



September 10, 2019

Mr. Mike Bratcher  
District Supervisor  
Oil Conservation Division  
811 S. First St.  
Artesia, NM 882105

Delivered via e-mail: mike.bratcher@state.nm.us

Re: Buckeye Disposal, LLC  
Work Plan for Characterization and Remediation of State DU #001 Site

Dear Mr. Bratcher:

On behalf of Buckeye Disposal, Inc. (Buckeye), Daniel B. Stephens & Associates, Inc. (DBS&A) has prepared this work plan describing activities to characterize the extent of soil impacts caused by a release of produced water from the disposal well at the State DU #001 Site (the site). The facility, which is operated by Buckeye, is located in Section 36, Township 22 South, Range 27 East, NMPM. Following is a summary of the release and actions taken to date, and proposed actions to complete site characterization and remediation.

### **Actions to Date**

Buckeye discovered the release on June 14, 2018. The tubing on top of the wellhead holding the pressure gauge and the cutoff valve had snapped off, and produced water was flowing from the site's injection well. Buckeye estimated that the fluid released consisted of approximately 900 barrels of produced water and 300 barrels of crude oil. Once released, the liquid flowed southeast to a low spot in a corner of the site. Buckeye estimated that approximately 1,000 barrels of liquid was recovered.

Buckeye notified the Oil Conservation Division (OCD) Artesia Office by telephone on or about June 16, 2018. Buckeye submitted a Release Notification Form C-141 to the OCD on July 3, 2018. According to Buckeye, OCD considered the Form C-141 to be incomplete and has taken no action. A revised Form C-141 is provided as Attachment 1.

On November 29, 2018, Buckeye collected a total of eight soil samples from four locations at the site, as shown on Figure 1. At each location, samples were collected at depths of 6 and 12 inches using a backhoe. The samples were submitted to Cardinal Laboratories in Hobbs, New Mexico, and were analyzed for total chloride, total petroleum hydrocarbons (TPH), including gasoline-range organics (GRO) (C6-C10), diesel-range organics (DRO) (>C10-C28), and extended DRO (>C28-C36). Sample results are summarized in Table 1; the laboratory report is provided as Attachment 2.

*Daniel B. Stephens & Associates, Inc.*

6020 Academy NE, Suite 100 505-822-9400

Albuquerque, NM 87109 FAX 505-822-8877

Information obtained online from the Office of the State Engineer (OSE) indicates that the depth to shallow groundwater at wells near the site is 50 feet or less below ground surface (Figure 2). Based on the depth to shallow groundwater (50 feet or less), the OCD numerical limits for TPH and chloride are 100 milligrams per kilogram (mg/kg) and 600 mg/kg, respectively, as prescribed in Table 1 of 19.15.29.12 NMAC.

TPH concentrations in soil samples collected in November 2018 ranged from not detected at 10 mg/kg to a maximum of 2,210 mg/kg (Figure 1a and Table 1). TPH concentrations exceeded the OCD numerical limit in three of eight samples and were not detected in three of eight samples.

Chloride concentrations ranged from 7,600 to 28,000 mg/kg, with all sample results exceeding the OCD numerical limit of 600 mg/kg (Figure 1b and Table 1). The results indicate that the lateral and vertical extents of chloride exceed those of TPH.

Additional sampling is required to delineate both the lateral and vertical extent of impacts to soil.

### **Proposed Characterization**

Additional soil samples will be collected on an approximately 50-foot grid at 17 locations (Figure 3). A backhoe will be used to excavate a test pit at each location and soil samples will be collected from the walls of the test pit or from the bucket of the backhoe. The lithology of soils encountered will be described. Two soil samples from each test pit (highest observed contamination and deepest depth investigated) will be submitted for laboratory analysis. Soil samples will be placed in clean containers provided by the laboratory, properly labeled, and placed on ice. Chain-of-custody documents will be completed and the samples will be delivered to an analytical laboratory.

In accordance with Table 1, Section 19.15.29.12 NMAC, samples will be submitted for laboratory analysis for the following constituents:

- TPH, including GRO, DRO, and MRO using U.S. Environmental Protection Agency (EPA) method 8015 modified
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) using EPA method 8021B
- Chloride using standard method 4500-Cl-B.

