

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

State of New Mexico
Energy Minerals and Natural
Resources Department

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

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

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: Enterprise Field Services, LLC	OGRID: 151618
Contact Name: Thomas Long	Contact Telephone: 505-599-2286
Contact email: tjlong@eprod.com	Incident # (assigned by OCD): NRM2009252076
Contact mailing address: 614 Reilly Ave, Farmington, NM 87401	

Location of Release Source

Latitude **36.77760** Longitude **-107.71743** (NAD 83 in decimal degrees to 5 decimal places)

Site Name Howell M#1	Site Type Natural Gas Gathering Pipeline
Date Release Discovered: 03/23/2020	Serial Number (if applicable): NM 0 011726

Unit Letter	Section	Township	Range	County
N	30	30N	8W	San Juan

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

Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input checked="" type="checkbox"/> Condensate	Volume Released (bbls): 10-15 BBLS	Volume Recovered (bbls): None
<input checked="" type="checkbox"/> Natural Gas	Volume Released (Mcf): 375.7 MCF	Volume Recovered (Mcf): None
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units):	Volume/Weight Recovered (provide units)

Cause of Release On March 23, 2020, Enterprise was notified by a producer that the meter tube on the Howell M#1 was damaged. The producer shut in the well. Enterprise dispatched technicians to remove the meter tube from service. The damaged meter tube was a result of someone driving over it with a vehicle. An area of approximately 40 feet in diameter was impacted by release fluids. In addition, fluids ran down hill to the southwest toward a wash, but did not enter the wash. No standing fluids were observed on site. Remediation activities were completed on April 6, 2020. The final excavation dimensions measured approximately 144 feet long by 92 feet wide up to nine feet deep. Approximately 708 cubic yards of hydrocarbon impacted soil was excavated and transported to a New Mexico Oil Conservation Division (NMOCD) approved land farm. During remediation activities, apparent historic impact was encountered at the site. Enterprise corresponded and collaborated with the NMOCD and Hilcorp Energy Company (Hilcorp), the production operator of the well site, and reached an agreement that Hilcorp would assume responsibility for further remediation at the site. A third party closure report is included with this "Final." C-141.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

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

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

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

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

Printed Name: Jon E. Fields

Title: Director, Environmental

Signature: 

Date: 11/30/2020

email: jefields@eprod.com


Telephone: (713) 381-6684

OCD Only

Received by: _____

Date: _____

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

Closure Approved by: 

Date: 05/20/2022

Printed Name: Nelson Velez

Title: Environmental Specialist – Adv



CLOSURE REPORT

Property:

**Howell M#1 (March 2020)
SW ¼, S30 T30N R8W
San Juan County, New Mexico**

October 7, 2020
Ensolum Project No. 05A1226099

Prepared for:

**Enterprise Field Services, LLC
614 Reilly Avenue
Farmington, NM 87401
Attn: Mr. Thomas Long**

Prepared by:

A blue ink signature of Landon Daniell, written in a cursive style.

Landon Daniell
Staff Geologist

A blue ink signature of Kyle Summers, written in a cursive style.

Kyle Summers
Senior Project Manager

Table of Contents

1.0	INTRODUCTION.....	1
1.1	SITE DESCRIPTION & BACKGROUND	1
1.2	PROJECT OBJECTIVE	1
2.0	CLOSURE CRITERIA.....	1
3.0	SOIL REMEDIATION ACTIVITIES.....	3
4.0	SOIL SAMPLING PROGRAM.....	3
5.0	SOIL LABORATORY ANALYTICAL METHODS	4
6.0	DATA EVALUATION	4
7.0	RECLAMATION AND REVEGETATION	5
8.0	FINDINGS AND RECOMMENDATION	5
9.0	STANDARDS OF CARE, LIMITATIONS, AND RELIANCE.....	5
9.1	STANDARD OF CARE	5
9.2	LIMITATIONS	5
9.3	RELIANCE	5

LIST OF APPENDICES

Appendix A: Figures

- Figure 1 Topographic Map
- Figure 2 Site Vicinity Map
- Figure 3 Site Map with Soil Analytical Results

Appendix B: Siting Figures and Documentation

- Figure A 1.0 Mile Radius Water Well Map
- Figure B Cathodic Protection Well Recorded Depth to Water
- Figure C 300 Foot Radius Watercourse and Drainage Identification
- Figure D 300 Foot Radius Occupied Structure Identification
- Figure E Water Well and Natural Spring Location
- Figure F Wetlands
- Figure G Mines, Mills, and Quarries
- Figure H 100-Year Flood Plain Map

Appendix C: Executed C-138 Solid Waste Acceptance Form

Appendix D: Photographic Documentation

Appendix E: Regulatory Correspondence

Appendix F: Table 1 - Soil Analytical Summary

Appendix G: Laboratory Data Sheets & Chain of Custody Documentation



CLOSURE REPORT

Howell M#1 (March 2020)
SW ¼, S30 T30N R8W
San Juan County, New Mexico

Ensolum Project No. 05A1226099

1.0 INTRODUCTION

1.1 Site Description & Background

Operator:	Enterprise Field Services, LLC / Enterprise Products Operating LLC (Enterprise)
Site Name:	Howell M#1 (March 2020) (Site)
Location:	36.77760° North, 107.71743° West Southwest (SW) ¼ of Section 30, Township 30 North, Range 8 West San Juan County, New Mexico
Property:	Bureau of Land Management (BLM)
Regulatory:	New Mexico Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division (OCD)

On March 23, 2020, a release of natural gas condensate was identified on the Howell M #1 meter run. The release resulted when an automobile impacted and severed the above-grade meter run piping. Enterprise subsequently isolated and locked the meter run out of service. On March 24, 2020, Enterprise initiated activities to facilitate the repair of the pipeline and remediate potential petroleum hydrocarbon impact resulting from the release.

A **Topographic Map** depicting the location of the Site is included as **Figure 1**, and a **Site Vicinity Map** is included as **Figure 2** in **Appendix A**.

1.2 Project Objective

The primary objective of the closure activities was to reduce constituent of concern (COC) concentrations in the on-Site soils to below the applicable New Mexico EMNRD OCD closure criteria.

2.0 CLOSURE CRITERIA

The Site is subject to regulatory oversight by the New Mexico EMNRD OCD. To address activities related to oil and gas releases, the New Mexico EMNRD OCD references New Mexico Administrative Code (NMAC) 19.15.29 *Releases*, which establishes investigation and abatement action requirements for oil and gas release sites that are subject to reporting and/or corrective action. Ensolum, LLC (Ensolum) utilized information provided by Enterprise, the general site characteristics, information available from the New Mexico Office of the State Engineer (OSE), and the New Mexico EMNRD OCD imaging database to determine the appropriate closure criteria for the Site. Supporting figures and documentation associated with the following bullets are provided in **Appendix B**.

- The OSE tracks the usage and assignment of water rights and water well installations and records this information in the Water Rights Reporting System (WRRS) database. Water wells and other points of diversion (PODs) are each assigned POD numbers in the database (which is searchable

Enterprise Field Services, LLC
 Closure Report
 Howell M #1 (March 2020)
 October 7, 2020



and includes an interactive map). Twelve (12) PODs were identified within a one mile radius of the Site in the OSE WRRS database. However, only seven (7) (SJ-04066 POD1, SJ-04084 POD1, SJ-04032 POD1, SJ-03904 POD1, SJ-02744, SJ-03699 POD1, and SJ-03467) of the 12 PODs have a recorded depth to water. The average depth to water for the seven (7) PODs is 39 feet below grade surface (bgs). The closest POD (SJ-04066 POD1), located approximately 0.38 miles northwest of the site and at a lower elevation (5,744 feet) than the Site (5,762 feet), indicates a depth to water of approximately 200 feet. The average depth to water for additional PODs located over one (1) mile from the Site but in adjacent Public Land Survey System (PLSS) sections is 11 feet bgs, but at elevations lower than the Site and typically adjacent to the San Juan River.

- The records for a cathodic protection well located at the Site well location indicates a depth to water of approximately 36 feet bgs.
- The Site is located within 300 feet of a New Mexico EMNRD OCD-defined significant watercourse. An ephemeral wash is located approximately 60 feet west of the excavation.
- The Site is not located within 200 feet of a lakebed, sinkhole, or playa lake.
- The Site is not located within 300 feet of a permanent residence, school, hospital, institution, or church.
- No springs, or private domestic fresh water wells used by less than five (5) households for domestic or stock watering purposes were identified within 500 feet of the Site.
- No fresh water wells or springs were identified within 1,000 feet of the Site.
- The Site is not located within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to New Mexico Statutes Annotated (NMSA) 1978, Section 3-27-3.
- Based on information identified in the U.S. Fish & Wildlife Service National Wetlands Inventory Wetlands Mapper, the Site is not located within 300 feet of a wetland.
- Based on information identified on the New Mexico Mining and Minerals Division's Geographic Information System (GIS), Maps and Mine Data database, the Site is not located within an area overlying a subsurface mine.
- The Site is not located within an unstable area.
- Based on information identified in the Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL) geospatial database, the Site is not located within a 100-year floodplain.

Based on the identified siting criteria, cleanup goals for soils remaining in place at the Site include:

Closure Criteria for Soils Impacted by a Release		
Constituent	Method	Limit
Chloride	EPA 300.0 or SM4500 Cl B	600 mg/kg
TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015	100 mg/kg
BTEX	EPA SW-846 Method 8021 or 8260	50 mg/kg
Benzene	EPA SW-846 Method 8021 or 8260	10 mg/kg

Enterprise Field Services, LLC
Closure Report
Howell M #1 (March 2020)
October 7, 2020



3.0 SOIL REMEDIATION ACTIVITIES

On March 24, 2020, Enterprise initiated activities to remediate petroleum hydrocarbon impact resulting from the meter run release. During the remediation and corrective action activities, West States Energy Contractors, Inc. provided heavy equipment and labor support, while Ensolum provided environmental consulting support.

During remediation activities, apparent historic impact was encountered at the Site. Further excavation was halted as it appeared that the historic impact was not related to the recent release from the meter run but rather to historic production activities, as evidenced by the transition from a total petroleum hydrocarbon (TPH) gasoline range organics (GRO) analytical fingerprint to a TPH diesel range organics (DRO) and motor oil/lube oil range organics (MRO) analytical fingerprint (as well as the presence of buried plastic liner material and supporting records documentation). Enterprise corresponded and collaborated with the New Mexico EMNRD OCD and Hilcorp Energy Company (Hilcorp), the production operator of the well site, and reached an agreement that Hilcorp would assume responsibility for further remediation at the Site.

The final excavation measured approximately 144 feet long and 92 feet wide at the maximum extents. The maximum depth of the excavation measured approximately nine (9) feet bgs.

The lithology encountered during the completion of remediation activities ranged from unconsolidated silty sand to medium-grained, moderately sorted, unconsolidated sand.

A total of approximately 708 cubic yards of petroleum hydrocarbon affected soils and 45 barrels (bbls) of hydro-excavation soil cuttings and water were transported to the Envirotech, Inc. (Envirotech) landfarm near Hilltop, New Mexico for disposal/remediation. The executed C-138 solid waste acceptance form is provided in **Appendix C**. The excavation was backfilled (where remediation was complete) with imported fill and the Site was turned over to Hilcorp (the producer) for additional remediation activities.

The map in **Figure 3 (Appendix A)** identifies the approximate soil sample locations and depicts the approximate dimensions of the excavation with respect to the meter run. Photographic documentation of the field activities is included in **Appendix D**.

4.0 SOIL SAMPLING PROGRAM

Ensolum field screened the soil samples from the excavation utilizing a photoionization detector (PID) fitted with a 10.6 eV lamp to guide excavation extents.

Ensolum's soil sampling program included the collection of 19 composite soil samples (S-1 through S-19) comprised of five (5) aliquots each, from the excavation for laboratory analysis. A clean shovel was utilized to obtain fresh aliquots from each area of the excavation. The New Mexico EMNRD OCD provided verbal approval to increase the sampling interval from 200 to 400 square feet. Most composite samples were comprised of a combination of floor and wall aliquots for a more practical approach because of the 400 square feet allowance coupled with the trench-like geometry of the excavation. **Regulatory Correspondence** is provided in **Appendix E**.

On April 6, 2020, a sampling event was performed at the Site. The New Mexico EMNRD OCD was notified of the sampling event although no representative was present during sampling activities. Composite soil samples S-1 (0-6"), S-2 (0-7"), S-3 (0-3'), S-4 (0-3'), S-5 (0-3'), S-6 (0-5'), S-7 (0-8'), S-8 (0-8'), S-9 (0-9'), S-10 (0-2'), S-11 (0-7'), and S-12 (0-5') were collected from the floor and walls of the excavation. Composite soil samples S-13 (3'), S-14 (3'), S-15 (3'), S-16 (3'), and S-17 (3') were collected from the floor of the excavation. Composite soil samples S-18 (0-3') and S-19 (0-3') were collected from the sidewalls of the excavation.

Enterprise Field Services, LLC
Closure Report
Howell M #1 (March 2020)
October 7, 2020



Soil samples were collected and placed in laboratory prepared containers. The containers were labeled and sealed using the laboratory supplied labels and custody seals and were stored on ice in a cooler. The samples were relinquished to the courier for Hall Environmental Analysis Laboratory of Albuquerque, New Mexico, under proper chain-of-custody procedures.

5.0 SOIL LABORATORY ANALYTICAL METHODS

The composite soil samples were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) using Environmental Protection Agency (EPA) SW-846 Method #8021; TPH GRO/DRO/MRO using EPA SW-846 Method #8015; and chlorides using EPA Method #300.0.

The laboratory analytical results are summarized in **Table 1** in **Appendix F**. The laboratory data sheets and executed chain-of-custody forms are provided in **Appendix G**.

6.0 DATA EVALUATION

Ensolum compared the BTEX, TPH, and chloride laboratory analytical results or laboratory supplied practical quantitation limits (PQLs) / reporting limits (RLs) associated with the composite soil samples (S-1 through S-19) to the applicable New Mexico EMNRD OCD closure criteria. The analytical results indicated TPH exceedances for soil samples S-13, S-15, and S-16; however, these exceedances were found to be the result of a historic earthen pit that is unrelated to this release. The remediation responsibility of soils associated with samples S-13, S-15, and S-16 were transferred to Hilcorp; therefore, these results are not included in the following discussion. The details explaining the transfer of responsibility to Hilcorp can be found in the **Regulatory Correspondence** in **Appendix E**.

- The laboratory analytical results for the composite soil samples collected from soils remaining at the Site indicate that benzene is not present at concentrations greater than the laboratory PQLs/RLs, which are less than the applicable New Mexico EMNRD OCD closure criteria of 10 milligrams per kilogram (mg/kg).
- The laboratory analytical results for composite soil samples S-3 and S-6 indicate total BTEX concentrations of 0.144 and 0.044 mg/kg, respectively, which is less than the applicable New Mexico EMNRD OCD closure criteria of 50 mg/kg. The laboratory analytical results for the remaining composite soil samples collected at the Site indicate that total BTEX is not present at concentrations greater than the laboratory PQLs/RLs, which are less than the applicable New Mexico EMNRD OCD closure criteria of 50 mg/kg.
- The laboratory analytical results for the composite soil samples collected from soils remaining at the Site indicate that total combined TPH GRO/DRO/MRO is not present at concentrations greater than the laboratory PQLs/RLs, which are less than the applicable New Mexico EMNRD OCD closure criteria of 100 mg/kg.
- The laboratory analytical results for the composite soil samples collected from soils remaining at the Site indicate that chloride is not present at concentrations greater than the laboratory PQLs/RLs, which are less than the applicable New Mexico EMNRD OCD closure criteria of 600 mg/kg for chlorides.

The laboratory analytical results are summarized in **Table 1** (**Appendix F**).

Enterprise Field Services, LLC
Closure Report
Howell M #1 (March 2020)
October 7, 2020



7.0 RECLAMATION AND REVEGETATION

The excavation was backfilled (where remediation was complete) with imported fill and the Site was turned over to Hilcorp for additional remediation activities.

8.0 FINDINGS AND RECOMMENDATION

- A total of 19 composite soil samples were collected from the excavation. Based on laboratory analytical results (not including S-13, S-15, and S-16, which are related to historic production activities) the soils remaining in place do not exhibit COC concentrations above the applicable New Mexico EMNRD OCD closure criteria.
- Following the remediation of condensate-affected soils from the Enterprise release, Site remediation activities were transferred to Hilcorp to complete the remediation of the historically-impacted soils associated with samples S-13, S-15, and S-16.
- A total of approximately 708 cubic yards of petroleum hydrocarbon affected soils and 45 bbls of hydro-excavation soil cuttings and water were transported to the Envirotech landfarm for disposal/remediation. The excavation and was backfilled using imported fill and subsequently contoured to the surrounding grade.

Based on field observations and laboratory analytical results, no additional investigation or corrective action appears warranted at this time.

9.0 STANDARDS OF CARE, LIMITATIONS, AND RELIANCE

9.1 Standard of Care

Ensolum's services were performed in accordance with standards customarily provided by a firm rendering the same or similar services in the area during the same time period. Ensolum makes no warranties, express or implied, as to the services performed hereunder. Additionally, Ensolum does not warrant the work of third parties supplying information used in the report (e.g. laboratories, regulatory agencies, or other third parties).

