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)* **nAPP2319233055**
Contact mailing address: **614 Reilly Ave, Farmington, NM 87401**	

Location of Release Source

Latitude **36.65679** Longitude **-107.36470** *(NAD 83 in decimal degrees to 5 decimal places)*

Site Name **San Juan 28-5 #14**	Site Type **Natural Gas Gathering Pipeline**
Date Release Discovered: **07/10/2023**	Serial Number *(if applicable)*: **N/A**

Unit Letter	Section	Township	Range	County
N	**16**	**28N**	**5W**	**San Juan**

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

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): **2.45 MCF**	Volume Recovered (Mcf): **None**
☐ Other (describe)	Volume/Weight Released (provide units):	Volume/Weight Recovered (provide units)

Cause of On April 20, 2023, Enterprise had a release of natural gas and natural gas liquids from the San Juan 28-5 #14 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 10, 2023, at which time Enterprise determined the release reportable per NMOCD regulation, due to the volume of impacted subsurface soil. Repairs and remediation were completed on August 9, 2023. The final excavation dimensions measured approximately 20 feet long by 20 feet wide by 7.5 feet deep. A total of 292 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: 09-20-2023

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: 01/19/2024

Printed Name: Nelson Velez Title: Environmental Specialist – Adv

ENSOLUM

CLOSURE REPORT

Property:

San Juan 28-5 #14 (07/10/23)
Unit Letter N, S16 T28N R5W
Rio Arriba County, New Mexico

New Mexico EMNRD OCD Incident ID No. NAPP231923355 & NAPP2320628649

September 18, 2023

Ensolum Project No. 05A1226239

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 28-5 #14 (07/10/23) (Site)
NM EMNRD OCD Incident ID No.	NAPP2319233055 & NAPP2320628649
Location:	36.65679° North, 107.36471° West Unit Letter N, Section 16, Township 28 North, Range 5 West Rio Arriba County, New Mexico
Property:	Private
Regulatory:	New Mexico (NM) Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division (OCD)

On April 20, 2023, a release of natural gas from the San Juan 28-5 #14 pipeline was identified by a third party. Enterprise verified the release and subsequently isolated and locked the pipeline out of service. On July 10, 2023, Enterprise initiated activities to repair the pipeline and remediate petroleum hydrocarbon impact. In addition, Enterprise determined the release was "reportable" due to the estimated volume of impacted soil. The NM EMNRD OCD was subsequently notified. On July 24, 2023, during the excavation of petroleum hydrocarbon-affected sandstone, a small flash fire occurred in the excavation. The fire was immediately extinguished by Site personnel with no injuries or property damage. Enterprise subsequently reported the fire incident to the NM EMNRD OCD.

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 Public Land Survey System (PLSS) section as the Site or in the adjacent sections (**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 0.25 miles from the Site. Documentation for the cathodic protection well located near the San Juan 28-5 Unit #6 and #83 well locations indicates a depth to water between 85 feet and 94 feet below grade surface (bgs). This cathodic protection well is located approximately 0.20 miles northwest of the Site and is approximately 63 feet higher in elevation than the Site. Documentation for the cathodic protection well located near the San Juan 28-5 Unit #84E well location indicates a depth to water of approximately 70 feet bgs. This cathodic protection well is located approximately 0.24 miles east of the Site and is approximately 3 feet lower in elevation than the Site.

- The Site is 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, but the high water mark for a stock pond is located approximately 500 feet from 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 within a 100-year floodplain (**Figure H**, **Appendix B**).

Based on available information Enterprise estimates the depth to water at the Site to be less than 50 feet bgs, resulting in a Tier I ranking. Applicable closure criteria for Tier I soils remaining in place at the Site include:

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 10, 2023, Enterprise initiated activities to repair the pipeline and remediate petroleum hydrocarbon impact resulting from the release. During the remediation and corrective action activities, OFT Construction Inc, provided heavy equipment and labor support, while Ensolum provided environmental consulting support. Because two additional pipelines were present in the vicinity of the release, a significant amount of the impacted soil was removed by hydro-excavation.

The final excavation measured approximately 20 feet long and 20 feet wide at the maximum extents. The maximum depth of the excavation measured approximately 7.5 feet bgs. The lithology encountered during the completion of remediation activities consisted primarily of silty sand and silty clay underlain by sandstone.

Approximately 292 cubic yards (yd^3) of petroleum hydrocarbon-affected soil and 545 barrels (bbls) of hydro-excavation soil cuttings and water were transported to the Envirotech, Inc., (Envirotech) landfarm near Hilltop, NM for disposal/remediation. The executed C-138 solid waste acceptance forms are provided in **Appendix C**. The excavation was backfilled with imported fill and then contoured to the surrounding topography.

Figure 3 is a map that identifies approximate soil sample locations and depicts the approximate dimensions of the excavation with respect to the pipelines (**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 seven composite soil samples (S-1 through S-5, S-1a, and S-5a) from the excavation for laboratory analysis. The composite samples were comprised of five aliquots each. 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 17, 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 (7') was collected from the floor of the excavation. Composite soil samples S-2 (0' to 7'), S-3 (0' to 7'), S-4 (0' to 7'), and S-5 (0' to 7') were collected from the walls of the excavation.

Subsequent soil analytical results identified total BTEX and TPH concentrations that exceeded the NM EMNRD OCD closure criteria for composite soil samples S-1 and S-5.

Second Sampling Event
In response to the exceedances of composite samples S-1 and S-5 during the first sampling event, the impacted soils were removed by excavation and transported to the landfarm for disposal/remediation. 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-1a (7.5') was collected from the floor of the excavation.

Third Sampling Event
On August 9, 2023, a third 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-5a (0' to 7.5') was collected from a wall 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-1a, S-2 through S-4, and S-5a) to the applicable NM EMNRD OCD closure criteria. The soils associated with composite soil samples S-1 and S-5 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 all 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 all composite soil samples 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 all composite soil samples associated with soil remaining at the Site 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.

- The laboratory analytical result for composite soil sample S-4 indicates a chloride concentration of 94 mg/kg, which is less than the New Mexico EMNRD OCD closure criteria of 600 mg/kg. The laboratory analytical results for all other 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.

7.0 RECLAMATION AND REVEGETATION

The excavation was backfilled with imported fill and then contoured to the surrounding topography.

8.0 FINDINGS AND RECOMMENDATION

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

- Approximately 292 yd^3 of petroleum hydrocarbon-affected soil and 545 bbls of hydro-excavation soil cuttings and water were transported to the Envirotech landfarm for disposal/remediation. The excavation was backfilled with imported fill and then contoured to the surrounding topography.

- The flash fire that occurred during the sandstone excavation was extiguised by Site personnel without further incident.

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.

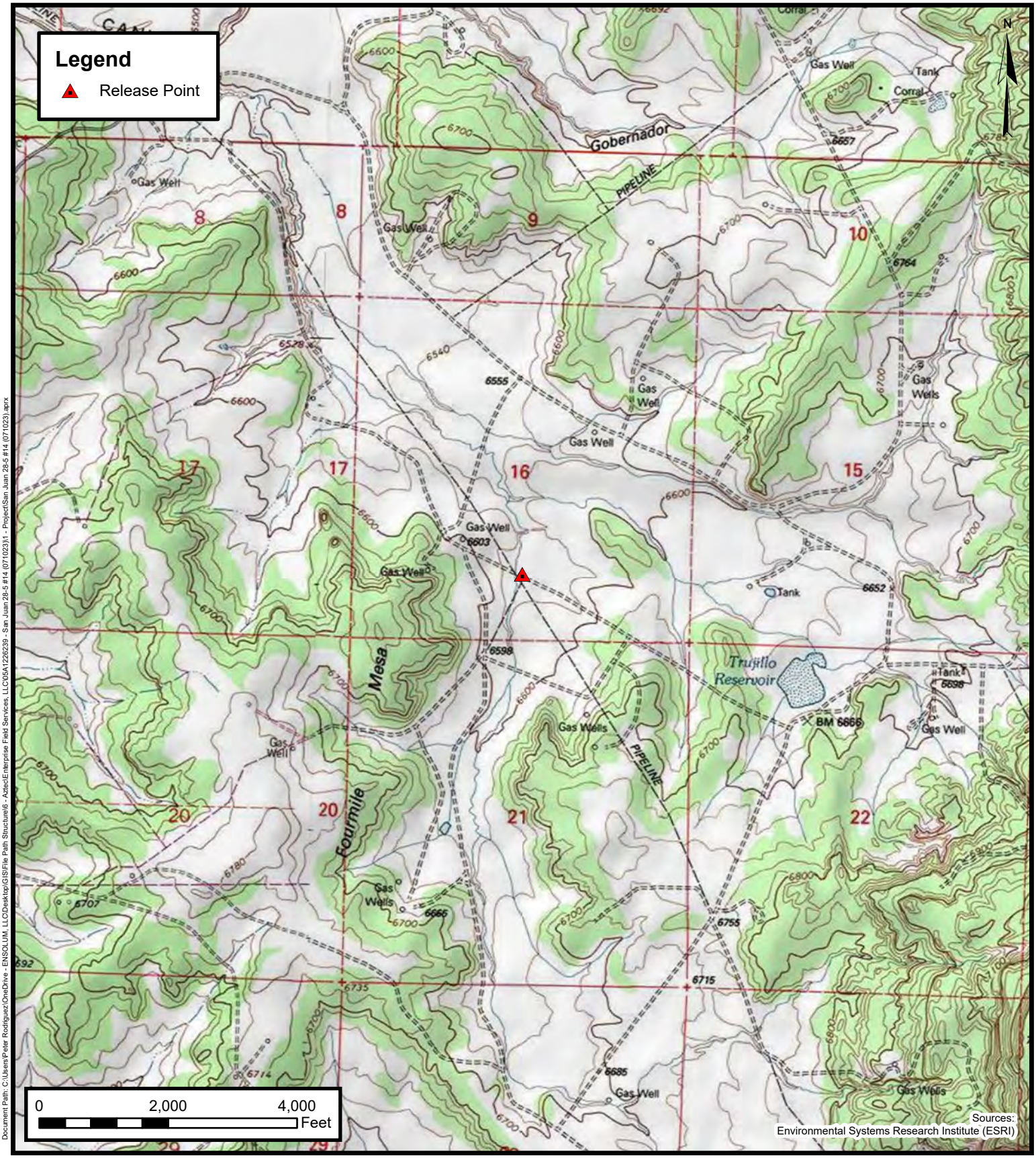
9.3 Reliance

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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ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Topographic Map

Enterprise Field Services, LLC
San Juan 28-5 #14 (07/10/23)
Project Number: 05A1226239
Unit Letter N, S16 T28N R5W, Rio Arriba County, New Mexico
36.65679, -107.36471

FIGURE
1

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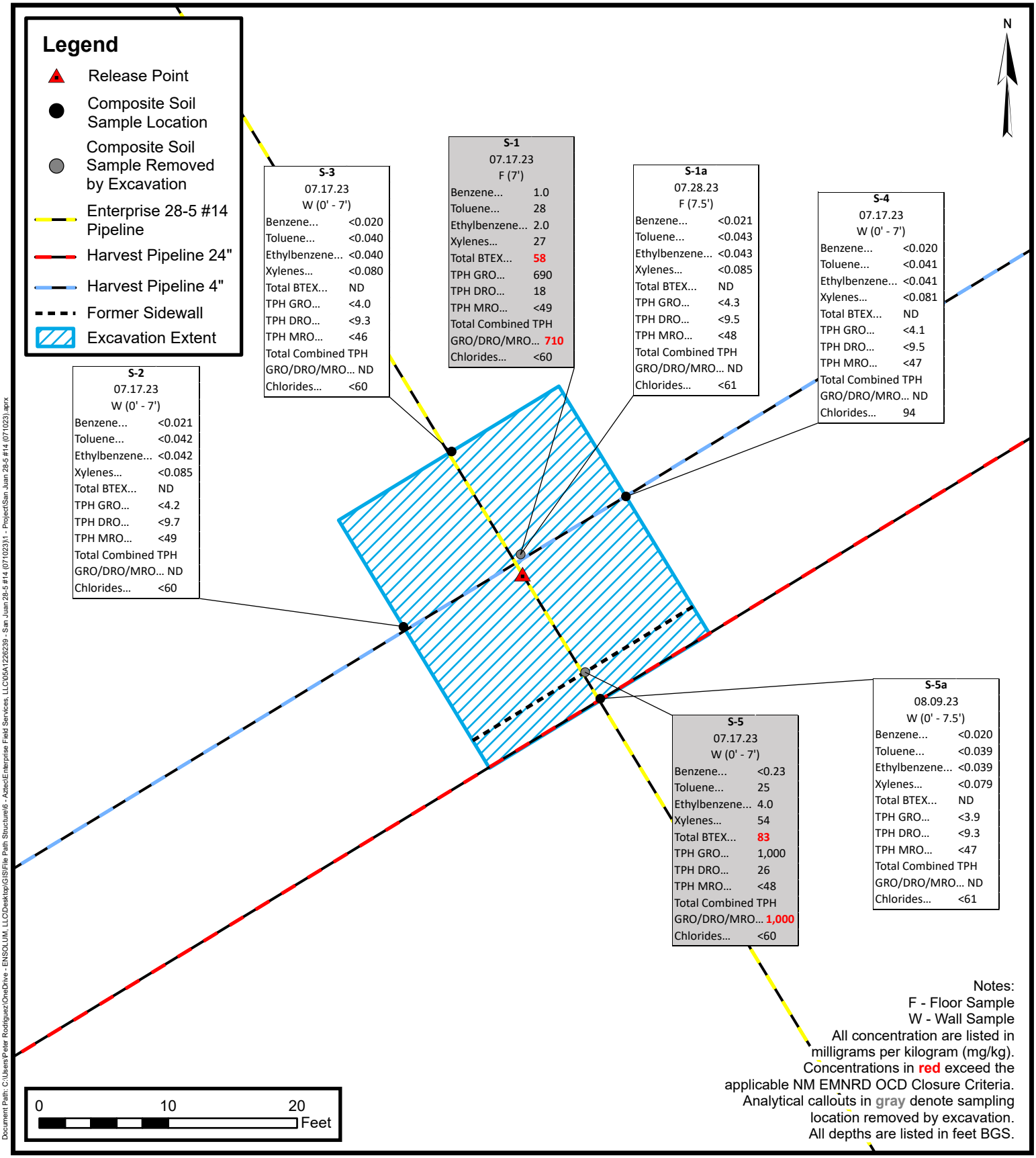
Environmental, Engineering and Hydrogeologic Consultants

Site Vicinity Map

Enterprise Field Services, LLC
San Juan 28-5 #14 (07/10/23)
Project Number: 05A1226239
Unit Letter N, S16 T28N R5W, Rio Arriba County, New Mexico
36.65679, -107.36471

FIGURE
2



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Environmental, Engineering and Hydrogeologic Consultants

Site Map with Soil Analytical Results

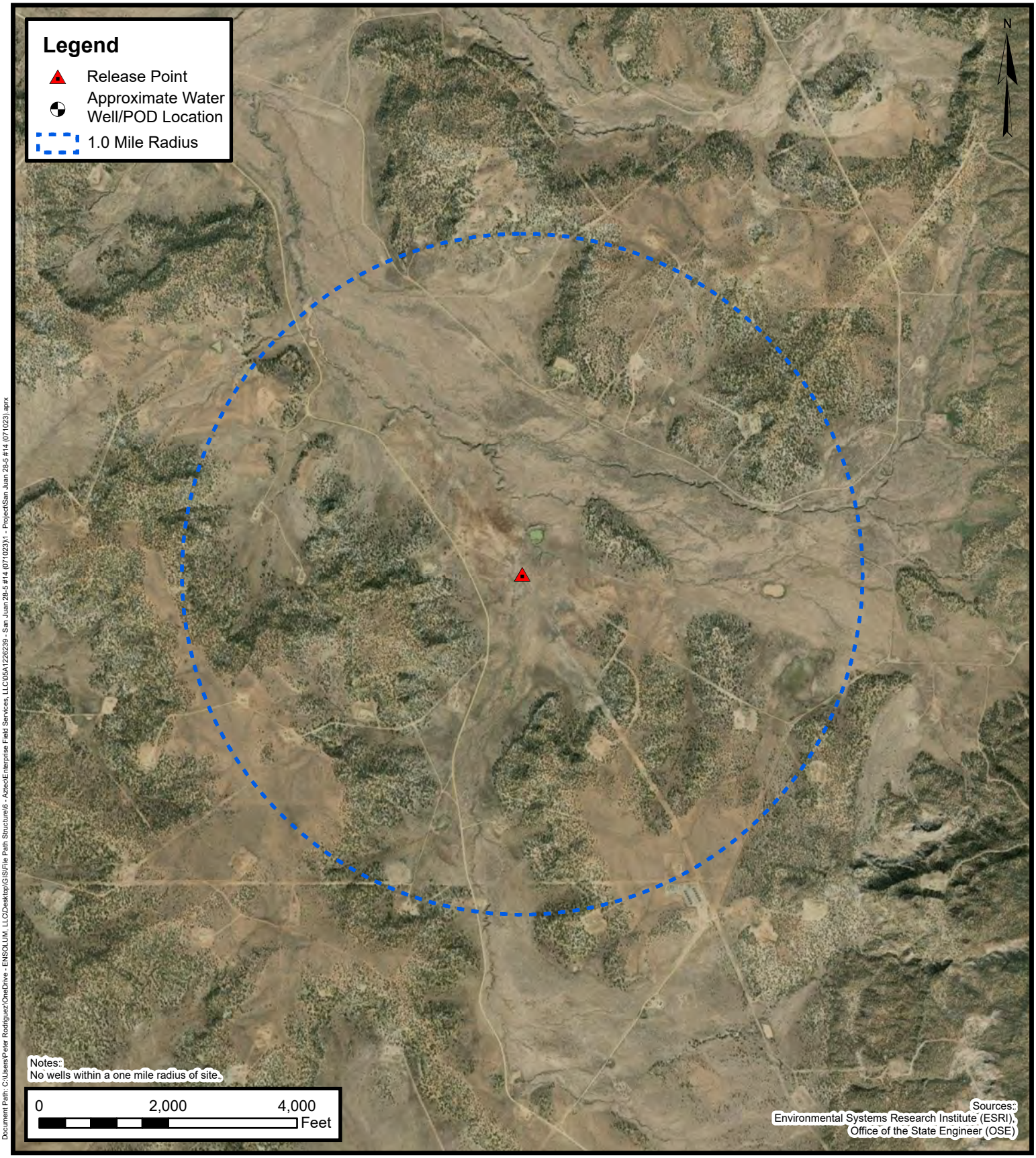
Enterprise Field Services, LLC
San Juan 28-5 #14 (07/10/23)
Project Number: 05A1226239
Unit Letter N, S16 T28N R5W, Rio Arriba County, New Mexico
36.65679, -107.36471

FIGURE
3

ENSOLUM

APPENDIX B

Siting Figures and Documentation



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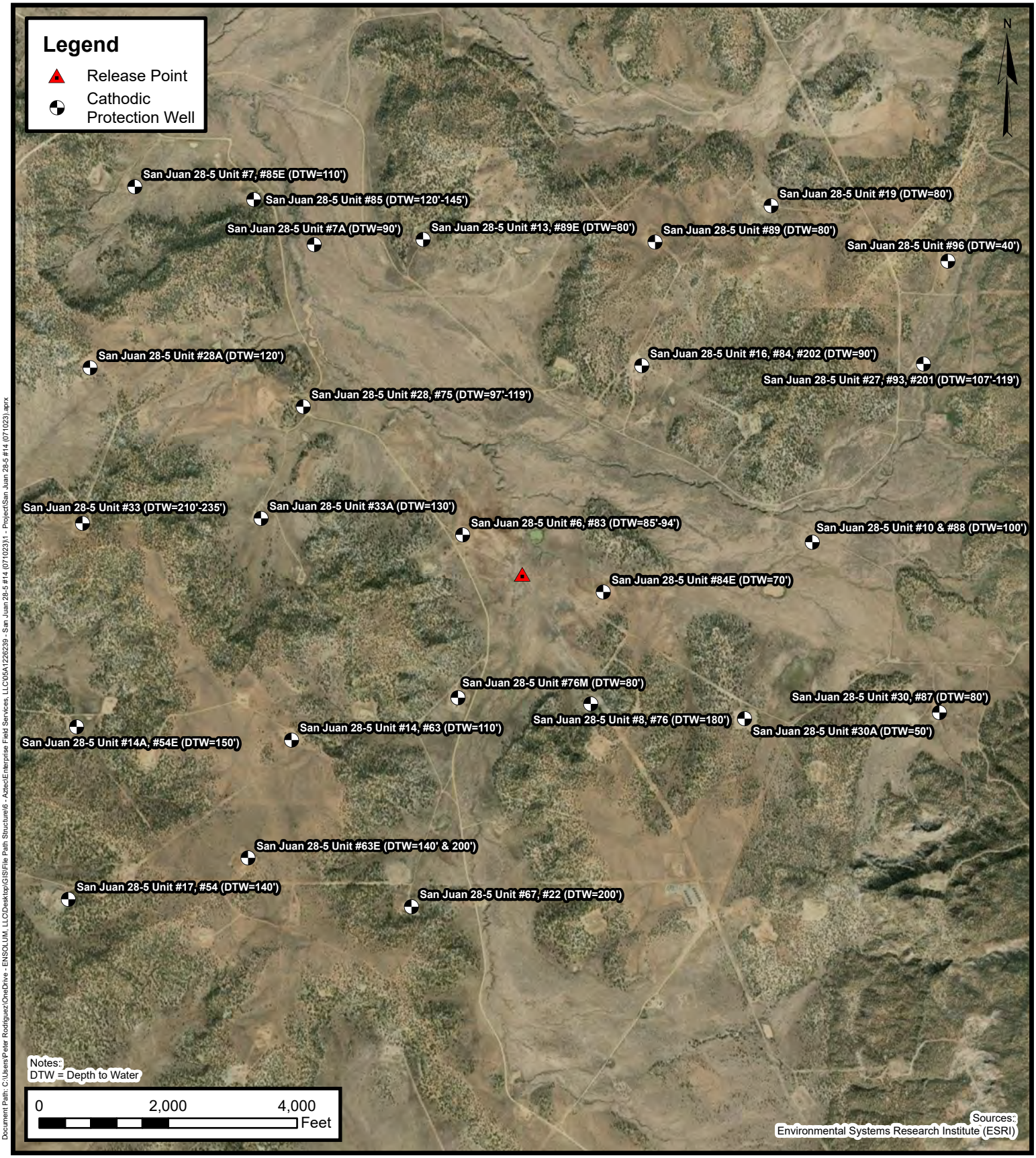
1.0 Mile Radius Water Well/POD Location Map

Enterprise Field Services, LLC
San Juan 28-5 #14 (07/10/23)
Project Number: 05A1226239
Unit Letter N, S16 T28N R5W, Rio Arriba County, New Mexico
36.65679, -107.36471

FIGURE
A



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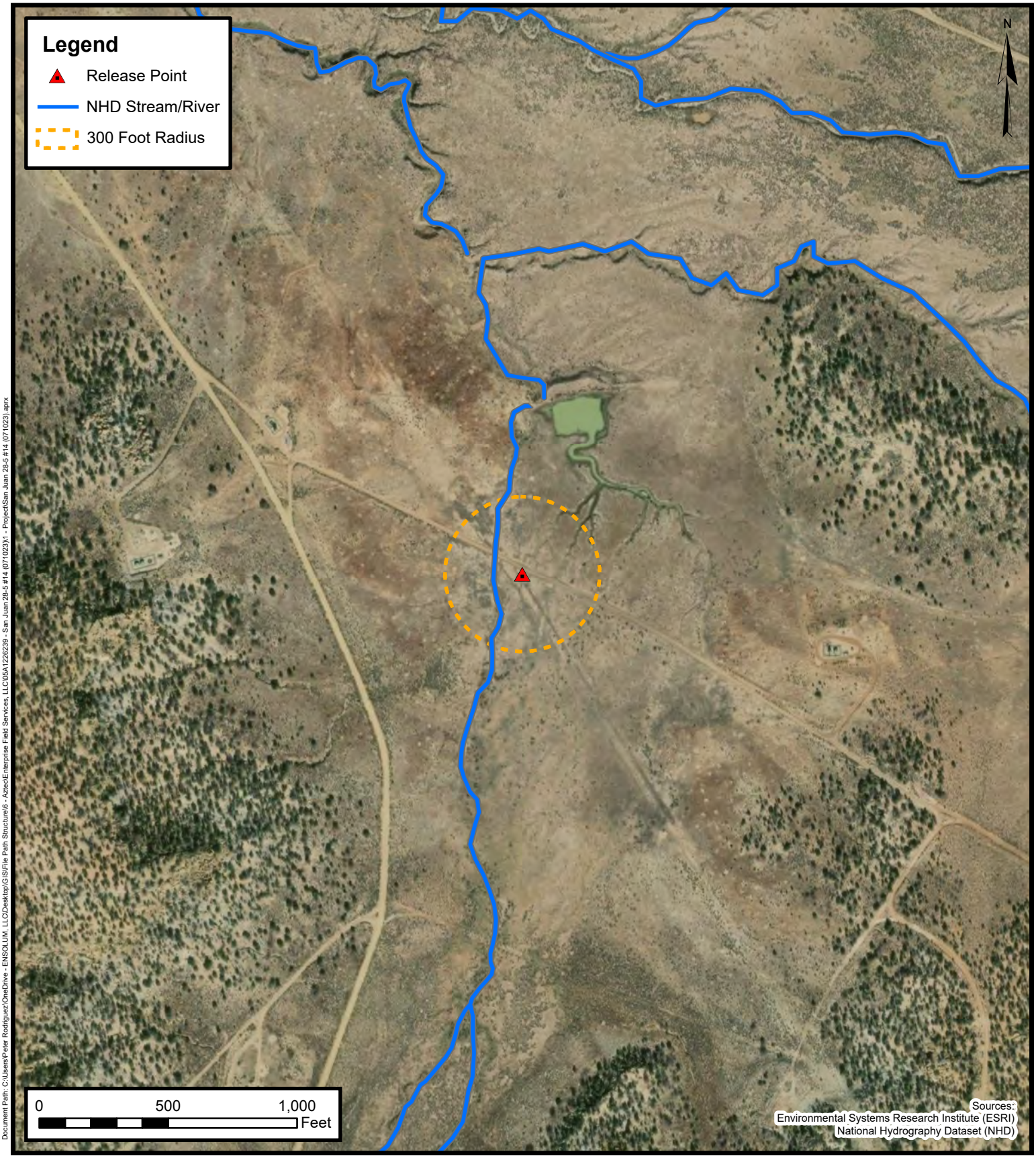
Cathodic Protection Well Recorded Depth to Water

Enterprise Field Services, LLC
San Juan 28-5 #14 (07/10/23)
Project Number: 05A1226239
Unit Letter N, S16 T28N R5W, Rio Arriba County, New Mexico
36.65679, -107.36471

FIGURE
B



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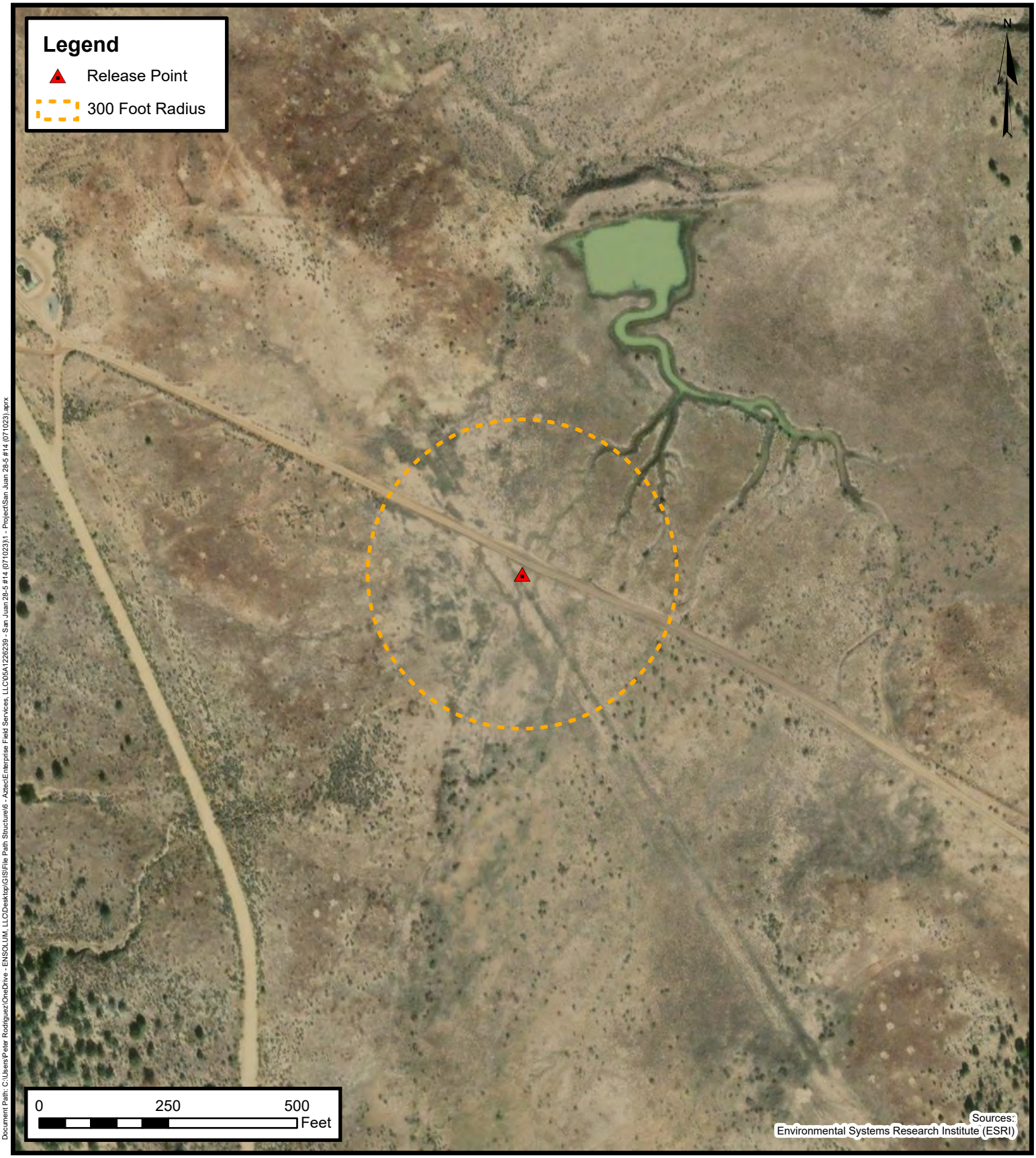
Environmental, Engineering and Hydrogeologic Consultants

300 Foot Radius Watercourse and Drainage Identification

Enterprise Field Services, LLC
San Juan 28-5 #14 (07/10/23)
Project Number: 05A1226239
Unit Letter N, S16 T28N R5W, Rio Arriba County, New Mexico
36.65679, -107.36471

FIGURE

C



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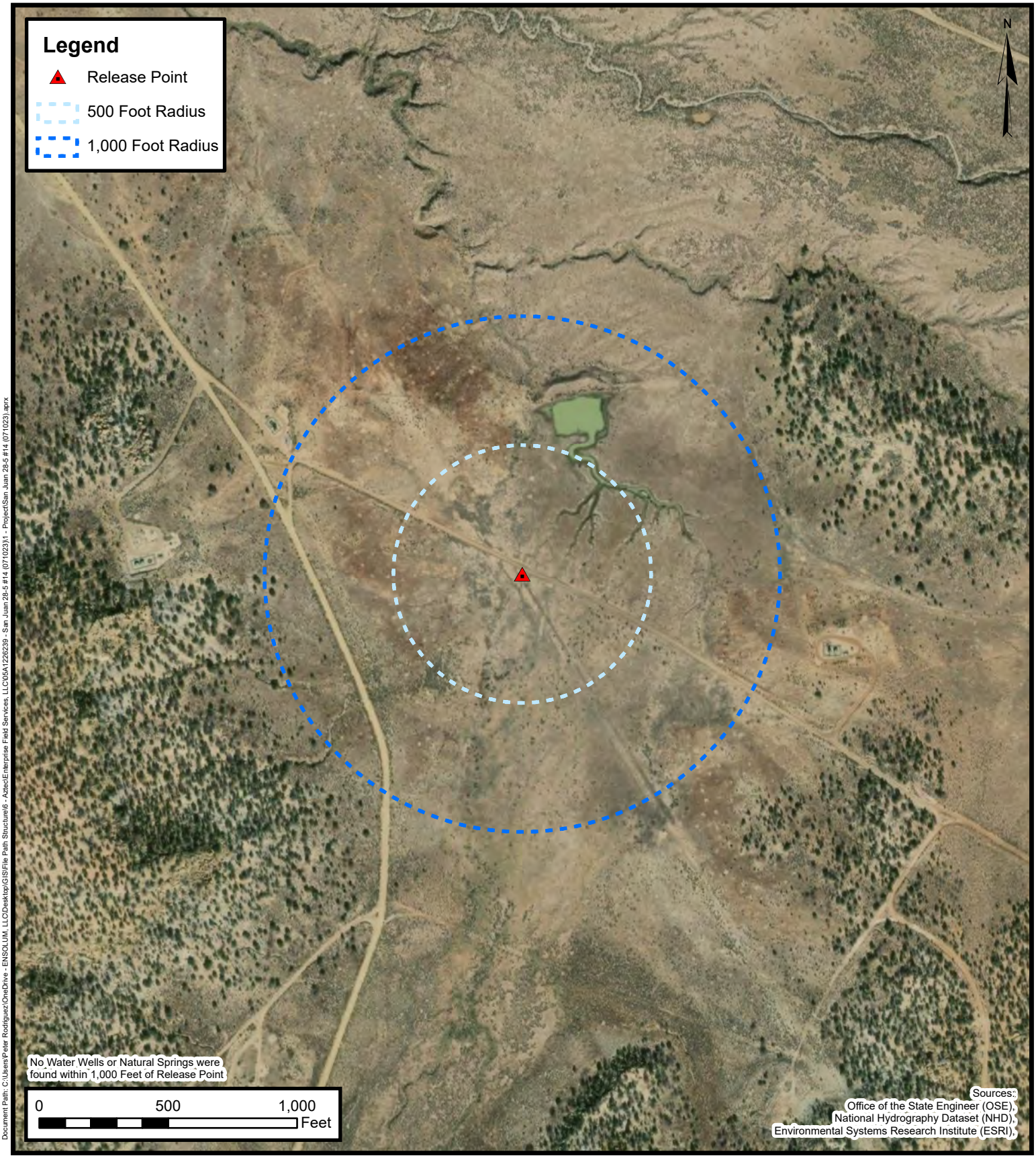
ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

