Initial Application Part I

Received: **07/30/2019**

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

RECEIVED: 07/30/2019	REVIEWER:	TYPE: SWD	APP NO: pMAM1921146826

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: Permian Oilfield Partners, LLC. **OGRID Number:** 328259
Well Name: Deluge Federal SWD #1 **API:** 30-025-Pending
Pool: SWD; Devonian-Silurian **Pool Code:** 97869

SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED BELOW

1) **TYPE OF APPLICATION:** Check those which apply for [A]

SWD-2214

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.

Gary E Fisher
Print or Type Name

Gary E Fisher
Signature

7-29-2019
Date

817-606-7630
Phone Number

gfisher@popmidstream.com
e-mail Address

PERMIAN OILFIELD
PARTNERS

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

Re: C-108 Application for SWD Well
Permian Oilfield Partners, LLC
Deluge Federal SWD #1
1673' FNL & 282' FWL
Sec 7, T26S, R34E
Lea County, NM

Mr. McMillan,
Attached is a C-108 Application for administrative approval of Permian Oilfield Partners LLC's proposed Deluge Federal SWD #1 located in Sec 7, Twp 26S, Rge 34E, Lea County, New Mexico. This well will be completed open hole in the Devonian-Silurian formation and will be operated as a commercial salt water 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: 7-29-2019

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: 7-23-2019

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: _____

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 15,951'

   Underlying Potentially Productive Zones:
   None

WELL CONSTRUCTION DATA

Permian Oilfield Partners, LLC.
Deluge Federal SWD #1
1673' FNL, 282' FWL
Sec. 7, T26S, R34E, Lea Co. NM
Lat 32.0606186° N, Lon 103.5166255° W
GL 3335', RKB 3355'

Surface - (Conventional)

Hole Size: 26" **Casing:** 20" - 94# H-40 & 106.5# J-55 STC Casing
Depth Top: Surface
Depth Btm: 1023'
Cement: 670 sks - Class C + Additives
Cement Top: Surface - (Circulate)

Intermediate #1 - (Conventional)

Hole Size: 17.5" **Casing:** 13.375" - 61# J-55 & 68# J-55 STC Casing
Depth Top: Surface
Depth Btm: 5365'
Cement: 1750 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: 12749' **ECP/DV Tool:** 5465'
Cement: 2166 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: 12549'
Depth Btm: 17970'
Cement: 259 sks - Lite Class C (60:40:0) + Additives
Cement Top: 12549' - (Volumetric)

Intermediate #4 - (Open Hole)

Hole Size: 6.5" **Depth:** 19765'
Inj. Interval: 17970' - 19765' (Open-Hole Completion)

Tubing - (Tapered)

Tubing Depth: 17925' **Tubing:** 7" - 26# HCP-110 FJ Casing & 5.5" 17# HCL-80 FJ Casing (Fiberglass Lined)
X/O Depth: 12549'
X/O: 7" 26# HCP-110 FJ Casing - X - 5.5" 17# HCL-80 FJ Casing (Fiberglass Lined)
Packer Depth: 17935' **Packer:** 5.5" - Perma-Pak or Equivalent (Inconel)

WELLBORE SCHEMATIC

Permian Oilfield Partners, LLC.
Deluge Federal SWD #1
1673' FNL, 282' FWL
Sec. 7, T26S, R34E, Lea Co. NM
Lat 32.0606186° N, Lon 103.5166255° W
GL 3335', RKB 3355'

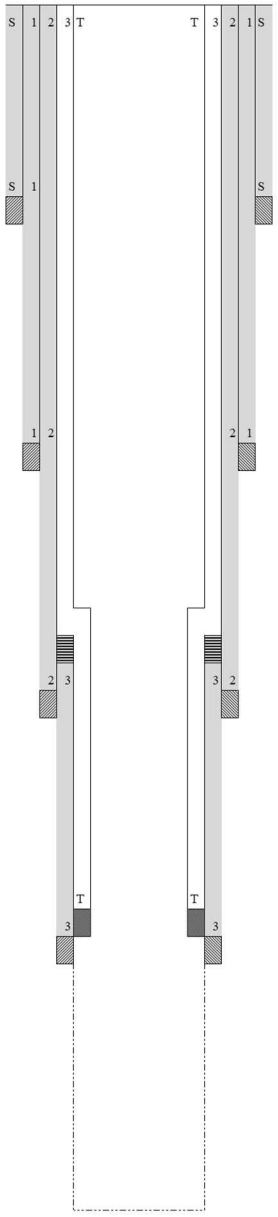
Surface - (Conventional)
Hole Size: 26"
Casing: 20" - 94# H-40 & 106.5# J-55 STC Casing
Depth Top: Surface
Depth Btm: 1023'
Cement: 670 sks - Class C + Additives
Cement Top: Surface - (Circulate)

Intermediate #1 - (Conventional)
Hole Size: 17.5"
Casing: 13.375" - 61# J-55 & 68# J-55 STC Casing
Depth Top: Surface
Depth Btm: 5365'
Cement: 1750 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: 12749'
Cement: 2166 sks - Lite Class C (60:40:0) + Additives
Cement Top: Surface - (Circulate)
ECP/DV Tool: 5465'

Intermediate #3 - (Liner)
Hole Size: 8.5"
Casing: 7.625" - 39# HCL-80 FJ Casing
Depth Top: 12549'
Depth Btm: 17970'
Cement: 259 sks - Lite Class C (60:40:0) + Additives
Cement Top: 12549' - (Volumetric)

Intermediate #4 - (Open Hole)
Hole Size: 6.5"
Depth: 19765'
Inj. Interval: 17970' - 19765' (Open-Hole Completion)



Tubing - (Tapered)
Tubing Depth: 17925'
Tubing: 7" - 26# HCP-110 FJ Casing & 5.5" 17# HCL-80 FJ Casing (Fiberglass Lined)
X/O Depth: 12549'
X/O: 7" 26# HCP-110 FJ Casing - X - 5.5" 17# HCL-80 FJ Casing (Fiberglass Lined)
Packer Depth: 17935'
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 3,594 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.
Deluge Federal SWD #1
1673' FNL, 282' FWL
Sec. 7, T26S, R34E, Lea Co. NM
Lat 32.0606186° N, Lon 103.5166255° W
GL 3335', RKB 3355'

GEOLOGY PROGNOSIS			
FORMATION	**TOP** KB TVD (ft)	**BOTTOM** KB TVD (ft)	**THICKNESS** (ft)
Salt	1,384	5,189	3,805
Delaware	5,340	9,396	4,056
Bone Spring	9,396	12,699	3,303
Wolfcamp	12,699	13,889	1,190
Lwr. Mississippian	17,443	17,708	265
Woodford	17,708	17,935	227
Devonian	17,935	19,059	1,124
Fusselman (Silurian)	19,059	19,790	731
Montoya (U. Ordovician)	19,790	20,289	499
Simpson (M. Ordovician	20,289	20,911	622

2. According to the New Mexico Office of the State Engineer, there is 1 fresh water well within the proposed well's one-mile area of review indicating the presence of freshwater at depths less than 250'. Regionally, shallow fresh water is known to exist at depths less than 750'. 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 is 1 fresh water well within the proposed well's one-mile area of review. Attempts were made to sample the below listed well but it was unable to be located, and is presumed to be plugged. POD data is attached.

Well Name	Formation Name	Depth Top	Depth Bottom	Thickness	Status
C 02295	None Given	200’	250’	50’	**Inactive**

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	2 Pool Code	3 Pool Name
30-025-	97869	SWD; DEVONIAN-SILURIAN

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

7 OGRID NO.	8 Operator Name	9 Elevation
328259	PERMIAN OILFIELD PARTNERS, LLC	3335'

10 Surface Location

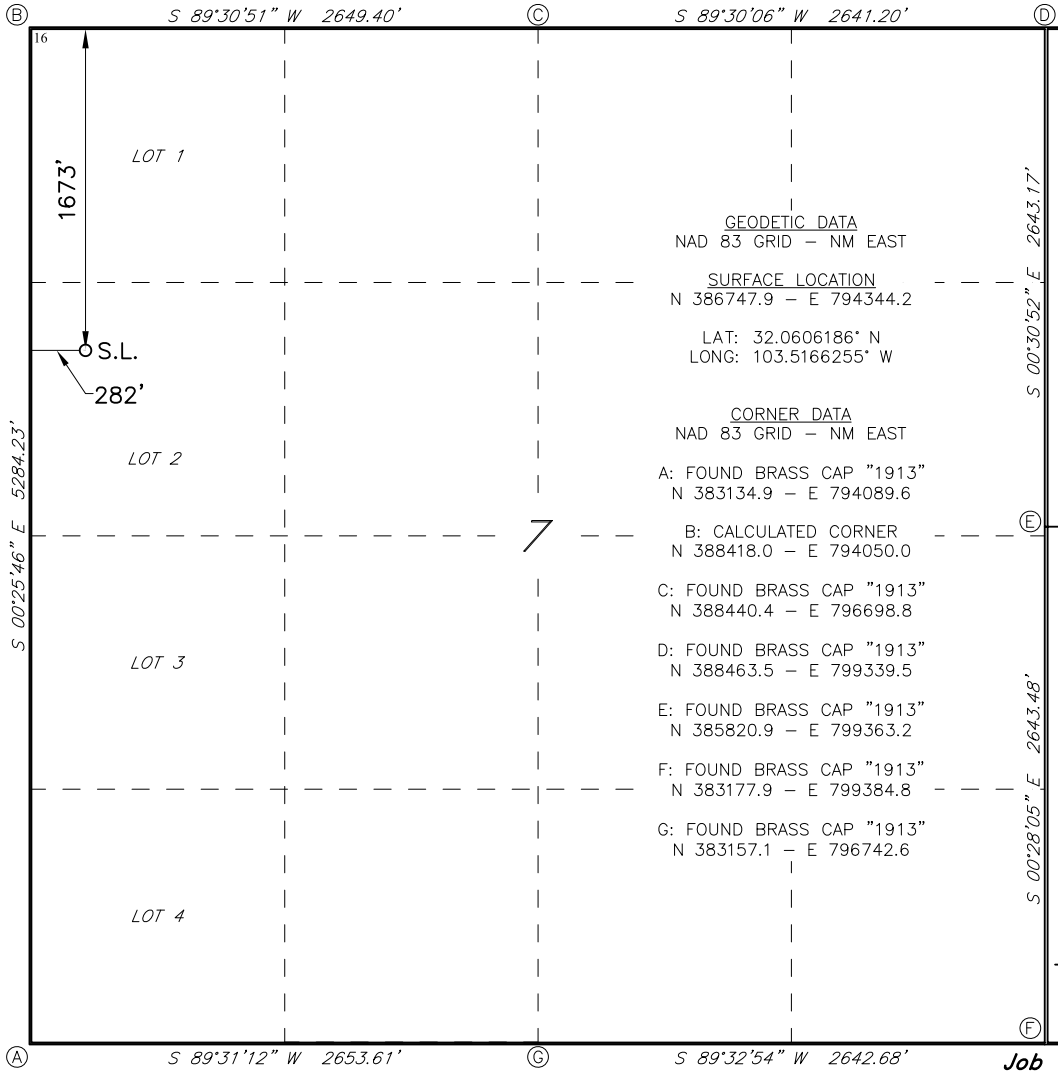
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet From the	East/West line	County
2	7	26S	34E		1673	NORTH	282	WEST	LEA

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 7-12-2019
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.

