

Incident ID	
District RP	
Facility ID	
Application ID	

UI7UE-200311-C-1410

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>> 50 Ft.</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input 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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

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

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

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

Form C-141

Page 4

State of New Mexico
Oil Conservation Division

Incident ID	
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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: Clyde WilhoitTitle: Maintenance ForemanSignature: Date: 3-5-2020email: cwilhoit@legacyreserves.comTelephone: 432-425-4137**OCD Only**

Received by: _____

Date: _____

Incident ID	
District RP	
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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: Clyde Wilhoit

Title: Maintenance Foreman

Signature: Clyde Wilhoit

Date: 3-5-2020

email: cwilhoit@legacyreserves.com

Telephone: 432-425-4137

OCD Only

Received by: _____ Date: _____

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

Signature: _____

Date: _____

Site Assessment Report and Proposed Remediation Workplan

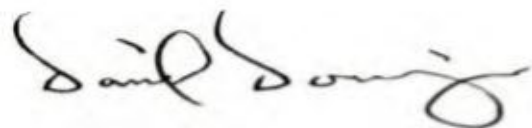
UI7UE-200311-C-1410

Legacy Reserves Operating, LP Hamon Fed Com A #3H

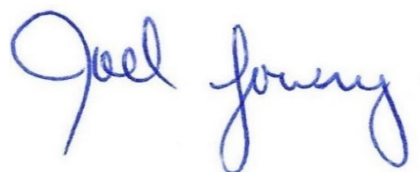
Lea County, New Mexico
Unit Letter O, Section 6, Township 20 South, Range 34 East
Latitude 32.596216 North, Longitude 103.597601 West
NMOCD Reference No. 1RP-pending

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 Legacy Reserves Operating, LP, has prepared this Report for the Release Site known as the Hamon Fed Com A #3H. Details of the release are summarized below:

Location of Release Source

Latitude: 32.596216 Longitude: -103.597601

Provided GPS are in WGS84 format.

Site Name:	Hamon Fed Com A #3H	Site Type:	Well Head
Date Release Discovered:	11/22/2019	API # (if applicable):	30-025-41305

Unit Letter	Section	Township	Range	County
O	6	20S	34E	Lea

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (Name Kenneth Smith Inc.)

Nature and Volume of Release

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) 36	Volume Recovered (bbls) 20
<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"/> 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:

The release was attributed to the failure of the stuffing box on the pumping unit.

Initial Response

- ☒ The source of the release has been stopped.
- ☒ The impacted area has been secured to protect human health and the environment.
- ☒ Release materials have been contained via the use of berms or dikes, absorbent pad, or other containment devices
- ☒ 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?	>50 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	
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Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Did the release impact areas not on an exploration, development, production or storage site?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	

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
>50 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 **December 11, 2019**, Etech conducted an initial site assessment. During the initial site assessment, a series of hand-augered soil bores (SP1 through SP5) were advanced within the release margins in an effort to determine the vertical extent of soil impacts. In addition, hand-augered soil bores (NH1, NH2, EH1, SH1, SH2, WH1 and WH2) were advanced at 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, field soil samples were collected and field-screened for the presence of Volatile Organic Compounds utilizing a Photoionization Detector (PID) and/or concentrations of chloride utilizing a Hach Quantab® chloride test kit. A "Site & Sample Location Map" is provided as Figure 3. Field data and soil profile logs, if applicable, are provided as Appendix

Based on field observations and field test data, nineteen (19) delineation soil samples (SP1 @ 1', SP2 @ 1', SP3 @ 1', SP4 @ 1', SP5 @ 1', NH1 @ Surf., NH1 @ 1', NH2 @ Surf., NH2 @ 1', EH1 @ Surf., EH1 @ 1', SH1 @ Surf., SH1 @ 1', SH2 @ Surf., SH2 @ 1', WH1 @ Surf., WH1 @ 1', WH2 @ Surf. and WH2 @ 1') were submitted to the laboratory for analysis of BTEX, TPH and chloride. Laboratory analytical results indicated BTEX, TPH and chloride concentrations were below the NMOCD Closure Criteria in each of the submitted soil samples. A "Soil Chemistry Table" is provided as Table 1. Laboratory Analytical Reports are provided in Appendix C.

On **December 26, 2020**, Etech revisited the release site in an effort to further characterize soil impacts. During the site visit, Etech collected six (6) additional soil samples (SP1 @ Surf., SP2 @ Surf., SP3 @ Surf., SP4 @ Surf., SP5 @ Surf. and WH2b @ Surf.) and submitted them to the laboratory for analysis of TPH and/or chloride concentrations. Laboratory analytical results indicated TPH and chloride concentrations ranged from less than the laboratory reporting limit in soil sample SP3 @ Surf. to 11,000 mg/kg in soil sample SP4 @ Surf. Analytical results indicated chloride concentrations ranged from 545 mg/kg in soil sample SP4 @ Surf. to 5,060 mg/kg in soil sample SP1 @ Surf.

On **March 3, 2020**, Etech revisited the release site in an effort to further characterize soil impacts. During the site visit, Etech collected three (3) additional soil samples (WH2b @ 1', WH2c @ Surf. and WH2c @ 1') and submitted them to the laboratory for analysis of BTEX, TPH and chloride. Laboratory analytical results indicated BTEX, TPH and chloride concentrations were below the NMOCD Closure Criteria in each of the submitted soil samples.

5.0 PROPOSED REMEDIATION PLAN

Based on laboratory analytical results, site characteristics and field observations made during the initial site assessment, Legacy Reserves Operating, LP 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 within the release margins in the areas characterized by sample points SP1 through SP5. The floor and sidewalls of the excavated area will be advanced until laboratory analytical results from confirmation soil samples indicates concentrations of BTEX, TPH and chloride are below the NMOCD Closure Criteria.
- Excavated soil will be temporarily stockpiled on-site, atop an impermeable liner, pending final disposition at an NMOCD-permitted surface waste facility.
- 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, a Remediation Summary and Soil Closure Request will be prepared detailing field activities and laboratory analytical results from confirmation soil samples.

6.0 SAMPLING PLAN

Upon completion of excavation activities, representative five-point composite excavation confirmation soil samples will be collected from the excavation sidewalls in each cardinal direction, representing no more than 50 linear ft. A minimum of **one (1)** representative five-point composite excavation confirmation soil sample will be collected from the base of the excavated area representing every **400 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 **800 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 graded to meet the needs of the well pad and compacted to achieve erosion control, stability and preservation of surface water flow to the extent practicable. The affected area is limited to an active well pad therefore reseeded will not be necessary.

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 Legacy Reserves Operating, LP. Use of the information contained in this report is prohibited within the consent of Etech and/or Legacy Reserves Operating, LP.

10.0 DISTRIBUTION

Legacy Reserves Operating, LP

303 W. Wall St.

Midland, TX 79701

New Mexico Energy, Minerals and Natural Resources Department

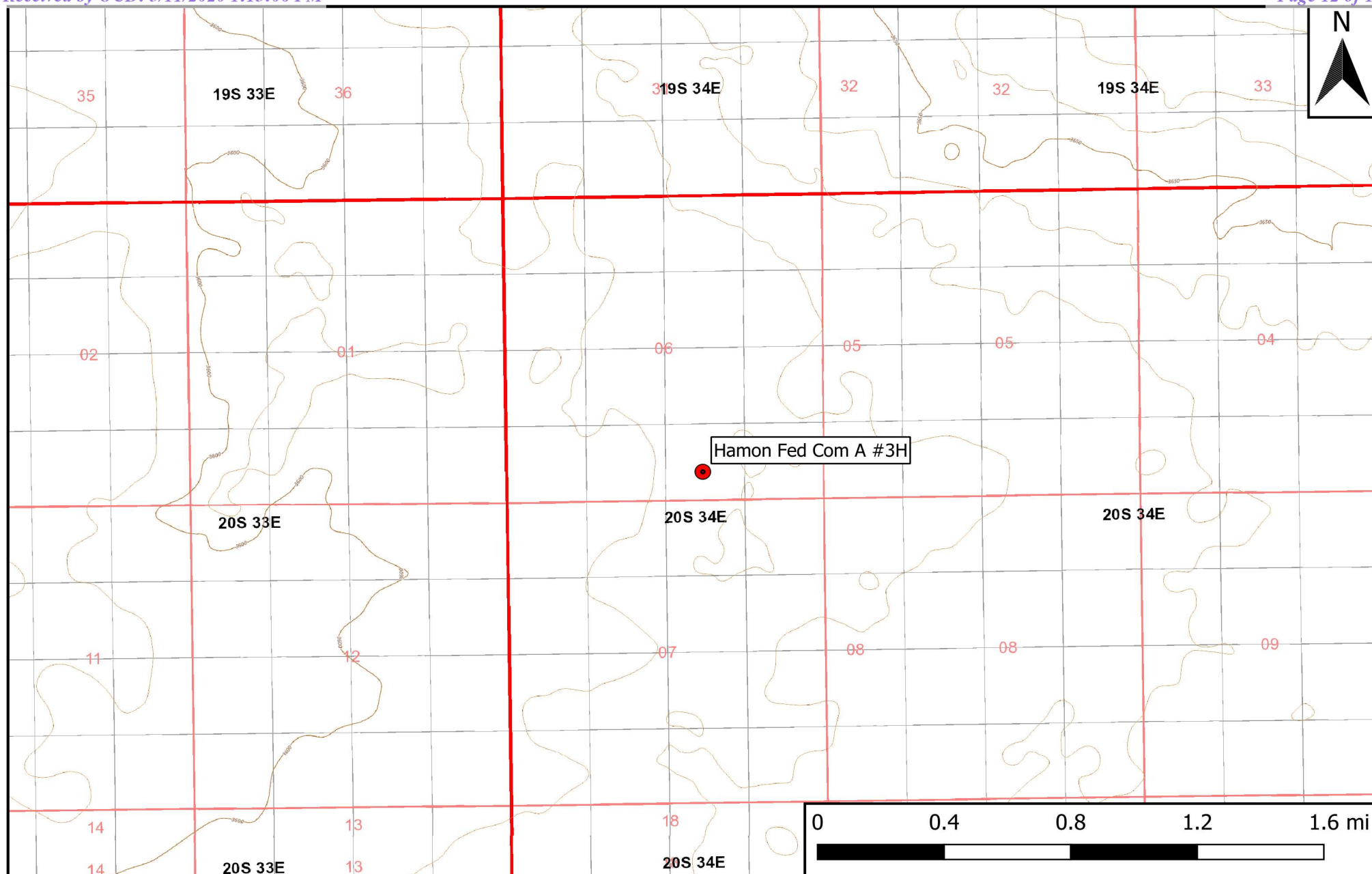
Oil Conservation Division, District 1

1220 South St. Francis Drive

Santa Fe, NM 87505

Figure 1

Topographic Map



Legend

● Site Location

Figure 1

Topographic Map
Legacy Reserves Operating, LP
Hamon Fed Com A #3H
GPS: 32.596216, -103.597601
Lea County



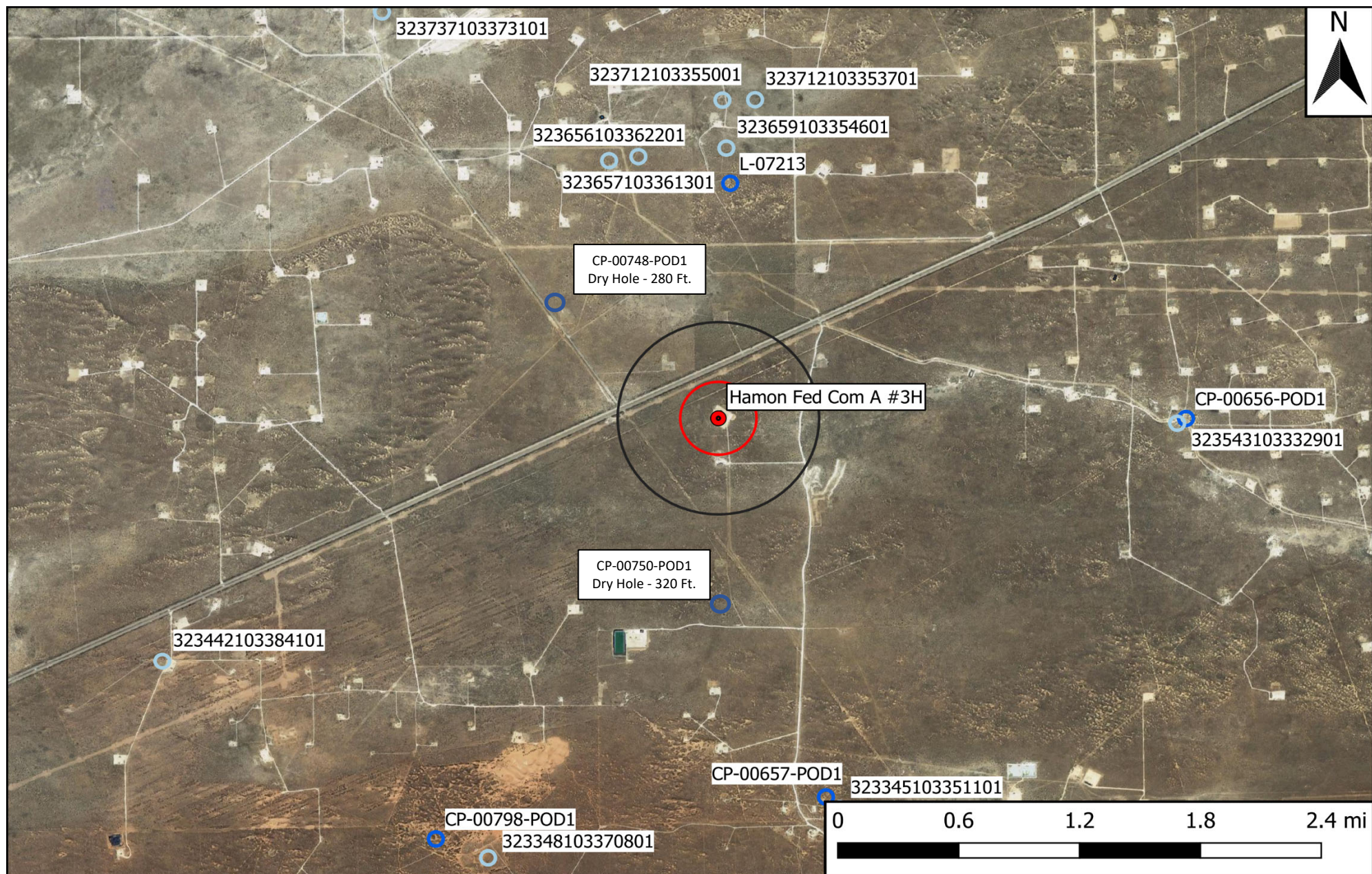
Drafted: mag

Checked: jwl

Date: 12/2/19

Figure 2

Aerial Proximity Map



Legend

- Site Location
- 0.5 Mi Radius
- 1000 Ft Radius
- 1% Annual Flood Chance
- Surface Water
- Well - USGS
- Well - NMOSE
- High Karst
- Medium Karst
- Potash Mine Workings

Figure 2
Aerial Map
Legacy Reserves Operating, LP
Hamon Fed Com A #3H
GPS: 32.596216, -103.597601
Lea County



