

NM1 - _____3_____

Milestone 2 Completion Report

December 21, 2018



333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

December 21, 2018

Mr. Jim Griswold, Bureau Chief
Environmental Bureau
Oil Conservation Division
New Mexico Department of Energy,
Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

DEC 21 2018 AM 10:27

**Reference: Milestone Progress Report
Produced Water Facility Closure
Sundance Services, Inc. Facility Closure**

Dear Mr. Griswold:

Sundance Services continues their efforts to close the legacy facility represented by Sundance Services, Inc. (SSI). Gordon Environmental/PSC, on behalf of SSI, has compiled the following information related to the completion of Milestone #2, the removal of all produced water tanks, associated berms, and sumps on or before December 31, 2018. This milestone was completed on November 16th with the removal and excavation of over 5,000 cubic yards of soils that resided under the produced water tanks, and subsequent sampling to confirm the removal of sump contamination to acceptable background levels. Please find attached the Produced Water Facility Closure Completion Report documenting this effort.

We appreciate your review of this Milestone report. Upon your concurrence with the completion of this Milestone effort, we would appreciate the release of an additional \$50,000.00 of required Financial Assurance. Please let us know if you have any questions about this information.

Sincerely,
GORDON ENVIRONMENTAL/PSC

A handwritten signature in black ink, appearing to read "Charles W. Fiedler, P.E.", written over a horizontal line.

Charles W. Fiedler, P.E., LEED, AP
Senior Associate

cc: Arif Mussani, Sundance Services, Inc.
Hon. Andrew L. Wambsganss, Esq.

Attachments: Produced Water Facility Closure Completion Report

**Sundance Services Inc.
Produced Water Facility Closure
Lea County, New Mexico**

December 2018

TABLE OF CONTENTS

Section		Page No.
1.0	INTRODUCTION	1
2.0	SOIL BORING SITE CHARACTERIZATION.....	1
3.0	SITE EXCAVATION.....	2
4.0	CONFIRMATION SAMPLE ANALYTICAL RESULTS	3
5.0	SITE RESTORATION	4
6.0	CONCLUSIONS	4

LIST OF FIGURES

Figure No.	Title
1	Tank Sump Pre-Excavation Boring Locations
2	Produced Water Facility Excavation and Base Grade Sample locations

LIST OF TABLES

Table No.	Title
1	Laboratory Soil Test Data Sundance Services Produced Water Facility Excavation Base Grade Samples, 11/15/18

LIST OF APPENDICES

Appendix No.	
A	Borings Logs, Produced Water Facility
B	Laboratory Analytical Report, Site Characterization Boring Samples
C	Laboratory Analytical Report, Base Grade Confirmation Samples

1.0 INTRODUCTION

This document contains a summary of closure actions on the Produced Water Facility (PWF) at the Sundance Services, Inc., oilfield waste management facility (NMOCD Surface Waste Management Facility No. NM-01-003) in Lea County, NM. The PWF is one of several areas identified for corrective actions in the Sundance Services Closure Post Closure Plan (CPC Plan), submitted to the New Mexico Oil Conservation Division on September 29, 2016. This Plan was approved by the Oil Conservation Division (OCD) on July 31, 2017 with additional Milestones requiring specific components of the closure be completed within specific timeframes. Completion of each Milestone by the required deadline would result in the release of \$50,000.00 in Financial Assurance. This effort represents the successful completion of Milestone #2 by the December 31, 2018 deadline.

Provisions for excavation and removal of impacted media, and backfilling with clean soil at the PWF were set forth in Section 2.8 of the CPC Plan. The location of the PWF is shown on the site map in the CPC Plan (CPC Plan, Figure 3). Twelve above grade tanks, related conveyance lines, and other infrastructure that were used to process brine and crude oil emulsions were formerly located at the facility. Pursuant to corrective actions, the tanks were removed in September 2018 and impacted soils associated with the tanks and infrastructure were initially characterized with a soil boring, sampling and analysis effort conducted September 28-29, 2018, then excavated on November 15-16, 2018. Backfilling with clean fill was completed December 20, 2018.

This submittal contains documentation of the site characterization efforts, as well as the excavation, confirmatory sampling and analysis, and backfill operations for the facility.

2.0 SOIL BORING SITE CHARACTERIZATION

Prior to removing the tanks and conveyance lines, each of the manways and the tank sumps, as well as other locations of observed or suspected oil or brine leakage were surveyed. After tank removal and site leveling, each of the surveyed points was staked and Direct Penetration Technology (DPT) soil boring methods were used to drill through impacted media and to collect core samples. The site boring was completed September 28-29, 2018. Each of the cores was inspected for visual and olfactory evidence of crude oil or brine impact. Copies of soil boring logs

Produced Water Facility Closure
Sundance Services Inc.
Lea County, New Mexico
December 2018

are included with this submittal as **Appendix A**. A depth-referenced soil sample was collected from each boring at the depth below the impacted soil, as estimated by color and odor. Several of the DPT borings reached refusal in impacted media and samples were collected from the bottom of the boring. Locations of the site characterization borings are shown on the map in **Figure 1**.

The soil samples were transmitted to Hall Laboratory in Albuquerque for analysis of hydrocarbons using EPA Methods 8015D for Total Petroleum Hydrocarbons (Gasoline Range Organics, Diesel Range Organics and Motor Oil Range Organics) and EPA Method 8021B for Volatile Organic Contaminants (Benzene, Toluene, Ethylbenzene and Xylenes). Results of the sample analyses indicated that most of the samples were taken from beneath impacted media. Several indicated that impacted media had not been fully penetrated. A copy of the laboratory report for the site characterization boring samples is included as **Appendix B**.

Information from the logs and sample analytical results were compiled to prepare a projection of the excavation geometry required to fully excise impacted media within the PWF. Projected elevation of the top of clean media at each boring location was plotted on the map in **Figure 1** and contoured to provide an estimated terrain surface on top of clean media. The volume between the pre-excavation land surface and the projected base of the excavation was estimated to be approximately 5500 Cubic Yards (CY).

3.0 SITE EXCAVATION

Site excavation was performed on November 15-16, 2018. A Caterpillar 349E track hoe was used to excavate the site; 4 Komatsu HM-400 haul trucks were used to transport the excavated soil from the site. Excavation required approximately 1.5 days. Pre-excavation and post-excavation terrain surveys were used to determine that a total of 5,859 cubic yards of soil were removed from the site. Generally, the excavation was advanced to refusal throughout the excavated area. Base grades in the excavation included redbeds of the Chinle or Dockum Group in the northern and southern portions of the dig; highly lithic caliche was struck in the central portion of the hole. The excavation reached groundwater saturation in the deeper portions, where hole depth exceeded 8 feet. Elevation of the saturation within the excavation corresponds to saturation noted in locations adjacent to the east and west of the site during site characterization boring.

Produced Water Facility Closure
Sundance Services Inc.
Lea County, New Mexico
December 2018

Upon completion of the excavation, 26 base grade confirmation soil samples were collected at the locations of the prior soil borings, as estimated from handheld GPS receiver measurements. The soil samples were transmitted to Hall Laboratory in Albuquerque for analysis of constituents set forth in the CPC Plan, including:

- EPA Method 8015D for Total Petroleum Hydrocarbons (Gasoline Range Organics, Diesel Range Organics and Motor Oil Range Organics);
- EPA Method 8021B for Volatile Organic Compounds (Benzene, Toluene, Ethylbenzene and Xylenes);
- EPA Method 6010B for RCRA 8 metals;
- and EPA Method 300.0 for primary cations and anions.

An aerial drone survey was performed on the open excavation and the resultant aerial image and terrain data was used to prepare a map showing the extent and depth of the excavation as presented on the map in **Figure 2**. The aerial photomap shows that the depth of the excavation ranged from approximately 5 feet in the northeast and southeast corners to approximately 10 feet in the western and northeast areas.

4.0 CONFIRMATION SAMPLE ANALYTICAL RESULTS

Base grade confirmation sample analytical results are summarized in **Table 1**. Hydrocarbon constituent and chloride concentrations were compared to maximum contaminant levels set forth in NMOCE Site Closure Criteria (19.15.29.12 NMAC Table 1, Groundwater Depth >100 feet). Concentrations of other analytes were compared to Soil Screening Levels set forth in the New Mexico Environment Department Risk Assessment Guidance for Investigation and Remediation, Volume I, December 2014, Tables A-1 and 6-2.

Analytical results indicate that no Volatile Organic Compounds were detected in any of the confirmation samples. Benzene, the most toxic and restrictive standard, was not detected in any sample. Total BTEX was also not detected. Total Petroleum Hydrocarbons (TPH), as the sum of Gasoline Range Organics, Diesel Range Organics and Motor Oil Range Organics (GRO+DRO+MRO), as well as the sum of (GRO+DRO) were detected in several samples at sub-

**Produced Water Facility Closure
Sundance Services Inc.
Lea County, New Mexico
December 2018**

action level concentrations. The samples collected from boring site Nos. 500, 501 and 520, located near the northern extremity of the excavation had the highest concentrations. None of the samples were found to contain chlorides in concentrations approaching the NMOCD standard.

5.0 SITE RESTORATION

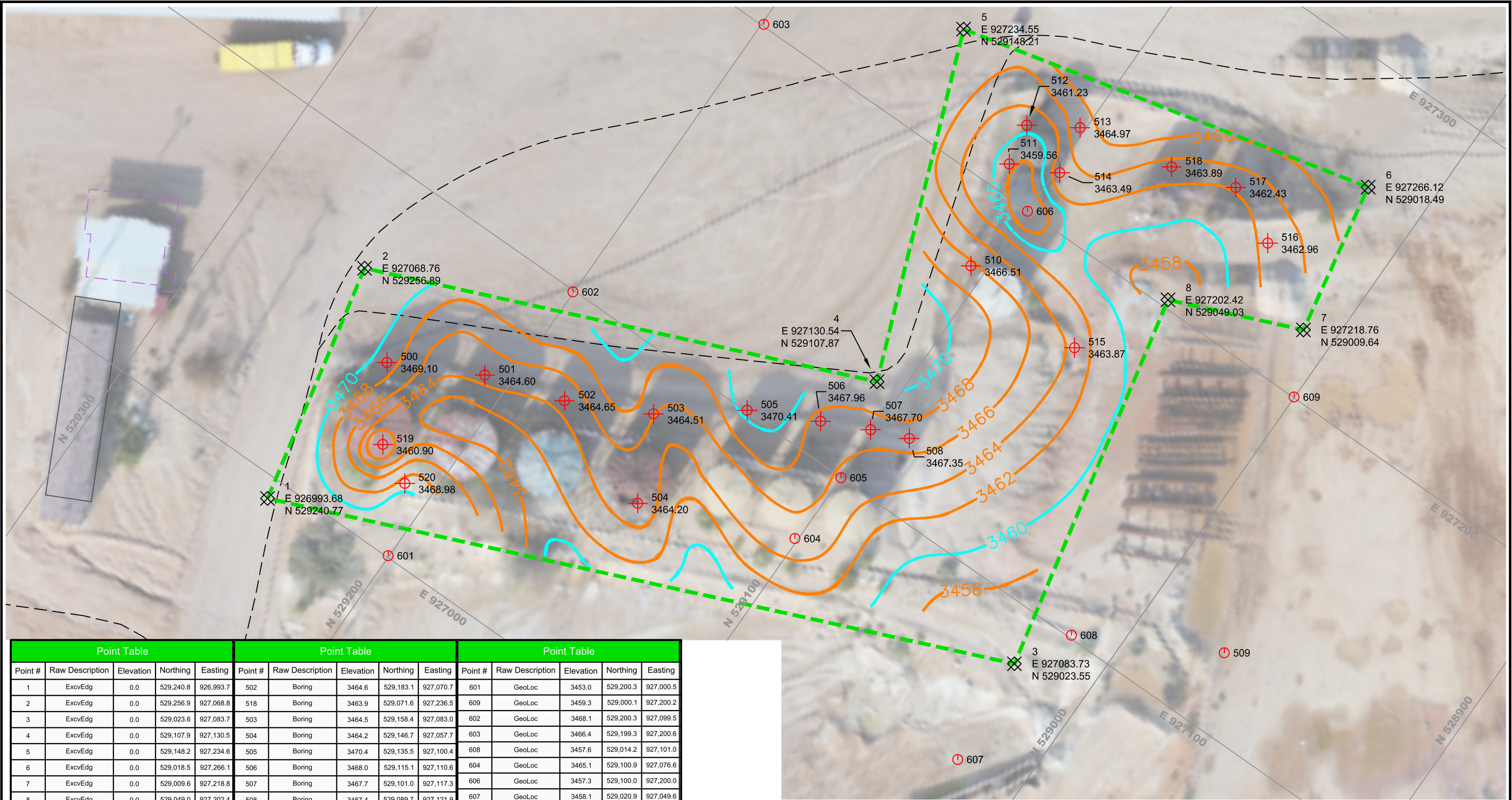
After receiving and reviewing the analytical results of the base grade confirmation sample analyses, it was determined that action level media had been successfully removed from the site. The excavation was backfilled with clean soil on December 20, 2018.

6.0 CONCLUSIONS

All of the above grade tanks and related infrastructure have been removed from the Produced Water Facility site. Excavation confirmation soil sample results indicate that action level soil has been successfully removed from the site. The site has been backfilled to surrounding grade with clean backfill soil. Based upon these actions and supporting data, we conclude that corrective action commitments for the Produced Water Facility set forth in the September 29, 2016 Closure Post Closure Plan have been met.

Produced Water Facility Closure
Sundance Services Inc.
Lea County, New Mexico
December 2018

FIGURES



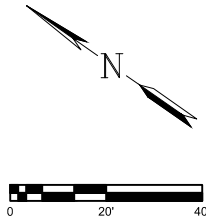
Point Table					Point Table					Point Table				
Point #	Raw Description	Elevation	Northing	Easting	Point #	Raw Description	Elevation	Northing	Easting	Point #	Raw Description	Elevation	Northing	Easting
1	ExcavEdg	0.0	529,240.8	926,993.7	502	Boring	3464.6	529,183.1	927,070.7	601	GeoLoc	3453.0	529,200.3	927,000.5
2	ExcavEdg	0.0	529,256.9	927,068.8	518	Boring	3463.9	529,071.6	927,236.5	609	GeoLoc	3459.3	529,000.1	927,200.2
3	ExcavEdg	0.0	529,023.6	927,083.7	503	Boring	3464.5	529,158.4	927,083.0	602	GeoLoc	3468.1	529,200.3	927,099.5
4	ExcavEdg	0.0	529,107.9	927,130.5	504	Boring	3464.2	529,146.7	927,057.7	603	GeoLoc	3466.4	529,199.3	927,200.6
5	ExcavEdg	0.0	529,148.2	927,234.6	505	Boring	3470.4	529,135.5	927,100.4	608	GeoLoc	3457.6	529,014.2	927,101.0
6	ExcavEdg	0.0	529,018.5	927,266.1	506	Boring	3468.0	529,115.1	927,110.6	604	GeoLoc	3465.1	529,100.9	927,076.6
7	ExcavEdg	0.0	529,009.6	927,218.8	507	Boring	3467.7	529,101.0	927,117.3	606	GeoLoc	3457.3	529,100.0	927,200.0
8	ExcavEdg	0.0	529,049.0	927,202.4	508	Boring	3467.4	529,089.7	927,121.9	607	GeoLoc	3458.1	529,020.9	927,049.6
513	Boring	3465.0	529,101.5	927,230.3	510	Boring	3466.5	529,104.6	927,176.2					
514	Boring	3463.5	529,098.7	927,215.4	511	Boring	3459.6	529,113.0	927,208.7					
515	Boring	3463.9	529,064.1	927,173.9	512	Boring	3461.2	529,115.3	927,221.5					
500	Boring	3469.1	529,234.6	927,049.0	519	Boring	3460.9	529,221.2	927,027.6					
516	Boring	3463.0	529,033.9	927,234.3	520	Boring	3469.0	529,208.9	927,021.7					
501	Boring	3464.6	529,207.8	927,063.1	509	GeoLoc	3449.6	528,972.6	927,123.5					
517	Boring	3462.4	529,051.8	927,242.7	605	GeoLoc	3465.7	529,100.0	927,100.0					

NOT FOR CONSTRUCTION
Drawing: X:\2017\0116.17\02_DSGN\02_DWG\050_CIVIL\Figure 3 Final-Sump+Grid.dwg
SIZE: ANSI-B Date/Time: Nov. 09, 2018-17:13:31 ; LAYOUT: B (LS)
Copyright © All Rights Reserved, Gordon Environmental | PSC - 2016

NOTE:
OCTOBER 16, 2017 AERIAL PHOTOGRAPHY PERFORMED BY GORDON ENVIRONMENTAL/PSC USING A PHANTOM 4 PRO DRONE. POST PROCESSING WAS DONE USING PIX4D SOFTWARE

LEGEND

- CORRECTIVE ACTION AREA
- 604 SUMP LOCATION
- 3465.13 ELEVATION TO BASE GRADE EXCAVATION
- 3458 PROJECTED BASE GRADE EXCAVATION ELEVATION



SUNDANCE SERVICES INC.
CPC PLAN CORRECTIVE ACTION
Tank Sump Pre-Excavation Boring Locations
and Projected Excavation Base Grades

333 Rio Rancho Blvd. NE
Suite 400
Rio Rancho, NM 87124
505-867-6990

DATE: 12/15/18	CAD:	PROJECT #:
DRAWN BY: LCK	REVIEWED BY:	FIGURE 1
APPROVED BY: CWF	www.team-psc.com	

**EXPLANATION**

- 508 Location of excavation base grade clean confirmation sample showing designation
- Isopleth on line of equal land surface elevation, ft, above MSL (2 ft contour interval)



Scale, feet



SUNDANCE SERVICES INC.
CPC PLAN CORRECTIVE ACTION
Produced Water Facility Excavation
and Base Grade Sample Locations



333 Rio Rancho Blvd. NE
Suite 400
Rio Rancho, NM 87124
505-867-6990

DATE: 12/15/18

CAD:

PROJECT #:

DRAWN BY: LCK

REVIEWED BY:

APPROVED BY: CWF

www.team-psc.com

FIGURE 2

Produced Water Facility Closure
Sundance Services Inc.
Lea County, New Mexico
December 2018

TABLE

Table 1.--Laboratory Soil Test Data, Sundance Services Produced Water Facility Excavation Base Grade Samples, 11/15/2018

Organic Compounds											
Sample Number	EPA 8021 (BTEX)						EPA 8015D (TPH)				
	¹ Benzene	² Toluene	² E. Benzene	² Xylenes	MTBE	¹ Total BTEX	GRO	DRO	MRO	¹ GRO+DRO+MRO	¹ GRO+DRO
	10	6.13E+04	368	4.28E+03	N/A	50	³ 3000-3800 mg/kg Oil Classes			2500	1000
500	<0.12	<0.23	<0.23	<0.47	<0.47	<1.05	<23	540	660	<1223	<563
501	<0.12	<0.24	<0.24	<0.49	<0.49	<1.07	<24	840	940	<1804	<864
502	<0.023	<0.047	<0.047	<0.093	<0.093	<0.21	<4.7	58	95	<157.7	<62.7
503	<0.023	<0.046	<0.046	<0.092	<0.092	<0.21	<4.6	23	<48	<75.6	<27.6
504	<0.024	<0.049	<0.049	<0.098	<0.098	<0.22	<4.9	130	170	<304.9	<134.9
505	<0.025	<0.049	<0.049	<0.098	<0.098	<0.22	<4.9	57	70	<131.9	<61.9
506	<0.024	<0.049	<0.049	<0.098	<0.098	<0.22	<4.9	<9.8	<49	<63.7	<14.7
507	<0.024	<0.048	<0.048	<0.096	<0.096	<0.22	<4.8	83	130	<217.8	<87.8
508	<0.024	<0.048	<0.048	<0.095	<0.095	<0.22	<4.8	220	590	<814.8	<224.8
510	<0.024	<0.048	<0.048	<0.097	<0.097	<0.22	<4.8	<9.8	<49	<63.6	<14.6
511	<0.024	<0.047	<0.047	<0.095	<0.095	<0.21	<4.7	280	260	<544.7	<284.7
512	<0.12	<0.24	<0.24	<0.47	<0.47	<1.07	<24	400	310	<734	<424
513	<0.024	<0.049	<0.049	<0.098	<0.098	<0.22	<4.9	17	<48	<21.9	<21.9
514	<0.024	<0.048	<0.048	<0.097	<0.097	<0.22	<4.8	<9.7	<48	<62.5	<14.5
515	<0.025	<0.049	<0.049	<0.098	<0.098	<0.22	<4.9	<9.8	<49	<63.7	<14.7
516	<0.024	<0.048	<0.048	<0.096	<0.096	<0.22	<4.8	<9.9	<49	<63.7	<14.7
517	<0.023	<0.047	<0.047	<0.094	<0.094	<0.21	<4.7	<9.6	<48	<62.3	<14.3
518	<0.025	<0.05	<0.050	<0.10	<0.10	<0.23	<5.0	<9.9	<50	<64.9	<14.9
519	<0.023	<0.047	<0.047	<0.094	<0.094	<0.21	<4.7	350	410	<764.7	<354.7
520	<0.025	<0.050	<0.050	<0.10	<0.10	<0.23	<5.0	180	210	<395	<185
604	<0.024	<0.048	<0.048	<0.096	<0.096	<0.22	<4.8	15	<48	<67.8	<19.8
605	<0.023	<0.047	<0.047	<0.094	<0.094	<0.21	<4.7	<9.6	<48	<62.3	<14.3
606	<0.023	<0.046	<0.046	<0.093	<0.093	<0.21	<4.6	35	57	<96.6	<39.6
S-1	<0.023	<0.047	<0.047	<0.094	<0.094	<0.21	<4.7	<9.9	<50	<64.6	<14.6
S-2	<0.023	<0.046	<0.046	<0.092	<0.092	<0.21	<4.6	19	<49	<23.6	<23.6
S-3	<0.024	<0.049	<0.049	<0.097	<0.097	<0.22	<4.9	<9.6	<48	<62.5	<14.5

Inorganic Compounds																
Sample Number	EPA 6010B (RCRA 8 Metals)								EPA 300.0 (Major Ions)							
	² Arsenic	² Barium	² Cadmium	² Chromium	² Lead	² Mercury	² Selenium	² Silver	³ Calcium	³ Magnesium	³ Sodium	³ Potassium	¹ Chloride	Sulfate	Bicarbonat	Phosphate
	21.5	2.55E+05	1110	505	800	112	6490	6490	3.24E+07	5.68E+06	3.57E+07	7.30E+07	20,000	N/A	N/A	N/A
500	3.9	360	<0.098	3.2	4.5	0.045	6.9	1.8	170000	3600	1600	700	2600	750	68	<1.0
501	4.5	830	<0.098	3.0	1.6	<0.16	5.9	1.9	200000	4200	1600	800	3700	1100	164	<1.0
502	4.3	370	<0.097	2.9	0.71	<0.032	<2.4	1.0	120000	3100	1500	850	2300	160	80	<1.0
503	3.2	520	<0.098	3.6	<0.25	<0.035	5.5	1.4	160000	8200	2500	1200	3600	310	96	<1.0
504	4.3	530	<0.099	2.3	0.52	<0.033	5.2	1.9	200000	3700	1000	700	1400	240	94	<1.0
505	2.3	200	<0.098	2.4	<0.25	<0.032	7.5	2.3	240000	6400	2600	910	4600	140	69	<1.0
506	<2.4	110	<0.097	3.8	<0.24	<0.033	2.7	0.83	120000	2600	1700	2000	2300	200	95	<1.0
507	3.6	370	<0.099	2.1	<0.25	<0.033	5.1	1.7	190000	1700	1600	390	2700	120	52	<1.0
508	4.4	210	<0.097	4.8	<0.24	<0.033	5.3	1.8	180000	4600	1600	980	2800	400	88	<1.0
510	4.5	660	<0.096	4.4	0.29	<0.032	5.6	1.3	160000	3500	2500	1400	3500	160	66	<1.0
511	5.5	420	<0.099	2.0	0.39	<0.033	6.0	1.8	190000	3700	1300	600	150	30	64	<1.0
512	5.5	800	<0.099	2.0	0.75	<0.032	5.4	1.5	160000	1300	1500	490	2600	140	57	<1.0
513	4.5	870	<0.096	1.3	0.31	<0.032	6.2	1.8	220000	1100	1600	360	2400	84	52	<1.0
514	7.2	540	<0.10	1.4	1.00	<0.033	5.1	1.0	160000	1300	3100	470	300	30	45	<1.0
515	3.7	1900	<0.099	5.0	<0.25	<0.033	7.7	1.6	190000	4400	3200	1600	200	20	68	<1.0
516	4.9	440	<0.097	2.8	0.41	<0.034	6.1	1.4	180000	1900	2800	730	3000	150	40	<1.0
517	6.4	630	<0.099	2.6	<0.25	<0.035	5.1	1.7	190000	2500	7500	730	12000	140	29	<1.0
518	8.8	720	<0.10	2.5	2.7	<0.032	<2.5	<0.25	87000	3300	8100	800	9400	99	39	<1.0
519	4.1	700	<0.096	3.1	0.38	<0.033	6.4	2.1	210000	4100	1300	730	1500	300	65	<1.0
520	4.4	900	<0.099	3.8	4.8	<0.033	5.4	1.5	160000	3300	2000	770	2000	180	54	<1.0
604	5.2	620	<0.099	6.3	0.74	<0.032	<2.5	<0.25	72000	2700	4600	2400	4200	350	52	<1.0
605	5.6	300	<0.097	3.4	0.67	<0.034	3.9	0.85	130000	2900	2800	830	3500	130	55	<1.0
606	5.5	580	<0.10	2.7	<0.25	<0.033	6.3	2.0	220000	3800	1900	860	2700	150	69	<1.0
S-1	5.0	680	<0.096	2.6	0.25	<0.034	5.00	1.6	170000	2400	2200	640	3300	580	59	<1.0
S-2	5.4	780	<0.10	1.6	<0.25	<0.033	6.9	2.0	220000	1100	2200	350	4200	260	40	<1.0
S-3	4.9	280	<0.098	2.9	<0.25	<0.033	5.5	1.6	150000	4200	3100	740	3800	480	50	<1.0

Notes: All units mg/kg

¹Maximum contaminant level, 19.15.29.12 NMAC Closure Criteria, Groundwater Level > 100 ft below land surface

²NMED Risk Assessmet Guidance for Investigation and Remediaion, Volume I, December 2014, Table A-1: NMED Soil Screening Levels, Industrial/Occupational Soil

³NMED Risk Assessmet Guidance for Investigation and Remediaion, Volume I, December 2014, Table 6-2: NMED TPH Soil Screening Levels, General Oil Classes

Produced Water Facility Closure
Sundance Services Inc.
Lea County, New Mexico
December 2018

APPENDIX A
BORING LOGS, PRODUCED WATER FACILITY
SITE CHARACTERIZATON



213 S. Camino del Pueblo
Bernalillo, New Mexico, USA
Phone: 505-867-6990
Fax: 505-867-6991

Monitor Well/Piezometer Log

Soil Boring
500

SITE NAME AND LOCATION: name and location	DRILLING METHOD: <u>DPT</u>	BORING NO.
	SAMPLING METHOD:	SHEET
		DRILLING
		START FINISH
NORTHING <u>529234.63</u>	WATER LEVEL	
EASTING:	TIME	
DATUM: amsl	DATE	
ELEVATION: <u>927048.96 347310</u>	CASING DEPTH	DATE DATE
DRILL RIG:	SURFACE CONDITIONS:	
ANGLE: 90	BEARING: -	

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max. particle size, gravel/cobble hardness, odor, interbeds, lam.)	% OVERSIZE ¹	% GRAVEL ²	% SAND ²	% FINES ²	COLOR	CONSISTENCY ³ / CEMENTATION ⁴	PLASTICITY (np, l, m, h)	OTHER TESTS ⁴
2		Fill, gravelly sand, silty								
4		Red Beds								
6										
8										
10										
12										
14										

DRILLING CONTRACTOR JR Pauling

LOGGED BY: K. M. H.

DATE: 9-28-88

JOB NO.

FILE NAME
Released to Imaging: 7/13/2022 3:23:07 PM



213 S. Camino del Pueblo
Bernalillo, New Mexico, USA
Phone: 505-867-6990
Fax: 505-867-6991

Monitor Well/Piezometer Log

DPT Boring
501

SITE NAME AND LOCATION: name and location		DRILLING METHOD: DPT		BORING NO.	
NORTHING: 529208.33 EASTING: 927062.78 DATUM: amsl ELEVATION: 5474.16		SAMPLING METHOD:		SHEET	
				DRILLING	
				START	FINISH
DRILL RIG: ANGLE: 90 BEARING: -		WATER LEVEL			
		TIME			
		DATE			
		CASING DEPTH			
		DATE			
		DATE			
		SURFACE CONDITIONS:			

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max. particle size, gravel/cobble hardness, odor, interbeds, lam.)	% OVERSIZE	% GRAVEL	% SAND	% FINES	CONSISTENCY/ CEMENTATION	PLASTICITY (np, t, m, h)	OTHER TESTS
2		Fill, gravelly sand, silty stained 0-3'							
4		sand, silty clean sample E4' 9:09 AM							
6									
8		Redbeds TD = 8							
10									
12									
14									

DRILLING CONTRACTOR

LOGGED BY: **Kilmer**

DATE: **9-28-17**

JOB NO.

