



2350 W Marland Blvd Hobbs, NM 88240

Deferment Request

April 21, 2020

Re: Werta Federal CTB

API# 30-025-27696

Case # 1RP-5375

On February 6, 2019 a release occurred due to livestock breached the battery fence and rubbed up on the oil circulating pump bleed off valve causing it to open. An initial C-141 was submitted and approved by NMOCD on February 21, 2019. The Werta Federal CTB (GPS: 32.61018, -103.11777) is located south of Hobbs, NM in unit letter O section 35 township 19S range 38E. A remediation plan was submitted and denied on December 13, 2019. On January 15, 2020 a soil bore was conducted on the west side of the lease pad and advanced to a depth of 55 feet. The bore hole was left open for more than 48 hours and utilizing a water meter which indicated no presence of water to a depth of 55 feet.

On February 15, 2019 samples were collected utilizing a hand shovel to a depth of one foot. All samples were collected and submitted to a commercial laboratory for analysis of chloride, TPH, and BTEX. On April 16, 2019 further delineation was conducted utilizing a backhoe and hand auger to various depths of 4 to 5.7 feet. All samples collected were submitted to a commercial laboratory for analysis of TPH, and BTEX. Hard rock was encountered at 5 feet a SP 1 and the backhoe could only achieve a depth of 5.7 feet.

On January 15, 2020 a soil bore was conducted in five foot intervals at SP 1 from 10' to 25'. All samples collected were submitted to a commercial laboratory for analysis of TPH and BTEX. All samples were below table one standards for TPH and BTEX. Horizontal composite samples were collect on March 9, 2020 not to exceed 200 square feet and submitted to a commercial laboratory for analysis of chloride, TPH, and BTEX.

Due to the release is in the vicinity and around active infrastructure Apache Corporation respectfully request that remediation be deferred until system abandonment.

Enclosed: Initial C-141, Groundwater Data, Maps, Sample Data, and Laboratory Analysis

Submitted by;

Bruce Baker

Environmental Technician

larry.baker@apachecorp.com

Cell# 432-631-6982

Off# 575-393-7106

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

State of New Mexico
Energy Minerals and Natural
Resources Department

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

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

Incident ID	NAB1905229182
District RP	1RP-5375
Facility ID	
Application ID	pAB1905228355

Release Notification

Responsible Party

Responsible Party	Apache Corporation	OGRID	873
Contact Name	Bruce Baker	Contact Telephone	432-631-6982
Contact email	larry.baker@apachecorp.com	Incident # (assigned by OCD)	NAB1905229182
Contact mailing address	2350 W. Marland BLVD Hobbs, NM 88240		

Location of Release Source

Latitude 32.61018 Longitude -103.11777
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Werta Federal CTB	Site Type	Battery
Date Release Discovered	2/6/2019	API# (if applicable)	30-025-27696

Unit Letter	Section	Township	Range	County
O	35	19S	38E	Lea

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (Name Apache Corporation)

Nature and Volume of Release

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

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) 130 barrels	Volume Recovered (bbls) 120 barrels
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release **Livestock breached battery fence and rubbed up on the oil circulating pump bleed off valve opening it.**

State of New Mexico
Oil Conservation Division

Incident ID	NAB1905229182
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Facility ID	
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Was this a major release as defined by 19.15.29.7(A) NMAC?

☒ Yes ☐ No

If YES, for what reason(s) does the responsible party consider this a major release?
Oil release was greater than 25 barrels

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Bruce Baker notified Jim Griswold and Christina Hernandez of NMOCD and Shelly Tucker (BLM) via email on 2/6/2019 at 2:59 p.m.

Initial Response

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

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

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

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

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

Printed Name: Bruce BAKER Title: Environmental Tech SR

Signature: Bruce Baker Date: 2-19-19

email: Larry.baker@apachecorp.com Telephone: 432-631-6982

OCD Only

Received by:  Date: 2/21/2019

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>61</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 checked="" type="checkbox"/> Yes <input 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 type="checkbox"/> Yes <input checked="" 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.*

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

Incident ID	
District RP	
Facility ID	
Application ID	

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Printed Name: Bruce BAKER Title: Environmental Tech. SR.

Signature: Bruce Baker Date: 5-7-19

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: Bruce Baker Title: Environmental Tech SR.
Signature: Bruce Baker Date: 4/21/2020
email: larry.baker@apachecorp.com Telephone: 432-631-6982

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____



Figure 2 - Aerial Map

BORING RECORD

GEOLOGIC UNIT	DEPTH	Start: 13:35 Finish: 14:50 DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	PID READING										SAMPLE			REMARKS	
					PPM X <u>1</u>										NUMBER	PID READING	RECOVERY DEPTH	BACKGROUND PID READING	SOIL : _____ PPM SOIL : _____ PPM
					2	4	6	8	10	12	14	16	18						
	0	Silt, 2.5YR, 5/4, Reddish Brown, Well Sorted	ML																
		Silt Clay, 2.5YR, 5/6, Red, Well Sorted	CL															1	
	5																	5	
		Silt, 2.5YR, 6/6, Light Red, Moderately Sorted w/ Subrounded Clast Inclusions, 0.5-5mm in Diameter	ML															10	
	10	Angular Clast Inclusions 0.5-8mm in Diameter																15	
	15	Caliche, 2.5YR, 8/2, Pinkish White	Caliche															20	
	20																	25	
	25																	30	
	30																	35	
	35	Silt, 2.5YR, 8/2, Pinkish White, Moderately Sorted w/ Subangular Inclusions, 0.5-5mm in Diameter	ML															40	
40																	45		
45	Clayey Sand, 7.5YR, 6/4, Light Brown, Very Fine, Well Sorted, Subangular Caliche Inclusions 1-3mm in Diameter	SC															50		
50																	55		
55	TD After 48 Hours = 55.38 ft bgs. No Water Present																60		



