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	nCE2003652970
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: Matador Production Company	OGRID: 228937
Contact Name: John Hurt	Contact Telephone: 972-371-5200
Contact email: JHurt@matadorresources.com	Incident # *(assigned by OCD)*
Contact mailing address: 5400 LBJ Freeway, Suite 1500 Dallas, TX 75240	

Location of Release Source

Latitude 32.212828 Longitude -104.050918
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Tiger Recycling Facility	Site Type: Produced Water Recycle Facility
Date Release Discovered: 01/22/2020	API# *(if applicable)* N/A

Unit Letter	Section	Township	Range	County
P	14	24S	28E	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)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 31 bbls	Volume Recovered (bbls) 5 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)
☐	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release:

The nipple on suction of pump broke causing release into right of way.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	nCE2003652970
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? > 25 bbls

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

No, initial release was believed to be under 25 bbls but following site evaluation, volume was determined to be 31 bbls. Natalie Gordon of Vertex emailed NM OCD on Friday 1/24 once accurate volume estimate was completed.

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: John Hurt Title: RES Specialist

Signature: Date: 1/28/20

email: JHurt@matadorresources.com Telephone: 972- 371-5200

OCD Only

Received by: Cristina Eads Date: 02/05/2020

Form C-141
Page 3

State of New Mexico
Oil Conservation Division

Incident ID	nCE2003652970
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?	52 (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.

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	nCE2003652970
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: John Hurt Title: RES Specialist

Signature: Date: 4/6/20

email: JHurt@matadorresources.com Telephone: 972-371-5200

OCD Only

Received by: Cristina Eads Date: 04/06/2020

Form C-141
Page 6

State of New Mexico
Oil Conservation Division

Incident ID	nCE2003652970
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.***

[x] A scaled site and sampling diagram as described in 19.15.29.11 NMAC

[x] 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)

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

[x] 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: John Hurt Title: RES Specialist

Signature: Date: 4/6/20

email: JHurt@matadorresources.com Telephone: 972-371-5200

OCD Only

Received by: Cristina Eads Date: 04/06/2020

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

Closure Approved by: Date: 05/11/2020

Printed Name: Cristina Eads Title: Environmental Specialist

VERTEX

April 2, 2020 Vertex Project #: 20E-00239-001

Spill Closure Report: Tiger Recycling Facility
Unit P, Section 14, Township 24 South, Range 28 East
County: Eddy
Tracking Number: nCE2003652970

Prepared For: Matador Production Company
5400 LBJ FreewaySuite 1500
Dallas, Texas 75240

New Mexico Oil Conservation Division – District 2 – Artesia
811 South First Street
Artesia, New Mexico 88210

Matador Production Company (Matador) retained Vertex Resource Services Inc. (Vertex) to conduct a spill assessment and remediation for a produced water release that occurred between a Matador tank battery and the adjacent Tiger Recycling Facility (site hereafter referred to as "Tiger"). Matador provided notification of the spill to New Mexico Oil Conservation Division (NM OCD) District 2 on January 22, 2020, via email, and followed up with an initial C-141 Release Notification (Attachment 1) on January 28, 2020. The NM OCD tracking number assigned to this incident is nCE2003652970.

This letter provides a description of the spill assessment and remediation activities, and demonstrates that closure criteria established in 19.15.29.12 *New Mexico Administrative Code* (NMAC; New Mexico Oil Conservation Division, 2018) have been met and all applicable regulations are being followed. This document is intended to serve as a final report to obtain approval from NM OCD for closure of this release.

Incident Description

On January 22, 2020, a release occurred at Matador's Tiger site when a nipple on a suction of a pump broke on the west edge of the tank battery. This incident resulted in the release of approximately 31 barrels (bbls) of produced water onto access roads and a pipeline right-of-way, in addition to a portion of the adjacent recycling facility. A vac truck arrived on-site to recover free fluids; approximately 5 bbls of produced water were recovered. The spilled fluid entered the road right-of-way adjacent to the access road on the north portion of the site, and also flowed onto a second right-of-way between the point of release and the recycling facility to the southwest as shown on Figure 1 (Attachment 2). No produced water was released into undisturbed areas or waterways.

Site Characterization

The release at Tiger occurred on privately-owned land, N 32.21170, W 104.05170, approximately 1 mile southeast of Malaga, New Mexico. The legal description for the site is Unit P, Section 14, Township 24 South, Range 28 East, Eddy County, New Mexico. This location is within the Permian Basin in southeast New Mexico and has historically been used for oil and gas exploration and production, and farmland.

Tiger is a complex consisting of the Tiger Recycling Facility, a tank battery, and nearby oil and gas exploration and production wellpads, and is typical of oil and gas-related sites in the western portion of the Permian Basin. The following sections specifically describe the release area on the western edge of the tank battery, the recycling facility, and the access road and right-of way between them.

The surrounding landscape falls on the border of prime farmland of statewide importance, associated with plains and low elongated hills typical of elevations between 1,250 and 5,000 feet above sea level, and less optimal land commonly found on fans and ridges adjacent. Average annual precipitation ranges between 10 and 25 inches in the prime farmland areas and 7 and 15 inches in areas less suited to farming. Historically, the plant communities in this area were dominated by grasses, such as tobosa, black grama, dropseeds, threeawns, forbs and broom snakeweed in the loamy sites that received runoff from the associated nearby ridges, and a grassland/shrub mix on the steeper sideslopes of the ridges themselves (United States Department of Agriculture, Natural Resources Conservation Service, 2020). Limited to no vegetation is allowed to grow on the compacted recycling facility and production pads or the adjacent roads.

The Geological Map of New Mexico indicates the surface geology at Tiger is comprised of Qoa – older alluvial deposits of upland plains and piedmont areas, and calcic soils and eolian cover sediments of the High Plains region (New Mexico Bureau of Geology and Mineral Resources, 2020). The Natural Resources Conservation Service *Web Soil Survey* characterizes the soil at the site as on the verge of Reeves loam and Gypsum land. Reeves loam is characterized by a layer of loam over gypsiferous material, and tends to be well-drained with very high runoff and low water storage in the soil profile. Gypsum land is characterized by a shallow layer of loam over bedrock, and tends to be well-drained with low runoff and very low available moisture levels in the soil profile (United States Department of Agriculture, Natural Resources Conservation Service, 2020). There is low-to-medium potential for karst geology to be present near Tiger (United States Department of the Interior, Bureau of Land Management, 2020).

There is no surface water located on-site. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 NMAC, is the Black River, located approximately one mile northeast of the site (United States Fish and Wildlife Service, 2020). There are no continuously flowing watercourses, lakebeds, sinkholes, playa lakes, or other critical water or community features at Tiger, as outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

The nearest active well to the release at Tiger is a New Mexico Office of the State Engineer (NM OSE)-identified domestic well, with a depth to groundwater of 52 feet below ground surface (bgs), located approximately 0.37 miles northwest of Tiger (New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System, 2020). Documentation pertaining to site characterization and depth to groundwater determination is included in Attachment 3.

Closure Criteria Determination

Using site characterization information, a closure criteria determination worksheet (Attachment 3) was completed to determine if the release was subject to any of the special case scenarios outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

Based on data included in the closure criteria determination worksheet, the release at Tiger is not subject to the requirements of Paragraph (4) of Subsection C of 19.15.29.12 NMAC and the closure criteria for the site are determined to be associated with the following constituent concentration limits based on depth to groundwater.

Table 1. Closure Criteria for Soils Impacted by a Release		
Depth to Groundwater	**Constituent**	**Limit**
51 to ≤100 feet	Chloride	10,000 mg/kg
	TPH[1] (GRO + DRO + MRO)	2,500 mg/kg
	GRO + DRO	1,000 mg/kg
	BTEX[2]	50 mg/kg
	Benzene	10 mg/kg

[1]Total petroleum hydrocarbons (TPH) = gasoline range organics (GRO) + diesel range organics (DRO) + motor oil range organics (MRO)
[2]Benzene, toluene, ethylbenzene and xylenes (BTEX)

Remedial Actions

Initial spill inspection and site characterization activities at Tiger were completed by Vertex on January 22, 2020. The Daily Field Report and field screening data associated with the site visit are included in Attachment 4. Using initial field screen data, the release was delineated horizontally and vertically as shown in Figure 1 (Attachment 2), and a remediation work plan was developed. Excavation of the contaminated soil was conducted between February 20 and 24, 2020, with a Vertex representative on-site to conduct field screening to determine final horizontal and vertical extents of the excavation area shown on Figure 2 (Attachment 2).

On February 28, 2020, following the completion of excavation activities, Vertex provided 48-hour notification of confirmation sampling to NM OCD (Attachment 5), as required by Subparagraph (a) of Paragraph (1) of Subsection D 19.15.29.12 NMAC.

On March 2, 2020, Vertex collected a total of 13 five-point composite confirmatory samples from the base and side walls of the excavation, at depths ranging between ground surface and 0.5 feet bgs. Each composite sample was representative of no more than 200 square feet per the alternate sampling method outlined in Subparagraph (c) of Paragraph (1) of Subsection D 19.15.29.12 NMAC, which does not require prior NM OCD approval. The composite samples were placed into laboratory-provided containers, preserved on ice, and submitted to a National Environmental Laboratory Accreditation Program-approved laboratory for chemical analysis.

Laboratory analyses included Method 300.0 for chlorides, Method 8021B for volatile organics, including BTEX, and EPA Method 8015 for TPH, including MRO, DRO and GRO. Confirmatory sampling analytical data are summarized in Attachment 6. Laboratory data reports and chain of custody forms are included in Attachment 7.

A GeoExplorer 7000 Series Trimble global positioning system (GPS) unit, or equivalent, was used to map the approximate center of each of the five-point composite samples. The confirmatory sampling locations are presented on Figure 1 (Attachment 2). Relevant equipment and prominent features/reference points at the site are mapped as well.

Closure Request

Vertex recommends no additional action to address the release at Tiger. Laboratory analyses of the confirmatory samples showed constituent of concern concentration levels below NM OCD Closure Criteria for areas where depth to

groundwater is between 50 and 100 feet bgs as presented in Table 1. There are no anticipated risks to human, ecological or hydrological receptors associated with the release site.

Based on the location of the release on an active site, access road and right-of-way, Vertex requests that restoration and reclamation of the release area commence at such time as the recycling facility is closed, production equipment is removed and the site reclaimed per 19.15.29.13 NMAC regulations.

Vertex requests that this incident (nCE2003652970) be closed as all closure requirements set forth in Subsection E of 19.15.29.12 NMAC have been met. Matador certifies that all information in this report and the attachments is correct, and that they have complied with all applicable closure requirements and conditions specified in Division rules and directives to meet NM OCD requirements to obtain closure on the January 22, 2020, release at the Tiger Recycling Facility.

Should you have any questions or concerns, please do not hesitate to contact the undersigned at 505.506.0040 or ngordon@vertex.ca.

Sincerely,

Natalie Gordon
PROJECT MANAGER

Attachments

Attachment 1. NM OCD C-141 Report
Attachment 2. Figures
Attachment 3. Closure Criteria for Soils Impacted by a Release Research Determination Documentation
Attachment 4. Daily Field Report(s) with Photographs
Attachment 5. Required 48-hr Notification of Confirmation Sampling to Regulatory Agencies
Attachment 6. Confirmatory Sampling Laboratory Results
Attachment 7. Laboratory Data Reports/Chain of Custody Forms

References

New Mexico Bureau of Geology and Mineral Resources. (2020). *Interactive Geologic Map.* Retrieved from http://geoinfo.nmt.edu.

New Mexico Oil Conservation Division. (2018). *New Mexico Administrative Code – Natural Resources and Wildlife Oil and Gas Releases*. Santa Fe, New Mexico.

New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System. (2020). *Water Column/Average Depth to Water Report.* Retrieved from http://nmwrrs.ose.state.nm.us/nmwrrs/waterColumn.html.

United States Department of Agriculture, Natural Resources Conservation Service. (2020). *Web Soil Survey*. Retrieved from https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.

United States Department of the Interior, Bureau of Land Management. (2020). *New Mexico Cave/Karsts*. Retrieved from https://www.blm.gov/programs/recreation/recreation-programs/caves/new-mexico.

United States Fish and Wildlife. (2020). *National Wetlands Inventory*. Retrieved from https://www.fws.gov/wetlands/Data/Mapper.html.

Limitations

This report has been prepared for the sole benefit of Matador Production Company (Matador). This document may not be used by any other person or entity, with the exception of the New Mexico Oil Conservation Division, without the express written consent of Vertex Resource Services Inc. (Vertex) and Matador. Any use of this report by a third party, or any reliance on decisions made based on it, or damages suffered as a result of the use of this report are the sole responsibility of the user.

The information and conclusions contained in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted scientific practices current at the time the work was performed. The conclusions and recommendations presented represent the best judgement of Vertex based on the data collected during the assessment. Due to the nature of the assessment and the data available, Vertex cannot warrant against undiscovered environmental liabilities. Conclusions and recommendations presented in this report should not be considered legal advice.

ATTACHMENT 1

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

Incident ID	nCE2003652970
District RP	
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Release Notification

Responsible Party

Responsible Party: Matador Production Company	OGRID: 228937
Contact Name: John Hurt	Contact Telephone: 972-371-5200
Contact email: JHurt@matadorresources.com	Incident # *(assigned by OCD)*
Contact mailing address: 5400 LBJ Freeway, Suite 1500 Dallas, TX 75240	

Location of Release Source

Latitude 32.212828 Longitude -104.050918
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Tiger Recycling Facility	Site Type: Produced Water Recycle Facility
Date Release Discovered: 01/22/2020	API# *(if applicable)* N/A

Unit Letter	Section	Township	Range	County
P	14	24S	28E	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)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 31 bbls	Volume Recovered (bbls) 5 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)
☐	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release:

The nipple on suction of pump broke causing release into right of way.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	nCE2003652970
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? > 25 bbls

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

No, initial release was believed to be under 25 bbls but following site evaluation, volume was determined to be 31 bbls. Natalie Gordon of Vertex emailed NM OCD on Friday 1/24 once accurate volume estimate was completed.

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: John Hurt Title: RES Specialist

Signature: [signature] Date: 1/28/20

email: JHurt@matadorresources.com Telephone: 972- 371-5200

OCD Only

Received by: Cristina Eads Date: 02/05/2020

ATTACHMENT 2

VERTEX

0 5 10 20 ft.

NAD 1983 UTM Zone 13N
Date: Feb 19/20

Map Center:
Lat: 32.211746,
Long:-104.052068

N

Site Schematic and Initial Spill Characterization Tiger Recycling Facility

FIGURE: 1

Geospatial data presented in this figure may be derived from external sources and Vertex does not assume any liability for inaccuracies. This figure is intended for reference use only and is not certified for legal, survey, or engineering purposes.

Note: Background image from ESRI, 2018.