Released to Imaging: 7/13/2022 3:23:07 PM



213 S. Camino del Pueblo
Bernalillo, New Mexico, USA
Phone: 505-867-6990
Fax: 505-867-6991

Monitor Well/Piezometer Log

502

SITE NAME AND LOCATION: name and location NORTHING 529182.93 EASTING 927070.85 DATUM: amsl ELEVATION: 3474.18	DRILLING METHOD:	BORING NO.	
	SAMPLING METHOD:	SHEET	
		DRILLING	
		START	FINISH
	WATER LEVEL		
	TIME		
	DATE		
	CASING DEPTH		
DRILL RIG: ANGLE: 90	BEARING: -	DATE	DATE
SURFACE CONDITIONS:			

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max. particle size, gravel/cobble hardness, odor, interbeds, lam.)	% OVERSIZE ¹	% GRAVEL ²	% SAND ²	% FINES ²	COLOR	CONSISTENCY ³ / CEMENTATION ⁴	PLASTICITY (np, l, m, h)	OTHER TESTS ⁴
2		Fill, gravel, sand, staining off to 5 ft								
4										
6		Sand, silty in situ sample @ 5.5 ft								
8		photo 08:12								
10		TD: 7 ft								
12										
14										

DRILLING CONTRACTOR J.R. Drilling

LOGGED BY: K. Hulse
DATE: 9-29-18

JOB NO.



213 S. Camino del Pueblo
Bernalillo, New Mexico, USA
Phone: 505-867-6990
Fax: 505-867-6991

Monitor Well/Piezometer Log

504

SITE NAME AND LOCATION: name and location	DRILLING METHOD:										BORING NO.		
											SHEET		
	SAMPLING METHOD:												
											DRILLING		
											START	FINISH	
NORTHING 529146.99						WATER LEVEL							
EASTING:						TIME							
DATUM: amsl 927057.72						DATE							
ELEVATION: 3473.07						CASING DEPTH							
DRILL RIG:						SURFACE CONDITIONS:							
ANGLE: 90	BEARING: -												

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max. particle size, gravel/cobble hardness, odor, interbeds, lam.)	% OVERSIZE ¹	% GRAVEL ²	% SAND ²	% FINES ²	COLOR	CONSISTENCY ³ / CEMENTATION ⁴	PLASTICITY (pp. l, m, h)	OTHER TESTS ⁴
2		Fill gravel, sandy stained 0' to 5'								
4										
6		in situ, sand, calcareous, gravelly								
8		Sample 6 ft 08:32								
10		10' TD								
12		Photo 08:30								
14										

DRILLING CONTRACTOR J.E. Drilling

LOGGED BY: KJ/mr

DATE: 9-29-18

JOB NO.

FILE NAME:
Released to Imaging: 7/13/2022 3:23:07 PM



213 S. Camino del Pueblo
Bernalillo, New Mexico, USA
Phone 505-867-6990
Fax 505-867-6991

Monitor Well/Piezometer Log

505

SITE NAME AND LOCATION: name and location	DRILLING METHOD:	DPT						BORING NO.	
							SHEET		
	SAMPLING METHOD:							DRILLING	
							START	FINISH	
							DATE	DATE	
NORTHING	529135.43	WATER LEVEL							
EASTING	927100.80	TIME							
DATUM: amsl		DATE							
ELEVATION:	3472.44	CASING DEPTH							
DRILL RIG:		SURFACE CONDITIONS:							
ANGLE 90	BEARING: -								

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max particle size, gravel/cobble hardness, odor, interbeds, lam.)	% OVERSIZE ¹	% GRAVEL ²	% SAND ²	% FINES ²	COLOR	CONSISTENCY ³ / CEMENTATION ⁴	PLASTICITY (mp, l, m, h)	OTHER TESTS ⁴
2		Fill gravelly, sandy - no staining								
4		0-1 Caliche, sandy hard								
6		sample @ 11 ft 10:00								
8		sand, silty								
10		TD = 8ft								
12		photo 10:15								
14										

DRILLING CONTRACTOR JR Drilling

LOGGED BY: K. Inea
DATE: 8-28-18

JOB NO.
FILE NAME:



213 S. Camino del Pueblo
Bernalillo, New Mexico, USA
Phone: 505-867-6990
Fax: 505-867-6991

Monitor Well/Piezometer Log

306

SITE NAME AND LOCATION: name and location	DRILLING METHOD: <u>DPT</u>						BORING NO.	
							SHEET	
	SAMPLING METHOD:							
							DRILLING	
NORTHING <u>529114.81</u>	WATER LEVEL						START	FINISH
EASTING:	TIME							
DATUM: <u>amsl</u>	DATE						DATE	DATE
ELEVATION: <u>3471.54</u>	CASING DEPTH							
DRILL RIG:	SURFACE CONDITIONS:							
ANGLE: 90	BEARING: -							

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max. particle size, gravel/cobble hardness, odor, interbeds, lam.)	% OVERSIZE ¹	% GRAVEL ²	% SAND ²	% FINES ²	COLOR	CONSISTENCY ³ CEMENTATION ⁴	PLASTICITY (np, l, m, h)	OTHER TESTS ⁴
2		Fill, sandy gravelly sl. stain 0-0.5'								
4		sample 1 ft in situ sand								
6		↓ silty, clayey, w. gravel								
8		8' TD								
10		Photo 13:42								
12										
14										

DRILLING CONTRACTOR JR Duffin

LOGGED BY: Kilmer
DATE: 9-28-18

JOB NO.

FILE NAME
Released to Imaging: 7/13/2022 3:23:07 PM



213 S. Camino del Pueblo
Bernalillo, New Mexico, USA
Phone 505-867-6990
Fax: 505-867-6991

Monitor Well/Piezometer Log

508

SITE NAME AND LOCATION: name and location NORTHING 529089.54 EASTING: 927422.23 DATUM: amsl ELEVATION: 3471.54 DRILL RIG: ANGLE: 90 BEARING: -	DRILLING METHOD: <u>DPT</u>	BORING NO.	
	SAMPLING METHOD:	SHEET	
		DRILLING	
		START	FINISH
		DATE	DATE
SURFACE CONDITIONS:		WATER LEVEL	
		TIME	
		DATE	
		CASING DEPTH	

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max. particle size, gravel/cobble hardness, odor, interbeds, lam.)	% OVERSIZE ¹	% GRAVEL ²	% SAND ³	% FINES ³	COLOR	CONSISTENCY ^{3/} CEMENTATION ⁴	PLASTICITY (np, l, m, h)	OTHER TESTS ⁴
2		Fill sand, gravelly, silty stained off to 2 ft								
4		sample @ 25 ft 14:08								
6		inside gravel, sand, silt								
8		Photo 14:07								
10		Refused @ 7 ft								
12										
14										

DRILLING CONTRACTOR JE Dailing

LOGGED BY: Filme

DATE: 9-28-13

JOB NO.

Page 23 of 173
Received by OCD: 7/13/2022 3:20:44 PM
Released to Imaging: 7/13/2022 3:23:07 PM



213 S Camino del Pueblo
Bernalillo, New Mexico, USA
Phone: 505-867-6990
Fax: 505-867-6991

Monitor Well/Piezometer Log

509

SITE NAME AND LOCATION: name and location	DRILLING METHOD:	BORING NO.						
		SHEET						
	SAMPLING METHOD:	DRILLING						
		START FINISH						
		DATE DATE						
NORTHING 528977.63		WATER LEVEL						
EASTING		TIME						
DATUM: amsl 927116.75		DATE						
ELEVATION: 3464.96		CASING DEPTH						
DRILL RIG:		SURFACE CONDITIONS:						
ANGLE: 90	BEARING: -							

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max. particle size, gravel/cobble hardness, odor, interbeds, lam.)	% OVERSIZE ¹	% GRAVEL ²	% SAND ³	% FINES ³	COLOR	CONSISTENCY ^{3/1} CEMENTATION ⁴	PLASTICITY (np, l, m, h)	OTHER TESTS ⁴
2	Excavation - fill	Fill (excavation?) sand, calcic staining 0-4 ft 9-10 ft								
4										
6		☒ sample @ 5 ft 12:35								
8		flowing sand								
10		Calcic + sand								
12		☒ sample @ 10 ft 12:40								
14		flowing sand								
16		silty sand, fine								
18		gravelly sand								
20		red beds								
	in situ	Photo: 12:28								

DRILLING CONTRACTOR J.P. Darling

LOGGED BY: K. Wilson
DATE: 7-25-18

JOB NO.

FILE NAME
Released to Imaging: 7/13/2022 3:23:07 PM



213 S Camino del Pueblo
Bernalillo, New Mexico, USA
Phone: 505-867-6990
Fax: 505-867-6991

Monitor Well/Piezometer Log

510

SITE NAME AND LOCATION: name and location	DRILLING METHOD:	DPT						BORING NO.	
	SAMPLING METHOD:							SHEET	
							DRILLING		
							START	FINISH	
NORTHING	529104.63	WATER LEVEL							
EASTING:	927176.09	TIME							
DATUM: amsl		DATE							
ELEVATION:	3469.80	CASING DEPTH							
DRILL RIG:								DATE	DATE
ANGLE: 90	BEARING: -	SURFACE CONDITIONS:							

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max. particle size, gravel/cobble hardness, odor, interbeds, lam.)	% OVERSIZE ¹	% GRAVEL ²	% SAND ²	% FINES ²	COLOR	CONSISTENCY ³ / CEMENTATION ⁴	PLASTICITY (pp, l, m, h)	OTHER TESTS ⁴
2		Fill, gravel, sand, silt stained to 3'								
4		Sample @ 3' 13:00								
6		- Refusal @ 6' (gravelly - in situ)								
8		photo 13:04								
10										
12										
14										

DRILLING CONTRACTOR J & D Drilling

LOGGED BY: KILNOR
DATE: 9-28-18

JOB NO.

FILE NAME:
Released to Imaging: 7/13/2022 3:23:07 PM



213 S Camino del Pueblo
Bernalillo, New Mexico, USA
Phone 505-867-6990
Fax: 505-867-6991

Monitor Well/Piezometer Log

511

SITE NAME AND LOCATION: name and location	DRILLING METHOD: <u>DPT</u>	BORING NO.	
		SHEET	
	SAMPLING METHOD:		
		DRILLING	
		START	FINISH
NORTHING <u>529113.12</u>	WATER LEVEL		
EASTING <u>927208.75</u>	TIME		
DATUM: <u>amsl</u>	DATE		
ELEVATION: <u>3468.58</u>	CASING DEPTH		
DRILL RIG:		DATE	DATE
ANGLE: 90	SURFACE CONDITIONS:		
BEARING: -			

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max. particle size, gravel/cobble hardness, odor, interbeds, lam.)	% OVERSIZE ¹	% GRAVEL ²	% SAND ²	% FINES ²	COLOR	CONSISTENCY ³ / CEMENTATION ⁴	PLASTICITY (pp, l, m, h)	OTHER TESTS ⁵
2		Fill, gravely sandy, stained to 4 ft								
4		Caliche, gravely, reddish clasts - refusal @ 6 ft								
6		☒ Sample @ 5' 10:45								
		very gravely (Tc) @ 6 ft								
		Angie								
8		gravel to 1.5-inch stained								
10		gravely, sandy								
12	12	-								
14		Sandy								
16		Coarse gravel + large								
		TD=15 photo 11:50								

DRILLING CONTRACTOR J & D Drilling

LOGGED BY: K. Huse

DATE: 9-28-18

JOB NO.

FILE NAME
Released to Imaging: 7/13/2022 3:23:07 PM



213 S. Camino del Pueblo
Bernalillo, New Mexico, USA
Phone: 505-867-6990
Fax: 505-867-6991

Monitor Well/Piezometer Log

DPT
512

SITE NAME AND LOCATION: name and location	DRILLING METHOD:	DPT						BORING NO.	
	SAMPLING METHOD:							SHEET	
							DRILLING		
							START	FINISH	
							DATE	DATE	
NORTHING	529113.56								
EASTING:	927221.49								
DATUM: amsl									
ELEVATION:	3467.80								
DRILL RIG:									
ANGLE: 90	BEARING: -								
SURFACE CONDITIONS:									

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max. particle size, gravel/cobble hardness, odor, interbeds, lam.)	% OVERSIZE ¹	% GRAVEL ²	% SAND ²	% FINES ²	COLOR	CONSISTENCY ³ / CEMENTATION ⁴	PLASTICITY (np, l, m, h)	OTHER TESTS ⁴
2		Fill, gravelly sand, silty, light stain to 2 ft								
4		GRAVEL, sandy, stained laminae to 6.5 ft								
6		sample @ 6 ft 10:00								
8		TD 7								
10										
12										
14										

DRILLING CONTRACTOR JE Drilling

LOGGED BY: Kimo

DATE: 9-28-18

JOB NO.

Released to Imaging: 7/13/2022 3:23:07 PM



213 S. Camino del Pueblo
Bernalillo, New Mexico, USA
Phone: 505-867-6990
Fax: 505-867-6991

Monitor Well/Piezometer Log

513

SITE NAME AND LOCATION: name and location		DRILLING METHOD:		BORING NO.	
NORTHING 529101.23 EASTING: 927230.50 DATUM: amsl ELEVATION: 3467.44 DRILL RIG: ANGLE: 90 BEARING: -		SAMPLING METHOD:		SHEET	
		WATER LEVEL		DRILLING	
		TIME		START FINISH	
		DATE		DATE	
SURFACE CONDITIONS:		CASING DEPTH			

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max. particle size, gravel/cobble hardness, odor, interbeds, lam.)	% OVERSIZE ¹	% GRAVEL ²	% SAND ²	% FINES ²	COLOR	CONSISTENCY ³ / CEMENTATION ⁴	PLASTICITY (mp, l, m, h)	OTHER TESTS ⁴
2		Fill, gravelly, sandy staining 0' to 2'								
4		Sample 2.5' 10:48								
6		in situ, gravel, silty								
8		Photo: 10:43								
10		TD: 7-ft refusal								
12										
14										

DRILLING CONTRACTOR J.R. Deiling

LOGGED BY: GILMAN

DATE: 7-29-18

JOB NO.

 FILE NAME:
 Released to Imaging: 7/13/2022 3:23:07 PM



213 S. Camino del Pueblo
Bernalillo, New Mexico, USA
Phone: 505-867-6990
Fax: 505-867-6991

Monitor Well/Piezometer Log

514

SITE NAME AND LOCATION: name and location NORTHING 529098.33 EASTING: 927214.83 DATUM: amsl ELEVATION: 3466.52 DRILL RIG: ANGLE: 90 BEARING: -	DRILLING METHOD:	BORING NO.
	SAMPLING METHOD:	SHEET
		DRILLING
		START FINISH
	WATER LEVEL	
	TIME	
	DATE	
	CASING DEPTH	DATE DATE
SURFACE CONDITIONS:		

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max. particle size, gravel/cobble hardness, odor, interbeds, lam.)	% OVERSIZE ¹	% GRAVEL ²	% SAND ²	% FINES ²	COLOR	CONSISTENCY ^{3,1} CEMENTATION ⁴	PLASTICITY (np, l, m, h)	OTHER TESTS ⁴
2		Fill sand, gravelly, stained 2ft to 3 1/2 ft								
4		Sample @ 3 1/2'								
6										
8		7.5' refusal								
10		photo 13:42								
12										

DRILLING CONTRACTOR JRP Drilling

LOGGED BY: K. Hase

DATE: 9:28

JOB NO.



213 S. Camino del Pueblo
Bernalillo, New Mexico, USA
Phone 505-867-6990
Fax 505-867-6991

Monitor Well/Piezometer Log

515

SITE NAME AND LOCATION: name and location MUEK 32° 26' 53.7" NORTHING EASTING: 103° 04' 57.3" DATUM: amsl ELEVATION: DRILL RIG: ANGLE: 90 BEARING: -	DRILLING METHOD:	BORING NO.					
	SAMPLING METHOD:	SHEET					
	DRILLING						
	START FINISH						
	DATE DATE						
SURFACE CONDITIONS:		DATE DATE					

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max. particle size, gravel/cobble hardness, odor, interbeds, lam.)	% OVERSIZE ¹	% GRAVEL ²	% SAND ³	% FINES ²	COLOR	CONSISTENCY ^{3/} CEMENTATION ⁴	PLASTICITY (np, l, m, h)	OTHER TESTS ⁴
2		Fill gravel, sandy, stained 0' to 5'								
4		clay (silt)								
6		sample 5.5' 10:25								
8		in situ, gravel, silty								
10		8' TD								
12		Probe: 10:21								
14										

DRILLING CONTRACTOR J & D Drilling

LOGGED BY: K. N. N.

DATE: 9-29-18

JOB NO.

FILE NAME

Page 30 of 173
Received by OCD: 7/13/2022 3:20:44 PM
Released to Imaging: 7/13/2022 3:23:07 PM



213 S Camino del Pueblo
Bernalillo, New Mexico, USA
Phone: 505-867-6990
Fax: 505-867-6991

Monitor Well/Piezometer Log

516

SITE NAME AND LOCATION: name and location NEW location	DRILLING METHOD:	BORING NO.					
	SAMPLING METHOD:	SHEET					
	DRILLING						
	START FINISH						
NORTHING 32° 28' 53.4"	WATER LEVEL						
EASTING:	TIME						
DATUM: amsl 103° 04' 56.5"	DATE						
ELEVATION:	CASING DEPTH						
DRILL RIG:	SURFACE CONDITIONS						
ANGLE: 90	BEARING: -						

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max. particle size, gravel/cobble hardness, odor, interbeds, lam.)	% OVERSIZE ¹	% GRAVEL ²	% SAND ²	% FINES ²	COLOR	CONSISTENCY ³ / CEMENTATION ⁴	PLASTICITY (pp, l, m, h)	OTHER TESTS ⁴
2		Fill, sand, silt, calcic staining 1.5' to 3.5'								
4		sample 4.0' 11:45								
6		in situ sand, gravelly, silty								
8		TD: 8' Refused								
10		Photo 11:40								
12										
14										

DRILLING CONTRACTOR J.R. DALLING
LOGGED BY: K. Hulse
DATE: 9-25-18

JOB NO.
FILE NAME:
Released to Imaging: 7/13/2022 3:23:07 PM



213 S. Camino del Pueblo
Bernalillo, New Mexico, USA
Phone: 505-867-6990
Fax: 505-867-6991

Monitor Well/Piezometer Log

517

SITE NAME AND LOCATION: name and location	DRILLING METHOD:						BORING NO.	
							SHEET	
	SAMPLING METHOD:						DRILLING	
							START	FINISH
NORTHING 529044.04	WATER LEVEL							
EASTING:	TIME							
DATUM: amsl 927242.81	DATE							
ELEVATION: 3466.63	CASING DEPTH							
DRILL RIG	SURFACE CONDITIONS:						DATE	DATE
ANGLE: 90	BEARING: -							

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max. particle size, gravel/cobble hardness, odor, interbeds, lam.)	% OVERSIZE ¹	% GRAVEL ²	% SAND ²	% FINES ²	COLOR	CONSISTENCY ³ / CEMENTATION ⁴	PLASTICITY (mp, l, m, h)	OTHER TESTS ⁴
2		Fill, gravel, sandy, silty stained 0'-4'								
4		sample @ 4.5'								
6		insitu gravel, sandy to silty								
8		TD: off refusal								
10		photo: 11:15								
12										
14										

DRILLING CONTRACTOR JR DUELLING

LOGGED BY: Kila

DATE: 7-29-19

JOB NO.

FILE NAME:
Released to Imaging: 7/13/2022 3:23:07 PM



213 S. Camino del Pueblo
Bernalillo, New Mexico, USA
Phone: 505-867-6990
Fax: 505-867-6991

Monitor Well/Piezometer Log

518

SITE NAME AND LOCATION: name and location NORTHING 529071.58 EASTING: 927236.50 DATUM: amsl ELEVATION: 3466.90 DRILL RIG: ANGLE: 90 BEARING: -	DRILLING METHOD:						BORING NO.	
							SHEET	
	SAMPLING METHOD:							
							DRILLING	
						START		FINISH
WATER LEVEL								
TIME								
DATE								
CASING DEPTH								
SURFACE CONDITIONS:								

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max. particle size, gravel/cobble hardness, odor, interbeds, lam.)	% OVERSIZE ¹	% GRAVEL ²	% SAND ²	% FINES ²	COLOR	CONSISTENCY ³ CEMENTATION ⁴	PLASTICITY (mp, l, m, h)	OTHER TESTS ⁴
2		Fill, sandy gravel stained 0' to 2.5'								
4		caliche (fill, tank base?) sample 3' 11:01								
6		in situ silt, gravelly								
8		TD: 7ft refusal Photo: 11:03								
10										
12										
14										

DRILLING CONTRACTOR JR Dwi (11.1)

LOGGED BY: K. (M) M

DATE: 9-28-19

JOB NO.

FILE NAME:

Released to Imaging: 7/13/2022 3:23:07 PM



213 S. Camino del Pueblo
Bernalillo, New Mexico, USA
Phone: 505-867-6990
Fax: 505-867-6991

Monitor Well/Piezometer Log

Soil Boring
519

SITE NAME AND LOCATION: name and location	DRILLING METHOD: <u>DPT</u>	BORING NO.	
		SHEET	
	SAMPLING METHOD:	DRILLING	
		START	FINISH
NORTHING <u>529221.20</u>	WATER LEVEL		
EASTING: <u>927027.13</u>	TIME		
DATUM: <u>amsl</u>	DATE		
ELEVATION: <u>3470.84</u>	CASING DEPTH		
DRILL RIG	SURFACE CONDITIONS:		
ANGLE: 90	BEARING: -		

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max. particle size, gravel/cobble hardness, odor, interbeds, lam.)	% OVERSIZE ¹	% GRAVEL ²	% SAND ²	% FINES ²	COLOR	CONSISTENCY ³ / CEMENTATION ⁴	PLASTICITY (np, l, m, h)	OTHER TESTS ⁴
2		Fill, Sandy, gravelly, silty								
4		minw staining to 7.5 ft								
6		sample 7.5' 08:10								
8										
10										
12		sampled @ 12 sample 12' 08:15								
14		Red Beds 13.5								
16										
18										
20										

DRILLING CONTRACTOR

LOGGED BY:

DATE: 5-28-19

JOB NO.



213 S Camino del Pueblo
Bernalillo, New Mexico, USA
Phone 505-867-6990
Fax: 505-867-6991

Monitor Well/Piezometer Log

*Sunkane Borings
601*

SITE NAME AND LOCATION: name and location NORTHING <i>529200</i> EASTING: DATUM: amsl <i>927000</i> ELEVATION: DRILL RIG: ANGLE: 90	DRILLING METHOD: <i>HSA</i>	BORING NO.	
	SAMPLING METHOD:	SHEET	
		DRILLING	
		START	FINISH
		DATE	DATE
	WATER LEVEL		
	TIME		
	DATE		
	CASING DEPTH		
BEARING: -	SURFACE CONDITIONS:		

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max. particle size, gravel/cobble hardness, odor, interbeds, lam.)	% OVERSIZE ¹	% GRAVEL ²	% SAND ²	% FINES ²	COLOR	CONSISTENCY ³ / CEMENTATION ⁴	PLASTICITY (np, I, m, h)	OTHER TESTS ⁴
5		Fill, gravely sand								
10	<i>IV</i>	sand, med to coarse subinlet @ 10 ft								
15	<i>~</i>	2 2" laminar black impacted sil @ 11.5 ft Rzd Bzd sample @ 12' 16:30								

DRILLING CONTRACTOR *JR Drilling*

LOGGED BY: *K. W. B.*

DATE: *8-27-18*

JOB NO.

Released to Imaging: 7/13/2022 3:23:07 PM



213 S. Camino del Pueblo
Bernalillo, New Mexico, USA
Phone: 505-867-6990
Fax: 505-867-6991

Monitor Well/Piezometer Log

Sunflower DPT
802

SITE NAME AND LOCATION: name and location NORTHING 529200 EASTING: 927100 DATUM: amsl ELEVATION: DRILL RIG: ANGLE: 90	DRILLING METHOD:	BORING NO.	
	SAMPLING METHOD:	SHEET	
		DRILLING	
		START	FINISH
		DATE	DATE
BEARING: -	SURFACE CONDITIONS:		

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max. particle size, gravel/cobble hardness, odor, interbeds, lam.)	% OVERSIZE ¹	% GRAVEL ²	% SAND ²	% FINES ²	COLOR	CONSISTENCY ³ / CEMENTATION ⁴	PLASTICITY (mp, l, m, h)	OTHER TESTS ⁵
2		fill, gravel & long, hard, silty								
4		Sample 2' 09:25								
6		Red bed - 3 ft								
8		TD - 8 ft								
10										
12										
14										

DRILLING CONTRACTOR

LOGGED BY: Filmer

DATE: 9-28-18

JOB NO.

FILE NAME

Released to Imaging: 7/13/2022 3:23:07 PM



213 S. Camino del Pueblo
Bernalillo, New Mexico, USA
Phone: 505-867-6990
Fax: 505-867-6991

Monitor Well/Piezometer Log

603

SITE NAME AND LOCATION: name and location NORTHING 529200 EASTING 927200 DATUM: amsl ELEVATION: DRILL RIG: ANGLE: 90	DRILLING METHOD: <u>DPI</u>	BORING NO.
	SAMPLING METHOD:	SHEET
		DRILLING
		START FINISH
		DATE DATE
BEARING -	SURFACE CONDITIONS:	

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max. particle size, gravel/cobble hardness, odor, interbeds, lam.)	% OVERSIZE ¹	% GRAVEL ²	% SAND ²	% FINES ²	COLOR	CONSISTENCY ³ , CEMENTATION ⁴	PLASTICITY (np, l, m, h)	OTHER TESTS ⁴
2		Fill, compacted road base, gravel, sand silt								
4		Caliche to red bed @ 4' 09:45								
		Sample @ 2' ☒ TD								
6										
8										
10										
12										
14										

DRILLING CONTRACTOR JR DeCling

LOGGED BY: Hilmer

DATE: 9-28-18

JOB NO.



213 S. Camino del Pueblo
Bernalillo, New Mexico, USA
Phone 505-867-6990
Fax 505-867-6991

Monitor Well/Piezometer Log

604

SITE NAME AND LOCATION: name and location New Location	DRILLING METHOD:	BORING NO.					
	SAMPLING METHOD:	SHEET					
	DRILLING						
	START FINISH						
NORTHING 32° 26' 54.0"	WATER LEVEL						
EASTING	TIME						
DATUM: amsl 103° 04' 58.4"	DATE						
ELEVATION:	CASING DEPTH						
DRILL RIG:	SURFACE CONDITIONS						
ANGLE: 90	BEARING: -						

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max. particle size, gravel/cobble hardness, odor, interbeds, lam.)	% OVERSIZE ¹	% GRAVEL ²	% SAND ²	% FINES ²	COLOR	CONSISTENCY ³ / CEMENTATION ⁴	PLASTICITY (np, l, m, h)	OTHER TESTS ⁴
2		Fill, gravel, sandy stained 0' to 5'								
4										
6		In-situ, gravel, sandy @ 5'								
		sample 5.5' 08:53								
8		TD: 8'								
10		Photo 08:54								
12										

DRILLING CONTRACTOR J.C. Dailly

LOGGED BY: KLM

DATE: 9-29-18

JOB NO.



213 S. Camino del Pueblo
Bernalillo, New Mexico, USA
Phone: 505-867-6990
Fax: 505-867-6991

Monitor Well/Piezometer Log

605

SITE NAME AND LOCATION: name and location NORTHING 529100 EASTING: 927100 DATUM: amsl ELEVATION: DRILL RIG: ANGLE: 90	DRILLING METHOD:	BORING NO.					
	SAMPLING METHOD:	SHEET					
		DRILLING					
		WATER LEVEL				START	FINISH
		TIME				DATE	DATE
		DATE					
		CASING DEPTH					
BEARING: -	SURFACE CONDITIONS:						

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max. particle size, gravel/cobble hardness, odor, interbeds, lam.)	% OVERSIZE ¹	% GRAVEL ²	% SAND ²	% FINES ²	COLOR	CONSISTENCY ^{3/} CEMENTATION ⁴	PLASTICITY (np, l, m, h)	OTHER TESTS ⁴
2		Fill, gravelly sand, no staining								
4		sand, in situ firm, cohesive Sample @ 2 ft 14.45								
6		(Less cons 4-8 ft)								
8		TD: 8 ft								
10		Photo 15:07								
12										
14										
16										

DRILLING CONTRACTOR JRD LLC

LOGGED BY: K. Luna

DATE: 7-28-18

JOB NO.