ONE CONTINUOUS AUGER SAMPLER



WATER TABLE (TIME OF BORING)



STANDARD PENETRATION TEST



LABORATORY TEST LOCATION



UNDISTURBED SAMPLE



PENETROMETER (TONS/ SQ. FT)

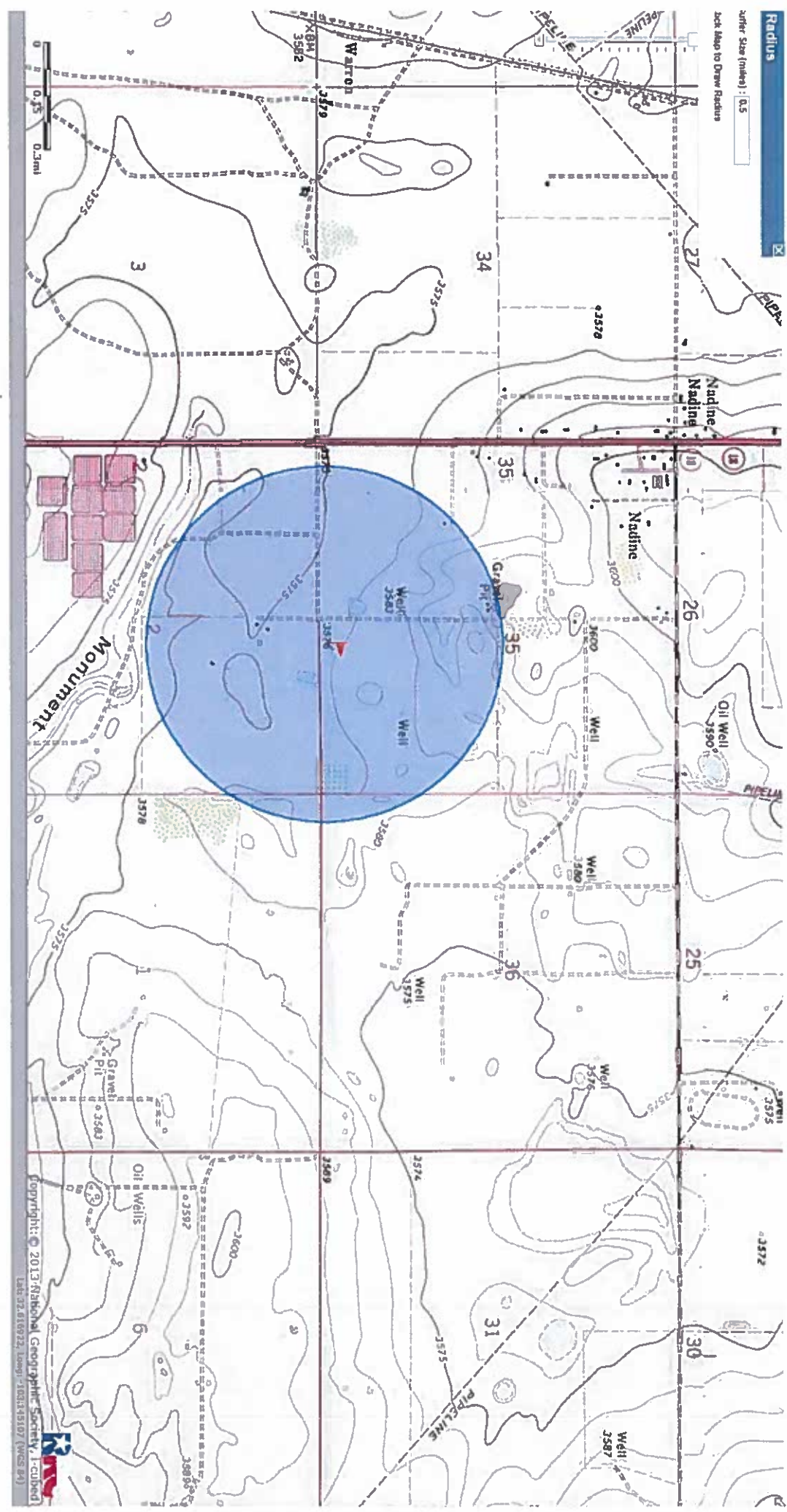


WATER TABLE (24 HRS)



NR NO RECOVERY

JOB NUMBER : Apache Corp./ 20-0101-02HOLE DIAMETER : 2"LOCATION : WertaLAI GEOLOGIST : R. OwenDRILLING CONTRACTOR : Scarborough DrillingDRILLING METHOD : Air Rotary