Drafted: mag

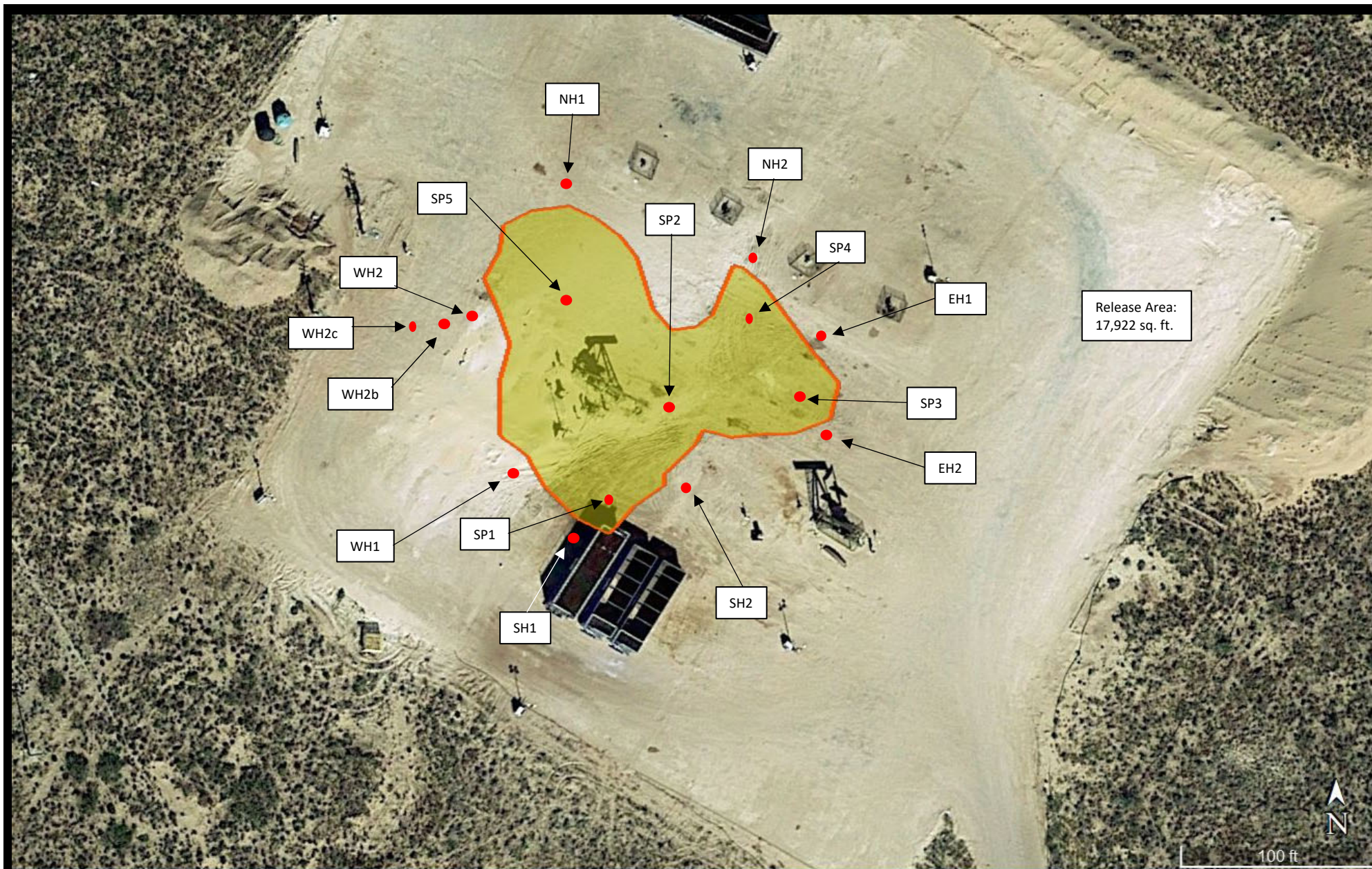
Checked: jwl

Date:

1/6/20

Figure 3

Site and Sample Location Map



Legend:

- Affected Area
- Pipeline
- Sample Point

Figure 3

Site and Sample Location Map
 Legacy Reserves Operating, LP
 Hamon Fed Com A #3H
 GPS: 32.596216, -103.597601



Drafted:

Checked: jwl

Date:

3/2/20

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

TABLE 1
CONCENTRATIONS OF BENZENE, BTEX TPH AND CHLORIDE IN SOIL
Legacy Reserves Operating, LP
Hamon Fed Com A #3H
NMOCD Ref. #:

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)
SP1 @ Surf.	12/26/2019	0'	In-Situ	-	-	<249	2,290	2,290	253	2,543	5,060
SP1 @ 1'	12/11/2019	1'	In-Situ	<0.00200	0.0155	<50.0	274	274	<50.0	274	434
SP2 @ Surf.	12/26/2019	0'	In-Situ	-	-	<50.0	83.6	<50.0	83.6	83.6	1,510
SP2 @ 1'	12/11/2019	1'	In-Situ	<0.00199	0.00669	<50.0	457	457	<50.0	457	269
SP3 @ Surf.	12/26/2019	0'	In-Situ	-	-	<50.0	<50.0	<50.0	<50.0	<50.0	834
SP3 @ 1'	12/11/2019	1'	In-Situ	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	353
SP4 @ Surf.	12/26/2019	0'	In-Situ	-	-	2,260	8,110	10,370	697	11,000	545
SP4 @ 1'	12/11/2019	1'	In-Situ	<0.00200	0.00296	<49.9	259	259	<49.9	259	279
SP5 @ Surf.	12/26/2019	0'	In-Situ	-	-	<250	3,860	3,860	431	4,290	1,020
SP5 @ 1'	12/11/2019	1'	In-Situ	<0.00199	<0.00199	<50.0	422	422	50.7	473	461
NH1 @ Surf	12/11/2019	0'	In-Situ	<0.00202	<0.00202	<49.8	73.1	73.1	<49.8	73.1	143
NH1 @ 1'	12/11/2019	1'	In-Situ	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	131
NH2 @ Surf	12/11/2019	0'	In-Situ	<0.00199	<0.00199	<50.0	151	151	<50.0	151	1,460
NH2 @ 1'	12/11/2019	1'	In-Situ	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	244
EH1 @ Surf	12/11/2019	0'	In-Situ	<0.00200	<0.00200	<50.0	51.1	51.1	<50.0	51.1	3,500
EH1 @ 1'	12/11/2019	1'	In-Situ	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	520
SH1 @ Surf	12/11/2019	0'	In-Situ	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	343
SH1 @ 1'	12/11/2019	1'	In-Situ	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	51.0
SH2 @ Surf	12/11/2019	0'	In-Situ	<0.00200	<0.00200	<49.9	521	521	100	621	2,160
SH2 @ 1'	12/11/2019	1'	In-Situ	<0.00198	<0.00198	<50.0	99.3	99.3	<50.0	99.3	2,840
WH1 @ Surf	12/11/2019	0'	In-Situ	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	23.8
WH1 @ 1'	12/11/2019	1'	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	12.3
WH2 @ Surf	12/11/2019	0'	In-Situ	<0.00198	<0.00198	<49.9	1,000	1,000	196	1,200	592
WH2 @ 1'	12/11/2019	1'	In-Situ	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	449
WH2b @ Surf.	1/26/2019	0'	In-Situ	-	-	<49.8	1,880	1,880	253	2,130	-
WH2b @ 1'	3/3/2020	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	80.0
WH2c @ Surf.	3/3/2020	0'	In-Situ	<0.050	<0.300	<10.0	188	188	59.2	247.2	768
WH2c @ 1'	3/3/2020	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,150
Closure Criteria				10	50	-	-	1,000	-	2,500	10,000

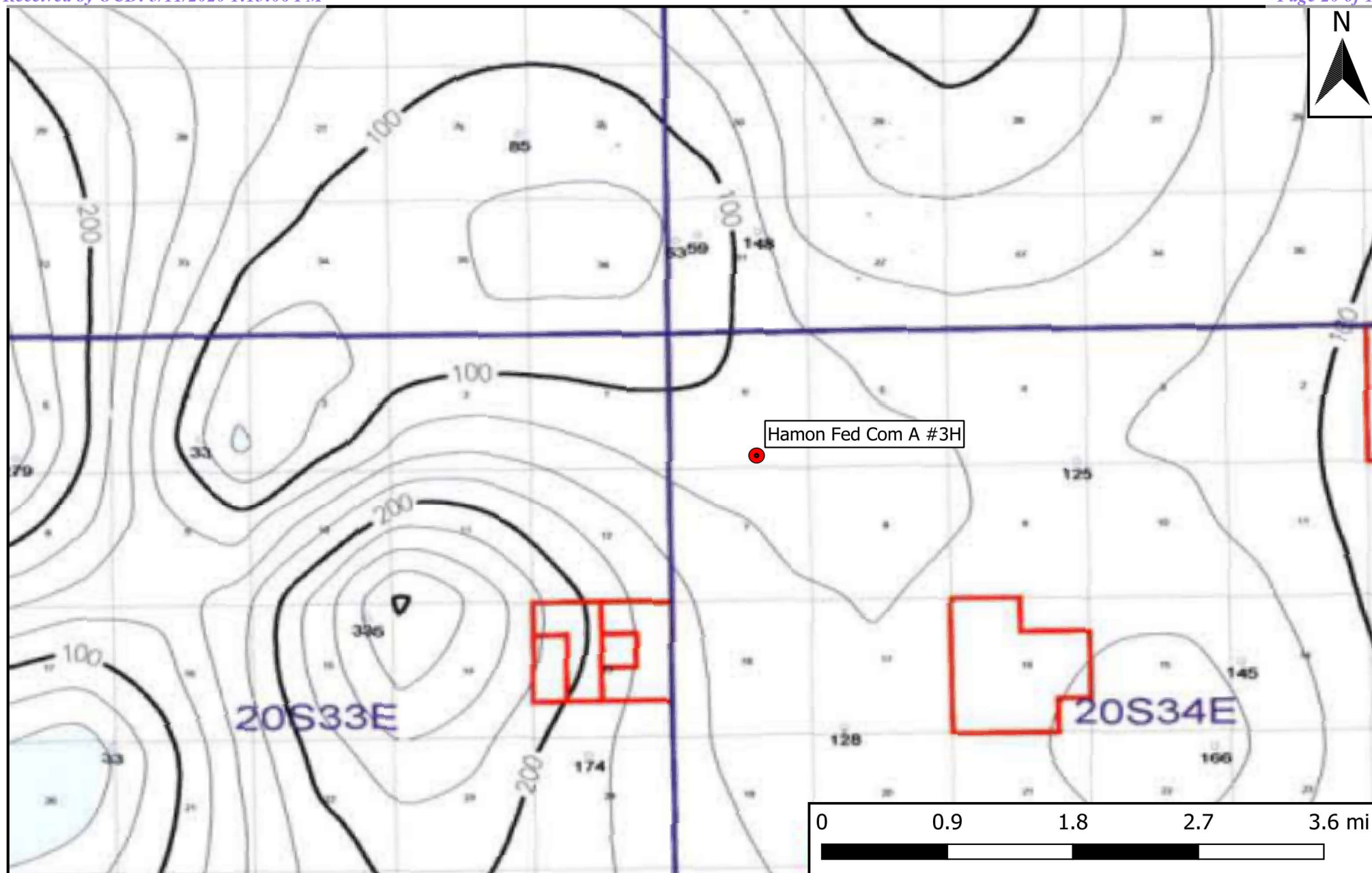
NOTES:

- =

Bold text denotes a concentration that exceeds the NMOCD Closure Criteria

Appendix A

Depth to Groundwater Information



Legend

● Site Location

Figure 4

Inferred Depth to Groundwater Trend Map
 Legacy Reserves Operating, LP
 Hamon Fed Com A #3H
 GPS: 32.596216, -103.597601
 Lea County



Drafted: mag

Checked: jwl

Date: 12/2/19



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

No records found.

UTMNAD83 Radius Search (in meters):

Easting (X): 631605.3 **Northing (Y):** 3607392.63 **Radius:** 804.67

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.

12/2/19 11:57 AM

WATER COLUMN/ AVERAGE
DEPTH TO WATER



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	Code	Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
CP 00750 POD1	CP	LE		3	4	07	20S	34E		631639	3605834*	1558	320		

Average Depth to Water: --

Minimum Depth: --

Maximum Depth: --

Record Count: 1

UTMNAD83 Radius Search (in meters):

Easting (X): 631605.3

Northing (Y): 3607392.63

Radius: 1610

*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.

12/2/19 11:58 AM

WATER COLUMN/ AVERAGE DEPTH TO
WATER



New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	CP 00750 POD1	3	4	07	20S	34E		631639	3605834*

x

Driller License: 421 **Driller Company:** GLENN'S WATER WELL SERVICE

Driller Name: GLENN, CLARK A."CORKY" (LD)

Drill Start Date: 06/20/1990

Drill Finish Date: 06/20/1990

Plug Date:
Log File Date: 07/26/1990

PCW Rcv Date:
Source:
Pump Type:
Pipe Discharge Size:
Estimated Yield:
Casing Size:
Depth Well: 320 feet

Depth Water:

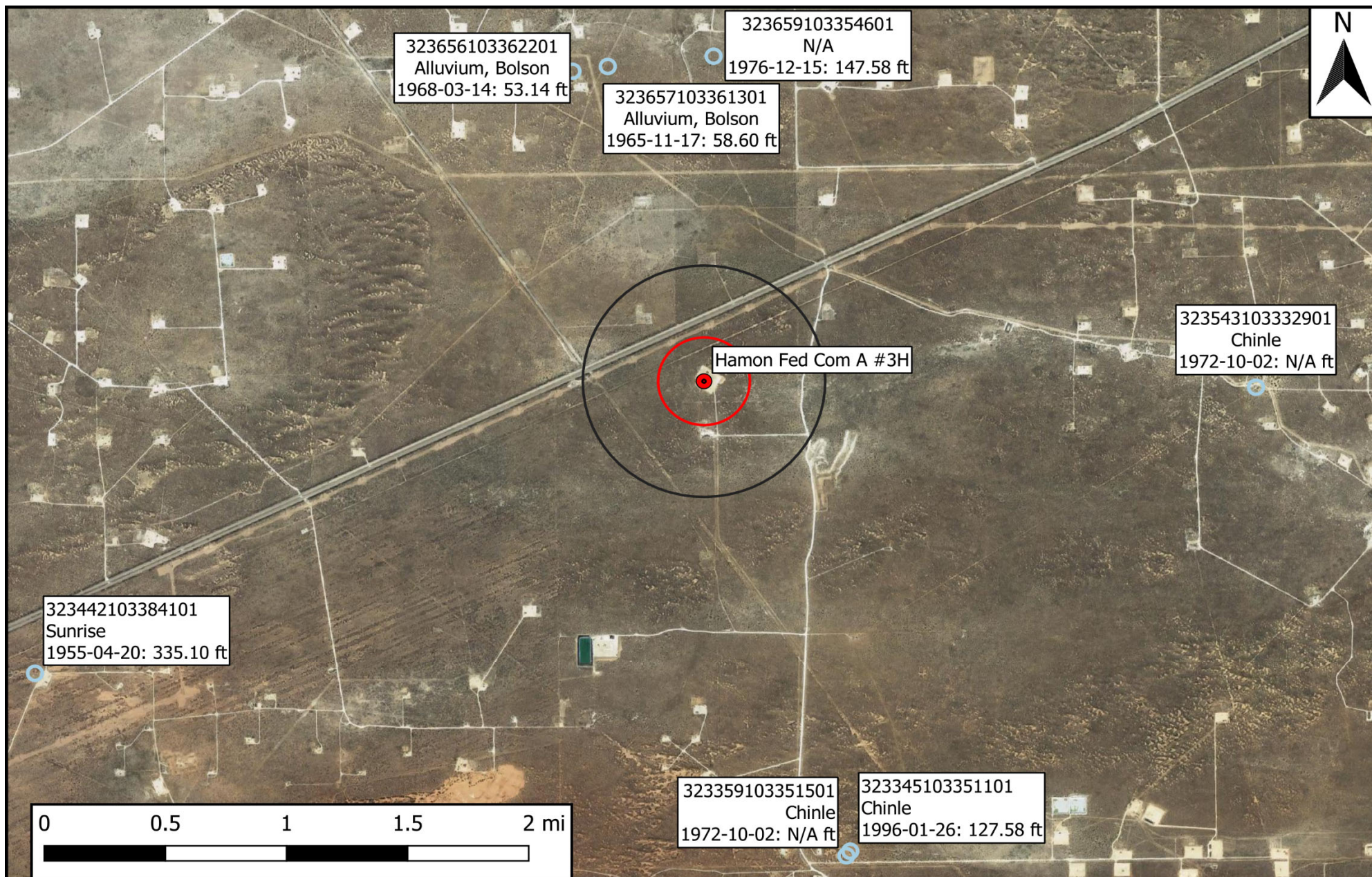
x

*UTM location was derived from PLSS - see Help

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12/2/19 11:58 AM

POINT OF DIVERSION SUMMARY



Legend

- Site Location
- Well - USGS
- 0.5 Mi Radius
- 1000 Ft Radius

Figure 5

USGS Well Proximity Map
Legacy Reserves Operating, LP
Hamon Fed Com A #3H
GPS: 32.596216, -103.597601
Lea County



