

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: Fasken Oil and Ranch, Ltd	OGRID
Contact Name: Aaron Pachlhofer	Contact Telephone: 432-687-1777
Contact email: aaronp@forl.com	Incident # (assigned by OCD)
Contact mailing address: 6101 Holiday Hill Road, Midland , TX 79707	

Location of Release Source

Latitude 33.027930° Longitude -103.167549°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Denton SWD Trunk Line	Site Type: SWD trunkline
Date Release Discovered 11/4/18	API# (if applicable)

Unit Letter	Section	Township	Range	County

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (Name: Darr Angell)

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) 50	Volume Recovered (bbls) 30
	Is the concentration of total dissolved solids (TDS) 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: Relief pumper for Legacy Operating discovered leak. Fasken foreman Neal Weeks went to location and found leak inside Faskens tinhorn that ties Legacy Denton "A" transfer line into SWD transfer line. A vacuum truck emptied 2 side by side tinhorns and then Weeks shut valve to main swd line to isolate leak. Vacuum truck picked up water from ground. Leak area. Next day (11/5/18) backhoe and gang dug out leak and found 4" drop in meter leaking. Bolts holding meter were eaten up and most were gone. There is a 4" valve coming from main line and 4" meter with no check valve found. Plan to replace valve, remove meter and add check valve.

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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? Spill over 25 barrels of produced water
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Aaron Pachlhofer called Olivia Yu on 11/5/18 at 7:05 a.m. MST to notify of the leak. Pachlhofer spoke to Olivia approximately at 8:11 MST. Jim Griswold was notified at 8:26 MST.	

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>Aaron Pachlhofer</u> Title: <u>Environmental Coordinator</u>	
Signature: _____ Date: <u>11/8/2018</u>	
email: <u>aaronp@forl.com</u> Telephone: <u>432-687-1777</u>	
<u>OCD Only</u> Received by: _____ Date: _____	

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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?	70 (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 type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: *Each of the following items must be included in the report.*

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

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

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Printed Name: Aaron PachlhoferTitle: Environmental Coordinator

Signature: _____

Date: 9/10/19email: aaronp@forl.comTelephone: 432-687-1777**OCD Only**

Received by: _____

Date: _____

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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: Aaron Pachlhofer Title: Environmental Coordinator

Signature: _____ Date: 11/8/18

email: aaronp@forl.com Telephone: 432-687-1777

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____

Incident ID	
District RP	
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Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: Each of the following items must be included in the closure report.

- ☐ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☐ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☐ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☐ Description of remediation activities

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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Aaron Pachlhofer _____ Title: Environmental Coordinator _____

Signature: _____ Date: 11/8/18 _____

email: aaronp@forl.com _____ Telephone: 432-687-1777 _____

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____



6101 Holiday Hill Road
Midland, TX 79707
(432) 687-1777
(432) 687-1570 (FAX)

September 9, 2019

Dylan Rose-Coss
Environmental Specialist
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Work Plan: 1RP-5271– Denton Trunkline Spill Workplan

Ms. Rose-Coss,

On November 4, 2018 a spill occurred at the Fasken Oil and Ranch (Fasken) Denton Trunkline when an unused meter began leaking due to corrosion. The well location at battery is located at 33.031060°, - 103.180635°. During the spill, an estimated 50 barrels of produced water was released and no crude oil was released. 30 barrels of produced water were recovered according to Fasken operations personnel. The spill occurred in a pasture that is not an active well pad or maintained production site.

Delineation Sampling

On January 30, 2019, six trenches were opened with a backhoe and two samples were collected from each trench: surface and one foot below surface. Laboratory analysis of the samples shows that chloride concentrations are high in the surface samples at TT-1, TT-3, and TT-5, and TT-6. All other sample concentrations are below the NMAC 19.15.29.12, Table 1 concentration of 10,000 mg/kg chloride. A site plan showing these sample locations is included as an attachment.

