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Closure Report

Cimarex Energy Company: Vega 9 Federal #3 Battery
|30-015-36713|2RP-2620|

February 3, 2017

Prepared By:

TALON/LPE
408 W. Texas Avenue
Artesia, New Mexico 88210

Prepared For:

Cimarex Energy Company

Mr. Mike Bratcher
NMOCD District 2
811 S. 1st Street
Artesia, NM 88210

Subject: **Remedial Activities and Closure Report**
Cimarex Energy Co.
Vega 9 Federal #3 Battery |30-015-36713|2RP-2620|

Dear Mr. Bratcher,

Cimarex Energy Company (Cimarex) has contracted Talon/LPE (Talon) to perform soil assessment and consultation services at the above referenced location. The incident description, soil sampling results, remediation activities and closure request are submitted herein.

Site Information

The Cimarex Vega 9 Fed #3 Battery is located approximately twenty-five (25) miles east of Artesia, New Mexico. The legal location for this facility is Unit Letter E, Section 9, Township 17S South and Range 30 East in Eddy County, New Mexico. More specifically the latitude and longitude are 32.849669 North and -103.983445 West. A site plan is presented in [Appendix I](#).

According to the soil survey provided by the United States Department of Agriculture Natural Resources Conservation Service, the soil in this area is made up of the Kermit-Berino fine sands with 0 to 3 percent slopes. Drainage courses in this area are normally dry.

Ground Water and Site Ranking

According to the 2005 ChevronTexaco Ground Water Trend Map, the ground water in this area is approximately 300-feet below ground surface (BGS). The referenced ground water data is presented in [Appendix II](#). Therefore the ranking for this site is a **0** based on the following:

Depth to ground water	>100'
Wellhead Protection Area	>1000'
Distance to surface water body	>1000'

Based upon the site ranking of **0**, NMOCD Recommended Remedial Action Levels (RRAL) are 50 mg/kg for BTEX, 10 mg/kg for Benzene, 5,000 mg/kg for TPH and 1,000 mg/kg for Total Chlorides.

Incident Description and Initial Remedial Actions

On November 18, 2014 the gas supply to the heater treater started leaking and caught fire. The fire caused the sight glass on the heater treater to break causing a release of approximately 10bbls of oil and 20bbls of produced water. All of the fluid was contained within the berms of the heater treater battery. A roustabout crew was mobilized to scrape up the saturated soil at surface. Talon/LPE mobilized personnel to conduct a site assessment and perform soil sampling activities within the battery. The results of our soil sampling activities are summarized in the table below.

Laboratory Results

See [Appendix IV](#) for complete report of laboratory results.

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg) GRO	TPH (mg/kg) DRO
S-1	0	ND	64	ND	45
S-1	0.5	ND	112	ND	ND
S-2	0	ND	11300	ND	ND
S-2	1	ND	224	ND	ND
S-2	2	ND	784	ND	ND
S-3	0	115	12400	707	2350
S-3	1	0.465	1630	ND	30.3
S-3	2	ND	656	ND	ND
S-4	0	ND	3520	ND	ND
S-4	1	ND	32	ND	ND
S-4	2	ND	288	ND	ND
S-5	0	255	12300	1610	3610
S-5	1	ND	336	ND	ND
S-5	2	ND	928	ND	ND

(ND) Analyte Not Detected

Based upon the site ranking of 0, NMOCD Recommended Remedial Action Levels (RRAL) are 50 mg/kg for BTEX, 10 mg/kg for Benzene, 5,000 mg/kg for TPH and 1,000 mg/kg for Total Chlorides.

Remedial Actions

- The impacted areas in the vicinity of sample locations S-2, S-4, and S-5 were excavated to a depth of 1-foot BGS by a third party construction crew.
- The impacted area within the vicinity of sample location S-3 was excavated to a depth of 2-feet BGS by a third party construction crew.
- All of the excavated soil was hauled to an NMOCD approved solid waste disposal facility.
- The excavation was backfilled with caliche and gravel.


Closure

On behalf of Cimarex Energy we respectfully request that no further actions be required and that closure with regard to this release be granted.

If we can provide additional information or be of further assistance, please contact our office at (575)-746-8768.

