SWD

Initial

Application

Received: 09/10/19

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

R3LQW-190910-C-1080

Revised March 23, 2017

RECEIVED:	REVIEWER:	TYPE:	APP NO:
09/10/19		SWD	pLEL1925946081

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: Goodnight Midstream Permian, LLC **OGRID Number:** 372311
Well Name: Brees FED SWD 1 **API:**
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

FOR OCD ONLY
☐ Notice Complete
☐ Application Content Complete

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

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.

Nate Alleman
Print or Type Name

Nathan Alleman
Signature

9-10-2019
Date

918-382-7581
Phone Number

nalleman@all-llc.com
e-mail Address

ALL CONSULTING
GOVERNMENT RELATIONS · ENERGY · PLANNING · TECHNOLOGY
ENGINEERING · ENVIRONMENTAL

September 10, 2019

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

Subject: Goodnight Midstream Permian, LLC – Brees FED SWD 1
Application for Authorization to Inject

To Whom It May Concern,

On behalf of Goodnight Midstream Permian, LLC (Goodnight), ALL Consulting, LLC (ALL) is submitting the enclosed Application for Authorization to Inject for the Brees FED SWD 1, a proposed salt water disposal well, in Lea County, NM.

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

Sincerely,
ALL Consulting

Nate Alleman
Sr. Regulatory Specialist

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? ____X____Yes _____No

II. OPERATOR: Vista Disposal Solutions, LLC

ADDRESS: 12444 NM 10th St., Building G, Suite 202-512, Yukon, OK 73099

CONTACT PARTY_____PHONE:_____

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 ____X____No
If yes, give the Division order number authorizing the project: _____

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

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

VII. Attach data on the proposed operation, including:

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

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

IX. Describe the proposed stimulation program, if any.

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

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

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

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

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Nathan Alleman TITLE: Regulatory Specialist - ALL Consulting

SIGNATURE: _____Nate Alleman DATE: 9-10-2019

E-MAIL ADDRESS: nalleman@all-llc.com

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

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.

Application for Authorization to Inject
Well Name: Brees FED SWD 1

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

A.

(1) General Well Information:

Operator: Goodnight Midstream Permian, LLC (OGRID No. 372311)
Lease Name & Well Number: Brees FED SWD 1
Location Footage Calls: 1,473 FNL & 209' FWL
Legal Location: Unit Letter E, S5 T23S R34E
Ground Elevation: 3,450'
Proposed Injection Interval: 14,615' – 16,195'
County: Lea

(2) Casing Information:

Type	Hole Size	Casing Size	Casing Weight	Setting Depth	Sacks of Cement	Estimated TOC	Method Determined
Surface	24"	20"	133.0 lb/ft	1,925'	1,960	Surface	Circulation
Intermediate 1	14-3/4"	13-3/8"	68.0 lb/ft	5,180'	1,160	Surface	Circulation
Intermediate 2	12-1/4"	9-5/8"	53.5 lb/ft	11,750'	3,900	Surface	Circulation
Liner	8-1/2"	7-5/8"	39.0 lb/ft	14,615'	300	10,910	CBL

(3) Tubing Information:

4-1/2" (composite weight string) of fiberglass-coated tubing with setting depth of 14,595'

(4) Packer Information: Lok-set or equivalent packer set at 14,595'

B.

(1) Injection Formation Name: Devonian and Silurian-Fusselman formations
Pool Name: SWD; DEVONIAN - SILURIAN
Pool Code: 97869
(2) Injection Interval: Open-hole injection between 14,615' – 16,195'
(3) Drilling Purpose: New Drill for Salt Water Disposal
(4) Other Perforated Intervals: No other perforated intervals exist.
(5) Overlying Oil and Gas Zones: Below are the approximate formation tops for known oil and gas producing zones in the area.

- Delaware (5,180')
- Bone Springs (8,505')
- Wolfcamp (11,110')
- Atoka (12,050')
- Morrow (12,645')

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

V – Well and Lease Maps

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

- 2-mile Oil & Gas Well Map
- 2-mile Lease Map
- 1.5-mile Deep SWD Map (Devonian/Silurian SWDs)
- 1-mile Well Detail List w/ Casing Information for the Penetrating Well
- Potash Lease Map
- Penetrating Well – Wellbore Diagram

VI – AOR Well List

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

There are three wells that penetrates the injection zone, one has been properly plugged and abandoned, and two two have been properly cased and cemented in order to isolate the injection zone. A wellbore diagram and casing information for this well is also included in ***Attachment 2.***

VII – Proposed Operation

(1) **Proposed Maximum Injection Rate:** 30,000 bpd
Proposed Average Injection Rate: 15,000 bpd

(2) A **closed system** will be used.

(3) **Proposed Maximum Injection Pressure**: 2,923 psi (surface)
Proposed Average Injection Pressure: approximately 1,500 – 2,000 psi (surface)

(4) **Source Water Analysis:** It is expected that the injectate will consist of produced water from production wells completed in the Wolfcamp and Bone Springs formations. Analysis of water from these formations is included in ***Attachment 3***.

(5) **Injection Formation Water Analysis:** The proposed SWD will be injecting water into the Devonian and Silurian-Fusselman formations which is a non-productive zone known to be compatible with formation water from the Wolfcamp and Bone Springs formations. Water analyses from the Devonian-Silurian formation in the area are included in ***Attachment 4*.**

VIII – Geologic Description

The proposed injection interval includes the Devonian and Silurian-Fusselman formations from 14,615 – 16,195 feet. These formations consist of carbonates including light colored dolomite and chert intervals interspersed with some tight limestone intervals. Several thick sections of porous dolomite capable of taking water are present within the subject formations in the area.

The freshwater formation is the Rustler at a depth of approximately 1,900 feet. Water well depths in the area range from approximately 130 - 305 feet below ground surface.

IX – Proposed Stimulation Program

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

X – Logging and Test Data

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

XI – Fresh Groundwater Samples

Based on a review of data from the New Mexico Office of the State Engineer, eleven groundwater wells are located within 1-mile of the proposed SWD location; however, according to state water well data and conversations with water well owners no water wells within the 1-mile radius of the proposed SWD location are currently active. Therefore, no groundwater samples were collected in association with this application.

A water well map of the area is included in ***Attachment 5***.

XII – No Hydrologic Connection Statement

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

XIII – Proof of Notice

A Public Notice was filed with the Hobbs News-Sun newspaper and an affidavit is included in ***Attachment 7***.

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

Attachments

Attachment 1: Wellbore Diagram

Attachment 2: Area of Review Information:

- 2-mile Oil & Gas Well Map
- 2-mile Lease Map
- 1.5-mile Deep SWD Map (Devonian/Silurian SWDs)
- 1-mile Well Detail List w/ Casing Information for Penetrating Wells
- Penetrating wells – Wellbore Diagram
- Potash Lease Map

Attachment 3: Source Water Analyses

Attachment 4: Injection Formation Water Analyses

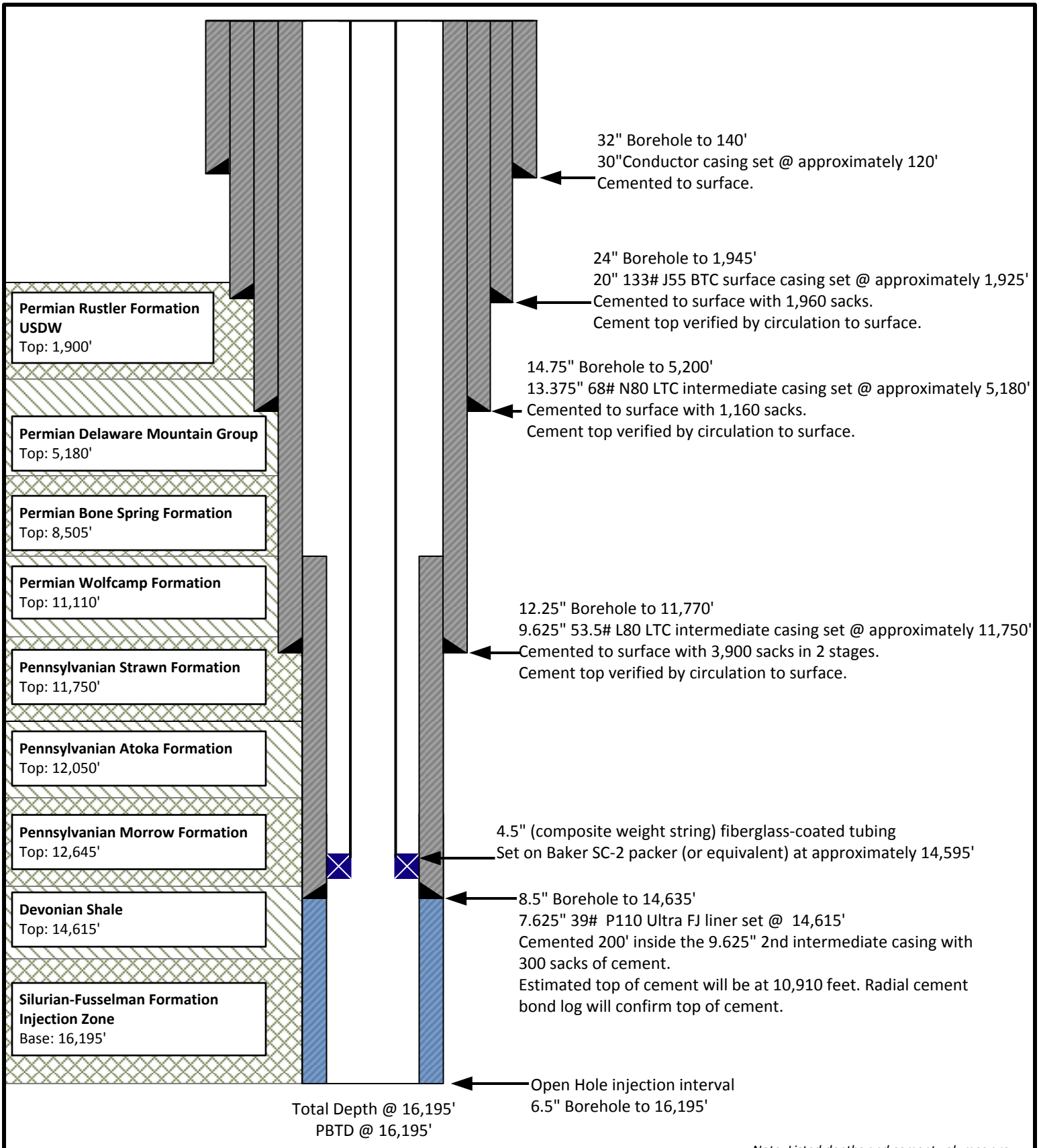
Attachment 5: Water Well Map and Well Data

