

**STATE OF NEW MEXICO
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES
OIL CONSERVATION DIVISION**

**APPLICATION OF PERMIAN OILFIELD PARTNERS, LLC
FOR APPROVAL OF SALT WATER DISPOSAL WELL
IN LEA COUNTY, NEW MEXICO**

**Case No. 20685
(CYCLONE FEDERAL)**

HEARING EXHIBITS

Exhibit 1A: Application, C-108, and Supporting Documentation

Exhibit 1B: Notice Affidavit

Exhibit 2A: Fisher Seismicity Statement 1 – Precambrian Fault

Exhibit 2B: Fisher Seismicity Statement 2 – Devonian Fault

**STATE OF NEW MEXICO
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES
OIL CONSERVATION DIVISION**

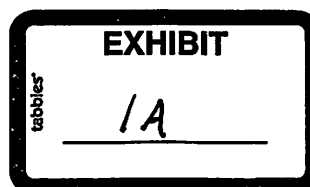
**APPLICATION OF PERMIAN OILFIELD PARTNERS, LLC
FOR APPROVAL OF SALT WATER DISPOSAL WELL
IN LEA COUNTY, NEW MEXICO**

Case No. 20685

APPLICATION

Permian Oilfield Partners, LLC ("Permian"), OGRID No. 328259, through its undersigned attorneys, hereby submits this application to the Oil Conservation Division pursuant to the provisions of NMSA 1978, § 70-2-12, for an order approving drilling of a salt water disposal well in Lea County, New Mexico. In support of this application, Permian states as follows:

1. Permian proposes to drill the Cyclone Federal SWD #1 well at a surface location 1494 feet from the North line and 291 feet from the East line of Section 11, Township 25 South, Range 32 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well.
2. Permian seeks authority to inject salt water into the Devonian-Silurian formation at a depth of 17,170' to 18,621'.
3. Permian further seeks approval of the use of 7 inch tubing inside the surface and intermediate casings and 5 ½ inch tubing inside the liner and requests that the Division approve a maximum daily injection rate for the well of 50,000 bbls per day.
4. Permian anticipates using an average pressure of 2,000 psi for this well, and it requests that a maximum pressure of 3,434 psi be approved for the well.



5. On or about April 25, 2019, Permian filed an administrative application with the Division seeking administrative approval of the subject well for produced water disposal.

6. Permian complied with the notice requirements for administrative applications, including mailing and publication in the Hobbs News Sun.

7. EOG and the New Mexico State Land Office submitted protests with respect to Permian's administrative application. Following discussions with EOG, Permian agreed to relocate the well by 69'. EOG has indicated that it will withdraw its protest, but as of the time of filing of this Application, it has not done so.

8. To Permian's knowledge, no other protests were submitted.

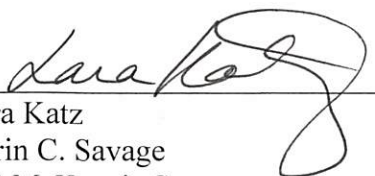
9. A proposed C-108 for the subject well, amended to reflect the change in location, is attached hereto as Exhibit A.

10. The granting of this application will avoid the drilling of unnecessary wells, will prevent waste, and will protect correlative rights.

WHEREFORE, NGL requests that this application be set for hearing before an Examiner of the Oil Conservation Division on August 8, 2019; and that after notice and hearing, the Division enter its order approving this application.

Respectfully submitted,

ABADIE & SCHILL, P.C.



Lara Katz
Darin C. Savage
214 McKenzie Street
Santa Fe, New Mexico 87501
(970) 385-4401

lara@abadieschill.com
darin@abadieschill.com

Attorneys for Permian Oilfield Partners, LLC

CASE NO. 20685: Application of Permian Oilfield Partners, LLC for approval of saltwater disposal well in Lea County, New Mexico. Applicant seeks an order approving disposal into the Devonian- Silurian formation through the Cyclone Federal SWD #1 well at a surface location 1494 feet from the North line and 291 feet from the East line of Section 11, Township 25 South, Range 32 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well. Applicant seeks authority to inject salt water into the Devonian-Silurian formation at a depth of 17,170' to 18,621'. Applicant further seeks approval of the use of 7 inch tubing inside the surface and intermediate casings and 5 ½ inch tubing inside the liner and requests that the Division approve a maximum daily injection rate for the well of 50,000 bbls per day.

ABOVE THIS TABLE FOR OCD DIVISION USE ONLY

- Geological & Engineering Bureau -
1220 South St. Francis Drive, Santa Fe, NM 87505

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: **Disposal**
Application qualifies for administrative approval? **Yes**
- II. OPERATOR: **Permian Oilfield Partners, LLC.**
ADDRESS: **P.O. Box 1220, Stephenville, TX. 76401**
CONTACT PARTY: **Sean Puryear** PHONE: **(817) 600-8772**
- 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? **No**
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-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: **Sean Puryear**

TITLE: **Manager**

SIGNATURE: 

DATE: **7-5-2019**

E-MAIL ADDRESS: **spuryear@popmidstream.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: _____

4/25/2019, original submission. Updating for relocation due to anti-collision discussions with lease operator.

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.

Additional Data

1. **Is this a new well drilled for injection?**
Yes
2. **Name of the Injection Formation:**
Devonian: Open Hole Completion
3. **Name of Field or Pool (if applicable):**
SWD; Devonian-Silurian
4. **Has the well ever been perforated in any other zone(s)?**
No: New Drill for Injection of Produced Water
5. **Give the name and depths of any oil or gas zones underlying or overlying the proposed Injection zone in this area:**

Overlying Potentially Productive Zones:

Delaware, Bone Spring, Wolfcamp, Strawn, Atoka & Morrow Tops all above 15,011'

Underlying Potentially Productive Zones:

None

WELL CONSTRUCTION DATA

Permian Oilfield Partners, LLC.
Cyclone Federal SWD #1
1494' FNL, 291' FEL
Sec. 11, T25S, R32E, Lea Co. NM
Lat 32.1481933° N, Lon 103.6379822° W
GL 3516', RKB 3546'

Surface - (Conventional)

Hole Size: 26" Casing: 20" - 94# H-40 STC Casing
Depth Top: Surface
Depth Btm: 851'
Cement: 538 sks - Class C + Additives
Cement Top: Surface - (Circulate)

Intermediate #1 - (Conventional)

Hole Size: 17.5" Casing: 13.375" - 54.5# J-55 & 61# J-55 STC Casing
Depth Top: Surface
Depth Btm: 4741'
Cement: 1551 sks - Lite Class C (50:50:10) + Additives
Cement Top: Surface - (Circulate)

Intermediate #2 - (Conventional)

Hole Size: 12.25" Casing: 9.625" - 40# L-80 & 40# HCL-80 BTC Casing
Depth Top: Surface
Depth Btm: 11942' ECP/DV Tool: 4841'
Cement: 2049 sks - Lite Class C (60:40:0) + Additives
Cement Top: Surface - (Circulate)

Intermediate #3 - (Liner)

Hole Size: 8.5" Casing: 7.625" - 39# HCL-80 FJ Casing
Depth Top: 11742'
Depth Btm: 17170'
Cement: 259 sks - Lite Class C (60:40:0) + Additives
Cement Top: 11742' - (Volumetric)

Intermediate #4 - (Open Hole)

Hole Size: 6.5" Depth: 18621'
Inj. Interval: 17170' - 18621' (Open-Hole Completion)

Tubing - (Tapered)

Tubing Depth: 17125' Tubing: 7" - 26# HCP-110 FJ Casing & 5.5" 17# HCL-80
X/O Depth: 11742' FJ Casing (Fiberglass Lined)
X/O: 7" 26# HCP-110 FJ Casing - X - 5.5" 17# HCL-80 FJ Casing (Fiberglass Lined)
Packer Depth: 17135' Packer: 5.5" - Perma-Pak or Equivalent (Inconel)

WELLBORE SCHEMATIC

Permian Oilfield Partners, LLC.
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1494' FNL, 291' FEL
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Depth Top: Surface
Depth Btm: 4741'
Cement: 1551 sks - Lite Class C (50:50:10) + Additives
Cement Top: Surface - (Circulate)

Intermediate #2 - (Conventional)

Hole Size: 12.25"
Casing: 9.625" - 40# L-80 & 40# HCL-80 BTC Casing
Depth Top: Surface
Depth Btm: 11942'
Cement: 2049 sks - Lite Class C (60:40:0) + Additives
Cement Top: Surface - (Circulate)
ECP/DV Tool: 4841'

Intermediate #3 - (Liner)

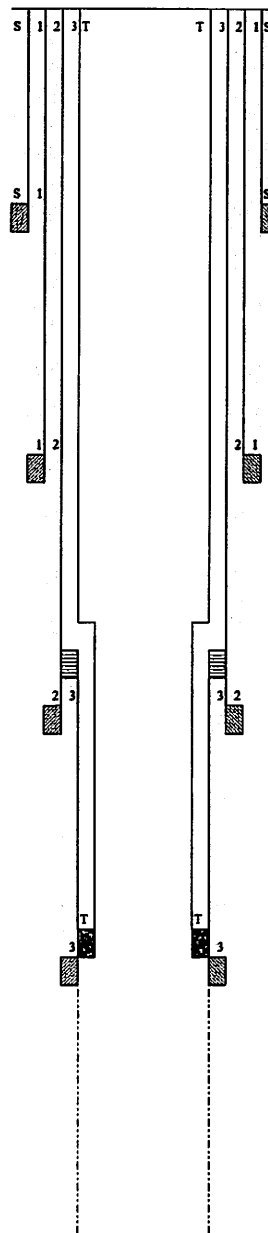
Hole Size: 8.5"
Casing: 7.625" - 39# HCL-80 FJ Casing
Depth Top: 11742'
Depth Btm: 17170'
Cement: 259 sks - Lite Class C (60:40:0) + Additives
Cement Top: 11742' - (Volumetric)

Intermediate #4 - (Open Hole)

Hole Size: 6.5"
Depth: 18621'
Inj. Interval: 17170' - 18621' (Open-Hole Completion)

Tubing - (Tapered)

Tubing Depth: 17125'
Tubing: 7" - 26# HCP-110 FJ Casing & 5.5" 17# HCL-80 FJ Casing (Fiberglass Lined)
X/O Depth: 11742'
X/O: 7" 26# HCP-110 FJ Casing - X - 5.5" 17# HCL-80 FJ Casing (Fiberglass Lined)
Packer Depth: 17135'
Packer: 5.5" - Perma-Pak or Equivalent (Inconel)



VI: There are no wells within the proposed wells area of review that penetrate the Devonian Formation.

VII:

1. The average injected volume anticipated is 40,000 BWPD
The maximum injected volume anticipated is 50,000 BWPD
2. Injection will be through a closed system
3. The average injection pressure anticipated is 2,000 psi
The proposed maximum injection pressure is 3,434 psi
4. Disposal Sources will be produced waters from surrounding wells in the Delaware, Avalon, Bone Spring and Wolfcamp formations. These formation waters are known to be compatible with Devonian formation water. Representative area produced water analyses were sourced from Go-Tech's website and are listed below.

WELL NAME	FIGHTING OKRA 18 FEDERAL COM #001H	SALADO DRAW 6 FEDERAL #001H	RATTLESNAKE 13 12 FEDERAL COM #001H	SNAPPING 2 STATE #014H
api	3002540382	3002541293	3002540912	3001542688
latitude	32.0435333	32.0657196	32.0369568	32.06555986
longitude	-103.5164566	-103.5146942	-103.416214	-103.7413815
section	18	6	13	2
township	26S	26S	26S	26S
range	34E	34E	34E	31E
unit	E	M	P	P
ftgns	2590N	200S	330S	250S
ftgew	330W	875W	330E	330E
county	Lea	Lea	Lea	EDDY
state	NM	NM	NM	NM
formation	AVALON UPPER	BONE SPRING 3RD SAND	DELAWARE-BRUSHY CANYON	WOLFCAMP
sampledate	42046	41850	41850	42284
ph	8	6.6	6.2	7.3
tds_mgL	201455.9	99401.9	243517.1	81366.4
resistivity_ohm_cm	0.032	0.064	0.026	0.1004
sodium_mgL	66908.6	34493.3	73409.8	26319.4
calcium_mgL	9313	3295	15800	2687.4
iron_mgL	10	0.4	18.8	26.1
magnesium_mgL	1603	396.8	2869	326.7
manganese_mgL	1.6	0.37	3.12	
chloride_mgL	121072.7	59986.5	149966.2	50281.2
bicarbonate_mgL	1024.8	109.8	48.8	
sulfate_mgL	940	710	560	399.7
co2_mgL	1950	70	200	100

5. Devonian water analysis from the area of review is unavailable. Representative area water analyses were sourced from Go-Tech's website and are listed below.

WELL NAME	ANTELOPE RIDGE UNIT #003	BELL LAKE UNIT #006
api	3002521082	3002508483
latitude	32.2593155	32.3282585
longitude	-103.4610748	-103.507103
sec	34	6
township	23S	23S
range	34E	34E
unit	K	O
ftgns	1980S	660S
ftgew	1650W	1980E
county	LEA	LEA
state	NM	NM
field	ANTELOPE RIDGE	BELL LAKE NORTH
formation	DEVONIAN	DEVONIAN
samplesource	UNKNOWN	HEATER TREATER
ph	6.9	7
tds_mgL	80187	71078
chloride_mgL	42200	47900
bicarbonate_mgL	500	476
sulfate_mgL	1000	900

VIII: Injection Zone Geology

Fluid injection will take place in the Devonian-Silurian formations. This sequence is bounded above by the Upper Devonian Woodford shale. Underlying the Woodford is the first injection formation, the Devonian, consisting of dolomitic carbonates & chert, followed by the Upper Silurian dolomites, and the Lower Silurian Fusselman dolomite. The lower bound of the injection interval is the limestone of the Upper Ordovician Montoya. This proposed well will TD above the top of the Montoya, and will not inject fluids into the Montoya itself, in order to provide a sufficient barrier to preclude fluid injection into the Middle Ordovician Simpson, the Lower Ordovician Ellenburger, the Cambrian, and the PreCambrian below.

Injection zone porosities are expected to range from 0% to a high of 8%, with the higher ranges being secondary porosity in the form of vugs & fractures due to weathering effects, with occasional interbedded shaly intervals. Permeabilities in the 2-3% porosity grainstone intervals are estimated to be in the 10-15 mD range, with the higher porosity intervals conservatively estimated to be in the 40-50 mD range. It is these intervals of high secondary porosity and associated high permeability that are expected to take the majority of the injected water.

The Devonian-Silurian sequence is well suited for SWD purposes, with a low permeability shale barrier overlying the injection interval to prevent upward fluid migrations to USDW's, sufficient permeabilities and porosities in zone, and multiple formations available over a large depth range. This large injection depth range means there is a large injection surface area available, allowing for low injection pressures at high injection rates.

Permian Oilfield Partners, LLC.
Cyclone Federal SWD #1
1494' FNL, 291' FEL
Sec. 11, T25S, R32E, Lea Co. NM
Lat 32.1481933° N, Lon 103.6379822° W
GL 3516', RKB 3546'

GEOLOGY PROGNOSIS			
FORMATION	TOP KB TVD (ft)	BOTTOM KB TVD (ft)	THICKNESS (ft)
Salt	1,200	4,525	3,325
Delaware	4,716	8,837	4,121
Bone Spring	8,837	11,892	3,055
Wolfcamp	11,892	13,085	1,193
Lwr. Mississippian	16,641	16,944	303
Woodford	16,944	17,135	191
Devonian	17,135	18,034	899
Fusselman (Silurian)	18,034	18,646	612
Montoya (U. Ordovician)	18,646	19,410	764
Simpson (M. Ordovician)	19,410	19,934	524

2. According to the New Mexico Office of the State Engineer, there are NO fresh water wells within the proposed well's one-mile area of review. Regionally, shallow fresh water is known to exist at depths less than 700'. There are no underground sources of fresh water present below the injection interval.
- IX:** Formation chemical stimulation with 40,000 gals of 15% Hydrochloric Acid is planned after well completion.
- X:** A compensated neutron/gamma ray log will be run from surface to TD upon well completion. All logs will be submitted to the NMOCD upon completion.
- XI:** According to the New Mexico Office of the State Engineer, there are NO fresh water wells within the proposed well's one-mile area of review. No sampling was obtained.
- XII:** Hydrologic affirmative statement attached.
- XIII:** Proof of notice and proof of publication attached.

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

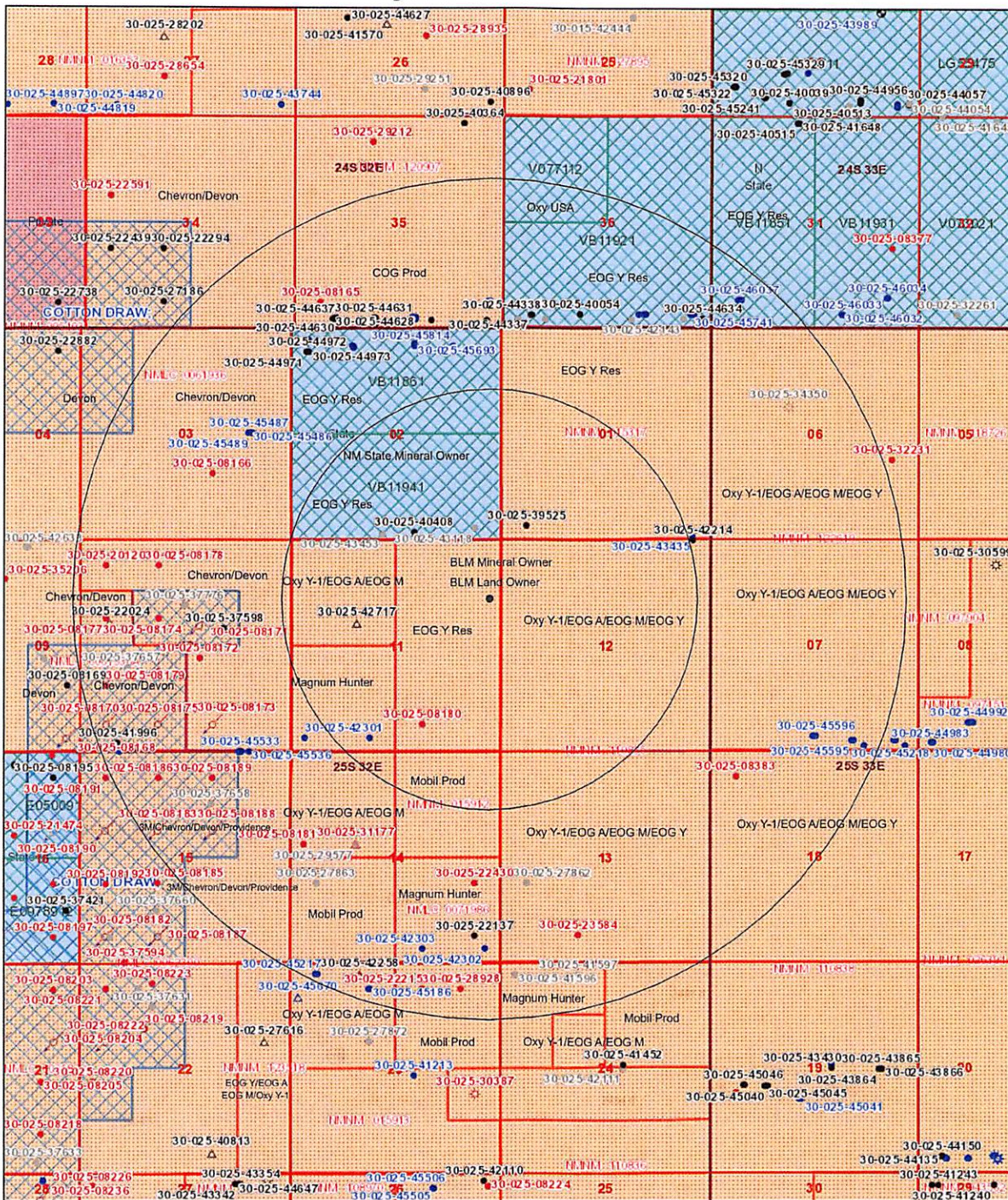
WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-		² Pool Code 97869		³ Pool Name SWD; DEVONIAN-SILURIAN					
⁴ Property Code		⁵ Property Name CYCLONE FEDERAL SWD						⁶ Well Number 1	
⁷ GRID NO. 328259		⁸ Operator Name PERMIAN OILFIELD PARTNERS, LLC						⁹ Elevation 3516'	
¹⁰ Surface Location									
UL or lot no. H	Section 11	Township 25S	Range 32E	Lot Idn	Feet from the 1494	North/South line NORTH	Feet from the 291	East/West line EAST	County LEA
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.			