Werta Federal

SP 1

SP 4

SP 2

SP 3

© 2018 Google

Google earth

Werta Federal CTB

SP 1 (GPS: 32.610183 -103.117822)									
Depth	CL-	Benzene	Toluene	Ethybenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO
0	160	30.2	188	153	365	737	9850	44600	6620
1'	16	26.4	180	121	239	566	6800	15800	2210
3'		<0.050	0.466	1.61	2.89	4.97	40.7	477	165
4'		<0.050	<0.050	1.36	1.6	2.96	115	1560	452
5'		0.155	1.45	3.36	8.64	13.6	344	5400	1490
5' 7"		<0.050	0.187	0.376	1.04	1.6	32.7	1450	458
10'		<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0
15'		<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0
20'		<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0
25'		<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0
SP 2 (GPS: 32.610027 -103.117863)									
Depth	CL-	Benzene	Toluene	Ethybenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO
0	80	21.6	199	185	384	790	10500	33600	5400
1'	16	97.4	397	210	393	1100	14500	25900	3620
SP 3 (GPS: 32.609925 -103.117821)									
Depth	CL-	Benzene	Toluene	Ethybenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO
0	208	19.6	129	102	231	481	9750	50300	8700
1'	48	58.2	190	101	204	553	8330	16800	2650
2'		0.099	2.44	3.72	10.9	17.2	167	850	177
3'		0.086	1.29	2.5	6.39	10.3	135	1190	267
4'		0.381	4.65	5.15	12.4	22.6	268	2110	373
SP 4 (GPS: 32.610084 -103.117776)									
Depth	CL-	Benzene	Toluene	Ethybenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO
0	3440	77.3	296	172	357	902	16300	43700	6090
1'	1310	9.81	46.8	28.7	59.9	145	974	3000	314
2'		0.082	0.556	0.949	3.17	4.76	53.6	249	45.8
3'		<0.050	<0.050	<0.050	<0.150	<0.300	<10	54.6	10.9
4'		<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10.0	<10.0

Horizontal Surface Samples									
Sample ID	CL-	Benzene	Toluene	Ethybenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO
HC1	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10.0	<10.0
HC2	96	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10.0	<10.0
HC3	32	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10.0	<10.0
HC4	144	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10.0	<10.0



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

February 21, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: WERTA FED BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 02/15/19 15:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/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,

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: 02/15/2019
 Reported: 02/21/2019
 Project Name: WERTA FED BATTERY
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 02/15/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ SURFACE (H900623-01)

BTEX 8021B		mg/kg	Analyzed By: MS					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	30.2	1.00	02/20/2019	ND	2.16	108	2.00	0.635	
Toluene*	188	1.00	02/20/2019	ND	2.20	110	2.00	1.11	
Ethylbenzene*	153	1.00	02/20/2019	ND	2.12	106	2.00	1.32	
Total Xylenes*	365	3.00	02/20/2019	ND	6.03	101	6.00	1.76	
Total BTEX	737	6.00	02/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 165 % 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	160	16.0	02/19/2019	ND	432	108	400	3.77	

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*	9850	100	02/18/2019	ND	177	88.7	200	11.3	
DRO >C10-C28*	44600	100	02/18/2019	ND	182	91.1	200	9.86	
EXT DRO >C28-C36	6620	100	02/18/2019	ND					

Surrogate: 1-Chlorooctane 471 % 41-142

Surrogate: 1-Chlorooctadecane 1040 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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

Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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 Project Name: WERTA FED BATTERY
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 02/15/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ 1' (H900623-02)

BTX 8021B		mg/kg		Analyzed By: MS			S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	26.4	1.00	02/20/2019	ND	2.16	108	2.00	0.635	
Toluene*	180	1.00	02/20/2019	ND	2.20	110	2.00	1.11	
Ethylbenzene*	121	1.00	02/20/2019	ND	2.12	106	2.00	1.32	
Total Xylenes*	239	3.00	02/20/2019	ND	6.03	101	6.00	1.76	
Total BTX	566	6.00	02/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 155 % 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	02/19/2019	ND	432	108	400	3.77	

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*	6800	100	02/18/2019	ND	177	88.7	200	11.3	
DRO >C10-C28*	15800	100	02/18/2019	ND	182	91.1	200	9.86	
EXT DRO >C28-C36	2210	100	02/18/2019	ND					

Surrogate: 1-Chlorooctane 252 % 41-142

Surrogate: 1-Chlorooctadecane 404 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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

Celey D. Keene, Lab Director/Quality Manager



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: 02/15/2019
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 Project Name: WERTA FED BATTERY
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 Project Location: NONE GIVEN

Sampling Date: 02/15/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ SURFACE (H900623-03)

BTEX 80218		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	21.6	2.00	02/20/2019	ND	2.16	108	2.00	0.635	
Toluene*	199	2.00	02/20/2019	ND	2.20	110	2.00	1.11	
Ethylbenzene*	185	2.00	02/20/2019	ND	2.12	106	2.00	1.32	
Total Xylenes*	384	6.00	02/20/2019	ND	6.03	101	6.00	1.76	
Total BTEX	790	12.0	02/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 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	80.0	16.0	02/19/2019	ND	432	108	400	3.77	

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*	10500	100	02/18/2019	ND	177	88.7	200	11.3	
DRO >C10-C28*	33600	100	02/18/2019	ND	182	91.1	200	9.86	
EXT DRO >C28-C36	5400	100	02/18/2019	ND					

Surrogate: 1-Chlorooctane 423 % 41-142

Surrogate: 1-Chlorooctadecane 777 % 37.6-147

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: 02/15/2019
 Reported: 02/21/2019
 Project Name: WERTA FED BATTERY
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 02/15/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ 1' (H900623-04)

BTX 8021B		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	97.4	2.00	02/20/2019	ND	2.16	108	2.00	0.635	
Toluene*	397	2.00	02/20/2019	ND	2.20	110	2.00	1.11	
Ethylbenzene*	210	2.00	02/20/2019	ND	2.12	106	2.00	1.32	
Total Xylenes*	393	6.00	02/20/2019	ND	6.03	101	6.00	1.76	
Total BTX	1100	12.0	02/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 146 % 73 3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	02/19/2019	ND	432	108	400	3.77	
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*	14500	100	02/18/2019	ND	177	88.7	200	11.3	
DRO >C10-C28*	25900	100	02/18/2019	ND	182	91.1	200	9.86	
EXT DRO >C28-C36	3620	100	02/18/2019	ND					

