STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION COMMISSION

APPLICATION OF TARGA NORTHERN DELAWARE LLC FOR AUTHORIZATION TO INJECT, LEA COUNTY, NEW MEXICO. **CASE NO._____**

TARGA NORTHERN DELAWARE LLC'S
APPLICATION FOR AUTHORIZATION TO INJECT

In accordance with 19.15.26 NMAC, Targa Northern Delaware LLC ("Targa") (OGRID No. 331548) seeks authorization to inject treated acid gas ("TAG") from its Red Hills Gas Processing ("Plant") into the proposed Red Hills AGI No. 3 ("AGI 3" or "Well"), which will be located in Section 13, Township 24 South, Range 33 East, Lea County, New Mexico. In support of this Application, Targa states the following.

1. The Well is an Underground Injection Control ("UIC") Class II well subject to the requirements of 19.15.26 NMAC.

2. The Well will be drilled as a vertical well with a surface location at approximately 3,116 feet from the north line (FNL) and 1,159 feet from the east line (FEL) of Section 13.

3. The target injection zone for the Well is within the Bell Canyon and Cherry Canyon Formations of the Delaware Mountain Group at a depth of approximately 5,700 feet to 7,600 feet.

4. The Well's maximum daily injection rate is 13 million standard cubic feet per day ("MMSCFD").

5. The Well's maximum surface injection pressure is approximately 1,767 pounds per square inch gauge ("psig").

6. The surface location of the Well is within the Plant's boundary.

7. The complete C-108 for the Well is attached to this application as Exhibit A.

8. Targa is currently authorized to inject up to 13 MMSCFD of TAG into the Red Hills AGI #1 (30-025-40448) ("AGI 1") under Order Nos. R-13507-13507-F at an injection interval within the Cherry Canyon Formation at a depth of approximately 6,230 to 6,585 feet. AGI 1 currently has limited injection capacity.

9. Targa is also currently authorized to inject up to 13 MMSCFD of TAG into the Red Hills AGI #2 (30-025-49474) ("AGI 2") under Order No. R-20916-H at an injection interval within the Devonian, Upper Silurian Wristen and Fusselman formations at a depth of approximately 16,000 to 17,600 feet. Although Targa commenced drilling AGI 2, completion has been postponed due to technical complications. As a result, Targa has filed a C-103 to temporarily abandon the well and has submitted to the Commission an administrative request to extend the deadline to commence injection into AGI 2 from October 2023 to October 2024.

10. Targa previously submitted a C-108 for AGI 3 that proposed an injection interval within the Devonian, Upper Silurian Wristen and Fusselman formations at a depth of approximately 16,000 to 17,600 feet but has withdrawn that application and now seeks to complete the well at a different location and with a different injection interval.

11. Targa requires additional injection capacity to serve operators in the area and avoid cessation of production.

12. Targa's request for authorization to inject TAG into AGI 3 will prevent waste, protect correlative rights, and protect human health and the environment.

WHEREFORE, Targa requests that this application be set for hearing before the Commission on July 13, 2023, and, after notice and hearing as required by law, the Commission enter an order approving Targa's C-108 application for authorization to inject.

Respectfully submitted,

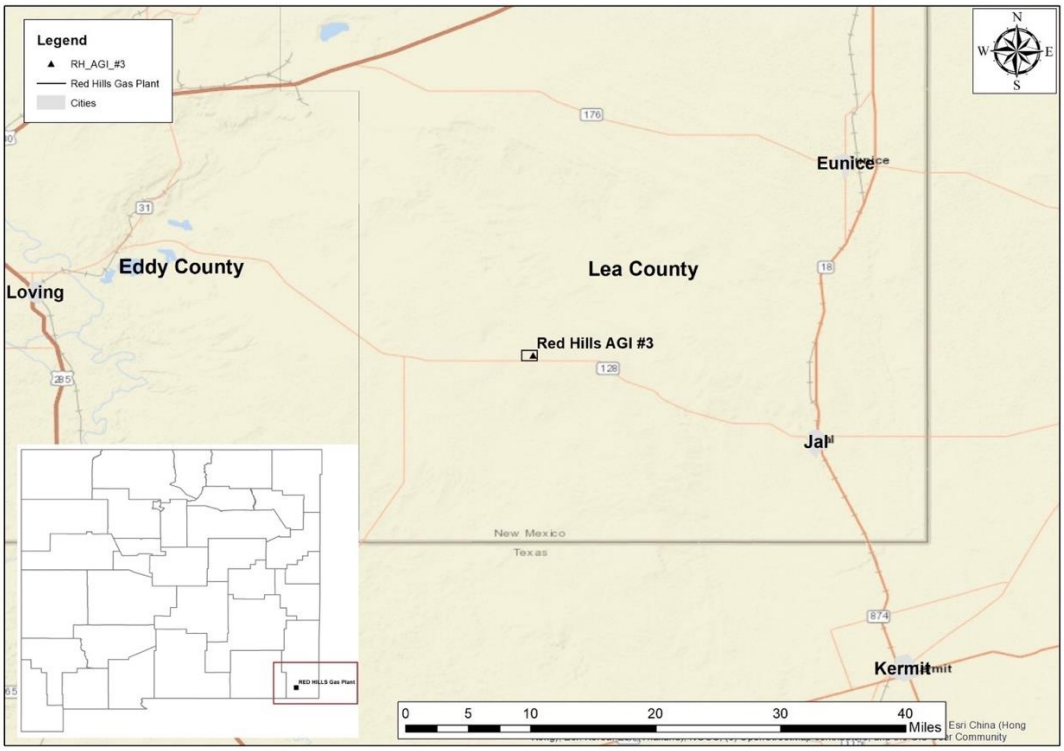
HINKLE SHANOR LLP

/s/ Dana S. Hardy
Dana S. Hardy
Jaclyn McLean
Yarithza Peña
P.O. Box 2068
Santa Fe, NM 87504-2068
Phone: (505) 982-4554
Facsimile: (505) 982-8623
dhardy@hinklelawfirm.com
jmclean@hinklelawfirm.com
ypena@hinklelawfirm.com
Counsel for Targa Northern Delaware LLC

Application for Class II Acid Gas Injection Well

Targa Northern Delaware LLC

Red Hills AGI #3
Section 13 T24S, R33E
Lea County, New Mexico



June 12, 2023

Prepared for:
Targa Northern Delaware LLC
811 Louisiana Street
Houston, TX 77002

Prepared by:
New Mexico Tech
Petroleum Recovery Research Center
801 Leroy Place
Socorro, NM 87832

Exhibit A

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

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

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: _____Secondary Recovery _____Pressure Maintenance ___X___Disposal _____Storage
Application qualifies for administrative approval. _____Yes __X_____No

II. OPERATOR: **Targa Northern Delaware LLC**
ADDRESS: **811 Louisiana Street Houston, Texas 77002**
CONTACT PARTY: **Clark White Executive VP of Operations** PHONE: **(713) 584-1525**

III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? ___X_____Yes _____No
If yes, give the Division order number authorizing the project: **Orders R-13507-13507F**

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected.
2. Whether the system is open or closed.
3. Proposed average and maximum injection pressure.
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.). **N/A**

*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any. **N/A**

*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
WELL IS NOT YET DRILLED

*XI. Attach a chemical analysis of fresh water from two or more freshwater wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
WE WILL NOTIFY OPERATORS AND LEASEHOLD OWNERS AND SURFACE OWNERS WITHIN THE AREA OF REVIEW PURSUANT TO NMOCD REGULATIONS AND WE WILL SUBMIT AFFIDAVITS OF PUBLICATION OF NOTICE AND CERTIFIED MAIL RETURN RECEIPTS AT HEARING

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
NAME: **Clark White** TITLE: **Executive VP of Operations**
SIGNATURE: Clark White DATE: June 7, 2023
E-MAIL ADDRESS: **cwhite@targaresources.com**

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office,

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

(1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used, or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

(1) The name, address, phone number, and contact party for the applicant.

(2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells.

(3) The formation name and depth with expected maximum injection rates and pressures; and,

(4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED

Table of Contents

1 Executive Summary

On behalf of Targa Northern Delaware LLC (Targa), the Petroleum Recovery Research Center (PRRC) at New Mexico Institute of Mining and Technology (NMT) prepared a completed C-108 application for approval to drill, complete and operate a redundant acid gas injection (AGI) well. Proposed Red Hills AGI #3 will be located at the Targa Red Hills Gas Plant in Section 13 T24S, R33E approximately 20 miles west of Jal, in Lea County, New Mexico (Figure 1).

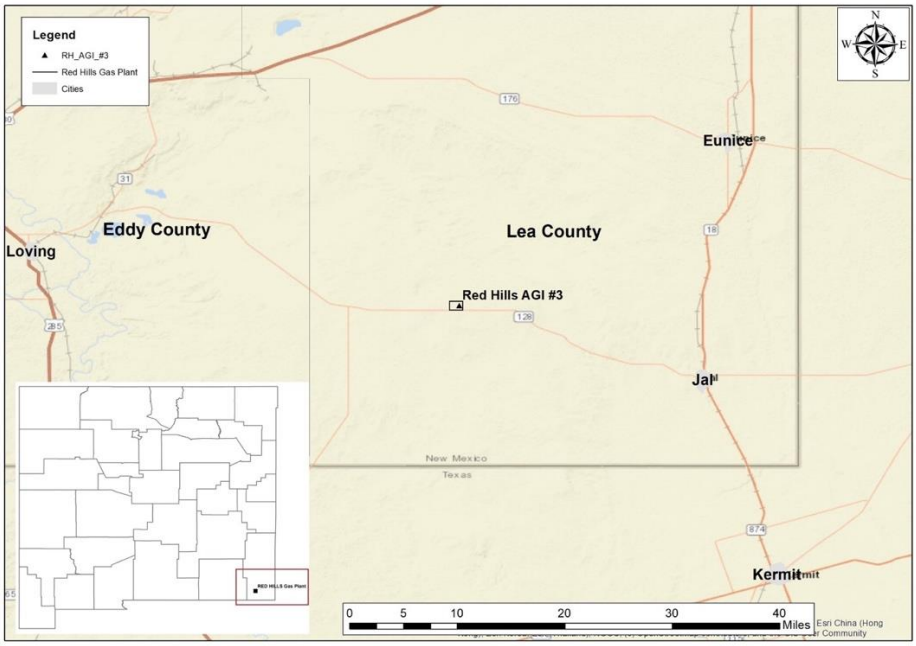
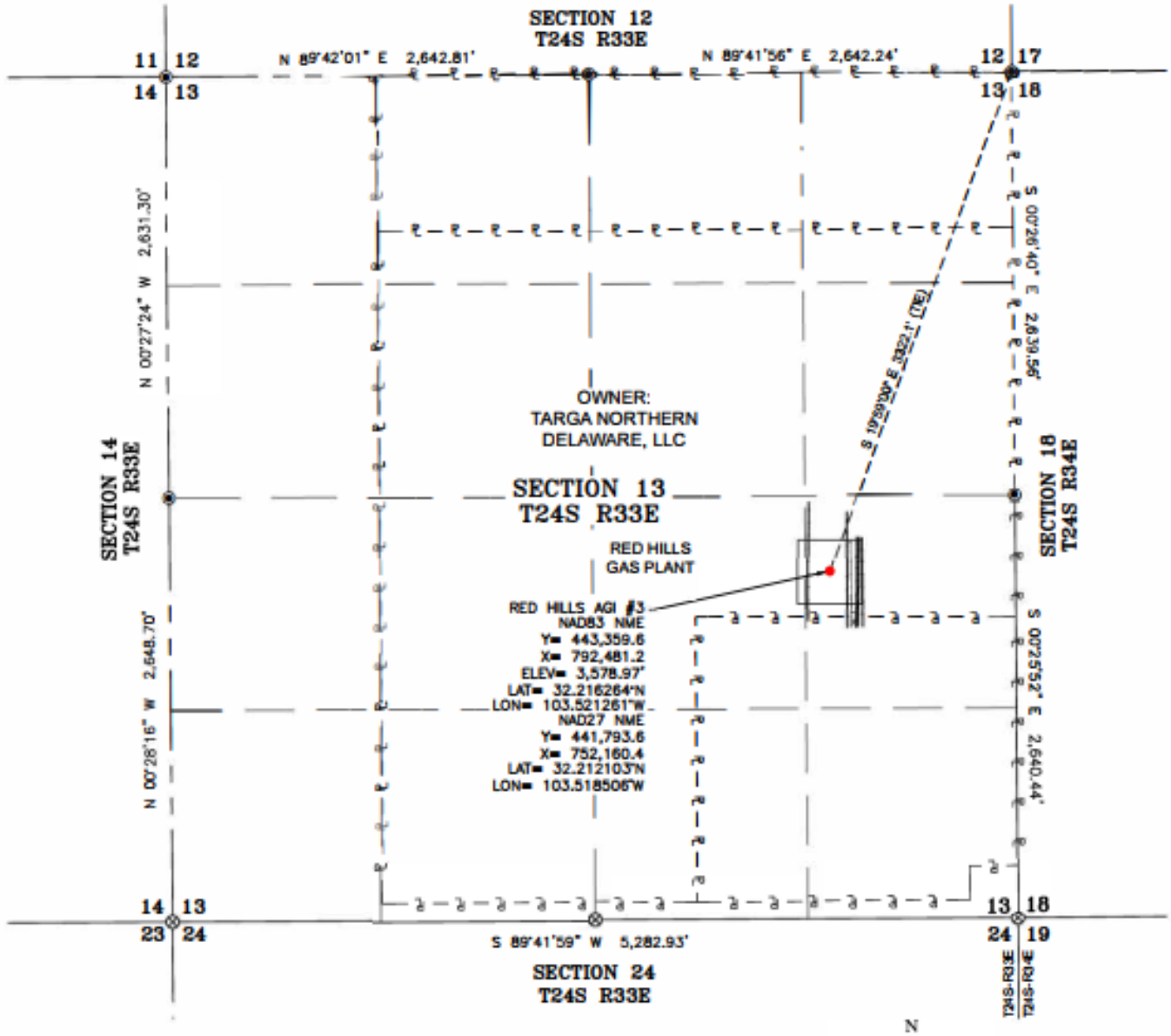