Laboratory results will be compared to the OCD numerical limits for sites where groundwater is 50 feet or less deep, per Table 1 of 19.15.29.12 NMAC. Additional samples will be collected as needed to establish the lateral and vertical extent of contamination.

Once the lateral and vertical extent of contaminated soil has been established, the contaminated soil will be removed and properly disposed of. A sufficient number of confirmation samples will be collected from the bottom of the excavation to confirm the removal of soil exceeding OCD

Mr. Mike Bratcher  
September 10, 2019  
Page 3

numerical limits. The excavated area will then be backfilled with clean soil and compacted.

Upon completion of site characterization and remediation, Buckeye will complete and submit the Site Characterization and Remediation portions of the Form C-141 to OCD.

### **Closing**

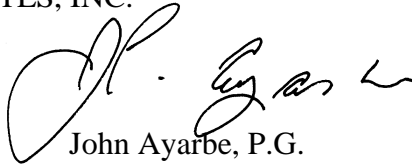
When your approval is received, Buckeye will implement this work plan. If you have any questions or comments regarding this work plan, please contact us at (505) 822-9400.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.



Bill Casadevall, C.P.G.  
Geologist



John Ayarbe, P.G.  
Senior Hydrologist

BC/rpf

Attachments

cc: Jim Griswold, OCD (jim.griswold@state.nm.us)  
Vincent D'Alise, Standard Energy Services (vincent@thestandardenergy.com)  
Saskia Bergstein Allen, Bergstein Enterprises (saskia@bergsteinenterprises.com)