Drafted: mag

Checked: jwl

Date:

1/6/20

Revised June 1972

STATE ENGINEER OFFICE
WELL RECORD

475940

Section 1. GENERAL INFORMATION

(A) Owner of well Grace Drilling Co. Owner's Well No. _____
Street or Post Office Address P.O. Box 13480
City and State Odessa, TX 79768 '91 JUN 5 AM 10 47

Well was drilled under Permit No. CP 748 and is located in the STATE ENGINEER OFFICE
SANTA FE NEW MEXICO
a. NE $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ of Section 1 Township 20 Range 33E N.M.P.M.
b. Tract No. _____ of Map No. _____ of the _____
c. Lot No. _____ of Block No. _____ of the _____
Subdivision, recorded in _____ County.
d. X= _____ feet, Y= _____ feet, N.M. Coordinate System _____ Zone in
the _____ Grant.

(B) Drilling Contractor West Texas Water Well Service License No. WK 1184
Address 3432 W. University Odessa, TX 79764
Drilling Began 6-1-90 Completed 6-2-90 Type tools Air rotary Size of hole 8 3/4 in.
Elevation of land surface or _____ at well is _____ ft. Total depth of well _____ ft.
Completed well is ☐ shallow ☐ artesian. Depth to water upon completion of well _____ ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet		Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
From	To			

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet		Length (feet)	Type of Shoe	Perforations	
			Top	Bottom			From	To
NO	CASING							

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet		Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
From	To				

Section 5. PLUGGING RECORD

Plugging Contractor West Texas Water Well Service
Address _____
Plugging Method Pumped grout - neat cement
Date Well Plugged 6-2-90
Plugging approved by: _____

State Engineer Representative

No.	Depth in Feet		Cubic Feet of Cement
	Top	Bottom	
1			
2			
3			
4			

FOR USE OF STATE ENGINEER ONLY

Date Received June 19, 1991

Quad _____ FWL _____ FSL _____

File No. CP-748 Use OWD Location No. 20.33.1.24144

— 43 —

STATE ENGINEER'S OFFICE
ROSWELL, NEW MEXICO

No casing was instaled

Robert E. Collis
Driller

INSTRUCTIONS: This form should be completed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1(a) and Section 5 need be completed.

Revised June 1972

STATE ENGINEER OFFICE
WELL RECORD

475954

Section 1. GENERAL INFORMATION

(A) Owner of well TXO Prod. Owner's Well No. _____
Street or Post Office Address c/o Glenn's Water Well Service,
City and State P.O. Box 692 Tatum, N.M. 88267

Well was drilled under Permit No. CP-750 and is located in the:

- a. $\frac{1}{4}$ $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 7 Township 20-S. Range 34-E. N.M.P.M.
- b. Tract No. _____ of Map No. _____ of the _____
- c. Lot No. _____ of Block No. _____ of the _____
Subdivision, recorded in _____ County.
- d. X= _____ feet, Y= _____ feet, N.M. Coordinate System _____ Zone in
the _____ Grant.

(B) Drilling Contractor Glenn's Water Well Service, Inc. License No. WD 421

Address P.O. Box 692 Tatum, N.M. 88267

Drilling Began 6/20/90 Completed 6/20/90 Type tools rotary Size of hole 7 7/8 in.

Elevation of land surface or _____ at well is _____ ft. Total depth of well 320 ft.

Completed well is ☒ shallow ☐ artesian. Depth to water upon completion of well _____ ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet		Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
From	To			
			dry hole	26
				AM 8 29

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet		Length (feet)	Type of Shoe	Perforations	
			Top	Bottom			From	To

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet		Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
From	To				

Section 5. PLUGGING RECORD

Plugging Contractor _____
Address _____
Plugging Method well was plugged with dirt
Date Well Plugged _____
Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet		Cubic Feet of Cement
	Top	Bottom	
1			
2			
3			
4			

FOR USE OF STATE ENGINEER ONLY

Date Received July 26, 1990

Quad _____ FWL _____ FSL _____

File No. CP-750 Use OWD Location No. 20.34.7.4300

Section 6. LOG OF HOLE

Depth in Feet		Thickness in Feet	Color and Type of Material Encountered
From	To		
0	6	6	sand
6	16	10	caleche
16	20	4	sand
20	22	2	rock (soft)
22	32	10	sand
32	65	33	sandy clay
65	102	37	red clay
102	107	5	blue sand rock
107	118	11	brown shale
118	127	9	blue sand rock
127	130	3	brown shale
130	154	24	blue sand rock
154	159	5	limestone hard
159	178	19	red clay
178	191	13	brown shale
191	210	19	red clay
210	235	25	brown shale
235	278	43	brown shale (some light blue)
278	295	17	purple shale (some light blue)
295	306	11	yellow and blue clay
306	320	14	red clay

SEALING & RECORD
DIVISION OF STATE
ENGINEERING

Section 7. REMARKS AND ADDITIONAL INFORMATION

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.


Driller

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a permanent record, only Section 1(a) and Section 5 need be completed.



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National Water Information System: Web Interface

USGS Water Resources

Data Category:
Groundwater

Geographic Area:
United States

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Agency code = usgs
site_no list =

- 323656103362201

Minimum number of levels = 1

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USGS 323656103362201 19S.34E.31.13100

Available data for this site

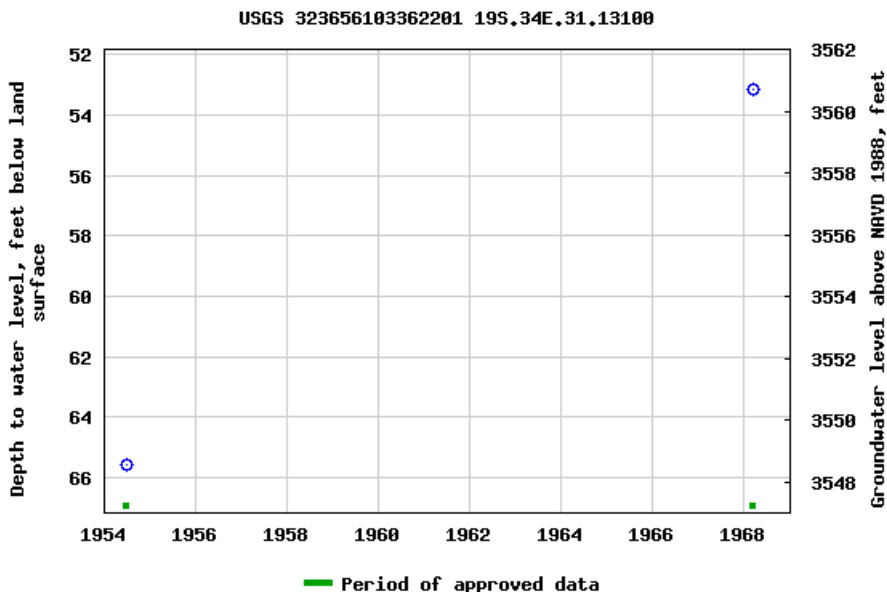
Groundwater: Field measurements

GO

Lea County, New Mexico
Hydrologic Unit Code 13060011
Latitude 32°36'56", Longitude 103°36'22" NAD27
Land-surface elevation 3,614 feet above NAVD88
This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

Output formats

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



Breaks in the plot represent a gap of at least one year between field measurements.
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URL: <https://nwis.waterdata.usgs.gov/nwis/gwlevels?>



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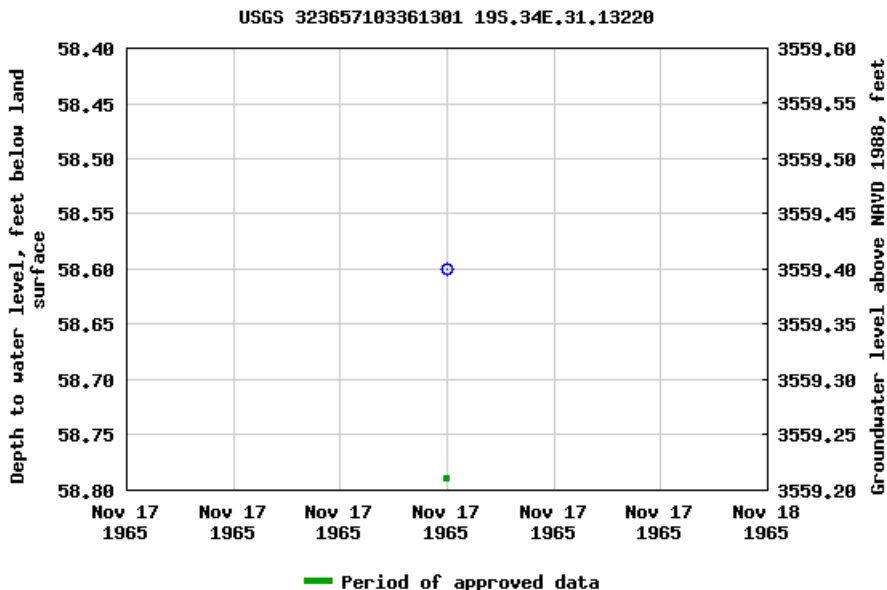
USGS 323657103361301 19S.34E.31.13220

Available data for this site Groundwater: Field measurements GO

Lea County, New Mexico
Hydrologic Unit Code 13060011
Latitude 32°36'57", Longitude 103°36'13" NAD27
Land-surface elevation 3,618 feet above NAVD88
The depth of the well is 66 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
Tab-separated data
Graph of data
Reselect period



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

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National Water Information System: Web Interface

USGS Water Resources

Data Category:
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Geographic Area:
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Groundwater levels for the Nation

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Agency code = usgs
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- 323659103354601

Minimum number of levels = 1

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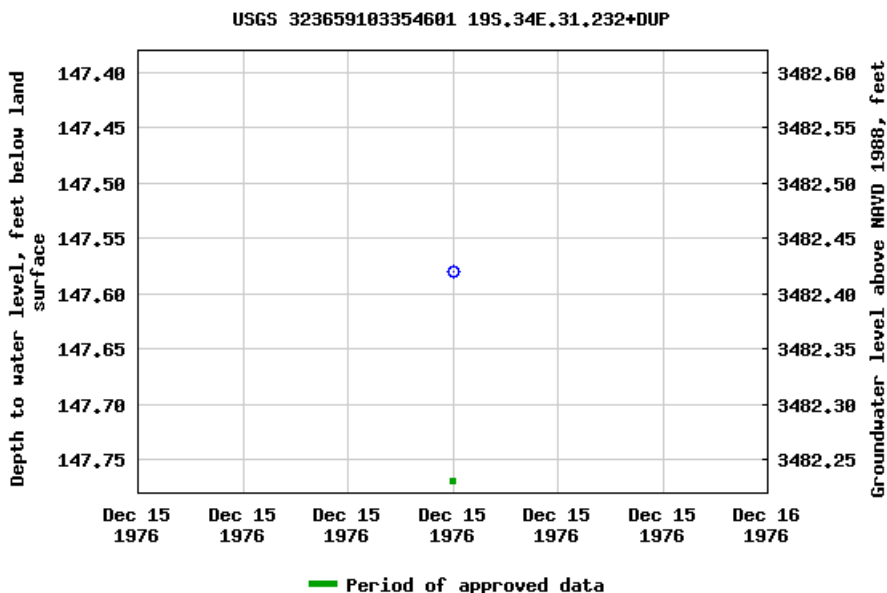
USGS 323659103354601 19S.34E.31.232+DUP

Available data for this site Groundwater: Field measurements GO

Lea County, New Mexico
Hydrologic Unit Code 13060011
Latitude 32°36'59", Longitude 103°35'46" NAD27
Land-surface elevation 3,630 feet above NAVD88

Output formats

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



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

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- 323345103351101

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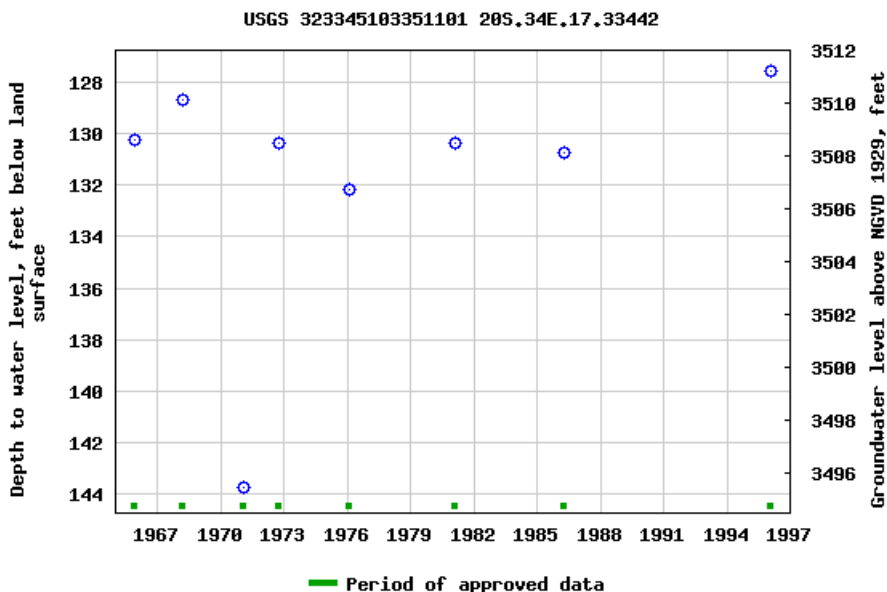
USGS 323345103351101 20S.34E.17.33442

Available data for this site Groundwater: Field measurements GO

Lea County, New Mexico
Hydrologic Unit Code 13060011
Latitude 32°34'00", Longitude 103°35'14" NAD27
Land-surface elevation 3,639.00 feet above NGVD29
The depth of the well is 160 feet below land surface.
This well is completed in the Chinle Formation (231CHNL) local aquifer.