300 Foot Radius Occupied Structure Identification

Enterprise Field Services, LLC
San Juan 28-5 #14 (07/10/23)
Project Number: 05A1226239
Unit Letter N, S16 T28N R5W, Rio Arriba County, New Mexico
36.65679, -107.36471

FIGURE

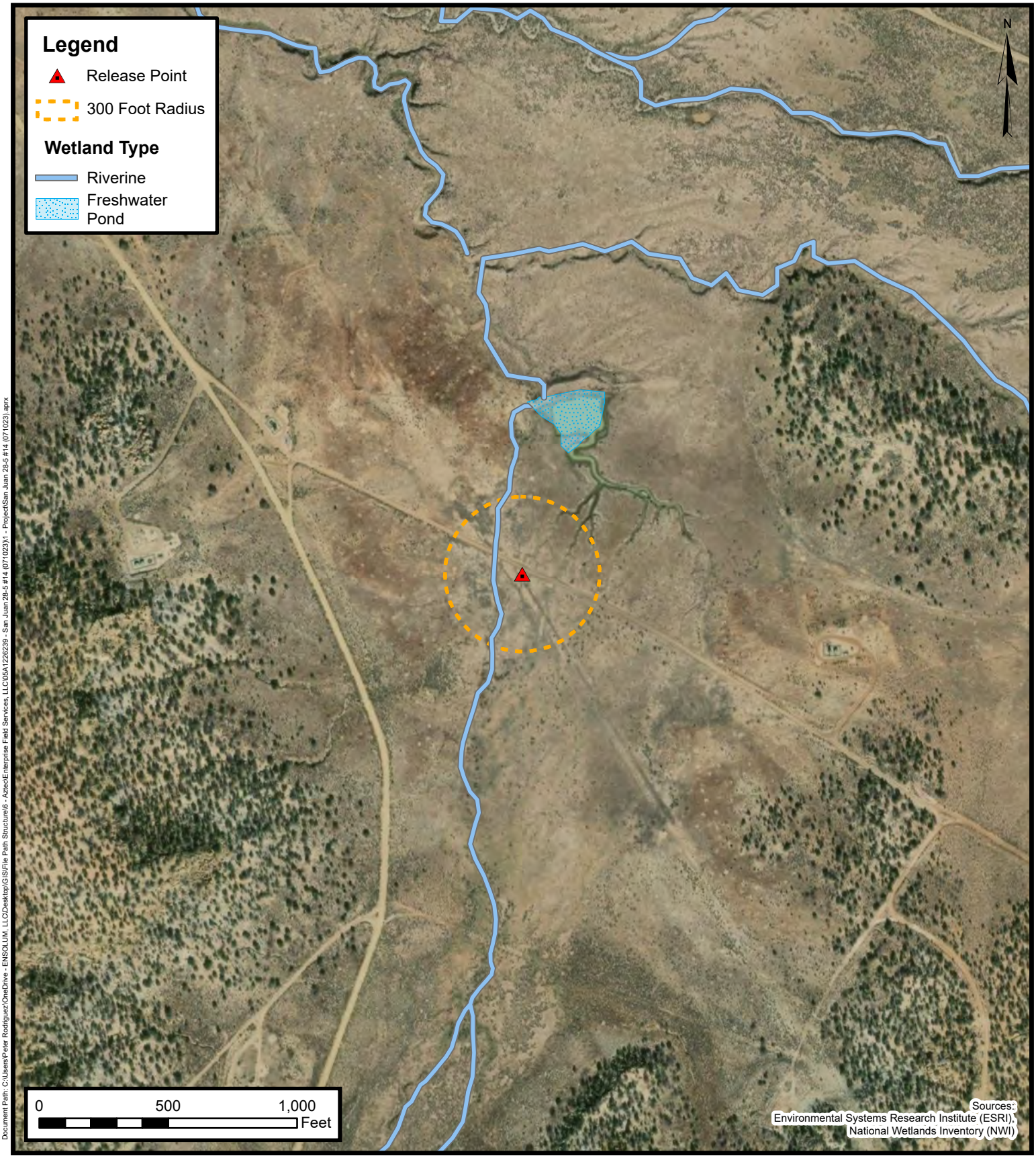
D



ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Water Well and Natural Spring Location
Enterprise Field Services, LLC
San Juan 28-5 #14 (07/10/23)
Project Number: 05A1226239
Unit Letter N, S16 T28N R5W, Rio Arriba County, New Mexico
36.65679, -107.36471

FIGURE
E

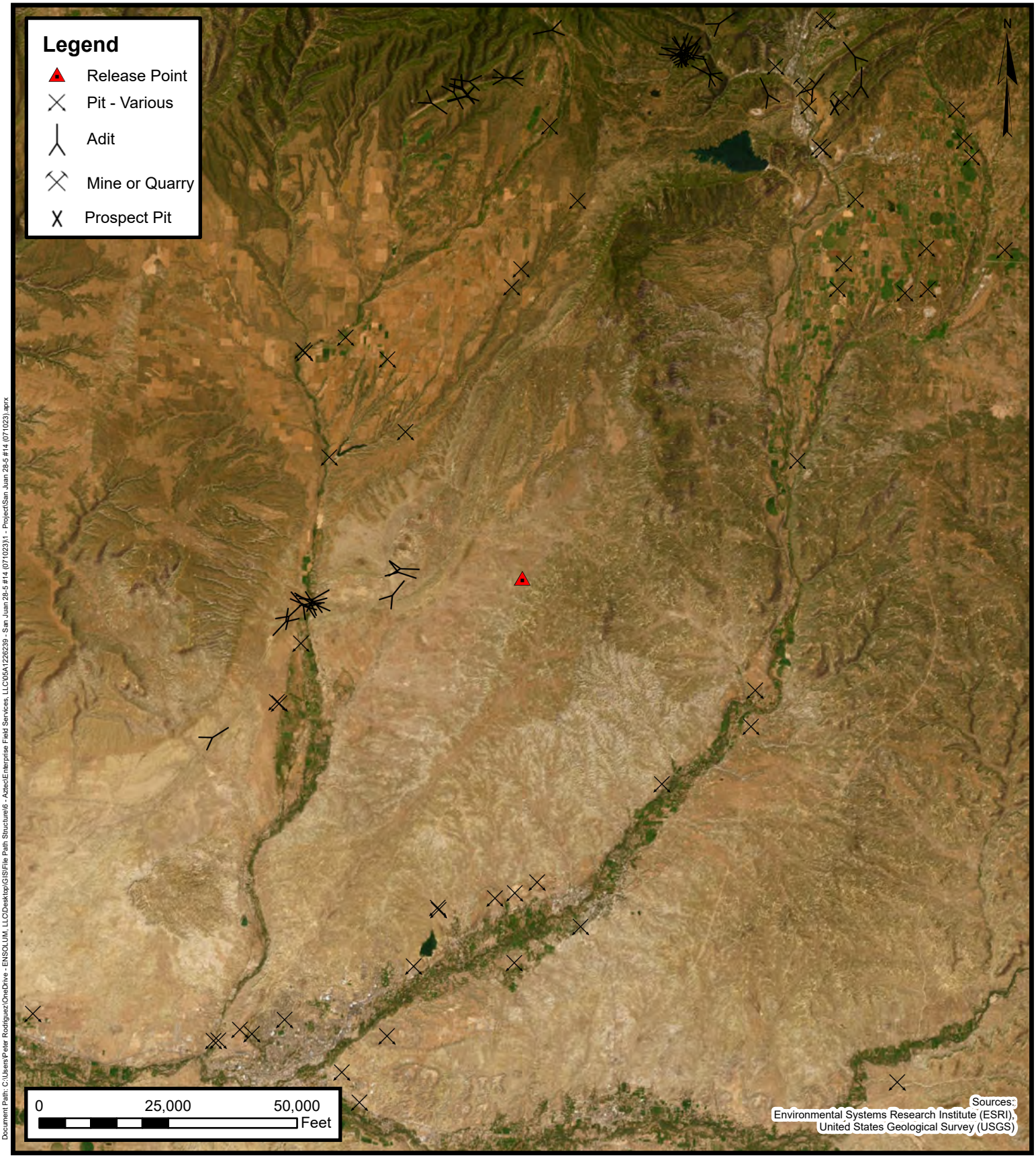


ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Wetlands

Enterprise Field Services, LLC
San Juan 28-5 #14 (07/10/23)
Project Number: 05A1226239
Unit Letter N, S16 T28N R5W, Rio Arriba County, New Mexico
36.65679, -107.36471

FIGURE
F

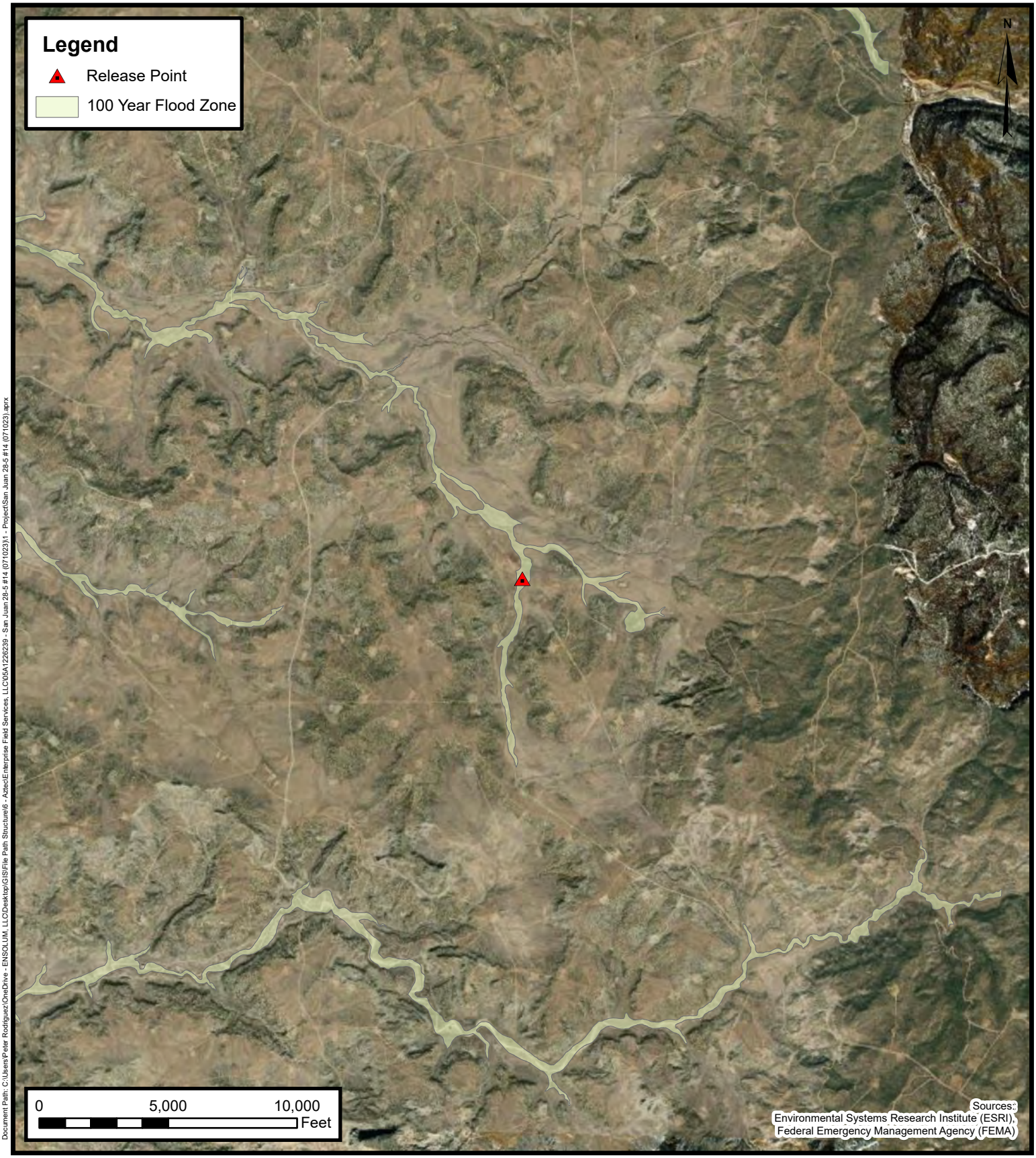


ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Mines, Mills, and Quarries

Enterprise Field Services, LLC
J.E. Decker #2 (07/20/23)
Project Number: 05A1226252
Unit Letter K, S12 T32N R12W, San Juan County, New Mexico
36.99671, -108.049583

FIGURE
G



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ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

100-Year Flood Plain Map

Enterprise Field Services, LLC
San Juan 28-5 #14 (07/10/23)
Project Number: 05A1226239
Unit Letter N, S16 T28N R5W, Rio Arriba County, New Mexico
36.65679, -107.36471

FIGURE
H

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

No records found.

PLSS Search:

Section(s): 16, 8, 9, 10, 15, 17, 20, 21, 22 **Township:** 28N **Range:** 05W

#4 30-039-07416

920 #83 30-039-20242

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. 16 Twp 28 Rng 5

Name of Well/Wells or Pipeline Serviced SAN JUAN 28-5 UNIT #6, #83

cps 1118w

Elevation 6641' Completion Date 9/12/77 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. 85' - 94', 110' - 118', 180'

Depths gas encountered: N/A

Type & amount of coke breeze used: 43 SACKS

Depths anodes placed: 360', 350', 340', 330', 285', 275', 265', 220', 210', 200'

Depths vent pipes placed: 365' OF 1" PVC VENT PIPE

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.

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 9-12-77

Well Name	Location	CPS No.
SAN JUAN 28-5 Unit #6 #83	SW 16-28-5	1118 W
Type & Size Bit Used: 6 3/4"		Work Order No. #6 = 52521.19 #83 = 54702.19

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
400 Logged - 393		43		

Anode Depth	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
	360	350	340	330	285	275	265	220	210	200
Anode Output (Amps)	3.0	3.2	3.5	3.4	4.0	4.1	4.0	4.2	5.1	4.6

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

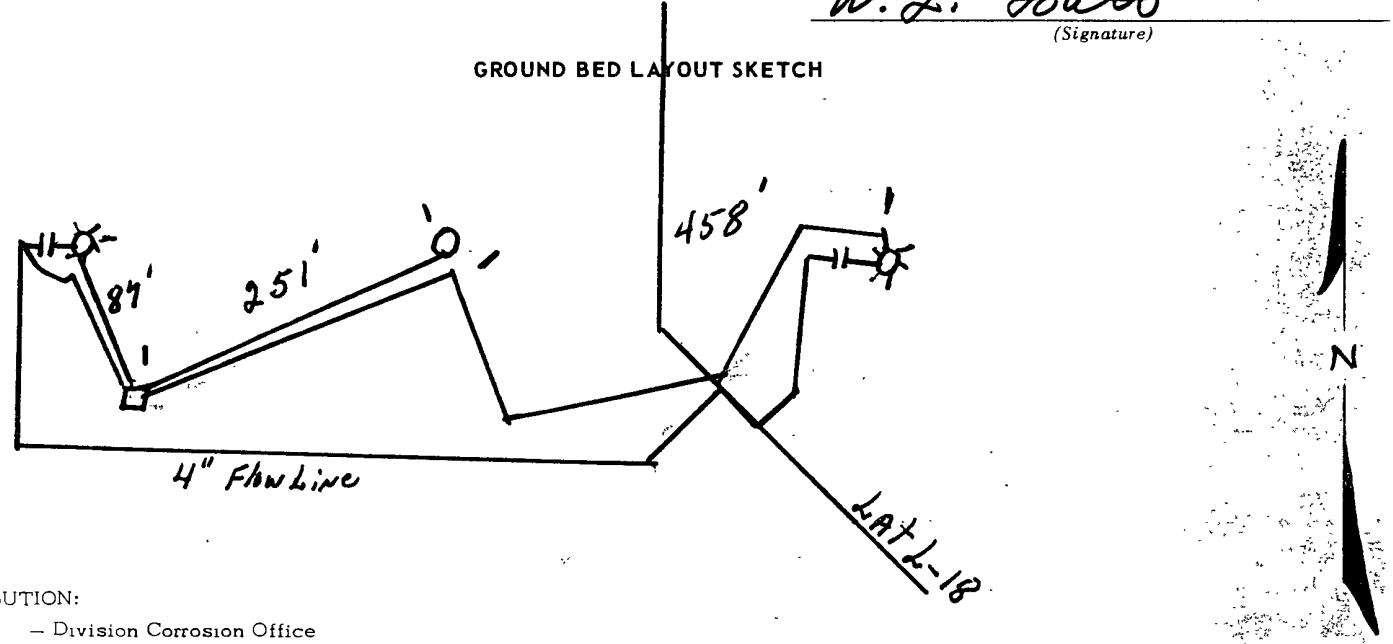
Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.2	Amps 16.4	Ohms 0.68		

Remarks: Static #6 600' SW = 0.73, Static #83 600' SE = 0.81. Driller said making water between 85' & 94'. Making more water between 110' & 118' Drilled to 120'. Next A.M. water standing @ 190'. Started Inj. @ 120'. Perforate 240' of 1" PVC Vent Pipe. Installed 365' of 1" PVC Vent Pipe. Slurryed 43 sacks of Coke. #83 marked 1 notch #6 marked 3 notches Installed 60V 30A Rectifier. making more water @ 180'

All Construction Completed

W. L. Lowe
(Signature)

GROUND BED LAYOUT SKETCH



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

6641

Form 7-1 (Rev. 5-75)

El Paso Natural Gas Company

ENGINEERING CALCULATION

Sheet: ____ of ____
Date:
By:
File:

SAN JUAN 28-5 UNIT # 6 — 52521.19
SAN JUAN 28-5 UNIT # 83 — SW16-28-5 — 1118W — 54702.19

Static #6 600' SW = 0.73
Static #83 600' SE = 0.81

Driller said making water
Between 85' & 94' more water
Between 110' & 118' Drilled to 180'
Next AM water standing @ 96'
making more water @ 180

Perforated 240' of 4½" Pvc vent Pipe
Installed 235' of 4½" Pvc vent Pipe
Slurryed 43 SACKS of Cobec

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

120		90	1.4			
			.7			
30		30	.5			
			.5			
40		10	.5			
			.4			
50		20	1.1			
			1.6			
60		30	1.6	(4)		
			1.4			
90		40	1.2	(3)		
			1.4			
101.7		50	1.3	(2)		
1.7			1.2			
902.2		60	1.2	(1)		
2.2			1.0			
2002.3	(10)	70	.9			
2.2			1.1			
102.4	(9)	80	1.6			
2.1			1.6			
201.9	(8)	90	1.6			
1.8		393	TD			
30.5		400				
.2						
40.4						
.4						
50.4						
.5						
601.6						
1.8	(7)					
701.9						
2.0	(6)					
802.2						
2.0	(5)					

①	360	1.5	3.0
②	350	1.7	3.2
③	340	1.9	3.5
④	330	2.0	3.4
⑤	285	2.4	4.0
⑥	275	2.6	4.1
⑦	265	2.5	4.0
⑧	220	2.7	4.2
⑨	210	3.2	5.1
⑩	200	3.2	4.6

16.4 Amps
11.2 Volts
0.68 Ohms

Form 22-2 (Rev. 1-61)

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE WELL NO. 11 (8W) CONTRACTOR Posey Drilling Co RIG NO. REPORT NO. DATE 9-11-74 19

MORNING

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
0	4	surface
4	25	sandstone
25	40	shale
40	65	sandstone
65	85	shale
85	94	sand Wet

REMARKS –

DAYLIGHT

Driller Albert L. Posey Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
		T.D. 397'		

NO. DC SIZE LENG.

BIT NO.

NO. DC SIZE LENG.

SERIAL NO.

STANDS

SIZE 6 3/4

SINGLES

TYPE Rock

DOWN ON KELLY

MAKE

TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN
94	110	shale
110	118	sand Wet
118	158	Shale
165	170	sandy shale
170	180	sand wet (Making Water)
180	241	Shale

REMARKS –

Logged 393'
Drilled 400'
Making Water 170' - 180'
Injected 150'

Total Depth 397

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
241	250	Sandstone
250	275	shale
275	300	sandy shale
300	340	shale
340	375	Red Shale
375	400	shale

REMARKS –

SIGNED: Toolpusher _____ Company Supervisor _____

#16 30-039-07439
921
#84 30-039-20360
#202 30-039-24517

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 16 Twp 28 Rng 5

Name of Well/Wells or Pipeline Serviced SAN JUAN 28-5 UNIT #16, #84, #202

cps 1119w

Elevation 6582' Completion Date 9/28/77 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. 90'

Depths gas encountered: N/A

Type & amount of coke breeze used: 40 SACKS

Depths anodes placed: 275', 260', 225', 215', 205', 285', 175' 150', 135', [illegible]'

Depths vent pipes placed: 280' OF 1" PVC VENT PIPE

Vent pipe perforations: 200'

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.

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

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Drilling Log (Attach Hereto). ☐ #302

Completion Date 9-28-77

Well Name	Location	CPS No.
San Juan 28-5 # 16 28-5 # 84	NE 16 - 28-5	1119W

Type & Size Bit Used	Work Order No.
6 3/4"	53264.19-50-20 184 - 54811.19-50-20

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
320' logged 309'		40 Sacks		

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10
Anode Depth	275	260	225	215	205	185	175	150	135	125
Anode Output (Amps)	3.3	2.7	2.9	3.6	3.8	4.4	3.2	3.1	4.1	3.3

	# 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 12.4	Amps 14.2	Ohms .87		

Remarks: STATICS = 28-5 # 16, 600 NW = .74, 28-5 # 84 600' NE = .75

DRILLER Said hit WATER at 90'

INSTALLED 280' of 1" VENT PIPE, PERFORATED 200' of VENT PIPE

SLURRYED 40 SACKS COKE, 10 GRAPHITE ANODES

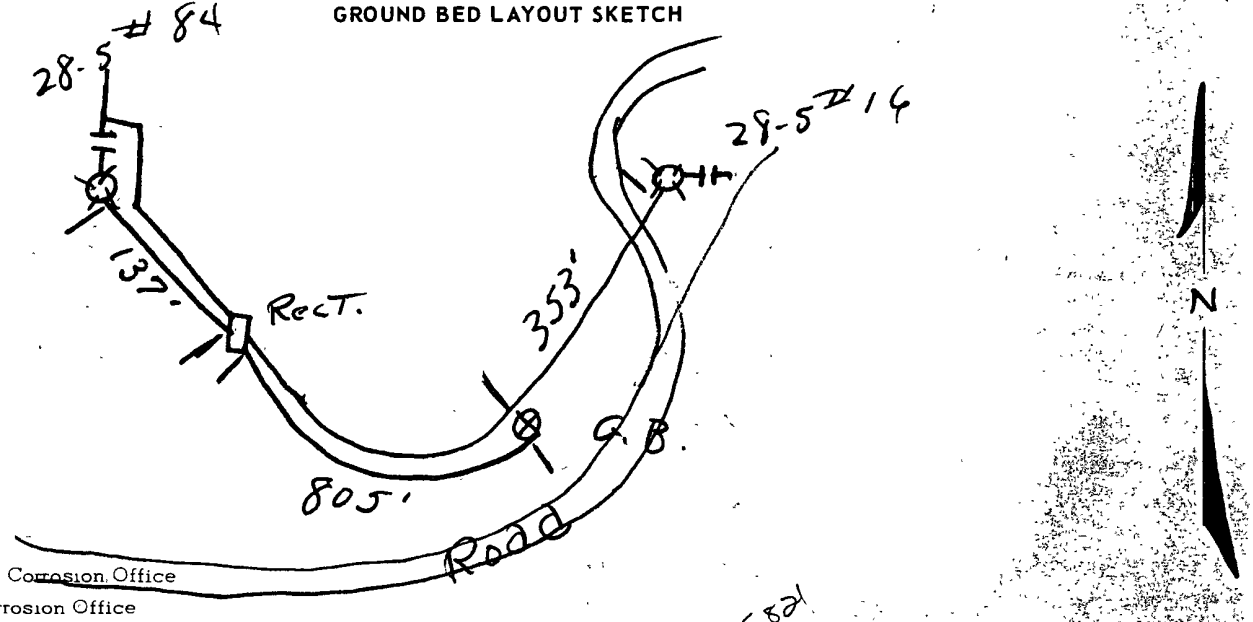
60V 30A RECT — 1 NOTCH = 28-5 # 84

STUB POLE — 3 NOTCHES = 28-5 # 16

All Construction Completed

Willis Knight Jr.
(Signature)

GROUND BED LAYOUT SKETCH



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Form 7-104 (Rev 2-75)

El Paso Natural Gas Company
ENGINEERING CALCULATION

Sheet: of
Date: 9-28-77
By:
File:

SAN JUAN 28-5 #16 W/O 184-53264.19-50-20
SAN JUAN 28-5 #84 W/O 184-54811.19-50-20
NE 16-28-5
CPS-1119 W

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

STATIC 28-5 #16 600' NW = .74
STATIC 28-5 #84 600' NE = .75
60V 30A RECT.
STUD POLE
10 GRAPHITE ANODES

DRILLER SAID HIT WATER AT 90'
INSTALLED 280' of 1" VENT PIPE
PERFORATED 200' of VENT PIPE
SLURRYED 40 SACKS OF COKE

90	.7			1.6	(4)					
	1.0		20	1.7						
120	1.7			1.6	(3)					
	1.5		30	1.1						
10	1.3			.9						
	1.3		40	.3						
20	1.2			.2						
	1.5	(10)	50	.5						
30	2.0			1.2						
	1.7	(9)	60	1.1	(2)					
40	1.3			1.0						
	1.3		70	1.2						
50	1.5	(8)		1.5	(1)					
	1.4		80	1.3						
60	1.1			1.0						
	.9		90	.8		(1)	275	1.9	3.3	
70	1.3			.8		(2)	260	1.5	2.7	
	1.4	7	300	.3		(3)	225	2.1	2.9	
80	1.8			.3		(4)	215	2.1	3.6	
	1.9	(6)	10/logged		305'	(5)	205	2.7	3.8	
90	1.9		TD		320'	(6)	185	2.3	4.4	
	1.9		20			(7)	175	1.8	3.2	
200	1.9					(8)	150	1.9	3.1	
	1.9	(5)	30			(9)	135	2.3	4.1	
10	1.5					(10)	125	1.9	3.3	

12.4 VOLTS
14.2 AMPS
.87 OHMS

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE WELL NO. 1119-W CONTRACTOR Posey Drilling Co. RIG NO. REPORT NO. DATE Sept 28 1977

MORNING

Driller Total Men In Crew

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

BIT NO. NO. DC SIZE LENG.

SER 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 –

DAYLIGHT

Driller Bob Posey Total Men In Crew

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

BIT NO. NO. DC SIZE LENG.

SERIAL NO. STANDS

SIZE 6 3/4 SINGLES

TYPE Rock DOWN ON KELLY

MAKE TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.	MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN
80	90	SANDY SHALE
90	100	SAND WET (MAKING WATER)
100	120	SANDY SHALE
120	160	SHALE
160	180	SAND WET
180	200	SANDY SHALE

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
200	220	SHALE
220	240	SANDY SHALE
240	260	SHALE
260	280	SANDY SHALE
280	300	SHALE
300	320	SANDY SHALE

REMARKS –

Drilled 320

Logged 309

Total Depth 314

SIGNED: Toolpusher _____ Company Supervisor B

1199

E

30-039-23836

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

Operator MERIDIAN OIL Location: Unit O Sec. 16 Twp 28 Rng 5

Name of Well/Wells or Pipeline Serviced SAN JUAN 28-5 UNIT #84E

cps 1889w

Elevation 6575' Completion Date 6/22/87 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

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: 370', 360', 350', 340',325', 315', 305', 295', 270', 260', 250',

Depths vent pipes placed: 384'

Vent pipe perforations: 320'

Remarks: gb #1 #1 & #4 ANODE DID NOT GET COKE AROUND THEM. #11 & #12 INSTALLED.

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.

CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Drilling Log (Attach Hereto) ☐ Completion Date 6-28-87

mtr. loc. 9555901

CPS #	Well Name, Line or Plant	Work Order #	Status	Ins. Union Check
1889W 1896-a	Sj 28-5 #84E	A 6737	.82 NE	

Location	Anode Size	Anode Type	Size Bit
O-16-28-5	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
400'	384'	4900			

Anode Depth

#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
~~320~~	360	350	~~340~~	325	315	305	295	270	26[illegible]

Anode Output (Amps)

#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
~~2.4~~	3.9	2.3	~~1.6~~	3.4	3.0	3.6	3.1	3.8	4.[illegible]

Anode Depth

#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
250	175								

Anode Output (Amps)

#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
3.9	5.3								

Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 12.2	Amps 18.1	Ohms .7		

Remarks: Water at 70', installed 384' of 1" PVC vent pipe, perforated 320'. #1 & #4 Anodes did not get coke breeze around them, we installed #11 & #12 to get 10 Anodes covered with coke. Drilled 400' logged 384'

Rectifier Size: 40 V 16 A — $250.00

Add'l Depth: —

Depth Credit: — 116' — $4300.00 / 464.00

Extra Cable: 112' — 28.00

$3836.00 GB

Ditch & 1 Cable: —

Ditch & 2 Cable: 212' — 110.24

25' Meter Pole: 1 — $305.00

20' Meter Pole: —

10' Stub Pole: —

Junction Box: 1 — $40.00

$5069.24

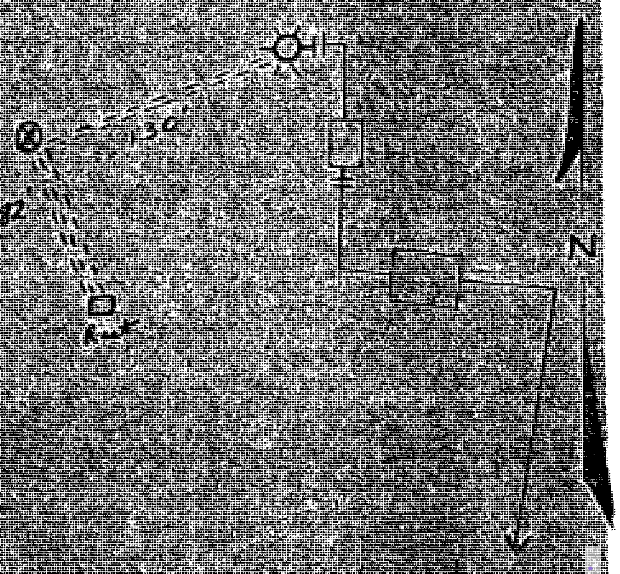
TAX 253.46

TOTAL 5322.70

All Construction Completed

L. E. [signature]

(Signature)



BURGE CORROSION SYSTEMS, INC.

P.O. BOX 1259 - PHONE 334-6141
AZTEC, NEW MEXICO 87410

DEEP WELL GROUNDBED LOG

Date 6-22-8?

Company Meridian

Well No. [illegible] Location O-16-29-5 Volts Applied 12.2 Amperes 18-?

Depth	Reading	Depth	Reading	Depth	Reading	Depth	Reading
0							
5		230	.2	455		680	Top of coke at
10		235	.7	460		685	70' Drilled
15		240	1.4	465		690	to 400'
20		245	1.3	470		695	
25		250	1.2 - (11)	475		700	
30		255	1.9	480		705	
35		260	1.6 - (10)	485		710	
40		265	1.4	490		715	
45		270	1.5 - (9)	495		720	
50		275	.9	500		725	
55		280	.6	505		730	
60		285	.5	510		735	
65		290	1.0	515		740	
70	1.5	295	1.5 - (8)	520		745	
75	1.3	300	1.6	525		750	
80	1.2	305	2.0 - (7)	530		755	
85	1.1	310	2.1	535		760	
90	1.2	315	1.9 - (6)	540		765	
95	1.5	320	1.6	545		770	
100	1.6	325	1.4 - (5)	550		775	
105	1.5	330	1.3	555		780	
110	1.3	335	1.2	560		785	
115	1.3	340	1.3 - (4)	565		790	
120	1.2	345	1.6	570		795	
125	.8	350	1.5 - (3)	575		800	
130	.7	355	2.1	580		805	
135	.6	360	2.4 - (2)	585		810	
140	.9	365	2.5	590		815	
145	.8	370	2.6 - (1)	595		820	
150	.6	375	2.6	600		825	(1) 370 2.7-2.4
155	1.2	380	2.5	605		830	(2) 360 1.4-3.9
160	1.2	385	384 TD	610		835	(3) 350 1.7-2.0
165	1.2	390		615		840	(4) 340 1.7-1.5
170	1.3	395		620		845	(5) 325 2.0-3.4
175	1.4 - (12)	400		625		850	(6) 315 2.1-3.0
180	1.3	405		630		855	(7) 305 2.1-3.6
185	1.0	410		635		860	(8) 295 1.7-3.1
190	.3	415		640		865	(9) 270 1.7-3.8
195	.3	420		645		870	(10) 260 2.1-2.7
200	.2	425		650		875	(11) 250 1.7-3.9
205	.2	430		655		880	(12) 175 1.3-5.0
210	.2	435		660		885	
215	.2	440		665		890	
220	.3	445		670		895	
225	.4	450		675		900	

BURGE CORROSION SYSTEMS, INC.

