Initial Application Part I

Received 10/23/21

This application is placed in file for record. It MAY or MAY NOT have been reviewed to be determined Administratively Complete

FHSJ1-211023-C-1080

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: _New Mexico Institute of Mining & Technology_____

ADDRESS: _801 Leroy PL Socorro, NM 87801_____

CONTACT PARTY: _Cleve McDaniel, PhD_____PHONE: _1-575-835-5018_____

lll. 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.

. Is this an expansion of an existing project? _____ Yes __ X____No
If yes, give the Division order number authorizing the project: _____
r

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:

SWD-2462

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.).

*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/I 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.

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

*XI. Attach a chemical analysis of fresh water from two or more fresh water 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.

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: _____ PhD_____ TITLE: __ Vice President for Administration and Finance_____

SIGNATURE: ♦;A21,5F6A[illegible] DATE: 10/13/2021

tttA,I

E-MAIL ADDRESS:
__William.Ampomah@nmt.edu__/ cleve.mcdaniel@nmt.edu _____

* 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

Side 2

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.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

Side 1

INJECTION WELL

DATA SHEET

OPERATOR: ____ New Mexico Institute of Mining & Technology_____

WELL NAME & NUMBER: _____SJB_CarbonSafe #001_____

WELL LOCATION: ___2236 FNL 1021 FEL_____H_____14_____31N_____12W_____

FOOTAGE LOCATION UNIT LETTER

SECTION TOWNSHIP RANGE

WELLBORE SCHEMATIC *See Attached* ***WELL CONSTRUCTION DATA***

Surface Casing	
Hole Size: ____17 1/2" _____	Casing Size:_____13 3/8"_____
Cemented with: ___1216 Type III _ SX.	*or* _____ ft^3
Top of Cement: _____1500'_____	Method Determined: _____
Intermediate Casing	
Hole Size: ___12 1/4"_____	Casing Size:__9 5/8"_____
Cemented with: __544_Type III_____ sx.	*or* _____ ft^3
Top of Cement: ___5500'_____	Method Determined: _____
Production Casing	
Hole Size: _____8 ¾"_____	Casing Size:__5 ½"_____
Cemented with: ___864_____ sx.	*or* _____ ft^3
Top of Cement: ___Surface_____	Method Determined: _____
Total Depth: ___8800'_____	
Injection Interval	
_____feet	to_____
(Perforated or Open Hole; indicate which)	

INJECTION WELL DATA SHEET

Tubing Size: ___2 7/8" _____Lining Material: _____

Type of Packer: Retrievable Packer Elastomer seal or metal seal max load 45,000lbf max pressure 3,600psi._____

Packer Setting Depth: _8,150'_____

Other Type of Tubing/Casing Seal (if applicable):

_____

Additional Data

1. Is this a new well drilled for injection? ___X____Yes _____No

   If no, for what purpose was the well originally drilled?

   _____

   _____

   _____

2. Name of the Injection Formation:

   _____

3. Name of Field or Pool (if applicable):

   _____

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used.

   _____

   _____

   _____

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:

   _____

   _____

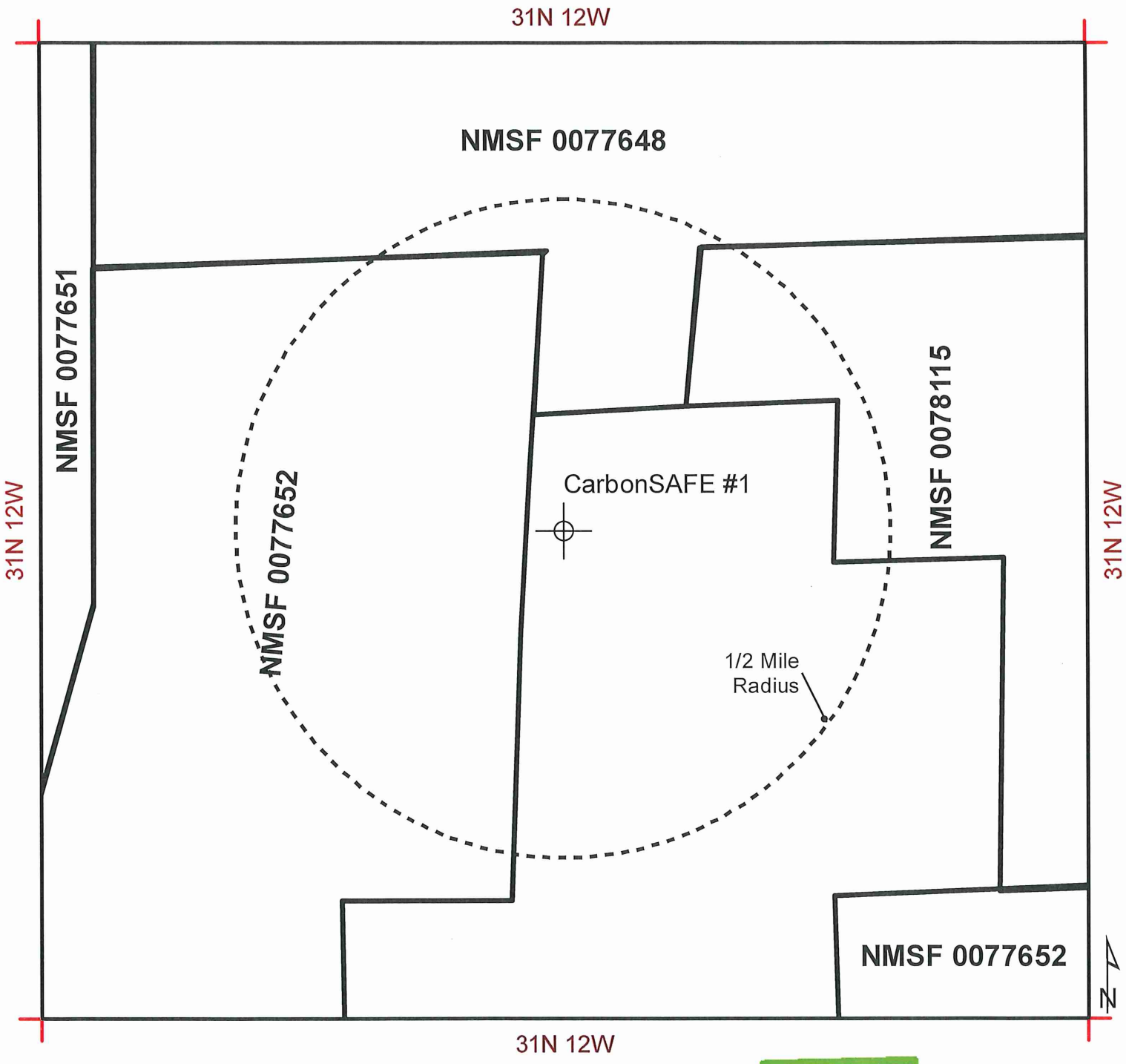
   _____

   _____

   _____

   _____

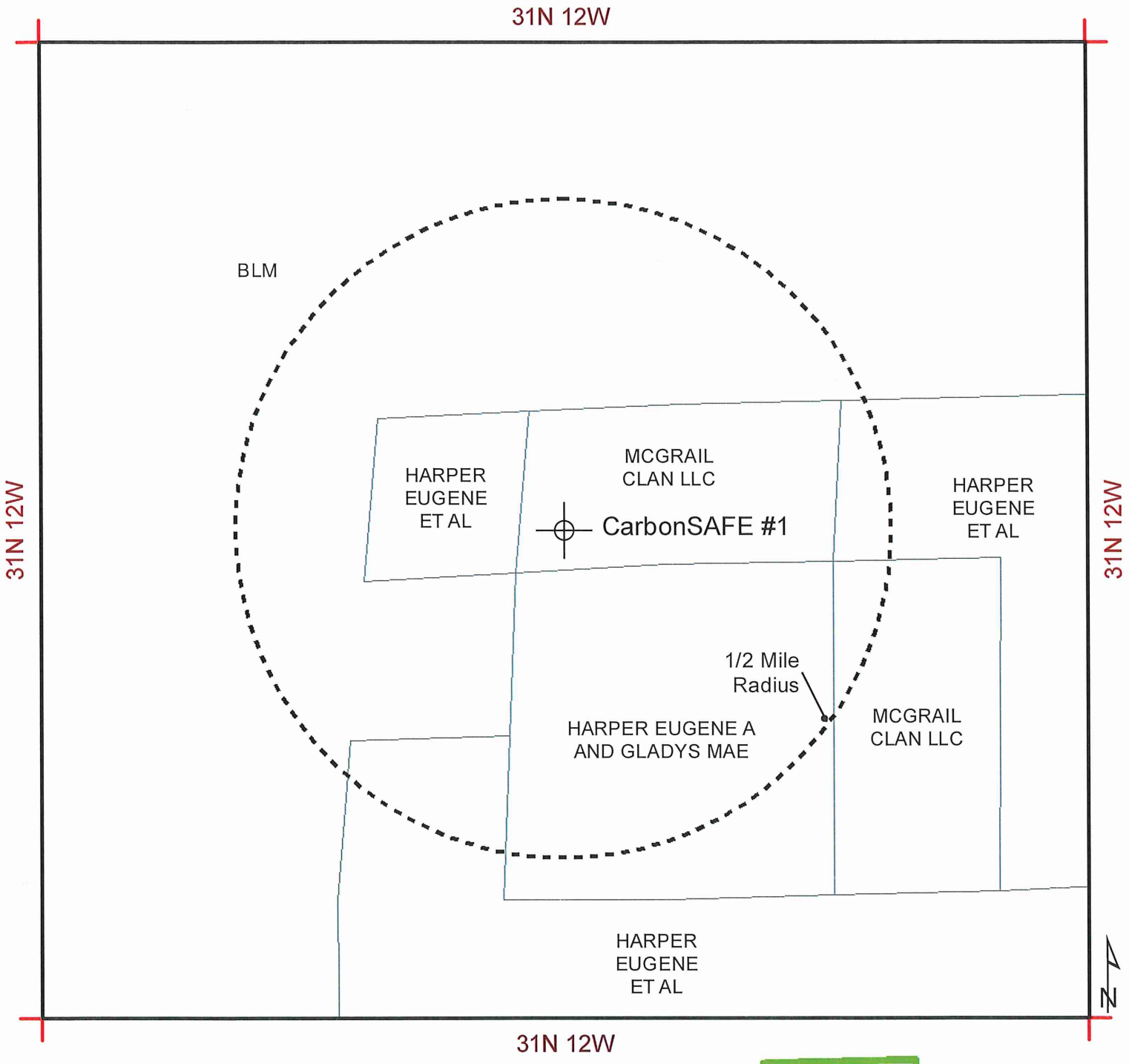
Township 31 North, Range 12 West
San Juan County, NM



