Delineation Report and Work Plan

Date
January, 2014

Smith, Cory, EMNRD

From: Griswold, Jim, EMNRD
Sent: Monday, March 4, 2019 11:19 AM
To: vern@walsheng.net
Cc: Smith, Cory, EMNRD
Subject: Federal I5 Tank Battery

Mr. Andrews,

The Oil Conservation Division (OCD) has reviewed the *Site Characterization and Remediation Workplan at the Federal I5, I8, and I9 Tank Battery* dated November 2018 prepared by Envirotech and hand delivered to the OCD by your attorney, the Gallegos Law Firm, on December 21, 2018. This report deals with OCD incident number nJK1534846034 which apparently occurred during 2015 when Encana Oil & Gas was operating the lease. The characterization portion of the report fulfills the associated requirements of our current spill rule, 19.15.29.11 NMAC, with one significant exception. The vertical extent of hydrocarbon contamination in the vadose zone has not been determined to the required limit of 100 mg/kg. This is noted by Envirotech on page 3 of the report. The stated reason was that a sandstone layer was encountered beneath the tank battery.

Nonetheless, Envirotech proposes to excavate approximately 300 cubic yards of contaminated soils, dispose of the soils at an appropriate waste management facility, sample the sidewalls and base within the excavation to confirm adequate removal, and then backfill the excavation with clean soils. This is a common and straightforward method of corrective action and is hereby approved by the OCD. Envirotech goes on to propose that if a confirmation sample(s) does not meet the regulatory closure criteria, an application of potassium permanganate will be utilized to further remediate in situ. If such an approach is taken, subsequent sampling will be required prior to backfilling to verify the effectiveness of this approach. There will also need to be a demonstration by Epic that the vertical extent of contamination has been determined, i.e. untreated soils with a hydrocarbon concentration of less than 100 mg/kg. As the characterization effort has adequately demonstrated that adsorbed chloride is not a contaminant of further concern due to the relatively low concentrations observed, analysis of the soils during closure sampling does not need to include chloride.

In any future reporting, could you please direct Envirotech to provide the laboratory reporting limit of any analysis in data tables rather than “ND” to represent non-detect. This will facilitate quicker review. Also, the report did not provide the locations of the initial augered borings on the site map. If you have any questions or comments, please feel free to contact me or Cory Smith (cory.smith@state.nm.us phone (505)334-6178 x115).

Jim Griswold
Environmental Bureau Chief
Oil Conservation Division
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505.476.3465
email: jim.griswold@state.nm.us

GALLEGOS LAW FIRM
A Professional Corporation

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Building 300
Santa Fe, New Mexico 87505
Telephone No. 505-983-6686
Telefax No. 505-986-1367

December 21, 2018
(Our File No. 18-494.00)

J.E. GALLEGOS★★

HAND DELIVERED
Jim Griswold
Environmental Bureau Chief
New Mexico Oil Conservation Division
Energy, Minerals, and Natural Resources
1220 South St. Francis Dr.
Santa Fe, NM 87505

Re: Incident #nJK1534846034
Release of hydrocarbon by Encana Oil & Gas
Federal I tank battery, Section 21,
T23N, R7W Sandoval County, N.M.

Dear Mr. Griswold,

This letter is written on behalf of Epic Energy, LLC regarding the above matter. Encana Oil & Gas Co ("Encana") allowed an oil spill to occur on September 12, 2015 while it was operating the referenced tank battery. Your letter of October 15, 2018 outlines a chronological summary of events revealing multiple legal and regulatory violations by Encana. Your letter concluded "the record does not adequately demonstrate corrective action was undertaken despite Encana's statements to the contrary." This major company not only committed environmental damage it intentionally disregarded its legal obligation, it repeatedly refused the agency requests for a correct C-141, and was untruthful and deceptive. Encana was obligated to remediate the release within 90 days. 19.15.28.8 – 12 NMAC

Epic can only conclude that Encana failed to comply with the remediation obligation and unfortunately the Division failed to enforce that obligation.

Due to absence of enforcement by the Division, our firm is counseling Epic regarding filing an action against Encana pursuant to NMSA 1978 § 70-2-29. Under the statute the court can enjoin complete and effective remediation by Encana. The Division in such case may be substituted as plaintiff or be named as a party plaintiff in the first instance.

Epic has honored the Division's demand to obtain and submit a delineation and remediation plan for the site ("Plan") by today Friday, December 21, 2018. A required

★Admitted in N.M. & Colo.

★★ New Mexico Board of Legal Specialization
Recognized Specialist in the area of
Natural Resources-Oil and Gas Law

Plan has been prepared at Epic's request by Envirotech. A copy of the Plan dated December 7, 2018 is here provided.

In submitting the Plan, Epic reserves all rights and waives no claims and defenses. Epic urges the Division to exercise its duty and authority to take necessary action, to cause the Plan to be executed by and at the expense of Encana, the "responsible party." 19.15.29.7 C NMAC

We will be available to answer any questions or to discuss this matter with you or Division attorneys.

Sincerely,

GALLEGOS LAW FIRM, P.C.

By J. E. Gallegos

JEG:ac
ec: Cory Smith,
Environmental Specialist
Oil Conservation Division
Aztec, NM

Paul Thompson
President
Epic Energy LLC
Farmington, NM
Enclosures

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December 7, 2018 Project Number: 18012-0004

Mr. Vern Andrews
EPIC Energy
7415 East Main Street
Farmington, New Mexico 87401

Phone: (505) 327-4892
Email: vern@walsheng.net

RE: SITE CHARACTERIZATION AND REMEDIATION WORKPLAN AT THE FEDERAL I5, I8, AND I9 TANK BATTERY, SANDOVAL COUNTY, NEW MEXICO

Dear Mr. Andrews,

Enclosed please find the *Site Characterization and Remediation Workplan* detailing contaminated soil delineation, site characterization, and corrective action remediation for the Federal I5, I8, and I9 Tank Battery located in Sandoval County, New Mexico.

We appreciate the opportunity to be of service. If you have any questions or require additional information, please contact our office at (505) 632-0615.

Respectfully Submitted,
ENVIROTECH, INC.

Brittany Hall
Environmental Field Technician
bhall@envirotech-inc.com

Enclosure: Site Characterization and Remediation Workplan

Cc: Client File Number 18012

WORKPLAN FOR
SOIL REMEDIATION AND RECLAMATION
AT THE FEDERAL I5, I8, AND I9 TANK BATTERY

SITE NAME:

FEDERAL I5, I8, AND I9 TANK BATTERY
SECTION 21, TOWNSHIP 23N, RANGE 7W
SANDOVAL COUNTY, NEW MEXICO

SUBMITTED TO:

MR. CORY SMITH
NEW MEXICO OIL CONSERVATION DISTRICT
1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178
(505) 419-2687

SUBMITTED FOR:

MR. VERN ANDREWS
WALSH ENGINEERING
7415 EAST MAIN STREET
FARMINGTON, NEW MEXICO
(505) 327-4892

SUBMITTED BY:

ENVIROTECH, INC.
5796 U.S. HIGHWAY 64
FARMINGTON, NEW MEXICO 87401
(505) 632-0615

PROJECT NUMBER: 18012-0004

NOVEMBER 2018

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SITE CHARACTERIZATION AND REMEDIATION WORKPLAN
AT THE FEDERAL I5, I8, AND I9 TANK BATTERY
SANDOVAL COUNTY, NEW MEXICO

TABLE OF CONTENTS

INTRODUCTION

Envirotech, Inc. (Envirotech) has been retained by EPIC Energy to perform hydrocarbon contaminated soil delineation and site characterization, as well as a corrective action remediation workplan for the Federal I5, I8, and I9 Tank Battery located at 36.218985, -107.577409, Sandoval County, New Mexico. Envirotech has prepared the following documentation, as requested by EPIC Energy Representative, Mr. Vern Andrews, and as a results of a historic release of an unconfirmed amount of hydrocarbon liquids at the site. This document has been prepared in conformance with the *19.15.29 NMAC*.

PURPOSE AND SCOPE OF SERVICES

The purpose of this Site Characterization and Remediation Workplan is to provide the methodology for conducting site delineation activities, including: field sampling and contamination screening, laboratory analysis, soil remediation and reclamation, and reporting of the results.

SITE CHARACTERIZATION AND DELINEATION ACTIVITIES:

SITE CHARACTERIZATION

Prior to performing on-site activities, Envirotech personnel conducted a site characterization in order to determine the appropriate cleanup standard for the site. The results of the site characterization are presented in the summary table below.

Table I: Site Characterization Summary

Depth to groundwater	>100'
Release impacting groundwater/surface water	NO
Release within 300' of water course	YES
Release within 200' lakebed	NO
Rellease within 300' of residance, school, hosptial, institution, or church	NO
Release within 500' of spring or private domestic water well	NO
Release witin 1000' of any other water well or spring	NO
Release within incorporated municipal boundries or fresh water well field	NO
Release within 300' of wetland	NO
Release overlaying a subsurface mine	NO
Release overlaying unstable area/KARST GEOLOGY	NO
Release in 100 year floodplain	NO

Based on the site characterization and the receptor setbacks listed above, the closure standard for this site was determined to be the most stringent standard listed in *Table 1* of *19.15.29.12 NMAC.* The specific closures standard for the contaminants of concern are as follows: Chloride 600 mg/kg, Total Petroleum Hydrocarbons (TPH) (GRO, DRO & MRO) 100 mg/kg, benzene 10 mg/kg, and total BTEX 50 mg/kg.

SITE DELINEATION ACTIVITIES

Prior to performing field activities, a one call utility service locate was initiated in order to locate and mark any underground utilities. Envirotech personnel arrived to the Site on October 16, 2018 to perform spill assessment and delineation activities. The Site assessment and delineation activities included: borehole advancements in to the sub-surface, on-site field screening of the contaminated soil for TPH and organic vapors (OV), as well completing soil boring logs to detail the soil characteristics.

Based on previous sampling activities and information provided by EPIC Energy personnel, the impacted area was anticipated to be within the bermed area. Utilizing a hand auger, bore holes were advanced into the sub-surface to collect soil samples from discrete intervals. Upon retrieving the samples, the soil characteristics were logged, and an aliquot of the sample was place into Ziploc bags, allowed to warm up, and screened in the field for OV with a photoionization detector (PID). The remaining sample aliquot was placed into individual laboratory provided four (4) ounce jars in preparation for laboratory analysis.
Five (5) bore holes were advanced in the anticipated impacted area; one (1) in the center of the tank battery, and one in each cardinal direction away from the center. Each bore hole was advance to maximum depth of the hand auger (4.5 feet) and samples were collected from the 2 foot and 4.5-foot intervals. Each sample was screened in the field for OV with a PID, the center sample returned results of 28.9 ppm and 264 ppm, respectively for the 2 and 4.5-foot intervals. The west sample returned results of 0.0 ppm and 83.2 ppm, respectively for the 2 and 4.5-foot intervals. The east sample returned results of 12.0 ppm and 12.4 ppm, respectively for the 2 and 4.5-foot intervals. The north sample and south sample returned results of 0.0 ppm at the 2 and 4.5-foot intervals. Additionally, the center sample at 2 feet was screened in the field for TPH using 418.1 to provide a base line TPH concentration, as well as field results to correlate with laboratory analysis.

Each of the samples previously collected into four (4) ounce jars were transported on ice under chain of custody and submitted to Envirotech's Analytical Laboratory to be analyzed for TPH (DRO, GRO, ORO) using USEPA Method 8015D, benzene and total BTEX using USEPA Method 8021B, and Chlorides using USEPA Method 300.0. All the samples analyzed returned results below the closure standards for benzene, total BTEX, and chlorides. The samples collected at *Center @ 2' bgs, Center @ 4.5' bgs, West @ 4.5' bgs,* and *East @ 2' bgs* returned results above the regulatory closure standard of 100 mg/kg. Delineation analytical results can be found in *Table II, Summary of Analytical Results* and *Appendix B, Analytical Results.*

Based on the analytical results and on-site observations, Envirotech recommend further vertical delineation of the center area and additional vertical and horizontal delineation in the west and east directions.

