

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

State of New Mexico
Energy Minerals and Natural
Resources Department

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

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

Incident ID	nAPP2112053741
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party EOG Resources, Inc.	OGRID 7377
Contact Name Chase Settle	Contact Telephone 575-748-1471
Contact email Chase_Settle@eogresources.com	Incident # (assigned by OCD)
Contact mailing address 104 S. 4th Street, Artesia, NM 88210	

Location of Release Source

Latitude 32.42609 Longitude -104.54400
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Brannigan ANF Federal Battery	Site Type Battery
Date Release Discovered 04/27/2021	API# (if applicable)

Unit Letter	Section	Township	Range	County
D	06	22S	24E	Eddy

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

Nature and Volume of Release

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

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) Unknown	Volume Recovered (bbls) 0
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release Unknown historical release, no known volume or date. Discovered while removing a flow line from the battery during P&A activities.

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

Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Chase Settle</u>	Title: <u>Rep Safety & Environmental Sr</u>
Signature: <u></u>	Date: <u>04/30/2021</u>
email: <u>Chase_Settle@eogresources.com</u>	Telephone: <u>575-748-1471</u>
<u>OCD Only</u> Received by: _____ Date: _____	

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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>unknown</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 checked="" type="checkbox"/> Yes <input 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.

State of New Mexico
Oil Conservation Division

Page 4

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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: Chase Settle

Title: Rep Safety & Environmental Sr

Signature:



Date: 07/20/2021

email: Chase_Settle@eogresources.com

Telephone: 575-748-1471

OCD Only

Received by: _____

Date: _____

Incident ID	nAPP2112053741
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Closure

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

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

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

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

Printed Name: Chase Settle

Title: Rep Safety & Environmental Sr

Signature: 

Date: 07/20/2021

email: Chase_Settle@eogresources.com

Telephone: 575-748-1471

OCD Only

Received by: Chad Hensley

Date: 08/25/2021

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

Closure Approved by: 

Date: 08/25/2021

Printed Name: Chad Hensley

Title: Environmental Specialist Advanced

2135 S. Loop 250 W,
Midland, Texas 79703
United States
www.ghd.com

Our ref: 11228320

July 20, 2021

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

Re: **Site Characterization and Closure Report**
Brannigan ANF Federal #5 Battery-Pipeline Release Site
EOG Resources Inc.
nAPP2112053741
D-06-22S-24E, Eddy County, New Mexico

To Whom It May Concern:

1. Introduction

GHD Services, Inc. (GHD), on behalf of EOG Resources (EOG), submits this Site Characterization and Closure Report to the New Mexico Oil Conservation Division (NMOCD) District 2 Office. This Report provides documentation of site characterization delineation, sampling, analyses, and assessment activities in the affected areas at the EOG Brannigan Federal Battery-Pipeline Release Site (Site). The Site is located in Unit Letter D Section 6 of Township 22 South and Range 24 East in Eddy County, New Mexico. The GPS coordinates for the releases site are 32.42609 N latitude and 104.54400 W longitude. The release occurred on land managed by the Bureau of Land Management (BLM). Figure 1 depicts the Site location. The EOG production facility and other site details are depicted on Figure 2.

2. Background Information

A C-141 initial report for this release was submitted to the NMOCD on April 30, 2021. The C-141 stated that no known volume or date could be assigned to this unknown historical release. The potential release area was discovered while removing a flow line from the battery during EOG plugging and abandonment activities associated with this location. An area approximately 20 feet by 20 feet around the buried flow line appeared to be discolored and after discussions between field personnel and environmental staff – EOG made the decision to go ahead and file a C-141 for this suspected location

The Initial Form C-141, Site Assessment/Characterization and Closure portions of Form C-141 for Incident Number nAPP2112053741 are attached to the front of this report.

3. Groundwater and Site Characterization

GHD characterized the Site according to Table 1, Closure Criteria for Soils Impacted by a Release, from New Mexico Administrative Code (NMAC) Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12). The release falls under the jurisdiction of the NMOCD District 2 Office in Artesia, New Mexico.

According to the Site characterization evaluation and 19.15.29.12.C(4)(a)(i) the Site is located within an area of high karst potential, so the release must be treated as if it occurred less than 50 ft. from groundwater. No other receptors (water wells, playas, wetlands, waterways, lakebeds or ordinance boundaries) were located within each specific boundaries or distance from the Site. No groundwater data could be located within one-half mile of the Site. The Site characterization documentation (Karst Potential, FEMA, USGS Water Resources, NMOSE POD and Wetlands maps) are provided in Attachment B. The soil and closure criteria are listed below:

General Site Characterization and Groundwater:

Site Characterization	Average Groundwater Depth (ft.)
High Karst Potential Area	Unknown, Treated as <50 ft.

Table 3.1 Closure Criteria for Soils Impacted by a Release (NMAC 19.15.29.12)

Constituent	Limits
Chloride	600 mg/kg
TPH (GRO+DRO+MRO)	100 mg/kg
TPH (GRO+DRO)	N/A
Benzene	10mg/kg
BTEX	50 mg/kg

4. Soil Assessment Sampling Summary and Findings

On April 27, 2021 GHD Services Inc. (GHD) and EOG's contractor BDS Services, LLC (BDS), on behalf of EOG, excavated a test pit (TP-6) and conducted a soil sampling event at the Site. One test pit bottom sample was collected and analyzed from 3.5 feet below ground surface (bgs). On May 18 and June 1, 2021, four hand auger sampling locations were placed outside of TP-6 and around a 20'x20' approximate area. The hand auger samples were field screened using a photoionization detector (PID) and chloride test strips. Hand auger sample depths ranged from 1.17' to 2'. A total of at five (5) samples were taken from five (5) locations at the Brannigan Battery-Pipeline site for soil assessment purposes.

All soil samples were analyzed for BTEX by EPA Method 8021B, TPH by Method 8015D MOD, and chloride by EPA Method 300 by Hall Environmental Analytical Laboratory in Albuquerque, New Mexico. None of the five samples exhibited concentrations in exceedance of Closure Criteria for Soil Impacted by a Release (NMAC 19.15.29.12) using the most stringent scenario – depth to groundwater less than 50 feet bgs. No remedial actions were indicated based on the soils assessment sample results. Analytical data is summarized in Table 1 and on Figure 2, and certified Laboratory Analytical Reports are provided in Attachment C.


5. Closure Request - OCD Incident Number nAPP2112053741

Release notification, site characterization, and soil assessment activities for this incident have been performed in accordance with applicable NMOCD guidance and regulations. Based upon supporting documentation provided in this report, GHD, on behalf of EOG, respectfully requests closure and no further regulatory actions for Incident Number nAPP2112053741.

If you have any questions or comments concerning this Site Characterization and Closure Report, please do not hesitate to contact our Midland office at (432) 686-0086.