C-108 Application to Drill
CarbonSAFE #1
Part V. b.
Lease Ownership Map

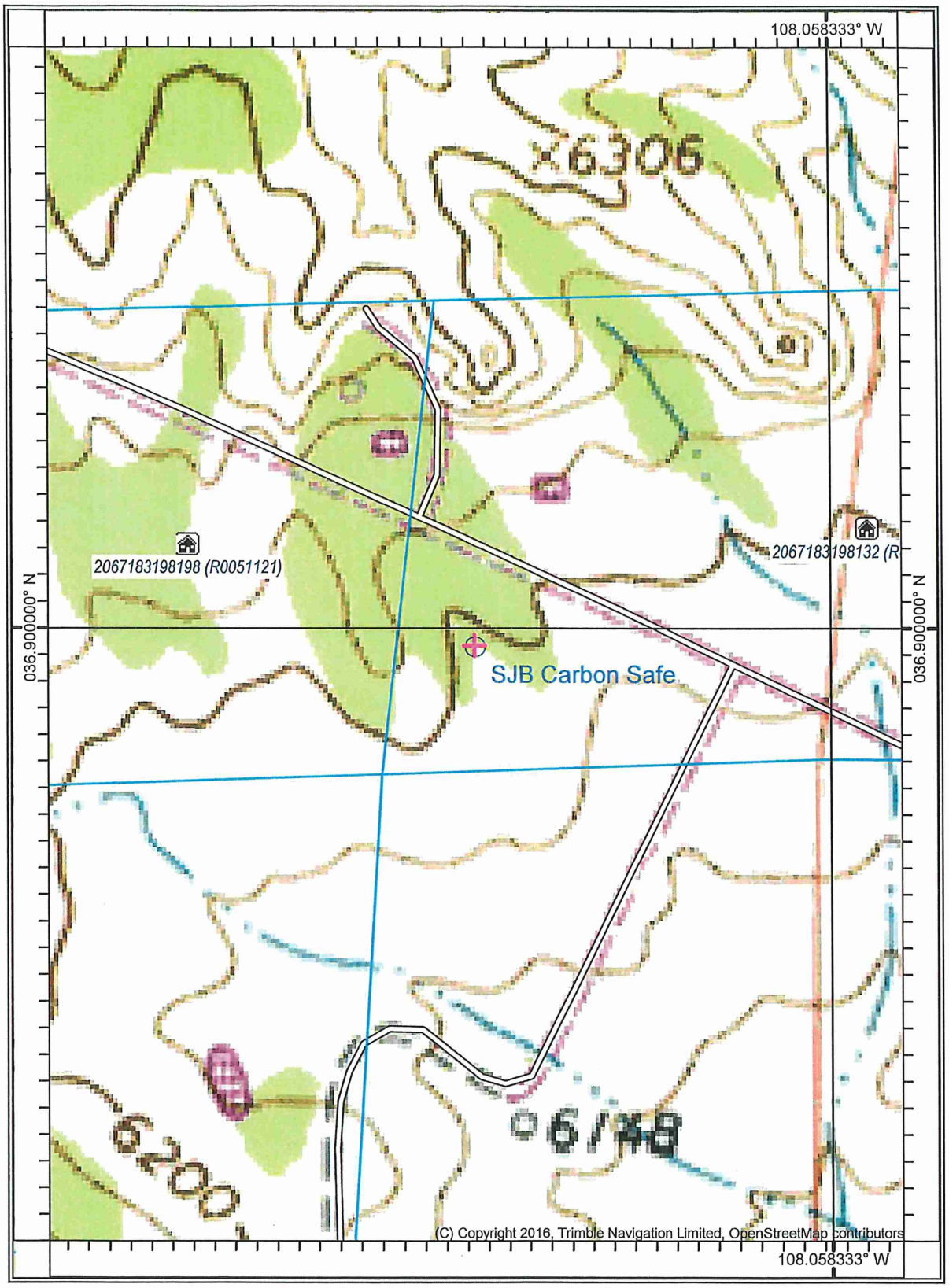
SAN JUAN BASIN CarbonSAFE

Township 31 North, Range 12 West
San Juan County, NM



C-108 Application to Drill
CarbonSAFE #1
Part V. c.
Surface Ownership Map

SAN JUAN BASIN CarbonSAFE



SCALE 1:4800

0 1000

Feet

Affirmative Statement of Examination of Geologic Data

Based on the available geologic data we find no evidence of open faults and/or any other hydrologic connection between the target injection zone for the SJB CarbonSafe #001 and any underground sources of drinking water.

Name: Dana Ulmer-Scholle Title: Asst. Research Scientist

Signature: Dana L. Ulmer-Scholle Date: 10/12/2021

Affirmative Statement of Examination of Geologic Data

Based on the available geologic data we find no evidence of open faults and/or any other hydrologic connection between the target injection zone for the SJB CarbonSafe #001 and any underground sources of drinking water.

Name: William Ampomah Title: Assistant Professor, NMT

Signature:  Date: 10/12/2021

SJB CarbonSafe #001 Well Description

The SJB CarbonSAFE #001 will be drilled as a stratigraphic test well in the area of interest to an approximate depth of 8,800'. The principal zones of interest for characterization are the Morrison and Entrada formation. Data to be gathered from the wellbore will include open-hole and cased hole logs, continuous core samples from the target reservoir intervals and seals, fluid samples from sandstone formations and known USDW's. The long-term injection test will be performed in the Entrada formation. All the data and analysis collected from this stratigraphic test well will assist on Class VI well permit application through the EPA UIC program.

Geological Review

The Nacimiento Formation forms a broad outcrop belt in the region surrounding the proposed drill site (NMBGMR Geologic Map, 2003). These Paleocene strata are nonresistant, forming low relief, rounded hills typical of badland topography. The Nacimiento, San Jose and Ojo Alamo formations make up the surficial deposits within the San Juan Basin (Fassett, 1985). The Nacimiento Formation conformably overlies the Paleocene Ojo Alamo Sandstone and is conformably overlain by the Eocene San Jose Formation (Fassett, 1974, 1985). The Nacimiento Formation grades into Animas Formation in the northeastern-most part of the San Juan Basin in New Mexico and Colorado (Fassett, 1995; Fassett and Hinds, 1971).

The Nacimiento Formation was deposited during the initial stages of down warping of the San Juan Basin (Fassett, 1985). The terrestrial, low-energy Nacimiento Formation includes braided stream, lacustrine, flood plain deposited sediments (Brimhall, 1973; Fassett, 1985). The Nacimiento Formation is dominated by mudstones and siltstones with unconsolidated sandstone channels (Brimhall, 1973; Stone et al., 1983). The Nacimiento Formation is usually very difficult to identify on well logs, because of the variety of facies present in the unit (Brimhall, 1973). The thickness of unit ranges from 500 to 1300 feet with the thickest sections in the center of the basin (Steven et al., 1974).

Groundwater is associated with the braided-stream-deposited sandstones and is therefore controlled by the distribution of these facies within the subsurface. These deposits appear to behave hydrologically like San Jose aquifers. There are no known aquifer tests for the Nacimiento Formation (Stone, 1983), but specific capacities have been reported for six wells that range from 0.24 to 2.30 gallons per minute per foot of drawdown (Levings et al., 1990). The Nacimiento does provide water for domestic and stock use and is recharged by precipitation.

References

Brimhall, R.M., 1973, Ground-water hydrology of Tertiary rocks of the San Juan Basin, New Mexico, in Fassett, J.E., ed., Cretaceous and Tertiary rocks of the Southern Colorado Plateau: Four Corners Geological Society Memoir, p. 197-207.

Fassett, J. E., 1985, Early Tertiary paleogeography and paleotectonics of the San Juan Basin Area, New Mexico and Colorado, *in* R. M. Flores, and S. S. Kaplan, eds., Cenozoic Paleogeography of West·Central United States: Denver, Rocky Mountain Section, SEPM, p. 317-334.

Fassett, J.E., 1974, Cretaceous and Tertiary rocks of the eastern San Juan Basin, New Mexico and Colorado, in Guidebook of Ghost Ranch, central-northern New Mexico: New Mexico Geological Society, 25th Field Conference, p. 225-230.

Fassett, J.E., and Hinds, J.S., 1971, Geology and fuel resources of the Fruitland Formation and Kirtland Shale of the San Juan Basin, New Mexico and Colorado: USGS Professional Paper 676, 76 p.

Levings, G.W., Craigg, S.D., Dam, W.L., Kernodle, J.M., and Thorn, C.R., 1990, Hydrogeology of the San Jose, Nacimiento, and Animas Formations in the San Juan structural basin, New Mexico, Colorado, Arizona, and Utah: USGS Hydrologic Investigations Atlas HA-720-A, 2 sheets.

Stone, W.J., Lyford, F.P., Frenzel, P.F., Mizell, N.H., and Padgett, E.T., 1983, Hydrogeology and water resources of San Juan Basin, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Hydrologic Report 6.