05-16-2019
Date of Survey

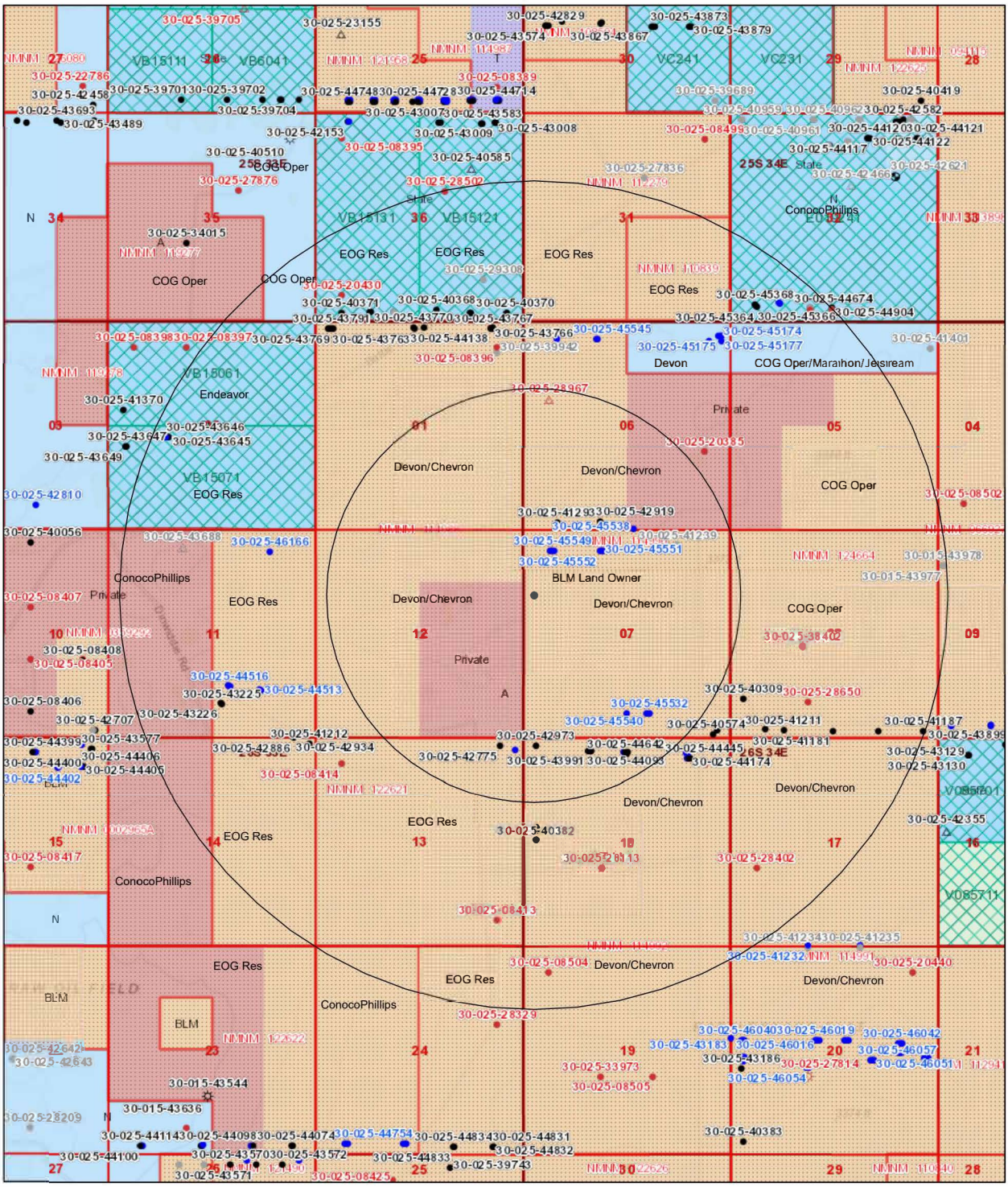
Signature and Seal of Professional Surveyor:

JEFFREY L. FANSLER
NEW MEXICO
10034
PROFESSIONAL SURVEYOR

10034
Certificate Number

Job No.: LS19050556

1 & 2 Mile AOR, Deluge Federal SWD #1



7/22/2019, 7:40:02 PM

1:36,112

0 0.35 0.7 1.4 mi

0 0.5 1 2 km

- 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
- Water, New
- Water, Plugged
- Water, Temporarily Abandoned
- PLSS First Division

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

Deluge 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
30-025-28967	DEVON ENERGY PRODUCTION COMPANY, LP	N E SALADO DRAW DEEP FEDERAL	#001	Oil	Vertical	Plugged, Site Released	06	T26S	R34E	E	E-06-26S-34E Lot: 2 1980 FNL 660 FWL	E-06-26S-34E Lot: 2 1980 FNL 660 FWL	MORROW	16320	16320
30-025-41239	DEVON ENERGY PRODUCTION COMPANY, LP	ICHABOD 7 FEDERAL	#002H	Oil	Horizontal	Cancelled Apd	07	T26S	R34E	B	B-07-26S-34E 380 FNL 1336 FEL	O-07-26S-34E 330 FSL 1386 FEL	BONE SPRING	14277	10000
30-025-41293	DEVON ENERGY PRODUCTION COMPANY, LP	SALADO DRAW 6 FEDERAL	#001H	Oil	Horizontal	Active	06	T26S	R34E	M	M-06-26S-34E Lot: 4 200 FSL 875 FWL	D-06-26S-34E Lot: 1 334 FNL 448 FWL	BONE SPRING	17070	12437
30-025-42775	DEVON ENERGY PRODUCTION COMPANY, LP	SEAWOLF 12 1 FEDERAL	#001H	Oil	Horizontal	Active	13	T26S	R33E	A	A-13-26S-33E 200 FNL 575 FEL	A-01-26S-33E 330 FNL 753 FEL	BONE SPRING	20039	9668
30-025-42919	DEVON ENERGY PRODUCTION COMPANY, LP	SALADO DRAW 6 FEDERAL	#002H	Oil	Horizontal	Active	06	T26S	R34E	N	N-06-26S-34E 200 FSL 1980 FWL	C-06-26S-34E 334 FNL 1884 FWL	BONE SPRING	16900	12412
30-025-42973	DEVON ENERGY PRODUCTION COMPANY, LP	FIGHTING OKRA 18 19 FEDERAL	#071H	Oil	Horizontal	Active	18	T26S	R34E	D	D-18-26S-34E Lot: 1 200 FNL 330 FWL	M-19-26S-34E Lot: 4 350 FSL 365 FWL	WOLFCAMP	22587	12769
30-025-43990	DEVON ENERGY PRODUCTION COMPANY, LP	JAYHAWK 7 6 FEDERAL FEE COM	#081H	Oil	Horizontal	New	18	T26S	R34E	D	D-18-26S-34E Lot: 1 325 FNL 380 FWL	D-06-26S-34E Lot: 1 330 FNL 380 FWL	WOLFCAMP	23117	12792
30-025-43991	DEVON ENERGY PRODUCTION COMPANY, LP	FIGHTING OKRA 18 19 FEDERAL	#002H	Oil	Horizontal	Active	18	T26S	R34E	C	C-18-26S-34E 330 FNL 1665 FWL	D-19-26S-34E Lot: 1 211 FSL 1663 FWL	WOLFCAMP	22728	12789
30-025-43992	DEVON ENERGY PRODUCTION COMPANY, LP	FIGHTING OKRA 18 19 FEDERAL	#014H	Oil	Horizontal	New	18	T26S	R34E	C	C-18-26S-34E 330 FNL 1695 FWL	N-19-26S-34E 330 FSL 1620 FWL	WOLFCAMP	22967	12810
30-025-44093	DEVON ENERGY PRODUCTION COMPANY, LP	FIGHTING OKRA 18 19 FEDERAL	#007H	Oil	Horizontal	Active	18	T26S	R34E	C	C-18-26S-34E 330 FNL 1725 FWL	N-20-26S-34E 199 FSL 2275 FWL	WOLFCAMP	22988	12911
30-025-44172	DEVON ENERGY PRODUCTION COMPANY, LP	FIGHTING OKRA 18 19 FEDERAL	#003H	Oil	Horizontal	Active	18	T26S	R34E	C	C-18-26S-34E 330 FNL 1755 FWL	N-19-26S-34E 209 FSL 2270 FWL	WOLFCAMP	22596	12713
30-025-44427	DEVON ENERGY PRODUCTION COMPANY, LP	FIGHTING OKRA 18 19 FEDERAL	#005H	Oil	Horizontal	Active	18	T26S	R34E	C	C-18-26S-34E 375 FNL 2605 FWL	O-19-26S-34E 186 FSL 2367 FEL	WOLFCAMP	22906	12822
30-025-44444	DEVON ENERGY PRODUCTION COMPANY, LP	FIGHTING OKRA 18 19 FEDERAL	#004H	Oil	Horizontal	Active	18	T26S	R34E	B	B-18-26S-34E 375 FNL 2631 FEL	O-19-26S-34E 234 FSL 1687 FEL	WOLFCAMP	22620	12707
30-025-44498	DEVON ENERGY PRODUCTION COMPANY, LP	FIGHTING OKRA 18 19 FEDERAL	#015H	Oil	Horizontal	New	18	T26S	R34E	C	C-18-26S-34E 375 FNL 2575 FWL	C-18-26S-34E 330 FSL 2340 FEL	BONE SPRING	22298	12524
30-025-44642	DEVON ENERGY PRODUCTION COMPANY, LP	FIGHTING OKRA 18 19 FEDERAL	#008H	Oil	Horizontal	Active	18	T26S	R34E	C	C-18-26S-34E 375 FNL 2635 FWL	O-19-26S-34E 6 FSL 1671 FEL	WOLFCAMP	23240	12946
30-025-45532	DEVON ENERGY PRODUCTION COMPANY, LP	JAYHAWK 7 6 FEDERAL FEE COM	#006H	Oil	Horizontal	New	07	T26S	R34E	O	O-07-26S-34E 615 FSL 2060 FEL	A-06-26S-34E 20 FNL 360 FEL	WOLFCAMP	23262	12850
30-025-45538	DEVON ENERGY PRODUCTION COMPANY, LP	JAYHAWK 7 6 FEDERAL FEE COM	#007H	Oil	Horizontal	New	07	T26S	R34E	O	O-07-26S-34E 615 FSL 2090 FEL	A-06-26S-34E 20 FNL 980 FEL	WOLFCAMP	22958	12770
30-025-45539	DEVON ENERGY PRODUCTION COMPANY, LP	JAYHAWK 7 6 FEDERAL FEE COM	#008H	Oil	Horizontal	New	07	T26S	R34E	O	O-07-26S-34E 615 FSL 2120 FEL	B-06-26S-34E 20 FNL 1660 FEL	WOLFCAMP	22951	12672
30-025-45540	DEVON ENERGY PRODUCTION COMPANY, LP	JAYHAWK 7 6 FEDERAL FEE COM	#016H	Oil	Horizontal	New	07	T26S	R34E	O	O-07-26S-34E 615 FSL 2150 FEL	B-06-26S-34E 21 FNL 2300 FEL	WOLFCAMP	22859	12750
30-025-45547	DEVON ENERGY PRODUCTION COMPANY, LP	JAYHAWK 7 FEDERAL	#009H	Oil	Horizontal	New	07	T26S	R34E	C	C-07-26S-34E 540 FNL 2075 FWL	N-07-26S-34E 20 FSL 2320 FWL	WOLFCAMP	17631	12830
30-025-45548	DEVON ENERGY PRODUCTION COMPANY, LP	JAYHAWK 7 FEDERAL	#010H	Oil	Horizontal	New	07	T26S	R34E	C	C-07-26S-34E 540 FNL 2045 FWL	N-07-26S-34E 20 FSL 2310 FWL	WOLFCAMP	17563	12652
30-025-45549	DEVON ENERGY PRODUCTION COMPANY, LP	JAYHAWK 7 FEDERAL	#011H	Oil	Horizontal	New	07	T26S	R36E	D	D-07-26S-36E Lot: 1 540 FNL 770 FWL	N-07-26S-34E 20 FSL 1660 FWL	WOLFCAMP	17701	12730
30-025-45550	DEVON ENERGY PRODUCTION COMPANY, LP	JAYHAWK 7 FEDERAL	#012H	Oil	Horizontal	New	07	T26S	R34E	M	M-07-26S-34E Lot: 4 540 FNL 800 FWL	M-07-26S-34E Lot: 4 20 FSL 1010 FWL	WOLFCAMP	17715	12810
30-025-45551	DEVON ENERGY PRODUCTION COMPANY, LP	JAYHAWK 7 FEDERAL	#013H	Oil	Horizontal	New	07	T26S	R34E	C	C-07-26S-34E 540 FNL 2015 FWL	M-07-26S-34E Lot: 4 20 FSL 1010 FWL	WOLFCAMP	17436	12662
30-025-45552	DEVON ENERGY PRODUCTION COMPANY, LP	JAYHAWK 7 FEDERAL	#017H	Oil	Horizontal	New	07	T26S	R34E	C	C-07-26S-34E 540 FNL 1985 FWL	N-07-26S-34E 20 FSL 1660 FWL	WOLFCAMP	17197	12445
30-025-45553	DEVON ENERGY PRODUCTION COMPANY, LP	JAYHAWK 7 FEDERAL	#018H	Oil	Horizontal	New	07	T26S	R34E	D	D-07-26S-34E Lot: 1 540 FNL 710 FWL	M-07-26S-34E Lot: 4 20 FSL 360 FWL	WOLFCAMP	17160	12445
30-025-45582	DEVON ENERGY PRODUCTION COMPANY, LP	JAYHAWK 7 FEDERAL	#014H	Oil	Horizontal	New	07	T26S	R34E	D	D-07-26S-34E Lot: 1 540 FNL 740 FWL	M-07-26S-34E Lot: 4 20 FSL 360 FWL	WOLFCAMP	17620	12710

