

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

State of New Mexico
Energy Minerals and Natural
Resources Department

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

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

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # (assigned by OCD)
Contact mailing address	

Location of Release Source

Latitude _____ Longitude _____
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Site Type
Date Release Discovered	API# (if applicable)

Unit Letter	Section	Township	Range	County

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

Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input 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		

Oil Conservation Division

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

Initial Response

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

<input type="checkbox"/> The source of the release has been stopped.	
<input type="checkbox"/> The impacted area has been secured to protect human health and the environment.	
<input type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
<input 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: _____	Title: _____
Signature: <u>Sheldon Nitan</u>	Date: _____
email: _____	Telephone: _____
<u>OCD Only</u>	
Received by: _____	Date: _____

Incident ID	
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Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	_____ (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input type="checkbox"/> No

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

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

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

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

Oil Conservation Division

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

Printed Name: _____ Title: _____

Signature: Sheldon Nitan Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

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Remediation Plan

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

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

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

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

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

Printed Name: _____ Title: _____

Signature: Sheldon Nitan Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

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

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

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

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

Printed Name: _____ Title: _____

Signature: Sheldon Hittman Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

Site Assessment Report and Proposed Remediation Workplan

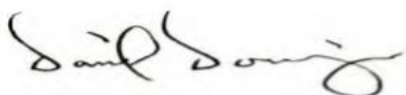
COG Operating, LLC Sebastian Fed Com #001H

Lea County, New Mexico
Unit Letter "D", Section 18, Township 24 South, Range 34 West
Latitude 32.2243 North, Longitude 103.51539 West
NMOCD Reference No. 1RP-5749

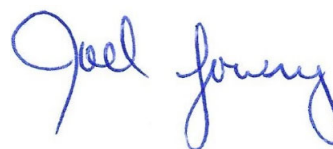
Prepared By:

Etech Environmental & Safety Solutions, Inc.

3100 Plains Highway
Lovington, New Mexico 88260



Daniel Dominguez



Joel W. Lowry



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1.0 PROJECT INFORMATION

Etech Environmental & Safety Solutions, Inc. (Etech), on behalf of COG Operating, LLC, has prepared this Report for the Release Site known as the Sebastian Fed Com #001H. Details of the release are summarized below:

Location of Release Source

Latitude: 32.2243 Longitude: -103.51539
Provided GPS are in WGS84 format.

Site Name: Sebastian Fed Com #001H	Site Type: Tank Battery
Date Release Discovered: 10/5/2019	API # (if applicable):

Unit Letter	Section	Township	Range	County
"D"	18	24S	34W	Lea

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (Name Quail Ranch, LLC)

Nature and Volume of Release

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) 10	Volume Recovered (bbls) 8
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 30	Volume Recovered (bbls) 25
	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"/> N/A
<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	Volume/Weight Recovered

Cause of Release and Affected Area:

The release was attributed to the failure of the gasket on a man may. The release was largely overspray, affecting an area measuring approximately 8,000 sq. ft. on the caliche well pad and 13,500 sq. ft. within the pasture and on the caliche access road.

Initial Response

<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"/> Release materials have been contained via the use of berms or dikes, absorbent pad, or other containment devices
<input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.

Previously submitted portions of the NMOCD Form C-141 are available on the NMOCD Imaging System.

2.0 SITE CHARACTERIZATION

A search of groundwater databases maintained by the New Mexico Office of the State Engineer (NMOSE) and United States Geological Survey (USGS) was conducted in an effort to determine the horizontal distance to known water sources within a half mile radius of the Release Site. Probable groundwater depth was determined using data generated by numeric models based on available water well data and published information. Depth to groundwater information is provided as Appendix A.

What is the shallowest depth to groundwater beneath the area affected by the release?	~ 60 Ft.	
Did the release impact groundwater or surface water?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of any occupied permanent residence, school, hospital, institution or church?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Are the lateral extents of the release within the incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production or storage site?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

NMOCD Siting Criteria data was gathered from available resources including Bureau of Land Management (BLM) shapefiles; topographic maps; NMOSE and USGS databases; and aerial imagery. The results are depicted on Figures 1 & 2.

3.0 CLOSURE CRITERIA FOR SOILS IMPACTED BY A RELEASE

Based on the volume and nature of the release, inferred depth to groundwater and NMOCD Siting Criteria, the NMOCD Closure Criteria for the Site is as follows:

Closure Criteria for Soil Impacted by a Release			
Probable Depth to Groundwater	Constituent	Method	Limit
~ 60 Ft.	Chloride	EPA 300.0 or SM4500 Cl B	10000 mg/kg
	TPH (GRO + DRO + MRO)	EPA SW-846 Method 8015M Ext	2500 mg/kg
	DRO + GRO	EPA SW-846 Method 8015M	1000 mg/kg
	BTEX	EPA SW-846 Methods 8021b or 8260b	50 mg/kg
	Benzene	EPA SW-846 Methods 8021b or 8260b	10 mg/kg

4.0 INITIAL SITE ASSESSMENT

On **November 15, 2019**, Etech conducted an initial site assessment. During the initial site visit, **twelve (12)** soil samples (**P1 @ Surf., P3 @ Surf., P3 @ 1', P4 @ Surf., P4 @ 1', RS1 @ Surf., RS1 @ 1', EFS1 @ Surf., EFS2 @ Surf., EFS2 @ 1', EFS3 @ Surf. and FS9 @ Surf.**) were collected and submitted to a commercial laboratory for analysis of BTEX, TPH and chloride. Laboratory analytical results indicated soil was not affected above the NMOCD Closure Criteria and/or NMOCD Reclamation Standard beyond 1 Ft. bgs in the area characterized by sample points P3, P4, RS1 and EFS2. Further characterization would be required in the areas characterized by sample points P1 and EFS3. A "Site & Sample Location Map" is provided as Figure 3.

On **December 4, 2019**, Etech revisited the release site in an effort to further characterize soil impacts at the release site. During the site visit, a series of hand-augered soil bores (**V1 through V3**) were advanced within the release margins in an effort to determine the vertical extent of soil impact in the areas characterized by soil samples FS9, P1 and EFS3. In addition, **four (4)** hand-augered soil bores (**NH, EH, SH and WH**) were advanced near the inferred edges of the affected area in an effort to determine the horizontal extent of soil impacts. During the advancement of the hand-augered soil bores, **fifteen (15)** soil samples (**V1 @ 1', V1 @ 2', V2 @ 1', V2 @ 2', V2 @ 3', V3 @ 1', V3 @ 2', NH @ Surf., NH @ 4', EH @ Surf., EH @ 4', SH @ Surf., SH @ 4', WH @ Surf. and WH @ 4'**) were collected and submitted to a commercial laboratory for analysis of BTEX, TPH and chloride. Laboratory analytical results indicated the horizontal extent of soil impacts were adequately delineated and soil was not affected above the NMOCD Closure Criteria and/or NMOCD Reclamation Standard beyond 1 Ft. bgs in the area characterized by sample point V1 or 2 Ft. bgs in the areas characterized by sample points V2 and V3. A "Soil Chemistry Table" is provided as Table 1. Laboratory Analytical Reports are provided in Appendix B.

