District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	
District RP	
Facility ID	
Application ID	

NMOCD
JUN 27 2019
DISTRICT III

Release Notification

Responsible Party

Responsible Party: **Enduring Resources**	OGRID: **372286**
Contact Name: **Chad Snell**	Contact Telephone: **(505)444-0586**
Contact email: **csnell@enduringresources.com**	Incident # *(assigned by OCD)*: **NCS1913036817**
Contact mailing address: **200 Energy Court**	**Farmington, New Mexico 87401**

Location of Release Source

Latitude **36.198966** Longitude **-107.793331**
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: **Kimbeto Wash 771H Pipeline**	Site Type: Pipe Line
Date Release Discovered: **4/22/2019**	API# *(if applicable)* **30-045-35756**

Unit Letter	Section	Township	Range	County
P	**17**	**23.0 N**	**9W**	**San Juan**

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)

☒ Crude Oil	Volume Released (bbls) **7.5bbls**	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls):	Volume Recovered (bbls):
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release
On 4-22-19 at 2:00 in the afternoon, a spill was discovered @ the Kimbeto Wash 771H pipe line. The release was caused by a loose flange. The spill was measured and calculated, coming out to 7.5 bbls. Clean up activities and closure sampling have been completed.

53

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ 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.

☐ The source of the release has been stopped.

☐ The impacted area has been secured to protect human health and the environment.

☐ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

☐ 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: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	205 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☒ Yes ☐ 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)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ 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?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☒ Yes ☐ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ 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

Incident ID	
District RP	
Facility ID	
Application ID	

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: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
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: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

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

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

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: **Chad Snell** Title: **HSE Tech**

Signature: [signature] Date: 6-24-19

email: **csnell@enduringresources.com** Telephone: **(505)444-0586**

OCD Only

Received by: OCD Date: 6/27/19

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

Closure Approved by: [signature] Date: 7/10/19

Printed Name: Cory Title: Environmental Spec.

Kimbeto Wash 771H Pipeline Release Remediation Narrative

4/22/2019

At 2 in the afternoon, a spill was occurred at the Kimbeto Wash 771H pipeline. The release was caused by a loose flange. The spill was measured and calculated, coming out to 7.5 bbls. The loose flange was tightened stopping the release.

5/1/2019

Clean-up activities were completed, approximately 90 yards of contaminated soil was removed. The site was ranked at the most stringent closure criteria (Benzene: 10 ppm, BTEX: 50 ppm, TPH: 100 ppm, and Chlorides 600 ppm) due to a wash being less than 300ft away as well as a wetland. See attached "*Wetlands Map*" and "*NMOCD Map*".

5/14/2019

Email notification was sent to the NMOCD and the BLM that sampling activities would take place on Thursday May 16th 2019 after sampling activities after the EL #1. See attached *"Email Notification"*.

5/16/2019

Enduring personnel was onsite to perform sampling activities. The NMOCD nor the BLM was able to witness sampling. Six composite samples were taken from excavated area and sent in for analysis of BTEX, GRO/DRO/ORO and Chlorides.

5/28/2019

Analytical Report was received and all sections sampled, except for one (Bottom North) was below closure criteria (Benzene: 10 ppm, BTEX: 50 ppm, TPH: 100 ppm, and Chlorides 600 ppm).

6/3/2019

Further clean-up activities on the section that failed (Bottom North) were completed. Approximately 6 yards were removed from area.

6/5/2019

Email notification was sent to NMOCD that sampling activities for the previously failed section would take place Friday June 7th 2019 at 9:00am.

6/7/2019

Enduring personnel was onsite to collect composite sample, NMOCD was not onsite to witness. Composite sample was sent in for analysis of (BTEX, DRO/GRO/ORO, and Chlorides).

6/11/2019

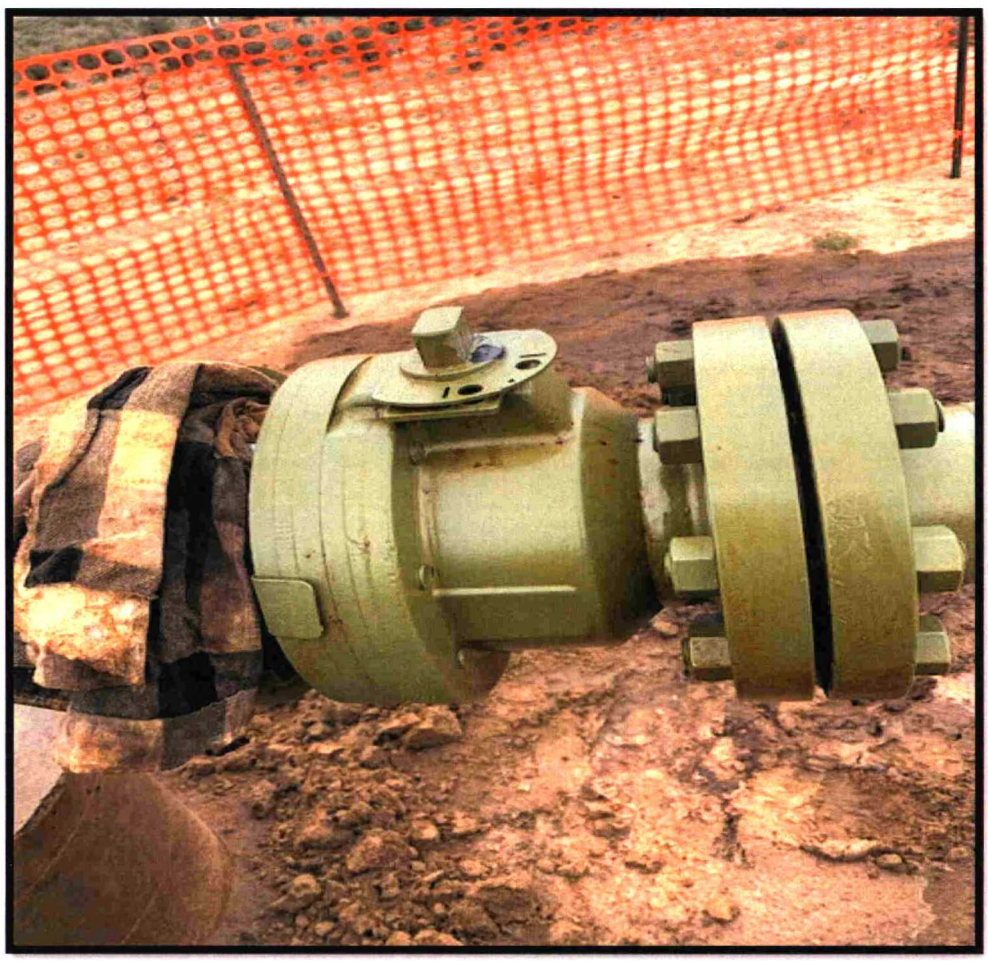
Analytical report was received and results were below closure criteria and no further action is required.

6/19/2019

Excavation was backfilled.