Figure 1: Location of Targa Red Hills Gas Plant and proposed Red Hills AGI #3

The Red Hills AGI #3 well will be drilled as a vertical well with surface location at approximately 3,116 feet from the north line (FNL) and 1,159 feet from the east line (FEL) of Section 13. The proposed injection zones for this well are the Bell Canyon and Cherry Canyon formations, at depths of approximately 5,700 feet to 7,600 feet. Analysis of the reservoir characteristics of these units confirms that they act as excellent closed-system reservoirs that will accommodate the future needs of Targa for treated acid gas (TAG), consisting of hydrogen sulfide (H_2S) and carbon dioxide (CO_2), disposal from the Red Hills processing facility.

SECTION 13, TOWNSHIP 24 SOUTH, RANGE 33 EAST, N.M.P.M.
LEA COUNTY, NEW MEXICO



RED HILLS SE WELL
SECTION LINE DISTANCE
SHL 3116' FNL & 1159' FEL

STANLEY W. DRANNON
STATE OF
NO.
23002
NEW MEXICO
REGISTERED PROFESSIONAL SURVEYOR

N
W E
S

0 1000 2000
1" = 1,000 FEET

- BEGIN, END OR ANGLE POINT
- FOUND USGLO BRASS CAP
- CALCULATED CORNER
- PROPERTY LINE
- SECTION LINE

I, Stanley W. Drannon, New Mexico PLS No. 23002, hereby certify this survey made on the ground under my supervision. This survey meet the minimum standards for surveying in New Mexico.

5/9/23
STANLEY W. DRANNON
NEW MEXICO R.P.L.S. NO. 23002
Date

NOTES:
1. BEARINGS AND DISTANCES CONFORM TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE, NAD83, IN U.S. SURVEY FEET.

DRAWN BY: ALT	SCALE: 1" = 1000'
CHECKED: JS	W.O. No.: DAP-028
DATE: 5/9/23	
AFE:	
REV:	

PROSPECT SURVEYING
9231 BOAT CLUB ROAD, FORT WORTH TX 76179
PH: 817-999-7385 FIRM NO. 10194267

WELL LOCATION PLAT
RED HILLS AGI #3

TARGA

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 Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
	97885	ACID GAS INJECTION; DEVONIAN

4 Property Code	5 Property Name	6 Well Number
	RED HILLS AGI	3

7 OGRID No.	8 Operator Name	9 Elevation
	TARGA NORTHERN DELAWARE, LLC	3578.97'

10 Surface Location

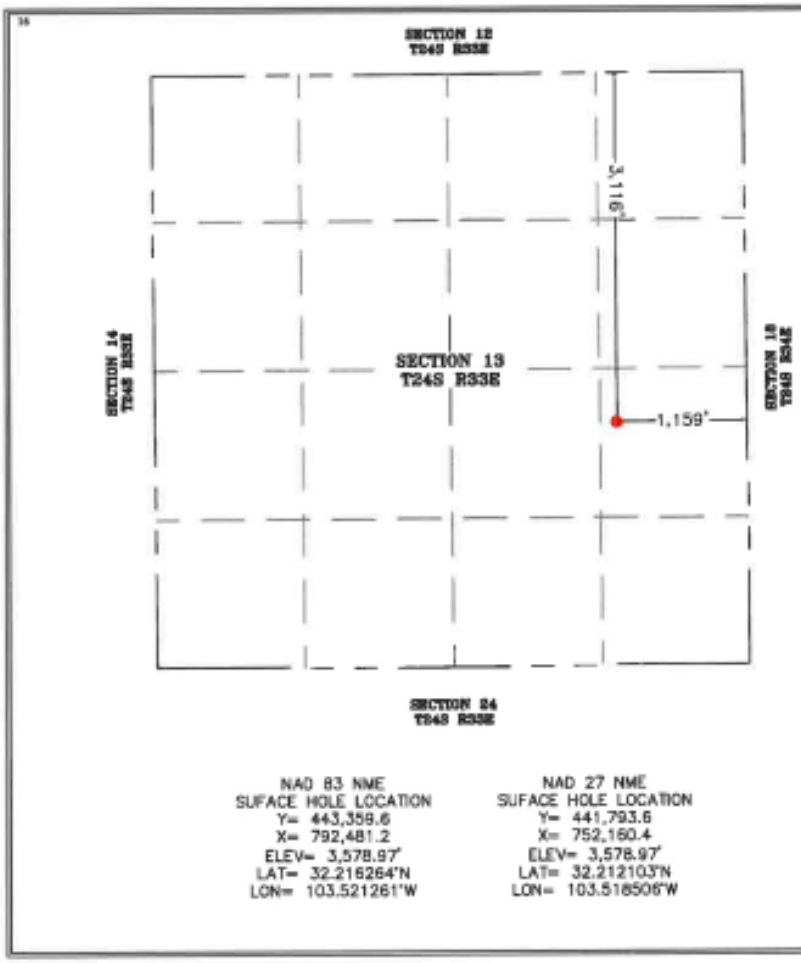
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	13	24 S	33 E		3116	NORTH	1159	EAST	LEA

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



NAD 83 NME
SURFACE HOLE LOCATION
Y= 443,359.6
X= 792,481.2
ELEV= 3,578.97'
LAT= 32.216264°N
LON= 103.521261°W

NAD 27 NME
SURFACE HOLE LOCATION
Y= 441,793.6
X= 752,160.4
ELEV= 3,578.97'
LAT= 32.212103°N
LON= 103.516506°W

17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Matt Eale 6-7-23
Signature Date

Matt Ealer
Printed Name

matt.ealer@targaresources.com
E-mail Address

18 SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

5/9/23
Date of Survey

Signature and Seal of Professional Surveyor:

STANLEY W. DRANNON
STATE OF NEW MEXICO
NO. 23002
REGISTERED PROFESSIONAL SURVEYOR

STANLEY W. DRANNON 23002
Certificate Number ALT TAR-028

Targa is requesting an injection volume of up to 13 million standard cubic feet per day (MMSCFD) of TAG for the Red Hills AGI #3. Targa is currently authorized to inject up to 13 MMSCFD of TAG in the Red Hills AGI #1 (30-025-40448) and Red Hills AGI #2 (30-025-49474) under the NMOCC Order R-13507-13707F, and Order R-20916-H, respectively. AGI #1 injects TAG into the Cherry Canyon formation of the Delaware Mountain Group (DMG) at depths of ~6,200-6,530 feet. AGI #2, not yet completed, is permitted to inject into the permeable carbonate units of the Devonian, Upper Silurian, Wristen, and Fusselman formations at depths of ~16,000-17,500 feet. Although approved for 13 MMSCFD, AGI #1 is physically only capable of taking ~5 MMSCFD due to formation and surface pressure limitations.

In preparing this C-108 application, NMT conducted a detailed examination of all elements required to be evaluated to prepare and obtain approval for this application for injection. The elements of this evaluation include:

- Identification and characterization of all hydrocarbon-producing zones of wells that surround and are present on the proposed plant site.
- The depths of perforated pay intervals in those wells relative to the depth of the target injection zones (Bell Canyon and Cherry Canyon).
- The past and current uses of the proposed injection interval.
- Total feet of net porosity in the proposed Bell Canyon and Cherry Canyon injection intervals.
- The stratigraphic and structural setting of the targeted injection zone relative to any nearby active or plugged wells, and other wells penetrating the interval.
- The identification of all wells within a two-mile radius.
- The identification of all operators, lessees and surface owners within a one-mile area of review of the proposed injection well and sample notification letter that will be sent to these parties.
- Identification and characterization of all active and plugged wells within the one-mile area of review of the proposed injection well.
- The details of the proposed injection operation, including general well design and average and maximum daily rates of injection and injection pressures.
- Sources and predicted composition of injection fluid and compatibility with the formation fluid of the injection zone.
- Location and identification of any fresh water bearing zones in the area; the depth and quality of available groundwater in the vicinity of the proposed well, including a determination that there are no structures which could possibly communicate the disposal zone with any known sources of drinking water.

An NMOCD Rule 11 H_2S Contingency Plan has been approved for the facility. Once the authorization to inject is approved for the Red Hills AGI #3, the Rule 11 H_2S Contingency Plan will be amended to reflect the changes in operations. If it is anticipated that a change may occur in the amount or concentrations of H_2S in the TAG stream, an update to the Rule 11 H_2S Contingency Plan will be filed. At a minimum, even if the H_2S volume remains the same, once the proposed well is successfully completed in the Bell Canyon and Cherry Canyon intervals, the Rule 11 H_2S Contingency Plan will be amended to reflect this change. The revised Rule 11 H_2S Contingency Plan will be submitted to NMOCD prior to the commencement of TAG injection into the Red Hills AGI #3 well.

Based upon a comprehensive evaluation summarized in this application, Targa has determined that the proposed Red Hills AGI #3 is a safe and environmentally-sound project for TAG disposal. Our research has identified porous and permeable sandstone and siltstone units within this proposed injection zone of the Bell Canyon and Cherry Canyon formations located approximately 5,245-7,620 feet below the plant. There are no active pay zones above these formations. The formations are overlain by a very thin Lamar Limestone followed by over 4,000 feet of limestone, anhydrite, gypsum and salts of the Castile, Salado and Rustler formations. The Cherry Canyon formation is underlain by the shales, siltstones and sandstones of the Brushy Canyon formation. Reservoir simulations have demonstrated that if the Red Hills AGI #3 is operated at maximum capacity for 30 years, TAG would remain within a radius of approximately 0.68 miles from the well location.

All recorded wells were identified in the two-mile radius of the proposed AGI location and placed within Appendix A. Of the 185 wells in this two-mile radius, 117 are active, 17 are plugged and abandoned, 1 is temporarily abandoned, 39 are permitted and are pending drilling, 10 are drilled but have not yet been completed and 1 is drilled and completed but not yet active.

Within one mile of the proposed AGI #3 well, there are 60 recorded well locations, of which 29 are active, 5 are plugged and abandoned, 23 are permitted and pending drilling, 2 are drilled while not yet been completed, and 1 is completed but not yet active. No wells within one mile of the proposed Red Hills AGI #3 pose any risk to act as potential conduits that would allow the escape of injection fluids from the proposed injection zone. None of these wells will be affected by the injection of TAG into the proposed injection zone of AGI #3.

The closest well penetrating the proposed injection zone are the Red Hills AGI #1 and Red Hills AGI #2 wells. They are located approximately 0.2 miles from the proposed AGI #3 well. Red Hills AGI #1 is active injecting TAG under the order of R-13507-13507 F and Red Hills AGI #2 is temporarily abandoned. All oil and gas wells listed in Appendix A-2 penetrate the injection zone.

Active leases in the one-mile area are operated by ConocoPhillips LLC, Devon Energy Production Company, LP., EOG Resources, Inc., Kaiser-Francis Oil Company and Matador Production Company.

Oil and gas mineral rights in this area are owned by private parties and the Bureau of Land Management (BLM). All surface and mineral owners, operators, and leasehold owners within a one-mile radius of the proposed injection well will be notified and provided with a copy of this application at least 20 days prior to the NMOCC hearing pursuant to the requirements of NMOCC. Details on all operators, lessees, and surface and mineral owners are included in Appendix B.