9.2 Limitations

Findings, conclusions, and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work and it should be noted that this information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, or not present during these services, and Ensolum cannot represent that the Site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during the investigation. Environmental conditions at other areas or portions of the Site may vary from those encountered at actual sample locations. Ensolum's findings and recommendation are based solely upon data available to Ensolum at the time of these services.

9.3 Reliance

This report has been prepared for the exclusive use of Enterprise and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the express written authorization of Enterprise and Ensolum. Any unauthorized distribution or reuse is at the

Enterprise Field Services, LLC
Closure Report
Howell M #1 (March 2020)
October 7, 2020

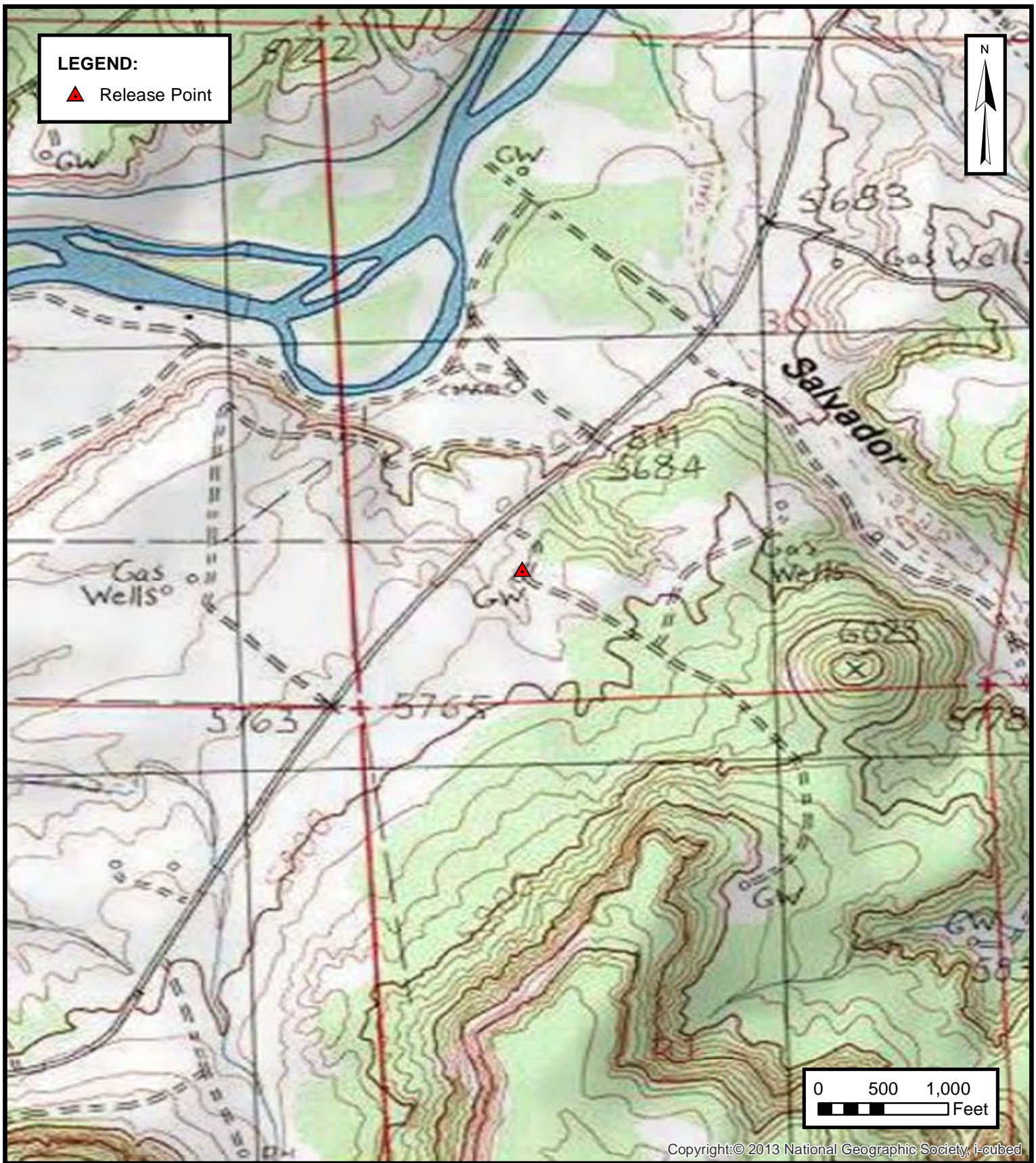


client's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in the Closure Report, and Ensolum's Master Services Agreement. The limitation of liability defined in the agreement is the aggregate limit of Ensolum's liability to the client.



APPENDIX A

Figures



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Environmental & Hydrogeologic Consultants

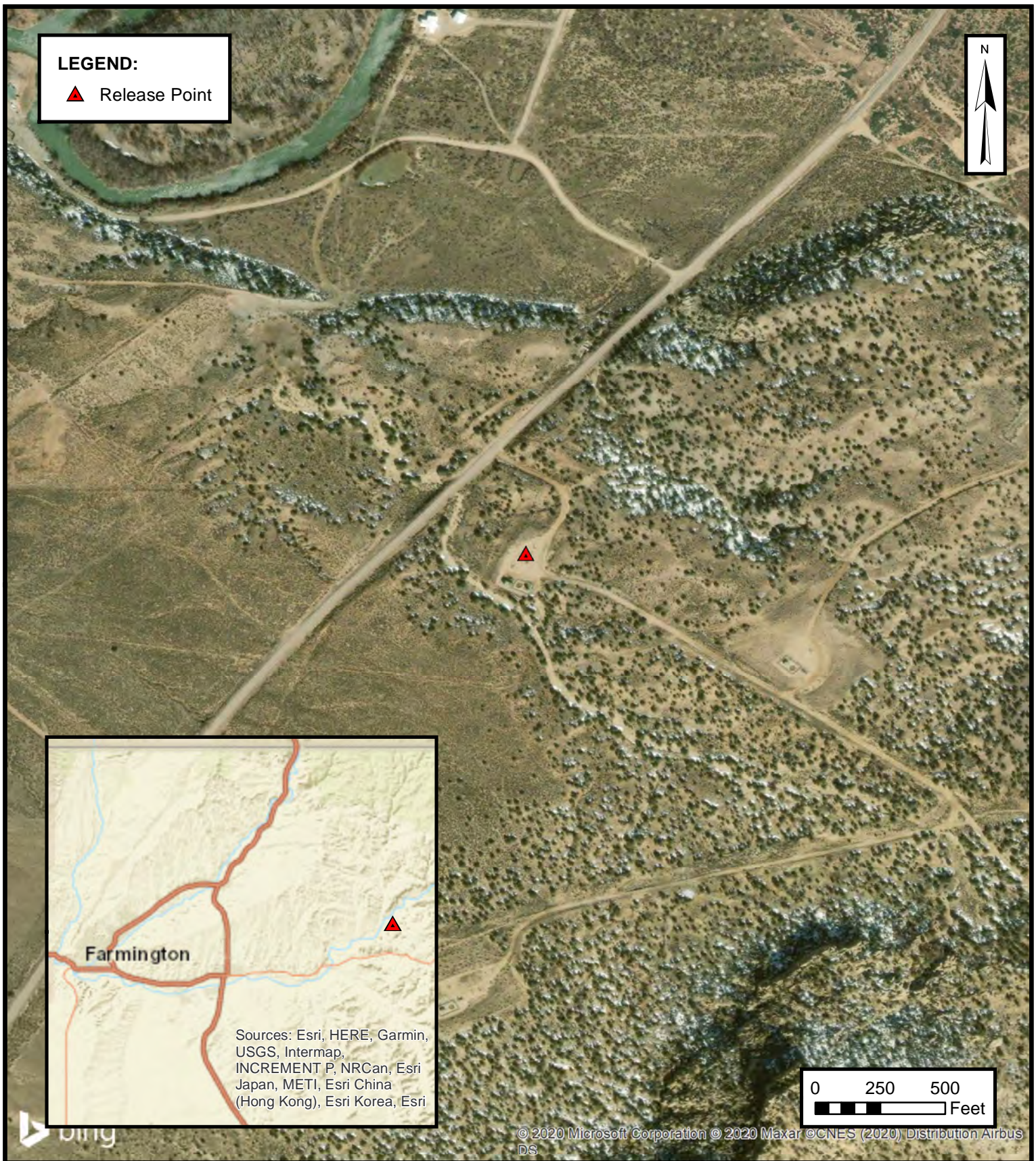
TOPOGRAPHIC MAP

ENTERPRISE FIELD SERVICES, LLC
HOWELL M#1 (March 2020)
SW ¼, S30 T30N R8W, San Juan County, New Mexico
36.77760° N, 107.71743° W

PROJECT NUMBER: 05A1226099

FIGURE

1



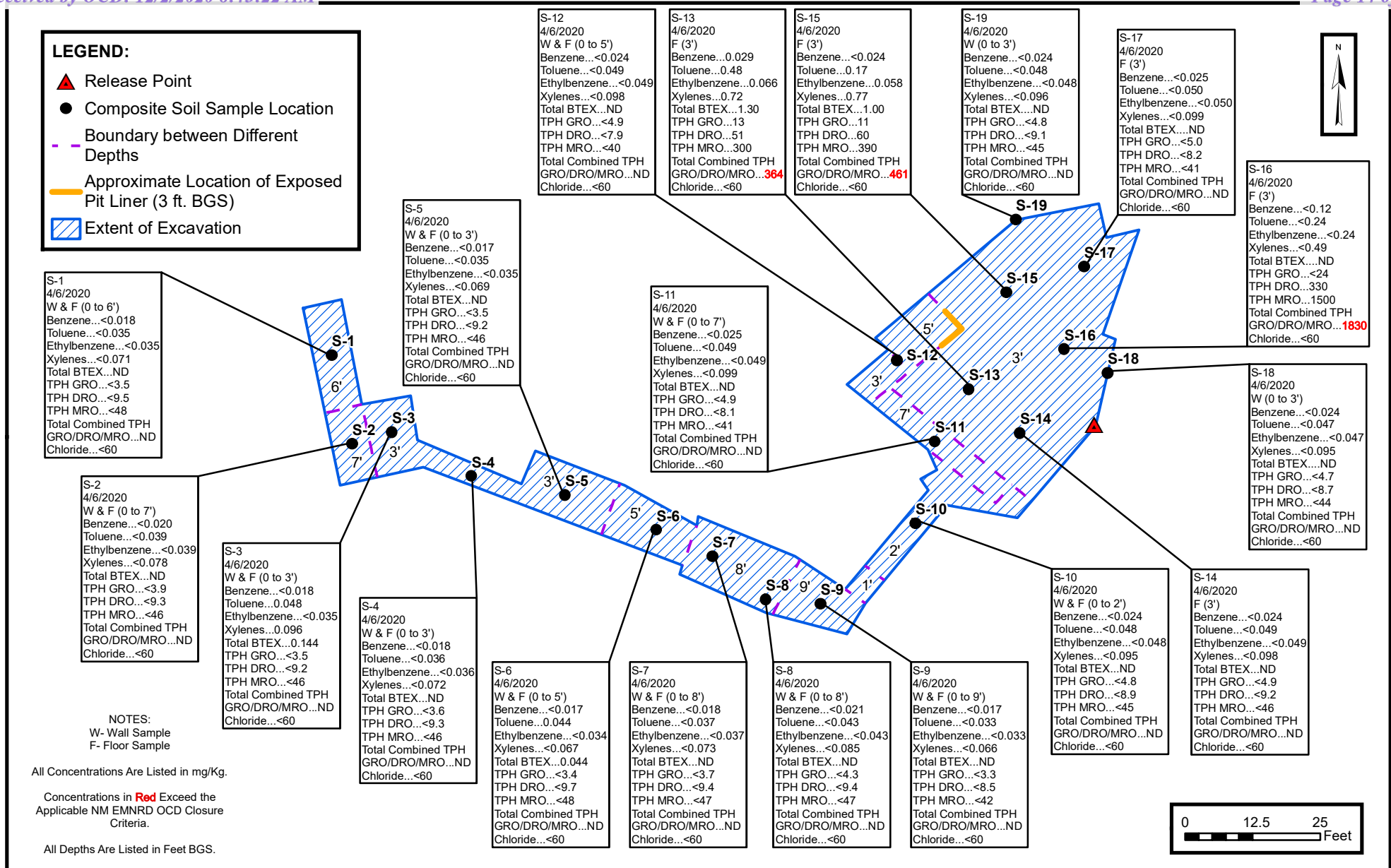
SITE VICINITY MAP

ENTERPRISE FIELD SERVICES, LLC
HOWELL M#1 (March 2020)
SW ¼, S30 T30N R8W, San Juan County, New Mexico
36.77760° N, 107.71743° W

PROJECT NUMBER: 05A1226099

FIGURE

2



SITE MAP WITH SOIL ANALYTICAL RESULTS

ENTERPRISE FIELD SERVICES, LLC
HOWELL M#1 (March 2020)
SW ¼, S30 T30N R8W, San Juan County, New Mexico
36.7776° N, 107.71743° W

