

talonlpe.com • 866.742.0742



Work Plan

Cimarex Energy Company: Vega 9 Federal #2
|30-015-36328|2RP-2619|

April 19, 2017

Prepared By:

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

Prepared For:

Cimarex Energy Company

Ms. Christine Alderman
Cimarex Energy Company
600 N. Marienfeld Ste. 600
Midland, TX 79701

Subject: **Soil Assessment and Remediation Work Plan**
Cimarex Energy Co.
Vega 9 Federal #2
|30-015-36328|2RP-2619|

Dear Ms. Alderman,

Cimarex Energy Company (Cimarex) has contracted Talon/LPE (Talon) to perform soil sampling and remediation services at the above referenced location. The results of our soil assessment and proposed remediation activities consist of the following.

Site Information

The Vega 9 Federal #2 is located approximately twenty-seven (27) miles east of Artesia, New Mexico. The legal location for this facility is Unit Letter D, Section 9, Township 17S South and Range 30 East in Eddy County, New Mexico. More specifically the latitude and longitude are 32.855484 North and -103.9830017 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 New Mexico Office of the State Engineer database, the ground water in this area is approximately 80-feet below ground surface (BGS). The referenced ground water data is presented in [Appendix II](#). Therefore the ranking for this site is a **10** based on the following:

Depth to ground water	50-100'
Wellhead Protection Area	>1000'
Distance to surface water body	>1000'

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

Incident Description and Initial Remedial Actions

On November 18, 2014, a steel flowline from the well to the battery developed a leak due to corrosion. The leak resulted in a release of approximately 14bbls of mixed fluids in the pasture south of the Cimarex Vega 9 Fed #2 location.

On February 15, 2017, Talon mobilized personnel to conduct soil sampling within the impacted area. The soil samples were analyzed for TPH, BTEX, Total Chlorides, and Detailed Salinity. The results of the soil analysis are summarized in the table below.

Laboratory Results

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

Sample ID	Depth	BTEX mg/kg	TPH mg/kg	Chloride mg/kg	pH	EC mmhos/cm	Sodium meq/L	Potassium meq/L	Calcium meq/L	Magnesium meq/L	SAR
S-1	0	ND	9,080	1,063	7	3.52	15.71	0.45	12.26	1.88	5.91
S-1	1	ND	2,959	1,134	7.6	0.97	4.37	0.54	3.45	0.57	3.08
S-1	2	ND	3,350	1,276	8.1	0.92	8.32	0.269	0.61	0.29	12.39
S-1	3	ND	2,380	992	8.3	7.447	7.45	0.06	0.54	0.08	13.33
S-1	4	1.1	4,123	992	7.9	1.08	10.15	0.15	0.54	0.22	16.52
S-1	6	ND	ND	16*	8	1.72	14.36	0.11	0.6	0.12	23.97
S-2	0	ND	9,990	32*	73	0.31	1.04	0.31	1.59	0.28	1.08
S-2	1	ND	1,140	ND*	7.4	0.27	1.35	0.18	1.16	0.18	1.64
S-2	2	4.09	4,658	--	--	--	--	--	--	--	--
S-2	3	21.9	5,763	--	--	--	--	--	--	--	--
S-2	4	48.5	6,069	--	--	--	--	--	--	--	--
S-2	6	1.02	6,381	--	--	--	--	--	--	--	--
S-2	7	0.8	4,323	--	--	--	--	--	--	--	--
S-2	8	ND	ND	--	--	--	--	--	--	--	--
S-2	10	ND	493	--	--	--	--	--	--	--	--

(ND) Analyte Not Detected

(--) Analyte Not Tested

(*) Laboratory Chloride Confirmation

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

Proposed Remedial Actions

- The impacted area in the vicinity of S-1 will be excavated to a depth of 5-feet BGS. A soil shredder will be used to aerate and treat the soil with a 33% hydrogen peroxide solution to oxidize the hydrocarbons. The soil will also be treated with a Calcium and Magnesium solution to replace sodium on the soil cation exchange complex. A soil sample will be taken from approximately every 100-yards of treated soil. The soil sample will be analyzed for TPH, BTEX, and Total Chlorides.
- The impacted area in the vicinity of sample location S-2 will be excavated to a depth of 8-feet BGS. A soil shredder will be used to aerate and treat the soil with a 33% hydrogen peroxide solution to oxidize the hydrocarbons. A soil sample will be taken from approximately every 100-yards of treated soil. The soil sample will be analyzed for TPH and BTEX.
- Once the laboratory results indicate that TPH, BTEX, and Total Chloride concentrations from the two respective excavation areas are below NMOCD RRAL's the results will be forwarded to NMOCD and BLM for review and permission to backfill the excavation with the treated soil.
- The backfilled area will be contoured to match the surrounding terrain and seeded with BLM #2 seed mixture.

Should you have any questions or if further information is required, please do not hesitate to contact our office at (575)-746-8768

Respectfully submitted,

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
Appendix IV Laboratory Results

APPENDIX I

SITE PLAN

Vega 9 Fed #2

Cimarex Energy Co.

