



2350 W Marland Blvd Hobbs, NM 88240

## **Remediation Plan**

November 15, 2018

Re: Crow Federal SWD #001

API# 30-015-42469

Case # 2RP-4990

To: Maria Pruett

Environmental Specialist-New Mexico Oil Conservation Division Energy, Minerals and  
Natural Resources Department 811 S. 1<sup>st</sup> Street Artesia, NM 88210

### **Background:**

On 8/17/2018 a release occurred due to a stainless valve on a riser at the well head was broken off by livestock. An initial C-141 was sent to NMOCD and approved by NMOCD on 10/1/2018. The Crow Federal SWD #001 is located east of Loco Hills in unit letter A section 9 township 17S range 31E (GPS Coordinates: 32.85386 -103.86825 ). A groundwater study was conducted utilizing the NMOSE and USGS sites to search for groundwater wells in the vicinity of the release site. According to the USGS there are no USGS wells in township 17S range 31E. The NMOSE shows a total of three wells in section 32 township 17S range 31E but no depth of groundwater is associated with those wells. It is common knowledge that there is no groundwater in township 17S and range 31E. The village of Loco Hills water source is the double eagle water pipeline which source of water is on top of the Cap rock located east of the township and range. The closest geographic water course is Taylor Draw located 2 miles east and south of the release site.

On 8/28/2018 nine surface samples within the path of the release were collected and submitted to a commercial laboratory for analysis of Cl-, Extended TPH, and BTEX. The lab results indicated that sample points 3,5,6,7, and 9 were above the table 1 standards for sites greater than 100 feet to groundwater. Between 9/11/2018 and 9/18/2018 those areas were excavated to a depth of approximately 1 foot. A total of 180 yards was excavated and hauled to an NMOCD approved facility.

### **Remediation Plan:**

Apache Corporation purposes to collect 5 point bottom samples not to exceed 1,000 square feet and 5 point wall composite samples not to exceed 200 square feet. All samples will be sent to a commercial laboratory for analysis of Cl-, Extended TPH, and BTEX. If the laboratory results yield levels below regulatory guidelines the site will be backfilled with clean imported soil. If the results yield levels that exceed the guidelines those areas will be excavated vertically and horizontally until regulatory guidelines are met. Once the regulatory guidelines are met the site will be backfilled with clean imported caliche. NMOCD will be notified 48 hours prior to all final sampling events. Apache Corporation will complete remediation activities within 90 days of NMOCD approval of this plan.

Enclosed: Initial C-141, groundwater data, Maps, Sample Plan Diagram, Photos, and Laboratory Results

Submitted by;

*Bruce Baker*

**Environmental Technician**

*[larry.baker@apachecorp.com](mailto: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	NMAP1827468378
District RP	2RP-4990
Facility ID	N/A
Application ID	pMAP1827468112

## 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)	NMAP1827468378
Contact mailing address	2350 W. Marland BLVD Hobbs, NM 88240		

### Location of Release Source

Latitude 32.85386 Longitude -103.86825  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Crow Federal SWD # 001	Site Type	SWD
Date Release Discovered	8/17/2018	API# (if applicable)	30-015-42469

Unit Letter	Section	Township	Range	County
A	9	17S	31E	Eddy

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 7 barrels	Volume Recovered (bbls) 1 barrel
	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 A stainless valve on a riser at the well head was broken off by livestock.

State of New Mexico  
Oil Conservation Division

Incident ID	NMAP1827468378
District RP	2RP-4990
Facility ID	N/A
Application ID	pMAP1827468112