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

CPS 1889 W

COMPANY Meridian Oil DAILY DRILLING REPORT June 22 19 87

WELL NAME:	WELL NUMBER:	SECTION:	TOWNSHIP:	RANGE:
San Juan 28-5	#84E	16	28	5

WATER AT: FEET:	HOLE MADE:
70'	400' TD 384'

DESCRIPTION OF FORMATION

FROM	TO	FORMATION IS	COLOR
0	60	shale/clay	
60	70	sand-water	
70	140	shale	
140	160	sand	
160	260	shale	
260	300	sanle/sand	
300	400	shale streamers-sand	

REMARKS:

Brian E. Burga Driller Tool Dresser

CDS (1889W)

API WATER ANALYSIS REPORT FORM

Company: Meridian Oil Co.		Sample No.	Date Sampled: 6-22-87
Field	Legal Description: O-16-28-5	County or Parish: Rio Arriba	State: N.M.
Lease or Unit	Well: S.J. 28-5 #84E	Depth: 70'	Formation: Dakota
Type of Water (Produced, Supply, etc.)	Sampling Point: G.B.		Sampled By: J. Evans

DISSOLVED SOLIDS

CATIONS	mg/l	me/l
Sodium, Na (calc.)	230	11.4
Calcium, Ca		
Magnesium, Mg		
Barium, Ba		

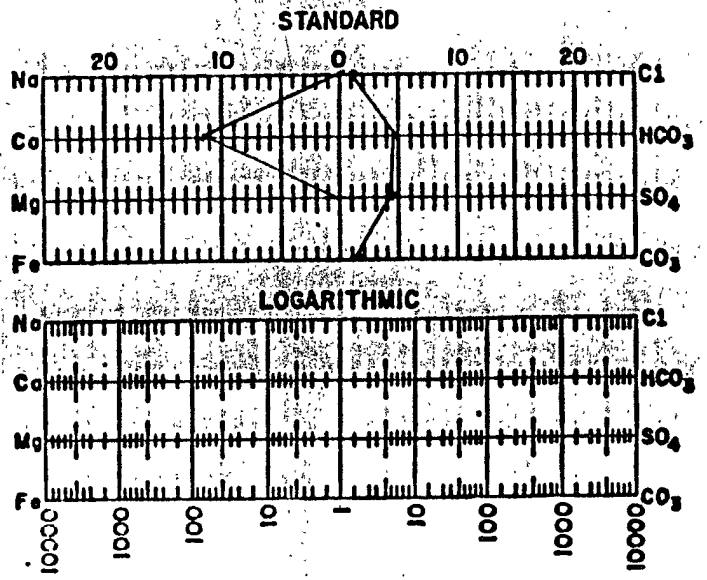
ANIONS	mg/l	me/l
Chloride, Cl	27.6	.8
Sulfate, SO_4	212	4.3
Carbonate, CO_3	47	1.6
Bicarbonate, HCO_3	300	4.9

Total Dissolved Solids (calc.)	610
Iron, Fe (total)	0
Sulfide, as H_2S	0

OTHER PROPERTIES

pH	8.85
Specific Gravity, 60/60 F.	1.0017
Resistivity (ohm-meters) 74 F.	1.3×10^2
Conductivity	1.7×10^4 µmho

WATER PATTERNS — me/l



REMARKS & RECOMMENDATIONS:

Sample had a considerable amount of difficultly filterable suspended clay.

30-039-07465

#7 — 30-039-07465

767 #85 E - 30-039-23834

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. 8 Twp 28 Rng 5

Name of Well/Wells or Pipeline Serviced SAN JUAN 28-5 UNIT #7, #85E

cps 1107w

Elevation 6549' Completion Date 9/7/77 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. 110'

Depths gas encountered: N/A

Type & amount of coke breeze used: 57 SACKS

Depths anodes placed: 265', 255', 245', 235', 225', 215', 160', 150', 140', 130'

Depths vent pipes placed: 280' OF 1" PVC VENT PIPE

Vent pipe perforations: 200'

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.

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

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Drilling Log (Attach Hereto). ☐ #451

Completion Date 9-7-77

Well Name	Location	CPS No.
SAN JUAN 28-5 Unit # 7	SW 8-28-5	1107W

Type & Size Bit Used	Work Order No.
6 3/4"	52577.19

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
320 Logged-315		57		

Anode Depth	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10
	265	255	245	235	225	215	160	150	140	130
Anode Output (Amps)	2.5	3.2	2.9	2.9	2.8	3.6	3.8	4.6	3.5	3.2
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 11.6	Amps 14	Ohms 0.83		

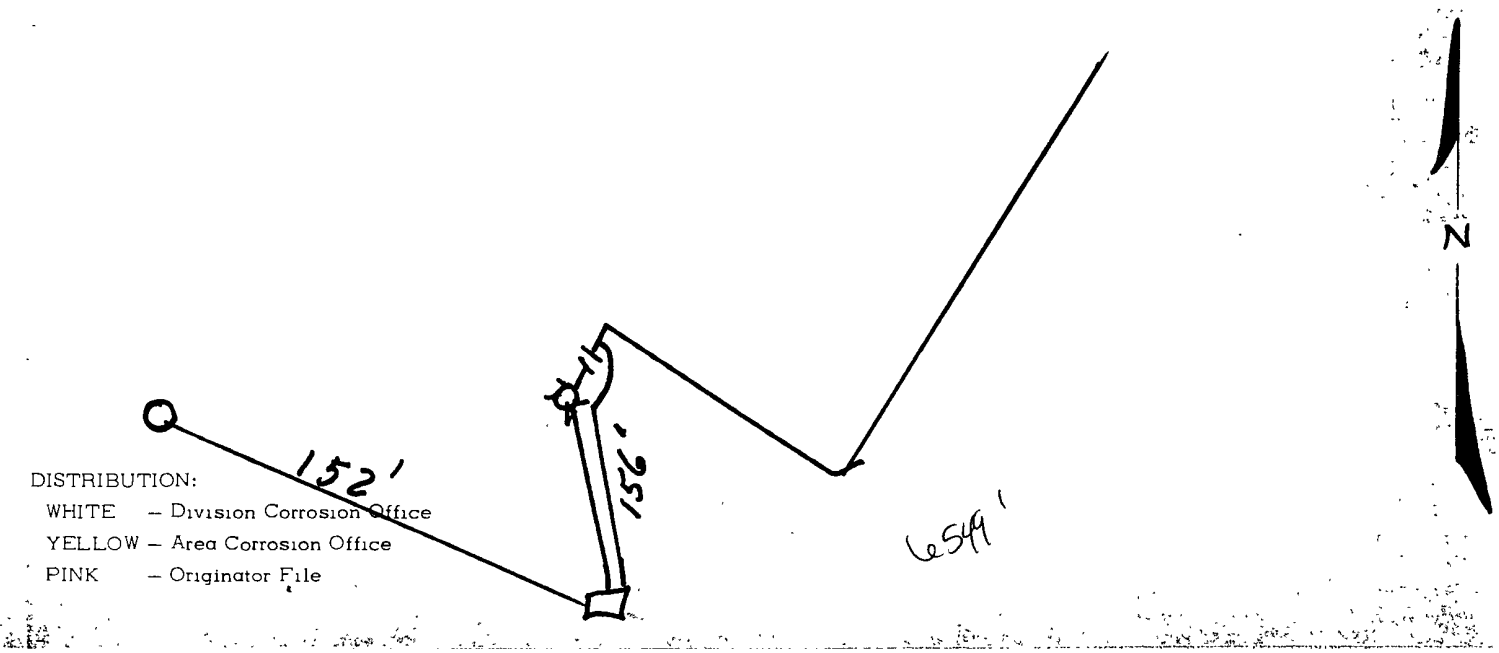
Remarks: Static 600' S = 0.75. Driller said making water @ 110'. Perforated 200' of 1" PVC Vent Pipe. Installed 280' of 1" PVC Vent Pi Slurried 57 sacks of Coke.

Installed 40V 16A Rectifier & Stub Pole.

All Construction Completed

W. L. Lott
(Signature)

GROUND BED LAYOUT SKETCH



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

El Paso Natural Gas Company
ENGINEERING CALCULATION

Sheet: ___ of ___
Date:
By:
File:

SAN JUAN 28-5 Unit #7 SW 8-28-5 1107W 52577.19

Static 600 S = 0.75				DRiller SAid MAking WATER @110	
				DRilled to 120' Next AM	Blew WATER
40 V 16 A Rect.				Perforated 20' of 1" PVC	Vent Pipe
Stub Pole				Installed 280' of 1" PVC	Vent Pipe
				Slurryed 57 SACKS of coke	
120 .5		80 .3			
.8		.8			
30 1.0	(10)	90 .7			
1.8		.6			
40 1.8	(9)	300 .8			
2.0		.8			
50 2.2	(8)	10 .6			
2.1		315 TD			
60 1.9	(7)	20			
1.3					
50 .8					
.6					
80 .6					
.5					
90 .4					
.4				① 265	1.6 2.5
200 .4				② 255	2.0 3.2
.5				③ 245	1.6 2.9
10 .8				④ 235	1.7 2.9
1.5	(6)			⑤ 225	1.7 2.8
90 1.6				⑥ 215	1.9 3.6
1.2	(5)			⑦ 160	2.1 3.8
30 1.0				⑧ 150	2.5 4.6
1.2	(4)			⑨ 140	1.9 3.5
40 1.1				⑩ 130	1.7 3.2
1.2	(3)				
50 1.2					
1.5	(2)			14.0	Amps
60 1.6				11.6	Volts
1.2	(1)			0.83	Ohms
70 1.0					
.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

Form 22-2 (Rev. 1-61)

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE WELL NO. WO7W CONTRACTOR Posey Drilling Co. RIG NO. REPORT NO. DATE 9-7-77 19

MORNING

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
0	10	Surface
10	30	silt (NOT BAD)
30	65	shale
65	100	sandstone
100	105	Shale
105	120	Sand Wet (making Water)

REMARKS –

making Water 105'-120'

Projected 130'

DAYLIGHT

Driller Albert L Posey Total Men In Crew 2

FROM	TO	FORMATION	WT-BIT	R.P.M.
		T.D. 317 ft		

NO. DC SIZE LENG.

BIT NO. NO. DC SIZE LENG.

SERIAL NO. STANDS

SIZE 6 3/4 SINGLES

TYPE Rock DOWN ON KELLY

MAKE TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN
120	165	shale
165	201	Sandy shale
201	225	shale
225	238	Sandstone
238	265	Shale
265	270	shale & sandy

REMARKS –

Drilled 320 ft

Logged 315 ft

Total depth 317

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
270		Shale

REMARKS –

SIGNED: Toolpusher Company Supervisor

866 30-039-20358

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 SE Sec. 8 Twp 28 Rng 5

Name of Well/Wells or Pipeline Serviced SAN JUAN 28-5 UNIT #85

cps 1106w

Elevation 6529' Completion Date 10/12/77 Total Depth 470' 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. 120'-145', 175'-190'

Depths gas encountered: N/A

Type & amount of coke breeze used: 50 SACKS

Depths anodes placed: 420', 360', 350', 340', 270', 260', 250', 240', 230', 220'

Depths vent pipes placed: 425' OF 1" PVC VENT PIPE

Vent pipe perforations: 220'

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.

El Paso Natural Gas Company
Form 7-238 (Rev. 1-...)

WELL CASING CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Drilling Log (Attach Hereto). ☐

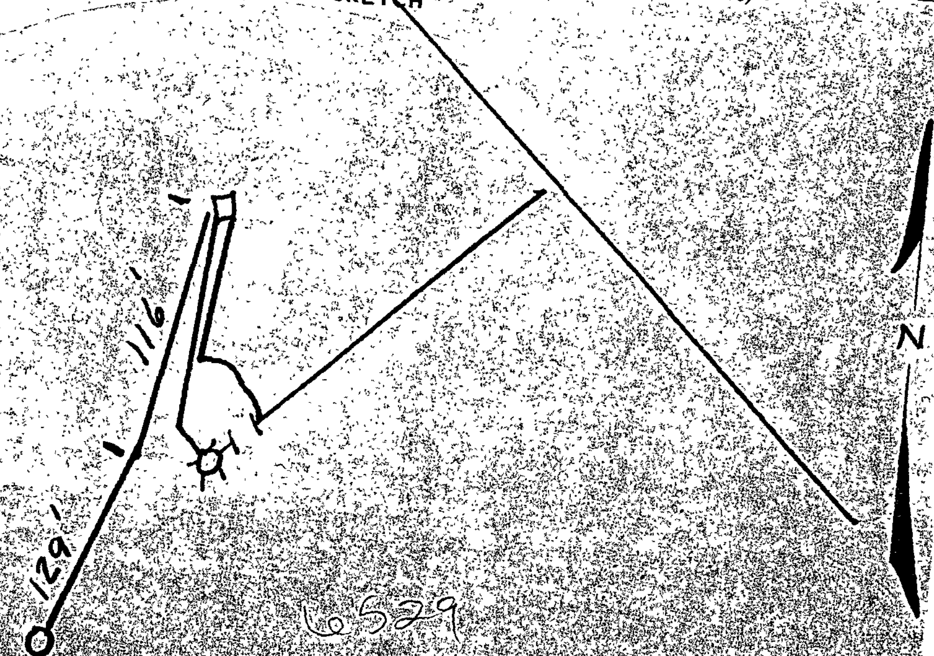
Well Name: SAN JUAN 28-5 Unit #85			Location: SE 8-28-5					Completion Date: 10-12-77	
Type & Size Bit Used: 6 3/4"								CPS No.: 1106W	
Anode Hole Depth: 470, Logged - 451		Total Drilling Rig Time:		Total Lbs. Coke Used: 50		Lost Circulation Mat'l Used:		Work Order No.: 54812.19	No. Sacks Mud Used:
Anode Depth									
# 1 420	# 2 360	# 3 350	# 4 340	# 5 270	# 6 260	# 7 250	# 8 240	# 9 230	# 10 220
Anode Output (Amps)									
# 1 3.0	# 2 3.2	# 3 3.8	# 4 3.5	# 5 2.9	# 6 3.0	# 7 2.9	# 8 3.0	# 9 3.1	# 10 2.8
Anode Depth									
# 11 150	# 12 135	# 13	# 14	# 15	# 16	# 17	# 18	# 19	# 20
Anode Output (Amps)									
# 11 5.5	# 12 3.4	# 13	# 14	# 15	# 16	# 17	# 18	# 19	# 20
Total Circuit Resistance (DURIRON)					PLATINUM				
Volts 11.7	Amps 14.3	Ohms .82			Volts 11.7	Amps 6.4		Ohms 1.83	

Remarks: Static 600' W = 0.67. Installed 10 Duriron & 2 Platinum Anodes. Loresco coke around Platinum Anodes. Perforated 220' of 1" PVC vent pipe. Installed 425' of 1" PVC vent pipe. Slurryed 50 sacks of coke. Note: Platinum Anodes taped to vent pipe. Note: Only Platinum Anodes connected in junction box. Duriron Anodes inside junction box but not connected. 60V 30A Rectifier & stub pole

All Construction Completed

Scott E. Sorrels
(Signature)

GROUND BED LAYOUT SKETCH



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

Form 71 (Rev. 6-78)

El Paso Natural Gas Company
ENGINEERING CALCULATION

Sheet: ____ of ____
Date:
By:
File:

SAN JUAN 28-5 Unit #85   SE 8-28-5   1106W   54812.19

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

Static 600' w = 0.67
10-Duriron Anodes
2-Platinum Anodes
60V 30A Rectifier
Stub Pole

Driller said making water @ 121'
Perforated 300' of 1" PVC vent pipe
Installed 425' of 1" PVC vent pipe
Slurryed 50 sacks of coke
Slurryed 10 sacks of Loresco coke

Drill 470 - Wte Next A.M. at 130'
Coke to 160
Vent to Below Platinum Anodes-

120	1.0			90	.5	60
	1.4				.4	
30	1.7	1.0		300	.3	70
	2.1	1.4	(12)		.6	
40	2.0	1.7		10	.6	
	1.5	2.1			.5	
50	1.1	1.5	(11)	20	.5	
	.3	1.1			.9?	
60	.2	.3		30	1.0	
	.2	.2			1.2	
70		.2		40	1.3 (4)	
		.2			1.5	
80	.3			50	1.8 (3)	
	.4				1.6	
90	.5			60	1.6 (2)	
	.7				1.1	
200	.8			70	.8	
	.9				.4	
10	.9			80	.2	
	1.2				.3	
20	1.2		(10)	90	.5	
	1.2				1.0	
30	1.5		(9)	400	.8	
	1.2				.7	
40	1.5		(8)	10	.6	
	1.3				.6	
50	1.4		(7)	20	1.3 (1)	
	1.4				1.5	
60	1.3		(6)	30	1.5	
	1.3				1.2	
70	1.2		(5)	40	1.1	
	.5				1.3	
80	.7			450	1.5 T.D.	
	.7					

11.7 Volts, 6.4 Amps, 1.83 Ohms — 2-Platinum

(1)	420	1.6	3.0
(2)	360	1.6	3.2
(3)	350	1.7	3.8
(4)	340	1.6	3.5
(5)	270	1.4	2.9
(6)	260	1.4	3.0
(7)	250	1.5	2.9
(8)	240	1.6	3.0
(9)	230	1.6	3.1
(10)	220	1.4	2.8
(11)	150	1.2	5.1 5.5
(12)	135	1.0	.92 3.4

11.7 Volts, 14.3 Amps, .82 ohms — 10 Duriron Anodes

16.6
11.7

Form 22-2 (Rev. 1-61)

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE WELL NO. 1106 CONTRACTOR Posey Drilling Co. RIG NO. REPORT NO. DATE 10-12 1977

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 Time	Wt.	Vis.	MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN
0	3	Surface
3	15	Shale
15	50	Sandstone
50	120	Shale
120	145	Sand Wet - MW
145	175	Shale

REMARKS –

DAYLIGHT

Driller Albert L. Posey 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 T.D. 460 ft SINGLES

MAKE DOWN ON KELLY

TOTAL DEPTH

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

FROM	TO	TIME BREAKDOWN
175	190	Sand Wet MW
190	250	Shale
250	270	Sandy shale
270	305	Shale
305	335	Sandy Shale
335	355	Shale

REMARKS –

Drilled 470 ft

Logged 451 ft

Making Water {120 ft - 145 ft; 175 - 190 ft}

Injected 220 ft

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
355	380	Shady Shale
380	415	Red Shale
415	428	Sandstone
428	431	Shale
431	440	Sandy Shale
440	470	Shale

REMARKS –

SIGNED: Toolpusher _____ Company Supervisor _____

1164 #7A 30-039-23845

C

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 P Sec. 8 Twp 28 Rng 5

Name of Well/Wells or Pipeline Serviced SAN JUAN 28-5 UNIT #7A

cps 1881w

Elevation 6507' Completion Date 7/28/87 Total Depth 280' Land Type* N/A

Casing, Sizes, Types & Depths 80' OF 7" PVC 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. 90'

Depths gas encountered: N/A

Type & amount of coke breeze used: N/A

Depths anodes placed: 230', 220', 210', 200', 175', 160', 150', 140', 135', 125'

Depths vent pipes placed: 245'

Vent pipe perforations: 165'

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.

Elevation 6507'

Gas Comp 7-31-87

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

WELL CASING

CATHODIC PROTECTION CONSTRUCTION REPORT

DAILY LOG

Drilling Log (Attach Hereto) ☐ N.M. 95-5600, Completion Date 7/28/87

CPS #	Well Name, Line or Plant	Work Order #	Static	Ins. Union Check
1881-W	SAN JUAN 28-5 # 7-A		.82 N	☒ Good ☐ Bad

Location	Anode Size	Anode Type	Size Bit
P-8-28-05	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
280'	245'				

Anode Depth	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10
	230	220	210	200	175	160	150	140	135	125
Anode Output (Amps)	3.8	3.2	4.4	4.8	2.3	3.3	4.9	3.9	3.1	3.6
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 12.12.	Amps 16.5	Ohms .734		

Remarks: 7/27/87 Drilled To 300' Ran #1 Anode would not go past 50' Redrilled 7/28/87 To 280' Set 80' of 7" P.V.C. CASING Logged. 245' 245' of 1" P.V.C. Perforated. 165' WATER WAS STANDING @ 90' (No Sample.)

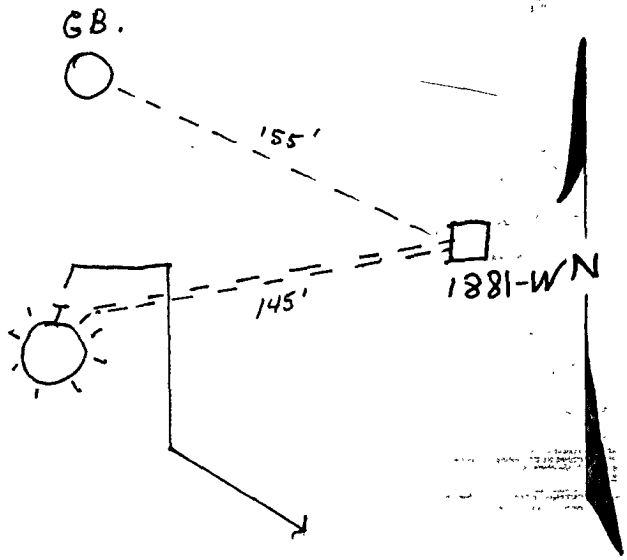
Rectifier Size:	40 V 16 A	4300.00 ✓
Addn'l Depth		750.00 ✓
Depth Credit:	255'	- 1020.00 ✓
Extra Cable:	30'	7.50 ✓
Ditch & 1 Cable:	155'	60.45 ✓
25' Meter Pole:	X	305.00 ✓
20' Meter Pole:		
10' Stub Pole:		
Ditch - 2 Cable	145'	75.40 ✓
Junction Box	X	40.00 ✓
PVC CASING	80'	1,760.00 ✓
		6278.35
TAX		313.92
TOTAL		6592.27 ✓

All Construction Completed

Mark McFarland

(Signature)

GROUND BED LAYOUT SKETCH



6507

BURGE CORROSION SYSTEMS, INC.

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

DEEP WELL GROUNDBED LOG

Date 7-28-87

Company MERIDIAN Oil ELEVATION 6507'

7345 Ω Well No. 28-5 #7-A Location SE 8-28-5 Volts Applied (Loaded) 12.12 Amperes 16.5

Depth	Reading	Remarks	Depth	Reading	Remarks	Depth	Reading	Remarks	Depth	Reading	Remarks
0											
5			230	2.2	(1)	455	3.8		680	3.5	(1) 2.2
10			235	1.7		460	3.2		685	3.3	(2) 1.7
15			240	1.8		465	4.4		690	4.1	(3) 2.6
20			245	1.9	T.D.	470	4.8		695	4.2	(4) 2.3
25			250			475	2.3		700	2.3	(5) 1.2
30			255			480	3.3		705	3.1	(6) 1.7
35			260			485	4.9		710	3.6	(7) 2.6
40			265			490	3.9		715	3.5	(8) 1.9
45			270			495	3.1		720	3.1	(9) 1.8
50			275			500	3.6		725	3.3	(10) 2.0
55			280			505			730		
60			285			510			735		
65			290			515			740		
70			295			520			745		
75			300			525			750		
80			305			530			755		
85		WATER	310			535			760		
90			315			540			765		
95			320			545			770		
100	0.5		325			550			775	7-27-87	
105	0.4		330			555			780	Drilled to	
110	.5		335			560			785	300' first	
115	.3		340			565			790	Hole	
120	.8		345			570			795	Ran 80'-7"	
125	2.0	10	350			575			800	CASING	
130	2.6	UP	355			580			805	7-28-87	
135	1.8	9	360			585			810	Drilled out	
140	1.9	8	365			590			815	to 230'.	
145	2.3	DOWN	370			595			820	Logged 245	
150	2.6	7	375			600			825		
155	2.1		380			605			830		
160	1.7		385			610			835		
165	[illegible]		390			615			840		
170	1.0		395			620			845		
175	1.2	5	400			625			850		
180	2.4		405			630			855		
185	0.6		410			635			860		
190	.6		415			640			865		
195	1.3		420			645			870		
200	2.3	4	425			650			875		
205	2.5		430			655			880		
210	2.6	3	435			660			885		
215	2.2		440			665			890		
220	1.7	(2)	445			670			895		
225	1.9		450			675			900		

APS 1881W

BURGE CORROSION SYSTEMS, INC.

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

MERIDAN OIL

COMPANY SJ. 28-5 7-A DAILY DRILLING REPORT Nov 27 19 87

WELL NAME:	WELL NUMBER:	SECTION:	TOWNSHIP:	RANGE:
		P 08	28	05

WATER AT:	FEET:	HOLE MADE:
~~80~~		300

DESCRIPTION OF FORMATION

FROM	TO	FORMATION IS	COLOR
0	80'	sand/clay — 8" casing	
80	300'	shale	

REMARKS: drilled to 300' lost hole at 45'
had to set casing 8" to 80' set ~~casing from~~.

Brian E. Burge Driller Tool Dresser

#13 30-039-07457

#89E 30-039-23857

868

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. 9 Twp 28 Rng 5

Name of Well/Wells or Pipeline Serviced SAN JUAN 28-5 UNIT #13, #89E

cps 1108w

Elevation 6642' Completion Date 9/27/77 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. 80'

Depths gas encountered: N/A

Type & amount of coke breeze used: 40 SACKS

Depths anodes placed: 275', 265', 205', 195', 180', 145', 135', 125', 115', 105'

Depths vent pipes placed: 280' OF 1" PVC VENT PIPE

Vent pipe perforations: 200'

Remarks: gb #1

RECEIVED
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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.

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

WELL CASING

CATHODIC PROTECTION CONSTRUCTION REPORT

DAILY LOG

Drilling Log (Attach Hereto) ☐ #89C

Completion Date 9-27-77

Well Name	Location	CPS No.
San Juan 28-5 #13	SW 9-28-5	1108W

Type & Size Bit Used	Work Order No.
6 3/4"	184-529644.19-50-20

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
320' logged 308'		40 Sacks		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	275	265	205	195	180	145	135	125	115	105
Anode Output (Amps)	3.8	4.0	4.5	3.3	3.6	4.0	4.9	5.3	5.2	4.9
Anode Depth	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Anode Output (Amps)	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20

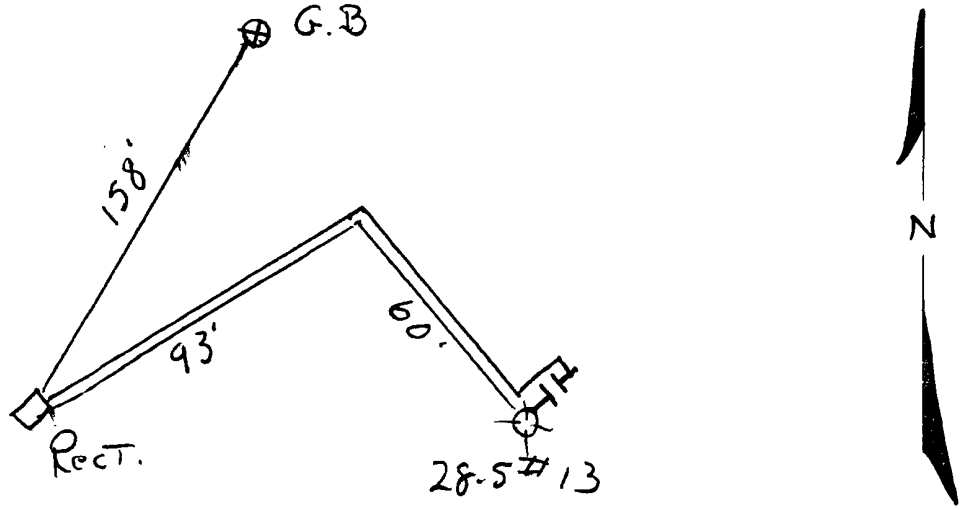
Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.7	Amps 19.3	Ohms .61		

Remarks: Driller said hit water at 80'
Static - 600" S = .72
Installed 280' of 1" Vent Pipe, Perforated 200' of Vent Pipe
Slurryed 32 Sacks of Coke
40V 16A Rect
Stub Pole

All Construction Completed

Nellis Knight Jr
(Signature)

GROUND BED LAYOUT SKETCH



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Le6642

El Paso Natural Gas Company
ENGINEERING CALCULATION

Sheet:
Date: 9-27-7
By:
File:

San Juan 28-5 # 13 W/O - 184 - 52964 19-50-20
SW 9-28-5
CPS 1108 W

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	17.48
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

STATIC - 600' S - .72
40V 16A Rect
STUB Pole

DRILLER Said hit water @ 280'
INSTALLED 280' of 1" VENT PIPE
PERFORATED 200' of VENT PIPE
SLURRYed 40 SACK COKE

	80	1.2			1.9	③			
		1.4		10	1.5				
	90	1.5			.8				
		1.7		20	.4				
100		2.3			.3				
		2.8	⑩	30	.2				
	10	2.6			.4				
		2.8	⑨	40	1.6				
	20	3.0			.9				
		2.7	⑧	50	.5				
	30	2.5			.8				
		2.7	⑦	60	1.6				
	40	2.3			2.1	②			
		1.8	⑥	70	2.0				
	50	1.1			2.1	①			
		.3		80	1.8				
	60	.3			1.4				
		.5		90	1.7				
	70	.6			1.6				
		1.8		300 logged 302'					
		2.1	⑤	TD 320'					
		1.7							
	10	1.3							
		1.6	④	20					
200		1.9							

①	275	2.3	3.8
②	265	2.2	4.0
③	205	2.3	4.5
④	195	1.8	3.3
⑤	180	2.1	3.6
⑥	145	2.3	4.0
⑦	135	2.8	4.9
⑧	125	3.0	5.3
⑨	115	3.0	5.2
⑩	105	3.0	4.9

11.7 VOLTS
19.3 AMPS
.61 ohms

Form 22-20(Rev. 1-64)

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE WELL NO. 1108W CONTRACTOR Posey Drilling Co. RIG NO. REPORT NO. DATE Sept 27 1977

MORNING	DAYLIGHT	EVENING
Driller Total Men In Crew	Driller Bob Posey Total Men In Crew	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	

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

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.	

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

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

FROM	TO	TIME BREAKDOWN
0	5	SURFACE
5	25	SANDY CLAY
25	50	SANDY SHALE
50	70	SHALE
70	80	SANDY SHALE
80	100	SAND WET (MAKING WATER)

FROM	TO	TIME BREAKDOWN
100	120	SANDY SHALE
120	140	SHALE
140	160	SANDY SHALE
160	170	SAND WET
170	190	SANDY SHALE
190	210	SHALE

FROM	TO	TIME BREAKDOWN
210	240	SANDY SHALE
240	260	SHALE
260	280	SANDY SHALE
280	300	SHALE
300	320	SANDY SHALE

REMARKS –

REMARKS –

REMARKS –

Drilled 320

Logged 302

Total Depth 311

SIGNED: Toolpusher Company Supervisor B

919 30-039-20472

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 SE Sec. 9 Twp 28 Rng 5

Name of Well/Wells or Pipeline Serviced SAN JUAN 28-5 UNIT #89

cps 1117w

Elevation 6690' Completion Date 9/26/77 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. 80'

Depths gas encountered: N/A

Type & amount of coke breeze used: 33 SACKS

Depths anodes placed: 280', 255', 245', 235', 225', 215', 160', 150', 140', 125'

Depths vent pipes placed: 288' OF 1" PVC VENT PIPE

Vent pipe perforations: 200'

Remarks: gb #1

RECEIVED
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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.

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 9-26-77

Well Name	Location	CPS No.
San Juan 28-5 # 89	SE 9-28-5	1117 W
Type & Size Bit Used 6 3/4		**Work Order No.** 184-54987.19-50-20

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
320' logged 308'		33 Sacks		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	280	255	245	235	225	215	160	150	140	125
Anode Output (Amps)	3.8	2.9	4.4	4.8	5.9	2.9	3.9	4.5	4.3	4.0

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

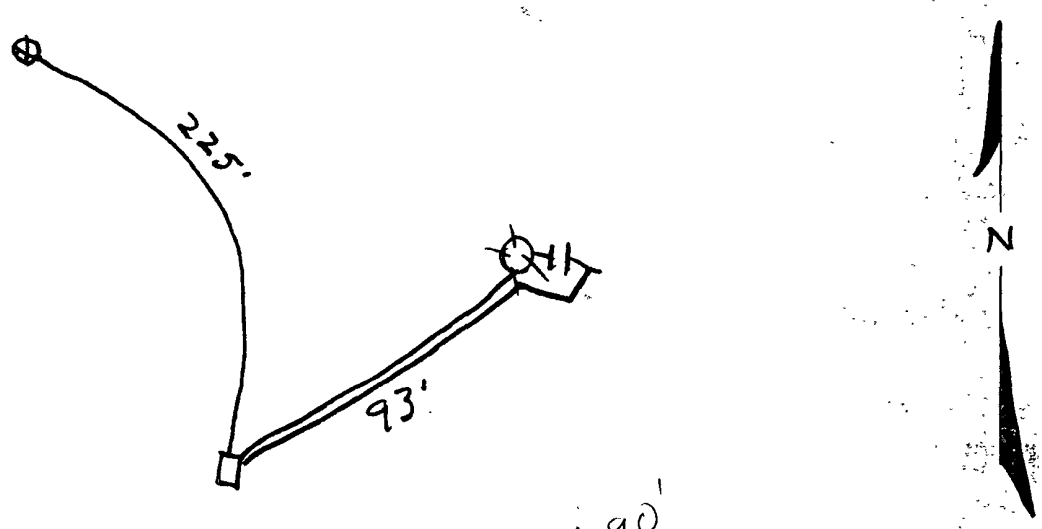
Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.6	Amps 17.3	Ohms .67		

Remarks: Driller said Hit water at 80', Next A.M Blew water
Static - 600' N = .68
Installed 288' of 1" Vent Pipe, Perforated 200' of Vent Pipe
Slurryed 33 sacks coke
40V 16A Rect
Stub Pole

All Construction Completed

Willis Knight Jr.
(Signature)

GROUND BED LAYOUT SKETCH



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Form E-1 (Rev 6-75)

El Paso Natural Gas Company

ENGINEERING CALCULATION

Sheet: ___ of ___
Date: 9-26-77
By:
File:

San Juan 28-5 87 W/O 181-54987-50-20
SE 9-28-5
2P3 1117 W

Static 600' N = .68
401 16A Rect
Stub Pole

Driller said hit water at 80'. Next AM blew water. Installed 288' of 1" vent pipe. Perforated 200' of vent pipe. Slurryed 33 sacks coke.