Prior to Envirotech arrival to the site on November 8, 2018, the one call utility located was renewed and Mr. Cory Smith, NMOCD representative, was notified. Based on the previous recommendations, Envirotech returned to the site to perform additional delineation activities. Utilizing a backhoe, test pits were excavated to fully delineate the western and eastern extents, as well as the center of the impacted area. Additionally, a test pit was excavated at the southernmost point of the historic bermed area, at the request of Walsh Engineering representatives. Due to the placement of the berm, the western sample was taken from just outside of the bermed area. The west test pit was advanced to 7 feet bgs. One (1) sample was collected from the bottom of the test pit *(West Bottom)* and one (1) composite sample was taken from the wall closest to the berm *(West Wall).* The east test pit was excavated outside of the bermed area. The test pit was 7 feet east of the berm with a depth of 6 feet 2 inches. One (1) sample was collected from the bottom of the excavation *(East Bottom)* and one (1) composite sample was taken from the wall closest to the berm *(East Wall).* The center test pit was advanced to 10 feet 6 inches bgs where a competent sandstone base was encounter and maximum feasible depth was reached. One sample was collected from the bottom of the center test pit. At the request of Walsh Engineering, a test pit was excavated at the southernmost edge of the historical bermed area. The south test pit was 6.5 feet bgs. No contamination was observed, and samples were collected from the bottom of the excavation *(South Bottom)* and from the wall closest to the berm *(South Wall).*

All the samples collected were screened in the field for OV using a PID. All the samples with the exception of the center sample returned results of 0.0 ppm OV. The center sample returned results of 0.4 ppm OV at 8 foot and 0.3 ppm OV at 9.5 foot. The samples were then placed into individual laboratory provided four (4) ounce jars, transported on ice under chain of custody, and submitted to Envirotech's Analytical Laboratory to be analyzed for TPH (DRO, GRO, ORO) using USEPA Method 8015D, benzene and total BTEX using USEPA Method 8021B, and Chlorides using USEPA Method 300.0. All samples collected returned results below the regulatory closure standards for all constituents analyzed with the exception of TPH at the *Center* sample at 10'6" bgs.

Based on the on-site observation and analytical results the impacted area is determined to be approximately 46 feet north to south and 36 feet east to west with a depth ranging from 1 foot to 10 feet 6 inched bgs. The estimated in-place impacted soil volume is 300 cubic yards. Envirotech recommends excavation of the impacted soil, collecting composite closure samples of the walls and base of the excavation, disposing of the impacted soil at a permitted remediation facility, backfilling with clean BLM/NMOCD approved soil and re-contorting to pre-incident conditions.

REMEDIATION PLAN

The corrective action to address the hydrocarbon impacted soil will be to excavate the contaminated soil, dispose of at an appropriate permitted facility and backfill with clean soil. The process is commonly referred to as a "Dig and Haul". On-site activities will not commence without the approval of NMOCD. Prior to performing on-site activities, a one call utility locate will be initiated to located and mark underground utilities. Preliminary on-site activities will include shutting in the location and performing an energy isolation LOTO. The applicable flow lines and tanks will be removed from the area of anticipated activity.

Upon completing site preparations, the impacted soil will be mechanically excavated with a tracked excavator. The estimated in-place volume of contaminated soil is 300 c/y and will likely result in 400 c/y of material being transported and disposed. Upon commencement of the excavation activities, an environmental field technician will be on site to perform periodic soil screening activities. The soil screening activities will include TPH and OV field screening. The on-site soil screening will assist in guiding and directing the excavation process. The excavated soil will be stock piled and loaded onto dump trucks for transportation to Envirotech's NMOCD permitted soil remediation facility, *Landfarm #2* (Permit #: NM 01-0011). The dump trucks will also transport BLM certified weed-free clean soil back to the Site. Each load of contaminated soil and clean fill soil will be logged on a Bill of Lading (BOL) for documentation of disposal and to calculate total volumes.

Upon the walls and base of the excavation retuning field screening results with-in acceptable levels, composite closure samples will be collected to verify the site has been remediated. In accordance with 19.15.29.12 NMAC, the district NMOCD office will be notified two (2) business days prior to performing any confirmation sampling activities. Closure samples will be collected from each wall and the base of the excavation, each sample will be less than 200 ft^2. If a wall or base is in exceedance of 200 ft^2, an additional sample will be collected. Additionally, if any discolored or wet areas are observed, an individual grab sample will be collected from the area.

Each closure sample will be divided into two (2) aliquots, one (1) will be collected into laboratory provided 4-ounce glass jars capped headspace free, labeled, and stored in an ice chest, in preparation for laboratory analysis and the other aliquot will be used for field screening activities. The field screening activities will include TPH using USEPA Method 418.1 and OV using a PID. The filed screening results will be documented on filed sheets and enclosed within the final report.

The samples previously collect in the four (4) ounce jars will be delivered under chain of custody to Envirotech's Laboratory to be analyzed for TPH using USEPA method 8015D, benzene and total BTEX using USEPA Method 8021B, and Chlorides using USEPA

method 300.0. The results of the analysis will be compared against the most stringent standards of *Table I* of *19.1529.12 NMAC.*

In the event that a sample does not meet the closure criteria for TPH, benzene or total BTEX, and the affected area has been excavated to maximum feasible extents, a potassium permanganate solution will be applied to the affected area as an *in-situ* remediation alterative.

Upon all samples meeting the required closure standard the excavation will be backfilled, re-contoured and the surface equipment will be re-installed.

FINAL CLOSURE

A report documenting the onsite activities will be prepared and submitted to the NMOCD following the completion of the soil remediation and reclamation activities. The report will include details of all activities performed, volume of material removed, disposal documentation, and laboratory analysis. The final report will include a chronological narrative with description of activities performed, 7.5 Minute US Topographical Vicinity Map, Site Maps, Summary of Analytical Results, Analytical Results, Field Notes, and Bill of Lading. One (1) digital copy of the report will be submitted to the NMOCD and one (1) copy will be submitted to the Epic Energy. Hard copies will be furnished upon request.

CLOSURE AND LIMITATIONS

The scope of Envirotech's services will be limited to project management, monitoring, analysis, soil remediation activities, and reporting for the Federal I5, I8, and I9 Tank Battery located at 36.218985, -107.577409, Sandoval County, New Mexico. All work will be performed in accordance with generally accepted practices in geotechnical, hydrogeological, environmental, and petroleum engineering.

Envirotech, Inc. will not perform work beyond the scope of services outlined herein without first obtaining approval from the Responsible Party and the NMOCD.

Respectfully Submitted,
ENVIROTECH, INC.

Brittany Hall
Environmental Field Technician
bhall@envirotech-inc.com

Reviewed by:

Felipe Aragon, CHMM, CES
Environmental Assistant Manager
faragon@envirotech-inc.com

FIGURES

Figure 1, *Vicinity Map*

Figure 2, *Site Map*

Figure 3, *Cross Section Map*

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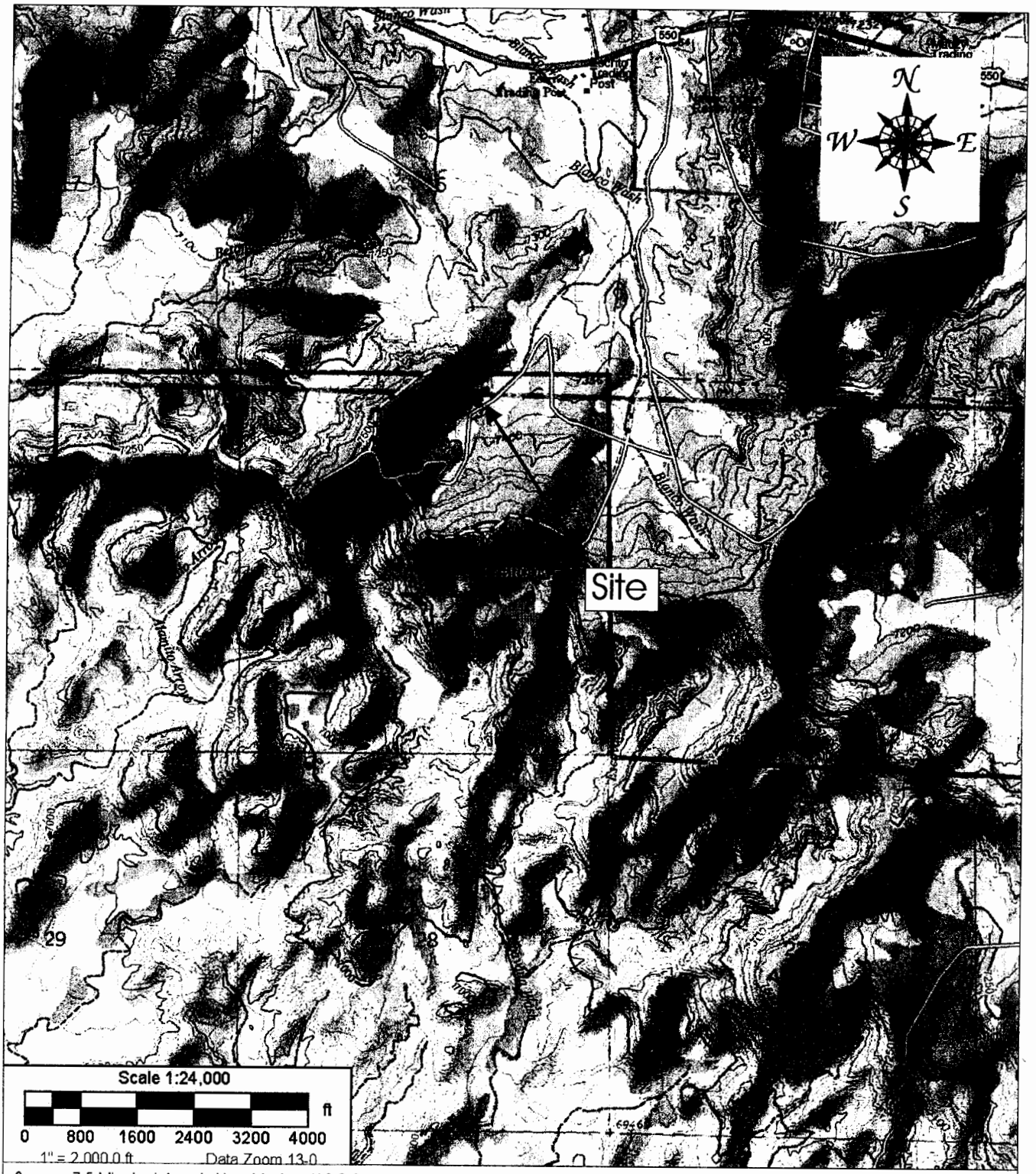
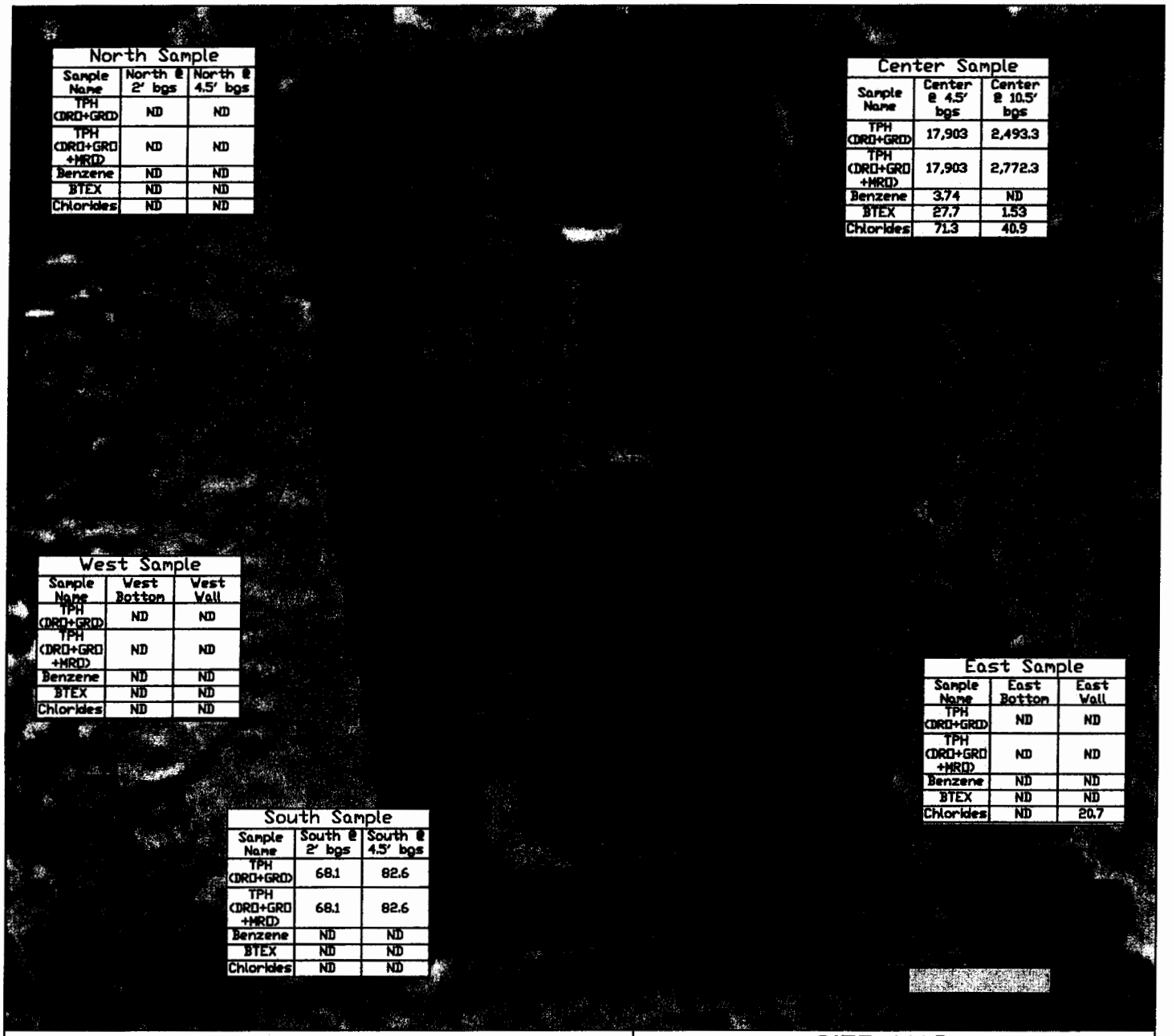