Sincerely,

GHD



Becky Haskell
Senior Project Manager



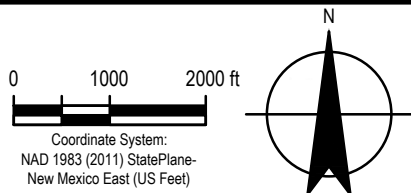
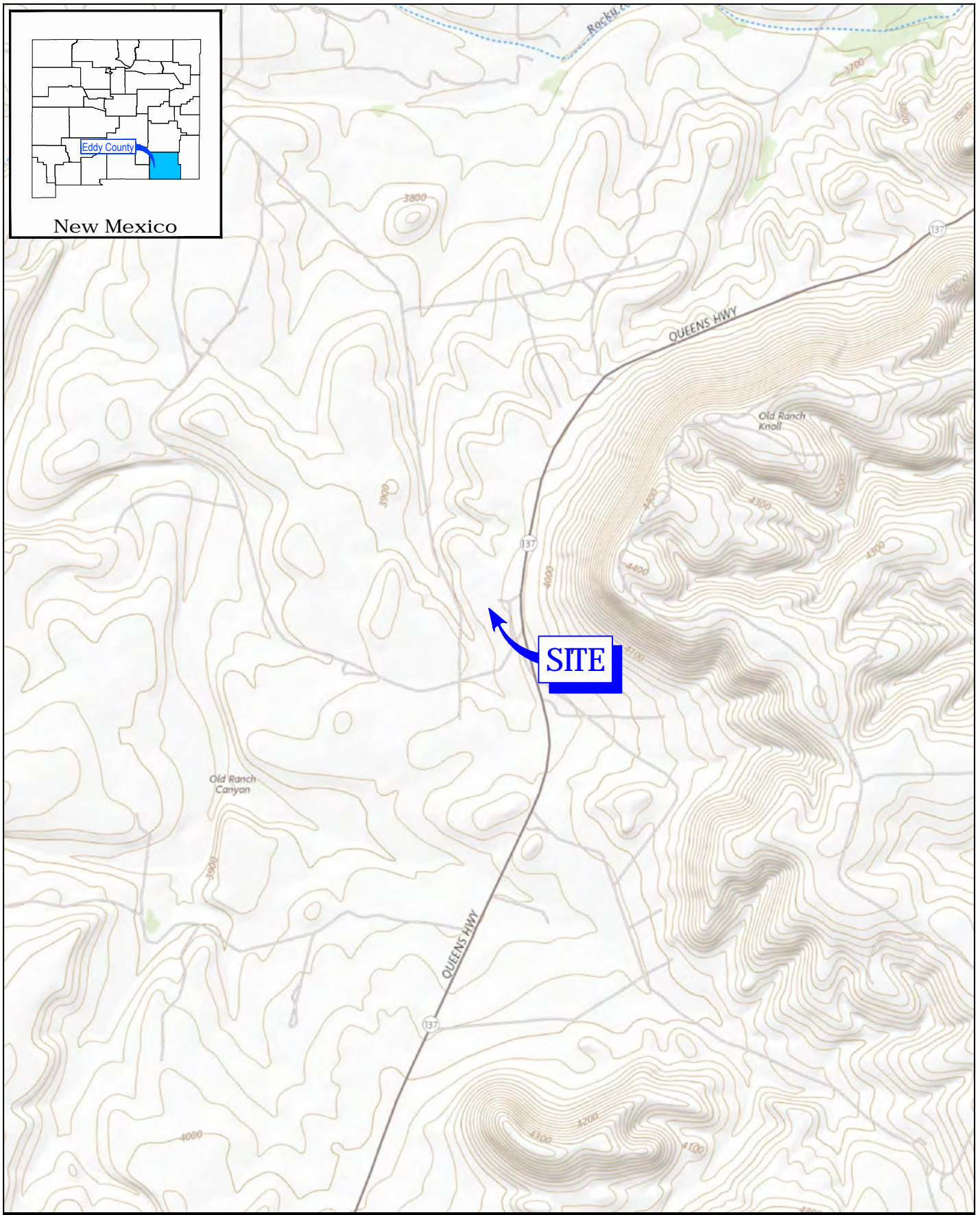
Thomas C. Larson, M.S.
Midland Operation Manager

BH/mss/1

Encl. Figure 1 – Site Location Map
 Figure 2 – Site Assessment: Soil Analytical Results Map
 Table 1 – Summary of Soil Analytical Data
 Attachment A – Site Characterization Documentation
 Attachment B – Laboratory Analytical Reports and Chain-of-Custody Documentation

cc: Chase Settles

Figures



EOG RESOURCES
EDDY COUNTY, NEW MEXICO
BRANNIGAN ANF FEDERAL #5 PIPELINE

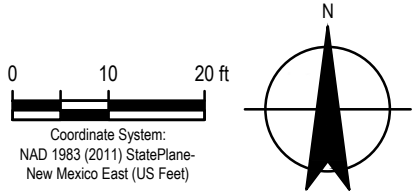
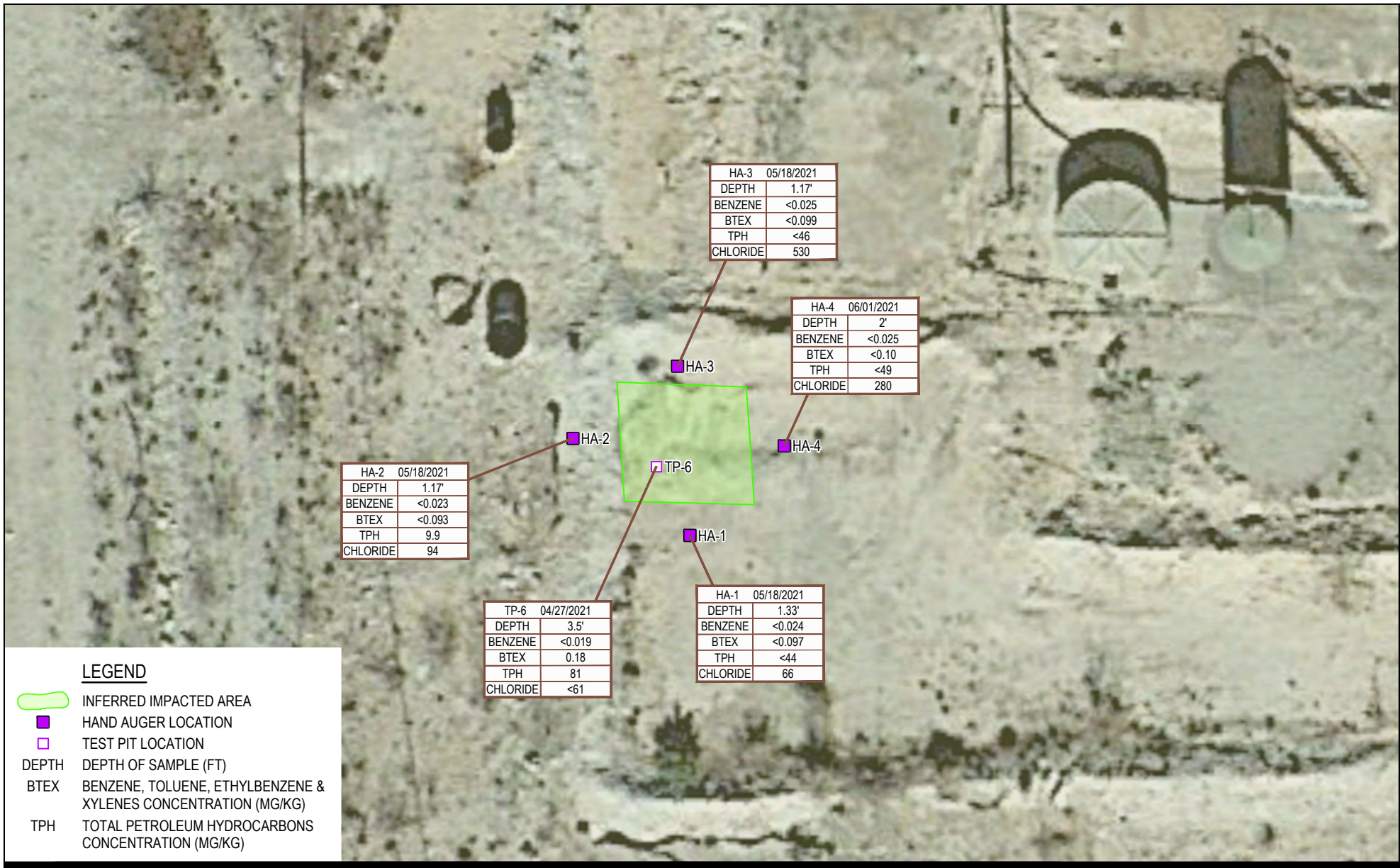
Project No. 11228320
Date May 2021

