M & M EXCAVATING, INC.
PO Box 1120
Carlsbad, New Mexico 88221
Phone (575) 236-6600

June 10, 2019

NMOCD District 2
Mr. Robert Hamlet
811 S. First Street
Artesia, New Mexico 88210

Dear Mr. Hamlet:

M&M Excavating, Inc. (MMX) has prepared this Remediation Closure Report for Devon Energy Production Company that describes the remediation of a release of liquids at the Cactus State #009. site. The site is in Unit O, Section 16, Township 21S, Range 26E, Latitude 32.20931, Longitude -103.70375, Eddy County, New Mexico, on State land. Figure 1 provides the vicinity and site location on an USGS 7.5-minute quadrangle map.

Site Information and Closure Criteria

The Cactus State #009. is located approximately twenty (20) miles east of Malaga, New Mexico on State land at an elevation of approximately 3,575 feet above mean sea level (amsl).

Based upon well water data. (Appendix B), depth to groundwater in the area is estimated to be 150 feet below grade surface (bgs). There are no known water wells within ½ mile of the location, according to the New Mexico Office of the State Engineer (NMOSE) and USGS. The nearest significant watercourse is the Calabaza Draw located approximately 1,200 feet to the south.

The site is in an area identified as high karst and has therefor been remediated to the applicable NMOCD Closure Criteria for groundwater less than 50 feet bgs. The site has been restored to meet the standards of Table I of 19.15.29.12 NMAC.

Table 2 demonstrates the Closure Criteria applicable to this location. Pertinent well data is attached in Appendix B.

Release Information and Closure Criteria			
Name	Cactus State #009		
API Number	30-015-28496		
Incident Number	2RP-5369		
Source of Release	Frac tank Hauler		
Released Material	Produced Water	Released Volume	15 BBLS
Recovered Volume	0 BBLS	Net Release	15BBLS
NMOCD Closure Criteria	<50 feet to groundwater		

Release Information

On January 23, 2019, a release was discovered at the Cactus State #009 site due to a frac tank hauler releasing fluids from a water tank onto location and adjacent pasture. Initial response activities were conducted by the operator and included source elimination and site containment. Figure 1 illustrates the vicinity and site location. Figure 2 illustrates the release location. The C-141 form is included in Appendix A.

Release Characterization and Remediation Activities

On January 24, 2019, MMX personnel arrived on site in response to the release associated with Cactus State #009. MMX collected initial soil samples around the release site and throughout the visibly stained area. A total of seven (7) samples (S1-S7), were collected for laboratory analysis for total chloride using EPA Method 300.0; benzene, toluene, ethylbenzene and total xylenes (BTEX) using EPA Method 8021B; and motor, diesel and gasoline range organics (MRO, DRO, and GRO) by EPA Method 8015D.

As summarized in Table 3, TPH and chloride results exceeded Closure Criteria. MMX proceeded to excavate the identified impacted area.

On February 6, 2019, MMX collected confirmation samples of the walls and base of the excavation. Confirmation samples (S1-S7) were comprised of five-point composites. A total of eight (8) samples were collected for laboratory analysis using the methods listed above. Samples were placed into laboratory supplied glassware, labeled, and maintained on ice until delivery to Cardinal Laboratories in Hobbs, New Mexico (Appendix C).

Sample S4 exceeded Closure Criteria for TPH. MMX returned to site on May 31, 2019 to continue excavation to five (5) feet bgs. A confirmation sample (S4), was collected and analyzed using the methods listed above. Figure 3 shows the final extent of the excavation and sample locations.

Final Laboratory results are summarized in Table 3. All Laboratory reports are included in Appendix C.

Contaminated soils were removed and replaced with clean backfill material to return the surface to previous contours. The contaminated soil was transported and disposed of at an NMOCD permitted disposal facility. Georeferenced photos are included in Appendix D.

On behalf of Devon Energy, MMX requests closure for the release associated with 2RP-5369.

Submitted by:
M&M Excavating, Inc.

Lupe Carrasco

Lupe Carrasco

ATTACHMENTS:

Figures:

Figure 1: Vicinity and Well Head Protection Map
Figure 2: Surface Water Radius Map
Figure 3: Site and Sample Location Map

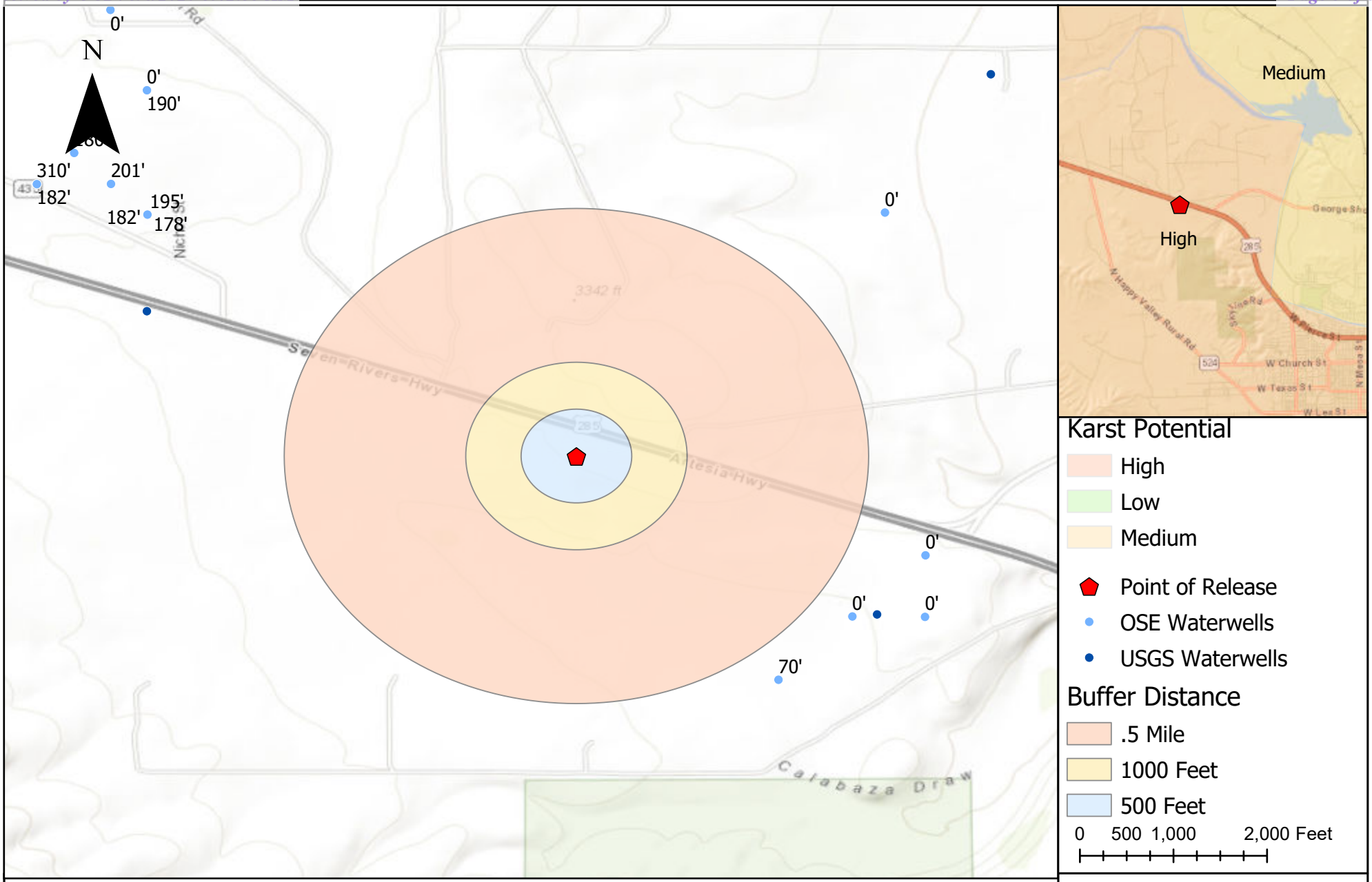
Tables:

Table 2: NMOCD Closure Criteria Justification
Table 3: Summary of Sample Results

Appendices:

Appendix A: Form C-141
Appendix B: Water Well Data
Appendix C: Laboratory Analytical Reports
Appendix D: Photo Log

Figures



Regional Vicinity & Wellhead Protection Map
Cactus State #9 - Devon Energy
Sec 16 T21S R26E Eddy County, New Mexico

Figure 1

P:\5-MM Excavating (5128335)\GIS\ARCGIS\MMX_MIT.aprx

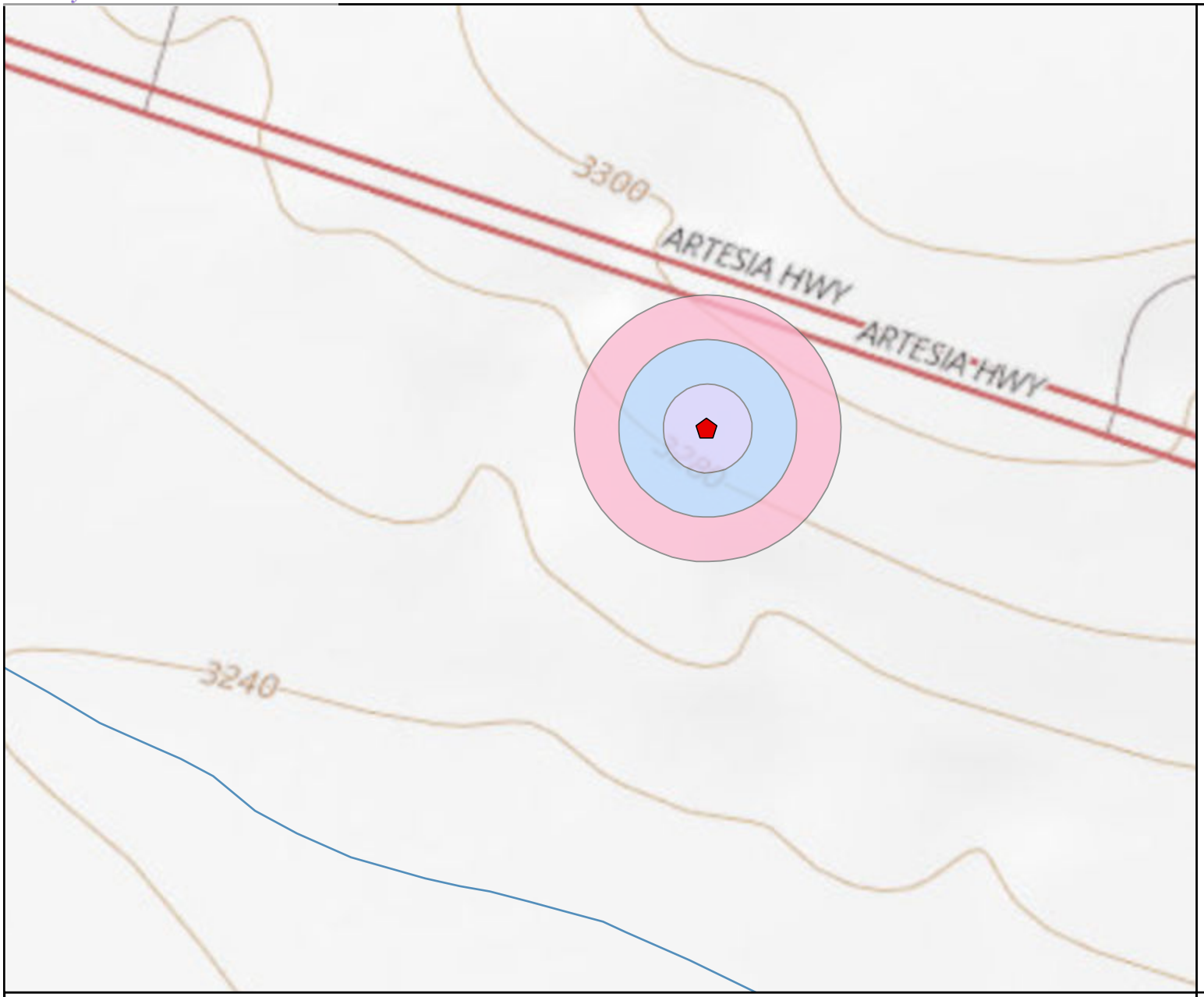
Date Saved: 5/27/2019

Revisions
By: Date: Descr:
By: Date: Descr:

Drawn LC
Date 5/27/2019
Checked
Approved

M&M EXCAVATING, INC.

78 Roberson Rd
Carlsbad, NM 88220
(575) 230-6600



Point of Release
Springs Seeps
Streams Canals
Rivers
NM Wetlands
Lakes Playas
FEMA Flood Zones 2011

Buffer Distance
100 Feet
200 Feet
300 Feet
Release Area

N

0 425 850 1,700 Feet

Surface Water Protection Map
Cactus State #9 - Devon Energy
Sec 16 T21S R26E Eddy County, New Mexico

