



2350 W Marland Blvd Hobbs, NM 88240

Remediation Plan

October 22, 2020

Re: EAU 121

Case # NRM2021222458

Background:

On 7/22/2020 a release occurred due to a corroded 2-inch valve resulting in the loss of oil and produced water. The release (GPS: 32.7724266, -104.2583466) is located east of Artesia, NM in unit letter P section 3 township 18S range 27E. A groundwater survey was conducted utilizing USGS and NMOSE wells of record. The nearest well is at an elevation of 3479 with depth of water being 33 feet. The release is at an elevation of 3510 feet. The difference between elevation suggests the groundwater depth below the release area is 64 feet. The release is in area of high karst.

On 9/30/2020 vertical delineation was conducted utilizing a backhoe. Samples were collected in one-foot intervals. SP 1 was advanced to a depth of 1 foot, SP 2 was advanced to a depth of 4 feet, SP3 was advanced to a depth of 2 feet. Surface horizontal 5-point composite samples not to exceed 200 square feet were collected. All samples collected were submitted to a commercial laboratory for analysis of chloride, TPH, and BTEX. On 10/13/2020 SP 2 was taken to a depth of 7 feet and surface horizontal 5-point composite sample not exceeding 200 square feet was collected. All samples collected were submitted to a commercial laboratory for analysis of TPH. On 10/19/2020 a surface horizontal 5-point composite sample not exceeding 200 square feet as collected. This sample was taken to a commercial laboratory for analysis of TPH.

Remediation Plan:

Apache Corporation proposes that the area around SP 1 and SP 3 be excavated to a depth of 1 foot. The area around SP 2 be excavated to a depth of 6 feet. All excavated material (265 yards) will be hauled to an NMOCD approved facility. After the excavation is complete final 5-point bottom and wall composite samples will be collected not to exceed 200 square feet and submitted to a commercial laboratory for analysis of chloride, TPH, and BTEX. Once analytical data confirms that the excavation meet table 1 standards the excavation will be backfilled with clean imported caliche and sand the area restored. The remediation will be completed within 90 days of NMOCD approval of the plan.

Enclosed: C-141, Groundwater data, Maps, Sample Data, and Laboratory Results

Submitted by;

Jeff Broom

Environmental Technician

Jeffrey.Broom@apachecorp.com

Cell# 432-664-4677

Off# 575-393-7106

Incident ID	
District RP	
Facility ID	
Application ID	

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?	<u>64</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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

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.

State of New Mexico
Oil Conservation Division

Page 4

Incident ID	
District RP	
Facility ID	
Application ID	

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: Jeff Broom

Title: Environmental Technician

Signature: Jeff Broom Date: 10/22/2020

email: Jeffrey.Broom@apachecorp.com Telephone: 432.664.4677

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

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.

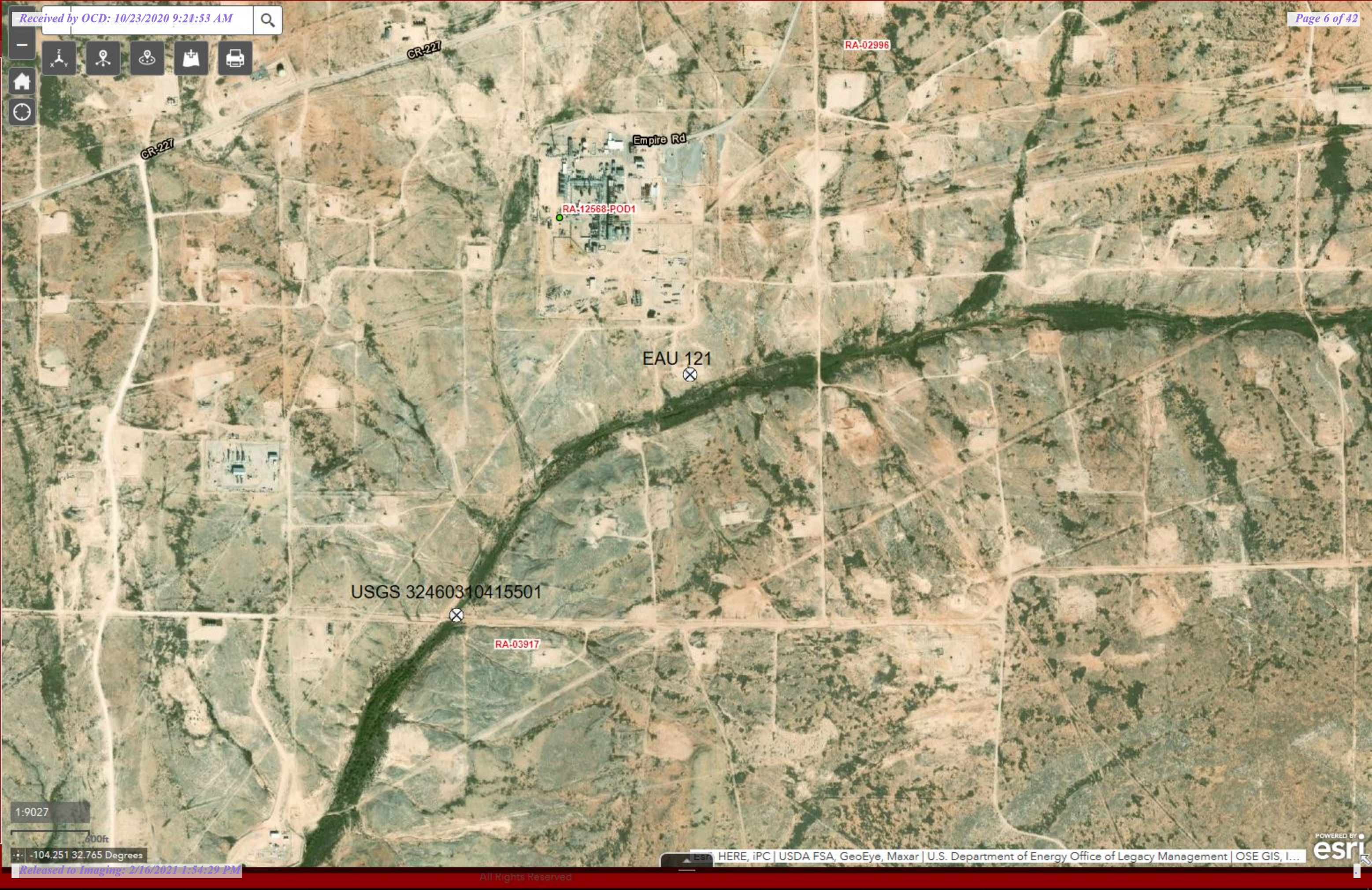
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public 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: Jeff BroomTitle: Environmental TechnicianSignature: Jeff Broom Date: 10/22/2020email: Jeffrey.Broom@apachecorp.comTelephone: 432.664.4677**OCD Only**

