Initial Application Part I

Received: **1/12/2020**

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

PERMIAN OILFIELD PARTNERS

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

Re: C-108 Application for Authorization to Inject
Permian Oilfield Partners, LLC
Taurus Federal SWD #1
1026' FSL & 275' FWL
Sec 6, T22S, R34E
Lea County, NM

Attached is a C-108 application for administrative approval of Permian Oilfield Partners LLC's proposed Taurus Federal SWD #1 located in Sec 6, Twp 22S, Rge 34E, Lea County, New Mexico. This well will be completed open hole in the Devonian-Silurian formations and will be operated as a commercial UIC Class II fluids disposal well.

Similar application exhibits were sent to all Affected Persons. The distribution list and proof of mailing, as well as affidavit of publication are enclosed. A copy of this application has also been sent to NM OCD District 1 in Hobbs.

If you have any questions, please contact us at (817)606-7630.

Sincerely,

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

Date: 1-10-2020

Revised March 23, 2017

RECEIVED:	REVIEWER:	TYPE:	APP NO:

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: _____ **OGRID Number:** _____
Well Name: _____ **API:** _____
Pool: _____ **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.

_____ Date

_____ Print or Type Name

_____ Phone Number

_____ Signature

_____ e-mail Address

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL
RESOURCES DEPARTMENT

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

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: **Disposal**
Application qualifies for administrative approval? **Yes**

II. OPERATOR: **Permian Oilfield Partners, LLC.**

ADDRESS: **P.O. Box 3329, Hobbs, NM 88241**

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: 01-09-2020

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.

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

Side 2

III. WELL DATA

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

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

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

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

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

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

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

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

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

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

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

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

XIV. PROOF OF NOTICE

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

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

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

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

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

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

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

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

Section III - A

WELL CONSTRUCTION DATA

Permian Oilfield Partners, LLC.
Taurus Federal SWD #1
1026' FSL, 275' FWL
Sec. 6, T22S, R34E, Lea Co. NM
Lat 32.4163000° N, Lon 103.5166459° W
GL 3558', RKB 3588'

Surface - (Conventional)

Hole Size: 26" **Casing:** 20" - 94# H-40 & 106.5# J-55 & 133# K-55 STC Casing
Depth Top: Surface
Depth Btm: 1785'
Cement: 1252 sks - Class C + Additives
Cement Top: Surface - (Circulate)

Intermediate #1 - (Conventional)

Hole Size: 18.5" **Casing:** 16" - 75# J-55 & 84# J-55 BTC Casing
Depth Top: Surface
Depth Btm: 3620'
Cement: 868 sks - Lite Class C (50:50:10) + Additives
Cement Top: Surface - (Circulate)

Intermediate #2 - (Conventional)

Hole Size: 14.75" **Casing:** 13.375" - 54.5# J-55 & 61# J-55 FJ Casing
Depth Top: Surface
Depth Btm: 5050' **ECP/DV Tool:** 3720'
Cement: 838 sks - Lite Class C (60:40:0) + Additives
Cement Top: Surface - (Circulate)

Intermediate #3 - (Conventional)

Hole Size: 12.25" **Casing:** 9.625" - 40# L-80 & 40# HCL-80 BTC Casing
Depth Top: Surface
Depth Btm: 12025' **ECP/DV Tool:** 5150'
Cement: 2000 sks - Lite Class C (60:40:0) + Additives
Cement Top: Surface - (Circulate)

Intermediate #4 - (Liner)

Hole Size: 8.5" **Casing:** 7.625" - 39# P-110 FJ Casing
Depth Top: 11825'
Depth Btm: 16424'
Cement: 237 sks - Lite Class C (60:40:0) + Additives
Cement Top: 11825' - (Circulate, then Bond Log when well at TD)

Intermediate #5 - (Open Hole)

Hole Size: 6.5" **Depth:** 17869'
Inj. Interval: 16424' - 17869' (Open-Hole Completion)

Tubing - (Tapered)

Tubing Depth: 16379' **Tubing:** 7" - 26# HCP-110 FJ Casing & 5.5" 17# HCL-80 FJ Casing (Fiberglass Lined)
X/O Depth: 11825'
X/O: 7" 26# HCP-110 FJ Casing - X - 5.5" 17# HCL-80 FJ Casing (Fiberglass Lined)
Packer Depth: 16389' **Packer:** 5.5" - Perma-Pak or Equivalent (Inconel)
Packer Fluid: 8.4 ppg FW + Additives

Section III - A

WELLBORE SCHEMATIC

Permian Oilfield Partners, LLC.
Taurus Federal SWD #1
1026' FSL, 275' FWL
Sec. 6, T22S, R34E, Lea Co. NM
Lat 32.4163000° N, Lon 103.5166459° W
GL 3558', RKB 3588'

Surface - (Conventional)
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Depth Top: Surface
Depth Btm: 1785'
Cement: 1252 sks - Class C + Additives
Cement Top: Surface - (Circulate)

Intermediate #1 - (Conventional)
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Depth Btm: 3620'
Cement: 868 sks - Lite Class C (50:50:10) + Additives
Cement Top: Surface - (Circulate)

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Hole Size: 14.75"
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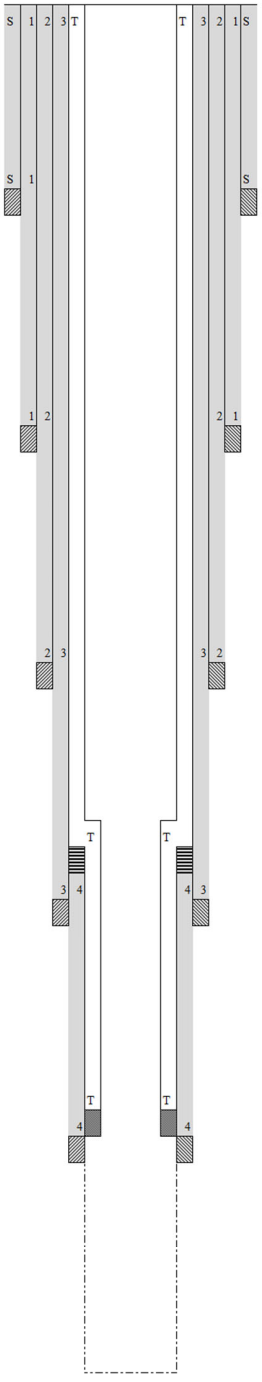
Cement: 838 sks - Lite Class C (60:40:0) + Additives
Cement Top: Surface - (Circulate)
ECP/DV Tool: 3720'

Intermediate #3 - (Conventional)
Hole Size: 12.25"
Casing: 9.625" - 40# L-80 & 40# HCL-80 BTC Casing
Depth Top: Surface
Depth Btm: 12025'
Cement: 2000 sks - Lite Class C (60:40:0) + Additives
Cement Top: Surface - (Circulate)
ECP/DV Tool: 5150'

Intermediate #4 - (Liner)
Hole Size: 8.5"
Casing: 7.625" - 39# P-110 FJ Casing
Depth Top: 11825'
Depth Btm: 16424'
Cement: 237 sks - Lite Class C (60:40:0) + Additives
Cement Top: 11825' - (Circulate, then Bond Log when well at TD)

Intermediate #5 - (Open Hole)
Hole Size: 6.5"
Depth: 17869'
Inj. Interval: 16424' - 17869' (Open-Hole Completion)



Tubing - (Tapered)
Tubing Depth: 16379'
Tubing: 7" - 26# HCP-110 FJ Casing & 5.5" 17# HCL-80 FJ Casing (Fiberglass Lined)
X/O Depth: 11825'
X/O: 7" 26# HCP-110 FJ Casing - X - 5.5" 17# HCL-80 FJ Casing (Fiberglass Lined)
Packer Depth: 16389'
Packer: 5.5" - Perma-Pak or Equivalent (Inconel)
Packer Fluid: 8.4 ppg FW + Additives

Section III - B

1. **Is this a new well drilled for injection?**
   Yes

2. **Name of the Injection Formation:**
   Devonian-Silurian: 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 14,245'

   Underlying Potentially Productive Zones:
   None

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
30-025-	97869	SWD; DEVONIAN-SILURIAN

4 Property Code	5 Property Name	6 Well Number
	TAURUS FEDERAL SWD	1

7 OGRID NO.	8 Operator Name	9 Elevation
328259	PERMIAN OILFIELD PARTNERS, LLC	3558'

10 Surface Location

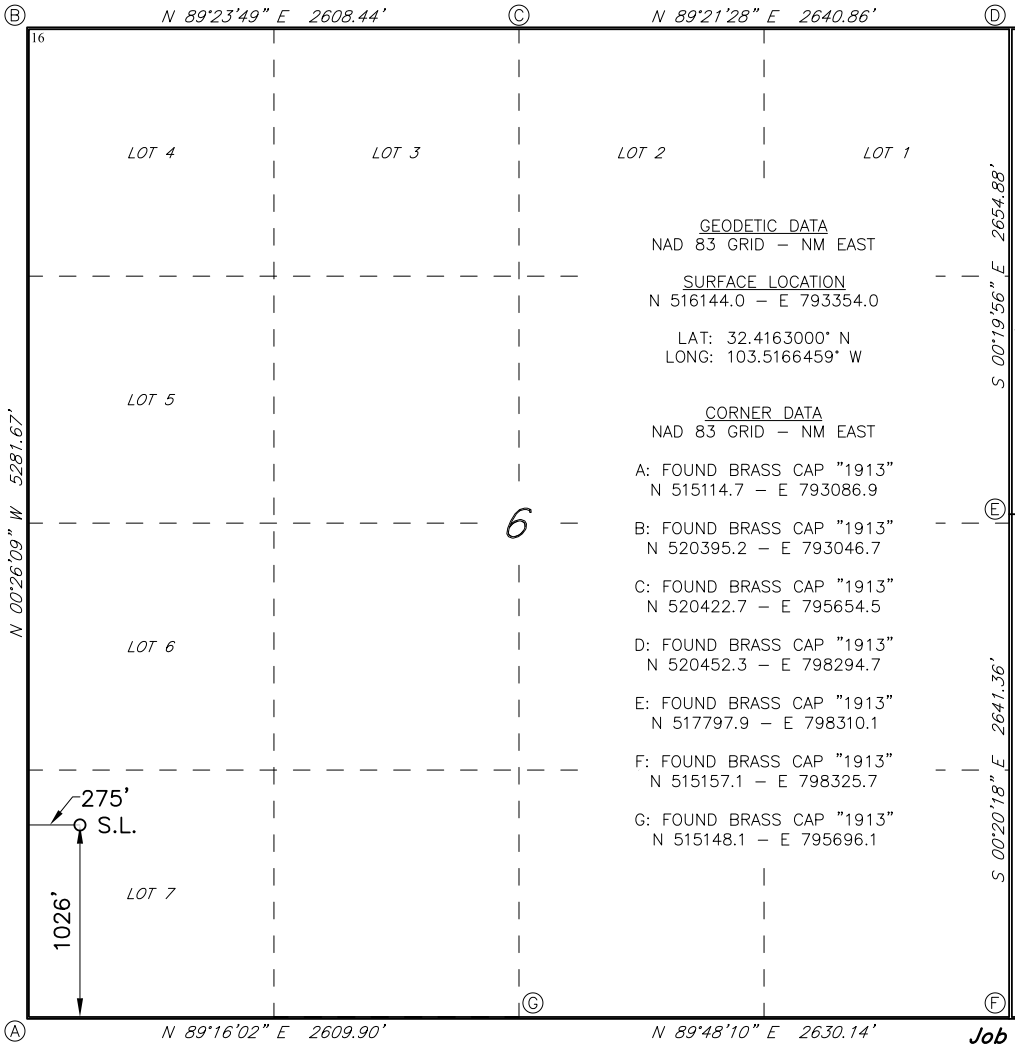
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet From the	East/West line	County
7	6	22S	34E		1026	SOUTH	275	WEST	LEA

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.



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.

Gary E Fisher 11-24-2019
Signature Date

Gary E Fisher
Printed Name

gfisher@popmidstream.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.

09-24-2019
Date of Survey

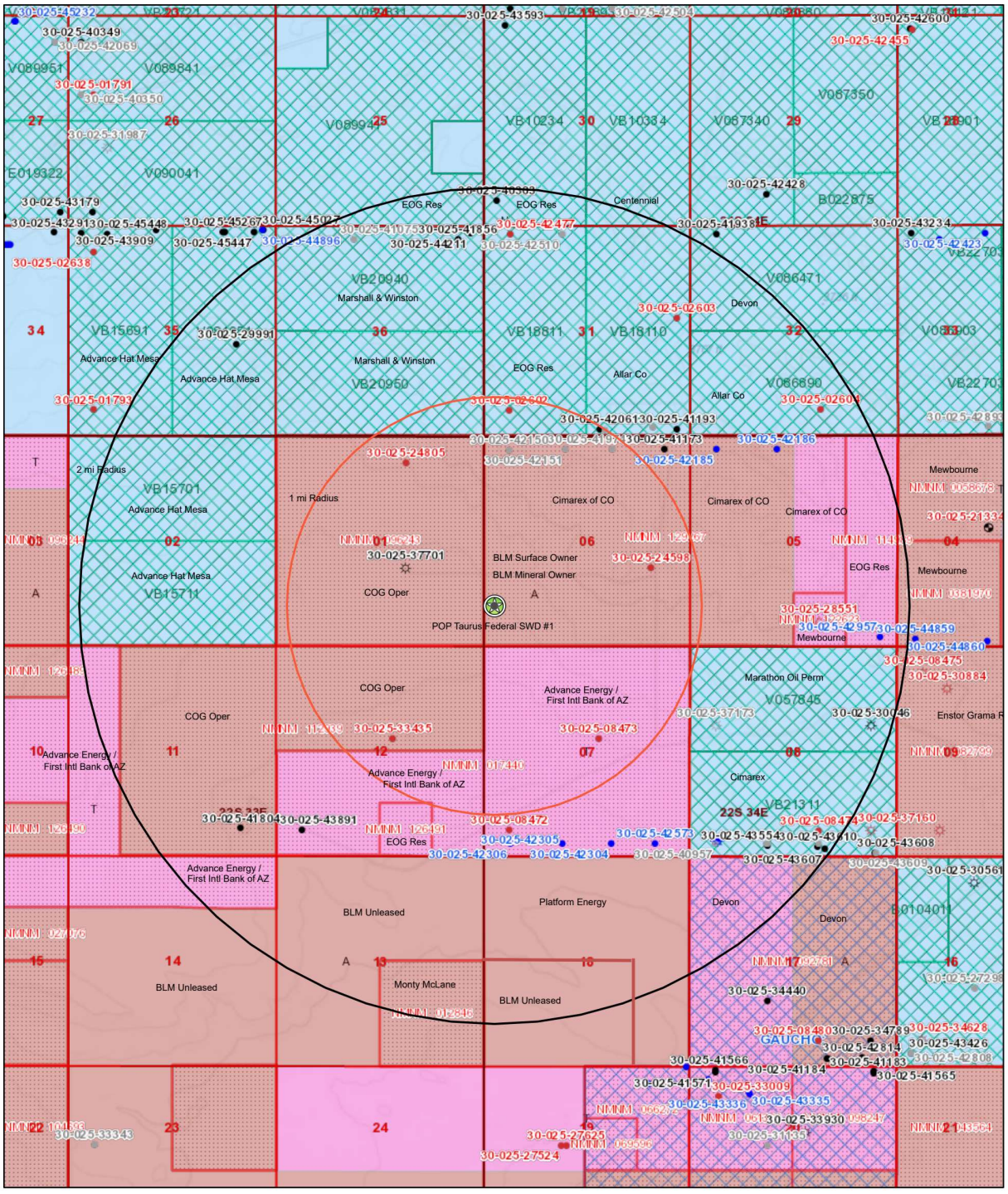
Signature and Seal of Professional Surveyor:

JEFFREY L. FANSLER
NEW MEXICO
10034
PROFESSIONAL SURVEYOR

10034
Certificate Number

Job No.: LS19090910

Section V (a) 1 & 2 Mi AOR, Taurus Federal SWD #1



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1:36,112

0 0.35 0.7 1.4 mi

0 0.5 1 2 km

Override 1

Areas
- Override 1
- Override 2

Override 1

Well Locations - Small Scale
- Active
- New
- Plugged
- Cancelled
- Temporarily Abandoned

