

Basin Environmental Service Technologies, LLC

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REMEDIATION SUMMARY & SITE CLOSURE REQUEST

**Black Mountain Operating, LLC
MADERA 19 FEDERAL #4
Lea County, New Mexico
Unit Letter "N", Section 19, Township 26 South, Range 35 East
Latitude 32.022315° North, Longitude -103.409676° West
NMOCD Reference #: 1RP-4472**

Prepared For:

Black Mountain Operating, LLC
500 Main Street, Suite 500
Fort Worth, TX 76102

Prepared By:

Basin Environmental Service Technologies, LLC
3100 Plains Highway
Lovington, New Mexico 88260

March 2017

Robbie Runnels
Project Manager

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1.0 INTRODUCTION & BACKGROUND INFORMATION

Basin Environmental Service Technologies, LLC (Basin Environmental), on behalf of Black Mountain Operating, LLC (Black Mountain) has prepared this *Remediation Summary & Site Closure Request* for the release site known as the Madera 19 Federal #4H Battery (Madera). The legal description of the release site is Unit Letter "N", Section 19, Township 26 South, Range 35 East, in Lea County, New Mexico. The geographic coordinates of the release site are 32.0224342° North latitude and -103.408783° West longitude. The property affected by the release is owned by the United States Department of the Interior - Bureau of Land Management (BLM). Please reference Figure 1 for a "Site Location Map".

On September 26, 2016, Black Mountain discovered a release at the Madera site of approximately one-hundred eighty (180) barrels (bbls) of crude oil and produced water when the separator had a gasket failure (1RP-4472). Approximately all 180 bbls of the release were recovered as the pooled liquids were contained within the permanent containment area. There was a light spray that impacted an estimated twenty-eight thousand nine hundred twenty-nine (28,929) square feet (ft²) of pasture. The release was later reported to the New Mexico Oil Conservation Division (NMOCD) Hobbs District Office on September 29, 2016 and the "Release Notification and Corrective Action" (Form C-141) was submitted on October 20, 2016.

The Form C-141 is provided for the release as Appendix A. General photographs of the release site are provided in Appendix B.

2.0 NMOCD SITE CLASSIFICATION

A search of the New Mexico Water Rights Reporting System (NMWRRS) database maintained by the New Mexico Office of the State Engineer (NMOSE) indicated no information for Section 19, Township 26 South, Range 35 East. Utilizing WAIDS WELLS information from the nearest wells, groundwater is not anticipated to be encountered at any depth. Based on the NMOCD ranking system, zero (0) points were assigned to the site as a result of this criterion.

A search of the NMWRRS database indicated there are no water wells within one thousand (1,000') feet of the release. Based on the NMOCD ranking system, zero (0) points were assigned to the site as a result of this criterion.

There are no surface water bodies within one thousand feet (1,000') of the release. Based on the NMOCD ranking system, zero (0) points were assigned to the site as a result of this criterion.

NMOCD guidelines indicate the Madera Battery release site has an initial ranking score of zero (0) points. The soil remediation levels for a site with a ranking score of zero (0) points are as follows:

- Benzene – 10 mg/kg (ppm)
- Benzene, ethylbenzene, toluene, and xylenes (BTEX) – 50 mg/kg (ppm)
- Total petroleum hydrocarbons (TPH) – 5,000 mg/kg (ppm)

The New Mexico Administrative Code (NMAC) does not currently specify a remediation level for chloride concentrations in soil. Chloride remediation levels are set by the NMOCD on a site-specific basis.

3.0 SUMMARY OF SOIL REMEDIATION ACTIVITIES

Black Mountain personnel, immediately after discovering the release, began remediation activities in the pasture around September 26, 2016. The top few inches of impacted soil were removed and taken to an NMOCD approved facility for disposal.

Basin personnel were on site beginning January 24, 2017 to begin sampling and delineation activities. Initial samples taken with depth were retrieved and submitted to a certified NMOCD approved commercial laboratory for initial analysis of chloride concentration utilizing method SM4500Cl-B. Gasoline range organics (GRO) and diesel range organics (DRO) were analyzed utilizing method TPH 8015M. Benzene, toluene, ethylbenzene and xylenes (BTEX) were analyzed utilizing method BTEX 8021B. An “Initial Sample Location Map” is provided as Figure 2. Laboratory analytical reports are provided as Appendix C.