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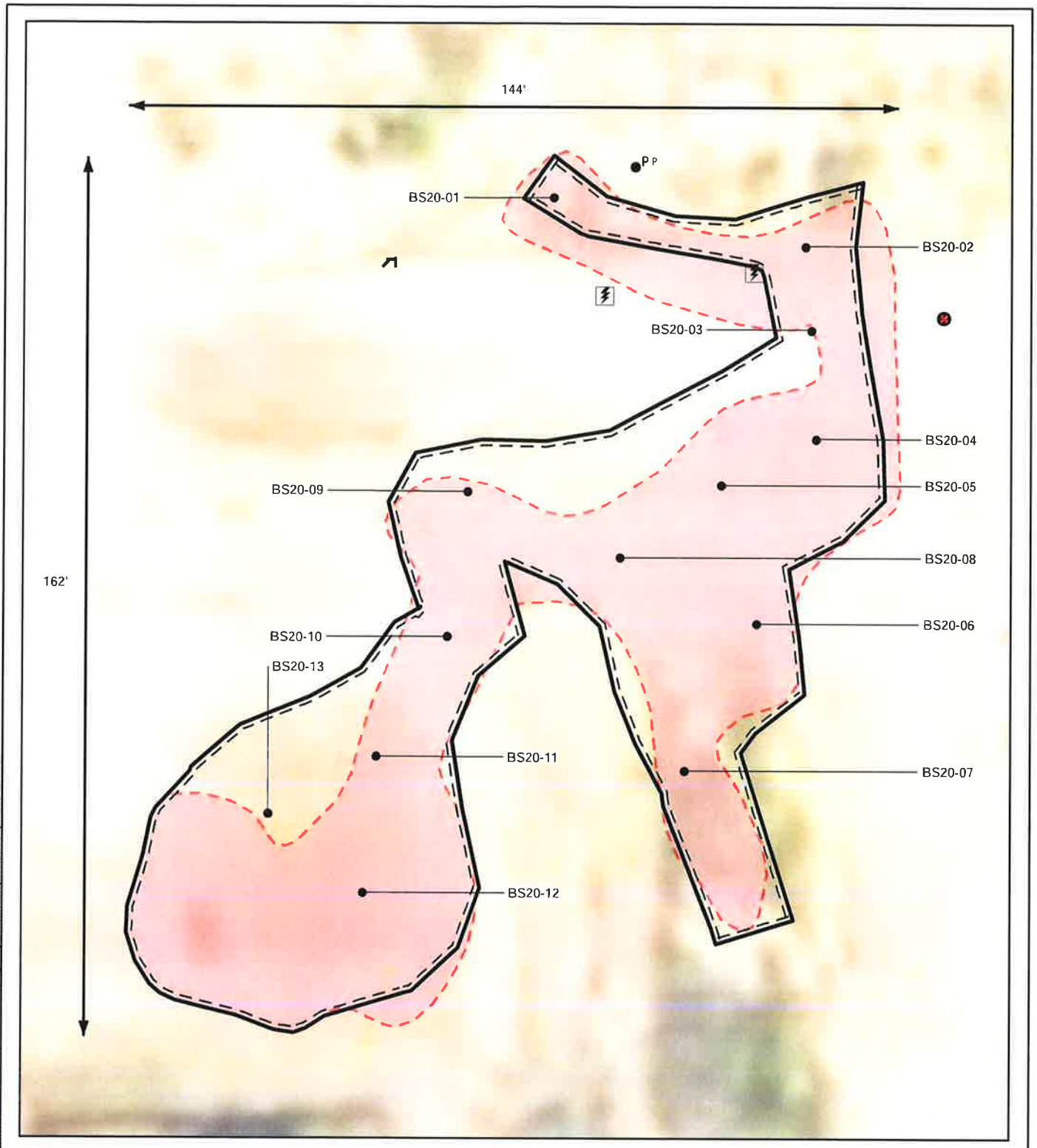
Document Path: G:\1-Projects_US PROJECTS\Matador Resources\20E-002390\001 - Tiger Tank Battery\Fig 1 Tiger Tank Battery Initial Spill Characterization.mxd



VERTEX

0 4.5 9 18 ft.

NAD 1983 UTM Zone 13N
Date: Mar 05/20

Map Center:
Lat: 32.211689,
Long:-104.052052

N

Excavation Footprint and Confirmatory Sampling Locations Tiger Recycling Facility

FIGURE: 2

Geospatial data presented in this figure may be derived from external sources and Vertex does not assume any liability for inaccuracies. This figure is intended for reference use only and is not certified for legal, survey, or engineering purposes.

Note: Background image from ESRI, 2018.

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\Matador Resources\20E-002391001 - Tiger Tank Battery\Fig 2 Tiger Tank Battery Confirmatory Excavation.mxd

ATTACHMENT 3

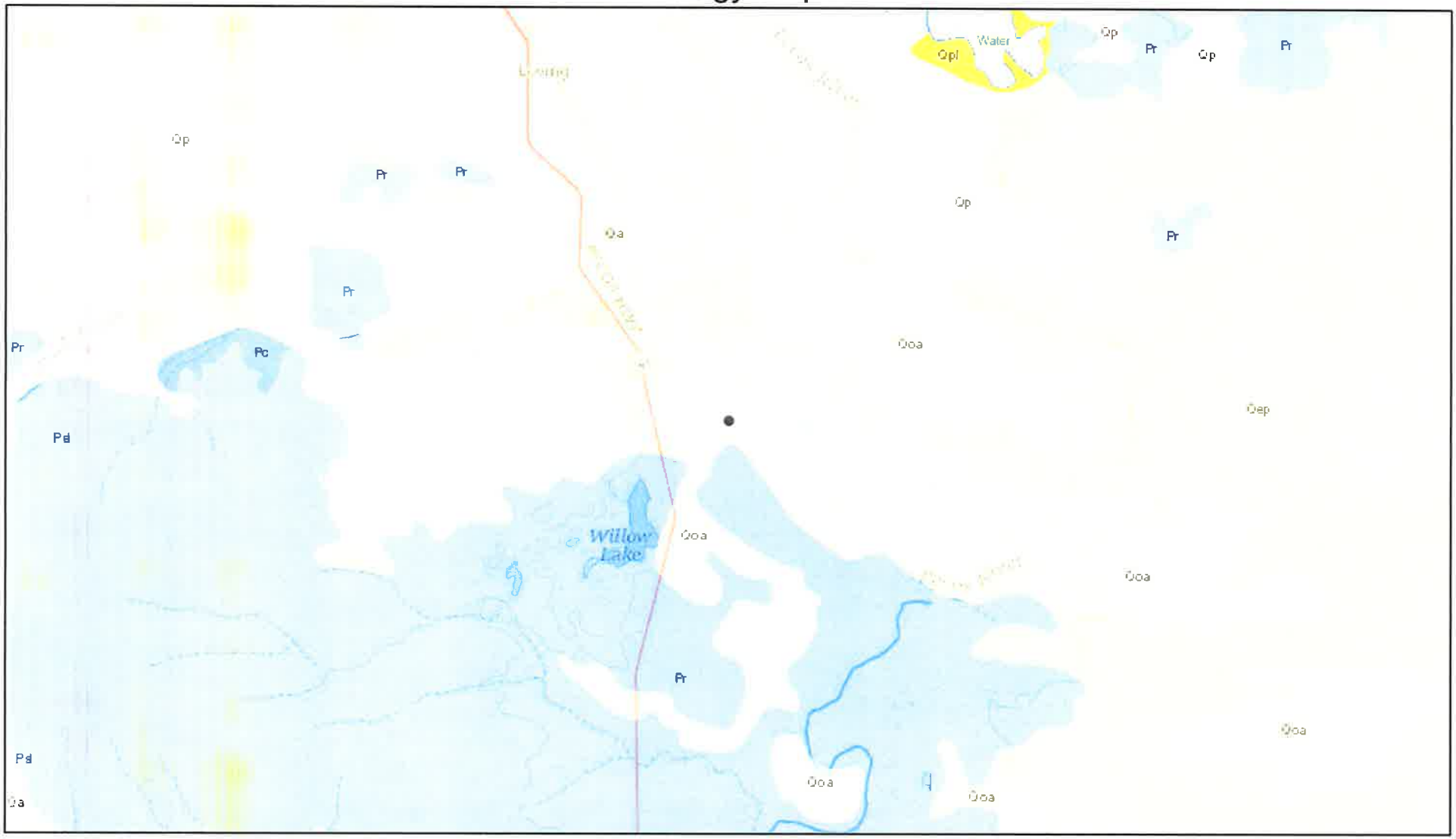
Closure Criteria Worksheet			
Site Name: Tiger Tank Battery			
Spill Coordinates:		X: 32.212828	Y: -104.050918
Site Specific Conditions		Value	Unit
1	Depth to Groundwater	**52**	feet
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	5,755	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	5,755	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	2,217	feet
5	i) Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, **or**	1,953	feet
	ii) Within 1000 feet of any fresh water well or spring	1,953	feet
6	Within incorporated municipal boundaries or within a defined municipal fresh water field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended, unless the municipality specifically approves	No	(Y/N)
7	Within 300 feet of a wetland	5,755	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
9	Within an unstable area (Karst Map)	Low	Critical High Medium Low
10	Within a 100-year Floodplain	>100	year
11	Soil Type	Residuum from weathered gypsum: Reeves loam and Gypsum land	
12	Ecological Classification	Both types well drained, reeves high runoff, Gypsum low runoff	
13	Geology	Older alluvial deposits, calcic soils, and eolian cover sediments	
	NMAC 19.15.29.12 E (Table 1) Closure Criteria	51-100'	<50' 51-100' >100'

Column1
Critical
High
Medium
Low

Column1
Yes
No

<50'
51-100'
>100'

Geology Map



1/28/2020, 1:43:14 PM

1:144,448

0 1 2 4 mi

0 1.5 3 6 km

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census

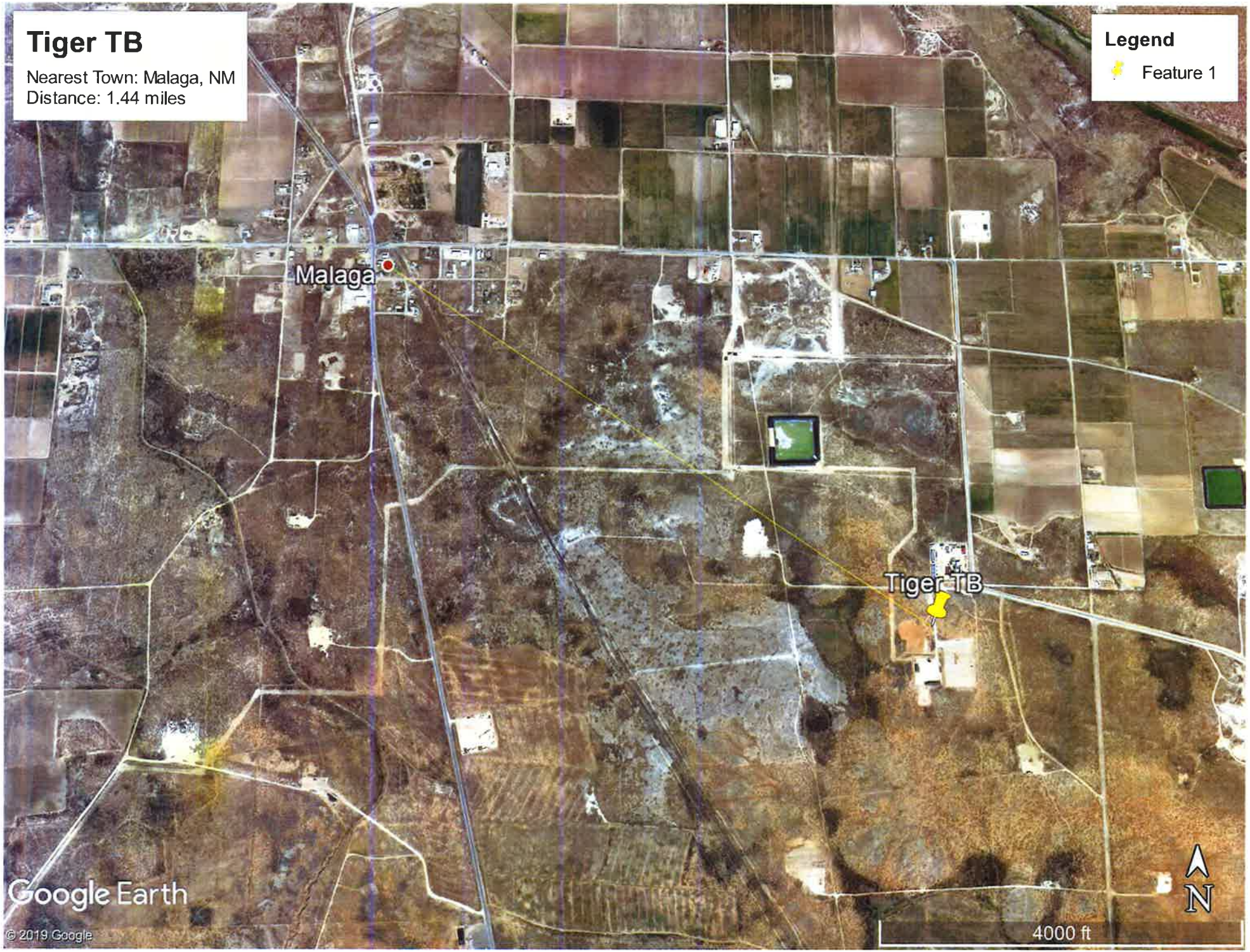
Web AppBuilder for ArcGIS

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census

USA Karst

A map showing karst areas in the United States based on the U.S. Geological Survey Open-File Report 2004-1352

U.S. Geological Survey Open-File Report 2004-1352, Caves and Karst in the U.S. National Park Service, AGI Karst Map of the US. | U.S. Geological Survey Open-File Report 2004-1352 | Earthstar Geographics



New Mexico Office of the State Engineer

Wells with Well Log Information

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right. (R=POD has been replaced, O=orphaned, C=the file is closed) (quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) (NAD83 UTM in meters) (in feet)

