



303 Veterans Airpark Lane Midland, TX 79705

Remediation Plan

August 26, 2020

Re: EAU 47

Case # NRM1931831123

Background:

On 8/10/2019 a release occurred due to buried steel flow line corroded resulting in the loss of produced water. The release (GPS: 32.79977, -104.13909) is located east of Artesia, NM in unit letter P section 26 township 17S range 28E. A remediation plan was submitted and denied by OCD on 2/17/2020. A ground water survey was conducted utilizing data from NMOSE and USGS. The nearest well indicates ground water below the release to be 257 feet below ground surface.

On 2/21/2020 SP 3 was further delineated to a depth of 1 foot. The sample collected was submitted to a commercial laboratory for analysis of chloride, TPH, and BTEX. Horizontal surface 5 point composite samples were collected and submitted to a commercial laboratory for analysis of chloride, TPH, and BTEX. On 8/13/2020 SP 1 was further delineated to a depth of 3 feet and SP 2 to a depth of 2 feet. Both samples collected were submitted to a commercial laboratory for analysis of TPH and BTEX.

Remediation Plan:

Apache Corporation proposes that the pasture area around SP 1 and SP 2 be excavated to a depth of 2 feet. The area on the lease road at SP 3 be excavated to a depth of 1 foot. After the excavation is complete final five point bottom composite samples will be collected not to exceed 1,000 square feet and final five point wall composite samples will be collected not to exceed 200 square feet. All excavated soil (450 yards) will be hauled to an OCD approved disposal facility. The lease road will be backfilled with clean imported caliche and the pasture with clean imported top soil and contoured to the surrounding area. The pasture area will be reseeded to surface landowners guidelines. The remediation will be completed within six months of the OCD approval date of the plan.

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

Submitted by;

Bruce Baker

Environmental Technician

larry.baker@apachecorp.com

Cell# 432-631-6982

Off# 432-818-1000

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>257</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 type="checkbox"/> Yes <input checked="" 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: Larry Baker Title: Environmental Tech SR.
Signature: *Larry Baker* Date: 8/27/2020
email: larry.baker@apachecorp.com Telephone: 432-631-6982

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: Larry Baker Title: Environmental Tech SR.
Signature: Larry Baker Date: 8/27/2020
email: larry.baker@apachecorp.com Telephone: 432-631-6982

OCD Only

Received by: Chad Hensley Date: 04/19/2021

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

Signature: Chad Hensley Date: 04/19/2021



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National Water Information System: Web Interface

USGS Water Resources

Data Category:
Groundwater

Geographic Area:
United States

GO

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Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =
• 324724104082301

Minimum number of levels = 1
[Save file of selected sites](#) to local disk for future upload

USGS 324724104082301 17S.28E.35.42233

Available data for this site

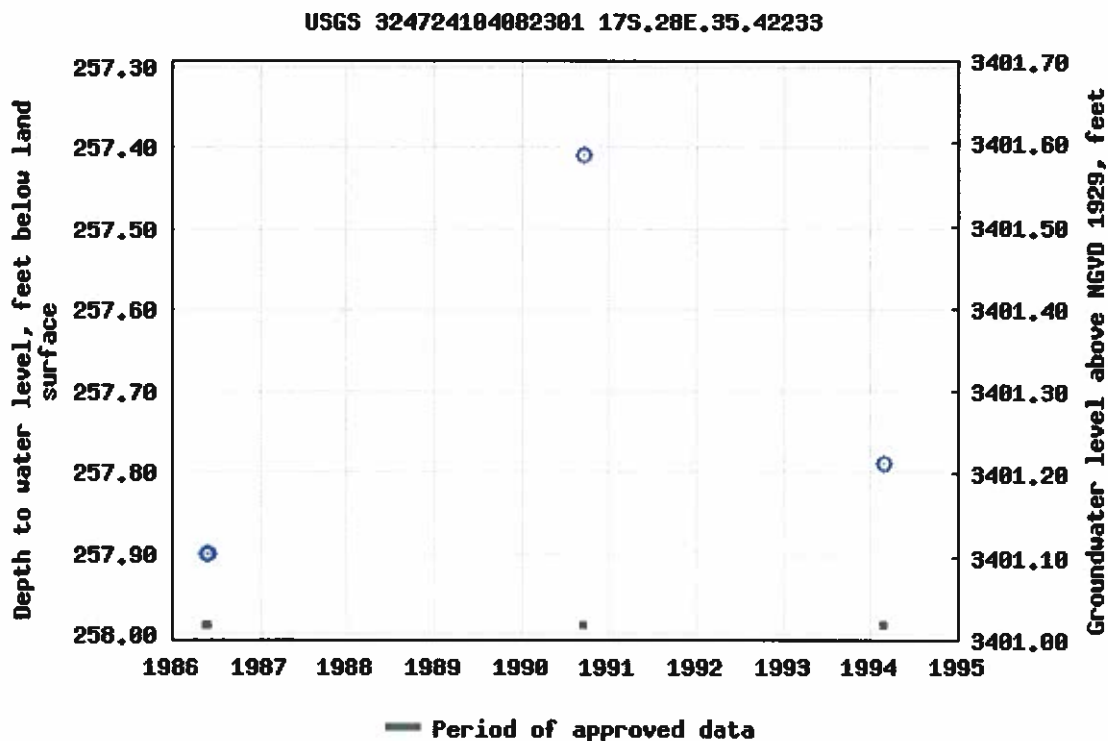
Groundwater: Field measurements

GO

Eddy County, New Mexico
Hydrologic Unit Code 13060011
Latitude 32°47'24", Longitude 104°08'23" NAD27
Land-surface elevation 3,659 feet above NGVD29
The depth of the well is 280.00 feet below land surface.
This well is completed in the Rustler Formation (312RSLR) 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.