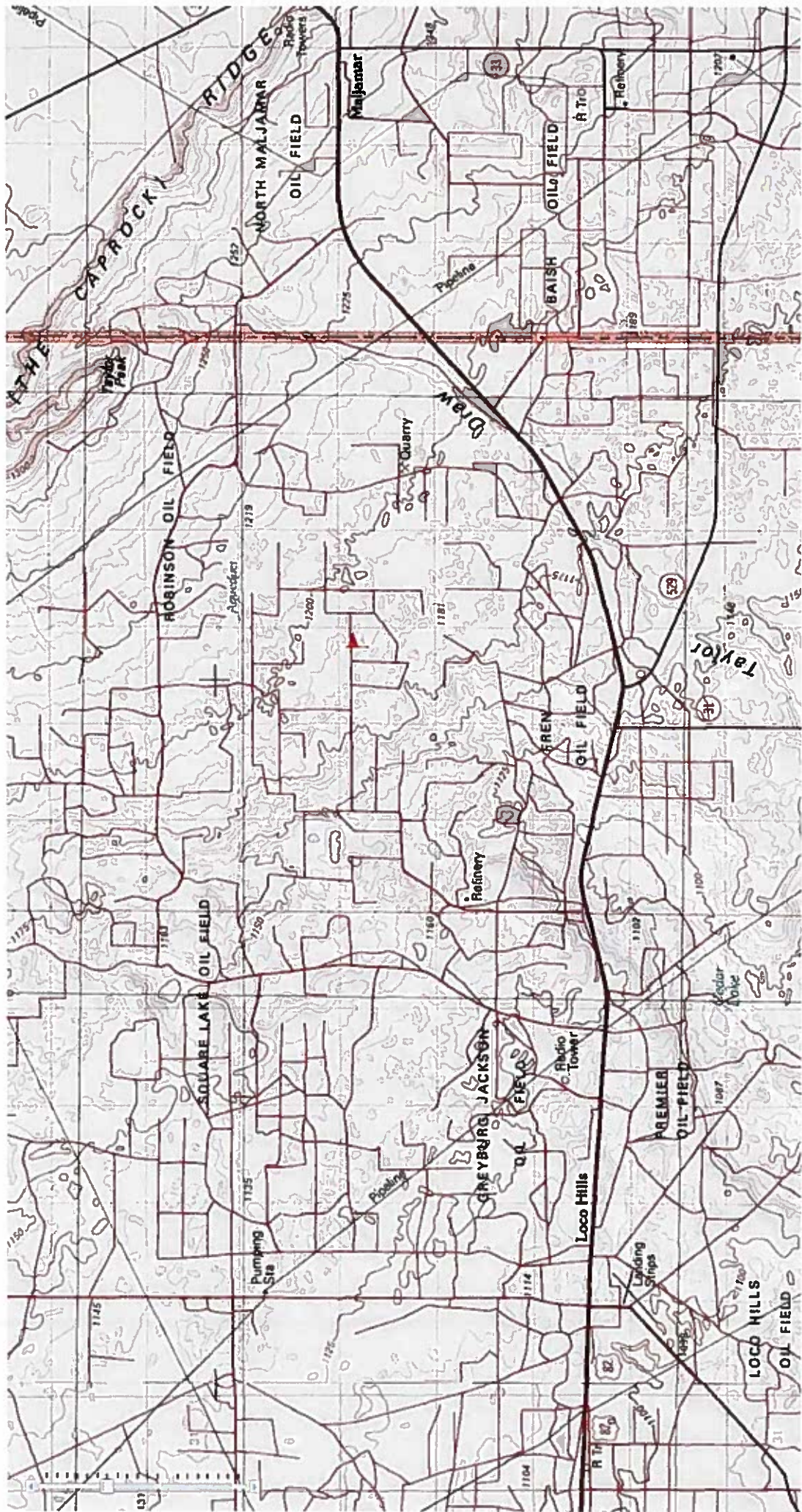
<p>Was this a major release as defined by 19.15.29.7(A) NMAC?</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>If YES, for what reason(s) does the responsible party consider this a major release?</p>
<p>If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?</p>	