Source: 7.5 Minute, Lybrook, New Mexico U.S.G.S. Topographic Quadrangle Map
Scale: 1:24,000 1" = 2000'

Epic Energy Federal I5, I8, and I9 Tank Battery Section 32, Twp 23N, Range 7W Sandoval County, New Mexico	envirotech ENVIRONMENTAL SCIENTISTS & ENGINEERS 5796 U.S. HIGHWAY 64 Farmington, New Mexico 87401 505.632.0615	Vicinity Map	
		Figure #1	
Project Number: 18012-0004 / Date Drawn: 11/21/2018		DRAWN BY: Brittany Hall	PROJECT MANAGER: Felipe Aragon



North Sample		
Sample Name	North @ 2' bgs	North @ 4.5' bgs
TPH (DRO+GRO)	ND	ND
TPH (DRO+GRO +MRO)	ND	ND
Benzene	ND	ND
BTEX	ND	ND
Chlorides	ND	ND

Center Sample		
Sample Name	Center @ 4.5' bgs	Center @ 10.5' bgs
TPH (DRO+GRO)	17,903	2,493.3
TPH (DRO+GRO +MRO)	17,903	2,772.3
Benzene	3.74	ND
BTEX	27.7	1.53
Chlorides	71.3	40.9

West Sample		
Sample Name	West Botton	West Wall
TPH (DRO+GRO)	ND	ND
TPH (DRO+GRO +MRO)	ND	ND
Benzene	ND	ND
BTEX	ND	ND
Chlorides	ND	ND

East Sample		
Sample Name	East Botton	East Wall
TPH (DRO+GRO)	ND	ND
TPH (DRO+GRO +MRO)	ND	ND
Benzene	ND	ND
BTEX	ND	ND
Chlorides	ND	20.7

South Sample		
Sample Name	South @ 2' bgs	South @ 4.5' bgs
TPH (DRO+GRO)	68.1	82.6
TPH (DRO+GRO +MRO)	68.1	82.6
Benzene	ND	ND
BTEX	ND	ND
Chlorides	ND	ND

LEGEND

X Sampling Locations

North Sample (36.218892, -107.577691)

West Sample (36.218857, -107.577744)

South Sample (36.218763, -107.577674)

East Sample (36.218862, -107.577565)

Center Sample (36.218708, -107.577739)

SITE MAP
EPIC PRODUCTION
FEDERAL I-5, I-8, I-9 TANK BATTERY
SECTION 21, TWP 23 NORTH, RANGE 7 WEST
SANDOVAL COUNTY, NEW MEXICO

SCALE: 1"=12'	FIGURE NO. 2	REV
PROJECT NO18012-0004		

REVISIONS

NO.	DATE	BY	DESCRIPTION

MAP DRWN	BH	11/5/18	BASE DRWN	BH	11/5/18

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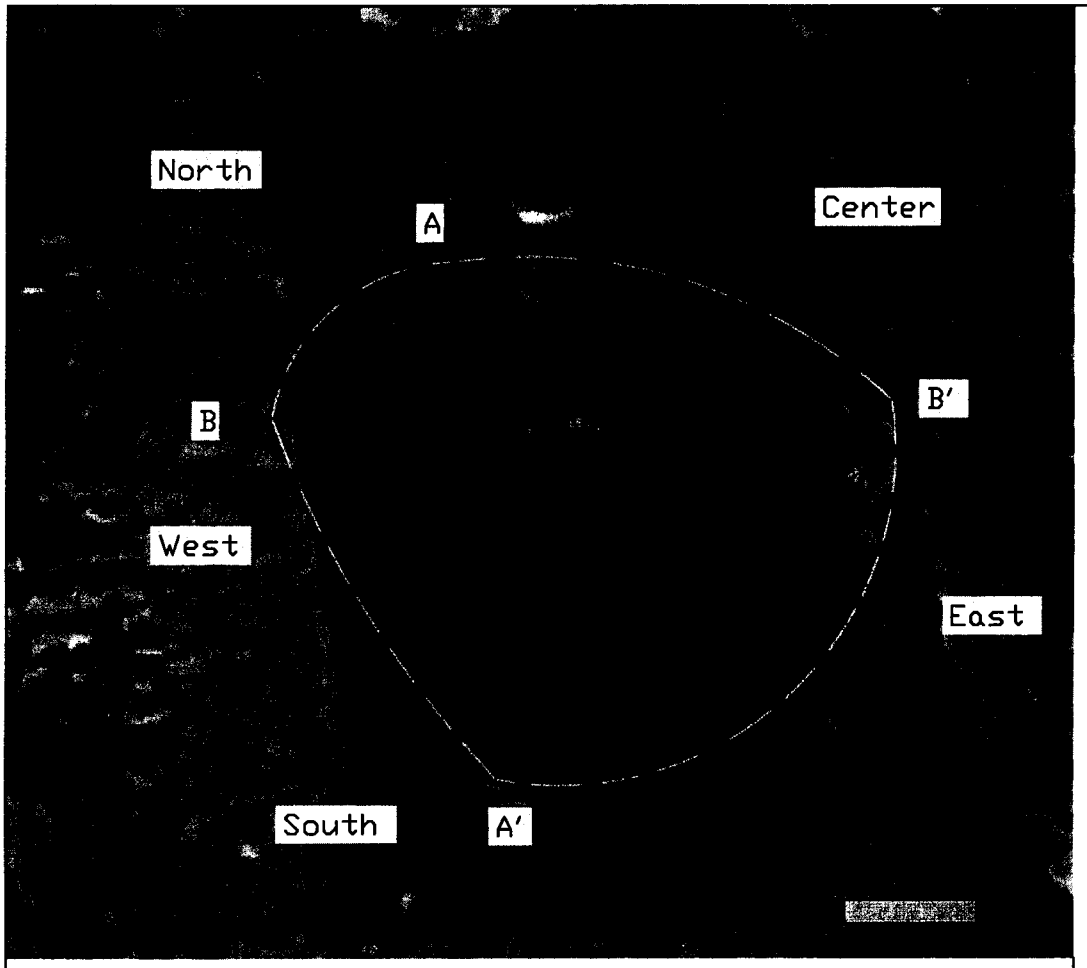
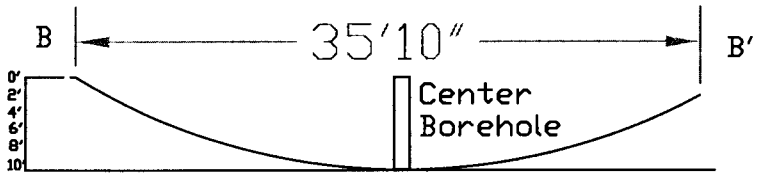
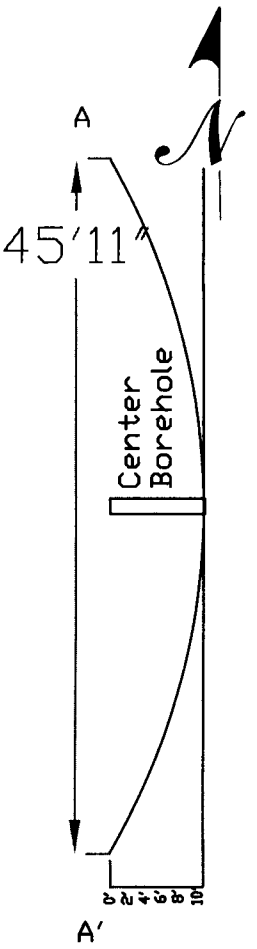
5796 U.S. HIGHWAY 64, FARMINGTON, NM 87401 505-632-0615







LEGEND

X Sampling Locations

Impacted Area

CROSS SECTION MAP
EPIC PRODUCTION

FEDERAL 1-5, 1-8, 1-9 TANK BATTERY
SECTION 21, TWP 23 NORTH, RANGE 7 WEST
SANDOVAL COUNTY, NEW MEXICO

SCALE: 1"=12'	FIGURE NO. 3	REV
PROJECT NO:18012-0004		

REVISIONS

NO.	DATE	BY	DESCRIPTION

MAP DRWN	BH	11/5/18	BASE DRWN	BH	11/5/18

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5796 U.S. HIGHWAY 64, FARMINGTON, NM 87401 505-632-0615

TABLES:

Table II, *Summary of Analytical Results*

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Table 1, Summary of Analytical Results
Epic Energy
Site Assessment/Delineation
Federal I5, I8, and I9 Tank Battery
Project Number: 18012-0004

Sample Description	Date	Contaminant of Concern			
		TPH (GRO+DRO+MRO)	Benzene	Total BTEX	Chlorides
New Mexico Oil Conservation Division (NMOCD) Allowable Concentrations	**NA**	**100 mg/Kg**	**10 mg/Kg**	**50 mg/Kg**	**600 mg/Kg**
Center @ 2' bgs	10/16/2018	**722**	ND	ND	44.4
Center @ 4.5' bgs	10/16/2018	**17,903**	3.74	27.7	71.3
West @ 2' bgs	10/16/2018	ND	ND	ND	ND
West @ 4.5' bgs	10/16/2018	**7,439**	0.544	3.54	ND
East @ 2' bgs	10/16/2018	**213**	ND	ND	193
East @ 4.5' bgs	10/16/2018	ND	ND	ND	214
North @ 2' bgs	10/16/2018	ND	ND	ND	ND
North @ 4.5' bgs	10/16/2018	ND	ND	ND	ND
South @ 2' bgs	10/16/2018	68.1	ND	ND	ND
South @ 4.5' bgs	10/16/2018	82.6	ND	ND	ND
West Bottom @7' bgs	11/8/2018	ND	ND	ND	ND
West Wall	11/8/2018	ND	ND	ND	ND
South Bottom @ 6.5' bgs	11/8/2018	ND	ND	ND	ND
South Wall	11/8/2018	ND	ND	ND	ND
East Bottom @ 6'2" bgs	11/8/2018	ND	ND	ND	ND
East Wall	11/8/2018	ND	ND	ND	20.7
Center @ 10.5' bgs	11/8/2018	**2,772.30**	ND	1.53	40.9

