Revised March 23, 2017

RECEIVED: 11/19/18	REVIEWER:	TYPE: SWD	APP NO: pLEL1832553557

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: ~~BOPCO, LP~~ XTO Permian Operating LLC **OGRID Number:** ~~260737~~ 373075
Well Name: Poker Lake Unit 36 DTD State SWD **API:** 30-015-45237
Pool: Devonian; SWD **Pool Code:**

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.

11/12/18
Date

Patricia Donald
Print or Type Name

Patricia Donald
Signature

432-571-8220
Phone Number

Patricia_Donald@xtoenergy.com
e-mail Address

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

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

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: _____Secondary Recovery _____Pressure Maintenance ____XXX__Disposal _____Storage
Application qualifies for administrative approval? _____Yes _____No

II. OPERATOR: ~~**BOPCO, LP**~~

ADDRESS: **6401 Holiday Hill Rd, BLDG 5, Midland TX 79707**

CONTACT PARTY: **Patricia Donald** PHONE: **432-571-8220**

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 **XXXXX** 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: Patricia Donald TITLE: Regulatory Analyst

SIGNATURE: Patricia Donald DATE: 11/12/13

E-MAIL ADDRESS: patricia_donald@xtoenergy.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

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

(1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

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

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

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) The name of the injection formation and, if applicable, the field or pool name.

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

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

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

(1) The name, address, phone number, and contact party for the applicant;

(2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;

(3) The formation name and depth with expected maximum injection rates and pressures; and,

(4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

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

Side 1

INJECTION WELL DATA SHEET

OPERATOR: **BOPCO, LP**

WELL NAME & NUMBER: **Poker Lake Unit 36 DTD State SWD #1**

WELL LOCATION: **660' FNL & 660' FEL** | A | 36 | 24S | 30E

FOOTAGE LOCATION | UNIT LETTER | SECTION | TOWNSHIP | RANGE

WELLBORE SCHEMATIC

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 24 Casing Size: 18 5/8

Cemented with: 1570 sx. *or* _____ ft^3

Top of Cement: 0 Method Determined: _____

Intermediate Casing

Hole Size: 17 1/2 Casing Size: 13 3/8

Cemented with: 3505 sxs _____

Top of Cement: 0 Method Determined: _____

Production Casing

Hole Size: 12 1/4 Casing Size: 9 5/8

Cemented with: 2300 SX _____

Top of Cement: 0 Method Determined: _____

Total Depth: 17900

Injection Interval

16800 feet to 17900

(Perforated or **Open Hole**; indicate which)

Production Liner

Hole Size: 8 1/2" Liner Size: 7"

Cemented with: 745 sxs Poz/H

Top of Cement: 0'

Open Hole from 16800-17900

INJECTION WELL DATA SHEET

Tubing Size: 5.5 to 4.5 at 11800' Lining Material: IPC

Type of Packer: Lock Set Packer

Packer Setting Depth: 16800

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

Additional Data

1. Is this a new well drilled for injection? XXX Yes ____ No

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

   _____

2. Name of the Injection Formation: Devonian, Silurian, Fusselman

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

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. NO

   _____

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

PLU Dog Town Draw 36 SWD #1

Proposed SWD Schematic (Sept 10, 2018)

County: Eddy
SHL: 660' FNL, 660' FEL
Sec 36, T 24S, R 30E

BHL: 660' FNL, 660' FEL
Sec 36, T 24S, R 30E

XTO ENERGY

AFE # 1802747
XTO ID # N/A

API # N/A
Elevation GL 3438', KB 3468' (30' AGL)
Rig: TBD (RKB 30')

Geology	Casing & Cement	Wellhead	Hole Size	General Notes
TVD *Formation*		(Tech Data Sheet)		
	Lead (100% OH excess) 890 sx 12.8ppg Poz/C Top of Lead @ 0		24"	
672' Rustler	*Tail (100% OH excess)* 680 sx 14.8ppg Class C Top of Tail @ 660'			
	18-5/8" 87.5# J-55 BTC	**960' MD**		
			17-1/2"	
1,255' Top Salt	*Lead (150% OH excess)* 2820 sx 12.8ppg Poz/C Top of Lead @ 0			
	Tail (100% OH excess) 685 sx 14.8ppg Class C Top of Tail @ 3500'			
4,018' Base Salt				
	13-3/8" 68# HCL-80 BTC	**4100' MD**		
			12-1/4"	
4,204' Delaware	*Lead (100% OH excess)* 1900 sx 11.5ppg Poz/H Top of Lead @ 3500'			
8,090' Bone Spring	*Tail (100% OH excess)* 400 sx 14.8ppg Poz/H Top of Tail @ 11400'	**11800' MD**		
11,393' Wolfcamp				
11,946' Wolfcamp B				
	9-5/8" 53.5# P-110 BTC	**12100' MD**		
			8-1/2"	
13,996' Strawn 14,129' Atoka 14,583' Morrow 16,243' Mississippian Lm 16,618' Woodford 16,778' Devonian	*Tail (40% OH excess)* 745 sx 14.5ppg Poz/H Top of Tail @ 11800'			
	7" 32# P-110 BTC	**16800' MD**		
			6"	
17,900' TVD at BHL	**Open hole completion**			
17,921' Montoya		**17,900' MD** **17,900' TVD**		

Approvals

Prepared by: _____

Peer Reviewed by: _____
Date

Reviewed by: _____

Approved by: _____

August 22, 2018

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

Re: **Geology Statement per Question XII on the Application for Authorization to Inject Form C-108 for**
XTO Energy Inc., an ExxonMobil subsidiary
PLU Dog Town Draw 36 SWD #1,
Section 36, Township 24S, Range 30E,
Eddy County, New Mexico

To whom it may concern:

XTO, Energy, Inc., an ExxonMobil subsidiary, has examined available geological data at the above-mentioned well located at 660 FNL & 660 FEL, Unit A, Section 36, T24S, R30E, Eddy County, New Mexico; and finds no evidence of open faults or other hydrologic connection between the disposal zone and the underground sources of drinking water.

Respectively Submitted,

Kesli Ivy

Geologist
XTO Energy Inc., an ExxonMobil subsidiary
22777 Springwoods Village Parkway
Spring, Texas 77389

RECEIVED

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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

SEP 12 2018
DISTRICT II-ARTESIA O.C.D.

Form C-101
Revised July 18, 2013

☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address	2. OGRID Number
BOPCO, LP **6401 Holiday Hill Rd, Bldg 5, Midland, TX 79707**	**260737**
	3. API Number: 30-015-45237

4. Property Code	5. Property Name	6. Well No.
324436	**POKER LAKE UNIT 36 DTD STATE SWD**	1

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
A	36	24S	30E		660	NORTH	660	EAST	Eddy

8. Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County

9. Pool Information

Pool Name	Pool Code
SWD; Devonian	96101

Additional Well Information

11. Work Type	12. Well Type	13. Cable/Rotary	14. Lease Type	15. Ground Level Elevation
NW	S	R	STATE	3,438'
16. Multiple	**17. Proposed Depth**	**18. Formation**	**19. Contractor**	**20. Spud Date**
	17,900'	DEVONIAN		ASAP

Depth to Ground water	Distance from nearest fresh water well	Distance to nearest surface water

[X] **We will be using a closed-loop system in lieu of lined pits**

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surface	24	18.625	J-55 87.5# BTC	960'	1570	0'
Inter	17.5	13.375	HCL-80 68# BTC	4,100'	3505	0'
Prod	12.25	9.625	P-110 53.5# BTC	12,100'	2300	3,500'

Casing/Cement Program: Additional Comments

Prod Liner: 8.5" hole, 7" P-110 32# BTC csg @ 11,800'-16,800' w/745sx cmt. TOC @ 11,800'. Prod hole: 6" 16,800'-17,900'

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Cameron Double Ram	10,000psi	5,000psi	

23.	OIL CONSERVATION DIVISION
I hereby certify that the information given above is true and complete to the best of my knowledge and belief. **I further certify that I have complied with 19.15.14.9 (A) NMAC [X] and/or 19.15.14.9 (B) NMAC [X], if applicable.** Signature: Kelly Kardos	Approved By: Raymond W. Podany
Printed name: Kelly Kardos	Title: Geologist
Title: Regulatory Coordinator	Approved Date: 9-14-18 Expiration Date: 9-14-20
E-mail Address: kelly_kardos@xtoenergy.com	
Date: 09-11-18 Phone: 432-620-4374	Conditions of Approval Attached: Approved C-108.

RECEIVED

SEP 12 2018

DISTRICT II-ARTESIA O.C.D.