## Initial Response

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

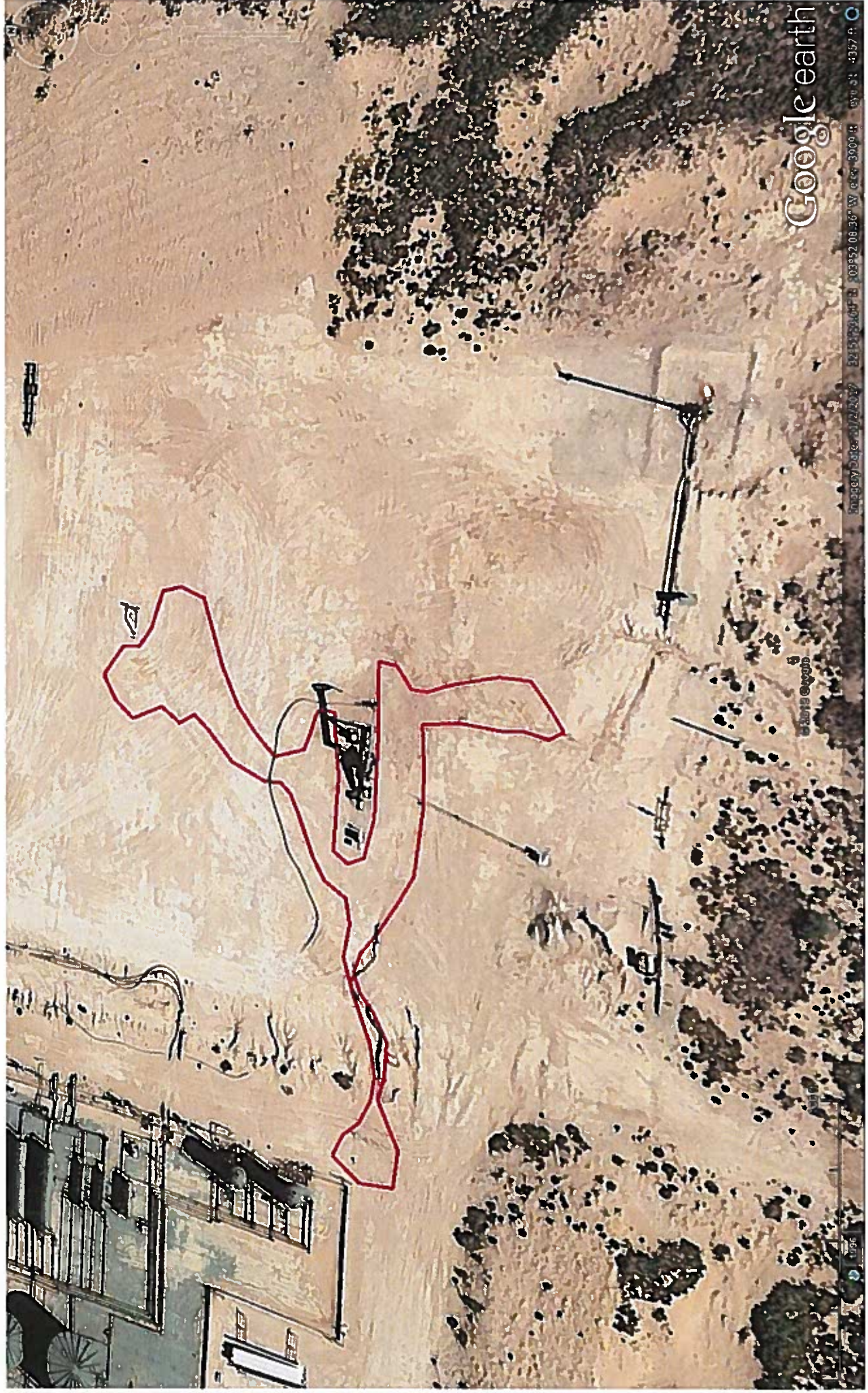
<input checked="" type="checkbox"/> The source of the release has been stopped.	
<input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment.	
<input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
<input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> 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: <u>Bruce Baker</u>	Title: <u>Environmental Tech. SR.</u>
Signature: <u>Bruce Baker</u>	Date: <u>10/11/18</u>
email: <u>larry.baker@apachecorp.com</u>	Telephone: <u>432-631-6982</u>
<u>OCD Only</u>	
Received by: <u>[Signature]</u>	Date: <u>10/01/18</u>





