AE Order Number Banner

Application Number: pEG2528350873

Initial Application Part I

SWD-2676

Blackbuck New Mexico LLC [373619]

Received: 10/02/2025



September 30, 2025

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

Subject: Blackbuck New Mexico LLC

Application for Authorization to Inject

Independence 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 Independence 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,

Nate Alleman

Chief Regulatory Advisor

Ace Energy Advisors

RECEIVED:	REVIEWER:	TYPE:	APP NO:	
	- Geologia	ABOVE THIS TABLE FOR OCCU CO OIL CONSERVA Cal & Engineering ancis Drive, Sant	ATION DIVISION g Bureau –	TO MEN ADDRO
	ADMINISTR	ATIVE APPLICATI	ON CHECKLIST	
THIS	S CHECKLIST IS MANDATORY FOR AL REGULATIONS WHICH RE		ations for exceptions to i Edivision level in Santa Fe	DIVISION RULES AND
Applicant: Blackbu			OGRID API: 30-0	Number: 373619
Pool: SWD; Devonian-	-Silurian			ode: 97869
1) TYPE OF APPI	RATE AND COMPLETE INF	INDICATED BELO which apply for [A	ow .]	E TYPE OF APPLICATION
	n – Spacing Unit – Simult]NSL	taneous Dedicatio)
[1] Con [[11] Inje 2) NOTIFICATIO A. Offse B. Royc C. Appl D. Notif E. Notif F. Surfa G. For a H. No n 3) CERTIFICATIO	one only for [1] or [1] nmingling – Storage – M DHC	IC PC Core Increase – Enhance Increase – Enhance IPI E those which apply ders where the information sugard complete to the information sugard complete to the increase of the information sugard complete to the information sugard complete information sugard complete to the information sugard complete information sugard complete in the information sugard complete informatio	anced Oil Recovery OR PPR	FOR OCD ONLY Notice Complete Application Content Complete ed, and/or, oplication for Vedge. I also
	are submitted to the Div			d
!	Note: Statement must be comple	rea by an individual with	manageriai and/or superv	visory capacity.
Nathan Alleman			09/30/2025 Date	
Print or Type Name	•		918-237-0559 Phone Number	
Nothern Alleman			nate.alleman@aceadv	risors.com
Signature			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 X 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?YesXNo If yes, give the Division order number authorizing the project:No
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:
	 Proposed average and maximum daily rate and volume of fluids to be injected; Whether the system is open or closed; Proposed average and maximum injection pressure; Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and, 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
1	belief.
]	NAME: Nate Alleman TITLE: Regulatory Consultant
	SIGNATURE: Nathern Address: 09/30/2025
]	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:

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: Independence SWD #1

Legal Location: 1,933' FSL & 1,154' FWL - Unit L - Section 9 R25S T26E - Eddy County

Coordinates: 32.142649,-104.302793

(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"	250'	438	Surface	Circulation
1st Intermediate	17-1/2"	13-3/8"	1,740'	970	Surface	Circulation
2 nd Intermediate	12-1/4"	9-5/8"	10,348'	2,590	Surface	Circulation
Liner	8-3/4"	7-5/8"	9,344' - 12,351'	221	9,344'	Calculation -circulate to top of liner
Open Hole Injection Interval	6"	N/A	Open hole 12,351' - 13,372'	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.

7" x 5-1/2" fiberglass-coated tubing set at 12,331'

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

Baker SC-2 or equivalent set at 12,331'

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 12,351' - 13,672'

(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
 - o Delaware (2,197' 3,057')
 - Bone Spring (5,709' 8,852')
 - Wolfcamp (8,852' 10,784')
 - 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*:

- 1.0-Mile & 2.0-Mile Well Map
- 1.0-Mile Well List
- 2.0-Mile & 2.0-Mile Lease Map
- 1.0-Mile Surface Ownership Map
- 1.0-Mile Mineral Ownership Map
- Potash District Map
- 1.5-Mile Deep SWD Proximity 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: 2,470 psi (surface) Average: approx. 2,000 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 & 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 & 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.

Groundwater

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 at the top of the Permian Castile formation which lies 36 feet (bgs), which contains the first anhydrite/salt layer in the Salado Fm. 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.

Proposed Injection Interval

The proposed injection interval, at depths of 12,351 ft to13,682 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. 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 111 cumulative feet of low-permeability limestone and shale of the Mississippian Limestone and Woodford Shale 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 12,351 ft, there is expected to be approximately 12,315 ft of vertical separation between the injected fluids and the base of the lowermost USDW, including the 111 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 250 ft (≈50 ft below the deepest freshwater-bearing strata in the area) and cemented to surface.

Underlying Confinement

Underlying Confinement is provided by approximately 587 cumulative feet of low-permeability carbonates of the Silurian-aged Montoya formation. The proposed well will TD approximately 32 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 basement to be at a depth of approximately 14,941 ft in this area. Therefore, the injection zone lies approximately 1,269 ft above the Precambrian basement.

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 been determined to be potential sampling candidates. Efforts are ongoing to contact the respective water well owners to obtain permission for water sample collection and analysis.

Attachment 5 includes a map and corresponding table summarizing relevant details of the water well records within the one-mile radius. Attempts to contact the water well owners will continue, and if any water well samples are able to be collected, an updated summary table and copies of the associated laboratory reports will be submitted to OCD.

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 data 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. A signed Affirmative Statement by a qualified expert is included in *Attachment 6*.

A Fault Slip Potential (FSP) Model was prepared for the proposed disposal operation using very conservative assumptions as inputs for the model. The model resulted in an FSP value of 0.0 on all faults after 20 years, demonstrating that, even under a very conservative scenario, the proposed SWD is not expected to contribute to seismicity. A summary of the methodology and findings of the FSP, along with an associated Seismic Potential Analysis, is included in *Attachment 6.*

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 7** 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.

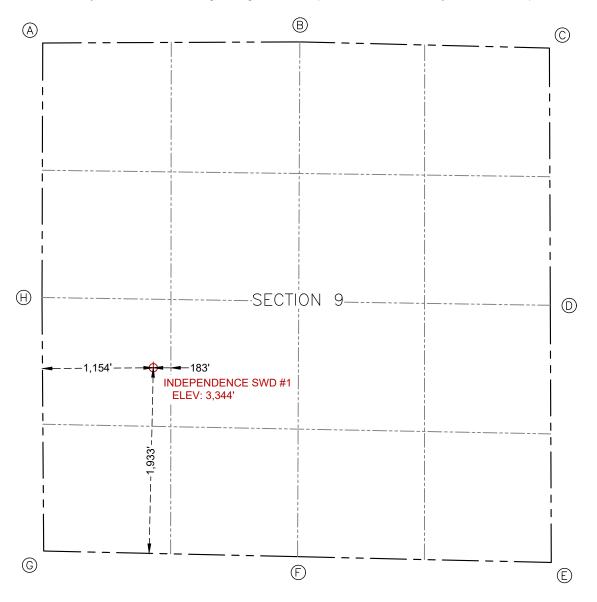
A Public Notice was published in the Carlsbad Current-Argus, a newspaper of general circulation in the area, and the associated affidavit is included in *Attachment 7*.

	12 Electronically Dermitting	у	Er	0,	inerals & Nat	lew Mexico ural Resources Dep ATION DIVISION	-	Revised July 9, 2024						
Via OCI	5 i cillitting							Submitta Type:						
						☐ As Drilled								
					WELL LOCA	TION INFORMATION								
API Nu	umber		Pool Code	Э	97869	Pool Name SV	VD-DEVON	IAN-SILU	JRIAN					
Proper	ty Code		Property N	Name	IN	DEPENDENCE SWD)		Well Numb	per #1				
OGRIE	No. 37361	9	Operator I	Name	BLACKBUCI	K NEW MEXICO, LLO	2		Ground Le	vel Elevation 3,344'				
(Surface Owr	ner: State	☐ Fee ☐ 7	Γribal □ F				e 🗆 Fee	☐ Tribal ☐ Fe	ederal				
					Surf	ace Location								
UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude		Longitude	County				
L	9	258	26E		1,933' FSI	1,154' FWL	32.1426	649° -	104.302793°	EDDY				
					Bottor	m Hole Location								
UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude		Longitude	County				
Dedica	ated Acres	Infill or Defin	ning Well	Defining	g Well API	Overlapping Spacin	ng Unit (Y/N)	Consolid	ation Code					
Order I	Numbers.	<u> </u>				Well setbacks are	under Comm	on Owners	ship: □Yes □I	No				
					Kick (Off Point (KOP)								
UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude		Longitude	County				
			<u> </u>		Firet T	Take Point (FTP)								
UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude		Longitude	County				
					l aet T	Take Point (LTP)								
UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude		Longitude	County				
										-				
Unitize	d Area or A	rea of Uniform	n Interest	Spacino	g Unit Type □ H	lorizontal □ Vertical	Grou	ınd Floor E	Elevation:					
OPER	ATOR CER	TIFICATIONS	;			SURVEYOR CERTIF	FICATIONS							
my know organiza including location interest,	wledge and be ation either ow g the propose pursuant to a	elief, and, if the ns a working in d bottom hole le contract with an early ary pooling agree	well is a vert terest or unlea ocation or has owner of a work	ical or directsed mineral a right to the king interest	mplete to the best o tional well, that this interest in the land drill this well at this or unleased minera ling order heretofore	actual surveys made by correct to the best of my	me or under no belief.		plat was plotted on, and that the s	from field notes of ame is true and				
consent interest	of at least one in each tract (ir ed interval will	lessee or owner in the target pool be located or obt	of a working in or formation) in tained a compu	terest or unle which any p	art of the well's		RECORD PRO	FESSIONAL	***					
	Northan A	Wirms		9/19/2025 Date		Signature and Seal of P	•		Date: 9/16/2025					
Signatu	re													
•		an												
•	athan Allem	an				Certificate Number	Date of Sur	vey	Revision	n Number				
Na Printed	athan Allema	an n@aceadvisoi	's.com			Certificate Number		vey 6/2025	Revision	n Number				

