



Electronic Correspondence

August 4, 2015

Kellie Jones
State of New Mexico
Oil Conservation Division
1625 N. French Dr.
Hobbs, New Mexico 88240
kellie.jones@state.nm.us

Re: **Assessment Corrective Action Plan**
Memorial Resource Development, North Square Lake Unit #154
API No.: 30-015-04986
Legal: Unit F – Sec 34 – T16S – R31E – 2310 FNL, 1650 FWL - Eddy, NM
GPS: N 32.879576 W -103.860639
Depth to Groundwater: Approximately 200 feet below ground surface (bgs)
Release Type: Crude Oil

Contaminants of Concern (COC's)	Threshold Levels
Total Petroleum Hydrocarbons (TPH)	5,000 mg/kg
Chlorides	1,000 mg/kg

Dear Kellie:

Etech Environmental & Safety Solutions, Inc. (Etech) is pleased to submit the following corrective action plan on the aforementioned site for your review and approval.

Background

The release occurred due to a pin hole that developed in the associated 2" steel flow line. The release occurred in the native pastureland approximately 60 yards north of the associated production pad. The majority of the spill had collected in the pooled area measuring approximately 35 feet long by 25 feet wide on the east side of the release point. A copy of the C-141 is provided in Attachment A. An annotated aerial photograph showing the release area and TPH levels is provided in Attachment B. Photographs of the release area are provided in Attachment C.

Scope of Work

The scope of this project is for the remediation of a hydrocarbon impact. Completion of remediation will involve the following actions:

1. Placement of a one-call for utility location.
2. Excavation of impacted soils as far as practicable or until COC threshold levels less regulatory threshold than are reached.

3. Please note: The delineation data was collected from the lowest point of the impacted area where it was evident liquids had pooled, the delineation samples were collected from surface to approximately 6 inches below ground surface (bgs). The assessment map includes the delineation data and the sampling points (SP's) that will be used to develop a baseline for hydrocarbon concentrations. A copy of the analyses along with a summary table is provided in Attachment D.
4. Confirmation samples will be collected from the bottom and the sidewalls of the excavation and analyzed for the contaminants of concern (COC's) to confirm excavation goals have been reached.
5. If the results of analysis determine that the hydrocarbon levels are above regulatory threshold levels, additional excavation will be performed until the remediation objectives are met. In the event that the depth of the impact migrated vertically to an extent that further excavation activities are no longer practical; it will be likely to install a liner at the bottom of the excavation before backfilling.
6. The impacted soil will be excavated and hauled to Lea Land for disposal.
7. Once remediation levels are reached, backfilling of the excavated area(s) will be achieved by placing clean fill similar to the existing material from the site, properly contoured, and seeded to match the region using the recommended mixture from the BLM.

Notifications and Special Conditions

1. The State Land Office (SLO) and OCD will be notified prior to the commencement of on-site operations.
2. The OCD will be notified prior to each sampling event to allow the opportunity to witness the sampling events. Splits will be made available if requested.
3. The SLO and OCD will be notified when the site is closed for final inspection prior to seeding.
4. A final report documenting the closure of the site will be submitted along with a final C-141 to SLO and OCD.

Thank you for your assistance on this matter. Should you have any questions, require additional information, or have any additional stipulations for this site, please contact Brandon Wilson or myself at (432) 563-2200 (office) or via email at fred@etechnv.com, or brandon@etechnv.com.

Respectfully:



Fred Holmes
Principal Environmental Professional

Cc: dvstrang@slo.state.nm.us

Attachment A
Initial C-141

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☐ Final Report

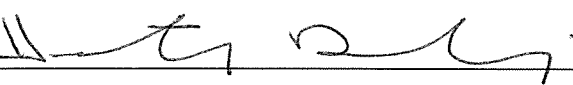
Name of Company	Memorial Production Operating LLC	Contact	Heather Dolphin
Address	500 Dallas Street Houston TX 77002	Telephone No.	832-797-1334
Facility Name	North Square Lake Unit # 154	Facility Type	Well
Surface Owner	Mineral Owner	API No. 30-015-04986	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	34	16S	31E					Eddy

