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: **241602**
Contact Name: **Thomas Long**	Contact Telephone: **505-599-2286**
Contact email:**tjlong@eprod.com**	Incident # *(assigned by OCD)* **nAPP2320734440**
Contact mailing address: **614 Reilly Ave, Farmington, NM 87401**	

Location of Release Source

Latitude **36.712269** Longitude **-107.646695** *(NAD 83 in decimal degrees to 5 decimal places)*

Site Name **San Juan 27-9 #94A**	Site Type **Natural Gas Gathering Pipeline**
Date Release Discovered: **07/26/2023**	Serial Number *(if applicable)*: **N/A**

Unit Letter	Section	Township	Range	County
F	**19**	**29N**	**7W**	**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)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☒ Condensate	Volume Released (bbls): **Estimated 5-10 BBLs**	Volume Recovered (bbls): **None**
☒ Natural Gas	Volume Released (Mcf): **3.14 MCF**	Volume Recovered (Mcf): **None**
☐ Other (describe)	Volume/Weight Released (provide units):	Volume/Weight Recovered (provide units)

Cause of Release On July 10, 2023, Enterprise had a release of natural gas and natural gas liquids from the San Juan 27-9 #94A pipeline. The pipeline was isolated, depressurized, locked and tagged out. No fire nor injuries occurred. No liquids were observed on the ground surface. Repairs and remediation began on July 26, 2023, at which time Enterprise determined the release reportable per NMOCD regulation, due to the volume of impacted subsurface soil. Remediation was completed on August 2, 2023. The final excavation dimensions measured approximately 25 feet long by 14.5 feet wide by 14 feet deep. A total of 260 cubic yards of hydrocarbon impacted soil was excavated and transported to a New Mexico Oil Conservation Division (NMOCD) approved land farm. A third party closure report is included with this "Final" C-141.

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: Thomas Long Title: Senior Environmental Scientist

Signature: Thomas Long Date: 11-2-2023

email: tjlong@eprod.com Telephone: (505) 599-2286

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: Nelson Velez Date: 01/03/2024

Printed Name: Nelson Velez Title: Environmental Specialist - Adv

ENSOLUM

CLOSURE REPORT

Property:

San Juan 27-9 #94A (07/26/23)
Unit Letter F, S19 T29N R7W
Rio Arriba County, New Mexico

New Mexico EMNRD OCD Incident ID No. NAPP2320734440

November 2, 2023

Ensolum Project No. 05A1226254

Prepared for:

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

Prepared by:

Chad D'Aponti
Project Scientist

Kyle Summers
Senior Managing Geologist

TABLE OF CONTENTS

LIST OF APPENDICES

1.0 INTRODUCTION

1.1 Site Description & Background

Operator:	Enterprise Field Services, LLC / Enterprise Products Operating LLC (Enterprise)
Site Name:	San Juan 27-9 #94A (07/26/23) (Site)
NM EMNRD OCD Incident ID No.	NAPP2320734440
Location:	36.712269° North, 107.616695° West Unit Letter F, Section 19, Township 29 North, Range 7 West Rio Arriba County, New Mexico
Property:	United States Bureau of Land Management (BLM)
Regulatory:	New Mexico (NM) Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division (OCD)

For clarification, it should be noted that although the Site nomenclature does not match the listed coordinates, the coordinates and Public Land Survey System (PLSS) details are correct for this release.

On June 2, 2023, a release of natural gas from the San Juan 27-9 #94A pipeline was identified by a third party. Enterprise verified the release and subsequently isolated and locked the pipeline out of service. On July 25, 2023, Enterprise initiated activities to repair the pipeline and remediate petroleum hydrocarbon impact. On July 26, 2023, Enterprise determined the release was "reportable" due to the estimated volume of impacted soil. The NM EMNRD OCD was subsequently notified.

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 NM EMNRD OCD closure criteria.

2.0 CLOSURE CRITERIA

The Site is subject to regulatory oversight by the New Mexico EMNRD OCD. Ensolum, LLC (Ensolum) referenced 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, during the evaluation and remediation of the Site. The appropriate closure criteria for sites are determined using the siting requirements outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC. Ensolum utilized the general site characteristics and information available from NM state agency databases and federal agency geospatial databases to determine the appropriate closure criteria for the Site. Supporting figures and documentation associated with the following Siting bullets are provided in **Appendix B**.

- The NM Office of the State Engineer (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 and includes an interactive map). No PODs were identified in the same PLSS section as the Site. One POD (SJ-00039) was identified in

an adjacent section. The depth to water for this POD is recorded as 435 feet below grade surface (bgs). This POD is approximately 1.6 miles southeast of the Site and approximately 390 feet lower in elevation than the Site (**Figure A**, **Appendix B**).

- Numerous cathodic protection wells (CPWs) were identified in the NM EMNRD OCD imaging database in the same PLSS section as the Site and in the adjacent PLSS sections. These CPWs are depicted on **Figure B** (**Appendix B**). Two of the closest CPWs are located less than 700 feet from the Site. Documentation for the cathodic protection well located near the San Juan 29-7 Unit #94A well location indicates a depth to water between 170 feet and 180 feet bgs. This cathodic protection well is located approximately 620 feet north of the Site and is approximately 11 feet lower in elevation than the Site. Documentation for the cathodic protection well located near the San Juan 29-7 Unit #119 well location indicates a depth to water of approximately 70 feet bgs. This cathodic protection well is located approximately 690 feet south of the Site and is approximately 16 feet lower in elevation than the Site.

- The Site is not located within 300 feet of a NM EMNRD OCD-defined continuously flowing watercourse or significant watercourse (**Figure C**, **Appendix B**).

- 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 (**Figure D**, **Appendix B**).

- No springs, or private domestic freshwater wells used by less than five households for domestic or stock watering purposes were identified within 500 feet of the Site (**Figure E**, **Appendix B**).

- No freshwater wells or springs were identified within 1,000 feet of the Site (**Figure E**, **Appendix B**).

- 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 within 300 feet of a wetland (**Figure F**, **Appendix B**).

- Based on information identified in the NM Mining and Minerals Division's Geographic Information System (GIS) Maps and Mine Data database, the Site is not within an area overlying a subsurface mine (**Figure G**, **Appendix B**).

- The Site is not located within an unstable area per Paragraph (6) of Subsection U of 19.15.2.7 NMAC.

- Based on information provided by the Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL) geospatial database, the Site is not within a 100-year floodplain (**Figure H**, **Appendix B**).

Based on available information Enterprise estimates the depth to water at the Site to be greater than 50 feet bgs, resulting in a Tier II ranking. However, the soil requirements of NMAC 19.15.29.13(D)(1) indicate that a minimum of the upper four feet must contain "uncontaminated" soil and that the soils meet Tier I closure criteria listed in Table 1 of NMAC 19.15.29.12.

Applicable closure criteria for Tier I soils and Tier II soils (below four feet) remaining in place at the Site include:

Tier II Closure Criteria for Soils Impacted by a Release		
Constituent[1]	**Method**	**Limit**
Chloride	EPA 300.0 or SM4500 Cl B	10,000 mg/kg
TPH (GRO+DRO+MRO)[2]	EPA SW-846 Method 8015	2,500 mg/kg
TPH (GRO+DRO)	EPA SW-846 Method 8015	1,000 mg/kg
BTEX[3]	EPA SW-846 Method 8021 or 8260	50 mg/kg
Benzene	EPA SW-846 Method 8021 or 8260	10 mg/kg

[1] – Constituent concentrations are in milligrams per kilogram (mg/kg).
[2] – Total Petroleum Hydrocarbons (TPH). Gasoline Range Organics (GRO). Diesel Range Organics (DRO). Motor Oil/Lube Oil Range Organics (MRO).
[3] – Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX).

Tier I Closure Criteria for Soils Impacted by a Release		
Constituent[1]	**Method**	**Limit**
Chloride	EPA 300.0 or SM4500 Cl B	600 mg/kg
TPH (GRO+DRO+MRO)[2]	EPA SW-846 Method 8015	100 mg/kg
BTEX[3]	EPA SW-846 Method 8021 or 8260	50 mg/kg
Benzene	EPA SW-846 Method 8021 or 8260	10 mg/kg

[1] – Constituent concentrations are in milligrams per kilogram (mg/kg).
[2] – Total Petroleum Hydrocarbons (TPH). Gasoline Range Organics (GRO). Diesel Range Organics (DRO). Motor Oil/Lube Oil Range Organics (MRO).
[3] – Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX).

3.0 SOIL REMEDIATION ACTIVITIES

On July 25, 2023, Enterprise initiated activities to repair the pipeline and remediate petroleum hydrocarbon impact resulting from the release. During the remediation and corrective action activities, Sunland Construction Inc, provided heavy equipment and labor support, while Ensolum provided environmental consulting support.

The final excavation measured approximately 25 feet long and 14.5 feet wide at the maximum extent. The maximum depth of the excavation measured approximately 14 feet bgs. The lithology encountered during the completion of remediation activities consisted primarily of silty sandy clay underlain by sandstone.

Approximately 260 cubic yards (yd^3) of petroleum hydrocarbon-affected soil and 13 barrels (bbls) of hydro-excavation soil cuttings and water were transported to the Envirotech, Inc., (Envirotech) landfarm in San Juan County, NM for disposal/remediation. The executed C-138 solid waste acceptance form is provided in **Appendix C**. Enterprise has not yet determined a permanent repair strategy for the pipeline; therefore, the excavation has not yet been backfilled at the time this document was finalized. Once the permanent pipeline repairs are completed, the pipeline excavation will be backfilled with imported fill and then contoured to the surrounding grade.

Figure 3 is a map that identifies approximate soil sample locations and depicts the approximate dimensions of the excavation with respect to the pipeline (**Appendix A**). 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 calibrated Dexsil PetroFLAG® hydrocarbon analyzer system and a photoionization detector (PID) fitted with a 10.6 eV lamp to guide excavation extents.

Ensolum's soil sampling program included the collection of 18 composite soil samples (S-1 through S-16, S-4a, and S-8a) from the excavation for laboratory analysis. The composite samples were comprised of five aliquots each and represent an estimated 200 square foot (ft^2) or less sample area per guidelines outlined in Section D of 19.15.29.12 NMAC. Hand tools or the excavator bucket were utilized to obtain fresh aliquots from each area of the excavation. Regulatory correspondence is provided in **Appendix E**.

First Sampling Event
On July 28, 2023, sampling was performed at the Site. The NM EMNRD OCD was notified of the sampling event although no representative was present during sampling activities. Composite soil sample S-1 (14') was collected from the floor of the excavation. Composite soil samples S-2 (0' to 4'), S-3 (4' to 14'), S-4 (0' to 4'), S-5 (4' to 14'), S-6 (0' to 4'), S-7 (4' to 14'), S-8 (0' to 4'), and S-9 (4' to 14') were collected from the walls of the excavation. Subsequent soil analytical results identified total BTEX and TPH concentrations that exceeded the applicable NM EMNRD OCD closure criteria for composite soil samples S-2, S-3, S-4, and S-8.

Second Sampling Event
In response to the exceedances of composite samples S-2, S-3, S-4, and S-8 during the first sampling event, additional soil was removed by excavation and transported to the landfarm for disposal/remediation. On August 2, 2023, a second sampling event was performed at the Site. The NM EMNRD OCD was notified of the sampling event although no representative was present during sampling activities. Composite soil sample S-10 (14') was collected from the floor of the excavation. Composite soil samples S-4a (0' to 4'), S-8a (0' to 4'), S-11 (0' to 4'), S-12 (4' to 14'), S-13 (0' to 4'), S-14 (4' to 14'), S-15 (0' to 4'), and S-16 (4' to 14') were collected from the walls of the excavation.

All soil samples were collected and placed in laboratory-prepared glassware. 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, NM, under proper chain-of-custody procedures.

5.0 SOIL LABORATORY ANALYTICAL METHODS

The composite soil samples were analyzed for 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** (**Appendix F**). The laboratory data sheets and executed chain-of-custody forms are provided in **Appendix G**.

6.0 SOIL DATA EVALUATION

Ensolum compared the benzene, BTEX, TPH, and chloride laboratory analytical results or laboratory practical quantitation limits (PQLs) / reporting limits (RLs) associated with the composite soil samples (S-1, S-4a, S-5 through S-7, S-8a, and S-9 through S-16) to the applicable NM EMNRD OCD closure criteria. The soils associated with composite soil samples S-2, S-3, S-

4, and S-8 were removed from the Site, and therefore, are not included in the following discussion. The laboratory analytical results are summarized in **Table 1** (**Appendix F**).

- The laboratory analytical results for composite soil samples S-1 and S-5 indicate benzene concentrations of 0.22 mg/kg and 0.13 mg/kg, respectively, which are less than the NM EMNRD OCD closure criteria of 10 mg/kg. The laboratory analytical results for all other composite soil samples associated with soil remaining at the Site indicate benzene is not present at concentrations greater than the laboratory PQLs/RLs, which are less than the NM EMNRD OCD closure criteria of 10 mg/kg.

- The laboratory analytical results for composite soil samples S-1, S-5, S-9, and S-10 indicate total BTEX concentrations ranging from 8.7 mg/kg (S-9) to 46 mg/kg (S-5), which are less than the NM EMNRD OCD closure criteria of 50 mg/kg. The laboratory analytical results for all other composite soil associated with soil remaining at the Site indicate total BTEX is not present at concentrations greater than the laboratory PQLs/RLs, which are less than the NM EMNRD OCD closure criteria of 50 mg/kg.

- The laboratory analytical results for Tier II composite soil samples S-1, S-5, S-9, S-10, S-12, S-14, and S-16 indicate combined TPH GRO/DRO concentrations ranging from 27 mg/kg (S-12) to 850 mg/kg (S-5), which are less than the New Mexico EMNRD OCD closure criteria of 1,000 mg/kg (for soils below 4 feet at a Tier II site). Sample depths are provided in **Table 1** in **Appendix F**. The laboratory analytical results for composite soil sample S-7 indicate combined TPH GRO/DRO is not present at concentrations greater than the laboratory PQLs/RLs, which are less than the applicable New Mexico EMNRD OCD closure criteria.

- The laboratory analytical results for composite soil samples S-1, S-4a, S-5, S-6, S-8a, and S-9 through S-16 indicate combined TPH GRO/DRO/MRO concentrations ranging from 11 mg/kg (S-6) to 850 mg/kg (S-5), which are less than the New Mexico EMNRD OCD closure criteria of 100 mg/kg (Tier I) or 2,500 mg/kg (Tier II) (depending on the depth of the represented soil). The laboratory analytical results for composite soil sample S-7 indicate combined TPH GRO/DRO/MRO is not present at concentrations greater than the laboratory PQLs/RLs, which are less than the New Mexico EMNRD OCD closure criteria of 100 mg/kg or 2,500 mg/kg (depending on the depth of the represented soil).

- The laboratory analytical results for all composite soil samples associated with soil remaining at the Site indicate chloride is not present at concentrations greater than the laboratory PQLs/RLs, which are less than the New Mexico EMNRD OCD closure criteria of 600 mg/kg or 10,000 mg/kg (depending on the depth of the represented soil).

7.0 RECLAMATION

Enterprise has not yet determined a permanent repair strategy for the pipeline; therefore, the excavation has not yet been backfilled at the time this document was finalized. Once permanent pipeline repairs are completed, Enterprise will backfill the excavation with imported fill and then contour to the surrounding grade.

8.0 FINDINGS AND RECOMMENDATION

- Eighteen composite soil samples were collected from the Site. Based on laboratory analytical results, no benzene, BTEX, chloride, or combined TPH GRO/DRO or total combined TPH GRO/DRO/MRO exceedances were identified in the soils remaining at the Site.

- Approximately 260 yd^3 of petroleum hydrocarbon-affected soil and 13 bbls of hydro-excavation soil cuttings and water were transported to the Envirotech landfarm for disposal/remediation.

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.

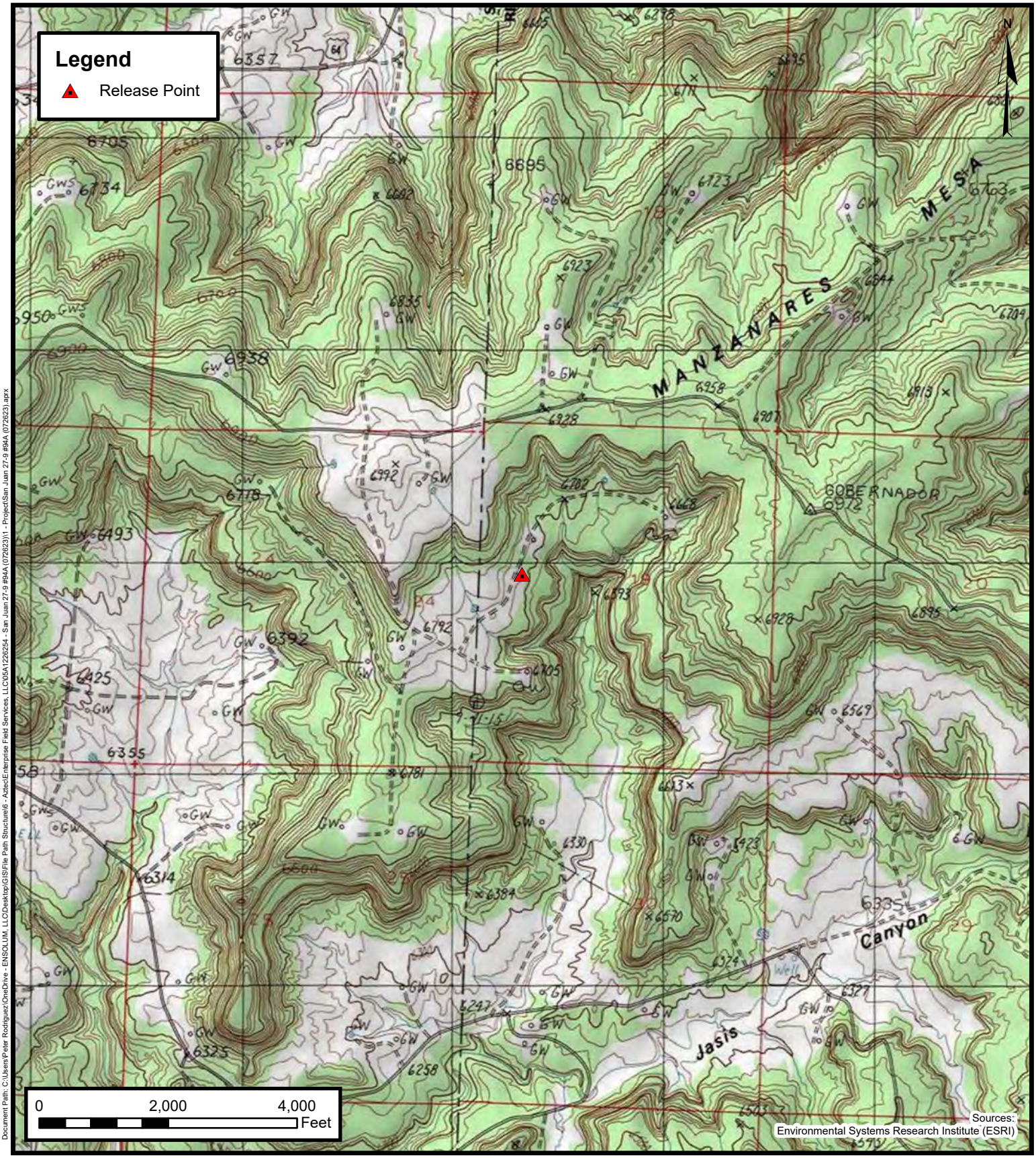
9.3 Reliance

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 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.

ENSOLUM

APPENDIX A

Figures



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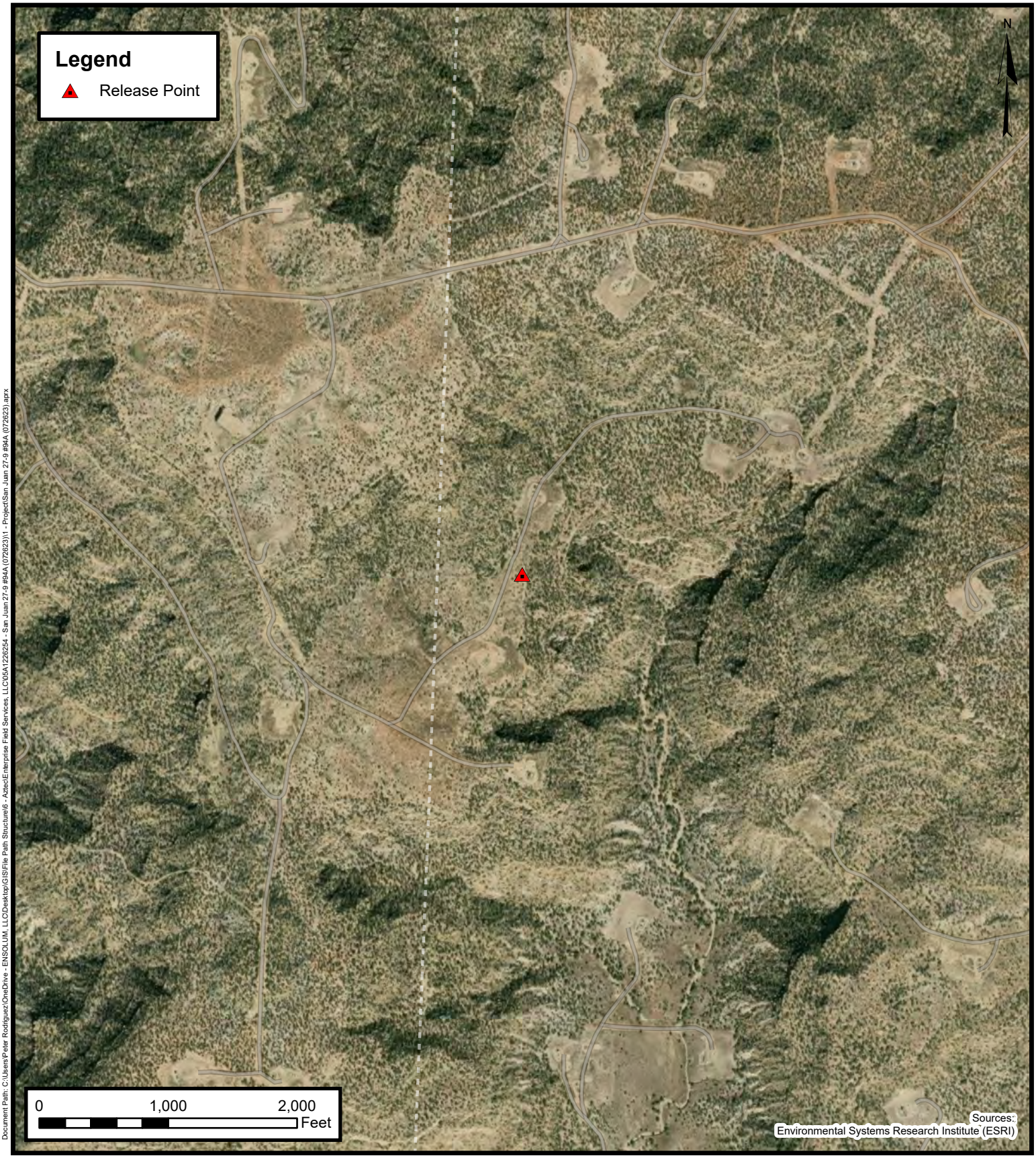
Environmental, Engineering and Hydrogeologic Consultants

Topographic Map

Enterprise Field Services, LLC
San Juan 27-9 #94A (07/26/23)
Project Number: 05A1226254
Unit Letter F, S19 T29N R7W, Rio Arriba County, New Mexico
36.712269, -107.616695

FIGURE
1



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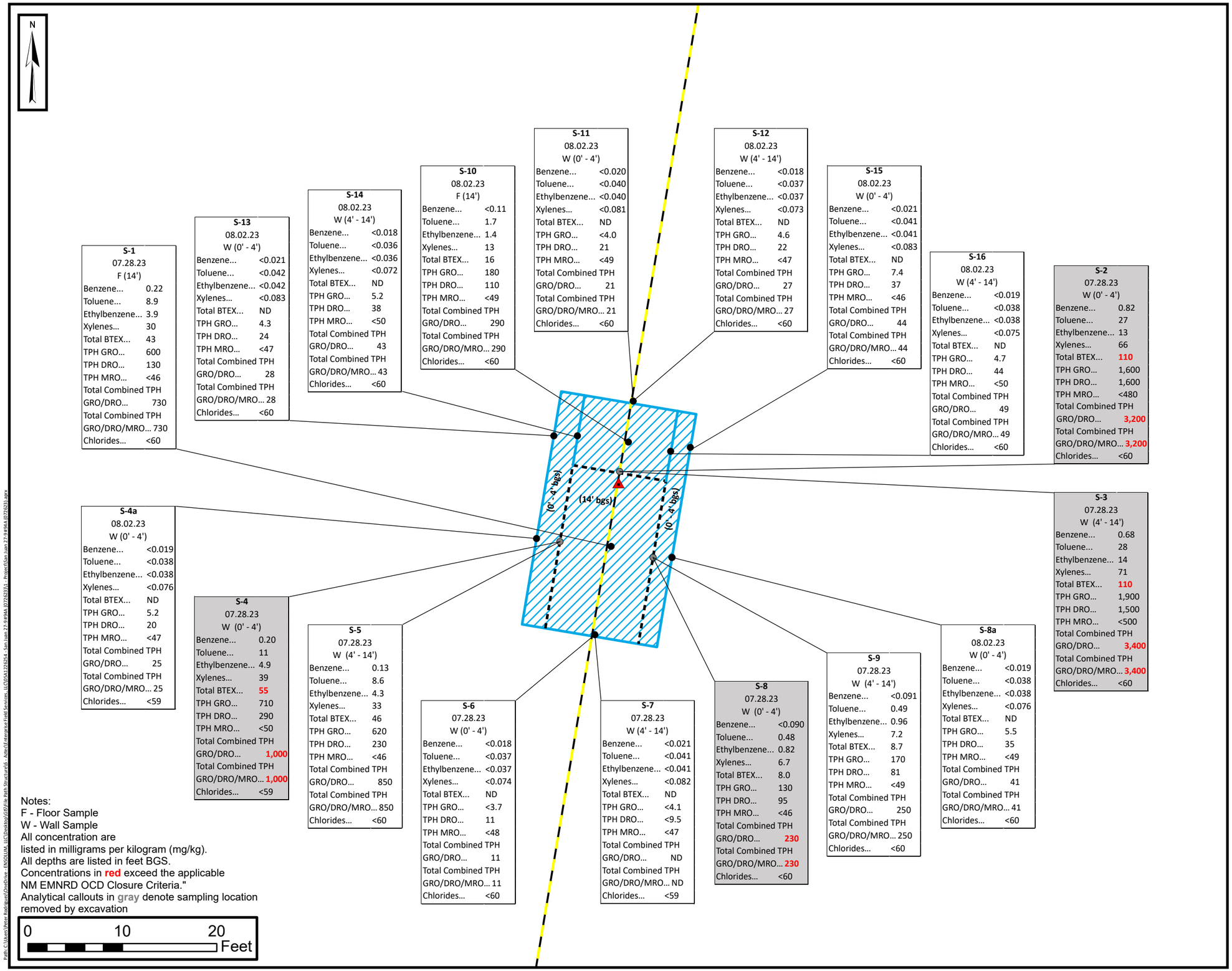
ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Site Vicinity Map

Enterprise Field Services, LLC
San Juan 27-9 #94A (07/26/23)
Project Number: 05A1226254
Unit Letter F, S19 T29N R7W, Rio Arriba County, New Mexico
36.712269, -107.616695

FIGURE
2



LEGEND

- Release Point
- Composite Soil Sample Location
- Composite Soil Sample Removed by Excavation
- Pipeline Location
- Former Sidewall
- Excavation Extent

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Site Map with Soil Analytical Results

Enterprise Field Services, LLC
San Juan 27-9 #94A (07/26/23)
Unit Letter F, S19 T29N R7W
Rio Arriba County, New Mexico
36.712269, -107.616695

Figure

3

Project Number: 05A1226254

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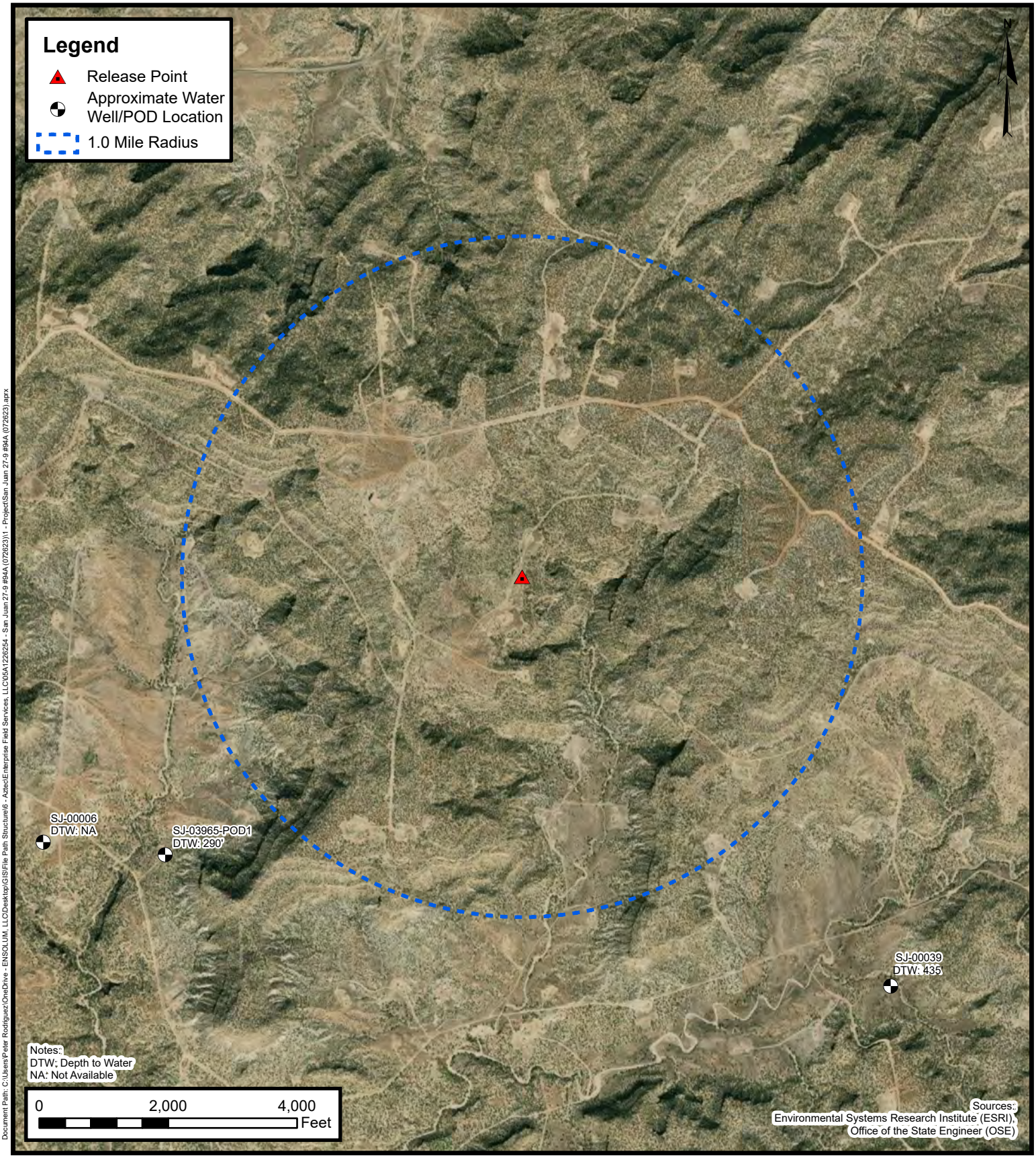
APPENDIX B

Siting Figures and Documentation



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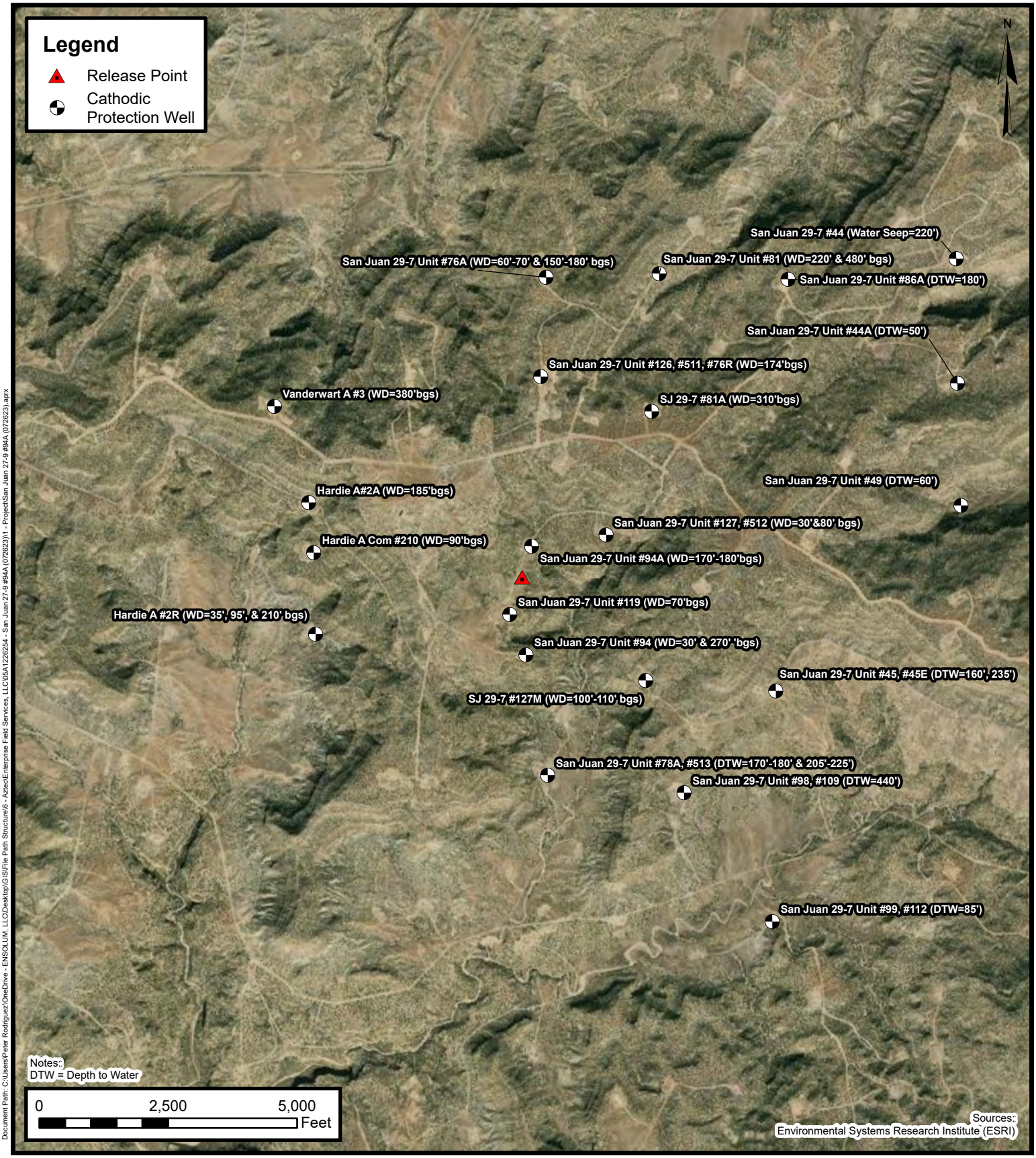
ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

