Before the Oil Conservation Division
Examiner Hearing
November 16, 2018

NGL Water Solutions Permian, LLC
Case Nos. 20063, 20084, 20093

TABLE OF CONTENTS

CASE NOS. 20063, 20084, AND 20093

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

APPLICATION OF NGL WATER SOLUTIONS PERMIAN, LLC TO APPROVE SALT WATER DISPOSAL WELL IN LEA COUNTY, NEW MEXICO.

CASE NO. _____

APPLICATION

NGL Water Solutions Permian, LLC ("NGL"), OGRID No. 372338, through its undersigned attorneys, hereby makes this application to the Oil Conservation Division pursuant to the provisions of N.M. Stat. Ann. § 70-2-12, for an order approving drilling of a salt water disposal well in Lea County, New Mexico. In support of this application, NGL states as follows:

(1) NGL proposes to drill the Falcon SWD #1 well at a surface location 1722 feet from the South line and 221 feet from the West line of Section 20, Township 25 South, Range 34 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well.

(2) NGL seeks authority to inject salt water into the Silurian-Devonian formation at a depth of 17,152' - 19,032'.

(3) NGL further seeks approval of the use of 7 inch tubing inside the surface and intermediate casings and 5 ½ inch tubing inside the liner and requests that the Division approve a maximum daily injection rate for the well of 50,000 bbls per day.

(4) NGL anticipates using an average pressure of 2,572 psi for this well, and it requests that a maximum pressure of 3,430 psi be approved for the well.

(5) A proposed C-108 for the subject well is attached hereto in Attachment A.

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

WHEREFORE, NGL requests that this application be set for hearing before an Examiner of the Oil Conservation Division on November 15, 2018; and that after notice and hearing, the Division enter its order approving this application.

Respectfully submitted,

MODRALL, SPERLING, ROEHL, HARRIS
& SISK, P.A.

By: Deana M. Bennett

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Deana Bennett
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Telephone: 505.848.1800
Attorneys for Applicant

CASE NO. _____: Application of NGL Water Solutions Permian, LLC for approval of salt water disposal well in Lea County, New Mexico. Applicant seeks an order approving disposal into the Silurian-Devonian formation through the Falcon SWD #1 well at a surface location 1722 feet from the South line and 221 feet from the West line of Section 20, Township 25 South, Range 34 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well. The target formation is the Silurian-Devonian formation at a depth of 17,152' - 19,032'. NGL further seeks approval of the use of 7 inch tubing inside the surface and intermediate casings and 5 ½ inch tubing inside the liner and requests that the Division approve a maximum daily injection rate for the well of 50,000 bbls per day. Said area is located approximately 18 miles west of Jal, New Mexico.

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: NGL WATER SOLUTIONS PERMIAN LLC **OGRID Number:** 372338
Well Name: FALCON SWD #1 **API:** TBD
Pool: SWD; SILURIAN-DEVONIAN **Pool Code:** 96101

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

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

FOR OCD ONLY
☐ Notice Complete
☐ Application Content Complete

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.

CHRIS WEYAND
Print or Type Name

Signature

10/09/2018
Date

512-600-1764
Phone Number

CHRIS@LONQUIST.COM
e-mail Address

EXHIBIT
tabbies
A

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

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

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: _____ Secondary Recovery _____ Pressure Maintenance __X__ Disposal _____ Storage
Application qualifies for administrative approval? __X__ Yes _____ No

II. OPERATOR: NGL WATER SOLUTIONS PERMIAN, LLC

ADDRESS: 1509 W WALL ST // STE 306 // MIDLAND, TX 79701

CONTACT PARTY: SARAH JORDAN PHONE: (432) 685-0005 x1989

III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? _____ Yes __X__ No
If yes, give the Division order number authorizing the project: _____

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

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

VII. Attach data on the proposed operation, including:

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

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

IX. Describe the proposed stimulation program, if any.

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

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

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

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

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

NAME: Christopher B. Wevand TITLE: Consulting Engineer

SIGNATURE: _____ DATE: 10/12/2018

E-MAIL ADDRESS: chris@lonquist.com

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

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

Side 2

III. WELL DATA

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

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

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

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

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

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

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

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

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

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

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

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

XIV. PROOF OF NOTICE

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

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

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

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

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

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

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

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

Side 1

INJECTION WELL DATA SHEET

OPERATOR: NGL WATER SOLUTIONS PERMIAN, LLC

WELL NAME & NUMBER: FALCON SWD #1

WELL LOCATION: 1,722 FSL & 221' FWL | L | 20 | 25S | 34E

FOOTAGE LOCATION | UNIT LETTER | SECTION | TOWNSHIP | RANGE

WELLBORE SCHEMATIC

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 24.000" Casing Size: 20.000"

Cemented with: 1,005 sx. *or* _____ ft^3

Top of Cement: Surface Method Determined: Circulation

1st Intermediate Casing

Hole Size: 17.500" Casing Size: 13.375"

Cemented with: 3,844 sx. *or* _____ ft^3

Top of Cement: Surface Method Determined: Circulation

2nd Intermediate Casing

Hole Size: 12.250" Casing Size: 9.625"

Cemented with: 3,295 sx. *or* _____ ft^3

Top of Cement: Surface Method Determined: Circulation

Production Liner

Hole Size: 8.500"

Casing Size: 7.625"

Cemented with: 368 sx.

or _____ ft^3

Top of Cement: 11,900'

Method Determined: Calculation

Total Depth: 19,032'

Injection Interval

17,152 feet to 19,032 feet

(Open Hole)

Side 2

INJECTION WELL DATA SHEET

Tubing Size: 7", 26 lb/ft, P-110, TCPC from 0'- 11,800' and 5.500", 17 lb/ft, P-110 TCPC from 11,800' – 17,127'
Lining Material: Duoline

Type of Packer: 7-5/8" x 5-1/2" TCPC Permanent Packer with High Temp Elastomer and Full Inconel 925 trim

Packer Setting Depth: 17,127'

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

Additional Data

1. Is this a new well drilled for injection? ___X___Yes _____No

   If no, for what purpose was the well originally drilled? N/A

2. Name of the Injection Formation: Devonian, Silurian, Fusselman and Montoya (Top 100')

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

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

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:
   Bone Spring: 9,207'
   Wolfcamp: 12,253'
   Morrow: 14,939'

Falcon SWD
Lea County NM
Vertical Injection - Devonian, Silurian, Fusselman, Montoya

Location - 1722 FEL 221 FWL: Sec 20, T25S R34E
Drilling and Complete Cost - $10.83MM
AFE #

TD 19,032
GL/KB 3,342

Directions to Site: 3.5 mi W-SW of 035-24683, 3 mi SW of Sidewinder, 87 mi w of Jal

Geologic Tops (MD ft)		Section	Problems	Bit/BHA	Mud	Casing	Logging	Cement (HOLD)	Injection String
Rustler Anhydrite	813	**Surface** Drill 24" 0' - 1220 Set and Cement 20" Casing	Loss Circulation Hole Cleaning Wellbore stability in the Red Beds Anhydrite in the Rustler	24" Tricone 9-5/8" x 8" MM 9 jts: 8" DC 21 jts: 5" HWDP 5 " DP to surface	Spud Mud MW< 9.0	1220' of 20" K55 133ppf STC Centralizers - bottom 2 joints and every 3rd jt thereafter, Cement basket at 200'	No Logs	Lead -499 sx of HES Extenda Cem, 13.7ppg, 4.5hrs TT Tail - 506sx of Halcem 3hr TT 25% Excess 1000psi CSD after 10hrs	11,800' of 7" P110 26# TCPC 5327' of 5-1/2" P110 17# TCPC Duoline Internally Coated Injection Tubing
Surface TD -	**1200**								
Top of Salt	1278	**1st Intermediate** Drill 4000' of 17-1/2" Hole 1150' - 5200' Set and Cement 13-3/8" Casing	Seepage Losses Possible H2S Anhydrite Salt Sections	17-1/2" PDC 9-5/8" x 8" MM 9 jts: 8" DC 21 jts: 5" HWDP 5 " DP to surface	8.5 ppg OBM High Vis Sweeps UBD/MPD usig ADA	5M A Section Casing Bowl 5200' of 13-3/8" 68# HCL80 BTC Centralizers - bottom jt, every 3rd joint in open hole and 2 jt inside the surface casing	Mudlogger on site by 1600'	Lead - 1997 sx of Neocem 12.9ppg, 5hr TT Tail - 1847sx of Halcem, 14.8ppg 60% Excess 1000psi CSD after 10 hrs Cement to Surface	
Base of Salt	4988								
Delaware	5260								
1st Int TD -	**5200**								
ECP DV Tool -	**5160**	**2nd Intermediate** Drill 7200' of 12-1/4" Hole 5200' - 12,400' Set 9-5/8" Intermediate Casing and Cement in 3 Stages	Hard Drilling in the Brushy Canyon Seepage to Complete Loss Water Flows Some Anhydrite H2S possible Production in the Bone Spring and Wolfcamp Ballooning is possible in Cherry Canyon and Brushy if Broken Down	12-1/4" PDC 8" MM 9jts: 8" DC 8" Drilling Jars 21 jts: 5" HWDP 5" DP to Surface		10M B Section 12400' of 9-5/8" 53.5# P110 BTC **Special Drift to 8.535"** **Externally Coat Between DV Tools** DV tool at at 9000' ECP DV Tool 15' Inside Previous Casing Centralizers - bottom jt, 100' aside of DV tool, every 3rd joint in open hole and 5 within the surface casing	MWD GR Triple combo + CBL of 13-3/8" Casing	**Stage 3: 0% Excess** Lead 663sx Neocem 12.9 ppg Tail 510sx Halcem 14.8ppg 1000psi CSD after 10 hrs Cement to Surface **Stage 2: 25% Excess** Lead 508sx Neocem 12.9 ppg Tail 590sx Halcem 14.8ppg 1000psi CSD after 10 hrs **Stage 1: 25% Excess** Lead 553sx Neocem 12.9 ppg Tail 471sx Halcem 14.8ppg. 1000psi CSD after 10hrs	
Bell Canyon	5299								
Cherry Canyon -	6332								
Brushy Canyon -	8067								
DV Tool -	**9000**								
Bone Spring -	9207								
3rd Int Liner Top -	**11,900**								
Wolfcamp -	12253								
2nd Int TD -	**12,400**								
Strawn -	13785	**3rd Intermediate** Drill 5320' of 8-1/2" Hole 12400 - 17152' Set 7-5/8" Liner and Cement in Single Stage	High Pressure (up to 15ppg) and wellbore instability (fracturing) expected in the Atoka 150 target radius Hard Drilling in the Morrow Clastic	8-1/2" PDC 6-3/4" MM 9 jts: 6" DC 21 jts: 5" HWDP 5" DP to Surface	12.5 ppg OBM UBD/MPD using ADA	4752' of 7-5/8" 39# Q125 - **DTL (FJ4) FJ (Gas Tight)** **VersaFlex Packer Hanger** Centralizers on and 1 jt above shoe jt and then every 2nd jt.	MWD GR Triple combo, CBL of 9-5/8" Casing	Lead 249sx Neocem 12.9 ppg Tail 101sx Halcem 14.8ppg. 1000psi CSD after 10hrs 8hr TT 35% Excess 1000psi CSD after 10hrs	7-5/8" x 5-1/2" TCPC Permanent Packer with High Temp Elastomer and full Inconel 925 trim
Atoka -	13982								
Morrow -	14939								
Miss Lst -	16622								
Woodford -	16945								
Perm Packer -	17,127								
3rd Int TD -	**17,152**								
Devonian - 17,122		**Injection Interval** Drill 1880' of 6-1/2" hole 17122' - 19032'	Chert is possible Loss of Circulation is expected H2S encountered on the Striker 3 well BHT estimated at 280F	6-1/2" PDC 4-3/4"MM 9 jts: 4-3/4" DC 4-3/4" Drilling Jars 18 jts: 4" FH HWDP 4" FH DP to Surface	Fresh Water - possible flows	Openhole completion	MWD GR Triple Combo with FMI, CBL of 7-5/8"	Displace with 3% KCl (or heavier brine if necessary)	
Fusselman - 18182									
Montoya - 18,932'									
TD - 19,032'									

NGL Water Solutions Permian, LLC

Falcon SWD No. 1

FORM C-108 Supplemental Information

III. Well Data

A. Wellbore Information

1.

Well information	
Lease Name	Falcon SWD
Well No.	1
Location	S-20 T-25S R-34E
Footage Location	1,722' FSL & 221' FWL

2.

a. Wellbore Description

Casing Information				
Type	Surface	Intermediate	Production	Liner
OD	20"	13.375"	9.625"	7.625"
WT	0.635"	0.480"	0.545"	0.500"
ID	18.730"	12.415"	8.535"	6.625"
Drift ID	18.542"	12.259"	8.535"	6.500"
COD	21.00"	14.375"	10.625"	7.625"
Weight	133 lb/ft	68 lb/ft	53.5 lb/ft	39 lb/ft
Grade	K-55	HCL-80	P-110	Q-125
Hole Size	24"	17.5"	12.25"	8.5"
Depth Set	1,200'	5,200'	12,400'	11,900' - 17,152'

b. Cementing Program

Cement Information				
Casing String	Surface	Intermediate	Production	Liner
Lead Cement	Extenda Cem	Neocem	Neocem	Neocem
Lead Cement Volume	499	1,997	Stage 1: 553 sx Stage 2: 508 sx Stage 3: 663 sx	154
Tail Cement	Halcem	Halcem	Versacem C, Halcem, Halcem	Halcem
Tail Cement Volume	506	1,847	Stage 1: 471 sx Stage 2: 590 sx Stage 3: 510 sx	214
Cement Excess	25%	60%	25%, 25%, 0%	35%
TOC	Surface	Surface	Surface	11,900'
Method	Circulate to Surface	Circulate to Surface	Circulate to Surface	Logged

3. Tubing Description

Tubing Information		
OD	7"	5.5"
WT	0.362"	0.304"
ID	6.276"	4.892"
Drift ID	7.875"	6.050"
COD	6.151"	4.653"
Weight	26 lb/ft	17 lb/ft
Grade	P-110 TCPC	P-110 TCPC
Depth Set	0'-11,800'	11,800' -17,127'

Tubing will be lined with Duoline.

4. Packer Description

7-5/8" x 5-1/2" TCPC Permanent Packer with High Temp Elastomer and Full Inconel 925 trim

B. Completion Information

1. Injection Formation: Devonian, Silurian, Fusselman, Montoya (Top 100')
2. Gross Injection Interval: 17,152' – 19,032'

   Completion Type: Open Hole
3. Drilled for injection.
4. See the attached wellbore schematic.
5. Oil and Gas Bearing Zones within area of well:

Formation	Depth
Bone Spring	9,207'
Wolfcamp	12,253'
Morrow	14,939'

VI. Area of Review

No wells within the area of review penetrate the proposed injection zone.

VII. Proposed Operation Data

1. Proposed Daily Rate of Fluids to be Injection:

   Average Volume: 40,000 BPD
   Maximum Volume: 50,000 BPD

2. Closed System

3. Anticipated Injection Pressure:

   Average Injection Pressure: 2,572 PSI (surface pressure)
   Maximum Injection Pressure: 3,430 PSI (surface pressure)

4. The injection fluid is to be locally produced water. It is expected that the source water will predominantly be from the Bone Spring and Wolfcamp formations. Attached are produced water sample analyses taken from the closest wells that feature samples from the Bone Spring, Wolfcamp, and Morrow formations.

5. The disposal interval is non-productive. No water samples are available from the surrounding area.

VIII. Geological Data

The Devonian formation is a dolomitic ramp carbonate that occurs below the Woodford shale and above the Fusselman formation. Strata found in the Devonian formation include two major groups, the Wristen Buildups and the Thirtyone Deepwater Chert, with the Wristen being more abundant. The Wristen Groups is composed of mixed limestone and dolomites with mudstone to grainstone and boundstone textures. Porosity in the Wristen group is a result of both primary and secondary development. Present are moldic, vugular, karstic (including collapse breccia) features that allow for higher porosities and permeabilities. The Thirtyone Formation contains two end-member reservoir facies, skeletal packstones/grainstones and spiculitic chert, with most of the porosity and permeability found in the coarsely crystalline cherty dolomite. These particular characteristics allow for this formation to be a tremendous Salt Water Disposal horizon.

A. Injection Zone: Siluro-Devonian Formation

Formation	Depth
Rustler Anhydrite	813
Delaware	5,260
Bone Spring	9,207
Wolfcamp	12,253
Penn	13,257
Atoka	13,982
Morrow	14,939
Mississippian	15,802
Woodford	16,945
Devonian	17,122
Fusselman	18,182
Montoya	18,932

B. Underground Sources of Drinking Water

There are no water wells within 1-mile of the proposed Falcon SWD #1 location. Water wells in the surrounding area have an average depth of 307 ft and an average water depth of 205 ft generally producing from the Santa Rosa. The upper Rustler may also be another USDW and will be protected.

IX. Proposed Stimulation Program

Stimulate with up to 50,000 gallons of acid.

X. Logging and Test Data on the Well

There are no logs or test data on the well. During the process of drilling and completion resistivity, gamma ray, and density logs will be run.

XI. Chemical Analysis of Fresh Water Wells

There are no water wells that exist within one mile of the well location.

XII. Affirmative Statement of Examination of Geologic and Engineering Data

Based on the available engineering and geologic data we find no evidence of open faults or any other hydrologic connection between the disposal zone (in the proposed **Falcon SWD #1**) and any underground sources of drinking water.

NAME: John C. Webb

TITLE: Sr. Geologist

SIGNATURE: John C. Webb

DATE: Oct 10, 2018

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

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

Form C-101
Revised July 18, 2013

☐ AMENDED REPORT

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

1. Operator Name and Address	2. OGRID Number
NGL WATER SOLUTIONS PERMIAN, LLC 1509 W WALL ST, STE 306 MIDLAND, TX 79701	372338
	3. API Number TBD

4. Property Code	5. Property Name	6. Well No.
	FALCON SWD	1

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
L	20	25S	34E	N/A	1,722'	SOUTH	221'	WEST	LEA

8. Proposed Bottom Hole Location

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

9. Pool Information

Pool Name	Pool Code
SWD; Silurian-Devonian	96101

Additional Well Information

11. Work Type	12. Well Type	13. Cable/Rotary	14. Lease Type	15. Ground Level Elevation
N	SWD	R	Private	3,322'
16. Multiple	**17. Proposed Depth**	**18. Formation**	**19. Contractor**	**20. Spud Date**
N	19,032'	Siluro-Devonian	TBD	ASAP

Depth to Ground water	Distance from nearest fresh water well	Distance to nearest surface water
205'	> 1 mile	> 1 mile

☐ We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surface	24"	20"	133 lb/ft	1,200'	1,005	Surface
Intermediate	17.5"	13.375"	68 lb/ft	5,200'	3,844	Surface
Production	12.25"	9.625"	53.5 lb/ft	12,400'	3,295	Surface
Prod. Liner	8.5"	7.625"	39 lb/ft	17,152'	368	11,900'
Tubing	N/A	7"	26 lb/ft	0' – 11,800'	N/A	N/A
Tubing	N/A	5.5"	17 lb/ft	11,800' – 17,127'	N/A	N/A

Casing/Cement Program: Additional Comments

See attached schematic.

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Hydraulic/Blinds, Pipe	10,000 psi	8,000 psi	TBD – Schaffer/Cameron

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify that I have complied with 19.15.14.9 (A) NMAC ☐ and/or 19.15.14.9 (B) NMAC ☒, if applicable. Signature:	OIL CONSERVATION DIVISION
	Approved By:
Printed name: Christopher B. Weyand	Title:
Title: Consulting Engineer	Approved Date: / Expiration Date:
E-mail Address: chris@lonquist.com	
Date: 10/12/2018 / Phone: (512) 600-1764	Conditions of Approval 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-10
Revised August 1
201
Submit one copy to appropriat
District Offic

☐ AMENDED REPOR

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
	96101	SWD; Silurian-Devonian

[4] Property Code	[5] Property Name	[6] Well Number
	FALCON SWD	1

[7] OGRID No.	[8] Operator Name	[9] Elevation
372338	NGL WATER SOLUTIONS PERMIAN, LLC	3322.00'±

[10] Surface Location

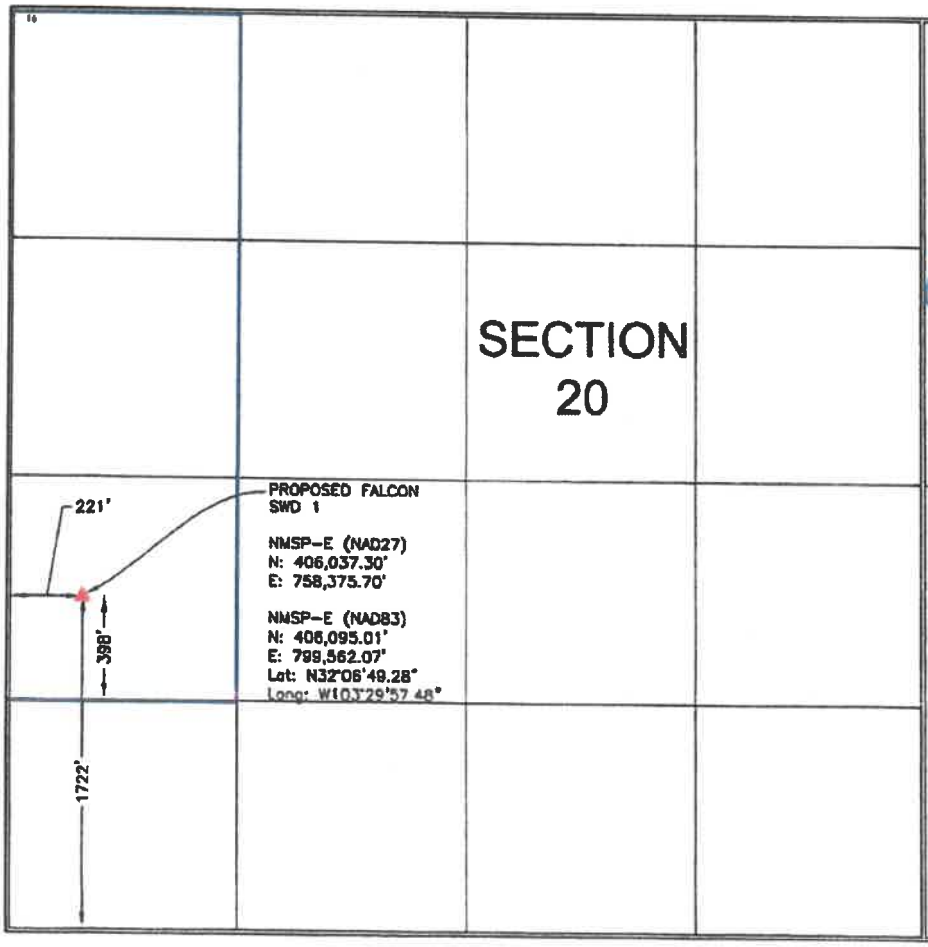
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	20	25 S	34 E	N/A	1722'	SOUTH	221'	WEST	LEA

[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 interests 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 locatio 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.

Signature — Date: 10/12/2018

Chris Weyand
Printed Name

chris@lonquist.com
E-mail Address

[18] SURVEYOR CERTIFICATION

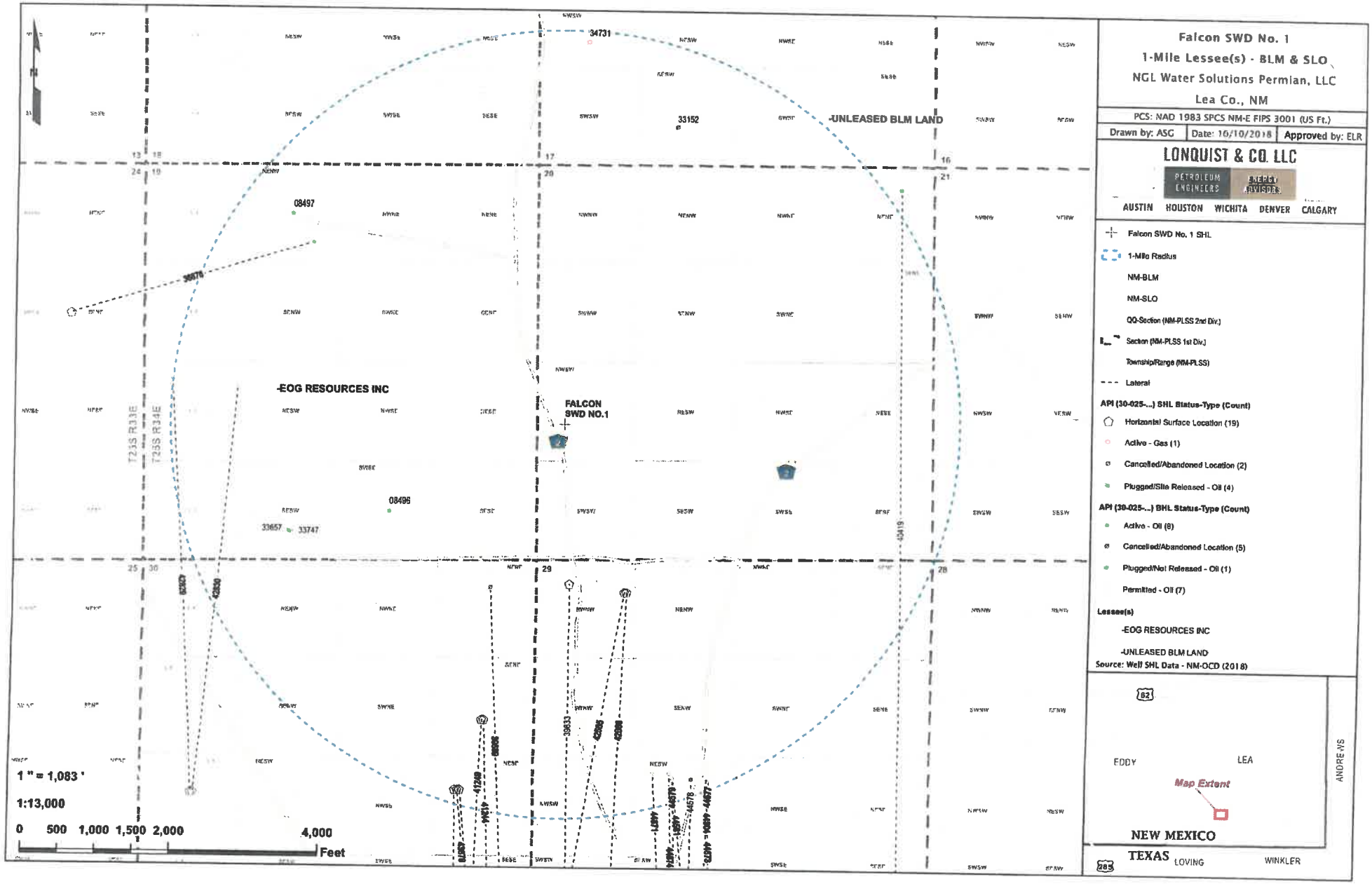
I hereby certify that the well location shown on this plat wa plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

8/17/18
Date of Survey

Signature and Seal of Professional Surveyor:

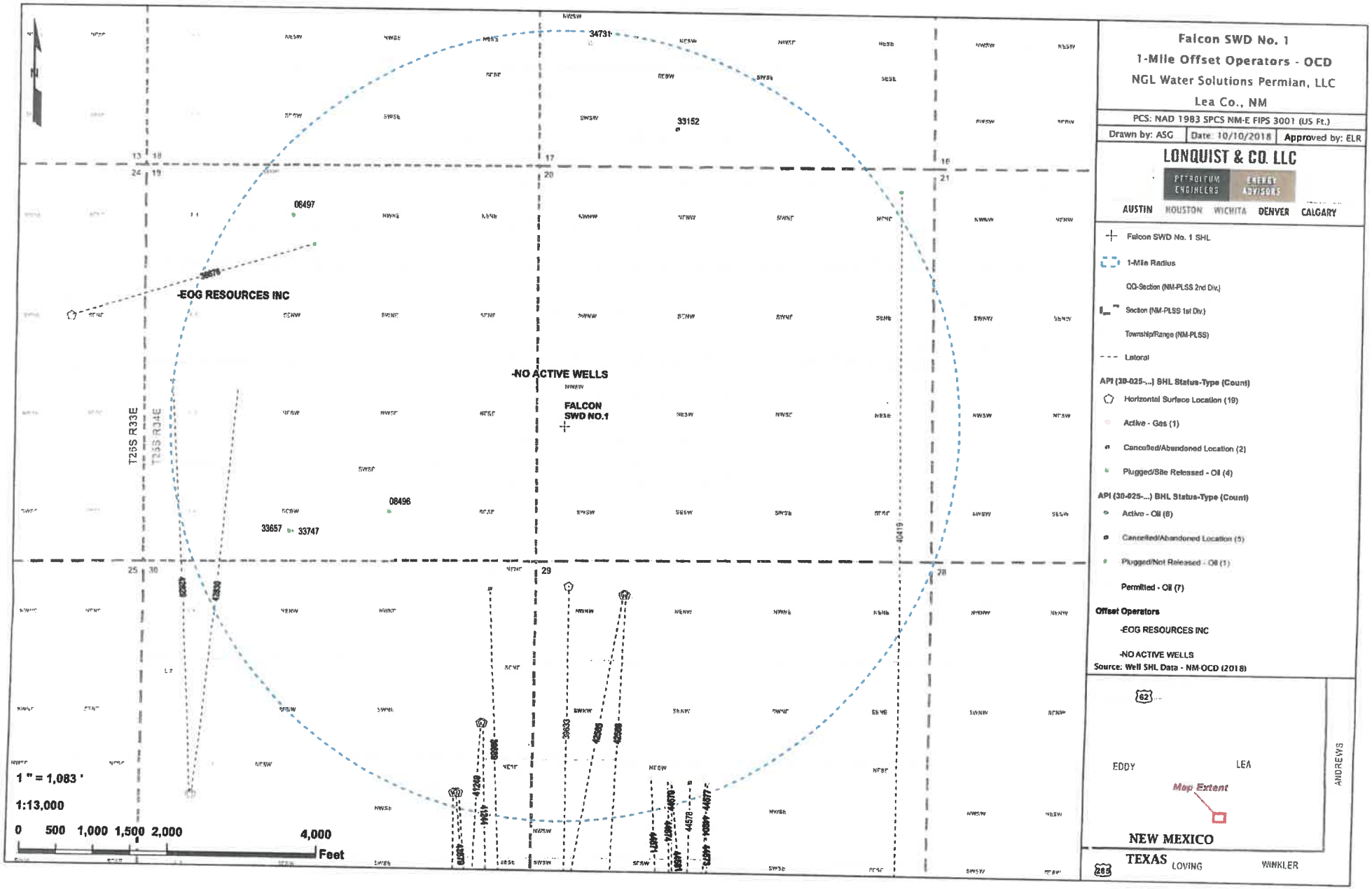
CODY A. CLARK
NEW MEXICO
23001
PROFESSIONAL SURVEYOR

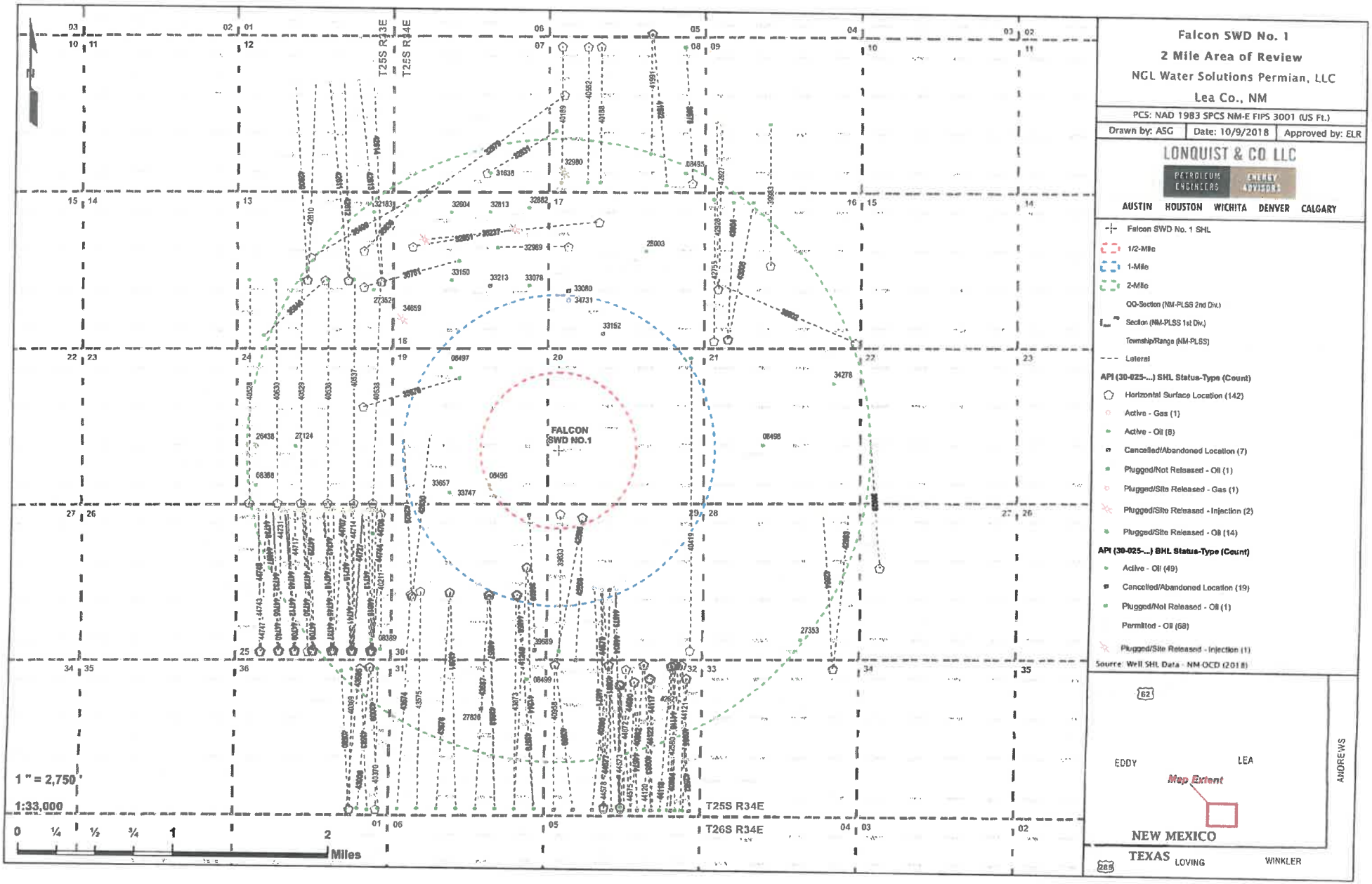
23001
Certificate Number


Falcon SWD No. 1
1-Mile Lessee(s) - BLM & SLO
NGL Water Solutions Permian, LLC
Lea Co., NM
PCS: NAD 1983 SPCS NM-E FIPS 3001 (US Ft.)
Drawn by: ASG
Date: 10/10/2018
Approved by: ELR
LONQUIST & CO. LLC
PETROLEUM ENGINEERS
ENERGY ADVISORS
AUSTIN HOUSTON WICHITA DENVER CALGARY
Falcon SWD No. 1 SHL
1-Mile Radius
NM-BLM
NM-SLO
QQ-Section (NM-PLSS 2nd Div.)
Section (NM-PLSS 1st Div.)
Township/Range (NM-PLSS)
Lateral
API (30-025-...) SHL Status-Type (Count)
Horizontal Surface Location (19)
Active - Gas (1)
Cancelled/Abandoned Location (2)
Plugged/Site Released - Oil (4)
API (30-025-...) BHL Status-Type (Count)
Active - Oil (8)
Cancelled/Abandoned Location (5)
Plugged/Not Released - Oil (1)
Permitted - Oil (7)
Lessee(s)
-EOG RESOURCES INC
-UNLEASED BLM LAND
Source: Well SHL Data - NM-OCD (2018)
-EOG RESOURCES INC
-UNLEASED BLM LAND
FALCON SWD NO.1
34731
33152
08497
08496
33657
33747
T23S R33E
T23S R34E
1 " = 1,083 '
1:13,000
0 500 1,000 1,500 2,000 4,000
Feet
82
EDDY
LEA
Map Extent
NEW MEXICO
TEXAS
LOVING
WINKLER
285
ANDREWS

Falcon SWD No. 1
1 Mile Area of Review List

API (30-025-...)	WELL NAME	WELL TYPE	STATUS	OPERATOR	TVD (FT.)	LATITUDE (NAD83 DD)	LONGITUDE (NAD83 DD)	DATE DRILLED
08496	PRE-ONGARD WELL #001	O	P	PRE-ONGARD WELL OPERATOR	5380	32.1105309000	-103.506843600	1/1/1900
08497	PRE-ONGARD WELL #002	O	P	PRE-ONGARD WELL OPERATOR	5352	32.1214256000	-103.511085500	1/1/1900
33152	JAVELINA 17 FEDERAL #004	O	C	EOG RESOURCES INC	0	32.1246221009	-103.494514254	12/31/9999
33657	ETHEL 19 MUR FEDERAL #001	O	P	EOG RESOURCES INC	854	32.1098175000	-103.511192300	11/18/1996
33747	ETHEL 19 MUR FEDERAL #001Y	O	P	EOG RESOURCES INC	12609	32.1098175000	-103.511093100	11/22/1996
34731	JAVELINA 17 FEDERAL #003	G	A	EOG RESOURCES INC	14080	32.1277733000	-103.498321500	10/27/1999
36676	VACA 24 FEDERAL #001H	O	A	EOG RESOURCES INC	12248	32.1178017000	-103.520683300	10/7/2004
39633	HORSE 29 STATE #001H	O	A	EOG RESOURCES INC	9634	32.1078033000	-103.499061600	2/12/2010
39689	HORSE 30 STATE #001H	O	C	EOG RESOURCES INC	0	32.0950965775	-103.501730672	12/31/9999
40419	PITCHBLENDE 29 FEDERAL COM #001H	O	A	EOG RESOURCES INC	9502	32.0950813000	-103.484764100	4/5/2012
41244	FOX 30 STATE COM #004H	O	A	EOG RESOURCES INC	9649	32.1028328000	-103.502662700	8/15/2013
41249	FOX 30 STATE COM #003H	O	A	EOG RESOURCES INC	9632	32.1028328000	-103.502761800	7/25/2013
42565	HORSE 29 STATE #701C	O	C	EOG RESOURCES INC	0	32.1074910571	-103.496686842	12/31/9999
42566	HORSE 29 STATE #702C	O	C	EOG RESOURCES INC	0	32.1074909259	-103.496589490	12/31/9999
42829	JALELINA 30 FEDERAL #601H	O	N	EOG RESOURCES INC	0	32.1001399000	-103.515312800	12/31/9999
42830	JALELINA 30 FEDERAL #602H	O	N	EOG RESOURCES INC	0	32.1001397000	-103.515216000	12/31/9999
43873	FOX 30 FEDERAL COM #703H	O	A	EOG RESOURCES INC	12654	32.1002601000	-103.503868600	3/5/2018
43879	FOX 30 FEDERAL COM #6D4H	O	A	EOG RESOURCES INC	12438	32.1002600000	-103.503755600	3/16/2018
44558	FOX 30 FEDERAL COM #706H	O	A	EOG RESOURCES INC	12667	32.1002599000	-103.503642600	4/1/2018
44577	CONDOR 32 STATE COM #713H	O	N	EOG RESOURCES INC	0	32.0804487000	-103.493926700	4/24/2018
44578	CONDOR 32 STATE COM #714C	O	C	EOG RESOURCES INC	0	32.0805394000	-103.493926700	12/31/9999
44579	CONDOR 32 STATE COM #715H	O	N	EOG RESOURCES INC	0	32.0806301000	-103.493926600	12/31/9999
44581	CONDOR 32 STATE COM #712C	O	C	EOG RESOURCES INC	0	32.0805401000	-103.492087600	12/31/9999
44671	CONDOR 32 STATE COM #615H	O	N	EOG RESOURCES INC	0	32.0805394000	-103.493926700	4/21/2018
44674	CONDOR 32 STATE COM #614H	O	N	EOG RESOURCES INC	0	32.0806302000	-103.493926400	4/18/2018
44904	CONDOR 32 STATE COM #712Y	O	N	EOG RESOURCES INC	0	32.0806308000	-103.492087700	6/21/2018


Falcon SWD No. 1
1-Mile Offset Operators - OCD
NGL Water Solutions Permian, LLC
Lea Co., NM
PCS: NAD 1983 SPCS NM-E FIPS 3001 (US Ft.)
Drawn by: ASG
Date: 10/10/2018
Approved by: ELR
LONQUIST & CO. LLC
PETROLEUM ENGINEERS
ENERGY ADVISORS
AUSTIN HOUSTON WICHITA DENVER CALGARY
Falcon SWD No. 1 SHL
1-Mile Radius
QQ-Section (NM-PLSS 2nd Div.)
Section (NM-PLSS 1st Div.)
Township/Range (NM-PLSS)
Lateral
API (30-025-...) SHL Status-Type (Count)
Horizontal Surface Location (19)
Active - Gas (1)
Cancelled/Abandoned Location (2)
Plugged/Site Released - Oil (4)
API (30-025-...) BHL Status-Type (Count)
Active - Oil (6)
Cancelled/Abandoned Location (5)
Plugged/Not Released - Oil (1)
Permitted - Oil (7)
Offset Operators
-EOG RESOURCES INC
-NO ACTIVE WELLS
Source: Well SHL Data - NM-OCD (2018)
-EOG RESOURCES INC
-NO ACTIVE WELLS
FALCON SWD NO.1
T26S R33E
T26S R34E
06497
08496
33657
33747
34731
33152
40419
1 " = 1,083 '
1:13,000
0 500 1,000 1,500 2,000 4,000
Feet
62
EDDY
LEA
Map Extent
NEW MEXICO
TEXAS
LOVING
WINKLER
285
ANDREWS


Falcon SWD No. 1
2 Mile Area of Review
NGL Water Solutions Permian, LLC
Lea Co., NM
PCS: NAD 1983 SPCS NM-E FIPS 3001 (US Ft.)
Drawn by: ASG
Date: 10/9/2018
Approved by: ELR
LONQUIST & CO. LLC
PETROLEUM ENGINEERS
ENERGY ADVISORS
AUSTIN HOUSTON WICHITA DENVER CALGARY
Falcon SWD No. 1 SHL
1/2-Mile
1-Mile
2-Mile
QQ-Section (NM-PLSS 2nd Div.)
Section (NM-PLSS 1st Div.)
Township/Range (NM-PLSS)
Lateral
API (30-025-...) SHL Status-Type (Count)
Horizontal Surface Location (142)
Active - Gas (1)
Active - Oil (8)
Cancelled/Abandoned Location (7)
Plugged/Not Released - Oil (1)
Plugged/Site Released - Gas (1)
Plugged/Site Released - Injection (2)
Plugged/Site Released - Oil (14)
API (30-025-...) BHL Status-Type (Count)
Active - Oil (49)
Cancelled/Abandoned Location (19)
Plugged/Not Released - Oil (1)
Permitted - Oil (68)
Plugged/Site Released - Injection (1)
Source: Well SHL Data - NM-OCD (2018)
FALCON SWD NO.1
T25S R33E
T25S R34E
T26S R34E
1 " = 2,750 '
1:33,000
0 ¼ ½ ¾ 1 2 Miles
62
EDDY
LEA
Map Extent
NEW MEXICO
TEXAS
LOVING
WINKLER
285
ANDREWS

Falcon SWD #1: Offsetting Produced Water Analysis																	
wellname	api	section	township	range	unit	county	formation	ph	tds_mgL	sodium_mgL	calcium_mgL	iron_mgL	magnesium_mgL	manganese_mgL	chloride_mgL	bicarbonate_mgL	sulfate_mgL	co2_mgL
BELL LAKE UNIT #009	3002520261	18	23S	34E	K	LEA	BONE SPRING		204652						130000	512	260	
CORIANDER AOC STATE #002	3002533574	1	23S	32E	H	LEA	BONE SPRING	5.2			24176	0	3815		167962	61.1	165	
THISTLE UNIT #071H	3002542425	27	23S	33E	A	Lea	BONE SPRING 1ST SAND	5.6	171476.3	55363.2	9140	40.4	1023	1.1	104576.4	244	560	770
BELL LAKE 19 STATE #002H	3002541515	19	24S	33E	O	Lea	BONE SPRING 2ND SAND	6.2		47148	6419	15	854	0	86572	232	670	240
BELL LAKE 19 STATE #004H	3002541517	19	24S	33E	O	Lea	BONE SPRING 2ND SAND	6.3		47537	6950	11	886	0	88389	171	650	210
SALADO DRAW 6 FEDERAL #001H	3002541293	6	26S	34E	M	Lea	BONE SPRING 3RD SAND	6.5	99612.7	34586.5	3244	10.3	417.7	0.39	59986.5	158.6	820	50
GAUCHO UNIT #011H	3002541184	17	22S	34E	O	Lea	BONE SPRING 3RD SAND	6.5		48879	6182	11	802	0.12	88836	122	1240	70
SNAPPING 2 STATE #014H	3001542688	2	26S	31E	P	EDDY	WOLFCAMP	7.3	81366.4	26319.4	2687.4	26.1	326.7		50281.2		399.7	100
BELLOQ 2 STATE #002H	3001542895	2	23S	31E	C	EDDY	WOLFCAMP	6.8	119471.8	37359.2	5659.1	22.4	746.1		73172.5		1035.5	250
CUSTER MOUNTAIN UNIT #001	3002520756	9	24S	35E	K	LEA	MORROW		282741						176800	161	650	

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

APPLICATION OF NGL WATER SOLUTIONS PERMIAN, LLC TO APPROVE SALT WATER DISPOSAL WELL IN LEA COUNTY, NEW MEXICO.

CASE NO. _____

APPLICATION

NGL Water Solutions Permian, LLC ("NGL"), OGRID No. 372338, through its undersigned attorneys, hereby makes this application to the Oil Conservation Division pursuant to the provisions of N.M. Stat. Ann. § 70-2-12, for an order approving drilling of a salt water disposal well in Lea County, New Mexico. In support of this application, NGL states as follows:

(1) NGL proposes to drill the Hornet SWD #1 well at a surface location 351 feet from the South line and 333 feet from the West line of Section 6, Township 26 South, Range 36 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well.

(2) NGL seeks authority to inject salt water into the Silurian-Devonian formation at a depth of 18,220' – 19,930'.

(3) NGL further seeks approval of the use of 7 inch tubing inside the surface and intermediate casings and 5 ½ inch tubing inside the liner and requests that the Division approve a maximum daily injection rate for the well of 50,000 bbls per day.

(4) NGL anticipates using an average pressure of 2,733 psi for this well, and it requests that a maximum pressure of 3,644 psi be approved for the well.

(5) A proposed C-108 for the subject well is attached hereto in Attachment A.

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

WHEREFORE, NGL requests that this application be set for hearing before an Examiner of the Oil Conservation Division on November 15, 2018; and that after notice and hearing, the Division enter its order approving this application.

Respectfully submitted,

MODRALL, SPERLING, ROEHL, HARRIS & SISK, P.A.

By: _____

Jennifer Bradfute
Deana Bennett
Post Office Box 2168
500 Fourth Street NW, Suite 1000
Albuquerque, New Mexico 87103-2168
Telephone: 505.848.1800
Attorneys for Applicant

CASE NO. _____: Application of NGL Water Solutions Permian, LLC for approval of salt water disposal well in Lea County, New Mexico. Applicant seeks an order approving disposal into the Silurian-Devonian formation through the Hornet SWD #1 well at a surface location 351 feet from the South line and 333 feet from the West line of Section 6, Township 26 South, Range 36 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well. The target formation is the Silurian-Devonian formation at a depth of 18,220' – 19,930'. NGL further seeks approval of the use of 7 inch tubing inside the surface and intermediate casings and 5 ½ inch tubing inside the liner and requests that the Division approve a maximum daily injection rate for the well of 50,000 bbls per day. Said area is located approximately 6 miles west of Bennett, New Mexico.

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: NGL WATER SOLUTIONS PERMIAN LLC **OGRID Number:** 372338
Well Name: HORNET SWD #1 **API:** TBD
Pool: SWD; SILURIAN-DEVONIAN **Pool Code:** 96101

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.

CHRIS WEYAND
Print or Type Name

10/09/2018
Date

512-600-1764
Phone Number

Signature

CHRIS@LONQUIST.COM
e-mail Address

EXHIBIT
tabbies
A

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

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

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: _____ Secondary Recovery _____ Pressure Maintenance __X__ Disposal _____ Storage
Application qualifies for administrative approval? __X__ Yes _____ No

II. OPERATOR: NGL WATER SOLUTIONS PERMIAN, LLC

ADDRESS: 1509 W WALL ST // STE 306 // MIDLAND, TX 79701

CONTACT PARTY: SARAH JORDAN PHONE: (432) 685-0005 x1989

III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? _____ Yes __X__ No
If yes, give the Division order number authorizing the project: _____

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

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

VII. Attach data on the proposed operation, including:

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

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

IX. Describe the proposed stimulation program, if any.

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

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

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

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

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

NAME: Christopher B. Weyand TITLE: Consulting Engineer

SIGNATURE:  DATE: 10/11/2018

E-MAIL ADDRESS: chris@lonquist.com

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

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

Side 2

III. WELL DATA

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

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

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

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

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

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

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

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

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

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

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

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

XIV. PROOF OF NOTICE

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

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

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

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

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

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

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

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

Side 1

INJECTION WELL DATA SHEET

OPERATOR: NGL WATER SOLUTIONS PERMIAN, LLC

WELL NAME & NUMBER: HORNET SWD #1

WELL LOCATION: 351 FSL & 333' FWL (FOOTAGE LOCATION) | M (UNIT LETTER) | 06 (SECTION) | 26S (TOWNSHIP) | 36E (RANGE)

WELLBORE SCHEMATIC

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 24.000" Casing Size: 20.000"

Cemented with: 960 sx. *or* _____ ft^3

Top of Cement: Surface Method Determined: Circulation

1st Intermediate Casing

Hole Size: 17.500" Casing Size: 13.375"

Cemented with: 3,859 sx. *or* _____ ft^3

Top of Cement: Surface Method Determined: Circulation

2nd Intermediate Casing

Hole Size: 12.250" Casing Size: 9.625"

Cemented with: 3,459 sx. *or* _____ ft^3

Top of Cement: Surface Method Determined: Circulation

Production Liner

Hole Size: 8.500"

Casing Size: 7.625"

Cemented with: 402 sx.

or _____ ft^3

Top of Cement: 12,400'

Method Determined: Calculation

Total Depth: 19,930'

Injection Interval

18,220 feet to 19,930 feet

(Open Hole)

Side 2

INJECTION WELL DATA SHEET

Tubing Size: 7", 26 lb/ft, P-110, TCPC from 0'- 12,400' and 5.500", 17 lb/ft, P-110 TCPC from 12,400' - 18,195'
Lining Material: Duoline

Type of Packer: 7-5/8" x 5-1/2" TCPC Permanent Packer with High Temp Elastomer and Full Inconel 925 trim

Packer Setting Depth: 18,195'

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

Additional Data

1. Is this a new well drilled for injection? ___X___Yes _____No

   If no, for what purpose was the well originally drilled? N/A

2. Name of the Injection Formation: Devonian, Silurian, Fusselman and Montoya (Top 100')

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

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

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:
   Bone Spring: 9,090'
   Wolfcamp: 12,670'
   Strawn: 13,695'

Hornet SWD
Lea County NM
Vertical injection - Devonian, Silurian, Fusselman, Montoya

Location - Sec 6, Twp 26S, R 36E
Drilling and Complete Cost - $11.0MM
AFE #

TD 19,930
GL/KB 3,000

Directions to Site - Travel West 6.3 miles from Jal along NM 128, turn South and travel 3.2miles to location. Lat/Long 32.10343, -103.32123

Geologic Tops (MD ft)	Section	Problems	Bit/BHA	Mud	Casing	Logging	Cement (HOLD)	Injection String
Rustler 867 **Surface TD - 1150**	**Surface** Drill 24" 0' - 1190 Set and Cement 20" Casing	Loss Circulation Hole Cleaning Wellbore stability in the Red Beds Anhydrite in the Rustler	24" Tricone 9-5/8" x 8" MM 9 jts: 8" DC 21 jts: 5" HWDP 5 " DP to surface	Spud Mud MW< 9.0	1190' of 20" K55 133ppf STC Centralizers - bottom 2 joints and every 3rd jt thereafter, Cement basket at 200'	No Logs	Lead -499 sx of HES Extenda Cem, 13.7ppg, 4.5hrs TT Tail - 461sx of Halcem 3hr TT 25% Excess 1000psi CSD after 10hrs	12,400' of 7" P110 26# TCPC 5795' of 5-1/2" P110 17# TCPC Duoline Internally Coated Injection Tubing
Top of Salt 1259 Base of Salt 4774 Delaware 5216 **1st Int TD - 5200**	**1st Intermediate** Drill 4050' of 17-1/2" Hole 1150' - 5200' Set and Cement 13-3/8" Casing	Seepage Losses Possible H2S Anhydrite Salt Sections	17-1/2" PDC 9-5/8" x 8" MM 9 jts: 8" DC 21 jts: 5" HWDP 5 " DP to surface		5M A Section Casing Bowl 5200' of 13-3/8" 68# HCL80 BTC Centralizers - bottom jt, every 3rd joint in open hole and 2 jt inside the surface casing	Mudlogger on site by 1600'	Lead - 2012 sx of Neocem 12.9ppg, 5hr TT Tail - 1847sx of Halcem, 14.8ppg 60% Excess 1000psi CSD after 10 hrs Cement to Surface	
ECP DV Tool - 5160 Bell Canyon 5272 Cherry Canyon - 6234 Brushy Canyon - 7670 **DV Tool - 9000** Bone Spring - 9090 **3rd Int Liner Top - 12,400** Wolfcamp - 12670 **2nd Int TD - 12,900**	**2nd Intermediate** Drill 7700' of 12-1/4" Hole 5200' - 12,900' Set 9-5/8" Intermediate Casing and Cement in 3 Stages	Hard Drilling in the Brushy Canyon Seepage to Complete Loss Water Flows Some Anhydrite H2S possible Production in the Bone Spring and Wolfcamp Ballooning is possible in Cherry Canyon and Brushy if Broken Down	12-1/4" PDC 8" MM 9jts: 8" DC 8" Drilling Jars 21 jts: 5" HWDP 5" DP to Surface	**8.5 ppg OBM** **High Vis Sweeps** **UBD/MPD usig ADA**	10M B Section 12900' of 9-5/8" 53.5# P110 BTC **Special Drift to 8.535"** **Externally Coat Between DV Tools** DV tool at at 9000' ECP DV Tool 15' inside Previous Casing Centralizers - bottom jt, 100' aside of DV tool, every 3rd joint in open hole and 5 within the surface casing	MWD GR Triple combo + CBL of 13-3/8" Casing	**Stage 3: 0% Excess** Lead 663sx Neocem 12.9 ppg Tail 510sx Halcem 14.8ppg 1000psi CSD after 10 hrs Cement to Surface **Stage 2: 25% Excess** Lead 508sx Neocem 12.9 ppg Tail 590sx Halcem 14.8ppg 1000psi CSD after 10 hrs **Stage 1: 25% Excess** Lead 553sx Neocem 12.9 ppg Tail 635sx Halcem 14.8ppg. 1000psi CSD after 10hrs	
Strawn - 13220 Atoka - 14338 Morrow - 15174 Miss Lst - 17572 Woodford - 17980 Perm Packer - 18,195 **3rd Int TD - 18,220**	**3rd Intermediate** Drill 5320' of 8-1/2" Hole 12900 - 18220' Set 7-5/8" Liner and Cement in Single Stage	High Pressure (up to 15ppg) and wellbore instability (fracturing) expected in the Atoka 150 target radius Hard Drilling in the Morrow Clastic	8-1/2" PDC 6-3/4" MM 9 jts: 6" DC 21 jts: 5" HWDP 5" DP to Surface	**12.5 ppg OBM** **UBD/MPD using ADA**	5320' of 7-5/8" 39# LS 140 - **DTL (FJ4) FJ (Gas Tight)** **VersaFlex Packer Hanger** Centralizers on and 1 jt above shoe jt and then every 2nd jt.	MWD GR Triple combo, CBL of 9-5/8" Casing	Lead 249sx Neocem 12.9 ppg Tail 101sx Halcem 14.8ppg. 1000psi CSD after 10hrs 8hr TT 35% Excess 1000psi CSD after 10hrs	7-5/8" x 5-1/2" TCPC Permanent Packer with High Temp Elastomer and full Inconel 925 trim
Devonian - 18,190 Fusselman - 19335 Montoya - 19,830' TD - 19,930'	**Injection Interval** Drill 1710' of 6-1/2" hole 18220' - 19930'	Chert is possible Loss of Circulation is expected H2S encountered on the Striker 3 well BHT estimated at 280F	6-1/2" PDC 4-3/4"MM 9 jts: 4-3/4" DC 4-3/4" Drilling Jars 18 jts: 4" FH HWDP 4" FH DP to Surface	Fresh Water - possible flows	Openhole completion	MWD GR Triple Combo with FMI, CBL of 7-5/8"	Displace with 3% KCl (or heavier brine if necessary)	

NGL Water Solutions Permian, LLC

Hornet SWD No. 1

FORM C-108 Supplemental Information

III. Well Data

A. Wellbore Information

1.

Well information	
Lease Name	Hornet SWD
Well No.	1
Location	S-06 T-26S R-36E
Footage Location	351' FSL & 333' FWL

2.

a. Wellbore Description

Casing Information				
Type	Surface	Intermediate	Production	Liner
OD	20"	13.375"	9.625"	7.625"
WT	0.635"	0.480"	0.545"	0.500"
ID	18.730"	12.415"	8.535"	6.625"
Drift ID	18.542"	12.259"	8.535"	6.500"
COD	21.00"	14.375"	10.625"	7.625"
Weight	133 lb/ft	68 lb/ft	53.5 lb/ft	39 lb/ft
Grade	K-55	HCL-80	P-110	LS-140
Hole Size	24"	17.5"	12.25"	8.5"
Depth Set	1,150'	5,200'	12,900'	12,400'-18,220'

b. Cementing Program

Cement Information				
Casing String	Surface	Intermediate	Production	Liner
Lead Cement	Extenda Cem	Neocem	Neocem, Neocem, Neocem	Neocem
Lead Cement Volume	499	2,012	Stage 1: 553 sx Stage 2: 508 sx Stage 3: 663 sx	117
Tail Cement	Halcem	Halcem	Versacem C, Halcem, Halcem	Halcem
Tail Cement Volume	461	1,847	Stage 1: 635 sx Stage 2: 590 sx Stage 3: 510 sx	285
Cement Excess	25%	60%	25%, 25%, 0%	35%
TOC	Surface	Surface	Surface	12,400'
Method	Circulate to Surface	Circulate to Surface	Circulate to Surface	Logged

3. Tubing Description

Tubing Information		
OD	7"	5.5"
WT	0.362"	0.304"
ID	6.276"	4.892"
Drift ID	7.875"	6.050"
COD	6.151"	4.653"
Weight	26 lb/ft	17 lb/ft
Grade	P-110 TCPC	P-110 TCPC
Depth Set	0'-12,400'	12,400' -18,195'

Tubing will be lined with Duoline.