Attachment 6: Induced Seismicity Assessment Letter

Attachment 7: Public Notice Affidavit and Notice of Application Confirmations

Attachment 1

Wellbore Diagram



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

NOT TO SCALE

Prepared by: ALL CONSULTING	Drawn by: Joshua Ticknor	Goodnight Midstream Permian, LLC Brees FED SWD #1
	Project Manager: Dan Arthur	Section 5, Twp 23S, Rng 34E 1,473' FNL & 209' FWL Lea County, NM
	Date: 7/18/2019	

A-3 and AL-2 LOK-SET Retrievable Casing Packers

Product Family No. H64630 and H64628

APPLICATION

The A-3™ LOK-SET™ packer combines advantages of a retrievable packer with the features of a permanent packer. An ability to lock down tubing forces makes the A-3 suitable for a broad range of applications, including production, injection, zone isolation, and remedial operations. The AL-2™ LOK-SET packer is similar to the A-3, and has a larger bore.

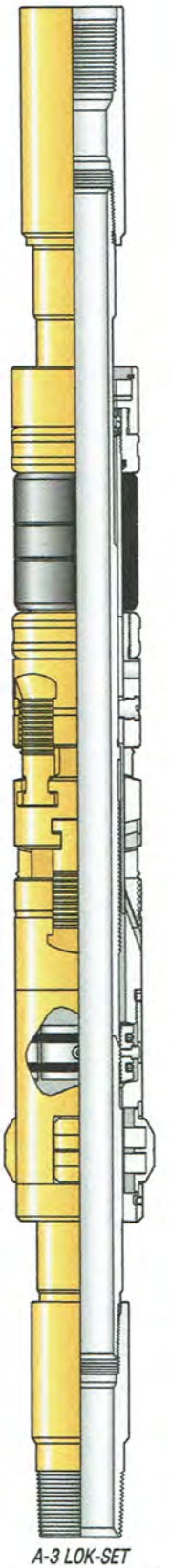
Advantages

- Holds pressure from above and below, without relying on set-down weight, tubing tension, or hydraulic hold down
- Provides tubing anchoring with tension applied, suitable for pumping wells or injection, controlling tubing forces related to change fluid temperatures
- Opposed, non-transferring, dovetail slips prevent packer movement associated with changing differential pressures, while allowing the landing of the tubing in tension, neutral or compression
- Right-hand tubing rotation controls setting and releasing
- Packing element compression locks in by ratcheting action of lock segments, which restricts rotation to one direction

Accessories

To provide a simple and reliable injection system for retrieving an injection string without having to unseat the packer:

L-10 or L-316 on-off sealing connectors, Product Family Nos. H68420 and H68422. Baker Hughes blanking plug can be used in the seating nipple profile of the on-off sealing connector to provide a means of plugging the lower zone while the tubing is being pulled.



A-3 LOK-SET Retrievable Casing Packer Product Family No. H64630

SPECIFICATION GUIDES

A-3™ LOK-SET Retrievable Casing Packer, Product Family No. H64630

Casing			Packer				
OD		Weight •	Size	Nom ID		Max Gage Ring OD	
in.	mm	lb/ft		in.	mm	in.	mm
4	101.6	9.5–12.9	41A2	1.500	38.1	3.244	82.4
4-1/2	144.3	21.6–23.6	41A2	1.500	38.1	3.244	82.4
4	101.6	9.5	41A4	1.500	38.1	3.423	112.4
4-1/2	114.3	18.8	41A4	1.500	38.1	3.423	112.4
		13.5–17.7	41B			3.578	90.9
		11.6–13.5	43A2	1.978	50.2	3.786	96.2
		9.5–10.5	43A4			3.786	96.2
5	127.0	15–18	43B	1.978	50.2	4.140	105.2
		11.5–15	43C			4.265	108.3
5-1/2	139.7	26	43C	1.978	50.2	4.265	108.3
		20–23	45A2			4.515	114.7
		15.5 –20	45A4			4.656	118.3
		13–15.5	45B			4.796	121.8
6	152.4	26	45B	1.978	50.2	4.796	121.8
		20–23	45C			5.078	129.0
		15–18	45D			5.171	131.3
6-5/8	168.3	34	45E	1.978	50.2	5.421	137.7
		24–32	45F			5.499	139.7
		24	47A2	2.441	62.0	5.671	144.0
		17–24	45G	1.978	50.2	5.796	147.2
		17–20	47A4	2.441	62.0	5.827	148.0
7	177.8	38	47A2	2.441	62.0	5.671	144.0
		32–35	47A4			5.827	148.0
		26–29	47B2			5.983	152.0
		23–26	47B4			6.093	154.8
		17–20	47C2			6.281	159.5
7-5/8	193.7	33.7–39	47C4	2.441	62.0	6.468	164.3
		24–29.7	47D2			6.687	169.9
		20–24	47D4			6.827	173.4
8-5/8	219.1	44–49	49A2	3.500	88.9	7.327	186.1
		32–40	49A4			7.546	191.7
		20–28	49B			7.796	198.0
9-5/8	244.5	47–53.5	51A2	3.500	88.9	8.234	209.1
		40–47	51A4			8.452	214.7
		29.3–36	51B			8.608	218.6

AL-2™ Large Bore LOK-SET Retrievable Casing Packer Product Family No. H64628

Casing		Packer							
OD		Weight •	Size	Nom ID		Max Gage Ring OD		Max Diameter of Compressed Drag Block	
in.	mm	lb/ft		in.	mm	in.	mm	in.	mm
5-1/2	139.7	20	45A2 x 2-3/8	2.375	60.3	4.562	115.9	4.592	116.6
		15.5–17	45A4 x 2-3/8			4.656	118.3	4.750	120.7
		13	45B x 2-3/8			4.796	121.8	4.902	124.5
6	152.4	26	45B x 2-3/8	2.375	60.3	4.796	121.8	4.902	124.5