PERMIAN OILFIELD PARTNERS

Statement of Notifications

Re: C-108 Application for SWD Well
Permian Oilfield Partners, LLC
Deluge Federal SWD #1
1673' FNL & 282' FWL
Sec 7, T26S, R34E
Lea County, NM

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

Deluge Federal SWD #1 - Affected Persons within 1 Mile Area of Review					
Notified Name	**Notifed Address**	**Notified City, State, ZIP Code**	**Shipper**	**Tracking No.**	**Mailing Date**
Bureau Of Land Management	620 E Greene St.	Carlsbad, NM 88220	USPS	9414811899561416626838	7/29/2019
New Mexico State Land Office	310 Old Santa Fe Trail	Santa Fe, NM 87501	USPS	9414811899561416626128	7/29/2019
Devon Energy Prod. Co.	333 West Sheridan Ave.	Oklahoma City, OK 73102	USPS	9414811899561416626975	7/29/2019
EOG Resources Inc.	PO Box 2267	Midland, TX 79702	USPS	9414811899561416626630	7/29/2019
Chevron USA, Inc.	6301 Deauville Blvd	Midland, TX 79706	USPS	9414811899561416626791	7/29/2019
COG Operating LLC	600 W. Illinois Ave	Midland, TX 79701	USPS	9414811899561416626739	7/29/2019

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

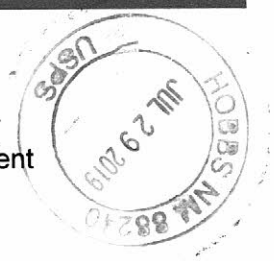
Date: 7-29-2019

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

ARTICLE NUMBER: 9414 8118 9956 1416 6268 38

ARTICLE ADDRESSED TO:

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



FEES

Postage Per Piece	$3.05
Certified Fee	3.50
Total Postage & Fees:	6.55

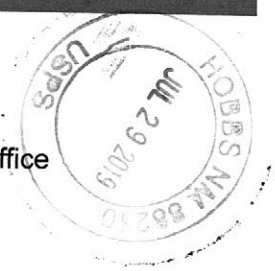
Postmark Here

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

ARTICLE NUMBER: 9414 8118 9956 1416 6261 28

ARTICLE ADDRESSED TO:

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



FEES

Postage Per Piece	$3.05
Certified Fee	3.50
Total Postage & Fees:	6.55

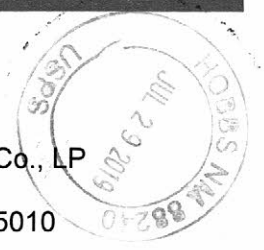
Postmark Here

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

ARTICLE NUMBER: 9414 8118 9956 1416 6269 75

ARTICLE ADDRESSED TO:

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



FEES

Postage Per Piece	$3.05
Certified Fee	3.50
Total Postage & Fees:	6.55

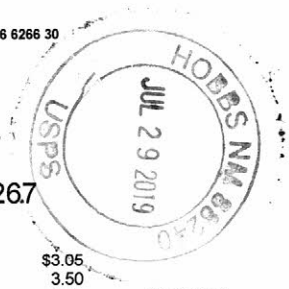
Postmark Here

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

ARTICLE NUMBER: 9414 8118 9956 1416 6266 30

ARTICLE ADDRESSED TO:

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



FEES

Postage Per Piece	$3.05
Certified Fee	3.50
Total Postage & Fees:	6.55

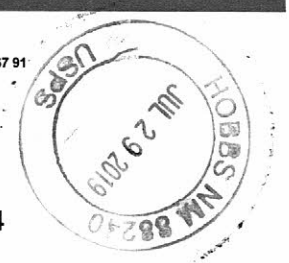
Postmark Here

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

ARTICLE NUMBER: 9414 8118 9956 1416 6267 91

ARTICLE ADDRESSED TO:

Chevron USA
6301 Deauville
Midland TX 79706-2964



FEES

Postage Per Piece	$3.05
Certified Fee	3.50
Total Postage & Fees:	6.55

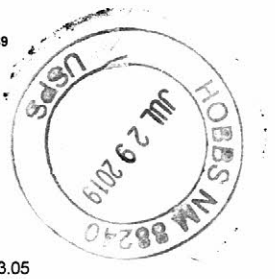
Postmark Here

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

ARTICLE NUMBER: 9414 8118 9956 1416 6267 39

ARTICLE ADDRESSED TO:

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



FEES

Postage Per Piece	$3.05
Certified Fee	3.50
Total Postage & Fees:	6.55

Postmark Here

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 17, 2019
and ending with the issue dated
July 17, 2019.

Publisher

Sworn and subscribed to before me this
17th day of July 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