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Title: Groundwater for USA: Water Levels

URL: <https://nwis.waterdata.usgs.gov/nwis/gwlevels?>



Page Contact Information: [USGS Water Data Support Team](#)

Page Last Modified: 2020-01-02 10:44:41 EST

0.57 0.48 nadww01

Radius

Buffer Size (miles) :

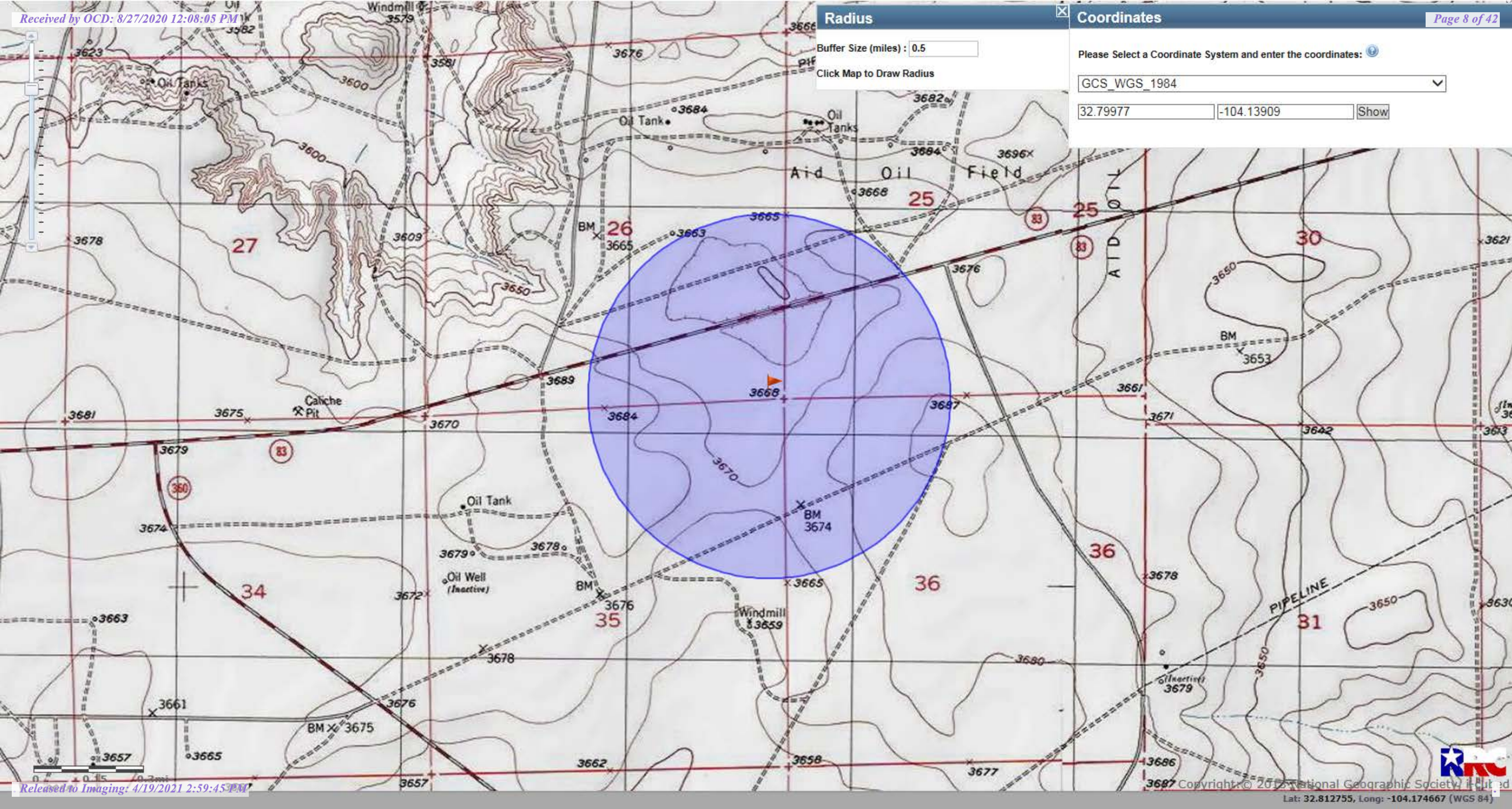
Click Map to Draw Radius

Coordinates

Please Select a Coordinate System and enter the coordinates:

GCS_WGS_1984

Show





Click to see historical imagery from 1996.