5.0 PROPOSED REMEDIATION PLAN

Based on laboratory analytical results, site characteristics and field observations made during the initial site assessment, COG Operating, LLC proposes the following remediation activities designed to advance the Site toward an approved closure:

- Utilizing mechanical equipment, excavate impacted soil affected above the NMOCD Closure Criteria present within the affected pasture in the area characterized by sample point EFS2 and RS1 and on the production pad in the areas characterized by sample points P1, P3, P4 and V2. The floor and sidewalls of the excavated area will be advanced until laboratory analytical results indicate concentrations of BTEX, TPH and chloride are below the NMOCD Closure Criteria.
- Excavate impacted soil affected above the NMOCD Reclamation Standard present within the uppermost 4 Ft of the affected pasture in the area characterized by sample point EFS2, EFS3 and V3. The floor and sidewalls of the excavated area will be advanced until laboratory analytical results from confirmation soil samples indicate BTEX, TPH and chloride are below the NMOCD Reclamation Standard.
- Impacted soil will be temporarily stockpiled on-site atop an impermeable liner, the transported to an NMOCD-permitted facility for disposal.
- Upon excavating impacted soil affected above the NMOCD Closure Criteria and/or NMOCD Reclamation Standard, collect the requisite excavation confirmation soil samples.
- Upon receiving laboratory analytical results from excavation confirmation soil samples, backfill the excavated area with locally sourced, non-impacted "like" material.
- Upon completion of remediation activities, prepare a *Remediation Summary and Soil Closure Request* detailing field activities and laboratory analytical results from confirmation soil samples.

6.0 ALTERNATIVE SAMPLING PLAN

A minimum of **one (1)** representative five-point composite excavation confirmation soil sample will be collected from the base and sidewalls of the excavated area representing every **500 square feet**. Additional, discrete grab samples will be collected from wet or visibly stained areas inferred to have been affected by the release, as necessary.

7.0 TIMELINE AND ESTIMATED VOLUME OF SOIL TO BE REMEDIATED

Remediation activities are expected to be completed **within 90 days** of receiving necessary approval(s) of the Site Assessment Summary and Proposed Remediation Plan. Based on laboratory analytical results, site characteristics and field observations made during the initial site assessment it is estimated that approximately **380 cubic yards** is in need of removal.

8.0 RESTORATION, RECLAMATION AND RE-VEGETATION PLAN

Areas affected by remediation and closure activities will be substantially restored to the condition that existed prior to the release, to the extent practicable. Excavated areas will be backfilled with locally sourced, non-impacted "like" material placed at or near original relative positions. The affected area will be contoured and/or compacted to achieve erosion control, stability and preservation of surface water flow to the extent practicable. Affected areas not on production pads and/or lease roads will be reseeded in accordance with the landowner during the first favorable growing season following closure of the site.

9.0 LIMITATIONS

Etech Environmental & Safety Solutions, Inc., has prepared this Site Assessment Report and Proposed Remediation Plan to the best of its ability. No other warranty, expressed or implied, is made or intended. Etech has examined and relied upon documents reference in the report and on oral statements made by certain individuals. Basis has not conducted an independent examination of the facts contained in referenced materials and statements. Etech has presumed the genuineness of these documents and statements and that the information provided therein is true and accurate. Etech has prepared the report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. Etech notes that the facts and conditions referenced in this report may change over time, and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

This report has been prepared for the benefit of COG Operating, LLC. Use of the information contained in this report is prohibited within the consent of Etech and/or COG Operating, LLC.

10.0 DISTRIBUTION

COG Operating, LLC

600 West Illinois Avenue

Midland, TX 79701

New Mexico Energy, Minerals and Natural Resources Department

Oil Conservation Division, District 1

1220 South St. Francis Drive

Santa Fe, NM 87505

(Electronic Submission)

Figure 1

Topographic Map



Legend:

● Site Location

Figure 1
 Topographic Map
 COG Operating, LLC
 Sebastian Fed Com #001H
 GPS: 32.2243, -103.51539
 Lea County

eTECH
 Environmental & Safety Solutions, Inc.

Drafted:

Checked: jwl

Date: 12/11/19

Figure 2

Aerial Proximity Map



- Legend**
- Site Location
 - Potash Mine Workings
 - 0.5 Mi Radius
 - 1% Annual Flood Chance
 - Surface Water

- Well - USGS
- Well - NMOSE
- High Karst
- Medium Karst

Figure 2
Aerial Map
COG Operating, LLC
Sebastian Fed Com #001H
GPS: 32.2243, -103.51539
Lea County