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-015-45237	96101	SWD; DEVONIAN

[4] Property Code	[5] Property Name	[6] Well Number
322436	POKER LAKE UNIT 36 DTD STATE SWD	1

[7] OGRID No.	[8] Operator Name	[9] Elevation
260737	XTO PERMIAN OPERATING, LLC.	3,438'

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	36	24 S	30 E		660	NORTH	660	EAST	EDDY

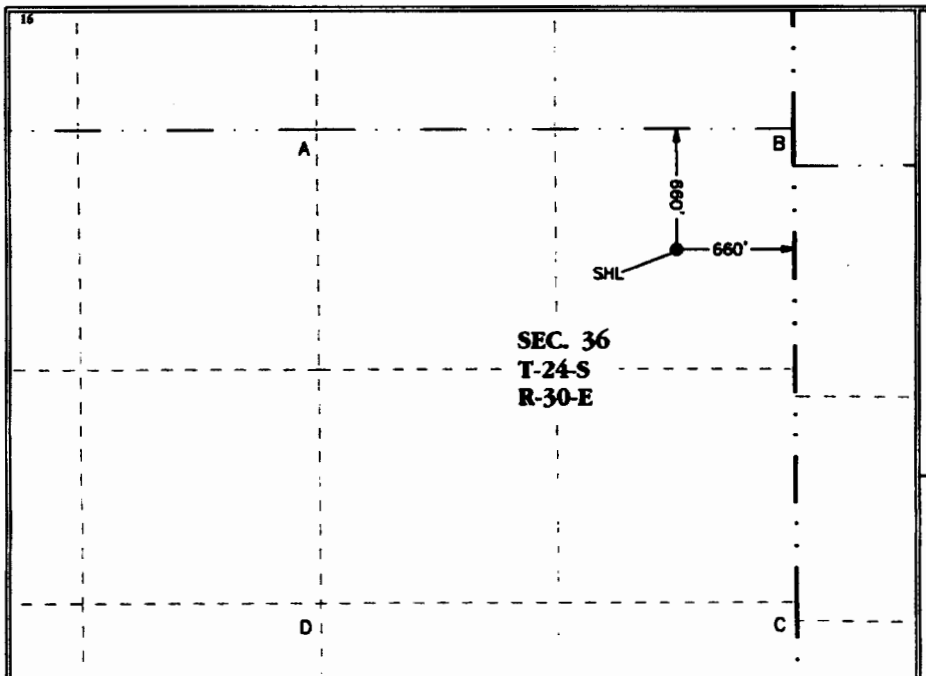
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
0			

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

[16]



GEODETIC COORDINATES
NAD 27 NME
SURFACE LOCATION
Y= 429,441.7
X= 656,545.5
LAT.= 32.179640°N
LONG.= 103.827353°W

CORNER COORDINATES TABLE
NAD 27 NME
A - Y= 430,098.9 N, X= 654,530.1 E
B - Y= 430,102.6 N, X= 657,202.2 E
C - Y= 427,464.6 N, X= 657,215.1 E
D - Y= 427,461.2 N, X= 654,549.6 E

GEODETIC COORDINATES
NAD 83 NME
SURFACE LOCATION
Y= 429,500.2
X= 697,729.9
LAT.= 32.179764°N
LONG.= 103.827836°W

CORNER COORDINATES TABLE
NAD 83 NME
A - Y= 430,157.5 N, X= 695,714.4 E
B - Y= 430,161.2 N, X= 698,386.6 E
C - Y= 427,523.1 N, X= 698,399.6 E
D - Y= 427,519.7 N, X= 695,734.0 E

[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Kelly Kardos 09/11/18
Signature Date

Kelly Kardos
Printed Name

kelly_kardos@xtoenergy.com
E-mail Address

[18] SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

06-15-2018
Date of Survey

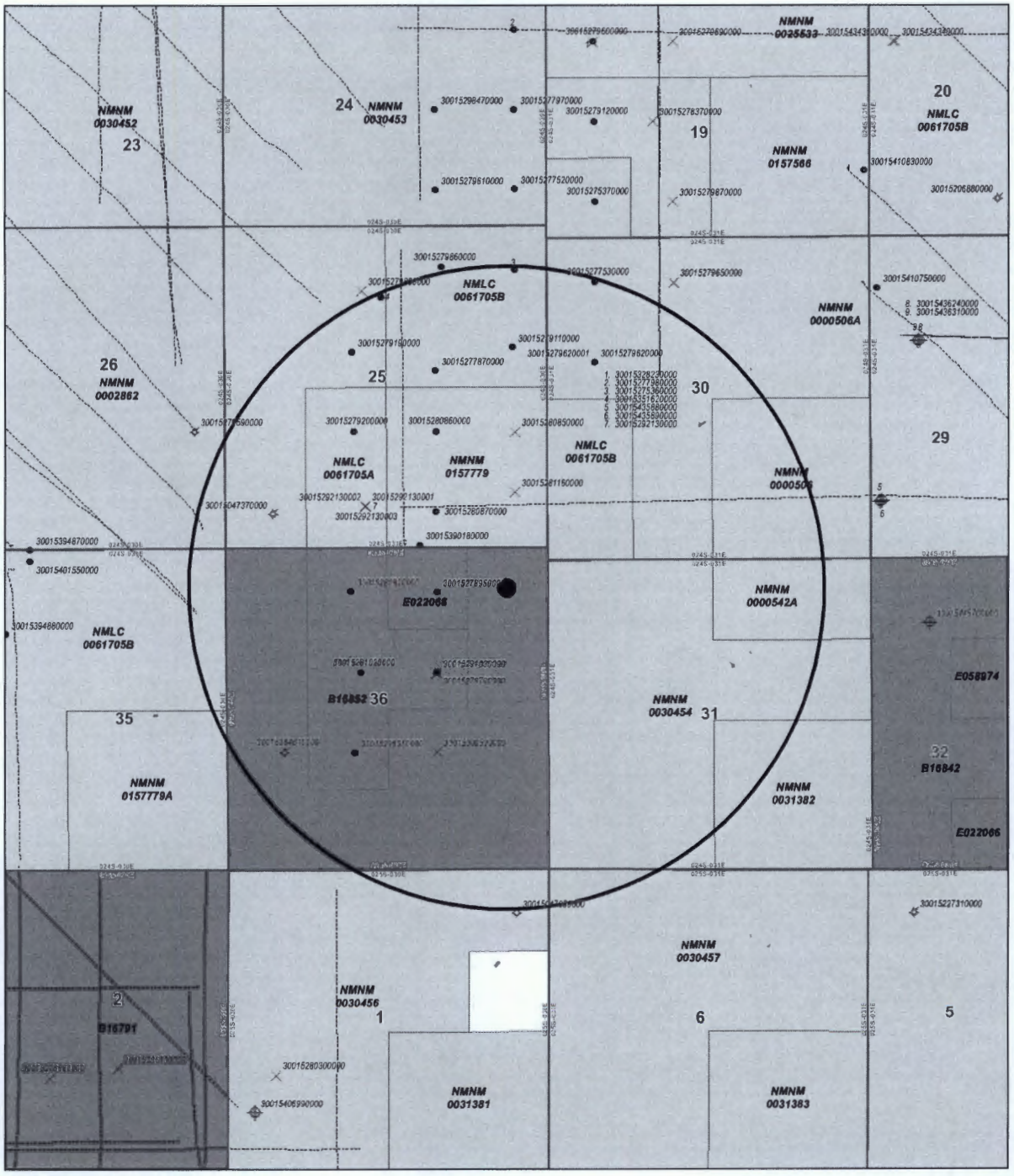
Signature and Seal of Professional Surveyor:

