



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

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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

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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

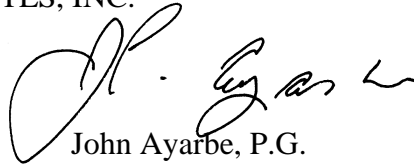
When your approval is received, Buckeye will implement this work plan. If you have any questions or comments regarding this work plan, please contact us at (505) 822-9400.

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

P:_DB19-1241\Work Plan.8-19\Figures\Word\Fig01a_TPH.docx

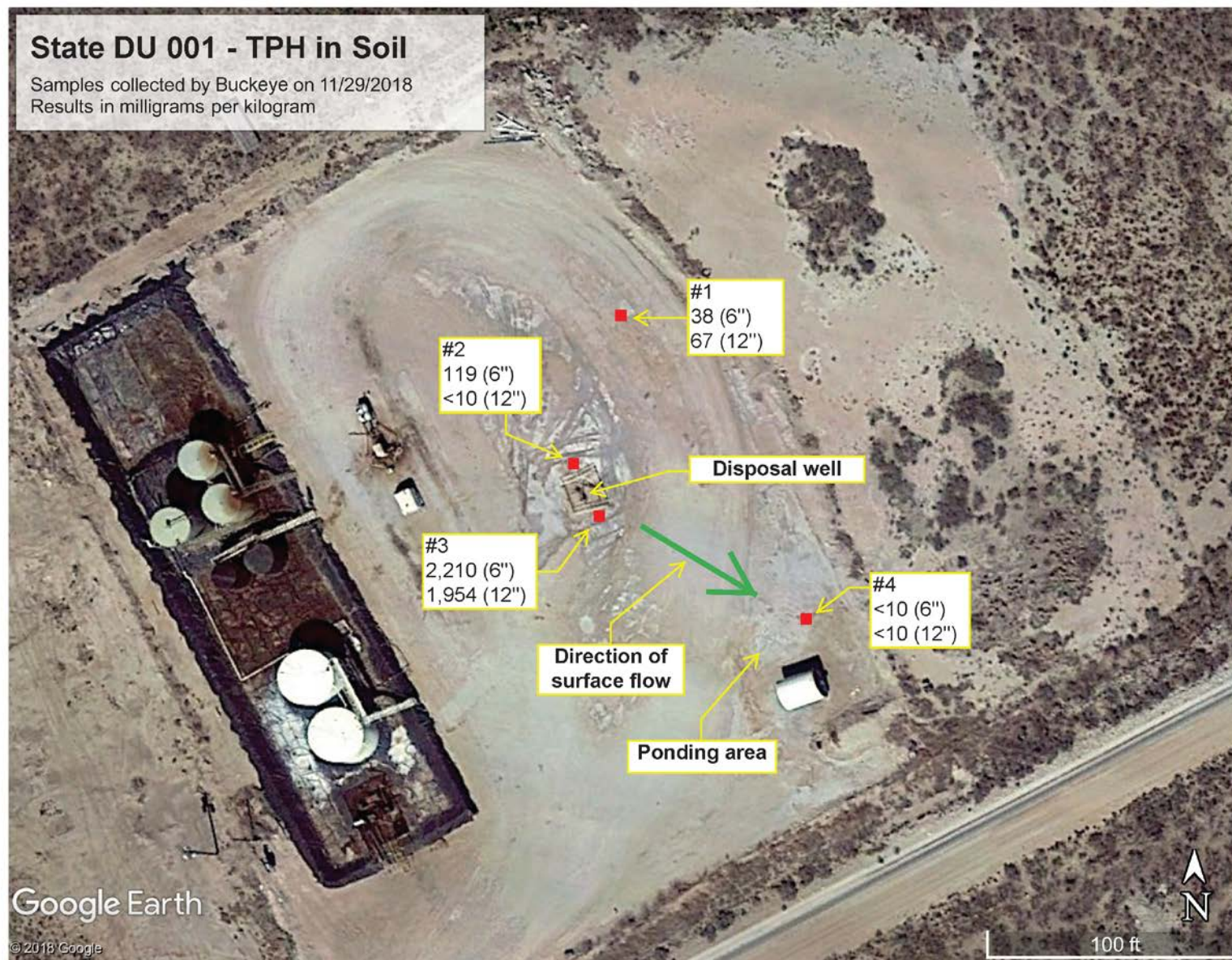


Figure 1a



Daniel B. Stephens & Associates, Inc.

