

**DELINEATION INVESTIGATION REPORT**  
**Blue Dunn #1 Site Release**  
**Lea County, New Mexico**

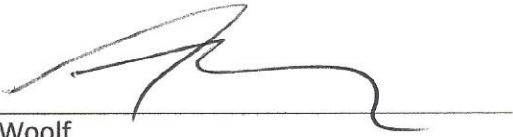
December 15, 2016

Prepared for:

Siana Operating LLC  
12012 Wickchester Lane, Ste 410  
Houston, Texas 77079

Prepared by:

Charger Services, Inc.  
3300 N. A Street, Bldg 7  
Midland, Texas 79705



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Coty Woolf  
Environmental Professional

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## **1.0 EXECUTIVE SUMMARY**

This report is submitted to Siana Operating LLC (Siana), by Charger Services, Inc., (Charger), to present the delineation investigation of a crude oil and produced water spill at the Blue Dunn #1 Site, located in Lea County, New Mexico. The spill occurred before March 24, 2016, because of equipment failure. An unknown quantity of oil and produced water were lost at the Site and covering approximately 6,100 sq. ft. of the facility. Zero bbl of oil and water were recovered with unknown total lost.

On March 24, 2016, Charger personnel arrived at the Blue Dunn #1 Site to initiate an investigation into the release. While at the site, Charger personnel collected photo documentation of the incident and established a work plan with Siana field personnel.

On October 10, 2016, October 17, 2016, and October 20, 2016, Charger personnel delineated the Site. The samples were analyzed for BTEX, TPH, and Chlorides. The laboratory ran samples consecutively until below NMOCD action limits for each sample point.

Remediation recommendations will be submitted in a separate proposal.

## **2.0 INTRODUCTION**

This report is submitted to Siana Operating LLC (Siana), by Charger Services, Inc., (Charger), to present the delineation investigation of a crude oil and produced water spill at the Blue Dunn #1 Site, located in Lea County, New Mexico. The spill occurred before March 24, 2016, because of equipment failure. An unknown quantity of oil and produced water were lost at the Site and covering approximately 6,100 sq. ft. of the facility. Zero bbl of oil and water were recovered with unknown total lost. The geodetic position for the spill is 32°37'57.21"N, 103°19'56.25"W. Figure 1 presents a topographic map. Figure 2 presents an aerial map.

### **2.1 Setting**

The setting is as follows:

- The Site is located approximately 4 miles west of Monument, in Lea County, New Mexico;
- The elevation is approximately 3,700 feet above mean sea level (MSL);
- Groundwater was encountered at 46 ft bgs;
- The topography is slightly undulating and slopes to the northeast;
- The nearest water well is located about 0.3 miles east;
- The closet surface water feature is a playa lake (seasonal) located about 0.3 miles east of the Site;
- Runoff is to the north and east.

## **3.0 SPILL INVESTIGATION**

On March 24, 2016, Charger personnel arrived at the Site to initiate an investigation into the crude oil and produced water release. While at the Site, Charger personnel collected photo documentation of the releases and established a work plan.

On October 10, 2016, October 17, 2016, and October 20, 2016, Charger personnel used an air rotary drill to collect soil samples at seven (7) boring locations. The samples were collected at 2 ft, 5ft, 10 ft, etc. to 100 foot below ground surface (bgs) and analyzed by Permian Basin Environmental Lab, LP, (PBELAB) for total petroleum hydrocarbons (TPH) by method 8015M, BTEX by method 8021B, and Chlorides by method E-300.

The laboratory reported chlorides concentrations above the NMOCD action level of 250 milligrams per kilogram (mg/kg) in samples down to 40 ft bgs. Table 1 presents a summary of the laboratory analysis. Appendix B presents the laboratory reports.

## **4.0 RECOMMENDATION**

Remediation recommendations will be submitted in a separate proposal.

## TABLES

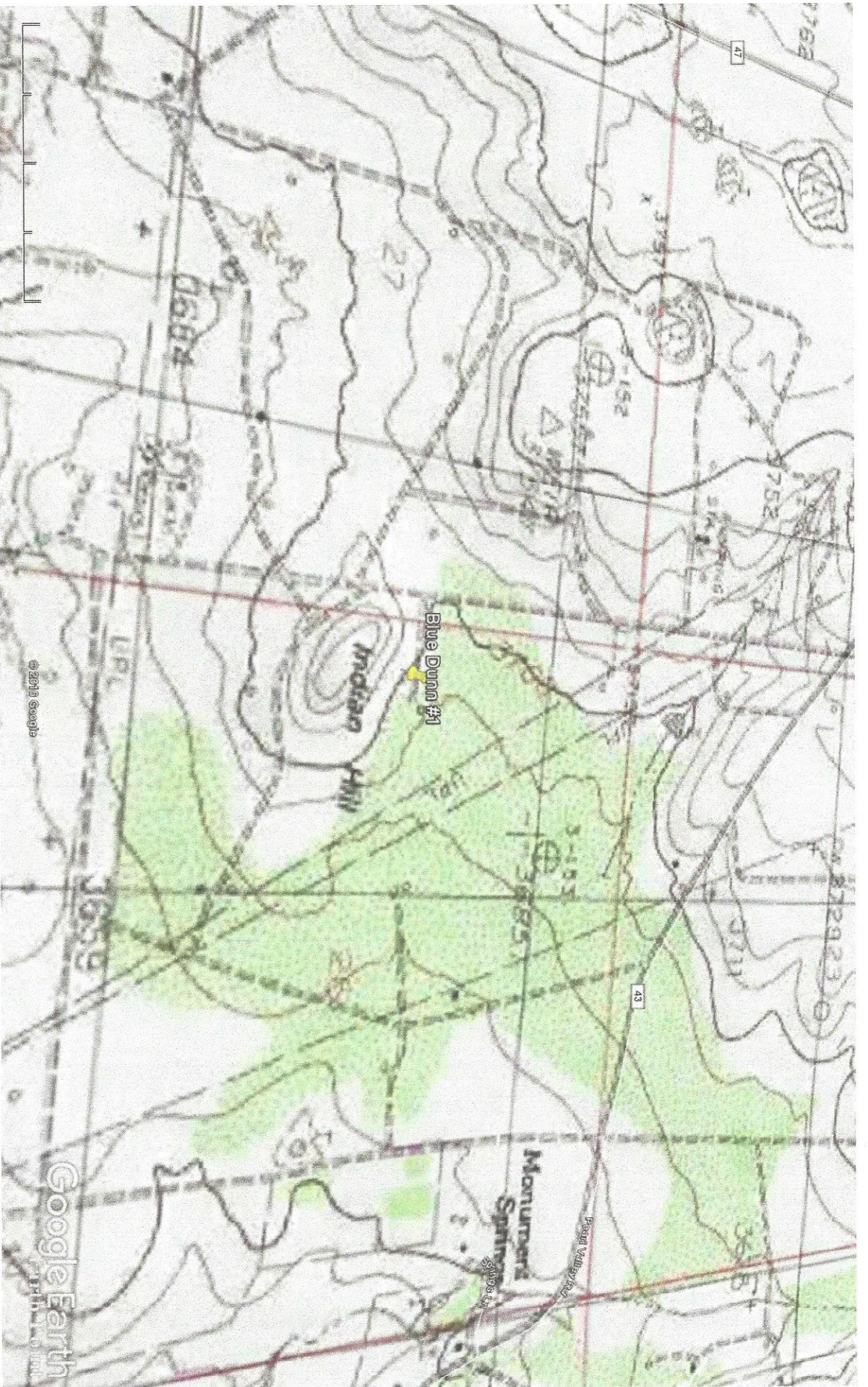
Table 1  
Soil Samples Analytical Summary  
Siana Oil and Gas, Blue Dunn #1  
Lea County, New Mexico

Boring	Depth Feet BGS	Date	Chloride mg/Kg	Benzene mg/kg	Toluene mg/kg	Ethylbenzene mg/kg	Xylene mg/kg	GRO mg/Kg	DRO mg/Kg	Oil mg/Kg	Total TPH mg/Kg
RRAL:											
SB-1	2 - 3	10/17/2016	213	<0.00110	<0.00110	<0.00110	<0.00220	640	4,240.0	616.0	5,496
	5 - 6	10/17/2016	472	--	--	--	--	60.0	767	108	935
	10 - 11	10/17/2016	1,480	--	--	--	--	--	--	--	0
	15 - 16	10/17/2016	563	--	--	--	--	--	--	--	0
	20 - 21	10/17/2016	238	--	--	--	--	--	--	--	0
	25 - 26	10/17/2016	316	--	--	--	--	--	--	--	0
	30 - 31	10/17/2016	239	--	--	--	--	--	--	--	0
	35 - 36	10/17/2016	320	--	--	--	--	--	--	--	0
	40 - 41	10/17/2016	348	--	--	--	--	--	--	--	0
	45 - 46	10/17/2016	185	--	--	--	--	--	--	--	0
SB-2	2 - 3	10/10/2016	573	<0.00106	<0.00213	<0.00106	<0.00213	245	2,010	248	2,503
	5 - 6	10/10/2016	163	<0.00108	<0.00215	0.0122	0.01374	32.4	302	72.6	407
	10 - 11	10/10/2016	46.6	<0.00111	<0.00222	0.00206	0.00321	<27.8	97.1	32.9	130
	15 - 16	10/10/2016	69.3	<0.00111	<0.00222	<0.00111	0.00190	28.4	78.8	<27.8	107
	20 - 21	10/10/2016	39.5	<0.00105	<0.00211	<0.00105	<0.00211	<26.3	57.1	<26.3	57.1
	25 - 26	10/10/2016	36.0	<0.00105	<0.00211	<0.00105	<0.00211	<26.4	51.1	26.6	77.7
SB-3	2 - 3	10/10/2016	344	<0.00108	<0.00215	<0.00108	<0.00215	<26.9	142	38.4	180
	5 - 6	10/10/2016	86.3	<0.00118	<0.00235	<0.00118	<0.00235	<29.4	<29.4	<29.4	<29.4
	10 - 11	10/10/2016	186	<0.00109	<0.00217	<0.00109	<0.00217	<27.2	48.4	<27.2	48.4
	15 - 16	10/10/2016	5.30	<0.00109	<0.00217	0.00239	0.00654	<27.2	<27.2	<27.2	<27.2
	20 - 21	10/10/2016	196	<0.00103	<0.00206	<0.00103	<0.00206	<25.8	47.8	<25.8	47.8
	25 - 26	10/10/2016	346	<0.00110	<0.00220	<0.00110	<0.00220	<27.5	36.2	<27.5	36.2
	30 - 31	10/10/2016	328	<0.00103	<0.00206	<0.00103	<0.00206	<25.8	64.9	30.9	95.8
	35 - 36	10/10/2016	197	<0.00104	<0.00208	<0.00104	<0.00208	<26.0	48.1	<26.0	48.1
	40 - 41	10/10/2016	156	<0.00104	<0.00208	<0.00104	<0.00208	<26.0	30.2	<26.0	30.2
	45 - 46	10/10/2016	51.8	<0.00108	<0.00215	<0.00108	<0.00215	<26.9	53.6	<26.9	53.6
SB-4	50 - 51	10/10/2016	47.0	<0.00105	<0.00211	<0.00105	<0.00211	<26.3	<26.3	<26.3	<26.3
	2 - 3	10/20/2016	<1.06	<0.00106	<0.00213	<0.00106	<0.00213	79.8	47	<26.6	127
	5 - 6	10/20/2016	90.8	<0.00109	<0.00217	<0.00109	<0.00217	69.4	<27.2	<27.2	69
SB-5	10 - 11	10/20/2016	36	--	--	--	--	--	--	--	--
	2 - 3	10/20/2016	15	<0.00128	<0.00256	<0.00128	<0.00256	<32.1	54	<32.1	54
	5 - 6	10/20/2016	13.8	--	--	--	--	--	--	--	--
SB-6	10 - 11	10/20/2016	499	--	--	--	--	--	--	--	--
	15 - 16	10/20/2016	132	--	--	--	--	--	--	--	--
	20 - 21	10/20/2016	186	--	--	--	--	--	--	--	--
	2 - 3	10/20/2016	403	<0.00112	<0.00225	<0.00112	<0.00225	<28.1	<28.1	<28.1	<28.1
SB-7	5 - 6	10/20/2016	315.0	--	--	--	--	--	--	--	--
	10 - 11	10/20/2016	3,210	--	--	--	--	--	--	--	--
	15 - 16	10/20/2016	127	--	--	--	--	--	--	--	--
	20 - 21	10/20/2016	180	--	--	--	--	--	--	--	--
	2 - 3	10/20/2016	14	<0.00112	<0.00225	<0.00112	<0.00225	<28.1	<28.1	<28.1	<28.1
SB-7	5 - 6	10/20/2016	38.2	--	--	--	--	--	--	--	--
	10 - 11	10/20/2016	32	--	--	--	--	--	--	--	--

**Notes:** Analysis performed by Permian Basin Environmental Lab, Midland, Texas  
Samples analyzed via EPA method SW-8015M (TPH) and SW-300 (chloride).  
Depth measurements are in feet below ground surface (bgs).  
All concentrations are in milligrams per kilogram (mg/Kg) equivalent to parts per million (ppm).

