

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

NM OIL CONSERVATION

ARTESIA DISTRICT

Form C-141

Revised August 8, 2011

OCT 10 2014

Submit 1 Copy to appropriate District Office in accordance with 19.15.29.NMAC.

RECEIVED

Release Notification and Corrective Action

NAB1428734057

OPERATOR

Initial Report Final Report

Name of Company	RKI E&P, LLC <i>246287</i>	Contact	Zack Laird
Address	210 Park Ave. - Ste. 900, OKC, OK 73102	Telephone No.	405-742-2696
Facility Name	Yates Federal #1	Facility Type	Oil and Gas Well

Surface Owner	Federal	Mineral Owner	Federal	API No.	30-015-24602
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	34	26S	29E		330 FSL		990FEL	Eddy

Latitude 32.0010310863311 Longitude -103.96717129277

NATURE OF RELEASE

Type of Release	Oil and Produced Water	Volume of Release	16Bbls	Volume Recovered	15Bbls
Source of Release	Parted wellhead nipple	Date and Hour of Occurrence	10/03/14 - Unknown	Date and Hour of Discovery	10/03/14 - 0700hrs
Was Immediate Notice Given?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?			
By Whom?		Date and Hour			
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.* N/A

Describe Cause of Problem and Remedial Action Taken.*
Piping nipple on wellhead parted allowing oil and produced water to leak; all fluids remained on the well pad. Well shut-in, leak repaired.

Describe Area Affected and Cleanup Action Taken.*
Vacuum truck used to recovered free fluid, stained soil back drug and hauled.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature: <i>[Signature]</i>	OIL CONSERVATION DIVISION	
Printed Name: Zack Laird	Approved by Environmental Specialist: <i>[Signature]</i>	
Title: Sr. EHS Manager	Approval Date: <i>10/10/14</i>	Expiration Date: <i>NA</i>
E-mail Address: ZLaird@rkixp.com	Conditions of Approval:	
Date: 10/09/14	Remediation per O.C.D. Rules & Guidelines	
Phone: 405-987-2213	SUBMIT REMEDIATION PROPOSAL NO	

LATER THAN: 11/10/14

22P-25A3

* Attach Additional Sheets If Necessary

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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	nAB1428734057
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: WPX Energy Permian, LLC	OGRID: 246289
Contact Name: Jim Raley	Contact Telephone: 575-689-7597
Contact email: Jim.Raley@dmv.com	Incident # (assigned by OCD): nAB1428734057
Contact mailing address: 5315 Buena Vista Drive, Carlsbad NM	

Location of Release Source

Latitude 32.00103 Longitude -103.96717
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Yates Federal #001	Site Type: Production Facility
Date Release Discovered: 10/03/2014	API# (if applicable): 30-015-24602

Unit Letter	Section	Township	Range	County
H	34	26S	29E	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/Produced Water	Volume Released (bbls): 16	Volume Recovered (bbls): 15
<input type="checkbox"/> Produced Water	Volume Released (bbls):	Volume Recovered (bbls):
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input checked="" 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:

Piping nipple on wellhead parted allowing oil and produced water to leak; all fluids remained on the well pad. Well shut-in, leak repaired.

$$bbl\ estimate = \frac{saturated\ soil\ volume\ (ft^3)}{4.21\ (bbl\ equivalent)} * estimated\ porosity\ (\%) + recovered\ fluids\ (bbl)$$

State of New Mexico
Oil Conservation Division

Incident ID	nAB1428734057
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Was this a major release as defined by 19.15.29.7(A) NMAC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?
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If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

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 not been undertaken, explain why:

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

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

Printed Name: Jim Raley Title: Environmental Professional
 Signature:  Date: 6/14/2023
 email: Jim.Raley@dvn.com Telephone: 575-689-7597

OCD Only
 Received by: _____ Date: _____

Incident ID	nAB1428734057
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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?	51-100 (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 checked="" 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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Incident ID	nAB1428734057
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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: Jim Raley Title: Environmental Professional
 Signature:  Date: 6/14/2023
 email: Jim.Raley@dvn.com Telephone: 575-689-7597

OCD Only

Received by: _____ Date: _____

Incident ID	nAB1428734057
District RP	
Facility ID	
Application ID	

Remediation Plan

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

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

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

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

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

Printed Name: Jim Raley Title: Environmental Professional
 Signature: *Jim Raley* Date: 6/14/2023
 email: Jim.Raley@dvn.com Telephone: 575-689-7597

OCD Only

Received by: _____ Date: _____

- Approved Approved with Attached Conditions of Approval Denied Deferral Approved

Signature: *Ashley Maxwell* Date: 11/27/2023

o Horizontal delineation must meet the requirements of the reclamation standards 19.15.29.13 NMAC (600 mg/kg Cl, 100 mg/kg TPH, 50 mg/kg BTEX, 10 mg/kg benzene) or OCD approved "background" values for the upper 4 feet of the impacted area.

APPROVED

By Ashley Maxwell at 9:41 am, Nov 27, 2023

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

Incident ID	NRM2011138650
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: WPX Energy Permian, LLC.	OGRID: 246289
Contact Name: Lynda Laumbach	Contact Telephone: (575) 725-1647
Contact email: Lynda.Laumbach@wpxenergy.com	Incident # (assigned by OCD)
Contact mailing address: 5315 Buena Vista Drive, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.000725 Longitude -103.967483
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Yates Federal #001	Site Type: Production Facility
Date Release Discovered: 04/14/2020	API# (if applicable): 30-015-24602

Unit Letter	Section	Township	Range	County
H	34	26S	29E	Eddy

Surface Owner: State Federal Tribal Private (Name: _____)

Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls): 10	Volume Recovered (bbls): 2
	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:

At 14:00 hours the tubing valve failed causing the produced water tank to overflow and release 10bbl of produced water into the earthen berm. 2bbls were recovered with a vacuum truck. No fluids left location.

$$bbl\ estimate = \frac{saturated\ soil\ volume\ (ft^3)}{4.21(\frac{ft^3}{bbl\ equivalent})} * estimated\ soil\ porosity(\%)$$

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Release Notification

Responsible Party

Responsible Party: WPX Energy Permian, LLC	OGRID: 246289
Contact Name: Jim Raley	Contact Telephone: 575-689-7597
Contact email: Jim.Raley@dmv.com	Incident # (assigned by OCD): NRM2011138650
Contact mailing address: 5315 Buena Vista Drive, Carlsbad NM	

Location of Release Source

Latitude 32.000725 Longitude -103.967483
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Yates Federal #001	Site Type: Production Facility
Date Release Discovered: 04/14/2020	API# (if applicable): 30-015-24602

Unit Letter	Section	Township	Range	County
H	34	26S	29E	Eddy

Surface Owner: State Federal Tribal Private (Name: _____)

Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls):	Volume Recovered (bbls):
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls): 10	Volume Recovered (bbls): 2
	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:

At 14:00 hours the tubing valve failed causing the produced water tank to overflow and release 10bbl of produced water into the earthen berm. 2bbls were recovered with a vacuum truck. No fluids left location.

$$bbl\ estimate = \frac{saturated\ soil\ volume\ (ft^3)}{4.21\ (\frac{ft^3}{bbl\ equivalent})} * estimated\ porosity\ (\%) + recovered\ fluids\ (bbl)$$

State of New Mexico
Oil Conservation Division

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Incident ID	NRM2011138650
District RP	
Facility ID	
Application ID	

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

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>Jim Raley</u> Title: <u>Environmental Professional</u> Signature: <u></u> Date: <u>6/14/2023</u> email: <u>Jim.Raley@dvn.com</u> Telephone: <u>575-689-7597</u>
<u>OCD Only</u> Received by: _____ Date: _____

Incident ID	NRM2011138650
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>51-100</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input checked="" 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: Jim Raley Title: Environmental Professional
 Signature:  Date: 6/14/2023
 email: Jim.Raley@dvn.com Telephone: 575-689-7597

OCD Only

Received by: _____ Date: _____

Incident ID	NRM2011138650
District RP	
Facility ID	
Application ID	

Remediation Plan

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

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

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

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

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

Printed Name: Jim Raley Title: Environmental Professional
 Signature:  Date: 6/14/2023
 email: Jim.Raley@dvn.com Telephone: 575-689-7597

OCD Only

Received by: _____ Date: _____

- Approved Approved with Attached Conditions of Approval Denied Deferral Approved

Signature: _____ Date: _____



REMEDIATION WORK PLAN

Yates Federal #001

Eddy County, New Mexico

Incident Numbers nAB1428734057 and NRM2011138650

Prepared for:

WPX Energy Permian, LLC

Carlsbad • Midland • San Antonio • Lubbock • Hobbs • Lafayette



SYNOPSIS

Etech Environmental & Safety Solutions, Inc. (Etech), on behalf of WPX Energy Permian, LLC (WPX), presents the following Remediation Work Plan (RWP) detailing a scope of work to address soil impacts from two inadvertent releases of crude oil and/or produced water at the Yates Federal #001 (Site). Based on the incident reviews and field observations at the Site, WPX proposes this RWP, which summarizes initial response efforts and details remediation objectives to investigate the releases and develop a corrective action plan to rectify environmental impacts.

SITE LOCATION AND RELEASE BACKGROUND

The Site is located in Unit H, Section 34, Township 26 South, Range 29 East, in Eddy County, New Mexico (32.000725°, -103.967483°) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (**Figure 1** in **Appendix A**).

nAB1428734057

On October 3, 2014, a wellhead leak resulted in approximately 16 barrels (bbls) of crude oil/produced water to be released onto the well pad surface. Vacuum trucks were immediately dispatched and recovered approximately 15 bbls of fluids. WPX reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 (Form C-141), which was received by the NMOCD on October 10, 2014, and was subsequently assigned Incident Number nAB1428734057. WPX conducted initial remediation efforts to minimize impacts at the Site, which included the removal and disposal of surficial stained soil. Well files were reviewed to investigate the existence of a reserve pit north of the release area. Based on the review and observations at the Site is it likely the reserve pit exists as documented on the well drilling permit. As a result, no further delineation was conducted in the area to minimize disturbance of the pit area. A Deferral Report (DR) was then submitted by WPX and denied on March 29, 2023, for a depth to water determination based off a well greater than 0.5 miles from the Site and reported groundwater measurements greater than 25 years old.

NRM2011138650

On April 14, 2020, a storage tank overflow resulted in approximately 10 bbls of produced water to be released into the tank battery earthen berm containment. Vacuum trucks were immediately dispatched and recovered approximately 2 bbls of fluids. WPX reported the release to the NMOCD on a Form C-141, which was received by the NMOCD on April 17, 2020, and was subsequently assigned Incident Number NRM2011128650. WPX mapped the release extent utilizing a handheld Trimble® Global Positioning System (GPS) unit following the release discovery and is presented as an Area of Concern (AOC) on **Figure 2** in **Appendix A**. Between April 30 and November 5, 2020, WPX initiated excavation activities, contracted the completion of a karst survey at the Site and surrounding area and continued excavation efforts. A DR was then submitted by WPX and was denied on March 18, 2021, due to the karst potential designation for the Site, which had been based off the karst survey results. Based on the data summary from those events and recently denied DR, additional remedial actions appeared warranted. Previous remediation summaries can be referenced in the original reports submitted to the NMOCD.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

Etech characterized the Site according to Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC) considering depth to groundwater and the proximity to:

- Any continuously flowing watercourse or any other significant watercourse;
- Any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark);
- An occupied permanent residence, school, hospital, institution or church;



- A spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes;
- Any freshwater well or spring;
- Incorporated municipal boundaries or a defined municipal fresh water well field covered under a municipal ordinance;
- A wetland;
- A subsurface mine;
- An unstable area (i.e. high karst potential); and
- A 100-year floodplain.

The closest water well with data is State of Texas Tracking #356414, located approximately 0.4 miles west to southwest of the Site. The well has a reported depth to groundwater of 58 feet below ground surface (bgs) from 2014. Based on this information and findings from the regional water well review, groundwater depth at the Site is estimated to be between 51 and 100 feet bgs. All well records referenced for depth to groundwater determination are included in **Appendix B**.

It should be noted that a margin of error is possible based on imagery only; field verification can further confirm these specified classifications developed from image analysis.

Based on the desktop review of the current BLM Carlsbad Field Office (CFO) karst cave potential map, this Site is located in a high potential karst area; however, a pedestrian karst survey was conducted and confirmed the absence of surface karst features and the limited likelihood of shallow subsurface karst features. No surface karst features were identified after a thorough desktop review by a karst expert or discovered within the 30.4 acres covered during the pedestrian karst survey. The karst survey is included in **Appendix C**.

Based on the initial desktop review, other potential receptors are not within the established buffers defined in NMAC 19.15.29.12. Receptor details from the site characterization are included in **Figure 1** in **Appendix A**.

Based on the results from the desktop review and estimated regional depth to groundwater at the Site, the following Closure Criteria was applied:

Constituents of Concern (COCs)	Laboratory Analytical Method	Closure Criteria
Chloride	Environmental Protection Agency (EPA) 300.0	600 milligram per kilogram (mg/kg)
Total Petroleum Hydrocarbon (TPH)	EPA 8015 M/D	100 mg/kg
Benzene	EPA 8021B	10 mg/kg
Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX)	EPA 8021B	50 mg/kg

SITE ASSESSMENT

On October 28, 2022, a site assessment was conducted by a third-party environmental consultant to evaluate and verify the release events according to the reported incident details. Two AOCs were identified: an area surrounding the well head (AOC #1) and an area within the tank battery earthen berm containment (AOC #2). The AOCs were mapped with a handheld GPS unit according to visual observations and depicted in **Figure 2** in **Appendix A**. Photographic documentation during the Site visit is included as **Appendix D**.



DELINEATION SOIL SAMPLING ACTIVITIES

On May 12, 2022, and November 9, 2022, a-third party environmental consultant advanced a total of two delineation potholes (PH01 and PH02) via mechanical equipment within the tank battery earthen berm containment. Delineation activities were driven by field screening soil samples for volatile organic hydrocarbons using a photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. A minimum of two soil samples were collected from each pothole: at least one sample representing the highest observed field screening concentrations and one sample representing the pothole terminus. Field screening results and soil descriptions were denoted on a soil sampling log, which is included as **Attachment E**. The location of the delineation soil samples is shown in **Figure 2** in **Appendix A**. Photographic documentation during delineation activities is included in **Attachment D**.

Delineation soil samples were placed directly into lab provided pre-cleaned glass jars, packaged with minimal void space, labeled and immediately placed on ice. The soil samples were transported under strict chain-of-custody procedures, to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of COCs.

LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for both PH01 and PH02 indicated BTEX and TPH concentrations were below the laboratory detection limit, and chloride concentrations for all soil samples collected from PH02 were below the Site Closure Criteria. Chloride concentrations for PH01 were compliant with Site Closure Criteria once the pothole reached 15 feet bgs. Laboratory analytical results are summarized in Table 1 as **Attachment F**, and the complete laboratory reports with chain-of-custody documentation is included as **Attachment G**.

PROPOSED REMEDIATION WORK PLAN

Based on the Site assessment, the following conclusion regarding the release is presented:

- Delineation soil sampling activities are required to assess the presence or absence of impacts to soil within AOC #1, and if present, to define the vertical and horizontal extent(s) through subsurface investigation and laboratory analyses of Closure Criteria COCs.
- Delineation soil sampling activities are required to assess the lateral extent of AOC #2 through subsurface investigation and laboratory analyses of Closure Criteria COCs.
- Delineation soil samples collected from PH02 will assist in the western lateral definition of both AOCs.