FILE NAME:
Released to Imaging: 7/13/2022 3:23:07 PM



213 S Camino del Pueblo
Bernalillo, New Mexico, USA
Phone: 505-867-6990
Fax: 505-867-6991

Monitor Well/Piezometer Log

606

SITE NAME AND LOCATION: name and location NORTHING 529100 EASTING: 927200 DATUM: amsl ELEVATION: DRILL RIG: ANGLE: 90	DRILLING METHOD: DPT	BORING NO.	
	SAMPLING METHOD:	SHEET	
		DRILLING	
		START	FINISH
		DATE	DATE
BEARING: -	SURFACE CONDITIONS:		

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max. particle size, gravel/cobble hardness, odor, interbeds, lam.)	% OVERSIZE ¹	% GRAVEL ²	% SAND ²	% FINES ²	COLOR	CONSISTENCY ³ , CEMENTATION ⁴	PLASTICITY (np, l, m, h)	OTHER TESTS ⁴
2		fill, sand, gravelly stained 2 ft to 7 ft, 8 ft to 9 ft								
4										
6										
8		sample @ 9'								
10		refusal @ 9'								
12		could not penetrate to bottom of stained soil								
		photo 13:20								

DRILLING CONTRACTOR JR Drilling

LOGGED BY: Kilmur
DATE: 7-28-18

JOB NO.
FILE NAME



213 S. Camino del Pueblo
Bernalillo, New Mexico, USA
Phone: 505-867-6990
Fax: 505-867-6991

Monitor Well/Piezometer Log

607

SITE NAME AND LOCATION: name and location New Location		DRILLING METHOD:						BORING NO.	
NORTHING 32° 26' 53.3"		SAMPLING METHOD:						SHEET	
EASTING 103° 04' 58.8"		DATE						DRILLING	
DATUM: amsl		TIME						START	
ELEVATION:		DATE						FINISH	
DRILL RIG:		CASING DEPTH						DATE	
ANGLE 90		SURFACE CONDITIONS:						DATE	
BEARING: -									

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max. particle size, gravel/cobble hardness, odor, interbeds, lam.)	% OVERSIZE ¹	% GRAVEL ²	% SAND ³	% FINES ³	COLOR	CONSISTENCY ^{3,4} CEMENTATION ⁴	PLASTICITY (mp, l, m, h)	OTHER TESTS ⁴
2		Fill, sand, gravelly stained 0' to 11.5'								
4										
6										
8										
10		10.5 ft Redbed								
12		☒ sample 10.5 ft 09:17								
14		Photo 09:16								
		TD: 11 ft								

DRILLING CONTRACTOR *JR Drilling*

LOGGED BY: *Kilasa*

DATE: *7-25-18*

JOB NO.

FILE NAME
Released to Imaging: 7/13/2022 3:23:07 PM



213 S. Camino del Pueblo
Bernalillo, New Mexico, USA
Phone 505-867-6990
Fax 505-867-6991

Monitor Well/Piezometer Log

608

SITE NAME AND LOCATION: name and location <i>new location</i>	DRILLING METHOD:						BORING NO.	
	SAMPLING METHOD:						SHEET	
	NORTHING <i>32° 26' 53.1"</i>						DRILLING	
	EASTING						START	FINISH
DATUM: <i>amsl 103° 04' 58.1"</i>	WATER LEVEL						DATE	
ELEVATION:	TIME						DATE	
DRILL RIG:	DATE						DATE	
ANGLE: 90	CASING DEPTH						DATE	
BEARING: -	SURFACE CONDITIONS:							

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max. particle size, gravel/cobble hardness, odor, interbeds, lam.,)	% OVERSIZE ¹	% GRAVEL ²	% SAND ²	% FINES ²	COLOR	CONSISTENCY ³ / CEMENTATION ⁴	PLASTICITY (np, l, m, h)	OTHER TESTS ⁴
2		Fill sandy gravel stained 0' to 6'								
4										
6	▽	sand (flowing) sample @ 6.5' @ 09:40								
8		gravelly photo 09:40								
10										
12		Harder (red bed?)								
14										

DRILLING CONTRACTOR

LOGGED BY: *Filmer*

DATE: *7-29-18*

JOB NO.

FILE NAME
Released to Imaging: 7/13/2022 3:23:07 PM



213 S. Camino del Pueblo
Bernalillo, New Mexico, USA
Phone: 505-867-6990
Fax: 505-867-6991

Monitor Well/Piezometer Log

609

SITE NAME AND LOCATION: name and location	DRILLING METHOD:										BORING NO.	
											SHEET	
	SAMPLING METHOD:											
											DRILLING	
											START	FINISH
NORTHING: 529000	WATER LEVEL											
EASTING: 927200	TIME											
DATUM: amsl	DATE											
ELEVATION:	CASING DEPTH											
DRILL RIG:	SURFACE CONDITIONS:										DATE	DATE
ANGLE: 90	BEARING: -											

DEPTH IN FEET (ELEVATION)	WELL COMPLETION DETAILS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL (i.e., angularity, moisture, HCL reaction, cementation, max. particle size, gravel/cobble hardness, odor, interbeds, lam.)	% OVERSIZE ¹	% GRAVEL ²	% SAND ²	% FINES ²	COLOR	CONSISTENCY ^{2,3} CEMENTATION ⁴	PLASTICITY (pp, l, m, h)	OTHER TESTS ⁴
2		Fill gravelly, sandy stained 0'-2.5'								
4		Sample 2.5 11:59 fin silty - gravel, sandy, silty								
6										
8		TD: 7ft Refusal Photo 11:54								
10										
12										
14										

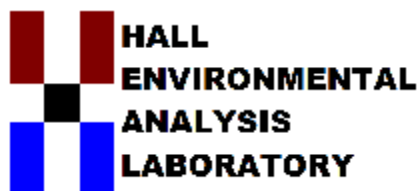
DRILLING CONTRACTOR JR Drilling

LOGGED BY Filma
DATE: 9-29-18

JOB NO.
FILE NAME:
Released to Imaging: 7/13/2022 3:23:07 PM

Produced Water Facility Closure
Sundance Services Inc.
Lea County, New Mexico
December 2018

APPENDIX B
LABORATORY ANALYTICAL REPORT
SITE CHARACTERIZATION BORING SAMPLES



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

October 08, 2018

Charles Fiedler

Gordon Environmental/PSC

333 Rio Rancho Blvd. N.E., Suite 400

Rio Rancho, NM 87124

TEL: (505) 867-6990

FAX (505) 867-6991

RE: Sundance Tank Farm

OrderNo.: 1810007

Dear Charles Fiedler:

Hall Environmental Analysis Laboratory received 32 sample(s) on 10/1/2018 for the analyses presented in the following report.

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

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 500 2'

Project: Sundance Tank Farm

Collection Date: 9/28/2018 8:45:00 AM

Lab ID: 1810007-001

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: irm
Diesel Range Organics (DRO)	2000	98		mg/Kg	10	10/4/2018 2:01:08 PM	40765
Motor Oil Range Organics (MRO)	3200	490		mg/Kg	10	10/4/2018 2:01:08 PM	40765
Surr: DNOP	0	50.6-138	S	%Rec	10	10/4/2018 2:01:08 PM	40765
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	10/4/2018 12:25:40 AM	40747
Surr: BFB	93.5	15-316		%Rec	1	10/4/2018 12:25:40 AM	40747
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.081		mg/Kg	1	10/4/2018 12:25:40 AM	40747
Benzene	ND	0.020		mg/Kg	1	10/4/2018 12:25:40 AM	40747
Toluene	ND	0.041		mg/Kg	1	10/4/2018 12:25:40 AM	40747
Ethylbenzene	ND	0.041		mg/Kg	1	10/4/2018 12:25:40 AM	40747
Xylenes, Total	ND	0.081		mg/Kg	1	10/4/2018 12:25:40 AM	40747
Surr: 4-Bromofluorobenzene	90.2	80-120		%Rec	1	10/4/2018 12:25:40 AM	40747

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

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

Page 1 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 501 4'

Project: Sundance Tank Farm

Collection Date: 9/28/2018 9:09:00 AM

Lab ID: 1810007-002

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: IRM
Diesel Range Organics (DRO)	2500	94		mg/Kg	10	10/4/2018 3:51:18 PM	40765
Motor Oil Range Organics (MRO)	2500	470		mg/Kg	10	10/4/2018 3:51:18 PM	40765
Surr: DNOP	0	50.6-138	S	%Rec	10	10/4/2018 3:51:18 PM	40765
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.2		mg/Kg	1	10/3/2018 8:08:56 PM	40747
Surr: BFB	94.3	15-316		%Rec	1	10/3/2018 8:08:56 PM	40747
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.064		mg/Kg	1	10/3/2018 8:08:56 PM	40747
Benzene	ND	0.016		mg/Kg	1	10/3/2018 8:08:56 PM	40747
Toluene	ND	0.032		mg/Kg	1	10/3/2018 8:08:56 PM	40747
Ethylbenzene	ND	0.032		mg/Kg	1	10/3/2018 8:08:56 PM	40747
Xylenes, Total	ND	0.064		mg/Kg	1	10/3/2018 8:08:56 PM	40747
Surr: 4-Bromofluorobenzene	91.0	80-120		%Rec	1	10/3/2018 8:08:56 PM	40747

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

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

Page 2 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 502 5.5'

Project: Sundance Tank Farm

Collection Date: 9/29/2018 8:12:00 AM

Lab ID: 1810007-003

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: IRM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	10/4/2018 4:57:27 PM	40765
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/4/2018 4:57:27 PM	40765
Surr: DNOP	119	50.6-138		%Rec	1	10/4/2018 4:57:27 PM	40765
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.2		mg/Kg	1	10/3/2018 8:55:35 PM	40747
Surr: BFB	89.8	15-316		%Rec	1	10/3/2018 8:55:35 PM	40747
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.064		mg/Kg	1	10/3/2018 8:55:35 PM	40747
Benzene	ND	0.016		mg/Kg	1	10/3/2018 8:55:35 PM	40747
Toluene	ND	0.032		mg/Kg	1	10/3/2018 8:55:35 PM	40747
Ethylbenzene	ND	0.032		mg/Kg	1	10/3/2018 8:55:35 PM	40747
Xylenes, Total	ND	0.064		mg/Kg	1	10/3/2018 8:55:35 PM	40747
Surr: 4-Bromofluorobenzene	87.8	80-120		%Rec	1	10/3/2018 8:55:35 PM	40747

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

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

Page 3 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 503 4'

Project: Sundance Tank Farm

Collection Date: 9/29/2018 4:29:00 PM

Lab ID: 1810007-004

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: IRM
Diesel Range Organics (DRO)	2200	97		mg/Kg	10	10/4/2018 6:03:30 PM	40765
Motor Oil Range Organics (MRO)	2100	490		mg/Kg	10	10/4/2018 6:03:30 PM	40765
Surr: DNOP	0	50.6-138	S	%Rec	10	10/4/2018 6:03:30 PM	40765
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	10/3/2018 9:18:57 PM	40747
Surr: BFB	93.7	15-316		%Rec	1	10/3/2018 9:18:57 PM	40747
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.070		mg/Kg	1	10/3/2018 9:18:57 PM	40747
Benzene	ND	0.017		mg/Kg	1	10/3/2018 9:18:57 PM	40747
Toluene	ND	0.035		mg/Kg	1	10/3/2018 9:18:57 PM	40747
Ethylbenzene	ND	0.035		mg/Kg	1	10/3/2018 9:18:57 PM	40747
Xylenes, Total	ND	0.070		mg/Kg	1	10/3/2018 9:18:57 PM	40747
Surr: 4-Bromofluorobenzene	89.0	80-120		%Rec	1	10/3/2018 9:18:57 PM	40747

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

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

Page 4 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 504 6'

Project: Sundance Tank Farm

Collection Date: 9/29/2018 8:32:00 AM

Lab ID: 1810007-005

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: irm
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	10/4/2018 7:09:38 PM	40765
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/4/2018 7:09:38 PM	40765
Surr: DNOP	114	50.6-138		%Rec	1	10/4/2018 7:09:38 PM	40765
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.4		mg/Kg	1	10/3/2018 9:42:16 PM	40747
Surr: BFB	91.2	15-316		%Rec	1	10/3/2018 9:42:16 PM	40747
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.068		mg/Kg	1	10/3/2018 9:42:16 PM	40747
Benzene	ND	0.017		mg/Kg	1	10/3/2018 9:42:16 PM	40747
Toluene	ND	0.034		mg/Kg	1	10/3/2018 9:42:16 PM	40747
Ethylbenzene	ND	0.034		mg/Kg	1	10/3/2018 9:42:16 PM	40747
Xylenes, Total	ND	0.068		mg/Kg	1	10/3/2018 9:42:16 PM	40747
Surr: 4-Bromofluorobenzene	89.9	80-120		%Rec	1	10/3/2018 9:42:16 PM	40747

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

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

Page 5 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 505 1'

Project: Sundance Tank Farm

Collection Date: 9/28/2018 4:00:00 PM

Lab ID: 1810007-006

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: irm
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	10/4/2018 7:31:47 PM	40765
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/4/2018 7:31:47 PM	40765
Surr: DNOP	122	50.6-138		%Rec	1	10/4/2018 7:31:47 PM	40765
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	10/3/2018 10:05:40 PM	40747
Surr: BFB	95.4	15-316		%Rec	1	10/3/2018 10:05:40 PM	40747
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.076		mg/Kg	1	10/3/2018 10:05:40 PM	40747
Benzene	ND	0.019		mg/Kg	1	10/3/2018 10:05:40 PM	40747
Toluene	ND	0.038		mg/Kg	1	10/3/2018 10:05:40 PM	40747
Ethylbenzene	ND	0.038		mg/Kg	1	10/3/2018 10:05:40 PM	40747
Xylenes, Total	ND	0.076		mg/Kg	1	10/3/2018 10:05:40 PM	40747
Surr: 4-Bromofluorobenzene	92.1	80-120		%Rec	1	10/3/2018 10:05:40 PM	40747

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

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

Page 6 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 506 1'

Project: Sundance Tank Farm

Collection Date: 9/28/2018 1:40:00 PM

Lab ID: 1810007-007

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	40	9.9		mg/Kg	1	10/4/2018 7:53:32 PM	40765
Motor Oil Range Organics (MRO)	52	49		mg/Kg	1	10/4/2018 7:53:32 PM	40765
Surr: DNOP	131	50.6-138		%Rec	1	10/4/2018 7:53:32 PM	40765
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.4		mg/Kg	1	10/3/2018 10:28:57 PM	40747
Surr: BFB	92.4	15-316		%Rec	1	10/3/2018 10:28:57 PM	40747
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.067		mg/Kg	1	10/3/2018 10:28:57 PM	40747
Benzene	ND	0.017		mg/Kg	1	10/3/2018 10:28:57 PM	40747
Toluene	ND	0.034		mg/Kg	1	10/3/2018 10:28:57 PM	40747
Ethylbenzene	ND	0.034		mg/Kg	1	10/3/2018 10:28:57 PM	40747
Xylenes, Total	ND	0.067		mg/Kg	1	10/3/2018 10:28:57 PM	40747
Surr: 4-Bromofluorobenzene	88.9	80-120		%Rec	1	10/3/2018 10:28:57 PM	40747

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

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

Page 7 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 507 2.5'

Project: Sundance Tank Farm

Collection Date: 9/28/2018 2:45:00 PM

Lab ID: 1810007-008

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: irm
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/4/2018 8:15:40 PM	40765
Motor Oil Range Organics (MRO)	ND	51		mg/Kg	1	10/4/2018 8:15:40 PM	40765
Surr: DNOP	109	50.6-138		%Rec	1	10/4/2018 8:15:40 PM	40765
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.3		mg/Kg	1	10/3/2018 10:52:14 PM	40747
Surr: BFB	92.0	15-316		%Rec	1	10/3/2018 10:52:14 PM	40747
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.066		mg/Kg	1	10/3/2018 10:52:14 PM	40747
Benzene	ND	0.016		mg/Kg	1	10/3/2018 10:52:14 PM	40747
Toluene	ND	0.033		mg/Kg	1	10/3/2018 10:52:14 PM	40747
Ethylbenzene	ND	0.033		mg/Kg	1	10/3/2018 10:52:14 PM	40747
Xylenes, Total	ND	0.066		mg/Kg	1	10/3/2018 10:52:14 PM	40747
Surr: 4-Bromofluorobenzene	90.0	80-120		%Rec	1	10/3/2018 10:52:14 PM	40747

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

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

Page 8 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 508 2.5'

Project: Sundance Tank Farm

Collection Date: 9/28/2018 2:08:00 PM

Lab ID: 1810007-009

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	10/4/2018 8:37:36 PM	40765
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/4/2018 8:37:36 PM	40765
Surr: DNOP	111	50.6-138		%Rec	1	10/4/2018 8:37:36 PM	40765
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	10/3/2018 3:59:10 PM	G54618
Surr: BFB	89.6	15-316		%Rec	1	10/3/2018 3:59:10 PM	G54618
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.072		mg/Kg	1	10/3/2018 3:59:10 PM	B54618
Benzene	ND	0.018		mg/Kg	1	10/3/2018 3:59:10 PM	B54618
Toluene	ND	0.036		mg/Kg	1	10/3/2018 3:59:10 PM	B54618
Ethylbenzene	ND	0.036		mg/Kg	1	10/3/2018 3:59:10 PM	B54618
Xylenes, Total	ND	0.072		mg/Kg	1	10/3/2018 3:59:10 PM	B54618
Surr: 4-Bromofluorobenzene	107	80-120		%Rec	1	10/3/2018 3:59:10 PM	B54618

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

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

Page 9 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 509 5'

Project: Sundance Tank Farm

Collection Date: 9/29/2018 12:35:00 PM

Lab ID: 1810007-010

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	29	9.7		mg/Kg	1	10/5/2018 9:50:18 AM	40765
Motor Oil Range Organics (MRO)	65	49		mg/Kg	1	10/5/2018 9:50:18 AM	40765
Surr: DNOP	119	50.6-138		%Rec	1	10/5/2018 9:50:18 AM	40765
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	2.5		mg/Kg	1	10/3/2018 5:07:30 PM	G54618
Surr: BFB	87.8	15-316		%Rec	1	10/3/2018 5:07:30 PM	G54618
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.049		mg/Kg	1	10/3/2018 5:07:30 PM	B54618
Benzene	ND	0.012		mg/Kg	1	10/3/2018 5:07:30 PM	B54618
Toluene	ND	0.025		mg/Kg	1	10/3/2018 5:07:30 PM	B54618
Ethylbenzene	ND	0.025		mg/Kg	1	10/3/2018 5:07:30 PM	B54618
Xylenes, Total	ND	0.049		mg/Kg	1	10/3/2018 5:07:30 PM	B54618
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	10/3/2018 5:07:30 PM	B54618

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

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

Page 10 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 509 10'

Project: Sundance Tank Farm

Collection Date: 9/29/2018 12:40:00 PM

Lab ID: 1810007-011

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	10/4/2018 10:27:55 PM	40765
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/4/2018 10:27:55 PM	40765
Surr: DNOP	121	50.6-138		%Rec	1	10/4/2018 10:27:55 PM	40765
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.3		mg/Kg	1	10/3/2018 6:38:32 PM	G54618
Surr: BFB	90.2	15-316		%Rec	1	10/3/2018 6:38:32 PM	G54618
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.065		mg/Kg	1	10/3/2018 6:38:32 PM	B54618
Benzene	ND	0.016		mg/Kg	1	10/3/2018 6:38:32 PM	B54618
Toluene	ND	0.033		mg/Kg	1	10/3/2018 6:38:32 PM	B54618
Ethylbenzene	ND	0.033		mg/Kg	1	10/3/2018 6:38:32 PM	B54618
Xylenes, Total	ND	0.065		mg/Kg	1	10/3/2018 6:38:32 PM	B54618
Surr: 4-Bromofluorobenzene	109	80-120		%Rec	1	10/3/2018 6:38:32 PM	B54618

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

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

Page 11 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 510 3'

Project: Sundance Tank Farm

Collection Date: 9/28/2018 1:00:00 PM

Lab ID: 1810007-012

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	10/4/2018 10:49:49 PM	40765
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/4/2018 10:49:49 PM	40765
Surr: DNOP	119	50.6-138		%Rec	1	10/4/2018 10:49:49 PM	40765
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.2		mg/Kg	1	10/3/2018 8:31:52 PM	G54618
Surr: BFB	86.7	15-316		%Rec	1	10/3/2018 8:31:52 PM	G54618
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.063		mg/Kg	1	10/3/2018 8:31:52 PM	B54618
Benzene	ND	0.016		mg/Kg	1	10/3/2018 8:31:52 PM	B54618
Toluene	ND	0.032		mg/Kg	1	10/3/2018 8:31:52 PM	B54618
Ethylbenzene	ND	0.032		mg/Kg	1	10/3/2018 8:31:52 PM	B54618
Xylenes, Total	ND	0.063		mg/Kg	1	10/3/2018 8:31:52 PM	B54618
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	10/3/2018 8:31:52 PM	B54618

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

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

Page 12 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 511 5'

Project: Sundance Tank Farm

Collection Date: 9/28/2018 10:45:00 AM

Lab ID: 1810007-013

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: Irm
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	10/4/2018 11:11:58 PM	40765
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	10/4/2018 11:11:58 PM	40765
Surr: DNOP	122	50.6-138		%Rec	1	10/4/2018 11:11:58 PM	40765
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.1		mg/Kg	1	10/3/2018 8:54:30 PM	G54618
Surr: BFB	86.8	15-316		%Rec	1	10/3/2018 8:54:30 PM	G54618
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.063		mg/Kg	1	10/3/2018 8:54:30 PM	B54618
Benzene	ND	0.016		mg/Kg	1	10/3/2018 8:54:30 PM	B54618
Toluene	ND	0.031		mg/Kg	1	10/3/2018 8:54:30 PM	B54618
Ethylbenzene	ND	0.031		mg/Kg	1	10/3/2018 8:54:30 PM	B54618
Xylenes, Total	ND	0.063		mg/Kg	1	10/3/2018 8:54:30 PM	B54618
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	10/3/2018 8:54:30 PM	B54618

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

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

Page 13 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 512 6'

Project: Sundance Tank Farm

Collection Date: 9/28/2018 10:00:00 AM

Lab ID: 1810007-014

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: Irm
Diesel Range Organics (DRO)	40	9.7		mg/Kg	1	10/5/2018 10:12:13 AM	40765
Motor Oil Range Organics (MRO)	190	49		mg/Kg	1	10/5/2018 10:12:13 AM	40765
Surr: DNOP	126	50.6-138		%Rec	1	10/5/2018 10:12:13 AM	40765
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	2.7		mg/Kg	1	10/3/2018 9:17:11 PM	G54618
Surr: BFB	85.7	15-316		%Rec	1	10/3/2018 9:17:11 PM	G54618
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.053		mg/Kg	1	10/3/2018 9:17:11 PM	B54618
Benzene	ND	0.013		mg/Kg	1	10/3/2018 9:17:11 PM	B54618
Toluene	ND	0.027		mg/Kg	1	10/3/2018 9:17:11 PM	B54618
Ethylbenzene	ND	0.027		mg/Kg	1	10/3/2018 9:17:11 PM	B54618
Xylenes, Total	ND	0.053		mg/Kg	1	10/3/2018 9:17:11 PM	B54618
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	10/3/2018 9:17:11 PM	B54618

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

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

Page 14 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 513 2.5'

Project: Sundance Tank Farm

Collection Date: 9/29/2018 10:48:00 AM

Lab ID: 1810007-015

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	10/5/2018 12:39:46 AM	40765
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/5/2018 12:39:46 AM	40765
Surr: DNOP	117	50.6-138		%Rec	1	10/5/2018 12:39:46 AM	40765
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.3		mg/Kg	1	10/3/2018 9:39:48 PM	G54618
Surr: BFB	87.9	15-316		%Rec	1	10/3/2018 9:39:48 PM	G54618
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.067		mg/Kg	1	10/3/2018 9:39:48 PM	B54618
Benzene	ND	0.017		mg/Kg	1	10/3/2018 9:39:48 PM	B54618
Toluene	ND	0.033		mg/Kg	1	10/3/2018 9:39:48 PM	B54618
Ethylbenzene	ND	0.033		mg/Kg	1	10/3/2018 9:39:48 PM	B54618
Xylenes, Total	ND	0.067		mg/Kg	1	10/3/2018 9:39:48 PM	B54618
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	10/3/2018 9:39:48 PM	B54618

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

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

Page 15 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 514 3.5'

Project: Sundance Tank Farm

Collection Date: 9/28/2018 1:40:00 PM

Lab ID: 1810007-016

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	19	9.6		mg/Kg	1	10/5/2018 1:01:45 AM	40765
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/5/2018 1:01:45 AM	40765
Surr: DNOP	120	50.6-138		%Rec	1	10/5/2018 1:01:45 AM	40765
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.2		mg/Kg	1	10/3/2018 10:02:27 PM	G54618
Surr: BFB	91.7	15-316		%Rec	1	10/3/2018 10:02:27 PM	G54618
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.063		mg/Kg	1	10/3/2018 10:02:27 PM	B54618
Benzene	ND	0.016		mg/Kg	1	10/3/2018 10:02:27 PM	B54618
Toluene	ND	0.032		mg/Kg	1	10/3/2018 10:02:27 PM	B54618
Ethylbenzene	ND	0.032		mg/Kg	1	10/3/2018 10:02:27 PM	B54618
Xylenes, Total	ND	0.063		mg/Kg	1	10/3/2018 10:02:27 PM	B54618
Surr: 4-Bromofluorobenzene	107	80-120		%Rec	1	10/3/2018 10:02:27 PM	B54618

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

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

Page 16 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 515 5.5'

Project: Sundance Tank Farm

Collection Date: 9/29/2018 10:25:00 AM

Lab ID: 1810007-017

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	17	9.8		mg/Kg	1	10/5/2018 1:23:56 AM	40765
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/5/2018 1:23:56 AM	40765
Surr: DNOP	120	50.6-138		%Rec	1	10/5/2018 1:23:56 AM	40765
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.2		mg/Kg	1	10/3/2018 10:25:05 PM	G54618
Surr: BFB	87.8	15-316		%Rec	1	10/3/2018 10:25:05 PM	G54618
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.063		mg/Kg	1	10/3/2018 10:25:05 PM	B54618
Benzene	ND	0.016		mg/Kg	1	10/3/2018 10:25:05 PM	B54618
Toluene	ND	0.032		mg/Kg	1	10/3/2018 10:25:05 PM	B54618
Ethylbenzene	ND	0.032		mg/Kg	1	10/3/2018 10:25:05 PM	B54618
Xylenes, Total	ND	0.063		mg/Kg	1	10/3/2018 10:25:05 PM	B54618
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	10/3/2018 10:25:05 PM	B54618

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

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

Page 17 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 516 4'

Project: Sundance Tank Farm

Collection Date: 9/29/2018 11:45:00 AM

Lab ID: 1810007-018

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	10/5/2018 1:45:55 AM	40765
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/5/2018 1:45:55 AM	40765
Surr: DNOP	120	50.6-138		%Rec	1	10/5/2018 1:45:55 AM	40765
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.4		mg/Kg	1	10/3/2018 10:47:45 PM	G54618
Surr: BFB	88.7	15-316		%Rec	1	10/3/2018 10:47:45 PM	G54618
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.068		mg/Kg	1	10/3/2018 10:47:45 PM	B54618
Benzene	ND	0.017		mg/Kg	1	10/3/2018 10:47:45 PM	B54618
Toluene	ND	0.034		mg/Kg	1	10/3/2018 10:47:45 PM	B54618
Ethylbenzene	ND	0.034		mg/Kg	1	10/3/2018 10:47:45 PM	B54618
Xylenes, Total	ND	0.068		mg/Kg	1	10/3/2018 10:47:45 PM	B54618
Surr: 4-Bromofluorobenzene	107	80-120		%Rec	1	10/3/2018 10:47:45 PM	B54618

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

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

Page 18 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 517 4.5'

Project: Sundance Tank Farm

Collection Date: 9/29/2018 11:20:00 AM

Lab ID: 1810007-019

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	10/5/2018 2:08:04 AM	40765
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/5/2018 2:08:04 AM	40765
Surr: DNOP	118	50.6-138		%Rec	1	10/5/2018 2:08:04 AM	40765
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.1		mg/Kg	1	10/4/2018 2:13:35 PM	G54639
Surr: BFB	88.3	15-316		%Rec	1	10/4/2018 2:13:35 PM	G54639
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.063		mg/Kg	1	10/4/2018 2:13:35 PM	B54639
Benzene	ND	0.016		mg/Kg	1	10/4/2018 2:13:35 PM	B54639
Toluene	ND	0.031		mg/Kg	1	10/4/2018 2:13:35 PM	B54639
Ethylbenzene	ND	0.031		mg/Kg	1	10/4/2018 2:13:35 PM	B54639
Xylenes, Total	ND	0.063		mg/Kg	1	10/4/2018 2:13:35 PM	B54639
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	10/4/2018 2:13:35 PM	B54639

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

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

Page 19 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 518 3'

Project: Sundance Tank Farm

Collection Date: 9/29/2018 11:01:00 AM

Lab ID: 1810007-020

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: Irm
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	10/5/2018 2:30:00 AM	40765
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/5/2018 2:30:00 AM	40765
Surr: DNOP	130	50.6-138		%Rec	1	10/5/2018 2:30:00 AM	40765
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.4		mg/Kg	1	10/4/2018 2:36:15 PM	G54639
Surr: BFB	88.3	15-316		%Rec	1	10/4/2018 2:36:15 PM	G54639
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.068		mg/Kg	1	10/4/2018 2:36:15 PM	B54639
Benzene	ND	0.017		mg/Kg	1	10/4/2018 2:36:15 PM	B54639
Toluene	ND	0.034		mg/Kg	1	10/4/2018 2:36:15 PM	B54639
Ethylbenzene	ND	0.034		mg/Kg	1	10/4/2018 2:36:15 PM	B54639
Xylenes, Total	ND	0.068		mg/Kg	1	10/4/2018 2:36:15 PM	B54639
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	10/4/2018 2:36:15 PM	B54639

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

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

Page 20 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 519 7.5'

Project: Sundance Tank Farm

Collection Date: 9/28/2018 8:10:00 AM

Lab ID: 1810007-021

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	15	10		mg/Kg	1	10/4/2018 3:55:17 PM	40787
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/4/2018 3:55:17 PM	40787
Surr: DNOP	110	50.6-138		%Rec	1	10/4/2018 3:55:17 PM	40787
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.3		mg/Kg	1	10/4/2018 4:29:55 PM	G54639
Surr: BFB	86.8	15-316		%Rec	1	10/4/2018 4:29:55 PM	G54639
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.066		mg/Kg	1	10/4/2018 4:29:55 PM	B54639
Benzene	ND	0.017		mg/Kg	1	10/4/2018 4:29:55 PM	B54639
Toluene	ND	0.033		mg/Kg	1	10/4/2018 4:29:55 PM	B54639
Ethylbenzene	ND	0.033		mg/Kg	1	10/4/2018 4:29:55 PM	B54639
Xylenes, Total	ND	0.066		mg/Kg	1	10/4/2018 4:29:55 PM	B54639
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	10/4/2018 4:29:55 PM	B54639