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

Depth	Reading		Depth	Reading	
80	.8			.6	
	2.3		10	.9	
90	2.2			1.2	(6)
	1.9		20	1.9	
100	2.1			2.7	(5)
	1.0		30	2.8	
10	.2			2.9	(4)
	.3		40	2.9	
20	.7			2.6	(3)
	2.1	(10)	50	1.9	
30	1.6			1.6	(2)
	2.6		60	1.5	
40	2.4	(9)		.8	
	2.0		70	.9	
50	2.1	(8)		1.5	
	2.3		80	2.0	(1)
60	2.1	(7)		1.5	
	1.3		90	.4	
70	.9			.2	
	.8		300	1.0	
180	.8			logged 308'	
	.9		10	TD 320	
90	1.0				
	.6		20		
200	.7				

Anode	Depth		
(1)	280	2.2	3.8
(2)	255	1.8	2.9
(3)	245	2.8	4.4
(4)	235	3.0	4.8
(5)	225	2.8	5.9
(6)	215	1.4	2.9
(7)	160	2.5	3.9
(8)	150	2.6	4.5
(9)	140	2.6	4.3
(10)	125	2.3	4.0

11.6 Volts
17.3 Amps
.67 ohms

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE WELL NO. 1117W CONTRACTOR Posey Drilling Co RIG NO. REPORT NO. DATE Sept 26 1977

MORNING

Driller Total Men In Crew

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

BIT NO. NO. DC SIZE LENG.

SER. 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	4	SURFACE
4	20	SANDY CLAY
20	40	SHALE
40	60	SANDY SHALE
60	80	SHALE
80	100	SAND WET (MAKING WATER)

REMARKS –

DAYLIGHT

Driller Bob Posey 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 6 3/4 STANDS

TYPE Rock SINGLES

MAKE DOWN ON KELLY

TOTAL DEPTH

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

FROM	TO	TIME BREAKDOWN
100	120	SANDY SHALE
120	140	SHALE
140	160	SANDY SHALE
160	180	SHALE
180	200	SANDY SHALE
200	220	SHALE

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
220	240	SANDY SHALE
240	260	SHALE
260	280	SANDY SHALE
280	300	SHALE
300	320	SANDY SHALE

REMARKS –

DRILLED 320

LOGGED 308

TOTAL DEPTH 314

SIGNED: Toolpusher Company Supervisor

30-039-07466

869

C

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 10 Twp 28 Rng 5

Name of Well/Wells or Pipeline Serviced SAN JUAN 28-5 UNIT #19

cps 1109w

Elevation 6656' Completion Date 9/28/77 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. 80'

Depths gas encountered: N/A

Type & amount of coke breeze used: 40 SACKS

Depths anodes placed: 235', 225', 215', 205', 195', 185', 175', 165', 155', 145'

Depths vent pipes placed: 240' OF 1" PVC VENT PIPE

Vent pipe perforations: 200'

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.

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 9-28-77

Well Name	Location	CPS No.
SAN JUAN 28-5 UNIT #19	SW 10-28-5	1109W

Type & Size Bit Used	Work Order No.
6 3/4"	53263.19

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
320 Logged 313		40		

Anode Depth	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
	235	225	215	205	195	185	175	165	155	145
Anode Output (Amps)	4.0	5.0	4.8	3.5	2.6	3.7	3.2	4.5	5.3	4.6

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 11.2	Amps 16.0	Ohms 0.70		

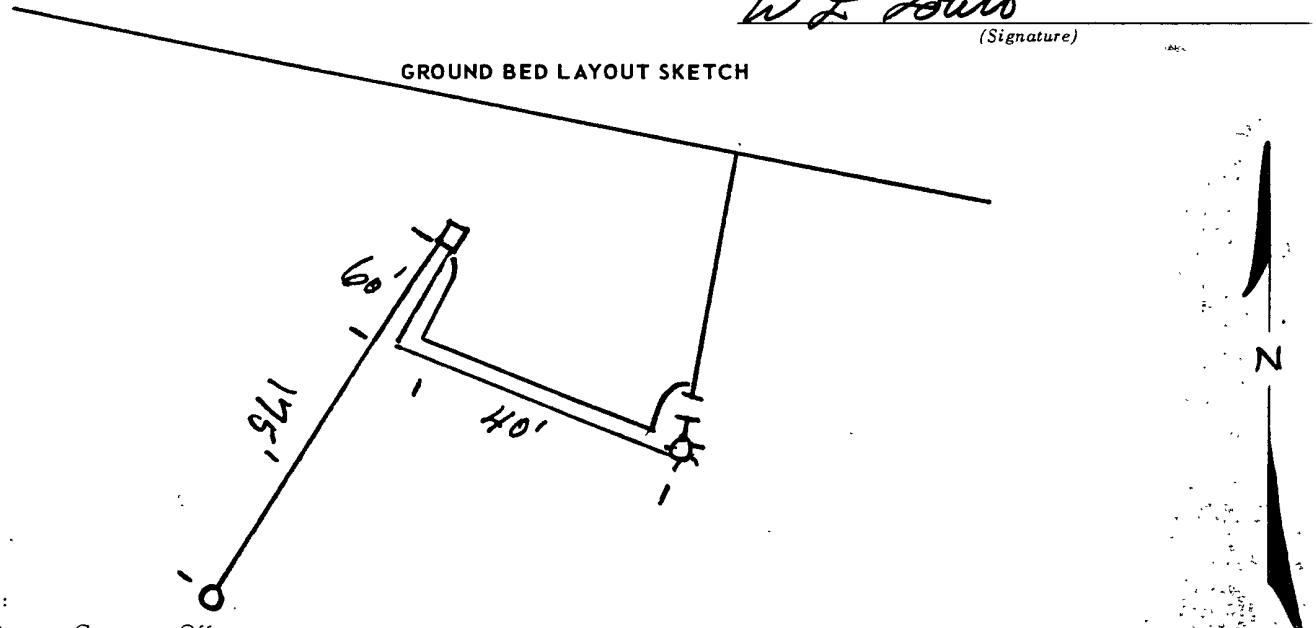
Remarks: Static 600' E = 0.79. Driller said making water @ 80' started Inj. @ 140'. Perforated 200' of 1" PVC vent pipe. Installed 240' of 1" PVC vent pipe. Slurryed 40 sacks of coke.

Installed 40V 16A Rectifier & Stnl Pole

All Construction Completed

W F Loutt
(Signature)

GROUND BED LAYOUT SKETCH



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6654

Form 1 (Rev. 8-75)

El Paso Natural Gas Company
ENGINEERING CALCULATION

Sheet: ___ of ___
Date:
By:
File:

SAN JUAN 28-5 Unit #19 SW10-28-5 1109W 53263.19

static 600 E = 0.79

40V 16A Rectifier
Stub Pole

Driller said making water @ 80'

Perforated 200' of 1" PVC vent Pipe
Installed 240' of 1" PVC vent Pipe
Slurryed sacks of coke

Pick up Rack
For wire Reels

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

Depth	Reading	Anode	Depth	Reading
80			30	2.5
				2.6 — ①
90			40	1.4
				.4
100			50	.4
				.6
10			60	.6
				1.0
20	.5 .3		70	.4
	1.9 1.5			.3
30	2.2 2.0		80	.3
	2.4 1.9			1.2
40	2.7 2.2		90	1.4
	2.5 2.3	⑩		1.5
50	2.6 2.6		300	1.2
	3.6 2.5	⑨		.8
60	2.8 2.5		10	
	2.2	⑧		313 TD
70	1.7		20	
	1.8	⑦		
80	2.2			
	2.2	⑥		
90	1.3			
	1.5	⑤		
200	1.7			
	2.2	④		
10	2.4			
	2.7	③		
20	2.6			
	2.6	②		

Anode	Depth	Reading	
①	235	2.6	4.0
②	225	3.1	5.0
③	215	3.1	4.8
④	205	2.2	3.5
⑤	195	1.5	2.6
⑥	185	2.2	3.7
⑦	175	1.8	3.2
⑧	165	2.7	4.5
⑨	155	2.9	5.3
⑩	145	2.6	4.6

11.2 Volts
16.0 Amps
0.70 Ohms

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE WELL NO. 1109W CONTRACTOR Posey Drilling Co, RIG NO. REPORT NO. DATE 9-28-77 19

MORNING

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			MUD, ADDITIVES USED AND RECEIVED
Time	Wt.	Vis.	

FROM	TO	TIME BREAKDOWN
0	8	surface
8	15	Sandstone
15	22	Sand wet
22	35	Shale
35	46	Sand Wet
46	79	shale

REMARKS –

DAYLIGHT

Driller Albert L Posey Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
		T.D 316 ft		

BIT NO. SERIAL NO. SIZE 6 3/4 TYPE Rock MAKE

NO. DC SIZE LENG.

NO. DC SIZE LENG.

STANDS SINGLES DOWN ON KELLY TOTAL DEPTH

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

FROM	TO	TIME BREAKDOWN
79	85	Sand Wet MW
85	125	Sandy shale
125	185	shale
185	232	Sandy shale
232	250	Red shale
250	258	Blue Shale

REMARKS –

Drilled	320 ft
Logged	313 ft
making Water	79-85
injected	140 ft

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			MUD, ADDITIVES USED AND RECEIVED
Time	Wt.	Vis.	

FROM	TO	TIME BREAKDOWN
258	275	Sandy shale
275	300	shale
300	320	sandy shale

REMARKS –

SIGNED: Toolpusher Company Supervisor

30-039-21864

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. 10 Twp 28 Rng 5

Name of Well/Wells or Pipeline Serviced SAN JUAN 28-5 UNIT #96

cps 1540w

Elevation 6712' Completion Date 6/2/80 Total Depth 430' 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. 40' SAMPLE TAKEN

Depths gas encountered: N/A

Type & amount of coke breeze used: 44 SACKS

Depths anodes placed: 375', 355', 340', 320', 290', 270', 255', 245', 235', 210'

Depths vent pipes placed: 420'

Vent pipe perforations: 360'

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.

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 6-2-80

Well Name	Location	CPS No.
S.J 28-5 #96	SE 10-28-5	1540 W

Type & Size Bit Used	Work Order No.
6 3/4"	57505-21

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
430' logged 420'		44 Sacks		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	375'	355	340	320	290	270	255	245	235	210
Anode Output (Amps)	3.3	3.1	3.0	3.8	4.6	3.2	3.25	3.85	4.70	3.65
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 11.9	Ohms .60		

Remarks: STATIC 600' N = .98. INSULATED UNION - OK. DRILLER SAID HIT WATER AT 40' INSTALLED 420' of 1" VENT PIPE. PERFORATE 360' of VENT PIPE

NOTHING has been INSTALLED

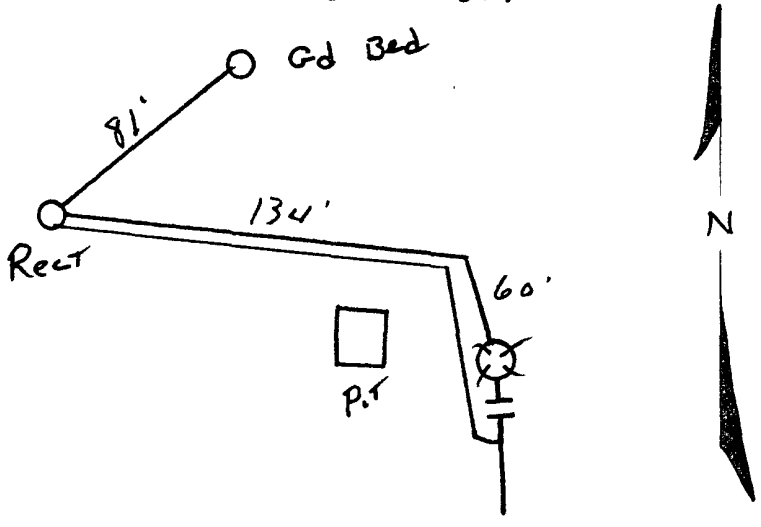
1 STUB Pole
1 40V 16A RECT
DITCH + 1 CABLE - 275'
EXTRA CABLE - 214'
HOLE - 80'
TIME - 19 HRS.

All Construction Completed

Willis Knight Jr
(Signature)

14 Hrs. REG.
5 Hrs. O.T.

GROUND BED LAYOUT SKETCH



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YELLOW – Area Corrosion Office
PINK – Originator File

0712

Form 1 (Rev 9-77)

El Paso Natural Gas Company
ENGINEERING CALCULATION

Sheet: ___ of ___
Date: 6-2-8
By: WK
File: 19 hrs.

S.J. 28-5 #96
S E 10-28-5
CPS 1540 W
W/O 57505-21

STATIC 600' N = .98
INSULATED UNION - OK

1 STUB POLE
1 40V 16A RECT
DITCH & 1 CABLE
EXTRA CABLE
HOLE

DRILLER SAID HIT WATER AT 40'. CAUGHT WATER SAMPLE DRILLED TO 200' NOT ENOUGH SHALE DRILLED TO 430'. INSTALLED 420' OF 1" VENT PIPE PERFORATED 360' OF VENT PIPE SLURRIED 44 SACK OF COKE BREEZE

40	1.0	1.9	220	2.6	400	1.1	
45	1.80	2.8	225	1.7	405	1.5	
50	1.20	2.4	230	2.7	410	.4	
55	1.20	1.8	235	2.9 (9)	415	.4	
60	1.10	1.9	240	2.7	420		logged
65	.80	1.5	245	2.4 (8)	425		
70	.80	1.5	250	2.0	430		TD
75	.80	1.7	255	2.0 (7)	435		
80	.80	1.7	260	1.5	440		
85	.60	1.4	265	1.7	445		
90	.65	1.10	270	2.2 (6)			
95	.65	1.0	275	2.1			
100	.60	1.0	280	1.7			
105	.45	1.0	285	1.8			
110	.40	1.0	290	2.7 (5)			
115	.45	1.0	295	3.1			
120	.65	1.7	300	3.3			
125	1.45	2.4	305	3.2			
130	.70	2.0	310	3.1			
135	.85	2.3	315	2.4			
140	.85	2.7	320	2.3 (11)			
145	1.00	2.6	325	2.4			
150	1.45	2.6	330	.4			
155	1.40	2.4	335	1.5			
160	.80	2.2	340	2.2 (3)			
165	.45	1.0	345	1.6			
170	.40	.50	350	1.3			
175	1.00	1.1	355	2.1 (2)			
180		1.4	360	1.6			
185		.9	365	1.6			
190		.8	370	1.8			
195		.9	375	2.0 (1)			
200		2.5	380	1.1			
210		2.6 (10)	385	.6			
215		1.8	390	.4			

(1)	375	2.15	3.3
(2)	355	2.10	3.1
(3)	340	2.10	3.0
(4)	320	2.35	3.8
(5)	290	2.70	4.6
(6)	270	2.10	3.2
(7)	255	2.00	3.25
(8)	245	2.40	3.85
(9)	235	2.95	4.70
(10)	210	2.60	3.65

11.3 V 18.9 A .60 Ω

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. 1-9913 **Date** 6-23-80

Operator El Paso Natural Gas **Well Name** San Juan 28-5 #96

Location SE 10-28-5 **County** Rio Arriba **State** New Mexico

Field Basin **Formation** Dakota

Sampled From [redacted]

Date Sampled 6-2-80 **By** ______

Tbg. Press. ______ **Csg.** ______ **Surface Csg. Press.** ______

	ppm	epm		ppm	epm
Sodium	1035	45	Chloride	10	.3
Calcium	204	10	Bicarbonate	137	2
Magnesium	16	1	Sulfate	2600	54
Iron	No Test		Carbonate	0	0
H_2S	Present		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 4066

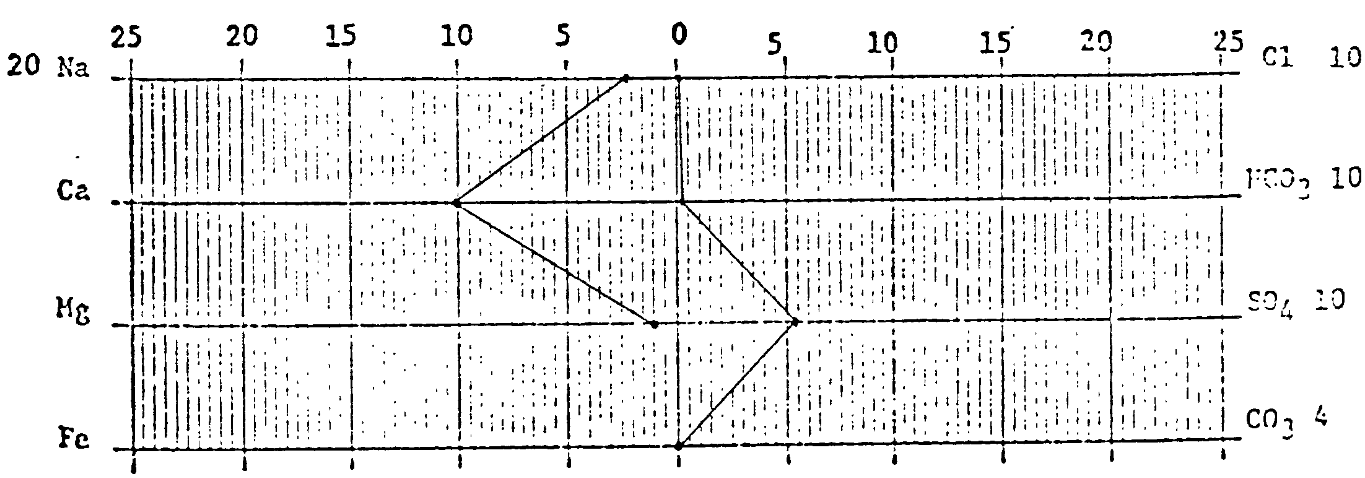
pH 7.9

Sp. Gr. 1.0046 **At** 60°F

Resistivity 211 ohm-cm at 77 °F

Chemist

RZE



Scale: epm

Form 22-2 (Rev. 1-61)

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

San Juan 28-5 | No. 96 | Three C Drilling | 2 | CPS 1540 W | DAILY DRILLING REPORT

LEASE SE 10-28-5 | WELL NO. | CONTRACTOR | RIG NO. | REPORT NO. 57505-A | DATE June 2 | 1980

MORNING

Driller Kevin Burge | Total Men In Crew 2

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

BIT NO. | NO. DC ___ SIZE ___ LENG ___

SERIAL NO. | NO. DC ___ SIZE ___ LENG. ___

SIZE 6 3/4 | STANDS

TYPE | SINGLES

MAKE | DOWN ON KELLY

TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN
20	100	sandstone + shale + bentonite
100	180	shale + sandstone shale
180	240	sandstone bentonite
240	330	shale + sandstone bentonite
330	390	shale
390	430	sandstone + bentonite

REMARKS – Water was at 40' feet 110' feet 2 gallons a minute

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

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 Kevin Burge | Company Supervisor

555 10-30-039-07417

E

88-30-039-20475

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

1116W

Operator MERIDIAN Location: Unit K Sec. 15 Twp 28 Rng 5

Name of Well/Wells or Pipeline Serviced SAN JUAN 28-5 #10 + #88

Elevation ____ Completion Date 8-28-91 Total Depth 405' Land Type F

Casing Strings, Sizes, Types & Depths 8" PVC SURFACE CASING 80' DEEP

If Casing Strings are cemented, show amounts & types used Yes - 22 SACKS NEAT CEMENT

If Cement or Bentonite Plugs have been placed, show depths & amounts used NO

Depths & thickness of water zones with description of water: Fresh, Clear, Salty, Sulphur, Etc. FRESH 100'

Depths gas encountered: NO

Ground bed depth with type & amount of coke breeze used: 405' w/ 4L 15 BAGS LORESCO TYPE SW & 88 BAGS ASBURY 4518 FLO COKE

Depths anodes placed: 375, 365, 303, 294, 285, 249, 240, 230, 220, 211, 202, 145

Depths vent pipes placed: 405'

Vent pipe perforations: BOTTOM 300'

Remarks:

RECEIVED
FEB 24 1992
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#	P/L NAME(s), NUMBER(s)					
1116-W	S. J. 28-5 #10, #88					
#49498A 44064A	TOTAL	VOLTS 12.46	AMPS 27.6	OHMS .45	DATE 8-28-91	NAME MRW

REMARKS (notes for construction log) 80' 8" - 22 CEMENT

WATER 100' perforated bottom 300'

TD 405

40 3.0
95 2.0

88 Asbury 15 loresco

DEPTH	LOG ANODE	ANODE #	DEPTH	LOG ANODE	ANODE #	DEPTH	LOG ANODE	ANODE #	DEPTH	LOG ANODE	ANODE #
100	2.0		295	3.1		490			685		
105	1.7		300	3.1		495			690		
110	1.7		305	1.9		500			695		
115	2.4		310	1.3		505			700		
120	2.0		315	.9		510					
125	2.2		320	.6		515					
130	3.1		325	.5		520					
135	3.5		330	.4		525					
140	3.6		335	.4		530					
145	3.5		340	.4		535					
150	2.7		345	.5		540					
155	2.8		350	.5		545					
3	2.8		355	.7		550					
105	1.6		360	2.6		555					
170	1.2		365	2.5		560					
175	1.0		370	2.4		565					
180	.9		375	2.2		570					
185	.7		380	1.6		575					
190	.8		385	1.5		580					
195	1.1		390	1.4		585					
200	1.7		395	1.5		590					
205	3.9		400	2.0		595					
210	3.6		405	2.7	TD	600					
215	3.7		410			605					
220	3.6		415			610					
225	3.2		420			615					
230	3.2		425			620					
235	3.3		430			625					
240	3.1		435			630					
245	2.7		440			635					
250	1.9		445			640					
255	1.1		450			645					
260	.8		455			650					
265	1.3		460			655					
270	.6		465			660					
275	1.1		470			665					
280	2.3		475			670					
3	2.4		480			675					
J	2.8		485			680					

ANODE #	DEPTH	NO COKE	FULLY COK'D
1	375	2.3	4.0
2	365	2.6	4.8
3	303	2.8	4.9
4	294	3.1	5.8
5	285	2.5	5.0
6	249	2.4	4.8
7	240	3.3	6.6
8	230	3.4	6.8
9	220	3.7	7.8
10	211	3.7	7.7
11	202	2.9	7.1
12	145	3.5	6.4
13			
14			
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27			
28			
29			
30			

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copy – Region Corrosion Specialist

API WATER ANALYSIS REPOR FORM

Laboratory No. 25910830-I

Company: MERIDIAN OIL		Sample No.: 1116W	Date Sampled: 8/28/91
Field:	Legal Description: K15-28-5	County or Parish: Rio Arriba	State: N.M.
Lease or Unit:	Well: SJ 28-5 #10	Depth:	Formation: MV	Water, B/D:
Type of Water (Produced, Supply, etc.):	Sampling Point: GROUND BED 100'		Sampled By: MRW

DISSOLVED SOLIDS

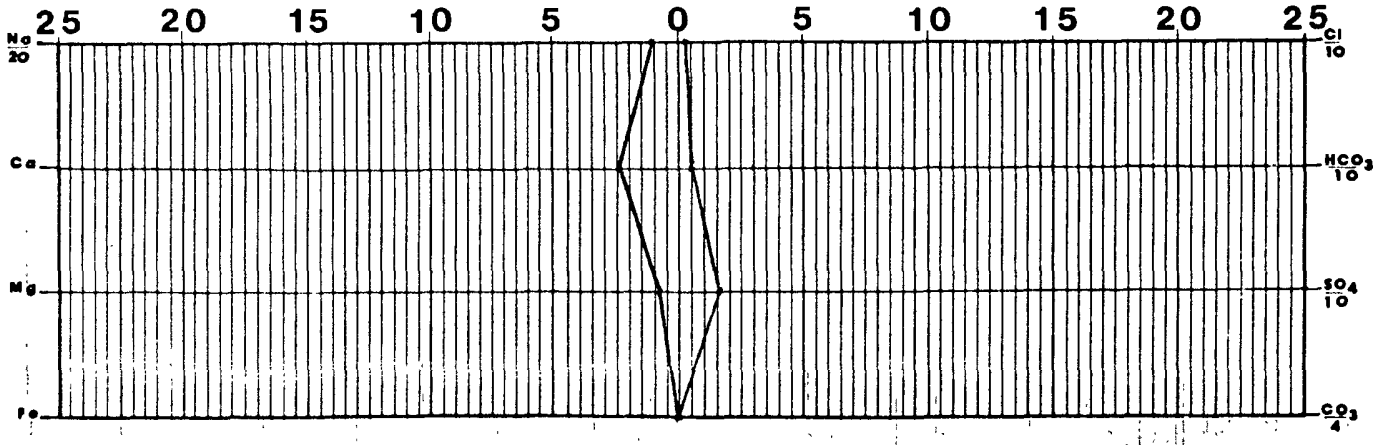
CATIONS	mg/l	me/l
Sodium, Na (calc.)	480	21
Calcium, Ca	48	2.4
Magnesium, Mg	9.7	0.8
Barium, Ba		

ANIONS		
Chloride, Cl	110	3.0
Sulfate, So_4	790	16
Carbonate, CO_3	0	0
Bicarbonate, HCO_3	310	5.0

OTHER PROPERTIES

pH	8.3
Specific Gravity, 60/60 F.	1.0028
Resistivity (ohm-meters) 70° F.	5.70
Total Dissolved Solids (calc.)	1700
Iron, Fe (total)	
Sulfide, as H_2S	

REMARKS & RECOMMENDATIONS:



Date Received	Preserved	Date Analyzed	Analyzed By
8/30/91	No	8/31/91	

TECH, Inc.
333 East Main
Farmington
New Mexico
87401
505/327-3311

916 27 - 30-039-07442
93 - 30-039-20876
201 - 30-039-24474

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. 15 Twp 28 Rng 5

Name of Well/Wells or Pipeline Serviced SAN JUAN 28-5 UNIT #27, #93, #201

cps 1115w

Elevation 6681' Completion Date 10/21/77 Total Depth 220' 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. 107' - 119'

Depths gas encountered: N/A

Type & amount of coke breeze used: 40 SACKS

Depths anodes placed: 185', 145', 125'

Depths vent pipes placed: 220' OF 1" PVC VENT PIPE

Vent pipe perforations: 120'

Remarks: gb #2

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.

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

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Drilling Log (Attach Hereto). ☐ #27

Completion Date 10-21-77

Well Name	Location	CPS No.
SAN JUAN 28-8 UNIT #27 #93	NE 15-28-5	1115W
Type & Size Bit Used: 6 3/4"		Work Order No. #27=53463.19 #93=55635.21

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
320 Logged-308		56		

Anode Depth	# 1 285	# 2 275	# 3 265	# 4 255	# 5 240	# 6 215	# 7 205	# 8 195	# 9 185	# 10 185
Anode Output (Amps)	# 1 4.1	# 2 4.9	# 3 4.6	# 4 3.6	# 5 2.6	# 6 2.6	# 7 4.2	# 8	# 9	# 10 2.8
Anode Depth	# 11 145	# 12 125	# 13	# 14	# 15	# 16	# 17	# 18	# 19	# 20
Anode Output (Amps)	# 11 2.2	# 12 2.5	# 13	# 14	# 15	# 16	# 17	# 18	# 19	# 20

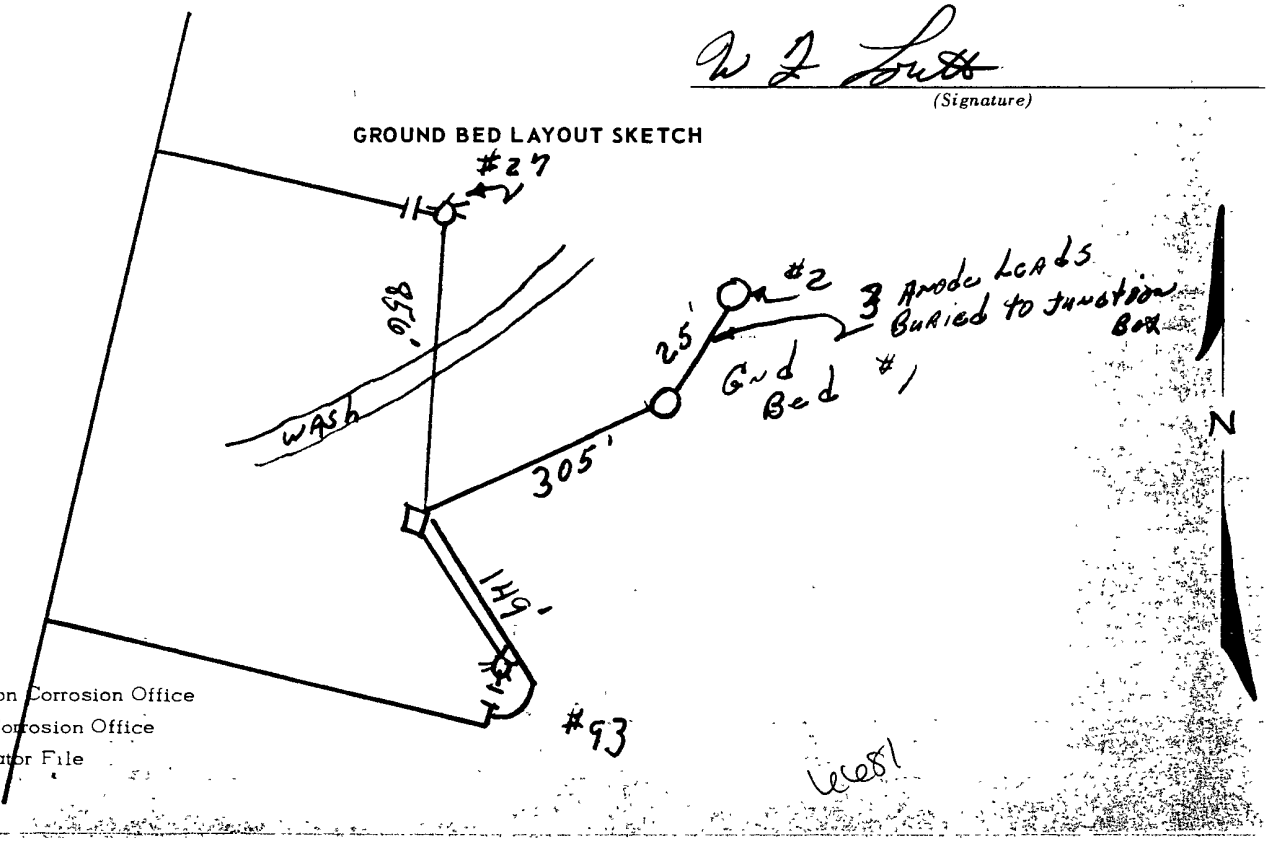
Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.5	Amps 13.4	Ohms 0.86		

Remarks: Static #27 600'N = 0.72, Static #93 600'S = 0.75 Installed 10-2"x2"x48" Graphite Anodes. Driller said making water @115'. Installed 300' of 1" PVC Vent Pipe. Perforated 200' of 1" PVC vent Pipe, Hole Bridged Above Anode #8 & #9. Drilled Hole #2. Installed Anodes #10, #11 & #, Installed 220' of 1" PVC vent Pipe & Perforated 120' of vent Pipe in Hole #2. Slurryed 56 sacks of Coke in Hole #1 & 40 sacks of Coke in Hole #2, Installed 60V 30 A Rectifier & stub Pole

All Construction Completed

W L Lutt
(Signature)

GROUND BED LAYOUT SKETCH



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Level

Form 7-1 (Rev. 8-75)

El Paso Natural Gas Company
ENGINEERING CALCULATION

Sheet: ____ of ____
Date:
By:
File:

Hole #1
7- Anodes

SAN JUAN 28-5 UNIT # 27 — 53463.19
SAN JUAN 28-5 UNIT # 93 — NE 15-28-5 — 1115W — 55635.21

Static 600' N = 0.72 = 93
Static 600' S = 0.75 = 27

60V 30A Rectifier
Stn6 Pole

DRILLER SAID MAKING WATER @ 115'
Started Inj @
PERFORATED 200' of 1" PVC Vent Pipe
Installed 300 of 1" PVC Vent Pipe
SLURRIED 56 SACKS OF COKE

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

			60 1.5 —				
1 15 .4			1.6	③			
20 1.0			70 1.6 —				
.9			1.7	②			
30 .3			80 1.6 —				
.4			1.4	①			
40 1.2 —	(10)		90 1.4				
.9			1.3				
50 .7			300 .9				
.4			.2				
60 .4			308 + D				
.4							
70 .5			20				
.4							
80 .5							
1.0 —	(9)				① 285	1.8	3.6
90 1.4					② 275	2.2	4.3
1.6 —	(8)				③ 265	2.1	4.3
200 1.8					④ 255	1.8	3.4
1.7 —	(7)				⑤ 240	1.4	2.5
10 1.4					⑥ 215	1.4	2.6
1.2 —	(6)			Bridged	⑦ 205	2.2	4.0
20 1.0					~~⑧ 195~~	~~2.1~~	~~2.2~~
.9					~~⑨ 185~~	~~1.9~~	~~2.0~~
30 .9					~~⑩ 140~~		
.8							
40 1.1	(5)			Hole #2	⑩ 185	1.6	2.8
1.0					⑪ 145	1.1	2.2
50 .8					⑫ 125	1.4	2.5
1.1	(4)						
					11.5 Volts		
					13.4 Amps		
					0.86 OHMS		

3.6	4.1	
4.3	4.9	
4.3	4.6	
3.4	3.6	Hole #1
2.5	2.6	
2.6	3.6	
4.0	4.2	

Form 7-1 (Rev. 8-75)

El Paso Natural Gas Company

ENGINEERING CALCULATION

Sheet: ____ of ____
Date:
By:
File:

Hole # 2
3 anodes

SAN JUAN 28-5 UNIT # 27 — 53463.19
SAN JUAN 28-5 UNIT # 93 — NE 15-28-5 — 11/5W — 55635.21

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

Depth	Reading	Anode
120	1.2	
	1.1	(12)
30	.2	
	.2	
40	.9	
	.9	(11)
50	.5	
	.4	
60	.3	
	.4	
70	.4	
	.4	
80	.4	
	1.2	(10)
90	1.4	
	1.6	
200	1.8	
	1.6	
10	211 TD	

20'

Installed 220' of 1" PVC Vent Pipe
Perforated 140' of 1" PVC Vent Pipe

Anode	Depth	Reading
(10)	185	1.6
(11)	145	1.1
(13)	125	1.4

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

Hole #2

Form 22-2 (Rev. 1-61)

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE WELL NO. 1115 CONTRACTOR Posey Drilling Co RIG NO. REPORT NO. DATE 10-21 19 77

MORNING					DAYLIGHT					EVENING				
Driller		Total Men In Crew			9H Driller Albert L Posey		Total Men In Crew 3			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.
		NO. DC ____ SIZE ____ LENG. ____					NO. DC ____ SIZE ____ LENG. ____					NO. DC ____ SIZE ____ LENG. ____		
BIT NO.		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 6 3/4		SINGLES			SIZE		SINGLES		
TYPE		DOWN ON KELLY			TYPE Rock		DOWN ON KELLY			TYPE		DOWN ON KELLY		
MAKE		TOTAL DEPTH			MAKE		TOTAL DEPTH			MAKE		TOTAL DEPTH		

T.D 215 ft

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

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

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

FROM	TO	TIME BREAKDOWN
0	15	Surface
15	55	Shale
55	62	Sandy Shale
62	65	Shaly
65	75	Sand stone
75	107	Shale

FROM	TO	TIME BREAKDOWN
107	119	Sand Wet MW
119	130	Shale
130	135	Red shale
135	155	Blue Shale
155	162	Sandy shale
162	178	Shale

FROM	TO	TIME BREAKDOWN
178	181	Sandy Shale
181	186	Sandstone
186	189	Shale
189	203	Sandy stone
203	220	Shale

REMARKS –

REMARKS –

Drilled 220 ft
Logged 211 ft
Making Water 107'-119'
Injected 120 ft

REMARKS –

SIGNED: Toolpusher _____ Company Supervisor _____

Form 22-2 (Rev. 1-61)

Hole #1

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE WELL NO. 1115 W CONTRACTOR Posey Drilling Co. RIG NO. REPORT NO. DATE Oct. 3 1977

MORNING

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
0	20	Surface
20	35	Shale
35	54	Sandstone
54	72	Shale
72	98	Sandstone
98	115	Shale

REMARKS –

DAYLIGHT

Driller ALBERT L. POSEY Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
		TD. 314 ft		

NO. DC SIZE LENG.

