

AE Order Number Banner

Application Number: pSYS2605432926

Initial Application Part I

SWD-2688

Blackbuck New Mexico LLC [373619]

Received: 2/3/2026



January 31, 2026

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

Subject: Blackbuck New Mexico LLC
Application for Authorization to Inject
Ballard SWD #1

OCD Manager,

Blackbuck New Mexico LLC (Blackbuck) is applying for administrative approval of the attached Application for Authorization to Inject (Form C-108) for their proposed Ballard SWD #1. The application is requesting authorization to dispose of saltwater from oil and gas production in the area via commercial disposal into the Devonian-Silurian Formation in Eddy County, NM.

Questions regarding this application or the included materials can be directed to Nate Alleman (Blackbuck Regulator Advisor Contractor) via telephone at 918-237-0559 or via email at nate.alleman@aceadvisors.com.

Sincerely,

A handwritten signature in black ink that reads "Nathan Alleman".

Nate Alleman
Chief Regulatory Advisor
Ace Energy Advisors

RECEIVED:	REVIEWER:	TYPE:	APP NO:
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ABOVE THIS TABLE FOR OCD DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
 - Geological & 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

Applicant: Blackbuck New Mexico LLC **OGRID Number:** 373619
Well Name: Ballard SWD #1 **API:** 30-015-xxxxx
Pool: SWD; Devonian-Silurian **Pool Code:** 97869

SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED BELOW

- 1) **TYPE OF APPLICATION:** Check those which apply for [A]
 A. Location – Spacing Unit – Simultaneous Dedication
 NSL NSP (PROJECT AREA) NSP (PRORATION UNIT) SD
- B. Check one only for [I] or [II]
 [I] Commingling – Storage – Measurement
 DHC CTB PLC PC OLS OLM
 [II] Injection – Disposal – Pressure Increase – Enhanced Oil Recovery
 WFX PMX SWD IPI EOR PPR

- 2) **NOTIFICATION REQUIRED TO:** Check those which apply.
 A. Offset operators or lease holders
 B. Royalty, overriding royalty owners, revenue owners
 C. Application requires published notice
 D. Notification and/or concurrent approval by SLO
 E. Notification and/or concurrent approval by BLM
 F. Surface owner
 G. For all of the above, proof of notification or publication is attached, and/or,
 H. No notice required

FOR OCD ONLY
<input type="checkbox"/> Notice Complete
<input type="checkbox"/> Application Content Complete

3) **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.

Nathan Alleman

Print or Type Name

Signature

01-31-2026
Date

918-237-0559
Phone Number

nate.alleman@aceadvisors.com
e-mail Address

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 _____ Disposal _____ Storage
Application qualifies for administrative approval? Yes _____ No

II. OPERATOR: Blackbuck New Mexico LLC

ADDRESS: 3200 Southwest Freeway, Houston TX 77027

CONTACT PARTY: Ace Energy Advisors - Nate Alleman PHONE: (918) 237-0559

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 N 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: Consultant for Blackbuck

SIGNATURE:  DATE: 01-31-2026

E-MAIL ADDRESS: nate.alleman@aceadvisors.com

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

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

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.

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.**

Operator: Blackbuck New Mexico LLC (OGRID# 373619)
 Lease/Well Name & Number: Ballard SWD #1
 Legal Location: 761' FNL & 1,276' FWL - Unit A – Section 24 T25S R25E – Eddy County
 Coordinates: 32.120663,-104.344815

- (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.**

Casing String	Hole Size (in)	Casing Size (in)	Casing Depth (ft)	Sacks Cement (sx)	Top of Cement (ft)	Method Determined
Surface	26	20	425	727	Surface	Circulation
1 st Intermediate	17-1/2	13-3/8	1,591	1,413	Surface	Circulation
2 nd Intermediate	12-1/4	9-5/8	10,134	3,671	Surface	Circulation
Injection Liner	8-3/4	7-5/8	9,934' - 12,499	367	TOL	Circulation
Open hole	6	N/A	12,499' - 13,435	N/A	N/A	N/A

A wellbore diagram is included in **Attachment 1**.

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

5-1/2" 20lb/ft L-80 & 20 lb/ft P-110 fiberglass-coated tubing set at 12,399'

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

SC-2 Retrievable or equivalent set at 13,435'

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.**

Injection Formation Name - Devonian-Silurian
 Pool Name - SWD; Devonian-Silurian
 Pool Code – 97869

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

open-hole injection between 12,499' - 13,435'

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

New drill for injection

- (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.**

None

- (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.**

- **Overlying**
 - Delaware (1,613')
 - Bone Spring (5,920')
 - Wolfcamp (8,180')
 - Morrow (11,093')
- **Underlying**
 - None

V. AOR Maps

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.

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

- 2.0 and 1.0-Mile Well Map
- 1.0-Mile Well List
- 2.0-Mile and 1.0-Mile Lease Map
- 1.0-Mile Surface Ownership Map
- 1.0-Mile Mineral Ownership Map
- Potash Map
- 1.5-Mile Deep SWD Map

VI. AOR List

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.

Details of the wells within the 1.0-mile AOR are included in **Attachment 2**. No wells within the 1.0-mile AOR penetrate the top of the proposed injection zone.

VII. Operational Information

Attach data on the proposed operation, including:

- (1) **Proposed average and maximum daily rate and volume of fluids to be injected;**

Maximum: 40,000 bpd

Average: 30,000 bpd

- (2) **Whether the system is open or closed;**

The system will be closed.

- (3) **Proposed average and maximum injection pressure;**

Maximum: 2,499 psi (surface)

Average: approx. 1,800 psi (surface)

- (4) **Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water;**

It is anticipated that produced water from Delaware, Bone Spring and Wolfcamp production wells in the area will be injected into the proposed SWD. Therefore, water analysis from these formations was obtained and is included in **Attachment 3**.

- (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.).**

The proposed injection interval for this SWD is the Devonian-Silurian formation, which is a non-productive zone known to be compatible with formation water from the Delaware, Bone Spring and Wolfcamp formations. Water analyses of samples collected from the proposed injection formation in the area were obtained and are included in **Attachment 4**.

VIII. Geologic Description

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.

Proposed Injection Interval

The proposed injection interval, at depths of 12,499 ft to 13,435 ft bgs, includes the Devonian and Silurian formations and is a package of carbonates consisting of predominantly of dolomite with limestone and interbedded cherts. Dolomitic and limestone porosities are expected to range from 0% to 7% with higher skeletal cherts ranging greater than 7% due to secondary porosity in the form of vugs and fractures from weathering effects and compaction. Permeabilities in the 2-7% porosity dolomitic grainstones intervals are estimated to be in the 2-20 millidarcy range, with higher porosity intervals estimated to be in the 40-100 millidarcy range (Ruppel and Holtz, 1994). The open hole injection interval is expected to be within the majority of the higher permeability intervals.

Overlying Confinement

Overlying Confinement is provided by approximately 290 cumulative feet of low-permeability limestone and shale of the Mississippian Limestone (178 feet) and Woodford Shale (112 feet) that will act as barrier to fluid flow and prevent upward migration of injectate into overlying formations.

With the top of the proposed injection interval at 12,499 ft, there is expected to be approximately 12,099 ft of vertical separation between the injected fluids and the base of the lowermost USDW, including the 290 ft thick permeability barrier immediately overlying the injection interval. In addition to the geologic isolation, the freshwater resources will be further isolated and protected by surface casing that will be set at approximately 425 ft (\approx 25 ft below the deepest freshwater-bearing strata in the area) and cemented to surface.

Underlying Confinement

Underlying Confinement is provided by approximately 179 feet of low-permeability carbonates of the Silurian-aged Montoya formation. The proposed well will TD approximately 100 ft above the top of the Ordovician Montoya and will not inject fluids into the Montoya itself in order to provide sufficient barrier to avoid injection into the Middle Ordovician Simpson, the Lower Ordovician Ellenburger, or the Cambrian and the Precambrian below. The Precambrian structure contours (Ruppel, 2009) show the Precambrian basement to be at a depth of approximately 14,648 ft in this area. Therefore, the injection zone lies approximately 1,213 ft above the Precambrian basement.

Groundwater Sources

The local alluvium acts as the principal aquifer used for drinking ground water, if present, near the Subject SWD. Around the Subject SWD, the base of the lowermost Underground Source of Drinking Water (USDW) is approximately 400 feet bgs within the Permian Castile, which contains anhydrite and salt layers. Office of the State Engineer (OSE) data for domestic and livestock water wells indicate the deepest freshwater-bearing strata in the area occurs at depths of less than 200 ft.

IX. Proposed Stimulation Program

Describe the proposed stimulation program, if any.

A minor acid job utilizing 15-20% hydrochloric acid may be used to cleanup the wellbore.

X. Logging and Test Data

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

Logs will be run and submitted to the Division once the well is completed.

XI. Groundwater Wells

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.

A review of New Mexico Office of the State Engineer (OSE) data returned records of three groundwater wells located within the Subject SWD's 1-mile water well sampling radius. Of these, two water wells have had samples collected and analyzed.

Attachment 5 includes a map and corresponding table summarizing relevant details of the water well records within the one-mile radius, along with lab results from the collected samples.

XII. No Hydrologic Connection Statement

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.

A geologic review conducted on offset wireline log data and published regional studies did not identify any faulting in the vicinity of the proposed locations that would allow for the hydraulic communication between the injection interval and overlying USDWs.

Attachment 6 includes a geology statement.

XIII. Proof of Notice

Applicants must complete the "Proof of Notice" section on the reverse side of this form.

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.

A copy of the application was mailed to the Affected Persons, including the OCD District Office, surface owner, leasehold operators within the AOR, and BLM/SLO if they own minerals within the AOR. **Attachment 6** includes a list of the Affected Persons receiving notice of the application and the associated certified mailing receipts (green sheets).

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.

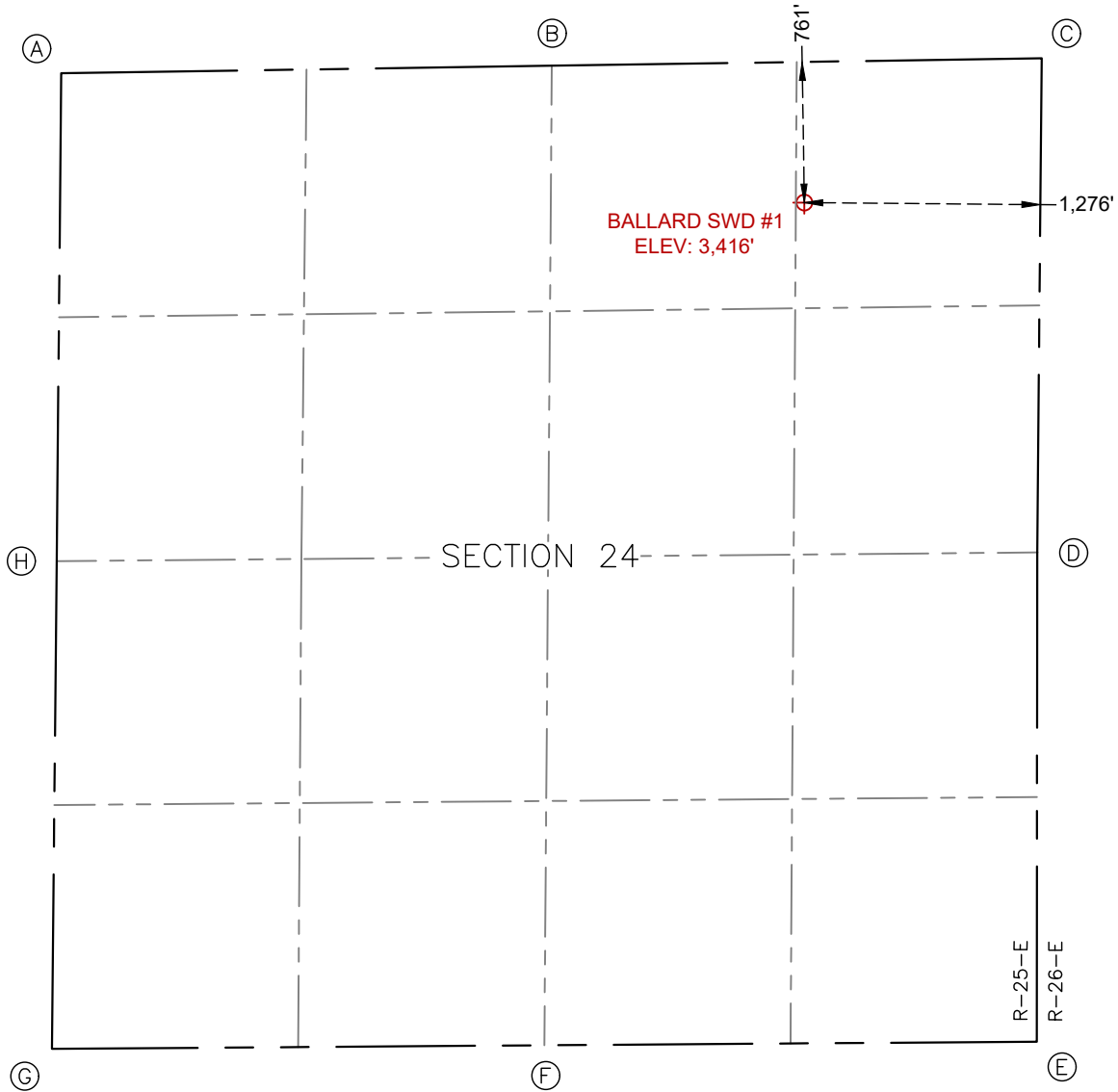
A Public Notice was published in the Carlsbad Current-Argus, a newspaper of general circulation in the area, and the associated affidavit is included in Attachment 7.