1.0 Mile Radius Water Well/POD Location Map

Enterprise Field Services, LLC
San Juan 27-9 #94A (07/26/23)
Project Number: 05A1226254
Unit Letter F, S19 T29N R7W, Rio Arriba County, New Mexico
36.712269, -107.616695

FIGURE

A



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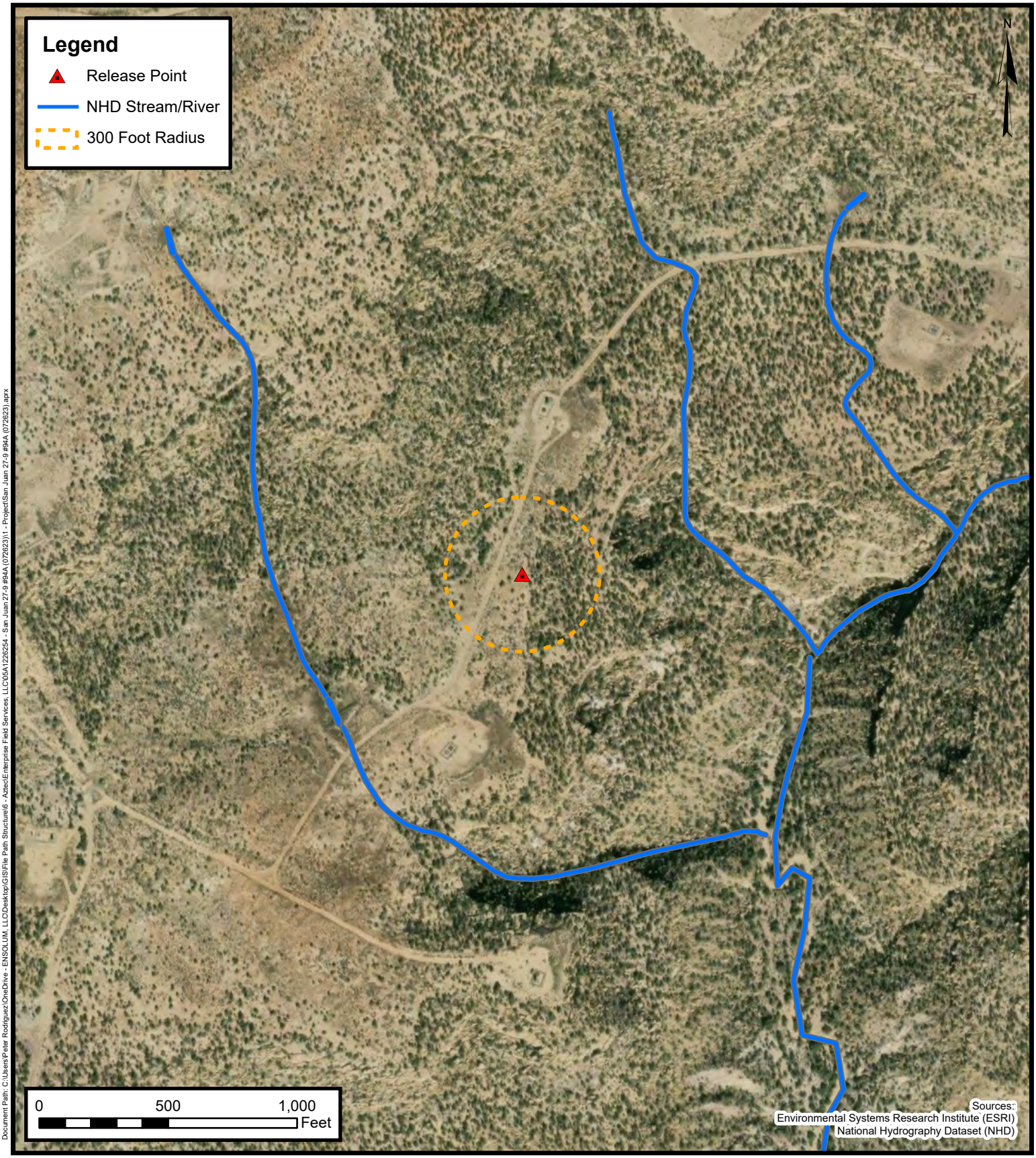
ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Cathodic Protection Well Recorded Depth to Water

Enterprise Field Services, LLC
San Juan 27-9 #94A (07/26/23)
Project Number: 05A1226254
Unit Letter F, S19 T29N R7W, Rio Arriba County, New Mexico
36.712269, -107.616695

FIGURE

B

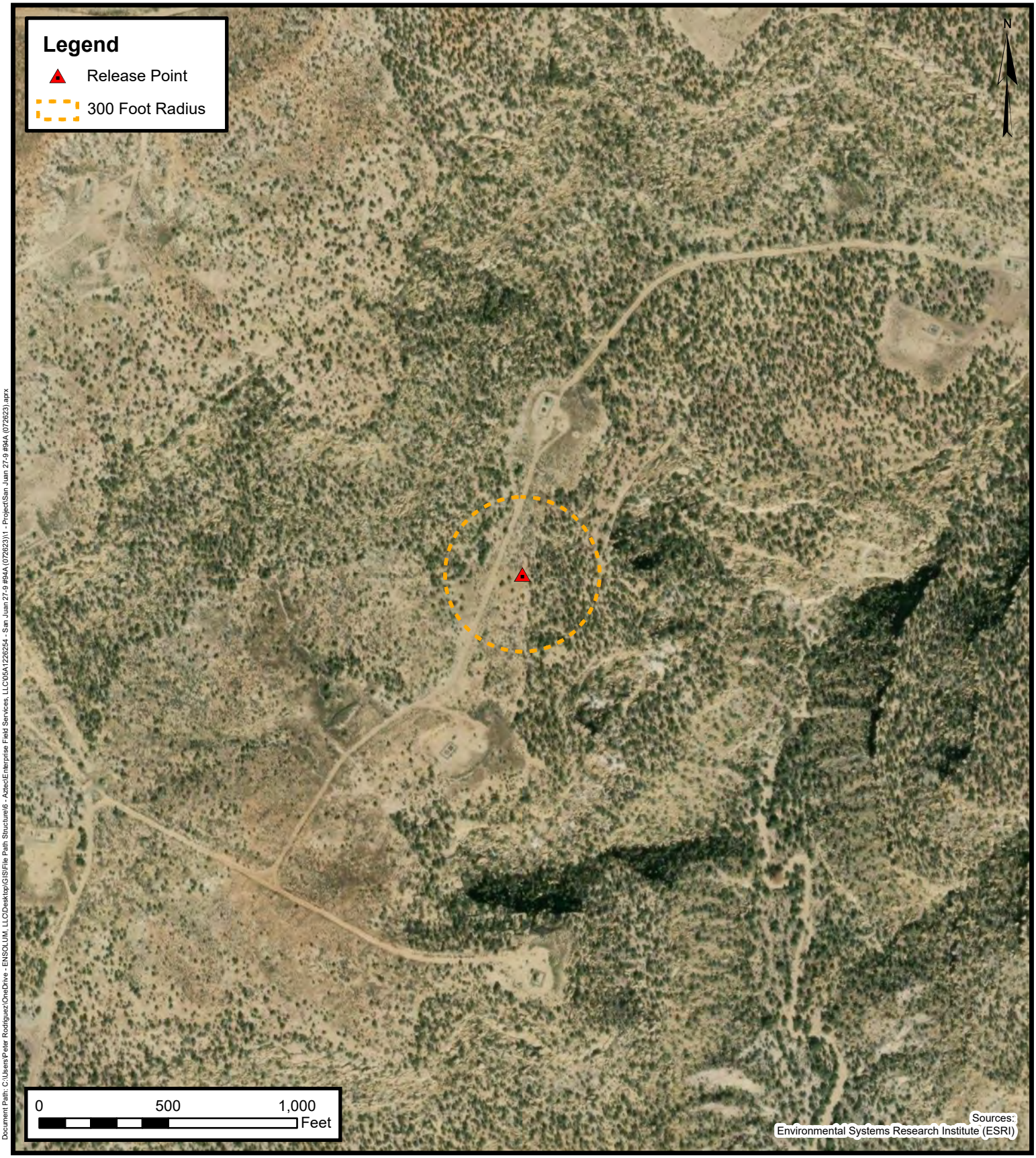


ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

300 Foot Radius Watercourse and Drainage Identification

Enterprise Field Services, LLC
San Juan 27-9 #94A (07/26/23)
Project Number: 05A1226254
Unit Letter F, S19 T29N R7W, Rio Arriba County, New Mexico
36.712269, -107.616695

FIGURE
C



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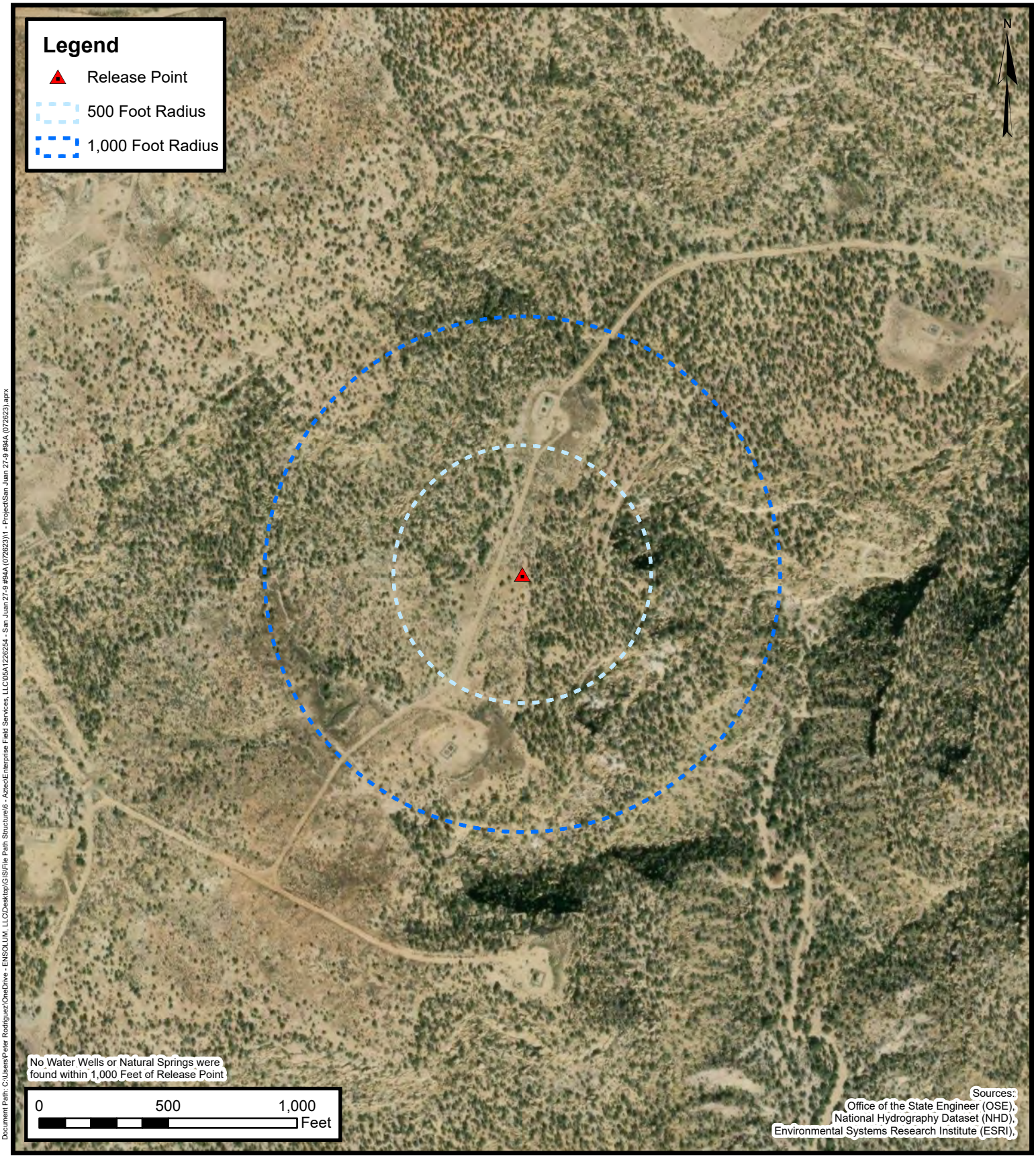
ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

300 Foot Radius Occupied Structure Identification

Enterprise Field Services, LLC
San Juan 27-9 #94A (07/26/23)
Project Number: 05A1226254
Unit Letter F, S19 T29N R7W, Rio Arriba County, New Mexico
36.712269, -107.616695

FIGURE

D

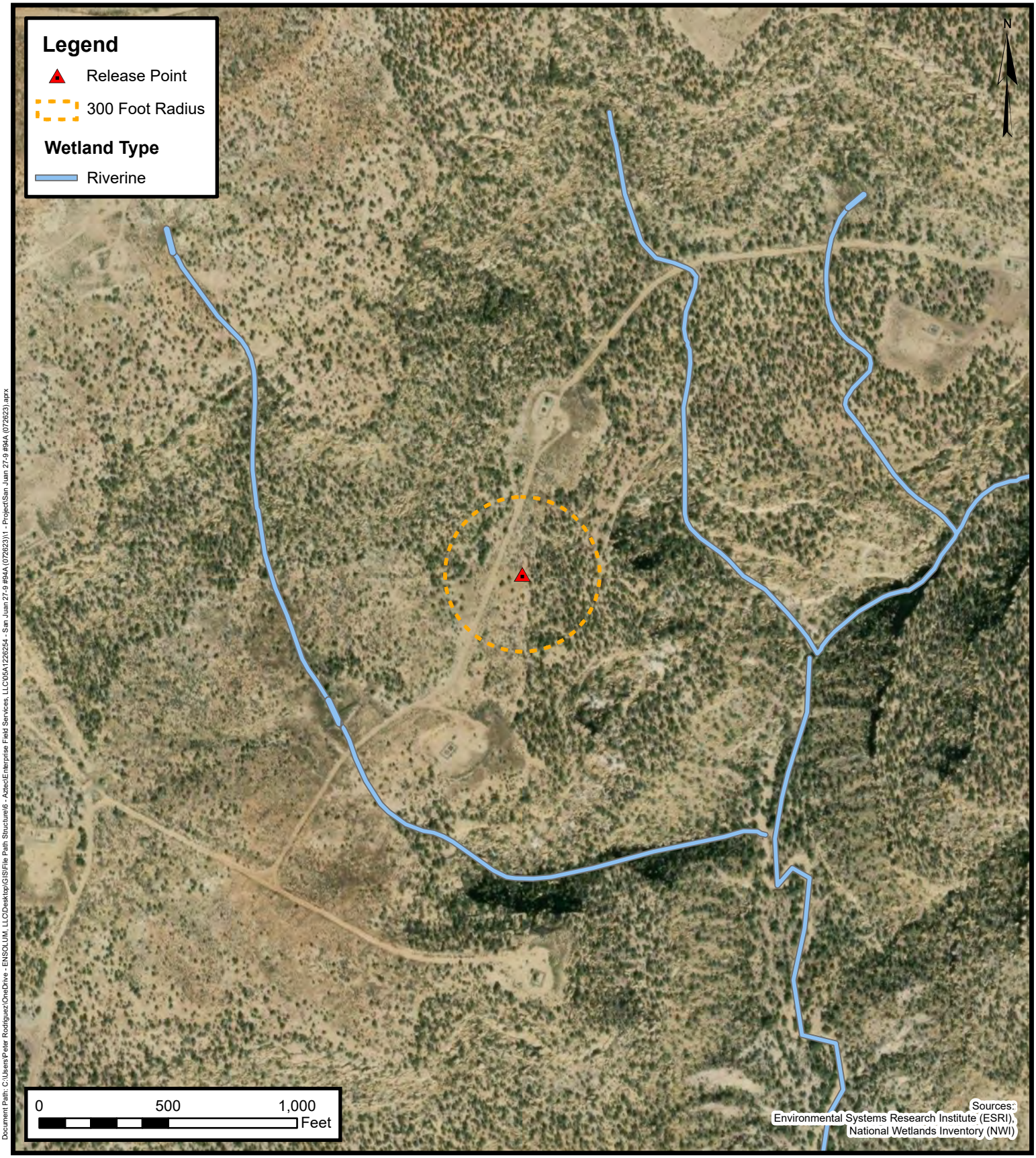


Document Path: C:\Users\Peter Rodriguez\OneDrive - ENSOLUM, LLC\Desktop\GIS\File Path Structure\6 - Aztec\Enterprise Field Services, LLC\05A1226254 - San Juan 27-9 #94A (072623)\1 - Project\San Juan 27-9 #94A (072623).aprx

ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Water Well and Natural Spring Location
Enterprise Field Services, LLC
San Juan 27-9 #94A (07/26/23)
Project Number: 05A1226254
Unit Letter F, S19 T29N R7W, Rio Arriba County, New Mexico
36.712269, -107.616695

FIGURE
E

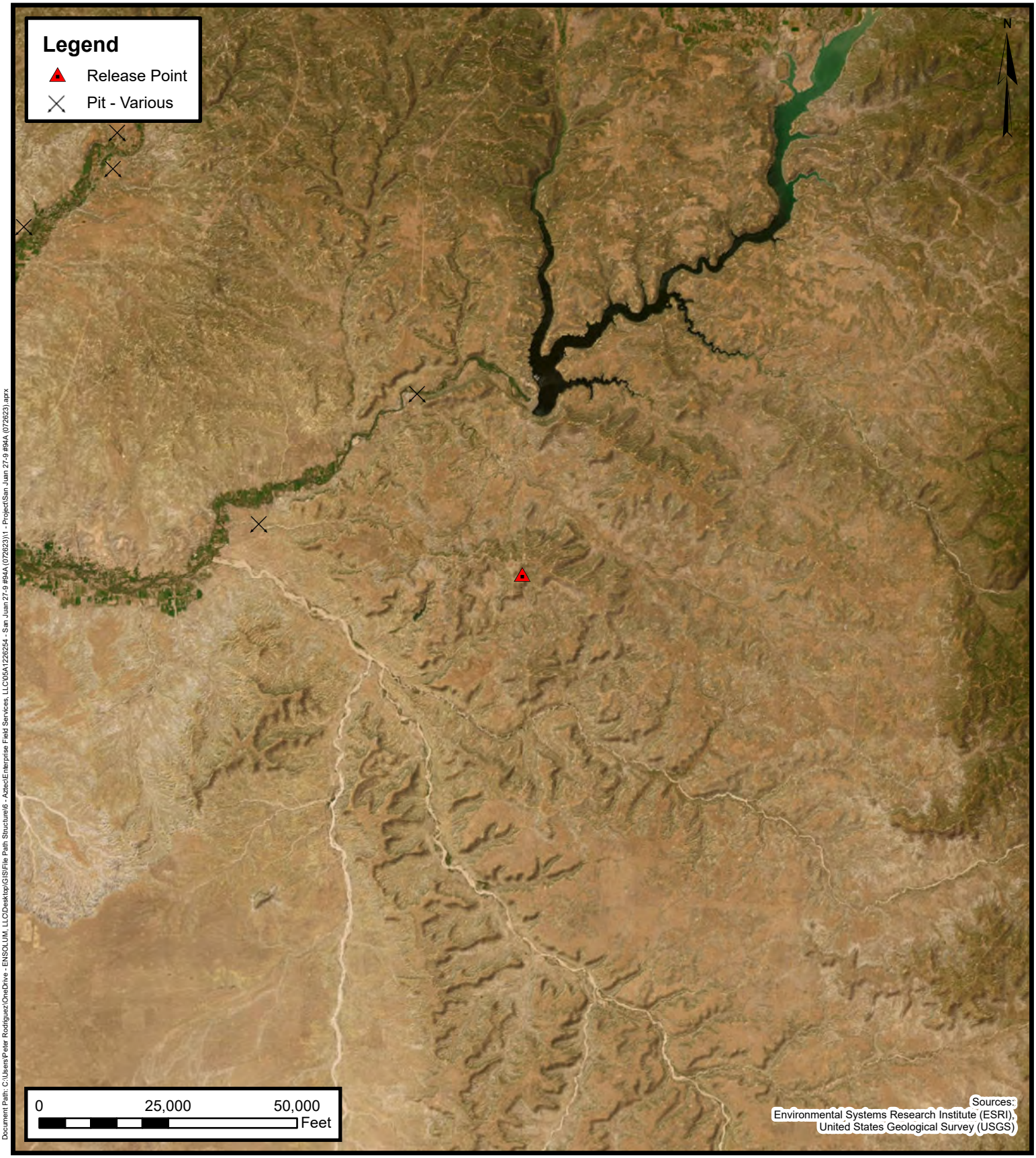


ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Wetlands

Enterprise Field Services, LLC
San Juan 27-9 #94A (07/26/23)
Project Number: 05A1226254
Unit Letter F, S19 T29N R7W, Rio Arriba County, New Mexico
36.712269, -107.616695

FIGURE
F



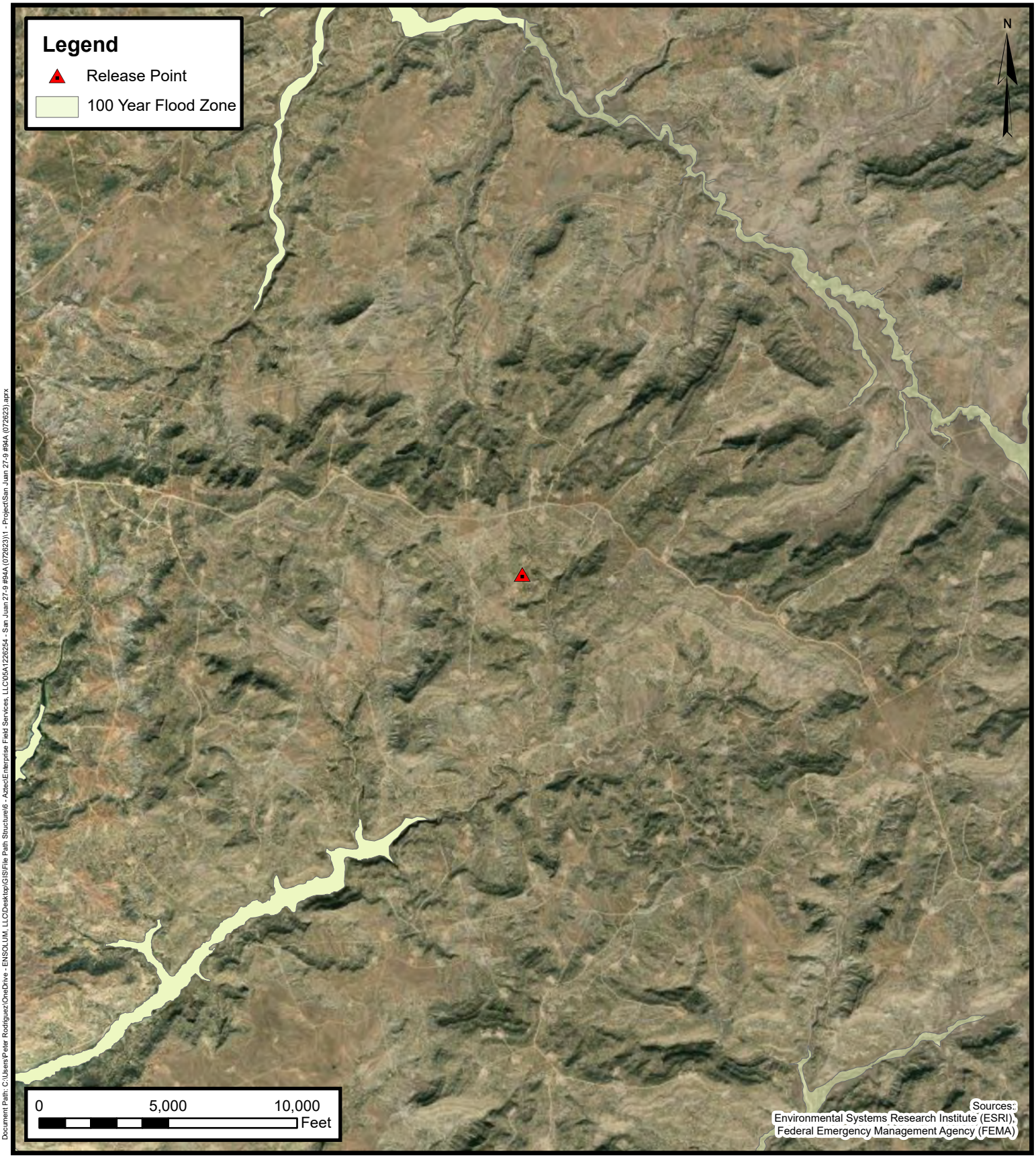
Document Path: C:\Users\Peter Rodriguez\OneDrive - ENSOLUM, LLC\Desktop\GIS\File Path Structure\6 - Aztec\Enterprise Field Services, LLC\05A1226254 - San Juan 27-9 #94A (072623)\1 - Project\San Juan 27-9 #94A (072623).aprx

ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Mines, Mills, and Quarries

Enterprise Field Services, LLC
San Juan 27-9 #94A (07/26/23)
Project Number: 05A1226254
Unit Letter F, S19 T29N R7W, Rio Arriba County, New Mexico
36.712269, -107.616695

FIGURE
G



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ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

100-Year Flood Plain Map

Enterprise Field Services, LLC
San Juan 27-9 #94A (07/26/23)
Project Number: 05A1226254
Unit Letter F, S19 T29N R7W, Rio Arriba County, New Mexico
36.712269, -107.616695

FIGURE

H

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-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
SJ 00039	SJ	RA	2	3		29	29N	07W	268022	4064208*	585	435	150

Average Depth to Water: **435 feet**

Minimum Depth: **435 feet**

Maximum Depth: **435 feet**

Record Count: 1

PLSS Search:

Section(s): 19, 17, 18, 20, 29, 30 **Township:** 29N **Range:** 07W

***UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

No records found.

PLSS Search:

Section(s): 13, 24, 25 **Township:** 29N **Range:** 08W

30-039-07509 4621

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit SW Sec. 19 Twp 29 Rng 7

Name of Well/Wells or Pipeline Serviced SAN JUAN 29-7 UNIT #94

cps 91w

Elevation 6715' Completion Date 6/30/72 Total Depth 320' Land Type* N/A

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

N/A

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

Fresh, Clear, Salty, Sulphur, Etc. 30'

RECEIVED
MAY 31 1991
OIL CON. DIV.
DIST. 3

Depths gas encountered: N/A

Type & amount of coke breeze used: 4200 lbs.

Depths anodes placed: 280', 270', 260', 250', 240', 230', 220', 210', 100', 95'

Depths vent pipes placed: N/A

Vent pipe perforations: 260'

Remarks: gb#2

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 LOG

Drilling Log (Attach Hereto). ☐

Ground Bed #2

Completion Date 6-30-72

Well Name	Location	CPS No.
San Juan 29-7 #94	SW 19-29N-7W	91 W

Type & Size Bit Used	Work Order No.
6 3/4"	184-52217-19-50-20

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
320'		4200		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	280	270	260	250	240	230	220	210	200	85
Anode Output (Amps)	3.4	3.7	3.9	4.4	3.7	3.3	3.3	3.9	3.2	4.7

	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Anode Depth										
Anode Output (Amps)										

Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.5	Amps 14.0	Ohms 0.82 Ω		

Remarks: Hole #1 Drilled To 320' Attempted To Load coke Around 4 Anodes contractor let coke settle Around Pump Hose Pulled Hose with winch when About 30' from Top 2" pipe Fell off Braking Anodes and Damageing wires Rig moved and Drilled Hole #2
Pumped 275 shovels slurry = 30 shovels
Vent Hose Perforated 260
Driller said wet at 30'
Stopped Drilling 3:30 A.M.
Water at 270' at 8:30AM

All Construction Completed

Paulet [illegible] (Signature)

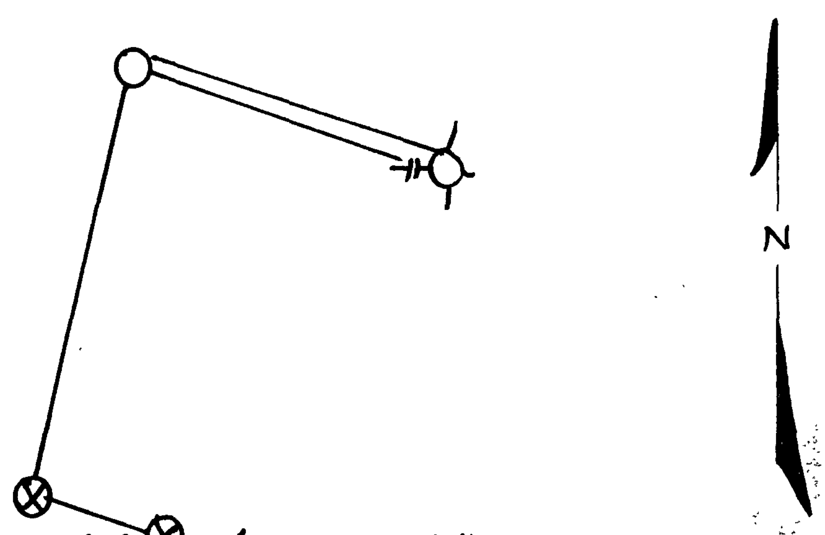
GROUND BED LAYOUT SKETCH

Credit 195'

2554.00 - 341.25 =

2212.75
.04
88.51

2301.26



Original & 1 Copy All Reports

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT Redrill

DAILY DRILLING REPORT

C. P. S. #91-W

LEASE S. J. 29-7 ~~Fed~~ WELL NO. 94 CONTRACTOR Moran RIG NO. REPORT NO. DATE 6-28 19 72

MORNING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
0	30	Dry Sand		
30	70	Wet Sand (Water)		
70	80	Shale		
80	120	Shale		

BIT NO. NO. DC SIZE LENG.
SERIAL NO. STANDS
SIZE SINGLES
TYPE DOWN ON KELLY
MAKE TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

DAYLIGHT

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
120	180	Sand		
180	260	Shale		
260	320	Sandy shale		

BIT NO. NO. DC SIZE LENG.
SERIAL NO. STANDS
SIZE SINGLES
TYPE DOWN ON KELLY
MAKE TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

EVENING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.

BIT NO. NO. DC SIZE LENG.
SERIAL NO. STANDS
SIZE SINGLES
TYPE DOWN ON KELLY
MAKE TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

SIGNED: Toolpusher Dub Moran Company Supervisor

Form 22-2 (Rev. 1-61)

Hole #1

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

C.P.S. # 91W

DAILY DRILLING REPORT

LEASE San Juan 29-7 WELL NO. # 94 CONTRACTOR Morrow RIG NO. REPORT NO. DATE 6-23 1972

MORNING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
0	35	dry sand		
35	40	wet sand blew water @ 40'		
40	105	shale & sandy shale		
105	190	sand		

NO. DC ____ SIZE ____ LENG. ____

BIT NO.

NO. DC ____ SIZE ____ LENG. ____

SERIAL NO. STANDS

SIZE SINGLES

TYPE DOWN ON KELLY

MAKE TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

DAYLIGHT

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
190	290	shale		
290	320	sand		

NO. DC ____ SIZE ____ LENG. ____

BIT NO.

NO. DC ____ SIZE ____ LENG. ____

SERIAL NO. STANDS

SIZE SINGLES

TYPE DOWN ON KELLY

MAKE TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

EVENING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.

NO. DC ____ SIZE ____ LENG. ____

BIT NO.