LEGAL NOTICE
JULY 17, 2019

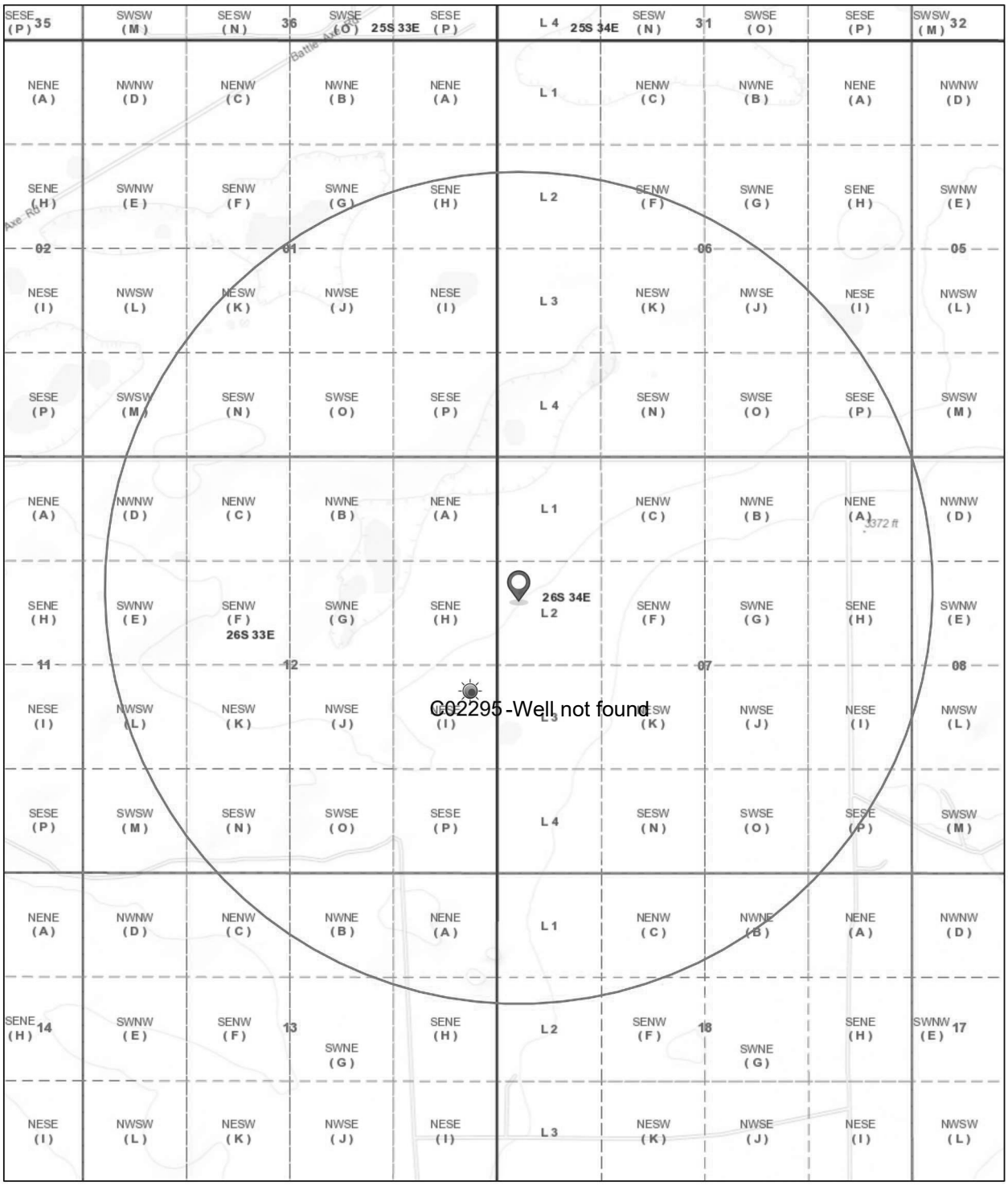
Permian Oilfield Partners, LLC, PO Box 3829, Hobbs, NM 88241, phone (817)606-7630, attn. Gary Fisher, has filed form C-108 (Application for Authorization for Injection) with the New Mexico Oil Conservation Division seeking approval to drill a commercial salt water disposal well in Lea County, New Mexico. The well is the Deluge Federal SWD #1, and is located 1673' FNL & 282' FWL, Lot #2, Section 7, Township 26 South, Range 34 East, NMPM, approximately 19.3 mi SW of Jal, NM. The well will dispose of water produced from nearby oil and gas wells into the Devonian formation from a depth of 17,970 feet to 19,769 feet. The maximum expected injection rate is 50,000 BWPD at a maximum surface injection pressure of 3,594 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.
#34437

67115647 00230903

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

Deluge Federal SWD #1 Water Wells in 1mi Radius



7/18/2019, 10:05:28 AM

Override 1
OCD Districts
OCD District Offices
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

New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	C 02295	2	2	4	12	26S	33E	639850	3547710*

Driller License: 122 **Driller Company:** UNKNOWN

Driller Name: UNKNOWN

Drill Start Date: **Drill Finish Date:** 12/31/1949 **Plug Date:**

Log File Date: **PCW Rcv Date:** **Source:**

Pump Type: **Pipe Discharge Size:** **Estimated Yield:** 12 GPM

Casing Size: 8.00 **Depth Well:** 250 feet **Depth Water:** 200 feet

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

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	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
C 02291		CUB	LE	1	1	2	06	26S	34E	640825	3550140*	220	160	60
C 02292 POD1		CUB	LE	4	1	2	06	26S	34E	640992	3549987	200	140	60
C 03441 POD1		C	LE	4	1	2	06	26S	34E	640971	3550039	250		
C 03442 POD1		C	LE	4	1	2	06	26S	34E	641056	3550028	251		

Average Depth to Water: **150 feet**

Minimum Depth: **140 feet**

Maximum Depth: **160 feet**

Record Count: 4

PLSS Search:

Township: 26S **Range:** 34E

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

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	Depth Well	Depth Water	Water Column
C 02270	CUB	LE	1	1	2	27	26S	33E	636063	3543722	150	125	25
C 02273	CUB	LE		1	2	21	26S	33E	634549	3545134*	160	120	40
C 02285 POD1	CUB	LE	1	4	4	03	26S	33E	636613	3548855	220	220	0
C 02286	CUB	LE	3	4	4	03	26S	33E	636470	3548714	220	175	45
C 02287	C	LE	3	4	4	03	26S	33E	636427	3548708	220		
C 02288	CUB	LE	4	4	4	03	26S	33E	636646	3548758	220	180	40
C 02289	CUB	LE	4	4	4	03	26S	33E	636612	3548675*	200	160	40
C 02290	CUB	LE	4	4	4	03	26S	33E	636538	3548770	200	160	40
C 02293	CUB	LE	2	2	1	14	26S	33E	637501	3546975	200	135	65
C 02294	CUB	LE	4	4	3	11	26S	33E	637465	3547003	200	145	55
C 02295	CUB	LE	2	2	4	12	26S	33E	639850	3547710*	250	200	50
C 03577 POD1	CUB	LE	3	3	3	22	26S	33E	636010	3543771	750	110	640
C 03596 POD1	C	LE	3	3	4	22	26S	33E	636017	3543756	225		

Average Depth to Water: **157 feet**

Minimum Depth: **110 feet**

Maximum Depth: **220 feet**

Record Count: 13

PLSS Search:

Township: 26S **Range:** 33E

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

PERMIAN OILFIELD
PARTNERS

Item XII. Affirmative Statement

Re: C-108 Application for SWD Well
Permian Oilfield Partners, LLC
Deluge Federal SWD #1
1673' FNL & 282' FWL
Sec 7, T26S, 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: 7/12/2019

Plugging Risk Assessment

Permian Oilfield Partners, LLC.
Deluge Federal SWD #1
SL: 1673' FNL & 282' FWL
Sec 7, T26S, R34E
Lea County, New Mexico

WELLBORE SCHEMATIC

Permian Oilfield Partners, LLC.
Deluge Federal SWD #1
1673' FNL, 282' FWL
Sec. 7, T26S, R34E, Lea Co. NM
Lat 32.0606186° N, Lon 103.5166255° W
GL 3335', RKB 3355'

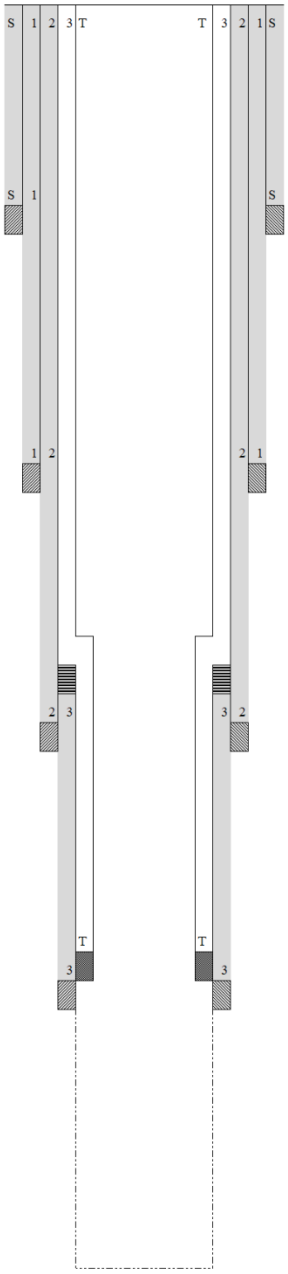
Surface - (Conventional)
Hole Size: 26"
Casing: 20" - 94# H-40 & 106.5# J-55 STC Casing
Depth Top: Surface
Depth Btm: 1023'
Cement: 670 sks - Class C + Additives
Cement Top: Surface - (Circulate)

Intermediate #1 - (Conventional)
Hole Size: 17.5"
Casing: 13.375" - 61# J-55 & 68# J-55 STC Casing
Depth Top: Surface
Depth Btm: 5365'
Cement: 1750 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: 12749'
Cement: 2166 sks - Lite Class C (60:40:0) + Additives
Cement Top: Surface - (Circulate)
ECP/DV Tool: 5465'

Intermediate #3 - (Liner)
Hole Size: 8.5"
Casing: 7.625" - 39# HCL-80 FJ Casing
Depth Top: 12549'
Depth Btm: 17970'
Cement: 259 sks - Lite Class C (60:40:0) + Additives
Cement Top: 12549' - (Volumetric)

Intermediate #4 - (Open Hole)
Hole Size: 6.5"
Depth: 19765'
Inj. Interval: 17970' - 19765' (Open-Hole Completion)



Tubing - (Tapered)
Tubing Depth: 17925'
Tubing: 7" - 26# HCP-110 FJ Casing & 5.5" 17# HCL-80 FJ Casing (Fiberglass Lined)
X/O Depth: 12549'
X/O: 7" 26# HCP-110 FJ Casing - X - 5.5" 17# HCL-80 FJ Casing (Fiberglass Lined)
Packer Depth: 17935'
Packer: 5.5" - Perma-Pak or Equivalent (Inconel)

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)		3¹⁵⁄₁₆	4⅛	4¼	4¼	4¼	4¼	4⅞
Overshot O.D.		5⅜	5⅜	5⅜	5¾	5⅞	6⅜	6⅜
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-4369	M-1071	8819
Spiral Grapple Control	Part No.	186	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-4369	M-1071	8819
Basket Grapple Control	Part No.	186	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.