Attachment 1

ACREAGE DEDICATION PLATS

This grid represents a standard section. You may superimpose a non-standard section, or larger area, over this grid. Operators must outline the dedicated acreage in a red box, clearly show the well surface location and bottom hole location, if it is directionally drilled, with the dimensions from the section lines in the cardinal directions. If this is a horizontal wellbore show on this plat the location of the First Take Point and Last Take Point, and the point within the Completed interval (other than the First Take Point or Last Take Point) that is closest to any outer boundary of the tract.

Surveyors shall use the latest United States government survey or dependent resurvey. Well locations will be in reference to the New Mexico Principal Meridian. If the land is not surveyed, contact the OCD Engineering Bureau. Independent subdivision surveys will not be acceptable.



SURFACE HOLE LOCATION
 761' FNL & 1,276' FEL
 ELEV. = 3,416'

 NAD 83 X = 537,783.11'
 NAD 83 Y = 407,633.55'
 NAD 83 LAT = 32.120663°
 NAD 83 LONG = -104.344815°
 NAD 27 X = 496,600.39'
 NAD 27 Y = 407,576.88'
 NAD 27 LAT = 32.120545°
 NAD 27 LONG = -104.344314°

CORNER COORDINATES NEW MEXICO EAST - NAD 83	
POINT	NORTHING/EASTING
A	N:408,332.93' E:533,764.86'
B	N:408,373.60' E:536,417.77'
C	N:408,413.71' E:539,066.56'
D	N:405,741.36' E:539,042.55'
E	N:403,095.32' E:539,040.12'
F	N:403,075.80' E:536,377.28'
G	N:403,056.27' E:533,714.44'
H	N:405,694.09' E:533,740.22'

Prepared By:



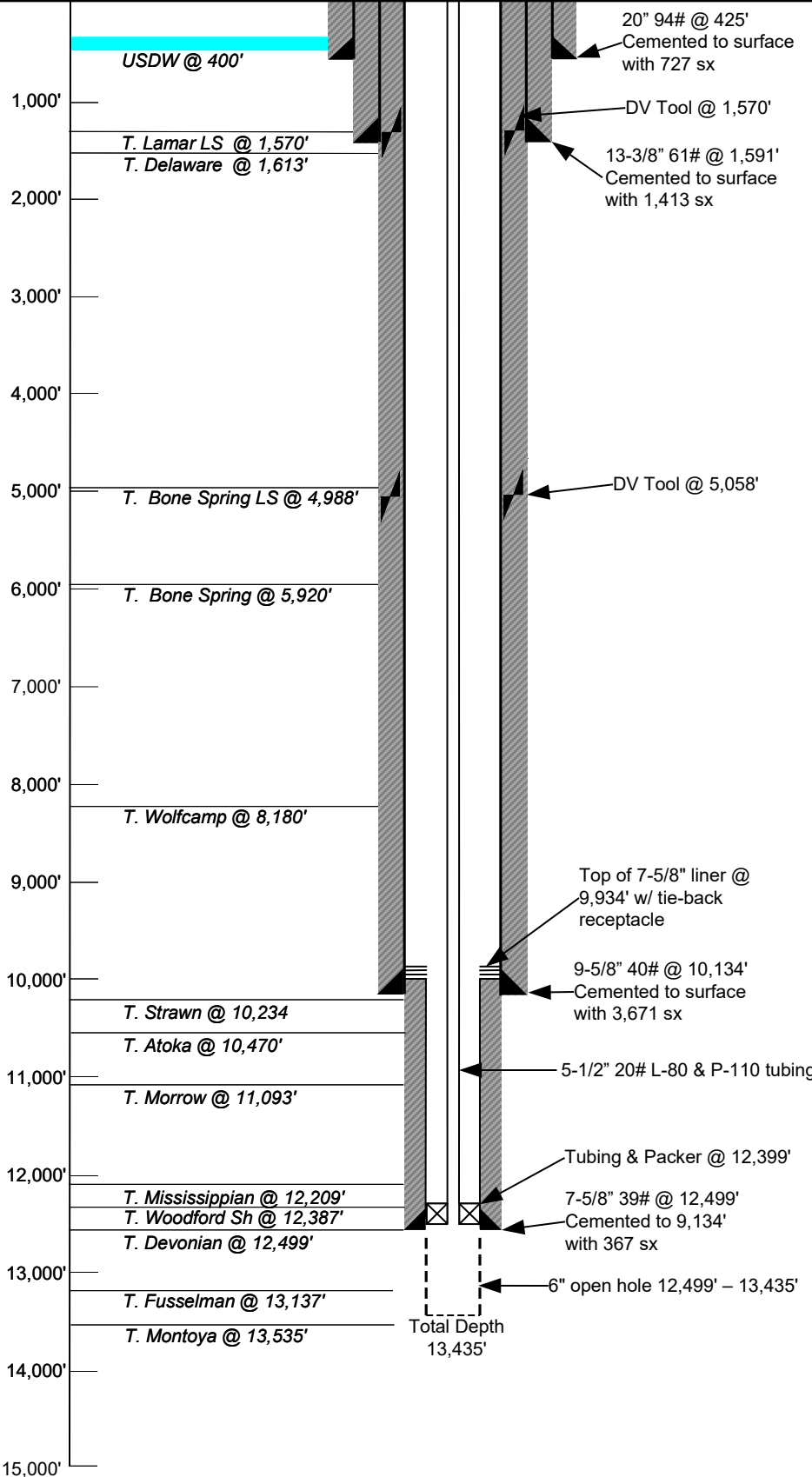
Ballard SWD #1

Proposed Wellbore Diagram

Prepared For:



Estimated Formation Depth Picks



Surface Casing

Casing Size: 20 in
Casing Type: 94 lb/ft J-55 BTC
Casing Depth: 425 ft
Hole Size: 26 in
Top of Cement: Surface
Sks Cement: 727 sx
Cement Type: Class C + additives

1 Intermediate Casing

Casing Size: 13-3/8 in
Casing Type: 61 lb/ft J-55 BTC
Casing Depth: 1,591 ft
Hole Size: 17-1/2 in
Top of Cement: Surface
Sks Cement: 1,413 sx
Cement Type: Class C + additives

2 Intermediate Casing

Casing Size: 9-5/8 in
Casing Type: 40 lb/ft HCP-110 BTC
Casing Depth: 10,134 ft
Hole Size: 12-1/4 in
Top of Cement: Surface
Sks Cement: 3,671 sx in 3 stages
Cement Type: Class C + additives

Injection Liner

Casing Size: 7-5/8 in
Casing Type: 39 lb/ft HCL FJ
Casing Depth: 9,934 - 12,499 ft
Hole Size: 8-3/4 in
Top of Cement: Surface
Sks Cement: 367 sx
Cement Type: Class H + additives

Injection Tubing & Packer

Tubing Size: 5-1/2 in
Tubing Type: 20 lb/ft L-80 & 20 lb/ft P-110 fiberglass-lined tubing
Tubing Depth: 12,399 ft
Packer Depth: 12,399 ft
Packer Type: SC-2 Retrievable or equivalent

Injection Interval

Formation(s): Devonian-Silurian
Top: 12,499 ft
Bottom: 13,435 ft
Hole size: 6 in
Cased or Open-Hole: Open-Hole

Notes:

- Listed depths are measured from ground surface.
- Depths and cement volumes are estimates based on evaluation of the available information.

NOT TO SCALE

SC-2 Retrievable Packer

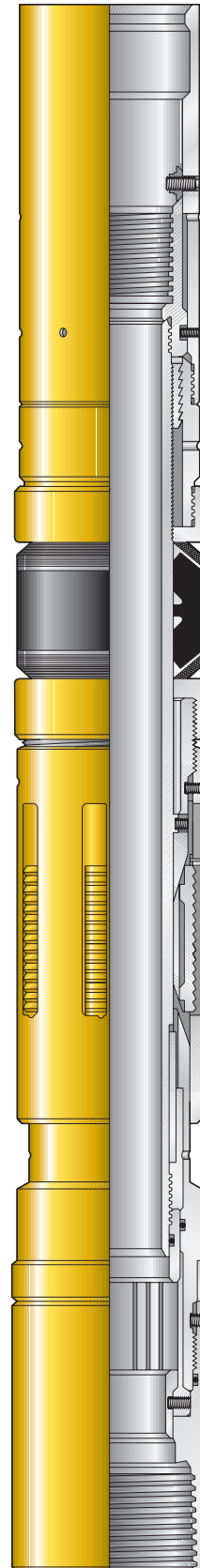
Product Family No. H48807

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

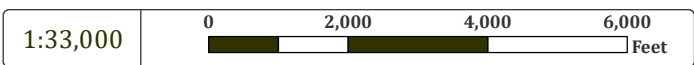
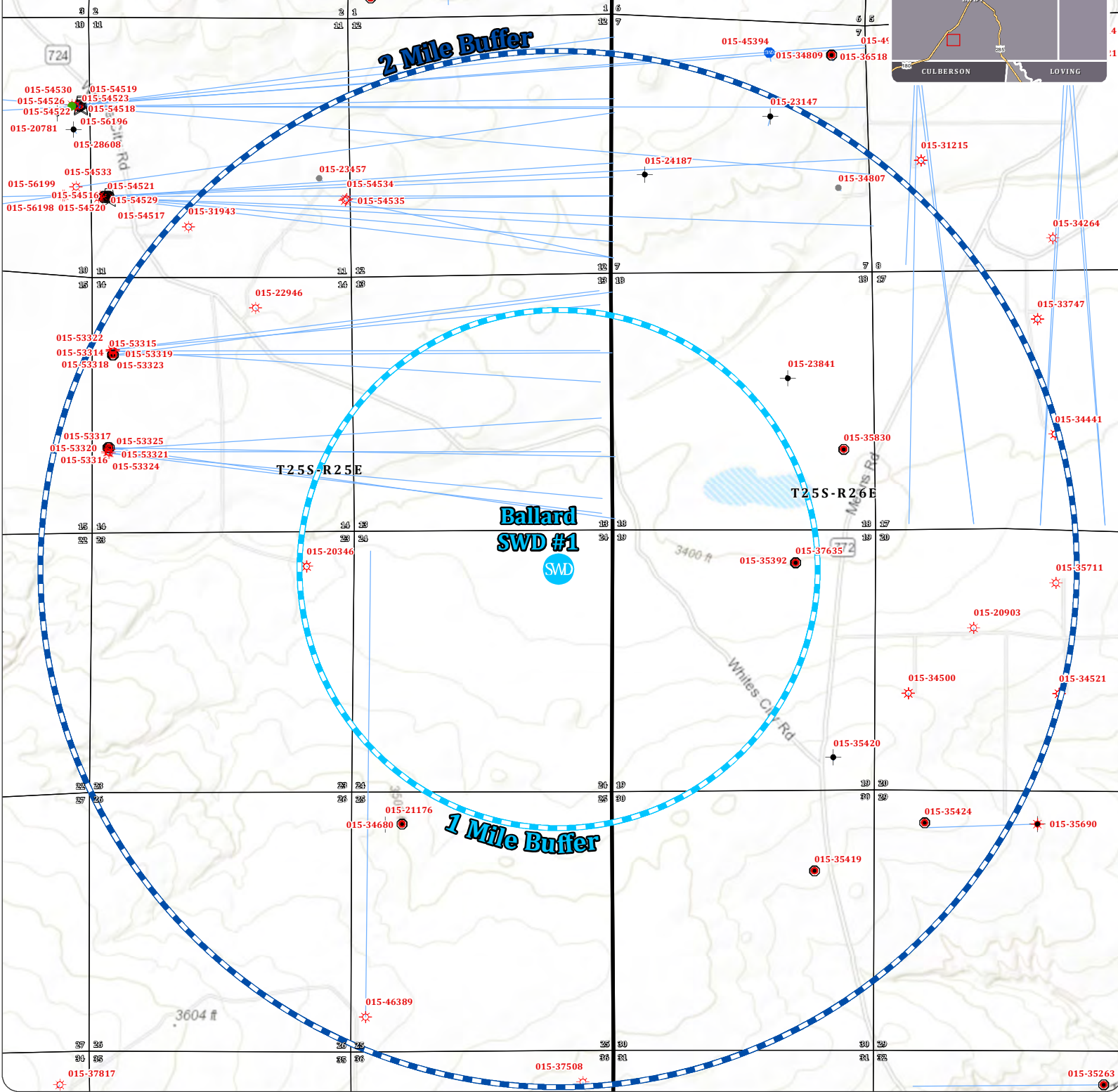
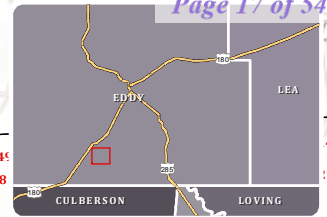
Size	Sealbore Dia for Seal Nipples ■		Seal Accessory Size ▲	Min Bore Thru Seal Nipples	
	in.	mm		in.	mm
55A2-26	2.688	68.2	40-26	1.968	50.0
55A4-26					
55B-26					
70A2-32	3.250	82.5	80-32 or 81-32	2.406 or 1.995	61.1 or 50.6
70A4-32					
70B-32					
70C-32					
76A2-32	4.000	101.6	80-40	3.000	72.6
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	3.250	82.5	80-32 or 81-32	2.406 or 1.995	61.1 or 50.6
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