NO. DC ____ SIZE ____ LENG. ____

SERIAL NO. STANDS

SIZE SINGLES

TYPE DOWN ON KELLY

MAKE TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

SIGNED: Toolpusher Joe Manor Company Supervisor

Form 7-1 (Rev. 5-57)

EL PASO NATURAL GAS COMPANY
ENGINEERING DEPARTMENT

Sheet ____ of ____
Date: ____
By: ____

Driller said - Wet at 30'
Stop Drill 3:30 A.M. Wtr at 270 at 8:30

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	$C_3^=$	9 67

MISC.		
MW		gals/mol
44	CO_2	6 38
34	H_2S	5 37
28	N_2	4 16
2	H_2	3 38

90	70	1.2	2.7
		1.8	2.5
100	80	1.5	2.0
		1.6	1.7
10	90	1.5	1.6
		1.4	1.5
20	300	1.4	1.5
		1.2	1.4
30	~~88~~	Bot.	
40	20		
50			
60			
70			
80			
90			
	1.2		
200	2.6		
	2.9		
10	3.3		
	2.8		
20	2.4		
	2.6		
30	2.1		
	2.5		
40	2.4		
	2.9		
50	2.9		
	2.7		
60	2.4		
	2.5		

Vent Perf. 260'
Pumped 275 shovels
Slurry = 30 shovels

			Log.	Wtr	Coke
1	2	80	2.0	2.0	3.4
2	2	70	2.7	1.9	3.7
3	2	60	2.4	2.0	3.9
4	2	50	2.9	2.3	4.4
5	2	40	2.4	2.0	3.7
6	2	30	2.1	2.1	3.3
7	2	20	2.4	2.3	3.3
8	2	10	3.3	2.5	3.9
9	2	00	2.6	2.3	3.2
10		95	1.9	2.2	4.7
			11.5	14.0 A	0.82 Ω

491 30-039-21630

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit NW Sec. 19 Twp 29 Rng 7

Name of Well/Wells or Pipeline Serviced SAN JUAN 29-7 UNIT #94A

cps 1414w

Elevation 6717' Completion Date 8/16/79 Total Depth 460' Land Type* N/A

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

N/A

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

Fresh, Clear, Salty, Sulphur, Etc. WATER SAND 170' - 180' SAMPLE TAKEN

Depths gas encountered: N/A

Type & amount of coke breeze used: N/A

Depths anodes placed: 415', 400', 385', 370', 355', 340', 325', 310', 295', 270'

Depths vent pipes placed: 460'

Vent pipe perforations: 400'

Remarks: gb #1

RECEIVED
MAY 31 1991
OIL CON. DIV.
DIST 3

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.

325-1873

4 Hrs Rig
8 Hrs Reg
3 Hrs OT

El Paso Natural Gas Company
Form 7-238 (Rev. 11-71)

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

CONTRACT #2

2" x 60" DURIRON

Drilling Log (Attach Hereto). ☐ Completion Date 8-16-79

Well Name		Location		CPS No.	
SJ 29-7 #94A		NW-19-29-7		1414 W	
Type & Size Bit Used: 6 3/4"		STATIC = .80		Work Order No.: 57358-21	
Anode Hole Depth: 460'	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used	

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	415	400	385	370	355	340	325	310	295	270
Anode Output (Amps)	4.0	3.0	3.1	3.5	4.0	4.4	3.9	3.0	2.5	2.9

	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Anode Depth										
Anode Output (Amps)										

Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.8	Amps 14.8	Ohms .79		

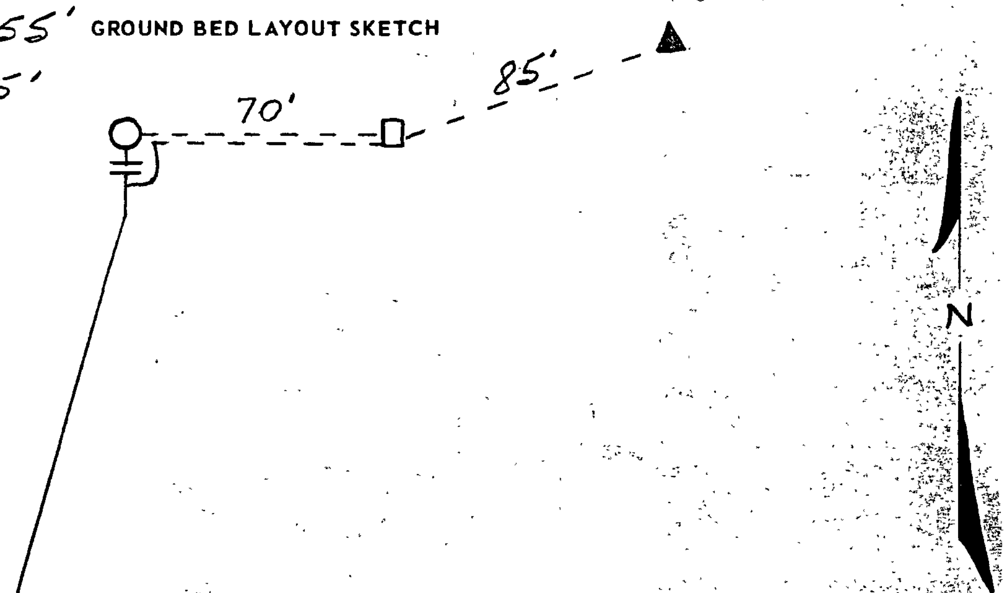
Remarks: Driller advised water sand 170 to 180'. Set over night. Blew water sample next AM. Started injection at 200'. Guesstimate water 1-2 gal per minute. 460' 1" PVC vent pipe perforated 400'

STUB POLE
40/16 RECT
DITCH + 1 CABLE = 155'
EXTRA CABLE = 95'
HOLE = -40'

All Construction Completed

B.T.
(Signature)

GROUND BED LAYOUT SKETCH



DISTRIBUTION:
WHITE – Division Corrosion Office
YELLOW – Area Corrosion Office
PINK – Originator File

6417

El Paso Natural Gas Company

ENGINEERING CALCULATION

4 Hrs Rig
8 Hrs Rig
3 Hrs O T

Sheet:
Date: 8-
By: BT
File:

STATIC .80 1414 W

S.J. 29-7 #94A NW-19-29-7 57358-2

Driller advised water sand 170 to 180' (set auger) light blow water with Air (Sample)
Started injecting at 200'
Guestimate water at 1-2 gal per minute.
460' 1" PVC Vent pipe perforated 480'

Drilled 460' Logged 46

11.8 V 14.8 A = .79 Ω

200	1.4						
5	1.2	5	1.2		5	1.9	
10	1.3	10	1.1	(8)	10	1.8	
15	1.2	15	1.3		15	1.9	(1)
20	1.0	20	1.9		20	2.1	
25	.9	25	1.9	(7)	25	1.7	
30	.7	30	1.9		30	1.6	
35	.5	35	2.1		35	1.6	
40	.4	40	2.1	(6)	40	.9	
45	.4	45	2.1		45	.8	
50	.7	50	2.4		50	.9	
55	1.2	55	2.2	(5)	55	.7	
60	1.5	60	2.3		60	TD	
65	1.8	65	2.3		65		
70	1.6 (10)	70	2.1	(4)	70		
75	1.7	75	2.0		75		
80	1.2	80	2.0		80		
85	1.0	85	1.9	(3)	85		
90	1.1	90	1.6		90		
95	1.4 (9)	95	1.7		95		
300	1.3	400	1.7	(2)	500		

1 =	415	2.2	4.0
2 =	400	2.1	3.0
3 =	385	1.9	3.1
4 =	370	2.2	3.5
5 =	355	2.6	4.0
6 =	340	2.9	4.4
7 =	325	2.5	3.9
8 =	310	1.7	3.0
9 =	295	1.3	2.5
10 =	270	1.9	2.9

MW		gals/mol
16.04	C_1	6.4
30.07	C_2	10.12
44.10	C_3	10.42
58.12	iC_4	12.38
58.12	nC_4	11.93
72.15	iC_5	13.85
72.15	nC_5	13.71
86.18	iC_6	15.50
86.18	C_6	15.57
100.21	iC_7	17.2
100.21	C_7	17.46
114.23	C_8	19.39
28.05	$C_2^=$	9.64
42.08	$C_3^=$	9.67

MISC.

MW		gals/mol
32.00	O_2	3.37
28.01	CO	4.19
44.01	CO_2	6.38
64.06	SO_2	5.50
34.08	H_2S	5.17
28.01	N_2	4.16
2.02	H_2	3.38

EL PASO NATURAL GAS COMPANY
SAN JUAN DIVISION
FARMINGTON, NEW MEXICO
PRODUCTION DEPARTMENT WATER ANALYSIS

Analysis No. 1-9744 Date 10-24-79

Operator ENPG Well Name San Juan 29-7 # 94 A

Location NW 19-29-7 County Rio Arriba State N.M.

Field _____ Formation _____

Sampled From [redacted]W

Date Sampled _____ By _____

Tbg. Press. _____ Csg. Press. _____ Surface Csg. Press _____

	ppm	epm		ppm	epm
Sodium	226	10	Chloride	40	1
Calcium	392	20	Bicarbonate	117	2
Magnesium	64	5	Sulfate	1520	32
Iron	Present		Carbonate	0	0
H_2S	Absent		Hydroxide	0	0

Total Solids Dissolved 2480

pH 8.0

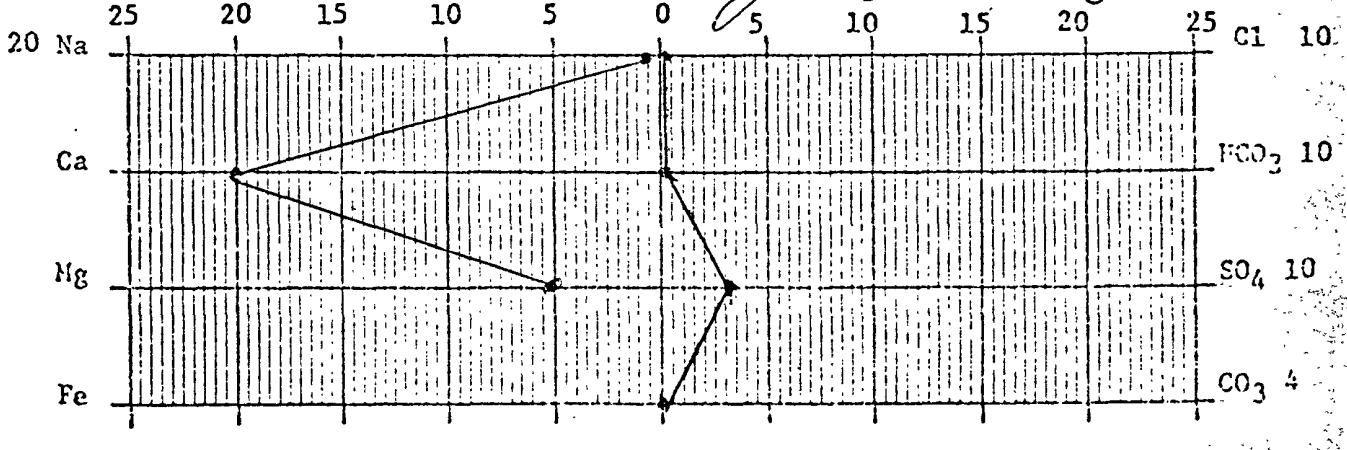
Sp. Gr. _____ at _____ 60°F

Resistivity 333 ohm-cm at 77 °F

cc: D.C.Adams
R.A.Ullrich
E.R.Paulek
J.W.McCarthy
A.M.Smith
W.B.Shropshire
File
C. B. O'Nan

Not enough Sample

Chemist



Scale: epm

Form 22-2 (Rev. 1-61)

C.P. # 1414

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE | WELL NO. | CONTRACTOR Rosey | RIG NO. | REPORT NO. | DATE 8-16 19 79

MORNING

Driller | Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.

BIT NO. | NO. DC ____ SIZE ____ LENG. ____
NO. DC ____ SIZE ____ LENG. ____
SET NO. 6 3/4 | STANDS
SIZE | SINGLES
TYPE | DOWN ON KELLY
MAKE | TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN
0	1	Surface
1	40	Light Shale
40	50	Shale
50	65	Sand Shale
65	85	Sand wet
85	100	Shale

REMARKS –

100 - 145 Sand
145 - 170 Shale
170 - 175 Sand wet making water 1 - 2 gal min.
175 - 230 Shale
230 - 260 Sand
260 - 290 Shale
290 - 300 Sand Stringers
300 - 320 Sandy Shale

DAYLIGHT

Driller | Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.

BIT NO. | NO. DC ____ SIZE ____ LENG. ____
NO. DC ____ SIZE ____ LENG. ____
SERIAL NO. | STANDS
SIZE | SINGLES
TYPE | DOWN ON KELLY
MAKE | TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN
		Drlg 200 ft

REMARKS –

EVENING

Driller | Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
	460 Drilled			
	460 Logged			

BIT NO. | NO. DC ____ SIZE ____ LENG. ____
NO. DC ____ SIZE ____ LENG. ____
SERIAL NO. | STANDS
SIZE | SINGLES
TYPE | DOWN ON KELLY
MAKE | TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN
320	355	Shale
355	365	Sandy Shale
365	380	Shale
380	390	Sand Stringers
390	460	Sandy Shale

REMARKS –

SIGNED: Toolpusher Rosey | Company Supervisor

1367

30-039-23602

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit SW Sec. 19 Twp 29 Rng 7

Name of Well/Wells or Pipeline Serviced SAN JUAN 29-7 UNIT #119

cps 1690w

Elevation 6712' Completion Date 11/19/82 Total Depth 400' Land Type* N/A

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

N/A

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

Fresh, Clear, Salty, Sulphur, Etc. 70' SAMPLE TAKEN

Depths gas encountered: N/A

Type & amount of coke breeze used: 3500 lbs.

Depths anodes placed: 380', 370', 360', 350', 340', 290', 280', 270', 260', 235'

Depths vent pipes placed: 400'

Vent pipe perforations: 330'

Remarks: gb #1

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MAY 31 1991
OIL CON. DIV.
DIST. 3

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.

FM 07-0238 (Rev. 6-82)

WELL CASING

CATHODIC PROTECTION CONSTRUCTION REPORT

DAILY LOG

Drilling Log (Attach Hereto). ☐ Completion Date 11-19-82

CPS #	Well Name, Line or Plant	Work Order #	Static	Ins Union Check
1690-W	S.J. 29-7 #119	59102-21-50-20-64	600' S-SW = 1.05	☑ Good ☐ Bad

Location	Anode Size	Anode Type	Size Bit
SW-19-29-7	2"x60"	DURIRON	6¾" carbide tip Rock B.T.

Depth Drilled	Depth Logged	Drilling Rig Time	Total Lbs Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
400'	390'		APPROX. 3500		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	380	370	360	350	340	290	280	270	260	235 ~~250~~
Anode Output (Amps)	2.91	3.00	2.91	2.80	2.~~60~~	2.38	3.65	3.07	3.08	~~4.0~~
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 12.43	Amps 12.95	Ohms .96		

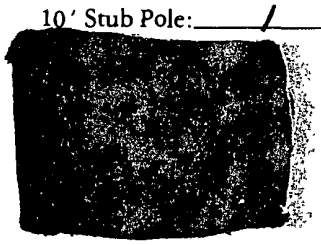
Remarks: St. 9/5 600' S-S[illegible] = 1.05 DP 2025 MA casing + 11-18-82 Driller Said water 70' Drilled to 90' waited 2 hr water standing at 70 Caught water sample, Drilled To 400'. 11-19-82 Logged To 390 Installed 400' of vent Pipe 330' Perforated.

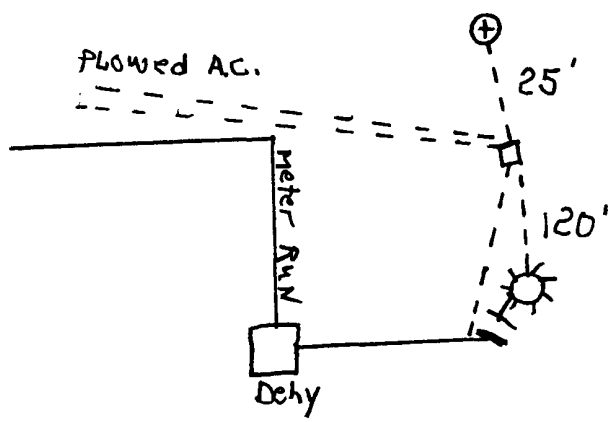
Rectifier Size: 40 V 16 A
Addn'l Depth NO
Depth Credit: 110'
Extra Cable: 150'
Ditch & 1 Cable: 145'
25' Meter Pole: NO
20' Meter Pole: NO
10' Stub Pole: 1

All Construction Completed

Don J. Hitt
(Signature)

GROUND BED LAYOUT SKETCH





D.H. Roy O.T.
11-19-82

6712

El Paso Natural Gas Company
ENGINEERING CALCULATION SHEET 1690-W
Form 7-371 (11-77)

S.J. 29-7 #117 SW-19-29-7 W.O.# 59102-21-50-20-64

Page 1
Date 11-19-82
By [illegible]

ST. 9/S 600'S-S-W= 1.05 DP 2025 MA casing +

11-18-82 DRiller Said water at 70' waited 2 hr water standing at 70' caught water sample Drilled To 400' 11-19-82 Logged To 390'. installed 400' Vent Pipe 330' perforated #10 Bridge at 130' Relocated From 250' to 235'

300	.80
	.72
10	.73
	.70
20	.83
	.80
30	.90
	.66
40	1.43 5
	1.64
50	1.83 4
	1.96
60	2.03 3
	2.04
70	1.98 2
	1.89
80	1.86 1
	1.65
90	B.O.H.

100	1.53
	1.25
10	1.21
	.87
20	.64
	.68
30	.69
	.76
40	.86
	.71
50	.46
	.44
60	.36
	.39
70	.97
	.93
80	.87
	.90
90	.98
	.52
200	.38
	.40
10	1.35
	1.37
20	1.22
	2.04
30	1.48
	2.06 10
40	2.12
	1.59
50	1.80
	1.49
60	1.63 9
	1.50
70	1.67 8
	1.80
80	2.14 7
	1.38
90	1.18 6
95	1.07

11-19 Rag 8 8 [illegible]

1- 380 - 2.04
2- 370 - 2.05
3- 360 - 2.20
4- 350 - 1.89
5- 340 - 1.66
6- 290 - 1.25
7- 280 - 2.28
8- 270 - 1.80
9- 260 - 1.72
10- 235 - 3.30

EL PASO NATURAL GAS COMPANY
SAN JUAN DIVISION
FARMINGTON, NEW MEXICO
PRODUCTION DEPARTMENT WATER ANALYSIS

Analysis No. 1-10662 Date December 7, 1982

Operator El Paso Natural Gas Well Name San Jaun 29-7 #117

Location SW 19-29-7 County Rio Arriba State New Mexico

Field _____ Formation _____

Sampled From CPS 1690W @ 70 Feet

Date Sampled November 18, 1982 By D.J. Hitt

Tbg. Press. _____ Csg. _____ Surface Csg. Press. _____

	ppm	epm		ppm	epm
Sodium	52	2.3	Chloride	10	0.3
Calcium	49	2.4	Bicarbonate	242	4.0
Magnesium	8	0.7	Sulfate	56	1.2
Iron			Carbonate	0	0
H_2S			Hydroxide	0	0

Total Solids Dissolved 294

pH 7.5

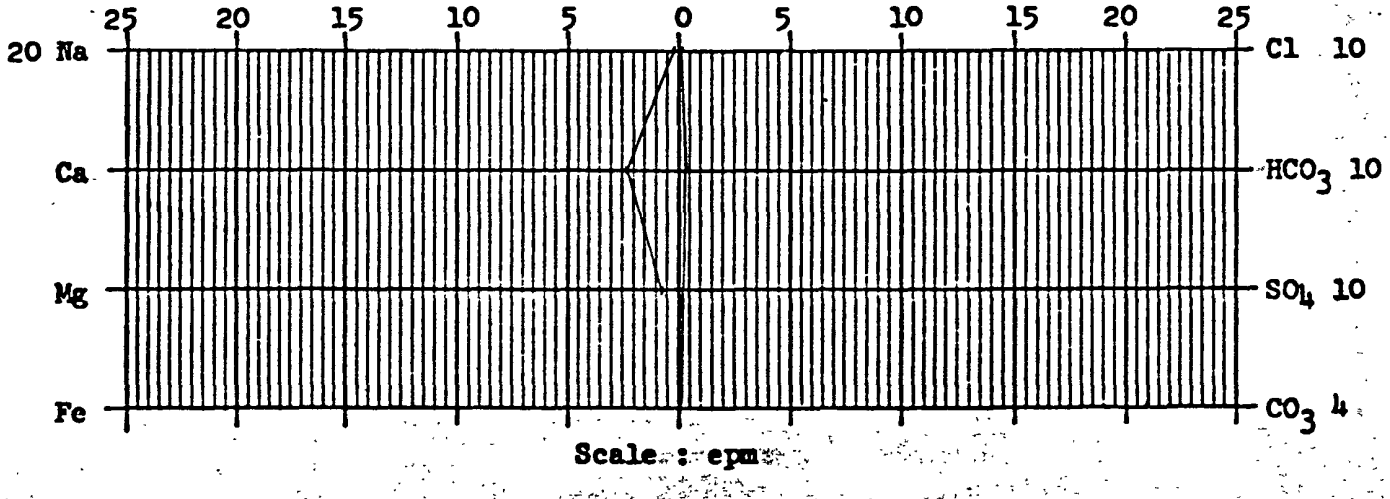
Sp. Gr. 0.9963 At 60°F

Resistivity 1852 ohm-cm at 73°F

Joe P. Barnett & Dennis P. Bird
Chemist

cc: R. A. Ullrich
E. R. Paulek
J. W. McCarthy
J. D. Evans
W. B. Shropshire
D. C. Adams
File

RZE



Form 22-2 (Rev. 1-61)

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

CPS 1690-W

DAILY DRILLING REPORT

LEASE S.J. 29-7 WELL NO. #117 CONTRACTOR 3-C Drlg. % Corrosion Cont. NO. #2 REPORT NO. 11 DATE NOVEMBER 19 1982

MORNING

Driller Brian Burge Total Men In Crew 3

FROM	TO	FORMATION	WT-BIT	R.P.M.
0	90	sandstone		
90	100	shale		
100	190	sandstone & shale.		
190	290	shale, sandstone		

BIT NO.
SE - NO.
SIZE 6 3/4
TYPE BIT TON
MAKE SAME

NO. DC ___ SIZE 4 1/2 LENG. 20'
NO. DC ___ SIZE ___ LENG. ___
STANDS
SINGLES 20
DOWN ON KELLY
TOTAL DEPTH 400'

MUD RECORD Time	Wt.	Vis.	MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS – Drilled to 90' had water at 70' got good water sample. Making 3 g.p.m. minute

Total hole depth 400'
Total Log depth 390'

DAYLIGHT

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
290	400	shale & sandstone		

BIT NO.
SERIAL NO.
SIZE
TYPE
MAKE

NO. DC ___ SIZE ___ LENG. ___
NO. DC ___ SIZE ___ LENG. ___
STANDS
SINGLES
DOWN ON KELLY
TOTAL DEPTH

MUD RECORD Time	Wt.	Vis.	MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

EVENING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.

BIT NO.
SERIAL NO.
SIZE
TYPE
MAKE

NO. DC ___ SIZE ___ LENG. ___
NO. DC ___ SIZE ___ LENG. ___
STANDS
SINGLES
DOWN ON KELLY
TOTAL DEPTH

MUD RECORD Time	Wt.	Vis.	MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

SIGNED: Toolpusher Brian Burge Company Supervisor

1272 30-039-23775
5122 30-039-24342

4234

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL INC. Location: Unit G Sec. 19 Twp 29 Rng 7

Name of Well/Wells or Pipeline Serviced SAN JUAN 29-7 UNIT #127, #512

cps 2119w

Elevation 6672' Completion Date 4/19/89 Total Depth 380' Land Type* N/A

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

N/A

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

Fresh, Clear, Salty, Sulphur, Etc. 30' & 80"

Depths gas encountered: N/A

Type & amount of coke breeze used: N/A

Depths anodes placed: 340', 330', 320', 310', 300', 290', 280', 270', 230', 220'

Depths vent pipes placed: 365'

Vent pipe perforations: 340'

Remarks: gb #1

RECEIVED
MAY 31 1991
OIL CON. DIV.
DIST. 3

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.

FM-07-0238 (Rev. 10-82)

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Drilling Log (Attach Hereto) ☒ Completion Date 4-19-89

CPS #	Well Name, Line or Plant: #127	Work Order #	Static:	Ins. Union Check
2119-W	S.J 29-7 #512	3479A	600' NW = .881	☒ Good ☐ Bad

Location:	Anode Size:	Anode Type:	Size Bit:
G 19-29-7	2" x 60"	Duriron	6 3/4"

Depth Drilled	Depth Logged	Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
380'	360'				

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	340'	330'	320'	310'	300'	290'	280'	270'	230'	22(
Anode Output (Amps)	3.6	3.8	4.2	4.7	4.2	3.1	3.5	3.3	3.3	3.3
Anode Depth										
Anode Output (Amps)										

	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Anode Depth										
Anode Output (Amps)										

Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 12.01	Amps 18.8	Ohms .639		

Remarks: DRILLED 380' LOGGED 360'. DRILLER SAID WATER AT 30' & 80'. INSTALLED 365' OF 1" PVC VENT PIPE PERFORATED BOTTOM 340'.

* CAN PLOW AC FROM 102-W EST. 700'

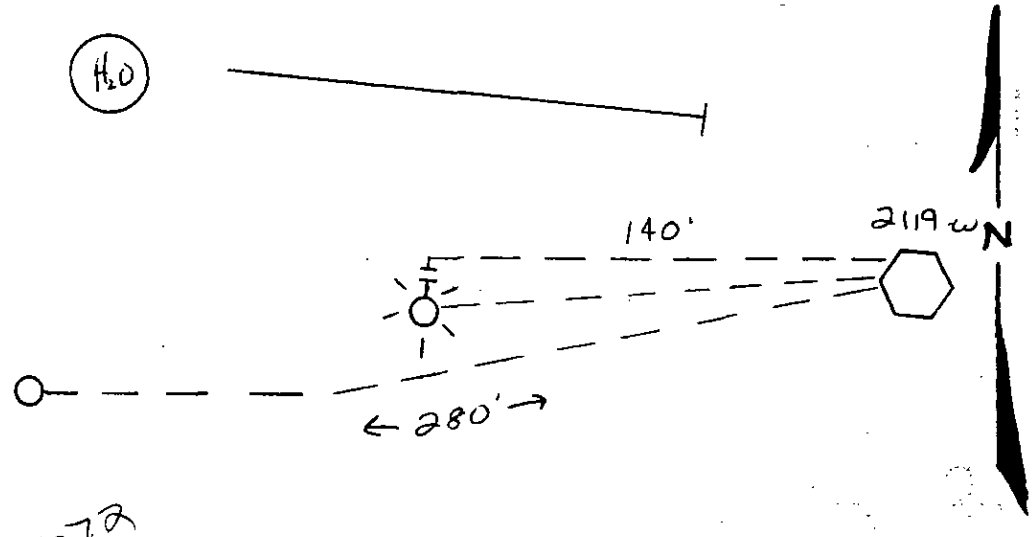
* PLOW NEGATIVE TO S.J 29-7 #127 FROM 2119-W

Rectifier Size: 40 V 16 A
Addn'l Depth
Depth Credit: 140' 3.75
Extra Cable: 310' .20
Ditch & 1 Cable: 280' .70
25' Meter Pole:
20' Meter Pole:
10' Stub Pole: 1
Junction Box: 1

All Construction Completed

M D Williams
(Signature)

GROUND BED LAYOUT SKETCH



3870.00
599.00
-525.00
62.00
196.00
144.50
237.00
4583.50
229.18
4812.68 RJ

Level

D. CRASS DRILLING CO.

Drill No. 3 219

DRILLER'S WELL LOG

S. P. No. S.J.29-7 #512 Date 4-19-89

Client Meridian Oil Co. Prospect

County Rio Arriba State New Mex.

If hole is a redrill or if moved from original staked position show distance and direction moved:

FROM	TO	FORMATION — COLOR — HARDNESS
0	30	SANDstone
30	55	SAND
55	70	SANDstone
70	80	SAND
80	100	Shale
100	140	SANDstone
140	155	SANDy Shale
155	360	Shale
360	380	SANDy Shale

Mud Bran Lime

Rock Bit Number Make

Remarks: Water @ 30' & 80'

Driller Lonnie-Brown

3354

30-039-25586

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS NORTHWESTERN NEW MEXICO

Operator Burlington Resources Location: Unit ___ Sec. 19 Twp 029 Rng 007

Name of Well/Wells or Pipeline Serviced SJ 29-7 #127M

Elevation 6568 Completion Date 4-14-97 Total Depth 160 Land Type SF

Casing Strings; Sizes, Types & Depths 8" PVC X 20'

If Casing Strings are cemented, show amounts & types used 4 Bags Portland cement

If Cement or Bentonite Plugs have been placed, show depths & amounts used None

Depths & thickness of water zones with description of water: Fresh, Clear, Salty, Sulphur, Etc. 100'-110' fresh, Seep

Depths gas encountered: None

Ground bed depth with type & amount of coke breeze used: 160' 1200 lbs Ionisco SW Coke Breeze

Depths anodes placed: 151, 145, 139, 133, 127, 111, 105

Depths vent pipes placed: 160'

Vent pipe perforations: 90' to Bottom

Remarks:

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FEB 25 1998
OIL CON. DIV.
DIST. 3

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.

Env 6568

API 30-039-[illegible]

Les# NMSF 078503A

Contractors of Cathodic Protection Services

GROUND BED CONSTRUCTION WORKSHEET

Rio Arriba

CPS#	P/L NAME(S), NUMBER(S)
9054W	Burlington Resources, S.J. 29-7 #127M 19-029-007

JC #	TOTAL	VOLTS	AMPS	= OHMS	DATE	NAME
-		11.21	11.1	1.0	4-14-97	Jack Ledbetter

REMARKS (notes for construction log)

Drill 11" hole 20' and set 20' of 8" PVC Casing and cement to surface (4 Bags) Drill 8" hole from 20'-160' and set 7 anodes and 1200# Loresco SW Coke breeze

H_2O at 100 ft ½ gpm

ENTERED

DEPTH	LOG ANODE	ANODE #	DEPTH	LOG ANODE	ANODE #	DEPTH	LOG ANODE	ANODE #	DEPTH	LOG ANODE	ANODE #
100	1.1		295			490			685		
105	2.2	7	300			495			690		
110	1.9	6	305			500			695		
115	1.6		310			505			700		
120	1.6		315	—		510			ANODE #	DEPTH	NO COKE
125	1.6		320			515			1	151	20
130	1.9	5	325			520			2	145	2.2
135	1.8	4	330			525			3	139	2.1
140	2.3	3	335			530			4	133	1.9
145	2.1	2	340			535			5	127	1.7
150	2.0	1	345			540			6	111	2.0
155	1.8		350			545			7	105	2.2
160	160	T.D.	355			550			8		
165			360			555			9		
170			365			560			10		
175			370			565			11		
180			375			570			12		
185			380			575			13		
190			385			580			14		
195			390			585			15		
200			395			590			16		
205			400			595			17		
210			405			600			18		
215			410			605			19		
220			415			610			20		
225			420			615			21		
230			425			620			22		
235			430			625			23		
240			435			630			24		
245			440			635			25		
250			445			640			26		
255			450			645			27		
260			455			650			28		
265			460			655			29		
270			465			660			30		
275			470			665					
280			475			670					
285			480			675					
290			485			680					

30-039-07626

4609

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit NE Sec. 18 Twp 29 Rng 7

Name of Well/Wells or Pipeline Serviced SAN JUAN 29-7 UNIT #81

cps 85w

Elevation 6722' Completion Date 5/1/74 Total Depth 520' Land Type* N/A

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

N/A

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

Fresh, Clear, Salty, Sulphur, Etc. 220' & 480'

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MAY 31 1991
OIL CON. DIV.
DIST. 3

Depths gas encountered: N/A

Type & amount of coke breeze used: 9000 lbs.

Depths anodes placed: 400', 390', 380', 370', 360', 350', 340', 330', 320', 300'

Depths vent pipes placed: N/A

Vent pipe perforations: 250'

Remarks: gb #2

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 LOG

Drilling Log (Attach Hereto). ☐

Completion Date 5-1-74

Well Name	Location	CPS No.
S.J. 29-7 # 81	NE18-29-7	85W

Type & Size Bit Used	Work Order No.
6 3/4	52190.19-50-20

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
520		9000 Est.		

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10
Anode Depth	400	390	380	370	360	350	340 ~~330~~	330	320	300
Anode Output (Amps)	2.8	3.0	2.9	3.2	3.6	2.8	3.4	3.1	3.0	3.3
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

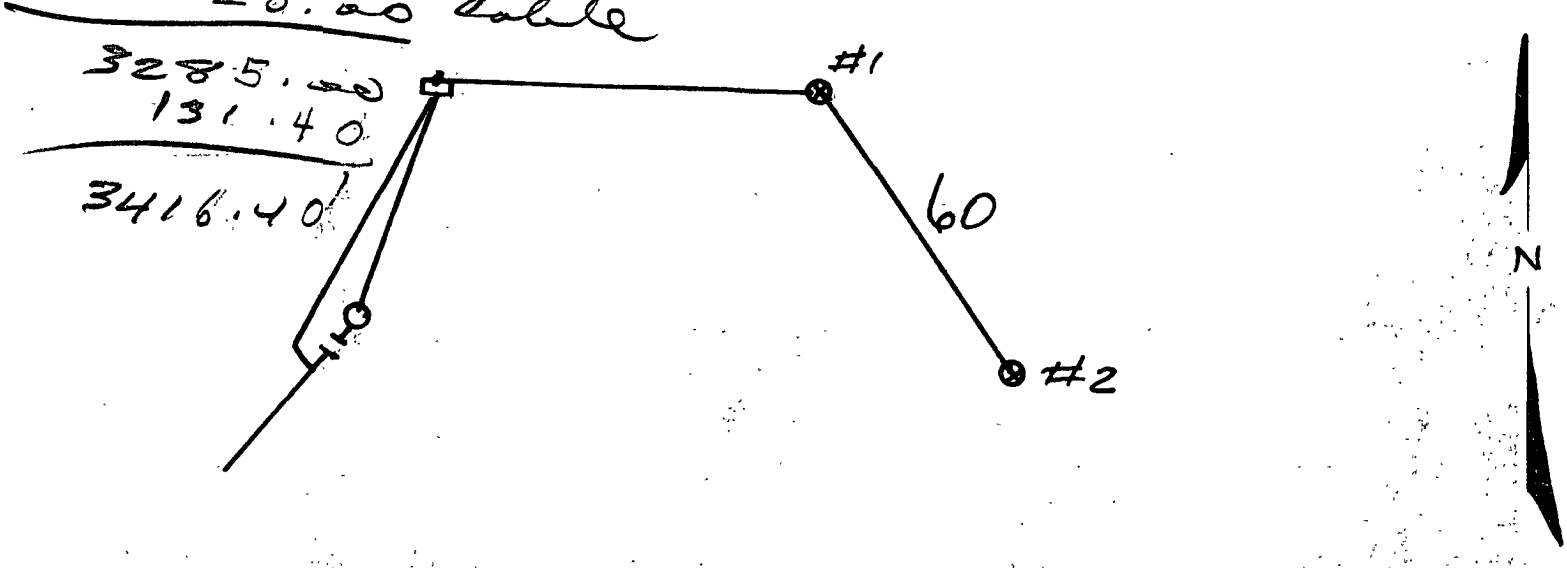
Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.5	Amps 10.0	Ohms 1.15	70	

Remarks: Driller said Water at 200 - Water Standing at 480 after 12 Hrs.
Pumped Coke above all anodes - Slurry to Surface
Vent Perforated 250'

3409.00
-150.00
3259.00
26.00 cable
3285.00
131.40
3416.40

All Construction Completed
Paul E. Daniels
(Signature)

GROUND BED LAYOUT SKETCH



Original & 1 Copy All Reports

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 G.D. 15W Date 5-1-74

Owner C.P.S.