Cimarex-Vega 9 Fed #2

Legend

-  Cimarex-Vega 9 Fed #2
-  Impacted Area
-  Sample Location

Google Earth

© 2016 Google

100 ft



APPENDIX II

GROUNDWATER DATA



NEW MEXICO Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest) (NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
RA 11914 POD1			ED	2	4	2	20	17S	30E	594801	3632002	3623	85	80	5

Average Depth to Water: 80 feet

Minimum Depth: 80 feet

Maximum Depth: 80 feet

Record Count: 1

Basin/County Search:

County: Eddy

UTM NAD83 Radius Search (in meters):

Easting (X): 595117

Northing (Y): 3635612

Radius: 5000

APPENDIX III

INITIAL C-141

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

NAB1432550182		OPERATOR	☒ Initial Report	☐ Final Report
Name of Company Cimarex Energy		Contact Christine Alderman		
Address 600 N Marienfeld Ste 600 Midland TX		Telephone No. 432-853-7059		
Facility Name Vega 9 Federal #2		Facility Type production		
Surface Owner		Mineral Owner	API No. 30-015-36328	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	09	17S	30E	330	N	810	W	Eddy

Latitude 32.85548 Longitude -103.98298

NATURE OF RELEASE

Type of Release oil and produced water	Volume of Release 4 bbls oil, 10 bbls PW	Volume Recovered 0 bbls oil, 0 bbls PW
Source of Release flowline	Date and Hour of Occurrence 11/18/14	Date and Hour of Discovery 11/18/14 4:30 pm
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? Mike Bratcher/Sol Hughes	
By Whom? Gloria Garza	Date and Hour 11/20/14 3:18pm	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

NM OIL CONSERVATION
ARTESIA DISTRICT

NOV 21 2014

RECEIVED

Describe Cause of Problem and Remedial Action Taken.*
2 7/8" steel flowline from well to battery developed a leak due to corrosion.

Describe Area Affected and Cleanup Action Taken.*
Pasture area approx. 60' x 12', 6' x 6', and 10' x 5'. Talon has been contacted to assess and develop 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 NMOC 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 NMOC 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, NMOC 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: [Signature]	
Title: ESH Supervisor	Approval Date: 11/21/14	Expiration Date: NA
E-mail Address: calderman@cimarex.com	Conditions of Approval:	Attached ☐
Date: Phone: 432-853-7059	Remediation per O.C.D. Rules & Guidelines	

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

2RP-2619

* Attach Additional Sheets If Necessary

APPENDIX IV

LABORATORY RESULTS

February 23, 2017

SHELDON HITCHCOCK

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: VEGA 9 FEDERAL #2

Enclosed are the results of analyses for samples received by the laboratory on 02/16/17 15:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. 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,



Caley 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: 02/16/2017
Reported: 02/23/2017
Project Name: VEGA 9 FEDERAL #2
Project Number: NONE GIVEN
Project Location: EDDY COUNTY, NM

Sampling Date: 02/15/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S-1 0' (H700406-01)

BTEx 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	02/19/2017	ND	2.16	108	2.00	0.378		
Toluene*	<0.050	0.050	02/19/2017	ND	2.03	102	2.00	0.392		
Ethylbenzene*	<0.050	0.050	02/19/2017	ND	2.05	103	2.00	0.236		
Total Xylenes*	<0.150	0.150	02/19/2017	ND	5.85	97.5	6.00	0.262		
Total BTEx	<0.300	0.300	02/19/2017	ND						

Surrogate: 4-Bromofluorobenzene (PIC) 113 % 73.6-140

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	02/17/2017	ND	182	90.9	200	3.52	
DRO >C10-C28	9080	50.0	02/17/2017	ND	185	92.5	200	8.68	

Surrogate: 1-Chlorooctane 90.8 % 35-147

Surrogate: 1-Chlorooctadecane 283 % 28-171

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: 02/16/2017
Reported: 02/23/2017
Project Name: VEGA 9 FEDERAL #2
Project Number: NONE GIVEN
Project Location: EDDY COUNTY, NM

Sampling Date: 02/15/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S-1 1' (H700406-02)

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	02/20/2017	ND	2.16	108	2.00	0.378		
Toluene*	<0.050	0.050	02/20/2017	ND	2.03	102	2.00	0.392		
Ethylbenzene*	<0.050	0.050	02/20/2017	ND	2.05	103	2.00	0.236		
Total Xylenes*	<0.150	0.150	02/20/2017	ND	5.85	97.5	6.00	0.262		
Total BTX	<0.300	0.300	02/20/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 114 % 73.6-140

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	209	50.0	02/17/2017	ND	182	90.9	200	3.52	
DRO >C10-C28	2750	50.0	02/17/2017	ND	185	92.5	200	8.68	

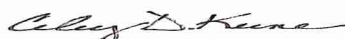
Surrogate: 1-Chlorooctane 74.8 % 35-147

Surrogate: 1-Chlorooctadecane 123 % 28-171

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: 02/16/2017
Reported: 02/23/2017
Project Name: VEGA 9 FEDERAL #2
Project Number: NONE GIVEN
Project Location: EDDY COUNTY, NM

Sampling Date: 02/15/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S-1 2' (H700406-03)