Enduring Resources, LLC
Photo Page
Kimbeto Wash Pipeline Release
30-045-35756

Photos: Impacted Area



Enduring Resources, LLC
Photo Page
Kimbeto Wash Pipeline Release
30-045-35756

Enduring Resources, LLC
Photo Page
Kimbeto Wash Pipeline Release
30-045-35756

Enduring Resources, LLC
Photo Page
Kimbeto Wash Pipeline Release
30-045-35756

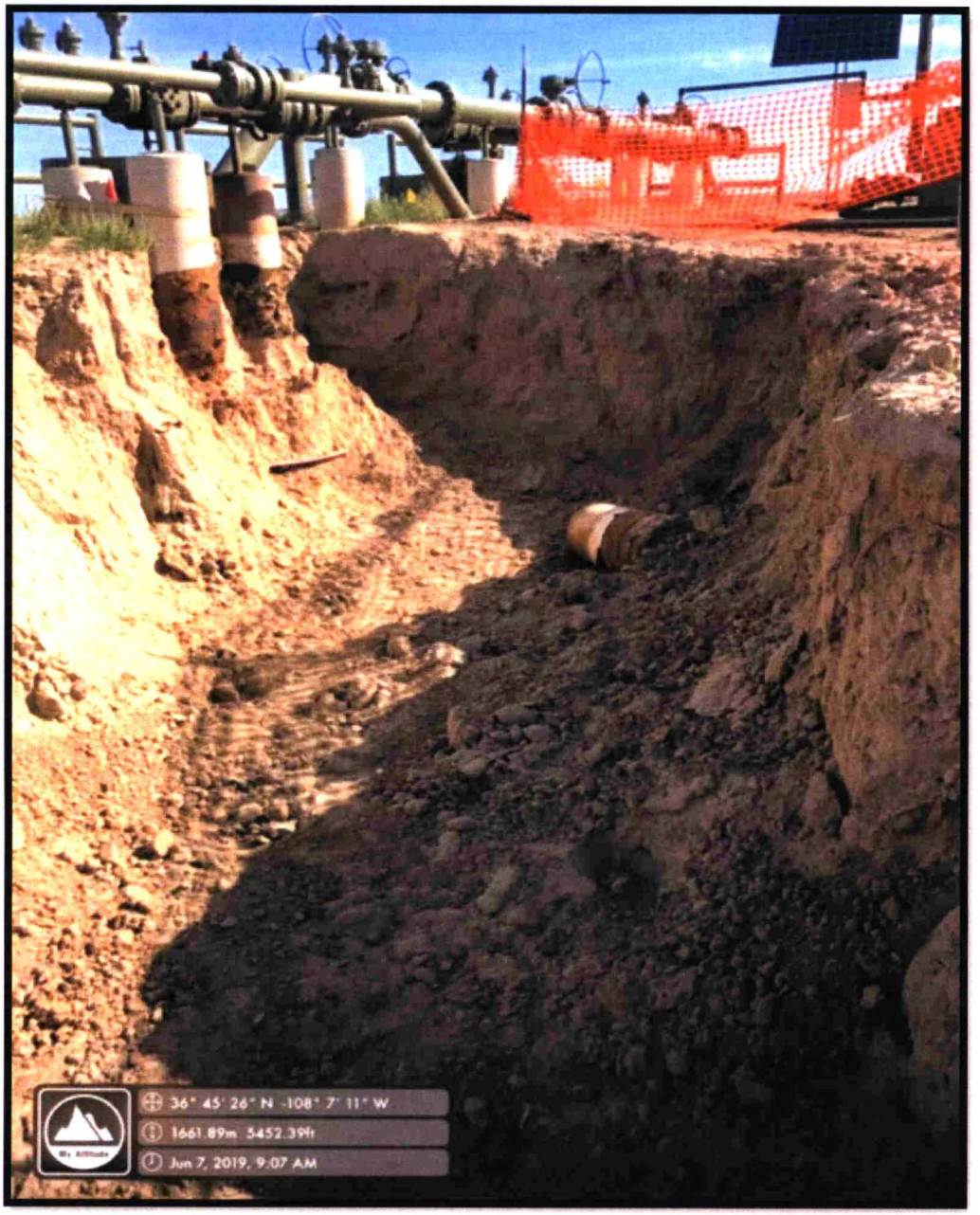
Photos: After Clean-up

Enduring Resources, LLC
Photo Page
Kimbeto Wash Pipeline Release
30-045-35756

Enduring Resources, LLC
Photo Page
Kimbeto Wash Pipeline Release
30-045-35756

Enduring Resources, LLC
Photo Page
Kimbeto Wash Pipeline Release
30-045-35756

Photo: After Clean-up/Resample



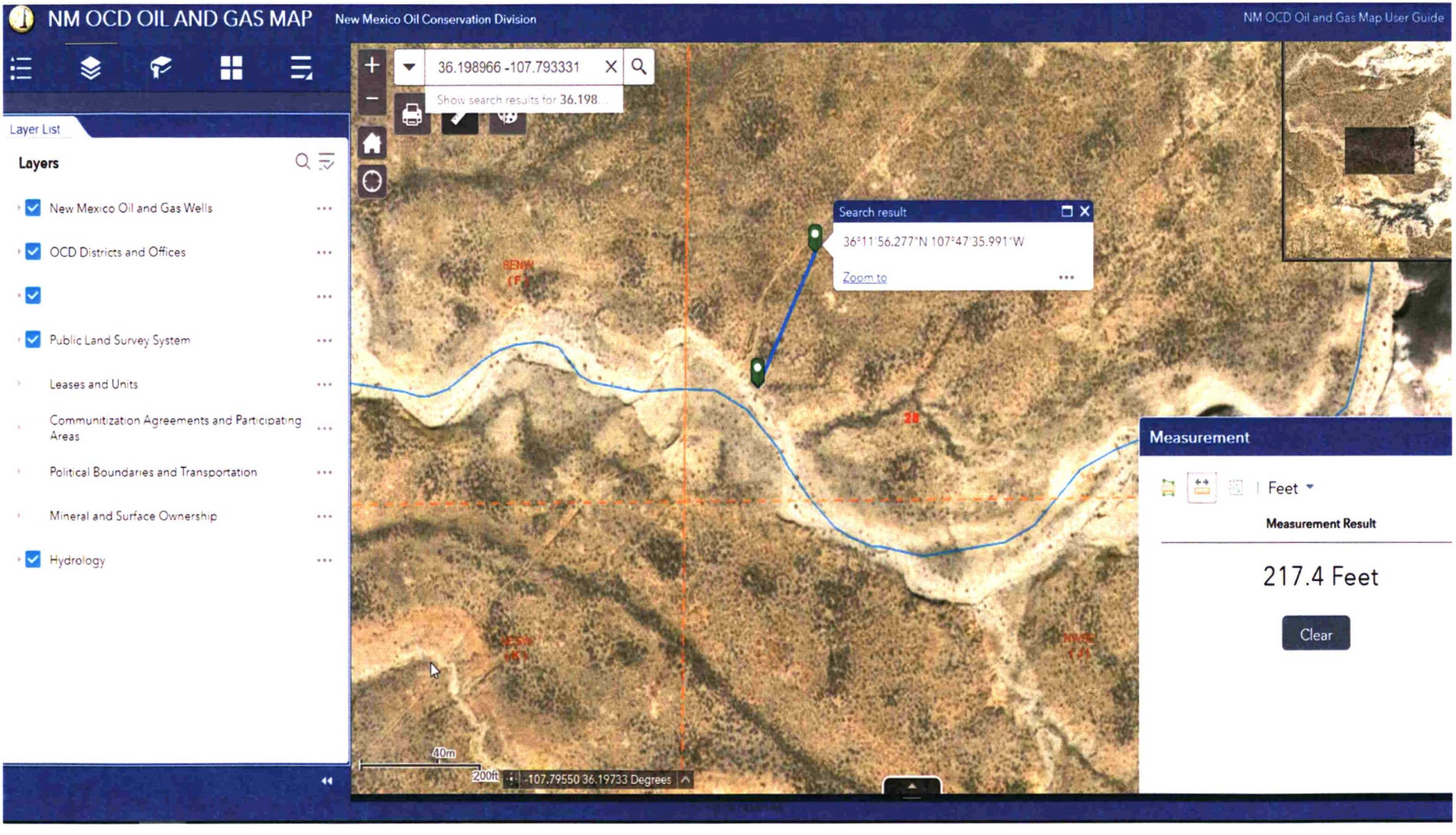
Kimbeto Wash 771H Pipeline Sample Results Table

