



## Electronic Correspondence

January 11, 2016

Mike Bratcher  
State of New Mexico  
Oil Conservation Division  
811 S. 1st Street  
Atresia, NM 88210  
[mike.bratcher@state.nm.us](mailto:mike.bratcher@state.nm.us)

Re: **Closure Report- 2RP-1922 & 2RP-3188**  
**Memorial Resource Development, KLM Battery**  
**API No.:** 30-015-04411  
**Legal:** Sec 31, T17S, R30E - Eddy Co., NM  
**GPS:** 32.791267, -104.012383  
**Depth to Groundwater:** No Groundwater in this area  
**Release Type:** Crude Oil

<b>Contaminants of Concern (COC's)</b>	<b>Threshold Levels</b>
Total Petroleum Hydrocarbons (TPH)	5000 mg/kg
Benzene	10 mg/kg
BTEX	50 mg/kg
Chlorides	1000 mg/kg

Dear Mike:

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 on August 2, 2015 (2RP-3188) occurred due to failure of a circulating pump in its ability to hold back fluid. The fluid overflowed it's containment around the pump and migrated approximately 200 feet on the lease road before pooling adjacent to a county road. All free standing liquids were removed and the areas assessed. A small amount of pasture areas (less than 800 SF) was impacted. A copy of the final C-141 (2RP-3188) is provided in Attachment A. An annotated aerial photograph showing the release area and the contaminant levels is provided In Attachment B. Photographs of the release area are provided in Attachment C.

This site had a release on July 27, 2013 when it was operated by Boaz Energy, LLC (291993), which to our knowledge was not closed with the OCD or BLM. According to the C-141 and the OCD, the release affected the same area as the release 2RP-3188. Memorial and Etech were requested to close this release with 3188 using the same data. A copy of the C-141 is provided in Attachment A.

## Work Performed

The scope of this project was for the remediation of a hydrocarbon impact. After discussion with the BLM and NMOCD the BLM verbally approved a technical approach for remediation involving the maximum of resource conservation. Completion of remediation involved the following actions:

1. Placement of a one-call for utility location.
2. Analytical data indicated that the surface interval of the impacted area is above regulatory threshold levels for TPH. Chlorides were below regulatory threshold levels in all areas sampled. All other areas were below corrective action threshold levels. Copies of TPH and chloride analytical results from the assessment are provided in Attachment D.
3. A lined treatment area was constructed on the north side of the tank battery.
4. The impacted soils on the first 6 inches of the road area, the impacted soil around the pump and pasture areas were removed and placed in the treatment area. Note pasture soils were kept segregated from road and pump soils.
5. A biological amendment was applied to the impacted soils. The soil in the treatment area was initially blended to disperse the amendment through the impacted soils.
6. Confirmation samples were collected to verify the excavated areas are below corrective action levels.
7. The soils in the treatment area were periodically rolled and screened for TPH until the TPH levels showed to be below regulatory threshold levels. Confirmation samples were collected from the treated soils and submitted for laboratory analyses.
8. Once the treated soils were below regulatory threshold levels, the pasture soils were returned to the area they were removed from and properly contoured. Clean soil was purchased from Lea Land and used to backfill around the transfer pump. The soils collected from the road and pump area were placed back onto the lease road area and used to reinforce containments at the facility.

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 Fred Holmes or myself at (432) 563-2200 (office) or via email at [fred@etechnv.com](mailto:fred@etechnv.com), or [tim@etechnv.com](mailto:tim@etechnv.com).

Respectfully:



Tim McMinn  
Sr. Project Manager

Cc: [heather.patterson@state.nm.us](mailto:heather.patterson@state.nm.us)  
[stucker@blm.gov](mailto:stucker@blm.gov)

**Attachment A**  
**Final C-141**

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

Form C-141  
Revised October 10, 2003

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

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: KLM Battery	Facility Type: Production

Surface Owner:	Mineral Owner:	API No.: 30-015-04411
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**LOCATION OF RELEASE**

Unit Letter	Section 31	Township 17S	Range 30E	Feet from the	North/South Line	Feet from the	East/West Line	County Eddy
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Latitude: 32.791267 Longitude: -104.012383

**NATURE OF RELEASE**

Type of Release: Oil	Volume of Release: 7 bbls oil 23 bbls PW	Volume Recovered: 30 bbls
Source of Release: Battery	Date and Hour of Occurrence: 8/2/15	Date and Hour of Discovery: 8/2/15 10am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Jim Amos, BLM & Heather Patterson, NMOCD	
By Whom? Heather Dolphin Sr. Regulatory Specialist	Date and Hour 8/2/15 4:17 PM	
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.\*: A valve upstream from the circulating pump washed out and wouldn't hold fluid back. The spill filled up the berm around the circ. pump and overflowed it.

Describe Area Affected and Cleanup Action Taken.\* : Impacted area around transfer pump inside containment; containment overflowed and fluid ran down lease road approx. 220 ft, through the pasture approx 100 ft, and down the bar ditch of the county road approx. 80 ft. Vacuumed up all free standing fluid. Site was excavated and soils were treated per OCD and BLM requirements in approved CAP.