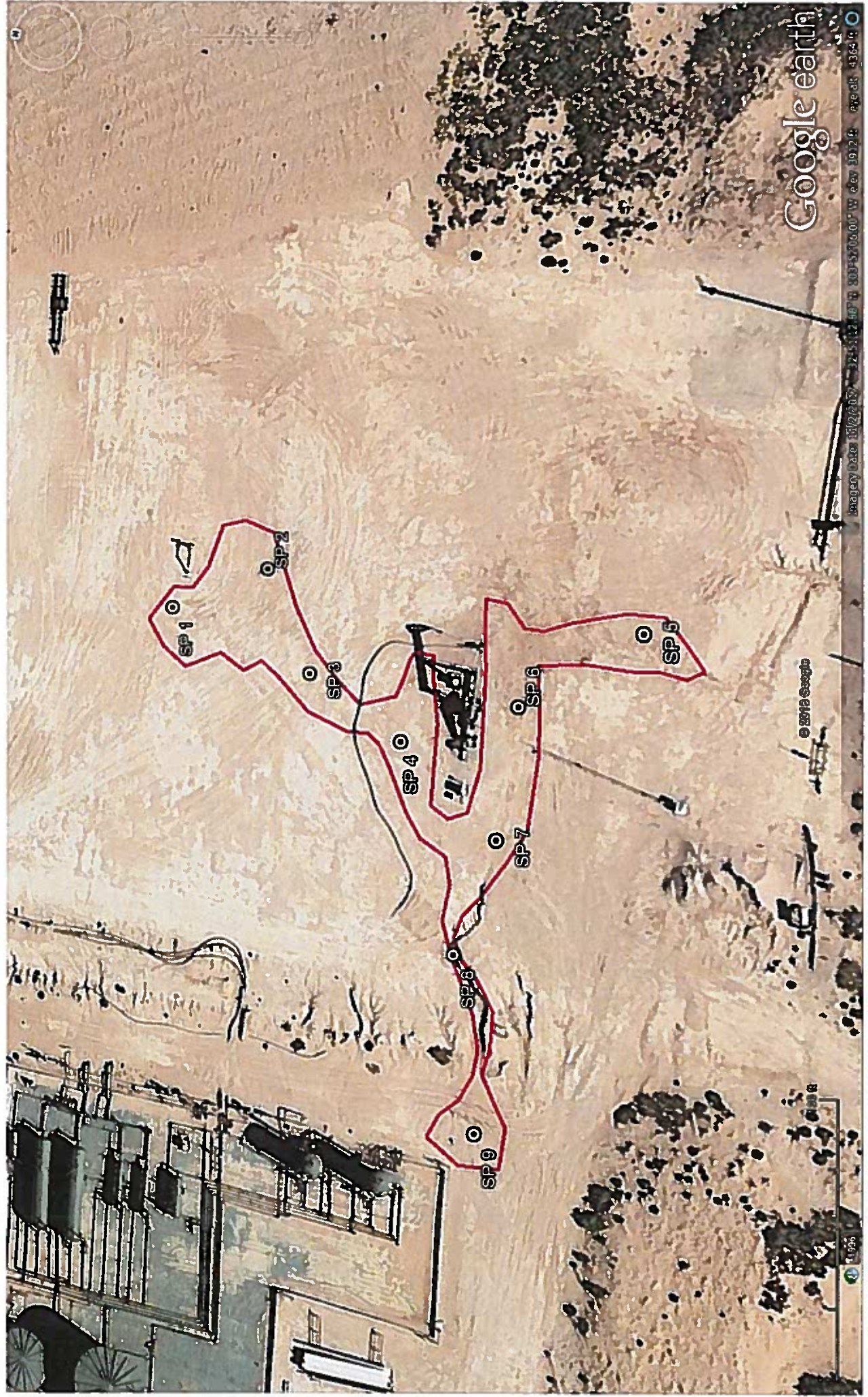


# Release Outline



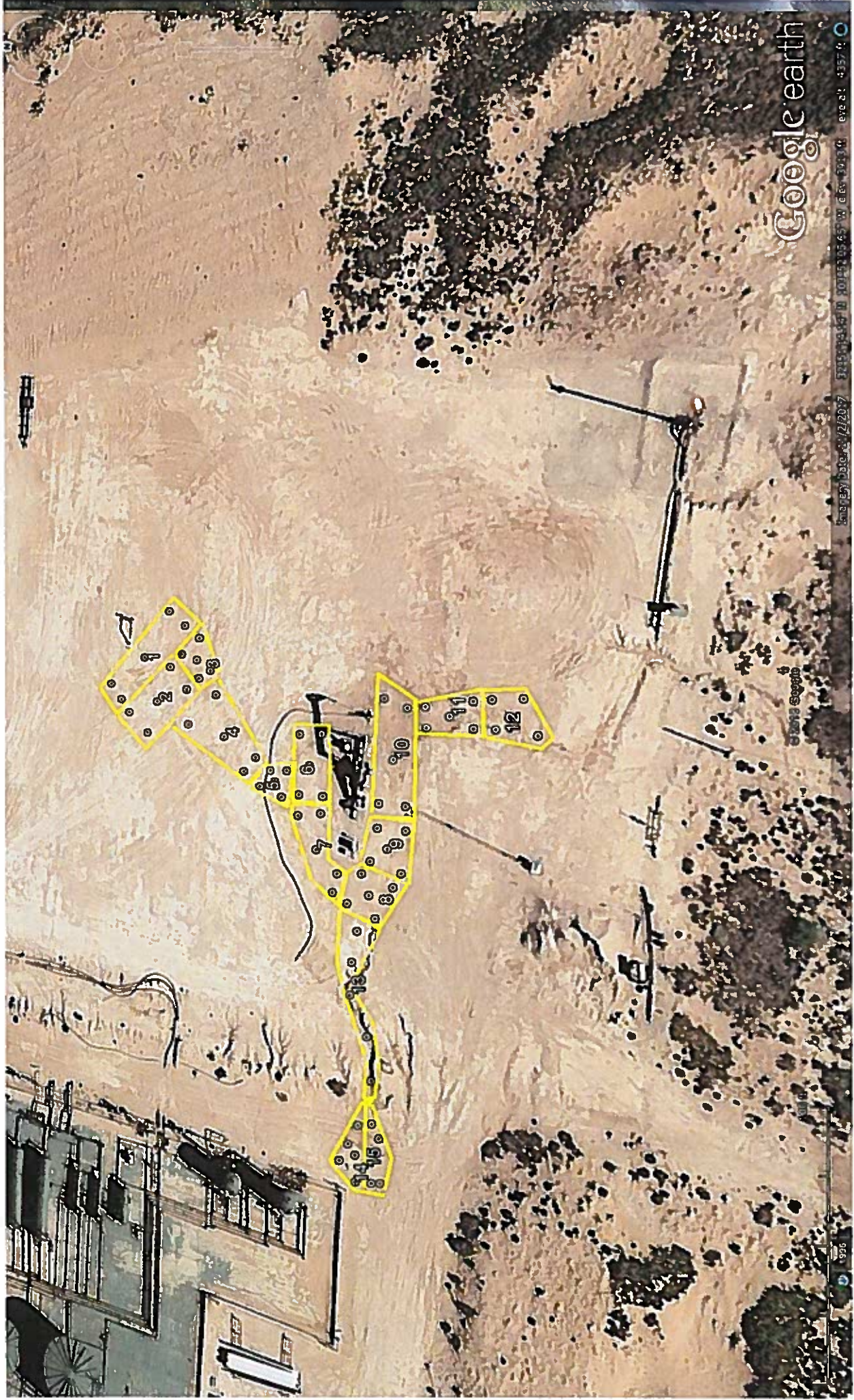


# Lab Sample Points





# Sample Plan





**Crow Federal SWD # 001 (GPS 32.85386 -103.86825) Photos**



**Photo of excavation facing southwest 11/15/2018**



**Photo of excavation facing south 11/15/2018**





Photo of excavation facing east 11/15/2018



Photo of excavation facing south west 11/15/2018





Photo of the excavation facing south 11/15/2018



## Crow Federal SWD Lab Data

Sample Pt.	Depth	Chloride	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO
1	Surface	13600	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10
2	Surface	16800	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10
3	Surface	44000	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10
4	Surface	15600	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10
5	Surface	39600	<0.050	<0.050	<0.050	<0.150	<0.300	<10	299	165
6	Surface	40800	<0.050	<0.050	<0.050	<0.150	<0.300	<10	3620	574
7	Surface	44000	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10
8	Surface	16,000	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10
9	Surface	23200	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10



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

August 31, 2018

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: CROW FED SWD #1

Enclosed are the results of analyses for samples received by the laboratory on 08/28/18 16:18.

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](http://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: 08/28/2018  
Reported: 08/31/2018  
Project Name: CROW FED SWD #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/28/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SP 1 (H802430-01)**

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	08/30/2018	ND	1.85	92.5	2.00	0.477	
Toluene*	<0.050	0.050	08/30/2018	ND	1.78	88.9	2.00	0.588	
Ethylbenzene*	<0.050	0.050	08/30/2018	ND	1.79	89.6	2.00	0.617	
Total Xylenes*	<0.150	0.150	08/30/2018	ND	5.32	88.7	6.00	0.422	
Total BTEX	<0.300	0.300	08/30/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 98.9 % 69.8-142

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AC				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	13600	16.0	08/30/2018	ND	416	104	400	0.00	

TPH 8015M			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/30/2018	ND	206	103	200	0.954	
DRO >C10-C28*	<10.0	10.0	08/30/2018	ND	203	102	200	0.0187	
EXT DRO >C28-C36	<10.0	10.0	08/30/2018	ND					

Surrogate: 1-Chlorooctane 102 % 41-142

Surrogate: 1-Chlorooctadecane 97.2 % 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: 08/28/2018  
Reported: 08/31/2018  
Project Name: CROW FED SWD #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/28/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SP 2 (H802430-02)**