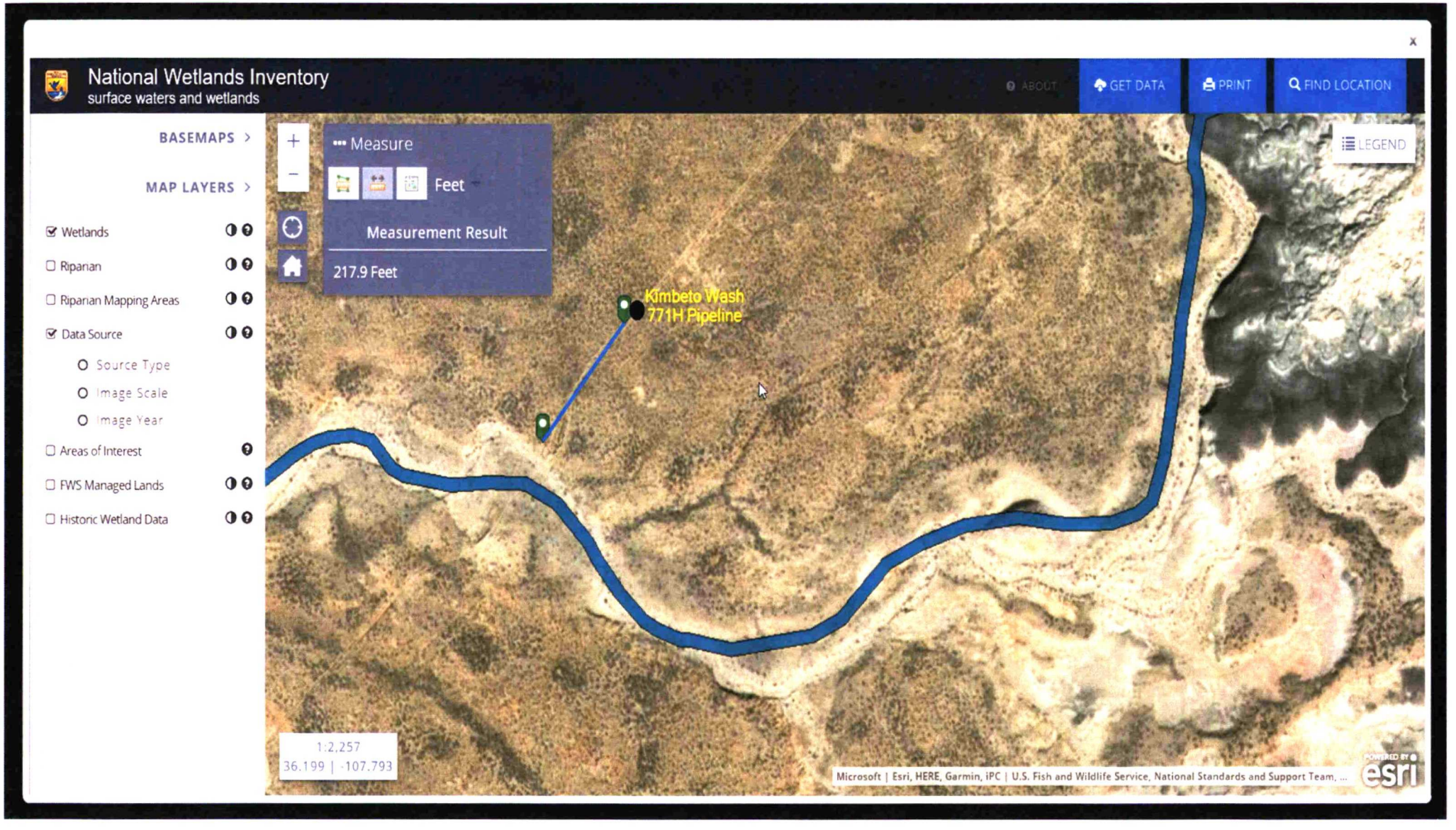
Sample Name	Description	Date	Time	DRO	GRO	DRO+ GRO	ORO	Total TPH	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	Chlorides	Square Footage
				NA	NA	100	NA	100	10	NA	NA	NA	50	600	
STANDARD	Wash <300ft	NA	NA	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	200 sq. ft
North Wall	Composite	5/16/2019	12:05 PM	<4.45	<0.112	**<5.0**	9	**<14**	**<0.000562**	<0.00562	<0.000562	<0.00169	**<0.1**	**16.3**	**24**
East Wall	Composite	5/16/2019	12:10 PM	<4.23	<0.106	**<5.0**	7.59	**<12.59**	**<0.000529**	<0.00529	<0.000529	<0.00159	**<0.1**	**29.2**	**168**
South Wall	Composite	5/16/2019	12:15 PM	<4.46	<0.112	**<5.0**	9.1	**<14.0**	**<0.000558**	<0.00558	<0.000558	<0.00167	**<0.1**	**17.8**	**24**
West Wall	Composite	5/16/2019	12:20 PM	<4.42	<0.110	**<5.0**	11.5	**<16.5**	**<0.000552**	<0.00552	<0.000552	<0.00166	**<0.1**	**90.7**	**168**
Bottom North	Composite	5/16/2019	12:25 PM	176	0.158	**176.2**	146	**322**	**<0.000537**	<0.00537	<0.000537	<0.00161	**<0.1**	**29.1**	**126**
Bottom South	Composite	5/16/2019	12:30 PM	4.48	<0.106	**<5.0**	6.08	**<11.08**	**<0.000529**	<0.00529	<0.000529	<0.00159	**<0.1**	**43.8**	**126**
Bottom North	Composite	6/7/2019	9:10 AM	25.3	<20	**<45.3**	<50	**<95.3**	**<0.0250**	<0.0250	<0.0250	<0.0250	**<0.1**	**29.5**	**126**