Received by: _____ Date: _____

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

Signature: _____ Date: _____



1:9027
600ft
-104.251 32.765 Degrees

Click to hide News Bulletins

- Introducing The Next Generation of USGS Water Data for the Nation
- Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =

- 324603104155001

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

USGS 324603104155001 18S.27E.10.213223

Available data for this site

Groundwater: Field measurements

GO

Eddy County, New Mexico
Hydrologic Unit Code 13060011
Latitude 32°46'03", Longitude 104°15'50" NAD27
Land-surface elevation 3,479 feet above NAVD88
The depth of the well is 130 feet below land surface.
This well is completed in the Artesia Group (313ARTS) local aquifer.

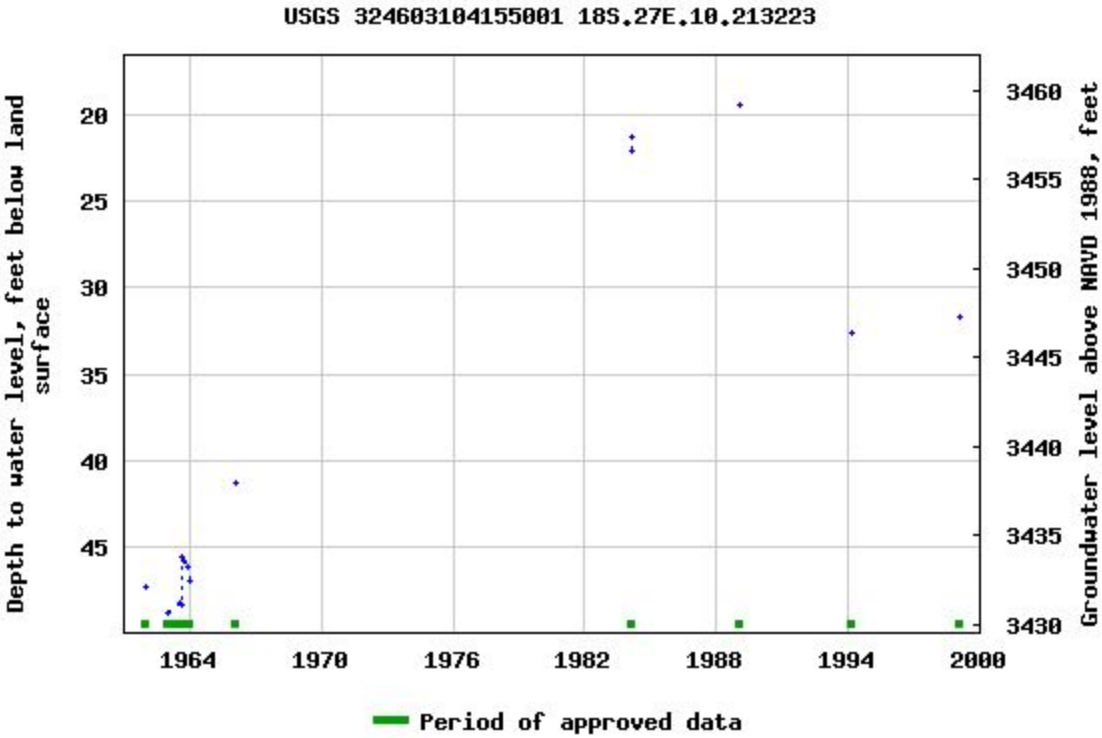
Output formats

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](#)