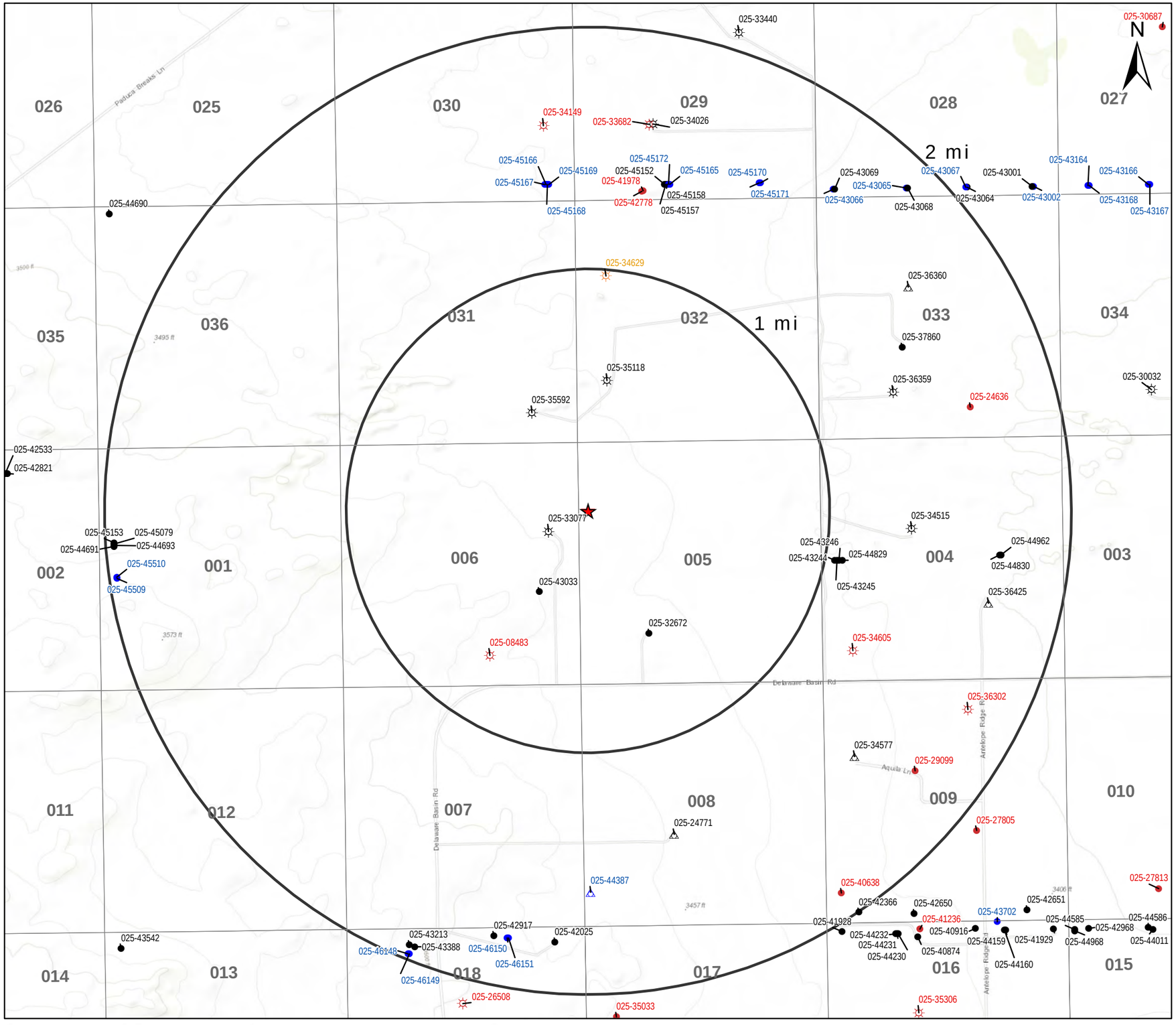
• *When selecting a packer for a casing weight common to two weight ranges (same OD), choose the packer size shown for the lighter of the two weight ranges. Example: for 7-in. (177.8 mm) OD 26 lb/ft casing use packer size 47B4. Under certain circumstances the other packer size may be run, such as when running in mixed casing strings.*

Repair kits, including such items as packing elements, seal rings, etc., are available for redressing Baker Retrievable Packers. Contact your Baker Hughes representative. Use only Baker Hughes repair parts.

Attachment 2

Area of Review Information:

- 2-mile Oil & Gas Well Map
- 2-mile Lease Map
- 1.5-mile Deep SWD Map (Devonian/Silurian SWDs)
- 1-mile Well Detail List w/ Casing Information for Penetrating Wells
- Penetrating wells – Wellbore Diagram
- Potash Lease Map



Legend

- Proposed SWD
- Gas, Active (8)
- Gas, Plugged (7)
- Gas, Temporarily Abandoned (1)
- Oil, Active (46)
- Oil, New (23)
- Oil, Plugged (10)
- Salt Water Injection, Active (4)
- Salt Water Injection, New (1)

0 0.5 1 2 Miles

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

O&G Wells Area of Review

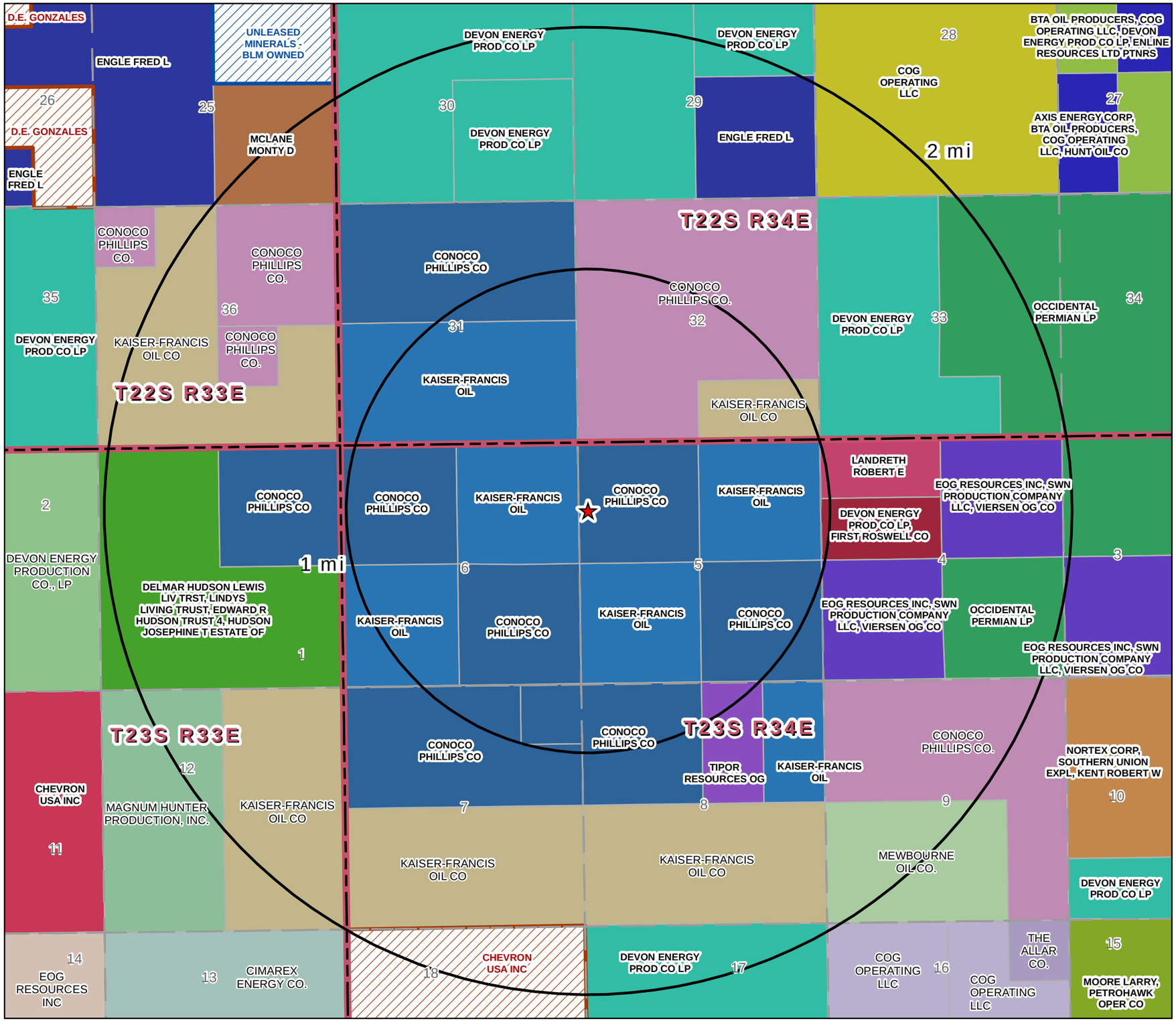
Brees FED SWD 1

Lea County, New Mexico

Proj Mgr: Dan Arthur	July 18, 2019	Mapped by: Ben Bockelmann

Prepared by:

ALL CONSULTING



Legend

- Proposed SWD
- Private Mineral Leases
- Unleased Minerals - BLM Owned

BLM Mineral Leases

- AXIS ENERGY CORP, BTA OIL PRODUCERS, COG OPERATING LLC, HUNT OIL CO
- BTA OIL PRODUCERS, COG OPERATING LLC, DEVON ENERGY PROD CO LP, ENLINE RESOURCES LTD PTNRS
- CHEVRON USA INC
- COG OPERATING LLC
- CONOCO PHILLIPS CO
- DELMAR HUDSON LEWIS LIV TRST, LINDYS LIVING TRUST, EDWARD R HUDSON TRUST 4, HUDSON JOSEPHINE T ESTATE OF
- DEVON ENERGY PROD CO LP
- DEVON ENERGY PROD CO LP, FIRST ROSWELL CO
- ENGLE FRED L
- EOG RESOURCES INC, SWN PRODUCTION COMPANY LLC, VIERSEN OG CO
- KAISER-FRANCIS OIL
- LANDRETH ROBERT E
- MCLANE MONTY D
- MOORE LARRY, PETROHAWK OPER CO
- NORTEX CORP, SOUTHERN UNION EXPL, KENT ROBERT W
- OCCIDENTAL PERMIAN LP
- TIPOR RESOURCES OG

NMSLO Mineral Leases

- CIMAREX ENERGY CO.
- COG OPERATING LLC
- CONOCO PHILLIPS CO.
- DEVON ENERGY PRODUCTION CO., LP
- EOG RESOURCES INC
- KAISER-FRANCIS OIL CO
- MAGNUM HUNTER PRODUCTION, INC.
- MEWBOURNE OIL CO.
- THE ALLAR CO.