Location City Farmington State N. MEX County

From	To	Formation	Color	Hardness
		Hole # 8 SW		
0	7	SAND	BR	Soft
7	90	Sandstone	BR	M. Soft
90	160	Shale	Blue	M. Soft
160	220	Shale	Red	M. Soft
220	250	Sandy Shale	Blue	Soft
250	300	Shale	Blue	M. Ha.
300	520	Shale Sandy	Blue	M. Ha.
		WATER ZONE @ 200 +		
		380' INCREASE		
		Injection @ 240'		

Total Hours

Equipment Down Time

Hours Drilling

Driller Ed Hellard

Helper

Helper

C.P.S. Time

S.W.W.D.I. Time

Total Footage

Approval of C.P.S. Engineer

Form 7-1 (Rev. 5-67)

EL PASO NATURAL GAS COMPANY
ENGINEERING DEPARTMENT

Sheet ___ of ___
Date: ___
By: ___

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	$C_3^=$	9.67

MW	MISC	gals/mol
44	CO_2	6.38
34	H_2S	5.17
28	N_2	4.16
2	H_2	3.38

85 W   x = 4.0

280	2.0	10	.9	Dr. Iller said water @ 200'			
	2.0		.7	water standing @ 480			
90	1.6	70	.5	after 12 hrs			
	1.5		.4	Vent Rer. 250'			
300	1.9	80	.3				
	1.9		.3				
10	1.6	90	.6				
	1.8	496	.6	Bottom			
20	1.9	500					
	2.0						
30	2.0						
	2.4					Water	Coke
40	2.3			1	400	1.8	2.8
	2.1			2	390	2.1	3.0
50	1.8			3	380	2.0	2.9
	2.0			4	370	2.6	3.2
60	2.1			5	360	2.2	3.6
	2.4			6	350	1.8	2.8
70	2.5			7	340	2.3	3.4
	2.2			8	330	2.0	3.1
80	1.0			9	320	2.0	3.0
	1.6			10	300	2.0	3.3
90	2.0						
	1.8				11.5 V	10.0 A	1.15 Ω
400	1.8						
	1.8						
10	1.8						
	1.3						
20	1.2						
	1.1						
30	1.0						
	1.2						
40	1.0						
	.8						
50	.7						
	.7						

76R- 30-039-20319 4607
511 - 30-039-24378
126- 30-039-23774

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit SW Sec. 18 Twp 29 Rng 7

Name of Well/Wells or Pipeline Serviced SAN JUAN 29-7 UNIT #126, #511, #76R

cps 84w

Elevation 6910' Completion Date 10/20/71 Total Depth 620' Land Type* N/A

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

N/A

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

Fresh, Clear, Salty, Sulphur, Etc. 174'

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Depths gas encountered: N/A

Type & amount of coke breeze used: 9600 lbs.

Depths anodes placed: 570', 560', 550', 540', 530', 520', 475', 465', 455', 445'

Depths vent pipes placed: 570'

Vent pipe perforations: 423'

Remarks: gb #2 LOST HOLE #1 AT 520'. #1 ANODE NO RESPONCE TO COKE.

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 LOG

Drilling Log (Attach Hereto). ☐

Completion Date 10-20-71

Well Name	Location	CPS No.
San Juan 29-7 No. 76J	SW 18-29N-7W	84W

Type & Size Bit Used	Work Order No.
6 3/4"	184-54766-50-20

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
620'		9600		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	570	560	550	540	530	520	475	465	455	445
Anode Output (Amps)	1.85	2.70	3.7	3.5	3.1	3.0	2.8	3.1	3.3	3.7
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

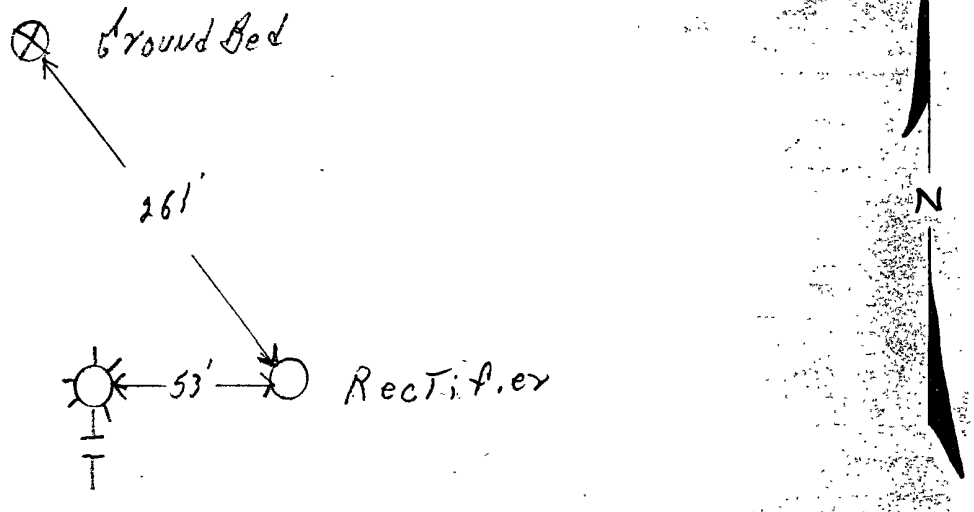
Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.3	Amps 13.5	Ohms 0.83Ω		

Remarks: 10-17-71 Driller Drilled To 500' Logged Hole NOT Enough Room. Driller switched To Mud Had Lost Circulat Drilled To 520' Lost Drilling Bit in Hole. Moved Rig over and Drilled Hole #2. Vent Hose Perforated 423' To #1 Anode. Note: #1 Anode No Response To Coke Breeze. Contractor Had Not Marked pumping Hose correctly Bottom of Pumping Hose was 15' Above #1 Anode. Pumped 385 Shovels = 55 Sacks Complete By Slurry. Driller Blew water out of Hole At 174'. Note: Positive and Negative Cables Not Installed To be Installed Later By Dozer

All Construction Completed

(Signature)

GROUND BED LAYOUT SKETCH



Original & 1 Copy All Reports

Form 22-2 (Rev. 1-61)

C.P.S. # 842

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE Sanjuan 29-7 WELL NO. 76Y CONTRACTOR Morrow RIG NO. REPORT NO. DATE 10-20 1971

MORNING

Driller Holland Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
0	15	sand stone		
15	30	shale		
30	50	sand		
50	90	shale		

NO. DC ____ SIZE ____ LENG. ____

BIT NO. ____

NO. DC ____ SIZE ____ LENG. ____

SERIAL NO. ____ STANDS

SIZE ____ SINGLES

TYPE ____ DOWN ON KELLY

MAKE ____ TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

DAYLIGHT

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
90	120	sand		
120	150	shale		
150	170	sand wet water		
170	230	shale		

NO. DC ____ SIZE ____ LENG. ____

BIT NO. ____

NO. DC ____ SIZE ____ LENG. ____

SERIAL NO. ____ STANDS

SIZE ____ SINGLES

TYPE ____ DOWN ON KELLY

MAKE ____ TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS – lost Rotc #1 @ 520 ft. moved over drilled new hole to 620 ft. 17 hrs drilling time

EVENING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
230	410	sand		
410	580	sandy shale & sand		
580	620	sand		

NO. DC ____ SIZE ____ LENG. ____

BIT NO. ____

NO. DC ____ SIZE ____ LENG. ____

SERIAL NO. ____ STANDS

SIZE ____ SINGLES

TYPE ____ DOWN ON KELLY

MAKE ____ TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

SIGNED: Toolpusher Joe Morrow Company Supervisor

Form 7-1 (Rev. 5-67)

EL PASO NATURAL GAS COMPANY

ENGINEERING DEPARTMENT

Sheet ____ of ____
Date: ____
By: ____

84 W
San Juan 29-7 #76Y
Hole #2

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	$C_3^=$	9.67

MISC

MW		gals/mol
44	CO_2	6.38
34	H_2S	5.17
28	N_2	4.16
2	H_2	3.38

Depth		Depth	Reading	Depth	Reading
150		20		90	1.10
					1.0
60		30		500	.80
					.82
70		40		10	1.08
					1.68
80		50		20	1.78
					1.45
90		60		30	1.55
					1.72
200		70		40	1.80
					1.88
10		80		50	1.74
					2.0
20		90		60	1.72
					1.62
30		400	.78	70	1.75
			.52		1.72
40		10	.52	80	1.75
			.54		2.0
50		20	.55	90	—
			.90	594	— BOTTOM
60		30	1.20	600	
			.52		
70		40	1.05	10	
			2.0		
80		50	1.75	20	
			1.85		
90		60	1.82		
			1.55		
300		70	1.65		
			1.58		
10		80	1.18		
			1.30		

Driller said Blew water out of Hole @ 174'

	Depth	Water	Coke
1	570	1.85	1.85
2	560	1.70	2.70
3	550	2.1	3.70
4	540	1.97	3.50
5	530	1.74	3.10
6	520	1.80	3.0
7	475	1.59	2.8
8	465	1.65	3.1
9	455	1.93	3.3
10	445	2.1	3.7

11.3V 13.5A 0.83Ω

Vent Perforated 423' To #1 Anode

Pumped 385 shovels = 55 sacks Completed By slurry

985 30-039-21629 E

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit NW Sec. 18 Twp 29 Rng 7

Name of Well/Wells or Pipeline Serviced SAN JUAN 29-7 UNIT #76A

cps 1408w

Elevation 6836' Completion Date 8/13/79 Total Depth 495' Land Type* N/A

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

N/A

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

Fresh, Clear, Salty, Sulphur, Etc. 60' - 70' & 150' - 180' TOO MUDDY FOR SAMPLE

Depths gas encountered: N/A

Type & amount of coke breeze used: 56 SACKS

Depths anodes placed: 465', 450', 435', 420', 405', 390', 375', 360', 345', 310'

Depths vent pipes placed: 500'

Vent pipe perforations: 450'

Remarks: gb #1

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DIST. 3

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.

8 Hrs Reg
3 Hrs OT

El Paso Natural Gas Company
Form 7-238 (Rev. 11-71)

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

CONTRACT #2

2" x 60" DURIRON

Drilling Log (Attach Hereto). ☐ Completion Date 8-13-7?

Well Name	Location	CPS No.
SJ 29-7-76A	NW 18-29-7	1408W

Type & Size Bit Used		Work Order No.
6 3/4"	STATIC = .88	51347-21

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
495'		56 BAGS		

Anode Depth	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
	465	450	435	420	405	390	375	360	345	310
Anode Output (Amps)	2.9	2.8	2.4	2.2	3.1	2.9	3.7	3.6	2.9	3.8

Anode Depth	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Anode Output (Amps)										

Total Circuit Resistance				No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.7	Amps 14.2	Ohms .82			

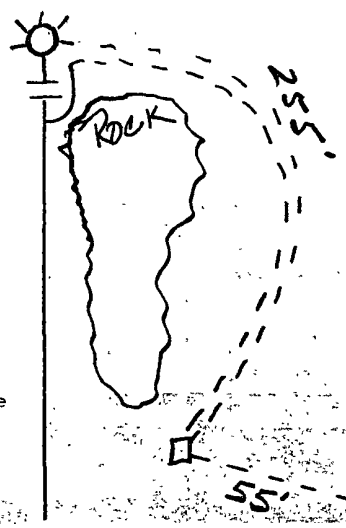
Remarks: Driller advised damage at 60 to 75' & 150-180' to muddy for samples Guestimates 1 to 2 gal per minute from each zones. Drilled to 500. Logged 495' 500' 1" PVC vent perforated 450'

All Construction Completed

B.I.
(Signature)

GROUND BED LAYOUT SKETCH

STUB POLE
40/16 RECT
DITCH + 1 CABLE 310'
EXTRA CABLE 275'
1 HOLE = -5'



N

DISTRIBUTION:
WHITE — Division Corrosion Office
YELLOW — Area Corrosion Office
PINK — Originator File

Form 3-1 (Rev. 9-77)

El Paso Natural Gas Company
ENGINEERING CALCULATION

2 Hrs Fl
3 Hrs OT
Date: 8-13-
By: BT
File:

STATIC = .88 | 408 W

SJ 29-7 # 76A NW 18-29-7 57347-2

Driller advised damp from 60' to 75' & 150' to 180' to muddy for samples. Guestimate 1+2 gas persons from each sand. Drilled to 500 Logged 495

500' 1" PVC & coil pipe perforated 450'
TD 495

MW		gals/mol
16.04	C_1	6.4
30.07	C_2	10.12
44.10	C_3	10.42
58.12	iC_4	12.38
58.12	nC_4	11.93
72.15	iC_5	13.85
72.15	nC_5	13.71
86.18	iC_6	15.50
86.18	C_6	15.57
100.21	iC_7	17.2
100.21	C_7	17.46
114.23	C_8	19.39
28.05	$C_2^=$	9.64
42.08	$C_3^=$	9.67

MISC. MW		gals/mol
32.00	O_2	3.37
28.01	CO	4.19
44.01	CO_2	6.38
64.06	SO_2	5.50
34.08	H_2S	5.17
28.01	N_2	4.16
2.02	H_2	3.38

200	.5		11.7 √ 14.2A = .82		
5	.4	5	.9	5	1.9 - (5)
10	.4	10	1.9 - (10)	10	1.5
15	.3	15	1.9	15	1.5
20	.9	20	1.0	20	1.3 - (4)
25	1.5	25	.9	25	1.2
30	1.3	30	.6	30	1.1
35	.8	35	.6	35	1.1 - (3)
40	1.1	40	1.6	40	1.4
45	1.5	45	1.7 - (9)	45	1.6
50	1.5	50	1.7	50	1.6 - (2)
55	1.2	55	1.7	55	1.6
60	.9	60	1.9 - (8)	60	1.6
65	.7	65	1.6	65	1.7 - (1)
70	.5	70	1.6	70	1.6
75	.4	75	1.8 - (7)	75	1.5
80	.4	80	1.9	80	1.5
85	.4	85	1.8	85	1.5
90	.4	90	1.5 - (6)	90	1.5
95	.4	95	1.5	95	
300	.5	400	1.8	500	

1 = 465	2.1	2.9	
2 = 450	2.1	2.8	
3 = 435	1.7	2.4	
4 = 420	1.5	2.2	
5 = 405	2.2	3.1	
6 = 390	1.8	2.9	
7 = 375	2.3	3.7	
8 = 360	2.2	3.6	
9 = 345	2.1	2.9	
10 = 310	2.7	3.8	

Form 22-2 (Rev. 1-61)

cpi 1408'

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE | WELL NO. | CONTRACTOR Losey | RIG NO. | REPORT NO. | DATE 8-13 19 79

MORNING

Driller | Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.

NO. DC ____ SIZE ____ LENG. ____

BIT NO. | NO. DC ____ SIZE ____ LENG. ____

SER. NO. 6 3/4 | STANDS

SIZE | SINGLES

TYPE | DOWN ON KELLY

MAKE | TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN
0	7	Surface
7	25	Lime Stone
25	60	Shale
60	75	Sand wet making water
75	90	Shale
90	120	Sand wet

REMARKS –

120 - 150 Shale
150 - 180 Sand wet making water
180 - 200 Shale
200 - 215 Sandy Shale
215 - 245 Shale
245 - 255 Sandy Shale
255 - 265 Sand
265 - 280 Shale

DAYLIGHT

Driller | Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.

NO. DC ____ SIZE ____ LENG. ____

BIT NO. | NO. DC ____ SIZE ____ LENG. ____

SERIAL NO. | STANDS

SIZE | SINGLES

TYPE | DOWN ON KELLY

MAKE | TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN
280	295	Sandy Shale
295	305	Sand
305	330	Shale
330	340	Lime Stone
340	380	Shale
380	415	Sandy Shale

REMARKS –

415 - 420 Sand Stone
420 - 485 Sandy Shale
485 - 500 Sand

EVENING

Driller | Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.

Drill 500 to 485 Logged

NO. DC ____ SIZE ____ LENG. ____

BIT NO. | NO. DC ____ SIZE ____ LENG. ____

SERIAL NO. | STANDS

SIZE | SINGLES

TYPE | DOWN ON KELLY

MAKE | TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN
		Inj 2.10

REMARKS –

1 - 2 gal min

SIGNED: Toolpusher Losey Company Supervisor

3352 Subsidiary JCPS 60 335 393

30-039-25642

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO

ENTERED 9065W 343054 007980017

Operator Burlington Location: Unit P Sec. 18 Twp 29 Rng 7

Name of Well/Wells or Pipeline Serviced S.J. 29-7 #81A

Elevation — Completion Date 7-7-97 Total Depth 400' Land Type —

Casing Strings, Sizes, Types & Depths 20' 8" PVC Casing

If Casing Strings are cemented, show amounts & types used yes

If Cement or Bentonite Plugs have been placed, show depths & amounts used None

Depths & thickness of water zones with description of water: Fresh, Clear, Salty, Sulphur, Etc. 310' - Fresh

Depths gas encountered: None

Ground bed depth with type & amount of coke breeze used: 400' Loresco 1100/65

Depths anodes placed: @ 380, 374, 368, 362, 356, 350, 344, ~~338, 332, 326, 320, 314~~

Depths vent pipes placed: Surface to 400'

Vent pipe perforations: From 300' to 400'

Remarks: No gas encountered during drilling

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FEB 25 1998
OIL CON. DIV.
DIST. 3

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.

TIERRA DYNAMIC COMPANY — DEEP WELL GROUNDED LOG DATA SHEET

COMPANY NAME: Burlington Resources

WELL NAME : SJ 29 7 # 81A

LEGAL LOCATION: P18 -29 -7 COUNTY: RIO ARRIBA

DATE: 7/7/97

DEPTH: 400'

BIT SIZE: 6 3/4

DRILLER NAME: Bud Mercer

SIZE AND TYPE OF CASING: 8" PVC -20'

TYPE OF COKE: Loresco SW

AMT. OF COKE BACKFILL: 1100

VENT PIPE: 400'

PERF. PIPE: Bottom 100'

ANODE AMT. & TYPE: ANOTEC (12)

BOULDER DRILLING:

COMPLETION INFORMATION:

WATER DEPTHS: 310 ft. damp

ISOLATION PLUGS:

DEPTH FT.	LOG	ANODE	DEPTH FT.	LOG	ANODE	DEPTH FT.	LOG	ANODE
100			265			430		
105			270			435		
110			275	0.7		440		
115			280	0.7		445		
120			285	0.7		450		
125			290	0.7		455		
130			295	0.7		460		
135			300	0.6		465		
140			305	0.6		470		
145			310	0.5		475		
150			315	0.5		480		
155			320	0.8		485		
160			325	1.0		490		
165			330	0.9		495		
170			335	0.9		500		
175			340	0.7		505		
180			345	0.7		510		
185			350	0.7		515		
190			355	0.6		520		
195			360	0.6		525		
200			365	0.6		530		
205			370	0.6		535		
210			375	0.5		540		
215			380	0.7		545		
220			385	0.6		550		
225			390	0.6		555		
230			395	T.D.		560		
235			400			565		
240			405			570		
245			410			575		
250			415			580		
255			420			585		
260			425			590		
						595		

ANODE#	DEPTH	OUTPUT NO COK	OUTPUT COKED
1	380	0.7	1.2
2	374	0.6	1.4
3	368	0.6	1.4
4	362	0.7	1.4
5	356	0.6	1.4
6	350	0.7	1.6
7	344	0.7	1.8
8	338	0.9	2.0
9	332	0.9	2.0
10	326	1.0	1.9
11	320	0.7	1.7
12	314	0.5	1.5
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

LOGING VOLTS: 19.4 VOLTAGE SOURCE: Auto

TOTAL AMPS: 4.8 TOTAL G/B RESISTANCE: 2.5 OHM

REMARKS:

#44 = 30-039-07630

3/18/96

3420

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO

Operator Meridian Oil Inc. Location: Unit A Sec. 17 Twp 29 Rng 07

Name of Well/Wells or Pipeline Serviced

San Juan 29-7 #44

Elevation 6666 Completion Date 3/18/96 Total Depth 485' Land Type F

Casing Strings: Sizes, Types & Depths 3/12 Set 99' of 8" PVC Casing.

No Gas, Water, or Boulders Were Encountered During Casing.

If Casing Strings are cemented, show amounts & types used Cemented

With 20 Sacks.

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

None

Depths & thickness of water zones with description of water: Fresh, Clear, Salty, Sulphur, Etc. Hit A Fresh Water Seep At 220'.

Depths gas encountered: None

Ground bed depth with type & amount of coke breeze used: 485' Depth.

Used 64 Sacks of Lotesco SW (6400#)

Depths anodes placed: 445', 420', 395', 385', 365', 355', 345', 330', 320', 310', 290', 270', 255', 235', +215'

Depths vent pipes placed: Surface To 485'

Vent pipe perforations: Bottom 360'

Remarks:

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FEB 19 1997
OIL CON. DIV.
DIST. 3

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.

CPS GROUND BED CONSTRUCTION WORKSHEET

CPS# 0087-W | P/L NAME(S), NUMBER(S) S.J. 29-7 #44

NO # 2406 | TOTAL | VOLTS 11.23 | AMPS 24.2 | OHMS .464 | DATE 3/18/96 | NAME John L. Moss

REMARKS (notes for construction log) Driller Reported A Water Seep At 220'. Installed 485' of 1" PE Vent Pipe, With The Bottom 360' Perforated. Coke Breeze To 115'.

DEPTH	LOG ANODE #	ANODE #	DEPTH	LOG ANODE #	ANODE #	DEPTH	LOG ANODE #	ANODE #	DEPTH	LOG ANODE #	ANODE #
100	↑		295	1.8		490			685		
105			300	1.8		495			690		
110			305	2.0		500			695		
115			310	2.2	-10	505			700		
120			315	2.2		510			ANODE #	DEPTH	NO COKE / FULL COKE
125			320	2.7	-9	515					
130			325	2.4		520			1	445'	1.9 / 4.0
135	SANDSTONE		330	2.3	-8	525			2	420'	2.6 / 5.3
140			335	2.1		530			3	395'	2.2 / 5.3
145			340	2.1	-	535			4	385'	2.1 / 5.2
150			345	2.3	-7	540			5	365'	2.6 / 5.7
155			350	2.1	-	545			6	355'	2.5 / 5.6
160			355	2.5	-6	550			7	345'	2.2 / 5.0
165			360	2.3		555			8	330'	2.5 / 5.5
170			365	2.5	-5	560			9	320'	2.6 / 5.5
175			370	2.0		565			10	310'	2.2 / 5.1
180	↓		375	2.0		570			11	290'	2.3 / 5.1
185			380	2.1		575			12	270'	2.2 / 4.9
190	.3		385	2.1	4	580			13	255'	2.0 / 4.6
195	.4		390	2.2		585			14	235'	2.3 / 4.9
200	.7		395	2.1	3	590			15	215'	2.5 / 5.0
205	.7		400	2.0		595			16		
210	.9		405	1.7		600			17		
215	2.3	-15	410	1.8		605			18		
220	2.8		415	1.7		610			19		
225	2.1	-	420	2.5	2	615			20		
230	1.8		425	1.7		620			21		
235	2.4	-14	430	1.9		625			22		
240	2.2		435	1.7		630			23		
245	1.7		440	1.8		635			24		
250	1.9		445	1.9	1	640			25		
255	2.1	-13	450	1.4		645			26		
260	2.0		455	.5		650			27		
265	2.0		460	.4		655			28		
270	2.1	-12	465	.4		660			29		
275	1.8		470	.3		665			30		
280	1.7		475	.2		670					
285	2.2		480	.2		675					
290	23	-11	485	T.D.	485'	680					

DISTRIBUTION - ORIGINAL - CORROSION CPS FILE
COPY - Division Corrosion Supervisor
COPY - Region Corrosion Specialist

1269 30-039-21980

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit SE Sec. 17 Twp 29 Rng 7

Name of Well/Wells or Pipeline Serviced SAN JUAN 29-7 UNIT #44A

cps 1550w

Elevation 6668' Completion Date 8/20/80 Total Depth 400' Land Type* N/A

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

N/A

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

Fresh, Clear, Salty, Sulphur, Etc. 50' SAMPLE TAKEN

Depths gas encountered: N/A

Type & amount of coke breeze used: 43 SACKS

Depths anodes placed: 340', 330', 302', 310', 300', 290', 280', 270', 260', 250'

Depths vent pipes placed: 375'

Vent pipe perforations: 315'

Remarks: gb #1

RECEIVED
MAY 31 1991
OIL CON. DIV.
DIST. 3

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.

11 hrs.

El Paso Natural Gas Company
Form 7-238 (Rev. 11-71)

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Drilling Log (Attach Hereto). ☐ 2 X 60 Anodes Completion Date 8-20-80

Well Name	Location	CPS No.
SJ 29-7 #44A	SE 17-29-7	1550-W

Type & Size Bit Used	Work Order No.
6 3/4	57695-21

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
400 logged 375		43 Sacks		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	340	330	320	310	300	290	280	270	260	250
Anode Output (Amps)	3.3	2.9	2.6	2.9	2.5	2.6	3.0	2.7	2.3	3.3
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 10.5	Amps 13.6	Ohms .77		

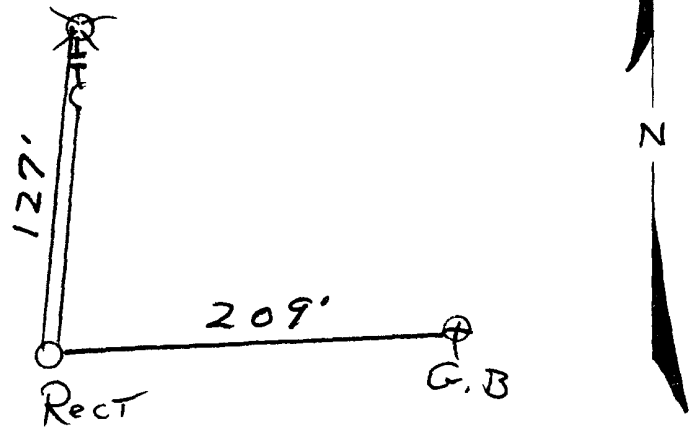
Remarks: STATIC 600' NW 1.0 UNION - F/L NOT laid DRILLER Said hit WATER @ 50' NEXT A.M. Blew WATER. GOT WATER Sample. MAKING APPROX 2 gal. PER MINUTE - INSTALLED 375' of 1" VENT PIPE, PERFORATED 315' OF VENT PIPE. SET #1 ANODE @ 355', Hole caved, had TO move #1 ANODE UP 15'.

1 10' STUB Pole ✓
1 LOV 16A Rect ✓
DITCH + 1 Cable - 336' ✓
EXTRA cable - 157' ✓
Hole DEPTH - 125' ✓

All Construction Completed

Willis Knight Jr.
(Signature)

GROUND BED LAYOUT SKETCH



DISTRIBUTION:
WHITE – Division Corrosion Office
YELLOW – Area Corrosion Office
PINK – Originator File

Form 7-1 (Rev 9-77)

El Paso Natural Gas Company
ENGINEERING CALCULATION

Sheet: ____ of ____
Date: 8-20-8
By: WK
File: ____

SJ 29-7 #44A
SE 17-29-7
CPS 1550-W
W/O 57695-21

STATIC 600' NW - 1.0
UNION - F/L NOT LAID

1 10' STUB Pole
1 40V 16A Rect
DITCH + 1 Cable 336'
EXTRA Cable 157'
Hole Depth -125'

DRILLER Said hit WATER AT 50'. NEXT AM BLEW WATER. GOT WATER SAMPLE. INSTALL 375' of 1" VENT PIPE, PERFORA 315 of VENT PIPE. SLURRY 43 SACKS of COKE. SET #1 ANODE AT 355', HOLE CAVED - had TO RAISE #1 ANODE UP 15'.

MW		gals/mol
16.04	C_1	6.4
30.07	C_2	10.12
44.10	C_3	10.42
58.12	iC_4	12.38
58.12	nC_4	11.93
72.15	iC_5	13.85
72.15	nC_5	13.71
86.18	iC_6	15.50
86.18	C_6	15.57
100.21	iC_7	17.2
100.21	C_7	17.46
114.23	C_8	19.39
28.05	$C_2^=$	9.64
42.08	$C_3^=$	9.67

MISC MW		gals/mol
32.00	O_2	3.37
28.01	CO	4.19
44.01	CO_2	6.38
64.06	SO_2	5.50
34.08	H_2S	5.17
28.01	N_2	4.16
2.02	H_2	3.38

50	.6
55	.7
60	1.4
65	1.0
70	1.2
75	1.6
80	.9
85	.8
90	.7
95	.7
100	.9
05	.8
10	.6
15	.5
20	.5
25	.4
30	.4
35	.4
40	.6
45	.2
50	.2
55	.3
60	.6
65	.5
70	.5
75	.5
80	.4
85	.5
90	.4
95	.4

200	.4	
05	.5	
10	.6	
15	.6	
20	.6	
25	.7	
30	.9	
35	.5	
40	.7	
45	1.3	
50	1.6	(10)
55	1.0	
60	1.1	(9)
65	1.3	
70	1.3	(8)
75	1.3	
80	1.7	(7)
85	1.8	
90	1.4	(6)
95	1.4	
300	1.3	(5)
05	1.4	
10	1.7	(4)
15	1.7	
20	1.5	(3)
25	1.4	
30	1.7	(2)
35	2.0	
40	1.9	(1)
45	1.8	

50	1.6	
55	1.9	
60	1.6	
65	1.6	
70	1.6	
75	1.5	TD
80		
85		
90		
95		
400		

(1)	340	2.2	3.3
(2)	330	1.9	2.9
(3)	320	1.8	2.6
(4)	310	2.0	2.9
(5)	300	1.7	2.5
	290	1.7	2.6
	280	2.0	3.0
	270	1.6	2.7
	260	1.4	2.3
	250	2.1	3.3

10.5 V 13.6 A .77 Ω

EL PASO NATURAL GAS COMPANY
SAN JUAN DIVISION
FARMINGTON, NEW MEXICO
PRODUCTION DEPARTMENT WATER ANALYSIS

Analysis No. 1-10020 Date 11-12-80

Operator El Paso Natural Gas Well Name San Juan 29-7 #44A

Location SE 17-29-7 County San Juan State New Mexico

Field Blanco Formation

Sampled From CPS 1550-W @ 50 ft.

Date Sampled 8-20-80 By Willis Knight

Tbg. Press. Csg. Surface Csg. Press.

	ppm	epm		ppm	epm
Sodium	40	1.8	Chloride	16	0.5
Calcium	48	2.4	Bicarbonate	229	3.8
Magnesium	11	0.9	Sulfate	40	0.8
Iron	No test		Carbonate	0	0
H_2S	No test		Hydroxide	0	0

cc: C.B. O'Nan
R.A. Ullrich
E.R. Paulek
J.W. McCarthy
A.M. Smith
W.B. Shropshire
D.C. Adams
File

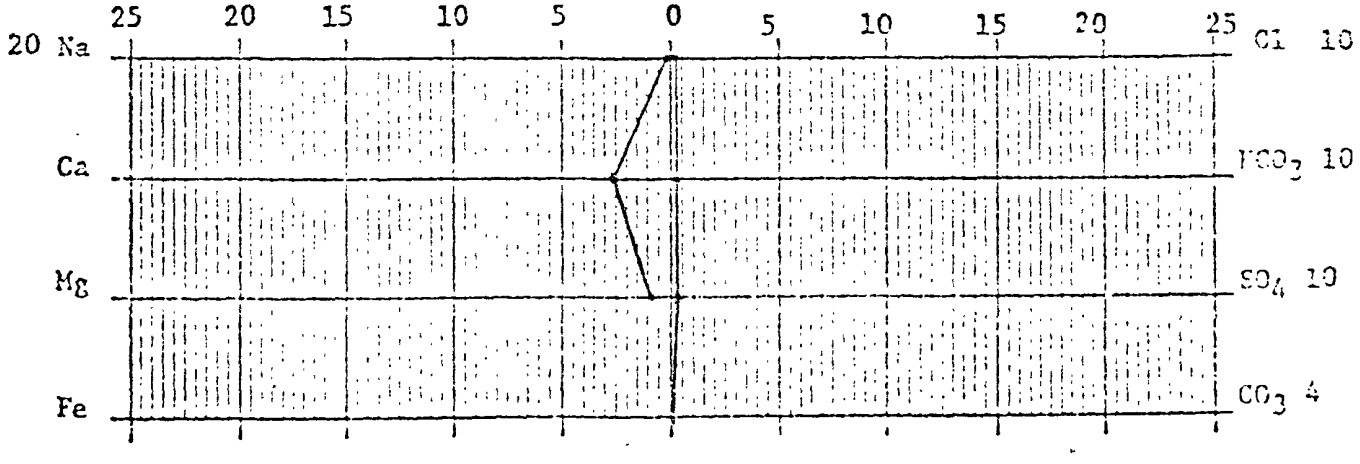
Total Solids Dissolved 274

pH 7.9

Sp. Gr. .9964 At 60°F

Resistivity 2000 ohm-cm at 77°F

Joe Barnett
Chemist



Scale: epm

Form 22-2 (Rev. 1-61)

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

CPS# 1550W | San Juan 29-7 #44-A | W.O.# 57695-21

LEASE | WELL NO. | CONTRACTOR 3-C Drilling | RIG NO. #1 | REPORT NO. | DATE August 20th 1980

MORNING

Driller Brian | Total Men In Crew 3

FROM	TO	FORMATION	WT-BIT	R.P.M.