There is no permanent body of surface water within several miles of the plant. A search of the New Mexico State Engineer's files shows 15 water wells within two miles of the proposed AGI #3. Data from these wells show that groundwater occurs at a depth of approximately 100-650 feet within alluvium and the Triassic red beds. Groundwater from the Permian Rustler Formation (1,245-1,600-foot depth) has total dissolved solids (TDS) generally exceeding 9,000 mg/L in many parts of southeastern New Mexico (Lambert, 1992). The Targa water well (water depth of 390 feet) was sampled and subsequent analysis determined a TDS of 650 mg/L.

2 Introduction and Organization of C-108 Application

The completed NMOCD Form C-108 is included before the Table of Contents.

This application organizes and details all the information required by NMOCD and NMOCC to evaluate and approve the submitted Form C-108 – Application for Authorization to Inject. This information is presented in the following categories:

A detailed description of the construction and operation of the proposed injection well (Section 3.0)

A summary of the regional and local geology, the hydrogeology, and the location of drinking water wells within the area of review (Section 4.0)

The identification, location, status, production zones, and other relevant information on oil and gas wells within the area of review (Section 5.0)

The identification and required notification for operators and surface landowners that are located within the area of review (Section 6.0)

An affirmative statement, based on the analysis of geological conditions at the site, that there is no hydraulic connection between the proposed injection zone and any known sources of drinking water (Section 7.0)

In addition, this application includes the following supporting information:

Appendix A: Table showing all active, temporarily abandoned, abandoned, and plugged oil and gas wells included within a two-mile radius.

Appendix B: Tables summarizing the operators, lessees, and surface owners in the one-mile radius area of review; an example of the notification letter that will be sent out to them at least 20 days prior to the NMOCC hearing; and a draft public notice.

3 Proposed Construction and Operation of Red Hills AGI #3

The Red Hills AGI #3 will be drilled at 3,116 feet from the north line (FNL) and 1,159 feet from the east line (FEL) of Section 13 T24S, R33E. The Red Hills AGI #3 well will be drilled vertically to an approximate depth of 7,600 feet as a Class II acid gas injection well. The well will be completed as a cased hole. Zones of interest are the Bell Canyon and Cherry Canyon formations at depths of ~5,700 – 7,600 feet. Data to be gathered from the wellbore will include open-hole and cased hole logs, core samples from the target reservoir intervals and seals, and fluid samples from the injection zone. A long-term injection test will be performed in the Bell Canyon and Cherry Canyon formation.

3.1 Calculated Maximum Injection Pressure

The well will be designed and constructed such that it will serve as the injection conduit for a mixed stream of TAG. Based on current data, the TAG stream used for the following calculations will be approximately:

- 80% CO_2
- 20% H_2S

The maximum total volume of TAG to be injected daily will be approximately 13 MMSCFD, although this volume will not be reached for several years based on market conditions. Pressure reduction valves and controls will be incorporated to assure that maximum surface injection pressure allowed by NMOCD will not be exceeded.

The specific gravity of TAG is dependent on the temperature and pressure conditions as well as the composition of the fluid mixture. It is most accurately calculated using a modification of the Peng-Robinson (PR) equation of state (EOS) model (Boyle and Carroll, 2002). We have calculated the specific gravity of the supercritical TAG phase for the proposed Targa injection stream using the AQUAlibrium 3.1 software which employs the modified PR EOS model (Table 1).

We have modeled the proposed maximum daily injection of 13 MMSCFD of TAG composed of 80 mol % CO_2 and 20 mol % H_2S. Specific gravities of TAG were determined for the conditions at the wellhead (pressure = 1,800 psi, temperature = 90°F) and the bottom of the well (pressure = 3,320 psi, temperature = 130°F). The specific gravity of TAG at equilibrium with the reservoir (pressure = 3,320 psi, temperature = 130°F) was also determined to evaluate the area expected to be affected by injection in the reservoir (see Table 1).

The calculated maximum allowable injection pressure would be approximately 1,767 psi (depending on specific gravity of final TAG stream). We have used the following method approved by NMOCD to calculate the proposed maximum allowable injection pressure. The final maximum permitted surface injection pressure should be based on the final specific gravity of the injection stream according to the following formula:

$IP_{max} = PG\ (D_{top})$ where:

IP_{max}= maximum surface injection pressure (psi)

PG = pressure gradient of injection fluid (psi/ft)

D_{top} = depth at top of perforated interval of injection zone (ft)

and $\underline{PG = 0.2 + 0.433\ (1.04 - SG_{tag})}$ where:

SG_{tag} = average specific gravity of treated acid gas in the tubing (SG_{tag} at top = 0.78 and SG_{tag} at bottom hole = 0.79; see Table 1)

For the maximum requested injection volume case, it is assumed that:

$\underline{SG_{tag}}$ = 0.785 (Average of 0.78 and 0.79)

$\underline{D_{top}}$ = 5,700 ft

Therefore:

$\underline{PG}$ = 0.2 + 0.433 (1.04 – 0.785) = 0.310 psi/ft

$IP_{max} = PG\ (D_{top}) = 0.310 * 5{,}700 = 1{,}767$ psi

For this reason, Targa requests approval for a MAOP of 1,767 psig for Red Hills AGI #3.

3.2 Injection Volume Calculation

Table 1 below summarizes the calculated injection volumes, the areas impacted by the TAG plume, and the proposed MAOP. The calculated TAG plume, after 30 years of continuous injection at 13 MMSCFD, will extend to a radius of 0.68 miles.

Table 1: PVT Calculation of Red Hills AGI #3

Proposed injection stream characteristics

TAG	H2S	CO2	H2S	CO2	TAG
Gas vol, MMSCFD	Concentration mol %	Concentration mol %	Mass rate lbs/day	Mass rate lbs/day	Mass rate lbs/day
13	20	80	246696	1274542	1521238

Conditions at the wellhead

Wellhead Conditions		TAG							
Temp, F	Pressure, psi	Gas vol, MMSCFD	Composition CO2:H2S	Injection Rate, lb/day	Density, kg/m3	Density, lb/gal	SG	volume, ft3	volume, bbl
90	1800	13	80:20	1521238	780	6.51	0.78	37520.65	6688.173

Conditions at the wellbore bottom hole

Bottomhole Conditions					TAG				
Temp, F	Pressure, psi	Upper Perf (MD), ft	Lower Perf (MD), ft	Thickness, ft	Density, kg/m3	Density, lb/gal	SG	volume, ft3	volume, bbl
130	3320	5700	7600	1900	790	6.59255	0.79	37045.7	6603.512

Reservoir static conditions

Reservoir Conditions					TAG				
Temp, F	Pressure, psi	Average Porosity, dec	Swr, dec	Unit Pore volume	Density, kg/m3	Density, lb/gal	SG	volume, ft3	volume, bbl
130	3320	0.2	0.4	228	790	6.59255	0.79	37045.7	6603.512

Constants

Molar volume at STD	0.7915	SCF/mol
Molar weight (MW)	g/mol	lb/mol
MW of H2S	34.0809	0.0751
MW of CO2	44.0096	0.097
MW of TAG	42.02386	0.09262
MW of H2O	18.015	0.0397

Calculation of Maximum injection pressure limitation

SG_TAG,avg	0.785
PG = 0.2 + 0.433*(1.04-SG_TAG-avg)	0.310
IP_max = PG*Depth	1769

Where: SG_TAG,avg is the average of specific gravity of TAG
PG is calculated pressure gradient
IP_max is calculated maximum injection pressure

Calculation of 30-year area of impact in reservoir

Cubic Feet per day	37,045.70	ft3/day
Cubic Feet over 30 years	405,650,462.98	ft3/30 years
Area = V/Net Porosity	1,779,168.70	ft2/30 years
Area = V/Net Porosity	40.84	acres/30 years
Radius	752.55	ft
Radius	0.14	mi

3.3 Well Design

The well will be drilled vertically to its anticipated total depth of approximately 7,600 feet. The injection zone (5,600-7,600 feet) will be completed as a cased hole interval. Table 2 lists the anticipated geological formations, depths, and potential for water or hydrocarbons.

Table 2: Formation tops expected within the Red Hills AGI #3

Formation	Measured Depth (ft)	Identification
Cenozoic alluvium	Surface	USDW
Santa Rosa Sandstone	~650-910	USDW, Gas
Rustler	1,257	USDW
Salado - Castile	1,351	Confining zone
Lamar Lime	5,205	Confining zone
Bell Canyon	5,245	Injection zone
Cherry Canyon	6,220	Injection zone
Brushy Canyon	8,019	Underlaying zone

A preliminary wellbore design for Red Hills AGI #3 is shown in Figure 2. The BLM will be notified of the project through submittal of related APD and C-108. The proposed casing and cementing programs are designed to protect and/or isolate all usable water zones, potentially productive zones, lost circulation zones, abnormally pressured zones, and any prospectively valuable deposits of minerals. Any isolating medium other than cement shall receive approval prior to use.

Design and material considerations include placement of a subsurface safety valve (SSSV) at ~175' in the tubing string, a permanent packer, triple casing through freshwater resources (Ogallala and Santa Rosa Formations – groundwater, Rustler – saline groundwater), characterization of the zone of injection and a total depth (TD) ensuring identification of the reservoir. Radial cement bond logs will be run for all casing strings.

A suitable drilling rig will be chosen for the job that will include an appropriate blowout preventer and choke manifold for any unforeseen pressures encountered. Visual inspections of cement return to the surface will be noted in both the conductor and surface pipe casing jobs. Casing and cement integrity will be demonstrated by pressure-testing and radial cement bond logging after each cement job.

Surface - (Conventional)

Hole Size:	17.5"
Casing:	13.375" 61# H-40 BTC
Depth Top:	Surface
Depth Btm:	1307'
Cement:	TBD sks - Class C + Additives
Cement Top:	Surface - (Circulate)

Intermediate #1 - (Conventional)

Hole Size:	12.25"
Casing:	9.625" 47# L-80 BTC
Depth Top:	Surface
Depth Btm:	5700'
Cement:	TBD - Class C + Additives
Cement Top:	Surface - (Circulate)

Production - (Conventional)

Hole Size:	8.5"
Casing 1:	7" 32# L-80 BTC
Depths:	0' to 5280' & 5580' to 7600'
Casing 2:	7" 32# G3 CRA VAMTOP
Depths:	5280' to 5580'
Cement:	TBD - Class C + Additives, Well Lock resin 5280'-5580'
Cement Top:	Surface - (Circulate)
ECP/DV Tool:	5280' & 5580'

Tubing

Depth:	5700'
Tubing:	3.5" 9.3# G3 CRA VAMACE
Packer:	7" x 3.5" PermaPak or equivalent (Inconel)
SSSV:	175'
PT Gauges:	5690'

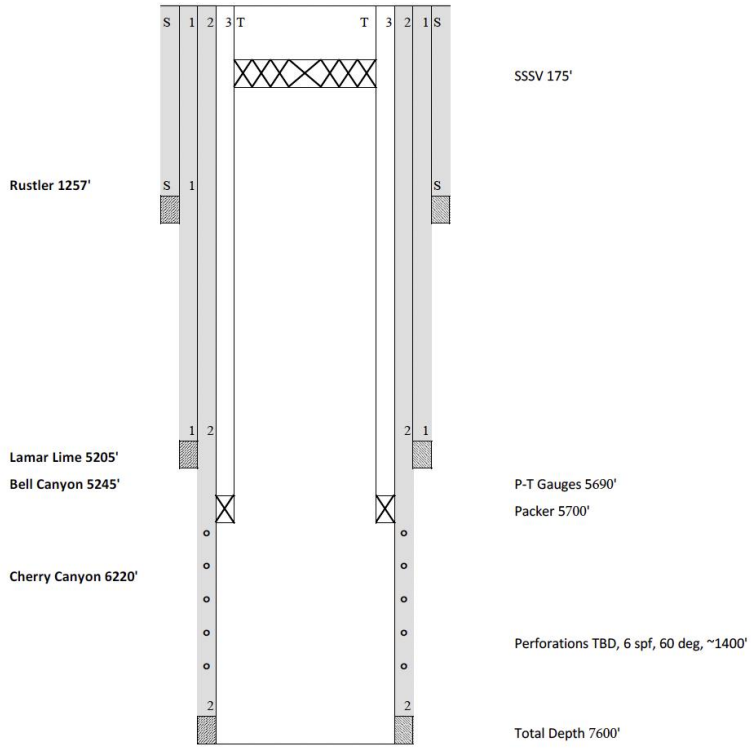


Figure 3: Preliminary wellbore design for Red Hills AGI #3

3.3.1 Casing Design

The preliminary casing design is presented in Table 3, and the specification of the casing is presented in Table 4. The well will have three strings of casing and all strings will be cemented to the surface. The injection tubing will include an SSSV placed ~175' from surface on the production tubing to assure that fluid cannot flow back out of the well in the event of a failure of the injection equipment. The casing setting depth shall be calculated to position the casing seat opposite a competent formation which will contain the maximum pressure to which it will be exposed during normal drilling operations. All indications of usable water shall be reported.