Latitude 32°52' 46"N Longitude -103° 51' 38"W

NATURE OF RELEASE

Type of Release	Oil	Volume of Release	7bbls	Volume Recovered	2bbls
Source of Release	2" Steel Flow Line	Date and Hour of Occurrence	4/29/15	Date and Hour of Discovery	11:35
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	BLM		
By Whom?	Heather Dolphin	Date and Hour	4/30/15		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	n/a		
If a Watercourse was Impacted, Describe Fully.* n/a					
Describe Cause of Problem and Remedial Action Taken.* The 2" steel flow line going from the NSLU #145 to the battery developed a pin hole approximately 60 yards off location and out in the field. It spilled approx. 7bbls of oil.					
Describe Area Affected and Cleanup Action Taken.* 2bbls were recovered by vac. Truck. A clamp was put on the pipe to cover the hole. Will follow the BLM procedure of scrapping up contaminated ground.					
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.					
Signature: 		<u>OIL CONSERVATION DIVISION</u>			
Printed Name: Heather Dolphin		Approved by Environmental Specialist:			
Title: Sr. Regulatory Specialist		Approval Date:		Expiration Date:	
E-mail Address: heather.dolphin@memorialrd.com		Conditions of Approval:		Attached <input type="checkbox"/>	
Date: 4/30/15		Phone: 832-797-1334			

* Attach Additional Sheets If Necessary

Attachment B
Annotated Aerial Imagery

[illegible]

Attachment C
Photograph Log



Attachment D
Analytical Results

**PERMIAN BASIN
ENVIRONMENTAL LAB, LP
10014 SCR 1213
Midland, TX 79706**



Analytical Report

Prepared for:

Kit Prichard
E Tech Environmental & Safety Solutions, Inc.
12800 W Hwy 80 E
Odessa, TX 79765

Project: NSCU #154
Project Number: 416-6200-000
Location: Memorial
Lab Order Number: 5E22006



NELAP/TCEQ # T104704156-13-3

Report Date: 06/08/15

E Tech Environmental & Safety Solutions, Inc.
12800 W Hwy 80 E
Odessa TX, 79765

Project: NSCU #154
Project Number: 416-6200-000
Project Manager: Kit Prichard

Fax: (432) 563-2213

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Sample Point 1	5E22006-01	Soil	05/19/15 15:00	05-22-2015 13:15
Sample Point 2	5E22006-03	Soil	05/19/15 15:15	05-22-2015 13:15

E Tech Environmental & Safety Solutions, Inc.
12800 W Hwy 80 E
Odessa TX, 79765

Project: NSCU #154
Project Number: 416-6200-000
Project Manager: Kit Prichard

Fax: (432) 563-2213

Sample Point 1
5E22006-01 (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	1.18	0.0233	mg/kg dry	20	P5E2704	05/26/15	05/26/15	EPA 8021B
Toluene	0.195	0.0465	mg/kg dry	20	P5E2704	05/26/15	05/26/15	EPA 8021B
Ethylbenzene	0.0500	0.0233	mg/kg dry	20	P5E2704	05/26/15	05/26/15	EPA 8021B
Xylene (p/m)	0.0942	0.0465	mg/kg dry	20	P5E2704	05/26/15	05/26/15	EPA 8021B
Xylene (o)	0.134	0.0233	mg/kg dry	20	P5E2704	05/26/15	05/26/15	EPA 8021B
<i>Surrogate: 4-Bromofluorobenzene</i>		108 %	75-125		P5E2704	05/26/15	05/26/15	EPA 8021B
<i>Surrogate: 1,4-Difluorobenzene</i>		88.0 %	75-125		P5E2704	05/26/15	05/26/15	EPA 8021B

General Chemistry Parameters by EPA / Standard Methods

Chloride	32.1	1.16	mg/kg dry	1	P5F0403	06/04/15	06/04/15	EPA 300.0
% Moisture	14.0	0.1	%	1	P5E2601	05/26/15	05/26/15	% calculation

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	1450	581	mg/kg dry	20	P5E2801	05/22/15	05/23/15	TPH 8015M
>C12-C28	15400	581	mg/kg dry	20	P5E2801	05/22/15	05/23/15	TPH 8015M
>C28-C35	1890	581	mg/kg dry	20	P5E2801	05/22/15	05/23/15	TPH 8015M
<i>Surrogate: 1-Chlorooctane</i>		111 %	70-130		P5E2801	05/22/15	05/23/15	TPH 8015M
<i>Surrogate: o-Terphenyl</i>		108 %	70-130		P5E2801	05/22/15	05/23/15	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	18700	581	mg/kg dry	20	[CALC]	05/22/15	05/23/15	calc