## FIGURES





Google Earth

miles  
km







Google Earth

feet  
meters



300  
100



Google Earth



## **Appendix A**

**Site Name:** Siana Blue Dunn #1  
**Job Number:** 16-0401  
**Driller:** Scarborough Drilling  
**Drill Method:** Air Rotary  
**Latitude:** 32°37'57.21"N

**Location:** Lea County, NM  
**Boring ID:** SB-1  
**Date:** 10/17/2016  
**Geologist:** A. Pachlhofer  
**Longitude:** 103°19'56.25"W

Depth	Time	PID (ppm)	USCS	Munsell Color	Description
Surface					
2	14:00	0.0	CH	Medium brown/slight red	Organic silt & clays/top soil with angular cobbles of caliche
5	14:10	0.0	SM	Pinkish brown	Sand with fines/silts & clays/fine ground caliche
10	14:20	0.0	SM	Light orange	Medium sized sand/25% - 40% fines/silts & clays
15	14:30	0.0	SM	Light orange to tan	Medium sized sand/25% - 40% fines/silts & clays
20	14:40	0.0	SM	Light orange to tan	Medium sized sand/25% - 40% fines/silts & clays
25	14:50	0.0	SP	Orange to light orange	Medium to fine sand/little to no silts or clays
30	15:00	0.0	SP	Orange to light orange	Medium to fine sand/little to no silts or clays
35	15:10	0.0	SP	Orange to light orange	Medium to fine sand/little to no silts or clays
40	15:20	0.0	SP	Orange to light orange	Medium to fine sand/little to no silts or clays
45	15:30	0.0	SP	Orange to light orange	Medium to fine sand/little to no silts or clays

**Site Name:** Siana Blue Dunn #1  
**Job Number:** 16-0401  
**Driller:** Scarborough Drilling  
**Drill Method:** Air Rotary  
**Latitude:** 32°37'57.21"N

**Location:** Lea County, NM  
**Boring ID:** SB-2  
**Date:** 10/10/2016  
**Geologist:** A. Pachlhofer  
**Longitude:** 103°19'56.25"W

Depth	Time	PID (ppm)	USCS	Munsell Color	Description
Surface					
2	10:00	0.0	CH	Medium brown/slight red	Organic silt & clays/top soil with angular cobbles of caliche
5	10:15	0.0	SM	Pinkish brown	Sand with fines/silts & clays/fine ground caliche
10	10:30	0.0	SM	Light orange	Medium sized sand/25% - 40% fines/silts & clays
15	10:45	0.0	SM	Light orange to tan	Medium sized sand/25% - 40% fines/silts & clays
20	11:00	0.0	SM	Light orange to tan	Medium sized sand/25% - 40% fines/silts & clays
25	11:15	0.0	SP	Orange to light orange	Medium to fine sand/little to no silts or clays



**Site Name:** Siana Blue Dunn #1  
**Job Number:** 16-0401  
**Driller:** Scarborough Drilling  
**Drill Method:** Air Rotary  
**Latitude:** 32°37'57.21"N

**Location:** Lea County, NM  
**Boring ID:** SB-3  
**Date:** 10/10/2016  
**Geologist:** A. Pachlhofer  
**Longitude:** 103°19'56.25"W

Depth	Time	PID (ppm)	USCS	Munsell Color	Description
Surface					
2	11:30	0.0	CH	Medium brown/slight red	Organic silt & clays/top soil with angular cobbles of caliche
5	11:45	0.0	SM	Pinkish brown	Sand with fines/silts & clays/fine ground caliche
10	12:00	0.0	SM	Light orange	Medium sized sand/25% - 40% fines/silts & clays
15	12:15	0.0	SM	Light orange to tan	Medium sized sand/25% - 40% fines/silts & clays
20	12:30	0.0	SM	Light orange to tan	Medium sized sand/25% - 40% fines/silts & clays
25	12:45	0.0	SP	Orange to light orange	Medium to fine sand/little to no silts or clays
30	13:00	0.0	SP	Orange to light orange	Medium to fine sand/little to no silts or clays
35	13:15	0.0	SP	Orange to light orange	Medium to fine sand/little to no silts or clays
40	13:30	0.0	SP	Orange to light orange	Medium to fine sand/little to no silts or clays
45	13:45	0.0	SP	Orange to light orange	Medium to fine sand/little to no silts or clays
50	14:00	0.0	SP	Lighter orange	Medium to fine sand/little to no silts or clays

**Site Name:** Siana Blue Dunn #1  
**Job Number:** 16-0401  
**Driller:** Scarborough Drilling  
**Drill Method:** Air Rotary  
**Latitude:** 32°37'57.21"N

**Location:** Lea County, NM  
**Boring ID:** SB-4  
**Date:** 10/20/2016  
**Geologist:** A. Pachlhofer  
**Longitude:** 103°19'56.25"W

Depth	Time	PID (ppm)	USCS	Munsell Color	Description
Surface					
2	8:50	0.0	CH	Medium brown/slight red	Organic silt & clays/top soil with angular cobbles of caliche
5	9:00	0.0	SM	Pinkish brown	Sand with fines/silts & clays/fine ground caliche
10	9:10	0.0	SM	Light orange	Medium sized sand/25% - 40% fines/silts & clays

**Site Name:** Siana Blue Dunn #1  
**Job Number:** 16-0401  
**Driller:** Scarborough Drilling  
**Drill Method:** Air Rotary  
**Latitude:** 32°37'57.21"N

**Location:** Lea County, NM  
**Boring ID:** SB-5  
**Date:** 10/20/2016  
**Geologist:** A. Pachlhofer  
**Longitude:** 103°19'56.25"W

Depth	Time	PID (ppm)	USCS	Munsell Color	Description
Surface					
2	9:20	0.0	CH	Medium brown/slight red	Organic silt & clays/top soil with angular cobbles of caliche
5	9:30	0.0	SM	Pinkish brown	Sand with fines/silts & clays/fine ground caliche
10	9:40	0.0	SM	Light orange	Medium sized sand/25% - 40% fines/silts & clays
15	9:50	0.0	SM	Light orange to tan	Medium sized sand/25% - 40% fines/silts & clays
20	10:00	0.0	SM	Light orange to tan	Medium sized sand/25% - 40% fines/silts & clays

**Site Name:** Siana Blue Dunn #1  
**Job Number:** 16-0401  
**Driller:** Scarborough Drilling  
**Drill Method:** Air Rotary  
**Latitude:** 32°37'57.21"N

**Location:** Lea County, NM  
**Boring ID:** SB-6  
**Date:** 10/20/2016  
**Geologist:** A. Pachlhofer  
**Longitude:** 103°19'56.25"W

Depth	Time	PID (ppm)	USCS	Munsell Color	Description
Surface					
2	10:30	0.0	CH	Medium brown/slight red	Organic silt & clays/top soil with angular cobbles of caliche
5	10:40	0.0	SM	Pinkish brown	Sand with fines/silts & clays/fine ground caliche
10	10:50	0.0	SM	Light orange	Medium sized sand/25% - 40% fines/silts & clays
15	11:00	0.0	SM	Light orange to tan	Medium sized sand/25% - 40% fines/silts & clays
20	11:10	0.0	SM	Light orange to tan	Medium sized sand/25% - 40% fines/silts & clays



**Site Name:** Siana Blue Dunn #1  
**Job Number:** 16-0401  
**Driller:** Scarborough Drilling  
**Drill Method:** Air Rotary  
**Latitude:** 32°37'57.21"N

**Location:** Lea County, NM  
**Boring ID:** SB-7  
**Date:** 10/20/2016  
**Geologist:** A. Pachlhofer  
**Longitude:** 103°19'56.25"W

Depth	Time	PID (ppm)	USCS	Munsell Color	Description
Surface					
2	11:20	0.0	CH	Medium brown/slight red	Organic silt & clays/top soil with angular cobbles of caliche
5	11:30	0.0	SM	Pinkish brown	Sand with fines/silts & clays/fine ground caliche
10	11:40	0.0	SM	Light orange	Medium sized sand/25% - 40% fines/silts & clays

## **Appendix B**

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



# Analytical Report

**Prepared for:**

Coty Woolf  
Charger Services  
P.O. Box 53070  
Midland, TX 79710

Project: Siana Blue Dunn #1

Project Number: [none]

Location:

Lab Order Number: 6J10011



**NELAP/TCEQ # T104704156-16-6**

Report Date: 10/14/16

Charger Services  
P.O. Box 53070  
Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB-2 (2-3)	6J10011-01	Soil	10/10/16 10:00	10-10-2016 16:45
SB-2 (5-6)	6J10011-02	Soil	10/10/16 10:15	10-10-2016 16:45
SB-2 (10-11)	6J10011-03	Soil	10/10/16 10:30	10-10-2016 16:45
SB-2 (15-16)	6J10011-04	Soil	10/10/16 10:45	10-10-2016 16:45
SB-2 (20-21)	6J10011-05	Soil	10/10/16 11:00	10-10-2016 16:45
SB-2 (25-26)	6J10011-06	Soil	10/10/16 11:15	10-10-2016 16:45
SB-3 (2-3)	6J10011-07	Soil	10/10/16 11:30	10-10-2016 16:45
SB-3 (5-6)	6J10011-08	Soil	10/10/16 11:45	10-10-2016 16:45
SB-3 (10-11)	6J10011-09	Soil	10/10/16 12:00	10-10-2016 16:45
SB-3 (15-16)	6J10011-10	Soil	10/10/16 12:15	10-10-2016 16:45
SB-3 (20-21)	6J10011-11	Soil	10/10/16 12:30	10-10-2016 16:45
SB-3 (25-26)	6J10011-12	Soil	10/10/16 12:45	10-10-2016 16:45
SB-3 (30-31)	6J10011-13	Soil	10/10/16 13:00	10-10-2016 16:45
SB-3 (35-36)	6J10011-14	Soil	10/10/16 13:15	10-10-2016 16:45
SB-3 (40-41)	6J10011-15	Soil	10/10/16 13:30	10-10-2016 16:45
SB-3 (45-46)	6J10011-16	Soil	10/10/16 13:45	10-10-2016 16:45
SB-3 (50-51)	6J10011-17	Soil	10/10/16 14:00	10-10-2016 16:45



Charger Services  
P.O. Box 53070  
Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

**SB-2 (2-3)**  
**6J10011-01 (Soil)**

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

**Organics by GC**

Benzene	ND	0.00106	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Toluene	ND	0.00213	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Ethylbenzene	ND	0.00106	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Xylene (p/m)	ND	0.00213	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Xylene (o)	ND	0.00106	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		76.7 %		75-125	P6J1303	10/12/16	10/13/16	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		73.1 %		75-125	P6J1303	10/12/16	10/13/16	EPA 8021B	S-GC

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	573	10.6	mg/kg dry	10	P6J1106	10/11/16	10/13/16	EPA 300.0	
% Moisture	6.0	0.1	%	1	P6J1205	10/12/16	10/12/16	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	245	26.6	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
>C12-C28	2010	26.6	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
>C28-C35	248	26.6	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
Surrogate: 1-Chlorooctane		90.8 %		70-130	P6J1214	10/11/16	10/12/16	TPH 8015M	
Surrogate: o-Terphenyl		98.8 %		70-130	P6J1214	10/11/16	10/12/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	2500	26.6	mg/kg dry	1	[CALC]	10/11/16	10/12/16	calc	

Charger Services  
P.O. Box 53070  
Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

**SB-2 (5-6)**  
**6J10011-02 (Soil)**

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

**Organics by GC**

Benzene	ND	0.00108	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Toluene	ND	0.00215	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Ethylbenzene	<b>0.0122</b>	0.00108	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Xylene (p/m)	<b>0.00869</b>	0.00215	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Xylene (o)	<b>0.00505</b>	0.00108	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		90.7 %	75-125		P6J1303	10/12/16	10/13/16	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		120 %	75-125		P6J1303	10/12/16	10/13/16	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	<b>163</b>	10.8	mg/kg dry	10	P6J1106	10/11/16	10/13/16	EPA 300.0	
% Moisture	<b>7.0</b>	0.1	%	1	P6J1205	10/12/16	10/12/16	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	<b>32.4</b>	26.9	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
>C12-C28	<b>302</b>	26.9	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
>C28-C35	<b>72.6</b>	26.9	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
Surrogate: 1-Chlorooctane		85.8 %	70-130		P6J1214	10/11/16	10/12/16	TPH 8015M	
Surrogate: o-Terphenyl		94.7 %	70-130		P6J1214	10/11/16	10/12/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	<b>407</b>	26.9	mg/kg dry	1	[CALC]	10/11/16	10/12/16	calc	

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Project Number: [none]  
Project Manager: Coty Woolf

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**SB-2 (10-11)**  
**6J10011-03 (Soil)**

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

**Organics by GC**

Benzene	ND	0.00111	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Toluene	ND	0.00222	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Ethylbenzene	<b>0.00206</b>	0.00111	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Xylene (p/m)	<b>0.00321</b>	0.00222	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Xylene (o)	ND	0.00111	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		80.5 %	75-125		P6J1303	10/12/16	10/13/16	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		96.0 %	75-125		P6J1303	10/12/16	10/13/16	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	<b>46.6</b>	5.56	mg/kg dry	5	P6J1106	10/11/16	10/13/16	EPA 300.0	
% Moisture	<b>10.0</b>	0.1	%	1	P6J1205	10/12/16	10/12/16	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	27.8	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
>C12-C28	<b>97.1</b>	27.8	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
>C28-C35	<b>32.9</b>	27.8	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
Surrogate: 1-Chlorooctane		92.4 %	70-130		P6J1214	10/11/16	10/12/16	TPH 8015M	
Surrogate: o-Terphenyl		99.4 %	70-130		P6J1214	10/11/16	10/12/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	<b>130</b>	27.8	mg/kg dry	1	[CALC]	10/11/16	10/12/16	calc	

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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

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**SB-2 (15-16)**  
**6J10011-04 (Soil)**

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

**Organics by GC**

Benzene	ND	0.00111	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Toluene	ND	0.00222	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Ethylbenzene	ND	0.00111	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Xylene (p/m)	ND	0.00222	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
<b>Xylene (o)</b>	<b>0.00190</b>	0.00111	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		72.5 %	75-125		P6J1303	10/12/16	10/13/16	EPA 8021B	S-GC
Surrogate: 4-Bromofluorobenzene		84.3 %	75-125		P6J1303	10/12/16	10/13/16	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>69.3</b>	1.11	mg/kg dry	1	P6J1106	10/11/16	10/13/16	EPA 300.0	
<b>% Moisture</b>	<b>10.0</b>	0.1	%	1	P6J1205	10/12/16	10/12/16	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

<b>C6-C12</b>	<b>28.4</b>	27.8	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
<b>&gt;C12-C28</b>	<b>78.8</b>	27.8	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
<b>&gt;C28-C35</b>	<b>ND</b>	27.8	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
Surrogate: 1-Chlorooctane		93.1 %	70-130		P6J1214	10/11/16	10/12/16	TPH 8015M	
Surrogate: o-Terphenyl		102 %	70-130		P6J1214	10/11/16	10/12/16	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>107</b>	27.8	mg/kg dry	1	[CALC]	10/11/16	10/12/16	calc	

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Project Number: [none]  
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**SB-2 (20-21)**  
**6J10011-05 (Soil)**

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

**Organics by GC**

Benzene	ND	0.00105	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Toluene	ND	0.00211	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Ethylbenzene	ND	0.00105	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Xylene (p/m)	ND	0.00211	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Xylene (o)	ND	0.00105	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		85.9 %	75-125		P6J1303	10/12/16	10/13/16	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		92.1 %	75-125		P6J1303	10/12/16	10/13/16	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	39.5	1.05	mg/kg dry	1	P6J1106	10/11/16	10/13/16	EPA 300.0	
% Moisture	5.0	0.1	%	1	P6J1205	10/12/16	10/12/16	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.3	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
>C12-C28	57.1	26.3	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
>C28-C35	ND	26.3	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
Surrogate: 1-Chlorooctane		90.7 %	70-130		P6J1214	10/11/16	10/12/16	TPH 8015M	
Surrogate: o-Terphenyl		97.4 %	70-130		P6J1214	10/11/16	10/12/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	57.1	26.3	mg/kg dry	1	[CALC]	10/11/16	10/12/16	calc	



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Project Number: [none]  
Project Manager: Coty Woolf

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**SB-2 (25-26)**  
**6J10011-06 (Soil)**

