



April 15, 2020

Vertex Project #: 19E-03610-001

**Spill Closure Report:** Dark Canyon (Carlsbad 960 SWD)  
Unit I, Section 23, Township 23 South, Range 26 East)  
API: 30-015-45033  
County: Eddy  
Incident Report: 2RP-5675

**Prepared For:** 3 Bear Delaware Operating – NM, LLC  
1512 Larimer Street, Suite 540  
Denver, CO 80202

**New Mexico Oil Conservation Division – District 2 – Artesia**

811 S. 1<sup>st</sup> Street  
Artesia, NM 88210

On September 25, 2019, 3 Bear Delaware Operating – NM, LLC (3 Bear) retained Vertex Resource Services Inc. (Vertex) to conduct a site assessment and remediation for a produced water release at Dark Canyon (Carlsbad 960 SWD), API 30-015-45033. 3 Bear submitted an initial C-141 Release Notification (Attachment 1) to New Mexico Oil Conservation Division (NM OCD) District II on October 8, 2019. Incident report number 2RP-5675 was assigned to this incident.

This revised letter provides an updated description of the release assessment and remediation activities, as well as a revised Figure 2. The Figure 2 in the original report used an outdated aerial photo showing the site before it was fully constructed, and based on that photo, it appeared that part of the release went off-pad. The revised figure in this report uses a more recent aerial photo that shows the full scale of the developed site and shows that the release was actually limited to the constructed pad. This revised letter also demonstrates that closure criteria established in Table I of *19.15.29.12 New Mexico Administrative Code* (NMAC) have been met for all sample points and applicable regulations were 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 September 24, 2019, a release at 3 Bear's Dark Canyon site occurred when lightning struck a tank causing it to catch fire. The fire resulted in the release of approximately 115 barrels (bbls) of produced water into the lined secondary containment. Due to the heat from the fire, a portion of the liner gave way allowing some produced water to escape containment onto the pad and an adjacent access road. No oil or produced water was released into undisturbed areas or water ways. Once the fire was extinguished, a hydrovac was brought on-site to recover free liquids. Approximately 110 bbls of produced water was recovered from secondary containment and the portion of the pad and access road impacted by the release.

## Site Characterization

The release occurred on privately-owned land at 32.287281° N, 104.257159° W, approximately 6 miles south of Carlsbad, New Mexico. The legal description for the site is Unit I, Section 23, Township 23 South, Range 26 East, in 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 range land.

Dark Canyon is typical of oil and gas exploration and production sites on the western portion of the Permian Basin, and is currently used for oil and gas production and storage and salt water disposal (SWD). The following sections specifically describe the release area on the northwest corner of the constructed pad where the storage tanks are located and on an adjacent access road running along the north edge of the site, as shown on Figure 1 (Attachment 2).

The surrounding landscape is comprised of grassland, with a semiarid climate and average annual precipitation ranging between 6 and 14 inches. The dominant vegetation is principally black grama, blue grama and tobosa grass species, with perennial forbs, such as globemallow, berberis and croton, and sparse, evenly distributed shrubs, such as fourwing saltbush and winterfat. Grass cover is uniform with few large bare areas (Soil Survey Staff, n.d.). Limited to no vegetation is allowed to grow on the compacted production pad, right-of-way (ROW) and access road.

*The Geological Map of New Mexico* (New Mexico Bureau of Geology and Mineral Resources, 2014 – 2017) indicates the surface geology at Dark Canyon is comprised primarily of Qp—piedmont alluvial deposits from the Holocene to middle Pleistocene ages. The United States Department of Agriculture (USDA) Web Soil Survey characterizes the soil at the site as predominantly loamy. The soil is well-drained with low runoff and moderate moisture levels in the profile. There is no karst geology present near Dark Canyon.

There is no surface water located at Dark Canyon. Based on the United States Geological Survey (USGS) National Hydrology Maps, the nearest significant watercourse, as defined in Subsection P of 19.15.17.7 NMAC, is an intermittent stream located 1.1 miles south-southwest of the site. There are no known water sources within a half mile of the release, nor are there any continuously flowing watercourses or significant watercourses, lakebeds, sinkholes, playa lakes or other critical water or community features as outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

Using information from the New Mexico Office of the State Engineer (NM OSE) Water Column/Average Depth to Water report, depth to groundwater at Dark Canyon is estimated to be approximately 185 feet below ground surface (bgs) based on a groundwater well located just less than a mile north of the release location. The Chevron Texaco Depth to Ground Water map for Eddy County confirms that depth to groundwater in the vicinity of Dark Canyon is approximately 200 feet bgs. Information pertaining to the depth to groundwater determination is included in Attachment 3.

## Closure Criteria Determination

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

**3 Bear Delaware Operating – NM, LLC**  
Dark Canyon (Carlsbad 960 SWD), 2RP-5675

**2019 Spill Assessment and Closure**  
April 2020

<b>Table 1. Closure Criteria Determination</b>			
<b>Site Name: Dark Canyon (Carlsbad 960 SWD)</b>			
<b>Spill Coordinates:</b>		<b>X: 32.287281</b>	<b>Y: -104.257159</b>
<b>Site Specific Conditions</b>		<b>Value</b>	<b>Unit</b>
1	Depth to groundwater	185	feet
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	5,677	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	48,843	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	1,742	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	3,809	feet
	ii) Within 1,000 feet of any fresh water well or spring	11,576	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	7,890	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
9	Within an unstable area (Karst Map)	Medium	Critical High Medium Low
10	Within a 100-year Floodplain	No	(Y/N)
<b>NMAC 19.15.29.12 E (Table 1) Closure Criteria</b>		>100 feet	<50 feet 51 – 100 feet >100 feet

Based on the data included in Table 1 above, the release at Dark Canyon 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 associated with the following constituent concentration limits as presented in Table 2.

<b>Table 2. Closure Criteria for Soils Impacted by a Release</b>		
<b>Minimum depth below any point within the horizontal boundary of the release to groundwater less than 10,000 mg/l TDS</b>	<b>Constituent</b>	<b>Limit</b>
> 100 feet	Chloride	20,000 mg/kg
	TPH (GRO+DRO+MRO)	2,500 mg/kg
	GRO+DRO	1,000 mg/kg
	BTEX	50 mg/kg
	Benzene	10 mg/kg

## Remedial Actions

An initial site inspection of the release area, completed on September 28, 2019, identified and mapped the boundaries of the release area, and white lined the area required for the 811 One Call request. The release area, including the tank secondary containment and any areas of impact outside of the secondary containment, was determined to be approximately 202 feet long and 120 feet wide; the total affected area was determined to be 20,631 square feet. The Daily Field Report (DFR) associated with the site inspection is included in Attachment 4.

Once the damaged tanks and containment liner were removed from site, on October 3, 2019, Vertex provided 48-hour notification of confirmation sampling to NM OCD, as required by Subparagraph (a) of Paragraph (1) of Subsection D 19.15.29.12 NMAC. On October 4, 2019, Vertex collected and field screened soil samples to determine the extent of contamination. On-site field screening methods included a Photoionization Detector to check for volatile hydrocarbons, Dexcel Petroflag using EPA SW-846 Method 9074 to check for the presence of extractable hydrocarbons, and Quantabs to determine the presence of chlorides. Field screening results are presented in Table 3 (Attachment 5), as well as in the DFRs in Attachment 4.

Based on field screening results, an initial 6-inch scrape of the release area was completed, and, on October 5, 2019, confirmation samples were collected. Five-point composite samples were collected from the base and walls of the excavation such that no composite sample was representative of 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. A total of 41 composite soil samples were collected and placed in laboratory-provided containers, preserved on ice, and submitted to a National Environmental Laboratory Accreditation Program (NELAP)-approved laboratory for chemical analysis.

Laboratory analyses included Method 300.0 for chlorides, Method 8021B for volatile organics (including benzene, toluene, ethylbenzene and xylene [BTEX]), and EPA Method 8015 for total petroleum hydrocarbons (TPHs; including motor oil range organics [MRO], diesel range organics [DRO] and gasoline range organics [GRO]). Final confirmation sample analytical data are summarized in Table 4 (Attachment 5). Laboratory data reports and chain of custody forms are included in Attachment 6.

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

Initial laboratory analyses for 11 of the 41 confirmation samples showed exceedance of NM OCD Closure Criteria for TPH. On October 9, 2019, additional remediation was conducted at those locations in exceedance of closure criteria and composite confirmation samples were re-collected for submission to the laboratory. Following lab verification that the remaining contaminants had been fully removed, the site was backfilled on October 14, 2019.

## Closure Request

Vertex does not recommend any additional remediation action to address the release at this time. As demonstrated in Table 4, laboratory analyses of the 41 confirmation samples collected at Dark Canyon in October 2019 show final



**3 Bear Delaware Operating – NM, LLC**  
Dark Canyon (Carlsbad 960 SWD), 2RP-5675

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April 2020

confirmatory values below NM OCD closure criteria for areas where depth to groundwater is greater than 100 feet bgs. There are no anticipated risks to human, ecological or hydrological receptors at the release site.

Vertex requests that Incident 2RP-5675 be closed as all closure requirements set forth in Subsection E of 19.15.29.12 NMAC have been met. 3 Bear 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 September 24, 2019 release at Dark Canyon.

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

Sincerely,



Natalie Gordon  
PROJECT MANAGER

## Attachments

- Attachment 1. NMOCD C-141 Report
- Attachment 2. Site Schematic and Revised Confirmation Sampling Map
- Attachment 3. Closure Criteria for Soils Impacted by a Release Research Determination Documentation
- Attachment 4. Daily Field Report(s) with Photographs
- Attachment 5. Data Tables
- Attachment 6. Laboratory Data Reports and Chain of Custody Forms

## References

*Water Column/Average Depth to Water Report.* New Mexico Water Rights Reporting System, (2019). Retrieved from <http://nmwrrs.ose.state.nm.us/nmwrrs/waterColumn.html>

*The Geological Map of New Mexico.* New Mexico Bureau of Geology and Mineral Resources, (2019). Retrieved from <http://geoinfo.nmt.edu>

*Measured Distance from the Subject Site to Residence.* Google Earth Pro, (2019). Retrieved from <https://earth.google.com>

*Point of Diversion Location Report.* New Mexico Water Rights Reporting System, (2019). Retrieved from <http://nmwrrs.ose.state.nm.us/nmwrrs/wellSurfaceDiversion.html>

*Measured Distance from the Subject Site to Municipal Boundaries.* Google Earth Pro, (2019). Retrieved from <https://earth.google.com>

*National Wetland Inventory Surface Waters and Wetland.* United State Fish and Wildlife Service, (2019). Retrieved from <https://www.fws.gov/wetlands/data/mapper.html>

*Coal Mine Resources in New Mexico.* NM Mining and Minerals Division, (2019). Retrieved from <http://www.emnrd.state.nm.us/MMD/gismapminedata.html>

*New Mexico Cave/Karsts.* United States Department of the Interior, Bureau of Land Management, (2019). Retrieved from <https://www.blm.gov/programs/recreation/recreation-programs/caves/new-mexico>

*Flood Map Number 35015C1875D.* United States Department of Homeland Security, FEMA Flood Map Service Center, (2010). Retrieved from <https://msc.fema.gov/portal/search?AddressQuery=malaga%20new%20mexico#searchresultsanchor>

*Well Log/Meter Information Report.* NM Office of the State Engineer, New Mexico Water Rights Reporting System. (2019). Retrieved from <http://nmwrrs.ose.state.nm.us/nmwrrs/meterReport.html>

*Natural Resources and Wildlife Oil and Gas Releases.* New Mexico Oil Conservation Division, (2019). Santa Fe, New Mexico.

*Web Soil Survey.* United States Department of Agriculture, Natural Resources Conservation Service. Retrieved from <https://websoilsurvey.sc.egov.usda.gov/>

*Field Book for Describing and Sampling Soils.* United States Department of Agriculture, National Resources Conservation Service, National Soil Survey Center (2019). Retrieved from: [https://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS](https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS).

**3 Bear Delaware Operating – NM, LLC**  
Dark Canyon (Carlsbad 960 SWD), 2RP-5675

**2019 Spill Assessment and Closure**  
April 2020

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## Limitations

This report has been prepared for the sole benefit of 3 Bear Delaware Operating – NM, LLC (3 Bear). 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 3 Bear. 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  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

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

Incident ID	NAB1929160071
District RP	2RP-5675
Facility ID	
Application ID	pAB1929159643

## Release Notification LGQN4-191008-C-1410

### Responsible Party

Responsible Party: 3 Bear Delaware Operating – NM, LLC	OGRID: 372603
Contact Name: Liz Klein	Contact Telephone: (303) 882-4404
Contact email: lklein@3bearllc.com	Incident # (assigned by OCD) NAB1929160071
Contact mailing address 1512 Larimer St. Suite 540, Denver, CO 80202	

### Location of Release Source

Latitude 32.287281

Longitude -104.257159

(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Dark Canyon (Carlsbad 960 SWD)	Site Type: SWD
Date Release Discovered: 9/24/19	API# (if applicable): 30-015-45033

Unit Letter	Section	Township	Range	County
I	23	23S	26E	Eddy

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (Name: 3Bear)

### Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 115 bbls	Volume Recovered (bbls) 110 bbls
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release: Lightning strike of tank at the site caused a fire and release.


State of New Mexico  
Oil Conservation Division

Incident ID	NAB1929160071
District RP	2RP-5675
Facility ID	
Application ID	pAB1929159643

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? A lightning strike of the truck unloading tank at the site occurred at approximately 2:53 pm on September 24, 2019. The tank caught fire and more than 25 bbls of produced water was spilled. The volume of the spill was approximately 115 bbls in volume with 110 bbls recovered.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Yes. Liz Klein, 3Bear Energy, when notified of the event called Mike Bratcher, OCD – District 2 by phone and also called Jim Griswold, OCD – Env. Division and left a message on September 25, 2019. This phone notification was also followed up with an email dated September 25, 2019.	

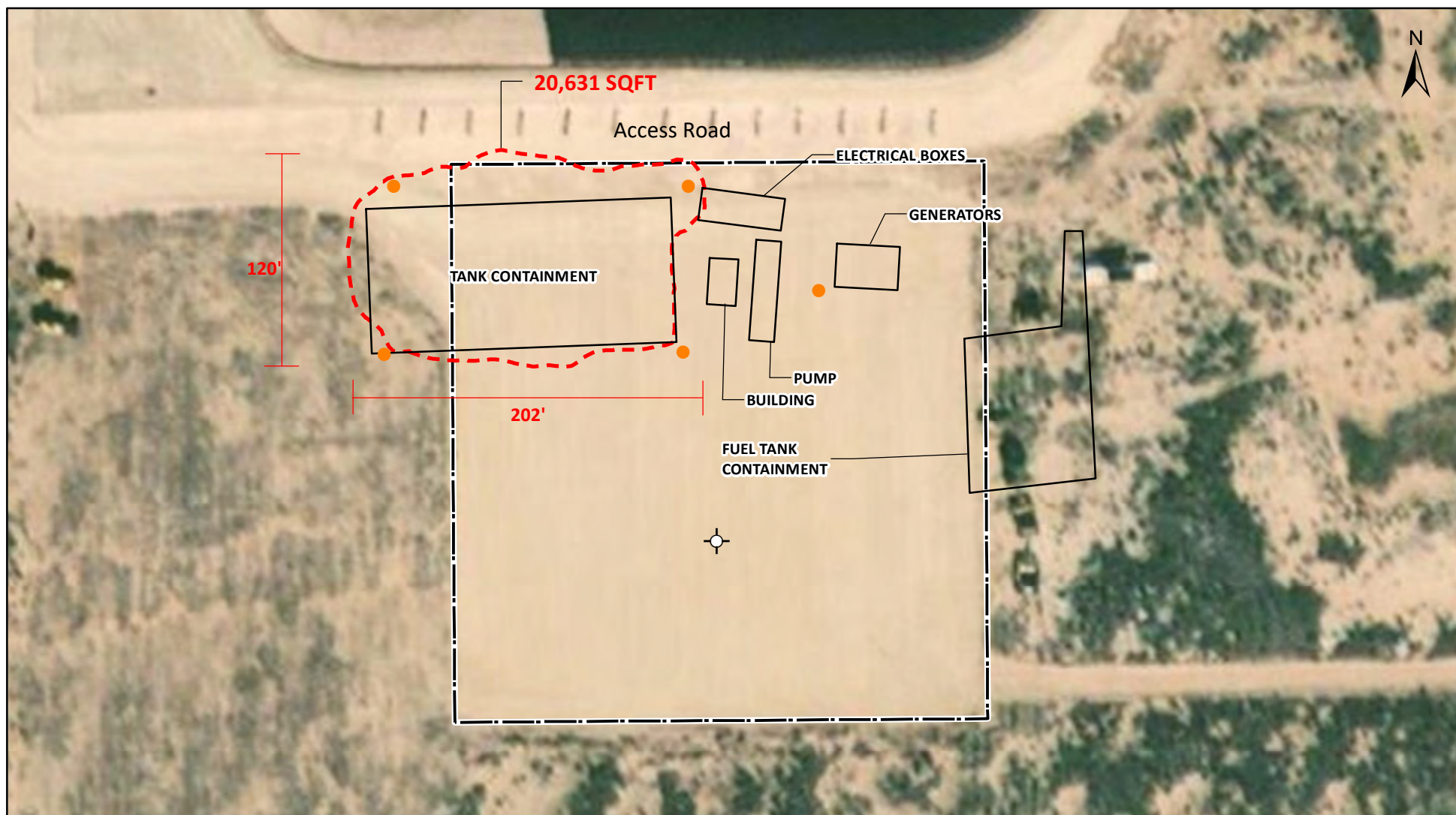
**Initial Response**

*The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury*

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:          	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Liz Klein</u>	Title: <u>Director, EHS Regulatory Compliance</u>
Signature: 	Date: <u>10/8/2019</u>
email: <u>lklein@3bearllc.com</u>	Telephone: <u>(303) 882-4404</u>
<b><u>OCD Only</u></b>	
Received by: <u>Amalia Bustamante</u>	Date: <u>10/18/2019</u>

## **ATTACHMENT 2**





## LEGEND

-  WELLHEAD
-  LIGHT POLE
-  SPILL AREA
-  WELL PAD

Notes: Aerial Image from ESRI Digital Globe 2018

0 25 50 100 ft

SCALE 1:1,000



**Site Schematic**  
**Dark Canyon**  
 (Carlsbad 960 SWD)



DRAWN: NM	FIGURE: <b>1</b>
APPROVED: DW	
DATE: OCT 01/19	

VERSATILITY. EXPERTISE.





-  Wellhead
-  Light Pole
-  Confirmatory Sample
-  Infrastructure (Existing)
-  Containment
-  Spill (~20,752.92 sq. ft. / 120' X 202')



0 25 50 Feet  
 Map Center:  
 Lat/Long: 32.285919, -104.257992

NAD 1983 UTM Zone 13N  
 Date: Apr 09/20



## Remediation Confirmatory Schematic Dark Canyon SWD #001 - Revised

FIGURE:

2 b



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: Imagery from Google, 2019.

VERSATILITY. EXPERTISE.

## **ATTACHMENT 3**



[USGS Home](#)  
[Contact USGS](#)  
[Search USGS](#)

## National Water Information System: Web Interface

USGS Water Resources

Data Category:


Groundwater ▼

Geographic Area:

United States ▼

GO

Click to hide News Bulletins

- [Introducing The Next Generation of USGS Water Data for the Nation](#)
- [Full News](#) 

Groundwater levels for the Nation

### Search Results -- 1 sites found

site\_no list =

- 321632104141501

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

### USGS 321632104141501 23S.26E.25.422323

Available data for this site

Groundwater: Field measurements ▼

GO

Eddy County, New Mexico

Hydrologic Unit Code 13060011

Latitude 32°16'32", Longitude 104°14'15" NAD27

Land-surface elevation 3,202 feet above NAVD88

The depth of the well is 204 feet below land surface.

This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

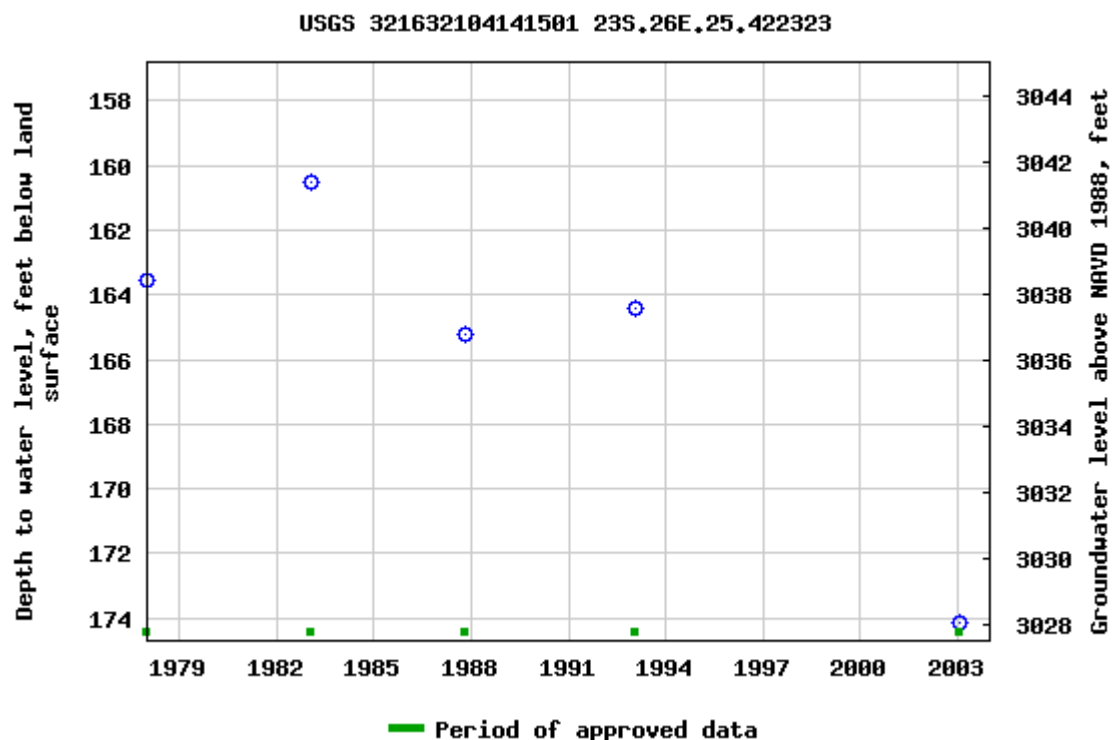
#### Output formats

[Table of data](#)

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Breaks in the plot represent a gap of at least one year between field measurements.

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**Title: Groundwater for USA: Water Levels**

**URL: <https://nwis.waterdata.usgs.gov/nwis/gwlevels?>**

Page Contact Information: [USGS Water Data Support Team](#)

Page Last Modified: 2019-11-20 10:35:53 EST

0.66 0.46 nadww01






# Dark Canyon SWD #001

Closest Water Well 4,886.87 Feet

## Legend

 Feature 1

Water Well

Dark Canyon SWD 001

Google Earth

© 2018 Google

500 m














# New Mexico Office of the State Engineer

## Active & Inactive Points of Diversion

(with Ownership Information)

(acre ft per annum)										(R=POD has been replaced and no longer serves this file, (quarters are 1=NW 2=NE 3=SW 4=SE) C=the file is closed) (quarters are smallest to largest) (NAD83 UTM in meters)									
WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	q 64	q 16	q 4	Sec	Tws	Rng	X	Y	Distance
<a href="#">C 03809</a>	C	STK		0 DAVID MALEY	ED	<a href="#">C 03809 POD1</a>					1	3	4	24	23S	26E	571019	3572371	 1161
<a href="#">C 01572</a>	C	DOM		3 BRIAN JAMES WESTON	ED	<a href="#">C 01572</a>				Shallow	3	3	3	13	23S	26E	570245	3573761*	 1488
					ED	<a href="#">C 02658</a>					3	3	3	13	23S	26E	570245	3573761*	 1488
<a href="#">C 02040</a>	C	DOL		3 RICHARD A. MARSHALL	ED	<a href="#">C 02040</a>				Shallow	3	3	3	13	23S	26E	570245	3573761*	 1488
<a href="#">C 02658</a>	C	DOM		3 BRIAN WESTON	ED	<a href="#">C 01572</a>				Shallow	3	3	3	13	23S	26E	570245	3573761*	 1488
					ED	<a href="#">C 02658 POD2</a>				Shallow	3	3	3	13	23S	26E	570245	3573761*	 1488
<a href="#">C 03378</a>	C	DOM		0 GREG DUNN	ED	<a href="#">C 03378 POD1</a>					4	4	3	14	23S	26E	569220	3573781	 1591

Record Count: 7

**UTMNAD83 Radius Search (in meters):****Easting (X):** 569859**Northing (Y):** 3572323.52**Radius:** 1610**Sorted by:** Distance

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.



# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(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	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
<a href="#">C 01572</a>	C	ED		3	3	3	13	23S	26E	570245	3573761*	1488	215		
<a href="#">C 02040</a>	C	ED		3	3	3	13	23S	26E	570245	3573761*	1488	264	185	79
<a href="#">C 02658 POD2</a>	C	ED		3	3	3	13	23S	26E	570245	3573761*	1488	252	211	41
<a href="#">C 01733</a>	C	ED		1	3	3	13	23S	26E	570245	3573961*	1682	247	197	50
<a href="#">C 01743</a>	C	ED		1	3	3	13	23S	26E	570245	3573961*	1682	250	196	54
<a href="#">C 02442</a>	C	ED		1	3	3	13	23S	26E	570245	3573961*	1682	276	200	76
<a href="#">C 01672</a>	C	ED			4	3	13	23S	26E	570750	3573861*	1776	280	80	200
<a href="#">C 03348</a>	C	ED		1	3	3	13	23S	26E	570606	3573938	1778	240	200	40
<a href="#">C 04348 POD1</a>	C	ED		3	1	3	13	23S	26E	570224	3574192	1904	260		
<a href="#">C 01022</a>	C	ED		4	3	2	22	23S	26E	568005	3572894*	1939	121	90	31
<a href="#">C 01832</a>	C	ED			1	3	13	23S	26E	570345	3574268*	2004	250	200	50
<a href="#">C 01015</a>	C	ED		4	4	4	15	23S	26E	568408	3573714*	2009	318	245	73
<a href="#">C 03238</a>	C	ED		4	4	4	15	23S	26E	568408	3573714*	2009	323	245	78
<a href="#">C 02833</a>	CUB	ED		1	1	1	36	23S	26E	570258	3570303*	2059	229		
<a href="#">C 01905</a>	C	ED			2	3	13	23S	26E	570749	3574267*	2137	300		
<a href="#">C 03071</a>	C	ED			2	3	13	23S	26E	570749	3574267*	2137	250	204	46
<a href="#">C 00259</a>	CUB	ED			2	4	25	23S	26E	571570	3571027*	2146	228	150	78
<a href="#">C 00259 CLW202652</a>	O	CUB	ED		2	4	25	23S	26E	571570	3571027*	2146	180		
<a href="#">C 00259 CLW240611</a>	O	CUB	ED		2	4	25	23S	26E	571570	3571027*	2146	204		
<a href="#">C 00259 S2</a>	CUB	ED			2	4	25	23S	26E	571570	3571027*	2146	207	132	75
<a href="#">C 00259 S3</a>	CUB	ED			2	4	25	23S	26E	571570	3571027*	2146	225	181	44
<a href="#">C 03323 POD1</a>	C	ED		3	4	2	14	23S	26E	569909	3574479	2156	275	205	70
<a href="#">C 02832</a>	CUB	ED		1	2	1	36	23S	26E	570663	3570308*	2169	250		
<a href="#">C 04201 POD1</a>	C	ED		4	4	2	14	23S	26E	569626	3574546	2235	255	110	145
<a href="#">C 02052</a>	C	ED		3	3	1	13	23S	26E	570242	3574573*	2281	290		
<a href="#">C 01463</a>	C	ED		2	2	3	22	23S	26E	567599	3572678*	2287	295	265	30

\*UTM location was derived from PLSS - see Help

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




























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(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD	County	Q Q Q							X	Y	Distance	Depth Well	Depth Water	Water Column	
	Sub-Code		basin	64	16	4	Sec	Tws	Rng							
<a href="#">C 04212 POD3</a>	CUB	ED	2	1	1	35	23S	26E	568796	3570273		2309	320	298	22	
<a href="#">C 00247</a>	C	ED	4	2	4	15	23S	26E	568406	3574119*		2309	315	230	85	
<a href="#">C 01639</a>	C	ED	4	2	4	15	23S	26E	568406	3574119*		2309	300	70	230	
<a href="#">C 04212 POD1</a>	CUB	ED	1	1	1	35	23S	26E	568631	3570335		2337	275	244	31	
<a href="#">C 00259 S</a>	CUB	ED	1	1	3	30	23S	27E	571874	3571131*		2341	204			
<a href="#">C 02834</a>	CUB	ED	1	1	3	30	23S	27E	571874	3571131*		2341	310	176	134	
<a href="#">C 01626</a>	C	ED		3	1	13	23S	26E	570343	3574674*		2399	246	198	48	
<a href="#">C 01822</a>	C	ED		3	1	13	23S	26E	570343	3574674*		2399	258	200	58	
<a href="#">C 01822 POD2</a>	C	ED		3	1	13	23S	26E	570343	3574674*		2399	228	212	16	
<a href="#">C 01857</a>	C	ED				13	23S	26E	570949	3574465*		2402	255	197	58	
<a href="#">C 02232</a>	C	ED				13	23S	26E	570949	3574465*		2402	240	200	40	
<a href="#">C 01435</a>	C	ED		4	4	25	23S	26E	571572	3570623*		2413	240	180	60	
<a href="#">C 01246 AC-S</a>	CUB	ED	3	1	1	35	23S	26E	568730	3570098		2494	350			
<a href="#">C 02484 EXPL</a>	CUB	ED		4	1	13	23S	26E	570747	3574672*		2510	280	175	105	
<a href="#">C 04212 POD2</a>	CUB	ED	3	1	1	35	23S	26E	568578	3570121		2547	324	255	69	
<a href="#">C 01968</a>	C	ED	1	4	1	13	23S	26E	570646	3574771*		2570	247	200	47	
<a href="#">C 02835</a>	CUB	ED	3	4	1	30	23S	27E	572258	3571338*		2593	228			
<a href="#">C 02059</a>	C	ED			1	13	23S	26E	570544	3574875*		2641	282	190	92	
<a href="#">C 04113 POD1</a>	CUB	ED	2	3	1	35	23S	26E	568836	3569881		2648	255	195	60	
<a href="#">C 01825</a>	C	ED		3	2	13	23S	26E	571151	3574670*		2678	243	221	22	
<a href="#">C 00535</a>	C	CUB	ED	2	1	1	27	23S	26E	567195	3571862*		2703	1903		
<a href="#">C 00341</a>	C	CUB	ED		1	3	22	23S	26E	567090	3572566*		2779	1881		
<a href="#">C 00352</a>	C	CUB	ED		1	3	22	23S	26E	567090	3572566*		2779	1867		
<a href="#">C 01851</a>	C	ED		1	1	13	23S	26E	570341	3575080*		2798	258	207	51	
<a href="#">C 02260</a>	C	ED		1	1	13	23S	26E	570341	3575080*		2798	247	218	29	
<a href="#">C 02537</a>	C	ED		1	1	13	23S	26E	570341	3575080*		2798	280	210	70	
<a href="#">C 04113 POD2</a>	CUB	ED	4	3	1	35	23S	26E	568838	3569680		2833	289	278	11	
<a href="#">C 01867</a>	C	ED	1	1	1	13	23S	26E	570240	3575179*		2880	250	212	38	
<a href="#">C 01762</a>	C	ED		2	1	13	23S	26E	570746	3575078*		2893	260	191	69	

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(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub- Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
<a href="#">C 01762 POD2</a>	C	ED		2	1	13	23S	26E		570746	3575078*	2893	250	203	47
<a href="#">C 01765</a>	C	ED		2	1	13	23S	26E		570746	3575078*	2893	350		
<a href="#">C 02444</a>	C	ED		2	1	13	23S	26E		570746	3575078*	2893	250	177	73
<a href="#">C 02205</a>	C	ED		1	2	1	13	23S	26E	570645	3575177*	2959	240	210	30
<a href="#">C 01642</a>	C	ED		2	2	1	13	23S	26E	570845	3575177*	3019	303		
<a href="#">C 03396 POD1</a>	C	ED		3	3	3	12	23S	26E	570231	3575341	3040	280	220	60
<a href="#">C 03736 POD1</a>	C	ED		2	2	4	13	23S	26E	571677	3574793	3066			
<a href="#">C 01195</a>	C	ED			2	19	23S	27E		572958	3573260*	3237	180	100	80
<a href="#">C 01140</a>	C	ED		1	3	3	15	23S	26E	566980	3573870*	3268	325		
<a href="#">C 01678</a>	C	ED		3	3	4	12	23S	26E	571048	3575379*	3278		350	
<a href="#">C 01781</a>	C	ED		2	4	19	23S	27E		573161	3572659*	3318			
<a href="#">C 01781 POD2</a>	C	ED		2	4	19	23S	27E		573161	3572659*	3318	210		
<a href="#">C 01781 POD3</a>	C	ED		2	4	19	23S	27E		573161	3572659*	3318	210		
<a href="#">C 04051 POD1</a>	C	ED		1	3	3	35	23S	26E	568653	3569112	3429	360	360	0
<a href="#">C 01724</a>	C	ED				34	23S	26E		567726	3569555*	3494	320		
<a href="#">C 00537</a>	C	ED		1	4	21	23S	26E		566277	3572558*	3589	400		
<a href="#">C 01806</a>	C	ED		4	2	3	12	23S	26E	570838	3575780*	3592	260		
<a href="#">C 02061</a>	C	ED		1	1	3	12	23S	26E	570232	3575981*	3676	276	220	56
<a href="#">C 02089</a>	C	ED		2	1	3	12	23S	26E	570432	3575981*	3702	262	199	63
<a href="#">C 00367</a>	C	CUB	ED		3	2	28	23S	26E	566286	3571353*	3702	1909		
<a href="#">C 02000</a>	C	ED		3	3	1	12	23S	26E	570226	3576177*	3870	261	230	31
<a href="#">C 03304</a>	C	ED		3	3	1	12	23S	26E	570251	3576212	3908	257	200	57
<a href="#">C 02448</a>	C	ED		2	4	12	23S	26E		571550	3575879*	3937	140	127	13
<a href="#">C 01548</a>	C	ED		3	2	11	23S	26E		569510	3576267*	3958	250		
<a href="#">C 01635</a>	C	ED		3	2	11	23S	26E		569510	3576267*	3958	255	205	50
<a href="#">C 01708</a>	C	ED		3	2	11	23S	26E		569510	3576267*	3958	275	236	39
<a href="#">C 01843</a>	C	ED		3	2	11	23S	26E		569510	3576267*	3958	252	217	35
<a href="#">C 03911 POD1</a>	C	ED		3	4	1	12	23S	26E	570699	3576215	3981	310	120	190
<a href="#">C 03301</a>	C	ED		3	3	4	07	23S	27E	572597	3575268	4020	375		

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(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub- Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
<a href="#">C 01920</a>	C	ED		3	3	2	12	23S	26E	571039	3576179*	4031		183	
<a href="#">C 02153</a>	C	ED		1	4	2	11	23S	26E	569818	3576371*	4047	275	200	75
<a href="#">C 01866</a>	C	ED		2	4	2	11	23S	26E	570018	3576371*	4050	245	212	33
<a href="#">C 02300</a>	CUB	ED				3	07	23S	27E	572160	3575676*	4066	402		
<a href="#">C 01310</a>	C	ED		1	3	2	11	23S	26E	569409	3576366*	4067	250	220	30
<a href="#">C 03010</a>	C	ED		2	2	4	12	23S	26E	571649	3575978*	4069	140	130	10
<a href="#">C 02053</a>	C	ED		1	3	1	12	23S	26E	570226	3576377*	4070	268	215	53
<a href="#">C 02112</a>	C	ED		1	3	4	13	21S	24E	573831	3571337	4092	182	119	63
<a href="#">C 01922</a>	C	ED		2	3	1	12	23S	26E	570426	3576377*	4092	270	220	50
<a href="#">C 03961 POD1</a>	C	ED		1	2	4	12	23S	26E	571522	3576070	4099	280		
<a href="#">C 01847</a>	C	ED			1	3	07	23S	27E	571956	3575878*	4126	300		
<a href="#">C 01847 POD2</a>	C	ED			1	3	07	23S	27E	571956	3575878*	4126	243		
<a href="#">C 02071</a>	C	ED		1	4	1	12	23S	26E	570633	3576378*	4127	400		
<a href="#">C 02071 CLW468367</a>	O	C	ED	1	4	1	12	23S	26E	570633	3576378*	4127	400		
<a href="#">C 01674</a>	C	ED		3	1	1	12	23S	26E	570220	3576573*	4264	215	207	8
<a href="#">C 01812</a>	C	ED		4	1	1	12	23S	26E	570420	3576573*	4286	262	238	24
<a href="#">C 03944 POD1</a>	C	ED		1	4	2	12	23S	26E	571535	3576412	4418	174	129	45
<a href="#">C 03005</a>	C	ED		3	4	4	07	23S	27E	573052	3575384*	4422	140	100	40
<a href="#">C 04023 POD1</a>	C	ED		2	2	3	01	23S	26E	570741	3576659	4424	219	167	52
<a href="#">C 01903</a>	C	ED			2	1	12	23S	26E	570729	3576677*	4439	250	250	0
<a href="#">C 02041</a>	C	ED			2	1	12	23S	26E	570729	3576677*	4439	225	184	41
<a href="#">C 03009</a>	C	ED		1	1	1	12	23S	26E	570220	3576773*	4464	232	199	33
<a href="#">C 02123</a>	C	ED		1	2	1	12	23S	26E	570628	3576776*	4518	230	181	49
<a href="#">C 01618</a>	C	ED		4	4	4	07	23S	27E	573252	3575384*	4569	250		
<a href="#">C 04293 POD1</a>	C	ED		3	3	3	01	23S	26E	570214	3576922	4612			
<a href="#">C 01960</a>	C	ED		3	3	3	01	23S	26E	570214	3576969*	4659	242	200	42
<a href="#">C 01647</a>	C	ED		4	3	3	01	23S	26E	570414	3576969*	4678	260	210	50
<a href="#">C 01632</a>	C	ED		3	2	4	07	23S	27E	573050	3575789*	4710	162	100	62
<a href="#">C 01632 CLW197648</a>	O	C	ED	3	2	4	07	23S	27E	573050	3575789*	4710	162	100	62

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(NAD83 UTM in meters)

(In feet)

POD																
Sub-		Q Q Q								Depth Depth Water						
POD Number	Code	basin	County	64	16	4	Sec	Tws	Rng	X	Y	Distance	Well	Water	Column	
<a href="#">C 01632 POD2</a>	C	ED	3	2	4	07	23S	27E		573050	3575789* 	4710	173	100	73	
<a href="#">C 01665</a>	C	ED	4	4	3	01	23S	26E		570822	3576975* 	4750	278			
<a href="#">C 02377</a>	C	ED				2	29	23S	27E	574575	3571666* 	4761	232	170	62	
<a href="#">C 02257</a>	C	ED			3	3	01	23S	26E	570315	3577070* 	4768	247	175	72	
<a href="#">C 01985</a>	C	ED			4	3	01	23S	26E	570723	3577076* 	4830	216	185	31	
<a href="#">C 02853</a>	C	ED	1	3	3	01	23S	26E		570214	3577169* 	4858	218	196	22	
<a href="#">C 02429</a>	C	ED	1	4	3	01	23S	26E		570622	3577175* 	4911	300	140	160	
<a href="#">C 03778 POD1</a>	C	ED	2	3	3	01	23S	26E		570329	3577213 	4912	230	209	21	
<a href="#">C 02080</a>	C	ED	2	4	3	01	23S	26E		570822	3577175* 	4946	240	190	50	
<a href="#">C 02081</a>	C	ED	2	4	3	01	23S	26E		570822	3577175* 	4946	240	190	50	
<a href="#">C 03118</a>	C	ED	2	4	3	01	23S	26E		570822	3577175* 	4946	260	210	50	

Average Depth to Water: **192 feet**

Minimum Depth: **70 feet**

Maximum Depth: **360 feet**

Record Count: 124

**UTMNAD83 Radius Search (in meters):**

**Easting (X):** 569859

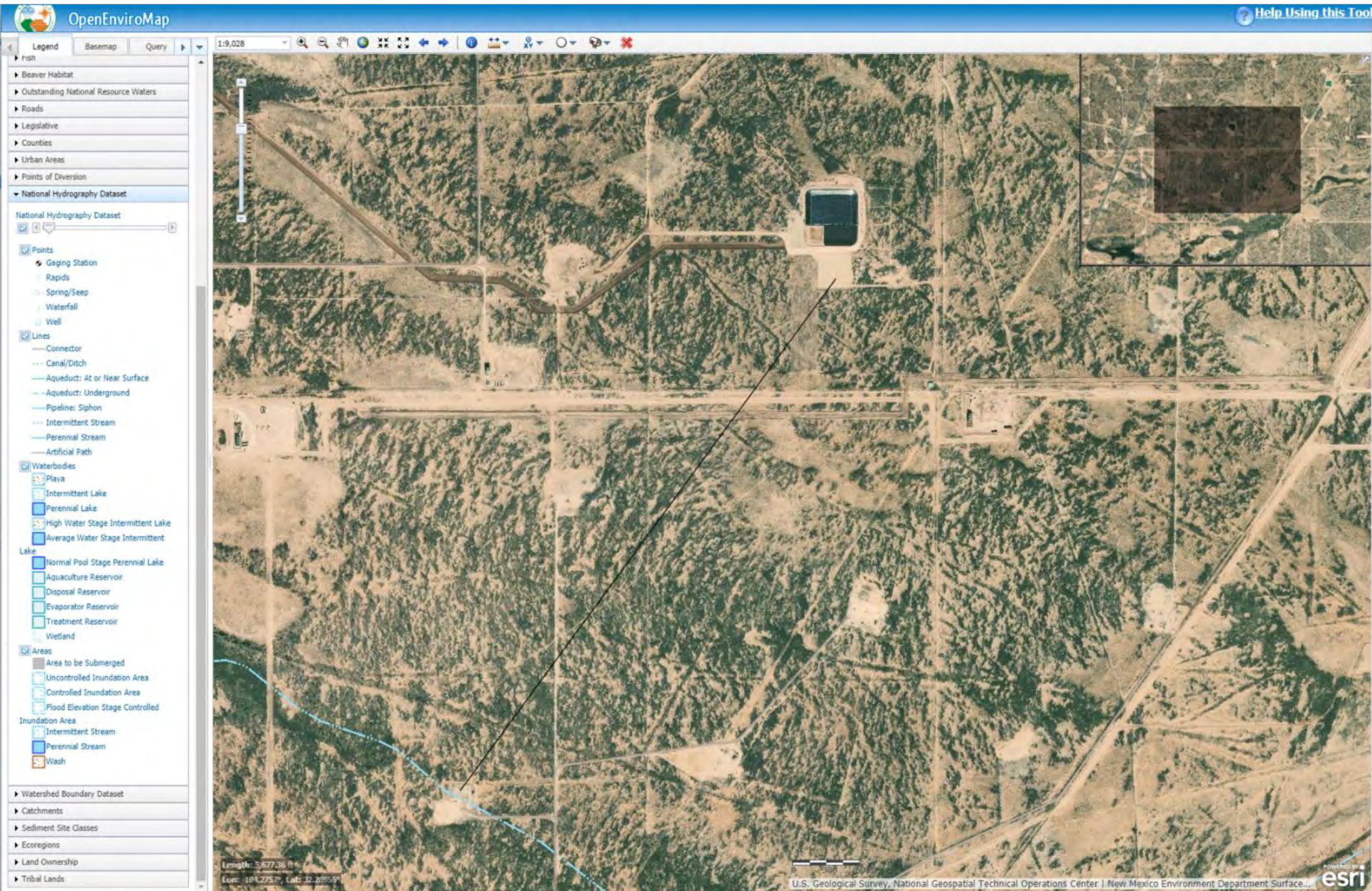
**Northing (Y):** 3572323.52

**Radius:** 5000

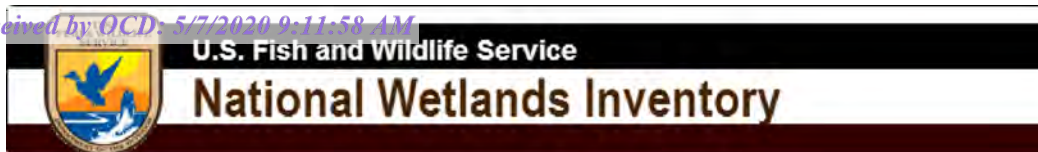
\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

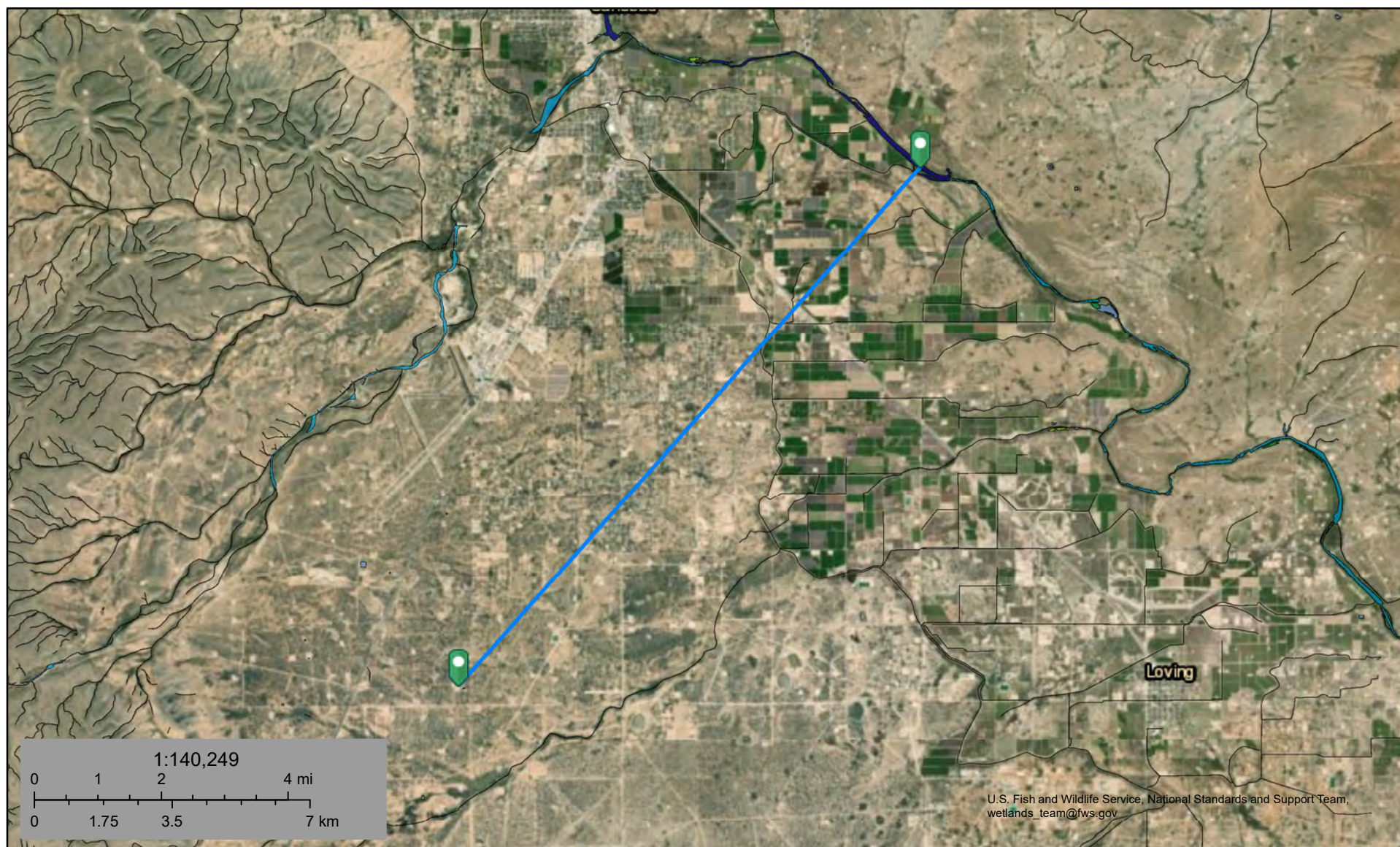








## Dark Canyon SWD #001 - 48,842.8 Feet



October 2, 2019

**Wetlands**

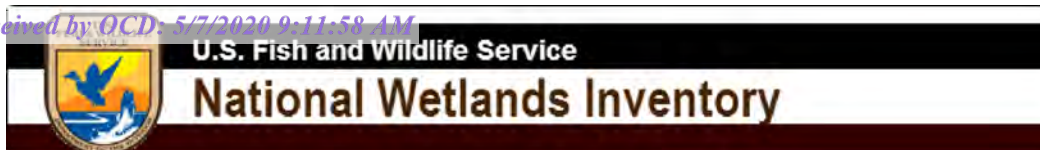
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