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 1,933' FSL & 1,154' FWL ELEV. = 3,344.00' NAD 83 X = 550,790.08' NAD 83 LAT = 32.142649° NAD 83 LONG = -104.302793° NAD 27 X = 509,607.37' NAD 27 Y = 415,575.60' NAD 27 LAT = 32.142530° NAD 27 LONG = -104.302293°

-	CORNER COORDINATES NEW MEXICO EAST - NAD 83											
POINT	NORTHING/EASTING											
А	IRON PIPE W/ BRASS CAP N:419,015.69' E:549,638.63'											
В	IRON PIPE W/ BRASS CAP N:419,027.33' E:552,316.49'											
С	IRON PIPE W/ BRASS CAP N:418,963.06' E:554,915.89'											
D	IRON PIPE W/ BRASS CAP N:416,283.51' E:554,924.99'											
E	IRON PIPE W/ BRASS CAP N:413,604.89' E:554,935.56'											
F	IRON PIPE W/ BRASS CAP N:413,665.27' E:552,292.80'											
G	IRON PIPE W/ BRASS CAP N:413,724.38' E:549,649.02'											
н	IRON PIPE W/ BRASS CAP N:416,364.76' E:549,631.34'											

Listed depths are measured from ground surface.

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Depths and cement volumes are estimates based on evaluation of the available information.

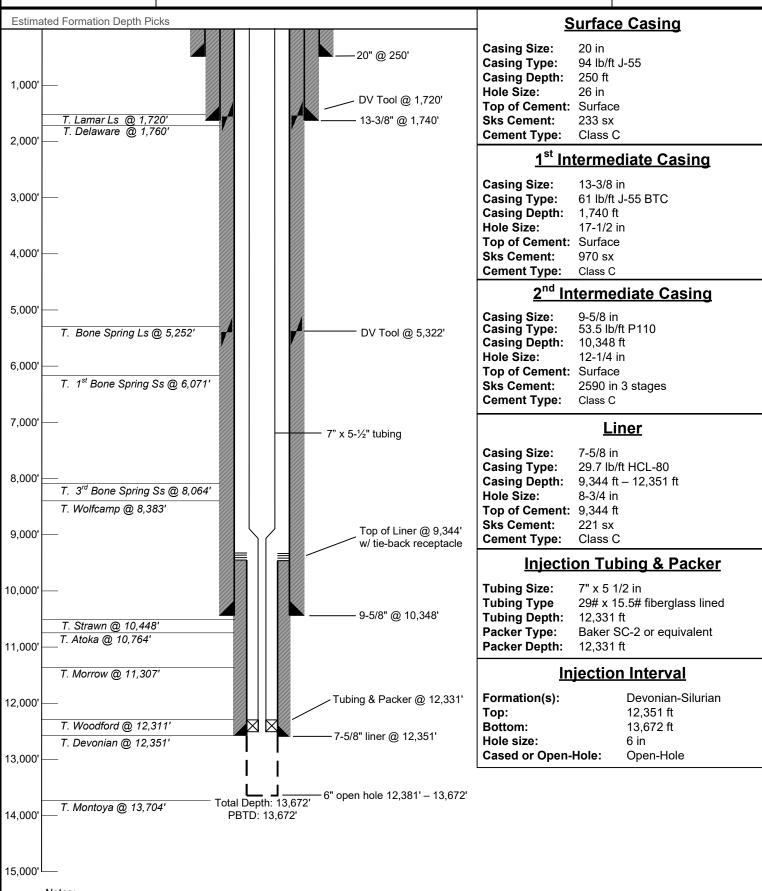
Prepared By:

Independence SWD #1

Proposed Wellbore Diagram



NOT TO SCALE



SC-2 Retrievable Packer

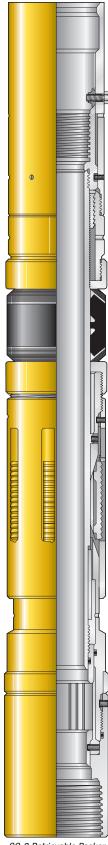
Product Family No. H48807

APPLICATION

The Baker Hughes SC- 2^{TM} 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, tubingconveyed perforating and gravel-packing systems



SC-2 Retrievable Packer Product Family No. H48807

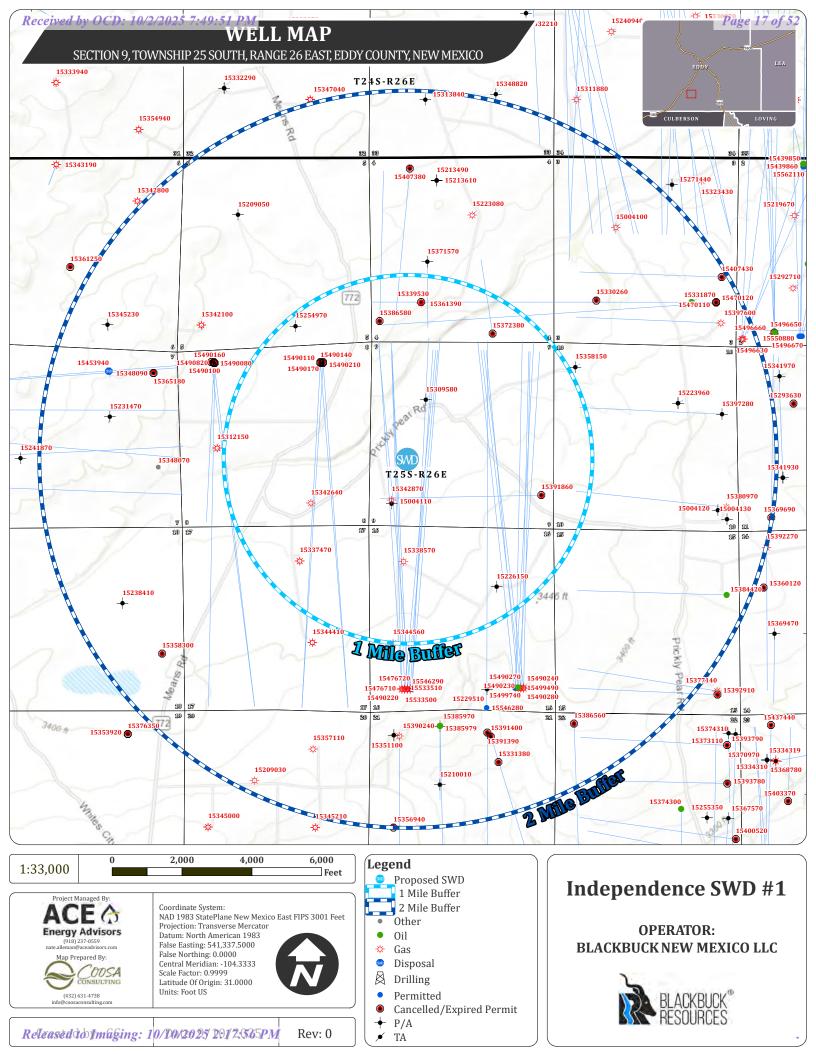
SPECIFICATION GUIDE

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

	Casing				Packer	*		
C)D	T & C Weight ▼	Siz	e •	Max Gago	e Ring OD	Max Packi	ng Element
in.	mm	lb/ft			in.	mm	in.	mm
		20-23	55A2	2–26	4.485	113.9	4.406	111.9
5-1/2	139.7	17–20	55A	1–26	4.593	116.6	4.500	114.3
		13–15.5	55B	-26	4.765	121.0	4.687	119.0
		35–38	70A	2–32	5.735	145.6	5.687	144.4
7	177.0	29–32	70A	1–32	5.820	147.8	5.750	146.0
7	177.8	23–29	70E	-32	6.000	152.4	5.937	150.8
		17–20	700	-32	6.250	158.7	6.187	157.1
		33.7–39	76A2-32 ◆	76A2-40 ◆	6.440	163.6	6.375	161.9
7-5/8	102.6	29.7–33.7	76A4-32 ◆	76A4-40 ◆	6.580	167.1	6.500	165.1
7-5/6	193.6	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
		53.5-58.4	96A	-47	8.191	208.0	8.125	206.3
0.5/0	244.4	47–53.5	96A2	2–47	8.319	211.3	8.250	209.5
9-5/8	244.4	40-47	96A	1–47	8.465	215.0	8.375	212.7
		36–40	96B	-47	8.619	218.9	8.500	215.9