4. Packer Description

7-5/8" x 5-1/2" TCPC Permanent Packer with High Temp Elastomer and Full Inconel 925 trim

B. Completion Information

1. Injection Formation: Devonian, Silurian, Fusselman, Montoya (Top 100')
2. Gross Injection Interval: 18,220' – 19,930'

   Completion Type: Open Hole
3. Drilled for injection.
4. See the attached wellbore schematic.
5. Oil and Gas Bearing Zones within area of well:

Formation	Depth
Bone Spring	9,090'
Wolfcamp	12,670'
Strawn	13,695'

VI. Area of Review

No wells within the area of review penetrate the proposed injection zone.

VII. Proposed Operation Data

1. Proposed Daily Rate of Fluids to be Injection:

   Average Volume: 40,000 BPD
   Maximum Volume: 50,000 BPD

2. Closed System

3. Anticipated Injection Pressure:

   Average Injection Pressure: 2,733 PSI (surface pressure)
   Maximum Injection Pressure: 3,644 PSI (surface pressure)

4. The injection fluid is to be locally produced water. It is expected that the source water will predominantly be from the Bone Spring and Wolfcamp formations. Attached are produced water sample analyses taken from the closest wells that feature samples from the Bone Spring, Wolfcamp, and Strawn formations.

5. The disposal interval is non-productive. No water samples are available from the surrounding area.

VIII. Geological Data

The Devonian formation is a dolomitic ramp carbonate that occurs below the Woodford shale and above the Fusselman formation. Strata found in the Devonian formation include two major groups, the Wristen Buildups and the Thirtyone Deepwater Chert, with the Wristen being more abundant. The Wristen Groups is composed of mixed limestone and dolomites with mudstone to grainstone and boundstone textures. Porosity in the Wristen group is a result of both primary and secondary development. Present are moldic, vugular, karstic (including collapse breccia) features that allow for higher porosities and permeabilities. The Thirtyone Formation contains two end-member reservoir facies, skeletal packstones/grainstones and spiculitic chert, with most of the porosity and permeability found in the coarsely crystalline cherty dolomite. These particular characteristics allow for this formation to be a tremendous Salt Water Disposal horizon.

A. Injection Zone: Siluro-Devonian Formation

Formation	Depth
Rustler Anhydrite	867'
Delaware	5,216'
Bone Spring	9,090'
Wolfcamp	12,670'
Penn	13,220'
Strawn	13,695'
Atoka	14,338'
Morrow	15,174'
Mississippian	16,670'
Woodford	17,980'
Devonian	18,190'
Fusselman	19,335'
Montoya	19,830'

B. Underground Sources of Drinking Water

Within 1-mile of the proposed Hornet SWD #1 location, there are nine water wells. Total depth and depth to water were reported for four of these wells averaging 550 ft and 247 ft respectively. Water wells in the surrounding area have an average depth of 564 ft and an average water depth of 254 ft generally producing from the Santa Rosa. The upper Rustler may also be another USDW and will be protected.

IX. Proposed Stimulation Program

Stimulate with up to 50,000 gallons of acid.

X. Logging and Test Data on the Well

There are no logs or test data on the well. During the process of drilling and completion resistivity, gamma ray, and density logs will be run.

XI. Chemical Analysis of Fresh Water Wells

Attached is a map of all water wells that exist within one mile of the well location. If samples can be obtained, analysis results will be provided as soon as possible. Water Right Summaries from the New Mexico Office of the State Engineer are attached for water wells CP-01351POD1, CP-01170POD1, CP-01263POD3, and CP-01267POD1.

VII. Affirmative Statement of Examination of Geology and Engineering Data

Based on the available engineering and geologic data we find no evidence of open faults or any other hydrologic connection between the disposal zone for the proposed Hornet SWD #1 and any underground sources of drinking water.

NAME: John C. Webb TITLE: Sr. Geologist

SIGNATURE: DATE: 9/24/2018

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

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

Form C-101
Revised July 18, 2013

☐ AMENDED REPORT

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

1. Operator Name and Address	2. OGRID Number
NGL WATER SOLUTIONS PERMIAN, LLC 1509 W WALL ST, STE 306 MIDLAND, TX 79701	372338
	3. API Number TBD

4. Property Code	5. Property Name	6. Well No.
	HORNET SWD	1

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
M	06	26S	36E	N/A	351'	SOUTH	333'	WEST	LEA

8. Proposed Bottom Hole Location

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

9. Pool Information

Pool Name	Pool Code
SWD; Silurian-Devonian	96101

Additional Well Information

11. Work Type	12. Well Type	13. Cable/Rotary	14. Lease Type	15. Ground Level Elevation
N	SWD	R	Private	3,000'
16. Multiple	**17. Proposed Depth**	**18. Formation**	**19. Contractor**	**20. Spud Date**
N	19,930'	Siluro-Devonian	TBD	ASAP

Depth to Ground water	Distance from nearest fresh water well	Distance to nearest surface water
254'	295'	> 1 mile

☐ We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surface	24"	20"	133 lb/ft	1,150'	960	Surface
Intermediate	17.5"	13.375"	68 lb/ft	5,200'	3,859	Surface
Production	12.25"	9.625"	53.5 lb/ft	12,900'	3,459	Surface
Prod. Liner	8.5"	7.625"	39 lb/ft	18,220'	402	12,400'
Tubing	N/A	7"	26 lb/ft	0' – 12,400'	N/A	N/A
Tubing	N/A	5.5"	17 lb/ft	12,400' – 18,195'	N/A	N/A

Casing/Cement Program: Additional Comments

See attached schematic.

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Hydraulic/Blinds, Pipe	10,000 psi	8,000 psi	TBD – Schaffer/Cameron

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify that I have complied with 19.15.14.9 (A) NMAC ☐ and/or 19.15.14.9 (B) NMAC ☒, if applicable. Signature:		OIL CONSERVATION DIVISION	
		Approved By:	
Printed name: Christopher B. Weyand		Title:	
Title: Consulting Engineer		Approved Date:	Expiration Date:
E-mail Address: chris@lonquist.com			
Date: 10/11/2018	Phone: (512) 600-1764	Conditions of Approval Attached	

District I
1625 N French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
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811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
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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
	96101	SWD; Silurian-Devonian

[4] Property Code	[5] Property Name	[6] Well Number
	HORNET SWD	1

[7] OGRID No.	[8] Operator Name	[9] Elevation
372338	NGL WATER SOLUTIONS PERMIAN, LLC	3000.00'±

[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
M	06	26 S	36 E	N/A	351'	SOUTH	333'	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 interests have been consolidated or a non-standard unit has been approved by the division.

[16]

SECTION
06

PROPOSED
HORNET SWD 1

NMSP–E (NAD27)
N: 389,193.11'
E: 816,641.96'

NMSP–E (NAD83)
N: 389,250.90'
E: 857,829.90'
Lat: N32°03'57.64"
Long: W103°18'41.91"

333'
351'

[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.

Signature 10/11/2018 Date

Chris Weyand
Printed Name

chris@lonquist.com
E-mail Address

[18] SURVEYOR CERTIFICATION

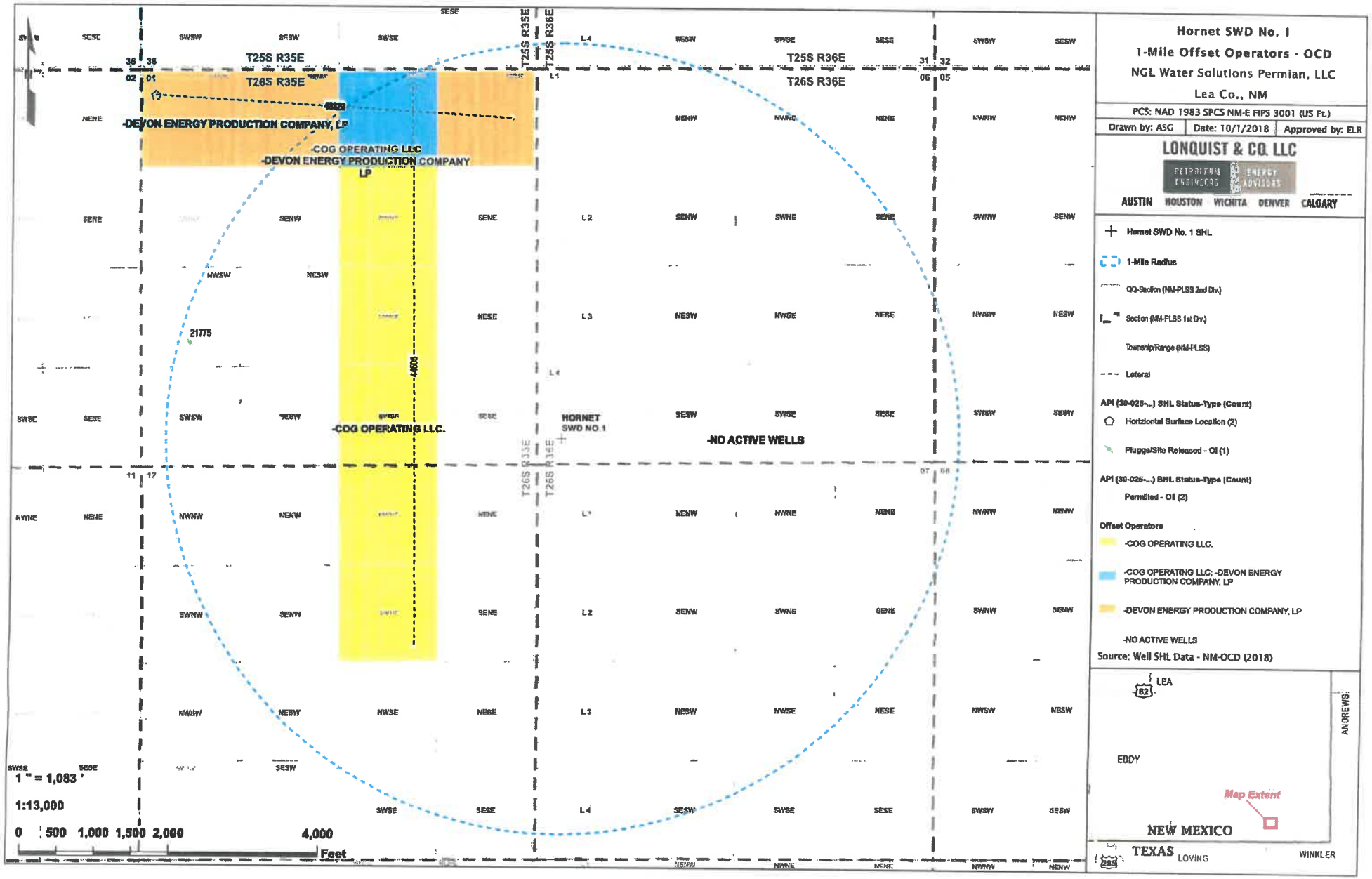
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

9/18/2018
Date of Survey

Signature and Seal of Professional Surveyor:

CODY A. CLARK
NEW MEXICO
23001
PROFESSIONAL SURVEYOR

Certificate Number 23001



Hornet SWD No. 1
1-Mile Offset Operators - OCD
NGL Water Solutions Permian, LLC
Lea Co., NM

PCS: NAD 1983 SPCS NM-E FIPS 3001 (US Ft.)

Drawn by: ASG	Date: 10/1/2018	Approved by: ELR

LONQUIST & CO. LLC
PETROLEUM ENGINEERS | ENERGY ADVISORS
AUSTIN HOUSTON WICHITA DENVER CALGARY

- Hornet SWD No. 1 SHL
- 1-Mile Radius
- QQ-Section (NM-PLSS 2nd Div.)
- Section (NM-PLSS 1st Div.)
- Township/Range (NM-PLSS)
- Lateral

API (30-025-...) SHL Status-Type (Count)
- Horizontal Surface Location (2)
- Plugged/Site Released - Oil (1)

API (30-025-...) BHL Status-Type (Count)
- Permitted - Oil (2)

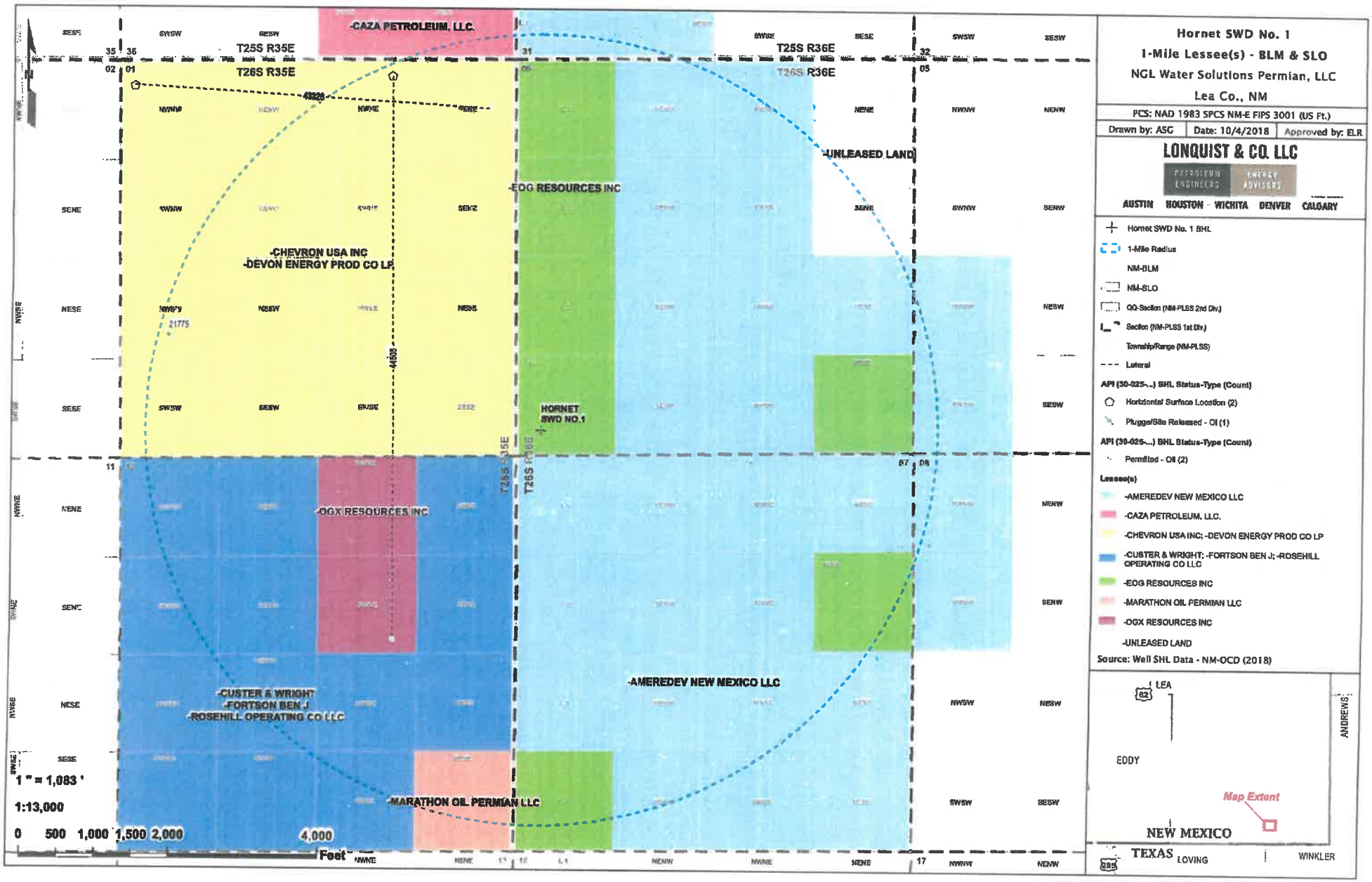
Offset Operators
- -COG OPERATING LLC.
- -COG OPERATING LLC; -DEVON ENERGY PRODUCTION COMPANY, LP
- -DEVON ENERGY PRODUCTION COMPANY, LP
- -NO ACTIVE WELLS

Source: Well SHL Data - NM-OCD (2018)

Hornet SWD No. 1

1 Mile Area of Review List

API (30-025-...)	WELL NAME	WELL TYPE	STATUS	OPERATOR	TVD (FT.)	LATITUDE (NAD83 DD)	LONGITUDE (NAD83 DD)	DATE DRILLED
43326	PURPLE ACE 1 FEDERAL #001H	O	N	DEVON ENERGY PRODUCTION COMPANY, LP	0	32.07866610000	-103.32913510000	12/31/9999
44505	USHANKA FEDERAL COM #023H	O	N	COG OPERATING LLC	0	32.07899600000	-103.31804900000	12/31/9999
21775	PRE-ONGARD WELL #001	O	P	PRE-ONGARD WELL OPERATOR	5191	32.06959150000	-103.32768250000	1/1/1900



Hornet SWD No. 1

1-Mile Lessee(s) - BLM & SLO

NGL Water Solutions Permian, LLC

Lea Co., NM

PCS: NAD 1983 SPCS NM-E FIPS 3001 (US Ft.)

Drawn by: ASG | Date: 10/4/2018 | Approved by: ELR

LONQUIST & CO. LLC

PETROLEUM ENGINEERS | ENERGY ADVISORS

AUSTIN HOUSTON WICHITA DENVER CALGARY

- Hornet SWD No. 1 SHL
- 1-Mile Radius
- NM-BLM
- NM-SLO
- QQ-Section (NM-PLSS 2nd Div.)
- Section (NM-PLSS 1st Div.)
- Township/Range (NM-PLSS)
- Lateral

API (30-025-...) SHL Status-Type (Count)

- Horizontal Surface Location (2)
- Plugged/Site Released - Oil (1)

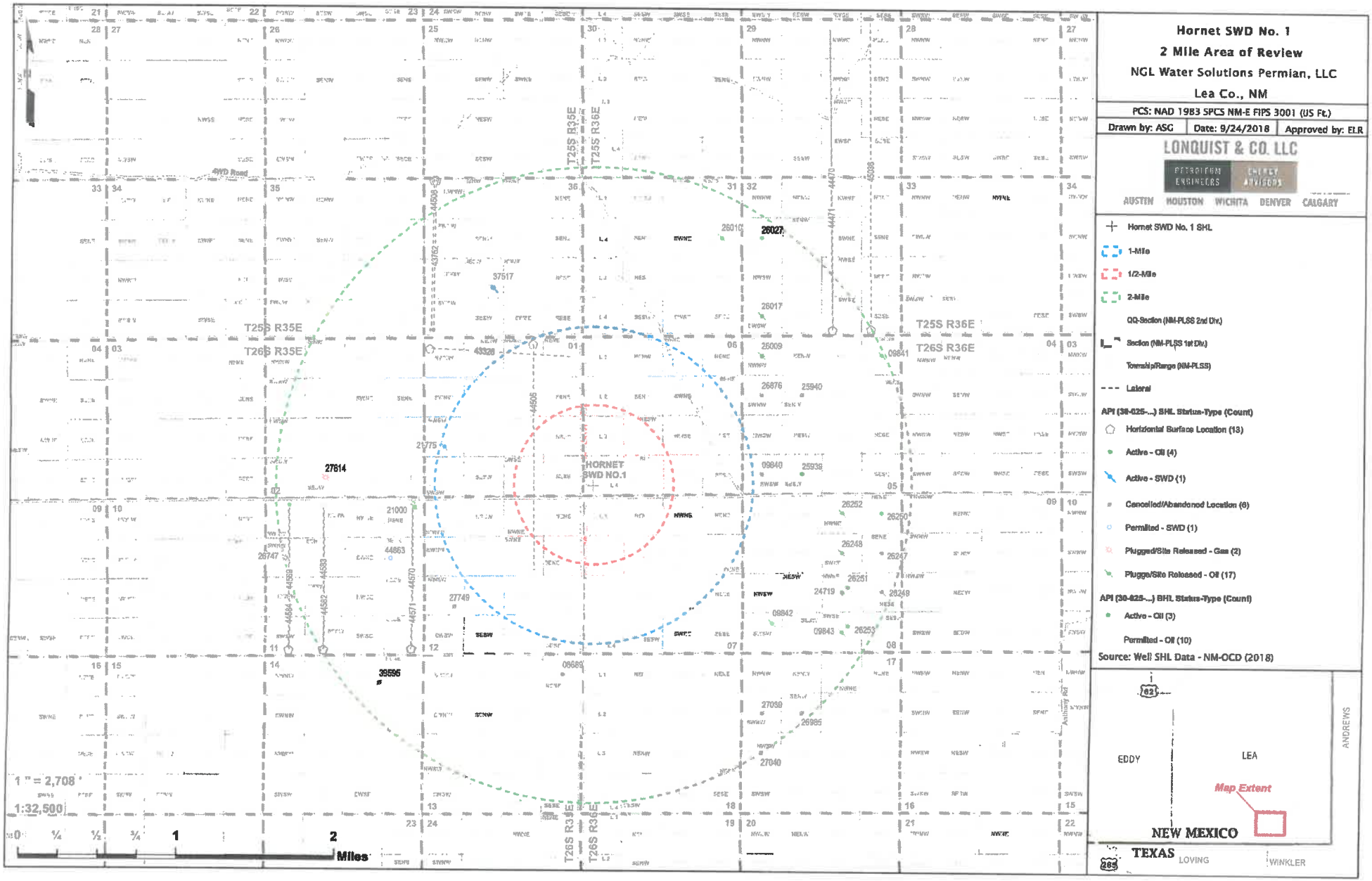
API (30-025-...) BHL Status-Type (Count)

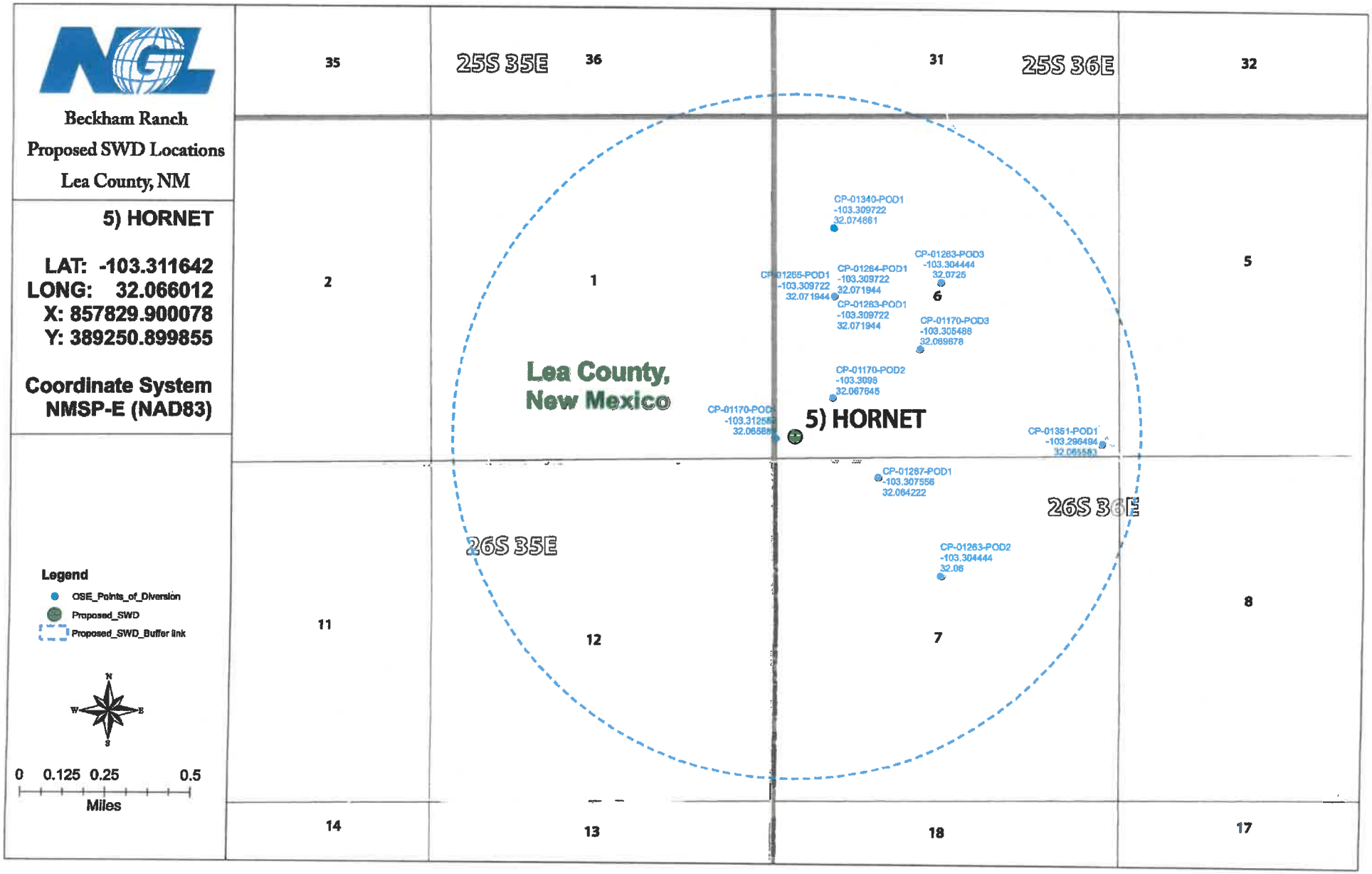
- Permitted - Oil (2)

Lessee(s)

- -AMEREDEV NEW MEXICO LLC
- -CAZA PETROLEUM, LLC.
- -CHEVRON USA INC; -DEVON ENERGY PROD CO LP
- -CUSTER & WRIGHT; -FORTSON BEN J; -ROSEHILL OPERATING CO LLC
- -EOG RESOURCES INC
- -MARATHON OIL PERMIAN LLC
- -OGX RESOURCES INC
- -UNLEASED LAND

Source: Well SHL Data - NM-OCD (2018)


Hornet SWD No. 1
2 Mile Area of Review
NGL Water Solutions Permian, LLC
Lea Co., NM
PCS: NAD 1983 SPCS NM-E FIPS 3001 (US Ft.)
Drawn by: ASG
Date: 9/24/2018
Approved by: ELR
LONQUIST & CO. LLC
PETROLEUM ENGINEERS
ENERGY ADVISORS
AUSTIN HOUSTON WICHITA DENVER CALGARY
Hornet SWD No. 1 SHL
1-Mile
1/2-Mile
2-Mile
QQ-Section (NM-PLSS 2nd Div.)
Section (NM-PLSS 1st Div.)
Township/Range (NM-PLSS)
Lateral
API (30-025-...) SHL Status-Type (Count)
Horizontal Surface Location (13)
Active - Oil (4)
Active - SWD (1)
Cancelled/Abandoned Location (6)
Permitted - SWD (1)
Plugged/Site Released - Gas (2)
Plugge/Site Released - Oil (17)
API (30-025-...) SHL Status-Type (Count)
Active - Oil (3)
Permitted - Oil (10)
Source: Well SHL Data - NM-OCD (2018)
HORNET SWD NO.1
T25S R35E
T25S R36E
T26S R35E
T26S R36E
1 " = 2,708 '
1:32,500
0 ¼ ½ ¾ 1 2
Miles
EDDY
LEA
Map Extent
NEW MEXICO
TEXAS
LOVING
WINKLER
ANDREWS


Beckham Ranch
Proposed SWD Locations
Lea County, NM
5) HORNET
LAT: -103.311642
LONG: 32.066012
X: 857829.900078
Y: 389250.899855
Coordinate System
NMSP-E (NAD83)
Legend
OSE_Points_of_Diversion
Proposed_SWD
Proposed_SWD_Buffer link
0 0.125 0.25 0.5
Miles
35
25S 35E
36
31
25S 36E
32
2
1
6
5
11
12
7
8
14
13
18
17
26S 35E
26S 36E
Lea County,
New Mexico
5) HORNET
CP-01340-POD1
-103.309722
32.074861
CP-01263-POD3
-103.304444
32.0725
CP-01255-POD1
-103.309722
32.071944
CP-01264-POD1
-103.309722
32.071944
CP-01263-POD1
-103.309722
32.071944
CP-01170-POD3
-103.305488
32.069678
CP-01170-POD2
-103.3098
32.067645
CP-01170-POD
-103.31255
32.06585
CP-01351-POD1
-103.296494
CP-01287-POD1
-103.307556
32.064222
CP-01263-POD2
-103.304444
32.06

Hornet SWD #1: Offsetting Produced Water Analysis														
wellname	api	county	formation	ph	tds_mgL	sodium_mgL	calcium_mgL	iron_mgL	magnesium_mgL	manganese_mgL	chloride_mgL	bicarbonate_mgL	sulfate_mgL	co2_mgL
BELL LAKE UNIT #009	3002520261	LEA	BONE SPRING		204652						130000	512	260	
THISTLE UNIT #071H	3002542425	Lea	BONE SPRING 1ST SAND	5.6	171476	55363.2	9140	40.4	1023	1.1	104576.4	244	560	770
BELL LAKE 19 STATE #004H	3002541517	Lea	BONE SPRING 2ND SAND	6.3		76378	6238	11	834	0	131397	159	670	200
BELL LAKE 19 STATE #003H	3002541516	Lea	BONE SPRING 2ND SAND	6.7		59599	7326	11	942	0.69	108190	171	680	230
SALADO DRAW 6 FEDERAL #001H	3002541293	Lea	BONE SPRING 3RD SAND	6.7	95604	31066	3196	10	394	0.5	59071	183	0	100
SALADO DRAW 6 FEDERAL #001H	3002541293	Lea	BONE SPRING 3RD SAND	7			3289	0.3	474.5	0.38		219.6		300
PRONGHORN AHO FEDERAL #001	3002526496	LEA	STRAWN	5.5			20.1	0	12.2		35.5	61.1	48.8	
SNAPPING 2 STATE #014H	3001542688	EDDY	WOLFCAMP	7.3	81366.4	26319.4	2687.4	26.1	326.7		50281.2		399.7	100

New Mexico Office of the State Engineer
Point of Diversion Summary

Well Tag	POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) Q64	Q16	Q4	Sec	Tws	Rng	(NAD83 UTM in meters) X	Y
	CP 01170 POD1	3	3	3	06	26S	36E	659282	3548984

Driller License:	1682	**Driller Company:**	HUNGRY HORSE, LLC.		
Driller Name:	JOHN NORRIES				
Drill Start Date:	10/21/2013	**Drill Finish Date:**	11/11/2013	**Plug Date:**	
Log File Date:	12/12/2013	**PCW Rcv Date:**	02/26/2014	**Source:**	Shallow
Pump Type:	SUBMER	**Pipe Discharge Size:**		**Estimated Yield:**	250 GPM
Casing Size:	12.00	**Depth Well:**	500 feet	**Depth Water:**	280 feet

Water Bearing Stratifications:	Top	Bottom	Description
	330	420	Sandstone/Gravel/Conglomerate
	473	495	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	0	500

New Mexico Office of the State Engineer
Point of Diversion Summary

Well Tag	POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) Q64	Q16	Q4	Sec	Twp	Rng	(NAD83 UTM in meters) X	Y
	CP 01263 POD3	4	1	3	06	26S	36E	660038	3549729

Driller License: 1607 **Driller Company:** DURAN DRILLING

Driller Name: DURAN, LUIS (TONY)

Drill Start Date: 06/24/2015 **Drill Finish Date:** 06/28/2015 **Plug Date:**

Log File Date: 07/13/2015 **PCW Rcv Date:** **Source:** Shallow

Pump Type: **Pipe Discharge Size:** **Estimated Yield:** 125 GPM

Casing Size: 10.00 **Depth Well:** 516 feet **Depth Water:** 240 feet

Water Bearing Stratifications:	Top	Bottom	Description
	195	254	Other/Unknown
	350	384	Other/Unknown

Casing Perforations:	Top	Bottom
	215	515

New Mexico Office of the State Engineer
Point of Diversion Summary

Well Tag	POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) Q64	Q16	Q4	Sec	Twn	Rng	(NAD83 UTM in meters) X	Y
	CP 01267 POD1	3	4	3	06	26S	36E	659759	3548807

Driller License:	1682	**Driller Company:**	HUNGRY HORSE, LLC.		
Driller Name:	JOHN NORRIES				
Drill Start Date:	01/20/2014	**Drill Finish Date:**	02/03/2014	**Plug Date:**	
Log File Date:	03/12/2014	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:	12.00	**Depth Well:**	585 feet	**Depth Water:**	200 feet

Water Bearing Stratifications:	Top	Bottom	Description
	200	297	Sandstone/Gravel/Conglomerate
	375	468	Sandstone/Gravel/Conglomerate
	518	580	Shale/Mudstone/Siltstone

Casing Perforations:	Top	Bottom
	0	585

New Mexico Office of the State Engineer
Point of Diversion Summary

Well Tag	POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) Q64	Q16	Q4	Sec	Twls	Rng	(NAD83 UTM in meters) X	Y
	CP 01351 POD1	4	4	4	06	26S	36E	660801	3548974

Driller License:		**Driller Company:**			
Driller Name:	MULLINS,JUSTIN				
Drill Start Date:	12/17/2016	**Drill Finish Date:**	01/17/2017	**Plug Date:**	
Log File Date:	03/27/2017	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	250 GPM
Casing Size:	8.00	**Depth Well:**	600 feet	**Depth Water:**	267 feet

Water Bearing Stratifications:	Top	Bottom	Description
	118	600	Other/Unknown

Casing Perforations:	Top	Bottom
	250	370
	430	470
	550	590

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

APPLICATION OF NGL WATER SOLUTIONS PERMIAN, LLC TO APPROVE SALT WATER DISPOSAL WELL IN LEA COUNTY, NEW MEXICO.

CASE NO. 20093

APPLICATION

NGL Water Solutions Permian, LLC ("NGL"), OGRID No. 372338, through its undersigned attorneys, hereby makes this application to the Oil Conservation for an order approving drilling of a salt water disposal well in Lea County, New Mexico. In support of this application, NGL states as follows:

(1) NGL proposes to drill the Thunderbird SWD #1 well at a surface location 190 feet from the South line and 314 feet from the East line of Section 30, Township 25 South, Range 36 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well.

(2) NGL seeks authority to inject salt water into the Devonian formation at a depth of 15,430' – 17,100'.

(3) NGL further seeks approval of the use of 7 inch tubing inside the surface and intermediate casings and 5 ½ inch tubing inside the liner and requests that the Division approve a maximum daily injection rate for the well of 50,000 bbls per day.

(4) NGL anticipates using an average pressure of 2,314 psi for this well, and it requests that a maximum pressure of 3,086 psi be approved for the well.

(5) A proposed C-108 for the subject well is attached hereto in Attachment A.

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

WHEREFORE, NGL requests that this application be set for hearing before an Examiner of the Oil Conservation Division on November 15, 2018; and that after notice and hearing, the Division enter its order approving this application.

Respectfully submitted,

MODRALL, SPERLING, ROEHL, HARRIS
& SISK, P.A.

By: _____

Jennifer Bradfute
Deana Bennett
Post Office Box 2168
Bank of America Centre
500 Fourth Street NW, Suite 1000
Albuquerque, New Mexico 87103-2168
Telephone: 505.848.1800
Attorneys for Applicant

CASE NO. _____: Application of NGL Water Solutions Permian, LLC for approval of salt water disposal well in Lea County, New Mexico. Applicant seeks an order approving disposal into the Devonian formation through the Thunderbird SWD #1 well at a surface location 190 feet from the South line and 314 feet from the East line of Section 30, Township 25 South, Range 36 East, NMPM, Lea County, New Mexico. The target injection interval is the Devonian formation at a depth of 15,430' – 17,100'. NGL further seeks approval of the use of 7 inch tubing inside the surface and intermediate casings and 5 ½ inch tubing inside the liner and requests that the Division approve a maximum daily injection rate for the well of 50,000 bbls per day. Said area is located approximately 6.2 miles west of Jal, New Mexico.

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

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

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: ___ Secondary Recovery ___ Pressure Maintenance _X_ Disposal ___ Storage
Application qualifies for administrative approval? _X_ Yes ___ No

II. OPERATOR: NGL WATER SOLUTIONS PERMIAN, LLC

ADDRESS: 1509 W WALL ST // STE 306 // MIDLAND, TX 79701

CONTACT PARTY: SARAH JORDAN PHONE: (432) 685-0005 x1989

III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? ___ Yes _X_ No
If yes, give the Division order number authorizing the project: _____

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

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

VII. Attach data on the proposed operation, including:

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

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

IX. Describe the proposed stimulation program, if any.

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

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

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

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

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

NAME: Christopher B. Weyand TITLE: Consulting Engineer

SIGNATURE:  DATE: 10/10/2018

E-MAIL ADDRESS: chris@lonquist.com

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

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

Side 2

III. WELL DATA

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

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

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

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

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

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

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

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

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

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

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

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

XIV. PROOF OF NOTICE

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

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

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

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

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

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

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

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

Side 1

INJECTION WELL DATA SHEET

OPERATOR: NGL WATER SOLUTIONS PERMIAN, LLC

WELL NAME & NUMBER: THUNDERBIRD SWD #1

WELL LOCATION: 190' FSL & 314' FEL | P | 30 | 25S | 36E

FOOTAGE LOCATION | UNIT LETTER | SECTION | TOWNSHIP | RANGE

WELLBORE SCHEMATIC

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 24.000" Casing Size: 20.000"

Cemented with: 1,308 sx. *or* _____ ft³

Top of Cement: Surface Method Determined: Circulation

1st Intermediate Casing

Hole Size: 17.500" Casing Size: 13.375"

Cemented with: 3,727 sx. *or* _____ ft³

Top of Cement: Surface Method Determined: Circulation

2nd Intermediate Casing

Hole Size: 12.250" Casing Size: 9.625"

Cemented with: 2,928 sx. *or* _____ ft³

Top of Cement: Surface Method Determined: Circulation

Production Liner

Hole Size: 8.500"

Casing Size: 7.625"

Cemented with: 350 sx.

or _____ ft^3

Top of Cement: 10,600'

Method Determined: Calculation

Total Depth: 17,100'

Injection Interval

15,430 feet to 17,100 feet

(Open Hole)

Side 2

INJECTION WELL DATA SHEET

Tubing Size: 7", 26 lb/ft, P-110, TCPC from 0'- 10,500' and 5.500", 17 lb/ft, P-110 TCPC from 10,500' – 15,400'
Lining Material: Duoline

Type of Packer: 7-5/8" x 5-1/2" TCPC Permanent Packer with High Temp Elastomer and Full Inconel 925 trim

Packer Setting Depth: 15,400'

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

Additional Data

1. Is this a new well drilled for injection? ___X___Yes _____No

   If no, for what purpose was the well originally drilled? N/A

2. Name of the Injection Formation: Devonian, Silurian, Fusselman and Montoya (Top 100')

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

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

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:
   Yates-Seven Rivers: 3,458'
   Delaware: 5,248'
   Bone Spring: 7,912'
   Wolfcamp: 10,984'
   Strawn: 11,406'

Thunderbird SWD
Lea County NM
Vertical Injection - Devonian, Silurian, Fusselman, Montoya

Location - Sec 30, Twp 25S, R 36E
Drilling and Complete Cost - $10.55MM
AFE #

TD 17,100
GL/KB 3,040

Directions to Site - Travel 5.2 miles from Jal along NM 205 - S/Erving Pan Road, continue on to Anthony Road and travel 5.9miles to location.
Lat/Long 32.0946100, -103.2967000

Geologic Tops (MD ft)	Section	Problems	Bit/BHA	Mud	Casing	Logging	Cement (HOLD)	Injection String
Rustler 1324 Salado Silicastic 1459 **Surface TD - 1600**	**Surface** Drill 24" 0' - 1620 Set and Cement 20" Casing	Loss Circulation Hole Cleaning Wellbore stability in the Red Beds Anhydrite in the Rustler	24" Tricone 9-5/8" x 8" MM 9 jts: 8" DC 21 jts: 5" HWDP 5 " DP to surface	Spud Mud MW< 9.0	1620' of 20" K55 133ppf STC Centralizers - bottom 2 joints and every 3rd jt thereafter, Cement basket at 200'	No Logs	Lead -713 sx of HES Extenda Cem, 13.7ppg, 4.5hrs TT Tail - 595sx of Halcem 3hr TT 25% Excess 1000psi CSD after 10hrs	10500' of 7" P110 26# TCPC 4900' of 5-1/2" P110 17# TCPC Duoline Internally Coated Injection Tubing
Top of Salt 1674 Base of Salt 3388 Delaware 5248 **1st Int TD - 5200**	**1st Intermediate** Drill 3600' of 17-1/2" Hole 1600' - 5200' Set and Cement 13-3/8" Casing	Seepage Losses Possible H2S Anhydrite Salt Sections	17-1/2" PDC 9-5/8" x 8" MM 9 jts: 8" DC 21 jts: 5" HWDP 5 " DP to surface		5M A Section Casing Bowl 5200' of 13-3/8" 68# HCL80 BTC Centralizers - bottom jt, every 3rd joint in open hole and 2 jt inside the surface casing	Mudlogger on site by 1600'	Lead - 1880 sx of Neocem 12.9ppg, 5hr TT Tail - 1847sx of Halcem, 14.8ppg 60% Excess 1000psi CSD after 10 hrs Cement to Surface	
ECP DV Tool - 5160 Bell Canyon 5298 Cherry Canyon - 5736 Brushy Canyon - 7036 **DV Tool - 8000** Bone Spring - 7119 **3rd Int Liner Top - 10,600** Wolfcamp - 10984 **2nd Int TD - 11,100**	**2nd Intermediate** Drill 5900' of 12-1/4" Hole 5200' - 11,100' Set 9-5/8" Intermediate Casing and Cement in 3 Stages	Hard Drilling in the Brushy Canyon Seepage to Complete Loss Water Flows Some Anhydrite H2S possible Production in the Bone Spring and Wolfcamp Ballooning is possible in Cherry Canyon and Brushy if Broken Down	12-1/4" PDC 8" MM 9jts: 8" DC 8" Drilling Jars 21 jts: 5" HWDP 5" DP to Surface	8.5 ppg OBM High Vis Sweeps UBD/MPD usig ADA	10M B Section 11100' of 9-5/8" 53.5# P110 BTC **Special Drift to 8.535"** **Externally Coat Between DV Tools** DV tool at at 8000' ECP DV Tool 15' Inside Previous Casing Centralizers - bottom jt, 100' aside of DV tool, every 3rd joint in open hole and 5 within the surface casing	MWD GR Triple combo + CBL of 13-3/8" Casing	**Stage 3: 0% Excess** Lead 663sx Neocem 12.9 ppg Tail 510sx Halcem 14.8ppg 1000psi CSD after 10 hrs Cement to Surface **Stage 2: 25% Excess** Lead 508sx Neocem 12.9 ppg Tail 295sx Halcem 14.8ppg 1000psi CSD after 10 hrs **Stage 1: 25% Excess** Lead 415sx Neocem 12.9 ppg Tail 537sx Halcem 14.8ppg. 1000psi CSD after 10hrs	
Strawn - 11406 Atoka - 11628 Morrow - 12288 Miss Lst - 13728 Woodford - 15056 Perm Packer - 15400 **3rd Int TD - 15,430**	**3rd Intermediate** Drill 4330' of 8-1/2" Hole 11100' - 15430' Set 7-5/8" Liner and Cement in Single Stage	High Pressure (up to 15ppg) and wellbore instability (fracturing) expected in the Atoka 150 target radius Hard Drilling in the Morrow Clastic	8-1/2" PDC 6-3/4" MM 9 jts: 6" DC 21 jts: 5" HWDP 5" DP to Surface	12.5 ppg OBM UBD/MPD using ADA	4330' of 7-5/8" 39# Q125 - **DTL (FJ4) FJ (Gas Tight)** **VersaFlex Packer Hanger** Centralizers on and 1 jt above shoe jt and then every 2nd jt.	MWD GR Triple combo, CBL of 9-5/8" Casing	Lead 249sx Neocem 12.9 ppg Tail 101sx Halcem 14.8ppg. 1000psi CSD after 10hrs 8hr TT 35% Excess 1000psi CSD after 10hrs	7-5/8" x 5-1/2" TCPC Permanent Packer with High Temp Elastomer and full Inconel 925 trim
Devonian - 15,409 **Fusselman - 16468** **Montoya - 17,000** **TD - 17,100**	**Injection Interval** Drill 1670' of 6-1/2" hole 15430' - 17,100'	Chert is possible Loss of Circulation is expected H2S encountered on the Striker 3 well BHT estimated at 280F	6-1/2" PDC 4-3/4"MM 9 jts: 4-3/4" DC 4-3/4" Drilling Jars 18 jts: 4" FH HWDP 4" FH DP to Surface	Fresh Water - possible flows	Openhole completion	MWD GR Triple Combo with FMI, CBL of 7-5/8"	Displace with 3% KCl (or heavier brine if necessary)	

NGL Water Solutions Permian, LLC

Thunderbird SWD No. 1

FORM C-108 Supplemental Information

III. Well Data

A. Wellbore Information

1.

Well information	
Lease Name	Thunderbird SWD
Well No.	1
Location	S-30 T-25S R-36E
Footage Location	190' FSL & 314' FEL

2.

a. Wellbore Description

Casing Information				
Type	Surface	Intermediate	Production	Liner
OD	20"	13.375"	9.625"	7.625"
WT	0.635"	0.480"	0.545"	0.500"
ID	18.730"	12.415"	8.535"	6.625"
Drift ID	18.542"	12.259"	8.535"	6.500"
COD	21.00"	14.375"	10.625"	7.625"
Weight	133 lb/ft	68 lb/ft	53.5 lb/ft	39 lb/ft
Grade	K-55	HCL-80	P-110	Q-125
Hole Size	24"	17.5"	12.25"	8.5"
Depth Set	1,600'	5,200'	11,100'	15,430'

b. Cementing Program

Cement Information				
Casing String	Surface	Intermediate	Production	Liner
Lead Cement	Extenda Cem	Neocem	Neocem, Neocem, Neocem	Neocem
Lead Cement Volume	713	1,880	Stage 1: 415 sks Stage 2: 508 sks Stage 3: 663 sks	249
Tail Cement	Halcem	Halcem	Versacem C, Halcem, Halcem	Halcem
Tail Cement Volume	595	1,847	Stage 1: 537 sks Stage 2: 295 sks Stage 3: 510 sks	101
Cement Excess	25%	60%	25%, 25%, 0%	35%
TOC	Surface	Surface	Surface	10,600'
Method	Circulate to Surface	Circulate to Surface	Circulate to Surface	Logged

3. Tubing Description

Tubing Information		
OD	7"	5.5"
WT	0.362"	0.304"
ID	6.276"	4.892"
Drift ID	7.875"	6.050"
COD	6.151"	4.653"
Weight	26 lb/ft	17 lb/ft
Grade	P-110 TCPC	P-110 TCPC
Depth Set	0'-10,500'	10,500' -15,400'

Tubing will be lined with Duoline.

4. Packer Description

7-5/8" x 5-1/2" TCPC Permanent Packer with High Temp Elastomer and Full Inconel 925 trim

B. Completion Information

1. Injection Formation: Devonian, Silurian, Fusselman, Montoya (Top 100')
2. Gross Injection Interval: 15,430' – 17,100'

   Completion Type: Open Hole
3. Drilled for injection.
4. See the attached wellbore schematic.
5. Oil and Gas Bearing Zones within area of well:

Formation	Depth
Yates-Seven Rivers	3,458'
Delaware	5,248'
Bone Spring	7,912'
Wolfcamp	10,984
Strawn	11,406'

VI. Area of Review

No wells within the area of review penetrate the proposed injection zone.

VII. Proposed Operation Data

1. Proposed Daily Rate of Fluids to be Injection:

   Average Volume: 40,000 BPD
   Maximum Volume: 50,000 BPD

2. Closed System

3. Anticipated Injection Pressure:

   Average Injection Pressure: 2,314 PSI (surface pressure)
   Maximum Injection Pressure: 3,086 PSI (surface pressure)

4. The injection fluid is to be locally produced water. It is expected that the source water will predominantly be from the Bone Spring and Wolfcamp formations. Attached are produced water sample analyses taken from the closest wells that feature samples from the Delaware, Bone Spring, Wolfcamp, and Strawn formations.

5. The disposal interval is non-productive. No water samples are available from the surrounding area.

VIII. Geological Data

The Devonian formation is a dolomitic ramp carbonate that occurs below the Woodford shale and above the Fusselman formation. Strata found in the Devonian formation include two major groups, the Wristen Buildups and the Thirtyone Deepwater Chert, with the Wristen being more abundant. The Wristen Groups is composed of mixed limestone and dolomites with mudstone to grainstone and boundstone textures. Porosity in the Wristen group is a result of both primary and secondary development. Present are moldic, vugular, karstic (including collapse breccia) features that allow for higher porosities and permeabilities. The Thirtyone Formation contains two end-member reservoir facies, skeletal packstones/grainstones and spiculitic chert, with most of the porosity and permeability found in the coarsely crystalline cherty dolomite. These particular characteristics allow for this formation to be a tremendous Salt Water Disposal horizon.

A. Injection Zone: Siluro-Devonian Formation

Formation	Depth
Rustler Anhydrite	1,324'
Yates-Seven Rivers	3,458'
Delaware	5,248'
Bone Spring	7,912'
Wolfcamp	10,984'
Penn	11,108'
Atoka	11,628'
Morrow	12,288'
Mississippian Lime	12,318'
Woodford	15,056'
Devonian	15,409'
Fusselman	16,468'
Montoya	17,000'

B. Underground Sources of Drinking Water

Within 1-mile of the proposed Thunderbird SWD #1 location, there are eight water wells. Only one water well has been reported of having a depth of 600 ft and a depth to water of 282 ft. Water wells in the surrounding area have an average depth of 495ft and an average water depth of 295 ft generally producing from the Santa Rosa. The upper Rustler may also be another USDW and will be protected.

IX. Proposed Stimulation Program

Stimulate with up to 50,000 gallons of acid.

X. Logging and Test Data on the Well

There are no logs or test data on the well. During the process of drilling and completion resistivity, gamma ray, and density logs will be run.

XI. Chemical Analysis of Fresh Water Wells

Attached is a map of all water wells that exist within one mile of the well location. If samples can be obtained, analysis results will be provided as soon as possible. A Water Right Summary from the New Mexico Office of the State Engineer is attached for water well CP-00858POD2.

XII. Affirmative Statement of Examination of Geologic and Engineering Data

Based on the available engineering and geologic data we find no evidence of open faults or any other hydrologic connection between the disposal zone (in the proposed Thunderbird SWD #1) and any underground sources of drinking water.

NAME: John C. Webb

TITLE: Sr. Geologist

SIGNATURE: John C Webb

DATE: 9/24/2018

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

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

Form C-101
Revised July 18, 2013

☐ AMENDED REPORT

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

1. Operator Name and Address	2. OGRID Number
NGL WATER SOLUTIONS PERMIAN, LLC 1509 W WALL ST, STE 306 MIDLAND, TX 79701	372338
	3. API Number TBD

4. Property Code	5. Property Name	6. Well No.
	THUNDERBIRD SWD	1

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
P	30	25S	36E	N/A	190'	SOUTH	314'	EAST	LEA

8. Proposed Bottom Hole Location

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

9. Pool Information

Pool Name	Pool Code
SWD; Silurian-Devonian	96101

Additional Well Information

11. Work Type	12. Well Type	13. Cable/Rotary	14. Lease Type	15. Ground Level Elevation
N	SWD	R	Private	3,040'
16. Multiple	**17. Proposed Depth**	**18. Formation**	**19. Contractor**	**20. Spud Date**
N	17,100'	Siluro-Devonian	TBD	ASAP
Depth to Ground water	**Distance from nearest fresh water well**		**Distance to nearest surface water**	
295'	127'		2,317'	

☐ We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surface	24"	20"	133 lb/ft	1,600'	1,308	Surface
Intermediate	17.5"	13.375"	68 lb/ft	5,200'	3,727	Surface
Production	12.25"	9.625"	53.5 lb/ft	11,100'	2,928	Surface
Prod. Liner	8.5"	7.625"	39 lb/ft	15,430'	350	10,600'
Tubing	N/A	7"	26 lb/ft	0' – 10,500'	N/A	N/A
Tubing	N/A	5.5"	17 lb/ft	10,500' – 15,400'	N/A	N/A

Casing/Cement Program: Additional Comments

See attached schematic.

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Hydraulic/Blinds, Pipe	10,000 psi	8,000 psi	TBD – Schaffer/Cameron

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify that I have complied with 19.15.14.9 (A) NMAC ☐ and/or 19.15.14.9 (B) NMAC ☒, if applicable. Signature:		OIL CONSERVATION DIVISION	
		Approved By:	
Printed name: Christopher B. Weyand		Title:	
Title: Consulting Engineer		Approved Date:	Expiration Date:
E-mail Address: chris@longust.com			
Date: 10/9/2018	Phone: (512) 600-1764	Conditions of Approval Attached	

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
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811 S. First St., Artesia, NM 88210
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1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
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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
	96101	SWD; Silurian-Devonian

[4] Property Code	[5] Property Name	[6] Well Number
	THUNDERBIRD SWD	1

[7] OGRID No.	[8] Operator Name	[9] Elevation
372338	NGL WATER SOLUTIONS PERMIAN, LLC	3040.00'±

[10] Surface Location

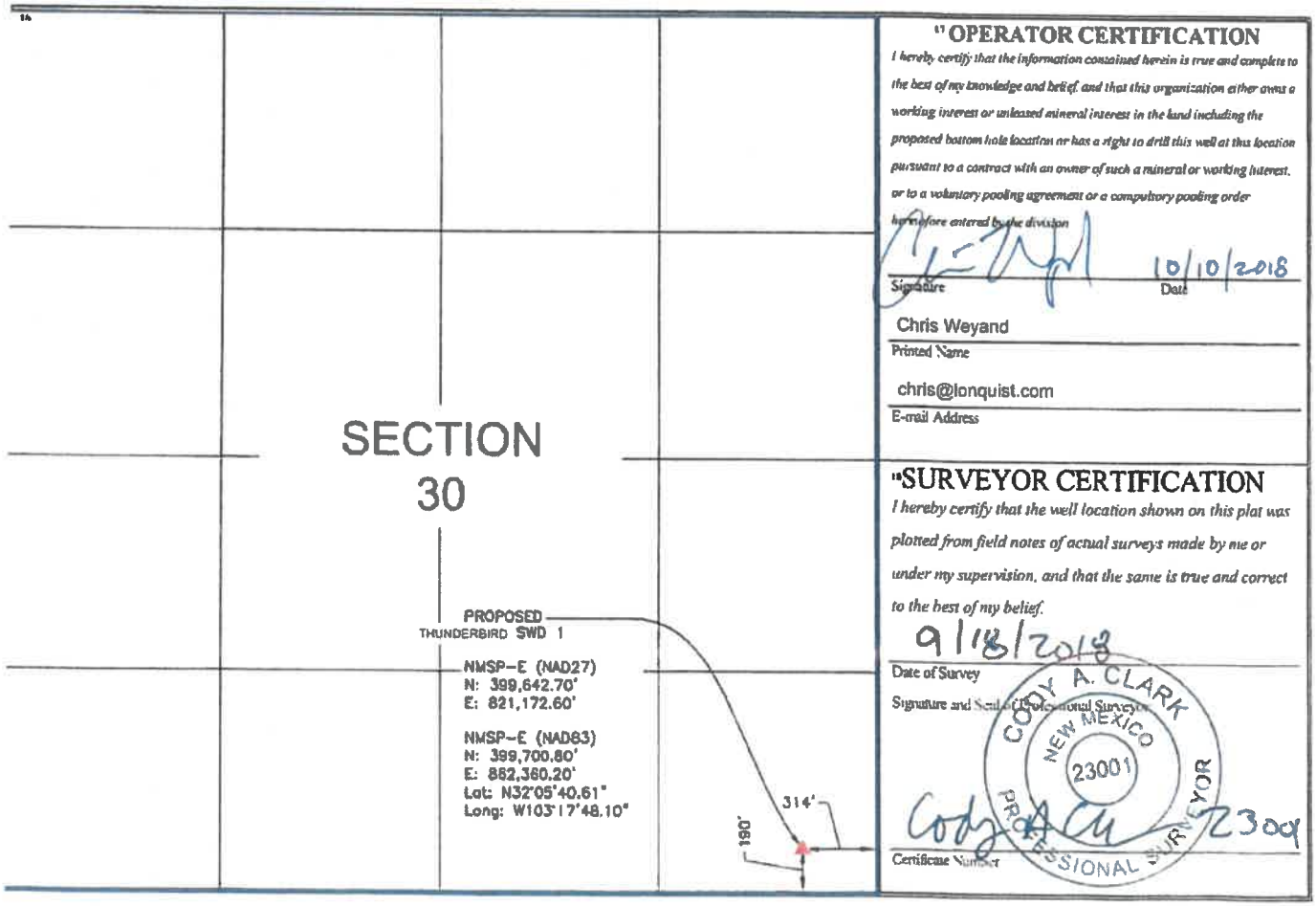
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	30	25 S	36 E	N/A	190'	SOUTH	314'	EAST	LEA

[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 interests 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.

