



November 26, 2014

Dr. Thomas Oberding
NMOCD District 2

1625 N. French Dr.
Hobbs, NM 88240

AMARILLO
921 North Bivins
Amarillo, Texas 79107
Phone 806.467.0607
Fax 806.467.0622

Subject: **Soil Assessment and Remediation Work Plan**
Legacy Reserves Operating, LP
West Cap Queen Sand Unit Central Tank Battery
30-005-01100

ARTESIA
408 West Texas Ave.
Artesia, New Mexico 88210
Phone 575.746.8768
Fax 575.746.8905

Dear Dr. Oberding

HOBBS
318 East Taylor Street
Hobbs, New Mexico 88240
Phone 575.393.4261
Fax 575.393.4658

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

Background Information

MIDLAND
2901 State Hwy 349
Midland, Texas 79706
Phone 432.522.2133
Fax 432.522.2180

The Legacy West Cap Queen Sand Unit Central Tank Battery (West Cap CTB) is located approximately 65 miles Northwest of Hobbs, New Mexico. The legal location for this site is Unit Letter O, Section 17, Township 14 South, and Range 31 East in Chaves County, New Mexico. More specifically the latitude and longitude for the release are 33.0991667 North and -103.839515 West. A site plan is presented in Appendix I.

OKLAHOMA CITY
7700 North Hudson Avenue
Suite 10
Oklahoma City, Oklahoma 73116
Phone 405.486.7030
Fax 806.467.0622

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 Faskin Fine Sand. Per the New Mexico Bureau of Geology and Mineral Resources, the local surface and shallow geology is comprised of Holocene to lower Pleistocene Piedmont alluvial deposits. Drainage courses in this area are normally dry. Groundwater in the project vicinity is approximately 200-feet below ground surface (bgs) according to the New Mexico Office of the State Engineer. See Appendix II for the referenced groundwater data.

SAN ANTONIO
13111 Lookout Way
San Antonio, Texas 78233
Phone 210.265.8025
Fax 210.568.2191

The ranking for this site is **0** based on the following:

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

ENVIRONMENTAL CONSULTING
ENGINEERING
DRILLING
CONSTRUCTION
SPILL MANAGEMENT
GENERAL CONTRACTING

Toll Free: 866.742.0742
www.talonlpe.com

Incident Description

Lightning struck one of the fiberglass produced water storage tanks on location resulting in a release of 120bbls of produced water. No fluids were recovered, however all fluids were contained within the berms of the battery. Talon mobilized personnel to conduct a site assessment and soil sampling of the battery. The results of our soil sampling activities are summarized in the table below.

Laboratory Results

See [Appendix III](#) 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	1	ND	2800	ND	1250
S-1	4	--	544	--	--
S-2	0	ND	18400	ND	ND
S-2	1	ND	5680	ND	ND
S-2	2	--	272	--	--
S-2	4	--	672	--	--

(--) Analyte Not Tested

(ND) Analyte Not Detected

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

Proposed Remedial Actions


- The impacted area in the vicinity S-1 will be excavated to a depth of 2-feet bgs. Soil samples will then be collected and tested using the field titration test method for chlorides to guide the excavation process.
- Upon gaining acceptable results from chloride field tests, confirmation samples will be collected and sent to the lab for analysis. NMOCD will be contacted for permission to backfill should analytical results be favorable prior to the 4-foot maximum total depth at sample location S-1.
- The impacted area in the vicinity of S-2 will be excavated to a depth of 2-feet bgs.
- The narrow flow path along the western berm of the battery will be hand excavated to a depth of 2-feet bgs. Care will be taken to insure the structural integrity of the tanks and surrounding equipment.

- All of the excavated material will be hauled to an NMOCD approved solid waste disposal facility.
- The battery will be backfilled with caliche and contoured to match the surrounding location.