## Figures

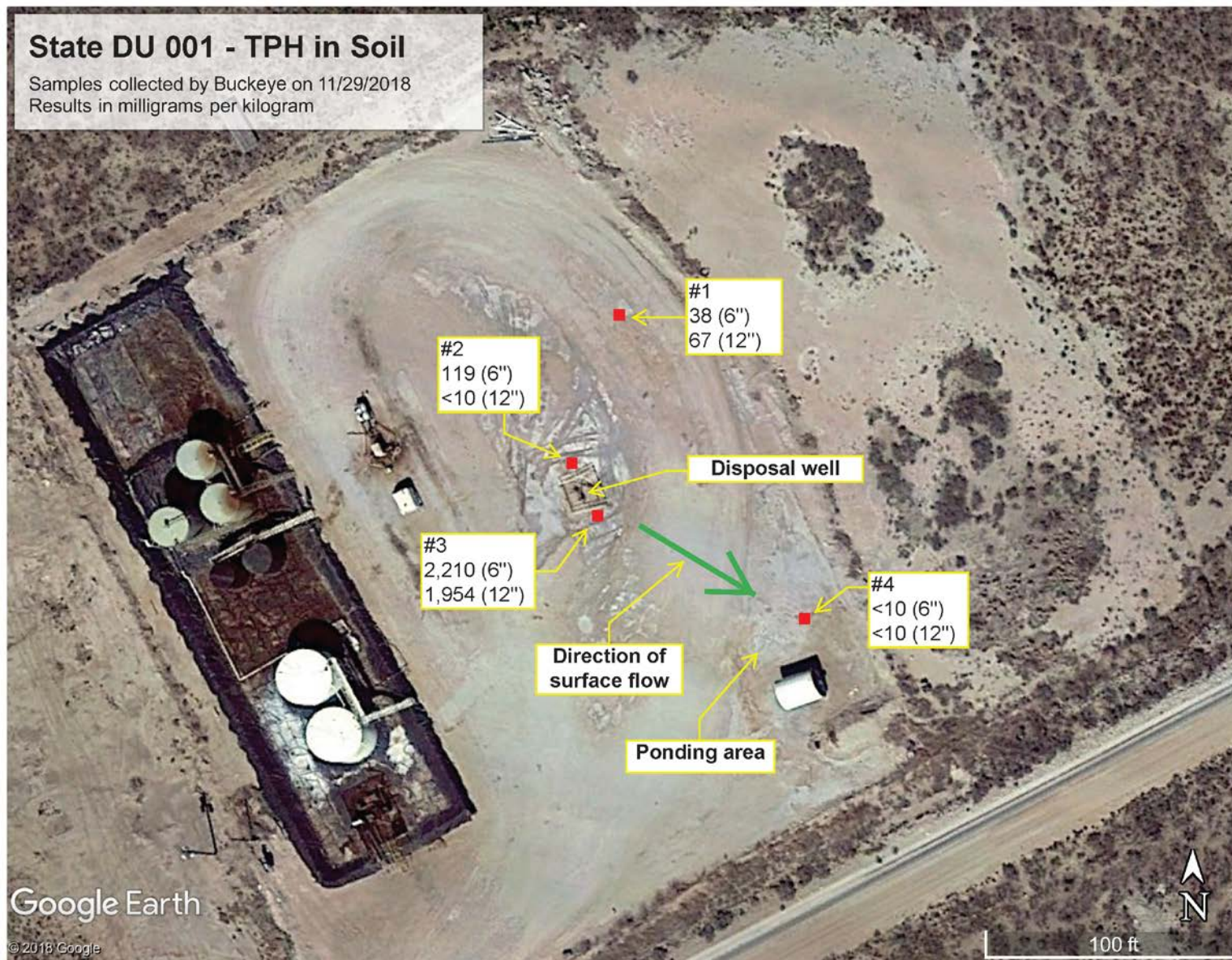


Figure 1a



Daniel B. Stephens & Associates, Inc.