Coordinates

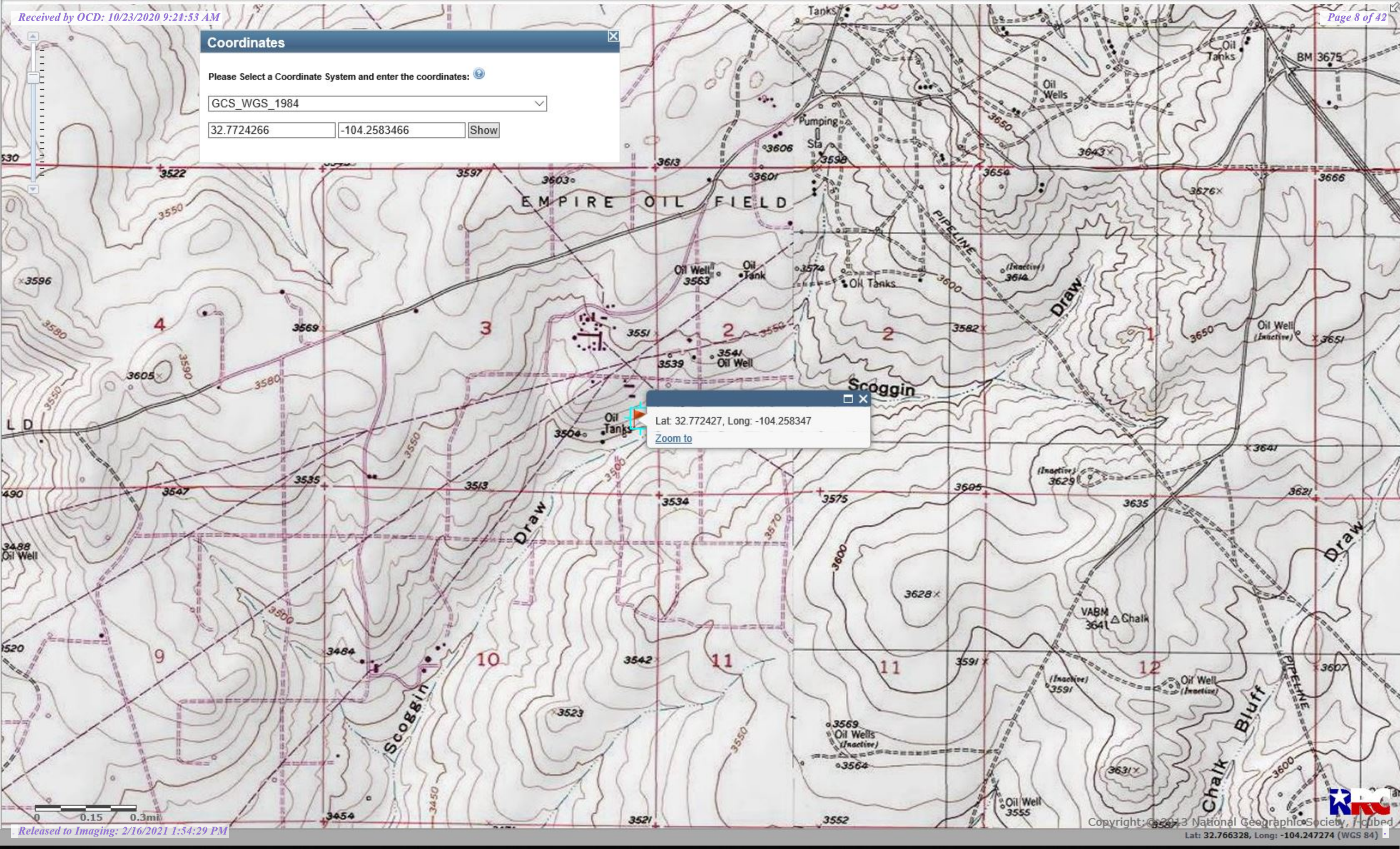
Please Select a Coordinate System and enter the coordinates:

GCS_WGS_1984

32.7724266

-104.2583466

Show





HC4

SP1

HC1

SP2

HC2

SP3

HC3

Delineation Samples

Sample Date	Sample ID	Depth	Chloride Field	Chloride Lab	Benzene	Toulene	Ethybenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO	GPS Coordinates
9/30/2020	SP 1	S	19,212	18,600	<0.050	<0.050	0.053	0.266	0.319	<10.0	7390	1780	32.77240 -104.25843
9/30/2020		1'	145	128	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	
9/30/2020	SP2	S	5858	8660	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	83.7	19	32.77236 -104.25859
9/30/2020		1'	1098	944	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	82.5	20	
9/30/2020		2'	890	448	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	
9/30/2020		3'	666	656	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	47.4	<10.0	
9/30/2020		4'	411	544	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	136	20.7	
10/13/2020		5'			<0.050	<0.050	0.116	0.777	0.893	28.2	1030	192	
10/13/2020		6'			<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	57.7	16.2	
10/13/2020		7'			<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	32.5	<10.0	
9/30/2020	SP3	S	239	96	<0.200	0.283	4.79	21.7	36.8	526	25500	4250	32.77226 -104.25878
9/30/2020		1'	117	<16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	14.2	<10.0	
9/30/2020		2'	89	<16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	28.9	<10.0	
9/30/2020	HC1	S	287	32.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.77240 -104.25831
9/30/2020	HC2	S	118	48.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.77234 -104.25863
9/30/2020	HC3	S	119	32.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.77226 -104.25881
9/30/2020	HC4	S	411	384.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	267	141	32.772428 -104.258642
10/13/2020					<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	225	178	
10/19/2020					<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	



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

October 05, 2020

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: EAU M-121

Enclosed are the results of analyses for samples received by the laboratory on 09/30/20 14:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-20-13. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager



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: 09/30/2020
 Reported: 10/05/2020
 Project Name: EAU M-121
 Project Number: EAU 121
 Project Location: EDDY COUNTY, NM

Sampling Date: 09/30/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: HC 1 (H002585-01)

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	10/01/2020	ND	2.19	110	2.00	0.301	
Toluene*	<0.050	0.050	10/01/2020	ND	2.11	105	2.00	0.696	
Ethylbenzene*	<0.050	0.050	10/01/2020	ND	2.18	109	2.00	0.947	
Total Xylenes*	<0.150	0.150	10/01/2020	ND	6.38	106	6.00	0.883	
Total BTEX	<0.300	0.300	10/01/2020	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	10/01/2020	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	10/01/2020	ND	204	102	200	1.25	
DRO >C10-C28*	<10.0	10.0	10/01/2020	ND	204	102	200	4.35	
EXT DRO >C28-C36	<10.0	10.0	10/01/2020	ND					

Surrogate: 1-Chlorooctane 93.9 % 44.3-144

Surrogate: 1-Chlorooctadecane 91.8 % 42.2-156

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/30/2020
 Reported: 10/05/2020
 Project Name: EAU M-121
 Project Number: EAU 121
 Project Location: EDDY COUNTY, NM

Sampling Date: 09/30/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: HC 2 (H002585-02)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/01/2020	ND	2.19	110	2.00	0.301	
Toluene*	<0.050	0.050	10/01/2020	ND	2.11	105	2.00	0.696	
Ethylbenzene*	<0.050	0.050	10/01/2020	ND	2.18	109	2.00	0.947	
Total Xylenes*	<0.150	0.150	10/01/2020	ND	6.38	106	6.00	0.883	
Total BTX	<0.300	0.300	10/01/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.6 % 73.3-129

Chloride, SM4500CI-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	10/01/2020	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	10/01/2020	ND	204	102	200	1.25	
DRO >C10-C28*	<10.0	10.0	10/01/2020	ND	204	102	200	4.35	
EXT DRO >C28-C36	<10.0	10.0	10/01/2020	ND					

Surrogate: 1-Chlorooctane 99.0 % 44.3-144

Surrogate: 1-Chlorooctadecane 96.6 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/30/2020
 Reported: 10/05/2020
 Project Name: EAU M-121
 Project Number: EAU 121
 Project Location: EDDY COUNTY, NM

Sampling Date: 09/30/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: HC 3 (H002585-03)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/01/2020	ND	2.19	110	2.00	0.301	
Toluene*	<0.050	0.050	10/01/2020	ND	2.11	105	2.00	0.696	
Ethylbenzene*	<0.050	0.050	10/01/2020	ND	2.18	109	2.00	0.947	
Total Xylenes*	<0.150	0.150	10/01/2020	ND	6.38	106	6.00	0.883	
Total BTX	<0.300	0.300	10/01/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.4 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	10/01/2020	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	10/01/2020	ND	204	102	200	1.25	
DRO >C10-C28*	<10.0	10.0	10/01/2020	ND	204	102	200	4.35	
EXT DRO >C28-C36	<10.0	10.0	10/01/2020	ND					

Surrogate: 1-Chlorooctane 92.7 % 44.3-144

Surrogate: 1-Chlorooctadecane 89.6 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/30/2020
 Reported: 10/05/2020
 Project Name: EAU M-121
 Project Number: EAU 121
 Project Location: EDDY COUNTY, NM

Sampling Date: 09/30/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: HC 4 (H002585-04)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/01/2020	ND	2.19	110	2.00	0.301	
Toluene*	<0.050	0.050	10/01/2020	ND	2.11	105	2.00	0.696	
Ethylbenzene*	<0.050	0.050	10/01/2020	ND	2.18	109	2.00	0.947	
Total Xylenes*	<0.150	0.150	10/01/2020	ND	6.38	106	6.00	0.883	
Total BTX	<0.300	0.300	10/01/2020	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	384	16.0	10/01/2020	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	10/01/2020	ND	204	102	200	1.25	
DRO >C10-C28*	267	10.0	10/01/2020	ND	204	102	200	4.35	
EXT DRO >C28-C36	141	10.0	10/01/2020	ND					

Surrogate: 1-Chlorooctane 94.5 % 44.3-144

Surrogate: 1-Chlorooctadecane 103 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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: 09/30/2020
 Reported: 10/05/2020
 Project Name: EAU M-121
 Project Number: EAU 121
 Project Location: EDDY COUNTY, NM

Sampling Date: 09/30/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 1 @ SURFACE (H002585-05)

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	10/01/2020	ND	2.19	110	2.00	0.301	
Toluene*	<0.050	0.050	10/01/2020	ND	2.11	105	2.00	0.696	
Ethylbenzene*	0.053	0.050	10/01/2020	ND	2.18	109	2.00	0.947	
Total Xylenes*	0.266	0.150	10/01/2020	ND	6.38	106	6.00	0.883	
Total BTEX	0.319	0.300	10/01/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 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	18600	16.0	10/01/2020	ND	416	104	400	0.00	QM-07
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	10/01/2020	ND	204	102	200	1.25	
DRO >C10-C28*	7390	10.0	10/01/2020	ND	204	102	200	4.35	
EXT DRO >C28-C36	1780	10.0	10/01/2020	ND					