SITE LOCATION MAP

FIGURE 1

Filename: \\ghdnet\ghd\USMidland\Projects\562\11228320\Digital_Design\ACAD 2020\Figures\11228320-GHD-0000-RPT-EN-0101_DL-001.dwg

Data Source: USGS 7.5 Minute Quad "Martha Creek and Azotea Peak, New Mexico"
Lat/Long: 32.425787° North, 104.544598° West



NOTES:

1. RESULTS IN MILLIGRAMS PER KILOGRAM (MG/KG).
2. SEE TABLE 1 FOR FULL ANALYTICAL RESULTS/DETAILS.
3. YELLOW SHADED CELLS INDICATE EXCEEDANCE.



EOG RESOURCES
EDDY COUNTY, NEW MEXICO
BRANNIGAN ANF FEDERAL #5 PIPELINE

**SITE ASSESSMENT:
SOIL ANALYTICAL RESULTS MAP**

Project No. 11228320
Date June 2021

FIGURE 2

Tables

Table 1
Summary of Soil Analytical Data
Brannigan ANF Federal 5 Pipeline Area
EOG Resources
Eddy County, New Mexico

Sample ID	Sample Date	Depth (feet bgs)	Benzene	Toluene	Ethylbenzene	Xylenes	BTEX	TPH				Chloride
								GRO(C6-C10)	DRO(C10-C28)	MRO (C28-C35)	Total GRO/DRO/MRO	
			(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
			Table I Closure Criteria for Soils <50 feet Depth to Groundwater 19.15.29 NMAC									
10 mg/Kg	---	---	---	50 mg/Kg	---	---	---	100 mg/Kg	600 mg/Kg			
Initial Assessment Samples - Pipeline Area												
TP-6	4/27/21	3.5	<0.019	<0.038	<0.038	0.18	0.18	59	22	<43	81	<61
HA-1	5/18/21	1.33	<0.024	<0.048	<0.048	<0.097	<0.097	<4.8	<8.8	<44	<44	66
HA-2	5/18/21	1.17	<0.023	<0.047	<0.047	<0.093	<0.093	<4.7	9.9	<48	9.9	94
HA-3	5/18/21	1.17	<0.025	<0.049	<0.049	<0.099	<0.099	<4.9	<9.2	<46	<46	530
HA-4	6/1/21	2	<0.025	<0.050	<0.050	<0.10	<0.10	<5.0	<9.8	<49	<49	280

Notes:

- Values reported in mg/kg
- < = Value Less than Reporting Limit (RL)
- Bold Indicates Analyte Detected
- BTEX analyses by EPA Method SW 8021B.
- TPH analyses by EPA Method SW 8015 Mod.
- GRO/DRO/MRO = Gasoline/Diesel/Motor Oil
- Yellow shaded cells indicate analytical samples that exceed the NMOC 19.15.29.12 Table 1 Closure Criteria for the site.