Based on the conclusion drawn above, WPX proposes the following remedial corrective actions:

- WPX proposes to advance up to 12 delineation points within and around the AOCs via mechanical equipment (**Figure 3** in **Appendix A**). Soil samples will be collected from each delineation location at a maximum frequency of 5-foot intervals and field screened for volatile organic compounds utilizing a PID and chloride using Hach® chloride QuanTab® test strips. Soil observations and field screening results for each delineation soil sample will be recorded on soil sampling logs. Soil sample locations will be mapped using a handheld GPS unit.
- A minimum of two soil samples will be collected from each delineation point location, representing the highest field screened concentration(s) and the greatest depth, and submitted to an accredited lab for analysis of BTEX, TPH and Chloride.
- Delineation locations proposed in areas off pad may require third-party operator oversight and additional safety measures near their respective subsurface pipelines before or during delineation



activities. WPX and/or the third-party operator may implement additional safety precautions above encroachment guidelines at their company’s discretion for the health and safety of on-site personnel and for the structural integrity of utilities. Acknowledgement of the reserve pit may also require the implementation of encroachment guidelines in order to preserve the pit liner throughout remediation activities. Such restrictions include but are not limited to:

- i. Shifting a proposed sampling location(s) within the AOCs to adhere to established buffer zone(s) around one or more utilities or the reserve pit.
 - ii. Inducing a lateral delineation sampling location(s) to be significantly further from the Site.
- Upon receipt and review of delineation soil laboratory results, WPX will determine the appropriate measure of corrective actions that will include:
 - i. Documenting the absence of impacted soil at the Site with a subsequent Closure Report detailing assessment and sampling activities or
 - ii. Preparing a RWP Addendum detailing the next course of remedial actions to address the presence of soil impacts at the Site, based off an estimated lateral and vertical extent of impacted soil from assessment and delineation activities.

WPX believes this RWP will meet requirements set forth in NMAC 19.15.29.13 and be protective of human health, the environment and groundwater. As such, WPX respectfully requests approval of this RWP from NMOCD.

If you have any questions or comments, please do not hesitate to contact Joseph Hernandez at (281) 702-2329 or joseph@etechenv.com or Anna Byers at (575) 200-6754 or anna@etechenv.com.

Sincerely,

eTECH Environmental and Safety Solutions, Inc.

Anna Byers
Senior Geologist

Joseph S. Hernandez
Senior Managing Geologist

cc: Jim Raley, WPX
New Mexico Oil Conservation Division
Bureau of Land Management

Appendices:

- Appendix A:** Figure 1: Site Map
Figure 2: Delineation Soil Sample Locations
Figure 3: Proposed Delineation Locations

Appendix B: Referenced Well Records

Appendix C: Karst Survey

Remediation Work Plan
Incident Numbers NRM2011128650 and nAB1428734057
Yates Federal #001



- Appendix D:** Photographic Log
- Appendix E:** Soil Sampling Logs
- Appendix F:** Tables
- Appendix G:** Laboratory Analytical Reports & Chain-of-Custody Documentation
- Appendix F:** NMOCD Notifications

APPENDIX A

Figures

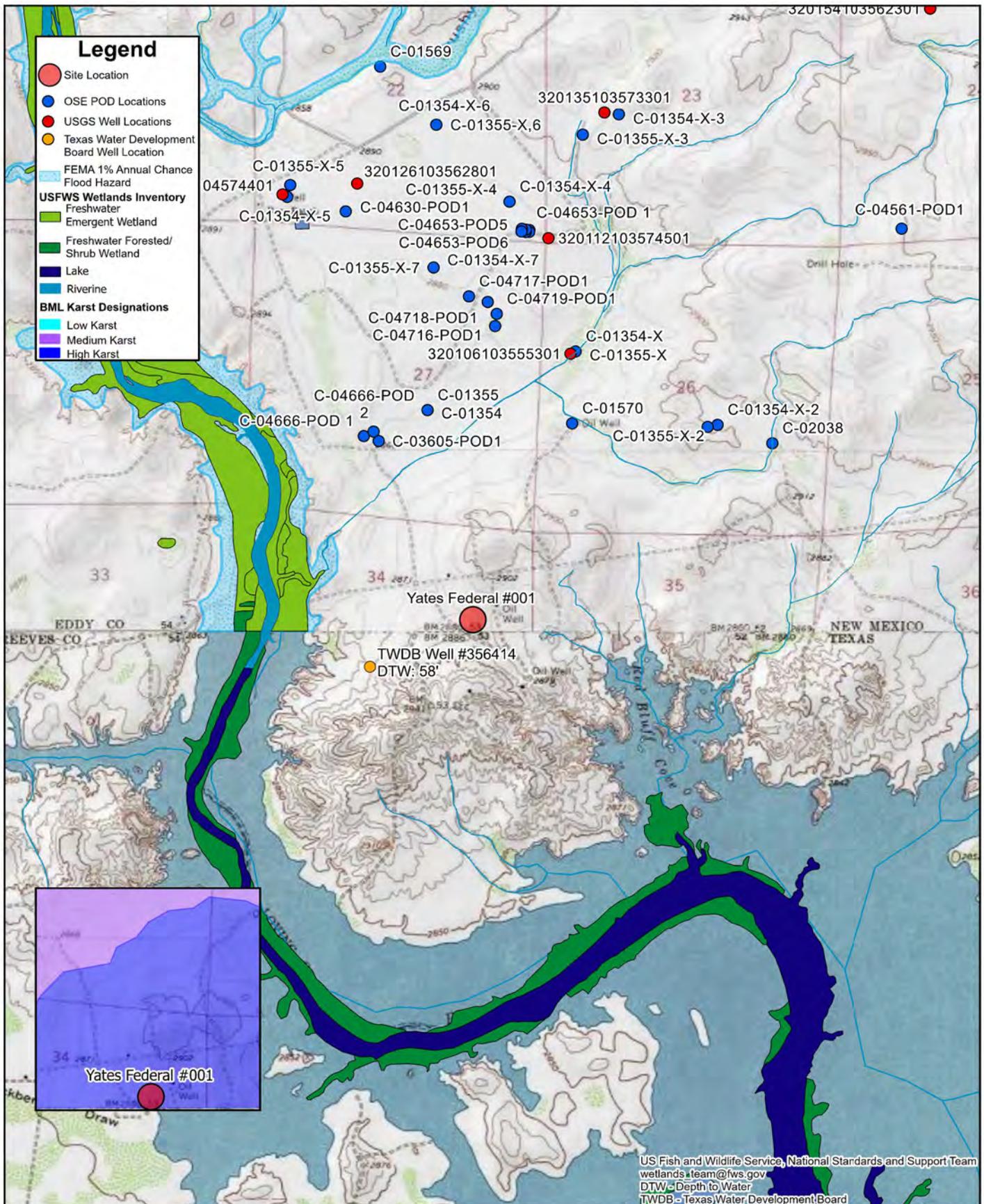


FIGURE 1

Site Map

WPX ENERGY PERMIAN
Yates Federal #001
Unit H Sec 34 T26S R29E
Eddy County, New Mexico



0 1,000 2,000 Feet

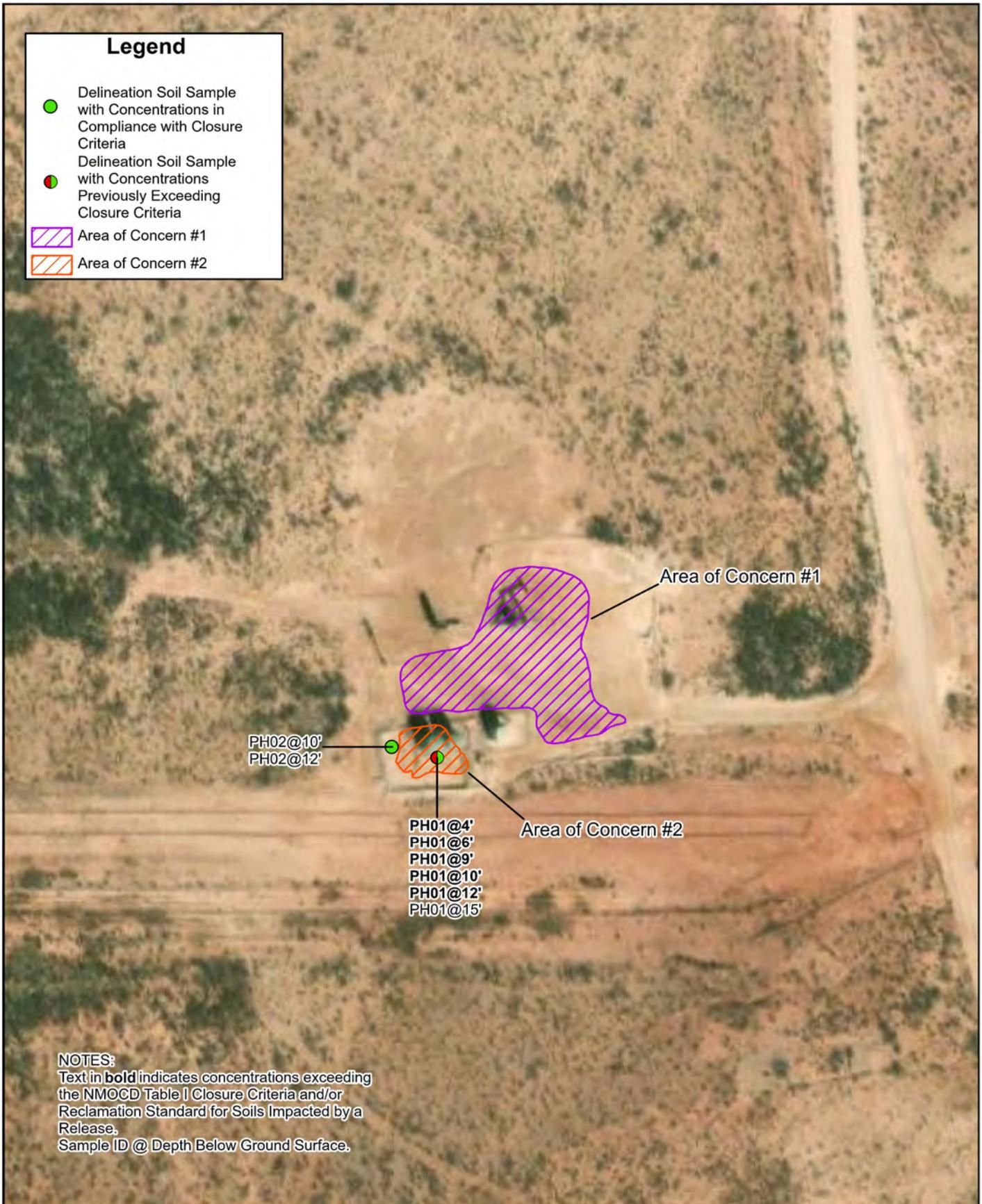
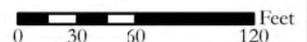


FIGURE 2

Delineation Soil Sample Locations

WPX ENERGY PERMIAN, LLC
 Yates Federal #001
 Unit H Sec 34 T26S R29E
 Eddy County, New Mexico



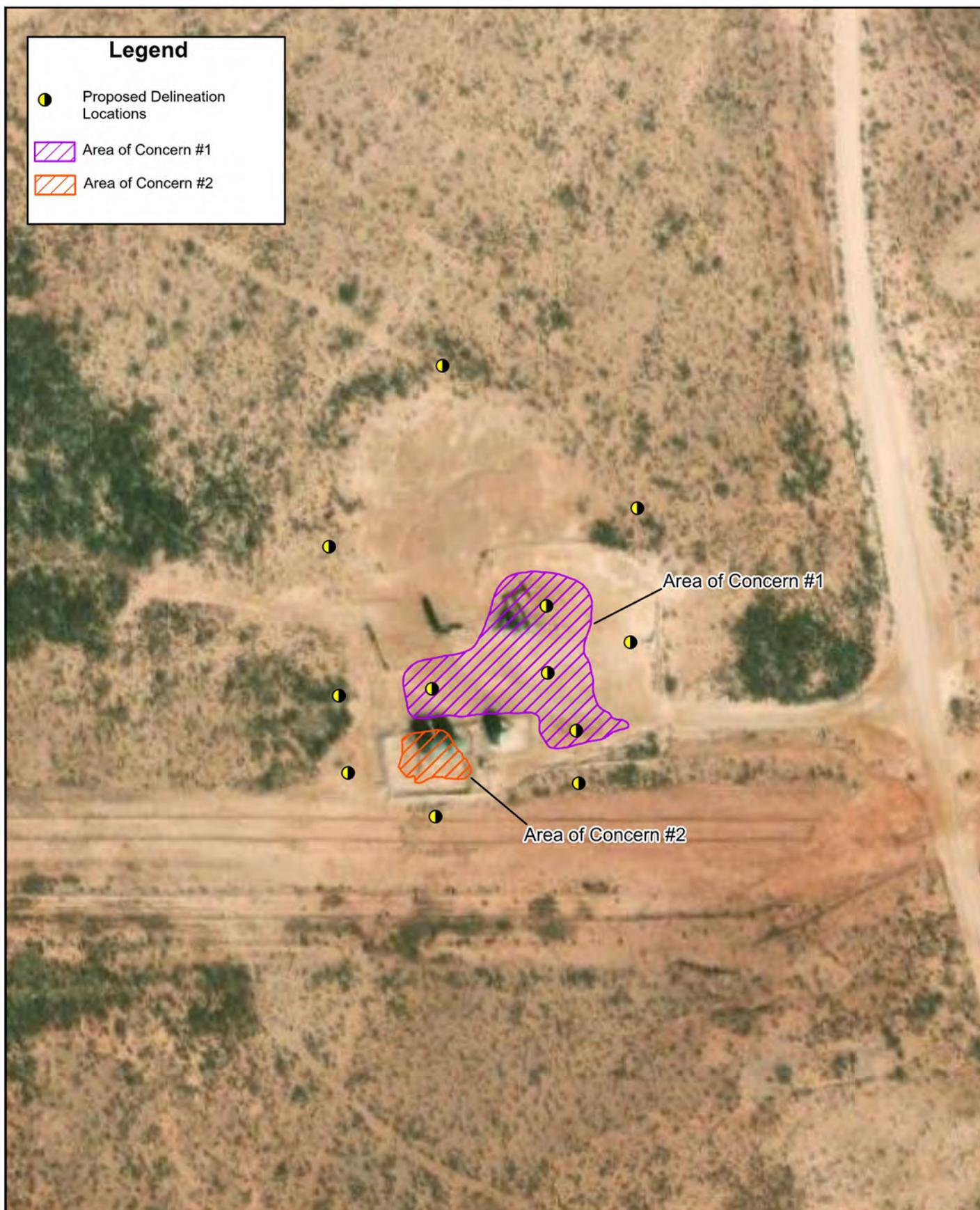
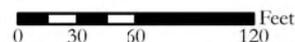


FIGURE 3

Proposed Delineation Locations

WPX ENERGY PERMIAN, LLC
Yates Federal #001
Unit H Sec 34 T26S R29E
Eddy County, New Mexico



APPENDIX B

Referenced Well Records

STATE OF TEXAS WELL REPORT for Tracking #356414

Owner: BHP BILLITON PETROLEUM	Owner Well #: JOHNSON#4-2
Address: 115 W 3RD ST, STE 208 PECOS, TX 79772	Grid #: 46-01-1
Well Location: 13.5 mi N of ORLA, 3.3 mi E of HWY 285, & .1 mi S of N MEX line ORLA, TX 79770	Latitude: 31° 59' 54" N
	Longitude: 103° 58' 25" W
Well County: Loving	Elevation: 2866 ft. above sea level
Type of Work: New Well Proposed Use: Rig Supply	

Drilling Start Date: **3/4/2014** Drilling End Date: **3/5/2014**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	9.875	0	303

Drilling Method: **Air Hammer**

Borehole Completion: **Filter Packed; CASED**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	20	303	Gravel	1/4"

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	0	20	5 CEMENT

Seal Method: **HAND**

Sealed By: **Driller**

Distance to Property Line (ft.): **5000+**

Distance to Septic Field or other
concentrated contamination (ft.): **N/A**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **OWNER INFO**

Surface Completion: **Surface Sleeve Installed**

Water Level: **58 ft. below land surface on 2014-03-05** Measurement Method: **Unknown**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **Jetted** Yield: **30+ GPM**