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	10/01/2020	ND	204	102	200	1.25	
DRO >C10-C28*	7390	10.0	10/01/2020	ND	204	102	200	4.35	
EXT DRO >C28-C36	1780	10.0	10/01/2020	ND					

Surrogate: 1-Chlorooctane 95.0 % 44.3-144

Surrogate: 1-Chlorooctadecane 375 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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: 09/30/2020
 Reported: 10/05/2020
 Project Name: EAU M-121
 Project Number: EAU 121
 Project Location: EDDY COUNTY, NM

Sampling Date: 09/30/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 1 @ 1' (H002585-06)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/01/2020	ND	2.19	110	2.00	0.301	
Toluene*	<0.050	0.050	10/01/2020	ND	2.11	105	2.00	0.696	
Ethylbenzene*	<0.050	0.050	10/01/2020	ND	2.18	109	2.00	0.947	
Total Xylenes*	<0.150	0.150	10/01/2020	ND	6.38	106	6.00	0.883	
Total BTX	<0.300	0.300	10/01/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	10/01/2020	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	10/01/2020	ND	204	102	200	1.25	
DRO >C10-C28*	<10.0	10.0	10/01/2020	ND	204	102	200	4.35	
EXT DRO >C28-C36	<10.0	10.0	10/01/2020	ND					

Surrogate: 1-Chlorooctane 95.4 % 44.3-144

Surrogate: 1-Chlorooctadecane 93.6 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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: 09/30/2020
 Reported: 10/05/2020
 Project Name: EAU M-121
 Project Number: EAU 121
 Project Location: EDDY COUNTY, NM

Sampling Date: 09/30/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 2 @ SURFACE (H002585-07)

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	10/02/2020	ND	2.19	110	2.00	0.301	
Toluene*	<0.050	0.050	10/02/2020	ND	2.11	105	2.00	0.696	
Ethylbenzene*	0.375	0.050	10/02/2020	ND	2.18	109	2.00	0.947	
Total Xylenes*	2.63	0.150	10/02/2020	ND	6.38	106	6.00	0.883	
Total BTEX	3.01	0.300	10/02/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 175 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	8660	16.0	10/01/2020	ND	416	104	400	0.00	

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*	215	50.0	10/01/2020	ND	204	102	200	1.25	
DRO >C10-C28*	31600	50.0	10/01/2020	ND	204	102	200	4.35	
EXT DRO >C28-C36	6660	50.0	10/01/2020	ND					

Surrogate: 1-Chlorooctane 170 % 44.3-144

Surrogate: 1-Chlorooctadecane 1210 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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: 09/30/2020
 Reported: 10/05/2020
 Project Name: EAU M-121
 Project Number: EAU 121
 Project Location: EDDY COUNTY, NM

Sampling Date: 09/30/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 2 @ 1' (H002585-08)

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	10/01/2020	ND	2.19	110	2.00	0.301		
Toluene*	<0.050	0.050	10/01/2020	ND	2.11	105	2.00	0.696		
Ethylbenzene*	<0.050	0.050	10/01/2020	ND	2.18	109	2.00	0.947		
Total Xylenes*	<0.150	0.150	10/01/2020	ND	6.38	106	6.00	0.883		
Total BTEX	<0.300	0.300	10/01/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	944	16.0	10/01/2020	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	10/01/2020	ND	204	102	200	1.25	
DRO >C10-C28*	82.5	10.0	10/01/2020	ND	204	102	200	4.35	
EXT DRO >C28-C36	20.0	10.0	10/01/2020	ND					

Surrogate: 1-Chlorooctane 89.5 % 44.3-144

Surrogate: 1-Chlorooctadecane 87.3 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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: 09/30/2020
 Reported: 10/05/2020
 Project Name: EAU M-121
 Project Number: EAU 121
 Project Location: EDDY COUNTY, NM

Sampling Date: 09/30/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 2 @ 2' (H002585-09)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/01/2020	ND	2.19	110	2.00	0.301	
Toluene*	<0.050	0.050	10/01/2020	ND	2.11	105	2.00	0.696	
Ethylbenzene*	<0.050	0.050	10/01/2020	ND	2.18	109	2.00	0.947	
Total Xylenes*	<0.150	0.150	10/01/2020	ND	6.38	106	6.00	0.883	
Total BTX	<0.300	0.300	10/01/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	448	16.0	10/01/2020	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	10/01/2020	ND	204	102	200	1.25	
DRO >C10-C28*	<10.0	10.0	10/01/2020	ND	204	102	200	4.35	
EXT DRO >C28-C36	<10.0	10.0	10/01/2020	ND					

Surrogate: 1-Chlorooctane 92.1 % 44.3-144

Surrogate: 1-Chlorooctadecane 90.5 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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: 09/30/2020
 Reported: 10/05/2020
 Project Name: EAU M-121
 Project Number: EAU 121
 Project Location: EDDY COUNTY, NM

Sampling Date: 09/30/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 2 @ 3' (H002585-10)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/01/2020	ND	2.19	110	2.00	0.301	
Toluene*	<0.050	0.050	10/01/2020	ND	2.11	105	2.00	0.696	
Ethylbenzene*	<0.050	0.050	10/01/2020	ND	2.18	109	2.00	0.947	
Total Xylenes*	<0.150	0.150	10/01/2020	ND	6.38	106	6.00	0.883	
Total BTX	<0.300	0.300	10/01/2020	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	656	16.0	10/01/2020	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	10/01/2020	ND	204	102	200	1.25	
DRO >C10-C28*	47.4	10.0	10/01/2020	ND	204	102	200	4.35	
EXT DRO >C28-C36	<10.0	10.0	10/01/2020	ND					