* NS - Parameter not screened
* ND - Parameter not detected
* BOLD - Parameter above NMOCD regulatory limit

APPENDICES:

Appendix A, *Field Notes*

Appendix B, *Laboratory Results*

Appendix C, *Soil Boring Lithology Logs*

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CLIENT: Epic Energy	envirotech (505) 632-0615 (800) 362-1879 5796 U.S. Hwy 64, Farmington, NM 87401	Envmtl. Spclst: Blake	
CLIENT/JOB #: 18012-0004		C.O.C. No:	
START DATE: 10/16/15		LAT	
FINISH DATE:		LONG	
Page # ____ of ____			

Field Report: Spill Closure Verification

NMOCD Ranking: ____ Depth to GW: ____ WH Protection Area: No / Yes

NMOCD TPH Closure Std.: Distance to SW:

LOCATION: Name: Tank Battery for Federal I Well #: 5, 8, 9 API:

County: Sandoval State: NM

Cause of Release: Material Released: Amt. Released:

QUAD/UNIT: SEC: TWP: RNG: PM:

Wellhead Lat/Long: Land Jurisdiction: QTR Footage:

Spill Located Approximately: ____ FT. FROM

Excavation Approx: ____ FT. X ____ FT. X ____ FT. Cubic Yardage:

Disposal Facility: Remediaton Method:

Land Use: Lease: Land Owner:

FIELD 418.1 ANLAYSIS

SAMPLE DESCRIPITION	TIME	SAMPLE I.D.	WEIGHT (g)	mL FREON	DILUTION	READING	CALC. ppm
200 Std	1139	—	—	—	—	—	194
Center ~2.0'bgs	1146	1	5	20	4	310	1240
Center ~4.5'bgs	1200	2					
West ~4.5 bgs	1335	3					
West ~2.0 bgs	1333	4					
East ~2.0 bgs	1345	5					
East ~4.5'bgs	1347	6					
North ~2.0'bgs	1400	7					
North ~4.5 bgs	1405	8					
South ~2.0 bgs	1430	9					
South ~4.5bgs	1435	10					

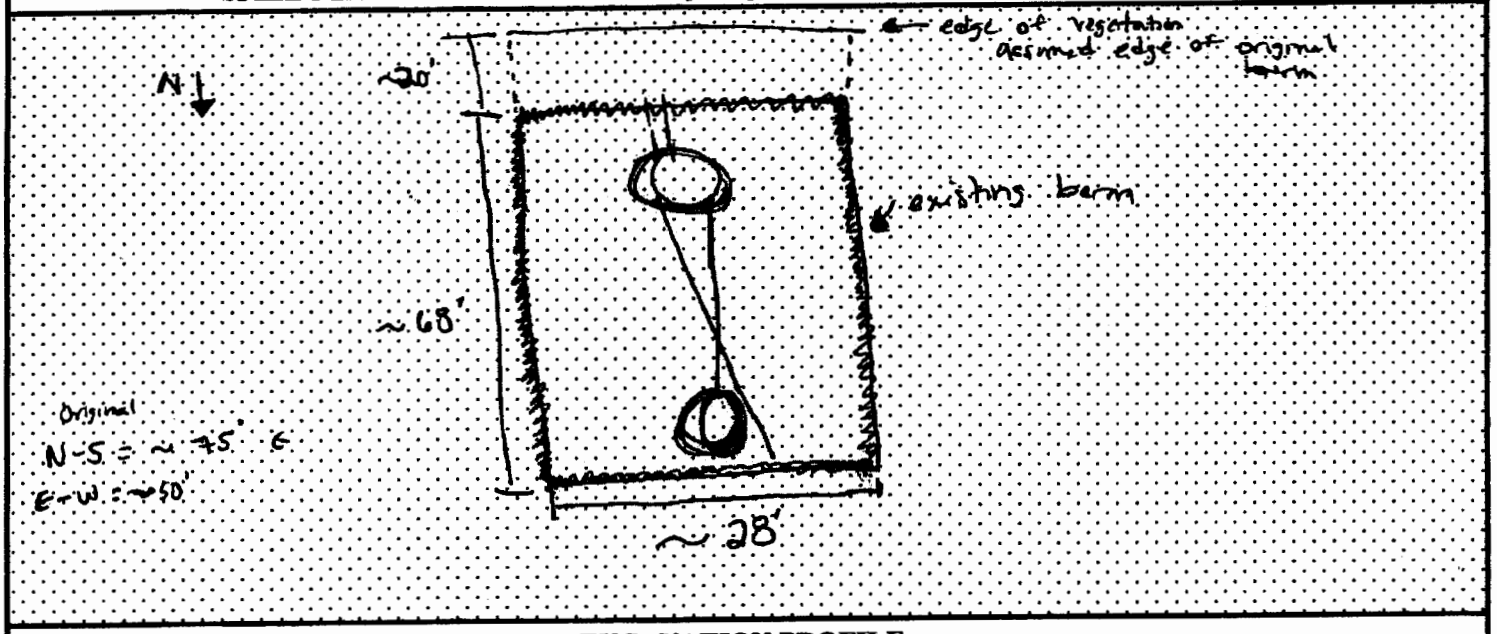
OVM Results

Sample ID	Field Headspace PID (ppm)	Sample ID	Field Headspace PID (ppm)
1	28.9	8	0.0
2	264	9	0.0
3	83.2	10	0.0
4	0.0		
5	12.0		
6	12.4		
7	0.0		

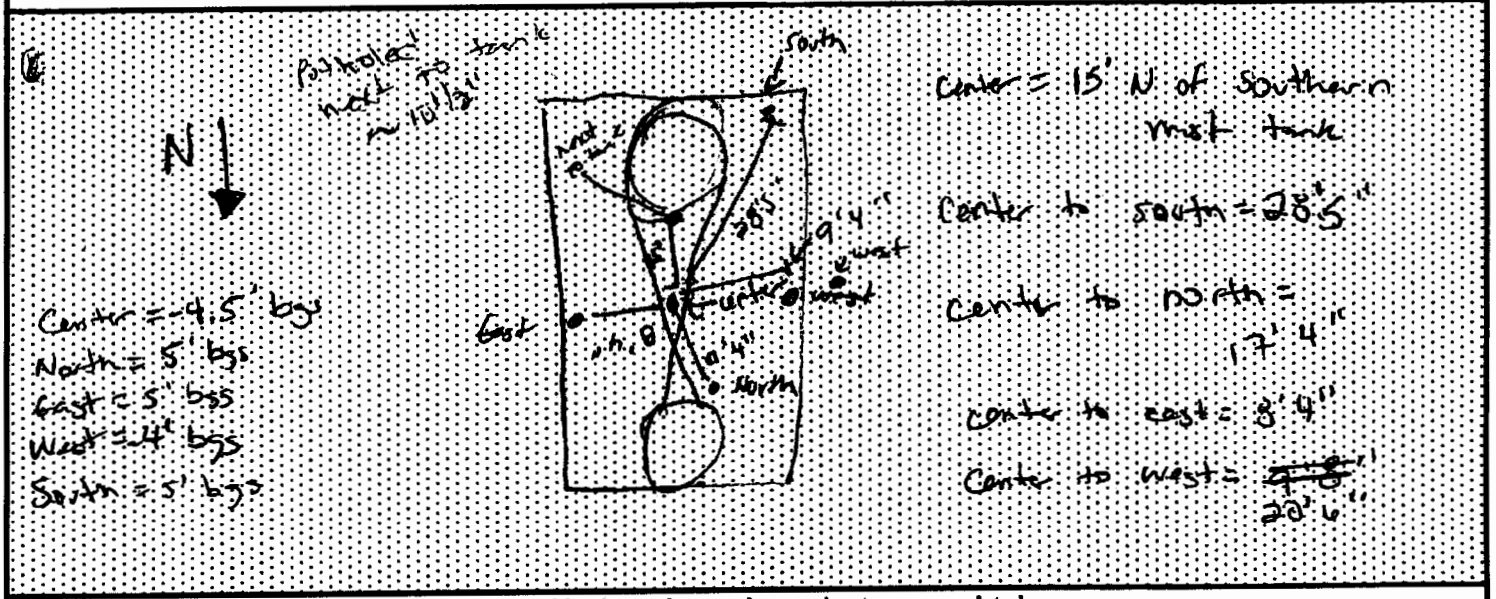
Lab Testing

Sample ID		Analysis Type	Time
1	8	8021, 8015, cl	
2	9	↓	↓
3	10		
4			
5			
6			
7			

SPILL PERIMETER: *Draw a schematic of the spill site. Attach photos and other diagrams as needed.*



EXCAVATION PROFILE:



NOTES: **Include number of samples and borings taken, and screening types completed.**

Describe spill in narrative format including amount, source and type of product.

WO #: **Who Ordered/Site Rep:**

CLIENT: Epic Energy	envirotech (505) 632-0615 (800) 362-1879 5796 U.S. Hwy 64, Farmington, NM 87401	Envmtl. Spclst:	
CLIENT/JOB #: 1B12-0004		C.O.C. No:	
START DATE: 11/18/15		LAT	
FINISH DATE:		LONG	
Page # of			

Field Report: Spill Closure Verification

NMOCD Ranking: _____ Depth to GW: _____ WH Protection Area: No Yes

NMOCD TPH Closure Std.: Distance to SW:

LOCATION: Name: Tank Battery for Federal I Well #: 5, 8, 9 API:

County: State:

Cause of Release: Material Released: Amt. Released:

QUAD/UNIT: SEC: TWP: RNG: PM:

Wellhead Lat/Long: Land Jurisdiction: QTR Footage:

Spill Located Approximately: FT. FROM

Excavation Approx: FT. X FT. X FT. Cubic Yardage:

Disposal Facility: Remediaton Method:

Land Use: Lease: Land Owner:

FIELD 418.1 ANLAYSIS

SAMPLE DESCRIPITION	TIME	SAMPLE I.D.	WEIGHT (g)	mL FREON	DILUTION	READING	CALC. ppm
Stnd 200	1300						196
Center @ 9.5'	1305	1				309	1236

OVM Results

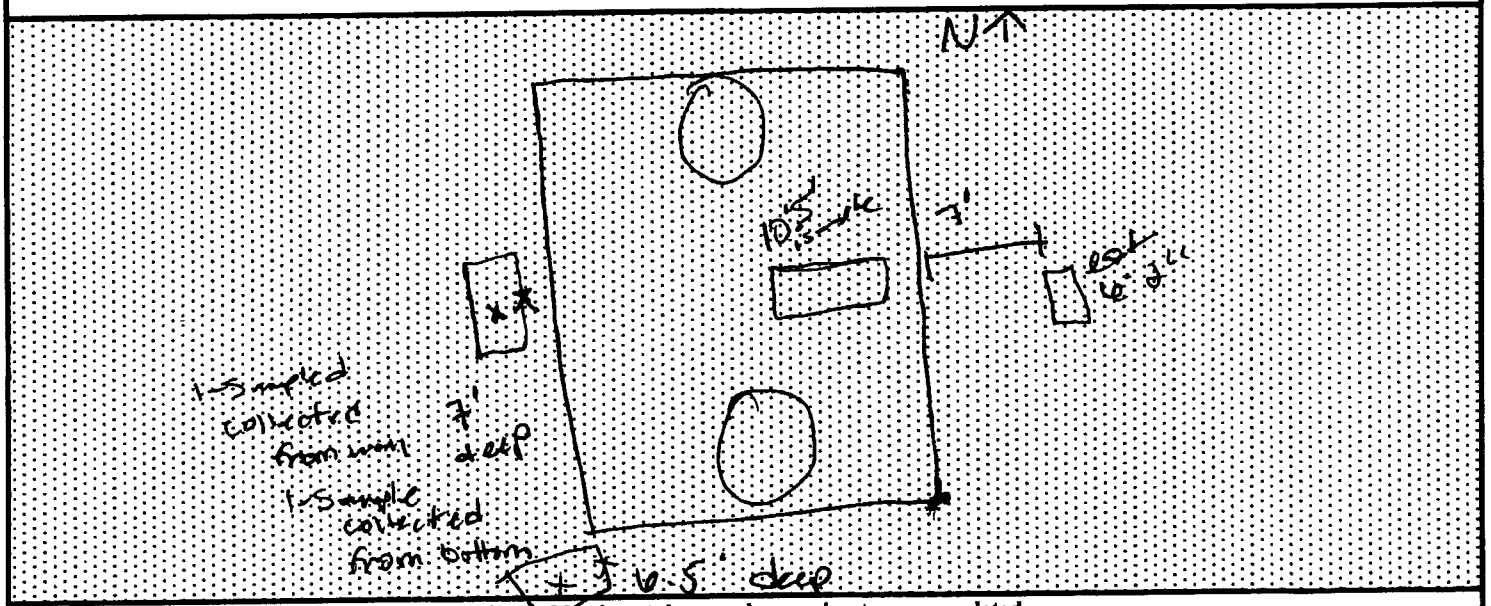
Sample ID	Field Headspace PID (ppm)	Sample ID	Field Headspace PID (ppm)	
West bottom	0.0	Lost with	0.00	
West wall	0.0			
South Bottom	0.0			
South wall	0.0			
Center	0.4			
Center @ 9.5'	0.3			
East bottom	0.0			