TALON/LPE


Sheldon L. Hitchcock
Project Manager


David J. Adkins
District Manager

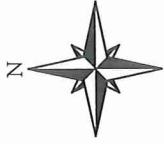
Attachments

Appendix I Site Plan
Appendix II Groundwater Data
Appendix III Initial C-141 & Final C-141
Appendix IV Laboratory Results

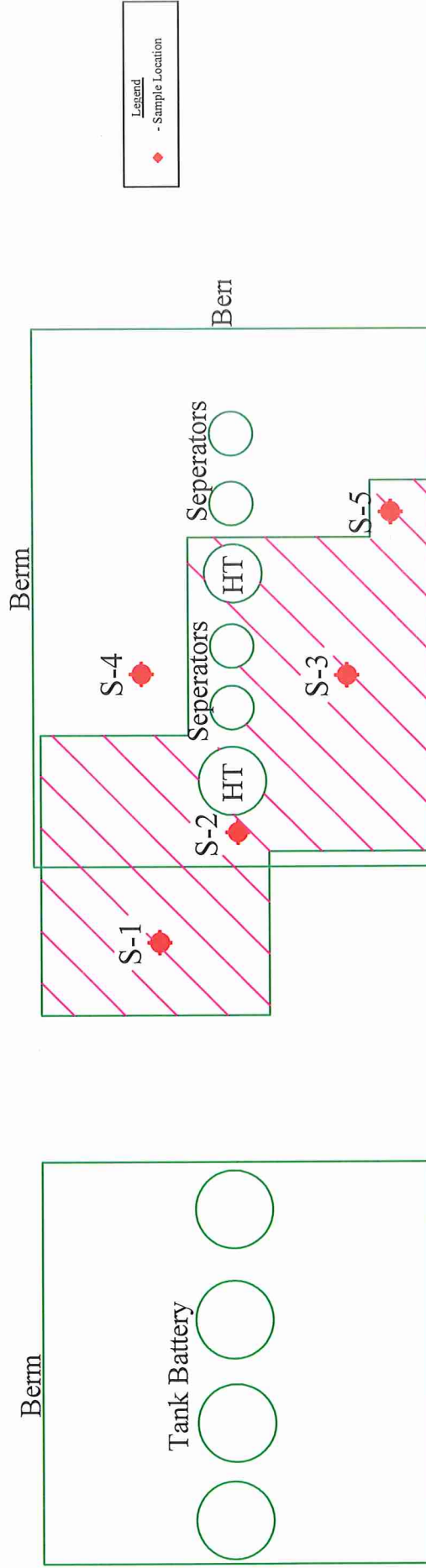
APPENDIX I

SITE PLAN

Pump Jack ⊗



NTS
Scale in Feet



Vega 9 Fed #1 Battery
Cimarex Energy
Eddy County, New Mexico
Figure 1 - Site Plan