Attachment to C-108
Permian Oilfield Partners, LLC
Deluge Federal SWD #1
1673' FNL & 282' FWL
Sec 7, T26S, R34E
Lea County, NM

July 13, 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:

1. M2.6, 2017-05-03, 29.04 miles away @ 86.91 deg heading
2. M3.3, 2001-06-02, 29.00 miles away @ 49.20 deg heading
3. M2.9, 1984-12-09, 14.34 miles away @ 350.93 deg heading
4. M3.1, 2012-03-18, 26.71 miles away @ 304.88 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. 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:

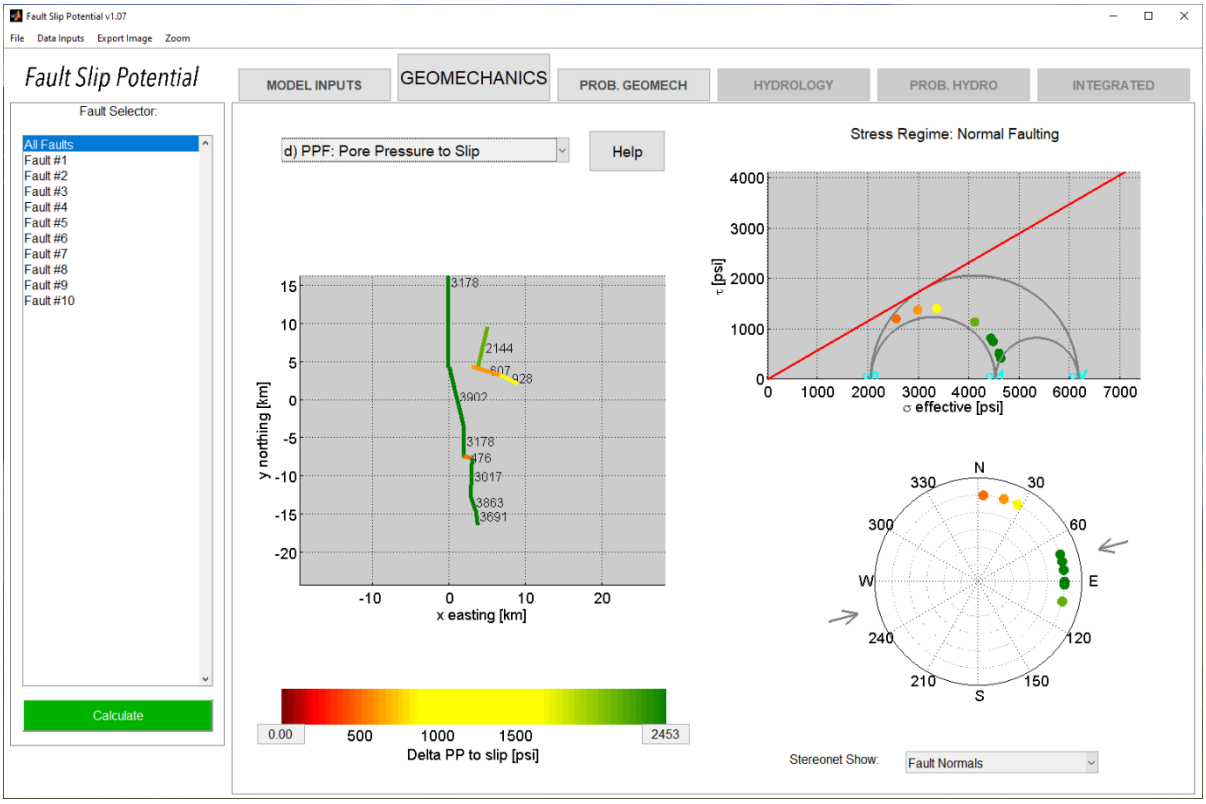
   a. Full proposed capacity of 50,000 BBL/day for 30 years
   b. 12.5 mD average permeability, 3% average porosity, .75 psi/ft stress gradient, .47 psi/ft hydrostatic gradient
   c. A-phi=0.60 & Max Horizontal Stress direction 75 deg N, as per Snee, Zoback paper noted above.

6. The distance from the proposed injection well to the nearest basement fault is approximately 3 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. When the injected fluids stay in the Devonian-Silurian zone as per design, there will be very low probability of fault slip, since there are no known nearby faults within the Devonian-Silurian.

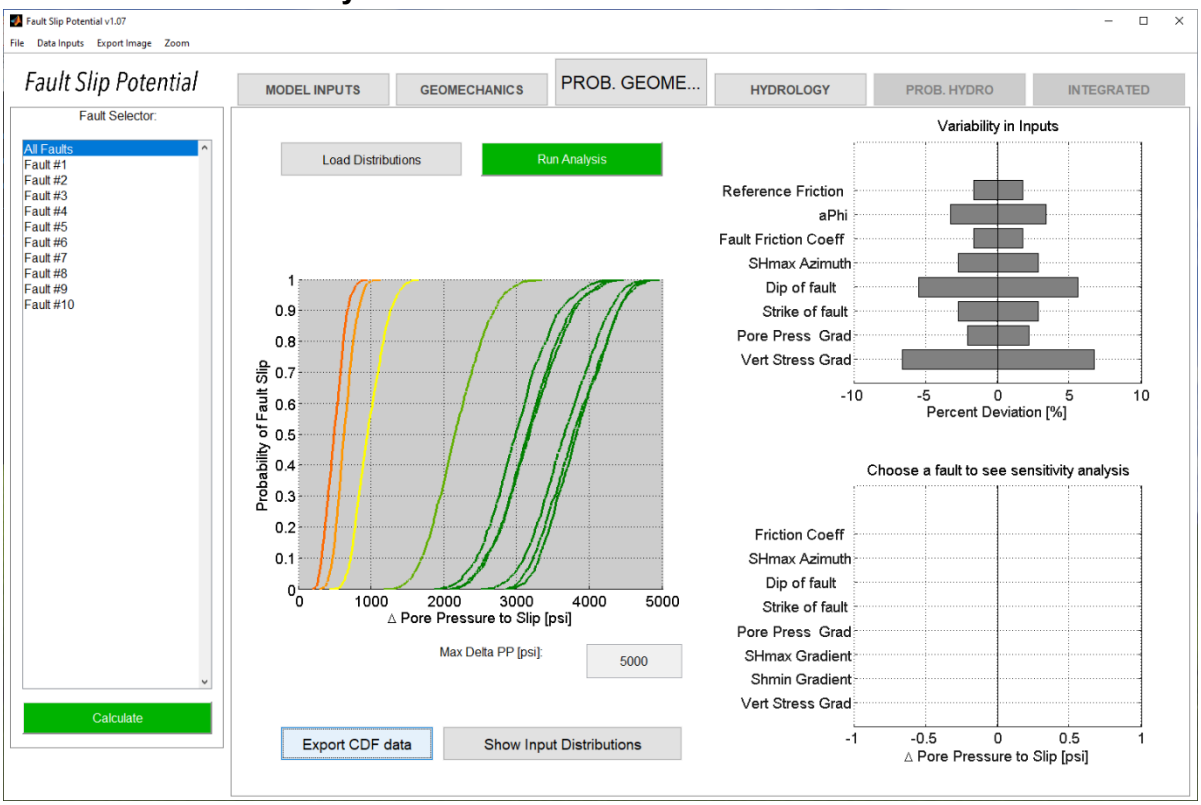
Input assumptions:

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)	22000
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