Output formats

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



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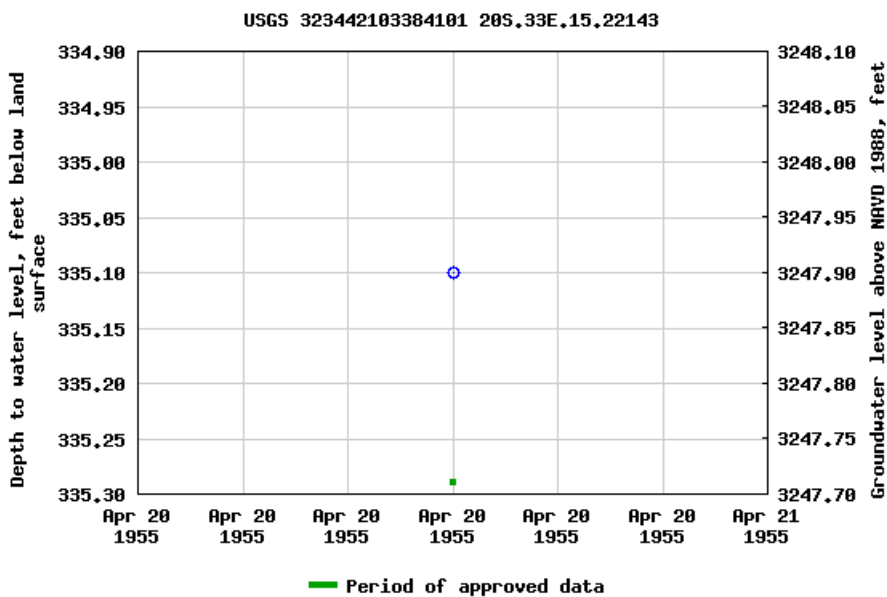
USGS 323442103384101 20S.33E.15.22143

Available data for this site Groundwater: Field measurements GO

Lea County, New Mexico
Hydrologic Unit Code 13060011
Latitude 32°34'42", Longitude 103°38'41" NAD27
Land-surface elevation 3,583 feet above NAVD88
This well is completed in the Sunrise Formation (231SNRS) local aquifer.

Output formats

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Tab-separated data
Graph of data
Reselect period



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Appendix B

Field Data and Soil Profile Logs




Soil Profile

Date: 12/11/2019Project: Hamon Fed Com A #3HProject Number: 11552 Latitude: 32.596216 Longitude: -103.597601

Depth (ft. bgs)

Description

1		0-8" Imported Fill / Caliche
2		Tan Sand
3	TD	
4		
5		
6		
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39		
40		



Sample Log

Date: 12/11/2019Project: Hamon Fed Com A #3HProject Number: 11552 Latitude: 32.596216 Longitude: -103.597601

Sample ID	PID/Odor	Chloride Conc.	GPS
NH 1 @ surface	NONE	348	32.59654, -103.59763
NH 1 @ 1'	NONE	280	" "
NH 2 @ surface	NONE	916	32.59641, -103.59731
NH 2 @ 1'	NONE	464	
EH 1 @ surface	NONE	2504	32.59670, -103.59719
EH 1 @ 1'	NONE	664	
EH 2 @ surface	NONE	2156	32.59614, -103.59719
EH 2 @ 1'	NONE	1628	" "
SH 1 @ surface	NONE	312	32.59602, -103.59761
SH 1 @ 1'	NONE	248	" "
SH 2 @ surface	NONE	1872	32.59606, -103.59743
SH 2 @ 1'	NONE	508	" "
WH 1 @ surface	NONE	196	32.59612, -103.59771
WH 1 @ 1'	NONE	2124	" "
WH 2 @ surface	NONE	720	32.59634, -103.59777
WH 2 @ 1'	NONE	312	" "
SP 1 @ 1'	NONE	508	32.59605, -103.59755
SP 2 @ 1' light	NONE	312	32.59620, -103.59746
SP 3 @ 1'	NONE	508	32.59671, -103.59724
SP 4 @ 1'	NONE	424	32.59637, -103.597304
SP 5 @ 1'	NONE	464	32.59650, -103.59763
WH 2 b @ surface	NONE	248	
WH 2 b @ 1'	NONE	464	
NH 2 b @ surface	NONE	1520	
NH 2 b @ 1'	NONE	608	
NH 2 c @ surface	NONE	2504	
NH 2 c @ 1'	NONE	2504	
EH 2 b @ surface	NONE	2514	
EH 2 b @ 1'	NONE	2156	
EH 1 b @ surface	NONE	1628	
EH 1 b @ 1'	NONE	312	
SH 2 b @ surface	NONE	248	
SH 2 b @ 1'	NONE	2124	
WH 2 b @ surface			
WH 2 b @ 1'			

Sample Point = SP #1 @ ## etc

Floor = FL #1 etc

Sidewall = SW #1 etc

Test Trench = TT #1 @ ##

Refusal = SP #1 @ 4'-R

Soil Intended to be Deferred = SP #1 @ 4' In-Situ

Resamples = SP #1 @ 5b or SW #1b

Stockpile = Stockpile #1

GPS Sample Points, Center of Comp Areas

Appendix C

Laboratory Analytical Reports

Analytical Report 646599

for
Etech Environmental & Safety Solution, Inc

Project Manager: Joel Lowry

Hamon Fed Com #3H

11552

23-DEC-19

Collected By: Client



1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



23-DEC-19

Project Manager: **Joel Lowry**
Etech Environmental & Safety Solution, Inc
P.O. Box 8469
Midland, TX 79708

Reference: XENCO Report No(s): **646599**
Hamon Fed Com #3H
Project Address: Rural Lea

Joel Lowry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 646599. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 646599 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer
Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



Sample Cross Reference 646599

Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP1 @ 1'	S	12-11-19 00:00	1 ft	646599-001
SP2 @ 1'	S	12-11-19 00:00	1 ft	646599-002
SP3 @ 1'	S	12-11-19 00:00	1 ft	646599-003
SP4 @ 1'	S	12-11-19 00:00	1 ft	646599-004
SP5 @ 1'	S	12-11-19 00:00	1 ft	646599-005
NH1 @ Surf	S	12-11-19 00:00		646599-006
NH1 @ 1'	S	12-11-19 00:00	1 ft	646599-007
NH2 @ Surf	S	12-11-19 00:00		646599-008
NH2 @ 1'	S	12-11-19 00:00	1 ft	646599-009
EH1 @ Surf	S	12-11-19 00:00		646599-010
EH1 @ 1'	S	12-11-19 00:00	1 ft	646599-011
SH1 @ Surf	S	12-11-19 00:00		646599-012
SH1 @ 1'	S	12-11-19 00:00	1 ft	646599-013
SH2 @ Surf	S	12-11-19 00:00		646599-014
SH2 @ 1'	S	12-11-19 00:00	1 ft	646599-015
WH1 @ Surf	S	12-11-19 00:00		646599-016
WH1 @ 1'	S	12-11-19 00:00	1 ft	646599-017
WH2 @ Surf	S	12-11-19 00:00		646599-018
WH2 @ 1'	S	12-11-19 00:00	1 ft	646599-019

**CASE NARRATIVE****Client Name: Etech Environmental & Safety Solution, Inc****Project Name: Hamon Fed Com #3H**Project ID: 11552
Work Order Number(s): 646599Report Date: 23-DEC-19
Date Received: 12/17/2019**Sample receipt non conformances and comments:**

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3111044 Chloride by EPA 300

Lab Sample ID 646599-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 646599-001, -002, -003, -004, -005, -006, -007, -008, -009, -010.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3111086 Chloride by EPA 300

Lab Sample ID 646620-002 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 646599-011, -012, -013, -014, -015, -016, -017, -018, -019.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3111382 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Lab Sample ID 646599-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). m,p-Xylenes recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 646599-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019.

The Laboratory Control Sample for m,p-Xylenes is within laboratory Control Limits, therefore the data was accepted.



Certificate of Analysis Summary 646599

Etech Environmental & Safety Solution, Inc, Midland, TX

Project Name: Hamon Fed Com #3H

Project Id: 11552
 Contact: Joel Lowry
 Project Location: Rural Lea

Date Received in Lab: Tue Dec-17-19 12:45 pm
 Report Date: 23-DEC-19
 Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	646599-001	646599-002	646599-003	646599-004	646599-005	646599-006
	<i>Field Id:</i>	SP1 @ 1'	SP2 @ 1'	SP3 @ 1'	SP4 @ 1'	SP5 @ 1'	NH1 @ Surf
	<i>Depth:</i>	1- ft	1- ft	1- ft	1- ft	1- ft	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-11-19 00:00	Dec-11-19 00:00	Dec-11-19 00:00	Dec-11-19 00:00	Dec-11-19 00:00	Dec-11-19 00:00
BTEX by EPA 8021B	<i>Extracted:</i>	Dec-19-19 14:00	Dec-19-19 14:00	Dec-19-19 14:00	Dec-19-19 14:00	Dec-19-19 14:00	Dec-19-19 14:00
	<i>Analyzed:</i>	Dec-21-19 16:15	Dec-21-19 16:35	Dec-21-19 16:56	Dec-21-19 17:16	Dec-21-19 17:36	Dec-21-19 17:57
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202
Toluene		0.00305 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202
m,p-Xylenes		0.00407 0.00400	<0.00398 0.00398	<0.00400 0.00400	<0.00401 0.00401	<0.00398 0.00398	<0.00403 0.00403
o-Xylene		0.00838 0.00200	0.00669 0.00199	<0.00200 0.00200	0.00296 0.00200	<0.00199 0.00199	<0.00202 0.00202
Total Xylenes		0.0125 0.00200	0.00669 0.00199	<0.00200 0.00200	0.00296 0.00200	<0.00199 0.00199	<0.00202 0.00202
Total BTEX		0.0155 0.00200	0.00669 0.00199	<0.00200 0.00200	0.00296 0.00200	<0.00199 0.00199	<0.00202 0.00202
Chloride by EPA 300	<i>Extracted:</i>	Dec-18-19 13:20	Dec-18-19 13:20	Dec-18-19 13:20	Dec-18-19 13:20	Dec-18-19 13:20	Dec-18-19 13:20
	<i>Analyzed:</i>	Dec-18-19 19:04	Dec-18-19 19:24	Dec-18-19 19:31	Dec-18-19 19:51	Dec-18-19 19:58	Dec-18-19 20:04
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		434 4.99	269 5.03	353 4.98	279 5.00	461 5.01	143 4.97
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-18-19 08:00	Dec-18-19 08:00	Dec-18-19 08:00	Dec-18-19 08:00	Dec-18-19 08:00	Dec-18-19 08:00
	<i>Analyzed:</i>	Dec-18-19 19:57	Dec-18-19 21:01	Dec-18-19 21:22	Dec-18-19 21:43	Dec-18-19 22:03	Dec-18-19 22:24
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.9 49.9	<50.0 50.0	<49.8 49.8
Diesel Range Organics (DRO)		274 50.0	457 50.0	<49.9 49.9	259 49.9	422 50.0	73.1 49.8
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.9 49.9	50.7 50.0	<49.8 49.8
Total TPH		274 50.0	457 50.0	<49.9 49.9	259 49.9	473 50.0	73.1 49.8

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Jessica Kramer
 Project Assistant



Certificate of Analysis Summary 646599

Etech Environmental & Safety Solution, Inc, Midland, TX

Project Name: Hamon Fed Com #3H

Project Id: 11552
 Contact: Joel Lowry
 Project Location: Rural Lea

Date Received in Lab: Tue Dec-17-19 12:45 pm
 Report Date: 23-DEC-19
 Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	646599-007	646599-008	646599-009	646599-010	646599-011	646599-012
	<i>Field Id:</i>	NH1 @ 1'	NH2 @ Surf	NH2 @ 1'	EH1 @ Surf	EH1 @ 1'	SH1 @ Surf
	<i>Depth:</i>	1- ft		1- ft		1- ft	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-11-19 00:00	Dec-11-19 00:00	Dec-11-19 00:00	Dec-11-19 00:00	Dec-11-19 00:00	Dec-11-19 00:00
BTEX by EPA 8021B	<i>Extracted:</i>	Dec-19-19 14:00	Dec-19-19 14:00	Dec-19-19 14:00	Dec-19-19 14:00	Dec-19-19 14:00	Dec-19-19 14:00
	<i>Analyzed:</i>	Dec-21-19 18:17	Dec-21-19 18:38	Dec-21-19 18:58	Dec-21-19 19:19	Dec-21-19 20:58	Dec-21-19 21:18
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Toluene		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Ethylbenzene		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
m,p-Xylenes		<0.00403 0.00403	<0.00398 0.00398	<0.00402 0.00402	<0.00399 0.00399	<0.00398 0.00398	<0.00399 0.00399
o-Xylene		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Total Xylenes		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Total BTEX		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	Dec-18-19 13:20	Dec-18-19 13:20	Dec-18-19 13:20	Dec-18-19 13:20	Dec-18-19 16:30	Dec-18-19 16:30
	<i>Analyzed:</i>	Dec-18-19 20:11	Dec-18-19 20:17	Dec-18-19 20:24	Dec-18-19 20:31	Dec-18-19 18:01	Dec-18-19 18:17
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		131 5.00	1460 5.02	244 4.96	3500 25.0	520 4.96	343 4.99
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-18-19 08:00	Dec-18-19 08:00	Dec-18-19 08:00	Dec-18-19 08:00	Dec-18-19 08:00	Dec-18-19 08:00
	<i>Analyzed:</i>	Dec-18-19 22:45	Dec-18-19 23:06	Dec-18-19 23:27	Dec-18-19 23:48	Dec-19-19 00:30	Dec-19-19 00:51
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.8 49.8	<49.9 49.9
Diesel Range Organics (DRO)		<49.9 49.9	151 50.0	<49.9 49.9	51.1 50.0	<49.8 49.8	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.8 49.8	<49.9 49.9
Total TPH		<49.9 49.9	151 50.0	<49.9 49.9	51.1 50.0	<49.8 49.8	<49.9 49.9

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Jessica Kramer
 Project Assistant