Attachment A

Site Characterization Documentation


Brannigan ANF Federal #5 Battery Pipeline


Karst Potential Map

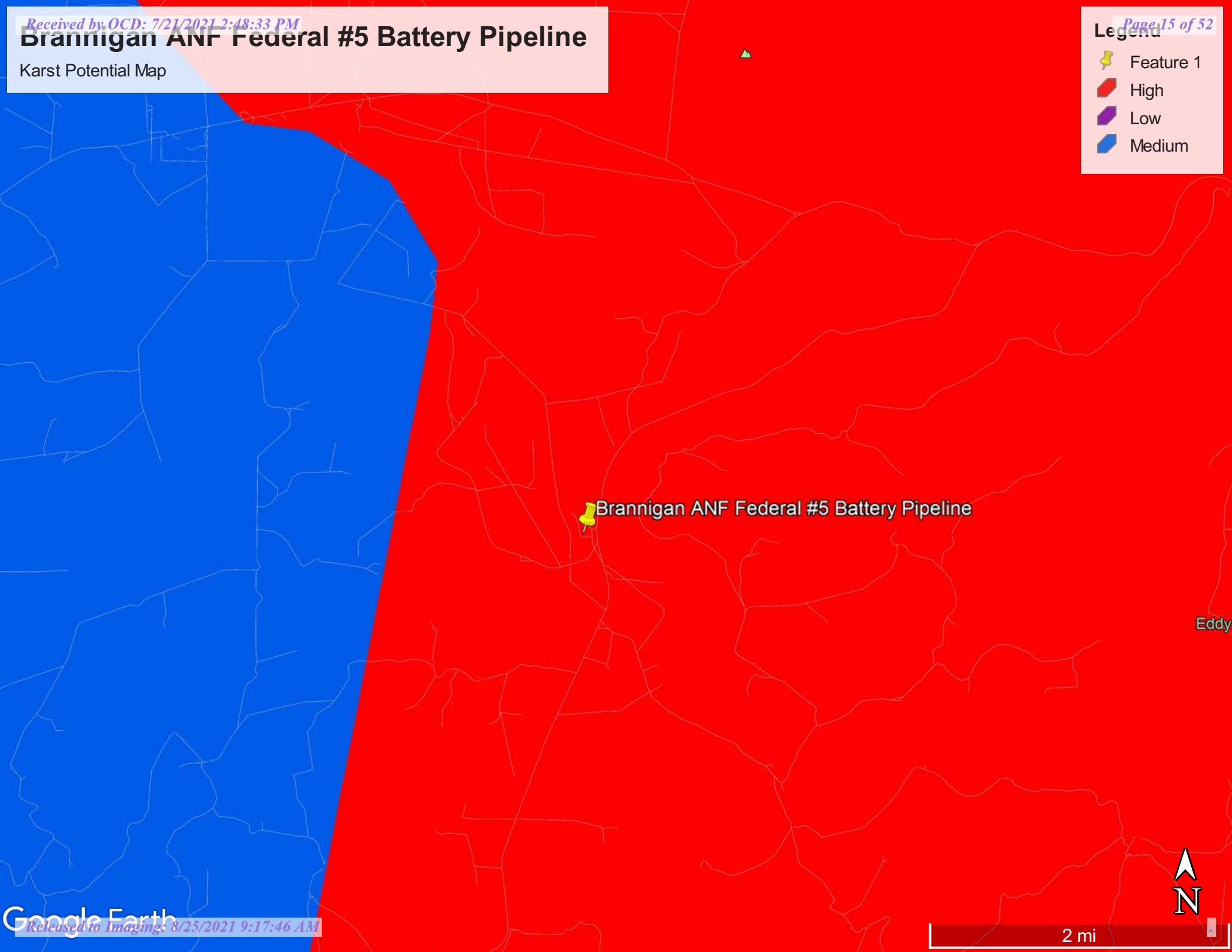
Legend

 Feature 1

 High

 Low

 Medium



Eddy



Brannigan ANF Fed Pipeline



7/6/2021, 5:12:33 PM

GIS WATERS PODs

• Active

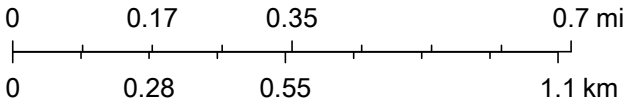
New Mexico State Trust Lands

Subsurface Estate

Both Estates

SiteBoundaries

1:18,056



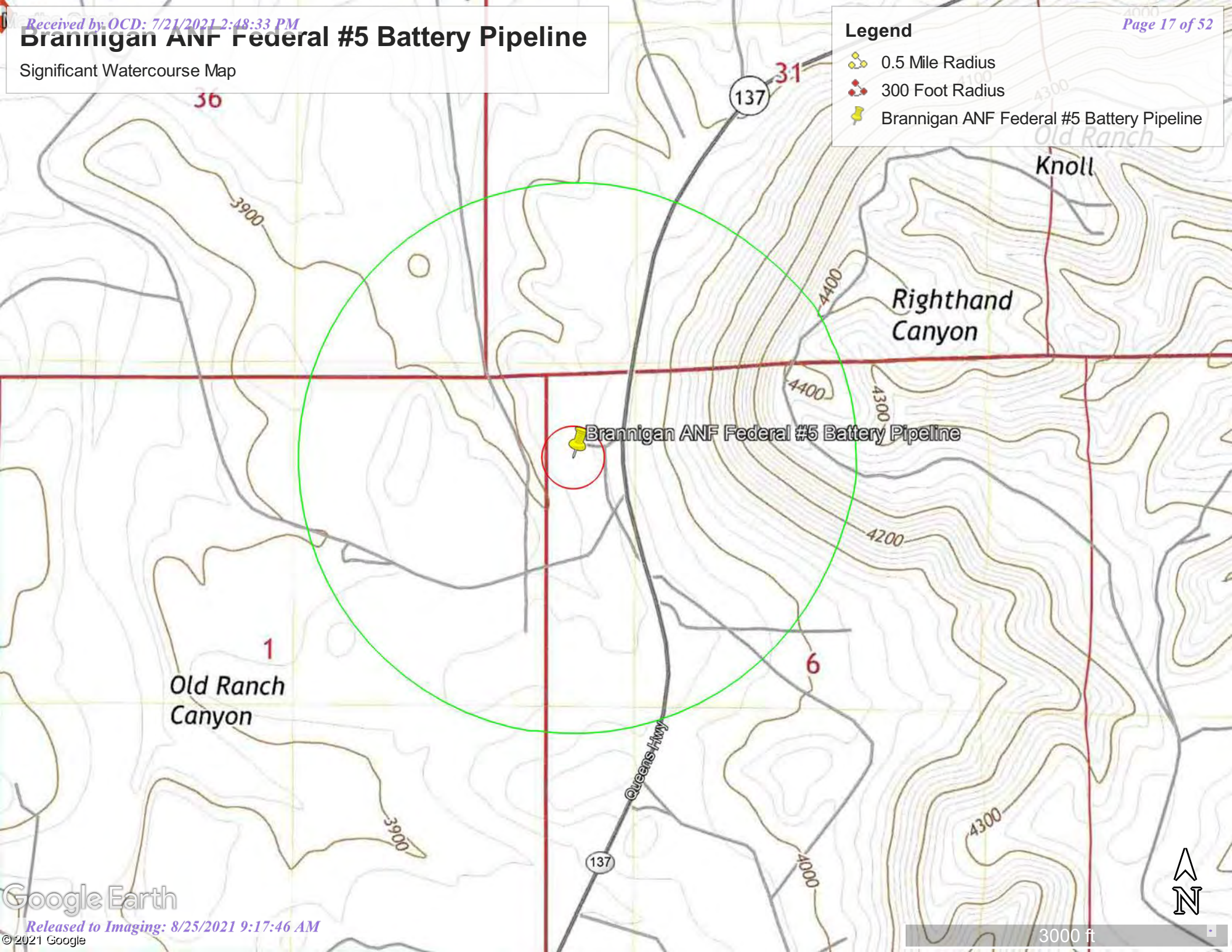
Esri, HERE, iPC, U.S. Department of Energy Office of Legacy Management, Esri, HERE, Garmin, iPC, Maxar

Brannigan ANF Federal #5 Battery Pipeline

Significant Watercourse Map

Legend

- 0.5 Mile Radius
- 300 Foot Radius
- Brannigan ANF Federal #5 Battery Pipeline





Brannigan ANF Federal Battery-Pipeline



July 6, 2021

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

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

- Lake
- Other
- Riverine

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

National Flood Hazard Layer FIRMette



104°32'57"W 32°25'49"N



Legend

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

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **7/6/2021 at 5:41 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

0 250 500 1,000 1,500 2,000 Feet 1:6,000

104°32'20"W 32°25'19"N

Attachment B Laboratory Analytical Reports and Chain-of- Custody Documentation



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

April 29, 2021

Jeff Walker

GHD

6121 Indian School Road, NE #200

Albuquerque, NM 87110

TEL: (505) 884-0672

FAX

RE: Brannigan ANF Federal 5 Battery

OrderNo.: 2104B53

Dear Jeff Walker:

Hall Environmental Analysis Laboratory received 6 sample(s) on 4/28/2021 for the analyses presented in the following report.

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order: 2104B53

Date Reported: 4/29/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: Brannigan ANF Federal 5 Battery

Lab Order: 2104B53

Lab ID: 2104B53-001

Collection Date: 4/27/2021 8:45:00 AM

Client Sample ID: TP1

Matrix: MEOH (SOIL)

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: VP
Chloride	180	60		mg/Kg	20	4/28/2021 11:32:21 AM	59670
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: BRM
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	4/28/2021 12:11:44 PM	C77007
Surr: BFB	93.5	70-130		%Rec	1	4/28/2021 12:11:44 PM	C77007
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	38	9.4		mg/Kg	1	4/28/2021 10:57:16 AM	59671
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/28/2021 10:57:16 AM	59671
Surr: DNOP	119	70-130		%Rec	1	4/28/2021 10:57:16 AM	59671
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: BRM
Benzene	ND	0.019		mg/Kg	1	4/28/2021 12:11:44 PM	D77007
Toluene	ND	0.038		mg/Kg	1	4/28/2021 12:11:44 PM	D77007
Ethylbenzene	ND	0.038		mg/Kg	1	4/28/2021 12:11:44 PM	D77007
Xylenes, Total	ND	0.076		mg/Kg	1	4/28/2021 12:11:44 PM	D77007
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	4/28/2021 12:11:44 PM	D77007
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	4/28/2021 12:11:44 PM	D77007
Surr: Dibromofluoromethane	112	70-130		%Rec	1	4/28/2021 12:11:44 PM	D77007
Surr: Toluene-d8	101	70-130		%Rec	1	4/28/2021 12:11:44 PM	D77007

