

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	

**APPROVED**

By Nelson Velez at 12:21 pm, Jan 05, 2022

## Release Notification

### Responsible Party

1. OCD approves the Proposed Delineation Activities.
2. Notify OCD of approximate commencement scheduling of the activities.

Responsible Party: Hilcorp Energy Company	OGRID: 372171
Contact Name: Lindsay Dumas	Contact Telephone: 832-839-4585
Contact email: Ldumas@hilcorp.com	Incident # (assigned by OCD)
Contact mailing address: 1111 Travis St. Houston, TX 77002	

### Location of Release Source

Latitude 36.5631485 Longitude -107.2507401  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: San Juan 27-4 Unit 60	Site Type: Gas
Date Release Discovered: 4-16-19	API# (if applicable) 30-039-20484

Unit Letter	Section	Township	Range	County
A	21	27N	04W	Rio Arriba

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

### Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 5	Volume Recovered (bbls) 5
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

#### Cause of Release

Release discovered by NMOCD inspector Jonathan Kelly. The BGT has been out of service for the last three years. Snow melt entered the pit and cribbing area, mixing with BS&W in the pit and exited via a corrosion hole in the pit.

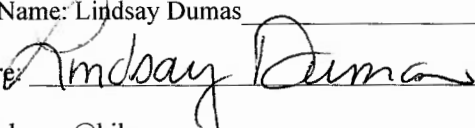
State of New Mexico  
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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

### Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:  	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: Lindsay Dumas Signature:  email: Ldumas@hilcorp.com	Title: Environmental Specialist Date: 9-27-19 Telephone: 832-839-4585
<b><u>OCD Only</u></b> Received by: _____ Date: _____	



December 7, 2021

New Mexico Energy, Minerals, and Natural Resources Department  
New Mexico Oil Conservation Division  
1000 Rio Brazos Road  
Aztec, New Mexico 87410

**Subject: Remediation Work Plan  
San Juan 27-4 Unit 60  
Rio Arriba County, New Mexico  
NMOCD Incident Number: NCS1929537483**

To Whom It May Concern:

WSP USA Inc. (WSP, formerly LT Environmental, Inc.), on behalf of Hilcorp Energy Company (Hilcorp), has prepared this *Remediation Work Plan* for the San Juan 27-4 Unit 60 natural gas production well (Site). The Site is located in Unit A of Section 21, Township 27 North, Range 04 West, within the Carson National Forest in Rio Arriba County, New Mexico (Figure 1).

## SITE BACKGROUND

During an onsite inspection, Mr. Jonathan Kelly, an inspector with the New Mexico Oil Conservation Division (NMOCD), discovered a release originating from an out-of-service below-grade tank (BGT). Specifically, Mr. Kelly noted that melted snow had entered the BGT, mixing with bottom sludge and water, and exited through corrosion holes in the steel tank. It was estimated that 5 barrels of produced water was released at the Site. Upon discovery, Hilcorp cleaned and removed the BGT from the Site and LT Environmental, Inc. (LTE) collected one, 5-point composite soil sample from the area below the BGT (Figure 2). Analytical results from the composite sample are presented on Table 1.

## SITE CHARACTERIZATION

As part of the site investigation, local geology/hydrogeology and nearby sensitive receptors were accessed in accordance with 19.15.29.11 of the New Mexico Administrative Code (NMAC). This information is further discussed below.

## GEOLOGY AND HYDROGEOLOGY

Based on United States Geological Survey (USGS) geologic mapping, the Site is located within the Tertiary San Jose Formation. In the report titled "Hydrogeology and Water Resources of San Juan Basin, New Mexico" (Stone, Lyford, Frenzel, Mizell, & Padgett, 1983), the San Jose Formation is characterized by various lithologies including coarse-grained arkose, mudstones, and lenses of claystone, siltstone, and poorly consolidated sandstone. This formation ranges in thickness from 200 to 2,700 feet. The San Jose Formation is the youngest Tertiary bedrock unit in the San Juan Basin and is underlain by the Nacimiento Formation.