BTEX 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	02/20/2017	ND	2.16	108	2.00	0.378	
Toluene*	<0.050	0.050	02/20/2017	ND	2.03	102	2.00	0.392	
Ethylbenzene*	<0.050	0.050	02/20/2017	ND	2.05	103	2.00	0.236	
Total Xylenes*	<0.150	0.150	02/20/2017	ND	5.85	97.5	6.00	0.262	
Total BTEX	<0.300	0.300	02/20/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 116 % 73.6-140

TPH 8015M			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	360	50.0	02/17/2017	ND	182	90.9	200	3.52	
DRO >C10-C28	2990	50.0	02/17/2017	ND	185	92.5	200	8.68	

Surrogate: 1-Chlorooctane 105 % 35-147

Surrogate: 1-Chlorooctadecane 146 % 28-171

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: 02/16/2017
 Reported: 02/23/2017
 Project Name: VEGA 9 FEDERAL #2
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

 Sampling Date: 02/15/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: S-1 3' (H700406-04)

BTEX 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	02/20/2017	ND	2.16	108	2.00	0.378		
Toluene*	<0.050	0.050	02/20/2017	ND	2.03	102	2.00	0.392		
Ethylbenzene*	<0.050	0.050	02/20/2017	ND	2.05	103	2.00	0.236		
Total Xylenes*	<0.150	0.150	02/20/2017	ND	5.85	97.5	6.00	0.262		
Total BTEX	<0.300	0.300	02/20/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.1 % 73.6-140

TPH 8015M			mg/kg							
			Analyzed By: MS							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	210	50.0	02/17/2017	ND	182	90.9	200	3.52		
DRO >C10-C28	2170	50.0	02/17/2017	ND	185	92.5	200	8.68		

Surrogate: 1-Chlorooctane 93.8 % 35-147

Surrogate: 1-Chlorooctadecane 128 % 28-171

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: 02/16/2017
 Reported: 02/23/2017
 Project Name: VEGA 9 FEDERAL #2
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

 Sampling Date: 02/15/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: S-1 4' (H700406-05)

BTEX 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	02/20/2017	ND	2.16	108	2.00	0.378	
Toluene*	<0.050	0.050	02/20/2017	ND	2.03	102	2.00	0.392	
Ethylbenzene*	<0.050	0.050	02/20/2017	ND	2.05	103	2.00	0.236	
Total Xylenes*	1.10	0.150	02/20/2017	ND	5.85	97.5	6.00	0.262	
Total BTEX	1.10	0.300	02/20/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 128 % 73.6-140

TPH 8015M		mg/kg	Analyzed By: MS					S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	243	50.0	02/17/2017	ND	182	90.9	200	3.52	
DRO >C10-C28	3880	50.0	02/17/2017	ND	185	92.5	200	8.68	

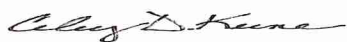
Surrogate: 1-Chlorooctane 113 % 35-147

Surrogate: 1-Chlorooctadecane 186 % 28-171

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: 02/16/2017
 Reported: 02/23/2017
 Project Name: VEGA 9 FEDERAL #2
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

 Sampling Date: 02/15/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: S-1 6' (H700406-06)

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	02/19/2017	ND	2.16	108	2.00	0.378		
Toluene*	<0.050	0.050	02/19/2017	ND	2.03	102	2.00	0.392		
Ethylbenzene*	<0.050	0.050	02/19/2017	ND	2.05	103	2.00	0.236		
Total Xylenes*	<0.150	0.150	02/19/2017	ND	5.85	97.5	6.00	0.262		
Total BTX	<0.300	0.300	02/19/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.3 % 73.6-140

Chloride, SM4500CI-B			mg/kg							
			Analyzed By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	02/21/2017	ND	448	112	400	0.00		

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	02/17/2017	ND	182	90.9	200	3.52		
DRO >C10-C28	<10.0	10.0	02/17/2017	ND	185	92.5	200	8.68		

Surrogate: 1-Chlorooctane 83.8 % 35-147

Surrogate: 1-Chlorooctadecane 105 % 28-171

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: 02/16/2017
Reported: 02/23/2017
Project Name: VEGA 9 FEDERAL #2
Project Number: NONE GIVEN
Project Location: EDDY COUNTY, NM

Sampling Date: 02/15/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S-2 0' (H700406-07)

BTEX 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	02/19/2017	ND	2.16	108	2.00	0.378		
Toluene*	<0.050	0.050	02/19/2017	ND	2.03	102	2.00	0.392		
Ethylbenzene*	<0.050	0.050	02/19/2017	ND	2.05	103	2.00	0.236		
Total Xylenes*	<0.150	0.150	02/19/2017	ND	5.85	97.5	6.00	0.262		
Total BTEX	<0.300	0.300	02/19/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 73.6-140

Chloride, SM4500Cl-B			mg/kg							
			Analyzed By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	02/21/2017	ND	448	112	400	0.00		

TPH 8015M			mg/kg							
			Analyzed By: MS							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<50.0	50.0	02/20/2017	ND	195	97.6	200	3.76		
DRO >C10-C28	9990	50.0	02/20/2017	ND	218	109	200	6.59	QM-07	

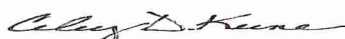
Surrogate: 1-Chlorooctane 86.5 % 35-147

Surrogate: 1-Chlorooctadecane 271 % 28-171

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: 02/16/2017
 Reported: 02/23/2017
 Project Name: VEGA 9 FEDERAL #2
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