Released to Imaging: 4/19/2021 2:59:45 PM

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Google earth

NEDU Injection Line

Complete List

Sample Date	Sample ID	Depth	Chloride Lab	Benzene	Toulene	Ethybenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO	GPS Coordinates
10/23/2019	SP1	S	4,800	ND	ND	ND	ND	ND	ND	42000	22400	32.799816, - 104.138513
10/23/2019		1'	2,070	ND	ND	ND	ND	ND	ND	2510	1230	
10/23/2019		2'	320	ND	ND	ND	ND	ND	ND	198	259	
8/13/2020				<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	
10/23/2019	SP 2	S	1,610	ND	ND	ND	ND	ND	ND	63.9	ND	32.799686, - 104.138727
10/23/2019		1'	312	ND	ND	ND	ND	ND	ND	215	319	
8/13/2020				<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	
10/23/2019	SP 3	S	1,520	ND	ND	ND	ND	ND	ND	3660	2990	32.799686, - 104.138513
2/21/2020		1'	<16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	
2/21/2020	HC1	S	96	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.799615, - 104.139089
2/21/2020	HC2	S	16	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.79962, - 104.13864
2/21/2020	HC3	S	<16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.79999, - 104.13845
2/21/2020	HC4	S	<16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.799736, - 104.138750



Analytical Report

Report Summary

Client: Hungry Horse

Samples Received: 10/29/2019

Job Number: 19054-0003

Work Order: P910184

Project Name/Location: Apache Corp- Empire Abo
Unit C47

Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Walter Hinchman', is written over a horizontal line.

Date: 10/30/19

Walter Hinchman, Laboratory Director



Envirotech Inc. certifies the test results meet all requirements of TNI unless footnoted otherwise.
Statement of Data Authenticity: Envirotech, Inc. attests the data reported has not been altered in any way.
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Envirotech, Inc. holds the Texas TNI certification T104704557-19-2 for the data reported.

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Page 1 of 15



Hungry Horse
PO box 1058
Hobbs NM, 88240

Project Name: Apache Corp- Empire Abo Unit C47
Project Number: 19054-0003
Project Manager: Lindsey Salgado

Reported:
10/30/19 17:22

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
SP1-Surf	P910184-01A	Soil	10/23/19	10/29/19	Glass Jar, 4 oz.
SP2-Surf	P910184-02A	Soil	10/23/19	10/29/19	Glass Jar, 4 oz.
SP3-Surf	P910184-03A	Soil	10/23/19	10/29/19	Glass Jar, 4 oz.
SP1-1'	P910184-04A	Soil	10/23/19	10/29/19	Glass Jar, 4 oz.
SP2-1'	P910184-05A	Soil	10/23/19	10/29/19	Glass Jar, 4 oz.
SP1-2'	P910184-06A	Soil	10/23/19	10/29/19	Glass Jar, 4 oz.

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Hungry Horse
PO box 1058
Hobbs NM, 88240

Project Name: Apache Corp- Empire Abo Unit C47
Project Number: 19054-0003
Project Manager: Lindsey Salgado

Reported:
10/30/19 17:22

SP1-Surf
P910184-01 (Solid)

Reporting

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Volatile Organics by EPA 8021

Benzene	ND	0.0500	mg/kg	2	1944006	10/29/19	10/29/19	EPA 8021B	
Toluene	ND	0.0500	mg/kg	2	1944006	10/29/19	10/29/19	EPA 8021B	
Ethylbenzene	ND	0.0500	mg/kg	2	1944006	10/29/19	10/29/19	EPA 8021B	
p,m-Xylene	ND	0.100	mg/kg	2	1944006	10/29/19	10/29/19	EPA 8021B	
o-Xylene	ND	0.0500	mg/kg	2	1944006	10/29/19	10/29/19	EPA 8021B	
Total Xylenes	ND	0.0500	mg/kg	2	1944006	10/29/19	10/29/19	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		103 %		50-150	1944006	10/29/19	10/29/19	EPA 8021B	

Nonhalogenated Organics by 8015 - DRO/ORO

Diesel Range Organics (C10-C28)	42000	1250	mg/kg	50	1944008	10/29/19	10/29/19	EPA 8015D	
Oil Range Organics (C28-C40)	22400	2500	mg/kg	50	1944008	10/29/19	10/29/19	EPA 8015D	
Surrogate: n-Nonane		156 %		50-200	1944008	10/29/19	10/29/19	EPA 8015D	

Nonhalogenated Organics by 8015 - GRO

Gasoline Range Organics (C6-C10)	ND	40.0	mg/kg	2	1944006	10/29/19	10/29/19	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		84.6 %		50-150	1944006	10/29/19	10/29/19	EPA 8015D	

Anions by 300.0/9056A

Chloride	4800	40.0	mg/kg	2	1944005	10/29/19	10/29/19	EPA 300.0/9056A	
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Hungry Horse
PO box 1058
Hobbs NM, 88240

Project Name: Apache Corp- Empire Abo Unit C47
Project Number: 19054-0003
Project Manager: Lindsey Salgado

Reported:
10/30/19 17:22

**SP2-Surf
P910184-02 (Solid)**

Reporting

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Volatile Organics by EPA 8021