8/9/19

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BUCKEYE STATE DU #001
TPH in Soil

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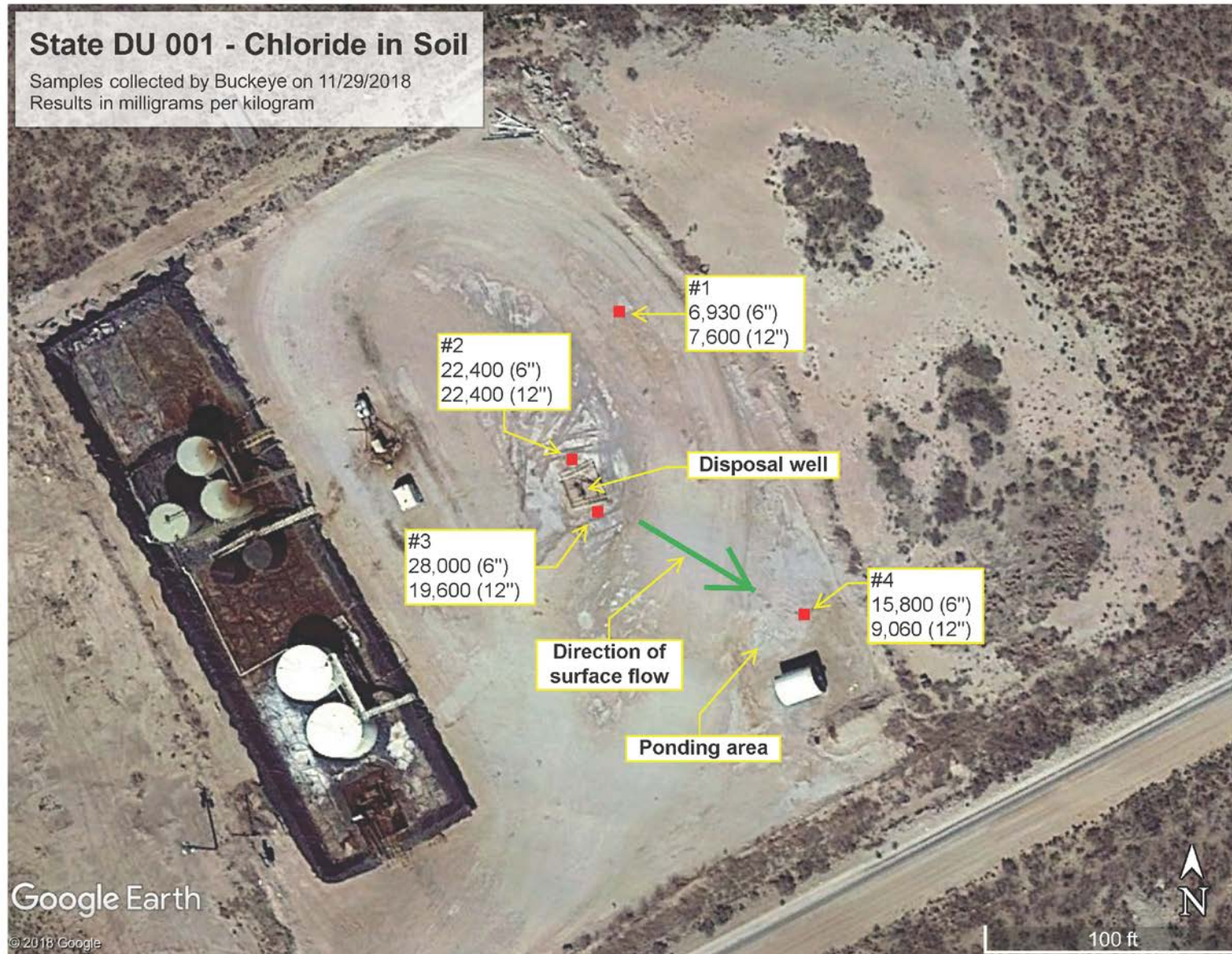


Figure 1b



Daniel B. Stephens & Associates, Inc.

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BUCKEYE STATE DU #001
Chloride in Soil

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Figure 2



Daniel B. Stephens & Associates, Inc.