WELL MAP

SECTION 24, TOWNSHIP 25 SOUTH, RANGE 25 EAST, EDDY COUNTY, NEW MEXICO



Legend

- Proposed SWD
- 1 Mile Buffer
- 2 Mile Buffer
- Other
- Oil
- Gas
- Disposal
- Drilling
- Permitted
- Cancelled/Expired Permit
- P/A
- TA

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Map Prepared By:
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Coordinate System:
 NAD 1983 StatePlane New Mexico East FIPS 3001 Feet
 Projection: Transverse Mercator
 Datum: North American 1983
 False Easting: 541,337.5000
 False Northing: 0.0000
 Central Meridian: -104.3333
 Scale Factor: 0.9999
 Latitude Of Origin: 31.0000
 Units: Foot US

Ballard SWD #1

OPERATOR:
BLACKBUCK RESOURCES

1-mile Well List (Top of Injection Interval: 12,499')

Well Name	API#	Well Type	Operator	Status	Spud Date	Location (Sec., Tn.,	Total Vertical Depth	Penetrate Inj. Zone?
BANZAI BKZ FEDERAL #001	30-015-20346	Gas	EOG RESOURCES INC**	Active	11/5/1970	A-23-25S-25E	11,622*	No
BIJOU BJU COM #001C	30-015-35392	Gas	EOG Y RESOURCES, INC.	Cancelled	N/A	B-19-25S-26E	0	No
BIJOU BJU COM #001	30-015-37635	Gas	EOG Y RESOURCES, INC.	Cancelled	N/A	B-19-25S-26E	0	No

Notes:
 - No wells penetrate the injection interval within the AOR.
 - * NMOC reports a TVD of 13,125'. However, all the records indicate a TVD of 11,622'.
 - ** Operator of active, drilled well within AOR and will receive notification of this application.

Horizontal Well w/ Surface Location Outside the 1.0-mile AOR

Well Name	API#	Well Type	Operator	Field	Status	Depth
MAS VERDE 25 FEDERAL COM 701H	30-015-46389	GAS	EOG RESOURCES INC**	PURPLE SAGE WOLFCAMP GAS	PRODUCING	8,358
COLD SNACK FEDERAL COM 153H	30-015-53316	OIL	CIVITAS PERMIAN OPERATING, LLC	COTTONWOOD DRAW	PERMIT EXPIRED	7,516
COLD SNACK FEDERAL COM 213H	30-015-53320	GAS	CIVITAS PERMIAN OPERATING, LLC**	PURPLE SAGE WOLFCAMP GAS	PRODUCING	8,438
COLD SNACK FEDERAL COM 232H	30-015-53323	GAS	CIVITAS PERMIAN OPERATING, LLC**	PURPLE SAGE WOLFCAMP GAS	PRODUCING	9,078
COLD SNACK FEDERAL COM 152H	30-015-53315	OIL	CIVITAS PERMIAN OPERATING, LLC	COTTONWOOD DRAW	PERMIT EXPIRED	7,488
COLD SNACK FEDERAL COM 212H	30-015-53319	GAS	CIVITAS PERMIAN OPERATING, LLC**	PURPLE SAGE WOLFCAMP GAS	PRODUCING	8,352
COLD SNACK FEDERAL COM 214H	30-015-53321	GAS	CIVITAS PERMIAN OPERATING, LLC**	PURPLE SAGE WOLFCAMP GAS	PRODUCING	8,369
COLD SNACK FEDERAL COM 154H	30-015-53317	OIL	CIVITAS PERMIAN OPERATING, LLC	COTTONWOOD DRAW	PERMIT EXPIRED	7,519
COLD SNACK FEDERAL COM 234H	30-015-53325	GAS	CIVITAS PERMIAN OPERATING, LLC**	PURPLE SAGE WOLFCAMP GAS	PRODUCING	9,238
COLD SNACK FEDERAL COM 233H	30-015-53324	GAS	CIVITAS PERMIAN OPERATING, LLC**	PURPLE SAGE WOLFCAMP GAS	PRODUCING	9,222

Notes:
 - ** Operator of active, drilled well within AOR and will receive notification of this application.

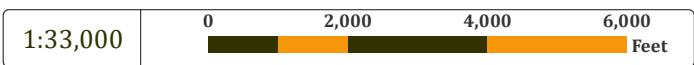
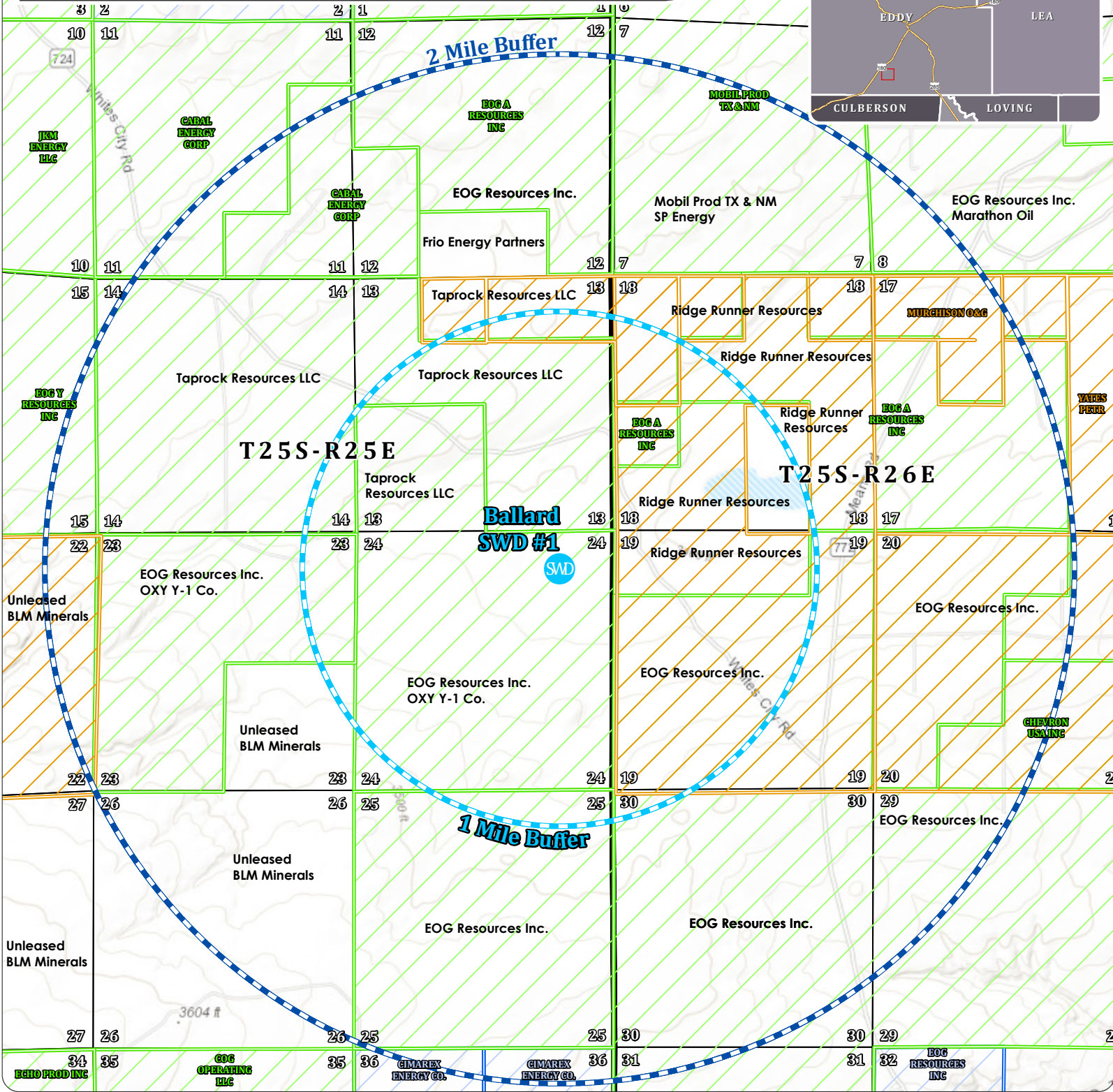
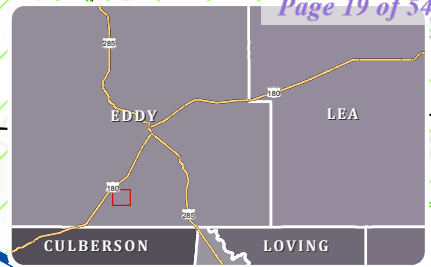
Penetrating Well Casing and Cement Details

API#	Type	Hole	Size	Depth	Sacks	TOC	Method	Problem
------	------	------	------	-------	-------	-----	--------	---------


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

LEASEHOLDER MAP

SECTION 24, TOWNSHIP 25 SOUTH, RANGE 25 EAST, EDDY COUNTY, NEW MEXICO




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False Northing: 0.0000
Central Meridian: -104.3333
Scale Factor: 0.9999
Latitude Of Origin: 31.0000
Units: Foot US



Legend

-  Proposed SWD
-  1 Mile Buffer
-  2 Mile Buffer
-  BLM Mineral Leases
-  NMSLO Mineral
-  Private Mineral

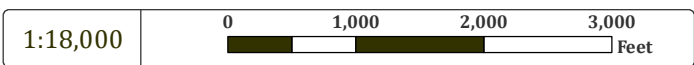
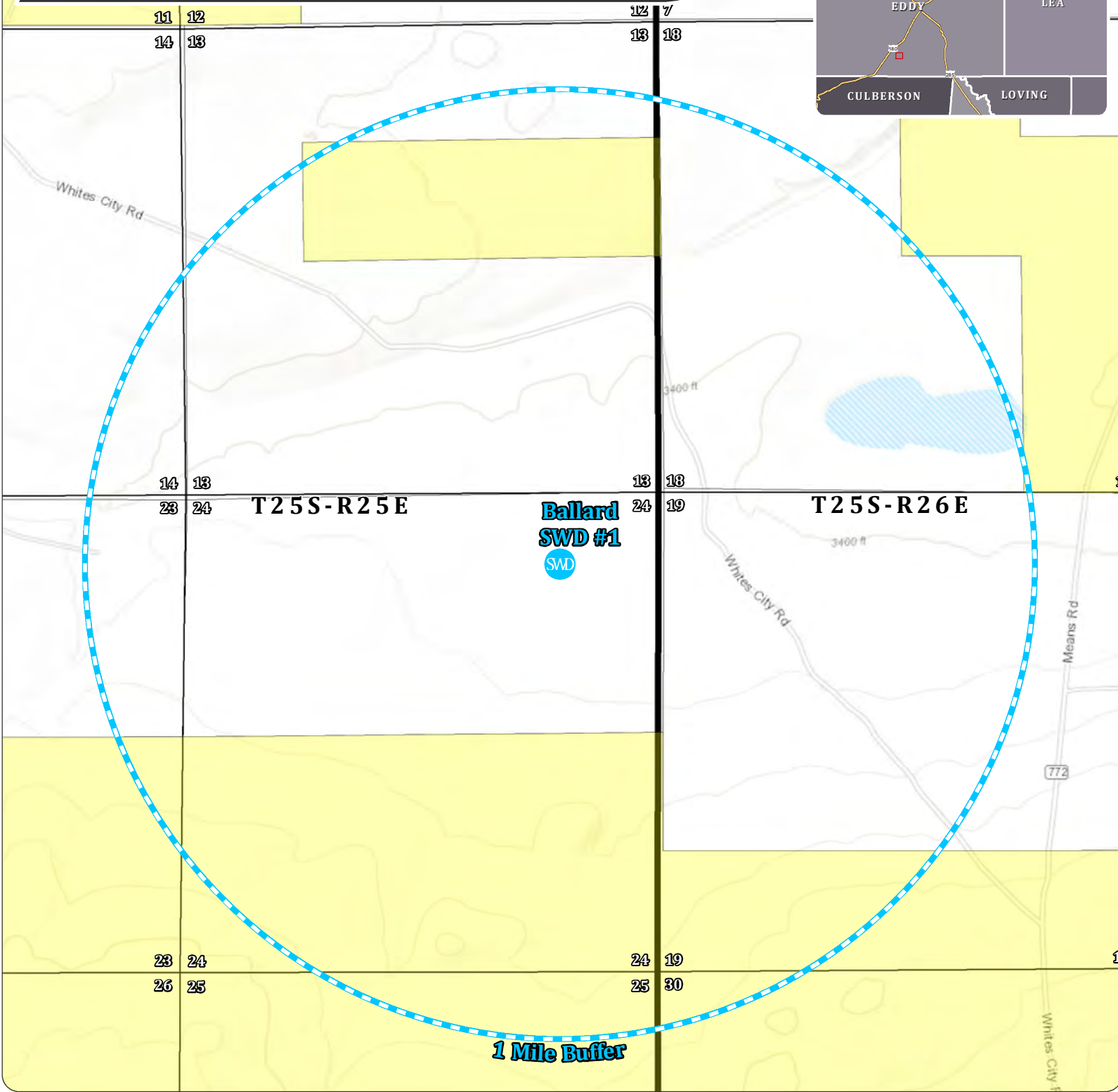
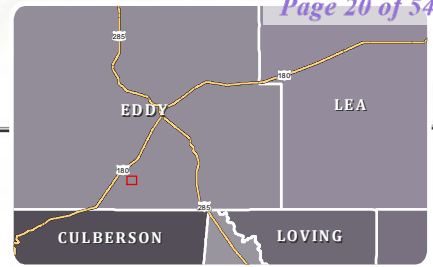
Ballard SWD #1