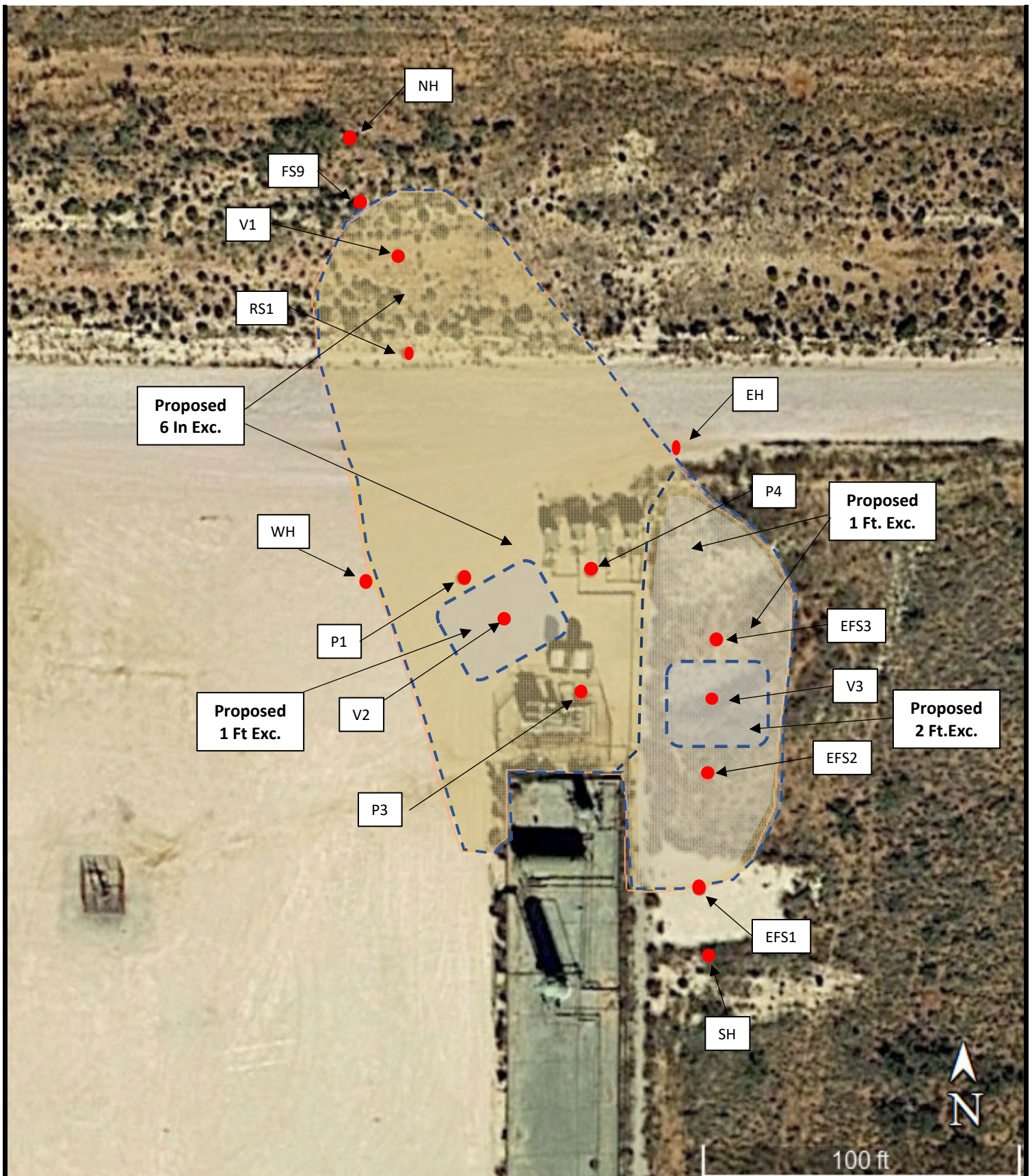
Drafted: mag

Checked: jwl

Date: 12/11/19

Figure 3

Site and Sample Location Map



Legend:

- Confirmation Sample Point
- Affected Area
- Proposed Excavation

Figure 3

Site and Sample Location Map
 COG Operating, LLC
 Sebastian Fed Com #001H
 GPS: 32.2243, -103.51539
 Lea County

eTECH
 Environmental & Safety Solutions, Inc.

Drafted:

Checked: jwl

Date: 12/18/19

Table 1
Concentrations of BTEX, TPH, and/or Chloride in Soil

TABLE 1
CONCENTRATIONS OF BENZENE, BTEX TPH AND CHLORIDE IN SOIL
COG Operating, LLC
Sebastian Fed Com #001H
NMOCD Ref. #: 1RP-5749

Sample ID	Date	Depth	Soil Status	SW 846 8021B		SW 846 8015M Ext.					4500 Cl
				Benzene (mg/kg)	BTEX (mg/kg)	GRO C ₆ -C ₁₀ (mg/kg)	DRO C ₁₀ -C ₂₈ (mg/kg)	GRO + DRO C ₆ -C ₂₈ (mg/kg)	ORO C ₂₈ -C ₃₆ (mg/kg)	TPH C ₆ -C ₃₆ (mg/kg)	Chloride (mg/kg)
P1 @ Surf.	11/15/2019	Surf.	In-Situ	<0.050	<0.300	<10.0	5,310	5,310	1,160	6,470	608
P3 @ Surf.	11/15/2019	Surf.	In-Situ	<0.050	<0.300	<10.0	4,610	4,610	1,260	5,870	1,340
P3 @ 1'	11/15/2019	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
P4 @ Surf.	11/15/2019	Surf.	In-Situ	<0.050	3.03	241	21,200	21,441	4,840	26,281	1,170
P4 @ 1'	11/15/2019	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
RS1 @ Surf.	11/15/2019	Surf.	In-Situ	<0.050	<0.300	<10.0	1,150	1,150	251	1,401	880
RS1 @ 1'	11/15/2019	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
EFS1 @ Surf.	11/15/2019	Surf.	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
EFS2 @ Surf.	11/15/2019	Surf.	In-Situ	<0.050	<0.300	<10.0	4,130	4,130	902	5,032	1,390
EFS2 @ 1'	11/15/2019	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
EFS3 @ Surf.	11/15/2019	Surf.	In-Situ	<0.050	<0.300	<10.0	218	218	43.8	261.8	608
FS9 @ Surf.	11/15/2019	Surf.	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
V1 @ 1'	12/4/2019	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	64.0
V1 @ 2'	12/4/2019	2'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
V2 @ 1'	12/4/2019	1'	In-Situ	<0.050	1.10	146	12,800	12,946	2,560	15,506	112
V2 @ 2'	12/4/2019	2'	In-Situ	<0.050	<0.300	<10.0	158	158	32.9	190.9	32.0
V2 @ 3'	12/4/2019	3'	In-Situ	<0.050	<0.300	<10.0	720	720	127	847	32.0
V3 @ 1'	12/4/2019	1'	In-Situ	<0.050	<0.300	<10.0	95.1	95.1	20.3	115.4	160
V3 @ 2'	12/4/2019	2'	In-Situ	<0.050	<0.300	<10.0	36.7	36.7	<10.0	36.7	224
NH @ Surf.	12/4/2019	Surf.	In-Situ	<0.050	<0.300	<10.0	41.5	41.5	<10.0	41.5	48.0
NH @ 4'	12/4/2019	4'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
EH @ Surf.	12/4/2019	Surf.	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	512
EH @ 4'	12/4/2019	4'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	80.0
SH @ Surf.	12/4/2019	Surf.	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SH @ 4'	12/4/2019	4'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
WH @ Surf.	12/4/2019	Surf.	In-Situ	<0.050	<0.300	<10.0	39.1	39.1	11.9	51.0	240
WH @ 4'	12/4/2019	4'	In-Situ	<0.050	<0.300	<10.0	16.00	16.00	<10.0	16.0	192
Closure Criteria				10	50	-	-	1,000	-	2,500	10,000