Surrogate: 1-Chlorooctane 368 % 41-142

Surrogate: 1-Chlorooctadecane 612 % 37.6-147

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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: 02/15/2019
 Reported: 02/21/2019
 Project Name: WERTA FED BATTERY
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 02/15/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 3 @ SURFACE (H900623-05)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	19.6	1.00	02/19/2019	ND	1.92	96.0	2.00	4.30	
Toluene*	129	1.00	02/19/2019	ND	1.95	97.3	2.00	3.96	QM-07
Ethylbenzene*	102	1.00	02/19/2019	ND	1.97	98.7	2.00	3.53	QM-07
Total Xylenes*	231	3.00	02/19/2019	ND	5.78	96.3	6.00	3.39	QM-07
Total BTEX	481	6.00	02/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 121 % 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	208	16.0	02/19/2019	ND	432	108	400	3.77	

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*	9750	100	02/18/2019	ND	177	88.7	200	11.3	
DRO >C10-C28*	50300	100	02/18/2019	ND	182	91.1	200	9.86	
EXT DRO >C28-C36	8700	100	02/18/2019	ND					

Surrogate: 1-Chlorooctane 444 % 41-142

Surrogate: 1-Chlorooctadecane 1230 % 37.6-147

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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: 02/15/2019
 Reported: 02/21/2019
 Project Name: WERTA FED BATTERY
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 02/15/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 3 @ 1' (H900623-06)

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	58.2	1.00	02/20/2019	ND	1.92	96.0	2.00	4.30	
Toluene*	190	1.00	02/20/2019	ND	1.95	97.3	2.00	3.96	
Ethylbenzene*	101	1.00	02/20/2019	ND	1.97	98.7	2.00	3.53	
Total Xylenes*	204	3.00	02/20/2019	ND	5.78	96.3	6.00	3.39	
Total BTEX	553	6.00	02/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 106 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	02/19/2019	ND	432	108	400	3.77	

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*	8330	100	02/18/2019	ND	177	88.7	200	11.3		
DRO >C10-C28*	16800	100	02/18/2019	ND	182	91.1	200	9.86		
EXT DRO >C28-C36	2650	100	02/18/2019	ND						

Surrogate: 1-Chlorooctane 249 % 41-142

Surrogate: 1-Chlorooctadecane 421 % 37.6-147

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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: 02/15/2019
 Reported: 02/21/2019
 Project Name: WERTA FED BATTERY
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 02/15/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 4 @ SURFACE (H900623-07)

BTEx 80218		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	77.3	2.00	02/20/2019	ND	1.92	96.0	2.00	4.30	
Toluene*	296	2.00	02/20/2019	ND	1.95	97.3	2.00	3.96	
Ethylbenzene*	172	2.00	02/20/2019	ND	1.97	98.7	2.00	3.53	
Total Xylenes*	357	6.00	02/20/2019	ND	5.78	96.3	6.00	3.39	
Total BTEx	902	12.0	02/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 109 % 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	3440	16.0	02/19/2019	ND	432	108	400	3.77	

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*	16300	100	02/18/2019	ND	177	88.7	200	11.3		
DRO >C10-C28*	43700	100	02/18/2019	ND	182	91.1	200	9.86		
EXT DRO >C28-C36	6090	100	02/18/2019	ND						

Surrogate: 1-Chlorooctane 500 % 41-142

Surrogate: 1-Chlorooctadecane 1040 % 37.6-147

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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: 02/15/2019
 Reported: 02/21/2019
 Project Name: WERTA FED BATTERY
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 02/15/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 4 @ 1' (H900623-08)

BTEX 80218		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	9.81	1.00	02/20/2019	ND	1.92	96.0	2.00	4.30	
Toluene*	46.8	1.00	02/20/2019	ND	1.95	97.3	2.00	3.96	
Ethylbenzene*	28.7	1.00	02/20/2019	ND	1.97	98.7	2.00	3.53	
Total Xylenes*	59.9	3.00	02/20/2019	ND	5.78	96.3	6.00	3.39	
Total BTEX	145	6.00	02/20/2019	ND					

Surrogate 4-Bromofluorobenzene (PIC) 101 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1310	16.0	02/19/2019	ND	432	108	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*	974	50.0	02/18/2019	ND	177	88.7	200	11.3	
DRO >C10-C28*	3000	50.0	02/18/2019	ND	182	91.1	200	9.86	
EXT DRO >C28-C36	314	50.0	02/18/2019	ND					

Surrogate 1-Chlorooctane 72.6 % 41-142

Surrogate 1-Chlorooctadecane 108 % 37.6-147

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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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Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

[illegible]



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

April 24, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: WERTA 001

Enclosed are the results of analyses for samples received by the laboratory on 04/16/19 15:34.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is 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,

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: 04/16/2019
 Reported: 04/24/2019
 Project Name: WERTA 001
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 04/16/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 1 @ 2' (H901392-01)

BTX 80218		mg/kg	Analyzed By: MS				S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	5.32	0.500	04/19/2019	ND	1.81	90.3	2.00	0.550	
Toluene*	41.7	0.500	04/19/2019	ND	1.86	93.0	2.00	1.21	
Ethylbenzene*	39.2	0.500	04/19/2019	ND	1.86	93.1	2.00	3.32	
Total Xylenes*	94.9	1.50	04/19/2019	ND	5.28	88.1	6.00	3.58	
Total BTX	181	3.00	04/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 141 % 73.3-129

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*	2710	50.0	04/18/2019	ND	197	98.6	200	0.976	
DRO >C10-C28*	9050	50.0	04/18/2019	ND	188	94.2	200	0.00213	
EXT DRO >C28-C36	1900	50.0	04/18/2019	ND					

Surrogate: 1-Chlorooctane 202 % 41-142

Surrogate: 1-Chlorooctadecane 316 % 37.6-147

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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: 04/16/2019
 Reported: 04/24/2019
 Project Name: WERTA 001
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 04/16/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 1 @ 3' (H901392-02)