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	08/30/2018	ND	1.79	89.7	2.00	1.81	
Toluene*	<0.050	0.050	08/30/2018	ND	1.73	86.7	2.00	2.37	
Ethylbenzene*	<0.050	0.050	08/30/2018	ND	1.74	87.2	2.00	1.64	
Total Xylenes*	<0.150	0.150	08/30/2018	ND	5.23	87.2	6.00	1.91	
Total BTEX	<0.300	0.300	08/30/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 91.7 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16800	16.0	08/30/2018	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/30/2018	ND	206	103	200	0.954	
DRO >C10-C28*	<10.0	10.0	08/30/2018	ND	203	102	200	0.0187	
EXT DRO >C28-C36	<10.0	10.0	08/30/2018	ND					

Surrogate: 1-Chlorooctane 101 % 41-142

Surrogate: 1-Chlorooctadecane 94.8 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

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

Received: 08/28/2018  
Reported: 08/31/2018  
Project Name: CROW FED SWD #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/28/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SP 3 (H802430-03)**

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	08/30/2018	ND	1.79	89.7	2.00	1.81		
Toluene*	<0.050	0.050	08/30/2018	ND	1.73	86.7	2.00	2.37		
Ethylbenzene*	<0.050	0.050	08/30/2018	ND	1.74	87.2	2.00	1.64		
Total Xylenes*	<0.150	0.150	08/30/2018	ND	5.23	87.2	6.00	1.91		
Total BTEX	<0.300	0.300	08/30/2018	ND						

Surrogate: 4-Bromofluorobenzene (PIC) 93.9 % 69.8-142

Chloride, 5M4500Cl-B			mg/kg							Analyzed By: AC	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
Chloride	44000	16.0	08/30/2018	ND	416	104	400	0.00			

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	08/30/2018	ND	206	103	200	0.954		
DRO >C10-C28*	<10.0	10.0	08/30/2018	ND	203	102	200	0.0187		
EXT DRO >C28-C36	<10.0	10.0	08/30/2018	ND						

Surrogate: 1-Chlorooctane 103 % 41-142

Surrogate: 1-Chlorooctadecane 98.7 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 08/28/2018  
Reported: 08/31/2018  
Project Name: CROW FED SWD #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/28/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SP 4 (H802430-04)**

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	08/30/2018	ND	1.79	89.7	2.00	1.81	
Toluene*	<0.050	0.050	08/30/2018	ND	1.73	86.7	2.00	2.37	
Ethylbenzene*	<0.050	0.050	08/30/2018	ND	1.74	87.2	2.00	1.64	
Total Xylenes*	<0.150	0.150	08/30/2018	ND	5.23	87.2	6.00	1.91	
Total BTEx	<0.300	0.300	08/30/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 93.5 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	15600	16.0	08/30/2018	ND	432	108	400	3.64	QM-07, QR-03

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	08/30/2018	ND	206	103	200	0.954	
DRO >C10-C28*	<10.0	10.0	08/30/2018	ND	203	102	200	0.0187	
EXT DRO >C28-C36	<10.0	10.0	08/30/2018	ND					

Surrogate: 1-Chlorooctane 105 % 41-142

Surrogate: 1-Chlorooctadecane 99.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

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

Received: 08/28/2018  
Reported: 08/31/2018  
Project Name: CROW FED SWD #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/28/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SP 5 (H802430-05)**

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/30/2018	ND	1.79	89.7	2.00	1.81	
Toluene*	<0.050	0.050	08/30/2018	ND	1.73	86.7	2.00	2.37	
Ethylbenzene*	<0.050	0.050	08/30/2018	ND	1.74	87.2	2.00	1.64	
Total Xylenes*	<0.150	0.150	08/30/2018	ND	5.23	87.2	6.00	1.91	
Total BTEX	<0.300	0.300	08/30/2018	ND					

Surrogate 4-Bromofluorobenzene (PIC) 94.2 % 69.8-142

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	39600	16.0	08/30/2018	ND	432	108	400	3.64	

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	08/30/2018	ND	206	103	200	0.954	
DRO >C10-C28*	299	10.0	08/30/2018	ND	203	102	200	0.0187	
EXT DRO >C28-C36	165	10.0	08/30/2018	ND					

Surrogate 1-Chlorooctane 107 % 41-142

Surrogate 1-Chlorooctadecane 113 % 37.6-147

**Cardinal Laboratories**

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

 Received: 08/28/2018  
 Reported: 08/31/2018  
 Project Name: CROW FED SWD #1  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 08/28/2018  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 6 (H802430-06)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/30/2018	ND	1.79	89.7	2.00	1.81	
Toluene*	<0.050	0.050	08/30/2018	ND	1.73	86.7	2.00	2.37	
Ethylbenzene*	<0.050	0.050	08/30/2018	ND	1.74	87.2	2.00	1.64	
Total Xylenes*	<0.150	0.150	08/30/2018	ND	5.23	87.2	6.00	1.91	
Total BTEX	<0.300	0.300	08/30/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 91.1 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	40800	16.0	08/30/2018	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<50.0	50.0	08/30/2018	ND	206	103	200	0.954		
DRO >C10-C28*	3620	50.0	08/30/2018	ND	203	102	200	0.0187		
EXT DRO >C28-C36	574	50.0	08/30/2018	ND						