8/9/19

BUCKEYE STATE DU #001  
**TPH in Soil**



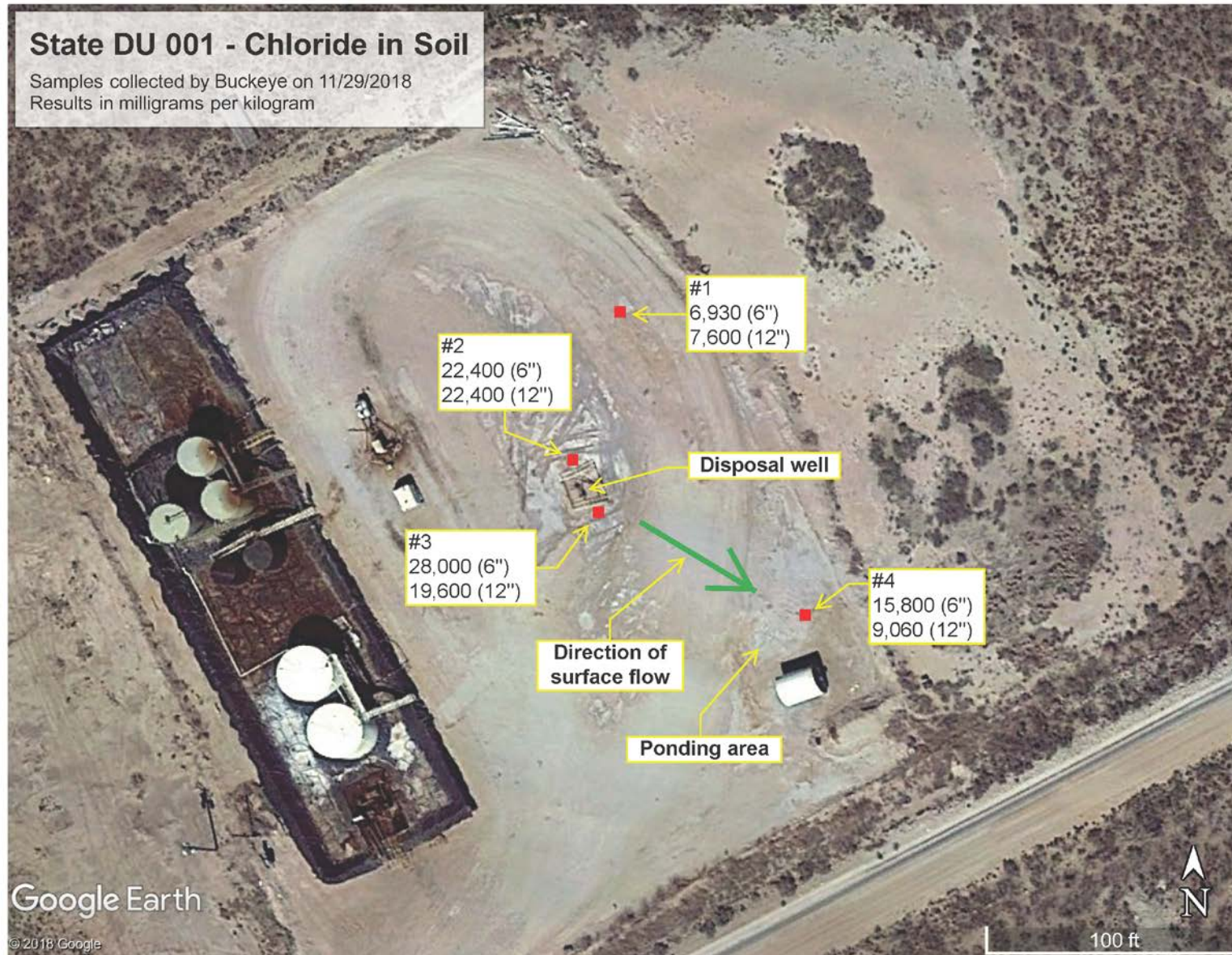