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

**Organics by GC**

Benzene	ND	0.00105	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Toluene	ND	0.00211	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Ethylbenzene	ND	0.00105	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Xylene (p/m)	ND	0.00211	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Xylene (o)	ND	0.00105	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		74.4 %	75-125		P6J1303	10/12/16	10/13/16	EPA 8021B	S-GC
Surrogate: 4-Bromofluorobenzene		80.9 %	75-125		P6J1303	10/12/16	10/13/16	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	36.0	1.05	mg/kg dry	1	P6J1106	10/11/16	10/13/16	EPA 300.0	
% Moisture	5.0	0.1	%	1	P6J1205	10/12/16	10/12/16	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.3	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
>C12-C28	51.1	26.3	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
>C28-C35	26.6	26.3	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
Surrogate: 1-Chlorooctane		90.7 %	70-130		P6J1214	10/11/16	10/12/16	TPH 8015M	
Surrogate: o-Terphenyl		97.3 %	70-130		P6J1214	10/11/16	10/12/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	77.7	26.3	mg/kg dry	1	[CALC]	10/11/16	10/12/16	calc	

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Project Number: [none]  
Project Manager: Coty Woolf

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**SB-3 (2-3)**  
**6J10011-07 (Soil)**

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

**Organics by GC**

Benzene	ND	0.00108	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Toluene	ND	0.00215	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Ethylbenzene	ND	0.00108	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Xylene (p/m)	ND	0.00215	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Xylene (o)	ND	0.00108	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		82.7 %	75-125		P6J1303	10/12/16	10/13/16	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		92.5 %	75-125		P6J1303	10/12/16	10/13/16	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	344	1.08	mg/kg dry	1	P6J1106	10/11/16	10/13/16	EPA 300.0	
% Moisture	7.0	0.1	%	1	P6J1205	10/12/16	10/12/16	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.9	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
>C12-C28	142	26.9	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
>C28-C35	38.4	26.9	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
Surrogate: 1-Chlorooctane		86.1 %	70-130		P6J1214	10/11/16	10/12/16	TPH 8015M	
Surrogate: o-Terphenyl		93.6 %	70-130		P6J1214	10/11/16	10/12/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	180	26.9	mg/kg dry	1	[CALC]	10/11/16	10/12/16	calc	

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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

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**SB-3 (5-6)**  
**6J10011-08 (Soil)**

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

**Organics by GC**

Benzene	ND	0.00118	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Toluene	ND	0.00235	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Ethylbenzene	ND	0.00118	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Xylene (p/m)	ND	0.00235	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Xylene (o)	ND	0.00118	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		73.7 %	75-125		P6J1303	10/12/16	10/13/16	EPA 8021B	S-GC
Surrogate: 4-Bromofluorobenzene		82.5 %	75-125		P6J1303	10/12/16	10/13/16	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	86.3	1.18	mg/kg dry	1	P6J1106	10/11/16	10/13/16	EPA 300.0	
% Moisture	15.0	0.1	%	1	P6J1205	10/12/16	10/12/16	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	29.4	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
>C12-C28	ND	29.4	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
>C28-C35	ND	29.4	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
Surrogate: 1-Chlorooctane		98.0 %	70-130		P6J1214	10/11/16	10/12/16	TPH 8015M	
Surrogate: o-Terphenyl		107 %	70-130		P6J1214	10/11/16	10/12/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	29.4	mg/kg dry	1	[CALC]	10/11/16	10/12/16	calc	

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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

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**SB-3 (10-11)**  
**6J10011-09 (Soil)**

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

**Organics by GC**

Benzene	ND	0.00109	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Toluene	ND	0.00217	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Ethylbenzene	ND	0.00109	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Xylene (p/m)	ND	0.00217	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Xylene (o)	ND	0.00109	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		85.3 %	75-125		P6J1303	10/12/16	10/13/16	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		75.8 %	75-125		P6J1303	10/12/16	10/13/16	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	186	1.09	mg/kg dry	1	P6J1106	10/11/16	10/13/16	EPA 300.0	
% Moisture	8.0	0.1	%	1	P6J1205	10/12/16	10/12/16	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	27.2	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
>C12-C28	48.4	27.2	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
>C28-C35	ND	27.2	mg/kg dry	1	P6J1214	10/11/16	10/12/16	TPH 8015M	
Surrogate: 1-Chlorooctane		83.5 %	70-130		P6J1214	10/11/16	10/12/16	TPH 8015M	
Surrogate: o-Terphenyl		91.5 %	70-130		P6J1214	10/11/16	10/12/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	48.4	27.2	mg/kg dry	1	[CALC]	10/11/16	10/12/16	calc	

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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

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**SB-3 (15-16)**  
**6J10011-10 (Soil)**

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

**Organics by GC**

Benzene	ND	0.00109	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Toluene	ND	0.00217	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Ethylbenzene	<b>0.00239</b>	0.00109	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Xylene (p/m)	<b>0.00654</b>	0.00217	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Xylene (o)	ND	0.00109	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		69.5 %	75-125		P6J1303	10/12/16	10/13/16	EPA 8021B	S-GC
Surrogate: 4-Bromofluorobenzene		78.6 %	75-125		P6J1303	10/12/16	10/13/16	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	<b>5.30</b>	1.09	mg/kg dry	1	P6J1106	10/11/16	10/13/16	EPA 300.0	
% Moisture	<b>8.0</b>	0.1	%	1	P6J1205	10/12/16	10/12/16	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	27.2	mg/kg dry	1	P6J1213	10/12/16	10/13/16	TPH 8015M	
>C12-C28	ND	27.2	mg/kg dry	1	P6J1213	10/12/16	10/13/16	TPH 8015M	
>C28-C35	ND	27.2	mg/kg dry	1	P6J1213	10/12/16	10/13/16	TPH 8015M	
Surrogate: 1-Chlorooctane		88.1 %	70-130		P6J1213	10/12/16	10/13/16	TPH 8015M	
Surrogate: o-Terphenyl		91.2 %	70-130		P6J1213	10/12/16	10/13/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.2	mg/kg dry	1	[CALC]	10/12/16	10/13/16	calc	



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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

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**SB-3 (20-21)**  
**6J10011-11 (Soil)**

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

**Organics by GC**

Benzene	ND	0.00103	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Toluene	ND	0.00206	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Ethylbenzene	ND	0.00103	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Xylene (p/m)	ND	0.00206	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Xylene (o)	ND	0.00103	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		66.7 %	75-125		P6J1303	10/12/16	10/13/16	EPA 8021B	S-GC
Surrogate: 4-Bromofluorobenzene		76.4 %	75-125		P6J1303	10/12/16	10/13/16	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	196	1.03	mg/kg dry	1	P6J1106	10/11/16	10/13/16	EPA 300.0	
% Moisture	3.0	0.1	%	1	P6J1205	10/12/16	10/12/16	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	25.8	mg/kg dry	1	P6J1213	10/12/16	10/13/16	TPH 8015M	
>C12-C28	47.8	25.8	mg/kg dry	1	P6J1213	10/12/16	10/13/16	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P6J1213	10/12/16	10/13/16	TPH 8015M	
Surrogate: 1-Chlorooctane		89.8 %	70-130		P6J1213	10/12/16	10/13/16	TPH 8015M	
Surrogate: o-Terphenyl		93.1 %	70-130		P6J1213	10/12/16	10/13/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	47.8	25.8	mg/kg dry	1	[CALC]	10/12/16	10/13/16	calc	

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Project Number: [none]  
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**SB-3 (25-26)**  
**6J10011-12 (Soil)**

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

**Organics by GC**

Benzene	ND	0.00110	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Toluene	ND	0.00220	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Ethylbenzene	ND	0.00110	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Xylene (p/m)	ND	0.00220	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Xylene (o)	ND	0.00110	mg/kg dry	1	P6J1303	10/12/16	10/13/16	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		82.6 %	75-125		P6J1303	10/12/16	10/13/16	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		79.9 %	75-125		P6J1303	10/12/16	10/13/16	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	346	1.10	mg/kg dry	1	P6J1106	10/11/16	10/13/16	EPA 300.0	
% Moisture	9.0	0.1	%	1	P6J1205	10/12/16	10/12/16	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	27.5	mg/kg dry	1	P6J1213	10/12/16	10/13/16	TPH 8015M	
>C12-C28	36.2	27.5	mg/kg dry	1	P6J1213	10/12/16	10/13/16	TPH 8015M	
>C28-C35	ND	27.5	mg/kg dry	1	P6J1213	10/12/16	10/13/16	TPH 8015M	
Surrogate: 1-Chlorooctane		88.6 %	70-130		P6J1213	10/12/16	10/13/16	TPH 8015M	
Surrogate: o-Terphenyl		91.8 %	70-130		P6J1213	10/12/16	10/13/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	36.2	27.5	mg/kg dry	1	[CALC]	10/12/16	10/13/16	calc	

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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

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**SB-3 (30-31)**  
**6J10011-13 (Soil)**

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

**Organics by GC**

Benzene	ND	0.00103	mg/kg dry	1	P6J1408	10/13/16	10/13/16	EPA 8021B	
Toluene	ND	0.00206	mg/kg dry	1	P6J1408	10/13/16	10/13/16	EPA 8021B	
Ethylbenzene	ND	0.00103	mg/kg dry	1	P6J1408	10/13/16	10/13/16	EPA 8021B	
Xylene (p/m)	ND	0.00206	mg/kg dry	1	P6J1408	10/13/16	10/13/16	EPA 8021B	
Xylene (o)	ND	0.00103	mg/kg dry	1	P6J1408	10/13/16	10/13/16	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		80.7 %	75-125		P6J1408	10/13/16	10/13/16	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		89.1 %	75-125		P6J1408	10/13/16	10/13/16	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	328	1.03	mg/kg dry	1	P6J1106	10/11/16	10/13/16	EPA 300.0	
% Moisture	3.0	0.1	%	1	P6J1205	10/12/16	10/12/16	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	25.8	mg/kg dry	1	P6J1213	10/12/16	10/13/16	TPH 8015M	
>C12-C28	64.9	25.8	mg/kg dry	1	P6J1213	10/12/16	10/13/16	TPH 8015M	
>C28-C35	30.9	25.8	mg/kg dry	1	P6J1213	10/12/16	10/13/16	TPH 8015M	
Surrogate: 1-Chlorooctane		85.9 %	70-130		P6J1213	10/12/16	10/13/16	TPH 8015M	
Surrogate: o-Terphenyl		88.4 %	70-130		P6J1213	10/12/16	10/13/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	95.8	25.8	mg/kg dry	1	[CALC]	10/12/16	10/13/16	calc	

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Project Manager: Coty Woolf

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**SB-3 (35-36)**  
**6J10011-14 (Soil)**

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

**Organics by GC**

Benzene	ND	0.00104	mg/kg dry	1	P6J1408	10/13/16	10/13/16	EPA 8021B	
Toluene	ND	0.00208	mg/kg dry	1	P6J1408	10/13/16	10/13/16	EPA 8021B	
Ethylbenzene	ND	0.00104	mg/kg dry	1	P6J1408	10/13/16	10/13/16	EPA 8021B	
Xylene (p/m)	ND	0.00208	mg/kg dry	1	P6J1408	10/13/16	10/13/16	EPA 8021B	
Xylene (o)	ND	0.00104	mg/kg dry	1	P6J1408	10/13/16	10/13/16	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		86.5 %	75-125		P6J1408	10/13/16	10/13/16	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		78.4 %	75-125		P6J1408	10/13/16	10/13/16	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	197	1.04	mg/kg dry	1	P6J1106	10/11/16	10/13/16	EPA 300.0	
% Moisture	4.0	0.1	%	1	P6J1205	10/12/16	10/12/16	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.0	mg/kg dry	1	P6J1213	10/12/16	10/13/16	TPH 8015M	
>C12-C28	48.1	26.0	mg/kg dry	1	P6J1213	10/12/16	10/13/16	TPH 8015M	
>C28-C35	ND	26.0	mg/kg dry	1	P6J1213	10/12/16	10/13/16	TPH 8015M	
Surrogate: 1-Chlorooctane		90.7 %	70-130		P6J1213	10/12/16	10/13/16	TPH 8015M	
Surrogate: o-Terphenyl		94.3 %	70-130		P6J1213	10/12/16	10/13/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	48.1	26.0	mg/kg dry	1	[CALC]	10/12/16	10/13/16	calc	

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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

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**SB-3 (40-41)**  
**6J10011-15 (Soil)**

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

**Organics by GC**

Benzene	ND	0.00104	mg/kg dry	1	P6J1408	10/13/16	10/13/16	EPA 8021B	
Toluene	ND	0.00208	mg/kg dry	1	P6J1408	10/13/16	10/13/16	EPA 8021B	
Ethylbenzene	ND	0.00104	mg/kg dry	1	P6J1408	10/13/16	10/13/16	EPA 8021B	
Xylene (p/m)	ND	0.00208	mg/kg dry	1	P6J1408	10/13/16	10/13/16	EPA 8021B	
Xylene (o)	ND	0.00104	mg/kg dry	1	P6J1408	10/13/16	10/13/16	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		84.5 %	75-125		P6J1408	10/13/16	10/13/16	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		78.4 %	75-125		P6J1408	10/13/16	10/13/16	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	156	1.04	mg/kg dry	1	P6J1106	10/11/16	10/13/16	EPA 300.0	
% Moisture	4.0	0.1	%	1	P6J1205	10/12/16	10/12/16	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.0	mg/kg dry	1	P6J1213	10/12/16	10/13/16	TPH 8015M	
>C12-C28	30.2	26.0	mg/kg dry	1	P6J1213	10/12/16	10/13/16	TPH 8015M	
>C28-C35	ND	26.0	mg/kg dry	1	P6J1213	10/12/16	10/13/16	TPH 8015M	
Surrogate: 1-Chlorooctane		99.5 %	70-130		P6J1213	10/12/16	10/13/16	TPH 8015M	
Surrogate: o-Terphenyl		103 %	70-130		P6J1213	10/12/16	10/13/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	30.2	26.0	mg/kg dry	1	[CALC]	10/12/16	10/13/16	calc	



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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

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**SB-3 (45-46)**  
**6J10011-16 (Soil)**

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

**Organics by GC**

Benzene	ND	0.00108	mg/kg dry	1	P6J1408	10/13/16	10/13/16	EPA 8021B	
Toluene	ND	0.00215	mg/kg dry	1	P6J1408	10/13/16	10/13/16	EPA 8021B	
Ethylbenzene	ND	0.00108	mg/kg dry	1	P6J1408	10/13/16	10/13/16	EPA 8021B	
Xylene (p/m)	ND	0.00215	mg/kg dry	1	P6J1408	10/13/16	10/13/16	EPA 8021B	
Xylene (o)	ND	0.00108	mg/kg dry	1	P6J1408	10/13/16	10/13/16	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		98.8 %	75-125		P6J1408	10/13/16	10/13/16	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		83.1 %	75-125		P6J1408	10/13/16	10/13/16	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	51.8	1.08	mg/kg dry	1	P6J1106	10/11/16	10/13/16	EPA 300.0	
% Moisture	7.0	0.1	%	1	P6J1205	10/12/16	10/12/16	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.9	mg/kg dry	1	P6J1213	10/12/16	10/13/16	TPH 8015M	
>C12-C28	53.6	26.9	mg/kg dry	1	P6J1213	10/12/16	10/13/16	TPH 8015M	
>C28-C35	ND	26.9	mg/kg dry	1	P6J1213	10/12/16	10/13/16	TPH 8015M	
Surrogate: 1-Chlorooctane		93.3 %	70-130		P6J1213	10/12/16	10/13/16	TPH 8015M	
Surrogate: o-Terphenyl		97.2 %	70-130		P6J1213	10/12/16	10/13/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	53.6	26.9	mg/kg dry	1	[CALC]	10/12/16	10/13/16	calc	