The impacted area was not actionable in that all discrete samples obtained did not exhibit a concentration above the recommended remediation action level (RRAL). Laboratory results confirm that delineation was achieved.

The release site will be contoured to the surrounding area and seeded with a native blend of vegetation free from invasive and noxious species at such time it is conducive for germination.

Table 1 summarizes the “Concentrations of BTEX, TPH & Chloride in Soil”.

4.0 QA/QC PROCEDURES

4.1 Soil Sampling

Soil samples were delivered to Cardinal Laboratories in Hobbs, New Mexico, for TPH, and/or chloride analysis using the methods described below:

- TPH concentrations in accordance with EPA Method SW-846 8015M
- Chloride concentrations in accordance with EPA Methods 4500 Cl-B

4.2 Decontamination of Equipment

Cleaning of the sampling equipment was the responsibility of the environmental technician. Prior to use, and between each sample, the sampling equipment was cleaned with Liqui-Nox® detergent and rinsed with distilled water.

4.3 Laboratory Protocol

The laboratory was responsible for proper QA/QC procedures after signing the chain-of-custody form(s). These procedures were either transmitted with the laboratory reports or are on file at the laboratory.

5.0 SITE CLOSURE REQUEST

Soil samples collected from the Madera 19 Federal #4 Battery excavation were analyzed by an NMOCD-approved laboratory, and concentrations of benzene, BTEX, and TPH were below the regulatory remediation action levels established for the site by the NMOCD.

Basin Environmental recommends Black Mountain Operating, LLC provide the NMOCD Hobbs District Office a copy of this *Remediation Summary & Site Closure Request* and request the NMOCD grant site closure to the Madera 19 Federal #4 Battery release site.

6.0 LIMITATIONS

Basin Environmental Service Technologies, LLC, has prepared this *Remediation Summary & Site Closure Request* to the best of its ability. No other warranty, expressed or implied, is made or intended. Basin Environmental has examined and relied upon documents referenced in the report and on oral statements made by certain individuals. Basin Environmental has not conducted an independent examination of the facts contained in referenced materials and statements. Basin Environmental has presumed the genuineness of these documents and statements and that the information provided therein is true and accurate. Basin Environmental has prepared this report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. Basin Environmental notes that the facts and conditions referenced in this report may change over time, and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

This report has been prepared for the benefit of Black Mountain Operating, LLC. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of Basin Environmental Service Technologies, LLC, and/or Black Mountain Operating, LLC.