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 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

[4] Property Code	[5] Property Name	[6] Well Number
	SJB CARBON SAFE	1

[7] OGRID No.	[8] Operator Name	[9] Elevation
15847	NEW MEXICO INSTITUTE OF MINING & TECHNOLOGY	6207'

[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
H	14	31-N	12-W		2236	NORTH	1021	EAST	SAN JUAN

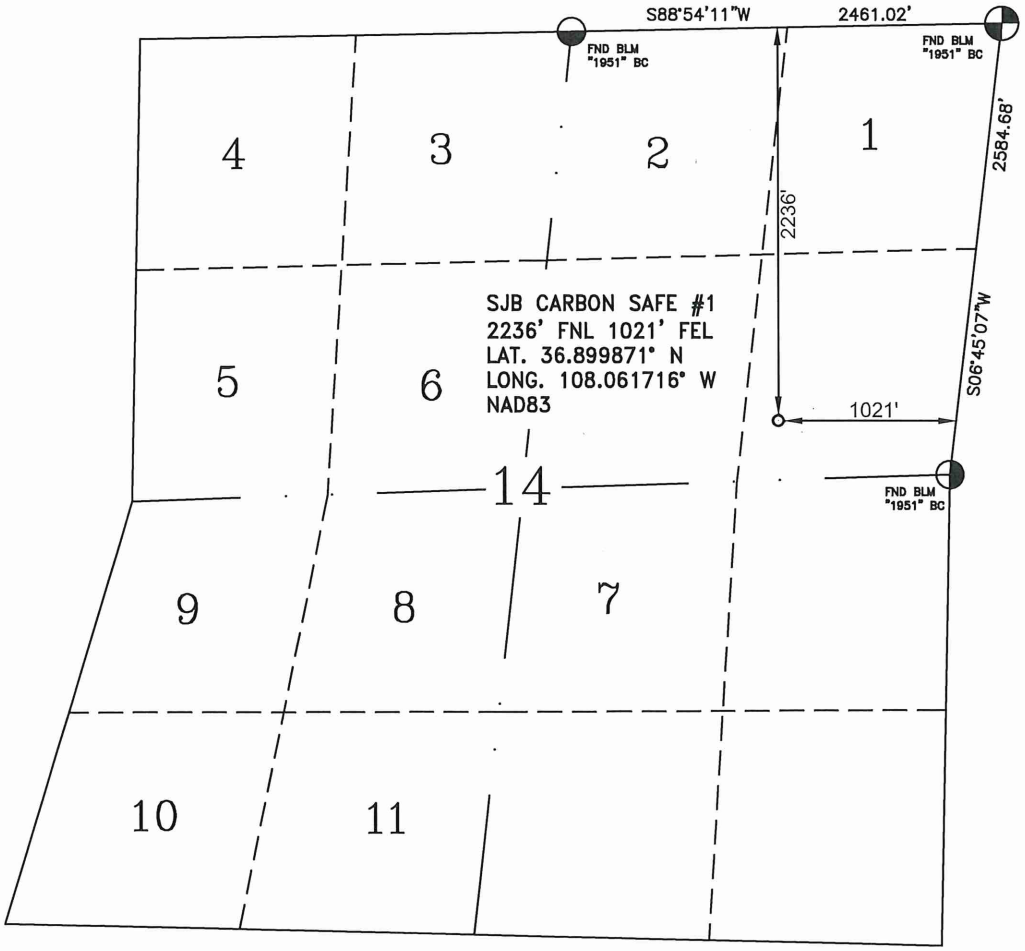
[11] Bottom Hole Location If Different From Surface

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

16



[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 a working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature Date

Printed Name

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.

JULY 12, 2021
Date of Survey

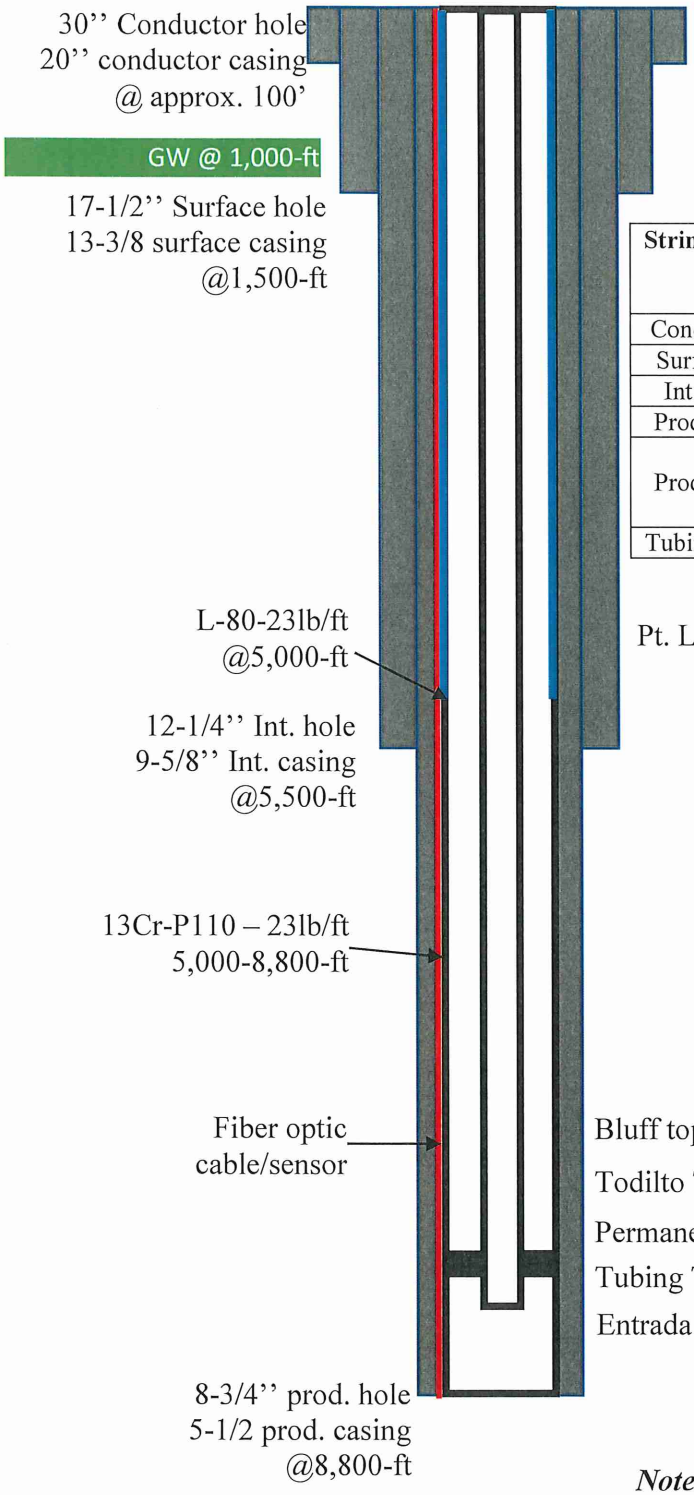
Signature and Seal of Professional Surveyor:

GLEN W. RUSSELL
NEW MEXICO
15703
LICENSED PROFESSIONAL SURVEYOR

GLEN W. RUSSELL
Certificate Number 15703

Well Name: SJB CarbonSAFE #1
Objective formation: Entrada
County, State: San Juan County, NM
Surface Legal Location: 12-31N-12W
Surface Lease Line Footage: TBD
API #: TBD

Rig: TBD
Ground Elevation: 6,207-ft
RBK Elevation: 6,237-ft
TD: 8,800-ft
MD: 8,800-ft
Useable-quality GW: ~1,000-ft



String	Hole Size, in.	Casing OD, in	Weight, lb/ft	Grade	Con.	Depth, ft
Cond.	30	20	94	J-55	Welded	~100
Surf.	17-1/2	13-3/8	54.5	J-55	BTC	1,500
Int.	12-1/4	9-5/8	40.0	L-80	BTC	5,500
Prod.	8-3/4	5-1/2	23.0	L-80	BTC	5,000
Prod.	8-3/4	5-1/2	23.0	13Cr-P110	Premium BTC	5,000 – 8,800
Tubing	2 7/8 OD		7.8	L-80	BTC	8,200

Pt. Lookout top - 5,108-ft – 169-ft

Bluff top - 7,971-ft – 127-ft

Todilto TD = 8,180-ft

Permanent Packer; TD = 8,150-ft; min. pull = 45,000 lbf.

Tubing TD = 8,200-ft; 2 7/8 L-80, WPF = 7.8 lb/ft

Entrada top - 8,200-ft – 116-ft

Note: #-ft - #-ft: top - thickness

New Mexico Institute of Mining and Technology

CarbonSAFE Project

Strat Well Injection Design Report

1. Lithology - Pore and Fracture Pressure

The pore and fracture pressure of the interested area are provided by Tom Bratton and shown in Fig. 1.