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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

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**SB-3 (50-51)**  
**6J10011-17 (Soil)**

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

**Organics by GC**

Benzene	ND	0.00105	mg/kg dry	1	P6J1408	10/13/16	10/13/16	EPA 8021B	
Toluene	ND	0.00211	mg/kg dry	1	P6J1408	10/13/16	10/13/16	EPA 8021B	
Ethylbenzene	ND	0.00105	mg/kg dry	1	P6J1408	10/13/16	10/13/16	EPA 8021B	
Xylene (p/m)	ND	0.00211	mg/kg dry	1	P6J1408	10/13/16	10/13/16	EPA 8021B	
Xylene (o)	ND	0.00105	mg/kg dry	1	P6J1408	10/13/16	10/13/16	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		79.9 %	75-125		P6J1408	10/13/16	10/13/16	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		75.2 %	75-125		P6J1408	10/13/16	10/13/16	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	47.0	1.05	mg/kg dry	1	P6J1106	10/11/16	10/13/16	EPA 300.0	
% Moisture	5.0	0.1	%	1	P6J1205	10/12/16	10/12/16	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.3	mg/kg dry	1	P6J1213	10/12/16	10/13/16	TPH 8015M	
>C12-C28	ND	26.3	mg/kg dry	1	P6J1213	10/12/16	10/13/16	TPH 8015M	
>C28-C35	ND	26.3	mg/kg dry	1	P6J1213	10/12/16	10/13/16	TPH 8015M	
Surrogate: 1-Chlorooctane		90.1 %	70-130		P6J1213	10/12/16	10/13/16	TPH 8015M	
Surrogate: o-Terphenyl		92.6 %	70-130		P6J1213	10/12/16	10/13/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.3	mg/kg dry	1	[CALC]	10/12/16	10/13/16	calc	

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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6J1303 - General Preparation (GC)**

**Blank (P6J1303-BLK1)**

Prepared: 10/12/16 Analyzed: 10/13/16

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 4-Bromofluorobenzene	0.0736		"	0.0800		92.0	75-125			
Surrogate: 1,4-Difluorobenzene	0.0633		"	0.0800		79.2	75-125			

**LCS (P6J1303-BS1)**

Prepared: 10/12/16 Analyzed: 10/13/16

Benzene	0.0868	0.00100	mg/kg wet	0.100		86.8	70-130			
Toluene	0.0828	0.00200	"	0.100		82.8	70-130			
Ethylbenzene	0.109	0.00100	"	0.100		109	70-130			
Xylene (p/m)	0.205	0.00200	"	0.200		102	70-130			
Xylene (o)	0.103	0.00100	"	0.100		103	70-130			
Surrogate: 1,4-Difluorobenzene	0.0593		"	0.0800		74.1	75-125			S-GC
Surrogate: 4-Bromofluorobenzene	0.0610		"	0.0800		76.3	75-125			

**LCS Dup (P6J1303-BSD1)**

Prepared: 10/12/16 Analyzed: 10/13/16

Benzene	0.108	0.00100	mg/kg wet	0.100		108	70-130	21.6	20	
Toluene	0.109	0.00200	"	0.100		109	70-130	26.9	20	
Ethylbenzene	0.111	0.00100	"	0.100		111	70-130	1.62	20	
Xylene (p/m)	0.199	0.00200	"	0.200		99.7	70-130	2.55	20	
Xylene (o)	0.120	0.00100	"	0.100		120	70-130	15.5	20	
Surrogate: 1,4-Difluorobenzene	0.0678		"	0.0800		84.8	75-125			
Surrogate: 4-Bromofluorobenzene	0.0683		"	0.0800		85.4	75-125			

**Matrix Spike (P6J1303-MS1)**

Source: 6J10011-10

Prepared: 10/12/16 Analyzed: 10/13/16

Benzene	0.164	0.00109	mg/kg dry	0.217	ND	75.3	80-120			QM-07
Toluene	0.172	0.00217	"	0.217	ND	78.9	80-120			QM-07
Ethylbenzene	0.225	0.00109	"	0.217	0.00239	103	80-120			
Xylene (p/m)	0.385	0.00217	"	0.435	0.00654	87.0	80-120			
Xylene (o)	0.188	0.00109	"	0.217	ND	86.5	80-120			
Surrogate: 4-Bromofluorobenzene	0.0722		"	0.0870		83.1	75-125			
Surrogate: 1,4-Difluorobenzene	0.0863		"	0.0870		99.3	75-125			

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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6J1303 - General Preparation (GC)**

**Matrix Spike Dup (P6J1303-MSD1)**

Source: 6J10011-10

Prepared: 10/12/16 Analyzed: 10/13/16

Benzene	0.139	0.00109	mg/kg dry	0.217	ND	63.9	80-120	16.3	20	QM-07
Toluene	0.150	0.00217	"	0.217	ND	68.9	80-120	13.6	20	QM-07
Ethylbenzene	0.203	0.00109	"	0.217	0.00239	92.3	80-120	10.5	20	
Xylene (p/m)	0.349	0.00217	"	0.435	0.00654	78.8	80-120	9.92	20	QM-07
Xylene (o)	0.170	0.00109	"	0.217	ND	78.2	80-120	10.0	20	QM-07
Surrogate: 1,4-Difluorobenzene	0.0838		"	0.0870		96.4	75-125			
Surrogate: 4-Bromofluorobenzene	0.0796		"	0.0870		91.5	75-125			

**Batch P6J1408 - General Preparation (GC)**

**Blank (P6J1408-BLK1)**

Prepared & Analyzed: 10/13/16

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	0.0595		"	0.0800		74.3	75-125			S-GC
Surrogate: 4-Bromofluorobenzene	0.0694		"	0.0800		86.8	75-125			

**LCS (P6J1408-BS1)**

Prepared & Analyzed: 10/13/16

Benzene	0.0906	0.00100	mg/kg wet	0.100		90.6	70-130			
Toluene	0.0933	0.00200	"	0.100		93.3	70-130			
Ethylbenzene	0.0951	0.00100	"	0.100		95.1	70-130			
Xylene (p/m)	0.226	0.00200	"	0.200		113	70-130			
Xylene (o)	0.110	0.00100	"	0.100		110	70-130			
Surrogate: 1,4-Difluorobenzene	0.0713		"	0.0800		89.1	75-125			
Surrogate: 4-Bromofluorobenzene	0.0696		"	0.0800		87.0	75-125			

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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6J1408 - General Preparation (GC)**

**LCS Dup (P6J1408-BSD1)**

Prepared & Analyzed: 10/13/16

Benzene	0.0954	0.00100	mg/kg wet	0.100		95.4	70-130	5.25	20	
Toluene	0.0971	0.00200	"	0.100		97.1	70-130	4.07	20	
Ethylbenzene	0.101	0.00100	"	0.100		101	70-130	5.78	20	
Xylene (p/m)	0.230	0.00200	"	0.200		115	70-130	1.81	20	
Xylene (o)	0.119	0.00100	"	0.100		119	70-130	7.19	20	
Surrogate: 1,4-Difluorobenzene	0.0696		"	0.0800		87.0	75-125			
Surrogate: 4-Bromofluorobenzene	0.0702		"	0.0800		87.7	75-125			

**Matrix Spike (P6J1408-MS1)**

Source: 6J11002-03

Prepared: 10/13/16 Analyzed: 10/14/16

Benzene	0.119	0.00114	mg/kg dry	0.114	ND	105	80-120			
Toluene	0.134	0.00227	"	0.114	ND	118	80-120			
Ethylbenzene	0.132	0.00114	"	0.114	ND	117	80-120			
Xylene (p/m)	0.265	0.00227	"	0.227	ND	116	80-120			
Xylene (o)	0.130	0.00114	"	0.114	ND	114	80-120			
Surrogate: 4-Bromofluorobenzene	0.0645		"	0.0909		70.9	75-125			S-GC
Surrogate: 1,4-Difluorobenzene	0.0786		"	0.0909		86.5	75-125			

**Matrix Spike Dup (P6J1408-MSD1)**

Source: 6J11002-03

Prepared: 10/13/16 Analyzed: 10/14/16

Benzene	0.129	0.00114	mg/kg dry	0.114	ND	114	80-120	8.36	20	
Toluene	0.143	0.00227	"	0.114	ND	125	80-120	6.19	20	QM-07
Ethylbenzene	0.136	0.00114	"	0.114	ND	120	80-120	2.52	20	
Xylene (p/m)	0.262	0.00227	"	0.227	ND	115	80-120	1.18	20	
Xylene (o)	0.151	0.00114	"	0.114	ND	133	80-120	14.9	20	QM-07
Surrogate: 4-Bromofluorobenzene	0.0812		"	0.0909		89.3	75-125			
Surrogate: 1,4-Difluorobenzene	0.0873		"	0.0909		96.0	75-125			

Charger Services  
P.O. Box 53070  
Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6J1106 - \*\*\* DEFAULT PREP \*\*\***

**Blank (P6J1106-BLK1)**

Prepared: 10/11/16 Analyzed: 10/13/16

Chloride	ND	1.00	mg/kg wet							
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**LCS (P6J1106-BS1)**

Prepared: 10/11/16 Analyzed: 10/13/16

Chloride	409	1.00	mg/kg wet	400		102	80-120			
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**LCS Dup (P6J1106-BSD1)**

Prepared: 10/11/16 Analyzed: 10/13/16

Chloride	415	1.00	mg/kg wet	400		104	80-120	1.42	20	
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**Duplicate (P6J1106-DUP1)**

Source: 6J10011-01

Prepared: 10/11/16 Analyzed: 10/13/16

Chloride	581	10.6	mg/kg dry		573			1.44	20	
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**Duplicate (P6J1106-DUP2)**

Source: 6J10011-11

Prepared: 10/11/16 Analyzed: 10/13/16

Chloride	208	1.03	mg/kg dry		196			6.02	20	
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**Matrix Spike (P6J1106-MS1)**

Source: 6J10011-01

Prepared: 10/11/16 Analyzed: 10/13/16

Chloride	1480	10.6	mg/kg dry	1060	573	85.0	80-120			
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**Batch P6J1205 - \*\*\* DEFAULT PREP \*\*\***

**Blank (P6J1205-BLK1)**

Prepared & Analyzed: 10/12/16

% Moisture	ND	0.1	%							
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**Duplicate (P6J1205-DUP1)**

Source: 6J10011-17

Prepared & Analyzed: 10/12/16

% Moisture	5.0	0.1	%		5.0			0.00	20	
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**Duplicate (P6J1205-DUP2)**

Source: 6J11006-03

Prepared & Analyzed: 10/12/16

% Moisture	6.0	0.1	%		7.0			15.4	20	
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P.O. Box 53070  
Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6J1205 - \*\*\* DEFAULT PREP \*\*\***

<b>Duplicate (P6J1205-DUP3)</b>	<b>Source: 6J11008-16</b>			Prepared & Analyzed: 10/12/16						
% Moisture	2.0	0.1	%		2.0			0.00	20	
<b>Duplicate (P6J1205-DUP4)</b>	<b>Source: 6J11010-05</b>			Prepared & Analyzed: 10/12/16						
% Moisture	1.0	0.1	%		1.0			0.00	20	



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Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6J1213 - TX 1005**

**Blank (P6J1213-BLK1)**

Prepared & Analyzed: 10/12/16

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	93.5		"	100		93.5	70-130			
Surrogate: o-Terphenyl	48.8		"	50.0		97.5	70-130			

**LCS (P6J1213-BS1)**

Prepared & Analyzed: 10/12/16

C6-C12	1150	25.0	mg/kg wet	1000		115	75-125			
>C12-C28	1150	25.0	"	1000		115	75-125			
Surrogate: 1-Chlorooctane	116		"	100		116	70-130			
Surrogate: o-Terphenyl	58.4		"	50.0		117	70-130			

**Batch P6J1214 - TX 1005**

**Blank (P6J1214-BLK1)**

Prepared: 10/11/16 Analyzed: 10/12/16

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	91.4		"	100		91.4	70-130			
Surrogate: o-Terphenyl	51.9		"	50.0		104	70-130			

**LCS (P6J1214-BS1)**

Prepared: 10/11/16 Analyzed: 10/12/16

C6-C12	854	25.0	mg/kg wet	1000		85.4	75-125			
>C12-C28	764	25.0	"	1000		76.4	75-125			
Surrogate: 1-Chlorooctane	93.0		"	100		93.0	70-130			
Surrogate: o-Terphenyl	46.6		"	50.0		93.1	70-130			

Charger Services  
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Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6J1214 - TX 1005**

**LCS Dup (P6J1214-BSD1)**

Prepared: 10/11/16 Analyzed: 10/12/16

C6-C12	894	25.0	mg/kg wet	1000		89.4	75-125	4.61	20	
>C12-C28	800	25.0	"	1000		80.0	75-125	4.62	20	
Surrogate: 1-Chlorooctane	94.5		"	100		94.5	70-130			
Surrogate: o-Terphenyl	49.0		"	50.0		98.1	70-130			

Charger Services  
P.O. Box 53070  
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Project: Siana Blue Dunn #1  
Project Number: [none]  
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Fax: (432) 695-6247

### Notes and Definitions

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

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

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

Report Approved By:



Date:

10/14/2016

Brent Barron, Laboratory Director/Technical Director

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





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



# Analytical Report

**Prepared for:**

Coty Woolf  
Charger Services  
P.O. Box 53070  
Midland, TX 79710

Project: Siana Blue Dunn #1

Project Number: [none]

Location:

Lab Order Number: 6J20001



NELAP/TCEQ # T104704156-16-6

Report Date: 11/04/16

Charger Services  
P.O. Box 53070  
Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB-1 (2')	6J20001-01	Soil	10/17/16 14:00	10-20-2016 16:43
SB-1 (5')	6J20001-02	Soil	10/17/16 14:10	10-20-2016 16:43
SB-1 (10')	6J20001-03	Soil	10/17/16 14:20	10-20-2016 16:43
SB-1 (15')	6J20001-04	Soil	10/17/16 14:30	10-20-2016 16:43
SB-1 (20')	6J20001-05	Soil	10/17/16 14:40	10-20-2016 16:43
SB-1 (25')	6J20001-06	Soil	10/17/16 14:50	10-20-2016 16:43
SB-1 (30')	6J20001-07	Soil	10/17/16 15:00	10-20-2016 16:43
SB-1 (35')	6J20001-08	Soil	10/17/16 15:10	10-20-2016 16:43
SB-1 (40')	6J20001-09	Soil	10/17/16 15:20	10-20-2016 16:43
SB-1 (45')	6J20001-10	Soil	10/17/16 15:30	10-20-2016 16:43