In addition, the annular space between the production tubing and the well bore will be filled with an inert fluid (corrosion-inhibited diesel fuel) as a further safety measure which is consistent with injection well designs which have been previously approved by NMOCD for acid gas injection.

Table 4: Casing Design for Red Hills AGI #3

Casing/ Tubing String	Casing/ Tubing Depth, TVD, ft.	Borehole Diameter, in.	Casing/ Tubing Outside Diameter, in.	Coupling/ Connection	Casing/Tubing Material (Weight/ Grade)	String Weight in air, lb.
Conductor	0 – 100	30	24	Welded	100 lb/ft, J-55	15,700
Surface	0 – 1,307	17-1/2	13-3/8	BTC	72 lb/ft, L-80	94,404
Intermediate	0 – 5,700	12-1/4	9-5/8	BTC	47 lb/ft, L-80	245,810
Production	0 – 7600	8-1/2	7	VAM TOP	32 lb/ft, CRA-G3-P110	224,000
Tubing	0 – 5,700	N/A	3-1/2	VAM ACE	9.2 lb/ft, CRA-G3	147,568

Table 5: Casing Specification for Red Hills AGI #3

Casing/ Tubing String	Casing/ Tubing Material	Casing/ Tubing Diameter	Yield	Tensile	Internal Yield	Collapse	Body	Joint Strength
	Weight/ Grade	OD/ID/DRIFT inches	ksi		Burst pressure		Yield 1000 lbs.	1,000 lbs.
Surface	72 lb/ft L-80, BTC	13.375/12.347/ 12.191	55	75	2,410	770	1,685	1,595
Intermediate	47 lb/ft L-80, BTC	9.625/8.681/8.525	80	95	6,870	4,760	1,086	1,122
Production	32 lb/ft VAMTOP CRA-G3-P110	7.0/6.094/5.969	110	125	11,640	10,780	1,025	1,053
Tubing	9.2 lb/ft VAMACE CRA-G3	3.5/2.992/2.867	138	149	15,890	14,890	324	327

3.3.2 Cement Design

Table 5 summarizes cement design specifications. Top plugs shall be used to reduce contamination of cement by displacement fluid. A bottom plug or other acceptable technique, such as a pre-flush fluid, inner string cement method, etc. shall be utilized to help isolate the cement from contamination by the mud fluid being displaced ahead of the cement slurry.

Actual volumes will be calculated and determined by conditions onsite. All cement slurries will meet or exceed minimum New Mexico Oil Conservation Division requirements. Slurries used will be the slurries listed above or equivalent slurries depending on service provider selected. Cement yields may change depending on slurries selected.

Cement shall be allowed adequate curing time to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling out.

Table 6: Cement design for Red Hills AGI #3*

Casing	Depth, ft	Cement Volume, sacks	Cement Type & Yield	Designed TOC	Centralizers
Conductor	100	82	Type I Neat 14.8 ppg	Surface	None
Surface	1,143	100% open hole excess 1772 sks	Type III Cement + 2% CaCI2 + 0.25Ibl/sk Cello Flake + 0.2% FL, 14.6ppg, 1.38 cuft/sk	Surface	1 per joint on bottom 3 joints
Intermediate	5,700	75% open hole excess Lead: 1,481sks Tail: 2,006 sks	Lead: Type III Cmt + 3% CaCI + 0.25Ib/sk CelloFlake + 5Ib/sk LCM, 12.8 ppg 2.13 cuft/sk Tail: Type III Cmt, 14.5ppg 1.38 cuft/sk	Surface	1 per joint for bottom 3 joints, 1 on every 3 joints for remaining joints
Production	7,600	75% open hole excess Lead: 1,555sks Tail: 2,024 sks	Lead: Type III Cmt,12.8 ppg, 2.16 cuft/sk Tail:Type III Cmt 14.8ppg, 1.16 cuft/sk Corrosion Resistant Cement	Surface	1 per joint for bottom 3 joints, 1 on every 3 joints for remaining joints

**Cement program may change based on cement engineer recommendation and caliper log result*

3.3.3 Drilling Fluids Design

Table 6 presents the drilling fluids plan. The anticipated bottom hole pressure is ~3,000 psi. No abnormal pressure or temperatures are anticipated; however, there will be sufficient mud on location to control a blowout should one occur. Mud flow and volume will be monitored both visually and with electronic pit volume totalizers. Mud tests shall be performed every 24 hours after mudding up to determine, as applicable: density, viscosity, gel strength, filtration, and pH. The mud program may be revised at the recommendation of the field engineer.

A closed-loop system will be used to recover drilling fluid and dry cuttings in both phases of the well and on all hole intervals, including fresh water and oil-based operations. Above-ground tanks will be utilized to hold cuttings and fluids for rig operations. A frac tank will be on location to store fresh water. Waste will be disposed of properly at an EPA-approved hazardous waste facility. Cuttings will be disposed of by the service company in an approved disposal facility.

Table 7: Drilling Fluid Design for Red Hills AGI #3

Hole Size, in.	Drilling Fluid System	Measured Depth, ft	Mud Weight, ppg	Viscosity	Drill Solids, % volume	pH	Circulation Rate, GPM
17-1/2	Fresh Water	0-1,307	8.5 - 9.0	25-30	5	9-10	750
12-1/4	Brine	1,307-5,700	10 - 10.5	36-40	10	9-10	700
8-1/2	Cut Brine	5,70-7,600'	8.5 - 9.0	36-40	5	9-10	600

3.3.4 Logging and Testing Design

Table 8: Logging and Testing Design for Red Hills AGI #3

Well Logging	Logging Program	Depth Intervals
	Surface Casing	
Open Hole	Platform Express 150 Array Induction Imager, GR, 4-Arm Caliper	1,307' – 0
	Intermediate Casing	
Open Hole	Platform Express 150 Array Laterolog Imager, GR, 4-Arm Caliper	5,700' - 1,307'
Cased Hole	Array Sonic Logging Tool, Cement Bond & Variable Density Log (13 3/8" casing), Gamma Ray	5,700' - 0
	Production Casing	
Open Hole	Platform Express 150 Array Laterolog Imager, GR, 4-Arm Caliper, FMI	7,600' - 5,700'
Cased Hole	Array Sonic Logging Tool, Cement Bond & Variable Density Log (9 5/8" casing), Gamma Ray	7,600' - 0

4 Geology and Hydrogeology

4.1 Surface Geology

The Red Hills Gas Processing Plant is located in Section 13, T 24 S, R 33 E, in Lea County, New Mexico, about 20 miles west of Hobbs (Figure 1). The plant location and proposed well are within a portion of the Pecos River basin referred to as the Querecho Plains reach (Nicholson & Clebsch, 1961). This area is relatively flat and largely covered by sand dunes underlain by a hard caliche surface. The dune sands are locally stabilized with shinnery oak, mesquite, and some burr-grass. There are no natural surface bodies of water or groundwater discharge sites within one mile of the plant and where drainages exist in interdunal areas, they are ephemeral, discontinuous, dry washes. The site is underlain by Quaternary alluvium overlying the Triassic redbeds of the Santa Rosa Formation (Dockum Group), both of which are local sources of groundwater. The thick sequences of Permian through Ordovician rocks that underlie these deposits are described generally below.

4.2 Subsurface Geology

The well is in the Delaware Basin portion of the broader Permian Basin. The subsurface geology is composed of a very thick sequence of sedimentary rocks including evaporites, carbonates, sandstones and shales representing a variety of depositional environments, underlain by Precambrian bedrock. The Delaware Basin was stable through Permian deposition with the basin sediments being dominated by siliciclastic and carbonate deposits, and the surrounding shelves by carbonate deposits. Figure 3 presents a stratigraphic column for the region.

The injection zone is within the sediments of the Delaware Mountain Group. These sediments were deposited during sea-level low stands associated with widespread exposure of the shelves and the migration of siliciclastic sediments across the shelves and into the basin. Interspersed with these sandstones, siltstones and shales are thin carbonate beds that are creatable throughout much of the Delaware Basin. These carbonate horizons represent sea-level high stands and the re-establishment of a carbonate factory upon the shelves. Clastic sedimentation during low stands represents thousands of feet

of sediments within the basin but correlates to relatively thin clastic deposits on the shelves. The high stand carbonate horizons form several thousand feet of carbonate deposits on the shelves that build upward and outward in the basin, but they thin dramatically towards the basin center.

Sediments of the Bell Delaware Mountain Group are predominately quartz-rich and terrigenous in origin. The quartz-rich sands are fine grained to silt sized and poorly cemented. The terrigenous clastic sediments formed submarine fan complexes associated with submarine canyons with turbidite, debris flows and density currents. Basin waters may have been stratified since many of the sandstones lack depositional features indicating deposition from traction currents. The siliciclastic deposits represent sea-level low stand deposits. The interbedded limestones are dark, finely crystalline, radiolarian-rich micrites to biomicrites and are suspension sediments that also thin to the basin center. Isolated coarse-grained to boulder sized carbonate debris flows and grain falls likely resulted from erosion and failure of the shelf margin during sea-level low stands. The top of the Guadalupe Series is locally marked by the Lamar Limestone. The Cherry Canyon and Bell Canyon deposits have channels as well as widespread sand sheets that have little cement within the sandstones.

The proposed injection interval is located under the approximately 4,000 feet of evaporite and minor carbonate deposits of the Rustler, Salado, and Castile formations and the Lamar Limestone. These units are an excellent seal for injection well and should insure no upward migration out of the injection zone. The injection zone, Bell Canyon and Cherry Canyon formations, is underlain by the Brushy Canyon Formation. Local production is oil and gas and is within the underlying Bone Springs, Wolfcamp, Atoka, and Morrow deposits. There are no pay zones within Bell Canyon and Cherry Canyon formations within the area.

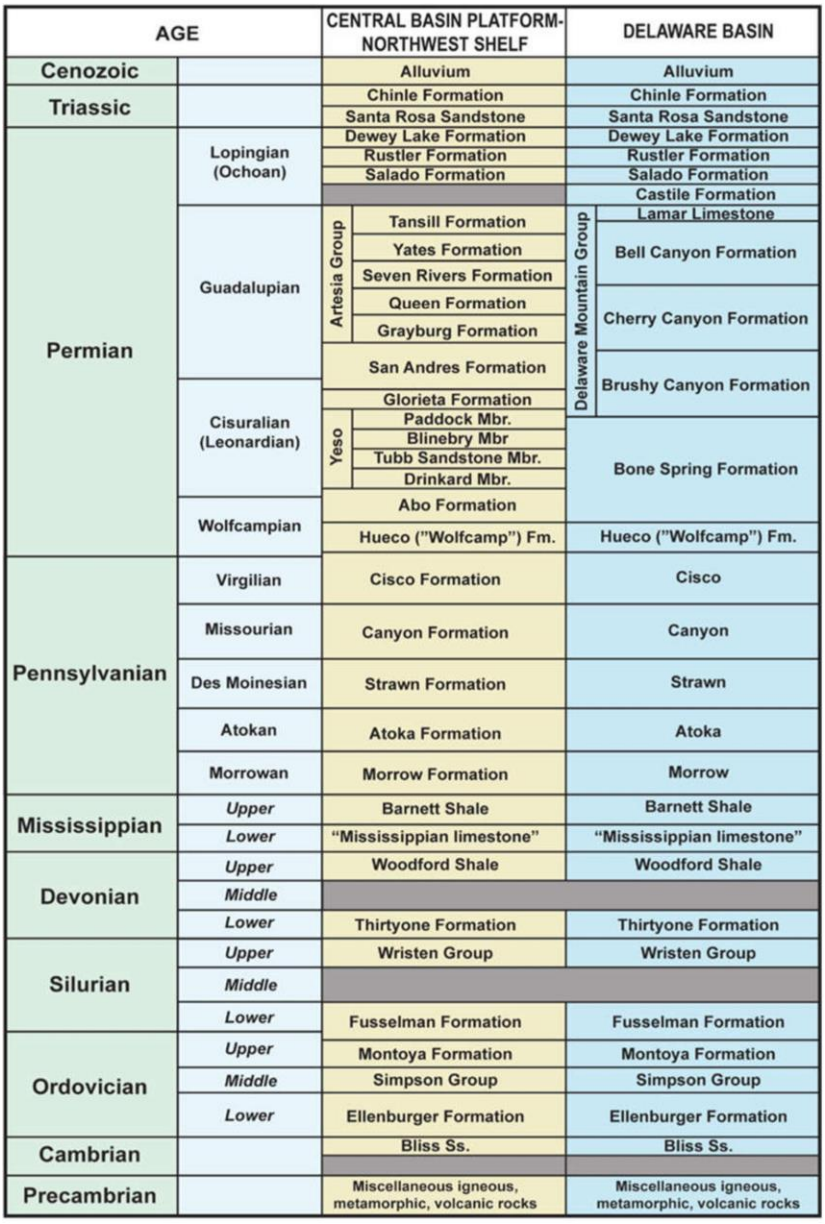


Figure 2. Stratigraphic column for the Delaware basin, the Northwest Shelf and Central Basin Platform (modified from Broadhead, 2017).