Figure 2

P:\5-MM Excavating (5128335)\GIS\ARCGIS\MMX_MIT.aprx

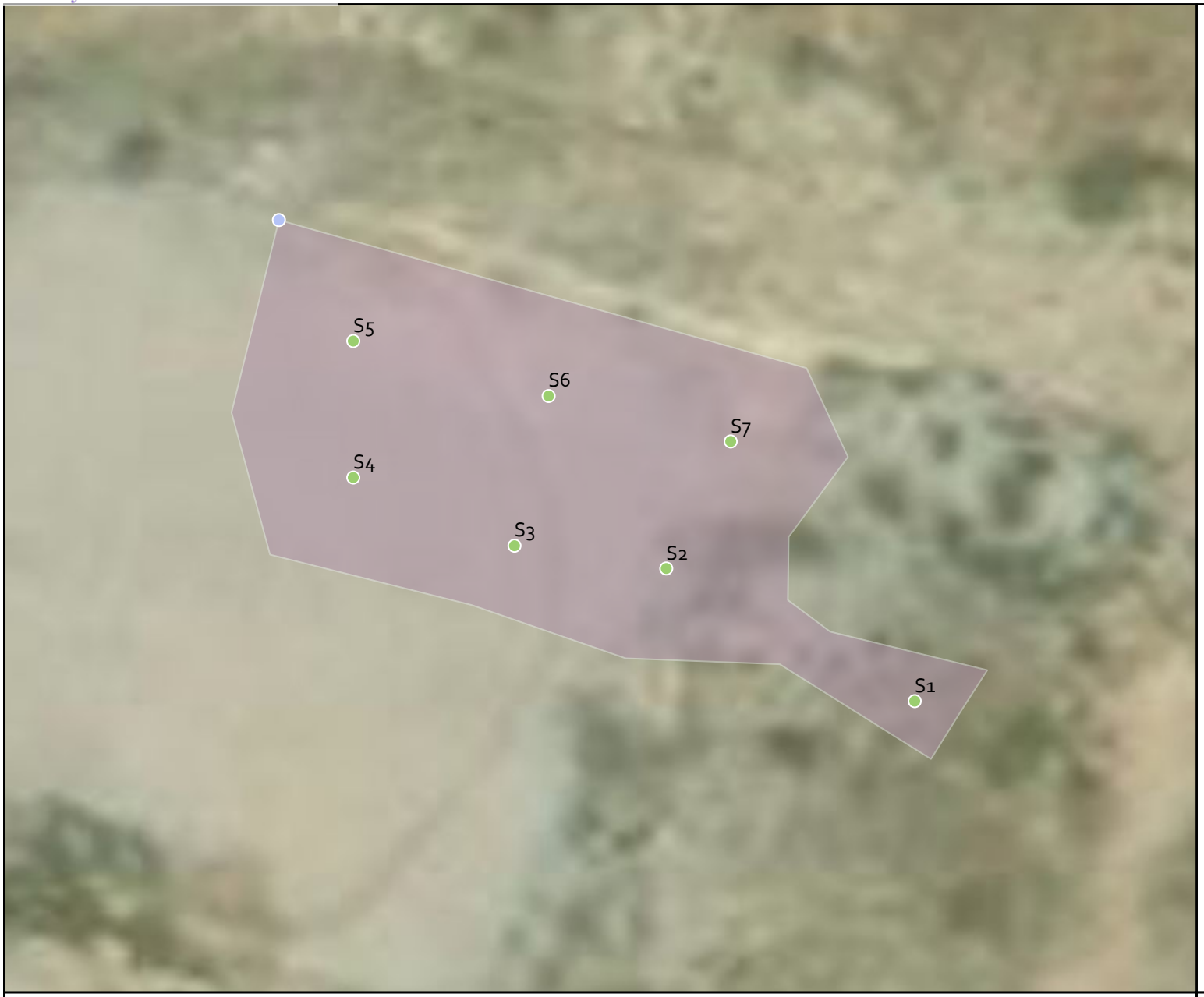
Date Saved: 5/27/2019

Revisions
By: Date: Descr:
By: Date: Descr:

Drawn LC
Date 5/27/2019
Checked
Approved

M&M EXCAVATING, INC.

78 Roberson Rd
Carlsbad, NM 88220
(575) 236-6600



Release Area
Point of Release
Sample Locations

N

33
Feet

Site & Sample Locations
Cactus State #9 - Devon Energy
Sec 16 T21S R26E Eddy County, New Mexico

Figure 3

P:\5-MM Excavating (5128335)\GIS\ARCGIS\MMX_MIT.aprx

Date Saved: 5/27/2019

Revisions
By: Date: Descr:
By: Date: Descr:

Drawn LC
Date 5/27/2019
Checked
Approved

M&M EXCAVATING, INC.

78 Roberson Rd
Carlsbad, NM 88220
(575) 236-6600

Tables

Table 2: NMOCD Closure Criteria

Cactus State #009
Devon Energy Production Company
2RP-5369

Site Information (19.15.29.11.A(2, 3, and 4) NMAC)			Source/Notes
Depth to Groundwater (feet bgs)	150-170		NMOSE & USGS
Hortizontal Distance From All Water Sources Within 1/2 Mile (ft)	N/A		
Hortizontal Distance to Nearest Significant Watercourse (ft)	1200'		North of the Calabaza Draw

Closure Criteria (19.15.29.12.B(4) and Table 1 NMAC)							
Depth to Groundwater			Closure Criteria (units in mg/kg)				
			Chloride *numerical limit or background, whichever is greater	TPH	GRO + DRO	BTEX	Benzene
Less than 50' BGS			600	100		50	10
51' to 100'			10000	2500	1000	50	10
Greater than 100'	X		20000	2500	1000	50	10
Surface Water	Yes	No	if yes, then				
Less than 300' from continuously flowing watercourse or other significant watercourse?		X	600	100		50	10
Less than 200' from lakebed, sinkhole or playa lake?		X					
Water Well or Water Source							
Less than 500 feet from spring or a private, domestic fresh water well used by less than 5 households for domestic or stock watering purposes?		X					
Less than 1000' from fresh water well or spring?		X					
Human and Other Areas							
Less than 300' from an occupied permanent residence, school, hospital, institution or church?		X					
Within incorporated municipal boundaries or within a defined municipal fresh water well field?		X					
Less than 100' from wetland?		X					
Within area overlying a subsurface mine		X					
Within an unstable area?	High Karst						
Within a 100-year floodplain?		X					

M & M EXCAVATING, INC.

Table 3: Summary of Sample Results

Cactus State #009
Devon Energy Production Company
2RP-5369

Sample ID	Sample Date	Depth (feet bgs)	BTEX mg/Kg	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	Total TPH mg/Kg	Cl- mg/Kg
NMOCD Closure Criteria			50	10				100	600
S1	1/24/2019	Surface	<0.300	<0.050	<10.0	163	36.9	199.9	175
	2/6/2019	1	<0.300	<0.050	<10.0	11.4	<10.0	11.4	32.0
S2	1/24/2019	Surface	1.53	<0.050	165	4,800	946	5,911	304
	2/7/2019	1	<0.300	<0.050	<10.0	<10.0	<10.0	<30.0	32
S3	1/24/2019	Surface	<0.300	<0.050	<10.0	412	140	552	144
	2/6/2019	1	<0.300	<0.050	<10.0	<10.0	<10.0	<30.0	48.0
S4	1/24/2019	Surface	0.313	<0.050	16.6	5,000	4,180	9,196.6	19,200
	2/6/2019	3	<0.300	<0.050	<10.0	710	121	831.0	96.0
	2/6/2019	4	<0.300	<0.050	<10.0	490	90	579.7	64.0
	5/31/2019	5	<0.300	<0.050	<10.0	<10.0	<10.0	<30.0	32.0
S5	1/24/2019	Surface	<0.300	<0.050	<10.0	225	279	504	3,120
	2/6/2019	1	<0.300	<0.050	<10.0	<10.0	<10.0	<30.0	32.0
S6	1/24/2019	Surface	40.2	<1.00	2,680	47,400	11,200	61,280	576
	2/6/2019	1	<0.300	<0.050	<10.0	<10.0	<10.0	<30.0	48.0
S7	1/24/2019	Surface	<0.300	<0.050	<10.0	887	283	1,170	576
	2/6/2019	1	<0.300	<0.050	<10.0	<10.0	<10.0	<30.0	16.0

M & M EXCAVATING, INC.

Appendix A

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 Department

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

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # *(assigned by OCD)*
Contact mailing address	

Location of Release Source

Latitude _____ Longitude _____
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Site Type
Date Release Discovered	API# *(if applicable)*

Unit Letter	Section	Township	Range	County

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)
Cause of Release		

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

- ☐ The source of the release has been stopped.
- ☐ The impacted area has been secured to protect human health and the environment.
- ☐ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
- ☐ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.