On July 18, 2019, four borings were advanced with a hollow stem auger mobile drilling machine. Samples were continuously collected by hollow stem auger in two-foot increments. Four samples from each boring were submitted for laboratory analysis, except B-2 where six samples were collected. The maximum concentration for these samples was 4,200 mg/kg chloride in B-2 at 0-2' feet. All other concentrations in all borings were lower, showing a consistent trend of decreasing concentration with depth. Except for B-2, the 20-22' feet sample from each boring was well below 600 mg/kg chloride. At B-2 a concentration of 1,710 was observed at 25 to 27' when the boring was terminated. In accordance with NMAC 19.15.29.11(A)(5)(c) further delineation to 600 mg/kg is not needed. A site plan showing these sample locations is included as an attachment.

A summary table and laboratory reports are included.

Potential Receptors

A network of monitoring wells belonging to Plains Pipeline are nearby the site and one monitoring well exists within the spill area. Fasken contacted Camille Bryant with Plains, who responded that the depth to water is 70 to 75 feet below ground surface. The depth to water is measured at least twice a year.

Mrs. Bryant did not provide detailed tables, but OCD may wish to contact her if additional detailed information is needed. Please note that these wells are installed for a crude oil pipeline release and there is no potable water.

Other potential receptors: There is no nearby surface water. There are no homes or occupied structures within 1 mile of the release. There are no other potential receptors such as a lakebed, sinkhole, playa lake, continually flowing watercourse, spring, fresh water well, or subsurface mine that have been identified within the distances specified on form C-141.

According to NMAC 19.15.29.12, Table 1, the chloride limit is 10,000 mg/kg

Work Plan

The spill area is approximately 11,100 square feet. The spill is adjacent to a previously remediated spill, 1RP-475 (this spill also has 1RP-4169 assigned to it). Fasken proposes a similar work plan:

1. Excavate soil to surface of caliche.
2. Collect confirmation side wall and excavation bottom samples for laboratory analysis as needed. All samples will be field screened prior to laboratory analysis.
3. Additional excavation as needed after sample collection and analysis
4. Dispose of excavated soil at properly permitted landfill.
5. Backfill excavation with new soil sourced from land owner.
6. Re-seed with land owner specified seed mix.

Please note that the Plains monitoring well will be left in place. As much soil as possible will be removed without damaging the well.

Variances Requested:

Variance 1 Due to the depth to caliche, a variance is requested from conducting a four foot deep excavation. The soil column above the caliche is the root zone that 19.15.29.13(D)(1) is intended to protect. There is no root zone below the caliche at this site. Laboratory analytical data included that is an attachment supports this variance.

Variance 2 If needed based on field screening and laboratory sample analysis, Fasken requests to install a 20 mil plastic liner. The liner will only be installed if excavation bottom samples chloride concentrations remain too high to protect the new backfilled soil that will replace the excavated soil.

If there are any questions or comments, please do not hesitate to contact Aaron Pachlhofer at the letterhead address or 432-687-1777 or aaronp@forl.com.

Thank You,

Aaron Pachlhofer, P.G.
Environmental Coordinator

Depth to groundwater at 1RP-5271

Please note that the following information was submitted to Fasken Oil and Ranch for nearby project 1RP-5270 by environmental consulting company SESI in Hobbs. Please note that most of the wells noted are within ½ mile of 1RP-5271. In particular, MW-16R is within the spill area of 1RP-5271. This monitoring well was installed at the direction of Plains All American Pipeline for a previous release that Plains All American is responsible for. David Boyer at SESI gauged this well on September 30, 2019. As needed, the full gauging history of this well might be available if it is needed by the OCD.

Fasken is also including an email from Camille Bryant at Plains All American Pipeline in reference to the depth to water for all Plains All American

From: [David Boyer](#)
To: [Aaron Pachlhofer](#)
Cc: [Rebecca Pons](#)
Subject: Fasken SWD #2 information
Date: Tuesday, October 08, 2019 6:39:05 PM
Attachments: [Fasken SWD #2 Nearby Water Well Map.pdf](#)

Aaron,

Attached is a map of nearby wells with depth to water and distance from SWD #2.