Figure 1b





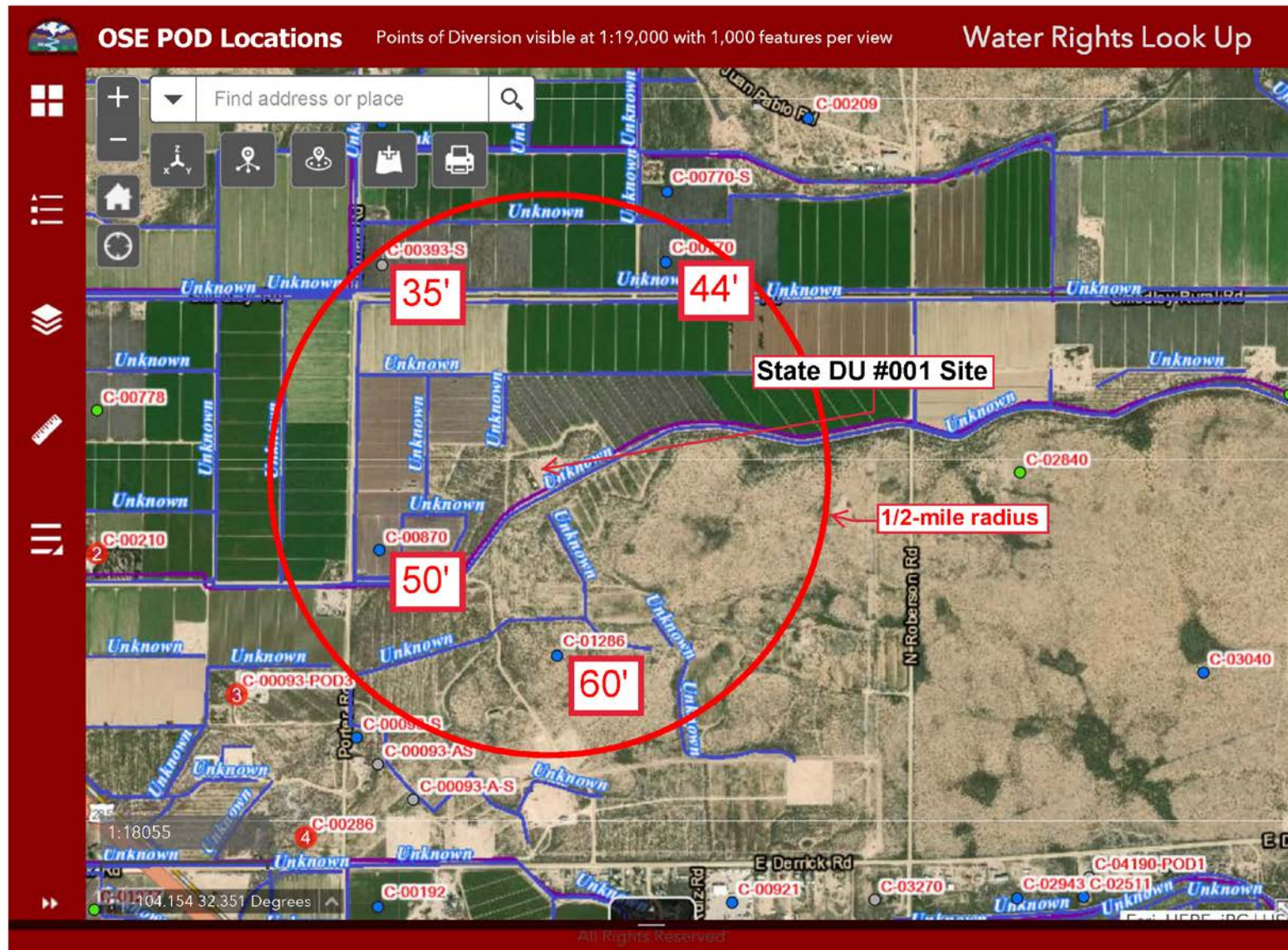


Figure 2



Daniel B. Stephens & Associates, Inc.