MARK DILLON HARP
NEW MEXICO
23786
PROFESSIONAL SURVEYOR

MARK DILLON HARP 23786
Certificate Number RR 2018051185

RWP 9-14-18

Poker Lake Unit 36 DTD SWD

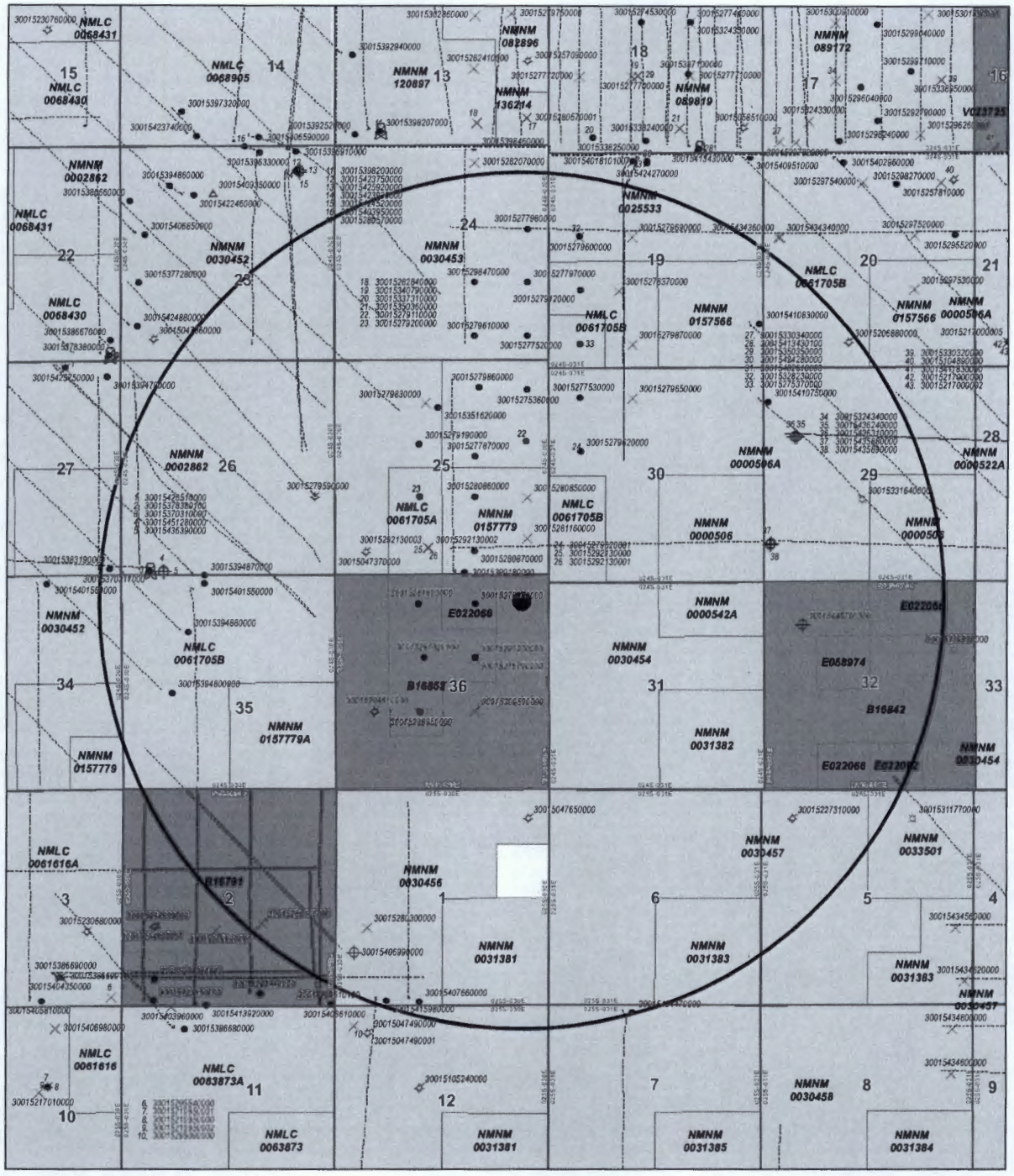


wellbore
State Lease
Federal Lease
one mile buffer
BLM Active Unit

Well Status Name

- GAS
- INJECTION
- MULTI OIL AND GAS PRODUCER
- OIL
- OIL AND GAS PRODUCER
- MULTIPLE GAS PRODUCER
- MULTIPLE OIL PRODUCER
- ABANDONED
- DRILLING
- NON-PRODUCING OTHER
- CO2
- DRY
- STORAGE
- CBM
- OTHER PRODUCING
- WATER SUPPLY WELL
- WELL PERMIT
- WELL START

Poker Lake Unit 36 DTD SWD



0 0.25 0.5 1 Miles

0 0.5 1 2 Kilometers

wellbore
State Lease
Federal Lease
two mile buffer
BLM Active Unit

Well Status Name

- GAS
- INJECTION
- MULTI OIL AND GAS PRODUCER
- OIL
- OIL AND GAS PRODUCER
- MULTIPLE GAS PRODUCER
- MULTIPLE OIL PRODUCER
- ABANDONED
- DRILLING
- NON-PRODUCING OTHER
- CO2
- DRY
- STORAGE
- CBM
- OTHER PRODUCING
- WATER SUPPLY WELL
- WELL PERMIT
- WELL START

CERTIFIED MAILING LIST
BOPCO, LP
Poker Lake Unit 36 DTD State SWD

Certified #7016 2070 0000 9005 6140
Bureau of Land Management
620 E. Greene Street
Carlsbad, NM 88220-6292

Certified #7016 1970 0000 4404 2285
DK Farms, Inc.
David Kirk
2727 Raquet Club Drive
Midland, TX 79705

Certified #7013 1710 0001 1160 6139
The New Mexico State Land Office
310 Old Santa Fe Trail
Santa Fe, NM 87501

CARLSBAD
CURRENT-ARGUS

AFFIDAVIT OF PUBLICATION

Ad No.
0001262554

REC'D MIDLAND
SEP 28 2018

XTO ENERGY, INC.
6401 HOLIDAY HILL RD, BLDG #5

MIDLAND TX 79701

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

09/25/18

Legal Clerk

Subscribed and sworn before me this
25th of September 2018.

State of WI, County of Brown
NOTARY PUBLIC

9-19-21
My Commission Expires

VICKY FELTY
NOTARY
PUBLIC
STATE OF WISCONSIN

Ad#:0001262554
P O : Unit 36 DTD SWD # 1
# of Affidavits :0.00

NOTICE OF APPLICATION FOR WATER DISPOSAL WELL PERMIT

BOPCO, L.P. has applied to the New Mexico Oil Conservation Division for a permit to dispose of produced water into a porous formation not productive of oil or gas.

The applicant proposes to dispose of produced water into the **Poker Lake Unit 36 DTD State SWD #1** (Devonian, Silurian, & Fusselman Formations). The maximum injection pressure will be 3360 psi and the maximum rate will be 40,000 bbls. produced water per day. The proposed disposal well is located in Section 36, T24S - R30E, 660' FNL & 660' FEL, Eddy County, New Mexico. The produced water will be disposed at a subsurface depth of 16,800' -17,900'.

Any questions concerning this application should be directed to Patricia Donald, Regulatory Analyst, BOPCO, L.P, 6401 Holiday Hill Rd, Bldg 5, Midland, Texas 79707, (432) 571-8220.

Interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 S. St. Francis Dr., Santa Fe, New Mexico 87505 within 15 days.

September 25th, 2018

XTO ENERGY

Statements Regarding Seismicity

XTO has performed a seismicity risk assessment associated with the proposed Poker Lake Unit Dog Town Draw 36 SWD Well by investigating historic seismicity, the presence of deep faulting, orientation of faults relative to the current stress regime and the potential for pore pressure build up that might cause a fault to slip. The analysis was done utilizing Stanford's Fault Slip Potential Tool (FSP; Walsh et al. 2017). To accommodate the tool's analytics, a simplified spatial relationship between the proposed well and possible fault was established.

As part of our risk assessment we also consider mitigation options to address inherent uncertainties associated with evaluation of the possibility as seismicity. XTO has developed and will implement, as a precautionary measure, a seismicity monitoring plan to address the inherent uncertainty in the subsurface characterization, the future rates of disposal and reservoir response.

A summary of our evaluation and seismicity monitoring plan follows:

Historic Seismicity

There are no seismic events reported on the USGS earthquake websiste within 15+ miles of the proposed well. Additionally, the Texas Bureau of Economic Geology's TexNet website shows no recent earthquakes in Texas within ~25 miles of the New Mexico border in the Delaware Basin (Figure 1).

Deep Faulting

Utilizing licensed 3D seismic data in the area of the proposed SWD well, XTO has interpreted a fault and/or linear feature with an azimuth of approximately 136 degrees and another that strikes due north. Both features have a dip of approximately 85 degrees. Additionally, there are several seismic discontinuities that are interpreted as karst features in the Devonian section that do not appear to have significant lateral continuity.

Stress Regime

Utilizing data and analysis from Snee and Zoback, 'State of Stress in the Permian Basin, Texas and New Mexico: Implications for Induced Seismicity' (Feb 2018, The Leading Edge) the region of the well is primarily a normal faulting regime with the maximum horizontal stress oriented at ~65 degrees from north.

Geomechanical Modeling

A simple screening level geometric / geomechanical assessment of the possible fault was performed utilizing the FSP tool. The model was run using the Aphi option which makes a simplifying and conservative assumption that the faults are critically stressed and thus close to failure. Additionally, given the uncertainties in the geophysical interpretation and stress information, a probabilistic scenario was run varying fault and stress characteristics. The results of the model runs are shown in Figure 2.

Pore Pressure Modeling

A screening level investigation of possible pore pressure increases due to the proposed SWD well was performed utilizing the FSP tool and a range of reservoir parameters. For this screening level analysis a 'high-side' model was run assuming disposal of 40,000 BWPD beginning in 2019 and

continuing at that rate until 2040. Sensitivities were performed by varying several reservoir parameters. Results of the model and the screening level inputs are shown in Figure 3.

Integration of Geomechanical and Pore Pressure Modeling

Integrating the geomechanical and hydrological elements of the assessment was performed using the FSP Integrated module and are shown in Figure 4. Note the y-axis in the lower right hand colored graph in Figure 4 is labeled 'Fault Slip Potential'. This a labeling convention within the tool but overstates the efficacy of the analysis. The FSP output should not be taken as calculating a reliable probability of a fault slipping but rather a screening method for assessing the relative potential of faults to slip.