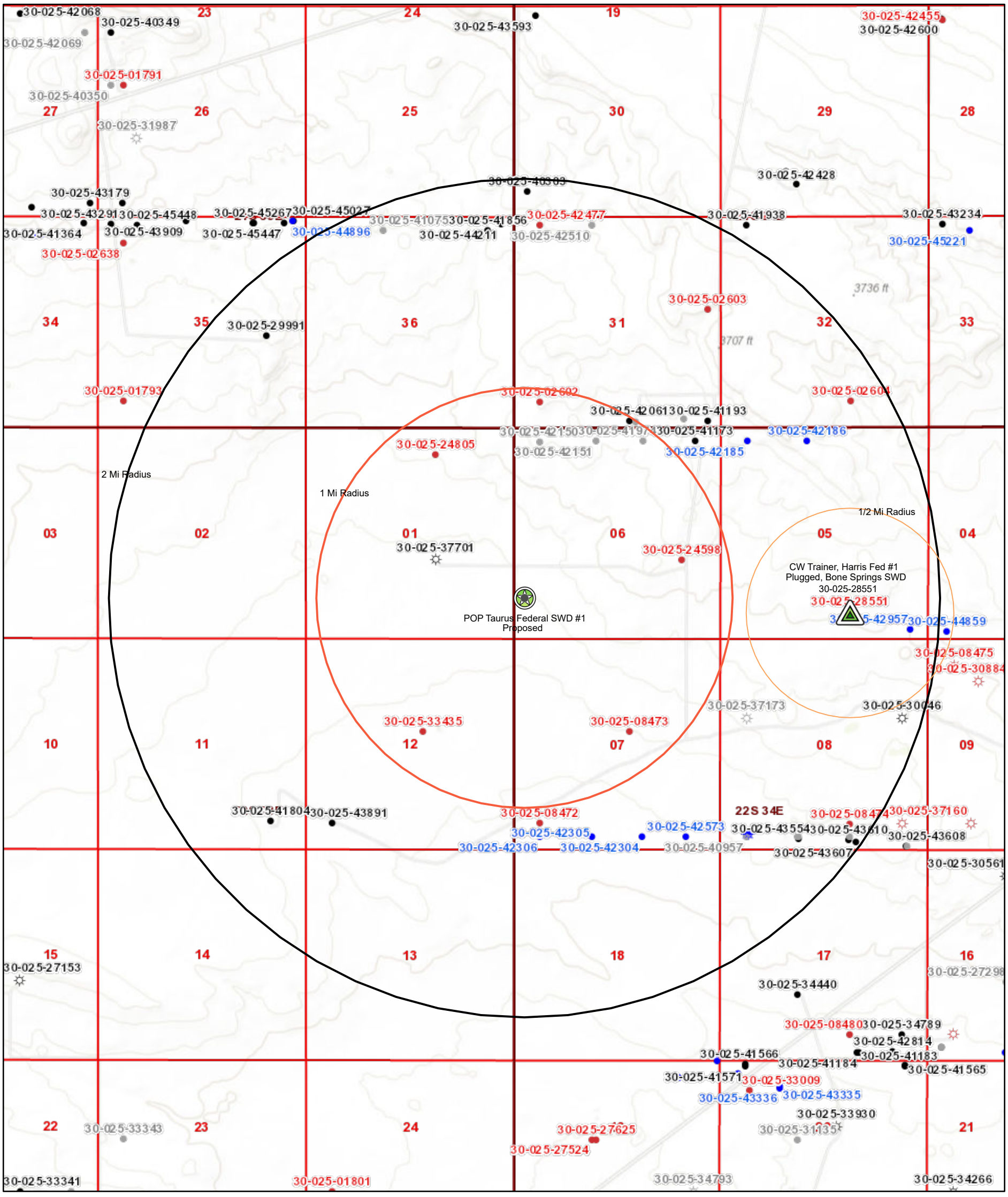
Well Locations - Large Scale
- Miscellaneous
- CO2 Active
- CO2 Cancelled
- CO2 New
- CO2, Plugged
- CO2, Temporarily Abandoned
- Gas Active
- Gas, Cancelled, Never Drilled
- Gas, New
- Gas, Plugged
- Gas, Temporarily Abandoned
- Injection, Active
- Injection, Cancelled
- Injection, New
- Injection, Plugged
- Injection, Temporarily Abandoned
- Oil, Active
- Oil, Cancelled
- Oil, New
- Oil, Plugged
- Oil, Temporarily Abondoned
- Salt Water Injection, Active
- Salt Water Injection, Cancelled
- Salt Water Injection, New
- Salt Water Injection, Plugged
- Salt Water InjectionTemporarily Abandoned
- Water, Active
- Water, Cancelled

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

New Mexico Oil Conservation Division

Section V (b)

Injection Wells Within 2 Mi, Taurus Federal SWD #1



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0 0.35 0.7 1.4 mi

0 0.5 1 2 km

Points
- Override 1
- Override 2

Areas
- Override 1
- Override 2
- Override 3

Well Locations - Small Scale
- Active
- New
- Plugged
- Cancelled
- Temporarily Abandoned

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
- Injection, Cancelled
- Injection, New
- Injection, Plugged
- Injection, Temporarily Abandoned
- Oil, Active
- Oil, Cancelled
- Oil, New
- Oil, Plugged
- Oil, Temporarily Abondoned
- Salt Water Injection, Active
- Salt Water Injection, Cancelled
- Salt Water Injection, New
- Salt Water Injection, Plugged
- Salt Water InjectionTemporarily Abandoned

New Mexico Oil Conservation Division

Section V (c)

Taurus 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
30-025-02602	PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL	#001	Oil	Vertical	Plugged, Site Released	31	T21S	R34E	M	M-31-21S-34E 660 FSL 660 FWL	M-31-21S-34E 660 FSL 660 FWL	REEF LIME	4308	4308
30-025-08473	PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL	#001	Oil	Vertical	Plugged, Site Released	07	T22S	R34E	G	G-07-22S-34E 2310 FNL 2310 FEL	G-07-22S-34E 2310 FNL 2310 FEL	n/a	4155	4155
30-025-24598	C W TRAINER	BARBARA FEDERAL	#001	Oil	Vertical	Plugged, Site Released	06	T22S	R34E	I	I-06-22S-34E 1980 FSL 990 FEL	I-06-22S-34E 1980 FSL 990 FEL	MORROW	15156	15156
30-025-24805	PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL	#001	Oil	Vertical	Plugged, Site Released	01	T22S	R33E	B	B-01-22S-33E Lot: 2 660 FNL 1980 FEL	B-01-22S-33E Lot: 2 660 FNL 1980 FEL	YATES	3900	3900
30-025-33435	EOG Y RESOURCES, INC.	CHERWIN AIW FEDERAL	#001	Oil	Vertical	Plugged, Site Released	12	T22S	R33E	G	G-12-22S-33E 2310 FNL 2310 FEL	G-12-22S-33E 2310 FNL 2310 FEL	BONE SPRING	9160	9160
30-025-37701	COG OPERATING LLC	MESA VERDE FEDERAL	#001	Gas	Vertical	Active	01	T22S	R33E	J	J-01-22S-33E 1980 FSL 1980 FEL	J-01-22S-33E 1980 FSL 1980 FEL	MORROW	15050	15050
30-025-41974	CIMAREX ENERGY CO.	WEST GRAMA RIDGE 6 FEDERAL	#003C	Oil	Horizontal	Cancelled Apd	06	T22S	R34E	B	B-06-22S-34E Lot: 2 330 FNL 1980 FEL	O-06-22S-34E 330 FSL 1980 FEL	BONE SPRING	15365	10950
30-025-42061	COG OPERATING LLC	GREY HAWK STATE	#002H	Oil	Horizontal	Active	31	T21S	R34E	O	O-31-21S-34E 190 FSL 2310 FEL	B-31-21S-34E 343 FNL 2279 FEL	BONE SPRING	15446	10907
30-025-42150	CIMAREX ENERGY CO.	WEST GRAMA RIDGE 6 FEDERAL	#001C	Oil	Horizontal	Cancelled Apd	06	T22S	R34E	D	D-06-22S-34E Lot: 4 330 FNL 660 FWL	M-06-22S-34E Lot: 7 330 FSL 660 FWL	BONE SPRING	15364	10950
30-025-42151	CIMAREX ENERGY CO.	WEST GRAMA RIDGE 6 FEDERAL	#002C	Oil	Horizontal	Cancelled Apd	06	T22S	R34E	C	C-06-22S-34E Lot: 3 330 FNL 2080 FWL	N-06-22S-34E 330 FSL 1980 FWL	BONE SPRING	15362	10950
30-025-42390	COG OPERATING LLC	GREY HAWK STATE	#004C	Oil	Horizontal	Cancelled Apd	31	T21S	R34E	O	O-31-21S-34E 190 FSL 2260 FEL	B-31-21S-34E 330 FNL 2260 FEL	BONE SPRING	16507	n/a

Section VI:

There are no wells within the proposed injection well's 1 mile area of review that penetrate the Devonian-Silurian formations.

Section 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 3,284 psi

4. Disposal Sources will be UIC Class II fluids from surrounding wells in the Delaware, Avalon, Bone Spring and Wolfcamp formations. These fluids are known to be compatible with Devonian-Silurian formation waters. Representative area produced water analyses were sourced from Go-Tech's website and are listed in the attached Table VII-4.

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 in the attached Table VII-5.

Section VII - 4 Produced Fluids Analysis

Well Name	API	Latitude	Longitude	Sec.	Twp.	Rge.	Unit	Ftg NS	Ftg EW	County	State	Sample Date	pH	TDS mgL	Res ohm-m	Sodium mgL	Calcium mgL	Iron mgL	Magnesium mgL	Manganese mgL	Chloride mgL	Bicarbonate mgL	Sulfate mgL	CO2 mgL
GAUCHO 21 FEDERAL #002H	3002540626	32.3709793	-103.4823151	21	22S	34E	M	375S	375W	Lea	NM	9/25/2014 0:00	5.9	266467.8		71664.2	20660.8	50.2	3492.5	3.8	167562	366	0	400
GAUCHO UNIT #001	3002533440	32.3654175	-103.488884	29	22S	34E	G	1650N	1650E	Lea	NM	5/19/2001 0:00	7.83	19593.3		6825.3	543	49	70		11533	450	39	90
GAUCHO UNIT #010H	3002541183	32.385006	-103.4892731	17	22S	34E	O	200S	1780E	Lea	NM	9/9/2015 0:00	5.58	165155.1	0.039	52757.1	9222	54.2	1040	1.44	100777.3	219.6	560	600
GAUCHO UNIT #015H	3002541566	32.3841896	-103.4984589	20	22S	34E	D	100N	660W	Lea	NM	9/30/2015 0:00	7.5	184420.1	0.035	55686.4	10540.1	47.6	1426	1.31	115274	268.4	765	770
NEW MEXICO BS STATE #001	3002508468	32.4188576	-103.4170074	1	22S	34E	I	1980S	660E	LEA	NM			129792							70560	412	9365	
RIO BLANCO 33 FEDERAL #003	3002537860	32.346386	-103.4776459	33	22S	34E	K	1980S	1830W	Lea	NM	9/9/2015 0:00	5.6	138283.7	0.046	44690.7	7319	28	807.6	0.85	83981.1	366	675	561.2
BILBREY BASIN 5 STATE COM #001H	3002540987	32.4155464	-103.70047	5	22S	32E	N	790S	1520W	Lea	NM	6/16/2014 0:00	6.6	109780.5		35119.1	4996.7	74.6	609.4	1.33	67200	97	7.5	100
CHECKERS 24 FEDERAL #005	3002533702	32.3717957	-103.6358948	24	22S	32E	M	660S	330W	Lea	NM	2/6/2015 0:00	5.9	249142.5		67101	17689.8	27.5	2974.7	2.98	158765.3	48.8	0	500
FEDERAL MILLS #002	3002531641	32.3826439	-103.6519092	23	22S	32E	D	660N	660W	LEA	NM	5/1/1954 0:00	6.2	130929	0.073		6370		2270		80485	352	671	
ROCK RIDGE 29 FEDERAL #001	3002537646	32.3643074	-103.7021408	29	22S	32E		1980N	990W	Lea	NM	9/9/2014 0:00	6.3	276542		76771.5	22382.5	51	3803.5	4.13	170500	61	17	430
WHITE SWAN 9 FEDERAL #001	3002532000	32.3998222	-103.6722412	9	22S	32E	P	330S	330E	Lea	NM	1/28/2015 0:00	5.6	274735		72807.9	22457.8	39.9	3641.3	4.78	173061.5	73.2	34	450
BOUNDARY RAIDER 6 FEDERAL #002H	3002541884	32.3256416	-103.7059097	7	23S	32E	A	200N	200E	Lea	NM	4/21/2015 0:00	5.5	198828.3	0.05417	63822.8	9826.5	65.2	1403.5	2.6	121113.4		183	17
DIAMONDTAIL 23 FEDERAL #002	3002533653	32.2920113	-103.6390228	23	23S	32E	H	1980N	660E	Lea	NM	5/23/2012 0:00	7.2	257547		72465.5	19374	37	3454	3.5	158521		122	396
DIAMONDTAIL 24 FEDERAL #001	3002533344	32.288414	-103.6347427	24	23S	32E	L	1980S	660W	Lea	NM	8/12/2014 0:00	8.5	172490.2		59465.3	5813.5	121.6	1016.4	2.3	103630		199.2	2
FALCON 32 STATE #003	3002535640	32.2591743	-103.6987686	32	23S	32E	K	1980S	1980W	Lea	NM	1/28/2015 0:00	5.5	249184.8		71161.3	16116.1	33	2496.1	3.96	156337.9		85.4	0
FALCON 32 STATE #004	3002536555	32.2664185	-103.6982193	32	23S	32E	C	660N	2150W	Lea	NM	1/28/2015 0:00	5.8	241993.3		72965.6	14328.7	29.4	2268.5	3.28	149603.8		97.6	0
FALCON 32 STATE #005Y	3002539661	32.2546806	-103.702446	32	23S	32E	M	351S	842W	Lea	NM	1/28/2015 0:00	5.9	239678.9		74767.3	13436.5	40.6	2234	2.32	146645.4		73.2	0
FREIDA AFR FEDERAL #001	3002532197	32.3390343	-103.6568133	3	23S	32E	A	660N	860E	LEA	NM	2/1/1989 0:00	6.2	149595		85000	2110	0	1000		147800	0	95	2450
HORNET 6 FEDERAL #001	3002536486	32.338829	-103.7074585	6	23S	32E	A	660N	660E	Lea	NM	6/23/2009 0:00	5.6	312483.3		91476.8	21517	21	3787	4	191582		61	1305
THYME APY FEDERAL #002	3002533529	32.3364449	-103.625145	1	23S	32E	G	1650N	1650E	LEA	NM	11/27/2001 0:00	6.1	172896			0	0	2025		104976		781	1150
TOMCAT 15 FEDERAL #003	3002535524	32.3100281	-103.6689453	15	23S	32E	D	660N	660W	Lea	NM	6/3/2008 0:00	5.7	257844.8		80765.3	14109	130	2423	9	157409		49	1187
TOMCAT 16 STATE #003	3002534809	32.3027229	-103.6860352	16	23S	32E	L	1980S	660W	Lea	NM	1/27/2015 0:00	5.51	282155.2		71636.9	27669.4	42.4	4186.8	15.6	175393.6		52.8	0
TOMCAT 16 STATE #004	3002534810	32.3072433	-103.6866913	16	23S	32E	E	1650N	460W	Lea	NM	8/6/2003 0:00	6.02	271775.9		74413.3	21773	23	3968		167535		36.6	471
TOMCAT 17 FEDERAL #001	3002534690	32.2990761	-103.6903	17	23S	32E	P	660S	660E	Lea	NM	1/27/2015 0:00	5.4	254754.8		75267	19088.7	38.3	3181.3	3.69	154115.3		109.8	0
TOMCAT 20 FEDERAL #001	3002534693	32.295723	-103.6899719	20	23S	32E	A	560N	560E	Lea	NM	6/2/2015 0:00	5.4	277437.6	0.0518	74399.4	21280.6	37.6	3402.2	4.9	174776.4			302.8
TOMCAT 21 FEDERAL #001	3002533356	32.291851	-103.6820602	21	23S	32E	F	1980N	1880W	Lea	NM	1/27/2015 0:00	5.4	246335.6		67632.8	16223.4	47.5	2611.1	3.16	157130.6		61	0
TRESNOR MITCHELL 30 FEDERAL #001	3002532688	32.2690697	-103.715477	30	23S	32E	N	330S	2310W	Lea	NM	2/6/2015 0:00	5.6	249571.5		64522.7	19862.2	37.7	3105.9	6.36	159003.4		73	0
BLACK MAMBA 15 STATE COM #002H	3002540173	32.3115883	-103.5666428	15	23S	33E	D	150N	660W	Lea	NM	4/29/2014 0:00	6.2	178123		56623.9	9330.2	65.4	985.2	1.6	108363	183	752	350
HORNED VIPER 20 FEDERAL COM #001H	3002541913	32.2835426	-103.5985184	20	23S	33E	N	200S	1350W	Lea	NM	9/9/2015 0:00	7	130154.4	0.049	49951.8	721	11.4	140	0.1	78282.4	158.6	740	210
HORNED VIPER 20 FEDERAL COM #002H	3002541914	32.2835426	-103.5986786	20	23S	33E	M	200S	1300W	Lea	NM	9/9/2015 0:00	6.1	272936.3	0.023	76649.8	21050	34.8	4456	4.19	169061.9	40	600	300
MARSHALL #001	3002508358	32.284832	-103.6176224	19	23S	33E	M	660S	660W	LEA	NM			238931							148600	127	156	
SEA SNAKE 35 STATE #001H	3002541625	32.2544518	-103.5474319	35	23S	33E	M	200S	1295W	Lea	NM	7/16/2015 0:00	7	146173.6	0.044	48514.2	6777	38.9	763.1	1.51	88880	207.4	635	60
SEA SNAKE 35 STATE #003H	3002542283	32.2544466	-103.5414797	35	23S	33E	O	200S	2132E	Lea	NM	7/23/2015 0:00	7	118969.6	0.054	39811	5202	26.1	612.4	1.05	71983.8	231.8	820	40
TAIPAN 10 STATE COM #001H	3002540743	32.3115883	-103.5664825	15	23S	33E	D	150N	710W	Lea	NM	9/9/2015 0:00	6.5	183673.6	0.035	59642.2	9492	48.1	1067	1.08	111974.8	61	765	230
THISTLE UNIT #004	3002534456	32.2557449	-103.562294	34	23S	33E	N	660S	1980W	Lea	NM	5/31/2001 0:00	5.08	21757.8		315.8	4914	284	368		12856	163	150	
THISTLE UNIT #005	3002534580	32.2630043	-103.5623016	34	23S	33E	F	1980N	1980W	Lea	NM	5/31/2001 0:00	6.99	74186		25899	1996	27	253		44527	386	269	
THISTLE UNIT #017H	3002539893	32.2543602	-103.5734558	33	23S	33E	O	150S	1470E	Lea	NM	9/25/2014 0:00	6	283085.1		71469.2	25489.1	54.1	3893.9	6.57	179335	427	0	100
THISTLE UNIT #018H	3002540010	32.2825584	-103.5810394	28	23S	33E	C	150N	1470W	Lea	NM	9/10/2014 0:00	6	254702.7		70206.8	20688.4	47.7	3452.1	3.83	157600	122	0	200
THISTLE UNIT #020H	3002540015	32.2825584	-103.5682526	27	23S	33E	D	150N	150W	Lea	NM	9/9/2015 0:00	6.5	167967.8	0.038	53995.6	9118	40.6	1014	1.19	102676.8	73.2	425	200
THISTLE UNIT #026H	3002542431	32.2965799	-103.5666151	22	23S	33E	M	100S	802W	Lea	NM	9/9/2015 0:00	5.04	133984.6	0.048	45518.8	5227	38.2	672.7	0.72	80481.9	972.2	880	240
THISTLE UNIT #043H	3002540898	32.2545166	-103.5841522	33	23S	33E	M	200S	500W	Lea	NM	7/16/2015 0:00	7	155146.4	0.041	51155.5	7420	35.9	868.5	1.25	94478.7	183	600	900
THISTLE UNIT #048H	3002541253	32.2546959	-103.5604095	34	23S	33E	N	280S	2561W	Lea	NM	9/10/2014 0:00	6.5	161403.3		51347.4	7892.9	18.5	856.7	1.12	99100	122	0	250
THISTLE UNIT #051H	3002541896	32.2824211	-103.584404	28	23S	33E	D	200N	430W	Lea	NM	9/9/2015 0:00	5.16	101658.2	0.063	34198.8	4245	13.2	578.6	0.37	61286.2	158.6	1030	170
THISTLE UNIT #055H	3002541488	32.2833824	-103.5666046	22	23S	33E	M	150S	660W	Lea	NM	5/1/2014 0:00	6.4	144752.8		47940.9	7687.8	36.9	847.7	1.92	85978	122	0	300
THISTLE UNIT #059H	3002541796	32.2824211	-103.5751495	28	23S	33E	B	200N	1980E	Lea	NM	9/9/2015 0:00	5.1	140110.6	0.046	47035.8	5996	30.2	763	1.97	84880.9	439.2	740	780