Signature — Date: 10/10/2018

Chris Weyand
Printed Name

chris@lonquist.com
E-mail Address

[18] SURVEYOR CERTIFICATION

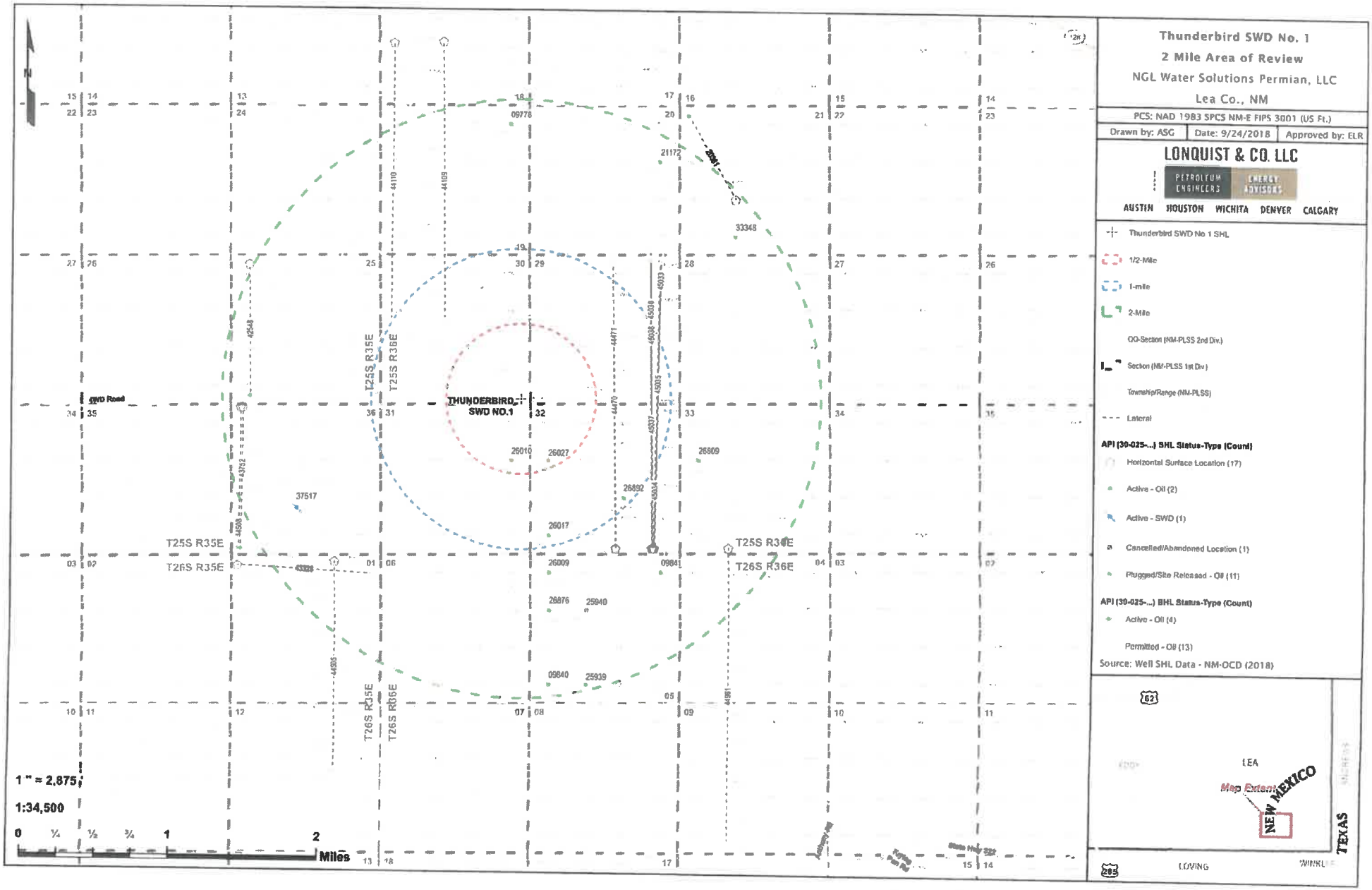
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

9/18/2018
Date of Survey

Signature and Seal of Professional Surveyor:

CODY A. CLARK
NEW MEXICO
23001
PROFESSIONAL SURVEYOR

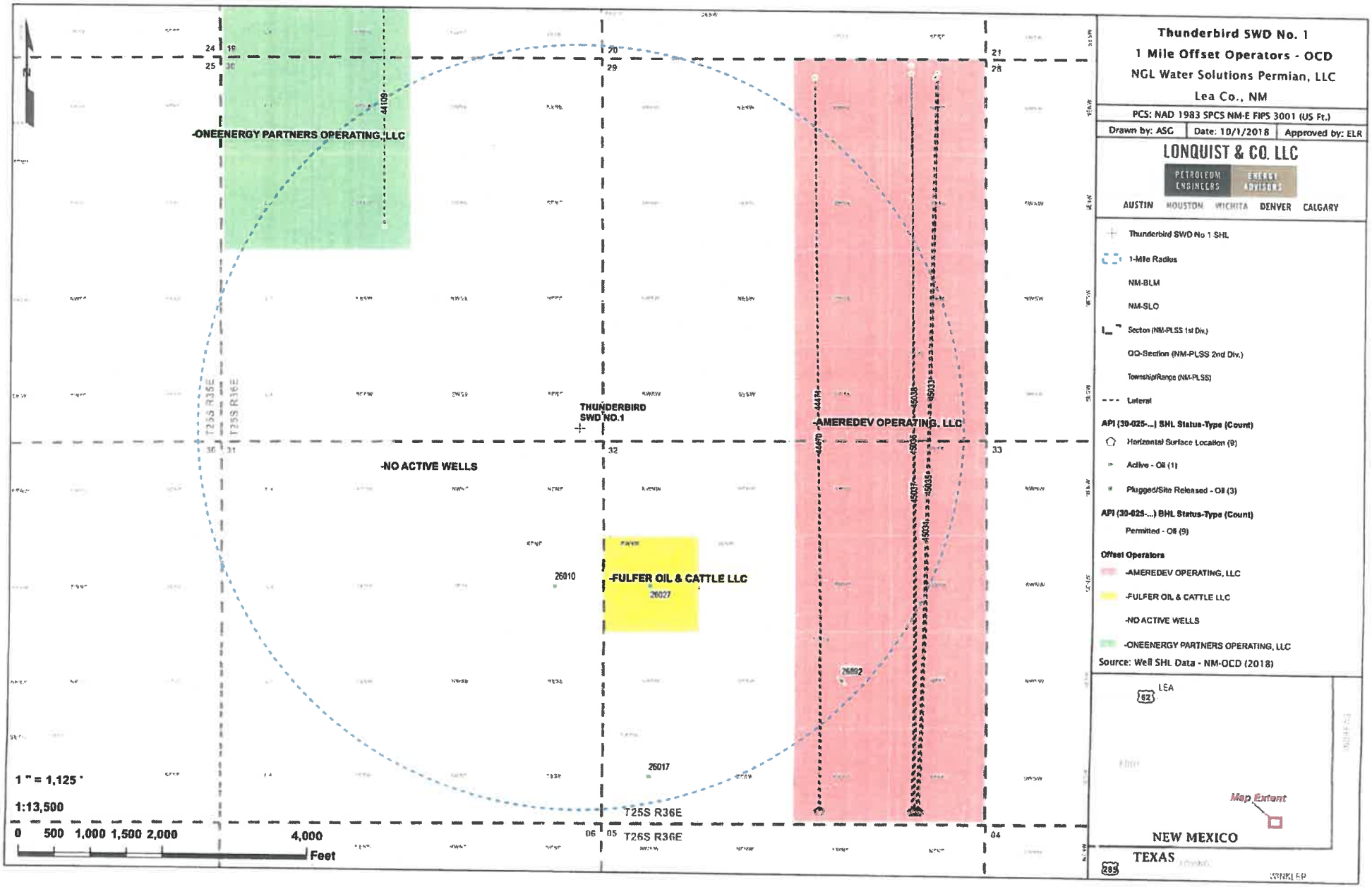
Certificate Number 23001


Thunderbird SWD No. 1
2 Mile Area of Review
NGL Water Solutions Permian, LLC
Lea Co., NM
PCS: NAD 1983 SPCS NM-E FIPS 3001 (US Ft.)
Drawn by: ASG
Date: 9/24/2018
Approved by: ELR
LONQUIST & CO. LLC
PETROLEUM ENGINEERS
ENERGY ADVISORS
AUSTIN HOUSTON WICHITA DENVER CALGARY
Thunderbird SWD No 1 SHL
1/2-Mile
1-mile
2-Mile
QQ-Section (NM-PLSS 2nd Div.)
Section (NM-PLSS 1st Div)
Township/Range (NM-PLSS)
Lateral
API (30-025-...) SHL Status-Type (Count)
Horizontal Surface Location (17)
Active - Oil (2)
Active - SWD (1)
Cancelled/Abandoned Location (1)
Plugged/Site Released - Oil (11)
API (30-025-...) BHL Status-Type (Count)
Active - Oil (4)
Permitted - Oil (13)
Source: Well SHL Data - NM-OCD (2018)
THUNDERBIRD SWD NO.1
T25S R35E
T25S R36E
T26S R35E
T26S R36E
1 " = 2,875'
1:34,500
0 ¼ ½ ¾ 1 2 Miles
LEA
Map Extent
NEW MEXICO
TEXAS
LOVING

Thunderbird SWD No. 1

1 Mile Area of Review List

API (30-025-...)	WELL NAME	WELL TYPE	STATUS	OPERATOR	TVD (FT.)	LATITUDE (NAD83 DD)	LONGITUDE (NAD83 DD)	DATE DRILLED
26010	PRE-ONGARD WELL #001	O	P	PRE-ONGARD WELL OPERATOR	3336	32.08861920000	-103.29783630000	1/1/1900
26017	PRE-ONGARD WELL #001	O	P	PRE-ONGARD WELL OPERATOR	3379	32.08138280000	-103.29358670000	1/1/1900
26027	SITTING BULL A #001	O	A	FULFER OIL & CATTLE LLC	3368	32.08861540000	-103.29357910000	7/22/1978
26892	PRE-ONGARD WELL #002	O	P	PRE-ONGARD WELL OPERATOR	3746	32.08501050000	-103.28504180000	1/1/1900
44109	CONVERT FEE WCB #001H	O	N	ONEENERGY PARTNERS OPERATING, LLC	0	32.12934600000	-103.30542500000	12/31/9999
44470	RED BUD 25 36 32 STATE COM #105H	O	N	AMEREDEV OPERATING, LLC	0	32.08012800000	-103.28594790000	5/20/2018
44471	RED BUD 25 36 32 STATE COM #115H	O	N	AMEREDEV OPERATING, LLC	0	32.08012850000	-103.28601200000	5/24/2018
45033	RED BUD 25 36 32 STATE COM #077H	O	N	AMEREDEV OPERATING, LLC	0	32.08012860000	-103.28156470000	12/31/9999
45034	RED BUD 25 36 32 STATE COM #087H	O	N	AMEREDEV OPERATING, LLC	0	32.08012850000	-103.28169390000	12/31/9999
45035	RED BUD 25 36 32 STATE COM #097H	O	N	AMEREDEV OPERATING, LLC	0	32.08012860000	-103.28162930000	12/31/9999
45036	RED BUD 25 36 32 STATE COM #107H	O	N	AMEREDEV OPERATING, LLC	0	32.08012850000	-103.28188760000	12/31/9999
45037	RED BUD 25 36 32 STATE COM #117H	O	N	AMEREDEV OPERATING, LLC	0	32.08012850000	-103.28182300000	12/31/9999
45038	RED BUD 25 36 32 STATE COM #127H	O	N	AMEREDEV OPERATING, LLC	0	32.08012850000	-103.28175840000	12/31/9999



Thunderbird SWD No. 1
1 Mile Offset Operators - OCD
NGL Water Solutions Permian, LLC
Lea Co., NM

PCS: NAD 1983 SPCS NM-E FIPS 3001 (US Ft.)

Drawn by: ASC	Date: 10/1/2018	Approved by: ELR

LONQUIST & CO. LLC
PETROLEUM ENGINEERS | ENERGY ADVISORS
AUSTIN HOUSTON WICHITA DENVER CALGARY

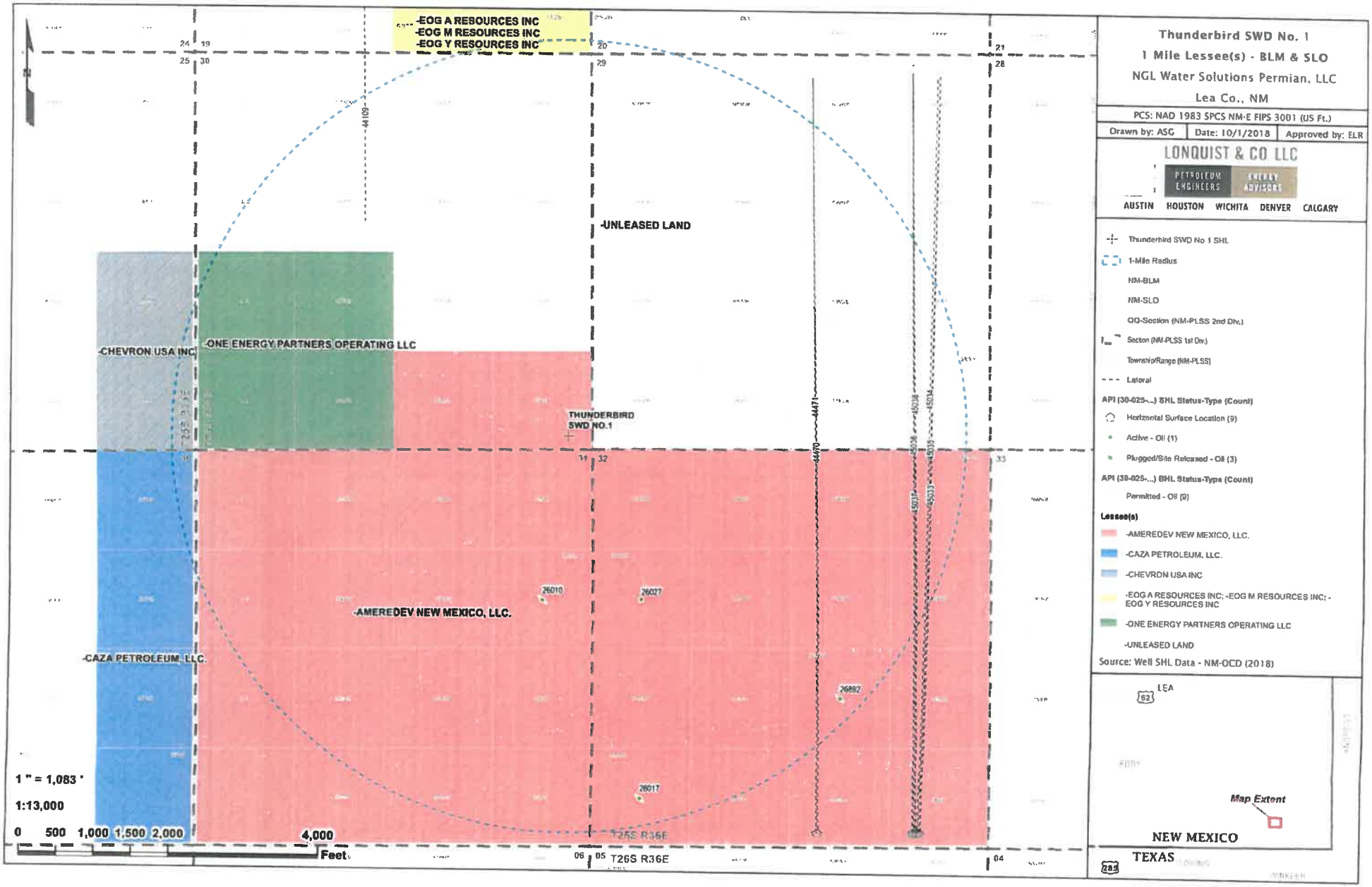
- Thunderbird SWD No 1 SHL
- 1-Mile Radius
- NM-BLM
- NM-SLO
- Section (NM-PLSS 1st Div.)
- QQ-Section (NM-PLSS 2nd Div.)
- Township/Range (NM-PLSS)
- Lateral

API (30-025-...) SHL Status-Type (Count)
- Horizontal Surface Location (9)
- Active - Oil (1)
- Plugged/Site Released - Oil (3)

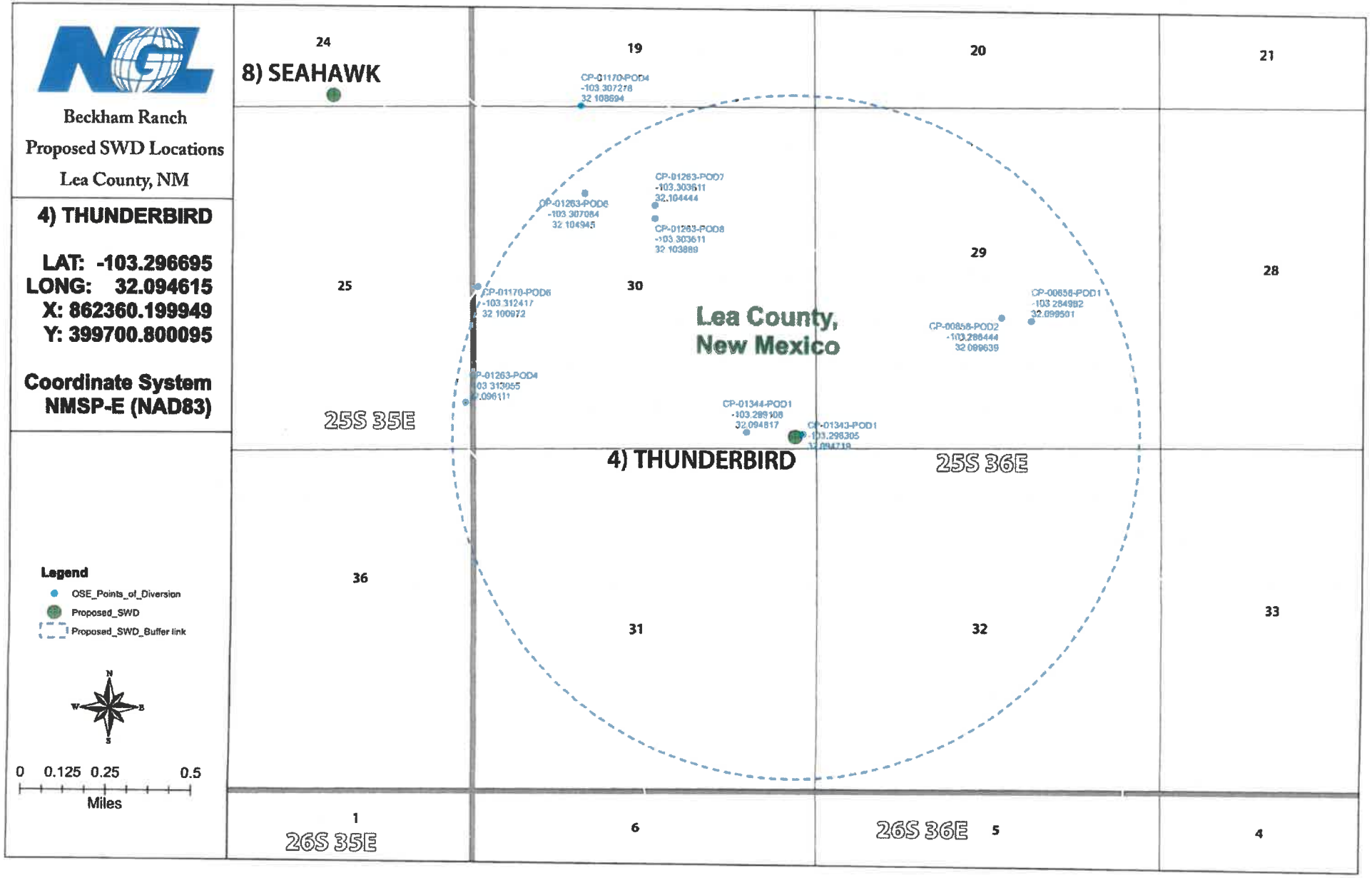
API (30-025-...) BHL Status-Type (Count)
- Permitted - Oil (9)

Offset Operators
- -AMEREDEV OPERATING, LLC
- -FULFER OIL & CATTLE LLC
- -NO ACTIVE WELLS
- -ONEENERGY PARTNERS OPERATING, LLC

Source: Well SHL Data - NM-OCD (2018)


-EOG A RESOURCES INC
-EOG M RESOURCES INC
-EOG Y RESOURCES INC
-UNLEASED LAND
-CHEVRON USA INC
-ONE ENERGY PARTNERS OPERATING LLC
THUNDERBIRD SWD NO.1
-AMEREDEV NEW MEXICO, LLC.
-CAZA PETROLEUM, LLC.
26010
26027
26017
26007
T25S R36E
T26S R36E
1 " = 1,083 '
1:13,000
0 500 1,000 1,500 2,000 4,000
Feet
Thunderbird SWD No. 1
1 Mile Lessee(s) - BLM & SLO
NGL Water Solutions Permian, LLC
Lea Co., NM
PCS: NAD 1983 SPCS NM-E FIPS 3001 (US Ft.)
Drawn by: ASG
Date: 10/1/2018
Approved by: ELR
LONQUIST & CO LLC
PETROLEUM ENGINEERS
ENERGY ADVISORS
AUSTIN HOUSTON WICHITA DENVER CALGARY
Thunderbird SWD No 1 SHL
1-Mile Radius
NM-BLM
NM-SLO
QQ-Section (NM-PLSS 2nd Div.)
Section (NM-PLSS 1st Div.)
Township/Range (NM-PLSS)
Lateral
API (30-025-...) SHL Status-Type (Count)
Horizontal Surface Location (9)
Active - Oil (1)
Plugged/Site Released - Oil (3)
API (30-025-...) BHL Status-Type (Count)
Permitted - Oil (0)
Lessee(s)
-AMEREDEV NEW MEXICO, LLC.
-CAZA PETROLEUM, LLC.
-CHEVRON USA INC
-EOG A RESOURCES INC; -EOG M RESOURCES INC; -EOG Y RESOURCES INC
-ONE ENERGY PARTNERS OPERATING LLC
-UNLEASED LAND
Source: Well SHL Data - NM-OCD (2018)
LEA
Map Extent
NEW MEXICO
TEXAS

Thunderbird SWD #1: Offsetting Produced Water Analysis																		
wellname	api	section	township	range	unit	county	formation	ph	tds_mgL	sodium_mgL	calcium_mgL	iron_mgL	magnesium_mgL	manganese_mgL	chloride_mgL	bicarbonate_mgL	sulfate_mgL	co2_mgL
BELL LAKE UNIT #009	3002520261	18	23S	34E	K	LEA	BONE SPRING		204652						130000	512	260	
THISTLE UNIT #071H	3002542425	27	23S	33E	A	Lea	BONE SPRING 1ST SAND	5.6	171476.3	55363.2	9140	40.4	1023	1.1	104576.4	244	560	770
BELL LAKE 19 STATE #004H	3002541517	19	24S	33E	O	Lea	BONE SPRING 2ND SAND	6.3		76378	6238	11	834	0	131397	159	670	200
BELL LAKE 19 STATE #003H	3002541516	19	24S	33E	O	Lea	BONE SPRING 2ND SAND	6.7		59599	7326	11	942	0.69	108190	171	680	230
SALADO DRAW 6 FEDERAL #001H	3002541293	6	26S	34E	M	Lea	BONE SPRING 3RD SAND	6.7	95604	31066	3196	10	394	0.5	59071	183	0	100
SALADO DRAW 6 FEDERAL #001H	3002541293	6	26S	34E	M	Lea	BONE SPRING 3RD SAND	7			3289	0.3	474.5	0.38		219.6		300
NORTH EL MAR UNIT #057	3002508440	31	26S	33E	F	LEA	DELAWARE		259554						163000	61	253	
GOEDEKE #002	3002508407	10	26S	33E	G	LEA	DELAWARE		293925						184000	85	210	
PRONGHORN AHD FEDERAL #001	3002526496	6	23S	33E	G	LEA	STRAWN	5.5			20.1	0	12.2		35.5	61.1	48.8	
SNAPPING 2 STATE #014H	3001542688	2	26S	31E	P	EDDY	WOLFCAMP	7.3	81366.4	26319.4	2687.4	26.1	326.7		50281.2		399.7	100


Beckham Ranch
Proposed SWD Locations
Lea County, NM
4) THUNDERBIRD
LAT: -103.296695
LONG: 32.094615
X: 862360.199949
Y: 399700.800095
Coordinate System
NMSP-E (NAD83)
Legend
OSE_Points_of_Diversion
Proposed_SWD
Proposed_SWD_Buffer link
0 0.125 0.25 0.5
Miles
8) SEAHAWK
4) THUNDERBIRD
Lea County, New Mexico
25S 35E
25S 36E
26S 35E
26S 36E
24
19
20
21
25
30
29
28
36
31
32
33
1
6
5
4
CP-01170-POD4 -103.307278 32.108694
CP-01263-POD7 -103.303611 32.104444
CP-01263-POD6 -103.307084 32.104945
CP-01263-POD8 -103.303611 32.103889
CP-01170-POD6 -103.312417 32.100972
CP-00858-POD1 -103.284992 32.099501
CP-00858-POD2 -103.286444 32.099639
CP-01263-POD4 -103.312055
CP-01344-POD1 -103.299108 32.094817
CP-01343-POD1 -103.296305

New Mexico Office of the State Engineer
Point of Diversion Summary

Well Tag	POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) Q64	Q16	Q4	Sec	Tws	Rng	(NAD83 UTM in meters) X	Y
	CP 00858 POD2	1	1	4	29	25S	36E	661690	3552765

Driller License: 331 **Driller Company:** SBQ2, LLC DBA STEWART BROTHERS DRILLING CO.

Driller Name: PHILLIP D. STEWART

Drill Start Date: 04/07/2014 **Drill Finish Date:** 04/12/2014 **Plug Date:**

Log File Date: 04/21/2014 **PCW Rcv Date:** **Source:** Shallow

Pump Type: **Pipe Discharge Size:** **Estimated Yield:** 30 GPM

Casing Size: 6.13 **Depth Well:** 600 feet **Depth Water:** 282 feet

Water Bearing Stratifications:	Top	Bottom	Description
	280	290	Shallow Alluvium/Basin Fill
	290	370	Shale/Mudstone/Siltstone
	370	530	Other/Unknown
	530	560	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	260	580

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

October 18, 2018

CHRIS WEYAND

Lonquist Field Services, LLC

3345 Bee Cave Road, Suite 201

Austin, TX 78746

RE: THUNDERBIRD

Enclosed are the results of analyses for samples received by the laboratory on 10/11/18 15:50.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Lonquist Field Services, LLC 3345 Bee Cave Road, Suite 201 Austin TX, 78746	Project: THUNDERBIRD Project Number: 32.094615 / - 103.296695 Project Manager: CHRIS WEYAND Fax To: (512) 732-9816	Reported: 18-Oct-18 11:23

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
C - 00858- POD 1	H802920-01	Water	11-Oct-18 13:39	11-Oct-18 15:50
T BIRD #2 (32.065868-103.312566	H802920-02	Water	11-Oct-18 14:31	11-Oct-18 15:50

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Lonquist Field Services, LLC 3345 Bee Cave Road, Suite 201 Austin TX, 78746	Project: THUNDERBIRD Project Number: 32.094615 / - 103.296695 Project Manager: CHRIS WEYAND Fax To: (512) 732-9816	Reported: 18-Oct-18 11:23

C - 00858- POD 1

H802920-01 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Alkalinity, Bicarbonate	**220**		5.00	mg/L	1	8101506	AC	15-Oct-18	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	8101506	AC	15-Oct-18	310.1	
Chloride*	**168**		4.00	mg/L	1	8101118	AC	15-Oct-18	4500-Cl-B	
Conductivity*	**1650**		1.00	uS/cm	1	8101210	AC	15-Oct-18	120.1	
pH*	**7.67**		0.100	pH Units	1	8101210	AC	12-Oct-18	150.1	
Resistivity	**6.07**			Ohms/m	1	8101210	AC	15-Oct-18	120.1	
Specific Gravity @ 60° F	**0.9930**		0.000	[blank]	1	8101512	AC	15-Oct-18	SM 2710F	
Sulfate*	**406**		83.3	mg/L	8.33	8101601	AC	16-Oct-18	375.4	
TDS*	**1080**		5.00	mg/L	1	8101206	AC	17-Oct-18	160.1	
Alkalinity, Total*	**180**		4.00	mg/L	1	8101506	AC	15-Oct-18	310.1	
Sulfide, total	<0.0100		0.0100	mg/L	1	8101513	AC	15-Oct-18	376.2	
Green Analytical Laboratories										
Total Recoverable Metals by ICP (E200.7)										
Barium*	<0.050		0.050	mg/L	1	B810148	AES	17-Oct-18	EPA200.7	
Calcium*	**105**		0.100	mg/L	1	B810148	AES	17-Oct-18	EPA200.7	
Iron*	**2.85**		0.050	mg/L	1	B810148	AES	17-Oct-18	EPA200.7	
Magnesium*	**67.1**		0.100	mg/L	1	B810148	AES	17-Oct-18	EPA200.7	
Potassium*	**7.83**		1.00	mg/L	1	B810148	AES	17-Oct-18	EPA200.7	
Sodium*	**155**		1.00	mg/L	1	B810148	AES	17-Oct-18	EPA200.7	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Lonquist Field Services, LLC 3345 Bee Cave Road, Suite 201 Austin TX, 78746	Project: THUNDERBIRD Project Number: 32.094615 / - 103.296695 Project Manager: CHRIS WEYAND Fax To: (512) 732-9816	Reported: 18-Oct-18 11:23

T BIRD #2 (32.065868-103.312566)

H802920-02 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Alkalinity, Bicarbonate	**132**		5.00	mg/L	1	8101506	AC	15-Oct-18	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	8101506	AC	15-Oct-18	310.1	
Chloride*	**136**		4.00	mg/L	1	8101118	AC	15-Oct-18	4500-Cl-B	
Conductivity*	**3480**		1.00	uS/cm	1	8101210	AC	15-Oct-18	120.1	
pH*	**7.52**		0.100	pH Units	1	8101210	AC	12-Oct-18	150.1	
Resistivity	**2.87**			Ohms/m	1	8101210	AC	15-Oct-18	120.1	
Specific Gravity @ 60° F	**0.9949**		0.000	[blank]	1	8101512	AC	15-Oct-18	SM 2710F	
Sulfate*	**1900**		500	mg/L	50	8101601	AC	16-Oct-18	375.4	
TDS*	**3120**		5.00	mg/L	1	8101206	AC	17-Oct-18	160.1	
Alkalinity, Total*	**108**		4.00	mg/L	1	8101506	AC	15-Oct-18	310.1	
Sulfide, total	<0.0100		0.0100	mg/L	1	8101513	AC	15-Oct-18	376.2	
Green Analytical Laboratories										
Total Recoverable Metals by ICP (E200.7)										
Barium*	<0.050		0.050	mg/L	1	B810148	AES	17-Oct-18	EPA200.7	
Calcium*	**448**		0.100	mg/L	1	B810148	AES	17-Oct-18	EPA200.7	
Iron*	**0.402**		0.050	mg/L	1	B810148	AES	17-Oct-18	EPA200.7	
Magnesium*	**122**		0.200	mg/L	2	B810148	AES	17-Oct-18	EPA200.7	
Potassium*	**6.62**		1.00	mg/L	1	B810148	AES	17-Oct-18	EPA200.7	
Sodium*	**252**		1.00	mg/L	1	B810148	AES	17-Oct-18	EPA200.7	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Lonquist Field Services, LLC 3345 Bee Cave Road, Suite 201 Austin TX, 78746	Project: THUNDERBIRD Project Number: 32.094615 / - 103.296695 Project Manager: CHRIS WEYAND Fax To: (512) 732-9816	Reported: 18-Oct-18 11:23

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8101118 - General Prep - Wet Chem										
Blank (8101118-BLK1)				Prepared: 11-Oct-18 Analyzed: 12-Oct-18						
Chloride	ND	4.00	mg/L							
LCS (8101118-BS1)				Prepared: 11-Oct-18 Analyzed: 12-Oct-18						
Chloride	104	4.00	mg/L	100		104	80-120			
LCS Dup (8101118-BSD1)				Prepared: 11-Oct-18 Analyzed: 12-Oct-18						
Chloride	104	4.00	mg/L	100		104	80-120	0.00	20	
Batch 8101206 - Filtration										
Blank (8101206-BLK1)				Prepared: 15-Oct-18 Analyzed: 17-Oct-18						
TDS	ND	5.00	mg/L							
LCS (8101206-BS1)				Prepared: 15-Oct-18 Analyzed: 17-Oct-18						
TDS	558		mg/L	527		106	80-120			
Duplicate (8101206-DUP1)		**Source: H802920-01**		Prepared: 15-Oct-18 Analyzed: 17-Oct-18						
TDS	1080	5.00	mg/L		1080			0.186	20	
Batch 8101210 - General Prep - Wet Chem										
LCS (8101210-BS1)				Prepared & Analyzed: 12-Oct-18						
pH	7.08		pH Units	7.00		101	90-110			
Conductivity	504		uS/cm	500		101	80-120			
Duplicate (8101210-DUP1)		**Source: H802918-01**		Prepared & Analyzed: 12-Oct-18						
pH	7.71	0.100	pH Units		7.66			0.651	20	
Conductivity	1270	1.00	uS/cm		1270			0.00	20	
Resistivity	7.87		Ohms/m		7.87			0.00	20	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Lonquist Field Services, LLC 3345 Bee Cave Road, Suite 201 Austin TX, 78746	Project: THUNDERBIRD Project Number: 32.094615 / - 103.296695 Project Manager: CHRIS WEYAND Fax To: (512) 732-9816	Reported: 18-Oct-18 11:23

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8101506 - General Prep - Wet Chem										
Blank (8101506-BLK1)				Prepared & Analyzed: 15-Oct-18						
Alkalinity, Carbonate	ND	1.00	mg/L							
Alkalinity, Bicarbonate	15.0	5.00	mg/L							
Alkalinity, Total	12.0	4.00	mg/L							
LCS (8101506-BS1)				Prepared & Analyzed: 15-Oct-18						
Alkalinity, Carbonate	ND	2.50	mg/L				80-120			
Alkalinity, Bicarbonate	318	12.5	mg/L				80-120			
Alkalinity, Total	260	10.0	mg/L	250		104	80-120			
LCS Dup (8101506-BSD1)				Prepared & Analyzed: 15-Oct-18						
Alkalinity, Carbonate	ND	2.50	mg/L				80-120		20	
Alkalinity, Bicarbonate	318	12.5	mg/L				80-120	0.00	20	
Alkalinity, Total	260	10.0	mg/L	250		104	80-120	0.00	20	
Batch 8101512 - General Prep - Wet Chem										
Duplicate (8101512-DUP1)		**Source: H802918-01**		Prepared & Analyzed: 15-Oct-18						
Specific Gravity @ 60° F	0.9970	0.000	[blank]		0.9958			0.126	20	
Batch 8101513 - General Prep - Wet Chem										
Blank (8101513-BLK1)				Prepared & Analyzed: 15-Oct-18						
Sulfide, total	ND	0.0100	mg/L							
Duplicate (8101513-DUP1)		**Source: H802918-01**		Prepared & Analyzed: 15-Oct-18						
Sulfide, total	0.00403	0.0100	mg/L		0.00403			0.00	20	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Lonquist Field Services, LLC 3345 Bee Cave Road, Suite 201 Austin TX, 78746	Project: THUNDERBIRD Project Number: 32.094615 / - 103.296695 Project Manager: CHRIS WEYAND Fax To: (512) 732-9816	Reported: 18-Oct-18 11:23

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8101601 - General Prep - Wet Chem										
Blank (8101601-BLK1)				Prepared & Analyzed: 16-Oct-18						
Sulfate	ND	10.0	mg/L							
LCS (8101601-BS1)				Prepared & Analyzed: 16-Oct-18						
Sulfate	22.3	10.0	mg/L	20.0		111	80-120			
LCS Dup (8101601-BSD1)				Prepared & Analyzed: 16-Oct-18						
Sulfate	23.2	10.0	mg/L	20.0		116	80-120	3.83	20	

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Lonquist Field Services, LLC 3345 Bee Cave Road, Suite 201 Austin TX, 78746	Project: THUNDERBIRD Project Number: 32.094615 / - 103.296695 Project Manager: CHRIS WEYAND Fax To: (512) 732-9816	Reported: 18-Oct-18 11:23

Total Recoverable Metals by ICP (E200.7) - Quality Control

Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B810148 - Total Rec. 200.7/200.8/200.2										
Blank (B810148-BLK1)				Prepared: 16-Oct-18 Analyzed: 17-Oct-18						
Barium	ND	0.050	mg/L							
Magnesium	ND	0.100	mg/L							
Calcium	ND	0.100	mg/L							
Iron	ND	0.050	mg/L							
Potassium	ND	1.00	mg/L							
Sodium	ND	1.00	mg/L							
LCS (B810148-BS1)				Prepared: 16-Oct-18 Analyzed: 17-Oct-18						
Sodium	3.31	1.00	mg/L	3.24		102	85-115			
Potassium	8.35	1.00	mg/L	8.00		104	85-115			
Magnesium	20.5	0.100	mg/L	20.0		102	85-115			
Barium	2.01	0.050	mg/L	2.00		101	85-115			
Calcium	4.21	0.100	mg/L	4.00		105	85-115			
Iron	4.08	0.050	mg/L	4.00		102	85-115			
LCS Dup (B810148-BSD1)				Prepared: 16-Oct-18 Analyzed: 17-Oct-18						
Sodium	3.29	1.00	mg/L	3.24		101	85-115	0.794	20	
Magnesium	20.6	0.100	mg/L	20.0		103	85-115	0.694	20	
Barium	2.02	0.050	mg/L	2.00		101	85-115	0.685	20	
Calcium	4.21	0.100	mg/L	4.00		105	85-115	0.0872	20	
Iron	4.03	0.050	mg/L	4.00		101	85-115	1.08	20	
Potassium	8.28	1.00	mg/L	8.00		104	85-115	0.800	20	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name: NGL		BILL TO	
Project Manager:		P.O. #:	
Address:		Company:	
City:	State: Zip:	Attn:	
Phone #:	Fax #:	Address:	
Project #:	Project Owner:	City:	
Project Name: THUNDERBIRD		State: Zip:	
Project Location: 32.094615 / -103.296695		Phone #:	
Sampler Name: R. Hernandez		Fax #:	

FOR LAB USE ONLY				MATRIX							PRESERV.			SAMPLING		ANALYSIS REQUEST													
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	Scale	T. Sulfide													
H802920																													
1	C-00258 - POD1												10.11.18	1:39	✓	✓													
2	T-BIRD #2 32.065868 -103.312566												10-11-18	2:31	✓	✓													

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: R. Hernandez	Date: 10-11-18 Time: 3:50	Received By: Tamara Oldaker	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Date: Time:	Received By:	Fax Result: ☐ Yes ☐ No Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other: 5.6 #97	Sample Condition Cool: ☑ Yes ☐ No Intact: ☐ Yes ☐ No	CHECKED BY: (Initials) TO.	REMARKS: Rush!

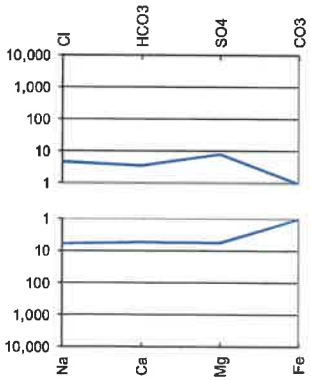
+ Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

CARDINAL LABORATORIES
SCALE INDEX WATER ANALYSIS REPORT

Company	:	LONQUIST FIELD SERVICES, LLC	Date Sampled	: 10/11/18
Lease Name	:	THUNDERBIRD	Company Rep.	: CHRIS WEYAND
Well Number	:	C-00858-POD1 (H802920-01)		
Location	:	32.094615 / -103.296695		

	ANALYSIS					
1.	pH	7.67				
2.	Specific Gravity @ 60/60 F.	0.9930				
3.	CaCO3 Saturation Index @ 80 F.	-0.084				
	@ 140 F.	+0.616	'Calcium Carbonate Scale Possible'			
	Dissolved Gasses					
4.	Hydrogen Sulfide	0.000	PPM			
5.	Carbon Dioxide	ND	PPM			
6.	Dissolved Oxygen	ND	PPM			
	Cations		/ Eq. Wt.	=	MEQ/L	
7.	Calcium (Ca++)	105.00	/ 20.1	=	5.22	
8.	Magnesium (Mg++)	67.10	/ 12.2	=	5.50	
9.	Sodium (Na+)	155	/ 23.0	=	5.93	
10.	Barium (Ba++)	0.000	/ 68.7	=	0.00	
	Anions					
11.	Hydroxyl (OH-)	0	/ 17.0	=	0.00	
12.	Carbonate (CO3=)	0	/ 30.0	=	0.00	
13.	Bicarbonate (HCO3-)	220	/ 61.1	=	3.60	
14.	Sulfate (SO4=)	406	/ 48.8	=	8.32	
15.	Chloride (Cl-)	168	/ 35.5	=	4.73	
	Other					
16.	Total Iron (Fe)	2.850	/ 18.2	=	0.16	
17.	Total Dissolved Solids	1,080				
18.	Total Hardness As CaCO3	539.0				
19.	Calcium Sulfate Solubility @ 90 F.	1,411				
20.	Resistivity (Measured)	6.070	Ohm/Meters	@ 77	Degrees (F)	

Logarithmic Water Pattern



PROBABLE MINERAL COMPOSITION

COMPOUND	Eq. Wt.	X	MEQ/L	=	mg/L
Ca(HCO3)2	81.04	X	3.60	=	292
CaSO4	68.07	X	1.62	=	110
CaCl2	55.50	X	0.00	=	0
Mg(HCO3)2	73.17	X	0.00	=	0
MgSO4	60.19	X	5.50	=	331
MgCl2	47.62	X	0.00	=	0
NaHCO3	84.00	X	0.00	=	0
NaSO4	71.03	X	1.20	=	85
NaCl	58.46	X	4.73	=	277

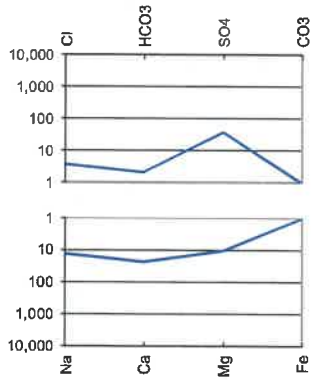
ND = Not Determined

CARDINAL LABORATORIES
SCALE INDEX WATER ANALYSIS REPORT

Company	:	LONQUIST FIELD SERVICES, LLC	Date Sampled	: 10/11/18
Lease Name	:	THUNDERBIRD	Company Rep.	: CHRIS WEYAND
Well Number	:	T BIRD #2 (H802920-02)		
Location	:	32.065868 / -103.312566		

ANALYSIS					
1. pH	7.52				
2. Specific Gravity @ 60/60 F.	0.9949				
3. CaCO3 Saturation Index @ 80 F.	+0.324	'Calcium Carbonate Scale Possible'			
@ 140 F.	+1.024	'Calcium Carbonate Scale Possible'			
Dissolved Gasses					
4. Hydrogen Sulfide	0.000	PPM			
5. Carbon Dioxide	ND	PPM			
6. Dissolved Oxygen	ND	PPM			
Cations		/	Eq. Wt.	=	MEQ/L
7. Calcium (Ca++)	448.00	/	20.1	=	22.29
8. Magnesium (Mg++)	122.00	/	12.2	=	10.00
9. Sodium (Na+)	252	/	23.0	=	12.64
10. Barium (Ba++)	0.000	/	68.7	=	0.00
Anions					
11. Hydroxyl (OH-)	0	/	17.0	=	0.00
12. Carbonate (CO3=)	0	/	30.0	=	0.00
13. Bicarbonate (HCO3-)	132	/	61.1	=	2.16
14. Sulfate (SO4=)	1,900	/	48.8	=	38.93
15. Chloride (Cl-)	136	/	35.5	=	3.83
Other					
16. Total Iron (Fe)	0.402	/	18.2	=	0.02
17. Total Dissolved Solids	3,120				
18. Total Hardness As CaCO3	1,621.0				
19. Calcium Sulfate Solubility @ 90 F.	1,541				
20. Resistivity (Measured)	2.870	Ohm/Meters	@ 77	Degrees (F)	

Logarithmic Water Pattern



PROBABLE MINERAL COMPOSITION

COMPOUND	Eq. Wt.	X	MEQ/L	=	mg/L
Ca(HCO3)2	81.04	X	2.16	=	175
CaSO4	68.07	X	20.13	=	1,370
CaCl2	55.50	X	0.00	=	0
Mg(HCO3)2	73.17	X	0.00	=	0
MgSO4	60.19	X	10.00	=	602
MgCl2	47.62	X	0.00	=	0
NaHCO3	84.00	X	0.00	=	0
NaSO4	71.03	X	8.81	=	626
NaCl	58.46	X	3.83	=	224

ND = Not Determined

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

APPLICATION OF NGL WATER SOLUTIONS PERMIAN, LLC FOR APPROVAL OF SALT WATER DISPOSAL WELL IN LEA COUNTY, NEW MEXICO

CASE NO. 20063

APPLICATION OF NGL WATER SOLUTIONS PERMIAN, LLC FOR APPROVAL OF SALT WATER DISPOSAL WELL IN LEA COUNTY, NEW MEXICO

CASE NO. 20084

APPLICATION OF NGL WATER SOLUTIONS PERMIAN, LLC FOR APPROVAL OF SALT WATER DISPOSAL WELL IN LEA COUNTY, NEW MEXICO

CASE NO. 20093

AFFIDAVIT OF SCOTT J. WILSON

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

I, Scott J. Wilson, make the following affidavit based upon my own personal knowledge.

1. I am over eighteen (18) years of age and am otherwise competent to make the statements contained herein.

2. I am the Senior Vice President for Ryder Scott Company in Denver, Colorado. My responsibilities at Ryder Scott Company include the performance of reserve appraisals, technical evaluations, and reservoir analysis.

3. I have obtained a bachelor's degree in petroleum engineering from the Colorado School of Mines, and a master's degree business from the University of Colorado. I have worked as a petroleum engineer since 1983.

4. I am familiar with the applications that NGL Water Solutions Permian, LLC ("NGL") has filed in this matter, and I have conducted a nodal analysis and reservoir study related to the area which is the subject matter of the applications. Copies of my study are attached hereto as Exhibit A.

5. The applicant, NGL (OGRID No. 372338), seeks an order approving the Falcon SWD #1 well (Case No. 20063), the Hornet SWD #1 well (Case No. 20084), and the Thunderbird SWD #1 well (Case No. 20093). All three wells are salt water disposal wells.

6. The wells will be spaced out and not located closer than approximately 1 mile from other disposal wells, approved for injection into the Devonian and Silurian formations.

7. The approved injection zone for the wells is located below the base of the Woodford Shale formation and above the Ordovician formation, which consists of significant shale deposits.

8. The wells will primarily be injecting fluids into the Wristen Group and Fusselman formations, with some fluids potentially being injected into the Upper Montoya Group. Each of these sub-formations or zones are located within what is commonly referred to by operators and the Division as the "Devonian Silurian" formations. These zones consist of a very thick sequence of limestone and dolostone which has significant primary and secondary porosity and permeability that is collectively between 800 to 1,800 feet thick.

9. I have reviewed step rate tests for similar disposal wells drilled within the area and conducted a nodal analysis. It is my opinion that a large percentage of surface pressure it was encountering using smaller diameter tubing was a result of friction pressure. In Case No. 15720 evidence had been presented to the Division showing that up to 85% of this surface pressure was due to friction. Increasing the tubing size would reduce friction and would conserve pump horsepower, fuel, and reduce emissions.

10. My nodal analysis indicates that increasing the tubing size to 7" by 5 ½" would not significantly increase reservoir pressures over a twenty-year time period. The injection zone is located within a reservoir with significant thickness which consists of high permeability rocks, which results in only very small pressure increases even when injection is increased to a rate of 40,000 barrels per day over a 20 year period.

11. It is my opinion that increasing the tubing size will not cause fractures in the formation. Wellhead pressures are set at a maximum that is below the formation fracture pressure and, as a result, it is impossible to get above the formation fracture pressure while honoring wellhead pressure constraints. Consequently, it is highly unlikely that increasing the tubing size in the wells would result in fractures to the formation.

12. I have also studied the potential impact on pore pressures and put together a simulation of the radial influence that the wells would have if larger tubing is used for a period of time. A copy of this study is included within Exhibit A to this affidavit. This study shows that it is anticipated that there will be a minimal impact on reservoir pressures and that the majority of fluids will not travel greater than 1 mile in 20 years.

13. My studies further indicate that additional injection wells located one mile away from the wells, will not create any materially adverse pressures in the formation.

14. I attest that the information provided herein is correct and complete to the best of my knowledge and belief.

15. The granting of these applications is in the interests of conservation and the prevention of waste.

[Signature page follows]

Scott J. Wilson

SUBSCRIBED AND SWORN to before me this 14th day of November, 2018 by Scott J. Wilson.

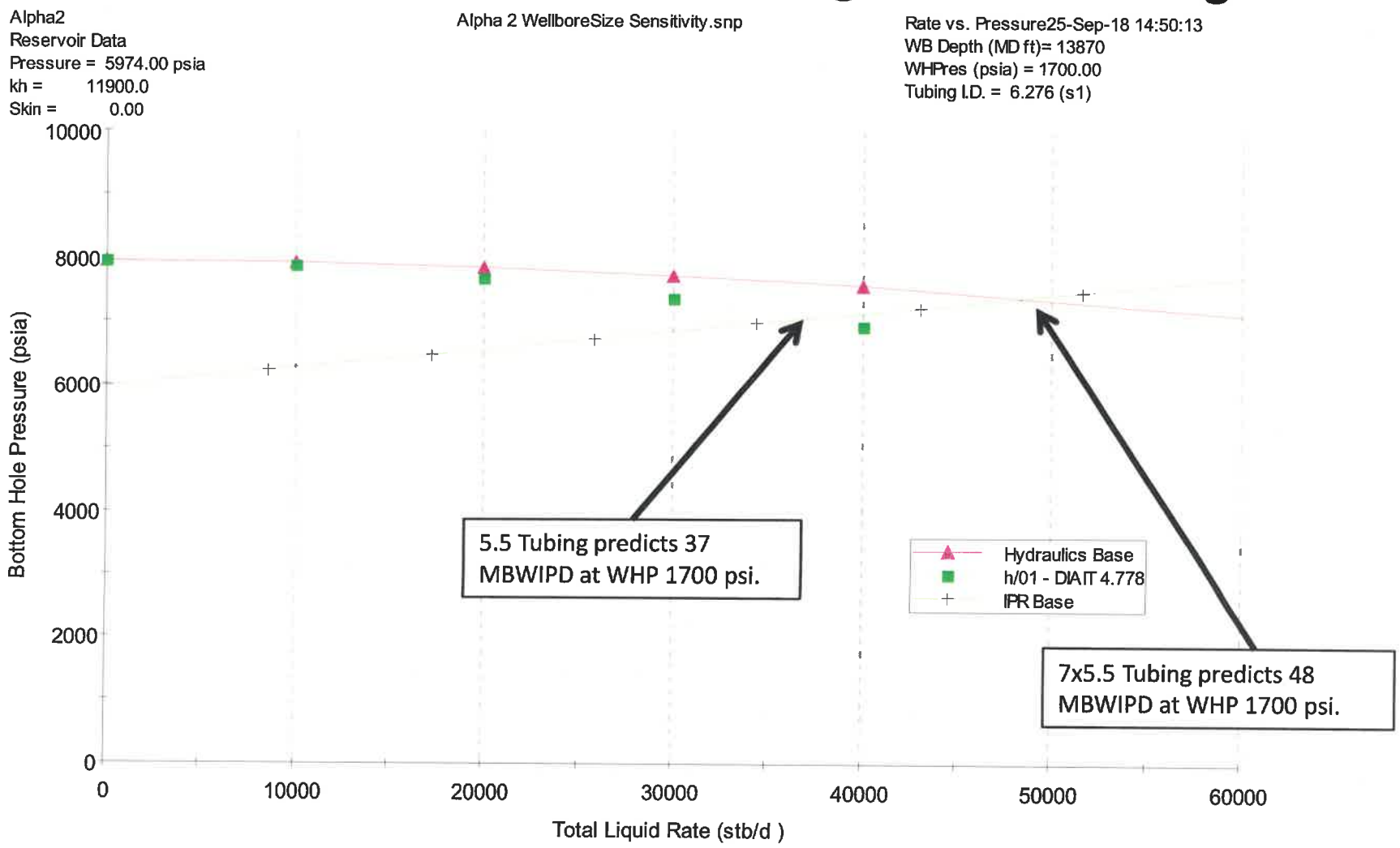
Notary Public

My commission expires: 8/23/21

DARSHAE E RODRIGUEZ
Notary Public - State of Colorado
Notary ID 20134006986
My Commission Expires Aug 23, 2021

NGL Water Solutions, LLC

Typical Wellbore Hydraulics Models predict a 30% increase in maximum injection rate between 5.5 tubing and 7x5.5 tubing.

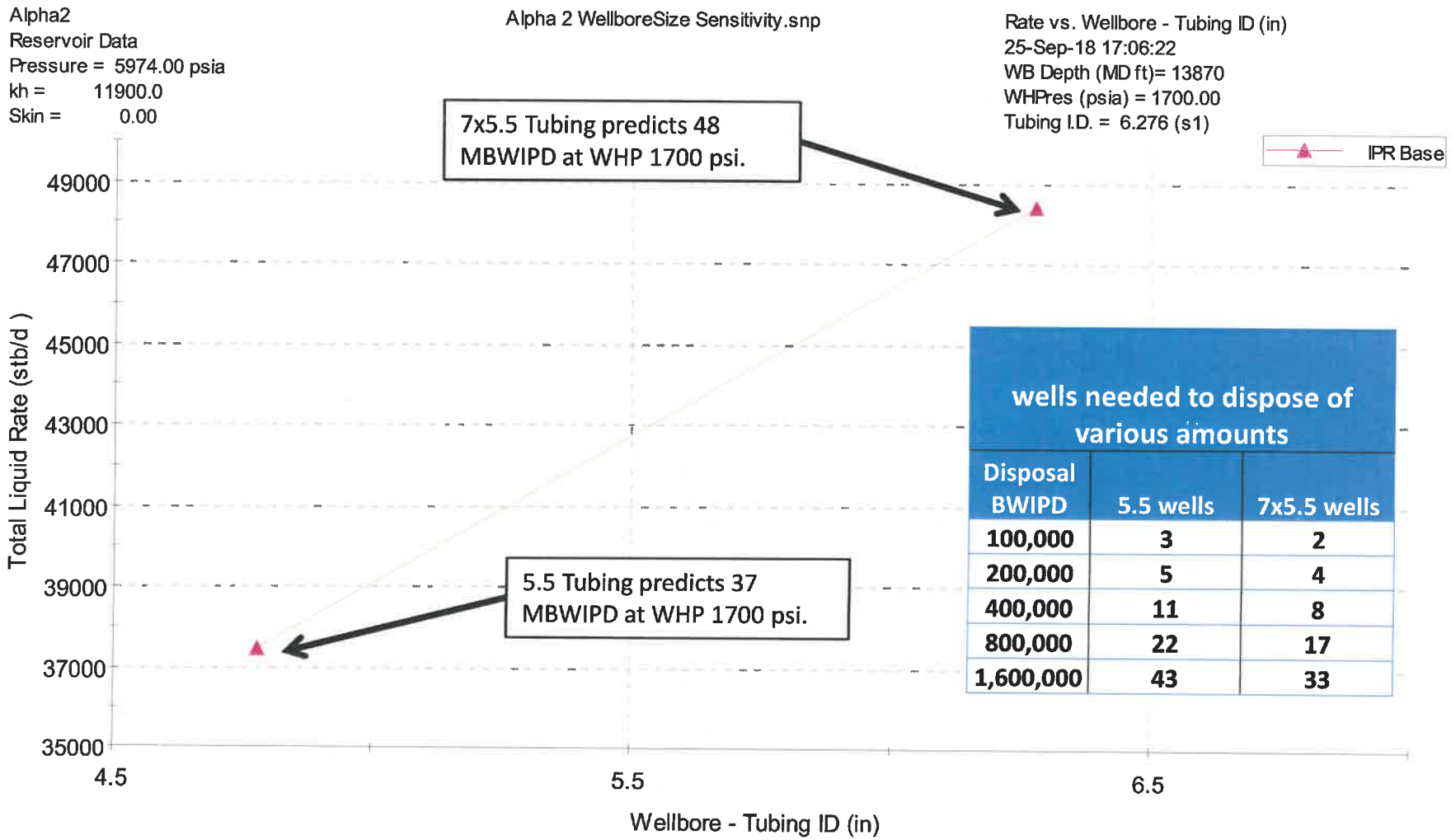


tabbies

EXHIBIT A

NGL Water Solutions, LLC

Increased injection rate per well equates to fewer injectors.