BIT NO.
SER. NO.
SIZE 6 3/4
TYPE rock
MAKE

NO. DC ___ SIZE ___ LENG. ___
NO. DC ___ SIZE 4 1/2 LENG. 20'
STANDS
SINGLES 20
DOWN ON KELLY
TOTAL DEPTH 400' T.D. 375'

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN
0	20	shale
20	40	sandstone
40	60	wtr bearing sand 2 gpm
	130	shale
150	180	sand & bentonite
180	230	bentonite

REMARKS –

DAYLIGHT

Driller | Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.

BIT NO.
SERIAL NO.
SIZE
TYPE
MAKE

NO. DC ___ SIZE ___ LENG. ___
NO. DC ___ SIZE ___ LENG. ___
STANDS
SINGLES
DOWN ON KELLY
TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN
230	250	bentonite & shale
250	280	sand & shale
280	400	shale

REMARKS – drilled to 60' on the 19th had water standing at approx 50' on the 20th. Set to good water sample. Hole making approx. 2 gpm

Total hole depth - 400'
Total log depth - 375'

EVENING

Driller | Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.

BIT NO.
SERIAL NO.
SIZE
TYPE
MAKE

NO. DC ___ SIZE ___ LENG. ___
NO. DC ___ SIZE ___ LENG. ___
STANDS
SINGLES
DOWN ON KELLY
TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

SIGNED: Toolpusher Brian Burge Company Supervisor

1310 30-039-22629

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit NW Sec. 17 Twp 29 Rng 7

Name of Well/Wells or Pipeline Serviced SAN JUAN 29-7 UNIT #86A

cps 1689w

Elevation 6770' Completion Date 11/23/82 Total Depth 400' Land Type* N/A

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

N/A

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

Fresh, Clear, Salty, Sulphur, Etc. 180' SAMPLE TAKEN

Depths gas encountered: N/A

Type & amount of coke breeze used: 3500 lbs.

Depths anodes placed: 360', 350', 340', 330', 320', 310', 300', 290', 270', 260'

Depths vent pipes placed: 380'

Vent pipe perforations: 230'

Remarks: gb #1

RECEIVED
MAY 31 1991
OIL CON. DIV.
DIST. 3

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.

FM 07-0238 (Rev. 6-82)

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Drilling Log (Attach Hereto). ☐ Completion Date 11-23-82

CPS #	Well Name, Line or Plant	Work Order #	Static:	Ins. Union Check
1689-W	S.J. 29-7 # 86-A	59101-21-50-20-64	600'S = .81	☑ Good ☐ Bad

Location	Anode Size	Anode Type	Size Bit:
NW-17-29-7	2"X60"	DurIroN	6 3/4" carbide TiP Rock B.T.

Depth Drilled	Depth Logged	Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
400'	375'		APPROX. 3500		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	360	350	340	330	320	310	300	290	270	260
Anode Output (Amps)	2.62	3.03	3.02	2.79	2.64	2.41	3.80	2.25	2.94	2.87

	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Anode Depth										
Anode Output (Amps)										

Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 12.50	Amps 12.80	Ohms .98		

Remarks: ST. 5/8 600'-S =.81-150MA. casing + UNION Good
DRiller Said water At 160' caught water SAMPLE 11-22-82 and DRilled to 400'. 11-23-82 Logged 375'. installed 380' OF vent PiPe, 230' PerFirations

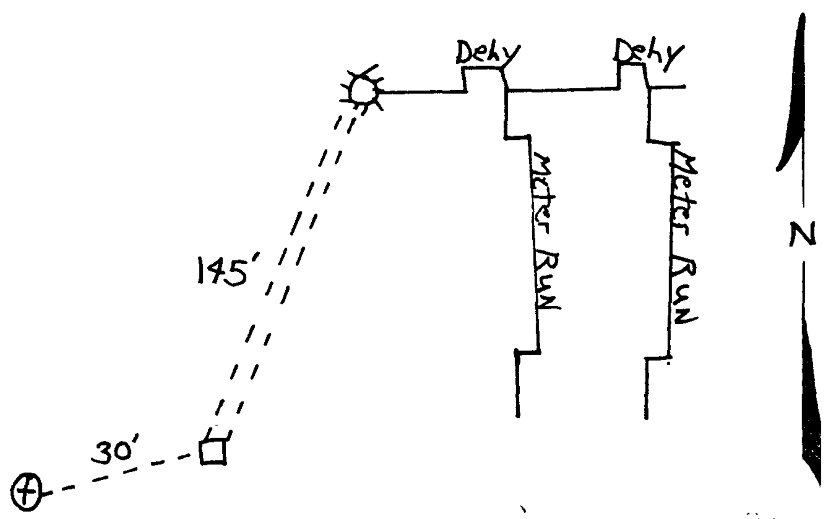
Rectifier Size: 40 V 16 A
Addn'l Depth NO
Depth Credit: 125'
Extra Cable: 175'
Ditch & 1 Cable: 175'
25' Meter Pole: NO
20' Meter Pole: 1
10' Stub Pole: 1

All Construction Completed

Don Jon Hitt
(Signature)

GROUND BED LAYOUT SKETCH

DEH	Reg.	O.T.
10-22	8 hrs	
10-23	8 hrs	



6770

El Paso Natural Gas Company
ENGINEERING CALCULATION SHEET 1689-W
Form 7-371 (11-77)

Page 1
Date 11-22-82
By [illegible]

S.J. 29-7-# 86-A NW-17-29-7 WO# 59101-21-50-20-64

ST. 9/6 600'S = .81 M A 1500 CASING + UNION = Good

11-22-82 DRiLLer Said water
at 160' Caught water sample
DRiLLed to 400'
11-23-82 Logged 375'
INSTaLLed 380' OF VENT
PiPe 230' PerForations

360 1.52-1
2.10
70 1.90
75 B.O.H.
80
90
400

[illegible] Reg. at. 2 / 8 8
11-22

11-23
1- 360 - 1.58
2- 350 - 2.05
3- 340 - 2.28
4- 330 - 1.90
5- 320 - 1.85
6- 310 - 1.76
7- 300 - 2.70
8- 290 - 1.26
9- 270 - 1.56
10- 260 - 1.60

160 .81
.85
70 .82
.92
80 .83
.79
90 .59
.33
200 .27
.27
10 .32
.37
20 .50
.50
30 .70
.64
40 .67
.69
50 1.29
1.53
60 1.59 10
1.60
70 1.24 9
1.10
80 .83
.86
90 1.22 8
2.04
300 2.55 7
1.78
10 1.60 6
1.66
20 1.85 5
2.01
30 1.65 4
1.85
40 2.20 3
2.07
50 2.00 2
55 1.49

EL PASO NATURAL GAS COMPANY
SAN JUAN DIVISION
FARMINGTON, NEW MEXICO
PRODUCTION DEPARTMENT WATER ANALYSIS

Analysis No. 1-10663 Date December 7, 1982

Operator El Paso Natural Gas Well Name San Juan 29-7 #86-A

Location NW 17-29-7 County Rio Arriba State New Mexico

Field _____ Formation _____

Sampled From CPS 1689W @ 160 Feet

Date Sampled November 22, 1982 By D. J. Hitt

Tbg. Press. _____ Csg. _____ Surface Csg. Press. _____

	ppm	epm		ppm	epm
Sodium	25	1.1	Chloride	10	0.3
Calcium	300	15.0	Bicarbonate	146	2.4
Magnesium	39	3.2	Sulfate	800	16.6
Iron			Carbonate	0	0
H_2S			Hydroxide	0	0

Total Solids Dissolved 1292

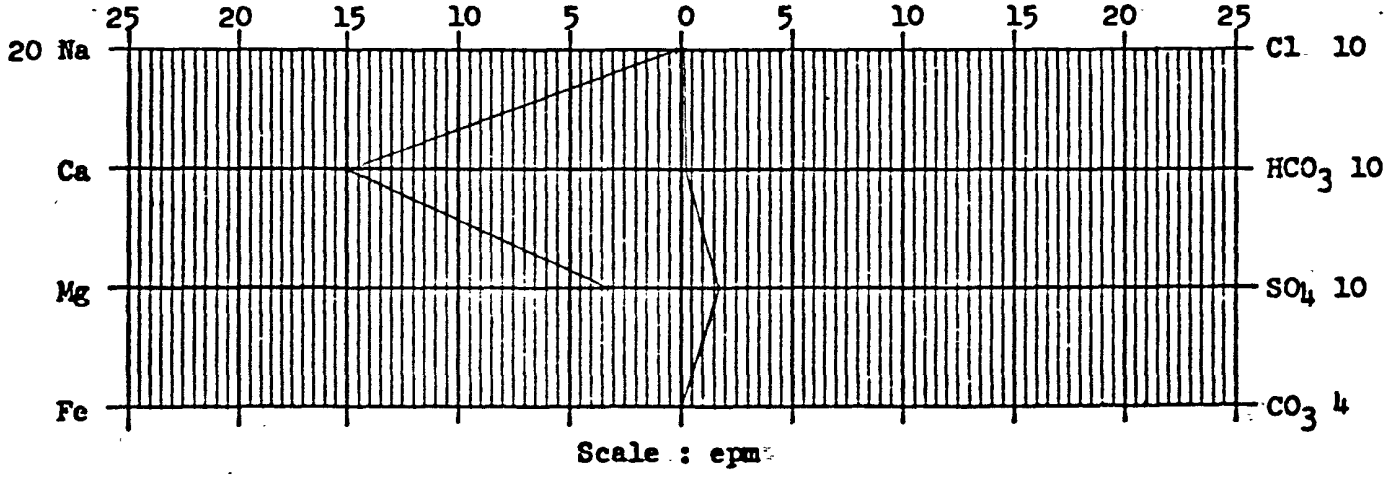
pH 6.9

Sp. Gr. 1.0013 At 60°F

Resistivity 656 ohm-cm at 73 °F

cc: R. A. Ullrich
E. R. Paulek
J. W. McCarthy
J. D. Evans
W. B. Shropshire
D. C. Adams
File

Joe P. Barnett & Dennis P. Bird RJB
Chemist



Form 22-2 (Rev. 1-61) CPS-1689-W

1689-W

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE S.J. 29-7 WELL NO. 86-A CONTRACTOR 3-C DRLG & Completion RIG NO. #2 REPORT NO. 12 DATE Nov. 22 19 82

MORNING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
0	20	Sandstone		
20	40	shale		
40	70	sandstone		
70	90	shale		

BIT NO.: NO. DC ____ SIZE 4½ LENG. 20'

SERIAL NO. NO. DC ____ SIZE ____ LENG. ____

SIZE 6¾ STANDS

TYPE Button SINGLES 20

MAKE Same DOWN ON KELLY

TOTAL DEPTH 400'

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS – Hit water 160' 3 gallons per minute. Good water sample.
Total hole depth 400'
Total log depth – 375'

DAYLIGHT

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
90	120	sand & shale		
120	140	shale		
140	240	sand, shale water		
240	400	shale		

BIT NO. NO. DC ____ SIZE ____ LENG. ____

SERIAL NO. STANDS

SIZE SINGLES

TYPE DOWN ON KELLY

MAKE TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

EVENING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.

BIT NO. NO. DC ____ SIZE ____ LENG. ____

SERIAL NO. STANDS

SIZE SINGLES

TYPE DOWN ON KELLY

MAKE TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

SIGNED: Toolpusher Brian Burge Company Supervisor

45- 30-039-07561
45E- 30-039-23956

4564

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit SW Sec. 20 Twp 29 Rng 7

Name of Well/Wells or Pipeline Serviced SAN JUAN 29-7 UNIT #45, #45E

cps 119w

Elevation 6575' Completion Date 9/9/83 Total Depth 520' Land Type* N/A

Casing, Sizes, Types & Depths 6' OF 8" CASING

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

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

N/A

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

Fresh, Clear, Salty, Sulphur, Etc. 160', 235'

RECEIVED
MAY 31 1991
OIL CON. DIV.
DIST. 3

Depths gas encountered: N/A

Type & amount of coke breeze used: 5000 lbs.

Depths anodes placed: 460', 250', 240', 230', 220', 210', 200', 190', 180', 170'

Depths vent pipes placed: 510' OF 1" PVC VENT PIPE

Vent pipe perforations: 440'

Remarks: gb #3

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.

FM-07-0238 (Rev. 10-82)

WELL CASING

CATHODIC PROTECTION CONSTRUCTION REPORT

DAILY LOG

Drilling Log (Attach Hereto) ☐ Completion Date 9-9-83

CPS #	Well Name, Line or Plant:	Work Order #	Static.	Ins. Union Check
119-W	S.J 29-7 #45	40056-19-50-20-63		☐ Good ☐ Bad

Location	Anode Size	Anode Type	Size Bit
SW 20-29-7	2" X 60"	Duricon	6 3/4

Depth Drilled	Depth Logged	Drilling Rig Time	Total Lbs Coke Used	Lost Circulation Mat'l Used	No Sacks Mud Used
520	507		5,000		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	460	250	240	230	220	210	200	190	180	170
Anode Output (Amps)	3.0	3.2	3.3	4.2	5.0	4.6	4.5	3.4	3.7	3.4

	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Anode Depth										
Anode Output (Amps)										

Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 12V	Amps 15.5	Ohms .78		

Remarks: Set 6' of 8" Casing. Drilled to 160' found water. Blew water from hole next morning. Found more water at 235'. Installed 510' of 1" PVC vent pipe 440' with perforations. Slurried 5,000 lbs of Coke down hole. Got water sample. Drilled in sandy shale from 255 to 450 which would not log.

Rectifier Size: ___ V ___ A
Addn'l Depth 7 ✓
Depth Credit: ___
Extra Cable: 5' ✓
Ditch & 1 Cable: 102' ✓
25' Meter Pole: ___
20' Meter Pole: ___
10' Stub Pole: ___

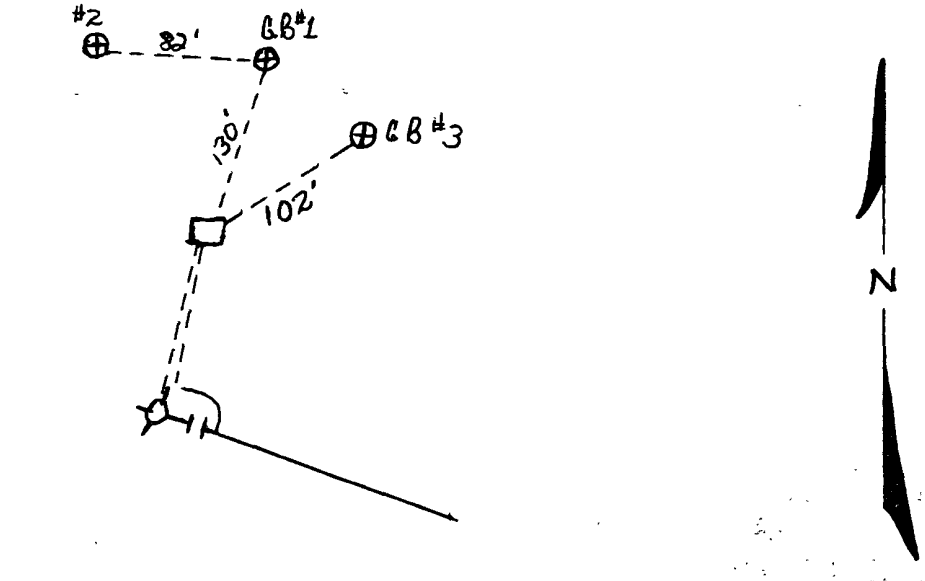
Reg time	O. time
8	2

Redr. 11

All Construction Completed

C.W. Donohue
(Signature)

GROUND BED LAYOUT SKETCH



Form 22-2 (Rev. 1-6-1)

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE S.J. 29-7 WELL NO. #45 SW 20-29-7 CONTRACTOR Loft.s Co. RIG NO. IRI REPORT NO. 19 DATE 9-9-83 19

MORNING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
0	160'	Sand & Sandstone		
160'	250'	Shale		
250'	450	Sands Stone		
450	465	Shale		

BIT NO. NO. DC SIZE LENG.

SERIAL NO. NO. DC SIZE LENG.

SIZE STANDS

TYPE SINGLES

MAKE DOWN ON KELLY

TOTAL DEPTH

MUD RECORD Time	Wt.	Vis.	MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

3 gpm

DAYLIGHT

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
465	520	Sands & Sandstone		

BIT NO. NO. DC SIZE LENG.

SERIAL NO. NO. DC SIZE LENG.

SIZE STANDS

TYPE SINGLES

MAKE DOWN ON KELLY

TOTAL DEPTH

MUD RECORD Time	Wt.	Vis.	MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

EVENING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.

BIT NO. NO. DC SIZE LENG.

SERIAL NO. NO. DC SIZE LENG.

SIZE STANDS

TYPE SINGLES

MAKE DOWN ON KELLY

TOTAL DEPTH

MUD RECORD Time	Wt.	Vis.	MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

SIGNED: Toolpusher _____ Company Supervisor Ron Arnold

El Paso Natural Gas Company
ENGINEERING CALCULATION

Sheet: of
Date: 9-9-83
By: BD
File:

CPS 119-W
S.J 29-7 #45
SW 20-29-7

W.O.# 40056-19-50-20-63
Redr. 11 #3

Set 6' of 8" casing (PVC)
Drilled to 160' found water. Blew water from hole, found more water at 235'. Installed 510' of 1" P.V.C. vent pipe with 440' of perforations. Got water sample

Drilled: 520
Logged: 507

Drilled in sandy shale from 255 to 450 which would not log.

MW		gals/mol
16.04	C_1	6 4
30.07	C_2	10.12
44.10	C_3	10.42
58.12	iC_4	12 38
58.12	nC_4	11.93
72.15	iC_5	13.85
72.15	nC_5	13.71
86.18	iC_6	15.50
86.18	C_6	15.57
100.21	iC_7	17.2
100.21	C_7	17 46
114 23	C_8	19.39
28.05	$C_2^=$	9.64
42.08	$C_3^=$	9 67

MISC. MW		gals/mol
32.00	O_2	3 37
28.01	CO	4 19
44.01	CO_2	6 38
64.06	SO_2	5 50
34.08	H_2S	5.17
28.01	N_2	4.16
2.02	H_2	3.38

160	1.0		370	.1				
65	1.0		75	.2				
70	1.1	(10)	80	.2				
75	1.1		85	.2				
80	1.1	(9)	90	.2				
85	1.0		95	.2				
90	1.0	(8)	400	.2				
95	1.0		05	.2				
200	1.1	(7)	10	.3				
05	1.2		15	.4				
10	1.2	(6)	20	.2				
15	1.2		25	.2				
20	1.2	(5)	30	.2				
25	1.1		35	.2				
30	1.1	(4)	40	.3	460	(1)	1.2	3.0
Better water → 35	1.1		45	.3	250	(2)	1.2	3.2
40	1.0	(3)	50	.5	240	(3)	1.2	3.3
45	1.0		55	1.2	230	(4)	1.3	4.2
50	1.0	(2)	60	1.2 (1)	220	(5)	1.6	5.0
55	.8		65	.8	210	(6)	1.6	4.6
60	.6		70	.6	200	(7)	1.6	4.5
65	.5		75	.5	190	(8)	1.2	3.4
70	.5		80	.5	180	(9)	1.4	3.7
75	.6		85	.6	170	(10)	1.45	3.4
80	.7		90	.8				
85	.6		95	.8				
90	.5		500	.6	12.1 V		15.5A	.78 Ω
95	.3		05					
300	.3		10					
05	.3		15					
10	.2		20					
15	.1							
20	.1							
25	.1							
30	.4							
35	.3							
40	.2							
45	.2							
50	.1							
55	.1							
60	.1							
65	.1							

30-039-07598

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit NE Sec. 20 Twp 29 Rng 7

Name of Well/Wells or Pipeline Serviced SAN JUAN 29-7 UNIT #49

cps 293w

Elevation 6390' Completion Date 5/29/74 Total Depth 580' Land Type* N/A

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

N/A

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

Fresh, Clear, Salty, Sulphur, Etc. 60'

RECEIVED
MAY 31 1991
OIL CON. DIV
DIST. 3

Depths gas encountered: N/A

Type & amount of coke breeze used: N/A

Depths anodes placed: 500', 490', 450', 440', 415', 395', 385', 370', 325', 315'

Depths vent pipes placed: N/A

Vent pipe perforations: 460'

Remarks: gb #2

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 LOG

Logged

Drilling Log (Attach Hereto). ☐

Completion Date 5-29-74

Well Name	Location	CPS No.
S.J. 29-7 # ~~#~~ 49	NE 20-29-7	293W
Type & Size Bit Used: 6 3/4		Work Order No.: 40020.01-50-20

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
580				

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10
Anode Depth	500	490	450	440	415	395	385	370	325	315
Anode Output (Amps)	3.0	2.6	2.1	2.2	1.8	1-8	1.9	1.6	2.6	2.7

	# 11	# 12	# 13	# 14	# 15	# 16	# 17	# 18	# 19	# 20
Anode Depth										
Anode Output (Amps)										

Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.5	Amps 10.0	Ohms 1.15	32'	

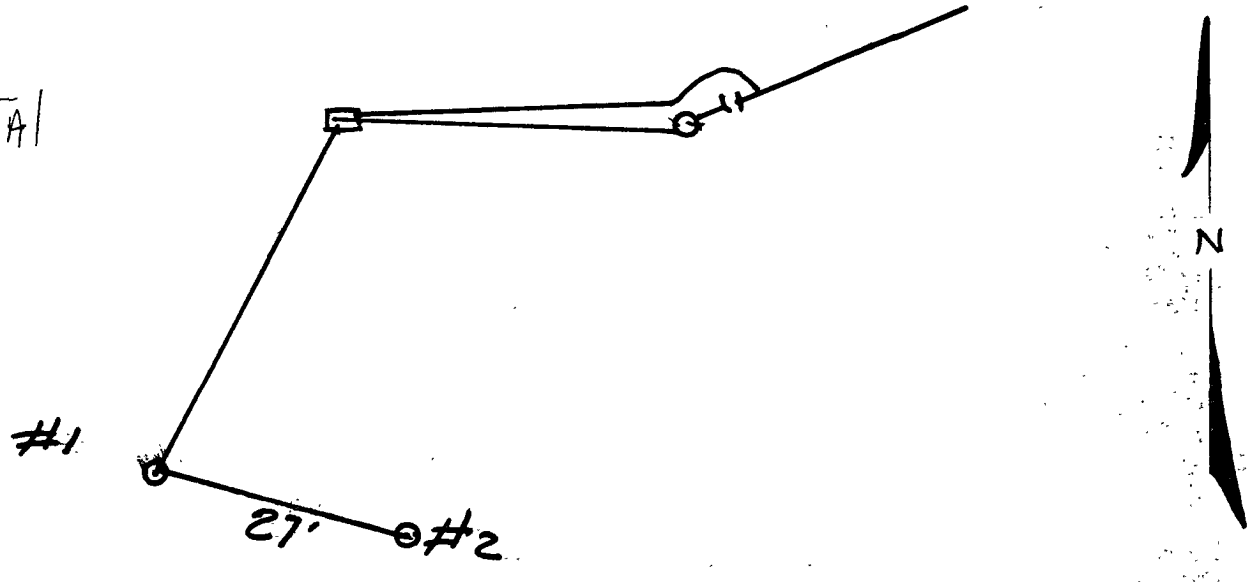
Remarks: Driller Said Water at 60'— Old Gnd Bed, Top anode at 66' Bottom anode at 92'- Helped to Water old Gnd Bed Didn't think enough Water, Told to Go Deeper Vent Perforated 460' - Pumped 2 loads water Anodes Covered, Went after another load of water Contr Said would Pump to 60' of Surface Left Location to make Anodes

All Construction Completed

Jarels
(Signature)

$3,409.00
12.80
$3,421.80
187.50 x Depth
$3,609.30
144.37 Tax
$3,753.67 Total

GROUND BED LAYOUT SKETCH



Original & 1 Copy All Reports

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

293 W
C.P.S.

Drill Portadrill

Date Tue 5-28-74

Owner C.P.S.

Location
City _____ State N.M. County _____

From	To	Formation	Color	Hardness
0	20	Sand	Tan	Soft
20	50	Sand	Tan	Firm
50	60	Sand	Tan "Wet"	
60	100	Shale	Gray	Med
100	130	Sand	Gray	Med
130	170	Sandy Shale	Gray	Med
170	255	Sand	Gray	Med
255	310	Sand	Gray	Hard
310	320	Shale Sandy	Gray, Green	Med
320	~~330~~ 330	Sand	Gray	Med
330	490	Shale	Gray	Med
490	510	Sandstone	Gray	Firm
510	540	Shale	Gray Green	Med
		Water @ 60 ft.		
540	580	Sandstone w/coal stk.	Gray	Med

Total Hours _____
Equipment Down Time _____
Hours Drilling 13
Driller Bob Rupp
Helper Ray
Helper Al

C.P.S. Time _____
S.W.W.D.I. Time _____
Total Footage 580

Approval of
C.P.S. Engineer _____

Form 7-1 (Rev. 5-67)

EL PASO NATURAL GAS COMPANY
ENGINEERING DEPARTMENT

Sheet ___ of ___
Date: ___
By: ___

560
3/8/45

293W X = 5.2

60	2.0	90	1.4		420	.7
	2.0		1.3			6
70	2.2	50	7		30	6
	2.2		3			6
80	2.2	60	2		40	.9
	2.0		2			1.0
90	1.8	70	2		50	.8
	1.7		2			7
100	1.6	80	2		60	8
	1.6		3			8
10	1.5	90	2		70	7
	1.4		2			6
20	1.8	300	3	.4	80	.6
	2.0		6	.4		.7
30	1.5	10	1.0	.6	90	1.0
	1.0		1.2	.9		1.4
40	1.2	20	1.0	1.2	500	1.5
	6		5	1.0		9
50	6	30	6	.5	10	7
	5		6	.6		6
60	4	40	5	6	20	.6
	3	TD	5	.6		.6
70	.2	50		.6	30	7
	3			5		7
80	3	60		5	40	7
	2			7		7
90	4	70		.8	50	7
	3			6		7
200	2	80		8	60	.8
	2			1.0	T.D. 64	.8
10	2	90		9	70	
	3			8		
20	4	400		7	80	
	3			7		
30	4	10		7		
	4			8		

Driller Said Water at 60'
Top anode on old
GND BED at 66' - Bottom
Helped to water old GND
Don't think Enough water
Told to Go Deeper -

Vent Perf 460
Pumped 2 Loads water
Anodes covered - Gone after another load
Left Loc. to Make anc
Cont. Said would Pump
to 60' of Surface

		Log	wtr.	
1	500	1.5	1.5	3.0
2	490	1.0	1.0	2.6
3	450	.8	1.0	2.1
4	440	.9	1.0	2.2
5	415	.8	.9	1.8
6	395	8	.9	1.8
7	385	1.0	1.0	1.9
8	370	.8	.8	1.6
9	325	1.0	1.2	2.6
10	315	.9	1.2	2.7

11.5 V 10.0 A = 1.15 Ω

MISC. MW		gals/mol
44	CO_2	6.38
34	H_2S	5.17
28	N_2	4.16
2	H_2	3.38

99 = 30-039-07529
112 = 30-039-21408
4/8/11

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit SW Sec. 29 Twp 29 Rng 7

Name of Well/Wells or Pipeline Serviced SAN JUAN 29-7 UNIT #99, #112

cps 122w

Elevation 6347' Completion Date 6/30/70 Total Depth 720' Land Type* N/A

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

N/A

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

Fresh, Clear, Salty, Sulphur, Etc. WET AT 85'

RECEIVED
MAY 31 1991
OIL CON. DIV.
DIST. 3

Depths gas encountered: N/A

Type & amount of coke breeze used: 86 SACKS

Depths anodes placed: 605', 580', 570', 555', 545', 445', 435', 380', 270', 260'

Depths vent pipes placed: N/A

Vent pipe perforations: N/A

Remarks: gb #2 ANODES #1 & #8 ARE SINGLE, ALL OTHERS DUAL.

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 LOG

C.P.S Contract
No 2 GND BED

Drilling Log (Attach Hereto). ☐ Completion Date 6-30-70

Well Name	Location	CPS No.
SJ 29-7 #99	SW 29-29-7	122W

Type & Size Bit Used	Work Order No.
6 3/4	184-52374-50-20

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
720'				

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10
Anode Depth	605	580	570	555	545	445	435	380	270	260
Anode Output (Amps)	1.8	3.3	3.3	1.8	1.8	1.8	1.8	1.4	4.2	4.2

	# 11	# 12	# 13	# 14	# 15	# 16	# 17	# 18	# 19	# 20
Anode Depth	250	240								
Anode Output (Amps)	4.0	4.0								

Total Circuit Resistance				No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 12.0	Amps 12.4	Ohms 0.96			

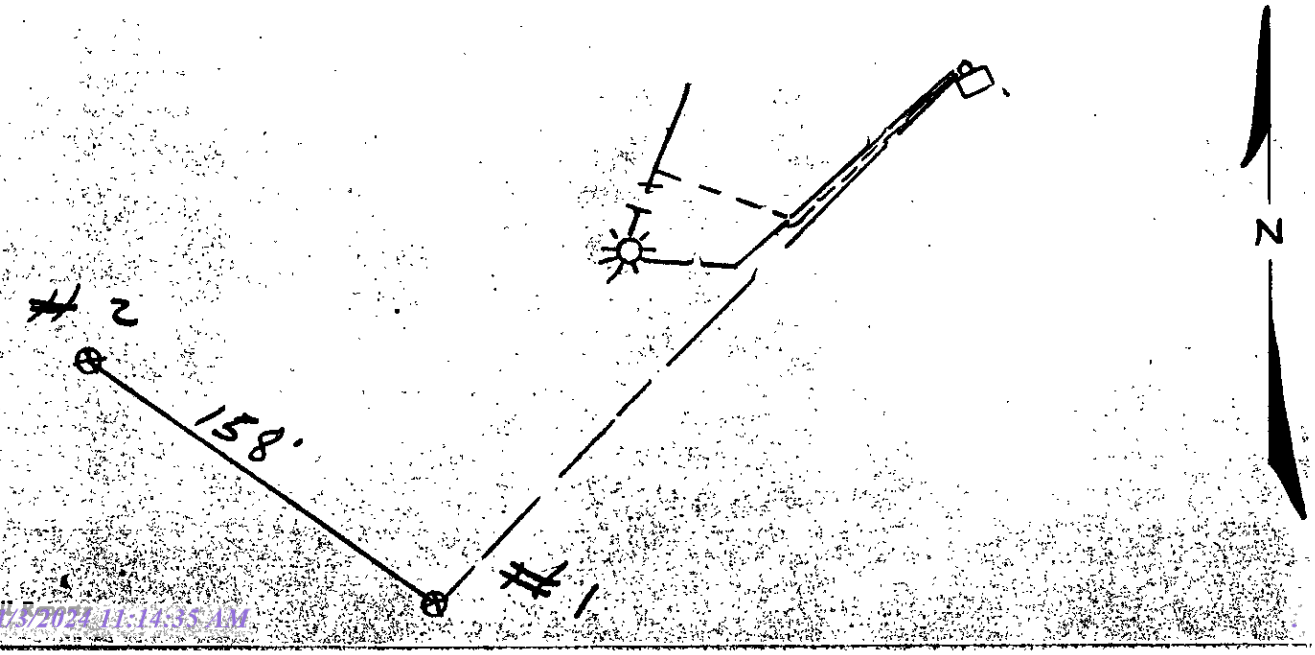
Remarks: Drill 360' with air - Driller says wet at 85'
Anode's #1 & 8 are single, all others Dual
Pumped 86 Sacks Coke — Slurry 24 - Total 110
Logged 660' of Hole - Couldn't Get any Deeper

Pop 120' hole

All Construction Completed

Daniels
(Signature)

GROUND BED LAYOUT SKETCH



Original & 1 Copy All Fo

122W

Wet at 85°
360 with air

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	13.95
"	NC_5	13.71
86	IC_6	15.50
"	C_6	15.57
100	IC_7	17.2
"	C_7	17.66
114	C_8	19.58
28	CO	5.66
32	O_2	5.67

MISC.		
MW		gals/mol
44	CO_2	6.38
34	H_2S	5.19
28	N_2	4.16
2	H_2	3.38

320	.72	100	.45	60	1.17
	.76		.46		1.25
30	.59	10	.72	70	1.08
	.65		.21		.89
40	.90	20		80	.58
	.70				.39
50	.6	30		90	.3
	.58				.27
60	.6	40		300	.27
	.6				.27
70	.63	50		10	.37
	.96				.41
80	1.04	60		20	.69
	.78				
90	.74	70			
	.71		.47		
200	.68	80	.6		
	.66		.55		
10		90	.52		
			.5		
20		200	.45		
			.47		
30		10	.8		
			1.17		
40		20	.83		
			.79		
50		30	.77		
			.77		
60		40	1.10		
			1.21		
		50	1.05		
			1.0		

Form 7-1 (Rev. 5-62)

EL PASO NATURAL GAS COMPANY

ENGINEERING DEPARTMENT

Date:

By:

122W

325-7350
CRANE Drilling

400	[illegible]	80	172	132	630'
	76		1.00	75	
10	76	90	92	69	
	78		100	78	
20	79	600	134	98	
	79		130	102	
30	84	610	107	87	
	114		105	89	
40	121	20		84	
	117			84	
50	95	30		83	
	79			82	T.D. 720
60	.75	40		82	Log. 660'
	.80			91	
70	.81	50		88	Pump. 86 sks Cok
	.79			84	
80	.78	60		75	
	.83				
90	.87	70			wtr
	.84				12.0 / 7.4A
500	.83	80			
	.83		1	605	.74 - 1.48
10	.77	90	2	580	12.0
	.79		3	570	1.6 - 3.0
20	.80	700	4	555	10.4
	85		5	545	1.09 1.59
30	88		6	445	
	93		7	435	1.02 1.65
40	1.01		8	380	.72 1.45 11.5
	1.00		9	270	
50	92		10	260	1.66 2.2
	1.07		11	250	
60	99		12	240	1.55 2.2
	1.09				
70	1.43				
	1.34	117			

98 - 30-039-07535
109 - 30-039-21330

4562

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit NE Sec. 30 Twp 29 Rng 7

Name of Well/Wells or Pipeline Serviced SAN JUAN 29-7 UNIT #98, #109

cps 118w

Elevation 6404' Completion Date 5/6/74 Total Depth 660' Land Type* N/A

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

N/A

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

Fresh, Clear, Salty, Sulphur, Etc. 440'

RECEIVED
MAY 31 1991
OIL CON. DIV.
DIST. 3

Depths gas encountered: N/A

Type & amount of coke breeze used: 11300 lbs.