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

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

Page 21 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 520 13'

Project: Sundance Tank Farm

Collection Date: 9/27/2018 4:00:00 PM

Lab ID: 1810007-022

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	10/4/2018 5:08:36 PM	40787
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/4/2018 5:08:36 PM	40787
Surr: DNOP	99.3	50.6-138		%Rec	1	10/4/2018 5:08:36 PM	40787
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	2.7		mg/Kg	1	10/4/2018 4:52:36 PM	G54639
Surr: BFB	88.7	15-316		%Rec	1	10/4/2018 4:52:36 PM	G54639
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.055		mg/Kg	1	10/4/2018 4:52:36 PM	B54639
Benzene	ND	0.014		mg/Kg	1	10/4/2018 4:52:36 PM	B54639
Toluene	ND	0.027		mg/Kg	1	10/4/2018 4:52:36 PM	B54639
Ethylbenzene	ND	0.027		mg/Kg	1	10/4/2018 4:52:36 PM	B54639
Xylenes, Total	ND	0.055		mg/Kg	1	10/4/2018 4:52:36 PM	B54639
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	10/4/2018 4:52:36 PM	B54639

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

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

Page 22 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 601 11'

Project: Sundance Tank Farm

Collection Date: 9/27/2018 4:30:00 PM

Lab ID: 1810007-023

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: IRM
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	10/4/2018 5:33:08 PM	40787
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/4/2018 5:33:08 PM	40787
Surr: DNOP	97.8	50.6-138		%Rec	1	10/4/2018 5:33:08 PM	40787
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	2.2		mg/Kg	1	10/4/2018 1:12:13 AM	40747
Surr: BFB	96.0	15-316		%Rec	1	10/4/2018 1:12:13 AM	40747
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.045		mg/Kg	1	10/4/2018 1:12:13 AM	40747
Benzene	ND	0.011		mg/Kg	1	10/4/2018 1:12:13 AM	40747
Toluene	ND	0.022		mg/Kg	1	10/4/2018 1:12:13 AM	40747
Ethylbenzene	ND	0.022		mg/Kg	1	10/4/2018 1:12:13 AM	40747
Xylenes, Total	ND	0.045		mg/Kg	1	10/4/2018 1:12:13 AM	40747
Surr: 4-Bromofluorobenzene	92.5	80-120		%Rec	1	10/4/2018 1:12:13 AM	40747

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

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

Page 23 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 602 2'

Project: Sundance Tank Farm

Collection Date: 9/28/2018 9:25:00 AM

Lab ID: 1810007-024

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	10/4/2018 5:57:27 PM	40787
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/4/2018 5:57:27 PM	40787
Surr: DNOP	100	50.6-138		%Rec	1	10/4/2018 5:57:27 PM	40787
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.4		mg/Kg	1	10/4/2018 5:15:15 PM	G54639
Surr: BFB	88.0	15-316		%Rec	1	10/4/2018 5:15:15 PM	G54639
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.068		mg/Kg	1	10/4/2018 5:15:15 PM	B54639
Benzene	ND	0.017		mg/Kg	1	10/4/2018 5:15:15 PM	B54639
Toluene	ND	0.034		mg/Kg	1	10/4/2018 5:15:15 PM	B54639
Ethylbenzene	ND	0.034		mg/Kg	1	10/4/2018 5:15:15 PM	B54639
Xylenes, Total	ND	0.068		mg/Kg	1	10/4/2018 5:15:15 PM	B54639
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	10/4/2018 5:15:15 PM	B54639

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

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

Page 24 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 603 2'

Project: Sundance Tank Farm

Collection Date: 9/28/2018 9:45:00 AM

Lab ID: 1810007-025

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	10/4/2018 6:22:00 PM	40787
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/4/2018 6:22:00 PM	40787
Surr: DNOP	102	50.6-138		%Rec	1	10/4/2018 6:22:00 PM	40787
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	10/4/2018 5:37:52 PM	G54639
Surr: BFB	87.9	15-316		%Rec	1	10/4/2018 5:37:52 PM	G54639
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.072		mg/Kg	1	10/4/2018 5:37:52 PM	B54639
Benzene	ND	0.018		mg/Kg	1	10/4/2018 5:37:52 PM	B54639
Toluene	ND	0.036		mg/Kg	1	10/4/2018 5:37:52 PM	B54639
Ethylbenzene	ND	0.036		mg/Kg	1	10/4/2018 5:37:52 PM	B54639
Xylenes, Total	ND	0.072		mg/Kg	1	10/4/2018 5:37:52 PM	B54639
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	10/4/2018 5:37:52 PM	B54639

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

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

Page 25 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 604 5.5'

Project: Sundance Tank Farm

Collection Date: 9/29/2018 8:53:00 AM

Lab ID: 1810007-026

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	10/4/2018 6:46:22 PM	40787
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/4/2018 6:46:22 PM	40787
Surr: DNOP	100	50.6-138		%Rec	1	10/4/2018 6:46:22 PM	40787
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.1		mg/Kg	1	10/4/2018 6:00:31 PM	G54639
Surr: BFB	87.5	15-316		%Rec	1	10/4/2018 6:00:31 PM	G54639
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.062		mg/Kg	1	10/4/2018 6:00:31 PM	B54639
Benzene	ND	0.015		mg/Kg	1	10/4/2018 6:00:31 PM	B54639
Toluene	ND	0.031		mg/Kg	1	10/4/2018 6:00:31 PM	B54639
Ethylbenzene	ND	0.031		mg/Kg	1	10/4/2018 6:00:31 PM	B54639
Xylenes, Total	ND	0.062		mg/Kg	1	10/4/2018 6:00:31 PM	B54639
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	10/4/2018 6:00:31 PM	B54639

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

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

Page 26 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 605 2'

Project: Sundance Tank Farm

Collection Date: 9/28/2018 2:45:00 PM

Lab ID: 1810007-027

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	1900	100		mg/Kg	10	10/4/2018 7:10:47 PM	40787
Motor Oil Range Organics (MRO)	940	500		mg/Kg	10	10/4/2018 7:10:47 PM	40787
Surr: DNOP	0	50.6-138	S	%Rec	10	10/4/2018 7:10:47 PM	40787
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.2		mg/Kg	1	10/4/2018 6:23:10 PM	G54639
Surr: BFB	87.4	15-316		%Rec	1	10/4/2018 6:23:10 PM	G54639
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.064		mg/Kg	1	10/4/2018 6:23:10 PM	B54639
Benzene	ND	0.016		mg/Kg	1	10/4/2018 6:23:10 PM	B54639
Toluene	ND	0.032		mg/Kg	1	10/4/2018 6:23:10 PM	B54639
Ethylbenzene	ND	0.032		mg/Kg	1	10/4/2018 6:23:10 PM	B54639
Xylenes, Total	ND	0.064		mg/Kg	1	10/4/2018 6:23:10 PM	B54639
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	10/4/2018 6:23:10 PM	B54639

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

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

Page 27 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 606 9'

Project: Sundance Tank Farm

Collection Date: 9/28/2018 1:20:00 PM

Lab ID: 1810007-028

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: IRM
Diesel Range Organics (DRO)	4200	96		mg/Kg	10	10/4/2018 7:59:43 PM	40787
Motor Oil Range Organics (MRO)	1100	480		mg/Kg	10	10/4/2018 7:59:43 PM	40787
Surr: DNOP	0	50.6-138	S	%Rec	10	10/4/2018 7:59:43 PM	40787
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	320	16		mg/Kg	5	10/3/2018 11:33:10 AM	40747
Surr: BFB	539	15-316	S	%Rec	5	10/3/2018 11:33:10 AM	40747
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.33		mg/Kg	5	10/3/2018 11:33:10 AM	40747
Benzene	0.090	0.082		mg/Kg	5	10/3/2018 11:33:10 AM	40747
Toluene	ND	0.16		mg/Kg	5	10/3/2018 11:33:10 AM	40747
Ethylbenzene	3.8	0.16		mg/Kg	5	10/3/2018 11:33:10 AM	40747
Xylenes, Total	2.9	0.33		mg/Kg	5	10/3/2018 11:33:10 AM	40747
Surr: 4-Bromofluorobenzene	128	80-120	S	%Rec	5	10/3/2018 11:33:10 AM	40747

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

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

Page 28 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 607 10.5'

Project: Sundance Tank Farm

Collection Date: 9/29/2018 9:17:00 AM

Lab ID: 1810007-029

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: IRM
Diesel Range Organics (DRO)	62	9.7		mg/Kg	1	10/5/2018 1:53:03 PM	40787
Motor Oil Range Organics (MRO)	160	49		mg/Kg	1	10/5/2018 1:53:03 PM	40787
Surr: DNOP	122	50.6-138		%Rec	1	10/5/2018 1:53:03 PM	40787
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	2.7		mg/Kg	1	10/4/2018 1:58:48 AM	40747
Surr: BFB	100	15-316		%Rec	1	10/4/2018 1:58:48 AM	40747
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.054		mg/Kg	1	10/4/2018 1:58:48 AM	40747
Benzene	0.022	0.013		mg/Kg	1	10/4/2018 1:58:48 AM	40747
Toluene	ND	0.027		mg/Kg	1	10/4/2018 1:58:48 AM	40747
Ethylbenzene	ND	0.027		mg/Kg	1	10/4/2018 1:58:48 AM	40747
Xylenes, Total	ND	0.054		mg/Kg	1	10/4/2018 1:58:48 AM	40747
Surr: 4-Bromofluorobenzene	92.2	80-120		%Rec	1	10/4/2018 1:58:48 AM	40747

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

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

Page 29 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 608 6.5'

Project: Sundance Tank Farm

Collection Date: 9/29/2018 9:40:00 AM

Lab ID: 1810007-030

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: Irm
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	10/4/2018 9:37:32 PM	40787
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	10/4/2018 9:37:32 PM	40787
Surr: DNOP	100	50.6-138		%Rec	1	10/4/2018 9:37:32 PM	40787
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	2.9		mg/Kg	1	10/4/2018 6:45:47 PM	G54639
Surr: BFB	87.2	15-316		%Rec	1	10/4/2018 6:45:47 PM	G54639
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.059		mg/Kg	1	10/4/2018 6:45:47 PM	B54639
Benzene	ND	0.015		mg/Kg	1	10/4/2018 6:45:47 PM	B54639
Toluene	ND	0.029		mg/Kg	1	10/4/2018 6:45:47 PM	B54639
Ethylbenzene	ND	0.029		mg/Kg	1	10/4/2018 6:45:47 PM	B54639
Xylenes, Total	ND	0.059		mg/Kg	1	10/4/2018 6:45:47 PM	B54639
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	10/4/2018 6:45:47 PM	B54639

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

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

Page 30 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 609 2.5'

Project: Sundance Tank Farm

Collection Date: 9/29/2018 11:59:00 AM

Lab ID: 1810007-031

Matrix: MEOH (SOIL)

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	10/4/2018 10:01:53 PM	40787
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/4/2018 10:01:53 PM	40787
Surr: DNOP	101	50.6-138		%Rec	1	10/4/2018 10:01:53 PM	40787
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.3		mg/Kg	1	10/4/2018 7:08:22 PM	G54639
Surr: BFB	85.7	15-316		%Rec	1	10/4/2018 7:08:22 PM	G54639
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.067		mg/Kg	1	10/4/2018 7:08:22 PM	B54639
Benzene	ND	0.017		mg/Kg	1	10/4/2018 7:08:22 PM	B54639
Toluene	ND	0.033		mg/Kg	1	10/4/2018 7:08:22 PM	B54639
Ethylbenzene	ND	0.033		mg/Kg	1	10/4/2018 7:08:22 PM	B54639
Xylenes, Total	ND	0.067		mg/Kg	1	10/4/2018 7:08:22 PM	B54639
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	10/4/2018 7:08:22 PM	B54639

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

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

Page 31 of 39

Analytical Report

Lab Order 1810007

Date Reported: 10/8/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: MEOH BLANK

Project: Sundance Tank Farm

Collection Date:

Lab ID: 1810007-032

Matrix: MEOH BLAN

Received Date: 10/1/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/4/2018 7:31:06 PM	G54639
Surr: BFB	88.8	15-316		%Rec	1	10/4/2018 7:31:06 PM	G54639
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.10		mg/Kg	1	10/4/2018 7:31:06 PM	B54639
Benzene	ND	0.025		mg/Kg	1	10/4/2018 7:31:06 PM	B54639
Toluene	ND	0.050		mg/Kg	1	10/4/2018 7:31:06 PM	B54639
Ethylbenzene	ND	0.050		mg/Kg	1	10/4/2018 7:31:06 PM	B54639
Xylenes, Total	ND	0.10		mg/Kg	1	10/4/2018 7:31:06 PM	B54639
Surr: 4-Bromofluorobenzene	107	80-120		%Rec	1	10/4/2018 7:31:06 PM	B54639

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

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

Page 32 of 39

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 1810007

08-Oct-18

Client: Gordon Environmental/PSC**Project:** Sundance Tank Farm

Sample ID	LCS-40787	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	40787	RunNo:	54636					
Prep Date:	10/3/2018	Analysis Date:	10/4/2018	SeqNo:	1812494	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	99.4	70	130			
Surr: DNOP	4.6		5.000		92.3	50.6	138			

Sample ID	MB-40787	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	40787	RunNo:	54636					
Prep Date:	10/3/2018	Analysis Date:	10/4/2018	SeqNo:	1812495	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.8		10.00		98.1	50.6	138			

Sample ID	1810007-021AMS	SampType:	MS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	519 7.5'	Batch ID:	40787	RunNo:	54636					
Prep Date:	10/3/2018	Analysis Date:	10/4/2018	SeqNo:	1812964	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	68	9.4	46.95	0	145	53.5	126			S
Surr: DNOP	5.8		4.695		123	50.6	138			

Sample ID	1810007-021AMSD	SampType:	MSD	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	519 7.5'	Batch ID:	40787	RunNo:	54636					
Prep Date:	10/3/2018	Analysis Date:	10/4/2018	SeqNo:	1812965	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	61	9.5	47.48	0	128	53.5	126	11.2	21.7	S
Surr: DNOP	6.0		4.748		126	50.6	138	0	0	

Sample ID	LCS-40765	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	40765	RunNo:	54634					
Prep Date:	10/3/2018	Analysis Date:	10/4/2018	SeqNo:	1813026	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	55	10	50.00	0	110	70	130			
Surr: DNOP	5.8		5.000		116	50.6	138			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Page 33 of 39

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1810007

08-Oct-18

Client: Gordon Environmental/PSC

Project: Sundance Tank Farm

Sample ID	MB-40765	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	40765	RunNo:	54634					
Prep Date:	10/3/2018	Analysis Date:	10/4/2018	SeqNo:	1813027	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	12		10.00		117	50.6	138			

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

Page 34 of 39

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 1810007

08-Oct-18

Client: Gordon Environmental/PSC**Project:** Sundance Tank Farm

Sample ID MB-40747	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: 40747			RunNo: 54603						
Prep Date: 10/2/2018	Analysis Date: 10/3/2018			SeqNo: 1811508		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	970		1000		96.9	15	316			

Sample ID LCS-40747	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: 40747			RunNo: 54603						
Prep Date: 10/2/2018	Analysis Date: 10/3/2018			SeqNo: 1811509		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	92.7	75.9	131			
Surr: BFB	1100		1000		108	15	316			

Sample ID RB	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: G54618			RunNo: 54618						
Prep Date:	Analysis Date: 10/3/2018			SeqNo: 1811576		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	860		1000		85.7	15	316			

Sample ID 2.5UG GRO LCS	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: G54618			RunNo: 54618						
Prep Date:	Analysis Date: 10/3/2018			SeqNo: 1811577		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	95.0	75.9	131			
Surr: BFB	1000		1000		103	15	316			

Sample ID 1810007-009AMS	SampType: MS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: 508 2.5'	Batch ID: G54618			RunNo: 54618						
Prep Date:	Analysis Date: 10/3/2018			SeqNo: 1811579		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	3.6	17.91	0	110	77.8	128			
Surr: BFB	780		716.3		109	15	316			

Sample ID 1810007-009AMSD	SampType: MSD			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: 508 2.5'	Batch ID: G54618			RunNo: 54618						
Prep Date:	Analysis Date: 10/3/2018			SeqNo: 1811580		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

Page 35 of 39

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 1810007

08-Oct-18

Client: Gordon Environmental/PSC**Project:** Sundance Tank Farm

Sample ID	1810007-009AMSD		SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	508 2.5'		Batch ID: G54618		RunNo: 54618					
Prep Date:			Analysis Date: 10/3/2018		SeqNo: 1811580		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	3.6	17.91	0	126	77.8	128	14.1	20	
Surr: BFB	790		716.3		110	15	316	0	0	

Sample ID	RB	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID: G54639			RunNo: 54639					
Prep Date:		Analysis Date: 10/4/2018			SeqNo: 1812839		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	860		1000		86.2	15	316			

Sample ID	2.5UG GRO LCS	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID: G54639			RunNo: 54639					
Prep Date:		Analysis Date: 10/4/2018			SeqNo: 1812840		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	99.0	75.9	131			
Surr: BFB	1100		1000		107	15	316			

Qualifiers:

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

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 1810007

08-Oct-18

Client: Gordon Environmental/PSC**Project:** Sundance Tank Farm

Sample ID MB-40747	SampType: MBLK			TestCode: EPA Method 8021B: Volatiles						
Client ID: PBS	Batch ID: 40747			RunNo: 54603						
Prep Date: 10/2/2018	Analysis Date: 10/3/2018			SeqNo: 1811539	Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	0.10								
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.93		1.000		93.1	80	120			

Sample ID LCS-40747	SampType: LCS			TestCode: EPA Method 8021B: Volatiles						
Client ID: LCSS	Batch ID: 40747			RunNo: 54603						
Prep Date: 10/2/2018	Analysis Date: 10/3/2018			SeqNo: 1811540	Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.79	0.10	1.000	0	79.2	70.1	121			
Benzene	0.87	0.025	1.000	0	86.9	77.3	128			
Toluene	0.91	0.050	1.000	0	90.8	79.2	125			
Ethylbenzene	0.90	0.050	1.000	0	90.1	80.7	127			
Xylenes, Total	2.7	0.10	3.000	0	91.0	81.6	129			
Surr: 4-Bromofluorobenzene	0.96		1.000		95.7	80	120			

Sample ID RB	SampType: MBLK			TestCode: EPA Method 8021B: Volatiles						
Client ID: PBS	Batch ID: B54618			RunNo: 54618						
Prep Date:	Analysis Date: 10/3/2018			SeqNo: 1811610	Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	0.10								
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

Sample ID 100NG BTEX LCS	SampType: LCS			TestCode: EPA Method 8021B: Volatiles						
Client ID: LCSS	Batch ID: B54618			RunNo: 54618						
Prep Date:	Analysis Date: 10/3/2018			SeqNo: 1811611	Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.94	0.10	1.000	0	94.0	70.1	121			
Benzene	1.0	0.025	1.000	0	101	77.3	128			
Toluene	1.0	0.050	1.000	0	104	79.2	125			
Ethylbenzene	1.0	0.050	1.000	0	102	80.7	127			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Page 37 of 39

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 1810007

08-Oct-18

Client: Gordon Environmental/PSC**Project:** Sundance Tank Farm

Sample ID	100NG BTEX LCS		SampType: LCS			TestCode: EPA Method 8021B: Volatiles				
Client ID:	LCSS		Batch ID: B54618			RunNo: 54618				
Prep Date:	Analysis Date: 10/3/2018			SeqNo: 1811611		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Xylenes, Total	3.0	0.10	3.000	0	101	81.6	129			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Sample ID	1810007-010AMS	SampType: MS			TestCode: EPA Method 8021B: Volatiles					
Client ID:	509 5'	Batch ID: B54618			RunNo: 54618					
Prep Date:		Analysis Date: 10/3/2018			SeqNo: 1811622		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.62	0.049	0.4907	0	126	56.9	130			
Benzene	0.65	0.012	0.4907	0.002051	132	68.5	133			
Toluene	0.66	0.025	0.4907	0.002326	133	75	130			S
Ethylbenzene	0.63	0.025	0.4907	0.002503	129	79.4	128			S
Xylenes, Total	1.9	0.049	1.472	0	127	77.3	131			
Surr: 4-Bromofluorobenzene	0.52		0.4907		105	80	120			

Sample ID	1810007-010AMSD		SampType: MSD		TestCode: EPA Method 8021B: Volatiles					
Client ID:	509 5'		Batch ID: B54618		RunNo: 54618					
Prep Date:			Analysis Date: 10/3/2018		SeqNo: 1811623		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.88	0.049	0.4907	0	180	56.9	130	35.3	20	RS
Benzene	0.71	0.012	0.4907	0.002051	143	68.5	133	7.93	20	S
Toluene	0.72	0.025	0.4907	0.002326	146	75	130	8.81	20	S
Ethylbenzene	0.69	0.025	0.4907	0.002503	141	79.4	128	9.14	20	S
Xylenes, Total	2.1	0.049	1.472	0	139	77.3	131	9.23	20	S
Surr: 4-Bromofluorobenzene	0.52		0.4907		105	80	120	0	0	

Sample ID	RB	SampType: MBLK			TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID: B54639			RunNo: 54639					
Prep Date:		Analysis Date: 10/4/2018			SeqNo: 1812865		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	0.10								
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Page 38 of 39

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1810007

08-Oct-18

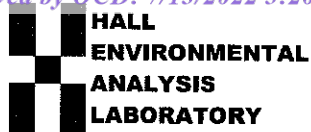
Client: Gordon Environmental/PSC**Project:** Sundance Tank Farm

Sample ID	100NG BTEX LCS	SampType: LCS			TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID: B54639			RunNo: 54639					
Prep Date:		Analysis Date: 10/4/2018			SeqNo: 1812866		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.92	0.10	1.000	0	92.5	70.1	121			
Benzene	0.99	0.025	1.000	0	99.0	77.3	128			
Toluene	1.0	0.050	1.000	0	103	79.2	125			
Ethylbenzene	0.99	0.050	1.000	0	98.8	80.7	127			
Xylenes, Total	3.0	0.10	3.000	0	98.6	81.6	129			
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Qualifiers:

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

Page 39 of 39



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87105
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: GEI

Work Order Number: 1810007

RcptNo: 1

Received By: Erin Melendrez

10/1/2018 9:10:00 AM

Completed By: Ashley Gallegos

10/1/2018 10:40:55 AM

Reviewed By:

Labeled by: ENM 10/1/18

ENM 10/1/18
10/10/11Chain of Custody

1. Is Chain of Custody complete?
2. How was the sample delivered?

Yes ☒ No ☐ Not Present ☐
Client

Log In

3. Was an attempt made to cool the samples?
4. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ?
5. Sample(s) in proper container(s)?
6. Sufficient sample volume for indicated test(s)?
7. Are samples (except VOA and ONG) properly preserved?
8. Was preservative added to bottles?

Yes ☒ No ☐ NA ☐
Yes ☐ No ☒ NA ☐
Approved by client.
Yes ☒ No ☐
Yes ☒ No ☐
Yes ☐ No ☒ NA ☐

9. VOA vials have zero headspace?
10. Were any sample containers received broken?

Yes ☐ No ☐ No VOA Vials ☒
Yes ☐ No ☒

11. Does paperwork match bottle labels?
(Note discrepancies on chain of custody)
12. Are matrices correctly identified on Chain of Custody?
13. Is it clear what analyses were requested?
14. Were all holding times able to be met?
(If no, notify customer for authorization.)

Yes ☒ No ☐
Yes ☒ No ☐
Yes ☒ No ☐
Yes ☒ No ☐

of preserved
bottles checked
for pH:
Adjusted: 2 or > 12 unless noted

Checked by:

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☒ No ☐ NA ☐

Person Notified: Clay Kilmer Date: 10/1/2018
By Whom: Erin Melendrez Via: ☐ eMail ☐ Phone ☐ Fax ☒ In Person
Regarding: High Temp
Client Instructions: Proceed with analysis

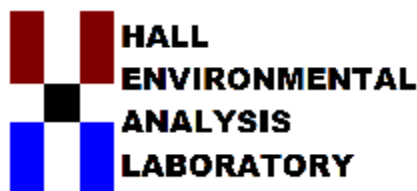
16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	7.0	Good	Not Present			
2	5.6	Good	Not Present			
3	8.5	Good	Not Present			

Produced Water Facility Closure
Sundance Services Inc.
Lea County, New Mexico
December 2018

APPENDIX C
LABORATORY ANALYTICAL REPORT
BASE GRADE CONFIRMATION SAMPLES



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

December 20, 2018

Charles Fiedler

Gordon Environmental/PSC

333 Rio Rancho Blvd. N.E., Suite 400

Rio Rancho, NM 87124

TEL: (505) 867-6990

FAX (505) 867-6991

RE: Sundance Tank Farm

OrderNo.: 1811953

Dear Charles Fiedler:

Hall Environmental Analysis Laboratory received 26 sample(s) on 11/16/2018 for the analyses presented in the following report.