Some dates are greater than 30 years old, but are include to show water levels were greater than 50 feet at that time. Water levels in the Lea County ground water basin are declining everywhere to pumping, mainly for agriculture. These have been documented historically by numerous USGS and NM State Engineer Studies.

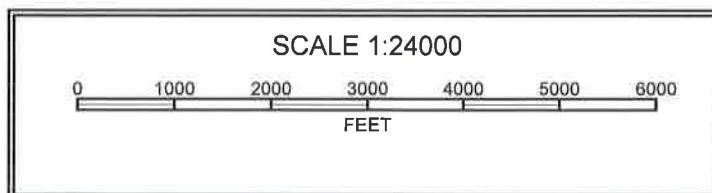
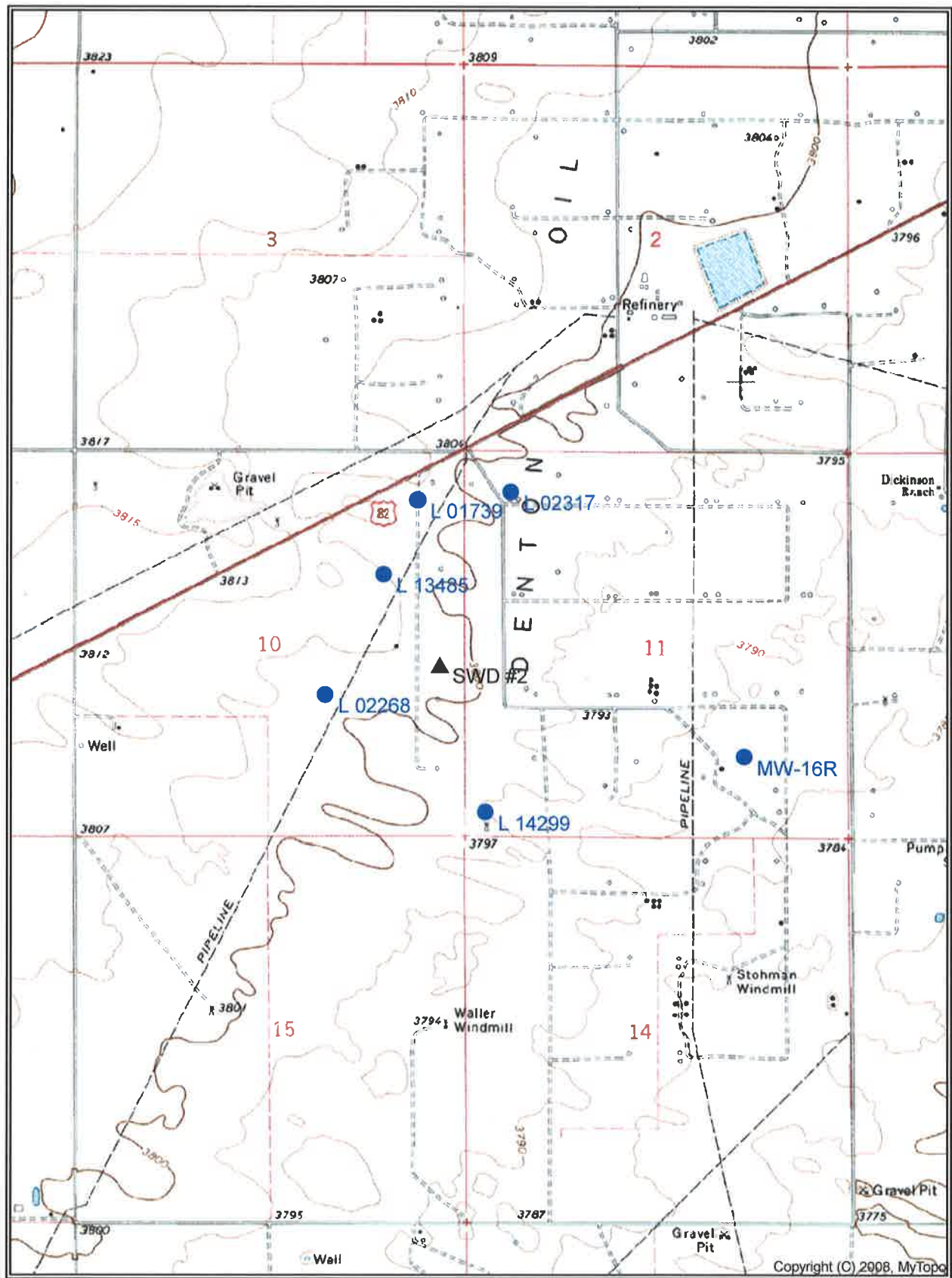
Monitor Well MW-16R is located at site of your Trunkline release and was sampled by me on Monday September 30, 2019