Surrogate: 1-Chlorooctane 97.8 % 44.3-144

Surrogate: 1-Chlorooctadecane 97.1 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/30/2020
 Reported: 10/05/2020
 Project Name: EAU M-121
 Project Number: EAU 121
 Project Location: EDDY COUNTY, NM

Sampling Date: 09/30/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 2 @ 4' (H002585-11)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/01/2020	ND	2.19	110	2.00	0.301	
Toluene*	<0.050	0.050	10/01/2020	ND	2.11	105	2.00	0.696	
Ethylbenzene*	<0.050	0.050	10/01/2020	ND	2.18	109	2.00	0.947	
Total Xylenes*	<0.150	0.150	10/01/2020	ND	6.38	106	6.00	0.883	
Total BTX	<0.300	0.300	10/01/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	544	16.0	10/01/2020	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	10/01/2020	ND	204	102	200	1.25	
DRO >C10-C28*	136	10.0	10/01/2020	ND	204	102	200	4.35	
EXT DRO >C28-C36	20.7	10.0	10/01/2020	ND					

Surrogate: 1-Chlorooctane 95.1 % 44.3-144

Surrogate: 1-Chlorooctadecane 97.3 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/30/2020
 Reported: 10/05/2020
 Project Name: EAU M-121
 Project Number: EAU 121
 Project Location: EDDY COUNTY, NM

Sampling Date: 09/30/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 3 @ SURFACE (H002585-12)

BTX 8021B		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	10/01/2020	ND	2.19	110	2.00	0.301	
Toluene*	0.283	0.200	10/01/2020	ND	2.11	105	2.00	0.696	
Ethylbenzene*	4.79	0.200	10/01/2020	ND	2.18	109	2.00	0.947	
Total Xylenes*	21.7	0.600	10/01/2020	ND	6.38	106	6.00	0.883	
Total BTX	26.8	1.20	10/01/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 154 % 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	10/01/2020	ND	416	104	400	0.00	

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*	526	50.0	10/01/2020	ND	204	102	200	1.25	
DRO >C10-C28*	25500	50.0	10/01/2020	ND	204	102	200	4.35	
EXT DRO >C28-C36	4250	50.0	10/01/2020	ND					

Surrogate: 1-Chlorooctane 248 % 44.3-144

Surrogate: 1-Chlorooctadecane 872 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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: 09/30/2020
 Reported: 10/05/2020
 Project Name: EAU M-121
 Project Number: EAU 121
 Project Location: EDDY COUNTY, NM

Sampling Date: 09/30/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 3 @ 1' (H002585-13)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/01/2020	ND	2.19	110	2.00	0.301	
Toluene*	<0.050	0.050	10/01/2020	ND	2.11	105	2.00	0.696	
Ethylbenzene*	<0.050	0.050	10/01/2020	ND	2.18	109	2.00	0.947	
Total Xylenes*	<0.150	0.150	10/01/2020	ND	6.38	106	6.00	0.883	
Total BTX	<0.300	0.300	10/01/2020	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/01/2020	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	10/02/2020	ND	204	102	200	1.25	
DRO >C10-C28*	14.2	10.0	10/02/2020	ND	204	102	200	4.35	
EXT DRO >C28-C36	<10.0	10.0	10/02/2020	ND					

Surrogate: 1-Chlorooctane 99.3 % 44.3-144

Surrogate: 1-Chlorooctadecane 95.0 % 42.2-156

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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: 09/30/2020
 Reported: 10/05/2020
 Project Name: EAU M-121
 Project Number: EAU 121
 Project Location: EDDY COUNTY, NM

Sampling Date: 09/30/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 3 @ 2' (H002585-14)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/01/2020	ND	2.19	110	2.00	0.301	
Toluene*	<0.050	0.050	10/01/2020	ND	2.11	105	2.00	0.696	
Ethylbenzene*	<0.050	0.050	10/01/2020	ND	2.18	109	2.00	0.947	
Total Xylenes*	<0.150	0.150	10/01/2020	ND	6.38	106	6.00	0.883	
Total BTX	<0.300	0.300	10/01/2020	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/01/2020	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	10/01/2020	ND	204	102	200	1.25	
DRO >C10-C28*	28.9	10.0	10/01/2020	ND	204	102	200	4.35	
EXT DRO >C28-C36	<10.0	10.0	10/01/2020	ND					

Surrogate: 1-Chlorooctane 86.4 % 44.3-144

Surrogate: 1-Chlorooctadecane 84.8 % 42.2-156

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Apache Corporation							BILL TO							ANALYSIS REQUEST						
Project Manager: Bruce Baker							P.O. #:													
Address:							Company:													
City:							Attn:													
State:							Address:													
Phone #:							City:													
Project #:							State:							Zip:						
Project Name: EAR 121							Phone #:													
Project Location: EAR 121							Fax #:													
Sampler Name: J. Brown							MATRIX							SAMPLING						
FOR LAB USE ONLY							(G)RAB OR (C)OMP.													
Lab I.D.							# CONTAINERS													
Sample I.D.							GROUNDWATER													
							WASTEWATER													
							SOIL													
							OIL													
							SLUDGE													
							OTHER :													
							ACID/BASE:													
							ICE / COOL													
							OTHER :													
H000585							DATE							TIME						
1 HC1							9/30/20							0923						
2 HC2														0925						
3 HC3														0927						
4 HC4														0928						
5 SP1 @ Surface														0937						
6 SP1 @ 1'														0939						
7 SP2 @ Surface														0944						
8 SP2 @ 1'														1000						
9 SP2 @ 2'														1004						
10 SP2 @ 3'														1022						