Charger Services  
P.O. Box 53070  
Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

**SB-1 (2')**  
**6J20001-01 (Soil)**

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

**Organics by GC**

Benzene	ND	0.00110	mg/kg dry	1	P6J2509	10/24/16	10/24/16	EPA 8021B	
Toluene	ND	0.00110	mg/kg dry	1	P6J2509	10/24/16	10/24/16	EPA 8021B	
Ethylbenzene	ND	0.00110	mg/kg dry	1	P6J2509	10/24/16	10/24/16	EPA 8021B	
Xylene (p/m)	ND	0.00220	mg/kg dry	1	P6J2509	10/24/16	10/24/16	EPA 8021B	
Xylene (o)	ND	0.00110	mg/kg dry	1	P6J2509	10/24/16	10/24/16	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		85.0 %	80-120		P6J2509	10/24/16	10/24/16	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		96.4 %	80-120		P6J2509	10/24/16	10/24/16	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	213	1.10	mg/kg dry	1	P6J2002	10/20/16	10/24/16	EPA 300.0	
% Moisture	9.0	0.1	%	1	P6J2201	10/22/16	10/22/16	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	640	137	mg/kg dry	5	P6J2105	10/20/16	10/21/16	TPH 8015M	
>C12-C28	4240	137	mg/kg dry	5	P6J2105	10/20/16	10/21/16	TPH 8015M	
>C28-C35	616	137	mg/kg dry	5	P6J2105	10/20/16	10/21/16	TPH 8015M	
Surrogate: 1-Chlorooctane		97.0 %	70-130		P6J2105	10/20/16	10/21/16	TPH 8015M	
Surrogate: o-Terphenyl		106 %	70-130		P6J2105	10/20/16	10/21/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	5490	137	mg/kg dry	5	[CALC]	10/20/16	10/21/16	calc	

Charger Services  
P.O. Box 53070  
Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

**SB-1 (5')**  
**6J20001-02 (Soil)**

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

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>472</b>	1.12	mg/kg dry	1	P6J2002	10/20/16	10/24/16	EPA 300.0	
<b>% Moisture</b>	<b>11.0</b>	0.1	%	1	P6J2201	10/22/16	10/22/16	% calculation	

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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

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**SB-1 (10')**  
**6J20001-03 (Soil)**

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

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>1480</b>	10.3	mg/kg dry	10	P6J2004	10/20/16	10/21/16	EPA 300.0	
<b>% Moisture</b>	<b>3.0</b>	0.1	%	1	P6J2201	10/22/16	10/22/16	% calculation	

Charger Services  
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Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

**SB-1 (15')**  
**6J20001-04 (Soil)**

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

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>563</b>	1.14	mg/kg dry	1	P6J2004	10/20/16	10/21/16	EPA 300.0	
<b>% Moisture</b>	<b>12.0</b>	0.1	%	1	P6J2201	10/22/16	10/22/16	% calculation	

Charger Services  
P.O. Box 53070  
Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

**SB-1 (20')**  
**6J20001-05 (Soil)**

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

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	238	1.03	mg/kg dry	1	P6K0110	11/01/16	11/02/16	EPA 300.0	
% Moisture	3.0	0.1	%	1	P6K0104	11/01/16	11/01/16	% calculation	

Charger Services  
P.O. Box 53070  
Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

**SB-1 (25')**  
**6J20001-06 (Soil)**

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

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>316</b>	1.04	mg/kg dry	1	P6K0110	11/01/16	11/02/16	EPA 300.0	
<b>% Moisture</b>	<b>4.0</b>	0.1	%	1	P6K0104	11/01/16	11/01/16	% calculation	

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P.O. Box 53070  
Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

**SB-1 (30')**  
**6J20001-07 (Soil)**

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

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>239</b>	1.04	mg/kg dry	1	P6K0110	11/01/16	11/02/16	EPA 300.0	
<b>% Moisture</b>	<b>4.0</b>	0.1	%	1	P6K0104	11/01/16	11/01/16	% calculation	



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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

**SB-1 (35')**  
**6J20001-08 (Soil)**

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

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	320	1.05	mg/kg dry	1	P6K0110	11/01/16	11/02/16	EPA 300.0	
% Moisture	5.0	0.1	%	1	P6K0104	11/01/16	11/01/16	% calculation	

Charger Services  
P.O. Box 53070  
Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

**SB-1 (40')**  
**6J20001-09 (Soil)**

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

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>348</b>	1.05	mg/kg dry	1	P6K0110	11/01/16	11/02/16	EPA 300.0	
<b>% Moisture</b>	<b>5.0</b>	0.1	%	1	P6K0104	11/01/16	11/01/16	% calculation	

Charger Services  
P.O. Box 53070  
Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

**SB-1 (45')**  
**6J20001-10 (Soil)**

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

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>185</b>	1.03	mg/kg dry	1	P6K0202	11/02/16	11/03/16	EPA 300.0	
<b>% Moisture</b>	<b>3.0</b>	0.1	%	1	P6K0104	11/01/16	11/01/16	% calculation	

Charger Services  
P.O. Box 53070  
Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6J2509 - General Preparation (GC)**

**Blank (P6J2509-BLK1)**

Prepared & Analyzed: 10/24/16

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	0.0601		"	0.0600		100	80-120			
Surrogate: 4-Bromofluorobenzene	0.0477		"	0.0600		79.5	80-120			S-GC

**LCS (P6J2509-BS1)**

Prepared & Analyzed: 10/24/16

Benzene	0.0904	0.00100	mg/kg wet	0.100		90.4	80-120			
Toluene	0.0934	0.00100	"	0.100		93.4	80-120			
Ethylbenzene	0.118	0.00100	"	0.100		118	80-120			
Xylene (p/m)	0.213	0.00200	"	0.200		106	80-120			
Xylene (o)	0.0968	0.00100	"	0.100		96.8	80-120			
Surrogate: 4-Bromofluorobenzene	0.0461		"	0.0600		76.8	80-120			S-GC
Surrogate: 1,4-Difluorobenzene	0.0653		"	0.0600		109	80-120			

**LCS Dup (P6J2509-BSD1)**

Prepared & Analyzed: 10/24/16

Benzene	0.0925	0.00100	mg/kg wet	0.100		92.5	80-120	2.35	20	
Toluene	0.0945	0.00100	"	0.100		94.5	80-120	1.18	20	
Ethylbenzene	0.117	0.00100	"	0.100		117	80-120	0.845	20	
Xylene (p/m)	0.216	0.00200	"	0.200		108	80-120	1.46	20	
Xylene (o)	0.100	0.00100	"	0.100		100	80-120	3.54	20	
Surrogate: 1,4-Difluorobenzene	0.0692		"	0.0600		115	80-120			
Surrogate: 4-Bromofluorobenzene	0.0460		"	0.0600		76.6	80-120			S-GC

**Matrix Spike (P6J2509-MS1)**

Source: 6J20005-01

Prepared: 10/24/16 Analyzed: 10/25/16

Benzene	0.193	0.0241	mg/kg dry	0.241	ND	80.1	80-120			
Toluene	0.171	0.0241	"	0.241	ND	71.0	80-120			QM-07
Ethylbenzene	0.230	0.0241	"	0.241	ND	95.4	80-120			
Xylene (p/m)	0.358	0.0482	"	0.482	ND	74.4	80-120			QM-07
Xylene (o)	0.147	0.0241	"	0.241	ND	60.9	80-120			QM-07
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0723		56.0	80-120			S-GC
Surrogate: 1,4-Difluorobenzene	0.0741		"	0.0723		103	80-120			

Charger Services  
P.O. Box 53070  
Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6J2509 - General Preparation (GC)**

**Matrix Spike Dup (P6J2509-MSD1)**

**Source: 6J20005-01**

Prepared: 10/24/16 Analyzed: 10/25/16

Benzene	0.174	0.0241	mg/kg dry	0.241	ND	72.1	80-120	10.5	20	QM-07
Toluene	0.176	0.0241	"	0.241	ND	73.1	80-120	2.91	20	QM-07
Ethylbenzene	0.218	0.0241	"	0.241	ND	90.4	80-120	5.38	20	
Xylene (p/m)	0.338	0.0482	"	0.482	ND	70.1	80-120	5.96	20	QM-07
Xylene (o)	0.150	0.0241	"	0.241	ND	62.4	80-120	2.43	20	QM-07
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0723		53.4	80-120			S-GC
Surrogate: 1,4-Difluorobenzene	0.0728		"	0.0723		101	80-120			

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Fax: (432) 695-6247

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6J2002 - \*\*\* DEFAULT PREP \*\*\***

**Blank (P6J2002-BLK1)**

Prepared: 10/20/16 Analyzed: 10/24/16

Chloride	ND	1.00	mg/kg wet							
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**LCS (P6J2002-BS1)**

Prepared: 10/20/16 Analyzed: 10/24/16

Chloride	436	1.00	mg/kg wet	400		109	80-120			
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**LCS Dup (P6J2002-BSD1)**

Prepared: 10/20/16 Analyzed: 10/24/16

Chloride	454	1.00	mg/kg wet	400		113	80-120	4.04	20	
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**Duplicate (P6J2002-DUP1)**

Source: 6J19003-03

Prepared: 10/20/16 Analyzed: 10/24/16

Chloride	1030	5.49	mg/kg dry		1030			0.331	20	
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**Duplicate (P6J2002-DUP2)**

Source: 6J19003-13

Prepared: 10/20/16 Analyzed: 10/24/16

Chloride	2220	11.2	mg/kg dry		2220			0.0203	20	
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**Matrix Spike (P6J2002-MS1)**

Source: 6J19003-03

Prepared: 10/20/16 Analyzed: 10/24/16

Chloride	2120	5.49	mg/kg dry	1100	1030	99.6	80-120			
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**Batch P6J2004 - \*\*\* DEFAULT PREP \*\*\***

**Blank (P6J2004-BLK1)**

Prepared: 10/20/16 Analyzed: 10/21/16

Chloride	ND	1.00	mg/kg wet							
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**LCS (P6J2004-BS1)**

Prepared: 10/20/16 Analyzed: 10/21/16

Chloride	468	1.00	mg/kg wet	400		117	80-120			
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**LCS Dup (P6J2004-BSD1)**

Prepared: 10/20/16 Analyzed: 10/21/16

Chloride	477	1.00	mg/kg wet	400		119	80-120	1.93	20	
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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6J2004 - \*\*\* DEFAULT PREP \*\*\***

<b>Duplicate (P6J2004-DUP1)</b>		<b>Source: 6J20001-03</b>		Prepared: 10/20/16 Analyzed: 10/21/16						
Chloride	1490	10.3	mg/kg dry		1480			0.445	20	
<b>Duplicate (P6J2004-DUP2)</b>		<b>Source: 6J20007-04</b>		Prepared: 10/20/16 Analyzed: 10/21/16						
Chloride	6740	26.0	mg/kg dry		6100			9.97	20	
<b>Matrix Spike (P6J2004-MS1)</b>		<b>Source: 6J20001-03</b>		Prepared: 10/20/16 Analyzed: 10/21/16						
Chloride	2260	10.3	mg/kg dry	773	1480	101	80-120			

**Batch P6J2201 - \*\*\* DEFAULT PREP \*\*\***

<b>Blank (P6J2201-BLK1)</b>				Prepared & Analyzed: 10/22/16						
% Moisture	ND	0.1	%							
<b>Duplicate (P6J2201-DUP1)</b>		<b>Source: 6J19003-12</b>		Prepared & Analyzed: 10/22/16						
% Moisture	11.0	0.1	%		11.0			0.00	20	
<b>Duplicate (P6J2201-DUP2)</b>		<b>Source: 6J19010-01</b>		Prepared & Analyzed: 10/22/16						
% Moisture	13.0	0.1	%		14.0			7.41	20	

**Batch P6K0104 - \*\*\* DEFAULT PREP \*\*\***

<b>Blank (P6K0104-BLK1)</b>				Prepared & Analyzed: 11/01/16						
% Moisture	ND	0.1	%							
<b>Duplicate (P6K0104-DUP1)</b>		<b>Source: 6J31008-02</b>		Prepared & Analyzed: 11/01/16						
% Moisture	2.0	0.1	%		3.0			40.0	20	



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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6K0104 - \*\*\* DEFAULT PREP \*\*\***

<b>Duplicate (P6K0104-DUP2)</b>	<b>Source: 6J20003-13</b>		Prepared & Analyzed: 11/01/16							
% Moisture	2.0	0.1	%		1.0			66.7	20	

**Batch P6K0110 - \*\*\* DEFAULT PREP \*\*\***

<b>Blank (P6K0110-BLK1)</b>	Prepared: 11/01/16 Analyzed: 11/02/16									
Chloride	ND	1.00	mg/kg wet							

<b>LCS (P6K0110-BS1)</b>	Prepared: 11/01/16 Analyzed: 11/02/16									
Chloride	417	1.00	mg/kg wet	400		104	80-120			

<b>LCS Dup (P6K0110-BSD1)</b>	Prepared: 11/01/16 Analyzed: 11/02/16									
Chloride	426	1.00	mg/kg wet	400		107	80-120	2.09	20	

<b>Duplicate (P6K0110-DUP1)</b>	<b>Source: 6J17005-07</b>		Prepared: 11/01/16 Analyzed: 11/02/16							
Chloride	150	1.05	mg/kg dry		150			0.0979	20	

<b>Duplicate (P6K0110-DUP2)</b>	<b>Source: 6J17005-17</b>		Prepared: 11/01/16 Analyzed: 11/02/16							
Chloride	32.9	1.04	mg/kg dry		32.8			0.349	20	

<b>Matrix Spike (P6K0110-MS1)</b>	<b>Source: 6J17005-07</b>		Prepared: 11/01/16 Analyzed: 11/02/16							
Chloride	1090	1.05	mg/kg dry	1050	150	89.2	80-120			

**Batch P6K0202 - \*\*\* DEFAULT PREP \*\*\***

<b>Blank (P6K0202-BLK1)</b>	Prepared: 11/02/16 Analyzed: 11/03/16									
Chloride	ND	1.00	mg/kg wet							

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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6K0202 - \*\*\* DEFAULT PREP \*\*\***

**LCS (P6K0202-BS1)**

Prepared: 11/02/16 Analyzed: 11/03/16

Chloride	389	1.00	mg/kg wet	400		97.2	80-120			
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**LCS Dup (P6K0202-BSD1)**