Mineral Lease Area of Review

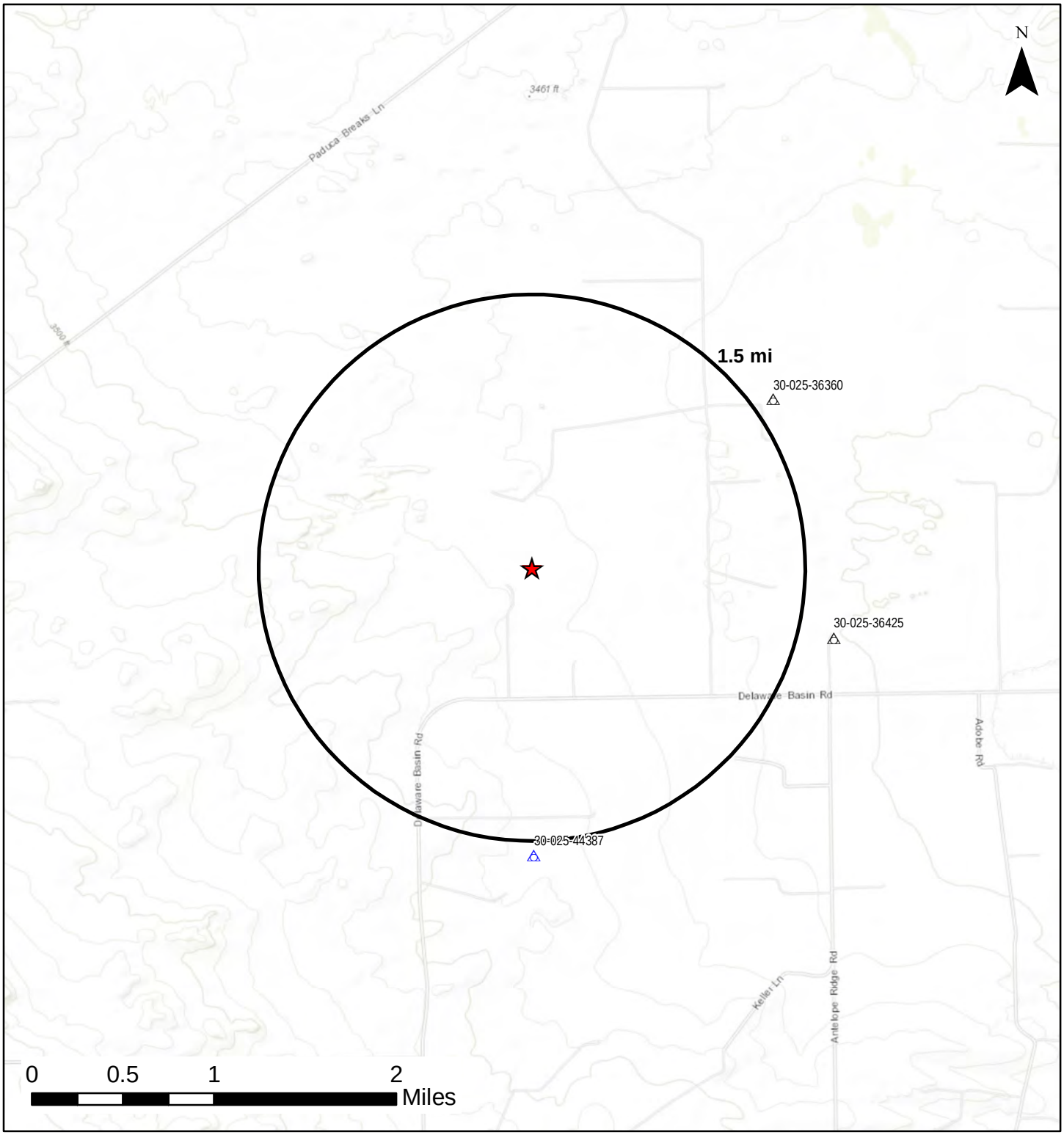
Brees FED SWD 1

Lea County, New Mexico

Proj Mgr:		Mapped by:
Dan Arthur	July 26, 2019	Ben Bockelmann

Prepared by:

ALL CONSULTING



Brees FED SWD 1
Deep SWDs AOR

Proj Mgr: Dan Arthur	Aug 16, 2019	Mapped by: Ben Bockelmann

Prepared by:

ALL CONSULTING

Legend

★ Proposed SWD

Devonian/Silurian SWDs

△ Salt Water Injection, Active (2)

△ Salt Water Injection, New (1)

AOR Tabulation for Brees FED SWD 1 (Top of Injection Interval: 14,615')							
Well Name	API#	Well Type	Operator	Spud Date	Location (Sec., Tn., Rng.)	Total Vertical Depth (feet)	Penetrate Inj. Zone?
BELL LAKE UNIT #006	30-025-08483	Plugged	KAISER-FRANCIS OIL CO	10/25/1959	O-06-23S-34E	Plugged (16506)	Yes
NORTH BELL LAKE FEDERAL #002	30-025-32672	O	KAISER-FRANCIS OIL CO	9/29/1994	N-05-23S-34E	17710	Yes
NORTH BELL LAKE FEDERAL #003	30-025-33077	G	KAISER-FRANCIS OIL CO	9/5/1995	H-06-23S-34E	17540	Yes
BELL LAKE UNIT #022	30-025-35592	G	KAISER-FRANCIS OIL CO	7/28/2001	P-31-22S-34E	13430	No
BELL LAKE UNIT #020	30-025-34629	G/Expired TA	KAISER-FRANCIS OIL CO	9/15/1999	E-32-22S-34E	13370	No
BELL LAKE UNIT #021	30-025-35118	G	KAISER-FRANCIS OIL CO	8/28/2000	L-32-22S-34E	13407	No
BELL LAKE UNIT NORTH #230H	30-025-43033	O	KAISER-FRANCIS OIL CO	11/20/2017	I-06-23S-34E	10226	No

Casing Information for Wells Penetrating the Brees FED SWD 1 Injection Zone																			
Well Name	Surface Casing						Intermediate Casing						Production Casing & Intermidiate II Casing						
	Set Depth	Casing Size	TOC	TOC Method Determined	Sks of Cement	Hole size	Set Depth	Casing Size	TOC	TOC Method Determined	Sks of Cement	Hole Size	Set Depth	Casing Size	TOC	TOC Method Determined	Sks of Cement	Hole Size	
BELL LAKE UNIT #006	890	20	G.S.	Circulation	1200	26	5910	13 5/8	G.S.	Circulation	1300	16	11910	9 5/8	5600	Temp. Survey	1680	12 1/4	
NORTH BELL LAKE FEDERAL #002	902	20	G.S.	Circulation	1068	26	4872	13 3/8	G.S.	Circulation	4600	17 1/2	12051	9 7/8, 9 5/8	10000	Calculated	835	12 1/4	
NORTH BELL LAKE FEDERAL #003	900	20	G.S.	Circulation	1550	26	4867	13 3/8	G.S.	Circulation	4500	17 1/2	12021	9 5/8	9000	Calculated	1600	12 1/4	

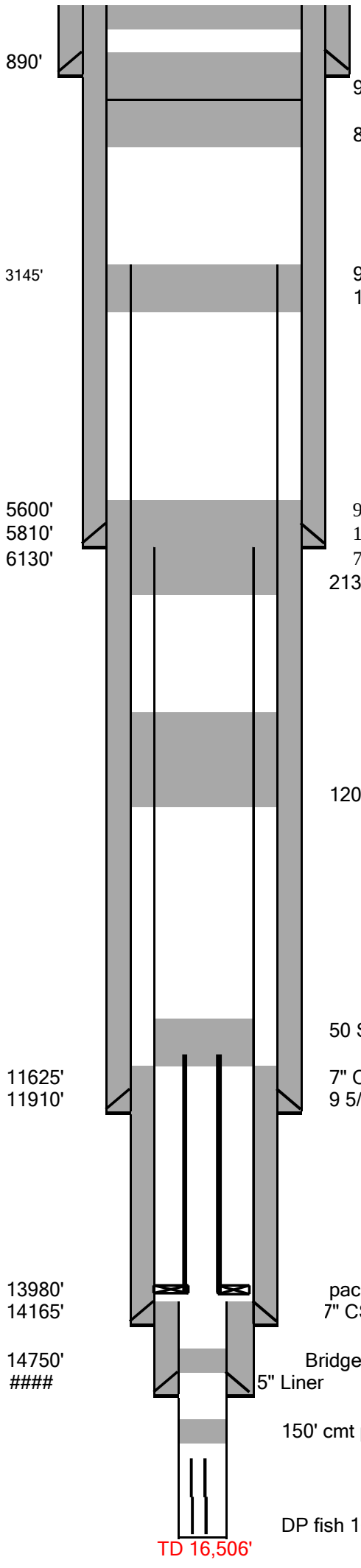
Well Name (Well Information Continued)	Drilling Liner						Liner						Production Casing					
	Set Depth	Casing Size	TOC	TOC Method Determined	Sks of Cement	Hole Size	Set Depth	Casing Size	TOC	TOC Method Determined	Sks of Cement	Hole Size	Set Depth	Casing Size	TOC	TOC Method Determined	Sks of Cement	Hole Size
BELL LAKE UNIT #006	14165	7	11625	Temp. Survey	650	8 3/4	14003-14900	5	14003	Top of Liner	*Unknown	*Unknown	N/A	N/A	N/A	N/A	N/A	N/A
NORTH BELL LAKE FEDERAL #002	11724-14406	7 5/8	11724	Top of Liner	600	8 1/2	15454-16917	5	15454	Top of Liner	250	6 1/2	15454	5 1/2	11250	Temp. Survey	400	6 1/2
NORTH BELL LAKE FEDERAL #003	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	17340	5", 5 1/2"	14330	Per Records	350	6 1/2

Notes: *Information can not be found on the OCD website. See wellbore diagram.