PROJECT NUMBER: 05A1226099

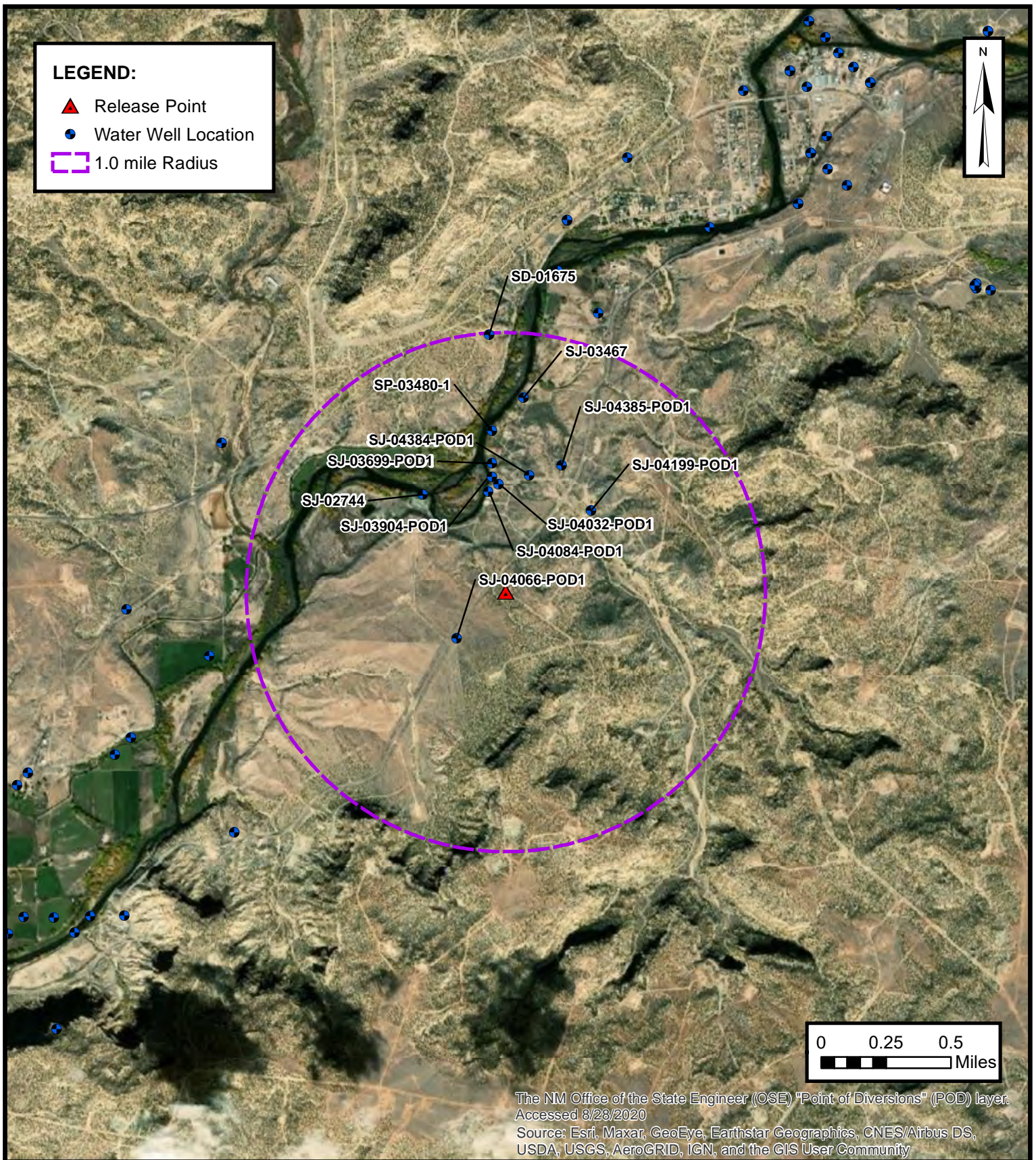


FIGURE
3



APPENDIX B

Siting Figures and Documentation

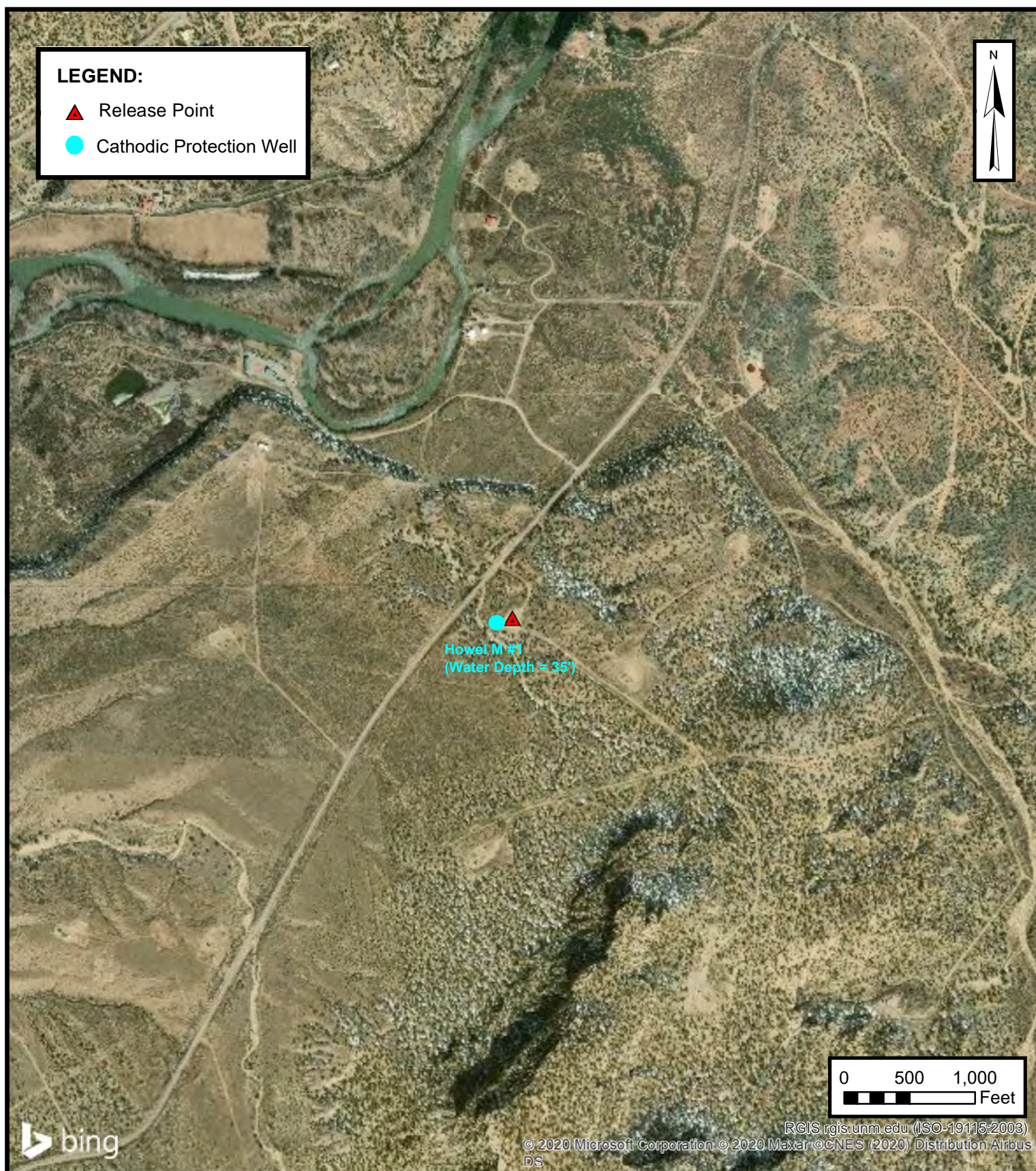


1.0 MILE RADIUS WATER WELL MAP

ENTERPRISE FIELD SERVICES, LLC
HOWELL M#1 (March 2020)
SW ¼, S30 T30N R8W, San Juan County, New Mexico
36.77760° N, 107.71743° W

PROJECT NUMBER: 05A1226099

FIGURE
A

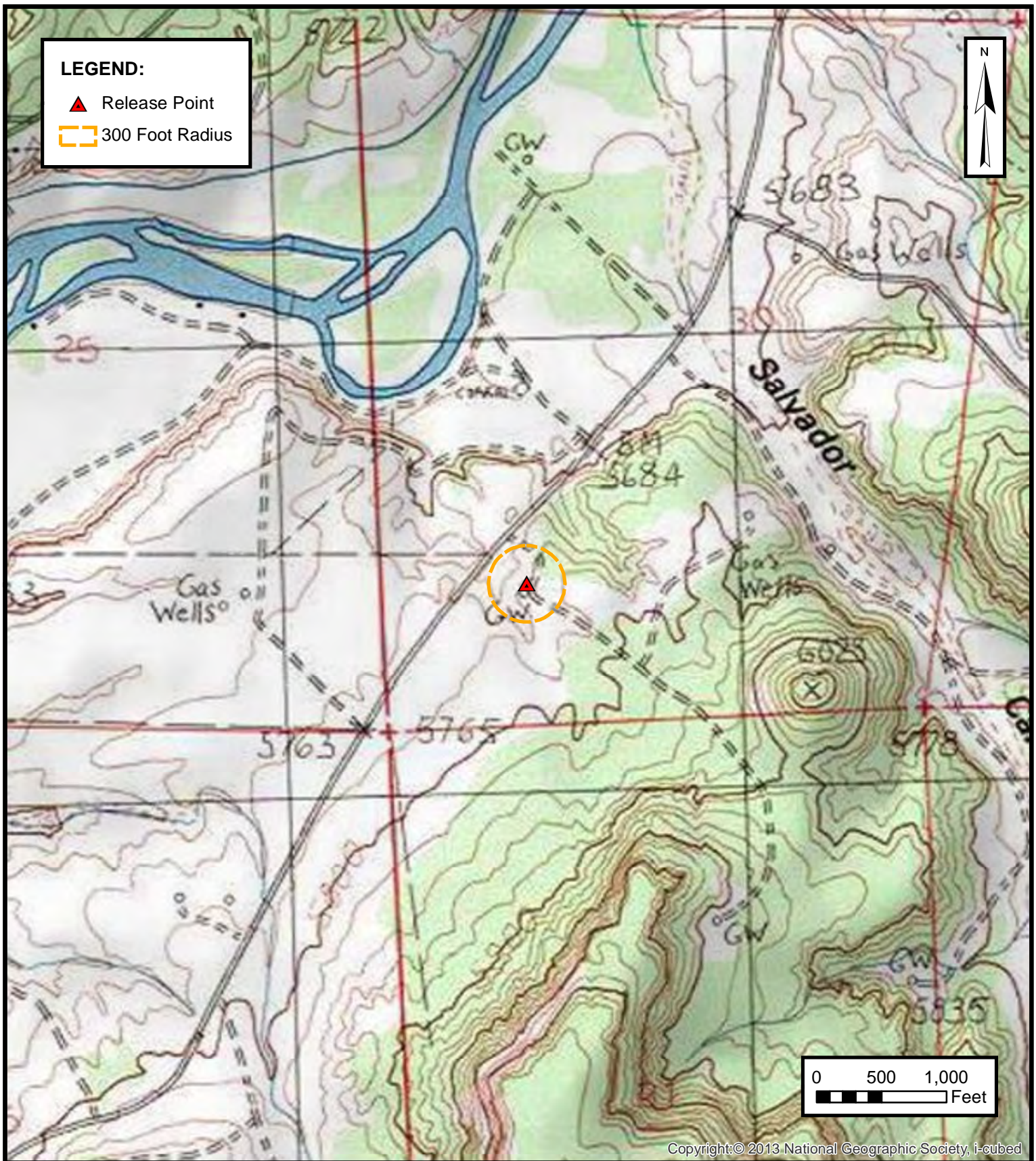


**CATHODIC PROTECTION WELL RECORDED
DEPTH TO WATER**

ENTERPRISE FIELD SERVICES, LLC
HOWELL M#1 (March 2020)
SW ¼, S30 T30N R8W, San Juan County, New Mexico
36.77760° N, 107.71743° W

PROJECT NUMBER: 05A1226099

**FIGURE
B**



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**300 FOOT RADIUS
WATERCOURSE AND DRAINAGE IDENTIFICATION**

ENTERPRISE FIELD SERVICES, LLC
HOWELL M#1 (March 2020)
SW ¼, S30 T30N R8W, San Juan County, New Mexico
36.77760° N, 107.71743° W

PROJECT NUMBER: 05A1226099

FIGURE

C

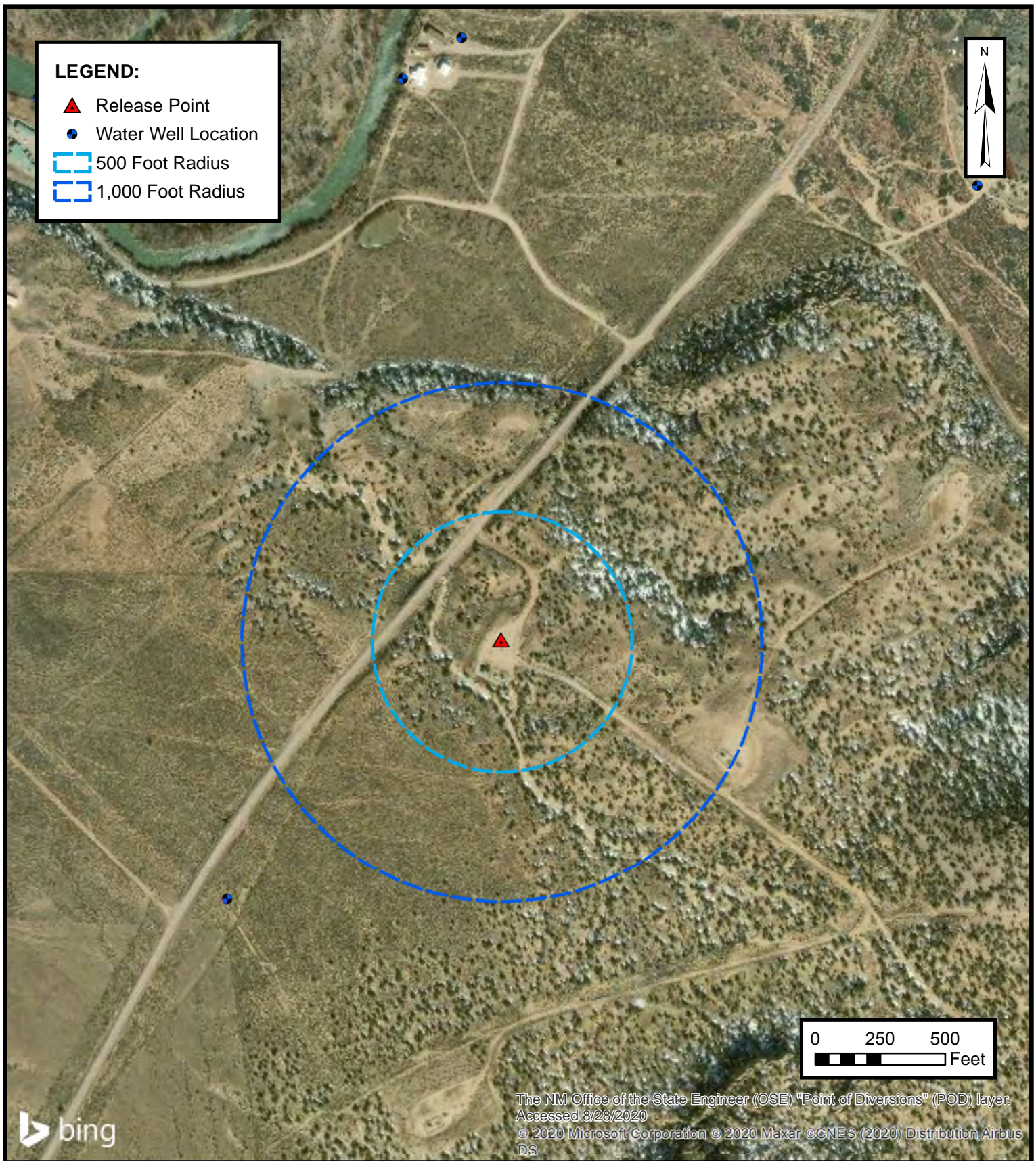


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**300 FOOT RADIUS
OCCUPIED STRUCTURE IDENTIFICATION**
ENTERPRISE FIELD SERVICES, LLC
HOWELL M#1 (March 2020)
SW ¼, S30 T30N R8W, San Juan County, New Mexico
36.77760° N, 107.71743° W

PROJECT NUMBER: 05A1226099

**FIGURE
D**



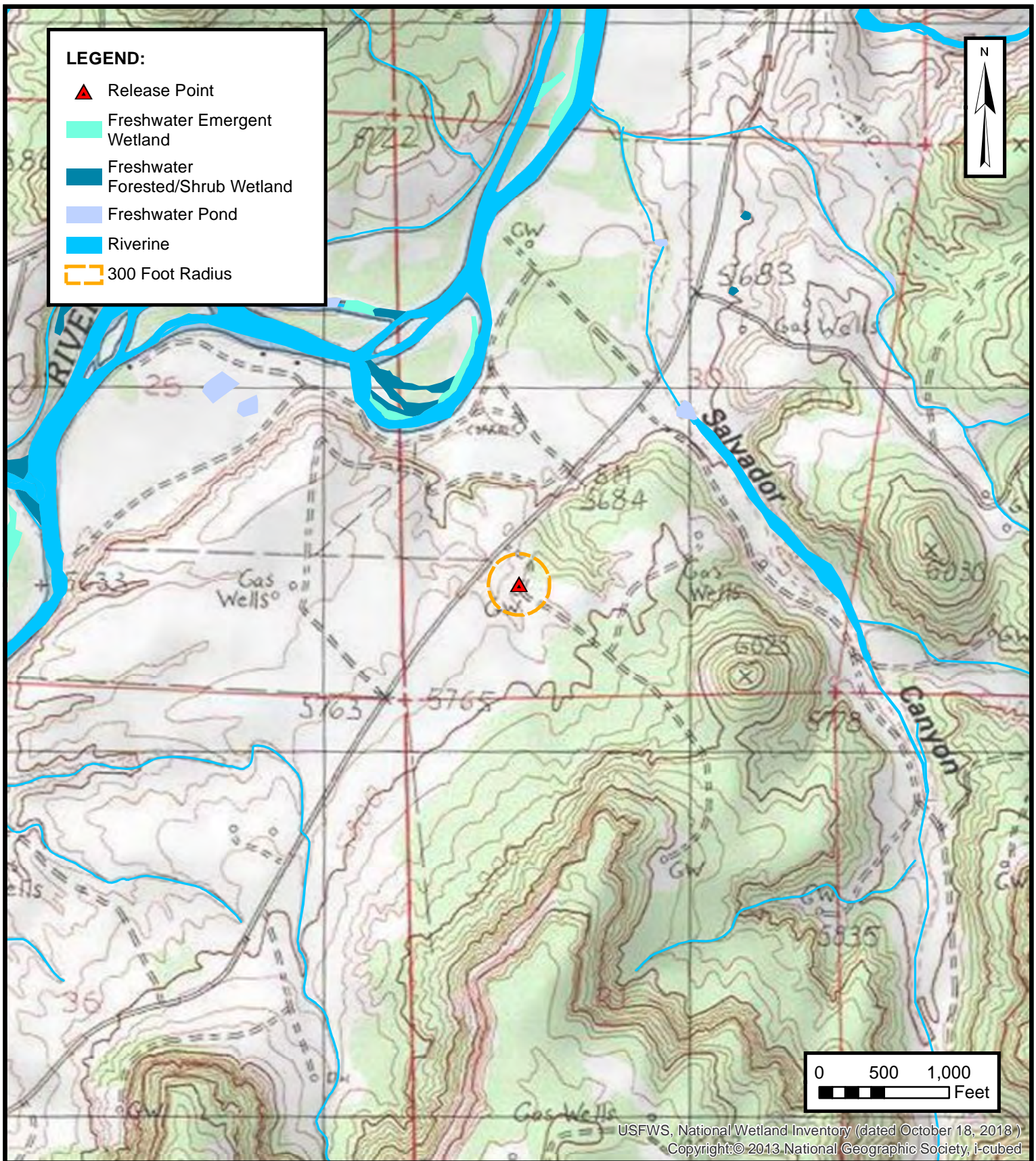
ENSOLUM
 Environmental & Hydrogeologic Consultants

WATER WELL AND NATURAL SPRING LOCATION

ENTERPRISE FIELD SERVICES, LLC
 HOWELL M#1 (March 2020)
 SW ¼, S30 T30N R8W, San Juan County, New Mexico
 36.77760° N, 107.71743° W