Prepared: 11/02/16 Analyzed: 11/03/16

Chloride	387	1.00	mg/kg wet	400		96.8	80-120	0.461	20	
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**Duplicate (P6K0202-DUP1)**

Source: 6J20001-10

Prepared: 11/02/16 Analyzed: 11/03/16

Chloride	137	1.03	mg/kg dry		185			29.6	20	R3
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**Duplicate (P6K0202-DUP2)**

Source: 6J21003-05

Prepared: 11/02/16 Analyzed: 11/03/16

Chloride	505	1.09	mg/kg dry		499			1.10	20	
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**Matrix Spike (P6K0202-MS1)**

Source: 6J20001-10

Prepared: 11/02/16 Analyzed: 11/03/16

Chloride	1030	1.03	mg/kg dry	1030	185	81.7	80-120			
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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6J2105 - TX 1005**

**Blank (P6J2105-BLK1)**

Prepared & Analyzed: 10/20/16

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	125		"	100		125	70-130			
Surrogate: o-Terphenyl	68.1		"	50.0		136	70-130			S-GC

**LCS (P6J2105-BS1)**

Prepared & Analyzed: 10/20/16

C6-C12	916	25.0	mg/kg wet	1000		91.6	75-125			
>C12-C28	904	25.0	"	1000		90.4	75-125			
Surrogate: 1-Chlorooctane	112		"	100		112	70-130			
Surrogate: o-Terphenyl	54.7		"	50.0		109	70-130			

**LCS Dup (P6J2105-BSD1)**

Prepared & Analyzed: 10/20/16

C6-C12	900	25.0	mg/kg wet	1000		90.0	75-125	1.83	20	
>C12-C28	809	25.0	"	1000		80.9	75-125	11.0	20	
Surrogate: 1-Chlorooctane	104		"	100		104	70-130			
Surrogate: o-Terphenyl	50.8		"	50.0		102	70-130			

**Matrix Spike (P6J2105-MS1)**

Source: 6J20003-02

Prepared: 10/20/16 Analyzed: 10/21/16

C6-C12	872	29.8	mg/kg dry	1190	ND	73.2	75-125			
>C12-C28	803	29.8	"	1190	18.0	66.0	75-125			
Surrogate: 1-Chlorooctane	88.8		"	119		74.6	70-130			
Surrogate: o-Terphenyl	41.1		"	59.5		69.0	70-130			

**Matrix Spike Dup (P6J2105-MSD1)**

Source: 6J20003-02

Prepared: 10/20/16 Analyzed: 10/21/16

C6-C12	1110	29.8	mg/kg dry	1190	ND	93.5	75-125	24.4	20	
>C12-C28	1100	29.8	"	1190	18.0	91.1	75-125	32.0	20	
Surrogate: 1-Chlorooctane	126		"	119		106	70-130			
Surrogate: o-Terphenyl	56.9		"	59.5		95.7	70-130			

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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

### Notes and Definitions

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

R3 The RPD exceeded the acceptance limit due to sample matrix effects.

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

BULK Samples received in Bulk soil containers

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

Report Approved By:



Date:

11/4/2016

Brent Barron, Laboratory Director/Technical Director

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

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

Charger Services  
P.O. Box 53070  
Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

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

Project Name: Singapore Blue Bear

Project #:

Project Loc:

PO #:

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Project Manager:

Company Name:

Company Address:

City/State/Zip:

Telephone No:

Sampler Signature:

e-mail:

(lab use only)

ORDER #: 6520001

LAB # (lab use only)

FIELD CODE

Beginning Depth

Ending Depth

Date Sampled

Time Sampled

Field Filtered

Total #. of Containers

Ice

HNO<sub>3</sub> 250, ml Poly

HCl

H<sub>2</sub>SO<sub>4</sub>

NaOH

Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>

None 1L Poly

NaOH/ZnAc

DW=Drinking Water SL=Sludge

GW = Groundwater S=Soil/Solid

NP=Non-Potable Specify Other

TPH by TX 1005 8015 8015M

Chloride

BTEX by 8021B

Analyze For:

Rush 24 48 72 (Please call)

Standard

Special Instructions:

Relinquished by:

Date

Time

Received by:

Date

Time

Relinquished by:

Date

Time

Received by:

Date

Time

Relinquished by:

Date

Time

Received by:

Date

Time

Laboratory Comments:

Sample Containers intact?

VOCs Free of Headspace?

Labels on container(s)

Custody seals on container(s)

Sample Hand Delivered

by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 20 °C

Adjusted:

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



# Analytical Report

**Prepared for:**

Coty Woolf  
Charger Services  
P.O. Box 53070  
Midland, TX 79710

Project: Siana Blue Dunn #1

Project Number: [none]

Location:

Lab Order Number: 6J21003



NELAP/TCEQ # T104704156-16-6

Report Date: 03/19/17

Charger Services  
P.O. Box 53070  
Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB-4 (2)	6J21003-01	Soil	10/20/16 09:50	10-21-2016 08:15
SB-4 (5)	6J21003-02	Soil	10/20/16 10:00	10-21-2016 08:15
SB-5 (2)	6J21003-03	Soil	10/20/16 09:20	10-21-2016 08:15
SB-5 (5)	6J21003-04	Soil	10/20/16 09:30	10-21-2016 08:15
SB-5 (10)	6J21003-05	Soil	10/20/16 09:40	10-21-2016 08:15
SB-6 (2)	6J21003-06	Soil	10/20/16 10:30	10-21-2016 08:15
SB-6 (5)	6J21003-07	Soil	10/20/16 10:40	10-21-2016 08:15
SB-6 (10)	6J21003-08	Soil	10/20/16 10:50	10-21-2016 08:15
SB-7 (2)	6J21003-09	Soil	10/20/16 10:10	10-21-2016 08:15
SB-7 (5)	6J21003-10	Soil	10/20/16 10:20	10-21-2016 08:15
SB-4 (10ft)	7C13016-01	Soil	10/20/16 10:05	03-13-2017 16:30
SB-5 (15ft)	7C13016-02	Soil	10/20/16 11:20	03-13-2017 16:30
SB-5 (20ft)	7C13016-03	Soil	10/20/16 11:30	03-13-2017 16:30
SB-6 (15ft)	7C13016-04	Soil	10/20/16 11:00	03-13-2017 16:30
SB-6 (20ft)	7C13016-05	Soil	10/20/16 11:10	03-13-2017 16:30
SB-7 (10ft)	7C13016-06	Soil	10/20/16 11:40	03-13-2017 16:30



Charger Services  
P.O. Box 53070  
Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

**SB-4 (2)**  
**6J21003-01 (Soil)**

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

**Organics by GC**

Benzene	ND	0.00106	mg/kg dry	1	P6J2603	10/25/16	10/25/16	EPA 8021B	
Toluene	ND	0.00213	mg/kg dry	1	P6J2603	10/25/16	10/25/16	EPA 8021B	
Ethylbenzene	ND	0.00106	mg/kg dry	1	P6J2603	10/25/16	10/25/16	EPA 8021B	
Xylene (p/m)	ND	0.00213	mg/kg dry	1	P6J2603	10/25/16	10/25/16	EPA 8021B	
Xylene (o)	ND	0.00106	mg/kg dry	1	P6J2603	10/25/16	10/25/16	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		71.6 %	75-125		P6J2603	10/25/16	10/25/16	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		80.1 %	75-125		P6J2603	10/25/16	10/25/16	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	1.06	mg/kg dry	1	P6J2503	10/25/16	10/26/16	EPA 300.0	
% Moisture	6.0	0.1	%	1	P6J2502	10/25/16	10/25/16	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	79.8	26.6	mg/kg dry	1	P6J2602	10/24/16	10/24/16	TPH 8015M	
>C12-C28	47.4	26.6	mg/kg dry	1	P6J2602	10/24/16	10/24/16	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P6J2602	10/24/16	10/24/16	TPH 8015M	
Surrogate: 1-Chlorooctane		87.1 %	70-130		P6J2602	10/24/16	10/24/16	TPH 8015M	
Surrogate: o-Terphenyl		100 %	70-130		P6J2602	10/24/16	10/24/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	127	26.6	mg/kg dry	1	[CALC]	10/24/16	10/24/16	calc	

Charger Services  
P.O. Box 53070  
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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

**SB-4 (5)**  
**6J21003-02 (Soil)**

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

**Organics by GC**

Benzene	ND	0.00109	mg/kg dry	1	P6J2603	10/25/16	10/25/16	EPA 8021B	
Toluene	ND	0.00217	mg/kg dry	1	P6J2603	10/25/16	10/25/16	EPA 8021B	
Ethylbenzene	ND	0.00109	mg/kg dry	1	P6J2603	10/25/16	10/25/16	EPA 8021B	
Xylene (p/m)	ND	0.00217	mg/kg dry	1	P6J2603	10/25/16	10/25/16	EPA 8021B	
Xylene (o)	ND	0.00109	mg/kg dry	1	P6J2603	10/25/16	10/25/16	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		79.5 %	75-125		P6J2603	10/25/16	10/25/16	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		69.2 %	75-125		P6J2603	10/25/16	10/25/16	EPA 8021B	S-GC

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	90.8	1.09	mg/kg dry	1	P6J2506	10/25/16	10/27/16	EPA 300.0	
% Moisture	8.0	0.1	%	1	P6J2502	10/25/16	10/25/16	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	69.4	27.2	mg/kg dry	1	P6J2602	10/24/16	10/24/16	TPH 8015M	
>C12-C28	ND	27.2	mg/kg dry	1	P6J2602	10/24/16	10/24/16	TPH 8015M	
>C28-C35	ND	27.2	mg/kg dry	1	P6J2602	10/24/16	10/24/16	TPH 8015M	
Surrogate: 1-Chlorooctane		86.2 %	70-130		P6J2602	10/24/16	10/24/16	TPH 8015M	
Surrogate: o-Terphenyl		102 %	70-130		P6J2602	10/24/16	10/24/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	69.4	27.2	mg/kg dry	1	[CALC]	10/24/16	10/24/16	calc	

Charger Services  
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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

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**SB-5 (2)**  
**6J21003-03 (Soil)**

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

**Organics by GC**

Benzene	ND	0.00128	mg/kg dry	1	P6J2807	10/28/16	10/29/16	EPA 8021B	
Toluene	ND	0.00256	mg/kg dry	1	P6J2807	10/28/16	10/29/16	EPA 8021B	
Ethylbenzene	ND	0.00128	mg/kg dry	1	P6J2807	10/28/16	10/29/16	EPA 8021B	
Xylene (p/m)	ND	0.00256	mg/kg dry	1	P6J2807	10/28/16	10/29/16	EPA 8021B	
Xylene (o)	ND	0.00128	mg/kg dry	1	P6J2807	10/28/16	10/29/16	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		76.7 %	75-125		P6J2807	10/28/16	10/29/16	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		35.0 %	75-125		P6J2807	10/28/16	10/29/16	EPA 8021B	S-GC

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	15.3	1.28	mg/kg dry	1	P6J2506	10/25/16	10/27/16	EPA 300.0	
% Moisture	22.0	0.1	%	1	P6J2502	10/25/16	10/25/16	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	32.1	mg/kg dry	1	P6K0205	11/01/16	11/01/16	TPH 8015M	
>C12-C28	54.0	32.1	mg/kg dry	1	P6K0205	11/01/16	11/01/16	TPH 8015M	
>C28-C35	ND	32.1	mg/kg dry	1	P6K0205	11/01/16	11/01/16	TPH 8015M	
Surrogate: 1-Chlorooctane		86.7 %	70-130		P6K0205	11/01/16	11/01/16	TPH 8015M	
Surrogate: o-Terphenyl		98.1 %	70-130		P6K0205	11/01/16	11/01/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	54.0	32.1	mg/kg dry	1	[CALC]	11/01/16	11/01/16	calc	

Charger Services  
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Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

**SB-5 (5)**  
**6J21003-04 (Soil)**

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

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>13.8</b>	1.28	mg/kg dry	1	P6J2506	10/25/16	10/27/16	EPA 300.0	
<b>% Moisture</b>	<b>23.0</b>	0.1	%	1	P6J2502	10/25/16	10/25/16	% calculation	

Charger Services  
P.O. Box 53070  
Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

**SB-5 (10)**  
**6J21003-05 (Soil)**

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

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>499</b>	1.09	mg/kg dry	1	P6K0202	11/02/16	11/03/16	EPA 300.0	
<b>% Moisture</b>	<b>8.0</b>	0.1	%	1	P6K0104	11/01/16	11/01/16	% calculation	

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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

**SB-6 (2)**  
**6J21003-06 (Soil)**

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

**Organics by GC**

Benzene	ND	0.00112	mg/kg dry	1	P6J2807	10/28/16	10/28/16	EPA 8021B	
Toluene	ND	0.00225	mg/kg dry	1	P6J2807	10/28/16	10/28/16	EPA 8021B	
Ethylbenzene	ND	0.00112	mg/kg dry	1	P6J2807	10/28/16	10/28/16	EPA 8021B	
Xylene (p/m)	ND	0.00225	mg/kg dry	1	P6J2807	10/28/16	10/28/16	EPA 8021B	
Xylene (o)	ND	0.00112	mg/kg dry	1	P6J2807	10/28/16	10/28/16	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		36.3 %	75-125		P6J2807	10/28/16	10/28/16	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		80.4 %	75-125		P6J2807	10/28/16	10/28/16	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	403	1.12	mg/kg dry	1	P6J2806	10/28/16	11/02/16	EPA 300.0	
% Moisture	11.0	0.1	%	1	P6J3101	10/31/16	10/31/16	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.1	mg/kg dry	1	P6J3105	10/28/16	10/31/16	TPH 8015M	
>C12-C28	ND	28.1	mg/kg dry	1	P6J3105	10/28/16	10/31/16	TPH 8015M	
>C28-C35	ND	28.1	mg/kg dry	1	P6J3105	10/28/16	10/31/16	TPH 8015M	
Surrogate: 1-Chlorooctane		81.5 %	70-130		P6J3105	10/28/16	10/31/16	TPH 8015M	
Surrogate: o-Terphenyl		95.9 %	70-130		P6J3105	10/28/16	10/31/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	28.1	mg/kg dry	1	[CALC]	10/28/16	10/31/16	calc	

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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

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**SB-6 (5)**  
**6J21003-07 (Soil)**

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

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>315</b>	1.06	mg/kg dry	1	P6K0202	11/02/16	11/03/16	EPA 300.0	
<b>% Moisture</b>	<b>6.0</b>	0.1	%	1	P6K0104	11/01/16	11/01/16	% calculation	

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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

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**SB-6 (10)**  
**6J21003-08 (Soil)**

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

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>3210</b>	27.8	mg/kg dry	25	P6K0202	11/02/16	11/03/16	EPA 300.0	
<b>% Moisture</b>	<b>10.0</b>	0.1	%	1	P6K0104	11/01/16	11/01/16	% calculation	