 Sampling Date: 02/15/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: S-2 1' (H700406-08)

BTX 8021B			mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/19/2017	ND	2.16	108	2.00	0.378		
Toluene*	<0.050	0.050	02/19/2017	ND	2.03	102	2.00	0.392		
Ethylbenzene*	<0.050	0.050	02/19/2017	ND	2.05	103	2.00	0.236		
Total Xylenes*	<0.150	0.150	02/19/2017	ND	5.85	97.5	6.00	0.262		
Total BTX	<0.300	0.300	02/19/2017	ND						

Surrogate: 4-Bromofluorobenzene (PIB) 152 % 73.6-140

Chloride, SM4500Cl-B			mg/kg					Analyzed By: AC	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	02/21/2017	ND	448	112	400	0.00	

TPH 8015M			mg/kg					Analyzed By: MS	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	02/20/2017	ND	195	97.6	200	3.76	
DRO >C10-C28	1140	50.0	02/20/2017	ND	218	109	200	6.59	

Surrogate: 1-Chlorooctane 69.1 % 35-147

Surrogate: 1-Chlorooctadecane 101 % 28-171

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: 02/16/2017
 Reported: 02/23/2017
 Project Name: VEGA 9 FEDERAL #2
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

 Sampling Date: 02/15/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: S-2 2' (H700406-09)

BTEX 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	02/21/2017	ND	2.12	106	2.00	3.29	
Toluene*	<0.050	0.050	02/21/2017	ND	1.98	98.9	2.00	2.98	
Ethylbenzene*	<0.050	0.050	02/21/2017	ND	1.96	98.2	2.00	2.35	QM-07
Total Xylenes*	4.08	0.150	02/21/2017	ND	5.65	94.1	6.00	2.87	
Total BTEX	4.09	0.300	02/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 134 % 73.6-140

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	498	50.0	02/20/2017	ND	195	97.6	200	3.76	
DRO >C10-C28	4160	50.0	02/20/2017	ND	218	109	200	6.59	

Surrogate: 1-Chlorooctane 127 % 35-147

Surrogate: 1-Chlorooctadecane 150 % 28-171

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: 02/16/2017
Reported: 02/23/2017
Project Name: VEGA 9 FEDERAL #2
Project Number: NONE GIVEN
Project Location: EDDY COUNTY, NM

Sampling Date: 02/15/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S-2 3' (H700406-10)

BTEX 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	02/21/2017	ND	2.12	106	2.00	3.29	
Toluene*	1.64	0.050	02/21/2017	ND	1.98	98.9	2.00	2.98	
Ethylbenzene*	5.17	0.050	02/21/2017	ND	1.96	98.2	2.00	2.35	
Total Xylenes*	15.1	0.150	02/21/2017	ND	5.65	94.1	6.00	2.87	
Total BTEX	21.9	0.300	02/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 86.7 % 73.6-140

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	863	50.0	02/20/2017	ND	195	97.6	200	3.76	
DRO >C10-C28	4900	50.0	02/20/2017	ND	218	109	200	6.59	

Surrogate: 1-Chlorooctane 166 % 35-147

Surrogate: 1-Chlorooctadecane 159 % 28-171

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: 02/16/2017
 Reported: 02/23/2017
 Project Name: VEGA 9 FEDERAL #2
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

 Sampling Date: 02/15/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: S-2 4' (H700406-11)

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	02/21/2017	ND	2.12	106	2.00	3.29	
Toluene*	4.23	0.050	02/21/2017	ND	1.98	98.9	2.00	2.98	
Ethylbenzene*	16.2	0.050	02/21/2017	ND	1.96	98.2	2.00	2.35	
Total Xylenes*	28.1	0.150	02/21/2017	ND	5.65	94.1	6.00	2.87	
Total BTX	48.5	0.300	02/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 73.6-140

TPH 8015M		mg/kg	Analyzed By: MS							S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	959	50.0	02/20/2017	ND	195	97.6	200	3.76		
DRO >C10-C28	5110	50.0	02/20/2017	ND	218	109	200	6.59		

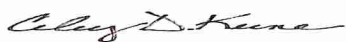
Surrogate: 1-Chlorooctane 174 % 35-147

Surrogate: 1-Chlorooctadecane 170 % 28-171

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

Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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 SM4500CI-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