Date: 12/01/2014

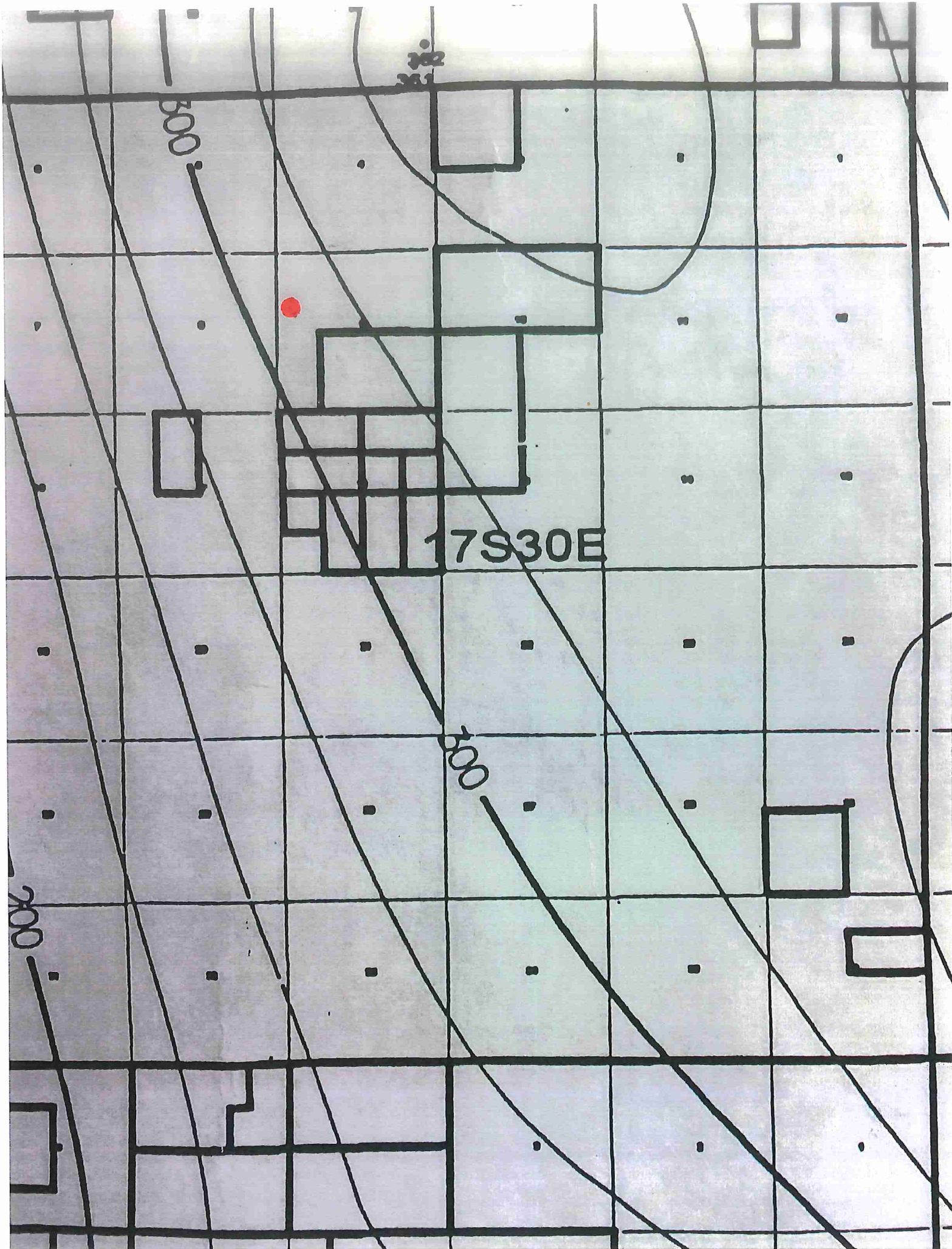
Scale: NTS

Drawn By: TJS



APPENDIX II

GROUNDWATER DATA



APPENDIX III
INITIAL C-141
&
FINAL C-141

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

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

7AB1432551444 **OPERATOR** ☒ Initial Report ☐ Final Report

Name of Company Cimarx Energy 1621083	Contact Christine Alderman
Address 600 N Marienfeld Ste 600 Midland TX	Telephone No. 432-853-7059
Facility Name Vega 9 Fed battery	Facility Type production

Surface Owner	Mineral Owner	API No. 30-015-36713
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
E	09	17S	30E	1650	N	900	W	Eddy

Latitude 32.85185 Longitude -103.982395

NATURE OF RELEASE

Type of Release fire (produced water & oil)	Volume of Release 10bbls oil 20 bbls PW	Volume Recovered 0 bbls oil 0 bbls PW
Source of Release fire	Date and Hour of Occurrence 11/18/14 9:00pm	Date and Hour of Discovery 11/18/14 9:00pm
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher/ Sol Hughes	
By Whom? Gloria Garza	Date and Hour 11/19/14 12:12 am	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

NM OIL CONSERVATION

ARTESIA DISTRICT

NOV 21 2014

RECEIVED

Describe Cause of Problem and Remedial Action Taken.*
Gas supply to heater treater started leaking and caught fire. The fire caused the sight glass to break causing the release of fluids

Describe Area Affected and Cleanup Action Taken.*
fluids contained within unlined berm. Talon was called to assess and develop spill plan.

