District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, 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 October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: Whiting Oil and Gas Corporation	Contact: Brian Ashburn
Address: 400 W. Illinois, Suite 1300, Midland, TX 79701	Telephone No.: 432-686-6745
Facility Name: Flying M, NM # 4, Lease K-2859	Facility Type: Oil & Gas Tank Battery

Surface Owner: Flying M	Mineral Owner:	Lease No.: 30-025-23187

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
SW/4	4	10S	33E					Lea

Latitude: N33 28' 25.3" **Longitude:** W103 34' 25.7"

NATURE OF RELEASE

Type of Release: Oil	Volume of Release: 90	Volume Recovered: 85
Source of Release: Storage Tank	Date and Hour of Occurrence: 08/11/09 - 0800	Date and Hour of Discovery: 08/11/09 - 0830
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? G. Leking	
By Whom? Wickett Office	Date and Hour: 08/11/09 - 0900	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*:

Describe Cause of Problem and Remedial Action Taken.*: Bottom of the oil storage tank developed leak. Oil was removed from the site via vaccum truck. Tank was emptied, repaired and the interior coated.

Describe Area Affected and Cleanup Action Taken.* : Spill stayed confined to the interior of the containment. A total of 2400 sq. ft. of surface area was impacted with an average depth ~6". Remediation of the site was completed in January 2010 with the blending of the hydrocarbon soil to below 1,000 mg/kg TPH and all chlorides were confirmed below 500 mg/kg.

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:	OIL CONSERVATION DIVISION	
Printed Name: Brian Ashburn	Approved by ENV. ENGINEER ~~District Supervisor~~:	
Title: Sr. Environmental Specialist	Approval Date: 03/25/10	Expiration Date: -
E-mail Address: brian.ashburn@whiting.com	Conditions of Approval:	Attached ☐ IRP-09-11-2297
Date: 03/16/2010 Phone: 432-686-6745		

* Attach Additional Sheets If Necessary

Environmental & Safety Solutions, Inc.

Date: March 16, 2010

Client: Whiting Oil and Gas Corporation

Subject: Remediation of Hydrocarbon Impacted Soil
Flying M, NM #4 Tank Battery (K-2859)
Lea County, New Mexico

On August 11, 2009, Whiting Oil & Gas Inc. (Whiting) found a release of crude oil at the Flying M, NM #4, Lease K-2859 Tank Battery in Lea County, New Mexico. The release was determined to be approximately 90 barrels of crude oil within the containment of the tank battery. Approximately 85 barrels of fluids were recovered. The release was reported to the New Mexico Oil Conservation Division (OCD) on August 11, 2009 by telephone and then an OCD form C-141 was completed and submitted to the OCD district office on September 1, 2009.

On September 21, 2009, Etech Environmental & Safety Solutions, Inc. (Etech) started the initial remedial activities by blending the impacted soil with a biological agent. The blending of the impacted soil continued until September 23, 2009. Soil samples were collected after the initial remedial activities and analyzed for total petroleum hydrocarbons (TPH) and chlorides.

Discussions with the OCD determined remediation of the site would be accomplished using the following contaminant cleanup levels:

TPH = 1000 ppm
Chlorides = 1000 ppm

The initial analytical results indicated chlorides were not an issue at the site. However, TPH analytical results revealed very high levels of hydrocarbons remaining at the site after blending. These results were determined to be too high to allow for biological remediation of the impacted soil. Results from the initial sampling are presented in the following table:

Delineation Sampling Results – TPH (mg/kg) September 23, 2009				
Sample ID	**Sample Depth**	**TPH - GRO**	**TPH – DRO**	**Total TPH**
Sample 1	1.5 feet	<500	32,992	32,992
Sample 2	1 foot	<500	34,328	34,328
Sample 3	1 foot	<500	21,904	21,904
Sample 4	1 foot	<500	34,520	34,520

Based on the initial remediation results, additional blending with clean soil was scheduled. After obtaining approval for the additional work, the next phase of remediation was started December 17, 2009. Clean soil from within the containment of the tank battery was used to blend with the hydrocarbon impacted soil. Blending of the soil continued until January 4, 2010. Samples were collected from the blended soil as well as the bottom of the excavation. Total petroleum hydrocarbon (TPH) results from the delineation sampling are presented in the following table:

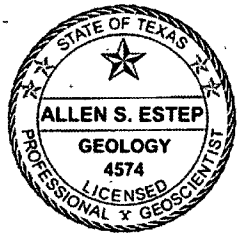
Delineation Sampling Results – (mg/kg) December 22, 2009					
Sample ID	**Sample Depth**	**TPH - GRO**	**TPH – DRO**	**Total TPH**	**Chlorides**
Bottom	2 feet	<10.0	<10	<10.0	112
Blended 1	0.5 feet	<10.0	91.3	1.3	368
Blended 2	0.5 foot	<10.0	457	457	224

The samples were also analyzed for benzene, toluene, ethylbenzene and total xylenes (BTEX) and all results were non-detect.

These final samples indicated the release site had been remediated to the cleanup levels established by the OCD.

Prepared By:
Etech Environmental & Safety Solutions, Inc.

Shane Estep, P.G.



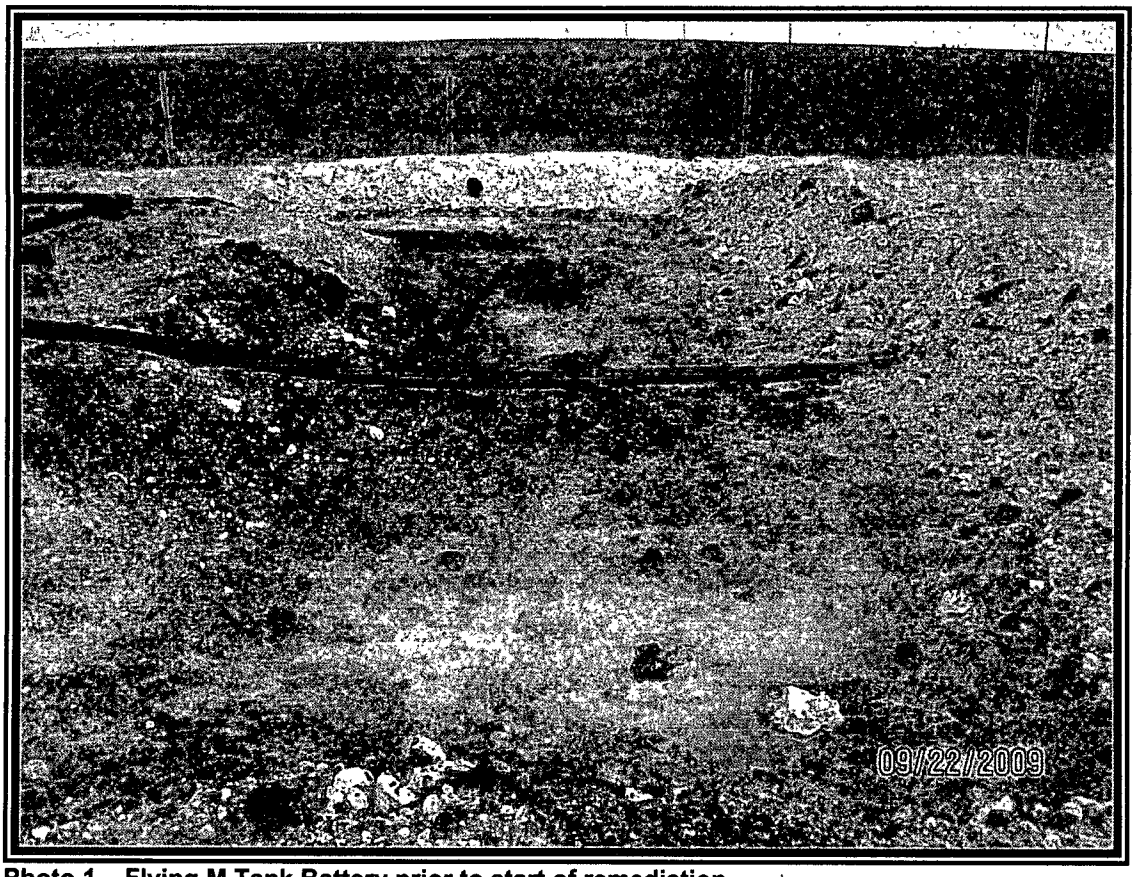


Photo 1 – Flying M Tank Battery prior to start of remediation.