7.0 DISTRIBUTION:

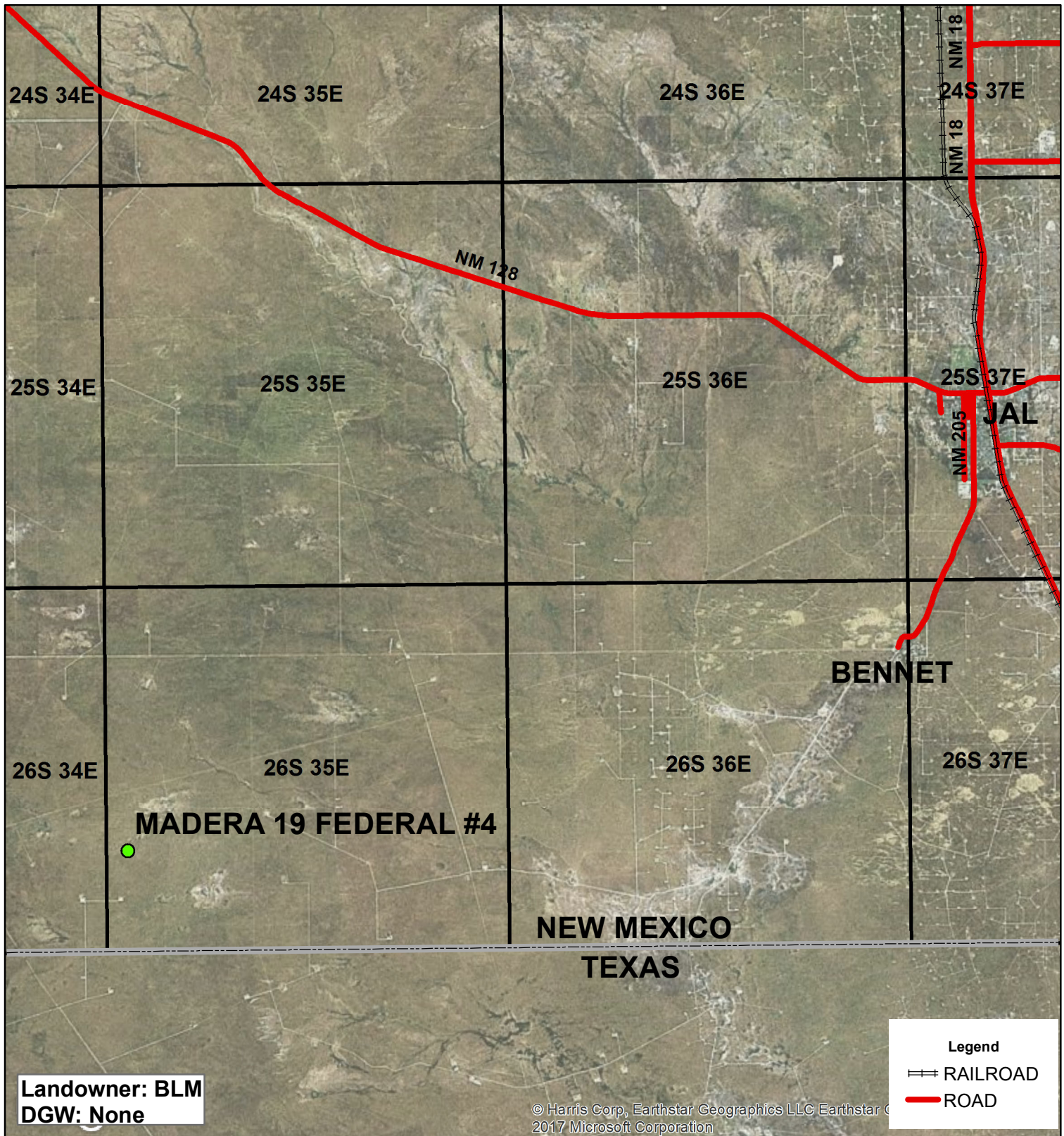
Copy 1: Olivia Yu
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division (District 1)
1625 N. French Drive
Hobbs, NM 88240

Copy 2: Henryetta Price
Environmental Protection Specialist
Bureau of Land Management
620 E. Green St.
Carlsbad, NM 88220

Copy 3: Basin Environmental Service Technologies, LLC
P.O. Box 301
Lovington, NM 88260

FIGURES

Geographic Location



**BLACK MOUNTAIN
OPERATING
MADERA 19 FEDERAL #4**

**UL N SECTION 19
T-26-S R-35-E
LEA COUNTY, NM**

GPS: 32.022315 -103.409676

Figure 1

0 1 2
Miles

Drawing date: 1/27/17
Drafted by: T. Grieco



Initial Sampling

Sample Point 1

Depth	Cl-	GRO	DRO	B	T	E	X	Total
Surface	32	<10	754	<0.05	<0.05	<0.05	<0.15	<0.3
1'	272	<10	<10					
2'	160							