Section VII - 5 Representative Injection Zone Fluids Analysis

Well Name	API	Latitude	Longitude	Sec.	Twp.	Rge.	Unit	Ftg NS	Ftg EW	County	State	Field	Formation	Sample Source	Sample Date	pH	TDS mgL	Res ohm-m	Sodium mgL	Calcium mgL	Iron mgL	Magnesium mgL	Manganese mgL	Chloride mgL	Bicarbonate mgL	Sulfate mgL	CO2 mgL
BELL LAKE UNIT #006	3002508483	32.3282585	-103.507103	6	23S	34E	O	660S	1980E	LEA	NM	BELL LAKE NORTH	DEVONIAN	HEATER TREATER		7	71078							42200		500	1000
ANTELOPE RIDGE UNIT #003	3002521082	32.2593155	-103.4610748	34	23S	34E	K	1980S	1650W	LEA	NM	ANTELOPE RIDGE	DEVONIAN	UNKNOWN	11/14/1967 0:00	6.9	80187							47900		476	900
REMUDA BASIN UNIT #001	3001503691	32.2886238	-103.9360428	24	23S	29E	J	1980S	1980E	EDDY	NM	REMUDA	DEVONIAN	SWAB			64582							37500		610	1700
CLINE FEDERAL #001	3002510717	32.3025551	-103.1358261	14	23S	37E	K	1980S	1980W	LEA	NM	CLINE	DEVONIAN	PRODUCTION TEST			118979							71280		462	2593
BIG EDDY UT #001	3001502475	32.4421539	-104.042305	36	21S	28E	C	660N	1980W	EDDY	NM		DEVONIAN	DRILL STEM TEST			19941							10700		640	1130
FED UNION #001	3001502416	32.5527229	-104.1623917	22	20S	28E	O	330S	1650E	EDDY	NM		DEVONIAN	DRILL STEM TEST		6.8	39605							22620		810	1618

Section 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 50-100 mD range. It is these intervals of high secondary porosity and associated high permeability that are expected to take the majority of the injected fluid.

The Devonian-Silurian sequence is well suited for fluid disposal purposes. The Woodford Shale, a low permeability shale, is the upper barrier to the injection interval, preventing upward fluid migration to USDW's and hydrocarbon bearing zones. The Montoya, a low porosity carbonate, is the lower barrier to the injection interval, and in conjunction with the underlying shale beds of the Simpson, will prevent downward fluid migration into the Ellenburger, Cambrian, and PreCambrian rocks below. The Devonian-Silurian is expected to have sufficient permeabilities and porosities in zone to support long term injection, over a large depth interval.

GL 3558', RKB 3588'

GEOLOGY PROGNOSIS			
FORMATION	TOP KB TVD (ft)	BOTTOM KB TVD (ft)	THICKNESS (ft)
Salt	2,130	3,420	1,290
Yates	3,570	4,072	502
Capitan Reef	4,072	5,025	953
Delaware	5,025	8,820	3,795
Bone Spring	8,820	11,975	3,155
Wolfcamp	11,975	12,900	925
Lwr. Mississippian	15,631	16,183	552
Woodford	16,183	16,389	206
Devonian	16,389	17,307	918
Fusselman (Silurian)	17,307	17,894	587
Montoya (U. Ordovician)	17,894	18,276	382
Simpson (M. Ordovician)	18,276	18,913	637

According to the New Mexico Office of the State Engineer, there are no fresh water wells drilled within the proposed well's one-mile area of review. Regionally, shallow Tertiary USDW's are known to exist at depths less than 1190'. There are no USDW's present below the injection interval. Data showing the area Average Depth to Water from the Office of the State Engineer is attached.

This well will penetrate the Yates and the Capitan Reef, both of which show chloride ion concentrations in the area between 5,000 & 10,000 mg/l, as per W.L. Hiss's USGS choride ion concentration map. The well design protects these zones by setting 16" casing in the top of the Yates so that the drilling mud can be changed over to a fresh water base for the drilling of the Yates and Capitan Reef. 13 3/8" casing will then be set in the top of the Delaware to protect these zones from ongoing drilling activity. The 9 5/8" casing will further protect these zones when set and cemented to surface.

Section VIII (D)

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	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
CP 01725 POD1	CP	LE	1	2	1	18	22S	34E	639914	3585521	2072	1137	800	337
CP 01721 POD1	CP	LE	4	2	1	18	22S	34E	640181	3585244	2407	1108	820	288
CP 00592 POD1	CP	ED		3	2	13	22S	33E	638834	3585015*	2614	427		
CP 01720 POD1	CP	LE	1	3	2	08	22S	34E	642003	3586723	2653	1190	824	366
CP 01723 POD1	CP	LE	4	4	1	18	22S	34E	640117	3584905	2718	1140	785	355
CP 00597 POD1	CP	LE		2	2	08	22S	34E	642410	3587074*	2966	35		
CP 01722 POD1	CP	LE	4	4	2	18	22S	34E	640964	3584949	2991	1122	785	337
CP 01455 POD1	CP	LE	4	1	4	18	22S	34E	640574	3584515	3223	1033	615	418
CP 00600 POD1	CP	LE		2	4	25	21S	33E	639152	3591054*	3520	65		
CP 01362 POD1	CP	LE	3	4	4	18	22S	34E	640809	3584182	3617	1032	613	419
CP 00744	CP	LE		1	2	09	22S	34E	643618	3587091*	4161	460		
CP 01411 POD1	CP	LE		2	2	34	21S	33E	635968	3590386	4515	1149		
CP 00588 POD1	CP	LE		3	2	33	21S	34E	643583	3589918*	4736	89		
CP 00589 POD1	CP	LE		3	2	33	21S	34E	643583	3589918*	4736	84		

Average Depth to Water: **748 feet**

Minimum Depth: **613 feet**

Maximum Depth: **824 feet**

Record Count: 14

UTMNAD83 Radius Search (in meters):

Easting (X): 639481.432 **Northing (Y):** 3587548.557 **Radius:** 4828

***UTM location was derived from PLSS - see Help**

Section IX: Formation chemical stimulation with 40,000 gals of 15% Hydrochloric Acid is planned after well completion.

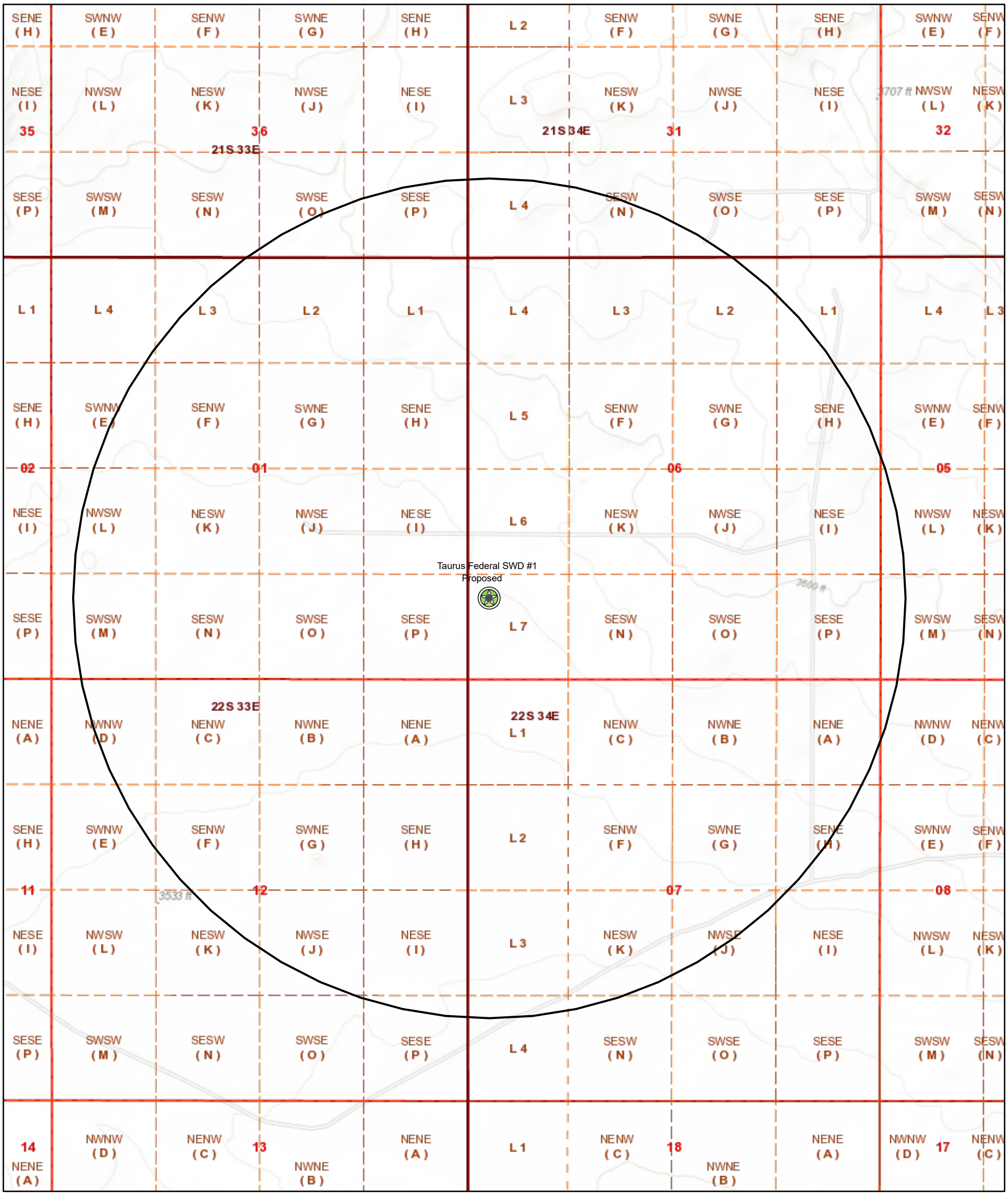
Section X: A Cement Bond Log and Compensated Neutron/Gamma Ray logs will be run from surface to TD upon well completion. All logs will be submitted to the NMOCD upon completion.

Section XI: According to the New Mexico Office of the State Engineer, there are no fresh water wells drilled within the proposed well's one-mile area of review.

Section XII: Hydrologic affirmative statement attached.

Section XIII: Proof of notice and proof of publication attached.

Sect. XI Water Wells Within 1 Mile AOR, Taurus Federal SWD #1



1/3/2020, 9:39:10 AM

Override 1

Override 1

PLSS First Division

PLSS Second Division

PLSS Townships

1:18,056

0 0.17 0.35 0.7 mi

0 0.28 0.55 1.1 km

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

New Mexico Oil Conservation Division

PERMIAN OILFIELD PARTNERS

Item XII. Affirmative Statement

Re: C-108 Application for Authorization to Inject
Permian Oilfield Partners, LLC
Taurus Federal SWD #1
1026' FSL & 275' FWL
Sec 6, T22S, R34E
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.

Gary Fisher
Manager
Permian Oilfield Partners, LLC.

Date: 11/24/2019

PERMIAN OILFIELD PARTNERS

Item XIII, Statement of Notifications

Re: C-108 Application for Authorization to Inject
Permian Oilfield Partners, LLC
Taurus Federal SWD #1
1026' FSL & 275' FWL
Sec 6, T22S, R34E
Lea County, NM

Permian Oilfield Partners, LLC has mailed notifications to Affected Persons as per the following list:

Taurus Federal SWD #1 - Affected Persons within 1 Mile Area of Review						
Notified Name	Notifed Address	Notified City, State, ZIP Code	Lease/Well Location	Shipper	Tracking No.	Mailing Date
Bureau Of Land Management	620 E Greene St.	Carlsbad, NM 88220	N/A	USPS	9414811899561171469435	1/10/2020
New Mexico State Land Office	310 Old Santa Fe Trail	Santa Fe, NM 87501	N/A	USPS	9414811899561171463037	1/10/2020
C W Trainer c/o Trainer Partners LTD	PO Box 3788	Midland, TX 79702	Sec. 6-22S-34E	USPS	9414811899561171463808	1/10/2020
EOG Y Resources, Inc.	104 S 4th St	Artesia, NM 88210	Sec. 12-22S-33E	USPS	9414811899561171463969	1/10/2020
COG Operating LLC	600 W Illinois Ave	Midland, TX 79701	Sec. 1-22S-33E, Sec. 31-21S-34E, N/2 Sec. 12-22S-34E, Sec. 1-22S-33E	USPS	9414811899561171463273	1/10/2020
Cimarex Energy Co.	600 N. Marienfeld Street Suite 600	Midland, TX 79701	Sec. 6, 7-22S-34E	USPS	9414811899561171469596	1/10/2020
Marshall & Winston Inc.	PO Box 50880	Midland, TX 79710	S/2 Sec. 36-21S-33E	USPS	9414811899561171463396	1/10/2020
The Allar Co.	735 Elm Street	Graham, TX 76450	E/2 Sec. 31-21S-34E	USPS	9414811899561171463433	1/10/2020
Cimarex Energy Co. of Colorado	600 N. Marienfeld Street Suite 600	Midland, TX 79701	Sec. 5, 6-21S-34E	USPS	9414811899561171463211	1/10/2020
Advance Energy Partners LLC	11490 Westheimer Rd, Suite 950	Houston, TX 77077	Sec. 7 & S/2 Sec. 12-22S-34E	USPS	9414811899561171469084	1/10/2020
First International Bank of Arizona	PO Box 1546	Mesa, AZ 85201	Sec. 7 & S/2 Sec. 12-22S-34E	USPS	9414811899561171463617	1/10/2020
EOG Resources, Inc.	PO Box 2267	Midland, TX 79702	W/2 Sec. 31-21S-34E, SW/4 SE/4 Sec. 12-22S-34E	USPS	9414811899561171463754	1/10/2020
Marathon Oil Permian LLC	5555 San Felipe Street	Houston, TX 77056	N/2 Sec. 8-22S-34E	USPS	9414811899561171463112	1/10/2020

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

Date: 1-10-2020

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

ARTICLE NUMBER: 9414 8118 9956 1171 4694 35

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

Postmark Here

JAN 10 2020

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

ARTICLE NUMBER: 9414 8118 9956 1171 4630 37

ARTICLE ADDRESSED TO:

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

FEES

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

Postmark Here

JAN 10 2020

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

ARTICLE NUMBER: 9414 8118 9956 1171 4638 08

ARTICLE ADDRESSED TO:

CW Trainer, c/o Trainer Partners LT
PO Box 3788
Midland TX 79702-3788

FEES

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

Postmark Here

JAN 10 2020

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

ARTICLE NUMBER: 9414 8118 9956 1171 4639 69

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

Postmark Here

JAN 10 2020

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

ARTICLE NUMBER: 9414 8118 9956 1171 4632 73

ARTICLE ADDRESSED TO:

COG Operating LLC
600 W Illinois Ave
Midland TX 79701-4882

FEES

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

Postmark Here

JAN 10 2020

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

ARTICLE NUMBER: 9414 8118 9956 1171 4695 96

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 Here

JAN 10 2020

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

ARTICLE NUMBER: 9414 8118 9956 1171 4633 96

ARTICLE ADDRESSED TO:

Marshall & Winston Inc.
PO Box 50880
Midland TX 79710-0880

FEES

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

Postmark Here

JAN 10 2020

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

ARTICLE NUMBER: 9414 8118 9956 1171 4634 33

ARTICLE ADDRESSED TO:

The Allar Company
735 Elm Street
Graham TX 76450-3018

FEES

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

Postmark Here

JAN 10 2020

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

ARTICLE NUMBER: 9414 8118 9956 1171 4632 11

ARTICLE ADDRESSED TO:

Cimarex Energy Co. of Colorado
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 Here

JAN 10 2020

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

ARTICLE NUMBER: 9414 8118 9956 1171 4690 84

ARTICLE ADDRESSED TO:

Advance Energy Partners LLC
11490 Westheimer Rd., Ste. 950
Houston TX 77077-6841

FEES

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

Postmark Here

JAN 10 2020

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

ARTICLE NUMBER: 9414 8118 9956 1171 4636 17

ARTICLE ADDRESSED TO:

First International Bank of Arizona
PO Box 1546
Mesa AZ 85211-1546

FEES

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

Postmark Here

JAN 10 2020

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

ARTICLE NUMBER: 9414 8118 9956 1171 4637 54

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

Postmark Here

JAN 10 2020

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

ARTICLE NUMBER: 9414 8118 9956 1171 4631 12

ARTICLE ADDRESSED TO:

Marathon Oil Permian LLC
5555 San Felipe Street
Houston TX 77056-2701

FEES

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

Postmark Here

JAN 10 2020

Section XIII

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
November 29, 2019
and ending with the issue dated
November 29, 2019.