## SITE CHARACTERIZATION AND POTENTIAL RECEPTORS

Assessment of potential nearby receptors was conducted through desktop reviews of topographic maps, Federal Emergency Management Administration (FEMA) Geographic Information System (GIS) maps, United States Geological Survey (USGS) GIS maps, New Mexico Office of the State Engineer database, and aerial photographs, as well as site-specific observations.

The Site is at an elevation of approximately 7,135 feet above mean sea level (amsl). The data sheet for a deep ground bed cathodic protection well (included as Enclosure A) for the Site indicates that groundwater at the Site is approximately 100 feet below ground surface (bgs). The nearest groundwater well to the Site (monitoring well SJ-01049) is located approximately 1.9 miles northwest of the Site. The closest water well to the Site (livestock well SJ-04056) is located approximately 3.3 miles west of the Site.

WSP USA  
848 EAST 2ND AVENUE  
DURANGO CO 81301

Tel.: 970-385-1096  
wsp.com



The Site is greater than 200 feet from any lakebed, sinkhole, or playa lake, and greater than 300 feet from any significant watercourse and/or wetland. The nearest wetland/watercourse is located approximately 900 feet south of the Site. Surface land use surrounding the Site consists primarily of oil and gas development and livestock grazing. No occupied permanent residence or structures, including schools, hospitals, institutions, and/or churches, are located within 300 feet of the Site. The Site is not within the area of a subsurface mine or unstable area and is not within the 100-year floodplain. Nearby receptors are shown on Figure 3.

## REGULATORY CLOSURE CRITERIA

WSP has characterized the Site according to *Table 1, Closure Criteria for Soils Impacted by a Release* of 19.15.29.12 NMAC. Due to the Site being located on an active well pad and having a depth to groundwater greater than 100 feet, the following Table 1 Closure Criteria apply to the Site for delineation purposes: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); 2,500 mg/kg total petroleum hydrocarbons (TPH); 1,000 mg/kg gasoline range organics (GRO) + diesel range organics (DRO); and 20,000 mg/kg chloride.

## PROPOSED DELINEATION ACTIVITIES

In order to delineate potential petroleum hydrocarbon impacts to soil originating from the BGT release, WSP proposes to advance five borings at the Site using a hand auger in the locations indicated on Figure 4. During sampling, soil will be inspected for visual staining and the presence or absence of odor. The soil will be characterized by visually inspecting the soil samples and field screening the soil headspace using a photoionization detector (PID) to monitor for the presence of organic vapors. At least two soil samples will be collected from each boring and submitted to Hall Environmental Analysis Laboratory for analysis of TPH, BTEX, and chloride. For each boring, one soil sample displaying the highest PID and/or chloride field screening measurements will be submitted for laboratory analysis. One additional sample collected from the terminus of each boring will be submitted for laboratory analysis. Boring locations will be recorded using a handheld Global Positioning System (GPS) unit.

All soil analytical results will be compared to the site-specific Table 1 Closure Criteria. If analytical results are compliant with Table 1 Closure Criteria, Hilcorp will submit a report documenting sampling activities and request closure. If analytical results for any soil sample exceeds Table 1 Closure Criteria, Hilcorp will submit an updated remediation work plan to address the identified elevated concentrations in soil.

## REFERENCES

Stone, W., Lyford, F., Frenzel, P., Mizell, N., & Padgett, E. (1983). Hydrogeology and Water Resources of San Juan Basin, New Mexico. New Mexico Bureau of Mines & Mineral Resources.

WSP appreciates the opportunity to provide this work plan to the NMOC. If you have any questions or comments regarding this report, do not hesitate to contact Stuart Hyde at (970) 903-1607 or [stuart.hyde@wsp.com](mailto:stuart.hyde@wsp.com), or Billy Ginn at (346) 237-2073 or [William.ginn@hilcorp.com](mailto:William.ginn@hilcorp.com).

Kind regards,

A handwritten signature in black ink, appearing to read 'Stuart'.

Stuart Hyde, L.G.  
Senior Geologist

A handwritten signature in black ink, appearing to read 'Ashley L. Ager'.