KAISER-FRANCIS OIL COMPANY, BELL LAKE - DV 06
API# 30-025-08483

Operator: KAISER-FRANCIS OIL COMPANY
FIELD: N BELL LAKE
LEASE: BELL LAKE - DV
COUNTY: LEA
Location: 660 FSL 1980 FEL

DATE: Jul. 23, 2019
BY: FDeLeon
WELL: 6
STATE: NEW MEXICO
Survey: O-06-23S-34E



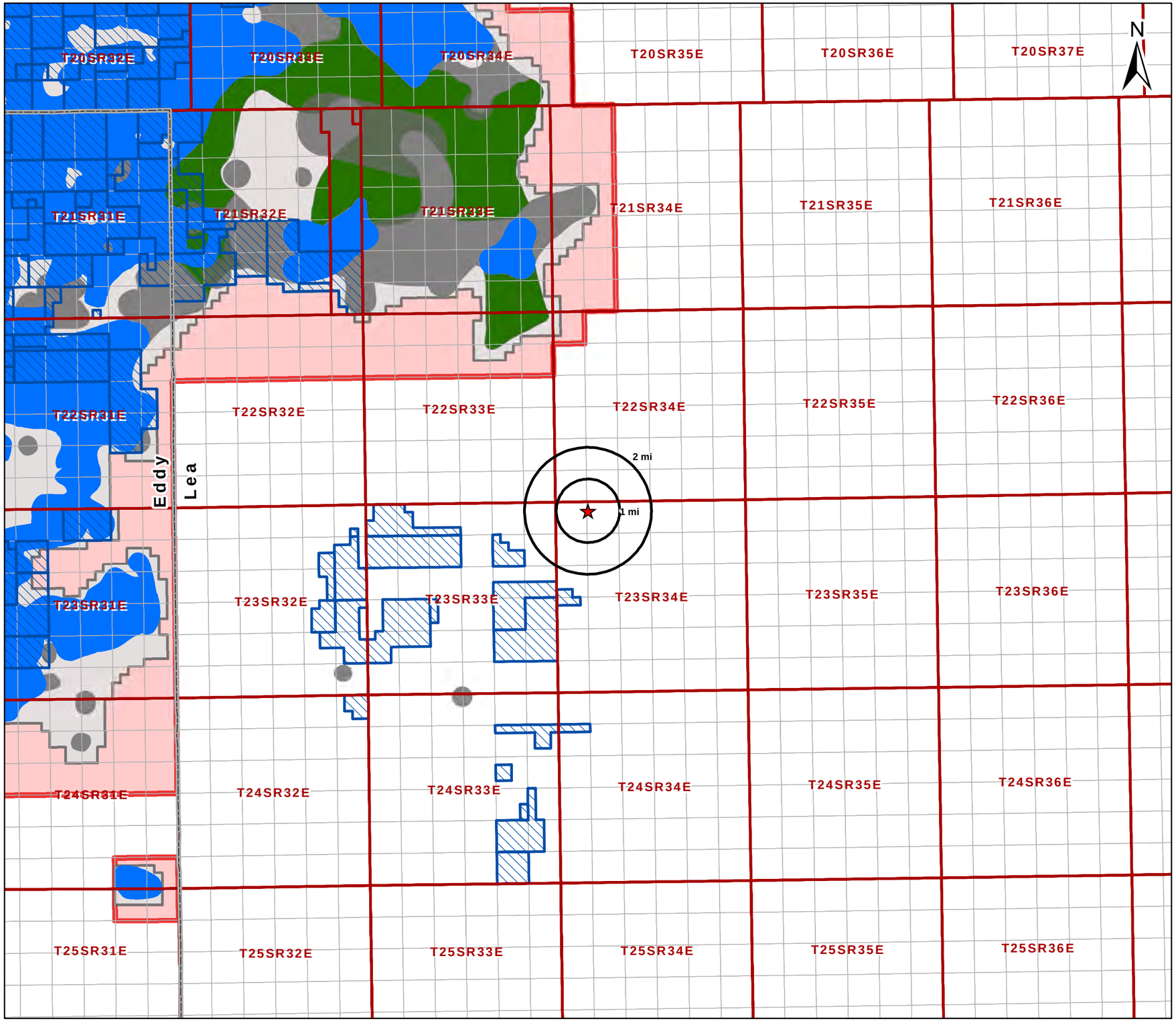
		Scaled Depth G.S.
	60 SX cmt plug 72-0'	0
		508
890'	20" S.C. 1200 sx,	762
	90 SX cmt plug 956-826'	1016
		1270
	80 SX cmt plug 1426-1276	1524
		1778
		2032
		2285
		2539
		2793
3145'	9 5/8 CSG cut & pulled	3047
	160 SX cmt plug 3245-293	3301
		3555
		3809
		4063
		4317
		4571
		4825
		5079
		5333
5600'	9 5/8 CSG TOC	5587
5810'	13 5/8" CSG	5841
6130'	7" CSG cut & pulled	6095
	213 SX cmt plug 6234-5500'	6348
		6602
		6856
		7110
		7364
		7618
		7872
		8126
		8380
	120 SX cmt plug 8616-7972'	8634
		8888
		9142
		9396
		9650
		9904
		10158
		10411
		10665
		10919
	50 Sx cmt plug 11424-11046'	11173
		11427
11625'	7" CSG TOC	11681
11910'	9 5/8" CSG	11935
		12189
		12443
		12697
		12951
		13205
		13459
		13713
13980'	packer fish, tbg top @ 11424'	13967
14165'	7" CSG	14221
		14474
14750'	Bridge Plug + 16' cnt, 14734 TO	14728
####	5" Liner	14982
		15236
	150' cmt plug	15490
		15744
		15998
		16252
	DP fish 16467-15715'	16506
TD 16,506'		

Casing	O.D.	top	bottom	weight	Drld hole	Factor
Conductor						
Surface	20	0	890		26	1.5054
Intermediate	13 5/8	0	5810		16	0.3838
Production	9 5/8	0	11910		12 1/4	0.3132
Production	7	0	14165		8 3/4	0.1503
Liner	5	14003	14900			
Liner						
Perforations						

Cement	Slurry	Class	Sacks	Volume	Yield	Fillup	bottom	top
Surface			1200					G.S.
Intermediate			3100					G.S.
9 5/8 Production			1680	4144				5600
7 Production			650	1007				11625
Liner			75					14003
Liner								

Groundwater

TD =	16506
PBTD =	G.S.
SPUD DATE:	10/25/1959
PLUG DATE:	8/31/2012
CURRENT STATUS:	Plugged
DERRICK FLOOR =	
Elevation =	



Legend

- Proposed SWD
- Potash Leases
- Ore Type - Measured
- Ore Type - Indicated
- Ore Type - Inferred
- KPLA
- SOPA

Potash Leases
Area of Review

Brees FED SWD 1
Lea County, New Mexico

Proj Mgr: Dan Arthur	August 16, 2019	Mapped by: Ben Bockelmann

Prepared by:

ALL CONSULTING

Attachment 3

Source Water Analyses

PRDUCED WATER FROM BONE SPRING, DELAWARE, DEVONIAN, WOLFCAMP

API	SECTION	TOWNSHIP	RANGE	FORMATION	tds mgL	chloride mgL	bicarbonate mgL	sulfate mgL
3002502424	11	20S	34E	BONE SPRING	29436	16720	634	1142
3002502427	12	20S	34E	BONE SPRING	15429			
3002502427	12	20S	34E	BONE SPRING	180701	108300	1016	670
3002502429	12	20S	34E	BONE SPRING	202606	118100	5196	992
3002502429	12	20S	34E	BONE SPRING	121800			
3002502431	12	20S	34E	BONE SPRING	147229	89640	108	1038
3002531696	2	20S	34E	DELAWARE	152064	102148	404	691
3002532105	2	20S	34E	DELAWARE	296822	215237	143	294
3002532466	2	20S	34E	DELAWARE	340838	245270	229	147
3002502427	12	20S	34E	DELAWARE	214787	132700	208	1816
3002502431	12	20S	34E	DEVONIAN	33414	18570	227	1961
3002502432	13	20S	34E	DEVONIAN	45778	26440	1145	729
3002501912	16	16S	34E	WOLFCAMP	164004	102500	4204	1249
3002501922	20	16S	34E	WOLFCAMP	104541	64290	280	541
3002501922	20	16S	34E	WOLFCAMP	104033	64080	268	515
3002501922	20	16S	34E	WOLFCAMP	105175	65570	207	192
3002501925	21	16S	34E	WOLFCAMP	86355	51800	610	665
3002501928	21	16S	34E	WOLFCAMP	119102	73300	227	454
3002501928	21	16S	34E	WOLFCAMP	35422	19170	979	1949
3002501930	22	16S	34E	WOLFCAMP	30015	14800	750	3300
3002501931	22	16S	34E	WOLFCAMP	87680	53000	301	681
3002501933	28	16S	34E	WOLFCAMP	59960	35100	515	1500
3002501933	28	16S	34E	WOLFCAMP	60309	35350	586	1297
3002501940	30	16S	34E	WOLFCAMP	82422	49890	361	787
3002501944	30	16S	34E	WOLFCAMP	83960	51410	418	641
3002520222	27	16S	34E	WOLFCAMP	85457	51020	544	1201
3001542895	2	23S	31E	WOLFCAMP	119472	73173		1036