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 consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:				Date: 9/30/20				Received By:				Date: 9/30/20			
Relinquished By: J. Brown				Date: 9/30/20				Received By: Heidi Mueller				Date: 9/30/20			
Time:				Time:				Time:				Time:			
Delivered By: (Circle One)				Observed Temp. °C				Corrected Temp. °C				Sample Condition			
Sampler - UPS - Bus - Other:				1.9				Cool Intact				Checked BY:			
								Yes No Yes No				Initials			
								Yes No Yes No				Thermometer ID #113			
								Correction Factor None				Standard Rush			
								Yes No Yes No				Bacteria (only) Sample Condition			
								Yes No Yes No				Cool Intact Observed Temp. °C			
								Yes No Yes No				Corrected Temp. °C			
REMARKS:															
Verbal Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Add'l Phone #:															
All Results are emailed. Please provide Email address:															



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



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

October 15, 2020

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: EAU 121

Enclosed are the results of analyses for samples received by the laboratory on 10/13/20 14:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-20-13. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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: 10/13/2020
 Reported: 10/15/2020
 Project Name: EAU 121
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 10/13/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 1 @ 5' (H002721-01)

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	10/13/2020	ND	2.09	104	2.00	0.144	
Toluene*	<0.050	0.050	10/13/2020	ND	2.07	104	2.00	0.312	
Ethylbenzene*	0.116	0.050	10/13/2020	ND	2.02	101	2.00	0.364	
Total Xylenes*	0.777	0.150	10/13/2020	ND	5.78	96.4	6.00	0.303	
Total BTEX	0.893	0.300	10/13/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 123 % 73.3-129

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	28.2	10.0	10/14/2020	ND	204	102	200	6.58	
DRO >C10-C28*	1030	10.0	10/14/2020	ND	212	106	200	6.26	
EXT DRO >C28-C36	192	10.0	10/14/2020	ND					

Surrogate: 1-Chlorooctane 93.7 % 44.3-144

Surrogate: 1-Chlorooctadecane 105 % 42.2-156

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 10/13/2020
 Reported: 10/15/2020
 Project Name: EAU 121
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 10/13/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 1 @ 6' (H002721-02)

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/13/2020	ND	2.09	104	2.00	0.144		
Toluene*	<0.050	0.050	10/13/2020	ND	2.07	104	2.00	0.312		
Ethylbenzene*	<0.050	0.050	10/13/2020	ND	2.02	101	2.00	0.364		
Total Xylenes*	<0.150	0.150	10/13/2020	ND	5.78	96.4	6.00	0.303		
Total BTX	<0.300	0.300	10/13/2020	ND						

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

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	10/14/2020	ND	204	102	200	6.58	
DRO >C10-C28*	57.7	10.0	10/14/2020	ND	212	106	200	6.26	
EXT DRO >C28-C36	16.2	10.0	10/14/2020	ND					

Surrogate: 1-Chlorooctane 83.9 % 44.3-144

Surrogate: 1-Chlorooctadecane 95.8 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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: 10/13/2020
 Reported: 10/15/2020
 Project Name: EAU 121
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 10/13/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 1 @ 7' (H002721-03)

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	10/14/2020	ND	1.98	98.8	2.00	10.1		
Toluene*	<0.050	0.050	10/14/2020	ND	2.00	100	2.00	10.2		
Ethylbenzene*	<0.050	0.050	10/14/2020	ND	2.03	101	2.00	10.0		
Total Xylenes*	<0.150	0.150	10/14/2020	ND	5.86	97.7	6.00	9.12		
Total BTEX	<0.300	0.300	10/14/2020	ND						

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

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	10/14/2020	ND	204	102	200	6.58	
DRO >C10-C28*	32.5	10.0	10/14/2020	ND	212	106	200	6.26	
EXT DRO >C28-C36	<10.0	10.0	10/14/2020	ND					

Surrogate: 1-Chlorooctane 89.1 % 44.3-144

Surrogate: 1-Chlorooctadecane 98.9 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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: 10/13/2020
 Reported: 10/15/2020
 Project Name: EAU 121
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 10/13/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: HC 4 (H002721-04)

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	10/14/2020	ND	1.98	98.8	2.00	10.1	
Toluene*	<0.050	0.050	10/14/2020	ND	2.00	100	2.00	10.2	
Ethylbenzene*	<0.050	0.050	10/14/2020	ND	2.03	101	2.00	10.0	
Total Xylenes*	<0.150	0.150	10/14/2020	ND	5.86	97.7	6.00	9.12	
Total BTEx	<0.300	0.300	10/14/2020	ND					

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

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	10/14/2020	ND	204	102	200	6.58	
DRO >C10-C28*	225	10.0	10/14/2020	ND	212	106	200	6.26	
EXT DRO >C28-C36	178	10.0	10/14/2020	ND					