Benzene	ND	0.0250	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	

Surrogate: 4-Bromochlorobenzene-PID 105 % 50-150 1944006 10/29/19 10/29/19 EPA 8021B

Nonhalogenated Organics by 8015 - DRO/ORO

Diesel Range Organics (C10-C28)	63.9	25.0	mg/kg	1	1944008	10/29/19	10/29/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1944008	10/29/19	10/29/19	EPA 8015D	

Surrogate: n-Nonane 105 % 50-200 1944008 10/29/19 10/29/19 EPA 8015D

Nonhalogenated Organics by 8015 - GRO

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8015D	
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Surrogate: 1-Chloro-4-fluorobenzene-PID 86.5 % 50-150 1944006 10/29/19 10/29/19 EPA 8015D

Anions by 300.0/9056A

Chloride	1610	40.0	mg/kg	2	1944005	10/29/19	10/29/19	EPA 300.0 9056A	
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Hungry Horse
PO box 1058
Hobbs NM, 88240

Project Name: Apache Corp- Empire Abo Unit C47
Project Number: 19054-0003
Project Manager: Lindsey Salgado

Reported:
10/30/19 17:22

**SP3-Surf
P910184-03 (Solid)**

Reporting

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Volatile Organics by EPA 8021

Benzene	ND	0.0250	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		105 %		50-150	1944006	10/29/19	10/29/19	EPA 8021B	

Nonhalogenated Organics by 8015 - DRO/ORO

Diesel Range Organics (C10-C28)	3660	500	mg/kg	20	1944008	10/29/19	10/29/19	EPA 8015D	
Oil Range Organics (C28-C40)	2990	1000	mg/kg	20	1944008	10/29/19	10/29/19	EPA 8015D	
Surrogate: n-Nonane		127 %		50-200	1944008	10/29/19	10/29/19	EPA 8015D	

Nonhalogenated Organics by 8015 - GRO

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		85.4 %		50-150	1944006	10/29/19	10/29/19	EPA 8015D	

Anions by 300.0/9056A

Chloride	1520	40.0	mg/kg	2	1944005	10/29/19	10/29/19	EPA 300.0/9056A	
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Hungry Horse
PO box 1058
Hobbs NM, 88240

Project Name: Apache Corp- Empire Abo Unit C47
Project Number: 19054-0003
Project Manager: Lindsey Salgado

Reported:
10/30/19 17:22

SP1-I'
P910184-04 (Solid)

Reporting

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Volatile Organics by EPA 8021

Benzene	ND	0.0250	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	

Surrogate: 4-Bromochlorobenzene-PID 108 % 50-150 1944006 10/29/19 10/29/19 EPA 8021B

Nonhalogenated Organics by 8015 - DRO/ORO

Diesel Range Organics (C10-C28)	2510	500	mg/kg	20	1944008	10/29/19	10/29/19	EPA 8015D	
Oil Range Organics (C28-C40)	1230	1000	mg/kg	20	1944008	10/29/19	10/29/19	EPA 8015D	

Surrogate: n-Nonane 124 % 50-200 1944008 10/29/19 10/29/19 EPA 8015D

Nonhalogenated Organics by 8015 - GRO

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8015D	
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Surrogate: 1-Chloro-4-fluorobenzene-FID 85.7 % 50-150 1944006 10/29/19 10/29/19 EPA 8015D

Anions by 300.0/9056A

Chloride	2070	40.0	mg/kg	2	1944005	10/29/19	10/29/19	EPA 300.0/9056A	
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Hungry Horse
PO box 1058
Hobbs NM, 88240

Project Name: Apache Corp- Empire Abo Unit C47
Project Number: 19054-0003
Project Manager: Lindsey Salgado

Reported:
10/30/19 17:22

SP2-1'
P910184-05 (Solid)

Reporting

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Volatile Organics by EPA 8021

Benzene	ND	0.0250	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	

Surrogate: 4-Bromochlorobenzene-PID 105 % 50-150 1944006 10/29/19 10/29/19 EPA 8021B

Nonhalogenated Organics by 8015 - DRO/ORO

Diesel Range Organics (C10-C28)	215	125	mg/kg	5	1944008	10/29/19	10/29/19	EPA 8015D	
Oil Range Organics (C28-C40)	319	250	mg/kg	5	1944008	10/29/19	10/29/19	EPA 8015D	

Surrogate: n-Nonane 113 % 50-200 1944008 10/29/19 10/29/19 EPA 8015D

Nonhalogenated Organics by 8015 - GRO

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8015D	
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Surrogate: 1-Chloro-4-fluorobenzene-FID 86.4 % 50-150 1944006 10/29/19 10/29/19 EPA 8015D

Anions by 300.0/9056A

Chloride	312	20.0	mg/kg	1	1944005	10/29/19	10/29/19	EPA 300.0 9056A	
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Hungry Horse
PO box 1058
Hobbs NM, 88240

Project Name: Apache Corp- Empire Abo Unit C47
Project Number: 19054-0003
Project Manager: Lindsey Salgado

Reported:
10/30/19 17:22

SP1-2'
P910184-06 (Solid)

Reporting

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Volatile Organics by EPA 8021

Benzene	ND	0.0250	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8021B	

Surrogate: 4-Bromochlorobenzene-PID 104 % 50-150 1944006 10/29/19 10/29/19 EPA 8021B