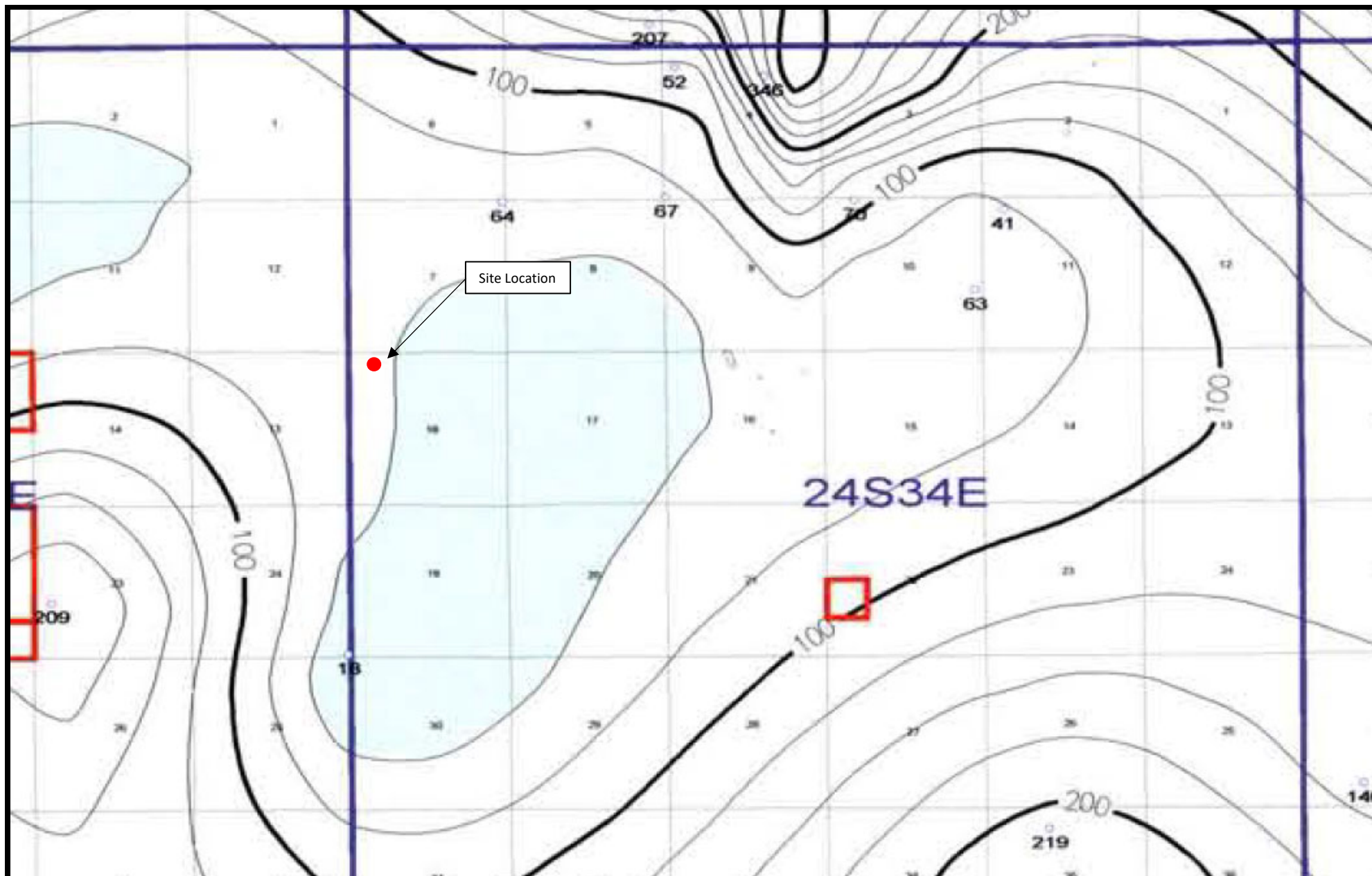
NOTES:

- =

Bold text denotes a concentration that exceeds the NMOCD Closure Criteria and/or NMOCD Reclamation Standard

Appendix A

Depth to Groundwater Information



Legend:

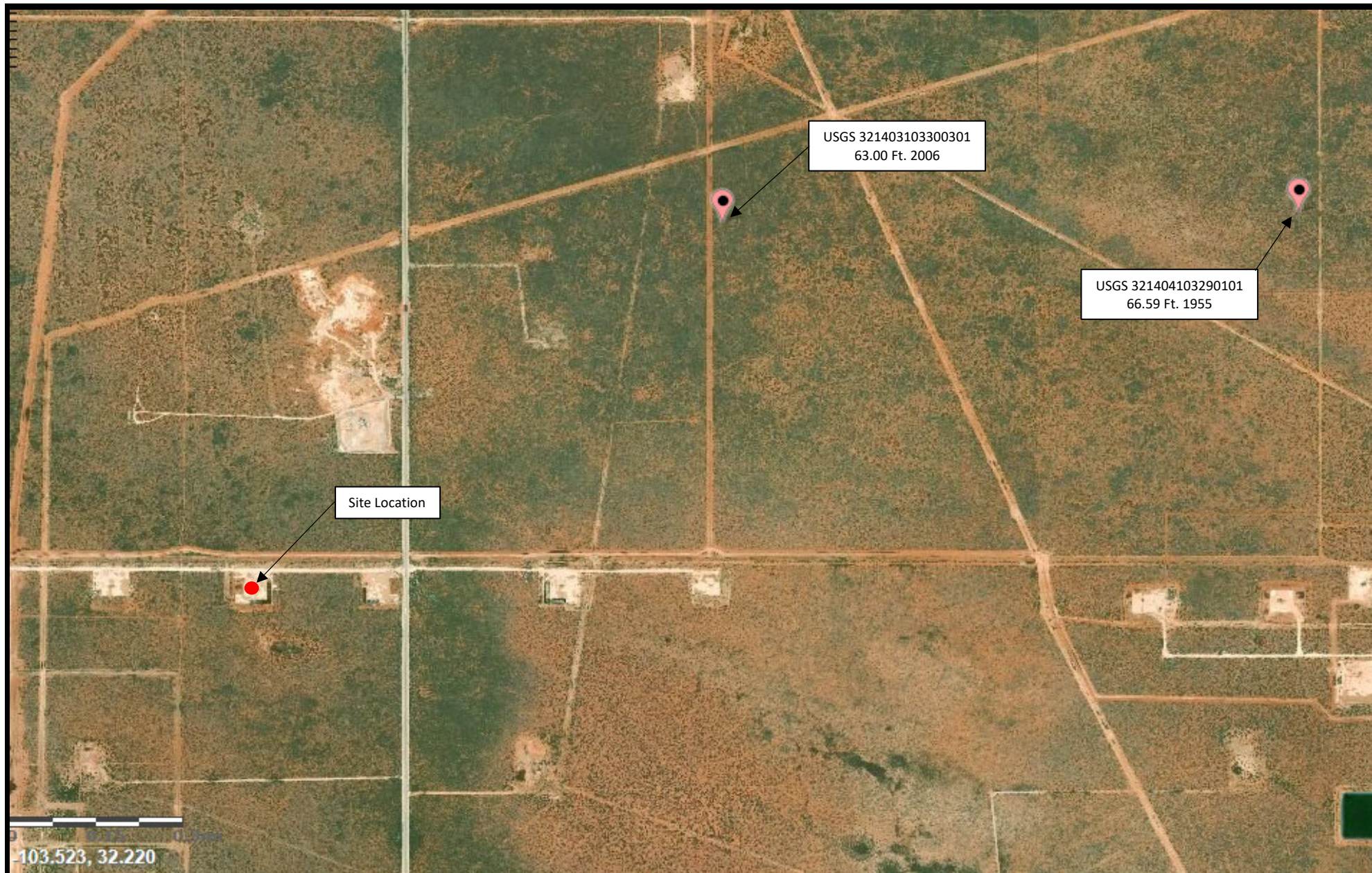
● Site Location

Figure 4
 Inferred Depth to Groundwater Trend Map
 COG Operating, LLC
 Sebastian Fed Com #001H
 GPS: 32.2243, -103.51539
 Lea County




Environmental & Safety Solutions, Inc.

Drafted: Checked: jwl Date: 12/11/19



Legend:

- Site Location
- USGS Water Well

Figure 5

USGS Well Proximity Map
 COG Operating, LLC
 Sebastian Fed Com #001H
 GPS: 32.2243, -103.51539
 Lea County



Drafted:

Checked: jwl

Date:

12/11/19



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USGS Water Resources

Data Category:


Groundwater ▼

Geographic Area:

United States ▼

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- [Full News](#) 

Search Results -- No sites found

No sites were found for groundwater level data using your search criteria.

The sites you requested may be available offline. For more information, contact [USGS Water Data Inquiries](#).

lat_long_bounding_box

=

Position	Latitude	Longitude
Corner 1	32.232329	103.523865
Corner 2	32.216679	103.505951
Coordinates are entered as Decimal Degrees. DMS values are converted to Decimal degrees using NAD83 as the datum. Make your bounding box bigger if you are using NAD27 Datum for your DMS values		

Minimum number of 1
levels =

Use the "Back" button on your browser to change your search criteria.