OPERATOR:
BLACKBUCK RESOURCES



SURFACE OWNERSHIP MAP

SECTION 24, TOWNSHIP 25 SOUTH, RANGE 25 EAST, EDDY COUNTY, NEW MEXICO



Legend

- Proposed SWD
- 1 Mile Buffer
- Federal Land
- State of NM Land
- Private Land

Ballard SWD #1

OPERATOR:
BLACKBUCK RESOURCES

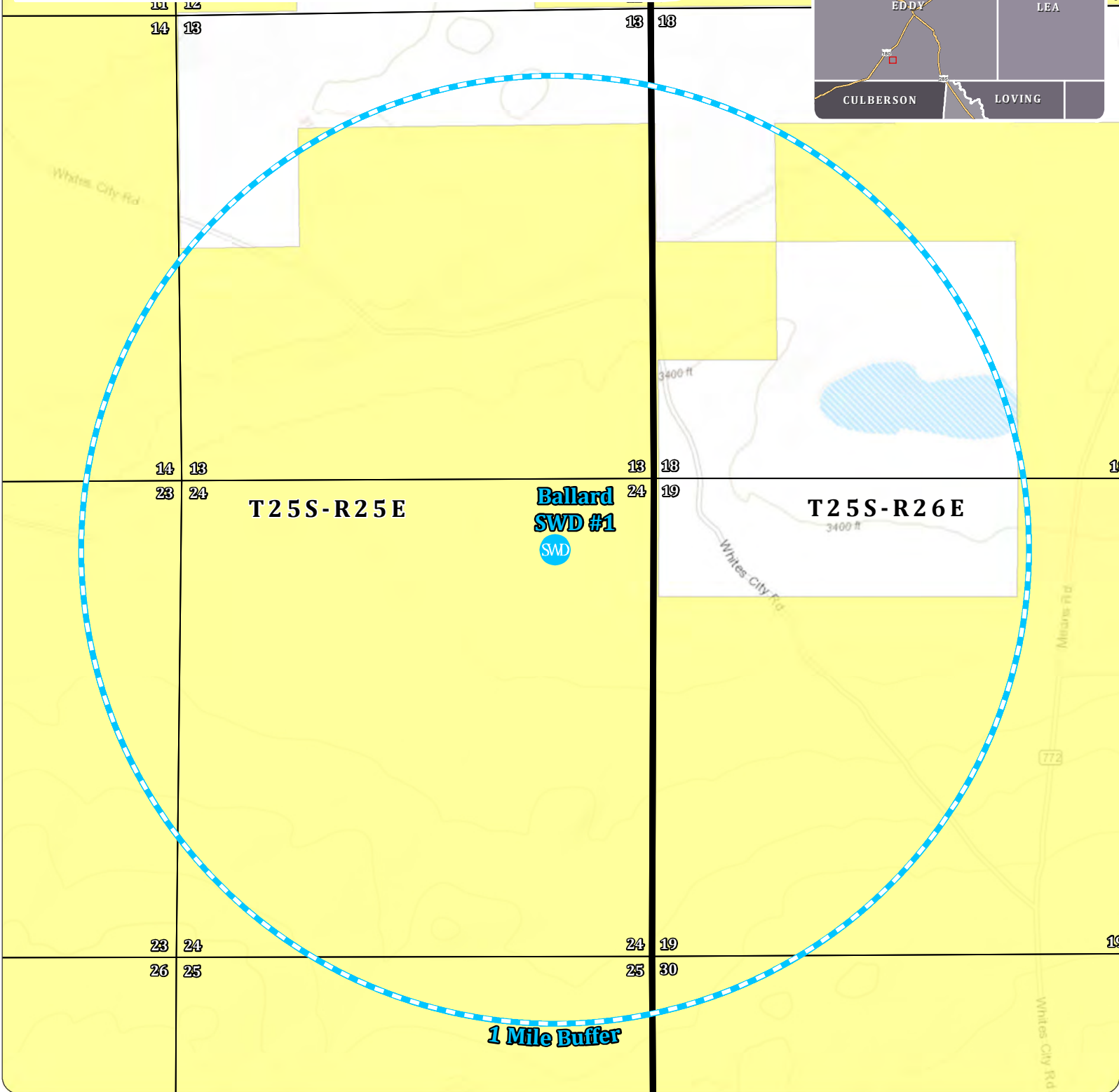
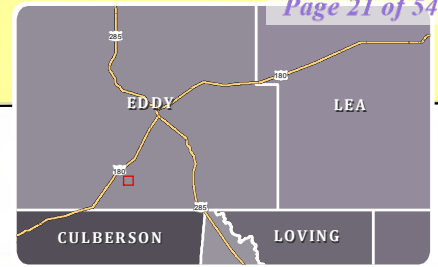
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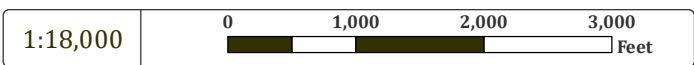
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 Datum: North American 1983
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 Units: Foot US






MINERAL OWNERSHIP MAP

SECTION 24, TOWNSHIP 25 SOUTH, RANGE 25 EAST, EDDY COUNTY, NEW MEXICO



1 Mile Buffer




- Legend**
-  Proposed SWD
 -  1 Mile Buffer
 -  Subsurface minerals (NMSLO)
 -  All minerals are owned by U.S. (BLM)
 -  Private minerals

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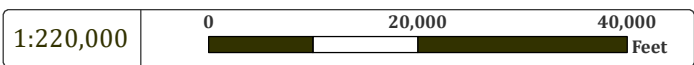
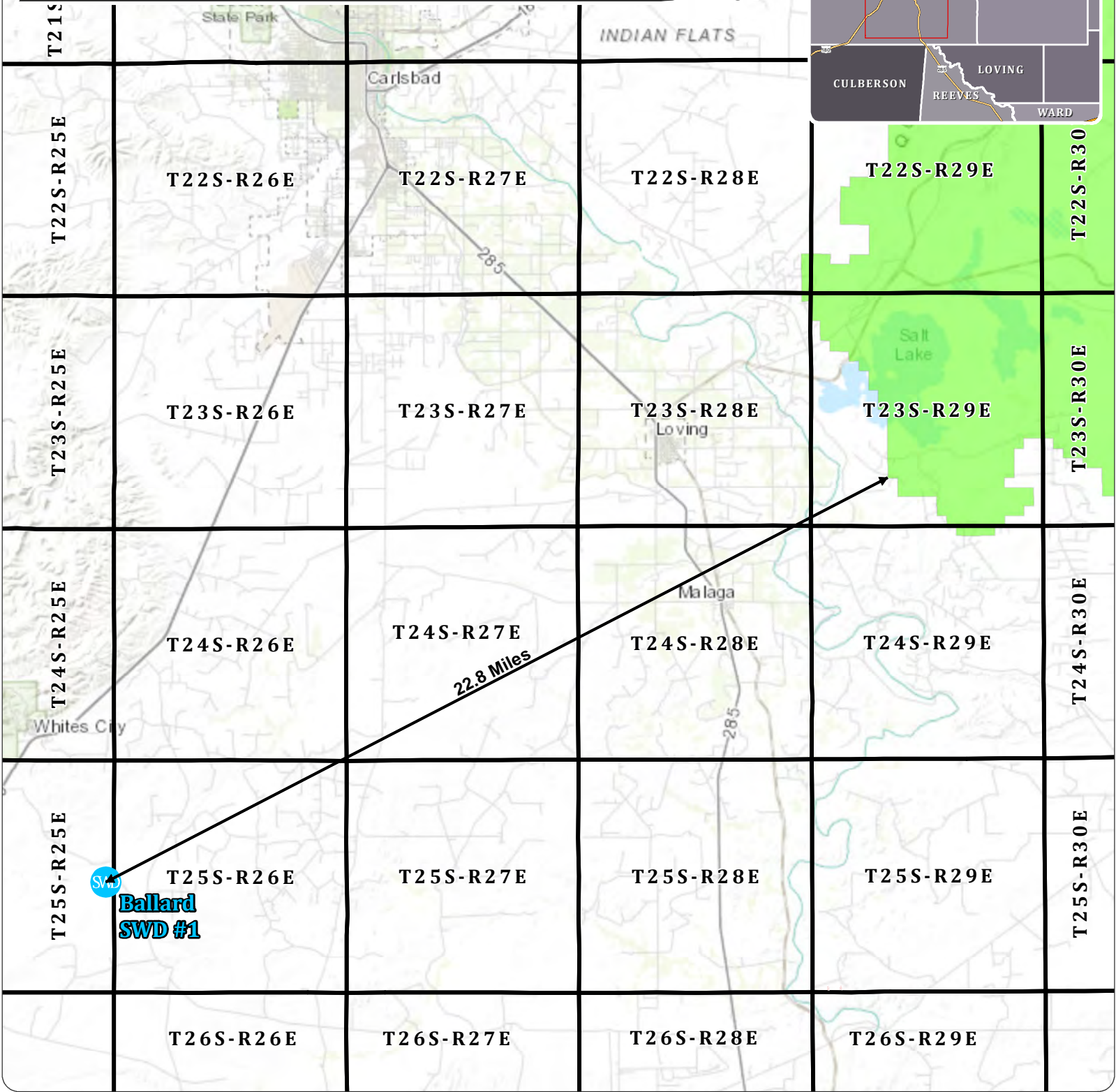
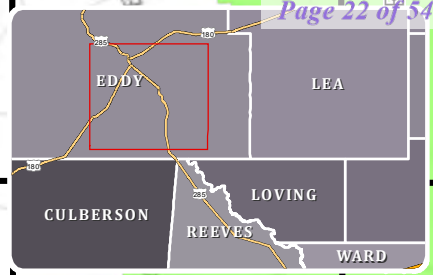
Ballard SWD #1