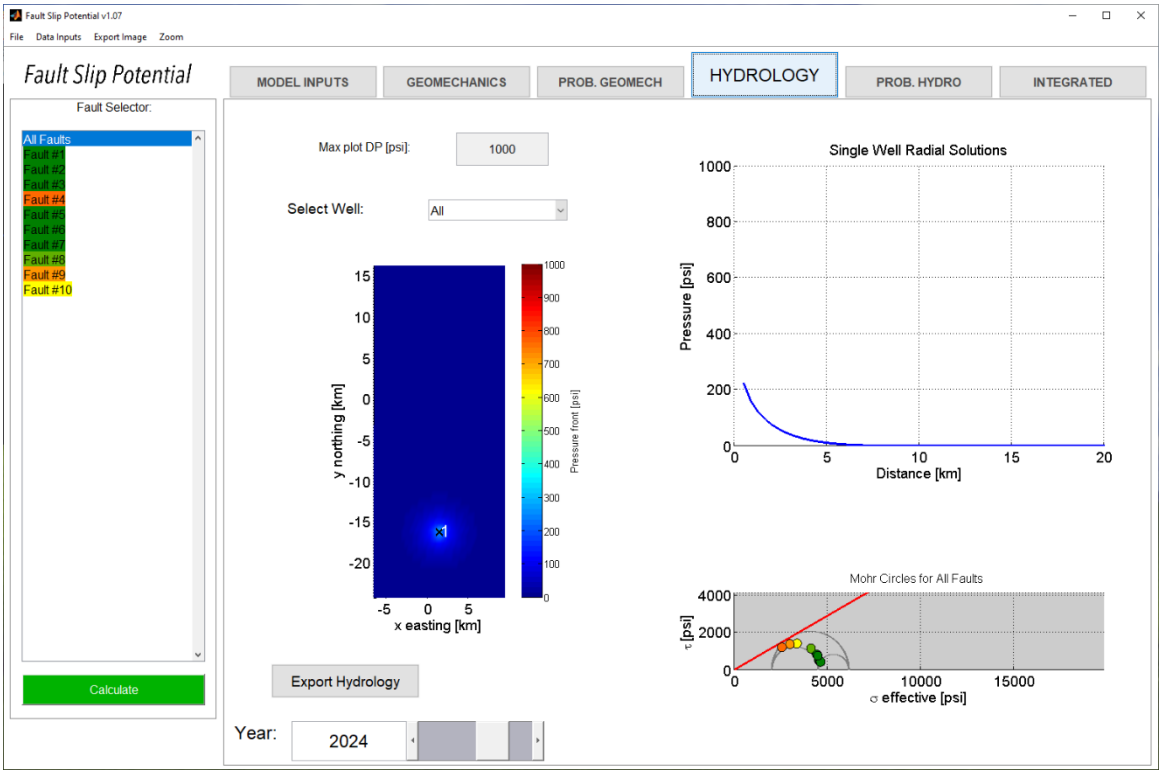
Geomechanics Pore Pressure to Slip



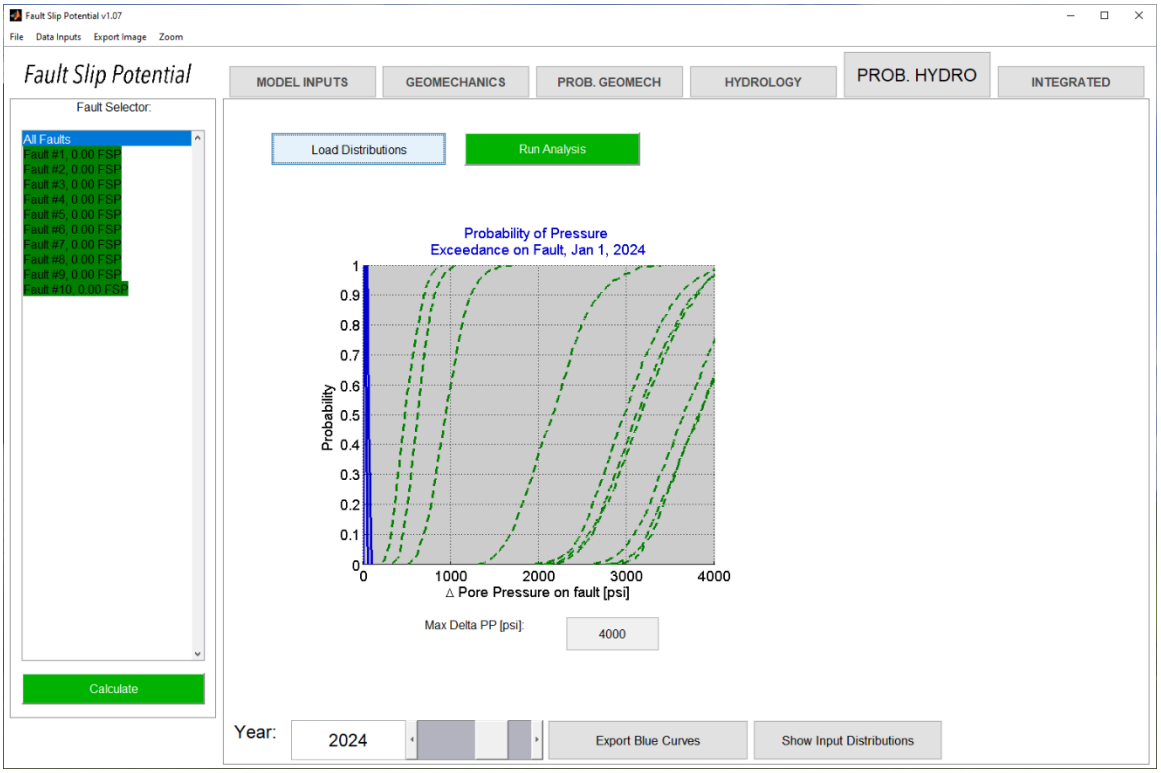
GeoMechanics Variability



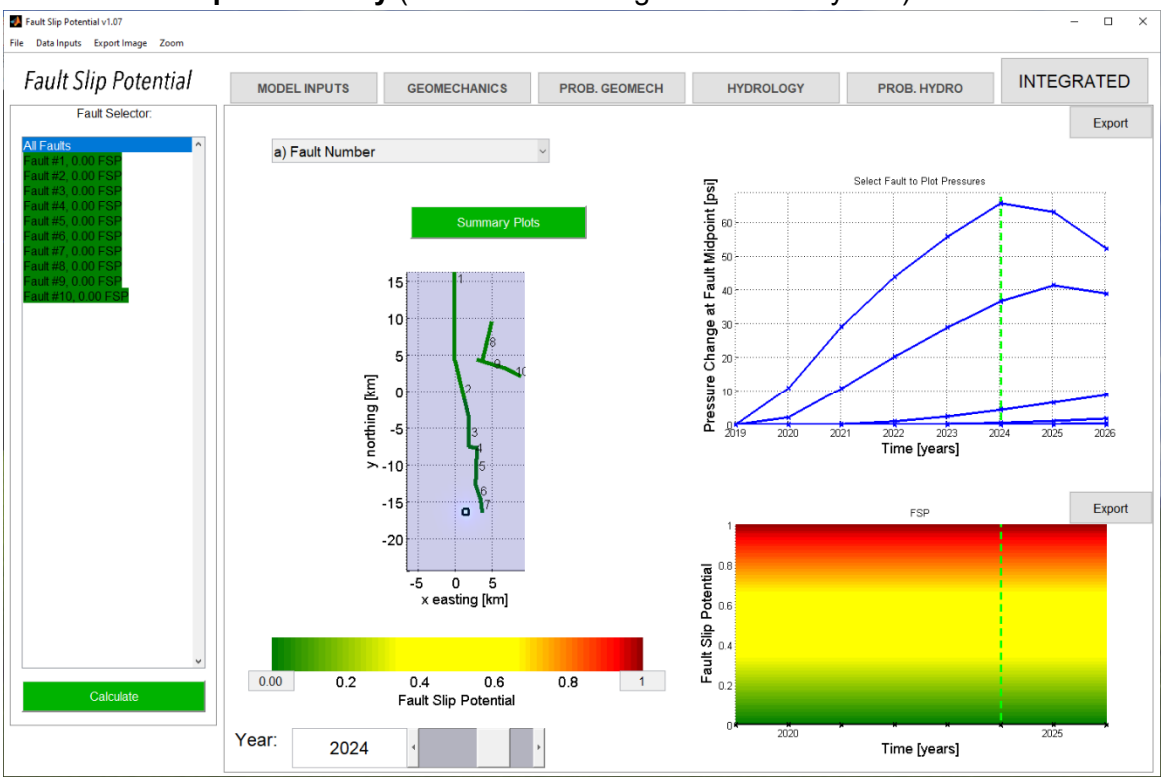
Year 5 Hydrology



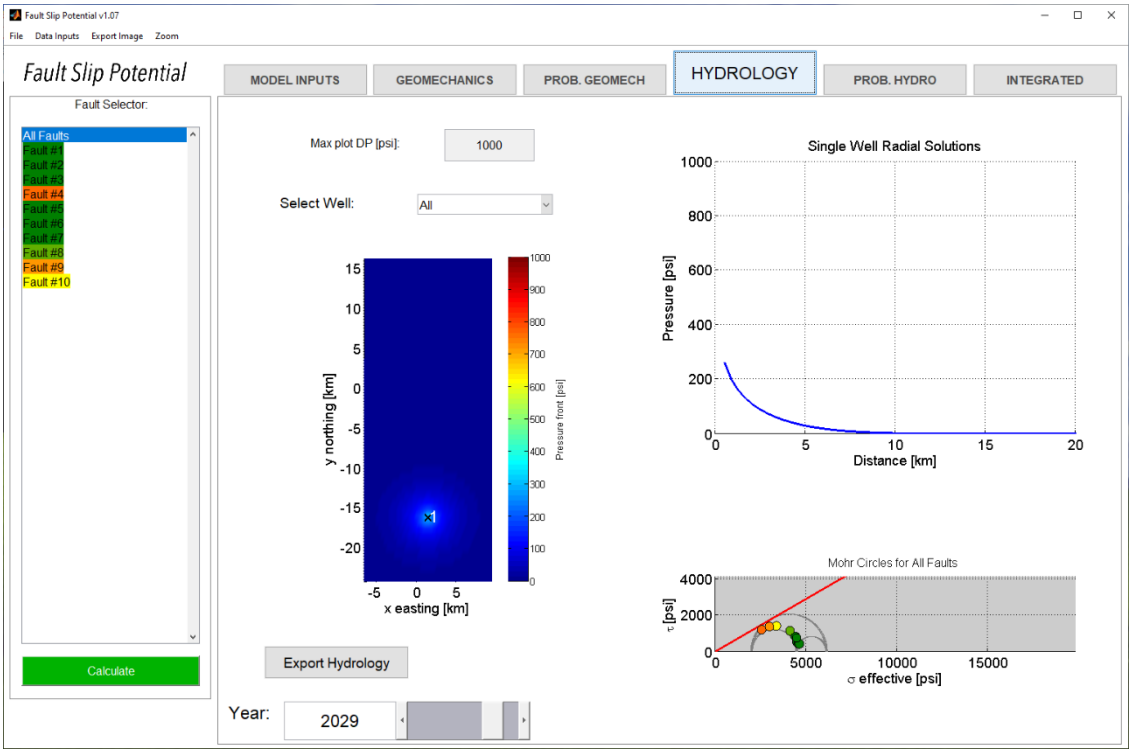
Year 5 Probabilistic Hydrology (note no crossover between blue delta-press. & green fault slip press.)



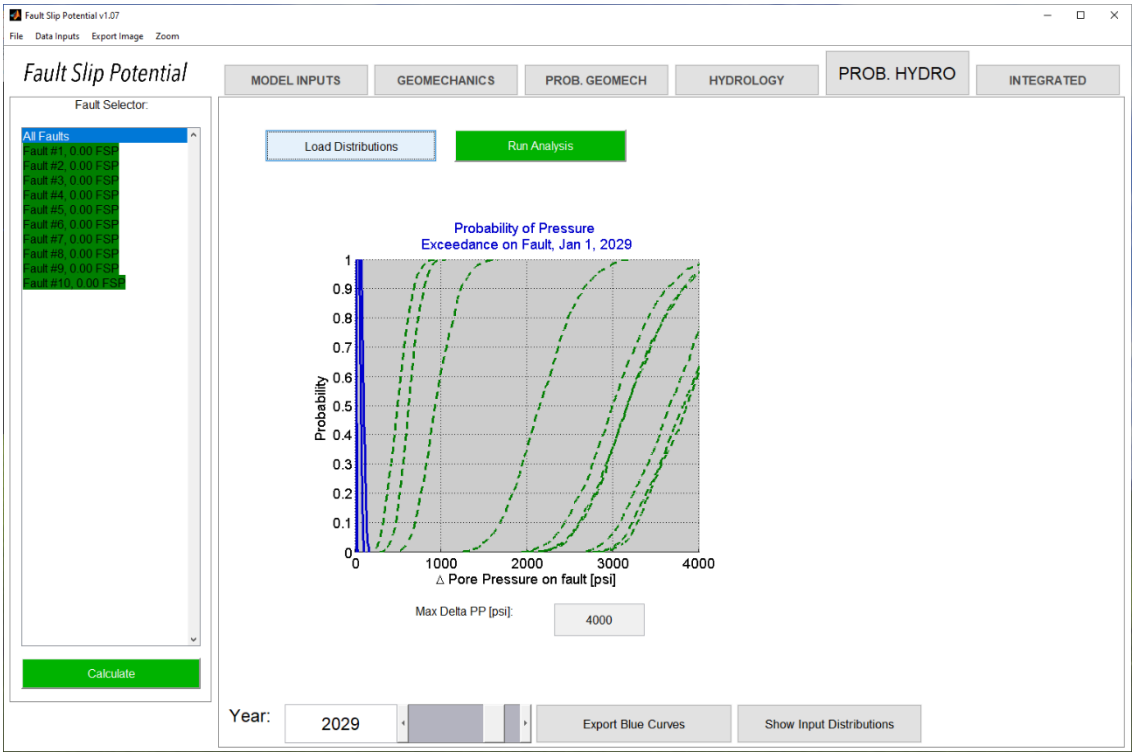
Year 5 Fault Slip Probability (0% for all fault segments after 5 years)



