

# ALL CONSULTING

GOVERNMENT RELATIONS · ENERGY · PLANNING · TECHNOLOGY  
ENGINEERING · ENVIRONMENTAL

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December 2, 2021

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

Subject: Blackbuck New Mexico LLC – Patriot State SWD #1  
Application for Authorization to Inject

To Whom It May Concern,

On behalf of Blackbuck New Mexico LLC (Blackbuck), ALL Consulting, LLC (ALL) is submitting the enclosed Application for Authorization to Inject for the Patriot State SWD #1, a proposed salt water disposal well, in Eddy County, NM.

Should you have any questions regarding the enclosed application, please contact Nate Alleman at (918) 382-7581 or [nalleman@all-llc.com](mailto:nalleman@all-llc.com).

Sincerely,  
ALL Consulting



Nate Alleman  
Sr. Regulatory Specialist

|         |          |          |           |      |         |
|---------|----------|----------|-----------|------|---------|
| DATE IN | SUSPENSE | ENGINEER | LOGGED IN | TYPE | APP NO. |
|---------|----------|----------|-----------|------|---------|

ABOVE THIS LINE FOR DIVISION USE ONLY

**NEW MEXICO OIL CONSERVATION DIVISION**  
 - Engineering Bureau -  
 1220 South St. Francis Drive, Santa Fe, NM 87505



**ADMINISTRATIVE APPLICATION CHECKLIST**

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

**Application Acronyms:**

- [NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]**  
**[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]**  
**[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]**  
**[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]**  
**[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]**  
**[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]**

[1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]

- [A] Location - Spacing Unit - Simultaneous Dedication  
 NSL  NSP  SD

Check One Only for [B] or [C]

- [B] Commingling - Storage - Measurement  
 DHC  CTB  PLC  PC  OLS  OLM

- [C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery  
 WFX  PMX  SWD  IPI  EOR  PPR

- [D] Other: Specify \_\_\_\_\_

[2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or Does Not Apply

- [A]  Working, Royalty or Overriding Royalty Interest Owners  
 [B]  Offset Operators, Leaseholders or Surface Owner  
 [C]  Application is One Which Requires Published Legal Notice  
 [D]  Notification and/or Concurrent Approval by BLM or SLO  
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office  
 [E]  For all of the above, Proof of Notification or Publication is Attached, and/or,  
 [F]  Waivers are Attached

[3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

**Note: Statement must be completed by an individual with managerial and/or supervisory capacity.**

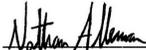
Nate Alleman  
 Print or Type Name

Nathan Alleman  
 Signature

Regulatory Specialist - ALL Consulting 11/30/2021  
 Title Date

nalleman@all-llc.com  
 Date e-mail Address

**APPLICATION FOR AUTHORIZATION TO INJECT**

- I. PURPOSE: \_\_\_\_\_ Secondary Recovery \_\_\_\_\_ Pressure Maintenance  Disposal \_\_\_\_\_ Storage  
Application qualifies for administrative approval?  Yes \_\_\_\_\_ No
- II. OPERATOR: Blackbuck New Mexico LLC  
ADDRESS: 3200 Southwest Freeway, Houston TX 77027  
CONTACT PARTY: Barry Riley PHONE: 713-804-9460
- 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? \_\_\_\_\_ Yes  No  
If yes, give the Division order number authorizing the project: \_\_\_\_\_
- 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.).
- \*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.
- \*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: Nate Alleman TITLE: Sr. Regulatory Specialist  
SIGNATURE:  DATE: 12/02/2021  
E-MAIL ADDRESS: Nalleman@all-llc.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: \_\_\_\_\_

### 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.

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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.

Application for Authorization to Inject  
Well Name: Patriot State SWD #1

### III – Well Data *(The Wellbore Diagram is included as Attachment 1)*

#### A.

##### (1) General Well Information:

Operator: Blackbuck New Mexico LLC (OGRID No. 373619)  
Lease Name & Well Number: Patriot State SWD #1  
Location Footage Calls: Unit Letter M, 671' FSL & 114' FWL  
Legal Location: S9 T25S R27E  
Ground Elevation: 3,238'  
Proposed Injection Interval: 13,500' – 14,378'  
County: Eddy

##### (2) Casing Information:

| Type         | Hole Size | Casing Size | Casing Weight | Setting Depth    | Sacks of Cement | Estimated TOC | Method Determined |
|--------------|-----------|-------------|---------------|------------------|-----------------|---------------|-------------------|
| Surface      | 26"       | 20"         | 94.0 lb/ft    | 475'             | 600             | Surface       | Circulation       |
| Intermediate | 17-1/2"   | 13-3/8"     | 61.0 lb/ft    | 2,240'           | 1,250           | Surface       | Circulation       |
| Production   | 12-1/4"   | 9-5/8"      | 53.5 lb/ft    | 10,384'          | 2,600           | Surface       | Circulation       |
| Liner        | 8-3/4"    | 7-5/8"      | 29.7-lb/ft    | 9,380' – 13,500' | 300             | 9,380'        | CBL               |

DV Tools set at: 1,990' & 5,775'

##### (3) Tubing Information:

7" (29 lb/ft) FJ fiberglass lined tubing with a setting depth of approximately 9,300', and 5.5" (15.5 lb/ft) FJ fiber glasses lined tubing from 9,300' – 13,450'.

##### (4) Packer Information: Baker Hughes SC-2 or equivalent packer set at 13,450'

#### B.

##### (1) Injection Formation Name: Devonian and Silurian formations

**Pool Name:** SWD; Devonian - Silurian

**Pool Code:** 97869

##### (2) Injection Interval: Open-hole injection between 13,500' – 14,378'

##### (3) Drilling Purpose: New Drill for Salt Water Disposal

##### (4) Other Perforated Intervals: No other perforated intervals exist.

##### (5) Overlying Oil and Gas Zones: Below are the approximate formation tops for known oil and gas producing zones in the area.

- Bone Springs (5,705')
- Morrow (11,952')

**Underlying Oil and Gas Zones:** No underlying oil and gas zones exist.

## V – Well and Lease Maps

The following maps are included in **Attachment 2**:

- 2-mile Oil & Gas Well Map
- 1-mile Well Detail List
- 2-mile Lease Map
- 2-mile Mineral Ownership Map
- 2-mile Surface Ownership Map
- 1.5-mile Deep SWD Map (Devonian/Silurian SWDs)
- Potash Lease Map

## VI – AOR Well List

No wells within the 1-mile AOR penetrate the proposed injection zone.

A list of the wells within the 1-mile AOR is included in **Attachment 2**.

## VII – Proposed Operation

- (1) **Proposed Maximum Injection Rate:** 40,000 bpd  
**Proposed Average Injection Rate:** 25,000 bpd
- (2) A **closed system** will be used.
- (3) **Proposed Maximum Injection Pressure:** 2,547 psi (surface)  
**Proposed Average Injection Pressure:** approximately 1,500 – 2,000 psi (surface)
- (4) **Source Water Analysis:** It is expected that the injectate will consist of produced water from production wells completed in the Wolfcamp and Bone Springs formations. Analysis of water from these formations is included in **Attachment 3**.
- (5) **Injection Formation Water Analysis:** The proposed SWD will be injecting water into the Devonian and Silurian formations which are non-productive zones known to be compatible with formation water from the Wolfcamp and Bone Springs formations. Water analyses from Silurian could not be located; however, water analyses from the Devonian formation in the area are included in **Attachment 4**.

## VIII – Geologic Description

The proposed injection interval includes the Devonian and Silurian formations from 13,500 – 14,378 feet. These formations consist of carbonates including light colored dolomite and chert intervals interspersed with some tight limestone intervals. Several thick sections of porous dolomite capable of taking water are present within the subject formations in the area.

The base of the deepest Underground Source of Drinking Water (USDW) is at a depth of approximately 450 feet. Surface casing will be set at a depth of 475 feet, which is 25 feet below the top of the Castille formation, which isolates the USDW. Geophysical log assessment was conducted to accurately determine the top of the Castille formation, and the top and the base of the Salado formation in this area. Water well depths in the area range from approximately 21 - 351 feet below ground surface.

## **IX – Proposed Stimulation Program**

A small cleanup acid job may be used to remove mud and drill cuttings from the formation. However, no other formation stimulation is currently planned.

## **X – Logging and Test Data**

Logs will be submitted to the Division upon completion of the well.

## **XI – Fresh Groundwater Samples**

Based on a review of data from the New Mexico Office of the State Engineer, there are no groundwater wells located within 1-mile of the proposed SWD location; therefore, no groundwater samples were collected in association with this application.

A water well map and details of water wells within 1-mile are included in **Attachment 5**.

## **XII – No Hydrologic Connection Statement**

No faulting is present in the area that would provide a hydrologic connection between the injection interval and overlying USDWs. Additionally, the casing program has been designed to ensure there will be no hydrologic connection between the injection interval and overlying USDWs. A letter from a knowledgeable and qualified expert stating that there is a low risk of seismic activity from the proposed injection activities is included in **Attachment 6**.

## **XIII – Proof of Notice**

A Public Notice was filed with the Carlsbad Current-Argus newspaper and an affidavit is included in **Attachment 7**.

A copy of the application was mailed to the OCD District Office, landowner, and leasehold operators within 1-mile of the proposed SWD location. A list of the recipients, as well as delivery confirmations, are included in **Attachment 7**.

# Attachments

**Attachment 1:**

- C-102
- Wellbore Diagram

**Attachment 2:** Area of Review Information:

- 2-mile Oil & Gas Well Map
- 1-mile Well Detail List
- 2-mile Lease Map
- 2-mile Mineral Ownership Map
- 2-mile Surface Ownership Map
- 1.5-mile Deep SWD Map (Devonian/Silurian SWDs)
- Potash Lease Map

**Attachment 3:** Source Water Analyses

**Attachment 4:** Injection Formation Water Analyses

**Attachment 5:** Water Well Map and Well Data

**Attachment 6:** Induced Seismicity Assessment Letter

**Attachment 7:** Public Notice Affidavit and Notice of Application Confirmations

**Attachment 1**

- C-102
- Wellbore Diagram

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

|                            |  |  |  |  |  |
|----------------------------|--|--|--|--|--|
| <sup>1</sup> API Number    |  | <sup>2</sup> Pool Code<br>97869                        |  | <sup>3</sup> Pool Name<br>SWD; Devonian - Silurian |  |
| <sup>4</sup> Property Code |  | <sup>5</sup> Property Name<br>PATRIOT STATE SWD        |  | <sup>6</sup> Well Number<br>#1                     |  |
| <sup>7</sup> OGRID No.     |  | <sup>8</sup> Operator Name<br>BLACKBUCK NEW MEXICO LLC |  | <sup>9</sup> Elevation<br>3238.0'                  |  |