Depth, ft	Formation
0.00	
1,173.00	Kirkland
1,200.00	Kirkland
2,203.00	Fluitland
2,835.00	Lewis Shale
4,235.00	Cliffhouse
4,940.00	Pt. Lookout
5,215.00	Mancos Shale
5,500.00	Mancos Shale
6,262.00	Sallup
6,614.00	Lower Mancos Shale
7,115.00	Dakota
7,330.00	Morrison
7,814.00	Bluff
8,264.00	Todilto
8,303.00	Entrada
8,800.00	Chinle
9,000.00	Dechelly

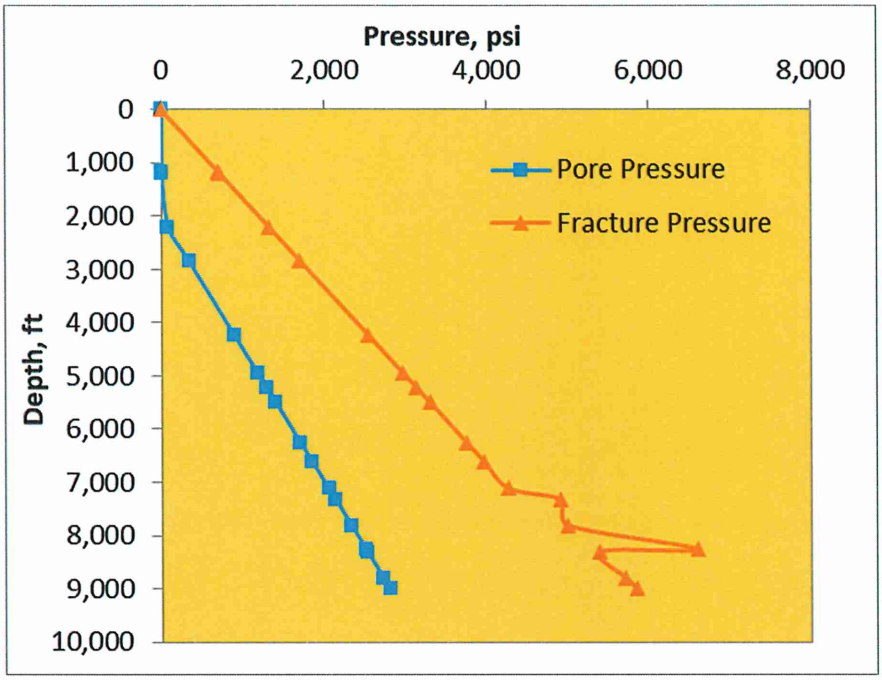


Figure 1: Pore and fracture pressure

2. Porosity and Permeability Data

The porosity and permeability data were given by Luke Martin for different formations. Due to the fact that the Bluff and Entrada formations are the two promising injection zones, this analysis will focus only on these two formations.

The porosity and permeability data for the Bluff and Entrada formation are plotted and shown in Fig. 2 and Fig. 3, respectively. Note that Fig. 2 and Fig. 3 show the original permeability and filtered permeability. We believed that the permeability values of the Bluff formation with the magnitude of more than 1000 mD are the outliers and hence we treated these values as the same values as the permeability of the formation right above it. Similarly, the permeability values of the Entrada formation with the magnitude of more than 100 mD are considered as outliers. We treated these values as the same values as the permeability of the formation right above it. The average permeability values of these two formations were then calculated. In addition, we considered the

maximum and minimum permeability values of these two formations for all of the simulations. The results are shown in Table 1.

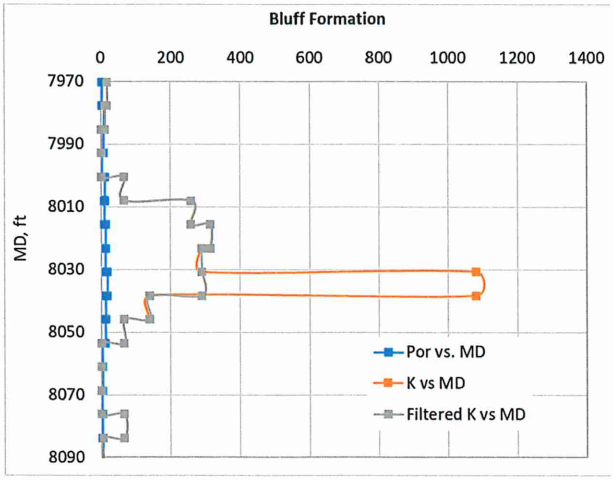


Figure 2: Porosity and permeability data of the Bluff formation

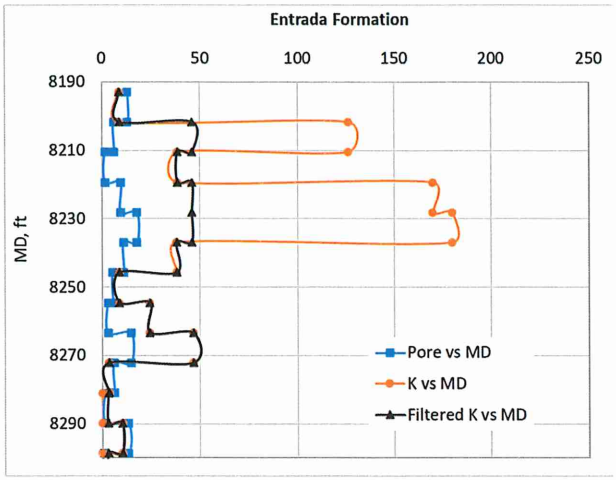


Figure 3: Porosity and permeability data of the Entrada formation

Table 1: Maximum, minimum, and average permeability values of the Bluff and Entrada

Formation type	Bottom MD, ft	Permeability, mD		
		Maximum	Average	Minimum
Bluff	8,094	288	95	0.39
Entrada	8,380	46	25	3

3. Injection Pressure Design

The surface injection pressure is calculated as follows

$$P_{inf} = BHP - P_h + \Delta P_f$$

Where P_{inj} is the surface injection pressure in psi; BHP is the bottomhole pressure in psi, and the ΔP_f is the frictional pressure losses in the production tubing in psi,

The BHP is calculated using the flowing equation in the reservoir with the following assumptions: 1-D radial flow, pseudo-steady state flow, and incompressible fluids.

The inputs for the simulations are presented in Table 2.

Table 2: Simulation input

Production Casing ID (5 ½ OD)	4.670	in
Production tubing ID (2 7/8 OD)	2.440	in
Reservoir area	125	acre
Reservoir radius	1316	ft
Bo	1.200	bbl/STB
Bluff formation Thickness of Bluff	1453.680	in
Bluff formation Permeability	0.393	mD
Skin factor	0.0	
Fluid viscosity	1.0	cp
Fluid density	8.5	ppg
Liquid injection rate	6000	BPD
Safety factor	500	psi

Using the maximum, average, and minimum permeability values for the Bluff and Entrada formations as shown in Table 1, the estimated BHP and the surface injection pressure for the Bluff and Entrada are shown in Table 3.

Table 3: BHP and injection pressure prediction

				Maximum Permeability			Average Permeability			Minimum Permeability		
	MD, ft	Pore, psi	Frac, psi	K, mD	BHP, psi	P_inj, psi	K, mD	BHP, psi	P_inj, psi	K, mD	BHP, psi	P_inj, psi
Bluff	8,094	2,325	5,000	289	2,560	51	95	3,035	526	0.39	174,472	171,963
Entrada	8,380	2,521	5,396	46	4,079	1,463	24	5,415	2,800	3.00	26,408	23,793

If the average permeability values (Bluff K = 95 mD and the Entrada K = 24 mD) are used, the estimated BHP are predicted as 3,035 psi and 5,415 psi for the Bluff and for the Entrada, respectively. Note that the BHP at the Entrada is 5,415 psi which is a little bit higher than the formation fracture pressure. Therefore, one can conclude that the liquid injection rate of 6,000 BPD is the upper limit. Above this rate, the formation will be fracture.

If the minimum permeability values are used, the BHP and the injection pressure are unrealistic. With the liquid rate of 6,000 BPD, the permeability of the Bluff and Entrada must be 26 mD and 30 mD or higher, respectively, to ensure the BHP less than the fracture pressure and to avoid the formation fracturing.

To be more practical, the minimum permeability simulations will not be discussed further in this report. The estimated BHP and injection pressure for the Bluff and Entrada for the two cases: maximum permeability and average permeability are shown in Fig. 4. One can easily recognize that the Bluff formation is much better quality for injection in comparison to the Entrada formation. At the injection rate of 6,000 BPD, the BHP and the injection pressure when Bluff (average K = 95 mD) is the injection formation are 3,035 psi and 525 psi, respectively. At the same rate, the

BHP and the injection pressure when Entrada (average K = 24 mD) is the injection formation are 5,415 psi and 2,800 psi, respectively.

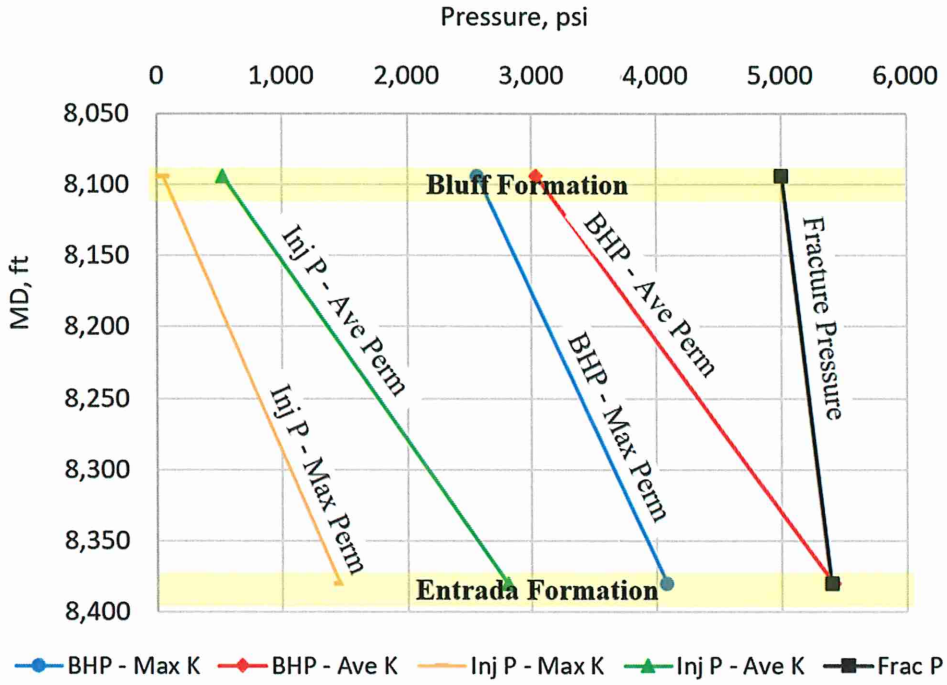


Figure 4: BHP and injection pressure for the maximum and average permeability cases

4. Summary

- Bluff is the much better candidate to be used as an injection formation compared to the Entrada.
- If the average permeability of the Bluff (K = 95 mD) is used, the maximum liquid rate can be injected is 17,500 BPD. This rate will create a BHP of 4,396 psi which is less than the formation fracture pressure and the surface injection pressure of about 5,000 psi which is the pressure rating for most of the surface equipment.
- If the average permeability of the Entrada (K = 24 mD) is used, the maximum liquid rate can be injected is about 6,000 BPD. This rate will create a BHP of about 5,300 psi which is very close to the formation fracture pressure.
- If the liquid injection rate is 6,000 psi, the minimum permeability values of the Bluff and the Entrada are 26 mD and 30 mD to avoid formation fracture.