**OPERATOR:
BLACKBUCK RESOURCES**



POTASH DISTRICT MAP

SECTION 24, TOWNSHIP 25 SOUTH, RANGE 25 EAST, EDDY COUNTY, NEW MEXICO R 28 E



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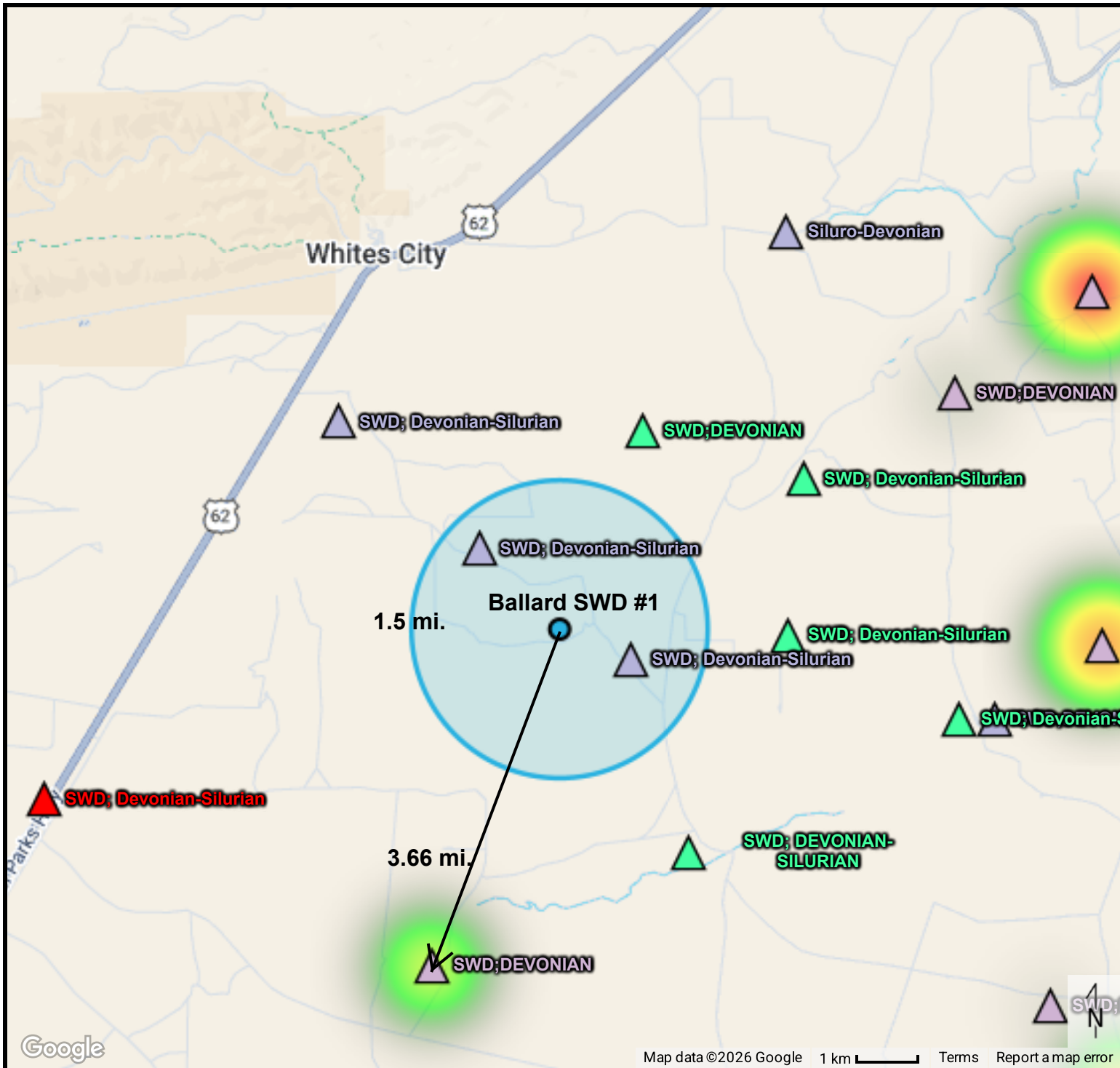
Legend

- Proposed SWD
- Potash District

Ballard SWD #1

OPERATOR:
BLACKBUCK RESOURCES

Ballard SWD #1 - 1.5-mile Deep SWD Map



Dataset Layers

NM Injection Wells

Surface Holes

Injection Status

- ▲ Pending (9)
- ▲ Cancelled (6)
- ▲ Active - Liquid (6)
- ▲ Administratively Abandoned - Not Ready To Inject (3)
- ▲ Plugged (1)

● Heat Map

Max Calculated Rate (bpd)

Label: Pool

Map Layers

- Ballard SWD #1
- Ballard SWD #1 1.5-miles

Google

Map data ©2026 Google 1 km Terms Report a map error

Attachment 3

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

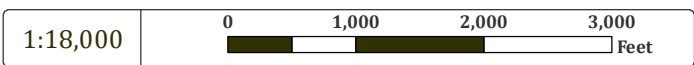
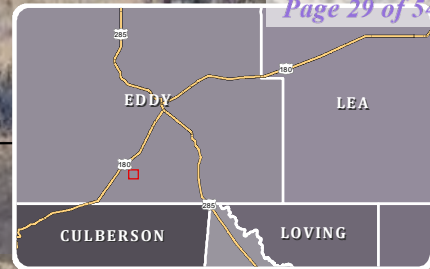
Attachment 4

Disposal Formation Water Analysis														
Well Name	API	Latitude	Longitude	Sec.	Township	Range	Unit	Formation	Sampled	PH	TDS (Mg/L)	Chloride (Mg/L)	Bicarbonate (Mg/L)	Sulfate (Mg/L)
JURNEGAN POINT #001	30-015-10280	32.2405243	-104.423912	5	24S	25E	M	DEVONIAN	1964	7	229,706	136,964	198	2,511
JURNEGAN POINT #001	30-015-10280	32.2405243	-104.423912	5	24S	25E	M	DEVONIAN	1964	7	203,100	121,100	175	2,220

Attachment 5

WATER WELL MAP

SECTION 24, TOWNSHIP 25 SOUTH, RANGE 25 EAST, EDDY COUNTY, NEW MEXICO



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 Units: Foot US

Legend

- Proposed SWD
- 1 Mile Buffer
- NMOSE Points of Diversion
- Active
- Pending
- Changed Location of Well
- Inactive
- Capped
- Plugged
- Unknown

Ballard SWD #1

OPERATOR:
BLACKBUCK RESOURCES

Water Well Sampling Table							
Water Well ID	OSE Status	Owner	Available Contact Information	Use	Latitude	Longitude	Notes
C 02333	Active	Berry Lucas	PO Box 96, White City, NM 88268	Livestock Watering	32.1201	-104.3396	Sampled 01/08/2019
C 03035	Active	John A Ballard	80 Ballard Ranch Rd, Carlsbad, NM 88220	Livestock Watering	32.1218	-104.3418	
C 04013 POD1	Active	John A Ballard	80 Ballard Ranch Rd, Carlsbad, NM 88220	Construction of Public Works	32.1205	-104.3417	Sampled 01/08/2019



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBES, NM 88240

April 15, 2019

JOEL LOWRY

LOWRY ENVIRONMENTAL & ASSOCIATES

PO BOX 296

LOVINGTON, NM 88260

RE: LUCAS SWD

Enclosed are the results of analyses for samples received by the laboratory on 04/08/19 14:20.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

LOWRY ENVIROMENTAL & ASSOCIATES
 JOEL LOWRY
 PO BOX 296
 LOVINGTON NM, 88260
 Fax To:

Received:	04/08/2019	Sampling Date:	04/08/2019
Reported:	04/15/2019	Sampling Type:	Water
Project Name:	LUCAS SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM		

Sample ID: 2101 (H901273-01) C-04013-POD1

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	44.0	4.00	04/11/2019	ND	104	104	100	3.92		
TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	2010	5.00	04/15/2019	ND	506	96.0	527	2.08		

Sample ID: 0201 (H901273-02) C-02333

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	36.0	4.00	04/11/2019	ND	104	104	100	3.92		
TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	2360	5.00	04/15/2019	ND	506	96.0	527	2.08		

Sample ID: 2201 (H901273-03)

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	252	4.00	04/11/2019	ND	104	104	100	3.92		
TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	4650	5.00	04/15/2019	ND	506	96.0	527	2.08		

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Attachment 6

GEOLOGICAL AFFIRMATION

After examination of publicly available geologic and engineering data, there is no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.

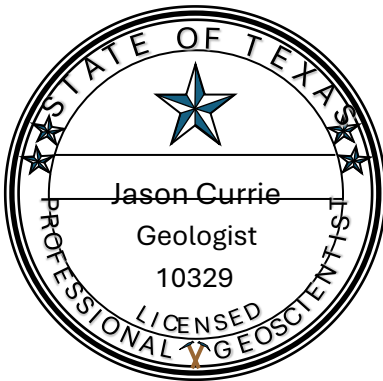


Jason Currie

TXPG License: 10329

Project: Blackbuck New Mexico LLC

Ballard SWD #1



SEISMIC RISK ASSESSMENT

Well Information

Well Name: Ballard SWD #1

Operator: Blackbuck New Mexico LLC

Legal Location: Sec 24 Township 25S Range 25 E

General Location: Eddy County, New Mexico

Geologic Evaluation Performed By:

Jason Currie

Geologist. TXBG-PG Lic# 10329

Point Bar Energy, LLC

Project Managed By:

Nate Alleman

Ace Energy Advisors

January 2026



GENERAL INFORMATION

Blackbuck New Mexico LLC's (Blackbuck) proposed Ballard SWD #1 (hereinafter referred to as the "Subject SWD") is located in Section 24 T25S, R25E, about 4.1 miles southeast of Whites City, NM in the Permian Basin. Blackbuck proposes to dispose of produced water within the Devonian-Silurian Formations through open-hole injection at a depth of 12,499 ft to 13,435 ft below ground surface (bgs).

This report provides a description of the Subject SWD and proposed injection formation, existing groundwater sources, geologic isolation to prevent vertical migration of fluids, and assesses the potential for operation of the Subject SWD to result in induced seismicity based on the proximity and characteristics of known faulting and seismicity in the area.

GEOLOGY & SUBSURFACE OVERVIEW

DEEP SWD PROXIMITY

The Subject SWD is located approximately 2.7 miles from the nearest proposed Deep SWD (Devonian or deeper), which is Blackbuck's Resolve State SWD #1, and approximately 4.4 miles from the nearest permitted or active Deep SWD, which is the Pine Springs State SWD #1, (30-015-32348, SWD-1474).

GROUNDWATER SOURCES

The local alluvium acts as the principal aquifer used for drinking ground water, if present, near the Subject SWD. Around the Subject SWD, the base of the lowermost Underground Source of Drinking Water (USDW) is approximately 400 feet bgs within the Permian Castile, which contains anhydrite and salt layers. Office of the State Engineer (OSE) data for domestic and livestock water wells indicate the deepest freshwater-bearing strata in the area occurs at depths of less than 200 ft.

VERTICAL MIGRATION OF FLUIDS

Proposed Injection Interval

The proposed injection interval, at depths of 12,499 ft to 13,435 ft bgs, includes the Devonian and Silurian formations and is a package of carbonates consisting of predominantly of dolomite with limestone and interbedded cherts. Dolomitic and limestone porosities are expected to range from 0% to 7% with higher skeletal cherts ranging greater than 7% due to secondary porosity in the form of vugs and fractures from weathering effects and compaction. Permeabilities in the 2-7% porosity dolomitic grainstones intervals are estimated to be in the 2-20 millidarcy range, with higher porosity intervals estimated to be in the 40-100 millidarcy range (Ruppel and Holtz, 1994). The open hole injection interval is expected to be within the majority of the higher permeability intervals.

Overlying Confinement

Overlying Confinement is provided by approximately 290 cumulative feet of low-permeability limestone and shale of the Mississippian Limestone (178 feet) and Woodford Shale (112 feet) that will act as barrier to fluid flow and prevent upward migration of injectate into overlying formations.

With the top of the proposed injection interval at 12,499 ft, there is expected to be approximately 12,099 ft of vertical separation between the injected fluids and the base of the lowermost USDW, including the 290 ft thick permeability barrier immediately

overlying the injection interval. In addition to the geologic isolation, the freshwater resources will be further isolated and protected by surface casing that will be set at approximately 425 ft (\approx 25 ft below the deepest freshwater-bearing strata in the area) and cemented to surface.

Underlying Confinement

Underlying Confinement is provided by approximately 175 feet of low-permeability carbonates of the Silurian-aged Montoya formation. The proposed well will TD approximately 100 ft above the top of the Ordovician Montoya and will not inject fluids into the Montoya itself in order to provide sufficient barrier to avoid injection into the Middle Ordovician Simpson, the Lower Ordovician Ellenburger, or the Cambrian and the Precambrian below. The Precambrian structure contours (Ruppel, 2009) show the Precambrian basement to be at a depth of approximately 14,648 ft in this area. Therefore, the injection zone lies approximately 1,213 ft above the Precambrian basement.

SEISMIC RISK ASSESSMENT

The Seismic Risk Assessment consisted of a review of publicly available data including recorded seismic events, known faults and subsurface conditions, as well as Fault Slip Potential (FSP) modeling based on current and future subsurface conditions within the Seismic Area of Interest (Seismic AOI); a 6-mile radius around the Subject SWD.

Historical Seismicity

A search of U.S. Geological Survey (USGS) and New Mexico Tech earthquake catalogs resulted in no recorded seismic events \geq M2.5 within the Seismic AOI (Seismic AOI) since 1970. An expanded search of these earthquake catalogs showed the nearest seismic event \geq M2.5 to be an M2.63 that occurred approximately 10 miles to the northwest in 2024 (see Exhibit 1).

Faults and Subsurface Conditions

Blackbuck does not own any 2D or 3D seismic data around the Subject SWD. Fault data are based on well-to-well correlations, publicly available data, and software as follows:

- USGS Quaternary Fault & Fold database shows no quaternary faults in the nearby area.
- New Mexico Bureau of Geology and Mineral Resources. Open-file Geologic Map 304: Geologic Map Database of New Mexico.
- Basement faults as documented in the Snee & Zoback paper, "State of stress in the Permian Basin, Texas and New Mexico: Implications for induced seismicity", published in the February 2018 issue of the SEG journal, The Leading Edge, along with a method for determining the probability of fault slip in the area.
- Basement faults as documented in the Horne et al (2021) paper, "Basement-Rooted Faults of the Delaware basin and Central Basin Platform, Permian Basin, West Texas and Southeastern New Mexico".
- Fault data was also correlated to the NMOCD SWD Applications & Fault Map dated 02/14/2022, and to fault maps as published in the New Mexico Geological Society Special Publication 13A, "Energy and Mineral Resources of New Mexico: Petroleum Geology," by R. F. Broadhead, 2017.
- Fault interpretations in Pennsylvania intervals by Price, Buddy J., Xavier Janson, Charles Kerans,--Controls on mixed carbonate-siliciclastic slope morphology, early

Permian, northern Delaware Basin, U.S.A., Marine and Petroleum Geology, Volume 143, 2022.