Certificate of Analysis Summary 646599

Etech Environmental & Safety Solution, Inc, Midland, TX

Project Name: Hamon Fed Com #3H

Project Id: 11552
 Contact: Joel Lowry
 Project Location: Rural Lea

Date Received in Lab: Tue Dec-17-19 12:45 pm
 Report Date: 23-DEC-19
 Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	646599-013	646599-014	646599-015	646599-016	646599-017	646599-018
	<i>Field Id:</i>	SH1 @ 1'	SH2 @ Surf	SH2 @ 1'	WH1 @ Surf	WH1 @ 1'	WH2 @ Surf
	<i>Depth:</i>	1- ft		1- ft		1- ft	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-11-19 00:00	Dec-11-19 00:00	Dec-11-19 00:00	Dec-11-19 00:00	Dec-11-19 00:00	Dec-11-19 00:00
BTEX by EPA 8021B	<i>Extracted:</i>	Dec-19-19 14:00	Dec-19-19 14:00	Dec-19-19 14:00	Dec-19-19 14:00	Dec-19-19 14:00	Dec-19-19 14:00
	<i>Analyzed:</i>	Dec-21-19 21:39	Dec-21-19 21:59	Dec-21-19 22:20	Dec-21-19 22:40	Dec-21-19 23:00	Dec-21-19 23:21
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198
Toluene		<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198
Ethylbenzene		<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198
m,p-Xylenes		<0.00403 0.00403	<0.00401 0.00401	<0.00396 0.00396	<0.00398 0.00398	<0.00400 0.00400	<0.00397 0.00397
o-Xylene		<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198
Total Xylenes		<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198
Total BTEX		<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198
Chloride by EPA 300	<i>Extracted:</i>	Dec-18-19 16:30	Dec-18-19 16:30	Dec-18-19 16:30	Dec-18-19 16:30	Dec-18-19 16:30	Dec-18-19 16:30
	<i>Analyzed:</i>	Dec-18-19 18:22	Dec-18-19 18:27	Dec-19-19 12:09	Dec-18-19 19:35	Dec-18-19 19:40	Dec-18-19 19:45
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		51.0 4.98	2160 25.2	2840 25.2	23.8 4.96	12.3 5.03	592 5.00
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-18-19 08:00	Dec-18-19 08:00	Dec-18-19 08:00	Dec-18-19 08:00	Dec-18-19 08:00	Dec-18-19 08:00
	<i>Analyzed:</i>	Dec-19-19 01:12	Dec-19-19 01:33	Dec-19-19 01:54	Dec-19-19 02:15	Dec-19-19 02:36	Dec-19-19 02:58
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9
Diesel Range Organics (DRO)		<50.0 50.0	521 49.9	99.3 50.0	<49.9 49.9	<50.0 50.0	1000 49.9
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	100 49.9	<50.0 50.0	<49.9 49.9	<50.0 50.0	196 49.9
Total TPH		<50.0 50.0	621 49.9	99.3 50.0	<49.9 49.9	<50.0 50.0	1200 49.9

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Jessica Kramer
 Project Assistant



Certificate of Analysis Summary 646599

Etech Environmental & Safety Solution, Inc, Midland, TX



Project Name: Hamon Fed Com #3H

Project Id: 11552
 Contact: Joel Lowry
 Project Location: Rural Lea

Date Received in Lab: Tue Dec-17-19 12:45 pm
 Report Date: 23-DEC-19
 Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	646599-019					
	Field Id:	WH2 @ 1'					
	Depth:	1- ft					
	Matrix:	SOIL					
	Sampled:	Dec-11-19 00:00					
BTEX by EPA 8021B	Extracted:	Dec-19-19 14:00					
	Analyzed:	Dec-21-19 23:41					
	Units/RL:	mg/kg RL					
Benzene		<0.00201 0.00201					
Toluene		<0.00201 0.00201					
Ethylbenzene		<0.00201 0.00201					
m,p-Xylenes		<0.00402 0.00402					
o-Xylene		<0.00201 0.00201					
Total Xylenes		<0.00201 0.00201					
Total BTEX		<0.00201 0.00201					
Chloride by EPA 300	Extracted:	Dec-18-19 16:30					
	Analyzed:	Dec-18-19 19:50					
	Units/RL:	mg/kg RL					
Chloride		449 4.98					
TPH By SW8015 Mod	Extracted:	Dec-18-19 08:00					
	Analyzed:	Dec-19-19 03:19					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0					
Diesel Range Organics (DRO)		<50.0 50.0					
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0					
Total TPH		<50.0 50.0					

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Jessica Kramer
Project Assistant



Certificate of Analytical Results 646599

Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **SP1 @ 1'**

Matrix: Soil

Date Received: 12.17.19 12.45

Lab Sample Id: 646599-001

Date Collected: 12.11.19 00.00

Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 12.18.19 13.20

Basis: Wet Weight

Seq Number: 3111044

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	434	4.99	mg/kg	12.18.19 19.04		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 12.18.19 08.00

Basis: Wet Weight

Seq Number: 3111076

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.18.19 19.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	274	50.0	mg/kg	12.18.19 19.57		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.18.19 19.57	U	1
Total TPH	PHC635	274	50.0	mg/kg	12.18.19 19.57		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	12.18.19 19.57	
o-Terphenyl	84-15-1	110	%	70-135	12.18.19 19.57	



Certificate of Analytical Results 646599



Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **SP1 @ 1'**
Lab Sample Id: 646599-001

Matrix: Soil
Date Collected: 12.11.19 00.00

Date Received: 12.17.19 12.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 12.19.19 14.00

Basis: Wet Weight

Seq Number: 3111382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.21.19 16.15	U	1
Toluene	108-88-3	0.00305	0.00200	mg/kg	12.21.19 16.15		1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.21.19 16.15	U	1
m,p-Xylenes	179601-23-1	0.00407	0.00400	mg/kg	12.21.19 16.15		1
o-Xylene	95-47-6	0.00838	0.00200	mg/kg	12.21.19 16.15		1
Total Xylenes	1330-20-7	0.0125	0.00200	mg/kg	12.21.19 16.15		1
Total BTEX		0.0155	0.00200	mg/kg	12.21.19 16.15		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	119	%	70-130	12.21.19 16.15		
4-Bromofluorobenzene	460-00-4	103	%	70-130	12.21.19 16.15		



Certificate of Analytical Results 646599

Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **SP2 @ 1'**
 Lab Sample Id: 646599-002

Matrix: Soil
 Date Collected: 12.11.19 00.00

Date Received: 12.17.19 12.45
 Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3111044

Date Prep: 12.18.19 13.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	269	5.03	mg/kg	12.18.19 19.24		1

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3111076

Date Prep: 12.18.19 08.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.18.19 21.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	457	50.0	mg/kg	12.18.19 21.01		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.18.19 21.01	U	1
Total TPH	PHC635	457	50.0	mg/kg	12.18.19 21.01		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	12.18.19 21.01	
o-Terphenyl	84-15-1	116	%	70-135	12.18.19 21.01	



Certificate of Analytical Results 646599

Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **SP2 @ 1'**
 Lab Sample Id: 646599-002

Matrix: Soil
 Date Collected: 12.11.19 00.00

Date Received: 12.17.19 12.45
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3111382

Date Prep: 12.19.19 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.21.19 16.35	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.21.19 16.35	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.21.19 16.35	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.21.19 16.35	U	1
o-Xylene	95-47-6	0.00669	0.00199	mg/kg	12.21.19 16.35		1
Total Xylenes	1330-20-7	0.00669	0.00199	mg/kg	12.21.19 16.35		1
Total BTEX		0.00669	0.00199	mg/kg	12.21.19 16.35		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	12.21.19 16.35		
4-Bromofluorobenzene	460-00-4	107	%	70-130	12.21.19 16.35		



Certificate of Analytical Results 646599



Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **SP3 @ 1'**
Lab Sample Id: 646599-003

Matrix: Soil
Date Collected: 12.11.19 00.00

Date Received: 12.17.19 12.45
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3111044

Date Prep: 12.18.19 13.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	353	4.98	mg/kg	12.18.19 19.31		1

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3111076

Date Prep: 12.18.19 08.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.18.19 21.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.18.19 21.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.18.19 21.22	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.18.19 21.22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	104	%	70-135	12.18.19 21.22		
o-Terphenyl	84-15-1	105	%	70-135	12.18.19 21.22		



Certificate of Analytical Results 646599



Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **SP3 @ 1'**
Lab Sample Id: 646599-003

Matrix: Soil
Date Collected: 12.11.19 00.00

Date Received: 12.17.19 12.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 12.19.19 14.00

Basis: Wet Weight

Seq Number: 3111382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.21.19 16.56	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.21.19 16.56	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.21.19 16.56	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	12.21.19 16.56	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.21.19 16.56	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.21.19 16.56	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.21.19 16.56	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	12.21.19 16.56		
4-Bromofluorobenzene	460-00-4	100	%	70-130	12.21.19 16.56		



Certificate of Analytical Results 646599

Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **SP4 @ 1'**
 Lab Sample Id: 646599-004

Matrix: Soil
 Date Collected: 12.11.19 00.00

Date Received: 12.17.19 12.45
 Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3111044

Date Prep: 12.18.19 13.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	279	5.00	mg/kg	12.18.19 19.51		1

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3111076

Date Prep: 12.18.19 08.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.18.19 21.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	259	49.9	mg/kg	12.18.19 21.43		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.18.19 21.43	U	1
Total TPH	PHC635	259	49.9	mg/kg	12.18.19 21.43		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	12.18.19 21.43	
o-Terphenyl	84-15-1	109	%	70-135	12.18.19 21.43	



Certificate of Analytical Results 646599



Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **SP4 @ 1'**
Lab Sample Id: 646599-004

Matrix: Soil
Date Collected: 12.11.19 00.00

Date Received: 12.17.19 12.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 12.19.19 14.00

Basis: Wet Weight

Seq Number: 3111382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.21.19 17.16	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.21.19 17.16	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.21.19 17.16	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	12.21.19 17.16	U	1
o-Xylene	95-47-6	0.00296	0.00200	mg/kg	12.21.19 17.16		1
Total Xylenes	1330-20-7	0.00296	0.00200	mg/kg	12.21.19 17.16		1
Total BTEX		0.00296	0.00200	mg/kg	12.21.19 17.16		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	12.21.19 17.16		
1,4-Difluorobenzene	540-36-3	109	%	70-130	12.21.19 17.16		



Certificate of Analytical Results 646599

Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **SP5 @ 1'**
 Lab Sample Id: 646599-005

Matrix: Soil
 Date Collected: 12.11.19 00.00

Date Received: 12.17.19 12.45
 Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3111044

Date Prep: 12.18.19 13.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	461	5.01	mg/kg	12.18.19 19.58		1

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3111076

Date Prep: 12.18.19 08.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.18.19 22.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	422	50.0	mg/kg	12.18.19 22.03		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	50.7	50.0	mg/kg	12.18.19 22.03		1
Total TPH	PHC635	473	50.0	mg/kg	12.18.19 22.03		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	104	%	70-135	12.18.19 22.03		
o-Terphenyl	84-15-1	106	%	70-135	12.18.19 22.03		



Certificate of Analytical Results 646599



Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **SP5 @ 1'**
Lab Sample Id: 646599-005

Matrix: Soil
Date Collected: 12.11.19 00.00

Date Received: 12.17.19 12.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 12.19.19 14.00

Basis: Wet Weight

Seq Number: 3111382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.21.19 17.36	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.21.19 17.36	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.21.19 17.36	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.21.19 17.36	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.21.19 17.36	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.21.19 17.36	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.21.19 17.36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	70-130	12.21.19 17.36		
1,4-Difluorobenzene	540-36-3	111	%	70-130	12.21.19 17.36		



Certificate of Analytical Results 646599



Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **NH1 @ Surf**

Matrix: Soil

Date Received: 12.17.19 12.45

Lab Sample Id: 646599-006

Date Collected: 12.11.19 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 12.18.19 13.20

Basis: Wet Weight

Seq Number: 3111044

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	143	4.97	mg/kg	12.18.19 20.04		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 12.18.19 08.00

Basis: Wet Weight

Seq Number: 3111076

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	12.18.19 22.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	73.1	49.8	mg/kg	12.18.19 22.24		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	12.18.19 22.24	U	1
Total TPH	PHC635	73.1	49.8	mg/kg	12.18.19 22.24		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	12.18.19 22.24	
o-Terphenyl	84-15-1	103	%	70-135	12.18.19 22.24	



Certificate of Analytical Results 646599

Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **NH1 @ Surf**

Matrix: Soil

Date Received: 12.17.19 12.45

Lab Sample Id: 646599-006

Date Collected: 12.11.19 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 12.19.19 14.00

Basis: Wet Weight

Seq Number: 3111382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.21.19 17.57	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	12.21.19 17.57	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	12.21.19 17.57	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	12.21.19 17.57	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	12.21.19 17.57	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	12.21.19 17.57	U	1
Total BTEX		<0.00202	0.00202	mg/kg	12.21.19 17.57	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	12.21.19 17.57		
1,4-Difluorobenzene	540-36-3	113	%	70-130	12.21.19 17.57		



Certificate of Analytical Results 646599

Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **NH1 @ 1'**

Matrix: Soil

Date Received: 12.17.19 12.45

Lab Sample Id: 646599-007

Date Collected: 12.11.19 00.00

Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 12.18.19 13.20

Basis: Wet Weight

Seq Number: 3111044

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	131	5.00	mg/kg	12.18.19 20.11		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 12.18.19 08.00

Basis: Wet Weight

Seq Number: 3111076

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.18.19 22.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.18.19 22.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.18.19 22.45	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.18.19 22.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	12.18.19 22.45	
o-Terphenyl	84-15-1	100	%	70-135	12.18.19 22.45	



Certificate of Analytical Results 646599

Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **NH1 @ 1'**
 Lab Sample Id: 646599-007

Matrix: Soil
 Date Collected: 12.11.19 00.00

Date Received: 12.17.19 12.45
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 12.19.19 14.00

Basis: Wet Weight

Seq Number: 3111382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.21.19 18.17	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	12.21.19 18.17	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	12.21.19 18.17	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	12.21.19 18.17	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	12.21.19 18.17	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	12.21.19 18.17	U	1
Total BTEX		<0.00202	0.00202	mg/kg	12.21.19 18.17	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	70-130	12.21.19 18.17		
1,4-Difluorobenzene	540-36-3	92	%	70-130	12.21.19 18.17		



Certificate of Analytical Results 646599



Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **NH2 @ Surf**

Matrix: Soil

Date Received: 12.17.19 12.45

Lab Sample Id: 646599-008

Date Collected: 12.11.19 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 12.18.19 13.20

Basis: Wet Weight

Seq Number: 3111044

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1460	5.02	mg/kg	12.18.19 20.17		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 12.18.19 08.00

Basis: Wet Weight

Seq Number: 3111076

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.18.19 23.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	151	50.0	mg/kg	12.18.19 23.06		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.18.19 23.06	U	1
Total TPH	PHC635	151	50.0	mg/kg	12.18.19 23.06		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	12.18.19 23.06	
o-Terphenyl	84-15-1	105	%	70-135	12.18.19 23.06	



Certificate of Analytical Results 646599



Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **NH2 @ Surf**

Matrix: Soil

Date Received: 12.17.19 12.45

Lab Sample Id: 646599-008

Date Collected: 12.11.19 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 12.19.19 14.00

Basis: Wet Weight

Seq Number: 3111382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.21.19 18.38	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.21.19 18.38	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.21.19 18.38	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.21.19 18.38	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.21.19 18.38	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.21.19 18.38	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.21.19 18.38	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	12.21.19 18.38		
1,4-Difluorobenzene	540-36-3	111	%	70-130	12.21.19 18.38		



Certificate of Analytical Results 646599

Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **NH2 @ 1'**

Matrix: Soil

Date Received: 12.17.19 12.45

Lab Sample Id: 646599-009

Date Collected: 12.11.19 00.00

Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 12.18.19 13.20

Basis: Wet Weight

Seq Number: 3111044

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	244	4.96	mg/kg	12.18.19 20.24		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 12.18.19 08.00