Uncertainty

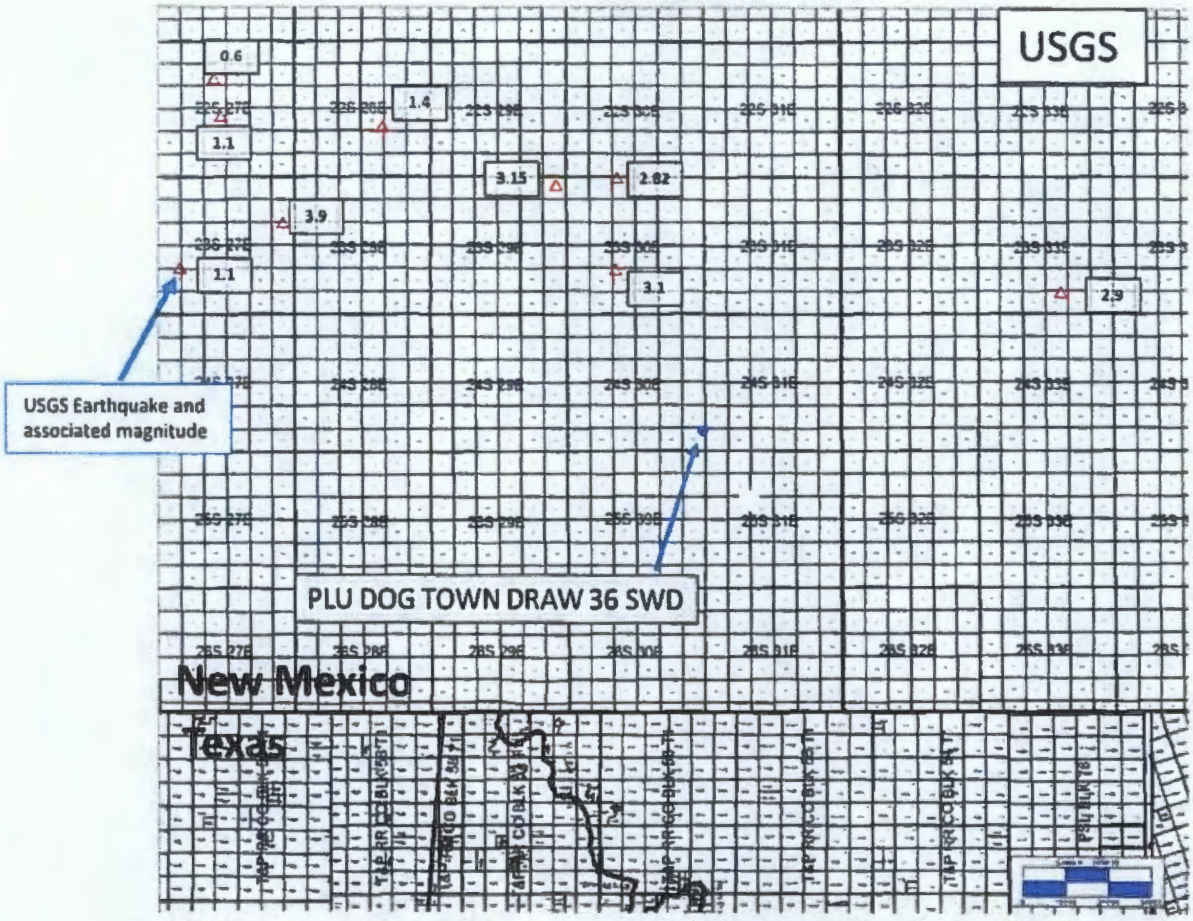
The analysis presented is a screening level approach that encompasses a range of uncertainties in several components that are difficult to individually constrain due to the limited static and dynamic data available from deep disposal wells. Accordingly, the analysis was done by varying key inputs to understand the relative importance of each and guide the focus of future data collection efforts.

Monitoring Plan

To manage the inherent uncertainty, XTO has contracted with a third party to provide seismicity monitoring using public seismometers augmented by a private array in the area of the proposed well. This will allow for a better determination of baseline seismicity as well as early detection should there be anomalous events. Additionally, XTO will determine the original pore pressure of the disposal interval prior to initiating operations. Upon request, XTO will share the results of this work with the EMNRD's UIC staff.

Tim Tyrrell
XTO Geoscience Technical Manager

Poker Lake Unit Dog Town Draw 36 SWD Well
Historic Seismicity



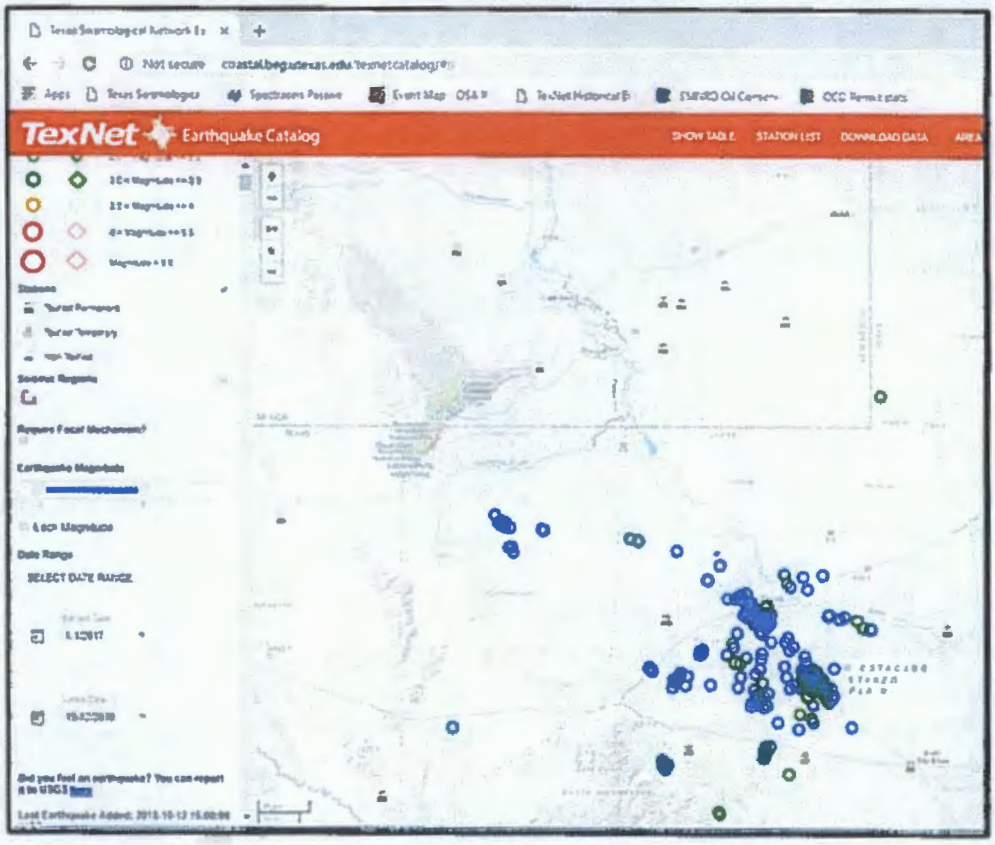
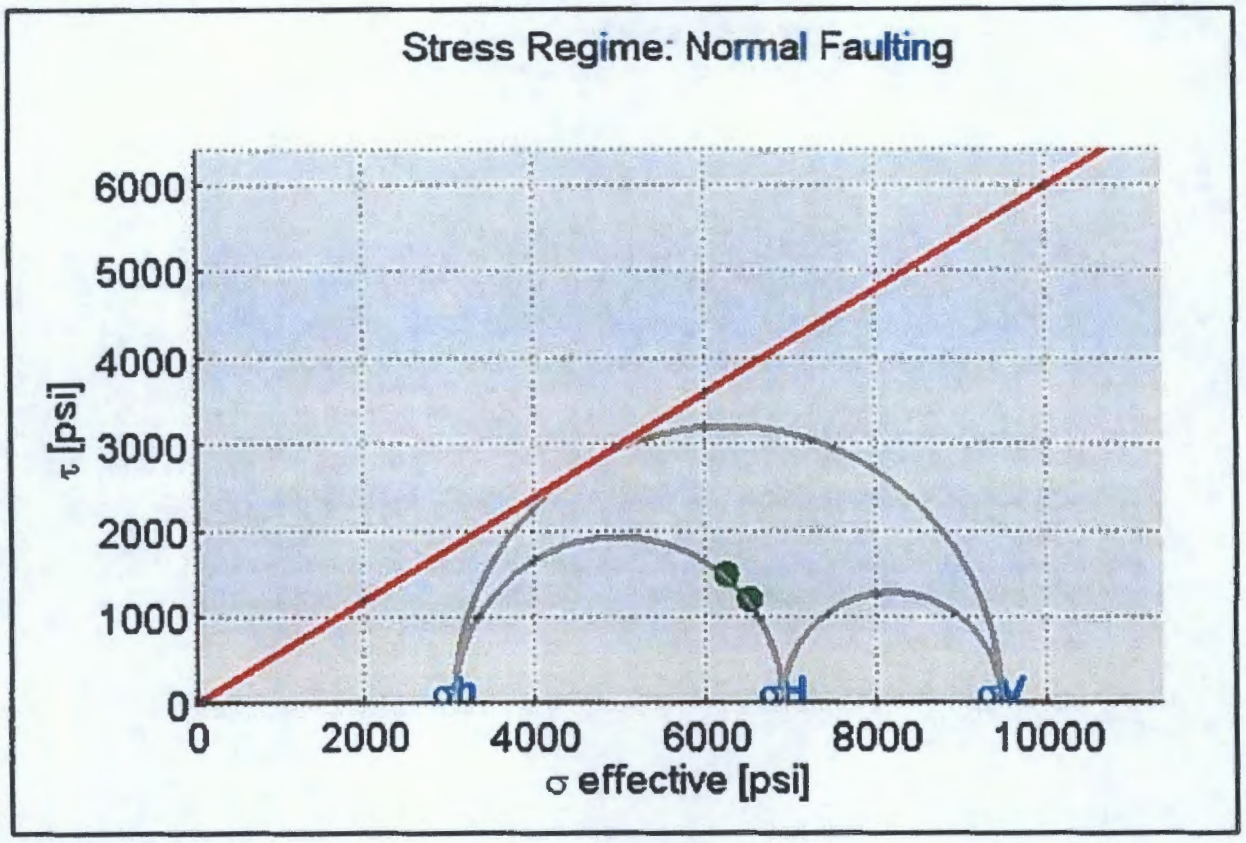
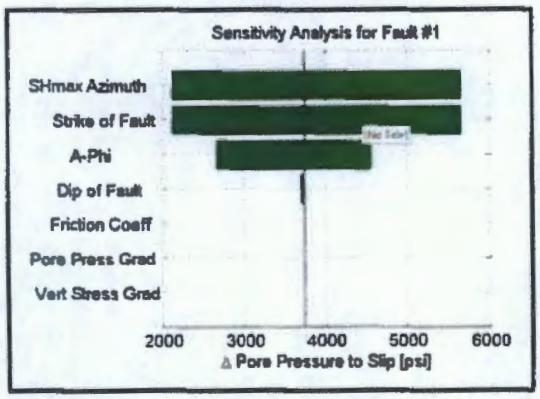