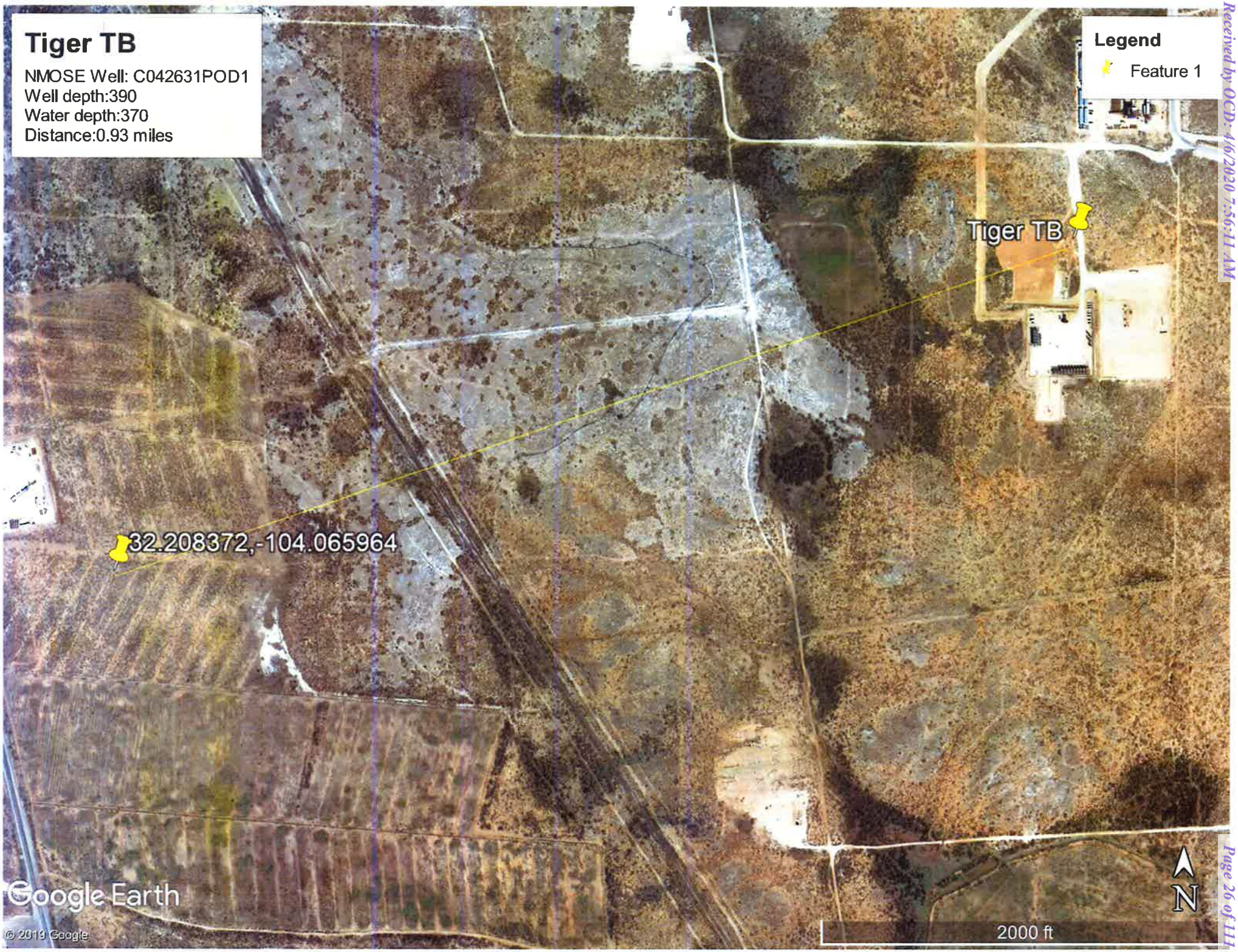
POD Number	Code	POD Subbasin	County	Source	q q q 64 16 4	Sec	Twn	Rng	X	Y	Distance	Start Date	Finish Date	Log File Date	Depth Well	Depth Water	Driller	License Number
C 02057		C	ED	Shallow	1 4	14	24S	28E	588956	3564774*	598	04/15/1983	04/16/1983	04/22/1983	126	52	MURRELL ABBOTT	46
C 00738		CUB	ED	Shallow	3 1 1	13	24S	28E	589673	3565472*	1075	01/15/1957	01/18/1957	02/04/1957	125	12	DONOWHO, JOE	75
C 00353	C	CUB	ED		3 4	13	24S	28E	590603	3564367*	1164	02/19/1953	03/07/1953	07/01/1958	2726		S & M DRILLING CO	
C 00903		C	ED	Shallow	2 1	13	24S	28E	590178	3565575*	1368	10/01/1959	10/31/1959	01/28/1960	57	30	SMITH, SAM S	108
C 04263 POD1		CUB	ED	Shallow	3 1 1	23	24S	28E	588026	3563915	1591	09/12/2018	09/13/2018	10/04/2018	390	370	JASON MALEY	1690
C 00464		CUB	ED	Shallow	2 2 1	13	24S	28E	590277	3565674*	1506	05/18/1954	05/25/1954	01/24/1955	111	28	J R JOLLEY	171
C 00354	C	CUB	ED		4 4	13	24S	28E	591005	3564367*	1565	08/21/1952	09/11/1952	07/01/1958	2739		S & W DRILLING CO	
C 00574		CUB	ED	Shallow	2 4 4	11	24S	28E	589452	3566081*	1659	08/12/1954	08/12/1954	09/10/1954	200	20	W D BRININSTOOL	161

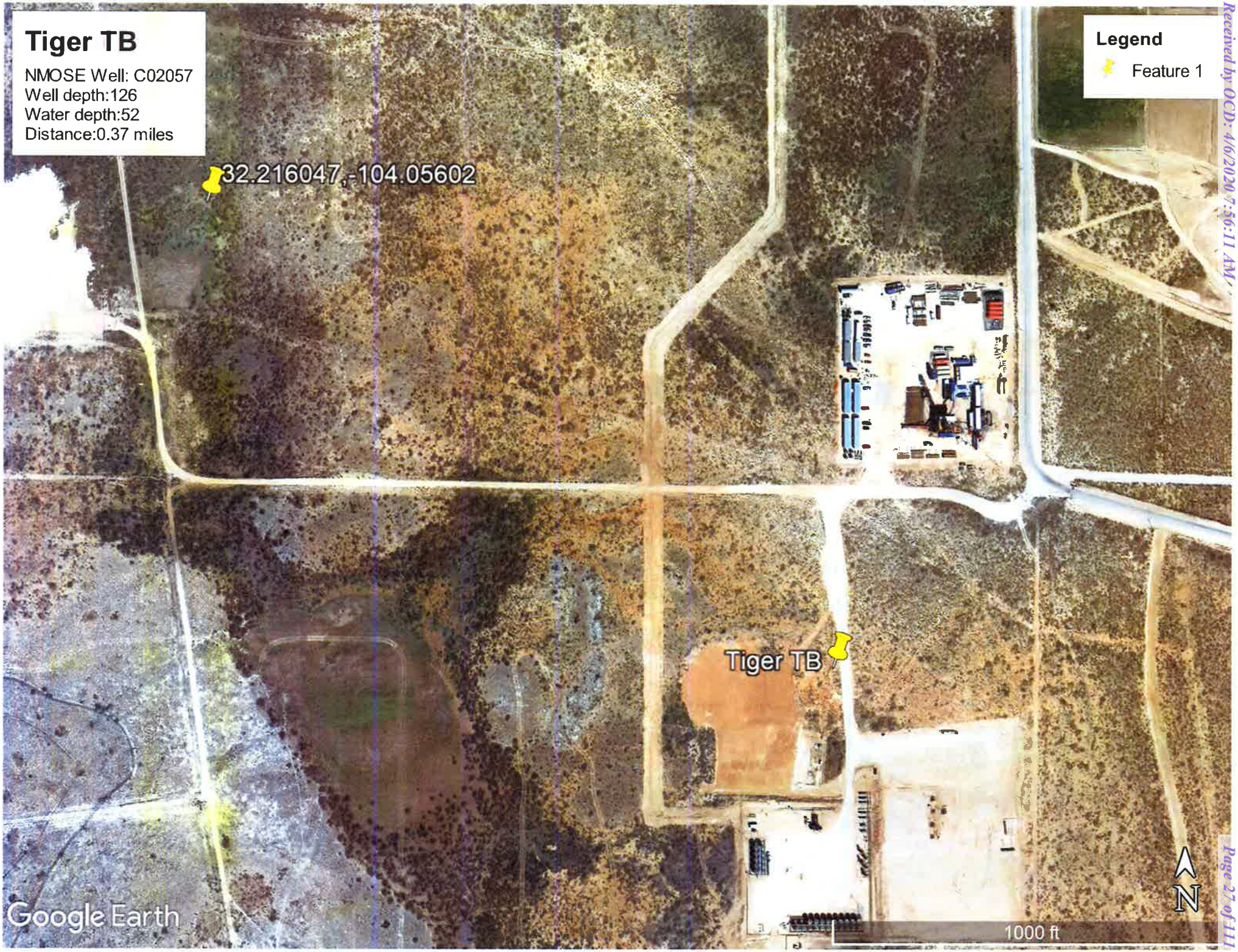
Record Count: 8

UTMNAD83 Radius Search (in meters):

Easting (X): 589440 Northing (Y): 3564421.96 Radius: 1750

*UTM location was derived from PLSS - see Help





New Mexico Office of the State Engineer
Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	C 02057		1	4	14	24S	28E	588956	3564774*

Driller License: 46 **Driller Company:** ABBOTT BROTHERS COMPANY

Driller Name: MURRELL ABBOTT

Drill Start Date:	04/15/1983	**Drill Finish Date:**	04/16/1983	**Plug Date:**	
Log File Date:	04/22/1983	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:	7.00	**Depth Well:**	126 feet	**Depth Water:**	52 feet

Water Bearing Stratifications:	Top	Bottom	Description
	90	125	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	91	126

***UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer
Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
NA	C 04263 POD1	3	1	1	23	24S	28E	588026	3563915

Driller License: 1690 **Driller Company:** VISION RESOURCES, INC
Driller Name: JASON MALEY

Drill Start Date: 09/12/2018 **Drill Finish Date:** 09/13/2018 **Plug Date:**
Log File Date: 10/04/2018 **PCW Rcv Date:** **Source:** Shallow
Pump Type: **Pipe Discharge Size:** **Estimated Yield:** 300 GPM
Casing Size: 8.00 **Depth Well:** 390 feet **Depth Water:** 370 feet

Water Bearing Stratifications:	Top	Bottom	Description
	350	390	Other/Unknown

Casing Perforations:	Top	Bottom
	290	390

Eddy Area, New Mexico

Gs—Gypsum land-Cottonwood complex, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 1w4j
Elevation: 1,250 to 5,000 feet
Mean annual precipitation: 10 to 25 inches
Mean annual air temperature: 57 to 66 degrees F
Frost-free period: 190 to 225 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Gypsum land: 60 percent
Cottonwood and similar soils: 30 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gypsum Land

Setting

Landform: Plains, ridges, hills
Landform position (two-dimensional): Backslope, footslope, shoulder, toeslope
Landform position (three-dimensional): Side slope, crest, nose slope, head slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Residuum weathered from gypsum

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Description of Cottonwood

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Backslope, footslope, shoulder, toeslope
Landform position (three-dimensional): Side slope, crest, nose slope, head slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Residuum weathered from gypsum

Typical profile

H1 - 0 to 9 inches: loam
H2 - 9 to 60 inches: bedrock

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 3 to 12 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: Gyp Upland (R042XC006NM)
Hydric soil rating: No

Minor Components

Cottonwood

Percent of map unit: 5 percent
Ecological site: Salty Bottomland (R042XC033NM)
Hydric soil rating: No

Rock outcrop

Percent of map unit: 5 percent
Hydric soil rating: No

Data Source Information

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 15, Sep 15, 2019

Eddy Area, New Mexico

Rt—Reeves loam, shallow, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 1w5s
Elevation: 1,250 to 4,500 feet
Mean annual precipitation: 10 to 25 inches
Mean annual air temperature: 57 to 66 degrees F
Frost-free period: 200 to 225 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Reeves and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Reeves

Setting

Landform: Plains, ridges, hills
Landform position (two-dimensional): Backslope, footslope, shoulder, toeslope
Landform position (three-dimensional): Side slope, crest, nose slope, head slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Residuum weathered from gypsum

Typical profile

Ap - 0 to 18 inches: loam
H2 - 18 to 60 inches: gypsiferous material

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 80 percent
Salinity, maximum in profile: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: Loamy (R042XC007NM)
Hydric soil rating: No

Minor Components

Reeves

Percent of map unit: 2 percent
Ecological site: Loamy (R042XC007NM)
Hydric soil rating: No

Cottonwood

Percent of map unit: 2 percent
Ecological site: Gyp Upland (R042XC006NM)
Hydric soil rating: No

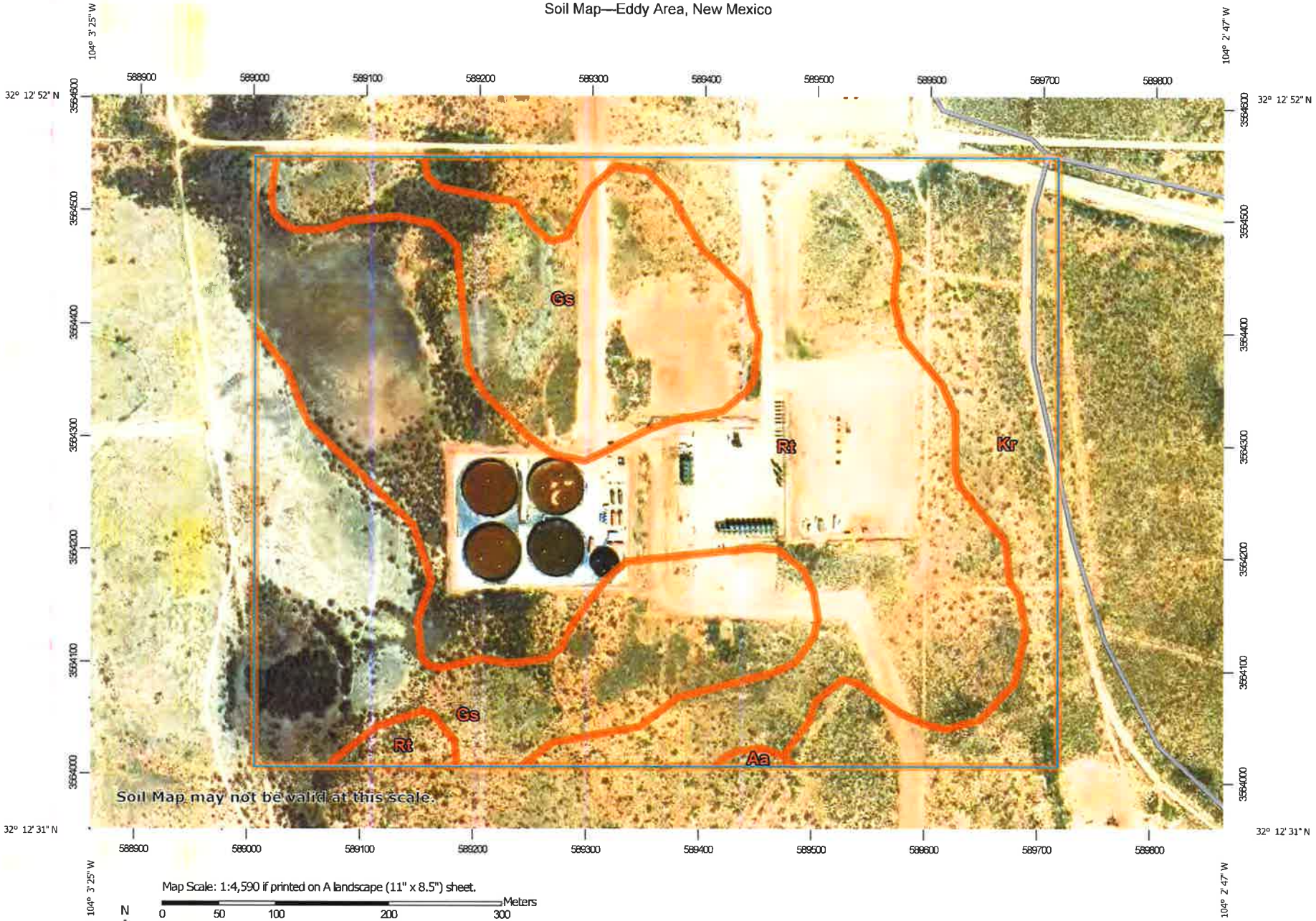
Reeves

Percent of map unit: 1 percent
Landform: Flood plains, plains, ridges, hills
Landform position (two-dimensional): Backslope, footslope, shoulder, toeslope
Landform position (three-dimensional): Side slope, crest, nose slope, head slope, talf
Down-slope shape: Convex
Across-slope shape: Convex, linear
Ecological site: Salt Flats (R042XC036NM)
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 15, Sep 15, 2019

Soil Map—Eddy Area, New Mexico



Map Scale: 1:4,590 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 15, Sep 15, 2019