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

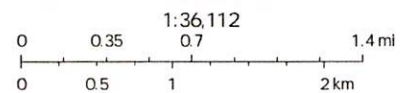
<p>S 89°28'32" W 2663.54'</p> <p>S 89°37'38" W 2659.29'</p> <p>N 00°24'00" W 5278.19'</p> <p>S 89°32'41" W 2686.06'</p> <p>S 89°34'53" W 2629.51'</p>		<p>¹⁶</p> <p>¹⁷ OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge 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.</p> <p>Signature: <i>Gary E Fisher</i> Date: 6-18-2019</p> <p>Printed Name: Gary E Fisher</p> <p>E-mail Address: gfisher@popmidstream.com</p>	
<p>GEODETIC DATA NAD 83 GRID - NM EAST</p> <p>SURFACE LOCATION (S.L.) N: 418343.0 - E: 756543.0 LAT. 32.1481933° N LONG. 103.6379822° W</p> <p>CORNER DATA NAD 83 GRID - NM EAST</p> <p>A: FOUND BRASS CAP "1940" N: 414520.0 - E: 751541.5</p> <p>B: FOUND BRASS CAP "1940" N: 419797.0 - E: 751504.6</p> <p>C: FOUND 1/2" REBAR N: 419821.4 - E: 754167.5</p> <p>D: FOUND 1/2" REBAR N: 419838.7 - E: 756826.2</p> <p>E: FOUND BRASS CAP "1940" N: 417198.9 - E: 756839.5</p> <p>F: FOUND BRASS CAP "1940" N: 414560.6 - E: 756855.8</p> <p>G: FOUND BRASS CAP "1940" N: 414541.4 - E: 754226.9</p>		<p>¹⁸ SURVEYOR CERTIFICATION</p> <p>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.</p> <p>5-28-2019 Date of Survey</p> <p>Signature and Seal of Professional Surveyor: <i>Jeffrey L. Fansler</i></p> <p>10034 Certificate Number</p>	
<p>N 00°17'19" W 2640.36'</p> <p>N 00°21'13" W 2638.92'</p>		<p>Job No. LS19030272R</p>	

1 & 2 Mile AOR, Cyclone Federal SWD #1-Amended



6/18/2019, 6:30:21 PM

- | | | |
|---|--|---|
| <ul style="list-style-type: none"> Override 1 Well Locations - Large Scale Miscellaneous CO2 Active CO2 Cancelled CO2 New CO2 Plugged CO2 Temporarily Abandoned Gas Active Gas Cancelled, Never Drilled Gas New Gas Plugged Gas Temporarily Abandoned Injection, Active | <ul style="list-style-type: none"> Injection, Cancelled Injection, New Injection, Plugged Injection, Temporarily Abandoned Oil, Active Oil, Cancelled Oil, New Oil, Plugged Oil, Temporarily Abandoned Salt Water Injection, Active Salt Water Injection, Cancelled Salt Water Injection, New Salt Water Injection, Plugged | <ul style="list-style-type: none"> Salt Water Injection Temporarily Abandoned Water, Active Water, Cancelled Water, New Water, Plugged Water, Temporarily Abandoned |
|---|--|---|
- Well Locations - Small Scale
- Active
 - New
 - Plugged
 - Cancelled
 - Temporarily Abandoned
- PLSS First Division
- PLSS Second Division

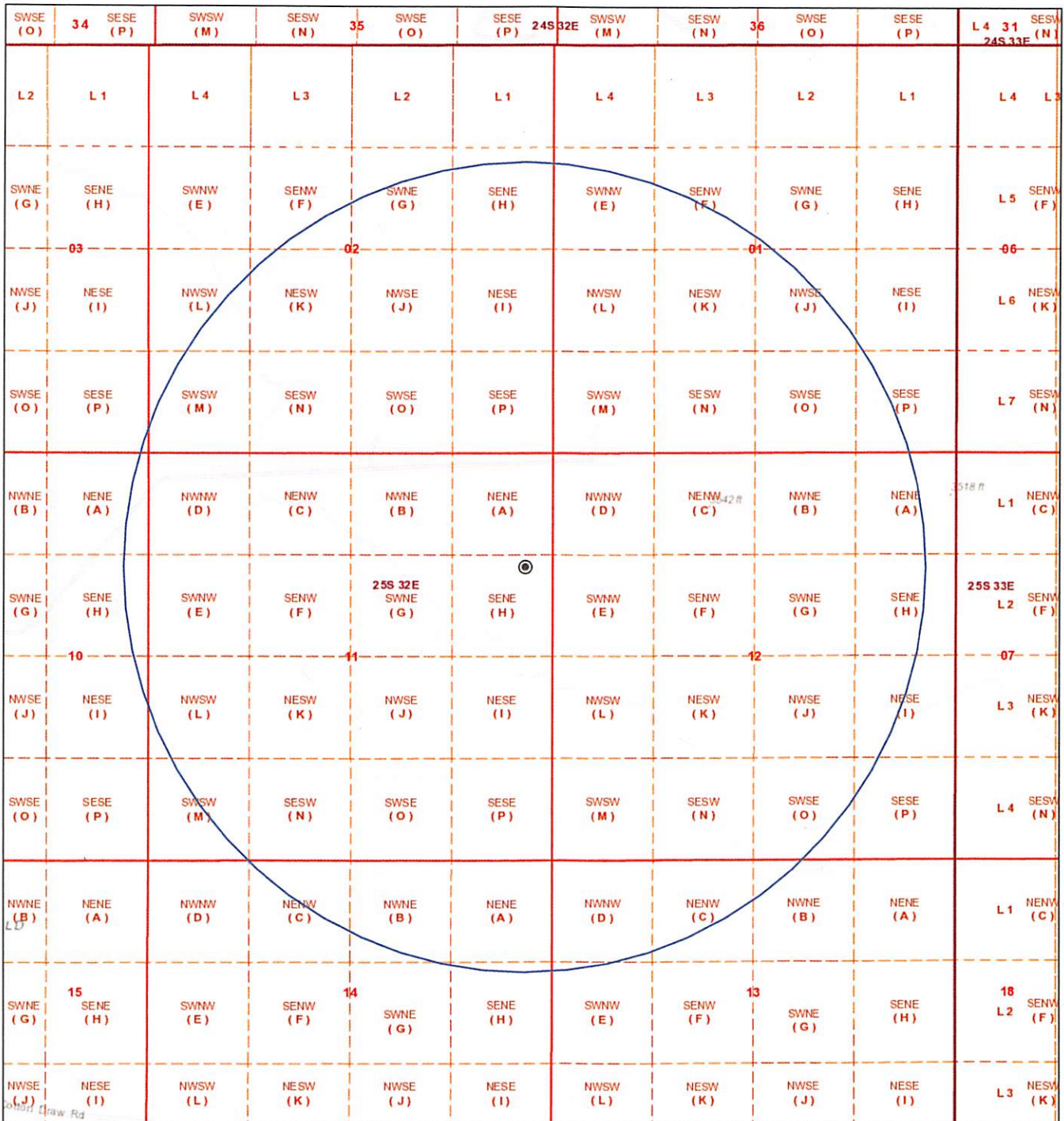


U.S. BLM
Sources: Esri, HERE, Garmin, Intermap, increment P Corp.,
GEOBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL,
Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c)

New Mexico Oil Conservation Division

Cyclone Federal SWD #1 - Wells within 1 Mile Area of Review															
API Number	Current Operator	Well Name	Well Number	Well Type	Well Direction	Well Status	Section	Township	Range	OCD Unit Letter	Surface Location	Bottomhole Location	Formation	MD	TVD
30-025-08180	PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL	#001	Oil	Vertical	Plugged, Site Released	11	T25S	R32E	O	O-11-25S-32E 660 FSL 1980 FEL	O-11-25S-32E 660 FSL 1980 FEL	DELAWARE	4842	4842
30-025-39525	EOG RESOURCES INC	FARBER BOB FEDERAL	#001H	Oil	Vertical	Active	01	T25S	R32E	M	M-01-25S-32E 330 FSL 660 FWL	M-01-25S-32E 330 FSL 660 FWL	BONE SPRING	13586	13586
30-025-40408	EOG RESOURCES INC	UNDAUNTED BSD STATE COM	#001H	Oil	Horizontal	Active	02	T25S	R32E	O	O-02-25S-32E 175 FSL 2200 FEL	B-02-25S-32E 4958 FSL 2243 FEL	BONE SPRING	15464	10882
30-025-42301	CIMAREX ENERGY CO.	FUGGLES 11 FEDERAL COM	#002H	Oil	Horizontal	New	11	T25S	R32E	N	N-11-25S-32E 330 FSL 1980 FWL	C-11-25S-32E 330 FSL 1980 FWL	BONE SPRING	13899	9484
30-025-42717	MESQUITE SWD, INC	BLUE QUAIL SWD FEDERAL	#001	Salt Water Disposal	Vertical	Active	11	T25S	R32E	F	F-11-25S-32E 2100 FNL 1660 FWL	F-11-25S-32E 2100 FNL 1660 FWL	DELAWARE	6274	6274
30-025-43118	EOG Y RESOURCES, INC.	UNDAUNTED BSD STATE COM	#003C	Oil	Horizontal	Cancelled Apd	02	T25S	R32E	P	P-02-25S-32E 271 FSL 660 FEL	A-02-25S-32E Lot: 1 331 FNL 660 FEL	BONE SPRING	15619	10885
30-025-43453	EOG Y RESOURCES, INC.	UNDAUNTED BSD STATE COM	#002C	Oil	Horizontal	Cancelled Apd	02	T25S	R32E	N	N-02-25S-32E 131 FSL 2310 FWL	C-02-25S-32E Lot: 3 331 FNL 2310 FWL	BONE SPRING	15506	10840

Cyclone Federal SWD #1 - Water Wells within 1 Mile AOR



4/17/2019, 10:40:33 AM

Override 1



Override 1



PLSS First Division

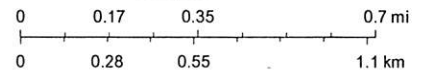


PLSS Second Division



PLSS Townships

1:18,056



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), swisstopo, © OpenStreetMap contributors, and the GIS User



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW#### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,
O=orphaned,
C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 6	Q 4	Q 16	Sec	Tws	Rng	X	Y	DepthWell	DepthWater	Water Column
C_01932		C	ED	3	1	12	24S	32E		628633	3567188*	492		
C_02350		CUB	ED	4	3	10	24S	32E		625826	3566333*	60		
C_03527 POD1		C	LE	1	2	3	03	24S	32E	625770	3568487	500		
C_03528 POD1		C	LE	1	1	2	15	24S	32E	626040	3566129	541		
C_03530 POD1		C	LE	3	4	3	07	24S	32E	620886	3566156	550		
C_03555 POD1		C	LE	2	2	1	05	24S	32E	622709	3569231	600	380	220

Average Depth to Water: **380 feet**

Minimum Depth: **380 feet**

Maximum Depth: **380 feet**

Record Count: 6

PLSS Search:

Township: 24S **Range:** 32E

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

4/22/19 11:04 AM

WATER COLUMN/ AVERAGE DEPTH TO
WATER



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW#### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,
O=orphaned,
C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	Sub-basin	County	Q	Q	Q	Sec	Tw	Rng	X	Y	DepthWell	DepthWater	Water Column
C_02308		CUB	LE	1	3	1	10	24S	33E	634953	3567364*	40	20	20
C_02309		CUB	LE	2	2	2	25	24S	33E	639638	3562994*	60	30	30
C_02310		CUB	LE	2	3	2	33	24S	33E	634437	3560918*	120	70	50
C_02311		CUB	LE	2	3	2	33	24S	33E	634437	3560918*	120	70	50
C_02430		CUB	LE	3	3	3	16	24S	33E	633377	3564732*	643	415	228
C_02431		CUB	LE	4	4	4	17	24S	33E	633175	3564728*	525	415	110
C_02432		CUB	LE	4	4	4	17	24S	33E	633175	3564728*	640	415	225
C_02563		CUB	LE	1	4	2	33	24S	33E	634639	3560923*	120		
C_02564		CUB	LE	2	4	2	33	24S	33E	634839	3560923*	120		
C_02890		C	LE	2	4	29	24S	33E	633114	3562012*	500			
C_03565 POD3		CUB	LE	3	4	08	24S	33E	632763	3566546			1533	
C_03591 POD1		CUB	LE	2	1	4	05	24S	33E	632731	3568518			
C_03600 POD1		CUB	LE	2	2	1	26	24S	33E	637275	3563023			
C_03600 POD2		CUB	LE	4	4	1	25	24S	33E	638824	3562329			
C_03600 POD3		CUB	LE	3	4	2	26	24S	33E	637784	3562340			
C_03600 POD4		CUB	LE	3	3	1	26	24S	33E	636617	3562293			
C_03600 POD5		CUB	LE	3	2	4	26	24S	33E	637857	3562020			
C_03600 POD6		CUB	LE	3	1	4	26	24S	33E	637383	3562026			
C_03600 POD7		CUB	LE	3	1	3	26	24S	33E	636726	3561968			
C_03601 POD1		CUB	LE	4	4	2	23	24S	33E	638124	3563937			
C_03601 POD2		CUB	LE	3	2	4	23	24S	33E	637846	3563588			
C_03601 POD3		CUB	LE	1	3	3	24	24S	33E	638142	3563413			
C_03601 POD4		CUB	LE	3	3	3	24	24S	33E	638162	3561375			
C_03601 POD5		CUB	LE	2	4	4	23	24S	33E	637988	3563334			
C_03601 POD6		CUB	LE	1	4	4	23	24S	33E	637834	3563338			
C_03601 POD7		CUB	LE	4	4	4	23	24S	33E	637946	3563170			
C_03602 POD2		CUB	LE	4	4	1	25	24S	33E	638824	3562329			
C_03603 POD1		CUB	LE	3	2	2	35	24S	33E	637805	3561225			
C_03603 POD2		CUB	LE	3	1	2	35	24S	33E	637384	3561167			
C_03603 POD3		CUB	LE	4	1	1	35	24S	33E	636890	3561092			
C_03603 POD4		CUB	LE	3	2	4	35	24S	33E	637789	3560461			
C_03603 POD5		CUB	LE	3	3	2	35	24S	33E	636745	3560767			
C_03603 POD6		CUB	LE	3	1	3	35	24S	33E	636749	3560447			

4/25/2019

T24S R33E Average Fresh Water Depths.htm

C_03662.POD1	C	LE	3	1	2	23	24S	33E	637342	3564428	550	110	440
C_03666.POD1	C	LE	2	3	4	13	24S	33E	639132	3565078	650	390	260
C_03679.POD1	C	ED	1	4	2	14	24S	33E	603567	3581547	700	575	125
C_03917.POD1	C	LE	4	1	3	13	24S	33E	638374	3565212	600	420	180
C_04014.POD2	CUB	LE	4	4	2	01	24S	33E	639656	3568917	95	81	14
C_04014.POD3	CUB	LE	2	4	2	01	24S	33E	639497	3569007	95	87	8
C_04014.POD4	CUB	LE	3	4	2	01	24S	33E	639295	3568859	96	86	10
C_04014.POD5	CUB	LE	1	4	2	01	24S	33E	639284	3569086	95	85	10

Average Depth to Water: **300 feet**
Minimum Depth: **20 feet**
Maximum Depth: **1533 feet**

Record Count: 41

PLSS Search:

Township: 24S **Range:** 33E

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

4/22/19 11:04 AM

WATER COLUMN/ AVERAGE DEPTH TO
WATER



New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest) (NAD83 UTM in meters)

No records found.

PLSS Search:

Township: 25S **Range:** 32E

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

4/22/19 11:02 AM

WATER COLUMN/ AVERAGE
DEPTH TO WATER



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,
O=orphaned,
C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tw	Rng	X	Y	DepthWell	DepthWater	Water Column
C 02312		CUB	LE	1	2	1	05	25S	33E	632241	3559687*	150	90	60
C 02313		CUB	LE	2	3	3	26	25S	33E	636971	3552098*	150	110	40
C 02373 CLW317846	O	CUB	LE	2	1	1	13	25S	33E	638518	3556544*	625	185	440
C 02373 S		CUB	LE	1	2	1	13	25S	33E	638721	3556549*	625	185	440

Average Depth to Water: **142 feet**

Minimum Depth: **90 feet**

Maximum Depth: **185 feet**

Record Count: 4

PLSS Search:

Township: 25S **Range:** 33E

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

4/22/19 11:05 AM

WATER COLUMN/ AVERAGE DEPTH TO
WATER



Item XII. Affirmative Statement

Re: C-108 Application for SWD Well
Permian Oilfield Partners, LLC
Cyclone Federal SWD #1
Sec. 11, Twp. 25S, Rge. 32E
1494' FNL, 291' FEL
Lea County, NM

Permian Oilfield Partners, LLC. has examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.

A handwritten signature in black ink, appearing to read "Gary Fisher".

Gary Fisher
Manager
Permian Oilfield Partners, LLC.