Lab Testing

Sample ID	Analysis Type	Time
West Bottom	8021 8015, Cl	
West Wall		
South Bottom		
South Wall		
Center (@ 9.5')		
East Bottom		
East Wall		

SPILL PERIMETER: *Draw a schematic of the spill site. Attach photos and other diagrams as needed.*

EXCAVATION PROFILE:



NOTES: **Include number of samples and borings taken, and screening types completed.**

Describe spill in narrative format including amount, source and type of product.

WO #: **Who Ordered/Site Rep:**

envirotech
Analytical Laboratory

Analytical Report

Report Summary

Client: Epic Energy

Chain Of Custody Number:

Samples Received: 10/18/2018 1:27:00PM

Job Number: 18012-0004

Work Order: P810099

Project Name/Location: Soil Sampling @ Federal I
5,8,9 Tank Battery

Report Reviewed By: _____ Date: 10/26/18

Walter Hinchman, Laboratory Director

_____ Date: 10/26/18

Tim Cain, Project Manager

Envirotech Inc. certifies the test results meet all requirements of TNI unless footnoted otherwise.
Statement of Data Authenticity: Envirotech, Inc, attests the data reported has not been altered in any way.
Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.
Envirotech, Inc, currently holds the appropriate and available Utah TNI certification NM009792018-1 for the data reported.

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	10/26/18 16:47

Analyical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Center @ 2' bgs	P810099-01A	Soil	10/16/18	10/18/18	Glass Jar, 4 oz.
	P810099-01B	Soil	10/16/18	10/18/18	Glass Jar, 4 oz.
West @ 2' bgs	P810099-02A	Soil	10/16/18	10/18/18	Glass Jar, 4 oz.
	P810099-02B	Soil	10/16/18	10/18/18	Glass Jar, 4 oz.
West @ 4.5' bgs	P810099-03A	Soil	10/16/18	10/18/18	Glass Jar, 4 oz.
	P810099-03B	Soil	10/16/18	10/18/18	Glass Jar, 4 oz.
Center @ 4.5' bgs	P810099-04A	Soil	10/16/18	10/18/18	Glass Jar, 4 oz.
	P810099-04B	Soil	10/16/18	10/18/18	Glass Jar, 4 oz.
East @ 2' bgs	P810099-05A	Soil	10/16/18	10/18/18	Glass Jar, 4 oz.
East @ 4.5' bgs	P810099-06A	Soil	10/16/18	10/18/18	Glass Jar, 4 oz.
South @ 2' bgs	P810099-07A	Soil	10/16/18	10/18/18	Glass Jar, 4 oz.
South @ 4.5' bgs	P810099-08A	Soil	10/16/18	10/18/18	Glass Jar, 4 oz.
North @ 2' bgs	P810099-09A	Soil	10/16/18	10/18/18	Glass Jar, 4 oz.
North @ 4.5' bgs	P810099-10A	Soil	10/16/18	10/18/18	Glass Jar, 4 oz.

envirotech
Analytical Laboratory

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	10/26/18 16:47

Center @ 2' bgs
P810099-01 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Toluene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Ethylbenzene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
p,m-Xylene	ND	200	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
o-Xylene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Total Xylenes	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Total BTEX	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*106 %*		*50-150*	*1842033*	*10/19/18*	*10/23/18*	*EPA 8021B*	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1842033	10/19/18	10/23/18	EPA 8015D	
Diesel Range Organics (C10-C28)	**653**	25.0	mg/kg	1	1843003	10/22/18	10/23/18	EPA 8015D	
Oil Range Organics (C28-C40+)	**68.5**	50.0	mg/kg	1	1843003	10/22/18	10/23/18	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*98.4 %*		*50-150*	*1842033*	*10/19/18*	*10/23/18*	*EPA 8015D*	
Surrogate: n-Nonane		*134 %*		*50-200*	*1843003*	*10/22/18*	*10/23/18*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	**44.4**	20.0	mg/kg	1	1843013	10/24/18	10/24/18	EPA 300.0/9056A	

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	10/26/18 16:47

West @ 2' bgs
P810099-02 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Toluene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Ethylbenzene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
p,m-Xylene	ND	200	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
o-Xylene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Total Xylenes	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Total BTEX	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*105 %*	*50-150*		*1842033*	*10/19/18*	*10/23/18*	*EPA 8021B*	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1842033	10/19/18	10/23/18	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1843003	10/22/18	10/23/18	EPA 8015D	
Oil Range Organics (C28-C40+)	ND	50.0	mg/kg	1	1843003	10/22/18	10/23/18	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*98.9 %*	*50-150*		*1842033*	*10/19/18*	*10/23/18*	*EPA 8015D*	
Surrogate: n-Nonane		*130 %*	*50-200*		*1843003*	*10/22/18*	*10/23/18*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	ND	20.0	mg/kg	1	1843013	10/24/18	10/24/18	EPA 300.0/9056A	

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	10/26/18 16:47

West @ 4.5' bgs
P810099-03 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	**544**	100	ug/kg	1	1842033	10/19/18	10/25/18	EPA 8021B	
Toluene	**248**	100	ug/kg	1	1842033	10/19/18	10/25/18	EPA 8021B	
Ethylbenzene	**493**	100	ug/kg	1	1842033	10/19/18	10/25/18	EPA 8021B	
p,m-Xylene	**1600**	200	ug/kg	1	1842033	10/19/18	10/25/18	EPA 8021B	
o-Xylene	**654**	100	ug/kg	1	1842033	10/19/18	10/25/18	EPA 8021B	
Total Xylenes	**2260**	100	ug/kg	1	1842033	10/19/18	10/25/18	EPA 8021B	
Total BTEX	**3540**	100	ug/kg	1	1842033	10/19/18	10/25/18	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*102 %*		*50-150*	*1842033*	*10/19/18*	*10/25/18*	*EPA 8021B*	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	**21.0**	20.0	mg/kg	1	1842033	10/19/18	10/25/18	EPA 8015D	
Diesel Range Organics (C10-C28)	**6890**	250	mg/kg	10	1843003	10/22/18	10/25/18	EPA 8015D	
Oil Range Organics (C28-C40+)	**528**	500	mg/kg	10	1843003	10/22/18	10/25/18	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*100 %*		*50-150*	*1842033*	*10/19/18*	*10/25/18*	*EPA 8015D*	
Surrogate: n-Nonane		*297 %*		*50-200*	*1843003*	*10/22/18*	*10/25/18*	*EPA 8015D*	*Surr2*
Anions by 300.0/9056A									
Chloride	ND	20.0	mg/kg	1	1843013	10/24/18	10/24/18	EPA 300.0/9056A	

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	10/26/18 16:47

Center @ 4.5' bgs
P810099-04 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	**3740**	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Toluene	**11200**	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Ethylbenzene	**2180**	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
p,m-Xylene	**7460**	200	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
o-Xylene	**3050**	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Total Xylenes	**10500**	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Total BTEX	**27700**	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*102 %*		*50-150*	*1842033*	*10/19/18*	*10/23/18*	*EPA 8021B*	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	**103**	20.0	mg/kg	1	1842033	10/19/18	10/23/18	EPA 8015D	
Diesel Range Organics (C10-C28)	**17800**	2500	mg/kg	100	1843003	10/22/18	10/25/18	EPA 8015D	
Oil Range Organics (C28-C40+)	ND	5000	mg/kg	100	1843003	10/22/18	10/25/18	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*101 %*		*50-150*	*1842033*	*10/19/18*	*10/23/18*	*EPA 8015D*	
Surrogate: n-Nonane		*%*		*50-200*	*1843003*	*10/22/18*	*10/25/18*	*EPA 8015D*	*Surr2*
Anions by 300.0/9056A									
Chloride	**71.3**	20.0	mg/kg	1	1843013	10/24/18	10/24/18	EPA 300.0/9056A	

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	10/26/18 16:47

East @ 2' bgs
P810099-05 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Toluene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Ethylbenzene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
p,m-Xylene	ND	200	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
o-Xylene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Total Xylenes	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Total BTEX	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*105 %*		*50-150*	*1842033*	*10/19/18*	*10/23/18*	*EPA 8021B*	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1842033	10/19/18	10/23/18	EPA 8015D	
Diesel Range Organics (C10-C28)	**213**	25.0	mg/kg	1	1843003	10/22/18	10/25/18	EPA 8015D	
Oil Range Organics (C28-C40+)	ND	50.0	mg/kg	1	1843003	10/22/18	10/25/18	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*97.3 %*		*50-150*	*1842033*	*10/19/18*	*10/23/18*	*EPA 8015D*	
Surrogate: n-Nonane		*138 %*		*50-200*	*1843003*	*10/22/18*	*10/25/18*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	**193**	20.0	mg/kg	1	1843013	10/24/18	10/24/18	EPA 300.0/9056A	

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	10/26/18 16:47

East @ 4.5' bgs
P810099-06 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Toluene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Ethylbenzene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
p,m-Xylene	ND	200	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
o-Xylene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Total Xylenes	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Total BTEX	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*105 %*	*50-150*		*1842033*	*10/19/18*	*10/23/18*	*EPA 8021B*	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1842033	10/19/18	10/23/18	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1843003	10/22/18	10/25/18	EPA 8015D	
Oil Range Organics (C28-C40+)	ND	50.0	mg/kg	1	1843003	10/22/18	10/25/18	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*97.5 %*	*50-150*		*1842033*	*10/19/18*	*10/23/18*	*EPA 8015D*	
Surrogate: n-Nonane		*135 %*	*50-200*		*1843003*	*10/22/18*	*10/25/18*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	**214**	20.0	mg/kg	1	1843013	10/24/18	10/24/18	EPA 300.0/9056A	

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	10/26/18 16:47

South @ 2' bgs
P810099-07 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Toluene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Ethylbenzene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
p,m-Xylene	ND	200	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
o-Xylene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Total Xylenes	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Total BTEX	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*105 %*	*50-150*		*1842033*	*10/19/18*	*10/23/18*	*EPA 8021B*	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1842033	10/19/18	10/23/18	EPA 8015D	
Diesel Range Organics (C10-C28)	**68.1**	25.0	mg/kg	1	1843003	10/22/18	10/25/18	EPA 8015D	
Oil Range Organics (C28-C40+)	ND	50.0	mg/kg	1	1843003	10/22/18	10/25/18	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*99.3 %*	*50-150*		*1842033*	*10/19/18*	*10/23/18*	*EPA 8015D*	
Surrogate: n-Nonane		*137 %*	*50-200*		*1843003*	*10/22/18*	*10/25/18*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	ND	20.0	mg/kg	1	1843013	10/24/18	10/25/18	EPA 300.0/9056A	