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



CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

V

Company Name: Talon/LPE		P.O. #: Cimaroy	
Project Manager: S. Hitchcock		Company: Talon/LPE	
Address: 408 W. Texas Ave.		Attn: Christine Alderman	
City: Artesia		Address:	
State: NM zip: 88210		City:	
Phone #: 575-746-8768		State:	
Fax #: 575-746-8905		Zip:	
Project #:		Phone #:	
Project Name: Vega 9 Field #2		Fax #:	
Project Location:		SAMPLING	
Sample Name: S. Hitchcock		PRESERV.	
FOR LAB USE ONLY		DATE	
Lab I.D.	Sample I.D.	TIME	
H700446	5-10'	2/15/12	
1	5-11'	9:05	
2	5-12'	9:10	
3	5-13'	9:20	
4	5-14'	9:30	
5	5-16'	9:40	
6	5-20'	10:00	
7	5-21'	10:05	
8	5-22'	10:10	
9	5-23'	10:20	
(G)RAB OR (C)OMP.		TPH	
# CONTAINERS		BTX	
GROUNDWATER		C1010-03	
WASTEWATER			
SOIL			
OIL			
SLUDGE			
OTHER :			
ACID/BASE:			
ICE / COOL			
OTHER :			
MATRIX			
PRESERV.			
SAMPLING			
REMARKS:			
Relinquished By: <i>Shirley Ann</i>		Received By: <i>Christine Alderman</i>	
Date: 2/14/17		Date: 2/15/12	
Time: 15:35		Time: 9:05	
Delivered By: (Circle One) <i>#75</i>		Sample Condition	
Cool ☒ Yes ☐ No		Intact ☒ Yes ☐ No	
CHECKED BY: <i>(Initials)</i>			
Phone Result: ☐ Yes ☐ No		Add'l Phone #:	
Fax Result: ☐ Yes ☐ No		Add'l Fax #:	

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



↖

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2000

February 28, 2017

SHELDON HITCHCOCK

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: VEGA 9 FEDERAL #2

Enclosed are the results of analyses for samples received by the laboratory on 02/23/17 13:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. 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/qa/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: 02/23/2017
Reported: 02/28/2017
Project Name: VEGA 9 FEDERAL #2
Project Number: 701162.086.01
Project Location: EDDY COUNTY, NM

Sampling Date: 02/15/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S-2 6' (H700461-01)

BTEX 8021B		mg/kg	Analyzed By: MS					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	02/27/2017	ND	1.89	94.4	2.00	1.81	
Toluene*	<0.200	0.200	02/27/2017	ND	1.76	88.2	2.00	2.17	
Ethylbenzene*	<0.200	0.200	02/27/2017	ND	1.75	87.3	2.00	2.30	QM-07
Total Xylenes*	1.02	0.600	02/27/2017	ND	4.96	82.7	6.00	2.29	
Total BTEX	<1.20	1.20	02/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 73.6-140

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	401	50.0	02/24/2017	ND	195	97.3	200	2.86	
DRO >C10-C28	5980	50.0	02/24/2017	ND	205	103	200	4.62	

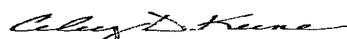
Surrogate: 1-Chlorooctane 130 % 35-147

Surrogate: 1-Chlorooctadecane 169 % 28-171

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: 02/23/2017
Reported: 02/28/2017
Project Name: VEGA 9 FEDERAL #2
Project Number: 701162.086.01
Project Location: EDDY COUNTY, NM

Sampling Date: 02/15/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S-2 7' (H700461-02)

BTEX 8021B		mg/kg	Analyzed By: MS					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2017	ND	1.89	94.4	2.00	1.81	
Toluene*	<0.050	0.050	02/27/2017	ND	1.76	88.2	2.00	2.17	
Ethylbenzene*	<0.050	0.050	02/27/2017	ND	1.75	87.3	2.00	2.30	
Total Xylenes*	0.798	0.150	02/27/2017	ND	4.96	82.7	6.00	2.29	
Total BTEX	0.798	0.300	02/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 212 % 73.6-140

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	263	50.0	02/24/2017	ND	195	97.3	200	2.86	
DRO >C10-C28	4060	50.0	02/24/2017	ND	205	103	200	4.62	

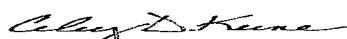
Surrogate: 1-Chlorooctane 130 % 35-147

Surrogate: 1-Chlorooctadecane 159 % 28-171

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: 02/23/2017
Reported: 02/28/2017
Project Name: VEGA 9 FEDERAL #2
Project Number: 701162.086.01
Project Location: EDDY COUNTY, NM

Sampling Date: 02/15/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S-2 8' (H700461-03)

BTEX 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	02/25/2017	ND	1.89	94.4	2.00	1.81	
Toluene*	<0.050	0.050	02/25/2017	ND	1.76	88.2	2.00	2.17	
Ethylbenzene*	<0.050	0.050	02/25/2017	ND	1.75	87.3	2.00	2.30	
Total Xylenes*	<0.150	0.150	02/25/2017	ND	4.96	82.7	6.00	2.29	
Total BTEX	<0.300	0.300	02/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 99.0 % 73.6-140

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	02/24/2017	ND	195	97.3	200	2.86	
DRO >C10-C28	<10.0	10.0	02/24/2017	ND	205	103	200	4.62	

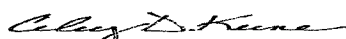
Surrogate: 1-Chlorooctane 88.7 % 35-147

Surrogate: 1-Chlorooctadecane 85.3 % 28-171

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: 02/23/2017
 Reported: 02/28/2017
 Project Name: VEGA 9 FEDERAL #2
 Project Number: 701162.086.01
 Project Location: EDDY COUNTY, NM

 Sampling Date: 02/15/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: S-2 10' (H700461-04)

BTEX 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	02/25/2017	ND	1.89	94.4	2.00	1.81	
Toluene*	<0.050	0.050	02/25/2017	ND	1.76	88.2	2.00	2.17	
Ethylbenzene*	<0.050	0.050	02/25/2017	ND	1.75	87.3	2.00	2.30	
Total Xylenes*	<0.150	0.150	02/25/2017	ND	4.96	82.7	6.00	2.29	
Total BTEX	<0.300	0.300	02/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 109 % 73.6-140