4.3 Formation Fluid Chemistry

Chemical analysis of water from Federal 30 Well No. 2 (API 30-025-29069), approximately 3.85 miles away, indicates that the formation waters are highly saline (~180,000 ppm NaCl) and compatible with the proposed injection (Table 8). The shallow freshwater aquifers in the area of review will be protected by the surface and intermediate casing of the proposed Red Hills AGI #3 well.

Table 9: Water Analysis of Federal 30 Well No. 2 (API 30-025-29069)

			Compound	Unit, ppm
SG	1.125 @ 74F		Calcium	12,000
Resistivity	0.07 Ω-m @ 74F		Magnesium	3,654
pH	7		Sulfate	1,240
Iron	Good/Good		Bicarbonate	2,135
Hardness	45,000 mg/L		Chloride	110,000
			Sodium Chloride	180,950
			Sodium & Potassium	52,072

4.4 Groundwater in the Vicinity of the Proposed Injection Well

Table 9 shows the identified U.S. Drinking Water (USDW) formations in the area. The main aquifers in the northern Delaware Basin of New Mexico are the Permian Capitan Formation, Permian Rustler Formation, Triassic Santa Rosa Sandstone and Cenozoic alluvium (Ritchey et al. 1985). The Capitan aquifer is not present in the area (Hiss, 1980), but the Rustler and shallower units are. Water from the Rustler aquifer is usually not suitable for domestic use due to its high salinity but is utilized for irrigation and livestock in the region. TDS values range from ~10,000 to 300,000 mg/l (Ritchey et al., 1985). The Santa Rosa Sandstone is the principal aquifer in western Lea County (Ritchey et al., 1985) and has an average TDS of approximately 1,000 mg/l (500 – 2000 mg/l; Ritchey et al., 1985). Cenozoic alluvium is also another possible source of groundwater in the area, but can be impacted by deeper, more saline aquifers (like the Rustler Formation), therefore the TDS is highly variable, but averages 2,300 mg/l (Ritchey et al., 1985). The shallow freshwater aquifers in review will be protected by the surface and intermediate casings in the proposed Red Hills AGI #3 (Figure 4).

Table 10 shows the water wells identified by the New Mexico State Engineer files within two miles of the proposed Red Hills AGI #3. Figure 5 shows the water wells within a one-mile radius.

Table 10: USDW formations in the area

Formation	Measured Depth (ft)	Identification
Cenozoic alluvium	Surface	USDW
Santa Rosa Sandstone	~650-910	USDW, Gas
Rustler	1257	USDW

Table 11: Water wells identified by the State Engineer files within two miles of the proposed Red Hills AGI #3

POD Number	Sec	Tws	Rng	Well Depth, ft.	UTME	UTMN	Distance, mi.
C-03666-POD1	13	24S	33E	650	639132.5	3565078.2	0.23
C-03917-POD1	13	24S	33E	600	638373.9	3565212.6	0.62
C-03601-POD1	23	24S	33E	0	638124.2	3563937.1	1.17
C-03662-POD1	23	24S	33E	550	637342.1	3564428.5	1.38
C-03932-POD8	7	24S	34E	72	641120	3566769.9	1.40

C-03601-POD3	24	24S	33E	0	638141.8	3563413.7	1.43
C-03601-POD2	23	24S	33E	0	637846.1	3563588.3	1.45
C-02309	25	24S	33E	60	639708.5	3562997.8	1.49
C-03601-POD5	23	24S	33E	0	637988.4	3563334.6	1.52
C-03601-POD6	23	24S	33E	0	637833.8	3563338.7	1.57
C-03601-POD7	23	24S	33E	0	637946.1	3563170.8	1.62
C-03565-POD9	15	24S	33E	0	636429.9	3565005.4	1.83
C-03600-POD2	25	24S	33E	0	638824.5	3562329.6	1.92
C-03602-POD2	25	24S	33E	0	638824.5	3562329.6	1.92
C-03600-POD1	26	24S	33E	0	637275	3563023.1	1.95

Two water wells have been identified within one mile of the Red Hills AGI #3 well and are placed in Table 11. The wells do not penetrate Permian strata and are completed in Cenozoic alluvium or Triassic redbeds. One of these wells, C 03666 POD1, was sampled and this analysis is shown in **Appendix A-1**. The water has a pH of 9.55 and has a calculated TDS of 650 mg/l.

Table 12: Water wells within one mile of proposed Red Hills AGI #3 well

POD Number	POD Status	Owner*	Well depth	Water Depth	UTME	UTMN	Start Date	Finish Date
C 03666 POD1	ACT	LUCID ENERGY DELAWARE LLC	650	390	639132.5	3565078	Oct 17 2013	Oct 25 2013
C 03917 POD1	ACT	NGL WATER SOLUTIONS PERMIAN	600	420	638373.9	3565213	Feb 29 2016	Mar 03 2016

**Note that Targa owns both wells and the change of ownership (COO) with has been recognized, however, the change has not yet been reflected in the online OSE database*

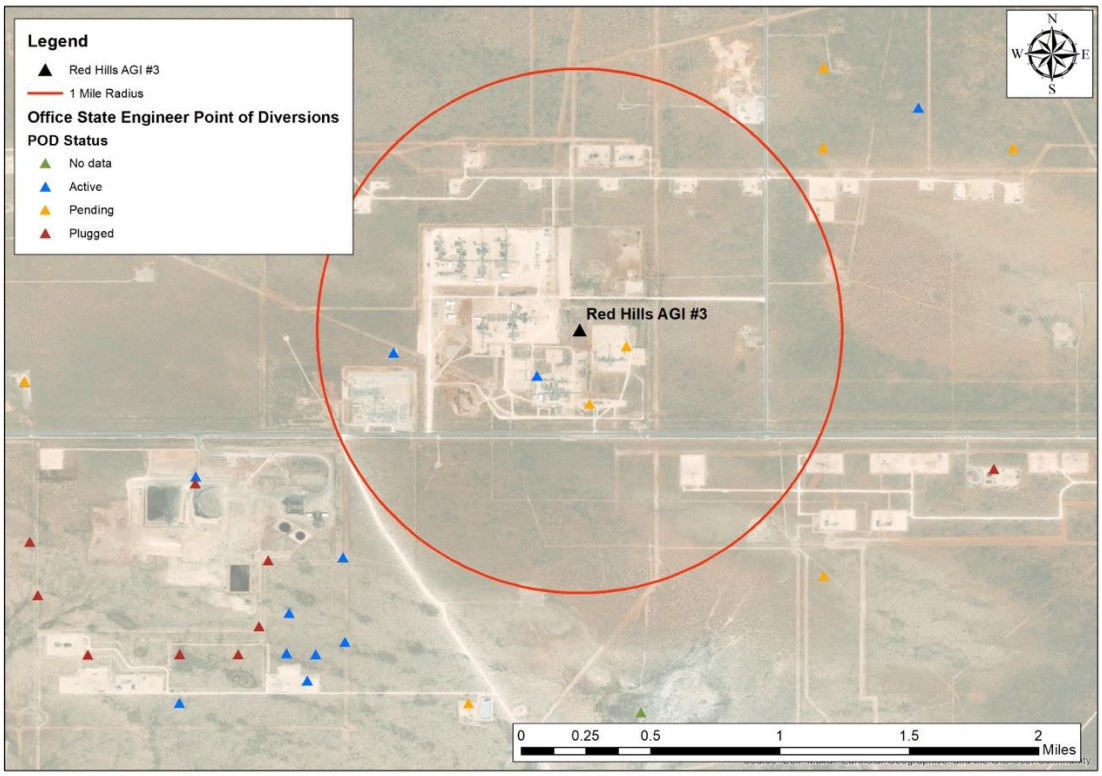


Figure 3: Water wells identified in the proposed Red Hills AGI #3 Well

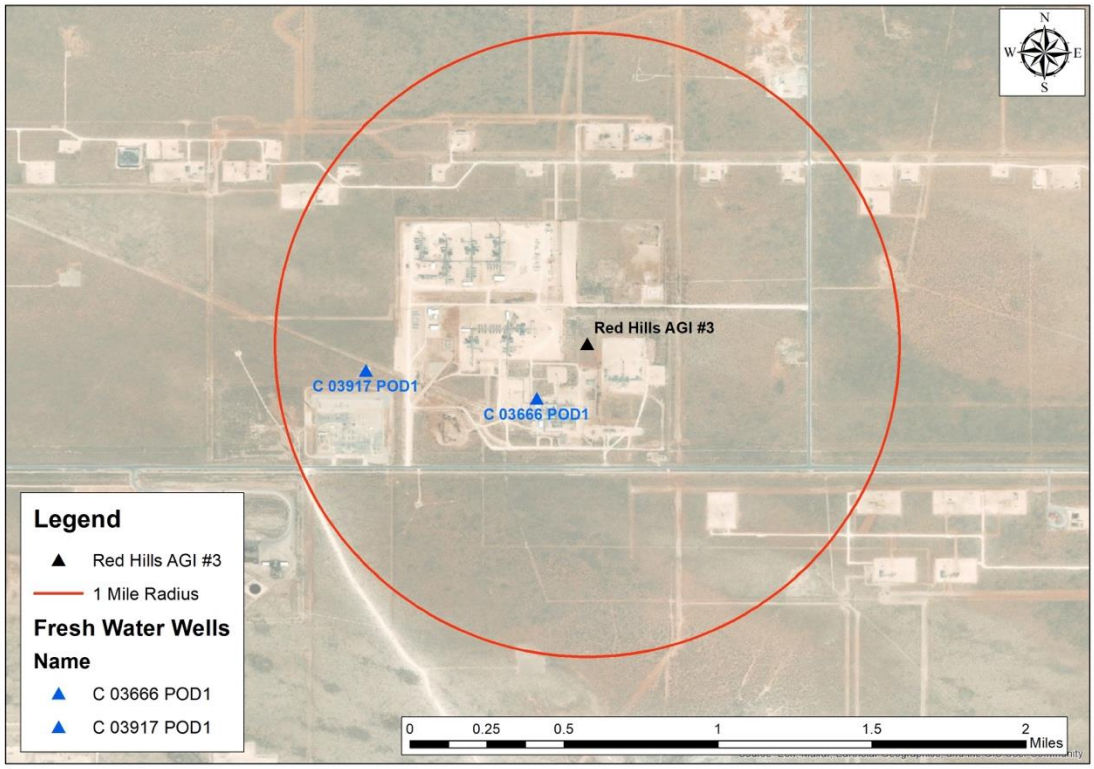


Figure 4: Active water wells identified within one mile of the proposed Red Hills AGI #3

5 Oil and Gas Wells in the Area of Review and Vicinity

Tables 12 and Figures 6 and 7 provide a summary and maps of wells within the vicinity and area of review of Red Hills AGI #3. A two-mile radius review was conducted of the offset wells of public record as demonstrated in the 2-mile radius map (Figure 7). There are 182 wells located within two miles of the proposed AGI #3 well. The well details are presented in Appendix A-2.