	Sealbore Dia fo	r Seal Nipples ■	Seal	Min Bore Thru Seal Nipples					
Size	in.	mm	Accessory Size ▲	in.	mm				
55A2-26									
55A4-26	2.688	68.2	40–26	1.968	50.0				
55B-26									
70A2-32									
70A4-32									
70B-32	3.250	82.5	80-32 or 81-32	2.406 or 1.995	61.1 or 50.6				
700-32									
76A2-32									
76A2-40	4.000	101.6	80–40	3.000	72.6				
76A4-32	3.250	82.5	80-32 or 81-32	2.406 or 1.995	61.1 or 50.6				
76A4-40	4.000	101.6	80–40	3.000	72.6				
76B2-32	3.250	82.5	80-32 or 81-32	2.406 or 1.995	61.1 or 50.6				
76B2-40	4.000	101.6	80–40	3.000	72.6				
76B4-32	3.250	82.5	80-32 or 81-32	2.406 or 1.995	61.1 or 50.6				
76B4-40	4.000	101.6	80–40	3.000	72.6				
96A-47									
96A2-47	4.750	120.6	190–47 or 192–47	3.000 or 3.875	72.6 or 98.4				
96A4-47	4.750	120.0	190-47 01 192-47	3.000 01 3.675	72.0 01 98.4				
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.



1-mile Well List (Top of Injection Interval: 12,351')													
Well Name	API#	Well Type	Operator	Status	Spud Date	Location (Sec., Tn., Rng.)	Total Vertical Depth (feet)	Penetrate Inj. Zone?					
PRE-ONGARD WELL #001	30-015-00411	Oil	PRE-ONGARD WELL OPERATOR	Plugged	12/21/1958	M-09-25S-26E	2,035	No					
PRE-ONGARD WELL #001	30-015-22615	Oil	PRE-ONGARD WELL OPERATOR	Plugged	7/14/1978	G-16-25S-26E	300	No					
PRE-ONGARD WELL #001	30-015-25497	Oil	PRE-ONGARD WELL OPERATOR	Plugged	11/30/1986	O-05-25S-26E	3,608	No					
OXY ESPERANZA #001	30-015-30958	Gas	OXY USA WTP LIMITED PARTNERSHIP	Plugged	2/25/2000	F-09-25S-26E	11,900	No					
GUITAR BFL COM #001	30-015-33747	Gas	EOG RESOURCES INC**	Active	3/21/2005	B-17-25S-26E	12,010	No					
BARREL BFK STATE COM #001	30-015-33857	Gas	Civitas Permian Operating, LLC**	Active	1/12/2005	D-16-25S-26E	12,124	No					
RINGER FEDERAL COM #007C	30-015-33953	Gas	Murchison Oil and Gas, LLC	Cancelled	N/A	N-04-25S-26E	0	No					
OXY SANTA FE FEDERAL #001	30-015-34264	Gas	OXY USA WTP LIMITED PARTNERSHIP**	Active	10/2/2005	O-08-25S-26E	12,050	No					
PARKS #001	30-015-34287	Gas	CIMAREX ENERGY CO. OF COLORADO**	Active	6/12/2006	M-09-25S-26E	12,235	No					
LUPINE BHJ STATE COM #001	30-015-34456	Gas	Civitas Permian Operating, LLC**	Active	8/1/2007	L-16-25S-26E	12,250	No					
RINGER FEDERAL COM #007	30-015-36139	Gas	CIMAREX ENERGY CO. OF COLORADO**	Active	4/7/2008	N-04-25S-26E	12,185	No					
RINGER FEE #009H	30-015-37238	Oil	CIMAREX ENERGY CO. OF COLORADO**	Cancelled	N/A	O-04-25S-26E	0	No					
RINGER FEDERAL #010H	30-015-38658	Oil	CIMAREX ENERGY CO. OF COLORADO**	Expired	N/A	M-04-25S-26E	0	No					
PARKS FEDERAL COM #002H	30-015-39186	Oil	CIMAREX ENERGY CO. OF COLORADO**	Cancelled	N/A	P-09-25S-26E	0	No					
OE FEDERAL COM #204H	30-015-49011	Gas	Civitas Permian Operating, LLC**	Expired	N/A	A-08-25S-26E	0	No					
OE FEDERAL COM #213H	30-015-49014	Gas	Civitas Permian Operating, LLC**	Expired	N/A	A-08-25S-26E	0	No					
OE FEDERAL COM #233H	30-015-49017	Gas	Civitas Permian Operating, LLC**	Expired	N/A	A-08-25S-26E	0	No					
OE FEDERAL COM #234H	30-015-49021	Gas	Civitas Permian Operating, LLC**	Expired	N/A	A-08-25S-26E	0	No					

Notes:

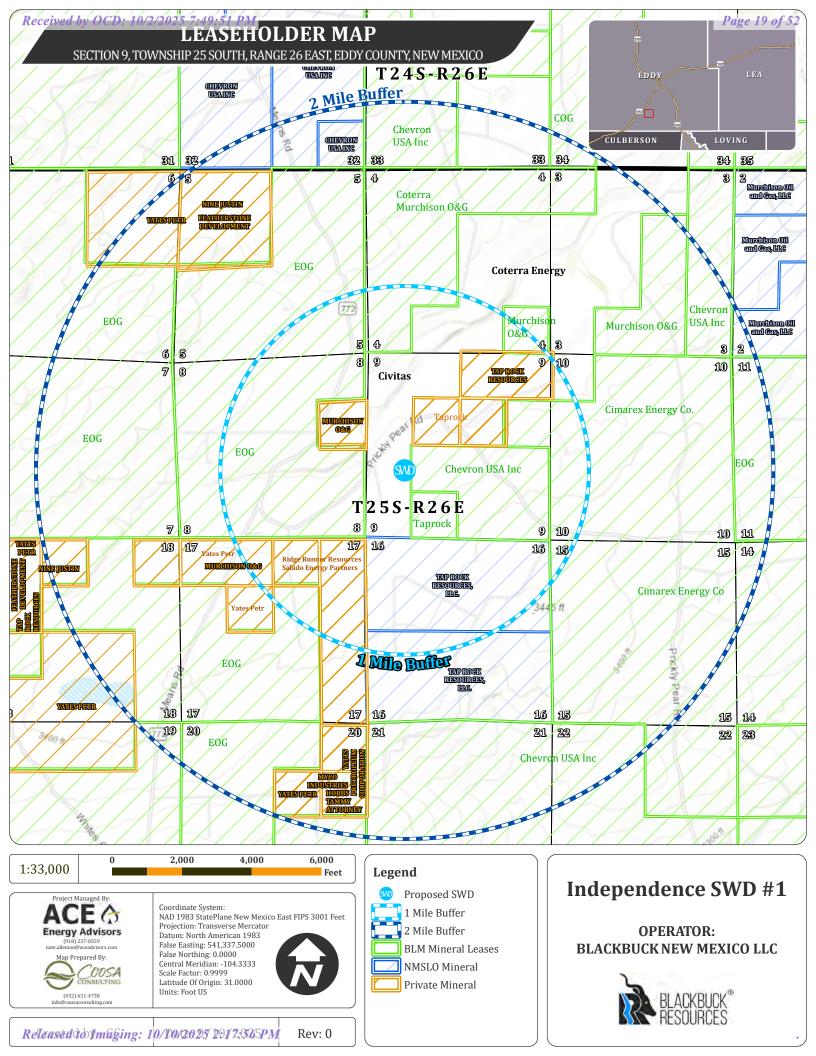
- No wells penetrate the injection interval within the AOR.

