APPROVED
By Olivia Yu at 3:09 pm, Sep 04, 2018

Apache

2350 W Marland Blvd Hobbs, NM 88240

Corrective Action Plan

NMOCD will approve of the vertical delineation completed for 1RP-5055 and the proposed remediation with conditions:
1) Confirmation bottom and sidewall samples, no greater than 50 ft. apart, tested for chlorides, BTEX, and TPH extended.
2) Mark release point and outline differing depths of excavation on a scaled map.
3) Photo documentation verifying that the release was from an oil tank and of remedial activities.

August 13, 2018

Re: BM Marcus Battery
API# 30-025-27949
Case # 1RP-5055

To: Olivia Yu
Environmental Specialist-New Mexico Oil Conservation Division Energy, Minerals and Natural Resources Department 1625 N. French Drive Hobbs, New Mexico 88240

Background:

On May 1, 2018 a release occurred due to the south oil tank failed resulting in the loss of oil. An initial C-141 was submitted to NMOCD on May 11, 2018. The release area is located north of Eunice New Mexico (GPS Coordinates 32.56383055 -103.173066) in unit letter C section 20 Township 20S Range 38E. A search radius of 2000 meters for groundwater wells was conducted utilizing data from the NMOSE and USGS. A total of 7 USGS wells and 1 NMOSE well were found to be inside the radius. The average depth of groundwater in the area is 67 feet below ground surface.

A total of 4 verticals were conducted utilizing a backhoe in one foot intervals to delineate the vertical extend of contamination on July 11 and July 23, 2018. All samples collected from all verticals were submitted to a commercial laboratory for analysis of TPH and BTEX.

Corrective Action:

Upon review of the vertical data collected Apache Corporation proposes that the area around SP 1 be excavated to a depth of 3 feet below ground surface. The area around SP 2 and SP 4 be excavated to a depth of 2 feet below ground surface. The area around SP 3 be excavated to a depth of 4 feet below ground surface. Once the excavation is complete final wall and bottom samples will be collected and submitted to a commercial laboratory for analysis of TPH and BTEX. All excavated material will be exported to a NMOCD approved disposal facility. The excavation will be backfield with imported caliche and top soil. Attached is the data for your review.

Enclosed: Initial C-141, Groundwater Data, Sample Diagram, Sample Data, and Laboratory Results

Submitted by;

Bruce Baker

Environmental Technician
larry.baker@apachecorp.com
Cell# 432-631-6982
Off# 575-393-7106

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Apache Corporation	Contact Bruce Baker
Address 2350 W Marland Street, Hobbs, NM 88240	Telephone No. (432) 631-6982
Facility Name BM Marcus Battery (Nearest Well BM Marcus 2)	Facility Type Battery

Surface Owner Private	Mineral Owner Private	API No. 30-025-27949

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	20	20S	38E		FSL		FEL	Lea

Latitude 32.5637 **Longitude** -103.1729

NATURE OF RELEASE

Type of Release Oil	Volume of Release 50 Barrels of oil	Volume Recovered 40 Barrels of oil
Source of Release Oil Tank	Date and Hour of Occurrence 5/1/2018	Date and Hour of Discovery 5/1/2018 at 3:00 pm
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Olivia Yu (NMOCD)	
By Whom? Bruce Baker	Date and Hour 5/2/2018 at 2:16 pm via email and voice mail.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

RECEIVED
By Olivia Yu at 1:42 pm, May 11, 2018

Describe Cause of Problem and Remedial Action Taken.*
The south steel oil tank failed resulting in the loss of oil. The tank was isolated and a vacuum truck was dispatched to pick-up standing oil.

Describe Area Affected and Cleanup Action Taken.*
The majority of the contamination was contained inside the secondary containment except the containment was breached on the northwest corner resulting in approximately 100 square feet of pasture was affected.

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: Bruce Baker

Printed Name: Bruce Baker

Title: Environmental Technician SR

E-mail Address: larry.baker@apachecorp.com

Date: 5/11/2018 Phone: (432) 631-6982

OIL CONSERVATION DIVISION

Approved by Environmental Specialist: OJ

Approval Date: 5/11/2018 Expiration Date:

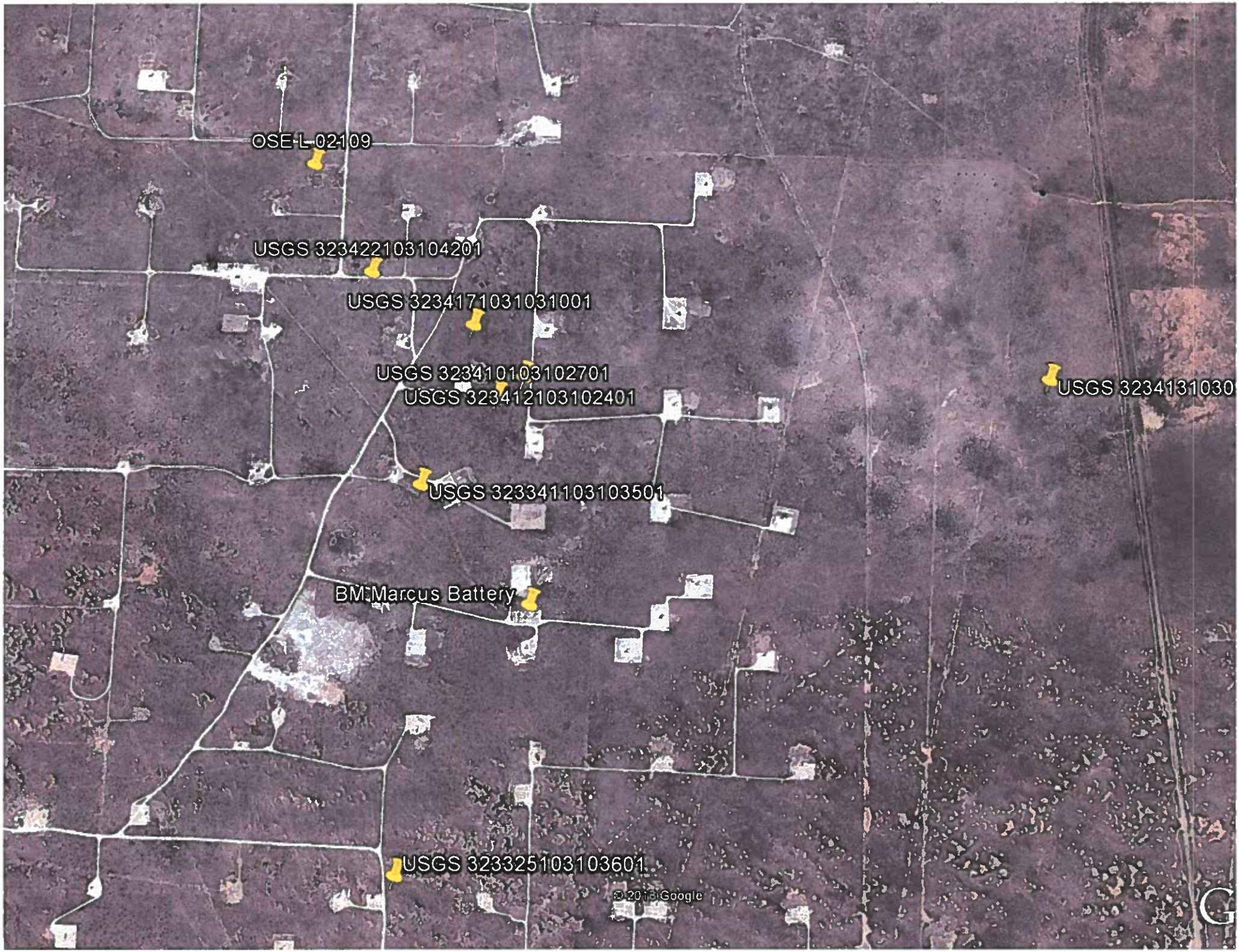
Conditions of Approval:
see attached directive