Nonhalogenated Organics by 8015 - DRO/ORO

Diesel Range Organics (C10-C28)	198	125	mg/kg	5	1944008	10/29/19	10/29/19	EPA 8015D	
Oil Range Organics (C28-C40)	259	250	mg/kg	5	1944008	10/29/19	10/29/19	EPA 8015D	

Surrogate: n-Nonane 116 % 50-200 1944008 10/29/19 10/29/19 EPA 8015D

Nonhalogenated Organics by 8015 - GRO

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1944006	10/29/19	10/29/19	EPA 8015D	
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Surrogate: 1-Chloro-4-fluorobenzene-FID 86.0 % 50-150 1944006 10/29/19 10/29/19 EPA 8015D

Anions by 300.0/9056A

Chloride	320	20.0	mg/kg	1	1944005	10/29/19	10/29/19	EPA 300.0.9056A	
----------	-----	------	-------	---	---------	----------	----------	-----------------	--

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Hungry Horse
PO box 1058
Hobbs NM, 88240

Project Name: Apache Corp- Empire Abo Unit C47
Project Number: 19054-0003
Project Manager: Lindsey Salgado

Reported:
10/30/19 17:22

Volatile Organics by EPA 8021 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1944006 - Purge and Trap EPA 5030A

Blank (1944006-BLK1)

Prepared & Analyzed: 10/29/19 1

Benzene	ND	0.0250	mg/kg							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
p,m-Xylene	ND	0.0500	"							
o-Xylene	ND	0.0250	"							
Total Xylenes	ND	0.0250	"							

Surrogate: 4-Bromochlorobenzene-PHD 8.38 8.00 105 50-150

LCS (1944006-BS1)

Prepared & Analyzed: 10/29/19 1

Benzene	4.27	0.0250	mg/kg	5.00		85.5	70-130			
Toluene	4.77	0.0250	"	5.00		95.4	70-130			
Ethylbenzene	4.87	0.0250	"	5.00		97.4	70-130			
p,m-Xylene	9.70	0.0500	"	10.0		97.0	70-130			
o-Xylene	4.86	0.0250	"	5.00		97.2	70-130			
Total Xylenes	14.6	0.0250	"	15.0		97.1	70-130			

Surrogate: 4-Bromochlorobenzene-PHD 8.57 8.00 107 50-150

Matrix Spike (1944006-MS1)

Source: P910184-02

Prepared: 10/29/19 1 Analyzed: 10/29/19 2

Benzene	3.96	0.0250	mg/kg	5.00	ND	79.2	54.3-133			
Toluene	4.48	0.0250	"	5.00	ND	89.6	61.4-130			
Ethylbenzene	4.53	0.0250	"	5.00	ND	90.6	61.4-133			
p,m-Xylene	9.03	0.0500	"	10.0	ND	90.3	63.3-131			
o-Xylene	4.55	0.0250	"	5.00	ND	90.9	63.3-131			
Total Xylenes	13.6	0.0250	"	15.0	ND	90.5	63.3-131			

Surrogate: 4-Bromochlorobenzene-PHD 8.50 8.00 106 50-150

Matrix Spike Dup (1944006-MSD1)

Source: P910184-02

Prepared: 10/29/19 1 Analyzed: 10/29/19 2

Benzene	4.22	0.0250	mg/kg	5.00	ND	84.5	54.3-133	6.48	20	
Toluene	4.72	0.0250	"	5.00	ND	94.3	61.4-130	5.15	20	
Ethylbenzene	4.84	0.0250	"	5.00	ND	96.8	61.4-133	6.58	20	
p,m-Xylene	9.63	0.0500	"	10.0	ND	96.3	63.3-131	6.42	20	
o-Xylene	4.85	0.0250	"	5.00	ND	97.0	63.3-131	6.47	20	
Total Xylenes	14.5	0.0250	"	15.0	ND	96.5	63.3-131	6.44	20	

Surrogate: 4-Bromochlorobenzene-PHD 8.55 8.00 107 50-150

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Hungry Horse
PO box 1058
Hobbs NM, 88240

Project Name: Apache Corp- Empire Abo Unit C47
Project Number: 19054-0003
Project Manager: Lindsey Salgado

Reported:
10/30/19 17:22

Nonhalogenated Organics by 8015 - DRO/ORO - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1944008 - DRO Extraction EPA 3570

Blank (1944008-BLK1)

Prepared: 10/29/19 | Analyzed: 10/30/19 0

Diesel Range Organics (C10-C28)	ND	25.0	mg/kg							
Oil Range Organics (C28-C40)	ND	50.0	"							
Surrogate: n-Nonane	47.5		"	50.0		95.0	50-200			

LCS (1944008-BS1)

Prepared: 10/29/19 | Analyzed: 10/30/19 0

Diesel Range Organics (C10-C28)	496	25.0	mg/kg	500		99.3	38-132			
Surrogate: n-Nonane	50.8		"	50.0		102	50-200			

Matrix Spike (1944008-MS1)