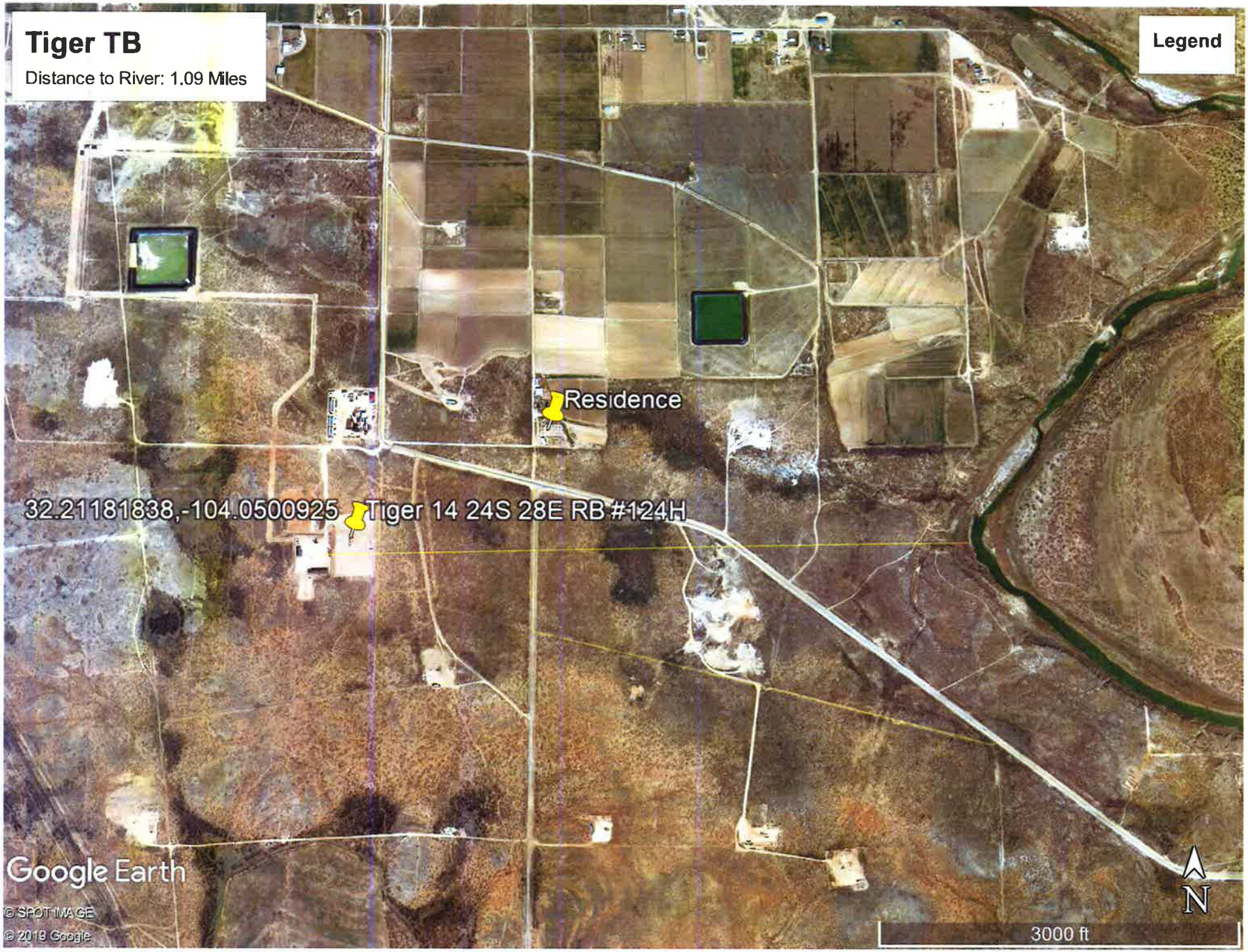
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Sep 17, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Aa	Anthony sandy loam, 0 to 1 percent slopes	0.2	0.2%
Gs	Gypsum land-Cottonwood complex, 0 to 3 percent slopes	33.3	34.8%
Kr	Karro loam, 0 to 1 percent slopes	14.6	15.3%
Rt	Reeves loam, shallow, 0 to 1 percent slopes	47.5	49.7%
Totals for Area of Interest		**95.7**	**100.0%**



Click to hideNews Bulletins

- Introducing The Next Generation of USGS Water Data for the Nation
- Full News

USGS 321343104025801 24S.28E.11.44211

Available data for this site SUMMARY OF ALL AVAILABLE DATA ▼ GO

Well Site

DESCRIPTION:

Latitude 32°13'43", Longitude 104°02'58" NAD27
Eddy County, New Mexico , Hydrologic Unit 13060011
Well depth: 200 feet
Land surface altitude: 2,977 feet above NAVD88.
Well completed in "Alluvium, Bolson Deposits and Other Surface Deposits" (110AVMB) local aquifer

AVAILABLE DATA:

Data Type	Begin Date	End Date	Count
Field groundwater-level measurements	1954-09-27	1998-01-23	9
Revisions	Unavailable (site:0) (timeseries:0)		

OPERATION:

Record for this site is maintained by the USGS New Mexico Water Science Center

Email questions about this site to New Mexico Water Science Center Water-Data Inquiries

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

Accessibility Plug-Ins FOIA Privacy Policies and Notices

U.S. Department of the Interior | U.S. Geological Survey

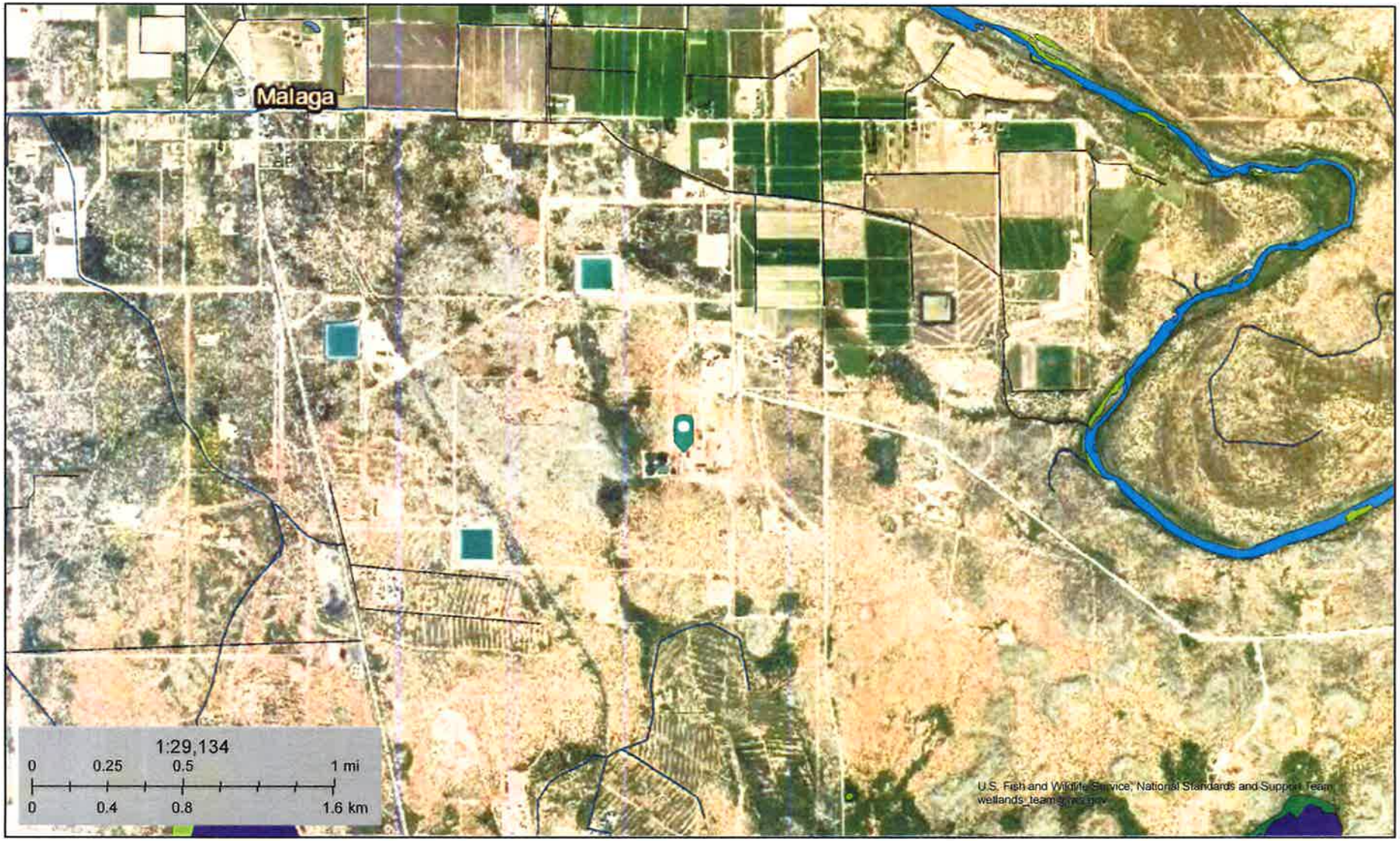
Title: NWIS Site Information for USA: Site Inventory
URL: https://waterdata.usgs.gov/nwis/inventory?agency_code=USGS&site_no=321343104025801

Page Contact Information: New Mexico Water Data Support Team
Page Last Modified: 2020-01-24 09:30:32 EST
0.4 0.39 caww02

U.S. Fish and Wildlife Service

National Wetlands Inventory

Tiger Wetlands



January 27, 2020

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

ATTACHMENT 4

Daily Site Visit Report

VERTEX

Client:	Matador Resources	Inspection Date:	1/22/2020
Site Location Name:	Tiger Tank Battery Booster	Report Run Date:	1/26/2020 8:22 PM
Project Owner:	John Hurt	File (Project) #:	20E-00239
Project Manager:	Natalie Gordon	API #:	
Client Contact Name:	John Hurt	Reference	Mid-stream release at booster station
Client Contact Phone #:			

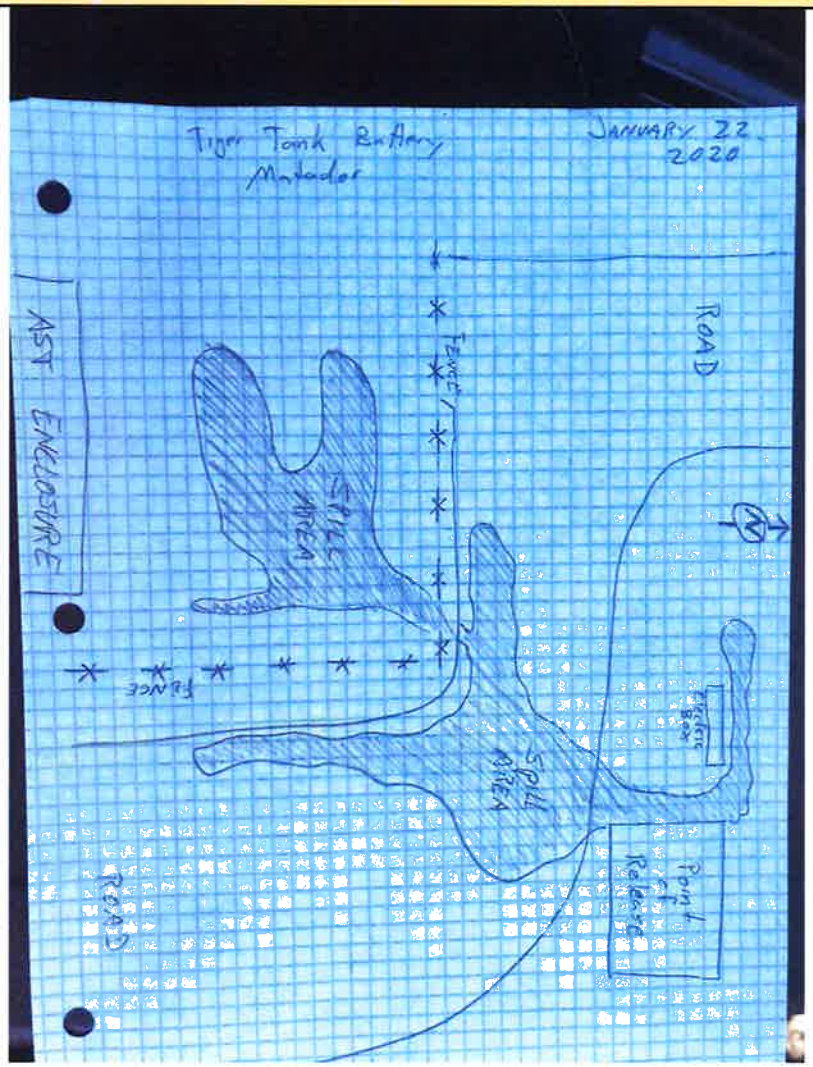
Summary of Times

Left Office	1/22/2020 12:00 PM
Arrived at Site	1/22/2020 12:45 PM
Departed Site	1/22/2020 4:45 PM
Returned to Office	1/22/2020 5:30 PM

Daily Site Visit Report

VERTEX

Site Sketch



Daily Site Visit Report

VERTEX

Summary of Daily Operations

13:11 Initial spill visit.
Arrive on site.
Complete safety paperwork.
Document spill.
Obtain initial visit samples.
Complete DFR.
Return to office.

Next Steps & Recommendations

1 Send surface samples and lowest depth samples to lab for analysis.

2 Create remediation plan.

3 Schedule dig and field screening.

Sampling

Background20-01

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.				2688 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.212177, -104.052770	Yes
1 ft.				2754 ppm		✓	32.212177, -104.052770	Yes
2 ft.				2777 ppm		✓	32.212177, -104.052770	Yes

Daily Site Visit Report

VERTEX

BH20-01

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.				11886 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	✓	32.211879, -104.052042	Yes
0.5 ft.				3694 ppm		✓	32.211879, -104.052042	Yes
1 ft.				3174 ppm		✓	32.211879, -104.052042	Yes
2 ft.				2505 ppm		✓	32.211879, -104.052042	Yes

BH20-02

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.				9134 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.211857, -104.051870	Yes
0.5 ft.				3039 ppm		✓	32.211857, -104.051870	Yes
1 ft.				3142 ppm		✓	32.211857, -104.051870	Yes

2 ft.				2471 ppm		✓	32.211857, -104.051870	Yes

BH20-03

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.				10122 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.211726, -104.051894	Yes
0.5 ft.				6702 ppm		✓	32.211726, -104.051894	Yes
1 ft.				1881 ppm		✓	32.211726, -104.051894	Yes
2 ft.				2636 ppm		✓	32.211726, -104.051894	Yes

BH20-04

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.				6231 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.211645, -104.051908	Yes
0.5 ft.				576 ppm		✓	32.211645, -104.051908	Yes

VERTEX

1 ft.				475 ppm		✓	32.211645, -104.051908	Yes
2 ft.				360 ppm	TPH (TX1005)	✓	32.211645, -104.051908	Yes

BH20-05

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.				12753 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.211526, -104.051930	Yes
0.5 ft.				490 ppm		✓	32.211526, -104.051930	Yes
1 ft.				139 ppm		✓	32.211526, -104.051930	Yes
2 ft.				172 ppm		✓	32.211526, -104.051930	Yes

BH20-06

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.				17109 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.211709, -104.051996	Yes

0.5 ft.				2786 ppm		✓	32.211709, -104.051996	Yes
1 ft.				1478 ppm		✓	32.211709, -104.051996	Yes
2 ft.				969 ppm		✓	32.211709, -104.051996	Yes

BH20-07

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.				10024 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.211722, -104.052116	Yes
0.5 ft.				755 ppm		✓	32.211722, -104.052116	Yes
1 ft.				745 ppm		✓	32.211722, -104.052116	Yes
2 ft.				552 ppm		✓	32.211722, -104.052116	Yes

Daily Site Visit Report

VERTEX

BH20-08

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.				10226 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.211610, -104.052132	Yes
0.5 ft.				696 ppm		✓	32.211610, -104.052132	Yes
1 ft.				572 ppm		✓	32.211610, -104.052132	Yes
2 ft.				558 ppm		✓	32.211610, -104.052132	Yes

BH20-09

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.				11394 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.211477, -104.052126	Yes
0.5 ft.				2369 ppm		✓	32.211477, -104.052126	Yes
1 ft.				1220 ppm		✓	32.211477, -104.052126	Yes