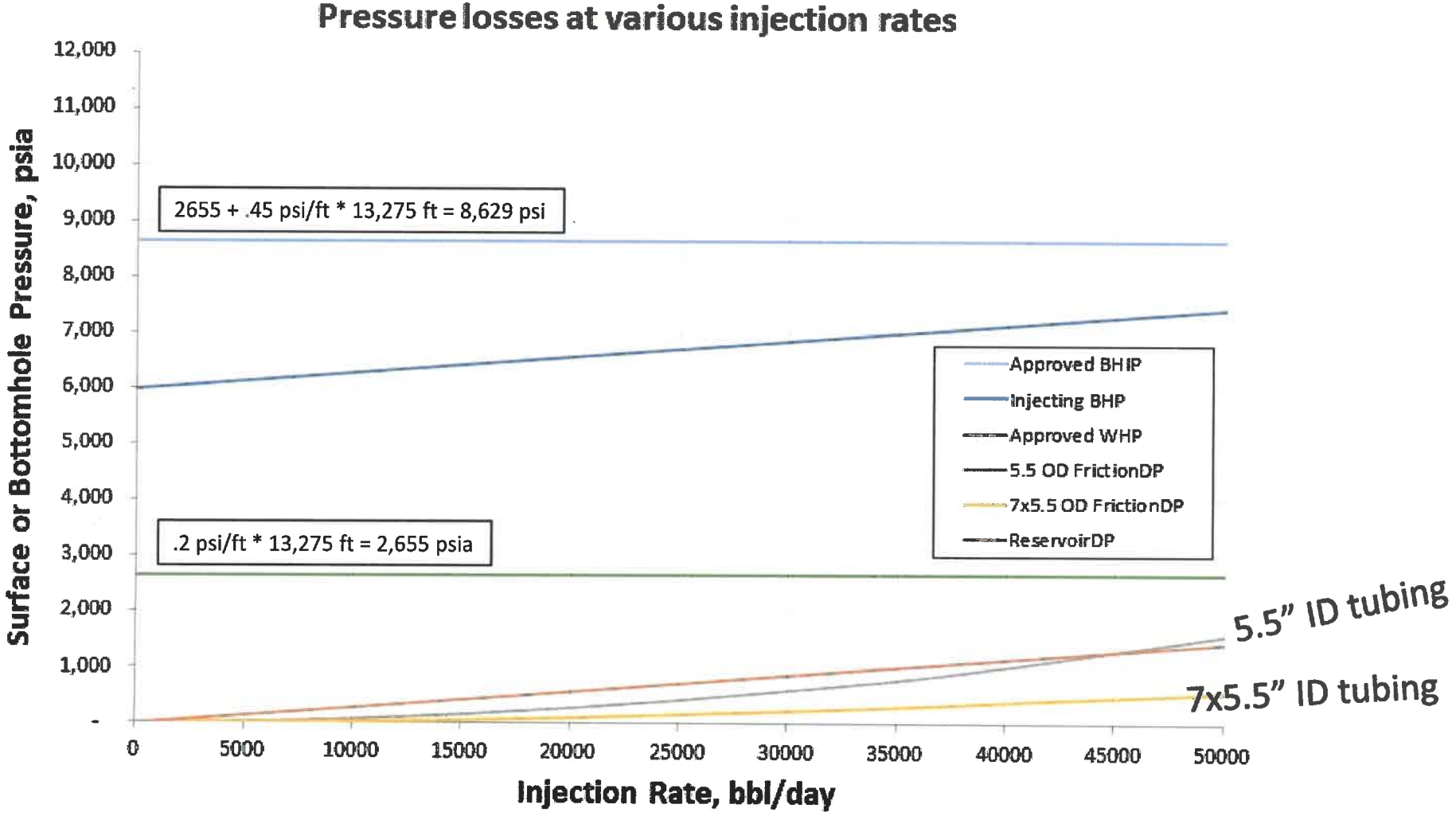


wells needed to dispose of various amounts		
Disposal BWIPD	5.5 wells	7x5.5 wells
100,000	3	2
200,000	5	4
400,000	11	8
800,000	22	17
1,600,000	43	33

NGL Water Solutions, LLC

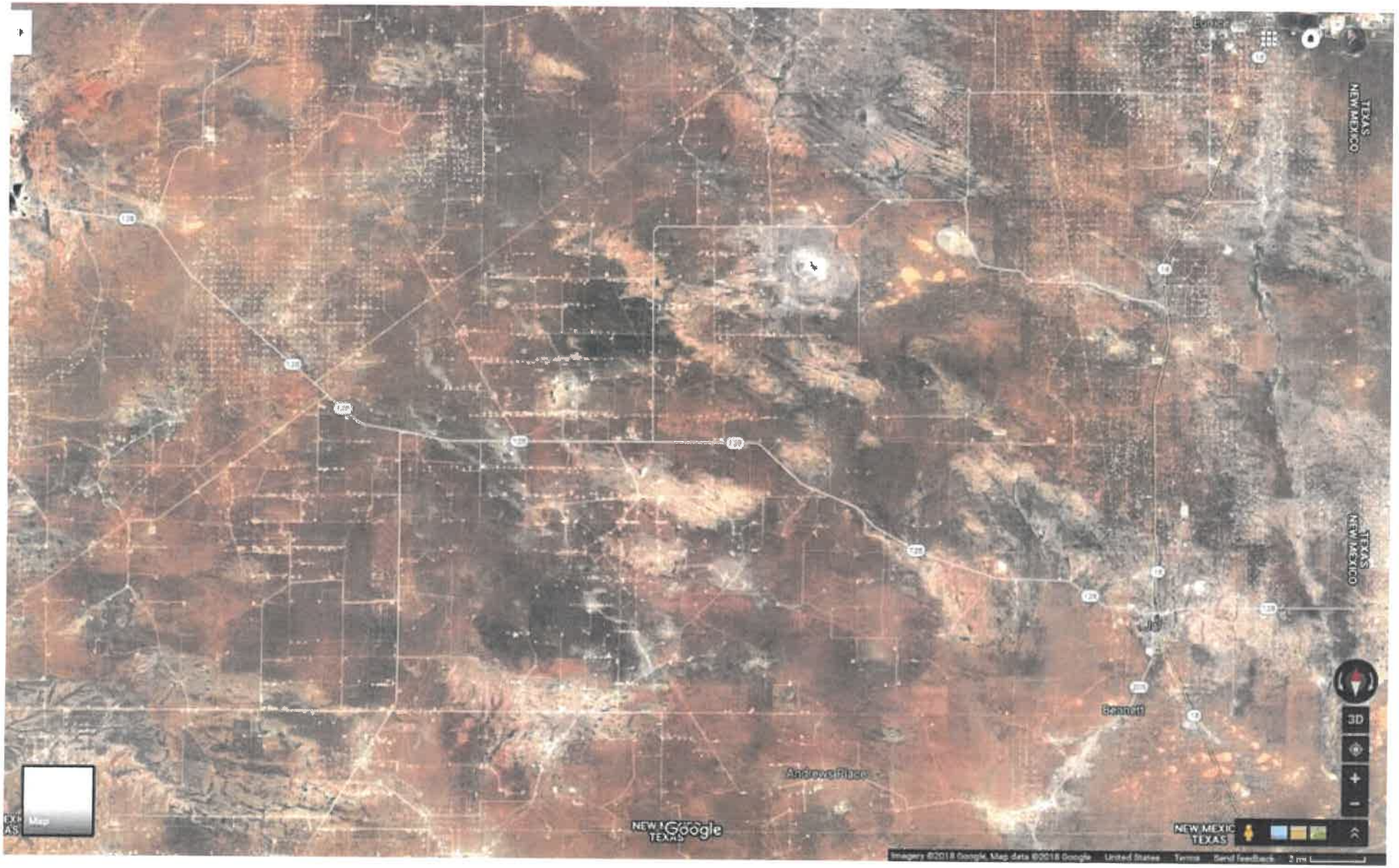
Increasing tubing size will decrease friction losses and conserve horsepower

2 example tubing sizes and their impact on friction losses for a typical SWD well.



NGL Water Solutions, LLC

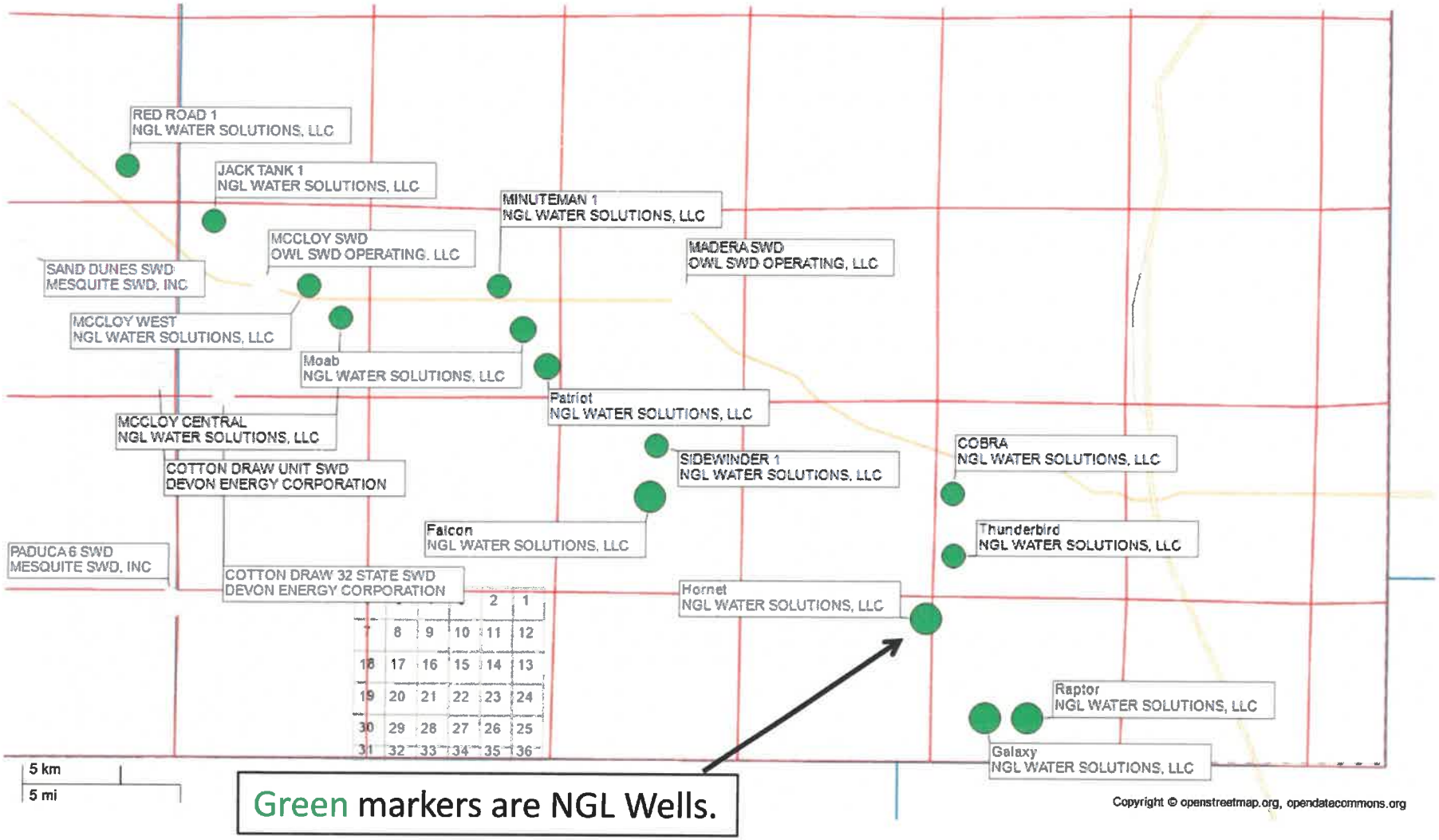
Terrain is level and infrastructure is plentiful.



NGL Water Solutions, LLC

A sample of Devonian formation SWD Wells in the area.
Area is roughly 40 miles (E-W) by 25 miles (N-S)

Map Chart

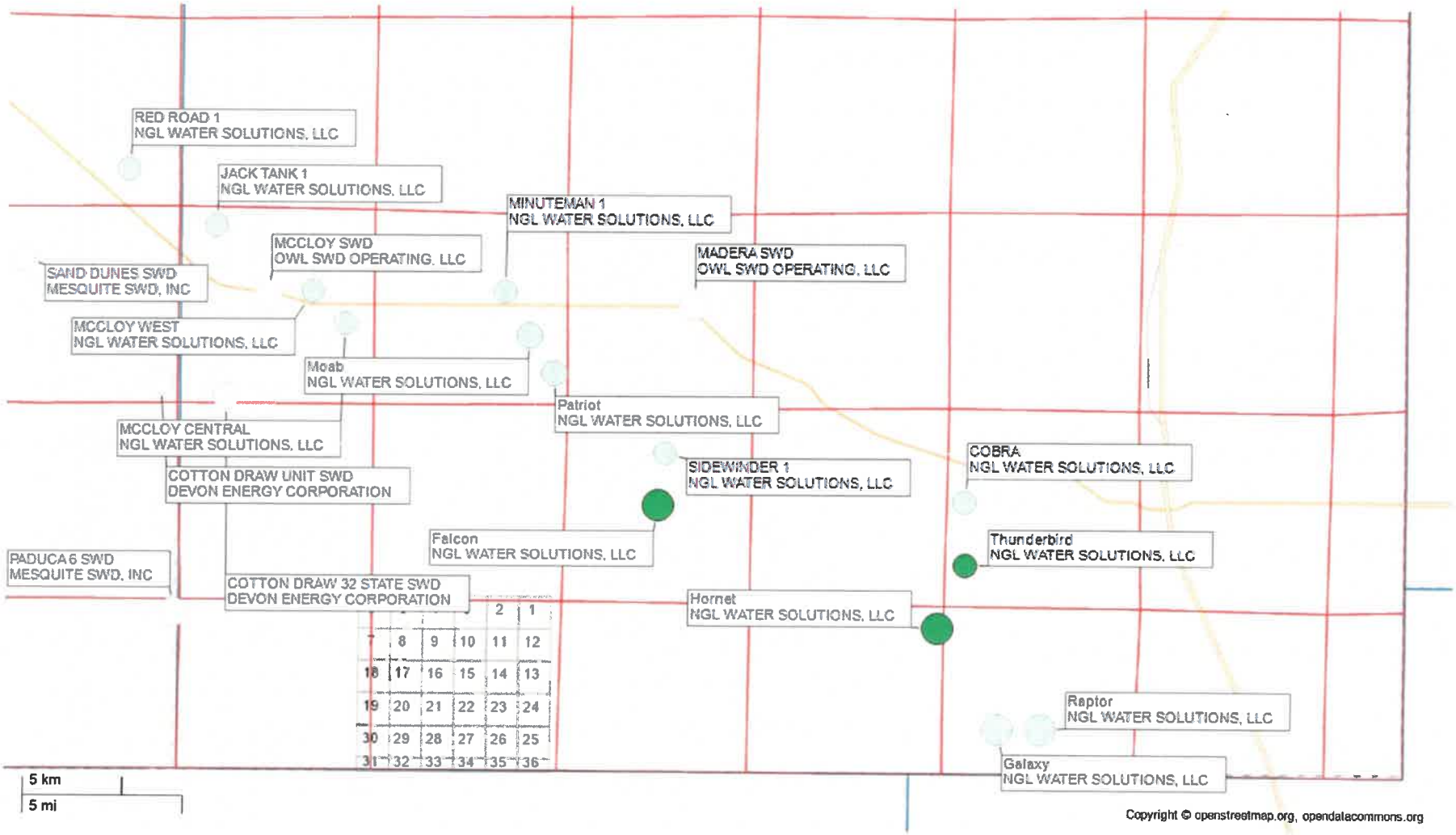


Existing well data source: DI Desktop

NGL Water Solutions, LLC

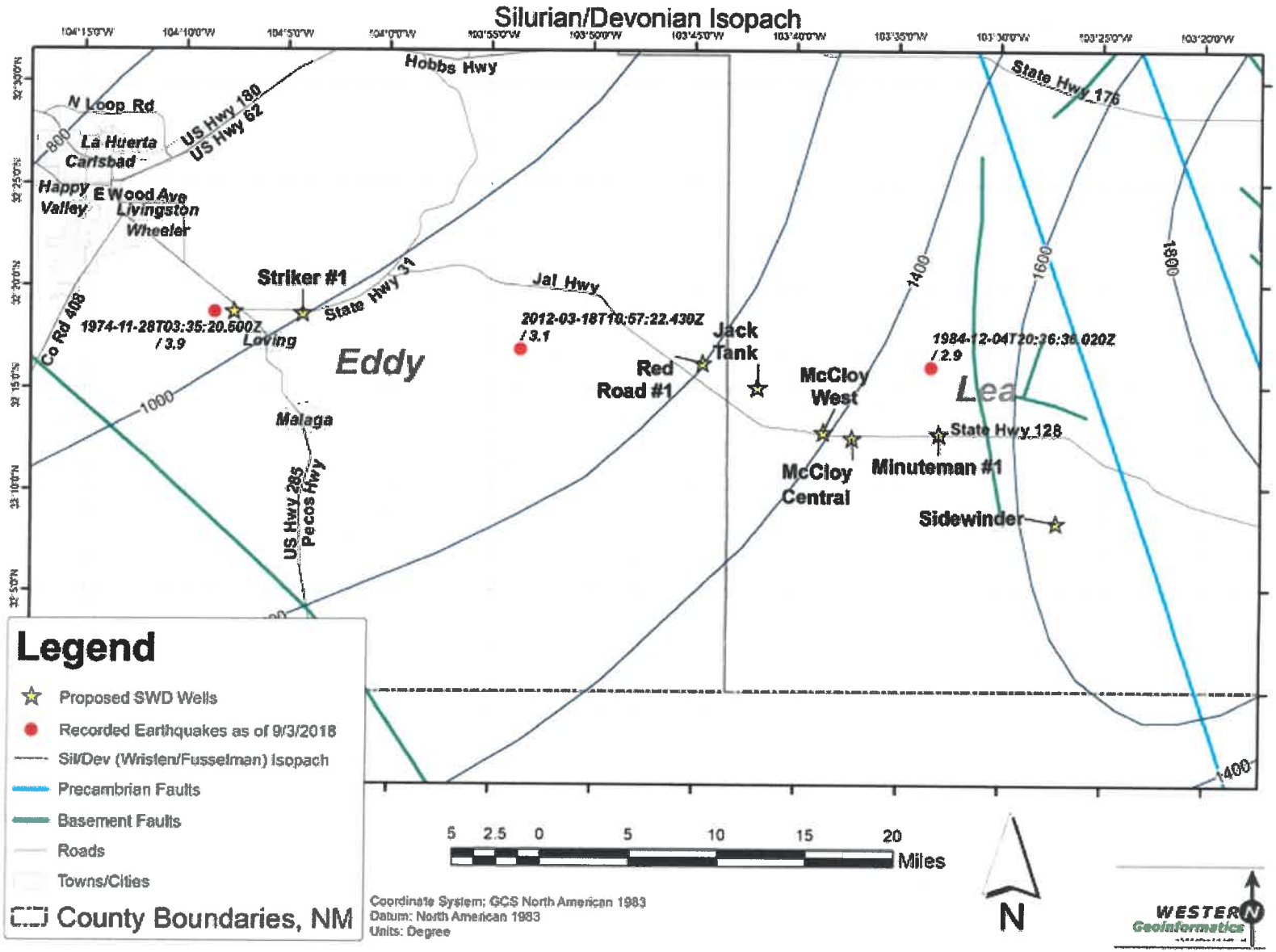
Falcon, Thunderbird, Horner wells highlighted.

Map Chart



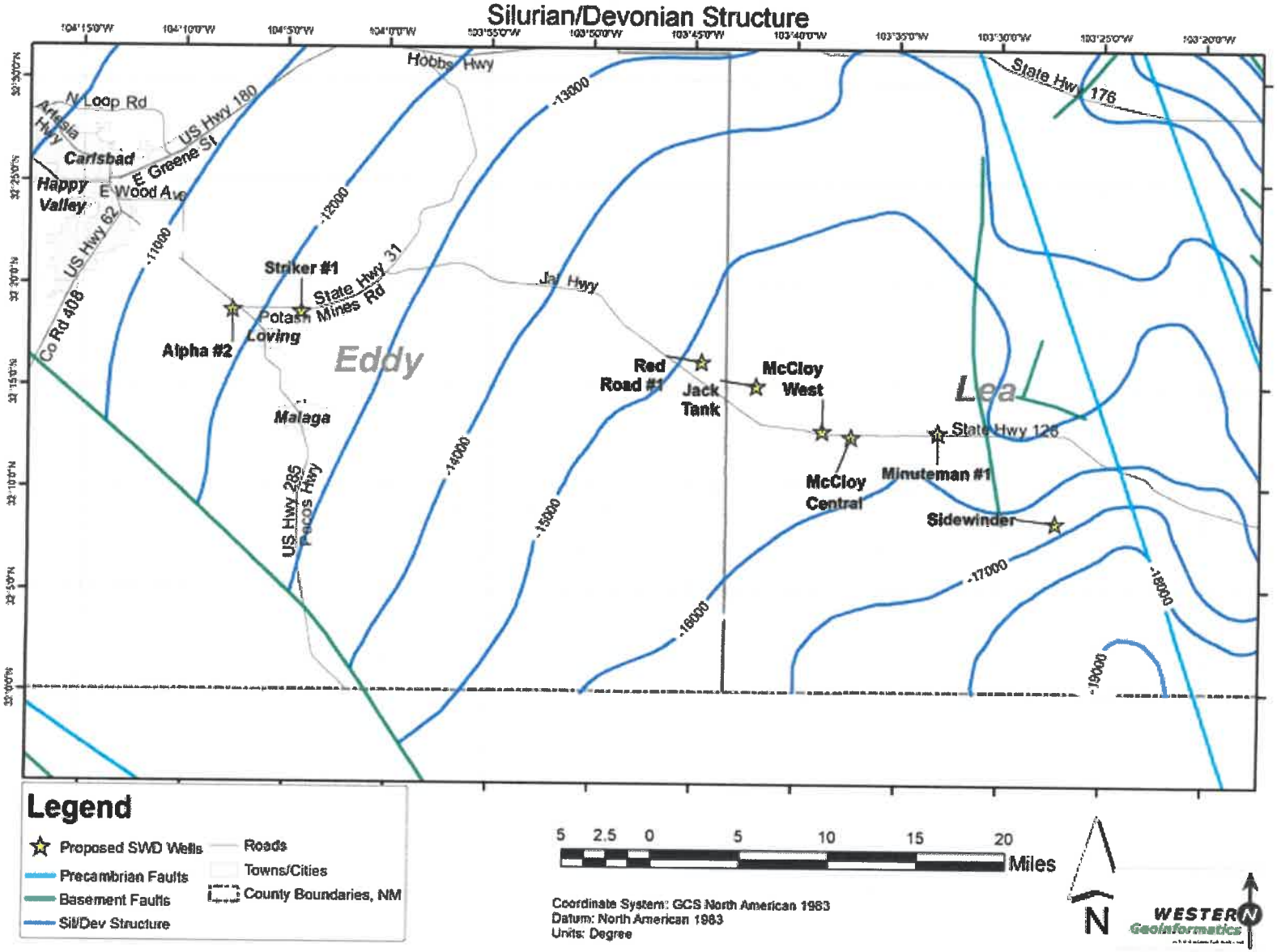
NGL Water Solutions, LLC

Sil/Dev Thickness increases from NW to E-SE



NGL Water Solutions, LLC

Sil/Dev structure dips from NW to SE

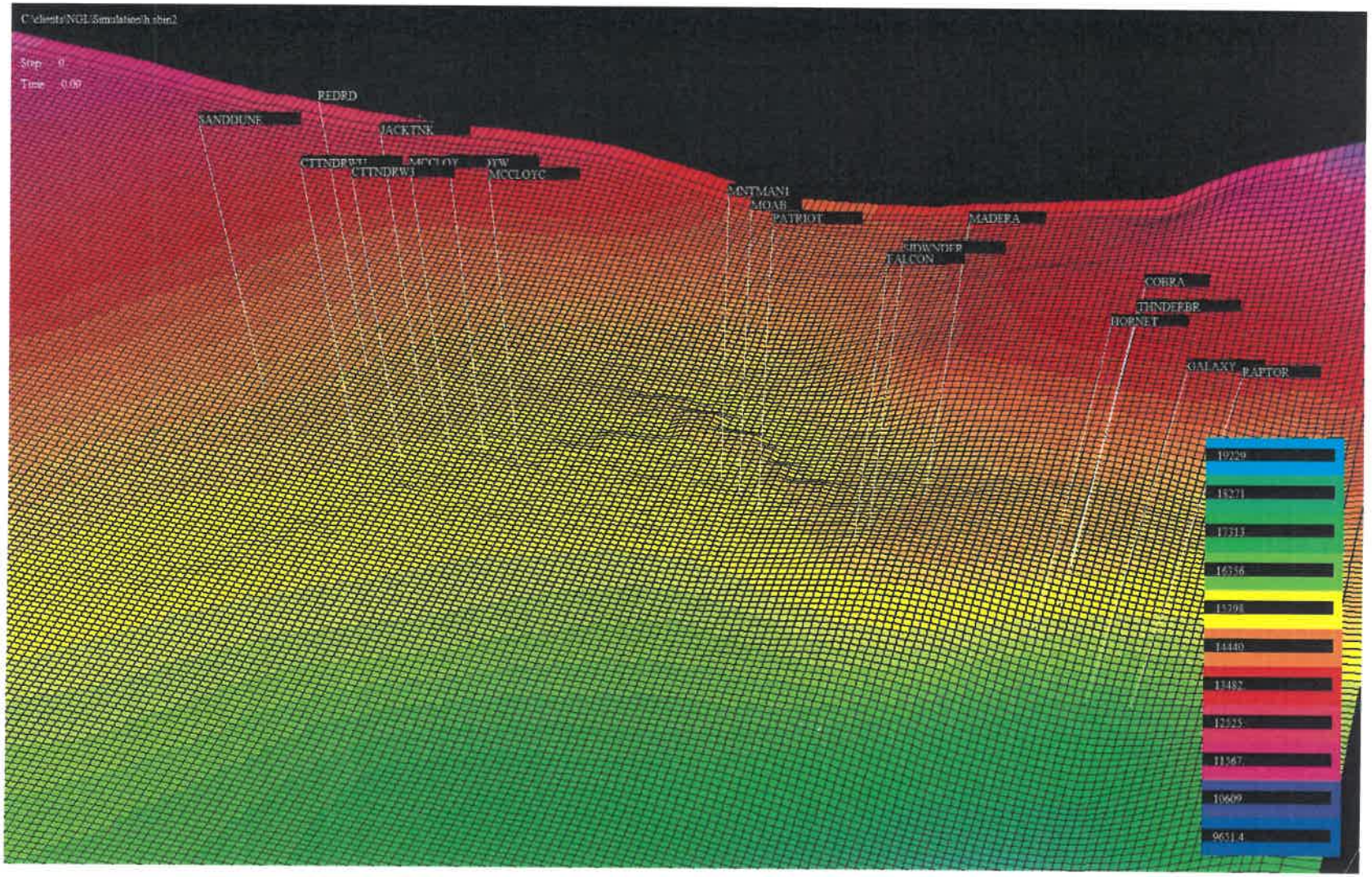


NGL Water Solutions, LLC

Simulation Grid matches Structure and Thickness

Reservoir Simulation grid incorporates the NGL proposed wells and the close offsets.

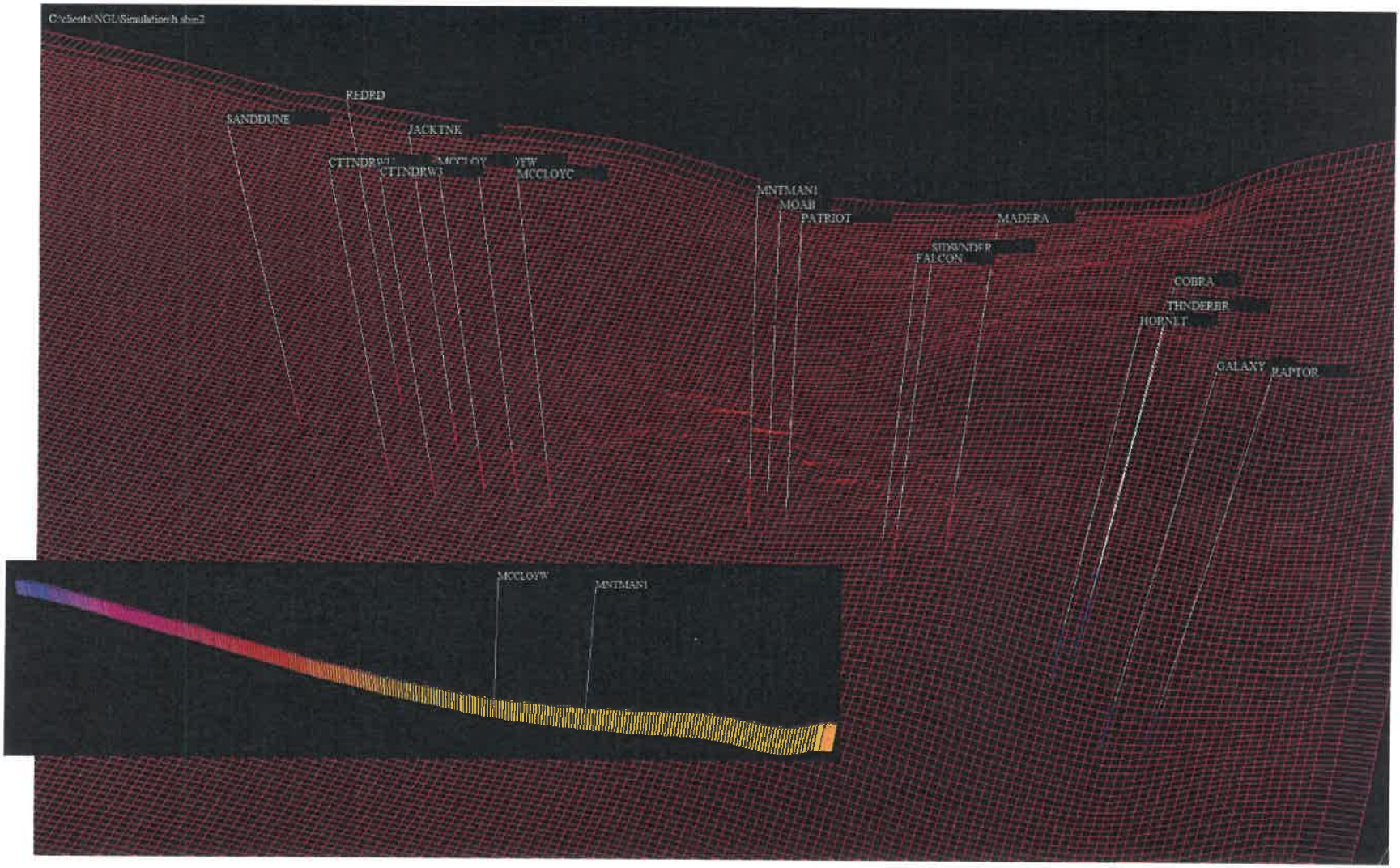
Observation wells are placed in grid corners to monitor the large scale pressure distribution.



NGL Water Solutions, LLC

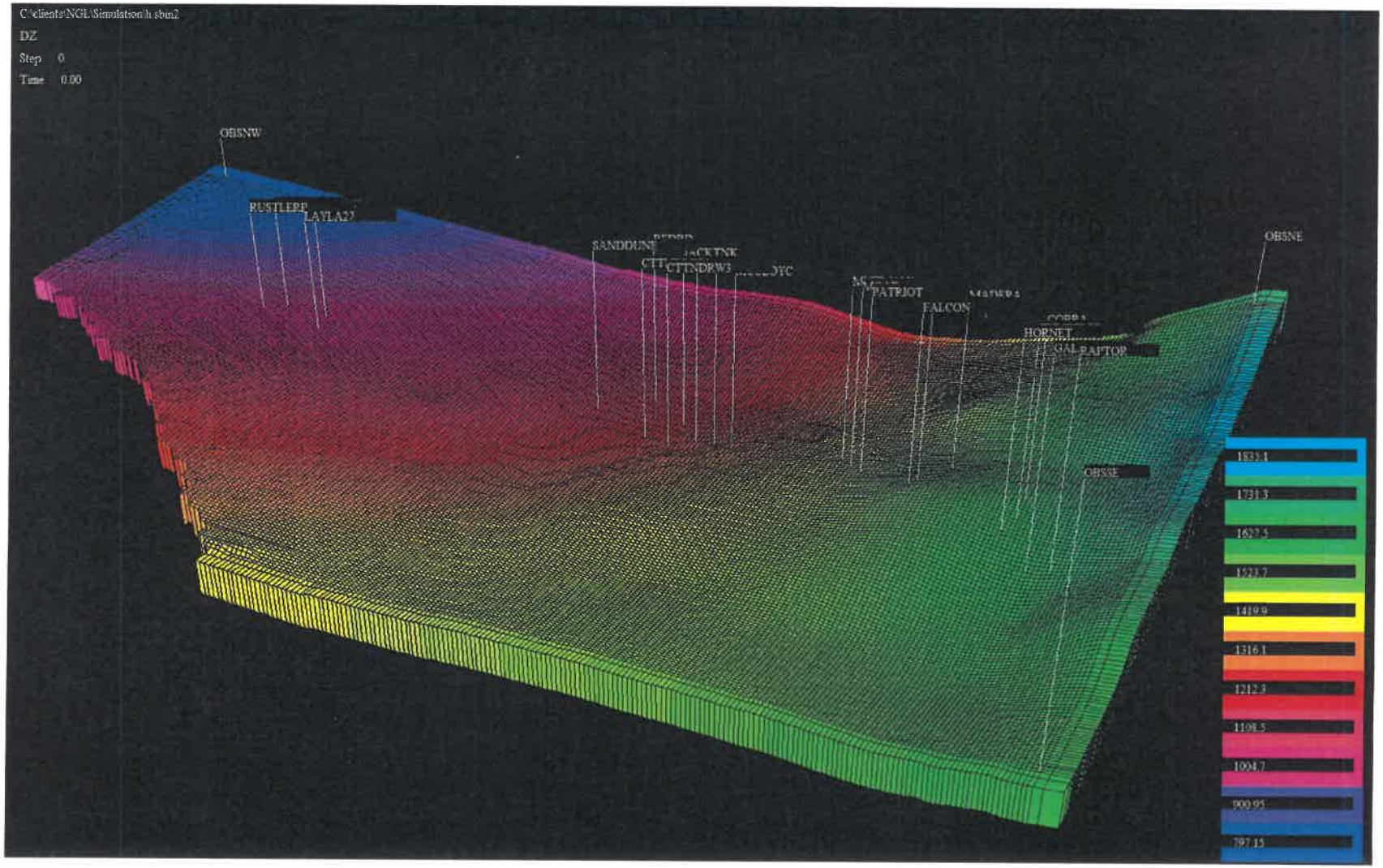
3D view of grid shows Structural Relief.

Thickness is accurate but not easy to see at this aspect ratio.



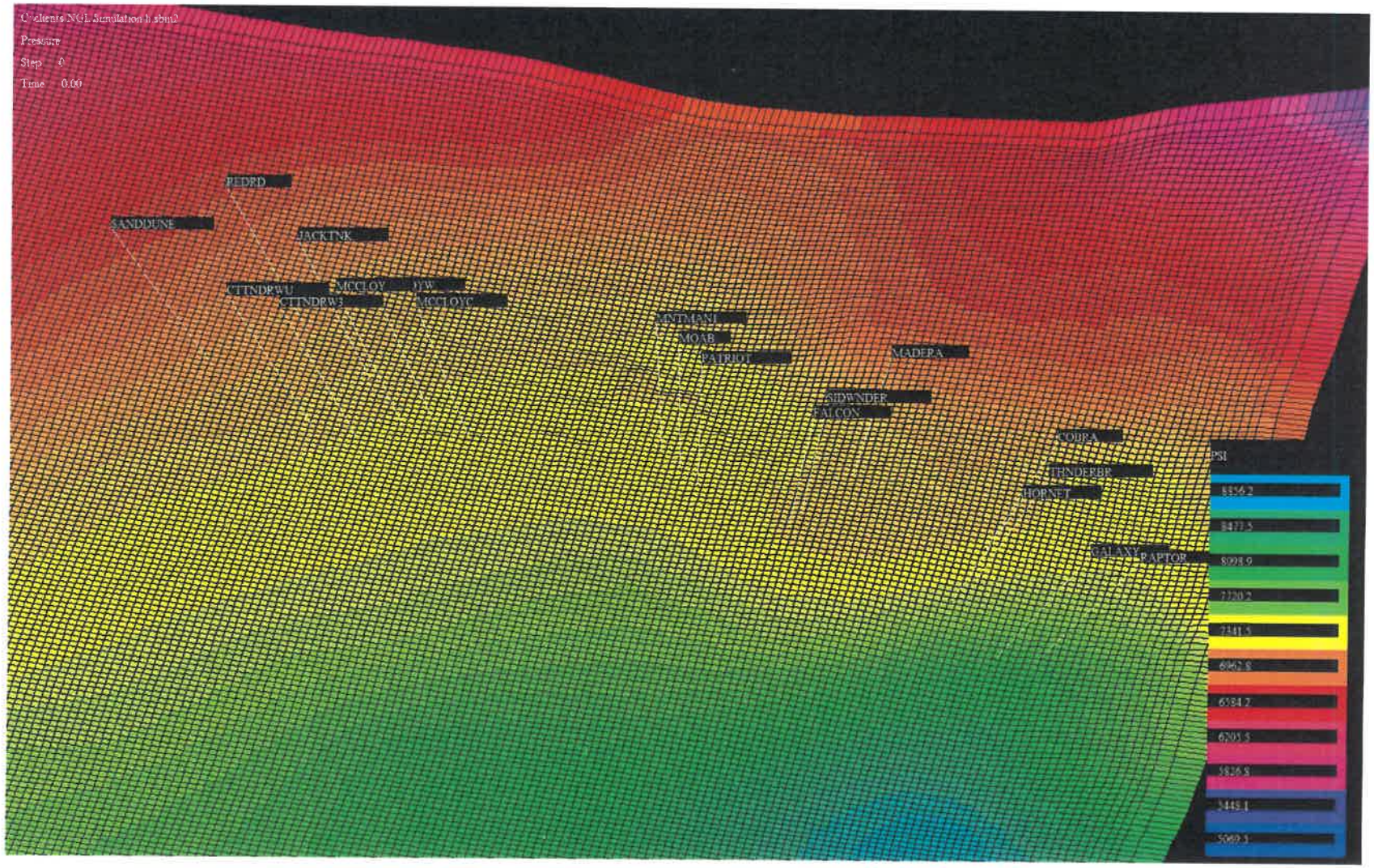
NGL Water Solutions, LLC

Light Blue color to the North East represents the thickest Sil/Dev.



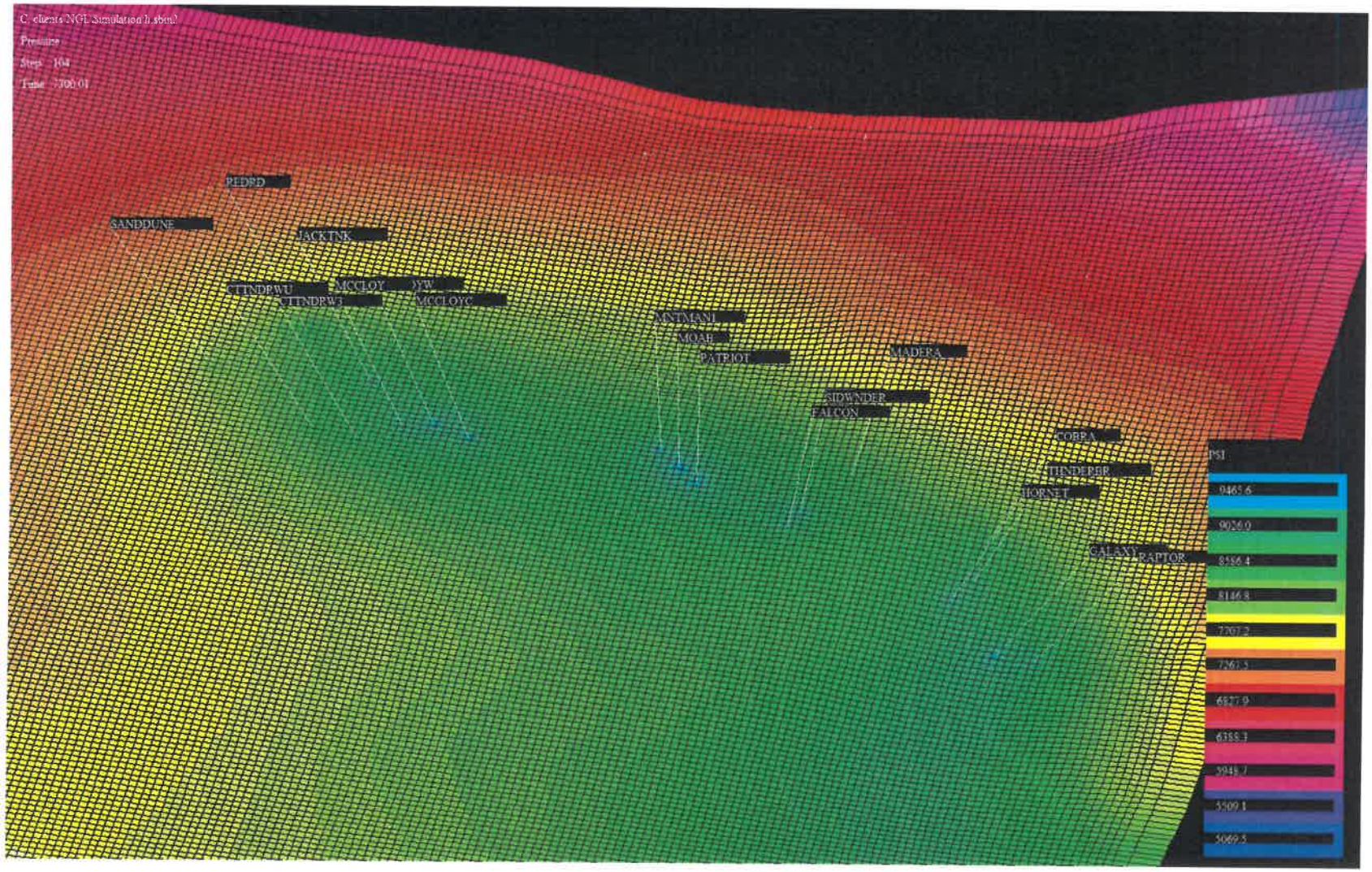
NGL Water Solutions, LLC

Initial pressure is equilibrated by the model based on grid cell depth, fluids(water) and capillary pressure.



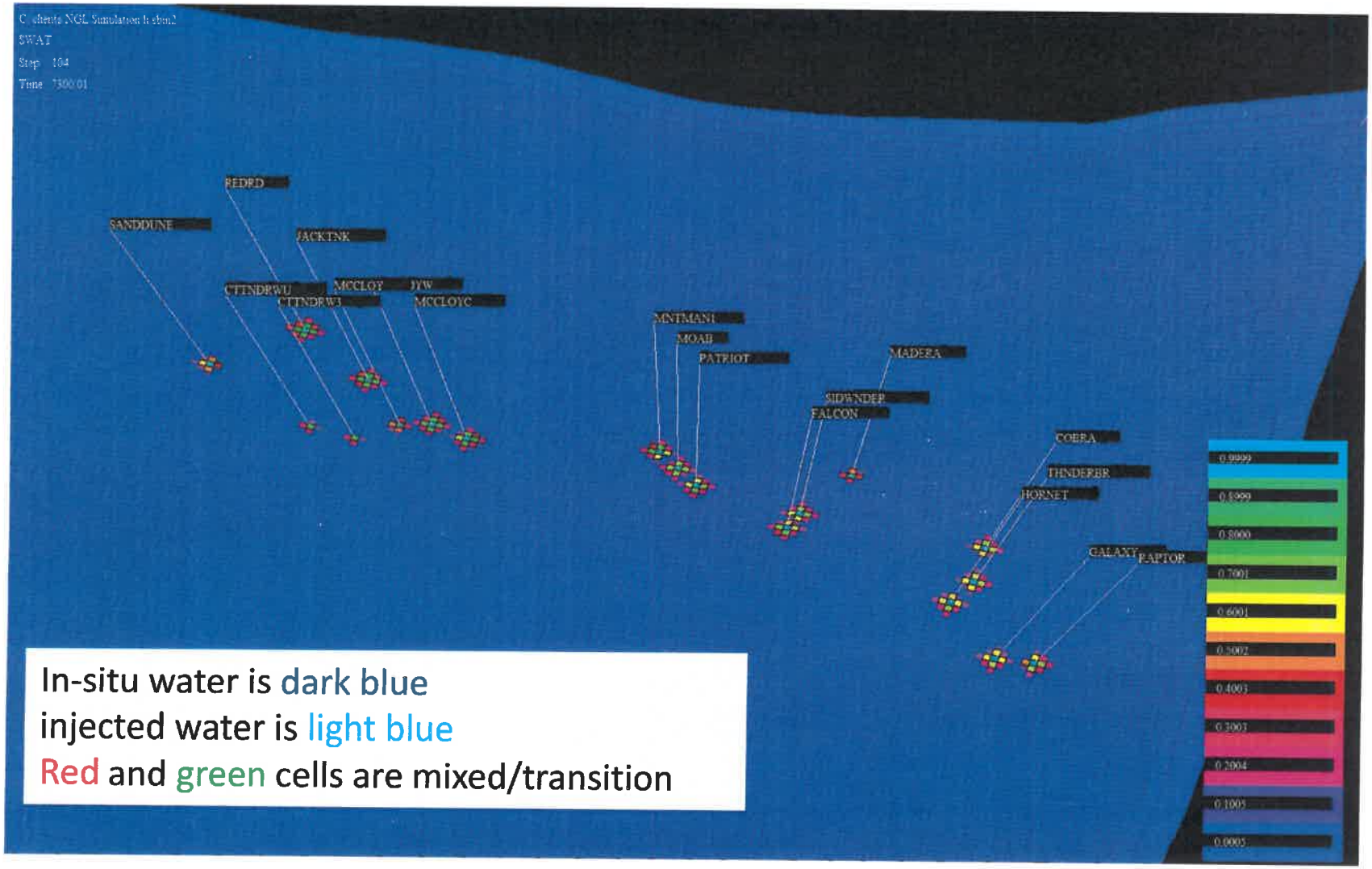
NGL Water Solutions, LLC

Pressure at 20 years is affected by original pressure, injected volumes, and the ability of the reservoir to dissipate pressure.



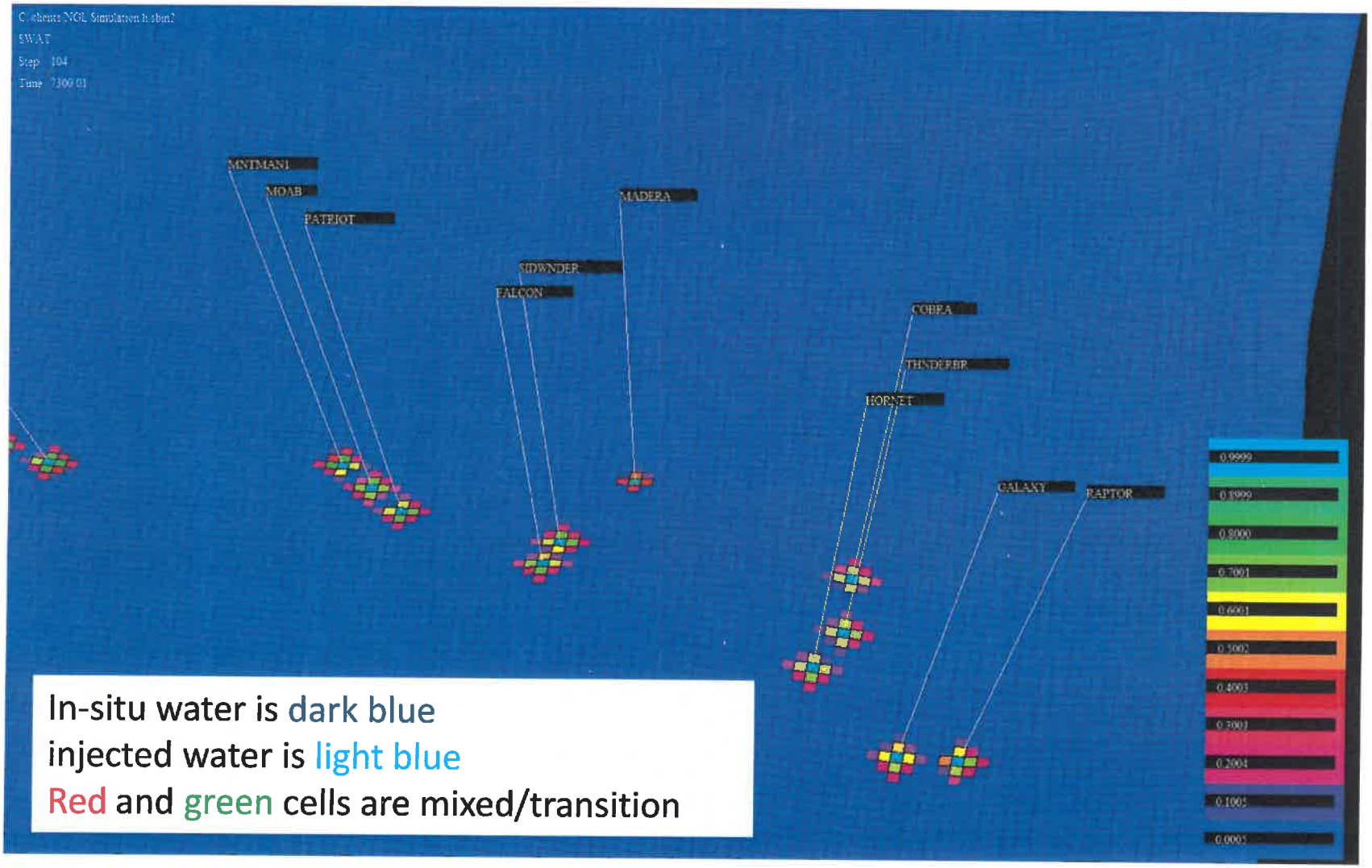
NGL Water Solutions, LLC

Large scale saturation profiles after 20 years of injection.



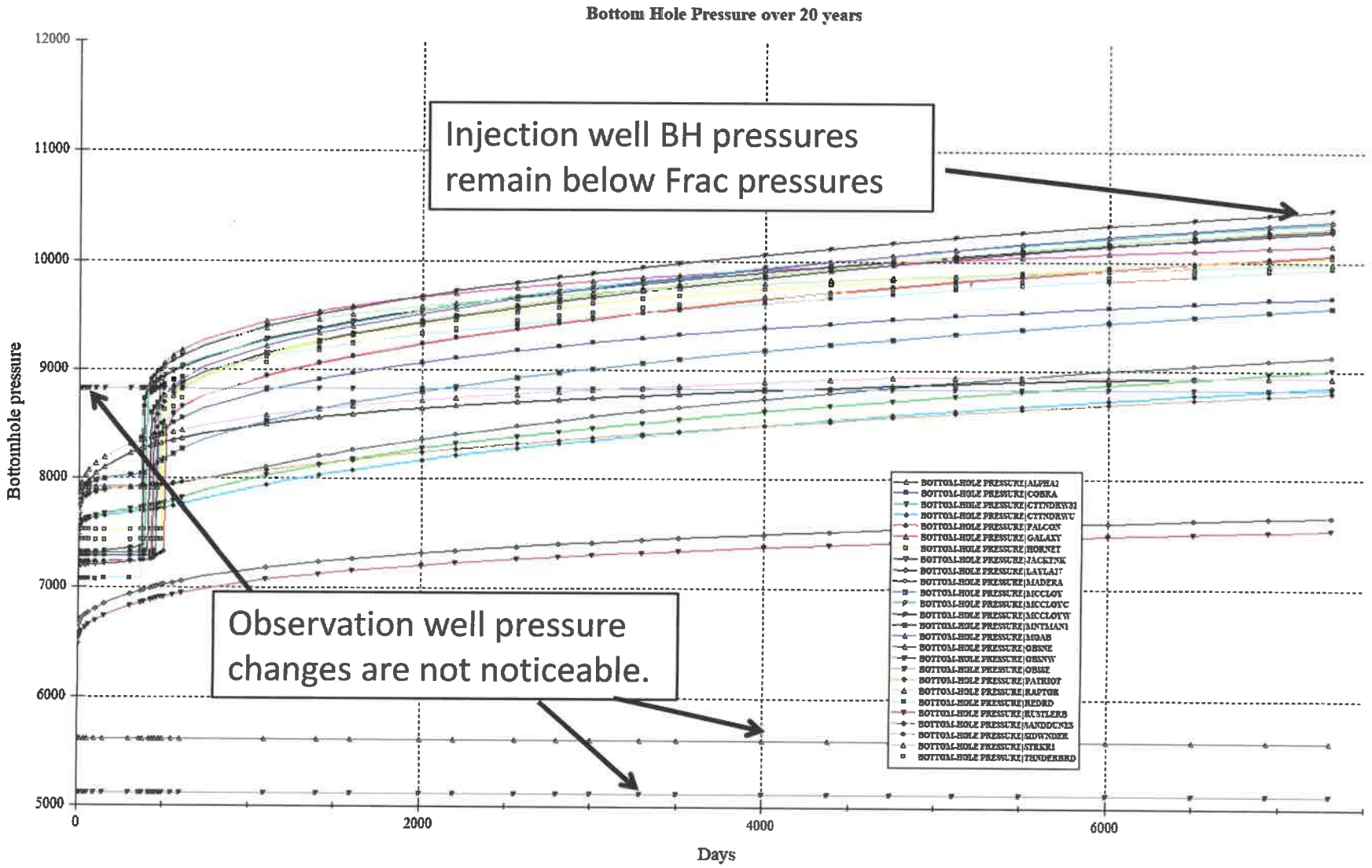
NGL Water Solutions, LLC

Detailed saturation profiles after 20 years of injection.



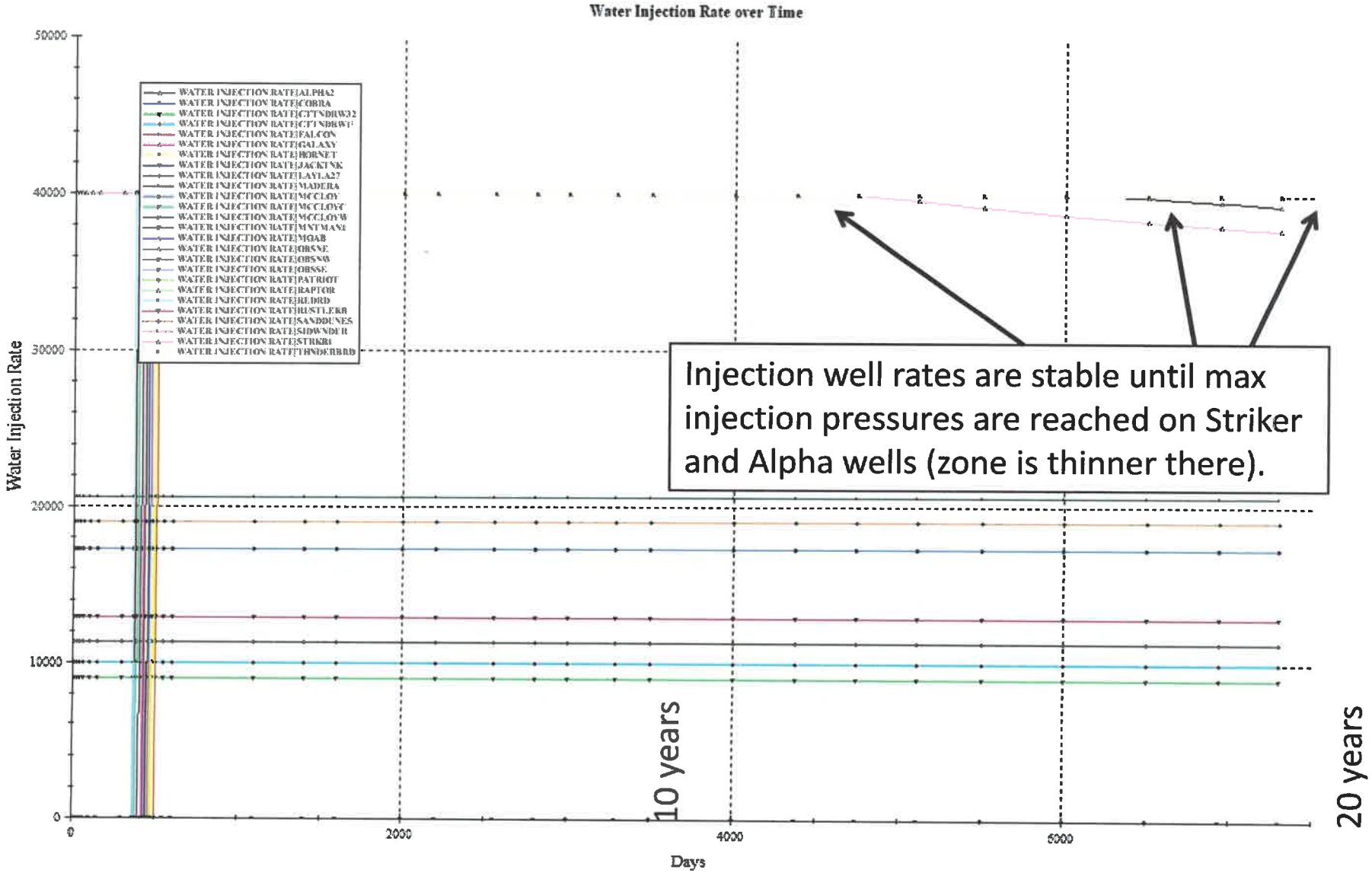
NGL Water Solutions, LLC

Simulation predictions for individual wells over time



NGL Water Solutions, LLC

Simulation predictions for individual wells over time



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

APPLICATION OF NGL WATER SOLUTIONS PERMIAN, LLC FOR APPROVAL OF SALT WATER DISPOSAL WELL IN LEA COUNTY, NEW MEXICO

CASE NO. 20063

APPLICATION OF NGL WATER SOLUTIONS PERMIAN, LLC FOR APPROVAL OF SALT WATER DISPOSAL WELL IN LEA COUNTY, NEW MEXICO

CASE NO. 20084

APPLICATION OF NGL WATER SOLUTIONS PERMIAN, LLC FOR APPROVAL OF SALT WATER DISPOSAL WELL IN LEA COUNTY, NEW MEXICO

CASE NO. 20093

AFFIDAVIT OF KATE ZEIGLER

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

I, Kate Zeigler, make the following affidavit based upon my own personal knowledge.

1. I am over eighteen (18) years of age and am otherwise competent to make the statements contained herein.

2. I am the senior geologist at Zeigler Geologic Consulting, and I provide a wide range of geoscience related services to companies and other entities in Southeastern New Mexico.

3. I have obtained a bachelor's degree in geology from Rice University, a master's degree in paleontology from the University of New Mexico, and a Ph.D. in stratigraphy and paleomagnetism from the University of New Mexico. Additionally, I have completed several surface geologic maps for the New Mexico Bureau of Geology and Mineral Resource's Geologic Mapping Program as well as for independent operators who are exploring prospects within the western Permian Basin. I have also conducted a prior geologic study concerning what is commonly referred to as the Devonian and Silurian formations in Southeastern New Mexico to help determine whether the approval of 7" by 5 ½" tubing is appropriate in Devonian and Silurian salt water disposal wells approved by the New Mexico Oil Conservation Division.

4. I am familiar with the applications that NGL Water Solutions Permian, LLC ("NGL") has filed in this matter, and I have conducted a geologic study of the lands which are the subject matter of the applications. A copy of my geologic study, including a cross section, structure contour maps and isopach maps, is included in Attachment A to this affidavit.

5. The applicant, NGL (OGRID No. 372338), seeks an order approving the Falcon SWD #1 well (Case No. 20063), the Hornet SWD #1 well (Case No. 20084), and the Thunderbird SWD #1 well (Case No. 20093). All three wells are salt water disposal wells.