Table 13. Summary of oil and gas wells in the vicinity of the proposed Red Hills AGI #3 well

Well within	Permitted	Drilled	DUC	Completed	Injecting	Producing	Inactive Injector	P & A	Total
1 mi	23	1	1	1	2	27	0	5	60
2 mi	39	2	8	1	2	115	1	17	185

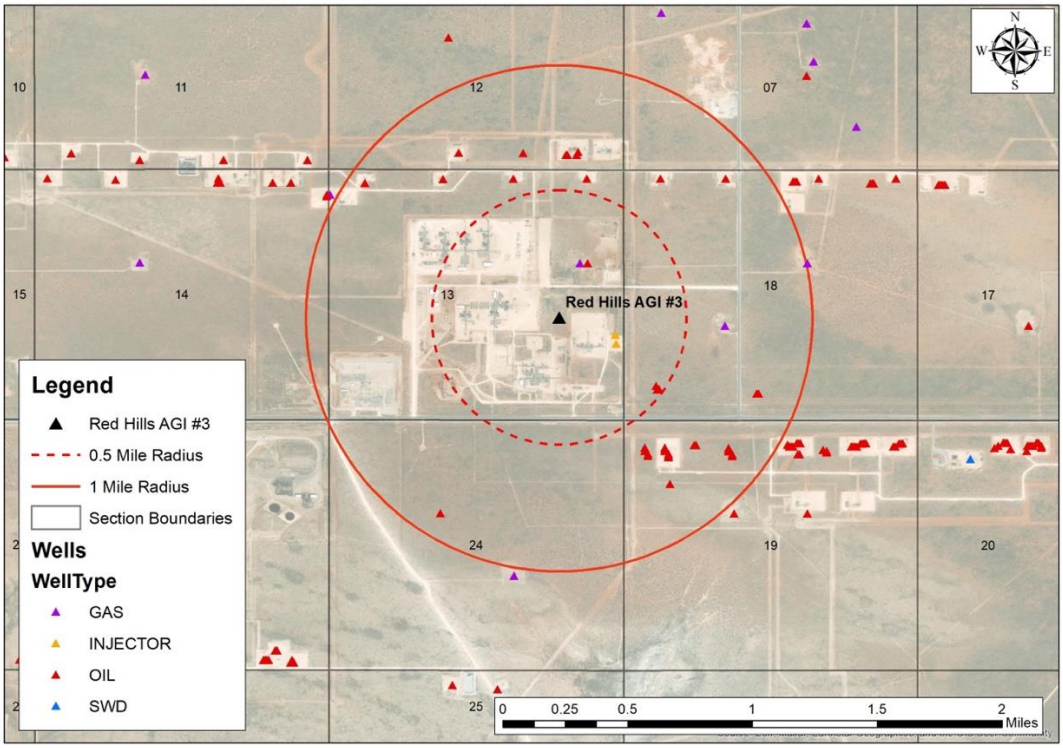


Figure 5: Wells within 1 mile (the red circle) and half mile (red dash circle) of the proposed well

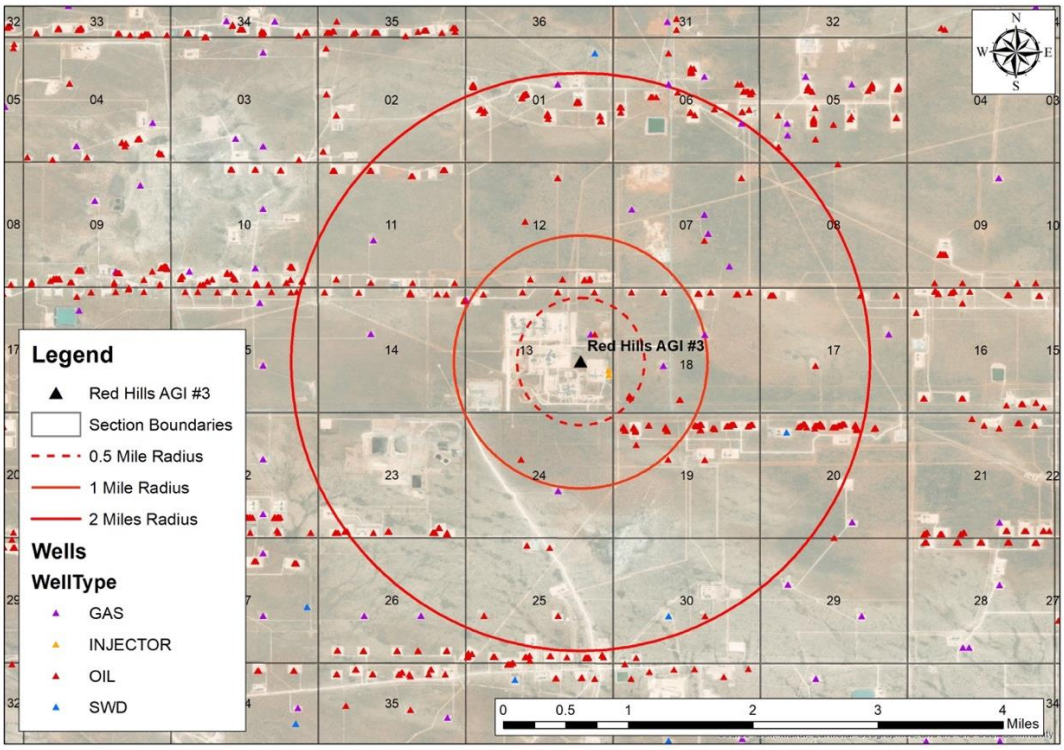


Figure 6: Wells within 2 miles (the outer red circle) of the proposed well. Smaller circles represent ½-mile radius (dashed) and 2-mile radius (solid)

6 Identification and Required Notification of Operators, Subsurface Lessees and Surface Owners within the Area of Review

Targa researched land records in Lea and Eddy Counties to obtain a listing of all operators, oil, gas and mineral lessees, and surface owners within a one-mile radius of the proposed AGI well. Appendix B includes the results of that search.

Appendix B also contains a draft notice letter which will accompany the application when the individual letters are sent. These notices will be sent out as soon as the NMOCC assigns a case number and sets a date for the hearing. A draft public notice for the Commission secretary is also included in Appendix B.

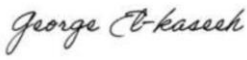
7 Affirmative Statement Covering Hydraulic Connectivity

Based on the available geological data we find no evidence of open faults and/or other hydrologic connection between the **target** injection zone for the Red Hills AGI #3 and underground sources of drinking water.

Name: Dana Ulmer-Scholle Title: Research Scientist

Signature:  Date: 6/7/2023

Name: George El-kaseeh Title: Section Head – Industry Service Outreach

Signature:  Date: 6/7/2023

8 References

Broadhead, R. F., 2017, Energy and Mineral Resources of New Mexico: Petroleum Geology: Socorro, New Mexico Bureau of Geology and Mineral Resources, v. A, 104 p.

Hiss, W.L., 1980, Movement of ground water in Permian Guadalupian aquifer systems, southeastern New Mexico, and western Texas, in Dickerson, P.W., and Hoffer, J.M., eds., Trans-Pecos Region, Southeastern New Mexico and West Texas: 31st Field Conference Guidebook: Albuquerque, New Mexico Geological Society, p. 289-294.

9 Appendix A

9.1 Appendix A-1: Water Analysis Report

There are two Targa water wells located in this region. The water samples were from C03666 POD1 water well (sample depth<500ft) within one mile of the proposed Red Hills AGI #3 well site. The sampling and analyses provided were all done in-house at New Mexico Tech.

For this water well, two 1-L washed Nalgene bottles were triple-rinsed with well water and filled. One 1-L bottle was reserved for general chemistry analysis. The pH of the sample is basic, around 9.98. The conductivity is 1777 Us/cm.

GENERAL CHEMISTRY ANALYSES

Customer name	Tianguang Fan
Company	New Mexico Institute of Mining and Technology
Address	801 Leroy Place
City, State, Zip code	Socorro NM 87801
Phone	(575) 835-5542
Email	Tianguang.Fan@nmt.edu
Date sampled	6/20/2022
Date received	6/22/2022
Date completed	6/29/2022

Customer ID	**Targa Red Hills Water Well (POD 0397)**
pH	9.55
Conductivity (uS/cm)	1,777.0
Alkalinity as CO_3^{-2} (mg/L)	
Alkalinity as HCO_3^- (mg/L)	68.3
Chloride (mg/L)	236.06
Fluoride (F^-) (mg/L)	0.43
Bromide (mg/L)	1.61
Nitrate (NO_3^-) (mg/L)	ND
Phosphate (mg/L)	ND
Sulfate (SO_4^{2-}) (mg/L)	447.06
Lithium(Li) (mg/L)	0.18
Sodium (Na) (mg/L)	365.64
Potassium (K) (mg/L)	6.45
Magnesium (Mg) (mg/L)	8.26
Calcium (Ca) (mg/L)	12.11
TDS Calculation (mg/L)	650.0
Total cations (meq/L)	16.77
Total anions (meq/L)	-17.09
Percent difference (%)	-0.96

ORP (mV)	473.8
IC (ppm)	11.0
NPOC (ppm)	4.48

ND, non-detectable.

9.2 Appendix A-2: Information on wells within Two Miles of Proposed Red Hills AGI#3

Table A-2 Locations of oil and gas wells in the vicinity of the proposed Red Hills AGI #3

API_UWI	WellName	Longitude	Latitude	TVD_ft	MD_ft	Distance, mi	Operator	Well Status	Trajectory	Well Type
30-025-41688	SEBASTIAN FEDERAL COM 003H	-103.50621	32.224302	11055	15457	1.04	CONOCOPHILLIPS	PRODUCING	HORIZONTAL	OIL
30-025-48238	JUPITER 19 FEDERAL COM 305H	-103.50596	32.208565	10582	17857	1.04	EOG	PERMITTED	HORIZONTAL	OIL
30-025-47913	JUPITER 19 FEDERAL COM 708H	-103.50575	32.208511	12477	19736	1.05	EOG	PERMITTED	HORIZONTAL	OIL
30-025-41026	TYRELL FEE 001H	-103.53679	32.22407	10951	15475	1.06	CONOCOPHILLIPS	PRODUCING	HORIZONTAL	OIL
30-025-47912	JUPITER 19 FEDERAL COM 707H	-103.50575	32.20842	12515	19744	1.06	EOG	PERMITTED	HORIZONTAL	OIL
30-025-41334	ROY BATTY FEDERAL COM 004H	-103.53583	32.225378	11051	15556	1.06	CONOCOPHILLIPS	PRODUCING	HORIZONTAL	OIL
30-025-42789	TYRELL FEE 002H	-103.53785	32.224073	9361	13810	1.11	CONOCOPHILLIPS	PRODUCING	HORIZONTAL	OIL
30-025-47875	JUPITER 19 FEDERAL COM 507H	-103.50433	32.208762	11150	18850	1.12	EOG	PRODUCING	HORIZONTAL	OIL
30-025-47875	JUPITER 19 FEDERAL COM 507H	-103.50433	32.208762	11150	18850	1.12	EOG	PRODUCING	HORIZONTAL	OIL
30-025-47876	JUPITER 19 FEDERAL COM 508H	-103.50422	32.208763	11143	18554	1.12	EOG	PRODUCING	HORIZONTAL	OIL
30-025-47876	JUPITER 19 FEDERAL COM 508H	-103.50422	32.208763	11143	18554	1.12	EOG	PRODUCING	HORIZONTAL	OIL
30-025-47877	JUPITER 19 FEDERAL COM 509H	-103.50411	32.208763	11156	18484	1.13	EOG	PRODUCING	HORIZONTAL	OIL
30-025-47878	JUPITER 19 FEDERAL COM 510H	-103.50401	32.208764	11102	18505	1.14	EOG	PRODUCING	HORIZONTAL	OIL
30-025-48230	JUPITER 19 FEDERAL COM 207H	-103.5038	32.208943	9720	17411	1.14	EOG	PERMITTED	HORIZONTAL	OIL
30-025-48231	JUPITER 19 FEDERAL COM 208H	-103.50369	32.208944	9882	17309	1.15	EOG	PERMITTED	HORIZONTAL	OIL
30-025-48232	JUPITER 19 FEDERAL COM 209H	-103.50358	32.208945	9881	17302	1.15	EOG	PERMITTED	HORIZONTAL	OIL
30-025-48233	JUPITER 19 FEDERAL COM 210H	-103.50348	32.208945	9886	17331	1.16	EOG	PERMITTED	HORIZONTAL	OIL
30-025-48206	BELL LAKE UNIT SOUTH 404H	-103.52767	32.232486	12085	20234	1.18	GBK CORP	PRODUCING	HORIZONTAL	OIL
30-025-48240	JUPITER 19 FEDERAL COM 307H	-103.50188	32.208765	10262	17577	1.25	EOG	PRODUCING	HORIZONTAL	OIL
30-025-48241	JUPITER 19 FEDERAL COM 308H	-103.50178	32.208765	10270	17856	1.25	EOG	PRODUCING	HORIZONTAL	OIL