Well ID	Date	DTW (ft.)	Distance (miles)
L 01739	03/1953	55	0.43
L 02268	06/1953	55	0.31
L 02317	08/1953	65	0.48
L 13485	12/2013	103	0.27
L 14299	08/2017	84	0.40
MW-16R	09/2019	67.85	0.82

Also attached is a map composite of all the sampling locations at the SWD #2.

Rebecca should be able to help you if you have additional questions.

David G. Boyer, P.G.
Hydrogeologist
Safety & Environmental Solutions, Inc.
703 East Clinton St.
P.O. Box 1613
Hobbs, New Mexico 88241
(575) 397-0510 (office)
(575) 393-4388 (fax)
(575) 390-7067 (cell)
dgboyer@sesi-nm.com



From: [Camille J Bryant](#)
To: [Aaron Pachlhofer](#)
Subject: DTW
Date: Wednesday, November 07, 2018 4:22:50 PM

Aaron,

As per our discussion this morning regarding depth to groundwater in Section 2, T15S, R37E in Lea County, New Mexico, the depth to water in this area should approximately 70 to 75 feet bgs. This depth is based on monitor wells in the area.

Thanks,

Camille J. Bryant
Remediation Supervisor
Plains All American
505 N. Big Spring, Suite 600
Midland, Texas 79701
Office: 432.221.7924
Cell: 575.441.1099

Attention:

The information contained in this message and/or attachments is intended only for the person or entity to which it is addressed and may contain confidential and/or privileged material. If you received this in error, please contact the Plains Service Desk at 713-646-4444 and delete the material from any system and destroy any copies.

This footnote also confirms that this email message has been scanned for Viruses and Content and cleared.

Fasken Trunkline

Legend

- Test Trenches
- ⊕ Monitor Well 7
- ⬭ Spill Area 4
- 📌 Trunk Line





Fasken Trunkline Release Area

Soil Borings July 18, 2019

Legend

- Borehole
- Trunkline

1RP-5271 - Denton Trunkline Spill

Location	Date	Cl- (mg/kg)
TT-1 Surface	1/30/2019	52000
TT-1 1'	1/30/2019	6130
TT-2 Surface	1/30/2019	144
TT-2 1'	1/30/2019	3560
TT-3 Surface	1/30/2019	40400
TT-3 1'	1/30/2019	2200
TT-4 Surface	1/30/2019	128
TT-4 1'	1/30/2019	1230
TT-5 Surface	1/30/2019	13500
TT-5 1'	1/30/2019	6400
TT-6 Surface	1/30/2019	40800
TT-6 1'	1/30/2019	3560
B-1 5-7'	7/24/2019	1390
B-1 10-12'	7/24/2019	1100
B-1 15-17'	7/24/2019	832
B-1 20-22'	7/24/2019	176
B-2 0-2'	7/24/2019	4200
B-2 5-7'	7/24/2019	2880
B-2 10-12'	7/24/2019	2040
B-2 15-17'	7/24/2019	1250
B-2 22-24'	7/24/2019	2200
B-2 25-27'	7/24/2019	1710
B-3 0-2'	7/24/2019	1890
B-3 10-12'	7/24/2019	560
B-3 15-17'	7/24/2019	256
B-3 20-22'	7/24/2019	272
B-4 0-2'	7/24/2019	2720
B-4 5-7'	7/24/2019	1310
B-4 10-12'	7/24/2019	64
B-4 15-17'	7/24/2019	32
B-4 20-22'	7/24/2019	16