BTEX 80218	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	04/19/2019	ND	1.81	90.3	2.00	0.550	
Toluene*	0.466	0.050	04/19/2019	ND	1.86	93.0	2.00	1.21	
Ethylbenzene*	1.61	0.050	04/19/2019	ND	1.86	93.1	2.00	3.32	
Total Xylenes*	2.89	0.150	04/19/2019	ND	5.28	88.1	6.00	3.58	
Total BTEX	4.97	0.300	04/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 183 % 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*	40.7	10.0	04/18/2019	ND	197	98.6	200	0.976	
DRO >C10-C28*	477	10.0	04/18/2019	ND	188	94.2	200	0.00213	
EXT DRO >C28-C36	165	10.0	04/18/2019	ND					

Surrogate: 1-Chlorooctane 103 % 41-142

Surrogate: 1-Chlorooctadecane 106 % 37.6-147

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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: 04/16/2019
 Reported: 04/24/2019
 Project Name: WERTA 001
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 04/16/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 1 @ 4' (H901392-03)

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	04/23/2019	ND	1.81	90.3	2.00	0.550	
Toluene*	<0.050	0.050	04/23/2019	ND	1.86	93.0	2.00	1.21	
Ethylbenzene*	1.36	0.050	04/23/2019	ND	1.86	93.1	2.00	3.32	
Total Xylenes*	1.60	0.150	04/23/2019	ND	5.28	88.1	6.00	3.58	
Total BTEX	2.96	0.300	04/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 78.5 % 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*	115	10.0	04/18/2019	ND	197	98.6	200	0.976	
DRO >C10-C28*	1560	10.0	04/18/2019	ND	188	94.2	200	0.00213	
EXT DRO >C28-C36	452	10.0	04/18/2019	ND					

Surrogate: 1-Chlorooctane 119 % 41-142

Surrogate: 1-Chlorooctadecane 131 % 37.6-147

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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: 04/16/2019
 Reported: 04/24/2019
 Project Name: WERTA 001
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 04/16/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 1 @ 5' (H901392-04)

BTEX 8021B		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.155	0.050	04/24/2019	ND	1.81	90.3	2.00	0.550	
Toluene*	1.45	0.050	04/24/2019	ND	1.86	93.0	2.00	1.21	
Ethylbenzene*	3.36	0.050	04/24/2019	ND	1.86	93.1	2.00	3.32	
Total Xylenes*	8.64	0.150	04/24/2019	ND	5.28	88.1	6.00	3.58	
Total BTEX	13.6	0.300	04/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 83.4 % 73.3-129

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*	344	50.0	04/18/2019	ND	197	98.6	200	0.976	
DRO >C10-C28*	5400	50.0	04/18/2019	ND	188	94.2	200	0.00213	
EXT DRO >C28-C36	1490	50.0	04/18/2019	ND					

Surrogate: 1-Chlorooctane 18.4 % 41-142

Surrogate: 1-Chlorooctadecane 24.9 % 37.6-147

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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: 04/16/2019
 Reported: 04/24/2019
 Project Name: WERTA 001
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 04/16/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 1 @ 5'7 (H901392-05)

BTEX 80218		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/19/2019	ND	1.81	90.3	2.00	0.550	
Toluene*	0.187	0.050	04/19/2019	ND	1.86	93.0	2.00	1.21	
Ethylbenzene*	0.376	0.050	04/19/2019	ND	1.86	93.1	2.00	3.32	
Total Xylenes*	1.04	0.150	04/19/2019	ND	5.28	88.1	6.00	3.58	
Total BTEX	1.60	0.300	04/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 129 % 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*	32.7	10.0	04/18/2019	ND	197	98.6	200	0.976	
DRO >C10-C28*	1450	10.0	04/18/2019	ND	188	94.2	200	0.00213	
EXT DRO >C28-C36	458	10.0	04/18/2019	ND					

Surrogate: 1-Chlorooctane 106 % 41-142

Surrogate: 1-Chlorooctadecane 129 % 37.6-147

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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: 04/16/2019
 Reported: 04/24/2019
 Project Name: WERTA 001
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 04/16/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 3 @ 2' (H901392-06)

BTEX 8021B		mg/kg	Analyzed By: MS				S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.099	0.050	04/24/2019	ND	1.81	90.3	2.00	0.550	
Toluene*	2.44	0.050	04/24/2019	ND	1.86	93.0	2.00	1.21	
Ethylbenzene*	3.72	0.050	04/24/2019	ND	1.86	93.1	2.00	3.32	
Total Xylenes*	10.9	0.150	04/24/2019	ND	5.28	88.1	6.00	3.58	
Total BTEX	17.2	0.300	04/24/2019	ND					

Surrogate 4-Bromofluorobenzene (PIC) 201 % 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*	167	10.0	04/18/2019	ND	197	98.6	200	0.976	
DRO >C10-C28*	850	10.0	04/18/2019	ND	188	94.2	200	0.00213	
EXT DRO >C28-C36	177	10.0	04/18/2019	ND					

Surrogate 1-Chlorooctane 131 % 41-142

Surrogate 1-Chlorooctadecane 119 % 37.6-147

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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: 04/16/2019
 Reported: 04/24/2019
 Project Name: WERTA 001
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 04/16/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 3 @ 3' (H901392-07)