Date: 7/5/2019



Statement of Notifications

Re: C-108 Application for SWD Well
Permian Oilfield Partners, LLC
Cyclone Federal SWD #1
Sec. 11, Twp. 25S, Rge. 32E
1492' FNL, 361' FEL
Lea County, NM

Permian Oilfield Partners, LLC has mailed notifications to offset operators, mineral owners, lessees and the surface owner as per the following list:

Cyclone Federal SWD #1 - Affected Persons within 1 Mile Area of Review					
Notified Name	Notified Address	Notified City, State, ZIP Code	Shipper	Tracking No.	Mailing Date
Cimarex Energy Co.	600 N. Marienfeld Street Suite 600	Midland, TX 79701	USPS	9414811899561827330010	4/26/2019
Mesquite SWD, Inc	P.O. Box 1479	Carlsbad, NM 88221	USPS	9414811899561827338696	4/26/2019
EOG Resources Inc	P.O. Box 2267	Midland, TX 79702	USPS	9414811899561827338801	4/26/2019
Bureau Of Land Management	620 E Greene St	Carlsbad, NM 88220	USPS	9414811899561827330164	4/26/2019
New Mexico State Land Office	2827 N Dal Paso St Suite 117	Hobbs, NM 88240	USPS	9414811899561827338023	4/26/2019
New Mexico State Land Office	310 Old Santa Fe Trail	Santa Fe, NM 87501	USPS	9414811899561827338375	4/26/2019
EOG Y Resources Inc	104 South 4th Street	Artesia, NM 88210-2123	USPS	9414811899561827338795	4/26/2019
EOG A Resources Inc	105 South 4th Street	Artesia, NM 88210-2123	USPS	9414811899561827330522	4/26/2019
Oxy Y-1 Company	5 Greenway Plaza	Houston, TX 77046	USPS	9414811899561827338405	4/26/2019
EOG M Resources Inc	P.O. BOX 840	Artesia, NM 88211	USPS	9414811899561827338283	4/26/2019
Mobil Prod TX & NM	9 Greenway Plaza 2700	Houston, TX 77046	USPS	9414811899561827338177	4/26/2019
Mobil Prod TX & NM	P.O. Box 64106	Spring, TX 77387	USPS	9414811899561827338153	4/26/2019
Devon Energy Production Company, LP	333 West Sheridan Ave.	Oklahoma City, OK 73102	USPS	9414811899561827330454	4/26/2019
Chevron U S A Inc	6301 Deauville Blvd	Midland, TX 79706	USPS	9414811899561827330355	4/26/2019
Magnum Hunter Production Inc	600 East Las Colinas Boulevard Suite 1100	Irving, TX 75039	USPS	9414811899561827338986	4/26/2019

Sean Puryear
Permian Oilfield Partners, LLC
spuryear@popmidstream.com

Date: 4-26-2019

U.S. Postal Service **Certified Mail Receipt**

ARTICLE NUMBER: 9414 8118 9956 1827 3300 10

ARTICLE ADDRESSED TO:

Cimarex Energy Co.
600 N. Marienfeld St., Suite 600
Midland TX 79701-4405

FEES
Postage Per Piece \$3.20
Certified Fee 3.50
Total Postage & Fees: 6.70



Postmark
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U.S. Postal Service **Certified Mail Receipt**

ARTICLE NUMBER: 9414 8118 9956 1827 3386 96

ARTICLE ADDRESSED TO:

Mesquite SWD, Inc.
PO Box 1479
Carlsbad NM 88221-1479

FEES
Postage Per Piece \$3.20
Certified Fee 3.50
Total Postage & Fees: 6.70



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U.S. Postal Service **Certified Mail Receipt**

ARTICLE NUMBER: 9414 8118 9956 1827 3388 01

ARTICLE ADDRESSED TO:

EOG Resources, Inc.
PO Box 2267
Midland TX 79702-2267

FEES
Postage Per Piece \$3.20
Certified Fee 3.50
Total Postage & Fees: 6.70



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U.S. Postal Service **Certified Mail Receipt**

ARTICLE NUMBER: 9414 8118 9956 1827 3301 64

ARTICLE ADDRESSED TO:

Bureau of Land Management
620 E Greene St
Carlsbad NM 88220-6292

FEES
Postage Per Piece \$3.20
Certified Fee 3.50
Total Postage & Fees: 6.70



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U.S. Postal Service **Certified Mail Receipt**

ARTICLE NUMBER: 9414 8118 9956 1827 3380 23

ARTICLE ADDRESSED TO:

New Mexico State Land Office
2827 N Dal Paso St. Suite 117
Hobbs NM 88240-2062

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Certified Fee 3.50
Total Postage & Fees: 6.70



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ARTICLE NUMBER: 9414 8118 9956 1827 3383 75

ARTICLE ADDRESSED TO:

New Mexico State Land Office
310 Old Santa Fe Trail
Santa Fe NM 87501-2708

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Postage Per Piece \$3.20
Certified Fee 3.50
Total Postage & Fees: 6.70



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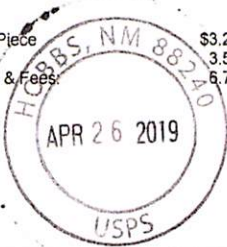
ARTICLE NUMBER: 9414 8118 9956 1827 3387 95

ARTICLE ADDRESSED TO:

EOG Y Resources, Inc.
104 South 4th Street
Artesia NM 88210-2123

FEES

Postage Per Piece	\$3.20
Certified Fee	3.50
Total Postage & Fees	6.70



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ARTICLE NUMBER: 9414 8118 9956 1827 3305 22

ARTICLE ADDRESSED TO:

EOG A Resources Inc.
105 South 4th Street
Artesia NM 88210-2177

FEES

Postage Per Piece	\$3.20
Certified Fee	3.50
Total Postage & Fees	6.70



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ARTICLE NUMBER: 9414 8118 9956 1827 3384 05

ARTICLE ADDRESSED TO:

Oxy Y-1 Company
5 Greenway Plaza
Houston TX 77046-0526

FEES

Postage Per Piece	\$3.20
Certified Fee	3.50
Total Postage & Fees	6.70



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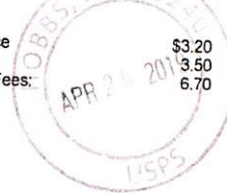
ARTICLE NUMBER: 9414 8118 9956 1827 3382 83

ARTICLE ADDRESSED TO:

EOG M Resources Inc.
PO Box 840
Artesia NM 88211-0840

FEES

Postage Per Piece	\$3.20
Certified Fee	3.50
Total Postage & Fees	6.70



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ARTICLE NUMBER: 9414 8118 9956 1827 3381 77

ARTICLE ADDRESSED TO:

Mobil Prod TX & NM
9 Greenway Plaza 2700
Houston TX 77046-0905

FEES

Postage Per Piece	\$3.20
Certified Fee	3.50
Total Postage & Fees	6.70



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ARTICLE NUMBER: 9414 8118 9956 1827 3381 53

ARTICLE ADDRESSED TO:

Mobil Prod TX & NM
PO Box 64106
Spring TX 77387-4106

FEES

Postage Per Piece	\$3.20
Certified Fee	3.50
Total Postage & Fees	6.70



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ARTICLE NUMBER: 9414 8118 9956 1827 3304 54

ARTICLE ADDRESSED TO:

Devon Energy Production Co., LP
333 West Sheridan Ave
Oklahoma City OK 73102-5010

FEES

Postage Per Piece	\$3.20
Certified Fee	3.50
Total Postage & Fees:	6.70

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ARTICLE NUMBER: 9414 8118 9956 1827 3303 55

ARTICLE ADDRESSED TO:

Chevron USA
6301 Deauville
Midland TX 79706-2964

FEES

Postage Per Piece	\$3.20
Certified Fee	3.50
Total Postage & Fees:	6.70

Postmark
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U.S. Postal Service Certified Mail Receipt

ARTICLE NUMBER: 9414 8118 9956 1827 3389 86

ARTICLE ADDRESSED TO:

Magnum Hunter Production Inc.
600 E Colinas Blvd. E Suite 1100
Irving TX 75039-5635

FEES

Postage Per Piece	\$3.20
Certified Fee	3.50
Total Postage & Fees:	6.70

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Affidavit of Publication

STATE OF NEW MEXICO
COUNTY OF LEA

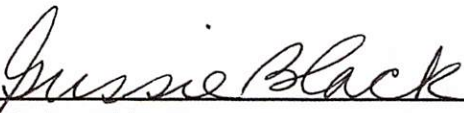
I, Todd Bailey, Editor of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

Beginning with the issue dated
April 25, 2019
and ending with the issue dated
April 25, 2019.



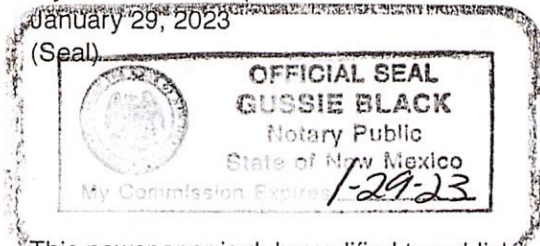
Editor

Sworn and subscribed to before me this
25th day of April 2019.



Business Manager

My commission expires
January 29, 2023
(Seal)



This newspaper is duly qualified to publish
legal notices or advertisements within the
meaning of Section 3, Chapter 167, Laws of
1937 and payment of fees for said

LEGALS

LEGAL NOTICE
APRIL 25, 2019

Newspaper Publication
Notice

Permian Oilfield Partners, LLC, PO Box 1220, Stephenville, TX 76401, phone (817)606-7630, attention Gary Fisher, has filed form C-108 (Application for Authorization for Injection) with the New Mexico Oil Conservation Division seeking approval to drill a commercial salt water disposal well in Lea County, New Mexico. The well name is the Cyclone Federal SWD #1, and is located 1492' FNL & 361' FEL, Unit Letter H, Section 11, Township 25 South, Range 32 East, NMPM. The well will dispose of water produced from nearby oil and gas wells into the Devonian formation from a depth of 17,170 feet to 18,621 feet. The maximum expected injection rate is 50,000 BWPD at a maximum surface injection pressure of 3,434 psi.

Interested parties must file objections or requests for hearing with the New Mexico Oil Conservation Division, 1220 South St. Francis Drive, Santa Fe, New Mexico, 87505 within 15 days.
#34075

67115647

00227382

GARY FISHER
PERMIAN OILFIELD PARTNERS, LLC
PO BOX 1220
STEPHENVILLE, TX 76401

**Plugging Risk Assessment
Permian Oilfield Partners, LLC.
Cyclone Federal SWD #1
SL: 1494' FNL & 291' FEL
Sec 11, T25S, R32E
Lea County, New Mexico**

WELLBORE SCHEMATIC

Permian Oilfield Partners, LLC.
Cyclone Federal SWD #1
1494' FNL, 291' FEL
Sec. 11, T25S, R32E, Lea Co. NM
Lat 32.1481933° N, Lon 103.6379822° W
GL 3516', RKB 3546'

Surface - (Conventional)

Hole Size: 26"
Casing: 20" - 94# H-40 STC Casing
Depth Top: Surface
Depth Btm: 851'
Cement: 538 sks - Class C + Additives
Cement Top: Surface - (Circulate)

Intermediate #1 - (Conventional)

Hole Size: 17.5"
Casing: 13.375" - 54.5# J-55 & 61# J-55 STC Casing
Depth Top: Surface
Depth Btm: 4741'
Cement: 1551 sks - Lite Class C (50:50:10) + Additives
Cement Top: Surface - (Circulate)

Intermediate #2 - (Conventional)

Hole Size: 12.25"
Casing: 9.625" - 40# L-80 & 40# HCL-80 BTC Casing
Depth Top: Surface
Depth Btm: 11942'
Cement: 2049 sks - Lite Class C (60:40:0) + Additives
Cement Top: Surface - (Circulate)
ECP/DV Tool: 4841'

Intermediate #3 - (Liner)

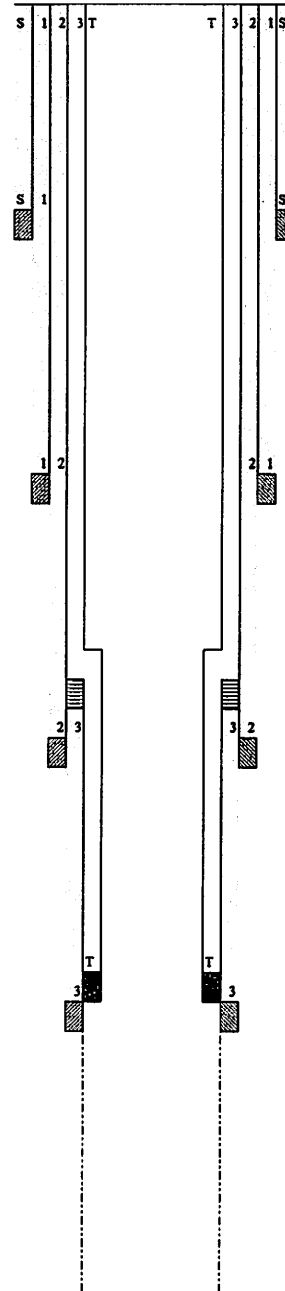
Hole Size: 8.5"
Casing: 7.625" - 39# HCL-80 FJ Casing
Depth Top: 11742'
Depth Btm: 17170'
Cement: 259 sks - Lite Class C (60:40:0) + Additives
Cement Top: 11742' - (Volumetric)

Intermediate #4 - (Open Hole)

Hole Size: 6.5"
Depth: 18621'
Inj. Interval: 17170' - 18621' (Open-Hole Completion)

Tubing - (Tapered)

Tubing Depth: 17125'
Tubing: 7" - 26# HCP-110 FJ Casing & 5.5" 17# HCL-80 FJ Casing (Fiberglass Lined)
X/O Depth: 11742'
X/O: 7" 26# HCP-110 FJ Casing - X - 5.5" 17# HCL-80 FJ Casing (Fiberglass Lined)
Packer Depth: 17135'
Packer: 5.5" - Perma-Pak or Equivalent (Inconel)



Plugging Risk Assessment

7" UFJ Tubing Inside of 9 5/8" 40# Casing

Bowen Series 150 Releasing and Circulation Overshots

Maximum Catch Size 6 5/8" to 7 1/4" Inclusive

Maximum Catch Size (Spiral)		6 5/8"	6 3/4"	7"	7 1/4"
Maximum Catch Size (Basket)		5 7/8"	6 1/8"	6 3/4"	6 5/8"
Overshot O.D.		8 1/4"	7 7/8"	8 1/8"	8 1/4"
Type		F.S.	S.H.	S.H.	S.H.
Complete Assembly	Part No.	C-3032	C-5222	Q217	C-5354
(Dressed Spiral Parts)	Weight	280	243	251	260

Replacement Parts

Top Sub	Part No.	A-3033	A-5223	Q218	A-5355
Bowl	Part No.	B-3034	B-5224	Q219	B-5356
Packer	Part No.	A-1814	B-5225	Q224	B-5357
Spiral Grapple	Part No.	N-84	B-5227	Q222	B-5359
Spiral Grapple Control	Part No.	M-89	A-5228	Q223	B-5360
Standard Guide	Part No.	A-1818	A-5229	Q226	A-5361

Basket Parts

Basket Grapple	Part No.	N-84	B-5227	Q222	B-5359
Basket Grapple Control	Part No.	M-89	A-5228	Q223	B-5360
Mill Control Packer	Part No.	A-1814-R	B-5225-R	Q224-R	B-5357-R

An 8.125" O.D. Bowen Series 150 Overshot will be used to perform this overshot operation. Details on the overshot are listed above. Casing to tubing clearance dimensions are listed below.

7" 26# FJ Casing Inside 9.625" 40# BTC Casing													
Clearance (in)	Pipe Size (in)	Weight lb/ft	Grade	Conn.	Type	Body O.D. (in)	Coupling O.D. (in)	I.D. (in)	Drift (in)	Lined Wt. lb/ft	Lined I.D. (in)	Flare I.D. (in)	Lined Drift (in)
0.840	9 5/8	40.0	L-80	BTC	Casing	9.625	10.625	8.835	8.679	-	-	-	-
	7	26.0	HCP-110	FJ	Casing	7.000	7.000	6.276	6.151	28.500	6.080	5.940	5.815

*Red Indicates Tubing

Fishing Procedure

Overshot Fishing Procedure

In the Event of a Connection Break

- If fishing neck is clean

1. Trip in hole with overshot and engage fish.
2. Pick up 2 points over neutral weight.
3. Turn pipe 10-15 turns to the right to release the seal assembly from the packer.
4. Once released from packer, trip out of hole with fish.

A skirted mill may be substituted for a standard mill to ensure pipe stabilization and the casing is not damaged while milling

- If dressing fishing neck is required

1. Trip in hole with mill and dress fishing neck to allow for overshot to engage tubing.
2. Trip out of hole with mill.
3. Trip in hole with overshot and engage fish.
4. Pick up 2 points over neutral weight.
5. Turn pipe 10-15 turns to the right to release the seal assembly from the packer.
6. Once released from packer, trip out of hole with fish.

A skirted mill may be substituted for a standard mill to ensure pipe stabilization and the casing is not damaged while milling

In the Event of a Body Break

- If fishing neck is clean

1. Trip in hole with overshot and engage fish.
2. Pick up 2 points over neutral weight.
3. Turn pipe 10-15 turns to the right to release the seal assembly from the packer.
4. Once released from packer, trip out of hole with fish.

- If dressing fishing neck is required

1. Trip in hole with mill and dress fishing neck to allow for overshot to engage tubing.
2. Trip out of hole with mill.
3. Trip in hole with overshot and engage fish.
4. Pick up 2 points over neutral weight.

5. Turn pipe 10-15 turns to the right to release the seal assembly from the packer.
6. Once released from packer, trip out of hole with fish.

A skirted mill may be substituted for a standard mill to ensure pipe stabilization and the casing is not damaged while milling

Spear Fishing Procedure

If an overshot cannot be used to retrieve the fish, a spear may be used.

- Due to the use of insert lined tubing, the composite liner must be removed from the tubing before engaging the fish with a spear.
1. Trip in hole with spear sized to engage the I.D. of the insert liner.
 2. Engage the insert liner inside the tubing with spear.
 3. Pull the insert liner out of the tubing.
 4. Trip out of hole with insert liner.
 5. Trip in hole with spear sized to engage the I.D. of the tubing.
 6. Engage the tubing with spear.
 7. Pick up 2 points over neutral weight.
 8. Turn pipe 10-15 turns to the right to release the seal assembly from the packer.
 9. Once released from packer, trip out of hole with fish.

Inside Diameter Cutting Tool Fishing Procedure

If an overshot is required but a mill cannot be used to dress off a fishing neck, an inside diameter cutting tool may be used.

- Due to the use of insert lined tubing, the composite liner must be removed from the tubing before engaging the fish with a spear.
1. Trip in hole with spear sized to engage the I.D. of the insert liner.
 2. Engage the insert liner inside the tubing with spear.
 3. Pull the insert liner out of the tubing.
 4. Trip out of hole with insert liner.
 5. Trip in hole with inside diameter cutting tool and cut the tubing below the damaged fishing neck.
 6. Trip out hole with cutting tool.
 7. Trip in hole with spear sized to engage the I.D. of the tubing.
 8. Engage the previously cut tubing segment with spear.
 9. Trip out hole with cut tubing segment and spear.
 10. Trip in hole with overshot and engage fish.
 11. Pick up 2 points over neutral weight.
 12. Turn pipe 10-15 turns to the right to release the seal assembly from the packer.
 13. Once released from packer, trip out of hole with fish.

Plugging Risk Assessment

Page 5

5 1/2" UFJ Tubing Inside of 7 5/8" 39# Casing

Series 150 Overshots

Tools are listed in order of maximum catch size.

The following table shows only a partial listing of available NOV Dowhole Bowen® overshots.

NOTE: Nitralloy Grapples are available upon request.