February 04, 2019

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: TRUNK LINE

Enclosed are the results of analyses for samples received by the laboratory on 01/30/19 16:53.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received: 01/30/2019
Reported: 02/04/2019
Project Name: TRUNK LINE
Project Number: FAS-19-002
Project Location: NONE GIVEN

Sampling Date: 01/30/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: TT 1 - SURFACE (H900345-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	52000	16.0	02/02/2019	ND	416	104	400	3.77	

Sample ID: TT 1 - 1' (H900345-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6130	16.0	02/02/2019	ND	416	104	400	3.77	

Sample ID: TT 2 - SURFACE (H900345-03)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	02/02/2019	ND	416	104	400	3.77	

Sample ID: TT 2 - 1' (H900345-04)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3560	16.0	02/02/2019	ND	416	104	400	3.77	

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Safety & Environmental Solutions
 Bob Allen
 703 East Clinton
 Hobbs NM, 88240
 Fax To: (575) 393-4388

 Received: 01/30/2019
 Reported: 02/04/2019
 Project Name: TRUNK LINE
 Project Number: FAS-19-002
 Project Location: NONE GIVEN

 Sampling Date: 01/30/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: TT 3 - SURFACE (H900345-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	40400	16.0	02/02/2019	ND	416	104	400	3.77		

Sample ID: TT 3 - 1' (H900345-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2200	16.0	02/02/2019	ND	416	104	400	3.77		

Sample ID: TT 4 - SURFACE (H900345-07)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	144	16.0	02/02/2019	ND	416	104	400	3.77		

Sample ID: TT 4 - 1' (H900345-08)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1230	16.0	02/02/2019	ND	416	104	400	3.77		

Sample ID: TT 5 - SURFACE (H900345-09)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	13500	16.0	02/02/2019	ND	416	104	400	3.77		

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Safety & Environmental Solutions
 Bob Allen
 703 East Clinton
 Hobbs NM, 88240
 Fax To: (575) 393-4388

 Received: 01/30/2019
 Reported: 02/04/2019
 Project Name: TRUNK LINE
 Project Number: FAS-19-002
 Project Location: NONE GIVEN

 Sampling Date: 01/30/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: TT 5 - 1' (H900345-10)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	6400	16.0	02/02/2019	ND	416	104	400	3.77		

Sample ID: TT 6 - SURFACE (H900345-11)

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	02/02/2019	ND	416	104	400	3.77	

Sample ID: TT 6 - 1' (H900345-12)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3560	16.0	02/02/2019	ND	416	104	400	3.77	

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

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

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Celey D. Keene, Lab Director/Quality Manager

Page 2 of 2

BILLY

ANALYSIS REQUEST

[illegible]

Phone Result:	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Add'l Phone #:
Fax Result:	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Add'l Fax #:
REMARKS:			

Fax Result:	
REMARKS:	

email: jzaragoza@Sci-M.com

Om

July 26, 2019

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: FAS-19-002

Enclosed are the results of analyses for samples received by the laboratory on 07/19/19 16:40.