Depths anodes placed: 620', 610', 595', 585', 575', 565', 555', 520', 510', 495

Depths vent pipes placed: N/A

Vent pipe perforations: 200'

Remarks: gb #2

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 LOG

Logged

Drilling Log (Attach Hereto). ☐

Completion Date 5-6-74

Well Name	Location	CPS No.
S.J. 29-7 # 98	NE 30 - 29 - 7	118W
Type & Size Bit Used: 6 3/4		Work Order No.: 52373.19-50-20

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
660		11,300 Est.		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	620	610	595	585	575	565	555	520	510	495
Anode Output (Amps)	1.5	1.8	1.8	1.6	2.0	2.2	2.7	1.9	1.8	1.5
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 11.4	Amps 6.0	Ohms 1.90			

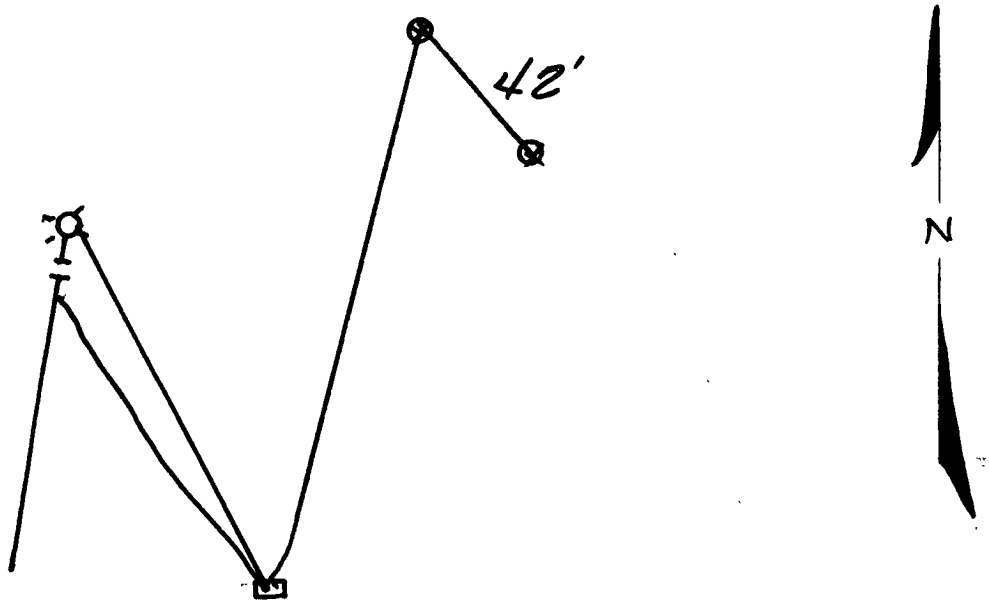
Remarks: Water standing @ 415' after 12 hrs Driller said lots of water @ 440' Vent Hose Perforated 200'. Pumped To Above water zone, Complete By Slurry

$ 3,409.00
1,087.50 Extra Depth
4,496.50
18.80 Cable
4,515.30
180.61 Tax
$ 4,695.91 Total

All Construction Completed

(Signature)

GROUND BED LAYOUT SKETCH



al & 1 Copy All Reports

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 G.D. 15W Date 4-6-74

Owner C.P.S.

Location
City Farmington State N.Mex County

From	To	Formation	Color	Hardness
0		Hole #118W		
0	15	OVERBURDEN SAND		
15	65	SHALE	BLUE	M. SOFT
65	230	SANDSTONE	BR	M. HAR
230	440	SANDY SHALE	BLUE	W. TH
		STREAKS HARD SANDSTONE		
440	660	SANDSTONE WITH STREAKS OF		
		SHALE VERY SANDY		
		WATER @ 440'		
		Injection @ 440'		
		Approx 30 gpm		

Total Hours
Equipment Down Time
Hours Drilling
Driller Ed Holland
Helper
Helper

C.P.S. Time
S.W.W.D.I. Time
Total Footage
Approval of C.P.S. Engineer

Form 7-1 (Rev. 5-67)

EL PASO NATURAL GAS COMPANY
ENGINEERING DEPARTMENT

Sheet ____ of ____
Date: [illegible]
By: ____

118W

X = 4.0

Depth	Reading	Depth	Reading	Notes
415	.6		.8	water standing @ 415
20	.7	600	.7	After 12 hrs
	.6		.6	Dailey said lots ax
30	.6	10	.7	water @ 410
	.6		.7	Vent Perf. 200'
40	.6	20	.7	
	.5		.5	
50	.4	30	.8	
	.5		.9	
60	.5	40	.8	630 Bottom
	.5		.8	
70	.5	50		
	.5			
80	.5			
	.5			
90	.6			
	.7			
500	.5			
	.5			
10	.7			
	.7			
20	.8			
	.7			
30	.5			
	.6			
40	.6			
	.6			
50	.6			
	.8			
60	1.8			
	.8			
70	.8			
	.7			
80	.7			
	.7			
90	.7			

	Depth	log	water	coke
1	620	.7	.7	1.5
2	610	.7	.7	1.8
3	595	.8	.7	1.8
4	585	.7	.7	1.6
5	575	.7	.7	2.0
6	565	.8	.8	2.2
7	555	.8	.8	2.7
8	520	.8	.7	1.9
9	510	.7	.7	1.8
10	495	.7	1	1.5
		11.4	6.0 A	1.90

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	$C_3^{=}$	9 67

MISC

MW		gals/mol
44	CO_2	6 38
34	H_2S	5 17
28	N_2	4 16
2	H_2	3 38

160 #78A 30-039-21633
#513 30-039-24298

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit NW Sec. 30 Twp 29 Rng 7

Name of Well/Wells or Pipeline Serviced SAN JUAN 29-7 UNIT #78A, #513

cps 1409w

Elevation 6349 Completion Date 8/10/79 Total Depth 495' Land Type* N/A

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

N/a

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

Fresh, Clear, Salty, Sulphur, Etc. WATER SAND 710' - 180' & 205' - 225'

SAMPLE TAKEN

Depths gas encountered: N/A

Type & amount of coke breeze used: 51 SACKS

Depths anodes placed: 455', 415', 395', 385', 375', 365', 355', 345', 310', 240'

Depths vent pipes placed: 500'

Vent pipe perforations: 400'

Remarks: gb #1

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ST. 3

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.

8 [illegible]
3/hr OT

El Paso Natural Gas Company
Form 7-238 (Rev. 11-71)

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

CONTRACT #2
#513 2" x 60" DURIRON

Drilling Log (Attach Hereto). ☐ Completion Date 8-10-7[illegible]

Well Name	Location	CPS No.
SJ 29-7 # 78A	NW 30-29-7	1409W

Type & Size Bit Used		Work Order No.
6 3/4	STATIC = .85	57353-21

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
495'		51 BAGS		

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10
Anode Depth	455	415	395	385	375	365	355	345	310	240
Anode Output (Amps)	2.0	1.8	2.0	2.6	2.9	2.1	2.4	2.3	1.9	2.4

	# 11	# 12	# 13	# 14	# 15	# 16	# 17	# 18	# 19	# 20
Anode Depth										
Anode Output (Amps)										

Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.9	Amps 10.5	Ohms 1.1		

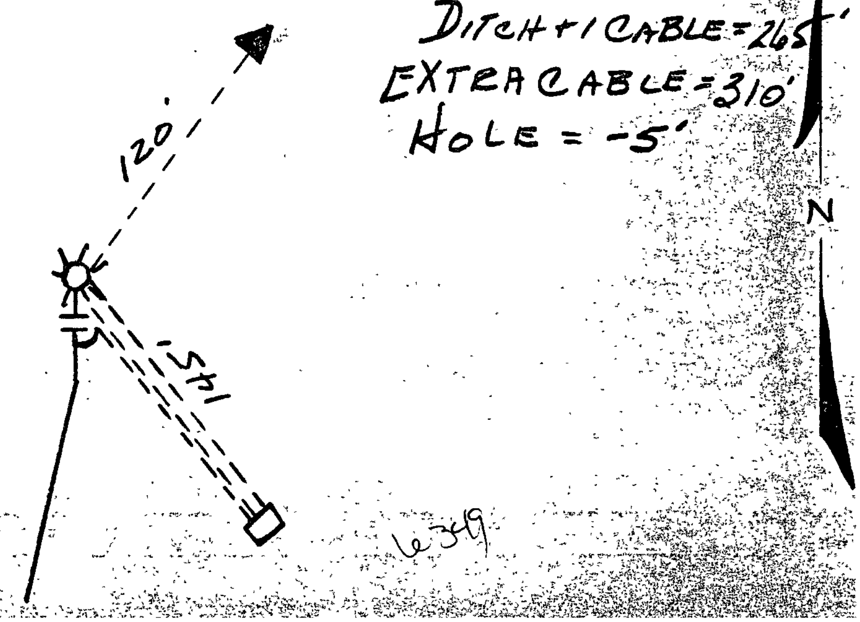
Remarks: Water sand 170 to 180 & 205 to 225 drilled to 300' set overnight 100' Water in hole sent A[illegible] (Sample) Guestimate 2 gal per minute. 500' 1" PVC Vent pipe 400' Perforated.

All Construction Completed

BT
(Signature)

STUB POLE
40/16 REET
DITCH + 1 CABLE = 265'
EXTRA CABLE = 310'
HOLE = -5'

GROUND BED LAYOUT SKETCH



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- WHITE — Division Corrosion Office
- YELLOW — Area Corrosion Office
- PINK — Originator File

El Paso Natural Gas Company
ENGINEERING CALCULATION

8 hrs req
3 hrs OT

Sheet: 1 of 1
Date: 8-10-
By:
File: BT

STATIC: .85 1409 W

SJ 29-7 # 78A NW 30-29-7 57353

Water sand 170 to 180 & 205' to 225'. Drilled to 390' set auger night. 100' water in hole with AM (Sample) Guestimate 2 gal per minute

500' 1" PVC vent pipe 400' perforated

TD 495' Drilled 500' logged 4

11.9 V 10.5 A = 1.1 Ω

200	.3							
5	.6		5	.5	(9)	5	.8	
10	.9	-	10	1.1	-	10	.7	
15	1.2		15	1.2		15	.8	- (2)
20	1.4	-	20	.9		20	1.1	
25	1.5		25	.6		25	.7	
30	1.9	-	30	.6		30	.7	
35	1.9		35	.7		35	.7	
40	1.7	- (10)	40	.7		40	.6	
45	1.2		45	.8	- (8)	45	.6	
50	.6		50	1.0		50	.7	
55	.5		55	1.6	- (7)	55	.8	- (1)
60	.4		60	1.5		60	1.0	
65	.4		65	1.2	- (6)	65	.8	
70	.6		70	1.1		70	.7	
75	.8		75	1.1	- (5)	75	.6	
80	1.0		80	1.5		80	.6	
85	.9		85	1.6	- (4)	85	.6	
90	.7		90	1.3		90	.6	
95	.6		95	.8	- (3)	95		
300	.5		400	1.1		500		

1 =	455	1.1	2.0
2 =	415	1.1	1.8
3 =	395	1.2	2.0
4 =	385	1.4	2.6
5 =	375	1.6	2.9
6 =	365	1.1	2.1
7 =	355	1.5	2.4
8 =	345	1.3	2.3
9 =	310	1.2	1.9
10 =	240	1.3	2.4

MW		gals/mol
16.04	C_1	6.4
30.07	C_2	10.12
44.10	C_3	10.42
58.12	iC_4	12.38
58.12	nC_4	11.93
72.15	iC_5	13.85
72.15	nC_5	13.71
86.18	iC_6	15.50
86.18	C_6	15.57
100.21	iC_7	17.2
100.21	C_7	17.46
114.23	C_8	19.39
28.05	$C_2^=$	9.64
42.08	$C_3^=$	9.67

MISC.

MW		gals/mol
32.00	O_2	3.37
28.01	CO	4.19
44.01	CO_2	6.38
64.06	SO_2	5.50
34.08	H_2S	5.17
28.01	N_2	4.16
2.02	H_2	3.38

EL PASO NATURAL GAS COMPANY
SAN JUAN DIVISION
FARMINGTON, NEW MEXICO
PRODUCTION DEPARTMENT WATER ANALYSIS

Analysis No. 1-9742 Date 10-24-79

Operator EPNG Well Name San Juan 29-7 # 78 A

Location NW 30-29-7 County Rio Arriba State N.M.

Field _____ Formation _____

Sampled From T409 W

Date Sampled _____ By _____

Tbg. Press. _____ Csg. Press. _____ Surface Csg. Press _____

	ppm	epm		ppm	epm
Sodium	132	6	Chloride	64	2
Calcium	572	29	Bicarbonate	137	2
Magnesium	49	4	Sulfate	1650	34
Iron	Present		Carbonate	0	0
H_2S	Absent		Hydroxide	0	0

Total Solids Dissolved 2964

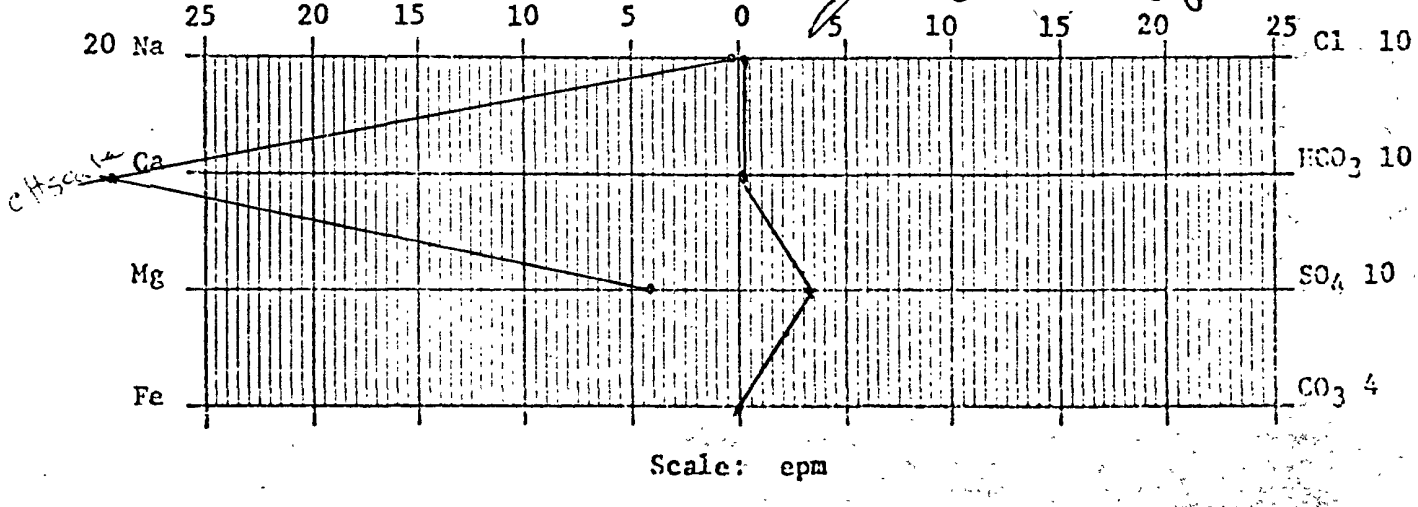
pH 7.7

Sp. Gr. 1.0037 at 60°F

Resistivity 286 ohm-cm at 77 °F

cc: D.C.Adams
R.A.Ullrich
E.R.Paulek
J.W.McCarthy
A.M.Smith
W.B.Shropshire
File
C. B. O'Nan

Chemist



CP# 1401

EL PASO NATURAL GAS COMPANY
DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE WELL NO. CONTRACTOR Posey RIG NO. REPORT NO. DATE 8-10 1977

MORNING					DAYLIGHT					EVENING				
Driller		Total Men In Crew			Driller		Total Men In Crew			Driller		Total Men In Crew		
FROM	TO	FORMATION	WT-BIT	R.P.M.	FROM	TO	FORMATION	WT-BIT	R.P.M.	FROM	TO	FORMATION	WT-BIT	R.P.M.

Drilled 500
Loged 495

MORNING		DAYLIGHT		EVENING	
	NO. DC SIZE LENG.		NO. DC SIZE LENG.		NO. DC SIZE LENG.
BIT NO. 6 3/4	NO. DC SIZE LENG.	BIT NO.	NO. DC SIZE LENG.	BIT NO.	NO. DC SIZE LENG.
SERIAL NO.	STANDS	SERIAL NO.	STANDS	SERIAL NO.	STANDS
SIZE	SINGLES	SIZE	SINGLES	SIZE	SINGLES
TYPE	DOWN ON KELLY	TYPE	DOWN ON KELLY	TYPE	DOWN ON KELLY
MAKE	TOTAL DEPTH	MAKE	TOTAL DEPTH	MAKE	TOTAL DEPTH

MUD RECORD			MUD, ADDITIVES USED AND RECEIVED	MUD RECORD			MUD, ADDITIVES USED AND RECEIVED	MUD RECORD			MUD, ADDITIVES USED AND RECEIVED
Time	Wt.	Vis.		Time	Wt.	Vis.		Time	Wt.	Vis.	

FROM	TO	TIME BREAKDOWN	FROM	TO	TIME BREAKDOWN	FROM	TO	TIME BREAKDOWN
0	5	Surface	350	365	Sandy Shale			
5	60	Shale	365	380	Shale			
60	150	Sand Dry	380	450	Sandy Shale			
150	170	Shale	450	470	Sand			
170	180	Sand wet	470	500	Sandy Shale			
180	195	Shale						

REMARKS –
195 - 200 Sand Dry
200 - 205 Shale
205 - 225 Sand wet making Water 1 - 2 gal min
225 - 240 Shale
240 - 260 Sand Stone
260 - 320 Sandy Shale
320 - 350 Shale

REMARKS –

REMARKS – Jaf 300

SIGNED: Toolpusher Posey Company Supervisor

30-045-20560 4295

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS NORTHWESTERN NEW MEXICO

Operator MERIDIAN OIL CO. **Location: Unit** K **Sec.** 24 **Twp** 29 **Rng** 8

Name of Well/Wells or Pipeline Serviced HARDIE A # 2 R

cps 871w

Elevation 6387 **Completion Date** 8/28/90 **Total Depth** 500 **Land Type** N/A

Casing Strings, Sizes, Types & Depths 20 ft. 8" PVC Casing

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

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

Depths & thickness of water zones with description of water: Fresh, Clear Salty, Sulphur, Etc. Wet at 35 ft, 95ft & 210 ft no sample

Depths gas encountered: N/A

Ground bed depth with type & amount of coke breeze used:

7700 lbs of Ashbury petroleum coke

Depths anodes placed: 470, 463, 456, 445, 435, 428, 421, 417, 307, 300

Depths vent pipes placed: 500 ft. 1" vent pipe

Vent pipe perforations: N/A

Remarks: gb #5

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OIL CON. DIV.
DIST. 3

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

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

NMOCD 0238 (Rev. 10-82)

20

WELL CASING

CATHODIC PROTECTION CONSTRUCTION REPORT

DAILY LOG

Drilling Log (Attach Hereto) ☐

Completion Date 8-28-90

CPS #	Well Name, Line or Plant:	Work Order #	Static:	Ins Union Check
871-W	HARDIE A #2R			☑ Good ☐ Bad

Location:	Anode Size:	Anode Type:	Size Bit:
K-24-29-8	2" X 60"	ANODE C	6 3/4

Depth Drilled	Depth Logged	Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
500'	490'		7700 #		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	470'	463'	456'	445'	435'	428'	421'	417'	307'	300'
Anode Output (Amps)	2.4	2.6	2.6	2.2	2.0	2.1	2.0	2.2	2.4	2.3
Anode Depth	#11 240'	#12 215'	#13	#14	#15	#16	#17	#18	#19	#20
Anode Output (Amps)	1.7	2.0	#13	#14	#15	#16	#17	#18	#19	#20

Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 12.4	Amps 8.8	Ohms 1.4		

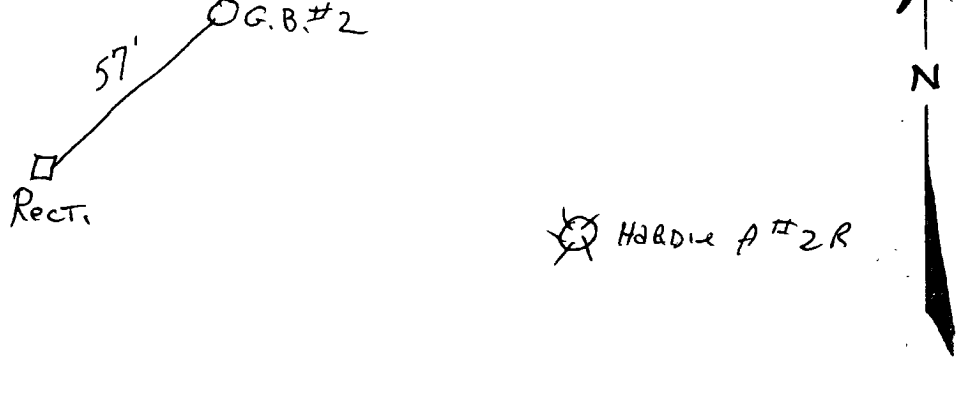
Remarks: Set 20' of 8" PVC casing. Driller said wet at 35', 95', & 210', sat overnight, did not blow water next A.M. Did not get water sample, started injecting at 260'. Ran 500' of 1" vent pipe. Left coke breeze approx 190'. Ran 2 extra anodes to try lower ground bed resistance. Lowered resistance .27 ohm

Rectifier Size: _____ V _____ A
Addn'l Depth _____
Depth Credit: _____
Extra Cable: 10'
Ditch & 1 Cable: 57'
25' Meter Pole: _____
20' Meter Pole: _____
10' Stub Pole: _____
Junction Box: _____

All Construction Completed

Willis Knight Jr
(Signature)

GROUND BED LAYOUT SKETCH



BURGE CORROSION SYSTEMS, INC.

P.O. BOX 1359 - PHONE 334-6141
AZTEC, NEW MEXICO 87410

COMPANY Meridian O.L DAILY DRILLING REPORT 8-28 1990

WELL NAME:	WELL NUMBER:	SECTION:	TOWNSHIP:	RANGE:
Hardie	A 2-R			

WATER AT: FEET: HOLE MADE: 500'

DESCRIPTION OF FORMATION

FROM	TO	FORMATION IS	COLOR
0	18'	8" PVC CASING -CEMENTED - clay / shale	
18'	35'	SANDSTONE - MOISTURE	
35'	90'	shale	
90'	100'	SAND - MOISTURE - WET	
100'	160'	BENTONITE / SAND MIX	
160'	170'	COAL	
170'	180'	SANDSTONE	
180'	210'	BENTONITE / SAND MIX	
210'	220'	Moisture / SAND	
220'	240'	SAND - BENTONITE MIX	
240'	500'	BENTONITE - SAND - SHALE MIX	

REMARKS: SET 20' 8" PVC CASING - CEMENTED DRILLED to 260' on 27
HAD TO GO TO injection NEXT AM. HAD MOISTURE at 35', 100' & 210-20'

Driller Brian E. Burge Tool Dresser

CONSTRUCTION LOGGING READINGS

Meridan Oil

CPS #: 871-W WELL NAME: Hardie A #2R LOCATION: K24-29-8 DATE: 8-28-90

TOTAL VOLTS: 72.4 TOTAL AMPS: 8.8 OHMS RESISTANCE: 1.40.

DEEP	LOG ANODE	ANODE NO.	DEEP	LOG ANODE	ANODE NO.	DEEP	LOG ANODE	ANODE No.	DEEP	LOG ANODE	ANODE No.
5			185	.40		365	.60		545		
10			190	.40		370	.50		550		
15			195	.40		375	.50		555		
20			200	.40		380	.40		560		
25			205	.40		385	.50		565		
30			210	.60		390	.60		570		
35			215	.90	12	395	.60		575		
40			220	.70		400	.70		580		
45			225	.60		405	.70		585		
50			230	.60		410	.70		590		
55			235	.50		415	1.0		595		
60			240	.80	11	420	.90	8	600		
65			245	.40		425	.80	7	605		
70			250	.30		430	.80	6	610		
75			255	.30		435	.80	5	615		
80			260	.30		440	1.0		620		
85			265	.30		445	1.1	4	625		
90			270	.30		450	1.0		630		
95			275	.30		455	1.1	3	635		
100	.50		280	.40		460	1.0	2	640		
105	.50		285	.40		465	.80		645		
110	.30		290	.40		470	.80	1	650		
115	.40		295	.60		475	.70		655		
120	.50		300	1.0	10	480	.80		660		
125	.70		305	1.3		485	.70		665		
130	.70		310	.90	9	490	—	TD	670		
135	.40		315	.60		495			675		
140	.40		320	.70		500			680		
145	.50		325	.80		505			685		
150	.60		330	.50		510			690		
155	.70		335	.40		515			695		
160	.60		340	.50		520			700		
165	.40		345	.60		525			705		
170	.40		350	.70		530			710		
175	.40		355	.70		535			715		
180	.40		360	.70		540			720		

ANODE READINGS

NO.	DEPTH	NO COKE	WITH COKE
1	470	.80	2.4
2	463	.90	2.6
3	456	1.2	2.6
4	445	1.2	2.2
5	435	.90	2.0
6	428	.80	2.1
7	421	.80	2.0
8	417	1.1	2.2
9	309	1.2	2.4
10	300	1.1	2.3
11	240	.70	1.7
12	215	1.0	2.0

REMARKS: Set 20' of 8" PVC casing. Driller said wet at 35', 95 and 210'. Drilled 240', set overnight. Next A.M. could not blow water, no water sample. Started injecting at 260'.

5014

30-045-21766

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit NW Sec. 24 Twp 29 Rng 8

Name of Well/Wells or Pipeline Serviced HARDIE A #2A

cps 1303w

Elevation 6706' Completion Date 10/28/78 Total Depth 380' Land Type* N/A

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

N/A

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

Fresh, Clear, Salty, Sulphur, Etc. 185' SAMPLE TAKEN

Depths gas encountered: N/A

Type & amount of coke breeze used: 34 SACKS

Depths anodes placed: 345', 335', 325', 315', 305', 295', 285', 275', 265', 245'

Depths vent pipes placed: 360'

Vent pipe perforations: 200'

Remarks: gb #1

RECEIVED
MAY 31 1991
OIL CON
DIS

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. 11-71)

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Drilling Log (Attach Hereto). ☐ Completion Date 10-28-78

Well Name	Location	CPS No.
Hardie A #2A	NW 24-29-8	1303 W

Type & Size Bit Used		Work Order No.
6 3/4	CONTRACT #2	57050.21

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
380 - 373		34 Bags		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	345	335	325	315	305	295	285	275	265	245
Anode Output (Amps)	2.7	3.3	4.4	4.9	4.0	3.8	3.4	3.6	3.7	3.4
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 11.4	Amps 16.6	Ohms .69		

Remarks: STATIC %s 600'W = .86

WET AT 88 FT WATER AT 185' APPROX 12 6P.M.
DRILLED 380' WITH AIR LOGGED 373' INSTALLED 360'
OF VENT PIPE PERFORATED 200' SLURRIED 34 BAGS
OF COKE

Hole depth = -127'
Cable + ditch = 235'
EXTRA cable = 145'

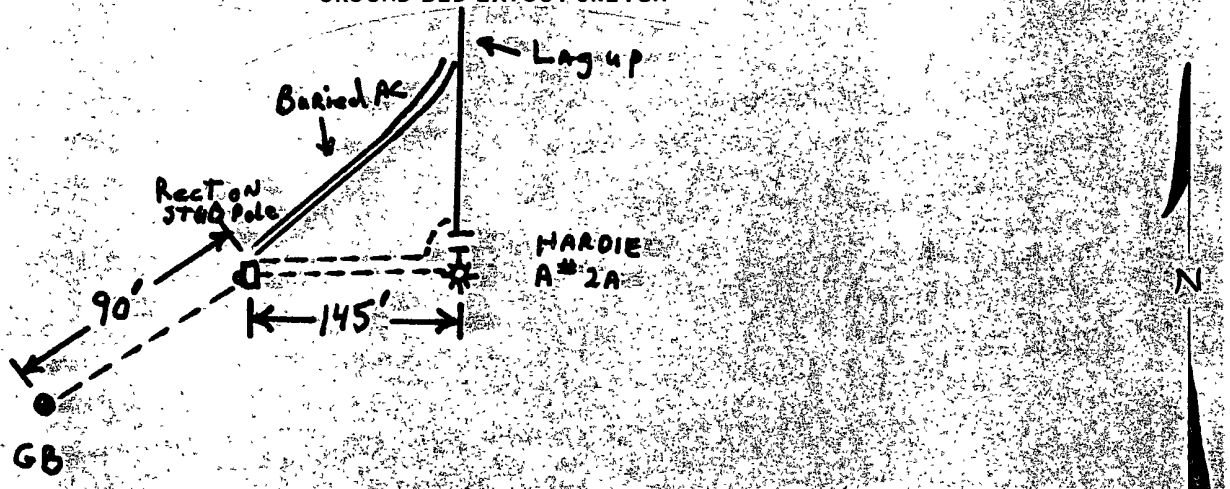
40U16A Rect STUB pole

2x2x48" Graphite Anod

All Construction Completed

Robert J. Belnick
(Signature)

GROUND BED LAYOUT SKETCH



DISTRIBUTION:
WHITE — Division Corrosion Office
YELLOW — Area Corrosion Office
PINK — Originator File

Form 7-1 (Rev 9-77)

El Paso Natural Gas Company
ENGINEERING CALCULATION

Sheet: 1 of 1
Date: 10-28-7
By: RB
File: 1303W

1303W NW 24-29-8
HARDIE A=2A 57050.21 ST 600'W=.86 U=OK

MW		gals/mol
16.04	C_1	6.4
30.07	C_2	10.12
44.10	C_3	10 42
58.12	iC_4	12.38
58.12	nC_4	11.93
72.15	iC_5	13.85
72.15	nC_5	13.71
86.18	iC_6	15.50
86.18	C_6	15.57
100.21	iC_7	17.2
100.21	C_7	17.46
114.23	C_8	19.39
28.05	$C_2^=$	9 64
42.08	$C_3^=$	9.67

MISC. MW		gals/mol
32.00	O_2	3.37
28.01	CO	4.19
44.01	CO_2	6.38
64.06	SO_2	5.50
34.08	H_2S	5 17
28.01	N_2	4.16
2.02	H_2	3.38

180			Wet AT 88 FT WATER
	1.6		At 185' WATER=12 BPM
190	2.3	390	Drilled 380' with AIR Logged
	2.6		373'
200	2.6	400	INSTALLED 360' OF VENT PIPE
	2.0		PERFORATED 200'
210	2.0		SLURRIED 34 BAGS OF COKE
	1.9		
220	2.1		
	1.9		
230	2.1		
	2.2		
240	2.4		Hole depth = -127
	2.3 - (10)		Ditch + cable = 235'
250	2.0		extra cable = 145'
	1.9		40 U16A Rect
260	2.2		Stub pole
	2.5 - (9)		2x2x48 graphite
270	2.2		
	2.2 - (8)		
280	2.2		
	2.5 - (7)		
290	2.4		① 345 - 1.9 - 2.7
	2.2 - (6)		② 335 - 2.2 - 3.3
300	2.5		③ 325 - 2.8 - 4.4
	2.6 - (5)		④ 315 - 3.0 - 4.9
310	2.8		⑤ 305 - 2.6 - 4.0
	3.1 - (4)		⑥ 295 - 2.3 - 3.8
320	3.0		⑦ 285 - 2.2 - 3.4
	2.6 - (3)		⑧ 275 - 2.4 - 3.6
330	2.2		⑨ 265 - 2.2 - 3.7
	2.0 - (2)		⑩ 245 - 2.4 - 3.4
340	1.9		
	2.0 - (1)		TOTAL 11.4 V 16.6 A = .69 ohms
350	1.7		
	1.9		
360	1.8		
	1.5		
370	1.4	TD 373	
		127	
380		DRILLED	

EL PASO NATURAL GAS COMPANY
SAN JUAN DIVISION
FARMINGTON, NEW MEXICO
PRODUCTION DEPARTMENT WATER ANALYSIS

Analysis No. 1-9417 Date 12-12-78

Operator _____ Well Name HARDIE A #2A 1303 W

Location NW24-29-8 County _____ State NM

Field _____ Formation _____

Sampled From ~~1303W~~

Date Sampled _____ By _____

Tbg. Press. _____ Csg. Press. _____ Surface Csg. Press _____

	ppm	epm		ppm	epm
Sodium	242	11	Chloride	16	.5
Calcium	176	9	Bicarbonate	239	4
Magnesium	22	2	Sulfate	825	17
Iron	PRESENT		Carbonate	0	0
H_2S	ABSENT		Hydroxide	0	0

cc: D.C.Adams
R.A.Ullrich
E.R.Paulek
J.W.McCarthy
A.M.Smith
W.B.Shropshire
File
57050.21

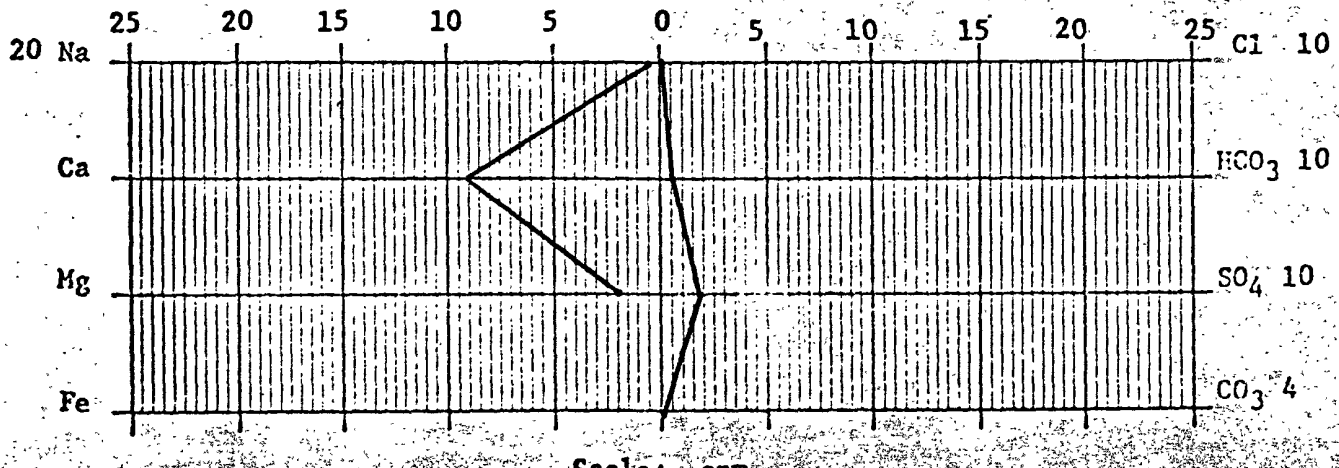
Total Solids Dissolved 1386

pH 7.6

Sp. Gr. 1.0025 at 60°F

Resistivity 560 ohm-cm at 75 °F

Barnett Ellsbury
Chemist



EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE 1303 W WELL NO. 1303W CONTRACTOR O'Brient Drilling RIG NO. REPORT NO. DATE Oct 28 1978

MORNING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.