Bowen Series 150 Releasing and Circulation Overshots

Maximum Catch Size 4 1/4" to 5 1/2" Inclusive

Maximum Catch Size (Spiral)		4 1/4"	4 1/2"	4 3/4"	4 7/8"	5"	5 1/8"	5 1/2"
Maximum Catch Size (Basket)		3 1/4"	4 1/4"	4 1/2"	4 3/4"	4 7/8"	5 1/8"	5 1/2"
Overshot O.D.		5 3/4"	5 7/8"	5 7/8"	5 7/8"	5 7/8"	6 1/8"	6 1/8"
Type		F.S.	S.H.	S.H.	S.F.S.	S.H.	F.S.	S.H.
Complete Assembly	Part No.	5898	5898	C-5188	8875	C-5171	C-4825	8825
(Dressed Spiral Parts)	Weight	130	130	133	138	140	182	185
Replacement Parts								
Top Sub	Part No.	5897	5899	A-5189	8876	A-5172	B-4826	8826
Bowl	Part No.	5898	5700	B-5170	8877	B-5173	B-4827	8817
Packer	Part No.	189	1140	B-2199	8114	L-5950	L-4505	8818
Spiral Grapple	Part No.	185	1135	B-2201	8112	B-4389	M-1071	8819
Spiral Grapple Control	Part No.	186	1137	B-2202	8113	B-4370	M-1072	8820
Standard Guide	Part No.	187	1143	B-2203	8121	B-4371	L-1074	8821
Basket Parts								
Basket Grapple	Part No.	185	1135	B-2201	8112	B-4389	M-1071	8819
Basket Grapple Control	Part No.	186	1137	B-2202	8113	B-4370	M-1072	8820
Mill Control Packer	Part No.	189-R	1140-R	B-2199-R	8114-R	L-5950-R	M-4505	L-8818-R

A (6.625" turned down to 6.500" O.D.) Bowen Series 150 Overshot will be used to perform this overshot operation. Details on the overshot are listed above. Casing to tubing clearance dimensions are listed below.

5.5" 17# FJ Casing Inside 7.625" 39# FJ Casing													
Clearance (in)	Pipe Size (in)	Weight lb/ft	Grade	Conn.	Type	Body O.D. (in)	Coupling O.D. (in)	I.D. (in)	Drift (in)	Lined Wt. lb/ft	Lined I.D. (in)	Flare I.D. (in)	Lined Drift (in)
0.500	7 5/8	39.0	HCL-80	FJ	Casing	7.625	7.625	6.625	6.500	-	-	-	-
	5 1/2	17.0	HCL-80	FJ	Casing	5.500	5.500	4.892	4.767	18.500	4.520	4.400	4.275

*Red Indicates Tubing

Fishing Procedure

Overshot Fishing Procedure

In the Event of a Connection Break

- If fishing neck is clean

1. Trip in hole with overshot and engage fish.
2. Pick up 2 points over neutral weight.
3. Turn pipe 10-15 turns to the right to release the seal assembly from the packer.
4. Once released from packer, trip out of hole with fish.

A skirted mill may be substituted for a standard mill to ensure pipe stabilization and the casing is not damaged while milling

- If dressing fishing neck is required

1. Trip in hole with mill and dress fishing neck to allow for overshot to engage tubing.
2. Trip out of hole with mill.
3. Trip in hole with overshot and engage fish.
4. Pick up 2 points over neutral weight.
5. Turn pipe 10-15 turns to the right to release the seal assembly from the packer.
6. Once released from packer, trip out of hole with fish.

A skirted mill may be substituted for a standard mill to ensure pipe stabilization and the casing is not damaged while milling

In the Event of a Body Break

- If fishing neck is clean

1. Trip in hole with overshot and engage fish.
2. Pick up 2 points over neutral weight.
3. Turn pipe 10-15 turns to the right to release the seal assembly from the packer.
4. Once released from packer, trip out of hole with fish.

- If dressing fishing neck is required

1. Trip in hole with mill and dress fishing neck to allow for overshot to engage tubing.
2. Trip out of hole with mill.
3. Trip in hole with overshot and engage fish.
4. Pick up 2 points over neutral weight.

5. Turn pipe 10-15 turns to the right to release the seal assembly from the packer.
6. Once released from packer, trip out of hole with fish.

A skirted mill may be substituted for a standard mill to ensure pipe stabilization and the casing is not damaged while milling

Spear Fishing Procedure

If an overshot cannot be used to retrieve the fish, a spear may be used.

- Due to the use of insert lined tubing, the composite liner must be removed from the tubing before engaging the fish with a spear.
1. Trip in hole with spear sized to engage the I.D. of the insert liner.
 2. Engage the insert liner inside the tubing with spear.
 3. Pull the insert liner out of the tubing.
 4. Trip out of hole with insert liner.
 5. Trip in hole with spear sized to engage the I.D. of the tubing.
 6. Engage the tubing with spear.
 7. Pick up 2 points over neutral weight.
 8. Turn pipe 10-15 turns to the right to release the seal assembly from the packer.
 9. Once released from packer, trip out of hole with fish.

Inside Diameter Cutting Tool Fishing Procedure

If an overshot is required but a mill cannot be used to dress off a fishing neck, an inside diameter cutting tool may be used.

- Due to the use of insert lined tubing, the composite liner must be removed from the tubing before engaging the fish with a spear.
1. Trip in hole with spear sized to engage the I.D. of the insert liner.
 2. Engage the insert liner inside the tubing with spear.
 3. Pull the insert liner out of the tubing.
 4. Trip out of hole with insert liner.
 5. Trip in hole with inside diameter cutting tool and cut the tubing below the damaged fishing neck.
 6. Trip out hole with cutting tool.
 7. Trip in hole with spear sized to engage the I.D. of the tubing.
 8. Engage the previously cut tubing segment with spear.
 9. Trip out hole with cut tubing segment and spear.
 10. Trip in hole with overshot and engage fish.
 11. Pick up 2 points over neutral weight.
 12. Turn pipe 10-15 turns to the right to release the seal assembly from the packer.
 13. Once released from packer, trip out of hole with fish.

Abandonment Procedure

If the tubing cannot be recovered and the well is to be abandoned.

- The operator will ensure that all geologic formations are properly isolated.
- 1. Confirm the I.D. of the injection tubing is free from obstructions.
- 2. Run in hole with wireline set profile plug.
- 3. Set plug inside of packer assembly.
(Plug will allow cement to fill the I.D. of the injection tubing and the tubing to casing annulus)
- 4. Run in hole with wireline conveyed perforating guns and perforate the tubing immediately above the packer.
- 5. Trip in hole with an overshot, spear, cement retainer or isolation tool that will provide a work string-to- injection tubing seal.
- 6. Engage the fish with sealing tool.
- 7. Confirm circulation down the tubing and up the tubing-to-casing annulus.
- 8. Cement the work string, injection tubing, injection tubing-to-casing annulus and work string-to-casing annulus to surface.
- 9. Confirm the entirety of the wellbore is cemented to surface and all zones are isolated.
- 10. ND wellhead and install permanent capping flange.

**STATE OF NEW MEXICO
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES
OIL CONSERVATION DIVISION**

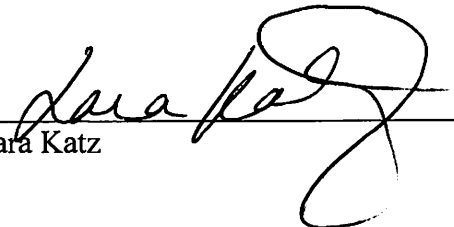
**APPLICATION OF PERMIAN OILFIELD
PARTNERS, LLC FOR APPROVAL OF SALT WATER
DISPOSAL WELL IN LEA COUNTY, NEW MEXICO**

Case No. 20685

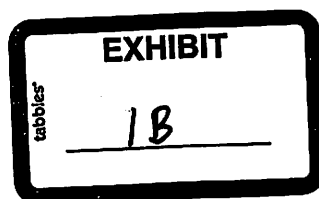
AFFIDAVIT

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

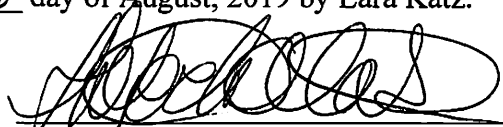
Lara Katz, attorney in fact and authorized representative of Permian Oilfield Partners, LLC, the Applicant herein, being first duly sworn, upon oath, states that the above-referenced Application was provided under a notice letter and that proof of receipt is attached hereto.



Lara Katz

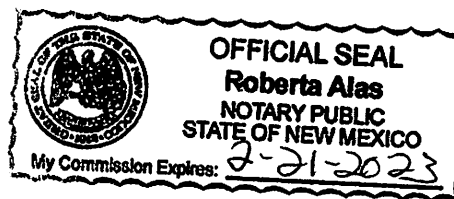


SUBSCRIBED AND SWORN to before me this 6th day of August, 2019 by Lara Katz.



Notary Public

My commission expires: 2-21-2023



Transaction Report Details - CertifiedPro.net

Date Created= 6/23/2019 - 7/23/2019

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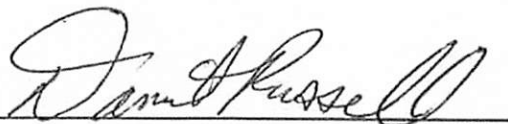
USPS Article Number	Name 1	Address	City	State	Zip	Mailing Status	Service Options
9314869904300061217311	Magnum Hunter Production, Inc.						
	C/O Cimarex Energy CO.	600 N. Marienfeld Street	Midland	TX	79701	Delivered	Return Receipt - Electronic, Certified Mail
9314869904300061217298	CHEVON USA INC.	6301 DEAUVILLE	MIDLAND	TX	79706-2964	Delivered	Return Receipt - Electronic, Certified Mail
9314869904300061217281	Devon Energy Production Company, LP	333 W SHERIDAN AVE	OKLAHOMA CITY	OK	73102-5010	Delivered	Return Receipt - Electronic, Certified Mail
9314869904300061217243	Mobil Prod TX and NM	9 Greenway Plaza 2700	Houston	TX	77046	To be Returned	Return Receipt - Electronic, Certified Mail
9314869904300061217236	Oxy Y-1 Company	5 Greenway Plaza	Houston	TX	77046	Delivered	Return Receipt - Electronic, Certified Mail
9314869904300061217205	EOG Y, A, M RESOURCES INC	104 S 4TH ST	ARTESIA	NM	88210-2123	Delivered	Return Receipt - Electronic, Certified Mail
9314869904300061217175	New Mexico State Land Office	310 Old Santa Fe Trail	Santa Fe	NM	87501	Delivered	Return Receipt - Electronic, Certified Mail
9314869904300061217144	BUREAU OF LAND MANAGEMENT	620 E GREENE ST	CARLSBAD	NM	88220-6292	Delivered	Return Receipt - Electronic, Certified Mail
9314869904300061217120	EOG RESOURCES INC	PO BOX 2267	MIDLAND	TX	79702-2267	Delivered	Return Receipt - Electronic, Certified Mail
9314869904300061217090	MESQUITE SWD, INC.	PO BOX 1479	CARLSBAD	NM	88221-1479	Delivered	Return Receipt - Electronic, Certified Mail
9314869904300061217069	CIMAREX ENERGY CO.	600 N MARIENFELD ST STE 60C	MIDLAND	TX	79701-4405	Delivered	Return Receipt - Electronic, Certified Mail

Affidavit of Publication

STATE OF NEW MEXICO
COUNTY OF LEA

I, Daniel Russell, Publisher of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

Beginning with the issue dated
July 19, 2019
and ending with the issue dated
July 19, 2019.



Publisher

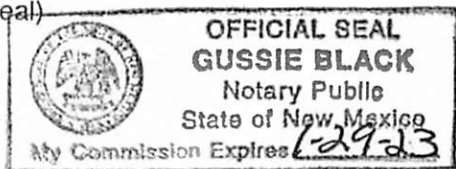
Sworn and subscribed to before me this
19th day of July 2019.



Business Manager

My commission expires
January 29, 2023

(Seal)



This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937 and payment of fees for said

LEGAL NOTICE JULY 19, 2019

Case No. 20585: Notice to all affected parties, as well as the heirs and devisees of CIMAREX ENERGY CO.; MESQUITE SWD, INC.; EOG RESOURCES INC.; BUREAU OF LAND MANAGEMENT; NEW MEXICO STATE LAND OFFICE; EOG Y RESOURCES INC.; EOG A RESOURCES INC.; OXY Y-1 COMPANY; EOG M RESOURCES INC.; MOBIL PROD TX & NM; DEVON ENERGY PRODUCTION COMPANY, L.P.; CHEVRON USA INC.; MAGNUM HUNTER PRODUCTION INC.; Permian Oilfield Partners, LLC, PO Box 1220, Stephenville, Texas 76401, has filed an application for hearing along with a C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division for approval of a salt water disposal well in Lea County, New Mexico. The State of New Mexico, through its Oil Conservation Division, hereby gives notice that the Division will conduct a public hearing at 8:15 a.m. on August 8, 2019, to consider this application. Applicant seeks an order approving disposal into the Silurian-Devonian formation through the Cyclone Federal SWD #1 well at a surface location 1494 feet from the North line and 291 feet from the East line of Section 11, Township 25 South, Range 32 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well. Permian seeks authority to inject salt water into the Devonian-Silurian formation at a depth of 17,170' to 18,621'. NGL further seeks approval of the use of 7 inch tubing inside the surface and intermediate casings and 5 1/2 inch tubing inside the liner and requests that the Division approve a maximum injection rate for the well of 50,000 bbls per day.
#34452

67115820

00230950

KAIYA TOOP
ABADIE SCHILL
214 McKENZIE
SANTA FA
NM, NM 87501



Attachment to C-108
Permian Oilfield Partners, LLC
Cyclone Federal SWD #1
Sec. 11, Twp. 25S, Rge. 32E
1494' FNL, 291' FEL
Lea County, NM

July 30, 2019

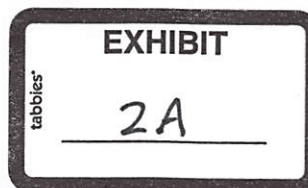
STATEMENT REGARDING SEISMICITY-REVISED

Examination of the USGS and TexNet seismic activity databases has shown minimal historic seismic activity in the area (< 30 miles) of our proposed above referenced SWD well as follows:

1. M2.9, 1984-12-09, 9.5 miles away @ 30.3 deg heading
2. M3.1, 2012-03-18, 17.5 miles away @ 302.0 deg heading

Permian Oilfield Partners does not own any 2D or 3D seismic data in the area of this proposed SWD well. Our fault interpretations are based on well to well correlations and publicly available data and software as follows:

1. USGS Quaternary Fault & Fold database shows no quaternary faults in the nearby area.
2. Based on offset well log data, we have not interpreted any faults in the immediate area.
3. Basement PreCambrian faults are documented in the Snee & Zoback paper, "State of stress in the Permian Basin, Texas and New Mexico: Implications for induced seismicity", published in the February 2018 issue of the SEG journal, The Leading Edge, along with a method for determining the probability of fault slip in the area.
4. Fault data was also correlated to the publicly available USGS GIS geologic units & structural features database, to Ewing's 1990 Tectonic map of Texas (via Ruppel's 2005 Preparation of Maps Depicting Geothermal Gradient and PreCambrian Structure in the Permian Basin), and to fault maps as published in the New Mexico Geological Society Special Publication 13A, "Energy and Mineral Resources of New Mexico: Petroleum Geology," by R. F. Broadhead, 2017.
5. Even though we do not propose to inject into the PreCambrian, Permian Oilfield Partners ran modeling to check for fault slip assuming the improbable occurrence of a total downhole well failure that would allow 100% of injected fluids to enter the PreCambrian. There is evidence that there is PreCambrian faulting that extends into the Devonian approximately 14 km to the NE. Devonian fault slip is addressed in a separate attached



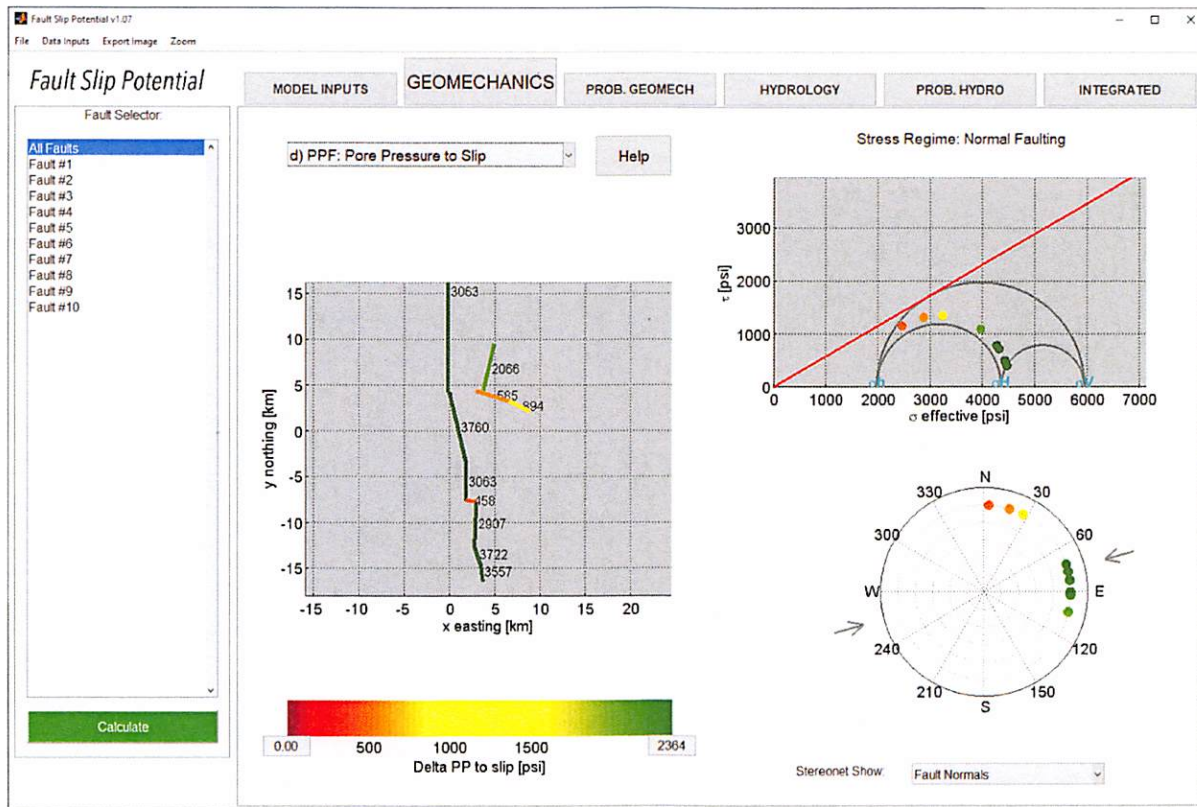
document. Software as discussed in #3 from the Stanford Center for Induced and Triggered Seismicity, "FSP 1.0: A program for probabilistic estimation of fault slip potential resulting from fluid injection", was used to calculate the probability of the PreCambrian fault being stressed so as to create an induced seismic event, with the following assumptions:

- a. Full proposed capacity of 50,000 BBL/day for 30 years
 - b. 12.5 mD average permeability, 3% average porosity, .75 psi/ft stress gradient, .47 psi/ft hydrostatic gradient
 - c. A-phi=0.60 & Max Horizontal Stress direction 75 deg N, as per Snee, Zoback paper noted above.
6. The distance from the proposed injection well to the nearest fault is approximately 10 km. The probability of an induced seismic event in the PreCambrian is calculated to be 0% after 5, 10, 20, & 30 years as per the FSP results screenshots below.
 7. The analysis below assumes an improbable well failure through the Montoya & Simpson barrier zones, through the Ellenburger & Cambrian permeable zones, into the PreCambrian.