Attached ☑

* Attach Additional Sheets If Necessary

1RP-5055 nOY1813149173

pOY1813149644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USGS 323412103102401
USGS 3234131030
USGS 323341103103501
BM Marcus Battery
USGS 323325103103601
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USGS Water Resources

Data Category: Groundwater | Geographic Area: New Mexico | GO

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Search Results -- 1 sites found

Agency code = usgs
site_no list =
- 323341103103501

Minimum number of levels = 1
Save file of selected sites to local disk for future upload

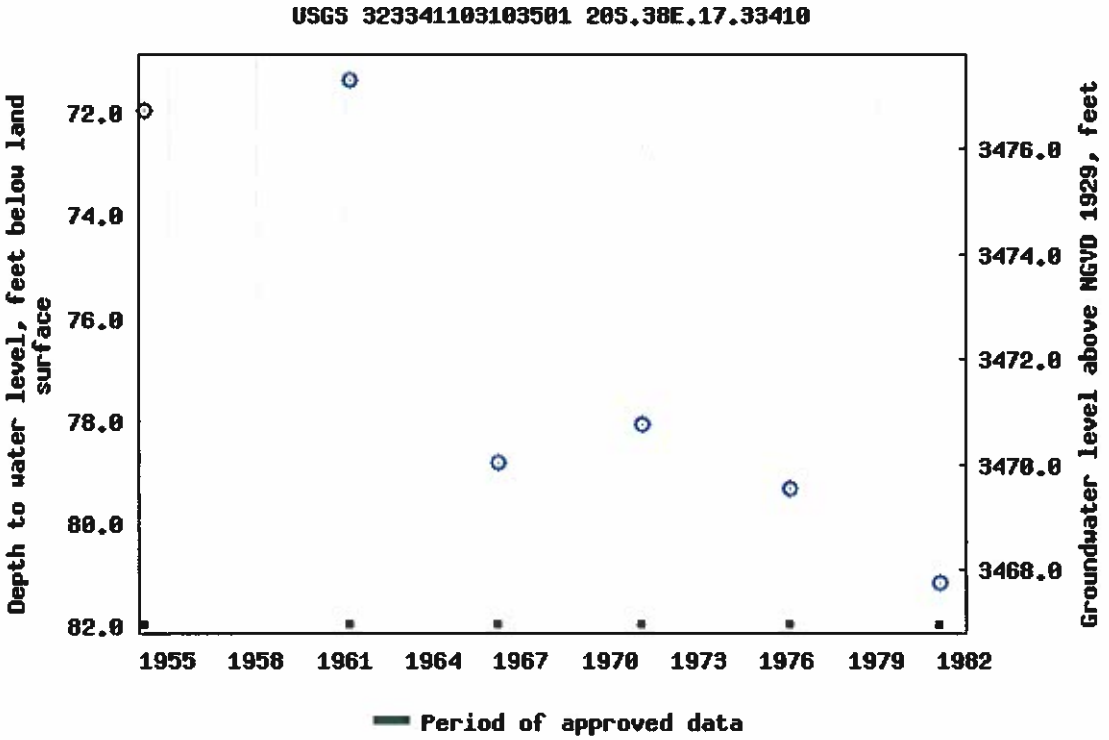
USGS 323341103103501 20S.38E.17.33410

Available data for this site | Groundwater: Field measurements | GO

Lea County, New Mexico
Hydrologic Unit Code 13070007
Latitude 32°34'01.3", Longitude 103°10'35.2" NAD83
Land-surface elevation 3,548.80 feet above NGVD29
The depth of the well is 116 feet below land surface.
This well is completed in the High Plains aquifer (N100HGHPLN) national aquifer.
This well is completed in the Ogallala Formation (121OGLL) local aquifer.

Output formats

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



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URL: https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?