Source: P910167-01

Prepared: 10/29/19 | Analyzed: 10/30/19 1

Diesel Range Organics (C10-C28)	511	25.0	mg/kg	500	ND	102	38-132			
Surrogate: n-Nonane	49.4		"	50.0		98.8	50-200			

Matrix Spike Dup (1944008-MSD1)

Source: P910167-01

Prepared: 10/29/19 | Analyzed: 10/30/19 1

Diesel Range Organics (C10-C28)	525	25.0	mg/kg	500	ND	105	38-132	2.61	20	
Surrogate: n-Nonane	48.7		"	50.0		97.3	50-200			

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Hungry Horse
PO box 1058
Hobbs NM, 88240

Project Name: Apache Corp- Empire Abo Unit C47
Project Number: 19054-0003
Project Manager: Lindsey Salgado

Reported:
10/30/19 17:22

Nonhalogenated Organics by 8015 - GRO - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1944006 - Purge and Trap EPA 5030A

Blank (1944006-BLK1)

Prepared & Analyzed: 10/29/19 1

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg							
Surrogate: 1-Chloro-4-fluorobenzene-FID	6.89		"	8.00		86.1	50-150			

LCS (1944006-BS2)

Prepared: 10/29/19 1 Analyzed: 10/29/19 2

Gasoline Range Organics (C6-C10)	47.4	20.0	mg/kg	50.0		94.7	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	6.89		"	8.00		86.1	50-150			

Matrix Spike (1944006-MS2)

Source: P910184-02

Prepared: 10/29/19 1 Analyzed: 10/29/19 2

Gasoline Range Organics (C6-C10)	47.8	20.0	mg/kg	50.0	ND	95.5	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	6.93		"	8.00		86.6	50-150			

Matrix Spike Dup (1944006-MSD2)

Source: P910184-02

Prepared: 10/29/19 1 Analyzed: 10/29/19 2

Gasoline Range Organics (C6-C10)	47.3	20.0	mg/kg	50.0	ND	94.5	70-130	1.05	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.03		"	8.00		87.9	50-150			

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Hungry Horse
PO box 1058
Hobbs NM, 88240

Project Name: Apache Corp- Empire Abo Unit C47
Project Number: 19054-0003
Project Manager: Lindsey Salgado

Reported:
10/30/19 17:22

Anions by 300.0/9056A - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1944005 - Anion Extraction EPA 300.0/9056A

Blank (1944005-BLK1)

Prepared & Analyzed: 10/29/19 1

Chloride ND 20.0 mg/kg

LCS (1944005-BS1)

Prepared & Analyzed: 10/29/19 1

Chloride 254 20.0 mg/kg 250 102 90-110

Matrix Spike (1944005-MS1)

Source: P910184-01

Prepared & Analyzed: 10/29/19 1

Chloride 4920 40.0 mg/kg 250 4800 45.9 80-120 M4

Matrix Spike Dup (1944005-MSD1)

Source: P910184-01

Prepared: 10/29/19 1 Analyzed: 10/30/19 1

Chloride 5340 40.0 mg/kg 250 4800 215 80-120 8.26 20 M4

QC Summary Report

Comment:

Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

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Hungry Horse	Project Name:	Apache Corp- Empire Abo Unit C47	Reported: 10/30/19 17:22
PO box 1058	Project Number:	19054-0003	
Hobbs NM, 88240	Project Manager:	Lindsey Salgado	

Notes and Definitions

- M4 Matrix spike recovery value is suspect since the analyte concentration in the sample is disproportionate to the spike level. The associated LCS spike recovery was acceptable.
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- RPD Relative Percent Difference
- ** Methods marked with ** are non-accredited methods.

Soil data is reported on an "as received" weight basis, unless reported otherwise.

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Project Information

** Rush **

Chain of Custody

Page 1 of 1

Client: <u>Apache Corp</u>		Report Attention		Lab Use Only		TAT		EPA Program				
Project: <u>Empty Abc Unit C47</u>		Report due by:		Lab WO# <u>P910004</u>		Job Number <u>19094-0003</u>		1D	3D	RCRA	CWA	SDWA
Project Manager: <u>Luis Salgado</u>		Attention:		Analysis and Method				State				
Address: <u>10 Box 1058</u>		Address:		5108 by 8015		5108 by 8015		NM				
City, State, Zip: <u>Hobbs, NM 88401</u>		City, State, Zip:		8108 by 8021		8108 by 8021		CO				
Phone: <u>Larry Baker @ Apache Corp</u>		Phone:		VOC by 8260		VOC by 8260		UT				
Email: <u>lsalgado@apachecorp.com</u>		Email:		Chloride 300.0		Chloride 300.0		AZ				
Time Sampled	Date Sampled	Matrix	No Containers	Sample ID	Lab Number	5108 by 8015	5108 by 8015	8108 by 8021	VOC by 8260	Chloride 300.0	Remarks	
10:15	10/25/19	S	1	SP1-Surf	1	X	X	X	X	X		
10:20				SP2-Surf	2	X	X	X	X	X		
10:30				SP3-Surf	3	X	X	X	X	X		
11:00				SP1-1'	4	X	X	X	X	X		
11:30				SP2-1'	5	X	X	X	X	X		
12:19				SP1-2'	6	X	X	X	X	X		

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Sampled by: [Signature] Date: 10/25/19 Time: 9:36

Received by: (Signature) [Signature] Date: 10/25/19 Time: 9:40

Received on ice: [Signature] T1: 1545 T2: 1545 T3: 1545

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other

Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.