Drilling Plan

Well Name: SJB CarbonSAFE #1

Well Location: Section 12, T 31 N, R 12 W, San Juan County, New Mexico.

-108.061174 and 36.899774.

San Juan County, New Mexico

1. Estimated Tops of Geological Markers (MD)

The estimated tops of important geological markers are as follows:

Formations/Groups	Measured Depth, ft
Ojo Alamo Ss.	1,330
Kirtland Sh.	1,920
Fruitland Fm.	2,059
Pictured Cliffs Ss.	2,769
Lewis Sh.	2,904
Mesaverde Grp.	4,334
Mancos Sh.	5,305
Greenhorn Ls.	7,073
Graneros Sh.	7,135
Dakota Ss.	7,185
Brushy Basin Mbr.	7,340
Salt Wash Mbr.	7,650
Bluff Fm.	7,920
Summerville Fm.	8,090
Todilto Fm.	8,173
Entrada Fm.	8,192
Carmel Fm.	8,306
Chinle Grp.	8,528

The referenced surface elevation is 6,207', KB 6,237'.

2. Estimated Depth of Potential Water, Oil, Gas, & Other Mineral Bearing Formations

Formation	Substance	Depth Unit, ft
Fruitland Sands/Coal	Gas/Water/Coal-bed Methane	2092
Pictured Cliffs	Gas	2737
Mesaverde Group (all 3 formations, Cliff House, Menefee and Pt. Lookout)	Gas/Water	4334
Mancos	Gas/Minor Oil	5277

Gallup Ss	Gas/Minor Oil/Water	6424
Dakota Ss	Gas/Minor Oil/Water	7233
Morrison Ss	Water	7420
Entrada Ss	Oil/Water	8200

All shows of fresh water and minerals will be reported and protected.

3. Pressure Control

a) Pressure control equipment and configuration will be designed to meet 5M standards.

b) Working pressure on rams and BOPE will be 5000 psi

c) Function test and visual inspection of BOP will be conducted daily and noted in the IADC Daily Drilling Report.

d) The Annular BOP will be pressure tested to a minimum of 50 percent of its rated working pressure.

e) Blind and Pipe Rams/BOP will be tested against a test plug to 100 percentage of rated working pressure.

f) Pressure tests are required before drilling out from under all casing strings set and cemented in place.

g) BOP controls must be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned.

h) BOP testing procedures and testing frequency will conform to Onshore Order No. 2.

i) BOP remote controls shall be located on the rig floor at a location readily accessible to the driller. Master controls shall be on the ground at the accumulator and shall have the capability to function all preventers.

j) The kill line shall be 2-inch minimum and contain two kill line valves, one of which shall be a check valve.

k) The choke line shall be a 2-inch minimum and contain two choke line valves (2-inch minimum).

l) The choke line shall be 2-inch minimum and contain two adjustable chokes

m) Hand wheels shall be installed on all ram preventers.

n) Safety valves and wrenches (with subs for drill string connections) shall be available on the rig floor at all times.

o) Inside BOP or float sub shall also be available on the rig floor at all times.

4. CASING & CEMENTING PROGRAM

The proposed casing and cementing program has been 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. 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 useable water shall be reported.

a) The proposed casing design is as follows:

Casing /Tubing String	Casing /tubing Depth, TVD[1], ft	Casing /Tubing Depth, MD[2], ft	Borehole Diameter, in.	Casing /Tubing Outside Diameter, in	Coupling Outside Diameter, in.	Casing/Tubing Material (Weight /Grade /Connection)	String Weight in Air, lb
Conductor	0-100	0-100	30	20	20	94 lb/ft, J-55, Welded	9,400
Surface	0-1,500	0-1,500	17 1/2	13 3/8	14.375	54.5 lb/ft, J-55, BTC	81,750
Intermed.	0-5,500	0-5,500	12 1/4	9 5/8	10.625	40 lb/ft, L-80, BTC	220,000
Long String	0-5,000	0-5,000	8 3/4	5 1/2	6.05	23 lb/ft, L80, BTC	115,000
	5,000-8,800	5,000-8,800	8 3/4	5 1/2	6.05	23 lb/ft, Cr13-P110, Premium BTC	87,400

Casing /Tubing String	Casing /Tubing Material (Weight /Grade /Connection)	Casing /Tubing Diameters (Outside /Inside / Drift Diameter), in.	Yield, ksi	Tensile, ksi	Internal (Burst) Yield, psi	Collapse, psi	Body Yield, 1000 lbs	Joint Strength 1000 lbs
Conductor	94 lb/ft, J-55, Welded	20/19/-	55	75	1530	520	1480	1402
Surface	54.5 lb/ft, J-55, BTC	13.375 /12.615 /12.459	55	75	2730	1130	853	909
Intermed.	40 lb/ft, L-80, BTC	9.625 /8.835 /8.679	80	95	5750	3090	916	947
Long String	23 lb/ft, L80, BTC	5.5 /4.67 /4.545	80	95	8990	11160	530	550
	23 lb/ft, Cr13-P110, Premium BTC	5.5 /4.67/ 4.545	110	125	12360	14540	729	724

Casing design is subject to revision based on geologic conditions encountered.

All casing strings below the conductor shall be pressure tested to 0.22 psi per foot of casing string length or 1,500 psi, whichever is greater, but not to exceed 70 percent of the minimum internal yield. If pressure declines more than 10 percent in 30 minutes, corrective action shall be taken.

b) The proposed cementing program is as follows:

Casing	Depth	Cement Volume, sacks	Cement Type &Yield	Designed TOC	Centralizers
Conductor	100	127	Type I Neat 14.8 ppg	Surface	None
Surface	1500	1216	Type III Cement+ 1% CaCl + 0.25lblsk Cello Flake + 0.2% FL, 14.6ppg, 1.38cuft/sk	Surface	1 per joint on bottom 3 joints
Intermediate	5500	50% open hole excess Stage 1 Lead: 544 sks Tail: 226 sks Stage 2 Lead: 422 sks Tail: 237 sks	Lead (Stages 1 and 2): Type III + 3% CaCl + 0.25lb/sk CelloFlake + 5lb/sk LCM, 12.1 ppg 2.13cuft/sk Tail (Stage 1): Type III Cmt + 1% CaCl + 0.25lb/sk Cello Flake 14.5ppg 1.38cuft/sk	Surface	1 per joint for bottom 3 joints, 1 on every 3 joints for remaining joints
Production	8800	75% open hole excess Lead: 864 sks Tail: 1258 sks	Lead: Class G cmt + 0.04 gal/sk antifoam +0.30 % Dispersant + 0.50 % Retarder, Evercrete cement, 16.1ppg, 1.07 cuft/sk	Surface	3 per joint

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 BLM and 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.

All waiting on cement times shall be a minimum of 8 hours or adequate to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling out.

5. DRILLING FLUIDS PROGRAM

Hole Size, in	Drilling Fluid System	Measured Depth, ft	Fluid Density, ppg	Plastic Viscosity, cp	Yield Point, lb /100ft^2	API Fluid loss, cm^3	PH	Circulation Rate, GPM
17 1/2	Water-based Mud	0–1,500	8.3-9.2	9-14	1-10	1-10	9-10	500
12 1/4	Water-based Mud	1,500-5,500	8.4-8.6	9-14	1-10	1-10	9-10	500
8 3/4	Water-based Mud	5,000-8,800	8.5	9-14	1-10	1-10	9-10	500

**Mud program may change based on mud engineer's field recommendation.*

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.

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. Fresh water cuttings will be disposed by the service from company. The location will be lined in accordance with the Surface Use Plan of Operations.

6. TESTING, CORING and LOGGING

a) Drill Stem Testing -None anticipated

b) Coring program

The coring will cover the contiguous intervals from 7,410' to 8,346' in order to cover the following coring intervals for research purposes.