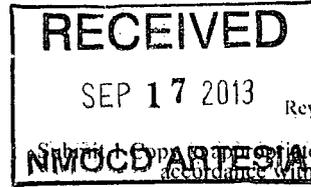
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger 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: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Tim McMinn	Approved by District Supervisor:	
Title: Etech Environmental	Approval Date:	Expiration Date:
E-mail Address: tim@etechenv.com	Conditions of Approval:	
Date: 1/11/16	Phone: 432-967-9062	Attached <input type="checkbox"/>

\* Attach Additional Sheets If Necessary

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  
District Office in  
19.15.29 NMAC

**Release Notification and Corrective Action**

*JMH* 1326352687 OPERATOR  Initial Report  Final Report

Name of Company	BOAZ Energy, LLC 291993	Contact	Joel Hale
Address	2608 Loma, Midland TX, 79705	Telephone No.	432-253-7074
Facility Name	Federal KLM	Facility Type	Tank Battery
Surface Owner	Federal KLM	Mineral Owner	
		API No.	30-015-0441

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	31	17S	30E					Eddy
	31	17S	30E	Latitude		Longitude		

**NATURE OF RELEASE**

Type of Release	Oil Spill	Volume of Release	10 barrels	Volume Recovered	6 barrels
Source of Release	Equipment Failure	Date and Hour of Occurrence	July 27, 2013 - Unknown	Date and Hour of Discovery	July 27, 2013 - 10AM
Was Immediate Notice Given?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?			
By Whom?		Date and Hour			
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			
If a Watercourse was Impacted, Describe Fully.*					
Describe Cause of Problem and Remedial Action Taken.*					
Circulation line between separator and production tanks developed hole. Circulation pump has been placed in containment and line has been replaced. PCC has been installed on loading lines at production tanks.					
Describe Area Affected and Cleanup Action Taken.*					
Areas inside firewall around separator and ground area around circulation pump and down hillside to county road 217. Standing fluids within firewall were vacuumed and Microblaze was sprayed on oil on ground outside firewall.					
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.					

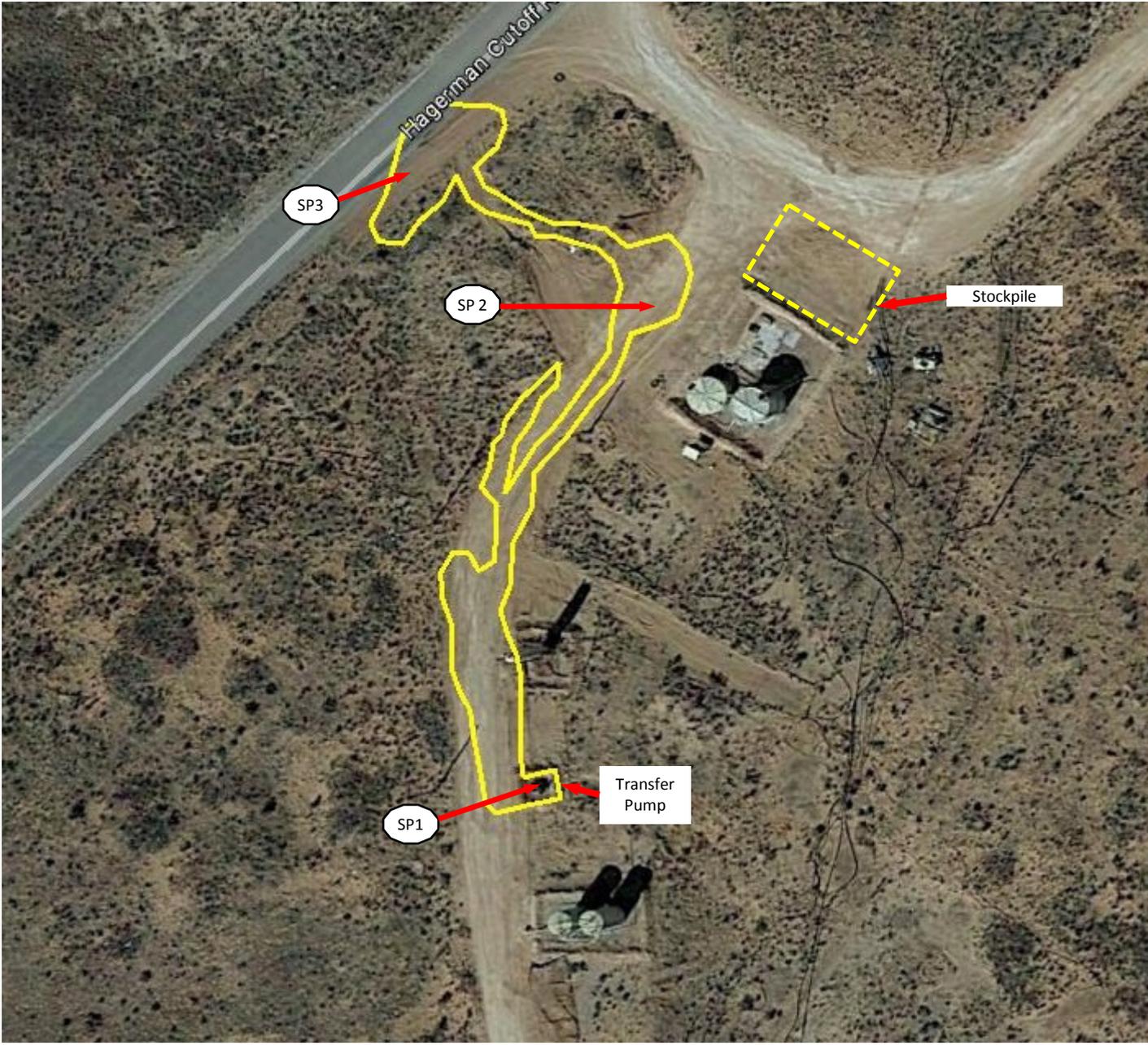
Signature: <i>Joel Hale</i>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Joel Hale	Approved by Environmental Specialist:	Signed By: <i>Mike Brannon</i>
Title: Engineer	Approval Date: <b>SEP 20 2013</b>	Expiration Date:
E-mail Address: joelmhale@gmail.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 9/13/13	Phone: 432-253-7074	Remediation per OCD Rule & Guidelines, & like approval by BLM. <b>SUBMIT REMEDIATION PROPOSAL NO LATER THAN: October 20, 2013</b>

\* Attach Additional Sheets If Necessary

2RP-1922

**Attachment B**  
**Annotated Aerial Imagery**





Assessment Results		
Sample I.D.	Depth (ft.)	TPH (mg/kg)
SP 1- TP	4	203
SP 2*	1	1460
SP 3	1	1570
Stockpile	NA	3320

Denoted as 'Sample Point 1' on analytical report 5K17008.