6. I have been informed that the injection intervals for the wells will be isolated to the Devonian and Silurian formations (also referred to as the Wristen Group and Fusselman Formation) and the wells will have four strings of casing protecting the fresh water aquifer, the salt-bearing interval, and the Permian aged rocks through the Wolfcamp Formation. The deepest casing is 7 5/8", which is cemented and cement is circulated on the 7 5/8" casing.

7. The wells will be spaced out and not located closer than approximately 1 mile from other disposal wells that have been approved for injection into the Devonian and Silurian formations.

8. The injection zone for the wells are located below the Woodford Shale. The Woodford Shale is an Upper Devonian unit which has low porosity and permeability and consists predominantly of shale and mudstone with some carbonate beds. The Woodford Shale acts as a permeability boundary to prevent fluids from moving upward out of the underlying formations. The Woodford Shale formation in the areas where the wells are located is between 200 feet to 325 feet thick.

9. Below the injection zone for the wells is the Ordovician formation, also referred to as the Simpson Group, which contains sequences of shale that make up approximately 55% of the total thickness of the formation in any given place and can likewise act as a permeability boundary which prevents fluids from migrating downwards into deeper formations and the basement rock. In the areas where the wells are located, the Ordovician formation is between 300' and 500' feet thick and, as a result, there is a significant thickness in this lower shale. Below the Ordovician is the Ellenburger Formation, which is up to 700 feet thick.

10. Based on my geologic study of the area, it is my opinion that the approved injection zone for the wells is located below the base of the Woodford Shale formation and above the Simpson Group formation, both of which consist of significant shale deposits. Evidence indicates that shale formations located above and below the approved injection zones will likely restrict fluids from migrating beyond the approved injection zones for the wells.

11. The wells will primarily be injecting fluids into the Wristen Group and Fusselman Formation, with some fluids potentially being injected into the Upper Montoya Group. Each of

these rock units are located within what is commonly referred to by operators and the Division as the "Devonian-Silurian" formations. These zones consist of a very thick sequence of limestone and dolostone which has significant primary and secondary porosity and permeability that is collectively between 1,900 to 2,000 feet thick.

12. It is my opinion that there is no risk to freshwater resources for injection within the Wristen Group, Fusselman, and Upper Montoya Group because of the depth of these sub-formations and the upper shale permeability boundary created by the Woodford Shale.

13. I have also studied the location of known fault lines within the area where the wells are proposed to be drilled and the closest known fault line to the wells is located approximately 1 mile away from where the wells are proposed to be drilled.

14. There are no currently recognized production shales within the Wristen Group, Fusselman Formation, and Upper Montoya Group in this part of the western Permian Basin. While there may be some isolated traps located within these sub-formations, it takes significant ability with imaging to be able to locate these deposits in order to properly target them.

15. I attest that the information provided herein is correct and complete to the best of my knowledge and belief.

16. The granting of these applications is in the interests of conservation and the prevention of waste.

[Signature page follows]

Kate Zeigler

SUBSCRIBED AND SWORN to before me this 13 th day of November, 2018 by Kate Zeigler.

Notary Public

My commission expires: May 3, 2019

OFFICIAL SEAL
JESSICA BERTOLUCCI
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires May 3, 2019

Delaware Basin Stratigraphic Unit Descriptions

Lower Paleozoic

Woodford Shale (Upper Devonian)

The Woodford Shale is dominated by organic-rich mudstone interbedded with carbonate (limestone and/or dolostone) beds, chert beds and radiolarian laminae. This unit has been interpreted to include sedimentary gravity-flow deposits. Dominantly shale means lower porosity and permeability than the limestone/dolostone units above and below. The Woodford Shale is unconformable on the units below it. Locally this contact includes solution cavities and fissures down into the underlying carbonate unit(s), creating a complex boundary. It is up to 150' thick locally.

Thirtyone Formation (Lower Devonian)

The Thirtyone Formation is part of a wedge of sedimentary rocks that thins to the north and the west where the wedge ends up truncated beneath the base of the overlying Woodford Shale. The Thirtyone Formation is only present in southeastern Lea County and consists of an upper coarsely crystalline dolostone unit and lower chert unit. This unit is not present in the area of concern.

Wristen Group (Middle-Upper Silurian)

The Wristen Group consists of interbedded limestone and dolostone that has a maximum thickness in Lea County, then thins to the north and the west. Thicknesses range from 0 to 1,400' thick. In the Delaware Basin, it occurs up to 19,000' below land surface, then rises to 10,000' to 12,000' subsurface to the north and west. It represents deposition in a shelf-margin environment and includes buildups of coral reefs, stromatoporoids and other invertebrate colonialists. The carbonate beds include boundstones, rudstones and oolitic grainstones with significant primary porosity. To the north, reservoirs targeted for production are dolomitic with vugular and fracture-related porosity.

Fusselman Formation (Late Ordovician-Lower Silurian)

The Fusselman Formation is almost entirely dolostone and can be up to 1,500' thick. As with the overlying Thirtyone Formation and Wristen Group, the Fusselman Formation thinks to the north and west where it is truncated beneath the Woodford Shale to the north of where the Wristen Group pinches out. In Lea County, the Fusselman Formation can be 18,000' or more below land surface. It is primarily coarsely crystalline dolostone that is vugular, fractured and/or brecciated, with significant secondary porosity due to the fracturing and brecciation.

Montoya Group (Middle-Upper Ordovician)

The Montoya Formation includes three dolostone members overlying a sandstone unit. The three upper carbonate units include the Upham, Aleman and Cutter Members and the lower sandstone unit is the Cable Canyon Sandstone. The entire package can be up to 600' thick and depth to the top of the unit ranges from 5,500' near the northern pinchout in Chaves County to as much as 20,000' in southern Lea County. The Montoya Group was stripped from the higher parts of the Central Basin Platform by erosion in the Late Pennsylvanian and Early Permian.

Simpson Group (Middle-Upper Ordovician)

The Simpson Group in a heterogeneous unit with limestone, dolostone, sandstone and green shale horizons. Up to 1000' thick, it is dominated by the shale beds (55% of total thickness), followed by the dolostone and limestone beds (40%) and finally sandstone (5%). The shale horizons can serve as a permeability barrier between the underlying Precambrian basement rocks and overlying reservoirs where the Simpson Group is present and has sufficient thickness. Depths to the Simpson Group range from 6,700' on parts of the Central Basin Platform to up to 21,000' in the Delaware Basin.

Ellenburger Formation (Lower Ordovician)

The Ellenburger Formation is up to 1000' thick and composed of limestone and dolostone that represent cyclic deposition in waters of the inner platform with restricted circulation. Porosity in the Ellenburger Formation includes porosity in the matrix, vugs, major karst dissolution features, collapse karst breccias and fractures. Depths to the top of the unit range from 7,500' on the Central Basin Platform to up to 22,000' in the Delaware Basin.

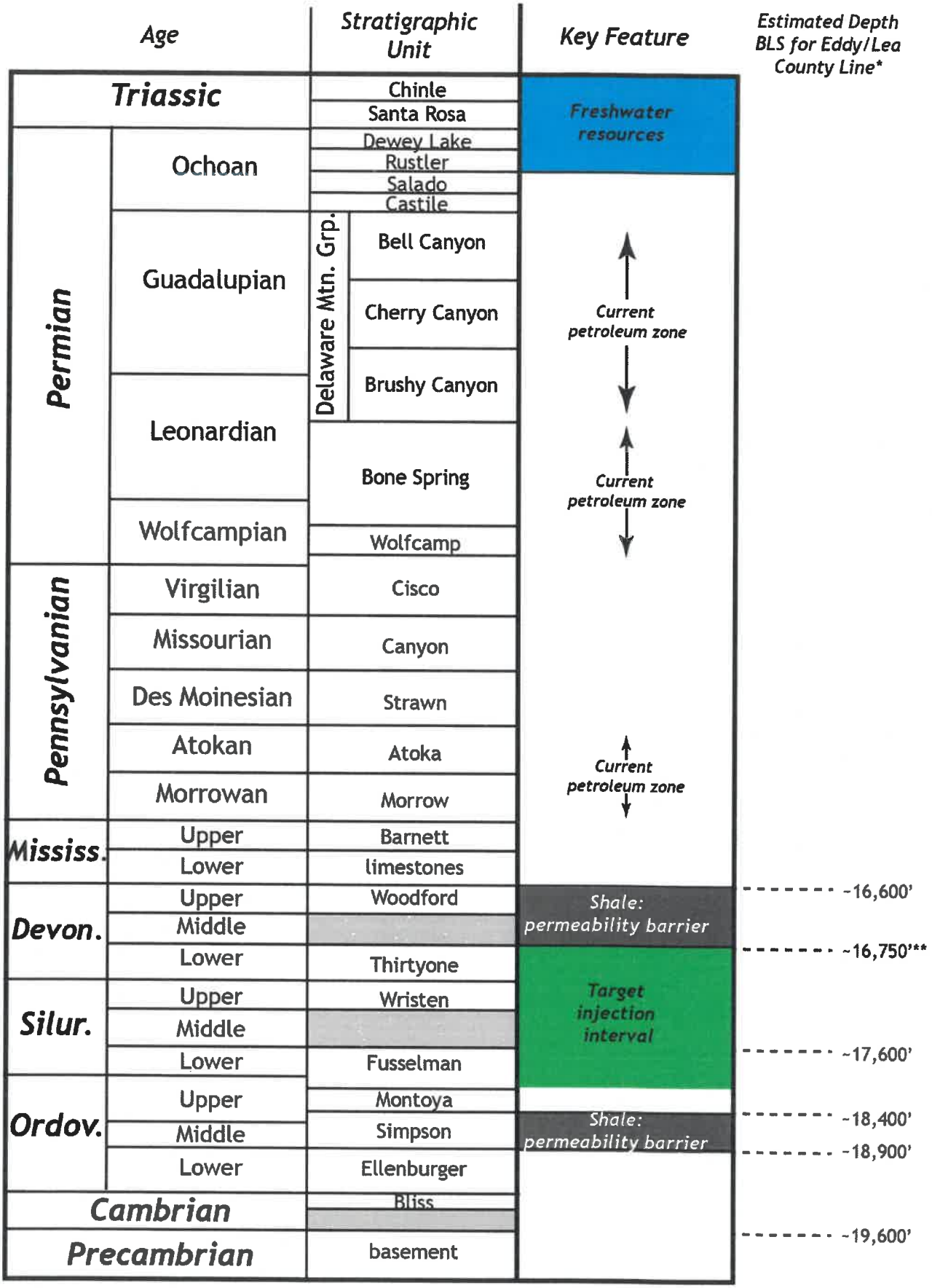
References

Broadhead, R.F., 2017, Petroleum Geology: *in* V.T. McLemore, S. Timmons and M. Wilks (eds.), Energy and Mineral Resources of New Mexico, New Mexico Bureau of Geology and Mineral Resources Memoir 50, vol. A, 90 p.

Comer, J.B., 1991, Stratigraphic analysis of the Upper Devonian Woodford Formation, Permian Basin, West Texas and southeastern New Mexico: Bureau of Economic Geology, University of Texas at Austin, Report of Investigations no. 201, 63 p.

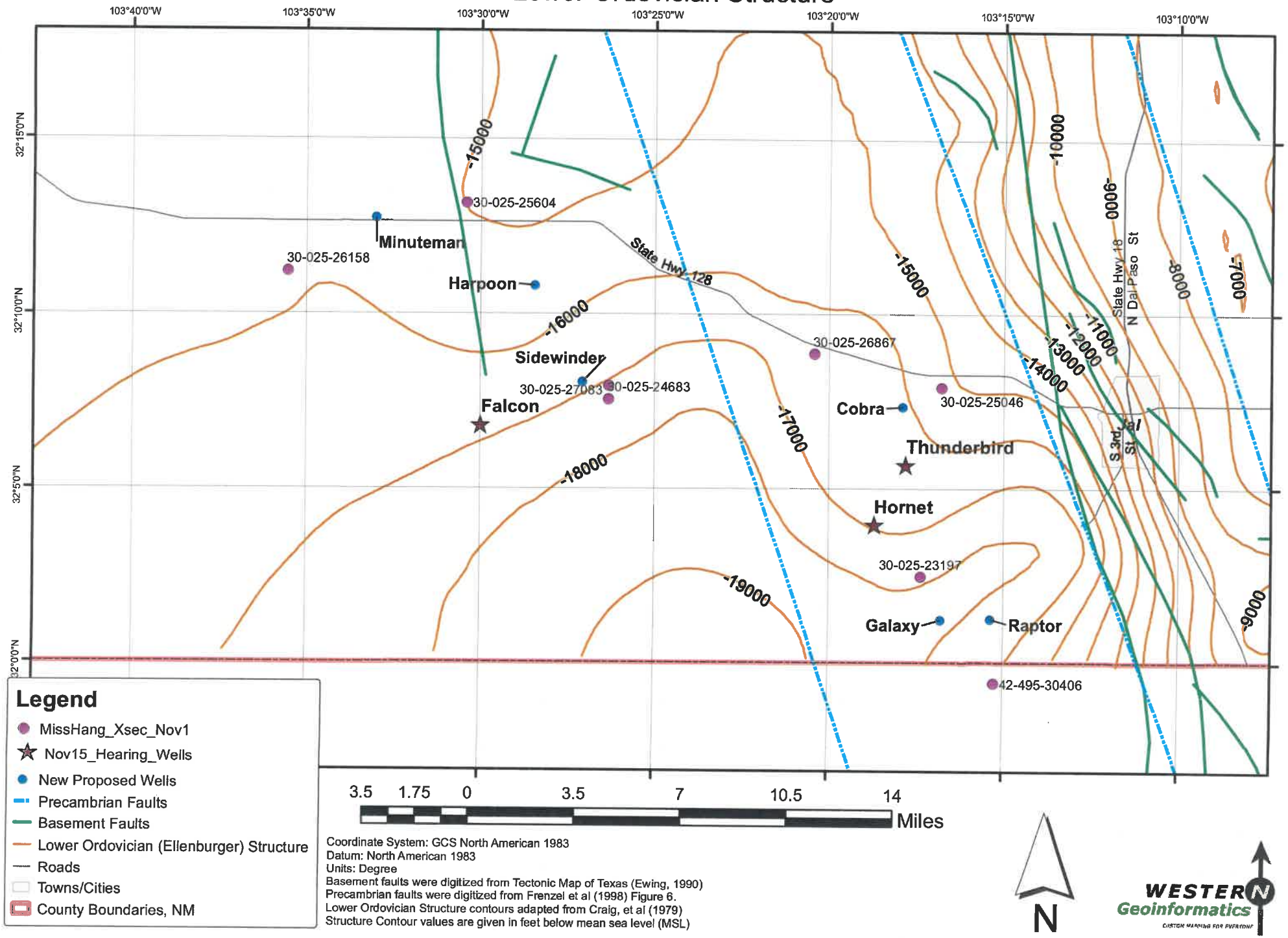
Hemmesch, N.T., Harris, N.B., Mnich, C.A. and Selby, D., 2014, A sequence-stratigraphic framework for the Upper Devonian Woodford Shale, Permian Basin, west Texas: American Association of Petroleum Geologists Bulletin, v. 98, no. 1, p. 23-47, doi:10.1306/05221312077

Texas Bureau of Economic Geology, 2009, Integrated Synthesis of the Permian Basin: Data and Models for Recovering Existing and Undiscovered Oil Resources from the Largest Oil-Bearing Basin in the U.S.: Department of Energy Final Technical Report, Award No: DE-FC26-04NT15509, 964 p.



Stratigraphic chart for the Delaware Basin from Broadhead (2017).
* Based on data from 30-015-44416 Striker 2 SWD #1 (23-24S-31E).
**Note the Thirtyone Formation is not present in the project area.

Lower Ordovician Structure



Legend

- MissHang_Xsec_Nov1
- Nov15_Hearing_Wells
- New Proposed Wells
- Precambrian Faults
- Basement Faults
- Lower Ordovician (Ellenburger) Structure
- Roads
- Towns/Cities
- County Boundaries, NM

Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree
Basement faults were digitized from Tectonic Map of Texas (Ewing, 1990)
Precambrian faults were digitized from Frenzel et al (1998) Figure 6.
Lower Ordovician Structure contours adapted from Craig, et al (1979)
Structure Contour values are given in feet below mean sea level (MSL)

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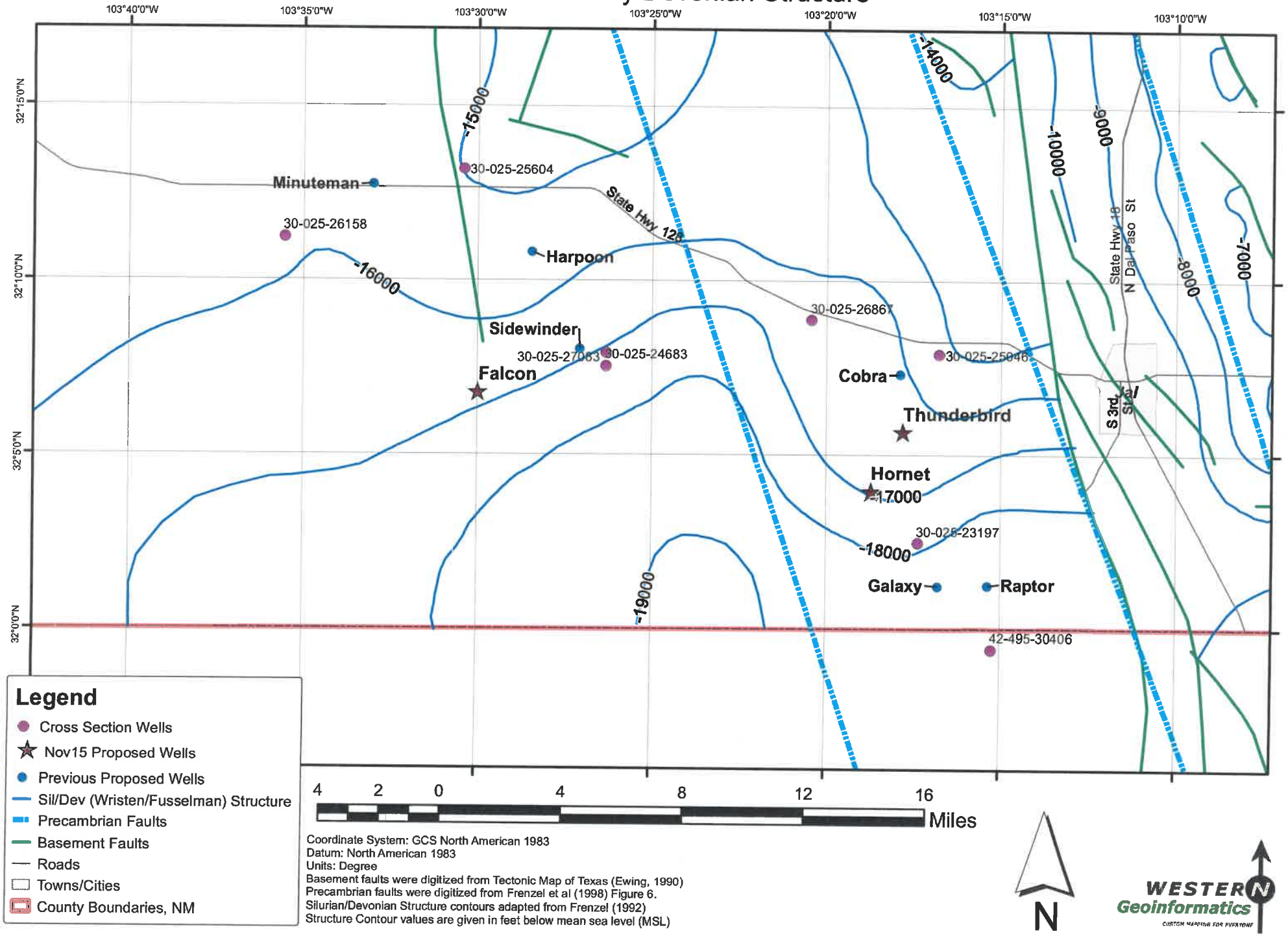
Silurian/Early Devonian Structure



Legend

- Cross Section Wells
- Nov15 Proposed Wells
- Previous Proposed Wells
- Sil/Dev (Wristen/Fusselman) Structure
- Precambrian Faults
- Basement Faults
- Roads
- Towns/Cities
- County Boundaries, NM

Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree
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Precambrian faults were digitized from Frenzel et al (1998) Figure 6.
Silurian/Devonian Structure contours adapted from Frenzel (1992)
Structure Contour values are given in feet below mean sea level (MSL)

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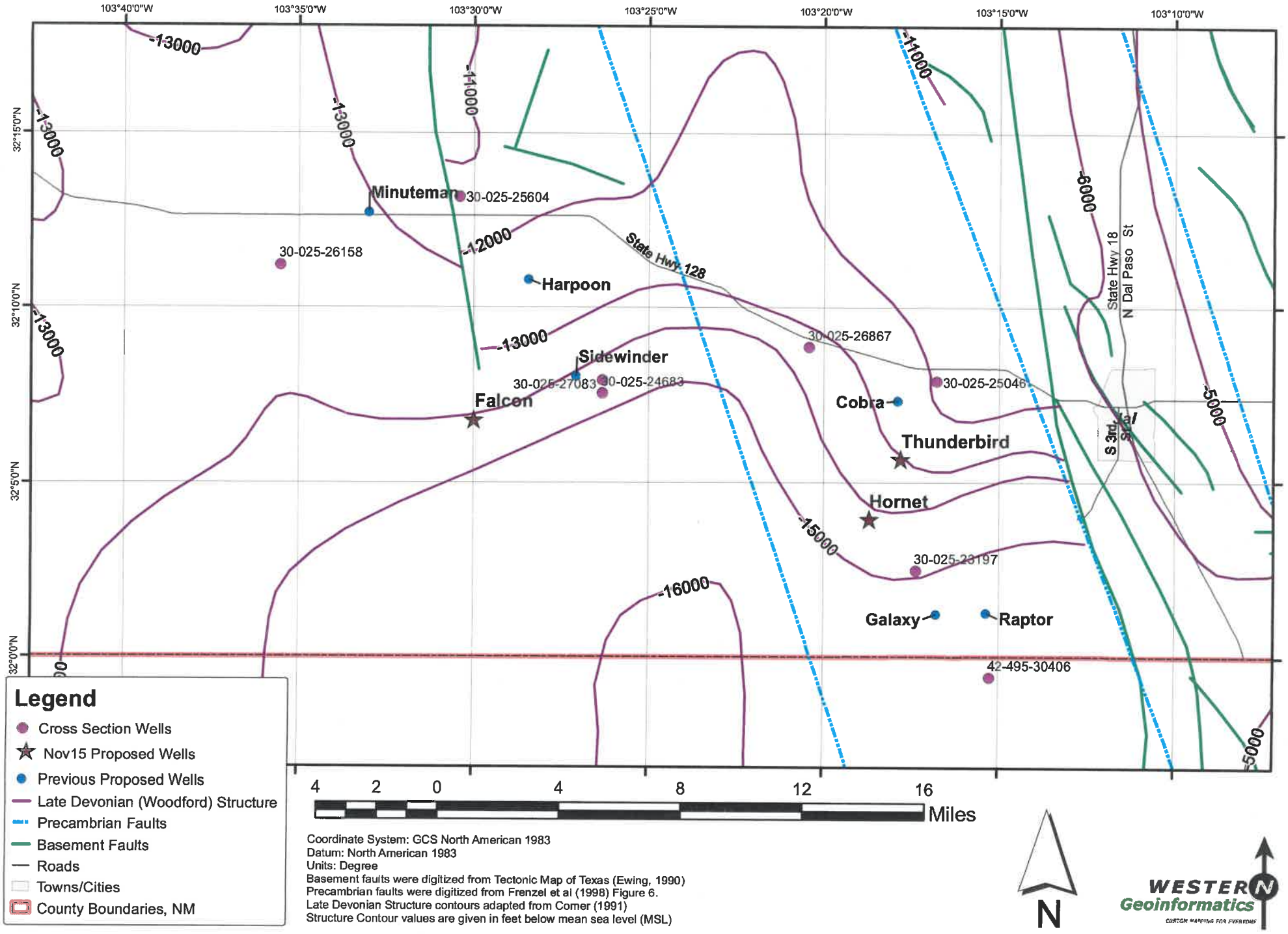
CUSTOM MAPPING FOR EVERYONE

Late Devonian Structure



Legend

- Cross Section Wells
- Nov15 Proposed Wells
- Previous Proposed Wells
- Late Devonian (Woodford) Structure
- Precambrian Faults
- Basement Faults
- Roads
- Towns/Cities
- County Boundaries, NM

Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree
Basement faults were digitized from Tectonic Map of Texas (Ewing, 1990)
Precambrian faults were digitized from Frenzel et al (1998) Figure 6.
Late Devonian Structure contours adapted from Comer (1991)
Structure Contour values are given in feet below mean sea level (MSL)

N

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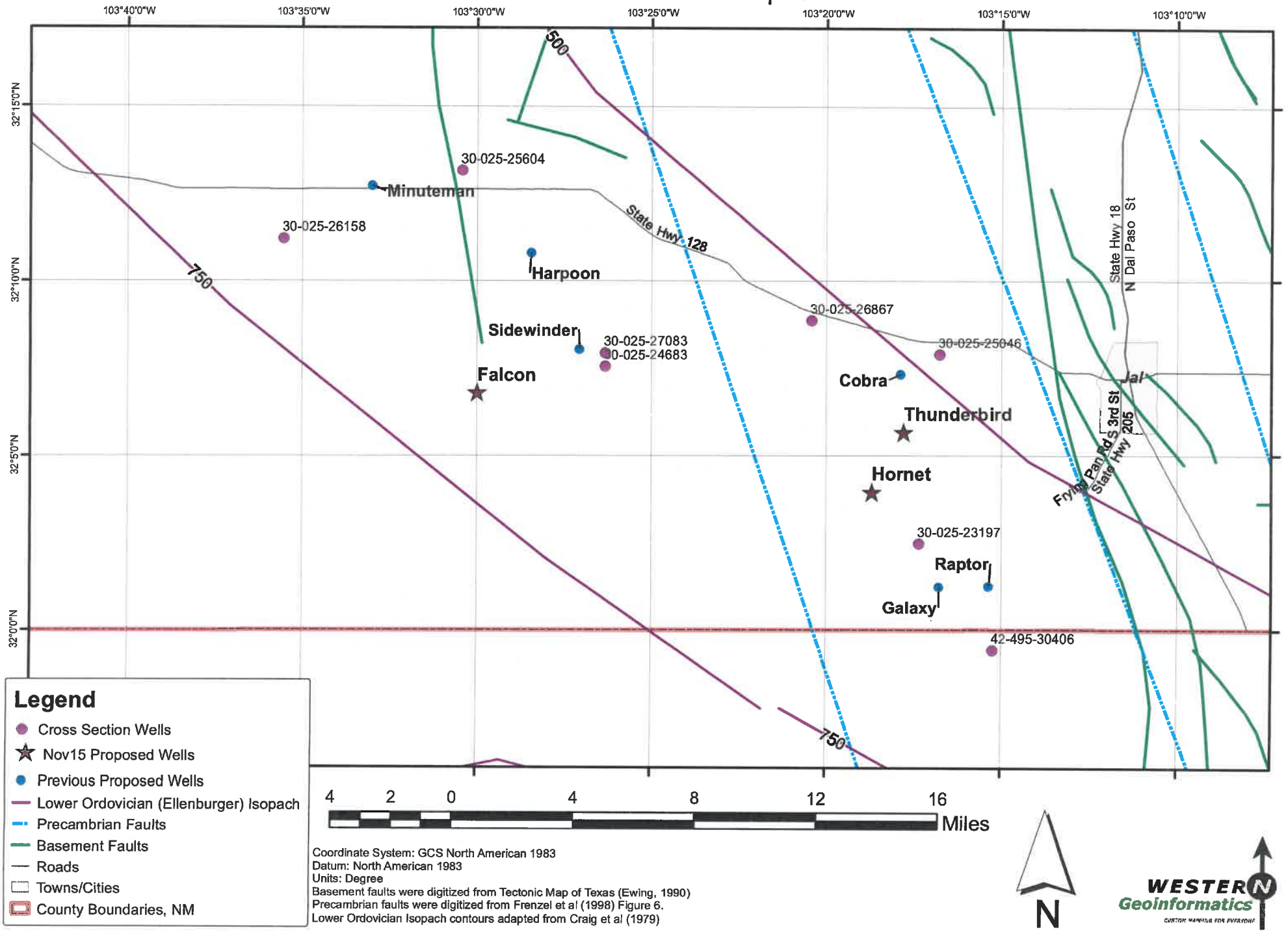
Lower Ordovician Isopach



Legend

- Cross Section Wells
- Nov15 Proposed Wells
- Previous Proposed Wells
- Lower Ordovician (Ellenburger) Isopach
- Precambrian Faults
- Basement Faults
- Roads
- Towns/Cities
- County Boundaries, NM

Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree
Basement faults were digitized from Tectonic Map of Texas (Ewing, 1990)
Precambrian faults were digitized from Frenzel et al (1998) Figure 6.
Lower Ordovician Isopach contours adapted from Craig et al (1979)

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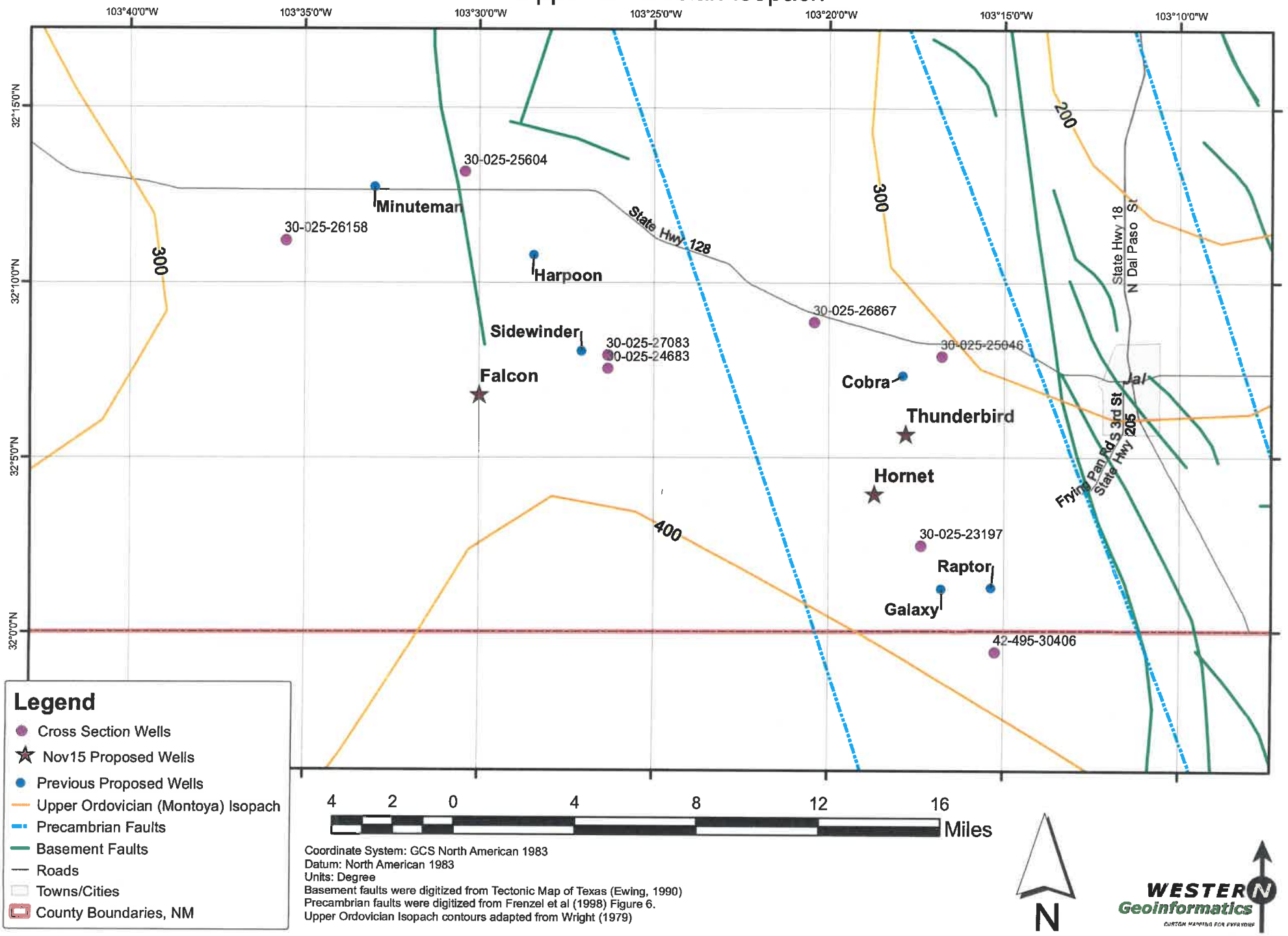
Upper Ordovician Isopach



Legend

- Cross Section Wells
- Nov15 Proposed Wells
- Previous Proposed Wells
- Upper Ordovician (Montoya) Isopach
- Precambrian Faults
- Basement Faults
- Roads
- Towns/Cities
- County Boundaries, NM

Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree
Basement faults were digitized from Tectonic Map of Texas (Ewing, 1990)
Precambrian faults were digitized from Frenzel et al (1998) Figure 6.
Upper Ordovician Isopach contours adapted from Wright (1979)

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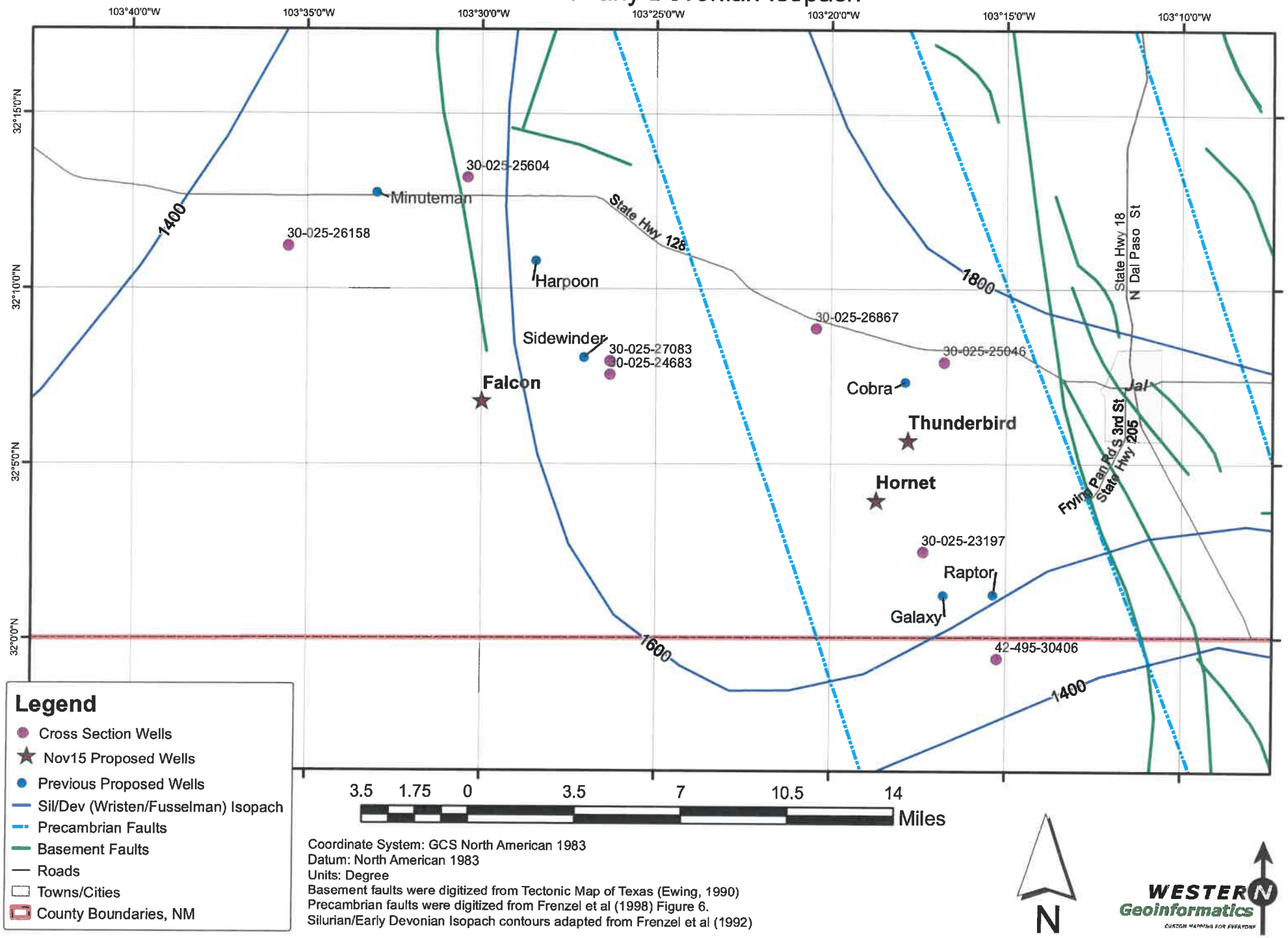
Silurian/Early Devonian Isopach



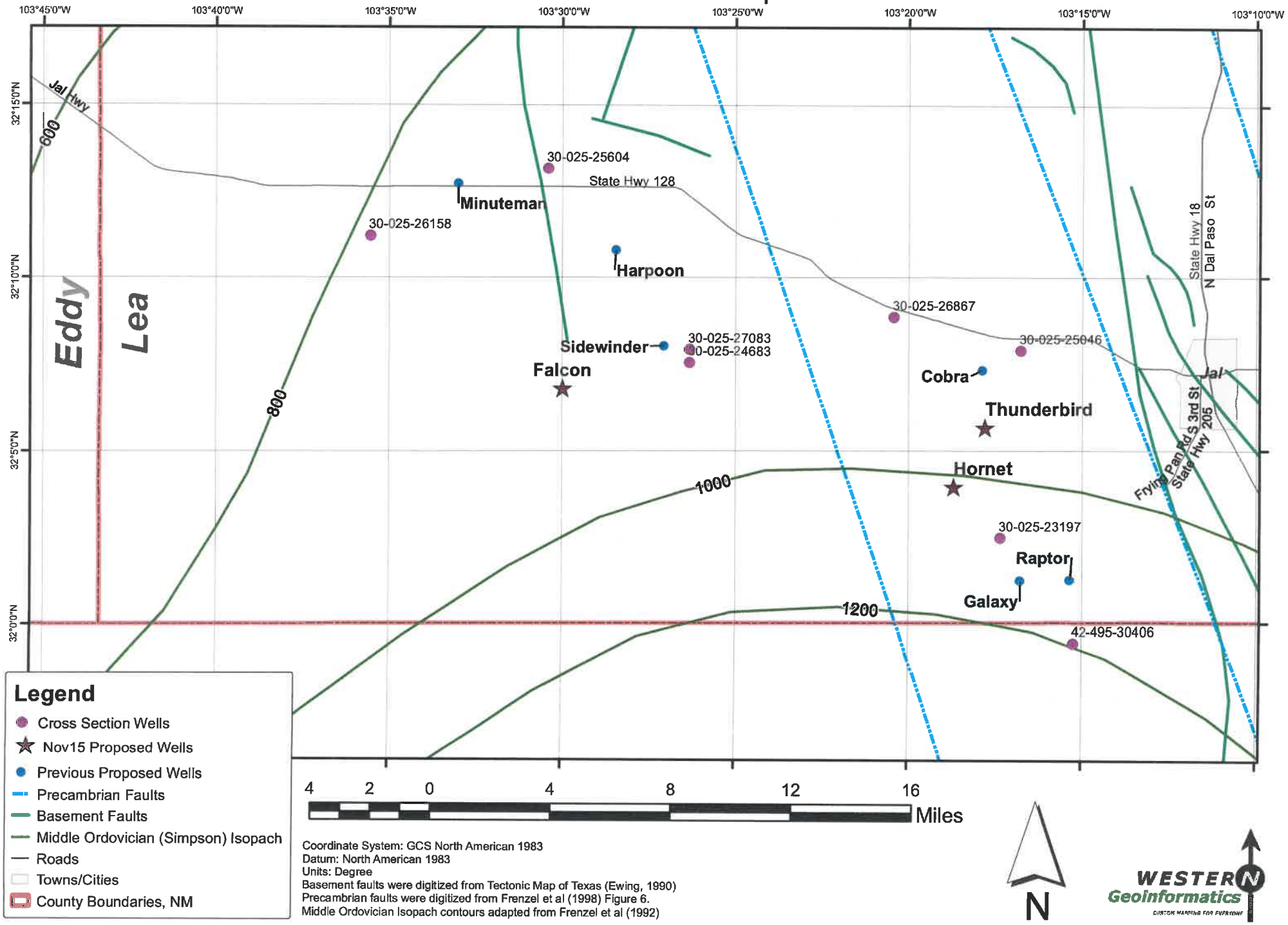
Legend

- Cross Section Wells
- Nov15 Proposed Wells
- Previous Proposed Wells
- Sil/Dev (Wristen/Fusselman) Isopach
- Precambrian Faults
- Basement Faults
- Roads
- Towns/Cities
- County Boundaries, NM

Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree
Basement faults were digitized from Tectonic Map of Texas (Ewing, 1990)
Precambrian faults were digitized from Frenzel et al (1998) Figure 6.
Silurian/Early Devonian Isopach contours adapted from Frenzel et al (1992)

WESTERN Geoinformatics
CUSTOM MAPPING FOR EVERYONE

Middle Ordovician Isopach



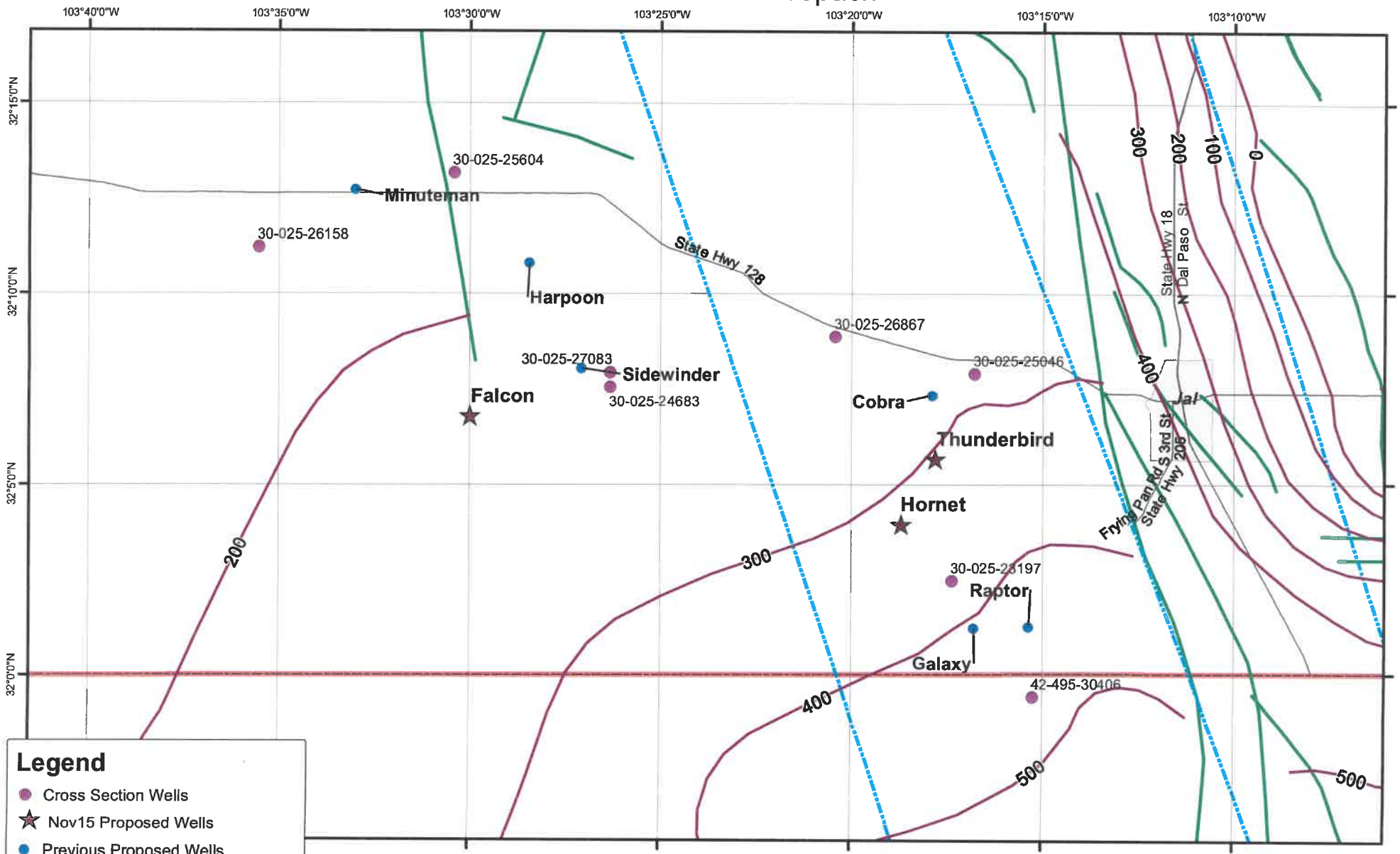
Legend

- Cross Section Wells
- Nov15 Proposed Wells
- Previous Proposed Wells
- Precambrian Faults
- Basement Faults
- Middle Ordovician (Simpson) Isopach
- Roads
- Towns/Cities
- County Boundaries, NM

Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree
Basement faults were digitized from Tectonic Map of Texas (Ewing, 1990)
Precambrian faults were digitized from Frenzel et al (1998) Figure 6.
Middle Ordovician Isopach contours adapted from Frenzel et al (1992)

WESTERN GeoInformatics

Late Devonian Isopach



Legend

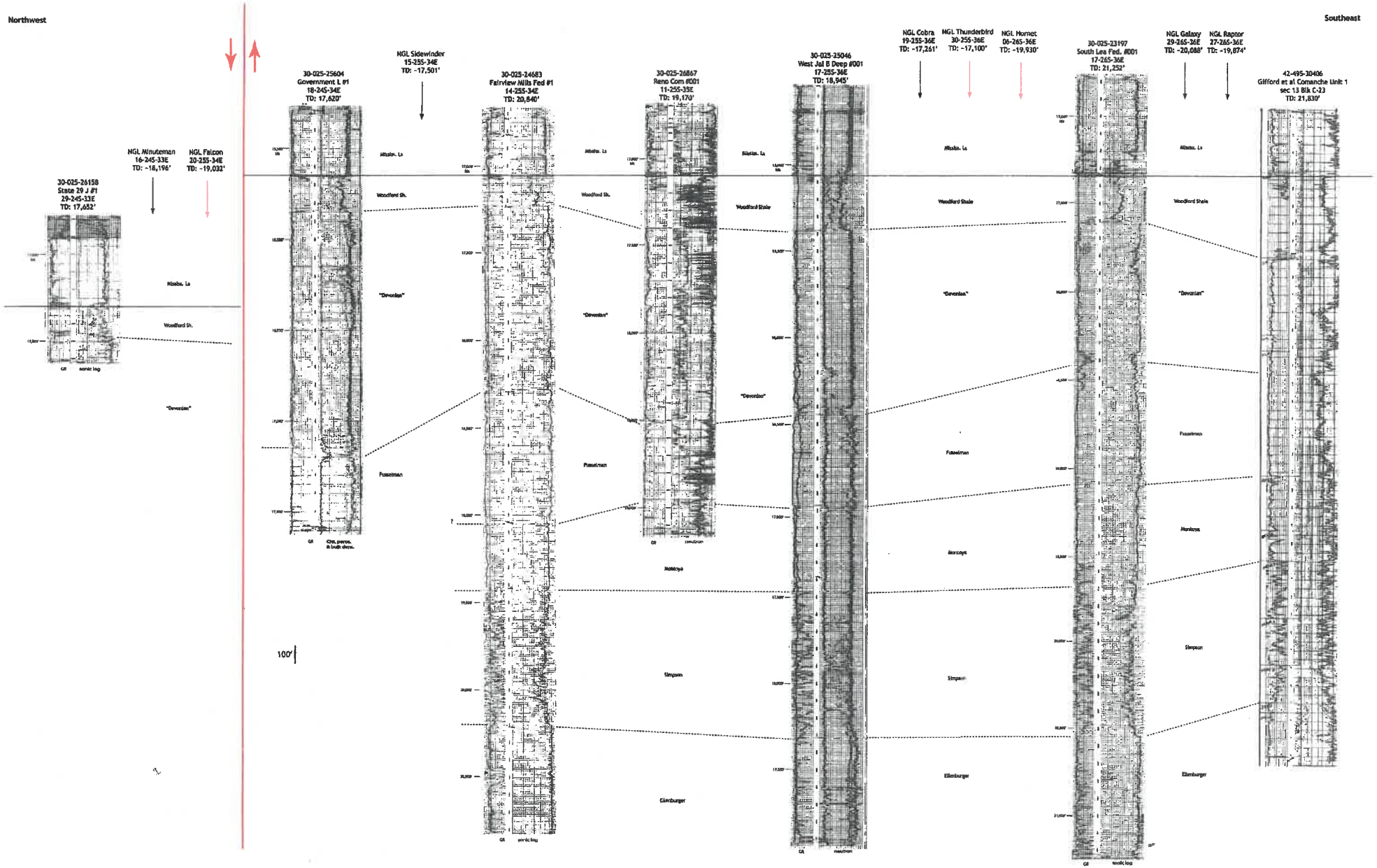
- Cross Section Wells
- Nov15 Proposed Wells
- Previous Proposed Wells
- Late Devonian (Woodford) Isopach
- Precambrian Faults
- Basement Faults
- Roads
- Towns/Cities
- County Boundaries, NM

4 2 0 4 8 12 16 Miles

Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree
Basement faults were digitized from Tectonic Map of Texas (Ewing, 1990)
Precambrian faults were digitized from Frenzel et al (1998) Figure 6.
Late Devonian Isopach contours adapted from Comer (1991)

N

WESTERN Geoinformatics
CUSTOM MAPPING FOR EVERYONE


Northwest
Southeast
30-025-26158
State 29 J #1
29-24S-33E
TD: 17,652'
NGL Minuteman
16-24S-33E
TD: -18,196'
NGL Falcon
20-25S-34E
TD: -19,032'
30-025-25604
Government L #1
18-24S-34E
TD: 17,620'
NGL Sidewinder
15-25S-34E
TD: -17,501'
30-025-24683
Fairview Mills Fed #1
14-25S-34E
TD: 20,840'
30-025-26867
Reno Com #001
11-25S-35E
TD: 19,170'
30-025-25046
West Jal B Deep #001
17-25S-36E
TD: 18,945'
NGL Cobra
19-25S-36E
TD: -17,261'
NGL Thunderbird
30-25S-36E
TD: -17,100'
NGL Hornet
06-26S-36E
TD: -19,930'
30-025-23197
South Lea Fed. #001
17-26S-36E
TD: 21,252'
NGL Galaxy
29-26S-36E
TD: -20,088'
NGL Raptor
27-26S-36E
TD: -19,874'
42-495-30406
Gifford et al Comanche Unit 1
sec 13 Blk C-23
TD: 21,830'
Mississ. Ls
Woodford Sh.
Woodford Shale
"Devonian"
Fusselman
Montoya
Simpson
Ellenburger
100'

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

APPLICATION OF NGL WATER SOLUTIONS PERMIAN, LLC FOR APPROVAL OF SALT WATER DISPOSAL WELL IN LEA COUNTY, NEW MEXICO

CASE NO. 20063

APPLICATION OF NGL WATER SOLUTIONS PERMIAN, LLC FOR APPROVAL OF SALT WATER DISPOSAL WELL IN LEA COUNTY, NEW MEXICO

CASE NO. 20084

APPLICATION OF NGL WATER SOLUTIONS PERMIAN, LLC FOR APPROVAL OF SALT WATER DISPOSAL WELL IN LEA COUNTY, NEW MEXICO

CASE NO. 20093

AFFIDAVIT OF DR. STEVEN TAYLOR

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

I, Dr. Steven Taylor, make the following affidavit based upon my own personal knowledge.

1. I am over eighteen (18) years of age and am otherwise competent to make the statements contained herein.

2. I have worked at the Los Alamos National Labs from 1991 to 2006. I currently am the secretary of GeoEnergy Monitoring Systems, Inc., a company that builds and conducts seismic monitoring.

3. I have obtained a Bachelor of Science degree in geology at Ohio University (1975) and a Ph.D. in Geophysics at the Massachusetts Institute of Technology (1980).

4. I am familiar with the applications that NGL Water Solutions Permian, LLC ("NGL") has filed in this matter and I have conducted a study related to the areas which is the subject matter of those applications.

5. The applicant, NGL (OGRID No. 372338), seeks an order approving the Falcon SWD #1 well (Case No. 20063), the Hornet SWD #1 well (Case No. 20084), and the Thunderbird SWD #1 well (Case No. 20093). All three wells are salt water disposal wells.

6. In its applications, NGL requests approval to use larger diameter tubing in both wells which is 7" by 5 ½".

7. The wells will be spaced out and not located closer than approximately 1 mile from other disposal wells, approved for injection into the Devonian and Silurian formations.

8. The approved injection zone for the wells is located below the base of the Woodford Shale formation and above the Ordovician formation, which consists of significant shale deposits.

9. The wells will primarily be injecting fluids into the Wristen Group and Fusselman formations, with some fluids potentially being injected into the Upper Montoya Group. Each of these sub-formations or zones are located within what is commonly referred to by operators and the Division as the "Devonian and Silurian" formations. These zones consist of a very thick

sequence of limestone and dolostone which has significant primary and secondary porosity and permeability that is collectively between 1,500 to 3,000 feet thick.

10. The closest known fault line is located approximately 2 to 20 miles away from where the wells are located.

11. I have studied seismic catalogs, unpublished catalogs and USGS catalogs for the time period of 2010 – 2017 selective events within 50 km of one the Striker SWD wells. Attached as Exhibit A is a copy of my study. My study concludes that there is very little seismic activity in the areas where the wells are located.

12. I have also reviewed information provided by FTI Platt Sparks involving several different fault slip probability analysis conducted, using a tool created by Stanford University. These fault slip potential models showed low probability of slip or earthquakes to known mapped faults located closest to the wells. A copy of the studies are attached hereto as Exhibit B.

13. I attest that the information provided herein is correct and complete to the best of my knowledge and belief.

14. The granting of these applications is in the interests of conservation and the prevention of waste.

[Signature page follows]

Steven R. Taylor
Dr. Steven Taylor

SUBSCRIBED AND SWORN to before me this 13 th day of November, 2018 by Dr. Steven Taylor.

Notary Public

My commission expires: June 5, 2022

OFFICIAL SEAL
MAURICIO JAVIER GARCIA TERRIQUEZ
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires June 5, 2022

Seismic Catalog Analysis Within 50 km of Falcon, Hornet and Thunderbird SWD

Prepared for NGL-Permian
by
GeoEnergy Monitoring Systems
November 12, 2018

Analysis is based on NMT seismic catalogs, unpublished catalogs and USGS catalogs for the time period 2010-2017 selecting events within 50 km of one of the Striker 2 SWD well. Additionally, seismic monitoring through October 15, 2018 from the three NGL seismic stations installed at Striker 2, Striker 3 and Striker 6 SWD wells on September 6, 2018.

Striker Two, Sand Dunes well, Lat/Long: 32.2072820/-103.7557370
Striker Three, Gossett well, Lat/Long: 32.2551110/-104.0868610
Striker Six, Madera well, Lat/Long: 32.2091150/-103.5359570

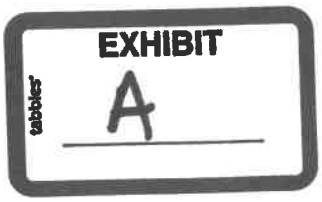
Figure 1 shows seismic station locations for three wells (blue pushpins) with estimated detection levels for M 1.0 (green circles) and M 1.5 (red circles) along with NGL-Permian stations (yellow pushpins). **Figure 2** shows seismicity listed in Table 1 shown as red circles and additional regional stations from TexNet and NMT (green pushpins). These regional stations will be used along with the 3 Striker SWD seismic stations for regional monitoring.

The USGS reports only two events in the vicinity since 2010. New Mexico Tech runs a seismic network (SC) north of the wells for the DOE Waste Isolation Plant (only short-period vertical components). There are a total of seven seismic events in this time period ranging in magnitude from 1.0 to 3.1.

Since the seismic deployment, we had four single-station detections at the STR6 station and made preliminary locations using available regional data (**Figure 3**). The waveform similarity between events suggests that they were closely spaced. Due to the small magnitudes, the signal-to-noise levels at other stations were very poor so the locations have large uncertainty and there is little constraint on depth. It is doubtful that the events were reported by any other network such as that operated by New Mexico Tech.