Figure 1

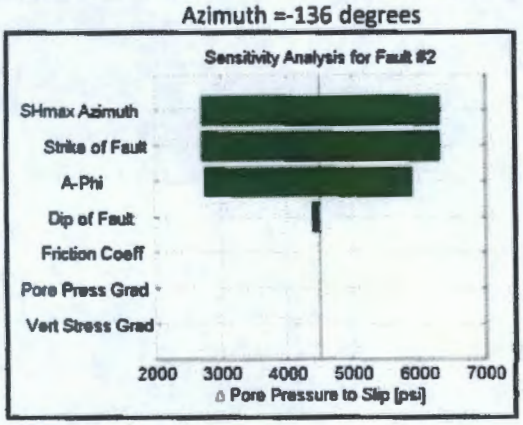
Poker Lake Unit Dog Town Draw 36 SWD Well
Geomechanical Analysis



Azimuth = 0 degrees



Azimuth =-136 degrees



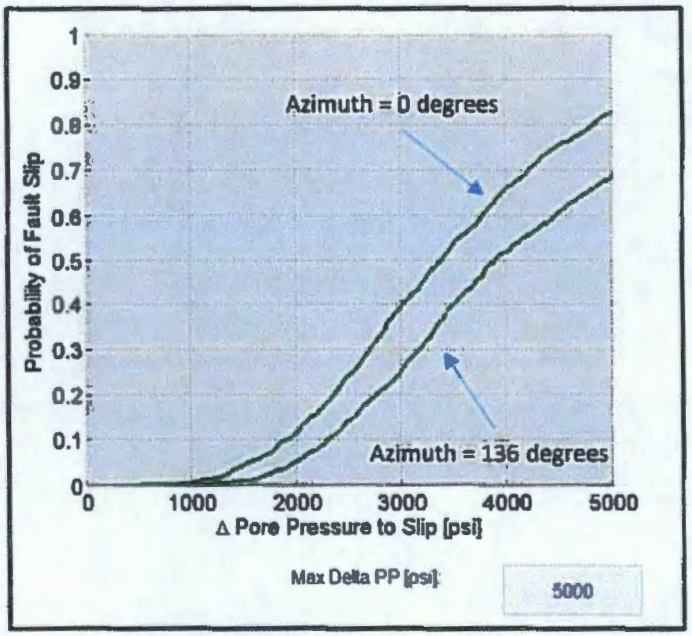
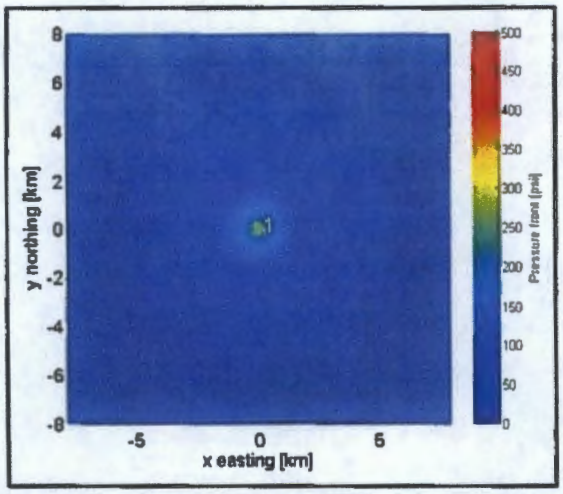
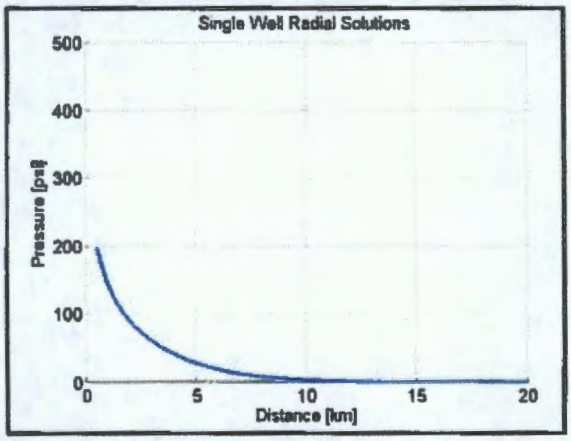