Exhibit 1, which includes a structure contour map of the Precambrian basement and mapped basement faults based on GIS data from NM BGMRS (2003), Horne et al. (2021) and Price (2022), indicates the nearest (potential) basement-rooted fault, as inferred by Horne (2021), is located approximately 3.2 miles northeast of the Subject SWD. Information about faults within the Seismic AOI and evaluated as a part of the FSP model is included in *Exhibit 4*.

Snee and Zoback (2020) states, “The profound rotation of SHmax within the Delaware subbasin and Northwest shelf could be an expression of a transition from dominantly approximately north–south SHmax orientations around the Rio Grande Rift (RGF) to approximately east–west and east-northeast–west-southwest orientations that reflect the general state of stress in the central United States. Around the Subject SWD, Snee and Zoback indicate a SHmax direction of S35°E and an A_{ϕ} of 0.52, indicating an extensional (normal) stress regime.”

Fault Slip Potential (FSP) Modeling

Software developed by the Stanford Center for Induced and Triggered Seismicity allows for the probabilistic screening of deep penetrating faults near the proposed injection zone (Walsh et al., 2016; Walsh et al., 2017). This software uses parameters such as stress orientations, fault strike/dip, injection rates, fault friction coefficients, etc. to estimate the potential for fault slip.

This FSP was performed using the best available data as subsurface/geologic input parameters (Exhibits 2, 3, 4 and 5). Additionally, to provide a conservative result, the daily injection rate used for each modeled SWD was their maximum proposed injection rate [barrels per day (bpd)]. Since sustaining these maximum injection rates throughout the entirety of the modeled time period is not realistic, this approach provides an overly conservative modeling scenario.

Even with this overly conservative scenario, the model resulted in a zero percent (0.0%) FSP value (i.e. chance of slip) on all faults within the Seismic AOI over 20 years (Exhibit 1). The attached exhibits provide additional details of the model, including expected increase in pore pressure and pore pressure required for each fault to slip for each 5-yr interval (see *Exhibits 6-10*).

CONCLUDING STATEMENTS

The Devonian-Silurian sequence in the area of the Subject SWD is well suited as a disposal interval because of the following findings:

1. The Mississippian and Woodford formations provide a sufficient low-permeability barrier to prevent upward migration into overlying formations and USDW's.
2. The Montoya formation provides sufficient low-permeability barrier to prevent downward fluid migration which could result in hydrologic communication with underlying Precambrian basement rock.
3. Sufficient permeabilities and porosities in the injection zone over an injection interval thickness of 936 ft is expected to allow for suitably high injection rates at low surface injection pressures.
4. FSP and Pore Pressure modeling using conservative inputs resulted in an FSP value of zero (0.0) on all faults within the 6-mile Seismic AOI over 20 years, demonstrating the likelihood for the Subject SWD to contribute to seismicity is minimal, at best.

Exhibit 1. Seismic AOI Map with Deep SWDs, seismic events, faults, structural contours of the Precambrian basement in feet below sea level (Horne et al., 2021). Faults within the 6-mile Seismic AOI are colored based on probability of fault slip as modeled using Fault Slip Potential software (Walsh and Zoback, 2016).

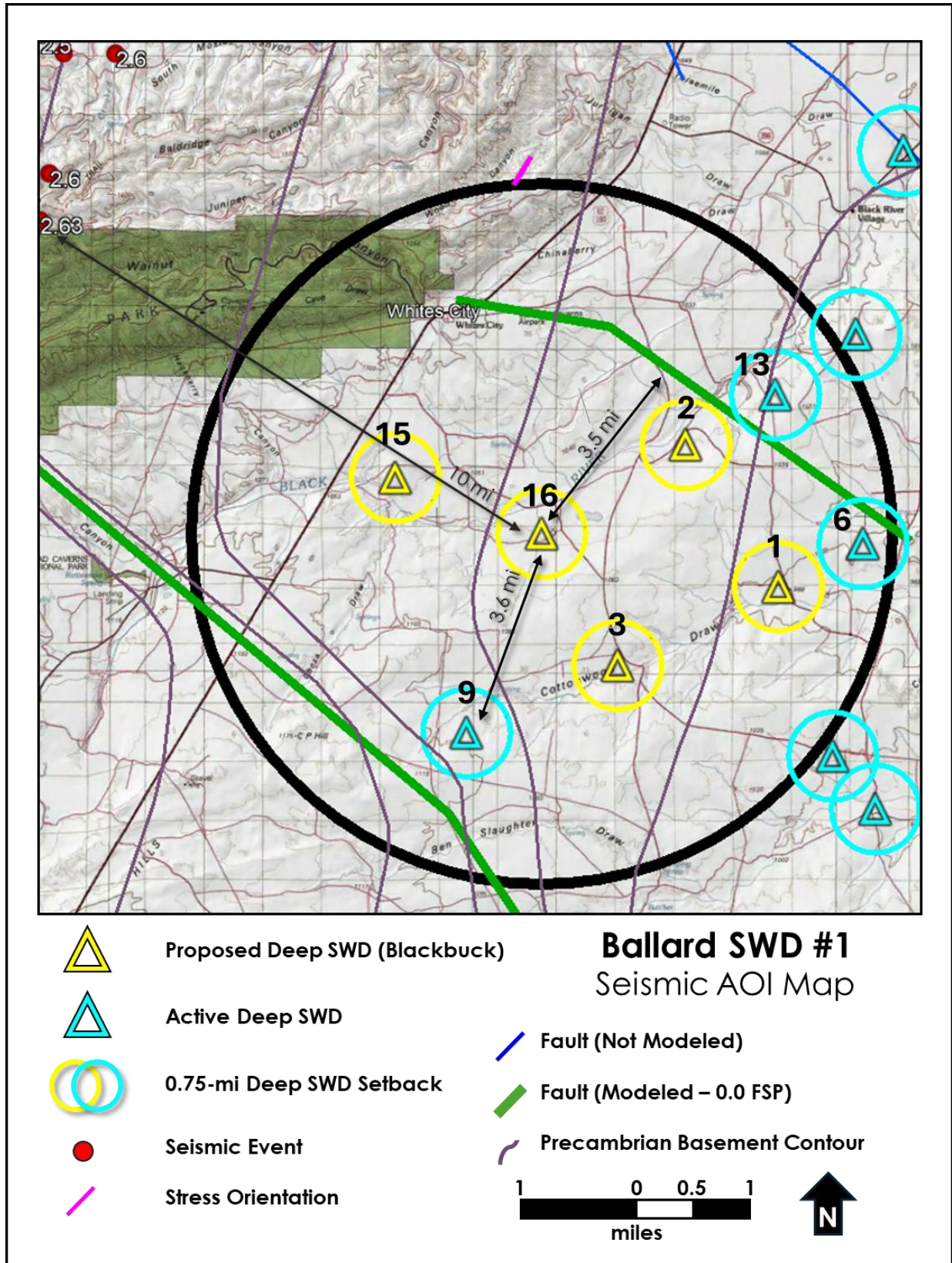


Exhibit 2. FSP Model SWD & Injection Rate Inputs

ID	Operator	Well Name	Status	Modeled Rate (BWPD)	API#	Order#	Latitude	Longitude
1	Blackbuck	Justice SWD #1	Pending	40,000*	N/A	N/A	32.107441	-104.275712
2	Blackbuck	Independence SWD #1	Pending	40,000*	N/A	N/A	32.142649	-104.302793
3	Blackbuck	Republic SWD #1	Pending	40,000*	N/A	N/A	32.088073	-104.322637
6	Blackbuck	Liberty 24 Federal COM #1	Active	40,000	015-33094	SWD-1216	32.118125	-104.2509842
9	Solaris	Pine Springs 2 State SWD #1	Active	20,000*	015-42348	SWD-1474	32.0714340	-104.366783
13	Select Water Solutions	Ringer Federal 36	Active	5,000*	015-33187	SWD-1343	32.15502	-104.276535
15	Blackbuck	Resolve State SWD #1	Pending	40,000*	N/A	N/A	32.134538	-104.3875816
16	Blackbuck	Ballard SWD #1	Pending	40,000*	N/A	N/A	32.120663	-104.344815

*Proposed/Permitted maximum injection rate.

Exhibit 3. FSP Model Geologic Inputs

Faults	Value	Notes/Source
Friction Coefficient	0.58	Hennings et. Al. (2021)
Dip Angle	70	Horne et al. (2021)
Stress	Value	Notes/Source
Vertical Stress Gradient	1.06	Hurd and Zoback (2012)
Max Horizontal Stress Direction (deg)	35	Snee and Zoback (2018)
Depth for Calculation	12,500	Proposed Injection Zone
Initial Reservoir Pressure Gradient (psi/ft)	0.48	calculated from mud weight (ppg) used in drilling at these depths
A Phi Parameter	0.52	Snee and Zoback (2018)
Reference Friction Coefficient	0.7	Hennings et. al. (2021)
Hydrology/Formation Characteristics	Value	Notes/Source
Reservoir Thickness (ft)	936	Proposed Injection Zone, Devonian-Silurian
Porosity (%)	5	Ruppel and Holtz (1994)
Permeability (mD)	20	Ruppel and Holtz (1994)
Injection Rate (bbl/day)	40,000	Maximum Proposed Injection Rate
Fluid Density (kg/m3)	1,100	Salt Water Density
Fluid Compressibility (/Pa)	4 e-10	
Rock Compressibility (/Pa)	1.08 e-09	

Exhibit 4: Modeled Fault Characteristics & Pore Pressure Modeling Results

Fault Number with highest FSP	distance to proposed SWD (mi)	Strike (deg)	Dip (deg)	FSP (2046)	▲ Pore Pressure after 20 years (psi)	Pore Pressure needed for 100% FSP (psi)	Pore Pressure needed for 50% FSP (psi)
Fault 3	3.3	298	70	0	498	4200	3500
Fault 2	4.1	315	70	0	167	4200	3500

Seismic Risk Assessment
 Blackbuck – Ballard SWD #1

Exhibit 5. FSP Model Fault & SWD Inputs to the Stanford FSP software showing the proximity of the Subject SWD (Red Star) to modeled SWD locations and injection rates, modeled injection rates of modeled SWDs, modeled faults within Seismic AOI, and stress orientation of 35 degrees.