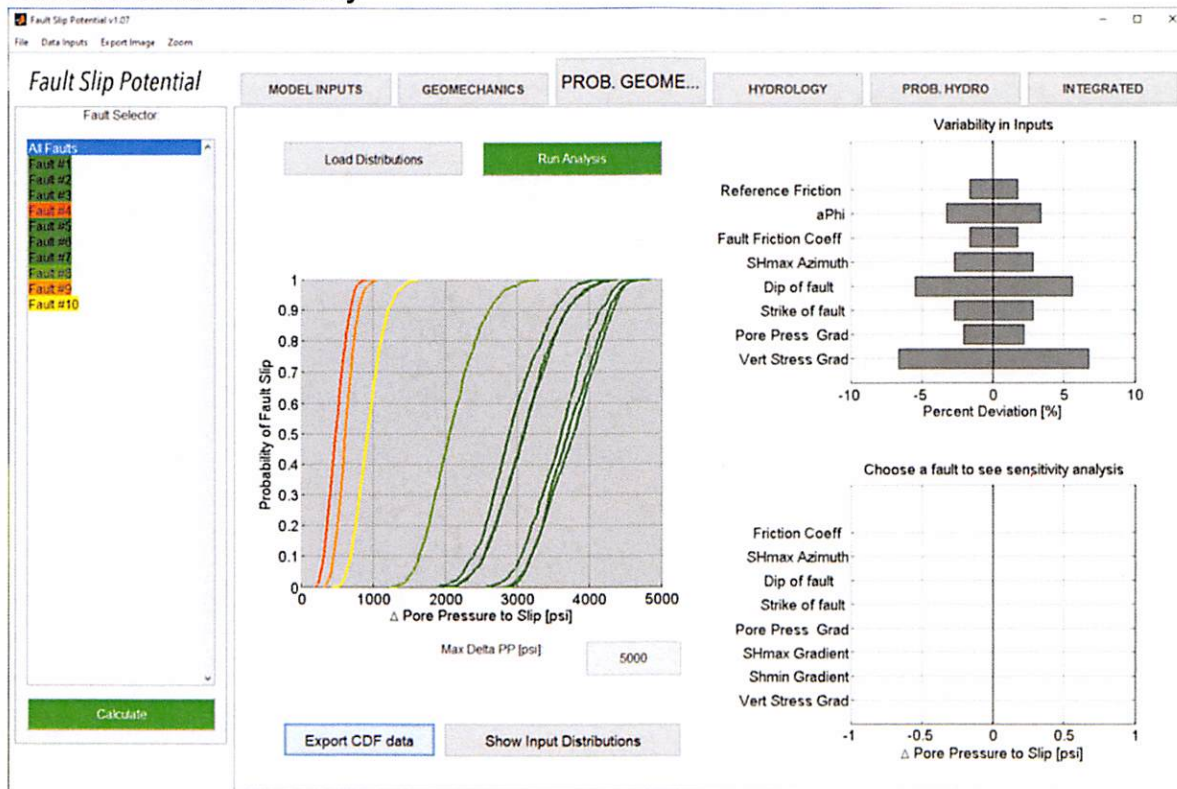
Input assumptions:

Rate (BBL/day)	50000
Interval height (ft)	1500
Average Porosity (%)	3
Vert stress gradient (psi/ft)	0.75
Hor stress direction (deg N)	75
Fault dip (deg)	75
Ref depth (ft)	21200
Initial res press gradient (psi/ft)	0.47
A phi	0.6
Friction coefficient	0.58
Weighted average perm	12.5
Fluid density (kg/m3)	1100
Dynamic viscosity	0.0003
Fluid compressibility (/Pa)	4 e-10
Rock compressibility (/Pa)	1.08 e-09

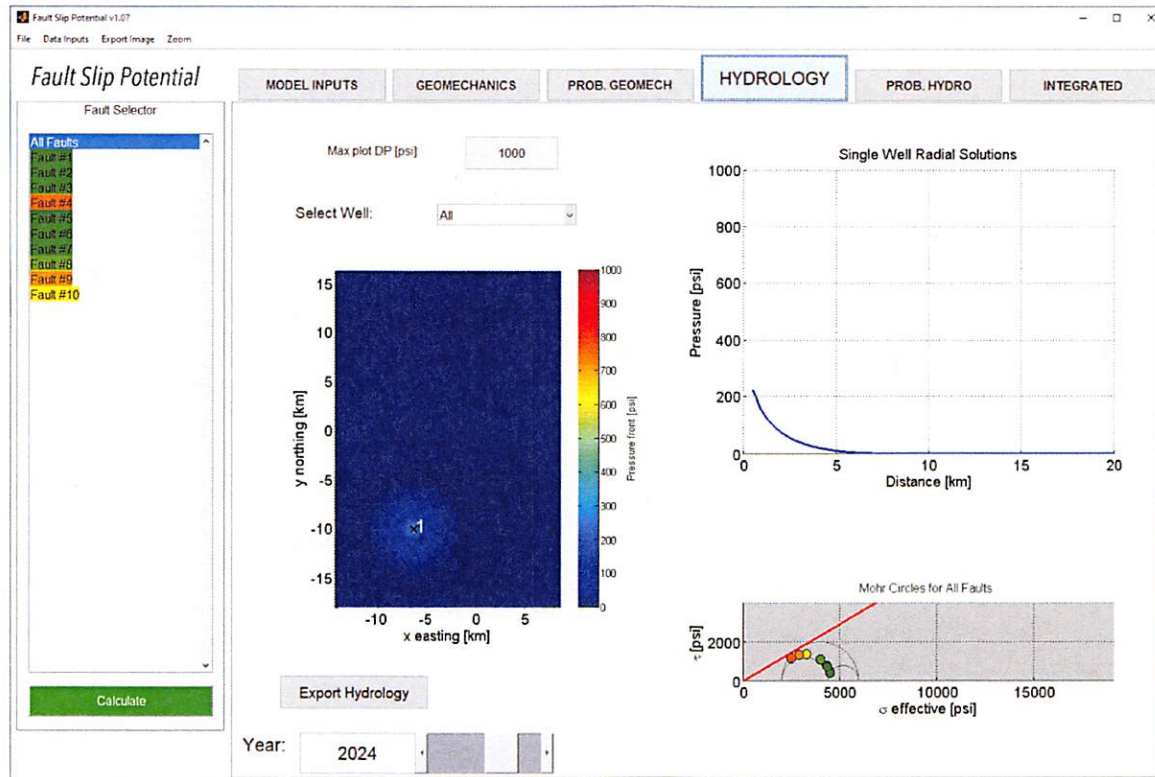
Geomechanics Pore Pressure to Slip



GeoMechanics Variability



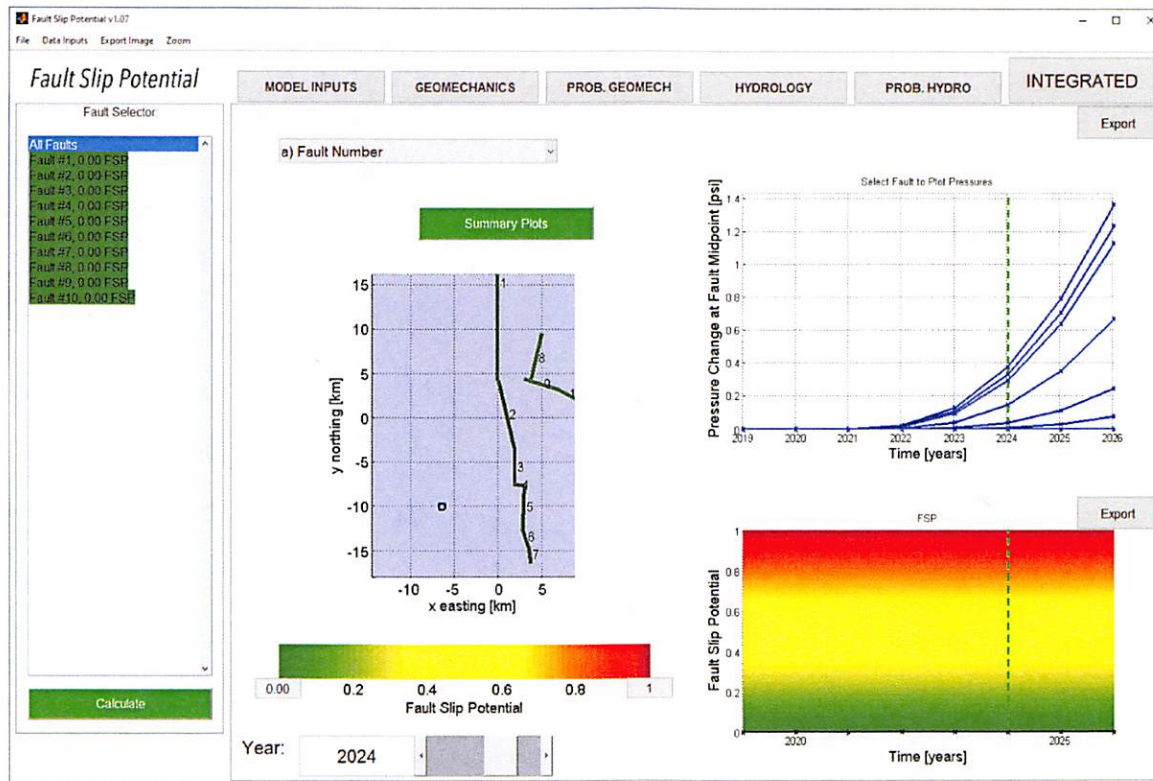
Year 5 Hydrology



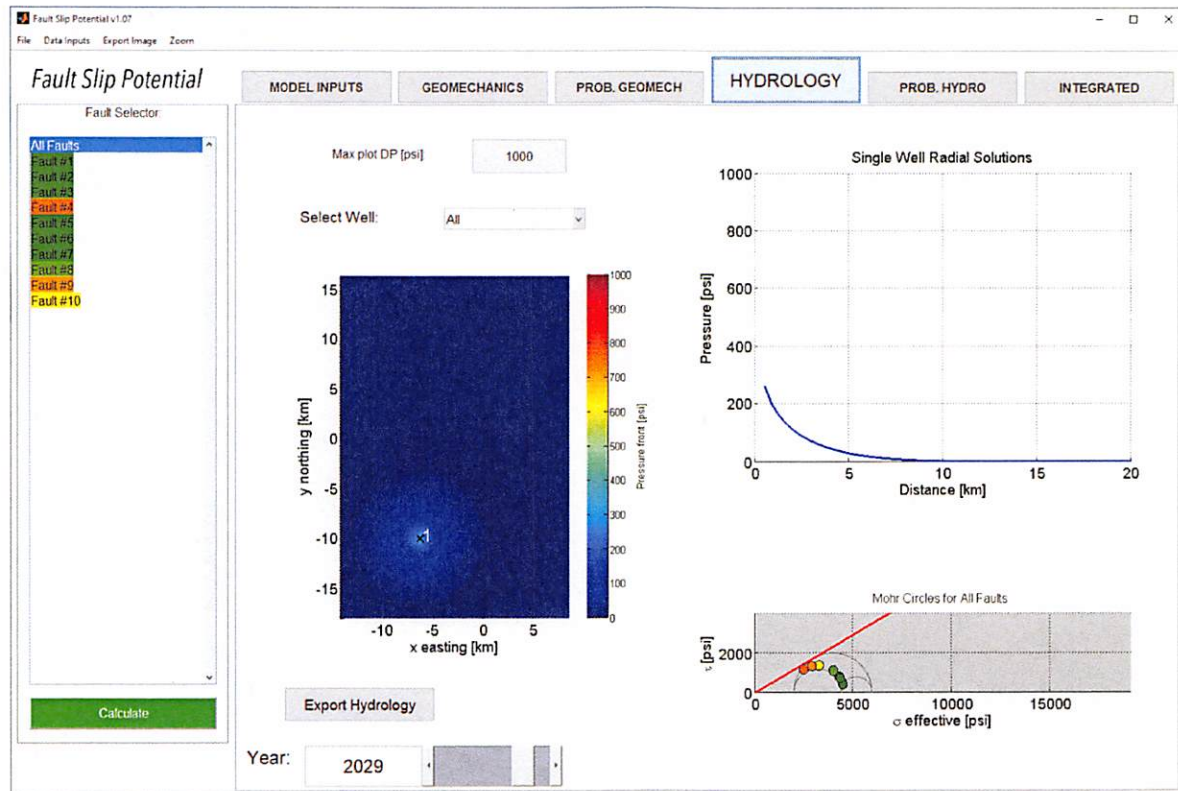
Year 5 Probabilistic Hydrology (note no crossover between blue delta-press. & green fault slip press.)



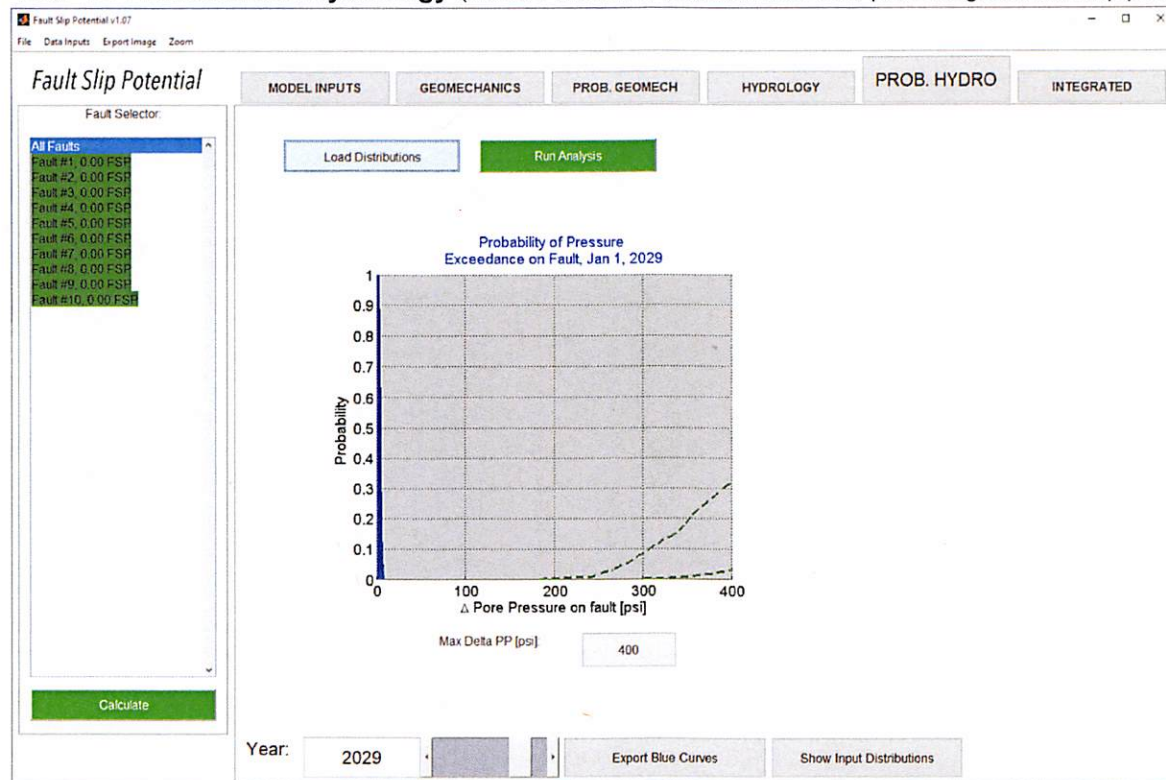
Year 5 Fault Slip Probability (0% for all fault segments after 5 years)



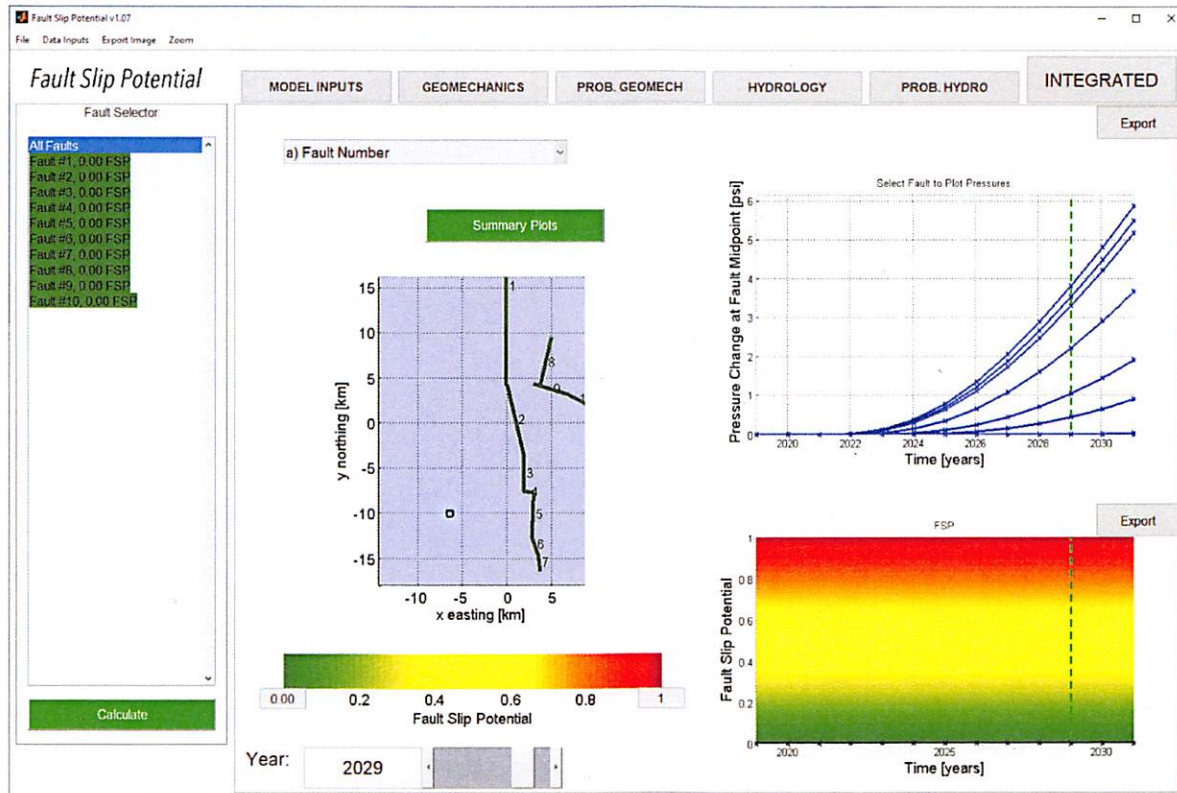
Year 10 Hydrology



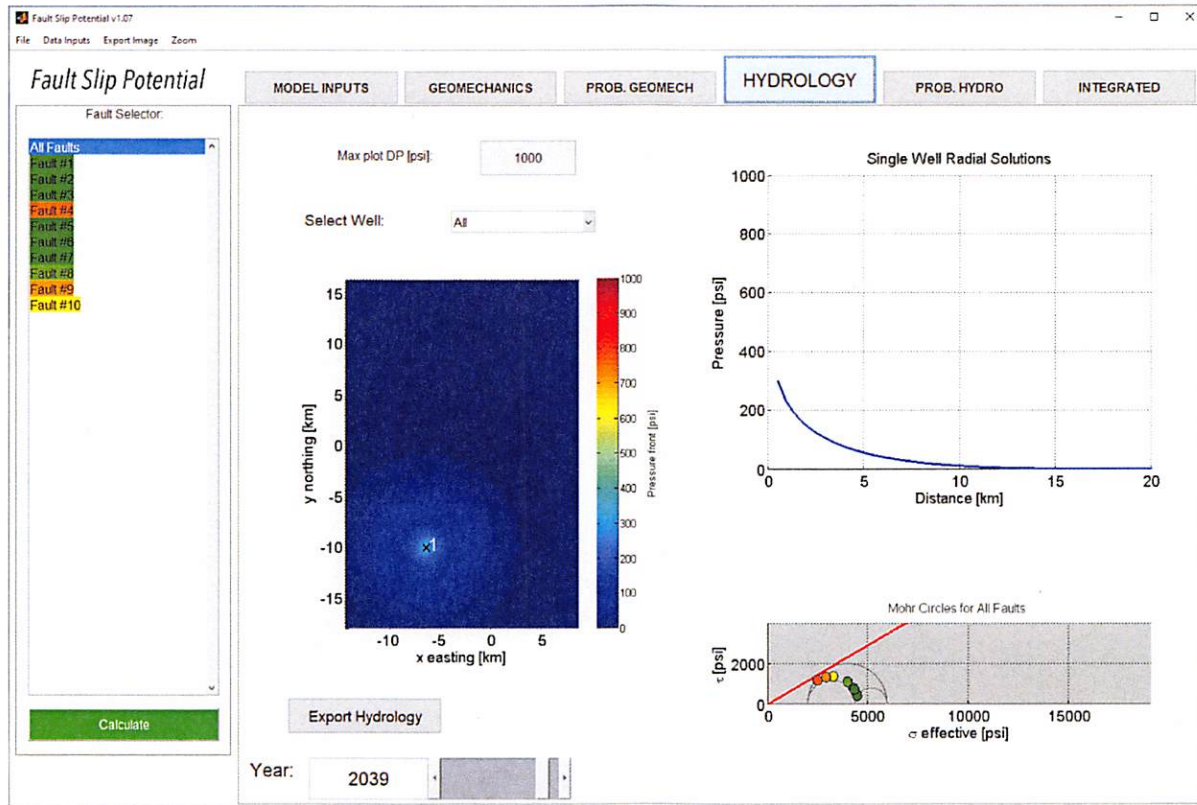
Year 10 Probabilistic Hydrology (note no crossover between blue delta-press. & green fault slip press.)