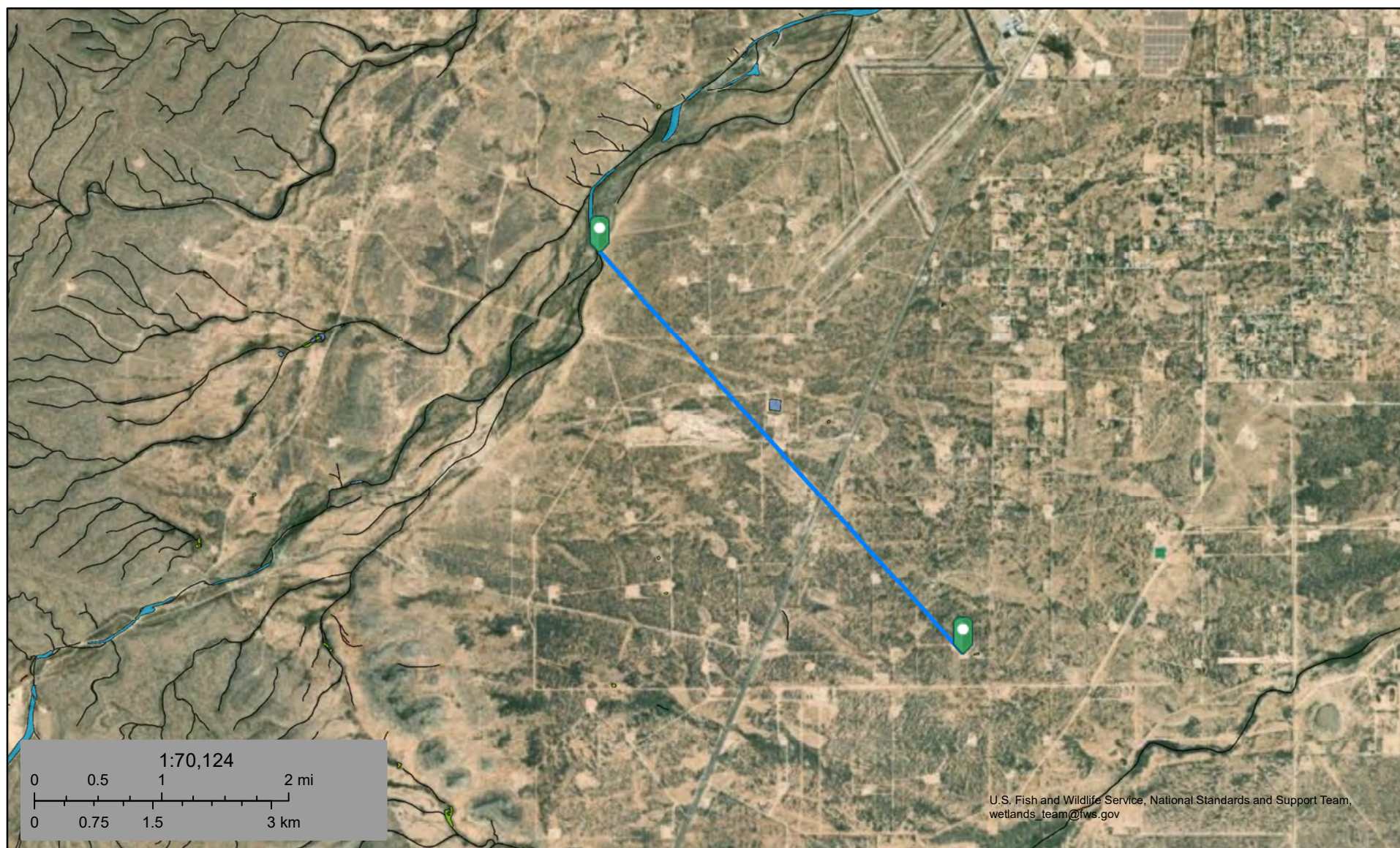
- Lake
- Other
- Riverine

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.





## Dark Canyon SWD #001 - 19,027.5 Feet



October 2, 2019

**Wetlands**

Estuarine and Marine Deepwater

Estuarine and Marine Wetland

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

Freshwater Pond

Lake

Other

Riverine


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# Dark Canyon SWD #001

Nearest residence: 4,741.61 Feet

## Legend

 Dark Canyon SWD 001







## New Mexico Office of the State Engineer

# Water Right Summary



**WR File Number:** C 03809      **Subbasin:** C      **Cross Reference:** -  
**Primary Purpose:** STK      72-12-1 LIVESTOCK WATERING  
**Primary Status:** EXP      EXPIRED  
**Total Acres:**      **Subfile:** -      **Header:** -  
**Total Diversion:** 0      **Cause/Case:** -  
**Owner:** DAVID MALEY  
**Contact:** JASON MALEY

### Documents on File

Trn #	Doc	File/Act	Status		Transaction Desc.	From/ To	Acres	Diversion	Consumptive
			1	2					
<a href="#">get images</a>	558399	72121	2014-11-25	EXP	EXP	C 03809 POD1	T		3

### Current Points of Diversion

(NAD83 UTM in meters)											
POD Number	Well Tag	Source	Q					X	Y	Other Location Desc	
			64	Q16	Q4	Sec	Tw				Rng
<a href="#">C 03809 POD1</a>			1	3	4	24	23S	26E	571019	3572371	

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

10/2/19 1:01 PM

WATER RIGHT SUMMARY



# Dark Canyon SWD #001

Nearest spring: 11,573.81 Feet

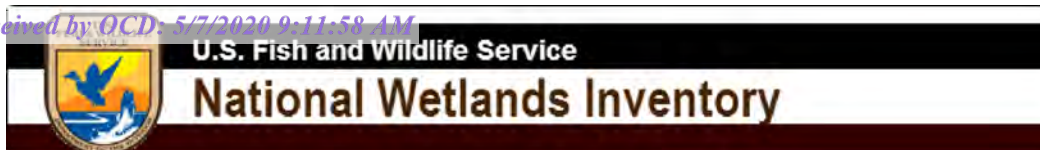


Dark Canyon SWD 001

Indian Big







## Dark Canyon SWD #001 - 7,889.8 Feet



October 2, 2019

**Wetlands**

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

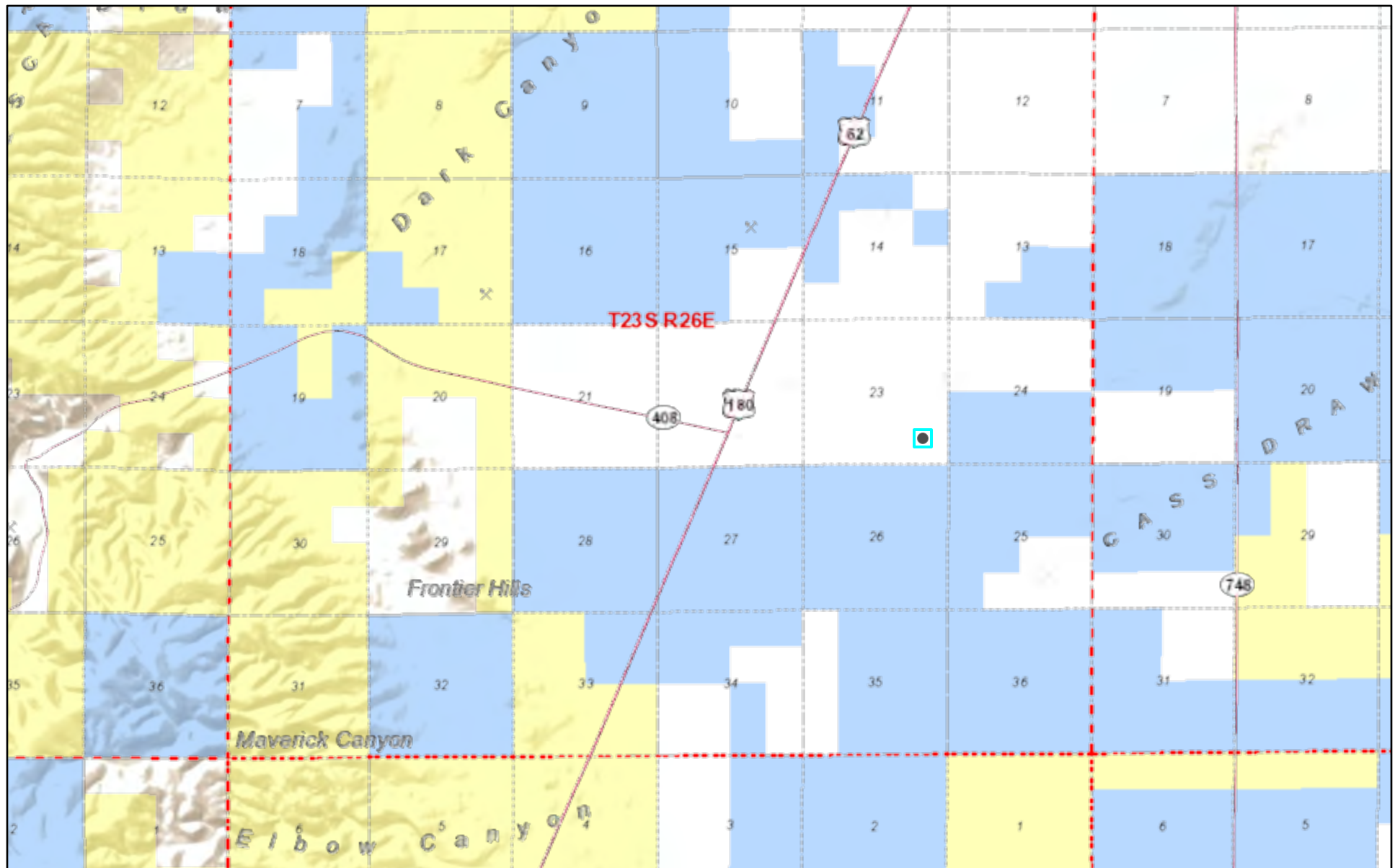
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- 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.



## Dark Canyon SWD #001 - Subsurface Mine

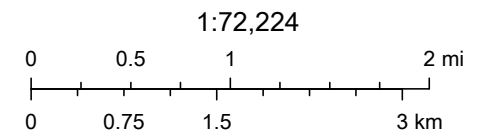


10/2/2019, 1:28:58 PM

Registered Mines

✕ Aggregate, Stone etc.

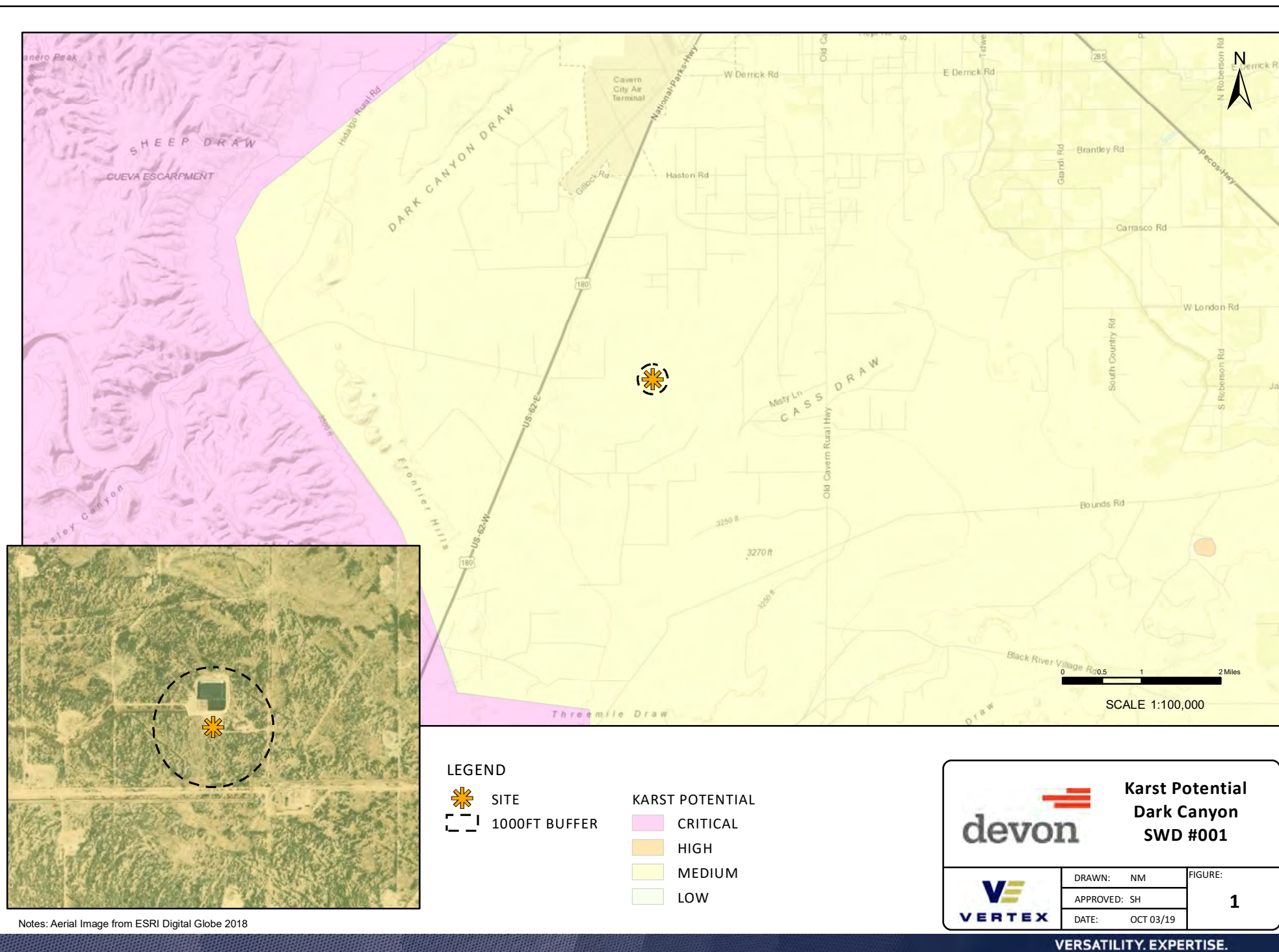
✕ Aggregate, Stone etc.



U.S. Bureau of Land Management - New Mexico State Office, Sources: Esri,

EMNRD MMD GIS Coordinator

NM Energy, Minerals and Natural Resources Department (<http://nm-emnrd.maps.arcgis.com/apps/webappviewer/index.html?id=1b5e577974664d689b47790897ca2795>)

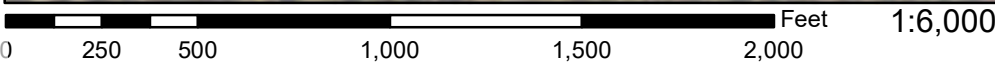
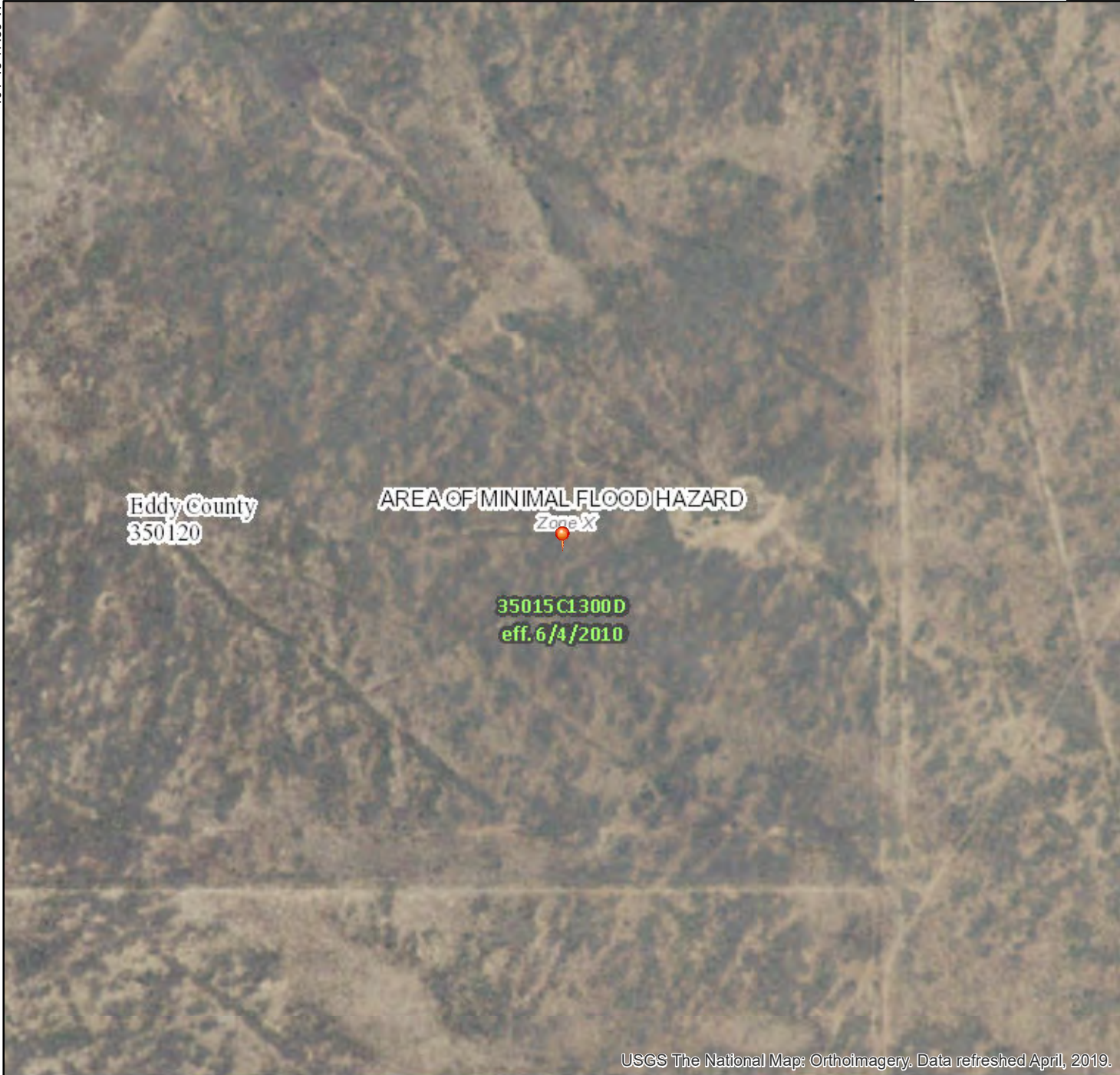




# National Flood Hazard Layer FIRMette



32°17'23.01"N



## Legend

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

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

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

OTHER AREAS		Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D

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

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

MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/2/2019 at 3:41:43 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

## R042XC007NM — Loamy: Historic Climax Plant Community

### Plant Community Photos

Plant Communities Photo Display & Descriptive Diagnosis

#### MLRA 42; SD-3; Loamy

##### Grassland



- Tobosa-black grama, some yucca and prickly pear
- Grass cover moderate, distributed fairly uniform
- Few large bare patches

##### Grassland



- Tobosa-burrograss, with some black grama and scattered prickly pear
- Grass cover moderate
- Few large bare patches
- Russler silt loam

#### Transition towards shrub Dominated



- Tarbush / burrograss, with some tobosa
- Fine textured calcareous soils
- Bare patches evident
- Soil surface sealing
- Reagan silt loam

#### Shrub-Dominated



- Mesquite / burrograss, with scattered patches of tobosa
- Sandy surface over finer textured soils
- Grass cover moderate to low
- Bare patches evident

### Historic Climax Plant Community

## Plant Community Description

### State Containing Historic Climax Plant Community

#### Grassland:

The historic plant community has a grassland aspect, dominated by grasses with shrubs and half-shrubs sparse and evenly distributed. Black grama, blue grama, and tobosa are the dominant grass species. There are a variety of perennial forbs and their production varies widely by season and year. Globemallow, verberna, groundsels, croton and filaree are forbs commonly found on this site. Fourwing saltbush and winterfat are two of the more palatable shrubs. The Loamy ecological site encompasses a wide variety of soils, with surface textures ranging from sandy loams to clay loams. Soil depths range from shallow to very deep and can include sub surface features such as calcic, petrocalcic, and gypsic horizons. These variations cause differences in plant community composition and dynamics. Black grama is found at highest densities on coarser textured sandy loams, with blue grama preferring finer textured loam and silt loam, and tobosa favoring lower landscape positions and loam to clay loam surface textures. Burrograss may often be the dominant grass species on silty soils, perhaps in part due to the seedlings ability to auger into and establish on physically crusted soils. Gypsum influenced soils typically have greater amounts of tobosa, burrograss, and ephedra. There is greater representation of sideoats and vine mesquite within the tobosa-blue grama community. Retrogression under continuous heavy grazing results in a decrease of black grama, blue grama, sideoats grama, plains bristlegrass, bush muhly, cane bluestem, vine mesquite, winterfat, and fourwing saltbush. Species such as burrograss, threeawns, sand dropseed, sand muhly, and broom snakeweed increase under continuous heavy grazing or prolonged periods of drought. Under continued retrogression burrograss can completely dominate the site. Creosotebush, tarbush, and mesquite, can also dominate. Cholla and prickly pear can increase on areas that are disturbed or overgrazed.

Diagnosis: Tobosa, black grama, and blue grama are the dominant species. Grass cover is uniformly distributed with few large bare areas. Shrubs are sparse and evenly distributed. Slopes range from level to gently sloping and usually display limited evidence of active rills and gully formation if plant cover remains intact. Litter movement associated with overland flow is limited to smaller size class litter and short distances.

Other shrubs include: yucca, mesquite, tarbush, cholla and creosote bush.

Other forbs include: desert holly, scorpionweed, bladderpod, flax, nama, fleabane, Indianwheat, Indian blanket flower, groundcherry, deerstongue, and rayless goldenrod.