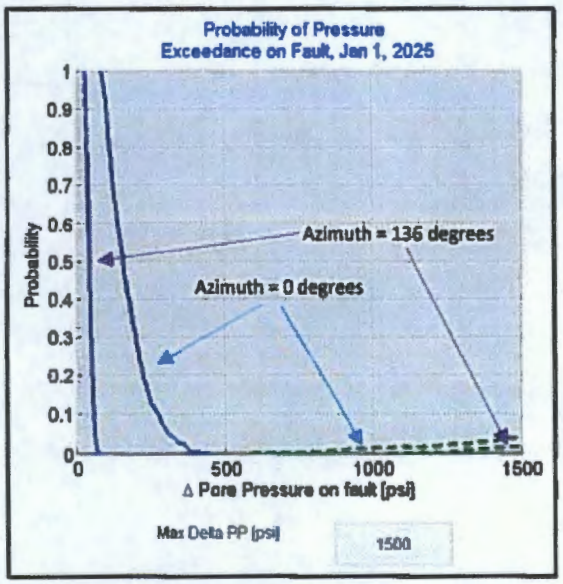
Figure 2

Poker Lake Unit Dog Town Draw 36 SWD Well
Pore Pressure Analysis

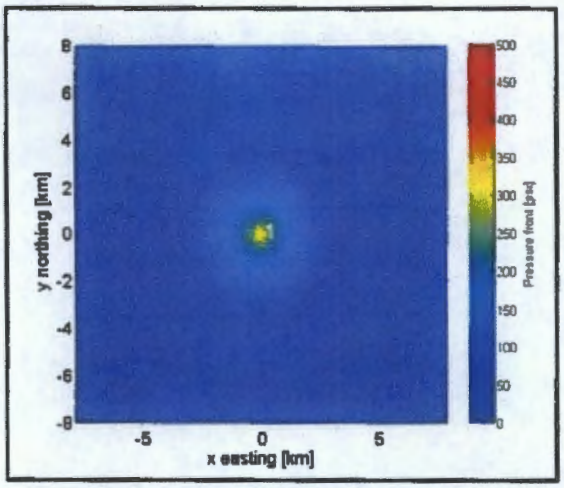
2025 Snapshot

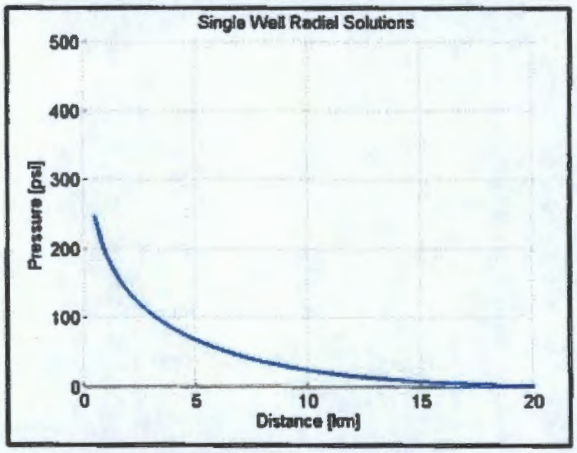






2040 Snapshot





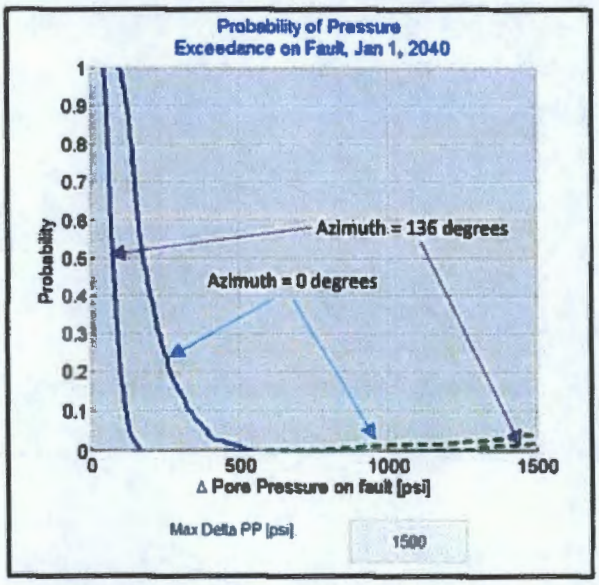


Figure 3

Poker Lake Unit Dog Town Draw 36 SWD Well
Geomechanical / Pore Pressure Integration

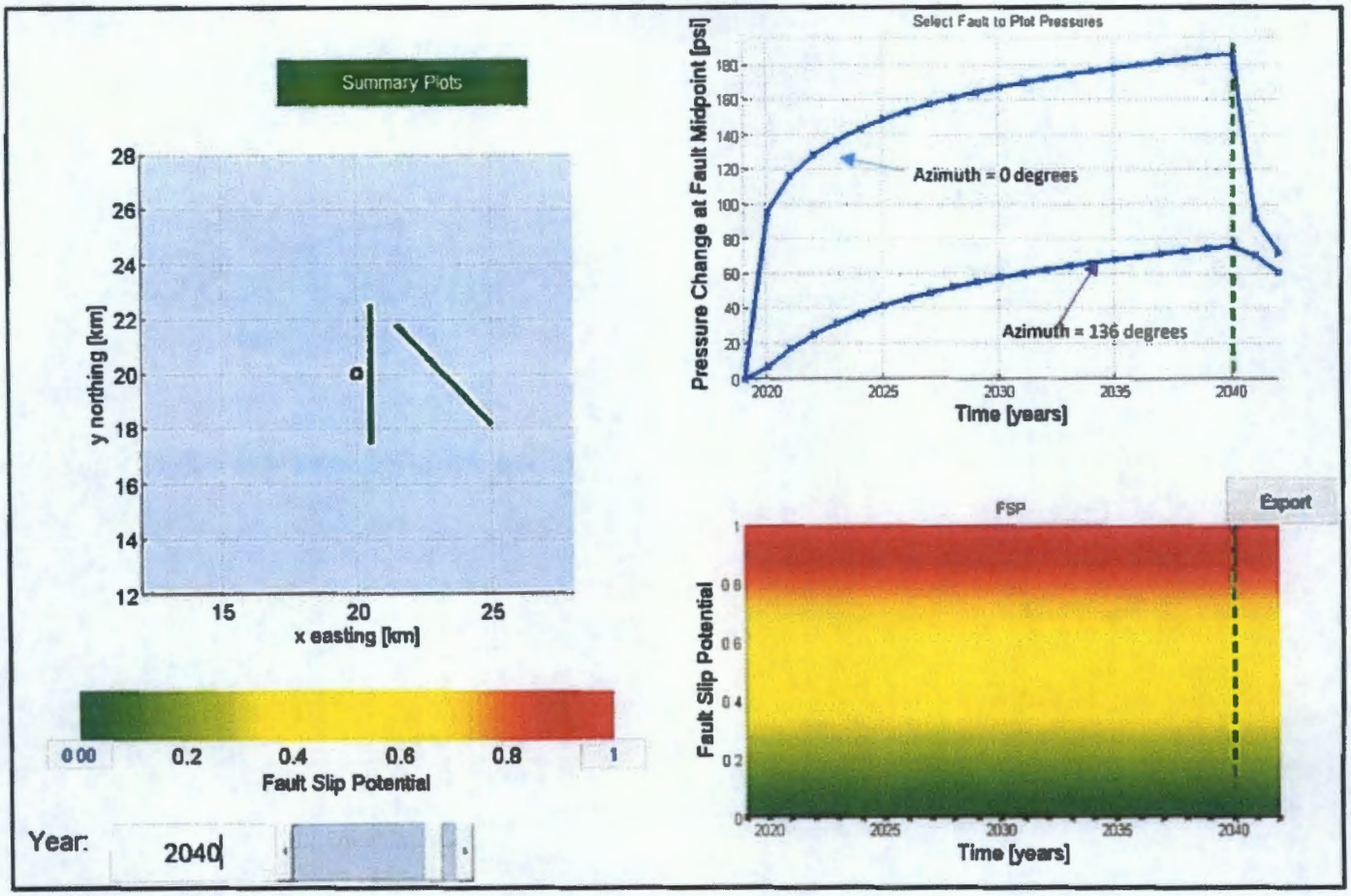


Figure 4

FORM C-108 Technical Review Summary [Prepared by reviewer and included with application; V17]

DATE RECORD: First Rec: 11/19/18 **Admin Complete:** 11/19/18 **or Suspended:** 11/19/18 Add. Request/Reply: FSP/ Solaris well

ORDER TYPE: WFX / PMX / SWD Number: 1854 Order Date: 06/17/19 Legacy Permits/Orders: None

Well No. 1 Well Name(s): Poker Lake Unit 36 DTD State SWD

API : 30-0 15-45237 Spud Date: TBD New or Old (EPA): New (*UIC Class II Primacy 03/07/1982*)

Footages 660 FNL / 660 FEL Lot — or Unit A Sec 36 Tsp 24S Rge 30E County Eddy

General Location: West of Big Sinks; 14.6m east of Malaga Pool: SWD; Silurian-Devonian Pool No.:

BLM 100K Map: Jal Operator*: XTO Permian Operating LLC OGRID: 373075 Contact: Tracie Cherry / XTO

COMPLIANCE RULE 5.9: Total Wells: 762 Inactive: 7 **Fincl Assur:** Yes Compl. Order? No **IS 5.9 OK?** Yes **Date:** 06/17/19

WELL FILE REVIEWED ✓ Current Status: APD approved; rig waiting

WELL DIAGRAMS: NEW: Proposed ✓ or **RE-ENTER:** Before Conv. ○ After Conv: ○ Logs in Imaging: —

Planned Rehab Work to Well: None-new well; * operator transfered during

Well Construction Details	Sizes (in) Borehole / Pipe	Setting Depths (ft)		Cement Sx or Cf	Cement Top and Determination Method
Planned ✓ or Existing — **Surface**	24 / 18 5/8	0 to 960	Stage Tool	1570	Cir to Surface
Planned ✓ or Existing — **Interm/Prod**	17 1/2 / 17 1/2	0 to 4100	—	3505	Cir to surface
Planned ✓ or Existing — **Interm/Prod**	12 1/4 / 9 5/8	0 to 12,100	Yes (?)	2300	Calculated / not to surface
Planned ✓ or Existing — **Prod/Liner**	8 1/2 / 7	11,800 to 16,800	—	745	Calculated
Planned — or Existing — **Liner**	—	—	—	—	—
Planned ✓ or Existing — **OH / PERF**	6	16,800 to 17,900	Inj Length 1100		

Injection Lithostratigraphic Units:	Depths (ft)	Injection or Confining Units	Tops
Adjacent Unit: Litho. Struc. Por.		Mississippian	16243
Confining Unit: Litho. Struc. Por.	160' + top	Woodford Sh	16618
Proposed Inj Interval TOP:	16800	Devonian	16778
Proposed Inj Interval BOTTOM:	17900	Silurian	
Confining Unit: Litho. Struc. Por.	± 20'	Montoya fm	17921
Adjacent Unit: Litho. Struc. Por.			