CLOSURE SAMPLES

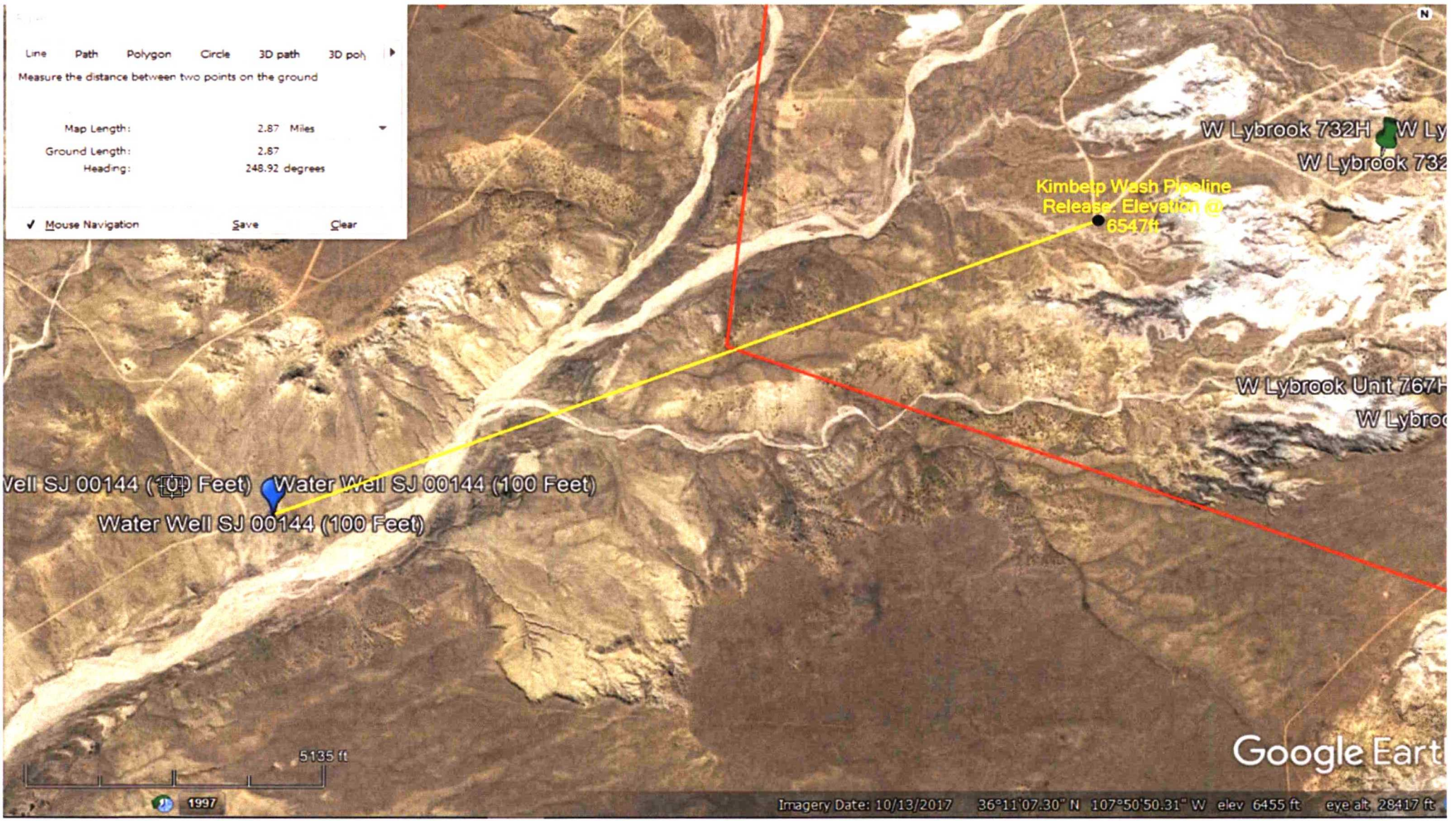

Sample Points on 5/16/2019
North Wall 6' W x 4'H
Bottom North 21'L x 6' W
West Wall 42' L x 4'H
East Wall 42' L x 4'H
Bottom South 21'L x 6' W
South Wall 6' W x 4'H
38 ft
1997
Google Earth


Sample Points on 6/7/2019
Bottom North 21'L x 6' W
38 ft
1997
Google Earth
Imagery Date: 10/13/2017 36°11'56.03" N 107°47'35.87" W elev 6546 ft eye alt 6708 ft


NM OCD OIL AND GAS MAP
New Mexico Oil Conservation Division
NM OCD Oil and Gas Map User Guide
Layer List
Layers
New Mexico Oil and Gas Wells
OCD Districts and Offices
Public Land Survey System
Leases and Units
Communitization Agreements and Participating Areas
Political Boundaries and Transportation
Mineral and Surface Ownership
Hydrology
36.198966 -107.793331
Show search results for 36.198...
Search result
36°11'56.277"N 107°47'35.991"W
Zoom to
Measurement
Feet
Measurement Result
217.4 Feet
Clear
40m
200ft
-107.79550 36.19733 Degrees


National Wetlands Inventory
surface waters and wetlands
ABOUT
GET DATA
PRINT
FIND LOCATION
BASEMAPS
MAP LAYERS
Wetlands
Riparian
Riparian Mapping Areas
Data Source
Source Type
Image Scale
Image Year
Areas of Interest
FWS Managed Lands
Historic Wetland Data
Measure
Feet
Measurement Result
217.9 Feet
Kimbeto Wash
771H Pipeline
LEGEND
1:2,257
36.199 | -107.793
Microsoft | Esri, HERE, Garmin, iPC | U.S. Fish and Wildlife Service, National Standards and Support Team, ...
esri


Coal Mine Resources in New Mexico
NM Mining and Minerals Division
EMNRD Home
Help
Other MMD GIS & Maps
Basemap Gallery
Dark Gray Canvas
Imagery
Imagery with Labels
Light Gray Canvas
National Geographic
Oceans
OpenStreetMap
Streets
Terrain with Labels
Topographic
USA Topo Maps
USGS National Map
36.198966 -107.793331
Show search results for 36.198966 -1...
Search result
36°11'56.277"N 107°47'35.991"W
Zoom to
6mi
-108.537 36.308 Degrees
All rights reserved


Line
Path
Polygon
Circle
3D path
3D poly
Measure the distance between two points on the ground
Map Length: 2.87 Miles
Ground Length: 2.87
Heading: 248.92 degrees
Mouse Navigation
Save
Clear
W Lybrook 732H
W Lybrook 732
Kimbetp Wash Pipeline Release. Elevation @ 6547ft
W Lybrook Unit 767H
Water Well SJ 00144 (100 Feet)
Water Well SJ 00144 (100 Feet)
5135 ft
1997
Google Earth
Imagery Date: 10/13/2017 36°11'07.30" N 107°50'50.31" W elev 6455 ft eye alt 28417 ft

National Flood Hazard Layer FIRMette

FEMA

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainag areas of less than one square mile *Zone*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 — Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- 513 — Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represe an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/20/2019 at 12:36:24 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Chad Snell

From: Adeloye, Abiodun <aadeloye@blm.gov>
Sent: Tuesday, May 14, 2019 2:54 PM
To: Chad Snell
Subject: Re: [EXTERNAL] FW: Kimbeto Wash 771H Incident #NCS1913036817

Thank you Chad for the notification. I will not be able to make, I will be on training.
Thanks

On Tue, May 14, 2019 at 1:58 PM Chad Snell <CSnell@enduringresources.com> wrote:

Good Afternoon,

Please see email below, I believe we will be on site around noon.

Please feel free to contact me with any questions.

Thanks.

From: Chad Snell
Sent: Tuesday, May 14, 2019 10:17 AM
To: 'Smith, Cory, EMNRD' <Cory.Smith@state.nm.us>
Cc: James McDaniel <JMcDaniel@enduringresources.com>
Subject: Kimbeto Wash 771H Incident #NCS1913036817

Cory,

Enduring will be performing confirmation sampling at the Kimbeto 771H pipeline release on Thursday May 16th 2019. We plan on collecting samples after the EL #1.

Please let me know if you have any questions.

Thanks.

Chad Snell

HSE Tech

Enduring Resources

(505) 444-0586.

--
Abiodun Adeloye (Emmanuel)
Natural Resource Specialist
6251 College Blvd. Suite A
BLM - FFO
Phone: 505-564-7665
Cell #: 505-635-0984

Chad Snell

From: Chad Snell
Sent: Wednesday, June 05, 2019 7:43 AM
To: 'Smith, Cory, EMNRD'
Cc: James McDaniel; 'aadeloye@blm.gov'
Subject: Closure Sampling

Cory,
Enduring will be performing sampling activities on Friday June 7th, 2019 at the following locations.

Kimbeto Wash 771H pipeline release Incident # NCS1913036817 (API: 30-045-35756, Sec: 17, Twn: 23N, RGE: 9W)- Starting at 9:00am. One sample section had slightly elevated results. Once we are finished with sampling activities at this location we will than head to the NEU 315H.

North Escavada Unit 315H Incident # NCS1913740860 (API: 30-043-21888, Sec: 10, Twn: 22N, RGE: 7W)- Sampling activities will began after the Kimbeto Wash 771H Pipeline release.

Please let us know if you have any questions.

Thank you.

Chad Snell
HSE Tech
Enduring Resources
(505) 444-0586.