8/9/19

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

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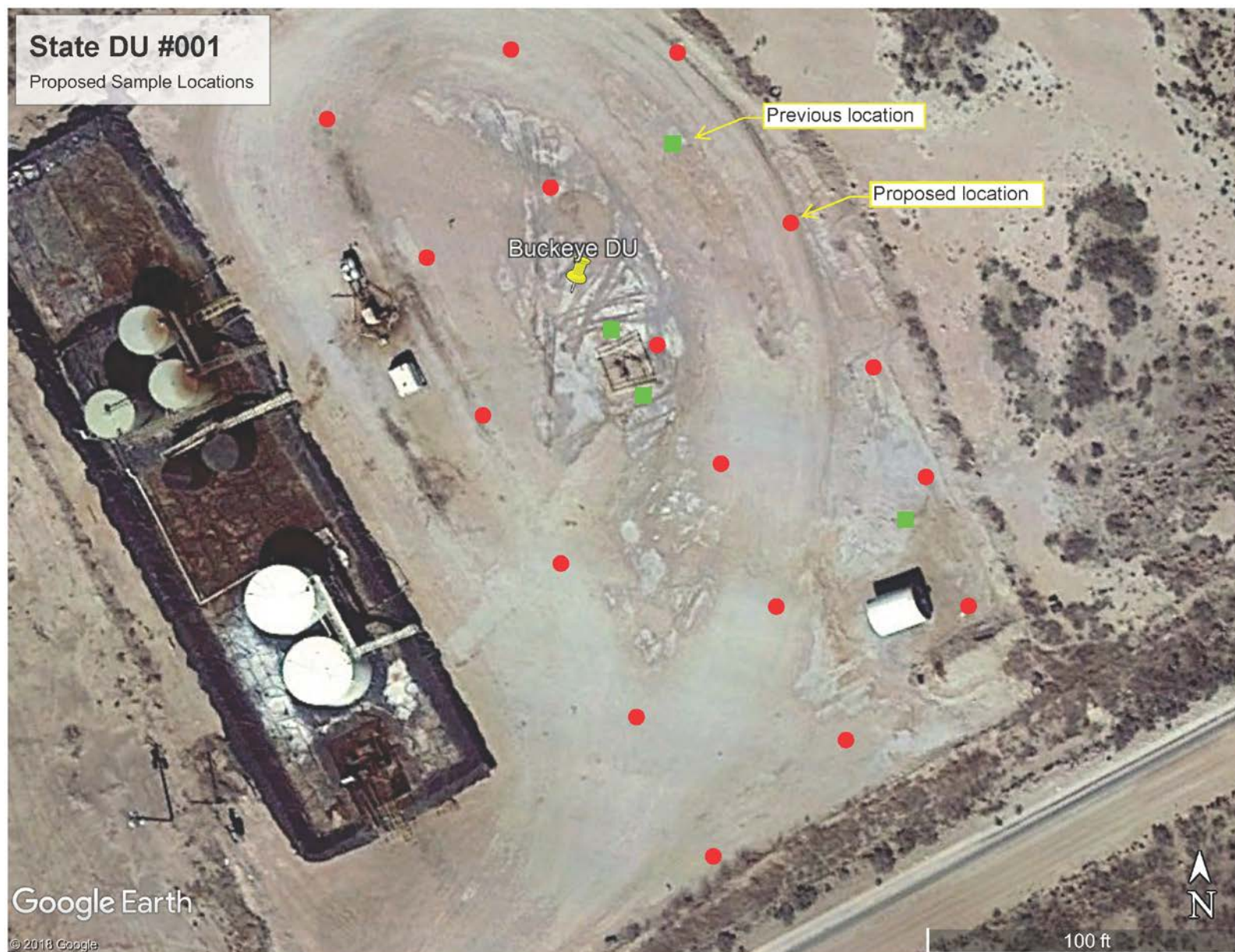


Figure 3



Daniel B. Stephens & Associates, Inc.

8/9/19

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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 ^a	#1 @ 6"	#1 @ 12"	#2 @ 6"	#2 @ 12"	#3 @ 6"	#3 @ 12"	#4 @ 6"	#4 @ 12"
Chloride	600	6,930	7,600	22,400	22,400	28,000	19,600	15,800	9,060
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	119	<10	2,210	1,954	<10	<10

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

Source: Cardinal Laboratories, 12/4/2018

^a 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.

Form C-141

Page 2

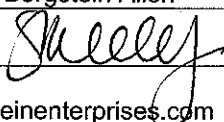
State of New Mexico
Oil Conservation Division

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>
<u>OCD Only</u> Received by: _____ Date: _____

Attachment 2

Laboratory Report



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

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.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene
Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 11/29/2018
Reported: 12/04/2018
Project Name: NM "DU" ST #001 SWD
Project Number: NM DU ST. #001 SWD
Project Location: NOT GIVEN

Sampling Date: 11/29/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6930	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*	27.1	10.0	12/01/2018	ND	227	114	200	2.69	
EXT DRO >C28-C36	10.9	10.0	12/01/2018	ND					
Surrogate: 1-Chlorooctane	96.8 %	41-142							
Surrogate: 1-Chlorooctadecane	105 %	37.6-147							

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	7600	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*	44.8	10.0	12/01/2018	ND	227	114	200	2.69	
EXT DRO >C28-C36	22.4	10.0	12/01/2018	ND					
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



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

Analytical Results For:

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

Received: 11/29/2018
Reported: 12/04/2018
Project Name: NM "DU" ST #001 SWD
Project Number: NM DU ST. #001 SWD
Project Location: NOT GIVEN

Sampling Date: 11/29/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

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, 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*	<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



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

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, SM4500CI-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, SM4500CI-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								

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:

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

Received: 11/29/2018
Reported: 12/04/2018
Project Name: NM "DU" ST #001 SWD
Project Number: NM DU ST. #001 SWD
Project Location: NOT GIVEN

Sampling Date: 11/29/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

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							

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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

Celey D. Keene, Lab Director/Quality Manager



CARDINAL
Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

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

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

+ Cardinal cannot accept verbal changes. Please fax written changes to (575) 392-2226

District I

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

District II

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

District III

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

District IV

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

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

CONDITIONS

Action 1256

CONDITIONS OF APPROVAL

Operator:	BUCKEYE DISPOSAL, L.L.C.	P.O. Box 2724	Lubbock, TX79408	OGRID:	222759	Action Number:	1256	Action Type:	C-141
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OCD Reviewer	Condition
billings	Please include incident number on communications. Make sure of both horizontal and vertical characterizations are complete. If contamination found approaches groundwater be prepared to set temporary well and sample groundwater. The age of well and levels already found could indicate a long subsurface ladder of contamination.