Surrogate: 1-Chlorooctane 105 % 41-142

Surrogate: 1-Chlorooctadecane 292 % 37.6-147

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\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

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

 Received: 08/28/2018  
 Reported: 08/31/2018  
 Project Name: CROW FED SWD #1  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 08/28/2018  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 7 (H802430-07)**

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	08/30/2018	ND	1.79	89.7	2.00	1.81	
Toluene*	<0.050	0.050	08/30/2018	ND	1.73	86.7	2.00	2.37	
Ethylbenzene*	<0.050	0.050	08/30/2018	ND	1.74	87.2	2.00	1.64	
Total Xylenes*	<0.150	0.150	08/30/2018	ND	5.23	87.2	6.00	1.91	
Total BTEX	<0.300	0.300	08/30/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 93.0 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	44000	16.0	08/30/2018	ND	432	108	400	3.64	

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	08/30/2018	ND	206	103	200	0.954	
DRO >C10-C28*	<10.0	10.0	08/30/2018	ND	203	102	200	0.0187	
EXT DRO >C28-C36	<10.0	10.0	08/30/2018	ND					

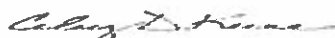
Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 95.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 08/28/2018  
Reported: 08/31/2018  
Project Name: CROW FED SWD #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/28/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SP 8 (H802430-08)**

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	08/30/2018	ND	1.79	89.7	2.00	1.81	
Toluene*	<0.050	0.050	08/30/2018	ND	1.73	86.7	2.00	2.37	
Ethylbenzene*	<0.050	0.050	08/30/2018	ND	1.74	87.2	2.00	1.64	
Total Xylenes*	<0.150	0.150	08/30/2018	ND	5.23	87.2	6.00	1.91	
Total BTX	<0.300	0.300	08/30/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 91.6 % 69.8-142

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16000	16.0	08/30/2018	ND	432	108	400	3.64	

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	08/30/2018	ND	206	103	200	0.954	
DRO >C10-C28*	<10.0	10.0	08/30/2018	ND	203	102	200	0.0187	
EXT DRO >C28-C36	<10.0	10.0	08/30/2018	ND					

Surrogate: 1-Chlorooctane 102 % 41-142

Surrogate: 1-Chlorooctadecane 95.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

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

Received: 08/28/2018  
Reported: 08/31/2018  
Project Name: CROW FED SWD #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/28/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SP 9 (H802430-09)**

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	08/30/2018	ND	1.79	89.7	2.00	1.81		
Toluene*	<0.050	0.050	08/30/2018	ND	1.73	86.7	2.00	2.37		
Ethylbenzene*	<0.050	0.050	08/30/2018	ND	1.74	87.2	2.00	1.64		
Total Xylenes*	<0.150	0.150	08/30/2018	ND	5.23	87.2	6.00	1.91		
Total BTEX	<0.300	0.300	08/30/2018	ND						

Surrogate: 4-Bromofluorobenzene (PIC) 92.8 % 69.8-142

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	23200	16.0	08/30/2018	ND	432	108	400	3.64		

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	08/30/2018	ND	206	103	200	0.954		
DRO >C10-C28*	<10.0	10.0	08/30/2018	ND	203	102	200	0.0187		
EXT DRO >C28-C36	<10.0	10.0	08/30/2018	ND						

Surrogate: 1-Chlorooctane 110 % 41-142

Surrogate: 1-Chlorooctadecane 102 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

### 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.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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**Celey D. Keene, Lab Director/Quality Manager**