Ashley Ager, M.S., P.G.  
Regional Vice President, Geologist

### Enclosed:

Figure 1	Site Location Map
Figure 2	Soil Sample Locations Map
Figure 3	Site Receptor Map
Figure 4	Proposed Soil Boring Locations
Table 1	Soil Analytical Results – BGT Closure Sampling
Enclosure A	Data Sheet for Deep Ground Bed Cathodic Protection Wells

## FIGURES



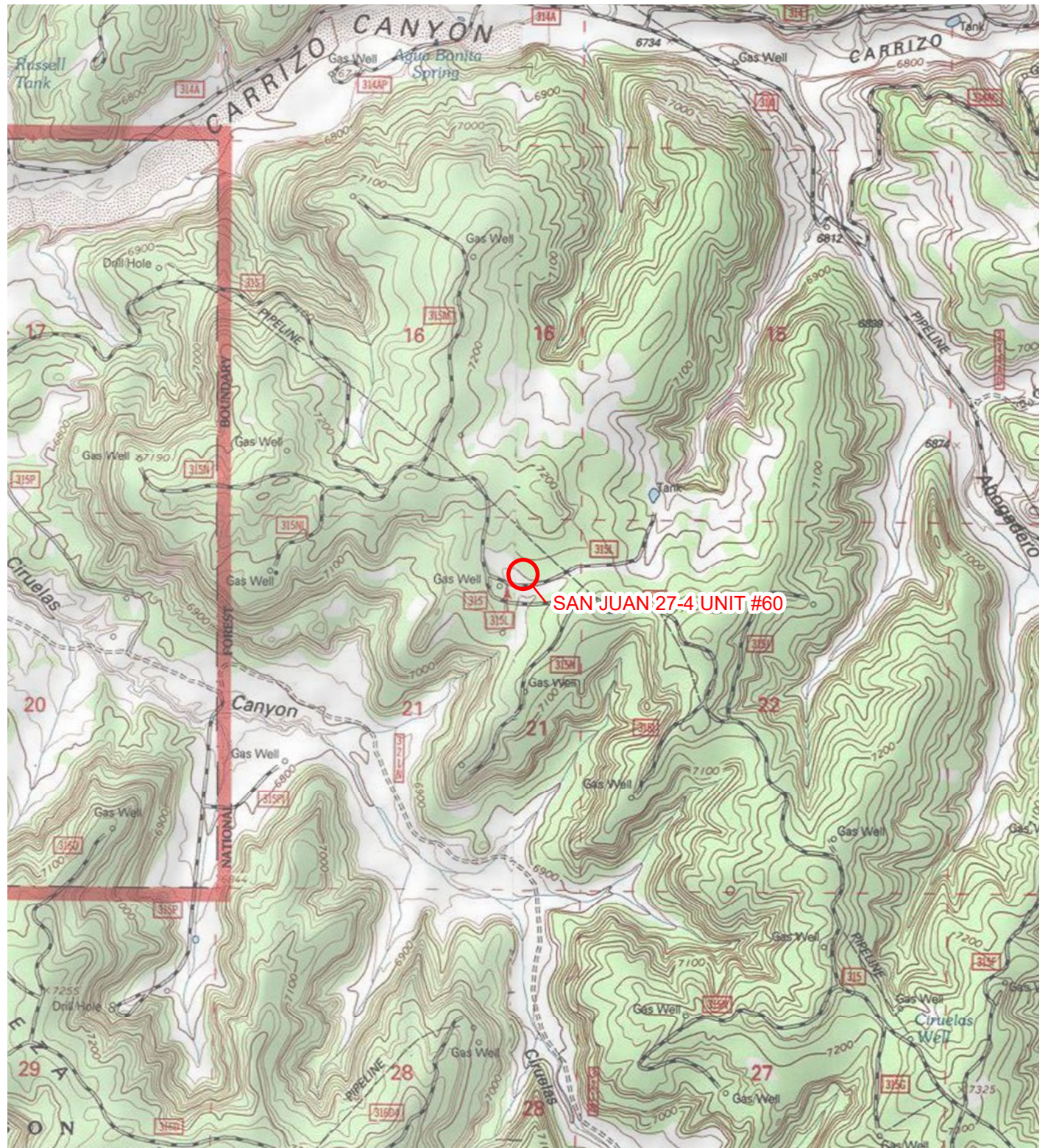


IMAGE COURTESY OF ESRI/USGS

**LEGEND**

○ SITE LOCATION

0 2,000 4,000  
Feet

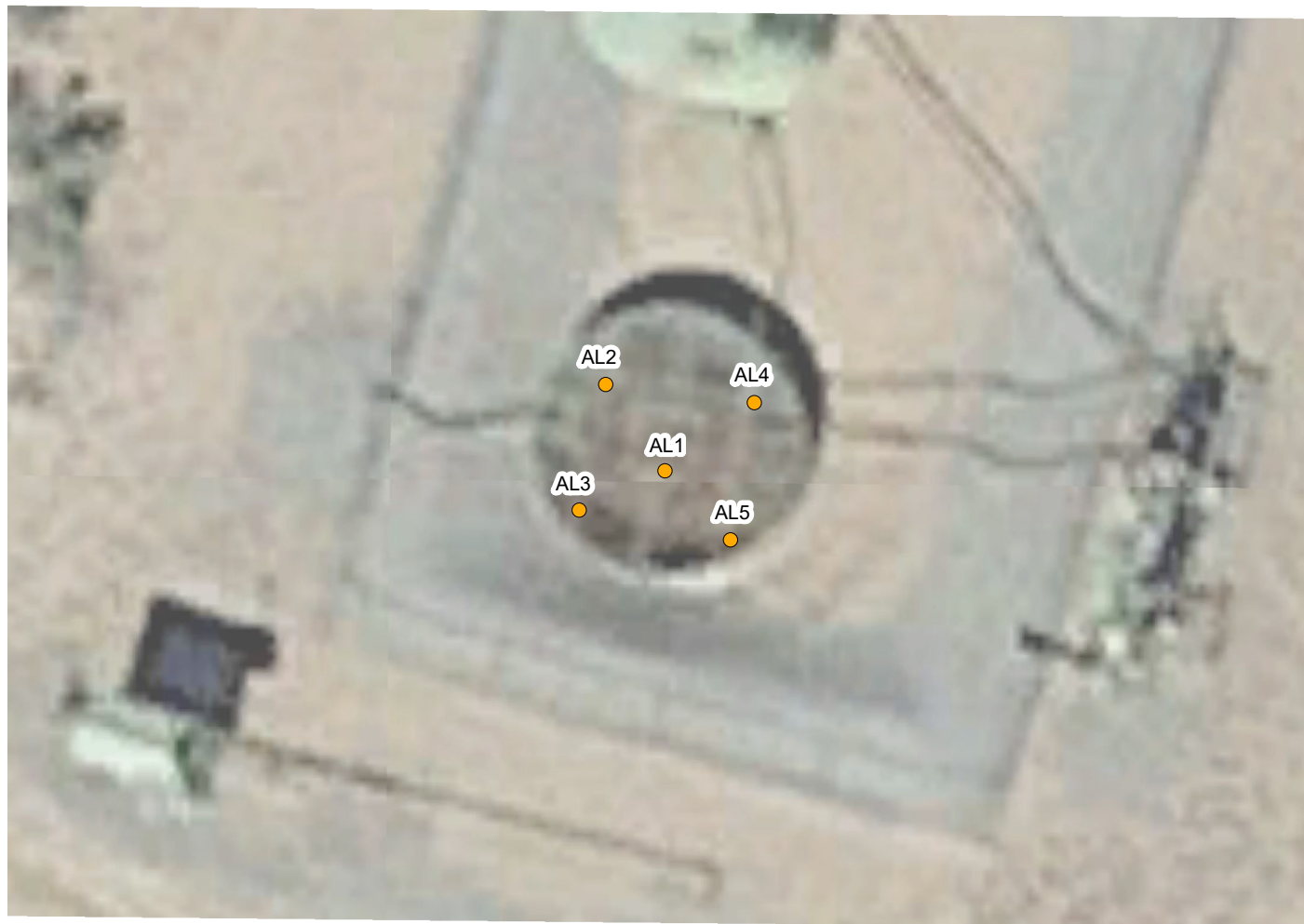


NEW  
MEXICO

**FIGURE 1**  
SITE LOCATION MAP  
SAN JUAN 27-4 UNIT #60  
NENE SEC 21-T27N-R4W  
RIO ARriba COUNTY, NEW MEXICO  
HILCORP ENERGY COMPANY