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

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 1811953

Date Reported: 12/20/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 500

Project: Sundance Tank Farm

Collection Date: 11/15/2018

Lab ID: 1811953-001

Matrix: SOIL

Received Date: 11/16/2018 9:33:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	2600	75		mg/Kg	50	11/28/2018 2:12:52 PM	41707
Sulfate	750	30		mg/Kg	20	11/26/2018 8:19:55 PM	41707
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	0.045	0.033		mg/Kg	1	12/6/2018 12:15:33 PM	41921
EPA METHOD 6010B: SOIL METALS							Analyst: rde
Arsenic	3.9	2.5		mg/Kg	1	12/4/2018 5:57:48 PM	41817
Barium	360	0.49		mg/Kg	5	12/12/2018 12:53:27 PM	41817
Cadmium	ND	0.098		mg/Kg	1	12/4/2018 5:57:48 PM	41817
Calcium	170000	2500		mg/Kg	100	12/6/2018 3:33:59 PM	41817
Chromium	3.2	0.29		mg/Kg	1	12/12/2018 12:51:34 PM	41817
Lead	4.5	0.25		mg/Kg	1	12/4/2018 5:57:48 PM	41817
Magnesium	3600	25		mg/Kg	1	12/4/2018 5:57:48 PM	41817
Potassium	700	49		mg/Kg	1	12/4/2018 5:57:48 PM	41817
Selenium	6.9	2.5		mg/Kg	1	12/12/2018 12:51:34 PM	41817
Silver	1.8	0.25		mg/Kg	1	12/4/2018 5:57:48 PM	41817
Sodium	1600	25		mg/Kg	1	12/4/2018 5:57:48 PM	41817
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	540	9.8		mg/Kg	1	11/29/2018 10:30:00 AM	41673
Motor Oil Range Organics (MRO)	660	49		mg/Kg	1	11/29/2018 10:30:00 AM	41673
Surr: DNOP	103	50.6-138		%Rec	1	11/29/2018 10:30:00 AM	41673
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	23	D	mg/Kg	5	11/21/2018 1:21:58 PM	41638
Surr: BFB	87.3	73.8-119	D	%Rec	5	11/21/2018 1:21:58 PM	41638
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.47	D	mg/Kg	5	11/21/2018 1:21:58 PM	41638
Benzene	ND	0.12	D	mg/Kg	5	11/21/2018 1:21:58 PM	41638
Toluene	ND	0.23	D	mg/Kg	5	11/21/2018 1:21:58 PM	41638
Ethylbenzene	ND	0.23	D	mg/Kg	5	11/21/2018 1:21:58 PM	41638
Xylenes, Total	ND	0.47	D	mg/Kg	5	11/21/2018 1:21:58 PM	41638
Surr: 4-Bromofluorobenzene	89.1	80-120	D	%Rec	5	11/21/2018 1:21:58 PM	41638

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

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

Page 1 of 42

Analytical Report

Lab Order 1811953

Date Reported: 12/20/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 501

Project: Sundance Tank Farm

Collection Date: 11/15/2018

Lab ID: 1811953-002

Matrix: SOIL

Received Date: 11/16/2018 9:33:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	3700	150		mg/Kg	100	11/28/2018 2:25:16 PM	41707
Sulfate	1100	30		mg/Kg	20	11/26/2018 8:32:20 PM	41707
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.16		mg/Kg	5	12/6/2018 1:06:10 PM	41921
EPA METHOD 6010B: SOIL METALS							Analyst: rde
Arsenic	4.5	2.5		mg/Kg	1	12/4/2018 5:59:56 PM	41817
Barium	630	0.49		mg/Kg	5	12/12/2018 12:59:11 PM	41817
Cadmium	ND	0.098		mg/Kg	1	12/4/2018 5:59:56 PM	41817
Calcium	200000	2500		mg/Kg	100	12/6/2018 3:35:53 PM	41817
Chromium	3.0	0.29		mg/Kg	1	12/12/2018 12:55:11 PM	41817
Lead	1.6	0.25		mg/Kg	1	12/4/2018 5:59:56 PM	41817
Magnesium	4200	25		mg/Kg	1	12/4/2018 5:59:56 PM	41817
Potassium	800	49		mg/Kg	1	12/4/2018 5:59:56 PM	41817
Selenium	5.9	2.5		mg/Kg	1	12/12/2018 12:55:11 PM	41817
Silver	1.9	0.25		mg/Kg	1	12/4/2018 5:59:56 PM	41817
Sodium	1600	25		mg/Kg	1	12/4/2018 5:59:56 PM	41817
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	840	96		mg/Kg	10	11/29/2018 10:45:00 AM	41673
Motor Oil Range Organics (MRO)	940	480		mg/Kg	10	11/29/2018 10:45:00 AM	41673
Surr: DNOP	0	50.6-138	S	%Rec	10	11/29/2018 10:45:00 AM	41673
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	24	D	mg/Kg	5	11/21/2018 2:53:23 PM	41638
Surr: BFB	87.5	73.8-119	D	%Rec	5	11/21/2018 2:53:23 PM	41638
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.49	D	mg/Kg	5	11/21/2018 2:53:23 PM	41638
Benzene	ND	0.12	D	mg/Kg	5	11/21/2018 2:53:23 PM	41638
Toluene	ND	0.24	D	mg/Kg	5	11/21/2018 2:53:23 PM	41638
Ethylbenzene	ND	0.24	D	mg/Kg	5	11/21/2018 2:53:23 PM	41638
Xylenes, Total	ND	0.49	D	mg/Kg	5	11/21/2018 2:53:23 PM	41638
Surr: 4-Bromofluorobenzene	89.5	80-120	D	%Rec	5	11/21/2018 2:53:23 PM	41638

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

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

Page 2 of 42

Analytical Report

Lab Order 1811953

Date Reported: 12/20/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 502

Project: Sundance Tank Farm

Collection Date: 11/15/2018

Lab ID: 1811953-003

Matrix: SOIL

Received Date: 11/16/2018 9:33:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	2300	150		mg/Kg	100	11/28/2018 2:37:41 PM	41707
Sulfate	160	30		mg/Kg	20	11/26/2018 8:44:45 PM	41707
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.032		mg/Kg	1	12/3/2018 6:15:17 PM	41852
EPA METHOD 6010B: SOIL METALS							Analyst: rde
Arsenic	4.3	2.4		mg/Kg	1	12/4/2018 6:02:05 PM	41817
Barium	370	0.19		mg/Kg	2	12/12/2018 1:10:33 PM	41817
Cadmium	ND	0.097		mg/Kg	1	12/4/2018 6:02:05 PM	41817
Calcium	120000	2400		mg/Kg	100	12/6/2018 3:37:45 PM	41817
Chromium	2.9	0.29		mg/Kg	1	12/12/2018 1:01:10 PM	41817
Lead	0.71	0.24		mg/Kg	1	12/4/2018 6:02:05 PM	41817
Magnesium	3100	24		mg/Kg	1	12/4/2018 6:02:05 PM	41817
Potassium	850	48		mg/Kg	1	12/4/2018 6:02:05 PM	41817
Selenium	ND	2.4		mg/Kg	1	12/12/2018 1:01:10 PM	41817
Silver	1.0	0.24		mg/Kg	1	12/4/2018 6:02:05 PM	41817
Sodium	1500	24		mg/Kg	1	12/4/2018 6:02:05 PM	41817
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	58	9.8		mg/Kg	1	11/29/2018 11:00:00 AM	41673
Motor Oil Range Organics (MRO)	95	49		mg/Kg	1	11/29/2018 11:00:00 AM	41673
Surr: DNOP	92.0	50.6-138		%Rec	1	11/29/2018 11:00:00 AM	41673
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/21/2018 8:33:53 PM	41638
Surr: BFB	88.7	73.8-119		%Rec	1	11/21/2018 8:33:53 PM	41638
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.093		mg/Kg	1	11/21/2018 8:33:53 PM	41638
Benzene	ND	0.023		mg/Kg	1	11/21/2018 8:33:53 PM	41638
Toluene	ND	0.047		mg/Kg	1	11/21/2018 8:33:53 PM	41638
Ethylbenzene	ND	0.047		mg/Kg	1	11/21/2018 8:33:53 PM	41638
Xylenes, Total	ND	0.093		mg/Kg	1	11/21/2018 8:33:53 PM	41638
Surr: 4-Bromofluorobenzene	91.0	80-120		%Rec	1	11/21/2018 8:33:53 PM	41638

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

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

Page 3 of 42

Analytical Report

Lab Order 1811953

Date Reported: 12/20/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 503

Project: Sundance Tank Farm

Collection Date: 11/15/2018

Lab ID: 1811953-004

Matrix: SOIL

Received Date: 11/16/2018 9:33:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	3600	150		mg/Kg	100	11/28/2018 3:14:54 PM	41707
Sulfate	310	30		mg/Kg	20	11/26/2018 8:57:09 PM	41707
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.035		mg/Kg	1	12/3/2018 6:17:05 PM	41852
EPA METHOD 6010B: SOIL METALS							Analyst: rde
Arsenic	3.2	2.5		mg/Kg	1	12/4/2018 6:04:12 PM	41817
Barium	520	0.49		mg/Kg	5	12/12/2018 1:14:26 PM	41817
Cadmium	ND	0.098		mg/Kg	1	12/4/2018 6:04:12 PM	41817
Calcium	160000	2500		mg/Kg	100	12/6/2018 3:39:41 PM	41817
Chromium	3.6	0.29		mg/Kg	1	12/12/2018 1:12:28 PM	41817
Lead	ND	0.25		mg/Kg	1	12/4/2018 6:04:12 PM	41817
Magnesium	8200	120		mg/Kg	5	12/12/2018 1:14:26 PM	41817
Potassium	1200	49		mg/Kg	1	12/4/2018 6:04:12 PM	41817
Selenium	5.5	2.5		mg/Kg	1	12/12/2018 1:12:28 PM	41817
Silver	1.4	0.25		mg/Kg	1	12/4/2018 6:04:12 PM	41817
Sodium	2500	25		mg/Kg	1	12/4/2018 6:04:12 PM	41817
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	23	9.7		mg/Kg	1	11/29/2018 11:15:00 AM	41673
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/29/2018 11:15:00 AM	41673
Surr: DNOP	90.4	50.6-138		%Rec	1	11/29/2018 11:15:00 AM	41673
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/21/2018 8:56:39 PM	41638
Surr: BFB	90.6	73.8-119		%Rec	1	11/21/2018 8:56:39 PM	41638
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.092		mg/Kg	1	11/21/2018 8:56:39 PM	41638
Benzene	ND	0.023		mg/Kg	1	11/21/2018 8:56:39 PM	41638
Toluene	ND	0.046		mg/Kg	1	11/21/2018 8:56:39 PM	41638
Ethylbenzene	ND	0.046		mg/Kg	1	11/21/2018 8:56:39 PM	41638
Xylenes, Total	ND	0.092		mg/Kg	1	11/21/2018 8:56:39 PM	41638
Surr: 4-Bromofluorobenzene	93.7	80-120		%Rec	1	11/21/2018 8:56:39 PM	41638

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

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

Page 4 of 42

Analytical Report

Lab Order 1811953

Date Reported: 12/20/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 504

Project: Sundance Tank Farm

Collection Date: 11/15/2018

Lab ID: 1811953-005

Matrix: SOIL

Received Date: 11/16/2018 9:33:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	1400	75		mg/Kg	50	11/28/2018 3:27:19 PM	41707
Sulfate	240	30		mg/Kg	20	11/26/2018 9:34:22 PM	41707
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.033		mg/Kg	1	12/3/2018 6:18:45 PM	41852
EPA METHOD 6010B: SOIL METALS							Analyst: rde
Arsenic	4.3	2.5		mg/Kg	1	12/4/2018 6:06:21 PM	41817
Barium	530	0.49		mg/Kg	5	12/12/2018 1:18:04 PM	41817
Cadmium	ND	0.099		mg/Kg	1	12/4/2018 6:06:21 PM	41817
Calcium	200000	2500		mg/Kg	100	12/6/2018 3:41:33 PM	41817
Chromium	2.3	0.30		mg/Kg	1	12/12/2018 1:16:12 PM	41817
Lead	0.52	0.25		mg/Kg	1	12/4/2018 6:06:21 PM	41817
Magnesium	3700	25		mg/Kg	1	12/4/2018 6:06:21 PM	41817
Potassium	700	49		mg/Kg	1	12/4/2018 6:06:21 PM	41817
Selenium	5.2	2.5		mg/Kg	1	12/12/2018 1:16:12 PM	41817
Silver	1.9	0.25		mg/Kg	1	12/4/2018 6:06:21 PM	41817
Sodium	1000	25		mg/Kg	1	12/4/2018 6:06:21 PM	41817
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	130	9.9		mg/Kg	1	12/1/2018 4:18:52 PM	41673
Motor Oil Range Organics (MRO)	170	49		mg/Kg	1	12/1/2018 4:18:52 PM	41673
Surr: DNOP	97.2	50.6-138		%Rec	1	12/1/2018 4:18:52 PM	41673
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/25/2018 12:05:53 AM	41638
Surr: BFB	89.6	73.8-119		%Rec	1	11/25/2018 12:05:53 AM	41638
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.098		mg/Kg	1	11/25/2018 12:05:53 AM	41638
Benzene	ND	0.024		mg/Kg	1	11/25/2018 12:05:53 AM	41638
Toluene	ND	0.049		mg/Kg	1	11/25/2018 12:05:53 AM	41638
Ethylbenzene	ND	0.049		mg/Kg	1	11/25/2018 12:05:53 AM	41638
Xylenes, Total	ND	0.098		mg/Kg	1	11/25/2018 12:05:53 AM	41638
Surr: 4-Bromofluorobenzene	90.2	80-120		%Rec	1	11/25/2018 12:05:53 AM	41638

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

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

Page 5 of 42

Analytical Report

Lab Order 1811953

Date Reported: 12/20/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 505

Project: Sundance Tank Farm

Collection Date: 11/15/2018

Lab ID: 1811953-006

Matrix: SOIL

Received Date: 11/16/2018 9:33:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	4600	300		mg/Kg	200	11/28/2018 3:39:43 PM	41729
Sulfate	140	30		mg/Kg	20	11/27/2018 11:43:25 AM	41729
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.032		mg/Kg	1	12/3/2018 6:20:25 PM	41852
EPA METHOD 6010B: SOIL METALS							Analyst: rde
Arsenic	3.3	2.5		mg/Kg	1	12/4/2018 6:08:30 PM	41817
Barium	200	0.098		mg/Kg	1	12/4/2018 6:08:30 PM	41817
Cadmium	ND	0.098		mg/Kg	1	12/4/2018 6:08:30 PM	41817
Calcium	240000	2500		mg/Kg	100	12/6/2018 3:43:25 PM	41817
Chromium	2.4	0.29		mg/Kg	1	12/12/2018 1:19:57 PM	41817
Lead	ND	0.25		mg/Kg	1	12/4/2018 6:08:30 PM	41817
Magnesium	6400	120		mg/Kg	5	12/12/2018 1:21:54 PM	41817
Potassium	910	49		mg/Kg	1	12/4/2018 6:08:30 PM	41817
Selenium	7.5	2.5		mg/Kg	1	12/12/2018 1:19:57 PM	41817
Silver	2.3	0.25		mg/Kg	1	12/4/2018 6:08:30 PM	41817
Sodium	2600	25		mg/Kg	1	12/4/2018 6:08:30 PM	41817
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	57	9.9		mg/Kg	1	11/29/2018 11:45:00 AM	41673
Motor Oil Range Organics (MRO)	70	49		mg/Kg	1	11/29/2018 11:45:00 AM	41673
Surr: DNOP	91.8	50.6-138		%Rec	1	11/29/2018 11:45:00 AM	41673
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/21/2018 9:42:13 PM	41638
Surr: BFB	88.0	73.8-119		%Rec	1	11/21/2018 9:42:13 PM	41638
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.098		mg/Kg	1	11/21/2018 9:42:13 PM	41638
Benzene	ND	0.025		mg/Kg	1	11/21/2018 9:42:13 PM	41638
Toluene	ND	0.049		mg/Kg	1	11/21/2018 9:42:13 PM	41638
Ethylbenzene	ND	0.049		mg/Kg	1	11/21/2018 9:42:13 PM	41638
Xylenes, Total	ND	0.098		mg/Kg	1	11/21/2018 9:42:13 PM	41638
Surr: 4-Bromofluorobenzene	90.7	80-120		%Rec	1	11/21/2018 9:42:13 PM	41638

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

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

Page 6 of 42

Analytical Report

Lab Order 1811953

Date Reported: 12/20/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 506

Project: Sundance Tank Farm

Collection Date: 11/15/2018

Lab ID: 1811953-007

Matrix: SOIL

Received Date: 11/16/2018 9:33:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	2300	75		mg/Kg	50	11/28/2018 3:52:08 PM	41729
Sulfate	200	30		mg/Kg	20	11/27/2018 12:20:38 PM	41729
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.033		mg/Kg	1	12/3/2018 6:22:06 PM	41852
EPA METHOD 6010B: SOIL METALS							Analyst: rde
Arsenic	ND	2.4		mg/Kg	1	12/4/2018 6:10:39 PM	41817
Barium	110	0.097		mg/Kg	1	12/4/2018 6:10:39 PM	41817
Cadmium	ND	0.097		mg/Kg	1	12/4/2018 6:10:39 PM	41817
Calcium	120000	2400		mg/Kg	100	12/6/2018 3:53:00 PM	41817
Chromium	3.8	0.29		mg/Kg	1	12/12/2018 1:23:50 PM	41817
Lead	ND	0.24		mg/Kg	1	12/4/2018 6:10:39 PM	41817
Magnesium	2600	24		mg/Kg	1	12/4/2018 6:10:39 PM	41817
Potassium	2000	49		mg/Kg	1	12/4/2018 6:10:39 PM	41817
Selenium	2.7	2.4		mg/Kg	1	12/12/2018 1:23:50 PM	41817
Silver	0.83	0.24		mg/Kg	1	12/4/2018 6:10:39 PM	41817
Sodium	1700	24		mg/Kg	1	12/4/2018 6:10:39 PM	41817
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/29/2018 12:00:00 PM	41673
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/29/2018 12:00:00 PM	41673
Surr: DNOP	90.1	50.6-138		%Rec	1	11/29/2018 12:00:00 PM	41673
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/21/2018 10:05:01 PM	41638
Surr: BFB	90.2	73.8-119		%Rec	1	11/21/2018 10:05:01 PM	41638
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.098		mg/Kg	1	11/21/2018 10:05:01 PM	41638
Benzene	ND	0.024		mg/Kg	1	11/21/2018 10:05:01 PM	41638
Toluene	ND	0.049		mg/Kg	1	11/21/2018 10:05:01 PM	41638
Ethylbenzene	ND	0.049		mg/Kg	1	11/21/2018 10:05:01 PM	41638
Xylenes, Total	ND	0.098		mg/Kg	1	11/21/2018 10:05:01 PM	41638
Surr: 4-Bromofluorobenzene	92.3	80-120		%Rec	1	11/21/2018 10:05:01 PM	41638

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

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

Page 7 of 42

Analytical Report

Lab Order 1811953

Date Reported: 12/20/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 507

Project: Sundance Tank Farm

Collection Date: 11/15/2018

Lab ID: 1811953-008

Matrix: SOIL

Received Date: 11/16/2018 9:33:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	2700	150		mg/Kg	100	11/28/2018 4:04:33 PM	41729
Sulfate	120	30		mg/Kg	20	11/27/2018 12:33:03 PM	41729
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.033		mg/Kg	1	12/3/2018 6:24:06 PM	41852
EPA METHOD 6010B: SOIL METALS							Analyst: rde
Arsenic	3.6	2.5		mg/Kg	1	12/4/2018 6:12:46 PM	41817
Barium	370	0.20		mg/Kg	2	12/12/2018 1:27:40 PM	41817
Cadmium	ND	0.099		mg/Kg	1	12/4/2018 6:12:46 PM	41817
Calcium	190000	2500		mg/Kg	100	12/6/2018 3:56:50 PM	41817
Chromium	2.1	0.30		mg/Kg	1	12/12/2018 1:25:48 PM	41817
Lead	ND	0.25		mg/Kg	1	12/4/2018 6:12:46 PM	41817
Magnesium	1700	25		mg/Kg	1	12/4/2018 6:12:46 PM	41817
Potassium	390	49		mg/Kg	1	12/4/2018 6:12:46 PM	41817
Selenium	5.1	2.5		mg/Kg	1	12/12/2018 1:25:48 PM	41817
Silver	1.7	0.25		mg/Kg	1	12/4/2018 6:12:46 PM	41817
Sodium	1600	25		mg/Kg	1	12/4/2018 6:12:46 PM	41817
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	83	9.7		mg/Kg	1	11/29/2018 12:15:00 PM	41673
Motor Oil Range Organics (MRO)	130	49		mg/Kg	1	11/29/2018 12:15:00 PM	41673
Surr: DNOP	91.7	50.6-138		%Rec	1	11/29/2018 12:15:00 PM	41673
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/21/2018 10:27:43 PM	41638
Surr: BFB	88.3	73.8-119		%Rec	1	11/21/2018 10:27:43 PM	41638
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.096		mg/Kg	1	11/21/2018 10:27:43 PM	41638
Benzene	ND	0.024		mg/Kg	1	11/21/2018 10:27:43 PM	41638
Toluene	ND	0.048		mg/Kg	1	11/21/2018 10:27:43 PM	41638
Ethylbenzene	ND	0.048		mg/Kg	1	11/21/2018 10:27:43 PM	41638
Xylenes, Total	ND	0.096		mg/Kg	1	11/21/2018 10:27:43 PM	41638
Surr: 4-Bromofluorobenzene	90.4	80-120		%Rec	1	11/21/2018 10:27:43 PM	41638

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

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

Page 8 of 42

Analytical Report

Lab Order 1811953

Date Reported: 12/20/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 508

Project: Sundance Tank Farm

Collection Date: 11/15/2018

Lab ID: 1811953-009

Matrix: SOIL

Received Date: 11/16/2018 9:33:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	2800	150		mg/Kg	100	11/28/2018 4:16:57 PM	41729
Sulfate	400	30		mg/Kg	20	11/27/2018 12:45:28 PM	41729
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.033		mg/Kg	1	12/6/2018 12:29:52 PM	41921
EPA METHOD 6010B: SOIL METALS							Analyst: rde
Arsenic	4.4	2.4		mg/Kg	1	12/12/2018 7:31:05 PM	41817
Barium	210	0.097		mg/Kg	1	12/12/2018 7:31:05 PM	41817
Cadmium	ND	0.097		mg/Kg	1	12/4/2018 6:22:55 PM	41817
Calcium	180000	2400		mg/Kg	100	12/6/2018 3:58:44 PM	41817
Chromium	4.8	0.29		mg/Kg	1	12/12/2018 7:31:05 PM	41817
Lead	ND	0.24		mg/Kg	1	12/4/2018 6:22:55 PM	41817
Magnesium	4600	24		mg/Kg	1	12/4/2018 6:22:55 PM	41817
Potassium	980	49		mg/Kg	1	12/4/2018 6:22:55 PM	41817
Selenium	5.3	2.4		mg/Kg	1	12/12/2018 7:31:05 PM	41817
Silver	1.8	0.24		mg/Kg	1	12/4/2018 6:22:55 PM	41817
Sodium	1600	24		mg/Kg	1	12/4/2018 6:22:55 PM	41817
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	220	99		mg/Kg	10	11/29/2018 12:30:00 PM	41673
Motor Oil Range Organics (MRO)	590	500		mg/Kg	10	11/29/2018 12:30:00 PM	41673
Surr: DNOP	0	50.6-138	S	%Rec	10	11/29/2018 12:30:00 PM	41673
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/21/2018 10:50:27 PM	41638
Surr: BFB	88.9	73.8-119		%Rec	1	11/21/2018 10:50:27 PM	41638
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.095		mg/Kg	1	11/21/2018 10:50:27 PM	41638
Benzene	ND	0.024		mg/Kg	1	11/21/2018 10:50:27 PM	41638
Toluene	ND	0.048		mg/Kg	1	11/21/2018 10:50:27 PM	41638
Ethylbenzene	ND	0.048		mg/Kg	1	11/21/2018 10:50:27 PM	41638
Xylenes, Total	ND	0.095		mg/Kg	1	11/21/2018 10:50:27 PM	41638
Surr: 4-Bromofluorobenzene	90.7	80-120		%Rec	1	11/21/2018 10:50:27 PM	41638

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

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

Page 9 of 42

Analytical Report

Lab Order 1811953

Date Reported: 12/20/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 510

Project: Sundance Tank Farm

Collection Date: 11/15/2018

Lab ID: 1811953-010

Matrix: SOIL

Received Date: 11/16/2018 9:33:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	3500	150		mg/Kg	100	11/28/2018 4:29:21 PM	41729
Sulfate	160	30		mg/Kg	20	11/27/2018 1:22:42 PM	41729
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.032		mg/Kg	1	12/3/2018 6:31:04 PM	41852
EPA METHOD 6010B: SOIL METALS							Analyst: rde
Arsenic	4.5	2.4		mg/Kg	1	12/12/2018 7:32:59 PM	41817
Barium	660	0.48		mg/Kg	5	12/12/2018 7:34:53 PM	41817
Cadmium	ND	0.096		mg/Kg	1	12/4/2018 6:25:04 PM	41817
Calcium	160000	2400		mg/Kg	100	12/6/2018 4:00:41 PM	41817
Chromium	4.4	0.29		mg/Kg	1	12/12/2018 7:32:59 PM	41817
Lead	0.29	0.24		mg/Kg	1	12/4/2018 6:25:04 PM	41817
Magnesium	3500	24		mg/Kg	1	12/4/2018 6:25:04 PM	41817
Potassium	1400	48		mg/Kg	1	12/4/2018 6:25:04 PM	41817
Selenium	5.6	2.4		mg/Kg	1	12/12/2018 7:32:59 PM	41817
Silver	1.3	0.24		mg/Kg	1	12/4/2018 6:25:04 PM	41817
Sodium	2500	24		mg/Kg	1	12/4/2018 6:25:04 PM	41817
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/29/2018 12:45:00 PM	41673
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/29/2018 12:45:00 PM	41673
Surr: DNOP	94.2	50.6-138		%Rec	1	11/29/2018 12:45:00 PM	41673
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/21/2018 11:13:09 PM	41638
Surr: BFB	90.3	73.8-119		%Rec	1	11/21/2018 11:13:09 PM	41638
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.097		mg/Kg	1	11/21/2018 11:13:09 PM	41638
Benzene	ND	0.024		mg/Kg	1	11/21/2018 11:13:09 PM	41638
Toluene	ND	0.048		mg/Kg	1	11/21/2018 11:13:09 PM	41638
Ethylbenzene	ND	0.048		mg/Kg	1	11/21/2018 11:13:09 PM	41638
Xylenes, Total	ND	0.097		mg/Kg	1	11/21/2018 11:13:09 PM	41638
Surr: 4-Bromofluorobenzene	92.1	80-120		%Rec	1	11/21/2018 11:13:09 PM	41638

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

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

Page 10 of 42

Analytical Report

Lab Order 1811953

Date Reported: 12/20/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 511

Project: Sundance Tank Farm

Collection Date: 11/15/2018

Lab ID: 1811953-011

Matrix: SOIL

Received Date: 11/16/2018 9:33:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	3000	150		mg/Kg	100	11/28/2018 4:41:46 PM	41729
Sulfate	130	30		mg/Kg	20	11/27/2018 1:59:55 PM	41729
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.033		mg/Kg	1	12/3/2018 6:32:46 PM	41852
EPA METHOD 6010B: SOIL METALS							Analyst: rde
Arsenic	5.5	2.5		mg/Kg	1	12/12/2018 7:38:45 PM	41817
Barium	420	0.20		mg/Kg	2	12/12/2018 7:40:44 PM	41817
Cadmium	ND	0.099		mg/Kg	1	12/4/2018 6:27:11 PM	41817
Calcium	190000	2500		mg/Kg	100	12/6/2018 4:02:34 PM	41817
Chromium	2.0	0.30		mg/Kg	1	12/12/2018 7:38:45 PM	41817
Lead	0.39	0.25		mg/Kg	1	12/4/2018 6:27:11 PM	41817
Magnesium	3700	25		mg/Kg	1	12/4/2018 6:27:11 PM	41817
Potassium	600	49		mg/Kg	1	12/4/2018 6:27:11 PM	41817
Selenium	6.0	2.5		mg/Kg	1	12/12/2018 7:38:45 PM	41817
Silver	1.8	0.25		mg/Kg	1	12/4/2018 6:27:11 PM	41817
Sodium	1300	25		mg/Kg	1	12/4/2018 6:27:11 PM	41817
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	280	9.9		mg/Kg	1	12/1/2018 5:24:28 PM	41673
Motor Oil Range Organics (MRO)	260	49		mg/Kg	1	12/1/2018 5:24:28 PM	41673
Surr: DNOP	103	50.6-138		%Rec	1	12/1/2018 5:24:28 PM	41673
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/21/2018 11:35:52 PM	41638
Surr: BFB	94.0	73.8-119		%Rec	1	11/21/2018 11:35:52 PM	41638
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.095		mg/Kg	1	11/21/2018 11:35:52 PM	41638
Benzene	ND	0.024		mg/Kg	1	11/21/2018 11:35:52 PM	41638
Toluene	ND	0.047		mg/Kg	1	11/21/2018 11:35:52 PM	41638
Ethylbenzene	ND	0.047		mg/Kg	1	11/21/2018 11:35:52 PM	41638
Xylenes, Total	ND	0.095		mg/Kg	1	11/21/2018 11:35:52 PM	41638
Surr: 4-Bromofluorobenzene	92.0	80-120		%Rec	1	11/21/2018 11:35:52 PM	41638

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

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

Page 11 of 42

Analytical Report

Lab Order 1811953

Date Reported: 12/20/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 512

Project: Sundance Tank Farm

Collection Date: 11/15/2018

Lab ID: 1811953-012

Matrix: SOIL

Received Date: 11/16/2018 9:33:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	2600	75		mg/Kg	50	11/28/2018 4:54:10 PM	41729
Sulfate	140	30		mg/Kg	20	11/27/2018 2:12:19 PM	41729
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.032		mg/Kg	1	12/3/2018 6:34:30 PM	41852
EPA METHOD 6010B: SOIL METALS							Analyst: rde
Arsenic	5.5	2.5		mg/Kg	1	12/12/2018 7:48:51 PM	41817
Barium	800	0.50		mg/Kg	5	12/12/2018 7:52:44 PM	41817
Cadmium	ND	0.099		mg/Kg	1	12/4/2018 6:29:19 PM	41817
Calcium	160000	1200		mg/Kg	50	12/12/2018 7:54:29 PM	41817
Chromium	2.0	0.30		mg/Kg	1	12/12/2018 7:48:51 PM	41817
Lead	0.75	0.25		mg/Kg	1	12/4/2018 6:29:19 PM	41817
Magnesium	1300	25		mg/Kg	1	12/4/2018 6:29:19 PM	41817
Potassium	490	50		mg/Kg	1	12/4/2018 6:29:19 PM	41817
Selenium	5.4	2.5		mg/Kg	1	12/12/2018 7:48:51 PM	41817
Silver	1.5	0.25		mg/Kg	1	12/4/2018 6:29:19 PM	41817
Sodium	1500	25		mg/Kg	1	12/4/2018 6:29:19 PM	41817
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	400	9.5		mg/Kg	1	12/1/2018 6:29:53 PM	41673
Motor Oil Range Organics (MRO)	310	48		mg/Kg	1	12/1/2018 6:29:53 PM	41673
Surr: DNOP	105	50.6-138		%Rec	1	12/1/2018 6:29:53 PM	41673
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	24	D	mg/Kg	5	11/21/2018 11:58:34 PM	41638
Surr: BFB	92.2	73.8-119	D	%Rec	5	11/21/2018 11:58:34 PM	41638
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.47	D	mg/Kg	5	11/21/2018 11:58:34 PM	41638
Benzene	ND	0.12	D	mg/Kg	5	11/21/2018 11:58:34 PM	41638
Toluene	ND	0.24	D	mg/Kg	5	11/21/2018 11:58:34 PM	41638
Ethylbenzene	ND	0.24	D	mg/Kg	5	11/21/2018 11:58:34 PM	41638
Xylenes, Total	ND	0.47	D	mg/Kg	5	11/21/2018 11:58:34 PM	41638
Surr: 4-Bromofluorobenzene	89.8	80-120	D	%Rec	5	11/21/2018 11:58:34 PM	41638