PROJECT NUMBER: 05A1226099

**FIGURE
 E**



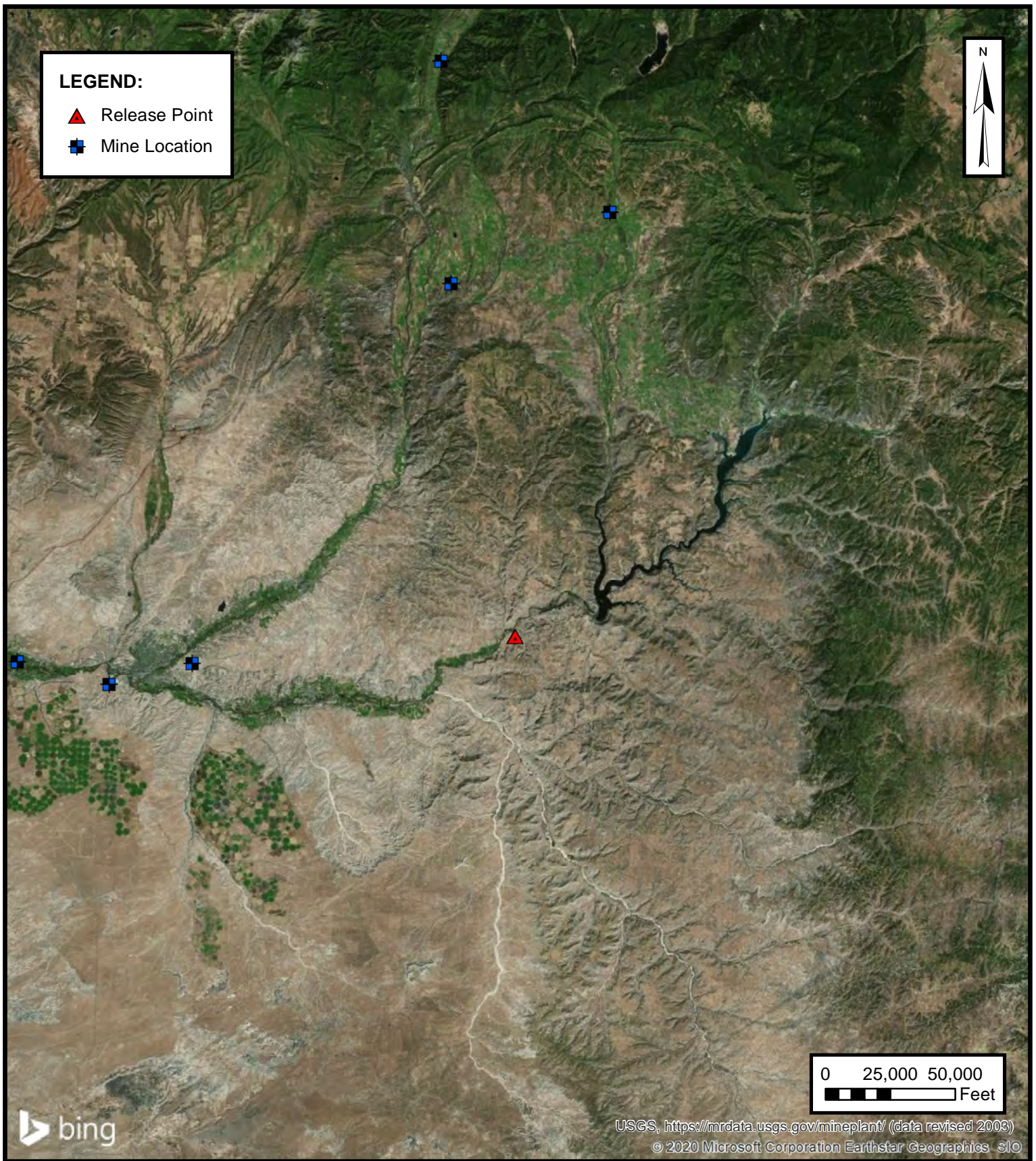
ENSOLUM
Environmental & Hydrogeologic Consultants

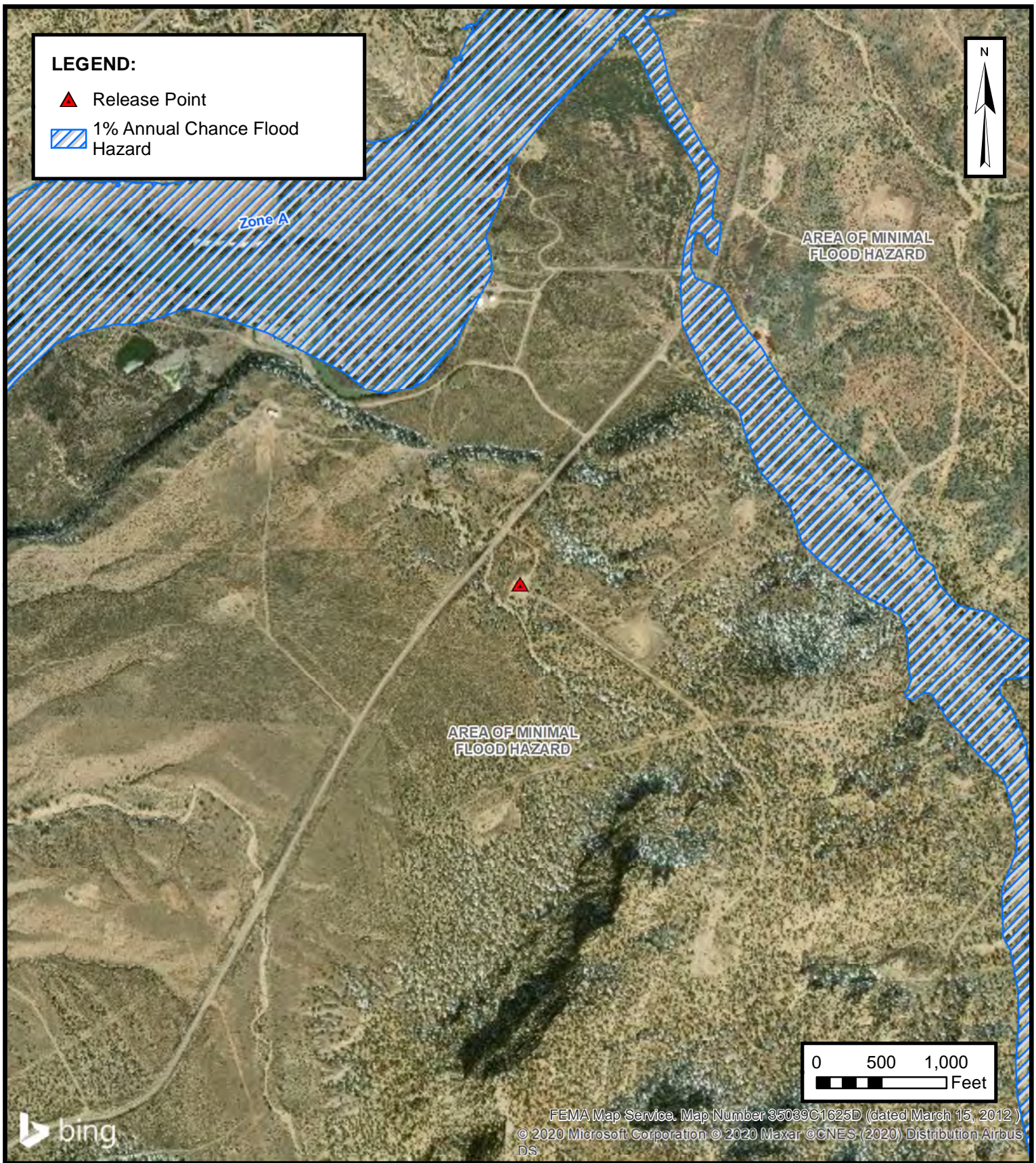
WETLANDS

ENTERPRISE FIELD SERVICES, LLC
HOWELL M#1 (March 2020)
SW ¼, S30 T30N R8W, San Juan County, New Mexico
36.77760° N, 107.71743° W

PROJECT NUMBER: 05A1226099

FIGURE
F







New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

(R=POD has been replaced,
O=orphaned,
C=the file is closed)

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
SJ 01024		SJM2	SJ	1	2	20	30N	08W		259430	4076298*	115		
SJ 01097		SJM2	SJ		2	20	30N	08W		259645	4076092*	40	27	13
SJ 01516		SJM2	SJ	2	2	19	30N	08W		258304	4076302*	15	10	5
SJ 01558		SJM2	SJ	1	2	20	30N	08W		259430	4076298*	20	8	12
SJ 01742		SJM2	SJ	3	1	20	30N	08W		258797	4075861*	17	11	6
SJ 03467		SJM2	SJ	2	2	1	30	30N	08W	257628	4074851*	40	16	24
SJ 03699	O		SJ	2	4	1	30	30N	08W	257623	4074452*		21	
SJ 03699 POD1		SJM2	SJ	1	4	1	30	30N	08W	257423	4074452*	21	10	11
SJ 03904 POD1		SJM2	SJ	1	4	1	30	30N	08W	257419	4074367	24	12	12
SJ 04032 POD1		SJM2	SJ	3	4	1	30	30N	08W	257459	4074325	22	13	9
SJ 04084 POD1		SJM2	SJ	3	4	1	30	30N	08W	257393	4074282	23	13	10

Average Depth to Water: **14 feet**

Minimum Depth: **8 feet**

Maximum Depth: **27 feet**

Record Count: 11

PLSS Search:

Section(s): 30, 19, 20, 29, 32, 31 Township: 30N Range: 08W

*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.

7/7/20 2:19 PM

Page 1 of 1

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	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
SJ 00140	SJM2	SJ		1	25	30N	09W			255769	4074625*	10		
SJ 01330	SJM2	SJ		2	1	1	36	30N	09W	255654	4073322*	20	5	15
SJ 02298	SJM2	SJ		3	36	30N	09W			255777	4072235*	15	4	11
SJ 02744	SJM2	SJ		4	4	2	25	30N	09W	256992	4074273*	21	10	11
SJ 04066 POD1	SJM2	SJ		2	4	25	30N	09W		257174	4073384	260	200	60

Average Depth to Water: **54 feet**

Minimum Depth: **4 feet**

Maximum Depth: **200 feet**

Record Count: 5

PLSS Search:

Section(s): 24, 25, 36

Township: 30N

Range: 09W

*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.

7/7/20 2:21 PM

Page 1 of 1

WATER COLUMN/ AVERAGE
DEPTH TO WATER

4482

30-045-09101

(Submit 3 copies to OCD Aztec Office)

CDS 30w

Casing, Sizes, Types & Depths	N/A
-------------------------------	-----

If Casing is cemented, show amounts & types used N/A

If Cement or Bentonite Plugs have been placed, show depths & amounts used

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. 36', 80', 120' RECEIVED

Depths gas encountered: N/A

Type & amount of coke breeze used: N/A **DIST. 3**

Depths anodes placed: 165', 155', 145', 135', 125', 115', 105', 95', 75', 65'

Depths vent pipes placed: N/A

Vent pipe perforations: 137'

Remarks: qb #2 DRILLED TO 40', HOLE CAVED, MOVED OVER.

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

El Paso Natural Gas Company
Form 7-238 (Rev. 1-69)WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOGDrilling Log (Attach Hereto). ☐Completion Date 6-12-74

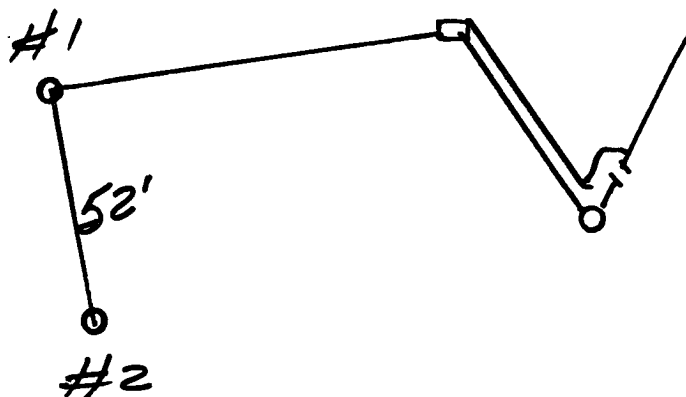
Well Name HONCII M#1		Location SW 30-30-8		CPS No. 30W	
Type & Size Bit Used 6 3/4				Work Order No.	
Anode Hole Depth 220	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used	
Anode Depth					
# 1 165	# 2 155	# 3 145	# 4 135	# 5 125	# 6 115
# 7 105	# 8 95	# 9 75	# 10 65		
Anode Output (Amps)					
# 1 3.1	# 2 4.2	# 3 3.2	# 4 3.5	# 5 3.9	# 6 4.0
# 7 3.9	# 8 2.6	# 9 2.0	# 10 1.9		
Anode Depth					
# 11	# 12	# 13	# 14	# 15	# 16
# 17	# 18	# 19	# 20		
Anode Output (Amps)					
# 11	# 12	# 13	# 14	# 15	# 16
# 17	# 18	# 19	# 20		
Total Circuit Resistance		No. 8 C.P. Cable Used		No. 2 C.P. Cable Used	
Volts 11.0	Amps 14.0	Ohms 0.78	57		

Remarks: Driller Said water at ~~40~~³⁶, 80 & 120
 Water level overnight at 35'
 Gravel 25 to 35 - used 3 Sacks Gypsum Plaster -
 Vent Perforated 137'
 Pumped to Surface

All Construction Completed

Areels
 (Signature)

GROUND BED LAYOUT SKETCH



3,409.00
 22.80 Cable
 # 3,431.80
 - 620.00 Depth Credit
 # 2,811.80
 112.47 TAX
 # 2,924.27

N

STORM WATER WELL DRILLING INC.

DIAMOND CORE DRILLING
DIAMOND DRILLING EQUIPMENT
GROUTING
FOUNDATION TESTING
MINING
QUARRYING
SHAFT SINKING
WATER WELL DRILLING

CONTRACTORS
14991 W. 44TH AVENUE
GOLDEN, COLORADO 80401
PHONE (303) 278-9505

GENERAL OFFICE
14991 W. 44TH AVENUE
BAILEY OFFICE
CALL 1-838-4821

Drill 10 TK

Date Wed, 6/12/74
THURS.

Owner CPS #30 W

Location _____

City _____

State New Mexico County San Juan

From	To	Formation	Color	Hardness
0	25	Sand	Tan	Soft
25	35	Gravel		med.
35	130	Shale	Grey Blue	med.
130	150	Sand shale	" "	med
150	220	Shale	Blue grey	" "
		Water 36, 80', 200'		
		3 LK Gypsum		

Total Hours 12 1/2

Equipment Down Time 5

Hours Drilling 7 1/2

Driller RAY ART

Helper PAT

Helper BOB

C.P.S. Time _____

S.W.W.D.I. Time _____

Total Footage _____

Approval of _____

C.P.S. Engineer _____

$$30W-6-12-74-X=4.0$$

MW		gals/mol
16	C ₁	6.4
30	C ₂	9.56
44	C ₃	10.42
58	IC ₄	12.38
"	NC ₄	11.93
72	IC ₅	13.85
"	NC ₅	13.71
86	IC ₆	15.50
"	C ₆	15.57
100	IC ₇	17.2
"	C ₇	17.46
114	C ₈	19.38
28	C ₂	9.64
42	CE	9.67

MISC		
MW		gals/mol
44	CO ₂	6.38
34	H ₂ S	5.17
28	N ₂	4.16
2	H ₂	3.38

Depth	Time	Notes	Log	wt	Core
35	1.0				
40	1.0				
	1.0				
50	1.1	Drilled to 40'			
	1.2	Hole Caved			
60	1.2	Moved over &			
	1.3	Redrilled			
70	1.6				
	1.4				
80	1.1				
	1.0				
90	1.0				
	1.2				
100	1.4				
	2.6				
10	3.2				
	3.1				
20	2.9		1	1.65	2.4
	2.8		2	1.55	3.1
30	2.8		3	1.45	3.0
	2.6		4	1.35	2.6
40	2.6		5	1.25	2.8
	3.0		6	1.15	3.1
50	3.2		7	1.05	2.6
	3.1		8	.95	1.2
60	2.6		9	.75	1.0
	2.4		10	.65	1.3
70	2.3				
	2.6				
80	2.0				
TD 85					
90					
200					
10					

Water overnight at 35'

Driller said water at 36, 80 & 200

Grave 25 to 35'

Vent Perf. 137

Pumped coke to surface

78

100 11.00 14.0 A = 0.78



APPENDIX C

Executed C-138 Solid Waste Acceptance Form

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, 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
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-138
Revised 08/01/11

*Surface Waste Management Facility Operator
and Generator shall maintain and make this
documentation available for Division inspection.

97057-1106

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address: Enterprise Field Services, LLC, 614 Reilly Ave, Farmington NM 87401	Invoicing Information PayKey AM14058 AFE: N47693
2. Originating Site: Howell M#1	
3. Location of Material (Street Address, City, State or ULSTR): UL N Section 30 T30N R8W; 36.7775, -107.71740	
4. Source and Description of Waste: Source: Hydrocarbon Impacted soil associated remediation activities associated with a natural gas pipeline leak. Description: Hydrocarbon Impacted soil associated remediation activities associated with a natural gas pipeline leak.. Estimated Volume <u>50</u> yd ³ / bbls Known Volume (to be entered by the operator at the end of the haul) <u>708/45</u> yd ³ / bbls	
5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS I, Thomas Long <i>Thomas Long</i> , representative or authorized agent for Enterprise Products Operating do hereby Generator Signature certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification) <input checked="" type="checkbox"/> RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non- exempt waste. <u>Operator Use Only: Waste Acceptance Frequency</u> <input type="checkbox"/> Monthly <input type="checkbox"/> Weekly <input checked="" type="checkbox"/> Per Load <input type="checkbox"/> RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items) <input type="checkbox"/> MSDS Information <input type="checkbox"/> RCRA Hazardous Waste Analysis <input type="checkbox"/> Process Knowledge <input type="checkbox"/> Other (Provide description in Box 4) GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS I, Thomas Long <i>Thomas Long</i> 3-31-2020, representative for Enterprise Products Operating authorizes <u>Envirotech, Inc.</u> to complete Generator Signature the required testing/sign the Generator Waste Testing Certification. I, _____, representative for <u>Envirotech, Inc.</u> do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.	