30-025-48061	JUPITER 19 FEDERAL COM 709H	-103.50157	32.208943	12134	19734	1.26	EOG	PERMITTED	HORIZONTAL	OIL
30-025-48062	JUPITER 19 FEDERAL COM 710H	-103.50146	32.208944	12134	19714	1.26	EOG	PERMITTED	HORIZONTAL	OIL
30-025-42933	BOOMSLANG 14 23 FEDERAL 004H	-103.5409	32.224062	11283	21110	1.27	DEVON	PRODUCING	HORIZONTAL	OIL
30-025-47909	JUPITER 19 FEDERAL COM 605H	-103.50135	32.208945		19488	1.27	EOG	PERMITTED	HORIZONTAL	OIL
30-025-41689	SEBASTIAN FEDERAL COM 004H	-103.50172	32.224302	12073	12075	1.27	CONOCOPHILLIPS	PRODUCING	VERTICAL	OIL
30-025-41689	SEBASTIAN FEDERAL COM 004H	-103.50172	32.224302	10877	15356	1.27	CONOCOPHILLIPS	PRODUCING	HORIZONTAL	OIL
30-025-42920	BOOMSLANG 14 23 FEDERAL 001H	-103.54107	32.224062	9518	19300	1.28	DEVON	PRODUCING	HORIZONTAL	OIL
30-025-43032	BOOMSLANG 14 23 FEDERAL 009H	-103.54101	32.224315	10658	20440	1.28	DEVON	PRODUCING	HORIZONTAL	OIL
30-025-41333	ROY BATTY FEDERAL COM 003H	-103.54071	32.225386	11157	15601	1.30	CONOCOPHILLIPS	PRODUCING	HORIZONTAL	OIL
30-025-44918	CARL MOTTEK FEDERAL 211H	-103.49926	32.223934	12289	16949	1.39	MATADOR RESOURCES	PRODUCING	HORIZONTAL	OIL
30-025-44936	CARL MOTTEK FEDERAL 121H	-103.49917	32.223934	10102	14903	1.40	MATADOR RESOURCES	PRODUCING	HORIZONTAL	OIL
30-025-44937	CARL MOTTEK FEDERAL 125H	-103.49907	32.223933	10831	15740	1.40	MATADOR RESOURCES	PRODUCING	HORIZONTAL	OIL
30-025-39716	RED RAIDER BKS STATE 002H	-103.52483	32.194689	9472	13883	1.50	CONOCOPHILLIPS	PRODUCING	HORIZONTAL	OIL
30-025-44291	STRIKER 6 SWD 002	-103.49742	32.208049	17692	17705	1.51	NGL ENERGY PARTNERS	INACTIVE INJECTOR	DIRECTIONAL	SWD
30-025-39560	FALCON 25 FEDERAL 001	-103.52745	32.194925	9468	13685	1.51	EOG	PRODUCING	HORIZONTAL	OIL
30-025-39560	FALCON 25 FEDERAL 001	-103.52745	32.194925	10889	10893	1.51	EOG	PRODUCING	VERTICAL	OIL
30-025-41332	ROY BATTY FEDERAL COM 002H	-103.54556	32.225389	11109	15660	1.56	CONOCOPHILLIPS	PRODUCING	HORIZONTAL	OIL
30-025-50484	YUKON 20 FEDERAL COM 746H	-103.49601	32.208677	12425	22669	1.57	EOG	PERMITTED	HORIZONTAL	OIL
30-025-50502	YUKON 20 FEDERAL COM 710H	-103.4958	32.2088	12096	22420	1.58	EOG	PERMITTED	HORIZONTAL	OIL
30-025-50503	YUKON 20 FEDERAL COM 711H	-103.4955	32.208972	12086	22420	1.59	EOG	PERMITTED	HORIZONTAL	OIL
30-025-47187	YUKON 20 FEDERAL COM 311H	-103.4955	32.208966	10313	20342	1.59	EOG	PRODUCING	HORIZONTAL	OIL
30-025-47194	YUKON 20 FEDERAL COM 310H	-103.49539	32.208967	10433	20275	1.60	EOG	PRODUCING	HORIZONTAL	OIL
30-025-47194	YUKON 20 FEDERAL COM 310H	-103.49539	32.208967	10437		1.60	EOG	PRODUCING	HORIZONTAL	OIL
30-025-50480	YUKON 20 FEDERAL COM 709H	-103.49528	32.208966	12102	22321	1.60	EOG	PERMITTED	HORIZONTAL	OIL

30-025-43308	BOOMSLANG 14 23 FEDERAL 002H	-103.54697	32.224249	9519	19432	1.60	DEVON	PRODUCING	HORIZONTAL	OIL
30-025-50421	YUKON 20 FEDERAL COM 406H	-103.49509	32.208619	10270	20515	1.62	EOG	PERMITTED	HORIZONTAL	OIL
30-025-46857	BLUE KRAIT 23 FEDERAL 021H	-103.53761	32.196943	11600	15237	1.64	DEVON	DUC	HORIZONTAL	OIL
30-025-46857	BLUE KRAIT 23 FEDERAL 021H	-103.53761	32.196943	11600	16597	1.64	DEVON	DUC	HORIZONTAL	OIL
30-025-43239	BLUE KRAIT 23 FEDERAL 006H	-103.53672	32.196398	9456	14170	1.64	DEVON	PRODUCING	HORIZONTAL	OIL
30-025-49690	BLUE KRAIT 23 FEDERAL 034H	-103.5377	32.196943	10600	15587	1.64	DEVON	DUC	HORIZONTAL	OIL
30-025-49690	BLUE KRAIT 23 FEDERAL 034H	-103.5377	32.196943	10600	15617	1.64	DEVON	DUC	HORIZONTAL	OIL
30-025-43238	BLUE KRAIT 23 FEDERAL 004H	-103.53662	32.19623	11190	15818	1.65	DEVON	PRODUCING	HORIZONTAL	OIL
30-025-43237	BLUE KRAIT 23 FEDERAL 003H	-103.53681	32.19623	9452	14150	1.65	DEVON	PRODUCING	HORIZONTAL	OIL
30-025-50397	YUKON 20 FEDERAL COM 101H	-103.49412	32.208799	9198	19666	1.67	EOG	PRODUCING	HORIZONTAL	OIL
30-025-50397	YUKON 20 FEDERAL COM 101H	-103.49412	32.208799	9198	22662	1.67	EOG	PRODUCING	HORIZONTAL	OIL
30-025-50469	YUKON 20 FEDERAL COM 102H	-103.49415	32.208506	9497	19474	1.68	EOG	PRODUCING	HORIZONTAL	OIL
30-025-49635	YUKON 20 FEDERAL COM 103H	-103.4939	32.208799	9198	22325	1.68	EOG	PRODUCING	HORIZONTAL	OIL
30-025-49635	YUKON 20 FEDERAL COM 103H	-103.4939	32.208799	9198	19428	1.68	EOG	PRODUCING	HORIZONTAL	OIL
30-025-47030	BLUE KRAIT 23 FEDERAL 034Y	-103.53809	32.196398	12525	17268	1.69	DEVON	DRILLED	HORIZONTAL	OIL
30-025-49634	YUKON 20 FEDERAL COM 104H	-103.4938	32.208799	9198	19518	1.69	EOG	PRODUCING	HORIZONTAL	OIL
30-025-49634	YUKON 20 FEDERAL COM 104H	-103.4938	32.208799	9198	19518	1.69	EOG	PRODUCING	HORIZONTAL	OIL
30-025-46832	BLUE KRAIT 23 FEDERAL 038H	-103.53819	32.196398	12429	17481	1.69	DEVON	PRODUCING	HORIZONTAL	OIL
30-025-46832	BLUE KRAIT 23 FEDERAL 038H	-103.53819	32.196398	12429	17481	1.69	DEVON	PRODUCING	HORIZONTAL	OIL
30-025-46540	BLUE KRAIT 23 FEDERAL 033H	-103.53829	32.196399	12582	17591	1.69	DEVON	PRODUCING	HORIZONTAL	OIL
30-025-46974	YUKON 20 FEDERAL COM 501H	-103.4936	32.208964	10150	20386	1.70	EOG	PRODUCING	HORIZONTAL	OIL
30-025-46974	YUKON 20 FEDERAL COM 501H	-103.4936	32.208964	10150	22341	1.70	EOG	PRODUCING	HORIZONTAL	OIL
30-025-46466	BLUE KRAIT 23 14 FEDERAL 037H	-103.53838	32.196398	12397	22720	1.70	DEVON	PRODUCING	HORIZONTAL	OIL
30-025-46466	BLUE KRAIT 23 14 FEDERAL 037H	-103.53838	32.196398	12397	22720	1.70	DEVON	PRODUCING	HORIZONTAL	OIL

30-025-46930	YUKON 20 FEDERAL COM 502H	-103.49355	32.208964	10150	22397	1.70	EOG	PRODUCING	HORIZONTAL	OIL
30-025-46930	YUKON 20 FEDERAL COM 502H	-103.49355	32.208964	10150	22397	1.70	EOG	PRODUCING	HORIZONTAL	OIL
30-025-46973	YUKON 20 FEDERAL COM 503H	-103.49349	32.208964	10150	22340	1.70	EOG	PRODUCING	HORIZONTAL	OIL
30-025-46973	YUKON 20 FEDERAL COM 503H	-103.49349	32.208964	10150	20371	1.70	EOG	PRODUCING	HORIZONTAL	OIL
30-025-46970	YUKON 20 FEDERAL COM 504H	-103.49344	32.208964	11149	22446	1.71	EOG	PRODUCING	HORIZONTAL	OIL
30-025-46970	YUKON 20 FEDERAL COM 504H	-103.49344	32.208964	11149	22446	1.71	EOG	PRODUCING	HORIZONTAL	OIL
30-025-50420	YUKON 20 FEDERAL COM 405H	-103.4933	32.208799	10270	20497	1.72	EOG	DUC	HORIZONTAL	OIL
30-025-50516	YUKON 20 FEDERAL COM 205H	-103.4933	32.208708	9900	20139	1.72	EOG	PERMITTED	HORIZONTAL	OIL
30-025-41099	ROY BATTY FEDERAL COM 001H	-103.54953	32.225771	10998	11000	1.78	CONOCOPHILLIPS	PRODUCING	VERTICAL	OIL
30-025-41099	ROY BATTY FEDERAL COM 001H	-103.54953	32.225771	11101	15477	1.78	CONOCOPHILLIPS	PRODUCING	HORIZONTAL	OIL
30-025-50352	YUKON 20 FEDERAL COM 507H	-103.49204	32.20863	10768	20494	1.79	EOG	PRODUCING	HORIZONTAL	OIL
30-025-45083	CHARLES LING FEDERAL COM 214H	-103.53719	32.238483	12278	17093	1.79	MATADOR RESOURCES	PRODUCING	HORIZONTAL	OIL
30-025-50351	YUKON 20 FEDERAL COM 508H	-103.49193	32.20863	10768	21022	1.80	EOG	PRODUCING	HORIZONTAL	OIL
30-025-50348	YUKON 20 FEDERAL COM 509H	-103.49182	32.20863	10768	21074	1.80	EOG	PRODUCING	HORIZONTAL	OIL
30-025-50348	YUKON 20 FEDERAL COM 509H	-103.49182	32.20863	10768	21074	1.80	EOG	PRODUCING	HORIZONTAL	OIL
30-025-50347	YUKON 20 FEDERAL COM 510H	-103.49172	32.208629	10768	21160	1.81	EOG	PRODUCING	HORIZONTAL	OIL
30-025-50347	YUKON 20 FEDERAL COM 510H	-103.49172	32.208629	10768	20172	1.81	EOG	PRODUCING	HORIZONTAL	OIL
30-025-49632	YUKON 20 FEDERAL COM 506H	-103.49142	32.208794	10830	22316	1.82	EOG	PRODUCING	HORIZONTAL	OIL
30-025-49632	YUKON 20 FEDERAL COM 506H	-103.49142	32.208794	10830	21081	1.82	EOG	PRODUCING	HORIZONTAL	OIL
30-025-43309	BOOMSLANG 14 23 FEDERAL 003H	-103.55091	32.224314	11287	21180	1.82	DEVON	PRODUCING	HORIZONTAL	OIL
30-025-24910	BELL LAKE UNIT 016	-103.50262	32.237537	9005	9005	1.83	GBK CORP	PRODUCING	VERTICAL	OIL
30-025-24910	BELL LAKE UNIT 016	-103.50262	32.237537	9005	9005	1.83	GBK CORP	PRODUCING	VERTICAL	OIL
30-025-50464	YUKON 20 FEDERAL COM 704H	-103.49131	32.208794	12090	22359	1.83	EOG	PERMITTED	HORIZONTAL	OIL
30-025-46975	YUKON 20 FEDERAL COM 505H	-103.49126	32.208794	10150	22334	1.83	EOG	PRODUCING	HORIZONTAL	OIL