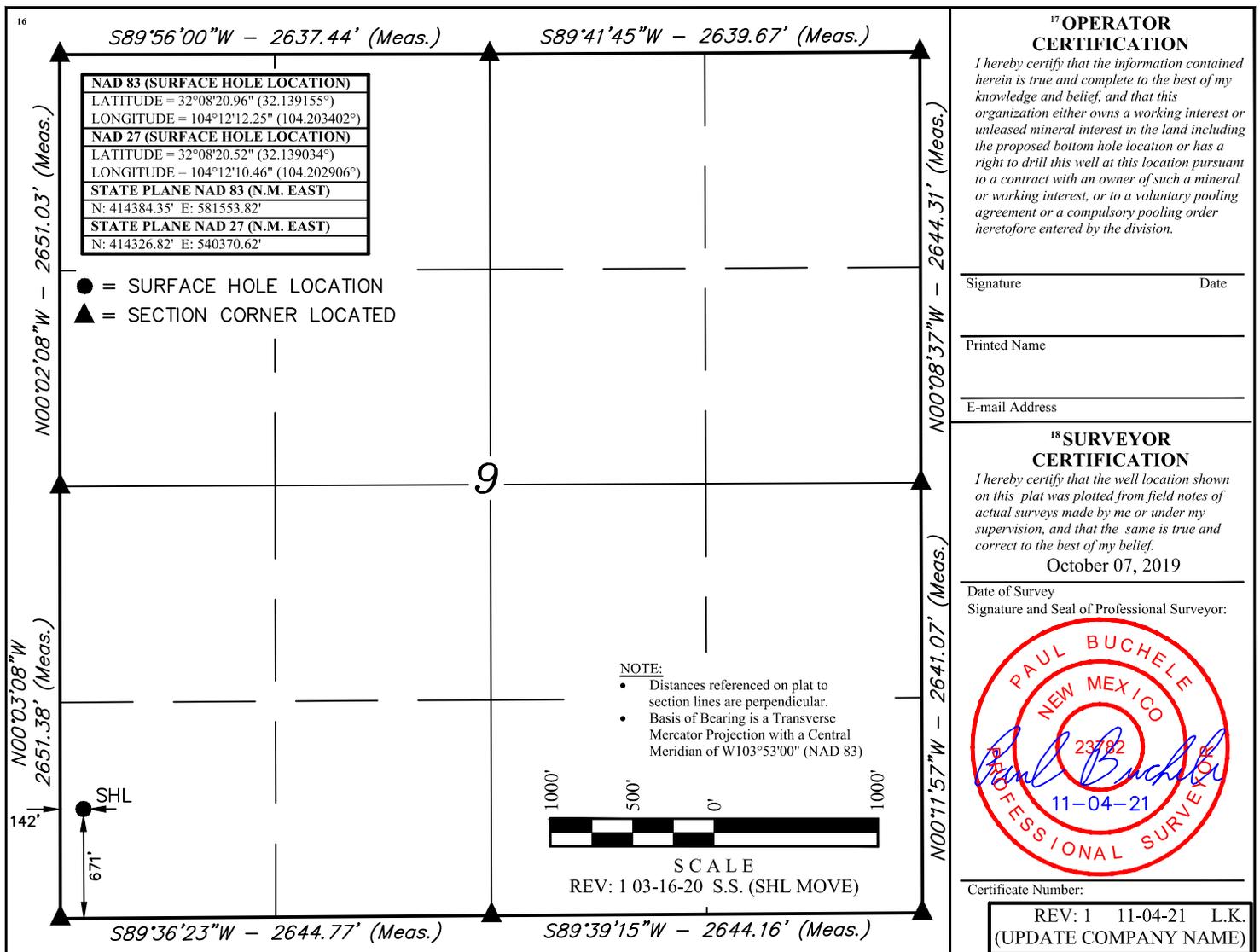
<sup>10</sup> Surface Location

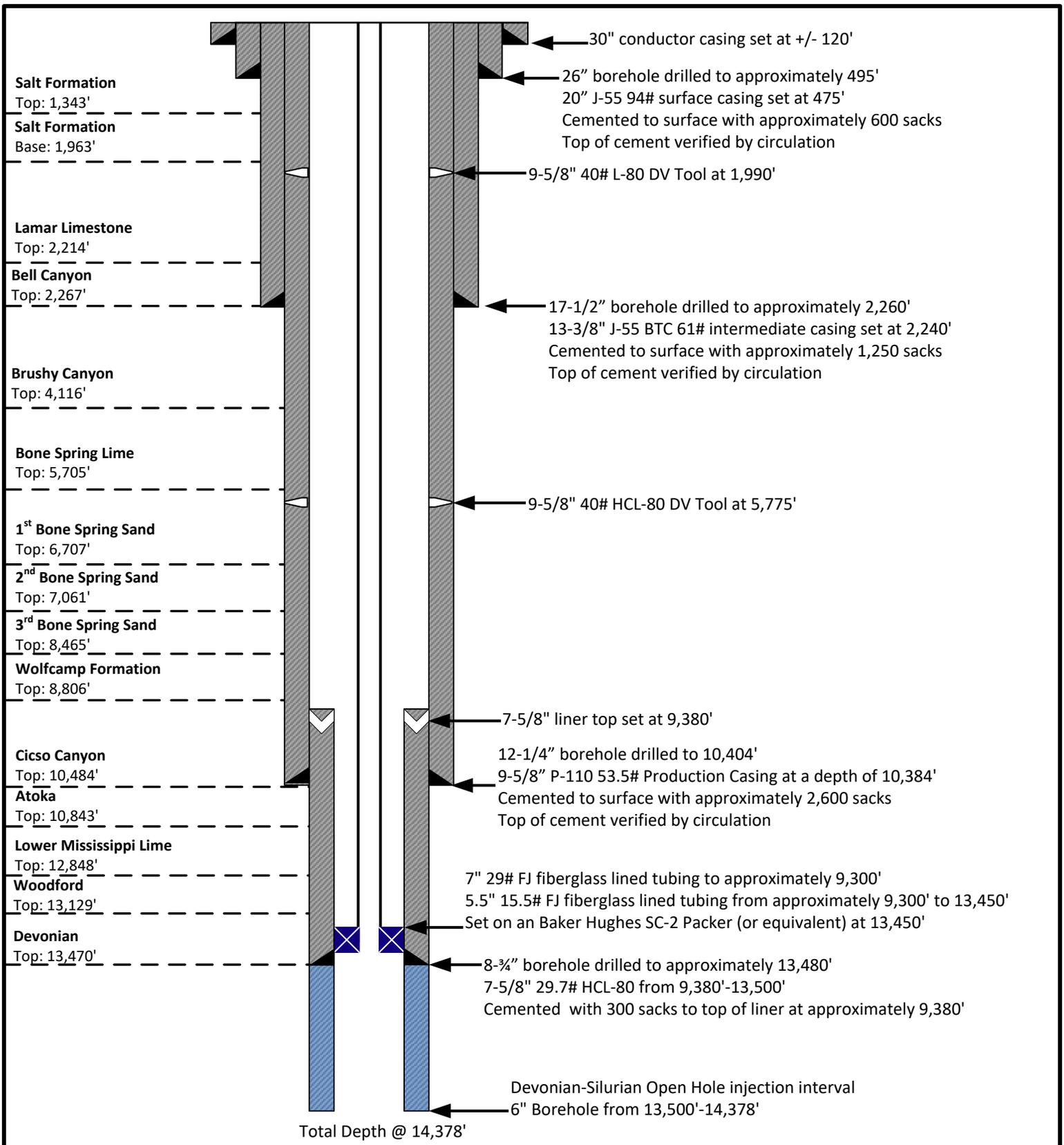
| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| M             | 9       | 25S      | 27E   |         | 671           | SOUTH            | 142           | WEST           | EDDY   |

<sup>11</sup> 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 |
|-------------------------------|---------|-------------------------------|-------|----------------------------------|---------------|-------------------------|---------------|----------------|--------|
|                               |         |                               |       |                                  |               |                         |               |                |        |
| <sup>12</sup> Dedicated Acres |         | <sup>13</sup> Joint or Infill |       | <sup>14</sup> Consolidation Code |               | <sup>15</sup> 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.





*Note: Listed depths and cement volumes are approximates based on available information. All cement calculations use yield of 1.18 cubic foot per sack and include 25% excess.*

NOT TO SCALE



Drawn by: Joshua Ticknor  
 Project Manager: Nathan Alleman  
 Date: 11/29/2021

Blackbuck New Mexico LLC  
 Patriot State SWD #1  
 671' FSL & 142' FWL, UL M, Sec. 9, T25S, R27E  
 Eddy County, NM

## SC-2 Retrievable Packer

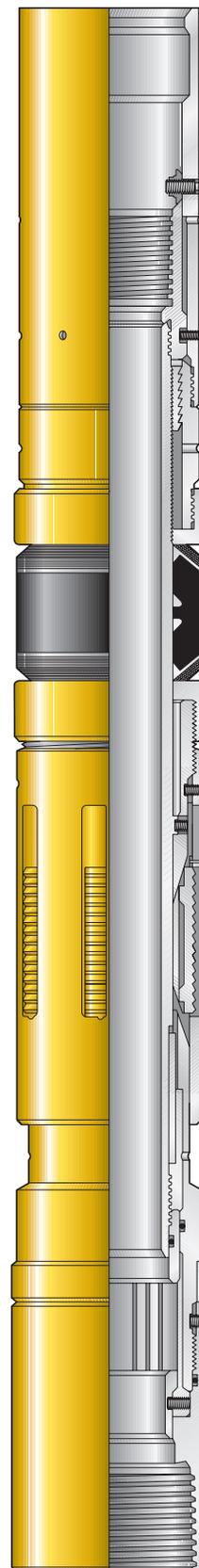
Product Family No. H48807

### APPLICATION

The Baker Hughes SC-2™ retrievable packer is a high-performance, retrievable, sealbore packer. It can be run and set on electric wireline, slick line/tubing with the same setting tools used for the D packer.

### Advantages

- Can be set with wireline or hydraulic setting tools
- Can be equipped with a variety of bottom guides (must be ordered separately)
- Packer easily accommodates tubing expansion or contraction
- Tubing and seals can be removed without accidentally unsetting packer
- Easy retrieval due to caged slips and releasing mechanism located in protected area below packing element
- Packer's releasing mechanism is not affected by differential pressure or tailpipe weight
- Case-hardened slips suitable for all grades of casing including V-150
- Compatible with standard Baker Hughes' seal accessories, tubing-conveyed perforating and gravel-packing systems



SC-2 Retrievable Packer  
Product Family No. H48807

## SPECIFICATION GUIDE

SC-2™ Retrievable Packer, Product Family No. H48807

| Casing |       |                | Packer *  |           |                  |       |                     |       |
|--------|-------|----------------|-----------|-----------|------------------|-------|---------------------|-------|
| OD     |       | T & C Weight ▼ | Size ●    |           | Max Gage Ring OD |       | Max Packing Element |       |
| in.    | mm    | lb/ft          |           |           | in.              | mm    | in.                 | mm    |
| 5-1/2  | 139.7 | 20-23          | 55A2-26   |           | 4.485            | 113.9 | 4.406               | 111.9 |
|        |       | 17-20          | 55A4-26   |           | 4.593            | 116.6 | 4.500               | 114.3 |
|        |       | 13-15.5        | 55B-26    |           | 4.765            | 121.0 | 4.687               | 119.0 |
| 7      | 177.8 | 35-38          | 70A2-32   |           | 5.735            | 145.6 | 5.687               | 144.4 |
|        |       | 29-32          | 70A4-32   |           | 5.820            | 147.8 | 5.750               | 146.0 |
|        |       | 23-29          | 70B-32    |           | 6.000            | 152.4 | 5.937               | 150.8 |
|        |       | 17-20          | 70C-32    |           | 6.250            | 158.7 | 6.187               | 157.1 |
| 7-5/8  | 193.6 | 33.7-39        | 76A2-32 ♦ | 76A2-40 ♦ | 6.440            | 163.6 | 6.375               | 161.9 |
|        |       | 29.7-33.7      | 76A4-32 ♦ | 76A4-40 ♦ | 6.580            | 167.1 | 6.500               | 165.1 |
|        |       | 24-29.7        | 76B2-32 ♦ | 76B2-40 ♦ | 6.690            | 169.9 | 6.625               | 168.2 |
|        |       | 20-24          | 76B4-32 ♦ | 76B4-40 ♦ | 6.784            | 172.3 | 6.718               | 170.6 |
| 9-5/8  | 244.4 | 53.5-58.4      | 96A-47    |           | 8.191            | 208.0 | 8.125               | 206.3 |
|        |       | 47-53.5        | 96A2-47   |           | 8.319            | 211.3 | 8.250               | 209.5 |
|        |       | 40-47          | 96A4-47   |           | 8.465            | 215.0 | 8.375               | 212.7 |
|        |       | 36-40          | 96B-47    |           | 8.619            | 218.9 | 8.500               | 215.9 |