Water Quality:	Strata Depth (ft.)	Water Type
	70-100 & 268-280	SALTY

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **SKINNER'S DRILLING**
P.O. BOX 544
ALPINE, TX 79831

Driller Name: **WALTER SKINNER** License Number: **2838**

Apprentice Name: **JOHN SKINNER** Apprentice Number: **58577**

Comments: **No Data**

Lithology:
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
 BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	4	TOPSOIL
4	25	LIGHT BROWN CLAY
25	55	RED CLAY
55	115	CRYSTAL FORMATIONS
115	175	BROWN CLAY
175	185	CRYSTAL FORMATIONS
185	270	RED CLAY & SANDSTONE
270	303	CRYSTAL FORMATIONS

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
8	N	STEEL 1.5A	8
6	N	PVC SCH 40 0	60
6	N	PVC SCH 40 SLOT. 60 100	.035
6	N	PVC SCH 40 100	263
6	N	PVC SCH 40 SLOT. 263 283	.035
6	N	PVC SCH 40 283	303

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

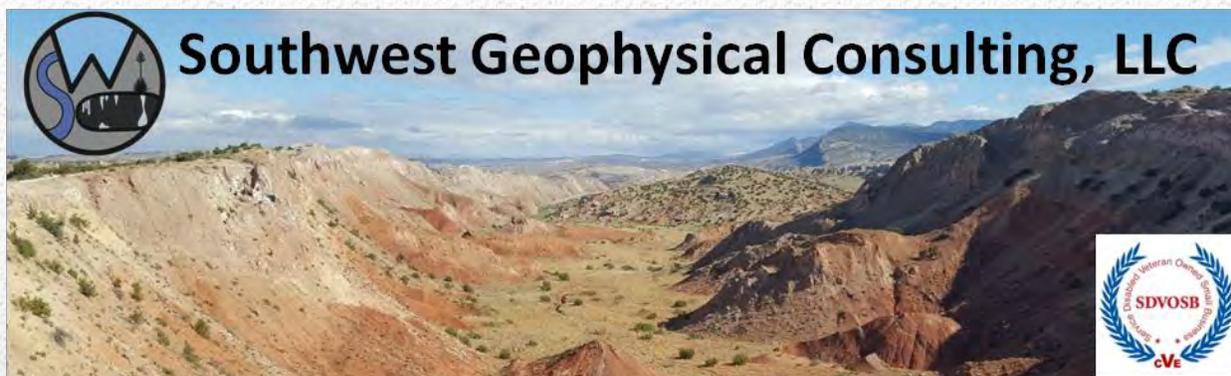
TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

APPENDIX C

Karst Survey



**Cave and Karst Resource Inventory Report
Yates Federal #001
Eddy County, New Mexico**

**Prepared for:
LT Environmental, Inc.
3300 North A Street Building 1, Unit 222
Midland, TX 79705**

- Positive – HKOZ remediation process required
- Negative – Oil Conservation Division may approve MKOZ remediation process at their discretion

September 14, 2020

LTE-022-20200901

Published by:

Southwest Geophysical Consulting, LLC
5117 Fairfax Dr. NW
Albuquerque, NM 87114
(505) 585-2550
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Prepared by:

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Midland, TX 79705

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MMXX

LTE-022-20200901

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1.0 INTRODUCTION

A pedestrian surface karst survey was commissioned by LT Environmental, Inc. (hereinafter referred to as "the client") on September 01, 2020 for the purpose of determining what, if any, karst-related surface features are present near the Yates Federal #001 pad (hereinafter termed "Yates") and to provide guidance on the level of remediation required. This study does not include subsurface features, which would require a geophysical survey. The study area that this report covers is in a **HIGH** karst occurrence zone and located within Bureau of Land Management - Carlsbad Field Office and privately managed lands.

As indicated in section **1.3 Affected Environment**, the bedrock and overlying soil at the survey site are susceptible to sinkhole development and karst features may be hidden beneath the existing soil stratum. Risk associated with sinkhole formation can be minimized during remediation by careful excavation of the spill site and the control of site hydrology. The Owner/Developer must recognize that a risk of sinkhole-induced damage to infrastructure remains even after site remediation. The Owner/Developer must evaluate the risks and attendant costs of performing a geophysical survey prior to remediation, versus no geophysical survey, and must be willing to accept these risks if it is decided that a surface karst survey is sufficient. Southwest Geophysical Consulting, LLC can provide a geophysical survey. If the decision is made to conduct a geophysical survey, a cost estimate and timeline will be provided upon request.

1.1 Goals of this Study

To provide the client with the location, description, photos, and boundaries of any surface karst-related features within a 200-meter buffer surrounding the Yates pad as provided by the client via email on September 01, 2020.

1.2 Summary of Findings

No surface karst features were located within the pedestrian survey area. However, unknown hidden features may still exist beneath the surface. Caution should be exercised during any remediation efforts.

1.3 Affected Environment

The Yates project site is located in evaporite karst terrain, a landform that is characterized by underground drainage through solutionally enlarged conduits. Evaporite karst terrain may contain sinkholes, sinking streams, caves, and springs. Sinkholes leading to underground drainages and voids are common. These karst features, as well as occasional fissures and discontinuities in the bedrock, provide the primary sources for rapid recharge of the groundwater aquifers of the region.

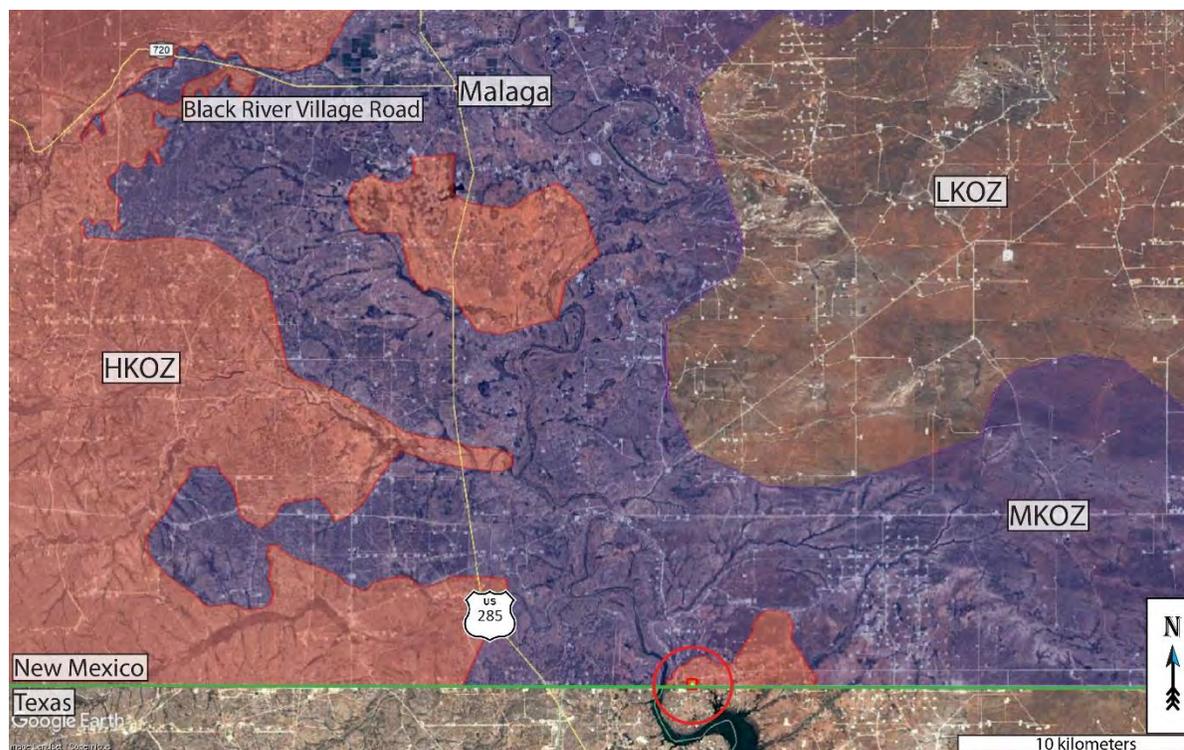


Figure 1: Karst occurrence overview. Red transparent area is a high karst occurrence zone; blue transparent area is a medium karst occurrence zone; no color is a low karst occurrence zone. Study area is the red outlined area in the lower-middle portion of the image. Background image credit: Google Earth. Image date: February 21, 2019. Datum: WGS-84.

The Bureau of Land Management (BLM) categorizes all areas within the Carlsbad Field Office (CFO) zone of responsibility as having either low, medium, or high cave potential based on geology, occurrence of known caves, density of karst features, and potential impacts to freshwater aquifers^[1]. These designations are also recognized by the New Mexico State Land Office (NMSLO). This project occurs within a **HIGH** karst occurrence zone (HKOZ) (**Figure 1**).

A high karst occurrence zone is defined as areas in known soluble rock types that contain a high frequency of significant caves and karst features such as sinkholes, bedrock fractures that provide rapid recharge of karst aquifers, and springs that provide riparian habitat^[2].

2.0 LOCATION AND DESCRIPTION OF STUDY AREA

2.1 Description of Site

The Yates project site is located in Eddy County, New Mexico, 26.7 kilometers (16.6 miles) south-southeast of Malaga, New Mexico, along the Texas-New Mexico border (**Figure 1** and **Figure 2**). The survey area is located within section 34 of NM T26S R29E. This area is within the Chihuahuan Desert Thornscrub defined by the Southwestern Regional ReGAP Vegetation map^[3] and the vegetation consists mostly of areas of grass, sparse creosote, and sparse yucca with very good visibility in most locations. See section **2.2 Local Geology** for the geology of the area. The entirety of the project site and surrounding survey area is within a HKOZ (**Figure 1**). Seventy-two percent of the survey area is located in BLM-CFO managed lands, while the remaining 28% is within privately managed lands in Texas (**Figure 2**).



Figure 2: Land ownership overview. Yellow transparent area: BLM-CFO managed land. Blue transparent area: New Mexico State Land Office managed land. No color: private land. Background image credit: Google Earth. Image date: February 21, 2019. Datum: WGS-84.

2.2 Local Geology

The area surveyed for the Yates project is located at an elevation of 880 meters (2,887 feet), \pm 3 meters (10 feet), within an area underlain by the Permian Rustler and Dewey Lakes Formations (Pru and Pdl). The area is mantled by thin gypsiferous soils, and Quaternary alluvial sands and gravels (Qal and Qp)^[4] between 0 and 3 meters in depth (**Figure 3**). The Rustler Formation is an evaporite facies and is composed mainly of thin siltstones and sandstones interbedded with claystones, dolomite and gypsum^[5], and contains both karst-forming strata (the Forty-niner and Tamarisk Members) and two shallow aquifers (the Magenta and Culebra Dolomite Members). The Pru overlies the Permian Salado Formation (Psl, not shown on map), a layer of extremely soluble halite which can easily be dissolved to create caves, sinkholes, and other karst features^[6]. The Pru may be subject to collapse if a void has developed beneath it in the Salado Formation. The survey area is covered by the Geologic Map of New Mexico (2003) at 1:500,000 scale^[4], and the Geologic Atlas of Texas - Hobbs Sheet (1976) at 1:250,000 scale.

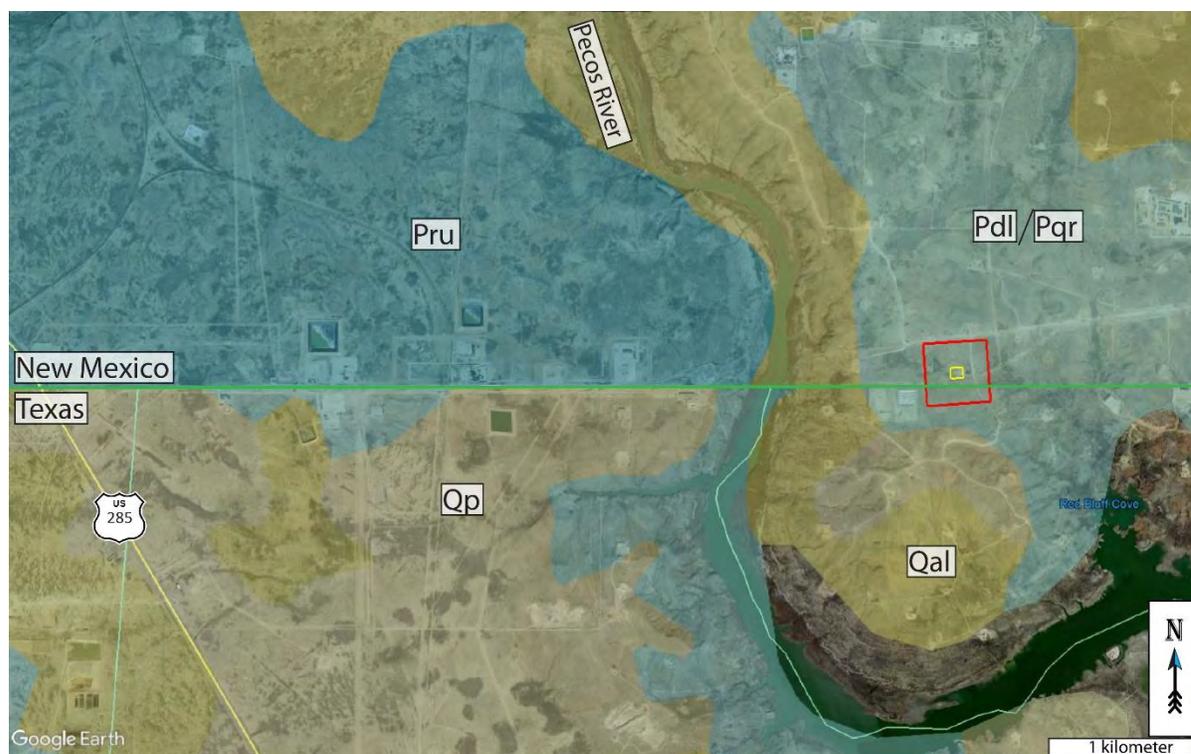


Figure 3: Geology overview. Pru: Permian Rustler Formation. Pdl/Pqr: Permian Dewey Lake Formation (formerly known as the Permian Quartermaster Formation). Qp: Quaternary piedmont deposits. Qal: Quaternary alluvium. Red polygon is the study area. Yellow polygon is the YATES pad perimeter. Map credit: Geologic Map of New Mexico (2003) at 1:500,000 scale, and Google Earth. Image date: February 21, 2019. Datum: WGS-84.

2.3 Description of Survey

For this survey 4 lines were walked in a raster pattern at 50-meter (165 feet) intervals in the designated area, providing 90 to 100% coverage for features greater than 50 centimeters (20 inches) in diameter (Table 1, Figure 4).

The northeast section of the study area was covered during a previous survey completed by Dave Decker on September 14, 2019. The remainder of the study area within New Mexico was surveyed by Garrett Jorgensen on September 09, 2020. While permission was obtained to enter the Texas portion of the study area, this information was not received by the field geologist (Mr. Jorgensen) by the time of the survey; therefore, this section was not covered. The total distance walked was 3.3 kilometers (2.0 miles) and the total area covered was 0.12 square kilometers (30.4 acres).