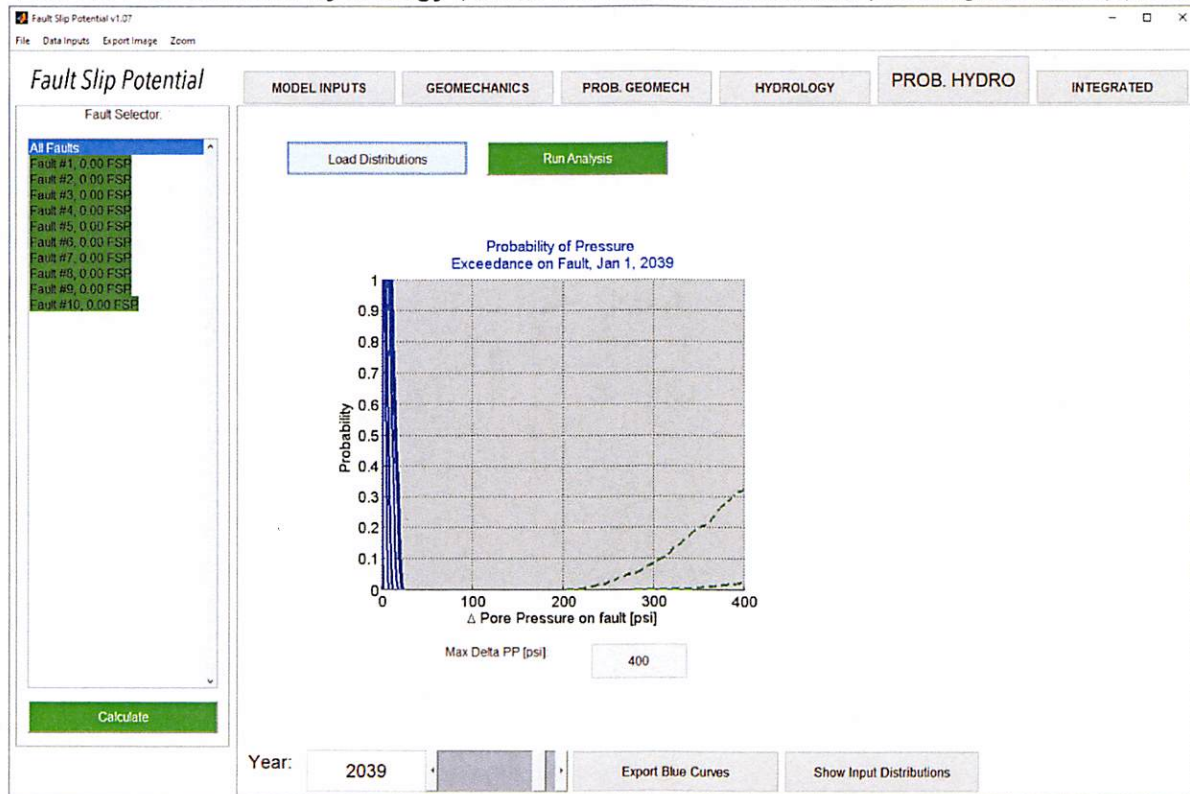
Year 10 Fault Slip Probability (0% for all fault segments after 10 years)



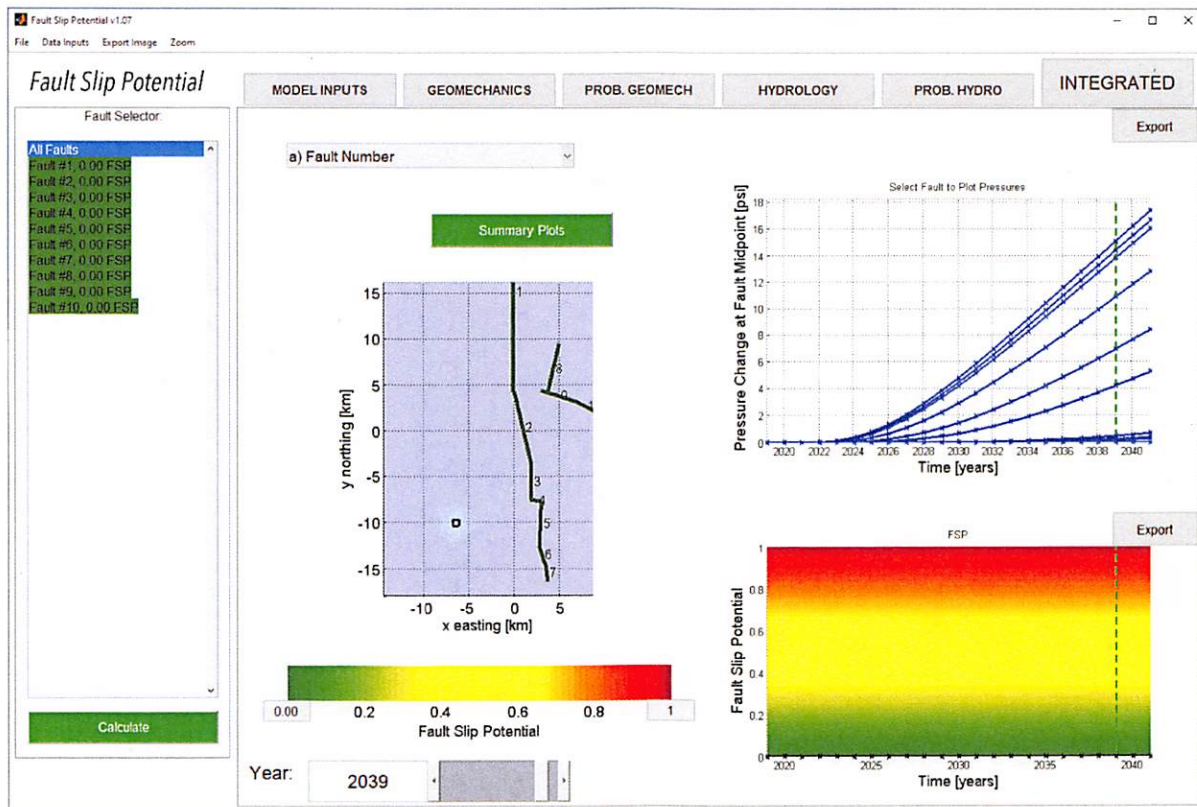
Year 20 Hydrology



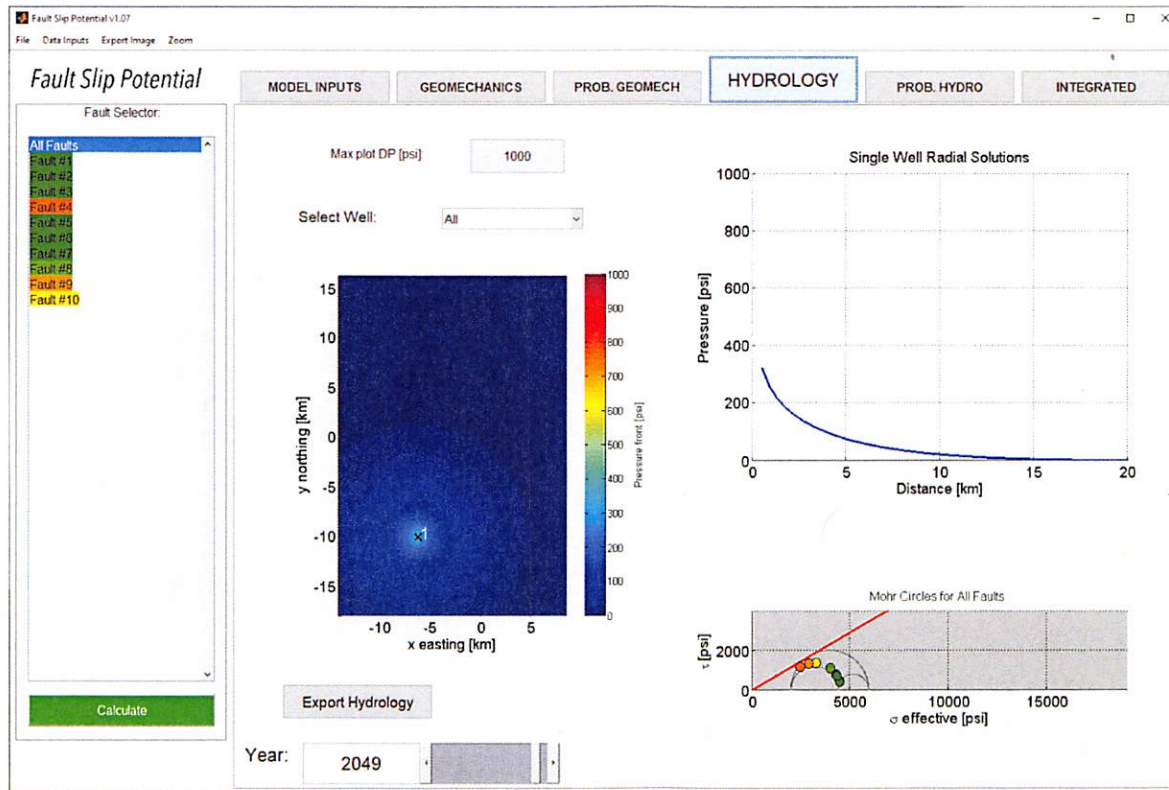
Year 20 Probabilistic Hydrology (note no crossover between blue delta-press. & green fault slip press.)



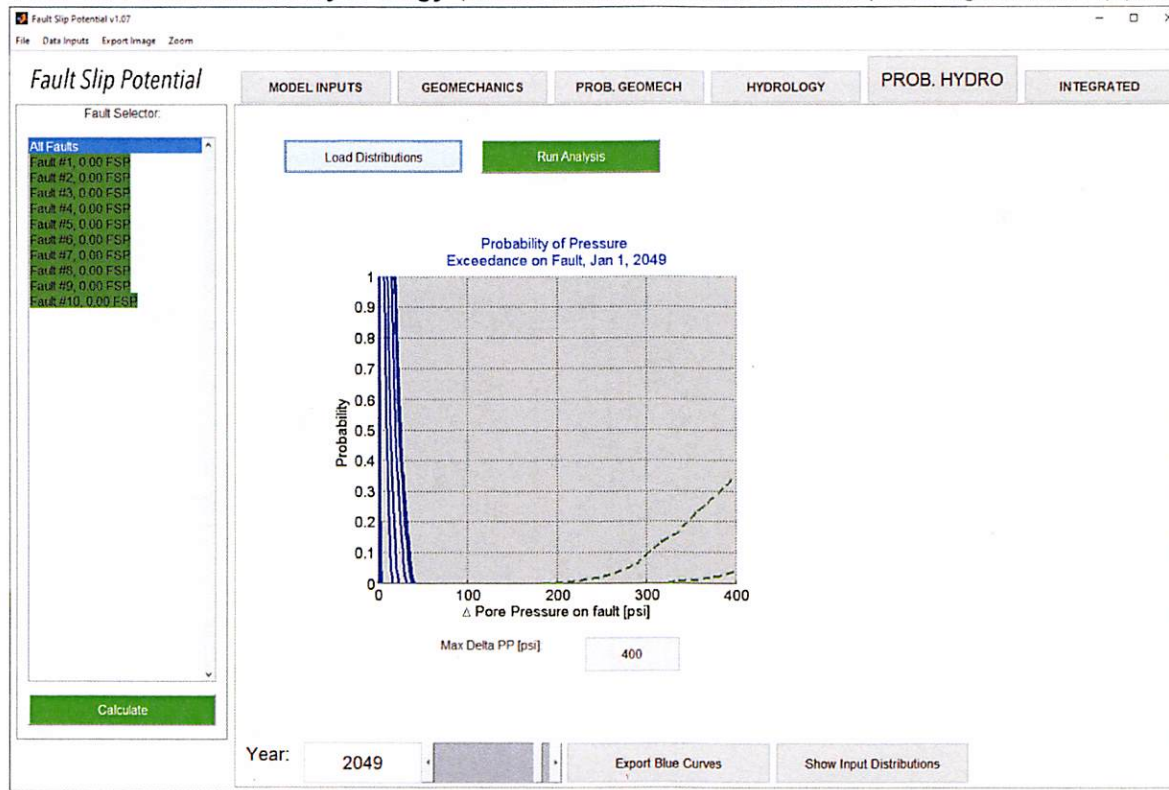
Year 20 Fault Slip Probability (0% for all fault segments after 20 years)



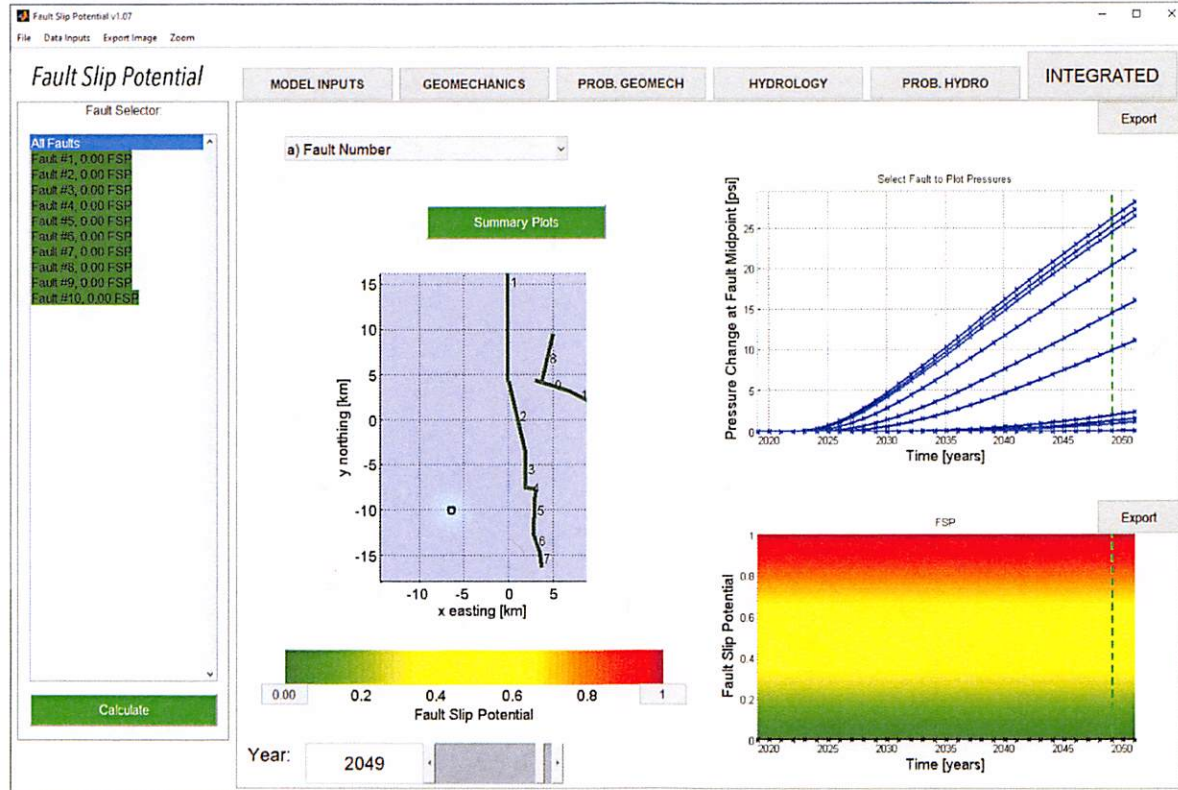
Year 30 Hydrology



Year 30 Probabilistic Hydrology (note no crossover between blue delta-press. & green fault slip press.)



Year 30 Fault Slip Probability (0% for all fault segments after 30 years. 27 psi fault delta pressure is much less than the 458 psi required for fault slip in the closest fault segment #4)



As per NM OCD requirements (injection well to injection well spacing minimum of 1.5 miles), this proposed above referenced SWD well is located 2.08 miles away from the nearest active or permitted Devonian disposal well (Mesquite Mel SWD #1, 25-23S-32E).