Coring interval #1	Look if there is enough of a seal between the lower reservoir units (Salt Wash, Bluff, and Entrada) and the Dakota Ss. (a gas producer in the area).	7,410'-7,530'
Coring interval #2	Look at both the transition between these two members of the Morrison and the lower Brushy Basin's sealing characteristics.	7,621'-7,691'
Coring interval #3	Collect cores in Salt Wash and Bluff formation, cap rock, and underlying formation. Also Collect cores in Entrada formation, cap rock, and underlying formation.	7,866'-8,346'

c) Mud Logging -Mud loggers will be on location from kick off point to TD.

d) Logging -See Below

Well Logging	Logging Program	Depth Intervals
	Surface Casing	
Measurements While Drilling	Near Bit Gamma Ray (GR) and Annular Pressure while drilling (APWD)	1,500'-0'
Open Hole	Triple combo (Resistivity, Density, Neutron, Gamma Ray [GR], Caliper[CALI], and Spontaneous Potential [SP])	1,500'-0'
Cased Hole	Cement bond log [CBL/VDL/CCL], Radial (Azimuthal) cement evaluation, Flexural wave imaging, temperature	1,500'-0'
	Intermediate Casing	
Measurements While Drilling	Near Bit Gamma Ray (Gr) and Annular Pressure while drilling (APWD)	5,500'-1,500'
Open Hole	Triple combo (Resistivity, Density, Neutron, Gamma Ray, Caliper, SP), Dipole sonic, Formation Imager - FMI	5,500'-1,500'
Cased Hole	Cement bond log [CBL/VDL/CCL], Radial (Azimuthal) cement evaluation, Flexural wave imaging, temperature	5,500'-1,500'
	Production Casing	
Measurements While Drilling	Near Bit Gamma Ray (GR) and Annular Pressure while drilling (APWD)	8,800'-5,500'
Open Hole	Triple combo (Resistivity, Density, Neutron, Gamma Ray [GR], caliper, and spontaneous potential [SP]) Dipole Sonic, including long recording times to see reflections from fractures and faults, Formation Imager - FMI, Litho Scanner with Spectral Gamma Ray, Magnetic Resonance Scanner, Dielectric Scanner, Formation Fluid Samples of porous zones, Sidewall Coring	8,800'-5,500' 8,800'-5,500'
Cased Hole	Cement bond log [CBL/VDL/CCL], Radial (Azimuthal) cement evaluation, Flexural wave imaging, temperature, Cased Hole Nuclear Spectroscopy, Casing Inspection Log, Zero Offset Vertical Seismic Profile	8,800'-5,000'

7. ABNORMAL PRESSURES & HYDROGEN SULFIDE

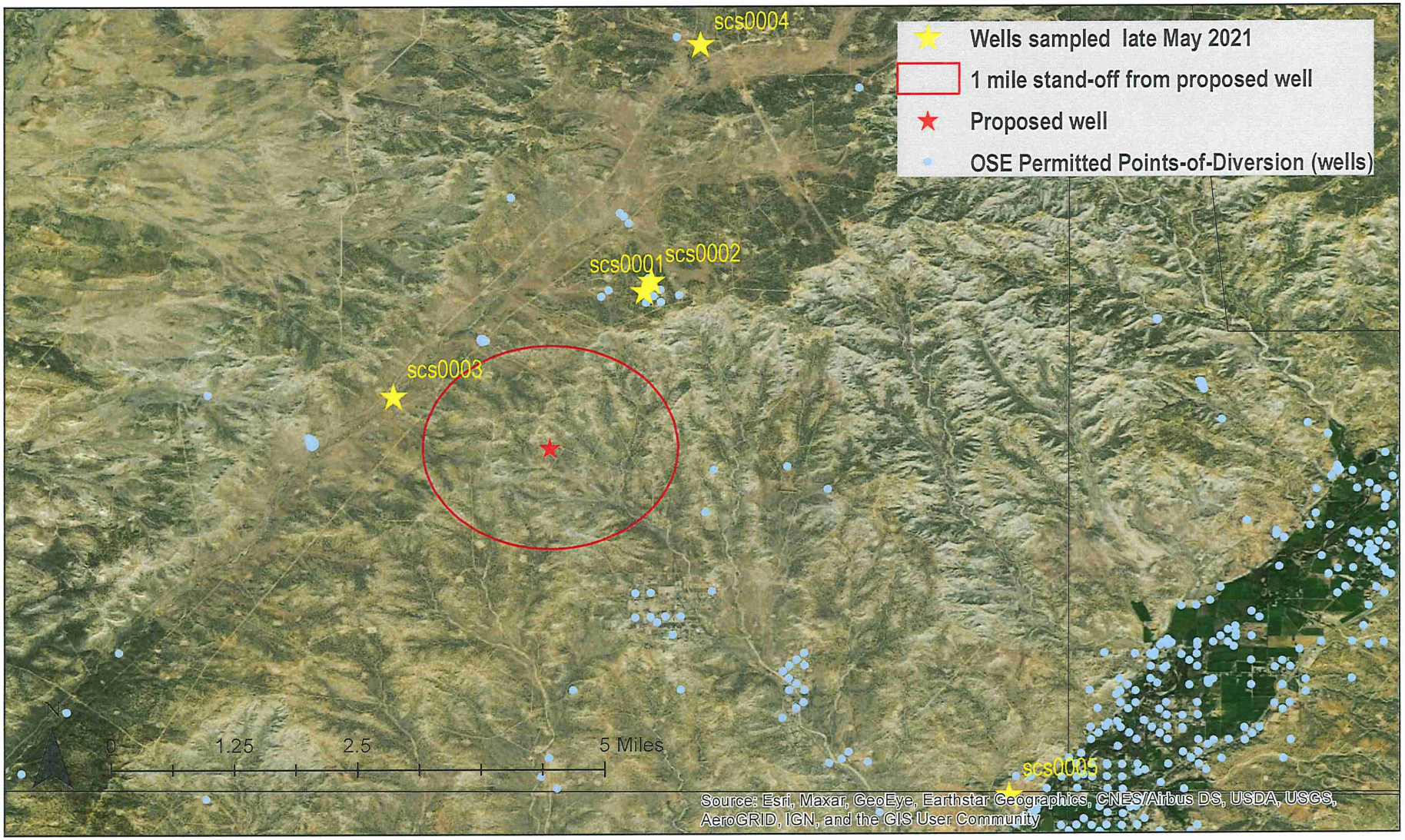
The anticipated bottom hole pressure is +/-3,300 psi. No abnormal pressure or temperatures are anticipated.

No hydrogen sulfide gas is anticipated, however, if H_2S is encountered, the guidelines in Onshore Order No. 6 will be followed.

8. ANTICIPATED START DATE AND DURATION OF OPERATIONS

Drilling is estimated to commence on November 30, 2021. It is anticipated that completion operations will begin within 60 days after the well has been drilled depending on coring and logging schedules with various service companies.

It is anticipated that the drilling of this well will take approximately 31 days.


scs0004
scs0001
scs0002
scs0003
scs0005
Wells sampled late May 2021
1 mile stand-off from proposed well
Proposed well
OSE Permitted Points-of-Diversion (wells)
N
0
1.25
2.5
5 Miles
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Water Sampling and Analysis Report

The sampling and analyses provided were all done in-house at New Mexico Tech. The waters were sampled from shallow (<500 ft) water wells within five miles of the proposed stratigraphic test well site (Figs. 1 and 2). A total seven wells were sampled.

At each well, two 1-L acid washed Nalgene bottles were triple-rinsed with well water and filled. One 1-L bottle was reserved for general chemistry analysis. The other was subsequently resampled with a peristaltic pump with acid-washed silicone tubing into one 45 mL amber glass bottle for stable isotopes, and through a 0.45 μm filter into two 125 mL acid washed Nalgene bottles where were acidified with two drops of UHP nitric acid. One filtered sample was reserved for trace metals analysis and the other was reserved for $^{87}Sr/^{86}Sr$ analysis at NETL. Samples were kept on ice in a cooler or refrigerator until they were analyzed.

The pH of all of the samples are basic, mostly around a pH of 8. SCS006 has a pH of 10.56. Specific conductivities range from 604 to 18,576 uS/cm. Temperatures ranged from 12 C to nearly 20 C.

Sample Data Table																											
pointid	oseid	easting	northing	well depth	use	status	date sampled	temp_c	do_mgL	spcond	pH	orp_mV	Conductivity (uS/cm)	Alkalinity as CO_3^{-2} (mg/L)	Alkalinity as HCO_3^- (mg/L)	Chloride (mg/L)	Fluoride (F) (mg/L)	Bromide (mg/L)	Nitrate (NO_3^-) (mg/L)	Phosphate (mg/L)	Sulfate (SO_4^{2-}) (mg/L)	Lithium(Li) (mg/L)	Sodium (Na) (mg/L)	Potassium (K) (mg/L)	Magnesium (Mg) (mg/L)	Calcium (Ca) (mg/L)	TDS Calculation (mg/L)	Hardness (mg/L)
scs0001	pre-records	763013	4090387	100	irrigation	active	18-May-21	14.73	8.11	1697.00	7.62	-12.50	1430.0	0.0	185.44	30.26	0.00	0.00	4.17	<0.50	635.34	1.42	145.01	5.86	14.29	210.51	1136.7	224.80
scs0002	sj03738	763104	4090558	115	undeveloped	open	19-May-21	12.21	5.63	604.00	8.79	-94.20	510.0	0.0	273.28	8.2	2.0	0.00	1.0	<0.50	56.8	0.07	122.7	0.7	0.8	5.5	332.2	6.30
scs0003	pre-records	759787	4088574	100	not used	inactive but equipped	20-May-21	15.12	1.00	7141.00	8.79	-184.10	6420.0	0.0	68.32	455.93	0.00	0.00	0.00	<0.50	3181.23	6.57	1329.21	27.08	38.99	414.07	5480.1	453.05
scs0004	sj03996	763621	4094459	120	livestock	active	50 May 2021	13.87	0.79	2176.00	8.07	-89.20	1808.0	0.0	295.24	11.19	1.63	0.00	1.63	<0.50	930.05	0.00	127.19	4.48	17.20	328.26	1566.9	345.46
scs0005	sj03309	768040	4082256	240	not used	inactive but equipped				20497.00	7.70																	

Culpepper Martin #106 Analytical Results

New Mexico Tech was only able to obtain page 5 of pages (1-9) of the referenced water analytical results for the Culpepper Martin #106 from Green Analytical. The complete chain of custody was unable to be obtained from HilCorp Energy.