Table 1: Seismicity Within 50 km of Striker SWD Wells 2010-2017

Date	Origin Time GMT	Latitude	Longitude	Depth (km)	Magnitude
20111227	23:10:37	32.37	-103.95	NaN	1.6
20120318	10:57:22	32.281	-103.892	5.0	3.1
20170211	14:34:27	32.29	-103.92	NaN	1.5
20170302	11:38:53	32.37	-103.88	NaN	1.7
20170325	22:46:01	32.13	-103.77	NaN	1



20170503	17:47:21	32.082	-103.023	5.0	2.6
20170814	01:09:56	32.39	-103.56	NaN	1.2

Table 2. New Mexico Area Reporting Period Seismicity (km units)

Date	Origin Time (GMT)	Lat	Long	Depth	Loc Error	M	(+/-)
09/10/18	23:35:43.942	32.1793	-103.5283	1	5.58	1.25	0.23
09/14/18	06:57:47.614	32.1540	-103.5030	1	5.58	1.11	0.41
09/15/18	16:48:21.041	32.1630	-103.5211	1	5.37	1.50	NaN
10/13/18	22:07:22.259	32.0998	-103.456	6	5.64	1.6	0.119

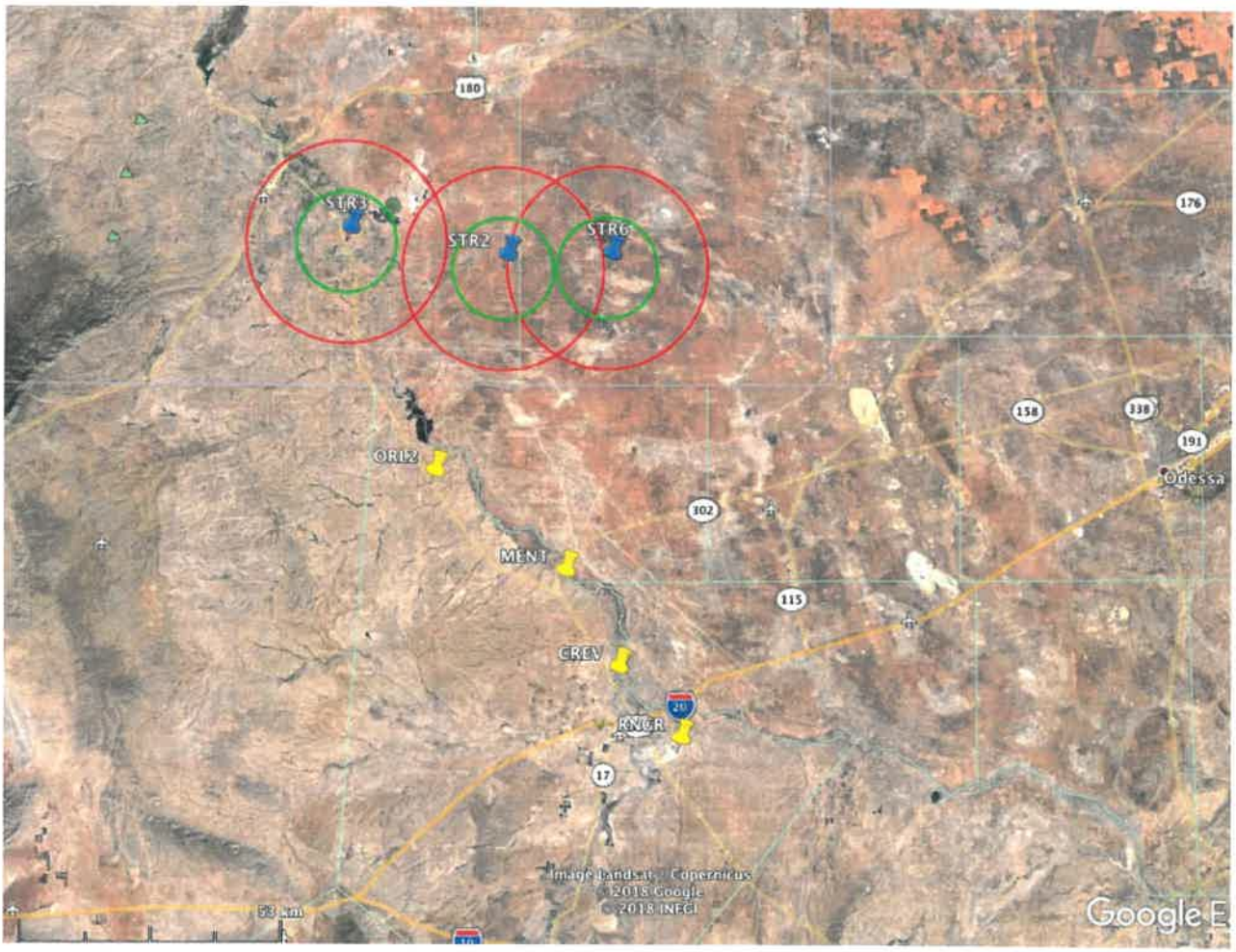


Figure 1. Striker SWD wells seismic station locations (blue push pins) and existing NGL-Permian seismic stations (yellow pushpins). Green and red circles around stations show approximate detection levels for ML 1.0 and 1.5, respectively.

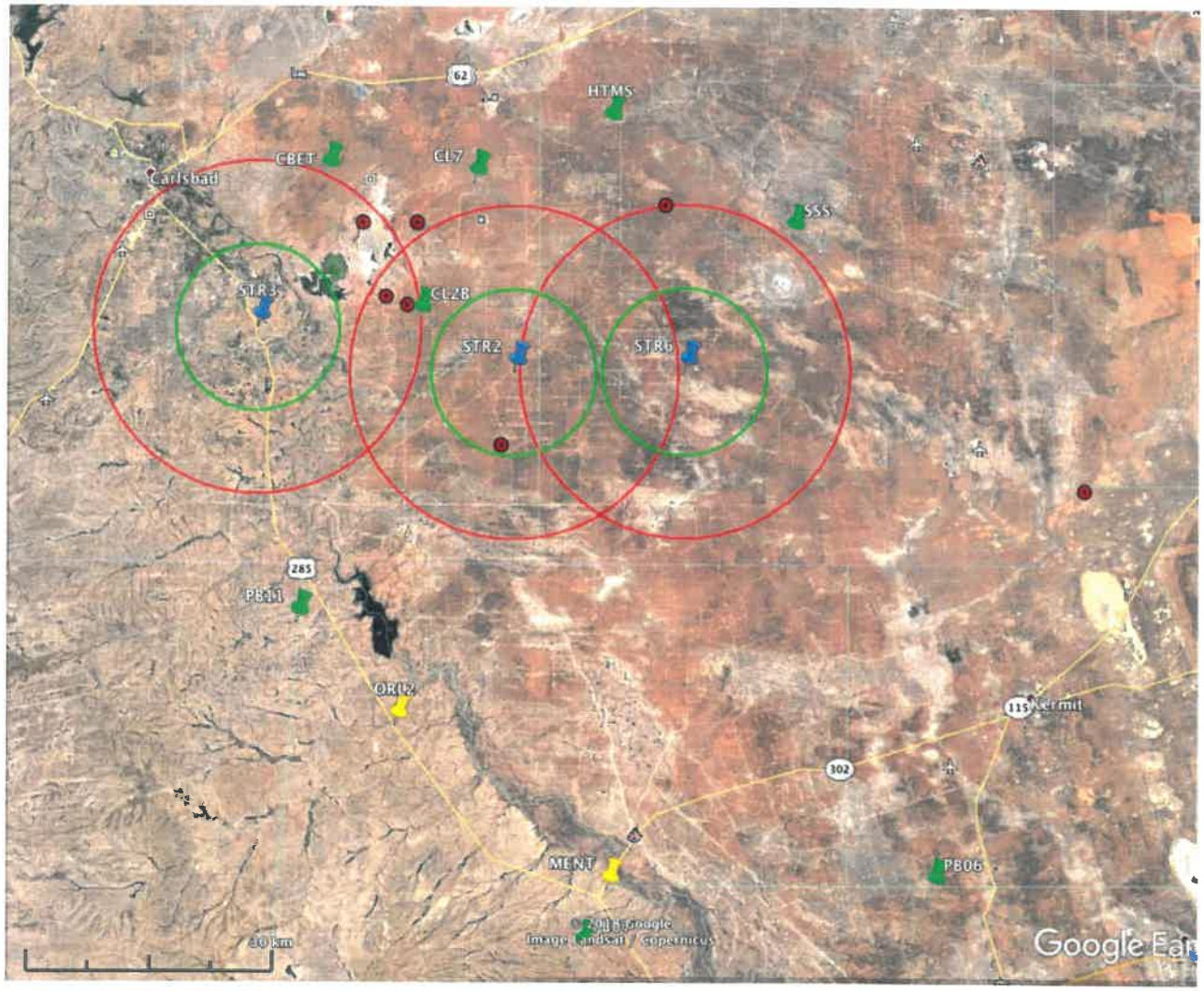


Figure 2. Striker SWD wells seismic station locations (blue push pins) and existing NGL-Permian seismic stations (yellow pushpins). Green and red circles around stations show approximate detection levels for ML 1.0 and 1.5, respectively. Other regional seismic stations run by TexNet and New Mexico Tech are shown as green pushpins. Seismicity listed in Table 1 shown as red circles.

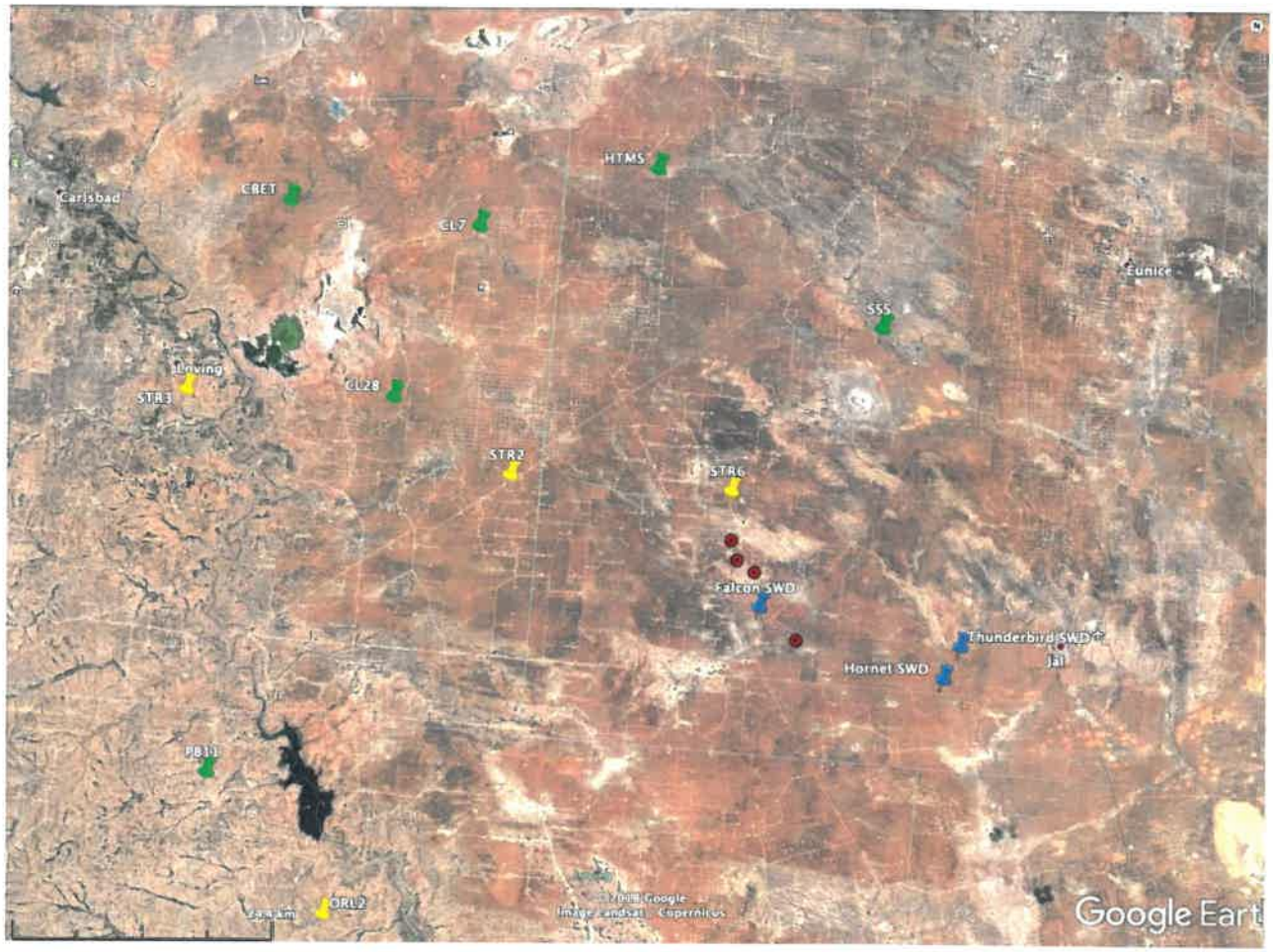


Figure 3. Seismic events in between September 6 and October 13, 2018 as red circles (Table 2). SWD wells shown as blue pushpins. Seismic stations as yellow (NGL) or green (NMT and TexNet) pushpins.

FTI™
PLATT SPARKS
Texas Registered Engineering Firm No F – 16381

November 13, 2018

RE: FSP Analysis Falcon SWD
Lea County, New Mexico

FSP Analysis

The FSP software used for this analysis was jointly developed by Stanford University, Exxon Mobil and XTO Energy as a tool for estimating fault slip potential resulting from fluid injection.

I have reviewed the geology, seismic activity, injection history and future proposed injection in the Subject Area and I would conclude that the Falcon SWD well does not pose a substantial risk of increasing seismicity in the area. The primary risk reduction factor is that the faults are not optimally oriented to slip, and significant pressure increases would be needed to initiate slip on the faults analyzed.

Fault slip potential (FSP) was analyzed in the area of review shown on **Exhibit No. 1.** The analysis integrates all of the proposed well locations as well as any existing injection wells in order to fully assess the pressure implications of injection in the area and the potential for slip along existing faults.

Exhibit No. 2 shows the FSP input parameters for the local stress, average reservoir depth, pressure gradients and reservoir characteristics. Depths and reservoir characteristics were derived from nearby well logs and stress values were derived from the Lund Snee and Zoback (2018) paper related to Stress in the Permian Basin.

Exhibit No. 3 shows the location of existing wells and locations of the Proposed SWD wells relative to the faults documented in this area. The faults are sourced from the Texas Bureau of Economic Geology and these are also the faults shown in the referenced Snee/Zoback paper (Figure 3 in the paper) and shown as **Exhibit No. 4** in my report. The Snee/Zoback paper only considers fault orientation

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relative to the stress orientation in determination of fault slip potential. Based on their limited analysis of the area they concluded the faults have low slip potential based on orientation/azimuth. My analysis further incorporates the injection history and future injection projections and the injection reservoir characteristics to fully assess the potential for slip along these faults. Existing wells were incorporated into the analysis using their injection volume histories and holding them constant into the future at their last reported monthly injection volume. The proposed well was modelled at 40,000 bbls/day and held constant for the life of the analysis (+25 years).

The proposed wells is denoted in the model as follows: **(Exhibit No. 3)**

F - Falcon SWD

Exhibit No. 5 illustrates the geomechanical properties of the fault segments in the area of review. It should be noted that the FSP software only calculates a single pressure change along a fault (at the fault mid-point) so it is critical that faults are broken in to multiple segments to get a true evaluation of the pressure increases associated with injection. **Exhibit No. 5 also** shows the direction of max hor. stress as denoted by the grey arrows outside the circle on the stereonet in the lower right portion of this exhibit. Faults that align parallel or closer to this orientation will have the highest potential for slip or lowest Delta PP to slip. All of the faults have very low potential for slip since they are oriented perpendicular to max hor. Stress.

Exhibit No. 6 shows that the input stress and fault values were varied by +/-10% to allow for uncertainty in the input parameters. Even considering the variability of the inputs the model results show very low probability for slip on the faults in the area of review. Fault 7 (orange) shows the highest risk for fault slip with a 570 psi ΔP yielding a 10% probability of fault slip. Fault 7 only reaches a pressure of 262 psi ΔP by the year 2045. Fault 7 is very distant from the proposed Falcon SWD and pressure changes along Fault 7 are related to the wells most proximal to this fault.

Exhibits No. 7 – No. 14 shows the sensitivity analysis for each fault segment and shows that without any variability of inputs the ΔP needed to slip is very high ranging from 1,050 to 7,200 psi. Even with the variability of inputs the ΔP needed to slip is still very high ranging from 570 to 5,000 psi. The fault

with the lowest ΔP needed to slip is segment F7 which will be analyzed further on the following heat maps.

Exhibit No. 15 illustrates the ΔP pressure in a "heat map" and shows ΔP pressure increases at the faults as of 1/1/2020. This map indicates ΔP pressure increases of 11 psi at F7.

Exhibit No. 16 illustrates the ΔP pressure in a "heat map" and shows ΔP pressure increases at the faults as of 1/1/2025. This map indicates ΔP pressure increases of 67 psi at F7.

Exhibit No. 17 illustrates the ΔP pressure in a "heat map" and shows ΔP pressure increases at the faults as of 1/1/2030. This map indicates ΔP pressure increases of 129 psi at F7.

Exhibit No. 18 illustrates the ΔP pressure in a "heat map" and shows ΔP pressure increases at the faults as of 1/1/2035. This map indicates ΔP pressure increases of 180 psi at F7.

Exhibit No. 19 illustrates the ΔP pressure in a "heat map" and shows ΔP pressure increases at the faults as of 1/1/2040. This map indicates ΔP pressure increases of 224 psi at F7.

Exhibit No. 20 illustrates the ΔP pressure in a "heat map" and shows ΔP pressure increases at the faults as of 1/1/2045. This map indicates ΔP pressure increases of 262 psi at F7.

The pressure analysis over time shows that pressure is expected to increase along the faults however pressures remain far below critical levels. The table below shows the ΔP pressure increases needed to imitate fault slip along each fault segment and the corresponding ΔP pressure increases as of 2045:

Fault Segment	ΔP to slip (fixed inputs)	ΔP to slip (10% varied inputs)	ΔP at 2045
F1	6,600	4,000	70
F2	7,200	5,000	272
F3	7,000	4,600	474
F4	7,050	4,700	322
F5	7,050	4,700	322
F6	3,800	1,800	108
F7	1,050	570	262
F8	1,550	900	329

This analysis demonstrates that there is a very low likelihood of injection induced seismicity in the Subject Area Specifically the Falcon SWD has minimal pressure impact along the most succeptible faults F6 – F8. These faults are over 10 km from the Falcon SWD.

Conclusion

The faults and fault trends in this area of review are not optimally oriented to slip. The orientation of the faults requires significant pressure changes (ΔP +1,050 psi) based on the input parameters and the ΔP increase at the most vulnerable fault only reaches 262 psi by 2045. This model assumes constant injection rates over the next +25 years which is not a typical scenario as SWD wells tend to decrease injection volumes over time as the well ages and disposal demand decreases in the area. If injection volumes are lower over time than the model represents, then the risk for fault slip is lowered also.

In the event seismicity should occur in the future, the wells closest to the faults (proposed and existing) should be the wells considered for modification or reduction of injection rates. At this time there is no evidence to support rate reduction for any of the existing or proposed wells.

Should you have any questions, please do not hesitate to call me at (512) 327-6930 or email me at todd.reynolds@ftiplattsparks.com.

Regards,

Todd W. Reynolds – Geologist/Geophysicist
Senior Director, Economics/FTI Platt Sparks

Todd W. Reynolds

FTI Platt Sparks
512.327.6930 office

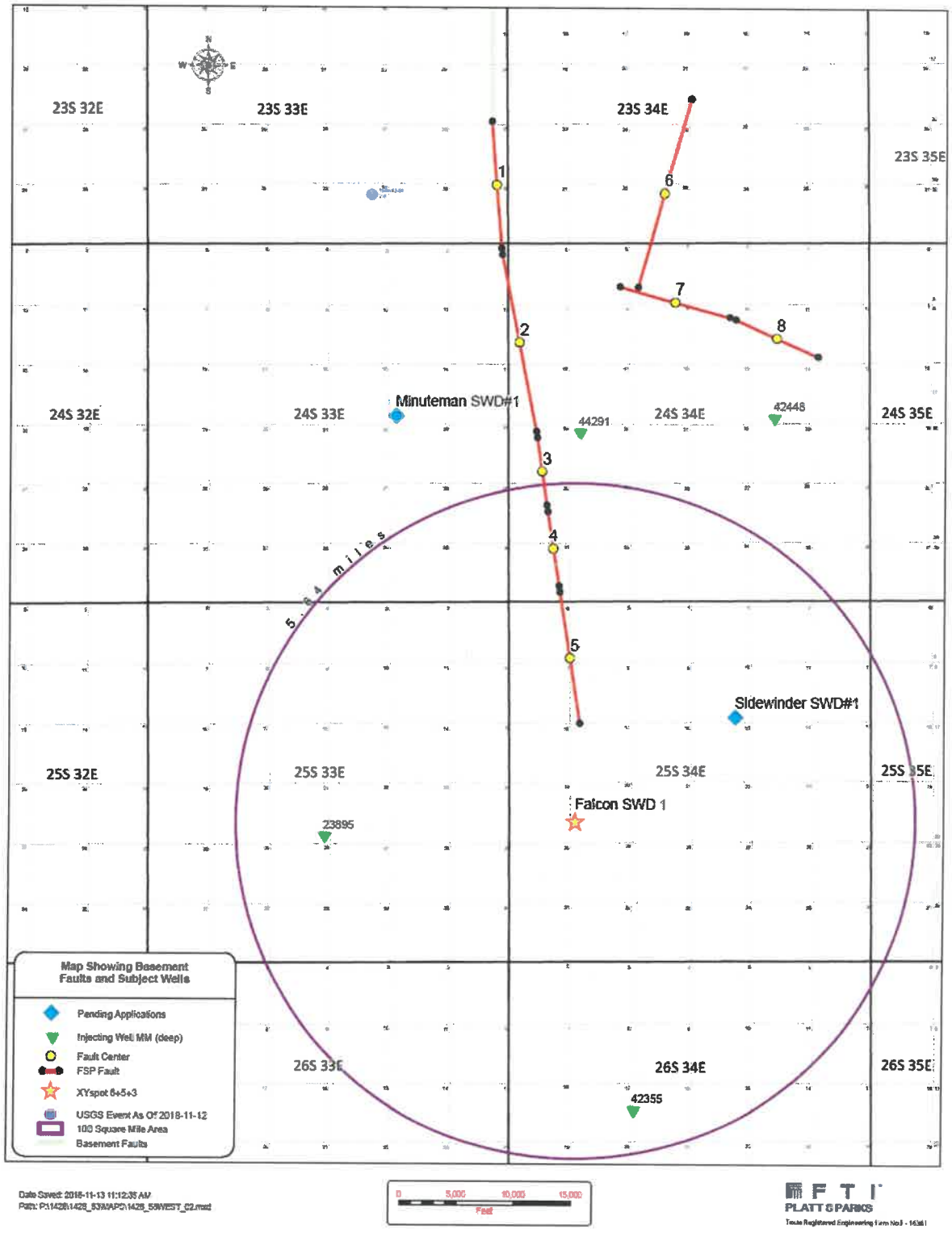
FTI PLATT SPARKS

Exh. No. 1

Area of review – Purple outlined area around the Subject wells represents the 100 sq. mile area around each well.

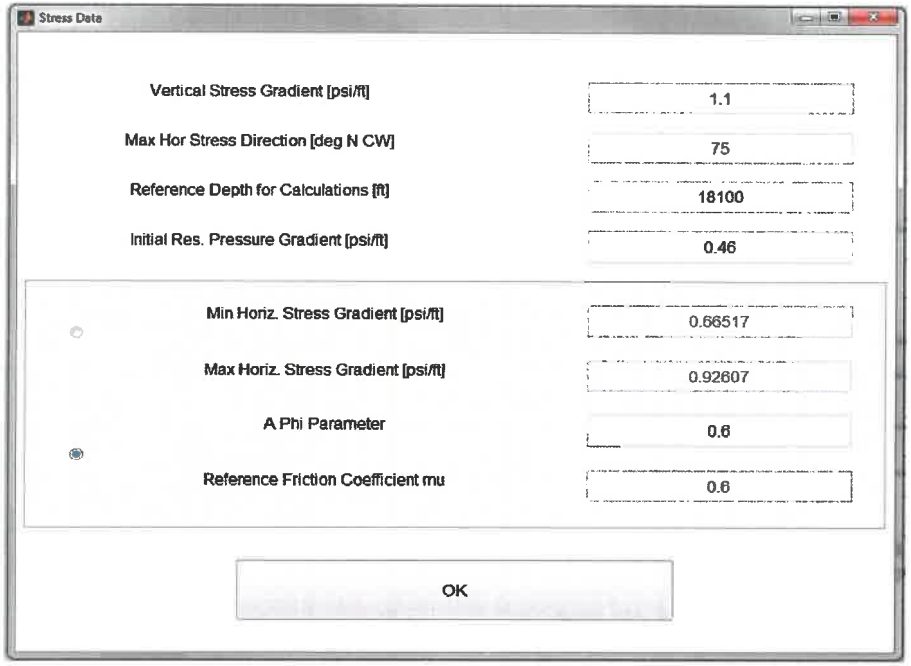
Subject wells are denoted by the "Star" symbol and active injection into the deep interval (Devonian/Silurian) is denoted by "Inverted Triangle" symbols.

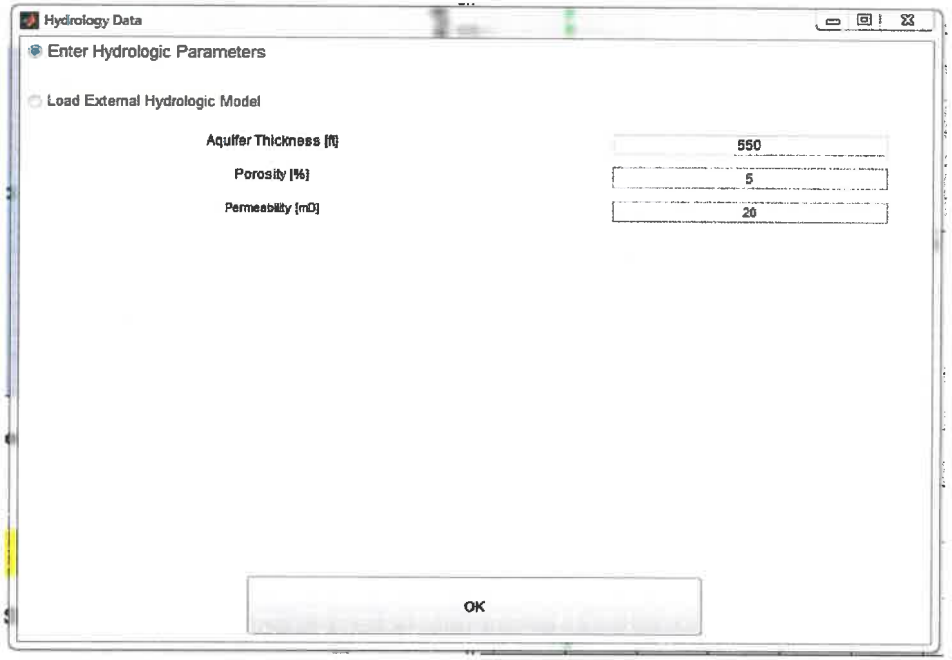
The FSP model uses the injection history of existing wells and the proposed rates of the Subject wells.

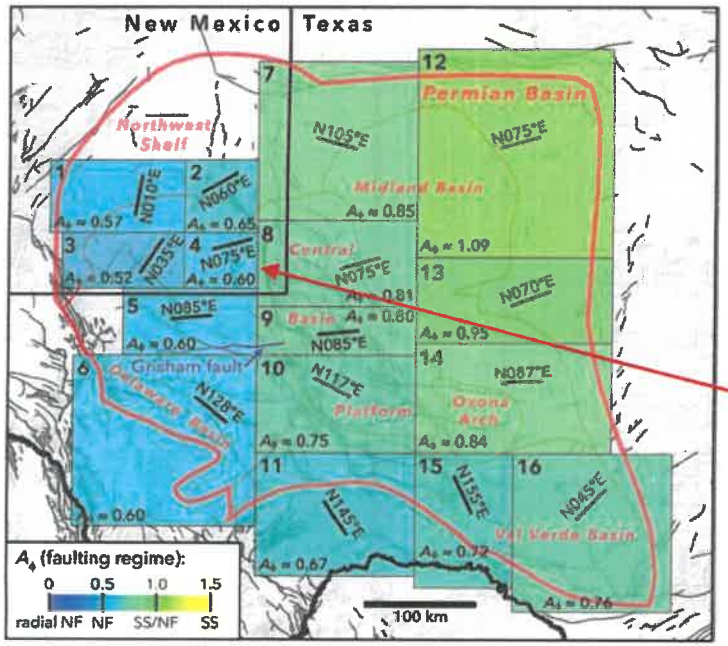


Exh. No. 2

FSP INPUT PARAMETERS







Input Parameter Comments

Hydrologic Parameters – Derived from Striker 6 SWD #2 logs

Stress Gradients – Derived from A Phi parameter from Snee/Zoback paper (.60)

Max Hor. Stress Direction - Derived from Snee/Zoback paper (N75E)

Exh. No. 3

Fault Slip Potential

MODEL INPU... | GEOMECHANICS | PROB. GEOMECH | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

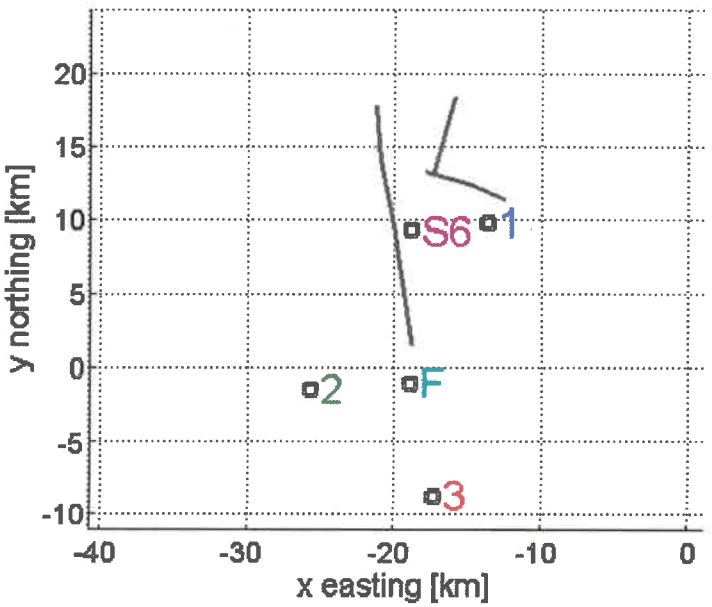
- All Faults
- Fault #1
- Fault #2
- Fault #3
- Fault #4
- Fault #5
- Fault #6
- Fault #7
- Fault #8

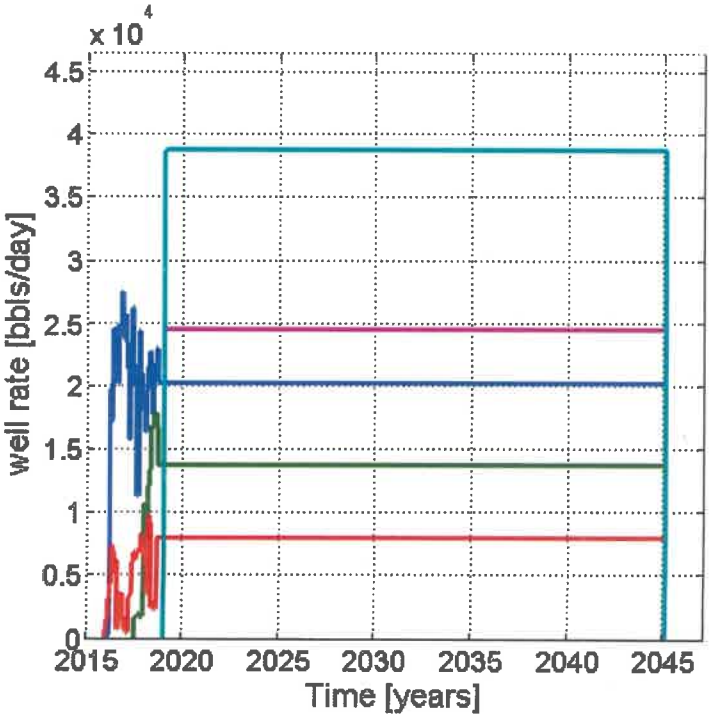
Calculate

Stress Regime: Normal Faulting

Select Well: All

FSP INPUT Fault and well locations





FSP INPUT Injection history and projected future injection

Exh. No. 4

Area of Review

Low slip potential based on fault orientation (green faults)

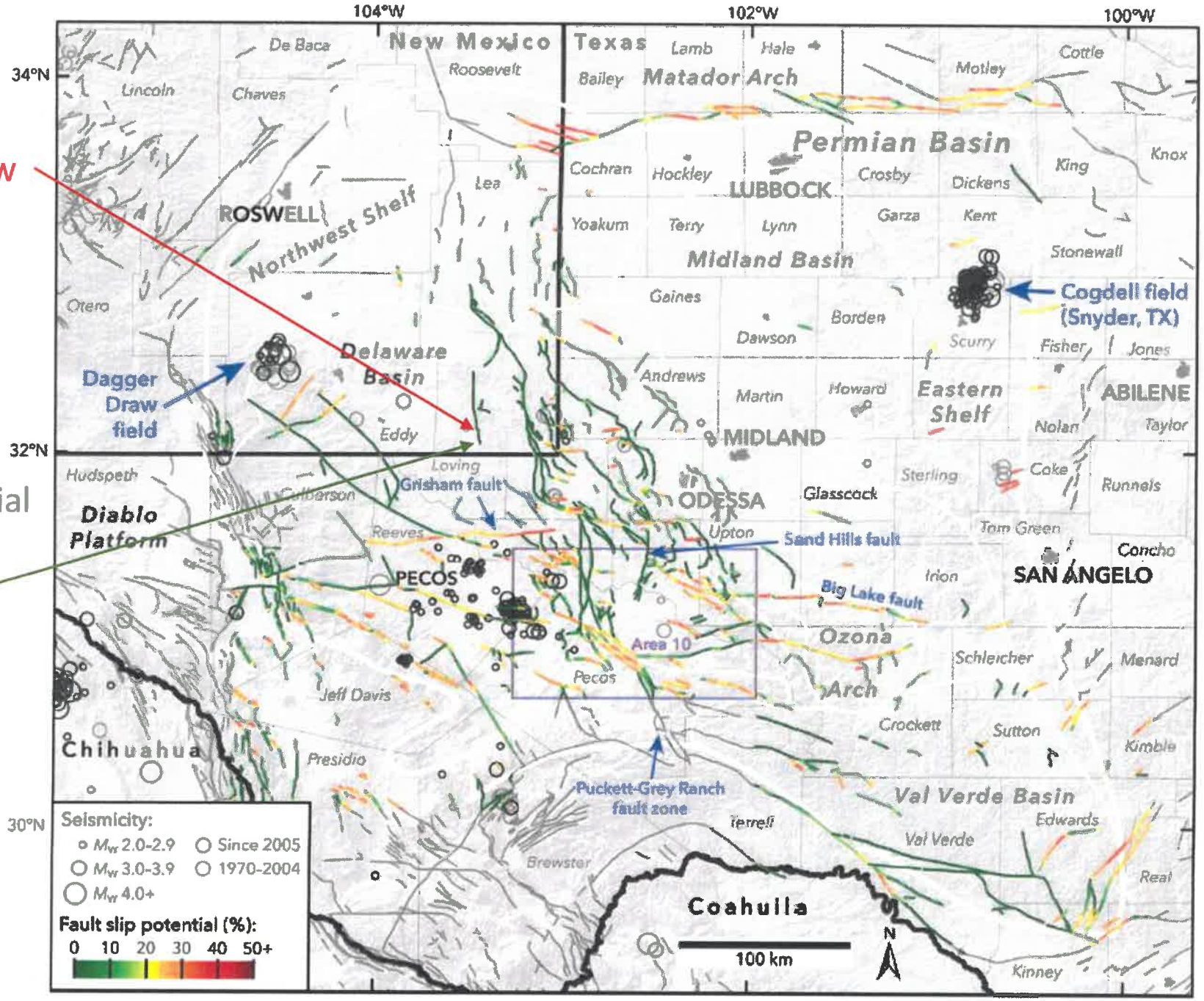


Figure 3. Results of our probabilistic FSP analysis across the Permian Basin. Data sources are as in Figures 1 and 2.

From Lund Snee and Zoback (2018)

Exh. No. 5

Fault Slip Potential

MODEL INPUTS | GEOMECHA... | PROB. GEOMECH | HYDROLOGY | PROB. HYDRO | INTEGRATED

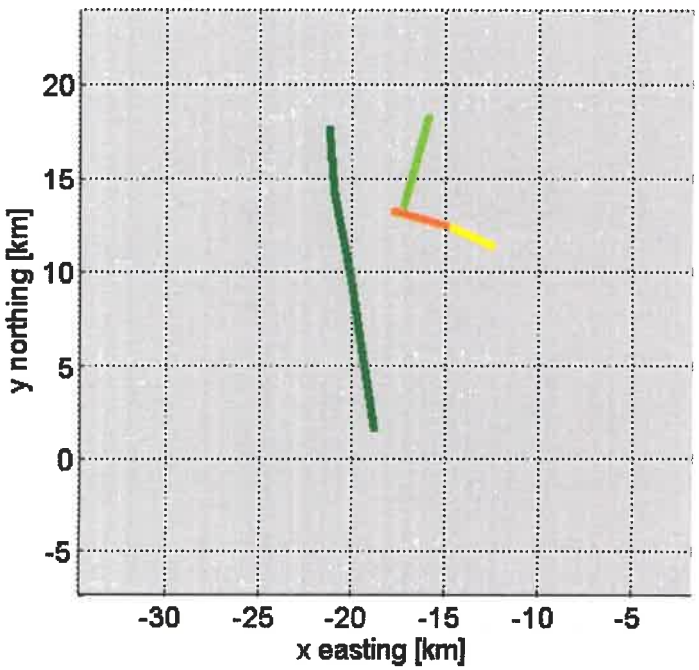
Fault Selector:

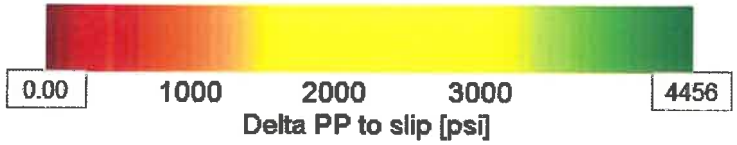
All Faults
Fault #1
Fault #2
Fault #3
Fault #4
Fault #5
Fault #6
Fault #7
Fault #8

Calculate

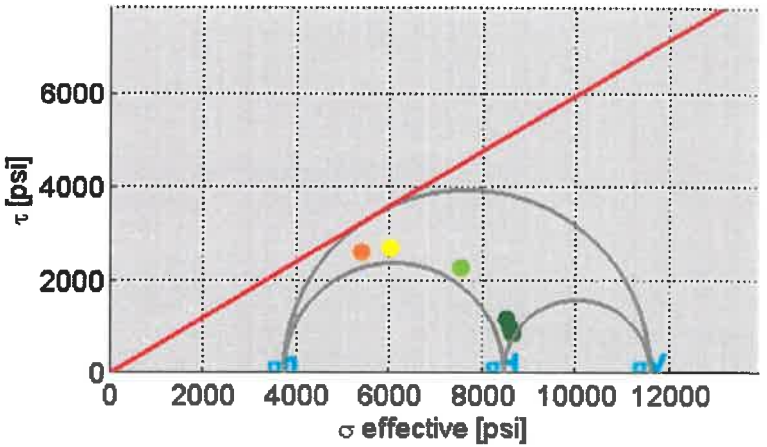
Choose Plot Labels

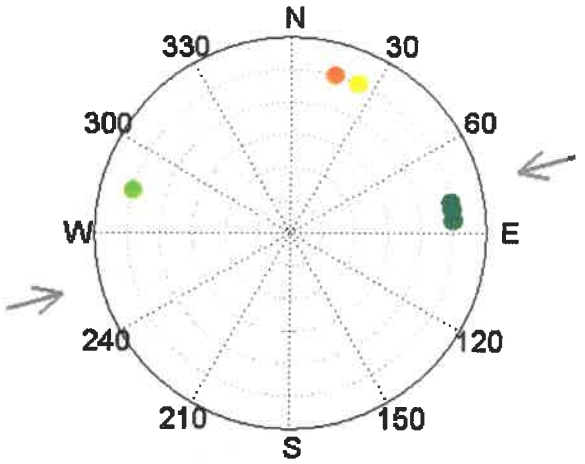
Help





Stress Regime: Normal Faulting





Stereonet Show: Fault Normals

Exh. No. 6

Fault Slip Potential

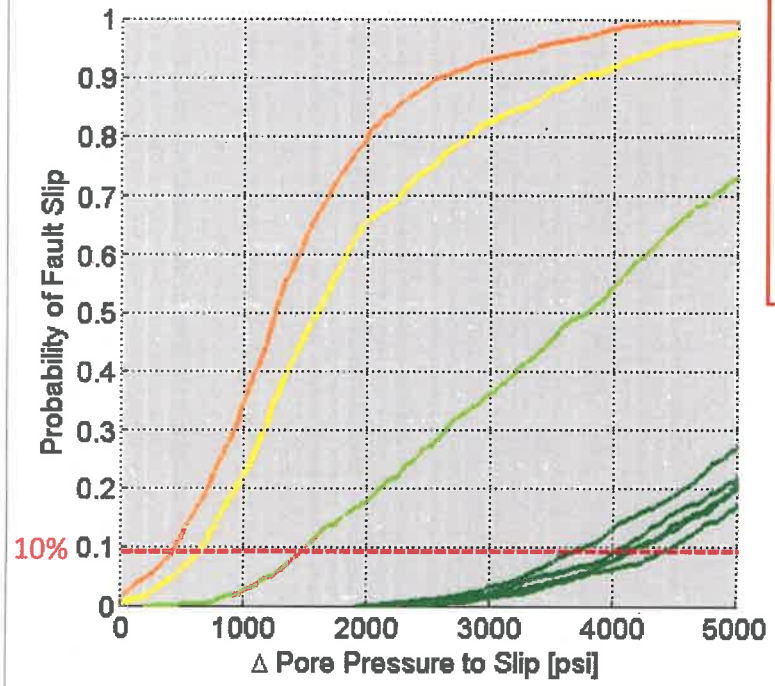
MODEL INPUTS | GEOMECHANICS | PROB. GEO... | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

All Faults
Fault #1
Fault #2
Fault #3
Fault #4
Fault #5
Fault #6
Fault #7
Fault #8

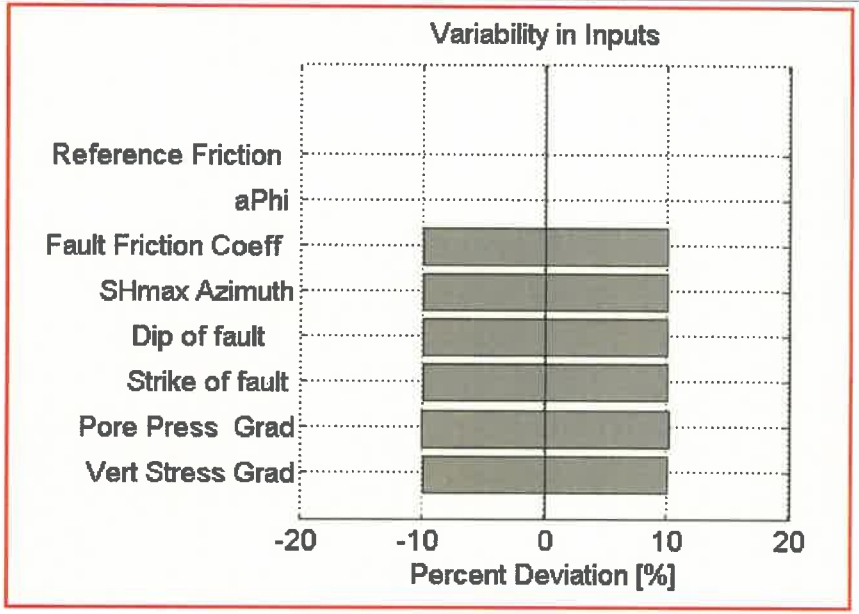
Calculate

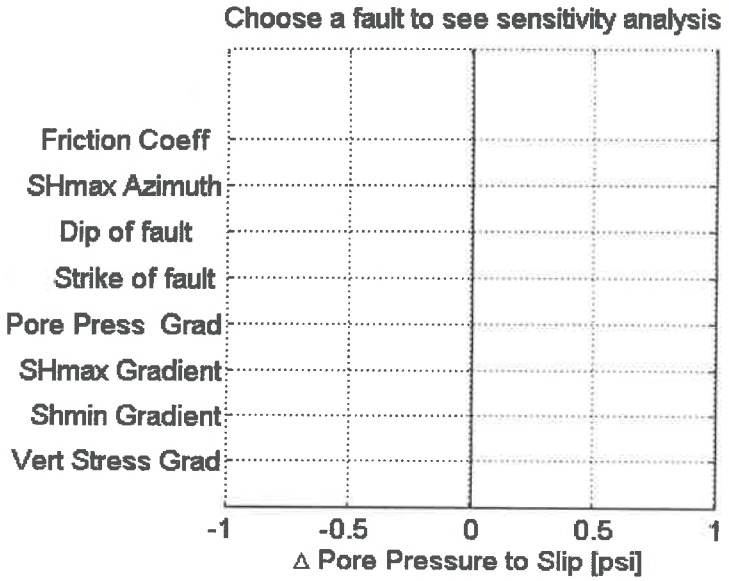
Load Distributions | Run Analysis



Max Delta PP [psi]: 5000

Export CDF data | Show Input Distributions





Exh. No. 7

File Zoom

Fault Slip Potential

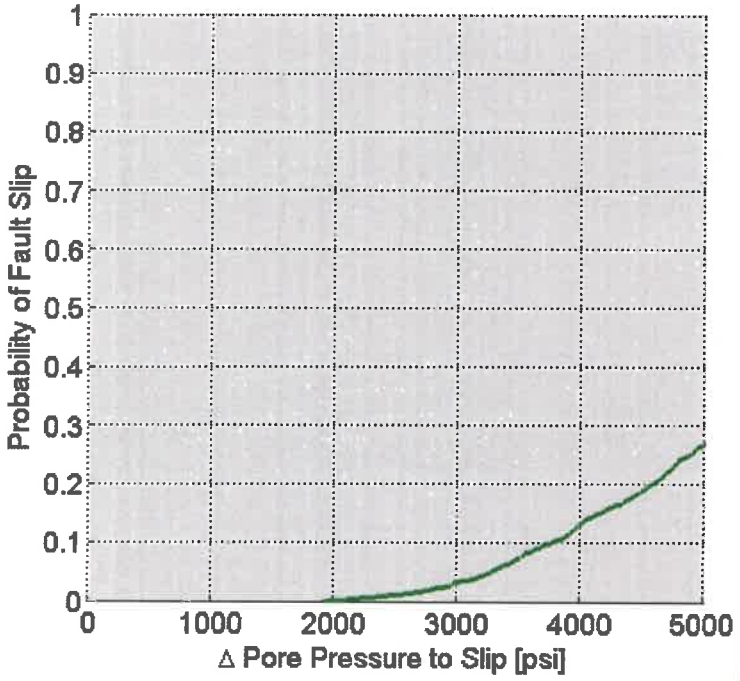
MODEL INPUTS | GEOMECHANICS | PROB. GEO... | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

All Faults
Fault #1
Fault #2
Fault #3
Fault #4
Fault #5
Fault #6
Fault #7
Fault #8

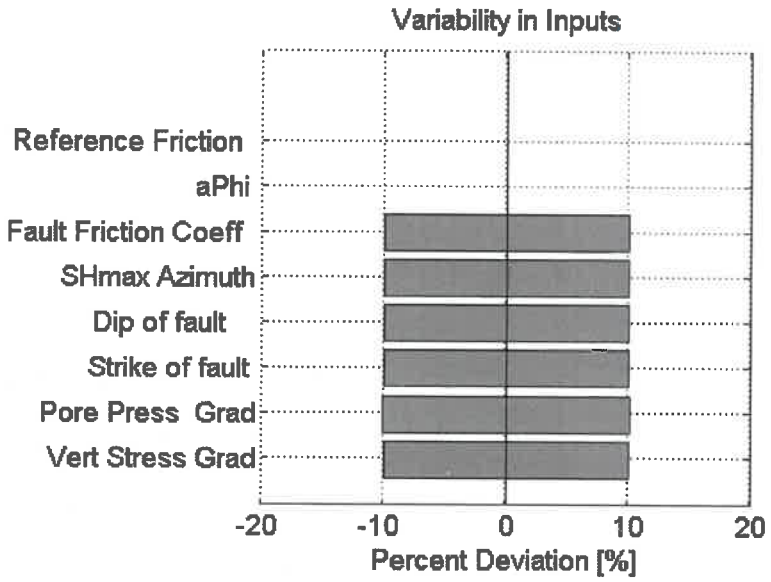
Calculate

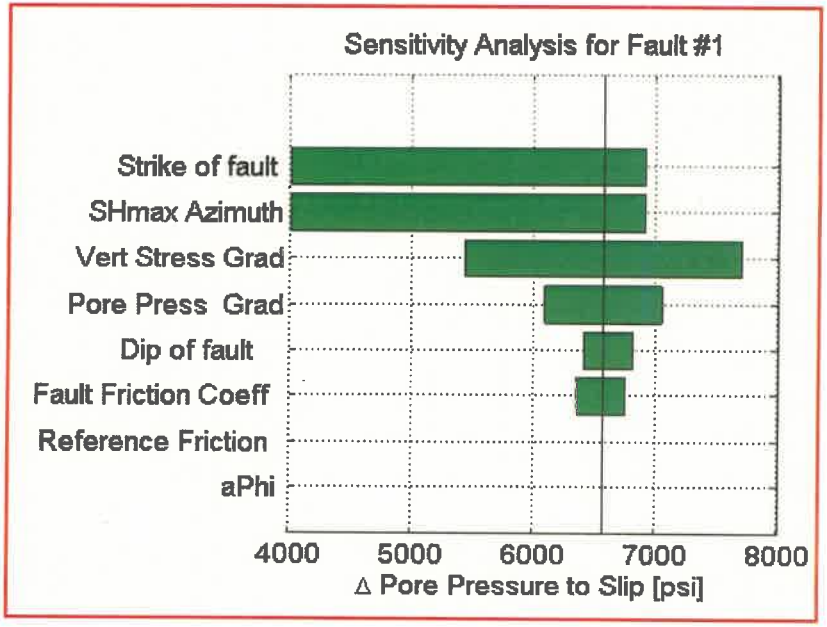
Load Distributions | Run Analysis



Max Delta PP [psi]: 5000

Export CDF data | Show Input Distributions





Exh. No. 8

Zoom

Fault Slip Potential

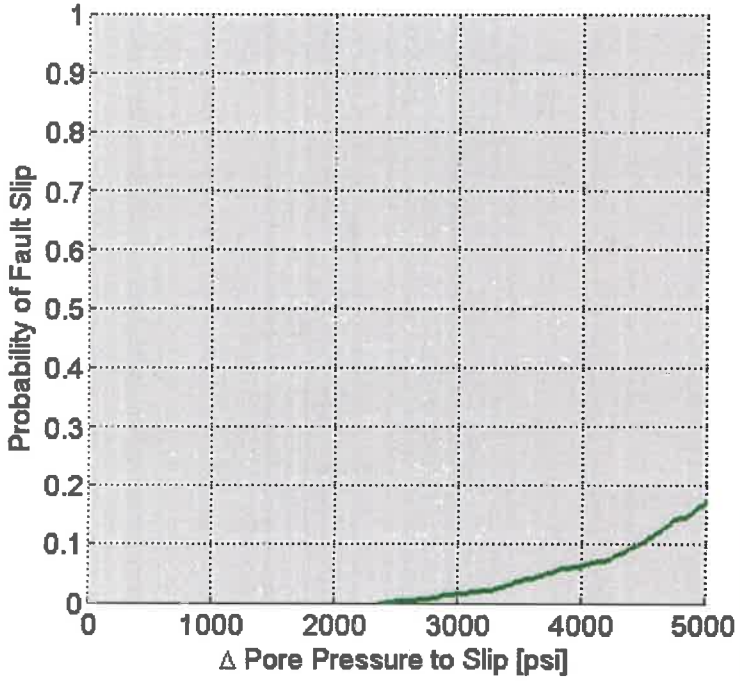
MODEL INPUTS | GEOMECHANICS | PROB. GEO... | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

All Faults
Fault #1
Fault #2
Fault #3
Fault #4
Fault #5
Fault #6
Fault #7
Fault #8

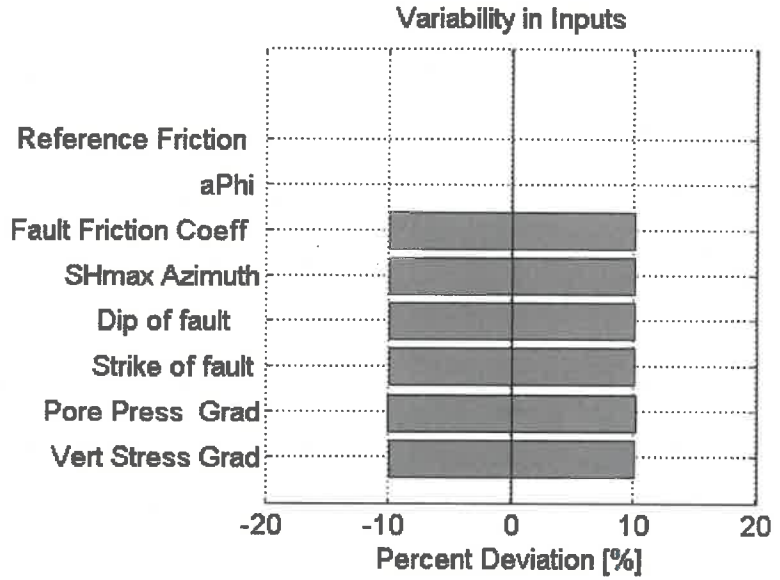
Calculate

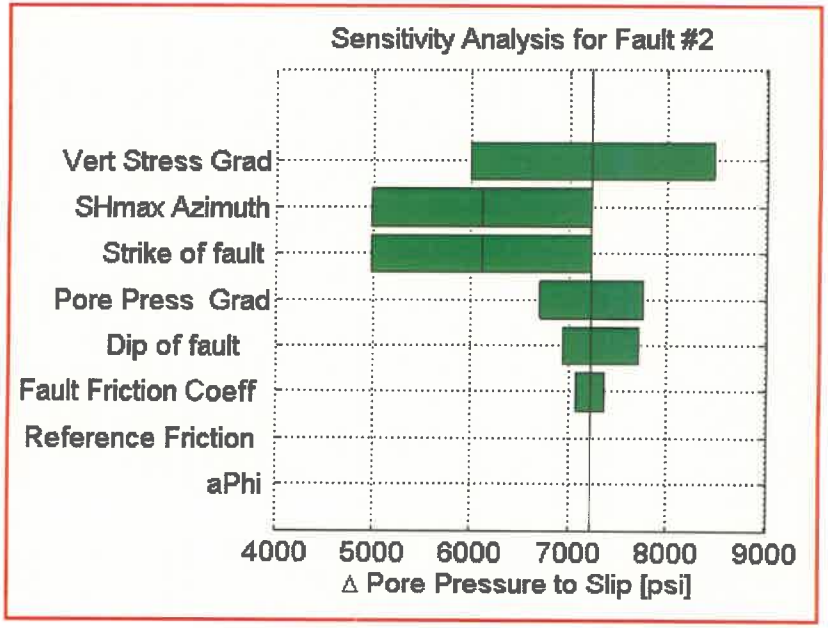
Load Distributions | Run Analysis



Max Delta PP [psi]: 5000

Export CDF data | Show Input Distributions





Exh. No. 9

File Zoom

Fault Slip Potential

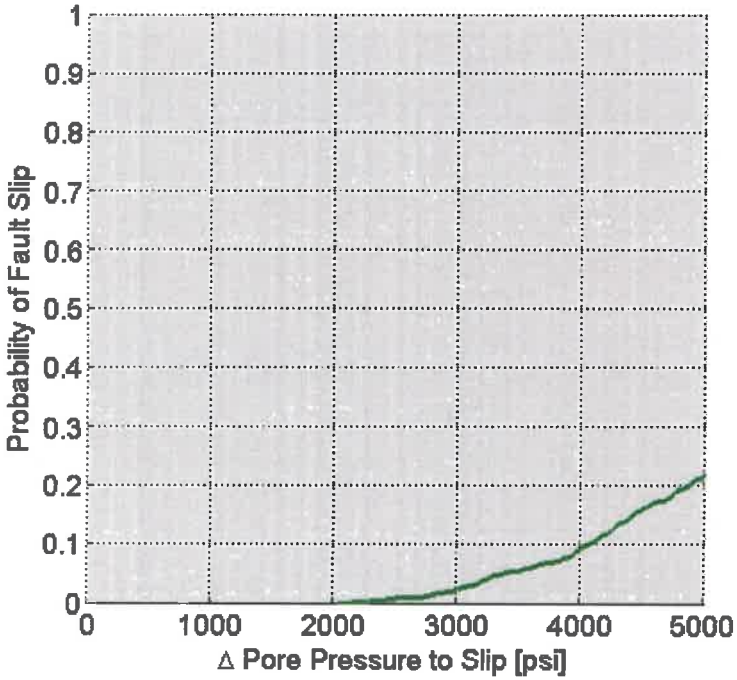
MODEL INPUTS | GEOMECHANICS | PROB. GEO... | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

All Faults
Fault #1
Fault #2
Fault #3
Fault #4
Fault #5
Fault #6
Fault #7
Fault #8