8/9/19

BUCKEYE STATE DU #001  
Shallow Water Sources within ½ mile of Site



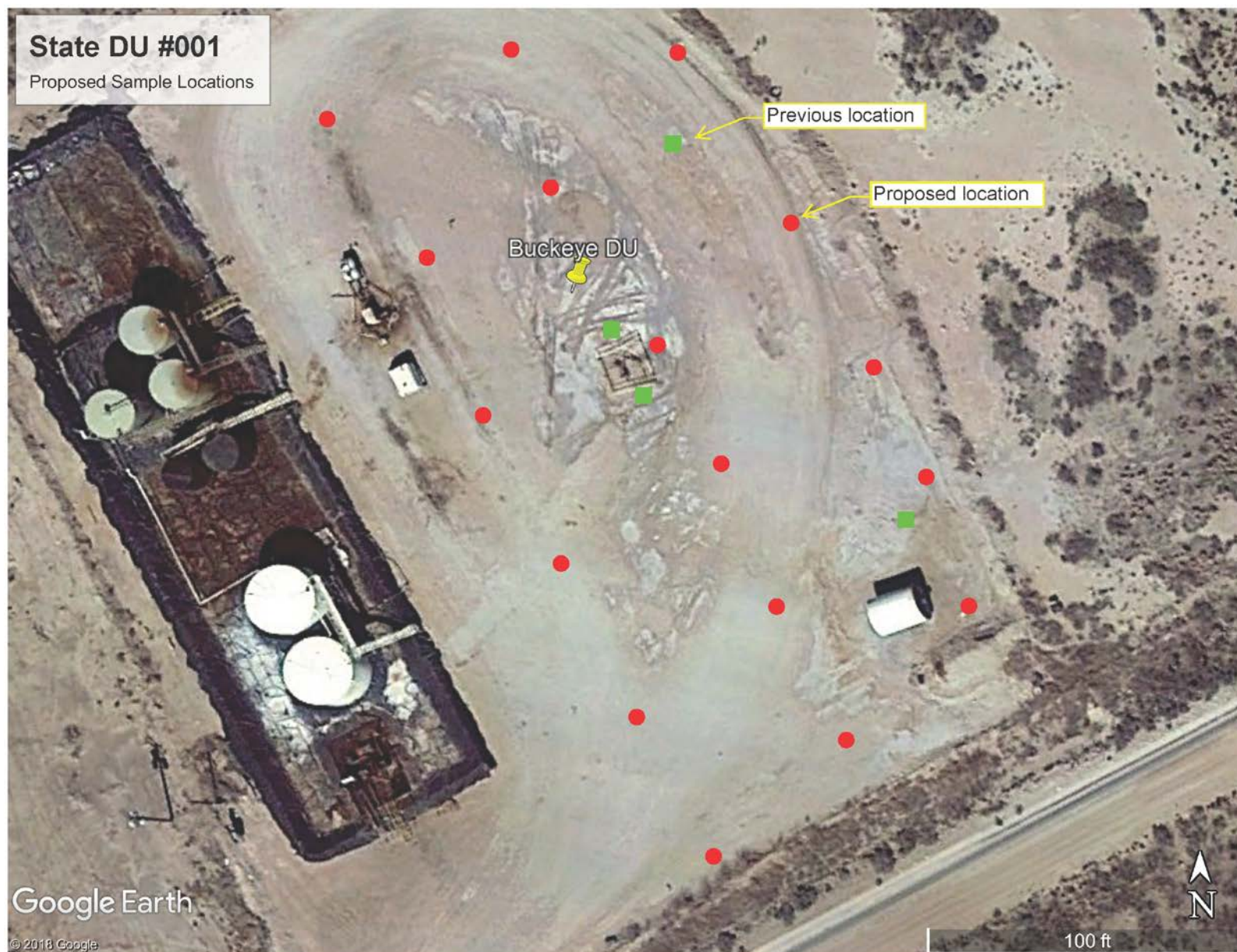


Figure 3



Daniel B. Stephens & Associates, Inc.

8/9/19

BUCKEYE STATE DU #001  
**Proposed Sample Locations**



**Table**



*Daniel B. Stephens & Associates, Inc.*

**Table 1. State DU #001 Site Soil Chemistry, November 29, 2018**

Analyte	Concentration (mg/kg)								
	OCD Limit <sup>a</sup>	#1 @ 6"	#1 @ 12"	#2 @ 6"	#2 @ 12"	#3 @ 6"	#3 @ 12"	#4 @ 6"	#4 @ 12"
Chloride	600	<b>6,930</b>	<b>7,600</b>	<b>22,400</b>	<b>22,400</b>	<b>28,000</b>	<b>19,600</b>	<b>15,800</b>	<b>9,060</b>
GRO (C6-C10)	NS	<10	<10	<10	<10	<10	<10	<10	<10
DRO (>C10-C28)	NS	27	45	76	<10	2,100	1,940	<10	<10
Ext DRO (>C28-C36)	NS	11	22	43	<10	110	14	<10	<10
GRO + DRO + MRO	100	38	67	<b>119</b>	<10	<b>2,210</b>	<b>1,954</b>	<10	<10

**Bold** indicates that value exceeds the Oil Conservation Division (OCD) numerical standard.

Source: Cardinal Laboratories, 12/4/2018

<sup>a</sup> Standards from Table 1 of 19.15.29.12 NMAC for site where depth to groundwater ≤ 50 feet.

mg/kg = Milligrams per kilogram

GRO = Gasoline-range organics

DRO = Diesel-range organics

MRO = Motor-oil-range organics

C = Carbon

NS = No standard

**Attachment 1**  
**Revised Form C-141**



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	
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party Buckeye, LLC	OGRID
Contact Name Saskia Bergstein Allen	Contact Telephone (817) 480-5050
Contact email saskia@bergsteinenterprises.com	Incident # (assigned by OCD)
Contact mailing address PO Box 2724, Lubbock, TX 79408	

### Location of Release Source

Latitude 32.35173 Longitude -104.14597  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Buckeye DU New Mexico State 001	Site Type Salt Water Disposal
Date Release Discovered June 14, 2018	API# (if applicable) 30-015-24531

Unit Letter	Section	Township	Range	County
	36	22 South	27 East	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 checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) 300	Volume Recovered (bbls) 200
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 900	Volume Recovered (bbls) 800
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input checked="" 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

Tubing on top of the wellhead holding the pressure gauge and the cut off valve snapped off. With no cut off valve, the injection site was free flowing.


State of New Mexico  
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? Per the statute, the spill was in excess of 25 barrels and is considered a major spill.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Notice was given by telephone roughly 48 hours later by Jim Sayer to the Atresia office. In October, when it was discovered that a C-141 was not filed, Gene Hornbeck reported the spill by phone to Mike Bratcher in the Atresia office.	