Table 1: Survey Track Data Files

File Name	Surveyor	Date	Length (km/miles)	Area (km ² /Ac)
SWGSrv_clipped.kmz	Decker	09/14/2019	1.82/1.13	0.12/30.4
YatesSrv_D1S1.kmz	Jorgensen	09/09/2020	1.44/0.89	

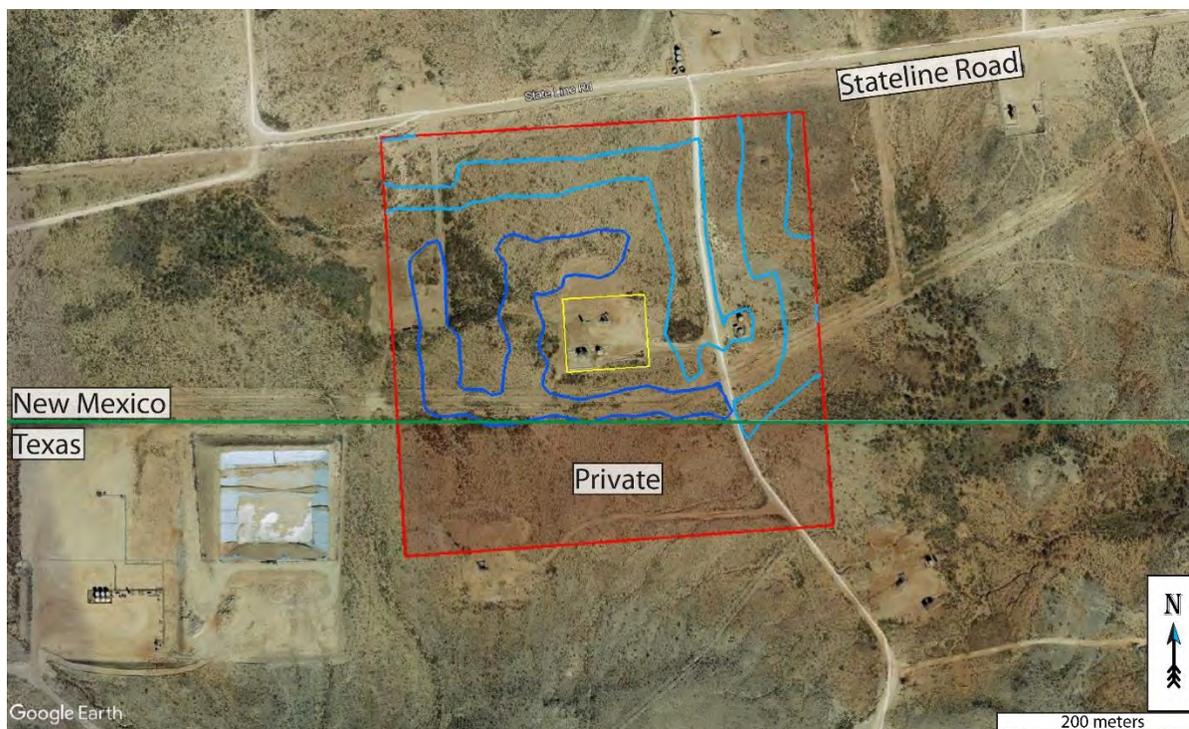


Figure 4: Survey overview. Red polygon is the study area. Shaded red polygon is the study area within Texas. Yellow polygon is the Yates well pad. Blue wavy lines are the actual survey lines walked (Dark blue: survey by Garrett Jorgensen. Light blue: Survey by Dave Decker). Background image credit: Google Earth. Image date: February 21, 2019. Datum: WGS-84.

The area in Texas that was not covered by the pedestrian karst survey is located within an area where the Dewey Lake red beds are exposed at the surface (which, as stated in section **2.2 Local Geology**, is a medium to fine-grained sandstone that does not support karst formation). A close inspection of the satellite imagery and a check of the New Mexico Cave and Karst Database revealed no previously known features in this area, and I am confident in stating that there are no surface karst features located within this zone.

2.4 Description of Karst Features

No surface karst features were located within the boundary of the pedestrian survey area for the Yates project site.

3.0 RECOMMENDATIONS

No surface karst features were located during this survey. Based on these findings, allowing use of medium karst occurrence zone (versus high karst occurrence zone) spill remediation procedures may be considered by the Oil Conservation Division within the survey area. Confirmation to use a lower remediation level should be received from the Oil Conservation Division before proceeding.

Vigilance during remediation is paramount. If voids are encountered during trenching or digging contact the New Mexico State Oil Conservation Division if on State land, and the Bureau of Land Management – Carlsbad Field Office at (575) 234-5972 if on BLM land and request an on-site investigation from a karst expert. A karst consultant can generally be on site in Eddy County within five hours.

4.0 REFERENCES

1. Rybacki, K., *Karst Potential Map*. CFO Basemap, 2019.
2. Scholle, P.A., *Geologic Map of New Mexico*. 2003. (1:500,000).
3. Johnson, K.S., *Evaporite Karst in the United States*. Carbonates and Evaporites, 1997. **12(1)**: p. 2-14.
4. Martinez, J.D., K.S. Johnson, and J.T. Neal, *Sinkholes in Evaporite Rocks*. American Scientist, 1998. **86(1-2)**: p. 38-51.
5. Whitehead, W. and C. Flynn, *Plant Utilization in Southeastern New Mexico: Botany, Ethnobotany, and Archaeology*. 2017, Carlsbad, NM: Bureau of Land Management, Carlsbad Field Office.
6. Vine, J.D., *Surface Geology of Nash Draw Quadrangle Eddy County New Mexico*, 1963.

5.0 GLOSSARY OF TERMS

BLM	Bureau of Land Management
CFO	Carlsbad Field Office
cave	A natural opening at the surface, large enough for a person to enter.
GPS	Global Positioning System
NMSLO	New Mexico State Land Office
OCD	Oil Conservation Division
playa lake	A natural depression on the surface that collects rainwater. Some contain swallets and/or caves, others do not.
pseudokarst	Karst-like terrain that forms through processes other than dissolution.
swallet	A natural opening in the surface, too small for a person, that drains water to an aquifer. Some are "open," meaning a void can be seen below; some are "closed," meaning they are full of sediment.
WGS	World Geodetic System



APPENDIX D

Photographic Log



PHOTOGRAPHIC LOG

WPX Energy Permian, LLC

Yates Federal #001

Incident Numbers nAB1428734057 and NRM2011138650



Photograph 1

Date: 05/12/2022

Description: Northeastern view of initial Site assesment, edge of earthen berm.



Photograph 2

Date: 05/12/2022

Description: Southeastern view of delineation activities location of PH02. South of battery containment.



PHOTOGRAPHIC LOG

WPX Energy Permian, LLC

Yates Federal #001

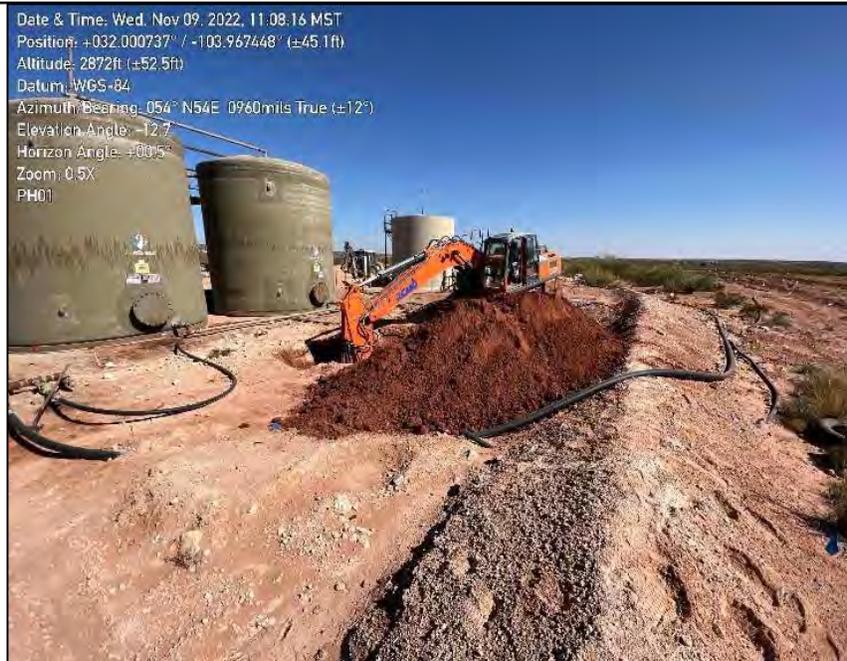
Incident Numbers nAB1428734057 and NRM2011138650



Photograph 3

Date: 05/12/2022

Description: Southwestern view of delineation activities location of PH02, southwest edge of earthen berm.



Photograph 4

Date: 11/09/2022

Description: Northeastern view of delineation activities location of PH01, southwest edge of earthen berm.

APPENDIX E

Soil Sampling Logs



LITHOLOGIC / SOIL SAMPLING LOG

Sample Name: PH01	Date: 11/09/2022
Site Name: Yates Federal #001	
Incident Number: nAB1428734057 and NRM2011138650	
Job Number: 18154	
Logged By: GM	Method: Trackhoe
Hole Diameter: N/A	Total Depth: 15'

Site Coordinates: 32.00067,-103.96744

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (feet bgs)	Depth (feet bgs)	USCS/Rock Symbol	Lithologic Descriptions/Notes
						0	CCHE	0-2' bgs: CALICHE, dry, tan, well graded with silt, fine to coarse grain, few subround gravel, no staining, no odor
							SW-SM	2-14' bgs: SAND, dry, reddish brown, well graded with silt, fine to coarse grain, trace subround to subangular gravel, no staining, no odor
Dry	1,814.4	0	No	PH01	4			14-15' bgs: SANDSTONE, dry, red, well sorted, very fine to fine grain, well consolidated, abundant greyish green reduction spots (3-4mm), no staining, no odor
Dry	3,404.8	0	No	PH01	6	5		
Dry	3,404.8	0	No	PH01	9			
Dry	8,607.2	0	No	PH01	10	10		
Dry	1,394.4	0	No	PH01	12			
Dry	952.0	0	No		14		SP-S	
Dry	806.4	0	No	PH01	15	15		

Total Depth: 15 feet bgs



LITHOLOGIC / SOIL SAMPLING LOG

Sample Name: PH02	Date: 05/12/2022
Site Name: Yates Federal #001	
Incident Number: nAB1428734057 and NRM2011138650	
Job Number: 18154	
Logged By: Liz Cheli	Method: Trackhoe
Hole Diameter: N/A	Total Depth: 12'

Site Coordinates: 32.00067,-103.96744

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (feet bgs)	Depth (feet bgs)	USCS/Rock Symbol	Lithologic Descriptions/Notes
Dry	<168	0.6	No		0.5	0	CCHE	0-2' bgs: CALICHE, dry, tan, well graded with silt, fine to coarse grain, few subround gravel, no staining, no odor 2-12' bgs: SAND, dry, reddish brown, well graded with silt, fine to coarse grain, trace subround to subangular gravel, no staining, no odor
Dry	<168	2.4	No		2	2	SW-SM	
Dry	<168	0.6	No		4	4		
Dry	<168	0.9	No		6	6		
Dry	<168	0	No		8	8		
Drt	<168	0	No	PH02	10	10		
Dry	202.00	0	No	PH02	12	12		

Total Depth: 12 feet bgs

APPENDIX F

Tables



**Table 1
SOIL SAMPLE ANALYTICAL RESULTS
WPX Energy Permian, LLC
Yates Federal #001
Eddy County, New Mexico**

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCOD Table I Closure Criteria for Soils Impacted by a Release (NMAC 19.15.29)			10	50	NE	NE	NE	100	600
Delineation Soil Samples - nAB1428734057 and NRM2011138650									
PH01	05/12/2022	4	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	1,700
PH01	11/09/2022	6	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	3,050
PH01	11/09/2022	9	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	3,320
PH01	05/12/2022	10	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	5,270
PH01	11/09/2022	12	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	1,210
PH01	11/09/2022	15	<0.00199	<0.00398	<49.8	<49.9	55.8	55.8	37.0
PH02	05/12/2022	10	<0.00202	<0.00404	<50.0	<50.0	<50.0	<50.0	157
PH02	05/12/2022	12	<0.00202	<0.00403	<49.9	<49.9	<49.9	<49.9	177

Notes:
 bgs: below ground surface
 mg/kg: milligrams per kilogram
 BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes
 GRO: Gasoline Range Organics
 DRO: Diesel Range Organics
 ORO: Oil Range Organics
 TPH: Total Petroleum Hydrocarbon
 NMOCOD: New Mexico Oil Conservation Division
 NMAC: New Mexico Administrative Code
 Concentrations in **bold** exceed the NMOCOD Table I Closure Criteria and/or Reclamation Standard for Soils Impacted by a Release

APPENDIX G

Laboratory Analytical Reports & Chain-of-Custody Documentation



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Devon Team
Ensolum
705 W. Wadley
Suite 210
Midland Texas 79701

Generated 11/22/2022 3:23:06 PM

JOB DESCRIPTION

Yates Federal #001
SDG NUMBER Rural Eddy Co

JOB NUMBER

890-3424-1



Client: Ensolum
Project/Site: Yates Federal #001

Laboratory Job ID: 890-3424-1
SDG: Rural Eddy Co

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Definitions/Glossary

Client: Ensolum
Project/Site: Yates Federal #001

Job ID: 890-3424-1
SDG: Rural Eddy Co

Qualifiers

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Ensolum
Project/Site: Yates Federal #001

Job ID: 890-3424-1
SDG: Rural Eddy Co

Job ID: 890-3424-1

Laboratory: Eurofins Carlsbad**Narrative**

**Job Narrative
890-3424-1****Receipt**

The samples were received on 11/9/2022 4:19 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.4°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: PH01 (890-3424-1), PH01 (890-3424-2) and PH01 (890-3424-3).

GC VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-39760 and analytical batch 880-39789 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



Client Sample Results

Client: Ensolum
Project/Site: Yates Federal #001

Job ID: 890-3424-1
SDG: Rural Eddy Co

Client Sample ID: PH01

Lab Sample ID: 890-3424-1

Date Collected: 11/09/22 09:30

Matrix: Solid

Date Received: 11/09/22 16:19

Sample Depth: 6

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		11/14/22 15:47	11/22/22 00:25	1
Toluene	<0.00199	U	0.00199		mg/Kg		11/14/22 15:47	11/22/22 00:25	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/14/22 15:47	11/22/22 00:25	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		11/14/22 15:47	11/22/22 00:25	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		11/14/22 15:47	11/22/22 00:25	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		11/14/22 15:47	11/22/22 00:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	118		70 - 130	11/14/22 15:47	11/22/22 00:25	1
1,4-Difluorobenzene (Surr)	108		70 - 130	11/14/22 15:47	11/22/22 00:25	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			11/22/22 15:30	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			11/15/22 09:26	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		11/11/22 11:45	11/14/22 13:58	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		11/11/22 11:45	11/14/22 13:58	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/11/22 11:45	11/14/22 13:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	88		70 - 130	11/11/22 11:45	11/14/22 13:58	1
o-Terphenyl	88		70 - 130	11/11/22 11:45	11/14/22 13:58	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3050		100		mg/Kg			11/17/22 09:47	20

Client Sample ID: PH01

Lab Sample ID: 890-3424-2

Date Collected: 11/09/22 09:40

Matrix: Solid

Date Received: 11/09/22 16:19

Sample Depth: 9

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		11/14/22 15:47	11/22/22 00:46	1
Toluene	<0.00199	U	0.00199		mg/Kg		11/14/22 15:47	11/22/22 00:46	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/14/22 15:47	11/22/22 00:46	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		11/14/22 15:47	11/22/22 00:46	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		11/14/22 15:47	11/22/22 00:46	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		11/14/22 15:47	11/22/22 00:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	121		70 - 130	11/14/22 15:47	11/22/22 00:46	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: Yates Federal #001

Job ID: 890-3424-1
SDG: Rural Eddy Co

Client Sample ID: PH01

Lab Sample ID: 890-3424-2

Date Collected: 11/09/22 09:40

Matrix: Solid

Date Received: 11/09/22 16:19

Sample Depth: 9

Method: SW846 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	102		70 - 130	11/14/22 15:47	11/22/22 00:46	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			11/22/22 15:30	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			11/15/22 09:26	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		11/11/22 11:45	11/14/22 14:20	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/11/22 11:45	11/14/22 14:20	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/11/22 11:45	11/14/22 14:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	86		70 - 130	11/11/22 11:45	11/14/22 14:20	1
o-Terphenyl	86		70 - 130	11/11/22 11:45	11/14/22 14:20	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3320		99.6		mg/Kg			11/17/22 09:53	20