BIT NO. NO. DC SIZE LENG.

SERIAL NO. NO. DC SIZE LENG.

SIZE STANDS

TYPE SINGLES

MAKE DOWN ON KELLY

TOTAL DEPTH

MUD RECORD			MUD, ADDITIVES USED AND RECEIVED
Time	Wt.	Vis.	

FROM	TO	TIME BREAKDOWN
0	88	Sandstone - Wet
88	104	Shale
104	185	Sandstone - (Water)
185	235	Shale
235	250	Sandy Shale
250	265	Shale

REMARKS –

DAYLIGHT

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.

BIT NO. NO. DC SIZE LENG.

SERIAL NO. NO. DC SIZE LENG.

SIZE STANDS

TYPE SINGLES

MAKE DOWN ON KELLY

TOTAL DEPTH

MUD RECORD			MUD, ADDITIVES USED AND RECEIVED
Time	Wt.	Vis.	

FROM	TO	TIME BREAKDOWN
265	270	Sandstone
270	285	Shale with SS streaks
285	345	Sandstone
345	370	Shale
370	380	Sandstone

REMARKS –

EVENING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.

BIT NO. NO. DC SIZE LENG.

SERIAL NO. NO. DC SIZE LENG.

SIZE STANDS

TYPE SINGLES

MAKE DOWN ON KELLY

TOTAL DEPTH

MUD RECORD			MUD, ADDITIVES USED AND RECEIVED
Time	Wt.	Vis.	

FROM	TO	TIME BREAKDOWN

REMARKS –

Drilled 6 3/4 hole to 380

Logged to 373

Est water - 10 GPM

SIGNED: Toolpusher Butch Benoit Company Supervisor

1538 30-045-27086

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL INC. Location: Unit F Sec. 24 Twp 29 Rng 8

Name of Well/Wells or Pipeline Serviced HARDIE A COM #210

cps 2118w

Elevation 6610' Completion Date 4/18/89 Total Depth 300' Land Type* N/A

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

N/A

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

Fresh, Clear, Salty, Sulphur, Etc. 90'

Depths gas encountered: N/A

Type & amount of coke breeze used: N/A

Depths anodes placed: 250', 240', 230',220',210', 200', 190', 130', 120', 105'

Depths vent pipes placed: 305'

Vent pipe perforations: 240'

Remarks: gb #1

RECEIVED
MAY 31 1991
OIL CON. DIV.
DIST. 3

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.

FM-07-0238 (Rev. 10-82)

WELL CASING CATHODIC PROTECTION CONSTRUCTION REPORT DAILY LOG

Drilling Log (Attach Hereto) ☒ Completion Date 4-18-89

CPS #	Well Name, Line or Plant:	Work Order #	Static:	Ins. Union Check
2118-W	HARDIE A com #210	3458A	600' SE -.944	☒ Good ☐ Bad

Location:	Anode Size:	Anode Type:	Size Bit:
F24-29-8	2"x60"	Duriron	6 3/4"

Depth Drilled	Depth Logged	Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
300'	300'				

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	250'	240'	230'	220'	210'	200'	190'	130'	120'	105
Anode Output (Amps)	3.1	4.2	4.3	4.7	3.9	3.7	3.6	3.3	4.3	4.8

	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Anode Depth										
Anode Output (Amps)										

Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 12.42	Amps 19.3	Ohms .644		

Remarks: DRILLED 300' LOGGED 300'. DRILLER SAID WATER AT 90'. INSTALLED 305' of 1" PVC VENT PIPE, PERFORATE BOTTOM 240'

* CAN PLOW AC FROM 1303-W EST. 1800'

Rectifier Size: 40 V 16 A
Addn'l Depth
Depth Credit: 200' 3.75
Extra Cable: 450' .20
Ditch & 1 Cable: 360' .70
25' Meter Pole:
20' Meter Pole:
10' Stub Pole: 1
Junction Box: 1

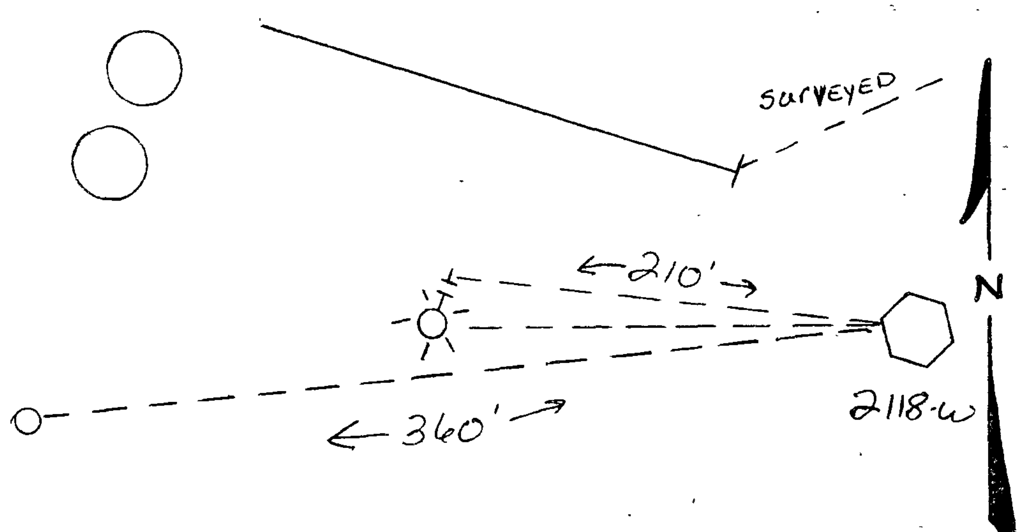
3870.00
599.00
- 750.00
90.00
252.00
144.50
237.00
4442.50
222.13
4664.63

All Construction Completed

[signature]

(Signature)

GROUND BED LAYOUT SKETCH



Darrell Crass DRILLING CO. 2118

Drill No. 3

DRILLER'S WELL LOG

S. P. No. Hardie A Com #210 Date 4-18-89

Client Meridian Oil Co. Prospect

County San Juan State New Mex.

If hole is a redrill or if moved from original staked position show distance and direction moved:

FROM	TO	FORMATION — COLOR — HARDNESS
0	80	Sandstone
80	100	~~Shale~~ SAND
100	150	Shale
150	160	Sandy Shale
160	170	Shale
170	180	Sandstone
180	250	Shale
250	265	Sandy Shale
265	300	Sandstone

Mud Bran Lime

Rock Bit Number Make

Remarks: Water @ 90'

Driller Connie Brown

4580

30-045-08202

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator TENNECO Location: Unit SW Sec. 13 Twp 29 Rng

Name of Well/Wells or Pipeline Serviced VANDERWART A #3

cps 75w

Elevation 6981 Completion Date 4/30/74 Total Depth 620' Land Type* N/A

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 use

N/A

Depths & thickness of water zones with description of water when possibl

Fresh, Clear, Salty, Sulphur, Etc. 380'

RECEIVED
MAY 31 1991
OIL CON. DIV.
DIST. 3

Depths gas encountered: N/A

Type & amount of coke breeze used: 10700 lbs.

Depths anodes placed: 530', 520', 510', 500', 490', 480', 470', 460', 450', 440'

Depths vent pipes placed: N/A

Vent pipe perforations: 300'

Remarks: gb #2 not a MERIDIAN well.

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

*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 7-236 (Rev. 1-69)

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

[illegible signature]

Drilling Log (Attach Hereto). ☐ Completion Date 4/30/74

Well Name	Location	CPS No.
Vanderwart A #3	SW 13-29N-8W	75 W
Type & Size Bit Used: 6 3/4"		Work Order No.: 184-52261.19-50-2

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
620'		10,700 EST		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	530	520	510	500	490	480	470	460	450	440
Anode Output (Amps)	3.6	3.6	3.1	3.2	3.2	3.0	2.7	3.5	3.4	3.8

	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Anode Depth										
Anode Output (Amps)										

Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.0	Amps 10.0	Ohms 1.10	100'	

Remarks: Driller said water @380' Hole caved, moved rig Back Drilled To 620' Loaded Hole Vent Hose Perforated 300'

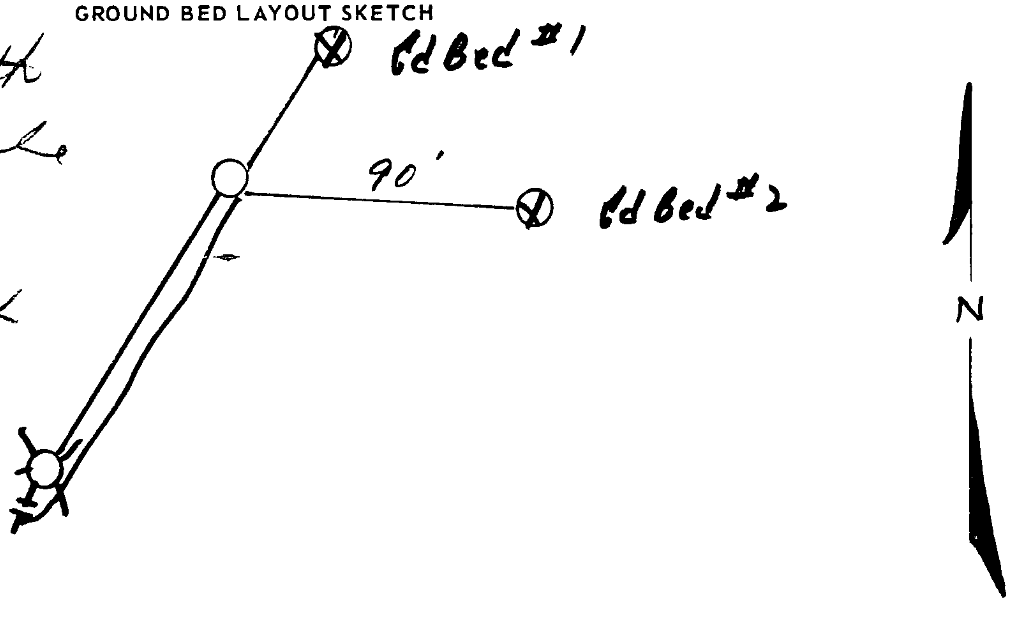
Drilled Hole 4/25/74 - Anode Caps soft Could not use. Hole Caved, Could not get rig back Until 4/30/74 - drilled to 620 to allow for casing.

All Construction Completed

[illegible signature]
(Signature)

GROUND BED LAYOUT SKETCH

3409.00
412.50 Depth
38.00 Cable
3859.50
154.38 Tax
4013.88



Original & 1 Copy All Reports

EL PASO NATURAL GAS COMPANY
ENGINEERING DEPARTMENT

Sheet

Date: _____

By: _____

75W

X = 5.0

380							Driller Said water @ 380'
							water standing in Hole
90							Next Morning blew
							water out of Hole
400	.2						Hole caved moved rig
	.3						back on Hole cleaned
10	.2	.7					Bottomed out @ 530
	.2	1.1					Drilled to 600' Driller was
20	.8	1.1					on standby Time by CPS
	.9	1.0		1	530	2.2	3.6
30	1.1	.9		(2)	520	1.9	3.6
	1.0	.9		3	510	1.7	3.1
40	.9	1.6		4	500	1.8	3.2
	.9	1.9		5	490	1.8	3.2
50	1.0	1.9		6	480	1.7	3.0
	1.7	1.9		7	470	1.5	3.7
60	1.8	2.0		8	460	1.9	3.5
	1.9	2.0		9	450	1.8	3.4
70	2.0	1.8		10	440	1.6	3.8
	2.0	1.6					
80	2.0	1.6				11.0V 10A	1.10Ω
	1.8	2.0					
90	1.6	2.0					
	1.6	1.8					
500	2.0	2.0					
	2.0	2.0					
10	1.8	2.0					
	1.8	2.0					
20	1.9	2.1					
	2.0	2.0					
30	1.8	2.0					
	2.0	2.3					
40	2.0	1.9					
548	2.1	Bottom					
50	2.3						
	2.0						

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	CO	9 64
42	$C_3^=$	9 67

MISC		
MW		gals/mol
44	CO_2	5 38
34	H_2S	5 17
28	N_2	4 16
2	H_2	3 38

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 G.D. 15 W Date 4-25-74

Owner C.P.S.

Location
City Farmington State N. Mex County

From	To	Formation	Color	Hardness
		Hole # 75 W		
0	4	Surface Sand		
4	90	Sandstone	Br	M. Soft
90	175	Shale	Blue	M. Hard
175	250	Sandstone	Grey	Hard
250	263	Sand	Br	Soft
263	315	Shale	Blue	M. Hard
315	380	Sandstone	Br	M. Hard
380	560	Shale	Blue + Red streaks	M. Hard
		Water zones at 250' + 380'		

Total Hours
Equipment Down Time
Hours Drilling
Driller Ted Hollums
Helper
Helper

C.P.S. Time
S.W.W.D.I. Time
Total Footage

Approval of
C.P.S. Engineer

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 G.D. 15W

Date 4-30-74

Owner C.P.S.

Location
City Farmington State N. Mex. County

From	To	Formation	Color	Hardness
		Hole # 15W		
560	620	Shale	Blue	Hard

Total Hours

Equipment Down Time

Hours Drilling

Driller

Helper

Helper

C.P.S. Time

S.W.W.D.I. Time

Total Footage

Approval of
C.P.S. Engineer

ENSOLUM

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.

97057-1125

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address:
Enterprise Field Services, LLC, 614 Reilly Ave, Farmington NM 87401

PayKey:RB21200
PM: Maron O'Brien
AFE: N66844

2. Originating Site:
SJ 297 #94A

3. Location of Material (Street Address, City, State or ULSTR):
UL F Section 19 T29N R7W; 36.712269, -107.616695

July/August 2023

4. Source and Description of Waste:
Source: Remediation activities associated with a natural gas pipeline leak.
Description: Hydrocarbon/Condensate impacted soil associated natural gas pipeline release.
Estimated Volume 10 (yd³ / bbls) Known Volume (to be entered by the operator at the end of the haul) 260/13 yd³ / bbls

5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

I, Thomas Long (Thomas Long) , 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)

☒ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. ***Operator Use Only: Waste Acceptance Frequency*** ☐ ***Monthly*** ☐ ***Weekly*** ☐ ***Per Load***

☐ 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)

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4)

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, Thomas Long (Thomas Long) 7-24-2023, representative for Enterprise Products Operating authorizes Envirotech, Inc. to complete
Generator Signature
the required testing/sign the Generator Waste Testing Certification.

I, Greg Crabtree, representative for Envirotech, Inc. 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: Riley Industrial/ Enterprise and Subcontractors

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: **Envirotech Inc. Soil Remediation Facility * Permit #: NM 01-0011**
Address of Facility: **Hilltop, 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: 7/24/23
SIGNATURE: _____ TELEPHONE NO.: 505-632-0615
Surface Waste Management Facility Authorized Agent

ENSOLUM

APPENDIX D

Photographic Documentation

SITE PHOTOGRAPHS

Closure Report
Enterprise Field Services, LLC
San Juan 27-9 #94A (07/26/23)
Ensolum Project No. 05A1226254

ENSOLUM

Photograph 1 Photograph Description: View of the in-process excavation activities.	
Photograph 2 Photograph Description: View of the in-process excavation activities.	
Photograph 3 Photograph Description: View of the excavation (first sampling event).	

SITE PHOTOGRAPHS

Closure Report
Enterprise Field Services, LLC
San Juan 27-9 #94A (07/26/23)
Ensolum Project No. 05A1226254

ENSOLUM

Photograph 4 Photograph Description: View of the excavation (second sampling event).	

ENSOLUM

APPENDIX E

Regulatory Correspondence

From:	Kyle Summers
To:	Ranee Deechilly; Landon Daniell; Chad D"Aponti
Subject:	FW: [EXTERNAL] SJ 27-9 #94A - UL F Section 19 T29N R7W; 36.712269, -107.616695; NMOCD Incident # nAPP2320734440
Date:	Thursday, July 27, 2023 10:35:13 AM
Attachments:	Outlook-rsokrncd.png image003.png image004.png image005.png

Kyle Summers
Principal
903-821-5603
Ensolum, LLC

From: Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>
Sent: Thursday, July 27, 2023 9:24 AM
To: Long, Thomas <tjlong@eprod.com>; 'aadeloye@blm.gov' <aadeloye@blm.gov>
Cc: Stone, Brian <bmstone@eprod.com>; Kyle Summers <ksummers@ensolum.com>
Subject: Re: [EXTERNAL] SJ 27-9 #94A - UL F Section 19 T29N R7W; 36.712269, -107.616695; NMOCD Incident # nAPP2320734440

[**EXTERNAL EMAIL**]

Tom,

Thank you for the notice. Your variance request specifically addressing 19.15.29.12D (1a) NMAC is approved.

If an OCD representative is not on-site on the date &/or time given, please sample per 19.15.29 NMAC or from an OCD pre-approved sampling plan. For whatever reason, if the sampling timeframe is altered, please notify the OCD as soon as possible so we may adjust our schedule(s). Failure to notify the OCD of this change may result in the closure sample(s) not being accepted.

Please keep a copy of this communication for inclusion within the appropriate report submittal.

Regards,

Nelson Velez ● Environmental Specialist - Adv

Environmental Bureau | EMNRD - Oil Conservation Division

1000 Rio Brazos Road | Aztec, NM 87410

(505) 469-6146 | nelson.velez@emnrd.nm.gov

http://www.emnrd.state.nm.us/OCD/

From: Long, Thomas <tjlong@eprod.com>
Sent: Thursday, July 27, 2023 9:07 AM
To: Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>; 'aadeloye@blm.gov' <aadeloye@blm.gov>
Cc: Stone, Brian <bmstone@eprod.com>; Kyle Summers <ksummers@ensolum.com>
Subject: [EXTERNAL] SJ 27-9 #94A - UL F Section 19 T29N R7W; 36.712269, -107.616695; NMOCD Incident # nAPP2320734440

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Nelson/Emanuel,

This email is a notification and a variance request. Enterprise is requesting a variance for required 48 hour notification per 19.15.29.12D (1a) NMAC. Enterprise would like to collect soil samples for laboratory analysis tomorrow July 28, 2023 at 10:00 a.m. at the SJ 27-9 #94A excavation. Please acknowledge acceptance of this variance request. 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

Enterprise Products

From: Kyle Summers
To: Ranee Deechilly
Subject: FW: [EXTERNAL] SJ 29-7 #94A - UL F Section 19 T29N R7W; 36.712269, -107.616695; NMOCD Incident # nAPP2320734440
Date: Tuesday, August 1, 2023 10:54:58 AM
Attachments: image002.png
image003.png
image004.png

Kyle Summers
Principal
903-821-5603
Ensolum, LLC

From: Kyle Summers
Sent: Tuesday, August 1, 2023 10:52 AM
To: 'Adeloye, Abiodun A' <aadeloye@blm.gov>; Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>
Cc: 'Stone, Brian' <bmstone@eprod.com>; 'Thomas Long' <tjlong@eprod.com>
Subject: RE: [EXTERNAL] SJ 29-7 #94A - UL F Section 19 T29N R7W; 36.712269, -107.616695; NMOCD Incident # nAPP2320734440

Just a quick note to correct the site name. I believe it is the SJ-29-7 #94A rather than the SJ 27-9 #94A. I have corrected it in the subject header. Plus, I apparently deleted Mr. Long from the cc list. He is now added back. Thanks gentlemen.

Kyle Summers
Principal
903-821-5603
Ensolum, LLC

From: Adeloye, Abiodun A <aadeloye@blm.gov>
Sent: Tuesday, August 1, 2023 10:46 AM
To: Kyle Summers <ksummers@ensolum.com>; Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>
Cc: 'Stone, Brian' <bmstone@eprod.com>
Subject: RE: [EXTERNAL] SJ 27-9 #94A - UL F Section 19 T29N R7W; 36.712269, -107.616695; NMOCD Incident # nAPP2320734440

[**EXTERNAL EMAIL**]

Hi, Kyle, BLM FFO approves the requested variance.
Please proceed with the sampling if the BLM representative is not present at the time of the sampling.
Thank you.

Abiodun Adeloye (Emmanuel)
Natural Resources Specialist (NRS)
6251 College Blvd., Suite A
Farmington, NM 87402
Office: 505-564-7665
Mobile: 505-635-0984

From: Kyle Summers <ksummers@ensolum.com>
Sent: Tuesday, August 1, 2023 10:18 AM
To: Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>; Adeloye, Abiodun A <aadeloye@blm.gov>
Cc: 'Stone, Brian' <bmstone@eprod.com>
Subject: [EXTERNAL] SJ 27-9 #94A - UL F Section 19 T29N R7W; 36.712269, -107.616695; NMOCD Incident # nAPP2320734440

Nelson/Emanuel,

On behalf of Thomas Long (Enterprise), this email is a notification and a variance request. Enterprise is requesting a variance for the required 48 hour notification per 19.15.29.12D (1a) NMAC. Enterprise would like to collect soil samples for laboratory analysis tomorrow August 2, 2023 at 10:00 a.m. at the SJ 27-9 #94A excavation. Please acknowledge acceptance of this variance request. If you have any questions, please call or email.

Kyle Summers
Principal
903-821-5603
Ensolum, LLC

ENSOLUM

APPENDIX F

Table 1 – Soil Analytical Summary

ENSOLUM

TABLE 1
San Juan 27-9 #94A (07/26/23)
SOIL ANALYTICAL SUMMARY

Sample I.D.	Date	Sample Type C- Composite G - Grab	Sample Depth (feet)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX[1] (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH MRO (mg/kg)	Total Combined TPH (GRO/DRO)[1] (mg/kg)	Total Combined TPH (GRO/DRO/MRO)[1] (mg/kg)	Chloride (mg/kg)
New Mexico Energy, Mineral & Natural Resources Department Oil Conservation Division Closure Criteria (Tier I and Tier II)				10	NE	NE	NE	50	NE	NE	NE	Tier II - 1,000	Tier I (<4 feet) - 100 Tier II - 2,500	Tier I (<4 feet) - 600 Tier II - 10,000
Composite Soil Samples Removed by Excavation and Transported to the Landfarm for Disposal/Remediation														
S-2	07.28.23	C	0 to 4	0.82	27	13	66	**110**	1,600	1,600	<480	**N/A**	**3,200**	<60
S-3	07.28.23	C	4 to 14	0.68	28	14	71	**110**	1,900	1,500	<500	**3,400**	**3,400**	<60
S-4	07.28.23	C	0 to 4	0.20	11	4.9	39	**55**	710	290	<50	**N/A**	**1,000**	<59
S-8	07.28.23	C	0 to 4	<0.090	0.48	0.82	6.7	8.0	130	95	<46	**N/A**	**230**	<60
Excavation Composite Soil Samples														
S-1	07.28.23	C	14	0.22	8.9	3.9	30	43	600	130	<46	730	730	<60
S-4a	08.02.23	C	0 to 4	<0.019	<0.038	<0.038	<0.076	ND	5.2	20	<47	N/A	25	<59
S-5	07.28.23	C	4 to 14	0.13	8.6	4.3	33	46	620	230	<46	850	850	<60
S-6	07.28.23	C	0 to 4	<0.018	<0.037	<0.037	<0.074	ND	<3.7	11	<48	N/A	11	<60
S-7	07.28.23	C	4 to 14	<0.021	<0.041	<0.041	<0.082	ND	<4.1	<9.5	<47	ND	ND	<59
S-8a	08.02.23	C	0 to 4	<0.019	<0.038	<0.038	<0.076	ND	5.5	35	<49	N/A	41	<60
S-9	07.28.23	C	4 to 14	<0.091	0.49	0.96	7.2	8.7	170	81	<49	250	250	<60
S-10	08.02.23	C	14	<0.11	1.7	1.4	13	16	180	110	<49	290	290	<60
S-11	08.02.23	C	0 to 4	<0.020	<0.040	<0.040	<0.081	ND	<4.0	21	<49	N/A	21	<60
S-12	08.02.23	C	4 to 14	<0.018	<0.037	<0.037	<0.073	ND	4.6	22	<47	27	27	<60
S-13	08.02.23	C	0 to 4	<0.021	<0.042	<0.042	<0.083	ND	4.3	24	<47	N/A	28	<60
S-14	08.02.23	C	4 to 14	<0.018	<0.036	<0.036	<0.072	ND	5.2	38	<50	43	43	<60
S-15	08.02.23	C	0 to 4	<0.021	<0.041	<0.041	<0.083	ND	7.4	37	<46	N/A	44	<60
S-16	08.02.23	C	4 to 14	<0.019	<0.038	<0.038	<0.075	ND	4.7	44	<50	49	49	<60

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

[1] = Total combined concentrations are rounded to two (2) significant figures to match the laboratory resolution of the individual constituents.

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

N/A = Not Applicable

NE = Not established

mg/kg = milligrams per kilogram

BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes

TPH = Total Petroleum Hydrocarbons

GRO = Gasoline Range Organics

DRO = Diesel Range Organics

MRO = Motor Oil/Lube Oil Range Organics

ENSOLUM

APPENDIX G

Laboratory Data Sheets & Chain of Custody Documentation

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

August 04, 2023

Kyle Summers

ENSOLUM
606 S. Rio Grande Suite A
Aztec, NM 87410
TEL: (903) 821-5603
FAX:

RE: SJ 27 9 94 A OrderNo.: 2307E44

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 9 sample(s) on 7/29/2023 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,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2307E44**
Date Reported: **8/4/2023**

CLIENT: ENSOLUM
Client Sample ID: S-1
Project: SJ 27 9 94 A
Collection Date: 7/28/2023 10:00:00 AM
Lab ID: 2307E44-001 **Matrix:** SOIL **Received Date:** 7/29/2023 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **SNS**	
Chloride	ND	60		mg/Kg	20	7/31/2023 11:15:17 AM	76564
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	130	9.2		mg/Kg	1	7/29/2023 12:31:01 PM	76555
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	7/29/2023 12:31:01 PM	76555
Surr: DNOP	99.0	69-147		%Rec	1	7/29/2023 12:31:01 PM	76555
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	600	20		mg/Kg	5	7/31/2023 10:58:00 AM	R98600
Surr: BFB	261	15-244	S	%Rec	5	7/31/2023 10:58:00 AM	R98600
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	0.22	0.099		mg/Kg	5	7/31/2023 10:58:00 AM	BS98600
Toluene	8.9	0.20		mg/Kg	5	7/31/2023 10:58:00 AM	BS98600
Ethylbenzene	3.9	0.20		mg/Kg	5	7/31/2023 10:58:00 AM	BS98600
Xylenes, Total	30	0.39		mg/Kg	5	7/31/2023 10:58:00 AM	BS98600
Surr: 4-Bromofluorobenzene	177	39.1-146	S	%Rec	5	7/31/2023 10:58:00 AM	BS98600

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2307E44**
Date Reported: **8/4/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: S-2
Project: SJ 27 9 94 A
Collection Date: 7/28/2023 10:05:00 AM
Lab ID: 2307E44-002 **Matrix:** SOIL **Received Date:** 7/29/2023 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **SNS**	
Chloride	ND	60		mg/Kg	20	7/31/2023 11:27:42 AM	76564
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	1600	96		mg/Kg	10	7/31/2023 11:27:29 AM	76555
Motor Oil Range Organics (MRO)	ND	480		mg/Kg	10	7/31/2023 11:27:29 AM	76555
Surr: DNOP	0	69-147	S	%Rec	10	7/31/2023 11:27:29 AM	76555
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	1600	21		mg/Kg	5	7/31/2023 11:20:00 AM	R98600
Surr: BFB	361	15-244	S	%Rec	5	7/31/2023 11:20:00 AM	R98600
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	0.82	0.10		mg/Kg	5	7/31/2023 11:20:00 AM	BS98600
Toluene	27	2.1		mg/Kg	50	7/31/2023 2:14:00 PM	BS98600
Ethylbenzene	13	0.21		mg/Kg	5	7/31/2023 11:20:00 AM	BS98600
Xylenes, Total	66	4.2		mg/Kg	50	7/31/2023 2:14:00 PM	BS98600
Surr: 4-Bromofluorobenzene	152	39.1-146	S	%Rec	5	7/31/2023 11:20:00 AM	BS98600

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2307E44**
Date Reported: **8/4/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: S-3
Project: SJ 27 9 94 A
Collection Date: 7/28/2023 10:10:00 AM
Lab ID: 2307E44-003 **Matrix:** SOIL **Received Date:** 7/29/2023 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **SNS**	
Chloride	ND	60		mg/Kg	20	7/31/2023 11:40:06 AM	76564
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	1500	100		mg/Kg	10	7/31/2023 11:38:02 AM	76555
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	7/31/2023 11:38:02 AM	76555
Surr: DNOP	0	69-147	S	%Rec	10	7/31/2023 11:38:02 AM	76555
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	1900	200		mg/Kg	50	7/31/2023 2:57:00 PM	R98600
Surr: BFB	204	15-244		%Rec	50	7/31/2023 2:57:00 PM	R98600
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	0.68	0.099		mg/Kg	5	7/31/2023 11:42:00 AM	BS98600
Toluene	28	2.0		mg/Kg	50	7/31/2023 2:57:00 PM	BS98600
Ethylbenzene	14	0.20		mg/Kg	5	7/31/2023 11:42:00 AM	BS98600
Xylenes, Total	71	4.0		mg/Kg	50	7/31/2023 2:57:00 PM	BS98600
Surr: 4-Bromofluorobenzene	161	39.1-146	S	%Rec	5	7/31/2023 11:42:00 AM	BS98600

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2307E44**
Date Reported: **8/4/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: S-4
Project: SJ 27 9 94 A
Collection Date: 7/28/2023 10:15:00 AM
Lab ID: 2307E44-004 **Matrix:** SOIL **Received Date:** 7/29/2023 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **SNS**	
Chloride	ND	59		mg/Kg	20	7/31/2023 11:52:31 AM	76564
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	290	9.9		mg/Kg	1	7/29/2023 1:03:13 PM	76555
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/29/2023 1:03:13 PM	76555
Surr: DNOP	98.8	69-147		%Rec	1	7/29/2023 1:03:13 PM	76555
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	710	20		mg/Kg	5	7/31/2023 12:03:00 PM	R98600
Surr: BFB	323	15-244	S	%Rec	5	7/31/2023 12:03:00 PM	R98600
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	0.20	0.098		mg/Kg	5	7/31/2023 12:03:00 PM	BS98600
Toluene	11	0.20		mg/Kg	5	7/31/2023 12:03:00 PM	BS98600
Ethylbenzene	4.9	0.20		mg/Kg	5	7/31/2023 12:03:00 PM	BS98600
Xylenes, Total	39	0.39		mg/Kg	5	7/31/2023 12:03:00 PM	BS98600
Surr: 4-Bromofluorobenzene	133	39.1-146		%Rec	5	7/31/2023 12:03:00 PM	BS98600