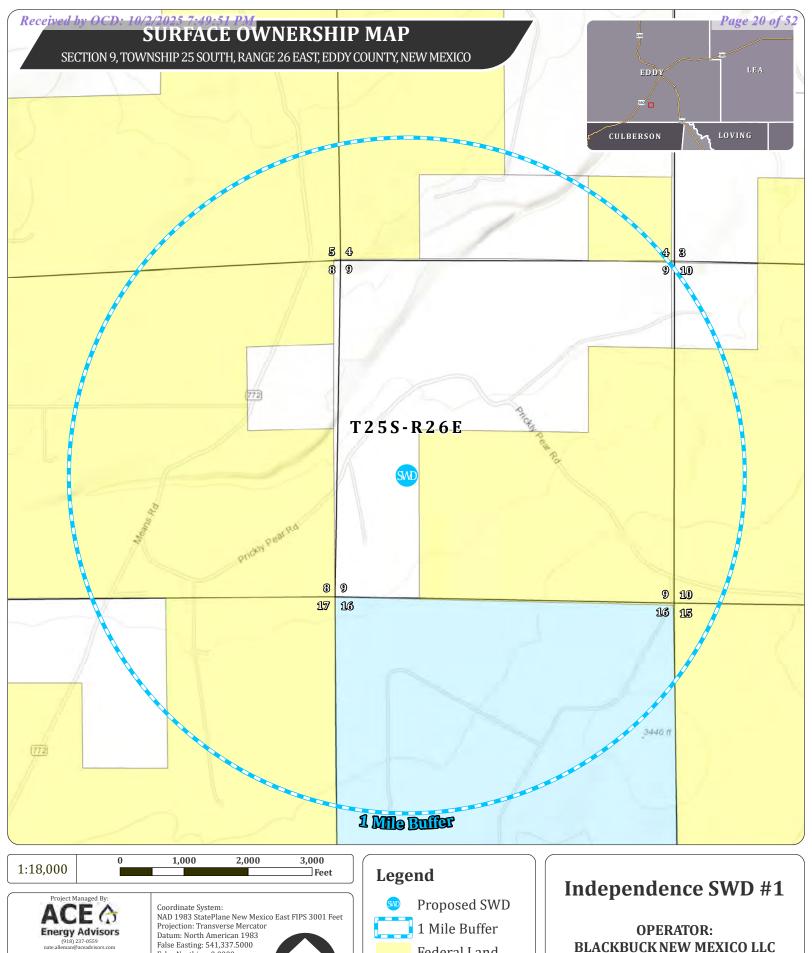
- ** Operator of active, drilled well within AOR and will receive notification of this application.

		Horizon	tal Well w/ Surface Location Out	tside the 1.0-mile AOR		
Well Name	API#	Well Type	Operator	Field	Status	Depth
RINGER FEDERAL COM 008	30-015-37157	Gas	CIMAREX ENERGY CO. OF COLORADO**	GROUP 1, WILDCAT	Plugged	2,816
WHITE CITY 10 FEDERAL 003H	30-015-38097	Gas	CIMAREX ENERGY CO. OF COLORADO**	WOLFCAMP GAS, PURPLE SAGE	Active	9,711
RINGER 3 4 FEDERAL COM 001H	30-015-47011	Gas	CIMAREX ENERGY CO. OF COLORADO**	WOLFCAMP (GAS), PURPLE SAGE	Expired	0
RINGER 3 4 FEDERAL COM 002H	30-015-47012	Gas	CIMAREX ENERGY CO. OF COLORADO**	WOLFCAMP (GAS), PURPLE SAGE	Expired	0
SCHLITZ FEDERAL COM 211H	30-015-47671	Gas	Civitas Permian Operating, LLC**	WOLFCAMP GAS, PURPLE SAGE	Active	8,691
SCHLITZ FEDERAL COM 231H	30-015-47672	Gas	Civitas Permian Operating, LLC**	WOLFCAMP GAS, PURPLE SAGE	Active	9,520
OE FEDERAL COM 232H	30-015-49008	Gas	Civitas Permian Operating, LLC**	WOLFCAMP GAS, PURPLE SAGE	Expired	0
OE FEDERAL COM 202H	30-015-49010	Gas	Civitas Permian Operating, LLC**	WOLFCAMP GAS, PURPLE SAGE	Expired	0
SCHLITZ FEDERAL COM 202H	30-015-49022	Gas	Civitas Permian Operating, LLC**	WOLFCAMP GAS, PURPLE SAGE	Active	8,662
SCHLITZ FEDERAL COM 204H	30-015-49023	Gas	Civitas Permian Operating, LLC**	WOLFCAMP GAS, PURPLE SAGE	Active	8,705
SCHLITZ FEDERAL COM 213H	30-015-49024	Gas	Civitas Permian Operating, LLC**	WOLFCAMP GAS, PURPLE SAGE	Active	8,691
SCHLITZ FEDERAL COM 232H	30-015-49025	Gas	Civitas Permian Operating, LLC**	WOLFCAMP GAS, PURPLE SAGE	Active	9,449
SCHLITZ FEDERAL COM 223H	30-015-49027	Gas	Civitas Permian Operating, LLC**	WOLFCAMP GAS, PURPLE SAGE	Active	9,484
SCHLITZ FEDERAL COM 234H	30-015-49028	Gas	Civitas Permian Operating, LLC**	WOLFCAMP GAS, PURPLE SAGE	Active	9,554
SCHLITZ FEDERAL COM 152H	30-015-49942	Gas	Civitas Permian Operating, LLC**	BONE SPRING O, COTTONWOOD DRAW	Active	7,688
SCHLITZ FEDERAL COM 158H	30-015-49949	Oil	Civitas Permian Operating, LLC**	BONE SPRING O, COTTONWOOD DRAW	Active	7,754
SCHLITZ FEDERAL COM 151H	30-015-49950	Gas	Civitas Permian Operating, LLC**	BONE SPRING O, COTTONWOOD DRAW	Active	7,648
SCHLITZ FEDERAL COM 156H	30-015-49974	Oil	Civitas Permian Operating, LLC**	BONE SPRING O, COTTONWOOD DRAW	Active	7,644
SCHLITZ FEDERAL COM 121H	30-015-53350	Gas	Civitas Permian Operating, LLC**	BONE SPRING O, COTTONWOOD DRAW	Active	7,189
SCHLITZ FEDERAL COM 141H	30-015-53351	Gas	Civitas Permian Operating, LLC**	BONE SPRING O, COTTONWOOD DRAW	Active	6,530
SCHLITZ FEDERAL COM 123H	30-015-54628	Oil	Civitas Permian Operating, LLC**	BONE SPRING O, COTTONWOOD DRAW	Permitted	0
SCHLITZ FEDERAL COM 122H	30-015-54629	Oil	Civitas Permian Operating, LLC**	BONE SPRING O, COTTONWOOD DRAW	Permitted	0
SCHLITZ FEDERAL COM 124H	30-015-54630	Oil	Civitas Permian Operating, LLC**	BONE SPRING O, COTTONWOOD DRAW	Permitted	0
SCHLITZ FEDERAL COM 142H	30-015-54636	Oil	Civitas Permian Operating, LLC**	BONE SPRING O, COTTONWOOD DRAW	Permitted	0
SCHLITZ FEDERAL COM 143H	30-015-54637	Oil	Civitas Permian Operating, LLC**	BONE SPRING O, COTTONWOOD DRAW	Permitted	0
SCHLITZ FEDERAL COM 144H	30-015-54638	Oil	Civitas Permian Operating, LLC**	BONE SPRING O, COTTONWOOD DRAW	Permitted	0
Notes:				<u> </u>		

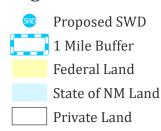
^{**} Operator of active, drilled well within AOR and will receive notification of this application.

			Penetrating Well Casing and Ce	ment Detail	s			
API#	Type	Hole	Size	Depth	Sacks	TOC	Method	Problem
Notes:								
- There are no penetrating wells in the	AOR.							