Client Sample ID: PH01

Lab Sample ID: 890-3424-3

Date Collected: 11/09/22 09:50

Matrix: Solid

Date Received: 11/09/22 16:19

Sample Depth: 12

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/14/22 15:47	11/22/22 03:11	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/14/22 15:47	11/22/22 03:11	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/14/22 15:47	11/22/22 03:11	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		11/14/22 15:47	11/22/22 03:11	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/14/22 15:47	11/22/22 03:11	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		11/14/22 15:47	11/22/22 03:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		70 - 130	11/14/22 15:47	11/22/22 03:11	1
1,4-Difluorobenzene (Surr)	97		70 - 130	11/14/22 15:47	11/22/22 03:11	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			11/22/22 15:30	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			11/15/22 09:26	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
 Project/Site: Yates Federal #001

Job ID: 890-3424-1
 SDG: Rural Eddy Co

Client Sample ID: PH01

Lab Sample ID: 890-3424-3

Date Collected: 11/09/22 09:50

Matrix: Solid

Date Received: 11/09/22 16:19

Sample Depth: 12

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		11/11/22 11:45	11/14/22 14:42	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/11/22 11:45	11/14/22 14:42	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/11/22 11:45	11/14/22 14:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	81		70 - 130	11/11/22 11:45	11/14/22 14:42	1
o-Terphenyl	81		70 - 130	11/11/22 11:45	11/14/22 14:42	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1210		49.7		mg/Kg			11/17/22 09:59	10

Surrogate Summary

Client: Ensolum
Project/Site: Yates Federal #001

Job ID: 890-3424-1
SDG: Rural Eddy Co

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-3423-A-1-D MS	Matrix Spike	104	94
890-3423-A-1-E MSD	Matrix Spike Duplicate	113	87
890-3424-1	PH01	118	108
890-3424-2	PH01	121	102
890-3424-3	PH01	109	97
LCS 880-39546/1-A	Lab Control Sample	91	82
LCSD 880-39546/2-A	Lab Control Sample Dup	99	93
MB 880-39546/5-A	Method Blank	112	92
MB 880-40068/5-A	Method Blank	101	92

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DFBZ = 1,4-Difluorobenzene (Surr)

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-3423-A-1-B MS	Matrix Spike	120	111
890-3423-A-1-C MSD	Matrix Spike Duplicate	102	96
890-3424-1	PH01	88	88
890-3424-2	PH01	86	86
890-3424-3	PH01	81	81
LCS 880-39324/2-A	Lab Control Sample	103	103
LCSD 880-39324/3-A	Lab Control Sample Dup	98	99
MB 880-39324/1-A	Method Blank	99	98

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: Yates Federal #001

Job ID: 890-3424-1
SDG: Rural Eddy Co

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-39546/5-A
Matrix: Solid
Analysis Batch: 40037

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 39546

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/14/22 15:47	11/21/22 22:20	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/14/22 15:47	11/21/22 22:20	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/14/22 15:47	11/21/22 22:20	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/14/22 15:47	11/21/22 22:20	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/14/22 15:47	11/21/22 22:20	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/14/22 15:47	11/21/22 22:20	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	112		70 - 130	11/14/22 15:47	11/21/22 22:20	1
1,4-Difluorobenzene (Surr)	92		70 - 130	11/14/22 15:47	11/21/22 22:20	1

Lab Sample ID: LCS 880-39546/1-A
Matrix: Solid
Analysis Batch: 40037

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 39546

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.06955		mg/Kg		70	70 - 130
Toluene	0.100	0.08190		mg/Kg		82	70 - 130
Ethylbenzene	0.100	0.08788		mg/Kg		88	70 - 130
m-Xylene & p-Xylene	0.200	0.1753		mg/Kg		88	70 - 130
o-Xylene	0.100	0.1027		mg/Kg		103	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	91		70 - 130
1,4-Difluorobenzene (Surr)	82		70 - 130

Lab Sample ID: LCSD 880-39546/2-A
Matrix: Solid
Analysis Batch: 40037

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 39546

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.07665		mg/Kg		77	70 - 130	10	35
Toluene	0.100	0.08944		mg/Kg		89	70 - 130	9	35
Ethylbenzene	0.100	0.09524		mg/Kg		95	70 - 130	8	35
m-Xylene & p-Xylene	0.200	0.1909		mg/Kg		95	70 - 130	9	35
o-Xylene	0.100	0.1111		mg/Kg		111	70 - 130	8	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		70 - 130
1,4-Difluorobenzene (Surr)	93		70 - 130

Lab Sample ID: 890-3423-A-1-D MS
Matrix: Solid
Analysis Batch: 40037

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 39546

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.0998	0.07603		mg/Kg		76	70 - 130
Toluene	<0.00199	U	0.0998	0.08510		mg/Kg		85	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: Yates Federal #001

Job ID: 890-3424-1
SDG: Rural Eddy Co

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 890-3423-A-1-D MS
Matrix: Solid
Analysis Batch: 40037

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 39546

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
Ethylbenzene	<0.00199	U	0.0998	0.08975		mg/Kg		90	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1800		mg/Kg		90	70 - 130
o-Xylene	<0.00199	U	0.0998	0.1033		mg/Kg		103	70 - 130

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	104		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

Lab Sample ID: 890-3423-A-1-E MSD
Matrix: Solid
Analysis Batch: 40037

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 39546

Analyte	Sample	Sample	Spike Added	MSD	MSD	Unit	D	%Rec	%Rec Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier						
Benzene	<0.00199	U	0.0996	0.07504		mg/Kg		75	70 - 130	1	35
Toluene	<0.00199	U	0.0996	0.08927		mg/Kg		90	70 - 130	5	35
Ethylbenzene	<0.00199	U	0.0996	0.09882		mg/Kg		99	70 - 130	10	35
m-Xylene & p-Xylene	<0.00398	U	0.199	0.1954		mg/Kg		98	70 - 130	8	35
o-Xylene	<0.00199	U	0.0996	0.1117		mg/Kg		112	70 - 130	8	35

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	113		70 - 130
1,4-Difluorobenzene (Surr)	87		70 - 130

Lab Sample ID: MB 880-40068/5-A
Matrix: Solid
Analysis Batch: 40037

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 40068

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	<0.00200	U	0.00200		mg/Kg		11/21/22 09:48	11/21/22 11:40	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/21/22 09:48	11/21/22 11:40	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/21/22 09:48	11/21/22 11:40	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/21/22 09:48	11/21/22 11:40	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/21/22 09:48	11/21/22 11:40	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/21/22 09:48	11/21/22 11:40	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	101		70 - 130	11/21/22 09:48	11/21/22 11:40	1
1,4-Difluorobenzene (Surr)	92		70 - 130	11/21/22 09:48	11/21/22 11:40	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-39324/1-A
Matrix: Solid
Analysis Batch: 39383

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 39324

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		11/11/22 11:45	11/14/22 08:54	1

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QC Sample Results

Client: Ensolum
Project/Site: Yates Federal #001

Job ID: 890-3424-1
SDG: Rural Eddy Co

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 880-39324/1-A
Matrix: Solid
Analysis Batch: 39383

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 39324

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/11/22 11:45	11/14/22 08:54	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/11/22 11:45	11/14/22 08:54	1
Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac			
	%Recovery	Qualifier							
1-Chlorooctane	99		70 - 130	11/11/22 11:45	11/14/22 08:54	1			
o-Terphenyl	98		70 - 130	11/11/22 11:45	11/14/22 08:54	1			

Lab Sample ID: LCS 880-39324/2-A
Matrix: Solid
Analysis Batch: 39383

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 39324

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Diesel Range Organics (Over C10-C28)	1000	964.6		mg/Kg		96	70 - 130
Surrogate	LCS	LCS	Limits				
	%Recovery	Qualifier					
1-Chlorooctane	103		70 - 130				
o-Terphenyl	103		70 - 130				

Lab Sample ID: LCSD 880-39324/3-A
Matrix: Solid
Analysis Batch: 39383

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 39324

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	
								RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	1000	795.7		mg/Kg		80	70 - 130	8	20
Diesel Range Organics (Over C10-C28)	1000	939.5		mg/Kg		94	70 - 130	3	20
Surrogate	LCSD	LCSD	Limits						
	%Recovery	Qualifier							
1-Chlorooctane	98		70 - 130						
o-Terphenyl	99		70 - 130						

Lab Sample ID: 890-3423-A-1-B MS
Matrix: Solid
Analysis Batch: 39383

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 39324

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Diesel Range Organics (Over C10-C28)	<50.0	U	997	986.0		mg/Kg		99	70 - 130
Surrogate	MS	MS	Limits						
	%Recovery	Qualifier							
1-Chlorooctane	120		70 - 130						
o-Terphenyl	111		70 - 130						

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QC Sample Results

Client: Ensolum
Project/Site: Yates Federal #001

Job ID: 890-3424-1
SDG: Rural Eddy Co

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 890-3423-A-1-C MSD
Matrix: Solid
Analysis Batch: 39383

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 39324

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	999	825.4		mg/Kg		80	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	<50.0	U	999	857.8		mg/Kg		86	70 - 130	14	20
Surrogate	%Recovery	MSD Qualifier		MSD						Limits	
1-Chlorooctane	102									70 - 130	
o-Terphenyl	96									70 - 130	

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-39760/1-A
Matrix: Solid
Analysis Batch: 39789

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			11/17/22 08:39	1

Lab Sample ID: LCS 880-39760/2-A
Matrix: Solid
Analysis Batch: 39789

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	253.2		mg/Kg		101	90 - 110

Lab Sample ID: LCSD 880-39760/3-A
Matrix: Solid
Analysis Batch: 39789

Client Sample ID: Lab Control Sample Dup
Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	251.7		mg/Kg		101	90 - 110	1	20

Lab Sample ID: 890-3423-A-1-I MS
Matrix: Solid
Analysis Batch: 39789

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	6570	F1	2490	9845	F1	mg/Kg		132	90 - 110

Lab Sample ID: 890-3423-A-1-J MSD
Matrix: Solid
Analysis Batch: 39789

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	6570	F1	2490	9876	F1	mg/Kg		133	90 - 110	0	20

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QC Association Summary

Client: Ensolum
Project/Site: Yates Federal #001

Job ID: 890-3424-1
SDG: Rural Eddy Co

GC VOA

Prep Batch: 39546

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3424-1	PH01	Total/NA	Solid	5035	
890-3424-2	PH01	Total/NA	Solid	5035	
890-3424-3	PH01	Total/NA	Solid	5035	
MB 880-39546/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-39546/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-39546/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3423-A-1-D MS	Matrix Spike	Total/NA	Solid	5035	
890-3423-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 40037

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3424-1	PH01	Total/NA	Solid	8021B	39546
890-3424-2	PH01	Total/NA	Solid	8021B	39546
890-3424-3	PH01	Total/NA	Solid	8021B	39546
MB 880-39546/5-A	Method Blank	Total/NA	Solid	8021B	39546
MB 880-40068/5-A	Method Blank	Total/NA	Solid	8021B	40068
LCS 880-39546/1-A	Lab Control Sample	Total/NA	Solid	8021B	39546
LCSD 880-39546/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	39546
890-3423-A-1-D MS	Matrix Spike	Total/NA	Solid	8021B	39546
890-3423-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	39546

Prep Batch: 40068

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-40068/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 40232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3424-1	PH01	Total/NA	Solid	Total BTEX	
890-3424-2	PH01	Total/NA	Solid	Total BTEX	
890-3424-3	PH01	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 39324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3424-1	PH01	Total/NA	Solid	8015NM Prep	
890-3424-2	PH01	Total/NA	Solid	8015NM Prep	
890-3424-3	PH01	Total/NA	Solid	8015NM Prep	
MB 880-39324/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-39324/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-39324/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3423-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3423-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 39383

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3424-1	PH01	Total/NA	Solid	8015B NM	39324
890-3424-2	PH01	Total/NA	Solid	8015B NM	39324
890-3424-3	PH01	Total/NA	Solid	8015B NM	39324
MB 880-39324/1-A	Method Blank	Total/NA	Solid	8015B NM	39324
LCS 880-39324/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	39324

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: Yates Federal #001

Job ID: 890-3424-1
SDG: Rural Eddy Co

GC Semi VOA (Continued)

Analysis Batch: 39383 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-39324/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	39324
890-3423-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	39324
890-3423-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	39324

Analysis Batch: 39583

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3424-1	PH01	Total/NA	Solid	8015 NM	
890-3424-2	PH01	Total/NA	Solid	8015 NM	
890-3424-3	PH01	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 39760

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3424-1	PH01	Soluble	Solid	DI Leach	
890-3424-2	PH01	Soluble	Solid	DI Leach	
890-3424-3	PH01	Soluble	Solid	DI Leach	
MB 880-39760/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-39760/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-39760/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3423-A-1-I MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3423-A-1-J MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 39789

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3424-1	PH01	Soluble	Solid	300.0	39760
890-3424-2	PH01	Soluble	Solid	300.0	39760
890-3424-3	PH01	Soluble	Solid	300.0	39760
MB 880-39760/1-A	Method Blank	Soluble	Solid	300.0	39760
LCS 880-39760/2-A	Lab Control Sample	Soluble	Solid	300.0	39760
LCSD 880-39760/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	39760
890-3423-A-1-I MS	Matrix Spike	Soluble	Solid	300.0	39760
890-3423-A-1-J MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	39760

Lab Chronicle

Client: Ensolum
 Project/Site: Yates Federal #001

Job ID: 890-3424-1
 SDG: Rural Eddy Co

Client Sample ID: PH01

Lab Sample ID: 890-3424-1

Date Collected: 11/09/22 09:30

Matrix: Solid

Date Received: 11/09/22 16:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	39546	11/14/22 15:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	40037	11/22/22 00:25	SM	EET MID
Total/NA	Analysis	Total BTEX		1			40232	11/22/22 15:30	SM	EET MID
Total/NA	Analysis	8015 NM		1			39583	11/15/22 09:26	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	39324	11/11/22 11:45	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	39383	11/14/22 13:58	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	39760	11/16/22 21:48	KS	EET MID
Soluble	Analysis	300.0		20			39789	11/17/22 09:47	CH	EET MID

Client Sample ID: PH01

Lab Sample ID: 890-3424-2

Date Collected: 11/09/22 09:40

Matrix: Solid

Date Received: 11/09/22 16:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	39546	11/14/22 15:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	40037	11/22/22 00:46	SM	EET MID
Total/NA	Analysis	Total BTEX		1			40232	11/22/22 15:30	SM	EET MID
Total/NA	Analysis	8015 NM		1			39583	11/15/22 09:26	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	39324	11/11/22 11:45	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	39383	11/14/22 14:20	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	39760	11/16/22 21:48	KS	EET MID
Soluble	Analysis	300.0		20			39789	11/17/22 09:53	CH	EET MID

Client Sample ID: PH01

Lab Sample ID: 890-3424-3

Date Collected: 11/09/22 09:50

Matrix: Solid

Date Received: 11/09/22 16:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	39546	11/14/22 15:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	40037	11/22/22 03:11	SM	EET MID
Total/NA	Analysis	Total BTEX		1			40232	11/22/22 15:30	SM	EET MID
Total/NA	Analysis	8015 NM		1			39583	11/15/22 09:26	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	39324	11/11/22 11:45	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	39383	11/14/22 14:42	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	39760	11/16/22 21:48	KS	EET MID
Soluble	Analysis	300.0		10			39789	11/17/22 09:59	CH	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Ensolum
Project/Site: Yates Federal #001

Job ID: 890-3424-1
SDG: Rural Eddy Co

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-24	06-30-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Method Summary

Client: Ensolum
 Project/Site: Yates Federal #001

Job ID: 890-3424-1
 SDG: Rural Eddy Co

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	MCAWW	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET MID
DI Leach	Deionized Water Leaching Procedure	ASTM	EET MID

Protocol References:

- ASTM = ASTM International
- MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
- SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
- TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

- EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440



Sample Summary

Client: Ensolum
Project/Site: Yates Federal #001

Job ID: 890-3424-1
SDG: Rural Eddy Co

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3424-1	PH01	Solid	11/09/22 09:30	11/09/22 16:19	6
890-3424-2	PH01	Solid	11/09/22 09:40	11/09/22 16:19	9
890-3424-3	PH01	Solid	11/09/22 09:50	11/09/22 16:19	12

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3424-1
SDG Number: Rural Eddy Co

Login Number: 3424
List Number: 1
Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	N/A	Refer to Job Narrative for details.
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3424-1
SDG Number: Rural Eddy Co

Login Number: 3424
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 11/11/22 10:46 AM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

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Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



Generated
11/22/2022 3:23:06 PM

Authorized for release by
Jessica Kramer, Project Manager
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Environment Testing

ANALYTICAL REPORT

Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Tel: (575)988-3199

Laboratory Job ID: 890-3425-1
Laboratory Sample Delivery Group: 03A1987020
Client Project/Site: YATES FEDERAL #001

For:
Ensolum
705 W. Wadley
Suite 210
Midland, Texas 79701

Attn: Devon Team

Authorized for release by:
11/14/2022 1:22:45 PM

Jessica Kramer, Project Manager
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LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

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Client: Ensolum
Project/Site: YATES FEDERAL #001

Laboratory Job ID: 890-3425-1
SDG: 03A1987020

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Definitions/Glossary

Client: Ensolum
Project/Site: YATES FEDERAL #001

Job ID: 890-3425-1
SDG: 03A1987020

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Ensolum
Project/Site: YATES FEDERAL #001

Job ID: 890-3425-1
SDG: 03A1987020

Job ID: 890-3425-1

Laboratory: Eurofins Carlsbad

Narrative

**Job Narrative
890-3425-1**

Receipt

The sample was received on 11/9/2022 4:19 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.4°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: PH01 (890-3425-1).