Publisher

Sworn and subscribed to before me this 29th day of November 2019.

Business Manager

My commission expires
January 29, 2023
(Seal)

OFFICIAL SEAL
GUSSIE BLACK
Notary Public
State of New Mexico
My Commission Expires 1-29-23

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
NOVEMBER 29, 2019

Permian Oilfield Partners, LLC, PO Box 3329, Hobbs, NM 88241, phone (817)606-7630, attention Gary Fisher, has filed form C-108 (Application for Authorization to Inject) 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 Taurus Federal SWD #1, and is located 1026' FSL & 275' FWL, Lot Number 7, Section 6, Township 22 South, Range 34 East, NMPM, approximately 21.0 miles W of Eunice, NM. The well will dispose of water produced from nearby oil and gas wells into the Devonian-Silurian formations from a depth of 16,424 feet to 17,869 feet. The maximum expected injection rate is 50,000 BWPD at a maximum surface injection pressure of 3,284 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.
#34914

67115647 00236577

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

Plugging Risk Assessment

Permian Oilfield Partners, LLC.
Taurus Federal SWD #1
1026' FSL & 275' FWL
Sec 6, T22S, R34E
Lea County, NM

WELLBORE SCHEMATIC

Permian Oilfield Partners, LLC.
Taurus Federal SWD #1
1026' FSL, 275' FWL
Sec. 6, T22S, R34E, Lea Co. NM
Lat 32.4163000° N, Lon 103.5166459° W
GL 3558', RKB 3588'

Surface - (Conventional)
Hole Size: 26"
Casing: 20" - 94# H-40 & 106.5# J-55 & 133# K-55 STC Casing
Depth Top: Surface
Depth Btm: 1785'
Cement: 1252 sks - Class C + Additives
Cement Top: Surface - (Circulate)

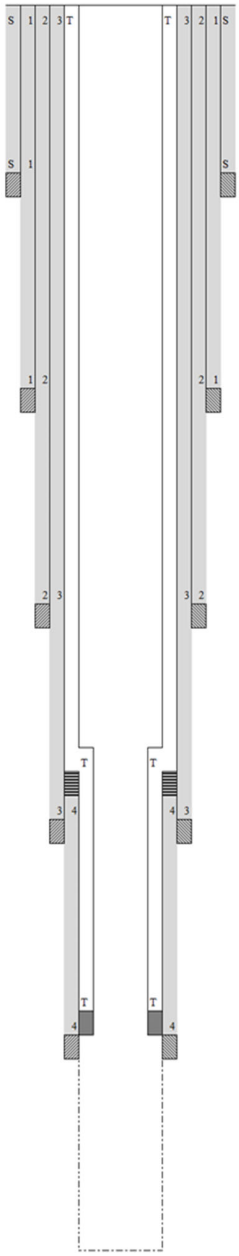
Intermediate #1 - (Conventional)
Hole Size: 18.5"
Casing: 16" - 75# J-55 & 84# J-55 BTC Casing
Depth Top: Surface
Depth Btm: 3620'
Cement: 868 sks - Lite Class C (50:50:10) + Additives
Cement Top: Surface - (Circulate)

Intermediate #2 - (Conventional)
Hole Size: 14.75"
Casing: 13.375" - 54.5# J-55 & 61# J-55 FJ Casing
Depth Top: Surface
Depth Btm: 5050'
Cement: 838 sks - Lite Class C (60:40:0) + Additives
Cement Top: Surface - (Circulate)
ECP/DV Tool: 3720'

Intermediate #3 - (Conventional)
Hole Size: 12.25"
Casing: 9.625" - 40# L-80 & 40# HCL-80 BTC Casing
Depth Top: Surface
Depth Btm: 12025'
Cement: 2000 sks - Lite Class C (60:40:0) + Additives
Cement Top: Surface - (Circulate)
ECP/DV Tool: 5150'

Intermediate #4 - (Liner)
Hole Size: 8.5"
Casing: 7.625" - 39# P-110 FJ Casing
Depth Top: 11825'
Depth Btm: 16424'
Cement: 237 sks - Lite Class C (60:40:0) + Additives
Cement Top: 11825' - (Circulate, then Bond Log when well at TD)

Intermediate #5 - (Open Hole)
Hole Size: 6.5"
Depth: 17869'
Inj. Interval: 16424' - 17869' (Open-Hole Completion)



Tubing - (Tapered)
Tubing Depth: 16379'
Tubing: 7" - 26# HCP-110 FJ Casing & 5.5" 17# HCL-80 FJ Casing (Fiberglass Lined)
X/O Depth: 11825'
X/O: 7" 26# HCP-110 FJ Casing - X - 5.5" 17# HCL-80 FJ Casing (Fiberglass Lined)
Packer Depth: 16389'
Packer: 5.5" - Perma-Pak or Equivalent (Inconel)
Packer Fluid: 8.4 ppg FW + Additives

7" UFJ Tubing Inside of 9 ⅝" 40# Casing

Bowen Series 150 Releasing and Circulation Overshots
Maximum Catch Size 6⅝" to 7¼" Inclusive

Maximum Catch Size (Spiral)		6⅝	6¼	7	7¼
Maximum Catch Size (Basket)		5⅞	6⅛	6⅜	6⅝
Overshot O.D.		8¼	7⅞	8⅛	8⅜
Type		F.S.	S.H.	S.H.	S.H.
Complete Assembly	Part No.	C-3032	C-5222	9217	C-5354
(Dressed Spiral Parts)	Weight	280	243	251	260
Replacement Parts					
Top Sub	Part No.	A-3033	A-5223	9218	A-5355
Bowl	Part No.	B-3034	B-5224	9219	B-5356
Packer	Part No.	A-1814	B-5225	9224	B-5357
Spiral Grapple	Part No.	N-84	B-5227	9222	B-5359
Spiral Grapple Control	Part No.	M-89	A-5228	9223	B-5360
Standard Guide	Part No.	A-1818	A-5229	9226	A-5361
Basket Parts					
Basket Grapple	Part No.	N-84	B-5227	9222	B-5359
Basket Grapple Control	Part No.	M-89	A-5228	9223	B-5360
Mill Control Packer	Part No.	A-1814-R	B-5225-R	9224-R	B-5357-R

A 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.

5 ½" UFJ Tubing Inside of 7 ⅝" 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 4¼" to 5½" Inclusive

Maximum Catch Size (Spiral)		4¼	4⅝	4¾	4¾	5	5	5½
Maximum Catch Size (Basket)		3⅞	4⅛	4¼	4¼	4¼	4¼	4⅞
Overshot O.D.		5⅜	5⅝	5⅝	5¾	5⅞	6⅝	6⅝
Type		F.S.	S.H.	S.H.	S.F.S.	S.H.	F.S.	S.H.
Complete Assembly	Part No.	5896	5698	C-5168	8975	C-5171	C-4825	8825
(Dressed Spiral Parts)	Weight	130	130	133	138	140	192	185
Replacement Parts								
Top Sub	Part No.	5897	5699	A-5169	8976	A-5172	B-4826	8826
Bowl	Part No.	5898	5700	B-5170	8977	B-5173	B-4827	8817
Packer	Part No.	169	1140	B-2199	6114	L-5950	L-4505	8818
Spiral Grapple	Part No.	165	1135	B-2201	6112	B-4389	M-1071	8819
Spiral Grapple Control	Part No.	166	1137	B-2202	6113	B-4370	M-1072	8820
Standard Guide	Part No.	187	1143	B-2203	6121	B-4371	L-1074	8821
Basket Parts								
Basket Grapple	Part No.	165	1135	B-2201	6112	B-4389	M-1071	8819
Basket Grapple Control	Part No.	166	1137	B-2202	6113	B-4370	M-1072	8820
Mill Control Packer	Part No.	169-R	1140-R	B-2199-R	6114-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.

PERMIAN OILFIELD PARTNERS

Attachment to C-108 Application for Authorization to Inject
Permian Oilfield Partners, LLC
Taurus Federal SWD #1
1026' FSL & 275' FWL
Sec 6, T22S, R34E
Lea County, NM

January 9, 2019

STATEMENT REGARDING SEISMICITY

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:

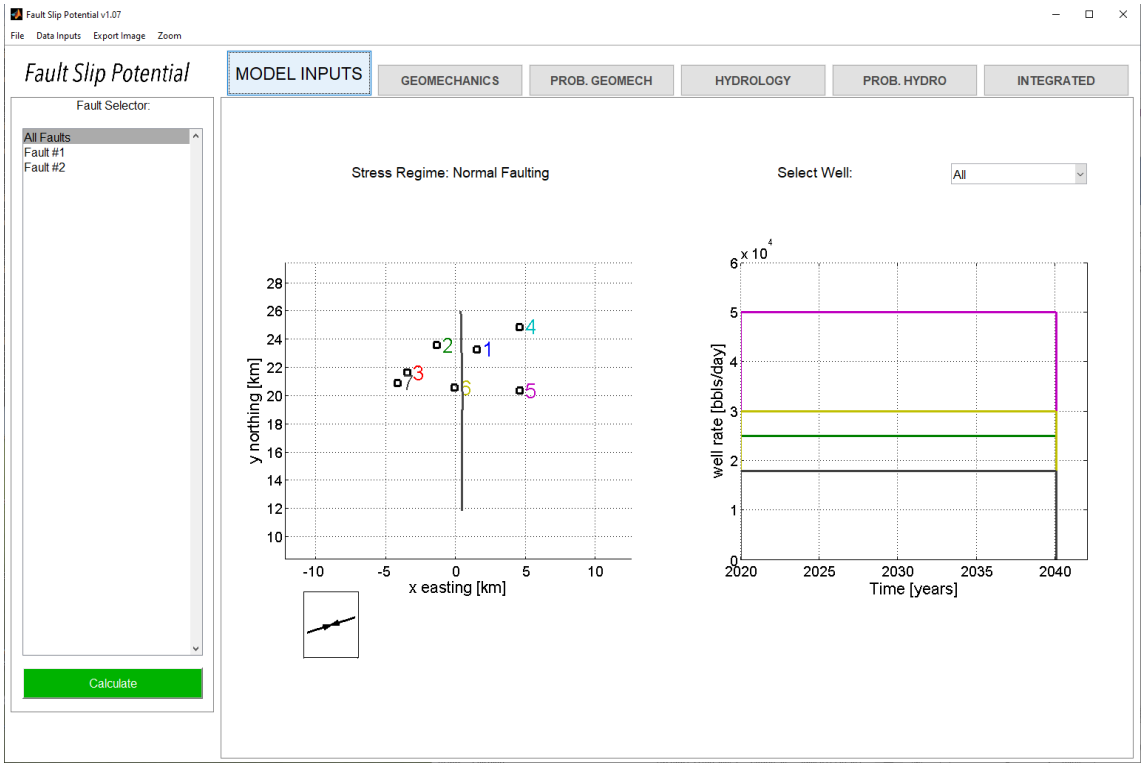
Magnitude	Date	Lat	Lon	Distance (mi.)	Bearing (°)
M2.9 USGS	12/4/1984	32.266	-103.556	10.63	257.46
M4.6 USGS	1/2/1992	32.336	-103.101	25.01	167.19
M3.3 USGS	6/2/2001	32.334	-103.141	22.76	165.54
M3.1 USGS	3/18/2012	32.281	-103.892	23.92	202.99

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. 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 a fault being stressed so as to create an induced seismic event.
6. This proposed SWD is 1.1 km from the nearest known fault, and there are an additional 6 Devonian applications within 6 km. Because of the fault proximity, these multiple offsetting applications as shown in the map and table below were used for the FSP analysis, whether approved or not. Constant maximum rates for 30 years were assumed.

Map #	Operator & Well Name	Lat	Lon	Max BBL/Day	Status
1	POP Taurus Federal SWD #1	32.4163	-103.516646	50,000	This Application
2	Advance Long Shot Unit SWD #1	32.41932	-103.546994	25,000	Application
3	POP Meteor Federal SWD #1	32.40179	-103.569512	50,000	Application
4	POP Python State SWD #1	32.43063	-103.484371	50,000	Application
5	POP Storm Federal SWD #1	32.39035	-103.484246	50,000	Application
6	Goodnight Elway SWD #1	32.39207	-103.533571	30,000	Application
7	Judah Doodle Bug State #1	32.39493	-103.576597	18,000	Expired Order



7. Two FSP scenarios were run:
    a. The first FSP scenario assumes PreCambrian faults as per the available data described above, with an improbable catastrophic well failure that would allow full rate injected water to penetrate the Montoya and Simpson permeability barriers, the Ellenburger, and the Cambrian to access the PreCambrian faults.

b. Because there is evidence that the PreCambrian faults extend into the Devonian in areas, we ran a second FSP scenario with Devonian depth & lithology assumptions.

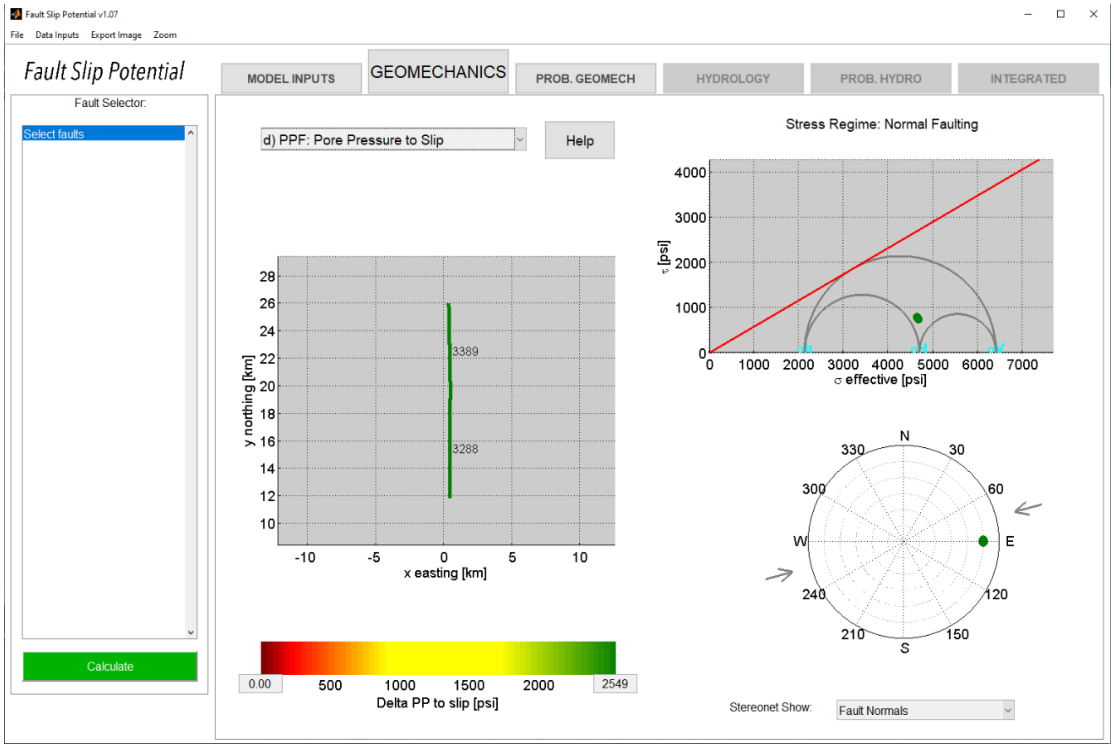
8. The probability of an induced seismic event in the PreCambrian is calculated to be 0% after 5, 10, 20, & 30 years as per the FSP results screenshots below. The probability of an induced seismic event in the Devonian is also calculated to be 0% after 5, 10, 20, & 30 years.
9. As per NM OCD requirements (injection well to injection well spacing minimum of 1.5 miles), this proposed above referenced SWD well is located 3.79 miles away from the nearest active or permitted Devonian disposal well, the Judah Oil Doodle Bug State #1 in Sec 16-22S-34E, although this SWD order shows to be expired as of the date of this application.