Basis: Wet Weight

Seq Number: 3111076

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.18.19 23.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.18.19 23.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.18.19 23.27	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.18.19 23.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	12.18.19 23.27	
o-Terphenyl	84-15-1	105	%	70-135	12.18.19 23.27	



Certificate of Analytical Results 646599



Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **NH2 @ 1'**

Matrix: Soil

Date Received: 12.17.19 12.45

Lab Sample Id: 646599-009

Date Collected: 12.11.19 00.00

Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 12.19.19 14.00

Basis: Wet Weight

Seq Number: 3111382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.21.19 18.58	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.21.19 18.58	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.21.19 18.58	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.21.19 18.58	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.21.19 18.58	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.21.19 18.58	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.21.19 18.58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	12.21.19 18.58		
4-Bromofluorobenzene	460-00-4	96	%	70-130	12.21.19 18.58		



Certificate of Analytical Results 646599



Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **EH1 @ Surf**

Matrix: Soil

Date Received: 12.17.19 12.45

Lab Sample Id: 646599-010

Date Collected: 12.11.19 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 12.18.19 13.20

Basis: Wet Weight

Seq Number: 3111044

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3500	25.0	mg/kg	12.18.19 20.31		5

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 12.18.19 08.00

Basis: Wet Weight

Seq Number: 3111076

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.18.19 23.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	51.1	50.0	mg/kg	12.18.19 23.48		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.18.19 23.48	U	1
Total TPH	PHC635	51.1	50.0	mg/kg	12.18.19 23.48		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	12.18.19 23.48	
o-Terphenyl	84-15-1	108	%	70-135	12.18.19 23.48	



Certificate of Analytical Results 646599

Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **EH1 @ Surf**

Matrix: Soil

Date Received: 12.17.19 12.45

Lab Sample Id: 646599-010

Date Collected: 12.11.19 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 12.19.19 14.00

Basis: Wet Weight

Seq Number: 3111382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.21.19 19.19	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.21.19 19.19	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.21.19 19.19	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.21.19 19.19	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.21.19 19.19	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.21.19 19.19	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.21.19 19.19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	12.21.19 19.19		
1,4-Difluorobenzene	540-36-3	111	%	70-130	12.21.19 19.19		



Certificate of Analytical Results 646599

Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **EH1 @ 1'**

Matrix: Soil

Date Received: 12.17.19 12.45

Lab Sample Id: 646599-011

Date Collected: 12.11.19 00.00

Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

% Moisture:

Analyst: SPC

Date Prep: 12.18.19 16.30

Basis: Wet Weight

Seq Number: 3111086

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	520	4.96	mg/kg	12.18.19 18.01		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 12.18.19 08.00

Basis: Wet Weight

Seq Number: 3111076

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	12.19.19 00.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	12.19.19 00.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	12.19.19 00.30	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	12.19.19 00.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	105	%	70-135	12.19.19 00.30		
o-Terphenyl	84-15-1	101	%	70-135	12.19.19 00.30		



Certificate of Analytical Results 646599



Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **EH1 @ 1'**

Matrix: Soil

Date Received: 12.17.19 12.45

Lab Sample Id: 646599-011

Date Collected: 12.11.19 00.00

Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 12.19.19 14.00

Basis: Wet Weight

Seq Number: 3111382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.21.19 20.58	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.21.19 20.58	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.21.19 20.58	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.21.19 20.58	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.21.19 20.58	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.21.19 20.58	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.21.19 20.58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	12.21.19 20.58		
4-Bromofluorobenzene	460-00-4	88	%	70-130	12.21.19 20.58		



Certificate of Analytical Results 646599



Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **SH1 @ Surf**

Matrix: Soil

Date Received: 12.17.19 12.45

Lab Sample Id: 646599-012

Date Collected: 12.11.19 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

% Moisture:

Analyst: SPC

Date Prep: 12.18.19 16.30

Basis: Wet Weight

Seq Number: 3111086

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	343	4.99	mg/kg	12.18.19 18.17		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 12.18.19 08.00

Basis: Wet Weight

Seq Number: 3111076

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.19.19 00.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.19.19 00.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.19.19 00.51	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.19.19 00.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	108	%	70-135	12.19.19 00.51		
o-Terphenyl	84-15-1	108	%	70-135	12.19.19 00.51		



Certificate of Analytical Results 646599

Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **SH1 @ Surf**

Matrix: Soil

Date Received: 12.17.19 12.45

Lab Sample Id: 646599-012

Date Collected: 12.11.19 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 12.19.19 14.00

Basis: Wet Weight

Seq Number: 3111382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.21.19 21.18	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.21.19 21.18	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.21.19 21.18	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.21.19 21.18	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.21.19 21.18	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.21.19 21.18	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.21.19 21.18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	12.21.19 21.18		
1,4-Difluorobenzene	540-36-3	110	%	70-130	12.21.19 21.18		



Certificate of Analytical Results 646599

Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **SH1 @ 1'**
 Lab Sample Id: 646599-013

Matrix: Soil
 Date Collected: 12.11.19 00.00

Date Received: 12.17.19 12.45
 Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3111086

Date Prep: 12.18.19 16.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	51.0	4.98	mg/kg	12.18.19 18.22		1

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3111076

Date Prep: 12.18.19 08.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.19.19 01.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.19.19 01.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.19.19 01.12	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.19.19 01.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	102	%	70-135	12.19.19 01.12		
o-Terphenyl	84-15-1	101	%	70-135	12.19.19 01.12		



Certificate of Analytical Results 646599



Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **SH1 @ 1'**
Lab Sample Id: 646599-013

Matrix: Soil
Date Collected: 12.11.19 00.00

Date Received: 12.17.19 12.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 12.19.19 14.00

Basis: Wet Weight

Seq Number: 3111382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.21.19 21.39	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	12.21.19 21.39	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	12.21.19 21.39	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	12.21.19 21.39	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	12.21.19 21.39	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	12.21.19 21.39	U	1
Total BTEX		<0.00202	0.00202	mg/kg	12.21.19 21.39	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	12.21.19 21.39		
4-Bromofluorobenzene	460-00-4	101	%	70-130	12.21.19 21.39		



Certificate of Analytical Results 646599

Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **SH2 @ Surf**

Matrix: Soil

Date Received: 12.17.19 12.45

Lab Sample Id: 646599-014

Date Collected: 12.11.19 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

% Moisture:

Analyst: SPC

Date Prep: 12.18.19 16.30

Basis: Wet Weight

Seq Number: 3111086

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2160	25.2	mg/kg	12.18.19 18.27		5

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 12.18.19 08.00

Basis: Wet Weight

Seq Number: 3111076

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.19.19 01.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	521	49.9	mg/kg	12.19.19 01.33		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	100	49.9	mg/kg	12.19.19 01.33		1
Total TPH	PHC635	621	49.9	mg/kg	12.19.19 01.33		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	12.19.19 01.33	
o-Terphenyl	84-15-1	111	%	70-135	12.19.19 01.33	



Certificate of Analytical Results 646599

Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **SH2 @ Surf**

Matrix: Soil

Date Received: 12.17.19 12.45

Lab Sample Id: 646599-014

Date Collected: 12.11.19 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 12.19.19 14.00

Basis: Wet Weight

Seq Number: 3111382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.21.19 21.59	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.21.19 21.59	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.21.19 21.59	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	12.21.19 21.59	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.21.19 21.59	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.21.19 21.59	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.21.19 21.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	113	%	70-130	12.21.19 21.59		
4-Bromofluorobenzene	460-00-4	96	%	70-130	12.21.19 21.59		



Certificate of Analytical Results 646599

Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **SH2 @ 1'**
Lab Sample Id: 646599-015

Matrix: Soil
Date Collected: 12.11.19 00.00

Date Received: 12.17.19 12.45
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300
Tech: SPC
Analyst: SPC
Seq Number: 3111086

Prep Method: E300P
% Moisture:
Date Prep: 12.18.19 16.30
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2840	25.2	mg/kg	12.19.19 12.09		5

Analytical Method: TPH By SW8015 Mod
Tech: DVM
Analyst: ARM
Seq Number: 3111076

Prep Method: SW8015P
% Moisture:
Date Prep: 12.18.19 08.00
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.19.19 01.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	99.3	50.0	mg/kg	12.19.19 01.54		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.19.19 01.54	U	1
Total TPH	PHC635	99.3	50.0	mg/kg	12.19.19 01.54		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	104	%	70-135	12.19.19 01.54		
o-Terphenyl	84-15-1	102	%	70-135	12.19.19 01.54		



Certificate of Analytical Results 646599

Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **SH2 @ 1'**
 Lab Sample Id: 646599-015

Matrix: Soil
 Date Collected: 12.11.19 00.00

Date Received: 12.17.19 12.45
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3111382

Date Prep: 12.19.19 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	12.21.19 22.20	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	12.21.19 22.20	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	12.21.19 22.20	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	12.21.19 22.20	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	12.21.19 22.20	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	12.21.19 22.20	U	1
Total BTEX		<0.00198	0.00198	mg/kg	12.21.19 22.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	12.21.19 22.20		
1,4-Difluorobenzene	540-36-3	110	%	70-130	12.21.19 22.20		



Certificate of Analytical Results 646599



Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **WH1 @ Surf**

Matrix: Soil

Date Received: 12.17.19 12.45

Lab Sample Id: 646599-016

Date Collected: 12.11.19 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

% Moisture:

Analyst: SPC

Date Prep: 12.18.19 16.30

Basis: Wet Weight

Seq Number: 3111086

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	23.8	4.96	mg/kg	12.18.19 19.35		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 12.18.19 08.00

Basis: Wet Weight

Seq Number: 3111076

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.19.19 02.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.19.19 02.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.19.19 02.15	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.19.19 02.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	106	%	70-135	12.19.19 02.15		
o-Terphenyl	84-15-1	106	%	70-135	12.19.19 02.15		



Certificate of Analytical Results 646599



Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **WH1 @ Surf**

Matrix: Soil

Date Received: 12.17.19 12.45

Lab Sample Id: 646599-016

Date Collected: 12.11.19 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 12.19.19 14.00

Basis: Wet Weight

Seq Number: 3111382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.21.19 22.40	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.21.19 22.40	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.21.19 22.40	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.21.19 22.40	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.21.19 22.40	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.21.19 22.40	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.21.19 22.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	12.21.19 22.40		
4-Bromofluorobenzene	460-00-4	101	%	70-130	12.21.19 22.40		



Certificate of Analytical Results 646599

Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: WH1 @ 1'

Matrix: Soil

Date Received: 12.17.19 12.45

Lab Sample Id: 646599-017

Date Collected: 12.11.19 00.00

Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

% Moisture:

Analyst: SPC

Date Prep: 12.18.19 16.30

Basis: Wet Weight

Seq Number: 3111086

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.3	5.03	mg/kg	12.18.19 19.40		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 12.18.19 08.00

Basis: Wet Weight

Seq Number: 3111076

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.19.19 02.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.19.19 02.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.19.19 02.36	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.19.19 02.36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	106	%	70-135	12.19.19 02.36		
o-Terphenyl	84-15-1	105	%	70-135	12.19.19 02.36		



Certificate of Analytical Results 646599



Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: WH1 @ 1'

Matrix: Soil

Date Received: 12.17.19 12.45

Lab Sample Id: 646599-017

Date Collected: 12.11.19 00.00

Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 12.19.19 14.00

Basis: Wet Weight

Seq Number: 3111382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.21.19 23.00	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.21.19 23.00	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.21.19 23.00	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	12.21.19 23.00	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.21.19 23.00	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.21.19 23.00	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.21.19 23.00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	113	%	70-130	12.21.19 23.00		
4-Bromofluorobenzene	460-00-4	100	%	70-130	12.21.19 23.00		



Certificate of Analytical Results 646599

Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **WH2 @ Surf**

Matrix: Soil

Date Received: 12.17.19 12.45

Lab Sample Id: 646599-018

Date Collected: 12.11.19 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

% Moisture:

Analyst: SPC

Date Prep: 12.18.19 16.30

Basis: Wet Weight

Seq Number: 3111086

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	592	5.00	mg/kg	12.18.19 19.45		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 12.18.19 08.00

Basis: Wet Weight

Seq Number: 3111076

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.19.19 02.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	1000	49.9	mg/kg	12.19.19 02.58		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	196	49.9	mg/kg	12.19.19 02.58		1
Total TPH	PHC635	1200	49.9	mg/kg	12.19.19 02.58		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	12.19.19 02.58	
o-Terphenyl	84-15-1	107	%	70-135	12.19.19 02.58	



Certificate of Analytical Results 646599



Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **WH2 @ Surf**

Matrix: Soil

Date Received: 12.17.19 12.45

Lab Sample Id: 646599-018

Date Collected: 12.11.19 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 12.19.19 14.00

Basis: Wet Weight

Seq Number: 3111382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	12.21.19 23.21	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	12.21.19 23.21	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	12.21.19 23.21	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	12.21.19 23.21	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	12.21.19 23.21	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	12.21.19 23.21	U	1
Total BTEX		<0.00198	0.00198	mg/kg	12.21.19 23.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	12.21.19 23.21		
4-Bromofluorobenzene	460-00-4	100	%	70-130	12.21.19 23.21		



Certificate of Analytical Results 646599

Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **WH2 @ 1'**

Matrix: Soil

Date Received: 12.17.19 12.45

Lab Sample Id: 646599-019

Date Collected: 12.11.19 00.00

Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

% Moisture:

Analyst: SPC

Date Prep: 12.18.19 16.30

Basis: Wet Weight

Seq Number: 3111086

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	449	4.98	mg/kg	12.18.19 19.50		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 12.18.19 08.00

Basis: Wet Weight

Seq Number: 3111076

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.19.19 03.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.19.19 03.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.19.19 03.19	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.19.19 03.19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	117	%	70-135	12.19.19 03.19		
o-Terphenyl	84-15-1	118	%	70-135	12.19.19 03.19		



Certificate of Analytical Results 646599



Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id: **WH2 @ 1'**

Matrix: Soil

Date Received: 12.17.19 12.45

Lab Sample Id: 646599-019

Date Collected: 12.11.19 00.00

Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 12.19.19 14.00

Basis: Wet Weight

Seq Number: 3111382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.21.19 23.41	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.21.19 23.41	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.21.19 23.41	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.21.19 23.41	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.21.19 23.41	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.21.19 23.41	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.21.19 23.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	12.21.19 23.41		
4-Bromofluorobenzene	460-00-4	92	%	70-130	12.21.19 23.41		



Flagging Criteria



- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



Etech Environmental & Safety Solution, Inc
Hamon Fed Com #3H

Analytical Method: Chloride by EPA 300

Seq Number: 3111044

MB Sample Id: 7692766-1-BLK

Matrix: Solid

LCS Sample Id: 7692766-1-BKS

Prep Method: E300P

Date Prep: 12.18.19

LCSD Sample Id: 7692766-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	251	100	254	102	90-110	1	20	mg/kg	12.18.19 17:18	

Analytical Method: Chloride by EPA 300

Seq Number: 3111086

MB Sample Id: 7692783-1-BLK

Matrix: Solid

LCS Sample Id: 7692783-1-BKS

Prep Method: E300P

Date Prep: 12.18.19

LCSD Sample Id: 7692783-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	261	104	252	101	90-110	4	20	mg/kg	12.18.19 17:51	