BTEX 8021B	mg/kg	Analyzed By: MS						S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.086	0.050	04/19/2019	ND	1.81	90.3	2.00	0.550	
Toluene*	1.29	0.050	04/19/2019	ND	1.86	93.0	2.00	1.21	
Ethylbenzene*	2.50	0.050	04/19/2019	ND	1.86	93.1	2.00	3.32	
Total Xylenes*	6.39	0.150	04/19/2019	ND	5.28	88.1	6.00	3.58	
Total BTEX	10.3	0.300	04/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIB) 162 % 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*	135	10.0	04/18/2019	ND	197	98.6	200	0.976	
DRO >C10-C28*	1190	10.0	04/18/2019	ND	188	94.2	200	0.00213	
EXT DRO >C28-C36	267	10.0	04/18/2019	ND					

Surrogate: 1-Chlorooctane 129 % 41-142

Surrogate: 1-Chlorooctadecane 126 % 37.6-147

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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: 04/16/2019
 Reported: 04/24/2019
 Project Name: WERTA 001
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 04/16/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 3 @ 4' (H901392-08)

BTEX 80218	mg/kg	Analyzed By: MS						S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.381	0.050	04/24/2019	ND	1.81	90.3	2.00	0.550	
Toluene*	4.65	0.050	04/24/2019	ND	1.86	93.0	2.00	1.21	
Ethylbenzene*	5.15	0.050	04/24/2019	ND	1.86	93.1	2.00	3.32	
Total Xylenes*	12.4	0.150	04/24/2019	ND	5.28	88.1	6.00	3.58	
Total BTEX	22.6	0.300	04/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 164 % 73.3-129

TPH 8015M	mg/kg	Analyzed By: MS						S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	268	10.0	04/19/2019	ND	190	94.9	200	2.00	QM-07
DRO >C10-C28*	2110	10.0	04/19/2019	ND	197	98.4	200	4.28	QM-07
EXT DRO >C28-C36	373	10.0	04/19/2019	ND					

Surrogate: 1-Chlorooctane 145 % 41-142

Surrogate: 1-Chlorooctadecane 155 % 37.6-147

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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: 04/16/2019
 Reported: 04/24/2019
 Project Name: WERTA 001
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 04/16/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 4 @ 2' (H901392-09)

BTEX 80218	mg/kg	Analyzed By: MS						S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.082	0.050	04/19/2019	ND	1.81	90.3	2.00	0.550	
Toluene*	0.556	0.050	04/19/2019	ND	1.86	93.0	2.00	1.21	
Ethylbenzene*	0.949	0.050	04/19/2019	ND	1.86	93.1	2.00	3.32	
Total Xylenes*	3.17	0.150	04/19/2019	ND	5.28	88.1	6.00	3.58	
Total BTEX	4.76	0.300	04/19/2019	ND					

Surrogate 4-Bromofluorobenzene (PIC) 135 % 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*	53.6	10.0	04/19/2019	ND	190	94.9	200	2.00	
DRO >C10-C28*	249	10.0	04/19/2019	ND	197	98.4	200	4.28	
EXT DRO >C28-C36	45.8	10.0	04/19/2019	ND					

Surrogate 1-Chlorooctane 99.5 % 41-142

Surrogate 1-Chlorooctadecane 99.5 % 37.6-147

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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: 04/16/2019
 Reported: 04/24/2019
 Project Name: WERTA 001
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 04/16/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 4 @ 3' (H901392-10)

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	04/19/2019	ND	1.81	90.3	2.00	0.550		
Toluene*	<0.050	0.050	04/19/2019	ND	1.86	93.0	2.00	1.21		
Ethylbenzene*	<0.050	0.050	04/19/2019	ND	1.86	93.1	2.00	3.32		
Total Xylenes*	<0.150	0.150	04/19/2019	ND	5.28	88.1	6.00	3.58		
Total BTEX	<0.300	0.300	04/19/2019	ND						

Surrogate: 4-Bromofluorobenzene (PIC) 98.4 % 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	04/19/2019	ND	190	94.9	200	2.00	
DRO >C10-C28*	54.6	10.0	04/19/2019	ND	197	98.4	200	4.28	
EXT DRO >C28-C36	10.9	10.0	04/19/2019	ND					

Surrogate: 1-Chlorooctane 86.7 % 41-142

Surrogate: 1-Chlorooctadecane 87.6 % 37.6-147

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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: 04/16/2019
 Reported: 04/24/2019
 Project Name: WERTA 001
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 04/16/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 4 @ 4' (H901392-11)

BTX 80218			mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/19/2019	ND	1.81	90.3	2.00	0.550		
Toluene*	<0.050	0.050	04/19/2019	ND	1.86	93.0	2.00	1.21		
Ethylbenzene*	<0.050	0.050	04/19/2019	ND	1.86	93.1	2.00	3.32		
Total Xylenes*	<0.150	0.150	04/19/2019	ND	5.28	88.1	6.00	3.58		
Total BTX	<0.300	0.300	04/19/2019	ND						

Surrogate: 4-Bromofluorobenzene (PIC) 98.0 % 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	04/19/2019	ND	190	94.9	200	2.00	
DRO >C10-C28*	<10.0	10.0	04/19/2019	ND	197	98.4	200	4.28	
EXT DRO >C28-C36	<10.0	10.0	04/19/2019	ND					