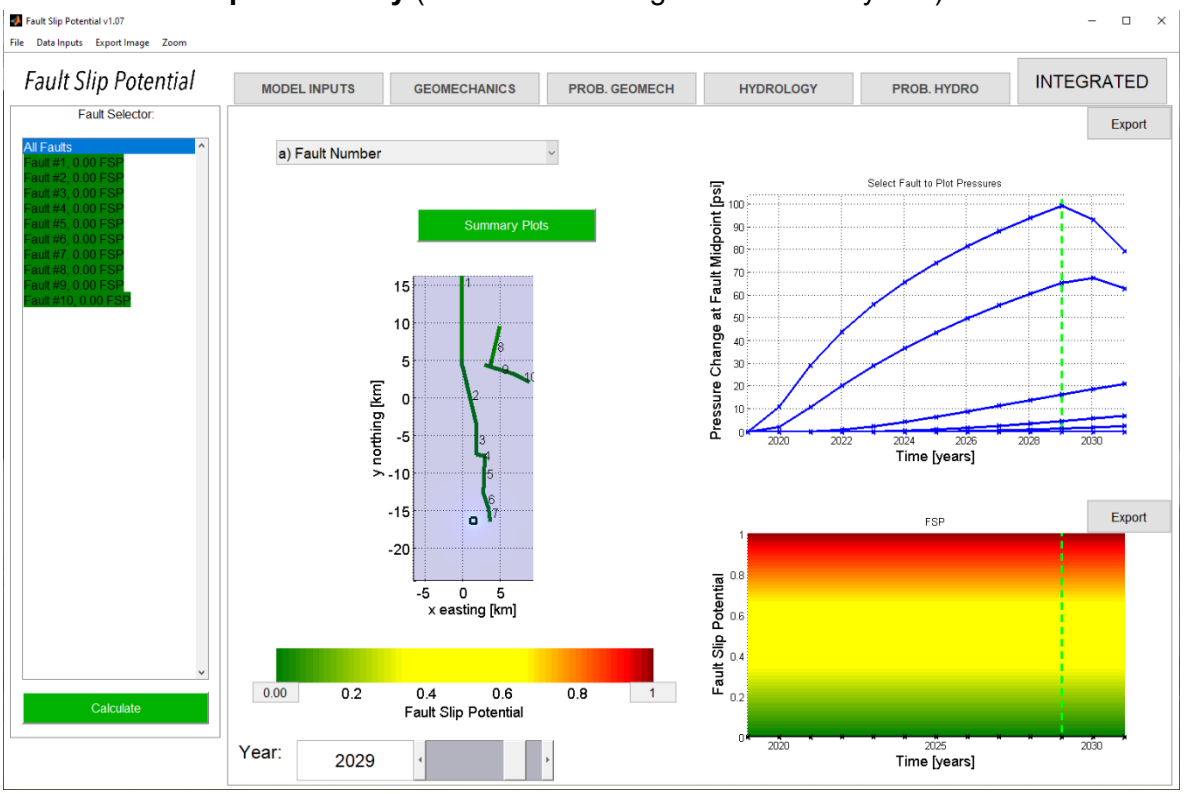
Year 10 Hydrology



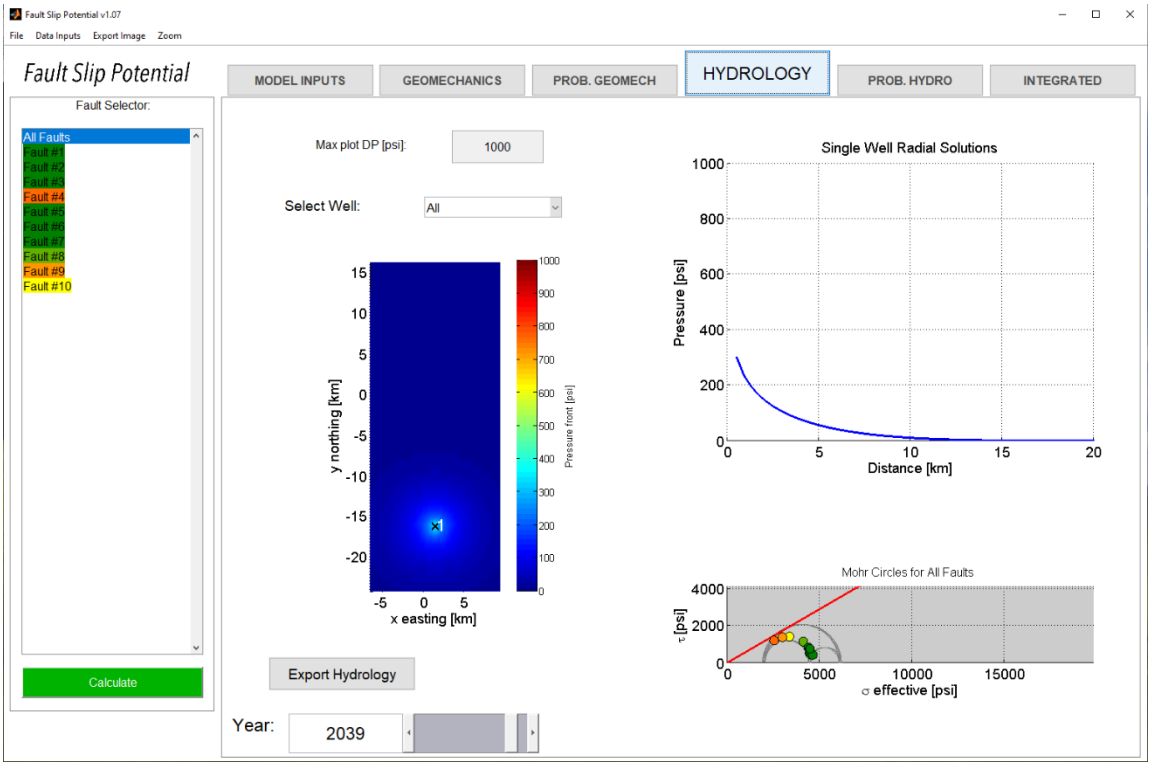
Year 10 Probabilistic Hydrology (note no crossover between blue delta-press. & green fault slip press.)



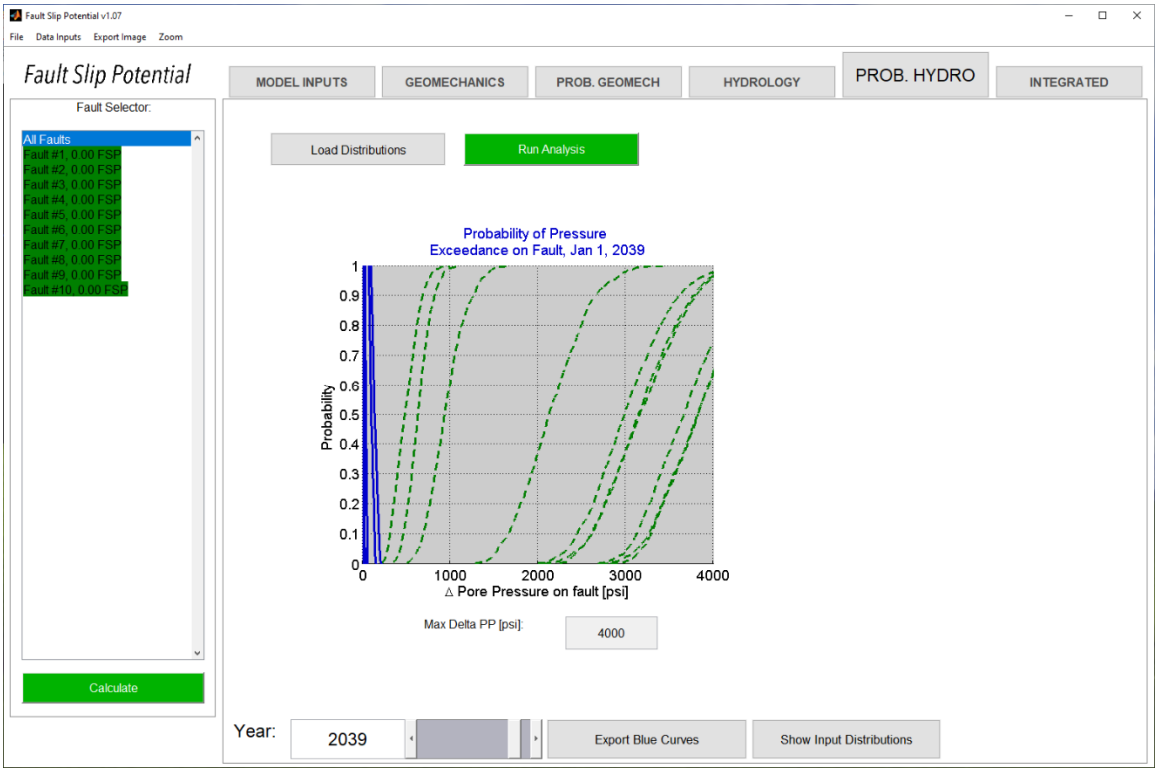
Year 10 Fault Slip Probability (0% for all fault segments after 10 years)