5. Transporter: West States Energy Contractors or subcontractors.

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: Envirotech, Inc. Soil Remediation Facility * Permit #: NM01-0011

Address of Facility: Hill Top, NM

Method of Treatment and/or Disposal:

☐ Evaporation ☐ Injection ☐ Treating Plant ☒ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☒ **APPROVED**

☐ **DENIED** (Must Be Maintained As Permanent Record)

PRINT NAME:

Greg Crabtree

TITLE:

Enviro Manager

DATE:

4/1/2020

SIGNATURE:

Greg Crabtree
Surface Waste Management Facility Authorized Agent

TELEPHONE NO.:

505-632-0615



APPENDIX D

Photographic Documentation

SITE PHOTOGRAPHS

Enterprise Field Services, LLC
Closure Report
Howell M#1 (March 2020)
Ensolum Project No. 05A1226099

**Photograph 1**

Photograph Date: 04/01/20

Photograph Description: A view of the western flow path facing northwest. This photograph was taken prior to excavation activities.

**Photograph 2**

Photograph Date: 04/01/20

Photograph Description: A view of the pad facing northeast, taken from the same position as Photograph 2. This photograph was taken prior to excavation activities and shows the end of the meter tube, which was the release point and southeastern extent of the flow-path.

**Photograph 3**

Photograph Date: 04/01/20

Photograph Description: A view from the release point facing north. This photograph was taken prior to excavation and shows the eastern extent of the surficial soil contamination.



SITE PHOTOGRAPHS

Enterprise Field Services, LLC
Closure Report
Howell M#1 (March 2020)
Ensolum Project No. 05A1226099

**Photograph 4**

Photograph Date: 04/01/20

Photograph Description: A view of the western extent of the final excavation facing northwest.

**Photograph 5**

Photograph Date: 04/02/20

Photograph Description: A view from the pad of the final excavation facing slightly northwest.



SITE PHOTOGRAPHS

Enterprise Field Services, LLC
Closure Report
Howell M#1 (March 2020)
Ensolum Project No. 05A1226099

**Photograph 6**

Photograph Date: 04/02/20

Photograph Description: A view of final excavation facing southwest.

**Photograph 7**

Photograph Date: 04/02/20

Photograph Description: Apparent former pit liner encountered while excavating on production pad.

**Photograph 8**

Photograph Date: 04/02/20

Photograph Description: A view of the southwestern extent of the northeastern part of final excavation facing northwest.



SITE PHOTOGRAPHS

Enterprise Field Services, LLC
Closure Report
Howell M#1 (March 2020)
Ensolum Project No. 05A1226099

**Photograph 9**

Photograph Date: 04/02/20

Photograph Description: A view of the final excavation facing southwest.

**Photograph 10**

Photograph Date: 04/02/20

Photograph Description: A view of the final excavation facing northeast.





APPENDIX E

Regulatory Correspondence

From: [Clara Cardoza](#)
To: [Smith, Cory, EMNRD](#)
Cc: [Long, Thomas](#)
Subject: RE: [EXTERNAL] Howell M#1 - UL N Section 30 T30N R8W; 36.77761, -107.71743; Incident # NRM2009252076
Date: Monday, June 29, 2020 1:55:15 PM

[Use caution with links/attachments]

Cory, Hilcorp will submit an initial C-141 and continue excavating mid-week.

Thank you,
Clara

From: Smith, Cory, EMNRD [mailto:Cory.Smith@state.nm.us]
Sent: Monday, June 29, 2020 1:25 PM
To: Clara Cardoza <ccardoza@hilcorp.com>
Cc: Long, Thomas <tjlong@eprod.com>
Subject: RE: [EXTERNAL] Howell M#1 - UL N Section 30 T30N R8W; 36.77761, -107.71743; Incident # NRM2009252076

Clara,

What is the status of this release? My understanding is HEC has taken over the remaining impacts.?

Has HEC needs to submit an initial C-141. As the current incident# is Enterprises and will be used to close out their portion of this incident.

Thanks,

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

From: Long, Thomas <tjlong@eprod.com>
Sent: Monday, June 29, 2020 9:40 AM
To: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>
Subject: [EXT] FW: [EXTERNAL] Howell M#1 - UL N Section 30 T30N R8W; 36.77761, -107.71743; Incident # NRM2009252076

Cory,

Please see below.

Thomas J. Long
Senior Environmental Scientist
Enterprise Products Company
614 Reilly Ave.
Farmington, New Mexico 87401
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com



From: Clara Cardoza <ccardoza@hilcorp.com>
Sent: Monday, June 29, 2020 9:25 AM
To: Long, Thomas <tjlong@eprod.com>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: RE: [EXTERNAL] Howell M#1 - UL N Section 30 T30N R8W; 36.77761, -107.71743; Incident # NRM2009252076

[Use caution with links/attachments]

Good morning. Our numbers came back a little high so we will need to continue to dig. We had to refresh the one call so we should be ready to go by Wednesday.

Thank you,
Clara

From: Long, Thomas [<mailto:tjlong@eprod.com>]
Sent: Monday, June 29, 2020 7:54 AM
To: Clara Cardoza <ccardoza@hilcorp.com>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: RE: [EXTERNAL] Howell M#1 - UL N Section 30 T30N R8W; 36.77761, -107.71743; Incident # NRM2009252076

Clara,

Any results on your investigation and sampling?

Thomas J. Long
Senior Environmental Scientist
Enterprise Products Company
614 Reilly Ave.
Farmington, New Mexico 87401
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com



From: Clara Cardoza <ccardoza@hilcorp.com>
Sent: Wednesday, June 17, 2020 8:51 AM
To: Long, Thomas <tjlong@eprod.com>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: RE: [EXTERNAL] Howell M#1 - UL N Section 30 T30N R8W; 36.77761, -107.71743; Incident # NRM2009252076

[Use caution with links/attachments]

We removed some plastic and a what appears to be a french drain. Samples were taken. We have not reported to NMOCD because we don't have anything to report at this time.

Thank you,
Clara

From: Long, Thomas [<mailto:tjlong@eprod.com>]
Sent: Wednesday, June 17, 2020 8:47 AM
To: Clara Cardoza <ccardoza@hilcorp.com>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: RE: [EXTERNAL] Howell M#1 - UL N Section 30 T30N R8W; 36.77761, -107.71743; Incident # NRM2009252076

Clara,

How did your investigation go? What did you discover? Did you report it to NMOCD?

Thomas J. Long
Senior Environmental Scientist
Enterprise Products Company
614 Reilly Ave.
Farmington, New Mexico 87401
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com



From: Clara Cardoza <ccardoza@hilcorp.com>
Sent: Monday, June 15, 2020 1:50 PM

To: Long, Thomas <tjlong@eprod.com>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: RE: [EXTERNAL] Howell M#1 - UL N Section 30 T30N R8W; 36.77761, -107.71743; Incident # NRM2009252076

[Use caution with links/attachments]

Tom, we will be out at the site tomorrow morning excavating the NW corner where the liner was found. Please let me know if you have any questions.

Thank you,
Clara

From: Clara Cardoza
Sent: Wednesday, June 10, 2020 8:23 AM
To: Long, Thomas <tjlong@eprod.com>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: RE: [EXTERNAL] Howell M#1 - UL N Section 30 T30N R8W; 36.77761, -107.71743; Incident # NRM2009252076

Tom, I just got back to the office today. Apparently the crew had something else come up so I got bumped. I will let you know as soon as I am on their schedule.

Thank you,
Clara

From: Long, Thomas [<mailto:tjlong@eprod.com>]
Sent: Tuesday, June 9, 2020 10:52 AM
To: Clara Cardoza <ccardoza@hilcorp.com>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: RE: [EXTERNAL] Howell M#1 - UL N Section 30 T30N R8W; 36.77761, -107.71743; Incident # NRM2009252076

Clara,

Any progress on the excavation at the Howell M#1 site?

Thomas J. Long
Senior Environmental Scientist
Enterprise Products Company
614 Reilly Ave.
Farmington, New Mexico 87401
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com



From: Clara Cardoza <ccardoza@hilcorp.com>
Sent: Monday, June 1, 2020 8:36 AM
To: Long, Thomas <tjlong@eprod.com>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: RE: [EXTERNAL] Howell M#1 - UL N Section 30 T30N R8W; 36.77761, -107.71743; Incident # NRM2009252076

[Use caution with links/attachments]

I anticipate late this week or beginning of next week.

From: Long, Thomas [<mailto:tjlong@eprod.com>]
Sent: Monday, June 1, 2020 8:35 AM
To: Clara Cardoza <ccardoza@hilcorp.com>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: RE: [EXTERNAL] Howell M#1 - UL N Section 30 T30N R8W; 36.77761, -107.71743; Incident # NRM2009252076

Clara,

When will you be excavating?

Thomas J. Long
Senior Environmental Scientist
Enterprise Products Company
614 Reilly Ave.
Farmington, New Mexico 87401
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com



From: Clara Cardoza <ccardoza@hilcorp.com>
Sent: Thursday, May 28, 2020 3:46 PM
To: Long, Thomas <tjlong@eprod.com>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: RE: [EXTERNAL] Howell M#1 - UL N Section 30 T30N R8W; 36.77761, -107.71743; Incident # NRM2009252076

[Use caution with links/attachments]

Hi Tom, we sent out some more samples and ordered a one call. I will keep you posted on those lab results and subsequent digging.

Thank you,
Clara

From: Long, Thomas [<mailto:tjlong@eprod.com>]
Sent: Thursday, May 28, 2020 3:07 PM
To: Clara Cardoza <ccardoza@hilcorp.com>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: RE: [EXTERNAL] Howell M#1 - UL N Section 30 T30N R8W; 36.77761, -107.71743; Incident # NRM2009252076

Clara,

Any results from your hand auger investigation?

Thomas J. Long
Senior Environmental Scientist
Enterprise Products Company
614 Reilly Ave.
Farmington, New Mexico 87401
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com



From: Clara Cardoza <ccardoza@hilcorp.com>
Sent: Tuesday, May 26, 2020 9:57 AM
To: Long, Thomas <tjlong@eprod.com>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: RE: [EXTERNAL] Howell M#1 - UL N Section 30 T30N R8W; 36.77761, -107.71743; Incident # NRM2009252076

[Use caution with links/attachments]

Tom, our lab samples came back pretty good, we found only one spot above the clean-up standard but much closer than the results you sent me. We are going to go out tomorrow and do some hand auguring around the impacted area to see if we can't get a better idea of what we might be up against.

From: Long, Thomas [<mailto:tjlong@eprod.com>]
Sent: Tuesday, May 26, 2020 7:10 AM
To: Clara Cardoza <ccardoza@hilcorp.com>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: RE: [EXTERNAL] Howell M#1 - UL N Section 30 T30N R8W; 36.77761, -107.71743; Incident # NRM2009252076

Clara,

I am emailing to inquire about your sampling results for the Howell M#1 excavation and Hilcorp's path forward?

Thomas J. Long
Senior Environmental Scientist
Enterprise Products Company
614 Reilly Ave.
Farmington, New Mexico 87401
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com



From: Clara Cardoza <ccardoza@hilcorp.com>
Sent: Thursday, May 14, 2020 12:34 PM
To: Long, Thomas <tjlong@eprod.com>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: RE: [EXTERNAL] Howell M#1 - UL N Section 30 T30N R8W; 36.77761, -107.71743; Incident # NRM2009252076

[Use caution with links/attachments]

Haven't seen anything yet. They usually don't get to us until late afternoon.

From: Long, Thomas [<mailto:tjlong@eprod.com>]
Sent: Thursday, May 14, 2020 12:32 PM
To: Clara Cardoza <ccardoza@hilcorp.com>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: RE: [EXTERNAL] Howell M#1 - UL N Section 30 T30N R8W; 36.77761, -107.71743; Incident # NRM2009252076

Clara,

Any results from your sampling event?

Thomas J. Long
Senior Environmental Scientist
Enterprise Products Company
614 Reilly Ave.
Farmington, New Mexico 87401
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com



From: Clara Cardoza <ccardoza@hilcorp.com>
Sent: Thursday, May 7, 2020 8:23 AM
To: Long, Thomas <tjlong@eprod.com>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: RE: [EXTERNAL] Howell M#1 - UL N Section 30 T30N R8W; 36.77761, -107.71743; Incident # NRM2009252076

[Use caution with links/attachments]

Tom, we grabbed some samples and should have more info late next week.

Thank you,
Clara

From: Long, Thomas [<mailto:tjlong@eprod.com>]
Sent: Wednesday, May 6, 2020 10:13 AM
To: Clara Cardoza <ccardoza@hilcorp.com>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: RE: [EXTERNAL] Howell M#1 - UL N Section 30 T30N R8W; 36.77761, -107.71743; Incident # NRM2009252076

Clara,

What was the result from your onsite meeting?

Thomas J. Long
Senior Environmental Scientist
Enterprise Products Company
614 Reilly Ave.
Farmington, New Mexico 87401
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com



From: Clara Cardoza <ccardoza@hilcorp.com>
Sent: Tuesday, May 5, 2020 1:50 PM
To: Long, Thomas <tjlong@eprod.com>
Subject: RE: [EXTERNAL] Howell M#1 - UL N Section 30 T30N R8W; 36.77761, -107.71743; Incident # NRM2009252076

[Use caution with links/attachments]

My mistake.

Thank you!

From: Long, Thomas [<mailto:tjlong@eprod.com>]
Sent: Tuesday, May 5, 2020 1:48 PM
To: Clara Cardoza <ccardoza@hilcorp.com>
Subject: RE: [EXTERNAL] Howell M#1 - UL N Section 30 T30N R8W; 36.77761, -107.71743; Incident # NRM2009252076

Clara,

There is a site sketch from my original email.

Thomas J. Long
Senior Environmental Scientist
Enterprise Products Company
614 Reilly Ave.
Farmington, New Mexico 87401
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com



From: Clara Cardoza <ccardoza@hilcorp.com>
Sent: Tuesday, May 5, 2020 1:47 PM
To: Long, Thomas <tjlong@eprod.com>
Subject: RE: [EXTERNAL] Howell M#1 - UL N Section 30 T30N R8W; 36.77761, -107.71743; Incident # NRM2009252076

[Redacted]

[Use caution with links/attachments]

Tom, do you have a diagram that shows the location for all the samples you took that you would share with me. I want to understand the locations of these high hitters.

Thank you,
Clara

From: Clara Cardoza
Sent: Tuesday, May 5, 2020 7:03 AM
To: Long, Thomas <tjlong@eprod.com>
Subject: RE: [EXTERNAL] Howell M#1 - UL N Section 30 T30N R8W; 36.77761, -107.71743; Incident # NRM2009252076

Tom, just wanted to let you know we are sending out someone to the site today to take a look at the situation. I will let you know what we figure out once I hear.

Thank you,
Clara

From: Long, Thomas [<mailto:tjlong@eprod.com>]
Sent: Monday, April 20, 2020 8:21 AM
To: Clara Cardoza <ccardoza@hilcorp.com>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: [EXTERNAL] Howell M#1 - UL N Section 30 T30N R8W; 36.77761, -107.71743; Incident # NRM2009252076

Clara,

Thank you for talking with me earlier. Here are the details of the Howell M#1 release as we spoke about.

During early April 2020, Enterprise began remediating a surface release of natural gas (NG) and associated liquids at the Howell M1 well pad. The release occurred when a civilian vehicle impacted and severed the north end of the Enterprise meter run, bending the pipe towards the north/northwest where it released natural gas to the atmosphere and liquids to the surface of the pad. The liquids subsequently flowed into the sandy soils to the west/southwest of the pad. While remediating the portion of the release that occurred on the well pad, the NG liquid impact appeared to abate at approximately three (3) feet below grade surface (bgs) based on volatile organic compound (VOC) field screening. However, upon receipt of the analytical results, it was revealed that while the TPH GRO concentrations were below the regulatory standards, the TPH DRO/MRO concentrations were elevated above the regulatory standards. This combination of TPH results did not correlate with the off-pad analytical results, and appears to be inconsistent with a fresh NG

liquid release.

Enterprise evaluated available historical records and found that there is documentary evidence of at least one prior release in the immediate vicinity. Enterprise observed that on previous pit and tank applications and a release notification (former BGT), the Operators had consistently used the same GPS coordinates, and those coordinates appear to have been referenced to NAD 1927 (which, if not converted to NAD 83, would put the tanks/pits off the pad and to the east, which is undeveloped). When the NAD 1927 coordinates are converted to NAD 1983 coordinates, they place the tanks/pits within 50 feet of the existing observed impact. Additionally, while excavating the NG liquids-impacted soil where liquids flowed off the pad to the west, Enterprise encountered black plastic sheeting that looked like the edge of a buried workover pit or containment liner as they excavated east (towards the pad). There are also dark areas visible in the vicinity of the current release on the 1997 Google Earth image, but the image is too grainy to determine conclusively what they are. Other aerial images could probably be obtained commercially that would provide more information regarding the older features at the site if that is deemed necessary.