Surrogate: 1-Chlorooctane 79.3 % 41-142

Surrogate: 1-Chlorooctadecane 80.0 % 37.6-147

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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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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: APACHE CORP		BILL TO		ANALYSIS REQUEST																					
Project Manager: BACE BAKER		P.O. #:																							
Address:		Company:																							
City:		Attn:																							
Phone #:		Address:																							
Fax #:		City:																							
Project #:		State:																							
Project Name:		Zip:																							
Project Location: LEKTA 001		Phone #:																							
Sample Name: JEFF KROWN		Fax #:																							
FOR LAB USE ONLY																									
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP.		# CONTAINERS		MATRIX				PRESERV.		SAMPLING											
								GROUNDWATER																	
								WASTEWATER																	
								SOIL																	
								OIL																	
								SLUDGE																	
								OTHER :																	
								ACID/BASE																	
								ICE / COOL																	
								OTHER :																	
1		SP1 @ 2'														4/6/13		10:30		BTEX					
2		SP2 @ 3'																11:20		Ext. TPH					
3		SP1 @ 4'																12:06							
4		SP1 @ 5'																1:58							
5		SP1 @ 5'7																2:37							
6		SP3 @ 2'																6:20							
7		SP3 @ 3'																11:10							
8		SP3 @ 4'																12:10							
9		SP4 @ 2'																6:25							
10		SP4 @ 3'																4/6/13 11:00							

PLEASE NOTE: Liability and Damages, Cardinal's liability and client's obligations remain for any claims arising out of or from, shall be limited to the amount paid by the client for the analysis. 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 data, or loss of profits incurred by client, its subsidiaries, affiliates or successors, arising out of or from the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated exceptions or otherwise.

Relinquished By:	Date: 4/6/13	Received By:	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Relinquished By:	Date:	Received By:	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Time: 3:34			REMARKS:	
Time:				

Delivered By: (Circle One)	Sample Condition	CHECKED BY:
Sampler - UPS - Bus - Other: 4:30 / #97	Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

[illegible]



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

March 11, 2020

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: WERTA FEDERAL

Enclosed are the results of analyses for samples received by the laboratory on 03/09/20 11:33.

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:	03/09/2020	Sampling Date:	03/09/2020
Reported:	03/11/2020	Sampling Type:	Soil
Project Name:	WERTA FEDERAL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: HC 1 (H000736-01)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/10/2020	ND	2.00	99.9	2.00	0.430	
Toluene*	<0.050	0.050	03/10/2020	ND	2.02	101	2.00	0.251	
Ethylbenzene*	<0.050	0.050	03/10/2020	ND	2.03	102	2.00	0.353	
Total Xylenes*	<0.150	0.150	03/10/2020	ND	5.87	97.9	6.00	0.536	
Total BTX	<0.300	0.300	03/10/2020	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	48.0	16.0	03/09/2020	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/10/2020	ND	198	99.1	200	6.26	
DRO >C10-C28*	<10.0	10.0	03/10/2020	ND	202	101	200	5.36	
EXT DRO >C28-C36	<10.0	10.0	03/10/2020	ND					

Surrogate: 1-Chlorooctane 90.8 % 44.3-144

Surrogate: 1-Chlorooctadecane 94.6 % 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:	03/09/2020	Sampling Date:	03/09/2020
Reported:	03/11/2020	Sampling Type:	Soil
Project Name:	WERTA FEDERAL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: HC 2 (H000736-02)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/10/2020	ND	2.00	99.9	2.00	0.430	
Toluene*	<0.050	0.050	03/10/2020	ND	2.02	101	2.00	0.251	
Ethylbenzene*	<0.050	0.050	03/10/2020	ND	2.03	102	2.00	0.353	
Total Xylenes*	<0.150	0.150	03/10/2020	ND	5.87	97.9	6.00	0.536	
Total BTEx	<0.300	0.300	03/10/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.9 % 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	96.0	16.0	03/09/2020	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/10/2020	ND	198	99.1	200	6.26	
DRO >C10-C28*	<10.0	10.0	03/10/2020	ND	202	101	200	5.36	
EXT DRO >C28-C36	<10.0	10.0	03/10/2020	ND					

Surrogate: 1-Chlorooctane 85.3 % 44.3-144

Surrogate: 1-Chlorooctadecane 89.9 % 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:	03/09/2020	Sampling Date:	03/09/2020
Reported:	03/11/2020	Sampling Type:	Soil
Project Name:	WERTA FEDERAL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: HC 3 (H000736-03)

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	03/10/2020	ND	1.79	89.4	2.00	10.3	
Toluene*	<0.050	0.050	03/10/2020	ND	1.78	89.0	2.00	10.2	
Ethylbenzene*	<0.050	0.050	03/10/2020	ND	1.81	90.5	2.00	10.2	
Total Xylenes*	<0.150	0.150	03/10/2020	ND	5.30	88.4	6.00	10.4	
Total BTEX	<0.300	0.300	03/10/2020	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	03/09/2020	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/10/2020	ND	198	99.1	200	6.26	
DRO >C10-C28*	<10.0	10.0	03/10/2020	ND	202	101	200	5.36	
EXT DRO >C28-C36	<10.0	10.0	03/10/2020	ND					

Surrogate: 1-Chlorooctane 86.9 % 44.3-144

Surrogate: 1-Chlorooctadecane 91.4 % 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

Analytical Results For:

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

Received: 03/09/2020
 Reported: 03/11/2020
 Project Name: WERTA FEDERAL
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 03/09/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: HC 4 (H000736-04)

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	03/10/2020	ND	1.79	89.4	2.00	10.3	
Toluene*	<0.050	0.050	03/10/2020	ND	1.78	89.0	2.00	10.2	
Ethylbenzene*	<0.050	0.050	03/10/2020	ND	1.81	90.5	2.00	10.2	
Total Xylenes*	<0.150	0.150	03/10/2020	ND	5.30	88.4	6.00	10.4	
Total BTEx	<0.300	0.300	03/10/2020	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	144	16.0	03/09/2020	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/10/2020	ND	198	99.1	200	6.26	
DRO >C10-C28*	<10.0	10.0	03/10/2020	ND	202	101	200	5.36	
EXT DRO >C28-C36	<10.0	10.0	03/10/2020	ND					

Surrogate: 1-Chlorooctane 90.2 % 44.3-144

Surrogate: 1-Chlorooctadecane 94.5 % 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

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.
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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*=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



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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



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

January 20, 2020

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: WERTA 001

Enclosed are the results of analyses for samples received by the laboratory on 01/15/20 15:51.