Completion/Operation Details:

Drilled TD — PBTD —

NEW TD 17900 NEW PBTD —

NEW Open Hole ✓ or NEW Perfs ○

Tubing Size 4.5 x 3.5 Tapered in. Inter Coated? Yes

Proposed Packer Depth 16800 ft

Min. Packer Depth 16700 (100-ft limit)

Proposed Max. Surface Press. 3360 psi

Admin. Inj. Press. 3360 (0.2 psi per ft)

AOR: Hydrologic and Geologic Information

POTASH: R-111-P No Noticed? — **BLM Sec Ord** No **WIPP** No Noticed? — **Salt/Salado** T: 1255 B: 4018 **NW: Cliff House fm** —

USDW: Aquifer(s) Alluvial / Rustler / Dewey? Max Depth < 500 **HYDRO AFFIRM STATEMENT By Qualified Person** ✓

NMOSE Basin: Carlsbad **CAPITAN REEF:** thru — adj — NA ✓ **No. GW Wells in 1-Mile Radius?** 0 FW Analysis? NA

Disposal Fluid: Formation Source(s) Permian (WC/BS/DMG) Analysis? Yes On Lease ○ Operator Only ✓ or Commercial ○

Disposal Interval: Inject Rate (Avg/Max BWPD): 30,000 / 40,000 Protectable Waters? No Source: Historical System: Closed or Open

HC Potential: Producing Interval? No Formerly Producing? No Method: Logs/DST/P&A/Other Mudlog required 2-Mi Radius Pool Map No

AOR Wells: 1/2-M — or ONE-M ✓ **RADIUS MAP/WELL LIST: Total Penetrating Wells:** 0 [AOR Hor: — AOR SWDs: —]

Penetrating Wells: No. Active Wells 0 No. Corrective? — on which well(s)? — Diagrams? —

Penetrating Wells: No. P&A Wells 0 No. Corrective? — on which well(s)? — Diagrams? —

Induced-Seismicity Risk Assess: analysis submitted ✓ historical/catalog review ✓ fault-slip model ✓ **probability** low

NOTICE: 1/2-M — or ONE-M ✓ : Newspaper Date 09/25/18 **Mineral Owner*** SLO Surface Owner SLO * N. Date 09/25/18

RULE 26.7(A): Identified Tracts? Yes **Affected Persons*:** [BOPCO]; BLM; SLO * DK Forms noticed 09/25/18 N. Date 09/25/18

*** new definition as of 12/28/2018** [any the mineral estate of United States or state of New Mexico; SWD operators within the notice radius]

Order Conditions: **Issues:** Solaris / Yellow Jacket Fed SWD #1 - withdrawn; cement on intermediate 9 5/8

Additional COAs: Circulate cement on 9 5/8; mudlog with picks; CMT not circulate - CBL & district notice BH Pressure; CBL for liner

Goetze, Phillip, EMNRD

From: Goetze, Phillip, EMNRD
Sent: Monday, February 11, 2019 10:06 AM
To: Cherry, Tracie
Cc: McMillan, Michael, EMNRD; 'Tyrrell, Timothy'; Jones, William V, EMNRD
Subject: Overlap of Radius of Influence: Poker Laker Unit 36 DTD State SWD No. 1
Attachments: XTO Devonians_PLU_36 DTD State SWD #1.pdf

Poker Laker Unit 36 DTD State SWD No. 1; 30-015-45237; Appl. No. pLEL1832553557

Tracie:

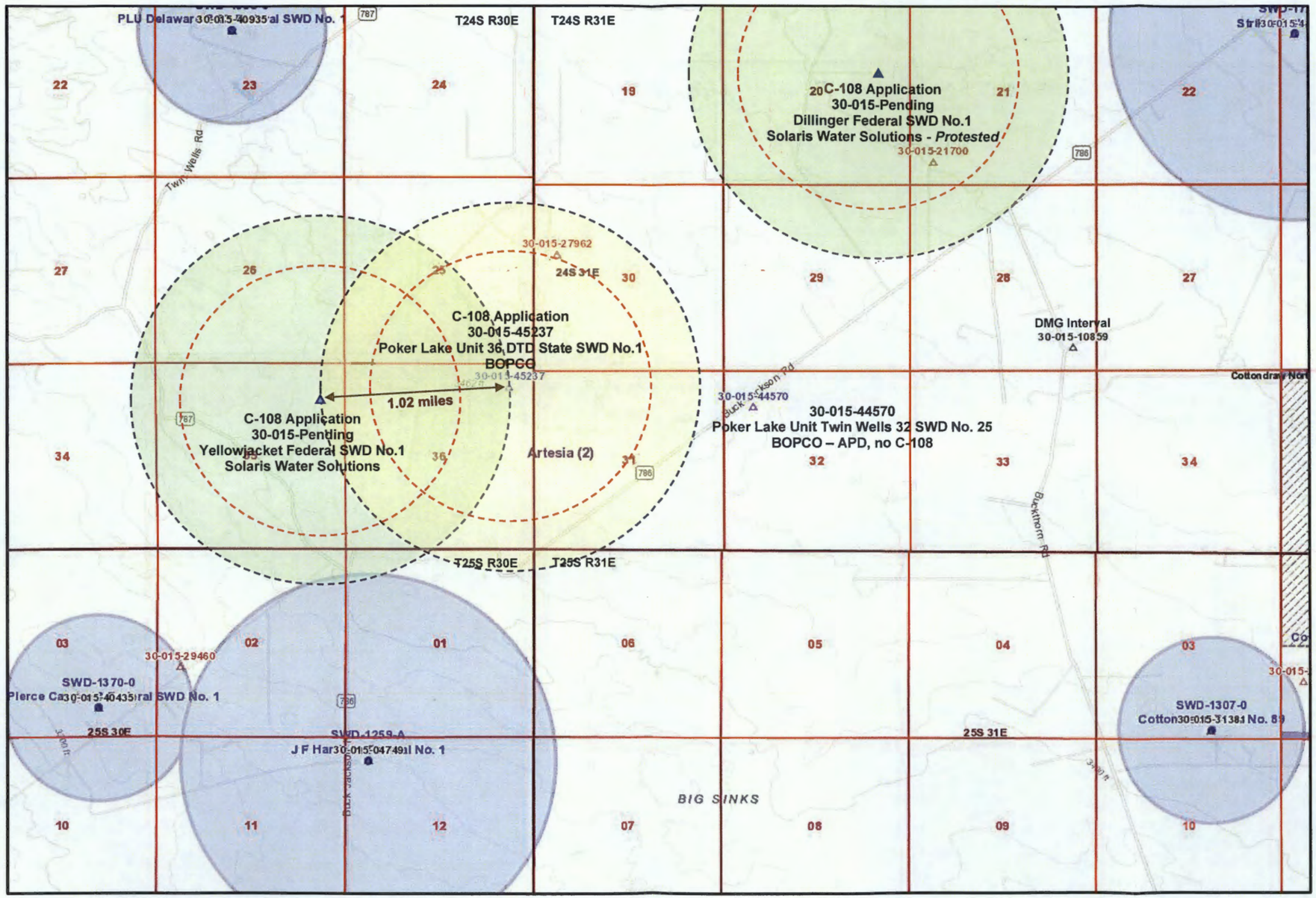
While doing the AOR review for this application, I identified an earlier pending application by Solaris that significantly overlaps the PLU 36 DTD State No. 1. The application description is as follows:

9/20/2018	pMAM1826357368	30-015-Pending	Yellowjacket Fed SWD #1	Solar

The location of the two proposed wells is approximately 1.02 miles apart (see attachment). Solaris' application is dated September 20, 2018, which predates BOPCO's application which was received November 19, 2018. Following the protocols established for selecting competing applications, Solaris' application would be processed while BOPCO's would be denied for being too close. Please discuss this situation with your management, but the Division will not be able to administratively issue a SWD order for the Poker Laker Unit 36 DTD State SWD No. 1. Please contact me with any questions regarding this application or the content of this e-mail. PRG

Phillip Goetze, PG
Engineering Bureau, Oil Conservation Division
New Mexico Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive, Santa Fe, NM 87505
Direct: 505.476.3466
E-mail: phillip.goetze@state.nm.us

Pending Application for High-Volume Devonian Disposal Well
C-108 Applications for Poker Lake Unit Area (T24/25S, R30/31E) – BOPCO LP [XTO Energy, Inc.]



Poker Lake Unit 36 DTD State SWD No. 1; BOPCO LP ["PLU Dog Town Draw 36 SWD"]
API 30-015-45237; APD identifies well as disposal well; C-108 application pending
Yellowjacket Federal SWD No. 1; Solaris Water Midstream LLC
API 30-015-Pending; A-Sec 35-24S-30E / 1069 FNL & 660 FELApplication No. pMAM1826357368; p C-108 application pending
Dillinger Federal SWD No. 1; Solaris Water Midstream LLC
API 30-015-Pending; Application No. pMAM1826355651; protested by XTO Energy and NGL Water Solutions

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St , Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

Change of Operator

Form C-145
Revised May 19, 2017

Permit 265951

Previous Operator Information		New Operator Information	
		Effective Date:	Effective on the date of approval by the OCD
OGRID:	260737	OGRID:	373075
Name:	BOPCO, L.P.	Name:	XTO PERMIAN OPERATING LLC.
Address:	6401 Holiday Hill Rd	Address:	6401 HOLIDAY HILL ROAD
	Bldg 5		BUILDING 5
City, State, Zip:	Midland, TX 79707	City, State, Zip:	MIDLAND, TX 79707

I hereby certify that the rules of the Oil Conservation Division ("OCD") have been complied with and that the information on this form and the certified list of wells is true to the best of my knowledge and belief.