Part 6 a: PreCambrian Fault Scenario

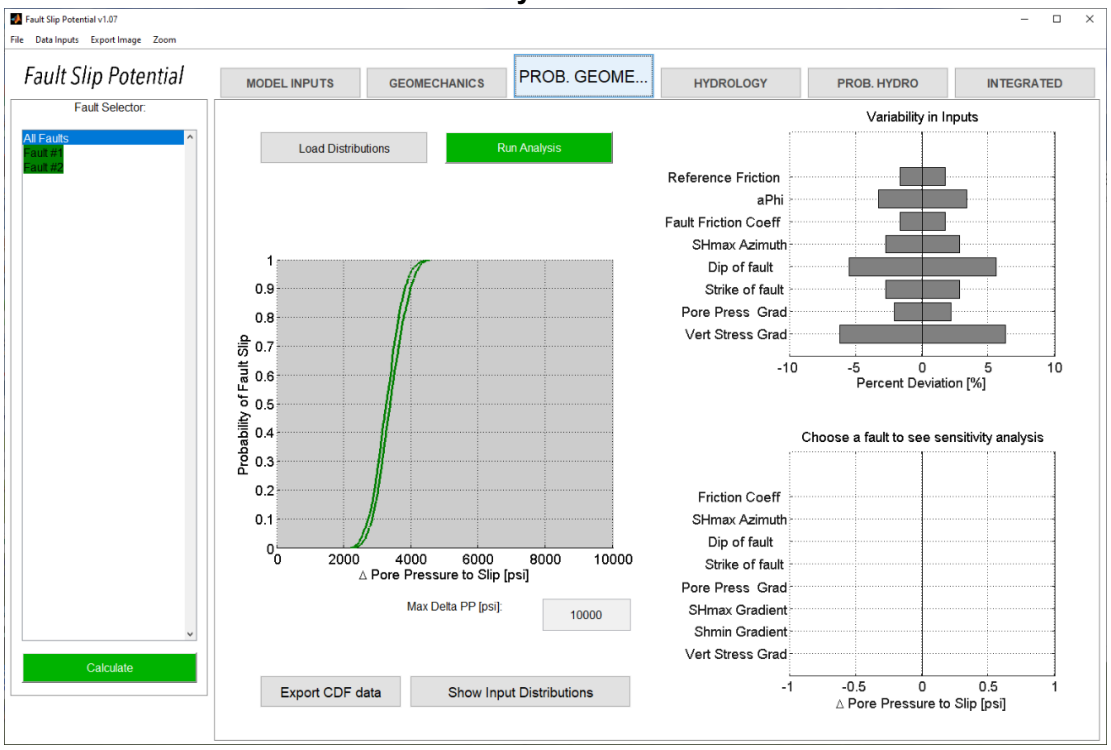
PreCambrian input assumptions:

Rate (BBL/day)	50000
Interval height (ft)	1000
Weighted Average Porosity (%)	3
Vert stress gradient (psi/ft)	0.8
Hor stress direction (deg N)	75
Fault dip (deg)	75
Ref depth (ft)	19400
Initial res press gradient (psi/ft)	0.47
A phi	0.6
Friction coefficient	0.58
Weighted Average perm (mD)	12.5
Fluid density (kg/m3)	1100
Dynamic viscosity (Pa-s)	0.0003
Fluid compressibility (/Pa)	4 e-10
Rock compressibility (/Pa)	1.08 e-09

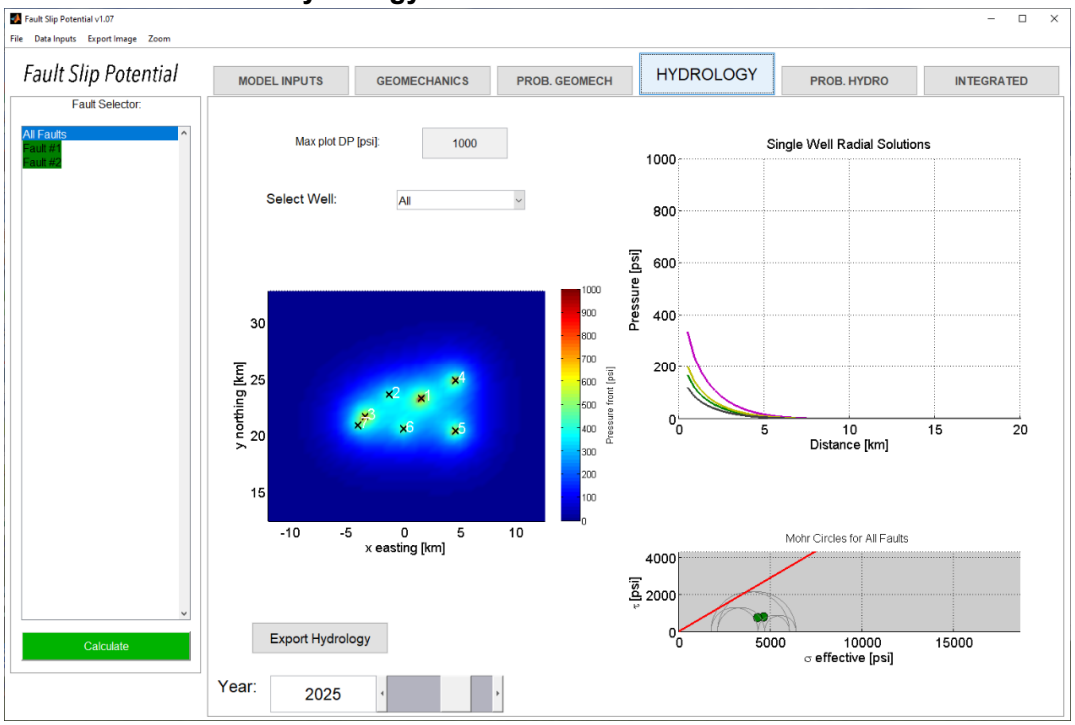
PreCambrian Geomechanics Pore Pressure to Slip



PreCambrian GeoMechanics Variability

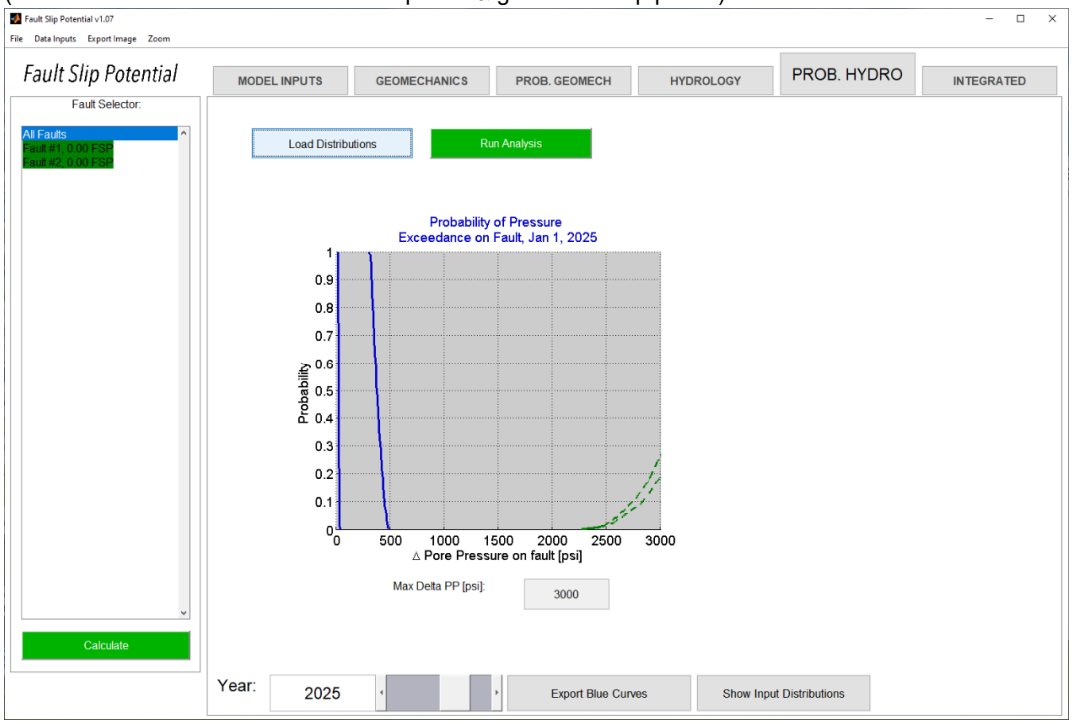


PreCambrian Year 5 Hydrology



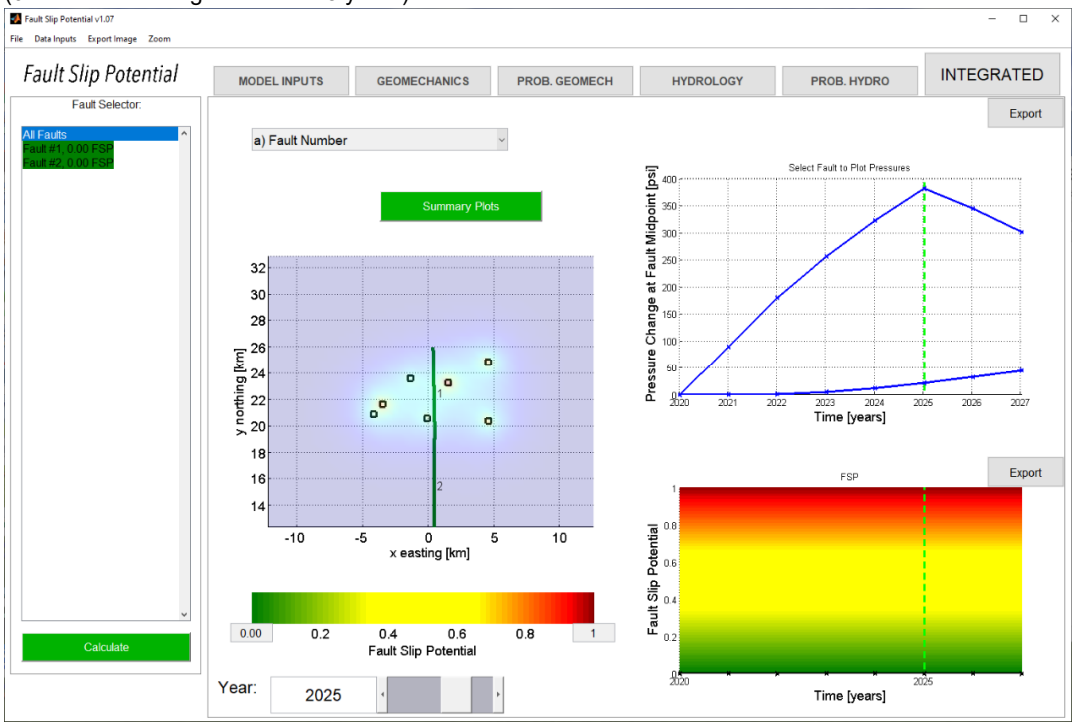
PreCambrian Year 5 Probabilistic Hydrology

(note no crossover between blue delta-press. & green fault slip press.)

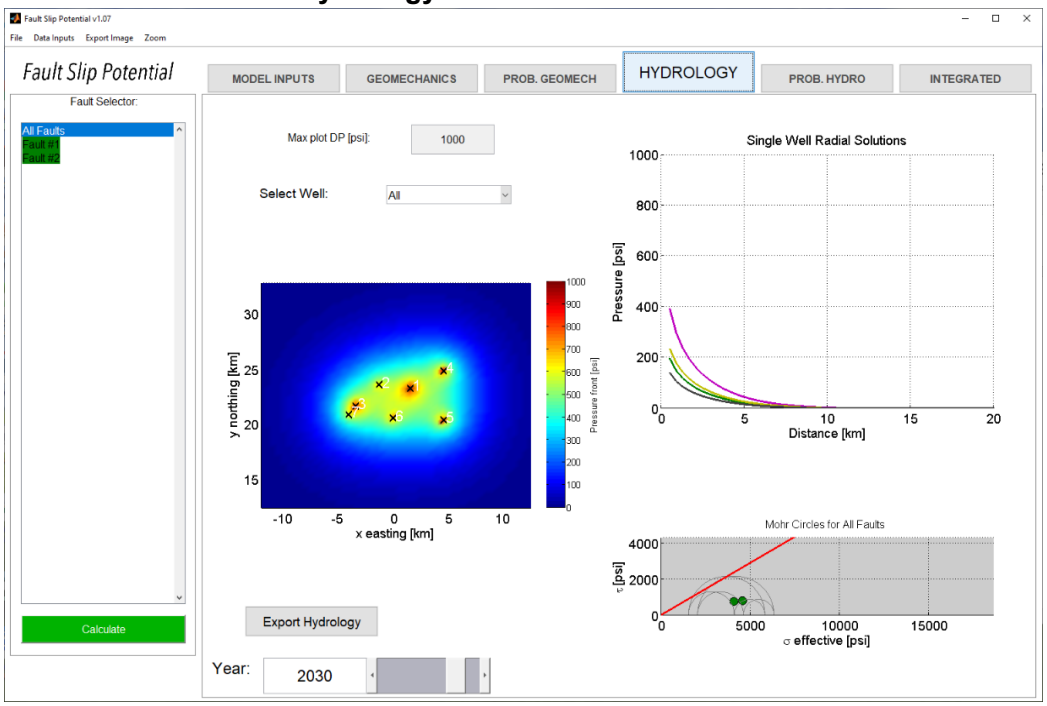


PreCambrian Year 5 Fault Slip Probability

(0% for all fault segments after 5 years)

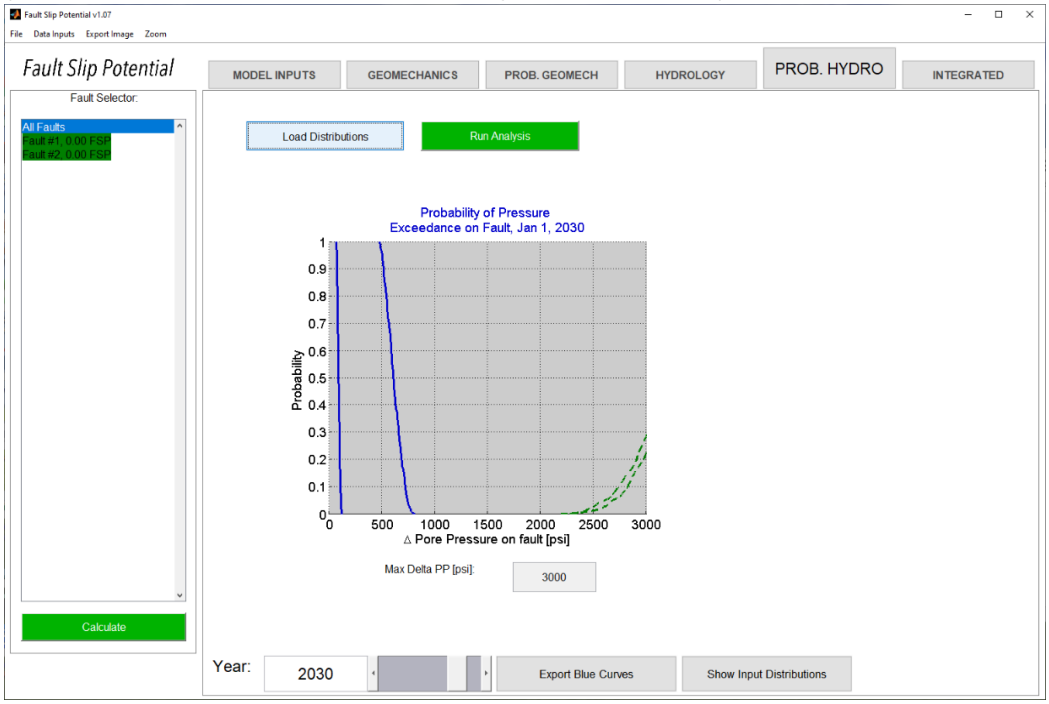


PreCambrian Year 10 Hydrology



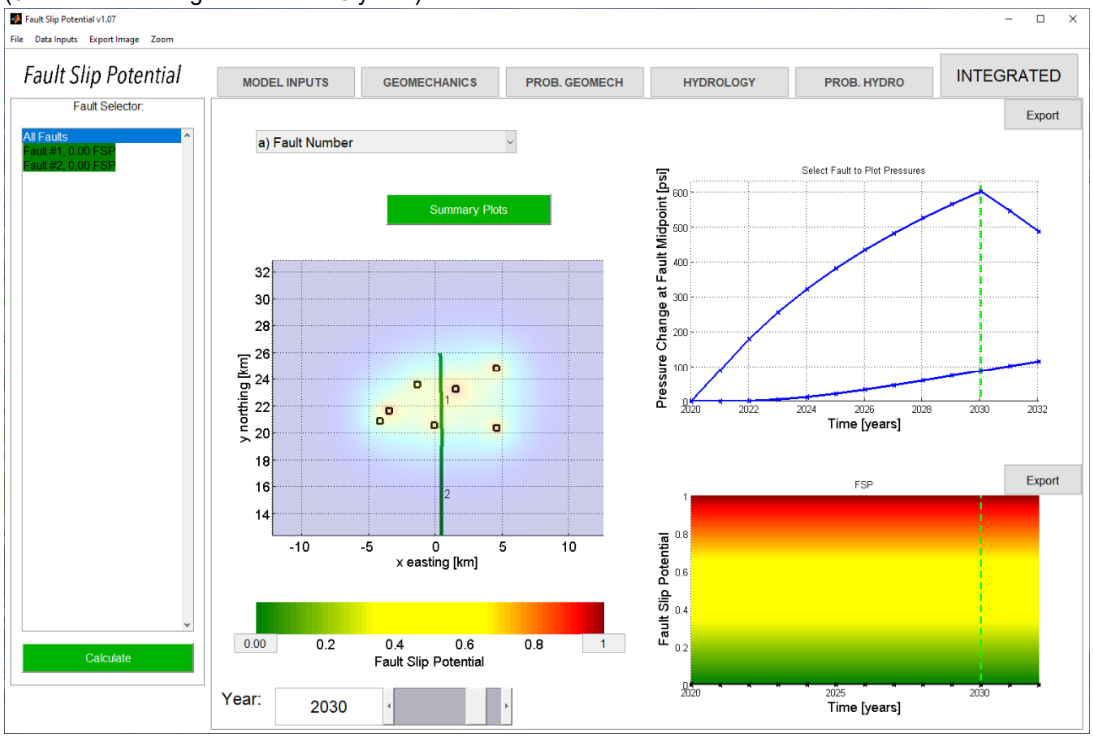
PreCambrian Year 10 Probabilistic Hydrology

(note no crossover between blue delta-press. & green fault slip press.)