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

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

Analytical Report

Lab Order: 2104B53

Date Reported: 4/29/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD

Lab Order: 2104B53

Project: Brannigan ANF Federal 5 Battery

Lab ID: 2104B53-002

Collection Date: 4/27/2021 8:50:00 AM

Client Sample ID: TP2

Matrix: MEOH (SOIL)

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: VP
Chloride	ND	61		mg/Kg	20	4/28/2021 11:44:45 AM	59670
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: BRM
Gasoline Range Organics (GRO)	ND	6.1		mg/Kg	1	4/28/2021 12:38:38 PM	C77007
Surr: BFB	95.8	70-130		%Rec	1	4/28/2021 12:38:38 PM	C77007
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	100	45		mg/Kg	5	4/28/2021 12:40:30 PM	59671
Motor Oil Range Organics (MRO)	340	230		mg/Kg	5	4/28/2021 12:40:30 PM	59671
Surr: DNOP	0	70-130	S	%Rec	5	4/28/2021 12:40:30 PM	59671
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: BRM
Benzene	ND	0.030		mg/Kg	1	4/28/2021 12:38:38 PM	D77007
Toluene	ND	0.061		mg/Kg	1	4/28/2021 12:38:38 PM	D77007
Ethylbenzene	ND	0.061		mg/Kg	1	4/28/2021 12:38:38 PM	D77007
Xylenes, Total	ND	0.12		mg/Kg	1	4/28/2021 12:38:38 PM	D77007
Surr: 1,2-Dichloroethane-d4	107	70-130		%Rec	1	4/28/2021 12:38:38 PM	D77007
Surr: 4-Bromofluorobenzene	107	70-130		%Rec	1	4/28/2021 12:38:38 PM	D77007
Surr: Dibromofluoromethane	115	70-130		%Rec	1	4/28/2021 12:38:38 PM	D77007
Surr: Toluene-d8	104	70-130		%Rec	1	4/28/2021 12:38:38 PM	D77007

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

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

Analytical Report

Lab Order: 2104B53

Date Reported: 4/29/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: Brannigan ANF Federal 5 Battery

Lab Order: 2104B53

Lab ID: 2104B53-003

Collection Date: 4/27/2021 8:55:00 AM

Client Sample ID: TP3

Matrix: MEOH (SOIL)

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: VP
Chloride	1100	61		mg/Kg	20	4/28/2021 11:57:09 AM	59670
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: BRM
Gasoline Range Organics (GRO)	4.7	4.6		mg/Kg	1	4/28/2021 1:05:33 PM	C77007
Surr: BFB	102	70-130		%Rec	1	4/28/2021 1:05:33 PM	C77007
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	62	8.8		mg/Kg	1	4/28/2021 11:06:42 AM	59671
Motor Oil Range Organics (MRO)	100	44		mg/Kg	1	4/28/2021 11:06:42 AM	59671
Surr: DNOP	114	70-130		%Rec	1	4/28/2021 11:06:42 AM	59671
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: BRM
Benzene	ND	0.023		mg/Kg	1	4/28/2021 1:05:33 PM	D77007
Toluene	ND	0.046		mg/Kg	1	4/28/2021 1:05:33 PM	D77007
Ethylbenzene	ND	0.046		mg/Kg	1	4/28/2021 1:05:33 PM	D77007
Xylenes, Total	ND	0.093		mg/Kg	1	4/28/2021 1:05:33 PM	D77007
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	4/28/2021 1:05:33 PM	D77007
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	4/28/2021 1:05:33 PM	D77007
Surr: Dibromofluoromethane	112	70-130		%Rec	1	4/28/2021 1:05:33 PM	D77007
Surr: Toluene-d8	109	70-130		%Rec	1	4/28/2021 1:05:33 PM	D77007

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

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

Analytical Report

Lab Order: 2104B53

Date Reported: 4/29/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD

Lab Order: 2104B53

Project: Brannigan ANF Federal 5 Battery

Lab ID: 2104B53-004

Collection Date: 4/27/2021 9:00:00 AM

Client Sample ID: TP4

Matrix: MEOH (SOIL)

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: VP
Chloride	63	60		mg/Kg	20	4/28/2021 12:09:34 PM	59670
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: BRM
Gasoline Range Organics (GRO)	270	23		mg/Kg	5	4/28/2021 1:32:24 PM	C77007
Surr: BFB	118	70-130		%Rec	5	4/28/2021 1:32:24 PM	C77007
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	2600	83		mg/Kg	10	4/28/2021 11:13:17 AM	59671
Motor Oil Range Organics (MRO)	1000	410		mg/Kg	10	4/28/2021 11:13:17 AM	59671
Surr: DNOP	0	70-130	S	%Rec	10	4/28/2021 11:13:17 AM	59671
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: BRM
Benzene	ND	0.12	D	mg/Kg	5	4/28/2021 1:32:24 PM	D77007
Toluene	ND	0.23	D	mg/Kg	5	4/28/2021 1:32:24 PM	D77007
Ethylbenzene	ND	0.23	D	mg/Kg	5	4/28/2021 1:32:24 PM	D77007
Xylenes, Total	ND	0.46	D	mg/Kg	5	4/28/2021 1:32:24 PM	D77007
Surr: 1,2-Dichloroethane-d4	109	70-130	D	%Rec	5	4/28/2021 1:32:24 PM	D77007
Surr: 4-Bromofluorobenzene	129	70-130	D	%Rec	5	4/28/2021 1:32:24 PM	D77007
Surr: Dibromofluoromethane	117	70-130	D	%Rec	5	4/28/2021 1:32:24 PM	D77007
Surr: Toluene-d8	107	70-130	D	%Rec	5	4/28/2021 1:32:24 PM	D77007

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

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

Analytical Report

Lab Order: 2104B53

Date Reported: 4/29/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: Brannigan ANF Federal 5 Battery

Lab Order: 2104B53

Lab ID: 2104B53-005

Collection Date: 4/27/2021 9:05:00 AM

Client Sample ID: TP5

Matrix: MEOH (SOIL)

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: VP
Chloride	230	60		mg/Kg	20	4/28/2021 12:21:59 PM	59670
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: BRM
Gasoline Range Organics (GRO)	170	4.7		mg/Kg	1	4/28/2021 1:59:15 PM	C77007
Surr: BFB	179	70-130	S	%Rec	1	4/28/2021 1:59:15 PM	C77007
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	1500	95		mg/Kg	10	4/28/2021 12:27:42 PM	59671
Motor Oil Range Organics (MRO)	1200	480		mg/Kg	10	4/28/2021 12:27:42 PM	59671
Surr: DNOP	0	70-130	S	%Rec	10	4/28/2021 12:27:42 PM	59671
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: BRM
Benzene	ND	0.023		mg/Kg	1	4/28/2021 1:59:15 PM	D77007
Toluene	ND	0.047		mg/Kg	1	4/28/2021 1:59:15 PM	D77007
Ethylbenzene	ND	0.047		mg/Kg	1	4/28/2021 1:59:15 PM	D77007
Xylenes, Total	0.58	0.094		mg/Kg	1	4/28/2021 1:59:15 PM	D77007
Surr: 1,2-Dichloroethane-d4	107	70-130		%Rec	1	4/28/2021 1:59:15 PM	D77007
Surr: 4-Bromofluorobenzene	190	70-130	S	%Rec	1	4/28/2021 1:59:15 PM	D77007
Surr: Dibromofluoromethane	115	70-130		%Rec	1	4/28/2021 1:59:15 PM	D77007
Surr: Toluene-d8	117	70-130		%Rec	1	4/28/2021 1:59:15 PM	D77007