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	11.9	10.0	02/24/2017	ND	195	97.3	200	2.86	
DRO >C10-C28	481	10.0	02/24/2017	ND	205	103	200	4.62	

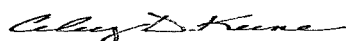
Surrogate: 1-Chlorooctane 93.2 % 35-147

Surrogate: 1-Chlorooctadecane 92.6 % 28-171

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

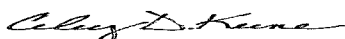
Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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

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



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 #: 701142, 086, 01 Project Owner: Cimarex

Project Name: V2029 F202 #2

Project Location:

Sampler Name: S. Hitchcock

FOR LAB USE ONLY

Lab I.D. Sample I.D.

1 5-26

2 5-27

3 5-28

4 5-210

Relinquished By: Sheldon Pitt

Date: 2-23-17

Time: 13:30

Received By: Tamara Delgado

Date: 2-23-17

Time: 13:30

Sample Condition: Cool Intact



Report generated for:
Sheldon Hitchcock
Talon LPE Vega 9 Fed #2
408 W Texas Ave
Artesia, NM 88210

Outside TX County
Laboratory Number: 478570
Customer Sample ID: S-1 0'

Crop Grown: NO CROP GIVEN

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: <http://soiltesting.tamu.edu>

Sample received on: 2/27/2017
Printed on: 3/13/2017
Area Represented: not provided

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.
pH	7.6	(5.8)	-	Slightly Alkaline						
Conductivity	268	(-)	umho/cm	None				CL*		Fertilizer Recommended
Nitrate-N	1	(-)	ppm**							
Phosphorus	10	(0)	ppm							
Potassium	48	(0)	ppm							
Calcium	403	(180)	ppm							
Magnesium	27	(50)	ppm							
Sulfur	11	(13)	ppm							
Sodium	74	(-)	ppm							
Iron										
Zinc										
Manganese										
Copper										
Boron										
Limestone Requirement										
Detailed Salinity Test (Saturated Paste Extract)										
	pH		7.0							
	Conductivity		3.52 mmhos/cm							
	Sodium		361 ppm							15.712 meq/L
	Potassium		18 ppm							0.451 meq/L
	Calcium		246 ppm							12.261 meq/L
	Magnesium		23 ppm							1.876 meq/L
	SAR		5.91							
	SSP		51.85							

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
<http://soiltesting.tamu.edu/webpages/calculator.html>



Report generated for:
Sheldon Hitchcock
Talon LPE Vega 9 Fed #2
408 W Texas Ave
Artesia, NM 88210

Outside TX County
Laboratory Number: 478571
Customer Sample ID: S-1-1'

Crop Grown: NO CROP GIVEN

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: <http://soiltesting.tamu.edu>

Sample received on: 2/27/2017
Printed on: 3/13/2017
Area Represented: not provided

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.
pH	7.9	(5.8)	-	Mod. Alkaline						
Conductivity	197	(-)	umho/cm	None						
Nitrate-N	0	(-)	ppm**	CL*						
Phosphorus	4	(0)	ppm							
Potassium	174	(0)	ppm							
Calcium	1,806	(180)	ppm							
Magnesium	96	(50)	ppm							
Sulfur	9	(13)	ppm							
Sodium	66	(-)	ppm							
Iron										
Zinc										
Manganese										
Copper										
Boron										
Limestone Requirement										
Detailed Salinity Test (Saturated Paste Extract)										
pH				7.6						
Conductivity				0.97 mmhos/cm						
Sodium				100 ppm				4.368 meq/L		
Potassium				21 ppm				0.538 meq/L		
Calcium				69 ppm				3.453 meq/L		
Magnesium				7 ppm				0.573 meq/L		
SAR				3.08						
SSP				48.91						

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
<http://soiltesting.tamu.edu/webpages/calculator.html>



Report generated for:
Sheldon Hitchcock
Talon LPE Vega 9 Fed #2
408 W Texas Ave
Artesia, NM 88210

Outside TX County
Laboratory Number: 478572
Customer Sample ID: S-1-2'
Crop Grown: NO CROP GIVEN

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: <http://soiltesting.tamu.edu>

Sample received on: 2/27/2017
Printed on: 3/13/2017
Area Represented: not provided

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.
pH	8.8	(5.8)	-	Strongly Alkaline						
Conductivity	188	(-)	umho/cm	None				CL*		Fertilizer Recommended
Nitrate-N	1	(-)	ppm**							
Phosphorus	3	(0)	ppm							
Potassium	117	(0)	ppm							
Calcium	1,204	(180)	ppm							
Magnesium	78	(50)	ppm							
Sulfur	9	(13)	ppm							
Sodium	255	(-)	ppm							
Iron										
Zinc										
Manganese										
Copper										
Boron										
Limestone Requirement										
Detailed Salinity Test (Saturated Paste Extract)										
pH				8.1						
Conductivity				0.92 mmhos/cm						
Sodium				191 ppm			8.320 meq/L			
Potassium				11 ppm			0.269 meq/L			
Calcium				12 ppm			0.608 meq/L			
Magnesium				4 ppm			0.294 meq/L			
SAR				12.39						
SSP				87.65						