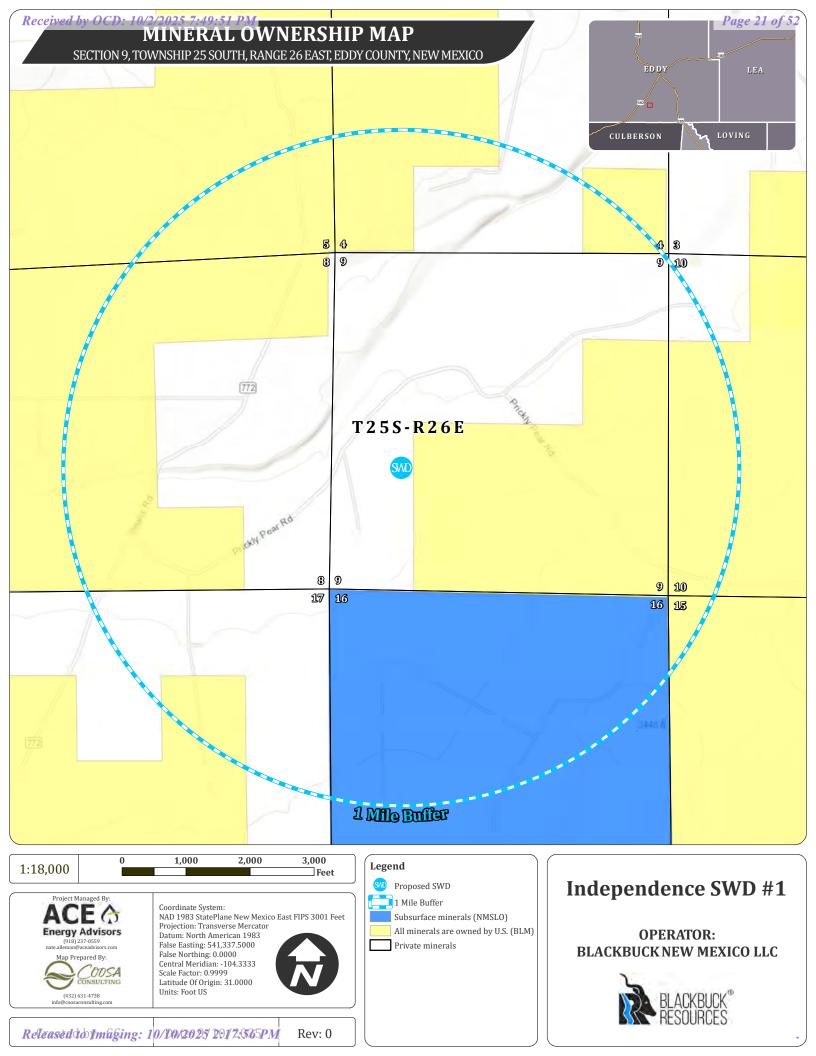


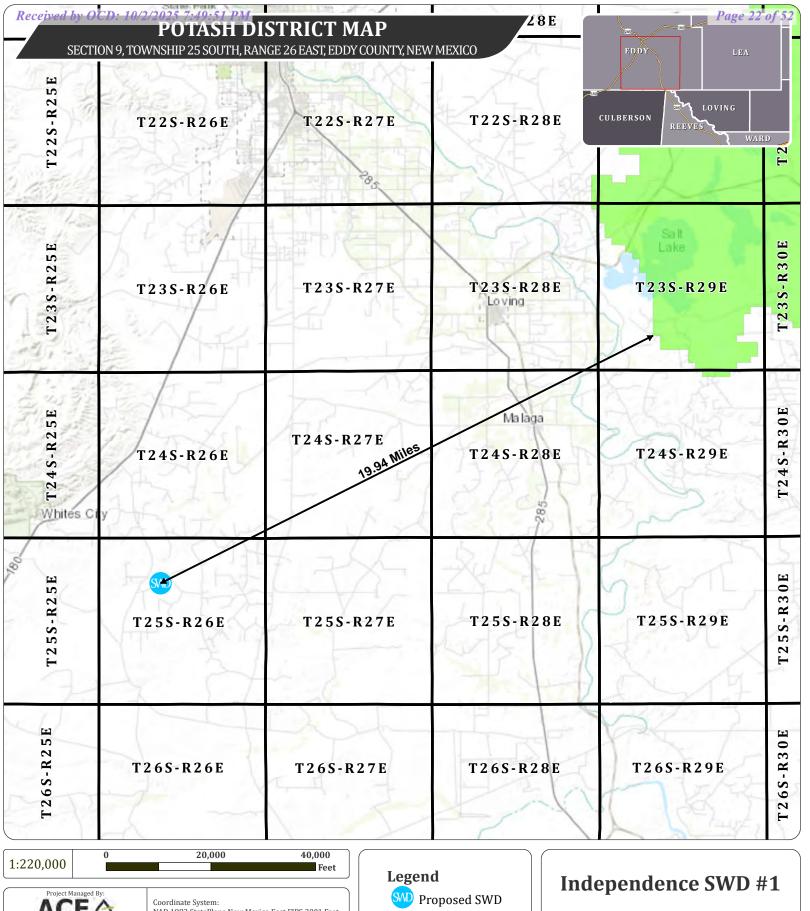




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Rev: 0







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

Releaseddd Imaging: 10/D0/2025 2012:565PM

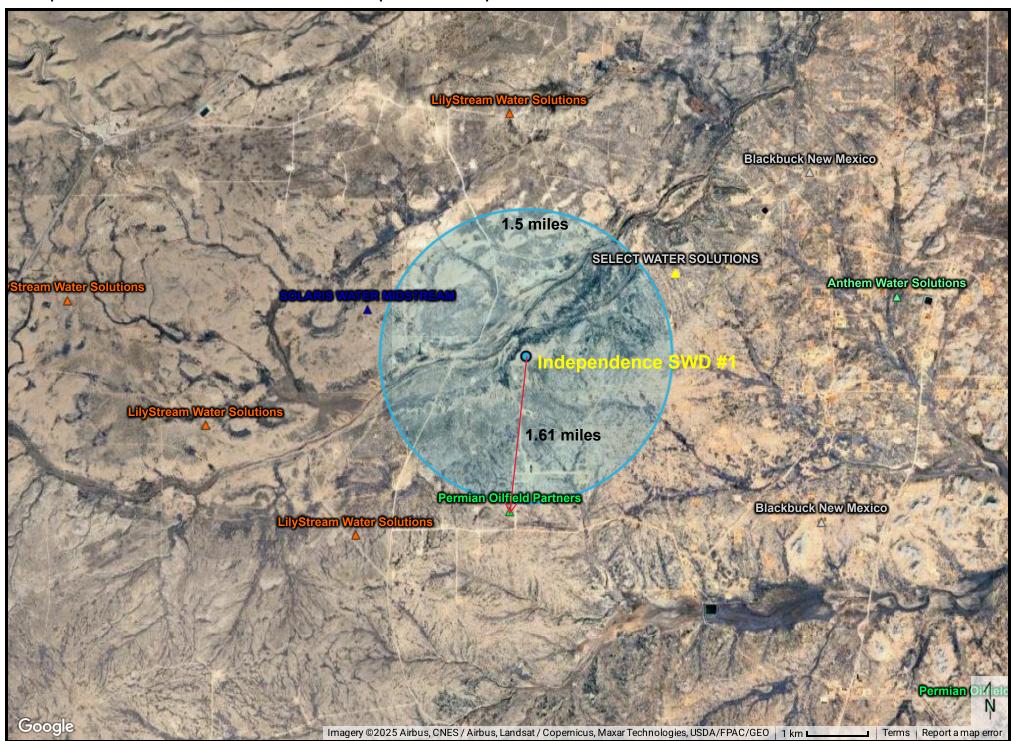
Units: Foot US

Rev: 0

Potash District

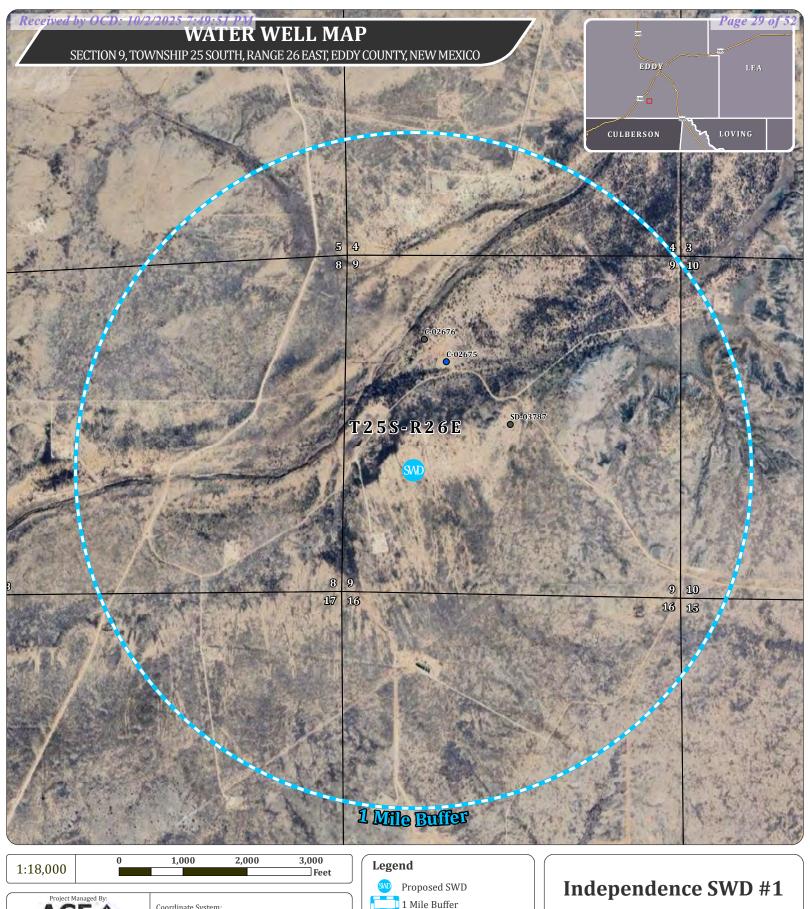
OPERATOR: BLACKBUCK NEW MEXICO LLC





			8	Source	e Formatio	n Water	Anal	ysis						
Well Name	API	Latitude	Longitude	Sec.	Township	Range	Range Unit Formation Sa		Sampled	PH	TDS (Mg/L)	Chloride (Mg/L)	Bicarbonate (Mg/L)	Sulfate (Mg/L)
DOC HOLLIDAY 32 STATE COM #001	30-015-41145	32.1804123	-104.220192	32	248	27E	D	BONE SPRING 2ND SAND	2014	6.7	193,316	120,600	171	17
PREACHER 19 FEDERAL #003H	30-015-41887	32.1957703	-104.2276001	19	248	27E	0	BONE SPRING 2ND SAND	2014	6.5	193,786	119,000	130	34
PREACHER 19 FEDERAL #003H	30-015-41887	32.1957703	-104.2276001	19	24S	27E	0	BONE SPRING 2ND SAND	2015	7	177,820	108,941	366	0
JOSEY WALES 16 STATE COM #003H	30-015-41090	32.2103996	-104.1936798	16	24S	27E	0	BONE SPRING 2ND SAND	2013	6.47	179,420	112,857	146	573
DOC HOLLIDAY 32 STATE COM #001	30-015-41145	32.1804123	-104.220192	32	24S	27E	D	BONE SPRING 2ND SAND	2014	6.3	205,799	128,749	122	17
PREACHER 19 FEDERAL #003H	30-015-41887	32.1957703	-104.2276001	19	24S	27E	0	BONE SPRING 2ND SAND	2014	5.8	203,718	125,605	144	34
JOSEY WALES 16 STATE COM #003H	30-015-41090	32.2103996	-104.1936798	16	248	27E	0	BONE SPRING 2ND SAND	2015	7.6	176,589	109,722	146	0
DOC HOLLIDAY 32 STATE COM #001	30-015-41145	32.1804123	-104.220192	32	24S	27E	D	BONE SPRING 2ND SAND	2015	7.3	197,760	123,850	146	0
DOC HOLLIDAY 32 STATE COM #001	30-015-41145	32.1804123	-104.220192	32	24S	27E	D	BONE SPRING 2ND SAND	2014	7.3	127,682	77,098	195	0
PREACHER 19 FEDERAL #003H	30-015-41887	32.1957703	-104.2276001	19	24S	27E	0	BONE SPRING 2ND SAND	2014	7.4	312,558	186,000	201	3,947
PREACHER 19 FEDERAL #003H	30-015-41887	32.1957703	-104.2276001	19	24S	27E	0	BONE SPRING 2ND SAND	2014	7.4	312,550	186,000	201	0
JOSEY WALES 16 STATE COM #003H	30-015-41090	32.2103996	-104.1936798	16	248	27E	0	BONE SPRING 2ND SAND	2015	6.5	179,141	109,123	73	0
DOC HOLLIDAY 32 STATE COM #001	30-015-41145	32.1804123	-104.220192	32	248	27E	D	BONE SPRING 2ND SAND	2015	7	203,230	124,269	49	0
IRRITABLE 22 STATE COM #002H	30-015-41359	32.1219177	-104.1758957	22	258	27E	В	BONE SPRING 2ND SAND	2015	6.8	161,087	100,324		544
BRADLEY FEDERAL #002	30-015-00387	32.2255516	-104.256218	11	248	26E	Р	DELAWARE			230,993	137,300	650	3,099
CRAWFORD #001	30-015-01121	32.2294731	-104.1977081	9	248	27E	K	DELAWARE			95,055	58,570	95	187
ST HAMILTON #001	30-015-01126	32.2109222	-104.186203	15	248	27E	М	DELAWARE			301,812	189,600	192	2,040
FED J #001	30-015-22471	32.0730133	-104.2359085	6	26S	27E	Е	DELAWARE	1978	5.7	255,599	160,000	24	330
FED J#001	30-015-22471	32.0730133	-104.2359085	6	26S	27E	Е	DELAWARE		7.4	265,727	158,000	37	3,600
FED J #001	30-015-22471	32.0730133	-104.2359085	6	26S	27E	Е	DELAWARE		7.6	255,336	156,000	76	790
FED J #001	30-015-22471	32.0730133	-104.2359085	6	26S	27E	Е	DELAWARE		8.5	263,830	157,000	78	3,700
WHITE CITY PENN GAS COM UNIT 1 #001	30-015-00408	32.1937523	-104.3088455	29	24S	26E	Α	WOLFCAMP	1960	7		10,000	645	1,320
LEE J FED #001	30-015-05973	32.2155037	-104.3304367	18	248	26E	J	WOLFCAMP		8.1		9,100		7,300
HABANERO 17 FEDERAL COM #001H	30-015-36108	32.2218475	-104.2062683	17	248	27E	Α	WOLFCAMP	2015	6.5	108,205	65,927	146	0
SERRANO 29 FEDERAL #001H	30-015-37763	32.1898842	-104.2062149	29	248	27E	Н	WOLFCAMP	2015	6.9	102,136	62,813	183	0
SERRANO 29 FEDERAL #001H	30-015-37763	32.1898842	-104.2062149	29	248	27E	Н	WOLFCAMP	2015	6.5	100,995	63,450	268	0

	Disposal Formation Water Analysis													
Well Name	API	Latitude	Longitude	Sec.		Range		Formation	Sampled	РН	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	М	DEVONIAN	1964	7	229,706	136,964	198	2,511
JURNEGAN POINT #001	30-015-10280	32.2405243	-104.423912	5	248	25E	М	DEVONIAN	1964	7	203,100	121,100	175	2,220