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

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

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

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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:Safety & Environmental Solutions
703 East Clinton
Hobbs NM, 88240Project: FAS-19-002
Project Number: NONE GIVEN
Project Manager: Bob Allen
Fax To: (575) 393-4388Reported:
26-Jul-19 12:05

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B - 1, TL, 0-2'	H902500-01	Soil	18-Jul-19 12:03	19-Jul-19 16:40
B - 1, TL, 5-7'	H902500-02	Soil	18-Jul-19 12:08	19-Jul-19 16:40
B - 1, TL, 10-12'	H902500-03	Soil	18-Jul-19 12:13	19-Jul-19 16:40
B - 1, TL, 15-17'	H902500-04	Soil	18-Jul-19 12:18	19-Jul-19 16:40
B - 1, TL, 20-22'	H902500-05	Soil	18-Jul-19 12:20	19-Jul-19 16:40
B - 2, TL, 0-2'	H902500-06	Soil	18-Jul-19 12:58	19-Jul-19 16:40
B - 2, TL, 5-7'	H902500-07	Soil	18-Jul-19 13:02	19-Jul-19 16:40
B - 2, TL, 10-12'	H902500-08	Soil	18-Jul-19 13:07	19-Jul-19 16:40
B - 2, TL, 15-17'	H902500-09	Soil	18-Jul-19 13:11	19-Jul-19 16:40
B - 2, TL, 22-24'	H902500-10	Soil	18-Jul-19 13:22	19-Jul-19 16:40
B - 2, TL, 25-27'	H902500-11	Soil	18-Jul-19 13:30	19-Jul-19 16:40
B - 3, TL, 0-2'	H902500-12	Soil	18-Jul-19 13:55	19-Jul-19 16:40
B - 3, TL, 10-12'	H902500-13	Soil	18-Jul-19 14:10	19-Jul-19 16:40
B - 3, TL, 15-17'	H902500-14	Soil	18-Jul-19 14:20	19-Jul-19 16:40
B - 3, TL, 20-22'	H902500-15	Soil	18-Jul-19 14:25	19-Jul-19 16:40
B - 4, TL, 0-2'	H902500-16	Soil	18-Jul-19 15:05	19-Jul-19 16:40
B - 4, TL, 5-7'	H902500-17	Soil	18-Jul-19 15:11	19-Jul-19 16:40
B - 4, TL, 10-12'	H902500-18	Soil	18-Jul-19 15:14	19-Jul-19 16:40
B - 4, TL, 15-17'	H902500-19	Soil	18-Jul-19 15:19	19-Jul-19 16:40
B - 4, TL, 20-22'	H902500-20	Soil	18-Jul-19 15:25	19-Jul-19 16:40

Client added chloride to the samples that were originally on hold, -09, -10 and -11. This is the revised report and will replace the one sent on 07/24/19.