GC VOA

Method 8021B: The matrix spike duplicate (MSD) recoveries for preparation batch 880-39278 and analytical batch 880-39279 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-39172 and analytical batch 880-39269 was outside the upper control limits.

Method 8015MOD_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-39172 and analytical batch 880-39269 recovered outside control limits for the following analytes: Gasoline Range Organics (GRO)-C6-C10.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



Client Sample Results

Client: Ensolum
Project/Site: YATES FEDERAL #001

Job ID: 890-3425-1
SDG: 03A1987020

Client Sample ID: PH01

Lab Sample ID: 890-3425-1

Date Collected: 11/09/22 10:00

Matrix: Solid

Date Received: 11/09/22 16:19

Sample Depth: 15

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		11/11/22 07:54	11/11/22 13:45	1
Toluene	<0.00199	U	0.00199		mg/Kg		11/11/22 07:54	11/11/22 13:45	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/11/22 07:54	11/11/22 13:45	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		11/11/22 07:54	11/11/22 13:45	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		11/11/22 07:54	11/11/22 13:45	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		11/11/22 07:54	11/11/22 13:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		70 - 130	11/11/22 07:54	11/11/22 13:45	1
1,4-Difluorobenzene (Surr)	98		70 - 130	11/11/22 07:54	11/11/22 13:45	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			11/11/22 15:05	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	55.8		49.8		mg/Kg			11/11/22 14:06	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U *1	49.8		mg/Kg		11/11/22 10:00	11/11/22 13:01	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		11/11/22 10:00	11/11/22 13:01	1
Oil Range Organics (Over C28-C36)	55.8		49.8		mg/Kg		11/11/22 10:00	11/11/22 13:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	90		70 - 130	11/11/22 10:00	11/11/22 13:01	1
o-Terphenyl	96		70 - 130	11/11/22 10:00	11/11/22 13:01	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	37.0		5.03		mg/Kg			11/11/22 21:19	1

Surrogate Summary

Client: Ensolum
Project/Site: YATES FEDERAL #001

Job ID: 890-3425-1
SDG: 03A1987020

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB1	DFBZ1
		(70-130)	(70-130)
880-21410-A-7-D MS	Matrix Spike	98	118
880-21410-A-7-E MSD	Matrix Spike Duplicate	98	116
890-3425-1	PH01	91	98
LCS 880-39278/1-A	Lab Control Sample	96	112
LCSD 880-39278/2-A	Lab Control Sample Dup	91	118
MB 880-39278/5-A	Method Blank	79	95

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	1CO1	OTPH1
		(70-130)	(70-130)
890-3402-A-1-G MS	Matrix Spike	86	79
890-3402-A-1-H MSD	Matrix Spike Duplicate	82	73
890-3425-1	PH01	90	96
LCS 880-39172/2-A	Lab Control Sample	94	97
LCSD 880-39172/3-A	Lab Control Sample Dup	107	109
MB 880-39172/1-A	Method Blank	119	134 S1+

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: YATES FEDERAL #001

Job ID: 890-3425-1
SDG: 03A1987020

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-39278/5-A
Matrix: Solid
Analysis Batch: 39279

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 39278

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/11/22 07:54	11/11/22 11:29	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/11/22 07:54	11/11/22 11:29	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/11/22 07:54	11/11/22 11:29	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/11/22 07:54	11/11/22 11:29	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/11/22 07:54	11/11/22 11:29	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/11/22 07:54	11/11/22 11:29	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	79		70 - 130	11/11/22 07:54	11/11/22 11:29	1
1,4-Difluorobenzene (Surr)	95		70 - 130	11/11/22 07:54	11/11/22 11:29	1

Lab Sample ID: LCS 880-39278/1-A
Matrix: Solid
Analysis Batch: 39279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 39278

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1078		mg/Kg		108	70 - 130
Toluene	0.100	0.09299		mg/Kg		93	70 - 130
Ethylbenzene	0.100	0.09158		mg/Kg		92	70 - 130
m-Xylene & p-Xylene	0.200	0.1884		mg/Kg		94	70 - 130
o-Xylene	0.100	0.09176		mg/Kg		92	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		70 - 130
1,4-Difluorobenzene (Surr)	112		70 - 130

Lab Sample ID: LCSD 880-39278/2-A
Matrix: Solid
Analysis Batch: 39279

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 39278

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1105		mg/Kg		111	70 - 130	2	35
Toluene	0.100	0.09284		mg/Kg		93	70 - 130	0	35
Ethylbenzene	0.100	0.08721		mg/Kg		87	70 - 130	5	35
m-Xylene & p-Xylene	0.200	0.1780		mg/Kg		89	70 - 130	6	35
o-Xylene	0.100	0.08684		mg/Kg		87	70 - 130	6	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	91		70 - 130
1,4-Difluorobenzene (Surr)	118		70 - 130

Lab Sample ID: 880-21410-A-7-D MS
Matrix: Solid
Analysis Batch: 39279

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 39278

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00201	U	0.100	0.09370		mg/Kg		94	70 - 130
Toluene	<0.00201	U	0.100	0.07829		mg/Kg		78	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: YATES FEDERAL #001

Job ID: 890-3425-1
SDG: 03A1987020

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-21410-A-7-D MS
Matrix: Solid
Analysis Batch: 39279

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 39278

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
Ethylbenzene	<0.00201	U F1	0.100	0.07774		mg/Kg		78	70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.200	0.1580		mg/Kg		79	70 - 130
o-Xylene	<0.00201	U	0.100	0.07763		mg/Kg		77	70 - 130
		MS MS							
Surrogate	%Recovery	Qualifier	Limits						
4-Bromofluorobenzene (Surr)	98		70 - 130						
1,4-Difluorobenzene (Surr)	118		70 - 130						

Lab Sample ID: 880-21410-A-7-E MSD
Matrix: Solid
Analysis Batch: 39279

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 39278

Analyte	Sample	Sample	Spike Added	MSD	MSD	Unit	D	%Rec	%Rec Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier						
Benzene	<0.00201	U	0.0996	0.08232		mg/Kg		83	70 - 130	13	35
Toluene	<0.00201	U	0.0996	0.06954		mg/Kg		70	70 - 130	12	35
Ethylbenzene	<0.00201	U F1	0.0996	0.06887	F1	mg/Kg		69	70 - 130	12	35
m-Xylene & p-Xylene	<0.00402	U	0.199	0.1411		mg/Kg		71	70 - 130	11	35
o-Xylene	<0.00201	U	0.0996	0.07014		mg/Kg		70	70 - 130	10	35
		MSD MSD									
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	98		70 - 130								
1,4-Difluorobenzene (Surr)	116		70 - 130								

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-39172/1-A
Matrix: Solid
Analysis Batch: 39269

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 39172

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		11/10/22 08:48	11/11/22 09:30	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/10/22 08:48	11/11/22 09:30	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/10/22 08:48	11/11/22 09:30	1
		MB MB							
Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac		
1-Chlorooctane	119		70 - 130		11/10/22 08:48	11/11/22 09:30	1		
o-Terphenyl	134	S1+	70 - 130		11/10/22 08:48	11/11/22 09:30	1		

Lab Sample ID: LCS 880-39172/2-A
Matrix: Solid
Analysis Batch: 39269

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 39172

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Gasoline Range Organics (GRO)-C6-C10	1000	815.5		mg/Kg		82	70 - 130
Diesel Range Organics (Over C10-C28)	1000	846.7		mg/Kg		85	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: YATES FEDERAL #001

Job ID: 890-3425-1
SDG: 03A1987020

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 880-39172/2-A
Matrix: Solid
Analysis Batch: 39269

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 39172

Surrogate	LCS		Limits
	%Recovery	Qualifier	
1-Chlorooctane	94		70 - 130
o-Terphenyl	97		70 - 130

Lab Sample ID: LCSD 880-39172/3-A
Matrix: Solid
Analysis Batch: 39269

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 39172

Analyte	Spike Added	LCSD		Unit	D	%Rec	%Rec		RPD	Limit
		Result	Qualifier				Limits	RPD		
Gasoline Range Organics (GRO)-C6-C10	1000	1003	*1	mg/Kg		100	70 - 130	21	20	
Diesel Range Organics (Over C10-C28)	1000	950.2		mg/Kg		95	70 - 130	12	20	

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
1-Chlorooctane	107		70 - 130
o-Terphenyl	109		70 - 130

Lab Sample ID: 890-3402-A-1-G MS
Matrix: Solid
Analysis Batch: 39269

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 39172

Analyte	Sample Result	Sample Qualifier	Spike Added	MS		Unit	D	%Rec	%Rec	
				Result	Qualifier				Limits	RPD
Gasoline Range Organics (GRO)-C6-C10	55.1	*1	997	1007		mg/Kg		95	70 - 130	
Diesel Range Organics (Over C10-C28)	<50.0	U	997	861.7		mg/Kg		84	70 - 130	

Surrogate	MS		Limits
	%Recovery	Qualifier	
1-Chlorooctane	86		70 - 130
o-Terphenyl	79		70 - 130

Lab Sample ID: 890-3402-A-1-H MSD
Matrix: Solid
Analysis Batch: 39269

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 39172

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec		RPD	Limit
				Result	Qualifier				Limits	RPD		
Gasoline Range Organics (GRO)-C6-C10	55.1	*1	999	978.6		mg/Kg		92	70 - 130	3	20	
Diesel Range Organics (Over C10-C28)	<50.0	U	999	796.8		mg/Kg		77	70 - 130	8	20	

Surrogate	MSD		Limits
	%Recovery	Qualifier	
1-Chlorooctane	82		70 - 130
o-Terphenyl	73		70 - 130

QC Sample Results

Client: Ensolum
Project/Site: YATES FEDERAL #001

Job ID: 890-3425-1
SDG: 03A1987020

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-39268/1-A
Matrix: Solid
Analysis Batch: 39312

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			11/11/22 08:24	1

Lab Sample ID: LCS 880-39268/2-A
Matrix: Solid
Analysis Batch: 39312

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	265.6		mg/Kg		106	90 - 110

Lab Sample ID: LCSD 880-39268/3-A
Matrix: Solid
Analysis Batch: 39312

Client Sample ID: Lab Control Sample Dup
Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	263.2		mg/Kg		105	90 - 110	1	20

Lab Sample ID: 880-21445-A-1-B MS
Matrix: Solid
Analysis Batch: 39312

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	44.5		248	289.0		mg/Kg		99	90 - 110

Lab Sample ID: 880-21445-A-1-C MSD
Matrix: Solid
Analysis Batch: 39312

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	44.5		248	282.6		mg/Kg		96	90 - 110	2	20

QC Association Summary

Client: Ensolum
Project/Site: YATES FEDERAL #001

Job ID: 890-3425-1
SDG: 03A1987020

GC VOA

Prep Batch: 39278

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3425-1	PH01	Total/NA	Solid	5035	
MB 880-39278/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-39278/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-39278/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-21410-A-7-D MS	Matrix Spike	Total/NA	Solid	5035	
880-21410-A-7-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 39279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3425-1	PH01	Total/NA	Solid	8021B	39278
MB 880-39278/5-A	Method Blank	Total/NA	Solid	8021B	39278
LCS 880-39278/1-A	Lab Control Sample	Total/NA	Solid	8021B	39278
LCSD 880-39278/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	39278
880-21410-A-7-D MS	Matrix Spike	Total/NA	Solid	8021B	39278
880-21410-A-7-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	39278

Analysis Batch: 39344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3425-1	PH01	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 39172

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3425-1	PH01	Total/NA	Solid	8015NM Prep	
MB 880-39172/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-39172/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-39172/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3402-A-1-G MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3402-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 39269

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3425-1	PH01	Total/NA	Solid	8015B NM	39172
MB 880-39172/1-A	Method Blank	Total/NA	Solid	8015B NM	39172
LCS 880-39172/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	39172
LCSD 880-39172/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	39172
890-3402-A-1-G MS	Matrix Spike	Total/NA	Solid	8015B NM	39172
890-3402-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	39172

Analysis Batch: 39338

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3425-1	PH01	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 39268

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3425-1	PH01	Soluble	Solid	DI Leach	
MB 880-39268/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-39268/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-39268/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
 Project/Site: YATES FEDERAL #001

Job ID: 890-3425-1
 SDG: 03A1987020

HPLC/IC (Continued)

Leach Batch: 39268 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-21445-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-21445-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 39312

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3425-1	PH01	Soluble	Solid	300.0	39268
MB 880-39268/1-A	Method Blank	Soluble	Solid	300.0	39268
LCS 880-39268/2-A	Lab Control Sample	Soluble	Solid	300.0	39268
LCSD 880-39268/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	39268
880-21445-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	39268
880-21445-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	39268

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Lab Chronicle

Client: Ensolum
 Project/Site: YATES FEDERAL #001

Job ID: 890-3425-1
 SDG: 03A1987020

Client Sample ID: PH01

Lab Sample ID: 890-3425-1

Date Collected: 11/09/22 10:00

Matrix: Solid

Date Received: 11/09/22 16:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	39278	11/11/22 07:54	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	39279	11/11/22 13:45	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			39344	11/11/22 15:05	SM	EET MID
Total/NA	Analysis	8015 NM		1			39338	11/11/22 14:06	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	39172	11/11/22 10:00	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	39269	11/11/22 13:01	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	39268	11/11/22 15:00	KS	EET MID
Soluble	Analysis	300.0		1			39312	11/11/22 21:19	CH	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

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Accreditation/Certification Summary

Client: Ensolum
Project/Site: YATES FEDERAL #001

Job ID: 890-3425-1
SDG: 03A1987020

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-24	06-30-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

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Method Summary

Client: Ensolum
 Project/Site: YATES FEDERAL #001

Job ID: 890-3425-1
 SDG: 03A1987020

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	MCAWW	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET MID
DI Leach	Deionized Water Leaching Procedure	ASTM	EET MID

Protocol References:

- ASTM = ASTM International
- MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
- SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
- TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

- EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440



Sample Summary

Client: Ensolum
Project/Site: YATES FEDERAL #001

Job ID: 890-3425-1
SDG: 03A1987020

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3425-1	PH01	Solid	11/09/22 10:00	11/09/22 16:19	15