Gay E. Fisher

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Attachment to C-108
Permian Oilfield Partners, LLC
Cyclone Federal SWD #1
Sec. 11, Twp. 25S, Rge. 32E
1494' FNL, 291' FEL
Lea County, NM

July 30, 2019

STATEMENT REGARDING SEISMICITY-Devonian fault assumption

Examination of the USGS and TexNet seismic activity databases has shown minimal historic seismic activity in the area (< 30 miles) of our proposed above referenced SWD well as follows:

1. M2.9, 1984-12-09, 9.5 miles away @ 30.3 deg heading
2. M3.1, 2012-03-18, 17.5 miles away @ 302.0 deg heading

Permian Oilfield Partners does not own any 2D or 3D seismic data in the area of this proposed SWD well. Our fault interpretations are based on well to well correlations and publicly available data and software as follows:

1. USGS Quaternary Fault & Fold database shows no quaternary faults in the nearby area.
2. Based on offset well log data, we have not interpreted any faults in the immediate area.
3. Basement PreCambrian faults are documented in the Snee & Zoback paper, "State of stress in the Permian Basin, Texas and New Mexico: Implications for induced seismicity", published in the February 2018 issue of the SEG journal, The Leading Edge, along with a method for determining the probability of fault slip in the area.
4. Fault data was also correlated to the publicly available USGS GIS geologic units & structural features database, to Ewing's 1990 Tectonic map of Texas (via Ruppel's 2005 Preparation of Maps Depicting Geothermal Gradient and PreCambrian Structure in the Permian Basin), and to fault maps as published in the New Mexico Geological Society Special Publication 13A, "Energy and Mineral Resources of New Mexico: Petroleum Geology," by R. F. Broadhead, 2017.
5. Permian Oilfield Partners does not believe that the nearest portion of the faults extends into the Devonian, although there is evidence they do so approximately 14 km to the NE. Permian Oilfield Partners ran modeling to check for fault slip assuming PreCambrian fault extension into the Devonian. Software as discussed in #3 from the Stanford Center



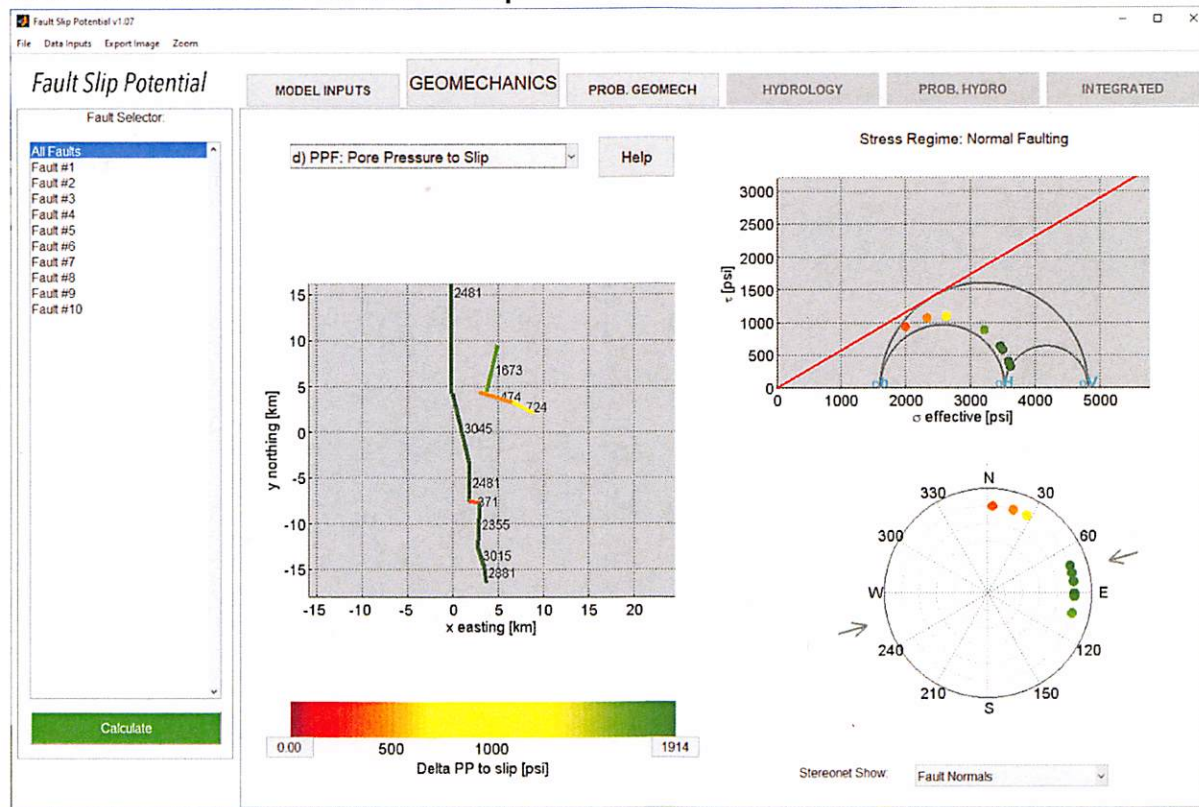
for Induced and Triggered Seismicity, "FSP 1.0: A program for probabilistic estimation of fault slip potential resulting from fluid injection", was used to calculate the probability of the fault being stressed so as to create an induced seismic event, with the following assumptions:

- a. Full proposed capacity of 50,000 BBL/day for 30 years
 - b. 19 mD weighted average permeability, 3.3% weighted average porosity, .75 psi/ft stress gradient, .47 psi/ft hydrostatic gradient
 - c. A-phi=0.60 & Max Horizontal Stress direction 75 deg N, as per Snee, Zoback paper noted above.
6. The distance from the proposed injection well to the nearest fault segment is approximately 10 km. The probability of an induced seismic event in the Devonian is calculated to be 0% after 5, 10, 20, & 30 years as per the FSP results screenshots below.

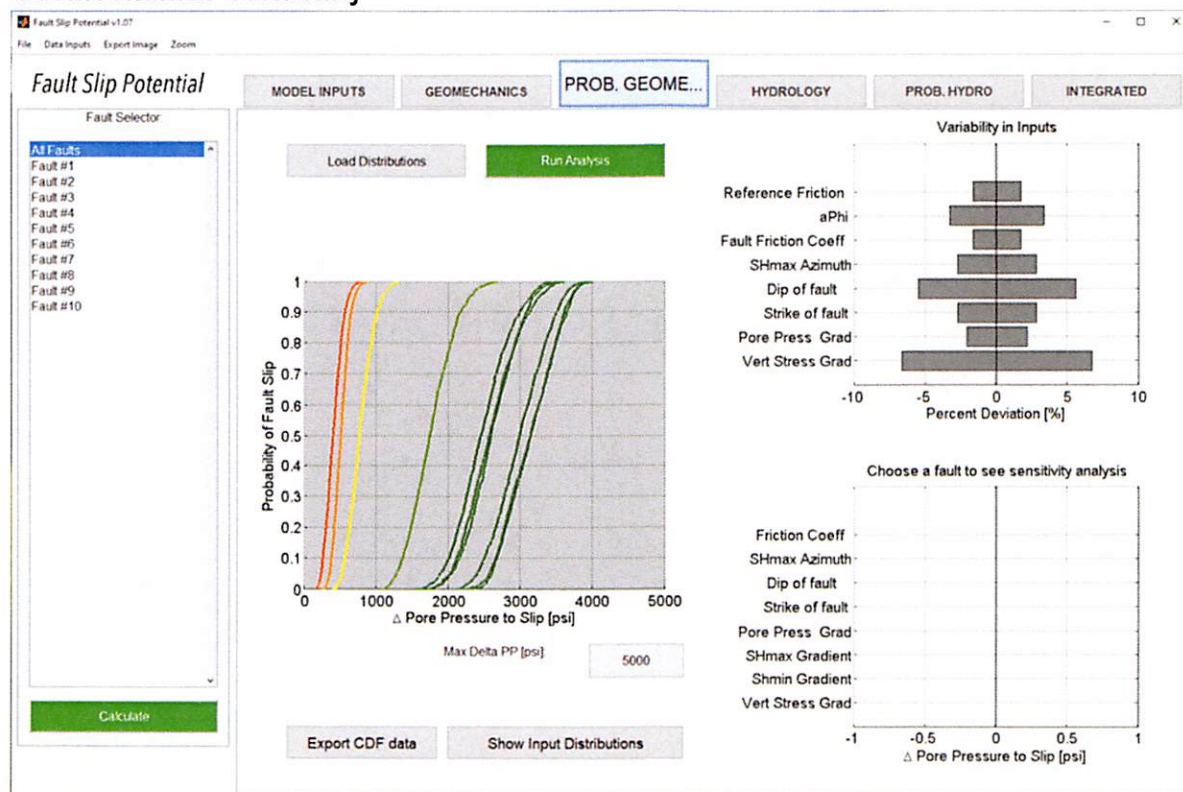
Input assumptions:

Rate (BBL/day)	50000
Interval height (ft)	1451
Average Porosity (%)	3.3
Vert stress gradient (psi/ft)	0.75
Hor stress direction (deg N)	75
Fault dip (deg)	75
Ref depth (ft)	17170
Initial res press gradient (psi/ft)	0.47
A phi	0.6
Friction coefficient	0.58
Weighted average perm (mD)	19
Fluid density (kg/m3)	1100
Dynamic viscosity (Pa-s)	0.0003
Fluid compressibility (/Pa)	4 e-10
Rock compressibility (/Pa)	1.08 e-09

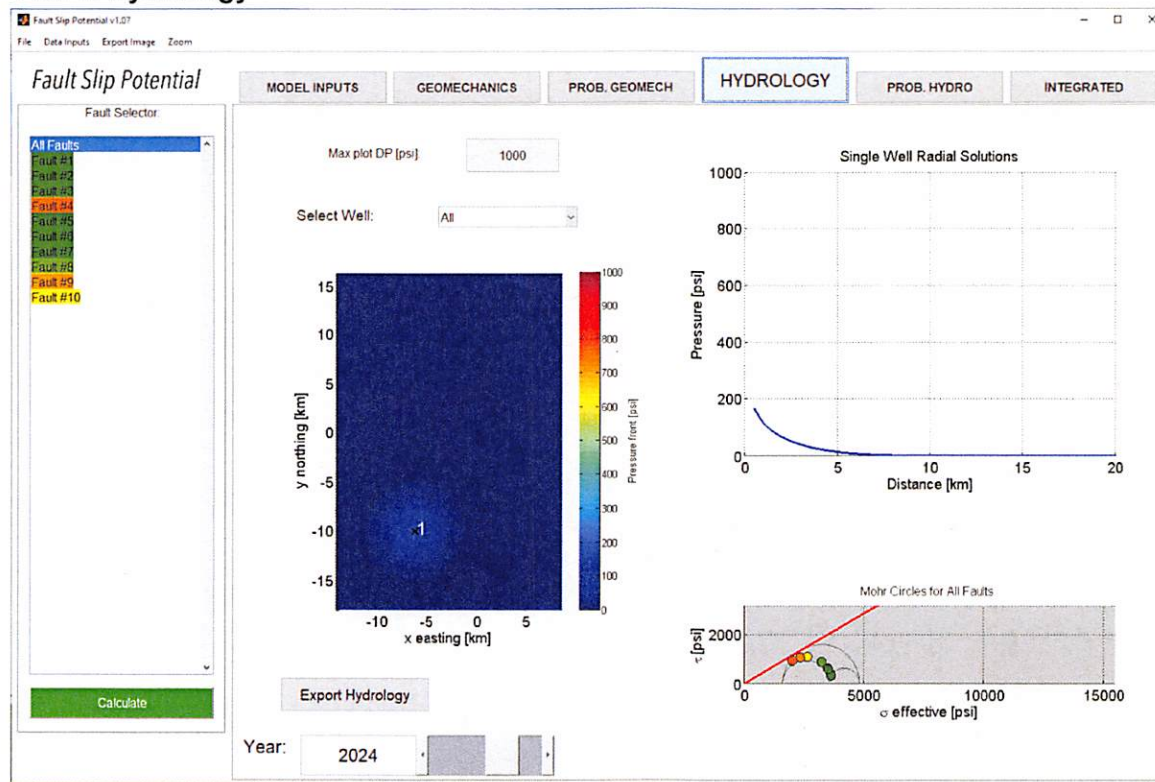
Geomechanics Pore Pressure to Slip



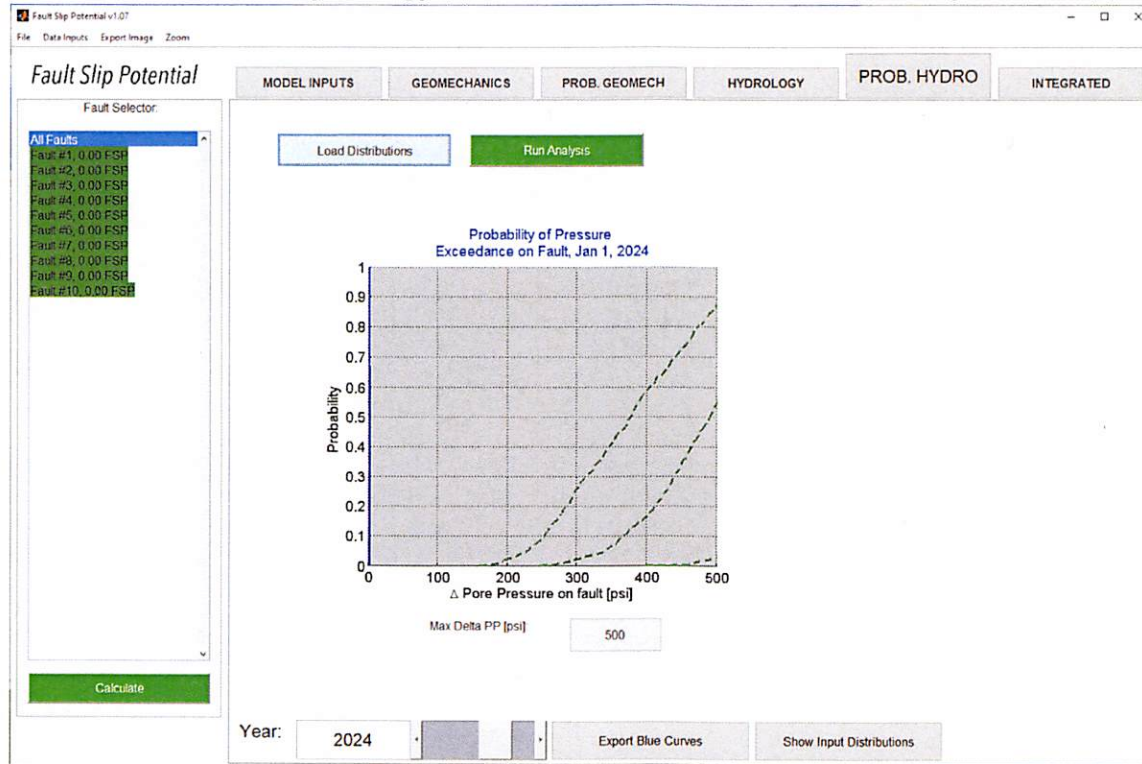
GeoMechanics Variability



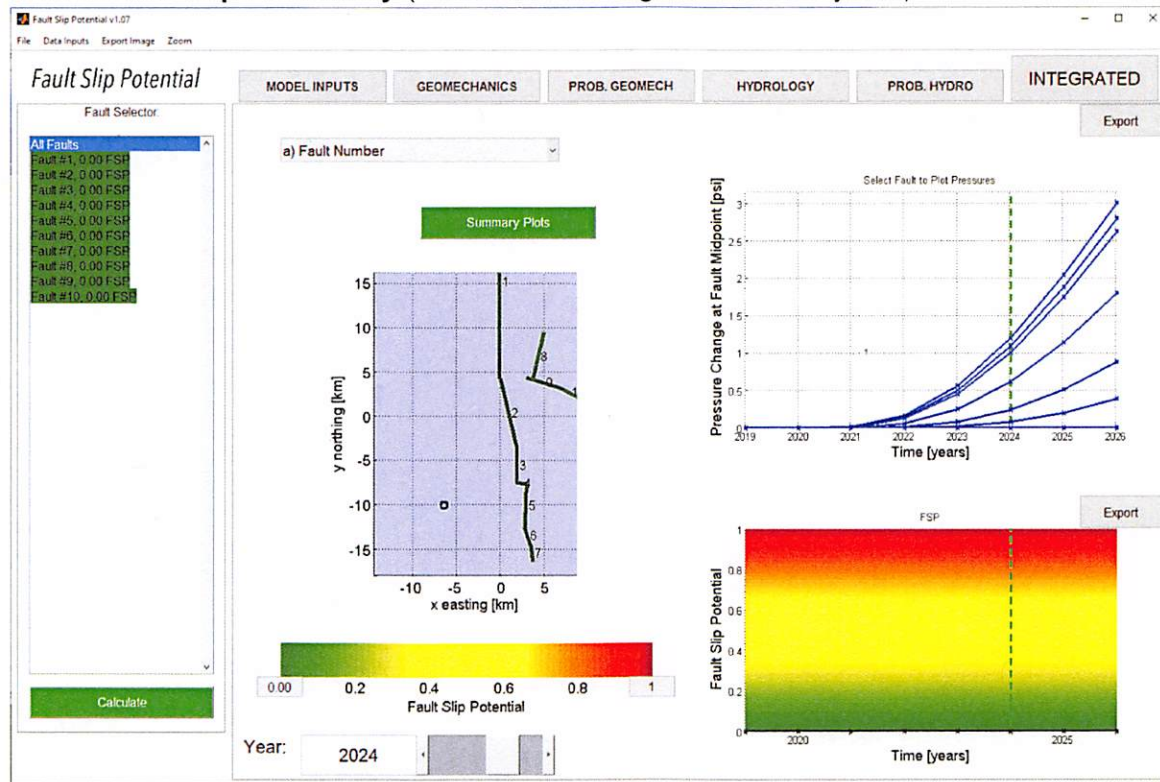
Year 5 Hydrology



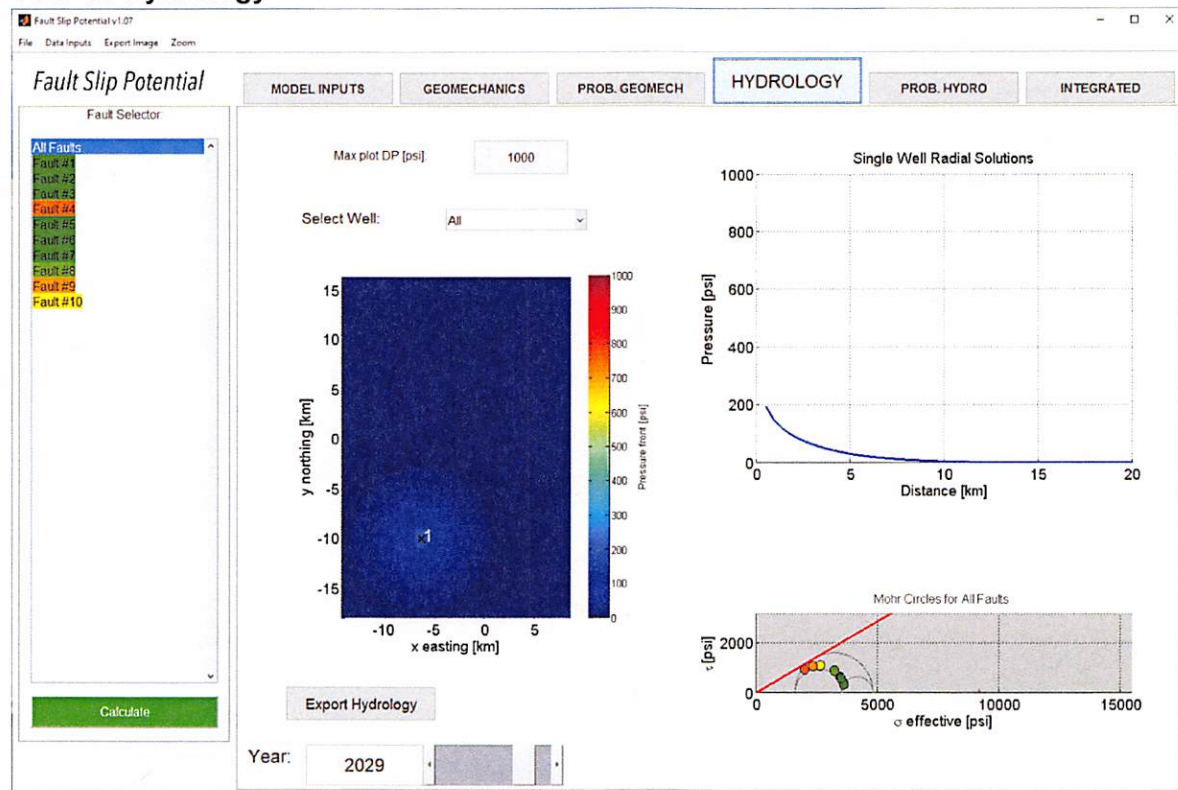
Year 5 Probabilistic Hydrology (note no crossover between blue delta-press. & green fault slip press.)