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

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

Page 12 of 42

Analytical Report

Lab Order 1811953

Date Reported: 12/20/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 513

Project: Sundance Tank Farm

Collection Date: 11/15/2018

Lab ID: 1811953-013

Matrix: SOIL

Received Date: 11/16/2018 9:33:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	2400	75		mg/Kg	50	11/28/2018 5:06:35 PM	41729
Sulfate	84	30		mg/Kg	20	11/27/2018 2:24:43 PM	41729
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.032		mg/Kg	1	12/3/2018 6:36:13 PM	41852
EPA METHOD 6010B: SOIL METALS							Analyst: rde
Arsenic	4.5	2.4		mg/Kg	1	12/12/2018 7:56:13 PM	41817
Barium	670	0.48		mg/Kg	5	12/12/2018 7:58:11 PM	41817
Cadmium	ND	0.096		mg/Kg	1	12/4/2018 6:31:27 PM	41817
Calcium	220000	2400		mg/Kg	100	12/6/2018 4:06:20 PM	41817
Chromium	1.3	0.29		mg/Kg	1	12/12/2018 7:56:13 PM	41817
Lead	0.31	0.24		mg/Kg	1	12/4/2018 6:31:27 PM	41817
Magnesium	1100	24		mg/Kg	1	12/4/2018 6:31:27 PM	41817
Potassium	360	48		mg/Kg	1	12/4/2018 6:31:27 PM	41817
Selenium	6.2	2.4		mg/Kg	1	12/12/2018 7:56:13 PM	41817
Silver	1.8	0.24		mg/Kg	1	12/4/2018 6:31:27 PM	41817
Sodium	1600	24		mg/Kg	1	12/4/2018 6:31:27 PM	41817
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	17	9.5		mg/Kg	1	11/29/2018 1:30:00 PM	41673
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/29/2018 1:30:00 PM	41673
Surr: DNOP	97.6	50.6-138		%Rec	1	11/29/2018 1:30:00 PM	41673
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/22/2018 1:29:15 AM	41638
Surr: BFB	90.9	73.8-119		%Rec	1	11/22/2018 1:29:15 AM	41638
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.098		mg/Kg	1	11/22/2018 1:29:15 AM	41638
Benzene	ND	0.024		mg/Kg	1	11/22/2018 1:29:15 AM	41638
Toluene	ND	0.049		mg/Kg	1	11/22/2018 1:29:15 AM	41638
Ethylbenzene	ND	0.049		mg/Kg	1	11/22/2018 1:29:15 AM	41638
Xylenes, Total	ND	0.098		mg/Kg	1	11/22/2018 1:29:15 AM	41638
Surr: 4-Bromofluorobenzene	93.7	80-120		%Rec	1	11/22/2018 1:29:15 AM	41638

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

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

Page 13 of 42

Analytical Report

Lab Order 1811953

Date Reported: 12/20/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 514

Project: Sundance Tank Farm

Collection Date: 11/15/2018

Lab ID: 1811953-014

Matrix: SOIL

Received Date: 11/16/2018 9:33:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	5800	300		mg/Kg	200	11/28/2018 5:43:48 PM	41729
Sulfate	70	30		mg/Kg	20	11/27/2018 2:37:07 PM	41729
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.033		mg/Kg	1	12/3/2018 6:37:57 PM	41852
EPA METHOD 6010B: SOIL METALS							Analyst: rde
Arsenic	7.2	2.5		mg/Kg	1	12/12/2018 7:59:57 PM	41817
Barium	540	0.50		mg/Kg	5	12/12/2018 8:01:51 PM	41817
Cadmium	ND	0.10		mg/Kg	1	12/4/2018 6:33:34 PM	41817
Calcium	160000	2500		mg/Kg	100	12/6/2018 4:08:14 PM	41817
Chromium	1.4	0.30		mg/Kg	1	12/12/2018 7:59:57 PM	41817
Lead	1.0	0.25		mg/Kg	1	12/4/2018 6:33:34 PM	41817
Magnesium	1300	25		mg/Kg	1	12/4/2018 6:33:34 PM	41817
Potassium	470	50		mg/Kg	1	12/4/2018 6:33:34 PM	41817
Selenium	5.1	2.5		mg/Kg	1	12/12/2018 7:59:57 PM	41817
Silver	1.0	0.25		mg/Kg	1	12/4/2018 6:33:34 PM	41817
Sodium	3100	25		mg/Kg	1	12/4/2018 6:33:34 PM	41817
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/29/2018 1:45:00 PM	41673
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/29/2018 1:45:00 PM	41673
Surr: DNOP	96.9	50.6-138		%Rec	1	11/29/2018 1:45:00 PM	41673
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/22/2018 1:51:53 AM	41638
Surr: BFB	90.8	73.8-119		%Rec	1	11/22/2018 1:51:53 AM	41638
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.097		mg/Kg	1	11/22/2018 1:51:53 AM	41638
Benzene	ND	0.024		mg/Kg	1	11/22/2018 1:51:53 AM	41638
Toluene	ND	0.048		mg/Kg	1	11/22/2018 1:51:53 AM	41638
Ethylbenzene	ND	0.048		mg/Kg	1	11/22/2018 1:51:53 AM	41638
Xylenes, Total	ND	0.097		mg/Kg	1	11/22/2018 1:51:53 AM	41638
Surr: 4-Bromofluorobenzene	93.9	80-120		%Rec	1	11/22/2018 1:51:53 AM	41638

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

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

Page 14 of 42

Analytical Report

Lab Order 1811953

Date Reported: 12/20/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 515

Project: Sundance Tank Farm

Collection Date: 11/15/2018

Lab ID: 1811953-015

Matrix: SOIL

Received Date: 11/16/2018 9:33:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	5200	300		mg/Kg	200	11/28/2018 5:56:13 PM	41729
Sulfate	390	30		mg/Kg	20	11/27/2018 2:49:32 PM	41729
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.033		mg/Kg	1	12/6/2018 12:27:20 PM	41921
EPA METHOD 6010B: SOIL METALS							Analyst: rde
Arsenic	3.7	2.5		mg/Kg	1	12/12/2018 8:03:36 PM	41817
Barium	1900	0.99		mg/Kg	10	12/12/2018 8:05:38 PM	41817
Cadmium	ND	0.099		mg/Kg	1	12/4/2018 6:35:41 PM	41817
Calcium	190000	2500		mg/Kg	100	12/6/2018 4:10:07 PM	41817
Chromium	5.0	0.30		mg/Kg	1	12/12/2018 8:03:36 PM	41817
Lead	ND	0.25		mg/Kg	1	12/4/2018 6:35:41 PM	41817
Magnesium	4400	25		mg/Kg	1	12/4/2018 6:35:41 PM	41817
Potassium	1600	49		mg/Kg	1	12/4/2018 6:35:41 PM	41817
Selenium	7.7	2.5		mg/Kg	1	12/12/2018 8:03:36 PM	41817
Silver	1.6	0.25		mg/Kg	1	12/4/2018 6:35:41 PM	41817
Sodium	3200	25		mg/Kg	1	12/4/2018 6:35:41 PM	41817
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/29/2018 2:00:00 PM	41673
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/29/2018 2:00:00 PM	41673
Surr: DNOP	103	50.6-138		%Rec	1	11/29/2018 2:00:00 PM	41673
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/22/2018 2:14:31 AM	41638
Surr: BFB	91.9	73.8-119		%Rec	1	11/22/2018 2:14:31 AM	41638
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.098		mg/Kg	1	11/22/2018 2:14:31 AM	41638
Benzene	ND	0.025		mg/Kg	1	11/22/2018 2:14:31 AM	41638
Toluene	ND	0.049		mg/Kg	1	11/22/2018 2:14:31 AM	41638
Ethylbenzene	ND	0.049		mg/Kg	1	11/22/2018 2:14:31 AM	41638
Xylenes, Total	ND	0.098		mg/Kg	1	11/22/2018 2:14:31 AM	41638
Surr: 4-Bromofluorobenzene	94.9	80-120		%Rec	1	11/22/2018 2:14:31 AM	41638

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

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

Page 15 of 42

Analytical Report

Lab Order 1811953

Date Reported: 12/20/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 516

Project: Sundance Tank Farm

Collection Date: 11/15/2018

Lab ID: 1811953-016

Matrix: SOIL

Received Date: 11/16/2018 9:33:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	3000	150		mg/Kg	100	11/28/2018 6:08:37 PM	41729
Sulfate	96	30		mg/Kg	20	11/27/2018 3:01:57 PM	41729
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.034		mg/Kg	1	12/3/2018 6:41:27 PM	41852
EPA METHOD 6010B: SOIL METALS							Analyst: rde
Arsenic	4.9	2.4		mg/Kg	1	12/12/2018 8:13:17 PM	41817
Barium	440	0.19		mg/Kg	2	12/12/2018 8:15:23 PM	41817
Cadmium	ND	0.097		mg/Kg	1	12/4/2018 6:37:56 PM	41817
Calcium	180000	2400		mg/Kg	100	12/6/2018 4:12:01 PM	41817
Chromium	2.8	0.29		mg/Kg	1	12/12/2018 8:13:17 PM	41817
Lead	0.41	0.24		mg/Kg	1	12/4/2018 6:37:56 PM	41817
Magnesium	1900	24		mg/Kg	1	12/4/2018 6:37:56 PM	41817
Potassium	730	48		mg/Kg	1	12/4/2018 6:37:56 PM	41817
Selenium	6.1	2.4		mg/Kg	1	12/12/2018 8:13:17 PM	41817
Silver	1.4	0.24		mg/Kg	1	12/4/2018 6:37:56 PM	41817
Sodium	2800	24		mg/Kg	1	12/4/2018 6:37:56 PM	41817
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/29/2018 2:15:00 PM	41673
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/29/2018 2:15:00 PM	41673
Surr: DNOP	93.4	50.6-138		%Rec	1	11/29/2018 2:15:00 PM	41673
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/22/2018 2:37:11 AM	41638
Surr: BFB	90.5	73.8-119		%Rec	1	11/22/2018 2:37:11 AM	41638
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.096		mg/Kg	1	11/22/2018 2:37:11 AM	41638
Benzene	ND	0.024		mg/Kg	1	11/22/2018 2:37:11 AM	41638
Toluene	ND	0.048		mg/Kg	1	11/22/2018 2:37:11 AM	41638
Ethylbenzene	ND	0.048		mg/Kg	1	11/22/2018 2:37:11 AM	41638
Xylenes, Total	ND	0.096		mg/Kg	1	11/22/2018 2:37:11 AM	41638
Surr: 4-Bromofluorobenzene	93.3	80-120		%Rec	1	11/22/2018 2:37:11 AM	41638

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

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

Page 16 of 42

Analytical Report

Lab Order 1811953

Date Reported: 12/20/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 517

Project: Sundance Tank Farm

Collection Date: 11/15/2018

Lab ID: 1811953-017

Matrix: SOIL

Received Date: 11/16/2018 9:33:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	12000	750		mg/Kg	500	11/28/2018 6:21:02 PM	41729
Sulfate	140	30		mg/Kg	20	11/27/2018 3:14:22 PM	41729
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.035		mg/Kg	1	12/6/2018 12:24:48 PM	41921
EPA METHOD 6010B: SOIL METALS							Analyst: rde
Arsenic	6.4	2.5		mg/Kg	1	12/12/2018 8:17:24 PM	41817
Barium	630	0.50		mg/Kg	5	12/12/2018 8:19:29 PM	41817
Cadmium	ND	0.099		mg/Kg	1	12/4/2018 6:40:04 PM	41817
Calcium	190000	2500		mg/Kg	100	12/6/2018 4:19:55 PM	41817
Chromium	2.6	0.30		mg/Kg	1	12/12/2018 8:17:24 PM	41817
Lead	ND	0.25		mg/Kg	1	12/4/2018 6:40:04 PM	41817
Magnesium	2500	25		mg/Kg	1	12/4/2018 6:40:04 PM	41817
Potassium	730	50		mg/Kg	1	12/4/2018 6:40:04 PM	41817
Selenium	5.1	2.5		mg/Kg	1	12/12/2018 8:17:24 PM	41817
Silver	1.7	0.25		mg/Kg	1	12/4/2018 6:40:04 PM	41817
Sodium	7500	120		mg/Kg	5	12/12/2018 8:19:29 PM	41817
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/29/2018 2:30:00 PM	41673
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/29/2018 2:30:00 PM	41673
Surr: DNOP	97.1	50.6-138		%Rec	1	11/29/2018 2:30:00 PM	41673
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/22/2018 2:59:48 AM	41638
Surr: BFB	91.2	73.8-119		%Rec	1	11/22/2018 2:59:48 AM	41638
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.094		mg/Kg	1	11/22/2018 2:59:48 AM	41638
Benzene	ND	0.023		mg/Kg	1	11/22/2018 2:59:48 AM	41638
Toluene	ND	0.047		mg/Kg	1	11/22/2018 2:59:48 AM	41638
Ethylbenzene	ND	0.047		mg/Kg	1	11/22/2018 2:59:48 AM	41638
Xylenes, Total	ND	0.094		mg/Kg	1	11/22/2018 2:59:48 AM	41638
Surr: 4-Bromofluorobenzene	93.7	80-120		%Rec	1	11/22/2018 2:59:48 AM	41638

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

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

Page 17 of 42

Analytical Report

Lab Order 1811953

Date Reported: 12/20/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 518

Project: Sundance Tank Farm

Collection Date: 11/15/2018

Lab ID: 1811953-018

Matrix: SOIL

Received Date: 11/16/2018 9:33:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	9400	750		mg/Kg	500	11/28/2018 6:33:26 PM	41729
Sulfate	99	30		mg/Kg	20	11/27/2018 3:51:35 PM	41729
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.032		mg/Kg	1	12/3/2018 6:44:58 PM	41852
EPA METHOD 6010B: SOIL METALS							Analyst: rde
Arsenic	8.8	2.5		mg/Kg	1	12/12/2018 8:21:19 PM	41817
Barium	720	0.50		mg/Kg	5	12/12/2018 8:23:26 PM	41817
Cadmium	ND	0.10		mg/Kg	1	12/4/2018 6:42:13 PM	41817
Calcium	87000	2500		mg/Kg	100	12/6/2018 4:23:48 PM	41817
Chromium	2.5	0.30		mg/Kg	1	12/12/2018 8:21:19 PM	41817
Lead	2.7	0.25		mg/Kg	1	12/4/2018 6:42:13 PM	41817
Magnesium	3300	25		mg/Kg	1	12/4/2018 6:42:13 PM	41817
Potassium	800	50		mg/Kg	1	12/4/2018 6:42:13 PM	41817
Selenium	ND	2.5		mg/Kg	1	12/12/2018 8:21:19 PM	41817
Silver	ND	0.25		mg/Kg	1	12/4/2018 6:42:13 PM	41817
Sodium	8100	120		mg/Kg	5	12/12/2018 8:23:26 PM	41817
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/29/2018 2:45:00 PM	41673
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/29/2018 2:45:00 PM	41673
Surr: DNOP	96.4	50.6-138		%Rec	1	11/29/2018 2:45:00 PM	41673
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/22/2018 3:22:27 AM	41638
Surr: BFB	89.4	73.8-119		%Rec	1	11/22/2018 3:22:27 AM	41638
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.10		mg/Kg	1	11/22/2018 3:22:27 AM	41638
Benzene	ND	0.025		mg/Kg	1	11/22/2018 3:22:27 AM	41638
Toluene	ND	0.050		mg/Kg	1	11/22/2018 3:22:27 AM	41638
Ethylbenzene	ND	0.050		mg/Kg	1	11/22/2018 3:22:27 AM	41638
Xylenes, Total	ND	0.10		mg/Kg	1	11/22/2018 3:22:27 AM	41638
Surr: 4-Bromofluorobenzene	90.7	80-120		%Rec	1	11/22/2018 3:22:27 AM	41638

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

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

Page 18 of 42

Analytical Report

Lab Order 1811953

Date Reported: 12/20/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 519

Project: Sundance Tank Farm

Collection Date: 11/15/2018

Lab ID: 1811953-019

Matrix: SOIL

Received Date: 11/16/2018 9:33:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	1500	75		mg/Kg	50	11/28/2018 6:45:50 PM	41729
Sulfate	300	30		mg/Kg	20	11/27/2018 4:03:59 PM	41729
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.033		mg/Kg	1	12/3/2018 6:50:19 PM	41852
EPA METHOD 6010B: SOIL METALS							Analyst: rde
Arsenic	4.1	2.4		mg/Kg	1	12/12/2018 12:30:44 PM	41817
Barium	700	0.48		mg/Kg	5	12/12/2018 12:44:15 PM	41817
Cadmium	ND	0.096		mg/Kg	1	12/4/2018 6:52:33 PM	41817
Calcium	210000	2400		mg/Kg	100	12/6/2018 4:25:45 PM	41817
Chromium	3.1	0.29		mg/Kg	1	12/12/2018 12:30:44 PM	41817
Lead	0.38	0.24		mg/Kg	1	12/12/2018 12:30:44 PM	41817
Magnesium	4100	24		mg/Kg	1	12/12/2018 12:30:44 PM	41817
Potassium	730	48		mg/Kg	1	12/4/2018 6:52:33 PM	41817
Selenium	6.4	2.4		mg/Kg	1	12/12/2018 12:30:44 PM	41817
Silver	2.1	0.24		mg/Kg	1	12/4/2018 6:52:33 PM	41817
Sodium	1300	24		mg/Kg	1	12/12/2018 12:30:44 PM	41817
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	350	9.9		mg/Kg	1	12/1/2018 7:35:25 PM	41673
Motor Oil Range Organics (MRO)	410	49		mg/Kg	1	12/1/2018 7:35:25 PM	41673
Surr: DNOP	103	50.6-138		%Rec	1	12/1/2018 7:35:25 PM	41673
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/22/2018 3:45:03 AM	41638
Surr: BFB	87.9	73.8-119		%Rec	1	11/22/2018 3:45:03 AM	41638
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.094		mg/Kg	1	11/22/2018 3:45:03 AM	41638
Benzene	ND	0.023		mg/Kg	1	11/22/2018 3:45:03 AM	41638
Toluene	ND	0.047		mg/Kg	1	11/22/2018 3:45:03 AM	41638
Ethylbenzene	ND	0.047		mg/Kg	1	11/22/2018 3:45:03 AM	41638
Xylenes, Total	ND	0.094		mg/Kg	1	11/22/2018 3:45:03 AM	41638
Surr: 4-Bromofluorobenzene	90.0	80-120		%Rec	1	11/22/2018 3:45:03 AM	41638

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

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

Page 19 of 42

Analytical Report

Lab Order 1811953

Date Reported: 12/20/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 520

Project: Sundance Tank Farm

Collection Date: 11/15/2018

Lab ID: 1811953-020

Matrix: SOIL

Received Date: 11/16/2018 9:33:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	2000	75		mg/Kg	50	11/28/2018 6:58:15 PM	41729
Sulfate	180	30		mg/Kg	20	11/27/2018 4:16:23 PM	41729
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.033		mg/Kg	1	12/4/2018 5:24:26 PM	41892
EPA METHOD 6010B: SOIL METALS							Analyst: rde
Arsenic	4.4	2.5		mg/Kg	1	12/12/2018 8:25:15 PM	41863
Barium	900	0.49		mg/Kg	5	12/12/2018 8:27:14 PM	41863
Cadmium	ND	0.099		mg/Kg	1	12/4/2018 7:24:20 PM	41863
Calcium	160000	2500		mg/Kg	100	12/6/2018 4:27:36 PM	41863
Chromium	3.8	0.30		mg/Kg	1	12/12/2018 8:25:15 PM	41863
Lead	4.8	0.25		mg/Kg	1	12/12/2018 8:25:15 PM	41863
Magnesium	3300	25		mg/Kg	1	12/4/2018 7:24:20 PM	41863
Potassium	770	49		mg/Kg	1	12/4/2018 7:24:20 PM	41863
Selenium	5.4	2.5		mg/Kg	1	12/12/2018 8:25:15 PM	41863
Silver	1.5	0.25		mg/Kg	1	12/4/2018 7:24:20 PM	41863
Sodium	2000	25		mg/Kg	1	12/4/2018 7:24:20 PM	41863
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	180	9.8		mg/Kg	1	12/1/2018 9:02:53 PM	41673
Motor Oil Range Organics (MRO)	210	49		mg/Kg	1	12/1/2018 9:02:53 PM	41673
Surr: DNOP	105	50.6-138		%Rec	1	12/1/2018 9:02:53 PM	41673
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/25/2018 12:51:07 AM	41638
Surr: BFB	88.8	73.8-119		%Rec	1	11/25/2018 12:51:07 AM	41638
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.10		mg/Kg	1	11/25/2018 12:51:07 AM	41638
Benzene	ND	0.025		mg/Kg	1	11/25/2018 12:51:07 AM	41638
Toluene	ND	0.050		mg/Kg	1	11/25/2018 12:51:07 AM	41638
Ethylbenzene	ND	0.050		mg/Kg	1	11/25/2018 12:51:07 AM	41638
Xylenes, Total	ND	0.10		mg/Kg	1	11/25/2018 12:51:07 AM	41638
Surr: 4-Bromofluorobenzene	89.9	80-120		%Rec	1	11/25/2018 12:51:07 AM	41638

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

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

Analytical Report

Lab Order 1811953

Date Reported: 12/20/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 604

Project: Sundance Tank Farm

Collection Date: 11/15/2018

Lab ID: 1811953-021

Matrix: SOIL

Received Date: 11/16/2018 9:33:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	4200	150		mg/Kg	100	11/28/2018 7:10:40 PM	41729
Sulfate	350	30		mg/Kg	20	11/27/2018 4:28:48 PM	41729
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.032		mg/Kg	1	12/4/2018 5:29:32 PM	41892
EPA METHOD 6010B: SOIL METALS							Analyst: rde
Arsenic	5.2	2.5		mg/Kg	1	12/12/2018 8:29:05 PM	41863
Barium	620	0.49		mg/Kg	5	12/12/2018 8:31:03 PM	41863
Cadmium	ND	0.099		mg/Kg	1	12/4/2018 7:26:29 PM	41863
Calcium	72000	2500		mg/Kg	100	12/6/2018 4:29:33 PM	41863
Chromium	6.3	0.30		mg/Kg	1	12/12/2018 8:29:05 PM	41863
Lead	0.74	0.25		mg/Kg	1	12/12/2018 8:29:05 PM	41863
Magnesium	2700	25		mg/Kg	1	12/4/2018 7:26:29 PM	41863
Potassium	2400	49		mg/Kg	1	12/4/2018 7:26:29 PM	41863
Selenium	ND	2.5		mg/Kg	1	12/12/2018 8:29:05 PM	41863
Silver	ND	0.25		mg/Kg	1	12/4/2018 7:26:29 PM	41863
Sodium	4600	25		mg/Kg	1	12/4/2018 7:26:29 PM	41863
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	15	9.6		mg/Kg	1	11/27/2018 12:15:08 PM	41682
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/27/2018 12:15:08 PM	41682
Surr: DNOP	107	50.6-138		%Rec	1	11/27/2018 12:15:08 PM	41682
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/21/2018 1:29:12 PM	41650
Surr: BFB	110	73.8-119		%Rec	1	11/21/2018 1:29:12 PM	41650
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.096		mg/Kg	1	11/21/2018 1:29:12 PM	41650
Benzene	ND	0.024		mg/Kg	1	11/21/2018 1:29:12 PM	41650
Toluene	ND	0.048		mg/Kg	1	11/21/2018 1:29:12 PM	41650
Ethylbenzene	ND	0.048		mg/Kg	1	11/21/2018 1:29:12 PM	41650
Xylenes, Total	ND	0.096		mg/Kg	1	11/21/2018 1:29:12 PM	41650
Surr: 4-Bromofluorobenzene	112	80-120		%Rec	1	11/21/2018 1:29:12 PM	41650

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

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

Page 21 of 42

Analytical Report

Lab Order 1811953

Date Reported: 12/20/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 605

Project: Sundance Tank Farm

Collection Date: 11/15/2018

Lab ID: 1811953-022

Matrix: SOIL

Received Date: 11/16/2018 9:33:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	3500	150		mg/Kg	100	11/28/2018 7:23:04 PM	41729
Sulfate	130	30		mg/Kg	20	11/27/2018 4:41:13 PM	41729
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.034		mg/Kg	1	12/4/2018 5:31:16 PM	41892
EPA METHOD 6010B: SOIL METALS							Analyst: rde
Arsenic	5.6	2.4		mg/Kg	1	12/12/2018 8:40:36 PM	41863
Barium	300	0.19		mg/Kg	2	12/12/2018 8:42:42 PM	41863
Cadmium	ND	0.097		mg/Kg	1	12/4/2018 7:28:44 PM	41863
Calcium	130000	2400		mg/Kg	100	12/6/2018 4:31:25 PM	41863
Chromium	3.4	0.29		mg/Kg	1	12/12/2018 8:40:36 PM	41863
Lead	0.67	0.24		mg/Kg	1	12/12/2018 8:40:36 PM	41863
Magnesium	2900	24		mg/Kg	1	12/4/2018 7:28:44 PM	41863
Potassium	830	48		mg/Kg	1	12/4/2018 7:28:44 PM	41863
Selenium	3.9	2.4		mg/Kg	1	12/12/2018 8:40:36 PM	41863
Silver	0.85	0.24		mg/Kg	1	12/4/2018 7:28:44 PM	41863
Sodium	2800	24		mg/Kg	1	12/4/2018 7:28:44 PM	41863
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/27/2018 12:39:30 PM	41682
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/27/2018 12:39:30 PM	41682
Surr: DNOP	103	50.6-138		%Rec	1	11/27/2018 12:39:30 PM	41682
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/21/2018 2:39:20 PM	41650
Surr: BFB	104	73.8-119		%Rec	1	11/21/2018 2:39:20 PM	41650
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.094		mg/Kg	1	11/21/2018 2:39:20 PM	41650
Benzene	ND	0.023		mg/Kg	1	11/21/2018 2:39:20 PM	41650
Toluene	ND	0.047		mg/Kg	1	11/21/2018 2:39:20 PM	41650
Ethylbenzene	ND	0.047		mg/Kg	1	11/21/2018 2:39:20 PM	41650
Xylenes, Total	ND	0.094		mg/Kg	1	11/21/2018 2:39:20 PM	41650
Surr: 4-Bromofluorobenzene	116	80-120		%Rec	1	11/21/2018 2:39:20 PM	41650

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

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

Page 22 of 42

Analytical Report

Lab Order 1811953

Date Reported: 12/20/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: 606

Project: Sundance Tank Farm

Collection Date: 11/15/2018

Lab ID: 1811953-023

Matrix: SOIL

Received Date: 11/16/2018 9:33:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	2700	75		mg/Kg	50	11/28/2018 7:35:29 PM	41729
Sulfate	150	30		mg/Kg	20	11/27/2018 4:53:37 PM	41729
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.033		mg/Kg	1	12/4/2018 5:32:59 PM	41892
EPA METHOD 6010B: SOIL METALS							Analyst: rde
Arsenic	5.5	2.5		mg/Kg	1	12/12/2018 8:44:33 PM	41863
Barium	580	0.50		mg/Kg	5	12/12/2018 8:46:32 PM	41863
Cadmium	ND	0.10		mg/Kg	1	12/4/2018 7:30:59 PM	41863
Calcium	220000	2500		mg/Kg	100	12/6/2018 4:33:20 PM	41863
Chromium	2.7	0.30		mg/Kg	1	12/12/2018 8:44:33 PM	41863
Lead	ND	0.25		mg/Kg	1	12/4/2018 7:30:59 PM	41863
Magnesium	3800	25		mg/Kg	1	12/4/2018 7:30:59 PM	41863
Potassium	860	50		mg/Kg	1	12/4/2018 7:30:59 PM	41863
Selenium	6.3	2.5		mg/Kg	1	12/12/2018 8:44:33 PM	41863
Silver	2.0	0.25		mg/Kg	1	12/4/2018 7:30:59 PM	41863
Sodium	1900	25		mg/Kg	1	12/4/2018 7:30:59 PM	41863
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	35	9.6		mg/Kg	1	11/27/2018 1:03:48 PM	41682
Motor Oil Range Organics (MRO)	57	48		mg/Kg	1	11/27/2018 1:03:48 PM	41682
Surr: DNOP	108	50.6-138		%Rec	1	11/27/2018 1:03:48 PM	41682
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/21/2018 3:49:28 PM	41650
Surr: BFB	99.7	73.8-119		%Rec	1	11/21/2018 3:49:28 PM	41650
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.093		mg/Kg	1	11/21/2018 3:49:28 PM	41650
Benzene	ND	0.023		mg/Kg	1	11/21/2018 3:49:28 PM	41650
Toluene	ND	0.046		mg/Kg	1	11/21/2018 3:49:28 PM	41650
Ethylbenzene	ND	0.046		mg/Kg	1	11/21/2018 3:49:28 PM	41650
Xylenes, Total	ND	0.093		mg/Kg	1	11/21/2018 3:49:28 PM	41650
Surr: 4-Bromofluorobenzene	110	80-120		%Rec	1	11/21/2018 3:49:28 PM	41650

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

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

Page 23 of 42

Analytical Report

Lab Order 1811953

Date Reported: 12/20/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: S-1

Project: Sundance Tank Farm

Collection Date: 11/15/2018

Lab ID: 1811953-024

Matrix: SOIL

Received Date: 11/16/2018 9:33:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	3300	150		mg/Kg	100	11/28/2018 8:12:43 PM	41755
Sulfate	580	30		mg/Kg	20	11/28/2018 1:10:49 PM	41755
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.034		mg/Kg	1	12/4/2018 5:34:43 PM	41892
EPA METHOD 6010B: SOIL METALS							Analyst: rde
Arsenic	5.0	2.4		mg/Kg	1	12/12/2018 8:48:27 PM	41863
Barium	680	0.48		mg/Kg	5	12/12/2018 8:50:34 PM	41863
Cadmium	ND	0.096		mg/Kg	1	12/4/2018 7:33:07 PM	41863
Calcium	170000	2400		mg/Kg	100	12/6/2018 4:35:11 PM	41863
Chromium	2.6	0.29		mg/Kg	1	12/12/2018 8:48:27 PM	41863
Lead	0.25	0.24		mg/Kg	1	12/12/2018 8:48:27 PM	41863
Magnesium	2400	24		mg/Kg	1	12/4/2018 7:33:07 PM	41863
Potassium	640	48		mg/Kg	1	12/4/2018 7:33:07 PM	41863
Selenium	5.0	2.4		mg/Kg	1	12/12/2018 8:48:27 PM	41863
Silver	1.6	0.24		mg/Kg	1	12/4/2018 7:33:07 PM	41863
Sodium	2200	24		mg/Kg	1	12/4/2018 7:33:07 PM	41863
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/27/2018 1:28:08 PM	41682
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/27/2018 1:28:08 PM	41682
Surr: DNOP	104	50.6-138		%Rec	1	11/27/2018 1:28:08 PM	41682
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/21/2018 4:12:48 PM	41650
Surr: BFB	101	73.8-119		%Rec	1	11/21/2018 4:12:48 PM	41650
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.094		mg/Kg	1	11/21/2018 4:12:48 PM	41650
Benzene	ND	0.023		mg/Kg	1	11/21/2018 4:12:48 PM	41650
Toluene	ND	0.047		mg/Kg	1	11/21/2018 4:12:48 PM	41650
Ethylbenzene	ND	0.047		mg/Kg	1	11/21/2018 4:12:48 PM	41650
Xylenes, Total	ND	0.094		mg/Kg	1	11/21/2018 4:12:48 PM	41650
Surr: 4-Bromofluorobenzene	113	80-120		%Rec	1	11/21/2018 4:12:48 PM	41650