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Environment Testing
Xenco

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Chain of Custody

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager:	Joseph Hernandez	Bill to: (if different)	Jim Raley
Company Name:	Ensolum	Company Name:	WPPX
Address:	3122 National Parks HWY	Address:	5315 Buena Vista Dr.
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	281-702-2329	Email:	jhernandez@ensolum.com, jim.raley@dvn.com

Program: UST/PST <input type="checkbox"/> PRP <input type="checkbox"/> Brownfields <input type="checkbox"/> RRC <input type="checkbox"/> Superfund <input type="checkbox"/> State of Project: _____ Reporting: Level II <input type="checkbox"/> Level III <input type="checkbox"/> PST/UST <input type="checkbox"/> TRRP <input type="checkbox"/> Level IV <input type="checkbox"/> Deliverables: EDD <input type="checkbox"/> ADAPT <input type="checkbox"/> Other: _____	
--	--

Project Name:	Yates Federal #001	Turn Around	<input type="checkbox"/> Routine <input checked="" type="checkbox"/> Rush	Pres. Code	
Project Number:	03A1987020	Due Date:	24 HR	ANALYSIS REQUEST	
Project Location:	Rural Eddy, NM	TAT starts the day received by the lab, if received by 4:30pm			
Sampler's Name:	Gilbert Moreno	Temp Blank:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Wet Ice:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
CC #:	1061159301	Thermometer ID:	NW007	Barcode: 890-3425 Chain of Custody 	
SAMPLE RECEIPT		Cooler Custody Seals:	Yes No	Correction Factor:	-0.2
		Sample Custody Seals:	Yes No	Temperature Reading:	4.6
		Total Containers:		Corrected Temperature:	4.4

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Parameters	Sample Comments
PH01	S	11.9.22	10:00	15'	Grab/1	1	CHLORIDES (EPA: 300.0) TPH (8015) BTEX (8021)	Incident ID NAB1428734057 NRM2011138650
<i>(Handwritten signature and date 11.9.22)</i>								

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO₂ Na Sr Ti Sn U V Zn
 Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>(Signature)</i>	<i>(Signature)</i>	11.9.22 10:19			

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3425-1

SDG Number: 03A1987020

Login Number: 3425

List Number: 1

Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	N/A	Refer to Job Narrative for details.
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

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Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3425-1

SDG Number: 03A1987020

Login Number: 3425

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 11/11/22 10:46 AM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

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Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Anna Byers
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 5/26/2023 11:51:34 AM Revision 2

JOB DESCRIPTION

Yates Fed #001
SDG NUMBER 03a1987020

JOB NUMBER

890-2309-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220



Eurofins Carlsbad

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



Generated
5/26/2023 11:51:34 AM
Revision 2

Authorized for release by
Holly Taylor, Project Manager
Holly.Taylor@et.eurofinsus.com
Designee for
Jessica Kramer, Project Manager
Jessica.Kramer@et.eurofinsus.com
(432)704-5440

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Client: Ensolum
Project/Site: Yates Fed #001

Laboratory Job ID: 890-2309-1
SDG: 03a1987020

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Definitions/Glossary

Client: Ensolum
Project/Site: Yates Fed #001

Job ID: 890-2309-1
SDG: 03a1987020

Qualifiers

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Ensolum
Project/Site: Yates Fed #001

Job ID: 890-2309-1
SDG: 03a1987020

Job ID: 890-2309-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-2309-1

Comments

No additional comments.

Revision

The report being provided is a revision of the original report sent on 5/18/2022. The report (revision 2) is being revised to change sample ID from PH02 @2' to PH02 @12' per Gilbert Moreno (email).

Report revision history

Revision 1 - 11/15/2022 - Reason - Per client email, requesting letters A and B be removed from sample names.

Receipt

The samples were received on 5/12/2022 4:43 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 8.2° C.

GC VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

Method 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-25610 and analytical batch 880-25679 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.



Client Sample Results

Client: Ensolum
Project/Site: Yates Fed #001Job ID: 890-2309-1
SDG: 03a1987020

Client Sample ID: PH01

Lab Sample ID: 890-2309-1

Date Collected: 05/12/22 10:25

Matrix: Solid

Date Received: 05/12/22 16:43

Sample Depth: 4

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		05/16/22 13:04	05/17/22 00:05	1
Toluene	<0.00201	U	0.00201		mg/Kg		05/16/22 13:04	05/17/22 00:05	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		05/16/22 13:04	05/17/22 00:05	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		05/16/22 13:04	05/17/22 00:05	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		05/16/22 13:04	05/17/22 00:05	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		05/16/22 13:04	05/17/22 00:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	114		70 - 130	05/16/22 13:04	05/17/22 00:05	1
1,4-Difluorobenzene (Surr)	94		70 - 130	05/16/22 13:04	05/17/22 00:05	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			05/17/22 11:08	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			05/17/22 09:43	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		05/16/22 08:41	05/16/22 15:15	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		05/16/22 08:41	05/16/22 15:15	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		05/16/22 08:41	05/16/22 15:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	100		70 - 130	05/16/22 08:41	05/16/22 15:15	1
o-Terphenyl	101		70 - 130	05/16/22 08:41	05/16/22 15:15	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1700	F1	50.0		mg/Kg			05/17/22 21:46	10

Client Sample ID: PH01

Lab Sample ID: 890-2309-2

Date Collected: 05/12/22 10:30

Matrix: Solid

Date Received: 05/12/22 16:43

Sample Depth: 10

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/16/22 13:04	05/17/22 00:25	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/16/22 13:04	05/17/22 00:25	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/16/22 13:04	05/17/22 00:25	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		05/16/22 13:04	05/17/22 00:25	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/16/22 13:04	05/17/22 00:25	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		05/16/22 13:04	05/17/22 00:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		70 - 130	05/16/22 13:04	05/17/22 00:25	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: Yates Fed #001Job ID: 890-2309-1
SDG: 03a1987020

Client Sample ID: PH01

Lab Sample ID: 890-2309-2

Date Collected: 05/12/22 10:30

Matrix: Solid

Date Received: 05/12/22 16:43

Sample Depth: 10

Method: SW846 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	95		70 - 130	05/16/22 13:04	05/17/22 00:25	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			05/17/22 11:08	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			05/17/22 09:43	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		05/16/22 08:41	05/16/22 15:36	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		05/16/22 08:41	05/16/22 15:36	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		05/16/22 08:41	05/16/22 15:36	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
1-Chlorooctane	100		70 - 130	05/16/22 08:41	05/16/22 15:36	1			
o-Terphenyl	104		70 - 130	05/16/22 08:41	05/16/22 15:36	1			

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5270		99.8		mg/Kg			05/17/22 22:05	20

Client Sample ID: PH02

Lab Sample ID: 890-2309-3

Date Collected: 05/12/22 12:00

Matrix: Solid

Date Received: 05/12/22 16:43

Sample Depth: 10

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		05/16/22 13:04	05/17/22 00:45	1
Toluene	<0.00202	U	0.00202		mg/Kg		05/16/22 13:04	05/17/22 00:45	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		05/16/22 13:04	05/17/22 00:45	1
m-Xylene & p-Xylene	<0.00404	U	0.00404		mg/Kg		05/16/22 13:04	05/17/22 00:45	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		05/16/22 13:04	05/17/22 00:45	1
Xylenes, Total	<0.00404	U	0.00404		mg/Kg		05/16/22 13:04	05/17/22 00:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		70 - 130	05/16/22 13:04	05/17/22 00:45	1
1,4-Difluorobenzene (Surr)	97		70 - 130	05/16/22 13:04	05/17/22 00:45	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404		mg/Kg			05/17/22 11:08	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			05/17/22 09:43	1

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Client Sample Results

Client: Ensolum
Project/Site: Yates Fed #001Job ID: 890-2309-1
SDG: 03a1987020

Client Sample ID: PH02

Date Collected: 05/12/22 12:00

Date Received: 05/12/22 16:43

Sample Depth: 10

Lab Sample ID: 890-2309-3

Matrix: Solid

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		05/16/22 08:41	05/16/22 15:58	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		05/16/22 08:41	05/16/22 15:58	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		05/16/22 08:41	05/16/22 15:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	104		70 - 130	05/16/22 08:41	05/16/22 15:58	1
o-Terphenyl	107		70 - 130	05/16/22 08:41	05/16/22 15:58	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	157		25.0		mg/Kg			05/17/22 22:11	5

Client Sample ID: PH02

Date Collected: 05/12/22 12:05

Date Received: 05/12/22 16:43

Sample Depth: 12

Lab Sample ID: 890-2309-4

Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		05/16/22 13:04	05/17/22 01:06	1
Toluene	<0.00202	U	0.00202		mg/Kg		05/16/22 13:04	05/17/22 01:06	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		05/16/22 13:04	05/17/22 01:06	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		05/16/22 13:04	05/17/22 01:06	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		05/16/22 13:04	05/17/22 01:06	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		05/16/22 13:04	05/17/22 01:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		70 - 130	05/16/22 13:04	05/17/22 01:06	1
1,4-Difluorobenzene (Surr)	96		70 - 130	05/16/22 13:04	05/17/22 01:06	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403		mg/Kg			05/17/22 11:08	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			05/17/22 09:43	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		05/16/22 08:41	05/16/22 16:20	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		05/16/22 08:41	05/16/22 16:20	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		05/16/22 08:41	05/16/22 16:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	107		70 - 130	05/16/22 08:41	05/16/22 16:20	1
o-Terphenyl	107		70 - 130	05/16/22 08:41	05/16/22 16:20	1

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Client Sample Results

Client: Ensolum
Project/Site: Yates Fed #001

Job ID: 890-2309-1
SDG: 03a1987020

Client Sample ID: PH02

Lab Sample ID: 890-2309-4

Date Collected: 05/12/22 12:05

Matrix: Solid

Date Received: 05/12/22 16:43

Sample Depth: 12

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	177		24.8		mg/Kg			05/17/22 22:18	5

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Surrogate Summary

Client: Ensolum
Project/Site: Yates Fed #001

Job ID: 890-2309-1
SDG: 03a1987020

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB1	DFBZ1
		(70-130)	(70-130)
890-2308-A-1-C MS	Matrix Spike	105	94
890-2308-A-1-D MSD	Matrix Spike Duplicate	106	96
890-2309-1	PH01	114	94
890-2309-2	PH01	115	95
890-2309-3	PH02	109	97
890-2309-4	PH02	115	96
LCS 880-25634/1-A	Lab Control Sample	103	95
LCSD 880-25634/2-A	Lab Control Sample Dup	101	94
MB 880-25578/5-A	Method Blank	101	93
MB 880-25634/5-A	Method Blank	103	92

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	1CO1	OTPH1
		(70-130)	(70-130)
890-2307-A-1-C MS	Matrix Spike	100	88
890-2307-A-1-D MSD	Matrix Spike Duplicate	98	87
890-2309-1	PH01	100	101
890-2309-2	PH01	100	104
890-2309-3	PH02	104	107
890-2309-4	PH02	107	107
LCS 880-25590/2-A	Lab Control Sample	113	104
LCSD 880-25590/3-A	Lab Control Sample Dup	108	104
MB 880-25590/1-A	Method Blank	113	123

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: Yates Fed #001

Job ID: 890-2309-1
SDG: 03a1987020

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-25578/5-A
Matrix: Solid
Analysis Batch: 25591

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 25578

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/15/22 16:33	05/16/22 11:44	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/15/22 16:33	05/16/22 11:44	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/15/22 16:33	05/16/22 11:44	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		05/15/22 16:33	05/16/22 11:44	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/15/22 16:33	05/16/22 11:44	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		05/15/22 16:33	05/16/22 11:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		70 - 130	05/15/22 16:33	05/16/22 11:44	1
1,4-Difluorobenzene (Surr)	93		70 - 130	05/15/22 16:33	05/16/22 11:44	1

Lab Sample ID: MB 880-25634/5-A
Matrix: Solid
Analysis Batch: 25591

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 25634

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/16/22 13:04	05/16/22 22:21	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/16/22 13:04	05/16/22 22:21	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/16/22 13:04	05/16/22 22:21	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		05/16/22 13:04	05/16/22 22:21	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/16/22 13:04	05/16/22 22:21	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		05/16/22 13:04	05/16/22 22:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130	05/16/22 13:04	05/16/22 22:21	1
1,4-Difluorobenzene (Surr)	92		70 - 130	05/16/22 13:04	05/16/22 22:21	1

Lab Sample ID: LCS 880-25634/1-A
Matrix: Solid
Analysis Batch: 25591

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 25634

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09542		mg/Kg		95	70 - 130
Toluene	0.100	0.1003		mg/Kg		100	70 - 130
Ethylbenzene	0.100	0.1024		mg/Kg		102	70 - 130
m-Xylene & p-Xylene	0.200	0.2061		mg/Kg		103	70 - 130
o-Xylene	0.100	0.1042		mg/Kg		104	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

Lab Sample ID: LCSD 880-25634/2-A
Matrix: Solid
Analysis Batch: 25591

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 25634

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.08697		mg/Kg		87	70 - 130	9	35

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QC Sample Results

Client: Ensolum
Project/Site: Yates Fed #001Job ID: 890-2309-1
SDG: 03a1987020

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: LCSD 880-25634/2-A

Matrix: Solid

Analysis Batch: 25591

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 25634

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene	0.100	0.09254		mg/Kg		93	70 - 130	8	35
Ethylbenzene	0.100	0.09409		mg/Kg		94	70 - 130	8	35
m-Xylene & p-Xylene	0.200	0.1904		mg/Kg		95	70 - 130	8	35
o-Xylene	0.100	0.09588		mg/Kg		96	70 - 130	8	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

Lab Sample ID: 890-2308-A-1-C MS

Matrix: Solid

Analysis Batch: 25591

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 25634

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.101	0.07755		mg/Kg		77	70 - 130
Toluene	<0.00199	U	0.101	0.08392		mg/Kg		83	70 - 130
Ethylbenzene	<0.00199	U	0.101	0.08638		mg/Kg		86	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.201	0.1758		mg/Kg		87	70 - 130
o-Xylene	<0.00199	U	0.101	0.08967		mg/Kg		89	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	105		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

Lab Sample ID: 890-2308-A-1-D MSD

Matrix: Solid

Analysis Batch: 25591

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 25634

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.100	0.08053		mg/Kg		80	70 - 130	4	35
Toluene	<0.00199	U	0.100	0.08566		mg/Kg		85	70 - 130	2	35
Ethylbenzene	<0.00199	U	0.100	0.08559		mg/Kg		85	70 - 130	1	35
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1783		mg/Kg		89	70 - 130	1	35
o-Xylene	<0.00199	U	0.100	0.09019		mg/Kg		90	70 - 130	1	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-25590/1-A

Matrix: Solid

Analysis Batch: 25580

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 25590

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		05/16/22 08:41	05/16/22 11:32	1

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QC Sample Results

Client: Ensolum
 Project/Site: Yates Fed #001

Job ID: 890-2309-1
 SDG: 03a1987020

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 880-25590/1-A
Matrix: Solid
Analysis Batch: 25580

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 25590

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		05/16/22 08:41	05/16/22 11:32	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		05/16/22 08:41	05/16/22 11:32	1
Surrogate	MB MB		Limits				Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
1-Chlorooctane	113		70 - 130				05/16/22 08:41	05/16/22 11:32	1
o-Terphenyl	123		70 - 130				05/16/22 08:41	05/16/22 11:32	1

Lab Sample ID: LCS 880-25590/2-A
Matrix: Solid
Analysis Batch: 25580

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 25590

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Diesel Range Organics (Over C10-C28)	1000	927.4		mg/Kg		93	70 - 130
Surrogate	LCS LCS		Limits				%Rec
	%Recovery	Qualifier					
1-Chlorooctane	113		70 - 130				
o-Terphenyl	104		70 - 130				

Lab Sample ID: LCSD 880-25590/3-A
Matrix: Solid
Analysis Batch: 25580

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 25590

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Diesel Range Organics (Over C10-C28)	1000	884.5		mg/Kg		88	70 - 130	5	20
Surrogate	LCSD LCSD		Limits				%Rec	RPD	Limit
	%Recovery	Qualifier							
1-Chlorooctane	108		70 - 130						
o-Terphenyl	104		70 - 130						