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: Christine Alderman	OIL CONSERVATION DIVISION	
Printed Name: Christine Alderman	Approved by Environmental Specialist: Haben	
Title: ESH Supervisor	Approval Date: 11/21/14	Expiration Date: NA
E-mail Address: calderman@cimarx.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: Phone: 432-853-7059	Remediation per O.C.D. Rules & Guidelines	

SUBMIT REMEDIATION PROPOSAL NO
LATER THAN: 12/21/14

* Attach Additional Sheets If Necessary

2RP-2620

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011
Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: Cimarex Energy Company	Contact: Christine Alderman	
Address: 600 N Marienfeld Ste 600 Midland Tx	Telephone No. 432-853-7059	
Facility Name: Vega 9 Fed #3 Battery	Facility Type: Tank Battery	
Surface Owner: BLM	Mineral Owner: BLM	API No. 30-015-36713

LOCATION OF RELEASE

Unit Letter E	Section 9	Township 17S	Range 30E	Feet from the 2310	North/South Line N	Feet from the 660	East/West Line W	County Eddy
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Latitude 32.8500404 Longitude -103.9834824

NATURE OF RELEASE

Type of Release: Mixed Fluids	Volume of Release: 20bbls Oil 10bbls PW	Volume Recovered: 0bbls
Source of Release: Heater Treater	Date and Hour of Occurrence: 11/18/2014 9:00am	Date and Hour of Discovery: 11/18/14 9:00am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher-NMOCD Sol Hughes-BLM	
By Whom? Gloria Garza	Date and Hour: 11/19/14 12:12am	
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.* The gas supply to the heater treater leaked which resulted in a fire. The fire caused the sight glass on the heater treater to break which resulted in approximately 30bbls of mixed fluids. The fire was extinguished and the equipment was repaired.		
Describe Area Affected and Cleanup Action Taken.* All of the fluid remained within the berms of the battery. Talon/LPE mobilized personnel to conduct a site assessment and soil sampling within the impacted battery. Upon receipt of analytical data from the soil sampling event a remediation work plan was drafted and subsequently approved by NMOCD and BLM. Cimarex contracted a separate construction company to conduct the remediation in accordance with the approved work plan.		
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>Christine Alderman</i>	OIL CONSERVATION DIVISION	
Printed Name: Christine Alderman	Approved by Environmental Specialist:	
Title: BHS Supervisor	Approval Date:	Expiration Date:
E-mail Address: calderman@cimarex.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 2/6/2017	Phone: 432-853-7059	

* Attach Additional Sheets If Necessary

APPENDIX IV

LABORATORY RESULTS



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

December 02, 2014

SHELDON HITCHCOCK

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: VEGA 9 FED #1

Enclosed are the results of analyses for samples received by the laboratory on 11/21/14 14:50.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab_accred_certif.html.

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

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

TALON LPE
SHELDON HITCHCOCK
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received: 11/21/2014
Reported: 12/02/2014
Project Name: VEGA 9 FED #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 11/20/2014
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S-1 0' (H403604-01)

BTX 8021B			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/25/2014	ND	1.73	86.5	2.00	6.14	
Toluene*	<0.050	0.050	11/25/2014	ND	1.71	85.5	2.00	6.80	
Ethylbenzene*	<0.050	0.050	11/25/2014	ND	1.71	85.3	2.00	7.55	
Total Xylenes*	<0.150	0.150	11/25/2014	ND	5.19	86.4	6.00	7.82	
Total BTX	<0.300	0.300	11/25/2014	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 102 % 61-154

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	11/24/2014	ND	400	100	400	3.92	

TPH 8015M			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/24/2014	ND	184	91.9	200	4.85	
DRO >C10-C28	45.0	10.0	11/24/2014	ND	181	90.5	200	8.98	

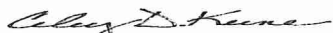
Surrogate: 1-Chlorooctane 127 % 47.2-157

Surrogate: 1-Chlorooctadecane 146 % 52.1-176

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TALON LPE
SHELDON HITCHCOCK
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received: 11/21/2014
Reported: 12/02/2014
Project Name: VEGA 9 FED #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 11/20/2014
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S-1 0.5' (H403604-02)