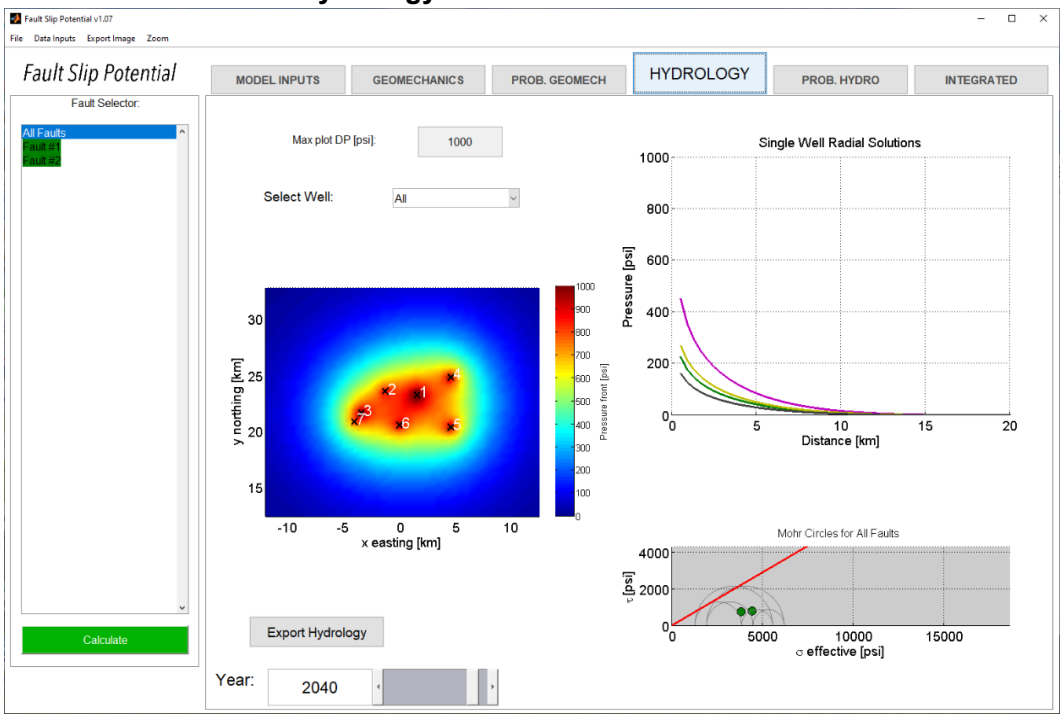


PreCambrian Year 10 Fault Slip Probability

(0% for all fault segments after 10 years)

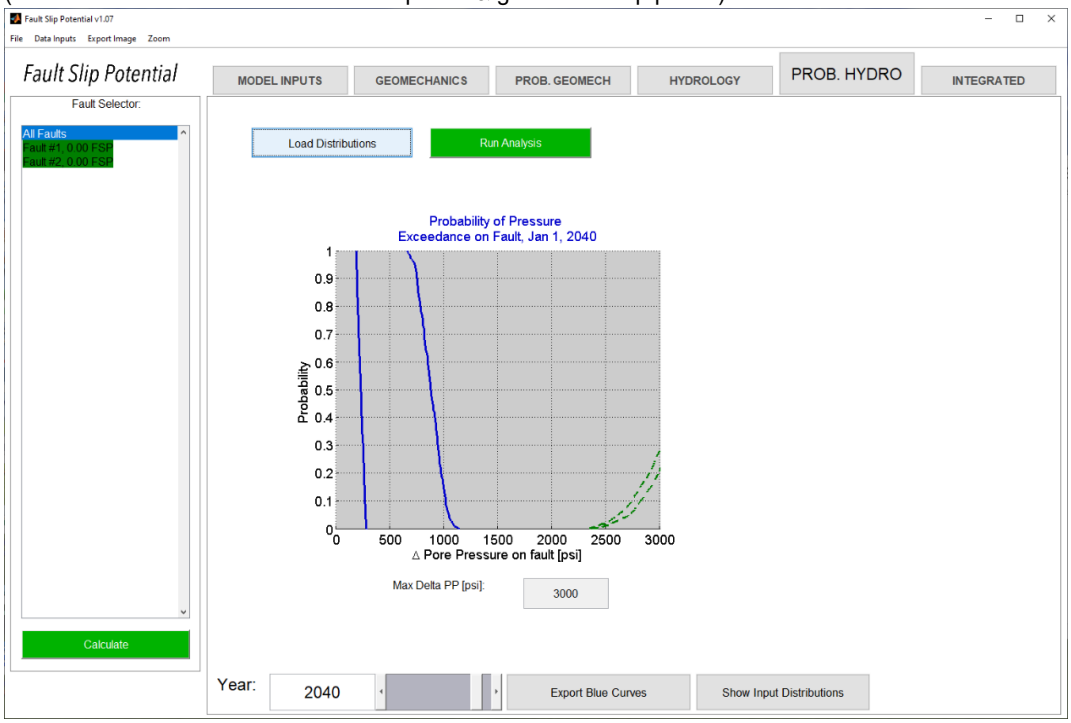


PreCambrian Year 20 Hydrology



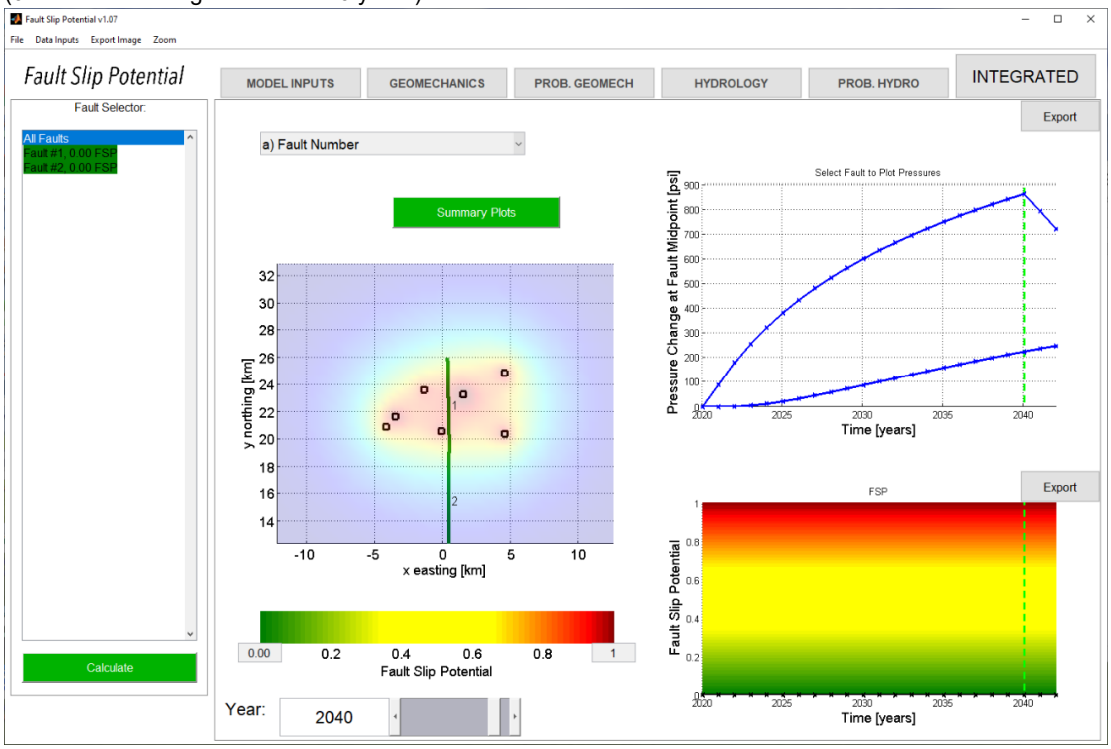
PreCambrian Year 20 Probabilistic Hydrology

(note no crossover between blue delta-press. & green fault slip press.)

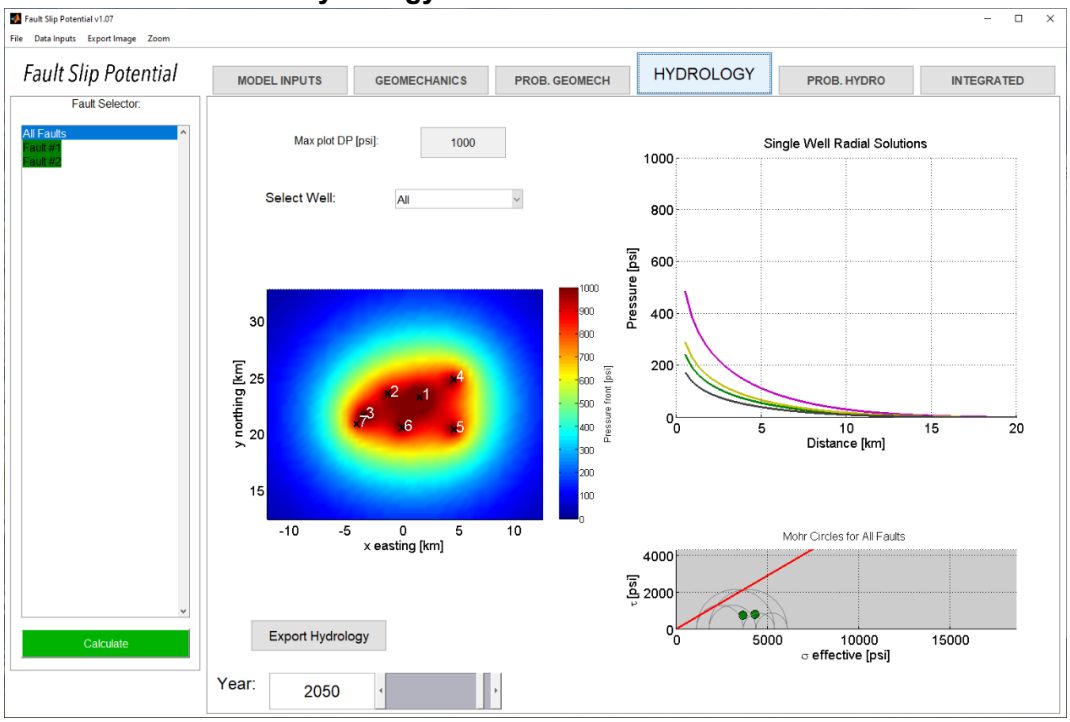


PreCambrian Year 20 Fault Slip Probability

(0% for all fault segments after 20 years)

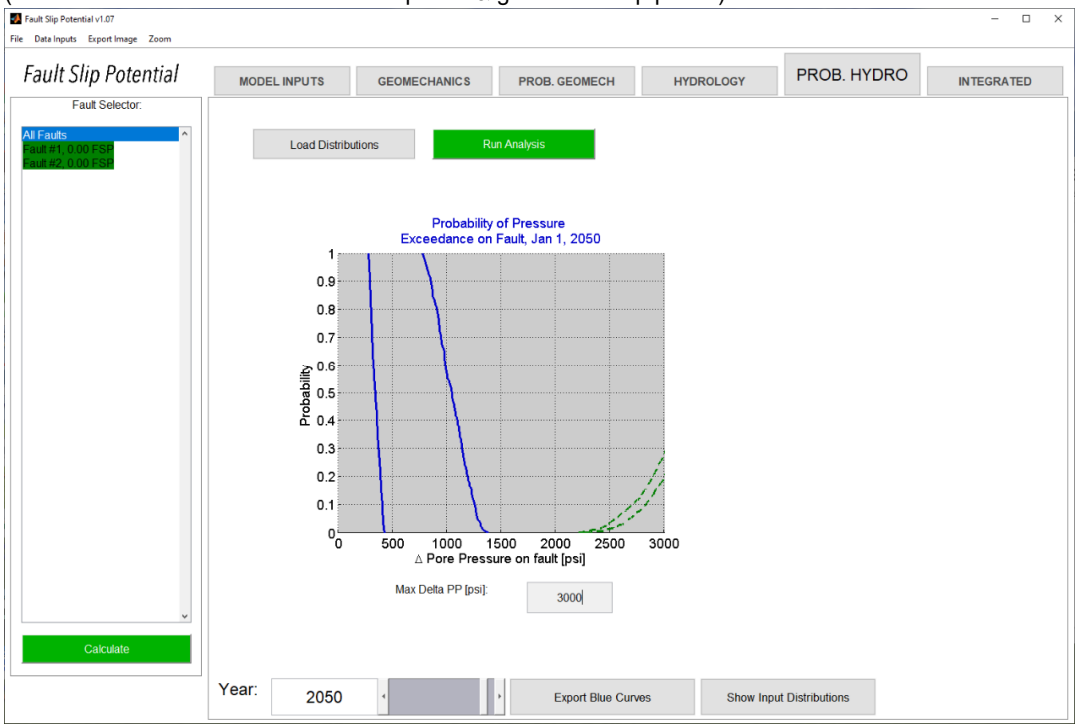


PreCambrian Year 30 Hydrology



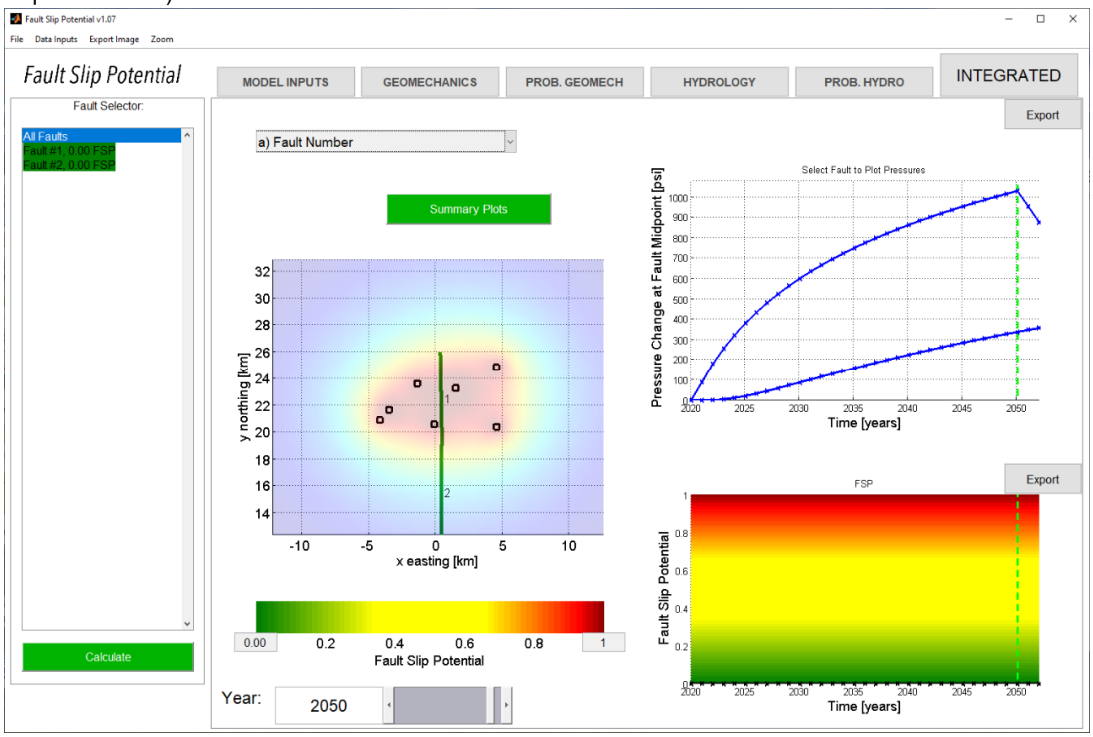
PreCambrian Year 30 Probabilistic Hydrology

(note no crossover between blue delta-press. & green fault slip press.)