| Size    | Sealbore Dia for Seal Nipples ■ |       | Seal Accessory Size ▲ | Min Bore Thru Seal Nipples |              |
|---------|---------------------------------|-------|-----------------------|----------------------------|--------------|
|         | in.                             | mm    |                       | in.                        | mm           |
| 55A2-26 | 2.688                           | 68.2  | 40-26                 | 1.968                      | 50.0         |
| 55A4-26 |                                 |       |                       |                            |              |
| 55B-26  |                                 |       |                       |                            |              |
| 70A2-32 | 3.250                           | 82.5  | 80-32 or 81-32        | 2.406 or 1.995             | 61.1 or 50.6 |
| 70A4-32 |                                 |       |                       |                            |              |
| 70B-32  |                                 |       |                       |                            |              |
| 70C-32  |                                 |       |                       |                            |              |
| 76A2-32 | 4.000                           | 101.6 | 80-40                 | 3.000                      | 72.6         |
| 76A2-40 |                                 |       |                       |                            |              |
| 76A4-32 | 3.250                           | 82.5  | 80-32 or 81-32        | 2.406 or 1.995             | 61.1 or 50.6 |
| 76A4-40 |                                 |       |                       |                            |              |
| 76B2-32 | 4.000                           | 101.6 | 80-40                 | 3.000                      | 72.6         |
| 76B2-40 |                                 |       |                       |                            |              |
| 76B4-32 | 3.250                           | 82.5  | 80-32 or 81-32        | 2.406 or 1.995             | 61.1 or 50.6 |
| 76B4-40 |                                 |       |                       |                            |              |
| 96A-47  | 4.750                           | 120.6 | 190-47 or 192-47      | 3.000 or 3.875             | 72.6 or 98.4 |
| 96A2-47 |                                 |       |                       |                            |              |
| 96A4-47 |                                 |       |                       |                            |              |
| 96B-47  |                                 |       |                       |                            |              |

\* For information on packer or accessory sizes not found in this specification guide, refer to Baker Hughes' packer systems technical manual or your Baker Hughes representative.

● When proposed for use in other than the casing weight range shown, contact your Baker Hughes representative.

■ The maximum OD (including tolerance) of any part run through a production packer should be at least 1/16-in. (1.59mm) smaller than the minimum bore through the packer body. This may occasionally require that the coupling ODs be turned down.

▲ Tubing-seal assemblies, tubing seal and spacer nipples.

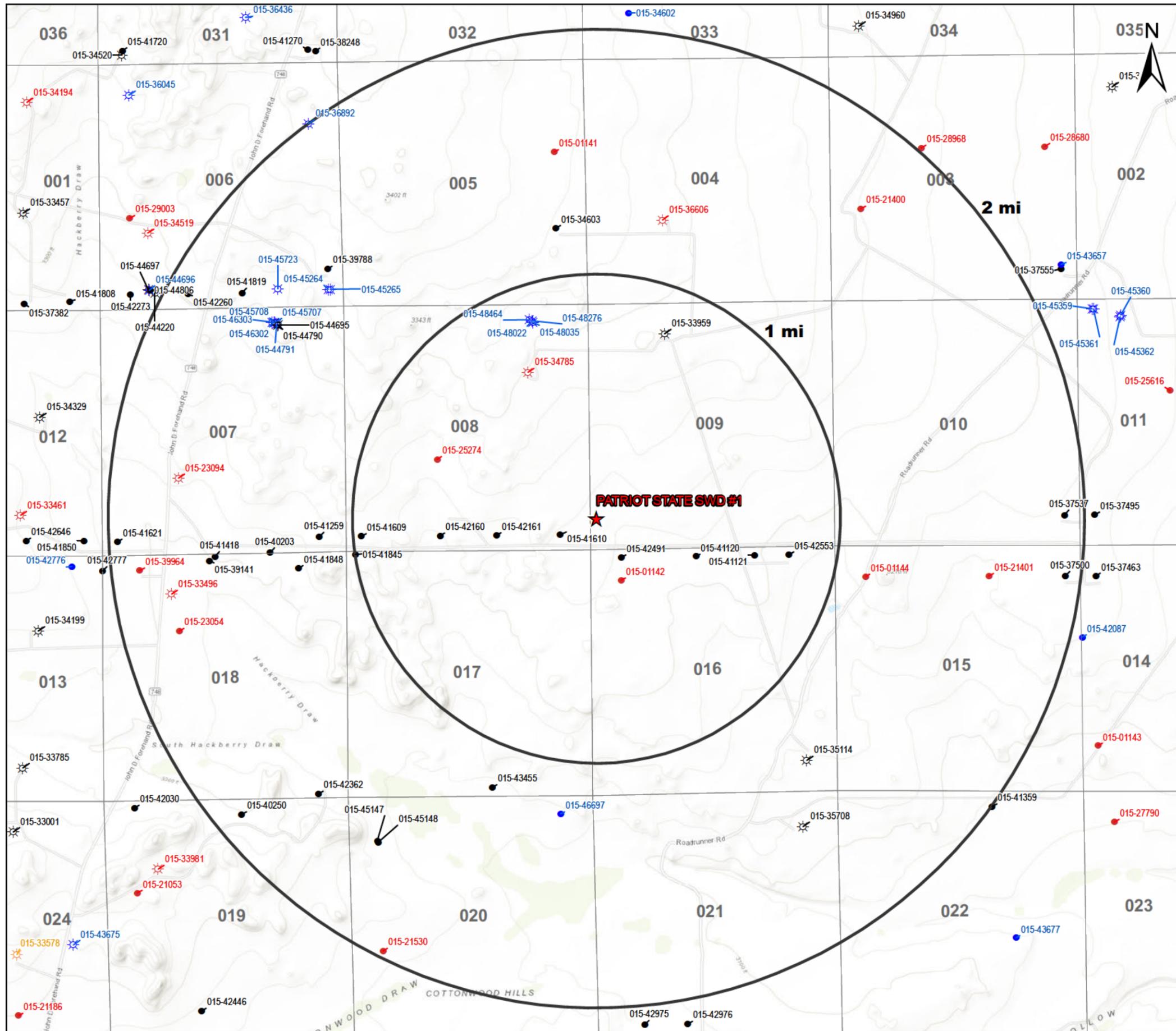
◆ This tool available with 3.250 in. (82.5 mm) or 4.000 in. (101.6 mm) seal bore diameter and uses sizes 80-32/ 81-32 or 80-40 accessories respectively.

▼ When selecting a SC-2 packer for a casing weight common to two size packers choose the packer with the smallest OD to maximize running clearances. Example: In 5-1/2-in. (139.7-mm), 20.0-lb/ft casing, use size 55A2-26.

## **Attachment 2**

### Area of Review Information:

- 2-mile Oil & Gas Well Map
- 1-mile Well Detail List
- 2-mile Lease Map
- 2-mile Mineral Ownership Map
- 2-mile Surface Ownership Map
- 1.5-mile Deep SWD Map (Devonian/Silurian SWDs)
- Potash Lease Map



### Legend

- ★ Proposed SWD
- ☀ Gas, Active (15)
- ⚙ Gas, New (20)
- ☀ Gas, Plugged (8)
- ☀ Gas, Temporarily Abandoned (1)
- Oil, Active (44)
- Oil, New (7)
- Oil, Plugged (17)

Source Info: NMOCD O&G Wells updated 10/27/2021  
<https://www.emnrd.nm.gov/ocd/ocd-data/ftp-server/1/>

## O&G Wells Area of Review

### PATRIOT STATE SWD #1 Eddy County, New Mexico

|                           |                   |                              |
|---------------------------|-------------------|------------------------------|
| Proj Mgr:<br>Nate Alleman | November 30, 2021 | Mapped by:<br>Ben Bockelmann |
|---------------------------|-------------------|------------------------------|