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

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

Page 24 of 42

Analytical Report

Lab Order 1811953

Date Reported: 12/20/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: S-2

Project: Sundance Tank Farm

Collection Date: 11/15/2018

Lab ID: 1811953-025

Matrix: SOIL

Received Date: 11/16/2018 9:33:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	4200	150		mg/Kg	100	11/28/2018 8:25:07 PM	41755
Sulfate	260	30		mg/Kg	20	11/28/2018 1:23:14 PM	41755
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.033		mg/Kg	1	12/4/2018 5:40:03 PM	41892
EPA METHOD 6010B: SOIL METALS							Analyst: rde
Arsenic	5.4	2.5		mg/Kg	1	12/12/2018 8:52:25 PM	41863
Barium	780	0.50		mg/Kg	5	12/12/2018 8:54:19 PM	41863
Cadmium	ND	0.10		mg/Kg	1	12/4/2018 7:35:14 PM	41863
Calcium	220000	2500		mg/Kg	100	12/6/2018 4:37:02 PM	41863
Chromium	1.6	0.30		mg/Kg	1	12/12/2018 8:52:25 PM	41863
Lead	ND	0.25		mg/Kg	1	12/4/2018 7:35:14 PM	41863
Magnesium	1100	25		mg/Kg	1	12/4/2018 7:35:14 PM	41863
Potassium	350	50		mg/Kg	1	12/4/2018 7:35:14 PM	41863
Selenium	6.9	2.5		mg/Kg	1	12/12/2018 8:52:25 PM	41863
Silver	2.0	0.25		mg/Kg	1	12/4/2018 7:35:14 PM	41863
Sodium	2200	25		mg/Kg	1	12/4/2018 7:35:14 PM	41863
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	19	9.9		mg/Kg	1	11/27/2018 1:52:26 PM	41682
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/27/2018 1:52:26 PM	41682
Surr: DNOP	102	50.6-138		%Rec	1	11/27/2018 1:52:26 PM	41682
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/21/2018 4:36:15 PM	41650
Surr: BFB	101	73.8-119		%Rec	1	11/21/2018 4:36:15 PM	41650
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.092		mg/Kg	1	11/21/2018 4:36:15 PM	41650
Benzene	ND	0.023		mg/Kg	1	11/21/2018 4:36:15 PM	41650
Toluene	ND	0.046		mg/Kg	1	11/21/2018 4:36:15 PM	41650
Ethylbenzene	ND	0.046		mg/Kg	1	11/21/2018 4:36:15 PM	41650
Xylenes, Total	ND	0.092		mg/Kg	1	11/21/2018 4:36:15 PM	41650
Surr: 4-Bromofluorobenzene	111	80-120		%Rec	1	11/21/2018 4:36:15 PM	41650

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

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

Page 25 of 42

Analytical Report

Lab Order 1811953

Date Reported: 12/20/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Gordon Environmental/PSC

Client Sample ID: S-3

Project: Sundance Tank Farm

Collection Date: 11/15/2018

Lab ID: 1811953-026

Matrix: SOIL

Received Date: 11/16/2018 9:33:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	3800	150		mg/Kg	100	11/28/2018 8:37:31 PM	41755
Sulfate	480	30		mg/Kg	20	11/28/2018 1:35:39 PM	41755
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.033		mg/Kg	1	12/4/2018 5:41:48 PM	41892
EPA METHOD 6010B: SOIL METALS							Analyst: rde
Arsenic	4.9	2.5		mg/Kg	1	12/12/2018 8:56:09 PM	41863
Barium	280	0.20		mg/Kg	2	12/12/2018 8:58:08 PM	41863
Cadmium	ND	0.098		mg/Kg	1	12/4/2018 7:37:22 PM	41863
Calcium	150000	2500		mg/Kg	100	12/6/2018 4:38:52 PM	41863
Chromium	2.9	0.30		mg/Kg	1	12/12/2018 8:56:09 PM	41863
Lead	ND	0.25		mg/Kg	1	12/12/2018 8:56:09 PM	41863
Magnesium	4200	25		mg/Kg	1	12/4/2018 7:37:22 PM	41863
Potassium	740	49		mg/Kg	1	12/4/2018 7:37:22 PM	41863
Selenium	5.5	2.5		mg/Kg	1	12/12/2018 8:56:09 PM	41863
Silver	1.6	0.25		mg/Kg	1	12/4/2018 7:37:22 PM	41863
Sodium	3100	25		mg/Kg	1	12/4/2018 7:37:22 PM	41863
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/27/2018 2:16:57 PM	41682
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/27/2018 2:16:57 PM	41682
Surr: DNOP	105	50.6-138		%Rec	1	11/27/2018 2:16:57 PM	41682
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/21/2018 4:59:48 PM	41650
Surr: BFB	97.7	73.8-119		%Rec	1	11/21/2018 4:59:48 PM	41650
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.097		mg/Kg	1	11/21/2018 4:59:48 PM	41650
Benzene	ND	0.024		mg/Kg	1	11/21/2018 4:59:48 PM	41650
Toluene	ND	0.049		mg/Kg	1	11/21/2018 4:59:48 PM	41650
Ethylbenzene	ND	0.049		mg/Kg	1	11/21/2018 4:59:48 PM	41650
Xylenes, Total	ND	0.097		mg/Kg	1	11/21/2018 4:59:48 PM	41650
Surr: 4-Bromofluorobenzene	109	80-120		%Rec	1	11/21/2018 4:59:48 PM	41650

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

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

Page 26 of 42

1811953-001B 500

SAMPLE RESULTS - 01

ONE LAB. NATIONWIDE

Collected date/time: 11/15/18 00:00

L1046059

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch	
Phosphate as P	ND		1.00	1	11/24/2018 15:23	WG1199853	1 Cp 2 Tc 3 Ss 4 Cn 5 Sl 6 Qc 7 Gl 8 Al 9 Sc

ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

1811953-002B 501

SAMPLE RESULTS - 02

ONE LAB. NATIONWIDE.

Collected date/time: 11/15/18 00:00

L1046059

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
Phosphate as P	mg/kg		mg/kg		date / time	
	ND		1.00	1	11/24/2018 15:51	WG1199853

1
Ce2
Tc3
Ss4
Cn5
Sr6
Qc7
Gl8
Al9
Sc

ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

1811953-003B 502

SAMPLE RESULTS - 03

ONE LAB. NATIONWIDE.

Collected date/time: 11/15/18 00:00

L1046059

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch	
	mg/kg		mg/kg		date / time		
Phosphate as P	ND		1.00	1	11/24/2018 16:19	WG1199853	1 Cd 2 Tc 3 Ss 4 Cn 5 Sr 6 Qc 7 Gl 8 Al 9 Sc

ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

1811953-004B 503

SAMPLE RESULTS - 04

ONE LAB. NATIONWIDE

Collected date/time: 11/15/18 00:00

L1046059

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Phosphate as P	ND		1.00	1	11/24/2018 17:15	WG1199853



ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

1811953-005B 504

SAMPLE RESULTS - 05

ONE LAB. NATIONWIDE

Collected date/time: 11/15/18 00:00

L1046059

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Phosphate as P	ND		1.00	1	11/24/2018 17:43	WG1199853



ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

1811953-006B 505

SAMPLE RESULTS - 06

ONE LAB NATIONWIDE

Collected date/time: 11/15/18 00:00

L1046059

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Phosphate as P	ND		1.00	1	11/24/2018 18:11	WG1199853



ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

1811953-00/B 506

SAMPLE RESULTS - 07

ONE LAB. NATIONWIDE

Collected date/time: 11/15/18 00:00

L1046059

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Phosphate as P	ND		1.00	1	11/24/2018 18:39	WG1199853



ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

1811953-008B 507

SAMPLE RESULTS - 08

ONE LAB. NATIONWIDE.

Collected date/time: 11/15/18 00:00

L1046059

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Phosphate as P	ND		1.00	1	11/24/2018 20:02	WG1199853



ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

1811953-009B 508

SAMPLE RESULTS - 09

ONE LAB. NATIONWIDE

Collected date/time: 11/15/18 00:00

L1046059

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch	
Phosphate as P	ND		1.00	1	11/24/2018 20:30	WG1199853	1 Co 2 Tc 3 Ss 4 Cn 5 Sr 6 Qc 7 Gl 8 Al 9 Sc

ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

1811953-0108 510

SAMPLE RESULTS - 10

ONE LAB. NATIONWIDE

Collected date/time: 11/15/18 00:00

L1046059

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Phosphate as P	ND		1.00	1	11/24/2018 20:58	WG1199853

1
Co2
Tc3
Ss4
Cn5
Sr6
Qc7
Gl8
Al9
Sc

ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

1811953-011B 511

SAMPLE RESULTS - 11

ONE LAB. NATIONWIDE

Collected date/time: 11/15/18 00:00

L1046059

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Phosphate as P	ND		1.00	1	11/24/2018 21:26	WG199853



ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

1811953-012B 512

SAMPLE RESULTS - 12

ONE LAB. NATIONWIDE

Collected date/time: 11/15/18 00:00

L1046059

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Phosphate as P	ND		1.00	1	11/24/2018 22:22	WG1199853



ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

1811953-013B 513

SAMPLE RESULTS - 13

ONE LAB. NATIONWIDE

Collected date/time: 11/15/18 00:00

L1046059

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch	Cp
Phosphate as P	ND		1.00	1	11/24/2018 22:50	WG1199853	² Tc
							³ Ss
							⁴ Cn
							⁵ Sl
							⁶ Qc
							⁷ Gl
							¹¹ Al
							⁶ Sc

ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

1811953-014B 514

SAMPLE RESULTS - 14

ONE LAB. NATIONWIDE

Collected date/time: 11/15/18 00:00

L1046059

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Phosphate as P	ND		1.00	1	11/24/2018 23:18	WG1199853



ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

1811953-015B 515

SAMPLE RESULTS - 15

ONE LAB. NATIONWIDE.

Collected date/time: 11/15/18 00:00

L1046059

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Phosphate as P	ND		1.00	1	11/24/2018 23:46	WG1199853

1
Cp2
Tc3
Ss4
Cn5
St6
Qc7
Gl8
Al9
Sc

ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

1811953-016B 516

SAMPLE RESULTS - 16

ONE LAB. NATIONWIDE.

Collected date/time: 11/15/18 00:00

L1046059

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch	
Phosphate as P	ND		1.00	1	11/25/2018 01:10	WG1199853	1 Cd 2 Tc 3 Ss 4 Cn 5 Sr 6 Qc 7 Gl 8 Al 9 Sc

ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

1811953-01/B 51/

SAMPLE RESULTS - 17

ONE LAB. NATIONWIDE

Collected date/time: 11/15/18 00:00

L1046059

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Phosphate as P	ND	J6	1.00	1	11/25/2018 01:38	WG1199853



ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

1811953-018B 518

SAMPLE RESULTS - 18

ONE LAB. NATIONWIDE

Collected date/time: 11/15/18 00:00

L1046059

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Phosphate as P	ND		1.00	1	11/24/2018 14:39	WG1200545



ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

1811953-019B 519

SAMPLE RESULTS - 19

ONE LAB. NATIONWIDE

Collected date/time: 11/15/18 00:00

L1046059

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Phosphate as P	ND		1.00	1	11/24/2018 15:54	WG1200545



ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

1811953-020B 520

SAMPLE RESULTS - 20

ONE LAB. NATIONWIDE

Collected date/time: 11/15/18 00:00

L1046059

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Phosphate as P	ND		1.00	1	11/24/2018 16:32	WG1200545



ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

1811953-021B 604

SAMPLE RESULTS - 21

ONE LAB. NATIONWIDE

Collected date/time: 11/15/18 00:00

L1046059

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Phosphate as P	ND		1.00	1	11/24/2018 17:10	WG1200545



ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

1811953-022B 605

SAMPLE RESULTS - 22

ONE LAB. NATIONWIDE

Collected date/time: 11/15/18 00:00

L1046059

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Phosphate as P	ND		1.00	1	11/24/2018 17:48	WG1200545

Cp

2
Tc3
Ss4
Cn5
Sl6
Qc7
Gl8
Al9
Sc

ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

1811953-023B 606

SAMPLE RESULTS - 23

ONE LAB. NATIONWIDE

Collected date/time: 11/15/18 00:00

L1046059

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch	
Phosphate as P	ND		1.00	1	11/24/2018 18:26	WG1200545	1 Cp 2 Tc 3 Ss 4 Cn 5 Sr 6 Qc 7 Gl 8 Al 9 Sc

ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

1811933-024B S-1

SAMPLE RESULTS - 24

ONE LAB. NATIONWIDE

Collected date/time: 11/15/18 00:00

L1046059

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Phosphate as P	ND		1.00	1	11/24/2018 19:04	WG1200545



ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

1811953-025B S-2

SAMPLE RESULTS - 25

ONE LAB. NATIONWIDE

Collected date/time: 11/15/18 00:00

L1046059

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch	1 Cp
Phosphate as P	ND		1.00	1	11/24/2018 22:13	WG1200545	2 Tc
							3 Ss
							4 Cn
							5 Sr
							6 Qc
							7 Gl
							8 Al
							9 Sc

ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

1811953-026B S-3

SAMPLE RESULTS - 26

ONE LAB NATIONWIDE

Collected date/time: 11/15/18 00:00

L1046059

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Phosphate as P	ND		1.00	1	11/24/2018 22:51	WG1200545

Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

WG1199853

Wet Chemistry by Method 9056A

QUALITY CONTROL SUMMARY

L1046059-01,02,03,04,05,06,07,08,09,10,11,12,13,14,15,16,17

ONE LAB NATIONWIDE

Method Blank (MB)

(MB) R3363036-1 11/24/18 12:03

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Phosphate as P	U	0.0769	1.00	

L1046059-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1046059-03 11/24/18 16:19 • (DUP) R3363036-3 11/24/18 16:47

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphate as P	ND	0.000	1	0.000		15

L1046059-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1046059-11 11/24/18 21:26 • (DUP) R3363036-4 11/24/18 21:54

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphate as P	ND	0.000	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R3363036-2 11/24/18 13:20

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphate as P	20.0	19.0	94.8	80.0-120	

L1046059-17 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1046059-17 11/25/18 01:38 • (MS) R3363036-5 11/25/18 02:06 • (MSD) R3363036-6 11/25/18 02:34

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Phosphate as P	50.0	ND	25.4	26.8	1	80.0-120	J6	J6	5.65	15

ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49

WG1200545

Wet Chemistry by Method 9056A

QUALITY CONTROL SUMMARY

L1046059-18,19,20,21,22,23,24,25,26

ONE LAB NATIONWIDE

Method Blank (MB)

(MB) R3363035-1 11/24/18 13:20

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Phosphate as P	U		0.0769	1.00

L1046059-18 Original Sample (OS) • Duplicate (DUP)

(OS) L1046059-18 11/24/18 14:39 • (DUP) R3363035-3 11/24/18 15:16

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphate as P	ND	0.000	1	0.000		15

L1046706-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1046706-05 11/25/18 07:04 • (DUP) R3363035-6 11/25/18 07:42

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphate as P	U	0.199	1	200	J P1	15

Laboratory Control Sample (LCS)

(LCS) R3363035-2 11/24/18 13:58

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphate as P	20.0	18.7	93.3	80.0-120	

L1046059-24 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1046059-24 11/24/18 19:04 • (MS) R3363035-4 11/24/18 20:58 • (MSD) R3363035-5 11/24/18 21:36

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Phosphate as P	50.0	ND	44.2	45.9	1	80.0-120			3.63	15

ACCOUNT:
Half Environmental Analysis Laboratory

PROJECT:

SDG:
L1046059DATE/TIME:
11/28/18 16:49

Guide to Reading and Understanding Your Laboratory Report

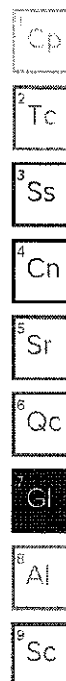
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.



ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L1046059

DATE/TIME:

11/28/18 16:49



Trust our People. Trust our Data.

 Billings, MT 800.735.4499 • Casper, WY 888.235.0515
 Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

 Client: Hall Environmental
 Project: Not Indicated

Report Date: 12/10/18

 Lab ID: B18120023-001
 Client Sample ID: 1811953-001B, 500

 Collection Date: 11/15/18
 Date Received: 12/01/18
 Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
----------	--------	-------	------------	----	-------------	--------	--------------------

WATER EXTRACTABLE CONSTITUENTS

Bicarbonate, 1:2	68	mg/kg		4		ASA10-3	12/05/18 11:07 / cke
------------------	----	-------	--	---	--	---------	----------------------

 Lab ID: B18120023-002
 Client Sample ID: 1811953-002B, 501

 Collection Date: 11/15/18
 Date Received: 12/01/18
 Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
----------	--------	-------	------------	----	-------------	--------	--------------------

WATER EXTRACTABLE CONSTITUENTS

Bicarbonate, 1:2	164	mg/kg		4		ASA10-3	12/05/18 11:07 / cke
------------------	-----	-------	--	---	--	---------	----------------------

 Lab ID: B18120023-003
 Client Sample ID: 1811953-003B, 502

 Collection Date: 11/15/18
 Date Received: 12/01/18
 Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
----------	--------	-------	------------	----	-------------	--------	--------------------

WATER EXTRACTABLE CONSTITUENTS

Bicarbonate, 1:2	80	mg/kg		4		ASA10-3	12/05/18 11:07 / cke
------------------	----	-------	--	---	--	---------	----------------------

 Lab ID: B18120023-004
 Client Sample ID: 1811953-004B, 503

 Collection Date: 11/15/18
 Date Received: 12/01/18
 Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
----------	--------	-------	------------	----	-------------	--------	--------------------

WATER EXTRACTABLE CONSTITUENTS

Bicarbonate, 1:2	96	mg/kg		4		ASA10-3	12/05/18 11:07 / cke
------------------	----	-------	--	---	--	---------	----------------------

 Lab ID: B18120023-005
 Client Sample ID: 1811953-005B, 504

 Collection Date: 11/15/18
 Date Received: 12/01/18
 Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
----------	--------	-------	------------	----	-------------	--------	--------------------

WATER EXTRACTABLE CONSTITUENTS

Bicarbonate, 1:2	94	mg/kg		4		ASA10-3	12/05/18 11:07 / cke
------------------	----	-------	--	---	--	---------	----------------------

 Report: RL - Analyte reporting limit.
 Definitions: QCL - Quality control limit.

 MCL - Maximum contaminant level.
 ND - Not detected at the reporting limit.



Trust Our People. Trust Our Data.

 Billings, MT 800.735.4489 • Casper, WY 888.235.0515
 Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental

Project: Not Indicated

Report Date: 12/10/18

Lab ID: B18120023-006

Collection Date: 11/15/18

Client Sample ID: 1811953-006B, 505

Date Received: 12/01/18

Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
WATER EXTRACTABLE CONSTITUENTS							
Bicarbonate, 1:2	69	mg/kg		4		ASA10-3	12/05/18 11:07 / cke

Lab ID: B18120023-007

Collection Date: 11/15/18

Client Sample ID: 1811953-007B, 506

Date Received: 12/01/18

Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
WATER EXTRACTABLE CONSTITUENTS							
Bicarbonate, 1:2	95	mg/kg		4		ASA10-3	12/05/18 11:07 / cke

Lab ID: B18120023-008

Collection Date: 11/15/18

Client Sample ID: 1811953-008B, 507

Date Received: 12/01/18

Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
WATER EXTRACTABLE CONSTITUENTS							
Bicarbonate, 1:2	52	mg/kg		4		ASA10-3	12/05/18 11:07 / cke

Lab ID: B18120023-009

Collection Date: 11/15/18

Client Sample ID: 1811953-009B, 508

Date Received: 12/01/18

Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
WATER EXTRACTABLE CONSTITUENTS							
Bicarbonate, 1:2	88	mg/kg		4		ASA10-3	12/05/18 11:07 / cke

Lab ID: B18120023-010

Collection Date: 11/15/18

Client Sample ID: 1811953-010B, 510

Date Received: 12/01/18

Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
WATER EXTRACTABLE CONSTITUENTS							
Bicarbonate, 1:2	66	mg/kg		4		ASA10-3	12/05/18 11:07 / cke

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

Definitions: QCL - Quality control limit.

ND - Not detected at the reporting limit.



Trust our People. Trust our Data.

 Billings, MT 800.735.4489 • Casper, WY 888.235.0515
 Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

 Client: Hall Environmental
 Project: Not Indicated

Report Date: 12/10/18

 Lab ID: B18120023-011
 Client Sample ID: 1811953-011B, 511

 Collection Date: 11/15/18
 Date Received: 12/01/18
 Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
----------	--------	-------	------------	----	-------------	--------	--------------------

WATER EXTRACTABLE CONSTITUENTS

Bicarbonate, 1:2	64	mg/kg		4		ASA10-3	12/05/18 11:07 / cke
------------------	----	-------	--	---	--	---------	----------------------

 Lab ID: B18120023-012
 Client Sample ID: 1811953-012B, 512

 Collection Date: 11/15/18
 Date Received: 12/01/18
 Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
----------	--------	-------	------------	----	-------------	--------	--------------------

WATER EXTRACTABLE CONSTITUENTS

Bicarbonate, 1:2	57	mg/kg		4		ASA10-3	12/05/18 11:07 / cke
------------------	----	-------	--	---	--	---------	----------------------

 Lab ID: B18120023-013
 Client Sample ID: 1811953-013B, 513

 Collection Date: 11/15/18
 Date Received: 12/01/18
 Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
----------	--------	-------	------------	----	-------------	--------	--------------------

WATER EXTRACTABLE CONSTITUENTS

Bicarbonate, 1:2	52	mg/kg		4		ASA10-3	12/05/18 11:07 / cke
------------------	----	-------	--	---	--	---------	----------------------

 Lab ID: B18120023-014
 Client Sample ID: 1811953-014B, 514

 Collection Date: 11/15/18
 Date Received: 12/01/18
 Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
----------	--------	-------	------------	----	-------------	--------	--------------------

WATER EXTRACTABLE CONSTITUENTS

Bicarbonate, 1:2	45	mg/kg		4		ASA10-3	12/05/18 11:07 / cke
------------------	----	-------	--	---	--	---------	----------------------

 Lab ID: B18120023-015
 Client Sample ID: 1811953-015B, 515

 Collection Date: 11/15/18
 Date Received: 12/01/18
 Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
----------	--------	-------	------------	----	-------------	--------	--------------------

WATER EXTRACTABLE CONSTITUENTS

Bicarbonate, 1:2	68	mg/kg		4		ASA10-3	12/05/18 11:07 / cke
------------------	----	-------	--	---	--	---------	----------------------

 Report Definitions: RL - Analyte reporting limit.
 QCL - Quality control limit.

 MCL - Maximum contaminant level.
 ND - Not detected at the reporting limit.



Trust our People. Trust our Data.

 Billings, MT 800.735.4489 • Casper, WY 888.235.0515
 Gillette, WY 888.686.7175 • Helena, MT 877.472.0711

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

 Client: Hall Environmental
 Project: Not Indicated

Report Date: 12/10/18

 Lab ID: B18120023-016
 Client Sample ID: 1811953-016B, 516

 Collection Date: 11/15/18
 Date Received: 12/01/18
 Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
----------	--------	-------	------------	----	-------------	--------	--------------------

WATER EXTRACTABLE CONSTITUENTS

Bicarbonate, 1:2	40	mg/kg		4		ASA10-3	12/05/18 11:08 / cke
------------------	----	-------	--	---	--	---------	----------------------

 Lab ID: B18120023-017
 Client Sample ID: 1811953-017B, 517

 Collection Date: 11/15/18
 Date Received: 12/01/18
 Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
----------	--------	-------	------------	----	-------------	--------	--------------------

WATER EXTRACTABLE CONSTITUENTS

Bicarbonate, 1:2	29	mg/kg		4		ASA10-3	12/05/18 11:08 / cke
------------------	----	-------	--	---	--	---------	----------------------

 Lab ID: B18120023-018
 Client Sample ID: 1811953-018B, 518

 Collection Date: 11/15/18
 Date Received: 12/01/18
 Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
----------	--------	-------	------------	----	-------------	--------	--------------------

WATER EXTRACTABLE CONSTITUENTS

Bicarbonate, 1:2	39	mg/kg		4		ASA10-3	12/05/18 11:08 / cke
------------------	----	-------	--	---	--	---------	----------------------

 Lab ID: B18120023-019
 Client Sample ID: 1811953-019B, 519

 Collection Date: 11/15/18
 Date Received: 12/01/18
 Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
----------	--------	-------	------------	----	-------------	--------	--------------------

WATER EXTRACTABLE CONSTITUENTS

Bicarbonate, 1:2	65	mg/kg		4		ASA10-3	12/05/18 11:08 / cke
------------------	----	-------	--	---	--	---------	----------------------

 Lab ID: B18120023-020
 Client Sample ID: 1811953-020B, 520

 Collection Date: 11/15/18
 Date Received: 12/01/18
 Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
----------	--------	-------	------------	----	-------------	--------	--------------------

WATER EXTRACTABLE CONSTITUENTS

Bicarbonate, 1:2	54	mg/kg		4		ASA10-3	12/05/18 11:08 / cke
------------------	----	-------	--	---	--	---------	----------------------

 Report Definitions: RL - Analyte reporting limit.
 QCL - Quality control limit.

 MCL - Maximum contaminant level.
 ND - Not detected at the reporting limit.



Trust our People. Trust our Data.

 Billings, MT 800.735.4488 • Casper, WY 888.235.0515
 Gillette, WY 866.886.7175 • Helena, MT 877.472.0711

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated

Report Date: 12/10/18

Lab ID: B18120023-021
Client Sample ID: 1811953-021B, 604

Collection Date: 11/15/18
DateReceived: 12/01/18
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
----------	--------	-------	------------	----	-------------	--------	--------------------

WATER EXTRACTABLE CONSTITUENTS

Bicarbonate, 1:2	52	mg/kg		4		ASA10-3	12/05/18 11:08 / cke
------------------	----	-------	--	---	--	---------	----------------------

Lab ID: B18120023-022
Client Sample ID: 1811953-022B, 605

Collection Date: 11/15/18
DateReceived: 12/01/18
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
----------	--------	-------	------------	----	-------------	--------	--------------------

WATER EXTRACTABLE CONSTITUENTS

Bicarbonate, 1:2	55	mg/kg		4		ASA10-3	12/05/18 11:08 / cke
------------------	----	-------	--	---	--	---------	----------------------

Lab ID: B18120023-023
Client Sample ID: 1811953-023B, 606

Collection Date: 11/15/18
DateReceived: 12/01/18
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
----------	--------	-------	------------	----	-------------	--------	--------------------

WATER EXTRACTABLE CONSTITUENTS

Bicarbonate, 1:2	69	mg/kg		4		ASA10-3	12/05/18 11:08 / cke
------------------	----	-------	--	---	--	---------	----------------------

Lab ID: B18120023-024
Client Sample ID: 1811953-024B, S-1

Collection Date: 11/15/18
DateReceived: 12/01/18
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
----------	--------	-------	------------	----	-------------	--------	--------------------

WATER EXTRACTABLE CONSTITUENTS

Bicarbonate, 1:2	59	mg/kg		4		ASA10-3	12/05/18 11:08 / cke
------------------	----	-------	--	---	--	---------	----------------------

Lab ID: B18120023-025
Client Sample ID: 1811953-025B, S-2

Collection Date: 11/15/18
DateReceived: 12/01/18
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
----------	--------	-------	------------	----	-------------	--------	--------------------

WATER EXTRACTABLE CONSTITUENTS

Bicarbonate, 1:2	40	mg/kg		4		ASA10-3	12/05/18 11:08 / cke
------------------	----	-------	--	---	--	---------	----------------------

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
 ND - Not detected at the reporting limit.



Trust our People. Trust our Data.

Billings, MT 800.735.4489 • Casper, WY 888.235.0515
Gillette, WY 866.886.7175 • Helena, MT 877.472.0711**LABORATORY ANALYTICAL REPORT**

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated**Report Date:** 12/10/18**Lab ID:** B18120023-026
Client Sample ID: 1811953-026B, S-3**Collection Date:** 11/15/18**Date Received:** 12/01/18**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
WATER EXTRACTABLE CONSTITUENTS							
Bicarbonate, 1:2	50	mg/kg		4		ASA10-3	12/05/18 11:08 / cke

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



Trust our People. Trust our Data.