Analytical Method: Chloride by EPA 300

Seq Number: 3111044

Parent Sample Id: 646598-001

Matrix: Soil

MS Sample Id: 646598-001 S

Prep Method: E300P

Date Prep: 12.18.19

MSD Sample Id: 646598-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.03	252	262	104	261	104	90-110	0	20	mg/kg	12.18.19 17:38	

Analytical Method: Chloride by EPA 300

Seq Number: 3111044

Parent Sample Id: 646599-001

Matrix: Soil

MS Sample Id: 646599-001 S

Prep Method: E300P

Date Prep: 12.18.19

MSD Sample Id: 646599-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	434	250	661	91	645	84	90-110	2	20	mg/kg	12.19.19 08:16	X

Analytical Method: Chloride by EPA 300

Seq Number: 3111086

Parent Sample Id: 646599-011

Matrix: Soil

MS Sample Id: 646599-011 S

Prep Method: E300P

Date Prep: 12.18.19

MSD Sample Id: 646599-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	520	248	724	82	727	83	90-110	0	20	mg/kg	12.18.19 18:07	X

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result

MS = Matrix Spike
 B = Spike Added
 D = MSD/LCSD % Rec



Etech Environmental & Safety Solution, Inc
Hamon Fed Com #3H

Analytical Method: Chloride by EPA 300

Seq Number: 3111086

Parent Sample Id: 646620-002

Matrix: Soil

MS Sample Id: 646620-002 S

Prep Method: E300P

Date Prep: 12.18.19

MSD Sample Id: 646620-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	44.1	251	280	94	274	92	90-110	2	20	mg/kg	12.18.19 20:06	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3111076

MB Sample Id: 7692691-1-BLK

Matrix: Solid

LCS Sample Id: 7692691-1-BKS

Prep Method: SW8015P

Date Prep: 12.18.19

LCSD Sample Id: 7692691-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	998	100	996	100	70-135	0	20	mg/kg	12.18.19 19:15	
Diesel Range Organics (DRO)	<15.0	1000	1050	105	1040	104	70-135	1	20	mg/kg	12.18.19 19:15	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	104		106		106		70-135	%	12.18.19 19:15
o-Terphenyl	106		104		103		70-135	%	12.18.19 19:15

Analytical Method: TPH By SW8015 Mod

Seq Number: 3111076

Matrix: Solid

MB Sample Id: 7692691-1-BLK

Prep Method: SW8015P

Date Prep: 12.18.19

Parameter

	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.18.19 18:54	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3111076

Matrix: Soil

Parent Sample Id: 646599-001

MS Sample Id: 646599-001 S

Prep Method: SW8015P

Date Prep: 12.18.19

MSD Sample Id: 646599-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	41.2	998	1070	103	1030	99	70-135	4	20	mg/kg	12.18.19 20:18	
Diesel Range Organics (DRO)	274	998	1230	96	1210	94	70-135	2	20	mg/kg	12.18.19 20:18	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	112		109		70-135	%	12.18.19 20:18
o-Terphenyl	111		116		70-135	%	12.18.19 20:18

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result

MS = Matrix Spike
 B = Spike Added
 D = MSD/LCSD % Rec



Etech Environmental & Safety Solution, Inc
Hamon Fed Com #3H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3111382

MB Sample Id: 7692867-1-BLK

Matrix: Solid

LCS Sample Id: 7692867-1-BKS

Prep Method: SW5030B

Date Prep: 12.19.19

LCSD Sample Id: 7692867-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.107	107	0.0987	99	70-130	8	35	mg/kg	12.21.19 14:04	
Toluene	<0.00200	0.100	0.101	101	0.0949	95	70-130	6	35	mg/kg	12.21.19 14:04	
Ethylbenzene	<0.00200	0.100	0.105	105	0.0986	99	70-130	6	35	mg/kg	12.21.19 14:04	
m,p-Xylenes	<0.00400	0.200	0.214	107	0.202	101	70-130	6	35	mg/kg	12.21.19 14:04	
o-Xylene	<0.00200	0.100	0.106	106	0.101	101	70-130	5	35	mg/kg	12.21.19 14:04	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		110		111		70-130	%	12.21.19 14:04
4-Bromofluorobenzene	100		99		106		70-130	%	12.21.19 14:04

Analytical Method: BTEX by EPA 8021B

Seq Number: 3111382

Parent Sample Id: 646599-001

Matrix: Soil

MS Sample Id: 646599-001 S

Prep Method: SW5030B

Date Prep: 12.19.19

MSD Sample Id: 646599-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.00157	0.101	0.0941	92	0.0964	96	70-130	2	35	mg/kg	12.21.19 14:45	
Toluene	0.00305	0.101	0.0819	78	0.0828	80	70-130	1	35	mg/kg	12.21.19 14:45	
Ethylbenzene	0.00102	0.101	0.0828	81	0.0787	78	70-130	5	35	mg/kg	12.21.19 14:45	
m,p-Xylenes	0.00407	0.202	0.144	69	0.122	60	70-130	17	35	mg/kg	12.21.19 14:45	X
o-Xylene	0.00838	0.101	0.0872	78	0.0852	77	70-130	2	35	mg/kg	12.21.19 14:45	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	113		114		70-130	%	12.21.19 14:45
4-Bromofluorobenzene	109		109		70-130	%	12.21.19 14:45

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C-A) / B$
 $RPD = 200 * |(C-E) / (C+E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result

MS = Matrix Spike
 B = Spike Added
 D = MSD/LCSD % Rec



Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300, San Antonio, TX (210) 509-3334
Midland, TX (432) 704-5440, El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 982-7550, Carlsbad, NM (678) 988-3199, Phoenix, AZ (480) 555-0900
Tampa, FL (813) 620-2000, Tallahassee, FL (850) 756-0747, Delray Beach, FL (561) 689-6707
Atlanta, GA (770) 449-8800

Work Order No:

100599

Project Manager:	Joel Lowry	Bill to: (if different)	Legacy C/O Clyde Willhoit
Company Name:	Etech Environmental	Company Name:	Legacy Reserves
Address:	3100 Plains HWY	Address:	303 West Wall, Ste 1400
City, State ZIP:	Lovington, NM, 88260	City, State ZIP:	Midland, TX 79701
Phone:	432-466-4450	Email:	Email Invoice to: clw@legacyreserves.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐

State of Project:

Reporting Level ☐ Level I ☐ PST/UST ☐ TRR ☐ Level II ☐

Deliverables: EDD ☐ ADAPT ☐ Other: _____

Project Name:	Hamon Fed Com #3H		Turn Around
Project Number:	11552		Routine: <input type="checkbox"/>
Project Location:	Rural Lea		Rush: <input type="checkbox"/>
Sampler's Name:	Miguel Ramirez		Due Date:
PO #:			
SAMPLE RECEIPT			
Temperature (°C):	Temp Blank:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Wet Ice: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Received Intact:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Thermometer ID: <input checked="" type="checkbox"/>	
Cooler Custody Seals:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Correction Factor:	
Sample Custody Seals:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Total Containers:	





ANALYSIS REQUEST										Preservative Codes
										HNO ₃ : HN H ₂ SO ₄ : H2 HCL: HL None: NO NaOH: Na MeOH: Me Zn Acetate+ NaOH: Zn
5 M Ext										TAT starts the day received by the lab, if received by 4:30pm

[illegible]

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenoco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenoco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenoco. A minimum charge of \$175.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenoco, but not analyzed. These terms will be enforced unless previously negotiated.

0.5

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		12/16/14 2:55			12/17 10:05



Chain of Custody

Work Order No:

W416599

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300, San Antonio, TX (210) 509-3334
 Midland, TX (432) 704-5440, El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1236
 Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199, Phoenix, AZ (480) 355-0900
 Tampa, FL (813) 620-2000, Tallahassee, FL (850) 756-0747, Delray Beach, FL (561) 689-6701
 Atlanta, GA (770) 449-8800

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Page 2 of 2

Project Manager:	Joel Lowry	Bill to: (if different)	Legacy C/O Clyde Willhoit
Company Name:	Elect Environmental	Company Name:	Legacy Reserves
Address:	3100 Plains HWY	Address:	303 West Wall, Ste 1400
City, State ZIP:	Lowington, NM, 88260	City, State ZIP:	Midland, TX 79701
Phone:	432-466-4450	Email:	Email Invoice to

Work Order Comments Program: USTPST <input type="checkbox"/> PRP <input type="checkbox"/> Brownfield <input type="checkbox"/> RRC <input type="checkbox"/> Superfund <input type="checkbox"/> State of Project:	
Reporting Level: <input type="checkbox"/>	Level <input type="checkbox"/> PST/US <input type="checkbox"/> TRR <input type="checkbox"/> Level <input type="checkbox"/>
Deliverables: EDD <input type="checkbox"/>	Adapt <input type="checkbox"/> Other: <input type="checkbox"/>

Project Name:	Hamon Fed Com #3H		Turn Around	
Project Number:	11552	Routine:	<input type="checkbox"/>	
Project Location:	Rural Lea	Rush:	<input type="checkbox"/>	
Sampler's Name:	Miguel Ramirez	Due Date:		
PO #:				
SAMPLE RECEIPT		Temp Blank:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Wet Ice: <input checked="" type="checkbox"/> No <input type="checkbox"/>
Temperature (°C):	0.5	Thermometer ID:	D8	
Received Inact:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Correction Factor:		
Cooler Custody Seals:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Total Containers:		
Sample Custody Seals:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A			

Sample Identification					Matrix	Date Sampled	Time Sampled	Depth	Number	BTEX	TPH 801	Chloride	Sample Comments														
EH1 @ 1'					S	12/11/2019		1	1	X	X	X															
SH1 @ Surf.					S	12/11/2019		0	1	X	X	X															
SH1 @ 1'					S	12/11/2019		1	1	X	X	X															
SH2 @ Surf.					S	12/11/2019		0	1	X	X	X															
SH2 @ 1'					S	12/11/2019		1	1	X	X	X															
WH1 @ Surf.					S	12/11/2019		0	1	X	X	X															
WH1 @ 1'					S	12/11/2019		1	1	X	X	X															
WH2 @ Surf.					S	12/11/2019		0	1	X	X	X															
WH2 @ 1'					S	12/11/2019		1	1	X	X	X															

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

0.5

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Spillbury	Eggen Connolly	12/16/19 2:55	Eggen Connolly	PSJL	12/17/19 12:43
3			4		
5			6		



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Etech Environmental & Safety Solution, I

Date/ Time Received: 12/17/2019 12:45:00 PM

Work Order #: 646599

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist**Comments**

#1 *Temperature of cooler(s)?	.5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 12/17/2019

Checklist reviewed by:

Jessica Kramer

Date: 12/17/2019

Analytical Report 647634

for

Etech Environmental & Safety Solution, Inc

Project Manager: Joel Lowry

Hamon Federal

03-JAN-20

Collected By: Client



1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



03-JAN-20

Project Manager: **Joel Lowry**
Etech Environmental & Safety Solution, Inc
P.O. Box 8469
Midland, TX 79708

Reference: XENCO Report No(s): **647634**
Hamon Federal
Project Address: Rural Lea NM

Joel Lowry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 647634. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 647634 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink that reads 'Holly Taylor'.

Holly Taylor
Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America

**Sample Cross Reference 647634****Etech Environmental & Safety Solution, Inc, Midland, TX**

Hamon Federal

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP1 @ Surf.	S	12-26-19 14:50	0	647634-001
SP2 @ Surf.	S	12-26-19 14:40	0	647634-002
SP3 @ Surf.	S	12-26-19 14:30	0	647634-003
SP4 @ Surf.	S	12-26-19 14:20	0	647634-004
SP5 @ Surf.	S	12-26-19 14:15	0	647634-005
WH2B @ Surf.	S	12-26-19 14:00	0	647634-006

**CASE NARRATIVE****Client Name: Etech Environmental & Safety Solution, Inc****Project Name: Hamon Federal**

Project ID:

Work Order Number(s): 647634

Report Date: 03-JAN-20

Date Received: 12/30/2019

Sample receipt non conformances and comments:None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3112082 Chloride by EPA 300

Lab Sample ID 647634-004 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 647634-002, -003, -004, -005.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3112135 TPH By SW8015 Mod

Surrogate 1-Chlorooctane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 647634-002 S, 647634-004.

Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 647634-004, 647634-005, 647634-001.



Certificate of Analytical Results

647634

Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Federal

Sample Id: **SP1 @ Surf.**

Matrix: Soil

Sample Depth: 0

Lab Sample Id: 647634-001

Date Collected: 12.26.19 14.50

Date Received: 12.30.19 11.07

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Analyst: SPC

% Moist:

Tech: SPC

Seq Number: 3112072

Date Prep: 12.30.19 12.45

Prep seq: 7693498

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	5060	24.8	4.25	mg/kg	12.30.19 16:22		5

Analytical Method: TPH By SW8015 Mod

Prep Method: 8015

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3112135

Date Prep: 12.30.19 15.00

Prep seq: 7693537

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<249	249	74.7	mg/kg	12.30.19 19:36	U	5
Diesel Range Organics (DRO)	C10C28DRO	2290	249	74.7	mg/kg	12.30.19 19:36		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	253	249	74.7	mg/kg	12.30.19 19:36		5
Total TPH	PHC635	2540		74.7	mg/kg	12.30.19 19:36		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	133	70 - 135	%		
o-Terphenyl	177	70 - 135	%		**



Certificate of Analytical Results

647634



Etech Environmental & Safety Solution, Inc, Midland, TX
Hamon Federal

Sample Id: **SP2 @ Surf.**

Matrix: Soil

Sample Depth: 0

Lab Sample Id: 647634-002

Date Collected: 12.26.19 14.40

Date Received: 12.30.19 11.07

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Analyst: SPC

% Moist:

Tech: SPC

Seq Number: 3112082

Date Prep: 12.30.19 16.57

Prep seq: 7693541

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	1510	24.8	4.25	mg/kg	12.30.19 18:12		5

Analytical Method: TPH By SW8015 Mod

Prep Method: 8015

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3112135

Date Prep: 12.30.19 15.00

Prep seq: 7693537

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	15.0	mg/kg	12.30.19 18:33	U	1
Diesel Range Organics (DRO)	C10C28DRO	83.6	50.0	15.0	mg/kg	12.30.19 18:33		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	15.0	mg/kg	12.30.19 18:33	U	1
Total TPH	PHC635	83.6		15.0	mg/kg	12.30.19 18:33		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	105	70 - 135	%		
o-Terphenyl	107	70 - 135	%		



Certificate of Analytical Results

647634

Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Federal

Sample Id: **SP3 @ Surf.**

Matrix: Soil

Sample Depth: 0

Lab Sample Id: 647634-003

Date Collected: 12.26.19 14.30

Date Received: 12.30.19 11.07

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Analyst: SPC

% Moist:

Tech: SPC

Seq Number: 3112082

Date Prep: 12.30.19 16.57

Prep seq: 7693541

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	834	4.97	0.853	mg/kg	12.30.19 18:18		1

Analytical Method: TPH By SW8015 Mod

Prep Method: 8015

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3112135

Date Prep: 12.30.19 15.00

Prep seq: 7693537

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	15.0	mg/kg	12.30.19 19:57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	15.0	mg/kg	12.30.19 19:57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	15.0	mg/kg	12.30.19 19:57	U	1
Total TPH	PHC635	<50.0		15.0	mg/kg	12.30.19 19:57	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	116	70 - 135	%		
o-Terphenyl	116	70 - 135	%		