PreCambrian Year 30 Fault Slip Probability

(0% for all fault segments after 30 years. 1000 psi fault delta pressure is much less than the 3389 psi required for fault slip in the closest fault segment #1, assuming all SWD applications in nearby area are approved and inject at full requested rates)

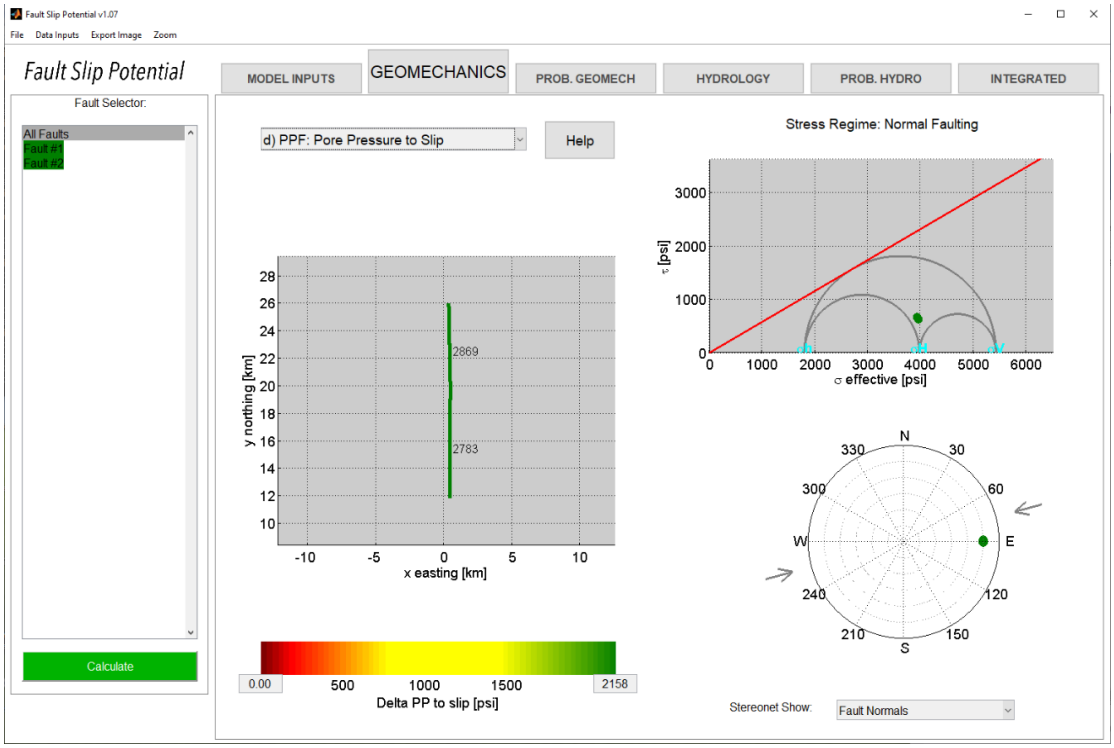


Part 6 b: Devonian Fault Scenario

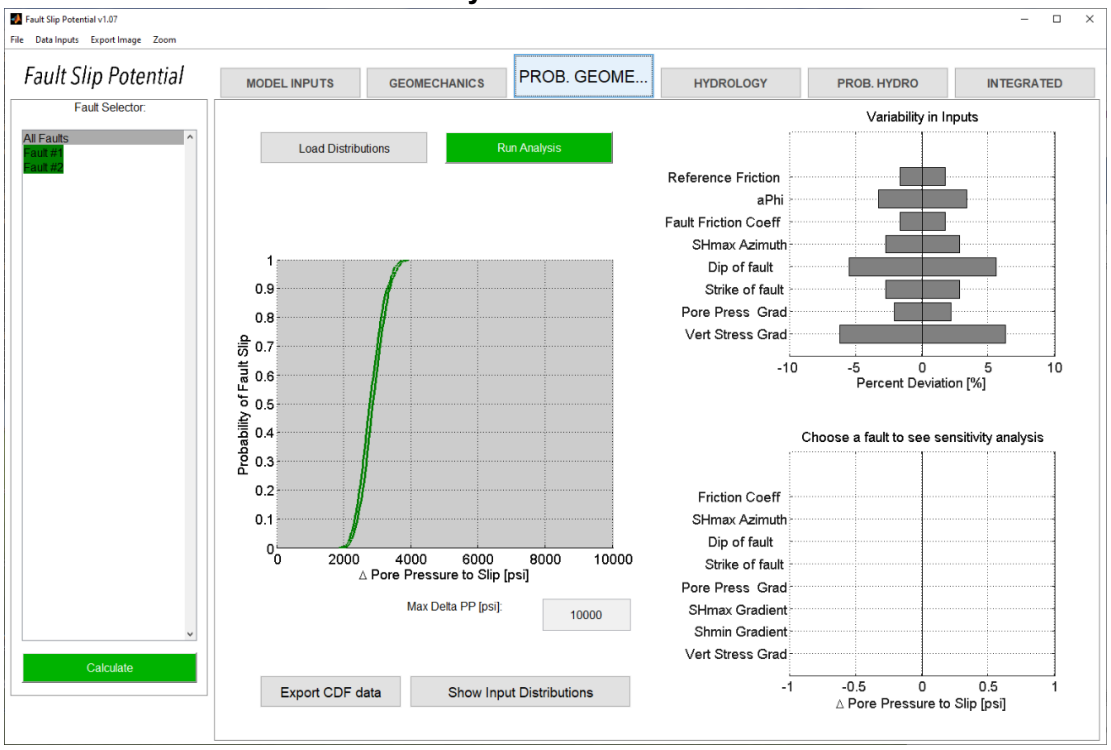
Devonian input assumptions:

Rate (BBL/day)	50000
Interval height (ft)	1445
Weighted Average Porosity (%)	3.3
Vert stress gradient (psi/ft)	0.8
Hor stress direction (deg N)	75
Fault dip (deg)	75
Ref depth (ft)	16424
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

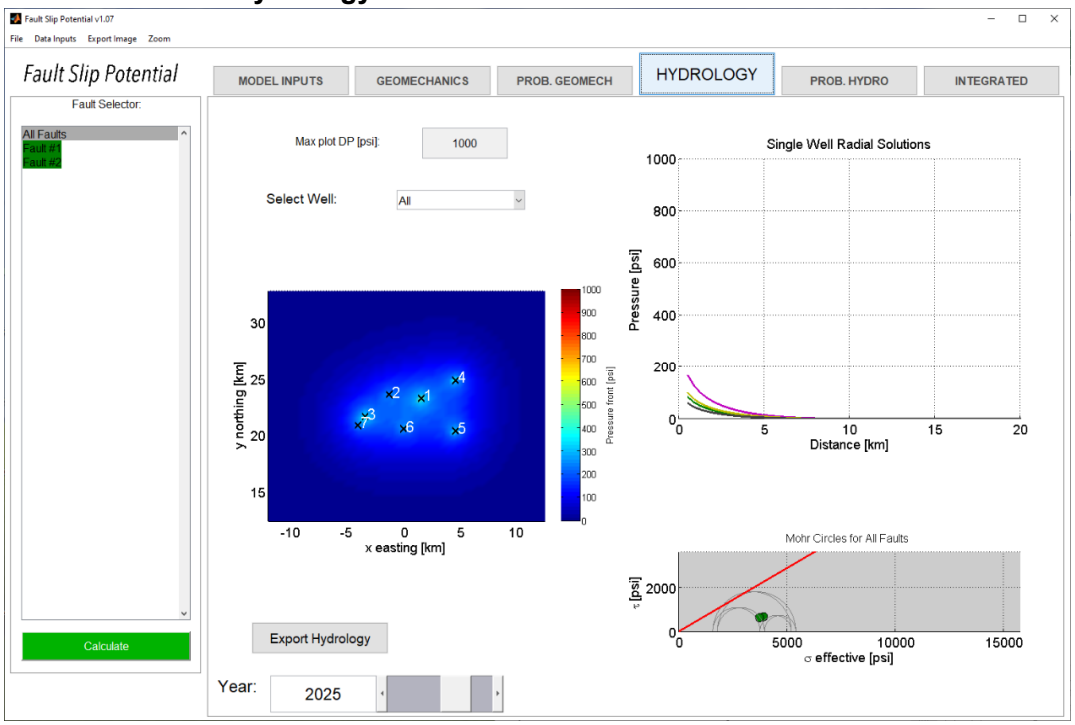
Devonian Geomechanics Pore Pressure to Slip



Devonian GeoMechanics Variability

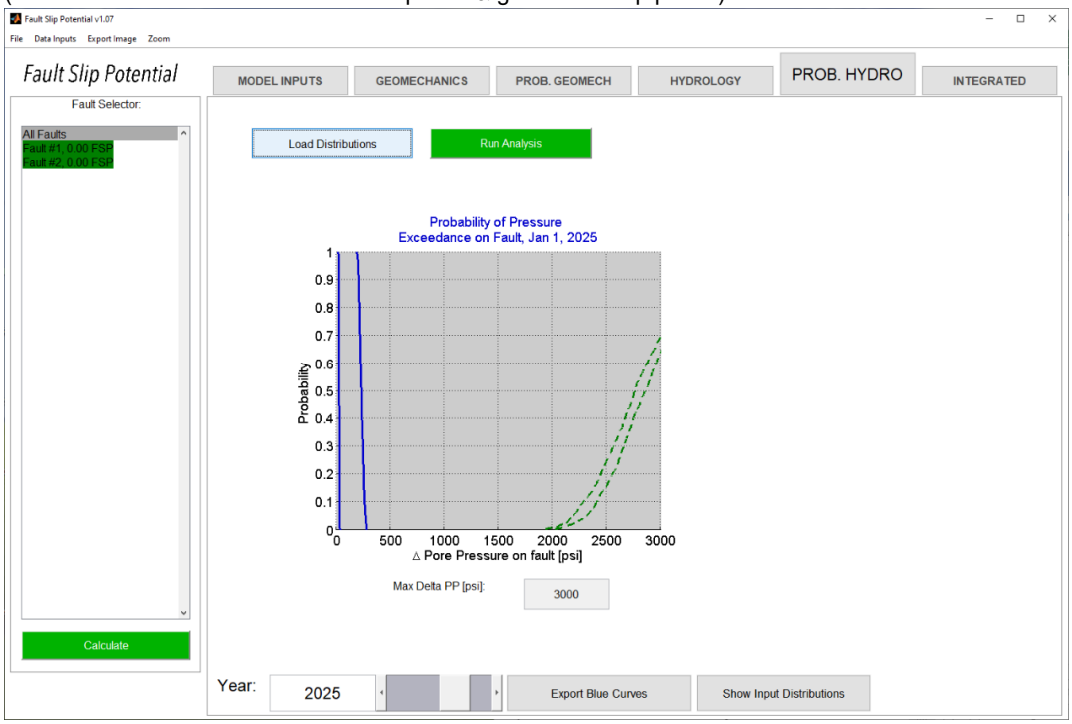


Devonian Year 5 Hydrology



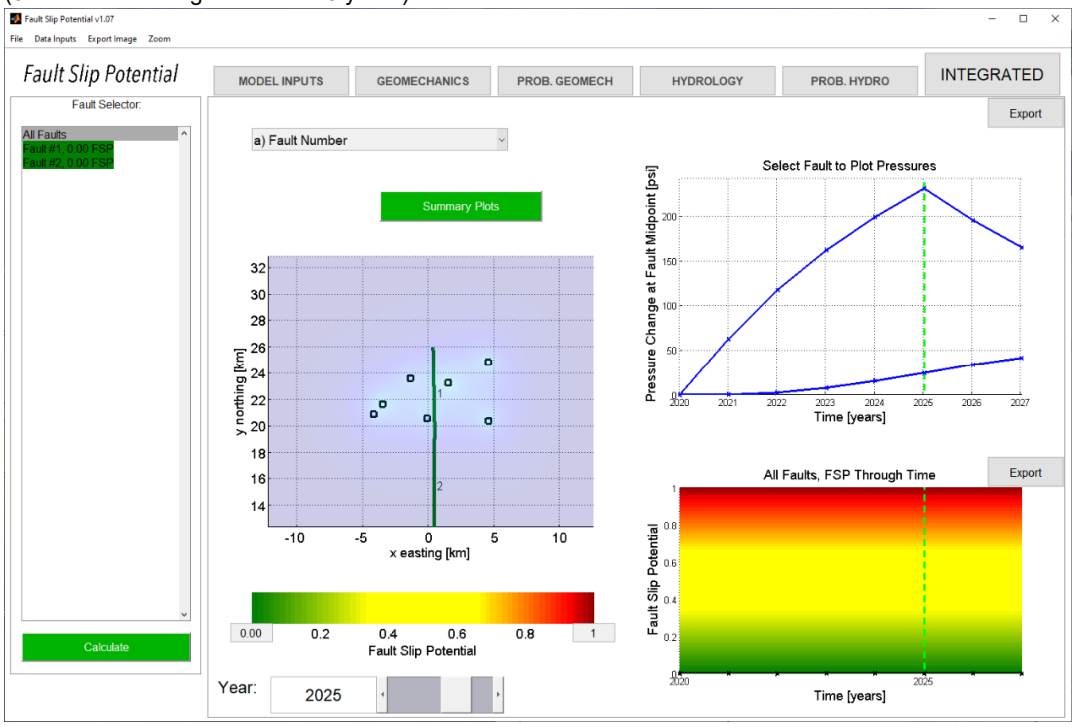
Devonian Year 5 Probabilistic Hydrology

(note no crossover between blue delta-press. & green fault slip press.)

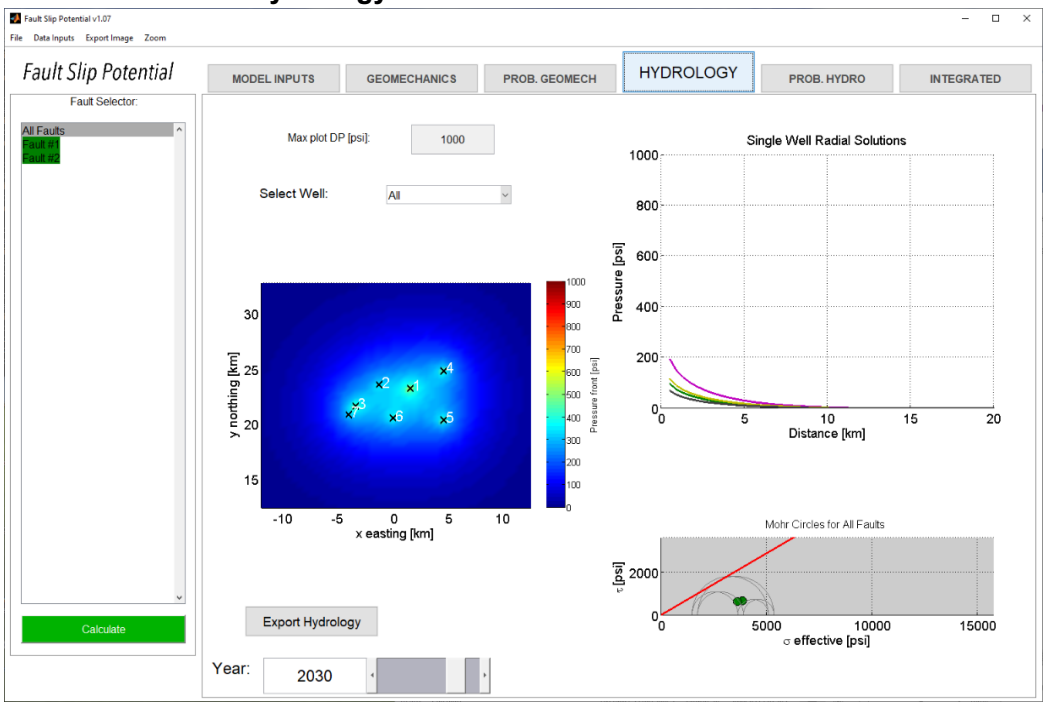


Devonian Year 5 Fault Slip Probability

(0% for all fault segments after 5 years)

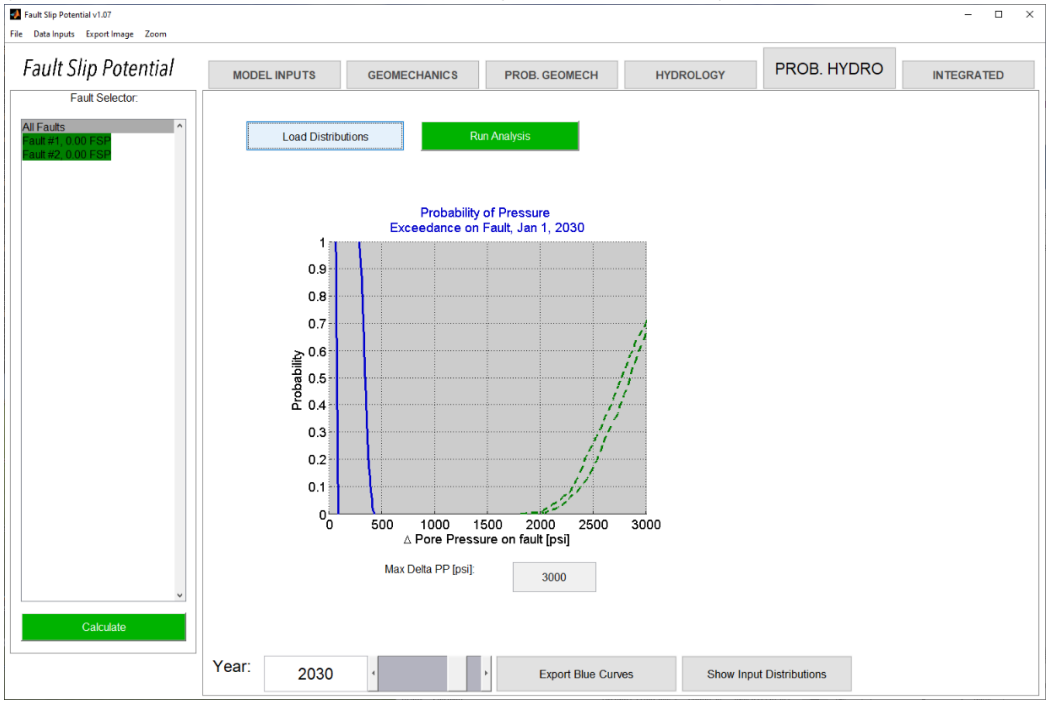


Devonian Year 10 Hydrology



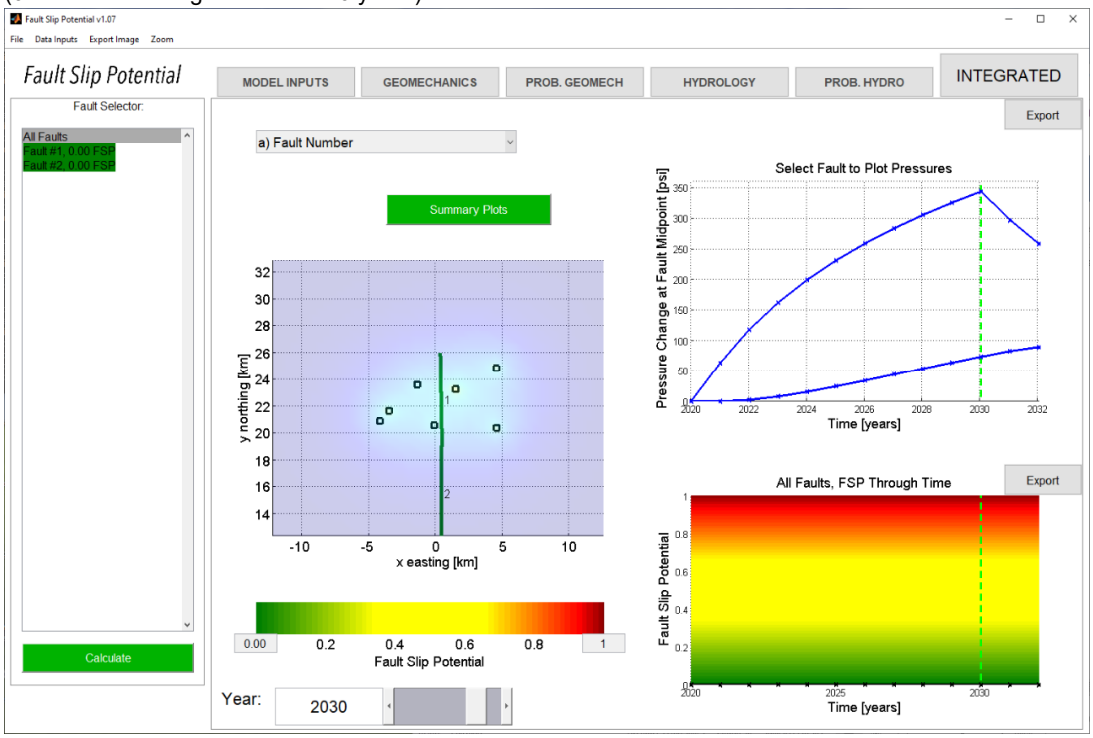
Devonian Year 10 Probabilistic Hydrology

(note no crossover between blue delta-press. & green fault slip press.)