Printed Name: _____ Title: _____

Signature: Kendra DeHoyos Date: _____

email: _____ Telephone: _____

OCD Only

Received by: Amalia Barrameda Date: _____

Appendix B

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-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 01529	C	ED	2	4	2	21	21S	26E	566689	3592556*	965	130	70	60
C 01817	C	ED		4	2	17	21S	26E	564942	3594056*	1366	215	195	20
C 01940	C	ED		4	2	17	21S	26E	564942	3594056*	1366	212	182	30
C 02137	C	ED		4	2	17	21S	26E	564942	3594056*	1366	217	178	39
C 02562	C	ED	4	2	3	15	21S	26E	567485	3593575*	1422	160	65	95
C 01840	C	ED	1	4	2	17	21S	26E	564841	3594155*	1504	360	201	159

Average Depth to Water: **148 feet**

Minimum Depth: **65 feet**

Maximum Depth: **201 feet**

Record Count: 6

UTMNAD83 Radius Search (in meters):

Easting (X): 566087 **Northing (Y):** 3593311 **Radius:** 1600

***UTM location was derived from PLSS - see Help**

National Water Information System: Web Interface

Click to hideNews Bulletins

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- Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =

- 322812104171301

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

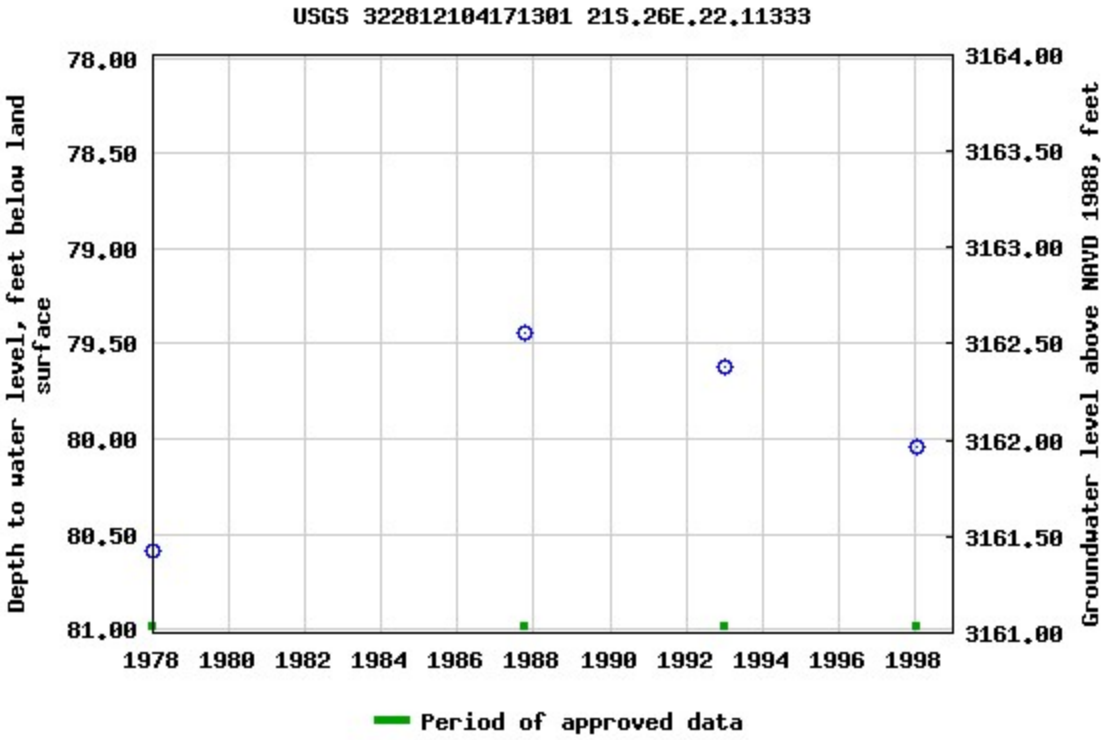
USGS 322812104171301 21S.26E.22.11333

Available data for this site Groundwater: Field measurements | GO

Eddy County, New Mexico
Hydrologic Unit Code --
Latitude 32°28'12", Longitude 104°17'13" NAD27
Land-surface elevation 3,242 feet above NAVD88
The depth of the well is 130 feet below land surface.
This well is completed in the Yates Formation, Guadalupe Group (313YATS) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period



Breaks in the plot represent a gap of at least one year between field measurements.
Download a presentation-quality graph

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

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- Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =

- 322844104183001

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

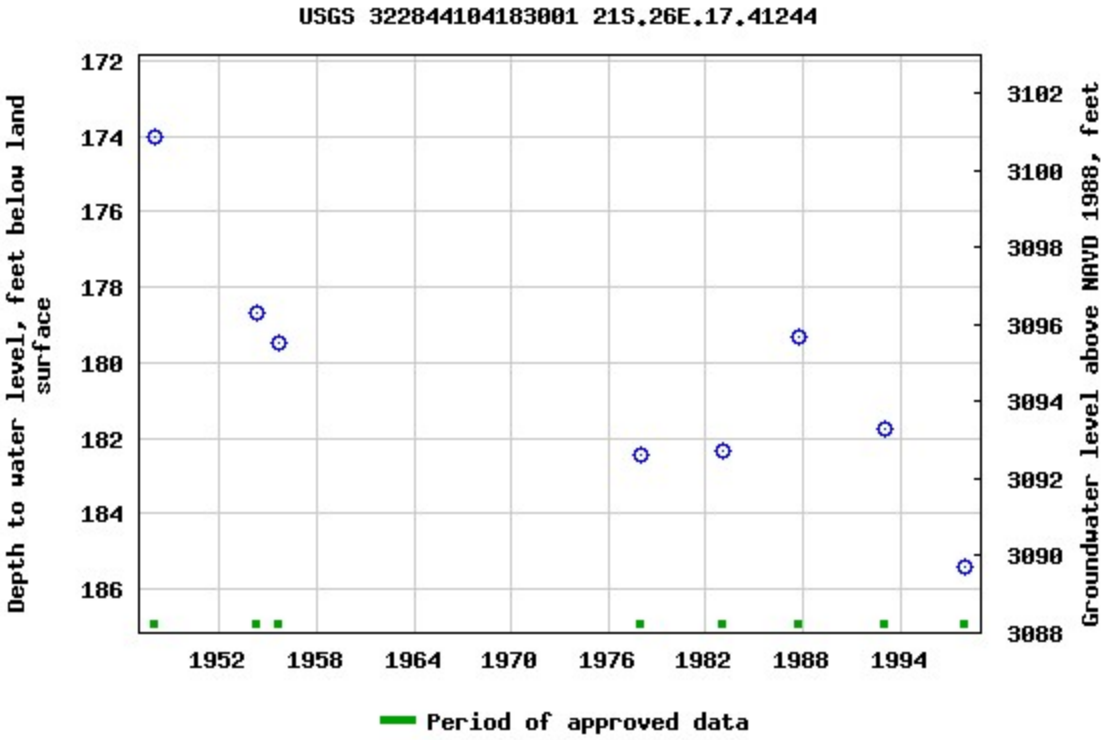
USGS 322844104183001 21S.26E.17.41244

Available data for this site Groundwater: Field measurements | GO

Eddy County, New Mexico
Hydrologic Unit Code --
Latitude 32°28'44", Longitude 104°18'30" NAD27
Land-surface elevation 3,275 feet above NAVD88
The depth of the well is 187 feet below land surface.
This well is completed in the Yates Formation, Guadalupe Group (313YATS) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period



Breaks in the plot represent a gap of at least one year between field measurements.
Download a presentation-quality graph

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

Appendix C

CARDINAL Laboratories

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

January 25, 2019

LUPE CARRASCO

MMX

2737 PECOS HWY

CARLSBAD, NM 88220

RE: CACTUS STATE #9

Enclosed are the results of analyses for samples received by the laboratory on 01/24/19 11:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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 accreditated 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

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

MMX
LUPE CARRASCO
2737 PECOS HWY
CARLSBAD NM, 88220
Fax To: (575) 236-6201

Received:	01/24/2019	Sampling Date:	01/24/2019
Reported:	01/25/2019	Sampling Type:	Soil
Project Name:	CACTUS STATE #9	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S 1 (H900257-01)