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

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

Analytical Report

Lab Order: 2104B53

Date Reported: 4/29/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: Brannigan ANF Federal 5 Battery

Lab Order: 2104B53

Lab ID: 2104B53-006

Collection Date: 4/27/2021 12:15:00 AM

Client Sample ID: TP6

Matrix: MEOH (SOIL)

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: VP
Chloride	ND	61		mg/Kg	20	4/28/2021 12:59:12 PM	59670
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: BRM
Gasoline Range Organics (GRO)	59	3.8		mg/Kg	1	4/28/2021 2:26:05 PM	C77007
Surr: BFB	104	70-130		%Rec	1	4/28/2021 2:26:05 PM	C77007
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	22	8.5		mg/Kg	1	4/28/2021 11:16:09 AM	59671
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	4/28/2021 11:16:09 AM	59671
Surr: DNOP	110	70-130		%Rec	1	4/28/2021 11:16:09 AM	59671
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: BRM
Benzene	ND	0.019		mg/Kg	1	4/28/2021 2:26:05 PM	D77007
Toluene	ND	0.038		mg/Kg	1	4/28/2021 2:26:05 PM	D77007
Ethylbenzene	ND	0.038		mg/Kg	1	4/28/2021 2:26:05 PM	D77007
Xylenes, Total	0.18	0.077		mg/Kg	1	4/28/2021 2:26:05 PM	D77007
Surr: 1,2-Dichloroethane-d4	108	70-130		%Rec	1	4/28/2021 2:26:05 PM	D77007
Surr: 4-Bromofluorobenzene	115	70-130		%Rec	1	4/28/2021 2:26:05 PM	D77007
Surr: Dibromofluoromethane	116	70-130		%Rec	1	4/28/2021 2:26:05 PM	D77007
Surr: Toluene-d8	107	70-130		%Rec	1	4/28/2021 2:26:05 PM	D77007

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

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

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2104B53

29-Apr-21

Client: GHD**Project:** Brannigan ANF Federal 5 Battery

Sample ID: MB-59670	SampType: MBLK	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 59670	RunNo: 77001								
Prep Date: 4/28/2021	Analysis Date: 4/28/2021	SeqNo: 2729918	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-59670	SampType: LCS	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 59670	RunNo: 77001								
Prep Date: 4/28/2021	Analysis Date: 4/28/2021	SeqNo: 2729919	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.2	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

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QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2104B53

29-Apr-21

Client: GHD**Project:** Brannigan ANF Federal 5 Battery

Sample ID: MB-59671	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 59671	RunNo: 77009								
Prep Date: 4/28/2021	Analysis Date: 4/28/2021	SeqNo: 2729666			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.9		10.00		88.9	70	130			

Sample ID: LCS-59671	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 59671	RunNo: 77009								
Prep Date: 4/28/2021	Analysis Date: 4/28/2021	SeqNo: 2729667			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	10	50.00	0	79.8	68.9	141			
Surr: DNOP	4.2		5.000		85.0	70	130			

Sample ID: MB-59659	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 59659	RunNo: 77011								
Prep Date: 4/27/2021	Analysis Date: 4/28/2021	SeqNo: 2730655			Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	11		10.00		113	70	130			

Sample ID: LCS-59659	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 59659	RunNo: 77011								
Prep Date: 4/27/2021	Analysis Date: 4/28/2021	SeqNo: 2730657			Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.9		5.000		119	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

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QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2104B53

29-Apr-21

Client: GHD**Project:** Brannigan ANF Federal 5 Battery

Sample ID: 100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: Volatiles Short List						
Client ID: LCSS	Batch ID: D77007			RunNo: 77007						
Prep Date:	Analysis Date: 4/28/2021			SeqNo: 2729716		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	107	70	130			
Toluene	0.97	0.050	1.000	0	96.8	70	130			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		104	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		103	70	130			
Surr: Dibromofluoromethane	0.54		0.5000		107	70	130			
Surr: Toluene-d8	0.50		0.5000		100	70	130			

Sample ID: mb	SampType: MBLK			TestCode: EPA Method 8260B: Volatiles Short List						
Client ID: PBS	Batch ID: D77007			RunNo: 77007						
Prep Date:	Analysis Date: 4/28/2021			SeqNo: 2729721		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		101	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		102	70	130			
Surr: Toluene-d8	0.49		0.5000		98.9	70	130			

Sample ID: lcs-59658	SampType: LCS			TestCode: EPA Method 8260B: Volatiles Short List						
Client ID: LCSS	Batch ID: 59658			RunNo: 77007						
Prep Date: 4/27/2021	Analysis Date: 4/28/2021			SeqNo: 2730200		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.53		0.5000		106	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		101	70	130			
Surr: Dibromofluoromethane	0.56		0.5000		112	70	130			
Surr: Toluene-d8	0.51		0.5000		101	70	130			

Sample ID: mb-59658	SampType: MBLK			TestCode: EPA Method 8260B: Volatiles Short List						
Client ID: PBS	Batch ID: 59658			RunNo: 77007						
Prep Date: 4/27/2021	Analysis Date: 4/28/2021			SeqNo: 2730201		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.55		0.5000		111	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		104	70	130			
Surr: Dibromofluoromethane	0.57		0.5000		113	70	130			
Surr: Toluene-d8	0.49		0.5000		98.8	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2104B53

29-Apr-21

Client: GHD**Project:** Brannigan ANF Federal 5 Battery

Sample ID: 2104B53-002A MS		SampType: MS		TestCode: EPA Method 8260B: Volatiles Short List						
Client ID: TP2		Batch ID: D77007		RunNo: 77007						
Prep Date:		Analysis Date: 4/28/2021		SeqNo: 2730317		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	111	70	130			
Toluene	0.99	0.050	1.000	0	99.0	70	130			
Surr: 1,2-Dichloroethane-d4	0.53		0.5000		107	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		106	70	130			
Surr: Dibromofluoromethane	0.57		0.5000		114	70	130			
Surr: Toluene-d8	0.52		0.5000		105	70	130			

Sample ID: 2104B53-002A MSD		SampType: MSD		TestCode: EPA Method 8260B: Volatiles Short List						
Client ID: TP2		Batch ID: D77007		RunNo: 77007						
Prep Date:		Analysis Date: 4/28/2021		SeqNo: 2730321		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	109	70	130	1.54	20	
Toluene	0.96	0.050	1.000	0	96.2	70	130	2.94	20	
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		101	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.53		0.5000		107	70	130	0	0	
Surr: Dibromofluoromethane	0.57		0.5000		114	70	130	0	0	
Surr: Toluene-d8	0.53		0.5000		106	70	130	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