**wsp**





# LEGEND

● SOIL SAMPLE

IMAGE COURTESY OF GOOGLE EARTH 2016

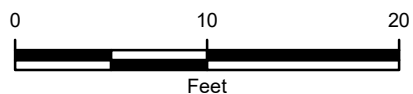


FIGURE 2  
SOIL SAMPLE LOCATIONS MAP  
SAN JUAN 27-4 UNIT #60  
NENE SEC 21-T27N-R4W  
RIO ARriba COUNTY, NEW MEXICO  
HILCORP ENERGY COMPANY





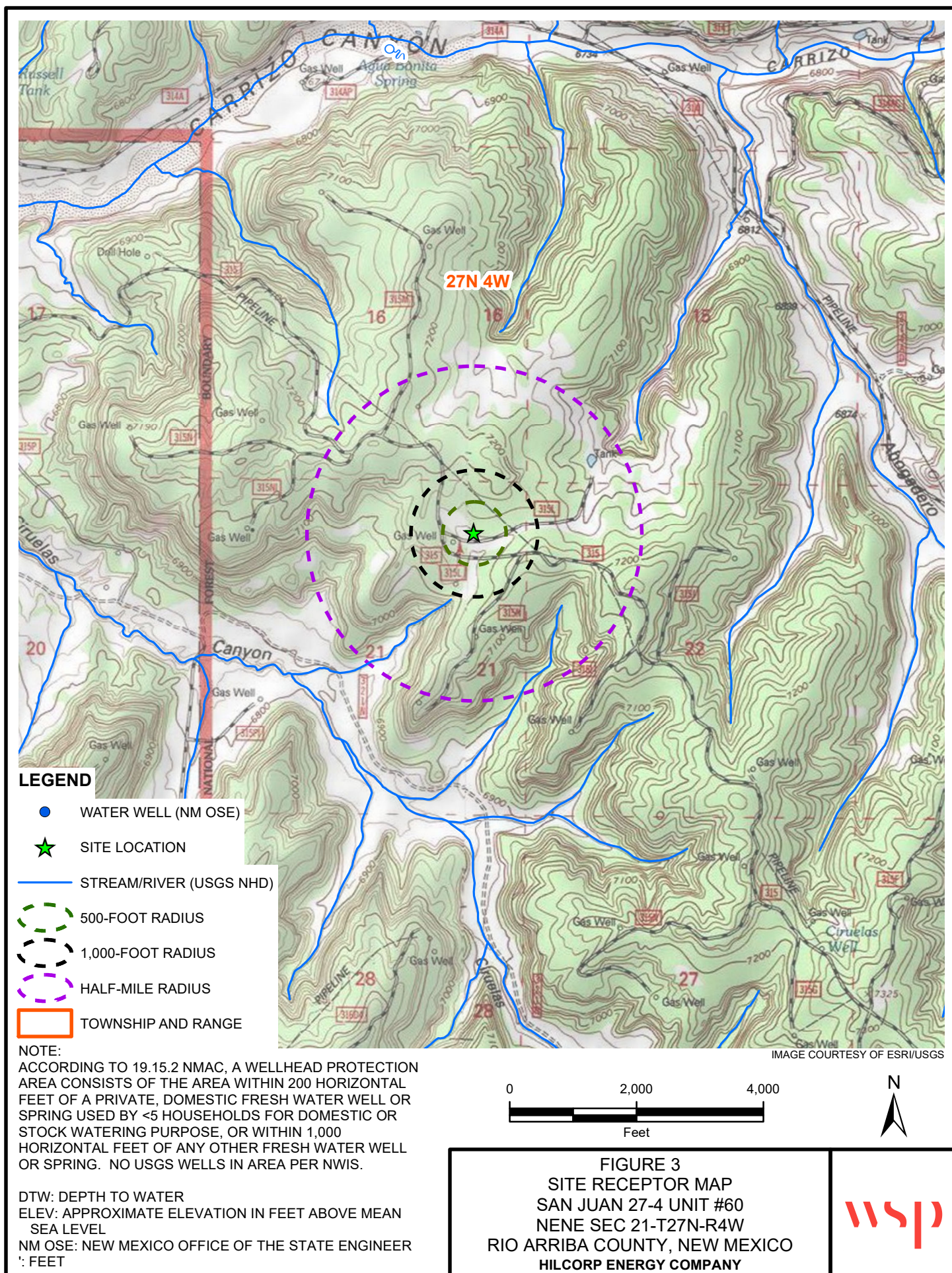


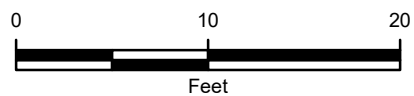




IMAGE COURTESY OF GOOGLE EARTH 2016

**LEGEND**

- SOIL SAMPLE
- PROPOSED SOIL BORING



**FIGURE 4**  
**PROPOSED SOIL BORING LOCATIONS**  
**SAN JUAN 27-4 UNIT #60**  
**NENE SEC 21-T27N-R4W**  
**RIO ARriba COUNTY, NEW MEXICO**  
**HILCORP ENERGY COMPANY**



## TABLES



**TABLE 1**  
**SOIL ANALYTICAL RESULTS - BGT CLOSURE SAMPLING**

**SAN JUAN 27-4 UNIT 60**  
**RIO ARriba COUNTY, NEW MEXICO**  
**HILCORP ENERGY COMPANY**

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	MRO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
CompA	0 - 0.5	1/27/2020	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<20.0	270	168	270	438	<20.0
<b>NMOCD Table 1 Closure Criteria</b>			<b>10</b>	NE	NE	NE	<b>50</b>	NE	NE	NE	<b>1,000</b>	<b>2,500</b>	<b>20,000</b>

**Notes:**

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

DRO - diesel range organics

GRO - gasoline range organics

mg/kg - milligrams per kilogram

MRO - motor oil range organics

NMAC - New Mexico Administrative Code

NMOCD - New Mexico Oil Conservation Division

NE - not established

Table 1 - closure criteria for soils impacted by a release per NMAC 19.15.29 August 2018

TPH - total petroleum hydrocarbons

&lt; - indicates result is below laboratory reporting limits

ENCLOSURE A – DATA SHEET FOR DEEP GROUND BED CATHODIC  
PROTECTION WELLS



#142 30-039-22803  