In conclusion, it seems very improbable that the TPH DRO/MRO concentrations encountered during the remediation of the NG release at the surface have any correlation to the NG release or the Enterprise pipeline, and are much more likely associated with historic production activities at the site. I have attached diagrams, summary analytical table, coordinate conversions, BGT closure reports and photos for reference.

I think that this should not be an Enterprise liability any longer, as that Enterprise has completed the required remediation for the March 23, 2020 release. Hilcorp should assume the responsibility for the remediation of this pit, if required. Please feel free to send this email and attachments to any interested parties. If you have any questions, please call or email.

Thomas J. Long
Senior Environmental Scientist
Enterprise Products Company
614 Reilly Ave.
Farmington, New Mexico 87401
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com



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While all reasonable care has been taken to avoid the transmission of viruses, it is the responsibility of the recipient to ensure that the onward transmission, opening, or use of this message and any attachments will not adversely affect its systems or data. No responsibility is accepted by the company in this regard and the recipient should carry out such virus and other checks as it considers appropriate.



APPENDIX F

Table 1 – Soil Analytical Summary

TABLE 1
Howell M#1 (March 2020)
SOIL ANALYTICAL SUMMARY

Sample I.D.	Date	Sample Type C- Composite G - Grab	Sample Depth (feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH MRO (mg/kg)	Total Combined TPH (GRO/DRO/MRO) (mg/kg)	Chloride (mg/kg)
New Mexico Energy Mineral & Natural Resources Department Oil Conservation Division Closure Criteria				10	NE	NE	NE	50				100	600
Excavation Composite Soil Samples													
S-1	4/6/2020	C	0 to 6	<0.018	<0.035	<0.035	<0.071	ND	<3.5	<9.5	<48	ND	<60
S-2	4/6/2020	C	0 to 7	<0.020	<0.039	<0.039	<0.078	ND	<3.9	<9.3	<46	ND	<60
S-3	4/6/2020	C	0 to 3	<0.018	0.048	<0.035	0.096	0.144	<3.5	<9.2	<46	ND	<60
S-4	4/6/2020	C	0 to 3	<0.018	<0.036	<0.036	<0.072	ND	<3.6	<9.3	<46	ND	<60
S-5	4/6/2020	C	0 to 3	<0.017	<0.035	<0.035	<0.069	ND	<3.5	<9.2	<46	ND	<60
S-6	4/6/2020	C	0 to 5	<0.017	0.044	<0.034	<0.067	0.044	<3.4	<9.7	<48	ND	<60
S-7	4/6/2020	C	0 to 8	<0.018	<0.037	<0.037	<0.073	ND	<3.7	<9.4	<47	ND	<60
S-8	4/6/2020	C	0 to 8	<0.021	<0.043	<0.043	<0.085	ND	<4.3	<9.4	<47	ND	<60
S-9	4/6/2020	C	0 to 9	<0.017	<0.033	<0.033	<0.066	ND	<3.3	<8.5	<42	ND	<60
S-10	4/6/2020	C	0 to 2	<0.024	<0.048	<0.048	<0.095	ND	<4.8	<8.9	<45	ND	<60
S-11	4/6/2020	C	0 to 7	<0.025	<0.049	<0.049	<0.099	ND	<4.9	<8.1	<41	ND	<60
S-12	4/6/2020	C	0 to 5	<0.024	<0.049	<0.049	<0.098	ND	<4.9	<7.9	<40	ND	<60
S-14	4/6/2020	C	3	<0.024	<0.049	<0.049	<0.098	ND	<4.9	<9.2	<46	ND	<60
S-17	4/6/2020	C	3	<0.025	<0.050	<0.050	<0.099	ND	<5.0	<8.2	<41	ND	<60
S-18	4/6/2020	C	0 to 3	<0.024	<0.047	<0.047	<0.095	ND	<4.7	<8.7	<44	ND	<60
S-19	4/6/2020	C	0 to 3	<0.024	<0.048	<0.048	<0.096	ND	<4.8	<9.1	<45	ND	<60
Soils Associated with Historic Production Release (Hilcorp)													
S-13	4/6/2020	C	3	0.029	0.48	0.066	0.72	1.30	13	51	300	364	<60
S-15	4/6/2020	C	3	<0.024	0.17	0.058	0.77	1.00	11	60	390	461	<60
S-16	4/6/2020	C	3	<0.12	<0.24	<0.24	<0.49	ND	<24	330	1500	1830	<60

Note: Concentrations in **bold** and yellow exceed the applicable NM EMNRD Closure Criteria

ND = Not Detected above the Laboratory Practical Quantitation Limits (PQLs) or Reporting Limits (RLs)

NA = Not Analyzed

NE = Not Established

mg/kg = milligram per kilogram

BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes

TPH = Total Petroleum Hydrocarbon

GRO = Gasoline Range Organics

DRO = Diesel Range Organics

MRO = Motor Oil/Lube Oil Range Organics



APPENDIX G

Laboratory Data Sheets & Chain of Custody Documentation



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

April 13, 2020

Kyle Summers

ENSOLUM

606 S. Rio Grande Suite A

Aztec, NM 87410

TEL: (903) 821-5603

FAX:

RE: Howell M1

OrderNo.: 2004233

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 9 sample(s) on 4/7/2020 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 2004233

Date Reported: 4/13/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: S-1

Project: Howell M1

Collection Date: 4/6/2020 10:00:00 AM

Lab ID: 2004233-001

Matrix: MEOH (SOIL)

Received Date: 4/7/2020 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	60		mg/Kg	20	4/7/2020 10:24:54 AM	51611
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	4/7/2020 12:00:33 PM	51605
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/7/2020 12:00:33 PM	51605
Surr: DNOP	92.9	55.1-146		%Rec	1	4/7/2020 12:00:33 PM	51605
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	4/7/2020 2:21:04 PM	G67914
Surr: BFB	94.5	66.6-105		%Rec	1	4/7/2020 2:21:04 PM	G67914
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.018		mg/Kg	1	4/7/2020 2:21:04 PM	B67914
Toluene	ND	0.035		mg/Kg	1	4/7/2020 2:21:04 PM	B67914
Ethylbenzene	ND	0.035		mg/Kg	1	4/7/2020 2:21:04 PM	B67914
Xylenes, Total	ND	0.071		mg/Kg	1	4/7/2020 2:21:04 PM	B67914
Surr: 4-Bromofluorobenzene	97.0	80-120		%Rec	1	4/7/2020 2:21:04 PM	B67914

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		

Page 1 of 17

Analytical Report

Lab Order 2004233

Date Reported: 4/13/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: S-2

Project: Howell M1

Collection Date: 4/6/2020 10:05:00 AM

Lab ID: 2004233-002

Matrix: MEOH (SOIL)

Received Date: 4/7/2020 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	60		mg/Kg	20	4/7/2020 10:37:18 AM	51611
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	4/7/2020 12:22:40 PM	51605
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/7/2020 12:22:40 PM	51605
Surr: DNOP	90.4	55.1-146		%Rec	1	4/7/2020 12:22:40 PM	51605
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	4/7/2020 2:44:37 PM	G67914
Surr: BFB	96.3	66.6-105		%Rec	1	4/7/2020 2:44:37 PM	G67914
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.020		mg/Kg	1	4/7/2020 2:44:37 PM	B67914
Toluene	ND	0.039		mg/Kg	1	4/7/2020 2:44:37 PM	B67914
Ethylbenzene	ND	0.039		mg/Kg	1	4/7/2020 2:44:37 PM	B67914
Xylenes, Total	ND	0.078		mg/Kg	1	4/7/2020 2:44:37 PM	B67914
Surr: 4-Bromofluorobenzene	99.4	80-120		%Rec	1	4/7/2020 2:44:37 PM	B67914

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		

Page 2 of 17

Analytical Report

Lab Order 2004233

Date Reported: 4/13/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: S-3

Project: Howell M1

Collection Date: 4/6/2020 10:10:00 AM

Lab ID: 2004233-003

Matrix: MEOH (SOIL)

Received Date: 4/7/2020 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	60		mg/Kg	20	4/7/2020 10:49:42 AM	51611
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: JMR
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	4/7/2020 9:46:28 AM	G67912
Surr: BFB	101	70-130		%Rec	1	4/7/2020 9:46:28 AM	G67912
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	4/7/2020 12:44:42 PM	51605
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/7/2020 12:44:42 PM	51605
Surr: DNOP	84.7	55.1-146		%Rec	1	4/7/2020 12:44:42 PM	51605
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: JMR
Benzene	ND	0.018		mg/Kg	1	4/7/2020 9:46:28 AM	R67912
Toluene	0.048	0.035		mg/Kg	1	4/7/2020 9:46:28 AM	R67912
Ethylbenzene	ND	0.035		mg/Kg	1	4/7/2020 9:46:28 AM	R67912
Xylenes, Total	0.096	0.071		mg/Kg	1	4/7/2020 9:46:28 AM	R67912
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	4/7/2020 9:46:28 AM	R67912
Surr: 4-Bromofluorobenzene	94.7	70-130		%Rec	1	4/7/2020 9:46:28 AM	R67912
Surr: Dibromofluoromethane	99.6	70-130		%Rec	1	4/7/2020 9:46:28 AM	R67912
Surr: Toluene-d8	103	70-130		%Rec	1	4/7/2020 9:46:28 AM	R67912

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		

Page 3 of 17

Analytical Report

Lab Order 2004233

Date Reported: 4/13/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: S-4

Project: Howell M1

Collection Date: 4/6/2020 10:15:00 AM

Lab ID: 2004233-004

Matrix: MEOH (SOIL)

Received Date: 4/7/2020 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	60		mg/Kg	20	4/7/2020 11:02:07 AM	51611
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: JMR
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	4/7/2020 10:15:06 AM	G67912
Surr: BFB	101	70-130		%Rec	1	4/7/2020 10:15:06 AM	G67912
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	4/7/2020 10:25:42 AM	51605
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/7/2020 10:25:42 AM	51605
Surr: DNOP	90.7	55.1-146		%Rec	1	4/7/2020 10:25:42 AM	51605
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: JMR
Benzene	ND	0.018		mg/Kg	1	4/7/2020 10:15:06 AM	R67912
Toluene	ND	0.036		mg/Kg	1	4/7/2020 10:15:06 AM	R67912
Ethylbenzene	ND	0.036		mg/Kg	1	4/7/2020 10:15:06 AM	R67912
Xylenes, Total	ND	0.072		mg/Kg	1	4/7/2020 10:15:06 AM	R67912
Surr: 1,2-Dichloroethane-d4	100	70-130		%Rec	1	4/7/2020 10:15:06 AM	R67912
Surr: 4-Bromofluorobenzene	92.9	70-130		%Rec	1	4/7/2020 10:15:06 AM	R67912
Surr: Dibromofluoromethane	100	70-130		%Rec	1	4/7/2020 10:15:06 AM	R67912
Surr: Toluene-d8	99.0	70-130		%Rec	1	4/7/2020 10:15:06 AM	R67912

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		

Page 4 of 17

Analytical Report

Lab Order 2004233

Date Reported: 4/13/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: S-5

Project: Howell M1

Collection Date: 4/6/2020 10:20:00 AM

Lab ID: 2004233-005

Matrix: MEOH (SOIL)

Received Date: 4/7/2020 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	60		mg/Kg	20	4/7/2020 11:14:32 AM	51611
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: JMR
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	4/7/2020 10:43:34 AM	G67912
Surr: BFB	101	70-130		%Rec	1	4/7/2020 10:43:34 AM	G67912
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	4/7/2020 10:49:34 AM	51605
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/7/2020 10:49:34 AM	51605
Surr: DNOP	67.2	55.1-146		%Rec	1	4/7/2020 10:49:34 AM	51605
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: JMR
Benzene	ND	0.017		mg/Kg	1	4/7/2020 10:43:34 AM	R67912
Toluene	ND	0.035		mg/Kg	1	4/7/2020 10:43:34 AM	R67912
Ethylbenzene	ND	0.035		mg/Kg	1	4/7/2020 10:43:34 AM	R67912
Xylenes, Total	ND	0.069		mg/Kg	1	4/7/2020 10:43:34 AM	R67912
Surr: 1,2-Dichloroethane-d4	97.5	70-130		%Rec	1	4/7/2020 10:43:34 AM	R67912
Surr: 4-Bromofluorobenzene	97.8	70-130		%Rec	1	4/7/2020 10:43:34 AM	R67912
Surr: Dibromofluoromethane	98.9	70-130		%Rec	1	4/7/2020 10:43:34 AM	R67912
Surr: Toluene-d8	102	70-130		%Rec	1	4/7/2020 10:43:34 AM	R67912

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		

Page 5 of 17

Analytical Report

Lab Order 2004233

Date Reported: 4/13/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: S-6

Project: Howell M1

Collection Date: 4/6/2020 10:25:00 AM

Lab ID: 2004233-006

Matrix: MEOH (SOIL)

Received Date: 4/7/2020 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	60		mg/Kg	20	4/7/2020 11:26:57 AM	51611
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: JMR
Gasoline Range Organics (GRO)	ND	3.4		mg/Kg	1	4/7/2020 11:12:12 AM	G67912
Surr: BFB	98.1	70-130		%Rec	1	4/7/2020 11:12:12 AM	G67912
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/7/2020 11:13:25 AM	51605
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/7/2020 11:13:25 AM	51605
Surr: DNOP	79.8	55.1-146		%Rec	1	4/7/2020 11:13:25 AM	51605
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: JMR
Benzene	ND	0.017		mg/Kg	1	4/7/2020 11:12:12 AM	R67912
Toluene	0.044	0.034		mg/Kg	1	4/7/2020 11:12:12 AM	R67912
Ethylbenzene	ND	0.034		mg/Kg	1	4/7/2020 11:12:12 AM	R67912
Xylenes, Total	ND	0.067		mg/Kg	1	4/7/2020 11:12:12 AM	R67912
Surr: 1,2-Dichloroethane-d4	96.5	70-130		%Rec	1	4/7/2020 11:12:12 AM	R67912
Surr: 4-Bromofluorobenzene	94.4	70-130		%Rec	1	4/7/2020 11:12:12 AM	R67912
Surr: Dibromofluoromethane	100	70-130		%Rec	1	4/7/2020 11:12:12 AM	R67912
Surr: Toluene-d8	97.6	70-130		%Rec	1	4/7/2020 11:12:12 AM	R67912

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		

Page 6 of 17

Analytical Report

Lab Order 2004233

Date Reported: 4/13/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: S-7

Project: Howell M1

Collection Date: 4/6/2020 10:30:00 AM

Lab ID: 2004233-007

Matrix: MEOH (SOIL)

Received Date: 4/7/2020 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	60		mg/Kg	20	4/7/2020 11:39:21 AM	51611
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: JMR
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	4/7/2020 11:40:51 AM	G67912
Surr: BFB	99.3	70-130		%Rec	1	4/7/2020 11:40:51 AM	G67912
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	4/7/2020 11:37:15 AM	51605
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/7/2020 11:37:15 AM	51605
Surr: DNOP	69.7	55.1-146		%Rec	1	4/7/2020 11:37:15 AM	51605
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: JMR
Benzene	ND	0.018		mg/Kg	1	4/7/2020 11:40:51 AM	R67912
Toluene	ND	0.037		mg/Kg	1	4/7/2020 11:40:51 AM	R67912
Ethylbenzene	ND	0.037		mg/Kg	1	4/7/2020 11:40:51 AM	R67912
Xylenes, Total	ND	0.073		mg/Kg	1	4/7/2020 11:40:51 AM	R67912
Surr: 1,2-Dichloroethane-d4	97.2	70-130		%Rec	1	4/7/2020 11:40:51 AM	R67912
Surr: 4-Bromofluorobenzene	95.2	70-130		%Rec	1	4/7/2020 11:40:51 AM	R67912
Surr: Dibromofluoromethane	105	70-130		%Rec	1	4/7/2020 11:40:51 AM	R67912
Surr: Toluene-d8	96.9	70-130		%Rec	1	4/7/2020 11:40:51 AM	R67912

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		

Page 7 of 17

Analytical Report

Lab Order 2004233

Date Reported: 4/13/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: S-8

Project: Howell M1

Collection Date: 4/6/2020 10:35:00 AM

Lab ID: 2004233-008

Matrix: MEOH (SOIL)