Sample Point 2

Depth	Cl-	GRO	DRO
Surface	16	<10	43.9
1'	64	<10	10.1
2'	400		
3'	256		
4'	64		

Sample Point 3

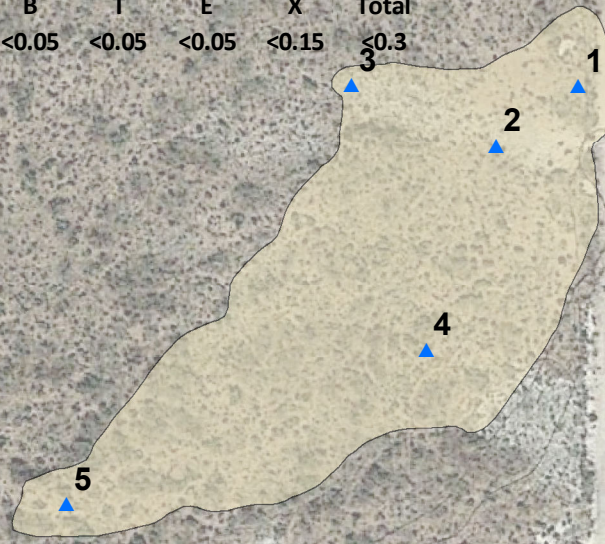
Depth	Cl-	GRO	DRO	B	T	E	X	Total
Surface	32	<10	12.5	<0.05	<0.05	<0.05	<0.15	<0.3
1'	<16	<10	12.6					
2'	<16							

Sample Point 4

Depth	Cl-	GRO	DRO
Surface	<16	<10	<10
1'	<16	<10	<10
2'	<16		

Sample Point 5

Depth	Cl-	GRO	DRO
Surface	<16	<10	<10
1'	<16	<10	<10



Landowner: BLM
DGW: None

Imagery date: 11/20/15

Legend

- ▲ SAMPLE POINT
- STAIN - 28,929 SQ FT



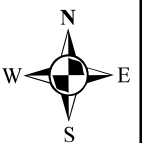
**BLACK MOUNTAIN
OPERATING
MADERA 19 FEDERAL #4**

**UL N SECTION 19
T-26-S R-35-E
LEA COUNTY, NM**

GPS: 32.022315 -103.409676

0 50 100
Feet

GPS date: 1/24/17 RR
Drawing date: 1/26/17
Drafted by: T. Grieco



TABLES

TABLE 1
CONCENTRATIONS OF BTEX, TPH & CHLORIDE IN SOIL

BLACK MOUNTAIN OPERATING, LLC
MADERA 19 FEDERAL #4
LEA COUNTY, NEW MEXICO
1RP - 4472

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	METHOD: EPA SW 846-8021B, 5030							METHOD: 8015M			TPH C ₆ -C ₃₅ (mg/Kg)	4500 CI-B
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL-BENZENE (mg/Kg)	M.P. -XYLENES (mg/Kg)	O-XYLENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO C ₆ -C ₁₂ (mg/Kg)	DRO C ₁₂ -C ₂₈ (mg/Kg)	ORO C ₂₈ -C ₃₅ (mg/Kg)		CHLORIDE (mg/Kg)
SP1 @ Surface	0.1'	1/24/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.150	<0.150	<0.300	<10.0	754	-	754	32
SP1 @ 1'	1'	1/24/2017	In-Situ	-	-	-	-	-	-	-	<10.0	<10.0	-	<10.0	272.0
SP1 @ 2'	2'	1/24/2017	In-Situ	-	-	-	-	-	-	-	-	-	-	-	160.0
SP2 @ Surface	0.1'	1/24/2017	In-Situ	-	-	-	-	-	-	-	<10.0	43.9	-	43.9	16.0
SP2 @ 1'	1'	1/24/2017	In-Situ	-	-	-	-	-	-	-	<10.0	10.1	-	10.1	64.0
SP2 @ 2'	2'	1/24/2017	In-Situ	-	-	-	-	-	-	-	-	-	-	-	400.00
SP2 @ 3'	3'	1/24/2017	In-Situ	-	-	-	-	-	-	-	-	-	-	-	256.0
SP2 @ 4'	4'	1/24/2017	In-Situ	-	-	-	-	-	-	-	-	-	-	-	64.0
SP3 @ Surface	0.1'	1/24/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.150	<0.150	<0.300	<10.0	12.5	-	12.5	32.0
SP3 @ 1'	1'	1/24/2017	In-Situ	-	-	-	-	-	-	-	<10.0	12.6	-	12.6	<16.0
SP3 @ 2'	2'	1/24/2017	In-Situ	-	-	-	-	-	-	-	-	-	-	-	<16.0
SP4 @ Surface	0.1'	1/24/2017	In-Situ	-	-	-	-	-	-	-	<10.0	<10.0	-	<10.0	<16.0
SP4 @ 1'	1'	1/24/2017	In-Situ	-	-	-	-	-	-	-	<10.0	<10.0	-	<10.0	<16.0
SP4 @ 2'	2'	1/24/2017	In-Situ	-	-	-	-	-	-	-	-	-	-	-	<16.0
SP5 @ Surface	0.1'	1/24/2017	In-Situ	-	-	-	-	-	-	-	<10.0	<10.0	-	<10.0	<16.0
SP5 @ 1'	1'	1/24/2017	In-Situ	-	-	-	-	-	-	-	<10.0	<10.0	-	<10.0	<16.0
SP5 @ 2'	2'	1/24/2017	In-Situ	-	-	-	-	-	-	-	-	-	-	-	<16.0
NMOCD Recommended Remediation Action Level				10						50				5,000	1,000