**Attachment C**  
**Photograph Log**

KLM Battery



KLM Battery



KLM Battery



KLM Battery



KLM Battery



KLM Battery



KLM Battery



KLM Battery



**Attachment D**  
**Analytical Results**



# Extended Diesel Range Organic Hydrocarbons Analysis Report

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

Client: Memorial  
Address:

Phone:  
Contact:

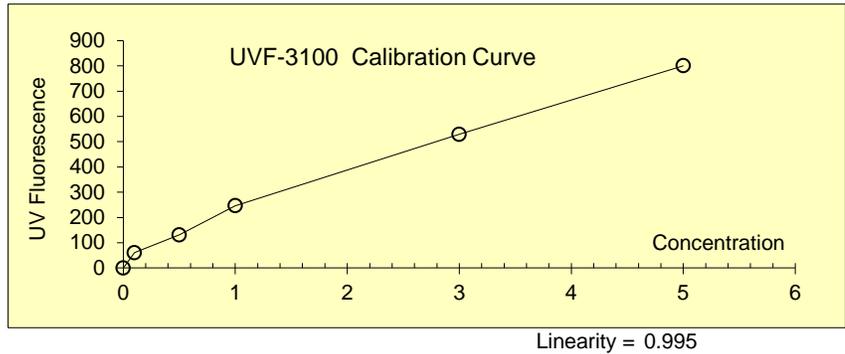
Operator:  
Signature:

Project Name: KLM Battery  
Job #: 416-6439-000  
File #: 1  
Matrix: soil  
Date Collected: 8/5/2015  
Date Received: 8/5/2015  
Date Extracted: 8/7/2015  
Date Analyzed: 8/7/2015  
Date Reported: 8/7/2015

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Standard Concentration	UVF-3100 Calibration Raw Fluorescence
0	0
0.1	60.6
0.5	131.0
1.0	246.2
3.0	529.4
5.0	800.6

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



UVF Run#:	Sample ID & Description	UVF Raw Fluorescence	Test Sample Concentration (ppm)	Dilution Factor	Test Result:
1	AH 1 SURFACE	605.00	3.557	2,000	7,114.0 ppm
2	AH 1 1'	673.10	4.06	1,000	4,060.0 ppm
3	AH 1 2'	592.90	3.468	1,000	3,468.0 ppm
4	AH 1 3'	489.50	2.718	1,000	2,718.0 ppm
5	AH 2 SURFACE	768.30	4.762	2,000	9,524.0 ppm
6	AH 2 1'	563.10	3.249	2,000	6,498.0 ppm
7	AH 2 2'	292.80	1.329	1,000	1,329.0 ppm
8	AH 2 3'	113.00	0.398	1,000	398.0 ppm
9	AH 3 SURFACE	675.10	4.074	4,000	16,296.0 ppm
10	AH 3 1'	405.10	2.123	1,000	2,123.0 ppm
11	AH 3 2'	410.10	2.157	1,000	2,157.0 ppm
12	AH 3 3'	38.37	0.063	10,000	Concentration... Too Low (ND)
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.

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



# Analytical Report

**Prepared for:**

Brandon Wilson  
E Tech Environmental & Safety Solutions, Inc.  
13000 West County Road 100  
Odessa, TX 79765

Project: KLM Battery  
Project Number: 416-6439-000  
Location: Memorial  
Lab Order Number: 5H11009



**NELAP/TCEQ # T104704156-13-3**

Report Date: 09/16/15

E Tech Environmental & Safety Solutions, Inc.  
13000 West County Road 100  
Odessa TX, 79765

Project: KLM Battery  
Project Number: 416-6439-000  
Project Manager: Brandon Wilson

Fax: (432) 563-2213

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
AH1 @ 1'	5H11009-01	Soil	08/05/15 00:00	08-11-2015 10:16
AH1 @ 3'	5H11009-02	Soil	08/05/15 00:00	08-11-2015 10:16
AH2 @ 1'	5H11009-03	Soil	08/05/15 00:00	08-11-2015 10:16
AH2 @ 3'	5H11009-04	Soil	08/05/15 00:00	08-11-2015 10:16
AH3 @ 1'	5H11009-05	Soil	08/05/15 00:00	08-11-2015 10:16
AH3 @ 3'	5H11009-06	Soil	08/05/15 00:00	08-11-2015 10:16

E Tech Environmental & Safety Solutions, Inc.  
 13000 West County Road 100  
 Odessa TX, 79765

Project: KLM Battery  
 Project Number: 416-6439-000  
 Project Manager: Brandon Wilson

Fax: (432) 563-2213

**AH1 @ 1'**  
**5H11009-01 (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	32.7	1.01	mg/kg dry	1	P5H1607	08/28/15	08/28/15	EPA 300.0	
% Moisture	1.0	0.1	%	1	P5H1301	08/13/15	08/13/15	% calculation	