Received Date: 4/7/2020 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	60		mg/Kg	20	4/7/2020 12:16:35 PM	51611
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: JMR
Gasoline Range Organics (GRO)	ND	4.3		mg/Kg	1	4/7/2020 1:35:01 PM	G67912
Surr: BFB	99.8	70-130		%Rec	1	4/7/2020 1:35:01 PM	G67912
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	4/7/2020 12:01:08 PM	51605
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/7/2020 12:01:08 PM	51605
Surr: DNOP	81.6	55.1-146		%Rec	1	4/7/2020 12:01:08 PM	51605
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: JMR
Benzene	ND	0.021		mg/Kg	1	4/7/2020 1:35:01 PM	R67912
Toluene	ND	0.043		mg/Kg	1	4/7/2020 1:35:01 PM	R67912
Ethylbenzene	ND	0.043		mg/Kg	1	4/7/2020 1:35:01 PM	R67912
Xylenes, Total	ND	0.085		mg/Kg	1	4/7/2020 1:35:01 PM	R67912
Surr: 1,2-Dichloroethane-d4	96.8	70-130		%Rec	1	4/7/2020 1:35:01 PM	R67912
Surr: 4-Bromofluorobenzene	97.2	70-130		%Rec	1	4/7/2020 1:35:01 PM	R67912
Surr: Dibromofluoromethane	100	70-130		%Rec	1	4/7/2020 1:35:01 PM	R67912
Surr: Toluene-d8	96.9	70-130		%Rec	1	4/7/2020 1:35:01 PM	R67912

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		

Page 8 of 17

Analytical Report

Lab Order 2004233

Date Reported: 4/13/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: S-9

Project: Howell M1

Collection Date: 4/6/2020 10:40:00 AM

Lab ID: 2004233-009

Matrix: MEOH (SOIL)

Received Date: 4/7/2020 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	60		mg/Kg	20	4/7/2020 12:29:00 PM	51611
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	8.5		mg/Kg	1	4/7/2020 12:25:05 PM	51606
Motor Oil Range Organics (MRO)	ND	42		mg/Kg	1	4/7/2020 12:25:05 PM	51606
Surr: DNOP	80.1	55.1-146		%Rec	1	4/7/2020 12:25:05 PM	51606
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.3		mg/Kg	1	4/7/2020 3:08:17 PM	G67914
Surr: BFB	93.8	66.6-105		%Rec	1	4/7/2020 3:08:17 PM	G67914
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.017		mg/Kg	1	4/7/2020 3:08:17 PM	B67914
Toluene	ND	0.033		mg/Kg	1	4/7/2020 3:08:17 PM	B67914
Ethylbenzene	ND	0.033		mg/Kg	1	4/7/2020 3:08:17 PM	B67914
Xylenes, Total	ND	0.066		mg/Kg	1	4/7/2020 3:08:17 PM	B67914
Surr: 4-Bromofluorobenzene	97.1	80-120		%Rec	1	4/7/2020 3:08:17 PM	B67914

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		

Page 9 of 17

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2004233
13-Apr-20

Client: ENSOLUM
Project: Howell M1

Sample ID: MB-51611		SampType: mblk		TestCode: EPA Method 300.0: Anions						
Client ID: PBS		Batch ID: 51611		RunNo: 67907						
Prep Date: 4/7/2020		Analysis Date: 4/7/2020		SeqNo: 2347333			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-51611		SampType: lcs		TestCode: EPA Method 300.0: Anions						
Client ID: LCSS		Batch ID: 51611		RunNo: 67907						
Prep Date: 4/7/2020		Analysis Date: 4/7/2020		SeqNo: 2347334			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	90.2	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

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

WO#: 2004233

13-Apr-20

Client: ENSOLUM**Project:** Howell M1

Sample ID: MB-51605	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 51605	RunNo: 67895								
Prep Date: 4/7/2020	Analysis Date: 4/7/2020	SeqNo: 2346079 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.2		10.00		92.3	55.1	146			

Sample ID: MB-51606	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 51606	RunNo: 67895								
Prep Date: 4/7/2020	Analysis Date: 4/7/2020	SeqNo: 2346080 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.5		10.00		94.9	55.1	146			

Sample ID: LCS-51605	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 51605	RunNo: 67895								
Prep Date: 4/7/2020	Analysis Date: 4/7/2020	SeqNo: 2346081 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	95.2	70	130			
Surr: DNOP	4.5		5.000		90.4	55.1	146			

Sample ID: LCS-51606	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 51606	RunNo: 67895								
Prep Date: 4/7/2020	Analysis Date: 4/7/2020	SeqNo: 2346082 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	97.8	70	130			
Surr: DNOP	4.6		5.000		91.2	55.1	146			

Sample ID: LCS-51606-2	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 51606	RunNo: 67895								
Prep Date: 4/7/2020	Analysis Date: 4/7/2020	SeqNo: 2346083 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	96.5	70	130			
Surr: DNOP	4.5		5.000		89.8	55.1	146			

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#: 2004233

13-Apr-20

Client: ENSOLUM**Project:** Howell M1

Sample ID: LCS-51606-3	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 51606	RunNo: 67895								
Prep Date: 4/7/2020	Analysis Date: 4/7/2020	SeqNo: 2346084	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	95.0	70	130			
Surr: DNOP	4.5		5.000		90.1	55.1	146			

Sample ID: LCS-51589	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 51589	RunNo: 67897								
Prep Date: 4/6/2020	Analysis Date: 4/7/2020	SeqNo: 2347620	Units: %Rec							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.2		5.000		83.2	55.1	146			

Sample ID: MB-51589	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 51589	RunNo: 67897								
Prep Date: 4/6/2020	Analysis Date: 4/7/2020	SeqNo: 2347621	Units: %Rec							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.8		10.00		88.4	55.1	146			

Sample ID: LCS-51634	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 51634	RunNo: 67900								
Prep Date: 4/7/2020	Analysis Date: 4/9/2020	SeqNo: 2348958	Units: %Rec							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.7		5.000		74.0	55.1	146			

Sample ID: MB-51634	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 51634	RunNo: 67900								
Prep Date: 4/7/2020	Analysis Date: 4/9/2020	SeqNo: 2348959	Units: %Rec							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.5		10.00		84.9	55.1	146			

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 12 of 17

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

WO#: 2004233

13-Apr-20

Client: ENSOLUM**Project:** Howell M1

Sample ID: mb1	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: G67914			RunNo: 67914						
Prep Date:	Analysis Date: 4/7/2020			SeqNo: 2346829		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	930		1000		92.8	66.6	105			

Sample ID: 2.5ug gro lcs	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: G67914			RunNo: 67914						
Prep Date:	Analysis Date: 4/7/2020			SeqNo: 2346830		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	84.8	80	120			
Surr: BFB	1000		1000		103	66.6	105			

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 13 of 17

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

WO#: 2004233

13-Apr-20

Client: ENSOLUM**Project:** Howell M1

Sample ID: mb1	SampType: MBLK			TestCode: EPA Method 8021B: Volatiles						
Client ID: PBS	Batch ID: B67914			RunNo: 67914						
Prep Date:	Analysis Date: 4/7/2020			SeqNo: 2346860		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	0.96		1.000		95.9	80	120			

Sample ID: 100ng btex lcs	SampType: LCS			TestCode: EPA Method 8021B: Volatiles						
Client ID: LCSS	Batch ID: B67914			RunNo: 67914						
Prep Date:	Analysis Date: 4/7/2020			SeqNo: 2346861		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	1.000	0	91.6	80	120			
Toluene	0.94	0.050	1.000	0	94.2	80	120			
Ethylbenzene	0.97	0.050	1.000	0	96.7	80	120			
Xylenes, Total	2.9	0.10	3.000	0	97.0	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		99.7	80	120			

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 14 of 17

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

WO#: 2004233

13-Apr-20

Client: ENSOLUM**Project:** Howell M1

Sample ID: 100ng lcs	SampType: LCS	TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: LCSS	Batch ID: R67912	RunNo: 67912								
Prep Date:	Analysis Date: 4/6/2020	SeqNo: 2346330	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	105	70	130			
Toluene	1.0	0.050	1.000	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	0.55		0.5000		110	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		101	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		101	70	130			
Surr: Toluene-d8	0.49		0.5000		97.1	70	130			

Sample ID: mb1	SampType: MBLK	TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: PBS	Batch ID: R67912	RunNo: 67912								
Prep Date:	Analysis Date: 4/6/2020	SeqNo: 2346363	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	0.55		0.5000		110	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		97.0	70	130			
Surr: Dibromofluoromethane	0.54		0.5000		108	70	130			
Surr: Toluene-d8	0.49		0.5000		97.1	70	130			

Sample ID: 2004233-003ams	SampType: MS	TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: S-3	Batch ID: R67912	RunNo: 67912								
Prep Date:	Analysis Date: 4/7/2020	SeqNo: 2347540	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0.003362	94.3	70	130			
Toluene	1.1	0.050	1.000	0.04797	104	70	130			
Surr: 1,2-Dichloroethane-d4	0.51		0.5000		101	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.7	70	130			
Surr: Dibromofluoromethane	0.49		0.5000		98.2	70	130			
Surr: Toluene-d8	0.47		0.5000		93.8	70	130			

Sample ID: 2004233-003amsd	SampType: MSD	TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: S-3	Batch ID: R67912	RunNo: 67912								
Prep Date:	Analysis Date: 4/7/2020	SeqNo: 2347541	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0.003362	93.5	70	130	0.825	20	
Toluene	1.0	0.050	1.000	0.04797	99.3	70	130	4.77	20	

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 15 of 17

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2004233

13-Apr-20

Client: ENSOLUM

Project: Howell M1

Sample ID: 2004233-003amsd		SampType: MSD		TestCode: EPA Method 8260B: Volatiles Short List						
Client ID: S-3		Batch ID: R67912		RunNo: 67912						
Prep Date:		Analysis Date: 4/7/2020		SeqNo: 2347541			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		103	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.0	70	130	0	0	
Surr: Dibromofluoromethane	0.50		0.5000		99.0	70	130	0	0	
Surr: Toluene-d8	0.48		0.5000		95.3	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 16 of 17

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

WO#: 2004233

13-Apr-20

Client: ENSOLUM**Project:** Howell M1

Sample ID: 2.5ug gro lcs	SampType: LCS			TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: LCSS	Batch ID: G67912			RunNo: 67912						
Prep Date:	Analysis Date: 4/6/2020			SeqNo: 2346368		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	85.5	70	130			
Surr: BFB	520		500.0		104	70	130			

Sample ID: mb1	SampType: MBLK			TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: PBS	Batch ID: G67912			RunNo: 67912						
Prep Date:	Analysis Date: 4/6/2020			SeqNo: 2346405		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	500		500.0		100	70	130			

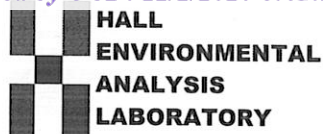
Sample ID: 2004233-004ams	SampType: MS			TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: S-4	Batch ID: G67912			RunNo: 67912						
Prep Date:	Analysis Date: 4/7/2020			SeqNo: 2347542		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	82.3	70	130			
Surr: BFB	510		500.0		103	70	130			

Sample ID: 2004233-004amsd	SampType: MSD			TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: S-4	Batch ID: G67912			RunNo: 67912						
Prep Date:	Analysis Date: 4/7/2020			SeqNo: 2347543		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	5.0	25.00	0	79.1	70	130	3.96	20	
Surr: BFB	500		500.0		99.4	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



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

Sample Log-In Check List

Client Name: ENSOLUM AZTEC

Work Order Number: 2004233

RcptNo: 1

Received By: Isaiah Ortiz 4/7/2020 8:05:00 AM

Completed By: Isaiah Ortiz 4/7/2020 8:16:25 AM

Reviewed By: LB 4/7/20

I-OX

I-OX

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of $>0^{\circ}\text{C}$ 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: DAD 4/7/20

Special Handling (if applicable)

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

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.2	Good	Yes			
2	2.2	Good	Yes			

Chain-of-Custody Record

Client: Ensolum LLC

Mailing Address: 606 ~~Sp~~ S. Rio
Grande, Ste A Aztec NM 87410
Phone #: 505 419 0837

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: Same day

☐ Standard ☒ Rush 100%

Project Name: Howell N#1

Project #:
05A1226099

Project Manager:
K. Summers

Sampler: L. Danielli, R. Deechilly

On Ice: ☒ Yes ☐ No

# of Coolers:	7.3-01KE	22°C
---------------	----------	------

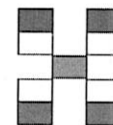
Cooler Temp (including CF): 1.3 - 0.1 / 1.2 / 17 (°C)

Container Type and #	Preservative Type	HEAL No. 2004233
-------------------------	----------------------	---------------------

Date	Time	Matrix	Sample Name
------	------	--------	-------------

4/6/20	10:00	S	S-1	1 jar 402	Cool	-001
4/6/20	10:05	S	S-2	1 jar		-002
4/6/20	10:10	S	S-3	1 jar		-003
4/6/20	10:15	S	S-4	1 jar		-004
4/6/20	10:20	S	S-5	1 jar		-005
4/6/20	10:25	S	S-6	1 jar		-006
4/6/20	10:30	S	S-7	1 jar		-007
4/6/20	10:35	S	S-8	1 jar		-008
4/6/20	10:40	S	S-9	1 jar		-009

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
4/6/70	1535		Christ Wao		4/6/201535	
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
4/6/70	1814	Christine Warten			4/7/70	0800



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

[illegible]

Remarks:	Tom Long N47693
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Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

April 13, 2020

Kyle Summers

ENSOLUM

606 S. Rio Grande Suite A

Aztec, NM 87410

TEL: (903) 821-5603

FAX:

RE: Howell M1

OrderNo.: 2004248

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 10 sample(s) on 4/7/2020 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 2004248

Date Reported: 4/13/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: S-10

Project: Howell M1

Collection Date: 4/6/2020 10:45:00 AM

Lab ID: 2004248-001

Matrix: SOIL

Received Date: 4/7/2020 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	60		mg/Kg	20	4/9/2020 12:29:23 PM	51658
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	8.9		mg/Kg	1	4/9/2020 8:55:47 AM	51636
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	4/9/2020 8:55:47 AM	51636
Surr: DNOP	103	55.1-146		%Rec	1	4/9/2020 8:55:47 AM	51636
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/9/2020 10:58:42 PM	51635
Surr: BFB	99.3	66.6-105		%Rec	1	4/9/2020 10:58:42 PM	51635
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	4/9/2020 10:58:42 PM	51635
Toluene	ND	0.048		mg/Kg	1	4/9/2020 10:58:42 PM	51635
Ethylbenzene	ND	0.048		mg/Kg	1	4/9/2020 10:58:42 PM	51635
Xylenes, Total	ND	0.095		mg/Kg	1	4/9/2020 10:58:42 PM	51635
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	4/9/2020 10:58:42 PM	51635

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		

Page 1 of 15

Analytical Report

Lab Order 2004248

Date Reported: 4/13/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: S-11

Project: Howell M1

Collection Date: 4/6/2020 10:50:00 AM

Lab ID: 2004248-002

Matrix: SOIL

Received Date: 4/7/2020 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	60		mg/Kg	20	4/9/2020 1:06:37 PM	51658
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	8.1		mg/Kg	1	4/9/2020 9:19:32 AM	51636
Motor Oil Range Organics (MRO)	ND	41		mg/Kg	1	4/9/2020 9:19:32 AM	51636
Surr: DNOP	119	55.1-146		%Rec	1	4/9/2020 9:19:32 AM	51636
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/10/2020 12:10:11 AM	51635
Surr: BFB	100	66.6-105		%Rec	1	4/10/2020 12:10:11 AM	51635
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	4/10/2020 12:10:11 AM	51635
Toluene	ND	0.049		mg/Kg	1	4/10/2020 12:10:11 AM	51635
Ethylbenzene	ND	0.049		mg/Kg	1	4/10/2020 12:10:11 AM	51635
Xylenes, Total	ND	0.099		mg/Kg	1	4/10/2020 12:10:11 AM	51635
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	4/10/2020 12:10:11 AM	51635

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		

Page 2 of 15

Analytical Report

Lab Order 2004248

Date Reported: 4/13/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: S-12

Project: Howell M1

Collection Date: 4/6/2020 10:55:00 AM

Lab ID: 2004248-003

Matrix: SOIL

Received Date: 4/7/2020 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	60		mg/Kg	20	4/9/2020 1:19:02 PM	51658
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	7.9		mg/Kg	1	4/9/2020 9:43:28 AM	51636
Motor Oil Range Organics (MRO)	ND	40		mg/Kg	1	4/9/2020 9:43:28 AM	51636
Surr: DNOP	121	55.1-146		%Rec	1	4/9/2020 9:43:28 AM	51636
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/10/2020 1:22:11 AM	51635
Surr: BFB	102	66.6-105		%Rec	1	4/10/2020 1:22:11 AM	51635
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	4/10/2020 1:22:11 AM	51635
Toluene	ND	0.049		mg/Kg	1	4/10/2020 1:22:11 AM	51635
Ethylbenzene	ND	0.049		mg/Kg	1	4/10/2020 1:22:11 AM	51635
Xylenes, Total	ND	0.098		mg/Kg	1	4/10/2020 1:22:11 AM	51635
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	4/10/2020 1:22:11 AM	51635