## Plant Community Tables

Plant Type	Low	Representative Value	High
Grass/Grasslike	585	833	1,080
Forb	39	55	72
Shrub/Vine	26	37	48
<b>Totals</b>	<b>650</b>	<b>925</b>	<b>1,200</b>

Grass/Grasslike				
Group	Plant Common Name	Plant Scientific Name	Annual Production Pounds Per Acre	
			Low	High
1: Warm Season			278	324
	tobosa	Pleuraphis mutica	278	324
2: Warm Season			9	46
	burrograss	Scleropogon brevifolius	9	46
3: Warm Season			231	278
	black grama	Bouteloua eriopoda	231	278
	blue grama	Bouteloua gracilis	231	278
4: Warm Season			28	46
	sideoats grama	Bouteloua curtipendula	28	46
5: Warm Season			46	93
	bush muhly	Muhlenbergia porteri	46	93
	plains bristlegrass	Setaria vulpiseta	46	93
6: Warm Season			9	28
	arizona cottontop	Digitaria californica	9	28
7: Warm Season			46	93
	perennial threeawn spp.	Aristida	46	93
	muhly	Muhlenbergia	46	93
	sand dropseed	Sporobolus cryptandrus	46	93
8: Warm Season			28	46



R042XC007NM -- Loamy: Historic Climax Plant Community---Eddy Area, New Mexico

Dark Canyon SWD #001

Forb				
Group	Plant Common Name	Plant Scientific Name	Annual Production Pounds Per Acre	
			Low	High
12: Forb			9	46
	threadleaf groundsel	Senecio flaccidus var. flaccidus	9	46
	gloemallow spp.	Sphaeralcea	9	46
			9	46
13: Forb			9	28
	croton spp.	Croton	9	28
	woolly groundsel	Packera cana	9	28
14: Forb			9	28
	Goodding's tansyaster	Machaeranthera pinnatifida ssp. gooddingii var. gooddingii	9	28
	woolly paperflower	Psilostrophe tagetina	9	28
15: Forb			9	28
	alfileria (redstem, storksbill)	Erodium cicutarium	9	28
	texas filaree	Erodium texanum	9	28
16: Forb			9	28

Shrub/Vine				
Group	Plant Common Name	Plant Scientific Name	Annual Production Pounds Per Acre	
			Low	High
9: Shrub			9	28
	fourwing saltbush	Atriplex canescens	9	28
	ephedra spp.	Ephedra	9	28
	winterfat	Krascheninnikovia lanata	9	28
10: Shrub			9	28
	javalina bush	Condalia ericoides	9	28
	broom snakeweed	Gutierrezia sarothrae	9	28
11: Shrubs			9	28

Growth Curve Name											
R042XC007NM Loamy HCPC											
Growth Curve Description											
R042XC007NM Loamy HCPC Warm Season Plant Community.											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0%	0%	0%	5%	10%	10%	25%	30%	15%	5%	0%	0%

R042XC007NM -- Loamy: Historic Climax Plant Community---Eddy Area, New Mexico

Dark Canyon SWD #001

Vegetative Cover Type	Minimum	Maximum
Grass/grasslike	15.000%	30.000%
Forb	—	—
Shrub/vine/liana	—	—
Tree	—	—
Non-vascular plants	—	—
Biological crust	—	—
Non-Vegetative Cover Type	Minimum	Maximum
Litter	25.000%	30.000%
Surface fragments > 0.25" and <= 3"	—	—
Surface fragments > 3"	—	—
Bedrock	—	—
Water	—	—
Bare ground	40.000%	50.000%
Down wood, fine-small	—	—
Down wood, fine-medium	—	—
Down wood, fine-large	—	—
Down wood, coarse-small	—	—
Down wood, coarse-large	—	—
Tree snags	—	—
Hard snags	—	—
Soft snags	—	—

Map Unit Description: Reagan-Upton association, 0 to 9 percent slopes---Eddy Area, New Mexico

Dark Canyon SWD #001

## Eddy Area, New Mexico

### RE—Reagan-Upton association, 0 to 9 percent slopes

#### Map Unit Setting

*National map unit symbol:* 1w5d

*Elevation:* 1,100 to 5,400 feet

*Mean annual precipitation:* 6 to 14 inches

*Mean annual air temperature:* 60 to 64 degrees F

*Frost-free period:* 180 to 240 days

*Farmland classification:* Farmland of statewide importance

#### Map Unit Composition

*Reagan and similar soils:* 70 percent

*Upton and similar soils:* 25 percent

*Minor components:* 5 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Reagan

##### Setting

*Landform:* Alluvial fans, fan remnants

*Landform position (three-dimensional):* Rise

*Down-slope shape:* Linear, convex

*Across-slope shape:* Linear

*Parent material:* Alluvium and/or eolian deposits

##### Typical profile

*H1 - 0 to 8 inches:* loam

*H2 - 8 to 60 inches:* loam

##### Properties and qualities

*Slope:* 0 to 3 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):*

Moderately high to high (0.60 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:* 40 percent

*Salinity, maximum in profile:* Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)

*Sodium adsorption ratio, maximum in profile:* 1.0

*Available water storage in profile:* Moderate (about 8.2 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 2e

*Land capability classification (nonirrigated):* 6e

*Hydrologic Soil Group:* B

Map Unit Description: Reagan-Upton association, 0 to 9 percent slopes---Eddy Area, New Mexico

Dark Canyon SWD #001

*Ecological site:* Loamy (R070DY153NM)  
*Hydric soil rating:* No

## Description of Upton

### Setting

*Landform:* Ridges, fans  
*Landform position (three-dimensional):* Side slope, rise  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Residuum weathered from limestone

### Typical profile

*H1 - 0 to 9 inches:* gravelly loam  
*H2 - 9 to 13 inches:* gravelly loam  
*H3 - 13 to 21 inches:* cemented  
*H4 - 21 to 60 inches:* very gravelly loam

### Properties and qualities

*Slope:* 0 to 9 percent  
*Depth to restrictive feature:* 7 to 20 inches to petrocalcic  
*Natural drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (Ksat):* Low to moderately high (0.01 to 0.60 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum in profile:* 75 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):* 7s  
*Hydrologic Soil Group:* D  
*Ecological site:* Shallow Loamy (R070DY159NM)  
*Hydric soil rating:* No

## Minor Components

### Atoka

*Percent of map unit:* 3 percent  
*Ecological site:* Loamy (R042XC007NM)  
*Hydric soil rating:* No

### Pima

*Percent of map unit:* 2 percent  
*Ecological site:* Bottomland (R042XC017NM)

Map Unit Description: Reagan-Upton association, 0 to 9 percent slopes---Eddy Area, New Mexico

Dark Canyon SWD #001

---

*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Eddy Area, New Mexico

Survey Area Data: Version 15, Sep 15, 2019





## **ATTACHMENT 4**



## Daily Site Visit Report

Client:	3 Bear Energy LLC	Inspection Date:	9/28/2019
Site Location Name:	Carlsbad 960 SWD	Report Run Date:	9/28/2019 9:50 PM
Project Owner:	Liz Klein	File (Project) #:	19E-03610
Project Manager:	Dennis Williams	API #:	30-015-45033
Client Contact Name:	Liz Klein	Reference	Lightning Strike
Client Contact Phone #:	(303) 882-4404		

### Summary of Times

Left Office	9/28/2019 9:30 AM
Arrived at Site	9/28/2019 9:54 AM
Departed Site	9/28/2019 11:17 AM
Returned to Office	9/28/2019 11:45 AM

### Summary of Daily Operations

#### 10:10 Arrive on site

- Fill out arrival and safety forms
- Tailgate safety meeting
- Conduct initial site visit
- Map spill area
- Map infrastructure on site
- Take pictures of site and spill area
- Fill out DFR
- Demobilize from site

### Next Steps & Recommendations

- 1 Send GPS data off to have maps made
- 2 Create sampling/work plan

## Daily Site Visit Report



## Site Photos

Viewing Direction: North



Destroyed tanks (lightning strike)

Viewing Direction: North



Destroyed tanks (lightning strike)

Viewing Direction: East



Destroyed tanks/containment

Viewing Direction: East



Destroyed tanks/containment



## Daily Site Visit Report

Viewing Direction: South



Destroyed tanks

Viewing Direction: West



Destroyed tanks

Viewing Direction: West



Destroyed tanks

Viewing Direction: West



Spill area



## Daily Site Visit Report

**Viewing Direction: West**



Spill area

**Viewing Direction: North**



Spill area

**Viewing Direction: East**



Spill area inside containment

**Viewing Direction: Northeast**



Spill area





# Daily Site Visit Report

Viewing Direction: East



Spill area

Viewing Direction: West



Spill area

Viewing Direction: East



Spill area

Viewing Direction: Northeast



Site photo

## Daily Site Visit Report



Daily Site Visit Signature

**Inspector:** Jason Crabtree

**Signature:**

  
Signature



## Daily Site Visit Report

Client:	3 Bear Energy LLC	Inspection Date:	10/4/2019
Site Location Name:	Carlsbad 960 SWD	Report Run Date:	10/4/2019 11:06 PM
Project Owner:	Liz Klein	File (Project) #:	19E-03610
Project Manager:	Dennis Williams	API #:	30-015-45033
Client Contact Name:	Liz Klein	Reference	Lightning Strike
Client Contact Phone #:	(303) 882-4404		

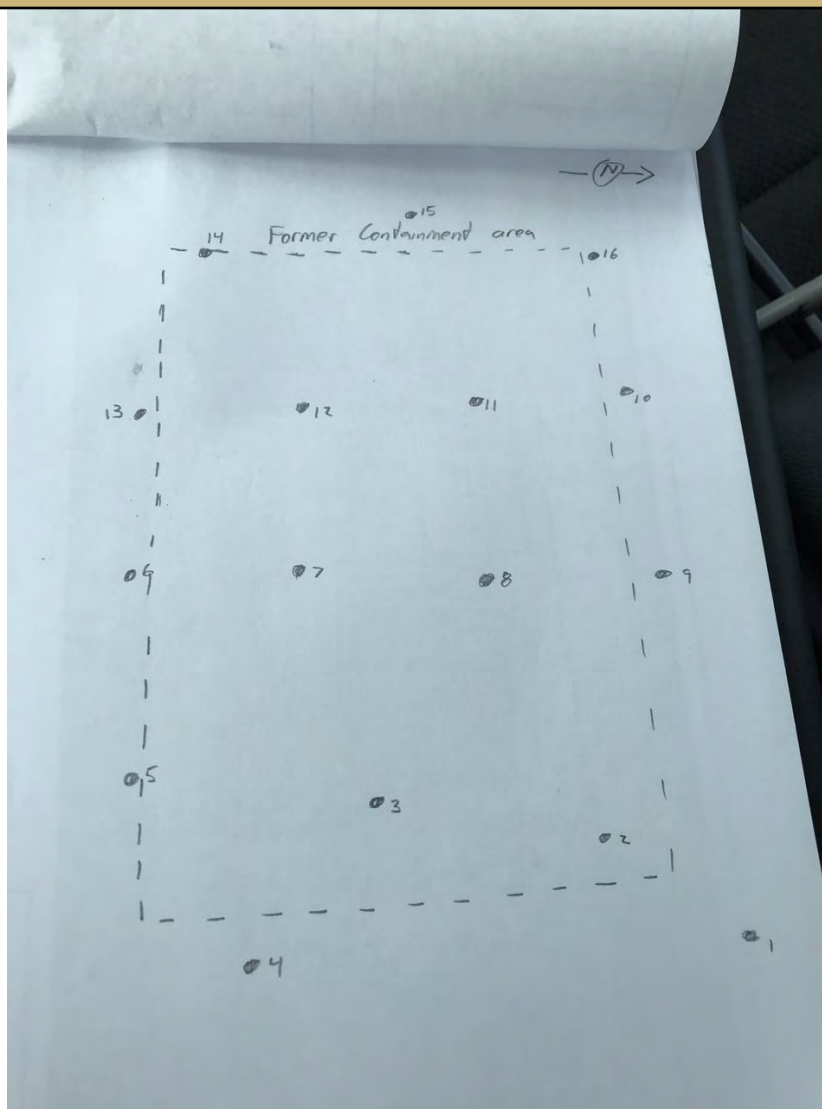
### Summary of Times

Left Office	10/4/2019 7:00 AM
Arrived at Site	10/4/2019 7:30 AM
Departed Site	10/4/2019 4:20 PM
Returned to Office	10/4/2019 4:46 PM

## Daily Site Visit Report

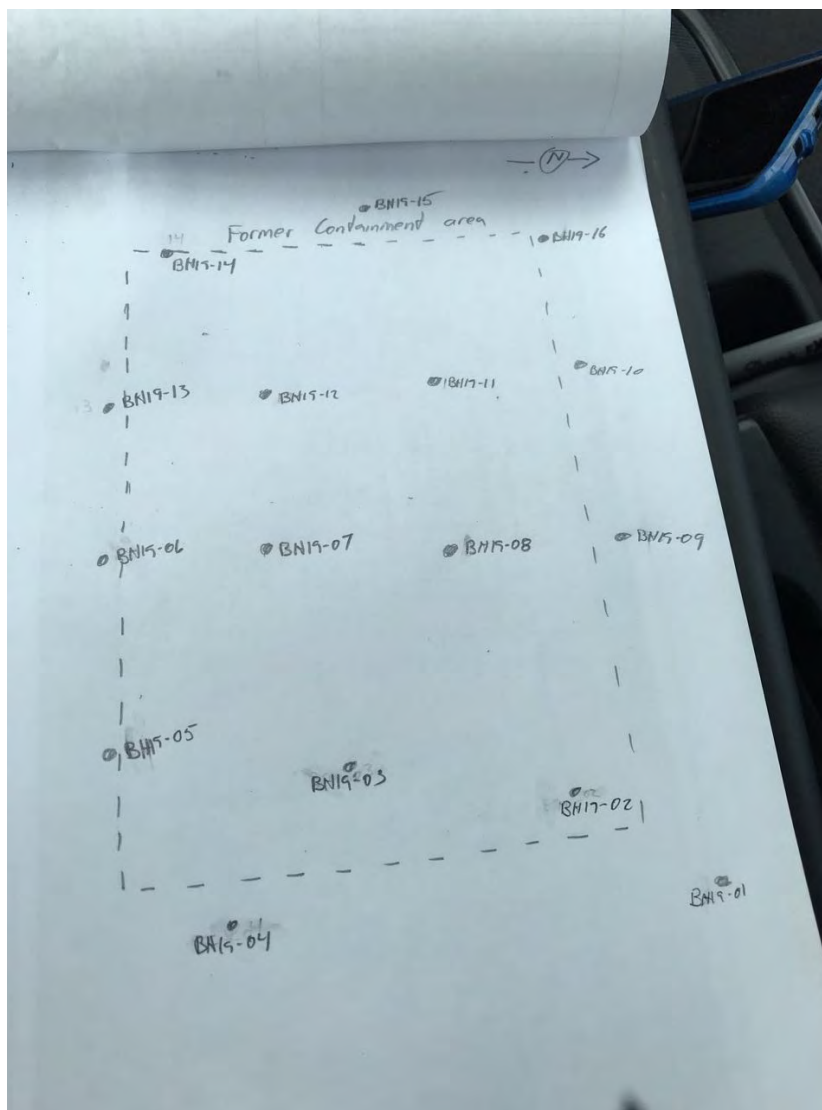


### Site Sketch





## Daily Site Visit Report





# Daily Site Visit Report

## Summary of Daily Operations

**8:04** Arrive on site.  
 Complete safety paperwork.  
 Begin field screening.  
 Collect data.  
 Complete DFR.  
 Return to office.

## Next Steps & Recommendations

- 1 Scrape 6" off surface.
- 2 Obtain confirmatory samples.
- 3 Send samples to lab.
- 4 Confirm lab analysis for backfill.

## Sampling

### Background19-01

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.	0.4 ppm	42 ppm	High (300- 6000ppm)	700 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.28607172, - 104.25711636	Yes

### BH19-01

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.	0.4 ppm	441 ppm	High (300- 6000ppm)	525 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.28610382, - 104.25815902	Yes






## Daily Site Visit Report

BH19-02									
Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?	
2 ft.	3.3 ppm	151 ppm	High (300-6000ppm)	4000 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.28605904, -104.25819265	Yes	
BH19-03									
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.	45.3 ppm	819 ppm	High (300-6000ppm)	2500 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.28599617, -104.25823786	Yes	
BH19-04									
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.	6 ppm	225 ppm	High (300-6000ppm)	2475 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.28593346, -104.25816960	Yes	
BH19-05									
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.	35.3 ppm	1116 ppm	High (300-6000ppm)	2125 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.28590914, -104.25824511	Yes	







## Daily Site Visit Report

BH19-06									
	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.	11.2 ppm	65 ppm	High (300-6000ppm)	750 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.28590464, -104.25840330	Yes
BH19-07									
	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.	13.8 ppm	787 ppm	High (300-6000ppm)	2750 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.28596638, -104.25839066	Yes
BH19-08									
	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.	12.5 ppm	53 ppm	High (300-6000ppm)	4350 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.28602371, -104.25838032	Yes
BH19-09									
	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.	10.4 ppm	47 ppm	Low (30-600 ppm)	450 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.28610531, -104.25834473	Yes






## Daily Site Visit Report

BH19-10									
	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.	1 ppm	48 ppm	High (300-6000ppm)	1625 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.28609128, -104.25851159	Yes
BH19-11									
	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.	47.5 ppm	667 ppm	High (300-6000ppm)	1750 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.28600696, -104.25851041	Yes
BH19-12									
	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.	5 ppm	57 ppm	High (300-6000ppm)	2050 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.28594178, -104.25852222	Yes
BH19-13									
	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.	1.2 ppm	55 ppm	High (300-6000ppm)	1650 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.28590128, -104.25857281	Yes



## Daily Site Visit Report

BH19-14									
	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.	1.1 ppm	115 ppm	High (300-6000ppm)	750 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		3.28589121, -104.25868630	Yes
BH19-15									
	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.	29.4 ppm	1120 ppm	High (300-6000ppm)	2350 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.28599387, -104.25868341	Yes
BH19-16									
	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.	2 ppm	95 ppm	High (300-6000ppm)	3250 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.28609665, -104.25867293	Yes



# Daily Site Visit Report



## Site Photos

**Viewing Direction: Southeast**



Former containment location

**Viewing Direction: South**



Former containment location

**Viewing Direction: North**



Former containment location

**Viewing Direction: East**



Former containment location



## Daily Site Visit Report

**Viewing Direction: West**



Former containment location

**Viewing Direction: North**



Former containment location

**Viewing Direction: West**



Former containment location

**Viewing Direction: Southwest**



Former containment location



# Daily Site Visit Report



## Depth Sample Photos

Sample Point ID: Background19-01



Depth: 0 ft.

Sample Point ID: BH19-01



Depth: 0 ft.

Sample Point ID: BH19-02



Depth: 2 ft.

Sample Point ID: BH19-03



Depth: 0 ft.





## Daily Site Visit Report

Sample Point ID: BH19-04



Depth: 0 ft.

Sample Point ID: BH19-05



Depth: 0 ft.

Sample Point ID: BH19-06



Depth: 0 ft.

Sample Point ID: BH19-07



Depth: 0 ft.



## Daily Site Visit Report

Sample Point ID: BH19-08



Depth: 0 ft.

Sample Point ID: BH19-09



Depth: 0 ft.

Sample Point ID: BH19-10



Depth: 0 ft.

Sample Point ID: BH19-11



Depth: 0 ft.





## Daily Site Visit Report

Sample Point ID: BH19-12



Depth: 0 ft.

Sample Point ID: BH19-13



Depth: 0 ft.

Sample Point ID: BH19-14



Depth: 0 ft.

Sample Point ID: BH19-15

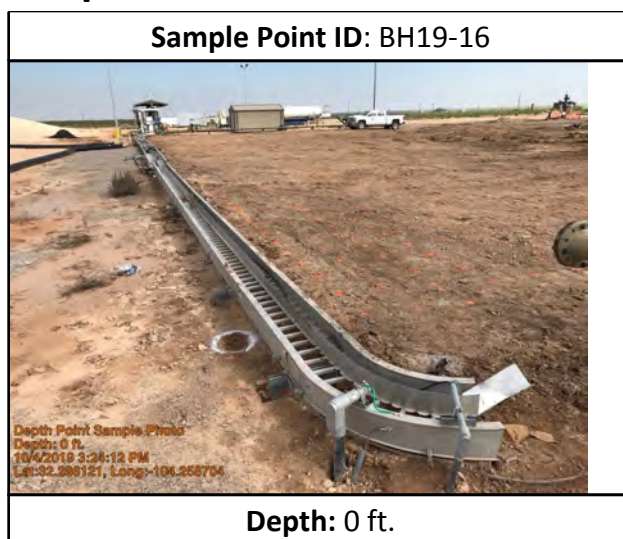


Depth: 0 ft.





## Daily Site Visit Report



## Daily Site Visit Report



Daily Site Visit Signature

**Inspector:** Austin Harris

**Signature:**

  
Signature



## Daily Site Visit Report

Client: 3 Bear Energy LLC  
Site Location Name: Carlsbad 960 SWD  
Project Owner: Liz Klein  
Project Manager: Dennis Williams  
Client Contact Name: Liz Klein  
Client Contact Phone #: (303) 882-4404

Inspection Date: 10/5/2019  
Report Run Date: 10/6/2019 1:02 AM  
File (Project) #: 19E-03610  
API #: 30-015-45033  
Reference: Lightning Strike

### Summary of Times

Left Office 10/5/2019 7:15 AM  
Arrived at Site 10/5/2019 7:45 AM  
Departed Site 10/5/2019 2:59 PM  
Returned to Office 10/5/2019 3:20 PM

### Summary of Daily Operations

**8:11** Arrive on site.  
Complete safety paperwork.  
Obtain confirmatory samples.  
Complete DFR.  
Return to office.

### Next Steps & Recommendations



**1** Confirm lab samples to backfill

### Sampling






# Daily Site Visit Report

ES-Base19-01									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285887, -104.258207	Yes
ES-Base19-02									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285924, -104.258198	Yes
ES-Base19-03									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285942, -104.258196	Yes
ES-Base19-04									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285968, -104.258194	Yes







# Daily Site Visit Report

ES-Base19-05									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.286000, -104.258198	Yes
ES-Base19-06									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.286027, -104.258198	Yes
ES-Base19-07									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.286059, -104.258211	Yes
ES-Base19-08									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.286062, -104.258281	Yes




# Daily Site Visit Report

ES-Base19-09									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.286032, -104.258275	Yes
ES-Base19-10									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.286001, -104.258273	Yes
ES-Base19-11									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285971, -104.258272	Yes
ES-Base19-12									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285941, -104.258267	Yes






## Daily Site Visit Report

ES-Base19-13									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285907, -104.258260	Yes
ES-Base19-14									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285877, -104.258261	Yes
ES-Base19-15									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285892, -104.258335	Yes
ES-Base19-16									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285931, -104.258333	Yes




## Daily Site Visit Report

ES-Base19-17									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285964, -104.258334	Yes
ES-Base19-18									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285998, -104258336	Yes
ES-Base19-19									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.286029, -104.258332	Yes
ES-Base19-20									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.286071, -104.258332	Yes




## Daily Site Visit Report

ES-Base19-21									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.286060, - 104.258413	Yes
ES-Base19-22									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.286022, - 104.258403	Yes
ES-Base19-23									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285990, - 104.258403	Yes
ES-Base19-24									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285960, - 104.258402	Yes





## Daily Site Visit Report

ES-Base19-25									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285925, -104.258394	Yes
ES-Base19-26									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285888, -104.258402	Yes
ES-Base19-27									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285892, -104.258467	Yes
ES-Base19-28									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285924, -104.258473	Yes





## Daily Site Visit Report

ES-Base19-29									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285958, -104.258480	Yes
ES-Base19-30									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285992, -104.258477	Yes
ES-Base19-31									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.286023, -104.258480	Yes
ES-Base19-32									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.286063, -104.258479	Yes




## Daily Site Visit Report

ES-Base19-33									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.286068, -104.258567	Yes
ES-Base19-34									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.286026, -104.258553	Yes
ES-Base19-35									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285983, -104.258550	Yes
ES-Base19-36									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285951, -104.258551	Yes





## Daily Site Visit Report

ES-Base19-37									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285899, - 104.258551	Yes
ES-Base19-38									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285895, - 104.258636	Yes
ES-Base19-39									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285933, - 104.258646	Yes
ES-Base19-40									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285965, - 104.258651	Yes

## Daily Site Visit Report



ES-Base19-41									
Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?	
0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.286040, - 104.258661	Yes	

## Daily Site Visit Report



## Site Photos

Viewing Direction: North



Former containment area after 0.5' scrape off

Viewing Direction: Northwest



Former containment area after 0.5' scrape off

Viewing Direction: West



Former containment area after 0.5' scrape off

Viewing Direction: West



Former containment area after 0.5' scrape off





## Daily Site Visit Report

**Viewing Direction: South**



Former containment area after 0.5' scrape off

**Viewing Direction: Southwest**



Former containment area after 0.5' scrape off

**Viewing Direction: East**



Former containment area after 0.5' scrape off

**Viewing Direction: Northeast**



Former containment area after 0.5' scrape off

## Daily Site Visit Report



## Depth Sample Photos

Sample Point ID: ES-Base19-01



Depth: 0.5 ft.

Sample Point ID: ES-Base19-02



Depth: 0.5 ft.

Sample Point ID: ES-Base19-03



Depth: 0.5 ft.

Sample Point ID: ES-Base19-04



Depth: 0.5 ft.





## Daily Site Visit Report

**Sample Point ID: ES-Base19-05**



**Depth: 0.5 ft.**

**Sample Point ID: ES-Base19-06**



**Depth: 0.5 ft.**

**Sample Point ID: ES-Base19-07**



**Depth: 0.5 ft.**

**Sample Point ID: ES-Base19-08**



**Depth: 0.5 ft.**



## Daily Site Visit Report

Sample Point ID: ES-Base19-09



Depth: 0.5 ft.

Sample Point ID: ES-Base19-10



Depth: 0.5 ft.

Sample Point ID: ES-Base19-11



Depth: 0.5 ft.

Sample Point ID: ES-Base19-12







Depth: 0.5 ft.