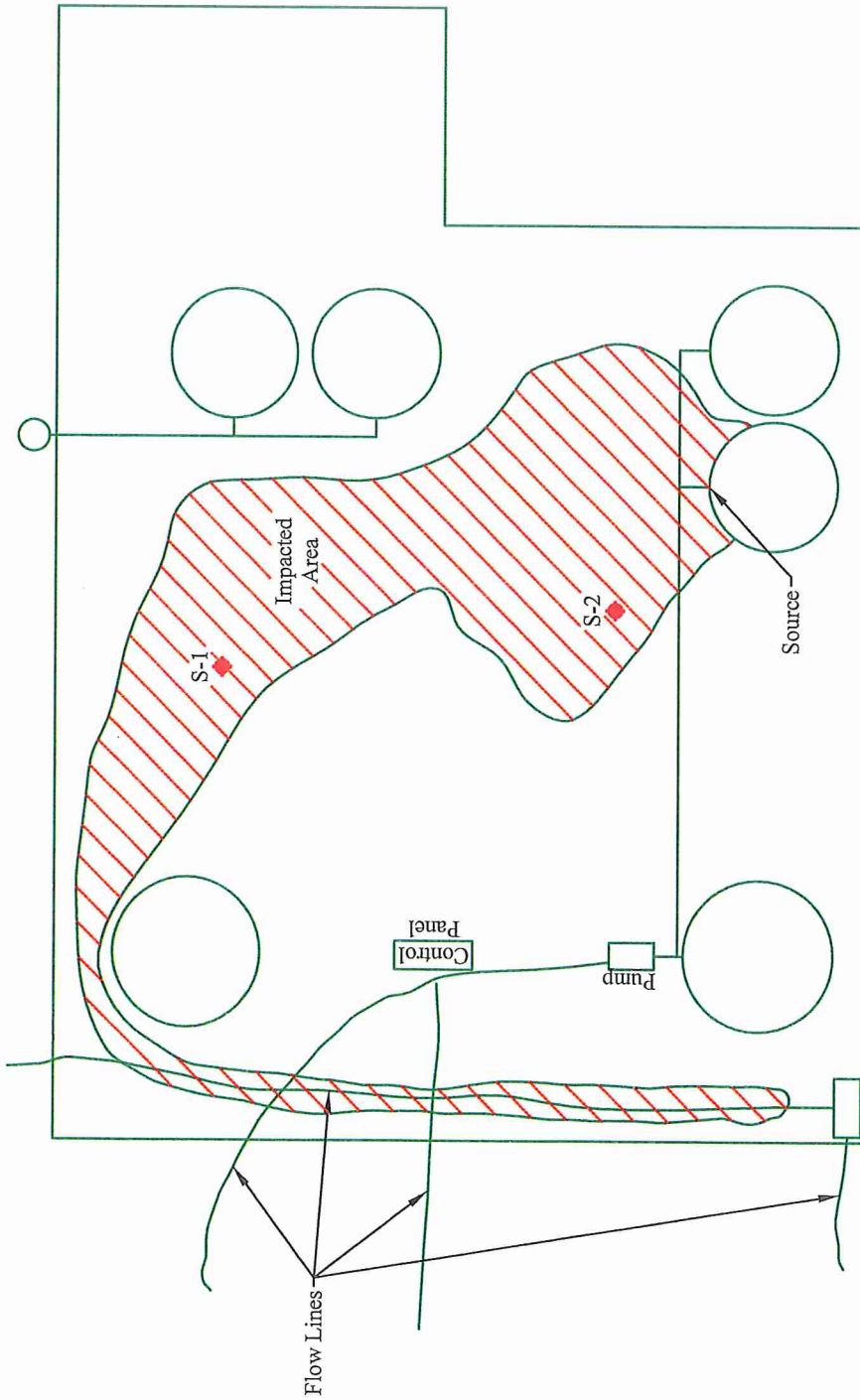
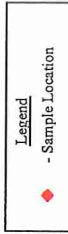
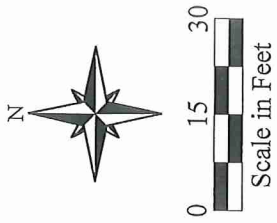
Should you have any questions or if further information is required, please do not hesitate to contact our office at (575)-746-8768.