- = Not analyzed.

APPENDICES

APPENDIX – A

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

Form C-141
Revised August 8, 2011

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

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: Black Mountain Operating LLC	Contact: John Wierzowiecki
Address: 500 Main St., Suite 500 Ft. Worth, TX 76102	Telephone No. 817-529-9472
Facility Name: Madera 19 Federal #4	Facility Type: Tank Battery

Surface Owner: BLM	Mineral Owner: BLM	API No. 30-025-41492
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LOCATION OF RELEASE

Unit Letter N	Section 19	Township 26 South	Range 35 East	Feet from the 330	North/South Line South	Feet from the 1980	East/West Line West	County Lea
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Latitude 32.0224342 Longitude -103.408783

NATURE OF RELEASE

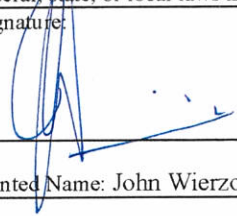
Type of Release: Crude and Produced Water	Volume of Release: 180 bbls	Volume Recovered: 180 bbls
Source of Release: Separator cleanout gasket failure	Date and Hour of Occurrence: 9/25/16	Date and Hour of Discovery: 9/26/16 @ 11:30
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Jim Amos and Shelly Tucker	
By Whom? John Wierzowiecki	Date and Hour: 9/29/16 @ 15:30	
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.*
Gasket at separator failed. Gasket and back-pressure valve were replaced.

Describe Area Affected and Cleanup Action Taken.*
Vacuum trucks were dispatched to collect pooled liquids. Pasture area impacted by release was excavated approximately 1-2 inches. Impacted soils were removed and disposed of at a proper facility. Analytical results, taken at depth, indicate that no contaminants remain. Pasture area will be reseeded at a time conducive for germination.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	OIL CONSERVATION DIVISION	
Printed Name: John Wierzowiecki	Approved by Environmental Specialist:	
Title: Operations Manager	Approval Date:	Expiration Date:
E-mail Address: JohnWierzowiecki@blackmtn.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 9/28/2017 Phone: 817-529-9472		

* Attach Additional Sheets If Necessary

APPENDIX – B

Photo Documentation

Madera 19 Federal #4

Unit Letter N, Section 19, T26S, R35E



Final overspray removal, facing southwest 1/24/17



Final overspray removal, facing east 1/24/17



Final overspray removal, facing northeast 1/24/17



Final overspray removal, facing southeast 1/24/17

APPENDIX – C

Analytical Reports



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

January 31, 2017

ROBBIE RUNNELS

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: MADERA 19 FEDERAL #4

Enclosed are the results of analyses for samples received by the laboratory on 01/25/17 14:55.

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,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

Basin Environmental Service
ROBBIE RUNNELS
P.O. Box 301
Lovington NM, 88260
Fax To: (575) 396-1429

Received:	01/25/2017	Sampling Date:	01/24/2017
Reported:	01/31/2017	Sampling Type:	Soil
Project Name:	MADERA 19 FEDERAL #4	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Celey D. Keene
Project Location:	LEA COUNTY, NM		

Sample ID: SP 1 @ SURFACE (H700189-01)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/31/2017	ND	1.93	96.7	2.00	0.0680	
Toluene*	<0.050	0.050	01/31/2017	ND	1.95	97.5	2.00	0.0817	
Ethylbenzene*	<0.050	0.050	01/31/2017	ND	2.01	100	2.00	0.340	
Total Xylenes*	<0.150	0.150	01/31/2017	ND	5.70	95.1	6.00	0.184	
Total BTX	<0.300	0.300	01/31/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 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	01/30/2017	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	01/27/2017	ND	194	97.2	200	1.07	
DRO >C10-C28	754	10.0	01/27/2017	ND	221	111	200	0.0303	