Page Contact Information: New Mexico Water Data Maintainer
Page Last Modified: 2018-07-16 11:26:27 EDT
1.14 1 nadww01

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- 323410103102701

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USGS 323410103102701 20S.38E.17.141341

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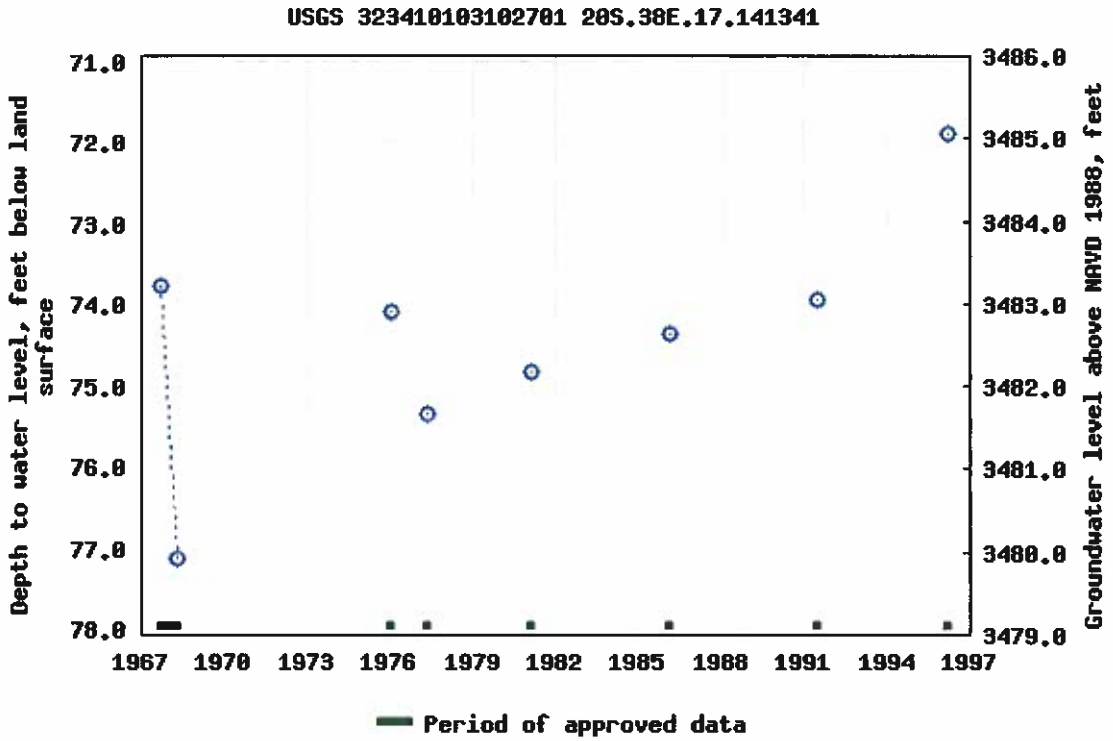
Lea County, New Mexico
Hydrologic Unit Code 13070007
Latitude 32°34'10", Longitude 103°10'27" NAD27
Land-surface elevation 3,557 feet above NAVD88
This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

Output formats

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



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1.58 1.17 nadww01

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- 323412103102401

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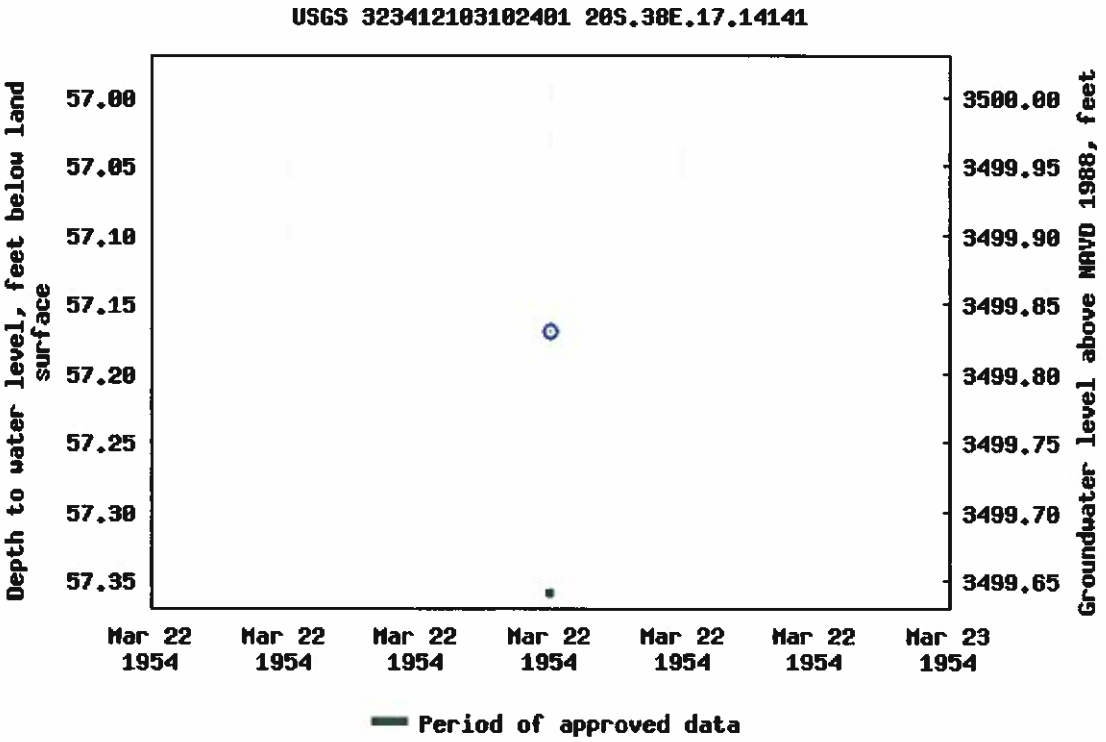
Lea County, New Mexico
Hydrologic Unit Code 13070007
Latitude 32°34'12", Longitude 103°10'24" NAD27
Land-surface elevation 3,557 feet above NAVD88
The depth of the well is 96 feet below land surface.
This well is completed in the Ogallala Formation (121OGLL) local aquifer.