2 ft.				1060 ppm		✓	32.211477, -104.052126	Yes

BH20-10

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.				8936 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.211541, -104.052175	Yes
0.5 ft.				3173 ppm		✓	32.211541, -104.052175	Yes
1 ft.				3643 ppm		✓	32.211541, -104.052175	Yes
2 ft.				2274 ppm		✓	32.211541, -104.052175	Yes

BH20-11

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.				11095 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.211517, -104.052270	Yes
0.5 ft.				1940 ppm		✓	32.211517, -104.052270	Yes

1 ft.				2281 ppm		✓	32.211517, -104.052270	Yes

BH20-12

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.				13921 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.211573, -104.052255	Yes
0.5 ft.				1103 ppm		✓	32.211573, -104.052255	Yes
1 ft.				973 ppm		✓	32.211573, -104.052255	Yes

VERTEX

Site Photos

Viewing Direction: Northeast

Point of release

Viewing Direction: West

Spill area

Viewing Direction: Northeast

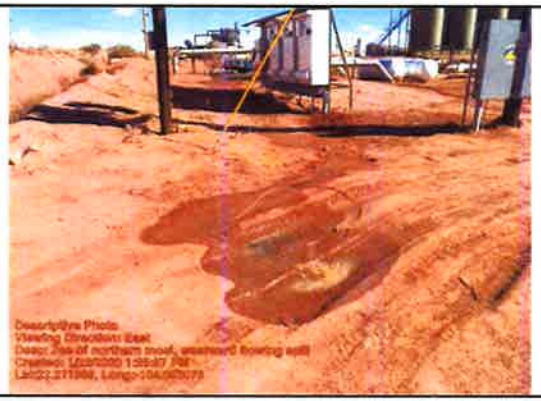
Point of release

Viewing Direction: West

Point of release flowing westward

Daily Site Visit Report

VERTEX

Viewing Direction: East	**Viewing Direction**: South
	
Toe of northern most, westward flowing spill	Spill area
Viewing Direction: Northeast	**Viewing Direction**: Northeast
	
Spill area	Spill area

Daily Site Visit Report

VERTEX

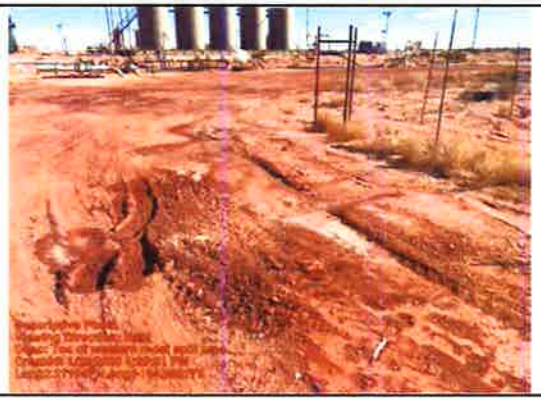
Viewing Direction: North

Toe of southern most spill area

Viewing Direction: West

Westward flow of spill

Viewing Direction: East



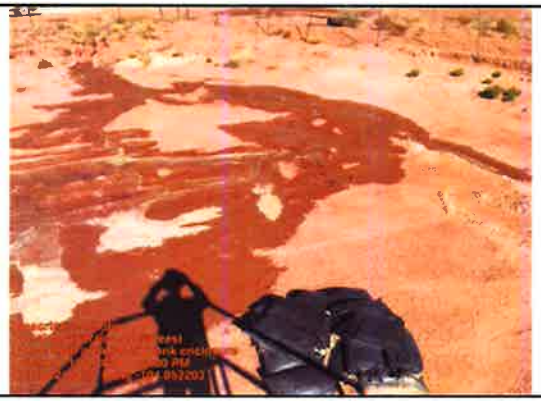
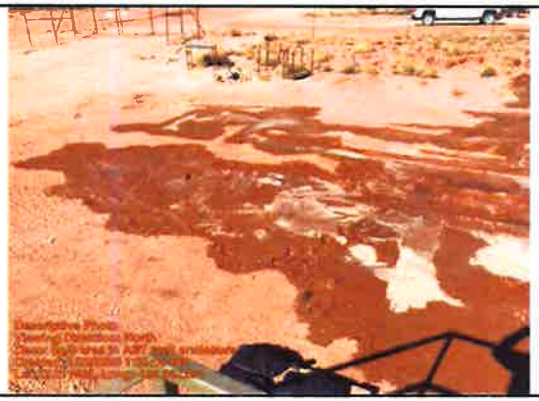
Toe of western most spill area

Viewing Direction: Southwest

Spill hits fence and goes Southwest, into lower area AST tank enclosure

Daily Site Visit Report

VERTEX

Viewing Direction: Northeast	**Viewing Direction**: North
	
Spill area in AST tank enclosure	Spill area in AST tank enclosure
Viewing Direction: West	**Viewing Direction**: Southwest
	
Spill area in AST tank enclosure	Spill area in AST tank enclosure

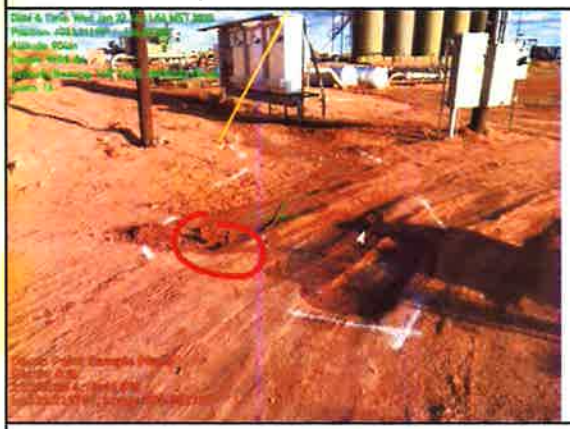
Daily Site Visit Report

Viewing Direction: East	**Viewing Direction**: East
	
Spill area in AST tank enclosure	Spill area in AST tank enclosure

VERTEX

Depth Sample Photos

Sample Point ID: BH20-01

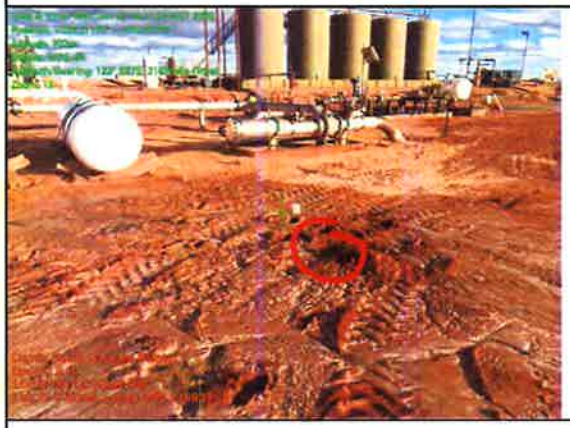


Depth: 0 ft.

Sample Point ID: BH20-02

Depth: 0 ft.

Sample Point ID: BH20-03



Depth: 0 ft.

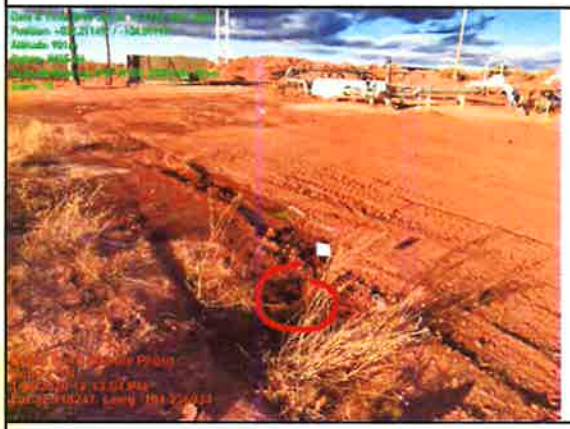
Sample Point ID: BH20-04

Depth: 0 ft.

Daily Site Visit Report

VERTEX

Sample Point ID: BH20-05

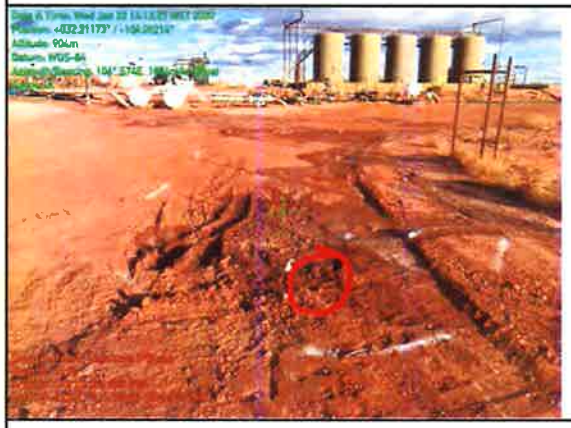


Depth: 0 ft.

Sample Point ID: BH20-06

Depth: 0 ft.

Sample Point ID: BH20-07



Depth: 0 ft.

Sample Point ID: BH20-08

Depth: 0 ft.

Daily Site Visit Report

VERTEX

Sample Point ID: BH20-09

Depth: 0 ft.

Sample Point ID: BH20-10

Depth: 0 ft.

Sample Point ID: BH20-11

Depth: 0 ft.

Sample Point ID: BH20-12

Depth: 0 ft.

Daily Site Visit Report

Sample Point ID: Background20-01

Depth: 0 ft.

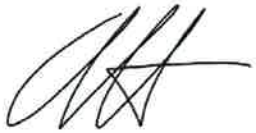
Daily Site Visit Report

VERTEX

Daily Site Visit Signature

Inspector: Austin Harris

Signature:



VERTEX

Spill Response and Sampling

Client:	Matador
Date:	1/22
Site Name:	Tiger TB
Site Location:	
Project Owner:	
Project Manager:	
Project #:	

Initial Spill Information - Record on First Visit	
Spill Date:	
Spill Volume:	
Spill Cause:	
Spill Product:	
Recovered Spill Volume:	
Recovery Method:	

Sampling

		Field Screening			Data Collection (Check for Yes)			
Sample ID	Depth (ft)	VOC (PID)	PetroFlag TPH (ppm)	Quantab (High/Low) Cor	~~Lab Analysis~~	Picture	Trimble Coordinates	Marked on Site Sketch
~~SS/TP/BH~~ Point Number Ex. BH18-01	Ex. 2ft	Ex. 400 ppm	200 ppm	Ex. High+	Notes ~~Ex. Hydrocarbon~~ ~~Chloride~~			
BH1	0			8.31/21.2	11886.4892 ppm			
	0.5			2.64/21.4	3694.3184			
	1			2.28/21.4	3174.7304			
	2			1.81/21.2	2505.0392			
BH2	0			6.37/20.1	9134.1161			
	0.5			2.15/20.2	3039.0602			
	1			2.21/19.8	3142.9778			
	2			1.76/20.3	2471.8433			
BH3	0			7.04/19.6	10122.7766			
	0.5			4.70/20.6	6702.1556			
	1			1.36/20.6	1881.5336			
	2			1.88/20.5	2636.3795			
BH4	0			4.38/20.8	6231.6398			
	0.5			0.45/20.4	576.7904			
	1			0.38/20.4	475.7594			
	2			0.30/20.4	360.2954			
BH5	0			8.89/20.5	12753.9125			
	0.5			0.39/20.4	490.1924			
	1			0.15/20.5	139.4705			
	2			0.17/20.4	172.6664			
BH6	0			11.89/19.9	17109.7919			
	0.5			1.96/19.7	2786.4827			

VERTEX

Spill Response and Sampling

Client:	Matador
Date:	1/22
Site Name:	Tiger TB
Site Location:	
Project Owner:	
Project Manager:	
Project #:	

Initial Spill Information - Record on First Visit	
Spill Date:	
Spill Volume:	
Spill Cause:	
Spill Product:	
Recovered Spill Volume:	
Recovery Method:	

Sampling

		Field Screening			Data Collection (Check for Yes)			
Sample ID	Depth (ft)	VOC (PID)	PetroFlag TPH (ppm)	Quantab (High/Low) + or -	Lab Analysis	Picture	Trimble Coordinates	Marked on Site Sketch
SS/HP/BH Point Number Ex. BH18-01	Ex. '2ft	Ex. 400 ppm	200 ppm	Ex. 'High +	Ex. Hydrocarbon Chloride			
BH6	1			1.06/19.9	1478.8529			
	2			0.71/20.0	969.368			
BH7	0			6.99/20.2	10024.6322			
	0.5			0.58/20.6	755.7596			
	1			0.57/20.5	745.6565			
	2			0.43/20.3	552.2543			
BH8	0			7.13/20.2	10226.6942			
	0.5			0.53/20.3	696.5843			
	1			0.45/20.5	572.4605			
	2			0.44/20.5	558.0275			
BH9	0			7.93/19.9	11394.3239			
	0.5			1.68/20.0	2369.369			
	1			0.89/20.2	clay 1220.5022			
	~~2~~ 1.5			0.77/19.9	(R) clay 1060.2959			
BH10	0			6.23/20.0	8936.384			
	0.5			2.24/20.1	3173.2871			
	1			2.56/19.9	3643.8029			
	2			1.62/20.2	2274.1112			
BH11	0			7.75/20.8	11095.5608			
	0.5			1.41/20.9	1940.7089			
	1			1.64/20.7	(R) 2281.3277			
	~~2~~							

VERTEX

Spill Response and Sampling

Client:	Matador
Date:	1/22
Site Name:	Tiger TB
Site Location:	
Project Owner:	
Project Manager:	
Project #:	

Initial Spill Information - Record on First Visit	
Spill Date:	
Spill Volume:	
Spill Cause:	
Spill Product:	
Recovered Spill Volume:	
Recovery Method:	

Sampling

		Field Screening			Data Collection (Check for Yes)			
Sample ID	Depth (ft)	VOC (PID)	PetroFlag TPH (ppm)	~~Quantab~~ (High/Low) + or -	Lab Analysis	Picture	Trimble Coordinates	Marked on Site Sketch
SS/IP/BH Year Number Ex. BH18-01	Ex. '2ft	Ex. 400 ppm	200 ppm	Ex. 'High+	Ex. Hydrocarbon Chloride			
BH12	0			9.72/21.2	13921.5422			
	0.5			0.83/20.9	Rocky 1103.5949			
	1			0.74/20.9	(R) Rocky 973.6979			
	2							
BG1	0			1.88/19.3	2688.3383			
	1			1.92/19.1	2754.7301			
	2			1.93/18.9	2777.8229			

Daily Site Visit Report

VERTEX

Client:	Matador Resources	Inspection Date:	2/12/2020
Site Location Name:	Tiger Tank Battery Booster	Report Run Date:	2/13/2020 1:12 AM
Project Owner:	John Hurt	File (Project) #:	20E-00239
Project Manager:	Natalie Gordon	API #:	
Client Contact Name:	John Hurt	Reference	Mid-stream release at booster station
Client Contact Phone #:			

Summary of Times

Left Office	2/12/2020 2:00 PM
Arrived at Site	2/12/2020 3:06 PM
Departed Site	
Returned to Office	