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
<http://soiltesting.tamu.edu/webpages/calculator.html>



Report generated for:
Sheldon Hitchcock
Talon LPE Vega 9 Fed #2
408 W Texas Ave
Artesia, NM 88210

Outside TX County
Laboratory Number: 478573
Customer Sample ID: S-1-3'
Crop Grown: NO CROP GIVEN

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: <http://soiltesting.tamu.edu>

Sample received on: 2/27/2017
Printed on: 3/13/2017
Area Represented: not provided

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.
pH	9.0	(5.8)	-	Strongly Alkaline						
Conductivity	245	(-)	umho/cm	None				CL*		Fertilizer Recommended
Nitrate-N	1	(-)	ppm**							
Phosphorus	3	(0)	ppm							
Potassium	112	(0)	ppm							
Calcium	1,522	(180)	ppm							
Magnesium	111	(50)	ppm							
Sulfur	8	(13)	ppm							
Sodium	470	(-)	ppm							
Iron										
Zinc										
Manganese										
Copper										
Boron										
Limestone Requirement										
Detailed Salinity Test (Saturated Paste Extract)										
	pH							8.3		
	Conductivity							0.84	mmhos/cm	
	Sodium							171	ppm	7.447 meq/L
	Potassium							2	ppm	0.061 meq/L
	Calcium							11	ppm	0.542 meq/L
	Magnesium							1	ppm	0.082 meq/L
	SAR							13.33		
	SSP							91.57		

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
<http://soiltesting.tamu.edu/webpages/calculator.html>



Report generated for:
Sheldon Hitchcock
Talon LPE Vega 9 Fed #2
408 W Texas Ave
Artesia, NM 88210

Outside TX County
Laboratory Number: 478574
Customer Sample ID: S-1-4'
Crop Grown: NO CROP GIVEN

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: <http://soiltesting.tamu.edu>

Sample received on: 2/27/2017
Printed on: 3/13/2017
Area Represented: not provided

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.
pH	8.8	(5.8)	-	Strongly Alkaline						
Conductivity	180	(-)	umho/cm	None				CL*		Fertilizer Recommended
Nitrate-N	0	(-)	ppm**							
Phosphorus	3	(0)	ppm							
Potassium	94	(0)	ppm							
Calcium	1,572	(180)	ppm							
Magnesium	85	(50)	ppm							
Sulfur	8	(13)	ppm							
Sodium	303	(-)	ppm							
Iron										
Zinc										
Manganese										
Copper										
Boron										
Limestone Requirement										
Detailed Salinity Test (Saturated Paste Extract)										
pH				7.9						
Conductivity				1.08 mmhos/cm						
Sodium				233 ppm		10.148 meq/L				
Potassium				6 ppm		0.146 meq/L				
Calcium				11 ppm		0.537 meq/L				
Magnesium				3 ppm		0.218 meq/L				
SAR				16.52						
SSP				91.85						

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
<http://soiltesting.tamu.edu/webpages/calculator.html>



Report generated for:
Sheldon Hitchcock
Talon LPE Vega 9 Fed #2
408 W Texas Ave
Artesia, NM 88210

Outside TX County
Laboratory Number: 478575
Customer Sample ID: S-1-5'
Crop Grown: NO CROP GIVEN

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: <http://soiltesting.tamu.edu>

Sample received on: 2/27/2017
Printed on: 3/13/2017
Area Represented: not provided

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	
pH	8.6	(5.8)	-	Mod. Alkaline							
Conductivity	197	(-)	umho/cm	None							
Nitrate-N	1	(-)	ppm**	CL*							
Phosphorus	3	(0)	ppm	Fertilizer Recommended							
Potassium	96	(0)	ppm								
Calcium	3,319	(180)	ppm								
Magnesium	122	(50)	ppm								
Sulfur	11	(13)	ppm								
Sodium	267	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement											
				Detailed Salinity Test (Saturated Paste Extract)							
				pH			7.7				
				Conductivity			1.28 mmhos/cm				
				Sodium			264 ppm		11.509 meq/L		
				Potassium			4 ppm		0.109 meq/L		
				Calcium			28 ppm		1.415 meq/L		
				Magnesium			3 ppm		0.259 meq/L		
				SAR			12.58				
				SSP			86.58				

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
<http://soiltesting.tamu.edu/webpages/calculator.html>



Report generated for:
Sheldon Hitchcock
Talon LPE Vega 9 Fed #2
408 W Texas Ave
Artesia, NM 88210

Outside TX County
Laboratory Number: 478576
Customer Sample ID: S-1-6'
Crop Grown: NO CROP GIVEN

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: <http://soiltesting.tamu.edu>

Sample received on: 2/27/2017
Printed on: 3/13/2017
Area Represented: not provided