Output formats

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



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1.07 0.95 nadww01

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USGS 323413103092401 20S.38E.16.141233

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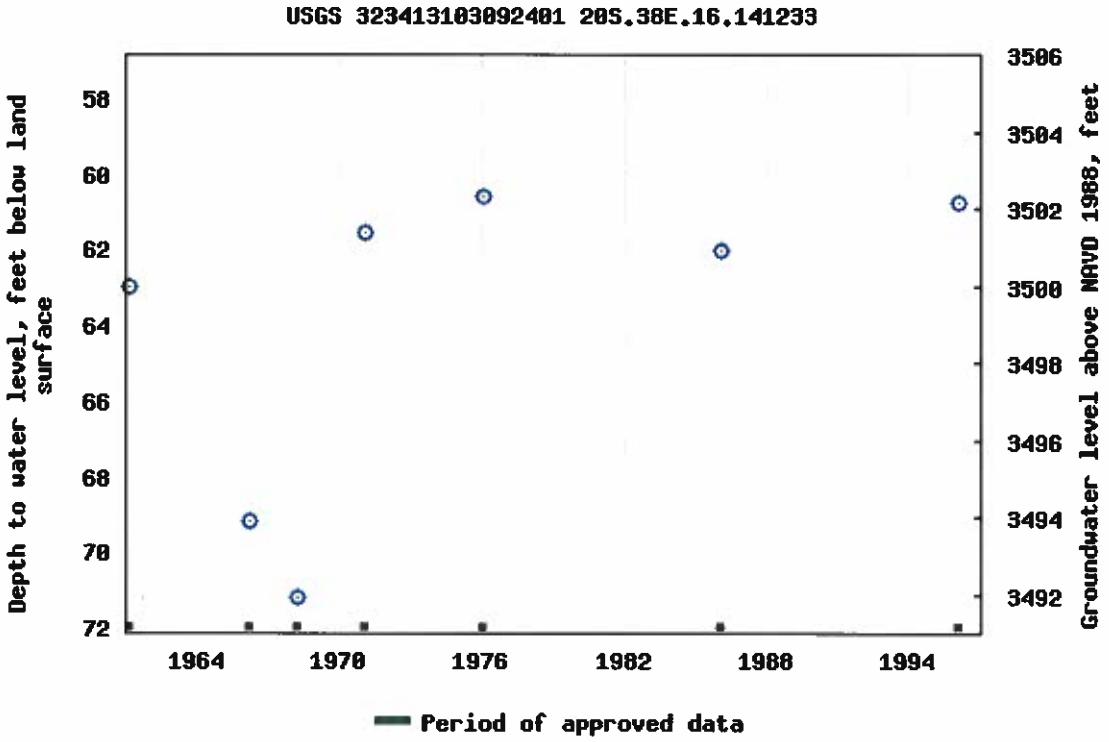
Lea County, New Mexico
Hydrologic Unit Code 13070007
Latitude 32°34'13", Longitude 103°09'24" NAD27
Land-surface elevation 3,563 feet above NAVD88
This well is completed in the Ogallala Formation (121OGLL) local aquifer.

Output formats

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



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1.31 1.07 nadww01

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- 323417103103001

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USGS 323417103103001 20S.38E.17.114442

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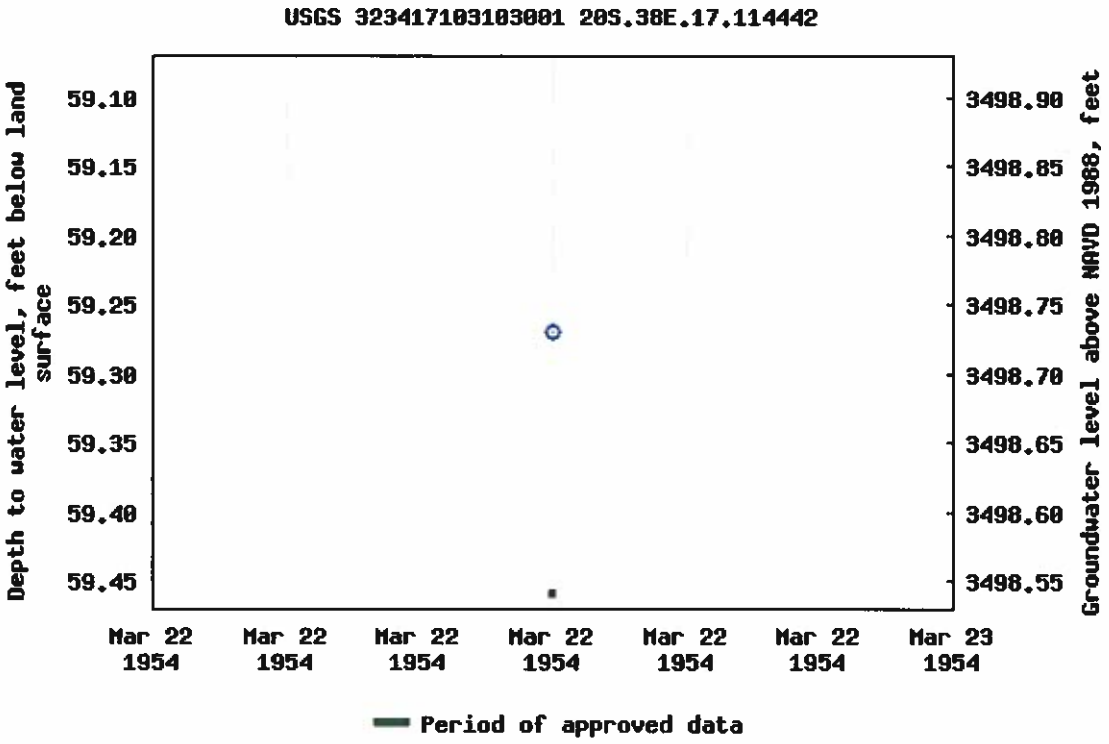
Lea County, New Mexico
Hydrologic Unit Code 12080003
Latitude 32°34'17", Longitude 103°10'30" NAD27
Land-surface elevation 3,558 feet above NAVD88
The depth of the well is 105 feet below land surface.
This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

Output formats

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



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URL: https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?