Summary of Daily Operations

15:06 Arrive on location. Safety paperwork. Add equipment to map for figure

Next Steps & Recommendations

1

Daily Site Visit Report

VERTEX

Site Photos

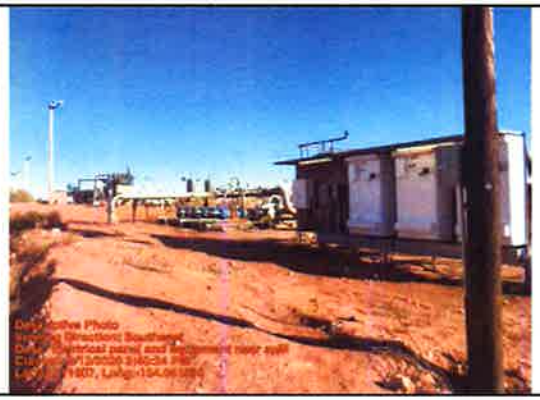
Viewing Direction: West

Riser near spill

Viewing Direction: South

Electric panel and power pole next to spill

Viewing Direction: Southeast



Electrical panel and equipment near spill

Viewing Direction: South

Equipment next to spill area

Daily Site Visit Report

Viewing Direction: South

Equipment next to spill area

Daily Site Visit Report

VERTEX

Daily Site Visit Signature

Inspector: Monica Peppin

Signature:

Daily Site Visit Report

Client:	Matador Resources	Inspection Date:	3/2/2020
Site Location Name:	Tiger Tank Battery Booster	Report Run Date:	3/2/2020 8:52 PM
Project Owner:	John Hurt	File (Project) #:	20E-00239
Project Manager:	Natalie Gordon	API #:	
Client Contact Name:	John Hurt	Reference	Mid-stream release at booster station
Client Contact Phone #:			

Summary of Times

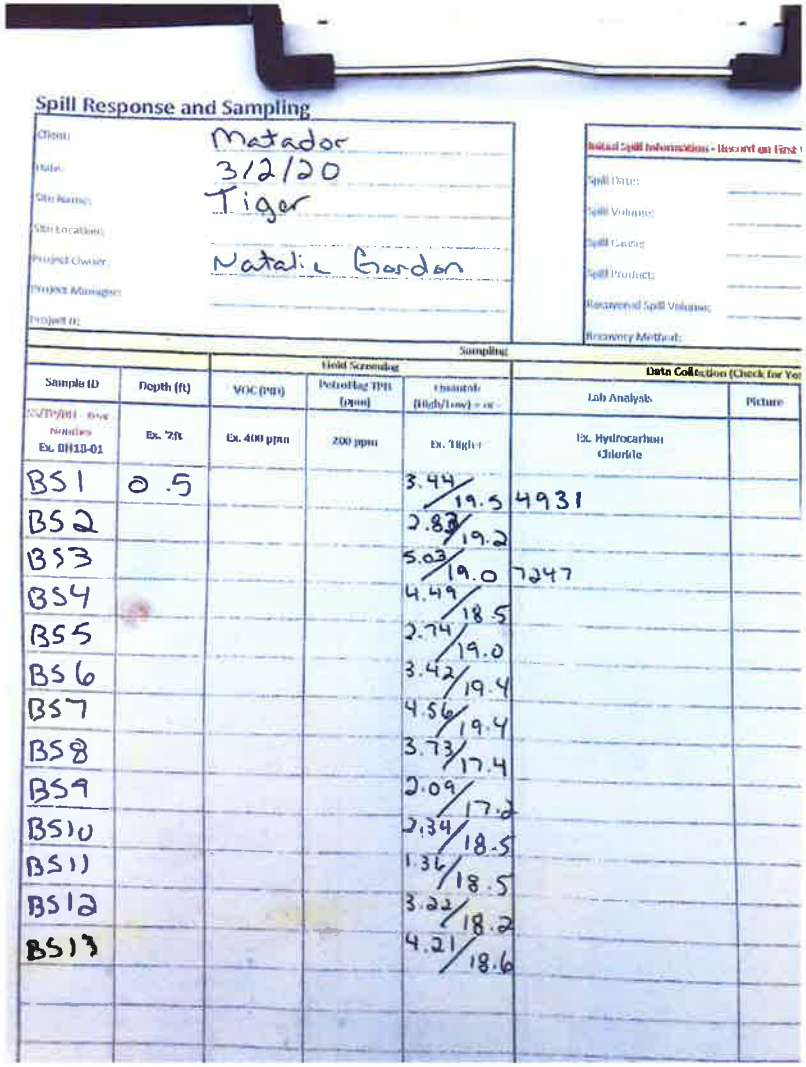
Left Office	3/2/2020 7:00 AM
Arrived at Site	3/2/2020 8:00 AM
Departed Site	3/2/2020 12:00 PM
Returned to Office	

Daily Site Visit Report

VERTEX

Site Sketch

Daily Site Visit Report



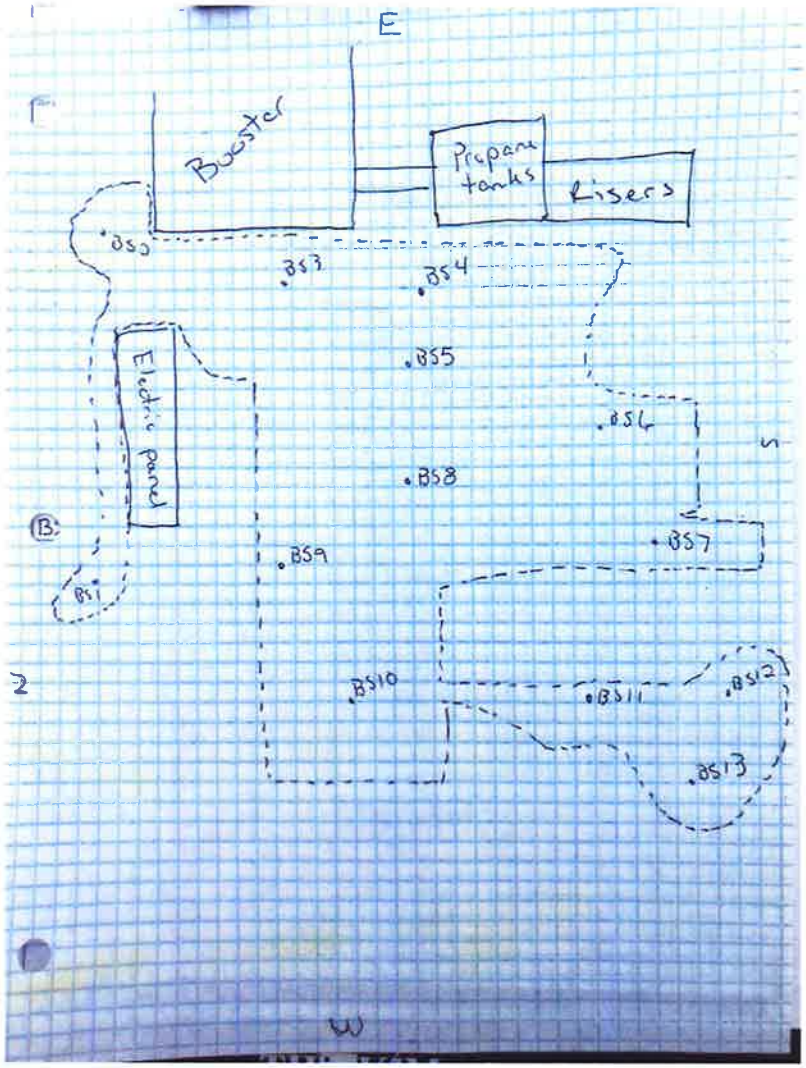
Spill Response and Sampling

Client: Matador
Date: 3/2/20
Site Name: Tiger
Site Location:
Project Owner: Natalie Gordon
Project Manager:
Project ID:

Initial Spill Information - Record on First
Spill Date:
Spill Volume:
Spill Cause:
Spill Product:
Recovered Spill Volume:
Recovery Method:

Sampling						
		Field Screening			Data Collection (Check for Yes)	
Sample ID	Depth (ft)	VOC (PID)	Petroflag TPH (ppm)	Chloride (High/Low) + or -	Lab Analysis	Picture
Ex. BH10-01	Ex. 7ft	Ex. 400 ppm	200 ppm	Ex. High +	Ex. Hydrocarbon Chloride	
BS1	0.5			3.44/19.5	4931	
BS2				2.83/19.2		
BS3				5.03/19.0	7247	
BS4				4.49/18.5		
BS5				2.74/19.0		
BS6				3.42/19.4		
BS7				4.56/19.4		
BS8				3.73/17.4		
BS9				2.09/17.2		
BS10				2.34/18.5		
BS11				1.36/18.5		
BS12				3.22/18.2		
BS13				4.21/18.6		

Daily Site Visit Report



Daily Site Visit Report

VERTEX

Summary of Daily Operations

8:08 Arrive on location safety paperwork collect confirmation samples

Next Steps & Recommendations

1 Send confirmation samples to lab

2 Start closure report

Daily Site Visit Report

VERTEX

Site Photos

Viewing Direction: East	**Viewing Direction**: South
	
Excavation area	Excavation area
Viewing Direction: East	**Viewing Direction**: South
	
Excavation area next to electrical panel	Excavation area near booster

Daily Site Visit Report

Viewing Direction: West

Excavation area on right of way

Viewing Direction: East

Excavation area in water treatment facility

Viewing Direction: North

Excavation area in water treatment facility

Daily Site Visit Report

VERTEX

Daily Site Visit Signature

Inspector: Monica Peppin

Signature:

ATTACHMENT 5

Natalie Gordon

From: Natalie Gordon
Sent: Friday, February 28, 2020 2:42 PM
To: Mike Bratcher (mike.bratcher@state.nm.us); Victoria Venegas (Victoria.Venegas@state.nm.us); Robert Hamlet (Robert.Hamlet@state.nm.us)
Subject: Incident nCE2003652970: Tiger Recycling Facility 48-hr Confirmatory sampling Notification - Matador Production Company

All:

Please accept this email as 48-hr notification that Vertex Resource Services Inc. has scheduled confirmation sampling to be conducted at Tiger Recycling Facility for the incident that occurred on 01/22/2020. The initial C-141 was submitted by Matador Production Company on 01/28/2020. Incident # nCE 2003652970 has been assigned to this release.

On March 2, 2020 beginning at 8:00 a.m., Vertex personnel will be onsite to guide remediation efforts of the above-reference release. Once excavation activities are complete at approximately 3:30 p.m., Vertex will collect confirmation samples to obtain closure of the incident.

If you need assistance with directions to the site, or have any questions or concerns, please do not hesitate to contact me at 505-506-0040.

Thank you,
Natalie

ATTACHMENT 6

Client Name: Matador Production Company
Site Name: Tiger Recycling Facility/Tracking
Number: nCE2003652970
Project #: 20E-00239-001
Lab Report: 2003069

Table 2. Confirmatory Sampling Field Screening and Lab Data: Depth to Groundwater 51 to ≤100 feet

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
						Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (Petro Flag)	Inorganics (Electroconductivity)	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BS20-01	0.5	March 2, 2020	-	-	4,931	<0.025	<0.221	<4.9	<9.8	<49	<14.7	<63.7	4,700
BS20-02	0.5	March 2, 2020	-	-	4,063	<0.025	<0.222	<4.9	<9.5	<47	<14.4	<61.4	2,400
BS20-03	0.5	March 2, 2020	-	-	7,247	<0.024	<0.213	<4.7	<9.9	<49	<14.6	<63.6	6,300
BS20-04	0.5	March 2, 2020	-	-	6,490	<0.024	<0.216	<4.8	<9.9	<49	<14.7	<63.7	6,000
BS20-05	0.5	March 2, 2020	-	-	3,943	<0.023	<0.210	<4.7	<9.9	<49	<14.6	<63.6	2,600
BS20-06	0.5	March 2, 2020	-	-	4,907	<0.025	<0.224	<5.0	<9.8	<49	<14.8	<63.8	3,700
BS20-07	0.5	March 2, 2020	-	-	6,552	<0.024	<0.213	<4.7	<9.7	<48	<14.4	<62.4	5,100
BS20-08	0.5	March 2, 2020	-	-	5,441	<0.024	<0.219	<4.9	<9.4	<47	<14.3	<61.3	4,700
BS20-09	0.5	March 2, 2020	-	-	3,082	<0.023	<0.207	<4.6	<9.4	<47	<14.5	<61.5	1,600
BS20-10	0.5	March 2, 2020	-	-	3,387	<0.024	<0.216	<4.8	<9.7	<49	<14.5	<63.5	3,200
BS20-11	0.5	March 2, 2020	-	-	1,972	<0.024	<0.212	<4.7	<9.7	<48	<14.4	<62.4	930
BS20-12	0.5	March 2, 2020	-	-	4,670	<0.024	<0.216	<4.8	45	<49	45	45	4,400
BS20-13	0.5	March 2, 2020	-	-	6,082	<0.024	<0.212	<4.7	28	<47	28	28	6,600

"-" - Not assessed/analyzed
Bold and shaded indicates exceedance outside of, or near, applied action level

VERTEX

ATTACHMENT 7

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 31, 2020

Natalie Gordon

Vertex Resource Group Ltd.
213 S. Mesa St
Carlsbad, NM 88220
TEL:
FAX

RE: Tiger Tank OrderNo.: 2001A59

Dear Natalie Gordon:

Hall Environmental Analysis Laboratory received 3 sample(s) on 1/28/2020 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order: **2001A59**
Date Reported: **1/31/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd. **Lab Order:** 2001A59
Project: Tiger Tank

Lab ID: 2001A59-001 **Collection Date:** 1/23/2020 3:30:00 PM
Client Sample ID: BG 20-01 0' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	61		mg/Kg	20	1/30/2020 5:16:24 PM	50158

Lab ID: 2001A59-002 **Collection Date:** 1/23/2020 3:30:00 PM
Client Sample ID: BG 20-01 1' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	1/30/2020 5:28:45 PM	50158

Lab ID: 2001A59-003 **Collection Date:** 1/23/2020 3:30:00 PM
Client Sample ID: BG 20-01 2' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	1/30/2020 5:41:04 PM	50158

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001A59**

31-Jan-20

Client: Vertex Resource Group Ltd.