Photo 2 – Flying M Tank Battery prior to start of remediation.

Photo 3 – After initial remedial activities.

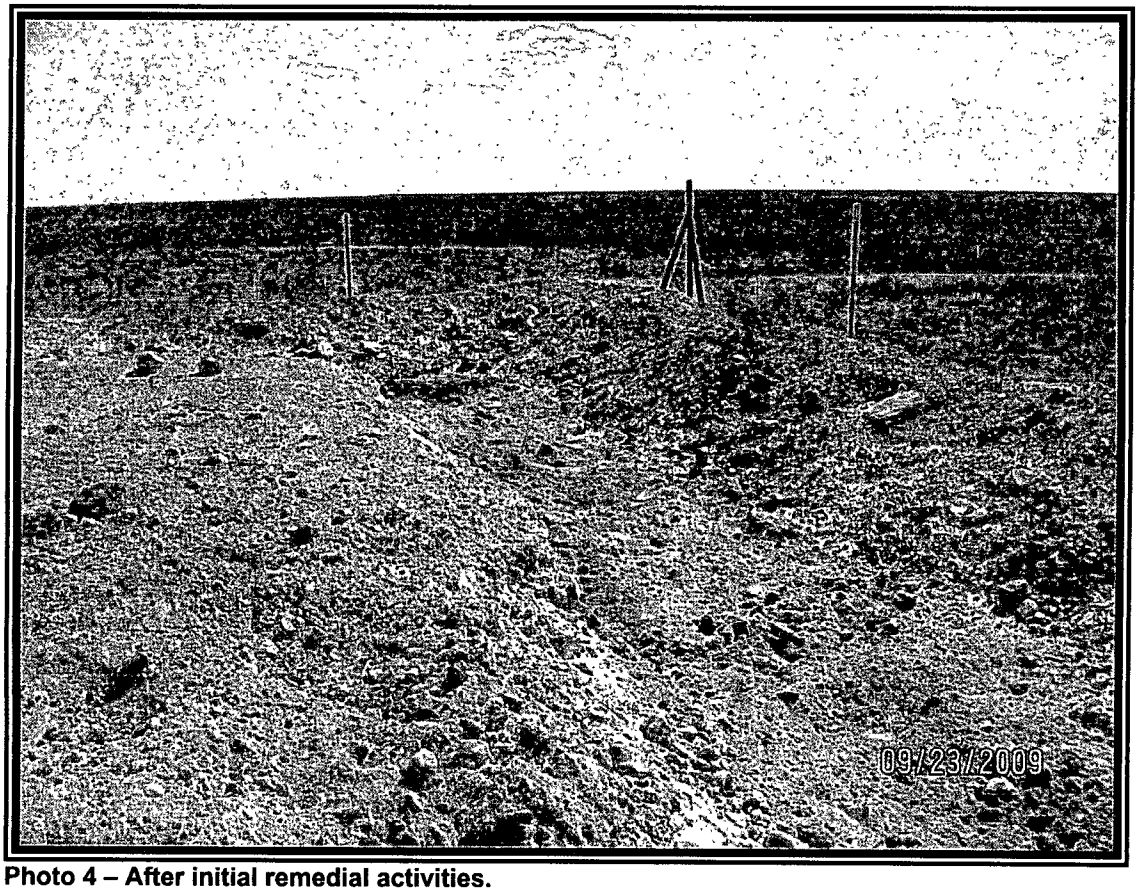


Photo 4 – After initial remedial activities.