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1.16 1.03 nadww01

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	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
L 02109		L	LE	2	4	2	18	20S	38E	670803	3605719*	1485	124	50	74

Average Depth to Water: **50 feet**

Minimum Depth: **50 feet**

Maximum Depth: **50 feet**

Record Count: 1

UTMNAD83 Radius Search (in meters):

Easting (X): 671533 **Northing (Y):** 3604425 **Radius:** 2000

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

7/16/18 9:07 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

BM Marcus Battery Delineation Data

SP 1 (GPS: 32.56383055 -103.173066)								
Depth	Benzene	Toluene	Ethybenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO
6"	<0.050	2.58	5.77	19.1	27.5	572	29300	5400
2'	<0.050	0.468	0.842	2.86	4.17	66.3	830	116
3'	<0.050	<0.050	<0.050	<0.150	<0.300	<10	556	145
4'	<0.050	<0.050	<0.050	<0.150	<0.300	<10	257	57.1
SP 2 (GPS: 32.563977 -103.1730055)								
Depth	Benzene	Toluene	Ethybenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO
6"	<0.500	0.605	2.44	9.43	12.5	427	32200	6120
1.5'	<0.200	<0.200	0.219	0.909	<1.20	<50	1390	254
2'	<0.050	<0.050	<0.050	<0.150	<0.300	<10	235	68.1
3'	<0.050	<0.050	<0.050	<0.150	<0.300	<10	154	40.8
SP 3 (GPS: 32.5638611 -103.172933)								
Depth	Benzene	Toluene	Ethybenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO
1'	0.464	8.23	8.6	25.8	43.1	962	35700	6860
1.5'	1.23	25.8	28	75.1	130	2210	13500	2080
3'	<0.050	0.124	0.327	1.12	1.57	48	1480	264
4'	<0.050	<0.050	0.071	0.244	0.315	<10	316	68.7
5'	<0.050	<0.050	<0.050	<0.150	<0.300	<10	332	92.9
SP 4 (GPS: 32.56409722 -103.17318611)								
Depth	Benzene	Toluene	Ethybenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO
Surface	<0.200	0.228	1.91	7.08	9.22	264	24700	4930
1'	<0.050	<0.050	0.259	2.2	2.73	109	1970	181
2'	<0.050	<0.050	<0.050	<0.150	<0.300	10.3	543	106
3'	<0.050	<0.050	<0.050	<0.150	<0.300	<10	194	24.8


SP4
SP 2
BM Marcus Battery
SP 1
SP 3
100 ft
© 2018 Google

CARDINAL Laboratories

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

July 13, 2018

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: BM MARCUS BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 07/11/18 15:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received:	07/11/2018	Sampling Date:	07/11/2018
Reported:	07/13/2018	Sampling Type:	Soil
Project Name:	BM MARCUS BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: SP 1 @ 6" (H801890-01)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.500	0.500	07/12/2018	ND	1.84	91.8	2.00	0.0879	
Toluene*	**2.58**	0.500	07/12/2018	ND	1.81	90.6	2.00	0.132	
Ethylbenzene*	**5.77**	0.500	07/12/2018	ND	1.77	88.7	2.00	0.719	
Total Xylenes*	**19.1**	1.50	07/12/2018	ND	5.46	91.0	6.00	1.01	
Total BTEX	**27.5**	3.00	07/12/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *120 %* *69.8-142*

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*	**572**	100	07/12/2018	ND	231	116	200	6.54	
DRO >C10-C28*	**29300**	100	07/12/2018	ND	240	120	200	22.1	
EXT DRO >C28-C36	**5400**	100	07/12/2018	ND					

Surrogate: 1-Chlorooctane *155 %* *41-142*

Surrogate: 1-Chlorooctadecane *1470 %* *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:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received:	07/11/2018	Sampling Date:	07/11/2018
Reported:	07/13/2018	Sampling Type:	Soil
Project Name:	BM MARCUS BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: SP 1 @ 2' (H801890-02)

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	07/12/2018	ND	1.84	91.8	2.00	0.0879	
Toluene*	**0.468**	0.050	07/12/2018	ND	1.81	90.6	2.00	0.132	
Ethylbenzene*	**0.842**	0.050	07/12/2018	ND	1.77	88.7	2.00	0.719	
Total Xylenes*	**2.86**	0.150	07/12/2018	ND	5.46	91.0	6.00	1.01	
Total BTEX	**4.17**	0.300	07/12/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *125 %* *69.8-142*

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**66.3**	10.0	07/12/2018	ND	231	116	200	6.54	
DRO >C10-C28*	**830**	10.0	07/12/2018	ND	240	120	200	22.1	
EXT DRO >C28-C36	**116**	10.0	07/12/2018	ND					

Surrogate: 1-Chlorooctane *97.8 %* *41-142*

Surrogate: 1-Chlorooctadecane *116 %* *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:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received:	07/11/2018	Sampling Date:	07/11/2018
Reported:	07/13/2018	Sampling Type:	Soil
Project Name:	BM MARCUS BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: SP 2 @ 6" (H801890-03)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.500	0.500	07/12/2018	ND	1.84	91.8	2.00	0.0879	
Toluene*	**0.605**	0.500	07/12/2018	ND	1.81	90.6	2.00	0.132	
Ethylbenzene*	**2.44**	0.500	07/12/2018	ND	1.77	88.7	2.00	0.719	
Total Xylenes*	**9.43**	1.50	07/12/2018	ND	5.46	91.0	6.00	1.01	
Total BTEX	**12.5**	3.00	07/12/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIL *112 %* *69.8-142*

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*	**427**	100	07/12/2018	ND	231	116	200	6.54	
DRO >C10-C28*	**32200**	100	07/12/2018	ND	240	120	200	22.1	
EXT DRO >C28-C36	**6120**	100	07/12/2018	ND					

Surrogate: 1-Chlorooctane *170 %* *41-142*

Surrogate: 1-Chlorooctadecane *1610 %* *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:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received:	07/11/2018	Sampling Date:	07/11/2018
Reported:	07/13/2018	Sampling Type:	Soil
Project Name:	BM MARCUS BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: SP 2 @ 1.5' (H801890-04)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	07/12/2018	ND	1.84	91.8	2.00	0.0879	
Toluene*	<0.200	0.200	07/12/2018	ND	1.81	90.6	2.00	0.132	
Ethylbenzene*	**0.219**	0.200	07/12/2018	ND	1.77	88.7	2.00	0.719	
Total Xylenes*	**0.909**	0.600	07/12/2018	ND	5.46	91.0	6.00	1.01	
Total BTEX	<1.20	1.20	07/12/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *112 %* *69.8-142*

