



Project No. AR167154		Attachment #1 – Sec A - Site and Sample Location Map Former Maljamar Station 32.71932°, -103.82819° Eddy County, New Mexico	
Scale:	1" ~ 25'		
Source:	Google Earth		
Date:	2016		
5827 50th St. Suite 1 PH. (806) 300-0104		Lubbock, Texas 79424 FAX. (806) 797 0947	



View of current excavation. Subject area is at base of ramp near southwest corner of liner. Facing Southeast



View of portion of the excavated area. Subject area is at base of ramp near southwest corner of liner. Facing South



View of the affected area and advancement of test trench. Facing Southwest.



View of portion of the excavated area. Subject area is at base of ramp near southwest corner of liner. Facing Southwest

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



Analytical Report

Prepared for:

Joel Lowry
Terracon Consulting, Inc.
10400 State Highway 191
Midland, TX 79707

Project: Maljamar Station
Project Number: AR167154
Location: New Mexico
Lab Order Number: 7E12021



NELAP/TCEQ # T104704156-13-3

Report Date: 05/16/17

Terracon Consulting, Inc.
10400 State Highway 191
Midland TX, 79707

Project: Maljamar Station
Project Number: AR167154
Project Manager: Joel Lowry

Fax: (432) 684-9608

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Sec. A Wall #13c	7E12021-01	Soil	05/11/17 00:00	05-12-2017 10:32
(5/11) Sec. A Stockpile #1	7E12021-02	Soil	05/11/17 00:00	05-12-2017 10:32

Sec. A Wall #13c
7E12021-01 (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	0.00115	mg/kg dry	1	P7E1609	05/15/17	05/15/17	EPA 8021B	
Toluene	ND	0.00230	mg/kg dry	1	P7E1609	05/15/17	05/15/17	EPA 8021B	
Ethylbenzene	ND	0.00115	mg/kg dry	1	P7E1609	05/15/17	05/15/17	EPA 8021B	
Xylene (p/m)	ND	0.00230	mg/kg dry	1	P7E1609	05/15/17	05/15/17	EPA 8021B	
Xylene (o)	ND	0.00115	mg/kg dry	1	P7E1609	05/15/17	05/15/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		48.1 %		75-125	P7E1609	05/15/17	05/15/17	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		98.2 %		75-125	P7E1609	05/15/17	05/15/17	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

% Moisture	13.0	0.1	%	1	P7E1503	05/15/17	05/15/17	% calculation	
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	28.7	mg/kg dry	1	P7E1606	05/15/17	05/15/17	TPH 8015M	
>C12-C28	79.2	28.7	mg/kg dry	1	P7E1606	05/15/17	05/15/17	TPH 8015M	
>C28-C35	85.6	28.7	mg/kg dry	1	P7E1606	05/15/17	05/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		96.5 %		70-130	P7E1606	05/15/17	05/15/17	TPH 8015M	
Surrogate: o-Terphenyl		96.8 %		70-130	P7E1606	05/15/17	05/15/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	165	28.7	mg/kg dry	1	[CALC]	05/15/17	05/15/17	calc	

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(5/11) Sec. A Stockpile #1
7E12021-02 (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	0.00104	mg/kg dry	1	P7E1609	05/15/17	05/15/17	EPA 8021B	
Toluene	ND	0.00208	mg/kg dry	1	P7E1609	05/15/17	05/15/17	EPA 8021B	
Ethylbenzene	ND	0.00104	mg/kg dry	1	P7E1609	05/15/17	05/15/17	EPA 8021B	
Xylene (p/m)	ND	0.00208	mg/kg dry	1	P7E1609	05/15/17	05/15/17	EPA 8021B	
Xylene (o)	ND	0.00104	mg/kg dry	1	P7E1609	05/15/17	05/15/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		50.9 %	75-125		P7E1609	05/15/17	05/15/17	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		108 %	75-125		P7E1609	05/15/17	05/15/17	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	31.1	1.04	mg/kg dry	1	P7E1511	05/15/17	05/16/17	EPA 300.0	
% Moisture	4.0	0.1	%	1	P7E1503	05/15/17	05/15/17	% calculation	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	81.9	26.0	mg/kg dry	1	P7E1606	05/15/17	05/16/17	TPH 8015M	
>C12-C28	1100	26.0	mg/kg dry	1	P7E1606	05/15/17	05/16/17	TPH 8015M	
>C28-C35	285	26.0	mg/kg dry	1	P7E1606	05/15/17	05/16/17	TPH 8015M	
Surrogate: 1-Chlorooctane		102 %	70-130		P7E1606	05/15/17	05/16/17	TPH 8015M	
Surrogate: o-Terphenyl		107 %	70-130		P7E1606	05/15/17	05/16/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	1460	26.0	mg/kg dry	1	[CALC]	05/15/17	05/16/17	calc	