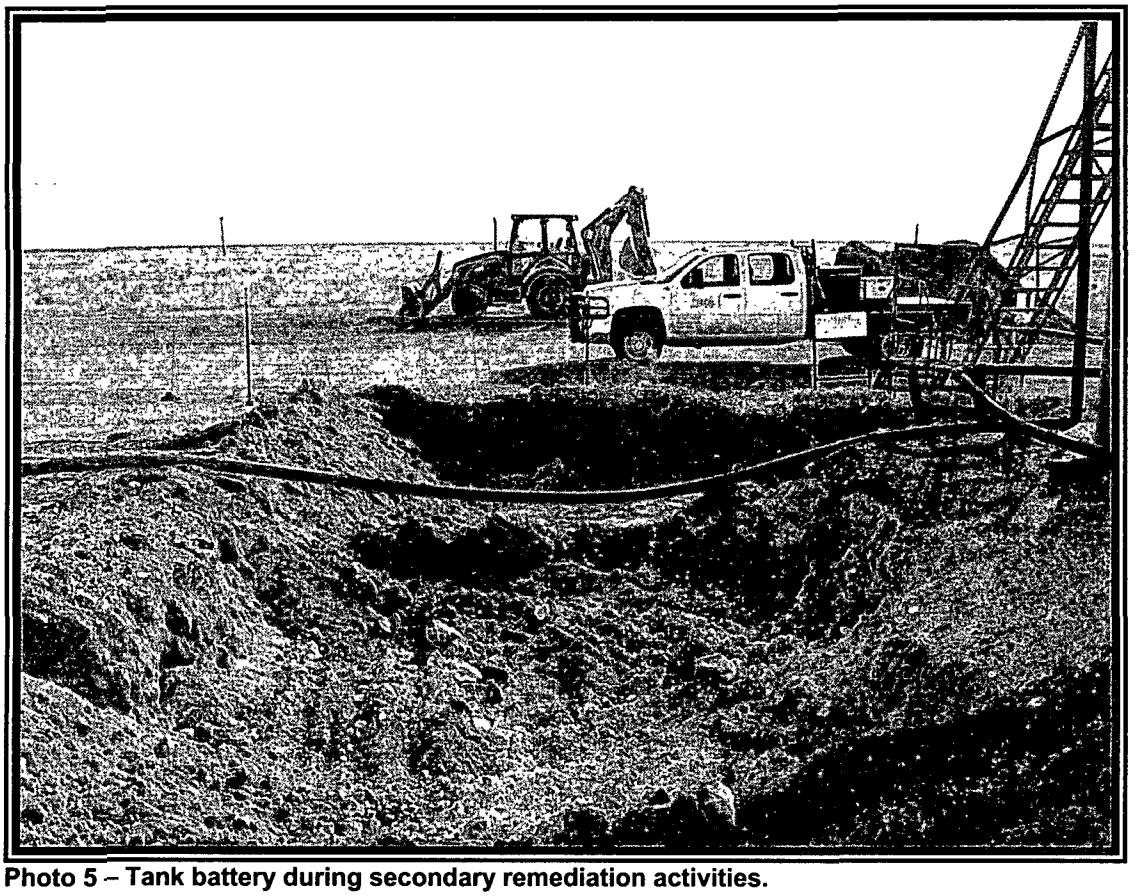


Photo 5 – Tank battery during secondary remediation activities.

Photo 6 – Tank battery during secondary remediation activities.