Page 10 of 11

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2104B53

29-Apr-21

Client: GHD
Project: Brannigan ANF Federal 5 Battery

Sample ID: 2.5ug gro lcs	SampType: LCS			TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: LCSS	Batch ID: C77007			RunNo: 77007						
Prep Date:	Analysis Date: 4/28/2021			SeqNo: 2729710		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	94.4	70	130			
Surr: BFB	480		500.0		95.6	70	130			

Sample ID: mb	SampType: MBLK			TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: PBS	Batch ID: C77007			RunNo: 77007						
Prep Date:	Analysis Date: 4/28/2021			SeqNo: 2729715		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	470		500.0		95.0	70	130			

Sample ID: lcs-59658	SampType: LCS			TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: LCSS	Batch ID: 59658			RunNo: 77007						
Prep Date: 4/27/2021	Analysis Date: 4/28/2021			SeqNo: 2730182		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	460		500.0		92.1	70	130			

Sample ID: mb-59658	SampType: MBLK			TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: PBS	Batch ID: 59658			RunNo: 77007						
Prep Date: 4/27/2021	Analysis Date: 4/28/2021			SeqNo: 2730183		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	470		500.0		94.5	70	130			

Sample ID: 2104B53-001A MS G	SampType: MS			TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: TP1	Batch ID: C77007			RunNo: 77007						
Prep Date:	Analysis Date: 4/28/2021			SeqNo: 2730261		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	95.2	49.2	122			
Surr: BFB	480		500.0		95.5	70	130			

Sample ID: 2104B53-001A MSD	SampType: MSD			TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: TP1	Batch ID: C77007			RunNo: 77007						
Prep Date:	Analysis Date: 4/28/2021			SeqNo: 2730263		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	90.8	49.2	122	4.69	20	
Surr: BFB	480		500.0		96.8	70	130	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

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

Sample Log-In Check List

Client Name: GHD

Work Order Number: 2104B53

RcptNo: 1

Received By: Cheyenne Cason 4/28/2021 8:00:00 AM

Completed By: Cheyenne Cason 4/28/2021 8:22:28 AM

Reviewed By: IO 4/28/21

Chain of Custody

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

Log In

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

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted? _____

Checked by: CW 4/28/21

Special Handling (if applicable)

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

Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.2	Good				



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

May 28, 2021

Tom Larson

GHD

6121 Indian School Road, NE #200

Albuquerque, NM 87110

TEL: (505) 884-0672

FAX

RE: Brannigan ANF Federal 5 Pipeline

OrderNo.: 2105947

Dear Tom Larson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 5/21/2021 for the analyses presented in the following report.

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order: 2105947

Date Reported: 5/28/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: Brannigan ANF Federal 5 Pipeline

Lab Order: 2105947

Lab ID: 2105947-001

Collection Date: 5/18/2021 1:40:00 PM

Client Sample ID: HA1

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: VP
Chloride	66	60		mg/Kg	20	5/24/2021 1:47:59 PM	60211
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	8.8		mg/Kg	1	5/24/2021 10:15:25 AM	60191
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	5/24/2021 10:15:25 AM	60191
Surr: DNOP	119	70-130		%Rec	1	5/24/2021 10:15:25 AM	60191
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/24/2021 1:47:48 PM	60185
Surr: BFB	89.8	70-130		%Rec	1	5/24/2021 1:47:48 PM	60185
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	5/24/2021 1:47:48 PM	60185
Toluene	ND	0.048		mg/Kg	1	5/24/2021 1:47:48 PM	60185
Ethylbenzene	ND	0.048		mg/Kg	1	5/24/2021 1:47:48 PM	60185
Xylenes, Total	ND	0.097		mg/Kg	1	5/24/2021 1:47:48 PM	60185
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	5/24/2021 1:47:48 PM	60185

Lab ID: 2105947-002

Collection Date: 5/18/2021 1:45:00 PM

Client Sample ID: HA2

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: VP
Chloride	94	59		mg/Kg	20	5/24/2021 2:00:23 PM	60211
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: mb
Diesel Range Organics (DRO)	9.9	9.7		mg/Kg	1	5/22/2021 12:14:48 PM	60191
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/22/2021 12:14:48 PM	60191
Surr: DNOP	120	70-130		%Rec	1	5/22/2021 12:14:48 PM	60191
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/24/2021 2:11:23 PM	60185
Surr: BFB	94.1	70-130		%Rec	1	5/24/2021 2:11:23 PM	60185
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	5/24/2021 2:11:23 PM	60185
Toluene	ND	0.047		mg/Kg	1	5/24/2021 2:11:23 PM	60185
Ethylbenzene	ND	0.047		mg/Kg	1	5/24/2021 2:11:23 PM	60185
Xylenes, Total	ND	0.093		mg/Kg	1	5/24/2021 2:11:23 PM	60185
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	5/24/2021 2:11:23 PM	60185

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

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 1 of 6

Analytical Report

Lab Order: 2105947

Date Reported: 5/28/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD

Lab Order: 2105947

Project: Brannigan ANF Federal 5 Pipeline

Lab ID: 2105947-003

Collection Date: 5/18/2021 1:50:00 PM

Client Sample ID: HA3

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: VP
Chloride	530	59		mg/Kg	20	5/24/2021 2:37:36 PM	60211
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: mb
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	5/22/2021 12:24:55 PM	60191
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/22/2021 12:24:55 PM	60191
Surr: DNOP	117	70-130		%Rec	1	5/22/2021 12:24:55 PM	60191
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/24/2021 2:34:54 PM	60185
Surr: BFB	89.7	70-130		%Rec	1	5/24/2021 2:34:54 PM	60185
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	5/24/2021 2:34:54 PM	60185
Toluene	ND	0.049		mg/Kg	1	5/24/2021 2:34:54 PM	60185
Ethylbenzene	ND	0.049		mg/Kg	1	5/24/2021 2:34:54 PM	60185
Xylenes, Total	ND	0.099		mg/Kg	1	5/24/2021 2:34:54 PM	60185
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	5/24/2021 2:34:54 PM	60185

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

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

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2105947

28-May-21

Client: GHD**Project:** Brannigan ANF Federal 5 Pipeline

Sample ID: MB-60211	SampType: MBLK	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 60211	RunNo: 77619								
Prep Date: 5/24/2021	Analysis Date: 5/24/2021	SeqNo: 2755203	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-60211	SampType: LCS	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 60211	RunNo: 77619								
Prep Date: 5/24/2021	Analysis Date: 5/24/2021	SeqNo: 2755204	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.7	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

Page 3 of 6

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2105947

28-May-21

Client: GHD
Project: Brannigan ANF Federal 5 Pipeline

Sample ID: MB-60191	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 60191	RunNo: 77590								
Prep Date: 5/21/2021	Analysis Date: 5/22/2021	SeqNo: 2753997	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	13		10.00		128	70	130			

Sample ID: LCS-60191	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 60191	RunNo: 77590								
Prep Date: 5/21/2021	Analysis Date: 5/22/2021	SeqNo: 2754004	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	64	10	50.00	0	127	68.9	141			
Surr: DNOP	7.2		5.000		145	70	130			S

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2105947

28-May-21

Client: GHD
Project: Brannigan ANF Federal 5 Pipeline

Sample ID: mb-60185	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 60185	RunNo: 77617								
Prep Date: 5/21/2021	Analysis Date: 5/24/2021	SeqNo: 2755051	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	910		1000		91.2	70	130			