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[USGS Water Resources](#)

Data Category:	Geographic Area:	
Groundwater	United States	GO

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Groundwater levels for the Nation

Search Results -- 1 sites found

Agency code = usgs
site_no list =

- 321403103300301

Minimum number of levels = 1
[Save file of selected sites](#) to local disk for future upload

USGS 321403103300301 24S.34E.07.22222

Lea County, New Mexico
Latitude 32°14'03", Longitude 103°30'03" NAD27
Land-surface elevation 3,606 feet above NAVD88
This well is completed in the Ogallala Formation (121OGLL) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period

Date	Time	? Water-level date-time accuracy	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Water-level accuracy	? Status	? Method of measurement	? Measuring agency	? Source of measurment
1970-12-08		D	72.19			2	R		U	
1976-01-16		D	85.84			2			U	
1981-03-19		D	82.95			2			U	
1986-03-06		D	79.31			2			U	
1991-05-30		D	74.56			2			U	
1996-03-13		D	64.12			2			S	
2001-02-28		D	63.38			2			S	
2006-02-07	08:40 MST	m	63.00			2			S	USGS

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level date-time accuracy	m	Date is accurate to the Minute
Water-level accuracy	2	Water level accuracy to nearest hundredth of a foot
Status		The reported water-level measurement represents a static level
Status	R	Site had been pumped recently.
Method of measurement	S	Steel-tape measurement.
Method of measurement	U	Unknown method.
Measuring agency		Not determined
Measuring agency	USGS	U.S. Geological Survey
Source of measurement	S	Measured by personnel of reporting agency.

Section	Code	Description
Source of measurement	U	Source is unknown.
Water-level approval status	A	Approved for publication -- Processing and review completed.

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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: 2019-10-15 16:12:10 EDT

0.53 0.5 nadww02






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Data Category: Groundwater Geographic Area: United States GO

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Groundwater levels for the Nation

Search Results -- 1 sites found

Agency code = usqs

site no list =

- 321404103290101

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

USGS 321404103290101 24S.34E.04.33333

Lea County, New Mexico

Latitude 32°14'04", Longitude 103°29'01" NAD27

Land-surface elevation 3,571 feet above NAVD88

This well is completed in the Ogallala Formation (121OGLL) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period

Date	Time	? Water-level date-time accuracy	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Water-level accuracy	? Status	? Method of measurement	? Measuring agency	? Source of measurement
1955-04-21		D	66.59				2		U	

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level accuracy	2	Water level accuracy to nearest hundredth of a foot
Status		The reported water-level measurement represents a static level
Method of measurement	U	Unknown method.
Measuring agency		Not determined
Source of measurement	U	Source is unknown.
Water-level approval status	A	Approved for publication -- Processing and review completed.

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Title: Groundwater for USA: Water Levels

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

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0.6 0.58 nadww02

Appendix B

Laboratory Analytical Reports



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

November 20, 2019

DANIEL DOMINGUEZ

Etech Environmental & Safety Solutions

P.O. Box 301

Lovington, NM 88260

RE: SEBASTION FED COM #001H

Enclosed are the results of analyses for samples received by the laboratory on 11/15/19 15:38.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	11/15/2019	Sampling Date:	11/15/2019
Reported:	11/20/2019	Sampling Type:	Soil
Project Name:	SEBASTION FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	COG - RURAL LEA COUNTY		

Sample ID: P1 @ SURFACE (H903894-01)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/18/2019	ND	1.93	96.5	2.00	9.93	
Toluene*	<0.050	0.050	11/18/2019	ND	2.02	101	2.00	15.6	
Ethylbenzene*	<0.050	0.050	11/18/2019	ND	2.09	105	2.00	21.8	
Total Xylenes*	<0.150	0.150	11/18/2019	ND	6.11	102	6.00	21.0	
Total BTX	<0.300	0.300	11/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	608	16.0	11/19/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	11/19/2019	ND	225	112	200	1.24		
DRO >C10-C28*	5310	10.0	11/19/2019	ND	221	111	200	1.31		
EXT DRO >C28-C36	1160	10.0	11/19/2019	ND						

Surrogate: 1-Chlorooctane 113 % 41-142

Surrogate: 1-Chlorooctadecane 302 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	11/15/2019	Sampling Date:	11/15/2019
Reported:	11/20/2019	Sampling Type:	Soil
Project Name:	SEBASTION FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	COG - RURAL LEA COUNTY		

Sample ID: P3 @ SURFACE (H903894-02)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/18/2019	ND	1.80	90.2	2.00	0.0904	
Toluene*	<0.050	0.050	11/18/2019	ND	1.81	90.3	2.00	0.912	
Ethylbenzene*	<0.050	0.050	11/18/2019	ND	1.82	90.9	2.00	0.137	
Total Xylenes*	<0.150	0.150	11/18/2019	ND	5.47	91.2	6.00	0.272	
Total BTX	<0.300	0.300	11/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1340	16.0	11/19/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	11/19/2019	ND	225	112	200	1.24		
DRO >C10-C28*	4610	10.0	11/19/2019	ND	221	111	200	1.31		
EXT DRO >C28-C36	1260	10.0	11/19/2019	ND						

Surrogate: 1-Chlorooctane 99.9 % 41-142

Surrogate: 1-Chlorooctadecane 289 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received: 11/15/2019
 Reported: 11/20/2019
 Project Name: SEBASTION FED COM #001H
 Project Number: 11378
 Project Location: COG - RURAL LEA COUNTY

Sampling Date: 11/15/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: P3 @ 1' (H903894-03)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/18/2019	ND	1.80	90.2	2.00	0.0904	
Toluene*	<0.050	0.050	11/18/2019	ND	1.81	90.3	2.00	0.912	
Ethylbenzene*	<0.050	0.050	11/18/2019	ND	1.82	90.9	2.00	0.137	
Total Xylenes*	<0.150	0.150	11/18/2019	ND	5.47	91.2	6.00	0.272	
Total BTX	<0.300	0.300	11/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 115 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	11/19/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/19/2019	ND	225	112	200	1.24	
DRO >C10-C28*	<10.0	10.0	11/19/2019	ND	221	111	200	1.31	
EXT DRO >C28-C36	<10.0	10.0	11/19/2019	ND					

Surrogate: 1-Chlorooctane 119 % 41-142

Surrogate: 1-Chlorooctadecane 129 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	11/15/2019	Sampling Date:	11/15/2019
Reported:	11/20/2019	Sampling Type:	Soil
Project Name:	SEBASTION FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	COG - RURAL LEA COUNTY		

Sample ID: P4 @ SURFACE (H903894-04)