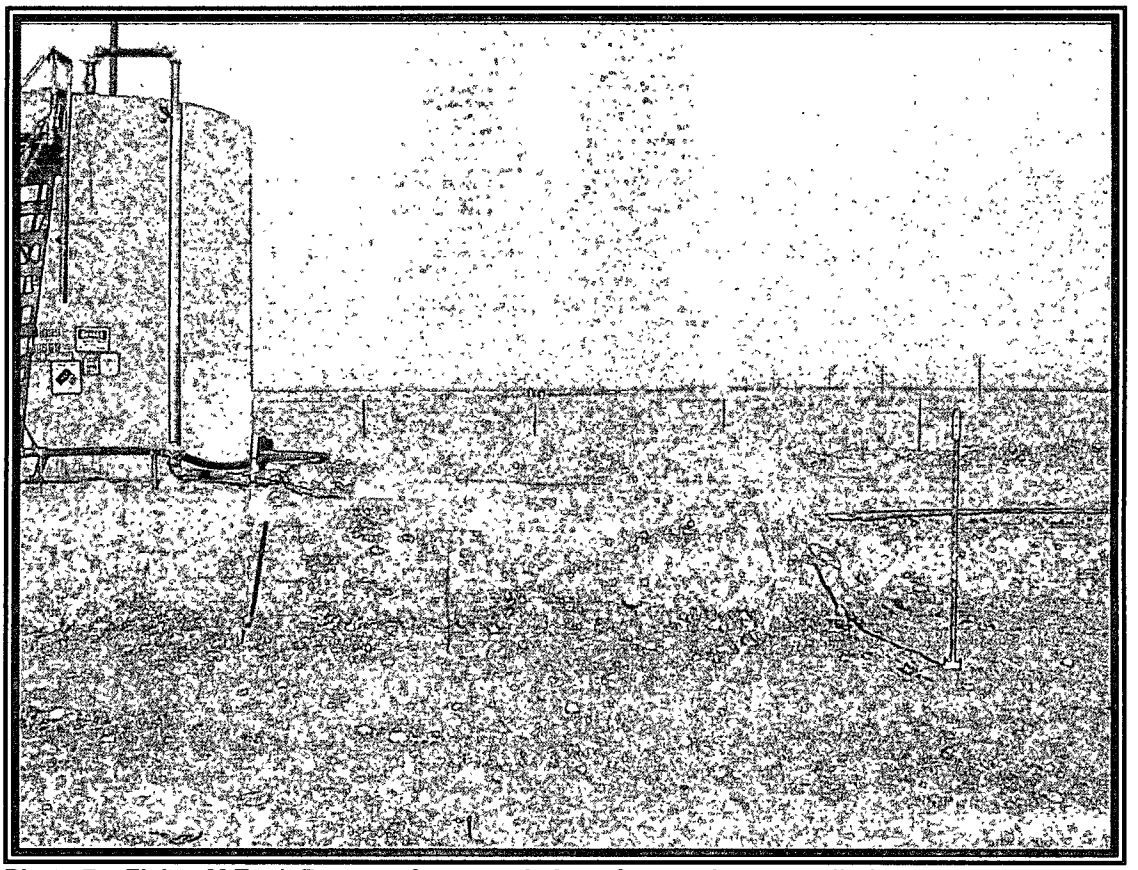


Photo 7 – Flying M Tank Battery after completion of secondary remediation.