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

C6-C12	64.9	25.3	mg/kg dry	1	P5H1304	08/12/15	08/13/15	TPH 8015M	
>C12-C28	1860	25.3	mg/kg dry	1	P5H1304	08/12/15	08/13/15	TPH 8015M	
>C28-C35	632	25.3	mg/kg dry	1	P5H1304	08/12/15	08/13/15	TPH 8015M	
Surrogate: 1-Chlorooctane		69.8 %	70-130		P5H1304	08/12/15	08/13/15	TPH 8015M	S-GC
Surrogate: o-Terphenyl		85.3 %	70-130		P5H1304	08/12/15	08/13/15	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>2560</b>	25.3	mg/kg dry	1	[CALC]	08/12/15	08/13/15	calc	

E Tech Environmental & Safety Solutions, Inc.  
 13000 West County Road 100  
 Odessa TX, 79765

Project: KLM Battery  
 Project Number: 416-6439-000  
 Project Manager: Brandon Wilson

Fax: (432) 563-2213

**AH1 @ 3'**  
**5H11009-02 (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>29.1</b>	1.02	mg/kg dry	1	P5H1607	08/28/15	08/28/15	EPA 300.0	
<b>% Moisture</b>	<b>2.0</b>	0.1	%	1	P5H1301	08/13/15	08/13/15	% calculation	

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

<b>C6-C12</b>	<b>36.9</b>	25.5	mg/kg dry	1	P5H1304	08/12/15	08/14/15	TPH 8015M	
<b>&gt;C12-C28</b>	<b>786</b>	25.5	mg/kg dry	1	P5H1304	08/12/15	08/14/15	TPH 8015M	
<b>&gt;C28-C35</b>	<b>308</b>	25.5	mg/kg dry	1	P5H1304	08/12/15	08/14/15	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		105 %	70-130		P5H1304	08/12/15	08/14/15	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		133 %	70-130		P5H1304	08/12/15	08/14/15	TPH 8015M	S-GC
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>1130</b>	25.5	mg/kg dry	1	[CALC]	08/12/15	08/14/15	calc	

E Tech Environmental & Safety Solutions, Inc.  
 13000 West County Road 100  
 Odessa TX, 79765

Project: KLM Battery  
 Project Number: 416-6439-000  
 Project Manager: Brandon Wilson

Fax: (432) 563-2213

**AH2 @ 1'**  
**5H11009-03 (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>168</b>	1.05	mg/kg dry	1	P5H1607	08/28/15	08/28/15	EPA 300.0	
<b>% Moisture</b>	<b>5.0</b>	0.1	%	1	P5H1301	08/13/15	08/13/15	% calculation	

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

C6-C12	ND	132	mg/kg dry	5	P5H1304	08/12/15	08/13/15	TPH 8015M	
>C12-C28	<b>3840</b>	132	mg/kg dry	5	P5H1304	08/12/15	08/13/15	TPH 8015M	
>C28-C35	<b>979</b>	132	mg/kg dry	5	P5H1304	08/12/15	08/13/15	TPH 8015M	
Surrogate: 1-Chlorooctane		58.3 %	70-130		P5H1304	08/12/15	08/13/15	TPH 8015M	S-GC
Surrogate: o-Terphenyl		72.2 %	70-130		P5H1304	08/12/15	08/13/15	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>4820</b>	132	mg/kg dry	5	[CALC]	08/12/15	08/13/15	calc	

E Tech Environmental & Safety Solutions, Inc.  
 13000 West County Road 100  
 Odessa TX, 79765

Project: KLM Battery  
 Project Number: 416-6439-000  
 Project Manager: Brandon Wilson

Fax: (432) 563-2213

**AH2 @ 3'**  
**5H11009-04 (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>495</b>	1.04	mg/kg dry	1	P5H1607	08/28/15	08/28/15	EPA 300.0	
<b>% Moisture</b>	<b>4.0</b>	0.1	%	1	P5H1301	08/13/15	08/13/15	% calculation	

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

<b>C6-C12</b>	<b>ND</b>	26.0	mg/kg dry	1	P5H1304	08/12/15	08/13/15	TPH 8015M	
<b>&gt;C12-C28</b>	<b>252</b>	26.0	mg/kg dry	1	P5H1304	08/12/15	08/13/15	TPH 8015M	
<b>&gt;C28-C35</b>	<b>87.0</b>	26.0	mg/kg dry	1	P5H1304	08/12/15	08/13/15	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		57.6 %	70-130		P5H1304	08/12/15	08/13/15	TPH 8015M	S-GC
<i>Surrogate: o-Terphenyl</i>		75.9 %	70-130		P5H1304	08/12/15	08/13/15	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>339</b>	26.0	mg/kg dry	1	[CALC]	08/12/15	08/13/15	calc	

E Tech Environmental & Safety Solutions, Inc.  
 13000 West County Road 100  
 Odessa TX, 79765

Project: KLM Battery  
 Project Number: 416-6439-000  
 Project Manager: Brandon Wilson

Fax: (432) 563-2213

**AH3 @ 1'**  
**5H11009-05 (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>4.47</b>	1.06	mg/kg dry	1	P5H1607	08/28/15	08/28/15	EPA 300.0	
<b>% Moisture</b>	<b>6.0</b>	0.1	%	1	P5H1301	08/13/15	08/13/15	% calculation	

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

<b>C6-C12</b>	<b>ND</b>	26.6	mg/kg dry	1	P5H1403	08/13/15	08/13/15	TPH 8015M	
<b>&gt;C12-C28</b>	<b>530</b>	26.6	mg/kg dry	1	P5H1403	08/13/15	08/13/15	TPH 8015M	
<b>&gt;C28-C35</b>	<b>159</b>	26.6	mg/kg dry	1	P5H1403	08/13/15	08/13/15	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		65.9 %		70-130	P5H1403	08/13/15	08/13/15	TPH 8015M	S-GC
<i>Surrogate: o-Terphenyl</i>		84.2 %		70-130	P5H1403	08/13/15	08/13/15	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>689</b>	26.6	mg/kg dry	1	[CALC]	08/13/15	08/13/15	calc	