WHITE CITY PENN GAS COM UNIT 1 #001	30-015-00408	32.1937523	-104.3088455	29	248	26E	Α	DEVONIAN	1960	7		10.120	653	1.336





Coordinate System: NAD 1983 StatePlane New Mexico East FIPS 3001 Feet Projection: Transverse Mercator

Projection: Transverse Mercatic 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 Inits: Fact IIS Units: Foot US



- **NMOSE Points of Diversion**
 - Active
- Pending
- Changed Location of Well
- Inactive
- Capped
- Plugged
- Unknown

OPERATOR: BLACKBUCK NEW MEXICO LLC



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Water Well Sampling Table							
Water Well ID	OSE Status	Owner	Available Contact Information	Use	Latitude	Longitude	Notes
C 02675	Active	Deborah Beard	185 Means Road Carlsbad, NM 88220	Livestock Watering	32.1473	-104.3011	May be suitable for testing
SD 03787	Declared	Deborah Beard	185 Means Road Carlsbad, NM 88220	Livestock Watering	32.1446	-104.2979	May be suitable for testing
C 02676	Permit	Oxy Usa Inc.	#6 Desta Drive, Midland, TX 79705	Prospecting	32.1483	-104.3022	Not suitable for testing based on use



Subject C-108 Application for Authorization to Inject – Affirmative Geologic Statement

Blackbuck New Mexico LLC Independence SWD #1

1,933' FSL & 1,154' FWL - Section 9 R25S T26E

Eddy County, New Mexico

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

Geologist. TXBG-PG Lic# 10329

Lean Waris

Point Bar Energy

Date 9/19/2025



SEISMIC RISK ASSESSMENT

Well Information

Well Name: Independence SWD #1

Operator: Blackbuck New Mexico LLC

Legal Location: Sec 9 Township 25S Range 26 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

September 19, 2025

GENERAL INFORMATION

Blackbuck New Mexico LLC's (Blackbuck) proposed Independence SWD #1 (hereinafter referred to as the "Subject SWD") is located in Section 9 T25S, R26E, about 5 miles southeast of Whites City, NM in the Permian Basin. Blackbuck proposes to dispose of produced water within the Devonian-Silurian Formation through open-hole injection at a depth of 12,351 ft to13,682 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 1.73 miles from the nearest active or permitted Deep SWD (Devonian or deeper), which is the Ringer Federal #6, (30-015-33187, SWD-1343).

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 at the top of the Permian Castile formation which lies 36 feet (bgs), which contains the first anhydrite/salt layer in the Salado Fm. 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 12,351 ft to13,682 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 111 cumulative feet of low-permeability limestone and shale of the Mississippian Limestone and Woodford Shale 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 12,351 ft, there is expected to be approximately 12,315 ft of vertical separation between the injected fluids and the base of the lowermost USDW, including the 111 ft thick permeability barrier immediately overlying the injection interval. In addition to the geologic isolation, the freshwater

Seismic Risk Assessment
Blackbuck - Independence SWD #1

resources will be further isolated and protected by surface casing that will be set at approximately 250 ft (\approx 50 ft below the deepest freshwater-bearing strata in the area) and cemented to surface.

Underlying Confinement

Underlying Confinement is provided by approximately 587 cumulative feet of low-permeability carbonates of the Silurian-aged Montoya formation. The proposed well will TD approximately 32 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 basement to be at a depth of approximately 14,941 ft in this area. Therefore, the injection zone lies approximately 1,269 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 <u>no recorded seismic events ≥M2.5 within the Seismic AOI (Seismic AOI) since 1970</u>. An expanded search of these earthquake catalogs showed the nearest seismic event ≥M2.5 to be an M2.6 that occurred approximately 11 miles to the northwest in 2024 (see Exhibit 1).