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/26/2014	ND	1.73	86.5	2.00	6.14	
Toluene*	<0.050	0.050	11/26/2014	ND	1.71	85.5	2.00	6.80	
Ethylbenzene*	<0.050	0.050	11/26/2014	ND	1.71	85.3	2.00	7.55	
Total Xylenes*	<0.150	0.150	11/26/2014	ND	5.19	86.4	6.00	7.82	
Total BTX	<0.300	0.300	11/26/2014	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 102 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	11/24/2014	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/25/2014	ND	202	101	200	1.12	
DRO >C10-C28	<10.0	10.0	11/25/2014	ND	211	105	200	2.83	

Surrogate: 1-Chlorooctane 117 % 47.2-157

Surrogate: 1-Chlorooctadecane 130 % 52.1-176

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 TALON LPE
 SHELDON HITCHCOCK
 408 W. TEXAS AVE.
 ARTESIA NM, 88210
 Fax To: (575) 745-8905

 Received: 11/21/2014
 Reported: 12/02/2014
 Project Name: VEGA 9 FED #1
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 11/20/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: S-2 0' (H403604-03)

BTX 8021B			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/26/2014	ND	1.73	86.5	2.00	6.14	
Toluene*	<0.050	0.050	11/26/2014	ND	1.71	85.5	2.00	6.80	
Ethylbenzene*	<0.050	0.050	11/26/2014	ND	1.71	85.3	2.00	7.55	
Total Xylenes*	<0.150	0.150	11/26/2014	ND	5.19	86.4	6.00	7.82	
Total BTX	<0.300	0.300	11/26/2014	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 102 % 61-154

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	11300	16.0	11/24/2014	ND	400	100	400	3.92	

TPH 8015M			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/25/2014	ND	202	101	200	1.12	
DRO >C10-C28	<10.0	10.0	11/25/2014	ND	211	105	200	2.83	

Surrogate: 1-Chlorooctane 125 % 47.2-157

Surrogate: 1-Chlorooctadecane 140 % 52.1-176

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TALON LPE
SHELDON HITCHCOCK
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received: 11/21/2014
Reported: 12/02/2014
Project Name: VEGA 9 FED #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 11/20/2014
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S-2 1' (H403604-04)

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/26/2014	ND	1.73	86.5	2.00	6.14	
Toluene*	<0.050	0.050	11/26/2014	ND	1.71	85.5	2.00	6.80	
Ethylbenzene*	<0.050	0.050	11/26/2014	ND	1.71	85.3	2.00	7.55	
Total Xylenes*	<0.150	0.150	11/26/2014	ND	5.19	86.4	6.00	7.82	
Total BTX	<0.300	0.300	11/26/2014	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 100 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	11/24/2014	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/25/2014	ND	202	101	200	1.12	
DRO >C10-C28	<10.0	10.0	11/25/2014	ND	211	105	200	2.83	

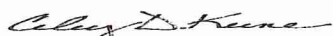
Surrogate: 1-Chlorooctane 131 % 47.2-157

Surrogate: 1-Chlorooctadecane 143 % 52.1-176

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TALON LPE
SHELDON HITCHCOCK
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received: 11/21/2014
Reported: 12/02/2014
Project Name: VEGA 9 FED #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 11/20/2014
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S-2 2' (H403604-05)

BTX 8021B			mg/kg		Analyzed By: CK				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/01/2014	ND	1.60	80.0	2.00	13.3	
Toluene*	<0.050	0.050	12/01/2014	ND	1.61	80.7	2.00	12.3	
Ethylbenzene*	<0.050	0.050	12/01/2014	ND	1.58	79.0	2.00	13.8	
Total Xylenes*	<0.150	0.150	12/01/2014	ND	4.75	79.2	6.00	14.1	
Total BTX	<0.300	0.300	12/01/2014	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 99.7 % 61-154

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	784	16.0	11/24/2014	ND	400	100	400	3.92	

TPH 8015M			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/25/2014	ND	202	101	200	1.12	
DRO >C10-C28	<10.0	10.0	11/25/2014	ND	211	105	200	2.83	

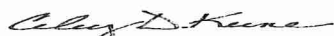
Surrogate: 1-Chlorooctane 124 % 47.2-157

Surrogate: 1-Chlorooctadecane 134 % 52.1-176

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Coley D. Keene, Lab Director/Quality Manager

Analytical Results For:

 TALON LPE
 SHELDON HITCHCOCK
 408 W. TEXAS AVE.
 ARTESIA NM, 88210
 Fax To: (575) 745-8905

 Received: 11/21/2014
 Reported: 12/02/2014
 Project Name: VEGA 9 FED #1
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 11/20/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: S-3 0' (H403604-06)

BTEx 8021B			mg/kg		Analyzed By: CK				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	3.99	0.500	12/01/2014	ND	1.60	80.0	2.00	13.3	
Toluene*	33.1	0.500	12/01/2014	ND	1.61	80.7	2.00	12.3	
Ethylbenzene*	32.1	0.500	12/01/2014	ND	1.58	79.0	2.00	13.8	
Total Xylenes*	45.5	1.50	12/01/2014	ND	4.75	79.2	6.00	14.1	
Total BTEx	115	3.00	12/01/2014	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 110 % 61-154

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	12400	16.0	11/24/2014	ND	400	100	400	3.92	

TPH 8015M			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	707	50.0	11/25/2014	ND	202	101	200	1.12	
DRO >C10-C28	2350	50.0	11/25/2014	ND	211	105	200	2.83	

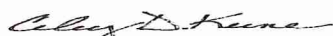
Surrogate: 1-Chlorooctane 114 % 47.2-157

Surrogate: 1-Chlorooctadecane 105 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TALON LPE
SHELDON HITCHCOCK
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received: 11/21/2014
Reported: 12/02/2014
Project Name: VEGA 9 FED #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 11/20/2014
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S-3 1' (H403604-07)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/01/2014	ND	1.60	80.0	2.00	13.3	
Toluene*	0.125	0.050	12/01/2014	ND	1.61	80.7	2.00	12.3	
Ethylbenzene*	0.131	0.050	12/01/2014	ND	1.58	79.0	2.00	13.8	
Total Xylenes*	0.208	0.150	12/01/2014	ND	4.75	79.2	6.00	14.1	
Total BTX	0.465	0.300	12/01/2014	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 99.4 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1630	16.0	11/24/2014	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/25/2014	ND	202	101	200	1.12	
DRO >C10-C28	30.3	10.0	11/25/2014	ND	211	105	200	2.83	

Surrogate: 1-Chlorooctane 131 % 47.2-157

Surrogate: 1-Chlorooctadecane 149 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TALON LPE
SHELDON HITCHCOCK
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received: 11/21/2014
Reported: 12/02/2014
Project Name: VEGA 9 FED #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 11/20/2014
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S-3 2' (H403604-08)

BTEx 8021B			mg/kg		Analyzed By: CK				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/01/2014	ND	1.60	80.0	2.00	13.3	
Toluene*	<0.050	0.050	12/01/2014	ND	1.61	80.7	2.00	12.3	
Ethylbenzene*	<0.050	0.050	12/01/2014	ND	1.58	79.0	2.00	13.8	
Total Xylenes*	<0.150	0.150	12/01/2014	ND	4.75	79.2	6.00	14.1	
Total BTEx	<0.300	0.300	12/01/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.7 % 61-154

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	656	16.0	11/24/2014	ND	400	100	400	3.92	

TPH 8015M			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/25/2014	ND	202	101	200	1.12	
DRO >C10-C28	<10.0	10.0	11/25/2014	ND	211	105	200	2.83	

Surrogate: 1-Chlorooctane 123 % 47.2-157

Surrogate: 1-Chlorooctadecane 138 % 52.1-176

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Analytical Results For:

 TALON LPE
 SHELDON HITCHCOCK
 408 W. TEXAS AVE.
 ARTESIA NM, 88210
 Fax To: (575) 745-8905

 Received: 11/21/2014
 Reported: 12/02/2014
 Project Name: VEGA 9 FED #1
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 11/20/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: S-4 0' (H403604-09)

BTX 8021B			mg/kg		Analyzed By: CK				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/01/2014	ND	1.60	80.0	2.00	13.3	
Toluene*	<0.050	0.050	12/01/2014	ND	1.61	80.7	2.00	12.3	
Ethylbenzene*	<0.050	0.050	12/01/2014	ND	1.58	79.0	2.00	13.8	
Total Xylenes*	<0.150	0.150	12/01/2014	ND	4.75	79.2	6.00	14.1	
Total BTX	<0.300	0.300	12/01/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.1 % 61-154