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2307E44**
Date Reported: **8/4/2023**

CLIENT: ENSOLUM
Client Sample ID: S-5
Project: SJ 27 9 94 A
Collection Date: 7/28/2023 10:20:00 AM
Lab ID: 2307E44-005 **Matrix:** SOIL **Received Date:** 7/29/2023 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **SNS**	
Chloride	ND	60		mg/Kg	20	7/31/2023 12:04:56 PM	76564
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	230	9.1		mg/Kg	1	7/29/2023 1:13:58 PM	76555
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	7/29/2023 1:13:58 PM	76555
Surr: DNOP	95.8	69-147		%Rec	1	7/29/2023 1:13:58 PM	76555
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	620	26		mg/Kg	5	7/31/2023 12:25:00 PM	R98600
Surr: BFB	284	15-244	S	%Rec	5	7/31/2023 12:25:00 PM	R98600
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	0.13	0.10		mg/Kg	5	7/31/2023 12:25:00 PM	BS98600
Toluene	8.6	0.26		mg/Kg	5	7/31/2023 12:25:00 PM	BS98600
Ethylbenzene	4.3	0.26		mg/Kg	5	7/31/2023 12:25:00 PM	BS98600
Xylenes, Total	33	0.52		mg/Kg	5	7/31/2023 12:25:00 PM	BS98600
Surr: 4-Bromofluorobenzene	180	39.1-146	S	%Rec	5	7/31/2023 12:25:00 PM	BS98600

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2307E44**
Date Reported: **8/4/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: S-6
Project: SJ 27 9 94 A
Collection Date: 7/28/2023 10:25:00 AM
Lab ID: 2307E44-006 **Matrix:** SOIL **Received Date:** 7/29/2023 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **SNS**	
Chloride	ND	60		mg/Kg	20	7/31/2023 12:17:20 PM	76564
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	11	9.6		mg/Kg	1	7/29/2023 1:24:43 PM	76555
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/29/2023 1:24:43 PM	76555
Surr: DNOP	125	69-147		%Rec	1	7/29/2023 1:24:43 PM	76555
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	7/31/2023 12:47:00 PM	R98600
Surr: BFB	89.5	15-244		%Rec	1	7/31/2023 12:47:00 PM	R98600
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	ND	0.018		mg/Kg	1	7/31/2023 12:47:00 PM	BS98600
Toluene	ND	0.037		mg/Kg	1	7/31/2023 12:47:00 PM	BS98600
Ethylbenzene	ND	0.037		mg/Kg	1	7/31/2023 12:47:00 PM	BS98600
Xylenes, Total	ND	0.074		mg/Kg	1	7/31/2023 12:47:00 PM	BS98600
Surr: 4-Bromofluorobenzene	77.8	39.1-146		%Rec	1	7/31/2023 12:47:00 PM	BS98600

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2307E44**
Date Reported: **8/4/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: S-7
Project: SJ 27 9 94 A
Collection Date: 7/28/2023 10:30:00 AM
Lab ID: 2307E44-007
Matrix: SOIL
Received Date: 7/29/2023 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **SNS**	
Chloride	ND	59		mg/Kg	20	7/31/2023 12:29:45 PM	76564
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	7/29/2023 1:35:29 PM	76555
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/29/2023 1:35:29 PM	76555
Surr: DNOP	98.2	69-147		%Rec	1	7/29/2023 1:35:29 PM	76555
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	7/31/2023 1:08:00 PM	R98600
Surr: BFB	82.6	15-244		%Rec	1	7/31/2023 1:08:00 PM	R98600
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	ND	0.021		mg/Kg	1	7/31/2023 1:08:00 PM	BS98600
Toluene	ND	0.041		mg/Kg	1	7/31/2023 1:08:00 PM	BS98600
Ethylbenzene	ND	0.041		mg/Kg	1	7/31/2023 1:08:00 PM	BS98600
Xylenes, Total	ND	0.082		mg/Kg	1	7/31/2023 1:08:00 PM	BS98600
Surr: 4-Bromofluorobenzene	77.2	39.1-146		%Rec	1	7/31/2023 1:08:00 PM	BS98600

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2307E44**
Date Reported: **8/4/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: S-8
Project: SJ 27 9 94 A
Collection Date: 7/28/2023 10:35:00 AM
Lab ID: 2307E44-008 **Matrix:** SOIL **Received Date:** 7/29/2023 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **SNS**	
Chloride	ND	60		mg/Kg	20	7/31/2023 12:42:09 PM	76564
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	95	9.1		mg/Kg	1	7/29/2023 1:57:04 PM	76555
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	7/29/2023 1:57:04 PM	76555
Surr: DNOP	124	69-147		%Rec	1	7/29/2023 1:57:04 PM	76555
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	130	18		mg/Kg	5	7/31/2023 1:30:00 PM	R98600
Surr: BFB	227	15-244		%Rec	5	7/31/2023 1:30:00 PM	R98600
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	ND	0.090		mg/Kg	5	7/31/2023 1:30:00 PM	BS98600
Toluene	0.48	0.18		mg/Kg	5	7/31/2023 1:30:00 PM	BS98600
Ethylbenzene	0.82	0.18		mg/Kg	5	7/31/2023 1:30:00 PM	BS98600
Xylenes, Total	6.7	0.36		mg/Kg	5	7/31/2023 1:30:00 PM	BS98600
Surr: 4-Bromofluorobenzene	108	39.1-146		%Rec	5	7/31/2023 1:30:00 PM	BS98600

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2307E44**
Date Reported: **8/4/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: S-9
Project: SJ 27 9 94 A
Collection Date: 7/28/2023 10:40:00 AM
Lab ID: 2307E44-009
Matrix: SOIL
Received Date: 7/29/2023 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **SNS**	
Chloride	ND	60		mg/Kg	20	7/31/2023 1:19:23 PM	76564
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	81	9.8		mg/Kg	1	7/29/2023 2:07:53 PM	76555
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/29/2023 2:07:53 PM	76555
Surr: DNOP	98.8	69-147		%Rec	1	7/29/2023 2:07:53 PM	76555
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	170	18		mg/Kg	5	7/31/2023 1:52:00 PM	R98600
Surr: BFB	252	15-244	S	%Rec	5	7/31/2023 1:52:00 PM	R98600
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	ND	0.091		mg/Kg	5	7/31/2023 1:52:00 PM	BS98600
Toluene	0.49	0.18		mg/Kg	5	7/31/2023 1:52:00 PM	BS98600
Ethylbenzene	0.96	0.18		mg/Kg	5	7/31/2023 1:52:00 PM	BS98600
Xylenes, Total	7.2	0.36		mg/Kg	5	7/31/2023 1:52:00 PM	BS98600
Surr: 4-Bromofluorobenzene	113	39.1-146		%Rec	5	7/31/2023 1:52:00 PM	BS98600

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2307E44**

04-Aug-23

Client: ENSOLUM

Project: SJ 27 9 94 A

Sample ID: **MB-76564**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **76564**	RunNo: **98608**
Prep Date: **7/31/2023**	Analysis Date: **7/31/2023**	SeqNo: **3592134** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-76564**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **76564**	RunNo: **98608**
Prep Date: **7/31/2023**	Analysis Date: **7/31/2023**	SeqNo: **3592135** 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			

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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2307E44**

04-Aug-23

Client: ENSOLUM

Project: SJ 27 9 94 A

Sample ID: **LCS-76555**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **76555**	RunNo: **98594**
Prep Date: **7/29/2023**	Analysis Date: **7/29/2023**	SeqNo: **3590225** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	107	61.9	130			
Surr: DNOP	5.1		5.000		103	69	147			

Sample ID: **MB-76555**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **76555**	RunNo: **98594**
Prep Date: **7/29/2023**	Analysis Date: **7/29/2023**	SeqNo: **3590227** 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	11		10.00		111	69	147			

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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2307E44**

04-Aug-23

Client: ENSOLUM

Project: SJ 27 9 94 A

Sample ID: **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R98600**	RunNo: **98600**
Prep Date:	Analysis Date: **7/31/2023**	SeqNo: **3590778** 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	85.1	70	130			
Surr: BFB	1900		1000		192	15	244			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **R98600**	RunNo: **98600**
Prep Date:	Analysis Date: **7/31/2023**	SeqNo: **3590779** 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	810		1000		81.5	15	244			

Sample ID: **2307E44-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **S-1**	Batch ID: **R98600**	RunNo: **98600**
Prep Date:	Analysis Date: **7/31/2023**	SeqNo: **3591531** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	700	20	98.74	601.2	102	70	130			
Surr: BFB	15000		3950		386	15	244			S

Sample ID: **2307E44-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **S-1**	Batch ID: **R98600**	RunNo: **98600**
Prep Date:	Analysis Date: **7/31/2023**	SeqNo: **3591532** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	660	20	98.74	601.2	59.8	70	130	6.17	20	S
Surr: BFB	15000		3950		380	15	244	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2307E44**

04-Aug-23

Client: ENSOLUM

Project: SJ 27 9 94 A

Sample ID: **100ng btex lcs**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **BS98600**	RunNo: **98600**
Prep Date:	Analysis Date: **7/31/2023**	SeqNo: **3590786** 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	94.3	70	130			
Toluene	0.96	0.050	1.000	0	95.7	70	130			
Ethylbenzene	0.97	0.050	1.000	0	96.6	70	130			
Xylenes, Total	2.9	0.10	3.000	0	96.9	70	130			
Surr: 4-Bromofluorobenzene	0.82		1.000		82.3	39.1	146			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **BS98600**	RunNo: **98600**
Prep Date:	Analysis Date: **7/31/2023**	SeqNo: **3590787** 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	0.81		1.000		80.7	39.1	146			

Sample ID: **2307E44-001ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **S-1**	Batch ID: **BS98600**	RunNo: **98640**
Prep Date:	Analysis Date: **8/2/2023**	SeqNo: **3592955** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	4.0	0.099	3.950	0.2174	95.1	70	130			
Toluene	13	0.20	3.950	8.851	93.3	70	130			
Ethylbenzene	7.5	0.20	3.950	3.924	91.5	70	130			
Xylenes, Total	41	0.39	11.85	30.09	90.7	70	130			
Surr: 4-Bromofluorobenzene	7.5		3.950		189	39.1	146			S

Sample ID: **2307E44-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **S-1**	Batch ID: **BS98600**	RunNo: **98640**
Prep Date:	Analysis Date: **8/2/2023**	SeqNo: **3592956** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	3.8	0.099	3.950	0.2174	90.1	70	130	5.05	20	
Toluene	12	0.20	3.950	8.851	77.8	70	130	5.02	20	
Ethylbenzene	7.2	0.20	3.950	3.924	82.8	70	130	4.62	20	
Xylenes, Total	39	0.39	11.85	30.09	75.0	70	130	4.65	20	
Surr: 4-Bromofluorobenzene	7.3		3.950		184	39.1	146	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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 | Work Order Number: 2307E44 | RcptNo: 1

Received By: Juan Rojas 7/29/2023 7:05:00 AM

Completed By: Juan Rojas 7/29/2023 8:11:41 AM

Reviewed By: TMC 7/29/23

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° 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: JR 7/29/23

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:

Client missing phone number and email address on COC, JR 7/29/23

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.8	Good	Yes	Morty		

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Client: Ensolum LLC

Mailing Address: 606 S Rio Grande Suit A 87410

Phone #:

email or Fax#:

QA/QC Package: ☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other ________

☐ EDD (Type) ________

Turn-Around Time: 10 day
☐ Standard ☒ Rush 7-31-23

Project Name: SJ 27-9 #94 A

Project #:

Project Manager: K Summers

Sampler: C D Afonzi

On Ice: ☒ Yes ☐ No

# of Coolers: 1 Marty

Cooler Temp (including CF): 1.9-0.1=1.8 (°C)

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2307E44	BTEX / ~~MTBE~~ / ~~TMB's~~ (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, ~~F~~, ~~Br~~, ~~NO3~~, ~~NO2~~, ~~PO4~~, ~~SO4~~	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)						
7/28	1000	S	S-1	1 4oz Jar	Cool	-001	✓	✓					✓									
7/28	1005	S	S-2		Cool	-002	✓	✓					✓									
7/28	1010	S	S-3		Cool	-003	✓	✓					✓									
7/28	1015	S	S-4		Cool	-004	✓	✓					✓									
7/28	1020	S	S-5		Cool	-005	✓	✓					✓									
7/28	1025	S	S-6		Cool	-006	✓	✓					✓									
7/28	1030	S	S-7		Cool	-007	✓	✓					✓									
7/28	1035	S	S-8		Cool	-008	✓	✓					✓									
7/28	1040	S	S-9		Cool	-009	✓	✓					✓									

Date	Time	Relinquished by	Received by	Via	Date	Time
7/28/23	1400	[signature]	[signature]		7/28/23	1400
7/28/23	1807	[signature]	[signature]	courier	7/29/23	7:05

Remarks: Tom Long

Seal intact to 7/28/23
Same Day

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

August 07, 2023

Kyle Summers

ENSOLUM
606 S. Rio Grande Suite A
Aztec, NM 87410
TEL: (903) 821-5603
FAX:

RE: SJ 29 7 94 A OrderNo.: 2308185

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 9 sample(s) on 8/3/2023 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,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2308185**
Date Reported: **8/7/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-4a
Project: SJ 29 7 94 A **Collection Date:** 8/2/2023 10:00:00 AM
Lab ID: 2308185-001 **Matrix:** MEOH (SOIL) **Received Date:** 8/3/2023 6:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	ND	59		mg/Kg	20	8/3/2023 9:15:51 AM	76643
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	20	9.3		mg/Kg	1	8/3/2023 9:05:42 AM	76642
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/3/2023 9:05:42 AM	76642
Surr: DNOP	97.8	69-147		%Rec	1	8/3/2023 9:05:42 AM	76642
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	5.2	3.8		mg/Kg	1	8/3/2023 11:18:00 AM	R98690
Surr: BFB	123	15-244		%Rec	1	8/3/2023 11:18:00 AM	R98690
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	ND	0.019		mg/Kg	1	8/3/2023 11:18:00 AM	R98690
Toluene	ND	0.038		mg/Kg	1	8/3/2023 11:18:00 AM	R98690
Ethylbenzene	ND	0.038		mg/Kg	1	8/3/2023 11:18:00 AM	R98690
Xylenes, Total	ND	0.076		mg/Kg	1	8/3/2023 11:18:00 AM	R98690
Surr: 4-Bromofluorobenzene	98.9	39.1-146		%Rec	1	8/3/2023 11:18:00 AM	R98690

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2308185**
Date Reported: **8/7/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-8a
Project: SJ 29 7 94 A **Collection Date:** 8/2/2023 10:05:00 AM
Lab ID: 2308185-002 **Matrix:** MEOH (SOIL) **Received Date:** 8/3/2023 6:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	ND	60		mg/Kg	20	8/3/2023 9:28:12 AM	76643
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	35	9.7		mg/Kg	1	8/3/2023 9:16:11 AM	76642
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/3/2023 9:16:11 AM	76642
Surr: DNOP	97.6	69-147		%Rec	1	8/3/2023 9:16:11 AM	76642
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	5.5	3.8		mg/Kg	1	8/3/2023 11:40:00 AM	R98690
Surr: BFB	126	15-244		%Rec	1	8/3/2023 11:40:00 AM	R98690
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	ND	0.019		mg/Kg	1	8/3/2023 11:40:00 AM	R98690
Toluene	ND	0.038		mg/Kg	1	8/3/2023 11:40:00 AM	R98690
Ethylbenzene	ND	0.038		mg/Kg	1	8/3/2023 11:40:00 AM	R98690
Xylenes, Total	ND	0.076		mg/Kg	1	8/3/2023 11:40:00 AM	R98690
Surr: 4-Bromofluorobenzene	99.5	39.1-146		%Rec	1	8/3/2023 11:40:00 AM	R98690

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2308185**
Date Reported: **8/7/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-10
Project: SJ 29 7 94 A **Collection Date:** 8/2/2023 10:10:00 AM
Lab ID: 2308185-003 **Matrix:** MEOH (SOIL) **Received Date:** 8/3/2023 6:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	ND	60		mg/Kg	20	8/3/2023 9:40:32 AM	76643
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	110	9.8		mg/Kg	1	8/3/2023 9:44:10 AM	76642
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/3/2023 9:44:10 AM	76642
Surr: DNOP	97.3	69-147		%Rec	1	8/3/2023 9:44:10 AM	76642
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	180	21		mg/Kg	5	8/3/2023 10:56:00 AM	R98690
Surr: BFB	252	15-244	S	%Rec	5	8/3/2023 10:56:00 AM	R98690
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	ND	0.11		mg/Kg	5	8/3/2023 10:56:00 AM	R98690
Toluene	1.7	0.21		mg/Kg	5	8/3/2023 10:56:00 AM	R98690
Ethylbenzene	1.4	0.21		mg/Kg	5	8/3/2023 10:56:00 AM	R98690
Xylenes, Total	13	0.43		mg/Kg	5	8/3/2023 10:56:00 AM	R98690
Surr: 4-Bromofluorobenzene	131	39.1-146		%Rec	5	8/3/2023 10:56:00 AM	R98690

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2308185**
Date Reported: **8/7/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-11
Project: SJ 29 7 94 A **Collection Date:** 8/2/2023 10:15:00 AM
Lab ID: 2308185-004 **Matrix:** MEOH (SOIL) **Received Date:** 8/3/2023 6:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	ND	60		mg/Kg	20	8/3/2023 9:52:51 AM	76643
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	21	9.9		mg/Kg	1	8/3/2023 9:54:39 AM	76642
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/3/2023 9:54:39 AM	76642
Surr: DNOP	97.4	69-147		%Rec	1	8/3/2023 9:54:39 AM	76642
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	ND	4.0		mg/Kg	1	8/3/2023 12:02:00 PM	R98690
Surr: BFB	109	15-244		%Rec	1	8/3/2023 12:02:00 PM	R98690
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	ND	0.020		mg/Kg	1	8/3/2023 12:02:00 PM	R98690
Toluene	ND	0.040		mg/Kg	1	8/3/2023 12:02:00 PM	R98690
Ethylbenzene	ND	0.040		mg/Kg	1	8/3/2023 12:02:00 PM	R98690
Xylenes, Total	ND	0.081		mg/Kg	1	8/3/2023 12:02:00 PM	R98690
Surr: 4-Bromofluorobenzene	96.2	39.1-146		%Rec	1	8/3/2023 12:02:00 PM	R98690

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2308185**
Date Reported: **8/7/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-12
Project: SJ 29 7 94 A **Collection Date:** 8/2/2023 10:20:00 AM
Lab ID: 2308185-005 **Matrix:** MEOH (SOIL) **Received Date:** 8/3/2023 6:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	ND	60		mg/Kg	20	8/3/2023 10:05:12 AM	76643
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	22	9.4		mg/Kg	1	8/3/2023 10:05:11 AM	76642
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/3/2023 10:05:11 AM	76642
Surr: DNOP	105	69-147		%Rec	1	8/3/2023 10:05:11 AM	76642
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	4.6	3.7		mg/Kg	1	8/3/2023 12:23:00 PM	R98690
Surr: BFB	125	15-244		%Rec	1	8/3/2023 12:23:00 PM	R98690
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	ND	0.018		mg/Kg	1	8/3/2023 12:23:00 PM	R98690
Toluene	ND	0.037		mg/Kg	1	8/3/2023 12:23:00 PM	R98690
Ethylbenzene	ND	0.037		mg/Kg	1	8/3/2023 12:23:00 PM	R98690
Xylenes, Total	ND	0.073		mg/Kg	1	8/3/2023 12:23:00 PM	R98690
Surr: 4-Bromofluorobenzene	97.8	39.1-146		%Rec	1	8/3/2023 12:23:00 PM	R98690

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2308185**
Date Reported: **8/7/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-13
Project: SJ 29 7 94 A **Collection Date:** 8/2/2023 10:25:00 AM
Lab ID: 2308185-006 **Matrix:** MEOH (SOIL) **Received Date:** 8/3/2023 6:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	ND	60		mg/Kg	20	8/3/2023 10:42:13 AM	76643
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	24	9.5		mg/Kg	1	8/3/2023 10:15:44 AM	76642
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/3/2023 10:15:44 AM	76642
Surr: DNOP	94.4	69-147		%Rec	1	8/3/2023 10:15:44 AM	76642
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	4.3	4.2		mg/Kg	1	8/3/2023 12:45:00 PM	R98690
Surr: BFB	117	15-244		%Rec	1	8/3/2023 12:45:00 PM	R98690
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	ND	0.021		mg/Kg	1	8/3/2023 12:45:00 PM	R98690
Toluene	ND	0.042		mg/Kg	1	8/3/2023 12:45:00 PM	R98690
Ethylbenzene	ND	0.042		mg/Kg	1	8/3/2023 12:45:00 PM	R98690
Xylenes, Total	ND	0.083		mg/Kg	1	8/3/2023 12:45:00 PM	R98690
Surr: 4-Bromofluorobenzene	96.4	39.1-146		%Rec	1	8/3/2023 12:45:00 PM	R98690

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2308185**
Date Reported: **8/7/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-14
Project: SJ 29 7 94 A **Collection Date:** 8/2/2023 10:30:00 AM
Lab ID: 2308185-007 **Matrix:** MEOH (SOIL) **Received Date:** 8/3/2023 6:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	ND	60		mg/Kg	20	8/3/2023 10:54:34 AM	76643
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	38	9.9		mg/Kg	1	8/3/2023 10:26:19 AM	76642
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/3/2023 10:26:19 AM	76642
Surr: DNOP	92.8	69-147		%Rec	1	8/3/2023 10:26:19 AM	76642
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	5.2	3.6		mg/Kg	1	8/3/2023 1:07:00 PM	R98690
Surr: BFB	128	15-244		%Rec	1	8/3/2023 1:07:00 PM	R98690
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	ND	0.018		mg/Kg	1	8/3/2023 1:07:00 PM	R98690
Toluene	ND	0.036		mg/Kg	1	8/3/2023 1:07:00 PM	R98690
Ethylbenzene	ND	0.036		mg/Kg	1	8/3/2023 1:07:00 PM	R98690
Xylenes, Total	ND	0.072		mg/Kg	1	8/3/2023 1:07:00 PM	R98690
Surr: 4-Bromofluorobenzene	98.3	39.1-146		%Rec	1	8/3/2023 1:07:00 PM	R98690

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2308185**
Date Reported: **8/7/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-15
Project: SJ 29 7 94 A **Collection Date:** 8/2/2023 10:35:00 AM
Lab ID: 2308185-008 **Matrix:** MEOH (SOIL) **Received Date:** 8/3/2023 6:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	ND	60		mg/Kg	20	8/3/2023 11:06:55 AM	76643
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	37	9.1		mg/Kg	1	8/3/2023 10:36:56 AM	76642
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/3/2023 10:36:56 AM	76642
Surr: DNOP	89.3	69-147		%Rec	1	8/3/2023 10:36:56 AM	76642
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	7.4	4.1		mg/Kg	1	8/3/2023 1:29:00 PM	R98690
Surr: BFB	126	15-244		%Rec	1	8/3/2023 1:29:00 PM	R98690
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	ND	0.021		mg/Kg	1	8/3/2023 1:29:00 PM	R98690
Toluene	ND	0.041		mg/Kg	1	8/3/2023 1:29:00 PM	R98690
Ethylbenzene	ND	0.041		mg/Kg	1	8/3/2023 1:29:00 PM	R98690
Xylenes, Total	ND	0.083		mg/Kg	1	8/3/2023 1:29:00 PM	R98690
Surr: 4-Bromofluorobenzene	102	39.1-146		%Rec	1	8/3/2023 1:29:00 PM	R98690

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2308185**
Date Reported: **8/7/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-16
Project: SJ 29 7 94 A **Collection Date:** 8/2/2023 10:40:00 AM
Lab ID: 2308185-009 **Matrix:** MEOH (SOIL) **Received Date:** 8/3/2023 6:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	ND	60		mg/Kg	20	8/3/2023 11:19:16 AM	76643
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	44	9.9		mg/Kg	1	8/3/2023 10:47:32 AM	76642
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/3/2023 10:47:32 AM	76642
Surr: DNOP	102	69-147		%Rec	1	8/3/2023 10:47:32 AM	76642
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	4.7	3.8		mg/Kg	1	8/3/2023 1:51:00 PM	R98690
Surr: BFB	121	15-244		%Rec	1	8/3/2023 1:51:00 PM	R98690
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	ND	0.019		mg/Kg	1	8/3/2023 1:51:00 PM	R98690
Toluene	ND	0.038		mg/Kg	1	8/3/2023 1:51:00 PM	R98690
Ethylbenzene	ND	0.038		mg/Kg	1	8/3/2023 1:51:00 PM	R98690
Xylenes, Total	ND	0.075		mg/Kg	1	8/3/2023 1:51:00 PM	R98690
Surr: 4-Bromofluorobenzene	96.9	39.1-146		%Rec	1	8/3/2023 1:51:00 PM	R98690

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2308185**

07-Aug-23

Client: ENSOLUM

Project: SJ 29 7 94 A

Sample ID: **MB-76643**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **76643**	RunNo: **98696**
Prep Date: **8/3/2023**	Analysis Date: **8/3/2023**	SeqNo: **3596185** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-76643**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **76643**	RunNo: **98696**
Prep Date: **8/3/2023**	Analysis Date: **8/3/2023**	SeqNo: **3596186** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.6	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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2308185**

07-Aug-23

Client: ENSOLUM

Project: SJ 29 7 94 A

Sample ID: **2308185-009AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **S-16**	Batch ID: **76642**	RunNo: **98705**							
Prep Date: **8/3/2023**	Analysis Date: **8/3/2023**	SeqNo: **3595302**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	66	9.4	46.82	44.20	46.4	54.2	135			S
Surr: DNOP	4.2		4.682		89.0	69	147			

Sample ID: **2308185-009AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **S-16**	Batch ID: **76642**	RunNo: **98705**							
Prep Date: **8/3/2023**	Analysis Date: **8/3/2023**	SeqNo: **3595303**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	74	9.4	47.04	44.20	63.7	54.2	135	11.7	29.2	
Surr: DNOP	4.7		4.704		99.1	69	147	0	0	

Sample ID: **LCS-76642**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **76642**	RunNo: **98705**							
Prep Date: **8/3/2023**	Analysis Date: **8/3/2023**	SeqNo: **3595309**	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	95.1	61.9	130			
Surr: DNOP	4.3		5.000		86.2	69	147			

Sample ID: **LCS-76646**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **76646**	RunNo: **98705**							
Prep Date: **8/3/2023**	Analysis Date: **8/3/2023**	SeqNo: **3595310**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.9		5.000		97.3	69	147			

Sample ID: **MB-76642**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **76642**	RunNo: **98705**							
Prep Date: **8/3/2023**	Analysis Date: **8/3/2023**	SeqNo: **3595311**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.5		10.00		85.4	69	147			

Sample ID: **MB-76646**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **76646**	RunNo: **98705**							
Prep Date: **8/3/2023**	Analysis Date: **8/3/2023**	SeqNo: **3596177**	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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2308185**

07-Aug-23

Client: ENSOLUM

Project: SJ 29 7 94 A

Sample ID: **MB-76646**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **76646**	RunNo: **98705**
Prep Date: **8/3/2023**	Analysis Date: **8/3/2023**	SeqNo: **3596177** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.7		10.00		97.1	69	147			

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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2308185**

07-Aug-23

Client: ENSOLUM

Project: SJ 29 7 94 A

Sample ID: **100ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R98690**	RunNo: **98690**
Prep Date:	Analysis Date: **8/3/2023**	SeqNo: **3594928** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	87.4	70	130			
Surr: BFB	2200		1000		215	15	244			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **R98690**	RunNo: **98690**
Prep Date:	Analysis Date: **8/3/2023**	SeqNo: **3594929** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		105	15	244			

Sample ID: **2308185-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **S-4a**	Batch ID: **R98690**	RunNo: **98690**
Prep Date:	Analysis Date: **8/3/2023**	SeqNo: **3595289** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	3.8	19.03	5.160	86.9	70	130			
Surr: BFB	1800		761.0		237	15	244			

Sample ID: **2308185-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **S-4a**	Batch ID: **R98690**	RunNo: **98690**
Prep Date:	Analysis Date: **8/3/2023**	SeqNo: **3595437** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	3.8	19.03	5.160	81.8	70	130	4.59	20	
Surr: BFB	1700		761.0		229	15	244	0	0	

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R98690**	RunNo: **98690**
Prep Date:	Analysis Date: **8/3/2023**	SeqNo: **3596291** 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	83.6	70	130			
Surr: BFB	2100		1000		207	15	244			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **R98690**	RunNo: **98690**
Prep Date:	Analysis Date: **8/3/2023**	SeqNo: **3596292** Units: **mg/Kg**

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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2308185**

07-Aug-23

Client: ENSOLUM

Project: SJ 29 7 94 A

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **R98690**	RunNo: **98690**
Prep Date:	Analysis Date: **8/3/2023**	SeqNo: **3596292** 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	950		1000		95.0	15	244			

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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2308185**

07-Aug-23

Client: ENSOLUM

Project: SJ 29 7 94 A

Sample ID: **100ng btex lcs**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **R98690**	RunNo: **98690**
Prep Date:	Analysis Date: **8/3/2023**	SeqNo: **3594931** 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	94.8	70	130			
Toluene	0.96	0.050	1.000	0	96.2	70	130			
Ethylbenzene	0.97	0.050	1.000	0	96.7	70	130			
Xylenes, Total	2.9	0.10	3.000	0	96.5	70	130			
Surr: 4-Bromofluorobenzene	0.97		1.000		96.7	39.1	146			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **R98690**	RunNo: **98690**
Prep Date:	Analysis Date: **8/3/2023**	SeqNo: **3594932** 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	0.95		1.000		95.2	39.1	146			

Sample ID: **2308185-002ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **S-8a**	Batch ID: **R98690**	RunNo: **98690**
Prep Date:	Analysis Date: **8/3/2023**	SeqNo: **3595438** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.70	0.019	0.7570	0	93.0	70	130			
Toluene	0.72	0.038	0.7570	0.01350	93.5	70	130			
Ethylbenzene	0.72	0.038	0.7570	0	95.2	70	130			
Xylenes, Total	2.1	0.076	2.271	0.01885	93.7	70	130			
Surr: 4-Bromofluorobenzene	0.77		0.7570		102	39.1	146			

Sample ID: **2308185-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **S-8a**	Batch ID: **R98690**	RunNo: **98690**
Prep Date:	Analysis Date: **8/3/2023**	SeqNo: **3596202** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.65	0.019	0.7570	0	85.6	70	130	8.30	20	
Toluene	0.67	0.038	0.7570	0.01350	86.2	70	130	7.95	20	
Ethylbenzene	0.66	0.038	0.7570	0	87.1	70	130	8.89	20	
Xylenes, Total	2.0	0.076	2.271	0.01885	86.7	70	130	7.75	20	
Surr: 4-Bromofluorobenzene	0.75		0.7570		99.3	39.1	146	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2308185**

07-Aug-23

Client: ENSOLUM

Project: SJ 29 7 94 A

Sample ID: **100ng btex lcs**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **R98690**	RunNo: **98690**
Prep Date:	Analysis Date: **8/3/2023**	SeqNo: **3596324** 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	94.3	70	130			
Toluene	0.96	0.050	1.000	0	96.3	70	130			
Ethylbenzene	0.97	0.050	1.000	0	97.2	70	130			
Xylenes, Total	2.9	0.10	3.000	0	97.2	70	130			
Surr: 4-Bromofluorobenzene	0.95		1.000		95.4	39.1	146			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **R98690**	RunNo: **98690**
Prep Date:	Analysis Date: **8/3/2023**	SeqNo: **3596325** 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	0.95		1.000		95.2	39.1	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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 | Work Order Number: 2308185 | RcptNo: 1

Received By: Tracy Casarrubias 8/3/2023 6:20:00 AM

Completed By: Tracy Casarrubias 8/3/2023 6:50:25 AM

Reviewed By: SCM 08/03/23

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° 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 ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
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 ☐	Checked by: TMC 8/3/23

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: Phone number is missing on COC - TMC 8/3/23

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.0	Good	Yes	Yogi		

Chain-of-Custody Record

Client: Ensolum LLC

Mailing Address: 606 S Rio Grande Suit A & 74110

Phone #:

email or Fax#: cdapanti@ensolum.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 100 & 20
☐ Standard ☑ Rush 8-3-24

Project Name: SJ 29-7 FR 94A

Project #:

Project Manager: K Summers

Sampler: C DiAponti

On Ice: ☒ Yes ☐ No 4.0gi

# of Coolers: 1

Cooler Temp(including CF): 4.8 +0.2=5.0 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2308185	BTEX / ~~MTBE~~ / ~~TMB~~'s (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	~~Cl~~, ~~F~~, ~~Br~~, NO_3, NO_2, ~~PO_4~~, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
8/2	1000	S	S-4a	1 4oz Jar	Cool	001	✓	✓					✓			
8/2	1005	S	S-8a		Cool	002	✓	✓					✓			
8/2	1010	S	S-10		Cool	003	✓	✓					✓			
8/2	1015	S	S-11		Cool	004	✓	✓					✓			
8/2	1020	S	S-12		Cool	005	✓	✓					✓			
8/2	1025	S	S-13		Cool	006	✓	✓					✓			
8/2	1030	S	S-14		Cool	007	✓	✓					✓			
8/2	1035	S	S-15		Cool	008	✓	✓					✓			
8/2	1040	S	S-16		Cool	009	✓	✓					✓			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
8/2/23	1219				8/2/23	1219
8/2/23	1752			courier	8/3/23	6:20

Remarks: Tom Long

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 282875

CONDITIONS

Operator: Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	OGRID: 241602
	Action Number: 282875
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	None	1/3/2024