Certificate of Analytical Results

647634



Etech Environmental & Safety Solution, Inc, Midland, TX
Hamon Federal

Sample Id: **SP4 @ Surf.**

Matrix: Soil

Sample Depth: 0

Lab Sample Id: 647634-004

Date Collected: 12.26.19 14.20

Date Received: 12.30.19 11.07

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Analyst: SPC

% Moist:

Tech: SPC

Seq Number: 3112082

Date Prep: 12.30.19 16.57

Prep seq: 7693541

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	545	5.01	0.860	mg/kg	12.30.19 17:52		1

Analytical Method: TPH By SW8015 Mod

Prep Method: 8015

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3112135

Date Prep: 12.30.19 15.00

Prep seq: 7693537

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	2230	249	74.8	mg/kg	12.30.19 20:19		5
Diesel Range Organics (DRO)	C10C28DRO	8110	249	74.8	mg/kg	12.30.19 20:19		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	697	249	74.8	mg/kg	12.30.19 20:19		5
Total TPH	PHC635	11000		74.8	mg/kg	12.30.19 20:19		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	215	70 - 135	%		**
o-Terphenyl	257	70 - 135	%		**



Certificate of Analytical Results

647634



Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Federal

Sample Id: **SP5 @ Surf.**

Matrix: Soil

Sample Depth: 0

Lab Sample Id: 647634-005

Date Collected: 12.26.19 14.15

Date Received: 12.30.19 11.07

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Analyst: SPC

% Moist:

Tech: SPC

Seq Number: 3112082

Date Prep: 12.30.19 16.57

Prep seq: 7693541

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	1020	4.95	0.850	mg/kg	12.30.19 18:25		1

Analytical Method: TPH By SW8015 Mod

Prep Method: 8015

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3112135

Date Prep: 12.30.19 15.00

Prep seq: 7693537

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<250	250	74.9	mg/kg	12.30.19 20:40	U	5
Diesel Range Organics (DRO)	C10C28DRO	3860	250	74.9	mg/kg	12.30.19 20:40		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	431	250	74.9	mg/kg	12.30.19 20:40		5
Total TPH	PHC635	4290		74.9	mg/kg	12.30.19 20:40		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	121	70 - 135	%		
o-Terphenyl	178	70 - 135	%		**

Sample Id: **WH2B @ Surf.**

Matrix: Soil

Sample Depth: 0

Lab Sample Id: 647634-006

Date Collected: 12.26.19 14.00

Date Received: 12.30.19 11.07

Analytical Method: TPH By SW8015 Mod

Prep Method: 8015

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3112135

Date Prep: 12.30.19 15.00

Prep seq: 7693537

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	14.9	mg/kg	12.30.19 21:01	U	1
Diesel Range Organics (DRO)	C10C28DRO	1880	49.8	14.9	mg/kg	12.30.19 21:01		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	253	49.8	14.9	mg/kg	12.30.19 21:01		1
Total TPH	PHC635	2130		14.9	mg/kg	12.30.19 21:01		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	121	70 - 135	%		
o-Terphenyl	126	70 - 135	%		



Certificate of Analytical Results

647634

Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Federal

Sample Id: **7693498-1-BLK** Matrix: Solid Sample Depth:
 Lab Sample Id: 7693498-1-BLK Date Collected: Date Received:
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Analyst: SPC % Moist: Tech: SPC
 Seq Number: 3112072 Date Prep: 12.30.19 12.45
 Prep seq: 7693498

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<5.00	5.00	0.858	mg/kg	12.30.19 12:57	U	1

Sample Id: **7693537-1-BLK** Matrix: Solid Sample Depth:
 Lab Sample Id: 7693537-1-BLK Date Collected: Date Received:
 Analytical Method: TPH By SW8015 Mod Prep Method: 8015
 Analyst: DVM % Moist: Tech: DVM
 Seq Number: 3112135 Date Prep: 12.30.19 15.00
 Prep seq: 7693537

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	15.0	mg/kg	12.30.19 17:29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	15.0	mg/kg	12.30.19 17:29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	15.0	mg/kg	12.30.19 17:29	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	114	70 - 135	%		
o-Terphenyl	116	70 - 135	%		

Sample Id: **7693541-1-BLK** Matrix: Solid Sample Depth:
 Lab Sample Id: 7693541-1-BLK Date Collected: Date Received:
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Analyst: SPC % Moist: Tech: SPC
 Seq Number: 3112082 Date Prep: 12.30.19 16.57
 Prep seq: 7693541

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<5.00	5.00	0.858	mg/kg	12.30.19 17:32	U	1



Flagging Criteria



- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



Form 2 - Surrogate Recoveries

Project Name: Hamon Federal

Work Orders : 647634,

Project ID:

Lab Batch #: 3112135

Sample: 7693537-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/30/19 17:29

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	100	114	70-135	
o-Terphenyl	58.2	50.0	116	70-135	

Lab Batch #: 3112135

Sample: 7693537-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/30/19 17:51

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	100	117	70-135	
o-Terphenyl	56.4	50.0	113	70-135	

Lab Batch #: 3112135

Sample: 7693537-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/30/19 18:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	50.2	50.0	100	70-135	

Lab Batch #: 3112135

Sample: 647634-002 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/30/19 18:53

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	137	99.7	137	70-135	**
o-Terphenyl	61.0	49.9	122	70-135	

Lab Batch #: 3112135

Sample: 647634-002 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/30/19 19:15

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	99.8	127	70-135	
o-Terphenyl	61.3	49.9	123	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



BS / BSD Recoveries



Project Name: Hamon Federal

Work Order #: 647634

Project ID:

Analyst: SPC

Date Prepared: 12/30/2019

Date Analyzed: 12/30/2019

Lab Batch ID: 3112072

Sample: 7693498-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<0.858	250	258	103	250	258	103	0	90-110	20	

Analyst: SPC

Date Prepared: 12/30/2019

Date Analyzed: 12/30/2019

Lab Batch ID: 3112082

Sample: 7693541-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<0.858	250	270	108	250	269	108	0	90-110	20	

Analyst: DVM

Date Prepared: 12/30/2019

Date Analyzed: 12/30/2019

Lab Batch ID: 3112135

Sample: 7693537-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	975	98	1000	958	96	2	70-135	20	
Diesel Range Organics (DRO)	<15.0	1000	1010	101	1000	977	98	3	70-135	20	

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$ Blank Spike Recovery [D] = $100 * (C)/[B]$ Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries



Project Name: Hamon Federal

Work Order #: 647634

Project ID:

Lab Batch ID: 3112072

QC- Sample ID: 647613-014 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/30/2019

Date Prepared: 12/30/2019

Analyst: SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	168	250	430	105	250	420	101	2	90-110	20	

Lab Batch ID: 3112072

QC- Sample ID: 647628-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/30/2019

Date Prepared: 12/30/2019

Analyst: SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	317	249	535	88	249	546	92	2	90-110	20	X

Lab Batch ID: 3112082

QC- Sample ID: 647634-004 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/30/2019

Date Prepared: 12/30/2019

Analyst: SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	545	251	809	105	251	836	116	3	90-110	20	X

Matrix Spike Percent Recovery $[D] = 100 * (C - A) / B$
 Relative Percent Difference $RPD = 200 * |(C - F) / (C + F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 * (F - A) / E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Form 3 - MS / MSD Recoveries



Project Name: Hamon Federal

Work Order #: 647634

Project ID:

Lab Batch ID: 3112135

QC- Sample ID: 647634-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/30/2019

Date Prepared: 12/30/2019

Analyst: DVM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	997	928	93	998	941	94	1	70-135	20	
Diesel Range Organics (DRO)	83.6	997	993	91	998	1020	94	3	70-135	20	

Matrix Spike Percent Recovery $[D] = 100 * (C - A) / B$
 Relative Percent Difference $RPD = 200 * |(C - F) / (C + F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 * (F - A) / E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
 N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300, San Antonio, TX (210) 509-3334
 Midland, TX (432) 704-5440, El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
 Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199, Phoenix, AZ (480) 355-0900
 Tampa, FL (813) 620-2000, Tallahassee, FL (850) 756-0747, Delray Beach, FL (561) 689-6701
 Atlanta, GA (770) 449-8800

Work Order No:

10471634

www.xenco.com Page _____ of _____

Project Manager:	Joel Lowry	Bill to: (if different)	Email Invoice to Clyde for Stamp
Company Name:	Etech Environmental	Company Name:	Legacy Reserves
Address:	3100 Plains Hwy	Address:	303 West Wall, Ste 1400
City, State ZIP:	Longton, NM, 88260	City, State ZIP:	Midland, TX, 79701
Phone:	432-466-4450	Email:	joele@etechnv.com, cwillhoit@legacyserves.com

Program: <input type="checkbox"/> UST/PT <input type="checkbox"/> PRP <input type="checkbox"/> Brownfield <input type="checkbox"/> RRC <input type="checkbox"/> Superfund <input type="checkbox"/> State of Project: Reporting Level: <input type="checkbox"/> Level I <input type="checkbox"/> Level II <input type="checkbox"/> PST/UST <input type="checkbox"/> TRR <input type="checkbox"/> Level III <input type="checkbox"/> Deliverables: EDD <input type="checkbox"/> ADAPT <input type="checkbox"/> Other:		Work Order Comments
--	--	----------------------------

Project Name:		Hamon Federal		Turn Around		ANALYSIS REQUEST																Preservative Codes									
Project Number:				Routine: <input type="checkbox"/>																		HNO3: HN									
Project Location:		Rural Lea, NM		Rush: <input type="checkbox"/>																		H2SO4: H2									
Sampler's Name:		Hayden Scott		Due Date:																		HCL: HL									
PO #:																						None: NO									
SAMPLE RECEIPT		Temp Blank:		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Wet Ice:		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																		NaOH: Na					
Temperature (°C):		0.8				Thermometer ID		128																		MeOH: Me					
Received In tact:		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				Correction Factor:																				Zn Acetate+ NaOH: Zn					
Cooler Custody Seals:		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				Total Containers:																									
Sample Custody Seals:		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																													
Sample Identification		Matrix		Date Sampled		Time Sampled		Depth		Number of Containers/Preservative Code																		Sample Comments			
SP1 @ Surf.		S		12/26/2019		2:50		0		1		BTX 8021																			
SP2 @ Surf.		S		12/26/2019		2:40		0		1		TPH 8015 M Ext																			
SP3 @ Surf.		S		12/26/2019		2:30		0		1		Chloride E 300																			
SP4 @ Surf.		S		12/26/2019		2:20		0		1																					
SP5 @ Surf.		S		12/26/2019		2:15		0		1																					
WH2B @ Surf.		S		12/26/2019		2:00		0		1																					

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

0.2

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	2:55 12-27-19	<i>[Signature]</i>	<i>[Signature]</i>	12/31/19



Client: Etech Environmental & Safety Solution, I

Date/ Time Received: 12/30/2019 11:07:00 AM

Work Order #: 647634

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	.6
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 12/30/2019

Checklist reviewed by:

Jessica Kramer

Date: 12/31/2019



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

March 04, 2020

LANCE CRENSHAW

Etech Environmental & Safety Solutions

P.O. Box 301

Lovington, NM 88260

RE: HAMON FED COM A #3H

Enclosed are the results of analyses for samples received by the laboratory on 03/03/20 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 fluid and cursive, with the first name "Celey" and last name "Keene" clearly distinguishable.

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

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

Received:	03/03/2020	Sampling Date:	03/03/2020
Reported:	03/04/2020	Sampling Type:	Soil
Project Name:	HAMON FED COM A #3H	Sampling Condition:	Cool & Intact
Project Number:	11552	Sample Received By:	Tamara Oldaker
Project Location:	LEGACY RESERVES OPERATING, LP - LE/		

Sample ID: WH2B @ 1' (H000693-01)

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	03/04/2020	ND	2.00	100	2.00	20.7	
Toluene*	<0.050	0.050	03/04/2020	ND	2.02	101	2.00	21.0	
Ethylbenzene*	<0.050	0.050	03/04/2020	ND	2.03	102	2.00	21.0	
Total Xylenes*	<0.150	0.150	03/04/2020	ND	5.94	99.1	6.00	21.4	
Total BTEX	<0.300	0.300	03/04/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.7 % 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	80.0	16.0	03/04/2020	ND	416	104	400	10.9	

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	03/04/2020	ND	171	85.7	200	3.17	
DRO >C10-C28*	<10.0	10.0	03/04/2020	ND	182	90.8	200	3.96	
EXT DRO >C28-C36	<10.0	10.0	03/04/2020	ND					

Surrogate: 1-Chlorooctane 84.2 % 44.3-144

Surrogate: 1-Chlorooctadecane 95.9 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	03/03/2020	Sampling Date:	03/03/2020
Reported:	03/04/2020	Sampling Type:	Soil
Project Name:	HAMON FED COM A #3H	Sampling Condition:	Cool & Intact
Project Number:	11552	Sample Received By:	Tamara Oldaker
Project Location:	LEGACY RESERVES OPERATING, LP - LE/		

Sample ID: WH2C @ SURF. (H000693-02)

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	03/04/2020	ND	2.00	100	2.00	20.7		
Toluene*	<0.050	0.050	03/04/2020	ND	2.02	101	2.00	21.0		
Ethylbenzene*	<0.050	0.050	03/04/2020	ND	2.03	102	2.00	21.0		
Total Xylenes*	<0.150	0.150	03/04/2020	ND	5.94	99.1	6.00	21.4		
Total BTEX	<0.300	0.300	03/04/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.4 % 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	768	16.0	03/04/2020	ND	416	104	400	10.9		

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	03/04/2020	ND	171	85.7	200	3.17	
DRO >C10-C28*	188	10.0	03/04/2020	ND	182	90.8	200	3.96	
EXT DRO >C28-C36	59.2	10.0	03/04/2020	ND					

Surrogate: 1-Chlorooctane 74.8 % 44.3-144

Surrogate: 1-Chlorooctadecane 90.2 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	03/03/2020	Sampling Date:	03/03/2020
Reported:	03/04/2020	Sampling Type:	Soil
Project Name:	HAMON FED COM A #3H	Sampling Condition:	Cool & Intact
Project Number:	11552	Sample Received By:	Tamara Oldaker
Project Location:	LEGACY RESERVES OPERATING, LP - LE/		

Sample ID: WH2C @ 1' (H000693-03)

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	03/04/2020	ND	2.00	100	2.00	20.7	
Toluene*	<0.050	0.050	03/04/2020	ND	2.02	101	2.00	21.0	
Ethylbenzene*	<0.050	0.050	03/04/2020	ND	2.03	102	2.00	21.0	
Total Xylenes*	<0.150	0.150	03/04/2020	ND	5.94	99.1	6.00	21.4	
Total BTEX	<0.300	0.300	03/04/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.3 % 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	1150	16.0	03/04/2020	ND	416	104	400	10.9		

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	03/04/2020	ND	171	85.7	200	3.17	
DRO >C10-C28*	<10.0	10.0	03/04/2020	ND	182	90.8	200	3.96	
EXT DRO >C28-C36	<10.0	10.0	03/04/2020	ND					

Surrogate: 1-Chlorooctane 78.5 % 44.3-144

Surrogate: 1-Chlorooctadecane 85.9 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- 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.
- 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

Page 6 of 6



701 East Mariana, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]

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

Appendix D

Photographic Log

Photographic Log



Photographic Log