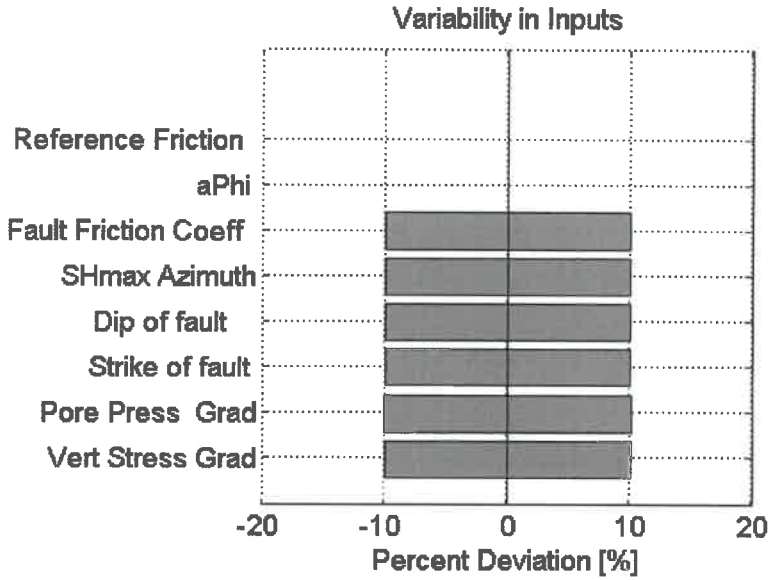
Calculate

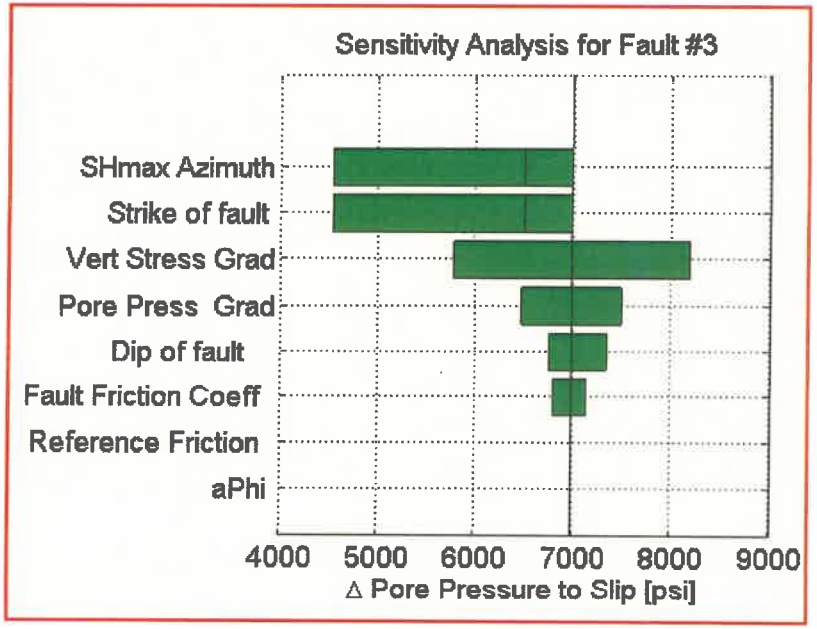
Load Distributions | Run Analysis



Max Delta PP [psi]: 5000

Export CDF data | Show Input Distributions





Exh. No. 10

Fault Slip Potential

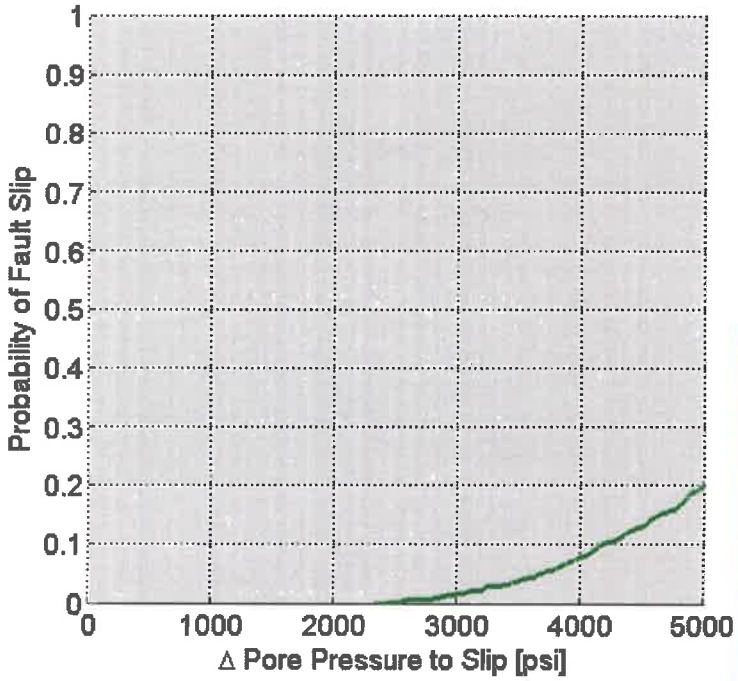
MODEL INPUTS | GEOMECHANICS | PROB. GEO... | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

All Faults
Fault #1
Fault #2
Fault #3
Fault #4
Fault #5
Fault #6
Fault #7
Fault #8

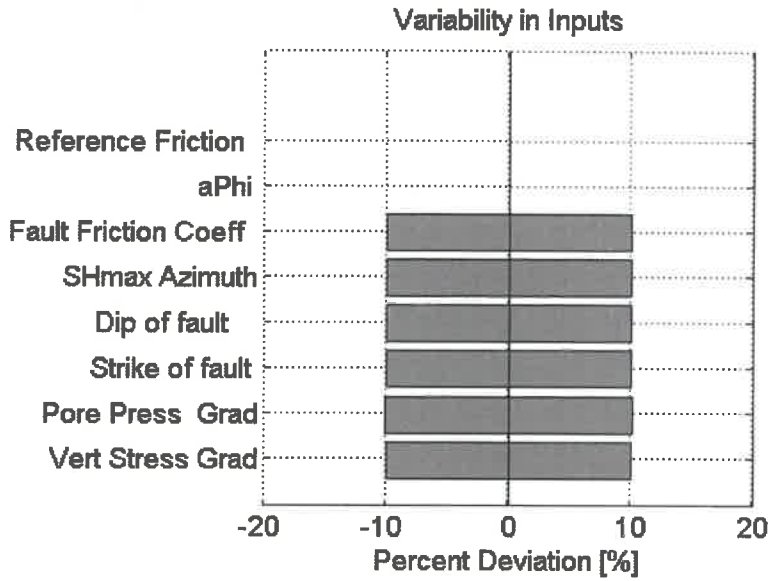
Calculate

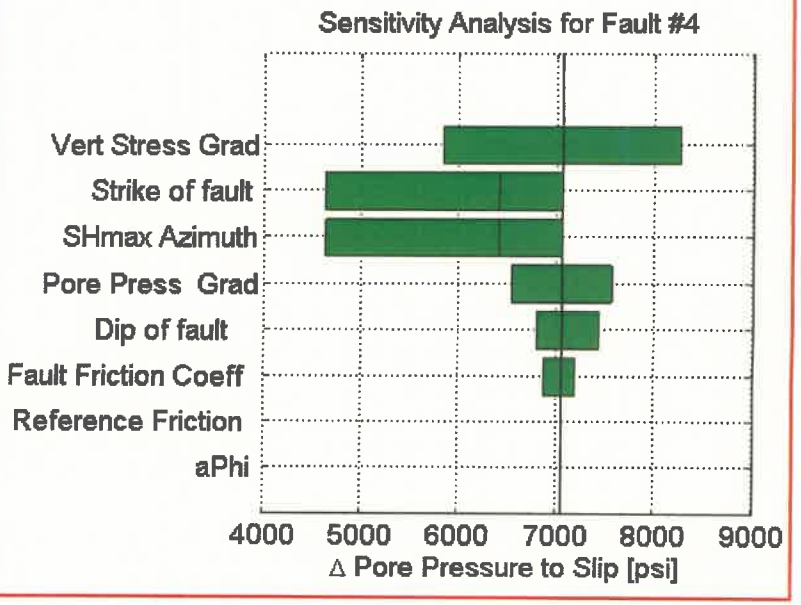
Load Distributions | Run Analysis



Max Delta PP [psi]: 5000

Export CDF data | Show Input Distributions





Exh. No. 11

Fault Slip Potential

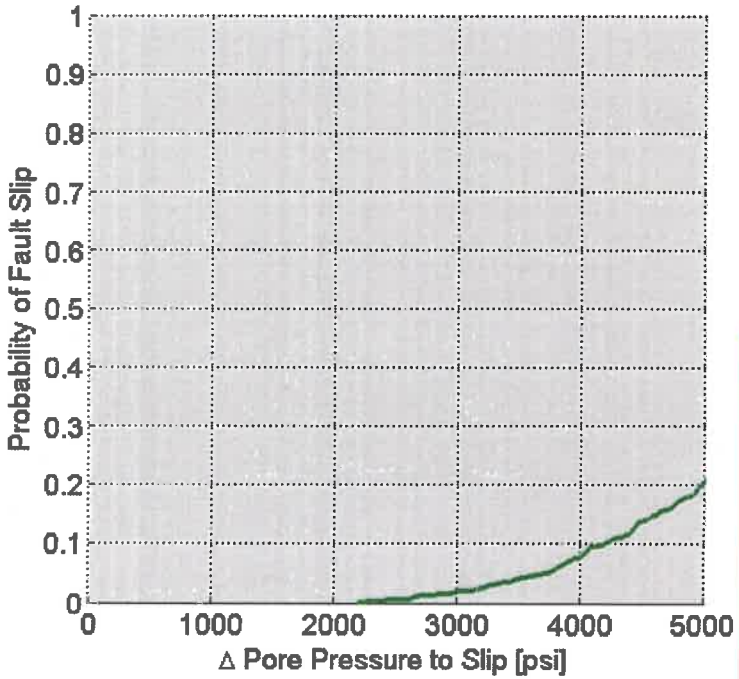
MODEL INPUTS | GEOMECHANICS | PROB. GEO... | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

All Faults
Fault #1
Fault #2
Fault #3
Fault #4
Fault #5
Fault #6
Fault #7
Fault #8

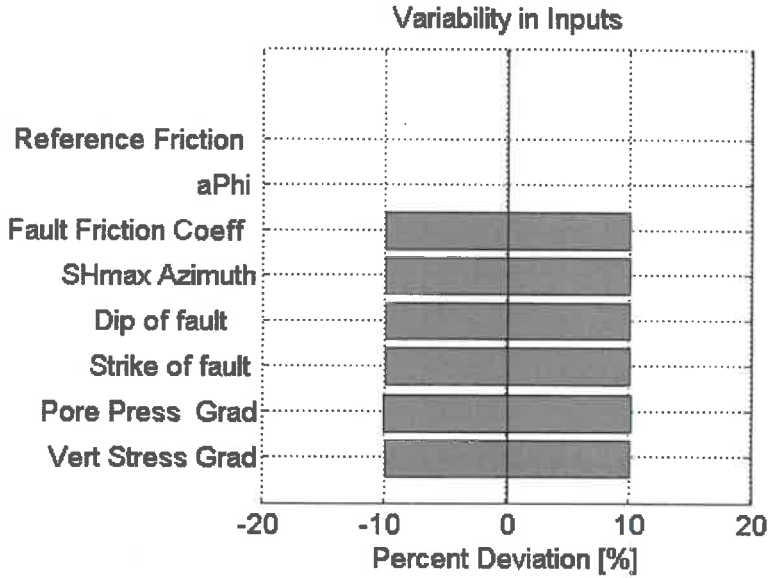
Calculate

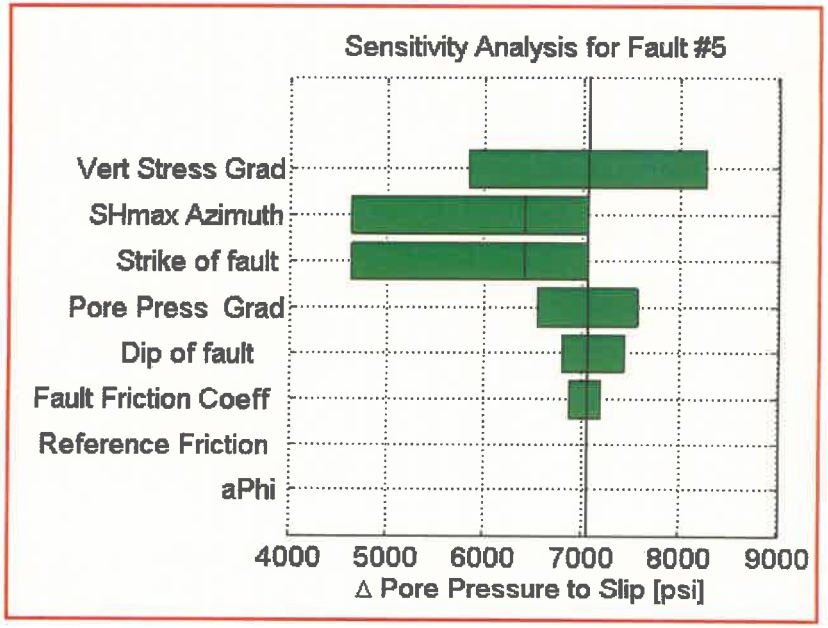
Load Distributions | Run Analysis



Max Delta PP [psi]: 5000

Export CDF data | Show Input Distributions





Exh. No. 12

Fault Slip Potential

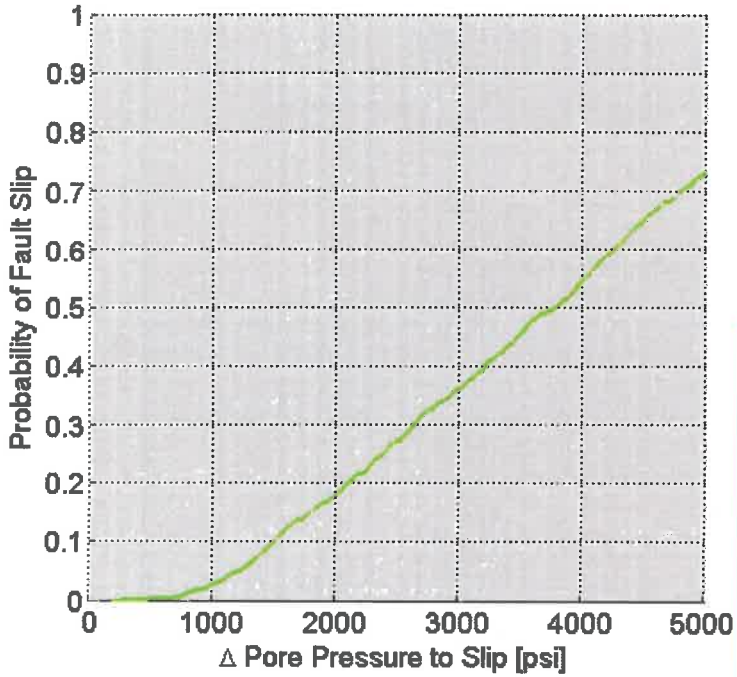
MODEL INPUTS | GEOMECHANICS | PROB. GEO... | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

All Faults
Fault #1
Fault #2
Fault #3
Fault #4
Fault #5
Fault #6
Fault #7
Fault #8

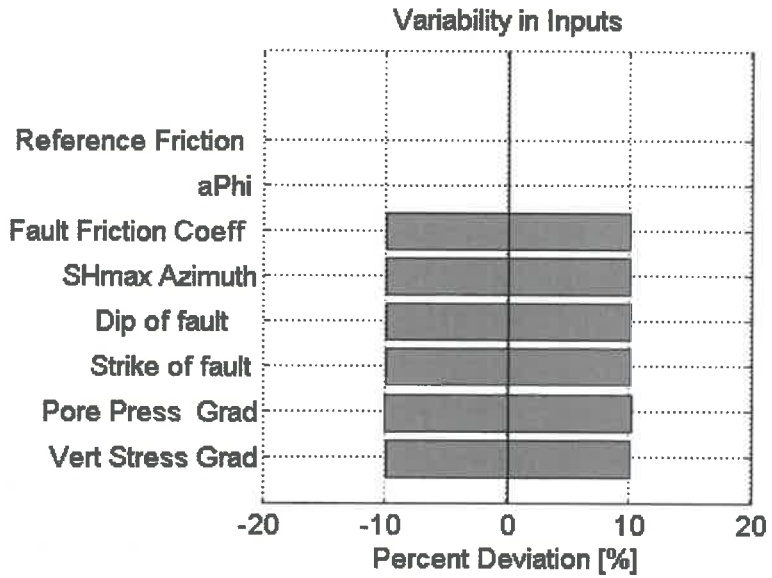
Calculate

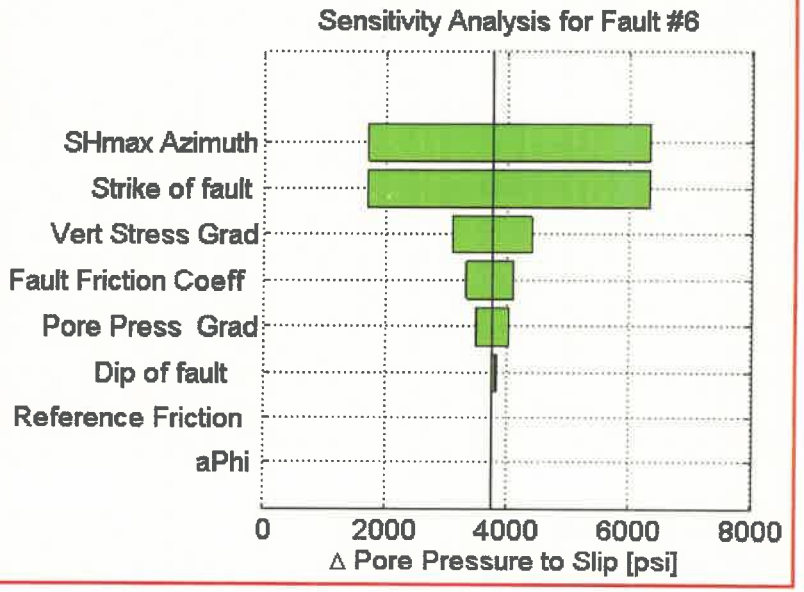
Load Distributions | Run Analysis



Max Delta PP [psi]: 5000

Export CDF data | Show Input Distributions





Exh. No. 13

Fault Slip Potential

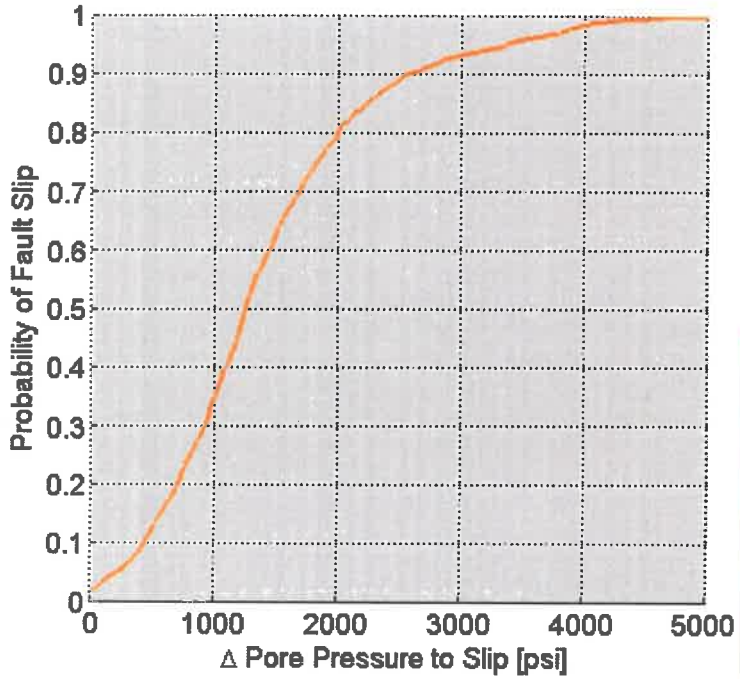
MODEL INPUTS | GEOMECHANICS | PROB. GEO... | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

All Faults
Fault #6
Fault #7
Fault #8

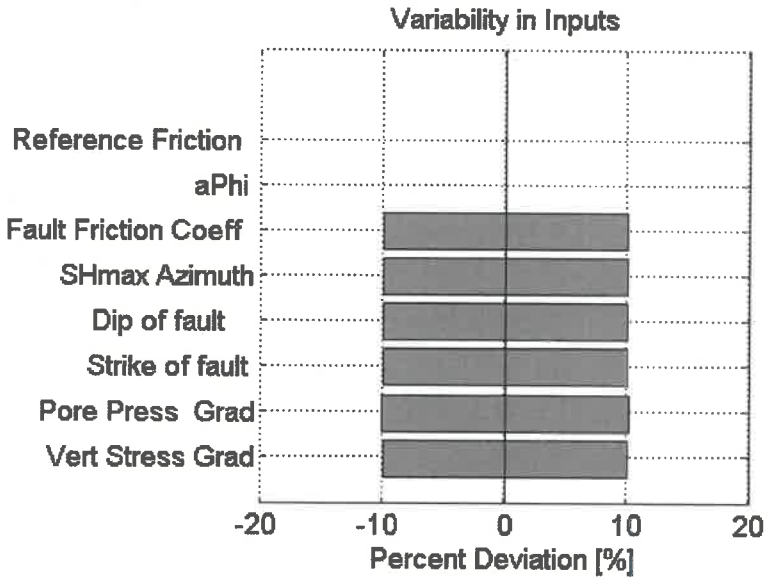
Calculate

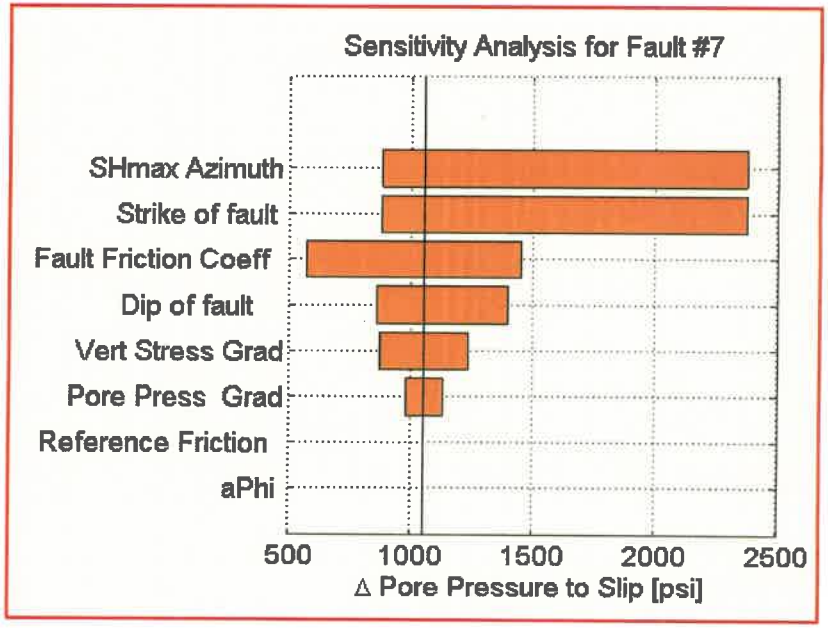
Load Distributions | Run Analysis



Max Delta PP [psi]: 5000

Export CDF data | Show Input Distributions





Exh. No. 14

Fault Slip Potential

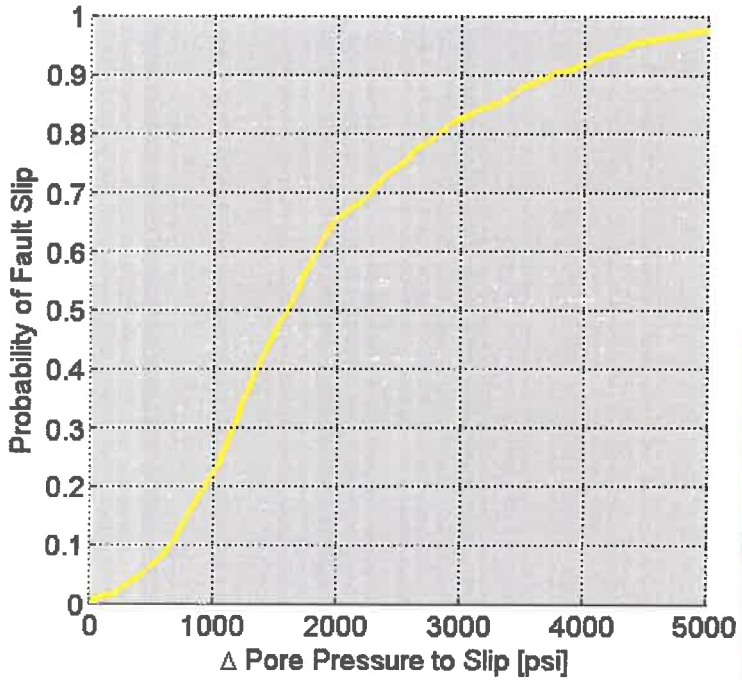
MODEL INPUTS | GEOMECHANICS | PROB. GEO... | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

All Faults
Fault #6
Fault #7

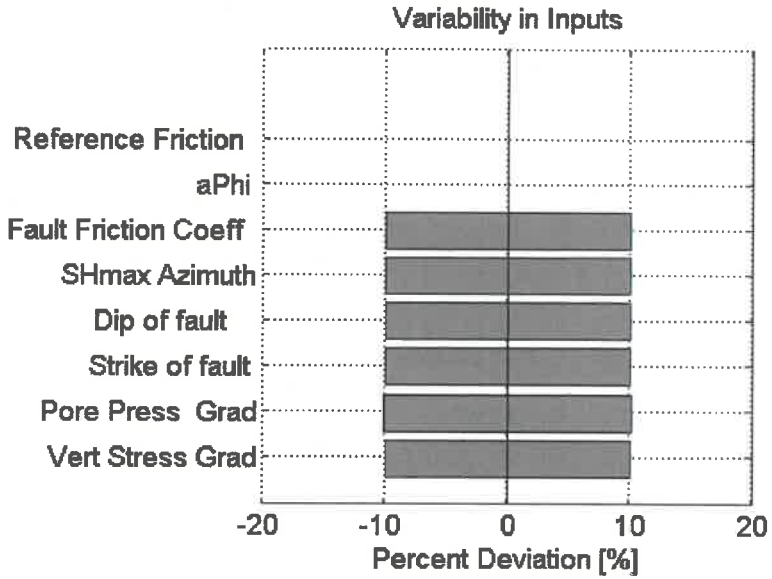
Calculate

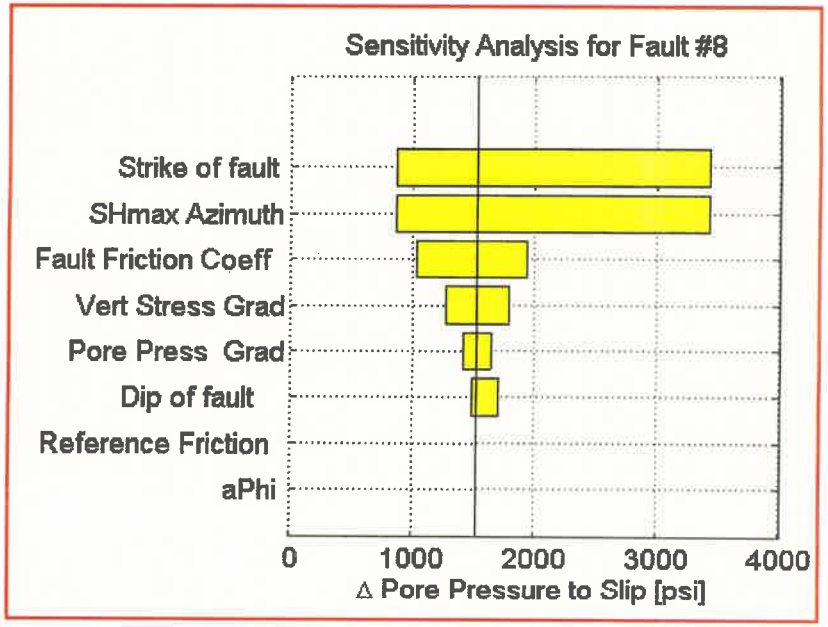
Load Distributions | Run Analysis



Max Delta PP [psi]: 5000

Export CDF data | Show Input Distributions





Exh. No. 15

Fault Slip Potential

MODEL INPUTS | GEOMECHANICS | PROB. GEOMECH | HYDROLOGY | PROB. HYDRO | INTEGRATED

Export

Fault Selector:

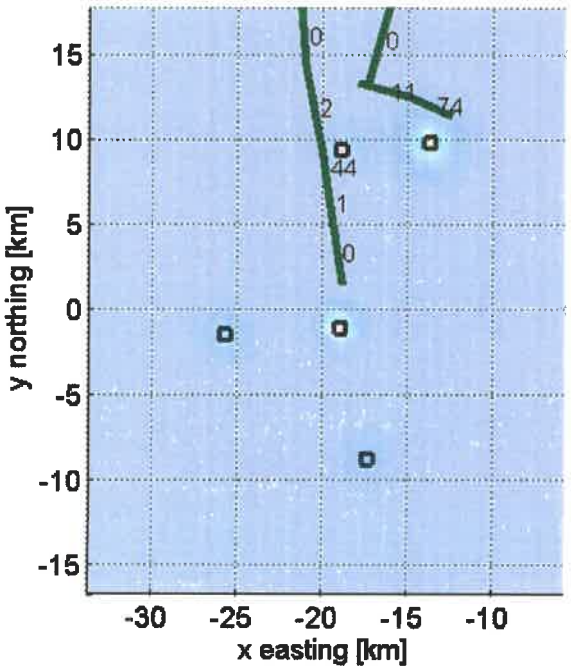
All Faults

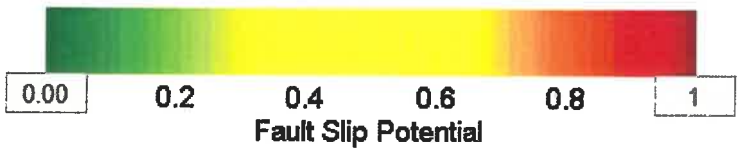
Fault #1, 0.00 FSP
Fault #2, 0.00 FSP
Fault #3, 0.00 FSP
Fault #4, 0.00 FSP
Fault #5, 0.00 FSP
Fault #6, 0.00 FSP
Fault #7, 0.02 FSP
Fault #8, 0.01 FSP

Calculate

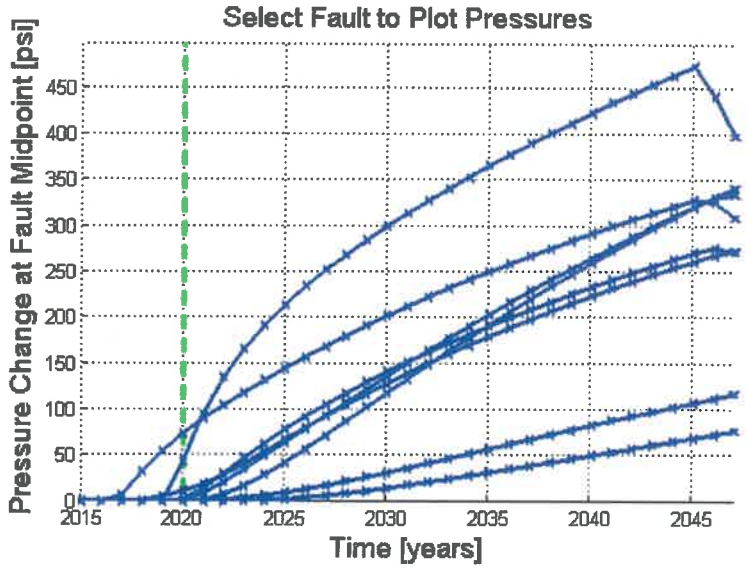
b) PP Change at fault [psi]

Summary Plots

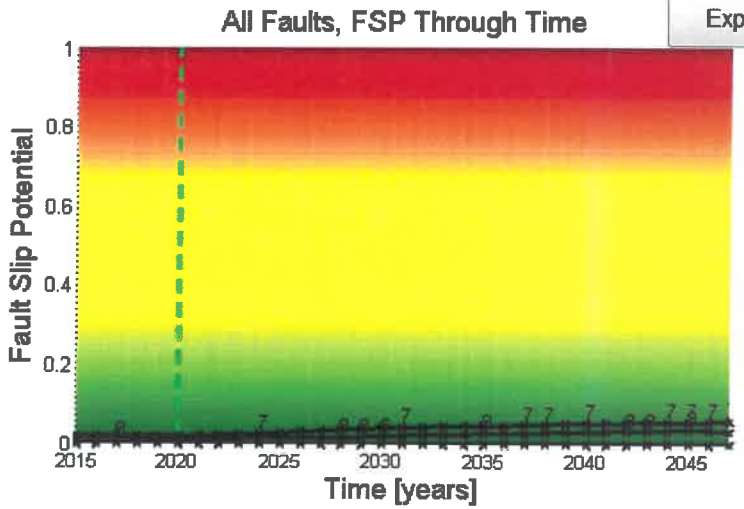




Year: 2020



Export



Exh. No. 16

Fault Slip Potential

MODEL INPUTS | GEOMECHANICS | PROB. GEOMECH | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

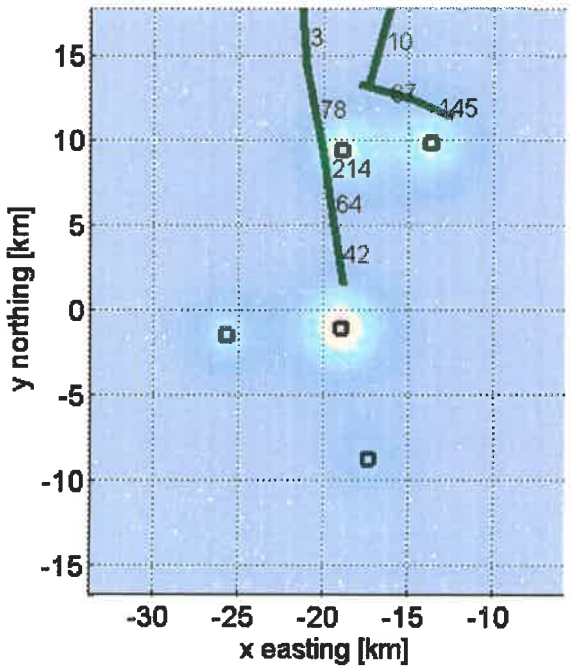
All Faults
Fault #1, 0.00 FSP
Fault #2, 0.00 FSP
Fault #3, 0.00 FSP
Fault #4, 0.00 FSP
Fault #5, 0.00 FSP
Fault #6, 0.00 FSP
Fault #7, 0.03 FSP
Fault #8, 0.02 FSP

Calculate

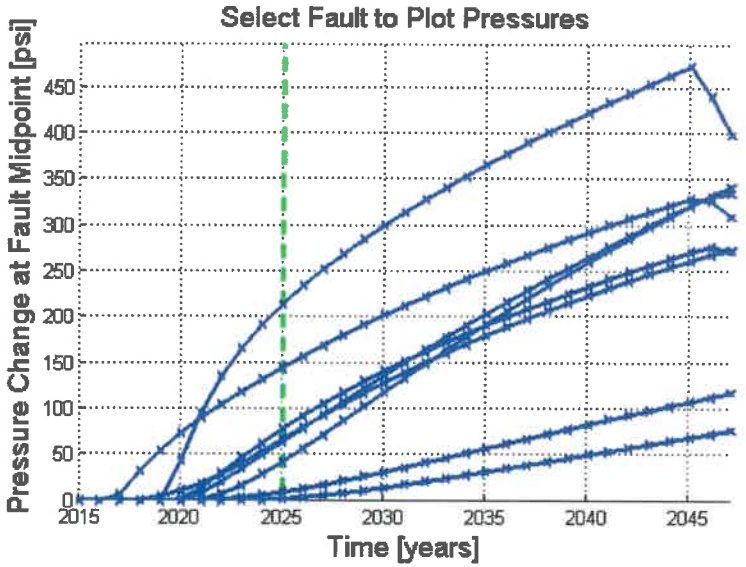
Export

b) PP Change at fault [psi]

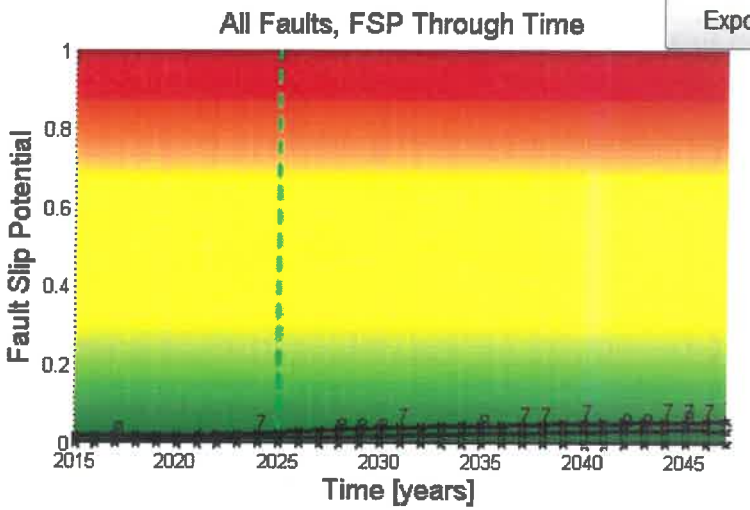
Summary Plots



Year: 2025



Export



Exh. No. 17

Fault Slip Potential

MODEL INPUTS | GEOMECHANICS | PROB. GEOMECH | HYDROLOGY | PROB. HYDRO | INTEGRATED

Export

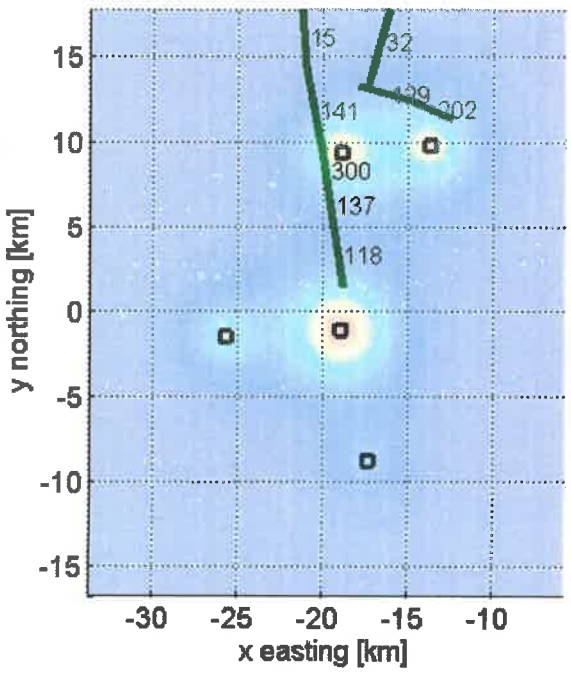
Fault Selector:

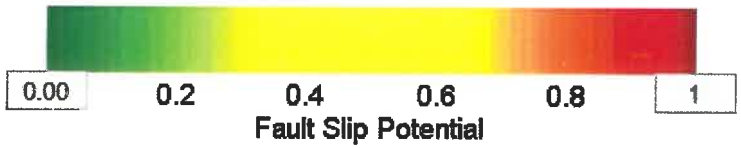
All Faults
Fault #1, 0.00 FSP
Fault #2, 0.00 FSP
Fault #3, 0.00 FSP
Fault #4, 0.00 FSP
Fault #5, 0.00 FSP
Fault #6, 0.00 FSP
Fault #7, 0.04 FSP
Fault #8, 0.02 FSP

Calculate

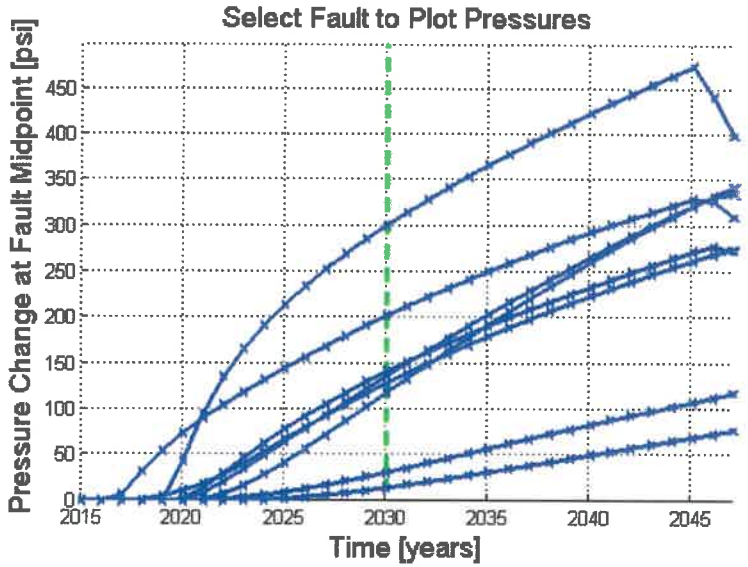
b) PP Change at fault [psi]

Summary Plots

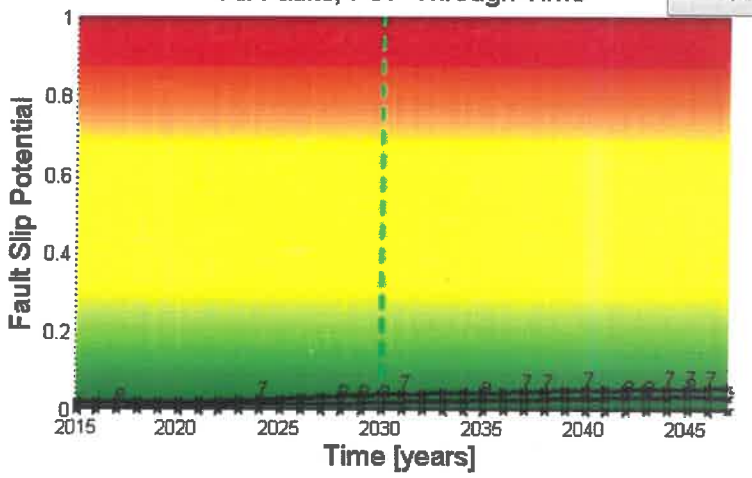




Year: 2030



Export



Exh. No. 18

Fault Slip Potential

MODEL INPUTS | GEOMECHANICS | PROB. GEOMECH | HYDROLOGY | PROB. HYDRO | INTEGRATED

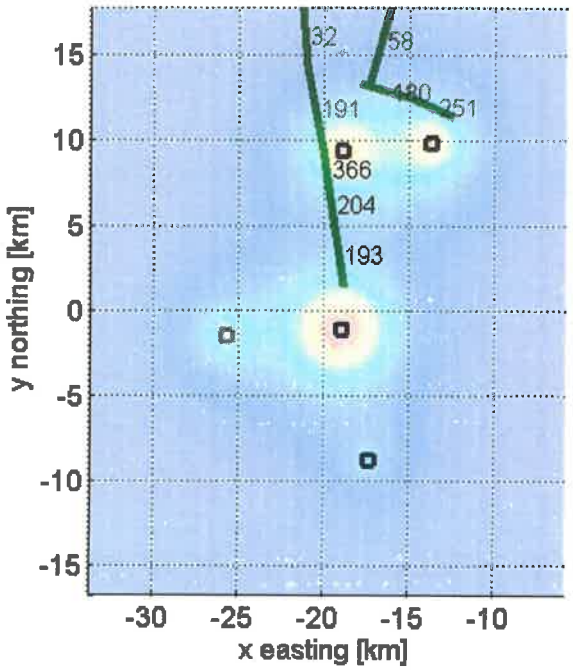
Fault Selector:

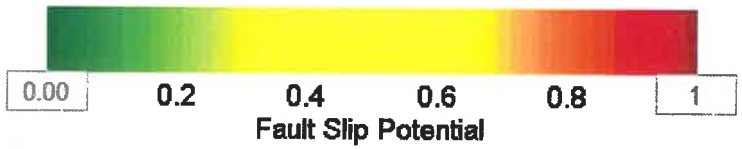
All Faults
Fault #1 0.00 FSP
Fault #2 0.00 FSP
Fault #3 0.00 FSP
Fault #4 0.00 FSP
Fault #5 0.00 FSP
Fault #6 0.00 FSP
Fault #7 0.05 FSP
Fault #8 0.03 FSP

Calculate

b) PP Change at fault [psi]

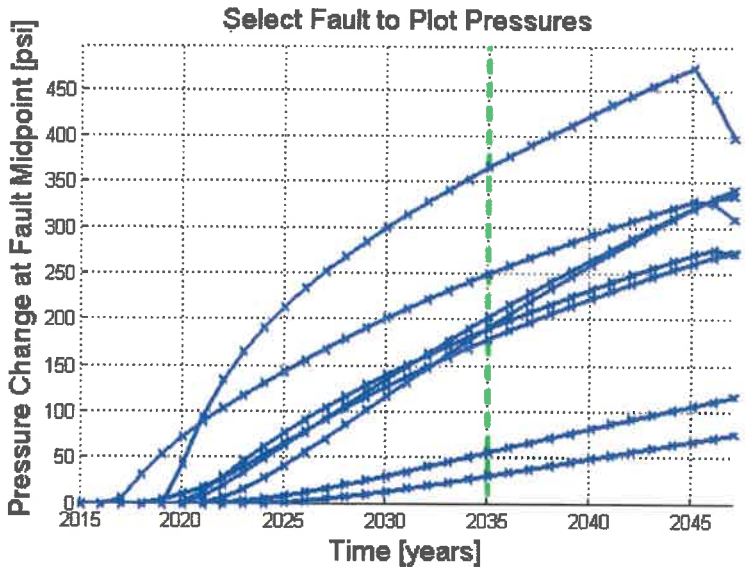
Summary Plots



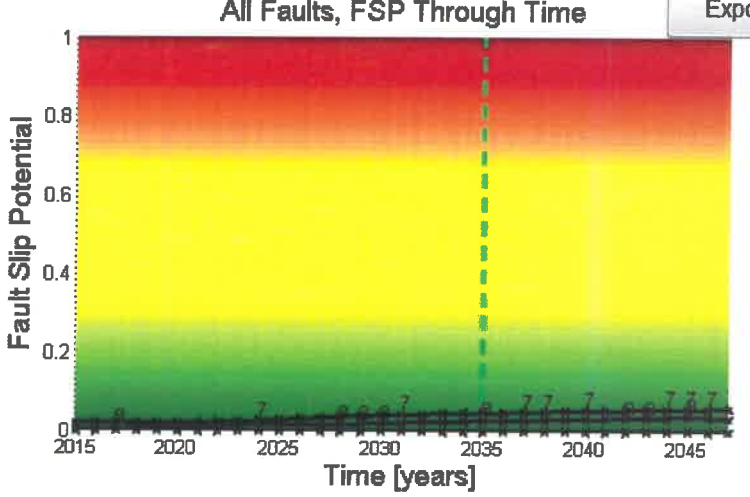


Year: 2035

Export



Export



Exh. No. 19

Fault Slip Potential

MODEL INPUTS | GEOMECHANICS | PROB. GEOMECH | HYDROLOGY | PROB. HYDRO | INTEGRATED

Export

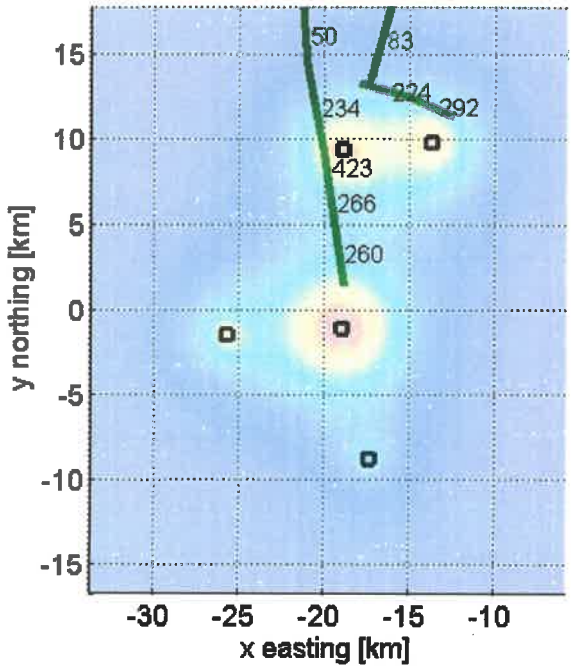
Fault Selector:

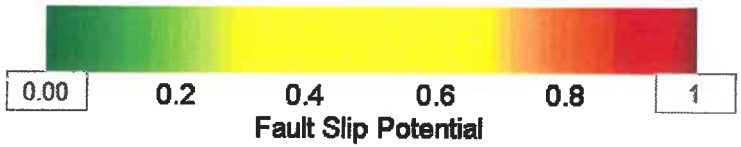
All Faults
Fault #1 0.00 FSP
Fault #2 0.00 FSP
Fault #3 0.00 FSP
Fault #4 0.00 FSP
Fault #5 0.00 FSP
Fault #6 0.00 FSP
Fault #7 0.06 FSP
Fault #8 0.03 FSP

Calculate

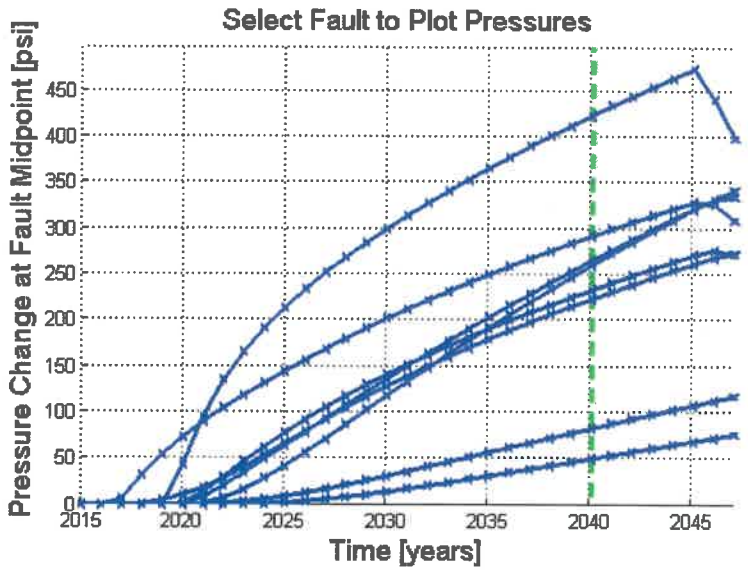
b) PP Change at fault [psi]

Summary Plots

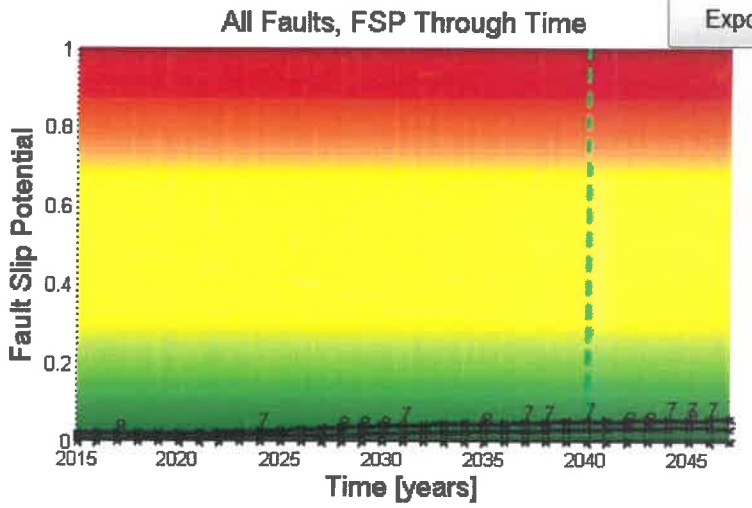




Year: 2040



Export



Exh. No. 20

Fault Slip Potential

MODEL INPUTS | GEOMECHANICS | PROB. GEOMECH | HYDROLOGY | PROB. HYDRO | INTEGRATED

Export

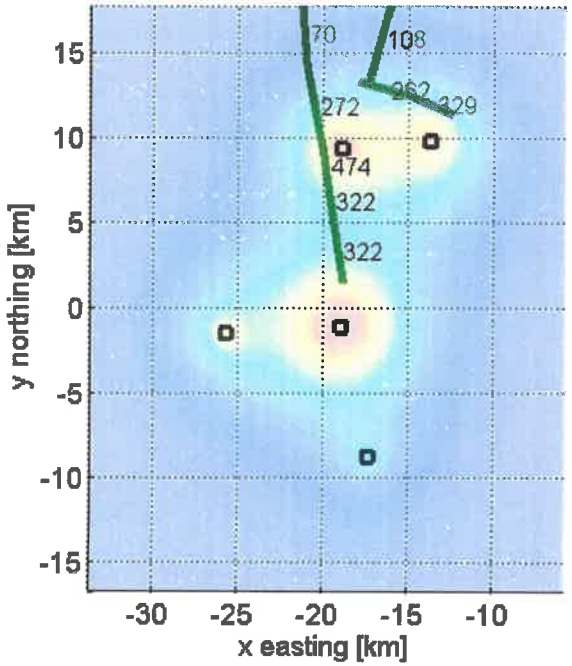
Fault Selector:

All Faults
Fault #1, 0.00 FSP
Fault #2, 0.00 FSP
Fault #3, 0.00 FSP
Fault #4, 0.00 FSP
Fault #5, 0.00 FSP
Fault #6, 0.00 FSP
Fault #7, 0.06 FSP
Fault #8, 0.04 FSP

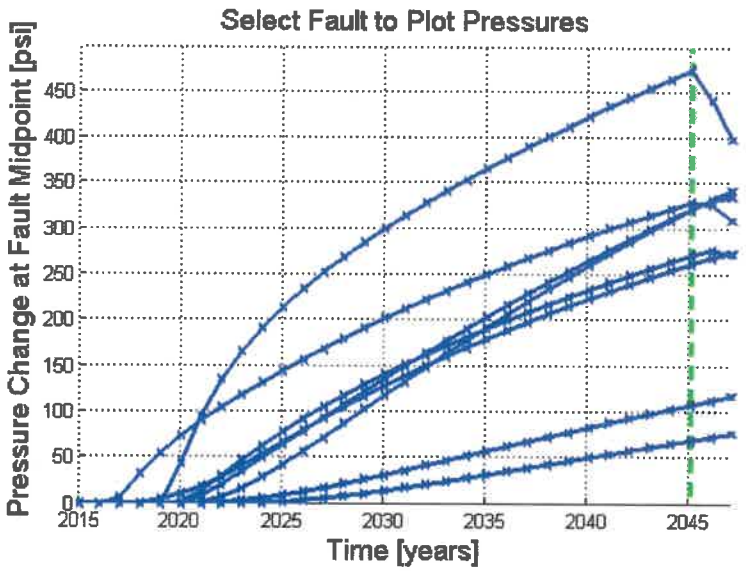
Calculate

b) PP Change at fault [psi]

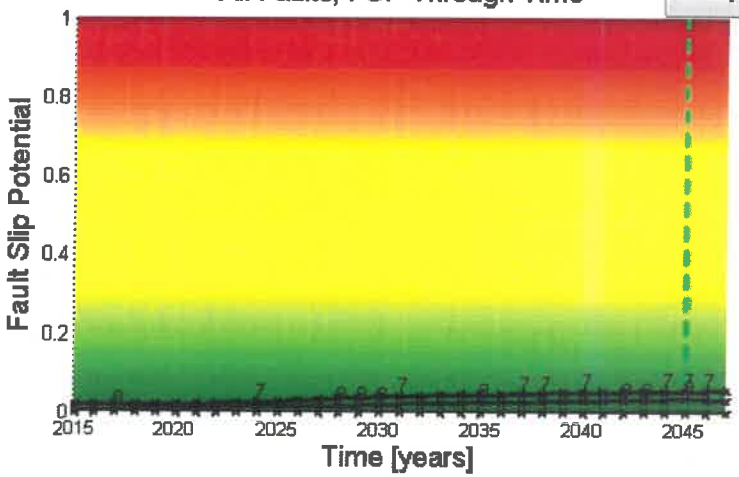
Summary Plots



Year: 2045



Export



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Texas Registered Engineering Firm No F – 16381

November 13, 2018

RE: FSP Analysis Multiple NGL SWD well locations
Hornet SWD and Thunderbird SWD
Lea County, New Mexico

FSP Analysis

The FSP software used for this analysis was jointly developed by Stanford University, Exxon Mobil and XTO Energy as a tool for estimating fault slip potential resulting from fluid injection.

I have reviewed the geology, seismic activity, injection history and future proposed injection in the Subject Area and I would conclude that the Proposed SWD wells do not pose a substantial risk of increasing seismicity in the area. The primary risk reduction factor is that the faults are not optimally oriented to slip, and significant pressure increases would be needed to initiate slip on the faults analyzed.

Fault slip potential (FSP) was analyzed in the area of review shown on **Exhibit No. 1.** The analysis integrates all of the proposed well locations as well as any existing injection wells in order to fully assess the pressure implications of injection in the area and the potential for slip along existing faults.

Exhibit No. 2 shows the FSP input parameters for the local stress, average reservoir depth, pressure gradients and reservoir characteristics. Depths and reservoir characteristics were derived from nearby well logs and stress values were derived from the Lund Snee and Zoback (2018) paper related to Stress in the Permian Basin.

Exhibit No. 3 shows the location of existing wells and locations of the Proposed SWD wells relative to the faults documented in this area. The faults are sourced from the Texas Bureau of Economic Geology and these are also the faults shown in the referenced Snee/Zoback paper (Figure 3 in the paper)

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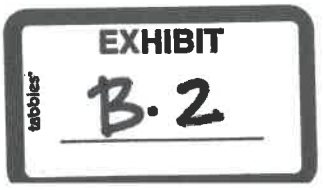


and shown as **Exhibit No. 4** in my report. The Snee/Zoback paper only considers fault orientation relative to the stress orientation in determination of fault slip potential. Based on their limited analysis of the area they concluded the faults have low slip potential based on orientation/azimuth. My analysis further incorporates the injection history and future injection projections and the injection reservoir characteristics to fully assess the potential for slip along these faults. Existing wells were incorporated into the analysis using their injection volume histories and holding them constant into the future at their last reported monthly injection volume. The proposed wells were all modelled at 40,000 bbls/day and held constant for the life of the analysis (+25 years).

The proposed wells are denoted in the model as follows: **(Exhibit No. 3)**

H - Hornet SWD

T – Thunderbird SWD

Exhibit No. 5 illustrates the geomechanical properties of the fault segments in the area of review. It should be noted that the FSP software only calculates a single pressure change along a fault (at the fault mid-point) so it is critical that faults are broken in to multiple segments to get a true evaluation of the pressure increases associated with injection. **Exhibit No. 5 also** shows the direction of max hor. stress as denoted by the grey arrows outside the circle on the stereonet in the lower right portion of this exhibit. Faults that align parallel or closer to this orientation will have the highest potential for slip or lowest Delta PP to slip. All of the faults have very low potential for slip since they are oriented perpendicular to max hor. Stress.

Exhibit No. 6 shows that the input stress and fault values were varied by +/-10% to allow for uncertainty in the input parameters. Even considering the variability of the inputs the model results show very low probability for slip on the faults in the area of review. An increase of 3,000 psi at the faults only results in a 10% probability of fault slip.

Exhibits No. 7 – No. 15 shows the sensitivity analysis for each fault segment and shows that without any variability of inputs the ΔP needed to slip is very high ranging from 5,900 to 6,600 psi. Even with the variability of inputs the ΔP needed to slip is still very high ranging from 3.600 to 5,000 psi. The

fault with the lowest ΔP needed to slip is segment F8 which will be analyzed further on the following heat maps.

Exhibit No. 16 illustrates the ΔP pressure in a "heat map" and shows ΔP pressure increases at the faults as of 1/1/2020. This map indicates ΔP pressure increases of 0 psi at F8.

Exhibit No. 17 illustrates the ΔP pressure in a "heat map" and shows ΔP pressure increases at the faults as of 1/1/2025. This map indicates ΔP pressure increases of 2 psi at F8.

Exhibit No. 18 illustrates the ΔP pressure in a "heat map" and shows ΔP pressure increases at the faults as of 1/1/2030. This map indicates ΔP pressure increases of 14 psi at F8.

Exhibit No. 19 illustrates the ΔP pressure in a "heat map" and shows ΔP pressure increases at the faults as of 1/1/2035. This map indicates ΔP pressure increases of 35 psi at F8.