Prepared for:  
**BLACKBUCK  
NEW MEXICO LLC**

Prepared by:  
**ALLCONSULTING**

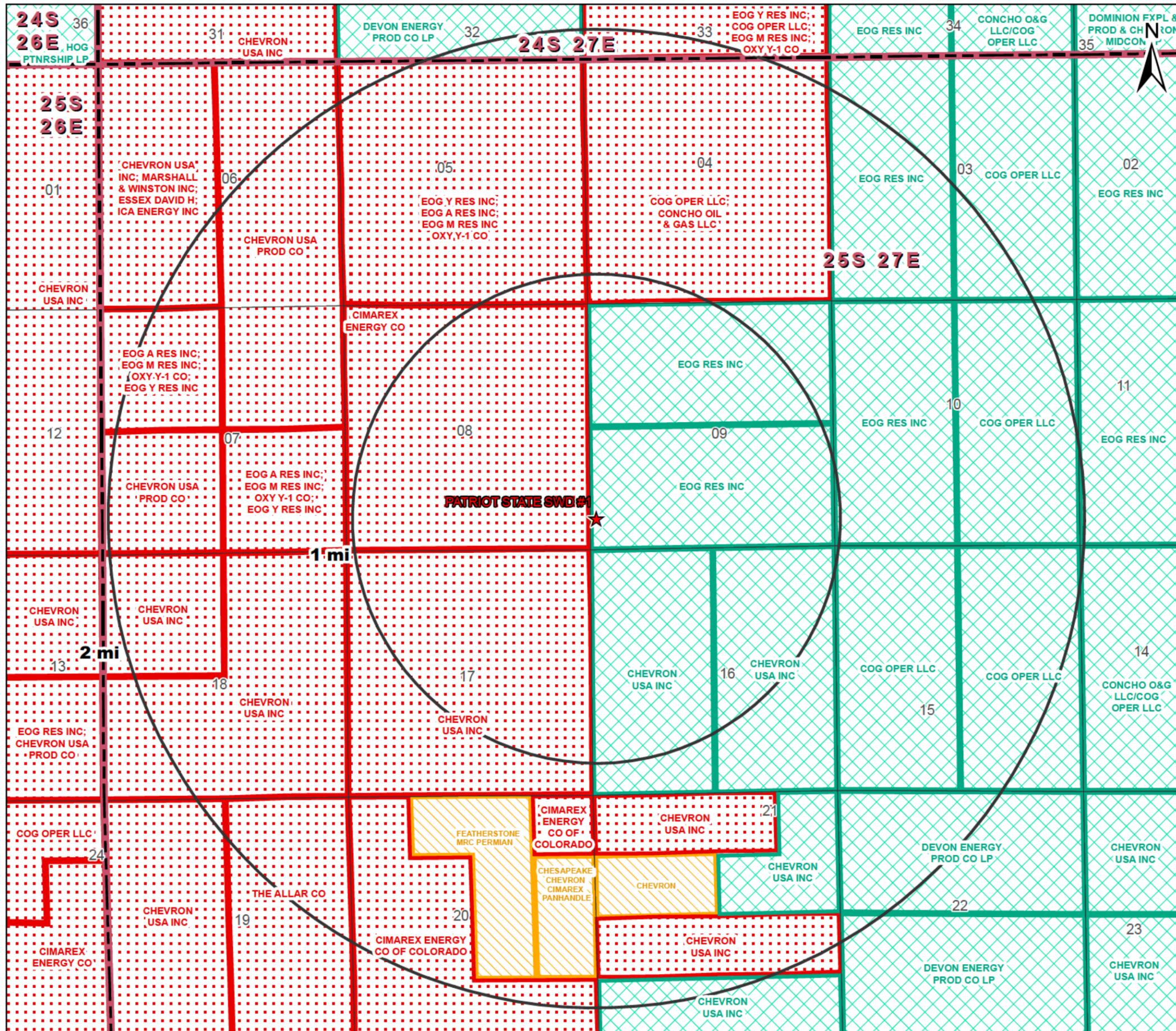
0 0.5 1 2 Miles

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

### AOR Tabulation for Patriot State SWD #1 (Top of Injection Interval: 13,500')

| Well Name                         | API#         | Well Type | Operator                                    | Spud Date  | Location<br>(Sec., Tn., Rng.) | Total Vertical<br>Depth<br>(feet) | Penetrate<br>Inj. Zone? |
|-----------------------------------|--------------|-----------|---|------------|-------------------------------|-----------------------------------|-------------------------|
| HAYHURST 16 25 27 STATE #003H     | 30-015-42491 | Oil       | CHEVRON U S A INC                           | 8/15/2014  | D-16-25S-27E                  | 7550                              | No                      |
| HAYHURST 16 25 27 STATE #001H     | 30-015-41120 | Oil       | CHEVRON U S A INC                           | 5/18/2014  | C-16-25S-27E                  | 7619                              | No                      |
| HAYHURST 16 25 27 STATE #002H     | 30-015-41121 | Oil       | CHEVRON U S A INC                           | 3/23/2014  | B-16-25S-27E                  | 6907                              | No                      |
| HAYHURST 16 25 27 STATE #004H     | 30-015-42553 | Oil       | CHEVRON U S A INC                           | 9/10/2014  | A-16-25S-27E                  | 7582                              | No                      |
| HAYHURST 17 FEDERAL #001H         | 30-015-41845 | Oil       | CHEVRON U S A INC                           | 2/23/2014  | D-17-25S-27E                  | 12151                             | No                      |
| WHITE CITY 8 FEDERAL #003H        | 30-015-42160 | Oil       | CIMAREX ENERGY CO.                          | 7/18/2014  | N-08-25S-27E                  | 7419                              | No                      |
| WHITE CITY 8 FEDERAL #002H        | 30-015-41609 | Oil       | CIMAREX ENERGY CO.                          | 12/19/2013 | M-08-25S-27E                  | 7354                              | No                      |
| WHITE CITY 8 FEDERAL #001         | 30-015-34785 | Plugged   | CIMAREX ENERGY CO.                          | 7/18/2006  | H-08-25S-27E                  | Plugged (12405)                   | No                      |
| WHITE CITY 8 FEDERAL #004H        | 30-015-42161 | Oil       | CIMAREX ENERGY CO.                          | 9/23/2015  | O-08-25S-27E                  | 7490                              | No                      |
| WHITE CITY 8 FEDERAL #005H        | 30-015-41610 | Oil       | CIMAREX ENERGY CO.                          | 9/7/2015   | P-08-25S-27E                  | 7524                              | No                      |
| WHITE CITY 8 17 FEDERAL COM #017H | 30-015-48022 | Oil       | CIMAREX ENERGY CO.                          | New Drill  | A-08-25S-27E                  | Proposed (9914)                   | No                      |
| WHITE CITY 8 17 FEDERAL COM #015H | 30-015-48035 | Gas       | CIMAREX ENERGY CO.                          | New Drill  | A-08-25S-27E                  | Proposed (8961)                   | No                      |
| WHITE CITY 8 17 FEDERAL COM #016H | 30-015-48276 | Gas       | CIMAREX ENERGY CO.                          | New Drill  | A-08-25S-27E                  | Proposed (8961)                   | No                      |
| WHITE CITY 8 17 FEDERAL COM #018H | 30-015-48464 | Gas       | CIMAREX ENERGY CO.                          | New Drill  | A-08-25S-27E                  | Proposed (9914)                   | No                      |
| PADRON BGM STATE COM #001         | 30-015-33959 | Gas       | EOG RESOURCES INC                           | 2/25/2005  | C-09-25S-27E                  | 12535                             | No                      |
| PRE-ONGARD WELL #001              | 30-015-01142 | Plugged   | PRE-ONGARD WELL OPERATOR (R.E. Sutton)      | Unknown*   | D-16-25S-27E                  | Plugged (2320)                    | No                      |
| PRE-ONGARD WELL #001              | 30-015-25274 | Plugged   | PRE-ONGARD WELL OPERATOR (Max Wilson, Inc.) | 5/15/1985  | K-08-25S-27E                  | Plugged (3609)                    | No                      |

**Notes:** No wells within the 1-mile AOR penetrate the injection interval.

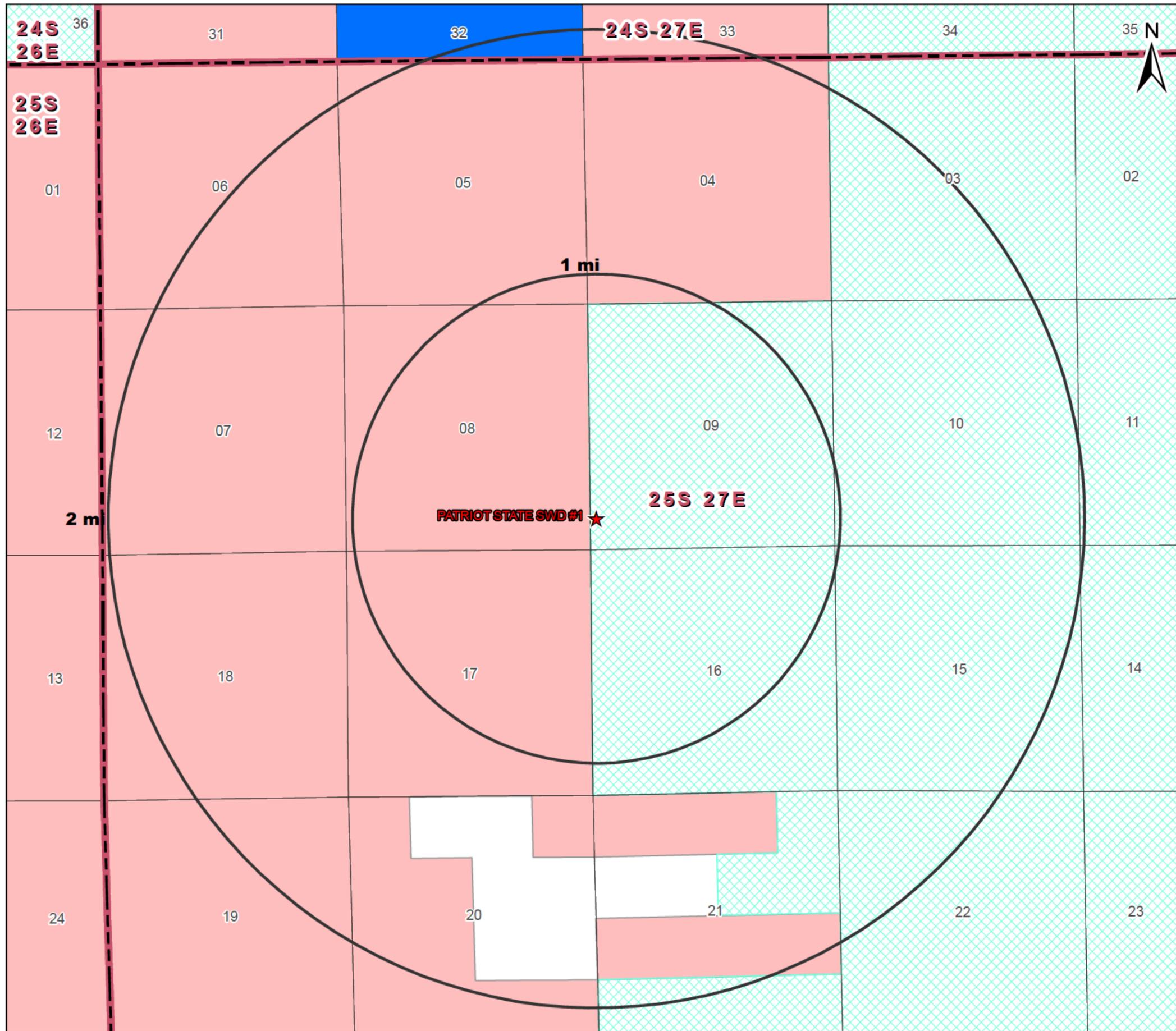


### Legend

- ★ Proposed SWD
- NMSLO Mineral Leases
- BLM Mineral Leases
- Private Mineral Leases

|  |                   |                              |
|--|-------------------|------------------------------|
| <b>Mineral Lease Area of Review</b>                    |                   |                              |
| <b>PATRIOT STATE SWD #1</b><br>Eddy County, New Mexico |                   |                              |
| Proj Mgr:<br>Nate Alleman                              | November 30, 2021 | Mapped by:<br>Ben Bockelmann |
| Prepared for:<br><b>BLACKBUCK<br/>NEW MEXICO LLC</b>   |                   | Prepared by:<br>             |

Source Info: BLM Mineral Leases (<https://catalog.data.gov/dataset/blm-new-mexico-mineral-ownership>) & NMSLO O&G Leases (<http://www.nmstatelands.org/maps-gis/gis-data-download/>)



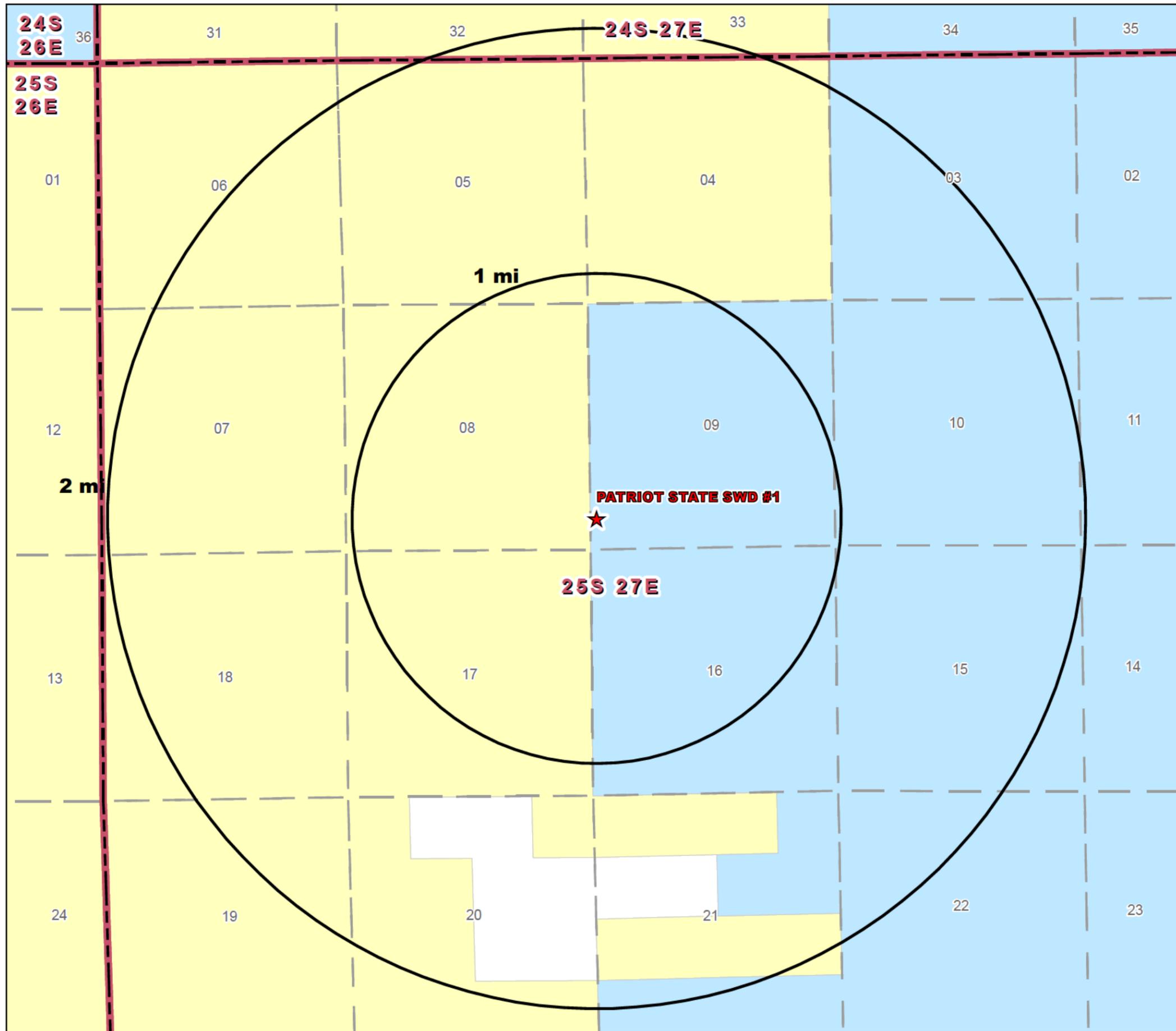
### Legend

- ★ Proposed SWD
- Private minerals
- Subsurface minerals (NMSLO)
- ▨ Surface and Subsurface minerals (NMSLO)
- All minerals are owned by U.S. (BLM)