TPH 8015M mg/kg **Analyzed By: MS** **S-06**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<50.0	50.0	07/12/2018	ND	231	116	200	6.54	
DRO >C10-C28*	**1390**	50.0	07/12/2018	ND	240	120	200	22.1	
EXT DRO >C28-C36	**254**	50.0	07/12/2018	ND					

Surrogate: 1-Chlorooctane *115 %* *41-142*

Surrogate: 1-Chlorooctadecane *162 %* *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:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received:	07/11/2018	Sampling Date:	07/11/2018
Reported:	07/13/2018	Sampling Type:	Soil
Project Name:	BM MARCUS BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: SP 3 @ 1' (H801890-05)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**0.464**	0.200	07/12/2018	ND	1.84	91.8	2.00	0.0879	
Toluene*	**8.23**	0.200	07/12/2018	ND	1.81	90.6	2.00	0.132	
Ethylbenzene*	**8.60**	0.200	07/12/2018	ND	1.77	88.7	2.00	0.719	
Total Xylenes*	**25.8**	0.600	07/12/2018	ND	5.46	91.0	6.00	1.01	
Total BTEX	**43.1**	1.20	07/12/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *131 %* *69.8-142*

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*	**962**	100	07/12/2018	ND	231	116	200	6.54	
DRO >C10-C28*	**35700**	100	07/12/2018	ND	240	120	200	22.1	
EXT DRO >C28-C36	**6860**	100	07/12/2018	ND					

Surrogate: 1-Chlorooctane *208 %* *41-142*

Surrogate: 1-Chlorooctadecane *1880 %* *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:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received:	07/11/2018	Sampling Date:	07/11/2018
Reported:	07/13/2018	Sampling Type:	Soil
Project Name:	BM MARCUS BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: SP 3 @ 1.5' (H801890-06)

BTEX 8021B mg/kg **Analyzed By: MS** **S-04**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**1.23**	0.200	07/12/2018	ND	1.84	91.8	2.00	0.0879	
Toluene*	**25.8**	0.200	07/12/2018	ND	1.81	90.6	2.00	0.132	
Ethylbenzene*	**28.0**	0.200	07/12/2018	ND	1.77	88.7	2.00	0.719	
Total Xylenes*	**75.1**	0.600	07/12/2018	ND	5.46	91.0	6.00	1.01	
Total BTEX	**130**	1.20	07/12/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIL *150 %* *69.8-142*

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*	**2210**	50.0	07/12/2018	ND	231	116	200	6.54	
DRO >C10-C28*	**13500**	50.0	07/12/2018	ND	240	120	200	22.1	
EXT DRO >C28-C36	**2080**	50.0	07/12/2018	ND					

Surrogate: 1-Chlorooctane *204 %* *41-142*

Surrogate: 1-Chlorooctadecane *636 %* *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:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received:	07/11/2018	Sampling Date:	07/11/2018
Reported:	07/13/2018	Sampling Type:	Soil
Project Name:	BM MARCUS BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: SP 3 @ 3' (H801890-07)

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	07/12/2018	ND	1.84	91.8	2.00	0.0879	
Toluene*	**0.124**	0.050	07/12/2018	ND	1.81	90.6	2.00	0.132	
Ethylbenzene*	**0.327**	0.050	07/12/2018	ND	1.77	88.7	2.00	0.719	
Total Xylenes*	**1.12**	0.150	07/12/2018	ND	5.46	91.0	6.00	1.01	
Total BTEX	**1.57**	0.300	07/12/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIL *121 %* *69.8-142*

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*	**48.0**	10.0	07/12/2018	ND	231	116	200	6.54	
DRO >C10-C28*	**1480**	10.0	07/12/2018	ND	240	120	200	22.1	
EXT DRO >C28-C36	**264**	10.0	07/12/2018	ND					

Surrogate: 1-Chlorooctane *109 %* *41-142*

Surrogate: 1-Chlorooctadecane *168 %* *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:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received:	07/11/2018	Sampling Date:	07/11/2018
Reported:	07/13/2018	Sampling Type:	Soil
Project Name:	BM MARCUS BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: SP 4 @ SURFACE (H801890-08)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	07/12/2018	ND	1.84	91.8	2.00	0.0879	
Toluene*	**0.228**	0.200	07/12/2018	ND	1.81	90.6	2.00	0.132	
Ethylbenzene*	**1.91**	0.200	07/12/2018	ND	1.77	88.7	2.00	0.719	
Total Xylenes*	**7.08**	0.600	07/12/2018	ND	5.46	91.0	6.00	1.01	
Total BTEX	**9.22**	1.20	07/12/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *128 %* *69.8-142*

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*	**264**	100	07/12/2018	ND	231	116	200	6.54	
DRO >C10-C28*	**24700**	100	07/12/2018	ND	240	120	200	22.1	
EXT DRO >C28-C36	**4930**	100	07/12/2018	ND					

Surrogate: 1-Chlorooctane *146 %* *41-142*

Surrogate: 1-Chlorooctadecane *1330 %* *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:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received:	07/11/2018	Sampling Date:	07/11/2018
Reported:	07/13/2018	Sampling Type:	Soil
Project Name:	BM MARCUS BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: SP 4 @ 1' (H801890-09)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/12/2018	ND	1.84	91.8	2.00	0.0879	
Toluene*	<0.050	0.050	07/12/2018	ND	1.81	90.6	2.00	0.132	
Ethylbenzene*	**0.529**	0.050	07/12/2018	ND	1.77	88.7	2.00	0.719	
Total Xylenes*	**2.20**	0.150	07/12/2018	ND	5.46	91.0	6.00	1.01	
Total BTEX	**2.73**	0.300	07/12/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIL *133 %* *69.8-142*

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*	**109**	50.0	07/12/2018	ND	231	116	200	6.54	
DRO >C10-C28*	**1970**	50.0	07/12/2018	ND	240	120	200	22.1	
EXT DRO >C28-C36	**181**	50.0	07/12/2018	ND					