Faults and Subsurface Conditions

Blackbuck does not own any 2D or 3D seismic data in the area of this Subject SWD. Fault interpretations are based on well-to-well correlations and 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.

Seismic Risk Assessment
Blackbuck - Independence SWD #1

A structure contour map (Ex. 1) of the Precambrian basement shows the Subject SWD is approximately 1 mile from the nearest (potentially) basement-rooted fault inferred by Horne (2021). Information about known, nearby faults based on GIS data from NM BGMRS (2003), Horne et al. (2021) and Price (2022) is listed 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 modeled daily injection rate for pending SWDs was their maximum proposed injection rate [barrels per day (bpd)] and the modeled daily injection rate for the existing, active SWDs was their maximum historical reported injection rate (bpd). Since sustaining these maximum injection rates throughout the duration of the modeled time periods is not realistic, this approach provides an overly conservative modeling scenario.

<u>Even with this overly conservative scenario, the model resulted in a zero (0%) percent 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.</u>

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:

- The Mississippian limestone and Woodford shale formations provide a low permeability barrier overlying the injection interval to prevent upward migration into overlying formations and USDW's,
- 2. The Montoya formation provide a low permeability barrier underlying the injection interval to prevent downward fluid migration which could result in hydrologic communication with Precambrian basement rock,
- 3. Sufficient permeabilities and porosities in the injection zone over an injection interval thickness of 1,321 ft is expected to allow for suitably high injection rates at low surface injection pressures, and
- 4. FSP and Pore Pressure modeling using conservative inputs resulted in an FSP value of zero (0) on all faults within the 6-mile Seismic AOI, demonstrating that the likelihood for operation of the Subject SWD to contribute to seismicity in the areas is minimal, at best.

Seismic Risk Assessment

Blackbuck - Independence SWD #1

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).

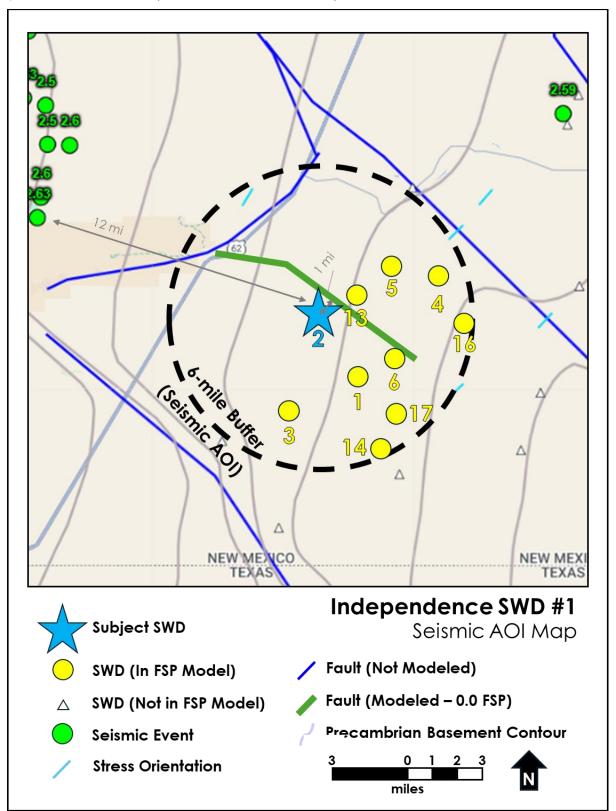


Exhibit 2. FSP Model SWD & Injection Rate Inputs

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
4	Blackbuck	Allegiance Federal SWD #1	Pending	40,000*	N/A	N/A	32.165286	-104.220793
5	Blackbuck	Freedom 36 State SWD #1	Active	29,842**	015-44489	SWD-2136	32.169967	-104.2529831
6	Blackbuck	Liberty 24 Federal COM #1	Active	23,646**	015-33094	SWD-1216	32.118125	-104.2509842
13	Select Water Solutions	Ringer Federal 36	Active	3,679**	015-33187	SWD-1343	32.15502	-104.276535
14	Solaris	Cottonwood 2 State SWD #1	Active	10,211**	015-42356	SWD-1473	32.065628	-104.259948
16	Blackbuck	Patriot State SWD #1	Approved	25,000*	015-50206	SWD-2466	32.138134	-104.2033997
17	Solaris	Cottonwood 36 State #1	Active	6,931**	015-29560	SWD-1226	32.084450	-104.248700

^{*}Proposed maximum injection rate (no injection history)

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	13,000	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)	1,321	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	

^{**}Highest reported monthly average injection rate

Blackbuck - Independence SWD #1

Exhibit 4: Basement Fault Model Characteristics and Results

Fault Number with highest FSP	distance to proposed SWD (mi)	Strike (deg)	Dip (deg)	FSP (2047)		▲ Pore Pressure needed for 100% FSP (psi)	
Fault 4	0.9	297	70	0	280	4500	3500
Fault 3	4.5	243	70	0	38	1000	525

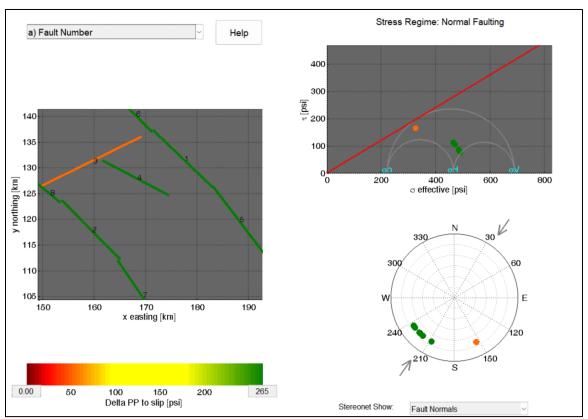


Exhibit 5. FSP Model Fault & SWD Inputs to the Stanford FSP software showing the proximity of the Subject SWD (Red Star) to modeled SWD locations and injection rates, modeled injection rates of modeled SWDs, modeled faults within Seismic AOI, and stress orientation of 35 degrees.

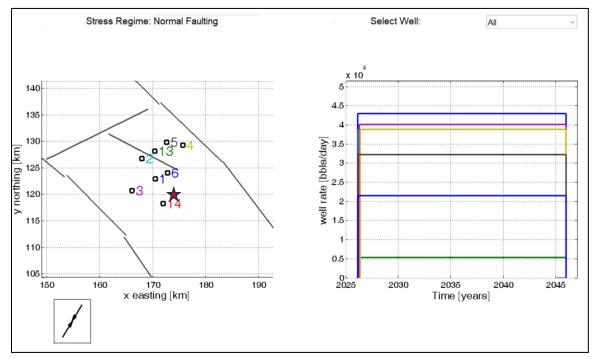
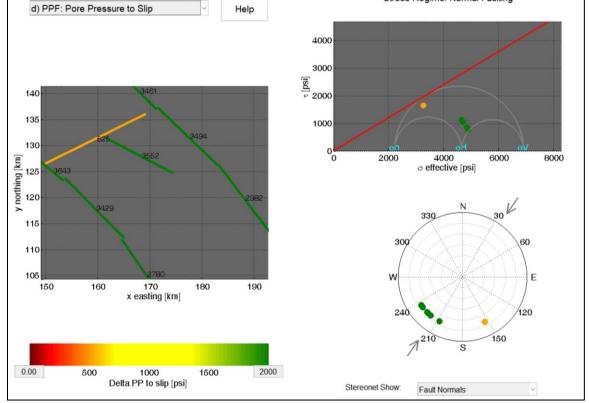


Exhibit 6: Pore Pressure to Slip on Modeled faults.