|   |                   |                                      |
|---|-------------------|--------------------------------------|
| <b>Mineral Ownership<br/>Area of Review</b>             |                   |                                      |
| <b>PATRIOT STATE SWD #1<br/>Eddy County, New Mexico</b> |                   |                                      |
| Proj Mgr:<br>Nate Alleman                               | November 30, 2021 | Mapped by:<br>Ben Bockelmann         |
| Prepared for:<br><b>BLACKBUCK<br/>NEW MEXICO LLC</b>    |                   | Prepared by:<br><b>ALLCONSULTING</b> |

0 0.5 1 2 Miles

Source Info: BLM Mineral Ownership (<https://catalog.data.gov/dataset/blm-new-mexico-mineral-ownership>) & NMSLO Ownership (<http://www.nmstatelands.org/maps-gis/gis-data-download/>)



**Legend**

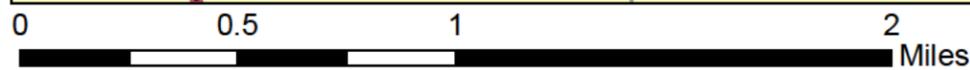
★ Proposed SWD

**Surface Ownership**

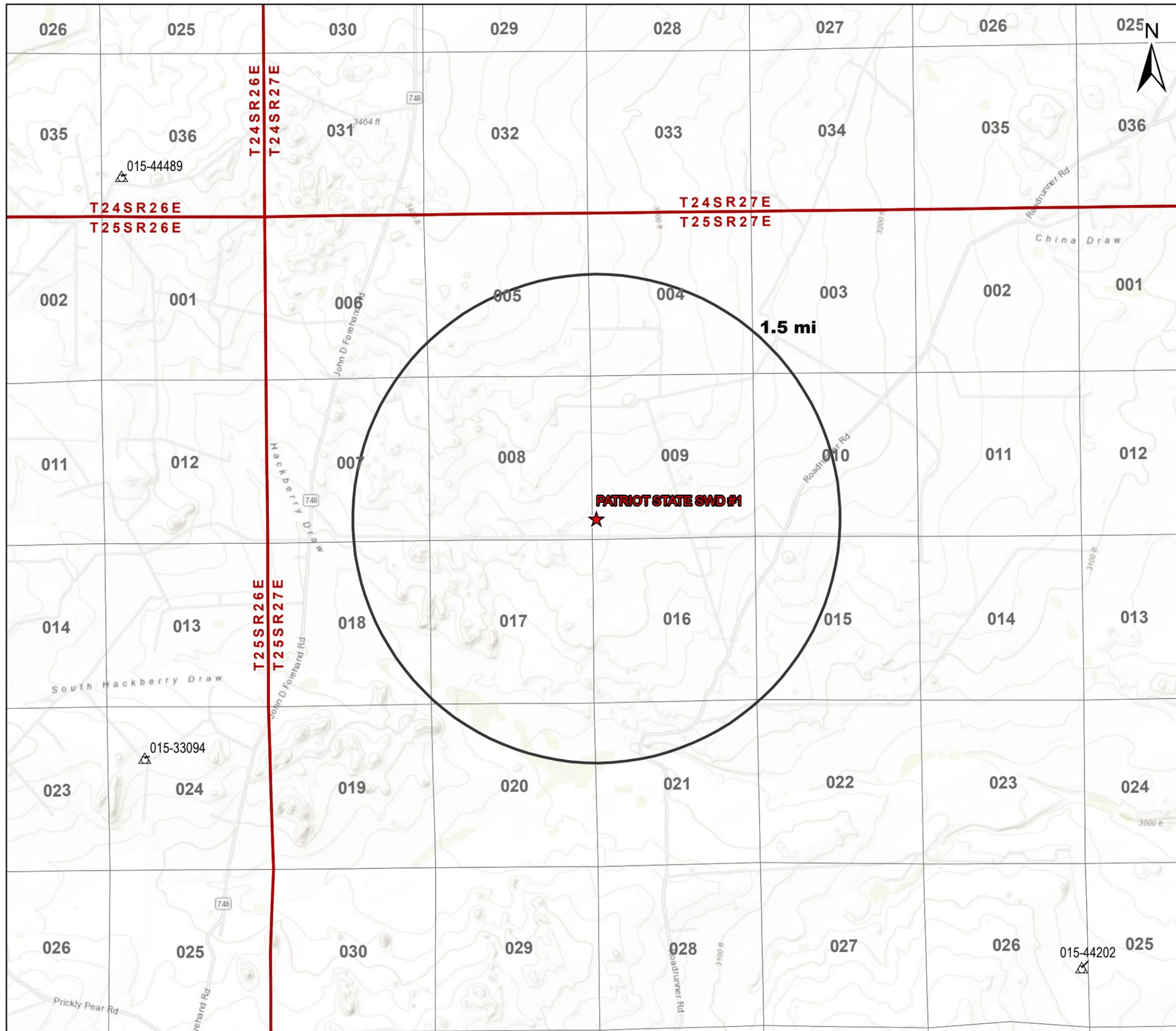
- BLM
- Private
- State



|  |                   |                                      |
|--|-------------------|--------------------------------------|
| <b>Surface Ownership<br/>Area of Review</b>            |                   |                                      |
| <b>PATRIOT STATE SWD #1</b><br>Eddy County, New Mexico |                   |                                      |
| Proj Mgr:<br>Nate Alleman                              | November 30, 2021 | Mapped by:<br>Ben Bockelmann         |
| Prepared for:<br><b>BLACKBUCK<br/>NEW MEXICO LLC</b>   |                   | Prepared by:<br><b>ALLCONSULTING</b> |



Source Info: BLM Surface Ownership (<https://catalog.data.gov/dataset/blm-new-mexico-surface-ownership>)



### Legend

- ★ Proposed SWD
- Deep SWDs**
- △ Salt Water Injection, Active (3)

Source Info: NMOCD O&G Wells updated 10/27/2021  
 (<https://www.emnrd.nm.gov/ocd/ocd-data/ftp-server/>)

## Deep SWDs Area of Review

### PATRIOT STATE SWD #1

Eddy County, New Mexico

Proj Mgr:  
Nate Alleman

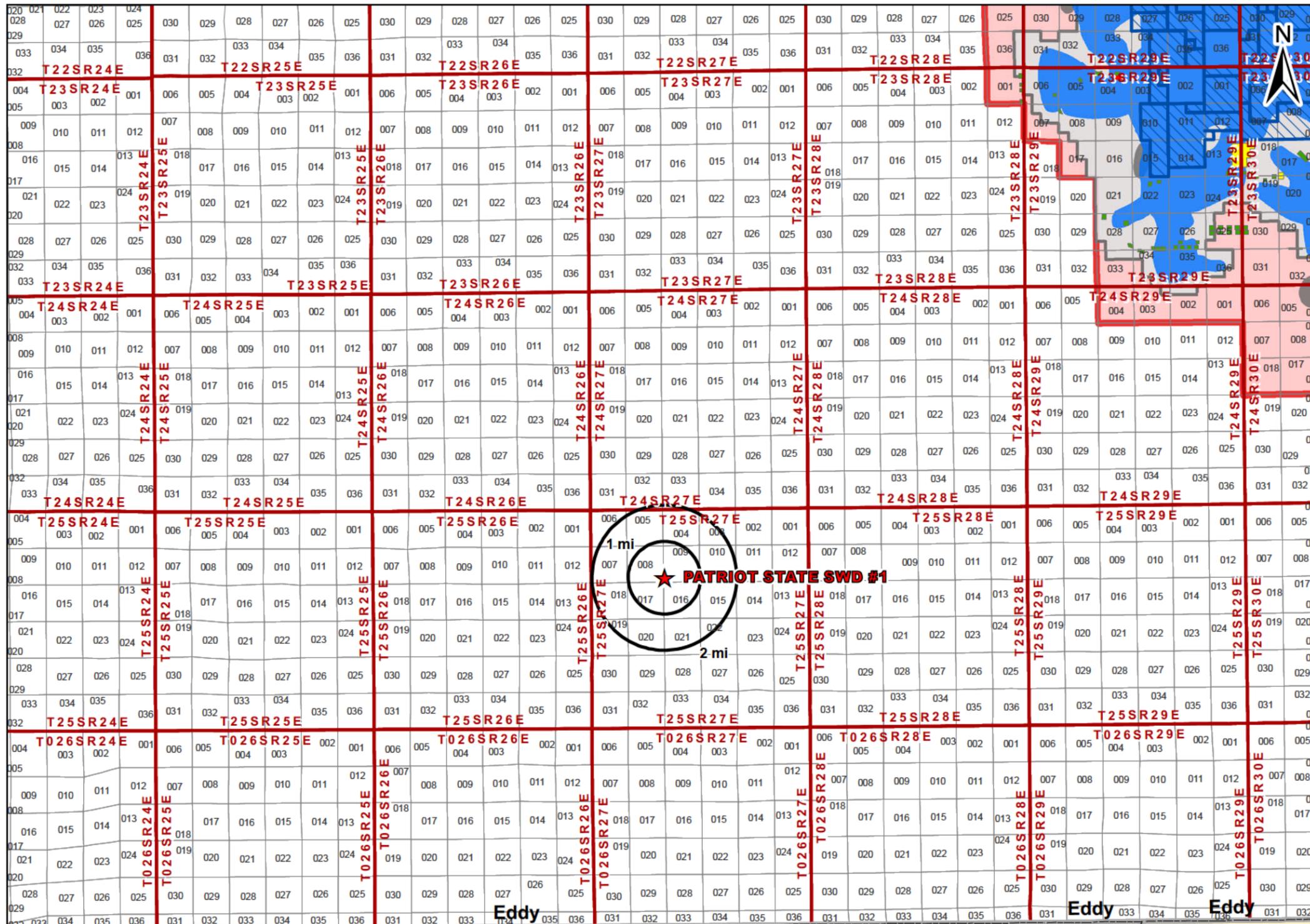
November 30, 2021

Mapped by:  
Ben Bockelmann

Prepared for:  
**BLACKBUCK  
NEW MEXICO LLC**

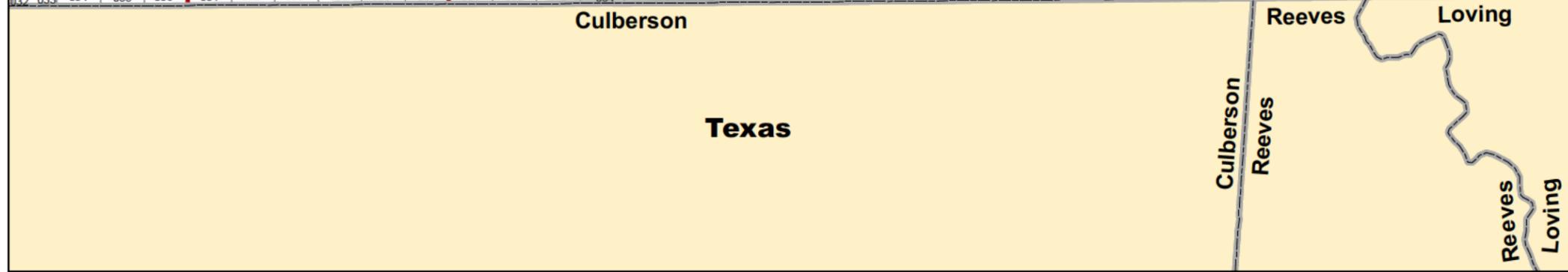
Prepared by:  
**ALLCONSULTING**



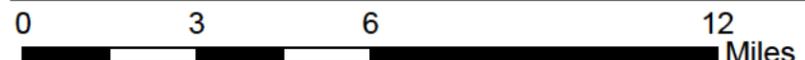


**Legend**

- ★ Proposed SWD
- Potash Leases
- Ore Type - Measured
- Ore Type - Indicated
- KPLA
- SOPA
- Drill Islands**
- Status**
- Approved
- Denied
- Nominated
- Withdrawn