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Sample Point 2
5E22006-03 (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	0.0316	0.0241	mg/kg dry	20	P5E2705	05/27/15	05/28/15	EPA 8021B	
Toluene	0.979	0.0482	mg/kg dry	20	P5E2705	05/27/15	05/28/15	EPA 8021B	
Ethylbenzene	3.14	0.0241	mg/kg dry	20	P5E2705	05/27/15	05/28/15	EPA 8021B	
Xylene (p/m)	4.71	0.0482	mg/kg dry	20	P5E2705	05/27/15	05/28/15	EPA 8021B	
Xylene (o)	2.61	0.0241	mg/kg dry	20	P5E2705	05/27/15	05/28/15	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		87.1 %		75-125	P5E2705	05/27/15	05/28/15	EPA 8021B	
<i>Surrogate: 1,4-Difluorobenzene</i>		112 %		75-125	P5E2705	05/27/15	05/28/15	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	4290	30.1	mg/kg dry	25	P5F0403	06/04/15	06/05/15	EPA 300.0	
% Moisture	17.0	0.1	%	1	P5E2601	05/26/15	05/26/15	% calculation	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	1380	301	mg/kg dry	10	P5E2801	05/22/15	05/23/15	TPH 8015M	
>C12-C28	12300	301	mg/kg dry	10	P5E2801	05/22/15	05/23/15	TPH 8015M	
>C28-C35	1090	301	mg/kg dry	10	P5E2801	05/22/15	05/23/15	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		116 %		70-130	P5E2801	05/22/15	05/23/15	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		98.6 %		70-130	P5E2801	05/22/15	05/23/15	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	14800	301	mg/kg dry	10	[CALC]	05/22/15	05/23/15	calc	

E Tech Environmental & Safety Solutions, Inc.
12800 W Hwy 80 E
Odessa TX, 79765

Project: NSCU #154
Project Number: 416-6200-000
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Fax: (432) 563-2213

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 P5E2704 - TX 1005

Blank (P5E2704-BLK1)

Prepared & Analyzed: 05/26/15

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	0.0472		"	0.0500		94.5	75-125			
Surrogate: 4-Bromofluorobenzene	0.0656		"	0.0500		131	75-125			S-GC

LCS (P5E2704-BS1)

Prepared & Analyzed: 05/26/15

Benzene	0.0812	0.00100	mg/kg wet	0.100		81.2	70-130			
Toluene	0.0922	0.00200	"	0.100		92.2	70-130			
Ethylbenzene	0.107	0.00100	"	0.100		107	70-130			
Xylene (p/m)	0.212	0.00200	"	0.200		106	70-130			
Xylene (o)	0.107	0.00100	"	0.100		107	70-130			
Surrogate: 1,4-Difluorobenzene	0.0538		"	0.0500		108	75-125			
Surrogate: 4-Bromofluorobenzene	0.0636		"	0.0500		127	75-125			S-GC

LCS Dup (P5E2704-BSD1)

Prepared & Analyzed: 05/26/15

Benzene	0.0850	0.00100	mg/kg wet	0.100		85.0	70-130	4.50	20	
Toluene	0.0971	0.00200	"	0.100		97.1	70-130	5.19	20	
Ethylbenzene	0.114	0.00100	"	0.100		114	70-130	6.44	20	
Xylene (p/m)	0.223	0.00200	"	0.200		111	70-130	4.65	20	
Xylene (o)	0.112	0.00100	"	0.100		112	70-130	4.60	20	
Surrogate: 4-Bromofluorobenzene	0.0643		"	0.0500		129	75-125			S-GC
Surrogate: 1,4-Difluorobenzene	0.0542		"	0.0500		108	75-125			

Batch P5E2705 - TX 1005

Blank (P5E2705-BLK1)

Prepared & Analyzed: 05/27/15

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	0.0581		"	0.0500		116	75-125			
Surrogate: 4-Bromofluorobenzene	0.0542		"	0.0500		108	75-125			

E Tech Environmental & Safety Solutions, Inc.
12800 W Hwy 80 E
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Project: NSCU #154
Project Number: 416-6200-000
Project Manager: Kit Prichard

Fax: (432) 563-2213

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 P5E2705 - TX 1005

LCS (P5E2705-BS1)

Prepared & Analyzed: 05/27/15

Benzene	0.0938	0.00100	mg/kg wet	0.100		93.8	70-130			
Toluene	0.104	0.00200	"	0.100		104	70-130			
Ethylbenzene	0.108	0.00100	"	0.100		108	70-130			
Xylene (p/m)	0.210	0.00200	"	0.200		105	70-130			
Xylene (o)	0.103	0.00100	"	0.100		103	70-130			
Surrogate: 1,4-Difluorobenzene	0.0618		"	0.0500		124	75-125			
Surrogate: 4-Bromofluorobenzene	0.0558		"	0.0500		112	75-125			