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:Safety & Environmental Solutions
703 East Clinton
Hobbs NM, 88240Project: FAS-19-002
Project Number: NONE GIVEN
Project Manager: Bob Allen
Fax To: (575) 393-4388Reported:
26-Jul-19 12:05**B - 1, TL, 0-2'****H902500-01 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	2080		16.0	mg/kg	4	9072217	AC	23-Jul-19	4500-Cl-B	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:Safety & Environmental Solutions
703 East Clinton
Hobbs NM, 88240Project: FAS-19-002
Project Number: NONE GIVEN
Project Manager: Bob Allen
Fax To: (575) 393-4388Reported:
26-Jul-19 12:05**B - 1, TL, 5-7'****H902500-02 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	1390		16.0	mg/kg	4	9072306	AC	23-Jul-19	4500-Cl-B	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:Safety & Environmental Solutions
703 East Clinton
Hobbs NM, 88240Project: FAS-19-002
Project Number: NONE GIVEN
Project Manager: Bob Allen
Fax To: (575) 393-4388Reported:
26-Jul-19 12:05**B - 1, TL, 10-12'****H902500-03 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	1100		16.0	mg/kg	4	9072306	AC	23-Jul-19	4500-Cl-B	
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703 East Clinton
Hobbs NM, 88240Project: FAS-19-002
Project Number: NONE GIVEN
Project Manager: Bob Allen
Fax To: (575) 393-4388Reported:
26-Jul-19 12:05**B - 1, TL, 15-17'****H902500-04 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	832		16.0	mg/kg	4	9072306	AC	23-Jul-19	4500-Cl-B	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:Safety & Environmental Solutions
703 East Clinton
Hobbs NM, 88240Project: FAS-19-002
Project Number: NONE GIVEN
Project Manager: Bob Allen
Fax To: (575) 393-4388Reported:
26-Jul-19 12:05**B - 1, TL, 20-22'****H902500-05 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	176		16.0	mg/kg	4	9072306	AC	23-Jul-19	4500-Cl-B	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:Safety & Environmental Solutions
703 East Clinton
Hobbs NM, 88240Project: FAS-19-002
Project Number: NONE GIVEN
Project Manager: Bob Allen
Fax To: (575) 393-4388Reported:
26-Jul-19 12:05**B - 2, TL, 0-2'****H902500-06 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	4200		16.0	mg/kg	4	9072306	AC	23-Jul-19	4500-Cl-B	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:Safety & Environmental Solutions
703 East Clinton
Hobbs NM, 88240Project: FAS-19-002
Project Number: NONE GIVEN
Project Manager: Bob Allen
Fax To: (575) 393-4388Reported:
26-Jul-19 12:05**B - 2, TL, 5-7'****H902500-07 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	2880		16.0	mg/kg	4	9072306	AC	23-Jul-19	4500-Cl-B	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:Safety & Environmental Solutions
703 East Clinton
Hobbs NM, 88240Project: FAS-19-002
Project Number: NONE GIVEN
Project Manager: Bob Allen
Fax To: (575) 393-4388Reported:
26-Jul-19 12:05**B - 2, TL, 10-12'****H902500-08 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	2040		16.0	mg/kg	4	9072306	AC	23-Jul-19	4500-Cl-B	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:Safety & Environmental Solutions
703 East Clinton
Hobbs NM, 88240Project: FAS-19-002
Project Number: NONE GIVEN
Project Manager: Bob Allen
Fax To: (575) 393-4388Reported:
26-Jul-19 12:05**B - 2, TL, 15-17'****H902500-09 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	1250		16.0	mg/kg	4	9072306	AC	25-Jul-19	4500-Cl-B	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:Safety & Environmental Solutions
703 East Clinton
Hobbs NM, 88240Project: FAS-19-002
Project Number: NONE GIVEN
Project Manager: Bob Allen
Fax To: (575) 393-4388Reported:
26-Jul-19 12:05**B - 2, TL, 22-24'****H902500-10 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	2200		16.0	mg/kg	4	9072306	AC	25-Jul-19	4500-Cl-B	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:Safety & Environmental Solutions
703 East Clinton
Hobbs NM, 88240Project: FAS-19-002
Project Number: NONE GIVEN
Project Manager: Bob Allen
Fax To: (575) 393-4388Reported:
26-Jul-19 12:05**B - 2, TL, 25-27'****H902500-11 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	1710		16.0	mg/kg	4	9072306	AC	25-Jul-19	4500-Cl-B	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:Safety & Environmental Solutions
703 East Clinton
Hobbs NM, 88240Project: FAS-19-002
Project Number: NONE GIVEN
Project Manager: Bob Allen
Fax To: (575) 393-4388Reported:
26-Jul-19 12:05**B - 3, TL, 0-2'****H902500-12 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	1890		16.0	mg/kg	4	9072306	AC	23-Jul-19	4500-Cl-B	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:Safety & Environmental Solutions
703 East Clinton
Hobbs NM, 88240Project: FAS-19-002
Project Number: NONE GIVEN
Project Manager: Bob Allen
Fax To: (575) 393-4388Reported:
26-Jul-19 12:05**B - 3, TL, 10-12'****H902500-13 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	560		16.0	mg/kg	4	9072306	AC	23-Jul-19	4500-Cl-B	
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Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:Safety & Environmental Solutions
703 East Clinton
Hobbs NM, 88240Project: FAS-19-002
Project Number: NONE GIVEN
Project Manager: Bob Allen
Fax To: (575) 393-4388Reported:
26-Jul-19 12:05**B - 3, TL, 15-17'****H902500-14 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	256		16.0	mg/kg	4	9072306	AC	23-Jul-19	4500-Cl-B	
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Celey D. Keene, Lab Director/Quality Manager