30-025-46975	YUKON 20 FEDERAL COM 505H	-103.49126	32.208794	10150	22334	1.83	EOG	PRODUCING	HORIZONTAL	OIL
30-025-50465	YUKON 20 FEDERAL COM 743H	-103.4912	32.208794	12425	22645	1.83	EOG	PERMITTED	HORIZONTAL	OIL
30-025-46972	YUKON 20 FEDERAL COM 306H	-103.49101	32.208959	10277	20479	1.84	EOG	PRODUCING	HORIZONTAL	OIL
30-025-46972	YUKON 20 FEDERAL COM 306H	-103.49101	32.208959	10150	20438	1.84	EOG	PRODUCING	HORIZONTAL	OIL
30-025-46971	YUKON 20 FEDERAL COM 305H	-103.49091	32.208963	10446	20400	1.85	EOG	PRODUCING	HORIZONTAL	OIL
30-025-47111	YUKON 20 FEDERAL COM 304H	-103.49081	32.208965	10290	20355	1.85	EOG	PRODUCING	HORIZONTAL	OIL
30-025-47170	YUKON 20 FEDERAL COM 303H	-103.4907	32.208965	10428	20608	1.86	EOG	PRODUCING	HORIZONTAL	OIL
30-025-47170	YUKON 20 FEDERAL COM 303H	-103.4907	32.208965	10428	20608	1.86	EOG	PRODUCING	HORIZONTAL	OIL
30-025-45082	CHARLES LING FEDERAL COM 213H	-103.54089	32.237744	12380	17144	1.87	MATADOR RESOURCES	PRODUCING	HORIZONTAL	OIL
30-025-46464	BLUE KRAIT 23 14 FEDERAL 028H	-103.54344	32.196531	10600	20600	1.88	DEVON	DUC	HORIZONTAL	OIL
30-025-46463	BLUE KRAIT 23 14 FEDERAL 027H	-103.54354	32.196531	10600	20512	1.88	DEVON	DUC	HORIZONTAL	OIL
30-025-47734	BELL LAKE UNIT SOUTH 423H	-103.51891	32.244122	11550	20148	1.92	GBK CORP	PRODUCING	HORIZONTAL	OIL
30-025-47737	BELL LAKE UNIT SOUTH 424H	-103.51885	32.244122		20082	1.92	GBK CORP	PRODUCING	HORIZONTAL	OIL
30-025-50483	YUKON 20 FEDERAL COM 742H	-103.48943	32.208942	12425	22639	1.93	EOG	PERMITTED	HORIZONTAL	OIL
30-025-50482	YUKON 20 FEDERAL COM 741H	-103.48943	32.208851	12425	22653	1.93	EOG	PERMITTED	HORIZONTAL	OIL
30-025-50481	YUKON 20 FEDERAL COM 740H	-103.48943	32.208761	12425	22709	1.93	EOG	PERMITTED	HORIZONTAL	OIL
30-025-50346	YUKON 20 FEDERAL COM 511H	-103.48924	32.208596	10768	21094	1.95	EOG	PRODUCING	HORIZONTAL	OIL
30-025-50345	YUKON 20 FEDERAL COM 512H	-103.48924	32.208505	10768	20323	1.95	EOG	PRODUCING	HORIZONTAL	OIL
30-025-50350	YUKON 20 FEDERAL COM 402H	-103.48924	32.208414	10270	20532	1.95	EOG	PERMITTED	HORIZONTAL	OIL
30-025-47621	BELL LAKE UNIT SOUTH 121H	-103.52502	32.244424	10349	18459	1.95	GBK CORP	PRODUCING	HORIZONTAL	OIL
30-025-50349	YUKON 20 FEDERAL COM 401H	-103.48924	32.208323	10270	20631	1.95	EOG	PERMITTED	HORIZONTAL	OIL
30-025-43236	BLUE KRAIT 23 14 FEDERAL 002H	-103.54525	32.196402	11229	21094	1.96	DEVON	PRODUCING	HORIZONTAL	OIL
30-025-47625	BELL LAKE UNIT SOUTH 223H	-103.51904	32.244727	10860	19098	1.97	GBK CORP	PRODUCING	HORIZONTAL	OIL
30-025-47626	BELL LAKE UNIT SOUTH 224H	-103.51898	32.244727		18974	1.97	GBK CORP	PRODUCING	HORIZONTAL	OIL

30-025-41957	PRODIGAL SUN 17 24 34 001H	-103.48882	32.223921	10866	15251	1.97	CHEVRON	PRODUCING	HORIZONTAL	OIL
30-025-47627	BELL LAKE UNIT SOUTH 421H	-103.52496	32.244764	12100	19770	1.98	GBK CORP	PRODUCING	HORIZONTAL	OIL
30-025-47729	BELL LAKE UNIT SOUTH 222H	-103.52509	32.244858	10860	18741	1.98	GBK CORP	PRODUCING	HORIZONTAL	OIL
30-025-4449	NEPTUNE 10 STATE COM 206H	-103.55344	32.22555	9632	19748	1.99	EOG	PRODUCING	HORIZONTAL	OIL
30-025-44468	NEPTUNE 10 STATE COM 101H	-103.55354	32.22555	9449	19607	2.00	EOG	PRODUCING	HORIZONTAL	OIL

9.3 Appendix A-3: Information on Plugged Wells within 1 Mile of Proposed Red Hills AGI #3

Table A-3 Information on Plugged Wells within 1 Mile of Proposed Red Hills AGI #3 (all plugging records are on OCD online system)

API_UWI	Well Name	Longitude	Latitude	Distance, mi	Operator
30-025-26958	SIMS 001	-103.52006	32.219406	0.23	EXXONMOBIL
30-025-25604	GOVERNMENT L COM 001	-103.50686	32.219398	0.87	EOG
30-025-47913	GOVERNMENT L COM 002	-103.51165	32.215775	0.56	EOG
30-025-41026	SMITH FEDERAL 001	-103.5111	32.20488	0.9	PRE-ONGARD
30-025-47912	COSSATOT E 002	-103.5196	32.219402	0.24	PRE-ONGARD

10 Appendix B: Operators, Subsurface Lessees and Surface Owners within the Area of Review

Subsurface Lessees:

Bureau of Land Management
301 Dinosaur Trail
Santa Fe, NM 87508

Marathon Petroleum Corporation
5555 San Felipe St.
Houston, TX 77056
990 Town & Country Blvd., Floor 11
Houston, TX 77024

COG Operating, LLC (ConocoPhillips)
600 West Illinois Avenue
Midland, Texas 79701
(432) 683-7443

Devon Energy Production Company
LP, 333 W. Sheridan Ave.
Oklahoma City, OK 73102

EOG Resources, Inc.
5509 Champions Drive
Midland, TX 79706
(432) 686- 3689

Targa Northern Delaware LLC
3100 McKinnon Street, Suite 800
Dallas, TX 75201
(214) 420-4949

Matador Production Company 5400
LBJ Freeway, Suite 1500
Dallas, TX 75240
(972) 371-5200

Surface Owners:

Quail Ranch LLC
One Concho Center
600 West Illinois Avenue
Midland, TX 79701
(432) 520-2517

(505) 954-2000

Merry Ann Byrd
P.O. Box 562
Buffalo Gap, TX 79508
(325) 572-3593

Sharon Smith
842 Comanche Trail
Abilene, TX 79601
(940) 395-0654

Shirley Ann Roach
818 South San Jose Drive
Abilene, TX 79605
(325) 692-8058

John Michael Scott
6501 East Ridge Road, # J-6
Odessa, TX 79762
(817) 483-2687

Diane Amelia Scott Hunsaker
17619 Strathern Street
Northridge, CA 91325
(818) 782-4086

Donald Earl Fortner
1033 Park Center Street
Benbrook, TX 76126
No phone number found

Linda Jean Butler Duralia
814 West 25th Street
Odessa, TX 79763
(432) 272-0928

Maedell Annette Butler Davidson
814 West 25th Street
Odessa, TX 79763
(432) 272-0928

Marissa Lynette Butler
2200 Katy Lane, Apartment D
Georgetown, TX 78626
No phone number found

James Erick Butler
323 Sage Trail

Springtown, TX 76082
No phone number found

The Estate of Cloma Perkins Garrett
c/o Jerry Wayne Mize
207 Willey Street
Willard, MO 65781
No phone number found

Jerry Wayne Mize
207 Willey Street
Willard, MO 65781
No phone number found

Beverly J. Cook, Trustee of the Beverly J. Cook 2021 Revocable Trust u/t/a dated May 20, 2021
2836 NW 20th Street
Oklahoma City, OK 73107
No phone number found

Jo Anne Krall
1110 Selman Court
San Angelo, TX 76905
(325) 703-1004
(325) 703-4317

Mary Nell McKandles Hale
1033 Park Center Street
Benbrook, TX 76126
(817) 249-2080

New Mexico Department of Transportation
P.O. Box 1149
Santa Fe, NM 87504
(505) 795-1401

NGL Water Solutions Permian, LLC
6120 South Yale Avenue, Suite 605
Tulsa, OK 74136
(918) 481-1119

Southwestern Public Service Company
P.O. Box 1979
Denver, CO 80201
(800) 895-1999

Agave Energy Company
c/o Lucid Artesia Company
1900 Dalrock Road
Rowlett, TX 75088

(469) 298-1594

U.S.A.
c/o New Mexico BLM
301 Dinosaur Trail
Santa Fe, NM 87508
(505) 954-2000

Gosier Energy, LLC
P. O. Box 5462
Midland, TX 79704
No phone number found

RHL Energy LLC
P. O. Box 10922
Midland, TX 79702
No phone number found

Vanguard Wireless, LLC
c/o InSite Wireless Group, LLC
1199 North Fairfax Street, Suite 700
Alexandria, VA 22314
(705) 535-3009

SAMPLE NOTICE LETTER

June XX, 2023

Sample Notice Letter

VIA CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Party to be Notified

RE: TARGA NORTHERN DELAWARE LLC PROPOSED RED HILLS AGI #3

This letter is to advise you that Targa Northern Delaware LLC ("Targa") has filed the enclosed C-108 application (Application for Authorization to Inject) with the New Mexico Oil Conservation Division seeking authorization to drill and operate a Class II acid gas injection (AGI) well, the Red Hills AGI #3 well, at Targa's gas processing facility ("Facility") in Lea County, New Mexico. The proposed Red Hills AGI #3 is intended to provide a redundant well option for existing acid gas injection operations and increase the total sour gas treatment capacity at the Facility. In accordance with the requirements of the New Mexico Oil Conservation Division, you are being provided this notice and a copy of the complete application as you are an interested party within one (1) mile of the proposed AGI well location.

The proposed redundant well (Red Hills AGI #3) will be a vertical well with a surface location of approximately 1,338 feet from the south line (FSL) and 354 feet from the east line (FEL) in Section 13, Township 24 South, Range 33 East, Lea County, New Mexico. As proposed, the Red Hills AGI #3 well will inject waste carbon dioxide and hydrogen sulfide into the Bell Canyon and Cherry Canyon formation from approximately 5,700 feet to 6,700 feet. The maximum surface pressure will not exceed 1,767 psi with a maximum daily injection volume of thirteen (13) million standard cubic feet (MMSCF).

This application (Case Number XXXXX) has been set for hearing before the New Mexico Oil Conservation Commission at XX:XX am on XX, 2023. You are not required to attend this hearing, but as an owner of an interest that may be affected by this application, you may appear and present testimony. Failure to appear at that time and become a party of record will preclude you from challenging the application at a later date. Hearings are currently conducted remotely. To participate in the electronic hearing, see the instructions posted on the OCC Hearings website: https://www.emnrd.nm.gov/ocd/occ-info/.

Pursuant to Division Rule 19.15.4.13.B, a party who intends to present evidence at the hearing shall file a pre-hearing statement and serve copies on other parties, or the attorneys of parties who are represented by counsel, at least four business days in advance of a scheduled hearing, but in no event later than 5:00 p.m. Mountain Time, on the Thursday preceding the scheduled hearing date. The statement must be submitted through the OCD E- Permitting system (https://wwwapps.emnrd.nm.gov/ocd/ocdpermitting/ or via e-mail to occ.hearings@emnrd.nm.gov and should include: the names of the parties and their attorneys, a concise statement of the case, the names of all witnesses the party will call to testify at the hearing, the approximate time the party will need to present its case, and identification of any procedural matters that are to be resolved prior to the hearing.

If you have any questions concerning this application, you may contact Clark White, Executive Vice President of Operations, at cwhite@targaresources.com; (713) 584-1525.

Sincerely,
Targa Northern Delaware LLC

Enclosure: C-108 Application for Authority to Inject

PROPOSED PUBLIC NOTICE

Targa Northern Delaware LLC ("Targa") filed an application on June 12, 2023 with the New Mexico Oil Conservation Commission ("NMOCC") seeking authorization to drill and operate a class II acid gas injection (AGI) well, the Red Hills AGI #3 well, at Targa's gas processing facility ("Facility") in Lea County, New Mexico. The proposed redundant well (Red Hills AGI #3) will be a vertical well with a surface location of approximately 3,116 feet from the north line (FNL) and 1,159 feet from the east line (FEL) in Section 13, Township 24 South, Range 33 East, Lea County, New Mexico. The Red Hills AGI #3 well will inject waste carbon dioxide and hydrogen sulfide into the Bell Canyon and Cherry Canyon formation from approximately 5,700 feet to 7,600 feet. The maximum surface pressure will not exceed 1,767 psi with a maximum daily injection volume of thirteen (13) million standard cubic feet per day (MMSCFD). The proposed well will serve as a disposal well for treated acid gas at the Facility.

This application (Case Number XXXXX) has been set for hearing before the New Mexico Oil Conservation Commission at XX:XX am on XX, 2023. You are not required to attend this hearing, but as an owner of an interest that may be affected by this application, you may appear and present testimony. Failure to appear at that time and become a party of record will preclude you from challenging the application at a later date. Hearings are currently conducted remotely. To participate in the electronic hearing, see the instructions posted on the OCC Hearings website: https://www.emnrd.nm.gov/ocd/occ-info/.

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