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	01/24/2019	ND	2.07	103	2.00	2.21	
Toluene*	<0.050	0.050	01/24/2019	ND	2.14	107	2.00	2.23	
Ethylbenzene*	<0.050	0.050	01/24/2019	ND	2.14	107	2.00	1.93	
Total Xylenes*	<0.150	0.150	01/24/2019	ND	6.25	104	6.00	0.644	
Total BTEX	<0.300	0.300	01/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.8 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**176**	16.0	01/25/2019	ND	432	108	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	01/24/2019	ND	209	105	200	4.91	
DRO >C10-C28*	**163**	10.0	01/24/2019	ND	195	97.6	200	7.37	
EXT DRO >C28-C36	**36.9**	10.0	01/24/2019	ND					

Surrogate: 1-Chlorooctane *87.9 %* *41-142*

Surrogate: 1-Chlorooctadecane *94.9 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

MMX
LUPE CARRASCO
2737 PECOS HWY
CARLSBAD NM, 88220
Fax To: (575) 236-6201

Received:	01/24/2019	Sampling Date:	01/24/2019
Reported:	01/25/2019	Sampling Type:	Soil
Project Name:	CACTUS STATE #9	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S 2 (H900257-02)

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	01/24/2019	ND	2.07	103	2.00	2.21	
Toluene*	**0.087**	0.050	01/24/2019	ND	2.14	107	2.00	2.23	
Ethylbenzene*	**0.436**	0.050	01/24/2019	ND	2.14	107	2.00	1.93	
Total Xylenes*	**1.01**	0.150	01/24/2019	ND	6.25	104	6.00	0.644	
Total BTEX	**1.53**	0.300	01/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *131 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**304**	16.0	01/25/2019	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS S-04

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**165**	10.0	01/24/2019	ND	209	105	200	4.91	
DRO >C10-C28*	**4800**	10.0	01/24/2019	ND	195	97.6	200	7.37	
EXT DRO >C28-C36	**946**	10.0	01/24/2019	ND					

Surrogate: 1-Chlorooctane *110 %* *41-142*

Surrogate: 1-Chlorooctadecane *224 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

MMX
LUPE CARRASCO
2737 PECOS HWY
CARLSBAD NM, 88220
Fax To: (575) 236-6201

Received:	01/24/2019	Sampling Date:	01/24/2019
Reported:	01/25/2019	Sampling Type:	Soil
Project Name:	CACTUS STATE #9	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S 3 (H900257-03)

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	01/24/2019	ND	2.07	103	2.00	2.21	
Toluene*	<0.050	0.050	01/24/2019	ND	2.14	107	2.00	2.23	
Ethylbenzene*	<0.050	0.050	01/24/2019	ND	2.14	107	2.00	1.93	
Total Xylenes*	<0.150	0.150	01/24/2019	ND	6.25	104	6.00	0.644	
Total BTEX	<0.300	0.300	01/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *101 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**144**	16.0	01/25/2019	ND	416	104	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2019	ND	209	105	200	4.91	
DRO >C10-C28*	**412**	10.0	01/24/2019	ND	195	97.6	200	7.37	
EXT DRO >C28-C36	**140**	10.0	01/24/2019	ND					

Surrogate: 1-Chlorooctane *95.4 %* *41-142*

Surrogate: 1-Chlorooctadecane *110 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

MMX
LUPE CARRASCO
2737 PECOS HWY
CARLSBAD NM, 88220
Fax To: (575) 236-6201

Received:	01/24/2019	Sampling Date:	01/24/2019
Reported:	01/25/2019	Sampling Type:	Soil
Project Name:	CACTUS STATE #9	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S 4 (H900257-04)

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	01/24/2019	ND	2.07	103	2.00	2.21	
Toluene*	<0.050	0.050	01/24/2019	ND	2.14	107	2.00	2.23	
Ethylbenzene*	**0.056**	0.050	01/24/2019	ND	2.14	107	2.00	1.93	
Total Xylenes*	**0.258**	0.150	01/24/2019	ND	6.25	104	6.00	0.644	
Total BTEX	**0.313**	0.300	01/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *110 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**19200**	16.0	01/25/2019	ND	416	104	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**16.6**	10.0	01/24/2019	ND	209	105	200	4.91	
DRO >C10-C28*	**5000**	10.0	01/24/2019	ND	195	97.6	200	7.37	
EXT DRO >C28-C36	**4180**	10.0	01/24/2019	ND					

Surrogate: 1-Chlorooctane *93.8 %* *41-142*

Surrogate: 1-Chlorooctadecane *130 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

MMX
LUPE CARRASCO
2737 PECOS HWY
CARLSBAD NM, 88220
Fax To: (575) 236-6201

Received:	01/24/2019	Sampling Date:	01/24/2019
Reported:	01/25/2019	Sampling Type:	Soil
Project Name:	CACTUS STATE #9	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S 5 (H900257-05)

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	01/24/2019	ND	2.07	103	2.00	2.21	
Toluene*	<0.050	0.050	01/24/2019	ND	2.14	107	2.00	2.23	
Ethylbenzene*	<0.050	0.050	01/24/2019	ND	2.14	107	2.00	1.93	
Total Xylenes*	<0.150	0.150	01/24/2019	ND	6.25	104	6.00	0.644	
Total BTEX	<0.300	0.300	01/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *103 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**3120**	16.0	01/25/2019	ND	416	104	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2019	ND	209	105	200	4.91	
DRO >C10-C28*	**225**	10.0	01/24/2019	ND	195	97.6	200	7.37	
EXT DRO >C28-C36	**279**	10.0	01/24/2019	ND					

Surrogate: 1-Chlorooctane *95.9 %* *41-142*

Surrogate: 1-Chlorooctadecane *97.9 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

MMX
LUPE CARRASCO
2737 PECOS HWY
CARLSBAD NM, 88220
Fax To: (575) 236-6201

Received:	01/24/2019	Sampling Date:	01/24/2019
Reported:	01/25/2019	Sampling Type:	Soil
Project Name:	CACTUS STATE #9	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S 6 (H900257-06)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<1.00	1.00	01/24/2019	ND	2.07	103	2.00	2.21	
Toluene*	**5.76**	1.00	01/24/2019	ND	2.14	107	2.00	2.23	
Ethylbenzene*	**9.14**	1.00	01/24/2019	ND	2.14	107	2.00	1.93	
Total Xylenes*	**25.3**	3.00	01/24/2019	ND	6.25	104	6.00	0.644	
Total BTEX	**40.2**	6.00	01/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *121 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**576**	16.0	01/25/2019	ND	416	104	400	3.92	

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*	**2680**	100	01/24/2019	ND	209	105	200	4.91	
DRO >C10-C28*	**47400**	100	01/24/2019	ND	195	97.6	200	7.37	
EXT DRO >C28-C36	**11200**	100	01/24/2019	ND					

Surrogate: 1-Chlorooctane *181 %* *41-142*

Surrogate: 1-Chlorooctadecane *1450 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

MMX
LUPE CARRASCO
2737 PECOS HWY
CARLSBAD NM, 88220
Fax To: (575) 236-6201

Received:	01/24/2019	Sampling Date:	01/24/2019
Reported:	01/25/2019	Sampling Type:	Soil
Project Name:	CACTUS STATE #9	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S 7 (H900257-07)

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	01/24/2019	ND	2.07	103	2.00	2.21	
Toluene*	<0.050	0.050	01/24/2019	ND	2.14	107	2.00	2.23	
Ethylbenzene*	<0.050	0.050	01/24/2019	ND	2.14	107	2.00	1.93	
Total Xylenes*	<0.150	0.150	01/24/2019	ND	6.25	104	6.00	0.644	
Total BTEX	<0.300	0.300	01/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *100 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**576**	16.0	01/25/2019	ND	416	104	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2019	ND	209	105	200	4.91	
DRO >C10-C28*	**887**	10.0	01/24/2019	ND	195	97.6	200	7.37	
EXT DRO >C28-C36	**283**	10.0	01/24/2019	ND					