BIT NO. NO. DC SIZE LENG.

SERIAL NO. STANDS

SIZE 6 3/4 SINGLES

TYPE Rock DOWN ON KELLY

MAKE TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN
115	130	Sand Wet MW
130	135	Red shale
135	150	Sandstone
150	170	Shale
170	190	Sandstone
190	210	Red shale

REMARKS –

Drilled — 320 ft

Logged — 308 ft

Making Water — 115 - 130 ft

Injected — 120 ft

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
210	255	Shale
255	265	Sandy Shale
265	290	Shale
290	308	Red shale
308	320	Blue

REMARKS –

SIGNED: Toolpusher Company Supervisor

30-039-07413

435

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. 17 Twp 28 Rng 5

Name of Well/Wells or Pipeline Serviced SAN JUAN 28-5 UNIT #33

cps 1121w

Elevation 6689' Completion Date 9/1/77 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. 210' - 235'

Depths gas encountered: N/A

Type & amount of coke breeze used: 37 SACKS

Depths anodes placed: 360', 350', 340', 330', 300', 290', 280', 270', 260', 245',220'

Depths vent pipes placed: 380' OF 1" PVC VENT PIPE

Vent pipe perforations: 200'

Remarks: gb #1 NO COKE AROUND #8 & #9 ANODES.

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.

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

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Drilling Log (Attach Hereto). ☐ #68

Completion Date 9-1-77

Well Name	Location	CPS No.
S.J 28-5 # 33	SW17- 28-5	1121W

Type & Size Bit Used	Work Order No.
6 3/4	184-20355.19-50-20

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
400 logged 400		37 Sacks		

Anode Depth	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10
	360	350	340	330	300	290	280	270 X	269 X	245
Anode Output (Amps)	3.0	3.0	3.3	2.7	3.0	4.8	4.9	X	X	3.8

Anode Depth	# 11	# 12	# 13	# 14	# 15	# 16	# 17	# 18	# 19	# 20
	220	210								
Anode Output (Amps)	2.7	3.8								

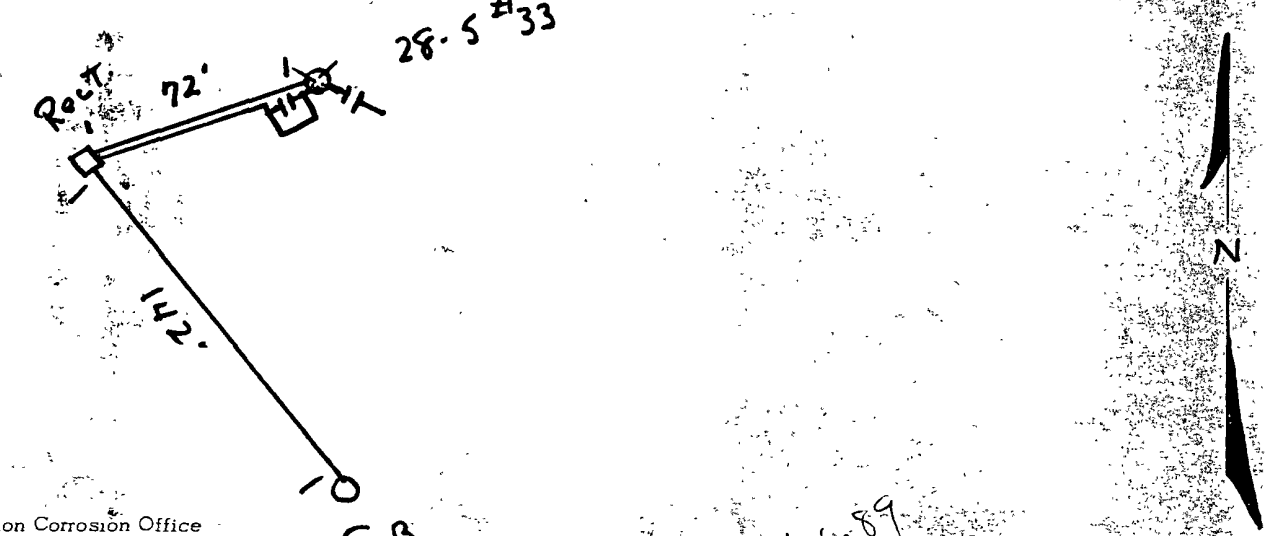
Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.3	Amps 20	Ohms .57		

Remarks: DRILLER Said H.T WATER 210' TO 235'
INSTALLED 380' 1" VENT PIPE, PERFORATED 200' of VENT PIPE
SLURRYED 37 SACK of COKE, NO COKE AROUND # 8 & 9 Anode,
added # 11 & 12 ANODE.
40V 16A RECT.
STUB Pole STATIC 600' S.E. - .90

All Construction Completed

Willis Knight Jr.
(Signature)

GROUND BED LAYOUT SKETCH



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6-6-89

Form 7-1 (Rev. 9-75)

El Paso Natural Gas Company
ENGINEERING CALCULATION

Sheet: ____ of ____
Date:
By:
File:

San Juan 28-5 #33 W/O 184-2035519-50-20
SW17-28-5
CPS 1121W

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

STATIC #33 600 SE .90
37 Sacks of Coke
40V 16A Rect
STUB Pole

DRILLER Said Hit WATER at 210' TO 235'
INSTALLED 380' 1" VENT PIPE
PERFORATED 200 of VENT PIPE

210	1.4		60	1.9	①						
	1.4			1.6							
20	1.0		70	1.4							
	.9			1.4							
30	.8		80	1.0							
	.7			1.0							
40	.7		90	1.0							
	1.2	⑩		1.2							
50	1.1		400								
	2.1										
60	2.5	⑨	TD 400								
	2.4		logged 400								
70	2.5	⑧									
	2.4										
80	2.3	⑦									
	2.4										
90	2.3	⑥									
	1.9										
300	1.8	⑤									
	1.7										
10	1.2					①	360	2.4		3.0	
	1.2					②	350	2.3		3.0	
20	1.1					③	340	2.6		3.3	
	1.7					④	330	2.0		2.7	
30	1.8	⑪				⑤	300	2.5		3.0	
	1.4					⑥	290	2.6		4.8	
40	1.8	③				⑦	280	3.4		4.9	
	2.1				NO COKE	~~⑧ 270~~		~~3.3~~		~~4.0~~	
50	1.7	②			NO COKE	~~⑨ 260~~		~~3.5~~		~~3.3~~	
	2.0					⑩	245	2.8		3.8	
						⑪	220	1.9		2.7	
			11.3 VOLTS			⑫	210	2.0		3.8	
			20 AMPS								
			.57 ohms								

Hole # 2

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE WELL NO. 121W CONTRACTOR Posey RIG NO. REPORT NO. DATE 8-31 1977

MORNING

Driller Total Men In Crew

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

BIT # 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	8	Surface
8	25	Clay
25	35	Shale
	50	Sandstone
50	120	Shale
120	130	Sand wet

REMARKS –

DAYLIGHT

Driller Posey Total Men In Crew

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

BIT NO. 6 3/4 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
130	135	Shale
135	145	Sand wet
145	210	Shale
210	235	Sand wet
235	260	Shale
260	290	Sandy Shale

REMARKS –

EVENING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
Logged	400			
400	TD			

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
290	400	Shale

REMARKS –

SIGNED: Toolpusher Company Supervisor

955 #28 30-039-07428
#75 30-039-20108

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 17 Twp 28 Rng 5

Name of Well/Wells or Pipeline Serviced SAN JUAN 28-5 UNIT #28, #75

cps 1120w

Elevation 6589' Completion Date 9/8/77 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. 97' - 119'

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

Depths gas encountered: N/A

Type & amount of coke breeze used: 38 SACKS

Depths anodes placed: 270', 260', 250', 230', 220', 210', 200', 165', 155', 145'

Depths vent pipes placed: 280' OF 1" PVC VENT PIPE

Vent pipe perforations: 200'

Remarks: gb #1

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 9-8-77

Well Name	Location	CPS No.
SAN JUAN 28-5 UNIT #28 #75	NE 17-28-5	1120W
Type & Size Bit Used: 6 3/4"		Work Order No: #28= 53464.19 #75= 54555.19

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
320 Logged-314		38		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	270	260	250	230	220	210	200	165	155	145
Anode Output (Amps)	4.0	3.6	3.9	3.0	3.9	3.4	3.9	3.6	5.3	5.7
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

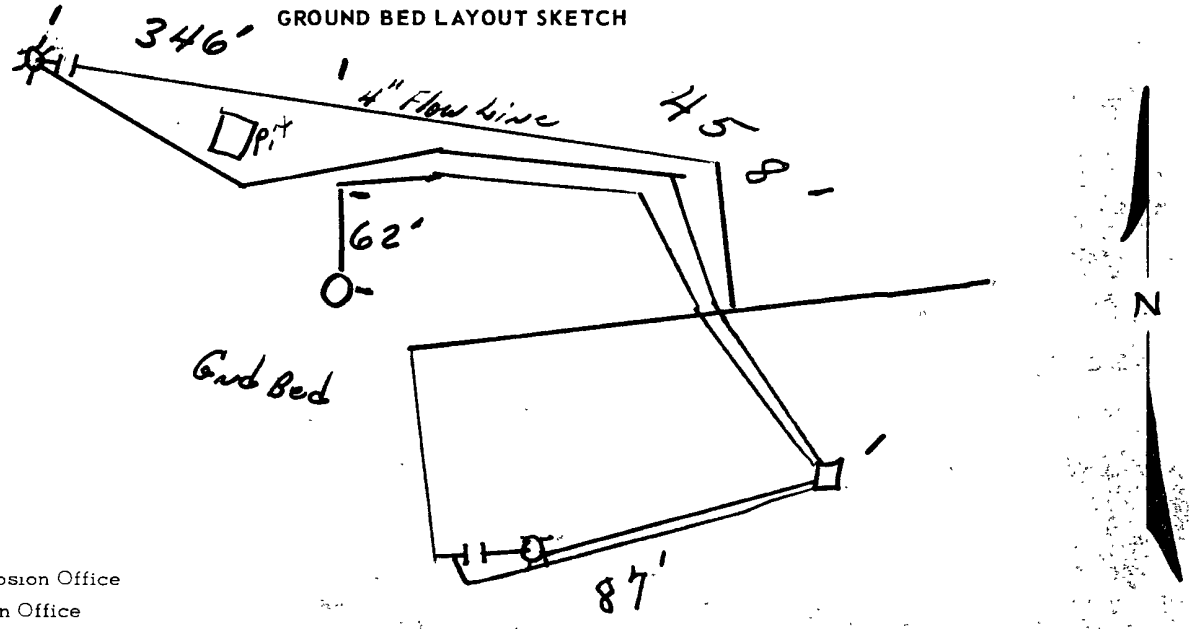
Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 12.0	Amps 14.2	Ohms 0.85		

Remarks: Static #28 600'SW= 0.77, static #75 600'SE = 0.68
Driller said making water between 97' & 119'. Drilled to 120' next AM blew water. Started Inj. @120'. Perforated 200' of 1" PVC vent Pipe Installed 280' of 1" PVC vent Pipe. Slurryed 38 SACKS of Coke. #28 MARKED 1 notch #75 MARKED 3 notches
Installed 60V 30A Rectifier & Stub Pole

All Construction Completed

W. L. Lewis
(Signature)

GROUND BED LAYOUT SKETCH



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El Paso Natural Gas Company
ENGINEERING CALCULATION

Sheet: ____ of ____
Date:
By:
File:

270
128
150

SAN JUAN 28-5 UNIT # 28 — 53464.19
SAN JUAN 28-5 UNIT # 45 — NE 17-28-5 — 1120W — 54555.19

Static = 28 600' SIW = 0.77
Static = 45 600' SIW = 0.68

Driller said making water between 97' & 119'. Drilled to 120'. Next A.M. Blew water. Started Inj. @ 120'
Perforated 200 +/- 1" Pvc vent Pipe
Installed 280 +/- 1" Pvc vent Pipe
Slurryed 38 sacks of coke

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

1 80 1.8		70 2.0	①			
2.6		1.7				
30 2.9		80 1.4				
3.0		1.3				
40 3.0		90 1.3				
2.9	⑩	1.4				
50 3.0		3 00 1.2				
2.8	⑨	1.3				
60 2.5		10 1.2				
2.0	⑧	3 14 +D				
70 1.6		20				
1.4						
80 .9						
.4						
90 .3						
.4				① 270	2.3	4.0
2 00 1.8	⑦			② 260	2.2	3.6
1.9				③ 250	2.3	3.9
10 1.8	⑥			④ 230	1.8	3.0
2.1				⑤ 220	2.5	3.9
20 2.3	⑤			⑥ 210	2.1	3.4
1.8				⑦ 200	2.1	3.2
30 1.7	④			⑧ 165	2.1	3.6
.9				⑨ 155	3.3	5.3
40 .4				⑩ 145	3.6	5.7
.7						
50 2.1	③					
2.2				14.2	Amps	
60 1.8	②			12.0	Volts	
1.7				0.85	Ohms	

Form 28-2 (Rev. 1-65)

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE WELL NO. 1120W CONTRACTOR Posey RIG NO. REPORT NO. DATE 9-8-77 19

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. 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	5	surface
5	15	Silty Clay
15	55	shale
55	75	sandstone
75	97	shale
97	119	

REMARKS –

DAYLIGHT

Driller Albert L. Posey Total Men In Crew 4

FROM	TO	FORMATION	WT-BIT	R.P.M.
	T.D. 317			

NO. DC SIZE LENG.

BIT NO. NO. DC SIZE LENG.

SERIAL NO. STANDS

SIZE 6 3/4 SINGLES

TYPE Rock DOWN ON KELLY

MAKE TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN
119	130	shale
130	156	sandy shale
156	169	shale
169	174	sandy shale
179	223	shale
223	235	sandy shale

REMARKS –

Drilled 320 ft

Logged 314

Total Depth 317

Making Water 97 - 119 ft

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
235	245	shale
245	250	sandstone
250	285	shale
285	290	Red shale
290	295	shaly
295	300	sandstone

REMARKS – 300-320 shale sandy

injected 125 ft

SIGNED: Toolpusher Company Supervisor

1165

30-039-23173

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 D Sec. 17 Twp 28 Rng 5

Name of Well/Wells or Pipeline Serviced SAN JUAN 28-5 UNIT #28A

cps 1882w

Elevation 6660' Completion Date 6/18/87 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. 120' NO SAMPLE

Depths gas encountered: N/A

Type & amount of coke breeze used: N/A

Depths anodes placed: 355', 345', 265', 225', 215', 205', 195', 155', 145', 135'

Depths vent pipes placed: N/A

Vent pipe perforations: 320'

Remarks: gb #1

RECEIVED
MAY 31 1991
OIL CON. DIV.
DIST.

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.

Cow
7-1-18
93

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

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Drilling Log (Attach Hereto) ☐ Meter code 9552401 Completion Date 6-18-87

CPS #	Well Name, Line or Plant.	Work Order #	Static	Ins. Union Check
1882W ~~1889W~~	~~S.J. 28-5 #28A~~	A 6644	~~.84 S.W.~~	☑ Good ☐ Bad

Location	Anode Size	Anode Type	Size Bit
P 17-28-5	2" X 60"	Durinon	6 3/4"

Depth Drilled	Depth Logged	Drilling Rig Time	Total Lbs Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
400	386	6 hrs		—	—

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	355	345	265	225	215	205	195	155	145	135
Anode Output (Amps)	3.9	4.0	3.4	5.5	5.4	5.9	4.7	4.0	4.2	4.3

	#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 12.1	Amps 19.9	Ohms .6		

Remarks: Driller said water was at 120'. Vent pipe is perforated up to 80'. No water sample was taken, but water was sufficient.

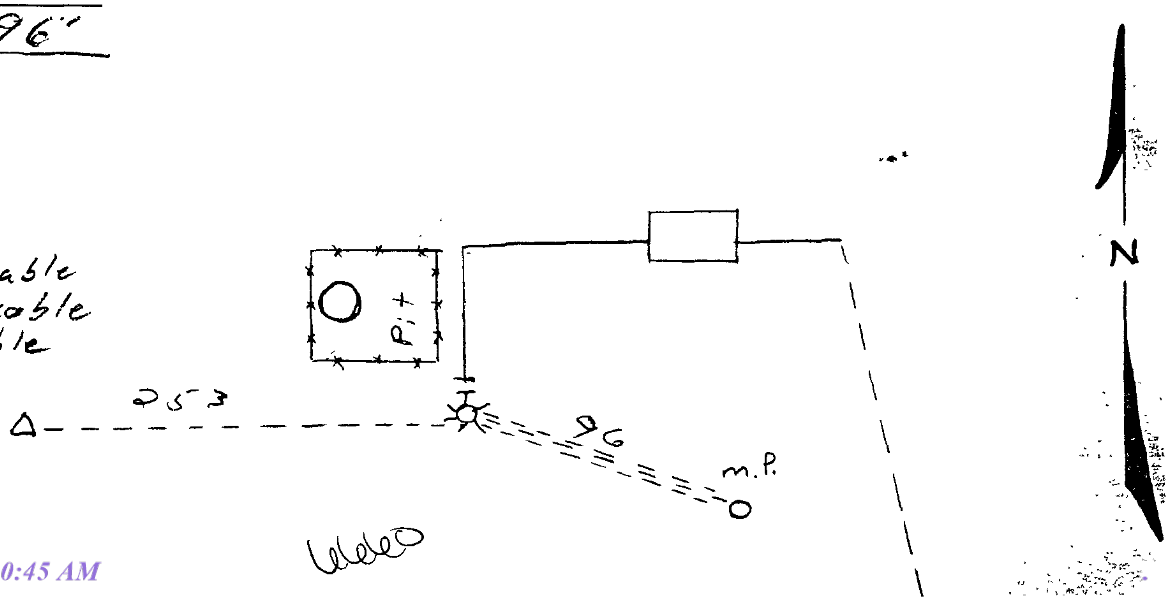
Rectifier Size: 40 V 16 A
Addn'l Depth
Depth Credit: 114
Extra Cable: 126'
Ditch & 1 Cable: 157'
25' Meter Pole: 1
20' Meter Pole:
10' Stub Pole:
Ditch + 2 cable 96'

All Construction Completed

Randy Smith
(Signature)

GROUND BED LAYOUT SKETCH

3844
750 - rect.
305 - MP
40 - JB
61.23 Ditch & 1 cable
49.92 Ditch & 2 cable
31.50 Extra Cable
5081.65
254.08
5335.73



BURGE CORROSION SYSTEMS, INC.

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

– CPS 1882 W

COMPANY Meridian Oil DAILY DRILLING REPORT 6-18-87 19

WELL NAME:	WELL NUMBER:	SECTION:	TOWNSHIP:	RANGE:
San Juan 28-5	#28A			

WATER AT:	FEET:	HOLE MADE:
120'		6 3/4

DESCRIPTION OF FORMATION

FROM	TO	FORMATION IS	COLOR
0	100	sandstone & shale	
100	120	water sand	
120	170	shale & sandy shale	
170	185	sandstone	
185	235	shale	
235	260	sandstone	
260	275	shale	
275	335	sandstone	
335	360	shale	
360	400	sandstone	

REMARKS:

Kevin Burge Driller Tool Dresser

BURGE CORROSION SYSTEMS, INC.

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

DEEP WELL GROUNDBED LOG

Date 6-18-87

Company Meridian Oil

Well No. SJ 28-5 38A Location ______ Volts Applied 12.1 Amperes 19.9

0

Depth	Reading		Depth	Reading		Depth	Reading	Depth	Reading
5			230	2.2		455		680	(1) 355 2.8 3.-
10			235	1.5		460		685	(2) 345 1.9 4.[illegible]
15			240	.7		465		690	(3) 265 2.0 3.[illegible]
20			245	.5		470		695	(4) 225 3.4 5.[illegible]
25			250	.4		475		700	(5) 215 3.8 5.[illegible]
30			255	.5		480		705	(6) 205 3.8 5.
35			260	1.3		485		710	(7) 195 2.8 4.[illegible]
40			265	1.9	✓ (3)	490		715	(8) 155 2.5 4.[illegible]
45			270	1.8		495		720	(9) 145 3.4 4.[illegible]
50			275	1.2		500		725	(10) 135 2.7 4.[illegible]
55			280	.6		505		730	
60			285	.3		510		735	
65			290	.2		515		740	
70			295	.3		520		745	
75			300	.3		525		750	
80			305	.2		530		755	
85			310	.2		535		760	
90			315	.2		540		765	
95			320	.2		545		770	
100			325	.3		550		775	
105			330	.5		555		780	
110			335	1.1		560		785	
115			340	1.5		565		790	
120	2.3		345	1.9	✓ (2)	670		795	
125	2.3		350	1.9		575		800	
130	1.9		355	2.0	✓ (1)	580		805	
135	2.4	✓ (10)	360	1.5		585		810	
140	2.8		365	1.0		590		815	
145	2.8	✓ (9)	370	.6		595		820	
150	2.3		375	.9		600		825	
155	2.1	✓ (8)	380	1.2		605		830	
160	1.6		385	TD 386		610		835	
165	1.4		390			615		840	
170	1.2		395			620		845	
175	.8		400			625		850	
180	.7		405			630		855	
185	1.4		410			635		860	
190	1.7		415			640		865	
195	2.5	✓ (7)	420			645		870	
200	2.9		425			650		875	
205	2.8	✓ (6)	430			655		880	
210	3.0		435			660		885	
215	2.9	✓ (5)	440			665		890	
220	2.8		445			670		895	
225	2.7	✓ 4	450			675		900	

1161

30-039-23812

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 J Sec. 17 Twp 28 Rng 5

Name of Well/Wells or Pipeline Serviced SAN JUAN 28-5 UNIT #33A

cps 1884w

Elevation 6585' Completion Date 6/19/87 Total Depth 340' 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. 130' SAMPLE TAKEN

Depths gas encountered: N/A

Type & amount of coke breeze used: N/A

Depths anodes placed: 305', 285', 275', 265', 240', 230', 220', 190', 180'

Depths vent pipes placed: 335'

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.

COMP 7-21-87

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

WELL CASING

CATHODIC PROTECTION CONSTRUCTION REPORT

DAILY LOG

Drilling Log (Attach Hereto) ☐ Meter Code 92030-01 Completion Date 6-19-87

CPS #	Well Name, Line or Plant:	Work Order #	Status:	Ins. Union Check
1884W 1801-A	L.J. 28-5 #33A Unit Letter J-17-28-5	S 8496	.93 SE.	☑ Good ☐ Bad

Location:	Anode Size:	Anode Type:	Size Bit:
J-17-28-5	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
340'	335'				

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	305	285'	275'	265'	240'	230'	220'	190'	180'	170
Anode Output (Amps)	3.9	4.7	4.6	3.5	3.7	4.6	3.1	3.9	3.8	4.9
Anode Depth	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Anode Output (Amps)	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20

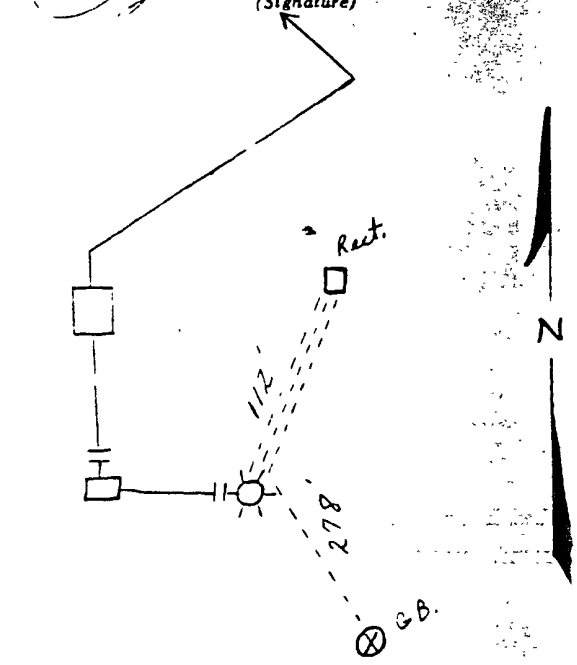
Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 12.33	Amps 17.2	Ohms .72		

Remarks: Wet material at 130', Drilled to 190' shut down for water supply unit till. Drilled 340' Logged 335' Installed 335' of 1" PVC vent pipe. Installed 230' of 2" pipe.

Rectifier Size: 40 V 16 A 750.00
Addn'l Depth
Depth Credit: 165' 3640.00
Extra Cable: 142' 35.50
Ditch & 1 Cable: 166' 64.74
Ditch & 2 Cable: 112' 58.24
25' Meter Pole:
20' Meter Pole:
10' Stub Pole: 1 150.00
Junction Box: 1 40.00
4738.48
TAX 236.92
4975.40

All Construction Completed

(Signature)



6585

BURGE CORROSION SYSTEMS, INC.

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

DEEP WELL GROUNDBED LOG

Date: 6-19-87

Company: Meridian

Well No. [illegible] 28-5 #33A Location: J-17-28-5 Volts Applied ______ Amperes ______

Depth	Reading	Depth	Reading	Depth	Reading	Depth	Reading
0							
5		230	2.8 – (6.)	455		680	Wet water at
10		235	2.7	460		685	130'
15		240	2.2 – (5.)	465		690	[illegible]
20		245	1.6	470		695	of Vent pipe
25		250	.9	475		700	Depth 340'
30		255	.6	480		705	
35		260	1.5	485		710	
40		265	2.2 – (4.)	490		715	
45		270	2.2	495		720	
50		275	2.0 – (3.)	500		725	
55		280	2.0	505		730	
60		285	2.3 – (2.)	510		735	
65		290	1.7	515		740	
70		295	1.5	520		745	
75		300	1.3	525		750	
80		305	1.9 – (1.)	530		755	
85		310	1.8	535		760	
90		315	1.7	540		765	
95		320	.8	545		770	
100		325	1.0	550		775	
105		330	1.4	555		780	
110		335	335 TD	560		785	
115		340		565		790	
120	.8	345		670		795	
125	1.1	350		575		800	
130	1.1	355		580		805	
135	2.2	360		585		810	
140	2.8	365		590		815	
145	3.3	370		595		820	
150	3.1	375		600		825	
155	3.2	380		605		830	
160	3.1	385		610		835	(1.) 305 2.2 3.5
165	3.1	390		615		840	(2.) 285 2.8 4.2
170	3.0 – (10.)	395		620		845	(3.) 275 2.3 4.6
175	2.7	400		625		850	(4.) 265 2.4 3.5
180	2.2 – (9.)	405		630		855	(5.) 240 2.4 3.7
185	1.8	410		635		860	(6.) 230 3.2 4.6
190	2.4 – (8.)	415		640		865	(7.) 220 2.5 3.1
195	1.4	420		645		870	(8.) 190 2.9 3.9
200	.4	425		650		875	(9.) 180 2.7 3.8
205	.4	430		655		880	(10.) 170 3.3 4.9
210	1.1	435		660		885	
215	.7	440		665		890	
220	1.9 – (7.)	445		670		895	
225	2.4	450		675		900	

BURGE CORROSION SYSTEMS, INC.

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

CPS 1884cc

COMPANY Meridian Oil DAILY DRILLING REPORT June 24, 19 87

WELL NAME:	WELL NUMBER:	SECTION:	TOWNSHIP:	RANGE:
San Juan 28-5	#33A	17	28	5

WATER AT:	FEET:	HOLE MADE:
	120	6 3/4

DESCRIPTION OF FORMATION

FROM	TO	FORMATION IS	COLOR
0	120	sandstone & shale	grey & tan
120	130	watersand	grey
130	195	shale	grey
195	215	sandstone	
215	250	shale	
250	260	sandstone	
260	315	shale	
315	340	sandstone	

REMARKS:

Kevin Burge — Driller — Tool Dresser

CPS 1884(C)

API WATER ANALYSIS REPORT FORM

Company	Sample No.	Date Sampled
Meridian Oil Co.		6-19-87

Field	Legal Description	County or Parish	State
	J-17-28-5	Rio Arriba	NM

Lease or Unit	Well	Depth	Formation	Water, B/D
	SJ 28-5 #33A	130'	Mesa Verde	

Type of Water (Produced, Supply, etc.)	Sampling Point	Sampled By
G.B.	G.B.	J. Evans

DISSOLVED SOLIDS

CATIONS	mg/l	me/l
Sodium, Na (calc.)	230	11.5
Calcium, Ca		
Magnesium, Mg		
Barium, Ba		

ANIONS	mg/l	me/l
Chloride, Cl	14	.4
Sulfate, SO_4	200	4.1
Carbonate, CO_3	30	1.0
Bicarbonate, HCO_3	425	7.0

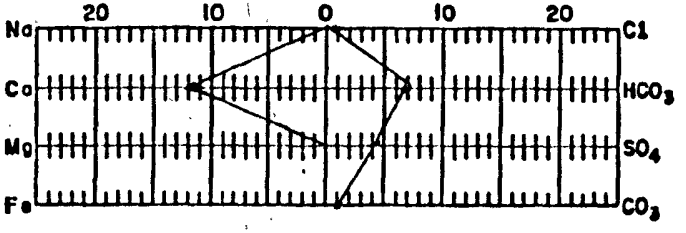
Total Dissolved Solids (calc.)	900
Iron, Fe (total)	0
Sulfide, as H_2S	0

OTHER PROPERTIES

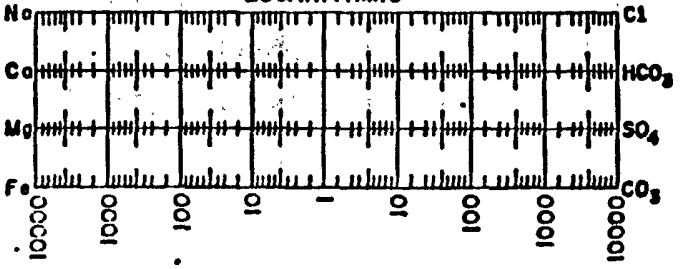
pH	8.99
Specific Gravity, 60/60 F.	1.0027
Resistivity (ohm-meters) 74° F.	1.1 X 10^{2}
Conductivity	8.9 X 10^{3} μ mhos

WATER PATTERNS — me/l

STANDARD



LOGARITHMIC



REMARKS & RECOMMENDATIONS:

This sample contained a large amount of suspended clay which was filtered with difficulty. Only small volumes of filtrate were obtained to analyze.

17= 30-039-07364

54= 30-039-07358

4911

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 28 Rng 5

Name of Well/Wells or Pipeline Serviced SAN JUAN 28-5 UNIT #17, #54

cps 727w

Elevation 6720' Completion Date 8/29/83 Total Depth 500' Land Type* N/A

Casing, Sizes, Types & Depths 40' 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. 140' NO SAMPLE

Depths gas encountered: N/A

Type & amount of coke breeze used: 5000 lbs.