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3520	16.0	11/24/2014	ND	416	104	400	3.92	

TPH 8015M			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/25/2014	ND	202	101	200	1.12	
DRO >C10-C28	<10.0	10.0	11/25/2014	ND	211	105	200	2.83	

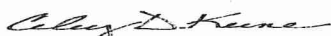
Surrogate: 1-Chlorooctane 125 % 47.2-157

Surrogate: 1-Chlorooctadecane 137 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 TALON LPE
 SHELDON HITCHCOCK
 408 W. TEXAS AVE.
 ARTESIA NM, 88210
 Fax To: (575) 745-8905

 Received: 11/21/2014
 Reported: 12/02/2014
 Project Name: VEGA 9 FED #1
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 11/20/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: S-4 1' (H403604-10)

BTEX 8021B			mg/kg		Analyzed By: CK				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/01/2014	ND	1.60	80.0	2.00	13.3	
Toluene*	<0.050	0.050	12/01/2014	ND	1.61	80.7	2.00	12.3	
Ethylbenzene*	<0.050	0.050	12/01/2014	ND	1.58	79.0	2.00	13.8	
Total Xylenes*	<0.150	0.150	12/01/2014	ND	4.75	79.2	6.00	14.1	
Total BTEX	<0.300	0.300	12/01/2014	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 98.3 % 61-154

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	11/24/2014	ND	416	104	400	3.92	

TPH 8015M			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/25/2014	ND	202	101	200	1.12	
DRO >C10-C28	<10.0	10.0	11/25/2014	ND	211	105	200	2.83	

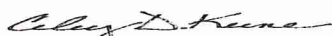
Surrogate: 1-Chlorooctane 117 % 47.2-157

Surrogate: 1-Chlorooctadecane 130 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 TALON LPE
 SHELDON HITCHCOCK
 408 W. TEXAS AVE.
 ARTESIA NM, 88210
 Fax To: (575) 745-8905

 Received: 11/21/2014
 Reported: 12/02/2014
 Project Name: VEGA 9 FED #1
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 11/20/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: S-4 2' (H403604-11)

BTX 8021B			mg/kg		Analyzed By: CK				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/01/2014	ND	1.60	80.0	2.00	13.3	
Toluene*	<0.050	0.050	12/01/2014	ND	1.61	80.7	2.00	12.3	
Ethylbenzene*	<0.050	0.050	12/01/2014	ND	1.58	79.0	2.00	13.8	
Total Xylenes*	<0.150	0.150	12/01/2014	ND	4.75	79.2	6.00	14.1	
Total BTX	<0.300	0.300	12/01/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.7 % 61-154

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	11/24/2014	ND	416	104	400	3.92	

TPH 8015M			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/25/2014	ND	202	101	200	1.12	
DRO >C10-C28	<10.0	10.0	11/25/2014	ND	211	105	200	2.83	

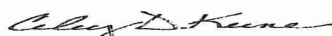
Surrogate: 1-Chlorooctane 122 % 47.2-157

Surrogate: 1-Chlorooctadecane 138 % 52.1-176

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Coley D. Keene, Lab Director/Quality Manager

Analytical Results For:

 TALON LPE
 SHELDON HITCHCOCK
 408 W. TEXAS AVE.
 ARTESIA NM, 88210
 Fax To: (575) 745-8905

 Received: 11/21/2014
 Reported: 12/02/2014
 Project Name: VEGA 9 FED #1
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 11/20/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: S-5 0' (H403604-12)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	20.8	1.00	12/01/2014	ND	1.60	80.0	2.00	13.3	
Toluene*	97.6	1.00	12/01/2014	ND	1.61	80.7	2.00	12.3	
Ethylbenzene*	61.5	1.00	12/01/2014	ND	1.58	79.0	2.00	13.8	
Total Xylenes*	75.0	3.00	12/01/2014	ND	4.75	79.2	6.00	14.1	
Total BTEX	255	6.00	12/01/2014	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 105 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	12300	16.0	11/24/2014	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	1610	50.0	11/25/2014	ND	202	101	200	1.12	
DRO >C10-C28	3610	50.0	11/25/2014	ND	211	105	200	2.83	