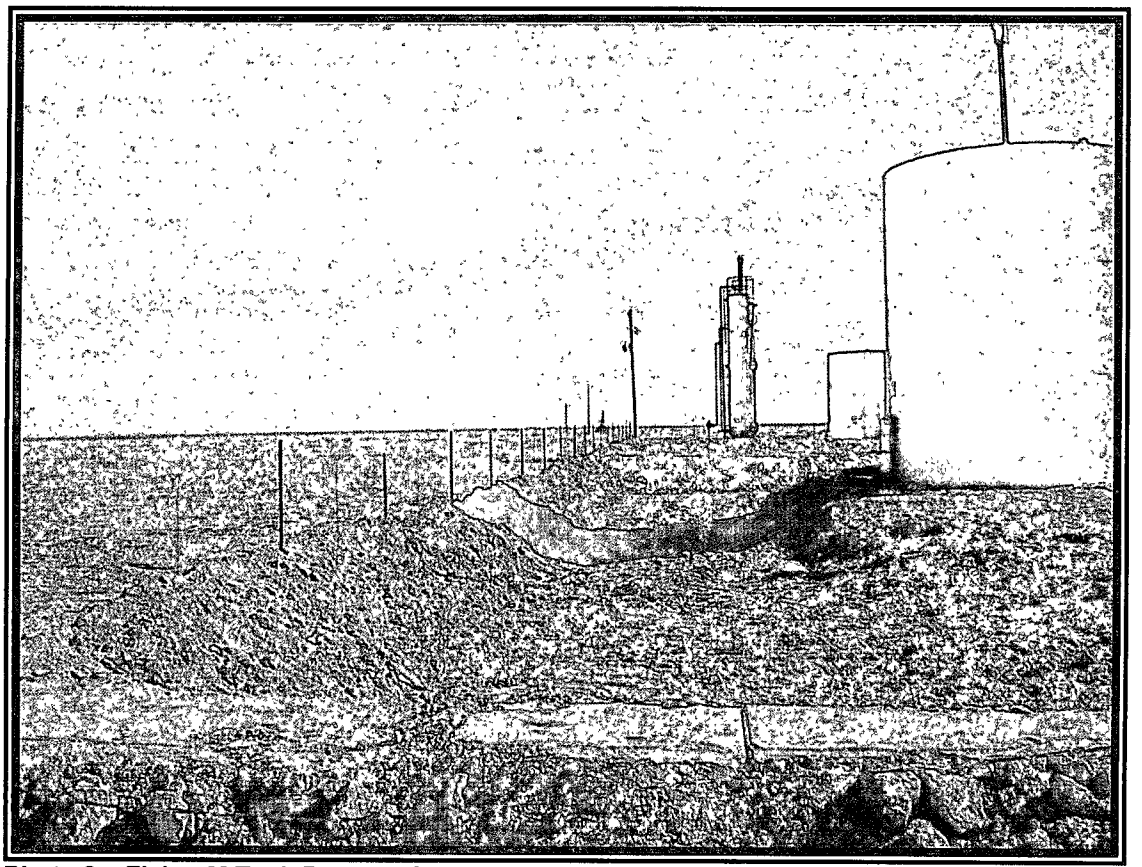


Photo 8 – Flying M Tank Battery after completion of secondary remediation.

Extended Diesel Range Organic Hydrocarbons Analysis Report

site LAB® EDRO C10-C40 Aromatics in Soil, Sediment & Water

Client: Whiting Petroleum
Address:

Phone:
Contact: Brian Ashburn

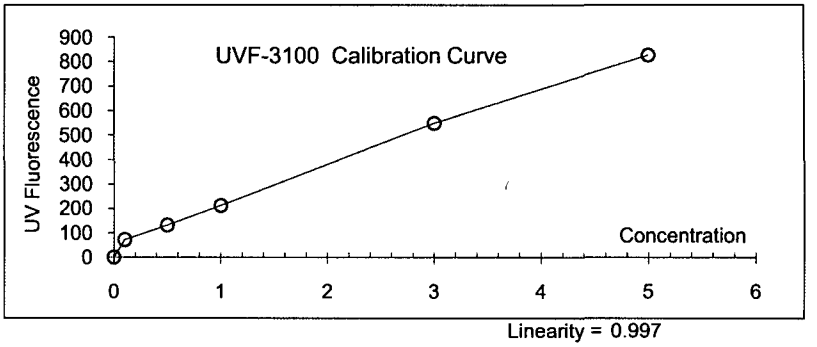
Operator: Shane
Signature:

Date: Time:

Project Name: Flying M
Job #:
File #:
Matrix: Soil
Date Collected: 9/23/2009
Date Received: 9/23/2009
Date Extracted: 9/24/2009
Date Analyzed: 9/24/2009
Date Reported: 9/24/2009

Standard Concentration	UVF-3100 Calibration Raw Fluorescence
0	0
0.1	72.6
0.5	131.0
1.0	212.2
3.0	549.1
5.0	825.1

site LAB
Calibration Product #: CAL-042
Units (ppm or mg/Kg): ppm



Linearity = 0.997

UVF Run#:	Sample ID & Description	UVF Raw Fluorescence	Test Sample Concentration (ppm)	Dilution Factor	Test Result:
1	**Sample 1**	704.30	4.124	8,000	**32,992.0 ppm**
3	**Sample 2**	727.30	4.291	8,000	**34,328.0 ppm**
4	**Sample 3**	505.00	2.738	8,000	**21,904.0 ppm**
5	**Sample 4**	730.60	4.315	8,000	**34,520.0 ppm**
6		1.00	1	1	**1.0 ppm**
7		1.00	1	1	**1.0 ppm**
8		1.00	1	1	**1.0 ppm**
9		1.00	1	1	**1.0 ppm**
10		1.00	1	1	**1.0 ppm**
11		1.00	1	1	**1.0 ppm**
12		1.00	1	1	**1.0 ppm**
13		1.00	1	1	**1.0 ppm**
14		1.00	1	1	**1.0 ppm**
15		1.00	1	1	**1.0 ppm**
16		1.00	1	1	**1.0 ppm**
17		1.00	1	1	**1.0 ppm**
18		1.00	1	1	**1.0 ppm**
19		1.00	1	1	**1.0 ppm**
20		1.00	1	1	**1.0 ppm**

Comments: Results reported in wet weight.