### 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>Saskia Bergstein Allen</u>	Title: <u>Manager</u>
Signature: <u></u>	Date: <u>July 3, 2019 (revised 8/16/19)</u>
email: <u>saskia@bergsteinenterprises.com</u>	Telephone: <u>(817) 480-5050</u>
<b><u>OCD Only</u></b>	
Received by: _____	Date: _____

**Attachment 2**  
**Laboratory Report**





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

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December 04, 2018

GREG FRANCO

BACKHOE SERVICES

P. O. BOX 842

ARTESIA, NM 88210

RE: NM "DU" ST #001 SWD

Enclosed are the results of analyses for samples received by the laboratory on 11/29/18 17:10.

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

**Analytical Results For:**

BACKHOE SERVICES  
GREG FRANCO  
P. O. BOX 842  
ARTESIA NM, 88210  
Fax To: (575) 365-2353

Received:	11/29/2018	Sampling Date:	11/29/2018
Reported:	12/04/2018	Sampling Type:	Soil
Project Name:	NM "DU" ST #001 SWD	Sampling Condition:	Cool & Intact
Project Number:	NM DU ST. #001 SWD	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

**Sample ID: # 1 @ 6" (H803512-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>6930</b>	16.0	12/03/2018	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	12/01/2018	ND	221	110	200	1.94	
<b>DRO &gt;C10-C28*</b>	<b>27.1</b>	10.0	12/01/2018	ND	227	114	200	2.69	
<b>EXT DRO &gt;C28-C36</b>	<b>10.9</b>	10.0	12/01/2018	ND					
<hr/>									
Surrogate: 1-Chlorooctane	96.8 %	41-142							
Surrogate: 1-Chlorooctadecane	105 %	37.6-147							

**Sample ID: # 1 @ 12" (H803512-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>7600</b>	16.0	12/03/2018	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	12/01/2018	ND	221	110	200	1.94	
<b>DRO &gt;C10-C28*</b>	<b>44.8</b>	10.0	12/01/2018	ND	227	114	200	2.69	
<b>EXT DRO &gt;C28-C36</b>	<b>22.4</b>	10.0	12/01/2018	ND					
<hr/>									
Surrogate: 1-Chlorooctane	97.2 %	41-142							
Surrogate: 1-Chlorooctadecane	107 %	37.6-147							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BACKHOE SERVICES  
GREG FRANCO  
P. O. BOX 842  
ARTESIA NM, 88210  
Fax To: (575) 365-2353

Received:	11/29/2018	Sampling Date:	11/29/2018
Reported:	12/04/2018	Sampling Type:	Soil
Project Name:	NM "DU" ST #001 SWD	Sampling Condition:	Cool & Intact
Project Number:	NM DU ST. #001 SWD	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

**Sample ID: # 2 @ 6" (H803512-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	22400	16.0	12/03/2018	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	12/01/2018	ND	221	110	200	1.94	
DRO >C10-C28*	75.7	10.0	12/01/2018	ND	227	114	200	2.69	
EXT DRO >C28-C36	43.0	10.0	12/01/2018	ND					
Surrogate: 1-Chlorooctane	99.4 %	41-142							
Surrogate: 1-Chlorooctadecane	114 %	37.6-147							

**Sample ID: # 2 @ 12" (H803512-04)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	22400	16.0	12/03/2018	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	12/01/2018	ND	221	110	200	1.94	
DRO >C10-C28*	<10.0	10.0	12/01/2018	ND	227	114	200	2.69	
EXT DRO >C28-C36	<10.0	10.0	12/01/2018	ND					
Surrogate: 1-Chlorooctane	99.6 %	41-142							
Surrogate: 1-Chlorooctadecane	109 %	37.6-147							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

BACKHOE SERVICES  
GREG FRANCO  
P. O. BOX 842  
ARTESIA NM, 88210  
Fax To: (575) 365-2353

Received:	11/29/2018	Sampling Date:	11/29/2018
Reported:	12/04/2018	Sampling Type:	Soil
Project Name:	NM "DU" ST #001 SWD	Sampling Condition:	Cool & Intact
Project Number:	NM DU ST. #001 SWD	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

**Sample ID: # 3 @ 6" (H803512-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	28000	16.0	12/03/2018	ND	432	108	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	12/01/2018	ND	221	110	200	1.94		
DRO >C10-C28*	2100	10.0	12/01/2018	ND	227	114	200	2.69		
EXT DRO >C28-C36	110	10.0	12/01/2018	ND						
Surrogate: 1-Chlorooctane	91.5 %	41-142								
Surrogate: 1-Chlorooctadecane	169 %	37.6-147								