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

May 28, 2019

Cp Tc Ss Cn Sr Qc Gl Al Sc

Enduring Resources

Sample Delivery Group:	L1100712
Samples Received:	05/17/2019
Project Number:	
Description:	Kimbeto Wash 771H Pipeline Release

Report To: Chad Snell
200 Energy Court
Farmington, NM 87401

Entire Report Reviewed By: Daphne R Richards

Daphne Richards
Project Manager

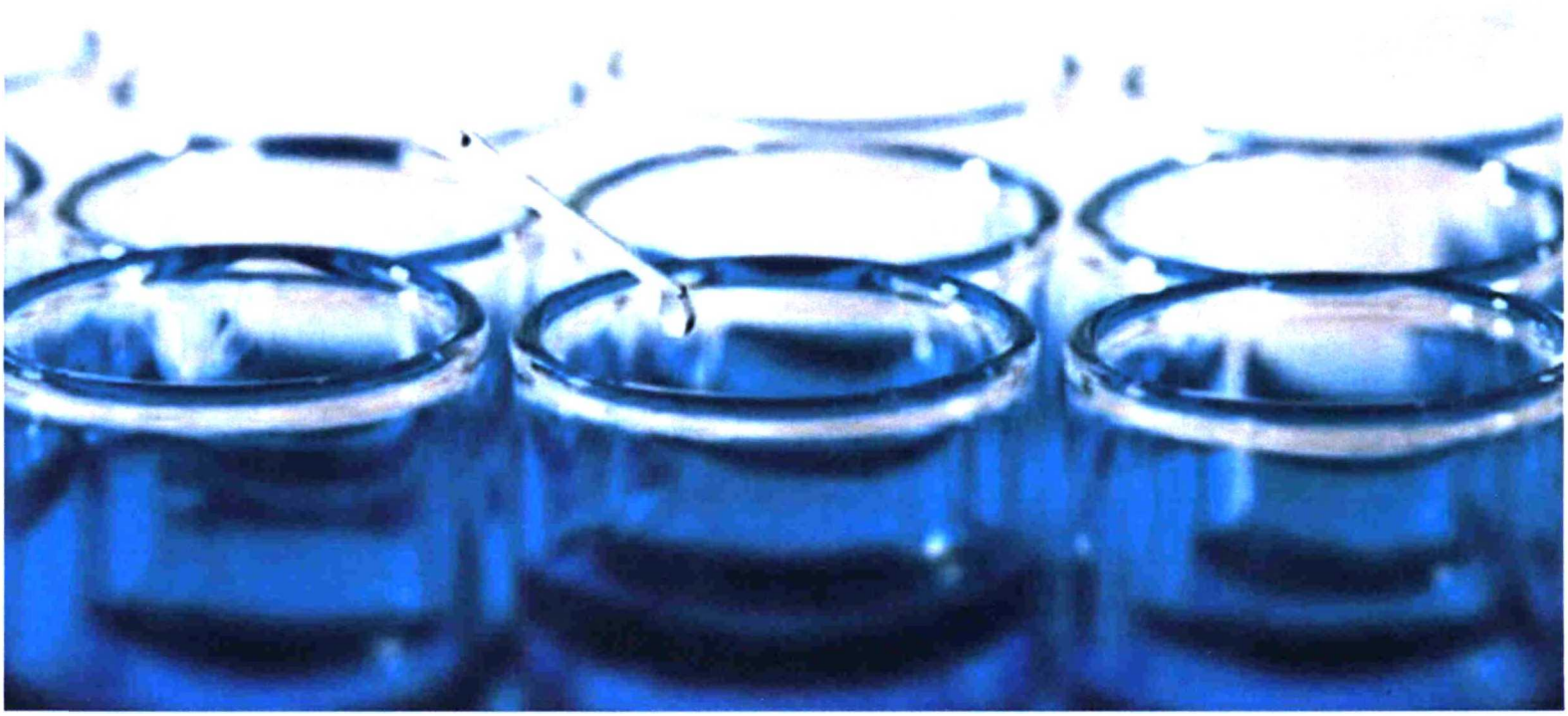


TABLE OF CONTENTS

NORTH WALL L1100712-01 Solid

Collected by: Chad Snell | Collected date/time: 05/16/19 12:05 | Received date/time: 05/17/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1285526	1	05/23/19 15:35	05/23/19 15:43	KBC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1284210	1	05/21/19 17:00	05/21/19 23:18	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1284784	1.01	05/21/19 22:59	05/23/19 17:09	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1286046	1	05/24/19 08:30	05/24/19 15:17	FM	Mt. Juliet, TN

EAST WALL L1100712-02 Solid

Collected by: Chad Snell | Collected date/time: 05/16/19 12:10 | Received date/time: 05/17/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1285526	1	05/23/19 15:35	05/23/19 15:43	KBC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1284210	1	05/21/19 17:00	05/21/19 23:26	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1284784	1	05/21/19 22:59	05/23/19 17:33	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1286046	1	05/24/19 08:30	05/24/19 14:50	FM	Mt. Juliet, TN

SOUTH WALL L1100712-03 Solid

Collected by: Chad Snell | Collected date/time: 05/16/19 12:15 | Received date/time: 05/17/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1285526	1	05/23/19 15:35	05/23/19 15:43	KBC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1284210	1	05/21/19 17:00	05/21/19 23:35	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1284784	1	05/21/19 22:59	05/23/19 17:57	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1286046	1	05/24/19 08:30	05/24/19 15:04	FM	Mt. Juliet, TN

WEST WALL L1100712-04 Solid

Collected by: Chad Snell | Collected date/time: 05/16/19 12:20 | Received date/time: 05/17/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1285526	1	05/23/19 15:35	05/23/19 15:43	KBC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1284210	1	05/21/19 17:00	05/21/19 23:43	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1284784	1	05/21/19 22:59	05/23/19 18:20	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1286046	1	05/24/19 08:30	05/24/19 15:45	FM	Mt. Juliet, TN

BOTTOM NORTH L1100712-05 Solid

Collected by: Chad Snell | Collected date/time: 05/16/19 12:25 | Received date/time: 05/17/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1285526	1	05/23/19 15:35	05/23/19 15:43	KBC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1284210	1	05/21/19 17:00	05/21/19 23:52	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1284784	1	05/21/19 22:59	05/23/19 18:44	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1286046	1	05/24/19 08:30	05/24/19 15:59	FM	Mt. Juliet, TN

BOTTOM SOUTH L1100712-06 Solid

Collected by: Chad Snell | Collected date/time: 05/16/19 12:30 | Received date/time: 05/17/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1285526	1	05/23/19 15:35	05/23/19 15:43	KBC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1284210	1	05/21/19 17:00	05/22/19 00:00	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1284784	1	05/21/19 22:59	05/23/19 19:08	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1286046	1	05/24/19 08:30	05/24/19 15:31	FM	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Daphne R Richards

Daphne Richards
Project Manager

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	89.9		1	05/23/2019 15:43	WG1285526

Wet Chemistry by Method 9056A

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Chloride	16.3	B	11.1	1	05/21/2019 23:18	WG1284210

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.000562	1.01	05/23/2019 17:09	WG1284784
Toluene	ND		0.00562	1.01	05/23/2019 17:09	WG1284784
Ethylbenzene	ND		0.000562	1.01	05/23/2019 17:09	WG1284784
Total Xylene	ND		0.00169	1.01	05/23/2019 17:09	WG1284784
TPH (GC/FID) Low Fraction	ND		0.112	1.01	05/23/2019 17:09	WG1284784
(S) a,a,a-Trifluorotoluene(FID)	*97.3*		*77.0-120*		*05/23/2019 17:09*	WG1284784
(S) a,a,a-Trifluorotoluene(PID)	*101*		*72.0-128*		*05/23/2019 17:09*	WG1284784

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	ND		4.45	1	05/24/2019 15:17	WG1286046
C28-C40 Oil Range	9.00		4.45	1	05/24/2019 15:17	WG1286046
(S) o-Terphenyl	*64.0*		*18.0-148*		*05/24/2019 15:17*	WG1286046

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.6		1	05/23/2019 15:43	WG1285526

Wet Chemistry by Method 9056A

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Chloride	29.2		10.6	1	05/21/2019 23:26	WG1284210