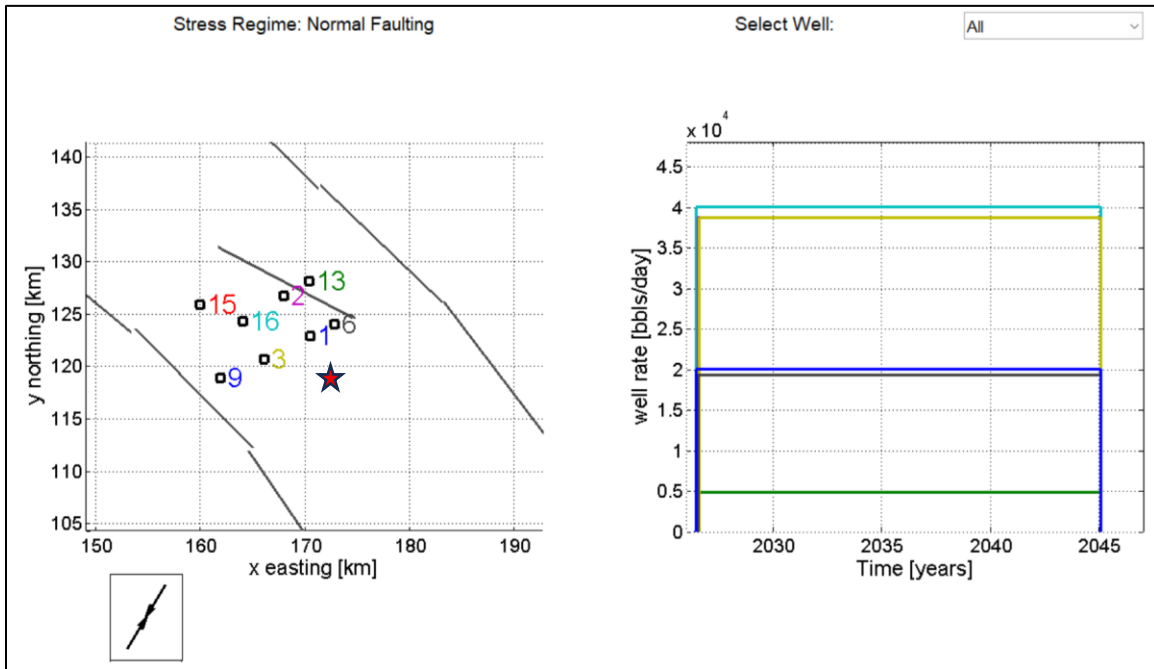
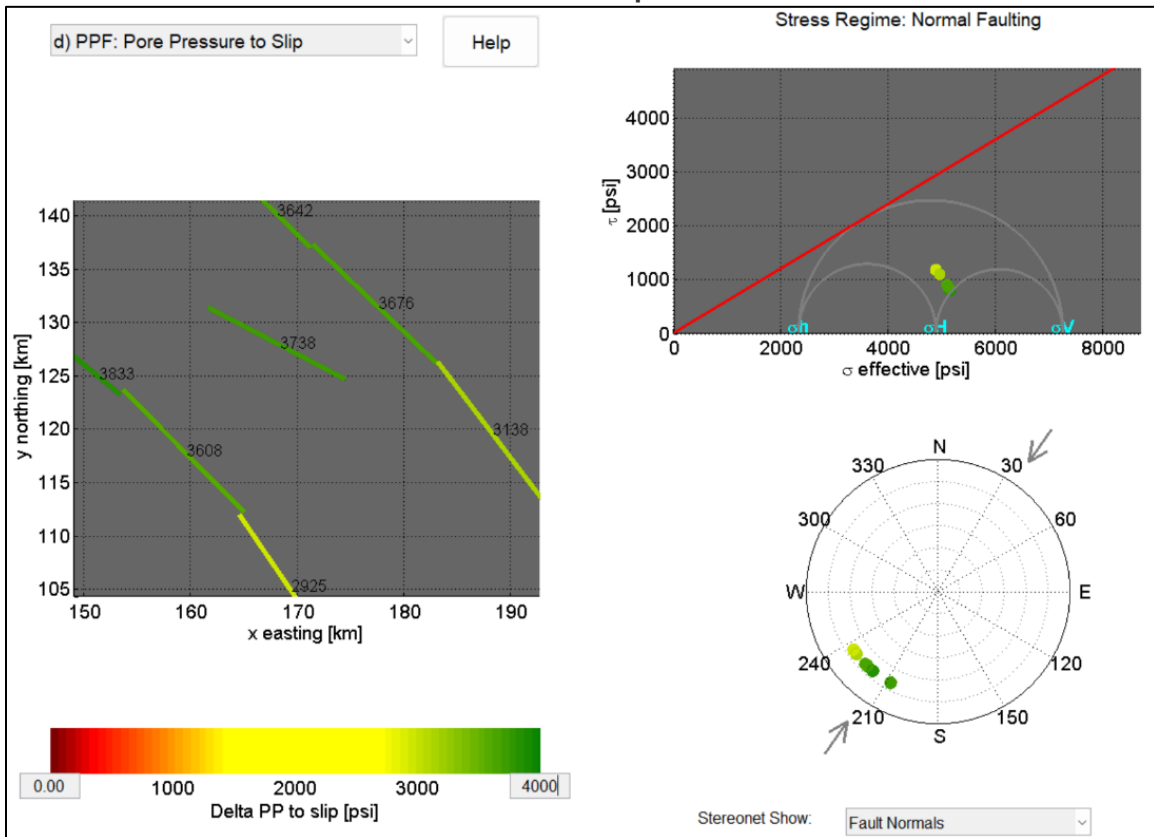


Exhibit 6: Pore Pressure to Slip on Modeled faults.



Seismic Risk Assessment
Blackbuck – Ballard SWD #1

Exhibit 7: Pore Pressure Required for Fault Slip

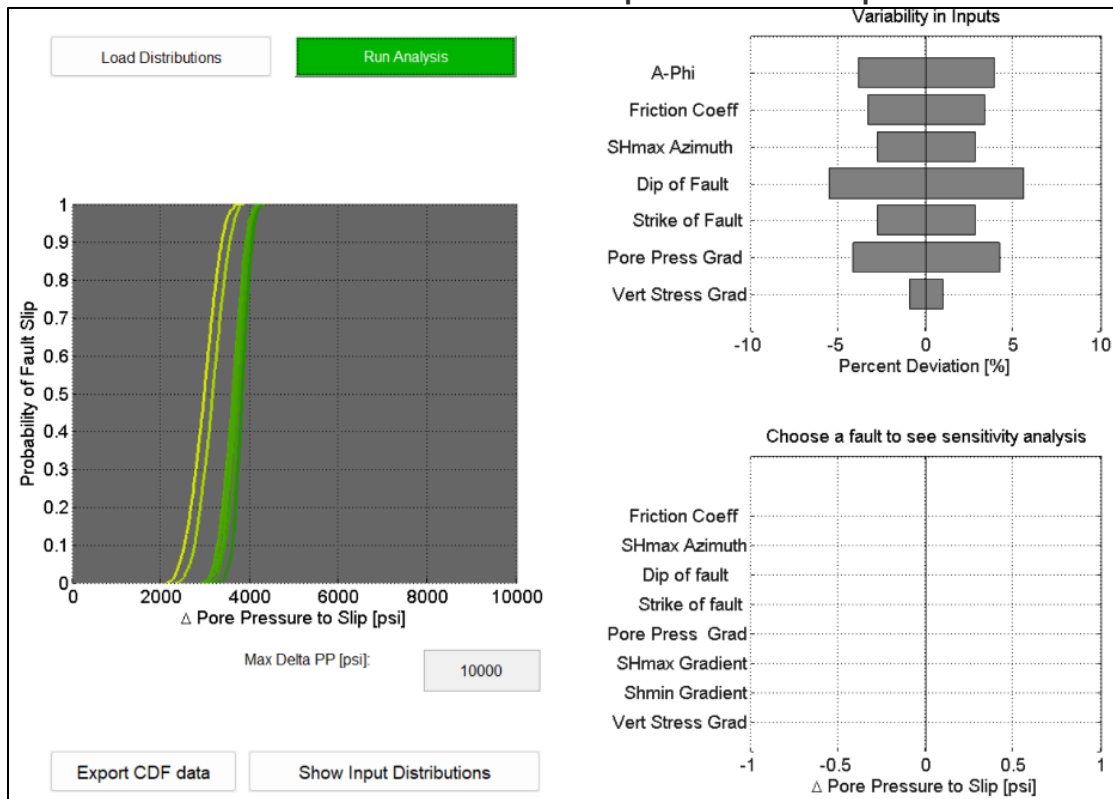
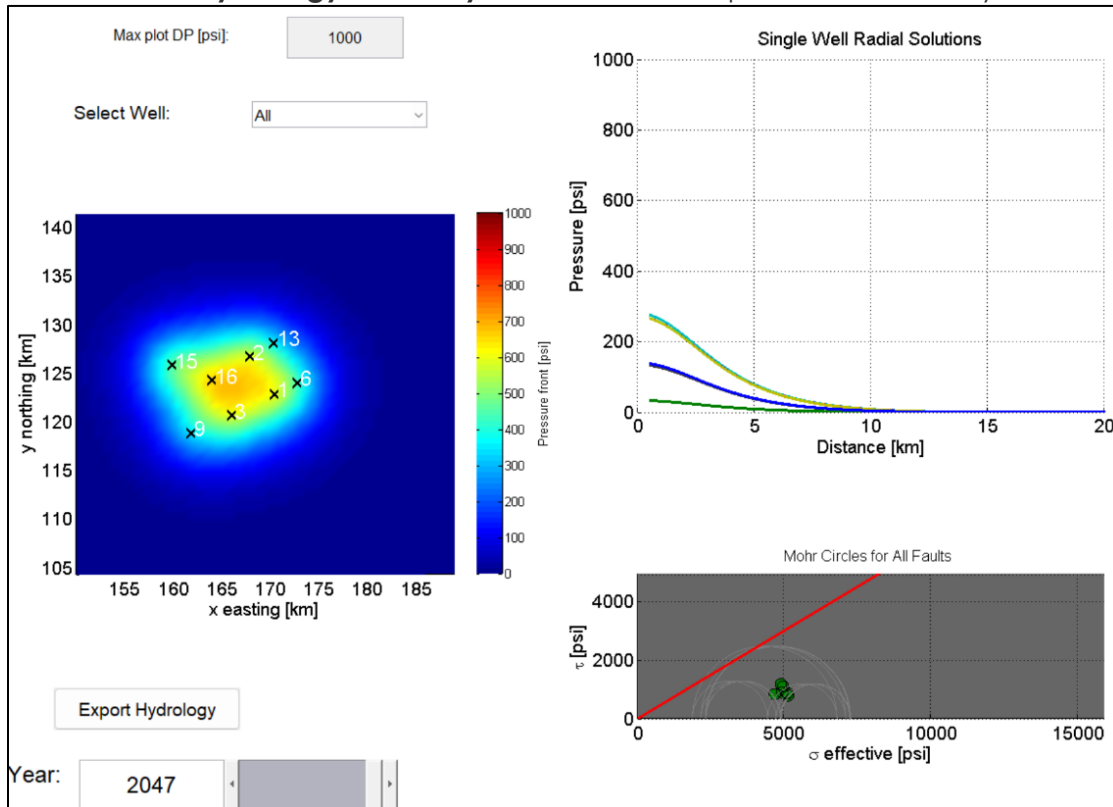


Exhibit 8: Plot of Hydrology after 20 years, Pressure drops off considerably within 5 km



Seismic Risk Assessment
Blackbuck – Ballard SWD #1

Exhibit 9: Year 5 Fault Slip Probability (0% on all faults after 5 years)

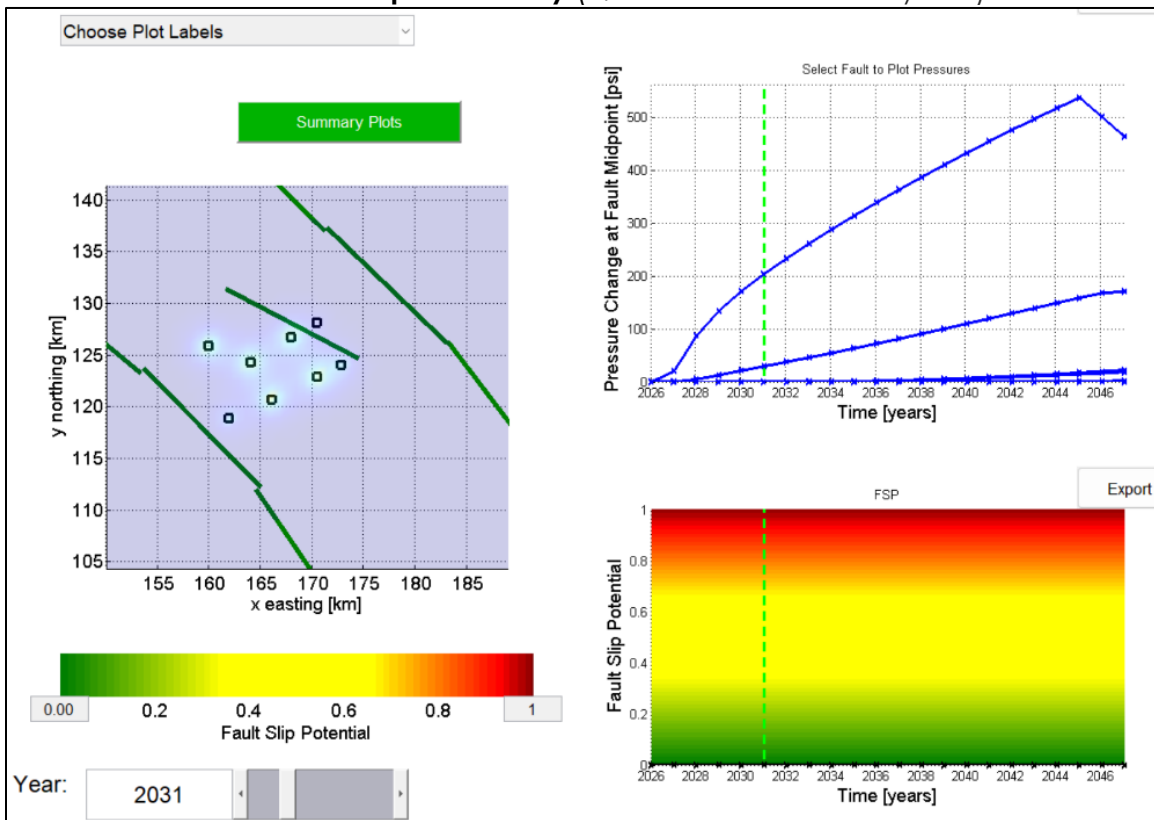
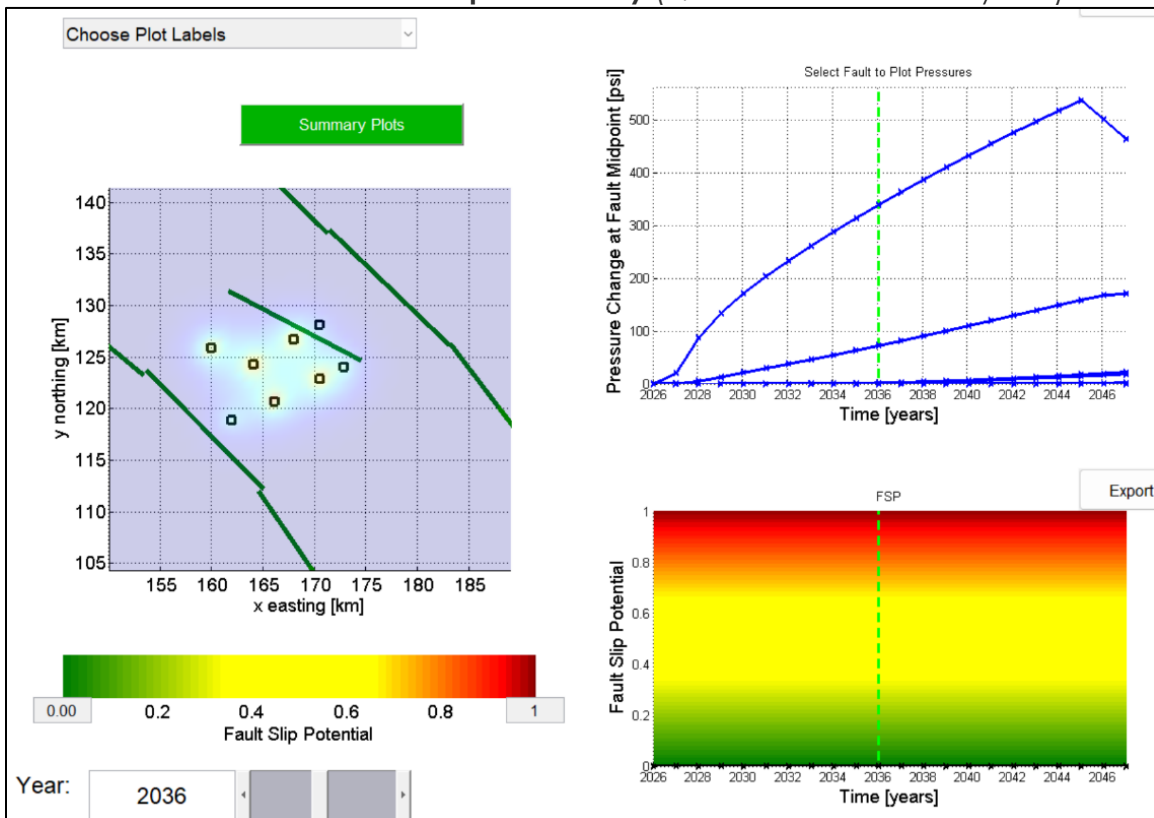