Project: Tiger Tank

Sample ID: **MB-50158**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **50158**	RunNo: **66201**
Prep Date: **1/30/2020**	Analysis Date: **1/30/2020**	SeqNo: **2274288** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-50158**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **50158**	RunNo: **66201**
Prep Date: **1/30/2020**	Analysis Date: **1/30/2020**	SeqNo: **2274289** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.1	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: VERTEX CARLSBAD Work Order Number: 2001A59 RcptNo: 1

Received By: Desiree Dominguez 1/28/2020 10:35:00 AM DD

Completed By: Isaiah Ortiz 1/28/2020 11:08:06 AM IO

Reviewed By: JP 1/28/20

Chain of Custody

1. Is Chain of Custody sufficiently complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: YC 1/28/20

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.0	Good	Not Present			

Chain-of-Custody Record

Client: VERTEX

Mailing Address: ON FILE

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush 5-Day

Project Name: Tiger Tank

Project #: ~~1Q~~ 20E-00239

Project Manager: N. GORDON

Sampler:

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 2.0+0.0 = 2.0 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2001A59
1/23	1530	soil	BG 20-01 0'	1 JAR	ice	-001
↓	↓	↓	BG 20-01 1'	↓	↓	-002
↓	↓	↓	BG 20-01 2'	↓	↓	-003

Analysis Request

BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	~~Cl~~, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
						X			
						↓			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
1/27	1500				1/29/20	1502
1/27/20	1900			Courier	1/28/20	10:35

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

March 11, 2020

Natalie Gordon
Vertex Resource Group Ltd.
213 S. Mesa St
Carlsbad, NM 88220
TEL: (505) 506-0040
FAX

RE: Tiger OrderNo.: 2003069

Dear Natalie Gordon:

Hall Environmental Analysis Laboratory received 13 sample(s) on 3/3/2020 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2003069**
Date Reported: **3/11/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.
Project: Tiger
Lab ID: 2003069-001 **Matrix:** SOIL

Client Sample ID: BS20-01 0.5
Collection Date: 3/2/2020
Received Date: 3/3/2020 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	3/7/2020 3:39:23 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/7/2020 3:39:23 AM
Surr: DNOP	97.4	55.1-146		%Rec	1	3/7/2020 3:39:23 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	4700	150		mg/Kg	50	3/10/2020 2:26:41 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**
Benzene	ND	0.025		mg/Kg	1	3/8/2020 12:44:46 AM
Toluene	ND	0.049		mg/Kg	1	3/8/2020 12:44:46 AM
Ethylbenzene	ND	0.049		mg/Kg	1	3/8/2020 12:44:46 AM
Xylenes, Total	ND	0.098		mg/Kg	1	3/8/2020 12:44:46 AM
Surr: 1,2-Dichloroethane-d4	97.4	70-130		%Rec	1	3/8/2020 12:44:46 AM
Surr: 4-Bromofluorobenzene	94.7	70-130		%Rec	1	3/8/2020 12:44:46 AM
Surr: Dibromofluoromethane	105	70-130		%Rec	1	3/8/2020 12:44:46 AM
Surr: Toluene-d8	101	70-130		%Rec	1	3/8/2020 12:44:46 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/8/2020 12:44:46 AM
Surr: BFB	95.7	70-130		%Rec	1	3/8/2020 12:44:46 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2003069**
Date Reported: **3/11/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.
Project: Tiger
Lab ID: 2003069-002 **Matrix:** SOIL

Client Sample ID: BS20-02 0.5
Collection Date: 3/2/2020
Received Date: 3/3/2020 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	3/7/2020 4:01:22 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/7/2020 4:01:22 AM
Surr: DNOP	86.0	55.1-146		%Rec	1	3/7/2020 4:01:22 AM
EPA METHOD 300.0: ANIONS						Analyst: **CJS**
Chloride	2400	60		mg/Kg	20	3/9/2020 5:08:33 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**
Benzene	ND	0.025		mg/Kg	1	3/8/2020 1:14:44 AM
Toluene	ND	0.049		mg/Kg	1	3/8/2020 1:14:44 AM
Ethylbenzene	ND	0.049		mg/Kg	1	3/8/2020 1:14:44 AM
Xylenes, Total	ND	0.099		mg/Kg	1	3/8/2020 1:14:44 AM
Surr: 1,2-Dichloroethane-d4	98.1	70-130		%Rec	1	3/8/2020 1:14:44 AM
Surr: 4-Bromofluorobenzene	93.9	70-130		%Rec	1	3/8/2020 1:14:44 AM
Surr: Dibromofluoromethane	101	70-130		%Rec	1	3/8/2020 1:14:44 AM
Surr: Toluene-d8	102	70-130		%Rec	1	3/8/2020 1:14:44 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/8/2020 1:14:44 AM
Surr: BFB	94.8	70-130		%Rec	1	3/8/2020 1:14:44 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2003069**
Date Reported: **3/11/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.
Project: Tiger
Lab ID: 2003069-003 **Matrix:** SOIL

Client Sample ID: BS20-03 0.5
Collection Date: 3/2/2020
Received Date: 3/3/2020 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	3/6/2020 10:59:24 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/6/2020 10:59:24 PM
Surr: DNOP	91.4	55.1-146		%Rec	1	3/6/2020 10:59:24 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	6300	300		mg/Kg	100	3/10/2020 3:53:09 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**
Benzene	ND	0.024		mg/Kg	1	3/8/2020 1:44:39 AM
Toluene	ND	0.047		mg/Kg	1	3/8/2020 1:44:39 AM
Ethylbenzene	ND	0.047		mg/Kg	1	3/8/2020 1:44:39 AM
Xylenes, Total	ND	0.095		mg/Kg	1	3/8/2020 1:44:39 AM
Surr: 1,2-Dichloroethane-d4	99.9	70-130		%Rec	1	3/8/2020 1:44:39 AM
Surr: 4-Bromofluorobenzene	96.0	70-130		%Rec	1	3/8/2020 1:44:39 AM
Surr: Dibromofluoromethane	105	70-130		%Rec	1	3/8/2020 1:44:39 AM
Surr: Toluene-d8	104	70-130		%Rec	1	3/8/2020 1:44:39 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/8/2020 1:44:39 AM
Surr: BFB	97.6	70-130		%Rec	1	3/8/2020 1:44:39 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2003069**
Date Reported: **3/11/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.
Project: Tiger
Lab ID: 2003069-004 **Matrix:** SOIL

Client Sample ID: BS20-04 0.5
Collection Date: 3/2/2020
Received Date: 3/3/2020 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	3/7/2020 12:11:06 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/7/2020 12:11:06 AM
Surr: DNOP	89.2	55.1-146		%Rec	1	3/7/2020 12:11:06 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	6000	300		mg/Kg	100	3/10/2020 4:05:30 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**
Benzene	ND	0.024		mg/Kg	1	3/8/2020 2:14:35 AM
Toluene	ND	0.048		mg/Kg	1	3/8/2020 2:14:35 AM
Ethylbenzene	ND	0.048		mg/Kg	1	3/8/2020 2:14:35 AM
Xylenes, Total	ND	0.096		mg/Kg	1	3/8/2020 2:14:35 AM
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	3/8/2020 2:14:35 AM
Surr: 4-Bromofluorobenzene	95.8	70-130		%Rec	1	3/8/2020 2:14:35 AM
Surr: Dibromofluoromethane	105	70-130		%Rec	1	3/8/2020 2:14:35 AM
Surr: Toluene-d8	111	70-130		%Rec	1	3/8/2020 2:14:35 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/8/2020 2:14:35 AM
Surr: BFB	99.8	70-130		%Rec	1	3/8/2020 2:14:35 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2003069**
Date Reported: **3/11/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.
Project: Tiger
Lab ID: 2003069-005 **Matrix:** SOIL

Client Sample ID: BS20-05 0.5
Collection Date: 3/2/2020
Received Date: 3/3/2020 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	3/7/2020 12:35:02 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/7/2020 12:35:02 AM
Surr: DNOP	90.7	55.1-146		%Rec	1	3/7/2020 12:35:02 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	2600	150		mg/Kg	50	3/10/2020 2:39:02 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**
Benzene	ND	0.023		mg/Kg	1	3/8/2020 2:44:30 AM
Toluene	ND	0.047		mg/Kg	1	3/8/2020 2:44:30 AM
Ethylbenzene	ND	0.047		mg/Kg	1	3/8/2020 2:44:30 AM
Xylenes, Total	ND	0.093		mg/Kg	1	3/8/2020 2:44:30 AM
Surr: 1,2-Dichloroethane-d4	96.7	70-130		%Rec	1	3/8/2020 2:44:30 AM
Surr: 4-Bromofluorobenzene	96.5	70-130		%Rec	1	3/8/2020 2:44:30 AM
Surr: Dibromofluoromethane	103	70-130		%Rec	1	3/8/2020 2:44:30 AM
Surr: Toluene-d8	106	70-130		%Rec	1	3/8/2020 2:44:30 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/8/2020 2:44:30 AM
Surr: BFB	97.1	70-130		%Rec	1	3/8/2020 2:44:30 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2003069**
Date Reported: **3/11/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.
Project: Tiger
Lab ID: 2003069-006 **Matrix:** SOIL

Client Sample ID: BS20-06 0.5
Collection Date: 3/2/2020
Received Date: 3/3/2020 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	3/7/2020 12:58:48 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/7/2020 12:58:48 AM
Surr: DNOP	67.9	55.1-146		%Rec	1	3/7/2020 12:58:48 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	3700	150		mg/Kg	50	3/10/2020 2:51:23 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**
Benzene	ND	0.025		mg/Kg	1	3/8/2020 3:14:26 AM
Toluene	ND	0.050		mg/Kg	1	3/8/2020 3:14:26 AM
Ethylbenzene	ND	0.050		mg/Kg	1	3/8/2020 3:14:26 AM
Xylenes, Total	ND	0.099		mg/Kg	1	3/8/2020 3:14:26 AM
Surr: 1,2-Dichloroethane-d4	99.5	70-130		%Rec	1	3/8/2020 3:14:26 AM
Surr: 4-Bromofluorobenzene	97.6	70-130		%Rec	1	3/8/2020 3:14:26 AM
Surr: Dibromofluoromethane	103	70-130		%Rec	1	3/8/2020 3:14:26 AM
Surr: Toluene-d8	104	70-130		%Rec	1	3/8/2020 3:14:26 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/8/2020 3:14:26 AM
Surr: BFB	97.4	70-130		%Rec	1	3/8/2020 3:14:26 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2003069**
Date Reported: **3/11/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.
Project: Tiger
Lab ID: 2003069-007 **Matrix:** SOIL

Client Sample ID: BS20-07 0.5
Collection Date: 3/2/2020
Received Date: 3/3/2020 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	3/7/2020 1:22:42 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/7/2020 1:22:42 AM
Surr: DNOP	87.0	55.1-146		%Rec	1	3/7/2020 1:22:42 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	5100	150		mg/Kg	50	3/10/2020 3:03:43 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**
Benzene	ND	0.024		mg/Kg	1	3/8/2020 4:44:12 AM
Toluene	ND	0.047		mg/Kg	1	3/8/2020 4:44:12 AM
Ethylbenzene	ND	0.047		mg/Kg	1	3/8/2020 4:44:12 AM
Xylenes, Total	ND	0.095		mg/Kg	1	3/8/2020 4:44:12 AM
Surr: 1,2-Dichloroethane-d4	97.4	70-130		%Rec	1	3/8/2020 4:44:12 AM
Surr: 4-Bromofluorobenzene	98.0	70-130		%Rec	1	3/8/2020 4:44:12 AM
Surr: Dibromofluoromethane	105	70-130		%Rec	1	3/8/2020 4:44:12 AM
Surr: Toluene-d8	105	70-130		%Rec	1	3/8/2020 4:44:12 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/8/2020 4:44:12 AM
Surr: BFB	99.3	70-130		%Rec	1	3/8/2020 4:44:12 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2003069**
Date Reported: **3/11/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.
Project: Tiger
Lab ID: 2003069-008 **Matrix:** SOIL

Client Sample ID: BS20-08 0.5
Collection Date: 3/2/2020
Received Date: 3/3/2020 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	3/7/2020 1:46:29 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/7/2020 1:46:29 AM
Surr: DNOP	81.4	55.1-146		%Rec	1	3/7/2020 1:46:29 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	4700	150		mg/Kg	50	3/10/2020 3:16:05 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**
Benzene	ND	0.024		mg/Kg	1	3/8/2020 6:12:53 AM
Toluene	ND	0.049		mg/Kg	1	3/8/2020 6:12:53 AM
Ethylbenzene	ND	0.049		mg/Kg	1	3/8/2020 6:12:53 AM
Xylenes, Total	ND	0.097		mg/Kg	1	3/8/2020 6:12:53 AM
Surr: 1,2-Dichloroethane-d4	99.5	70-130		%Rec	1	3/8/2020 6:12:53 AM
Surr: 4-Bromofluorobenzene	94.9	70-130		%Rec	1	3/8/2020 6:12:53 AM
Surr: Dibromofluoromethane	106	70-130		%Rec	1	3/8/2020 6:12:53 AM
Surr: Toluene-d8	97.5	70-130		%Rec	1	3/8/2020 6:12:53 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/8/2020 6:12:53 AM
Surr: BFB	93.3	70-130		%Rec	1	3/8/2020 6:12:53 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2003069**
Date Reported: **3/11/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.
Project: Tiger
Lab ID: 2003069-009 **Matrix:** SOIL

Client Sample ID: BS20-09 0.5
Collection Date: 3/2/2020
Received Date: 3/3/2020 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	3/7/2020 2:10:26 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/7/2020 2:10:26 AM
Surr: DNOP	77.4	55.1-146		%Rec	1	3/7/2020 2:10:26 AM
EPA METHOD 300.0: ANIONS						Analyst: **CJS**
Chloride	1600	60		mg/Kg	20	3/9/2020 7:23:22 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**
Benzene	ND	0.023		mg/Kg	1	3/8/2020 6:42:15 AM
Toluene	ND	0.046		mg/Kg	1	3/8/2020 6:42:15 AM
Ethylbenzene	ND	0.046		mg/Kg	1	3/8/2020 6:42:15 AM
Xylenes, Total	ND	0.092		mg/Kg	1	3/8/2020 6:42:15 AM
Surr: 1,2-Dichloroethane-d4	93.5	70-130		%Rec	1	3/8/2020 6:42:15 AM
Surr: 4-Bromofluorobenzene	94.3	70-130		%Rec	1	3/8/2020 6:42:15 AM
Surr: Dibromofluoromethane	107	70-130		%Rec	1	3/8/2020 6:42:15 AM
Surr: Toluene-d8	98.3	70-130		%Rec	1	3/8/2020 6:42:15 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	3/8/2020 6:42:15 AM
Surr: BFB	92.8	70-130		%Rec	1	3/8/2020 6:42:15 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2003069**
Date Reported: **3/11/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.
Project: Tiger
Lab ID: 2003069-010 **Matrix:** SOIL

Client Sample ID: BS20-10 0.5
Collection Date: 3/2/2020
Received Date: 3/3/2020 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	3/7/2020 2:34:13 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/7/2020 2:34:13 AM
Surr: DNOP	74.4	55.1-146		%Rec	1	3/7/2020 2:34:13 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	3200	150		mg/Kg	50	3/10/2020 3:28:27 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**
Benzene	ND	0.024		mg/Kg	1	3/8/2020 7:11:44 AM
Toluene	ND	0.048		mg/Kg	1	3/8/2020 7:11:44 AM
Ethylbenzene	ND	0.048		mg/Kg	1	3/8/2020 7:11:44 AM
Xylenes, Total	ND	0.096		mg/Kg	1	3/8/2020 7:11:44 AM
Surr: 1,2-Dichloroethane-d4	98.7	70-130		%Rec	1	3/8/2020 7:11:44 AM
Surr: 4-Bromofluorobenzene	97.1	70-130		%Rec	1	3/8/2020 7:11:44 AM
Surr: Dibromofluoromethane	103	70-130		%Rec	1	3/8/2020 7:11:44 AM
Surr: Toluene-d8	98.7	70-130		%Rec	1	3/8/2020 7:11:44 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/8/2020 7:11:44 AM
Surr: BFB	93.9	70-130		%Rec	1	3/8/2020 7:11:44 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2003069**
Date Reported: **3/11/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.
Project: Tiger
Lab ID: 2003069-011 **Matrix:** SOIL

Client Sample ID: BS20-11 0.5
Collection Date: 3/2/2020
Received Date: 3/3/2020 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	3/7/2020 2:58:07 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/7/2020 2:58:07 AM
Surr: DNOP	69.8	55.1-146		%Rec	1	3/7/2020 2:58:07 AM
EPA METHOD 300.0: ANIONS						Analyst: **CJS**
Chloride	930	60		mg/Kg	20	3/9/2020 8:13:00 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**
Benzene	ND	0.024		mg/Kg	1	3/8/2020 7:40:41 AM
Toluene	ND	0.047		mg/Kg	1	3/8/2020 7:40:41 AM
Ethylbenzene	ND	0.047		mg/Kg	1	3/8/2020 7:40:41 AM
Xylenes, Total	ND	0.094		mg/Kg	1	3/8/2020 7:40:41 AM
Surr: 1,2-Dichloroethane-d4	93.8	70-130		%Rec	1	3/8/2020 7:40:41 AM
Surr: 4-Bromofluorobenzene	95.5	70-130		%Rec	1	3/8/2020 7:40:41 AM
Surr: Dibromofluoromethane	99.0	70-130		%Rec	1	3/8/2020 7:40:41 AM
Surr: Toluene-d8	98.1	70-130		%Rec	1	3/8/2020 7:40:41 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/8/2020 7:40:41 AM
Surr: BFB	93.6	70-130		%Rec	1	3/8/2020 7:40:41 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2003069**
Date Reported: **3/11/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.
Project: Tiger
Lab ID: 2003069-012 **Matrix:** SOIL