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.000529	1	05/23/2019 17:33	WG1284784
Toluene	ND		0.00529	1	05/23/2019 17:33	WG1284784
Ethylbenzene	ND		0.000529	1	05/23/2019 17:33	WG1284784
Total Xylene	ND		0.00159	1	05/23/2019 17:33	WG1284784
TPH (GC/FID) Low Fraction	ND		0.106	1	05/23/2019 17:33	WG1284784
(S) a,a,a-Trifluorotoluene(FID)	*98.9*		*77.0-120*		*05/23/2019 17:33*	WG1284784
(S) a,a,a-Trifluorotoluene(PID)	*103*		*72.0-128*		*05/23/2019 17:33*	WG1284784

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	ND		4.23	1	05/24/2019 14:50	WG1286046
C28-C40 Oil Range	7.59		4.23	1	05/24/2019 14:50	WG1286046
(S) o-Terphenyl	*46.7*		*18.0-148*		*05/24/2019 14:50*	WG1286046

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	89.6		1	05/23/2019 15:43	WG1285526

Wet Chemistry by Method 9056A

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Chloride	17.8	B	11.2	1	05/21/2019 23:35	WG1284210

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.000558	1	05/23/2019 17:57	WG1284784
Toluene	ND		0.00558	1	05/23/2019 17:57	WG1284784
Ethylbenzene	ND		0.000558	1	05/23/2019 17:57	WG1284784
Total Xylene	ND		0.00167	1	05/23/2019 17:57	WG1284784
TPH (GC/FID) Low Fraction	ND		0.112	1	05/23/2019 17:57	WG1284784
(S) a,a,a-Trifluorotoluene(FID)	*96.8*		*77.0-120*		*05/23/2019 17:57*	WG1284784
(S) a,a,a-Trifluorotoluene(PID)	*100*		*72.0-128*		*05/23/2019 17:57*	WG1284784

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	ND		4.46	1	05/24/2019 15:04	WG1286046
C28-C40 Oil Range	9.10		4.46	1	05/24/2019 15:04	WG1286046
(S) o-Terphenyl	*61.2*		*18.0-148*		*05/24/2019 15:04*	WG1286046

Total Solids by Method 2540 G 2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	90.6		1	05/23/2019 15:43	WG1285526

Wet Chemistry by Method 9056A

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Chloride	90.7		11.0	1	05/21/2019 23:43	WG1284210

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.000552	1	05/23/2019 18:20	WG1284784
Toluene	ND		0.00552	1	05/23/2019 18:20	WG1284784
Ethylbenzene	ND		0.000552	1	05/23/2019 18:20	WG1284784
Total Xylene	ND		0.00166	1	05/23/2019 18:20	WG1284784
TPH (GC/FID) Low Fraction	ND		0.110	1	05/23/2019 18:20	WG1284784
(S) a,a,a-Trifluorotoluene(FID)	*96.7*		*77.0-120*		*05/23/2019 18:20*	WG1284784
(S) a,a,a-Trifluorotoluene(PID)	*100*		*72.0-128*		*05/23/2019 18:20*	WG1284784

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	ND		4.42	1	05/24/2019 15:45	WG1286046
C28-C40 Oil Range	11.5		4.42	1	05/24/2019 15:45	WG1286046
(S) o-Terphenyl	*66.5*		*18.0-148*		*05/24/2019 15:45*	WG1286046

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	93.1		1	05/23/2019 15:43	WG1285526

Wet Chemistry by Method 9056A

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Chloride	29.1		10.7	1	05/21/2019 23:52	WG1284210

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.000537	1	05/23/2019 18:44	WG1284784
Toluene	ND		0.00537	1	05/23/2019 18:44	WG1284784
Ethylbenzene	ND		0.000537	1	05/23/2019 18:44	WG1284784
Total Xylene	ND		0.00161	1	05/23/2019 18:44	WG1284784
TPH (GC/FID) Low Fraction	0.158		0.107	1	05/23/2019 18:44	WG1284784
(S) a,a,a-Trifluorotoluene(FID)	*96.7*		*77.0-120*		*05/23/2019 18:44*	WG1284784
(S) a,a,a-Trifluorotoluene(PID)	*100*		*72.0-128*		*05/23/2019 18:44*	WG1284784

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	176		4.30	1	05/24/2019 15:59	WG1286046
C28-C40 Oil Range	146		4.30	1	05/24/2019 15:59	WG1286046
(S) o-Terphenyl	*53.4*		*18.0-148*		*05/24/2019 15:59*	WG1286046

Total Solids by Method 2540 G 2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.5		1	05/23/2019 15:43	WG1285526

Wet Chemistry by Method 9056A

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Chloride	43.8		10.6	1	05/22/2019 00:00	WG1284210

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.000529	1	05/23/2019 19:08	WG1284784
Toluene	ND		0.00529	1	05/23/2019 19:08	WG1284784
Ethylbenzene	ND		0.000529	1	05/23/2019 19:08	WG1284784
Total Xylene	ND		0.00159	1	05/23/2019 19:08	WG1284784
TPH (GC/FID) Low Fraction	ND		0.106	1	05/23/2019 19:08	WG1284784
(S) a,a,a-Trifluorotoluene(FID)	*98.0*		*77.0-120*		*05/23/2019 19:08*	WG1284784
(S) a,a,a-Trifluorotoluene(PID)	*102*		*72.0-128*		*05/23/2019 19:08*	WG1284784

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	4.48		4.23	1	05/24/2019 15:31	WG1286046
C28-C40 Oil Range	6.08		4.23	1	05/24/2019 15:31	WG1286046
(S) o-Terphenyl	*59.1*		*18.0-148*		*05/24/2019 15:31*	WG1286046

Method Blank (MB)

(MB) R3414499-1 05/23/19 15:43

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	%		%	%
Total Solids	0.00200			

L1100940-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1100940-01 05/23/19 15:43 • (DUP) R3414499-3 05/23/19 15:43

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	%	%		%		%
Total Solids	79.8	77.8	1	2.51		10

Laboratory Control Sample (LCS)

(LCS) R3414499-2 05/23/19 15:43

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	%	%	%	%	
Total Solids	50.0	50.0	99.9	85.0-115	

Method Blank (MB)

(MB) R3413449-1 05/21/19 18:45

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
Chloride	2.42	J	0.795	10.0

L1100392-26 Original Sample (OS) • Duplicate (DUP)

(OS) L1100392-26 05/21/19 22:01 • (DUP) R3413449-5 05/21/19 22:10

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/kg	mg/kg		%		%
Chloride	ND	4.51	1	0.000		15

L1100537-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1100537-01 05/21/19 22:27 • (DUP) R3413449-6 05/21/19 22:35

Analyte	Original Result (dry)	DUP Result (dry)	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/kg	mg/kg		%		%
Chloride	1240	1240	5	0.127		15

Laboratory Control Sample (LCS)

(LCS) R3413449-2 05/21/19 18:54

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/kg	mg/kg	%	%	
Chloride	200	203	101	80.0-120	

L1100392-17 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1100392-17 05/21/19 19:48 • (MS) R3413449-3 05/21/19 19:56 • (MSD) R3413449-4 05/21/19 20:05

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Chloride	500	ND	534	543	106	108	1	80.0-120			1.65	15

Method Blank (MB)

(MB) R3414742-2 05/23/19 12:50

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
Benzene	0.000176	J	0.000120	0.000500
Toluene	0.000702	J	0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	98.2			77.0-120
(S) a,a,a-Trifluorotoluene(PID)	104			72.0-128

Laboratory Control Sample (LCS)

(LCS) R3414742-1 05/23/19 11:15

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/kg	mg/kg	%	%	
Benzene	0.0500	0.0456	91.3	76.0-121	
Toluene	0.0500	0.0467	93.4	80.0-120	
Ethylbenzene	0.0500	0.0496	99.2	80.0-124	
Total Xylene	0.150	0.147	98.0	37.0-160	
(S) a,a,a-Trifluorotoluene(FID)			97.8	77.0-120	
(S) a,a,a-Trifluorotoluene(PID)			101	72.0-128	

Laboratory Control Sample (LCS)

(LCS) R3414742-3 05/23/19 14:24

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/kg	mg/kg	%	%	
TPH (GC/FID) Low Fraction	5.50	5.52	100	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			108	77.0-120	
(S) a,a,a-Trifluorotoluene(PID)			111	72.0-128	

Method Blank (MB)

(MB) R3414838-1 05/24/19 14:08

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C40 Oil Range	U		0.274	4.00
(S) o-Terphenyl	*55.3*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3414838-2 05/24/19 14:22

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/kg	mg/kg	%	%	
C10-C28 Diesel Range	50.0	37.0	74.0	50.0-150	
(S) o-Terphenyl			*59.9*	*18.0-148*	

L1100545-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1100545-07 05/25/19 19:40 • (MS) R3415061-1 05/25/19 19:54 • (MSD) R3415061-2 05/25/19 20:08

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
C10-C28 Diesel Range	50.0	ND	37.9	38.5	75.8	77.0	4	50.0-150			1.57	20
(S) o-Terphenyl					*57.6*	*59.7*		*18.0-148*				

Sample Narrative:

OS: Dilution due to matrix impact during extract concentration procedure

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils]
MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

Ct
Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1,6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1,4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.