Depths anodes placed: 405', 375', 365', 355', 345', 335', 305', 295', 245', 235'

Depths vent pipes placed: 500' OF 1" PVC VENT PIPE

Vent pipe perforations: 400'

Remarks: gb #2

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 8-29-83

CPS #	Well Name, Line or Plant	Work Order #	Static	Ins. Union Check
727-W	SS 28-5 #17	184-53265-19		☐ Good ☐ Bad
	SS 28-5 #54	184-54254-19		

Location	Anode Size	Anode Type	Size Bit
SW20-28-5	2"	DURIRON	6 3/4

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

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	405	375	365	355	345	335	305	295	245	235
Anode Output (Amps)	3.15	3.4	3.3	3.9	3.3	2.8	3.6	3.3	3.4	4.2
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 12.2	Amps 14.5	Ohms .84			

Remarks: DRILLER SAID HIT WATER AT 140' DID NOT GET WATER SAMPLE. INSTALLED 500' OF 1" VENT PIPE, PERFORATED 400' OF VENT PIPE. SLURRIED 5000 # OF COKE BREEZE. SET 40' OF 8" CASING

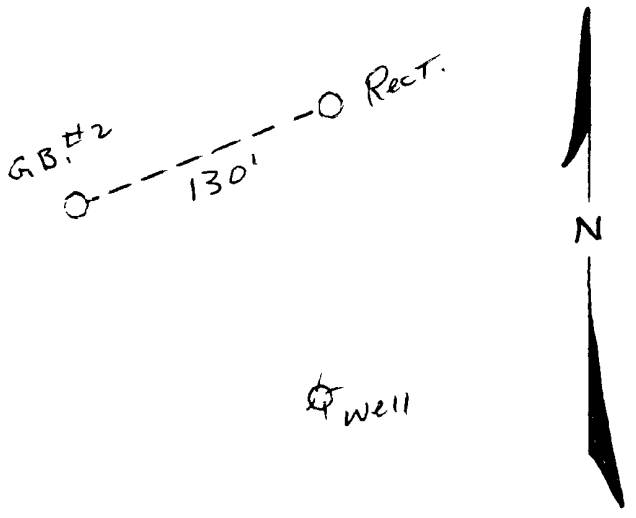
Rectifier Size: — V — A
Addn'l Depth —
Depth Credit: —
Extra Cable: 5' ✓
Ditch & 1 Cable: 130' ✓
25' Meter Pole: —
20' Meter Pole: —
10' Stub Pole: —

SET CASING 2HRS. ✓

All Construction Completed

Willie Knight Jr
(Signature)

GROUND BED LAYOUT SKETCH



Date	Reg	OT
8-25	4	2 ✓
8-29	8	2 ✓

Form 22-2 (Rev. 1-61)

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE CPS 727 W WELL NO. SJ-28-5 #17 #5-1 CONTRACTOR LOFTIS RIG NO. IRI REPORT NO. DATE 8-29 1983

MORNING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
0	100	SAND & STONE		
160	170	Shale		
170	205	SAND		
205	305	Shale		

305'

NO. DC ____ SIZE ____ LENG. ____

BIT NO.

NO. DC ____ SIZE ____ LENG. ____

SER. 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 –

Apx 20 gal per min

DAYLIGHT

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
305	330	SAND		
330	405	Shale		
405	500	SAND		

BIT NO.

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.

BIT NO.

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 _____ Company Supervisor Roger Smith

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

Page ____
Date 8-29-83
By WK

CPS 727-W
SJ 28-5 # 17
SJ 28-5 # 54
SW 20-28-5

W/O
184- 53265-19-50-20-63
184- 54254-19-50-20-63

Driller said hit water at 140'. Did not get water sample. Installed 500' of 1" vent pipe, perforated 400' of vent pipe. Slurried 5000 lbs of coke breeze. Set 40' of 8" casing 3 hrs

Anode	Depth		
①	405	1.2	3.15
②	375	1.3	3.4
③	365	1.2	3.3
④	355	1.5	3.9
⑤	345	1.2	3.3
⑥	335	1.2	2.8
⑦	305	1.1	3.6
⑧	295	1.3	3.3
⑨	245	1.5	3.4
⑩	235	1.9	4.2

12.2 V 14.5 A .84 Ω

Depth	Reading
140	.5
45	.5
50	.5
55	.5
60	.7
65	1.0
70	1.0
75	.9
80	.6
85	.5
90	.4
95	.5
200	.8
05	1.2
10	1.2
15	1.3
20	1.3
25	1.2
30	1.3
35	1.2 ⑩
40	1.2
45	1.1 ⑨
50	1.0
55	.9
60	1.1
65	.9
70	.9
75	.9
80	1.0
85	.9
90	1.1
95	1.3 ⑧
300	1.3
05	1.0 ⑦
10	.6
15	.4
20	.3
25	.4
30	.3
35	1.1 ⑥
40	1.0
45	1.1 ⑤
50	1.2
55	1.1 ④
60	1.0
65	1.0 ③
70	1.0
75	1.1 ②
80	.9
85	.9
90	.9
95	.9
400	1.0
05	1.0 ①
10	.9
15	.9
20	.8
25	.5
30	.3
35	.3
40	.1
45	.2
50	.2
55	.3
60	.3
65	.4
70	.6
75	.6
80	.6
85	.6
90	.5
95	.5
500	1.0

30-039-07380
63= 30-039-82381

4913

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

Operator MERIDIAN OIL Location: Unit B Sec. 20 Twp 28 Rng 5

Name of Well/Wells or Pipeline Serviced SAN JUAN 28-5 UNIT #14, #63

cps 726w

Elevation 6729' Completion Date 8/3/88 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. 110'

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MAY 31 1991
OIL CON. DIV.
DIST. 3

Depths gas encountered: N/A

Type & amount of coke breeze used: N/A

Depths anodes placed: 340', 330', 320', 310', 245', 190', 180', 165', 155', 150'

Depths vent pipes placed: 405' OF 1" PVC VENT PIPE

Vent pipe perforations: BOTTOM 280'

Remarks: cgb #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.

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

WELL CASING

CATHODIC PROTECTION CONSTRUCTION REPORT

DAILY LOG

Rebuild

Drilling Log (Attach Hereto) ☒ Comp 8-4-88

Completion Date 8-3-88

CPS #	Well Name, Line or Plant:	Work Order #	Static:	Ins. Union Check
726W	SJ 28-5 U. #63	B 20-28-5	50691A ✓	☒ Good ☐ Bad
	" " " #14	H 20-28-5	49696A ✓	

Location:	Anode Size:	Anode Type:	Size Bit:
B 20-28-5	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
400'	385'				

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	340	330	320	310	245	190	180	165	155	150
Anode Output (Amps)	5.0	5.6	5.7	5.7	4.8	4.8	5.7	4.5	4.9	5.5
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 11.79	Amps 23.8	Ohms .49		

Remarks: Hole was drilled with mud, sampled. Show water to be at 110' to 150'. Installed 405' of 1" PVC vent pipe, bottom 280' perforated. Ditches (DC) were cut by road grader.

GB 4074.00

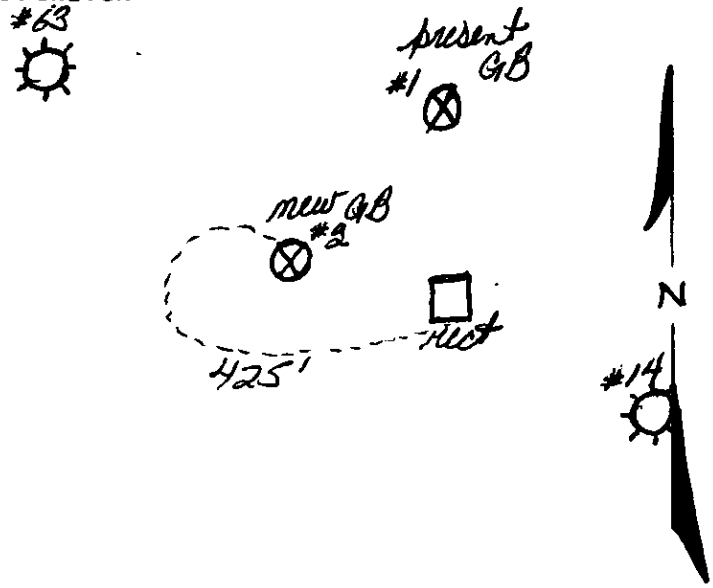
Rectifier Size: 40 V 16 A

Addn'l Depth		
Depth Credit:	115' @ 3.50	-402.50 ✓
Extra Cable:	10' @ .24	2.40 ✓
Ditch & 1 Cable:	425' @ .70	297.50 ✓
25' Meter Pole:	0	
20' Meter Pole:	0	
10' Stub Pole:	0	
1 junction box		225.00 ✓
		4196.40 ✓
tax		209.82 ✓
		4406.22 ok 9-7

All Construction Completed

Calvin Rodman
(Signature)

GROUND BED LAYOUT SKETCH



T26N

D. Crass DRILLING CO.

Drill No. 3

DRILLER'S WELL LOG

S. P. No. San Juan 28-5 #63 Date 8-3-88

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	10	SAND
10	30	Shale
30	65	SANDstone
65	95	Shale
95	115	SAND
115	130	SANDstone
130	200	Shale
200	235	SANDstone
235	275	Shale
275	300	SAND
300	355	Shale
355	380	SANDstone
380	400	Shale

Mud Bran Lime

Rock Bit Number Make

Remarks: Water @ 110'

Driller Lonnie Brown

1295

14A-30-039-22205

54E-30-039-23813

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. 20 Twp 28 Rng 5

Name of Well/Wells or Pipeline Serviced SAN JUAN 28-5 UNIT #14A, #54E

cps 1598w

Elevation 6637' Completion Date 7/13/81 Total Depth 425' 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. 150' SAMPLE TAKEN

Depths gas encountered: HOLE MAKING GAS

Type & amount of coke breeze used: 3500 lbs.

Depths anodes placed: 395', 385', 375', 365', 350', 340', 280', 270', 210', 200'

Depths vent pipes placed: 420'

Vent pipe perforations: 280'

Remarks: gb #1 HOLE CAVED AFTER #8 ANODE COKED.

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.

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 7-13-81

Well Name	Location	CPS No.
S.J. 28-5 #14A SWE	NW-20-28-5	1598 W

Type & Size Bit Used	Work Order No.
6 3/4 Rock 2" X 60" Duriron	57923-21-50-20

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
425 Logged 421		APPROX 3500		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	395	385	375	365	350	340	280	270	210	200
Anode Output (Amps)	3.0	2.8	3.4	3.3	2.7	3.0	2.6	2.4	2.9	4.6
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 12.4	Amps 17.9	Ohms .69		

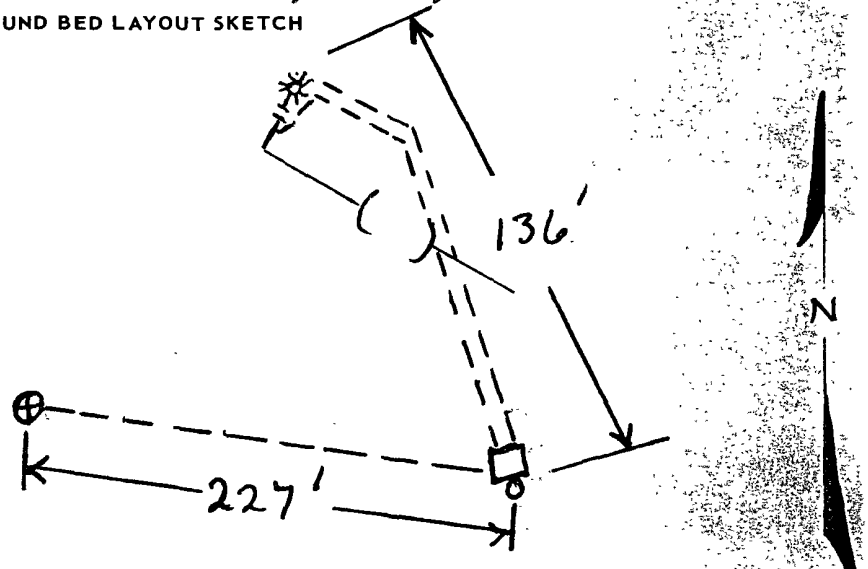
Remarks: STATIC c/s 600's = .85 1300MA+ UNION = OK
Driller SAID WATER AT 150FT Drilled TO 160FT 7-10-81 LEFT open over weekend, CAUGHT WATER SAMPLE 7-13-81. Drilled to 425' Logged 421. total WATER APPROX 2GPM. GB MAKING GAS. INST. 420 VENT pipe @280' perF. Hole CAVED AFTER #8 ANODE coked #9 + 10 stuck IN hole. Blew out bridge with AIR then FINISHED coking
Hole depth = 379'
Extra CABLE = 156'
Ditch & CABLE = 363'
STUB POLE
40 U 16A RECT

	Reg.	O.T.
7-13	8	3

All Construction Completed

Robert J Schmidt
(Signature)

GROUND BED LAYOUT SKETCH



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

6637

EL PASO NATURAL GAS COMPANY

Form 7-354 (Rev 11-77)

Sheet 1 of 1
Date: 1-13-81
By: RJB

1598W S.J. 28-5 #14A NW 20-28-5
57923-21-50-20
STATIC c/s 500S = .85 1300mA UNION = OK
10FT = .72

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

150	.8	330	1.0
	.8		1.1
60	.8	40	1.2 - 6
	1.2		1.3
70	1.7	50	1.2 - 5
	1.7		1.0
80	1.6	60	.9
	1.9		1.3 - 4
90	1.9	70	1.3
	1.9		1.3 - 3
200	1.9 - 10	80	1.4
	1.7		1.3 - 2
10	1.4 - 9	90	1.0
	.7		1.3 - 1
20	.2	400	1.0
	.3		.6
30	.4	10	1.3
	.4		1.4
40	.8	20	TD 421'
	1.1		
50	.7		
	.5		
60	.4		
	.4		
70	1.0 - 8		
	1.1		
80	1.1 - 7		
	.9		
90	.6		
	.3		
300	.3		
	.5		
10	.3		
	.3		
20	.3		
	.4		

Driller said water at 150 FT. Drilled 160' left for weekend. Caught water sample Monday AM. Drilled to 425 FT w/ air + watering. Logged 421 FT total. Water 2 GPM. GB making gas. Inst 420 Ft vent pipe with 280 FT perf. Hole caved after #8 coked @ TD stuck. Blew hole clean with air. Finished coking hole.

① 395 - 1.7 - 3.0
② 385 - 1.7 - 2.8
③ 375 - 1.9 - 3.4
④ 365 - 1.7 - 3.3
⑤ 350 - 1.6 - ~~3.3~~ 2.7
⑥ 340 - 1.8 - 3.0
⑦ 280 - 1.5 - 2.6
⑧ 270 - 1.4 - ~~2.8~~ 2.4
⑨ 210 - 2.0 - 2.9
⑩ 200 - 3.4 - 4.6

12.4 V @ 17.9 A = .69 Ohms

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

Analysis No. 1-10271 Date 7-28-81

Operator El Paso Natural Gas Well Name S.J. 28-5 #14A CPS 1598 W

Location NW 20-28-5 County Rio Arriba State New Mexico

Field Blanco Formation

Sampled From 150 ft.

Date Sampled 7-13-81 By Robert J. Babnick

Tbg. Press. Csg. Surface Csg. Press.

	ppm	epm		ppm	epm
Sodium	968	42.1	Chloride	60	1.7
Calcium	262	13.1	Bicarbonate	539	8.8
Magnesium	74	6.1	Sulfate	2440	50.8
Iron	Absent		Carbonate	0	0
H_2S	Absent		Hydroxide	0	0

Total Solids Dissolved 3,854

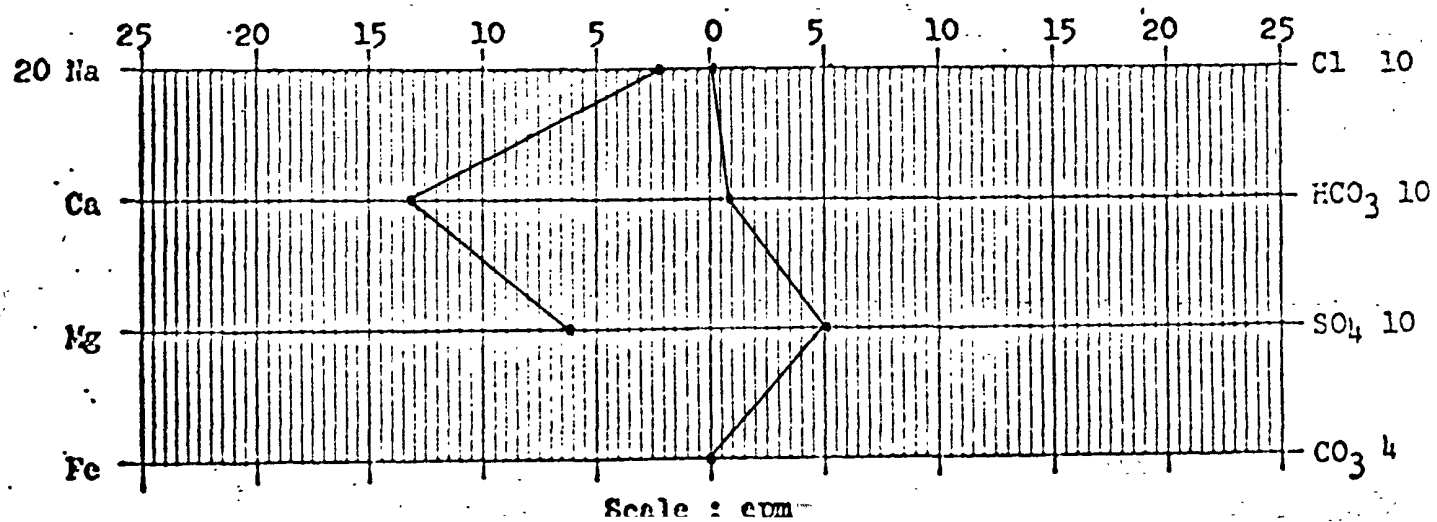
pH 7.5

Sp. Gr. 1.0054 At 60°F

Resistivity 211 ohm-cm at 75°F

Debbie Newland PZE
Chemist

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



Form 22-2 (Rev 5-79)

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

159810 LEASE | SJ 28-5 H 14 H WELL NO. | CONTRACTOR Stacy Drilling | RIG NO. | REPORT NO. | DATE 7-13 1981

MORNING

Driller | Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
0	10	CB		
10	60	Sh		
60	155	SS		
155	205	Sh		

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 –

Water at 150

2 gal per min

probe #21

DAYLIGHT

Driller | Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
205	270	SS w/Sh		
270	280	Sh		
280	330	SS		
330	395	Sh w/SS		

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.
395	405	SS w/Gas		
405	425	Sh		

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 Al Stacy Company Supervisor

1202

30-039-23814

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 J Sec. 20 Twp 28 Rng 5

Name of Well/Wells or Pipeline Serviced SAN JUAN 28-5 UNIT #63E

cps 1886w

Elevation 6776' Completion Date 6/26/87 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. 140' & 200' NO SAMPLE

Depths gas encountered: N/A

Type & amount of coke breeze used: N/A

Depths anodes placed: 350', 340', 330', 320', 310', 270', 255', 230', 220', 200'

Depths vent pipes placed: N/A

Vent pipe perforations: 270'

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.

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Drilling Log (Attach Hereto) ☐

Completion Date 6-26-8[illegible]

meter tag 9554701

CPS #	Well Name, Line or Plant	Work Order #	Static	Ins. Union Check
1886W	S.J. 28-5 #63E	A 6728	.81 E	☑ Good ☐ Bad

Location	Anode Size	Anode Type	Size Bit
J 20 28-5	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
400'	389'	6hrs			

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	350	340	330	320	310	270	255	230	220	20[illegible]
Anode Output (Amps)	4.6	5.1	4.5	5.4	4.5	3.6	4.6	3.7	4.3	4.[illegible]

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

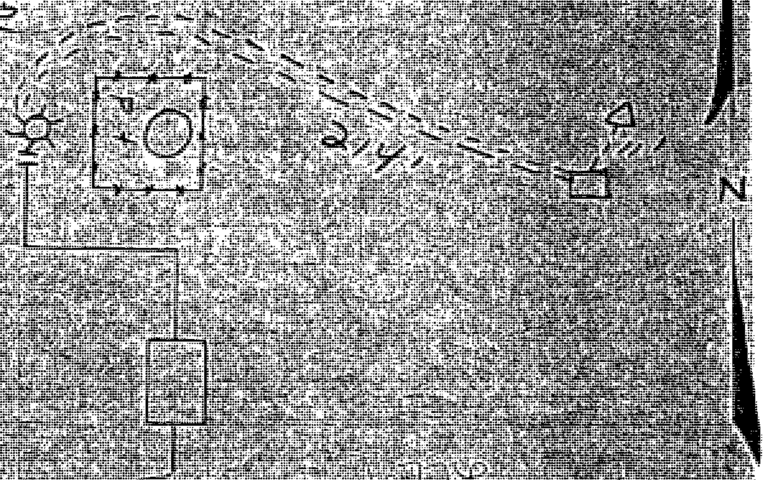
Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.8	Amps 20.8	Ohms .57		

Remarks: A little bit of water at 140' but most of the water at 200' Vent pipe is perforated up to appox 130' No water sample was taken

4300
444
750
429
111.28
150
40.00
750.00
4719.07
Tx 245.95
5165.02

Rectifier Size: 40 V 16 A
Add'l Depth
Depth Credit: 111'
Extra Cable: 30'
Ditch & 1 Cable: 11'
Ditch & 2 Cable: 214
25' Meter Pole:
20' Meter Pole:
10' Stub Pole: ✓
Junction Box: 40.00

All Construction Completed
[signature]
(Signature)



BURGE CORROSION SYSTEMS, INC.

P.O. BOX 1359 PHONE 334-6141
AZTEC, NEW MEXICO 87410
DEEP WELL GROUNDBED LOG

Date 6-28-82

Company Meridian Oil

Well No. ______ Location S. J. 28-5 #63-E Volts Applied 11.8 Amperes [illegible]

Depth	Reading	Depth	Reading	Depth	Reading	Depth	Reading
0							
5		230	2.0 – (8)	455		680	(2) 3.5 (0) 3.5 [illegible]
10		235	1.6	460		685	[illegible]
15		240	1.5	465		690	[illegible]
20		245	1.5	470		695	[illegible]
25		250	2.3	475		700	[illegible]
30		255	2.2 – (0)	480		705	[illegible]
35		260	1.8	485		710	[illegible]
40		265	1.8	490		715	[illegible]
45		270	2.1 – (0)	495		720	[illegible]
50		275	1.7	500		725	(2) 2.0 [illegible]
55		280	1.2	505		730	
60		285	1.1	510		735	
65		290	.8	515		740	
70		295	.7	520		745	
75		300	.6	525		750	
80		305	2.1	530		755	
85		310	2.4 – (5)	535		760	
90		315	2.3	540		765	
95		320	3.4 – (4)	545		770	
100		325	2.2	550		775	
105		330	2.0 – (3)	555		780	
110		335	2.4	560		785	
115		340	2.4 – (2)	565		790	
120		345	2.1	570		795	
125		350	2.2 – (1)	575		800	
130		355	2.7	580		805	
135		360	1.9	585		810	
140		365	1.5	590		815	
145		370	1.4	595		820	
150		375	1.0	600		825	
155		380	.9	605		830	
160		385	.8	610		835	
165		390	TD 389'	615		840	
170		395		620		845	
175		400		625		850	
180		405		630		855	
185		410		635		860	
190	2.4	415		640		865	
195	2.8	420		645		870	
200	2.3 – (10)	425		650		875	
205	1.9	430		655		880	
210	1.7	435		660		885	
215	2.3	440		665		890	
220	2.4 – (9)	445		670		895	
		450		675		900	

BURGE CORROSION SYSTEMS, INC.

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

QPS 1886 cc

COMPANY: Meridian Oil DAILY DRILLING REPORT: June 25 19 87

WELL NAME:	WELL NUMBER:	SECTION:	TOWNSHIP:	RANGE:
S. J. 28-5	#63E	S20	28	5

WATER AT: FEET	HOLE MADE:
150' - 200'	400' TD

DESCRIPTION OF FORMATION

FROM	TO	FORMATION IS	COLOR
0	30	clay	
30	80	sandstone	
80	110	shale	
110	150	sand-water	
150	170	shale	
170	200	sand-water	
200	280	shale	
280	310	sand-moisture	
310	400	shale	

REMARKS:

Brian L. Burge Driller Tool Dresser

E

746

22-30-039-07360

67-30-039-20026

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. 21 Twp 28 Rng 5

Name of Well/Wells or Pipeline Serviced SAN JUAN 28-5 UNIT #67, #22

cps 1066w

Elevation 6654' Completion Date 10/6/76 Total Depth 453' 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. 200'

Depths gas encountered: N/A

Type & amount of coke breeze used: 45 SACKS

Depths anodes placed: 415', 350', 340', 305', 295', 260', 250', 240', 230', 220'

Depths vent pipes placed: N/A

Vent pipe perforations: 269'

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.

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 10-6-76

Well Name	Location	CPS No.
S.J. 28-5 #67 & #22	SW 21-28-5	1066W
Type & Size Bit Used 6 3/4		**Work Order No.** 54491 & 53215

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
Log 453		45		

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10
Anode Depth	415	350	340	305	295	260	250	240	230	220
Anode Output (Amps)	3.5	3.8	3.4	3.9	4.4	3.3	3.9	4.8	4.6	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 11.8	Amps 18.2	Ohms 0.64		

Remarks: Driller Said Blew Mud out at 140 - Blew water out at 200. Start injection - Drill to 460'

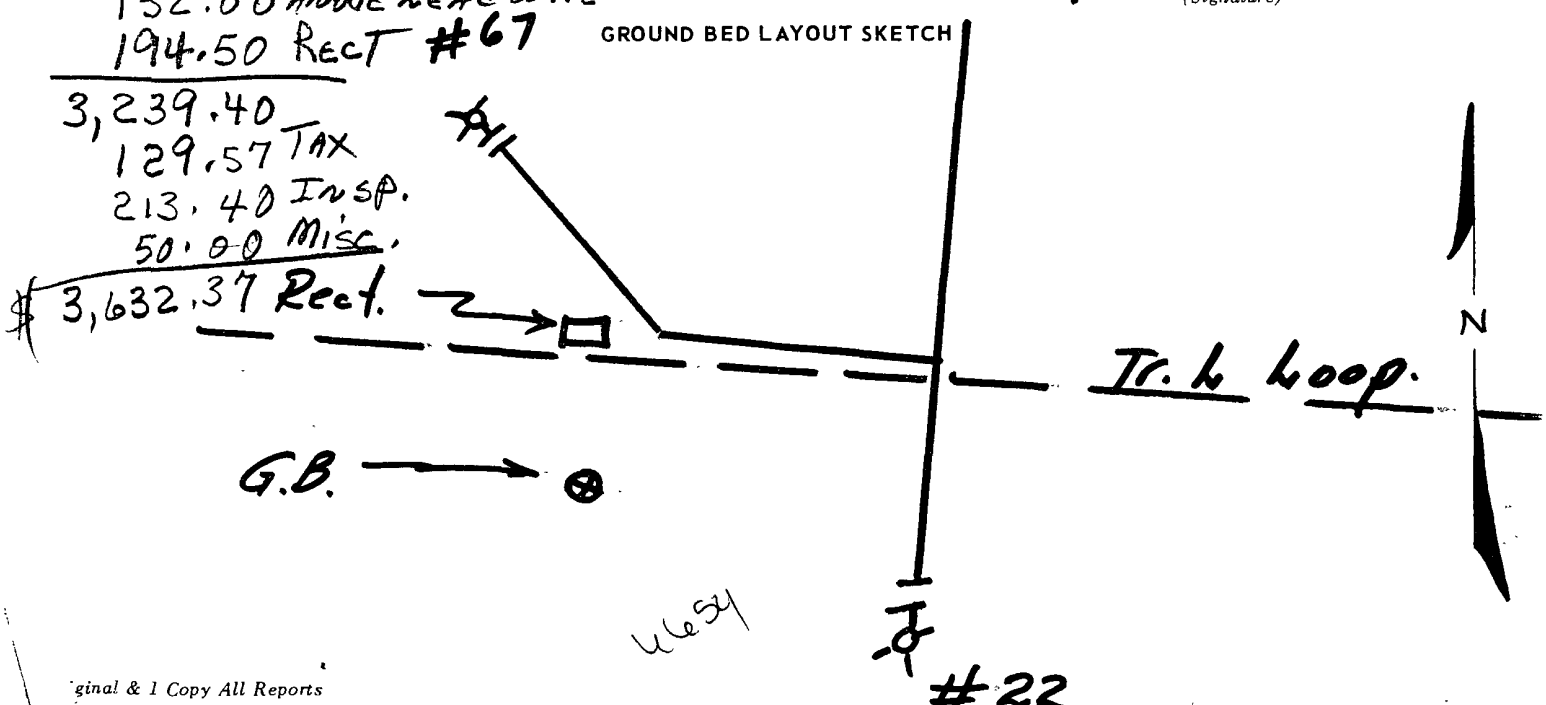
Vent Perforated 269'
Slurry 45 Sacks Cokes

$ 2,248.50
494.40 Depth
170.00 Anode
132.00 Anode Lead Wire
194.50 Rect #67
3,239.40
129.57 TAX
213.40 Insp.
50.00 Misc.
$ 3,632.37 Rect.

All Construction Completed

Daniels
(Signature)

GROUND BED LAYOUT SKETCH



ginal & 1 Copy All Reports

Form 7-1 (Rev. 8-75)

El Paso Natural Gas Company
ENGINEERING CALCULATION

Sheet: ____ of ____
Date:
By:
File:

1066W SW21-28-5 - SJ.28-5 #67 & #22

90		3.5	1.2		Blew wtr out at 200			
		20	.6		wet 84 - 9" Mud at 140			
100			.7					
		30	1.4					
10			1.5					
		40	1.8					
20			1.9					
		50	1.9					
30			1.6					
		60	1.2					
40			1.2					
		70	1.2					
50			1.3					
		80	1.4					
60			1.2		Vent Perf 269'			
	1.6	90	1.0					
70	1.6							
	1.6	400	1.2					
80	1.4		1.3					
	.9	10	1.5					
90	.8		1.8					
	.6	20	1.6					
200	.6		1.4					
	.6	30	1.3					
10	.6		.9					
	1.5	40	.7		1	4.15	2.1	- 3.5
20	2.0		.6		2	3.50	2.8	- 3.8
	1.9	50		ID.	3	3.40	2.5	- 3.4
30	2.0		453	FD.	4	3.05	2.6	- 3.9
	2.5	60			5	2.95	3.2	- 4.4
40	2.4				6	2.60	2.3	- 3.8
	2.2	70			7	2.50	2.9	- 3.9
50	2.0				8	2.40	3.3	- 4.8
	1.4				9	2.30	3.2	- 4.6
60	1.7		11.77	U	10	2.20	2.9	- 4.0
	1.2		18.2	A				
70	.4							
	.9		.064	CR				
80	1.6							
	1.6							
90	1.8							
	2.0							
300	1.9							
	1.8							
10	1.6							

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	3.36

1066 w

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE Tom O Briant WELL NO. #1 CONTRACTOR RIG NO. REPORT NO. DATE 9-6 1976

MORNING

Driller Total Men In Crew

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

BIT NO.
SER. NO.
SIZE 6 3/4 RT
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 –

0-43 S damp
43-44 sh
84-92 S wet
92-125 sh
125-170 S mud @ 140'
170-190 sh
190-210 – S wet Inject
210-270 sh

DAYLIGHT

Driller Tom O Briant 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 –

270 S w/ sh streaks

Could not distinguish seperations w/ heavy injection

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
		Drilled w/ Air Water Inject.

REMARKS –

Hole drilled to 4601'
Hole logged to 4481

SIGNED: Toolpusher _____ Company Supervisor _____

1200

30-039-23815

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 NW Sec. 21 Twp 28 Rng 5

Name of Well/Wells or Pipeline Serviced SAN JUAN 28-5 UNIT #76M

cps 1888w

Elevation 6607' Completion Date 6/23/87 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. 80'

Depths gas encountered: N/A

Type & amount of coke breeze used: 4650 lbs.

Depths anodes placed: 340', 250', 210', 200', 190', 180', 170', 130', 120', 110'

Depths vent pipes placed: 385'

Vent pipe perforations: 320'

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.

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG
~~~~956060~~~~ DK 956050 meter lake

Drilling Log (Attach Hereto) ☐ Completion Date 6/25/87

CPS #	Well Name, Line or Plant	Work Order #	Static	Ins. Union Check
1888 W ~~1875~~ ✓	SJ 28-5 #76M		.85V S	☒ Good ☐ Bad

Location	Anode Size	Anode Type	Size Bit
NW 21-28-5	2" x 60	2" X 60" Durion	6 3/4

Depth Drilled	Depth Logged	Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
404	385		4650		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	340	250	210	200	190	180	170	130	120	110
Anode Output (Amps)	2.1	3.2	5.0	5.3	5.1	3.9	3.6	3.7	5.1	4.1

	#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 11.6	Amps 22.8	Ohms .5		

Remarks: Water at 80'. Installed 385' of 1" PVC vent pipe Perforated 320'.

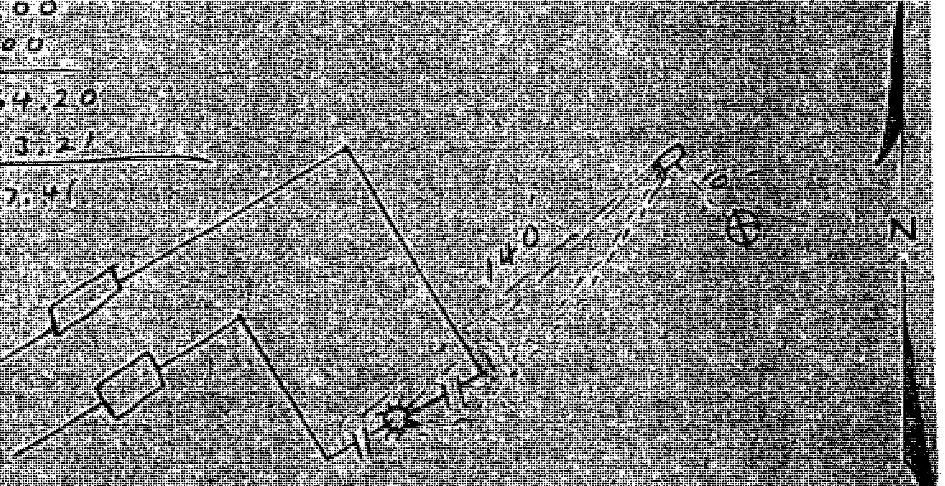
Rectifier Size: 40V 16A 750.00
Add'l Depth
Depth Credit: -115' -460.00
Extra Cable: 30' 7.50
Ditch & 1 Cable: 10' 3.90
Ditch & 2 Cable: 140' 72.80
25' Meter Pole: —
20' Meter Pole: —
10' Stub Pole: 1 150.00
Junction Box: 40.00

4864.20
TAX 243.21
TOTAL $5107.41

GB
4300.00
-460.00
$3840.00

All Construction Completed

J.E. [signature]
(Signature)


~~~~

[illegible] 1895 W

BURGE CORROSION SYSTEMS, INC.