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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 P7E1609 - General Preparation (GC)

Blank (P7E1609-BLK1)

Prepared & Analyzed: 05/15/17

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	0.0548		"	0.0600		91.3	75-125			
Surrogate: 4-Bromofluorobenzene	0.0264		"	0.0600		44.0	75-125			S-GC

LCS (P7E1609-BS1)

Prepared & Analyzed: 05/15/17

Benzene	0.114	0.00100	mg/kg wet	0.100		114	70-130			
Toluene	0.105	0.00200	"	0.100		105	70-130			
Ethylbenzene	0.111	0.00100	"	0.100		111	70-130			
Xylene (p/m)	0.212	0.00200	"				70-130			
Xylene (o)	0.104	0.00100	"				70-130			
Surrogate: 1,4-Difluorobenzene	0.0638		"	0.0600		106	75-125			
Surrogate: 4-Bromofluorobenzene	0.0264		"	0.0600		44.0	75-125			S-GC

LCS Dup (P7E1609-BS1)

Prepared & Analyzed: 05/15/17

Benzene	0.100	0.00100	mg/kg wet	0.100		100	70-130	12.8	20	
Toluene	0.0948	0.00200	"	0.100		94.8	70-130	9.82	20	
Ethylbenzene	0.107	0.00100	"	0.100		107	70-130	4.28	20	
Xylene (p/m)	0.174	0.00200	"				70-130		20	
Xylene (o)	0.0901	0.00100	"				70-130		20	
Surrogate: 4-Bromofluorobenzene	0.0214		"	0.0600		35.7	75-125			S-GC
Surrogate: 1,4-Difluorobenzene	0.0580		"	0.0600		96.6	75-125			

Matrix Spike (P7E1609-MS1)

Source: 7E15004-07

Prepared: 05/15/17 Analyzed: 05/16/17

Benzene	0.139	0.00100	mg/kg wet	0.100	ND	139	80-120			QM-05
Toluene	0.125	0.00200	"	0.100	ND	125	80-120			QM-05
Ethylbenzene	0.150	0.00100	"	0.100	ND	150	80-120			QM-05
Xylene (p/m)	0.230	0.00200	"		ND		80-120			
Xylene (o)	0.109	0.00100	"		ND		80-120			
Surrogate: 1,4-Difluorobenzene	0.0600		"	0.0600		100	75-125			
Surrogate: 4-Bromofluorobenzene	0.0226		"	0.0600		37.7	75-125			S-GC

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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 P7E1609 - General Preparation (GC)

Matrix Spike Dup (P7E1609-MSD1)

Source: 7E15004-07

Prepared: 05/15/17 Analyzed: 05/16/17

Benzene	0.142	0.00100	mg/kg wet	0.100	ND	142	80-120	2.45	20	QM-05
Toluene	0.127	0.00200	"	0.100	ND	127	80-120	1.30	20	QM-05
Ethylbenzene	0.160	0.00100	"	0.100	ND	160	80-120	6.67	20	QM-05
Xylene (p/m)	0.247	0.00200	"		ND		80-120		20	
Xylene (o)	0.116	0.00100	"		ND		80-120		20	
Surrogate: 1,4-Difluorobenzene	0.0624		"	0.0600		104	75-125			
Surrogate: 4-Bromofluorobenzene	0.0230		"	0.0600		38.3	75-125			S-GC

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P7E1503 - *** DEFAULT PREP ***										
Blank (P7E1503-BLK1)				Prepared & Analyzed: 05/15/17						
% Moisture	ND	0.1	%							
Blank (P7E1503-BLK2)				Prepared & Analyzed: 05/15/17						
% Moisture	ND	0.1	%							
Duplicate (P7E1503-DUP1)				Source: 7E12005-08		Prepared & Analyzed: 05/15/17				
% Moisture	13.0	0.1	%		13.0			0.00	20	
Duplicate (P7E1503-DUP2)				Source: 7E12010-06		Prepared & Analyzed: 05/15/17				
% Moisture	12.0	0.1	%		13.0			8.00	20	
Duplicate (P7E1503-DUP3)				Source: 7E12012-15		Prepared & Analyzed: 05/15/17				
% Moisture	10.0	0.1	%		10.0			0.00	20	
Duplicate (P7E1503-DUP4)				Source: 7E12016-01		Prepared & Analyzed: 05/15/17				
% Moisture	5.0	0.1	%		4.0			22.2	20	
Batch P7E1511 - *** DEFAULT PREP ***										
Blank (P7E1511-BLK1)				Prepared: 05/15/17 Analyzed: 05/16/17						
Chloride	ND	1.00	mg/kg wet							
LCS (P7E1511-BS1)				Prepared: 05/15/17 Analyzed: 05/16/17						
Chloride	405	1.00	mg/kg wet	400		101	80-120			
LCS Dup (P7E1511-BSD1)				Prepared: 05/15/17 Analyzed: 05/16/17						
Chloride	409	1.00	mg/kg wet	400		102	80-120	1.04	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 P7E1511 - * DEFAULT PREP *****