Green Analytical Laboratories
dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303
www.GreenAnalytical.com

Conoco Phillips-Farmington	Project: PO4 & API+ & Fe/Mn	
3401 30th Street	Project Name / Number: Area 1	**Reported:**
Farmington NM, 87401	Project Manager: Darrell Savage	07/20/15 12:00

Culpepper Martin #106

1507057-03 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate*	**3980**	10.0		mg/L	20	07/13/15	2320 B		ABP
Alkalinity, Carbonate*	**40.0**	10.0		mg/L	20	07/13/15	2320 B		ABP
Alkalinity, Hydroxide*	<10.0	10.0		mg/L	20	07/13/15	2320 B		ABP
Alkalinity, Total*	**4020**	10.0		mg/L	20	07/13/15	2320 B		ABP
Chloride*	**710**	50.0	25.0	mg/L	5	07/18/15	4500-Cl- C		LLG
Conductivity*	**9430**	10.0		uS/cm	1	07/08/15	2510 B		MAJ
pH*	**7.91**			pH Units	1	07/08/15	EPA150.1		MAJ
Phosphate (PO4)	**1.12**	0.768	0.276	mg/L	5	07/14/15	EPA365.3/Calc		LLG
Phosphorus, Total	**0.365**	0.250	0.0900	mg/L	5	07/14/15	EPA365.3	Q3	LLG
Resistivity	**106**			ohm/cm	1	07/20/15	2510 B		DJZ
TDS*	**5670**	10.0		mg/L	1	07/13/15	EPA160.1		ABP
Specific Gravity	**1.004**			N/A	1	07/09/15	Hydrometer		ABP
Sulfate	**2.60**	10.0	1.68	mg/L	1	07/14/15	4500-SO42- E		ABP
Potentially Dissolved Metals by ICP									
Hardness	**45.9**	4.62	1.40	mg/L	10	07/10/15	2340 B		JLM
Silica Potentially Dissolved	**24.5**	10.7	5.34	mg/L	10	07/10/15	2340 B		JLM
Barium*	**7.90**	0.100	0.026	mg/L	10	07/10/15	EPA200.7		JLM
Calcium*	**10.3**	0.200	0.028	mg/L	10	07/10/15	EPA200.7		JLM
Iron*	**8.76**	0.500	0.035	mg/L	10	07/10/15	EPA200.7		JLM
Lead*	<1.00	1.00	0.246	mg/L	10	07/10/15	EPA200.7		JLM
Magnesium*	**4.94**	1.00	0.324	mg/L	10	07/10/15	EPA200.7		JLM
Manganese*	**0.155**	0.050	0.007	mg/L	10	07/10/15	EPA200.7		JLM
Potassium*	**37.0**	10.0	3.35	mg/L	10	07/10/15	EPA200.7		JLM
Silicon	**11.5**	5.00	2.50	mg/L	10	07/10/15	EPA200.7		JLM
Sodium*	**2230**	10.0	3.05	mg/L	10	07/10/15	EPA200.7		JLM
Strontium*	**3.60**	1.00	0.004	mg/L	10	07/10/15	EPA200.7		JLM
Zinc*	<0.500	0.500	0.022	mg/L	10	07/10/15	EPA200.7		JLM
Cation/Anion Balance	**6.75**								

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

Table 1. Water sampling well inventory.

Well ID	Easting	Northing	Depth	Fm.	Active pump	Field param.	Gen. chem.	Trace metals	Sr-ratio	Stable isotopes
SCS001	763013	4090387	100	Nac	X	X	X	X	X	X
SCS002	761304	4090558	115	alluv	open	X	X	X	X	X
SCS003	759787	4088574	100	Nac	inactive	X	X	X	X	X
SCS004	763621	4094459	120	Nac	X	X	X	X	X	X
SCS005	762040	4082256	240	Nac	inactive	?				X
SCS006	762939	4086923	UNK	Nac	open	X	X	X	X	X
SCS007	764960	4087558	UNK	Nac	inactive	X	X	X	X	X

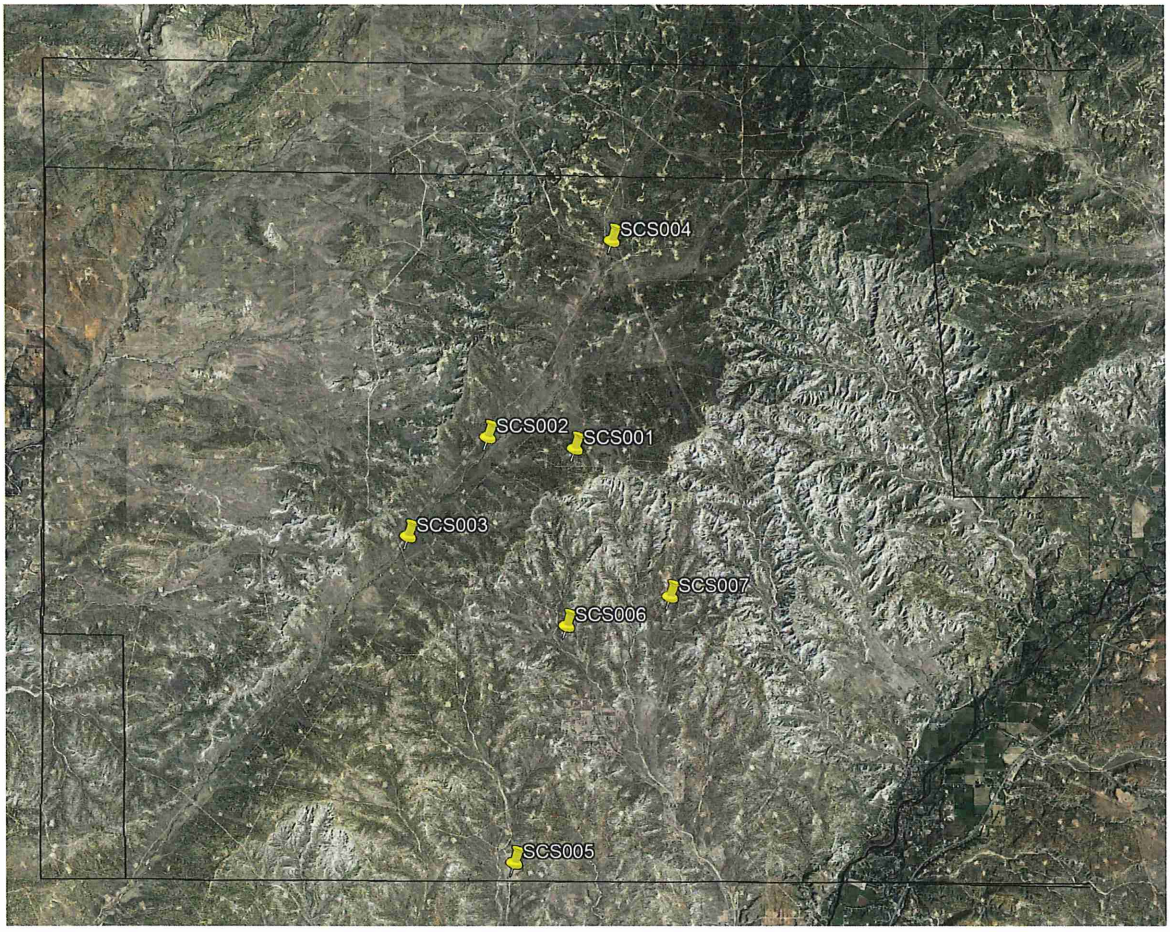


Figure 2. Locations of sampled wells.

Table 2. Field parameters and general chemistry.

Well ID	SCS0001	SCS0002	SCS0003	SCS0004	Blank	SCS0006	SCS0007
pH (field)	7.62	8.79	8.79	8.07	-	10.56	7.87
Spec. Cond. (uS/cm)	1697	604	7741	2176	-	9,181	18,576
DO (mg/L)	8.11	5.63	1.00	0.79	-	0.04	1.08
Temp (C)	14.73	12.21	15.12	13.87	-	15.72	19.87
Alkalinity as CO_3^{-2} (mg/L)						384.0	0.0
Alkalinity as HCO_3^- (mg/L)	185.44	273.28	68.32	295.24	2.44	1,171.0	146.4
Chloride (mg/L)	30.26	8.2	455.93	11.19	0.0	317.1	2,385.2
Fluoride (F^-) (mg/L)	0.00	2.0	0.00	1.63	0.0	0.0	0.0
Bromide (mg/L)	0.00	0.00	0.00	0.00	0.00	0.0	0.0
Nitrate (NO_3^-) (mg/L)	4.17	1.0	0.00	1.63	0.0	0.0	0.0
Phosphate (mg/L)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Sulfate (SO_4^{2-}) (mg/L)	635.34	56.8	3181.23	930.05	0.0	2,909.0	6,655.8
Lithium(Li) (mg/L)	1.42	0.07	6.57	0.00	0.00	0.0	0.0
Sodium (Na) (mg/L)	145.01	122.7	1329.21	127.19	0.6	2,408.4	4,683.3
Potassium (K) (mg/L)	5.86	0.7	27.08	4.48	0.5	18.4	10.8
Magnesium (Mg) (mg/L)	14.29	0.8	38.99	17.20	0.5	0.6	22.4
Calcium (Ca) (mg/L)	210.51	5.5	414.07	328.26	0.9	3.4	430.0
TDS Calculation (mg/L)	1136.7	332.2	5480.1	1566.9	3.7	6,233.1	14,259.7

New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

No records found.

PLSS Search:

Section(s): 14 **Township:** 31N **Range:** 12W

10/14/21 5:03 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER

New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

No records found.

PLSS Search:

Section(s): 13 **Township:** 31N **Range:** 12W

10/14/21 5:03 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER

New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

No records found.