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703 East Clinton
Hobbs NM, 88240Project: FAS-19-002
Project Number: NONE GIVEN
Project Manager: Bob Allen
Fax To: (575) 393-4388Reported:
26-Jul-19 12:05**B - 3, TL, 20-22'****H902500-15 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	272		16.0	mg/kg	4	9072306	AC	23-Jul-19	4500-Cl-B	
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703 East Clinton
Hobbs NM, 88240Project: FAS-19-002
Project Number: NONE GIVEN
Project Manager: Bob Allen
Fax To: (575) 393-4388Reported:
26-Jul-19 12:05**B - 4, TL, 0-2'****H902500-16 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	2720		16.0	mg/kg	4	9072306	AC	23-Jul-19	4500-Cl-B	
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Analytical Results For:Safety & Environmental Solutions
703 East Clinton
Hobbs NM, 88240Project: FAS-19-002
Project Number: NONE GIVEN
Project Manager: Bob Allen
Fax To: (575) 393-4388Reported:
26-Jul-19 12:05**B - 4, TL, 5-7'****H902500-17 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	1310		16.0	mg/kg	4	9072306	AC	23-Jul-19	4500-Cl-B	
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Analytical Results For:Safety & Environmental Solutions
703 East Clinton
Hobbs NM, 88240Project: FAS-19-002
Project Number: NONE GIVEN
Project Manager: Bob Allen
Fax To: (575) 393-4388Reported:
26-Jul-19 12:05**B - 4, TL, 10-12'****H902500-18 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	64.0		16.0	mg/kg	4	9072306	AC	23-Jul-19	4500-Cl-B	
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Analytical Results For:Safety & Environmental Solutions
703 East Clinton
Hobbs NM, 88240Project: FAS-19-002
Project Number: NONE GIVEN
Project Manager: Bob Allen
Fax To: (575) 393-4388Reported:
26-Jul-19 12:05**B - 4, TL, 15-17'****H902500-19 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	32.0		16.0	mg/kg	4	9072306	AC	23-Jul-19	4500-Cl-B	
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Analytical Results For:Safety & Environmental Solutions
703 East Clinton
Hobbs NM, 88240Project: FAS-19-002
Project Number: NONE GIVEN
Project Manager: Bob Allen
Fax To: (575) 393-4388Reported:
26-Jul-19 12:05**B - 4, TL, 20-22'****H902500-20 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	16.0		16.0	mg/kg	4	9072306	AC	23-Jul-19	4500-Cl-B	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

Safety & Environmental Solutions
703 East Clinton
Hobbs NM, 88240

Project: FAS-19-002
Project Number: NONE GIVEN
Project Manager: Bob Allen
Fax To: (575) 393-4388

Reported:
26-Jul-19 12:05

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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Batch 9072217 - 1:4 DI Water

Blank (9072217-BLK1)

Prepared & Analyzed: 22-Jul-19

Chloride	ND	16.0	mg/kg						
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LCS (9072217-BS1)

Prepared & Analyzed: 22-Jul-19

Chloride	400	16.0	mg/kg	400	100	80-120			
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LCS Dup (9072217-BSD1)

Prepared & Analyzed: 22-Jul-19

Chloride	416	16.0	mg/kg	400	104	80-120	3.92	20	
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Batch 9072306 - 1:4 DI Water

Blank (9072306-BLK1)

Prepared & Analyzed: 23-Jul-19

Chloride	ND	16.0	mg/kg						
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LCS (9072306-BS1)

Prepared & Analyzed: 23-Jul-19

Chloride	432	16.0	mg/kg	400	108	80-120			
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LCS Dup (9072306-BSD1)

Prepared & Analyzed: 23-Jul-19

Chloride	416	16.0	mg/kg	400	104	80-120	3.77	20	
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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

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

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Celey D. Keene, Lab Director/Quality Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Rec 1022

[illegible]