E Tech Environmental & Safety Solutions, Inc.  
 13000 West County Road 100  
 Odessa TX, 79765

Project: KLM Battery  
 Project Number: 416-6439-000  
 Project Manager: Brandon Wilson

Fax: (432) 563-2213

**AH3 @ 3'**  
**5H11009-06 (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>527</b>	1.09	mg/kg dry	1	P5H1607	08/28/15	08/28/15	EPA 300.0	
<b>% Moisture</b>	<b>8.0</b>	0.1	%	1	P5H1301	08/13/15	08/13/15	% calculation	

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

<b>C6-C12</b>	<b>ND</b>	27.2	mg/kg dry	1	P5H1403	08/13/15	08/13/15	TPH 8015M	
<b>&gt;C12-C28</b>	<b>301</b>	27.2	mg/kg dry	1	P5H1403	08/13/15	08/13/15	TPH 8015M	
<b>&gt;C28-C35</b>	<b>66.8</b>	27.2	mg/kg dry	1	P5H1403	08/13/15	08/13/15	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		65.0 %	70-130		P5H1403	08/13/15	08/13/15	TPH 8015M	S-GC
<i>Surrogate: o-Terphenyl</i>		82.2 %	70-130		P5H1403	08/13/15	08/13/15	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>367</b>	27.2	mg/kg dry	1	[CALC]	08/13/15	08/13/15	calc	

**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
<b>Batch P5H1301 - % Solids</b>										
<b>Blank (P5H1301-BLK1)</b> Prepared & Analyzed: 08/13/15										
% Moisture	ND	0.1	%							
<b>Duplicate (P5H1301-DUP1)</b> Source: 5H11005-01 Prepared & Analyzed: 08/13/15										
% Moisture	9.0	0.1	%		9.0			0.00	20	
<b>Duplicate (P5H1301-DUP2)</b> Source: 5H11009-03 Prepared & Analyzed: 08/13/15										
% Moisture	4.0	0.1	%		5.0			22.2	20	
<b>Duplicate (P5H1301-DUP3)</b> Source: 5H12009-08 Prepared & Analyzed: 08/13/15										
% Moisture	5.0	0.1	%		5.0			0.00	20	
<b>Batch P5I1607 - *** DEFAULT PREP ***</b>										
<b>Blank (P5I1607-BLK1)</b> Prepared & Analyzed: 09/11/15										
Chloride	ND	1.00	mg/kg wet							
<b>LCS (P5I1607-BS1)</b> Prepared & Analyzed: 09/11/15										
Chloride	96.9	1.00	mg/kg wet	100		96.9	80-120			
<b>Duplicate (P5I1607-DUP1)</b> Source: 5H11009-05 Prepared & Analyzed: 09/11/15										
Chloride	4.53	1.06	mg/kg dry		4.47			1.42	20	
<b>Matrix Spike (P5I1607-MS1)</b> Source: 5H11009-05 Prepared & Analyzed: 09/11/15										
Chloride	112	1.06	mg/kg dry	106	4.47	101	80-120			

E Tech Environmental & Safety Solutions, Inc.  
 13000 West County Road 100  
 Odessa TX, 79765

Project: KLM Battery  
 Project Number: 416-6439-000  
 Project Manager: Brandon Wilson

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
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**Batch P5H1403 - TX 1005**

**Blank (P5H1403-BLK1)**

Prepared & Analyzed: 08/13/15

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
<i>Surrogate: 1-Chlorooctane</i>	71.8		"	100		71.8	70-130			
<i>Surrogate: o-Terphenyl</i>	45.0		"	50.0		90.0	70-130			

**LCS (P5H1403-BS1)**

Prepared & Analyzed: 08/13/15

C6-C12	857	25.0	mg/kg wet	1000		85.7	75-125			
>C12-C28	999	25.0	"	1000		99.9	75-125			
<i>Surrogate: 1-Chlorooctane</i>	92.1		"	100		92.1	70-130			
<i>Surrogate: o-Terphenyl</i>	46.5		"	50.0		93.1	70-130			

**LCS Dup (P5H1403-BSD1)**

Prepared & Analyzed: 08/13/15

C6-C12	873	25.0	mg/kg wet	1000		87.3	75-125	1.86	20	
>C12-C28	1100	25.0	"	1000		110	75-125	9.58	20	
<i>Surrogate: 1-Chlorooctane</i>	99.7		"	100		99.7	70-130			
<i>Surrogate: o-Terphenyl</i>	48.1		"	50.0		96.2	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.
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:

9/16/2015

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.



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



# Analytical Report

**Prepared for:**

Tim McMinn  
E Tech Environmental & Safety Solutions, Inc.  
13000 West County Road 100  
Odessa, TX 79765

Project: KLM Battery  
Project Number: 416-6439-000  
Location: Loco Hills, NM  
Lab Order Number: 5J16004



NELAP/TCEQ # T104704156-13-3

Report Date: 10/21/15

E Tech Environmental & Safety Solutions, Inc.  
13000 West County Road 100  
Odessa TX, 79765

Project: KLM Battery  
Project Number: 416-6439-000  
Project Manager: Tim McMinn

Fax: (432) 563-2213

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
SP1- Transfer Pump 4'	5J16004-01	Soil	10/12/15 15:45	10-15-2015 16:40
SP2 6"	5J16004-02	Soil	10/12/15 15:50	10-15-2015 16:40
SP3 1'	5J16004-03	Soil	10/12/15 15:52	10-15-2015 16:40
Stockpile	5J16004-04	Soil	10/12/15 15:55	10-15-2015 16:40