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.
pH	8.9	(5.8)	-	Strongly Alkaline						
Conductivity	269	(-)	umho/cm	None				CL*		Fertilizer Recommended
Nitrate-N	0	(-)	ppm**							
Phosphorus	3	(0)	ppm							
Potassium	108	(0)	ppm							
Calcium	2,977	(180)	ppm							
Magnesium	95	(50)	ppm							
Sulfur	14	(13)	ppm							
Sodium	453	(-)	ppm							
Iron										
Zinc										
Manganese										
Copper										
Boron										
Limestone Requirement										
Detailed Salinity Test (Saturated Paste Extract)										
pH				8.0						
Conductivity				1.72 mmhos/cm						
Sodium				330 ppm			14.356 meq/L			
Potassium				4 ppm			0.114 meq/L			
Calcium				12 ppm			0.597 meq/L			
Magnesium				1 ppm			0.121 meq/L			
SAR				23.97						
SSP				94.52						

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
<http://soiltesting.tamu.edu/webpages/calculator.html>



Report generated for:
Sheldon Hitchcock
Talon LPE Vega 9 Fed #2
408 W Texas Ave
Artesia, NM 88210

Outside TX County
Laboratory Number: 478577
Customer Sample ID: S-2 0'

Crop Grown: NO CROP GIVEN

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU

College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)

Visit our website: <http://soiltesting.tamu.edu>

Sample received on: 2/27/2017

Printed on: 3/13/2017

Area Represented: not provided

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.
pH	8.4	(5.8)	-	Mod. Alkaline						
Conductivity	77	(-)	umho/cm	None						
Nitrate-N	1	(-)	ppm**	CL*						
Phosphorus	2	(0)	ppm							
Potassium	74	(0)	ppm							
Calcium	853	(180)	ppm							
Magnesium	44	(50)	ppm							
Sulfur	6	(13)	ppm							
Sodium	14	(-)	ppm							
Iron										
Zinc										
Manganese										
Copper										
Boron										
Limestone Requirement										

Detailed Salinity Test (Saturated Paste Extract)

pH	7.3
Conductivity	0.31 mmhos/cm
Sodium	24 ppm
Potassium	12 ppm
Calcium	32 ppm
Magnesium	3 ppm
SAR	1.08
SSP	32.31

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
<http://soiltesting.tamu.edu/webpages/calculator.html>



Report generated for:
 Sheldon Hitchcock
 Talon LPE Vega 9 Fed #2
 408 W Texas Ave
 Artesia, NM 88210

Outside TX County
 Laboratory Number: 478578
 Customer Sample ID: S-2 /1

Crop Grown: NO CROP GIVEN

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
 Department of Soil and Crop Sciences
 2478 TAMU

College Station, TX 77843-2478
 979-845-4816 (phone)
 979-845-5958 (FAX)

Visit our website: <http://soiltesting.tamu.edu>

Sample received on: 2/27/2017
 Printed on: 3/13/2017
 Area Represented: not provided

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.
pH	8.1	(5.8)	-	Mod. Alkaline						
Conductivity	120	(-)	umho/cm	None						
Nitrate-N	1	(-)	ppm**	CL*						
Phosphorus	2	(0)	ppm							
Potassium	133	(0)	ppm							
Calcium	3,706	(180)	ppm							
Magnesium	102	(50)	ppm							
Sulfur	9	(13)	ppm							
Sodium	13	(-)	ppm							
Iron										
Zinc										
Manganese										
Copper										
Boron										
Limestone Requirement										
				Detailed Salinity Test (Saturated Paste Extract)						
				pH		7.4				
				Conductivity		0.27 mmhos/cm				
				Sodium		31 ppm		1.347 meq/L		
				Potassium		7 ppm		0.175 meq/L		
				Calcium		23 ppm		1.161 meq/L		
				Magnesium		2 ppm		0.183 meq/L		
				SAR		1.64				
				SSP		47.01				

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
<http://soiltesting.tamu.edu/webpages/calculator.html>



Report generated for:
Sheldon Hitchcock
Talon LPE Vega 9 Fed #2
408 W Texas Ave
Artesia, NM 88210

Outside TX County

Laboratory Number: 478580

Customer Sample ID: BG-1 0'

Crop Grown: NO CROP GIVEN

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU

College Station, TX 77843-2478

979-845-4816 (phone)

979-845-5958 (FAX)

Visit our website: <http://soiltesting.tamu.edu>

Sample received on: 2/27/2017

Printed on: 3/13/2017

Area Represented: not provided

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.
pH	8.1	(5.8)	-	Mod. Alkaline						
Conductivity	73	(-)	umho/cm	None						
Nitrate-N	0	(-)	ppm**							
Phosphorus	8	(0)	ppm							
Potassium	112	(0)	ppm							
Calcium	618	(180)	ppm							
Magnesium	54	(50)	ppm							
Sulfur	3	(13)	ppm							
Sodium	2	(-)	ppm							
Iron										
Zinc										
Manganese										
Copper										
Boron										
Limestone Requirement										
				Fertilizer Recommended						

Fertilizer Recommended

Detailed Salinity Test (Saturated Paste Extract)

pH	7.3	
Conductivity	0.15 mmhos/cm	
Sodium	23 ppm	1.009 meq/L
Potassium	11 ppm	0.271 meq/L
Calcium	9 ppm	0.441 meq/L
Magnesium	1 ppm	0.112 meq/L
SAR	1.92	
SSP	55.06	

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
<http://soiltesting.tamu.edu/webpages/calculator.html>