|  |                   |                              |
|--|-------------------|------------------------------|
| <b>Potash Leases<br/>Area of Review</b>                |                   |                              |
| <b>PATRIOT STATE SWD #1</b><br>Eddy County, New Mexico |                   |                              |
| Proj Mgr:<br>Nate Alleman                              | November 30, 2021 | Mapped by:<br>Ben Bockelmann |
| Prepared for:<br><b>BLACKBUCK<br/>NEW MEXICO LLC</b>   | Prepared by:<br>  |                              |



Source Info: BLM CFO Potash ([https://www.nm.blm.gov/shapeFiles/cfo/carlsbad\\_spatial\\_data.html](https://www.nm.blm.gov/shapeFiles/cfo/carlsbad_spatial_data.html))

**Attachment 3**

Source Water Analyses

**Source Water Analysis**

**Blackbuck Resources, LLC - Wolfcamp and Bone Spring Formation**

| Wellname                            | API        | Latitude  | Longitude    | Section | Township | Range | Unit | Ftgns | Ftgew | County | State | Company | Field | Formation            | Tds_mgL  | Chloride_mgL | Bicarbonate_mgL | Sulfate_mgL |
|-------------------------------------|------------|-----------|--------------|---------|----------|-------|------|-------|-------|--------|-------|---------|-------|----------------------|----------|--------------|-----------------|-------------|
| DOC HOLLIDAY 32 STATE COM #001      | 3001541145 | 32.180412 | -104.220192  | 32      | 24S      | 27E   | D    | 150N  | 330W  | EDDY   | NM    |         |       | BONE SPRING 2ND SAND | 193316.3 | 120600       | 170.8           | 17          |
| PREACHER 19 FEDERAL #003H           | 3001541887 | 32.19577  | -104.2276001 | 19      | 24S      | 27E   | O    | 150S  | 1980E | EDDY   | NM    |         |       | BONE SPRING 2ND SAND | 193786.1 | 119000       | 130             | 34          |
| PREACHER 19 FEDERAL #003H           | 3001541887 | 32.19577  | -104.2276001 | 19      | 24S      | 27E   | O    | 150S  | 1980E | EDDY   | NM    |         |       | BONE SPRING 2ND SAND | 177819.6 | 108940.6     | 366             | 0           |
| WHITE CITY PENN GAS COM UNIT 1 #001 | 3001500408 | 32.193752 | -104.3088455 | 29      | 24S      | 26E   | A    | 660N  | 660E  | EDDY   | NM    |         |       | WOLFCAMP             |          | 10000        | 645             | 1320        |
| JOSEY WALES 16 STATE COM #003H      | 3001541090 | 32.2104   | -104.1936798 | 16      | 24S      | 27E   | O    | 150S  | 1980E | EDDY   | NM    |         |       | BONE SPRING 2ND SAND | 179419.7 | 112857       | 146.4           | 573         |
| DOC HOLLIDAY 32 STATE COM #001      | 3001541145 | 32.180412 | -104.220192  | 32      | 24S      | 27E   | D    | 150N  | 330W  | EDDY   | NM    |         |       | BONE SPRING 2ND SAND | 205799.3 | 128748.7     | 122             | 17          |
| PREACHER 19 FEDERAL #003H           | 3001541887 | 32.19577  | -104.2276001 | 19      | 24S      | 27E   | O    | 150S  | 1980E | EDDY   | NM    |         |       | BONE SPRING 2ND SAND | 203717.6 | 125604.7     | 144             | 34          |
| JOSEY WALES 16 STATE COM #003H      | 3001541090 | 32.2104   | -104.1936798 | 16      | 24S      | 27E   | O    | 150S  | 1980E | EDDY   | NM    |         |       | BONE SPRING 2ND SAND | 176588.8 | 109722       | 146             | 0           |
| DOC HOLLIDAY 32 STATE COM #001      | 3001541145 | 32.180412 | -104.220192  | 32      | 24S      | 27E   | D    | 150N  | 330W  | EDDY   | NM    |         |       | BONE SPRING 2ND SAND | 197760.1 | 123849.8     | 146             | 0           |
| HABANERO 17 FEDERAL COM #001H       | 3001536108 | 32.221848 | -104.2062683 | 17      | 24S      | 27E   | A    | 990N  | 660E  | EDDY   | NM    |         |       | WOLFCAMP             | 108205   | 65927.2      | 146             | 0           |
| SERRANO 29 FEDERAL #001H            | 3001537763 | 32.189884 | -104.2062149 | 29      | 24S      | 27E   | H    | 1980N | 660E  | EDDY   | NM    |         |       | WOLFCAMP             | 102136.2 | 62812.7      | 183             | 0           |
| DOC HOLLIDAY 32 STATE COM #001      | 3001541145 | 32.180412 | -104.220192  | 32      | 24S      | 27E   | D    | 150N  | 330W  | EDDY   | NM    |         |       | BONE SPRING 2ND SAND | 127681.6 | 77098        | 195.2           | 0           |
| PREACHER 19 FEDERAL #003H           | 3001541887 | 32.19577  | -104.2276001 | 19      | 24S      | 27E   | O    | 150S  | 1980E | EDDY   | NM    |         |       | BONE SPRING 2ND SAND | 312558   | 186000       | 201.4           | 3947        |
| PREACHER 19 FEDERAL #003H           | 3001541887 | 32.19577  | -104.2276001 | 19      | 24S      | 27E   | O    | 150S  | 1980E | EDDY   | NM    |         |       | BONE SPRING 2ND SAND | 312550   | 186000       | 201.4           | 0           |
| JOSEY WALES 16 STATE COM #003H      | 3001541090 | 32.2104   | -104.1936798 | 16      | 24S      | 27E   | O    | 150S  | 1980E | EDDY   | NM    |         |       | BONE SPRING 2ND SAND | 179141.4 | 109122.7     | 73.2            | 0           |
| DOC HOLLIDAY 32 STATE COM #001      | 3001541145 | 32.180412 | -104.220192  | 32      | 24S      | 27E   | D    | 150N  | 330W  | EDDY   | NM    |         |       | BONE SPRING 2ND SAND | 203230.2 | 124268.5     | 48.8            | 0           |
| SERRANO 29 FEDERAL #001H            | 3001537763 | 32.189884 | -104.2062149 | 29      | 24S      | 27E   | H    | 1980N | 660E  | EDDY   | NM    |         |       | WOLFCAMP             | 100994.9 | 63450.1      | 268             | 0           |
| LEE J FED #001                      | 3001505973 | 32.215504 | -104.3304367 | 18      | 24S      | 26E   | J    | 1980S | 1980E | EDDY   | NM    |         |       | WOLFCAMP             |          | 9100         |                 | 7300        |
| ODIE 4 STATE #001H                  | 3001541311 | 32.152496 | -104.098938  | 4       | 25S      | 28E   | M    | 210S  | 660W  | EDDY   | NM    |         |       | BONE SPRING 2ND SAND | 190675.4 | 119078       | 93.1            | 17          |
| IRRITABLE 22 STATE COM #002H        | 3001541359 | 32.121918 | -104.1758957 | 22      | 25S      | 27E   | B    | 330N  | 1980E | EDDY   | NM    |         |       | BONE SPRING 2ND SAND | 161087   | 100324.4     |                 | 544         |
| NERMAL 4 STATE #001H                | 3001541239 | 32.165981 | -104.0945816 | 4       | 25S      | 28E   | C    | 207N  | 1980W | EDDY   | NM    |         |       | BONE SPRING 2ND SAND | 208311.9 | 123723       | 61              | 1.7         |
| POOKY 4 STATE #001H                 | 3001541241 | 32.165974 | -104.0859146 | 4       | 25S      | 28E   | A    | 207N  | 660E  | EDDY   | NM    |         |       | BONE SPRING 2ND SAND | 204576.5 | 125493       | 48.8            | 0           |

**Attachment 4**

Injection Formation Water Analyses

**Injection Formation Analysis**

**Blackbuck Resources, LLC - Devonian Formation**

| Wellname                            | API        | Latitude  | Longitude    | Section | Township | Range | Unit | Ftgs | Ftgew | County | State | Company | Field   | Formation | Tds_mgL | Chloride_mgL | Bicarbonate_mgL | Sulfate_mgL |
|-------------------------------------|------------|-----------|--------------|---------|----------|-------|------|------|-------|--------|-------|---------|---------|-----------|---------|--------------|-----------------|-------------|
| WHITE CITY PENN GAS COM UNIT 1 #001 | 3001500408 | 32.193752 | -104.3088455 | 29      | 24S      | 26E   | A    | 660N | 660E  | EDDY   | NM    |         |         | DEVONIAN  |         | 10120        | 653             | 1336        |
| JURNEGAN POINT #001                 | 3001510280 | 32.240524 | -104.423912  | 5       | 24S      | 25E   | M    | 660S | 660W  | EDDY   | NM    |         | WILDCAT | DEVONIAN  | 229706  | 136964       | 198             | 2511        |
| JURNEGAN POINT #001                 | 3001510280 | 32.240524 | -104.423912  | 5       | 24S      | 25E   | M    | 660S | 660W  | EDDY   | NM    |         | WILDCAT | DEVONIAN  | 203100  | 121100       | 175             | 2220        |

**Attachment 5**

Water Well Map and Well Data



### Legend

★ Proposed SWD

### NMOSE PODs

#### Status

- Active (0)
- Pending (0)
- Change Location of Well (0)
- Capped (0)
- Plugged (0)
- Incomplete (0)
- Unknown (0)

## Water Wells Area of Review

### PATRIOT STATE SWD #1 Eddy County, New Mexico

Proj Mgr:  
Nate Alleman

November 30, 2021

Mapped by:  
Ben Bockelmann

Prepared for:  
**BLACKBUCK  
NEW MEXICO LLC**

Prepared by:  
**ALLCONSULTING**

0 0.25 0.5 1 Miles

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SourceInfo: [https://gis.ose.state.nm.us/arcgis/rest/services/WatersPod/OSE\\_PODs/MapServer/0](https://gis.ose.state.nm.us/arcgis/rest/services/WatersPod/OSE_PODs/MapServer/0)

**Water Well Sampling Rationale - Patriot State SWD #1**

| Water Wells | Owner | Available Contact Information | Use | Sampling Required | Notes |
|-------------|-------|-------------------------------|-----|-------------------|-------|
|             |       |                               |     |                   |       |
|             |       |                               |     |                   |       |
|             |       |                               |     |                   |       |
|             |       |                               |     |                   |       |

**Note:** No Water Wells are present within 1-mile of the proposed SWD location.

**Attachment 6**

Induced Seismicity Assessment Letter

November 30, 2021

Mr. Phillip Goetze, P.G.  
NM EMNRD – Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, NM 87505

Subject: Induced Seismicity Potential Statement for the Patriot State SWD #1

Dear Mr. Goetze,

This letter provides information regarding the seismic potential associated with injection operations associated with the Blackbuck New Mexico LLC (Blackbuck), Patriot State SWD #1, hereinafter referred to as the “Subject Well.”