Client Sample ID: BS20-12 0.5
Collection Date: 3/2/2020
Received Date: 3/3/2020 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	45	9.8		mg/Kg	1	3/7/2020 3:21:49 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/7/2020 3:21:49 AM
Surr: DNOP	84.4	55.1-146		%Rec	1	3/7/2020 3:21:49 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	4400	150		mg/Kg	50	3/10/2020 3:40:48 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**
Benzene	ND	0.024		mg/Kg	1	3/8/2020 8:09:40 AM
Toluene	ND	0.048		mg/Kg	1	3/8/2020 8:09:40 AM
Ethylbenzene	ND	0.048		mg/Kg	1	3/8/2020 8:09:40 AM
Xylenes, Total	ND	0.096		mg/Kg	1	3/8/2020 8:09:40 AM
Surr: 1,2-Dichloroethane-d4	90.5	70-130		%Rec	1	3/8/2020 8:09:40 AM
Surr: 4-Bromofluorobenzene	93.1	70-130		%Rec	1	3/8/2020 8:09:40 AM
Surr: Dibromofluoromethane	99.1	70-130		%Rec	1	3/8/2020 8:09:40 AM
Surr: Toluene-d8	97.7	70-130		%Rec	1	3/8/2020 8:09:40 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/8/2020 8:09:40 AM
Surr: BFB	89.6	70-130		%Rec	1	3/8/2020 8:09:40 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2003069**
Date Reported: **3/11/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.
Project: Tiger
Lab ID: 2003069-013 **Matrix:** SOIL

Client Sample ID: BS20-13 0.5
Collection Date: 3/2/2020
Received Date: 3/3/2020 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	28	9.4		mg/Kg	1	3/7/2020 3:45:38 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/7/2020 3:45:38 AM
Surr: DNOP	83.5	55.1-146		%Rec	1	3/7/2020 3:45:38 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	6600	300		mg/Kg	100	3/10/2020 4:17:51 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**
Benzene	ND	0.024		mg/Kg	1	3/8/2020 8:38:46 AM
Toluene	ND	0.047		mg/Kg	1	3/8/2020 8:38:46 AM
Ethylbenzene	ND	0.047		mg/Kg	1	3/8/2020 8:38:46 AM
Xylenes, Total	ND	0.094		mg/Kg	1	3/8/2020 8:38:46 AM
Surr: 1,2-Dichloroethane-d4	95.3	70-130		%Rec	1	3/8/2020 8:38:46 AM
Surr: 4-Bromofluorobenzene	95.0	70-130		%Rec	1	3/8/2020 8:38:46 AM
Surr: Dibromofluoromethane	105	70-130		%Rec	1	3/8/2020 8:38:46 AM
Surr: Toluene-d8	102	70-130		%Rec	1	3/8/2020 8:38:46 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/8/2020 8:38:46 AM
Surr: BFB	93.8	70-130		%Rec	1	3/8/2020 8:38:46 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2003069**

11-Mar-20

Client: Vertex Resource Group Ltd.

Project: Tiger

Sample ID: **MB-50957**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **50957**	RunNo: **67121**							
Prep Date: **3/9/2020**	Analysis Date: **3/9/2020**	SeqNo: **2312534**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-50957**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **50957**	RunNo: **67121**							
Prep Date: **3/9/2020**	Analysis Date: **3/9/2020**	SeqNo: **2312535**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.7	90	110			

Sample ID: **MB-50977**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **50977**	RunNo: **67142**							
Prep Date: **3/9/2020**	Analysis Date: **3/9/2020**	SeqNo: **2312810**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-50977**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **50977**	RunNo: **67142**							
Prep Date: **3/9/2020**	Analysis Date: **3/9/2020**	SeqNo: **2312811**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.4	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2003069**

11-Mar-20

Client: Vertex Resource Group Ltd.

Project: Tiger

Sample ID: **LCS-50885**	SampType: **LCS**			TestCode: **EPA Method 8015M/D: Diesel Range Organics**					
Client ID: **LCSS**	Batch ID: **50885**			RunNo: **67065**					
Prep Date: **3/4/2020**	Analysis Date: **3/6/2020**			SeqNo: **2309324**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	103	70	130			
Surr: DNOP	4.6		5.000		91.8	55.1	146			

Sample ID: **MB-50885**	SampType: **MBLK**			TestCode: **EPA Method 8015M/D: Diesel Range Organics**					
Client ID: **PBS**	Batch ID: **50885**			RunNo: **67065**					
Prep Date: **3/4/2020**	Analysis Date: **3/6/2020**			SeqNo: **2309326**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.7		10.00		97.0	55.1	146			

Sample ID: **2003069-003AMS**	SampType: **MS**			TestCode: **EPA Method 8015M/D: Diesel Range Organics**					
Client ID: **BS20-03 0.5**	Batch ID: **50902**			RunNo: **67065**					
Prep Date: **3/5/2020**	Analysis Date: **3/6/2020**			SeqNo: **2309948**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	37	9.8	48.97	3.898	67.5	47.4	136			
Surr: DNOP	3.8		4.897		76.7	55.1	146			

Sample ID: **2003069-003AMSD**	SampType: **MSD**			TestCode: **EPA Method 8015M/D: Diesel Range Organics**					
Client ID: **BS20-03 0.5**	Batch ID: **50902**			RunNo: **67065**					
Prep Date: **3/5/2020**	Analysis Date: **3/6/2020**			SeqNo: **2309949**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	38	9.7	48.36	3.898	70.3	47.4	136	2.46	43.4	
Surr: DNOP	3.7		4.836		76.5	55.1	146	0	0	

Sample ID: **LCS-50902**	SampType: **LCS**			TestCode: **EPA Method 8015M/D: Diesel Range Organics**					
Client ID: **LCSS**	Batch ID: **50902**			RunNo: **67065**					
Prep Date: **3/5/2020**	Analysis Date: **3/6/2020**			SeqNo: **2309963**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	87.1	70	130			
Surr: DNOP	4.0		5.000		79.0	55.1	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2003069**

11-Mar-20

Client: Vertex Resource Group Ltd.

Project: Tiger

Sample ID: **MB-50902**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **50902**	RunNo: **67065**
Prep Date: **3/5/2020**	Analysis Date: **3/6/2020**	SeqNo: **2309964** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.9		10.00		89.0	55.1	146			

Sample ID: **LCS-50944**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **50944**	RunNo: **67097**
Prep Date: **3/6/2020**	Analysis Date: **3/8/2020**	SeqNo: **2310267** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.5		5.000		111	55.1	146			

Sample ID: **MB-50944**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **50944**	RunNo: **67097**
Prep Date: **3/6/2020**	Analysis Date: **3/8/2020**	SeqNo: **2310268** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	11		10.00		109	55.1	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2003069**

11-Mar-20

Client: Vertex Resource Group Ltd.

Project: Tiger

Sample ID: **mb-50878**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles Short List**							
Client ID: **PBS**	Batch ID: **50878**	RunNo: **67099**							
Prep Date: **3/4/2020**	Analysis Date: **3/7/2020**	SeqNo: **2310442**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		100	70	130			
Surr: 4-Bromofluorobenzene	0.45		0.5000		90.9	70	130			
Surr: Dibromofluoromethane	0.53		0.5000		106	70	130			
Surr: Toluene-d8	0.52		0.5000		103	70	130			

Sample ID: **lcs-50878**	SampType: **LCS4**	TestCode: **EPA Method 8260B: Volatiles Short List**							
Client ID: **BatchQC**	Batch ID: **50878**	RunNo: **67099**							
Prep Date: **3/4/2020**	Analysis Date: **3/7/2020**	SeqNo: **2310443**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.025	1.000	0	87.2	80	120			
Toluene	0.93	0.050	1.000	0	93.0	80	120			
Ethylbenzene	0.97	0.050	1.000	0	96.6	80	120			
Xylenes, Total	3.1	0.10	3.000	0	104	80	120			
Surr: 4-Bromofluorobenzene	0.47		0.5000		94.2	70	130			
Surr: Toluene-d8	0.49		0.5000		98.5	70	130			

Sample ID: **MB-50890**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles Short List**							
Client ID: **PBS**	Batch ID: **50890**	RunNo: **67099**							
Prep Date: **3/4/2020**	Analysis Date: **3/8/2020**	SeqNo: **2310496**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		99.3	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		92.9	70	130			
Surr: Dibromofluoromethane	0.52		0.5000		104	70	130			
Surr: Toluene-d8	0.52		0.5000		104	70	130			

Sample ID: **LCS-50890**	SampType: **LCS4**	TestCode: **EPA Method 8260B: Volatiles Short List**							
Client ID: **BatchQC**	Batch ID: **50890**	RunNo: **67099**							
Prep Date: **3/4/2020**	Analysis Date: **3/7/2020**	SeqNo: **2310497**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2003069**

11-Mar-20

Client: Vertex Resource Group Ltd.

Project: Tiger

Sample ID: **LCS-50890**	SampType: **LCS4**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **BatchQC**	Batch ID: **50890**	RunNo: **67099**
Prep Date: **3/4/2020**	Analysis Date: **3/7/2020**	SeqNo: **2310497** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.025	1.000	0	84.9	80	120			
Toluene	0.97	0.050	1.000	0	96.9	80	120			
Ethylbenzene	0.95	0.050	1.000	0	94.9	80	120			
Xylenes, Total	3.1	0.10	3.000	0	104	80	120			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.8	70	130			
Surr: Toluene-d8	0.52		0.5000		105	70	130			

Sample ID: **2003069-007AMS**	SampType: **MS4**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **BS20-07 0.5**	Batch ID: **50890**	RunNo: **67099**
Prep Date: **3/4/2020**	Analysis Date: **3/8/2020**	SeqNo: **2310500** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.82	0.025	0.9804	0	83.9	80	120			
Toluene	0.93	0.049	0.9804	0	94.6	80	120			
Ethylbenzene	0.96	0.049	0.9804	0	97.5	80	120			
Xylenes, Total	3.0	0.098	2.941	0	104	80	120			
Surr: 4-Bromofluorobenzene	0.47		0.4902		96.6	70	130			
Surr: Toluene-d8	0.52		0.4902		106	70	130			

Sample ID: **2003069-007AMSD**	SampType: **MSD4**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **BS20-07 0.5**	Batch ID: **50890**	RunNo: **67099**
Prep Date: **3/4/2020**	Analysis Date: **3/8/2020**	SeqNo: **2310501** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.79	0.024	0.9533	0	82.5	80	120	4.52	20	
Toluene	0.92	0.048	0.9533	0	96.1	80	120	1.18	20	
Ethylbenzene	0.95	0.048	0.9533	0	99.2	80	120	1.04	20	
Xylenes, Total	2.9	0.095	2.860	0	103	80	120	3.31	20	
Surr: 4-Bromofluorobenzene	0.45		0.4766		94.3	70	130	0	0	
Surr: Toluene-d8	0.52		0.4766		108	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2003069**

11-Mar-20

Client: Vertex Resource Group Ltd.

Project: Tiger

Sample ID: **mb-50878**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**							
Client ID: **PBS**	Batch ID: **50878**	RunNo: **67099**							
Prep Date: **3/4/2020**	Analysis Date: **3/7/2020**	SeqNo: **2310805**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	450		500.0		90.3	70	130			

Sample ID: **lcs-50878**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **50878**	RunNo: **67099**							
Prep Date: **3/4/2020**	Analysis Date: **3/7/2020**	SeqNo: **2310806**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	91.2	70	130			
Surr: BFB	460		500.0		91.0	70	130			

Sample ID: **mb-50890**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**							
Client ID: **PBS**	Batch ID: **50890**	RunNo: **67099**							
Prep Date: **3/4/2020**	Analysis Date: **3/8/2020**	SeqNo: **2310848**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	470		500.0		94.2	70	130			

Sample ID: **lcs-50890**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **50890**	RunNo: **67099**							
Prep Date: **3/4/2020**	Analysis Date: **3/7/2020**	SeqNo: **2310849**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	87.1	70	130			
Surr: BFB	470		500.0		94.6	70	130			

Sample ID: **2003069-006ams**	SampType: **MS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**							
Client ID: **BS20-06 0.5**	Batch ID: **50890**	RunNo: **67099**							
Prep Date: **3/4/2020**	Analysis Date: **3/8/2020**	SeqNo: **2310851**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	91.2	70	130			
Surr: BFB	490		500.0		97.9	70	130			

Sample ID: **2003069-006amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D Mod: Gasoline Range**							
Client ID: **BS20-06 0.5**	Batch ID: **50890**	RunNo: **67099**							
Prep Date: **3/4/2020**	Analysis Date: **3/8/2020**	SeqNo: **2310852**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2003069**

11-Mar-20

Client: Vertex Resource Group Ltd.

Project: Tiger

Sample ID: **2003069-006amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **BS20-06 0.5**	Batch ID: **50890**	RunNo: **67099**
Prep Date: **3/4/2020**	Analysis Date: **3/8/2020**	SeqNo: **2310852** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	24.98	0	91.4	70	130	0.119	20	
Surr: BFB	480		499.5		96.1	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: VERTEX CARLSBAD Work Order Number: 2003069 RcptNo: 1

3.3.20 PGW 3.3.20

Received By: Desiree Dominguez ~~3/2/2020 2:30:00 PM~~ DD

Completed By: Juan Rojas 3/3/2020 12:45:09 PM Juan Rojas

Reviewed By: LB 3/3/2020

Chain of Custody

1. Is Chain of Custody sufficiently complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: DAD 3/3/20

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.8	Good				

Chain-of-Custody Record

Client: Vertex

Mailing Address: on file

Phone #: on file

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 5 Day
☑ Standard ☐ Rush

Project Name: Tiger

Project #: 20E-00239 -001

Project Manager: Natalie Gordon

Sampler: MJP

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 2.6+0.2=2.8 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2003069	(BTEX) MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	(Cl) F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
3/2		soil	BS20-01 0.5	4 oz	Ice	-001	✓	✓					✓			
			BS20-02 0.5			-002	✓	✓					✓			
			BS20-03 0.5			-003	✓	✓					✓			
			BS20-04 0.5			-004	✓	✓					✓			
			BS20-05 0.5			-005	✓	✓					✓			
			BS20-06 0.5			-006	✓	✓					✓			
			BS20-07 0.5			-007	✓	✓					✓			
			BS20-08 0.5			-008	✓	✓					✓			
			BS20-09 0.5			-009	✓	✓					✓			
			BS20-10 0.5			-010	✓	✓					✓			
			BS20-11 0.5			-011	✓	✓					✓			
↓		↓	BS20-12 0.5	↓	↓	-012	✓	✓					✓			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
3/2/20	1430				3/2/20	1430
3/2/20	1900			Courier	3/3/20	9:00

Remarks: CC: Natalie Gordon

Matador Vertex

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: Vertex

Mailing Address: on file

Phone #: on file

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 5 Day
☑ Standard ☐ Rush

Project Name: Tiger

Project #: 20E-00039 - 001

Project Manager: Natalie Gordon

Sampler: MJP

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 2.6+0.2=2.8 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2003069	(BTEX) MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	(Cl), F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
3/2		Soil	BS20-13 0.5	4oz	ice	-013	✓	✓					✓			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
3/2/20	1430				3/2/20	1430
3/2/20	1900		DDB	Courier	3/3/20	9:00

Remarks: Vertex

Matador CC: Natalie Gordon

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.