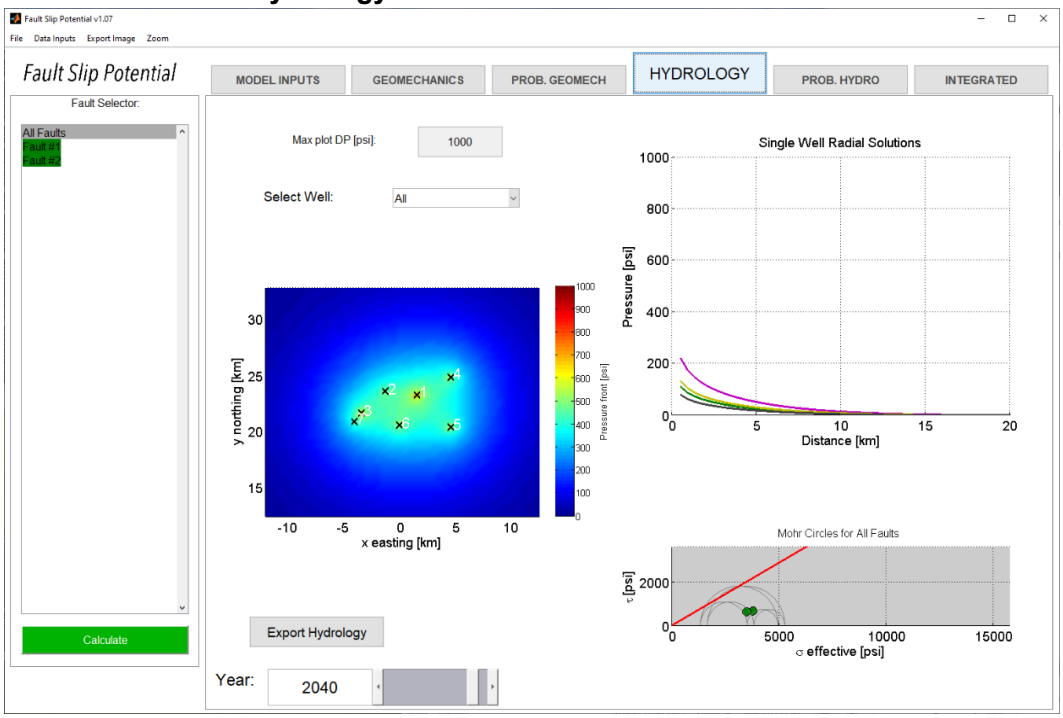


Devonian Year 10 Fault Slip Probability

(0% for all fault segments after 10 years)

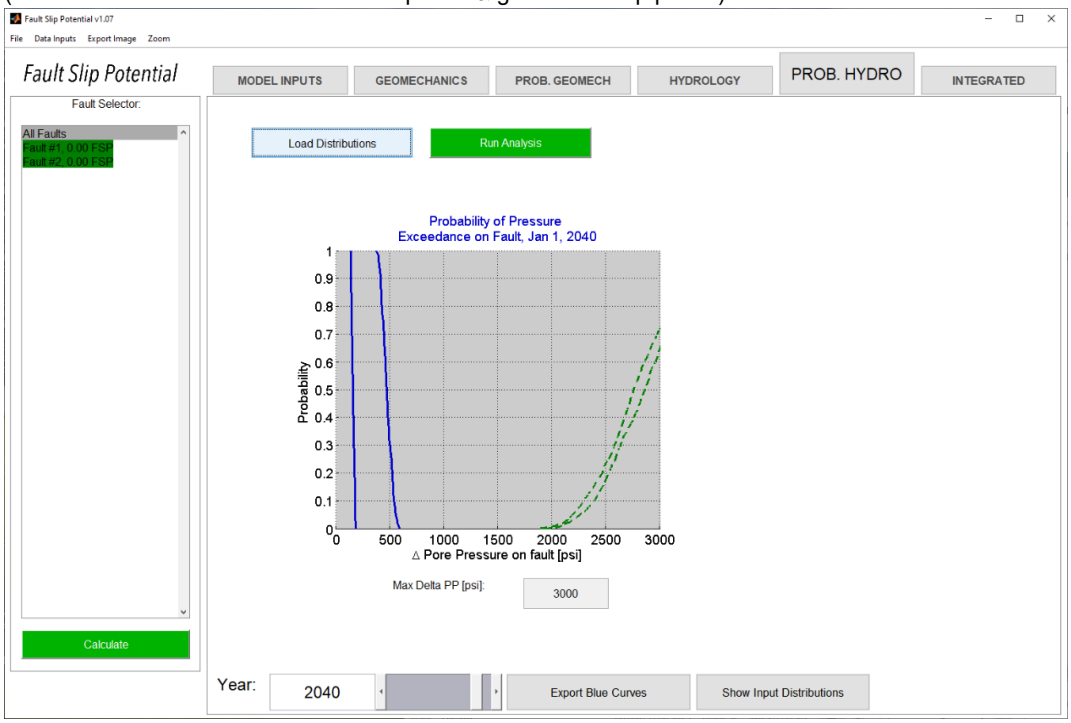


Devonian Year 20 Hydrology



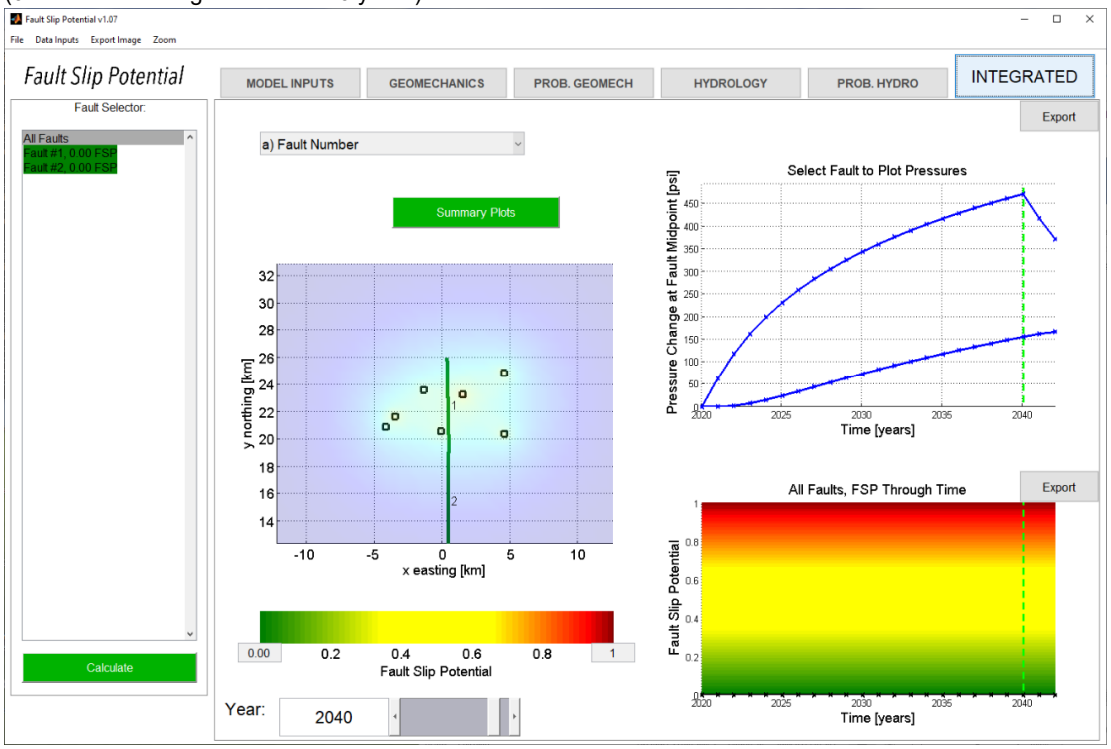
Devonian Year 20 Probabilistic Hydrology

(note no crossover between blue delta-press. & green fault slip press.)

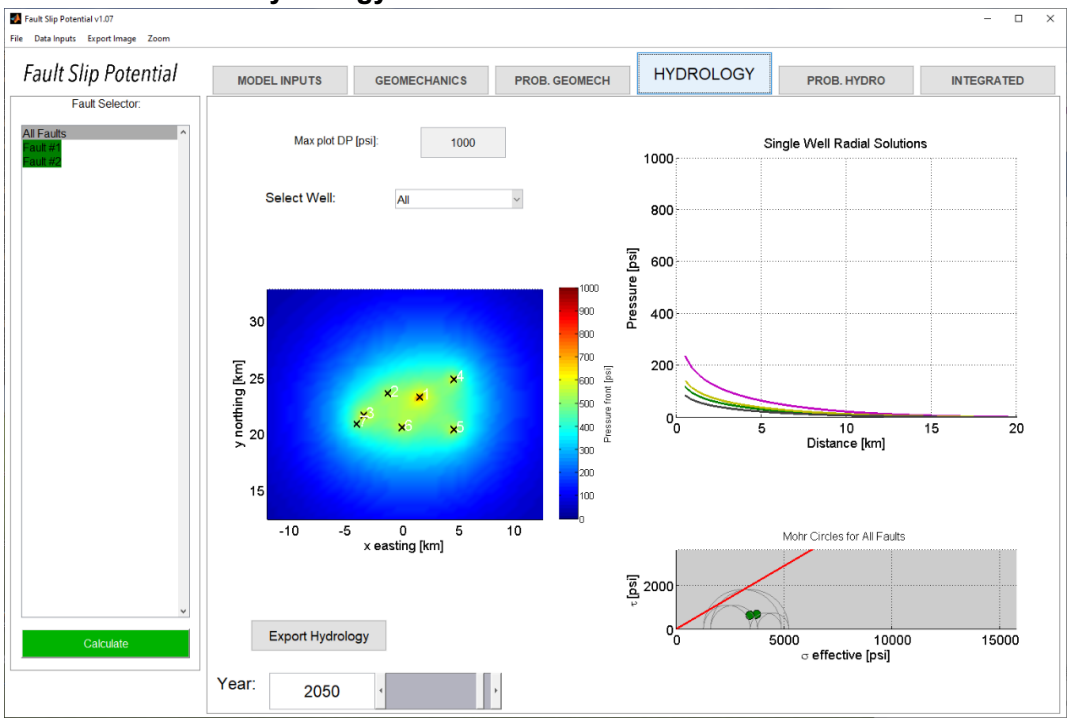


Devonian Year 20 Fault Slip Probability

(0% for all fault segments after 20 years)

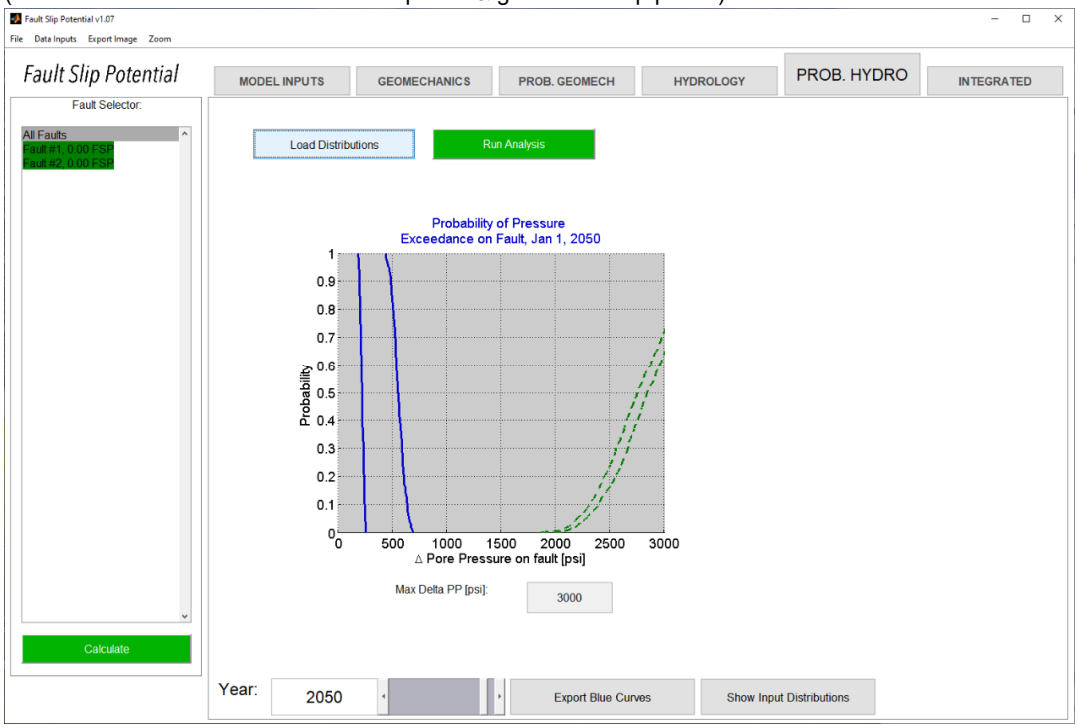


Devonian Year 30 Hydrology



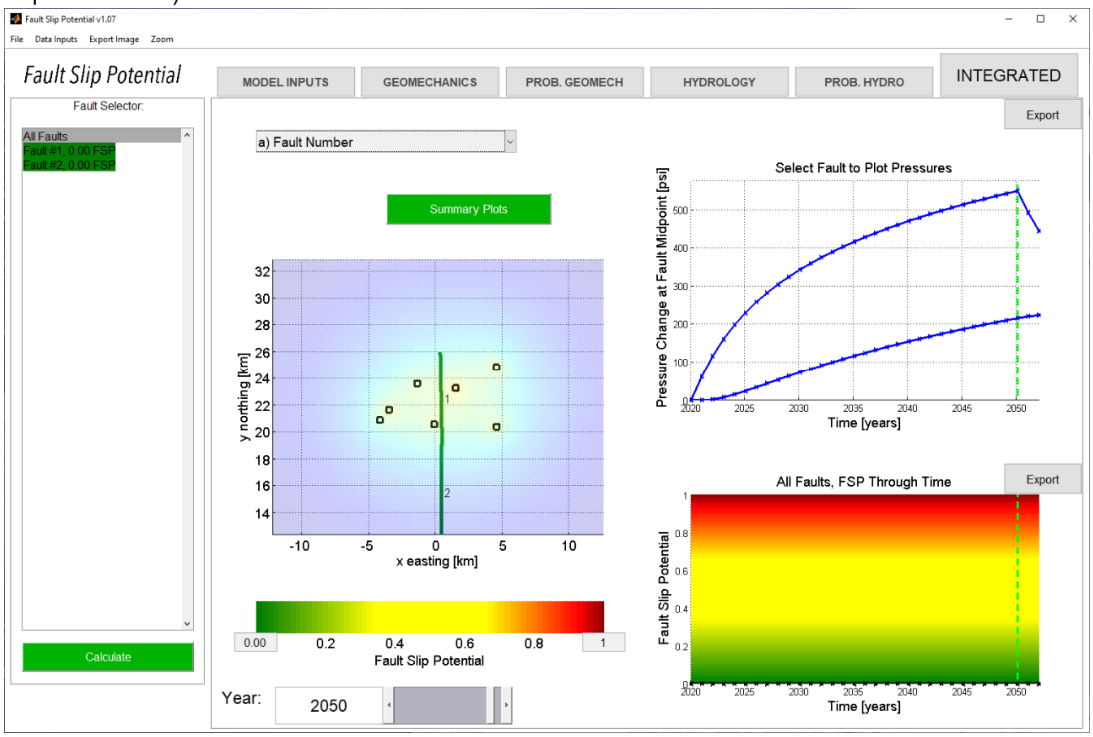
Devonian Year 30 Probabilistic Hydrology

(note no crossover between blue delta-press. & green fault slip press.)



Devonian Year 30 Fault Slip Probability

(0% for all fault segments after 30 years. 550 psi fault delta pressure is much less than the 2869 psi required for fault slip in the closest fault segment #1, assuming all SWD applications in nearby area are approved and inject at full requested rates.)



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