Enduring Resources

200 Energy Court
Farmington, NM 87401

Billing Information:
James McDaniel
200 Energy Court
Farmington, NM 87401

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone 615-758-5858
Phone 800-767-5859
Fax 615-758-5859

L# 1100712
1083

Report to: Chad Snell/James McDaniel
Email To: CSnell@enduringresources.com; JMcdaniel@enduringresources.com

Project Description: Kimbeto Wash 771H Pipeline Release
City/State Collected: NM

Phone: 505-636-9731
Fax:
Client Project #
Lab Project #

Collected by (print): Chad Snell
Site/Facility ID #
P.O. #

Collected by (signature):
Immediately Packed on Ice N ___ Y X
Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day
Quote #
Date Results Needed

Acctnum: ENDRESANM
Template:
Prelogin:
TSR: 288 - Daphne Richards
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No of Cntrs	8015 GRO/DRO/ORO	8021 (BTEX)	Chlorides	Remarks	Sample # (lab only)
North Wall	Comp	SS		5-16-19	12:05pm	1	X	X	X		-01
East Wall	Comp	SS			12:10pm		X	X	X		02
South Wall	Comp	SS			12:15pm		X	X	X		03
West Wall	Comp	SS			12:20pm		X	X	X		04
Bottom North	Comp	SS			12:25pm		X	X	X		05
Bottom South	Comp	SS			12:30pm		X	X	X		06

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:
RAD SCREEN: <0.5 mR/hr

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 4794 8830 0388

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes (No) HCl / MeoH TBR	If preservation required by Login: Date/Time
	5-16-19	2:30pm			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 22.6 °C Bottles Received: 6	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: TODAY Time: 8:45	Hold: Condition: (NCF) / OK

Kelsey Stephenson

Login #:L1100712	Client: ENDRESANM	Date: 5/17/19	Evaluated by: Jeremy

Non-Conformance (check applicable items)

	Sample Integrity		Chain of Custody Clarification		
x	Parameter(s) past holding time		Login Clarification Needed		**If Broken Container:**
	Temperature not in range		Chain of custody is incomplete		Insufficient packing material around container
	Improper container type		Please specify Metals requested.		Insufficient packing material inside cooler
	pH not in range.		Please specify TCLP requested.		Improper handling by carrier (FedEx / UPS / Courie
	Insufficient sample volume.		Received additional samples not listed on coc.		Sample was frozen
	Sample is biphasic.		Sample ids on containers do not match ids on coc		Container lid not intact
	Vials received with headspace.		Trip Blank not received.		**If no Chain of Custody:**
	Broken container		Client did not "X" analysis.		Received by:
	Broken container:		Chain of Custody is missing		Date/Time:
	Sufficient sample remains				Temp./Cont. Rec./pH:
					Carrier:
					Tracking#

Login Comments: Received at 22.6 Deg C. Ice melted.

Client informed by:		Call		Email	X	Voice Mail		Date: 5/20	Time: 1110
TSR Initials: DR	Client Contact:CS								

Login Instructions:

Qualify for temp and proceed with analysis

envirotech
Analytical Laboratory

Analytical Report

Report Summary

Client: Enduring Resources, LLC

Samples Received: 6/7/2019
Job Number: 17065-0017
Work Order: P906027
Project Name/Location: Kimbeto Wash 771H

Report Reviewed By: Walter Hinchman Date: 6/11/19

Walter Hinchman, Laboratory Director

NELAP ACCREDITED TNI LABORATORY

Envirotech Inc. certifies the test results meet all requirements of TNI unless footnoted otherwise.
Statement of Data Authenticity: Envirotech, Inc, attests the data reported has not been altered in any way.
Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.
Envirotech, Inc, currently holds the appropriate and available Utah TNI certification NM009792018-1 for the data reported.

envirotech
Analytical Laboratory

Enduring Resources, LLC	Project Name:	Kimbeto Wash 771H	
511 16th Street, Suite 700	Project Number:	17065-0017	Reported:
Denver CO, 80202	Project Manager:	Chad Snell	06/11/19 16:11

Analyical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Bottom North	P906027-01A	Soil	06/07/19	06/07/19	Glass Jar, 4 oz.

Enduring Resources, LLC	Project Name:	Kimbeto Wash 771H	
511 16th Street, Suite 700	Project Number:	17065-0017	**Reported:**
Denver CO, 80202	Project Manager:	Chad Snell	06/11/19 16:11

Bottom North
P906027-01 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.0250	mg/kg	1	1923035	06/07/19	06/10/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1923035	06/07/19	06/10/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1923035	06/07/19	06/10/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1923035	06/07/19	06/10/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1923035	06/07/19	06/10/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1923035	06/07/19	06/10/19	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*96.4 %*		*50-150*	*1923035*	*06/07/19*	*06/10/19*	*EPA 8021B*	
Nonhalogenated Organics by 8015 - DRO/ORO									
Diesel Range Organics (C10-C28)	**25.3**	25.0	mg/kg	1	1923037	06/07/19	06/10/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1923037	06/07/19	06/10/19	EPA 8015D	
Surrogate: n-Nonane		*93.1 %*		*50-200*	*1923037*	*06/07/19*	*06/10/19*	*EPA 8015D*	
Nonhalogenated Organics by 8015 - GRO									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1923035	06/07/19	06/10/19	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*104 %*		*50-150*	*1923035*	*06/07/19*	*06/10/19*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	**29.5**	20.0	mg/kg	1	1923038	06/07/19	06/07/19	EPA 300.0/9056A	

Enduring Resources, LLC	Project Name:	Kimbeto Wash 771H	
511 16th Street, Suite 700	Project Number:	17065-0017	**Reported:**
Denver CO, 80202	Project Manager:	Chad Snell	06/11/19 16:11