Surrogate: 1-Chlorooctane *128 %* *41-142*

Surrogate: 1-Chlorooctadecane *185 %* *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.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
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:	Apache	**BILL TO**	
Project Manager:	Bruce BAKer	P.O. #:	
Address:		Company:	
City:	Hobbs	State: NM Zip: 88240	Attn:
Phone #:		Fax #:	Address:
Project #:	Project Owner:		City:
Project Name:			State: Zip:
Project Location:	BM Marcus Battery		Phone #:
Sampler Name:	Bruce BAKer		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: Ext. TPH	BTEX
H801890																
1	SP 1 @ 6"	G	1			✓					✓		7-11-18	12:35pm	✓	✓
2	SP 1 @ 2'	G	1			✓					✓		7-11-18	1:15pm	✓	✓
3	SP 2 @ 6"	G	1			✓					✓		7-11-18	12:40pm	✓	✓
4	SP 2 @ 1.5'	G	1			✓					✓		7-11-18	12:35pm	✓	✓
5	SP 3 @ 1'	G	1			✓					✓		7-11-18	12:45pm	✓	✓
6	SP 3 @ 1.5'	G	1			✓					✓		7-11-18	1:00pm	✓	✓
7	SP 3 @ 3'	G	1			✓					✓		7-11-18	1:10pm	✓	✓
8	SP 4 @ Surface	G	1			✓					✓		7-11-18	1:20pm	✓	✓
9	SP 4 @ 1'	G	1			✓					✓		7-11-18	1:25pm	✓	✓

Relinquished By: Bruce Baker	Date: 7-11-18 Time: 15:15	Received By: Tamara Oldaker	
Relinquished By:	Date: Time:	Received By:	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	5.8c Corrected 5.7c	Sample Condition Cool: ☑ Yes ☐ No Intact: ☑ Yes ☐ No	CHECKED BY: (Initials) TO. #75

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS: Email

+ 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

July 27, 2018

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: BM MARCUS BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 07/23/18 14:38.

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:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received:	07/23/2018	Sampling Date:	07/23/2018
Reported:	07/27/2018	Sampling Type:	Soil
Project Name:	BM MARCUS BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: SP 1 @ 3' (H802001-01)

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	07/24/2018	ND	1.85	92.3	2.00	3.72	
Toluene*	<0.050	0.050	07/24/2018	ND	1.85	92.7	2.00	2.88	QR-03
Ethylbenzene*	<0.050	0.050	07/24/2018	ND	1.86	92.8	2.00	2.91	QR-03
Total Xylenes*	<0.150	0.150	07/24/2018	ND	5.39	89.8	6.00	2.89	QR-03
Total BTEX	<0.300	0.300	07/24/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *108 %* *69.8-142*

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*	<10.0	10.0	07/24/2018	ND	202	101	200	8.17	
DRO >C10-C28*	**556**	10.0	07/24/2018	ND	224	112	200	7.15	QM-07
EXT DRO >C28-C36	**145**	10.0	07/24/2018	ND					

Surrogate: 1-Chlorooctane *95.2 %* *41-142*

Surrogate: 1-Chlorooctadecane *149 %* *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:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received:	07/23/2018	Sampling Date:	07/23/2018
Reported:	07/27/2018	Sampling Type:	Soil
Project Name:	BM MARCUS BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: SP 1 @ 4' (H802001-02)

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	07/24/2018	ND	1.85	92.3	2.00	3.72	
Toluene*	<0.050	0.050	07/24/2018	ND	1.85	92.7	2.00	2.88	
Ethylbenzene*	<0.050	0.050	07/24/2018	ND	1.86	92.8	2.00	2.91	
Total Xylenes*	<0.150	0.150	07/24/2018	ND	5.39	89.8	6.00	2.89	
Total BTEX	<0.300	0.300	07/24/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *106 %* *69.8-142*

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	07/24/2018	ND	202	101	200	8.17	
DRO >C10-C28*	**257**	10.0	07/24/2018	ND	224	112	200	7.15	
EXT DRO >C28-C36	**57.1**	10.0	07/24/2018	ND					

Surrogate: 1-Chlorooctane *98.5 %* *41-142*

Surrogate: 1-Chlorooctadecane *119 %* *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:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received:	07/23/2018	Sampling Date:	07/23/2018
Reported:	07/27/2018	Sampling Type:	Soil
Project Name:	BM MARCUS BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: SP 2 @ 2' (H802001-03)

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	07/24/2018	ND	1.85	92.3	2.00	3.72	
Toluene*	<0.050	0.050	07/24/2018	ND	1.85	92.7	2.00	2.88	
Ethylbenzene*	<0.050	0.050	07/24/2018	ND	1.86	92.8	2.00	2.91	
Total Xylenes*	<0.150	0.150	07/24/2018	ND	5.39	89.8	6.00	2.89	
Total BTEX	<0.300	0.300	07/24/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *103 %* *69.8-142*

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	07/24/2018	ND	202	101	200	8.17	
DRO >C10-C28*	**235**	10.0	07/24/2018	ND	224	112	200	7.15	
EXT DRO >C28-C36	**68.1**	10.0	07/24/2018	ND					

Surrogate: 1-Chlorooctane *97.6 %* *41-142*

Surrogate: 1-Chlorooctadecane *126 %* *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:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received:	07/23/2018	Sampling Date:	07/23/2018
Reported:	07/27/2018	Sampling Type:	Soil
Project Name:	BM MARCUS BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: SP 2 @ 3' (H802001-04)

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	07/24/2018	ND	1.85	92.3	2.00	3.72	
Toluene*	<0.050	0.050	07/24/2018	ND	1.85	92.7	2.00	2.88	
Ethylbenzene*	<0.050	0.050	07/24/2018	ND	1.86	92.8	2.00	2.91	
Total Xylenes*	<0.150	0.150	07/24/2018	ND	5.39	89.8	6.00	2.89	
Total BTEX	<0.300	0.300	07/24/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *105 %* *69.8-142*