## Daily Site Visit Report

<p><b>Sample Point ID: ES-Base19-12</b></p>  <p><b>Depth: 0.5 ft.</b></p>	<p><b>Sample Point ID: ES-Base19-14</b></p>  <p><b>Depth: 0.5 ft.</b></p>
<p><b>Sample Point ID: ES-Base19-15</b></p>  <p><b>Depth: 0.5 ft.</b></p>	<p><b>Sample Point ID: ES-Base19-16</b></p>  <p><b>Depth: 0.5 ft.</b></p>



## Daily Site Visit Report

**Sample Point ID: ES-Base19-17****Depth: 0.5 ft.****Sample Point ID: ES-Base19-18****Depth: 0.5 ft.****Sample Point ID: ES-Base19-19****Depth: 0.5 ft.****Sample Point ID: ES-Base19-20****Depth: 0.5 ft.**





## Daily Site Visit Report

**Sample Point ID: ES-Base19-21**



**Depth: 0.5 ft.**

**Sample Point ID: ES-Base19-22**



**Depth: 0.5 ft.**

**Sample Point ID: ES-Base19-23**



**Depth: 0.5 ft.**

**Sample Point ID: ES-Base19-24**



**Depth: 0.5 ft.**





## Daily Site Visit Report

**Sample Point ID: ES-Base19-25****Depth: 0.5 ft.****Sample Point ID: ES-Base19-26****Depth: 0.5 ft.****Sample Point ID: ES-Base19-27****Depth: 0.5 ft.****Sample Point ID: ES-Base19-28****Depth: 0.5 ft.**







## Daily Site Visit Report

**Sample Point ID: ES-Base19-29****Depth: 0.5 ft.****Sample Point ID: ES-Base19-30****Depth: 0.5 ft.****Sample Point ID: ES-Base19-31****Depth: 0.5 ft.****Sample Point ID: ES-Base19-32****Depth: 0.5 ft.**





## Daily Site Visit Report

<p><b>Sample Point ID: ES-Base19-33</b></p> <p>Date &amp; Time: Sat Oct 5 14:34:21 MDT 2019 Position: +032.28584° / -104.25823° Altitude: 990m Datum: WGS-84 Azimuth/Bearing: 00° N00E 1422mils (True) Zoom: IX</p>  <p>Depth Point Sample Photo Depth: 0.5 ft. 10/5/2019 9:20:17 PM Lat:32.416178, Long:-104.237142</p> <p><b>Depth: 0.5 ft.</b></p>	<p><b>Sample Point ID: ES-Base19-34</b></p> <p>Date &amp; Time: Sat Oct 5 14:34:23 MDT 2019 Position: +032.28584° / -104.25823° Altitude: 990m Datum: WGS-84 Azimuth/Bearing: 00° N00E 1936mils (True) Zoom: IX</p>  <p>Depth Point Sample Photo Depth: 0.5 ft. 10/5/2019 9:21:48 PM Lat:32.416178, Long:-104.237142</p> <p><b>Depth: 0.5 ft.</b></p>
<p><b>Sample Point ID: ES-Base19-35</b></p> <p>Date &amp; Time: Sat Oct 5 14:34:32 MDT 2019 Position: +032.28583° / -104.25823° Altitude: 990m Datum: WGS-84 Azimuth/Bearing: 044° N44E 1173mils (True) Zoom: IX</p>  <p>Depth Point Sample Photo Depth: 0.5 ft. 10/5/2019 9:24:34 PM Lat:32.416178, Long:-104.237142</p> <p><b>Depth: 0.5 ft.</b></p>	<p><b>Sample Point ID: ES-Base19-36</b></p> <p>Date &amp; Time: Sat Oct 5 14:34:33 MDT 2019 Position: +032.28583° / -104.25823° Altitude: 990m Datum: WGS-84 Azimuth/Bearing: 104° 52° N104E 1241mils (True) Zoom: IX</p>  <p>Depth Point Sample Photo Depth: 0.5 ft. 10/5/2019 9:25:32 PM Lat:32.416178, Long:-104.237142</p> <p><b>Depth: 0.5 ft.</b></p>





## Daily Site Visit Report

Sample Point ID: ES-Base19-37



Depth: 0.5 ft.

Sample Point ID: ES-Base19-38



Depth: 0.5 ft.

Sample Point ID: ES-Base19-39



Depth: 0.5 ft.


Sample Point ID: ES-Base19-40



Depth: 0.5 ft.



## Daily Site Visit Report

<b>Sample Point ID: ES-Base19-41</b>	
<div><div><div>Data &amp; Photo - Sat Oct 5 14:27:05 2019 Position: -43.23583° / -104.23822° Altitude: 587m Datum: WGS-84 Azimuth/Bearing: 005° N04E 0107mils (true) Zoom: IX</div></div><div><div>Copy Photo Sample Photo Caption: 1.5 ft. 10/6/2019 1:02:04 PM Lat: -43.23583, Long: -104.23822</div></div></div>	
<b>Depth: 0.5 ft.</b>	

## Daily Site Visit Report



Daily Site Visit Signature

**Inspector:** Austin Harris

**Signature:**

  
Signature





## Daily Site Visit Report

Client: 3 Bear Energy LLC  
Site Location Name: Carlsbad 960 SWD  
Project Owner: Liz Klein  
Project Manager: Dennis Williams  
Client Contact Name: Liz Klein  
Client Contact Phone #: (303) 882-4404

Inspection Date: 10/9/2019  
Report Run Date: 10/9/2019 9:53 PM  
File (Project) #: 19E-03610  
API #: 30-015-45033  
Reference: Lightning Strike

### Summary of Times

Left Office 10/9/2019 7:15 AM  
Arrived at Site 10/9/2019 7:45 AM  
Departed Site 10/9/2019 2:21 PM  
Returned to Office 10/9/2019 3:00 PM

### Summary of Daily Operations

**10:45** Arrive on site.  
Complete safety paperwork.  
Obtain confirmatory samples.  
Complete DFR.  
Return to office.



### Next Steps & Recommendations

**1** Send confirmatory samples to lab

### Sampling







## Daily Site Visit Report

ES-Base19-02									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	2 ft.	0.1 ppm	31 ppm	Low (30-600 ppm)	195 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285924, -104.258198	Yes
ES-Base19-11									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	2 ft.	1 ppm	36 ppm	Low (30-600 ppm)	180 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285971, -104.258272	Yes
ES-Base19-12									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	2 ft.	0.5 ppm	49 ppm	Low (30-600 ppm)	105 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285941, -104.258267	Yes
ES-Base19-15									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	2 ft.	1 ppm	32 ppm	Low (30-600 ppm)	185 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285892, -104.258335	Yes




## Daily Site Visit Report

ES-Base19-18									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	2 ft.	0.6 ppm	3 ppm	Low (30-600 ppm)	140 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285998, -104.258336	Yes
ES-Base19-19									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	2 ft.	0.6 ppm	25 ppm	Low (30-600 ppm)	172 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.286032, -104.258275	Yes
ES-Base19-24									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	2 ft.	0.7 ppm	68 ppm	Low (30-600 ppm)	190 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285960, -104.258402	Yes
ES-Base19-26									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	2 ft.	0.5 ppm	22 ppm	Low (30-600 ppm)	183 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285888, -104.258402	Yes





## Daily Site Visit Report

ES-Base19-28									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	2 ft.	3.5 ppm	31 ppm	Low (30-600 ppm)	195 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285924, -104.258473	Yes
ES-Base19-29									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	2 ft.	14.6 ppm	29 ppm	Low (30-600 ppm)	150 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285958, -104.258473	Yes
ES-Base19-37									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	2 ft.	0.9 ppm	15 ppm	Low (30-600 ppm)	175 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285899, -104.258551	Yes
ES-Base19-38									
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	2 ft.	0.5 ppm	36 ppm	Low (30-600 ppm)	180 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)		32.285895, -104.258636	Yes



# Daily Site Visit Report

## Site Photos

Viewing Direction: West



Excavation area under former containment

Viewing Direction: West



Excavated area under old containment

Viewing Direction: Southwest



Excavated area under old containment

Viewing Direction: East



Excavated area under old containment



## Daily Site Visit Report





## Daily Site Visit Report



## Depth Sample Photos

Sample Point ID: ES-Base19-02



Depth: 2 ft.

Sample Point ID: ES-Base19-11



Depth: 2 ft.

Sample Point ID: ES-Base19-12



Depth: 2 ft.

Sample Point ID: ES-Base19-18



Depth: 2 ft.



## Daily Site Visit Report

**Sample Point ID: ES-Base19-19**



**Depth: 2 ft.**

**Sample Point ID: ES-Base19-15**



**Depth: 2 ft.**

**Sample Point ID: ES-Base19-24**



**Depth: 2 ft.**

**Sample Point ID: ES-Base19-26**



**Depth: 2 ft.**





## Daily Site Visit Report

**Sample Point ID: ES-Base19-28****Depth: 2 ft.****Sample Point ID: ES-Base19-29****Depth: 2 ft.****Sample Point ID: ES-Base19-37****Depth: 2 ft.****Sample Point ID: ES-Base19-38****Depth: 2 ft.**



## Daily Site Visit Report



Daily Site Visit Signature

**Inspector:** Austin Harris

**Signature:**

A handwritten signature in black ink, appearing to be 'AH', written over a horizontal line.

Signature



## Daily Site Visit Report

Client:	3 Bear Energy LLC	Inspection Date:	10/14/2019
Site Location Name:	Carlsbad 960 SWD	Report Run Date:	10/15/2019 12:06 AM
Project Owner:	Liz Klein	File (Project) #:	19E-03610
Project Manager:	Dennis Williams	API #:	30-015-45033
Client Contact Name:	Liz Klein	Reference	Lightning Strike
Client Contact Phone #:	(303) 882-4404		

### Summary of Times

Left Office	10/14/2019 10:30 AM
Arrived at Site	10/14/2019 10:47 AM
Departed Site	10/14/2019 5:24 PM
Returned to Office	10/14/2019 5:57 PM

### Summary of Daily Operations

**10:52** Fill out arrival and safety forms  
Conduct backfill inspection  
Take pictures  
Fill out DFR  
Demobilize

### Next Steps & Recommendations

1

# Daily Site Visit Report



## Site Photos

Viewing Direction: West



Descriptive Photo  
Viewing Direction: West  
Owner: Backfill material  
Created: 10/14/2019 4:22:04 PM  
Lat: 32.285943, Long: -104.285729

Backfill material

Viewing Direction: Northwest



Descriptive Photo  
Viewing Direction: Northwest  
Owner: Excavation area  
Created: 10/14/2019 4:22:04 PM  
Lat: 32.285943, Long: -104.285729

Excavation area

Viewing Direction: East



Descriptive Photo  
Viewing Direction: East  
Owner: Backfilled area  
Created: 10/14/2019 4:22:04 PM  
Lat: 32.285943, Long: -104.285729

Backfilled area

Viewing Direction: Northeast



Descriptive Photo  
Viewing Direction: Northeast  
Owner: Backfilled area  
Created: 10/14/2019 4:22:04 PM  
Lat: 32.285943, Long: -104.285729

Backfilled area





## Daily Site Visit Report

Viewing Direction: East



Backfilled area

Viewing Direction: West



Backfilled area

Viewing Direction: West



Backfilled area

## Daily Site Visit Report



Daily Site Visit Signature

**Inspector:** Jason Crabtree

**Signature:**

A handwritten signature in black ink, appearing to be 'JC', written over a thin horizontal line. The word 'signature' is faintly visible below the line.

## **ATTACHMENT 5**



**Table 3 - Soil Characterization Samples**  
**3 Bear Delaware Operating - NM, LLC**  
**Dark Canyon (Carlsbad 960 SWD)**  
**Project #: 19E-03610-001**  
**Lab Report Number: 1910366**

Table 3. Characterization Soil Analysis - 10/04/2019																	
Sample Description			Field Screening			Petroleum Hydrocarbons											Inorganic
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Quantab Result (High/Low)	Volatile							Extractable				
						Benzene	Toluene	Ethylbenzene	Xylenes (o&m)	Xylenes (p)	Xylenes (Total)	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	Total Petroleum Hydrocarbons (TPH)	
			(ppm)	(ppm)	(+/-)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BG19-01	0	10/4/2019	0	42	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH19-01	0	10/4/2019	0	441	525	ND	ND	ND	ND	ND	ND	ND	ND	140	630	770	100.0
BH19-02	0	10/4/2019	3	151	4,000	ND	ND	ND	ND	ND	ND	ND	ND	260	160	420	3,100.0
BH19-03	0	10/4/2019	45	819	2,500	ND	ND	ND	ND	1.3	ND	1.3	150	2200	940	3290	2,300.0
BH19-04	0	10/4/2019	6	225	2,475	ND	ND	ND	ND	ND	ND	ND	ND	9.6	110	119.6	3,300.0
BH19-05	0	10/4/2019	35	1,116	2,125	ND	ND	ND	ND	2	ND	2	150	5100	2300	7550	2,200.0
BH19-06	0	10/4/2019	11	65	750	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	470.0
BH19-07	0	10/4/2019	14	787	2,750	ND	ND	ND	ND	0.51	ND	0.51	100	1900	830	2830	2,400.0
BH19-08	0	10/4/2019	13	53	4,350	ND	ND	ND	ND	ND	ND	ND	ND	10	83	93	1,000.0
BH19-09	0	10/4/2019	10	47	450	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH19-10	0	10/4/2019	1	48	1,625	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,800.0
BH19-11	0	10/4/2019	47	667	1,750	ND	ND	ND	ND	0.44	ND	0.44	72	970	550	1592	1,600.0
BH19-12	0	10/4/2019	5	57	2,050	ND	ND	ND	ND	ND	ND	ND	ND	11	68	79	1,100.0
BH19-13	0	10/4/2019	1	55	1,650	ND	ND	ND	ND	ND	ND	ND	ND	19	ND	19	1,200.0
BH19-14	0	10/4/2019	1	115	750	ND	ND	ND	ND	ND	ND	ND	ND	16	77	93	150.0
BH19-15	0	10/4/2019	29	1,120	2,350	ND	ND	ND	ND	ND	ND	ND	ND	1600	1100	2700	1,800.0
BH19-16	0	10/4/2019	2	95	3,250	ND	ND	ND	ND	ND	ND	ND	ND	28	56	84	2,300.0

**Bold and Shaded indicates exceedance outside of applied action level.**

**Table 4 - Confirmatory Soil Samples**  
**3 Bear Delaware Operating - NM, LLC**  
**Dark Canyon (Carlsbad 960 SWD)**  
**Report #: 19E-03610**  
**Lab Report Numbers: 1910365 and 1910673**

Table 4. Confirmatory Soil Sample Laboratory Results																		
Sample Description			Field Screening			Petroleum Hydrocarbons												Inorganic
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Quantab Result (High/Low)	Volatile							Extractable					
						Benzene	Toluene	Ethylbenzene	Xylenes (o&m)	Xylenes (p)	Xylenes (Total)	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	Total Petroleum Hydrocarbons (TPH)	Chloride	
			(ppm)	(ppm)	(+/-)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BS19-01	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	710	400	1110		940.0
BS19-02	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	1.2	1.2	46	2200	940	3186		1,600.0
BS19-02	2	10/9/2019	0	31	195	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BS19-03	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	1500	530	2030		1,400.0
BS19-04	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	270	130	400		2,600.0
BS19-05	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	240	120	360		2,200.0
BS19-06	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	250	160	410		3,100.0
BS19-07	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	67	ND	67		4,300.0
BS19-08	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	160	110	270		1,900.0
BS19-09	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	450	220	770		2,200.0
BS19-10	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	570	290	860		2,400.0
BS19-11	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	0.86	ND	0.86	40	1800	650	2490		2,400.0
BS19-11	2	10/9/2019	1	36	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BS19-12	0.5	10/5/2019		-	-	ND	ND	ND	ND	0.44	ND	0.44	ND	2200	750	2950		2,100.0
BS19-12	2	10/9/2019	1	49	105	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BS19-13	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	1700	580	2280		1,100.0
BS19-14	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	740	340	1080		1,300.0
BS19-15	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	3600	1600	5200		830.0
BS19-15	2	10/9/2019	1	32	185	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BS19-16	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	1300	720	2020		2,400.0
BS19-17	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	280	ND	280		1,800.0
BS19-18	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	1.7	ND	1.7	63	2700	1100	3863		2,200.0
BS19-18	2	10/9/2019	1	3	140	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BS19-19	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	0.44	ND	0.44	ND	2200	1200	3400		3,200.0
BS19-19	2	10/9/2019	1	25	172	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BS19-20	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	350	180	530		2,300.0
BS19-21	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	710	360	1070		900.0
BS19-22	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	1000	720	1720		2,200.0

Table 4 - Confirmatory Soil Samples  
 3 Bear Delaware Operating - NM, LLC  
 Dark Canyon (Carlsbad 960 SWD)  
 Report #: 19E-03610  
 Lab Report Numbers: 1910365 and 1910673

Table 4. Confirmatory Soil Sample Laboratory Results																		
Sample Description			Field Screening			Petroleum Hydrocarbons												Inorganic
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Quantab Result (High/Low)	Volatile							Extractable					
						Benzene	Toluene	Ethylbenzene	Xylenes (o&m)	Xylenes (p)	Xylenes (Total)	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	Total Petroleum Hydrocarbons (TPH)	Chloride	
			(ppm)	(ppm)	(+/-)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	
BS19-23	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	630	290	920	2,000.0	
BS19-24	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	0.85	ND	0.85	43	2800	1300	4143	2,300.0	
BS19-24	2	10/9/2019	1	68	190	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
BS19-25	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	0.58	ND	0.58	23	2100	ND	2123	2,300.0	
BS19-26	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	0.56	ND	0.56	30	2000	890	2120	1,200.0	
BS19-26	2	10/9/2019	1	22	183	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
BS19-27	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	0.66	ND	0.66	30	1300	660	1990	2,400.0	
BS19-28	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	0.5	ND	0.5	ND	1900	1100	3000	2,800.0	
BS19-28	2	10/9/2019	4	31	195	ND	ND	ND	ND	ND	ND	ND	ND	28	ND	28	78.0	
BS19-29	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	0.69	ND	0.69	27	2700	1400	4127	2,200.0	
BS19-29	2	10/9/2019	15	29	150	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
BS19-30	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	1400	900	2300	2,300.0	
BS19-31	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	340	180	520	1,600.0	
BS19-32	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	740	420	1160	1,600.0	
BS19-33	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	510	350	860	1,600.0	
BS19-34	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	860	590	1450	2,300.0	
BS19-35	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	860	690	1550	1,800.0	
BS19-36	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	1500	920	2420	2,100.0	
BS19-37	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	1600	930	2530	1,700.0	
BS19-37	2	10/9/2019	1	15	175	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
BS19-38	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	1900	1100	3000	2,300.0	
BS19-38	2	10/9/2019	1	36	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
BS19-39	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	980	ND	980	2,000.0	
BS19-40	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	1500	ND	1500	2,000.0	
BS19-41	0.5	10/5/2019	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	550	410	960	1,900.0	

Bold and shaded indicates exceedance outside of applied action level.



## **ATTACHMENT 6**

## Analytical Report

Lab Order 1910366

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BG19-01 0.0'

Project: Dark Canyon SWD 001

Collection Date: 10/4/2019 9:00:00 AM

Lab ID: 1910366-001

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	10/7/2019 6:39:56 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/7/2019 6:39:56 PM
Surr: DNOP	96.9	70-130		%Rec	1	10/7/2019 6:39:56 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	ND	60		mg/Kg	20	10/7/2019 7:19:09 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>DJF</b>
Benzene	ND	0.11		mg/Kg	5	10/7/2019 3:34:32 PM
Toluene	ND	0.22		mg/Kg	5	10/7/2019 3:34:32 PM
Ethylbenzene	ND	0.22		mg/Kg	5	10/7/2019 3:34:32 PM
Xylenes, Total	ND	0.44		mg/Kg	5	10/7/2019 3:34:32 PM
Surr: 1,2-Dichloroethane-d4	112	70-130		%Rec	5	10/7/2019 3:34:32 PM
Surr: 4-Bromofluorobenzene	88.0	70-130		%Rec	5	10/7/2019 3:34:32 PM
Surr: Dibromofluoromethane	111	70-130		%Rec	5	10/7/2019 3:34:32 PM
Surr: Toluene-d8	102	70-130		%Rec	5	10/7/2019 3:34:32 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	22		mg/Kg	5	10/7/2019 3:34:32 PM
Surr: BFB	90.8	70-130		%Rec	5	10/7/2019 3:34:32 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910366

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BH19-01 0.0'

Project: Dark Canyon SWD 001

Collection Date: 10/4/2019 9:15:00 AM

Lab ID: 1910366-002

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	140	8.6		mg/Kg	1	10/7/2019 7:02:02 PM
Motor Oil Range Organics (MRO)	630	43		mg/Kg	1	10/7/2019 7:02:02 PM
Surr: DNOP	112	70-130		%Rec	1	10/7/2019 7:02:02 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	100	60		mg/Kg	20	10/7/2019 8:20:53 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>DJF</b>
Benzene	ND	0.12		mg/Kg	5	10/7/2019 5:02:50 PM
Toluene	ND	0.24		mg/Kg	5	10/7/2019 5:02:50 PM
Ethylbenzene	ND	0.24		mg/Kg	5	10/7/2019 5:02:50 PM
Xylenes, Total	ND	0.48		mg/Kg	5	10/7/2019 5:02:50 PM
Surr: 1,2-Dichloroethane-d4	106	70-130		%Rec	5	10/7/2019 5:02:50 PM
Surr: 4-Bromofluorobenzene	87.6	70-130		%Rec	5	10/7/2019 5:02:50 PM
Surr: Dibromofluoromethane	113	70-130		%Rec	5	10/7/2019 5:02:50 PM
Surr: Toluene-d8	104	70-130		%Rec	5	10/7/2019 5:02:50 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	24		mg/Kg	5	10/7/2019 5:02:50 PM
Surr: BFB	88.4	70-130		%Rec	5	10/7/2019 5:02:50 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910366

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BH19-02 0.0'

Project: Dark Canyon SWD 001

Collection Date: 10/4/2019 9:30:00 AM

Lab ID: 1910366-003

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	260	9.0		mg/Kg	1	10/7/2019 7:24:12 PM
Motor Oil Range Organics (MRO)	160	45		mg/Kg	1	10/7/2019 7:24:12 PM
Surr: DNOP	110	70-130		%Rec	1	10/7/2019 7:24:12 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CJS</b>
Chloride	3100	150		mg/Kg	50	10/8/2019
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>DJF</b>
Benzene	ND	0.11		mg/Kg	5	10/7/2019 6:30:32 PM
Toluene	ND	0.21		mg/Kg	5	10/7/2019 6:30:32 PM
Ethylbenzene	ND	0.21		mg/Kg	5	10/7/2019 6:30:32 PM
Xylenes, Total	ND	0.42		mg/Kg	5	10/7/2019 6:30:32 PM
Surr: 1,2-Dichloroethane-d4	107	70-130		%Rec	5	10/7/2019 6:30:32 PM
Surr: 4-Bromofluorobenzene	86.4	70-130		%Rec	5	10/7/2019 6:30:32 PM
Surr: Dibromofluoromethane	112	70-130		%Rec	5	10/7/2019 6:30:32 PM
Surr: Toluene-d8	99.9	70-130		%Rec	5	10/7/2019 6:30:32 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	21		mg/Kg	5	10/7/2019 6:30:32 PM
Surr: BFB	88.9	70-130		%Rec	5	10/7/2019 6:30:32 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		



## Analytical Report

Lab Order 1910366

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BH19-03 0.0'

Project: Dark Canyon SWD 001

Collection Date: 10/4/2019 9:45:00 AM

Lab ID: 1910366-004

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	2200	96		mg/Kg	10	10/8/2019 1:34:36 PM
Motor Oil Range Organics (MRO)	940	480		mg/Kg	10	10/8/2019 1:34:36 PM
Surr: DNOP	0	70-130	S	%Rec	10	10/8/2019 1:34:36 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CJS</b>
Chloride	2300	150		mg/Kg	50	10/8/2019
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>DJF</b>
Benzene	ND	0.096		mg/Kg	5	10/7/2019 6:59:31 PM
Toluene	ND	0.19		mg/Kg	5	10/7/2019 6:59:31 PM
Ethylbenzene	ND	0.19		mg/Kg	5	10/7/2019 6:59:31 PM
Xylenes, Total	1.3	0.38		mg/Kg	5	10/7/2019 6:59:31 PM
Surr: 1,2-Dichloroethane-d4	112	70-130		%Rec	5	10/7/2019 6:59:31 PM
Surr: 4-Bromofluorobenzene	92.9	70-130		%Rec	5	10/7/2019 6:59:31 PM
Surr: Dibromofluoromethane	116	70-130		%Rec	5	10/7/2019 6:59:31 PM
Surr: Toluene-d8	98.3	70-130		%Rec	5	10/7/2019 6:59:31 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	150	19		mg/Kg	5	10/7/2019 6:59:31 PM
Surr: BFB	92.7	70-130		%Rec	5	10/7/2019 6:59:31 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910366

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BH19-04 0.0'

Project: Dark Canyon SWD 001

Collection Date: 10/4/2019 10:00:00 AM

Lab ID: 1910366-005

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	9.6	9.4		mg/Kg	1	10/7/2019 8:08:36 PM
Motor Oil Range Organics (MRO)	110	47		mg/Kg	1	10/7/2019 8:08:36 PM
Surr: DNOP	84.1	70-130		%Rec	1	10/7/2019 8:08:36 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CJS</b>
Chloride	3300	150		mg/Kg	50	10/8/2019
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>DJF</b>
Benzene	ND	0.084		mg/Kg	5	10/7/2019 7:28:33 PM
Toluene	ND	0.17		mg/Kg	5	10/7/2019 7:28:33 PM
Ethylbenzene	ND	0.17		mg/Kg	5	10/7/2019 7:28:33 PM
Xylenes, Total	ND	0.33		mg/Kg	5	10/7/2019 7:28:33 PM
Surr: 1,2-Dichloroethane-d4	110	70-130		%Rec	5	10/7/2019 7:28:33 PM
Surr: 4-Bromofluorobenzene	84.8	70-130		%Rec	5	10/7/2019 7:28:33 PM
Surr: Dibromofluoromethane	114	70-130		%Rec	5	10/7/2019 7:28:33 PM
Surr: Toluene-d8	98.6	70-130		%Rec	5	10/7/2019 7:28:33 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	17		mg/Kg	5	10/7/2019 7:28:33 PM
Surr: BFB	86.8	70-130		%Rec	5	10/7/2019 7:28:33 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910366