Surrogate: 1-Chlorooctane 65.4 % 44.3-144

Surrogate: 1-Chlorooctadecane 85.2 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Apache Corporation Project Manager: Bruce Baker		P.O. #: Company:	
Address:		Attn:	
City:	State:	Zip:	Address:
Phone #:	Fax #:	City:	State:
Project #:		Project Owner:	Zip:
Project Name: EAU 121		Project Location: EAU 121	Phone #:
Sampler Name: Jeff Brown		Fax #:	Analysis Request

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	BTX	EXT. TPH
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :				
AE00724	1 SP105'	✓				✓				12/13/20	0919	✓	
	2 SP106'	✓				✓				12/13/20	0921	✓	
	3 SP107'	✓				✓				12/13/20	0922	✓	
	4 Hc4	✓				✓				12/13/20	0925	✓	

Relinquished By: Jeff Brown Date: 12/13/20 Time: 1435		Received By: [Signature] Date: 12/13/20 Time: 1435	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Observed Temp. °C: 5.2 Corrected Temp. °C:	
Sample Condition: Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Checked By: [Signature] Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>	
Thermometer ID #97 Correction Factor +0.5°C		Bacteria (only) Sample Condition: Cool <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's recourse 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 consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services rendered by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Verbal Result: ☐ Yes ☐ No Add'l Phone #:
All Results are emailed. Please provide Email address:
REMARKS:

† Cardinal cannot accept verbal changes. Please email changes to celey.kee@cardinalabnm.com



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

October 22, 2020

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: EAU 121

Enclosed are the results of analyses for samples received by the laboratory on 10/19/20 11:13.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-20-13. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is fluid and cursive, with the first name "Celey" and last name "Keene" clearly distinguishable.

Celey D. Keene

Lab Director/Quality Manager



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: 10/19/2020
 Reported: 10/22/2020
 Project Name: EAU 121
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 10/19/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: HC 4 (H002774-01)

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	10/21/2020	ND	2.03	102	2.00	4.66	
Toluene*	<0.050	0.050	10/21/2020	ND	2.03	101	2.00	5.71	
Ethylbenzene*	<0.050	0.050	10/21/2020	ND	1.95	97.4	2.00	4.81	
Total Xylenes*	<0.150	0.150	10/21/2020	ND	5.67	94.4	6.00	3.13	
Total BTEX	<0.300	0.300	10/21/2020	ND					

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

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	10/20/2020	ND	222	111	200	0.124	
DRO >C10-C28*	<10.0	10.0	10/20/2020	ND	214	107	200	0.876	
EXT DRO >C28-C36	<10.0	10.0	10/20/2020	ND					

Surrogate: 1-Chlorooctane 110 % 44.3-144

Surrogate: 1-Chlorooctadecane 108 % 42.2-156

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



ANALYSIS REQUEST

† Cardinal cannot accept verbal changes. Please email changes to celej.keene@cardinallabsnm.com

Incident ID	
District RP	
Facility ID	
Application ID	

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: Jeff BroomTitle: Environmental TechnicianSignature: Jeff Broom Date: 10/22/2020email: Jeffrey.Broom@apachecorp.com Telephone: 432.664.4677**OCD Only**Received by: Chad Hensley Date: 02/16/2021☐ Approved ☒ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral ApprovedSignature: Chad Hensley Date: 02/16/2021

From: [Hensley, Chad, EMNRD](#)
To: [Baker, Larry](#)
Subject: FW: NRM2021222458 EAU 121 Remediation Plan
Date: Tuesday, February 16, 2021 1:35:00 PM
Attachments: [Approved Remediation Plan NRM2021222458 EAU 121 .pdf](#)

Larry,

The OCD has approved with conditions the submitted Remediation Request C-141 for incident # NRM2021222458:

- The depth to groundwater has not been determined. When nearby wells are used to determine depth to groundwater, the wells should be no further than 0.5 mile away from the site, and data should be no more than 25 years old, and well construction information should be provided. The responsible party may choose to remediate to the most stringent levels listed in Table 1 in lieu of drilling to determine the depth to groundwater.
- This release has occurred in a High Karst area and will need to be remediated to the strictest closure criteria of <50' depth to groundwater from Table 1 of the spill rule. The current spill rule may be viewed here: <http://164.64.110.134/parts/title19/19.015.0029.html>

Cheers,

Chad Hensley • Environmental Science & Specialist

Environmental Bureau

EMNRD - Oil Conservation Division

811 First St. | Artesia, NM 88210

Office: 575.748.1283 | Cell: 575-703-1723

chad.hensley@state.nm.us

<http://www.emnrd.state.nm.us/OCD/>



District I

1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II

811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 10820

CONDITIONS OF APPROVAL

Operator:		OGRID:	Action Number:	Action Type:
#1000	APACHE CORPORATION Midland, TX79705	873	10820	C-141
	303 Veterans Airpark Ln			

OCD Reviewer	Condition
chensley	The OCD has approved with conditions the submitted Remediation Request C-141 for incident # NRM2021222458: • The depth to groundwater has not been determined. When nearby wells are used to determine depth to groundwater, the wells should be no further than 0.5 mile away from the site, and data should be no more than 25 years old, and well construction information should be provided. The responsible party may choose to remediate to the most stringent levels listed in Table 1 in lieu of drilling t