Respectfully submitted,


Sheldon Hitchcock
Project Manager


David J. Adkins
District Manager

SITE PLAN



West Cap Battery
Legacy Reserves Operating, LP
Chaves County, New Mexico
Figure 1 - Site Plan

Date: 08/15/2014

Scale: 1" = 30'

Drawn By: TJS



GROUNDWATER DATA
INITIAL C-141



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 09984		CH		4	2	2	28	14S	31E	610201	3660615*	2572	350		
L 03583	L	LE		2	4	23	14S	31E	613312	3661566*		4855	292	200	92
L 03583 S2	L	LE		2	4	23	14S	31E	613312	3661566*		4855	340	258	82
L 03583 S	L	LE		2	4	2	23	14S	31E	613406	3662068*	4866	301	275	26

Average Depth to Water: 244 feet

Minimum Depth: 200 feet

Maximum Depth: 275 feet

Record Count: 4

UTMNAD83 Radius Search (in meters):

Easting (X): 608569

Northing (Y): 3662603

Radius: 5000

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

7/21/14 12:48 PM

Page 1 of 1

WATER COLUMN/ AVERAGE
DEPTH TO WATER

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company : Legacy Reserves Operating, LP	Contact : Freddie Gibbs
Address : 303 W. Wall St. Ste 1300, Midland, TX 79701	Telephone No. : 432-221-6369
Facility Name : West Cap Queen Sand Unit #10	Facility Type: Central Tank Battery
Surface Owner : STATE	Mineral Owner:
API #: 30-005-01100	

LOCATION OF RELEASE

Unit Letter O	Section 17	Township 14S	Range 31E	Feet from the	North/South Line	Feet from the	East/West Line	County: CHAVES
------------------	---------------	-----------------	--------------	---------------	------------------	---------------	----------------	----------------

Latitude 33.0991667 N Longitude -103.839515 W

NATURE OF RELEASE

Type of Release : Produced Water	Volume of Release : 120 bbls	Volume Recovered: -0- bbls
Source of Release : Lightening Strike	Date and Hour of Occurrence: 7/20/14	Date and Hour of Discovery: 7/21/14
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Hobbs NMOCD/Tomas Oberding	
By Whom? Sheldon Hitchcock	Date and Hour : 7/21/14 @ 9:43 am	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

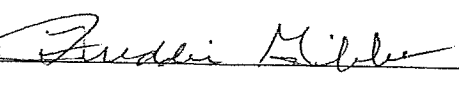
If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* Lightening struck the produced water tank causing a release of 120 barrels. No fluids were recovered. All fluids were contained within the berms of the battery.

Describe Area Affected and Cleanup Action Taken.* The area inside the facility containment was impacted. Talon/LPE was contacted for initial site assessment and soil sampling to generate a 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.

OIL CONSERVATION DIVISION

Signature: 

Printed Name: Freddie Gibbs

Title: Production Superintendent

E-mail Address: fgibbs@legacyp.com

Date: 7/24/14

Phone: 432-221-6369

Approved by District Supervisor:

Approval Date:

Expiration Date:

Conditions of Approval:

Attached ☐

* Attach Additional Sheets If Necessary

LABORATORY RESULTS

August 12, 2014

DAVID ADKINS

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: WEST CAP BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 08/05/14 16:06.

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/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,



Caley D. Keene

Lab Director/Quality Manager

Analytical Results For:

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

Received: 08/05/2014
Reported: 08/12/2014
Project Name: WEST CAP BATTERY
Project Number: 701047.139.01
Project Location: LEGACY

Sampling Date: 07/30/2014
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Kathy Perez

Sample ID: S-1 1' (H402402-01)

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	08/07/2014	ND	1.67	83.7	2.00	9.39		
Toluene*	<0.050	0.050	08/07/2014	ND	1.66	83.1	2.00	9.35		
Ethylbenzene*	<0.050	0.050	08/07/2014	ND	1.65	82.4	2.00	10.7		
Total Xylenes*	<0.150	0.150	08/07/2014	ND	5.41	90.1	6.00	10.9		
Total BTEX	<0.300	0.300	08/07/2014	ND						

Surrogate: 4-Bromofluorobenzene (PII) 103 % 89.4-126

Chloride, SM4500Cl-B			mg/kg Analyzed By: HM							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2800	16.0	08/08/2014	ND	400	100	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	<200	200	08/07/2014	10.9	178	88.8	200	4.58	
DRO >C10-C28	1250	100	08/07/2014	ND	182	90.8	200	7.33	