Surrogate: 1-Chlorooctane 90.0 % 35-147

Surrogate: 1-Chlorooctadecane 96.5 % 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:

Basin Environmental Service
ROBBIE RUNNELS
P.O. Box 301
Lovington NM, 88260
Fax To: (575) 396-1429

Received:	01/25/2017	Sampling Date:	01/24/2017
Reported:	01/31/2017	Sampling Type:	Soil
Project Name:	MADERA 19 FEDERAL #4	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Celey D. Keene
Project Location:	LEA COUNTY, NM		

Sample ID: SP 1 @ 1' (H700189-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	272	16.0	01/30/2017	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	01/27/2017	ND	194	97.2	200	1.07		
DRO >C10-C28	<10.0	10.0	01/27/2017	ND	221	111	200	0.0303		
<hr/>										
Surrogate: 1-Chlorooctane	94.7 %	35-147								
Surrogate: 1-Chlorooctadecane	101 %	28-171								

Sample ID: SP 1 @ 2' (H700189-03)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	01/30/2017	ND	448	112	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:

Basin Environmental Service
ROBBIE RUNNELS
P.O. Box 301
Lovington NM, 88260
Fax To: (575) 396-1429

Received:	01/25/2017	Sampling Date:	01/24/2017
Reported:	01/31/2017	Sampling Type:	Soil
Project Name:	MADERA 19 FEDERAL #4	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Celey D. Keene
Project Location:	LEA COUNTY, NM		

Sample ID: SP 2 @ SURFACE (H700189-04)

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	01/30/2017	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	01/27/2017	ND	194	97.2	200	1.07	
DRO >C10-C28	43.9	10.0	01/27/2017	ND	221	111	200	0.0303	
Surrogate: 1-Chlorooctane		90.1 %	35-147						
Surrogate: 1-Chlorooctadecane		99.3 %	28-171						

Sample ID: SP 2 @ 1' (H700189-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	01/30/2017	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	01/27/2017	ND	194	97.2	200	1.07	
DRO >C10-C28	10.1	10.0	01/27/2017	ND	221	111	200	0.0303	
Surrogate: 1-Chlorooctane	91.0 %	35-147							
Surrogate: 1-Chlorooctadecane	94.4 %	28-171							

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

Basin Environmental Service
ROBBIE RUNNELS
P.O. Box 301
Lovington NM, 88260
Fax To: (575) 396-1429

Received:	01/25/2017	Sampling Date:	01/24/2017
Reported:	01/31/2017	Sampling Type:	Soil
Project Name:	MADERA 19 FEDERAL #4	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Celey D. Keene
Project Location:	LEA COUNTY, NM		

Sample ID: SP 2 @ 2' (H700189-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	400	16.0	01/30/2017	ND	448	112	400	0.00		

Sample ID: SP 2 @ 3' (H700189-07)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	256	16.0	01/30/2017	ND	448	112	400	0.00		

Sample ID: SP 2 @ 4' (H700189-08)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	01/30/2017	ND	416	104	400	3.77	

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ROBBIE RUNNELS
P.O. Box 301
Lovington NM, 88260
Fax To: (575) 396-1429

Received:	01/25/2017	Sampling Date:	01/24/2017
Reported:	01/31/2017	Sampling Type:	Soil
Project Name:	MADERA 19 FEDERAL #4	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Celey D. Keene
Project Location:	LEA COUNTY, NM		

Sample ID: SP 3 @ SURFACE (H700189-09)

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	01/31/2017	ND	1.93	96.7	2.00	0.0680	
Toluene*	<0.050	0.050	01/31/2017	ND	1.95	97.5	2.00	0.0817	
Ethylbenzene*	<0.050	0.050	01/31/2017	ND	2.01	100	2.00	0.340	
Total Xylenes*	<0.150	0.150	01/31/2017	ND	5.70	95.1	6.00	0.184	
Total BTX	<0.300	0.300	01/31/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	01/30/2017	ND	416	104	400	3.77	