Lab Sample ID: 890-2307-A-1-C MS
Matrix: Solid
Analysis Batch: 25580

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 25590

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Diesel Range Organics (Over C10-C28)	<50.0	U	1000	903.5		mg/Kg		90	70 - 130
Surrogate	MS MS		Limits					%Rec	Limit
	%Recovery	Qualifier							
1-Chlorooctane	100		70 - 130						
o-Terphenyl	88		70 - 130						

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QC Sample Results

Client: Ensolum
Project/Site: Yates Fed #001

Job ID: 890-2309-1
SDG: 03a1987020

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 890-2307-A-1-D MSD
Matrix: Solid
Analysis Batch: 25580

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 25590

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	1250		mg/Kg		121	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	<50.0	U	998	948.0		mg/Kg		95	70 - 130	5	20
Surrogate	%Recovery	MSD Qualifier	MSD Limits								
1-Chlorooctane	98		70 - 130								
o-Terphenyl	87		70 - 130								

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-25610/1-A
Matrix: Solid
Analysis Batch: 25679

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			05/17/22 21:27	1

Lab Sample ID: LCS 880-25610/2-A
Matrix: Solid
Analysis Batch: 25679

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	274.3		mg/Kg		110	90 - 110

Lab Sample ID: LCSD 880-25610/3-A
Matrix: Solid
Analysis Batch: 25679

Client Sample ID: Lab Control Sample Dup
Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	260.6		mg/Kg		104	90 - 110	5	20

Lab Sample ID: 890-2309-1 MS
Matrix: Solid
Analysis Batch: 25679

Client Sample ID: PH01
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	1700	F1	2500	4240		mg/Kg		102	90 - 110

Lab Sample ID: 890-2309-1 MSD
Matrix: Solid
Analysis Batch: 25679

Client Sample ID: PH01
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1700	F1	2500	4752	F1	mg/Kg		122	90 - 110	11	20

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QC Association Summary

Client: Ensolum
Project/Site: Yates Fed #001Job ID: 890-2309-1
SDG: 03a1987020

GC VOA

Prep Batch: 25578

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-25578/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 25591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2309-1	PH01	Total/NA	Solid	8021B	25634
890-2309-2	PH01	Total/NA	Solid	8021B	25634
890-2309-3	PH02	Total/NA	Solid	8021B	25634
890-2309-4	PH02	Total/NA	Solid	8021B	25634
MB 880-25578/5-A	Method Blank	Total/NA	Solid	8021B	25578
MB 880-25634/5-A	Method Blank	Total/NA	Solid	8021B	25634
LCS 880-25634/1-A	Lab Control Sample	Total/NA	Solid	8021B	25634
LCSD 880-25634/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	25634
890-2308-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	25634
890-2308-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	25634

Prep Batch: 25634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2309-1	PH01	Total/NA	Solid	5035	
890-2309-2	PH01	Total/NA	Solid	5035	
890-2309-3	PH02	Total/NA	Solid	5035	
890-2309-4	PH02	Total/NA	Solid	5035	
MB 880-25634/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-25634/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-25634/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2308-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
890-2308-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 25708

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2309-1	PH01	Total/NA	Solid	Total BTEX	
890-2309-2	PH01	Total/NA	Solid	Total BTEX	
890-2309-3	PH02	Total/NA	Solid	Total BTEX	
890-2309-4	PH02	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 25580

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2309-1	PH01	Total/NA	Solid	8015B NM	25590
890-2309-2	PH01	Total/NA	Solid	8015B NM	25590
890-2309-3	PH02	Total/NA	Solid	8015B NM	25590
890-2309-4	PH02	Total/NA	Solid	8015B NM	25590
MB 880-25590/1-A	Method Blank	Total/NA	Solid	8015B NM	25590
LCS 880-25590/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	25590
LCSD 880-25590/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	25590
890-2307-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	25590
890-2307-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	25590

Prep Batch: 25590

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2309-1	PH01	Total/NA	Solid	8015NM Prep	

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: Yates Fed #001Job ID: 890-2309-1
SDG: 03a1987020

GC Semi VOA (Continued)

Prep Batch: 25590 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2309-2	PH01	Total/NA	Solid	8015NM Prep	
890-2309-3	PH02	Total/NA	Solid	8015NM Prep	
890-2309-4	PH02	Total/NA	Solid	8015NM Prep	
MB 880-25590/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-25590/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-25590/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2307-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2307-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 25682

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2309-1	PH01	Total/NA	Solid	8015 NM	
890-2309-2	PH01	Total/NA	Solid	8015 NM	
890-2309-3	PH02	Total/NA	Solid	8015 NM	
890-2309-4	PH02	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 25610

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2309-1	PH01	Soluble	Solid	DI Leach	
890-2309-2	PH01	Soluble	Solid	DI Leach	
890-2309-3	PH02	Soluble	Solid	DI Leach	
890-2309-4	PH02	Soluble	Solid	DI Leach	
MB 880-25610/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-25610/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-25610/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2309-1 MS	PH01	Soluble	Solid	DI Leach	
890-2309-1 MSD	PH01	Soluble	Solid	DI Leach	

Analysis Batch: 25679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2309-1	PH01	Soluble	Solid	300.0	25610
890-2309-2	PH01	Soluble	Solid	300.0	25610
890-2309-3	PH02	Soluble	Solid	300.0	25610
890-2309-4	PH02	Soluble	Solid	300.0	25610
MB 880-25610/1-A	Method Blank	Soluble	Solid	300.0	25610
LCS 880-25610/2-A	Lab Control Sample	Soluble	Solid	300.0	25610
LCSD 880-25610/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	25610
890-2309-1 MS	PH01	Soluble	Solid	300.0	25610
890-2309-1 MSD	PH01	Soluble	Solid	300.0	25610

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: Yates Fed #001

Job ID: 890-2309-1
SDG: 03a1987020

Client Sample ID: PH01
Date Collected: 05/12/22 10:25
Date Received: 05/12/22 16:43

Lab Sample ID: 890-2309-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	25634	05/16/22 13:04	MNR	EET MID
Total/NA	Analysis	8021B		1			25591	05/17/22 00:05	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			25708	05/17/22 11:08	SM	EET MID
Total/NA	Analysis	8015 NM		1			25682	05/17/22 09:43	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	25590	05/16/22 08:41	DM	EET MID
Total/NA	Analysis	8015B NM		1			25580	05/16/22 15:15	AJ	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	25610	05/16/22 10:43	CH	EET MID
Soluble	Analysis	300.0		10			25679	05/17/22 21:46	CH	EET MID

Client Sample ID: PH01
Date Collected: 05/12/22 10:30
Date Received: 05/12/22 16:43

Lab Sample ID: 890-2309-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	25634	05/16/22 13:04	MNR	EET MID
Total/NA	Analysis	8021B		1			25591	05/17/22 00:25	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			25708	05/17/22 11:08	SM	EET MID
Total/NA	Analysis	8015 NM		1			25682	05/17/22 09:43	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	25590	05/16/22 08:41	DM	EET MID
Total/NA	Analysis	8015B NM		1			25580	05/16/22 15:36	AJ	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	25610	05/16/22 10:43	CH	EET MID
Soluble	Analysis	300.0		20			25679	05/17/22 22:05	CH	EET MID

Client Sample ID: PH02
Date Collected: 05/12/22 12:00
Date Received: 05/12/22 16:43

Lab Sample ID: 890-2309-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	25634	05/16/22 13:04	MNR	EET MID
Total/NA	Analysis	8021B		1			25591	05/17/22 00:45	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			25708	05/17/22 11:08	SM	EET MID
Total/NA	Analysis	8015 NM		1			25682	05/17/22 09:43	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	25590	05/16/22 08:41	DM	EET MID
Total/NA	Analysis	8015B NM		1			25580	05/16/22 15:58	AJ	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	25610	05/16/22 10:43	CH	EET MID
Soluble	Analysis	300.0		5			25679	05/17/22 22:11	CH	EET MID

Client Sample ID: PH02
Date Collected: 05/12/22 12:05
Date Received: 05/12/22 16:43

Lab Sample ID: 890-2309-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	25634	05/16/22 13:04	MNR	EET MID
Total/NA	Analysis	8021B		1			25591	05/17/22 01:06	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			25708	05/17/22 11:08	SM	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: Yates Fed #001

Job ID: 890-2309-1
SDG: 03a1987020

Client Sample ID: PH02

Lab Sample ID: 890-2309-4

Date Collected: 05/12/22 12:05

Matrix: Solid

Date Received: 05/12/22 16:43

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			25682	05/17/22 09:43	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	25590	05/16/22 08:41	DM	EET MID
Total/NA	Analysis	8015B NM		1			25580	05/16/22 16:20	AJ	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	25610	05/16/22 10:43	CH	EET MID
Soluble	Analysis	300.0		5			25679	05/17/22 22:18	CH	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

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Accreditation/Certification Summary

Client: Ensolum
Project/Site: Yates Fed #001

Job ID: 890-2309-1
SDG: 03a1987020

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-25	06-30-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

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Method Summary

Client: Ensolum
Project/Site: Yates Fed #001

Job ID: 890-2309-1
SDG: 03a1987020

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET MID
DI Leach	Deionized Water Leaching Procedure	ASTM	EET MID

Protocol References:

- ASTM = ASTM International
- EPA = US Environmental Protection Agency
- SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
- TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

- EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440



Sample Summary

Client: Ensolum
Project/Site: Yates Fed #001

Job ID: 890-2309-1
SDG: 03a1987020

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2309-1	PH01	Solid	05/12/22 10:25	05/12/22 16:43	4
890-2309-2	PH01	Solid	05/12/22 10:30	05/12/22 16:43	10
890-2309-3	PH02	Solid	05/12/22 12:00	05/12/22 16:43	10
890-2309-4	PH02	Solid	05/12/22 12:05	05/12/22 16:43	12

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Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Environment Testing
Xenco



Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager: Anna Byers	Bill to: (if different) Jim Raley
Company Name: ENSOLUM	Company Name: WPX DEVON
Address: 3122 NATL. PARKS HWY.	Address: 5315 BUENA VISTA DR.
City, State ZIP: Carlsbad NM 88220	City, State ZIP: Carlsbad, NM 88220
Phone: 575-200-6754	Email: abyers@ensolum.com

Project Name: YATES Fed. #001	Turn Around Routine <input checked="" type="checkbox"/> Rush <input type="checkbox"/>	Pres. Code
Project Number: 03A1987020	Due Date:	
Project Location: YATES Fed. #001	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name: Liz Chrell	Temp Blank: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Wet Ice: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
PO #: _____	Thermometer ID: 1111-0071	Correction Factor: -0.2
SAMPLE RECEIPT	Temperature Reading: 8.7	Corrected Temperature: 8.2
Samples Received Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Temperature Reading: _____	Corrected Temperature: _____
Cooler Custody Seals: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Temperature Reading: _____	Corrected Temperature: _____
Sample Custody Seals: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Temperature Reading: _____	Corrected Temperature: _____
Total Containers: _____	Temperature Reading: _____	Corrected Temperature: _____

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	ANALYSIS REQUEST		Preservative Codes
							Parameters	Sample Comments	
PHD1A	S	5/12/22	10:25	4'	G	1	Chondes (CPA:500)		None: NO Cool: Cool HCl: HC H ₂ SO ₄ : H ₂ H ₃ PO ₄ : HP NaHSO ₄ : NABIS Na ₂ S ₂ O ₃ : NaSO ₃ Zn Acetate+NaOH: Zn NaOH+Ascorbic Acid: SACP
PHD1B	S	5/12/22	10:30	10'	G	1	TRH (8015)		
PHD2A	S	5/12/22	12:00	10'	G	1	BTEX (8021)		
PHD2B	S	5/12/22	12:05	12'	G	1			

Total 2007/6010 200.8/6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO₂ Na Sr Ti Sn U V Zn
 Circle Method(s) and Metal(s) to be analyzed TCLP/SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>[Signature]</i>
Date/Time: 5/12/22 16:43	Date/Time: _____

Revised Date: 08/25/2020 Rev. 2020.2



Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2309-1
SDG Number: 03a1987020

Login Number: 2309
List Number: 1
Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

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Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2309-1
SDG Number: 03a1987020

Login Number: 2309
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 05/16/22 09:25 AM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

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APPENDIX H

NMOCD Notifications

From: [Erick Herrera](#)
To: [Joseph Hernandez](#)
Subject: FW: [EXTERNAL] WPX Site Sampling Activity Update (11/7 - 11/11)
Date: Tuesday, December 20, 2022 4:46:57 PM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)



Erick Herrera

Staff Geologist
281-777-4152
Ensolum, LLC
in f t

From: Nobui, Jennifer, EMNRD <Jennifer.Nobui@emnrd.nm.gov>
Sent: Wednesday, November 2, 2022 3:58 PM
To: Erick Herrera <eherrera@ensolum.com>
Cc: Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>
Subject: FW: [EXTERNAL] WPX Site Sampling Activity Update (11/7 - 11/11)

[**EXTERNAL EMAIL**]

Erick

Thank you for the notification. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Thanks,
Jennifer Nobui

From: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Sent: Wednesday, November 2, 2022 11:54 AM
To: Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; Nobui, Jennifer, EMNRD <Jennifer.Nobui@emnrd.nm.gov>
Subject: FW: [EXTERNAL] WPX Site Sampling Activity Update (11/7 - 11/11)

Jocelyn Harimon • Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
1220 South St. Francis Drive | Santa Fe, NM 87505
(505)469-2821 | Jocelyn.Harimon@state.nm.us
[http:// www.emnrd.nm.gov](http://www.emnrd.nm.gov)



From: Erick Herrera <eherrera@ensolum.com>
Sent: Wednesday, November 2, 2022 11:52 AM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>; 'CFO_Spill, BLM_NM' <blm_nm_cfo_spill@blm.gov>
Cc: Raley, Jim <jim.raley@dvn.com>; Devon-Team <Devon-Team@ensolum.com>
Subject: [EXTERNAL] WPX Site Sampling Activity Update (11/7 - 11/11)

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Good afternoon,

WPX anticipates conducting confirmation soil sampling activities at the following sites between November 7th – November 11th, 2022:

Site Name: LVP #001
API: 30-015-42234
Incident Number: nAPP2135033453

Site Name: RDX 21-44
API: 30-015-41193
Incident Number: nAPP2115533694

Site Name: UCBH WW ROW
API: 30-015-24451, 30-015-24034
Incident Numbers: nAB1805133508, nAB1501655607, nAB1522341642, nAB1621453181, nAB1633639499

Site Name: Ross Draw Unit #034
API: 30-015-41578
Incident Numbers: nAPP2107554265, NAB1736055339, and NAB1528240224

Site Name: Yates Federal #001
API: 30-015-24602
Incident Number: NRM2011138650 and NAB1428734057

Site Name: Pecos Federal #001Y
API: 30-015-24875

Incident Number: nAPP2208846424

Site Name: MWJ Federal 1

API: 30-015-24262

Incident Numbers: nAB1503440420, nAB1524652333, and nAB1719940724



Erick Hererra

Staff Geologist

281-777-4152

Ensolum, LLC

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PLEASE NOTE OUR NEW CORPORATE ADDRESS:

Ensolum, LLC

8330 LBJ Freeway, Ste. B830

Dallas, TX 75243

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 227725

CONDITIONS

Operator: WPX Energy Permian, LLC Devon Energy - Regulatory Oklahoma City, OK 73102	OGRID: 246289
	Action Number: 227725
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	Work plan approved with the following condition:	11/27/2023
amaxwell	Horizontal delineation must meet the requirements of the reclamation standards 19.15.29.13 NMAC (600 mg/kg Cl, 100 mg/kg TPH, 50 mg/kg BTEX, 10 mg/kg benzene) or OCD approved "background" values for the upper 4 feet of the impacted area.	11/27/2023
amaxwell	Submit report via the OCD permitting portal by February 19, 2024.	11/27/2023