 Billings, MT 800.735.4489 • Casper, WY 800.235.0515
 Gillette, WY 800.686.7175 • Helena, MT 877.472.0711

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental

Report Date: 12/10/18

Project: Not Indicated

Work Order: B18120023

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: ASA10-3									Batch: 128206
Lab ID: B18120023-010A DUP	Sample Duplicate								
Bicarbonate, 1:2	66.4	mg/kg	4.0				0.1		12/05/18 11:07 20
Lab ID: LCS-128206	Laboratory Control Sample								
Bicarbonate, 1:2	176	mg/kg	4.0	119	70	130			12/05/18 11:07
Lab ID: B18120023-020A DUP	Sample Duplicate								
Bicarbonate, 1:2	54.9	mg/kg	4.0				2.4		12/05/18 11:08 20

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 1811953

20-Dec-18

Client: Gordon Environmental/PSC**Project:** Sundance Tank Farm

Sample ID	MB-41707		SampType: MBLK		TestCode: EPA Method 300.0: Anions					
Client ID:	PBS		Batch ID: 41707		RunNo: 55869					
Prep Date:	11/26/2018		Analysis Date: 11/26/2018		SeqNo: 1863738		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								
Sulfate	ND	1.5								

Sample ID	LCS-41707		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 41707		RunNo: 55869					
Prep Date:	11/26/2018		Analysis Date: 11/26/2018		SeqNo: 1863739		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.4	90	110			
Sulfate	29	1.5	30.00	0	98.0	90	110			

Sample ID	MB-41729		SampType: mblk		TestCode: EPA Method 300.0: Anions					
Client ID:	PBS		Batch ID: 41729		RunNo: 55875					
Prep Date:	11/27/2018		Analysis Date: 11/27/2018		SeqNo: 1865031		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								
Sulfate	ND	1.5								

Sample ID	LCS-41729		SampType: Ics		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 41729		RunNo: 55875					
Prep Date:	11/27/2018		Analysis Date: 11/27/2018		SeqNo: 1865032		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.2	90	110			
Sulfate	30	1.5	30.00	0	99.0	90	110			

Sample ID	MB-41755		SampType: MBLK		TestCode: EPA Method 300.0: Anions					
Client ID:	PBS		Batch ID: 41755		RunNo: 55915					
Prep Date:	11/28/2018		Analysis Date: 11/28/2018		SeqNo: 1866465		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								
Sulfate	ND	1.5								

Sample ID	LCS-41755		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 41755		RunNo: 55915					
Prep Date:	11/28/2018		Analysis Date: 11/28/2018		SeqNo: 1866466		Units: mg/Kg			
Analyte	Result	POL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Page 27 of 42

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1811953
20-Dec-18

Client: Gordon Environmental/PSC
Project: Sundance Tank Farm

Sample ID	LCS-41755	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	41755	RunNo:	55915					
Prep Date:	11/28/2018	Analysis Date:	11/28/2018	SeqNo:	1866466	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.3	90	110			
Sulfate	30	1.5	30.00	0	98.9	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	Page 28 of 42
D Sample Diluted Due to Matrix	E Value above quantitation range	
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	
ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
PQL Practical Quantitative Limit	RL Reporting Detection Limit	
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified	

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 1811953

20-Dec-18

Client: Gordon Environmental/PSC**Project:** Sundance Tank Farm

Sample ID	LCS-41682	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	41682	RunNo:	55889					
Prep Date:	11/21/2018	Analysis Date:	11/27/2018	SeqNo:	1864529	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.3	70	130			
Surr: DNOP	4.8		5.000		96.8	50.6	138			

Sample ID	MB-41682	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	41682	RunNo:	55889					
Prep Date:	11/21/2018	Analysis Date:	11/27/2018	SeqNo:	1864530	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		105	50.6	138			

Sample ID	MB-41673	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	41673	RunNo:	55941					
Prep Date:	11/21/2018	Analysis Date:	11/29/2018	SeqNo:	1868530	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.6		10.00		96.1	50.6	138			

Sample ID	LCS-41673	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	41673	RunNo:	55941					
Prep Date:	11/21/2018	Analysis Date:	11/29/2018	SeqNo:	1868531	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	10	50.00	0	80.5	70	130			
Surr: DNOP	4.5		5.000		90.1	50.6	138			

Sample ID	1811953-020AMS	SampType:	MS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	520	Batch ID:	41673	RunNo:	55920					
Prep Date:	11/21/2018	Analysis Date:	12/1/2018	SeqNo:	1870016	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	250	9.5	47.62	183.2	144	53.5	126			S
Surr: DNOP	5.1		4.762		107	50.6	138			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

Page 29 of 42

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1811953

20-Dec-18

Client: Gordon Environmental/PSC

Project: Sundance Tank Farm

Sample ID	1811953-020AMSD	SampType:	MSD	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	520	Batch ID:	41673	RunNo:	55920					
Prep Date:	11/21/2018	Analysis Date:	12/1/2018	SeqNo:	1870017	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	230	9.5	47.48	183.2	98.4	53.5	126	9.07	21.7	
Surr: DNOP	5.0		4.748		106	50.6	138	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	Page 30 of 42
D Sample Diluted Due to Matrix	E Value above quantitation range	
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	
ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
PQL Practical Quantitative Limit	RL Reporting Detection Limit	
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified	

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 1811953

20-Dec-18

Client: Gordon Environmental/PSC**Project:** Sundance Tank Farm

Sample ID MB-41638	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: 41638			RunNo: 55809						
Prep Date: 11/20/2018	Analysis Date: 11/21/2018			SeqNo: 1861284	Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	870		1000		86.9	73.8	119			

Sample ID LCS-41638	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: 41638			RunNo: 55809						
Prep Date: 11/20/2018	Analysis Date: 11/21/2018			SeqNo: 1861285	Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	80.1	123			
Surr: BFB	1000		1000		104	73.8	119			

Sample ID 1811953-001AMS	SampType: MS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: 500	Batch ID: 41638			RunNo: 55809						
Prep Date: 11/20/2018	Analysis Date: 11/21/2018			SeqNo: 1861287	Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	24	23.63	0	120	77.8	128			D
Surr: BFB	4300		4726		91.2	73.8	119			D

Sample ID 1811953-001AMSD	SampType: MSD			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: 500	Batch ID: 41638			RunNo: 55809						
Prep Date: 11/20/2018	Analysis Date: 11/21/2018			SeqNo: 1861288	Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	23	23.32	0	110	77.8	128	10.0	20	D
Surr: BFB	4200		4664		89.7	73.8	119	0	0	D

Sample ID MB-41650	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: 41650			RunNo: 55808						
Prep Date: 11/20/2018	Analysis Date: 11/21/2018			SeqNo: 1861364	Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		101	73.8	119			

Sample ID LCS-41650	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: 41650			RunNo: 55808						
Prep Date: 11/20/2018	Analysis Date: 11/21/2018			SeqNo: 1861365	Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Page 31 of 42

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 1811953

20-Dec-18

Client: Gordon Environmental/PSC**Project:** Sundance Tank Farm

Sample ID	LCS-41650		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 41650		RunNo: 55808					
Prep Date:	11/20/2018		Analysis Date: 11/21/2018		SeqNo: 1861365		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.8	80.1	123			
Surr: BFB	1100		1000		112	73.8	119			

Sample ID	1811953-021AMS	SampType: MS			TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	604	Batch ID: 41650			RunNo: 55808					
Prep Date:	11/20/2018	Analysis Date: 11/21/2018			SeqNo: 1861378		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.8	23.92	0	102	77.8	128			
Surr: BFB	1100		956.9		115	73.8	119			

Sample ID	1811953-021AMSD		SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	604		Batch ID: 41650		RunNo: 55808					
Prep Date:	11/20/2018		Analysis Date: 11/21/2018		SeqNo: 1861379		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.8	23.79	0	101	77.8	128	1.44	20	
Surr: BFB	1100		951.5		114	73.8	119	0	0	

Qualifiers:

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

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 1811953

20-Dec-18

Client: Gordon Environmental/PSC**Project:** Sundance Tank Farm

Sample ID MB-41638	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 41638		RunNo: 55809							
Prep Date: 11/20/2018	Analysis Date: 11/21/2018		SeqNo: 1861319		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	0.10								
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.89		1.000		88.9	80	120			

Sample ID LCS-41638	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 41638		RunNo: 55809							
Prep Date: 11/20/2018	Analysis Date: 11/21/2018		SeqNo: 1861320		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.89	0.10	1.000	0	89.4	80	120			
Benzene	0.97	0.025	1.000	0	96.9	80	120			
Toluene	1.0	0.050	1.000	0	102	80	120			
Ethylbenzene	1.0	0.050	1.000	0	103	80	120			
Xylenes, Total	3.1	0.10	3.000	0	102	80	120			
Surr: 4-Bromofluorobenzene	0.94		1.000		94.2	80	120			

Sample ID 1811953-002AMS	SampType: MS		TestCode: EPA Method 8021B: Volatiles							
Client ID: 501	Batch ID: 41638		RunNo: 55809							
Prep Date: 11/20/2018	Analysis Date: 11/21/2018		SeqNo: 1861323		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.85	0.47	0.9320	0	90.9	51.7	125			D
Benzene	0.96	0.12	0.9320	0.01579	101	63.9	127			D
Toluene	1.0	0.23	0.9320	0	110	69.9	131			D
Ethylbenzene	1.0	0.23	0.9320	0.01794	109	71	132			D
Xylenes, Total	3.1	0.47	2.796	0	111	71.8	131			D
Surr: 4-Bromofluorobenzene	4.3		4.660		92.5	80	120			D

Sample ID 1811953-002AMSD	SampType: MSD		TestCode: EPA Method 8021B: Volatiles							
Client ID: 501	Batch ID: 41638		RunNo: 55809							
Prep Date: 11/20/2018	Analysis Date: 11/21/2018		SeqNo: 1861324		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.77	0.48	0.9606	0	79.6	51.7	125	10.2	20	D
Benzene	0.85	0.12	0.9606	0.01579	86.8	63.9	127	12.2	20	D
Toluene	0.91	0.24	0.9606	0	94.3	69.9	131	12.1	20	D
Ethylbenzene	0.92	0.24	0.9606	0.01794	93.5	71	132	12.4	20	D

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Page 33 of 42

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 1811953

20-Dec-18

Client: Gordon Environmental/PSC**Project:** Sundance Tank Farm

Sample ID	1811953-002AMSD		SampType: MSD		TestCode: EPA Method 8021B: Volatiles					
Client ID:	501		Batch ID: 41638		RunNo: 55809					
Prep Date:	11/20/2018		Analysis Date: 11/21/2018		SeqNo: 1861324		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Xylenes, Total	2.7	0.48	2.882	0	95.1	71.8	131	12.2	20	D
Surr: 4-Bromofluorobenzene	4.3		4.803		90.0	80	120	0	0	D

Sample ID	MB-41650		SampType: MBLK		TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBS		Batch ID: 41650		RunNo: 55808					
Prep Date:	11/20/2018		Analysis Date: 11/21/2018		SeqNo: 1861396		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	0.10								
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		112	80	120			

Sample ID	LCS-41650		SampType: LCS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS		Batch ID: 41650		RunNo: 55808					
Prep Date:	11/20/2018		Analysis Date: 11/21/2018		SeqNo: 1861397		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.92	0.10	1.000	0	91.9	80	120			
Benzene	0.93	0.025	1.000	0	92.5	80	120			
Toluene	0.97	0.050	1.000	0	97.4	80	120			
Ethylbenzene	0.99	0.050	1.000	0	98.7	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.2	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		113	80	120			

Sample ID	1811953-022AMS	SampType: MS			TestCode: EPA Method 8021B: Volatiles					
Client ID:	605	Batch ID: 41650			RunNo: 55808					
Prep Date:	11/20/2018	Analysis Date: 11/21/2018			SeqNo: 1861407		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.95	0.099	0.9891	0	95.9	51.7	125			
Benzene	0.94	0.025	0.9891	0	94.6	63.9	127			
Toluene	1.0	0.049	0.9891	0.01006	100	69.9	131			
Ethylbenzene	1.0	0.049	0.9891	0	103	71	132			
Xylenes, Total	3.1	0.099	2.967	0	105	71.8	131			
Surr: 4-Bromofluorobenzene	1.2		0.9891		117	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1811953

20-Dec-18

Client: Gordon Environmental/PSC

Project: Sundance Tank Farm

Sample ID	1811953-022AMSD	SampType:	MSD	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	605	Batch ID:	41650	RunNo:	55808					
Prep Date:	11/20/2018	Analysis Date:	11/21/2018	SeqNo:	1861408	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.87	0.092	0.9234	0	94.6	51.7	125	8.25	20	
Benzene	0.85	0.023	0.9234	0	92.3	63.9	127	9.39	20	
Toluene	0.90	0.046	0.9234	0.01006	96.4	69.9	131	10.7	20	
Ethylbenzene	0.91	0.046	0.9234	0	99.0	71	132	10.4	20	
Xylenes, Total	2.8	0.092	2.770	0	100	71.8	131	10.9	20	
Surr: 4-Bromofluorobenzene	1.0		0.9234		110	80	120	0	0	

Qualifiers:

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

Page 35 of 42

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 1811953

20-Dec-18

Client: Gordon Environmental/PSC**Project:** Sundance Tank Farm

Sample ID	MB-41852	SampType:	MBLK	TestCode:	EPA Method 7471: Mercury					
Client ID:	PBS	Batch ID:	41852	RunNo:	56049					
Prep Date:	12/3/2018	Analysis Date:	12/3/2018	SeqNo:	1871798	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	LCS-41852	SampType:	LCS	TestCode:	EPA Method 7471: Mercury					
Client ID:	LCSS	Batch ID:	41852	RunNo:	56049					
Prep Date:	12/3/2018	Analysis Date:	12/3/2018	SeqNo:	1871799	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.37	0.033	0.1667	0	220	80	120			ES

Sample ID	LCSLL-41852	SampType:	LCSLL	TestCode:	EPA Method 7471: Mercury					
Client ID:	BatchQC	Batch ID:	41852	RunNo:	56049					
Prep Date:	12/3/2018	Analysis Date:	12/3/2018	SeqNo:	1871804	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033	0.006660	0	130	70	130			S

Sample ID	MB-41892	SampType:	MBLK	TestCode:	EPA Method 7471: Mercury					
Client ID:	PBS	Batch ID:	41892	RunNo:	56071					
Prep Date:	12/4/2018	Analysis Date:	12/4/2018	SeqNo:	1872458	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	LCS-41892	SampType:	LCS	TestCode:	EPA Method 7471: Mercury					
Client ID:	LCSS	Batch ID:	41892	RunNo:	56071					
Prep Date:	12/4/2018	Analysis Date:	12/4/2018	SeqNo:	1872459	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	101	80	120			

Sample ID	LLCS-41892	SampType:	LCSLL	TestCode:	EPA Method 7471: Mercury					
Client ID:	BatchQC	Batch ID:	41892	RunNo:	56071					
Prep Date:	12/4/2018	Analysis Date:	12/4/2018	SeqNo:	1872460	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033	0.006660	0	136	70	130			S

Qualifiers:

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

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 1811953

20-Dec-18

Client: Gordon Environmental/PSC**Project:** Sundance Tank Farm

Sample ID	1811953-020AMS	SampType:	MS	TestCode:	EPA Method 7471: Mercury					
Client ID:	520	Batch ID:	41892	RunNo:	56071					
Prep Date:	12/4/2018	Analysis Date:	12/4/2018	SeqNo:	1872462	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.15	0.032	0.1632	0.03277	74.7	80	120			S

Sample ID	1811953-020AMSD	SampType:	MSD	TestCode:	EPA Method 7471: Mercury					
Client ID:	520	Batch ID:	41892	RunNo:	56071					
Prep Date:	12/4/2018	Analysis Date:	12/4/2018	SeqNo:	1872463	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.15	0.033	0.1648	0.03277	73.8	80	120	0.225	20	S

Sample ID	MB-41921	SampType:	MBLK	TestCode:	EPA Method 7471: Mercury					
Client ID:	PBS	Batch ID:	41921	RunNo:	56131					
Prep Date:	12/5/2018	Analysis Date:	12/6/2018	SeqNo:	1875001	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	LCS-41921	SampType:	LCS	TestCode:	EPA Method 7471: Mercury					
Client ID:	LCSS	Batch ID:	41921	RunNo:	56131					
Prep Date:	12/5/2018	Analysis Date:	12/6/2018	SeqNo:	1875013	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	99.9	80	120			

Sample ID	LLLCS-41921	SampType:	LCSLL	TestCode:	EPA Method 7471: Mercury					
Client ID:	BatchQC	Batch ID:	41921	RunNo:	56131					
Prep Date:	12/5/2018	Analysis Date:	12/6/2018	SeqNo:	1875015	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033	0.006660	0	117	70	130			

Sample ID	1811953-002AMS	SampType:	MS	TestCode:	EPA Method 7471: Mercury					
Client ID:	501	Batch ID:	41921	RunNo:	56131					
Prep Date:	12/5/2018	Analysis Date:	12/6/2018	SeqNo:	1875032	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.20	0.16	0.1654	0	119	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1811953

20-Dec-18

Client: Gordon Environmental/PSC

Project: Sundance Tank Farm

Sample ID	1811953-002AMSD	SampType:	MSD	TestCode:	EPA Method 7471: Mercury						
Client ID:	501	Batch ID:	41921	RunNo:	56131						
Prep Date:	12/5/2018	Analysis Date:	12/6/2018	SeqNo:	1875033	Units:	mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.18	0.16	0.1650	0	111	80	120	7.31	20		

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	Page 38 of 42
D Sample Diluted Due to Matrix	E Value above quantitation range	
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	
ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
PQL Practical Quantitative Limit	RL Reporting Detection Limit	
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified	

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 1811953

20-Dec-18

Client: Gordon Environmental/PSC**Project:** Sundance Tank Farm

Sample ID MB-41817	SampType: MBLK	TestCode: EPA Method 6010B: Soil Metals
Client ID: PBS	Batch ID: 41817	RunNo: 56083
Prep Date: 11/30/2018	Analysis Date: 12/4/2018	SeqNo: 1873087 Units: mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	2.5								
Barium	ND	0.10								
Cadmium	ND	0.10								
Calcium	ND	25								
Chromium	ND	0.30								
Lead	ND	0.25								
Magnesium	ND	25								
Potassium	ND	50								
Selenium	ND	2.5								
Silver	ND	0.25								
Sodium	ND	25								

Sample ID LCS-41817	SampType: LCS	TestCode: EPA Method 6010B: Soil Metals
Client ID: LCSS	Batch ID: 41817	RunNo: 56083
Prep Date: 11/30/2018	Analysis Date: 12/4/2018	SeqNo: 1873088 Units: mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	26	2.5	25.00	0	103	80	120			
Barium	25	0.10	25.00	0	100	80	120			
Cadmium	25	0.10	25.00	0	101	80	120			
Calcium	2600	25	2500	0	102	80	120			
Chromium	25	0.30	25.00	0	98.9	80	120			
Lead	25	0.25	25.00	0	101	80	120			
Magnesium	2500	25	2500	0	101	80	120			
Potassium	2500	50	2500	0	99.1	80	120			
Selenium	25	2.5	25.00	0	101	80	120			
Silver	5.1	0.25	5.000	0	102	80	120			
Sodium	2600	25	2500	0	103	80	120			

Sample ID MB-41863	SampType: MBLK	TestCode: EPA Method 6010B: Soil Metals
Client ID: PBS	Batch ID: 41863	RunNo: 56083
Prep Date: 12/3/2018	Analysis Date: 12/4/2018	SeqNo: 1873090 Units: mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	2.5								
Barium	ND	0.10								
Cadmium	ND	0.10								
Calcium	ND	25								
Chromium	ND	0.30								
Magnesium	ND	25								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

Page 39 of 42

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 1811953

20-Dec-18

Client: Gordon Environmental/PSC**Project:** Sundance Tank Farm

Sample ID	MB-41863		SampType:	MBLK		TestCode:	EPA Method 6010B: Soil Metals			
Client ID:	PBS		Batch ID:	41863		RunNo:	56083			
Prep Date:	12/3/2018		Analysis Date:	12/4/2018		SeqNo:	1873090		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Potassium	ND	50								
Selenium	ND	2.5								
Silver	ND	0.25								
Sodium	ND	25								

Sample ID	LCS-41863		SampType:	LCS		TestCode:	EPA Method 6010B: Soil Metals			
Client ID:	LCSS		Batch ID:	41863		RunNo:	56083			
Prep Date:	12/3/2018		Analysis Date:	12/4/2018		SeqNo:	1873091		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	25	2.5	25.00	0	98.9	80	120			
Barium	24	0.10	25.00	0	96.7	80	120			
Cadmium	24	0.10	25.00	0	97.8	80	120			
Calcium	2600	25	2500	0	105	80	120			
Chromium	24	0.30	25.00	0	96.1	80	120			
Magnesium	2600	25	2500	0	104	80	120			
Potassium	2600	50	2500	0	103	80	120			
Selenium	25	2.5	25.00	0	101	80	120			
Silver	4.9	0.25	5.000	0	98.0	80	120			
Sodium	2600	25	2500	0	102	80	120			

Sample ID	1811953-019AMS		SampType:	MS		TestCode:	EPA Method 6010B: Soil Metals			
Client ID:	519		Batch ID:	41817		RunNo:	56083			
Prep Date:	11/30/2018		Analysis Date:	12/4/2018		SeqNo:	1873205		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	18	0.096	24.11	0	75.2	75	125			
Potassium	2600	48	2411	728.9	79.5	75	125			
Silver	6.0	0.24	4.823	2.077	80.8	75	125			

Sample ID	1811953-019AMSD		SampType:	MSD		TestCode:	EPA Method 6010B: Soil Metals			
Client ID:	519		Batch ID:	41817		RunNo:	56083			
Prep Date:	11/30/2018		Analysis Date:	12/4/2018		SeqNo:	1873206		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	18	0.096	24.11	0	75.8	75	125	0.781	20	
Potassium	2700	48	2411	728.9	81.5	75	125	1.81	20	
Silver	5.9	0.24	4.823	2.077	79.6	75	125	0.956	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 1811953

20-Dec-18

Client: Gordon Environmental/PSC**Project:** Sundance Tank Farm

Sample ID	MB-41863	SampType:	MBLK	TestCode:	EPA Method 6010B: Soil Metals					
Client ID:	PBS	Batch ID:	41863	RunNo:	56150					
Prep Date:	12/3/2018	Analysis Date:	12/6/2018	SeqNo:	1875555	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.25								

Sample ID	LCS-41863	SampType:	LCS	TestCode:	EPA Method 6010B: Soil Metals					
Client ID:	LCSS	Batch ID:	41863	RunNo:	56150					
Prep Date:	12/3/2018	Analysis Date:	12/6/2018	SeqNo:	1875556	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	25	0.25	25.00	0	99.0	80	120			

Sample ID	MB-41817	SampType:	MBLK	TestCode:	EPA Method 6010B: Soil Metals					
Client ID:	PBS	Batch ID:	41817	RunNo:	56300					
Prep Date:	11/30/2018	Analysis Date:	12/12/2018	SeqNo:	1881469	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	ND	0.30								

Sample ID	LCS-41817	SampType:	LCS	TestCode:	EPA Method 6010B: Soil Metals					
Client ID:	LCSS	Batch ID:	41817	RunNo:	56300					
Prep Date:	11/30/2018	Analysis Date:	12/12/2018	SeqNo:	1881470	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	25	0.30	25.00	0	99.1	80	120			

Sample ID	1811953-019AMS	SampType:	MS	TestCode:	EPA Method 6010B: Soil Metals					
Client ID:	519	Batch ID:	41817	RunNo:	56300					
Prep Date:	11/30/2018	Analysis Date:	12/12/2018	SeqNo:	1881473	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	23	2.4	24.11	4.119	76.6	75	125			
Chromium	19	0.29	24.11	3.091	66.6	75	125			S
Lead	17	0.24	24.11	0.3832	68.5	75	125			S
Selenium	26	2.4	24.11	6.359	83.1	75	125			
Sodium	3300	24	2411	1302	82.0	75	125			

Sample ID	1811953-019AMSD	SampType:	MSD	TestCode:	EPA Method 6010B: Soil Metals					
Client ID:	519	Batch ID:	41817	RunNo:	56300					
Prep Date:	11/30/2018	Analysis Date:	12/12/2018	SeqNo:	1881474	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	24	2.4	24.11	4.119	82.9	75	125	6.50	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Page 41 of 42

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 1811953

20-Dec-18

Client: Gordon Environmental/PSC**Project:** Sundance Tank Farm

Sample ID	1811953-019AMSD		SampType: MSD		TestCode: EPA Method 6010B: Soil Metals					
Client ID:	519		Batch ID: 41817		RunNo: 56300					
Prep Date:	11/30/2018		Analysis Date: 12/12/2018		SeqNo: 1881474		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	19	0.29	24.11	3.091	68.0	75	125	1.80	20	S
Lead	17	0.24	24.11	0.3832	70.1	75	125	2.26	20	S
Selenium	27	2.4	24.11	6.359	87.0	75	125	3.47	20	
Sodium	3300	24	2411	1302	84.6	75	125	1.87	20	

Sample ID	1811953-019APS		SampType: PS			TestCode: EPA Method 6010B: Soil Metals				
Client ID:	519		Batch ID: 41817			RunNo: 56300				
Prep Date:			Analysis Date: 12/12/2018			SeqNo: 1881475		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	22	0.29	23.93	3.091	80.6	80	120			
Lead	20	0.24	23.93	0.3832	80.1	80	120			

Sample ID	1811953-019AMS	SampType: MS				TestCode: EPA Method 6010B: Soil Metals				
Client ID:	519	Batch ID: 41817				RunNo: 56300				
Prep Date:	11/30/2018	Analysis Date: 12/12/2018				SeqNo: 1881481		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	660	0.48	24.11	695.7	-133	75	125			S

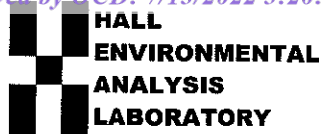
Sample ID	1811953-019AMSD		SampType: MSD		TestCode: EPA Method 6010B: Soil Metals					
Client ID:	519		Batch ID: 41817		RunNo: 56300					
Prep Date:	11/30/2018		Analysis Date: 12/12/2018		SeqNo: 1881482		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	510	0.48	24.11	695.7	-784	75	125	26.8	20	RS

Sample ID	1811953-019APS		SampType: PS		TestCode: EPA Method 6010B: Soil Metals					
Client ID:	519		Batch ID: 41817		RunNo: 56300					
Prep Date:			Analysis Date: 12/12/2018		SeqNo: 1881483		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	810	0.48	119.7	695.7	96.0	80	120			

Qualifiers:

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

Page 42 of 42



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

Sample Log-In Check List

Client Name: GEI

Work Order Number: 1811953

RcptNo: 1

Received By: Michelle Garcia 11/16/2018 9:33:00 AM

Completed By: Erin Melendrez 11/19/2018 9:27:26 AM

Reviewed By:

JAB 11/19/18

LB: JU 11/19-18

Michelle Garcia

U. U. G.

Chain of Custody1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐

2. How was the sample delivered? Client

Log In3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐4. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐5. Sample(s) in proper container(s)? Yes ☒ No ☐6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒10. Were any sample containers received broken? Yes ☐ No ☒11. Does paperwork match bottle labels? Yes ☒ No ☐

(Note discrepancies on chain of custody)

12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐13. Is it clear what analyses were requested? Yes ☒ No ☐14. Were all holding times able to be met? Yes ☒ No ☐

(If no, notify customer for authorization.)

of preserved
bottles checked
for pH:

(<2 or >12-unless noted)

Adjusted?

Checked by:

Special Handling (if applicable)15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via:

☐ eMail☐ Phone☐ Fax☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.2	Good	Not Present			
2	0.7	Good	Not Present			
3	1.1	Good	Not Present			

Chain-of-Custody Record

Client: Gordon - PSC

Turn-Around Time: ☒ Standard ☐ Rush

Project Name: Surdance Tank Farm

Project #: ABQ NM 87124

Project Manager: Charles Fiedler

Mailing Address: 333 Rio Rancho Blvd NE

Phone #: 505 887 6990

email or Fax#: CKilmer@tran-psc.com

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

Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other

☒ EDD (Type)

Sampler: Clay Silmer

On Ice: ☒ Yes ☐ No

of Coolers: 3

Cooler Temp (including CF): 2.2 - 10 CF = 1.2

Container Type and # (2) 250mL

Preservative Type by 1.0 CF = 0.7

HEAL No: 1.1

1811953

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	Cooler Temp (including CF)	BTEX / MTBE / TMBs (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCBs	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO ₃ , NO ₂ , PO ₄ , SO ₄	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	No, Ca, K, Mg, Cl, SO ₄	bicarbonate, Phosphate
11-15-18		Soil	513				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
			514				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
			515				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
			516				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
			517				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
			518				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
			519				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
			520				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
			604				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
			605				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
			606				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
			5-1				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Relinquished by: Clay Silmer

Relinquished by: Clay Silmer

Date: 11-15-18 Time: 9:33

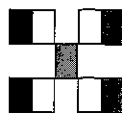
Date: 11/16/18 Time: 0933

Received by: Clay Silmer Date: 11/16/18 Time: 0933

Received by: Clay Silmer Date: 11/16/18 Time: 0933

[illegible]

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



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

[illegible]

Remarks:

Date: 11/16/00	Time: 9:33	Relinquished by: Guy Turner	Received by: Michael J	Date: 11/16/00	Time: 0533
Date:	Time:	Relinquished by:	Received by:	Date:	Time:

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 125187

CONDITIONS

Operator: SUNDANCE SERVICES, INC. P.O. Box 1737 Eunice, NM 88231	OGRID: 149972
	Action Number: 125187
	Action Type: [C-137] Non-Fee SWMF Submittal (SWMF NON-FEE SUBMITTAL)

CONDITIONS

Created By	Condition	Condition Date
bjones	None	7/13/2022