BTX 8021B		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/18/2019	ND	1.80	90.2	2.00	0.0904	
Toluene*	0.050	0.050	11/18/2019	ND	1.81	90.3	2.00	0.912	
Ethylbenzene*	0.479	0.050	11/18/2019	ND	1.82	90.9	2.00	0.137	
Total Xylenes*	2.50	0.150	11/18/2019	ND	5.47	91.2	6.00	0.272	
Total BTX	3.03	0.300	11/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 149 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1170	16.0	11/19/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	241	50.0	11/19/2019	ND	225	112	200	1.24	
DRO >C10-C28*	21200	50.0	11/19/2019	ND	221	111	200	1.31	
EXT DRO >C28-C36	4840	50.0	11/19/2019	ND					

Surrogate: 1-Chlorooctane 166 % 41-142

Surrogate: 1-Chlorooctadecane 980 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received: 11/15/2019
 Reported: 11/20/2019
 Project Name: SEBASTION FED COM #001H
 Project Number: 11378
 Project Location: COG - RURAL LEA COUNTY

Sampling Date: 11/15/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: P4 @ 1' (H903894-05)

BTX 8021B		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/18/2019	ND	1.80	90.2	2.00	0.0904	
Toluene*	<0.050	0.050	11/18/2019	ND	1.81	90.3	2.00	0.912	
Ethylbenzene*	<0.050	0.050	11/18/2019	ND	1.82	90.9	2.00	0.137	
Total Xylenes*	<0.150	0.150	11/18/2019	ND	5.47	91.2	6.00	0.272	
Total BTX	<0.300	0.300	11/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 139 % 73.3-129

Chloride, SM4500CI-B			mg/kg					Analyzed By: AC	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	11/19/2019	ND	416	104	400	0.00	

TPH 8015M			mg/kg					Analyzed By: MS	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/19/2019	ND	225	112	200	1.24	
DRO >C10-C28*	<10.0	10.0	11/19/2019	ND	221	111	200	1.31	
EXT DRO >C28-C36	<10.0	10.0	11/19/2019	ND					

Surrogate: 1-Chlorooctane 117 % 41-142

Surrogate: 1-Chlorooctadecane 128 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received: 11/15/2019
 Reported: 11/20/2019
 Project Name: SEBASTION FED COM #001H
 Project Number: 11378
 Project Location: COG - RURAL LEA COUNTY

Sampling Date: 11/15/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: RS1 @ SURFACE (H903894-06)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/18/2019	ND	1.80	90.2	2.00	0.0904	
Toluene*	<0.050	0.050	11/18/2019	ND	1.81	90.3	2.00	0.912	
Ethylbenzene*	<0.050	0.050	11/18/2019	ND	1.82	90.9	2.00	0.137	
Total Xylenes*	<0.150	0.150	11/18/2019	ND	5.47	91.2	6.00	0.272	
Total BTX	<0.300	0.300	11/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 115 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	880	16.0	11/19/2019	ND	416	104	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/19/2019	ND	222	111	200	2.38	
DRO >C10-C28*	1150	10.0	11/19/2019	ND	211	106	200	7.20	QR-03, QM-07
EXT DRO >C28-C36	251	10.0	11/19/2019	ND					

Surrogate: 1-Chlorooctane 93.7 % 41-142

Surrogate: 1-Chlorooctadecane 133 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	11/15/2019	Sampling Date:	11/15/2019
Reported:	11/20/2019	Sampling Type:	Soil
Project Name:	SEBASTION FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	COG - RURAL LEA COUNTY		

Sample ID: RS1 @ 1' (H903894-07)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/18/2019	ND	1.80	90.2	2.00	0.0904	
Toluene*	<0.050	0.050	11/18/2019	ND	1.81	90.3	2.00	0.912	
Ethylbenzene*	<0.050	0.050	11/18/2019	ND	1.82	90.9	2.00	0.137	
Total Xylenes*	<0.150	0.150	11/18/2019	ND	5.47	91.2	6.00	0.272	
Total BTX	<0.300	0.300	11/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	11/19/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/19/2019	ND	222	111	200	2.38	
DRO >C10-C28*	<10.0	10.0	11/19/2019	ND	211	106	200	7.20	
EXT DRO >C28-C36	<10.0	10.0	11/19/2019	ND					

Surrogate: 1-Chlorooctane 95.0 % 41-142

Surrogate: 1-Chlorooctadecane 91.3 % 37.6-147

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Analytical Results For:

Etech Environmental & Safety Solutions
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 P.O. Box 301
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 Fax To: (575) 396-1429

Received: 11/15/2019
 Reported: 11/20/2019
 Project Name: SEBASTION FED COM #001H
 Project Number: 11378
 Project Location: COG - RURAL LEA COUNTY

Sampling Date: 11/15/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: EFS1 @ SURFACE (H903894-08)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/18/2019	ND	1.80	90.2	2.00	0.0904	
Toluene*	<0.050	0.050	11/18/2019	ND	1.81	90.3	2.00	0.912	
Ethylbenzene*	<0.050	0.050	11/18/2019	ND	1.82	90.9	2.00	0.137	
Total Xylenes*	<0.150	0.150	11/18/2019	ND	5.47	91.2	6.00	0.272	
Total BTX	<0.300	0.300	11/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	11/19/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/19/2019	ND	222	111	200	2.38	
DRO >C10-C28*	<10.0	10.0	11/19/2019	ND	211	106	200	7.20	
EXT DRO >C28-C36	<10.0	10.0	11/19/2019	ND					

Surrogate: 1-Chlorooctane 89.0 % 41-142

Surrogate: 1-Chlorooctadecane 84.5 % 37.6-147

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Analytical Results For:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received: 11/15/2019
 Reported: 11/20/2019
 Project Name: SEBASTION FED COM #001H
 Project Number: 11378
 Project Location: COG - RURAL LEA COUNTY

Sampling Date: 11/15/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: EFS2 @ SURFACE (H903894-09)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/18/2019	ND	1.80	90.2	2.00	0.0904	
Toluene*	<0.050	0.050	11/18/2019	ND	1.81	90.3	2.00	0.912	
Ethylbenzene*	<0.050	0.050	11/18/2019	ND	1.82	90.9	2.00	0.137	
Total Xylenes*	<0.150	0.150	11/18/2019	ND	5.47	91.2	6.00	0.272	
Total BTX	<0.300	0.300	11/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1390	16.0	11/19/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	11/19/2019	ND	222	111	200	2.38		
DRO >C10-C28*	4130	10.0	11/19/2019	ND	211	106	200	7.20		
EXT DRO >C28-C36	902	10.0	11/19/2019	ND						

Surrogate: 1-Chlorooctane 101 % 41-142

Surrogate: 1-Chlorooctadecane 211 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Etech Environmental & Safety Solutions
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 Fax To: (575) 396-1429

Received: 11/15/2019
 Reported: 11/20/2019
 Project Name: SEBASTION FED COM #001H
 Project Number: 11378
 Project Location: COG - RURAL LEA COUNTY

Sampling Date: 11/15/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: EFS2 @ 1' (H903894-10)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/19/2019	ND	1.80	90.2	2.00	0.0904	
Toluene*	<0.050	0.050	11/19/2019	ND	1.81	90.3	2.00	0.912	
Ethylbenzene*	<0.050	0.050	11/19/2019	ND	1.82	90.9	2.00	0.137	
Total Xylenes*	<0.150	0.150	11/19/2019	ND	5.47	91.2	6.00	0.272	
Total BTX	<0.300	0.300	11/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 122 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	11/19/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/19/2019	ND	222	111	200	2.38	
DRO >C10-C28*	<10.0	10.0	11/19/2019	ND	211	106	200	7.20	
EXT DRO >C28-C36	<10.0	10.0	11/19/2019	ND					