**SP1- Transfer Pump 4'**  
**5J16004-01 (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	0.00103	mg/kg dry	1	P5J1608	10/15/15	10/16/15	EPA 8021B	
Toluene	ND	0.00206	mg/kg dry	1	P5J1608	10/15/15	10/16/15	EPA 8021B	
Ethylbenzene	ND	0.00103	mg/kg dry	1	P5J1608	10/15/15	10/16/15	EPA 8021B	
Xylene (p/m)	ND	0.00206	mg/kg dry	1	P5J1608	10/15/15	10/16/15	EPA 8021B	
Xylene (o)	ND	0.00103	mg/kg dry	1	P5J1608	10/15/15	10/16/15	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>130 %</i>	<i>75-125</i>		<i>P5J1608</i>	<i>10/15/15</i>	<i>10/16/15</i>	<i>EPA 8021B</i>	<i>S-GC</i>
<i>Surrogate: 1,4-Difluorobenzene</i>		<i>110 %</i>	<i>75-125</i>		<i>P5J1608</i>	<i>10/15/15</i>	<i>10/16/15</i>	<i>EPA 8021B</i>	

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

<b>% Moisture</b>	<b>3.0</b>	0.1	%	1	P5J1610	10/16/15	10/16/15	% calculation	
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**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	25.8	mg/kg dry	1	P5J1609	10/16/15	10/16/15	TPH 8015M	
<b>&gt;C12-C28</b>	<b>166</b>	25.8	mg/kg dry	1	P5J1609	10/16/15	10/16/15	TPH 8015M	
<b>&gt;C28-C35</b>	<b>37.7</b>	25.8	mg/kg dry	1	P5J1609	10/16/15	10/16/15	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		<i>111 %</i>	<i>70-130</i>		<i>P5J1609</i>	<i>10/16/15</i>	<i>10/16/15</i>	<i>TPH 8015M</i>	
<i>Surrogate: o-Terphenyl</i>		<i>137 %</i>	<i>70-130</i>		<i>P5J1609</i>	<i>10/16/15</i>	<i>10/16/15</i>	<i>TPH 8015M</i>	<i>S-GC</i>
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>203</b>	25.8	mg/kg dry	1	[CALC]	10/16/15	10/16/15	calc	

**SP2 6"**  
**5J16004-02 (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**

<b>Benzene</b>	<b>0.00107</b>	0.00104	mg/kg dry	1	P5J1608	10/15/15	10/16/15	EPA 8021B	
<b>Toluene</b>	<b>0.00777</b>	0.00208	mg/kg dry	1	P5J1608	10/15/15	10/16/15	EPA 8021B	
<b>Ethylbenzene</b>	<b>0.00583</b>	0.00104	mg/kg dry	1	P5J1608	10/15/15	10/16/15	EPA 8021B	
<b>Xylene (p/m)</b>	<b>0.0178</b>	0.00208	mg/kg dry	1	P5J1608	10/15/15	10/16/15	EPA 8021B	
<b>Xylene (o)</b>	<b>0.0174</b>	0.00104	mg/kg dry	1	P5J1608	10/15/15	10/16/15	EPA 8021B	
<i>Surrogate: 1,4-Difluorobenzene</i>		85.8 %		75-125	P5J1608	10/15/15	10/16/15	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		96.1 %		75-125	P5J1608	10/15/15	10/16/15	EPA 8021B	

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

<b>% Moisture</b>	<b>4.0</b>	0.1	%	1	P5J1610	10/16/15	10/16/15	% calculation	
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**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

<b>C6-C12</b>	<b>266</b>	26.0	mg/kg dry	1	P5J1609	10/16/15	10/16/15	TPH 8015M	
<b>&gt;C12-C28</b>	<b>4970</b>	26.0	mg/kg dry	1	P5J1609	10/16/15	10/16/15	TPH 8015M	
<b>&gt;C28-C35</b>	<b>637</b>	26.0	mg/kg dry	1	P5J1609	10/16/15	10/16/15	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		114 %		70-130	P5J1609	10/16/15	10/16/15	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		121 %		70-130	P5J1609	10/16/15	10/16/15	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>5870</b>	26.0	mg/kg dry	1	[CALC]	10/16/15	10/16/15	calc	

E Tech Environmental & Safety Solutions, Inc.  
 13000 West County Road 100  
 Odessa TX, 79765

Project: KLM Battery  
 Project Number: 416-6439-000  
 Project Manager: Tim McMinn

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**SP3 1'**  
**5J16004-03 (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	0.00104	mg/kg dry	1	P5J1608	10/15/15	10/16/15	EPA 8021B	
Toluene	ND	0.00208	mg/kg dry	1	P5J1608	10/15/15	10/16/15	EPA 8021B	
Ethylbenzene	ND	0.00104	mg/kg dry	1	P5J1608	10/15/15	10/16/15	EPA 8021B	
Xylene (p/m)	ND	0.00208	mg/kg dry	1	P5J1608	10/15/15	10/16/15	EPA 8021B	
Xylene (o)	ND	0.00104	mg/kg dry	1	P5J1608	10/15/15	10/16/15	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		120 %	75-125		P5J1608	10/15/15	10/16/15	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		118 %	75-125		P5J1608	10/15/15	10/16/15	EPA 8021B	

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

<b>% Moisture</b>	<b>4.0</b>	0.1	%	1	P5J1610	10/16/15	10/16/15	% calculation	
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**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