Surrogate: 1-Chlorooctane 72.4 % 65.2-140

Surrogate: 1-Chlorooctadecane 122 % 63.6-154

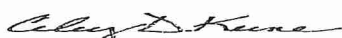
Sample ID: S-1 4' (H402402-02)

Chloride, SM4500Cl-B			mg/kg Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	544	16.0	08/08/2014	ND	400	100	400	0.00	

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
DAVID ADKINS
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received: 08/05/2014
Reported: 08/12/2014
Project Name: WEST CAP BATTERY
Project Number: 701047.139.01
Project Location: LEGACY

Sampling Date: 07/30/2014
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Kathy Perez

Sample ID: S-2 0' (H402402-03)

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	08/07/2014	ND	1.67	83.7	2.00	9.39	
Toluene*	<0.050	0.050	08/07/2014	ND	1.66	83.1	2.00	9.35	
Ethylbenzene*	<0.050	0.050	08/07/2014	ND	1.65	82.4	2.00	10.7	
Total Xylenes*	<0.150	0.150	08/07/2014	ND	5.41	90.1	6.00	10.9	
Total BTEX	<0.300	0.300	08/07/2014	ND					

Surrogate: 4-Bromofluorobenzene (PII) 104 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	18400	16.0	08/08/2014	ND	400	100	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	<100	100	08/07/2014	10.9	178	88.8	200	4.58	
DRO >C10-C28	<50.0	50.0	08/07/2014	ND	182	90.8	200	7.33	

Surrogate: 1-Chlorooctane 73.7 % 65.2-140

Surrogate: 1-Chlorooctadecane 101 % 63.6-154

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
DAVID ADKINS
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received: 08/05/2014
Reported: 08/12/2014
Project Name: WEST CAP BATTERY
Project Number: 701047.139.01
Project Location: LEGACY

Sampling Date: 07/30/2014
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Kathy Perez

Sample ID: S-2 1' (H402402-04)

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	08/07/2014	ND	1.67	83.7	2.00	9.39	
Toluene*	<0.050	0.050	08/07/2014	ND	1.66	83.1	2.00	9.35	
Ethylbenzene*	<0.050	0.050	08/07/2014	ND	1.65	82.4	2.00	10.7	
Total Xylenes*	<0.150	0.150	08/07/2014	ND	5.41	90.1	6.00	10.9	
Total BTEX	<0.300	0.300	08/07/2014	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 102 % 89.4-126

Chloride, SM4500Cl-B		mg/kg	Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5680	16.0	08/08/2014	ND	400	100	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	<20.0	20.0	08/07/2014	10.9	178	88.8	200	4.58	
DRO >C10-C28	<10.0	10.0	08/07/2014	ND	182	90.8	200	7.33	

Surrogate: 1-Chlorooctane 89.0 % 65.2-140

Surrogate: 1-Chlorooctadecane 100 % 63.6-154

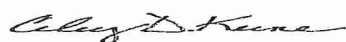
Sample ID: S-2 2' (H402402-05)

Chloride, SM4500Cl-B		mg/kg	Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	08/08/2014	ND	400	100	400	0.00	

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
DAVID ADKINS
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received: 08/05/2014
Reported: 08/12/2014
Project Name: WEST CAP BATTERY
Project Number: 701047.139.01
Project Location: LEGACY

Sampling Date: 07/30/2014
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Kathy Perez

Sample ID: S-2 4' (H402402-06)

Chloride, SM4500Cl-B

mg/kg

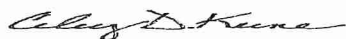
Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	672	16.0	08/08/2014	ND	400	100	400	0.00	

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

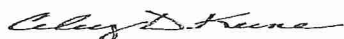
Notes and Definitions

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

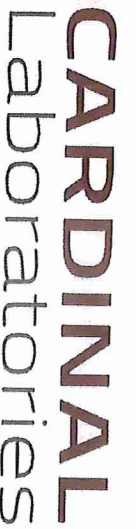
Cardinal Laboratories

*=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

Page 7 of 7