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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

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**SB-7 (2)**  
**6J21003-09 (Soil)**

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

**Organics by GC**

Benzene	ND	0.00112	mg/kg dry	1	P6J2807	10/28/16	10/28/16	EPA 8021B	
Toluene	ND	0.00225	mg/kg dry	1	P6J2807	10/28/16	10/28/16	EPA 8021B	
Ethylbenzene	ND	0.00112	mg/kg dry	1	P6J2807	10/28/16	10/28/16	EPA 8021B	
Xylene (p/m)	ND	0.00225	mg/kg dry	1	P6J2807	10/28/16	10/28/16	EPA 8021B	
Xylene (o)	ND	0.00112	mg/kg dry	1	P6J2807	10/28/16	10/28/16	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		80.6 %	75-125		P6J2807	10/28/16	10/28/16	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		34.0 %	75-125		P6J2807	10/28/16	10/28/16	EPA 8021B	S-GC

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	13.8	1.12	mg/kg dry	1	P6J2806	10/28/16	11/02/16	EPA 300.0	
% Moisture	11.0	0.1	%	1	P6J3101	10/31/16	10/31/16	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.1	mg/kg dry	1	P6J3105	10/28/16	10/28/16	TPH 8015M	
>C12-C28	ND	28.1	mg/kg dry	1	P6J3105	10/28/16	10/28/16	TPH 8015M	
>C28-C35	ND	28.1	mg/kg dry	1	P6J3105	10/28/16	10/28/16	TPH 8015M	
Surrogate: 1-Chlorooctane		65.7 %	70-130		P6J3105	10/28/16	10/28/16	TPH 8015M	S-GC
Surrogate: o-Terphenyl		75.6 %	70-130		P6J3105	10/28/16	10/28/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	28.1	mg/kg dry	1	[CALC]	10/28/16	10/28/16	calc	

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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

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**SB-7 (5)**  
**6J21003-10 (Soil)**

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

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	38.2	1.08	mg/kg dry	1	P6K0202	11/02/16	11/03/16	EPA 300.0	
% Moisture	7.0	0.1	%	1	P6K0104	11/01/16	11/01/16	% calculation	

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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

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**SB-4 (10ft)**  
**7C13016-01 (Soil)**

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

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	36.2	1.10	mg/kg dry	1	P7C1603	03/16/17	03/16/17	EPA 300.0
% Moisture	9.0	0.1	%	1	P7C1703	03/17/17	03/17/17	% calculation

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Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

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**SB-5 (15ft)**  
**7C13016-02 (Soil)**

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

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>132</b>	1.04	mg/kg dry	1	P7C1603	03/16/17	03/16/17	EPA 300.0
<b>% Moisture</b>	<b>4.0</b>	0.1	%	1	P7C1703	03/17/17	03/17/17	% calculation

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Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

**SB-5 (20ft)**  
**7C13016-03 (Soil)**

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

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>186</b>	1.02	mg/kg dry	1	P7C1603	03/16/17	03/16/17	EPA 300.0
<b>% Moisture</b>	<b>2.0</b>	0.1	%	1	P7C1703	03/17/17	03/17/17	% calculation

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Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

**SB-6 (15ft)**  
**7C13016-04 (Soil)**

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

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>127</b>	1.02	mg/kg dry	1	P7C1603	03/16/17	03/16/17	EPA 300.0
<b>% Moisture</b>	<b>2.0</b>	0.1	%	1	P7C1703	03/17/17	03/17/17	% calculation

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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

**SB-6 (20ft)**  
**7C13016-05 (Soil)**

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

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>180</b>	1.04	mg/kg dry	1	P7C1603	03/16/17	03/16/17	EPA 300.0
<b>% Moisture</b>	<b>4.0</b>	0.1	%	1	P7C1703	03/17/17	03/17/17	% calculation

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Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

**SB-7 (10ft)**  
**7C13016-06 (Soil)**

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

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>31.5</b>	1.04	mg/kg dry	1	P7C1603	03/16/17	03/16/17	EPA 300.0
<b>% Moisture</b>	<b>4.0</b>	0.1	%	1	P7C1703	03/17/17	03/17/17	% calculation



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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6J2603 - General Preparation (GC)**

**Blank (P6J2603-BLK1)**

Prepared & Analyzed: 10/25/16

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	0.0670		"	0.0600		112	75-125			
Surrogate: 4-Bromofluorobenzene	0.0543		"	0.0600		90.4	75-125			

**LCS (P6J2603-BS1)**

Prepared & Analyzed: 10/25/16

Benzene	0.0876	0.00100	mg/kg wet	0.100		87.6	70-130			
Toluene	0.0846	0.00200	"	0.100		84.6	70-130			
Ethylbenzene	0.102	0.00100	"	0.100		102	70-130			
Xylene (p/m)	0.192	0.00200	"	0.200		96.2	70-130			
Xylene (o)	0.0892	0.00100	"	0.100		89.2	70-130			
Surrogate: 1,4-Difluorobenzene	0.0721		"	0.0600		120	75-125			
Surrogate: 4-Bromofluorobenzene	0.0466		"	0.0600		77.8	75-125			

**LCS Dup (P6J2603-BSD1)**

Prepared & Analyzed: 10/25/16

Benzene	0.0942	0.00100	mg/kg wet	0.100		94.2	70-130	7.30	20	
Toluene	0.0903	0.00200	"	0.100		90.3	70-130	6.47	20	
Ethylbenzene	0.117	0.00100	"	0.100		117	70-130	13.7	20	
Xylene (p/m)	0.211	0.00200	"	0.200		106	70-130	9.31	20	
Xylene (o)	0.0962	0.00100	"	0.100		96.2	70-130	7.59	20	
Surrogate: 4-Bromofluorobenzene	0.0553		"	0.0600		92.2	75-125			
Surrogate: 1,4-Difluorobenzene	0.0768		"	0.0600		128	75-125			S-GC

**Matrix Spike (P6J2603-MS1)**

Source: 6J21002-03

Prepared & Analyzed: 10/25/16

Benzene	0.176	0.00105	mg/kg dry	0.211	ND	83.4	80-120			
Toluene	0.177	0.00211	"	0.211	0.00151	83.5	80-120			
Ethylbenzene	0.200	0.00105	"	0.211	0.00275	93.5	80-120			
Xylene (p/m)	0.342	0.00211	"	0.421	0.0133	78.1	80-120			QM-07
Xylene (o)	0.154	0.00105	"	0.211	0.0377	55.1	80-120			QM-07
Surrogate: 1,4-Difluorobenzene	0.0741		"	0.0632		117	75-125			
Surrogate: 4-Bromofluorobenzene	0.0508		"	0.0632		80.5	75-125			

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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6J2603 - General Preparation (GC)**

**Matrix Spike Dup (P6J2603-MSD1)**

Source: 6J21002-03

Prepared & Analyzed: 10/25/16

Benzene	0.159	0.00105	mg/kg dry	0.211	ND	75.5	80-120	9.90	20	QM-07
Toluene	0.155	0.00211	"	0.211	0.00151	73.0	80-120	13.4	20	QM-07
Ethylbenzene	0.174	0.00105	"	0.211	0.00275	81.6	80-120	13.6	20	
Xylene (p/m)	0.295	0.00211	"	0.421	0.0133	67.0	80-120	15.3	20	QM-07
Xylene (o)	0.131	0.00105	"	0.211	0.0377	44.2	80-120	22.0	20	QM-07
Surrogate: 4-Bromofluorobenzene	0.0469		"	0.0632		74.2	75-125			S-GC
Surrogate: 1,4-Difluorobenzene	0.0783		"	0.0632		124	75-125			

**Batch P6J2807 - General Preparation (GC)**

**Blank (P6J2807-BLK1)**

Prepared & Analyzed: 10/28/16

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 4-Bromofluorobenzene	0.0286		"	0.0800		35.8	75-125			S-GC
Surrogate: 1,4-Difluorobenzene	0.0615		"	0.0800		76.9	75-125			

**LCS (P6J2807-BS1)**

Prepared & Analyzed: 10/28/16

Benzene	0.0847	0.00100	mg/kg wet	0.100		84.7	70-130			
Toluene	0.0880	0.00200	"	0.100		88.0	70-130			
Ethylbenzene	0.0930	0.00100	"	0.100		93.0	70-130			
Xylene (p/m)	0.171	0.00200	"	0.200		85.4	70-130			
Xylene (o)	0.0828	0.00100	"	0.100		82.8	70-130			
Surrogate: 1,4-Difluorobenzene	0.0748		"	0.0800		93.5	75-125			
Surrogate: 4-Bromofluorobenzene	0.0263		"	0.0800		32.8	75-125			S-GC

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Project Number: [none]  
Project Manager: Coty Woolf

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6J2807 - General Preparation (GC)**

**LCS Dup (P6J2807-BSD1)**

Prepared & Analyzed: 10/28/16

Benzene	0.0846	0.00100	mg/kg wet	0.100		84.6	70-130	0.154	20	
Toluene	0.0882	0.00200	"	0.100		88.2	70-130	0.204	20	
Ethylbenzene	0.0893	0.00100	"	0.100		89.3	70-130	4.10	20	
Xylene (p/m)	0.166	0.00200	"	0.200		83.1	70-130	2.70	20	
Xylene (o)	0.0850	0.00100	"	0.100		85.0	70-130	2.68	20	
Surrogate: 1,4-Difluorobenzene	0.0754		"	0.0800		94.2	75-125			
Surrogate: 4-Bromofluorobenzene	0.0259		"	0.0800		32.4	75-125			S-GC

**Matrix Spike (P6J2807-MS1)**

Source: 6J21004-04

Prepared: 10/28/16 Analyzed: 10/29/16

Benzene	0.164	0.00143	mg/kg dry	0.286	ND	57.3	80-120			QM-07
Toluene	0.160	0.00286	"	0.286	ND	56.1	80-120			QM-07
Ethylbenzene	0.149	0.00143	"	0.286	ND	52.3	80-120			QM-07
Xylene (p/m)	0.253	0.00286	"	0.571	ND	44.3	80-120			QM-07
Xylene (o)	0.111	0.00143	"	0.286	ND	38.7	80-120			QM-07
Surrogate: 4-Bromofluorobenzene	0.0390		"	0.114		34.1	75-125			S-GC
Surrogate: 1,4-Difluorobenzene	0.113		"	0.114		99.2	75-125			

**Matrix Spike Dup (P6J2807-MSD1)**

Source: 6J21004-04

Prepared: 10/28/16 Analyzed: 10/29/16

Benzene	0.163	0.00143	mg/kg dry	0.286	ND	57.2	80-120	0.227	20	QM-07
Toluene	0.154	0.00286	"	0.286	ND	53.8	80-120	4.12	20	QM-07
Ethylbenzene	0.138	0.00143	"	0.286	ND	48.3	80-120	7.95	20	QM-07
Xylene (p/m)	0.234	0.00286	"	0.571	ND	40.9	80-120	8.03	20	QM-07
Xylene (o)	0.100	0.00143	"	0.286	ND	35.0	80-120	9.94	20	QM-07
Surrogate: 1,4-Difluorobenzene	0.105		"	0.114		91.8	75-125			
Surrogate: 4-Bromofluorobenzene	0.0377		"	0.114		33.0	75-125			S-GC

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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6J2502 - \*\*\* DEFAULT PREP \*\*\***

<b>Blank (P6J2502-BLK1)</b>		Prepared & Analyzed: 10/25/16								
% Moisture	ND	0.1	%							
<b>Duplicate (P6J2502-DUP1)</b>		<b>Source: 6J21001-03</b>		Prepared & Analyzed: 10/25/16						
% Moisture	12.0	0.1	%		12.0			0.00	20	
<b>Duplicate (P6J2502-DUP2)</b>		<b>Source: 6J21008-04</b>		Prepared & Analyzed: 10/25/16						
% Moisture	2.0	0.1	%		1.0			66.7	20	
<b>Duplicate (P6J2502-DUP3)</b>		<b>Source: 6J21013-03</b>		Prepared & Analyzed: 10/25/16						
% Moisture	13.0	0.1	%		13.0			0.00	20	
<b>Duplicate (P6J2502-DUP4)</b>		<b>Source: 6J24001-08</b>		Prepared & Analyzed: 10/25/16						
% Moisture	9.0	0.1	%		8.0			11.8	20	

**Batch P6J2503 - \*\*\* DEFAULT PREP \*\*\***

<b>Blank (P6J2503-BLK1)</b>		Prepared & Analyzed: 10/25/16								
Chloride	ND	1.00	mg/kg wet							
<b>LCS (P6J2503-BS1)</b>		Prepared & Analyzed: 10/25/16								
Chloride	368	1.00	mg/kg wet	400		91.9	80-120			
<b>LCS Dup (P6J2503-BSD1)</b>		Prepared & Analyzed: 10/25/16								
Chloride	376	1.00	mg/kg wet	400		94.0	80-120	2.21	20	
<b>Duplicate (P6J2503-DUP1)</b>		<b>Source: 6J20019-BF</b>		Prepared & Analyzed: 10/25/16						
Chloride	942	26.9	mg/kg dry		947			0.541	20	

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Project Manager: Coty Woolf

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6J2503 - \*\*\* DEFAULT PREP \*\*\***

<b>Duplicate (P6J2503-DUP2)</b>		<b>Source: 6J20019-BP</b>		Prepared: 10/25/16 Analyzed: 10/26/16						
Chloride	1030	27.5	mg/kg dry		1040			0.318	20	
<b>Matrix Spike (P6J2503-MS1)</b>		<b>Source: 6J20019-BF</b>		Prepared & Analyzed: 10/25/16						
Chloride	13800	26.9	mg/kg dry	10800	947	119	80-120			

**Batch P6J2506 - \*\*\* DEFAULT PREP \*\*\***

<b>Blank (P6J2506-BLK1)</b>				Prepared: 10/25/16 Analyzed: 10/26/16						
Chloride	ND	1.00	mg/kg wet							
<b>LCS (P6J2506-BS1)</b>				Prepared: 10/25/16 Analyzed: 10/26/16						
Chloride	413	1.00	mg/kg wet	400		103	80-120			
<b>LCS Dup (P6J2506-BSD1)</b>				Prepared: 10/25/16 Analyzed: 10/26/16						
Chloride	414	1.00	mg/kg wet	400		103	80-120	0.181	20	
<b>Duplicate (P6J2506-DUP1)</b>		<b>Source: 6J21004-01</b>		Prepared: 10/25/16 Analyzed: 10/26/16						
Chloride	2.47	1.35	mg/kg dry		ND				20	
<b>Duplicate (P6J2506-DUP2)</b>		<b>Source: 6J21006-03</b>		Prepared: 10/25/16 Analyzed: 10/26/16						
Chloride	3.21	1.05	mg/kg dry		3.57			10.6	20	
<b>Matrix Spike (P6J2506-MS1)</b>		<b>Source: 6J21004-01</b>		Prepared: 10/25/16 Analyzed: 10/26/16						
Chloride	1070	1.35	mg/kg dry	1350	ND	79.0	80-120			QM-07