CARDINAL LABORATORIES

PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

January 8, 2010

Shane Estep
ETECH Environmental & Safety Solutions, Inc.
P.O. Box 8469
Midland, TX 79708

Re: Flying M-NM #4 – K2859 (052-2141-000)

Enclosed are the results of analyses for sample number H18992, received by the laboratory on 01/06/10 at 8:15 am.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method SW-846 8260	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method TX 1005	Total Petroleum Hydrocarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

Cardinal Laboratories is accredited though the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.2	Regulated VOCs (V2, V3)

Accreditation applies to public drinking water matrices.

Total Number of Pages of Report: 3 (includes Chain of Custody)

Sincerely,

Celey D. Keene
Laboratory Director

This report conforms with NELAP requirements.

CARDINAL LABORATORIES

PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ETECH ENVIRONMENTAL & SAFETY SOLUTION
ATTN: SHANE ESTEP
P.O. BOX 8469
MIDLAND, TX 79708
FAX TO: (432) 563-2213

Receiving Date: 01/06/10
Reporting Date: 01/07/10
Project Number: 052-2141-000
Project Name: FLYING M-NM #4-K2859
Project Location: TATUM, NM

Sampling Date: 12/22/09
Sample Type: SOIL
Sample Condition: COOL & INTACT @ -2.5°C
Sample Received By: JH
Analyzed By: AB/ZL/HM

LAB NO. SAMPLE ID	GRO (C_6-C_{10}) (mg/kg)	DRO (>C_{10}-C_{28}) (mg/kg)	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL BENZENE (mg/kg)	TOTAL XYLENES (mg/kg)	Cl* (mg/kg)
ANALYSIS DATE:	01/07/10	01/07/10	01/06/10	01/06/10	01/06/10	01/06/10	01/07/10
H18992-1 BOTTOM**	<10.0	<10.0	<0.050	<0.050	<0.050	<0.300	112
H18992-2 BLENDED #1**	<10.0	91.3	<0.050	<0.050	<0.050	<0.300	368
H18992-3 BLENDED #2	<10.0	457	<0.050	<0.050	<0.050	<0.300	224
Quality Control	463	407	0.047	0.046	0.048	0.138	500
True Value QC	500	500	0.050	0.050	0.050	0.150	500
% Recovery	92.6	81.4	94.0	92.0	96.0	92.0	100
Relative Percent Difference	13.0	0.6	2.1	2.2	2.1	2.7	<0.1

METHODS: TPH GRO & DRO - EPA SW-846 8015 M; BTEX - SW-846 8021B; Cl-: Std. Methods 4500-Cl-B
*Analysis performed on a 1:4 w:v aqueous extract.
Not accredited for Chloride and GRO/DRO.
**TPH second surrogate outside historical limits due to matrix interference.
TEXAS NELAP ACCREDITATION T104704398-08-TX FOR BENZENE, TOLUENE, ETHYL BENZENE, AND TOTAL XYLENES. Reported on wet weight.

NOTE: Samples were extracted outside EPA recommended hold-time for GRO/DRO and BTEX.

Lab Director

01/08/10
Date

H18992 TBCL ETECH

CARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240
(505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 1

Company Name:	ETech Env + Safety Solu	**BILL TO**	
Project Manager:	Shane Estep	P.O. #:	
Address:	P.O. Box 8469	Company:	
City:	Midland State: TX Zip: 79708	Attn:	
Phone #:	(432) 563-2200 Fax #: (432) 563-2213	Address:	
Project #:	052-2141-000 Project Owner: Whiting Petr.	City:	
Project Name:	Flying M-NM#4-K2859	State: Zip:	
Project Location:	Tatum, NM	Phone #:	
Sampler Name:	Casey Howard	Fax #:	

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST		
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME	Chlorides	TPH 8015	BTEX 8021
H18992-1	Bottom	G	1			X					X		12/22/09	1143	X	X	X
-2	Blended #1	G	1			X					X		"	1147	X	X	X
-3	Blended #2	G	1			X					X		"	1152	X	X	X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished:	Date:	Received By:	
	Time:		
Relinquished By:	Date: 12/16/10	Received By:	
	Time: 8:15		
Delivered By: (Circle One)	Temp:	Sample Condition Cool / Intact: ☑ Yes ☑ Yes ☐ No ☐ No	CHECKED BY: (Initials)
Sampler - UPS - Bus - Other:			

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS:

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476.

-2.5°C #26