Duplicate (P7E1511-DUP1)

Source: 7E12004-01

Prepared: 05/15/17 Analyzed: 05/16/17

Chloride	9290	54.3	mg/kg dry		9120			1.81	20	
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Duplicate (P7E1511-DUP2)

Source: 7E12004-11

Prepared: 05/15/17 Analyzed: 05/16/17

Chloride	4400	25.5	mg/kg dry		4400			0.0754	20	
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Matrix Spike (P7E1511-MS1)

Source: 7E12004-01

Prepared: 05/15/17 Analyzed: 05/16/17

Chloride	15500	54.3	mg/kg dry	5430	9120	117	80-120			
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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 P7E1606 - TX 1005

Blank (P7E1606-BLK1)

Prepared & Analyzed: 05/15/17

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
<i>Surrogate: 1-Chlorooctane</i>	<i>88.1</i>		<i>"</i>	<i>100</i>		<i>88.1</i>	<i>70-130</i>			
<i>Surrogate: o-Terphenyl</i>	<i>44.7</i>		<i>"</i>	<i>50.0</i>		<i>89.4</i>	<i>70-130</i>			

LCS (P7E1606-BS1)

Prepared & Analyzed: 05/15/17

C6-C12	824	25.0	mg/kg wet	1000		82.4	75-125			
>C12-C28	840	25.0	"	1000		84.0	75-125			
<i>Surrogate: 1-Chlorooctane</i>	<i>93.7</i>		<i>"</i>	<i>100</i>		<i>93.7</i>	<i>70-130</i>			
<i>Surrogate: o-Terphenyl</i>	<i>42.6</i>		<i>"</i>	<i>50.0</i>		<i>85.3</i>	<i>70-130</i>			

LCS Dup (P7E1606-BSD1)

Prepared & Analyzed: 05/15/17

C6-C12	844	25.0	mg/kg wet	1000		84.4	75-125	2.39	20	
>C12-C28	841	25.0	"	1000		84.1	75-125	0.149	20	
<i>Surrogate: 1-Chlorooctane</i>	<i>93.2</i>		<i>"</i>	<i>100</i>		<i>93.2</i>	<i>70-130</i>			
<i>Surrogate: o-Terphenyl</i>	<i>42.8</i>		<i>"</i>	<i>50.0</i>		<i>85.6</i>	<i>70-130</i>			

Matrix Spike (P7E1606-MS1)

Source: 7E12013-07

Prepared: 05/15/17 Analyzed: 05/16/17

C6-C12	878	26.3	mg/kg dry	1050	ND	83.4	75-125			
>C12-C28	859	26.3	"	1050	21.9	79.5	75-125			
<i>Surrogate: 1-Chlorooctane</i>	<i>106</i>		<i>"</i>	<i>105</i>		<i>101</i>	<i>70-130</i>			
<i>Surrogate: o-Terphenyl</i>	<i>49.9</i>		<i>"</i>	<i>52.6</i>		<i>94.9</i>	<i>70-130</i>			

Matrix Spike Dup (P7E1606-MSD1)

Source: 7E12013-07

Prepared: 05/15/17 Analyzed: 05/16/17

C6-C12	922	26.3	mg/kg dry	1050	ND	87.6	75-125	4.93	20	
>C12-C28	899	26.3	"	1050	21.9	83.3	75-125	4.63	20	
<i>Surrogate: 1-Chlorooctane</i>	<i>112</i>		<i>"</i>	<i>105</i>		<i>106</i>	<i>70-130</i>			
<i>Surrogate: o-Terphenyl</i>	<i>52.3</i>		<i>"</i>	<i>52.6</i>		<i>99.4</i>	<i>70-130</i>			

Notes and Definitions

S-GC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
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:

5/16/2017

Brent Barron, Laboratory Director/Technical Director

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