PLSS Search:

Section(s): 14 **Township:** 32N **Range:** 12W

10/14/21 5:04 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER

Well Name	EAST #001A	EAST #007	EAST #007E	EAST #007F	EAST #103	HARPER #001	HARPER #001A	HARPER #002	HARPER #002E	HARPER #003	HARPER COM #100	GRENIER #011F	GRENIER #005B	GRENIER #005A
API	30-045-22269	30-045-10814	30-045-24146	30-045-30438	30-045-27850	30-045-10712	30-045-22850	30-045-10676	30-045-23647	30-045-24675	30-045-27515	30-045-30466	30-045-30000	30-045-21878
Well type	Gas Producer	Gas Producer	Gas Producer	Gas Producer	Gas Producer	Gas Producer	Gas Producer	Gas Producer	Gas Producer	Gas Producer	Gas Producer	Gas Producer	Gas Producer	Gas Producer
Construction														
Date Drilled (Spund)	1/29/1977	05/02/1962	5/24/1980	04/29/2001	6/9/1990	3/18/1952	03/08/1978	3/29/1962	10/22/1979	2/19/1981	03/03/1990	06/01/2001	1/23/2000	9/16/1975
prod)	12/1/1977	6/4/1962	10/1/1980	3/13/2001	1/1/1992	N/A	6/1/1978	N/A	3/1/1980	1/1/1982	1/1/1992	7/26/2001	4/10/2000	12/1/1975
Location	M-14-31N-12W	D-14-31N-12W	L-14-31N-12W	F-14-31N-12W	K-14-31N-12W	I-14-31N-12W	G-14-31N-12W	P-14-31N-12W	H-14-31N-12W	P-14-31N-12W	G-14-31N-12W	D-13-31N-12W	E-13-31N-12W	L-13-31N-12W
Lat	36.8940926	36.9037132	36.8962288	36.9018059	36.895546	36.8962173	36.9014854	36.8938637	36.9011497	36.8943748	36.900753	36.9034233	36.9020424	36.8966255
Long	-108.0737228	-108.0718765	-108.0726929	-108.0677719	-108.0710449	-108.0610046	-108.0624161	-108.0610275	-108.0609055	-108.0620117	-108.0633087	-108.0558319	-108.055397	-108.0540314
Depth	5463	7560	7480	7550	2772	5253	5471	7348	7590	2920	2727	7430	5427	5150
Record of completion	12/1/1977	N/A	10/1/1980	3/13/2001	1/1/1992	N/A	6/1/1978	N/A	3/1/1980	1/1/1982	1/1/1992	7/26/2001	4/10/2000	12/1/1975
Schematic of plugging	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Offset Well Information

Well Name	API
PATTERSON B COM 001	3004504169
PATTERSON B COM 001	3004504170
GOULDING 001	3004504171
OLIVER SRC #001	3004510395
EAST #005	3004510475
ELLIOTT A LS #001	3004510495
RICHARDSON SRC #006	3004510497
EAST #011	3004510599
EAST #004	3004510605
SARAH M HEDGES #002	3004510607
EAST #002	3004510610
RICHARDSON #003	3004510612
EAST #006	3004510637
GRENIER #012	3004510673
HARPER #002	3004510676
CASE B #004	3004510685
GRENIER #008	3004510692
HARPER #001	3004510712
RICHARDSON SRC #007	3004510723
STATE GAS COM BA #001	3004510759
GRENIER #011	3004510763
STATE GAS COM N #001	3004510765
GRENIER #010	3004510768
GRENIER #009	3004510780
PRE-ONGARD WELL #008	3004510784
GRENIER #005	3004510787
GRENIER #002	3004510788
EAST #001	3004510789
RICHARDSON SRC #002	3004510790
RICHARDSON #009	3004510813
EAST #007	3004510814
CHOKE CHERRY CANYON #001	3004510842
DAVIS #002	3004510853
RICHARDSON SRC #001	3004510854
DAVIS #006	3004510855
DAVIS #008	3004510857
RICHARDSON #008	3004510868
DAVIS #009	3004510878
DAVIS #001	3004510931
RICHARDSON SRC #004	3004510933
DAVIS #010	3004510946
DAVIS #004	3004510947
GRENIER #004	3004510949
RICHARDSON #010	3004510950
GRENIER #014	3004510952
DAVIS #007	3004510957
DAVIS #011	3004510998
PATTERSON A COM #001	3004511012
DAVIS #005	3004511013

DUSENBERRY #002	3004511032
GRENIER #015	3004511668
RICHARDSON #011	3004512178
CASE B #010	3004520311
GRENIER #018	3004520427
EAST #013	3004520477
OLIVER #002	3004520481
OLIVER SRC #003	3004520482
EAST #014	3004520488
EAST #015	3004520511
GRENIER #021	3004520533
PRE-ONGARD WELL #019	3004520535
EAST #020	3004520555
DAVIS #014	3004520648
DAVIS #015	3004520653
PATTERSON #003	3004520654
PATTERSON C COM #001	3004520716
DAVIS #016	3004520742
CASE B #014	3004520888
ELLIOT A LS #002	3004521029
RICHARDSON #012	3004521273
GRENIER #004A	3004521795
EAST #002A	3004521798
EAST #022	3004521799
RICHARDSON #001A	3004521877
GRENIER #005A	3004521878
RICHARDSON #002A	3004521879
RICHARDSON #012A	3004521880
DAVIS #001A	3004522112
GRENIER #002A	3004522262
DAVIS #003A	3004522264
DAVIS #002A	3004522266
DAVIS #004A	3004522267
GRENIER #003A	3004522268
EAST #001A	3004522269
DAVIS #006A	3004522314
STATE GAS COM M #001A	3004522765
PATTERSON B COM #001A	3004522839
HARPER #001A	3004522850
EAST #009A	3004522853
RICHARDSON #004A	3004522862
RICHARDSON #003A	3004522864
EAST #005A	3004522865
EAST #004A	3004522866
RICHARDSON #006A	3004522881
DAVIS #017	3004523022
CASE B #004A	3004523191
HEDGES #003	3004523367
DAVIS #018	3004523372
ELLIOTT A LS #001A	3004523383
CASE A #001	3004523458
GRENIER #011E	3004523646

HARPER #002E	3004523647
DAVIS #008E	3004523759
RICHARDSON #007E	3004523794
RICHARDSON #010E	3004523872
DAVIS #007E	3004523873
PATTERSON B COM #001E	3004523959
DAVIS #009E	3004523982
DAVIS #013E	3004524018
RICHARDSON #008E	3004524019
CASE A #004	3004524041
DAVIS #010E	3004524145
EAST #007E	3004524146
RICHARDSON #009E	3004524147
CASE A #004E	3004524618
HARPER #003	3004524675
GRENIER #015E	3004525331
CASE A #001E	3004525624
GRENIER #101	3004527247
PRE-ONGARD WELL #104	3004527249
GRENIER #102	3004527271
PRE-ONGARD WELL #500	3004527294
RICHARDSON #101	3004527295
DAVIS #501	3004527296
DAVIS #502	3004527363
RICHARDSON #100	3004527387
DAVIS #504	3004527395
PRE-ONGARD WELL #102	3004527450
PRE-ONGARD WELL #102	3004527466
PRE-ONGARD WELL #103	3004527468
PRE-ONGARD WELL #100	3004527473
HARPER COM #100	3004527515
DAVIS #505	3004527526
PRE-ONGARD WELL #105	3004527530
PRE-ONGARD WELL #105	3004527559
CASE B #021	3004527777
EAST #103	3004527850
EAST COM #105	3004527851
RICHARDSON #102	3004527865
PRE-ONGARD WELL #001	3004527904
EAST #005M	3004529646
GRENIER #005B	3004530000
GRENIER #002B	3004530007
GRENIER #012M	3004530117
DAVIS #008R	3004530417
DAVIS #007F	3004530437
EAST #007F	3004530438
DAVIS #005B	3004530445
EAST #005B	3004530464
GRENIER #011F	3004530466
HARPER #002F	3004530467
DAVIS #505S	3004530715
EAST #008M	3004530879

EAST #006M	3004530945
EAST #011M	3004530947
EAST #009M	3004530948
SARAH M HEDGES #002M	3004532266
STATE GAS COM M #002	3004532661
SARAH M HEDGES #001A	3004533039
DAVIS #010M	3004533127
STATE GAS COM BB #003	3004533143
DAVIS #013M	3004533157
DUSENBERRY #002B	3004533210
CASE A #004M	3004533466
EAST #020R	3004533492
DAVIS #501S	3004533506
GRENIER #102S	3004533507
ELLIOTT A LS #001M	3004533612
EAST #013R	3004533620
RICHARDSON SRC #100	3004533721
DAVIS #009F	3004534094
PATTERSON B COM #001N	3004534739
RICHARDSON #008N	3004534873
ELLIOTT A #100	3004535199
EAST #006N	3004535255
EAST #103S	3004535312
GRENIER #003	3004560038
SARAH M HEDGES #001	3004560040

Half Mile Radius Review Offset Wells:

A two-mile radius review of was conducted of the offset wells of public record as demonstrated in the tabulated table and 2-mile Radius Map. After an extensive review it was determined that the referenced wells will not be affected by the injection into the Morrison and Entrada Formation.

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Affidavit of Publication

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I, being duly sworn say: **Farmington Daily Times**, a daily newspaper of general circulation published in English at Farmington, said county and state, and that the hereto attached Legal Notice was published in a regular and entire issue of the said DAILY TIMES, a daily newsaper duly qualified for the purpose within the State of New Mexico for publication and appeared in the internet at The Daily Times web site on the following days(s):

07/28/2021

Legal Clerk

Subscribed and sworn before me this July 28, 2021:

State of WI, County of Brown
NOTARY PUBLIC

1-7-25

My commission expires

KATHLEEN ALLEN
Notary Public
State of Wisconsin

New Mexico Tech, located at 801 Leroy Place, Socorro, New Mexico 87801, is filing Form C-108 (Application for Authorization to drill a stratigraphic test well) with the New Mexico Oil Conservation Division for administrative approval for its logging, coring, well SJB CarbonSAFE #1. The proposed well will be located at 2236 FNL 1022 FEL Section 14 Township 31N Range 12W in San Juan County, New Mexico. The well will be drilled to 8,800 feet total depth from surface (6,207 feet surface elevation). Petrophysical logs, geophysical logs, cores and water samples will be collected in open and cased hole. Step rate testing (using water) will be performed in the Entrada formation (at depth of 8,200 feet from surface). The purpose of the data collection is to characterize the subsurface geology of the San Juan Basin. Interested parties opposing the action must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Frances Drive, Santa Fe, New Mexico 87505, within 15 days. Additional information can be obtained from the applicant, Dr. William Ampomah, at (575) 835-5018.
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