Surrogate: 1-Chlorooctane *81.5 %* *41-142*

Surrogate: 1-Chlorooctadecane *112 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

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 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

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

Company Name: MMX	**BILL TO**
Project Manager: Lupe Carrasco	P.O. #:
Address:	Company: MMX
City: State: Zip:	Attn: Lupe Carrasco
Phone #: Fax #:	Address: PO Box 1120
Project #: Project Owner:	City: Carlsbad
Project Name: Cactus State #9	State: NM Zip: 88221
Project Location:	Phone #:
Sampler Name:	Fax #:

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	BTEX	TPH	Chlorides
H900257																	
1	S1	G	1			X							1/24/19		X	X	X
2	S2	C	1			X									X	X	X
3	S3	C	1			X									X	X	X
4	S4	C	1			X									X	X	X
5	S5	C	1			X									X	X	X
6	S6	C	1			X									X	X	X
7	S7	C	1			X									X	X	X

Relinquished By:	Date: 1-24-19	Received By: Tamara Oldaker	Phone Result: ☐ Yes ☐ No Add'l Phone #:
	Time: 11:40 Am		Fax Result: ☐ Yes ☐ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS: email: lupemmxinc@gmail.com
	Time:		~~Amanda~~ Amanda.Davis@dvn.com
Delivered By: (Circle One)	Sample Condition: Cool ☑ Yes ☐ No, Intact ☑ Yes ☐ No	CHECKED BY: (Initials)	* RUSH!
Sampler - UPS - Bus - Other: 5.5°C #97		TO	

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

CARDINAL Laboratories

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

February 07, 2019

LUPE CARRASCO

MMX

2737 PECOS HWY

CARLSBAD, NM 88220

RE: CACTUS STATE #9

Enclosed are the results of analyses for samples received by the laboratory on 02/06/19 14:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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 accreditated 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

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

MMX
LUPE CARRASCO
2737 PECOS HWY
CARLSBAD NM, 88220
Fax To: (575) 236-6201

Received:	02/06/2019	Sampling Date:	02/06/2019
Reported:	02/07/2019	Sampling Type:	Soil
Project Name:	CACTUS STATE #9	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: S5 -1' (H900457-01)

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	02/07/2019	ND	2.03	102	2.00	4.08	
Toluene*	<0.050	0.050	02/07/2019	ND	1.96	97.9	2.00	4.88	
Ethylbenzene*	<0.050	0.050	02/07/2019	ND	1.92	96.0	2.00	4.83	
Total Xylenes*	<0.150	0.150	02/07/2019	ND	5.82	97.0	6.00	4.36	
Total BTEX	<0.300	0.300	02/07/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *101 %* *73.3-129*

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	02/07/2019	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	02/06/2019	ND	198	99.1	200	1.94	
DRO >C10-C28*	<10.0	10.0	02/06/2019	ND	208	104	200	1.75	
EXT DRO >C28-C36	<10.0	10.0	02/06/2019	ND					

Surrogate: 1-Chlorooctane *82.9 %* *41-142*

Surrogate: 1-Chlorooctadecane *90.4 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

MMX
LUPE CARRASCO
2737 PECOS HWY
CARLSBAD NM, 88220
Fax To: (575) 236-6201

Received:	02/06/2019	Sampling Date:	02/06/2019
Reported:	02/07/2019	Sampling Type:	Soil
Project Name:	CACTUS STATE #9	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: S6 -1' (H900457-02)

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	02/07/2019	ND	2.03	102	2.00	4.08	
Toluene*	<0.050	0.050	02/07/2019	ND	1.96	97.9	2.00	4.88	
Ethylbenzene*	<0.050	0.050	02/07/2019	ND	1.92	96.0	2.00	4.83	
Total Xylenes*	<0.150	0.150	02/07/2019	ND	5.82	97.0	6.00	4.36	
Total BTEX	<0.300	0.300	02/07/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.5 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**48.0**	16.0	02/07/2019	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	02/06/2019	ND	198	99.1	200	1.94	
DRO >C10-C28*	<10.0	10.0	02/06/2019	ND	208	104	200	1.75	
EXT DRO >C28-C36	<10.0	10.0	02/06/2019	ND					

Surrogate: 1-Chlorooctane *88.4 %* *41-142*

Surrogate: 1-Chlorooctadecane *93.2 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

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

Celey D. Keene, Lab Director/Quality Manager

1 of 1

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: MMX	**BILL TO**
Project Manager: Lupe Carrasco	P.O. #:
Address:	Company: MMX
City: State: Zip:	Attn:
Phone #: Fax #:	Address:
Project #: Project Owner:	City:
Project Name: Cactus State #9	State: Zip:
Project Location:	Phone #:
Sampler Name:	Fax #:

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST		
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	BTEX	TPH	Chlorides
H900457-01	SS-1'	X				X					X		2/6/19		X	X	X
02	SS-1'	X				X					X				X	X	X

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 the client for the 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 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental 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 services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 2/6/19	Received By: Jodi Henson	Phone Result: ☐ Yes ☐ No Add'l Phone #:
	Time: 14:15		Fax Result: ☐ Yes ☐ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS: *Rush Email: Lupe Amanda.Davis@dvn.com
	Time:		
Delivered By: (Circle One) Sampler - UPS - Bus - Other: 5.8°C / #97	Sample Condition Cool: ☑ Yes ☐ No Intact: ☑ Yes ☐ No	CHECKED BY: (Initials)	

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

CARDINAL Laboratories

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

February 07, 2019

LUPE CARRASCO

MMX

2737 PECOS HWY

CARLSBAD, NM 88220

RE: CACTUS STATE #9

Enclosed are the results of analyses for samples received by the laboratory on 02/06/19 14:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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 accreditated 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

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

MMX
LUPE CARRASCO
2737 PECOS HWY
CARLSBAD NM, 88220
Fax To: (575) 236-6201

Received:	02/06/2019	Sampling Date:	02/06/2019
Reported:	02/07/2019	Sampling Type:	Soil
Project Name:	CACTUS STATE #9	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: S4 -3' (H900458-01)

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	02/07/2019	ND	2.03	102	2.00	4.08	
Toluene*	<0.050	0.050	02/07/2019	ND	1.96	97.9	2.00	4.88	
Ethylbenzene*	<0.050	0.050	02/07/2019	ND	1.92	96.0	2.00	4.83	
Total Xylenes*	<0.150	0.150	02/07/2019	ND	5.82	97.0	6.00	4.36	
Total BTEX	<0.300	0.300	02/07/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.9 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**96.0**	16.0	02/07/2019	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	02/06/2019	ND	198	99.1	200	1.94	
DRO >C10-C28*	**710**	10.0	02/06/2019	ND	208	104	200	1.75	
EXT DRO >C28-C36	**121**	10.0	02/06/2019	ND					

Surrogate: 1-Chlorooctane *90.2 %* *41-142*

Surrogate: 1-Chlorooctadecane *112 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

MMX
LUPE CARRASCO
2737 PECOS HWY
CARLSBAD NM, 88220
Fax To: (575) 236-6201

Received:	02/06/2019	Sampling Date:	02/06/2019
Reported:	02/07/2019	Sampling Type:	Soil
Project Name:	CACTUS STATE #9	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: S4 -4' (H900458-02)