<b>C6-C12</b>	<b>31.1</b>	26.0	mg/kg dry	1	P5J1609	10/16/15	10/16/15	TPH 8015M	
<b>&gt;C12-C28</b>	<b>1330</b>	26.0	mg/kg dry	1	P5J1609	10/16/15	10/16/15	TPH 8015M	
<b>&gt;C28-C35</b>	<b>214</b>	26.0	mg/kg dry	1	P5J1609	10/16/15	10/16/15	TPH 8015M	
Surrogate: 1-Chlorooctane		107 %	70-130		P5J1609	10/16/15	10/16/15	TPH 8015M	
Surrogate: o-Terphenyl		135 %	70-130		P5J1609	10/16/15	10/16/15	TPH 8015M	S-GC
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>1570</b>	26.0	mg/kg dry	1	[CALC]	10/16/15	10/16/15	calc	

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**Stockpile**  
**5J16004-04 (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	0.00106	mg/kg dry	1	P5J1608	10/15/15	10/16/15	EPA 8021B	
<b>Toluene</b>	<b>0.0181</b>	0.00213	mg/kg dry	1	P5J1608	10/15/15	10/16/15	EPA 8021B	
<b>Ethylbenzene</b>	<b>0.0224</b>	0.00106	mg/kg dry	1	P5J1608	10/15/15	10/16/15	EPA 8021B	
<b>Xylene (p/m)</b>	<b>0.0454</b>	0.00213	mg/kg dry	1	P5J1608	10/15/15	10/16/15	EPA 8021B	
<b>Xylene (o)</b>	<b>0.0397</b>	0.00106	mg/kg dry	1	P5J1608	10/15/15	10/16/15	EPA 8021B	
<i>Surrogate: 1,4-Difluorobenzene</i>		89.8 %	75-125		P5J1608	10/15/15	10/16/15	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		84.0 %	75-125		P5J1608	10/15/15	10/16/15	EPA 8021B	

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

<b>% Moisture</b>	<b>6.0</b>	0.1	%	1	P5J1610	10/16/15	10/16/15	% calculation	
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**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

<b>C6-C12</b>	<b>230</b>	133	mg/kg dry	5	P5J1609	10/16/15	10/16/15	TPH 8015M	
<b>&gt;C12-C28</b>	<b>2630</b>	133	mg/kg dry	5	P5J1609	10/16/15	10/16/15	TPH 8015M	
<b>&gt;C28-C35</b>	<b>453</b>	133	mg/kg dry	5	P5J1609	10/16/15	10/16/15	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		98.0 %	70-130		P5J1609	10/16/15	10/16/15	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		118 %	70-130		P5J1609	10/16/15	10/16/15	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>3320</b>	133	mg/kg dry	5	[CALC]	10/16/15	10/16/15	calc	

**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 P5J1608 - General Preparation (GC)**

<b>Blank (P5J1608-BLK1)</b>										
										Prepared & Analyzed: 10/15/15
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: 4-Bromofluorobenzene	0.0726		"	0.0500		145	75-125			S-GC
Surrogate: 1,4-Difluorobenzene	0.0538		"	0.0500		108	75-125			

<b>LCS (P5J1608-BS1)</b>										
										Prepared & Analyzed: 10/15/15
Benzene	0.0824	0.00100	mg/kg wet	0.100		82.4	70-130			
Toluene	0.0994	0.00200	"	0.100		99.4	70-130			
Ethylbenzene	0.115	0.00100	"	0.100		115	70-130			
Xylene (p/m)	0.221	0.00200	"	0.200		111	70-130			
Xylene (o)	0.109	0.00100	"	0.100		109	70-130			
Surrogate: 1,4-Difluorobenzene	0.0535		"	0.0500		107	75-125			
Surrogate: 4-Bromofluorobenzene	0.0737		"	0.0500		147	75-125			S-GC

<b>LCS Dup (P5J1608-BSD1)</b>										
										Prepared & Analyzed: 10/15/15
Benzene	0.0876	0.00100	mg/kg wet	0.100		87.6	70-130	6.14	20	
Toluene	0.106	0.00200	"	0.100		106	70-130	6.80	20	
Ethylbenzene	0.107	0.00100	"	0.100		107	70-130	6.40	20	
Xylene (p/m)	0.221	0.00200	"	0.200		111	70-130	0.104	20	
Xylene (o)	0.118	0.00100	"	0.100		118	70-130	8.46	20	
Surrogate: 1,4-Difluorobenzene	0.0523		"	0.0500		105	75-125			
Surrogate: 4-Bromofluorobenzene	0.0784		"	0.0500		157	75-125			S-GC

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Project: KLM Battery  
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 Project Manager: Tim McMinn

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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 P5J1610 - % Solids**

<b>Blank (P5J1610-BLK1)</b>				Prepared & Analyzed: 10/16/15						
% Moisture	ND	0.1	%							
<b>Duplicate (P5J1610-DUP1)</b>				Prepared & Analyzed: 10/16/15						
	Source: 5J16001-01									
% Moisture	2.0	0.1	%		2.0			0.00	20	
<b>Duplicate (P5J1610-DUP2)</b>				Prepared & Analyzed: 10/16/15						
	Source: 5J16005-07									
% Moisture	6.0	0.1	%		6.0			0.00	20	
<b>Duplicate (P5J1610-DUP3)</b>				Prepared & Analyzed: 10/16/15						
	Source: 5J16010-01									
% Moisture	4.0	0.1	%		4.0			0.00	20	