Surrogate: 1-Chlorooctane 96.4 % 41-142

Surrogate: 1-Chlorooctadecane 98.6 % 37.6-147

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Analytical Results For:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	11/15/2019	Sampling Date:	11/15/2019
Reported:	11/20/2019	Sampling Type:	Soil
Project Name:	SEBASTION FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	COG - RURAL LEA COUNTY		

Sample ID: EFS3 @ SURFACE (H903894-11)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/19/2019	ND	1.80	90.2	2.00	0.0904	
Toluene*	<0.050	0.050	11/19/2019	ND	1.81	90.3	2.00	0.912	
Ethylbenzene*	<0.050	0.050	11/19/2019	ND	1.82	90.9	2.00	0.137	
Total Xylenes*	<0.150	0.150	11/19/2019	ND	5.47	91.2	6.00	0.272	
Total BTX	<0.300	0.300	11/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	608	16.0	11/19/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/19/2019	ND	222	111	200	2.38	
DRO >C10-C28*	218	10.0	11/19/2019	ND	211	106	200	7.20	
EXT DRO >C28-C36	43.8	10.0	11/19/2019	ND					

Surrogate: 1-Chlorooctane 89.2 % 41-142

Surrogate: 1-Chlorooctadecane 101 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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 Fax To: (575) 396-1429

Received: 11/15/2019
 Reported: 11/20/2019
 Project Name: SEBASTION FED COM #001H
 Project Number: 11378
 Project Location: COG - RURAL LEA COUNTY

Sampling Date: 11/15/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: FS9 @ SURFACE (H903894-12)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/19/2019	ND	1.80	90.2	2.00	0.0904	
Toluene*	<0.050	0.050	11/19/2019	ND	1.81	90.3	2.00	0.912	
Ethylbenzene*	<0.050	0.050	11/19/2019	ND	1.82	90.9	2.00	0.137	
Total Xylenes*	<0.150	0.150	11/19/2019	ND	5.47	91.2	6.00	0.272	
Total BTX	<0.300	0.300	11/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	11/19/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/19/2019	ND	222	111	200	2.38	
DRO >C10-C28*	<10.0	10.0	11/19/2019	ND	211	106	200	7.20	
EXT DRO >C28-C36	<10.0	10.0	11/19/2019	ND					

Surrogate: 1-Chlorooctane 89.4 % 41-142

Surrogate: 1-Chlorooctadecane 90.3 % 37.6-147

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Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager

**CARDINAL LABORATORIES**
 101 East Marland, Hobbs, NM 88240
 (575) 393-2326 FAX (575) 393-2476
CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Etech Environmental & Safety Solutions, Inc. Project Manager: Daniel Dominguez Address: P.O. Box 301 City: Lovington Phone #: (575) 396-2378 Project #: 11378 Project Name: Sebastian Fed Com #001H Project Location: Rural Lea County Sampler Name: Joel Lowry		State: NM Zip: 88260 Fax #: (575) 396-1429 Project Owner: Concho City: State: Zip: Phone #: Fax #:		BILL TO P.O. #: Company: Concho Attn: Address: City: State: Zip: Phone #: Fax #:		ANALYSIS REQUEST																	
FOR LAB USE ONLY		Sample I.D. H903894		(G)RAB OR (C)OMP. # CONTAINERS		MATRIX GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER :		PRESERV. ACID/BASE: ICE / COOL OTHER :		SAMPLING DATE TIME		Chloride TPH (8015M) BTEX (8021B)											
P1 @ Surface		g		1		X		X		11/15/19		10:00		X									
P3 @ Surface		g		1		X		X		11/15/19		10:15		X									
P3 @ 1'		g		1		X		X		11/15/19		10:20		X									
P4 @ Surface		g		1		X		X		11/15/19		10:30		X									
P4 @ 1'		g		1		X		X		11/15/19		10:35		X									
RS1 @ Surface		g		1		X		X		11/15/19		11:00		X									
RS1 @ 1'		g		1		X		X		11/15/19		11:05		X									
EFS1 @ Surface		g		1		X		X		11/15/19		11:20		X									
EFS2 @ Surface		g		1		X		X		11/15/19		11:25		X									
EFS2 @ 1'		g		1		X		X		11/15/19		11:30		X									

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Relinquished By: [Signature] Date: 11/15/19 Time: 15:38	Received By: [Signature] Date: 11/15/19 Time: 15:38	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No REMARKS: Please email results to daniel@etechenv.com, joel@etechenv.com.
---	---	--

Delivered By: (Circle One) ☒ **UPS** ☐ **Other:** 2.42 / 2.82 #97
Sampler - UPS - Bus - Other: 2.42 / 2.82 #97
Sample Condition: ☒ Cool ☐ Intact
☐ Yes ☐ No
☐ Yes ☐ No
CHECKED BY: [Signature]

FORM-006
Revision 1.0

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476



ORDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

December 06, 2019

SHELDON HITCHCOCK

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: SEBASTIAN FED COM #001H

Enclosed are the results of analyses for samples received by the laboratory on 12/04/19 16:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	12/04/2019	Sampling Date:	12/04/2019
Reported:	12/06/2019	Sampling Type:	Soil
Project Name:	SEBASTIAN FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	RURAL LEA		

Sample ID: V1 @ 1' (H904060-01)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46		
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50		
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13		
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75		
Total BTEX	<0.300	0.300	12/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.2 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	12/05/2019	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	<10.0	10.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	<10.0	10.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 102 % 41-142

Surrogate: 1-Chlorooctadecane 105 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 12/04/2019
Reported: 12/06/2019
Project Name: SEBASTIAN FED COM #001H
Project Number: 11378
Project Location: RURAL LEA

Sampling Date: 12/04/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: V1 @ 2' (H904060-02)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46	
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50	
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13	
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75	
Total BTX	<0.300	0.300	12/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.9 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	12/05/2019	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	<10.0	10.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	<10.0	10.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 102 % 41-142

Surrogate: 1-Chlorooctadecane 105 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 12/04/2019
Reported: 12/06/2019
Project Name: SEBASTIAN FED COM #001H
Project Number: 11378
Project Location: RURAL LEA

Sampling Date: 12/04/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: V2 @ 1' (H904060-03)

BTX 8021B		mg/kg	Analyzed By: MS					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46	
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50	
Ethylbenzene*	0.148	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13	
Total Xylenes*	0.951	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75	
Total BTX	1.10	0.300	12/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 131 % 73.3-129

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	12/05/2019	ND	400	100	400	7.69	

TPH 8015M		mg/kg	Analyzed By: MS					S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	146	50.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	12800	50.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	2560	50.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 148 % 41-142

Surrogate: 1-Chlorooctadecane 532 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 12/04/2019
Reported: 12/06/2019
Project Name: SEBASTIAN FED COM #001H
Project Number: 11378
Project Location: RURAL LEA

Sampling Date: 12/04/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: V2 @ 2' (H904060-04)