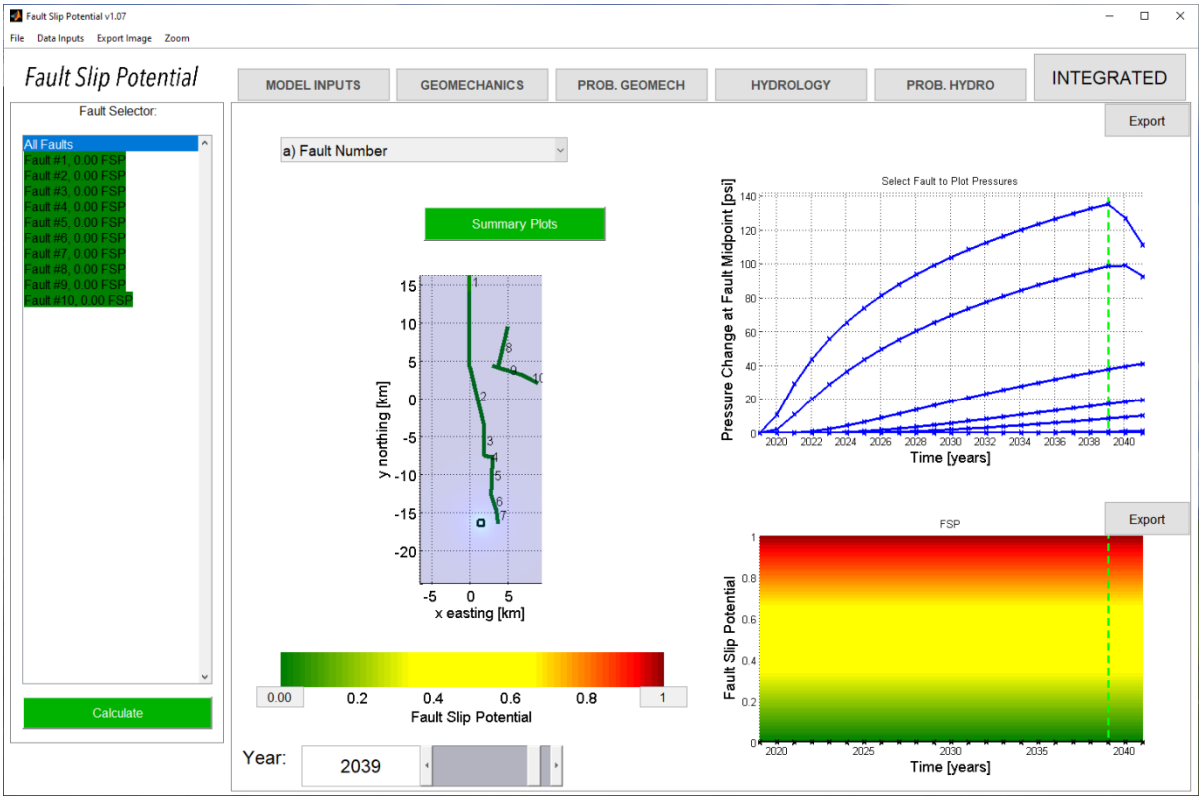
Year 20 Hydrology



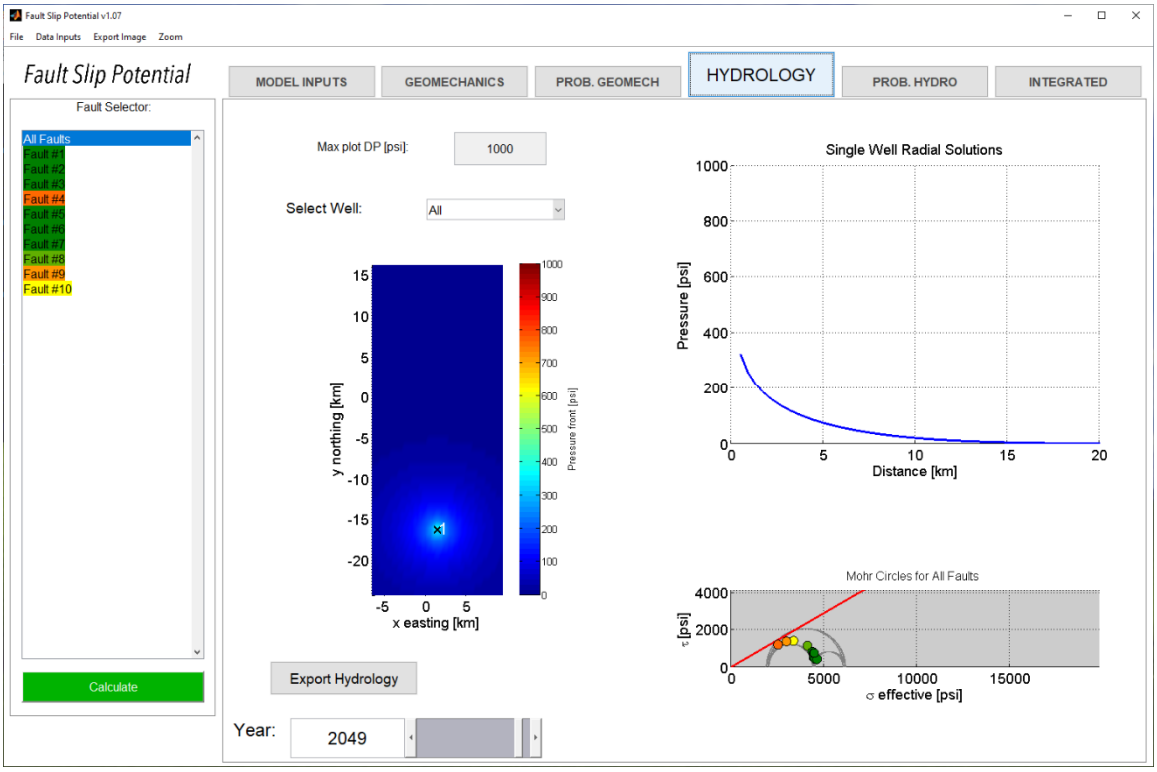
Year 20 Probabilistic Hydrology (note no crossover between blue delta-press. & green fault slip press.)



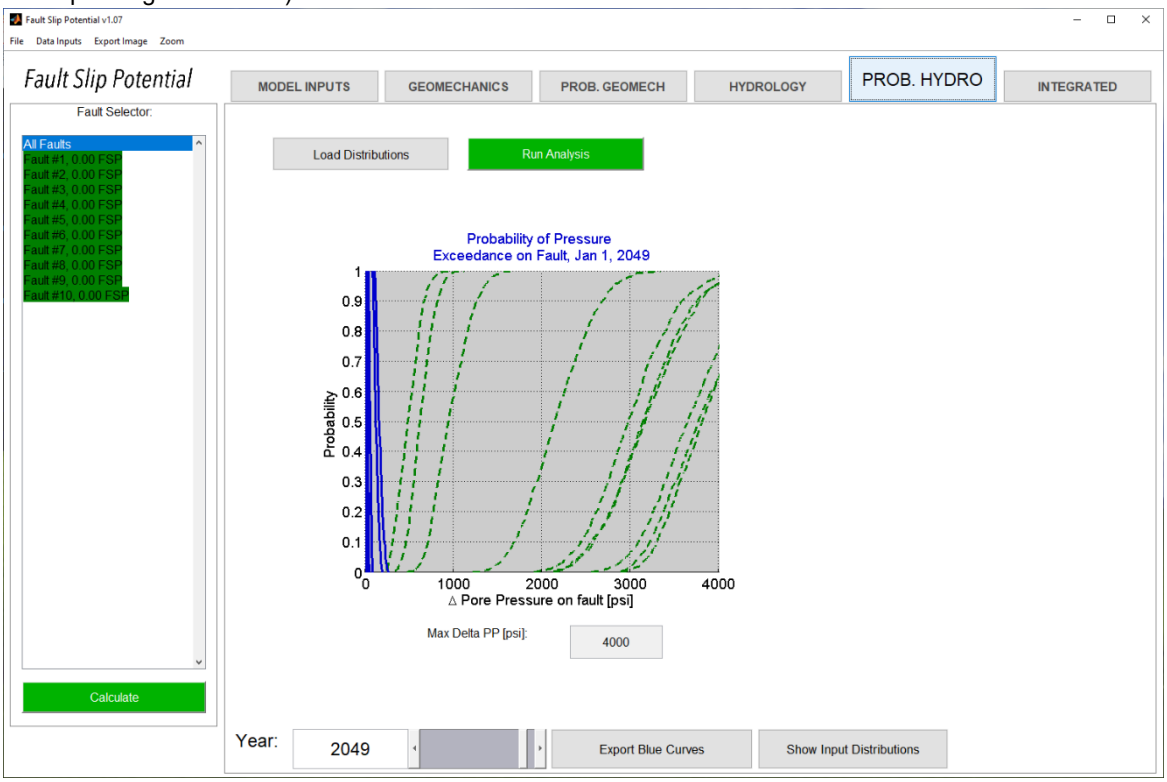
Year 20 Fault Slip Probability (0% for all fault segments after 20 years)



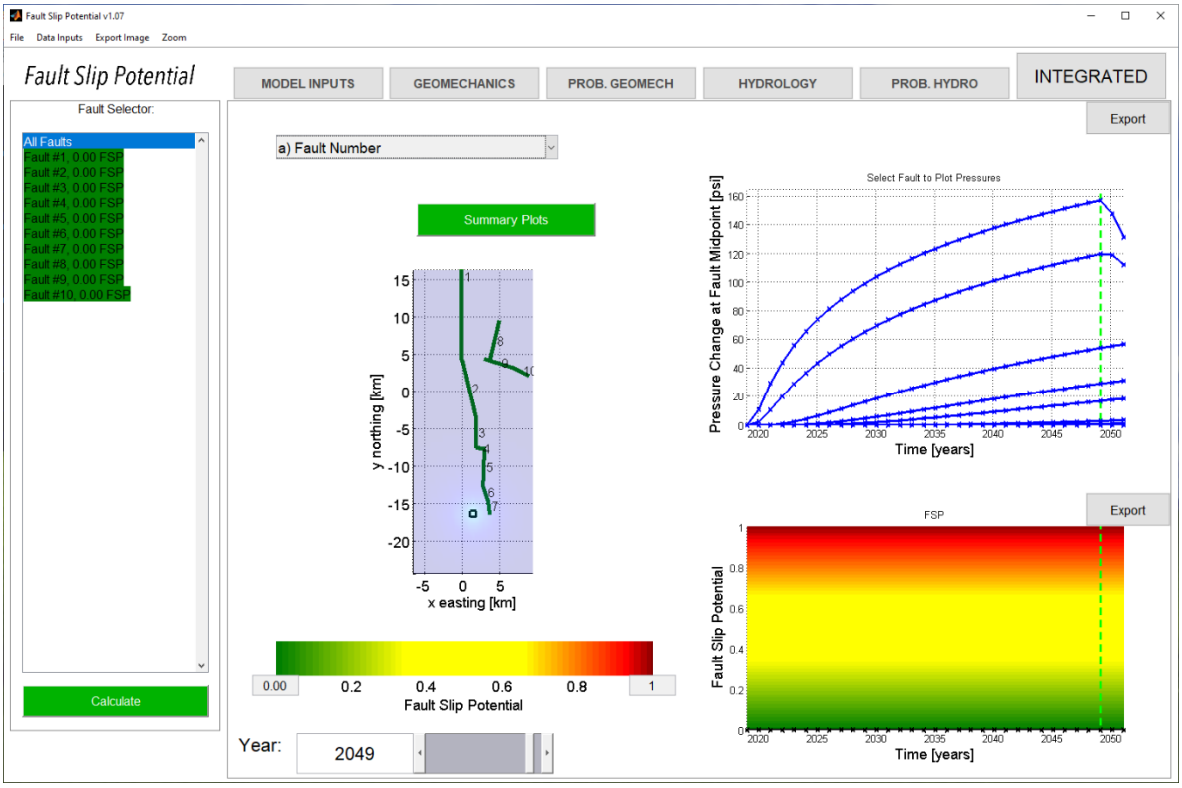
Year 30 Hydrology



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



Year 30 Fault Slip Probability (0% for all fault segments after 30 years. 157 psi fault delta pressure is much less than the 3691 psi required for fault slip in the closest fault segment #7)



As per NM OCD requirements (injection well to injection well spacing minimum of 1.5 miles), this proposed above referenced SWD well is located 2.33 miles away from the nearest active or permitted Devonian disposal well.

gfisher@popmidstream.com
(817) 606-7630