LCS Dup (P5E2705-BSD1)

Prepared & Analyzed: 05/27/15

Benzene	0.0884	0.00100	mg/kg wet	0.100		88.4	70-130	5.94	20	
Toluene	0.102	0.00200	"	0.100		102	70-130	1.74	20	
Ethylbenzene	0.105	0.00100	"	0.100		105	70-130	2.50	20	
Xylene (p/m)	0.203	0.00200	"	0.200		101	70-130	3.53	20	
Xylene (o)	0.0980	0.00100	"	0.100		98.0	70-130	5.50	20	
Surrogate: 1,4-Difluorobenzene	0.0656		"	0.0500		131	75-125			S-GC
Surrogate: 4-Bromofluorobenzene	0.0579		"	0.0500		116	75-125			

E Tech Environmental & Safety Solutions, Inc.
12800 W Hwy 80 E
Odessa TX, 79765

Project: NSCU #154
Project Number: 416-6200-000
Project Manager: Kit Prichard

Fax: (432) 563-2213

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 P5E2601 - * DEFAULT PREP *****

Blank (P5E2601-BLK1)

Prepared & Analyzed: 05/26/15

% Moisture ND 0.1 %

Duplicate (P5E2601-DUP1)

Source: 5E21006-01

Prepared & Analyzed: 05/26/15

% Moisture 1.0 0.1 % 1.0 0.00 20

Batch P5F0403 - * DEFAULT PREP *****

Blank (P5F0403-BLK1)

Prepared & Analyzed: 06/04/15

Chloride ND 1.00 mg/kg wet

LCS (P5F0403-BS1)

Prepared & Analyzed: 06/04/15

Chloride 104 1.00 mg/kg wet 100 104 80-120

LCS Dup (P5F0403-BSD1)

Prepared & Analyzed: 06/04/15

Chloride 98.0 1.00 mg/kg wet 100 98.0 80-120 5.97 20

Duplicate (P5F0403-DUP1)

Source: 5F03007-01

Prepared & Analyzed: 06/04/15

Chloride 4270 29.4 mg/kg dry 4190 1.84 20

Duplicate (P5F0403-DUP2)

Source: 5E22006-03

Prepared: 06/04/15 Analyzed: 06/05/15

Chloride 3880 30.1 mg/kg dry 4290 10.0 20

E Tech Environmental & Safety Solutions, Inc.
12800 W Hwy 80 E
Odessa TX, 79765

Project: NSCU #154
Project Number: 416-6200-000
Project Manager: Kit Prichard

Fax: (432) 563-2213

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5E2801 - TX 1005										
Blank (P5E2801-BLK1)				Prepared & Analyzed: 05/22/15						
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	80.3		"	100		80.3	70-130			
Surrogate: o-Terphenyl	49.5		"	50.0		99.1	70-130			
LCS (P5E2801-BS1)				Prepared & Analyzed: 05/22/15						
C6-C12	872	25.0	mg/kg wet	1000		87.2	75-125			
>C12-C28	938	25.0	"	1000		93.8	75-125			
Surrogate: 1-Chlorooctane	92.3		"	100		92.3	70-130			
Surrogate: o-Terphenyl	44.8		"	50.0		89.5	70-130			
LCS Dup (P5E2801-BSD1)				Prepared & Analyzed: 05/22/15						
C6-C12	815	25.0	mg/kg wet	1000		81.5	75-125	6.75	20	
>C12-C28	821	25.0	"	1000		82.1	75-125	13.2	20	
Surrogate: 1-Chlorooctane	96.1		"	100		96.1	70-130			
Surrogate: o-Terphenyl	50.2		"	50.0		100	70-130			
Duplicate (P5E2801-DUP1)				Source: 5E22002-04	Prepared: 05/22/15 Analyzed: 05/23/15					
C6-C12	21.8	28.1	mg/kg dry		18.9			14.3	20	
>C12-C28	124	28.1	"		91.2			30.2	20	R3
Surrogate: 1-Chlorooctane	90.7		"	112		80.7	70-130			
Surrogate: o-Terphenyl	55.8		"	56.2		99.4	70-130			

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.
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:

6/8/2015

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.