Stress Regime: Normal Faulting

Help



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Exhibit 7: Pore Pressure Required for Fault Slip

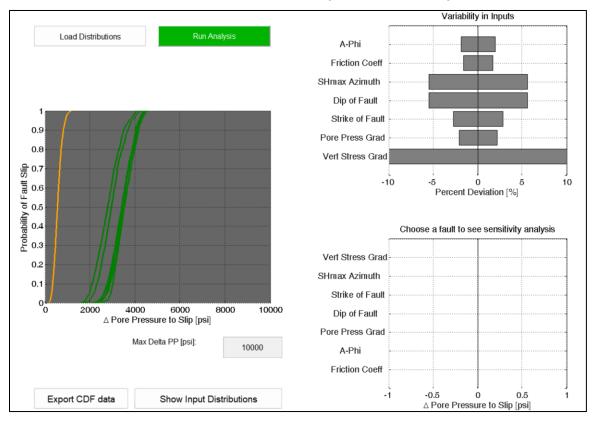


Exhibit 8: Plot of Hydrology after 20 years, Pressure drops off considerably within 5 km

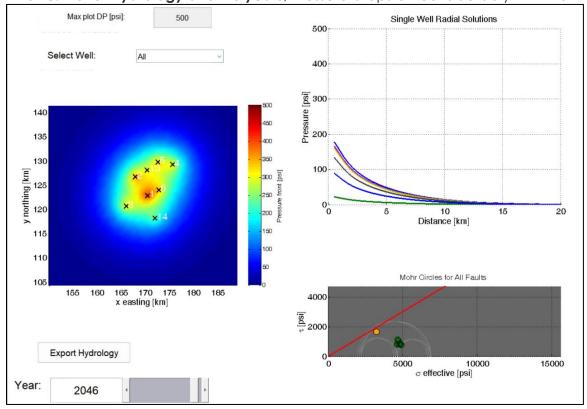


Exhibit 9: Year 5 Fault Slip Probability (0% on all faults after 5 years)

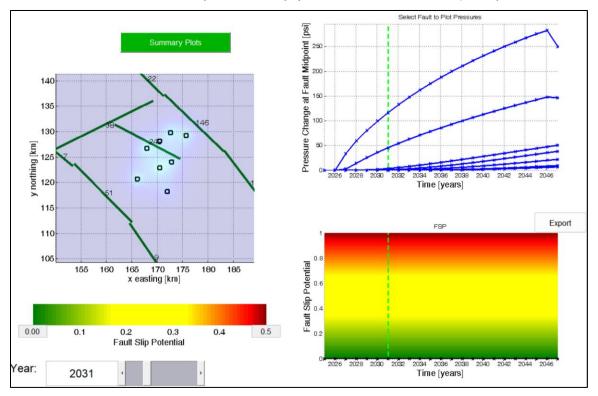


Exhibit 10: Year 10 Fault Slip Probability (0% on all faults after 5 years)

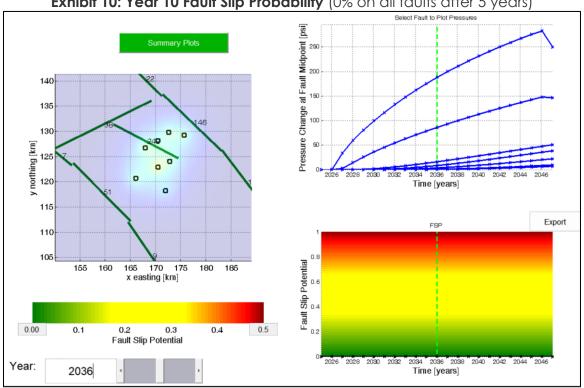


Exhibit 11: Year 15 Fault Slip Probability (0% on all faults after 5 years)

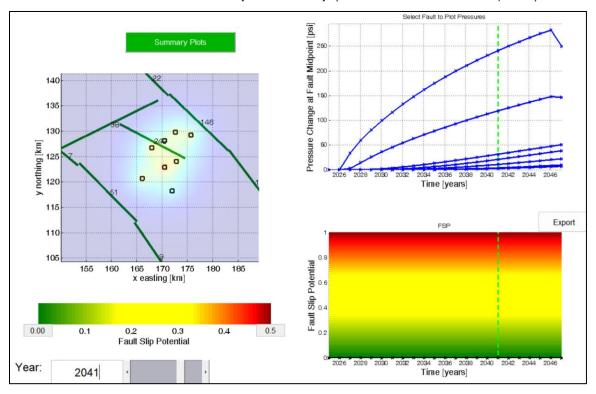
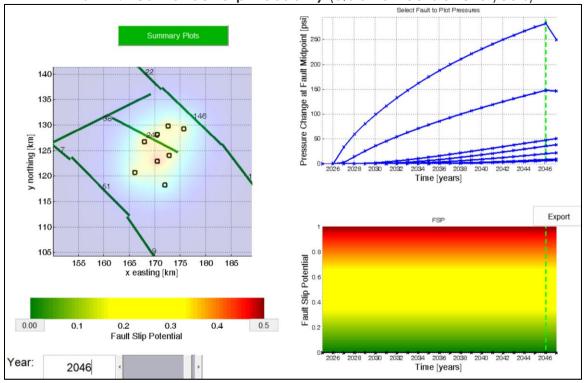


Exhibit 12: Year 20 Fault Slip Probability (0% on all faults after 5 years)



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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								
Fred & Deborah Beard	185 Means RD Carlsbad, NM 88220-9401	09/19/2025						
Applicable Mineral Owners								
	Oil and Gas Division							
Bureau of Land Management	620 E Greene St.	09/19/2025						
	Carlsbad, NM 88220							
State Land Office	602 N Canal, Suite B	09/19/2025						
	Carlsbad, NM 88220							
	OCD District Office							
OCD – District 2	506 W. Texas Ave. Artesia, NM 88210	09/19/2025						
1	easeholders within 1-Mile AOR							
	5509 Champions Drive							
EOG Resources, Inc.	Midland, TX 79706	09/19/2025						
D.1 D D	20405 State Highway 249, Suite 820	00/40/0005						
Ridge Runner Resources	Houston, TX 77070	09/19/2025						
Salado Energy Partners	218 N Main St., Unit C	09/19/2025						
Salado Ellergy Farthers	Midland, TX 79701	09/19/2025						
Murchison Oil & Gas	P O Box 670127	09/19/2025						
	Dallas, TX 75367							
Chevron USA Inc	P.O. Box 2100 Houston, TX 77252	09/19/2025						
	6001 Deauville Blvd, Ste 300 N							
Cimarex Energy Co. of Colorado	Midland, TX 79706	09/19/2025						
T D I D	1700 Lincoln St. Suite 4700	00/40/0005						
Tap Rock Resources	Denver, CO 80203	09/19/2025						
Coterra Energy Operating Co.	6001 Deauville Blvd, Ste 300 N	09/19/2025						
Coterra Energy Operating Co.	Midland, TX 79706	09/19/2023						
Civitas Permian Operating, LLC	555 17th Street, Suite 3700	09/19/2025						
	Denver, CO 80202 105 South 4th St							
Yates Petroleum Corporation	Artesia, NM 88210	09/19/2025						
	Well Operators within AOR							
	555 17 th Street Suite 3700							
Civitas Permian Operating, LLC	Denver, CO 80202	09/19/2025						
	6001 Deauville Blvd Ste. 300N	00/40/005						
Cimarex Energy Co. of Colorado	Midland, TX 79706	09/19/2025						
EOG Resources	5509 Champions Drive	09/19/2025						
EOG Nesources	Midland, TX 79706	09/19/2020						
OXY USA WTP Limited Partnership	6 Desta Drive Suite 6000	09/19/2025						
C.C. CC. TTTT Emilion Caratoromp	Midland, TX 79710-0250	00,10,2020						

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

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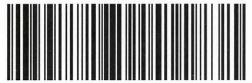
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State of New Mexico

63290

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Adrian Hedden

being duly sworn, sayes that he is the

Publisher

of the Carlsbad Current Argus, a weekly newspaper of general circulation, published in English at Carlsbad, said county and state, and that the hereto attached

Legal Ad

was published in a regular and entire issue of the said Carlsbad Current Argus, a weekly newspaper duly qualified for that purpose within the meaning of Chapter 167 of the 1937 Session Laws of the state of New Mexico for

1 Consecutive weeks/day on the same

day as follows:

First Publication

September 18, 2025

Second Publication

Third Publication

Fourth Publication

T'01 T 111 .

Fifth Publication

Sixth Publication

Seventh Publication

Eighth Publication

Subscribed ans sworn before me this

18th

day of

Septermber

2025

LATISHA ROMINE
Notary Public, State of New Mexico
Commission No. 1076338
My Commission Expires
05-12-2027

Latisha Romine

Notary Public, Eddy County, New Mexico

Copy of Publication:

Blackbuck Resources, 3200 Southwest Freeway, Houston, TX 77027, (OGRID# 373619), is filing Form C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division seeking administrative approval for commercial saltwater injection into its independence SWD #1. This will be a new well located 1,933' FSL & 1,154' FWL in Section 9 Township 258 Range 26E in Eddy County, NM, which is approximately 4.9 miles SE of Whites City. The purpose of the well is to inject produced water from permitted oil and gas wells in the area for commercial disposal into the Devonian-Silurian formation at depths of 12,351'-13,672' at a maximum surface injection pressure of 2,470 psi and a maximum injection rate of 40,000 barrels of water per Objections or requests for hearing must be filed withouthe 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. Additional information may be obtained by contacting the operator contact, Nate Alleman, at (918) 237-0559 or info@aceadvisors.com.

63290-Published in Carlsbad Current Argus Sept. 18, 2025. 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 511887

CONDITIONS

Operator:	OGRID:
Blackbuck New Mexico LLC	373619
3200 Southwest Freeway	Action Number:
Houston, TX 77027	511887
	Action Type:
	[C-108] Fluid Injection Well (C-108)

CONDITIONS

Created By	Condition	Condition Date
erica.gordan	None	10/10/2025