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

DEEP WELL GROUNDBED LOG

Date 6/28/[illegible]

Company Meridian Oil

Well No. SJ 28-5 #76M Location K-21-28-5 Volts Applied 11.6 Amperes 22.[illegible]

Depth	Reading	Depth	Reading	Depth	Reading	Depth	Reading
0							
5		230	.1	455		680	
10		235	.2	460		685	
15		240	.3	465		690	
20		245	.5	470		695	
25		250	1.4 – (2)	475		700	
30		255	1.1	480		705	
35		260	.9	485		710	
40		265	1.2	490		715	
45		270	1.3	495		720	
50		275	1.0	500		725	
55		280	.6	505		730	
60		285	.5	510		735	
65		290	.3	515		740	
70		295	.3	520		745	
75		300	.2	525		750	
80	WATER	305	.3	530		755	
85	2.3	310	.5	535		760	
90	2.0	315	.2	540		765	
95	2.1 –	320	.2	545		770	
100	1.5	325	.2	550		775	
105	1.6	330	.7	555		780	
110	2.4 – [illegible] (13)	335	1.3	560		785	
115	2.6	340	1.3 – (1)	565		790	
120	2.1 – [illegible] (9)	345	1.3	570		795	
125	1.9	350	.8	575		800	
130	1.8 – [illegible] (8)	355	.6	580		805	
135	1.5	360	.4	585		810	
140	1.2	365	.7	590		815	
145	1.0	370	1.5	595		820	
150	.9	375	1.6	600		825	
155	.8	380	1.4	605		830	
160	.7	385	TD	610		835	(1) 240 – 1.7 – 5.[illegible]
165	1.2	390		615		840	(2) 230 – 2.0 – [illegible]
170	2.0 – [illegible] (2)	395		620		845	(3) 210 – 3.2 – 5.[illegible]
175	1.5	400	Drilled TD	625		850	(4) 200 – 3.4 – 5.[illegible]
180	2.0 – [illegible] (6)	405		630		855	(5) 190 – 3.1 – [illegible]
185	1.9	410		635		860	(6) 150 – 2.4 – 3.[illegible]
190	1.9 – [illegible] (5)	415		640		865	(7) 120 – 2.1 – 3.[illegible]
195	1.8	420		645		870	(8) 130 – 2.3 – 3.[illegible]
200	2.0 – [illegible] (4)	425		650		875	(9) 120 – 3.4 – 5.[illegible]
205	1.7	430		655		880	(10) 110 – 2.6 – 4.[illegible]
210	1.6 – [illegible] (0)	435		660		885	
215	1.[illegible]	440		665		890	
220	.5	445		670		895	
225	.1	450		675		900	

BURGE CORROSION SYSTEMS, INC.

P. O. BOX 1359 - PHONE 334-8141
AZTEC, NEW MEXICO 87410

Cpf 18286

COMPANY: Meridian Oil DAILY DRILLING REPORT June 22 19 87

WELL NAME:	WELL NUMBER:	SECTION:	TOWNSHIP:	RANGE:
San Juan 28-5	76M	21	28	5

WATER AT: 80 FEET HOLE MADE: 6 3/4

DESCRIPTION OF FORMATION:

FROM	TO	FORMATION IS:	COLOR:
0	75	sandstone, clay & shale	tan & greys
75	80	watersand	
80	135	shale	
135	165	sandstone	
165	215	shale	
215	245	sandstone	
245	255	shale	
255	265	sandstone	
265	275	bentonite sand	
275	330	sandstone	
330	345	shale	
345	365	sandstone	
365	380	shale	
380	400	sandstone	

REMARKS:

Kevin Burge
Driller

Tool Dresser

954 #8 Pre-onGARD well → 30-039-07396
#76 30-039-20107

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. 21 Twp 28 Rng 5

Name of Well/Wells or Pipeline Serviced SAN JUAN 28-5 UNIT #8, #76

cps 1124w

Elevation 6636' Completion Date 10/7/77 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, if possible:

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

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

Depths gas encountered: N/A

Type & amount of coke breeze used: 50 SACKS

Depths anodes placed: 365', 355', 305', 295', 285', 275', 265', 240', 230', 220'

Depths vent pipes placed: 380' OF 1" PVC VENT PIPE

Vent pipe perforations: 280'

Remarks: gb #1

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 10-7-77

Well Name	Location	CPS No.
SAN JUAN 28-5 UNIT #8 #76	NE 21-28-5	1124W
Type & Size Bit Used 6 3/4"		Work Order No. #8 = 52578.19 #76 = 54556.19

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
400 Logged 389		50		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	365	355	305	295	285	275	265	240	230	220
Anode Output (Amps)	3.0	2.9	3.1	4.4	4.5	4.1	4.0	3.4	3.1	3.2
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

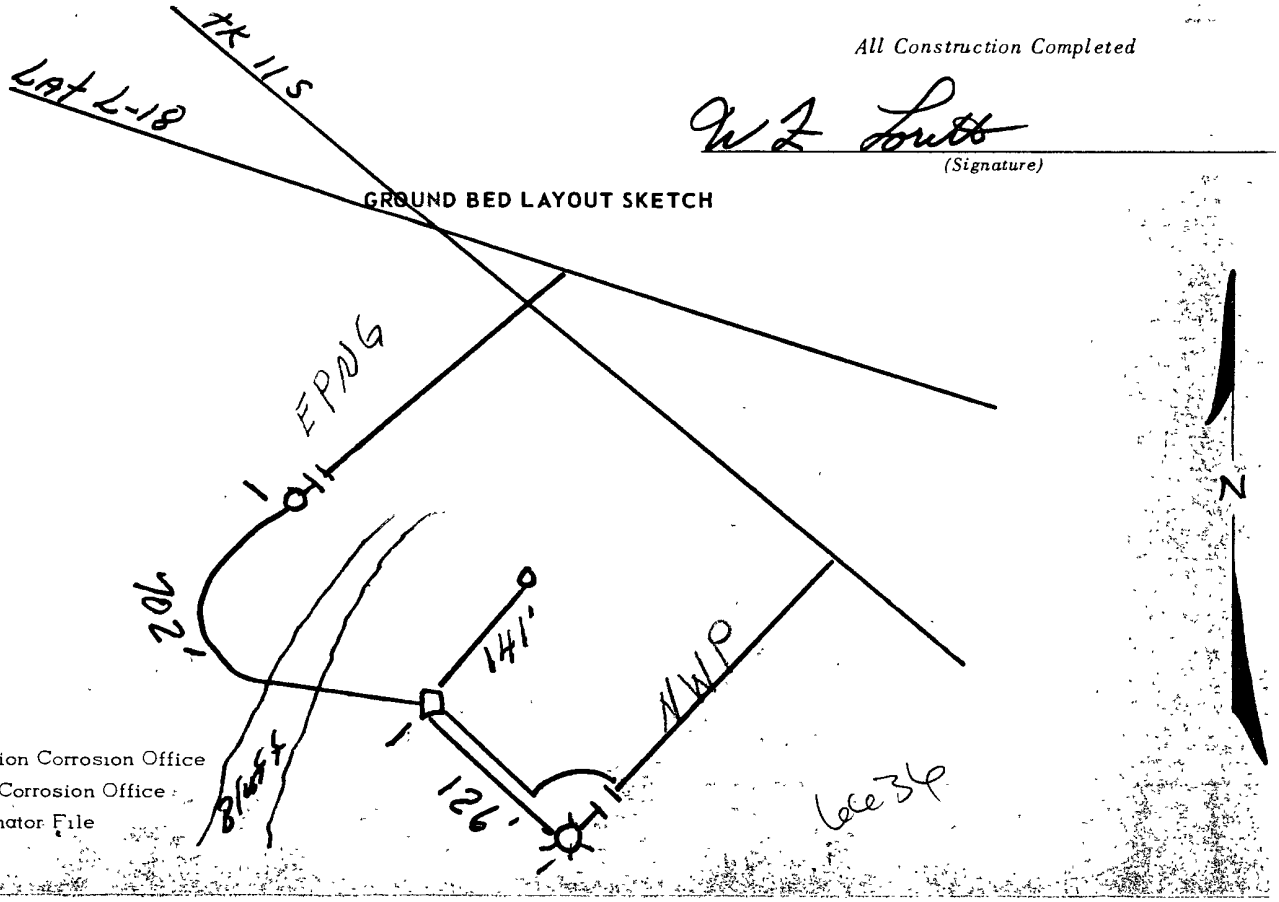
Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 10.7	Amps 15.9	Ohms 0.67		

Remarks: Static #8 600' S.W. = 0.78, Static #76 600' W = 0.72 Installed 10 - 2"x2"x48" Graphite Anodes. Driller said making water @ 180'. Drilled to 200'. Next AM blew water. Perforated 280' of 1" PVC Vent Pipe. Installed 380' of 1" PVC vent Pipe. Slurryed 50 sacks of Coke. #76 Marked 1 notch & #8 Marked 3 notches. Installed 60V 30A Rectifier & Stub Pole

All Construction Completed

W L Lantz
(Signature)

GROUND BED LAYOUT SKETCH



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

Form 7-1 (Rev 8-75)

El Paso Natural Gas Company
ENGINEERING CALCULATION

Sheet: ____ of ____
Date:
By:
File:

SAN JUAN 28-5 UNIT #8 — 52578.19
SAN JUAN 28-5 UNIT #76 — NE 21-28-5 — 1124W — 54556.19

Static #8 600'SW = 0.78
Static #76 600' west = 0.72
10-2"x2"x48" Graphite Anodes
60V 30A Rectifier
Stub Pole

Driller said making water 180'
Drilled to 200' Next AM blew water
Perforated 180' of 1" PVC Vent Pipe
Installed 180' of 1" PVC vent Pipe
Slurried 5 SACKS of COKE

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	1.5		60	1.4			
	1.3			1.5	①		
10	1.5		70	1.3			
	2.1			1.4			
20	1.8	(10)	80	1.0			
	1.5			.6			
30	1.5	⑨	389	40			
	1.8						
40	1.5	⑧	400				
	1.1						
50	.9						
	.7						
60	.7						
	1.7	⑦					
70	1.8						
	1.2	⑥			①	365	1.7	3.0
80	1.9				②	355	1.6	2.9
	1.6	⑤			③	305	1.6	3.1
90	1.5		1.6	2.1	④	295	2.1	2.0
	1.6	④	2.1		⑤	285	2.1	4.5
300	1.5		2.1		⑥	275	2.1	4.1
	1.4	③			⑦	265	2.1	4.0
10	1.3				⑧	240	1.7	3.4
	.3		1.7		⑨	230	1.7	3.1
20	.2				⑩	220	2.0	3.2
	.3							
30	.2							
	.3					15.9 Amps		
40	.2					10.7 Volts		
	.2					0.67 Ohms		
50	1.0							
	1.3	②						

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE WELL NO. 1124 W CONTRACTOR Posey Drilling Co. RIG NO. REPORT NO. DATE 10-7 19 77

MORNING

Driller Total Men In Crew

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

NO. DC ____ SIZE ____ LENG. ____

NO. DC ____ SIZE ____ LENG. ____

SERIAL NO.

SIZE

TYPE

MAKE

STANDS

SINGLES

DOWN ON KELLY

TOTAL DEPTH

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

FROM	TO	TIME BREAKDOWN
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	
0	10	Surface
10	30	Sandstone
30	60	Sandy Shale

REMARKS –

Making Water 184-200

Injected - 220 ft.

DAYLIGHT

Driller Albert L. Posey Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
	T.D.	394 ft		

BIT NO.

NO. DC ____ SIZE ____ LENG. ____

NO. DC ____ SIZE ____ LENG. ____

SERIAL NO.

SIZE 6 3/4

TYPE Rock

MAKE

STANDS

SINGLES

DOWN ON KELLY

TOTAL DEPTH

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

FROM	TO	TIME BREAKDOWN
60	80	Wet Sand
80	110	Shale
110	115	Sandstone
115	140	Shale
140	145	Sand Wet
145	165	Red Shale

REMARKS –

Drilled 400 ft

Logged 389

T.D. 394

EVENING

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.

SIZE

TYPE

MAKE

STANDS

SINGLES

DOWN ON KELLY

TOTAL DEPTH

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

FROM	TO	TIME BREAKDOWN
165	184	Sandstone
184	200	Sand Wet MW
200	235	Shale
235	255	Red shale
255	274	Sandy Shale
274	315	Blue Shale

REMARKS –

315-335	Red shale
335-342	Sandy Shale
342-355	Blue Shale
355-365	Sand shale
365-400	Shale

SIGNED: Toolpusher _____ Company Supervisor _____

932 87 - 30-039-20471

30 - 30-039-07396

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. 22 Twp 28 Rng 5

Name of Well/Wells or Pipeline Serviced SAN JUAN 28-5 UNIT #30 #87

cps 1125w

Elevation 6684' Completion Date 10/5/77 Total Depth 240' 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. 80'

Depths gas encountered: N/A

Type & amount of coke breeze used: 36 SACKS

Depths anodes placed: 210', 170', 140', 130', 120', 100', 90'

Depths vent pipes placed: 215'

Vent pipe perforations: 180'

Remarks: gb #2

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.

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 Oct 5-1977

Well Name	Location	CPS No.
SJ, 28-5 #30 & #87	NE 22-28-5	1125W

Type & Size Bit Used: 6 3/4
Work Order No.: 53545.19 & 54986.1

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
290				

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	255	240	230	210	170	140	130	120	100	90
Anode Output (Amps)	3.1	3.8	3.3	3.3	3.3	3.0	4.8	4.3	3.4	3.0
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

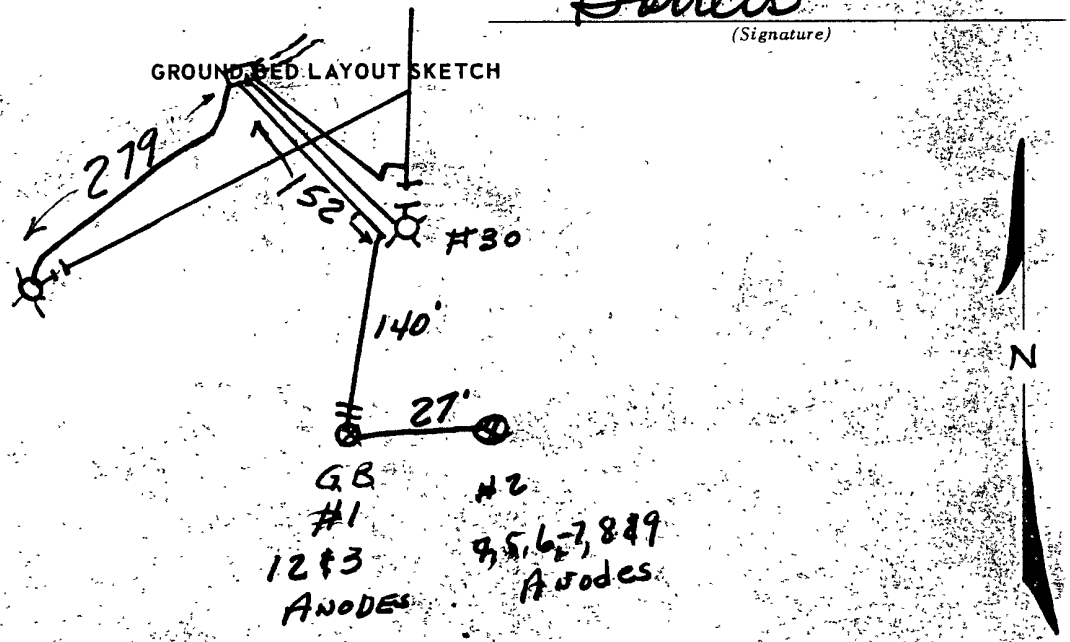
Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.7	Amps 17.3	Ohms 0.67		

Remarks: STATIC #30, 600 N = .70 #87, 600 NE = 73 GRAPHITE ANODE
DRILL TO 300 LOG 290 - HOLE CAVED AFTER 3 ANODES RESPONDED
DRILL NEW HOLE TO 240 LOG 233 - INSTALLED 7 ANODES
VENT to HOLE #1 TO 260 PERF. 200 - HOLE #2 TO 215 PERF 180
DRILLER SAID WATER AT 80' EACH HOLE
JUNCTION BOX ON HOLE #1 SLURRY 56 COKE IN HOLE #1, 36 COKE IN #2
60-30 RECT.
STUB POLE

All Construction Completed

Darrels
(Signature)

GROUNDBED LAYOUT SKETCH



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

Well

El Paso Natural Gas Company
ENGINEERING CALCULATION

Sheet: ____ of ____
Date:
By:
File:

.73
5
17.76

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

1125W

Static #30 = 600' N = .70 #87 600' NE = .73

80	1.2	280	.6		
	1.3		.6		
90	1.4	90	290 T.D.		
	1.9				
100	1.3	300			
	.9				
10	.8				
	.8				Vent to 260 Perf 200
20	2.0				
	2.2				
30	2.0				
	2.0				
40	1.8				
	1.4				
50	.6				
	1.0				
60	.4				
	.4				
70	1.7				
	1.6				
80	.8				
	.6				
90	.8				
	.6				
300	.5		1 255 1.5	8.7 31	
	.5		2 240 1.8	3.2 38	
10	1.6		3 230 1.6	3.1 33	
	1.5		2.10 17		
20	1.3		4 170 21		
	1.2		5 145		
30	1.5		6 135		
	1.8		7 125		
40	1.6		8 100		
	1.3		9 90		
50	1.3		10 80		
	1.4				
60	1.5				
	1.7				
70	1.3				
	.8				

Hole CAVED After 3' Nodes H2O Respondes to Coke -

56 COKE TOTAL

HOLE #1

Form 29-2 (Rev. 12-64)

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE WELL NO. 1125 CONTRACTOR Posey Drilling Co RIG NO. REPORT NO. DATE Sept 30 1977

MORNING					DAYLIGHT					EVENING				
Driller			Total Men In Crew		Driller Bob Posey			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.

	NO. DC SIZE LENG.		NO. DC SIZE LENG.		NO. DC SIZE LENG.
BIT NO.	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 6 3/8	SINGLES	SIZE	SINGLES
TYPE	DOWN ON KELLY	TYPE Rock	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
0	4	SURFACE
4	20	SANDY CLAY
20	40	SILT
40	60	SANDY SHALE
60	80	SAND WET (MAKING WATER)
80	100	SANDSTONE

FROM	TO	TIME BREAKDOWN
100	120	SANDY SHALE
120	140	SHALE
140	160	SANDY SHALE
160	180	SHALE
180	200	SAND
200	220	SANAY SHALE

FROM	TO	TIME BREAKDOWN
220	240	SHALE
240	260	SANDY SHALE
260	280	SHALE
280	300	SANAY SHALE

REMARKS –

REMARKS –

HOLE #1

REMARKS –

DRILLED 300

Logged 290

TD 295

SIGNED: Toolpusher _____ Company Supervisor B

Form 7-1 (Rev. 8-75)

El Paso Natural Gas Company
ENGINEERING CALCULATION

Sheet: ____ of ____
Date: ____
By: ____
File: ____

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

1125W HOLE#2

DRILLER SAID WET at 80' - Drill to 120
Blew with air out next A.M.
100-30 feet
Stub Pole
Graphite Nodes

80	1.0				
	1.2				
90	1.2				
	1.9				
100	1.4				
	.9				
10	.7				
	.5				
20	2.2				
	2.2				
30	2.1				
	2.1				
40	1.7				3.1
	1.2				3.8
50	1.0				3.3
	.9	4	210	2.1	3.3
60	.5	5	170	2.1	3.3
	.6	6	140	1.8	3.0
70	2.0	7	130	2.1	4.8
	1.7	8	120	2.4	4.3
80	.8	9	100	1.9	3.4
	.8	10	90	1.7	3.0
90	.9				
	.6				
200	.5				
	.8				
10	1.8				
	1.6				
20	1.5				
	1.2				
30					
40					

Vent to 215
Perf 180
Slurry 36 sx

.69
173 11.7V 17.3A = 0.67
1.038
1330
1264
1060

233 T.D.

Form 22-2 (Rev. 1-61)

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE WELL NO. 1125W CONTRACTOR Posey Drilling Co. RIG NO. REPORT NO. DATE Oct 5 19 77

MORNING

Driller Total Men In Crew

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

BIT NO. NO. DC SIZE LENG.

BIT NO. NO. DC SIZE LENG.

SERIAL NO. STANDS

SIZE SINGLES

TYPE DOWN ON KELLY

MAKE TOTAL DEPTH

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

FROM	TO	TIME BREAKDOWN
0	4	SURFACE
4	25	SANDY CLAY
25	35	SILT
35	60	SANDY SHALE
60	85	SAND WET (MAKING WATER)
85	100	SANDSTONE

REMARKS –

DAYLIGHT

Driller Bob Posey Total Men In Crew

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

BIT NO. NO. DC SIZE LENG.

BIT NO. NO. DC SIZE LENG.

SERIAL NO. STANDS

SIZE 6 7/8 SINGLES

TYPE Rock DOWN ON KELLY

MAKE TOTAL DEPTH

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

FROM	TO	TIME BREAKDOWN
100	115	SANDY SHALE
115	140	SHALE
140	160	SANDY SHALE
160	175	SHALE
175	190	SAND
190	220	SANDY SHALE

REMARKS –

HOLE #2

EVENING

Driller Total Men In Crew

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

BIT NO. NO. DC SIZE LENG.

BIT NO. NO. DC SIZE LENG.

SERIAL NO. STANDS

SIZE SINGLES

TYPE DOWN ON KELLY

MAKE TOTAL DEPTH

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

FROM	TO	TIME BREAKDOWN
220	240	SHALE

REMARKS –

DRILLED 240
MAKING WATER 80

Logged – 233
Total Depth – 236

SIGNED: Toolpusher Company Supervisor B

1162

30-039-23729

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 D Sec. 22 Twp 28 Rng 5

Name of Well/Wells or Pipeline Serviced SAN JUAN 28-5 UNIT #30A

cps 1883w

Elevation 6682' Completion Date 6/23/87 Total Depth 280' 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: N/A

Depths anodes placed: 225', 215', 205', 195', 185', 175', 160', 150', 140', 120'

Depths vent pipes placed: 273'

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

7-17-87
92

Drilling Log (Attach Hereto) ☐

under code 9555001 Completion Date 6-23-87

CPS #	Well Name, Line or Plant:	Work Order #	Static:	Ins. Union Check
1883 W ~~1890-W~~	Lf. 28-5 #30A	A 6726	.92 5.	☑ Good ☐ Bad

Location	Anode Size.	Anode Type:	Size Bit:
D-22-28-5	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
280'	273'				

Anode Depth	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
	225'	215'	205'	195'	185'	175'	160'	150'	140'	120
Anode Output (Amps)	4.1	3.3	5.5	4.0	4.6	3.5	3.8	3.9	3.5	4.6

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 12.32	Amps 15.5	Ohms .80		

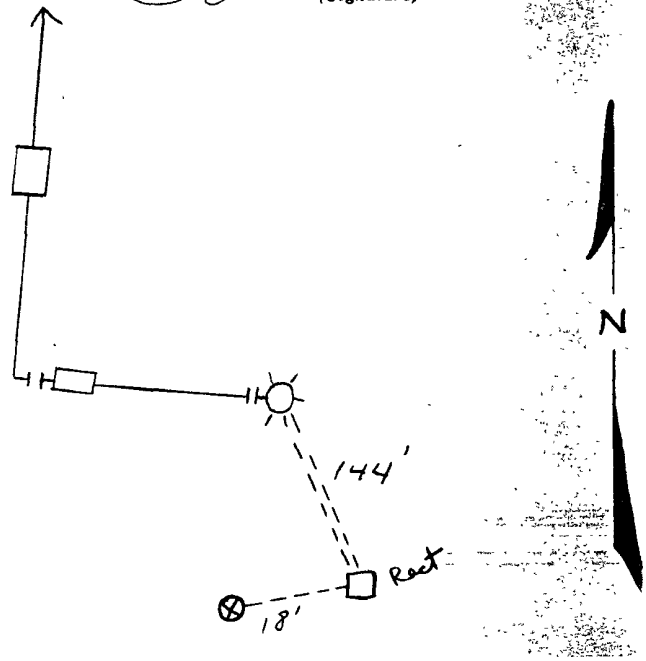
Remarks: Hit water at 50', took water sample, installed 273' of 1" PVC. Vent pipe, Perforated 240' of vent pipe. Drilled 280', Logged 273'.

4300.00 GB. cost.

Rectifier Size:	40 V 16 A	750.00
Addn'l Depth		
Depth Credit:	227'	-908.00
Extra Cable:	30'	7.50
Ditch & 1 Cable:	18'	7.02
Ditch & 2 Cable:	144'	74.88
25' Meter Pole:	1	305.00
20' Meter Pole:		
10' Stub Pole:		
Junction Box:	1	40.00
		4576.40
	Tax:	228.82
	Total:	4805.22

All Construction Completed

Tyler J. Ehrlich
(Signature)



LL682

BURGE CORROSION SYSTEMS, INC.

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

Date 6-23-87

DEEP WELL GROUNDBED LOG

Company Meridian

Well No. SJ 28-5 #30A Location D-22-28-5 Volts Applied 12.3 Amperes 15.

Depth	Reading	Depth	Reading	Depth	Reading	Depth	Reading
0							
5		230	1.6	455		680	Hit water at
10		235	1.1	460		685	50' Perforated
15		240	.8	465		690	240' of 1" PVC
20		245	.5	470		695	vent pipe
25		250	.4	475		700	
30		255	.9	480		705	
35		260	2.3	485		710	
40		265	1.9	490		715	
45		270	273 T.D.	495		720	
50	WATER	275		500		725	
55		280	Drilled To	505		730	
60	1.8	285		510		735	
65	2.0	290		515		740	
70	3.3	295		520		745	
75	2.8	300		525		750	
80	3.0	305		530		755	
85	3.4	310		535		760	
90	3.1	315		540		765	
95	3.9	320		545		770	
100	3.2	325		550		775	
105	3.1	330		555		780	
110	3.2	335		560		785	
115	3.1	340		565		790	
120	3.0 — (10)	345		670		795	
125	2.2	350		575		800	
130	1.1	355		580		805	
135	2.0	360		585		810	
140	2.4 — (9)	365		590		815	
145	1.3	370		595		820	
150	2.8 — (8)	375		600		825	
155	2.5	380		605		830	
160	2.3 — (7)	385		610		835	
165	1.4	390		615		840	
170	1.0	395		620		845	(1) 225 2.1 → 4.1
175	2.4 — (6)	400		625		850	(2) 215 2.1 → 3.3
180	3.6	405		630		855	(3) 205 3.7 → 5.5
185	3.0 — (5)	410		635		860	(4) 195 2.2 → 4.0
190	2.6	415		640		865	(5) 185 3.0 → 4.6
195	2.1 — (4)	420		645		870	(6) 175 2.7 → 3.5
200	2.0	425		650		875	(7) 160 2.5 → 3.8
205	3.3 — (3)	430		655		880	(8) 150 2.8 → 3.9
210	2.1	435		660		885	(9) 140 2.6 → 3.3
215	2.1 — (2)	440		665		890	(10) 120 [illegible]2 → 4.6
220	2.2	445		670		895	
225	2.0 — (1)	450		675		900	

BURGE CORROSION SYSTEMS, INC.

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

QPS 1883 W

COMPANY Meridian Oil DAILY DRILLING REPORT June 23 19 87

WELL NAME:	WELL NUMBER:	SECTION:	TOWNSHIP:	RANGE:
San Juan 28-5	#30-A	22	28	5

WATER AT:	FEET:	HOLE MADE:
	50'	6 3/4

DESCRIPTION OF FORMATION

FROM	TO	FORMATION IS	COLOR
0	45	sandstone, clay & shale	
45	50	watersand	
50	125	shale	
125	135	sandstone	
135	145	shale	
145	150	watersand	
150	230	shale	
230	260	sandstone	
260	270	shale	
270	280	watersand & sandstone	

REMARKS:

Kevin Burge Driller Tool Dresser

Farmington, New Mexico

CPS 1883 W

API WATER ANALYSIS REPORT FORM

Company Meridian Oil Co.	Sample No. 1	Date Sampled 6-23-87
Field Gobernador	Legal Description D-22-28-5	County or Parish Rio Arriba / State NM
Lease or Unit	Well S.J. 28-5 #30A / Depth 50' / Formation Mesa Verde	Water, B/D
Type of Water (Produced, Supply, etc.)	Sampling Point G.B.	Sampled By J.E.

DISSOLVED SOLIDS

CATIONS	mg/l	me/l
Sodium, Na (calc.)	214	9.3
Calcium, Ca	2	.1
Magnesium, Mg	0	0
Barium, Ba		

ANIONS	mg/l	me/l
Chloride, Cl	0	0
Sulfate, SO_4	210	4.3
Carbonate, CO_3	3	.1
Bicarbonate, HCO_3	303	5.0
~~Hydroxide~~	0	0

Total Dissolved Solids (calc.) 729

Iron, Fe (total)

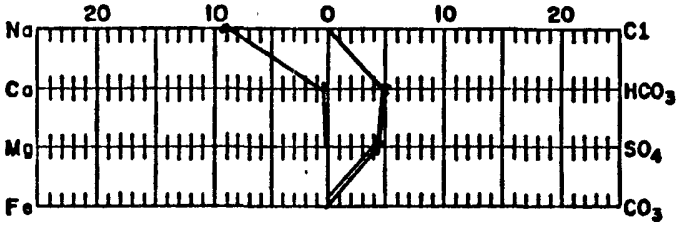
Sulfide, as H_2S 0

OTHER PROPERTIES

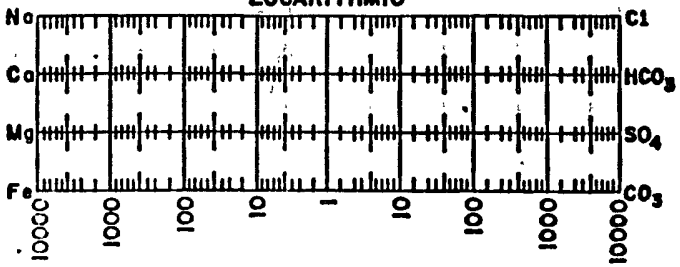
pH	9.34
Specific Gravity, 60/60 F.	1.0045
Resistivity (ohm-meters) 70° F.	13.4

WATER PATTERNS — me/l

STANDARD



LOGARITHMIC



REMARKS & RECOMMENDATIONS:

ENSOLUM

APPENDIX C

Executed C-138 Solid Waste Acceptance Forms

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

2. Originating Site:
SJ 28-5 #14

AFE: N66187
PM: Maron O'Brien
Pay Key: RB21200

2. Location of Material (Street Address, City, State or ULSTR):
UL N Section 16 T28 R5W; 36.65679, -107.364700

MAY 2023

4. Source and Description of Waste:
Source: Hydrocarbon contaminated soil associated with remediation activities from a natural gas pipeline release.
Description: Hydrocarbon contaminated soil associated with remediation activities from a natural gas pipeline release.
Estimated Volume 20 (yd³) / bbls Known Volume (to be entered by the operator at the end of the haul) 55 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) 5-8-2023, representative for Enterprise Products Operating authorize 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: TBD

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: **Envirotech, Inc. Soil Remediation Facility * Permit #: NM01-0011**
Address of Facility: **Hill Top, NM**
Method of Treatment and/or Disposal:
☐ Evaporation ☐ Injection ☐ Treating Plant ☒ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

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

PRINT NAME: Greg Crabtree TITLE: Enviro Manager DATE: 5/11/23

SIGNATURE: _____ TELEPHONE NO.: 505-632-0615
Surface Waste Management Facility Authorized Agent

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

2. Originating Site:
SJ 28-5 #14

AFE: N66187
PM: Maron O'Brien
Pay Key: RB21200

2. Location of Material (Street Address, City, State or ULSTR):
UL N Section 16 T28 R5W; 36.65679, -107.364700

July / August 2023

4. Source and Description of Waste:
Source: Hydrocarbon contaminated soil associated with remediation activities from a natural gas pipeline release.
Description: Hydrocarbon contaminated soil associated with remediation activities from a natural gas pipeline release.
Estimated Volume 20 (yd³) / bbls Known Volume (to be entered by the operator at the end of the haul) 292/490 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 7-11-2023, representative for Enterprise Products Operating authorize 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: TBD

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: **Envirotech, Inc. Soil Remediation Facility * Permit #: NM01-0011**
Address of Facility: **Hill Top, NM**
Method of Treatment and/or Disposal:
☐ Evaporation ☐ Injection ☐ Treating Plant ☒ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

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

PRINT NAME: Greg Crabtree TITLE: Envivo Manager DATE: 7/11/23

SIGNATURE: TELEPHONE NO.: 505-632-0615

Surface Waste Management Facility Authorized Agent

ENSOLUM

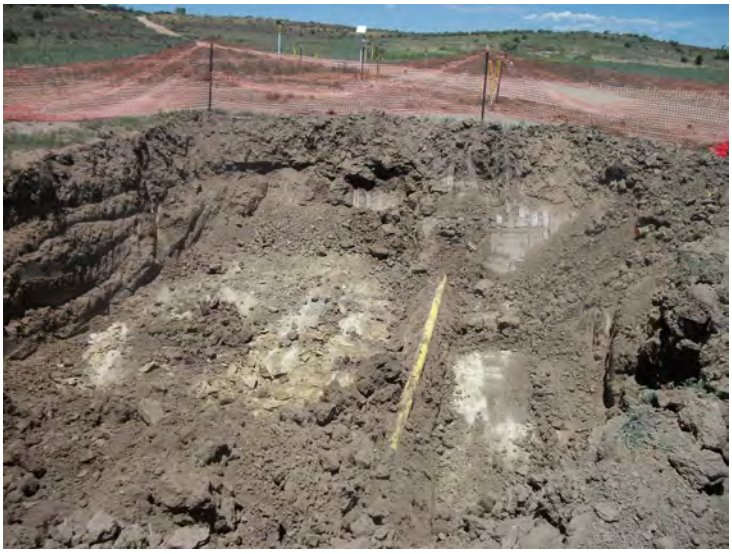
APPENDIX D

Photographic Documentation

SITE PHOTOGRAPHS

Closure Report
Enterprise Field Services, LLC
San Juan 28-5 #14 (07/10/23)
Ensolum Project No. 05A1226239

ENSOLUM

Photograph 1 Photograph Description: View of the in-process excavation activities.	
Photograph 2 Photograph Description: View of the excavation.	
Photograph 3 Photograph Description: View of the site after initial restoration.	