BTX 8021B		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46	
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50	
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13	
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75	
Total BTX	<0.300	0.300	12/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 193 % 73.3-129

Chloride, SM4500CI-B			mg/kg					Analyzed By: AC	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	12/05/2019	ND	400	100	400	7.69	

TPH 8015M			mg/kg					Analyzed By: MS	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	158	10.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	32.9	10.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 111 % 41-142

Surrogate: 1-Chlorooctadecane 124 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 12/04/2019
Reported: 12/06/2019
Project Name: SEBASTIAN FED COM #001H
Project Number: 11378
Project Location: RURAL LEA

Sampling Date: 12/04/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: V2 @ 3' (H904060-05)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46	
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50	
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13	
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75	
Total BTX	<0.300	0.300	12/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	12/05/2019	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	720	10.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	127	10.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 109 % 41-142

Surrogate: 1-Chlorooctadecane 135 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 12/04/2019
Reported: 12/06/2019
Project Name: SEBASTIAN FED COM #001H
Project Number: 11378
Project Location: RURAL LEA

Sampling Date: 12/04/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: V3 @ 1' (H904060-06)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46	
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50	
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13	
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75	
Total BTX	<0.300	0.300	12/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 122 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	12/05/2019	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	95.1	10.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	20.3	10.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 93.0 % 41-142

Surrogate: 1-Chlorooctadecane 103 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 12/04/2019
Reported: 12/06/2019
Project Name: SEBASTIAN FED COM #001H
Project Number: 11378
Project Location: RURAL LEA

Sampling Date: 12/04/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: V3 @ 2' (H904060-07)

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46		
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50		
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13		
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75		
Total BTX	<0.300	0.300	12/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	224	16.0	12/05/2019	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	36.7	10.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	<10.0	10.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 101 % 41-142

Surrogate: 1-Chlorooctadecane 107 % 37.6-147

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 12/04/2019
Reported: 12/06/2019
Project Name: SEBASTIAN FED COM #001H
Project Number: 11378
Project Location: RURAL LEA

Sampling Date: 12/04/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SH @ SURFACE (H904060-08)

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46		
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50		
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13		
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75		
Total BTX	<0.300	0.300	12/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	12/05/2019	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	<10.0	10.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	<10.0	10.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 109 % 41-142

Surrogate: 1-Chlorooctadecane 114 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

COG OPERATING
 SHELDON HITCHCOCK
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received: 12/04/2019
 Reported: 12/06/2019
 Project Name: SEBASTIAN FED COM #001H
 Project Number: 11378
 Project Location: RURAL LEA

Sampling Date: 12/04/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: NH @ SURFACE (H904060-09)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46		
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50		
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13		
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75		
Total BTEX	<0.300	0.300	12/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	12/05/2019	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	41.5	10.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	<10.0	10.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 107 % 41-142

Surrogate: 1-Chlorooctadecane 116 % 37.6-147

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Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 12/04/2019
Reported: 12/06/2019
Project Name: SEBASTIAN FED COM #001H
Project Number: 11378
Project Location: RURAL LEA

Sampling Date: 12/04/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SH @ 4' (H904060-10)

BTX 8021B		mg/kg	Analyzed By: MS					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46	
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50	
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13	
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75	
Total BTX	<0.300	0.300	12/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 163 % 73.3-129

Chloride, SM4500CI-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	12/05/2019	ND	400	100	400	7.69	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	<10.0	10.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	<10.0	10.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 110 % 41-142

Surrogate: 1-Chlorooctadecane 113 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 12/04/2019
Reported: 12/06/2019
Project Name: SEBASTIAN FED COM #001H
Project Number: 11378
Project Location: RURAL LEA

Sampling Date: 12/04/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: EH @ 4' (H904060-11)

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46		
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50		
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13		
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75		
Total BTX	<0.300	0.300	12/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	12/05/2019	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	<10.0	10.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	<10.0	10.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 102 % 41-142

Surrogate: 1-Chlorooctadecane 106 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 12/04/2019
Reported: 12/06/2019
Project Name: SEBASTIAN FED COM #001H
Project Number: 11378
Project Location: RURAL LEA

Sampling Date: 12/04/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: WH @ SURFACE (H904060-12)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46	
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50	
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13	
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75	
Total BTX	<0.300	0.300	12/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	240	16.0	12/05/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	39.1	10.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	11.9	10.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 97.1 % 41-142

Surrogate: 1-Chlorooctadecane 104 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 12/04/2019
Reported: 12/06/2019
Project Name: SEBASTIAN FED COM #001H
Project Number: 11378
Project Location: RURAL LEA

Sampling Date: 12/04/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: EH @ SURFACE (H904060-13)

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46		
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50		
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13		
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75		
Total BTX	<0.300	0.300	12/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	512	16.0	12/05/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	<10.0	10.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	<10.0	10.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 108 % 37.6-147

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Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 12/04/2019
Reported: 12/06/2019
Project Name: SEBASTIAN FED COM #001H
Project Number: 11378
Project Location: RURAL LEA

Sampling Date: 12/04/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: WH @ 4' (H904060-14)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46	
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50	
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13	
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75	
Total BTX	<0.300	0.300	12/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.2 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	192	16.0	12/05/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	16.0	10.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	<10.0	10.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 98.6 % 41-142

Surrogate: 1-Chlorooctadecane 103 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 12/04/2019
Reported: 12/06/2019
Project Name: SEBASTIAN FED COM #001H
Project Number: 11378
Project Location: RURAL LEA

Sampling Date: 12/04/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: NH @ 4' (H904060-15)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46		
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50		
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13		
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75		
Total BTEx	<0.300	0.300	12/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	12/05/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	<10.0	10.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	<10.0	10.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 111 % 41-142

Surrogate: 1-Chlorooctadecane 116 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: COG Operating, LLC

Project Manager: Daniel Dominguez

Address: 3100 Plains Hwy

City: Lovington State: NM Zip: 88260

Phone #: 575-396-2378 Fax #: 575-396-1429

Project #: 11378 Project Owner: COG Operating, LLC

Project Name: Sebastian Fed Com #001H

Project Location: Rural Lea

Sample Name:

P.O. #:

Company: COG

Attn: CO Sheldon Hitchcock

Address:

City:

State: NM Zip:

Phone #:

Fax #:

FOR LAB USE ONLY

MATRIX

PRESERV

SAMPLING

Lab I.D. Sample I.D.

11000000

(G)RAB OR (C)OMP.

CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

TIME

Chloride

TPH

BTEX 8021

11

EH @ 4'

5

1

X

12

WH @ surface

5

1

X

13

EH @ surface

5

1

X

14

WH @ 4'

5

1

X

15

WH @ 4'

5

1

X

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Relinquished By:

Date:

12/4/19

Time:

10:45

Received By:

Sheldon Hitchcock

Date:

12/4/19

Time:

12:30

Relinquished By:

Sheldon Hitchcock

Date:

12/4/19

Time:

12:30

Received By:

Sheldon Hitchcock

Date:

12/4/19

Time:

12:30

Relinquished By:

Sheldon Hitchcock

Date:

12/4/19

Time:

12:30

Relinquished By:

Appendix C

Photographic Log

Photographic Log