EXHIBIT F

Attachment 4

Injection Formation Water Analyses

Injection Formation Water Analysis

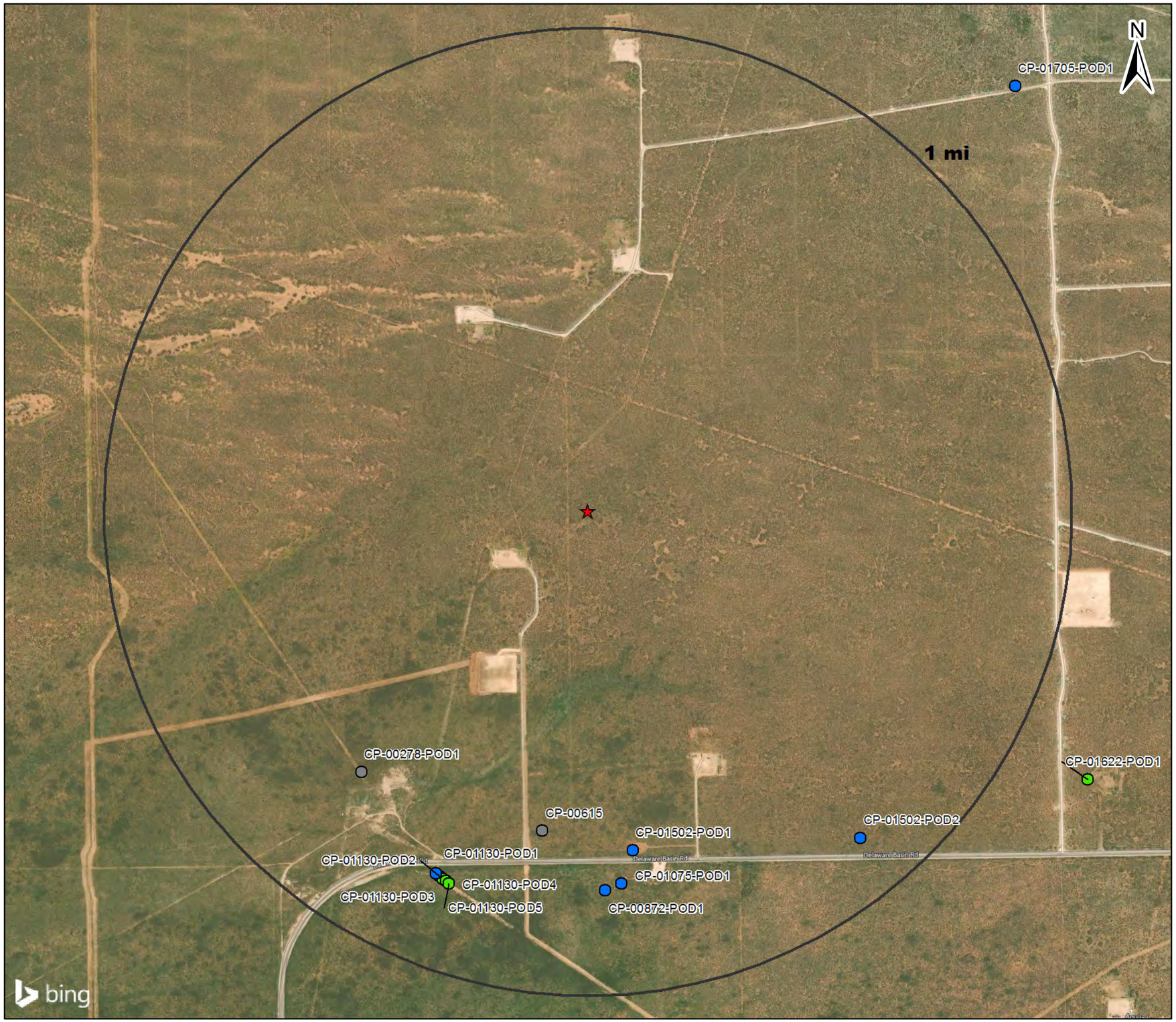
Goodnight Midstream Permian, LLC - Devonian, Fusselman & Silurian formations

Wellname	API	Latitude	Longitude	Section	Township	Range	Unit	Ftgns	Ftgew	County	State	Field	Formation	Sample Date	pH	Tds_mgL	Chloride_mgL	Bicarbonate_mgL	Sulfate_mgL
E O CARSON #016	3002506987	32.4407959	-103.1737061	33	21S	37E	D	660N	860W	LEA	NM	BRUNSON	FUSSELMAN			100,876	59,330	878	2,929
BELL LAKE UNIT #006	3002508483	32.3282585	-103.507103	6	23S	34E	O	660S	1980E	LEA	NM	BELL LAKE NORTH	DEVONIAN		7	71,078	42,200	500	1,000
CLINE FEDERAL #001	3002510717	32.3025551	-103.1358261	14	23S	37E	K	1980S	1980W	LEA	NM	CLINE	DEVONIAN			118,979	71,280	462	2,593
E C HILL B FEDERAL #001	3002510945	32.2658463	-103.1443634	34	23S	37E	A	810N	660E	LEA	NM	TEAGUE	DEVONIAN			112,959	67,390	288	2,765
E C HILL D FEDERAL #001	3002510947	32.2622147	-103.1443634	34	23S	37E	H	2131N	660E	LEA	NM	TEAGUE	DEVONIAN			35,639			
E C HILL D FEDERAL #004	3002510950	32.2653503	-103.1443634	34	23S	37E	A	990N	660E	LEA	NM	TEAGUE	DEVONIAN			236,252	147,000	129	781
ANTELOPE RIDGE UNIT #003	3002521082	32.2593155	-103.4610748	34	23S	34E	K	1980S	1650W	LEA	NM	ANTELOPE RIDGE	DEVONIAN	11/14/67	6.9	80,187	47,900	476	900
STATE B COM #001	3002509716	32.1794052	-103.2212524	36	24S	36E	C	600N	1880W	LEA	NM	CUSTER	DEVONIAN			176,234	107,400	128	1,004
ELLIOTT H FEDERAL #001	3002512272	32.1756325	-103.0931931	31	24S	38E	H	1980N	660E	LEA	NM	DOLLARHIDE	DEVONIAN			58,687			
ELLIOTT H FEDERAL #001	3002512272	32.1756325	-103.0931931	31	24S	38E	H	1980N	660E	LEA	NM	DOLLARHIDE	DEVONIAN			57,018			
WEST DOLLARHIDE DEVONIAN UNIT #104	3002512297	32.1720123	-103.0761032	32	24S	38E	I	1980S	660E	LEA	NM	DOLLARHIDE	DEVONIAN			50,858	30,200	183	980

Source: http://gotech.nmt.edu/gotech/Water/producedwater.aspx

Attachment 5

Water Well Map and Well Data



Service Layer Credits: © 2019 Microsoft Corporation © 2019 DigitalGlobe ©CNES (2019) Distribution Airbus DS © 2019 HERE

Legend

- Proposed SWD

NMOSE PODs

Status

- Active (7)
- Pending (4)
- Change Location of Well (0)
- Capped (0)
- Plugged (0)
- Incomplete (0)
- Unknown (2)

Water Wells Area of Review

Brees FED SWD 1

Lea County, New Mexico

Proj Mgr: Dan Arthur	August 12, 2019	Mapped by: Ben Bockelmann

Prepared by:

ALL CONSULTING

Water Well Sampling Rationale						
Goodnight Midstream Permian, LLC - Brees FED SWD 1						
SWD	**Water Wells**	**Owner**	**Available Contact Information**	**Use**	**Sampling Required**	**Notes**
Brees FED SWD 1	CP-00278 POD 1	New Mexico State Land Office Lease: Limestone Basin Properties	John Langdon (Owner): 210-835-8057 John@bpranches.com	Industrial & Cattle	No	Surface lease holder stated that the well is not operational.
Brees FED SWD 1	CP-00615	J.C. Mills	N/A	Prospecting or developent of natural resources	No	Well permit expired in 2015.
Brees FED SWD 1	CP-00872 POD1	Keller RV LLC.	785-672-3257	Exploritory	No	This well is for exploritory use only, "if satisfactory water is encountered a separate application to appropriate water will be filed". Well permitted with the clause to plug the well within 10-days of explority drilling.
Brees FED SWD 1	CP-01075 POD 1	Limestone Basin Properties	John Langdon (Owner): 210-835-8057 John@bpranches.com	Commercial	No	Surface lease holder stated that the well is not operational.
Brees FED SWD 1	CP-01130 POD 1	Southern Union Gas Services	Rose Slade: 432-940-5147 817-302-9717	Monitoring Well	No	Rose slade stated that this well has been plugged.
Brees FED SWD 1	CP-01130 POD 2	Southern Union Gas Services	Rose Slade: 432-940-5147 817-302-9718	Monitoring Well	No	Rose slade stated that this well has been plugged.
Brees FED SWD 1	CP-01130 POD 3	Southern Union Gas Services	Rose Slade: 432-940-5147 817-302-9719	Monitoring Well	No	Rose slade stated that this well has been plugged.
Brees FED SWD 1	CP-01130 POD 4	Southern Union Gas Services	Rose Slade: 432-940-5147 817-302-9720	Monitoring Well	No	Rose slade stated that this well has been plugged.
Brees FED SWD 1	CP-01130 POD 5	Southern Union Gas Services	Rose Slade: 432-940-5147 817-302-9721	Monitoring Well	No	Rose slade stated that this well has been plugged.
Brees FED SWD 1	CP-01502 POD 1	BLM Surface Surface lease: Limestone Livestock, LLC	John Langdon (Owner): 210-835-8057 John@bpranches.com	Commercial	No	Surface lease holder stated that the well is not operational.
Brees FED SWD 1	CP-01502 POD 2	Limestone Basin Properties	JD Rose: 575-704-4498	Commercial	No	Land owner stated that the water well is not operational.