As outlined herein, based on my experience as an expert on the issue of induced seismicity, it is my opinion that the potential for the proposed injection well to cause injection-induced seismicity is expected to be minimal, at best. This conclusion is based on (1) the lack of historic seismic activity and faulting in the area, (2) the low fault slip potential (FSP) of Precambrian faults in the area, (3) the presence of confining layers, and (4) the overall vertical distance between the proposed injection zone and basement rock.

The Subject Well, is located 671’ FSL & 142’ FWL of Section 9, in T25-S and R27-E of Eddy County, New Mexico. Historically, the Eddy County area has experienced very limited recorded seismic activity (per the U.S. Geological Survey [USGS] earthquake catalog database). There have been eighteen known seismic events located within a 25-mile radius of the proposed subject well. The closest recorded seismic event was a M4.0 that occurred on November 28, 1974 and was located approximately 12.35 miles northeast of the subject well (See Exhibit 1). The closest Class IID well injecting into the same formations (Devonian-Silurian) of the Subject Well is approximately 3.14 miles to the southwest (See Exhibit 1).

Fault data from USGS & Texas Railroad Commission indicates that the closest known fault is approximately 2.36 miles northeast of the Subject Well (See Exhibit 1).

In a recent paper written by Snee and Zoback (2018) entitled “State of Stress in the Permian Basin, Texas and New Mexico: Implications for Induced Seismicity,”, the authors found that large groups of mostly north-south striking Precambrian basement faults, predominantly located along the Central Basin Platform, the western Delaware Basin, and large parts of the Northwest Shelf (which includes Eddy and Lea counties, New Mexico) have low FSP at the modeled fluid-pressure perturbation. The map in Exhibit 2 depicts the low probability risk of FSP for the Delaware Basin and Northwest Shelf areas (Snee and Zoback 2018).

Geologic analysis indicates that the proposed Devonian-Silurian injection zone is overlain by approximately 200 feet of Woodford Shale, which is the upper confining zone and will serve as a barrier for upward injection fluid migration. Additionally, the Simpson Group that lies directly below the Montoya Formation will act as a lower confining zone to prohibit fluids from migrating downward into the underlying Ellenberger Formation and Precambrian basement rock. See the stratigraphic column for the Delaware Basin included in Exhibit 3.

In the Eddy and Lea Counties area of New Mexico, the Simpson Group is comprised of a series of Middle to Upper Ordovician carbonates, several sandstones, and sandy shales that range from approximately 350 to 650 feet thick (Jones 2008). This group of rocks is capped by the limestones of the Bromide Formation, which is approximately 200 feet thick in this area (Jones 2008). The closest deep well drilled into the Precambrian basement was completed by the Skelly Oil Company in 1975. This well is located in Section 17, Range 36E, Township 25S of Lea County (API No.30-025-25046) and encountered 602 feet of Ellenburger Formation before reaching the top of the Precambrian granite at a depth of 18,920 feet. Based on the estimated thickness of the Simpson Group and Ellenburger Formation in this area, the Precambrian basement should be approximately 4,650 feet below the bottom of the proposed injection zones in the Subject Well.

### **Conclusion**

As an expert on the issue of induced seismicity, it is my opinion that the potential for the proposed injection well to cause injection-induced seismicity is expected to be minimal, at best. This conclusion is based on (1) the lack of historic seismic activity and faulting in the area, (2) the low FSP of Precambrian faults in the area, (3) the presence of confining layers, and (4) the overall vertical distance between the proposed injection zone and basement rock.

Sincerely,  
ALL Consulting



J. Daniel Arthur, P.E., SPEC  
President and Chief Engineer

Enclosures  
References  
Exhibits

## **References**

Ball, Mahlon M. 1995. "Permian Basin Province (044)." In *National Assessment of United States Oil and Gas Resources—Results, Methodology, and Supporting Data*. U.S. Geological Survey. <https://certmapper.cr.usgs.gov/data/noga95/prov44/text/prov44.pdf> (accessed November 10, 2021).

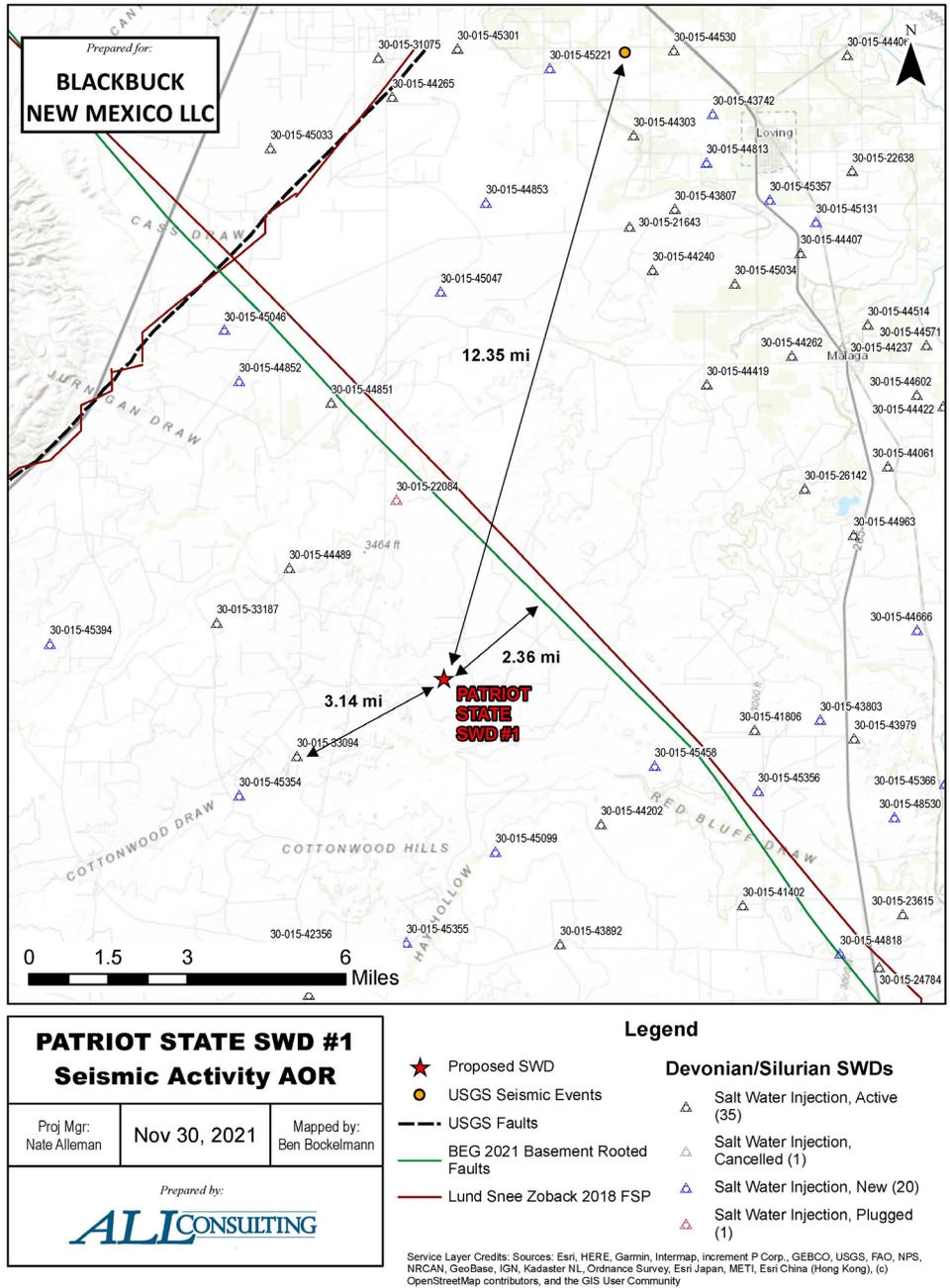
Green, G.N., and G.E. Jones. 1997. "The Digital Geologic Map of New Mexico in ARC/INFO Format." U.S. Geological Survey Open-File Report 97-0052. <https://mrdata.usgs.gov/geology/state/state.php?state=NM> (accessed November 10, 2021).

Jones, Rebecca H. 2008. "The Middle-Upper Ordovician Simpson Group of the Permian Basin: Deposition, Diagenesis, and Reservoir Development." [http://www.beg.utexas.edu/resprog/permianbasin/PBGSP\\_members/writ\\_synth/Simpson.pdf](http://www.beg.utexas.edu/resprog/permianbasin/PBGSP_members/writ_synth/Simpson.pdf) (accessed November 10, 2021).

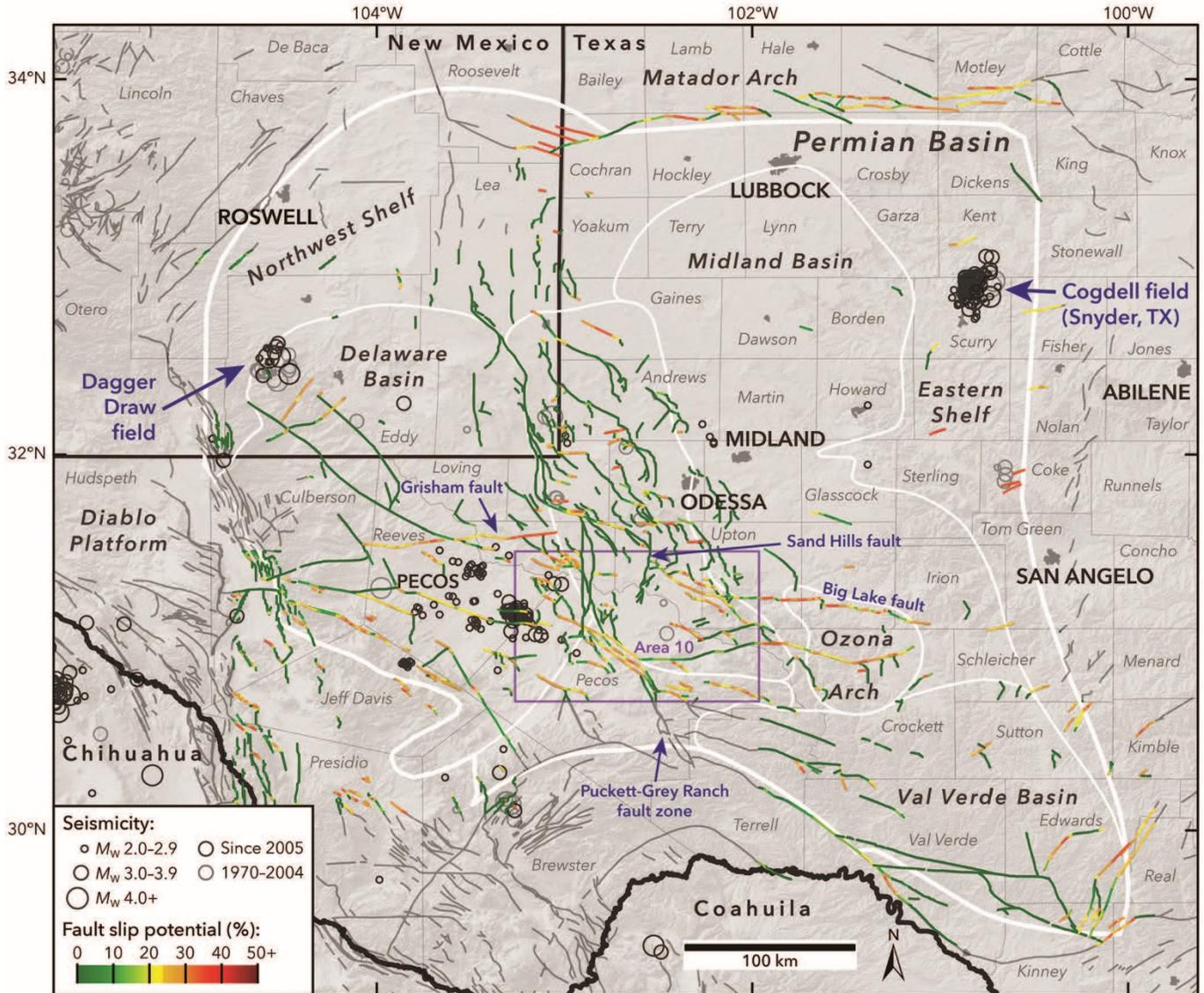
Snee, Jens-Erik Lund, and Mark D. Zoback. 2018. "State of Stress in the Permian Basin, Texas and New Mexico: Implications for Induced Seismicity." *The Leading Edge* 37, no. 2 (February 2018): 127-34.