**Batch P6J2806 - \*\*\* DEFAULT PREP \*\*\***

<b>Blank (P6J2806-BLK1)</b>				Prepared: 10/28/16 Analyzed: 11/02/16						
Chloride	ND	1.00	mg/kg wet							

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6J2806 - \*\*\* DEFAULT PREP \*\*\***

**LCS (P6J2806-BS1)**

Prepared: 10/28/16 Analyzed: 11/02/16

Chloride	438	1.00	mg/kg wet	400	110	80-120
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**LCS Dup (P6J2806-BSD1)**

Prepared: 10/28/16 Analyzed: 11/02/16

Chloride	438	1.00	mg/kg wet	400	109	80-120	0.0548	20
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**Duplicate (P6J2806-DUP2)**

Source: 6J26002-02

Prepared: 10/28/16 Analyzed: 11/02/16

Chloride	3260	30.1	mg/kg dry	3220	1.15	20
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**Matrix Spike (P6J2806-MS1)**

Source: 6J21003-06

Prepared: 10/28/16 Analyzed: 11/02/16

Chloride	1620	1.12	mg/kg dry	1120	403	108	80-120
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**Batch P6J3101 - \*\*\* DEFAULT PREP \*\*\***

**Blank (P6J3101-BLK1)**

Prepared & Analyzed: 10/31/16

% Moisture	ND	0.1	%
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**Duplicate (P6J3101-DUP1)**

Source: 6J28004-04

Prepared & Analyzed: 10/31/16

% Moisture	3.0	0.1	%	3.0	0.00	20
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**Duplicate (P6J3101-DUP2)**

Source: 6J28009-04

Prepared & Analyzed: 10/31/16

% Moisture	8.0	0.1	%	8.0	0.00	20
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**Batch P6K0104 - \*\*\* DEFAULT PREP \*\*\***

**Blank (P6K0104-BLK1)**

Prepared & Analyzed: 11/01/16

% Moisture	ND	0.1	%
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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6K0104 - \*\*\* DEFAULT PREP \*\*\***

<b>Duplicate (P6K0104-DUP1)</b>	<b>Source: 6J31008-02</b>		Prepared & Analyzed: 11/01/16							
% Moisture	2.0	0.1	%		3.0			40.0	20	
<b>Duplicate (P6K0104-DUP2)</b>	<b>Source: 6J20003-13</b>		Prepared & Analyzed: 11/01/16							
% Moisture	2.0	0.1	%		1.0			66.7	20	

**Batch P6K0202 - \*\*\* DEFAULT PREP \*\*\***

<b>Blank (P6K0202-BLK1)</b>	Prepared: 11/02/16 Analyzed: 11/03/16									
Chloride	ND	1.00	mg/kg wet							
<b>LCS (P6K0202-BS1)</b>	Prepared: 11/02/16 Analyzed: 11/03/16									
Chloride	389	1.00	mg/kg wet	400		97.2	80-120			
<b>LCS Dup (P6K0202-BSD1)</b>	Prepared: 11/02/16 Analyzed: 11/03/16									
Chloride	387	1.00	mg/kg wet	400		96.8	80-120	0.461	20	
<b>Duplicate (P6K0202-DUP1)</b>	<b>Source: 6J20001-10</b>		Prepared: 11/02/16 Analyzed: 11/03/16							
Chloride	137	1.03	mg/kg dry		185			29.6	20	R3
<b>Duplicate (P6K0202-DUP2)</b>	<b>Source: 6J21003-05</b>		Prepared: 11/02/16 Analyzed: 11/03/16							
Chloride	505	1.09	mg/kg dry		499			1.10	20	
<b>Matrix Spike (P6K0202-MS1)</b>	<b>Source: 6J20001-10</b>		Prepared: 11/02/16 Analyzed: 11/03/16							
Chloride	1030	1.03	mg/kg dry	1030	185	81.7	80-120			

**Batch P7C1603 - \*\*\* DEFAULT PREP \*\*\***

<b>Blank (P7C1603-BLK1)</b>	Prepared & Analyzed: 03/16/17									
Chloride	ND	1.00	mg/kg wet							

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Project Number: [none]  
Project Manager: Coty Woolf

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P7C1603 - \*\*\* DEFAULT PREP \*\*\***

**LCS (P7C1603-BS1)**

Prepared & Analyzed: 03/16/17

Chloride	403	1.00	mg/kg wet	400	101	80-120
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**LCS Dup (P7C1603-BSD1)**

Prepared & Analyzed: 03/16/17

Chloride	403	1.00	mg/kg wet	400	101	80-120	0.0993	20
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**Duplicate (P7C1603-DUP1)**

Source: 7C13014-01

Prepared & Analyzed: 03/16/17

Chloride	371	1.06	mg/kg dry	369	0.575	20
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**Duplicate (P7C1603-DUP2)**

Source: 7C13017-03

Prepared & Analyzed: 03/16/17

Chloride	26.4	1.04	mg/kg dry	28.2	6.72	20
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**Matrix Spike (P7C1603-MS1)**

Source: 7C13014-01

Prepared & Analyzed: 03/16/17

Chloride	566	1.06	mg/kg dry	213	369	92.5	80-120
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**Batch P7C1703 - \*\*\* DEFAULT PREP \*\*\***

**Blank (P7C1703-BLK1)**

Prepared & Analyzed: 03/17/17

% Moisture	ND	0.1	%
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**Blank (P7C1703-BLK2)**

Prepared & Analyzed: 03/17/17

% Moisture	ND	0.1	%
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**Duplicate (P7C1703-DUP1)**

Source: 7C14004-12

Prepared & Analyzed: 03/17/17

% Moisture	12.0	0.1	%	8.0	40.0	20
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**Duplicate (P7C1703-DUP2)**

Source: 7C14007-08

Prepared & Analyzed: 03/17/17

% Moisture	6.0	0.1	%	7.0	15.4	20
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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P7C1703 - \*\*\* DEFAULT PREP \*\*\***

Duplicate (P7C1703-DUP3)	Source: 7C14011-27			Prepared & Analyzed: 03/17/17		
% Moisture	12.0	0.1	%	9.0	28.6	20
Duplicate (P7C1703-DUP4)	Source: 7C15004-01			Prepared & Analyzed: 03/17/17		
% Moisture	1.0	0.1	%	2.0	66.7	20
Duplicate (P7C1703-DUP5)	Source: 7C15005-33			Prepared & Analyzed: 03/17/17		
% Moisture	16.0	0.1	%	15.0	6.45	20

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Project Number: [none]  
Project Manager: Coty Woolf

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6J2602 - TX 1005**

**Blank (P6J2602-BLK1)**

Prepared & Analyzed: 10/24/16

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	78.9		"	100		78.9	70-130			
Surrogate: o-Terphenyl	61.0		"	50.0		122	70-130			

**LCS (P6J2602-BS1)**

Prepared & Analyzed: 10/24/16

C6-C12	1130	25.0	mg/kg wet	1000		113	75-125			
>C12-C28	956	25.0	"	1000		95.6	75-125			
Surrogate: 1-Chlorooctane	93.8		"	100		93.8	70-130			
Surrogate: o-Terphenyl	57.0		"	50.0		114	70-130			

**LCS Dup (P6J2602-BSD1)**

Prepared & Analyzed: 10/24/16

C6-C12	1070	25.0	mg/kg wet	1000		107	75-125	4.91	20	
>C12-C28	945	25.0	"	1000		94.5	75-125	1.15	20	
Surrogate: 1-Chlorooctane	96.0		"	100		96.0	70-130			
Surrogate: o-Terphenyl	56.2		"	50.0		112	70-130			

**Matrix Spike (P6J2602-MS1)**

Source: 6J21006-02

Prepared & Analyzed: 10/24/16

C6-C12	1280	36.2	mg/kg dry	1450	22.9	87.0	75-125			
>C12-C28	1150	36.2	"	1450	ND	79.1	75-125			
Surrogate: 1-Chlorooctane	151		"	145		104	70-130			
Surrogate: o-Terphenyl	75.2		"	72.5		104	70-130			

**Matrix Spike Dup (P6J2602-MSD1)**

Source: 6J21006-02

Prepared & Analyzed: 10/24/16

C6-C12	1350	36.2	mg/kg dry	1450	22.9	91.5	75-125	5.02	20	
>C12-C28	1190	36.2	"	1450	ND	82.3	75-125	3.99	20	
Surrogate: 1-Chlorooctane	156		"	145		108	70-130			
Surrogate: o-Terphenyl	78.1		"	72.5		108	70-130			

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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6J3105 - TX 1005**

**Blank (P6J3105-BLK1)**

Prepared & Analyzed: 10/28/16

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	76.0		"	100		76.0	70-130			
Surrogate: o-Terphenyl	50.3		"	50.0		101	70-130			

**LCS (P6J3105-BS1)**

Prepared & Analyzed: 10/28/16

C6-C12	937	25.0	mg/kg wet	1000		93.7	75-125			
>C12-C28	861	25.0	"	1000		86.1	75-125			
Surrogate: 1-Chlorooctane	77.5		"	100		77.5	70-130			
Surrogate: o-Terphenyl	43.1		"	50.0		86.2	70-130			

**LCS Dup (P6J3105-BSD1)**

Prepared & Analyzed: 10/28/16

C6-C12	963	25.0	mg/kg wet	1000		96.3	75-125	2.77	20	
>C12-C28	879	25.0	"	1000		87.9	75-125	2.05	20	
Surrogate: 1-Chlorooctane	97.8		"	100		97.8	70-130			
Surrogate: o-Terphenyl	45.1		"	50.0		90.2	70-130			

**Matrix Spike (P6J3105-MS1)**

Source: 6J21006-05

Prepared: 10/28/16 Analyzed: 10/29/16

C6-C12	1130	28.4	mg/kg dry	1140	19.2	97.9	75-125			
>C12-C28	1040	28.4	"	1140	ND	91.9	75-125			
Surrogate: 1-Chlorooctane	126		"	114		111	70-130			
Surrogate: o-Terphenyl	53.7		"	56.8		94.5	70-130			

**Matrix Spike Dup (P6J3105-MSD1)**

Source: 6J21006-05

Prepared: 10/28/16 Analyzed: 10/29/16

C6-C12	1110	28.4	mg/kg dry	1140	19.2	96.1	75-125	1.88	20	
>C12-C28	861	28.4	"	1140	ND	75.8	75-125	19.2	20	
Surrogate: 1-Chlorooctane	104		"	114		91.3	70-130			
Surrogate: o-Terphenyl	43.6		"	56.8		76.8	70-130			

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Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6K0205 - TX 1005**

**Blank (P6K0205-BLK1)**

Prepared & Analyzed: 11/01/16

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	73.1		"	100		73.1	70-130			
Surrogate: o-Terphenyl	44.4		"	50.0		88.9	70-130			

**LCS (P6K0205-BS1)**

Prepared & Analyzed: 11/01/16

C6-C12	984	25.0	mg/kg wet	1000		98.4	75-125			
>C12-C28	916	25.0	"	1000		91.6	75-125			
Surrogate: 1-Chlorooctane	77.5		"	100		77.5	70-130			
Surrogate: o-Terphenyl	41.1		"	50.0		82.2	70-130			

**LCS Dup (P6K0205-BSD1)**

Prepared & Analyzed: 11/01/16

C6-C12	1020	25.0	mg/kg wet	1000		102	75-125	3.64	20	
>C12-C28	944	25.0	"	1000		94.4	75-125	3.06	20	
Surrogate: 1-Chlorooctane	90.0		"	100		90.0	70-130			
Surrogate: o-Terphenyl	44.6		"	50.0		89.1	70-130			

Charger Services  
P.O. Box 53070  
Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247

### Notes and Definitions

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

R3 The RPD exceeded the acceptance limit due to sample matrix effects.

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

BULK Samples received in Bulk soil containers

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

Report Approved By:



Date:

3/19/2017

Brent Barron, Laboratory Director/Technical Director

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

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

Charger Services  
P.O. Box 53070  
Midland TX, 79710

Project: Siana Blue Dunn #1  
Project Number: [none]  
Project Manager: Coty Woolf

Fax: (432) 695-6247



CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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

Phone: 432-686-7235

CH

Project Name: Blue Point #1

Project #: \_\_\_\_\_

Project Loc: \_\_\_\_\_

PO #: \_\_\_\_\_

Project Manager: Coty Woolf

Company Name: Charge Services

Company Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Telephone No: 325-669-5735

Fax No: \_\_\_\_\_

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: \_\_\_\_\_

e-mail: \_\_\_\_\_

Coty.Woolf@chargeservices.com

(lab use only)

ORDER #: 6521003

LAB # (lab use only)	

Rush 24 48 72 (Please call)  
Standard

Special Instructions:

Relinquished by: Josh Coats Date: 10/21/16 Time: 8:15 AM

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: 10-21-16 Time: 8:15

Laboratory Comments:  
Sample Containers Intact? N  
VOCs Free of Headspace? N  
Labels on containers? N  
Custody seals on containers? N  
Custody seals on cooler(s)? N  
Sample Hand Delivered by Courier? N  
by Sample/Client Rep.? N  
by UPS? N  
Temperature Upon Receipt: 2.0 °C  
Adjusted: NCEU

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

Phone: 432-686-7235

Project Manager:

Coty Wolf

Project Name:

Santa Blue Run

Company Name

Charger Services

Project #:

Company Address:

Project Loc:

City/State/Zip:

PO #:

Telephone No:

Report Format: ☒ Standard

☐ TRRP

☐ NPDES

Sampler Signature:

[Signature]

e-mail:

coty.wolf@chargerservices.com

((lab use only))

ORDER #: 7C13016

LAB # (lab use only)

FIELD CODE

Beginning Depth

Ending Depth

Date Sampled

Time Sampled

Field Filtered

Total #. of Containers

Ice

HNO<sub>3</sub> 250ml Poly

HCl

H<sub>2</sub>SO<sub>4</sub>

NaOH

Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>

None 1L Poly

NaOH/ZnAc

DW=Drinking Water SL=Sludge

GW = Groundwater S=Soil/Solid

NP=Non-Potable Specify Other

TPH by TX 1005 8015B 8015M

Chloride

BTEX by 8021B

Preservation & # of Containers

Matrix

Analyze For:

Rush 24 48 72 (Please call)

Standard

Special Instructions:

Relinquished by:

Date

Time

Date

Time

Relinquished by:

Date

Time

Date

Time

Relinquished by:

Date

Time

Date

Time

Laboratory Comments:

Sample Containers Intact?

VOCs Free of Headspace?

Labels on container(s)

Custody seals on container(s)

Sample Hand Delivered

by Courier?

Temperature Upon Receipt:

Adjusted:

Factor

N

N

N

N

N

N

N

N

N

N

N

N

N

N

N

N

N

N