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	10/26/18 16:47

South @ 4.5' bgs
P810099-08 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Toluene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Ethylbenzene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
p,m-Xylene	ND	200	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
o-Xylene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Total Xylenes	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Total BTEX	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*105 %*	*50-150*		*1842033*	*10/19/18*	*10/23/18*	*EPA 8021B*	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1842033	10/19/18	10/23/18	EPA 8015D	
Diesel Range Organics (C10-C28)	**82.6**	25.0	mg/kg	1	1843003	10/22/18	10/25/18	EPA 8015D	
Oil Range Organics (C28-C40+)	ND	50.0	mg/kg	1	1843003	10/22/18	10/25/18	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*99.4 %*	*50-150*		*1842033*	*10/19/18*	*10/23/18*	*EPA 8015D*	
Surrogate: n-Nonane		*137 %*	*50-200*		*1843003*	*10/22/18*	*10/25/18*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	ND	20.0	mg/kg	1	1843013	10/24/18	10/25/18	EPA 300.0/9056A	

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	10/26/18 16:47

North @ 2' bgs
P810099-09 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Toluene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Ethylbenzene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
p,m-Xylene	ND	200	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
o-Xylene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Total Xylenes	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Total BTEX	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*105 %*	*50-150*		*1842033*	*10/19/18*	*10/23/18*	*EPA 8021B*	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1842033	10/19/18	10/23/18	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1843003	10/22/18	10/25/18	EPA 8015D	
Oil Range Organics (C28-C40+)	ND	50.0	mg/kg	1	1843003	10/22/18	10/25/18	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*98.4 %*	*50-150*		*1842033*	*10/19/18*	*10/23/18*	*EPA 8015D*	
Surrogate: n-Nonane		*139 %*	*50-200*		*1843003*	*10/22/18*	*10/25/18*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	ND	20.0	mg/kg	1	1843013	10/24/18	10/25/18	EPA 300.0/9056A	

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	10/26/18 16:47

North @ 4.5' bgs
P810099-10 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Toluene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Ethylbenzene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
p,m-Xylene	ND	200	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
o-Xylene	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Total Xylenes	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Total BTEX	ND	100	ug/kg	1	1842033	10/19/18	10/23/18	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*105 %*		*50-150*	*1842033*	*10/19/18*	*10/23/18*	*EPA 8021B*	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1842033	10/19/18	10/23/18	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1843003	10/22/18	10/25/18	EPA 8015D	
Oil Range Organics (C28-C40+)	ND	50.0	mg/kg	1	1843003	10/22/18	10/25/18	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*99.4 %*		*50-150*	*1842033*	*10/19/18*	*10/23/18*	*EPA 8015D*	
Surrogate: n-Nonane		*139 %*		*50-200*	*1843003*	*10/22/18*	*10/25/18*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	ND	20.0	mg/kg	1	1843013	10/24/18	10/25/18	EPA 300.0/9056A	

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	10/26/18 16:47

Volatile Organics by EPA 8021 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1842033 - Purge and Trap EPA 5030A										
Blank (1842033-BLK1)				Prepared: 10/19/18 1 Analyzed: 10/23/18 0						
Benzene	ND	100	ug/kg							
Toluene	ND	100	"							
Ethylbenzene	ND	100	"							
p,m-Xylene	ND	200	"							
o-Xylene	ND	100	"							
Total Xylenes	ND	100	"							
Total BTEX	ND	100	"							
Surrogate: 4-Bromochlorobenzene-PID	*8410*		"	*8000*		*105*	*50-150*			
LCS (1842033-BS1)				Prepared: 10/19/18 1 Analyzed: 10/23/18 0						
Benzene	5450	100	ug/kg	5000		109	70-130			
Toluene	5480	100	"	5000		110	70-130			
Ethylbenzene	5550	100	"	5000		111	70-130			
p,m-Xylene	11300	200	"	10000		113	70-130			
o-Xylene	5490	100	"	5000		110	70-130			
Total Xylenes	16800	100	"	15000		112	70-130			
Surrogate: 4-Bromochlorobenzene-PID	*8440*		"	*8000*		*106*	*50-150*			
Matrix Spike (1842033-MS1)	**Source: P810099-01**			Prepared: 10/19/18 1 Analyzed: 10/23/18 0						
Benzene	5340	100	ug/kg	5000	ND	107	54.3-133			
Toluene	5320	100	"	5000	ND	106	61.4-130			
Ethylbenzene	5490	100	"	5000	ND	110	61.4-133			
p,m-Xylene	11100	200	"	10000	ND	111	63.3-131			
o-Xylene	5420	100	"	5000	ND	108	63.3-131			
Total Xylenes	16500	100	"	15000	ND	110	63.3-131			
Surrogate: 4-Bromochlorobenzene-PID	*8470*		"	*8000*		*106*	*50-150*			
Matrix Spike Dup (1842033-MSD1)	**Source: P810099-01**			Prepared: 10/19/18 1 Analyzed: 10/25/18 0						
Benzene	5220	100	ug/kg	5000	ND	104	54.3-133	2.24	20	
Toluene	5220	100	"	5000	ND	104	61.4-130	1.91	20	
Ethylbenzene	5360	100	"	5000	ND	107	61.4-133	2.39	20	
p,m-Xylene	10900	200	"	10000	ND	109	63.3-131	2.03	20	
o-Xylene	5280	100	"	5000	ND	106	63.3-131	2.69	20	
Total Xylenes	16200	100	"	15000	ND	108	63.3-131	2.25	20	
Surrogate: 4-Bromochlorobenzene-PID	*8210*		"	*8000*		*103*	*50-150*			

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	10/26/18 16:47

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1842033 - Purge and Trap EPA 5030A										
Blank (1842033-BLK1)				Prepared: 10/19/18 1 Analyzed: 10/23/18 0						
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg							
Surrogate: 1-Chloro-4-fluorobenzene-FID	*7.90*		"	*8.00*		*98.7*	*50-150*			
LCS (1842033-BS2)				Prepared: 10/19/18 1 Analyzed: 10/23/18 0						
Gasoline Range Organics (C6-C10)	50.6	20.0	mg/kg	50.0		101	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	*7.98*		"	*8.00*		*99.7*	*50-150*			
Matrix Spike (1842033-MS2)		**Source: P810099-01**		Prepared: 10/19/18 1 Analyzed: 10/23/18 0						
Gasoline Range Organics (C6-C10)	57.4	20.0	mg/kg	50.0	ND	115	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	*8.18*		"	*8.00*		*102*	*50-150*			
Matrix Spike Dup (1842033-MSD2)		**Source: P810099-01**		Prepared: 10/19/18 1 Analyzed: 10/23/18 0						
Gasoline Range Organics (C6-C10)	57.1	20.0	mg/kg	50.0	ND	114	70-130	0.514	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	*7.92*		"	*8.00*		*99.0*	*50-150*			

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Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	10/26/18 16:47

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1843003 - DRO Extraction EPA 3570										
Blank (1843003-BLK1)				Prepared: 10/22/18 0 Analyzed: 10/23/18 2						
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg							
Oil Range Organics (C28-C40+)	ND	50.0	"							
Surrogate: n-Nonane	*61.3*		"	*50.0*		*123*	*50-200*			
LCS (1843003-BS1)				Prepared: 10/22/18 0 Analyzed: 10/23/18 2						
Diesel Range Organics (C10-C28)	458	25.0	mg/kg	500		91.6	38-132			
Surrogate: n-Nonane	*59.3*		"	*50.0*		*119*	*50-200*			
Matrix Spike (1843003-MS1)	**Source: P810099-01**			Prepared: 10/22/18 0 Analyzed: 10/23/18 2						
Diesel Range Organics (C10-C28)	1140	25.0	mg/kg	500	653	96.6	38-132			
Surrogate: n-Nonane	*64.2*		"	*50.0*		*128*	*50-200*			
Matrix Spike Dup (1843003-MSD1)	**Source: P810099-01**			Prepared: 10/22/18 0 Analyzed: 10/23/18 2						
Diesel Range Organics (C10-C28)	1170	25.0	mg/kg	500	653	103	38-132	2.59	20	
Surrogate: n-Nonane	*65.6*		"	*50.0*		*131*	*50-200*			

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	10/26/18 16:47

Anions by 300.0/9056A - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1843013 - Anion Extraction EPA 300.0/9056A										
Blank (1843013-BLK1)				Prepared: 10/24/18 0 Analyzed: 10/24/18 1						
Chloride	ND	20.0	mg/kg							
LCS (1843013-BS1)				Prepared: 10/24/18 0 Analyzed: 10/24/18 1						
Chloride	258	20.0	mg/kg	250		103	90-110			
Matrix Spike (1843013-MS1)	**Source: P810092-01**			Prepared: 10/24/18 0 Analyzed: 10/24/18 1						
Chloride	259	20.0	mg/kg	250	ND	104	80-120			
Matrix Spike Dup (1843013-MSD1)	**Source: P810092-01**			Prepared: 10/24/18 0 Analyzed: 10/24/18 1						
Chloride	259	20.0	mg/kg	250	ND	104	80-120	0.0926	20	

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	10/26/18 16:47

Notes and Definitions

Surr2	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
RPD	Relative Percent Difference
**	Methods marked with ** are non-accredited methods.

Project Information | Chain of Custody | Page 1 of 1

Client: Epic Energy
Project: Soil sampling @ Federal E 5, 3, 4 Tank battery
Project Manager: F.Aragon
Address:
City, State, Zip
Phone:
Email: Gcrabtree Admin Bhall Faragon

Report Attention
Report due by:
Email:
Address:
City, State, Zip
Phone:

Lab Use Only: Lab WO# P810099 | Job Number 1805-0004
TAT: 1D | 3D
EPA Program: RCRA | CWA | SDWA
State: NM | CO | UT | AZ

Time Sampled	Date Sampled	Matrix	No Containers	Sample ID	Lab Number	8015 DRO/GRO/GRO	8260	GPA 2189	RCRA 8 Metals	TDS/TSS	COD	Oil and Grease 1664	Chloride	8021				Remarks
1130	10/16/18	S	2	Center @ 2' bgs	1	X							X	X				2-4oz jar
1440	10/16/18	S	2	West @ 2' bgs	2													
1500	10/16/18	S	2	West @ 4.5' bgs	3													
1200	10/16/18	S	2	Center @ 4.5' bgs	4													—
1335	10/16/18	S	1	East @ 2' bgs	5													1-4oz jar
1338	10/16/18	S	1	East @ 4.5' bgs	6													
1400	10/16/18	S	1	South @ 2' bgs	7													
1403	10/16/18	S	1	South @ 4.5' bgs	8													
1345	10/16/18	S	1	North @ 2' bgs	9													
1348	10/16/18	S	1	North @ 4.5' bgs	10													—

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Sampled by: Bottom Hall

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Bottom Hall	10/18/18	1327	[signature]	10/19/18	13:27
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Lab Use Only
Received on ice: (Y) / N
T1 T2 T3
AVG Temp °C 4

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other
Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboraotry is limited to the amount paid for on the report.

envirotech Analytical Laboratory
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Analytical Laboratory

Analytical Report

Report Summary

Client: Epic Energy

Chain Of Custody Number:

Samples Received: 11/9/2018 9:59:00AM

Job Number: 18012-0004

Work Order: P811031

Project Name/Location: Soil Sampling @ Federal I
5,8,9 Tank Battery

Report Reviewed By: _____ Date: 11/15/18

Walter Hinchman, Laboratory Director

_____ Date: 11/15/18

Tim Cain, Project Manager

Envirotech Inc. certifies the test results meet all requirements of TNI unless footnoted otherwise.
Statement of Data Authenticity: Envirotech, Inc, attests the data reported has not been altered in any way.
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Envirotech, Inc, currently holds the appropriate and available Utah TNI certification NM009792018-1 for the data reported.