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BH19-05 0.0'

Project: Dark Canyon SWD 001

Collection Date: 10/4/2019 10:15:00 AM

Lab ID: 1910366-006

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	5100	95		mg/Kg	10	10/7/2019 8:30:49 PM
Motor Oil Range Organics (MRO)	2300	480		mg/Kg	10	10/7/2019 8:30:49 PM
Surr: DNOP	0	70-130	S	%Rec	10	10/7/2019 8:30:49 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	2200	59		mg/Kg	20	10/7/2019 9:10:15 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>DJF</b>
Benzene	ND	0.11		mg/Kg	5	10/7/2019 7:57:25 PM
Toluene	ND	0.22		mg/Kg	5	10/7/2019 7:57:25 PM
Ethylbenzene	ND	0.22		mg/Kg	5	10/7/2019 7:57:25 PM
Xylenes, Total	2.0	0.44		mg/Kg	5	10/7/2019 7:57:25 PM
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	5	10/7/2019 7:57:25 PM
Surr: 4-Bromofluorobenzene	107	70-130		%Rec	5	10/7/2019 7:57:25 PM
Surr: Dibromofluoromethane	111	70-130		%Rec	5	10/7/2019 7:57:25 PM
Surr: Toluene-d8	99.4	70-130		%Rec	5	10/7/2019 7:57:25 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	150	22		mg/Kg	5	10/7/2019 7:57:25 PM
Surr: BFB	94.8	70-130		%Rec	5	10/7/2019 7:57:25 PM

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

<b>Qualifiers:</b>		*	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 Quantitative Limit	RL	Reporting Limit
	S		% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910366

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BH19-06 0.0'

Project: Dark Canyon SWD 001

Collection Date: 10/4/2019 10:30:00 AM

Lab ID: 1910366-007

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	ND	8.7		mg/Kg	1	10/7/2019 8:53:01 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	10/7/2019 8:53:01 PM
Surr: DNOP	107	70-130		%Rec	1	10/7/2019 8:53:01 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	470	60		mg/Kg	20	10/7/2019 9:22:36 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>DJF</b>
Benzene	ND	0.083		mg/Kg	5	10/7/2019 8:26:27 PM
Toluene	ND	0.17		mg/Kg	5	10/7/2019 8:26:27 PM
Ethylbenzene	ND	0.17		mg/Kg	5	10/7/2019 8:26:27 PM
Xylenes, Total	ND	0.33		mg/Kg	5	10/7/2019 8:26:27 PM
Surr: 1,2-Dichloroethane-d4	108	70-130		%Rec	5	10/7/2019 8:26:27 PM
Surr: 4-Bromofluorobenzene	84.6	70-130		%Rec	5	10/7/2019 8:26:27 PM
Surr: Dibromofluoromethane	112	70-130		%Rec	5	10/7/2019 8:26:27 PM
Surr: Toluene-d8	99.8	70-130		%Rec	5	10/7/2019 8:26:27 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	17		mg/Kg	5	10/7/2019 8:26:27 PM
Surr: BFB	85.7	70-130		%Rec	5	10/7/2019 8:26:27 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		



## Analytical Report

Lab Order 1910366

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BH19-07 0.0'

Project: Dark Canyon SWD 001

Collection Date: 10/4/2019 10:45:00 AM

Lab ID: 1910366-008

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	1900	97		mg/Kg	10	10/8/2019 1:58:29 PM
Motor Oil Range Organics (MRO)	830	490		mg/Kg	10	10/8/2019 1:58:29 PM
Surr: DNOP	0	70-130	S	%Rec	10	10/8/2019 1:58:29 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CJS</b>
Chloride	2400	150		mg/Kg	50	10/8/2019
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>DJF</b>
Benzene	ND	0.11		mg/Kg	5	10/7/2019 8:55:49 PM
Toluene	ND	0.22		mg/Kg	5	10/7/2019 8:55:49 PM
Ethylbenzene	ND	0.22		mg/Kg	5	10/7/2019 8:55:49 PM
Xylenes, Total	0.51	0.45		mg/Kg	5	10/7/2019 8:55:49 PM
Surr: 1,2-Dichloroethane-d4	110	70-130		%Rec	5	10/7/2019 8:55:49 PM
Surr: 4-Bromofluorobenzene	94.7	70-130		%Rec	5	10/7/2019 8:55:49 PM
Surr: Dibromofluoromethane	113	70-130		%Rec	5	10/7/2019 8:55:49 PM
Surr: Toluene-d8	99.9	70-130		%Rec	5	10/7/2019 8:55:49 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	100	22		mg/Kg	5	10/7/2019 8:55:49 PM
Surr: BFB	90.4	70-130		%Rec	5	10/7/2019 8:55:49 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910366

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BH19-08 0.0'

Project: Dark Canyon SWD 001

Collection Date: 10/4/2019 11:00:00 AM

Lab ID: 1910366-009

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	10	9.8		mg/Kg	1	10/7/2019 9:37:24 PM
Motor Oil Range Organics (MRO)	83	49		mg/Kg	1	10/7/2019 9:37:24 PM
Surr: DNOP	108	70-130		%Rec	1	10/7/2019 9:37:24 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	1000	60		mg/Kg	20	10/7/2019 9:47:17 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>DJF</b>
Benzene	ND	0.079		mg/Kg	5	10/7/2019 9:24:41 PM
Toluene	ND	0.16		mg/Kg	5	10/7/2019 9:24:41 PM
Ethylbenzene	ND	0.16		mg/Kg	5	10/7/2019 9:24:41 PM
Xylenes, Total	ND	0.32		mg/Kg	5	10/7/2019 9:24:41 PM
Surr: 1,2-Dichloroethane-d4	109	70-130		%Rec	5	10/7/2019 9:24:41 PM
Surr: 4-Bromofluorobenzene	84.9	70-130		%Rec	5	10/7/2019 9:24:41 PM
Surr: Dibromofluoromethane	113	70-130		%Rec	5	10/7/2019 9:24:41 PM
Surr: Toluene-d8	99.9	70-130		%Rec	5	10/7/2019 9:24:41 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	16		mg/Kg	5	10/7/2019 9:24:41 PM
Surr: BFB	87.3	70-130		%Rec	5	10/7/2019 9:24:41 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910366

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BH19-09 0.0'

Project: Dark Canyon SWD 001

Collection Date: 10/4/2019 11:15:00 AM

Lab ID: 1910366-010

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	10/7/2019 9:59:31 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/7/2019 9:59:31 PM
Surr: DNOP	105	70-130		%Rec	1	10/7/2019 9:59:31 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	ND	60		mg/Kg	20	10/7/2019 10:24:18 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>DJF</b>
Benzene	ND	0.092		mg/Kg	5	10/7/2019 9:53:28 PM
Toluene	ND	0.18		mg/Kg	5	10/7/2019 9:53:28 PM
Ethylbenzene	ND	0.18		mg/Kg	5	10/7/2019 9:53:28 PM
Xylenes, Total	ND	0.37		mg/Kg	5	10/7/2019 9:53:28 PM
Surr: 1,2-Dichloroethane-d4	111	70-130		%Rec	5	10/7/2019 9:53:28 PM
Surr: 4-Bromofluorobenzene	86.5	70-130		%Rec	5	10/7/2019 9:53:28 PM
Surr: Dibromofluoromethane	111	70-130		%Rec	5	10/7/2019 9:53:28 PM
Surr: Toluene-d8	102	70-130		%Rec	5	10/7/2019 9:53:28 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	18		mg/Kg	5	10/7/2019 9:53:28 PM
Surr: BFB	87.1	70-130		%Rec	5	10/7/2019 9:53:28 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910366

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BH19-10 0.0'

Project: Dark Canyon SWD 001

Collection Date: 10/4/2019 11:30:00 AM

Lab ID: 1910366-011

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	10/7/2019 10:21:45 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/7/2019 10:21:45 PM
Surr: DNOP	111	70-130		%Rec	1	10/7/2019 10:21:45 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	1800	59		mg/Kg	20	10/7/2019 10:36:38 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>DJF</b>
Benzene	ND	0.073		mg/Kg	5	10/7/2019 10:23:12 PM
Toluene	ND	0.15		mg/Kg	5	10/7/2019 10:23:12 PM
Ethylbenzene	ND	0.15		mg/Kg	5	10/7/2019 10:23:12 PM
Xylenes, Total	ND	0.29		mg/Kg	5	10/7/2019 10:23:12 PM
Surr: 1,2-Dichloroethane-d4	111	70-130		%Rec	5	10/7/2019 10:23:12 PM
Surr: 4-Bromofluorobenzene	85.1	70-130		%Rec	5	10/7/2019 10:23:12 PM
Surr: Dibromofluoromethane	119	70-130		%Rec	5	10/7/2019 10:23:12 PM
Surr: Toluene-d8	100	70-130		%Rec	5	10/7/2019 10:23:12 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	15		mg/Kg	5	10/7/2019 10:23:12 PM
Surr: BFB	85.7	70-130		%Rec	5	10/7/2019 10:23:12 PM

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

<b>Qualifiers:</b>		*	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 Quantitative Limit	RL	Reporting Limit
	S		% Recovery outside of range due to dilution or matrix		



## Analytical Report

Lab Order 1910366

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BH19-11 0.0'

Project: Dark Canyon SWD 001

Collection Date: 10/4/2019 11:45:00 AM

Lab ID: 1910366-012

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	970	96		mg/Kg	10	10/8/2019 2:22:28 PM
Motor Oil Range Organics (MRO)	550	480		mg/Kg	10	10/8/2019 2:22:28 PM
Surr: DNOP	0	70-130	S	%Rec	10	10/8/2019 2:22:28 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	1600	60		mg/Kg	20	10/7/2019 10:48:58 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>DJF</b>
Benzene	ND	0.092		mg/Kg	5	10/7/2019 10:52:24 PM
Toluene	ND	0.18		mg/Kg	5	10/7/2019 10:52:24 PM
Ethylbenzene	ND	0.18		mg/Kg	5	10/7/2019 10:52:24 PM
Xylenes, Total	0.44	0.37		mg/Kg	5	10/7/2019 10:52:24 PM
Surr: 1,2-Dichloroethane-d4	112	70-130		%Rec	5	10/7/2019 10:52:24 PM
Surr: 4-Bromofluorobenzene	88.1	70-130		%Rec	5	10/7/2019 10:52:24 PM
Surr: Dibromofluoromethane	118	70-130		%Rec	5	10/7/2019 10:52:24 PM
Surr: Toluene-d8	102	70-130		%Rec	5	10/7/2019 10:52:24 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	72	18		mg/Kg	5	10/7/2019 10:52:24 PM
Surr: BFB	89.0	70-130		%Rec	5	10/7/2019 10:52:24 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910366

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BH19-12 0.0'

Project: Dark Canyon SWD 001

Collection Date: 10/4/2019 12:00:00 PM

Lab ID: 1910366-013

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	11	9.5		mg/Kg	1	10/7/2019 11:06:06 PM
Motor Oil Range Organics (MRO)	68	47		mg/Kg	1	10/7/2019 11:06:06 PM
Surr: DNOP	108	70-130		%Rec	1	10/7/2019 11:06:06 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	1100	60		mg/Kg	20	10/7/2019 11:01:19 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>DJF</b>
Benzene	ND	0.093		mg/Kg	5	10/8/2019 2:18:40 AM
Toluene	ND	0.19		mg/Kg	5	10/8/2019 2:18:40 AM
Ethylbenzene	ND	0.19		mg/Kg	5	10/8/2019 2:18:40 AM
Xylenes, Total	ND	0.37		mg/Kg	5	10/8/2019 2:18:40 AM
Surr: 1,2-Dichloroethane-d4	110	70-130		%Rec	5	10/8/2019 2:18:40 AM
Surr: 4-Bromofluorobenzene	81.8	70-130		%Rec	5	10/8/2019 2:18:40 AM
Surr: Dibromofluoromethane	117	70-130		%Rec	5	10/8/2019 2:18:40 AM
Surr: Toluene-d8	99.2	70-130		%Rec	5	10/8/2019 2:18:40 AM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	19		mg/Kg	5	10/8/2019 2:18:40 AM
Surr: BFB	84.1	70-130		%Rec	5	10/8/2019 2:18:40 AM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910366

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BH19-13 0.0'

Project: Dark Canyon SWD 001

Collection Date: 10/4/2019 12:15:00 PM

Lab ID: 1910366-014

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	19	9.8		mg/Kg	1	10/7/2019 11:28:07 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/7/2019 11:28:07 PM
Surr: DNOP	111	70-130		%Rec	1	10/7/2019 11:28:07 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	1200	60		mg/Kg	20	10/7/2019 11:13:39 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>DJF</b>
Benzene	ND	0.089		mg/Kg	5	10/8/2019 2:48:04 AM
Toluene	ND	0.18		mg/Kg	5	10/8/2019 2:48:04 AM
Ethylbenzene	ND	0.18		mg/Kg	5	10/8/2019 2:48:04 AM
Xylenes, Total	ND	0.36		mg/Kg	5	10/8/2019 2:48:04 AM
Surr: 1,2-Dichloroethane-d4	113	70-130		%Rec	5	10/8/2019 2:48:04 AM
Surr: 4-Bromofluorobenzene	84.9	70-130		%Rec	5	10/8/2019 2:48:04 AM
Surr: Dibromofluoromethane	116	70-130		%Rec	5	10/8/2019 2:48:04 AM
Surr: Toluene-d8	98.1	70-130		%Rec	5	10/8/2019 2:48:04 AM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	18		mg/Kg	5	10/8/2019 2:48:04 AM
Surr: BFB	82.8	70-130		%Rec	5	10/8/2019 2:48:04 AM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910366

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BH19-14 0.0'

Project: Dark Canyon SWD 001

Collection Date: 10/4/2019 12:30:00 PM

Lab ID: 1910366-015

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	16	9.0		mg/Kg	1	10/7/2019 11:50:17 PM
Motor Oil Range Organics (MRO)	77	45		mg/Kg	1	10/7/2019 11:50:17 PM
Surr: DNOP	115	70-130		%Rec	1	10/7/2019 11:50:17 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	150	60		mg/Kg	20	10/7/2019 11:26:00 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>DJF</b>
Benzene	ND	0.073		mg/Kg	5	10/8/2019 3:17:33 AM
Toluene	ND	0.15		mg/Kg	5	10/8/2019 3:17:33 AM
Ethylbenzene	ND	0.15		mg/Kg	5	10/8/2019 3:17:33 AM
Xylenes, Total	ND	0.29		mg/Kg	5	10/8/2019 3:17:33 AM
Surr: 1,2-Dichloroethane-d4	111	70-130		%Rec	5	10/8/2019 3:17:33 AM
Surr: 4-Bromofluorobenzene	83.3	70-130		%Rec	5	10/8/2019 3:17:33 AM
Surr: Dibromofluoromethane	118	70-130		%Rec	5	10/8/2019 3:17:33 AM
Surr: Toluene-d8	100	70-130		%Rec	5	10/8/2019 3:17:33 AM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	15		mg/Kg	5	10/8/2019 3:17:33 AM
Surr: BFB	81.2	70-130		%Rec	5	10/8/2019 3:17:33 AM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		



## Analytical Report

Lab Order 1910366

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BH19-15 0.0'

Project: Dark Canyon SWD 001

Collection Date: 10/4/2019 12:45:00 PM

Lab ID: 1910366-016

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	1600	95		mg/Kg	10	10/8/2019 12:12:20 AM
Motor Oil Range Organics (MRO)	1100	480		mg/Kg	10	10/8/2019 12:12:20 AM
Surr: DNOP	0	70-130	S	%Rec	10	10/8/2019 12:12:20 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	1800	60		mg/Kg	20	10/7/2019 11:38:20 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>DJF</b>
Benzene	ND	0.092		mg/Kg	5	10/8/2019 3:46:55 AM
Toluene	ND	0.18		mg/Kg	5	10/8/2019 3:46:55 AM
Ethylbenzene	ND	0.18		mg/Kg	5	10/8/2019 3:46:55 AM
Xylenes, Total	ND	0.37		mg/Kg	5	10/8/2019 3:46:55 AM
Surr: 1,2-Dichloroethane-d4	110	70-130		%Rec	5	10/8/2019 3:46:55 AM
Surr: 4-Bromofluorobenzene	84.7	70-130		%Rec	5	10/8/2019 3:46:55 AM
Surr: Dibromofluoromethane	115	70-130		%Rec	5	10/8/2019 3:46:55 AM
Surr: Toluene-d8	103	70-130		%Rec	5	10/8/2019 3:46:55 AM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	18		mg/Kg	5	10/8/2019 3:46:55 AM
Surr: BFB	85.4	70-130		%Rec	5	10/8/2019 3:46:55 AM

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

<b>Qualifiers:</b>		*	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 Quantitative Limit	RL	Reporting Limit
	S		% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910366

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BH19-16 0.0'

Project: Dark Canyon SWD 001

Collection Date: 10/4/2019 1:00:00 PM

Lab ID: 1910366-017

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	28	9.5		mg/Kg	1	10/8/2019 12:34:30 AM
Motor Oil Range Organics (MRO)	56	48		mg/Kg	1	10/8/2019 12:34:30 AM
Surr: DNOP	105	70-130		%Rec	1	10/8/2019 12:34:30 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CJS</b>
Chloride	2300	150		mg/Kg	50	10/8/2019
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>DJF</b>
Benzene	ND	0.094		mg/Kg	5	10/8/2019 4:16:13 AM
Toluene	ND	0.19		mg/Kg	5	10/8/2019 4:16:13 AM
Ethylbenzene	ND	0.19		mg/Kg	5	10/8/2019 4:16:13 AM
Xylenes, Total	ND	0.38		mg/Kg	5	10/8/2019 4:16:13 AM
Surr: 1,2-Dichloroethane-d4	112	70-130		%Rec	5	10/8/2019 4:16:13 AM
Surr: 4-Bromofluorobenzene	85.2	70-130		%Rec	5	10/8/2019 4:16:13 AM
Surr: Dibromofluoromethane	116	70-130		%Rec	5	10/8/2019 4:16:13 AM
Surr: Toluene-d8	101	70-130		%Rec	5	10/8/2019 4:16:13 AM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	19		mg/Kg	5	10/8/2019 4:16:13 AM
Surr: BFB	83.7	70-130		%Rec	5	10/8/2019 4:16:13 AM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-01 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 3:30:00 PM

Lab ID: 1910365-001

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	710	9.9		mg/Kg	1	10/8/2019 2:03:01 AM
Motor Oil Range Organics (MRO)	400	50		mg/Kg	1	10/8/2019 2:03:01 AM
Surr: DNOP	118	70-130		%Rec	1	10/8/2019 2:03:01 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	19		mg/Kg	5	10/7/2019 10:11:06 AM
Surr: BFB	106	77.4-118		%Rec	5	10/7/2019 10:11:06 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.096		mg/Kg	5	10/7/2019 10:11:06 AM
Toluene	ND	0.19		mg/Kg	5	10/7/2019 10:11:06 AM
Ethylbenzene	ND	0.19		mg/Kg	5	10/7/2019 10:11:06 AM
Xylenes, Total	ND	0.38		mg/Kg	5	10/7/2019 10:11:06 AM
Surr: 4-Bromofluorobenzene	96.8	80-120		%Rec	5	10/7/2019 10:11:06 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	940	60		mg/Kg	20	10/7/2019 10:41:59 AM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-02 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 3:36:00 PM

Lab ID: 1910365-002

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	2200	98		mg/Kg	10	10/8/2019 8:59:53 AM
Motor Oil Range Organics (MRO)	940	490		mg/Kg	10	10/8/2019 8:59:53 AM
Surr: DNOP	0	70-130	S	%Rec	10	10/8/2019 8:59:53 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	46	20		mg/Kg	5	10/7/2019 11:21:14 AM
Surr: BFB	167	77.4-118	S	%Rec	5	10/7/2019 11:21:14 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.10		mg/Kg	5	10/7/2019 11:21:14 AM
Toluene	ND	0.20		mg/Kg	5	10/7/2019 11:21:14 AM
Ethylbenzene	ND	0.20		mg/Kg	5	10/7/2019 11:21:14 AM
Xylenes, Total	1.2	0.41		mg/Kg	5	10/7/2019 11:21:14 AM
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	5	10/7/2019 11:21:14 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	1600	59		mg/Kg	20	10/7/2019 11:19:12 AM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		



## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-03 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 3:41:00 PM

Lab ID: 1910365-003

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	1500	93		mg/Kg	10	10/8/2019 1:58:38 PM
Motor Oil Range Organics (MRO)	530	470		mg/Kg	10	10/8/2019 1:58:38 PM
Surr: DNOP	0	70-130	S	%Rec	10	10/8/2019 1:58:38 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	19		mg/Kg	5	10/7/2019 12:32:01 PM
Surr: BFB	113	77.4-118		%Rec	5	10/7/2019 12:32:01 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.093		mg/Kg	5	10/7/2019 12:32:01 PM
Toluene	ND	0.19		mg/Kg	5	10/7/2019 12:32:01 PM
Ethylbenzene	ND	0.19		mg/Kg	5	10/7/2019 12:32:01 PM
Xylenes, Total	ND	0.37		mg/Kg	5	10/7/2019 12:32:01 PM
Surr: 4-Bromofluorobenzene	96.9	80-120		%Rec	5	10/7/2019 12:32:01 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	1400	60		mg/Kg	20	10/7/2019 11:56:26 AM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-04 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 3:46:00 PM

Lab ID: 1910365-004

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	270	8.7		mg/Kg	1	10/8/2019 9:24:10 AM
Motor Oil Range Organics (MRO)	130	43		mg/Kg	1	10/8/2019 9:24:10 AM
Surr: DNOP	100	70-130		%Rec	1	10/8/2019 9:24:10 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	22		mg/Kg	5	10/7/2019 12:55:26 PM
Surr: BFB	107	77.4-118		%Rec	5	10/7/2019 12:55:26 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.11		mg/Kg	5	10/7/2019 12:55:26 PM
Toluene	ND	0.22		mg/Kg	5	10/7/2019 12:55:26 PM
Ethylbenzene	ND	0.22		mg/Kg	5	10/7/2019 12:55:26 PM
Xylenes, Total	ND	0.44		mg/Kg	5	10/7/2019 12:55:26 PM
Surr: 4-Bromofluorobenzene	99.8	80-120		%Rec	5	10/7/2019 12:55:26 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	2600	150		mg/Kg	50	10/7/2019 11:31:28 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-05 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 3:51:00 PM

Lab ID: 1910365-005

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	240	9.7		mg/Kg	1	10/8/2019 9:48:21 AM
Motor Oil Range Organics (MRO)	120	49		mg/Kg	1	10/8/2019 9:48:21 AM
Surr: DNOP	101	70-130		%Rec	1	10/8/2019 9:48:21 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	21		mg/Kg	5	10/7/2019 1:18:52 PM
Surr: BFB	108	77.4-118		%Rec	5	10/7/2019 1:18:52 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.11		mg/Kg	5	10/7/2019 1:18:52 PM
Toluene	ND	0.21		mg/Kg	5	10/7/2019 1:18:52 PM
Ethylbenzene	ND	0.21		mg/Kg	5	10/7/2019 1:18:52 PM
Xylenes, Total	ND	0.42		mg/Kg	5	10/7/2019 1:18:52 PM
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	5	10/7/2019 1:18:52 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	2200	150		mg/Kg	50	10/7/2019 11:43:53 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-06 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 3:56:00 PM

Lab ID: 1910365-006

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	250	9.5		mg/Kg	1	10/8/2019 3:53:40 AM
Motor Oil Range Organics (MRO)	160	47		mg/Kg	1	10/8/2019 3:53:40 AM
Surr: DNOP	110	70-130		%Rec	1	10/8/2019 3:53:40 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	20		mg/Kg	5	10/7/2019 1:42:23 PM
Surr: BFB	101	77.4-118		%Rec	5	10/7/2019 1:42:23 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.098		mg/Kg	5	10/7/2019 1:42:23 PM
Toluene	ND	0.20		mg/Kg	5	10/7/2019 1:42:23 PM
Ethylbenzene	ND	0.20		mg/Kg	5	10/7/2019 1:42:23 PM
Xylenes, Total	ND	0.39		mg/Kg	5	10/7/2019 1:42:23 PM
Surr: 4-Bromofluorobenzene	96.0	80-120		%Rec	5	10/7/2019 1:42:23 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	3100	150		mg/Kg	50	10/7/2019 11:56:18 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		



## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-07 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 4:01:00 PM

Lab ID: 1910365-007

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	67	8.8		mg/Kg	1	10/8/2019 10:12:45 AM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	10/8/2019 10:12:45 AM
Surr: DNOP	96.1	70-130		%Rec	1	10/8/2019 10:12:45 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	20		mg/Kg	5	10/7/2019 2:05:55 PM
Surr: BFB	105	77.4-118		%Rec	5	10/7/2019 2:05:55 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.10		mg/Kg	5	10/7/2019 2:05:55 PM
Toluene	ND	0.20		mg/Kg	5	10/7/2019 2:05:55 PM
Ethylbenzene	ND	0.20		mg/Kg	5	10/7/2019 2:05:55 PM
Xylenes, Total	ND	0.41		mg/Kg	5	10/7/2019 2:05:55 PM
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	5	10/7/2019 2:05:55 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	4300	150		mg/Kg	50	10/8/2019 12:08:43 AM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-08 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 4:06:00 PM

Lab ID: 1910365-008

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	160	10		mg/Kg	1	10/8/2019 4:37:51 AM
Motor Oil Range Organics (MRO)	110	50		mg/Kg	1	10/8/2019 4:37:51 AM
Surr: DNOP	107	70-130		%Rec	1	10/8/2019 4:37:51 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	18		mg/Kg	5	10/7/2019 2:29:30 PM
Surr: BFB	96.9	77.4-118		%Rec	5	10/7/2019 2:29:30 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.090		mg/Kg	5	10/7/2019 2:29:30 PM
Toluene	ND	0.18		mg/Kg	5	10/7/2019 2:29:30 PM
Ethylbenzene	ND	0.18		mg/Kg	5	10/7/2019 2:29:30 PM
Xylenes, Total	ND	0.36		mg/Kg	5	10/7/2019 2:29:30 PM
Surr: 4-Bromofluorobenzene	93.4	80-120		%Rec	5	10/7/2019 2:29:30 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	1900	60		mg/Kg	20	10/7/2019 1:48:08 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-09 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 4:11:00 PM

Lab ID: 1910365-009

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	450	9.2		mg/Kg	1	10/8/2019 5:00:02 AM
Motor Oil Range Organics (MRO)	220	46		mg/Kg	1	10/8/2019 5:00:02 AM
Surr: DNOP	118	70-130		%Rec	1	10/8/2019 5:00:02 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	21		mg/Kg	5	10/7/2019 2:52:53 PM
Surr: BFB	100	77.4-118		%Rec	5	10/7/2019 2:52:53 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.10		mg/Kg	5	10/7/2019 2:52:53 PM
Toluene	ND	0.21		mg/Kg	5	10/7/2019 2:52:53 PM
Ethylbenzene	ND	0.21		mg/Kg	5	10/7/2019 2:52:53 PM
Xylenes, Total	ND	0.41		mg/Kg	5	10/7/2019 2:52:53 PM
Surr: 4-Bromofluorobenzene	92.5	80-120		%Rec	5	10/7/2019 2:52:53 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	2200	60		mg/Kg	20	10/7/2019 2:00:33 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-10 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 4:16:00 PM

Lab ID: 1910365-010

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	570	10		mg/Kg	1	10/8/2019 5:22:05 AM
Motor Oil Range Organics (MRO)	290	50		mg/Kg	1	10/8/2019 5:22:05 AM
Surr: DNOP	116	70-130		%Rec	1	10/8/2019 5:22:05 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	23		mg/Kg	5	10/7/2019 3:16:15 PM
Surr: BFB	107	77.4-118		%Rec	5	10/7/2019 3:16:15 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.11		mg/Kg	5	10/7/2019 3:16:15 PM
Toluene	ND	0.23		mg/Kg	5	10/7/2019 3:16:15 PM
Ethylbenzene	ND	0.23		mg/Kg	5	10/7/2019 3:16:15 PM
Xylenes, Total	ND	0.45		mg/Kg	5	10/7/2019 3:16:15 PM
Surr: 4-Bromofluorobenzene	93.0	80-120		%Rec	5	10/7/2019 3:16:15 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	2400	60		mg/Kg	20	10/7/2019 2:12:57 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		



## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-11 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 4:20:00 PM

Lab ID: 1910365-011

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	1800	91		mg/Kg	10	10/8/2019 2:23:15 PM
Motor Oil Range Organics (MRO)	650	450		mg/Kg	10	10/8/2019 2:23:15 PM
Surr: DNOP	0	70-130	S	%Rec	10	10/8/2019 2:23:15 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	40	20		mg/Kg	5	10/7/2019 5:36:53 PM
Surr: BFB	157	77.4-118	S	%Rec	5	10/7/2019 5:36:53 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.098		mg/Kg	5	10/7/2019 5:36:53 PM
Toluene	ND	0.20		mg/Kg	5	10/7/2019 5:36:53 PM
Ethylbenzene	ND	0.20		mg/Kg	5	10/7/2019 5:36:53 PM
Xylenes, Total	0.86	0.39		mg/Kg	5	10/7/2019 5:36:53 PM
Surr: 4-Bromofluorobenzene	95.4	80-120		%Rec	5	10/7/2019 5:36:53 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	2400	150		mg/Kg	50	10/8/2019 12:21:07 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 Quantitative 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 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-12 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 4:24:00 PM

Lab ID: 1910365-012

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	2200	88		mg/Kg	10	10/8/2019 2:47:33 PM
Motor Oil Range Organics (MRO)	750	440		mg/Kg	10	10/8/2019 2:47:33 PM
Surr: DNOP	0	70-130	S	%Rec	10	10/8/2019 2:47:33 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	21		mg/Kg	5	10/7/2019 6:00:23 PM
Surr: BFB	128	77.4-118	S	%Rec	5	10/7/2019 6:00:23 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.10		mg/Kg	5	10/7/2019 6:00:23 PM
Toluene	ND	0.21		mg/Kg	5	10/7/2019 6:00:23 PM
Ethylbenzene	ND	0.21		mg/Kg	5	10/7/2019 6:00:23 PM
Xylenes, Total	0.44	0.42		mg/Kg	5	10/7/2019 6:00:23 PM
Surr: 4-Bromofluorobenzene	94.1	80-120		%Rec	5	10/7/2019 6:00:23 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	2100	60		mg/Kg	20	10/7/2019 2:37:47 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-13 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 4:29:00 PM

Lab ID: 1910365-013

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	1700	92		mg/Kg	10	10/8/2019 3:11:57 PM
Motor Oil Range Organics (MRO)	580	460		mg/Kg	10	10/8/2019 3:11:57 PM
Surr: DNOP	0	70-130	S	%Rec	10	10/8/2019 3:11:57 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	21		mg/Kg	5	10/7/2019 6:23:52 PM
Surr: BFB	112	77.4-118		%Rec	5	10/7/2019 6:23:52 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.11		mg/Kg	5	10/7/2019 6:23:52 PM
Toluene	ND	0.21		mg/Kg	5	10/7/2019 6:23:52 PM
Ethylbenzene	ND	0.21		mg/Kg	5	10/7/2019 6:23:52 PM
Xylenes, Total	ND	0.42		mg/Kg	5	10/7/2019 6:23:52 PM
Surr: 4-Bromofluorobenzene	93.5	80-120		%Rec	5	10/7/2019 6:23:52 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	1100	59		mg/Kg	20	10/7/2019 3:15:01 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-14 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 4:34:00 PM

Lab ID: 1910365-014

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	740	9.2		mg/Kg	1	10/8/2019 10:37:04 AM
Motor Oil Range Organics (MRO)	340	46		mg/Kg	1	10/8/2019 10:37:04 AM
Surr: DNOP	109	70-130		%Rec	1	10/8/2019 10:37:04 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	17		mg/Kg	5	10/7/2019 6:47:09 PM
Surr: BFB	107	77.4-118		%Rec	5	10/7/2019 6:47:09 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.083		mg/Kg	5	10/7/2019 6:47:09 PM
Toluene	ND	0.17		mg/Kg	5	10/7/2019 6:47:09 PM
Ethylbenzene	ND	0.17		mg/Kg	5	10/7/2019 6:47:09 PM
Xylenes, Total	ND	0.33		mg/Kg	5	10/7/2019 6:47:09 PM
Surr: 4-Bromofluorobenzene	93.6	80-120		%Rec	5	10/7/2019 6:47:09 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	1300	60		mg/Kg	20	10/7/2019 3:27:25 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		



## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-15 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 4:40:00 PM

Lab ID: 1910365-015

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	3600	96		mg/Kg	10	10/8/2019 3:14:37 PM
Motor Oil Range Organics (MRO)	1600	480		mg/Kg	10	10/8/2019 3:14:37 PM
Surr: DNOP	0	70-130	S	%Rec	10	10/8/2019 3:14:37 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	19		mg/Kg	5	10/7/2019 7:10:27 PM
Surr: BFB	121	77.4-118	S	%Rec	5	10/7/2019 7:10:27 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.094		mg/Kg	5	10/7/2019 7:10:27 PM
Toluene	ND	0.19		mg/Kg	5	10/7/2019 7:10:27 PM
Ethylbenzene	ND	0.19		mg/Kg	5	10/7/2019 7:10:27 PM
Xylenes, Total	ND	0.38		mg/Kg	5	10/7/2019 7:10:27 PM
Surr: 4-Bromofluorobenzene	96.4	80-120		%Rec	5	10/7/2019 7:10:27 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	830	61		mg/Kg	20	10/7/2019 3:39:50 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-16 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 4:45:00 PM

Lab ID: 1910365-016

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	1300	93		mg/Kg	10	10/8/2019 2:36:12 PM
Motor Oil Range Organics (MRO)	720	470		mg/Kg	10	10/8/2019 2:36:12 PM
Surr: DNOP	0	70-130	S	%Rec	10	10/8/2019 2:36:12 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	20		mg/Kg	5	10/7/2019 7:33:45 PM
Surr: BFB	112	77.4-118		%Rec	5	10/7/2019 7:33:45 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.099		mg/Kg	5	10/7/2019 7:33:45 PM
Toluene	ND	0.20		mg/Kg	5	10/7/2019 7:33:45 PM
Ethylbenzene	ND	0.20		mg/Kg	5	10/7/2019 7:33:45 PM
Xylenes, Total	ND	0.40		mg/Kg	5	10/7/2019 7:33:45 PM
Surr: 4-Bromofluorobenzene	91.3	80-120		%Rec	5	10/7/2019 7:33:45 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	2400	150		mg/Kg	50	10/8/2019 12:33:31 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 Quantitative 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 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-17 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 4:50:00 PM

Lab ID: 1910365-017

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	280	94		mg/Kg	10	10/8/2019 9:48:00 AM
Motor Oil Range Organics (MRO)	ND	470		mg/Kg	10	10/8/2019 9:48:00 AM
Surr: DNOP	0	70-130	S	%Rec	10	10/8/2019 9:48:00 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	21		mg/Kg	5	10/7/2019 7:57:03 PM
Surr: BFB	99.0	77.4-118		%Rec	5	10/7/2019 7:57:03 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.11		mg/Kg	5	10/7/2019 7:57:03 PM
Toluene	ND	0.21		mg/Kg	5	10/7/2019 7:57:03 PM
Ethylbenzene	ND	0.21		mg/Kg	5	10/7/2019 7:57:03 PM
Xylenes, Total	ND	0.42		mg/Kg	5	10/7/2019 7:57:03 PM
Surr: 4-Bromofluorobenzene	95.0	80-120		%Rec	5	10/7/2019 7:57:03 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	1800	60		mg/Kg	20	10/7/2019 4:04:39 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-18 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 4:54:00 PM

Lab ID: 1910365-018

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	2700	99		mg/Kg	10	10/8/2019 10:10:15 AM
Motor Oil Range Organics (MRO)	1100	490		mg/Kg	10	10/8/2019 10:10:15 AM
Surr: DNOP	0	70-130	S	%Rec	10	10/8/2019 10:10:15 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	63	21		mg/Kg	5	10/7/2019 8:20:20 PM
Surr: BFB	174	77.4-118	S	%Rec	5	10/7/2019 8:20:20 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.10		mg/Kg	5	10/7/2019 8:20:20 PM
Toluene	ND	0.21		mg/Kg	5	10/7/2019 8:20:20 PM
Ethylbenzene	ND	0.21		mg/Kg	5	10/7/2019 8:20:20 PM
Xylenes, Total	1.7	0.41		mg/Kg	5	10/7/2019 8:20:20 PM
Surr: 4-Bromofluorobenzene	97.9	80-120		%Rec	5	10/7/2019 8:20:20 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	2200	59		mg/Kg	20	10/7/2019 4:17:04 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		



## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-19 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 4:59:00 PM

Lab ID: 1910365-019

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	2200	99		mg/Kg	10	10/8/2019 10:32:18 AM
Motor Oil Range Organics (MRO)	1200	490		mg/Kg	10	10/8/2019 10:32:18 AM
Surr: DNOP	0	70-130	S	%Rec	10	10/8/2019 10:32:18 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	19		mg/Kg	5	10/7/2019 8:43:38 PM
Surr: BFB	117	77.4-118		%Rec	5	10/7/2019 8:43:38 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.096		mg/Kg	5	10/7/2019 8:43:38 PM
Toluene	ND	0.19		mg/Kg	5	10/7/2019 8:43:38 PM
Ethylbenzene	ND	0.19		mg/Kg	5	10/7/2019 8:43:38 PM
Xylenes, Total	0.44	0.38		mg/Kg	5	10/7/2019 8:43:38 PM
Surr: 4-Bromofluorobenzene	95.2	80-120		%Rec	5	10/7/2019 8:43:38 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	3200	150		mg/Kg	50	10/8/2019 1:10:44 AM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-20 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 5:04:00 PM

Lab ID: 1910365-020

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	350	9.6		mg/Kg	1	10/8/2019 8:11:31 AM
Motor Oil Range Organics (MRO)	180	48		mg/Kg	1	10/8/2019 8:11:31 AM
Surr: DNOP	106	70-130		%Rec	1	10/8/2019 8:11:31 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	26		mg/Kg	5	10/7/2019 9:06:58 PM
Surr: BFB	115	77.4-118		%Rec	5	10/7/2019 9:06:58 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.13		mg/Kg	5	10/7/2019 9:06:58 PM
Toluene	ND	0.26		mg/Kg	5	10/7/2019 9:06:58 PM
Ethylbenzene	ND	0.26		mg/Kg	5	10/7/2019 9:06:58 PM
Xylenes, Total	ND	0.53		mg/Kg	5	10/7/2019 9:06:58 PM
Surr: 4-Bromofluorobenzene	108	80-120		%Rec	5	10/7/2019 9:06:58 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	2300	60		mg/Kg	20	10/7/2019 4:41:54 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-21 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 5:09:00 PM

Lab ID: 1910365-021

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	710	9.4		mg/Kg	1	10/7/2019 10:39:58 PM
Motor Oil Range Organics (MRO)	360	47		mg/Kg	1	10/7/2019 10:39:58 PM
Surr: DNOP	114	70-130		%Rec	1	10/7/2019 10:39:58 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	19		mg/Kg	5	10/7/2019 10:52:18 AM
Surr: BFB	106	77.4-118		%Rec	5	10/7/2019 10:52:18 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.096		mg/Kg	5	10/7/2019 10:52:18 AM
Toluene	ND	0.19		mg/Kg	5	10/7/2019 10:52:18 AM
Ethylbenzene	ND	0.19		mg/Kg	5	10/7/2019 10:52:18 AM
Xylenes, Total	ND	0.39		mg/Kg	5	10/7/2019 10:52:18 AM
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	5	10/7/2019 10:52:18 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	900	60		mg/Kg	20	10/7/2019 5:43:58 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-22 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 5:15:00 PM

Lab ID: 1910365-022

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	1000	99		mg/Kg	10	10/8/2019 10:54:38 AM
Motor Oil Range Organics (MRO)	720	490		mg/Kg	10	10/8/2019 10:54:38 AM
Surr: DNOP	0	70-130	S	%Rec	10	10/8/2019 10:54:38 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	17		mg/Kg	5	10/7/2019 12:00:45 PM
Surr: BFB	113	77.4-118		%Rec	5	10/7/2019 12:00:45 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.086		mg/Kg	5	10/7/2019 12:00:45 PM
Toluene	ND	0.17		mg/Kg	5	10/7/2019 12:00:45 PM
Ethylbenzene	ND	0.17		mg/Kg	5	10/7/2019 12:00:45 PM
Xylenes, Total	ND	0.34		mg/Kg	5	10/7/2019 12:00:45 PM
Surr: 4-Bromofluorobenzene	99.6	80-120		%Rec	5	10/7/2019 12:00:45 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	2200	60		mg/Kg	20	10/7/2019 6:21:13 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		



## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-23 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 5:20:00 PM

Lab ID: 1910365-023

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	630	8.9		mg/Kg	1	10/7/2019 11:29:03 PM
Motor Oil Range Organics (MRO)	290	45		mg/Kg	1	10/7/2019 11:29:03 PM
Surr: DNOP	109	70-130		%Rec	1	10/7/2019 11:29:03 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	20		mg/Kg	5	10/7/2019 1:09:40 PM
Surr: BFB	114	77.4-118		%Rec	5	10/7/2019 1:09:40 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.098		mg/Kg	5	10/7/2019 1:09:40 PM
Toluene	ND	0.20		mg/Kg	5	10/7/2019 1:09:40 PM
Ethylbenzene	ND	0.20		mg/Kg	5	10/7/2019 1:09:40 PM
Xylenes, Total	ND	0.39		mg/Kg	5	10/7/2019 1:09:40 PM
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	5	10/7/2019 1:09:40 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	2000	59		mg/Kg	20	10/7/2019 6:58:27 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-24 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 5:24:00 PM

Lab ID: 1910365-024

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	2800	97		mg/Kg	10	10/8/2019 2:58:14 PM
Motor Oil Range Organics (MRO)	1300	480		mg/Kg	10	10/8/2019 2:58:14 PM
Surr: DNOP	0	70-130	S	%Rec	10	10/8/2019 2:58:14 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	43	21		mg/Kg	5	10/7/2019 1:32:27 PM
Surr: BFB	153	77.4-118	S	%Rec	5	10/7/2019 1:32:27 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.11		mg/Kg	5	10/7/2019 1:32:27 PM
Toluene	ND	0.21		mg/Kg	5	10/7/2019 1:32:27 PM
Ethylbenzene	ND	0.21		mg/Kg	5	10/7/2019 1:32:27 PM
Xylenes, Total	0.85	0.43		mg/Kg	5	10/7/2019 1:32:27 PM
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	5	10/7/2019 1:32:27 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CJS</b>
Chloride	2300	150		mg/Kg	50	10/8/2019

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-25 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 5:29:00 PM

Lab ID: 1910365-025

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	2100	9.8	E	mg/Kg	1	10/8/2019 12:17:59 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/8/2019 12:17:59 AM
Surr: DNOP	131	70-130	S	%Rec	1	10/8/2019 12:17:59 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	23	20		mg/Kg	5	10/7/2019 1:55:13 PM
Surr: BFB	136	77.4-118	S	%Rec	5	10/7/2019 1:55:13 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.098		mg/Kg	5	10/7/2019 1:55:13 PM
Toluene	ND	0.20		mg/Kg	5	10/7/2019 1:55:13 PM
Ethylbenzene	ND	0.20		mg/Kg	5	10/7/2019 1:55:13 PM
Xylenes, Total	0.58	0.39		mg/Kg	5	10/7/2019 1:55:13 PM
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	5	10/7/2019 1:55:13 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CJS</b>
Chloride	2300	150		mg/Kg	50	10/8/2019

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-26 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 5:34:00 PM

Lab ID: 1910365-026

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	2000	98		mg/Kg	10	10/8/2019 11:16:42 AM
Motor Oil Range Organics (MRO)	890	490		mg/Kg	10	10/8/2019 11:16:42 AM
Surr: DNOP	0	70-130	S	%Rec	10	10/8/2019 11:16:42 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	30	18		mg/Kg	5	10/7/2019 2:17:57 PM
Surr: BFB	154	77.4-118	S	%Rec	5	10/7/2019 2:17:57 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.090		mg/Kg	5	10/7/2019 2:17:57 PM
Toluene	ND	0.18		mg/Kg	5	10/7/2019 2:17:57 PM
Ethylbenzene	ND	0.18		mg/Kg	5	10/7/2019 2:17:57 PM
Xylenes, Total	0.56	0.36		mg/Kg	5	10/7/2019 2:17:57 PM
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	5	10/7/2019 2:17:57 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	1200	59		mg/Kg	20	10/7/2019 7:35:41 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		



## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-27 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 5:39:00 PM

Lab ID: 1910365-027

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	1300	91		mg/Kg	10	10/8/2019 11:38:58 AM
Motor Oil Range Organics (MRO)	660	460		mg/Kg	10	10/8/2019 11:38:58 AM
Surr: DNOP	0	70-130	S	%Rec	10	10/8/2019 11:38:58 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	30	17		mg/Kg	5	10/7/2019 2:40:46 PM
Surr: BFB	152	77.4-118	S	%Rec	5	10/7/2019 2:40:46 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.083		mg/Kg	5	10/7/2019 2:40:46 PM
Toluene	ND	0.17		mg/Kg	5	10/7/2019 2:40:46 PM
Ethylbenzene	ND	0.17		mg/Kg	5	10/7/2019 2:40:46 PM
Xylenes, Total	0.66	0.33		mg/Kg	5	10/7/2019 2:40:46 PM
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	5	10/7/2019 2:40:46 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	2400	60		mg/Kg	20	10/7/2019 8:12:54 PM

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

<b>Qualifiers:</b>		*	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 Quantitative Limit	RL	Reporting Limit
	S		% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-28 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 5:44:00 PM

Lab ID: 1910365-028

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	1900	99		mg/Kg	10	10/8/2019 12:01:12 PM
Motor Oil Range Organics (MRO)	1100	500		mg/Kg	10	10/8/2019 12:01:12 PM
Surr: DNOP	0	70-130	S	%Rec	10	10/8/2019 12:01:12 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	19		mg/Kg	5	10/7/2019 3:03:45 PM
Surr: BFB	118	77.4-118	S	%Rec	5	10/7/2019 3:03:45 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.094		mg/Kg	5	10/7/2019 3:03:45 PM
Toluene	ND	0.19		mg/Kg	5	10/7/2019 3:03:45 PM
Ethylbenzene	ND	0.19		mg/Kg	5	10/7/2019 3:03:45 PM
Xylenes, Total	0.50	0.38		mg/Kg	5	10/7/2019 3:03:45 PM
Surr: 4-Bromofluorobenzene	98.5	80-120		%Rec	5	10/7/2019 3:03:45 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CJS</b>
Chloride	2800	150		mg/Kg	50	10/8/2019

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-29 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 5:50:00 PM

Lab ID: 1910365-029

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	2700	98		mg/Kg	10	10/8/2019 12:23:23 PM
Motor Oil Range Organics (MRO)	1400	490		mg/Kg	10	10/8/2019 12:23:23 PM
Surr: DNOP	0	70-130	S	%Rec	10	10/8/2019 12:23:23 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	27	19		mg/Kg	5	10/7/2019 3:26:32 PM
Surr: BFB	150	77.4-118	S	%Rec	5	10/7/2019 3:26:32 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.095		mg/Kg	5	10/7/2019 3:26:32 PM
Toluene	ND	0.19		mg/Kg	5	10/7/2019 3:26:32 PM
Ethylbenzene	ND	0.19		mg/Kg	5	10/7/2019 3:26:32 PM
Xylenes, Total	0.69	0.38		mg/Kg	5	10/7/2019 3:26:32 PM
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	5	10/7/2019 3:26:32 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CJS</b>
Chloride	2200	150		mg/Kg	50	10/8/2019

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-30 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 5:54:00 PM

Lab ID: 1910365-030

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	1400	99		mg/Kg	10	10/8/2019 12:45:28 PM
Motor Oil Range Organics (MRO)	900	500		mg/Kg	10	10/8/2019 12:45:28 PM
Surr: DNOP	0	70-130	S	%Rec	10	10/8/2019 12:45:28 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	20		mg/Kg	5	10/7/2019 3:49:20 PM
Surr: BFB	119	77.4-118	S	%Rec	5	10/7/2019 3:49:20 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.098		mg/Kg	5	10/7/2019 3:49:20 PM
Toluene	ND	0.20		mg/Kg	5	10/7/2019 3:49:20 PM
Ethylbenzene	ND	0.20		mg/Kg	5	10/7/2019 3:49:20 PM
Xylenes, Total	ND	0.39		mg/Kg	5	10/7/2019 3:49:20 PM
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	5	10/7/2019 3:49:20 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	2300	60		mg/Kg	20	10/7/2019 8:50:08 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		



## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-31 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 5:59:00 PM

Lab ID: 1910365-031

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	340	9.5		mg/Kg	1	10/8/2019 8:35:47 AM
Motor Oil Range Organics (MRO)	180	47		mg/Kg	1	10/8/2019 8:35:47 AM
Surr: DNOP	98.9	70-130		%Rec	1	10/8/2019 8:35:47 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	18		mg/Kg	5	10/7/2019 5:20:44 PM
Surr: BFB	96.2	77.4-118		%Rec	5	10/7/2019 5:20:44 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.089		mg/Kg	5	10/7/2019 5:20:44 PM
Toluene	ND	0.18		mg/Kg	5	10/7/2019 5:20:44 PM
Ethylbenzene	ND	0.18		mg/Kg	5	10/7/2019 5:20:44 PM
Xylenes, Total	ND	0.36		mg/Kg	5	10/7/2019 5:20:44 PM
Surr: 4-Bromofluorobenzene	95.7	80-120		%Rec	5	10/7/2019 5:20:44 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	1600	60		mg/Kg	20	10/7/2019 9:02:33 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-32 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 6:02:00 PM

Lab ID: 1910365-032

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	740	9.9		mg/Kg	1	10/8/2019 3:09:16 AM
Motor Oil Range Organics (MRO)	420	49		mg/Kg	1	10/8/2019 3:09:16 AM
Surr: DNOP	108	70-130		%Rec	1	10/8/2019 3:09:16 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	19		mg/Kg	5	10/7/2019 5:43:35 PM
Surr: BFB	101	77.4-118		%Rec	5	10/7/2019 5:43:35 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.095		mg/Kg	5	10/7/2019 5:43:35 PM
Toluene	ND	0.19		mg/Kg	5	10/7/2019 5:43:35 PM
Ethylbenzene	ND	0.19		mg/Kg	5	10/7/2019 5:43:35 PM
Xylenes, Total	ND	0.38		mg/Kg	5	10/7/2019 5:43:35 PM
Surr: 4-Bromofluorobenzene	98.2	80-120		%Rec	5	10/7/2019 5:43:35 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	1600	61		mg/Kg	20	10/7/2019 9:14:57 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-33 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 6:06:00 PM

Lab ID: 1910365-033

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	510	9.4		mg/Kg	1	10/8/2019 3:33:47 AM
Motor Oil Range Organics (MRO)	350	47		mg/Kg	1	10/8/2019 3:33:47 AM
Surr: DNOP	111	70-130		%Rec	1	10/8/2019 3:33:47 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	19		mg/Kg	5	10/7/2019 6:06:23 PM
Surr: BFB	95.8	77.4-118		%Rec	5	10/7/2019 6:06:23 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.095		mg/Kg	5	10/7/2019 6:06:23 PM
Toluene	ND	0.19		mg/Kg	5	10/7/2019 6:06:23 PM
Ethylbenzene	ND	0.19		mg/Kg	5	10/7/2019 6:06:23 PM
Xylenes, Total	ND	0.38		mg/Kg	5	10/7/2019 6:06:23 PM
Surr: 4-Bromofluorobenzene	95.6	80-120		%Rec	5	10/7/2019 6:06:23 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	1600	60		mg/Kg	20	10/7/2019 9:27:22 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-34 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 6:11:00 PM

Lab ID: 1910365-034

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	860	9.3		mg/Kg	1	10/8/2019 3:58:12 AM
Motor Oil Range Organics (MRO)	590	46		mg/Kg	1	10/8/2019 3:58:12 AM
Surr: DNOP	121	70-130		%Rec	1	10/8/2019 3:58:12 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	17		mg/Kg	5	10/7/2019 6:29:16 PM
Surr: BFB	103	77.4-118		%Rec	5	10/7/2019 6:29:16 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.084		mg/Kg	5	10/7/2019 6:29:16 PM
Toluene	ND	0.17		mg/Kg	5	10/7/2019 6:29:16 PM
Ethylbenzene	ND	0.17		mg/Kg	5	10/7/2019 6:29:16 PM
Xylenes, Total	ND	0.34		mg/Kg	5	10/7/2019 6:29:16 PM
Surr: 4-Bromofluorobenzene	95.5	80-120		%Rec	5	10/7/2019 6:29:16 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	2300	59		mg/Kg	20	10/7/2019 9:39:47 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-35 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 6:16:00 PM

Lab ID: 1910365-035

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	860	92		mg/Kg	10	10/8/2019 1:07:35 PM
Motor Oil Range Organics (MRO)	690	460		mg/Kg	10	10/8/2019 1:07:35 PM
Surr: DNOP	0	70-130	S	%Rec	10	10/8/2019 1:07:35 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	24		mg/Kg	5	10/8/2019 9:28:38 AM
Surr: BFB	108	77.4-118		%Rec	5	10/8/2019 9:28:38 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.12		mg/Kg	5	10/8/2019 9:28:38 AM
Toluene	ND	0.24		mg/Kg	5	10/8/2019 9:28:38 AM
Ethylbenzene	ND	0.24		mg/Kg	5	10/8/2019 9:28:38 AM
Xylenes, Total	ND	0.48		mg/Kg	5	10/8/2019 9:28:38 AM
Surr: 4-Bromofluorobenzene	97.4	80-120		%Rec	5	10/8/2019 9:28:38 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	1800	60		mg/Kg	20	10/7/2019 9:52:12 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		



## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-36 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 6:20:00 PM

Lab ID: 1910365-036

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	1500	97		mg/Kg	10	10/8/2019 1:29:37 PM
Motor Oil Range Organics (MRO)	920	490		mg/Kg	10	10/8/2019 1:29:37 PM
Surr: DNOP	0	70-130	S	%Rec	10	10/8/2019 1:29:37 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	24		mg/Kg	5	10/8/2019 9:51:25 AM
Surr: BFB	110	77.4-118		%Rec	5	10/8/2019 9:51:25 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.12		mg/Kg	5	10/8/2019 9:51:25 AM
Toluene	ND	0.24		mg/Kg	5	10/8/2019 9:51:25 AM
Ethylbenzene	ND	0.24		mg/Kg	5	10/8/2019 9:51:25 AM
Xylenes, Total	ND	0.48		mg/Kg	5	10/8/2019 9:51:25 AM
Surr: 4-Bromofluorobenzene	98.6	80-120		%Rec	5	10/8/2019 9:51:25 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CJS</b>
Chloride	2100	150		mg/Kg	50	10/8/2019

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-37 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 6:25:00 PM

Lab ID: 1910365-037

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	1600	99		mg/Kg	10	10/8/2019 1:51:46 PM
Motor Oil Range Organics (MRO)	930	500		mg/Kg	10	10/8/2019 1:51:46 PM
Surr: DNOP	0	70-130	S	%Rec	10	10/8/2019 1:51:46 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	18		mg/Kg	5	10/7/2019 6:52:03 PM
Surr: BFB	113	77.4-118		%Rec	5	10/7/2019 6:52:03 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.090		mg/Kg	5	10/7/2019 6:52:03 PM
Toluene	ND	0.18		mg/Kg	5	10/7/2019 6:52:03 PM
Ethylbenzene	ND	0.18		mg/Kg	5	10/7/2019 6:52:03 PM
Xylenes, Total	ND	0.36		mg/Kg	5	10/7/2019 6:52:03 PM
Surr: 4-Bromofluorobenzene	96.9	80-120		%Rec	5	10/7/2019 6:52:03 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	1700	60		mg/Kg	20	10/7/2019 10:41:51 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-38 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 6:31:00 PM

Lab ID: 1910365-038

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	1900	95		mg/Kg	10	10/8/2019 2:13:52 PM
Motor Oil Range Organics (MRO)	1100	470		mg/Kg	10	10/8/2019 2:13:52 PM
Surr: DNOP	0	70-130	S	%Rec	10	10/8/2019 2:13:52 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	18		mg/Kg	5	10/7/2019 7:14:51 PM
Surr: BFB	105	77.4-118		%Rec	5	10/7/2019 7:14:51 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.091		mg/Kg	5	10/7/2019 7:14:51 PM
Toluene	ND	0.18		mg/Kg	5	10/7/2019 7:14:51 PM
Ethylbenzene	ND	0.18		mg/Kg	5	10/7/2019 7:14:51 PM
Xylenes, Total	ND	0.36		mg/Kg	5	10/7/2019 7:14:51 PM
Surr: 4-Bromofluorobenzene	94.8	80-120		%Rec	5	10/7/2019 7:14:51 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CJS</b>
Chloride	2300	150		mg/Kg	50	10/8/2019

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-39 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 6:37:00 PM

Lab ID: 1910365-039

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	980	9.7	E	mg/Kg	1	10/7/2019 5:33:25 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/7/2019 5:33:25 PM
Surr: DNOP	136	70-130	S	%Rec	1	10/7/2019 5:33:25 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	21		mg/Kg	5	10/7/2019 7:37:38 PM
Surr: BFB	108	77.4-118		%Rec	5	10/7/2019 7:37:38 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.10		mg/Kg	5	10/7/2019 7:37:38 PM
Toluene	ND	0.21		mg/Kg	5	10/7/2019 7:37:38 PM
Ethylbenzene	ND	0.21		mg/Kg	5	10/7/2019 7:37:38 PM
Xylenes, Total	ND	0.42		mg/Kg	5	10/7/2019 7:37:38 PM
Surr: 4-Bromofluorobenzene	96.5	80-120		%Rec	5	10/7/2019 7:37:38 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	2000	60		mg/Kg	20	10/7/2019 11:06:40 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-40 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 6:41:00 PM

Lab ID: 1910365-040

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	1500	9.9	E	mg/Kg	1	10/7/2019 5:55:42 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/7/2019 5:55:42 PM
Surr: DNOP	139	70-130	S	%Rec	1	10/7/2019 5:55:42 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	18		mg/Kg	5	10/7/2019 8:00:20 PM
Surr: BFB	104	77.4-118		%Rec	5	10/7/2019 8:00:20 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.092		mg/Kg	5	10/7/2019 8:00:20 PM
Toluene	ND	0.18		mg/Kg	5	10/7/2019 8:00:20 PM
Ethylbenzene	ND	0.18		mg/Kg	5	10/7/2019 8:00:20 PM
Xylenes, Total	ND	0.37		mg/Kg	5	10/7/2019 8:00:20 PM
Surr: 4-Bromofluorobenzene	95.0	80-120		%Rec	5	10/7/2019 8:00:20 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CJS</b>
Chloride	2000	150		mg/Kg	50	10/8/2019

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		



## Analytical Report

Lab Order 1910365

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-41 0.5'

Project: Dark Canyon SWD 001

Collection Date: 10/5/2019 6:50:00 PM

Lab ID: 1910365-041

Matrix: MEOH (SOIL)

Received Date: 10/6/2019 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	550	9.1		mg/Kg	1	10/8/2019 11:01:26 AM
Motor Oil Range Organics (MRO)	410	45		mg/Kg	1	10/8/2019 11:01:26 AM
Surr: DNOP	109	70-130		%Rec	1	10/8/2019 11:01:26 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	20		mg/Kg	5	10/7/2019 8:23:13 PM
Surr: BFB	99.1	77.4-118		%Rec	5	10/7/2019 8:23:13 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.098		mg/Kg	5	10/7/2019 8:23:13 PM
Toluene	ND	0.20		mg/Kg	5	10/7/2019 8:23:13 PM
Ethylbenzene	ND	0.20		mg/Kg	5	10/7/2019 8:23:13 PM
Xylenes, Total	ND	0.39		mg/Kg	5	10/7/2019 8:23:13 PM
Surr: 4-Bromofluorobenzene	95.4	80-120		%Rec	5	10/7/2019 8:23:13 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SRM</b>
Chloride	1900	59		mg/Kg	20	10/7/2019 6:29:44 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910673

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-02 2.0'

Project: Dark Canyon SWD 001

Collection Date: 10/9/2019 10:00:00 AM

Lab ID: 1910673-001

Matrix: SOIL

Received Date: 10/11/2019 9:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/11/2019 11:12:53 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/11/2019 11:12:53 AM
Surr: DNOP	94.9	70-130		%Rec	1	10/11/2019 11:12:53 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/11/2019 10:15:41 AM
Surr: BFB	99.3	77.4-118		%Rec	1	10/11/2019 10:15:41 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	10/11/2019 10:15:41 AM
Toluene	ND	0.050		mg/Kg	1	10/11/2019 10:15:41 AM
Ethylbenzene	ND	0.050		mg/Kg	1	10/11/2019 10:15:41 AM
Xylenes, Total	ND	0.10		mg/Kg	1	10/11/2019 10:15:41 AM
Surr: 4-Bromofluorobenzene	98.0	80-120		%Rec	1	10/11/2019 10:15:41 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CJS</b>
Chloride	ND	60		mg/Kg	20	10/11/2019 12:00:00 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910673

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-11 2.0'

Project: Dark Canyon SWD 001

Collection Date: 10/9/2019 10:15:00 AM

Lab ID: 1910673-002

Matrix: SOIL

Received Date: 10/11/2019 9:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/11/2019 11:37:13 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/11/2019 11:37:13 AM
Surr: DNOP	98.2	70-130		%Rec	1	10/11/2019 11:37:13 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/11/2019 10:38:34 AM
Surr: BFB	98.4	77.4-118		%Rec	1	10/11/2019 10:38:34 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	10/11/2019 10:38:34 AM
Toluene	ND	0.050		mg/Kg	1	10/11/2019 10:38:34 AM
Ethylbenzene	ND	0.050		mg/Kg	1	10/11/2019 10:38:34 AM
Xylenes, Total	ND	0.10		mg/Kg	1	10/11/2019 10:38:34 AM
Surr: 4-Bromofluorobenzene	94.3	80-120		%Rec	1	10/11/2019 10:38:34 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CJS</b>
Chloride	ND	60		mg/Kg	20	10/11/2019 12:00:00 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910673

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-12 2.0'

Project: Dark Canyon SWD 001

Collection Date: 10/9/2019 10:30:00 AM

Lab ID: 1910673-003

Matrix: SOIL

Received Date: 10/11/2019 9:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	10/11/2019 12:01:19 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/11/2019 12:01:19 PM
Surr: DNOP	102	70-130		%Rec	1	10/11/2019 12:01:19 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/11/2019 11:01:24 AM
Surr: BFB	97.9	77.4-118		%Rec	1	10/11/2019 11:01:24 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	10/11/2019 11:01:24 AM
Toluene	ND	0.050		mg/Kg	1	10/11/2019 11:01:24 AM
Ethylbenzene	ND	0.050		mg/Kg	1	10/11/2019 11:01:24 AM
Xylenes, Total	ND	0.10		mg/Kg	1	10/11/2019 11:01:24 AM
Surr: 4-Bromofluorobenzene	93.6	80-120		%Rec	1	10/11/2019 11:01:24 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CJS</b>
Chloride	ND	60		mg/Kg	20	10/11/2019 12:00:00 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910673

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-15 2.0'

Project: Dark Canyon SWD 001

Collection Date: 10/9/2019 10:45:00 AM

Lab ID: 1910673-004

Matrix: SOIL

Received Date: 10/11/2019 9:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	10/11/2019 12:25:41 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/11/2019 12:25:41 PM
Surr: DNOP	97.2	70-130		%Rec	1	10/11/2019 12:25:41 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/11/2019 11:24:22 AM
Surr: BFB	97.6	77.4-118		%Rec	1	10/11/2019 11:24:22 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	10/11/2019 11:24:22 AM
Toluene	ND	0.050		mg/Kg	1	10/11/2019 11:24:22 AM
Ethylbenzene	ND	0.050		mg/Kg	1	10/11/2019 11:24:22 AM
Xylenes, Total	ND	0.10		mg/Kg	1	10/11/2019 11:24:22 AM
Surr: 4-Bromofluorobenzene	92.9	80-120		%Rec	1	10/11/2019 11:24:22 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CJS</b>
Chloride	ND	60		mg/Kg	20	10/11/2019 12:00:00 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		



## Analytical Report

Lab Order 1910673

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-18 2.0'

Project: Dark Canyon SWD 001

Collection Date: 10/9/2019 11:00:00 AM

Lab ID: 1910673-005

Matrix: SOIL

Received Date: 10/11/2019 9:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	10/11/2019 11:13:34 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/11/2019 11:13:34 AM
Surr: DNOP	99.7	70-130		%Rec	1	10/11/2019 11:13:34 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/11/2019 11:47:19 AM
Surr: BFB	94.6	77.4-118		%Rec	1	10/11/2019 11:47:19 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	10/11/2019 11:47:19 AM
Toluene	ND	0.050		mg/Kg	1	10/11/2019 11:47:19 AM
Ethylbenzene	ND	0.050		mg/Kg	1	10/11/2019 11:47:19 AM
Xylenes, Total	ND	0.10		mg/Kg	1	10/11/2019 11:47:19 AM
Surr: 4-Bromofluorobenzene	89.8	80-120		%Rec	1	10/11/2019 11:47:19 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CJS</b>
Chloride	ND	60		mg/Kg	20	10/11/2019 12:00:00 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910673

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-19 2.0'

Project: Dark Canyon SWD 001

Collection Date: 10/9/2019 11:15:00 AM

Lab ID: 1910673-006

Matrix: SOIL

Received Date: 10/11/2019 9:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	10/11/2019 11:37:11 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/11/2019 11:37:11 AM
Surr: DNOP	95.5	70-130		%Rec	1	10/11/2019 11:37:11 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/11/2019 12:10:13 PM
Surr: BFB	96.4	77.4-118		%Rec	1	10/11/2019 12:10:13 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	10/11/2019 12:10:13 PM
Toluene	ND	0.050		mg/Kg	1	10/11/2019 12:10:13 PM
Ethylbenzene	ND	0.050		mg/Kg	1	10/11/2019 12:10:13 PM
Xylenes, Total	ND	0.10		mg/Kg	1	10/11/2019 12:10:13 PM
Surr: 4-Bromofluorobenzene	90.6	80-120		%Rec	1	10/11/2019 12:10:13 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CJS</b>
Chloride	ND	60		mg/Kg	20	10/11/2019 12:00:00 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910673

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-24 2.0'

Project: Dark Canyon SWD 001

Collection Date: 10/9/2019 11:30:00 AM

Lab ID: 1910673-007

Matrix: SOIL

Received Date: 10/11/2019 9:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	10/11/2019 12:00:54 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/11/2019 12:00:54 PM
Surr: DNOP	89.5	70-130		%Rec	1	10/11/2019 12:00:54 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/11/2019 12:32:57 PM
Surr: BFB	99.2	77.4-118		%Rec	1	10/11/2019 12:32:57 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	10/11/2019 12:32:57 PM
Toluene	ND	0.050		mg/Kg	1	10/11/2019 12:32:57 PM
Ethylbenzene	ND	0.050		mg/Kg	1	10/11/2019 12:32:57 PM
Xylenes, Total	ND	0.10		mg/Kg	1	10/11/2019 12:32:57 PM
Surr: 4-Bromofluorobenzene	93.9	80-120		%Rec	1	10/11/2019 12:32:57 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CJS</b>
Chloride	ND	60		mg/Kg	20	10/11/2019 12:00:00 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910673

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-26 2.0'

Project: Dark Canyon SWD 001

Collection Date: 10/9/2019 11:45:00 AM

Lab ID: 1910673-008

Matrix: SOIL

Received Date: 10/11/2019 9:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	10/11/2019 12:24:38 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	10/11/2019 12:24:38 PM
Surr: DNOP	94.6	70-130		%Rec	1	10/11/2019 12:24:38 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/11/2019 12:55:44 PM
Surr: BFB	98.5	77.4-118		%Rec	1	10/11/2019 12:55:44 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	10/11/2019 12:55:44 PM
Toluene	ND	0.050		mg/Kg	1	10/11/2019 12:55:44 PM
Ethylbenzene	ND	0.050		mg/Kg	1	10/11/2019 12:55:44 PM
Xylenes, Total	ND	0.10		mg/Kg	1	10/11/2019 12:55:44 PM
Surr: 4-Bromofluorobenzene	93.4	80-120		%Rec	1	10/11/2019 12:55:44 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CJS</b>
Chloride	ND	60		mg/Kg	20	10/11/2019 12:00:00 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910673

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-28 2.0'

Project: Dark Canyon SWD 001

Collection Date: 10/9/2019 12:00:00 PM

Lab ID: 1910673-009

Matrix: SOIL

Received Date: 10/11/2019 9:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	28	9.6		mg/Kg	1	10/11/2019 11:15:48 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/11/2019 11:15:48 AM
Surr: DNOP	93.6	70-130		%Rec	1	10/11/2019 11:15:48 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/11/2019 1:18:30 PM
Surr: BFB	96.7	77.4-118		%Rec	1	10/11/2019 1:18:30 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	10/11/2019 1:18:30 PM
Toluene	ND	0.050		mg/Kg	1	10/11/2019 1:18:30 PM
Ethylbenzene	ND	0.050		mg/Kg	1	10/11/2019 1:18:30 PM
Xylenes, Total	ND	0.10		mg/Kg	1	10/11/2019 1:18:30 PM
Surr: 4-Bromofluorobenzene	91.3	80-120		%Rec	1	10/11/2019 1:18:30 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CJS</b>
Chloride	78	60		mg/Kg	20	10/11/2019 12:00:00 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		



## Analytical Report

Lab Order 1910673

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-29 2.0'

Project: Dark Canyon SWD 001

Collection Date: 10/9/2019 12:15:00 PM

Lab ID: 1910673-010

Matrix: SOIL

Received Date: 10/11/2019 9:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	10/11/2019 11:37:49 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	10/11/2019 11:37:49 AM
Surr: DNOP	88.8	70-130		%Rec	1	10/11/2019 11:37:49 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/11/2019 1:41:18 PM
Surr: BFB	98.6	77.4-118		%Rec	1	10/11/2019 1:41:18 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	10/11/2019 1:41:18 PM
Toluene	ND	0.050		mg/Kg	1	10/11/2019 1:41:18 PM
Ethylbenzene	ND	0.050		mg/Kg	1	10/11/2019 1:41:18 PM
Xylenes, Total	ND	0.10		mg/Kg	1	10/11/2019 1:41:18 PM
Surr: 4-Bromofluorobenzene	92.6	80-120		%Rec	1	10/11/2019 1:41:18 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CJS</b>
Chloride	70	60		mg/Kg	20	10/11/2019 12:00:00 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910673

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-37 2.0'

Project: Dark Canyon SWD 001

Collection Date: 10/9/2019 12:30:00 PM

Lab ID: 1910673-011

Matrix: SOIL

Received Date: 10/11/2019 9:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	10/11/2019 11:59:46 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/11/2019 11:59:46 AM
Surr: DNOP	88.1	70-130		%Rec	1	10/11/2019 11:59:46 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/11/2019 10:29:07 AM
Surr: BFB	98.9	77.4-118		%Rec	1	10/11/2019 10:29:07 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	10/11/2019 10:29:07 AM
Toluene	ND	0.050		mg/Kg	1	10/11/2019 10:29:07 AM
Ethylbenzene	ND	0.050		mg/Kg	1	10/11/2019 10:29:07 AM
Xylenes, Total	ND	0.10		mg/Kg	1	10/11/2019 10:29:07 AM
Surr: 4-Bromofluorobenzene	95.1	80-120		%Rec	1	10/11/2019 10:29:07 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CJS</b>
Chloride	ND	60		mg/Kg	20	10/11/2019 12:00:00 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1910673

Date Reported:

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS19-38 2.0'

Project: Dark Canyon SWD 001

Collection Date: 10/9/2019 12:45:00 PM

Lab ID: 1910673-012

Matrix: SOIL

Received Date: 10/11/2019 9:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	10/11/2019 12:21:45 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/11/2019 12:21:45 PM
Surr: DNOP	89.2	70-130		%Rec	1	10/11/2019 12:21:45 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/11/2019 10:52:39 AM
Surr: BFB	95.1	77.4-118		%Rec	1	10/11/2019 10:52:39 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	10/11/2019 10:52:39 AM
Toluene	ND	0.050		mg/Kg	1	10/11/2019 10:52:39 AM
Ethylbenzene	ND	0.050		mg/Kg	1	10/11/2019 10:52:39 AM
Xylenes, Total	ND	0.10		mg/Kg	1	10/11/2019 10:52:39 AM
Surr: 4-Bromofluorobenzene	93.3	80-120		%Rec	1	10/11/2019 10:52:39 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CJS</b>
Chloride	ND	60		mg/Kg	20	10/11/2019 12:00:00 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		