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	01/27/2017	ND	194	97.2	200	1.07	
DRO >C10-C28	12.5	10.0	01/27/2017	ND	221	111	200	0.0303	

Surrogate: 1-Chlorooctane 96.6 % 35-147

Surrogate: 1-Chlorooctadecane 103 % 28-171

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ROBBIE RUNNELS
P.O. Box 301
Lovington NM, 88260
Fax To: (575) 396-1429

Received:	01/25/2017	Sampling Date:	01/24/2017
Reported:	01/31/2017	Sampling Type:	Soil
Project Name:	MADERA 19 FEDERAL #4	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Celey D. Keene
Project Location:	LEA COUNTY, NM		

Sample ID: SP 3 @ 1' (H700189-10)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/30/2017	ND	416	104	400	3.77	
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	01/27/2017	ND	194	97.2	200	1.07	
DRO >C10-C28	12.6	10.0	01/27/2017	ND	221	111	200	0.0303	
Surrogate: 1-Chlorooctane	99.6 %	35-147							
Surrogate: 1-Chlorooctadecane	107 %	28-171							

Sample ID: SP 3 @ 2' (H700189-11)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	01/30/2017	ND	416	104	400	3.77		

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ROBBIE RUNNELS
P.O. Box 301
Lovington NM, 88260
Fax To: (575) 396-1429

Received:	01/25/2017	Sampling Date:	01/24/2017
Reported:	01/31/2017	Sampling Type:	Soil
Project Name:	MADERA 19 FEDERAL #4	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Celey D. Keene
Project Location:	LEA COUNTY, NM		

Sample ID: SP 4 @ SURFACE (H700189-12)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/30/2017	ND	416	104	400	3.77	
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	01/27/2017	ND	194	97.2	200	1.07	
DRO >C10-C28	<10.0	10.0	01/27/2017	ND	221	111	200	0.0303	
Surrogate: 1-Chlorooctane	96.7 %	35-147							
Surrogate: 1-Chlorooctadecane	93.8 %	28-171							

Sample ID: SP 4 @ 1' (H700189-13)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/30/2017	ND	416	104	400	3.77	
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	01/27/2017	ND	194	97.2	200	1.07	
DRO >C10-C28	<10.0	10.0	01/27/2017	ND	221	111	200	0.0303	
Surrogate: 1-Chlorooctane	93.8 %	35-147							
Surrogate: 1-Chlorooctadecane	102 %	28-171							

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Lovington NM, 88260
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Received:	01/25/2017	Sampling Date:	01/24/2017
Reported:	01/31/2017	Sampling Type:	Soil
Project Name:	MADERA 19 FEDERAL #4	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Celey D. Keene
Project Location:	LEA COUNTY, NM		

Sample ID: SP 4 @ 2' (H700189-14)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	01/30/2017	ND	416	104	400	3.77		

Sample ID: SP 5 @ SURFACE (H700189-15)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	01/30/2017	ND	416	104	400	3.77		

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	01/27/2017	ND	194	97.2	200	1.07	
DRO >C10-C28	<10.0	10.0	01/27/2017	ND	221	111	200	0.0303	

Surrogate: 1-Chlorooctane 105 % 35-147

Surrogate: 1-Chlorooctadecane 93.5 % 28-171

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Analytical Results For:

 Basin Environmental Service
 ROBBIE RUNNELS
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	01/25/2017	Sampling Date:	01/24/2017
Reported:	01/31/2017	Sampling Type:	Soil
Project Name:	MADERA 19 FEDERAL #4	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Celey D. Keene
Project Location:	LEA COUNTY, NM		

Sample ID: SP 5 @ 1' (H700189-16)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/30/2017	ND	416	104	400	3.77	
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	01/27/2017	ND	194	97.2	200	1.07	
DRO >C10-C28	<10.0	10.0	01/27/2017	ND	221	111	200	0.0303	
Surrogate: 1-Chlorooctane		95.0 %	35-147						
Surrogate: 1-Chlorooctadecane		80.2 %	28-171						

Sample ID: SP 5 @ SURFACE (H700189-17)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	01/30/2017	ND	416	104	400	3.77		

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Notes and Definitions

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

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