Exhibit 10: Year 10 Fault Slip Probability (0% on all faults after 5 years)



Seismic Risk Assessment
Blackbuck – Ballard SWD #1

Exhibit 11: Year 15 Fault Slip Probability (0% on all faults after 5 years)

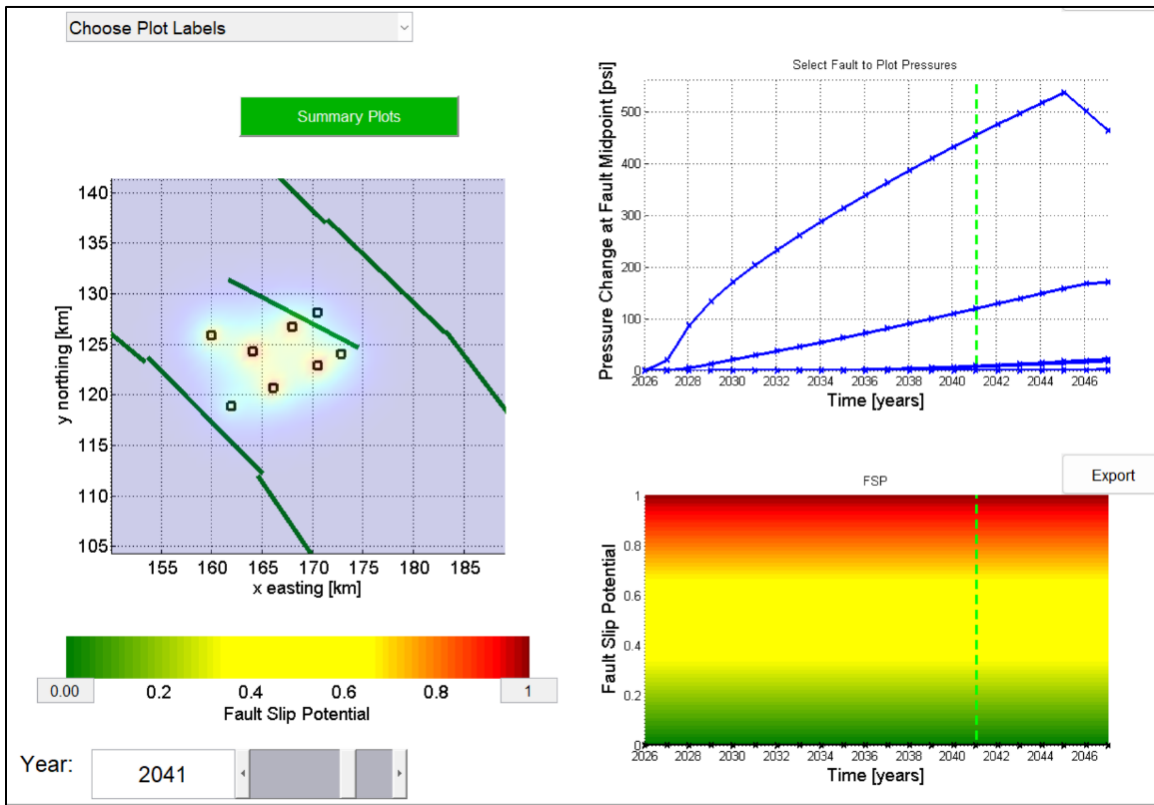
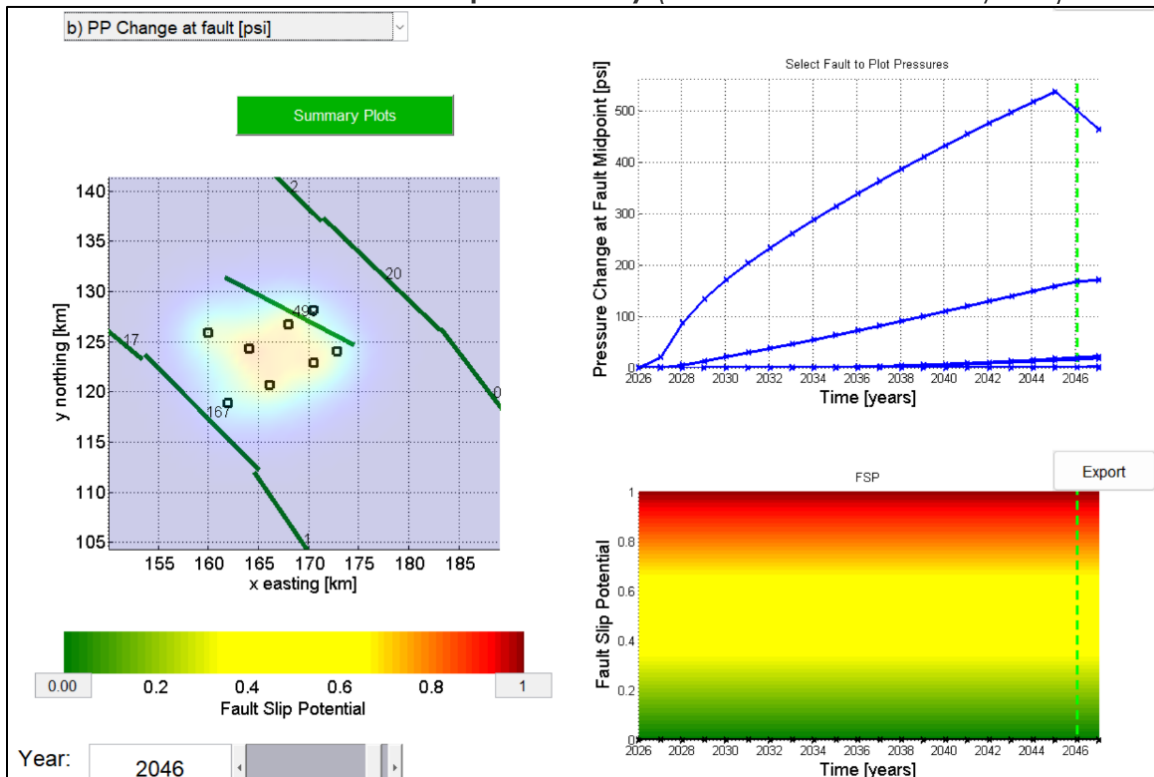


Exhibit 12: Year 20 Fault Slip Probability (0% on all faults after 5 years)



Seismic Risk Assessment
Blackbuck – Ballard SWD #1

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Attachment 7

Statement of Affected Person Notification

A copy of the C-108 application has been provided to the following Affected Persons as notification of the subject Application for Authorization to Inject (C-108).

Entity Name	Entity Address	Mailing Date
Site Surface Owner		
John A. & Mary Lou Ballard	80 Ballard Ranch Rd Carlsbad, NM 88220	01/31/2026
Applicable Mineral Owners		
Bureau of Land Management	Oil and Gas Division 620 E Greene St. Carlsbad, NM 88220	01/31/2026
OCD District Office		
OCD – District 2	506 W. Texas Ave. Artesia, NM 88210	01/31/2026
Leaseholders within 1-Mile AOR		
EOG Resources, Inc.	5509 Champions Drive Midland, TX 79706	01/31/2026
OXY Y-1 Co.	5 Greenway Plaza, Ste. 110 Houston, TX 77046	01/31/2026
Ridge Runner Resources	4000 N. Big Spring Ste. 210 Midland, TX 79705	01/31/2026
Tap Rock Resources	1700 Lincoln St. Suite 4700 Denver, CO 80203	01/31/2026
Well Operators within AOR		
Civitas Permian Operating, LLC	555 17 th Street Suite 3700 Denver, CO 80202	01/31/2026
EOG Resources, Inc.	5509 Champions Drive Midland, TX 79706	01/31/2026

Nathan Alleman
Ace Energy Advisors
501 Se Fph Blvd Ste 201
BARTLESVILLE OK 74003-3931

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John A. & Mary Lou Ballard
80 Ballard Ranch Rd
Carlsbad NM 88220-9406

Bureau of Land Management
Oil and Gas Division
620 E Greene St
Carlsbad NM 88220-6292

Nathan Alleman
Ace Energy Advisors
501 Se Fph Blvd Ste 201
BARTLESVILLE OK 74003-3931

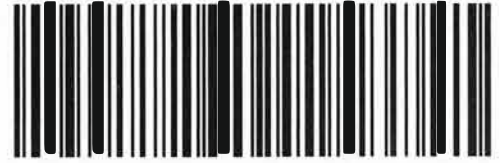
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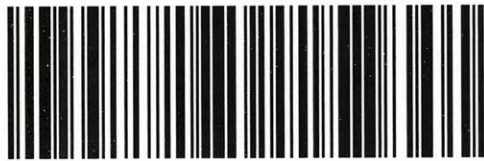
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OCD – District 2
506 W Texas Ave
Artesia NM 88210-2041

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EOG Resources, Inc.
5509 Champions Dr
Midland TX 79706-2843

Nathan Alleman
Ace Energy Advisors
501 Se Fph Blvd Ste 201
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OXY Y-1 Co.
5 Greenway Plz Ste 110
Houston TX 77046-0521

Nathan Alleman
Ace Energy Advisors
501 Se Fph Blvd Ste 201
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Ridge Runner Resources
4000 N Big Spring St Ste 210
Midland TX 79705-4639

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Ace Energy Advisors
501 Se Fph Blvd Ste 201
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Tap Rock Resources
1700 N Lincoln St Ste 4700
Denver CO 80203-4547

Nathan Alleman
Ace Energy Advisors
501 Se Fph Blvd Ste 201
BARTLESVILLE OK 74003-3931

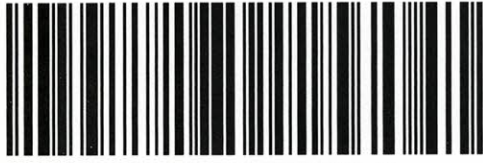


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Civitas Permian Operating, LLC
555 17th St Ste 3700
Denver CO 80202-3906

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Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 549449

CONDITIONS

Operator: Blackbuck New Mexico LLC 3200 Southwest Freeway Houston, TX 77027	OGRID: 373619
	Action Number: 549449
	Action Type: [C-108] Fluid Injection Well (C-108)

CONDITIONS

Created By	Condition	Condition Date
stacy.sandoval	None	2/23/2026