Attachment 6

Induced Seismicity Assessment Letter

ALL CONSULTING
GOVERNMENT RELATIONS · ENERGY · PLANNING · TECHNOLOGY
ENGINEERING · ENVIRONMENTAL

August 16, 2019

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

Subject: Induced Seismicity Potential Statement for the Brees FED SWD 1

Dear Mr. Goetze,

This letter provides information regarding the seismic potential associated with injection operations associated with Goodnight Midstream Permian, LLC (Goodnight), proposed Manning SWD 1, hereinafter referred to as the "Subject Well."

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

The Subject Well, is located 1,473 FNL & 209 FWL of Section 5, in T23-S and R34-E of Lea County, New Mexico. Historically, the Eddy and Lea Counties area has experienced very limited recorded seismic activity (per the U.S. Geological Survey [USGS] earthquake catalog database). There has been one known seismic events located within a 25-mile radius of the proposed Subject Well. The closest recorded seismic event was a M2.9 that occurred on December 4th, 1984, and was located approximately 5.9 miles southwest of the Subject Well (See Exhibit 1). The closest Class IID well injecting into the same formations (Devonian-Silurian) of the Subject Well is approximately 1.6 miles to the south (See Exhibit 1).

Goodnight does not own either 2D or 3D seismic reflection data in the area of the Subject Well. Fault data from USGS indicates that the closest known fault is approximately 1.0 mile west of the Subject Well (See Exhibit 1).

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

perturbation. The map in Exhibit 2 depicts the low probability risk of FSP for the Delaware Basin and Northwest Shelf areas (Snee and Zoback 2018).

Geologic analysis indicates that the proposed Devonian-Silurian injection zone is overlain by approximately 200 to 400 feet of Woodford Shale, which is the upper confining zone and will serve as a barrier for upward injection fluid migration. Additionally, the Simpson Group that lies directly below the Montoya Formation will act as a lower confining zone to prohibit fluids from migrating downward into the underlying Ellenberger Formation and Precambrian basement rock. See the stratigraphic column for the Delaware Basin included in Exhibit 3.

In the Eddy and Lea Counties area of New Mexico, the Simpson Group is comprised of a series of Middle to Upper Ordovician carbonates, several sandstones, and sandy shales that range from approximately 350 to 650 feet thick (Jones 2008). This group of rocks is capped by the limestones of the Bromide Formation, which is approximately 200 feet thick in this area (Jones 2008). The closest deep well drilled into the Precambrian basement was completed by the Skelly Oil Company in 1975. This well is located in Section 17, Range 36E, Township 25S of Lea County (API No.30-025-25046) and encountered 602 feet of Ellenburger Formation before reaching the top of the Precambrian granite at a depth of 18,920 feet. Based on the estimated thickness of the Simpson Group and Ellenburger Formation in this area, the Precambrian basement should be approximately 1,000 to 1,200 feet below the bottom of the proposed injection zones in the Subject Well.

Conclusion

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

Sincerely,
ALL Consulting

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

Enclosures
References
Exhibits

References

Ball, Mahlon M. 1995. “Permian Basin Province (044).” In *National Assessment of United States Oil and Gas Resources—Results, Methodology, and Supporting Data.* U.S. Geological Survey. https://certmapper.cr.usgs.gov/data/noga95/prov44/text/prov44.pdf (accessed June 18, 2018).

Green, G.N., and G.E. Jones. 1997. “The Digital Geologic Map of New Mexico in ARC/INFO Format.” U.S. Geological Survey Open-File Report 97-0052. https://mrdata.usgs.gov/geology/state/state.php?state=NM (accessed June 14, 2018).

Jones, Rebecca H. 2008. “The Middle-Upper Ordovician Simpson Group of the Permian Basin: Deposition, Diagenesis, and Reservoir Development.” http://www.beg.utexas.edu/resprog/permianbasin/PBGSP_members/writ_synth/Simpson.pdf (accessed June 19, 2018).

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

U.S. Geological Survey (USGS). No date. Earthquakes Hazard Program: Earthquake Catalog. https://earthquake.usgs.gov/earthquakes/search/ (accessed June 14, 2018).

Exhibits

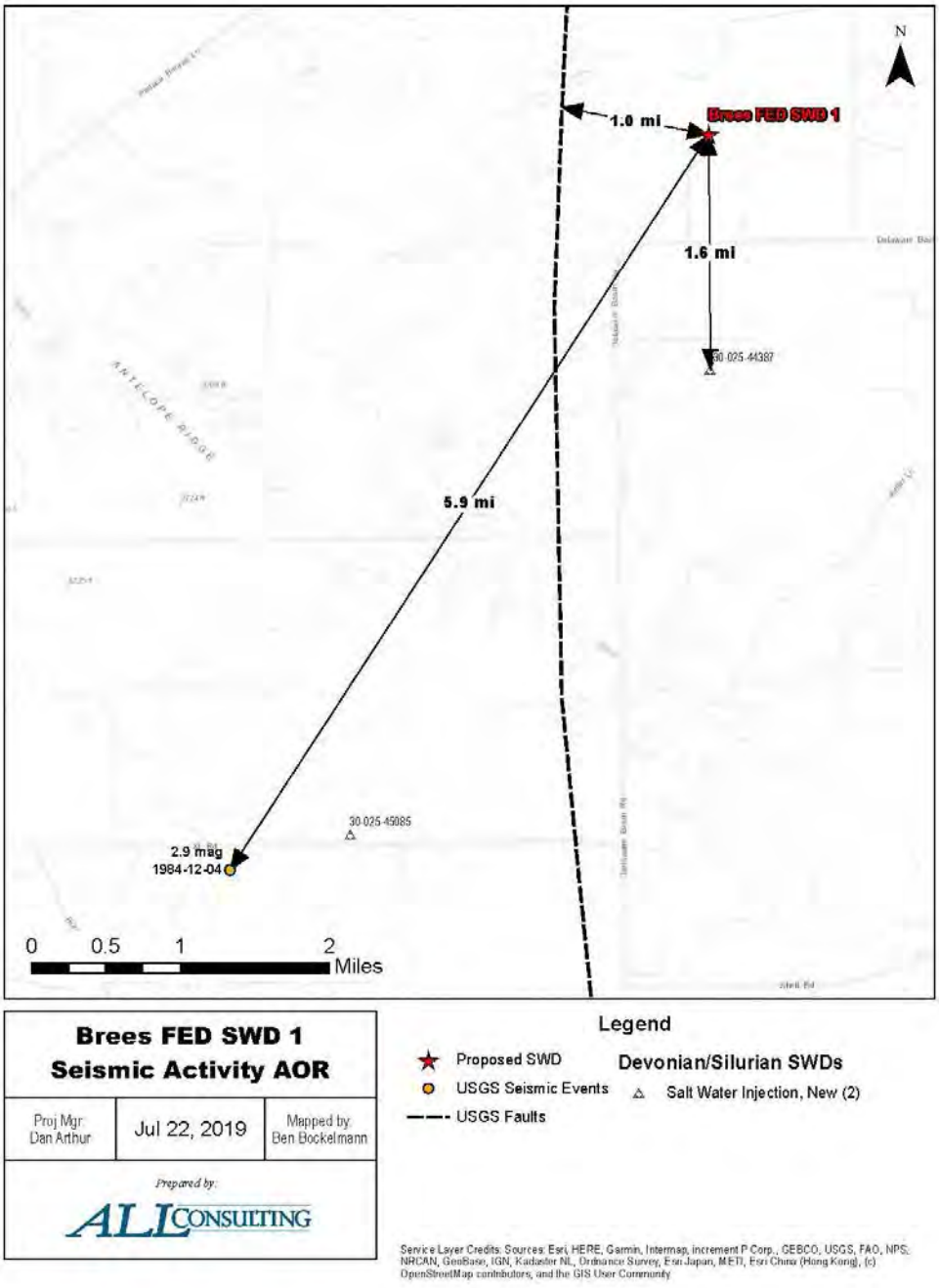


Exhibit 1. Map Showing the Distances from Known and Inferred Faults, Seismic Event, and Closest Deep Injection Well