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	07/24/2018	ND	202	101	200	8.17	
DRO >C10-C28*	**154**	10.0	07/24/2018	ND	224	112	200	7.15	
EXT DRO >C28-C36	**40.8**	10.0	07/24/2018	ND					

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

Surrogate: 1-Chlorooctadecane *105 %* *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:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received:	07/23/2018	Sampling Date:	07/23/2018
Reported:	07/27/2018	Sampling Type:	Soil
Project Name:	BM MARCUS BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: SP 3 @ 5' (H802001-06)

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	07/24/2018	ND	1.85	92.3	2.00	3.72	
Toluene*	<0.050	0.050	07/24/2018	ND	1.85	92.7	2.00	2.88	
Ethylbenzene*	<0.050	0.050	07/24/2018	ND	1.86	92.8	2.00	2.91	
Total Xylenes*	<0.150	0.150	07/24/2018	ND	5.39	89.8	6.00	2.89	
Total BTEX	<0.300	0.300	07/24/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *105 %* *69.8-142*

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	07/24/2018	ND	202	101	200	8.17	
DRO >C10-C28*	**332**	10.0	07/24/2018	ND	224	112	200	7.15	
EXT DRO >C28-C36	**92.9**	10.0	07/24/2018	ND					

Surrogate: 1-Chlorooctane *76.6 %* *41-142*

Surrogate: 1-Chlorooctadecane *126 %* *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:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received:	07/23/2018	Sampling Date:	07/23/2018
Reported:	07/27/2018	Sampling Type:	Soil
Project Name:	BM MARCUS BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: SP 3 @ 4' (H802001-05)

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	07/24/2018	ND	1.85	92.3	2.00	3.72	
Toluene*	<0.050	0.050	07/24/2018	ND	1.85	92.7	2.00	2.88	
Ethylbenzene*	**0.071**	0.050	07/24/2018	ND	1.86	92.8	2.00	2.91	
Total Xylenes*	**0.244**	0.150	07/24/2018	ND	5.39	89.8	6.00	2.89	
Total BTEX	**0.315**	0.300	07/24/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *106 %* *69.8-142*

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	07/24/2018	ND	202	101	200	8.17	
DRO >C10-C28*	**316**	10.0	07/24/2018	ND	224	112	200	7.15	
EXT DRO >C28-C36	**68.7**	10.0	07/24/2018	ND					

Surrogate: 1-Chlorooctane *93.3 %* *41-142*

Surrogate: 1-Chlorooctadecane *122 %* *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:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received:	07/23/2018	Sampling Date:	07/23/2018
Reported:	07/27/2018	Sampling Type:	Soil
Project Name:	BM MARCUS BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: SP 4 @ 2' (H802001-07)

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	07/24/2018	ND	1.85	92.3	2.00	3.72	
Toluene*	<0.050	0.050	07/24/2018	ND	1.85	92.7	2.00	2.88	
Ethylbenzene*	<0.050	0.050	07/24/2018	ND	1.86	92.8	2.00	2.91	
Total Xylenes*	<0.150	0.150	07/24/2018	ND	5.39	89.8	6.00	2.89	
Total BTEX	<0.300	0.300	07/24/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *106 %* *69.8-142*

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**10.3**	10.0	07/24/2018	ND	202	101	200	8.17	
DRO >C10-C28*	**543**	10.0	07/24/2018	ND	224	112	200	7.15	
EXT DRO >C28-C36	**106**	10.0	07/24/2018	ND					

Surrogate: 1-Chlorooctane *94.5 %* *41-142*

Surrogate: 1-Chlorooctadecane *137 %* *37.6-147*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received:	07/23/2018	Sampling Date:	07/23/2018
Reported:	07/27/2018	Sampling Type:	Soil
Project Name:	BM MARCUS BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: SP 4 @ 3' (H802001-08)

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	07/24/2018	ND	1.85	92.3	2.00	3.72	
Toluene*	<0.050	0.050	07/24/2018	ND	1.85	92.7	2.00	2.88	
Ethylbenzene*	<0.050	0.050	07/24/2018	ND	1.86	92.8	2.00	2.91	
Total Xylenes*	<0.150	0.150	07/24/2018	ND	5.39	89.8	6.00	2.89	
Total BTEX	<0.300	0.300	07/24/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *107 %* *69.8-142*

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	07/24/2018	ND	202	101	200	8.17	
DRO >C10-C28*	**194**	10.0	07/24/2018	ND	224	112	200	7.15	
EXT DRO >C28-C36	**24.8**	10.0	07/24/2018	ND					

Surrogate: 1-Chlorooctane *82.5 %* *41-142*

Surrogate: 1-Chlorooctadecane *108 %* *37.6-147*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
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

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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:	Apache	**BILL TO**	
Project Manager:	Bruce Baker	P.O. #:	
Address:		Company:	
City:	Hobbs	State: NM Zip: 88240	Attn:
Phone #:		Fax #:	Address:
Project #:		Project Owner:	City:
Project Name:	BM Marcus Battery		State: Zip:
Project Location:			Phone #:
Sampler Name:	Bruce Baker		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	Ext. TPH	BTEX
H602001																
1	SP 1 @ 3'	G	1			✓					✓		7-23-18	1:00pm	✓	✓
2	SP 1 @ 4'	G	1			✓					✓		"	1:05pm	✓	✓
3	SP 2 @ 2'	G	1			✓					✓		"	1:15pm	✓	✓
4	SP 2 @ 3'	G	1			✓					✓		"	1:20pm	✓	✓
5	SP 3 @ 4'	G	1			✓					✓		"	1:25pm	✓	✓
6	SP 3 @ 5'	G	1			✓					✓		"	1:30pm	✓	✓
7	SP 4 @ 2'	G	1			✓					✓		"	1:35pm	✓	✓
8	SP 4 @ 3'	G	1			✓					✓		"	1:42pm	✓	✓

Relinquished By:	Date: 7-23-18	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Bruce Baker	Time: 2:38pm	Tamara Oldaker	Fax Result: ☐ Yes ☐ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS: Email Results
	Time:		

Delivered By: (Circle One) Sampler - UPS - Bus - Other: 5.8° Corrected 5.7°

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

CHECKED BY: (Initials) TO #5

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