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	11/15/18 15:24

Analyical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
West Bottom	P811031-01A	Soil	11/08/18	11/09/18	Glass Jar, 4 oz.
	P811031-01B	Soil	11/08/18	11/09/18	Glass Jar, 4 oz.
West Wall	P811031-02A	Soil	11/08/18	11/09/18	Glass Jar, 4 oz.
	P811031-02B	Soil	11/08/18	11/09/18	Glass Jar, 4 oz.
South Bottom	P811031-03A	Soil	11/08/18	11/09/18	Glass Jar, 4 oz.
	P811031-03B	Soil	11/08/18	11/09/18	Glass Jar, 4 oz.
South Wall	P811031-04A	Soil	11/08/18	11/09/18	Glass Jar, 4 oz.
	P811031-04B	Soil	11/08/18	11/09/18	Glass Jar, 4 oz.
East Bottom	P811031-05A	Soil	11/08/18	11/09/18	Glass Jar, 4 oz.
	P811031-05B	Soil	11/08/18	11/09/18	Glass Jar, 4 oz.
East Wall	P811031-06A	Soil	11/08/18	11/09/18	Glass Jar, 4 oz.
	P811031-06B	Soil	11/08/18	11/09/18	Glass Jar, 4 oz.
Center	P811031-07A	Soil	11/08/18	11/09/18	Glass Jar, 4 oz.
	P811031-07B	Soil	11/08/18	11/09/18	Glass Jar, 4 oz.

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	11/15/18 15:24

West Bottom

P811031-01 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Toluene	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Ethylbenzene	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
p,m-Xylene	ND	200	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
o-Xylene	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Total Xylenes	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Total BTEX	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*100 %*		*50-150*	*1846004*	*11/12/18*	*11/13/18*	*EPA 8021B*	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1846004	11/12/18	11/13/18	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1846017	11/13/18	11/13/18	EPA 8015D	
Oil Range Organics (C28-C40+)	ND	50.0	mg/kg	1	1846017	11/13/18	11/13/18	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*105 %*		*50-150*	*1846004*	*11/12/18*	*11/13/18*	*EPA 8015D*	
Surrogate: n-Nonane		*88.3 %*		*50-200*	*1846017*	*11/13/18*	*11/13/18*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	ND	20.0	mg/kg	1	1846006	11/12/18	11/12/18	EPA 300.0/9056A	

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	11/15/18 15:24

West Wall
P811031-02 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Toluene	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Ethylbenzene	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
p,m-Xylene	ND	200	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
o-Xylene	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Total Xylenes	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Total BTEX	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*99.6 %*		*50-150*	*1846004*	*11/12/18*	*11/13/18*	*EPA 8021B*	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1846004	11/12/18	11/13/18	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1846017	11/13/18	11/13/18	EPA 8015D	
Oil Range Organics (C28-C40+)	ND	50.0	mg/kg	1	1846017	11/13/18	11/13/18	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*103 %*		*50-150*	*1846004*	*11/12/18*	*11/13/18*	*EPA 8015D*	
Surrogate: n-Nonane		*82.9 %*		*50-200*	*1846017*	*11/13/18*	*11/13/18*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	ND	20.0	mg/kg	1	1846006	11/12/18	11/12/18	EPA 300.0/9056A	

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	11/15/18 15:24

South Bottom
P811031-03 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Toluene	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Ethylbenzene	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
p,m-Xylene	ND	200	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
o-Xylene	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Total Xylenes	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Total BTEX	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*100 %*	*50-150*		*1846004*	*11/12/18*	*11/13/18*	*EPA 8021B*	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1846004	11/12/18	11/13/18	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1846017	11/13/18	11/13/18	EPA 8015D	
Oil Range Organics (C28-C40+)	ND	50.0	mg/kg	1	1846017	11/13/18	11/13/18	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*103 %*	*50-150*		*1846004*	*11/12/18*	*11/13/18*	*EPA 8015D*	
Surrogate: n-Nonane		*84.3 %*	*50-200*		*1846017*	*11/13/18*	*11/13/18*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	ND	20.0	mg/kg	1	1846006	11/12/18	11/12/18	EPA 300.0/9056A	

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	11/15/18 15:24

South Wall

P811031-04 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Toluene	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Ethylbenzene	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
p,m-Xylene	ND	200	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
o-Xylene	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Total Xylenes	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Total BTEX	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*99.0 %*		*50-150*	*1846004*	*11/12/18*	*11/13/18*	*EPA 8021B*	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1846004	11/12/18	11/13/18	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1846017	11/13/18	11/13/18	EPA 8015D	
Oil Range Organics (C28-C40+)	ND	50.0	mg/kg	1	1846017	11/13/18	11/13/18	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*106 %*		*50-150*	*1846004*	*11/12/18*	*11/13/18*	*EPA 8015D*	
Surrogate: n-Nonane		*82.2 %*		*50-200*	*1846017*	*11/13/18*	*11/13/18*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	ND	20.0	mg/kg	1	1846006	11/12/18	11/12/18	EPA 300.0/9056A	

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	11/15/18 15:24

East Bottom

P811031-05 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Toluene	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Ethylbenzene	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
p,m-Xylene	ND	200	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
o-Xylene	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Total Xylenes	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Total BTEX	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*99.1 %*		*50-150*	*1846004*	*11/12/18*	*11/13/18*	*EPA 8021B*	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1846004	11/12/18	11/13/18	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1846017	11/13/18	11/13/18	EPA 8015D	
Oil Range Organics (C28-C40+)	ND	50.0	mg/kg	1	1846017	11/13/18	11/13/18	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*103 %*		*50-150*	*1846004*	*11/12/18*	*11/13/18*	*EPA 8015D*	
Surrogate: n-Nonane		*82.1 %*		*50-200*	*1846017*	*11/13/18*	*11/13/18*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	ND	20.0	mg/kg	1	1846006	11/12/18	11/12/18	EPA 300.0/9056A	

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	11/15/18 15:24

East Wall

P811031-06 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Toluene	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Ethylbenzene	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
p,m-Xylene	ND	200	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
o-Xylene	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Total Xylenes	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Total BTEX	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*98.8 %*		*50-150*	*1846004*	*11/12/18*	*11/13/18*	*EPA 8021B*	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1846004	11/12/18	11/13/18	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1846017	11/13/18	11/13/18	EPA 8015D	
Oil Range Organics (C28-C40+)	ND	50.0	mg/kg	1	1846017	11/13/18	11/13/18	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*105 %*		*50-150*	*1846004*	*11/12/18*	*11/13/18*	*EPA 8015D*	
Surrogate: n-Nonane		*82.1 %*		*50-200*	*1846017*	*11/13/18*	*11/13/18*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	**20.7**	20.0	mg/kg	1	1846006	11/12/18	11/12/18	EPA 300.0/9056A	

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	11/15/18 15:24

Center

P811031-07 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Toluene	ND	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Ethylbenzene	**243**	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
p,m-Xylene	**1020**	200	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
o-Xylene	**261**	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Total Xylenes	**1280**	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Total BTEX	**1530**	100	ug/kg	1	1846004	11/12/18	11/13/18	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*103 %*		*50-150*	*1846004*	*11/12/18*	*11/13/18*	*EPA 8021B*	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	**33.3**	20.0	mg/kg	1	1846004	11/12/18	11/13/18	EPA 8015D	
Diesel Range Organics (C10-C28)	**2460**	125	mg/kg	5	1846017	11/13/18	11/13/18	EPA 8015D	
Oil Range Organics (C28-C40+)	**279**	250	mg/kg	5	1846017	11/13/18	11/13/18	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*113 %*		*50-150*	*1846004*	*11/12/18*	*11/13/18*	*EPA 8015D*	
Surrogate: n-Nonane		*108 %*		*50-200*	*1846017*	*11/13/18*	*11/13/18*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	**40.9**	20.0	mg/kg	1	1846006	11/12/18	11/12/18	EPA 300.0/9056A	

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	11/15/18 15:24

Volatile Organics by EPA 8021 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1846004 - Purge and Trap EPA 5030A										
Blank (1846004-BLK1)				Prepared: 11/12/18 0 Analyzed: 11/12/18 2						
Benzene	ND	100	ug/kg							
Toluene	ND	100	"							
Ethylbenzene	ND	100	"							
p,m-Xylene	ND	200	"							
o-Xylene	ND	100	"							
Total Xylenes	ND	100	"							
Total BTEX	ND	100	"							
Surrogate: 4-Bromochlorobenzene-PID	*8030*		"	*8000*		*100*	*50-150*			
LCS (1846004-BS1)				Prepared: 11/12/18 0 Analyzed: 11/13/18 0						
Benzene	4800	100	ug/kg	5000		95.9	70-130			
Toluene	4890	100	"	5000		97.7	70-130			
Ethylbenzene	4970	100	"	5000		99.4	70-130			
p,m-Xylene	10200	200	"	10000		102	70-130			
o-Xylene	4970	100	"	5000		99.4	70-130			
Total Xylenes	15200	100	"	15000		101	70-130			
Surrogate: 4-Bromochlorobenzene-PID	*8110*		"	*8000*		*101*	*50-150*			
Matrix Spike (1846004-MS1)	**Source: P811031-01**			Prepared: 11/12/18 0 Analyzed: 11/13/18 0						
Benzene	4330	100	ug/kg	5000	ND	86.6	54.3-133			
Toluene	4410	100	"	5000	ND	88.2	61.4-130			
Ethylbenzene	4470	100	"	5000	ND	89.5	61.4-133			
p,m-Xylene	9210	200	"	10000	ND	92.1	63.3-131			
o-Xylene	4490	100	"	5000	ND	89.8	63.3-131			
Total Xylenes	13700	100	"	15000	ND	91.3	63.3-131			
Surrogate: 4-Bromochlorobenzene-PID	*8080*		"	*8000*		*101*	*50-150*			
Matrix Spike Dup (1846004-MSD1)	**Source: P811031-01**			Prepared: 11/12/18 0 Analyzed: 11/13/18 0						
Benzene	4420	100	ug/kg	5000	ND	88.3	54.3-133	2.00	20	
Toluene	4470	100	"	5000	ND	89.4	61.4-130	1.41	20	
Ethylbenzene	4510	100	"	5000	ND	90.1	61.4-133	0.731	20	
p,m-Xylene	9240	200	"	10000	ND	92.4	63.3-131	0.336	20	
o-Xylene	4480	100	"	5000	ND	89.6	63.3-131	0.208	20	
Total Xylenes	13700	100	"	15000	ND	91.5	63.3-131	0.158	20	
Surrogate: 4-Bromochlorobenzene-PID	*8060*		"	*8000*		*101*	*50-150*			

Epic Energy	Project Name:	Soil Sampling @ Federal 1 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	11/15/18 15:24

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1846004 - Purge and Trap EPA 5030A										
Blank (1846004-BLK1)				Prepared: 11/12/18 0 Analyzed: 11/12/18 2						
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg							
Surrogate: 1-Chloro-4-fluorobenzene-FID	*8.38*		"	*8.00*		*105*	*50-150*			
LCS (1846004-BS2)				Prepared: 11/12/18 0 Analyzed: 11/13/18 0						
Gasoline Range Organics (C6-C10)	43.4	20.0	mg/kg	50.0		86.8	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	*8.45*		"	*8.00*		*106*	*50-150*			
Matrix Spike (1846004-MS2)	**Source: P811031-01**			Prepared: 11/12/18 0 Analyzed: 11/13/18 0						
Gasoline Range Organics (C6-C10)	41.1	20.0	mg/kg	50.0	ND	82.1	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	*8.40*		"	*8.00*		*105*	*50-150*			
Matrix Spike Dup (1846004-MSD2)	**Source: P811031-01**			Prepared: 11/12/18 0 Analyzed: 11/13/18 0						
Gasoline Range Organics (C6-C10)	45.7	20.0	mg/kg	50.0	ND	91.3	70-130	10.6	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	*8.40*		"	*8.00*		*105*	*50-150*			