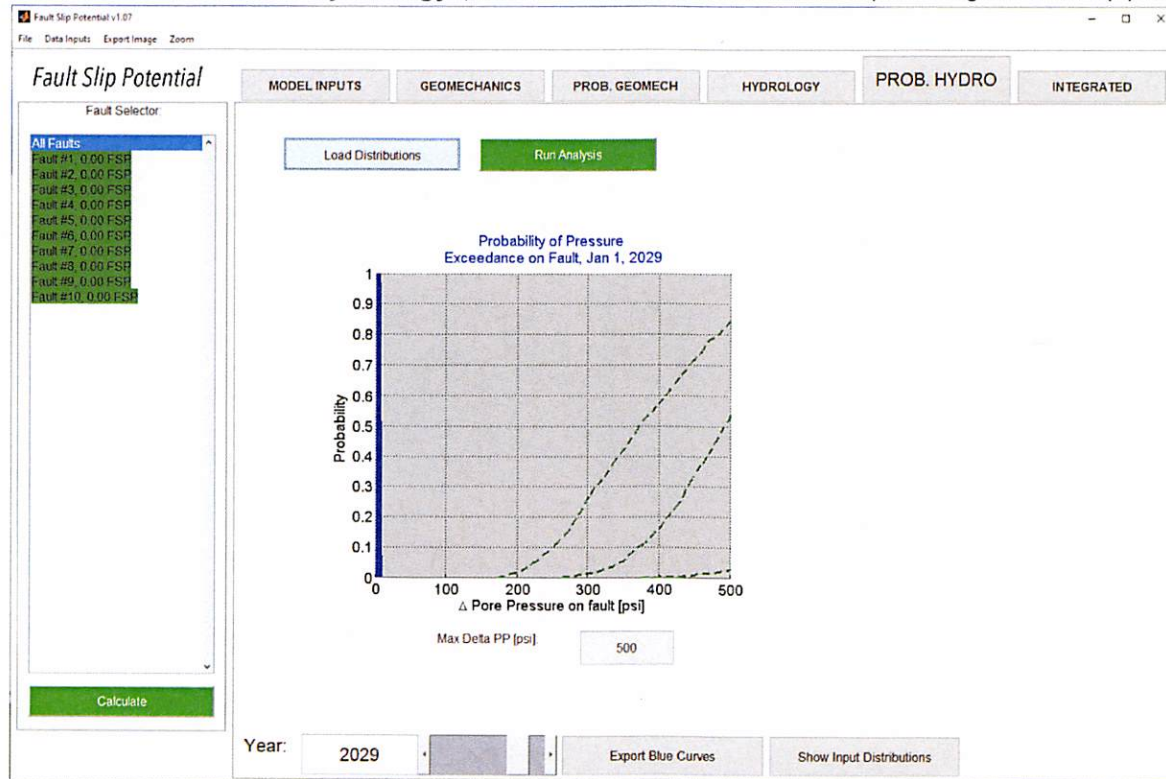
Year 5 Fault Slip Probability (0% for all fault segments after 5 years)



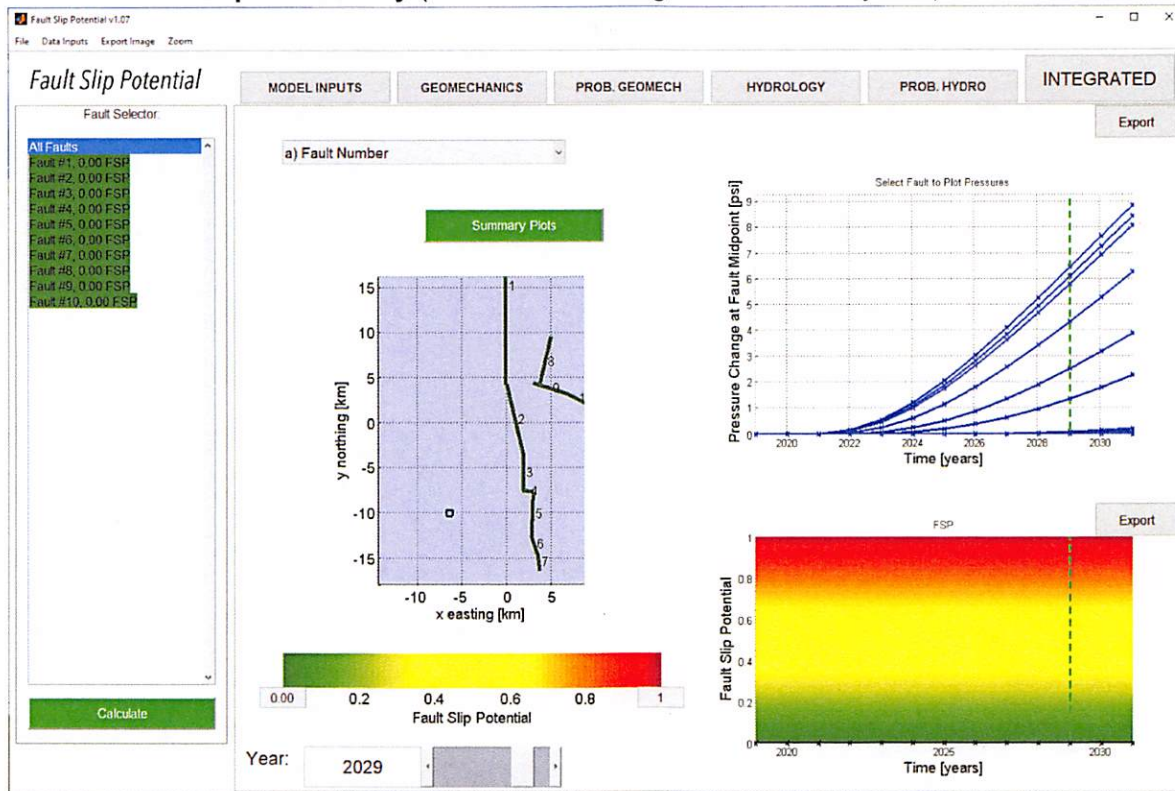
Year 10 Hydrology



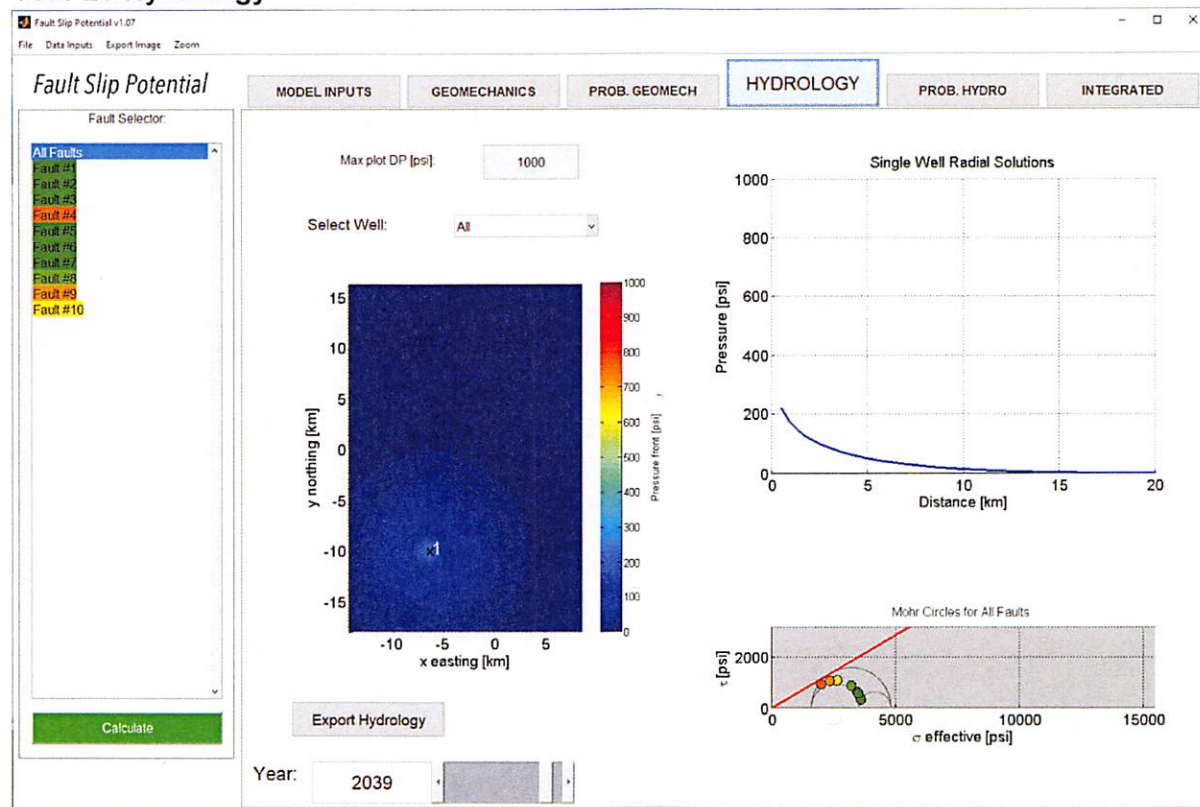
Year 10 Probabilistic Hydrology (note no crossover between blue delta-press. & green fault slip press.)



Year 10 Fault Slip Probability (0% for all fault segments after 10 years)



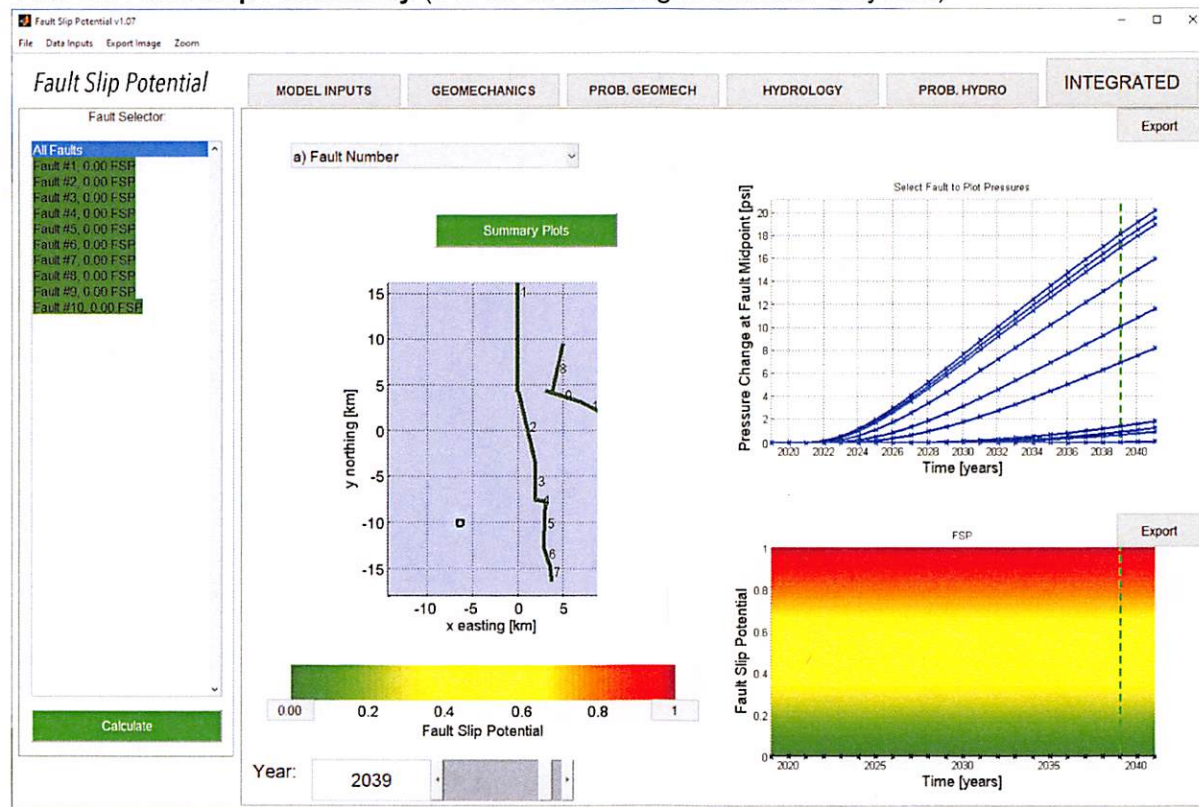
Year 20 Hydrology



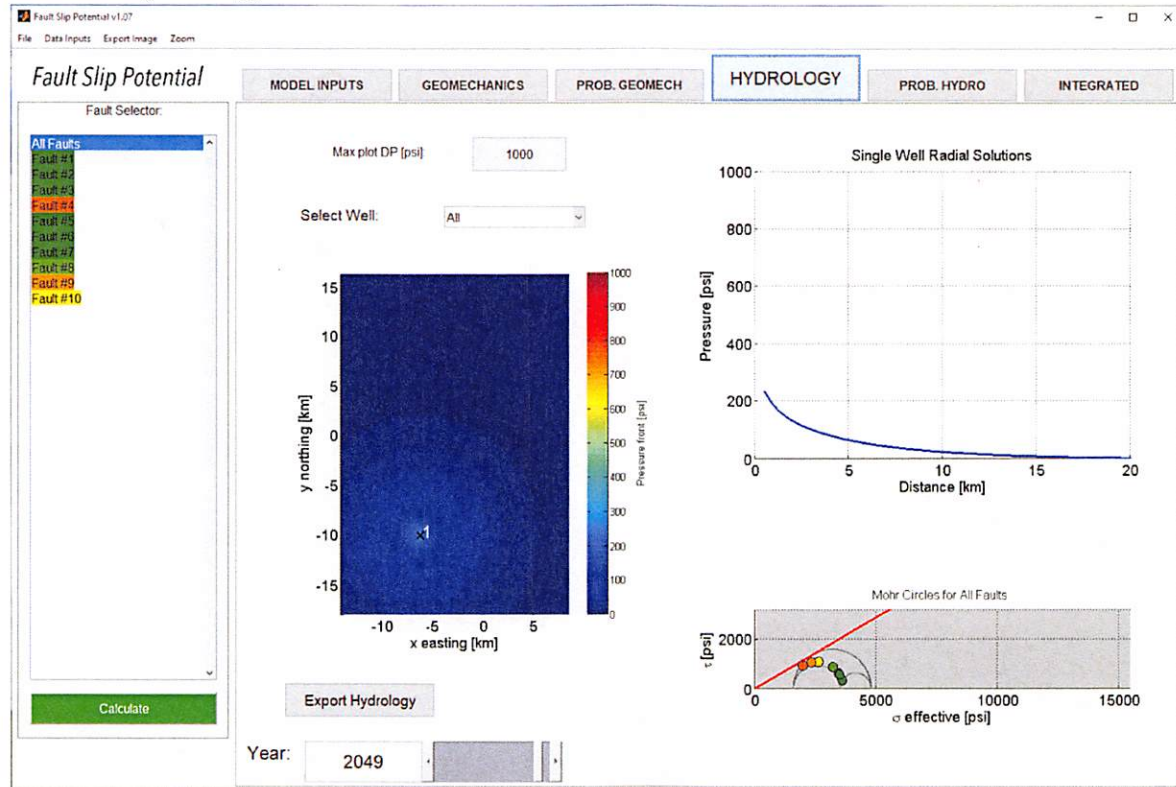
Year 20 Probabilistic Hydrology (note no crossover between blue delta-press. & green fault slip press.)



Year 20 Fault Slip Probability (0% for all fault segments after 20 years)



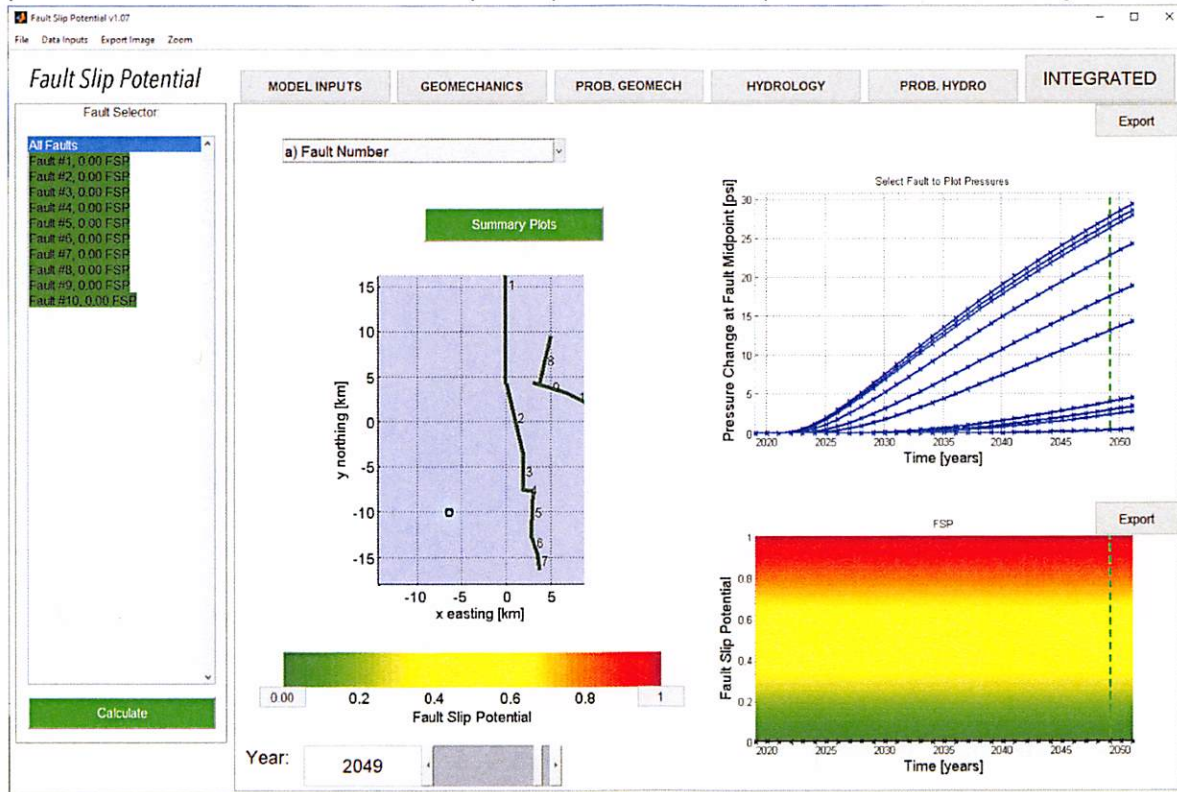
Year 30 Hydrology



Year 30 Probabilistic Hydrology (note no crossover between blue delta-press. & green fault slip press.)



Year 30 Fault Slip Probability (0% for all fault segments after 30 years. 28 psi fault delta pressure is much less than the 371 psi required for fault slip in the closest fault segment #4)



As per NM OCD requirements (injection well to injection well spacing minimum of 1.5 miles), this proposed above referenced SWD well is located 2.08 miles away from the nearest active or permitted Devonian disposal well (Mesquite Mel SWD #1, 25-23S-32E).

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