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FedEx 10/29/19 10:20

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Project Information

* Crush *

Chain of Custody

Page 1 of 1

Client: Apache Corp Project: Empire Abandonment C47 Project Manager: Lindsay Salgado Address: PO Box 1058 City, State, Zip: Hobbs, NM 88240 Phone: Harry.Baker@apachecorp.com Email: lsalgado@hugobury-horse.com					Report Attention Report due by: Attention: Address: City, State, Zip: Phone: Email:					Lab Use Only Lab WO# P10284 Job Number 19054-0003 Analysis and Method					TAT 1D 3D		EPA Program RCRA CWA SDWA		
															State NM CO UT AZ				
Time Sampled	Date Sampled	Matrix	No. Containers	Sample ID	Lab Number	DRO/DRO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0						Remarks		
10:15	10/25/19	S	1	SP1-Surf	1	X	X	X		X	X								
10:20				SP2-Surf	2	X	X	X		X	X								
10:30				SP3-Surf	3	X	X	X		X	X								
11:00				SP1-1'	4	X	X	X		X	X								
11:30				SP2-1'	5	X	X	X		X	X								
12:19				SP1-2'	6	X	X	X		X	X								
Additional Instructions: I, (Field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling this sample location, date or time of collection is considered fraud and may be grounds for legal action. Sampled by: Relinquished by: (Signature) <i>[Signature]</i> Date 10/25 Time 9:36 Received by: (Signature) <i>[Signature]</i> Date 10/25 Time 9:40 Relinquished by: (Signature) <i>[Signature]</i> Date 10/25 Time Received by: (Signature) <i>[Signature]</i> Date 10/25 Time 1545 Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.																			



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 10/29/19 10:20

FedEx 10/28/19 1435
 10/29/19 10:20

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

February 28, 2020

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: EAU C 47

Enclosed are the results of analyses for samples received by the laboratory on 02/21/20 15:02.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. 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: 02/21/2020
 Reported: 02/28/2020
 Project Name: EAU C 47
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 02/21/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 3 @ 1' (H000559-01)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2020	ND	2.05	102	2.00	5.24	
Toluene*	<0.050	0.050	02/27/2020	ND	2.06	103	2.00	4.83	
Ethylbenzene*	<0.050	0.050	02/27/2020	ND	2.08	104	2.00	5.23	
Total Xylenes*	<0.150	0.150	02/27/2020	ND	6.04	101	6.00	5.33	
Total BTEX	<0.300	0.300	02/27/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.0 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	02/25/2020	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/28/2020	ND	213	107	200	2.46	
DRO >C10-C28*	<10.0	10.0	02/28/2020	ND	202	101	200	0.314	
EXT DRO >C28-C36	<10.0	10.0	02/28/2020	ND					

Surrogate: 1-Chlorooctane 87.2 % 44.3-144

Surrogate: 1-Chlorooctadecane 89.2 % 42.2-156

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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Notes and Definitions

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

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

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

Celey D. Keene, Lab Director/Quality Manager

Page 4 of 4



CARDINAL
Laboratories

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

February 28, 2020

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: EAU C 47

Enclosed are the results of analyses for samples received by the laboratory on 02/21/20 15:06.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. 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: 02/21/2020
 Reported: 02/28/2020
 Project Name: EAU C 47
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 02/21/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: HORIZONTAL 1 (H000560-01)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2020	ND	2.05	102	2.00	5.24	
Toluene*	<0.050	0.050	02/27/2020	ND	2.06	103	2.00	4.83	
Ethylbenzene*	<0.050	0.050	02/27/2020	ND	2.08	104	2.00	5.23	
Total Xylenes*	<0.150	0.150	02/27/2020	ND	6.04	101	6.00	5.33	
Total BTEX	<0.300	0.300	02/27/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.5 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	02/25/2020	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/28/2020	ND	213	107	200	2.46	
DRO >C10-C28*	<10.0	10.0	02/28/2020	ND	202	101	200	0.314	
EXT DRO >C28-C36	<10.0	10.0	02/28/2020	ND					

Surrogate: 1-Chlorooctane 81.0 % 44.3-144

Surrogate: 1-Chlorooctadecane 80.3 % 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: 02/21/2020
 Reported: 02/28/2020
 Project Name: EAU C 47
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 02/21/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: HORIZONTAL 2 (H000560-02)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2020	ND	2.05	102	2.00	5.24	
Toluene*	<0.050	0.050	02/27/2020	ND	2.06	103	2.00	4.83	
Ethylbenzene*	<0.050	0.050	02/27/2020	ND	2.08	104	2.00	5.23	
Total Xylenes*	<0.150	0.150	02/27/2020	ND	6.04	101	6.00	5.33	
Total BTX	<0.300	0.300	02/27/2020	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	02/25/2020	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/28/2020	ND	213	107	200	2.46	
DRO >C10-C28*	<10.0	10.0	02/28/2020	ND	202	101	200	0.314	
EXT DRO >C28-C36	<10.0	10.0	02/28/2020	ND					