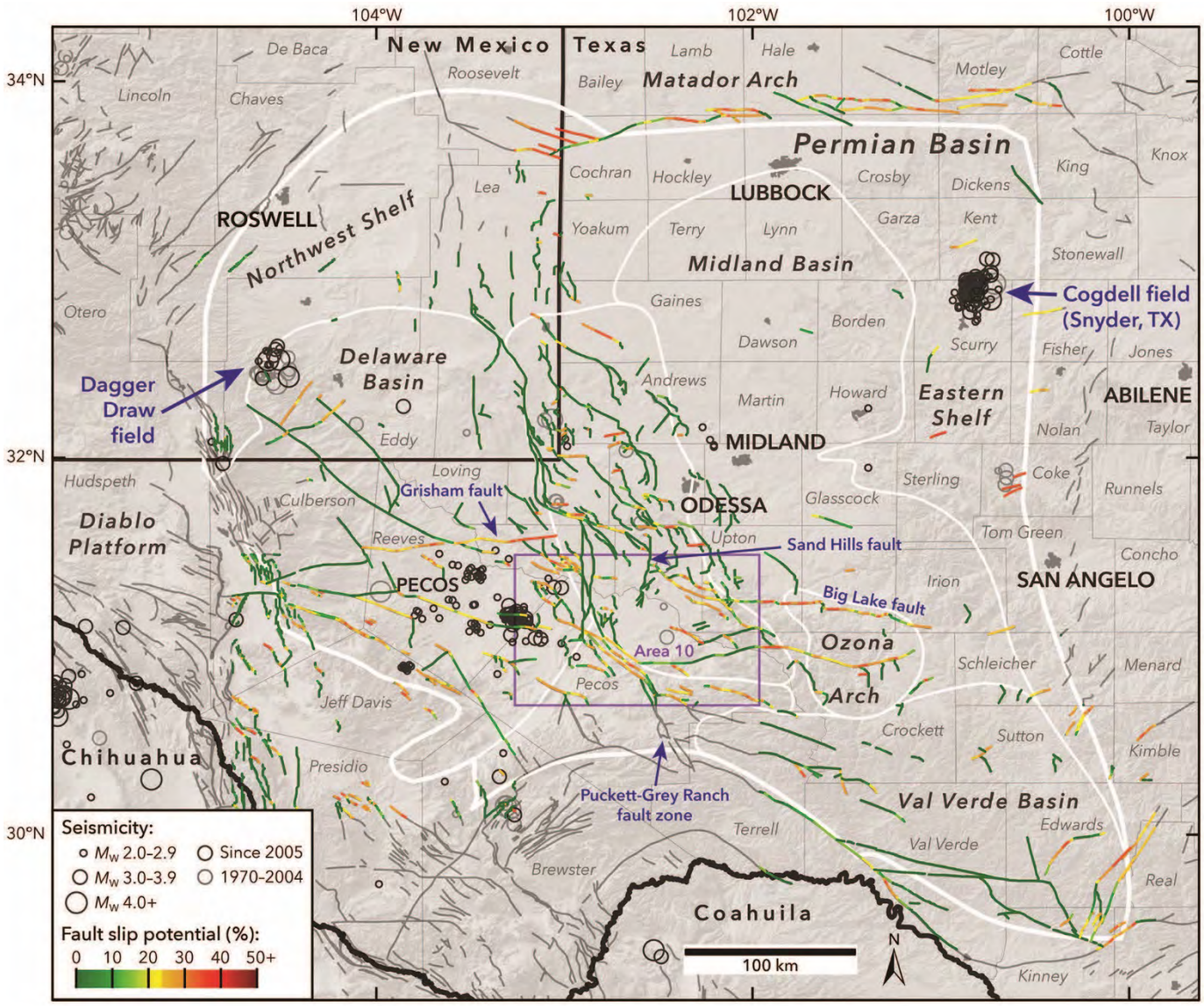


Exhibit 2. Results of the Snee and Zoback (2018) Probabilistic FSP Analysis Across the Permian Basin

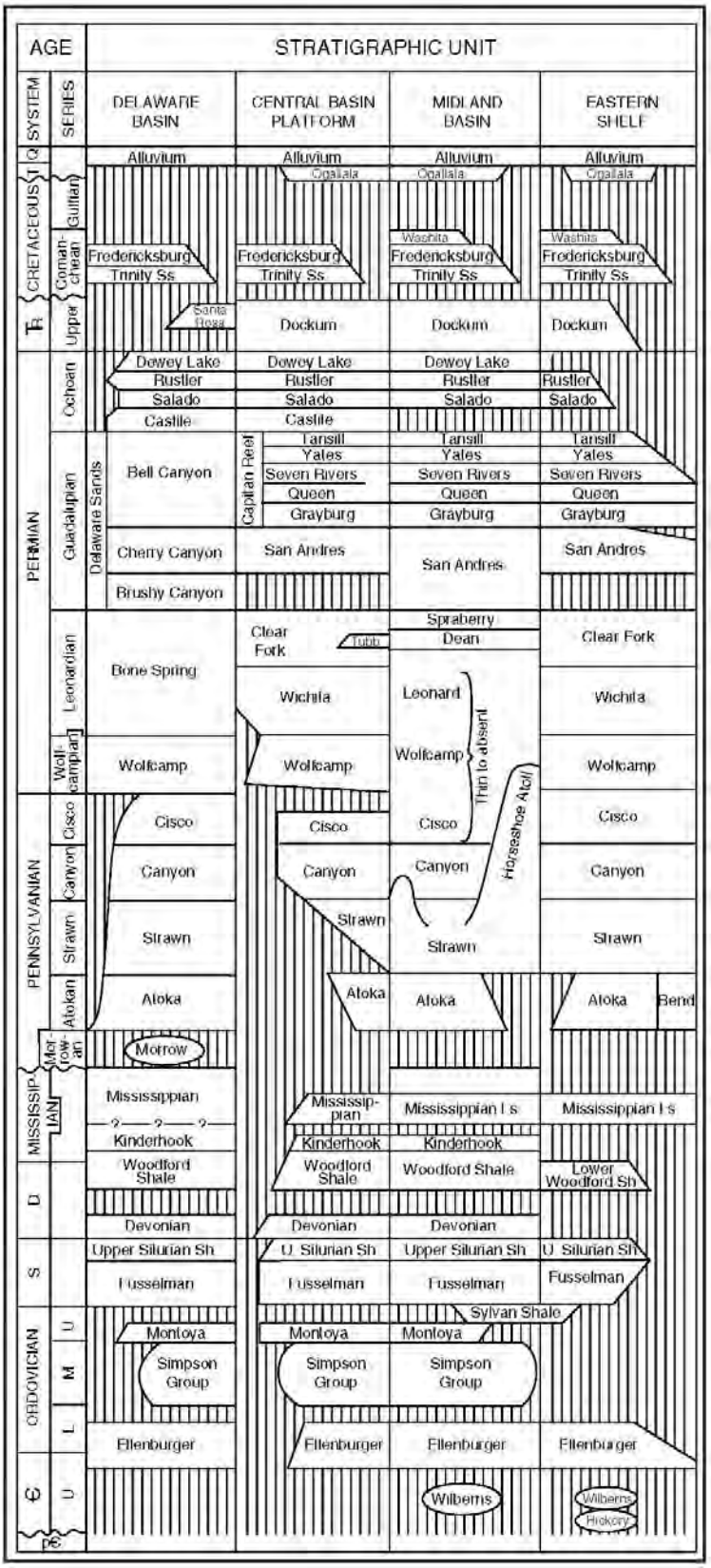


Exhibit 3. Delaware Basin Stratigraphic Chart (Ball 1995)

Attachment 7

Public Notice Affidavit and Notice of Application Confirmations

Brees FED SWD 1 - Notice of Application Recipients				
Entity	**Address**	**City**	**State**	**Zip Code**
Land & Mineral Owner				
New Mexico BLM	620 Greene St.	Carlsbad	NM	88220
OCD District				
NMOCD District 1	1625 N. French Drive	Hobbs	NM	88240
Leasehold Operators				
Commision of Public Lands - State Land Office	310 Old Santa Fe Trail	Santa Fe	NM	87501
ConocoPhillips Company (CONOCOPHILLIPS CO) (CONOCOPHILLIPS CO.)	P.O. Box 7500	Bartlesville	OK	79705
Devon Energy Production Company, LP (DEVON ENERGY PROD CO LP)	333 W. Sheridan Ave.	Oklahoma City	OK	73102
EOG Resources, Inc. (EOG RESOURCES INC)	104 S. 4th Street	Artesia	NM	88210
First Roswell Company (FIRST ROSWELL CO)	P.O. Box 1797	Roswell	NM	88202
Kaiser-Francis Oil Company (KAISER-FRANCIS OIL CO & KAISER-FRANCIS OIL)	6733 S. Yale Ave.	Tulsa	OK	74121
Robert E. Landreth (Landreth Robert E)	110 W. Louisiana, Suite 404	Midland	TX	79701
SWN Production Company, LLC (SWN PRODUCTION COMPANY LLC)	2350 N. Sam Houston Parkway East	Houston	TX	77032
Tipor Resources Oil and Gas (TIPOR RESOURCES OG)	305 Entex Building	Houston	TX	77002
Viersen Oil & Gas Company (VIERSEN OG CO)	P.O. Box 702708	Tulsa	OK	74170

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