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <u>Apache</u>		P.O. #:		BILL TO												ANALYSIS REQUEST																													
Project Manager: <u>Bruce Baker</u>		Company:																																											
Address:		Attn:																																											
City: <u>Hobbs</u>		State: <u>NM</u> Zip: <u>88240</u>																																											
Phone #:		Address:																																											
Fax #:		City:																																											
Project #:		State:		Zip:																																									
Project Name: <u>Crow Fed SWD #1</u>		Phone #:																																											
Project Location:		Fax #:																																											
Sampler Name: <u>Bruce Baker</u>		PRESERV:		SAMPLING																																									
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		CL		Ext. TPH		BTEX											
1 SP 1		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 11:15am		✓		✓		✓													
2 SP 2		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 11:18am		✓		✓		✓													
3 SP 3		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 11:21am		✓		✓		✓													
4 SP 4		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 11:25am		✓		✓		✓													
5 SP 5		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 11:30am		✓		✓		✓													
6 SP 6		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 11:35am		✓		✓		✓													
7 SP 7		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 11:40am		✓		✓		✓													
8 SP 8		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 11:45am		✓		✓		✓													
9 SP 9		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 11:50am		✓		✓		✓													
10 SP 10		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 11:55am		✓		✓		✓													
11 SP 11		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 12:00pm		✓		✓		✓													
12 SP 12		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 12:05pm		✓		✓		✓													
13 SP 13		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 12:10pm		✓		✓		✓													
14 SP 14		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 12:15pm		✓		✓		✓													
15 SP 15		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 12:20pm		✓		✓		✓													
16 SP 16		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 12:25pm		✓		✓		✓													
17 SP 17		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 12:30pm		✓		✓		✓													
18 SP 18		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 12:35pm		✓		✓		✓													
19 SP 19		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 12:40pm		✓		✓		✓													
20 SP 20		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 12:45pm		✓		✓		✓													
21 SP 21		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 12:50pm		✓		✓		✓													
22 SP 22		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 12:55pm		✓		✓		✓													
23 SP 23		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 1:00pm		✓		✓		✓													
24 SP 24		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 1:05pm		✓		✓		✓													
25 SP 25		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 1:10pm		✓		✓		✓													
26 SP 26		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 1:15pm		✓		✓		✓													
27 SP 27		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 1:20pm		✓		✓		✓													
28 SP 28		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 1:25pm		✓		✓		✓													
29 SP 29		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 1:30pm		✓		✓		✓													
30 SP 30		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 1:35pm		✓		✓		✓													
31 SP 31		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 1:40pm		✓		✓		✓													
32 SP 32		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 1:45pm		✓		✓		✓													
33 SP 33		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 1:50pm		✓		✓		✓													
34 SP 34		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 1:55pm		✓		✓		✓													
35 SP 35		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 2:00pm		✓		✓		✓													
36 SP 36		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 2:05pm		✓		✓		✓													
37 SP 37		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 2:10pm		✓		✓		✓													
38 SP 38		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 2:15pm		✓		✓		✓													
39 SP 39		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 2:20pm		✓		✓		✓													
40 SP 40		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 2:25pm		✓		✓		✓													
41 SP 41		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 2:30pm		✓		✓		✓													
42 SP 42		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 2:35pm		✓		✓		✓													
43 SP 43		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 2:40pm		✓		✓		✓													
44 SP 44		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 2:45pm		✓		✓		✓													
45 SP 45		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 2:50pm		✓		✓		✓													
46 SP 46		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 2:55pm		✓		✓		✓													
47 SP 47		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 3:00pm		✓		✓		✓													
48 SP 48		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 3:05pm		✓		✓		✓													
49 SP 49		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 3:10pm		✓		✓		✓													
50 SP 50		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 3:15pm		✓		✓		✓													
51 SP 51		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 3:20pm		✓		✓		✓													
52 SP 52		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 3:25pm		✓		✓		✓													
53 SP 53		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 3:30pm		✓		✓		✓													
54 SP 54		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 3:35pm		✓		✓		✓													
55 SP 55		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 3:40pm		✓		✓		✓													
56 SP 56		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 3:45pm		✓		✓		✓													
57 SP 57		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 3:50pm		✓		✓		✓													
58 SP 58		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 3:55pm		✓		✓		✓													
59 SP 59		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 4:00pm		✓		✓		✓													
60 SP 60		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 4:05pm		✓		✓		✓													
61 SP 61		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 4:10pm		✓		✓		✓													
62 SP 62		G 1		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		8-28-18 4:15pm		✓		✓		✓													
63 SP 63		G 1		✓		✓																																							



State of New Mexico  
Oil Conservation Division

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>NONE</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 <b>not</b> 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.*

- ☒ 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.

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## Remediation Plan

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

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

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

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: Bruce Baker Title: Environmental Technician sr  
Signature: Bruce Baker Date: 11-16-18  
email: larry.baker@apackcorp.com Telephone: 432-631-6982

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

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

Signature: \_\_\_\_\_ Date: \_\_\_\_\_