Surrogate: 1-Chlorooctane 91.3 % 44.3-144

Surrogate: 1-Chlorooctadecane 93.3 % 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: 02/21/2020
 Reported: 02/28/2020
 Project Name: EAU C 47
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 02/21/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: HORIZONTAL 3 (H000560-03)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2020	ND	2.05	102	2.00	5.24	
Toluene*	<0.050	0.050	02/27/2020	ND	2.06	103	2.00	4.83	
Ethylbenzene*	<0.050	0.050	02/27/2020	ND	2.08	104	2.00	5.23	
Total Xylenes*	<0.150	0.150	02/27/2020	ND	6.04	101	6.00	5.33	
Total BTX	<0.300	0.300	02/27/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.9 % 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	02/25/2020	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/28/2020	ND	208	104	200	2.93	
DRO >C10-C28*	<10.0	10.0	02/28/2020	ND	226	113	200	0.526	
EXT DRO >C28-C36	<10.0	10.0	02/28/2020	ND					

Surrogate: 1-Chlorooctane 85.2 % 44.3-144

Surrogate: 1-Chlorooctadecane 87.2 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 02/21/2020
 Reported: 02/28/2020
 Project Name: EAU C 47
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 02/21/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: HORIZONTAL 4 (H000560-04)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2020	ND	2.05	102	2.00	5.24	
Toluene*	<0.050	0.050	02/27/2020	ND	2.06	103	2.00	4.83	
Ethylbenzene*	<0.050	0.050	02/27/2020	ND	2.08	104	2.00	5.23	
Total Xylenes*	<0.150	0.150	02/27/2020	ND	6.04	101	6.00	5.33	
Total BTX	<0.300	0.300	02/27/2020	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	<16.0	16.0	02/25/2020	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/28/2020	ND	208	104	200	2.93	
DRO >C10-C28*	<10.0	10.0	02/28/2020	ND	226	113	200	0.526	
EXT DRO >C28-C36	<10.0	10.0	02/28/2020	ND					

Surrogate: 1-Chlorooctane 83.4 % 44.3-144

Surrogate: 1-Chlorooctadecane 83.6 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager

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Notes and Definitions

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

Celey D. Keene, Lab Director/Quality Manager



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Laboratories

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(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



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

August 19, 2020

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: EAU 47

Enclosed are the results of analyses for samples received by the laboratory on 08/13/20 14:39.

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 letters of the first and last names being capitalized and prominent.

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: 08/13/2020
 Reported: 08/19/2020
 Project Name: EAU 47
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 08/13/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ 3' (H002117-01)

BTEX 8021B			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/14/2020	ND	2.03	101	2.00	1.76	
Toluene*	<0.050	0.050	08/14/2020	ND	2.05	102	2.00	1.53	
Ethylbenzene*	<0.050	0.050	08/14/2020	ND	2.03	101	2.00	1.55	
Total Xylenes*	<0.150	0.150	08/14/2020	ND	5.90	98.4	6.00	1.54	
Total BTEX	<0.300	0.300	08/14/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.5 % 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	08/14/2020	ND	178	88.8	200	1.03	
DRO >C10-C28*	<10.0	10.0	08/14/2020	ND	167	83.6	200	0.611	
EXT DRO >C28-C36	<10.0	10.0	08/14/2020	ND					

Surrogate: 1-Chlorooctane 85.0 % 44.3-144

Surrogate: 1-Chlorooctadecane 89.2 % 42.2-156

Cardinal Laboratories

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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: 08/13/2020
 Reported: 08/19/2020
 Project Name: EAU 47
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 08/13/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ 2' (H002117-02)

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	08/14/2020	ND	2.03	101	2.00	1.76		
Toluene*	<0.050	0.050	08/14/2020	ND	2.05	102	2.00	1.53		
Ethylbenzene*	<0.050	0.050	08/14/2020	ND	2.03	101	2.00	1.55		
Total Xylenes*	<0.150	0.150	08/14/2020	ND	5.90	98.4	6.00	1.54		
Total BTX	<0.300	0.300	08/14/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.7 % 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	08/14/2020	ND	178	88.8	200	1.03		
DRO >C10-C28*	<10.0	10.0	08/14/2020	ND	167	83.6	200	0.611		
EXT DRO >C28-C36	<10.0	10.0	08/14/2020	ND						

Surrogate: 1-Chlorooctane 85.7 % 44.3-144

Surrogate: 1-Chlorooctadecane 89.1 % 42.2-156

Cardinal Laboratories

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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

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

Celey D. Keene, Lab Director/Quality Manager

Page 5 of 5



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]

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 9875

CONDITIONS OF APPROVAL

Operator:		OGRID:	Action Number:	Action Type:
#1000	APACHE CORPORATION Midland, TX79705	303 Veterans Airpark Ln 873	9875	C-141

OCD Reviewer	Condition
chensley	The depth to groundwater has not been adequately determined. When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old, and well construction information should be provided in the submission. The responsible party may choose to remediate to the most stringent levels listed in Table 1 of 19.15.29 NMAC in lieu of drilling to determine the depth to groundwater.