U.S. Geological Survey (USGS). No date. Earthquakes Hazard Program: Earthquake Catalog. <https://earthquake.usgs.gov/earthquakes/search/> (accessed November 10, 2021).

## **Exhibits**



**Exhibit 1. Map Showing the Distances from Known and Inferred Faults, Seismic Event, and Closest Deep Injection Well**



**Exhibit 2. Results of the Snee and Zoback (2018) Probabilistic FSP Analysis Across the Permian Basin**

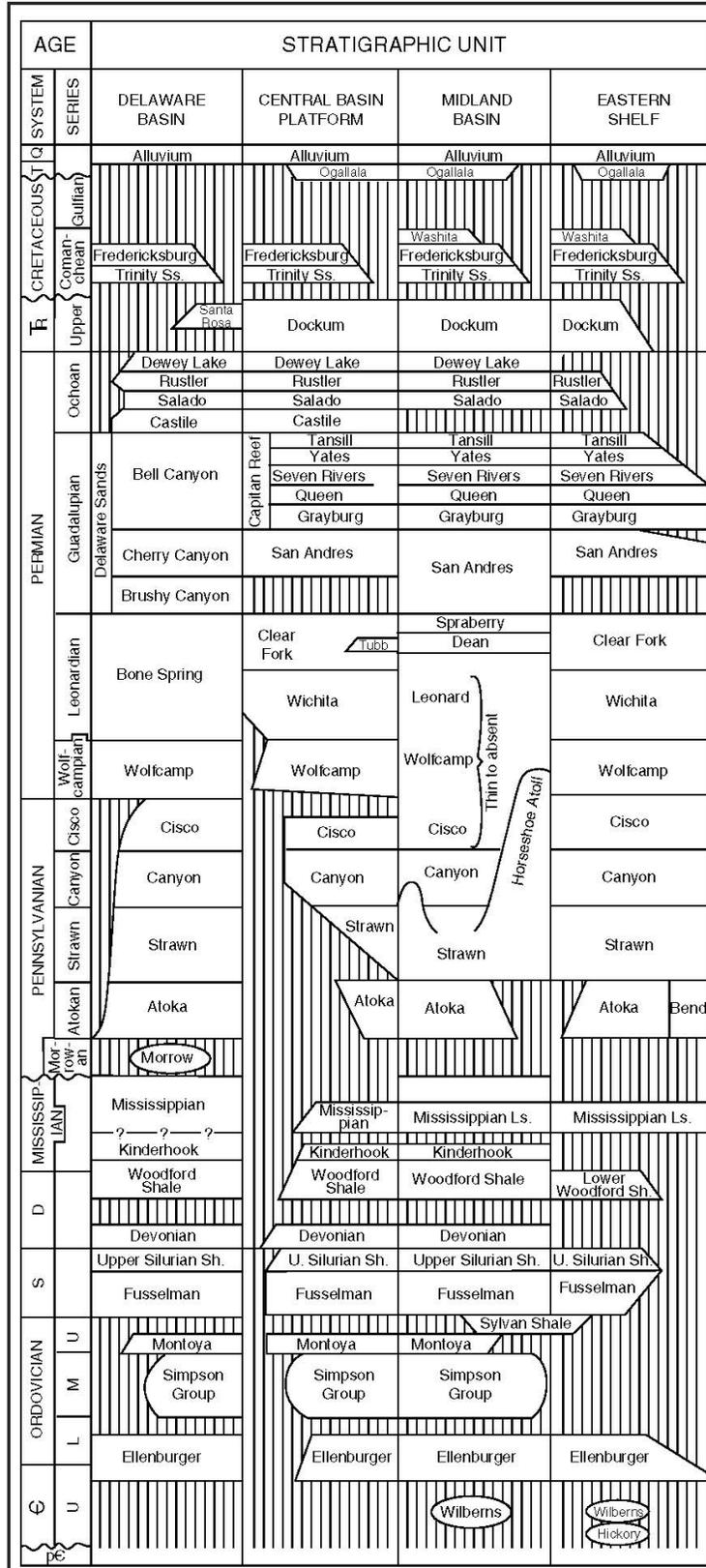


Exhibit 3. Delaware Basin Stratigraphic Chart (Ball 1995)

**Attachment 7**

Public Notice Affidavit and Notice of Application Confirmations

# Carlsbad Current Argus.

PART OF THE USA TODAY NETWORK

## Affidavit of Publication

Ad # 0005002181

This is not an invoice

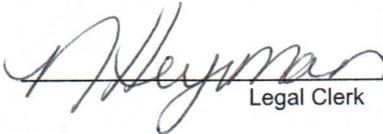
### ALL CONSULTING

1718 SOUTH CHEYENNE AVE

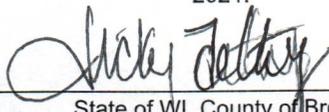
TULSA, OK 74119

I, a legal clerk of the **Carlsbad Current Argus**, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof in editions dated as follows:

11/16/2021

  
\_\_\_\_\_  
Legal Clerk

Subscribed and sworn before me this November 16, 2021:

  
\_\_\_\_\_  
State of WI, County of Brown  
NOTARY PUBLIC

9-19-25  
\_\_\_\_\_  
My commission expires

### APPLICATION FOR AUTHORIZATION TO INJECT

NOTICE IS HEREBY GIVEN: That Blackbuck Resources LLC, 2601 Westheimer Rd., Suite C210, Houston, TX 77098, is requesting that the New Mexico Oil Conservation Division administratively approve the APPLICATION FOR AUTHORIZATION TO INJECT as follows:

PURPOSE: The intended purpose of the injection well is to dispose of salt water produced from permitted oil and gas wells.

WELL NAME AND LOCATION: Patriot State SWD #1 SW ¼ SW ¼, Section 9, Township 25S, Range 27E 671' FSL & 142' FWL Located 11.8-miles southwest from Loving, NM Eddy County, NM

### NAME AND DEPTH OF DISPOSAL ZONE:

Devonian-Silurian (12,738' - 14,738')

### EXPECTED MAXIMUM INJECTION RATE:

40,000 Bbls/day

### EXPECTED MAXIMUM INJECTION PRESSURE:

2,547 psi (surface)

Objections or requests for hearing must be filed with the New Mexico Oil Conservation Division within fifteen (15) days. Any objection or request for hearing should be mailed to the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505.

Additional information may be obtained by contacting Nate Alleman at 918-382-7581.

#5002181, Current Argus, Nov. 16, 2021

Ad # 0005002181  
PO #: 5002181  
# of Affidavits 1

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VICKY FELTY  
Notary Public  
State of Wisconsin

**Patriot State SWD #1 - Notice of Application Recipients**

| Entity  | Address                           | City     | State | Zip Code   |
|---|-----------------------------------|----------|-------|------------|
| <b>Land &amp; Mineral Owner</b>   |                                   |          |       |            |
| Commission of Public Lands - State Land Office  | 310 Old Santa Fe Trail            | Santa Fe | NM    | 87501      |
| <b>OCD District</b>   |                                   |          |       |            |
| NMOCD District 2  | 811 S. 1st St.                    | Artesia  | NM    | 88210      |
| <b>Leasehold Operators</b>  |                                   |          |       |            |
| <b>Cimarex Energy Company</b><br>(CIMAREX ENERGY CO.)<br>(CIMAREX ENERGY CO OF COLORADO)<br>(CIMAREX) | 600 N. Marienfeld St., Suite 600  | Midland  | TX    | 79701      |
| <b>Chevron USA Inc</b><br>(CHEVON PROD CO)<br>(CHEVRON)   | 6301 Deauville BLVD               | Midland  | TX    | 79706      |
| <b>COG Operating, LLC</b><br>(COG OPER LLC)   | 600 W. Illinois Ave.              | Midland  | TX    | 79701      |
| <b>Concho Oil &amp; Gas, LLC</b><br>(Concho OIL & GAS LLC) (Concho O&G LLC)                           | 110 West Louisiana Ave, Suite 410 | Midland  | TX    | 79701      |
| <b>EOG Resources, Inc</b><br>(EOG Y RES INC) (EOG A RES INC)<br>(EOG M RES INC) (EOG RES INC)         | 1111 Bagby Street, Sky Hobby 2    | Houston  | TX    | 77002      |
| <b>New Mexico BLM</b>   | 620 E Greene St.                  | Carlsbad | NM    | 88220      |
| <b>OXY USA Inc.</b><br>(OXY Y-1 CO)   | P.O. Box 27570                    | Houston  | TX    | 77227-7757 |

**Notes:** The table above shows the Entities who were identified as parties of interest requiring notification on either the 1-mile well detail list ) or on the 2-mile Mineral Lease Map . The names listed above in parenthesis, are the abbreviated entity names used on either the 1-mile well detail list (or on the 2-mile Mineral Lease Map).

ALL Consulting, LLC  
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Tulsa OK 74119

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600 North Marienfeld Street Suite 600  
Midland TX 79701-4405

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Tulsa OK 74119

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Houston TX 77002-2551

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Houston TX 77227-7570

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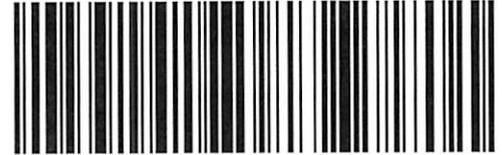
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New Mexico BLM  
620 East Greene Street  
Carlsbad NM 88220-6292

Concho Oil & Gas, LLC  
110 West Louisiana Ave, Suite 410  
Midland TX 79701-3427

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Chevron USA Inc.  
6301 Deauville  
Midland TX 79706-2964

NMOCD District 2  
811 South 1st Street  
Artesia NM 88210-2834

ALL Consulting, LLC  
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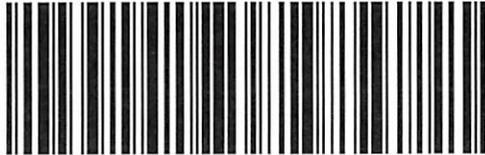
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State Land Office  
Commission of Public Lands  
310 Old Santa Fe Trail  
Santa Fe NM 87501-2708

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