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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
<b>Batch P5J1609 - TX 1005</b>										
<b>Blank (P5J1609-BLK1)</b>										
Prepared & Analyzed: 10/16/15										
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	87.0		"	100		87.0	70-130			
Surrogate: o-Terphenyl	52.7		"	50.0		105	70-130			
<b>LCS (P5J1609-BS1)</b>										
Prepared & Analyzed: 10/16/15										
C6-C12	885	25.0	mg/kg wet	1000		88.5	75-125			
>C12-C28	901	25.0	"	1000		90.1	75-125			
Surrogate: 1-Chlorooctane	104		"	100		104	70-130			
Surrogate: o-Terphenyl	50.3		"	50.0		101	70-130			
<b>LCS Dup (P5J1609-BSD1)</b>										
Prepared & Analyzed: 10/16/15										
C6-C12	863	25.0	mg/kg wet	1000		86.3	75-125	2.56	20	
>C12-C28	855	25.0	"	1000		85.5	75-125	5.22	20	
Surrogate: 1-Chlorooctane	98.7		"	100		98.7	70-130			
Surrogate: o-Terphenyl	47.2		"	50.0		94.5	70-130			
<b>Duplicate (P5J1609-DUP1)</b>										
<b>Source: 5J16008-02</b>										
Prepared & Analyzed: 10/16/15										
C6-C12	267	26.9	mg/kg dry		238			11.4	20	
>C12-C28	1230	26.9	"		1120			9.42	20	
Surrogate: 1-Chlorooctane	123		"	108		115	70-130			
Surrogate: o-Terphenyl	73.9		"	53.8		138	70-130			S-GC

### Notes and Definitions

S-GC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
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: 10/21/2015

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.



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



# Analytical Report

**Prepared for:**

Tim McMinn  
E Tech Environmental & Safety Solutions, Inc.  
13000 West County Road 100  
Odessa, TX 79765

Project: KLM Battery  
Project Number: 416-6439-000  
Location: Memorial  
Lab Order Number: 5K17008



**NELAP/TCEQ # T104704156-13-3**

Report Date: 11/20/15

E Tech Environmental & Safety Solutions, Inc.  
13000 West County Road 100  
Odessa TX, 79765

Project: KLM Battery  
Project Number: 416-6439-000  
Project Manager: Tim McMinn

Fax: (432) 563-2213

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
Sample Point 1	5K17008-01	Soil	11/13/15 09:45	11-16-2015 15:15

**Sample Point 1**  
**5K17008-01 (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**

% Moisture	ND	0.1	%	1	P5K1701	11/17/15	11/17/15	% calculation	
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**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

<b>C6-C12</b>	<b>32.2</b>	25.0	mg/kg dry	1	P5K1806	11/17/15	11/17/15	TPH 8015M	
<b>&gt;C12-C28</b>	<b>1210</b>	25.0	mg/kg dry	1	P5K1806	11/17/15	11/17/15	TPH 8015M	
<b>&gt;C28-C35</b>	<b>220</b>	25.0	mg/kg dry	1	P5K1806	11/17/15	11/17/15	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		95.9 %	70-130		P5K1806	11/17/15	11/17/15	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		107 %	70-130		P5K1806	11/17/15	11/17/15	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>1460</b>	25.0	mg/kg dry	1	[CALC]	11/17/15	11/17/15	calc	

E Tech Environmental & Safety Solutions, Inc.  
 13000 West County Road 100  
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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 P5K1701 - \*\*\* DEFAULT PREP \*\*\***

<b>Blank (P5K1701-BLK1)</b>				Prepared & Analyzed: 11/17/15						
% Moisture	ND	0.1	%							
<b>Duplicate (P5K1701-DUP1)</b>				Source: 5K17001-01 Prepared & Analyzed: 11/17/15						
% Moisture	15.0	0.1	%		15.0			0.00	20	
<b>Duplicate (P5K1701-DUP2)</b>				Source: 5K17009-01 Prepared & Analyzed: 11/17/15						
% Moisture	10.0	0.1	%		10.0			0.00	20	

**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 P5K1806 - TX 1005**

**Blank (P5K1806-BLK1)**

Prepared & Analyzed: 11/17/15

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	99.9		"	100		99.9	70-130			
Surrogate: o-Terphenyl	56.2		"	50.0		112	70-130			

**LCS (P5K1806-BS1)**

Prepared & Analyzed: 11/17/15

C6-C12	946	25.0	mg/kg wet	1000		94.6	75-125			
>C12-C28	893	25.0	"	1000		89.3	75-125			
Surrogate: 1-Chlorooctane	113		"	100		113	70-130			
Surrogate: o-Terphenyl	49.6		"	50.0		99.3	70-130			

**LCS Dup (P5K1806-BSD1)**

Prepared & Analyzed: 11/17/15

C6-C12	845	25.0	mg/kg wet	1000		84.5	75-125	11.2	20	
>C12-C28	832	25.0	"	1000		83.2	75-125	7.10	20	
Surrogate: 1-Chlorooctane	104		"	100		104	70-130			
Surrogate: o-Terphenyl	49.7		"	50.0		99.3	70-130			

**Matrix Spike (P5K1806-MS1)**

Source: 5K17001-01

Prepared & Analyzed: 11/17/15

C6-C12	974	29.4	mg/kg dry	1180	23.0	80.9	75-125			
>C12-C28	923	29.4	"	1180	ND	78.5	75-125			
Surrogate: 1-Chlorooctane	129		"	118		109	70-130			
Surrogate: o-Terphenyl	53.5		"	58.8		90.9	70-130			

**Matrix Spike Dup (P5K1806-MSD1)**

Source: 5K17001-01

Prepared & Analyzed: 11/17/15

C6-C12	1000	29.4	mg/kg dry	1180	23.0	83.3	75-125	2.94	20	
>C12-C28	940	29.4	"	1180	ND	79.9	75-125	1.75	20	
Surrogate: 1-Chlorooctane	123		"	118		105	70-130			
Surrogate: o-Terphenyl	54.6		"	58.8		92.8	70-130			

### Notes and Definitions

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RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By:



Date:

11/20/2015

Brent Barron, Laboratory Director/Technical Director

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