Volatile Organics by EPA 8021 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1923035 - Purge and Trap EPA 5030A										
Blank (1923035-BLK1)				Prepared: 06/07/19 1 Analyzed: 06/10/19 1						
Benzene	ND	0.0250	mg/kg							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
p,m-Xylene	ND	0.0500	"							
o-Xylene	ND	0.0250	"							
Total Xylenes	ND	0.0250	"							
Surrogate: 4-Bromochlorobenzene-PID	*7.72*		"	*8.00*		*96.5*	*50-150*			
LCS (1923035-BS1)				Prepared: 06/07/19 1 Analyzed: 06/10/19 1						
Benzene	4.28	0.0250	mg/kg	5.00		85.6	70-130			
Toluene	4.65	0.0250	"	5.00		92.9	70-130			
Ethylbenzene	4.60	0.0250	"	5.00		92.0	70-130			
p,m-Xylene	9.48	0.0500	"	10.0		94.8	70-130			
o-Xylene	4.62	0.0250	"	5.00		92.4	70-130			
Total Xylenes	14.1	0.0250	"	15.0		94.0	70-130			
Surrogate: 4-Bromochlorobenzene-PID	*7.80*		"	*8.00*		*97.4*	*50-150*			
Matrix Spike (1923035-MS1)		Source: P906026-01		Prepared: 06/07/19 1 Analyzed: 06/10/19 1						
Benzene	4.28	0.0250	mg/kg	5.00	ND	85.7	54.3-133			
Toluene	4.66	0.0250	"	5.00	ND	93.2	61.4-130			
Ethylbenzene	4.62	0.0250	"	5.00	ND	92.4	61.4-133			
p,m-Xylene	9.51	0.0500	"	10.0	ND	95.1	63.3-131			
o-Xylene	4.62	0.0250	"	5.00	ND	92.3	63.3-131			
Total Xylenes	14.1	0.0250	"	15.0	ND	94.2	63.3-131			
Surrogate: 4-Bromochlorobenzene-PID	*7.74*		"	*8.00*		*96.8*	*50-150*			
Matrix Spike Dup (1923035-MSD1)		Source: P906026-01		Prepared: 06/07/19 1 Analyzed: 06/10/19 1						
Benzene	4.13	0.0250	mg/kg	5.00	ND	82.7	54.3-133	3.53	20	
Toluene	4.50	0.0250	"	5.00	ND	89.9	61.4-130	3.59	20	
Ethylbenzene	4.48	0.0250	"	5.00	ND	89.6	61.4-133	3.10	20	
p,m-Xylene	9.24	0.0500	"	10.0	ND	92.4	63.3-131	2.88	20	
o-Xylene	4.51	0.0250	"	5.00	ND	90.2	63.3-131	2.33	20	
Total Xylenes	13.8	0.0250	"	15.0	ND	91.7	63.3-131	2.70	20	
Surrogate: 4-Bromochlorobenzene-PID	*7.81*		"	*8.00*		*97.7*	*50-150*			

Enduring Resources, LLC	Project Name:	Kimbeto Wash 771H	
511 16th Street, Suite 700	Project Number:	17065-0017	**Reported:**
Denver CO, 80202	Project Manager:	Chad Snell	06/11/19 16:11

Nonhalogenated Organics by 8015 - DRO/ORO - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1923037 - DRO Extraction EPA 3570										
Blank (1923037-BLK1)				Prepared: 06/07/19 1 Analyzed: 06/10/19 1						
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg							
Oil Range Organics (C28-C40)	ND	50.0	"							
Surrogate: n-Nonane	*55.2*		"	*50.0*		*110*	*50-200*			
LCS (1923037-BS1)				Prepared: 06/07/19 1 Analyzed: 06/10/19 1						
Diesel Range Organics (C10-C28)	474	25.0	mg/kg	500		94.8	38-132			
Surrogate: n-Nonane	*56.2*		"	*50.0*		*112*	*50-200*			
Matrix Spike (1923037-MS1)		**Source: P906026-01**		Prepared: 06/07/19 1 Analyzed: 06/10/19 1						
Diesel Range Organics (C10-C28)	519	25.0	mg/kg	500	45.3	94.8	38-132			
Surrogate: n-Nonane	*56.7*		"	*50.0*		*113*	*50-200*			
Matrix Spike Dup (1923037-MSD1)		**Source: P906026-01**		Prepared: 06/07/19 1 Analyzed: 06/11/19 0						
Diesel Range Organics (C10-C28)	575	25.0	mg/kg	500	45.3	106	38-132	10.1	20	
Surrogate: n-Nonane	*64.0*		"	*50.0*		*128*	*50-200*			

Enduring Resources, LLC	Project Name:	Kimbeto Wash 771H	
511 16th Street, Suite 700	Project Number:	17065-0017	**Reported:**
Denver CO, 80202	Project Manager:	Chad Snell	06/11/19 16:11

Nonhalogenated Organics by 8015 - GRO - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1923035 - Purge and Trap EPA 5030A										
Blank (1923035-BLK1)				Prepared: 06/07/19 1 Analyzed: 06/10/19 1						
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg							
Surrogate: 1-Chloro-4-fluorobenzene-FID	*8.37*		"	*8.00*		*105*	*50-150*			
LCS (1923035-BS2)				Prepared: 06/07/19 1 Analyzed: 06/10/19 1						
Gasoline Range Organics (C6-C10)	50.0	20.0	mg/kg	50.0		100	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	*8.37*		"	*8.00*		*105*	*50-150*			
Matrix Spike (1923035-MS2)		**Source: P906026-01**		Prepared: 06/07/19 1 Analyzed: 06/10/19 1						
Gasoline Range Organics (C6-C10)	42.7	20.0	mg/kg	50.0	ND	85.4	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	*8.38*		"	*8.00*		*105*	*50-150*			
Matrix Spike Dup (1923035-MSD2)		**Source: P906026-01**		Prepared: 06/07/19 1 Analyzed: 06/10/19 1						
Gasoline Range Organics (C6-C10)	49.2	20.0	mg/kg	50.0	ND	98.5	70-130	14.3	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	*8.48*		"	*8.00*		*106*	*50-150*			

Enduring Resources, LLC	Project Name:	Kimbeto Wash 771H	
511 16th Street, Suite 700	Project Number:	17065-0017	**Reported:**
Denver CO, 80202	Project Manager:	Chad Snell	06/11/19 16:11

Anions by 300.0/9056A - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1923038 - Anion Extraction EPA 300.0/9056A										
Blank (1923038-BLK1)				Prepared: 06/07/19 1 Analyzed: 06/11/19 1						
Chloride	ND	20.0	mg/kg							
LCS (1923038-BS1)				Prepared: 06/07/19 1 Analyzed: 06/11/19 1						
Chloride	257	20.0	mg/kg	250		103	90-110			
Matrix Spike (1923038-MS1)		Source: P906026-01		Prepared: 06/07/19 1 Analyzed: 06/11/19 1						
Chloride	318	20.0	mg/kg	250	55.2	105	80-120			
Matrix Spike Dup (1923038-MSD1)		Source: P906026-01		Prepared: 06/07/19 1 Analyzed: 06/11/19 1						
Chloride	321	20.0	mg/kg	250	55.2	106	80-120	0.988	20	

QC Summary Report
Comment:
Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values my differ slightly.

envirotech
Analytical Laboratory

Enduring Resources, LLC	Project Name:	Kimbeto Wash 771H	
511 16th Street, Suite 700	Project Number:	17065-0017	**Reported:**
Denver CO, 80202	Project Manager:	Chad Snell	06/11/19 16:11

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
RPD	Relative Percent Difference
**	Methods marked with ** are non-accredited methods.

Project Information | Chain of Custody | Page 1 of 1

Client:	Enduring Resources
Project:	Kimbeto Wash 771H
Project Manager:	Chad Snell
Address:	200 Energy Court
City, State, Zip	Farmington, NM 87401
Phone:	(505)444-0586
Email:	CSnell@enduringresources.com

Report Attention

Report due by:	
Attention:	
Address:	
City, State, Zip	
Phone:	
Email:	

Lab Use Only

Lab WO#	Job Number	1D	3D
P906027	17065-0017	X	

TAT

EPA Program

RCRA	CWA	SDWA

State

NM	CO	UT	AZ

Analysis and Method

Time Sampled	Date Sampled	Matrix	No Containers	Sample ID	Lab Number	DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	TPH 418.1	Remarks
9:10am	6-7-19	S	1	Bottom North	1	X	X	X			X		

Additional Instructions:

U.S ice in cooler

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Sampled by: C.S 6-7-19

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	6-7-19	1:30pm		6-7-19	13:30
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Lab Use Only

Received on ice: (Y) / N

T1 T2 T3

AVG Temp °C 4

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other

Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.

envirotech Analytical Laboratory

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fx (505) 632-1865
Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301 | Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com
laboratory@envirotech-inc.com