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		

Page 3 of 15

Analytical Report

Lab Order 2004248

Date Reported: 4/13/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: S-13

Project: Howell M1

Collection Date: 4/6/2020 11:00:00 AM

Lab ID: 2004248-004

Matrix: SOIL

Received Date: 4/7/2020 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	60		mg/Kg	20	4/9/2020 1:31:26 PM	51658
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	51	8.7		mg/Kg	1	4/9/2020 10:07:24 AM	51636
Motor Oil Range Organics (MRO)	300	43		mg/Kg	1	4/9/2020 10:07:24 AM	51636
Surr: DNOP	107	55.1-146		%Rec	1	4/9/2020 10:07:24 AM	51636
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	13	4.7		mg/Kg	1	4/10/2020 1:46:09 AM	51635
Surr: BFB	105	66.6-105		%Rec	1	4/10/2020 1:46:09 AM	51635
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	0.029	0.023		mg/Kg	1	4/10/2020 1:46:09 AM	51635
Toluene	0.48	0.047		mg/Kg	1	4/10/2020 1:46:09 AM	51635
Ethylbenzene	0.066	0.047		mg/Kg	1	4/10/2020 1:46:09 AM	51635
Xylenes, Total	0.72	0.093		mg/Kg	1	4/10/2020 1:46:09 AM	51635
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	4/10/2020 1:46:09 AM	51635

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 2004248

Date Reported: 4/13/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: S-14

Project: Howell M1

Collection Date: 4/6/2020 11:05:00 AM

Lab ID: 2004248-005

Matrix: SOIL

Received Date: 4/7/2020 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: CAS
Chloride	ND	60		mg/Kg	20	4/8/2020 4:31:34 PM	51662
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	4/9/2020 10:55:08 AM	51636
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/9/2020 10:55:08 AM	51636
Surr: DNOP	95.2	55.1-146		%Rec	1	4/9/2020 10:55:08 AM	51636
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/10/2020 2:57:52 AM	51635
Surr: BFB	102	66.6-105		%Rec	1	4/10/2020 2:57:52 AM	51635
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	4/10/2020 2:57:52 AM	51635
Toluene	ND	0.049		mg/Kg	1	4/10/2020 2:57:52 AM	51635
Ethylbenzene	ND	0.049		mg/Kg	1	4/10/2020 2:57:52 AM	51635
Xylenes, Total	ND	0.098		mg/Kg	1	4/10/2020 2:57:52 AM	51635
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	4/10/2020 2:57:52 AM	51635

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		

Page 5 of 15

Analytical Report

Lab Order 2004248

Date Reported: 4/13/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: S-15

Project: Howell M1

Collection Date: 4/6/2020 11:10:00 AM

Lab ID: 2004248-006

Matrix: SOIL

Received Date: 4/7/2020 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: CAS
Chloride	ND	60		mg/Kg	20	4/8/2020 4:43:58 PM	51662
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	60	8.4		mg/Kg	1	4/9/2020 11:19:09 AM	51636
Motor Oil Range Organics (MRO)	390	42		mg/Kg	1	4/9/2020 11:19:09 AM	51636
Surr: DNOP	122	55.1-146		%Rec	1	4/9/2020 11:19:09 AM	51636
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	11	4.8		mg/Kg	1	4/10/2020 3:21:49 AM	51635
Surr: BFB	125	66.6-105	S	%Rec	1	4/10/2020 3:21:49 AM	51635
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	4/10/2020 3:21:49 AM	51635
Toluene	0.17	0.048		mg/Kg	1	4/10/2020 3:21:49 AM	51635
Ethylbenzene	0.058	0.048		mg/Kg	1	4/10/2020 3:21:49 AM	51635
Xylenes, Total	0.77	0.095		mg/Kg	1	4/10/2020 3:21:49 AM	51635
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	4/10/2020 3:21:49 AM	51635

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		

Page 6 of 15

Analytical Report

Lab Order 2004248

Date Reported: 4/13/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: S-16

Project: Howell M1

Collection Date: 4/6/2020 11:15:00 AM

Lab ID: 2004248-007

Matrix: SOIL

Received Date: 4/7/2020 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: CAS
Chloride	ND	60		mg/Kg	20	4/8/2020 4:56:22 PM	51662
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	330	98		mg/Kg	10	4/9/2020 12:07:00 PM	51636
Motor Oil Range Organics (MRO)	1500	490		mg/Kg	10	4/9/2020 12:07:00 PM	51636
Surr: DNOP	0	55.1-146	S	%Rec	10	4/9/2020 12:07:00 PM	51636
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	24	D	mg/Kg	5	4/10/2020 3:45:43 AM	51635
Surr: BFB	98.1	66.6-105	D	%Rec	5	4/10/2020 3:45:43 AM	51635
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	0.12	D	mg/Kg	5	4/10/2020 3:45:43 AM	51635
Toluene	ND	0.24	D	mg/Kg	5	4/10/2020 3:45:43 AM	51635
Ethylbenzene	ND	0.24	D	mg/Kg	5	4/10/2020 3:45:43 AM	51635
Xylenes, Total	ND	0.49	D	mg/Kg	5	4/10/2020 3:45:43 AM	51635
Surr: 4-Bromofluorobenzene	99.0	80-120	D	%Rec	5	4/10/2020 3:45:43 AM	51635

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		

Page 7 of 15

Analytical Report

Lab Order 2004248

Date Reported: 4/13/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: S-17

Project: Howell M1

Collection Date: 4/6/2020 11:20:00 AM

Lab ID: 2004248-008

Matrix: SOIL

Received Date: 4/7/2020 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: CAS
Chloride	ND	60		mg/Kg	20	4/8/2020 5:08:47 PM	51662
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	8.2		mg/Kg	1	4/9/2020 12:30:55 PM	51636
Motor Oil Range Organics (MRO)	ND	41		mg/Kg	1	4/9/2020 12:30:55 PM	51636
Surr: DNOP	83.1	55.1-146		%Rec	1	4/9/2020 12:30:55 PM	51636
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/10/2020 4:09:35 AM	51635
Surr: BFB	98.2	66.6-105		%Rec	1	4/10/2020 4:09:35 AM	51635
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	4/10/2020 4:09:35 AM	51635
Toluene	ND	0.050		mg/Kg	1	4/10/2020 4:09:35 AM	51635
Ethylbenzene	ND	0.050		mg/Kg	1	4/10/2020 4:09:35 AM	51635
Xylenes, Total	ND	0.099		mg/Kg	1	4/10/2020 4:09:35 AM	51635
Surr: 4-Bromofluorobenzene	98.6	80-120		%Rec	1	4/10/2020 4:09:35 AM	51635

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		

Page 8 of 15

Analytical Report

Lab Order 2004248

Date Reported: 4/13/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: S-18

Project: Howell M1

Collection Date: 4/6/2020 11:25:00 AM

Lab ID: 2004248-009

Matrix: SOIL

Received Date: 4/7/2020 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: CAS
Chloride	ND	60		mg/Kg	20	4/8/2020 5:21:12 PM	51662
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	8.7		mg/Kg	1	4/9/2020 12:54:50 PM	51636
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	4/9/2020 12:54:50 PM	51636
Surr: DNOP	119	55.1-146		%Rec	1	4/9/2020 12:54:50 PM	51636
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/10/2020 4:33:02 AM	51635
Surr: BFB	103	66.6-105		%Rec	1	4/10/2020 4:33:02 AM	51635
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	4/10/2020 4:33:02 AM	51635
Toluene	ND	0.047		mg/Kg	1	4/10/2020 4:33:02 AM	51635
Ethylbenzene	ND	0.047		mg/Kg	1	4/10/2020 4:33:02 AM	51635
Xylenes, Total	ND	0.095		mg/Kg	1	4/10/2020 4:33:02 AM	51635
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	4/10/2020 4:33:02 AM	51635

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		

Page 9 of 15

Analytical Report

Lab Order 2004248

Date Reported: 4/13/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: S-19

Project: Howell M1

Collection Date: 4/6/2020 11:30:00 AM

Lab ID: 2004248-010

Matrix: SOIL

Received Date: 4/7/2020 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: CAS
Chloride	ND	60		mg/Kg	20	4/8/2020 5:33:37 PM	51662
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	4/9/2020 1:18:51 PM	51636
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	4/9/2020 1:18:51 PM	51636
Surr: DNOP	96.9	55.1-146		%Rec	1	4/9/2020 1:18:51 PM	51636
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/10/2020 4:56:30 AM	51635
Surr: BFB	96.6	66.6-105		%Rec	1	4/10/2020 4:56:30 AM	51635
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	4/10/2020 4:56:30 AM	51635
Toluene	ND	0.048		mg/Kg	1	4/10/2020 4:56:30 AM	51635
Ethylbenzene	ND	0.048		mg/Kg	1	4/10/2020 4:56:30 AM	51635
Xylenes, Total	ND	0.096		mg/Kg	1	4/10/2020 4:56:30 AM	51635
Surr: 4-Bromofluorobenzene	98.5	80-120		%Rec	1	4/10/2020 4:56:30 AM	51635

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		

Page 10 of 15

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

WO#: 2004248

13-Apr-20

Client: ENSOLUM**Project:** Howell M1

Sample ID: MB-51662	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 51662	RunNo: 67978								
Prep Date: 4/8/2020	Analysis Date: 4/8/2020	SeqNo: 2349318		Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-51662	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 51662	RunNo: 67978								
Prep Date: 4/8/2020	Analysis Date: 4/8/2020	SeqNo: 2349333		Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.1	90	110			

Sample ID: MB-51658	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 51658	RunNo: 68005								
Prep Date: 4/8/2020	Analysis Date: 4/9/2020	SeqNo: 2350129		Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-51658	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 51658	RunNo: 68005								
Prep Date: 4/8/2020	Analysis Date: 4/9/2020	SeqNo: 2350130		Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.4	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical 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 11 of 15

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

WO#: 2004248

13-Apr-20

Client: ENSOLUM**Project:** Howell M1

Sample ID: MB-51636	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 51636	RunNo: 67971								
Prep Date: 4/7/2020	Analysis Date: 4/9/2020	SeqNo: 2349485 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	12		10.00		120	55.1	146			

Sample ID: LCS-51636	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 51636	RunNo: 67971								
Prep Date: 4/7/2020	Analysis Date: 4/9/2020	SeqNo: 2349486 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	58	10	50.00	0	115	70	130			
Surr: DNOP	5.5		5.000		110	55.1	146			

Sample ID: 2004248-001AMS	SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: S-10	Batch ID: 51636	RunNo: 67971								
Prep Date: 4/7/2020	Analysis Date: 4/9/2020	SeqNo: 2350487 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	8.5	42.34	2.828	93.7	47.4	136			
Surr: DNOP	4.4		4.234		103	55.1	146			

Sample ID: 2004248-001AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: S-10	Batch ID: 51636	RunNo: 67971								
Prep Date: 4/7/2020	Analysis Date: 4/9/2020	SeqNo: 2350488 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	39	8.0	40.03	2.828	90.5	47.4	136	8.49	43.4	
Surr: DNOP	3.7		4.003		92.9	55.1	146	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 12 of 15

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

WO#: 2004248

13-Apr-20

Client: ENSOLUM**Project:** Howell M1

Sample ID: 2004248-002ams	SampType: MS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: S-11	Batch ID: 51635			RunNo: 68006						
Prep Date: 4/7/2020	Analysis Date: 4/10/2020			SeqNo: 2350177		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	4.9	24.44	0	86.6	69.1	142			
Surr: BFB	1100		977.5		109	66.6	105			S

Sample ID: 2004248-002amsd	SampType: MSD			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: S-11	Batch ID: 51635			RunNo: 68006						
Prep Date: 4/7/2020	Analysis Date: 4/10/2020			SeqNo: 2350178		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	4.8	23.85	0	89.1	69.1	142	0.408	20	
Surr: BFB	1100		954.2		112	66.6	105	0	0	S

Sample ID: lcs-51628	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: 51628			RunNo: 68006						
Prep Date: 4/7/2020	Analysis Date: 4/9/2020			SeqNo: 2350206		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		108	66.6	105			S

Sample ID: lcs-51635	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: 51635			RunNo: 68006						
Prep Date: 4/7/2020	Analysis Date: 4/10/2020			SeqNo: 2350207		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	91.9	80	120			
Surr: BFB	1100		1000		107	66.6	105			S

Sample ID: mb-51628	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: 51628			RunNo: 68006						
Prep Date: 4/7/2020	Analysis Date: 4/9/2020			SeqNo: 2350208		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	970		1000		97.0	66.6	105			

Sample ID: mb-51635	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: 51635			RunNo: 68006						
Prep Date: 4/7/2020	Analysis Date: 4/10/2020			SeqNo: 2350209		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	970		1000		97.3	66.6	105			

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 13 of 15

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

WO#: 2004248

13-Apr-20

Client: ENSOLUM**Project:** Howell M1

Sample ID: 2004248-001ams	SampType: MS	TestCode: EPA Method 8021B: Volatiles								
Client ID: S-10	Batch ID: 51635	RunNo: 68006								
Prep Date: 4/7/2020	Analysis Date: 4/9/2020	SeqNo: 2350225 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.82	0.024	0.9653	0	85.2	78.5	119			
Toluene	0.88	0.048	0.9653	0.01288	90.3	75.7	123			
Ethylbenzene	0.90	0.048	0.9653	0	93.2	74.3	126			
Xylenes, Total	2.7	0.097	2.896	0	94.3	72.9	130			
Surr: 4-Bromofluorobenzene	1.0		0.9653		104	80	120			

Sample ID: 2004248-001amsd	SampType: MSD	TestCode: EPA Method 8021B: Volatiles								
Client ID: S-10	Batch ID: 51635	RunNo: 68006								
Prep Date: 4/7/2020	Analysis Date: 4/9/2020	SeqNo: 2350226 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.025	0.9911	0	84.5	78.5	119	1.75	20	
Toluene	0.88	0.050	0.9911	0.01288	87.6	75.7	123	0.473	20	
Ethylbenzene	0.92	0.050	0.9911	0	92.7	74.3	126	2.05	20	
Xylenes, Total	2.8	0.099	2.973	0	93.4	72.9	130	1.68	20	
Surr: 4-Bromofluorobenzene	1.0		0.9911		102	80	120	0	0	

Sample ID: LCS-51628	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 51628	RunNo: 68006								
Prep Date: 4/7/2020	Analysis Date: 4/9/2020	SeqNo: 2350255 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

Sample ID: LCS-51635	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 51635	RunNo: 68006								
Prep Date: 4/7/2020	Analysis Date: 4/10/2020	SeqNo: 2350256 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.025	1.000	0	85.6	80	120			
Toluene	0.89	0.050	1.000	0	89.2	80	120			
Ethylbenzene	0.92	0.050	1.000	0	91.9	80	120			
Xylenes, Total	2.8	0.10	3.000	0	92.3	80	120			
Surr: 4-Bromofluorobenzene	0.97		1.000		97.2	80	120			

Sample ID: mb-51628	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 51628	RunNo: 68006								
Prep Date: 4/7/2020	Analysis Date: 4/9/2020	SeqNo: 2350257 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

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#: 2004248

13-Apr-20

Client: ENSOLUM**Project:** Howell M1

Sample ID: mb-51628	SampType: MBLK			TestCode: EPA Method 8021B: Volatiles						
Client ID: PBS	Batch ID: 51628			RunNo: 68006						
Prep Date: 4/7/2020	Analysis Date: 4/9/2020			SeqNo: 2350257	Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.99		1.000		99.2	80	120			

Sample ID: mb-51635	SampType: MBLK			TestCode: EPA Method 8021B: Volatiles						
Client ID: PBS	Batch ID: 51635			RunNo: 68006						
Prep Date: 4/7/2020	Analysis Date: 4/10/2020			SeqNo: 2350258	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	0.99		1.000		98.9	80	120			

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: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **ENSOLUM AZTEC**Work Order Number: **2004248**

RcptNo: 1

Received By: **Juan Rojas**

4/7/2020 8:05:00 AM

*Juan Rojas*Completed By: **Isaiah Ortiz**

4/7/2020 9:37:36 AM

*I-Ortiz*Reviewed By: *IR**4/7/20*

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of $>0^{\circ}\text{C}$ 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: *DAD 4/7/20*

Special Handling (if applicable)

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

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.2	Good	Yes			
2	2.2	Good	Yes			

Released to Imaging: 5/20/2022 9:07:19 AM

☐ EDD (Type)

Container Type and #	Preservative Type	2.3-0.1=2.2 HEAL No. 100424
-------------------------	----------------------	-----------------------------------

☒ Rush☒ Yes ☐ No

Container Type and #	Preservative Type	2.3-0.1=2.2 HEAL No. 100424
-------------------------	----------------------	-----------------------------------

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

[illegible]

Date	Time	Matrix	Sample Name
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4/6/20	10:45	S	S-10
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4/6/20	10:50	S	S-11
--------	-------	---	------

4/6/20	10:55	S	S+12
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4/12/20	11:00 10:00	5	5-1
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4/6/20	11:05	5	5-1 ⁴
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4/6/20 11:10	S	S-12
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4/2/20	11:15	5	5 - 10

9/10/20	11:20	5	5-1
1/1		5	

4/6/20	11:25	5	5-8
		6	6

9/6/20	11.30	7	1

Date:	Time:	Relinquished by:
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4/6/24	1535	
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Date: 4/1/18 Time: 18:41 Relinquished by: [Signature]

Received by: Via: Date Time:

1/ Mstr Walter 7/6/20 13

Received by: Via: Date Time

Remarks:	+	1	+	1117193
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10m long N17E15

1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

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 11382

CONDITIONS

Operator: Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	OGRID: 241602
	Action Number: 11382
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	None	5/20/2022