Additionally, by signing below, XTO PERMIAN OPERATING LLC. certifies that it has read and understands the following synopsis of applicable rules.

PREVIOUS OPERATOR certifies that all below-grade tanks constructed and installed prior to June 16, 2008 associated with the selected wells being transferred are either (1) in compliance with 19.15.17 NMAC, (2) have been closed pursuant to 19.15.17.13 NMAC or (3) have been retrofitted to comply with Paragraphs 1 through 4 of 19.15.17.11(I) NMAC.

XTO PERMIAN OPERATING LLC. understands that the OCD's approval of this operator change:

1. constitutes approval of the transfer of the permit for any permitted pit, below-grade tank or closed-loop system associated with the selected wells; and
2. constitutes approval of the transfer of any below-grade tanks constructed and installed prior to June 16, 2008 associated with the selected wells, regardless of whether the transferor has disclosed the existence of those below-grade tanks to the transferee or to the OCD, and regardless of whether the below-grade tanks are in compliance with 19.15.17 NMAC.

Goetze, Phillip, EMNRD

From: McMillan, Michael, EMNRD
Sent: Monday, February 25, 2019 3:07 PM
To: Goetze, Phillip, EMNRD
Subject: FW: Yellow Jacket Fed SWD #1_C-108 Withdraw
Attachments: Yellow Jacket Fed SWD #1_C-108 withdraw letter.pdf

From: Whitney McKee <whitney.mckee@solarismidstream.com>
Sent: Thursday, February 21, 2019 1:30 PM
To: McMillan, Michael, EMNRD <Michael.McMillan@state.nm.us>
Cc: Drew Dixon <drew.dixon@solarismidstream.com>; Matt Garlington <matt.garlington@solarismidstream.com>
Subject: [EXT] Yellow Jacket Fed SWD #1_C-108 Withdraw

Mr. McMillan,

Attached is a letter stating that Solaris Water Midstream, LLC wishes to formally withdraw the C-108 application for Yellow Jacket Fed SWD #1. If anything else is needed to withdraw this application please let me know.

Thank you,

Whitney McKee
Solaris Water Midstream
432-203-9020 ext. 9005

SOLARIS
WATER MIDSTREAM

February 21, 2019

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

Attention: Michael McMillian

Re: Yellow Jacket Fed SWD #1

Mr. McMillian

Solaris Water Midstream, LLC would like to officially withdraw the C-108 application for Yellow Jacket Fed SWD #1 dated August 29, 2018.

Thank you,
Whitney McKee

Solaris Water Midstream, LLC
432-203-9020 ext. 9005

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER)	OSE FILE NUMBER(S)
1	C-3960
WELL OWNER NAME(S)	**PHONE (OPTIONAL)**
BUREAU OF LAND MANAGEMENT	
WELL OWNER MAILING ADDRESS	**CITY / STATE / ZIP**
620 E. GREENE STREET	CARLSBAD NM 88220

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	12	519 31.14	N
	LONGITUDE	103	53	511 30.96	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

SECTION 21 TOWNSHIP 24 S. RANGE 30 S.

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD-1753	JACOBO FRIESSEN	VANGUARD WATER WELLS

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
11-12-16	11-12-16	475	475	250

COMPLETED WELL IS: ☐ ARTESIAN ☐ DRY HOLE ☑ SHALLOW (UNCONFINED) — STATIC WATER LEVEL IN COMPLETED WELL (FT):

DRILLING FLUID: ☐ AIR ☑ MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ☑ ROTARY ☐ HAMMER ☐ CABLE TOOL ☐ OTHER – SPECIFY:

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	250	11	STEEL BLANK	THREAD	6	.322	
250	290	11	STEEL SCREEN	THREAD	6	.25	.030
290	395	11	STEEL BLANK	THREAD	6	.322	
395	435	11	STEEL SCREEN	THREAD	6	.25	.030
435	475	11	STEEL BLANK	THREAD	6	.322	

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
0	20	11	CONCRETE	9	POURD
20	220	11	3/8 GRAVEL	93	POURED
220	310	11	SILCA SAND	41	POURED
310	370	11	3/8 GRAVEL	28	POURED
370	475	11	SILCA SAND	48	POURED

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 10/29/15)

FILE NUMBER	C-3960	POD NUMBER	1	TRN NUMBER	588952
LOCATION	24.30.21.231				PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	1	1	TOPSOIL	Y ✔N	
1	42	41	SAND	Y ✔N	
42	182	140	SAND & SANDSTONE	Y ✔N	
182	250	68	SAND & GRAVEL	✔Y N	
250	402	152	FINE SAND	Y ✔N	
402	460	58	SAND & GRAVEL	✔Y N	
460	475	15	RED CLAY	Y ✔N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

☐ PUMP ☐ AIR LIFT ☐ BAILER ☐ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): 0.00

2016 NOV 17 PM 3 53

STATE ENGINEER OFFICE ROSWELL, NEW MEXICO

5. TEST; RIG SUPERVISION

WELL TEST: TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION:

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

Jacob Friessen JACOBO FRIESSEN 11-16-16

SIGNATURE OF DRILLER / PRINT SIGNEE NAME DATE

FOR OSE INTERNAL USE WR-20 WELL RECORD & LOG (Version 10/29/2015)

FILE NUMBER	C-3960	POD NUMBER	1	TRN NUMBER	588952
LOCATION	24.30.21.231				PAGE 2 OF 2

Form WR-23
SANTA FE

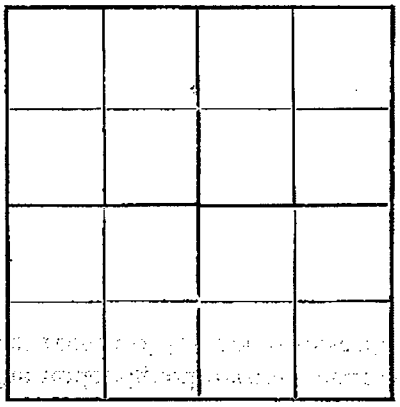
STATE ENGINEER OFFICE

~~A0493~~

WELL RECORD

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the nearest district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1A and Section 5 need be completed.

Section 1



(Plat of 640 acres)

(A) Owner of well Buck Jackson
Street and Number Box 671
City Pecos State Texas
Well was drilled under Permit No. C-1379 and is located in the
SE ¼ SE ¼ SW ¼ of Section 10 Twp. 25 Rge. 30E
(B) Drilling Contractor Emmett Barron License No. WD 30
Street and Number 307 South 10th St.
City Carlsbad State N. Mex.
Drilling was commenced January 22 19 68
Drilling was completed March 20 19 68

Elevation at top of casing in feet above sea level ____ Total depth of well 400
State whether well is shallow or artesian shallow Depth to water upon completion none

Section 2 PRINCIPAL WATER-BEARING STRATA

No.	Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation
1				
2				None Dry sand
3				
4				
5				

STATE ENGINEER OFFICE
SANTA FE, N.M.
1968 MAY 15 AM 10 11

Section 3 RECORD OF CASING

Dia in.	Pounds ft.	Threads in	Depth Top	Depth Bottom	Feet	Type Shoe	Perforations From	Perforations To
7" OD	26	10	1	265	265	None	None	None
			All 7" Casing pulled from well					
				Dry Hole				

Section 4 RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Diameter Hole in in.	Tons Clay	No. Sacks of Cement	Methods Used
		None			

Section 5 PLUGGING RECORD

Name of Plugging Contractor ____ License No. ____
Street and Number ____ City ____ State ____

Section 6

LOG OF WELL

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color	Type of Material Encountered
0	2	2		Top soil
2	20	18		Sandy Caliche
20	90	70		Hard Gray sand
90	100	10		Red soft sand stone
100	120	20	Red	Conglomerate sand stone
120	140		Red	Sandy clay
140	150	10	Gray	Hard sand
150	175	25		Red Bed Sandy
175	180	5		Gray hard sand
180	190	10		Soft Gray Sand
190	200	10		Sandy red bed
200	210	10		Gray sand
210	230	20		Sandy red bed
230	290	60		Hard sandy red bed
290	300	10		Gray sand
300	325	25		Sandy red Bed
325	340	15		Soft red Sand stone
340	360	20		Red sand soft
360	400	40		Red sand soft, bottom
				Dry

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described well.

Emmett D. Barrow

Well Driller