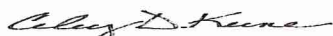
Surrogate: 1-Chlorooctane 138 % 47.2-157

Surrogate: 1-Chlorooctadecane 129 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TALON LPE
SHELDON HITCHCOCK
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received: 11/21/2014
Reported: 12/02/2014
Project Name: VEGA 9 FED #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 11/20/2014
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S-5 1' (H403604-13)

BTX 8021B			mg/kg		Analyzed By: CK				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/01/2014	ND	1.60	80.0	2.00	13.3	
Toluene*	<0.050	0.050	12/01/2014	ND	1.61	80.7	2.00	12.3	
Ethylbenzene*	<0.050	0.050	12/01/2014	ND	1.58	79.0	2.00	13.8	
Total Xylenes*	<0.150	0.150	12/01/2014	ND	4.75	79.2	6.00	14.1	
Total BTX	<0.300	0.300	12/01/2014	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 99.2 % 61-154

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	336	16.0	11/24/2014	ND	416	104	400	3.92	

TPH 8015M			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/25/2014	ND	202	101	200	1.12	
DRO >C10-C28	<10.0	10.0	11/25/2014	ND	211	105	200	2.83	

Surrogate: 1-Chlorooctane 122 % 47.2-157

Surrogate: 1-Chlorooctadecane 141 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 TALON LPE
 SHELDON HITCHCOCK
 408 W. TEXAS AVE.
 ARTESIA NM, 88210
 Fax To: (575) 745-8905

 Received: 11/21/2014
 Reported: 12/02/2014
 Project Name: VEGA 9 FED #1
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 11/20/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: S-5 2' (H403604-14)

BTEX 8021B			mg/kg		Analyzed By: CK				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/01/2014	ND	1.60	80.0	2.00	13.3	
Toluene*	<0.050	0.050	12/01/2014	ND	1.61	80.7	2.00	12.3	
Ethylbenzene*	<0.050	0.050	12/01/2014	ND	1.58	79.0	2.00	13.8	
Total Xylenes*	<0.150	0.150	12/01/2014	ND	4.75	79.2	6.00	14.1	
Total BTEX	<0.300	0.300	12/01/2014	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 99.7 % 61-154

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	928	16.0	11/24/2014	ND	416	104	400	3.92	

TPH 8015M			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/25/2014	ND	202	101	200	1.12	
DRO >C10-C28	<10.0	10.0	11/25/2014	ND	211	105	200	2.83	

Surrogate: 1-Chlorooctane 130 % 47.2-157

Surrogate: 1-Chlorooctadecane 146 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

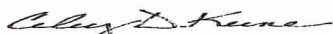
Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

PG 1 of 2



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

BILL TO

ANALYSIS REQUEST

Company Name: Talon/LPE

Project Manager: S. Hitchcock

Address: 408 W. Texas Ave.

City: Artesia State: NM Zip: 88210

Phone #: 575-746-8768 Fax #: 575-746-8905

Project #: Project Owner: Cimarex

Project Name: Vega 9 Fed #1

Project Location:

Sampler Name: S. Hitchcock

FOR LAB USE ONLY

Lab I.D.

Sample I.D.

H403604

11 5-4 2'

12 5-5 0'

13 5-5 1'

14 5-5 2'

(G)RAB OR (C)OMP.

CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

TIME

TPH

BTEX

Chlorides

PLEASE NOTE: Liability and claims are excluded for any claim arising from the use of the sample for the purpose of the analysis. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of analytical services by Cardinal. Regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:

Date: 11/24/14

Time: 9:50

Received By:

Date: 11/24/14

Time: 2:45

Received By:

Date: 11/24/14

Time: 2:47

Received By:

Date: 11/24/14

Time: 2:50

Relinquished By:

Date: 11/24/14

Time: 9:50

Received By:

Date: 11/24/14

Time: 2:45

Received By:

Date: 11/24/14

Time: 2:47

Received By:

Date: 11/24/14

Time: 2:50

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

Sample Condition

Cool Intact

Yes No

Yes No

Yes No

Yes No

Yes No

Yes No

Yes No

Sample Condition

Cool Intact

Yes No

Yes No

Yes No

Yes No

Yes No

Yes No

Yes No

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326