#60 30-039-20484DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS  
NORTHWESTERN NEW MEXICOOperator Meridian Oil Co. Location: Unit A Sec. 21 Twp 27 Rng 04

Name of Well/Wells or Pipeline Serviced \_\_\_\_\_

SAN JUAN 27-4 UNITS #142, #60Elevation 7121 Completion Date \_\_\_\_\_ Total Depth 405' Land Type FCasing Strings, Sizes, Types & Depths 10/6 SET 99' OF 8" PVC CASINGNO GAS, WATER, OR BOULDERS WERE ENCOUNTERED DURING CASING.If Casing Strings are cemented, show amounts & types used CementedWITH 20 SACKS

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

NONEDepths & thickness of water zones with description of water: Fresh, Clear,  
Salty, Sulphur, Etc. 100' FreshDepths gas encountered: NONEGround bed depth with type & amount of coke breeze used: 405'58 SACKS OF LORESCO TYPE SWDepths anodes placed: 375, 335, 328, 321, 315, 295, 288, 280, 273, 267, 260, 240, 230, 223, 180Depths vent pipes placed: 405'Vent pipe perforations: Bottom 305'

Remarks: \_\_\_\_\_

RECEIVED

JAN 31 1994

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.

**District I**

1625 N. French Dr., Hobbs, NM 88240  
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**District II**

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**District III**

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**District IV**

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 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 66237

**CONDITIONS**

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 66237
	Action Type: [C-141] Release Corrective Action (C-141)

**CONDITIONS**

Created By	Condition	Condition Date
nvelez	1. OCD approves the Proposed Delineation Activities. 2. Notify OCD of approximate commencement scheduling of the activities.	1/5/2022