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	02/07/2019	ND	2.03	102	2.00	4.08	
Toluene*	<0.050	0.050	02/07/2019	ND	1.96	97.9	2.00	4.88	
Ethylbenzene*	<0.050	0.050	02/07/2019	ND	1.92	96.0	2.00	4.83	
Total Xylenes*	<0.150	0.150	02/07/2019	ND	5.82	97.0	6.00	4.36	
Total BTEX	<0.300	0.300	02/07/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.8 %* *73.3-129*

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	02/07/2019	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	02/06/2019	ND	198	99.1	200	1.94	
DRO >C10-C28*	**490**	10.0	02/06/2019	ND	208	104	200	1.75	
EXT DRO >C28-C36	**89.7**	10.0	02/06/2019	ND					

Surrogate: 1-Chlorooctane *90.8 %* *41-142*

Surrogate: 1-Chlorooctadecane *107 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

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

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

1 of 1

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: MMX	**BILL TO**
Project Manager: Lupe Carrasco	P.O. #:
Address:	Company: MMX
City: State: Zip:	Attn:
Phone #: Fax #:	Address:
Project #: Project Owner:	City:
Project Name: Cactus State #9	State: Zip:
Project Location:	Phone #:
Sampler Name:	Fax #:

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST		
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	BTEX	TPH	Chloride
H900458-																	
01	S4-3'	X				X					X		2/6/19		X	X	X
02	S4-4'	X				X					X		1		X	X	X

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 the client for the 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 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental 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 services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 2/6/19	Received By: Jodi Henson	Phone Result: ☐ Yes ☐ No Add'l Phone #:
	Time: 14:15		Fax Result: ☐ Yes ☐ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS: *Rush Email: Lupe Amanda.Davis@dvn.com
	Time:		
Delivered By: (Circle One) Sampler - UPS - Bus - Other: 5.8°C/#97	Sample Condition Cool: ☑ Yes ☐ No Intact: ☑ Yes ☐ No	CHECKED BY: (Initials) JH	

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

CARDINAL Laboratories

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

February 07, 2019

LUPE CARRASCO

MMX

2737 PECOS HWY

CARLSBAD, NM 88220

RE: CACTUS STATE #9

Enclosed are the results of analyses for samples received by the laboratory on 02/06/19 14:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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 accreditated 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

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

MMX
LUPE CARRASCO
2737 PECOS HWY
CARLSBAD NM, 88220
Fax To: (575) 236-6201

Received:	02/06/2019	Sampling Date:	02/06/2019
Reported:	02/07/2019	Sampling Type:	Soil
Project Name:	CACTUS STATE #9	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: S1 - 1' (H900459-01)

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	02/07/2019	ND	2.03	102	2.00	4.08	
Toluene*	<0.050	0.050	02/07/2019	ND	1.96	97.9	2.00	4.88	
Ethylbenzene*	<0.050	0.050	02/07/2019	ND	1.92	96.0	2.00	4.83	
Total Xylenes*	<0.150	0.150	02/07/2019	ND	5.82	97.0	6.00	4.36	
Total BTEX	<0.300	0.300	02/07/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *100 %* *73.3-129*

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	02/07/2019	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	02/06/2019	ND	198	99.1	200	1.94	
DRO >C10-C28*	**11.4**	10.0	02/06/2019	ND	208	104	200	1.75	
EXT DRO >C28-C36	<10.0	10.0	02/06/2019	ND					

Surrogate: 1-Chlorooctane *89.7 %* *41-142*

Surrogate: 1-Chlorooctadecane *95.1 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

MMX
LUPE CARRASCO
2737 PECOS HWY
CARLSBAD NM, 88220
Fax To: (575) 236-6201

Received:	02/06/2019	Sampling Date:	02/06/2019
Reported:	02/07/2019	Sampling Type:	Soil
Project Name:	CACTUS STATE #9	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: S2 - 1' (H900459-02)

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	02/07/2019	ND	2.03	102	2.00	4.08	
Toluene*	<0.050	0.050	02/07/2019	ND	1.96	97.9	2.00	4.88	
Ethylbenzene*	<0.050	0.050	02/07/2019	ND	1.92	96.0	2.00	4.83	
Total Xylenes*	<0.150	0.150	02/07/2019	ND	5.82	97.0	6.00	4.36	
Total BTEX	<0.300	0.300	02/07/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *100 %* *73.3-129*

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	02/07/2019	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	02/06/2019	ND	198	99.1	200	1.94	
DRO >C10-C28*	<10.0	10.0	02/06/2019	ND	208	104	200	1.75	
EXT DRO >C28-C36	<10.0	10.0	02/06/2019	ND					

Surrogate: 1-Chlorooctane *90.0 %* *41-142*

Surrogate: 1-Chlorooctadecane *97.4 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

MMX
LUPE CARRASCO
2737 PECOS HWY
CARLSBAD NM, 88220
Fax To: (575) 236-6201

Received:	02/06/2019	Sampling Date:	02/06/2019
Reported:	02/07/2019	Sampling Type:	Soil
Project Name:	CACTUS STATE #9	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: S3 - 1' (H900459-03)

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	02/07/2019	ND	2.03	102	2.00	4.08	
Toluene*	<0.050	0.050	02/07/2019	ND	1.96	97.9	2.00	4.88	
Ethylbenzene*	<0.050	0.050	02/07/2019	ND	1.92	96.0	2.00	4.83	
Total Xylenes*	<0.150	0.150	02/07/2019	ND	5.82	97.0	6.00	4.36	
Total BTEX	<0.300	0.300	02/07/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.3 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**48.0**	16.0	02/07/2019	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	02/06/2019	ND	198	99.1	200	1.94	
DRO >C10-C28*	<10.0	10.0	02/06/2019	ND	208	104	200	1.75	
EXT DRO >C28-C36	<10.0	10.0	02/06/2019	ND					

Surrogate: 1-Chlorooctane *87.5 %* *41-142*

Surrogate: 1-Chlorooctadecane *94.1 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

MMX
LUPE CARRASCO
2737 PECOS HWY
CARLSBAD NM, 88220
Fax To: (575) 236-6201

Received:	02/06/2019	Sampling Date:	02/06/2019
Reported:	02/07/2019	Sampling Type:	Soil
Project Name:	CACTUS STATE #9	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: S7 - 1' (H900459-04)

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	02/07/2019	ND	2.03	102	2.00	4.08	
Toluene*	<0.050	0.050	02/07/2019	ND	1.96	97.9	2.00	4.88	
Ethylbenzene*	<0.050	0.050	02/07/2019	ND	1.92	96.0	2.00	4.83	
Total Xylenes*	<0.150	0.150	02/07/2019	ND	5.82	97.0	6.00	4.36	
Total BTEX	<0.300	0.300	02/07/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.7 %* *73.3-129*

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	02/07/2019	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	02/06/2019	ND	198	99.1	200	1.94	
DRO >C10-C28*	<10.0	10.0	02/06/2019	ND	208	104	200	1.75	
EXT DRO >C28-C36	<10.0	10.0	02/06/2019	ND					

Surrogate: 1-Chlorooctane *90.6 %* *41-142*

Surrogate: 1-Chlorooctadecane *98.0 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

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

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

1 of 1

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: MMX	**BILL TO**
Project Manager: Lupe Carrasco	P.O. #:
Address:	Company: MMX
City: State: Zip:	Attn:
Phone #: Fax #:	Address:
Project #: Project Owner:	City:
Project Name: Cactus State #4	State: Zip:
Project Location:	Phone #:
Sampler Name:	Fax #:

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	ANALYSIS REQUEST: BTEX	TPH	Chlorides
H900458- 01	S1-1'	X				X					X		2/6/19		X	X	X
02	S2-1'	X				X					X				X	X	X
03	S3-1'	X				X					X				X	X	X
04	S7-1'	X				X					X				X	X	X

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 the client for the 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 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental 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 services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 2/6/19	Received By: Jodi Henson
	Time: 14:15	
Relinquished By:	Date:	Received By:
	Time:	

Delivered By: (Circle One)
Sampler - UPS - Bus - Other: 5.8°C / #97

Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No

CHECKED BY: (Initials) JH

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS:
* Rush
Email: lupe
Amanda.Davis@dvn.com

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

CARDINAL Laboratories

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

June 04, 2019

LUPE CARRASCO

MMX

2737 PECOS HWY

CARLSBAD, NM 88220

RE: CACTUS STATE #9

Enclosed are the results of analyses for samples received by the laboratory on 06/03/19 10:20.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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 accreditated 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

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

MMX
LUPE CARRASCO
2737 PECOS HWY
CARLSBAD NM, 88220
Fax To: (575) 236-6201

Received:	06/03/2019	Sampling Date:	05/31/2019
Reported:	06/04/2019	Sampling Type:	Soil
Project Name:	CACTUS STATE #9	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S 4 - 5' (H901933-01)

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	06/03/2019	ND	1.81	90.6	2.00	18.1	
Toluene*	<0.050	0.050	06/03/2019	ND	2.00	99.9	2.00	15.4	
Ethylbenzene*	<0.050	0.050	06/03/2019	ND	2.00	100	2.00	22.3	
Total Xylenes*	<0.150	0.150	06/03/2019	ND	6.08	101	6.00	8.72	
Total BTEX	<0.300	0.300	06/03/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *92.0 %* *73.3-129*

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	06/04/2019	ND	416	104	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	06/04/2019	ND	214	107	200	1.33	
DRO >C10-C28*	<10.0	10.0	06/04/2019	ND	186	93.1	200	2.90	
EXT DRO >C28-C36	<10.0	10.0	06/04/2019	ND					

Surrogate: 1-Chlorooctane *84.4 %* *41-142*

Surrogate: 1-Chlorooctadecane *83.6 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

QR-04	The RPD for the BS/BSD was outside of historical limits.
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

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

Company Name:	MMX
Project Manager:	
Address:	
City:	State: Zip:
Phone #:	Fax #:
Project #:	Project Owner:
Project Name:	Cactus State #9
Project Location:	
Sampler Name:	

BILL TO

P.O. #:	
Company:	MMX
Attn:	Lupe Carrasco
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

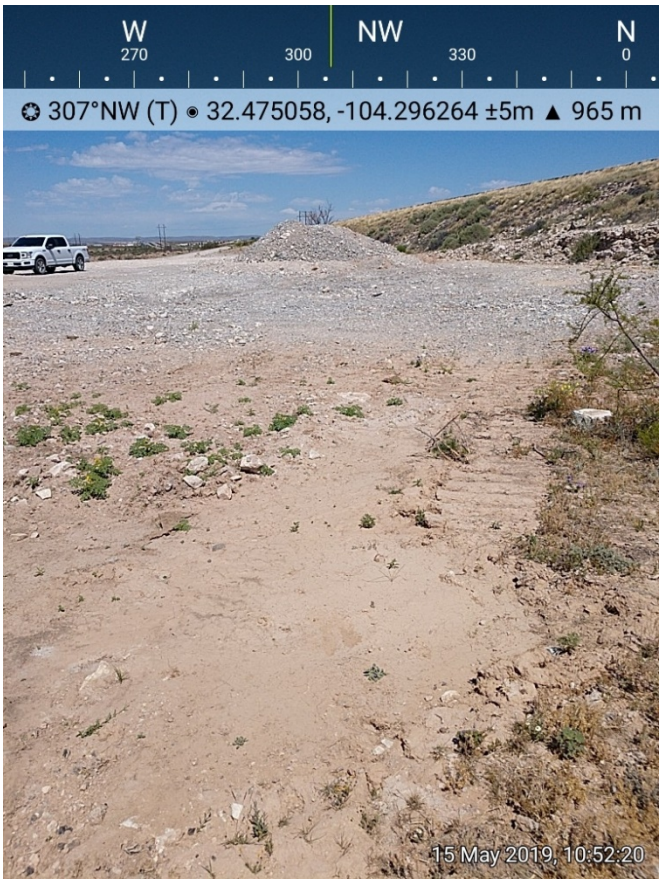
FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	BTEX	TPH	Chlorides
H901933																	
1	S4-5'	C				X							5/31/19		X	X	X

Relinquished By:	Date: 6/3/19	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
	Time: 10:20am	Tamara Oldaker	Fax Result: ☐ Yes ☐ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS: lupemmx.inc@gmail.com
	Time:		Rush! - added 6/3/19 @ 13:31 T.O.
Delivered By: (Circle One)	Sample Condition: Cool ☐ Yes ☐ No, Intact ☐ Yes ☐ No	CHECKED BY: (Initials)	
Sampler - UPS - Bus - Other: 5.1° dry		T.O.	

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

Appendix D


W
NW
240
270
300
330
292°W (T) • 32.475179, -104.296289 ±6m ▲ 972 m
15 May 2019, 10:52:34


W
NW
N
270
300
330
0
307°NW (T) • 32.475058, -104.296264 ±5m ▲ 965 m
15 May 2019, 10:52:20


E
SE
S
90
120
150
180
126°SE (T) • 32.475343, -104.296588 ±7m ▲ 975 m
15 May 2019, 10:52:57


SE
S
SW
150
180
210
240
181°S (T) 32.475343, -104.296588 ±7m ▲ 975 m
15 May 2019, 10:53:00


NE
E
SE
30
60
90
120
76°NE (T) 32.475217, -104.296652 ±4m ▲ 976 m
15 May 2019, 10:51:24


NW
N
NE
330
0
30
4°N (T) 32.475092, -104.296362 ±4m ▲ 972 m
15 May 2019, 10:52:05


E
90
120
SE
150
120°E (T) 32.475217, -104.296652 ±4m ▲ 976 m
15 May 2019, 10:51:27


NE
30
60
E
90
120
SE
85°E (T) 32.4751, -104.296462 ±8m ▲ 972 m
15 May 2019, 10:51:54

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 Department

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

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	NAB1911934008
District RP	2RP-5369
Facility ID	
Application ID	pAB1911933779

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	>100 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
☒ Field data
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
☒ Boring or excavation logs
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

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Page 2 Oil Conservation Division

Incident ID	NAB1911934008
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If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.

Printed Name: Tom Bynum Title: EHS Consultant

Signature: Tom Bynum Date: 4/6/2020

email: tom.bynum@dvn.com Telephone: 575-748-0176

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	NAB1911934008
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Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

☒ Detailed description of proposed remediation technique
☒ Scaled sitemap with GPS coordinates showing delineation points
☒ Estimated volume of material to be remediated
☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☐ Extents of contamination must be fully delineated.

☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.

Printed Name: Tom Bynum Title: EHS Consultant

Signature: Tom Bynum Date: 4/6/2020

email: tom.bynum@dvn.com Telephone: 575-748-0176

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

Form C-141
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State of New Mexico
Oil Conservation Division

Incident ID	NAB1911934008
District RP	2RP-5369
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Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Tom Bynum Title: EHS Consultant

Signature: *Tom Bynum* Date: 4/6/2020

email: tom.bynum@dvn.com Telephone: 575-748-0176

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____