ENSOLUM

APPENDIX E

Regulatory Correspondence

From:	Kyle Summers
To:	Chad D"Aponti
Cc:	Ranee Deechilly
Subject:	FW: [EXTERNAL] SJ 28-5 #14 - UL N Section 16 T28 R5W; 36.65679, -107.364700; NMOCD Incident #nAPP2319233055
Date:	Tuesday, August 8, 2023 1:15:54 PM
Attachments:	image002.png image004.png image005.png image006.png

Kyle Summers
Principal
903-821-5603
Ensolum, LLC

From: Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>
Sent: Tuesday, August 8, 2023 1:15 PM
To: Long, Thomas <tjlong@eprod.com>
Cc: Stone, Brian <bmstone@eprod.com>; Kyle Summers <ksummers@ensolum.com>
Subject: Re: [EXTERNAL] SJ 28-5 #14 - UL N Section 16 T28 R5W; 36.65679, -107.364700; NMOCD Incident #nAPP2319233055

[**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: Tuesday, August 8, 2023 12:53 PM
To: Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>
Cc: Stone, Brian <bmstone@eprod.com>; Kyle Summers <ksummers@ensolum.com>
Subject: FW: [EXTERNAL] SJ 28-5 #14 - UL N Section 16 T28 R5W; 36.65679, -107.364700; NMOCD Incident #nAPP2319233055

Nelson,

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 August 9, 2023 at 12:00 a.m. at the SJ 28-5 #14 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: Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>
Sent: Thursday, July 27, 2023 9:22 AM
To: Long, Thomas <tjlong@eprod.com>

Cc: Stone, Brian <bmstone@eprod.com>; Kyle Summers <ksummers@ensolum.com>
Subject: Re: [EXTERNAL] SJ 28-5 #14 - UL N Section 16 T28 R5W; 36.65679, -107.364700; NMOCD Incident #nAPP2319233055

[Use caution with links/attachments]
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 9:10 AM
To: Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>
Cc: Stone, Brian <bmstone@eprod.com>; Kyle Summers <ksummers@ensolum.com>

Subject: FW: [EXTERNAL] SJ 28-5 #14 - UL N Section 16 T28 R5W; 36.65679, -107.364700; NMOCD Incident #nAPP2319233055

Nelson,

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 12:00 p.m. at the SJ 28-5 #14 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: Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>
Sent: Tuesday, July 25, 2023 10:54 AM
To: Long, Thomas <tjlong@eprod.com>
Cc: Stone, Brian <bmstone@eprod.com>; Kyle Summers <ksummers@ensolum.com>; Landon Daniell <ldaniell@ensolum.com>
Subject: Re: [EXTERNAL] SJ 28-5 #14 - UL N Section 16 T28 R5W; 36.65679, -107.364700; NMOCD Incident #nAPP2319233055

[Use caution with links/attachments]
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: Tuesday, July 25, 2023 10:51 AM
To: Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>
Cc: Stone, Brian <bmstone@eprod.com>; Kyle Summers <ksummers@ensolum.com>; Landon Daniell <ldaniell@ensolum.com>
Subject: FW: [EXTERNAL] SJ 28-5 #14 - UL N Section 16 T28 R5W; 36.65679, -107.364700; NMOCD Incident #nAPP2319233055

Nelson,

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 26, 2023 at 10:00 a.m. at the SJ 28-5 #14 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

From: Long, Thomas
Sent: Monday, July 24, 2023 2:57 PM
To: 'Velez, Nelson, EMNRD' <Nelson.Velez@emnrd.nm.gov>
Cc: Stone, Brian <bmstone@eprod.com>; Kyle Summers <ksummers@ensolum.com>
Subject: RE: [EXTERNAL] SJ 28-5 #14 - UL N Section 16 T28 R5W; 36.65679, -107.364700; NMOCD Incident #nAPP2319233055

Nelson,

This email is a notification that Enterprise had a small flash fire at the SJ 28-5 #14 excavation while performing remediation activities. **No one was injured**. No emergency services responded. The fire was extinguished utilizing hand help fire extinguishers. I will submit a new C-141 for this event. Please let me know if you have any questions, or concerns.

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

From: Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>
Sent: Monday, July 24, 2023 8:07 AM
To: Long, Thomas <tjlong@eprod.com>
Cc: Stone, Brian <bmstone@eprod.com>; Kyle Summers <ksummers@ensolum.com>
Subject: Re: [EXTERNAL] SJ 28-5 #14 - UL N Section 16 T28 R5W; 36.65679, -107.364700; NMOCD Incident #nAPP2319233055

[Use caution with links/attachments]
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: Monday, July 24, 2023 8:04 AM
To: Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>
Cc: Stone, Brian <bmstone@eprod.com>; Kyle Summers <ksummers@ensolum.com>
Subject: FW: [EXTERNAL] SJ 28-5 #14 - UL N Section 16 T28 R5W; 36.65679, -107.364700; NMOCD Incident #nAPP2319233055

Nelson,

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 today July 24, 2023 at 2:00 p.m. at the SJ 28-5 #14 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

From: Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>
Sent: Monday, July 17, 2023 7:56 AM
To: Long, Thomas <tjlong@eprod.com>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: Re: [EXTERNAL] SJ 28-5 #14 - UL N Section 16 T28 R5W; 36.65679, -107.364700; NMOCD Incident #nAPP2319233055

[Use caution with links/attachments]

Good morning 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.

The OCD requires a copy of all correspondence relative to remedial activities be included in all proposals and/or final closure reports. Correspondence required to be included in reports may include, but not limited to, notifications for liner inspections, sample events, spill/release/fire, and request for time extensions or variances.

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: Monday, July 17, 2023 7:46 AM
To: Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: [EXTERNAL] SJ 28-5 #14 - UL N Section 16 T28 R5W; 36.65679, -107.364700; NMOCD Incident #nAPP2319233055

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

Nelson,

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 today July 17, 2023 at 1:00 p.m. at the SJ 28-5 #14 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

ENSOLUM

APPENDIX F

Table 1 – Soil Analytical Summary

ENSOLUM

TABLE 1
San Juan 28-5 #14 (07/10/23)
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/MRO)[1] (mg/kg)	Chloride (mg/kg)
New Mexico Energy, Mineral & Natural Resources Department Oil Conservation Division Closure Criteria (Tier I)				**10**	**NE**	**NE**	**NE**	**50**	**NE**	**NE**	**NE**	**100**	**600**
Composite Soil Samples Removed by Excavation and Transported to the Landfarm for Disposal/Remediation													
S-1	07.17.23	C	7	1.0	28	2.0	27	**58**	690	18	<49	**710**	<60
S-5	07.17.23	C	0 to 7	<0.23	25	4.0	54	**83**	1,000	26	<48	**1,000**	<60
Excavation Composite Soil Samples													
S-1a	07.28.23	C	7.5	<0.021	<0.043	<0.043	<0.085	ND	<4.3	<9.5	<48	ND	<61
S-2	07.17.23	C	0 to 7	<0.021	<0.042	<0.042	<0.085	ND	<4.2	<9.7	<49	ND	<60
S-3	07.17.23	C	0 to 7	<0.020	<0.040	<0.040	<0.080	ND	<4.0	<9.3	<46	ND	<60
S-4	07.17.23	C	0 to 7	<0.020	<0.041	<0.041	<0.081	ND	<4.1	<9.5	<47	ND	94
S-5a	08.09.23	C	0 to 7.5	<0.020	<0.039	<0.039	<0.079	ND	<3.9	<9.3	<47	ND	<61

*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)

NA = Not Analyzed

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

July 24, 2023

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

RE: SJ 28 5 14 OrderNo.: 2307755

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 5 sample(s) on 7/18/2023 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 **2307755**
Date Reported: **7/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-1
Project: SJ 28 5 14 **Collection Date:** 7/17/2023 1:00:00 PM
Lab ID: 2307755-001 **Matrix:** MEOH (SOIL) **Received Date:** 7/18/2023 6:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	7/18/2023 11:10:50 AM	76284
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	18	9.7		mg/Kg	1	7/18/2023 10:08:49 AM	76278
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/18/2023 10:08:49 AM	76278
Surr: DNOP	83.4	69-147		%Rec	1	7/18/2023 10:08:49 AM	76278
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**	
Gasoline Range Organics (GRO)	690	39		mg/Kg	10	7/18/2023 1:09:56 PM	GS98285
Surr: BFB	168	15-244		%Rec	10	7/18/2023 1:09:56 PM	GS98285
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**	
Benzene	1.0	0.20		mg/Kg	10	7/18/2023 1:09:56 PM	R98285
Toluene	28	0.39		mg/Kg	10	7/18/2023 1:09:56 PM	R98285
Ethylbenzene	2.0	0.39		mg/Kg	10	7/18/2023 1:09:56 PM	R98285
Xylenes, Total	27	0.79		mg/Kg	10	7/18/2023 1:09:56 PM	R98285
Surr: 4-Bromofluorobenzene	101	39.1-146		%Rec	10	7/18/2023 1:09:56 PM	R98285

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 **2307755**
Date Reported: **7/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-2
Project: SJ 28 5 14 **Collection Date:** 7/17/2023 1:05:00 PM
Lab ID: 2307755-002 **Matrix:** MEOH (SOIL) **Received Date:** 7/18/2023 6:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	7/18/2023 11:23:15 AM	76284
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	7/18/2023 10:32:35 AM	76278
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/18/2023 10:32:35 AM	76278
Surr: DNOP	83.1	69-147		%Rec	1	7/18/2023 10:32:35 AM	76278
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**	
Gasoline Range Organics (GRO)	ND	4.2		mg/Kg	1	7/18/2023 11:58:41 AM	GS98285
Surr: BFB	93.2	15-244		%Rec	1	7/18/2023 11:58:41 AM	GS98285
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**	
Benzene	ND	0.021		mg/Kg	1	7/18/2023 11:58:41 AM	R98285
Toluene	ND	0.042		mg/Kg	1	7/18/2023 11:58:41 AM	R98285
Ethylbenzene	ND	0.042		mg/Kg	1	7/18/2023 11:58:41 AM	R98285
Xylenes, Total	ND	0.085		mg/Kg	1	7/18/2023 11:58:41 AM	R98285
Surr: 4-Bromofluorobenzene	95.5	39.1-146		%Rec	1	7/18/2023 11:58:41 AM	R98285

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 **2307755**
Date Reported: **7/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-3
Project: SJ 28 5 14 **Collection Date:** 7/17/2023 1:10:00 PM
Lab ID: 2307755-003 **Matrix:** MEOH (SOIL) **Received Date:** 7/18/2023 6:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	7/18/2023 11:35:40 AM	76284
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	7/18/2023 10:56:20 AM	76278
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	7/18/2023 10:56:20 AM	76278
Surr: DNOP	83.2	69-147		%Rec	1	7/18/2023 10:56:20 AM	76278
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**	
Gasoline Range Organics (GRO)	ND	4.0		mg/Kg	1	7/18/2023 12:22:22 PM	GS98285
Surr: BFB	92.0	15-244		%Rec	1	7/18/2023 12:22:22 PM	GS98285
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**	
Benzene	ND	0.020		mg/Kg	1	7/18/2023 12:22:22 PM	R98285
Toluene	ND	0.040		mg/Kg	1	7/18/2023 12:22:22 PM	R98285
Ethylbenzene	ND	0.040		mg/Kg	1	7/18/2023 12:22:22 PM	R98285
Xylenes, Total	ND	0.080		mg/Kg	1	7/18/2023 12:22:22 PM	R98285
Surr: 4-Bromofluorobenzene	94.9	39.1-146		%Rec	1	7/18/2023 12:22:22 PM	R98285

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 **2307755**
Date Reported: **7/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-4
Project: SJ 28 5 14 **Collection Date:** 7/17/2023 1:15:00 PM
Lab ID: 2307755-004 **Matrix:** MEOH (SOIL) **Received Date:** 7/18/2023 6:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	94	60		mg/Kg	20	7/18/2023 11:48:04 AM	76284
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	7/18/2023 11:20:09 AM	76278
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/18/2023 11:20:09 AM	76278
Surr: DNOP	84.6	69-147		%Rec	1	7/18/2023 11:20:09 AM	76278
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**	
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	7/18/2023 12:46:09 PM	GS98285
Surr: BFB	92.6	15-244		%Rec	1	7/18/2023 12:46:09 PM	GS98285
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**	
Benzene	ND	0.020		mg/Kg	1	7/18/2023 12:46:09 PM	R98285
Toluene	ND	0.041		mg/Kg	1	7/18/2023 12:46:09 PM	R98285
Ethylbenzene	ND	0.041		mg/Kg	1	7/18/2023 12:46:09 PM	R98285
Xylenes, Total	ND	0.081		mg/Kg	1	7/18/2023 12:46:09 PM	R98285
Surr: 4-Bromofluorobenzene	95.8	39.1-146		%Rec	1	7/18/2023 12:46:09 PM	R98285

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 **2307755**
Date Reported: **7/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-5
Project: SJ 28 5 14 **Collection Date:** 7/17/2023 1:20:00 PM
Lab ID: 2307755-005 **Matrix:** MEOH (SOIL) **Received Date:** 7/18/2023 6:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	7/18/2023 12:00:29 PM	76284
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	26	9.6		mg/Kg	1	7/18/2023 11:44:04 AM	76278
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/18/2023 11:44:04 AM	76278
Surr: DNOP	81.7	69-147		%Rec	1	7/18/2023 11:44:04 AM	76278
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**	
Gasoline Range Organics (GRO)	1000	47		mg/Kg	10	7/18/2023 1:33:45 PM	GS98285
Surr: BFB	300	15-244	S	%Rec	10	7/18/2023 1:33:45 PM	GS98285
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**	
Benzene	ND	0.23		mg/Kg	10	7/18/2023 1:33:45 PM	R98285
Toluene	25	0.47		mg/Kg	10	7/18/2023 1:33:45 PM	R98285
Ethylbenzene	4.0	0.47		mg/Kg	10	7/18/2023 1:33:45 PM	R98285
Xylenes, Total	54	0.93		mg/Kg	10	7/18/2023 1:33:45 PM	R98285
Surr: 4-Bromofluorobenzene	109	39.1-146		%Rec	10	7/18/2023 1:33:45 PM	R98285

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#: **2307755**

24-Jul-23

Client: ENSOLUM

Project: SJ 28 5 14

Sample ID: **MB-76284**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **76284**	RunNo: **98289**
Prep Date: **7/18/2023**	Analysis Date: **7/18/2023**	SeqNo: **3578639** Units: **mg/Kg**

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

Sample ID: **LCS-76284**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **76284**	RunNo: **98289**
Prep Date: **7/18/2023**	Analysis Date: **7/18/2023**	SeqNo: **3578640** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.4	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical 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#: **2307755**

24-Jul-23

Client: ENSOLUM

Project: SJ 28 5 14

Sample ID: **2307755-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **S-1**	Batch ID: **76278**	RunNo: **98287**
Prep Date: **7/18/2023**	Analysis Date: **7/18/2023**	SeqNo: **3577029** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	9.6	47.98	17.89	63.0	54.2	135			
Surr: DNOP	4.1		4.798		86.0	69	147			

Sample ID: **MB-76278**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **76278**	RunNo: **98287**
Prep Date: **7/18/2023**	Analysis Date: **7/18/2023**	SeqNo: **3577030** 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	8.4		10.00		84.4	69	147			

Sample ID: **LCS-76278**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **76278**	RunNo: **98287**
Prep Date: **7/18/2023**	Analysis Date: **7/18/2023**	SeqNo: **3577031** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	50.00	0	85.9	61.9	130			
Surr: DNOP	4.1		5.000		82.3	69	147			

Sample ID: **MB-76296**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **76296**	RunNo: **98287**
Prep Date: **7/18/2023**	Analysis Date: **7/18/2023**	SeqNo: **3577902** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.4		10.00		84.2	69	147			

Sample ID: **LCS-76296**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **76296**	RunNo: **98287**
Prep Date: **7/18/2023**	Analysis Date: **7/18/2023**	SeqNo: **3577903** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.1		5.000		81.3	69	147			

Sample ID: **2307755-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **S-1**	Batch ID: **76278**	RunNo: **98287**
Prep Date: **7/18/2023**	Analysis Date: **7/18/2023**	SeqNo: **3577999** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	9.7	48.73	17.89	60.6	54.2	135	1.44	29.2	

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#: **2307755**

24-Jul-23

Client: ENSOLUM

Project: SJ 28 5 14

Sample ID: **2307755-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **S-1**	Batch ID: **76278**	RunNo: **98287**
Prep Date: **7/18/2023**	Analysis Date: **7/18/2023**	SeqNo: **3577999** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.2		4.873		85.3	69	147	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical 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#: **2307755**

24-Jul-23

Client: ENSOLUM

Project: SJ 28 5 14

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **GS98285**	RunNo: **98285**
Prep Date:	Analysis Date: **7/18/2023**	SeqNo: **3576898** 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	88.0	70	130			
Surr: BFB	1900		1000		191	15	244			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **GS98285**	RunNo: **98285**
Prep Date:	Analysis Date: **7/18/2023**	SeqNo: **3576899** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	910		1000		90.5	15	244			

Sample ID: **2307755-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **S-1**	Batch ID: **GS98285**	RunNo: **98285**
Prep Date:	Analysis Date: **7/18/2023**	SeqNo: **3577210** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	870	39	197.3	689.5	91.1	70	130			
Surr: BFB	22000		7893		284	15	244			S

Sample ID: **2307755-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **S-1**	Batch ID: **GS98285**	RunNo: **98285**
Prep Date:	Analysis Date: **7/18/2023**	SeqNo: **3577325** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	860	39	197.3	689.5	85.6	70	130	1.26	20	
Surr: BFB	23000		7893		296	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#: **2307755**

24-Jul-23

Client: ENSOLUM

Project: SJ 28 5 14

Sample ID: **100ng btex lcs**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **R98285**	RunNo: **98285**
Prep Date:	Analysis Date: **7/18/2023**	SeqNo: **3576901** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	95.6	70	130			
Toluene	0.97	0.050	1.000	0	97.4	70	130			
Ethylbenzene	0.96	0.050	1.000	0	96.4	70	130			
Xylenes, Total	2.9	0.10	3.000	0	96.8	70	130			
Surr: 4-Bromofluorobenzene	0.93		1.000		92.5	39.1	146			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **R98285**	RunNo: **98285**
Prep Date:	Analysis Date: **7/18/2023**	SeqNo: **3576902** 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	0.92		1.000		92.0	39.1	146			

Sample ID: **2307755-002ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **S-2**	Batch ID: **R98285**	RunNo: **98285**
Prep Date:	Analysis Date: **7/18/2023**	SeqNo: **3577326** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.79	0.021	0.8496	0	93.4	70	130			
Toluene	0.81	0.042	0.8496	0	95.6	70	130			
Ethylbenzene	0.81	0.042	0.8496	0	95.5	70	130			
Xylenes, Total	2.5	0.085	2.549	0.01767	96.6	70	130			
Surr: 4-Bromofluorobenzene	0.86		0.8496		101	39.1	146			

Sample ID: **2307755-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **S-2**	Batch ID: **R98285**	RunNo: **98285**
Prep Date:	Analysis Date: **7/18/2023**	SeqNo: **3577327** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.79	0.021	0.8496	0	92.8	70	130	0.666	20	
Toluene	0.81	0.042	0.8496	0	95.1	70	130	0.482	20	
Ethylbenzene	0.81	0.042	0.8496	0	95.2	70	130	0.367	20	
Xylenes, Total	2.5	0.085	2.549	0.01767	96.7	70	130	0.0582	20	
Surr: 4-Bromofluorobenzene	0.86		0.8496		101	39.1	146	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical 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: 2307755 RcptNo: 1

Received By: Tracy Casarrubias 7/18/2023 6:20:00 AM

Completed By: Tracy Casarrubias 7/18/2023 6:52:25 AM

Reviewed By: SCM 07/18/23

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 7/18/23

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 and Email/Fax are missin on COC - TMC 7/18/23

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.2	Good	Yes	Yogi		

Chain-of-Custody Record

Client: Ensolum LLC

Mailing Address: 606 S Rio Grande Suite A 87401

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 10 days
☐ Standard ☑ Rush 7-18-23

Project Name: SJ 28-5 #14

Project #:

Project Manager: K Summers

Sampler: C DiAponti

On Ice: ☑ Yes ☐ No 4 oz

# of Coolers: 1

Cooler Temp (including CF): 5.2-0=5.2 (°C)

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2307755	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)
7/17	1300	S	S-1	1402 Jar	Cool	001	✓	✓					✓			
7/17	1305	S	S-2		Cool	002	✓	✓					✓			
7/17	1310	S	S-3		Cool	003	✓	✓					✓			
7/17	1315	S	S-4		Cool	004	✓	✓					✓			
7/17	1320	S	S-5		Cool	005	✓	✓					✓			

Analysis Request

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
7/17	1433				7/17/23	1433
7/17/23	1751			courier	7/18/23	6:20

Remarks: Tom Long

Sample Bags

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 04, 2023

Kyle Summers

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

RE: SJ 28 5 14 OrderNo.: 2307E46

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 1 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 **2307E46**
Date Reported: **8/4/2023**

CLIENT: ENSOLUM **Client Sample ID:** S-1a
Project: SJ 28 5 14 **Collection Date:** 7/28/2023 12:00:00 PM
Lab ID: 2307E46-001 **Matrix:** MEOH (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	61		mg/Kg	20	7/31/2023 1:56:36 PM	76564
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	7/29/2023 3:02:20 PM	76555
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/29/2023 3:02:20 PM	76555
Surr: DNOP	102	69-147		%Rec	1	7/29/2023 3:02:20 PM	76555
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**	
Gasoline Range Organics (GRO)	ND	4.3		mg/Kg	1	7/31/2023 1:38:34 PM	GS98601
Surr: BFB	95.4	15-244		%Rec	1	7/31/2023 1:38:34 PM	GS98601
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**	
Benzene	ND	0.021		mg/Kg	1	7/31/2023 1:38:34 PM	BS98601
Toluene	ND	0.043		mg/Kg	1	7/31/2023 1:38:34 PM	BS98601
Ethylbenzene	ND	0.043		mg/Kg	1	7/31/2023 1:38:34 PM	BS98601
Xylenes, Total	ND	0.085		mg/Kg	1	7/31/2023 1:38:34 PM	BS98601
Surr: 4-Bromofluorobenzene	110	39.1-146		%Rec	1	7/31/2023 1:38:34 PM	BS98601

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#: **2307E46**

04-Aug-23

Client: ENSOLUM

Project: SJ 28 5 14

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#: **2307E46**

04-Aug-23

Client: ENSOLUM

Project: SJ 28 5 14

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#: **2307E46**

04-Aug-23

Client: ENSOLUM

Project: SJ 28 5 14

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **GS98601**	RunNo: **98601**
Prep Date:	Analysis Date: **7/31/2023**	SeqNo: **3590782** 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	89.2	70	130			
Surr: BFB	2000		1000		195	15	244			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **GS98601**	RunNo: **98601**
Prep Date:	Analysis Date: **7/31/2023**	SeqNo: **3590783** 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	900		1000		90.4	15	244			

Sample ID: **lcs-76543**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **76543**	RunNo: **98601**
Prep Date: **7/28/2023**	Analysis Date: **7/31/2023**	SeqNo: **3591155** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	2000		1000		199	15	244			

Sample ID: **mb-76543**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **76543**	RunNo: **98601**
Prep Date: **7/28/2023**	Analysis Date: **7/31/2023**	SeqNo: **3591604** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	960		1000		96.1	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#: **2307E46**

04-Aug-23

Client: ENSOLUM

Project: SJ 28 5 14

Sample ID: **100ng btex lcs**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **BS98601**	RunNo: **98601**
Prep Date:	Analysis Date: **7/31/2023**	SeqNo: **3590788** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	110	70	130			
Toluene	1.1	0.050	1.000	0	111	70	130			
Ethylbenzene	1.1	0.050	1.000	0	110	70	130			
Xylenes, Total	3.3	0.10	3.000	0	111	70	130			
Surr: 4-Bromofluorobenzene	1.1		1.000		109	39.1	146			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **BS98601**	RunNo: **98601**
Prep Date:	Analysis Date: **7/31/2023**	SeqNo: **3590790** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		109	39.1	146			

Sample ID: **LCS-76543**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **76543**	RunNo: **98601**
Prep Date: **7/28/2023**	Analysis Date: **7/31/2023**	SeqNo: **3591156** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		114	39.1	146			

Sample ID: **mb-76543**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **76543**	RunNo: **98601**
Prep Date: **7/28/2023**	Analysis Date: **7/31/2023**	SeqNo: **3591642** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		114	39.1	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical 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: 2307E46 RcptNo: 1

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

Completed By: Tracy Casarrubias 7/29/2023 8:23:37 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 ☐	# 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 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: Phone number and Email/Fax are missing on COC - TMC 7/29/23

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.7	Good	Yes	Morty		

Chain-of-Custody Record

Client: Ensolum LLC

Mailing Address: 606 S Rio Grande Suite A 87410

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 100%

☐ Standard ☑ Rush 7-31-23

Project Name: SJ 28-5 #14

Project #:

Project Manager: K Summers

Sampler: C Apodaca

On Ice: ☐ Yes ☐ No

# of Coolers: 1 Morty

Cooler Temp(including CF): 0.8-0.1=0.7 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2307E46	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~~ Cl	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
7/28	1200	S	~~Soil~~ S-1a	1 4oz Jar	Cool	001	✓	✓					✓			

Analysis Request

Relinquished by:	Received by:	Via:	Date	Time
			7/28/23	1406
			7/28/23	1400
			7/28/23	1807
			7/29/23	7:05

Remarks: Tom Long Send Intact 7/28/23

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

September 08, 2023

Kyle Summers

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

RE: SJ 28 5 14 OrderNo.: 2308556

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 1 sample(s) on 8/10/2023 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued August 14, 2023.

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. 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. All samples are reported as received unless otherwise indicated.

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 **2308556**
Date Reported: **9/8/2023**

CLIENT: ENSOLUM
Client Sample ID: S-5a
Project: SJ 28 5 14
Collection Date: 8/9/2023 8:00:00 AM
Lab ID: 2308556-001
Matrix: MEOH (SOIL)
Received Date: 8/10/2023 6:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **RBC**	
Chloride	ND	61		mg/Kg	20	8/10/2023 10:32:48 AM	76785
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **mb**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	8/10/2023 8:51:42 AM	76782
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/10/2023 8:51:42 AM	76782
Surr: DNOP	88.6	69-147		%Rec	1	8/10/2023 8:51:42 AM	76782
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**	
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	8/10/2023 11:45:05 AM	GS98876
Surr: BFB	94.8	15-244		%Rec	1	8/10/2023 11:45:05 AM	GS98876
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**	
Benzene	ND	0.020		mg/Kg	1	8/10/2023 11:45:05 AM	BS98876
Toluene	ND	0.039		mg/Kg	1	8/10/2023 11:45:05 AM	BS98876
Ethylbenzene	ND	0.039		mg/Kg	1	8/10/2023 11:45:05 AM	BS98876
Xylenes, Total	ND	0.079		mg/Kg	1	8/10/2023 11:45:05 AM	BS98876
Surr: 4-Bromofluorobenzene	109	39.1-146		%Rec	1	8/10/2023 11:45:05 AM	BS98876

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#: **2308556**

08-Sep-23

Client: ENSOLUM

Project: SJ 28 5 14

Sample ID:	**MB-76785**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**76785**	RunNo:	**98880**					
Prep Date:	**8/10/2023**	Analysis Date:	**8/10/2023**	SeqNo:	**3603269**	Units:	**mg/Kg**			

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

Sample ID:	**LCS-76785**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**76785**	RunNo:	**98880**					
Prep Date:	**8/10/2023**	Analysis Date:	**8/10/2023**	SeqNo:	**3603270**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	98.0	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#: **2308556**

08-Sep-23

Client: ENSOLUM

Project: SJ 28 5 14

Sample ID: **2308556-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **S-5a** Batch ID: **76782** RunNo: **98859**

Prep Date: **8/10/2023** Analysis Date: **8/10/2023** SeqNo: **3601549** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	9.4	47.04	0	96.5	54.2	135			
Surr: DNOP	4.2		4.704		89.0	69	147			

Sample ID: **LCS-76782** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **76782** RunNo: **98859**

Prep Date: **8/10/2023** Analysis Date: **8/10/2023** SeqNo: **3601554** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.2	61.9	130			
Surr: DNOP	4.4		5.000		88.9	69	147			

Sample ID: **MB-76782** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **76782** RunNo: **98859**

Prep Date: **8/10/2023** Analysis Date: **8/10/2023** SeqNo: **3601557** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.1		10.00		91.2	69	147			

Sample ID: **2308556-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **S-5a** Batch ID: **76782** RunNo: **98859**

Prep Date: **8/10/2023** Analysis Date: **8/10/2023** SeqNo: **3602160** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	9.6	47.85	0	97.1	54.2	135	2.27	29.2	
Surr: DNOP	4.0		4.785		84.2	69	147	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical 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#: **2308556**

08-Sep-23

Client: ENSOLUM

Project: SJ 28 5 14

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **GS98876**	RunNo: **98876**
Prep Date:	Analysis Date: **8/10/2023**	SeqNo: **3602488** 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	89.3	70	130			
Surr: BFB	1900		1000		193	15	244			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **GS98876**	RunNo: **98876**
Prep Date:	Analysis Date: **8/10/2023**	SeqNo: **3602489** 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		95.2	15	244			

Sample ID: **2308556-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **S-5a**	Batch ID: **GS98876**	RunNo: **98876**
Prep Date:	Analysis Date: **8/10/2023**	SeqNo: **3602679** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	18	3.9	19.73	0	91.1	70	130			
Surr: BFB	1600		789.3		200	15	244			

Sample ID: **2308556-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **S-5a**	Batch ID: **GS98876**	RunNo: **98876**
Prep Date:	Analysis Date: **8/10/2023**	SeqNo: **3602680** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	3.9	19.73	0	94.3	70	130	3.45	20	
Surr: BFB	1600		789.3		205	15	244	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical 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#: **2308556**

08-Sep-23

Client: ENSOLUM

Project: SJ 28 5 14

Sample ID: **100ng btex lcs**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **BS98876**	RunNo: **98876**
Prep Date:	Analysis Date: **8/10/2023**	SeqNo: **3602492** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	108	70	130			
Toluene	1.1	0.050	1.000	0	109	70	130			
Ethylbenzene	1.1	0.050	1.000	0	110	70	130			
Xylenes, Total	3.3	0.10	3.000	0	111	70	130			
Surr: 4-Bromofluorobenzene	1.1		1.000		108	39.1	146			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **BS98876**	RunNo: **98876**
Prep Date:	Analysis Date: **8/10/2023**	SeqNo: **3602493** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		108	39.1	146			

Sample ID: **2308556-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **S-5a**	Batch ID: **BS98876**	RunNo: **98876**
Prep Date:	Analysis Date: **8/10/2023**	SeqNo: **3602705** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.82	0.020	0.7893	0	104	70	130	1.62	20	
Toluene	0.83	0.039	0.7893	0	105	70	130	2.10	20	
Ethylbenzene	0.85	0.039	0.7893	0	107	70	130	0.353	20	
Xylenes, Total	2.6	0.079	2.368	0.01586	107	70	130	0.901	20	
Surr: 4-Bromofluorobenzene	0.87		0.7893		110	39.1	146	0	0	

Sample ID: **2308556-001AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **S-5a**	Batch ID: **BS98876**	RunNo: **98876**
Prep Date:	Analysis Date: **8/10/2023**	SeqNo: **3602706** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.83	0.020	0.7893	0	106	70	130			
Toluene	0.85	0.039	0.7893	0	107	70	130			
Ethylbenzene	0.85	0.039	0.7893	0	108	70	130			
Xylenes, Total	2.6	0.079	2.368	0.01586	108	70	130			
Surr: 4-Bromofluorobenzene	0.87		0.7893		110	39.1	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical 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: 2308556 | RcptNo: 1

Received By: Tracy Casarrubias 8/10/2023 6:30:00 AM

Completed By: Tracy Casarrubias 8/10/2023 7:04:37 AM

Reviewed By: JN 8/10/23

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? SCM 08/10/23
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: SCM ~~08/09/23~~ 08/10/23

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:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.9	Good	Yes	Morty		

Chain-of-Custody Record

Client: Ensolum

Mailing Address: 606 S Rio Grande Suite A 87410

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☑ Rush 8-10-23

Project Name: 28-5 #114 SJ 29-4

Project #: 05A1221739

Project Manager: K Summers

Sampler:

On Ice: ☐ Yes ☐ No

# of Coolers:

Cooler Temp(including CF): (°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.	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)						
8/9	800	S	S-5a (M)	1 4oz Jar	Cool		✓	✓					✓									
			S-5a (M)																			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
8/9	1720					
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks:

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.

Chain-of-Custody Record

Client: Ensolum

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 8-10-23

Project Name: 28-5 #14 SJ

Project #: 05A 122 1239

Project Manager: K Summers

Sampler: C DAponti

On Ice: ☑ Yes ☐ No marty

# of Coolers: 1

Cooler Temp(Including CF): 2.1-0.2=1.9 (°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. 2308556	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)
8/9	800	S	S-2a	1 4oz Jar	Cool	001	✓	✓					✓			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
8/9/23	1728				8/9/23	1728
8/9/23	1820			courier	8/10/23	6:30

Remarks: Tom Long

Send Dog

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.

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 267435

CONDITIONS

Operator: Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	OGRID: 241602
	Action Number: 267435
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	None	1/19/2024