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	11/15/18 15:24

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1846017 - DRO Extraction EPA 3570										
Blank (1846017-BLK1)				Prepared & Analyzed: 11/13/18 1						
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg							
Oil Range Organics (C28-C40+)	ND	50.0	"							
Surrogate: n-Nonane	*47.8*		"	*50.0*		*95.6*	*50-200*			
LCS (1846017-BS1)				Prepared & Analyzed: 11/13/18 1						
Diesel Range Organics (C10-C28)	489	25.0	mg/kg	500		97.8	38-132			
Surrogate: n-Nonane	*43.2*		"	*50.0*		*86.3*	*50-200*			
Matrix Spike (1846017-MS1)	**Source: P811031-01**			Prepared: 11/13/18 1 Analyzed: 11/15/18 0						
Diesel Range Organics (C10-C28)	500	25.0	mg/kg	500	ND	100	38-132			
Surrogate: n-Nonane	*41.6*		"	*50.0*		*83.1*	*50-200*			
Matrix Spike Dup (1846017-MSD1)	**Source: P811031-01**			Prepared & Analyzed: 11/13/18 1						
Diesel Range Organics (C10-C28)	492	25.0	mg/kg	500	ND	98.5	38-132	1.51	20	
Surrogate: n-Nonane	*41.6*		"	*50.0*		*83.2*	*50-200*			

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	11/15/18 15:24

Anions by 300.0/9056A - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1846006 - Anion Extraction EPA 300.0/9056A										
Blank (1846006-BLK1)				Prepared & Analyzed: 11/12/18 1						
Chloride	ND	20.0	mg/kg							
LCS (1846006-BS1)				Prepared & Analyzed: 11/12/18 1						
Chloride	257	20.0	mg/kg	250		103	90-110			
Matrix Spike (1846006-MS1)		**Source: P811031-01**		Prepared & Analyzed: 11/12/18 1						
Chloride	259	20.0	mg/kg	250	ND	104	80-120			
Matrix Spike Dup (1846006-MSD1)		**Source: P811031-01**		Prepared & Analyzed: 11/12/18 1						
Chloride	259	20.0	mg/kg	250	ND	104	80-120	0.201	20	

Epic Energy	Project Name:	Soil Sampling @ Federal I 5,8,9 Tank Battery	
7415 East Main	Project Number:	18012-0004	**Reported:**
Farmington NM, 87402	Project Manager:	Felipe Aragon	11/15/18 15:24

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
RPD	Relative Percent Difference
**	Methods marked with ** are non-accredited methods.

Project Information | Chain of Custody | Page 1 of 1

Client: Epic Energy	Report Attention
Project: Soil Sampling @ Federal IS 89 Tank Bottom	Report due by:
Project Manager: F Aragon	Attention:
Address:	Address:
City, State, Zip	City, State, Zip
Phone:	Phone:
Email: Greg, Felipe, Adrian, Brou	Email:

Lab Use Only		TAT		EPA Program		
Lab WO#	Job Number	1D	3D	RCRA	CWA	SDWA
P811031	18012-0004					

State: NM X | CO | UT | AZ

Time Sampled	Date Sampled	Matrix	No Containers	Sample ID	Lab Number	DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	TPH 418.1						Remarks
1304	11/8/18	S	2	West Bottom	1	X	X	X			X							
1306	|	|	|	West Wall	2	|	|	|			|							
1340	|	|	|	South Bottom	3	|	|	|			|							
1342	|	|	|	South Wall	4	|	|	|			|							
1615	|	|	|	East Bottom	5	|	|	|			|							
1620	|	|	|	East Wall	6	|	|	|			|							
1500	|	|	|	Center	7	X	X	X			X							

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Sampled by: Brittany Hall

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6°C on subsequent days.

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Brittany Hall	11/9/18	959	[signature]	11/9/18	9:59
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Lab Use Only
Received on ice: (Y) / N
T1 T2 T3
AVG Temp °C 4

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other ______

Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.

envirotech Analytical Laboratory

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Three Springs - 65 Mercado Street, Suite 115, Durango, CO 81301 | Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com
laboratory@envirotech-inc.com

SOIL BORING
LITHOLOGY LOG

SB Center

DEPTH (FEET)	TIME	USCS	SAMPLE TYPE	HEADSPACE (PPM)	LITHOLOGY	SAMPLE DESCRIPTION	DEPTH (FEET)
10/16/13	1146	SM	Hand Auger			Light brown, silty sand, no odor	
1		SM				Light Brown silty sand no odor	
2		SM				light Brown, silty sand.	
			Grab	289		@2.5' slight hydrocarbon odor	
3		SM				Light Brown silty sand w/ some black discoloration, hydrocarbon odor	
4		SM				light brown silty sand w/ alot of black discoloration, strong hydrocarbon odor	
			~~Grab~~ Grab	2642			
10/18/13 5		SM	backfill			light brown silty sand w/ greyish black discoloration hydrocarbon odor	
6		SM				light Brown silty sand w/ black discoloration, hydrocarbon odor	
7		SM				greyish Brown silty sand hydrocarbon odor	

Driller: ~~DRILLER:~~ SH
Helper: ~~HELPER:~~ BC
DRILLING COMPANY: Envirotech
DRILLING METHOD: _____

BIT SIZE: _____
TOTAL BORING DEPTH: 25'
DATE STARTED: 10/16/13

LOCATION: Tank Battery Federal E 5.8.9 (36.21[illegible] -107.57[illegible])
ELEVATION: _____
DATE COMPLETED: 10/18/13
GEOLOGIST: _____

Note: SS = Split Spoon A = Auger c5 = 5 foot composite from air cuttings

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SOIL BORING LITHOLOGY LOG

SB Center

DEPTH (FEET)	TIME	USCS	SAMPLE TYPE	HEADSPACE (PPM)	LITHOLOGY	SAMPLE DESCRIPTION	DEPTH (FEET)
			Back hoe				
8		Sm				light grey silty sand w/ hydro carbon odor	
				0.4			
9		Sm				Grayish/black silty sand w/ hydrocarbon odor	
			Grab	0.3			
10						grayish/black silty sand w/ hydro carbon odor	
10.5						very hard digging w/ backhoe, encountered sand stone shelf.	
11							

Enviro ~~DRILLER:~~ BH

Operator ~~HELPER:~~ BC

DRILLING COMPANY: Envirotech

DRILLING METHOD:

BIT SIZE:

TOTAL BORING DEPTH: 10.5'

DATE STARTED: 10/16/18

SAMPLER TYPE:

LOCATION: Tank Bottom Federal I S, 8, 9 (36.2... , -107.57...)

ELEVATION:

DATE COMPLETED 11/18/18

GEOLOGIST:

Note: SS = Split Spoon A = Auger c5 = 5 foot composite from air cuttings

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SOIL BORING LITHOLOGY LOG

SB West

DEPTH (FEET)	TIME	USCS	SAMPLE TYPE	HEADSPACE (PPM)	LITHOLOGY	SAMPLE DESCRIPTION	DEPTH (FEET)
10/16/13		SM	Hand auger			Very light brown, fine, poorly graded sands, no odor	
2		SM		0.0		Very light brown, fine sand no odor	
4		SM		83.2		Very fine light brown sand w/ some black discoloration, hydrocarbon odor	
			back hoe				
11/8/13 6		SM				Very fine light brown sand no odor, very hard digging w/ backhoe	
		SM		0.0		Very fine light brown sand no odor, very hard digging w/ backhoe	
8							
10							

~~DRILLER~~ Envirotech: BH

~~HELPER~~ Operator: BC

DRILLING COMPANY: Envirotech

DRILLING METHOD:

BIT SIZE:

TOTAL BORING DEPTH: 9.0'

DATE STARTED: 10/16/13

SAMPLER TYPE:

LOCATION: Federal I 5, 8, 9 tank battery (36.2188, -107.57744)

ELEVATION:

DATE COMPLETED 11/8/13

GEOLOGIST:

Note: SS = Split Spoon A = Auger c5 = 5 foot composite from air cuttings

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SOIL BORING LITHOLOGY LOG

SB East

DEPTH (FEET)	TIME	USCS	SAMPLE TYPE	HEADSPACE (PPM)	LITHOLOGY	SAMPLE DESCRIPTION
Hand auger 10/16/18		SM				light Brown sand w/ some greenish discoloration no odor
1						
2		SM		12.0		light Brownish/gray w/ slight hydrocarbon odor
3		SM				light brownish gray sand w/ slight hydrocarbon odor
4		SM		12.4		light greyish sand w/ hydrocarbon odor
backhoe 11/8/18						
5		SM				Test pit moved 7 feet outside berm in order to find uncontaminated soil. light brown sand no odor
6		SM		0.0		light Brown sand no odor

~~DRILLER~~ Gun: BH
~~HELPER~~ Operator: BC
DRILLING COMPANY:
DRILLING METHOD:

BIT SIZE:
TOTAL BORING DEPTH: 6'2"
DATE STARTED: 10/16/18
SAMPLER TYPE:

LOCATION: (36.218862, -107.577505)
ELEVATION:
DATE COMPLETED 11/8/18
GEOLOGIST:

Note: SS = Split Spoon A = Auger c5 = 5 foot composite from air cuttings

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SOIL BORING
LITHOLOGY LOG

SB North

DEPTH (FEET)	TIME	USCS	SAMPLE TYPE	HEADSPACE (PPM)	LITHOLOGY	SAMPLE DESCRIPTION	DEPTH (FEET)
		Sm				light Brown Sand no odor	
1		sm					
2		Sm		0.0		light Brown Sand no odor	
3		Sm				light Brown sand no odor	
4		Sm				light Brown sand no odor	
		sm		0.0		light Brown Sand no odor	
5							

~~DRILLER~~ Envro: Bh
~~HELPER~~ Operator: BC
DRILLING COMPANY:
DRILLING METHOD:

BIT SIZE:
TOTAL BORING DEPTH:
DATE STARTED: 10/16/18
SAMPLER TYPE:

LOCATION: 36.21864 -107.57761
ELEVATION:
DATE COMPLETED 10/16/18
GEOLOGIST:

Note: SS = Split Spoon A = Auger c5 = 5 foot composite from air cuttings

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SOIL BORING LITHOLOGY LOG

SB South

DEPTH (FEET)	TIME	USCS	SAMPLE TYPE	HEADSPACE (PPM)	LITHOLOGY	SAMPLE DESCRIPTION
10/16/18		SM	Hand auger			light Brown sand, poorly graded no odor
1		SM				light Brown sand, slight odor
2		SM		0.0		light Brown sand, odor like salt water
3		SM				ligh Brown sand, odor
4		SM				light Brown fine sand w/ slight odor
		SM		0.0		
5						

~~DRILLER:~~ Enviro 84

~~HELPER:~~ [illegible]

DRILLING COMPANY:

DRILLING METHOD:

BIT SIZE:

TOTAL BORING DEPTH: 4.5'

DATE STARTED: 10/16/18

SAMPLER TYPE:

LOCATION: Federal I-8, [illegible] tank bottom

ELEVATION: (36.218763, -107.577678)

DATE COMPLETED 10/16/18

GEOLOGIST:

Note: SS = Split Spoon A = Auger c5 = 5 foot composite from air cuttings

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SOIL BORING LITHOLOGY LOG

SB South
(Walsh engineering request)

DEPTH (FEET)	TIME	USCS	SAMPLE TYPE	HEADSPACE (PPM)	LITHOLOGY	SAMPLE DESCRIPTION	DEPTH (FEET)
		SM	Back hoe			Very fine light Brown silty sand	
1		SM				Very fine light Brown silty sand	
2		SM				light Brown silty sand hard to dig w/ backhoe	
3		SM				light Brown fine silty sand hard to dig w/ backhoe	
4		SM				light Brown fine silty sand hard to dig	
5		SM				light Brown fine silty sand hard to dig	
6		SM				light Brown silty sand hard to dig no odor	
		SM	0-0				
7							

~~DRILLER~~ Sampler: BM
~~HELPER~~ Operator: BC
DRILLING COMPANY:
DRILLING METHOD:

BIT SIZE:
TOTAL BORING DEPTH: 6.5'
DATE STARTED: 11/8/19
SAMPLER TYPE:

LOCATION: (36.218712, -107.577727)
ELEVATION:
DATE COMPLETED: 11/8/19
GEOLOGIST:

Note: SS = Split Spoon A = Auger c5 = 5 foot composite from air cuttings

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