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: 01/15/2020
 Reported: 01/20/2020
 Project Name: WERTA 001
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 01/15/2020
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ 10' (H000141-01)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/17/2020	ND	2.07	104	2.00	10.5	
Toluene*	<0.050	0.050	01/17/2020	ND	2.08	104	2.00	10.8	
Ethylbenzene*	<0.050	0.050	01/17/2020	ND	2.11	106	2.00	10.6	
Total Xylenes*	<0.150	0.150	01/17/2020	ND	6.19	103	6.00	10.9	
Total BTEX	<0.300	0.300	01/17/2020	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	01/18/2020	ND	224	112	200	0.417	
DRO >C10-C28*	<10.0	10.0	01/18/2020	ND	229	115	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	01/18/2020	ND					

Surrogate: 1-Chlorooctane 89.7 % 41-142

Surrogate: 1-Chlorooctadecane 92.1 % 37.6-147

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: 01/15/2020
 Reported: 01/20/2020
 Project Name: WERTA 001
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 01/15/2020
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ 15' (H000141-02)

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	01/17/2020	ND	2.07	104	2.00	10.5	
Toluene*	<0.050	0.050	01/17/2020	ND	2.08	104	2.00	10.8	
Ethylbenzene*	<0.050	0.050	01/17/2020	ND	2.11	106	2.00	10.6	
Total Xylenes*	<0.150	0.150	01/17/2020	ND	6.19	103	6.00	10.9	
Total BTX	<0.300	0.300	01/17/2020	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	01/18/2020	ND	224	112	200	0.417	
DRO >C10-C28*	<10.0	10.0	01/18/2020	ND	229	115	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	01/18/2020	ND					

Surrogate: 1-Chlorooctane 99.5 % 41-142

Surrogate: 1-Chlorooctadecane 101 % 37.6-147

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: 01/15/2020
 Reported: 01/20/2020
 Project Name: WERTA 001
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 01/15/2020
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ 20' (H000141-03)

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	01/17/2020	ND	2.07	104	2.00	10.5	
Toluene*	<0.050	0.050	01/17/2020	ND	2.08	104	2.00	10.8	
Ethylbenzene*	<0.050	0.050	01/17/2020	ND	2.11	106	2.00	10.6	
Total Xylenes*	<0.150	0.150	01/17/2020	ND	6.19	103	6.00	10.9	
Total BTX	<0.300	0.300	01/17/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.6 % 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	01/18/2020	ND	224	112	200	0.417	
DRO >C10-C28*	<10.0	10.0	01/18/2020	ND	229	115	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	01/18/2020	ND					

Surrogate: 1-Chlorooctane 98.2 % 41-142

Surrogate: 1-Chlorooctadecane 100 % 37.6-147

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: 01/15/2020
 Reported: 01/20/2020
 Project Name: WERTA 001
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 01/15/2020
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ 25' (H000141-04)

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	01/17/2020	ND	2.07	104	2.00	10.5		
Toluene*	<0.050	0.050	01/17/2020	ND	2.08	104	2.00	10.8		
Ethylbenzene*	<0.050	0.050	01/17/2020	ND	2.11	106	2.00	10.6		
Total Xylenes*	<0.150	0.150	01/17/2020	ND	6.19	103	6.00	10.9		
Total BTX	<0.300	0.300	01/17/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.3 % 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	01/18/2020	ND	224	112	200	0.417		
DRO >C10-C28*	<10.0	10.0	01/18/2020	ND	229	115	200	2.47		
EXT DRO >C28-C36	<10.0	10.0	01/18/2020	ND						

Surrogate: 1-Chlorooctane 96.5 % 41-142

Surrogate: 1-Chlorooctadecane 99.1 % 37.6-147

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

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

Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <i>Apache Corporation</i>		P.O. #:		BILL TO												ANALYSIS REQUEST																									
Project Manager: <i>Grue Baker</i>		Company:																																							
Address:		Attn:																																							
City:		Address:																																							
Phone #:		City:																																							
Project #:		State:																																							
Project Name: <i>Warta #001</i>		Zip:																																							
Project Location: <i>Warta #001</i>		Phone #:																																							
Sample Name: <i>1st Room</i>		Fax #:																																							
FOR LAB USE ONLY																																									
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP.		# CONTAINERS		GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER :		ACID/BASE:		ICE / COOL		OTHER :		DATE		TIME													
<i>#H000141</i>		<i>SP1 @ 10'</i>																								<i>11/5/20</i>		<i>11</i>													
<i>2 SP1 @ 15'</i>																										<i>11/5/20</i>		<i>11</i>													
<i>3 SP1 @ 20'</i>																										<i>11/5/20</i>		<i>11</i>													
<i>4 SP1 @ 25'</i>																										<i>11/5/20</i>		<i>11</i>													
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 analysis. 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: <i>1st Room</i>		Date: <i>11/5/20</i>		Received By: <i>Jessica Alvarado</i>		Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Add'l Phone #:		All Results are emailed. Please provide Email address:		REMARKS: <i>Bring set straight to lab from field</i>																													
Delivered By: (Circle One)		Observed Temp. °C <i>7.8</i>		Sample Condition		CHECKED BY: (Initials)		Turnaround Time: <i>Standard</i>		Thermometer ID #97																															
Sampler - UPS - Bus - Other:		Corrected Temp. °C		Cool <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		YES		Bacteria (only) Sample Condition		Cool <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																															

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