**Sample ID: # 3 @ 12" (H803512-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	19600	16.0	12/03/2018	ND	432	108	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	12/01/2018	ND	221	110	200	1.94		
DRO >C10-C28*	1940	10.0	12/01/2018	ND	227	114	200	2.69		
EXT DRO >C28-C36	13.8	10.0	12/01/2018	ND						
Surrogate: 1-Chlorooctane	97.5 %	41-142								
Surrogate: 1-Chlorooctadecane	154 %	37.6-147								

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\*=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

**Analytical Results For:**

BACKHOE SERVICES  
GREG FRANCO  
P. O. BOX 842  
ARTESIA NM, 88210  
Fax To: (575) 365-2353

Received:	11/29/2018	Sampling Date:	11/29/2018
Reported:	12/04/2018	Sampling Type:	Soil
Project Name:	NM "DU" ST #001 SWD	Sampling Condition:	Cool & Intact
Project Number:	NM DU ST. #001 SWD	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

**Sample ID: # 4 @ 6" (H803512-07)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	15800	16.0	12/03/2018	ND	400	100	400	3.92	QM-07
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/01/2018	ND	221	110	200	1.94	
DRO >C10-C28*	<10.0	10.0	12/01/2018	ND	227	114	200	2.69	
EXT DRO >C28-C36	<10.0	10.0	12/01/2018	ND					
Surrogate: 1-Chlorooctane	89.9 %	41-142							
Surrogate: 1-Chlorooctadecane	98.1 %	37.6-147							

**Sample ID: # 4 @ 12" (H803512-08)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	9060	16.0	12/03/2018	ND	400	100	400	3.92	
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	12/01/2018	ND	221	110	200	1.08	
DRO >C10-C28*	<10.0	10.0	12/01/2018	ND	228	114	200	1.37	
EXT DRO >C28-C36	<10.0	10.0	12/01/2018	ND					
Surrogate: 1-Chlorooctane	91.9 %	41-142							
Surrogate: 1-Chlorooctadecane	101 %	37.6-147							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Notes and Definitions

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

Company Name: <u>BACKHOE Services Inc.</u>				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>																				
Project Manager: <u>Greg FRANCO</u>				P.O. #:																								
Address: <u>PO Box 842</u>				Company: <u>Standard</u>																								
City: <u>Artesia</u> State: <u>NM</u> Zip: <u>88211</u>				Attn: <u>Gene Hornbeck</u>																								
Phone #: <u>575-746-7552</u> Fax #:				Address:																								
Project #: <u>NM "Du" St 001 SWD</u> Project Owner:				City:																								
Project Name:				State: Zip:																								
Project Location: <u>NM Du St 001 SWD</u>				Phone #:																								
Sampler Name:				Fax #:																								
FOR LAB USE ONLY						MATRIX		PRESERV.		SAMPLING																		
Lab I.D.	Sample I.D.	(GRAB OR C/COMP.)	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME														
<u>H803512</u>																												
	1 #1 @ 6"	<u>G</u>	1			<u>✓</u>							<u>11-29-18</u>	<u>15:11</u>	<u>TPH</u>	<u>CL</u>												
	2 #1 @ 12"													<u>15:48</u>														
	3 #2 @ 6"													<u>15:28</u>														
	4 #2 @ 12"													<u>15:31</u>														
	5 #3 @ 6"													<u>15:35</u>														
	6 #3 @ 12"													<u>15:41</u>														
	7 #4 @ 6"													<u>15:42</u>														
	8 #4 @ 12"													<u>15:46</u>														

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Relinquished By: <u>Greg Franco</u>	Date: <u>11-29-18</u>	Received By: <u>Guara Aldak</u>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
	Time: <u>17:10</u>		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS: <u>gene@thestandardenergy.com</u>	
	Time:			
Delivered By: (Circle One)	Sample Condition	CHECKED BY: (Initials)		
Sampler - UPS - Bus - Other: <u>4.4 @ #97</u>	Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<u>TO.</u>		