Sample ID: lcs-60185	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 60185	RunNo: 77617								
Prep Date: 5/21/2021	Analysis Date: 5/24/2021	SeqNo: 2755052	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	95.4	78.6	131			
Surr: BFB	1000		1000		100	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

Page 5 of 6

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2105947

28-May-21

Client: GHD**Project:** Brannigan ANF Federal 5 Pipeline

Sample ID: mb-60185	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 60185	RunNo: 77617								
Prep Date: 5/21/2021	Analysis Date: 5/24/2021	SeqNo: 2755095	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		103	70	130			

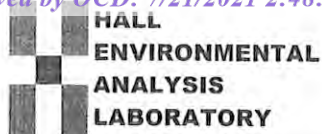
Sample ID: LCS-60185	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 60185	RunNo: 77617								
Prep Date: 5/21/2021	Analysis Date: 5/24/2021	SeqNo: 2755096	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	90.4	80	120			
Toluene	0.95	0.050	1.000	0	95.4	80	120			
Ethylbenzene	0.96	0.050	1.000	0	95.6	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.6	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

Page 6 of 6



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

Sample Log-In Check List

Client Name: GHD

Work Order Number: 2105947

RcptNo: 1

Received By: Juan Rojas 5/20/2021 7:30:00 AM

Completed By: Cheyenne Cason 5/21/2021 8:16:32 AM

Reviewed By: SPA 5.21.21

Chain of Custody1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐

2. How was the sample delivered? Courier

Log In3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐4. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐5. Sample(s) in proper container(s)? Yes ☒ No ☐6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐9. Received at least 1 vial with headspace $<1/4"$ for AQ VOA? Yes ☐ No ☐ NA ☒10. Were any sample containers received broken? Yes ☐ No ☒11. Does paperwork match bottle labels? Yes ☒ No ☐

(Note discrepancies on chain of custody)

12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐13. Is it clear what analyses were requested? Yes ☒ No ☐14. Were all holding times able to be met? Yes ☒ No ☐

(If no, notify customer for authorization.)

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted?

Checked by:

Special Handling (if applicable)15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.1	Good				



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

June 09, 2021

Tom Larson

GHD

6121 Indian School Road, NE #200

Albuquerque, NM 87110

TEL: (505) 884-0672

FAX

RE: Brannigan AWF Federal 5 Pipeline

OrderNo.: 2106163

Dear Tom Larson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 6/3/2021 for the analyses presented in the following report.

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order: 2106163

Date Reported: 6/9/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD

Lab Order: 2106163

Project: Brannigan AWF Federal 5 Pipeline

Lab ID: 2106163-001

Collection Date: 6/1/2021 9:45:00 AM

Client Sample ID: HA4

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: VP
Chloride	280	60		mg/Kg	20	6/7/2021 2:36:56 PM	60459
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	6/4/2021 10:56:17 PM	60427
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/4/2021 10:56:17 PM	60427
Surr: DNOP	84.6	70-130		%Rec	1	6/4/2021 10:56:17 PM	60427
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/4/2021 7:37:11 PM	60424
Surr: BFB	103	70-130		%Rec	1	6/4/2021 7:37:11 PM	60424
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	6/4/2021 7:37:11 PM	60424
Toluene	ND	0.050		mg/Kg	1	6/4/2021 7:37:11 PM	60424
Ethylbenzene	ND	0.050		mg/Kg	1	6/4/2021 7:37:11 PM	60424
Xylenes, Total	ND	0.10		mg/Kg	1	6/4/2021 7:37:11 PM	60424
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	6/4/2021 7:37:11 PM	60424

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

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

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2106163

09-Jun-21

Client: GHD**Project:** Brannigan AWF Federal 5 Pipeline

Sample ID: MB-60459	SampType: MBLK	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 60459	RunNo: 78895								
Prep Date: 6/7/2021	Analysis Date: 6/7/2021	SeqNo: 2767286	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-60459	SampType: LCS	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 60459	RunNo: 78895								
Prep Date: 6/7/2021	Analysis Date: 6/7/2021	SeqNo: 2767287	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.9	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

Page 2 of 5

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2106163

09-Jun-21

Client: GHD
Project: Brannigan AWF Federal 5 Pipeline

Sample ID: MB-60427	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 60427	RunNo: 78853								
Prep Date: 6/3/2021	Analysis Date: 6/4/2021	SeqNo: 2766244 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.5		10.00		84.7	70	130			

Sample ID: LCS-60427	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 60427	RunNo: 78853								
Prep Date: 6/3/2021	Analysis Date: 6/4/2021	SeqNo: 2766245 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	10	50.00	0	82.5	68.9	141			
Surr: DNOP	4.4		5.000		87.4	70	130			

Sample ID: MB-60453	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 60453	RunNo: 78881								
Prep Date: 6/5/2021	Analysis Date: 6/5/2021	SeqNo: 2766497 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		103	70	130			

Sample ID: LCS-60453	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 60453	RunNo: 78881								
Prep Date: 6/5/2021	Analysis Date: 6/5/2021	SeqNo: 2766498 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.9		5.000		97.8	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2106163

09-Jun-21

Client: GHD
Project: Brannigan AWF Federal 5 Pipeline

Sample ID: mb-60424	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 60424	RunNo: 78876								
Prep Date: 6/3/2021	Analysis Date: 6/4/2021	SeqNo: 2766354 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		103	70	130			

Sample ID: lcs-60424	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 60424	RunNo: 78876								
Prep Date: 6/3/2021	Analysis Date: 6/4/2021	SeqNo: 2766355 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	78.6	131			
Surr: BFB	1100		1000		113	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2106163

09-Jun-21

Client: GHD**Project:** Brannigan AWF Federal 5 Pipeline

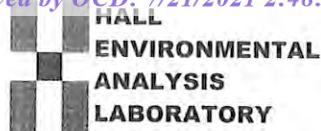
Sample ID: mb-60424	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 60424	RunNo: 78876								
Prep Date: 6/3/2021	Analysis Date: 6/4/2021	SeqNo: 2766381 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		103	70	130			

Sample ID: LCS-60424	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 60424	RunNo: 78876								
Prep Date: 6/3/2021	Analysis Date: 6/4/2021	SeqNo: 2766382 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	93.5	80	120			
Toluene	0.96	0.050	1.000	0	96.3	80	120			
Ethylbenzene	0.96	0.050	1.000	0	96.2	80	120			
Xylenes, Total	2.9	0.10	3.000	0	97.6	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		106	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit



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

Sample Log-In Check List

Client Name: GHD

Work Order Number: 2106163

RcptNo: 1

Received By: Cheyenne Cason 6/3/2021 7:30:00 AM

Completed By: Cheyenne Cason 6/3/2021 7:56:31 AM

Reviewed By: JR 6/3/21

Chain of Custody

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

Log In

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

of preserved
bottles checked
for pH:

(≤ 2 or >12 unless noted)

Adjusted?

Checked by:

Special Handling (if applicable)

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

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.2	Good				
2	4.3	Good				

District I

1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II

811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 37339

CONDITIONS

Operator: EOG RESOURCES INC P.O. Box 2267 Midland, TX 79702	OGRID: 7377
	Action Number: 37339
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
chensley	None	8/25/2021