Exhibit No. 20 illustrates the ΔP pressure in a "heat map" and shows ΔP pressure increases at the faults as of 1/1/2040. This map indicates ΔP pressure increases of 61 psi at F8.

Exhibit No. 21 illustrates the ΔP pressure in a "heat map" and shows ΔP pressure increases at the faults as of 1/1/2045. This map indicates ΔP pressure increases of 90 psi at F8.

The pressure analysis over time shows that pressure is expected to increase along the faults however pressures remain far below critical levels. The table below shows the ΔP pressure increases needed to imitate fault slip along each fault segment and the corresponding ΔP pressure increases as of 2045:

Fault Segment	ΔP to slip (fixed inputs)	ΔP to slip (10% varied inputs)	ΔP at 2045
F1	6,200	4,000	82
F2	6,200	3,800	141
F3	6,600	4,850	139
F4	6,600	5,000	103
F5	6,500	4,500	42
F6	6,600	4,900	9
F7	6,100	3,700	3
F8	5,900	3,600	90
F9	6,100	3,700	14

This analysis demonstrates that there is a very low likelihood of injection induced seismicity in the Subject Area.

Conclusion

The faults and fault trends in this area of review are not optimally oriented to slip. The orientation of the faults requires significant pressure changes (ΔP +5,900 psi) based on the input parameters and the ΔP increase at the most vulnerable fault only reaches 90 psi by 2045. This model assumes constant injection rates over the next +25 years which is not a typical scenario as SWD wells tend to decrease injection volumes over time as the well ages and disposal demand decreases in the area. If injection volumes are lower over time than the model represents, then the risk for fault slip is lowered also.

In the event seismicity should occur in the future, the wells closest to the faults (proposed and existing) should be the wells considered for modification or reduction of injection rates. At this time there is no evidence to support rate reduction for any of the existing or proposed wells.

Should you have any questions, please do not hesitate to call me at (512) 327-6930 or email me at todd.reynolds@ftiplattsparks.com.

Regards,

Todd W. Reynolds – Geologist/Geophysicist
Senior Director, Economics/FTI Platt Sparks

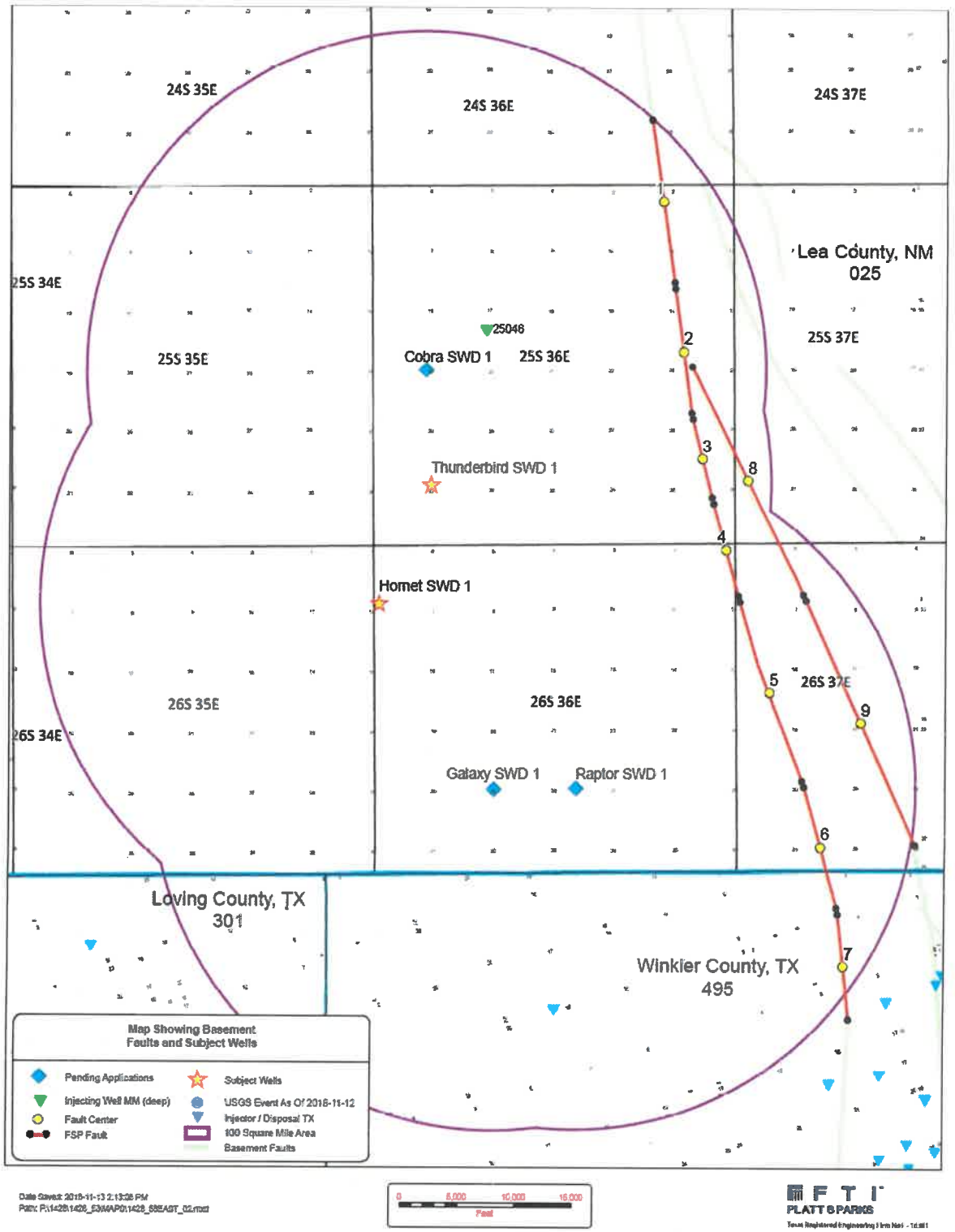
FTI Platt Sparks
512.327.6930 office

Exh. No. 1

Area of review – Purple outlined area around the Subject wells represents the 100 sq. mile area around each well.

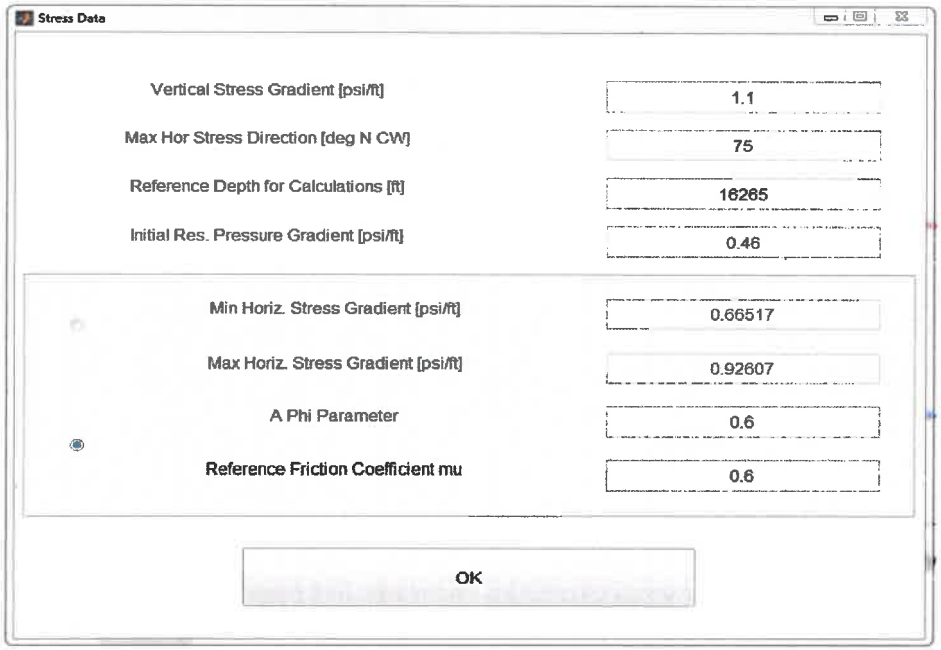
Subject wells are denoted by the "Star" symbol and active injection into the deep interval (Devonian/Silurian) is denoted by "Inverted Triangle" symbols.

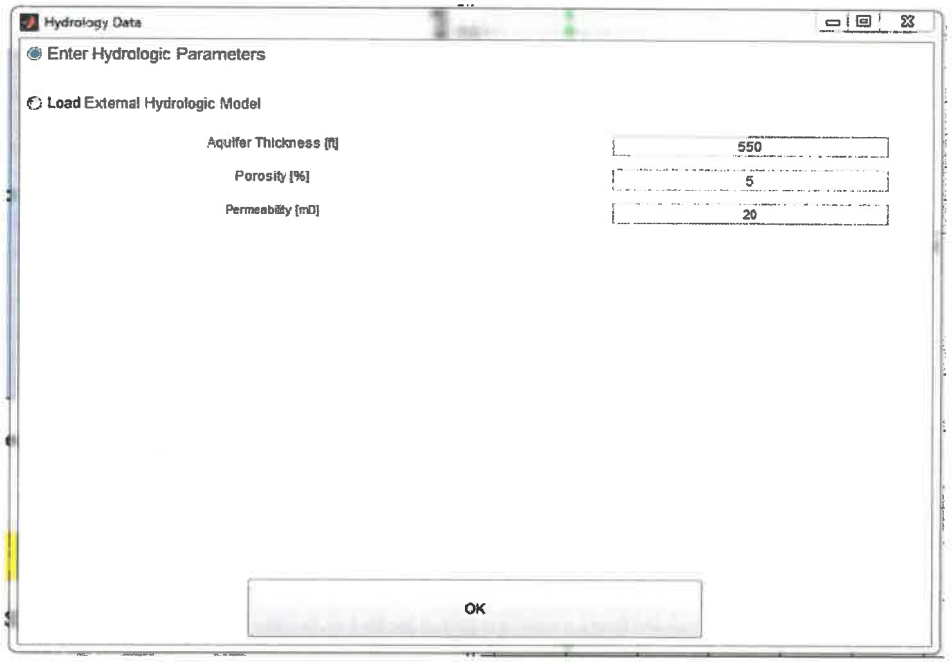
The FSP model uses the injection history of existing wells and the proposed rates of the Subject wells.

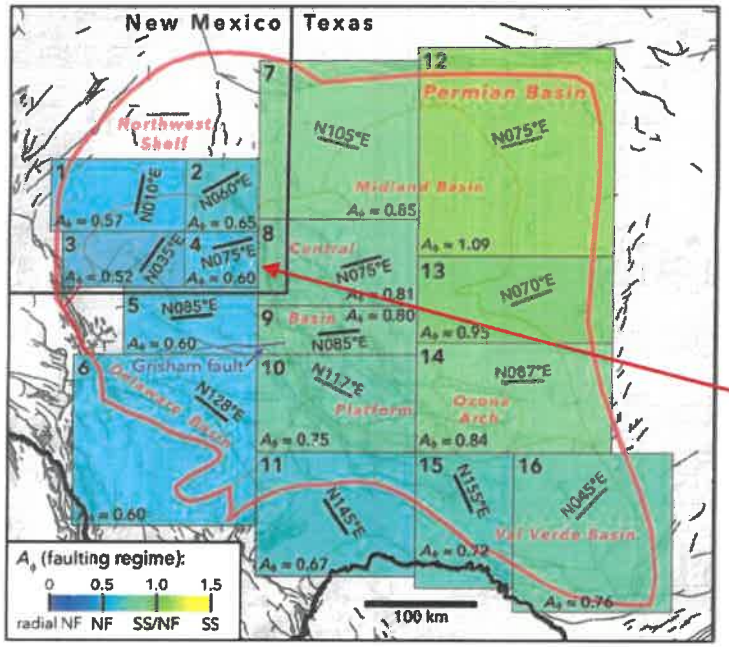


Exh. No. 2

FSP INPUT PARAMETERS







Input Parameter Comments

Hydrologic Parameters – Derived from Striker 6 SWD #2 logs

Stress Gradients – Derived from A Phi parameter from Snee/Zoback paper (.60)

Max Hor. Stress Direction - Derived from Snee/Zoback paper (N75E)

Exh. No. 3

File Zoom

Fault Slip Potential

MODEL INPUTS | GEOMECHANICS | PROB. GEOMECH | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

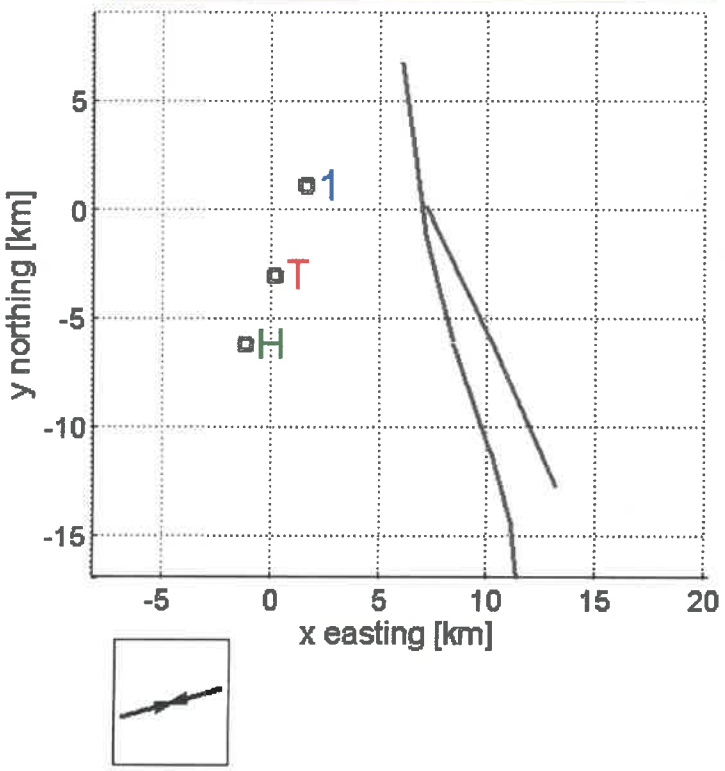
- All Faults
- Fault #1
- Fault #2
- Fault #3
- Fault #4
- Fault #5
- Fault #6
- Fault #7
- Fault #8
- Fault #9

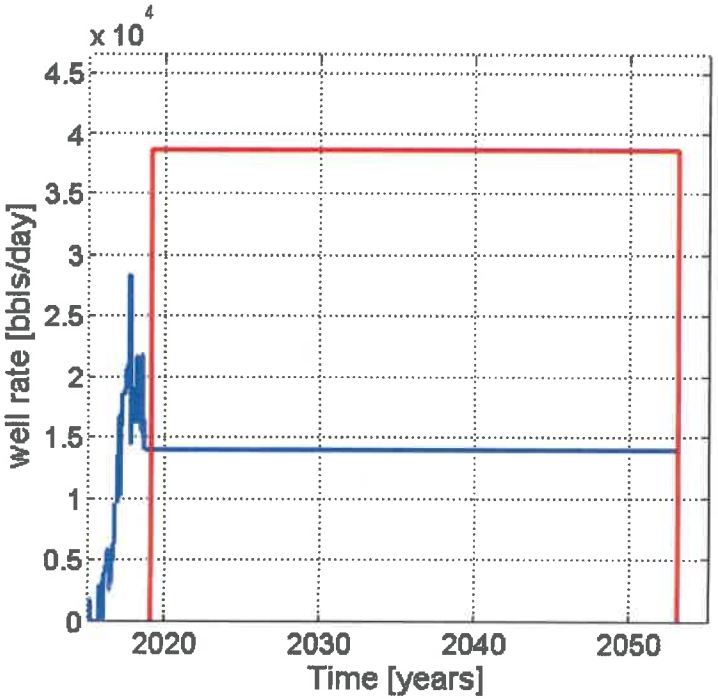
Calculate

Stress Regime: Normal Faulting

Select Well: All

FSP INPUT Fault and well locations





FSP INPUT Injection history and projected future injection

Exh. No. 4

Area of Review

Low slip potential based on fault orientation (green faults)

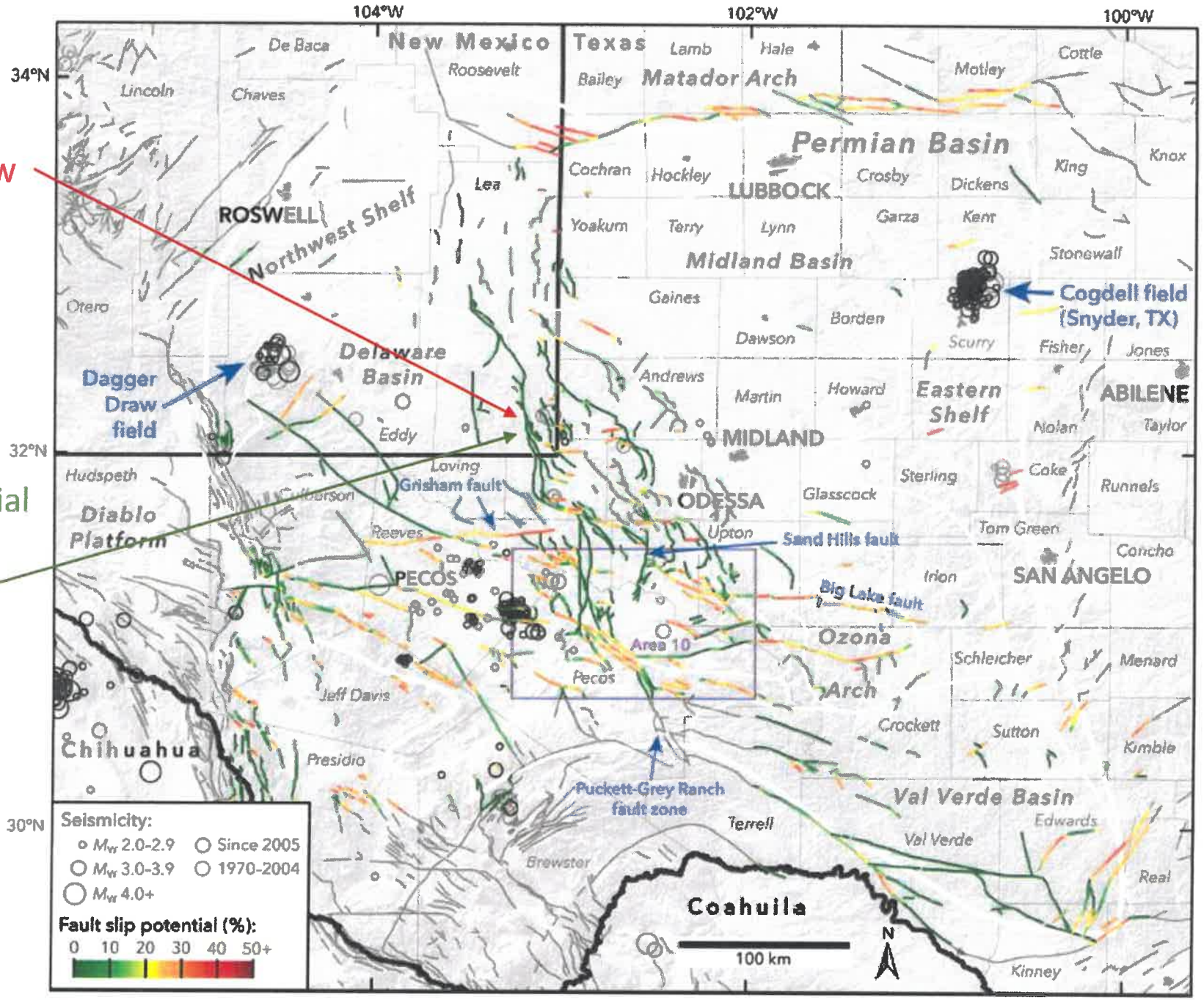


Figure 3. Results of our probabilistic FSP analysis across the Permian Basin. Data sources are as in Figures 1 and 2.

From Lund Snee and Zoback (2018)

Exh. No. 5

File Zoom

Fault Slip Potential

MODEL INPUTS | GEOMECHANI... | PROB. GEOMECH | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

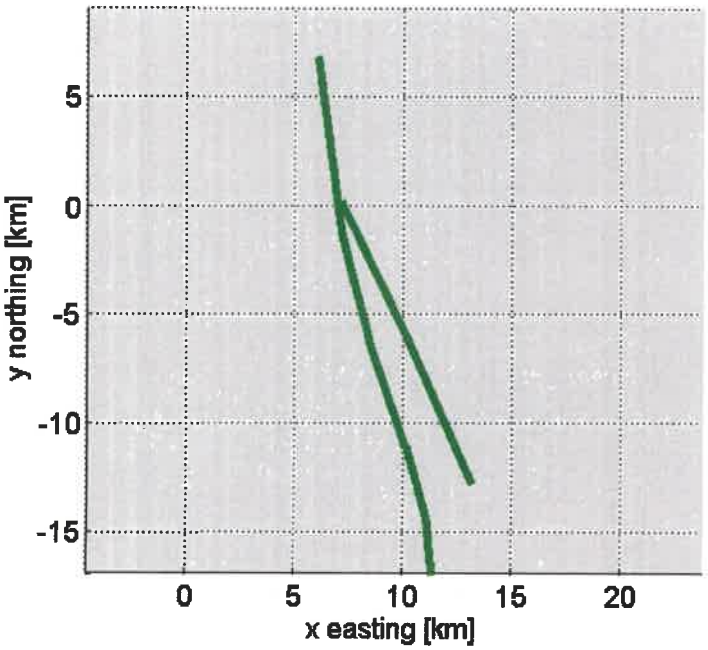
All Faults

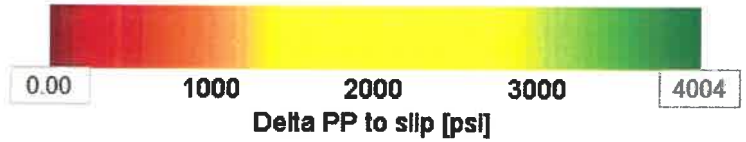
Fault #1
Fault #2
Fault #3
Fault #4
Fault #5
Fault #6
Fault #7
Fault #8
Fault #9

Calculate

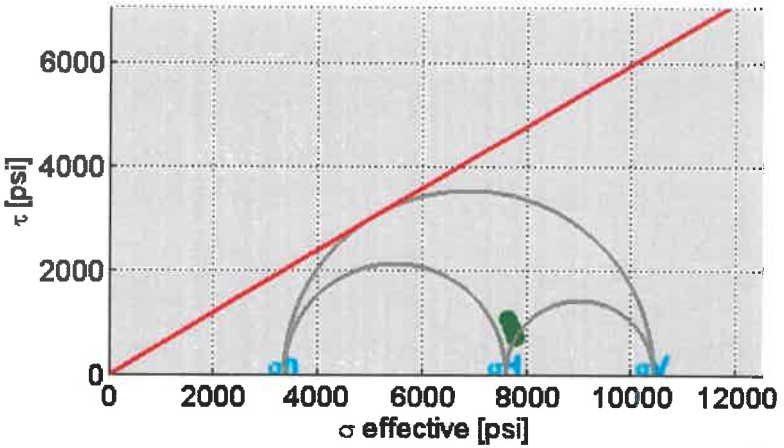
Choose Plot Labels

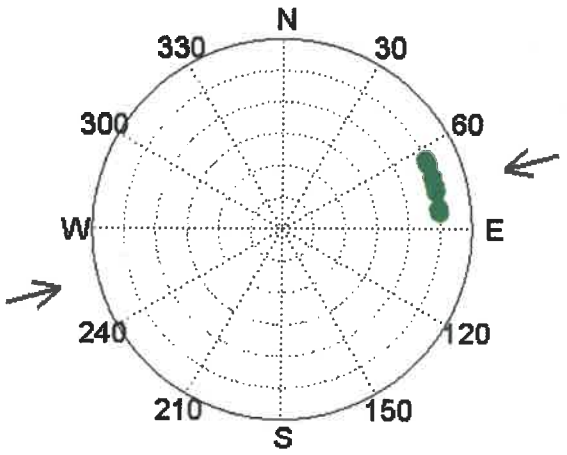
Help





Stress Regime: Normal Faulting





Stereonet Show: Fault Normals

Exh. No. 6

Fault Slip Potential

Zoom

MODEL INPUTS | GEOMECHANICS | PROB. GEOM... | HYDROLOGY | PROB. HYDRO | INTEGRATED

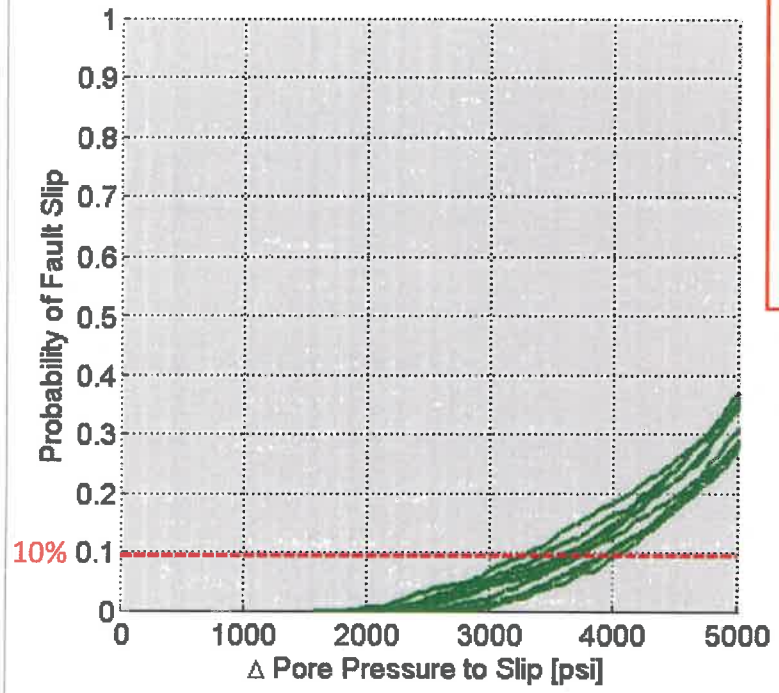
Fault Selector:

All Faults

Fault #1
Fault #2
Fault #3
Fault #4
Fault #5
Fault #6
Fault #7
Fault #8
Fault #9

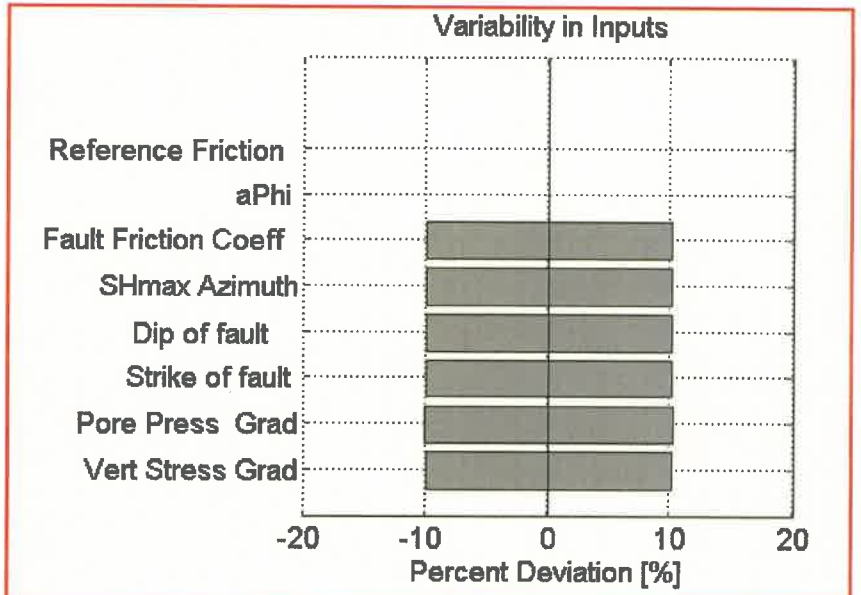
Calculate

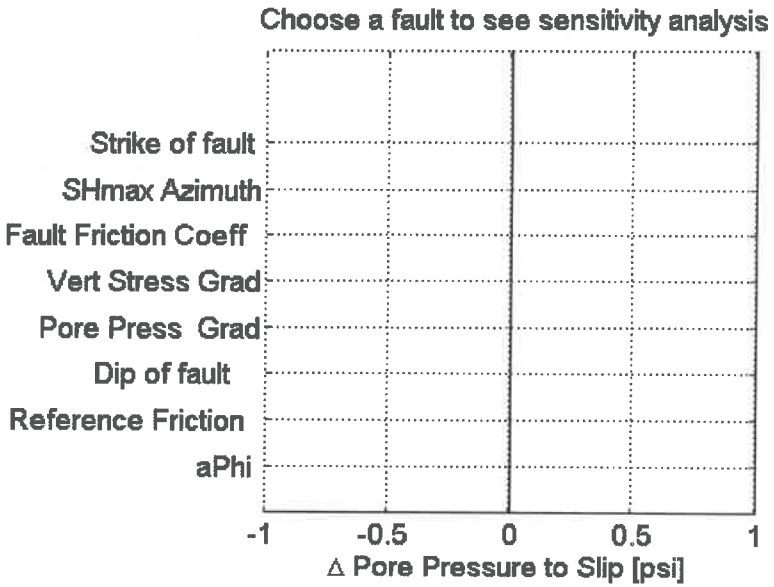
Load Distributions | Run Analysis



Max Delta PP [psi]: 5000

Export CDF data | Show Input Distributions





Exh. No. 7

File Zoom

Fault Slip Potential

MODEL INPUTS | GEOMECHANICS | PROB. GEOM... | HYDROLOGY | PROB. HYDRO | INTEGRATED

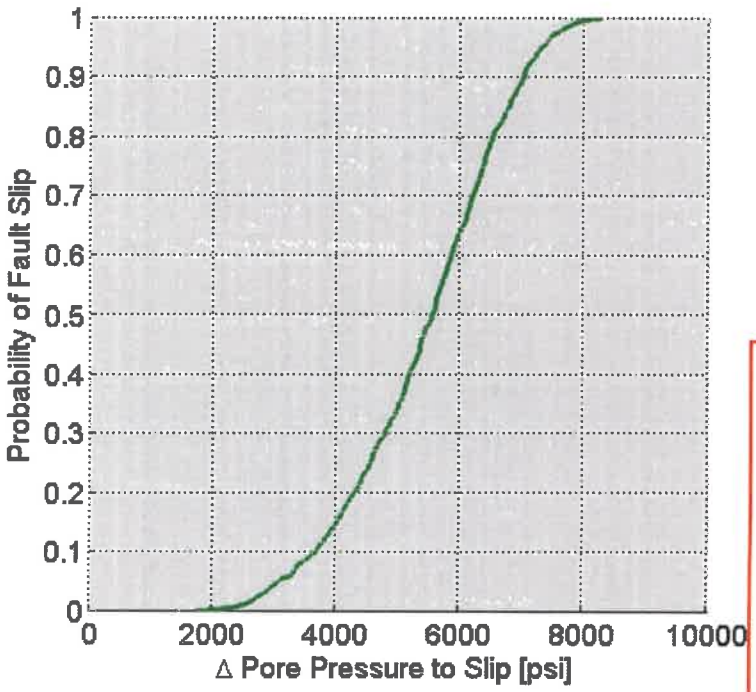
Fault Selector:

All Faults

Fault #1
Fault #2
Fault #3
Fault #4
Fault #5
Fault #6
Fault #7
Fault #8
Fault #9

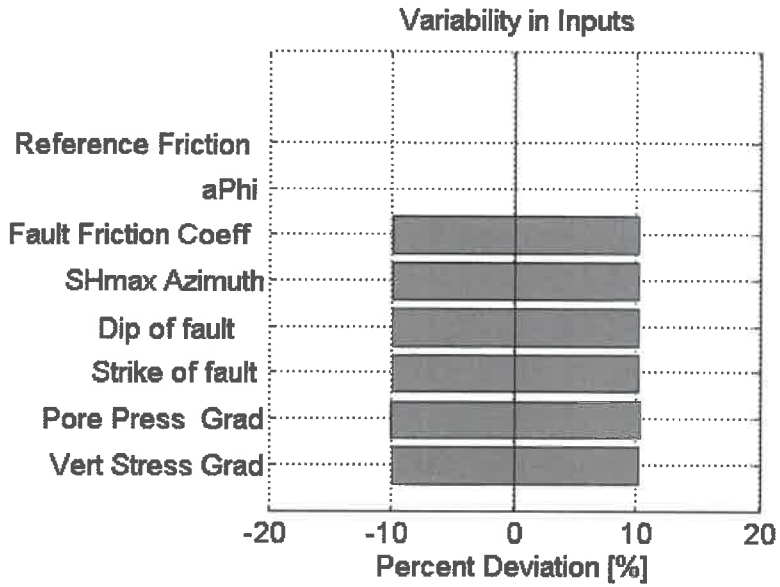
Calculate

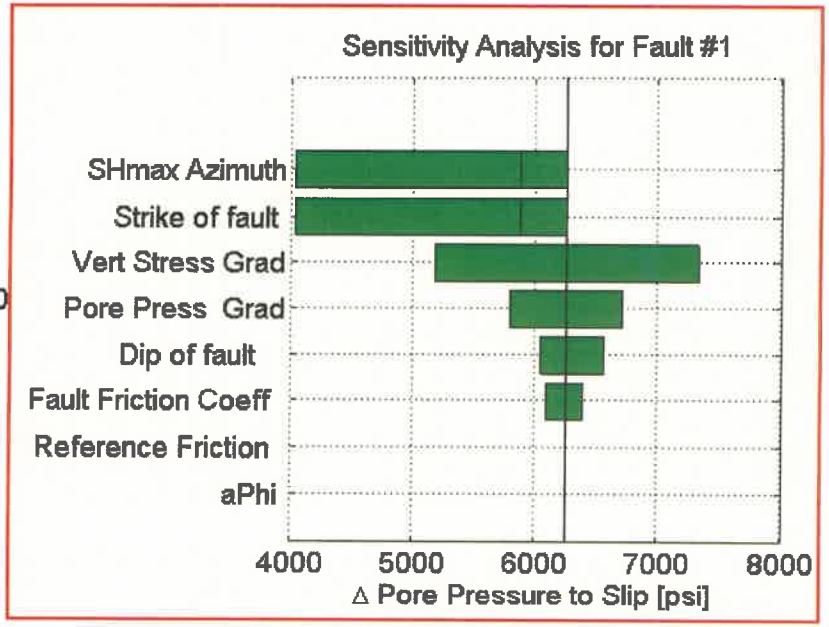
Load Distributions | Run Analysis



Max Delta PP [psi]: 10000

Export CDF data | Show Input Distributions





Exh. No. 8

File Zoom

Fault Slip Potential

MODEL INPUTS | GEOMECHANICS | PROB. GEOM... | HYDROLOGY | PROB. HYDRO | INTEGRATED

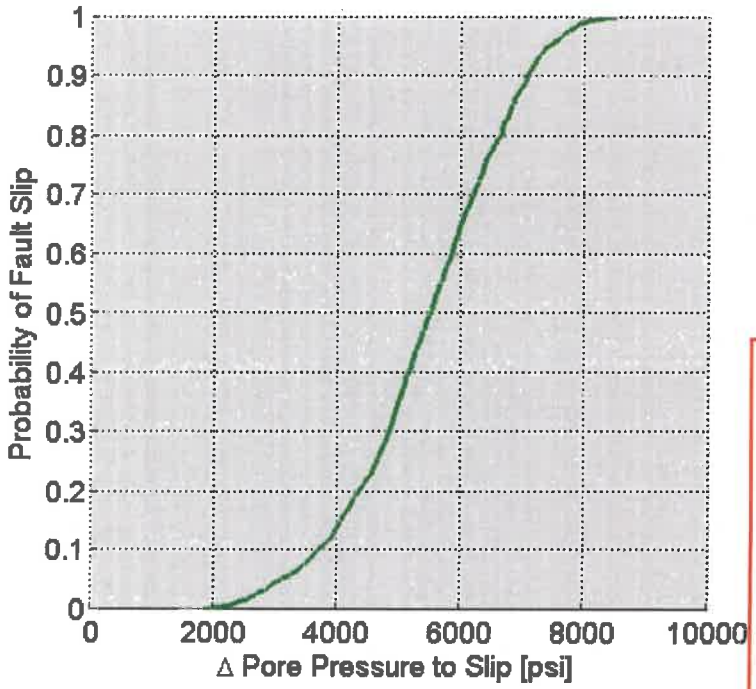
Fault Selector:

All Faults

Fault #1
Fault #2
Fault #3
Fault #4
Fault #5
Fault #6
Fault #7
Fault #8
Fault #9

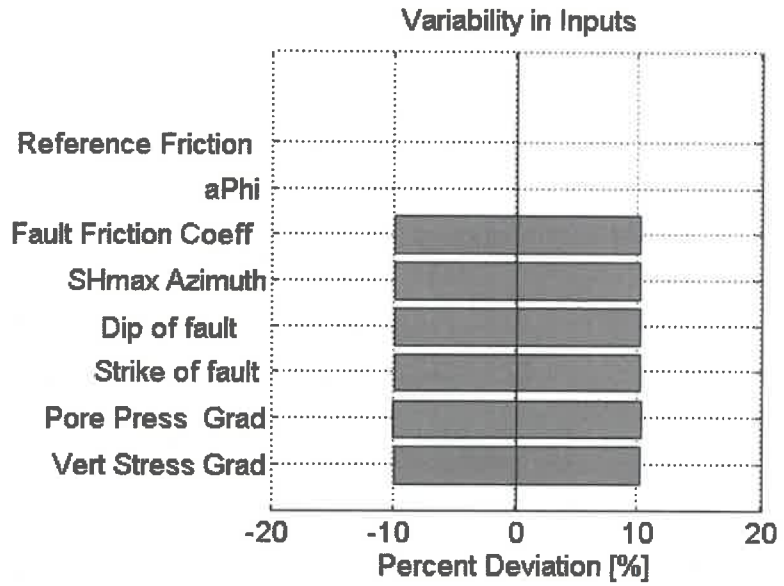
Calculate

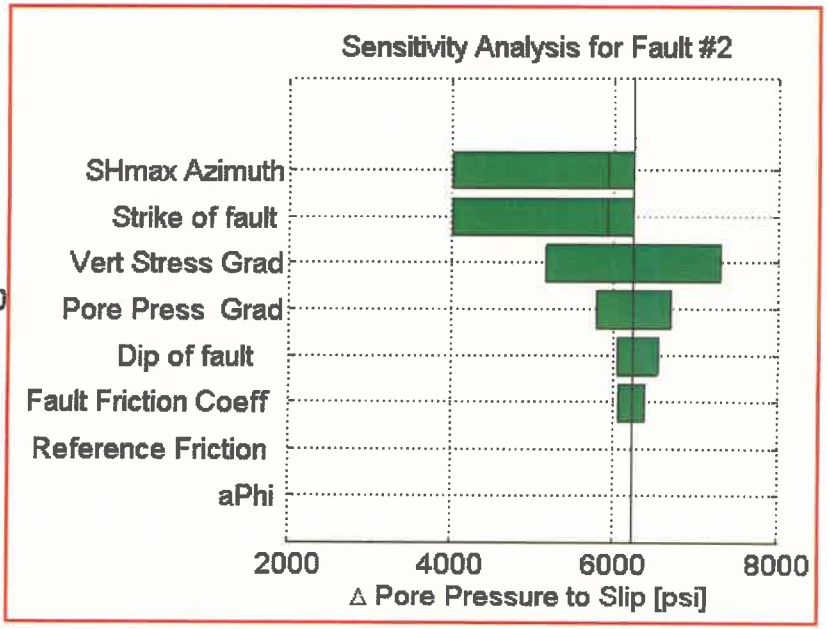
Load Distributions | Run Analysis



Max Delta PP [psi]: 10000

Export CDF data | Show Input Distributions





Exh. No. 9

Fil Zoom

Fault Slip Potential

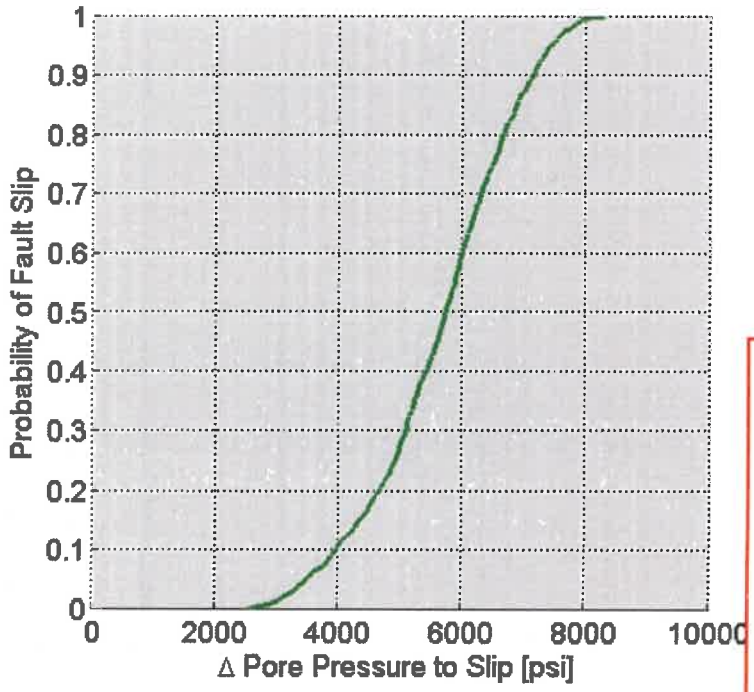
MODEL INPUTS | GEOMECHANICS | PROB. GEOM... | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

All Faults
Fault #1
Fault #2
Fault #3
Fault #4
Fault #5
Fault #6
Fault #7
Fault #8
Fault #9

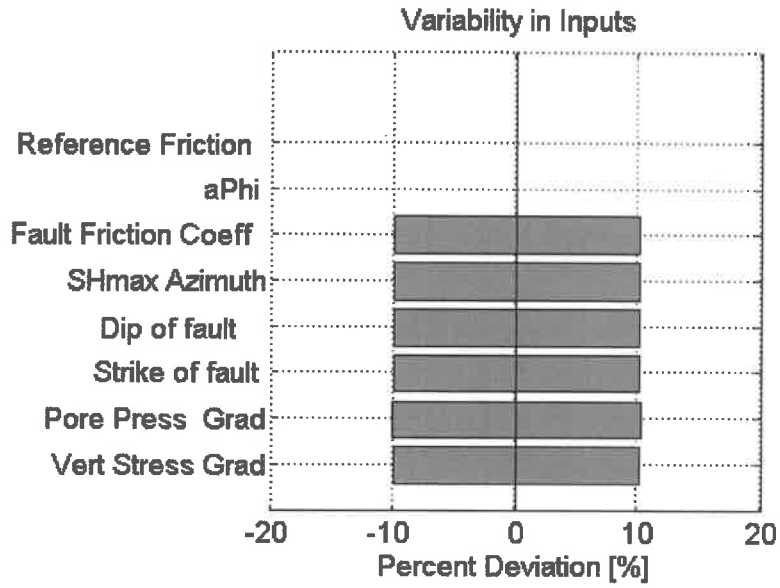
Calculate

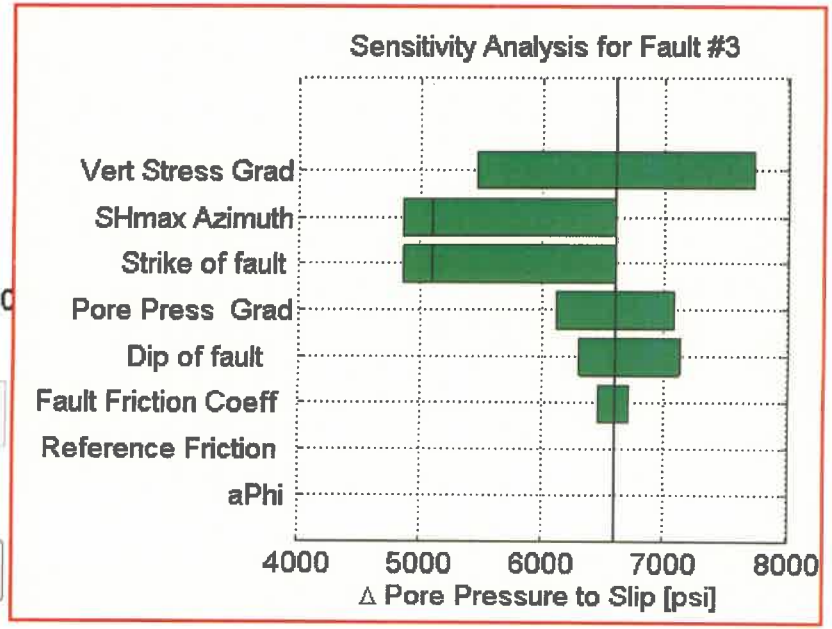
Load Distributions | Run Analysis



Max Delta PP [psi]: 10000

Export CDF data | Show Input Distributions





Exh. No. 10

Fault Slip Potential

MODEL INPUTS | GEOMECHANICS | PROB. GEOM... | HYDROLOGY | PROB. HYDRO | INTEGRATED

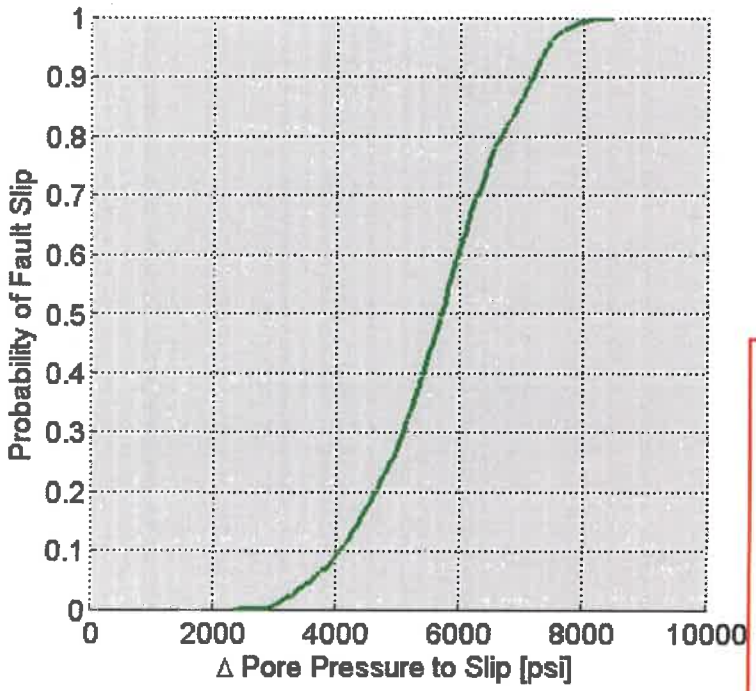
Fault Selector:

All Faults

Fault #1
Fault #2
Fault #3
Fault #4
Fault #5
Fault #6
Fault #7
Fault #8
Fault #9

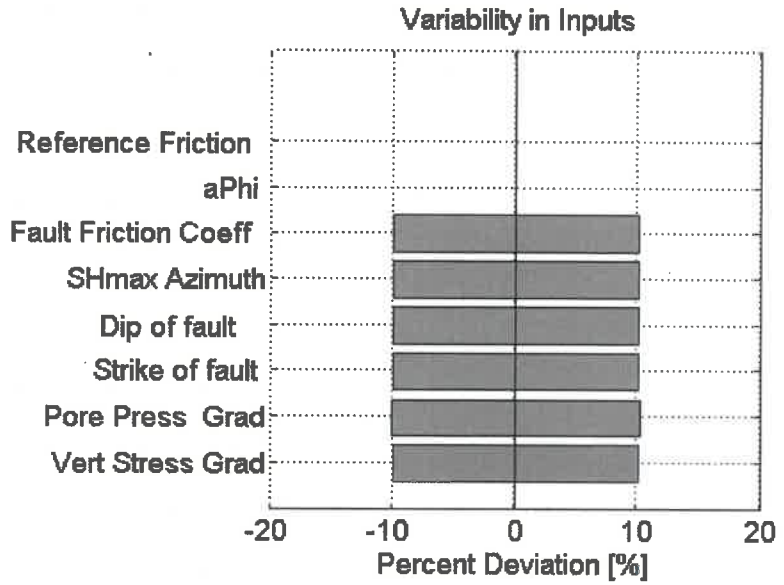
Calculate

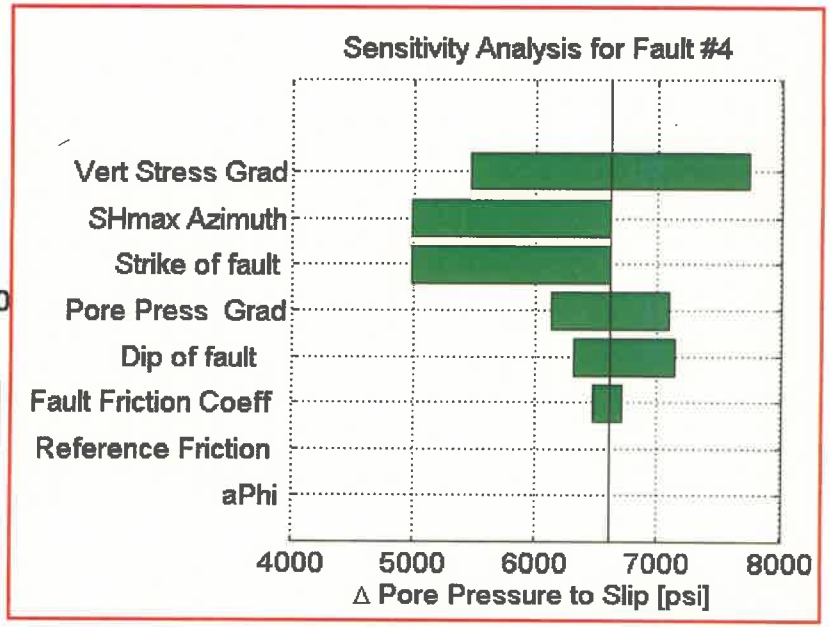
Load Distributions | Run Analysis



Max Delta PP [psi]: 10000

Export CDF data | Show Input Distributions





Exh. No. 11

Fault Slip Potential

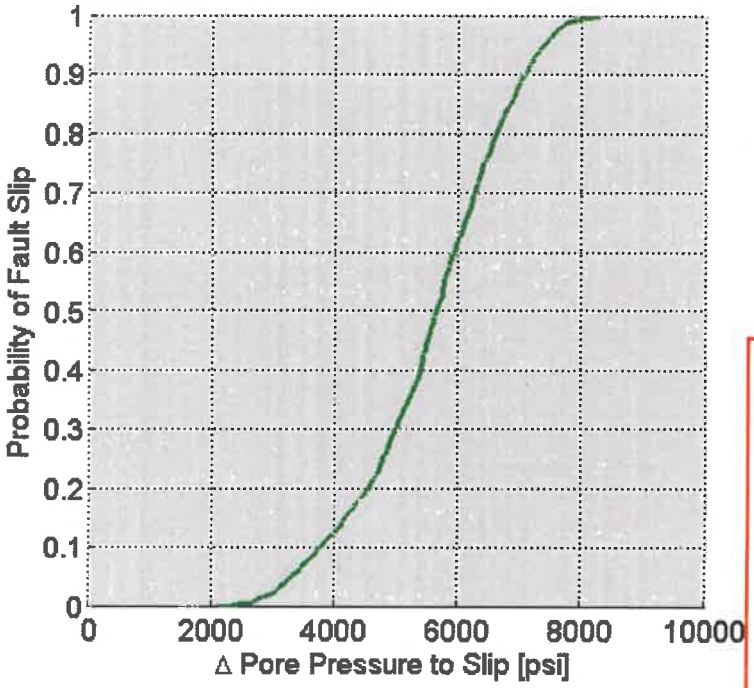
MODEL INPUTS | GEOMECHANICS | PROB. GEOM... | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

All Faults
Fault #1
Fault #2
Fault #3
Fault #4
Fault #5
Fault #6
Fault #7
Fault #8
Fault #9

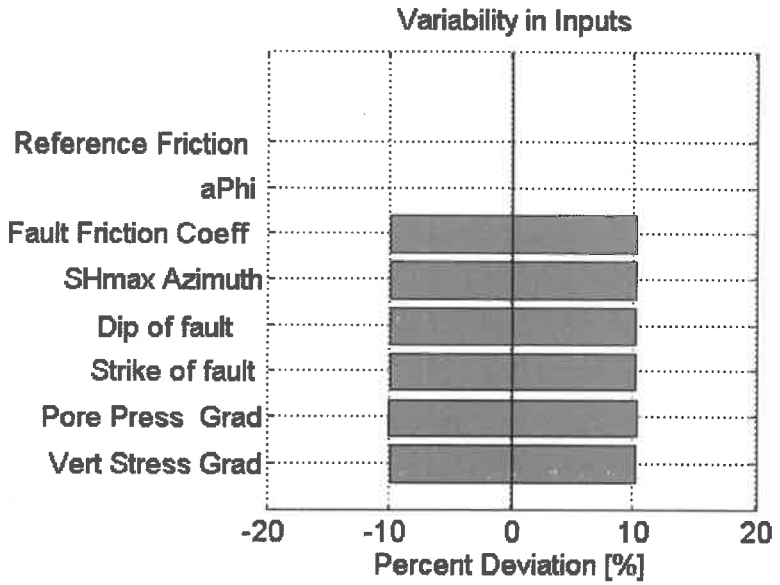
Calculate

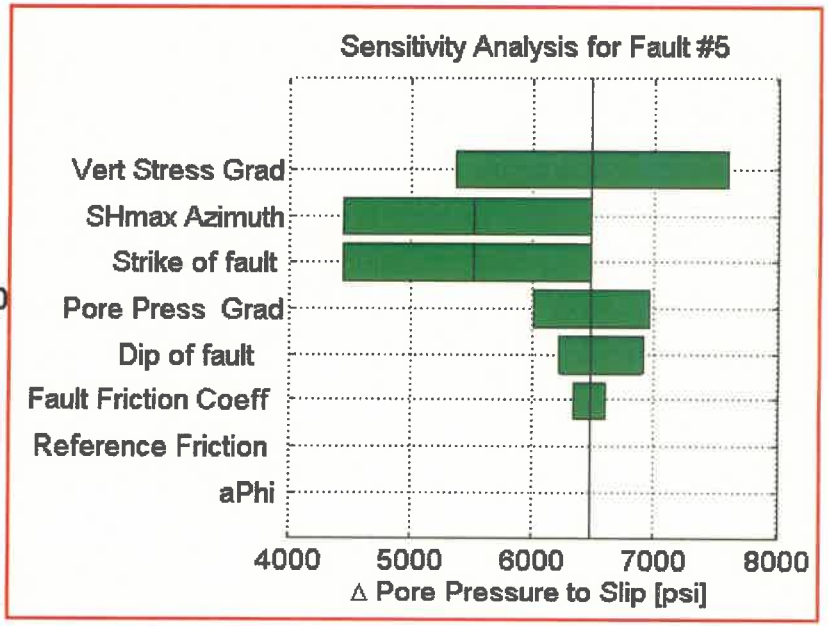
Load Distributions | Run Analysis



Max Delta PP [psi]: 10000

Export CDF data | Show Input Distributions





Exh. No. 12

Fault Slip Potential

MODEL INPUTS | GEOMECHANICS | PROB. GEOM... | HYDROLOGY | PROB. HYDRO | INTEGRATED

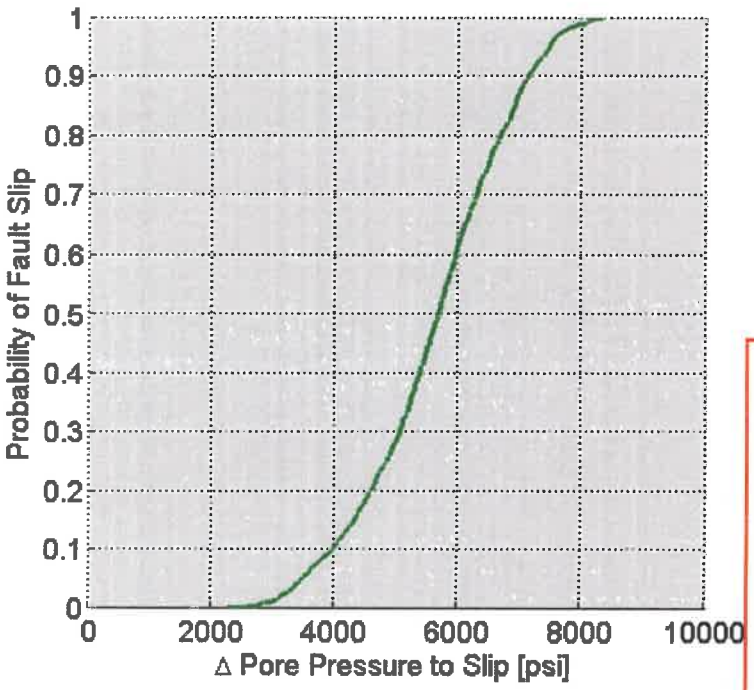
Fault Selector:

All Faults

Fault #1
Fault #2
Fault #3
Fault #4
Fault #5
Fault #6
Fault #7
Fault #8
Fault #9

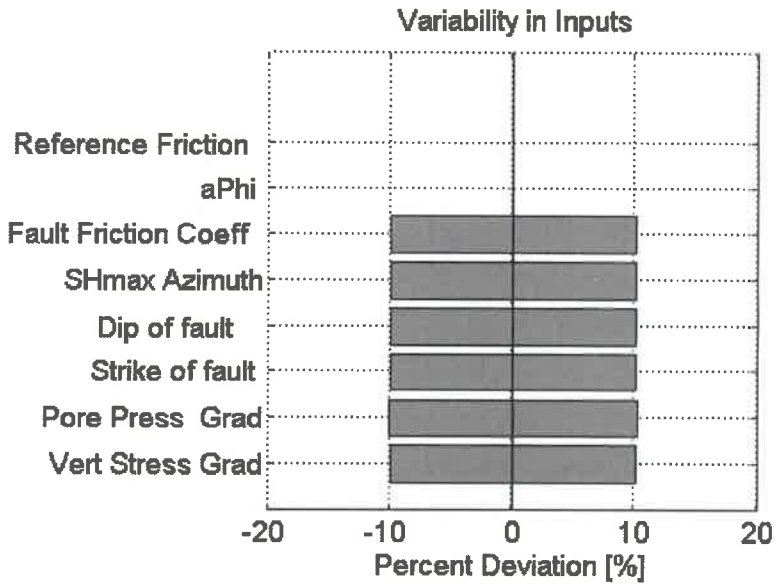
Calculate

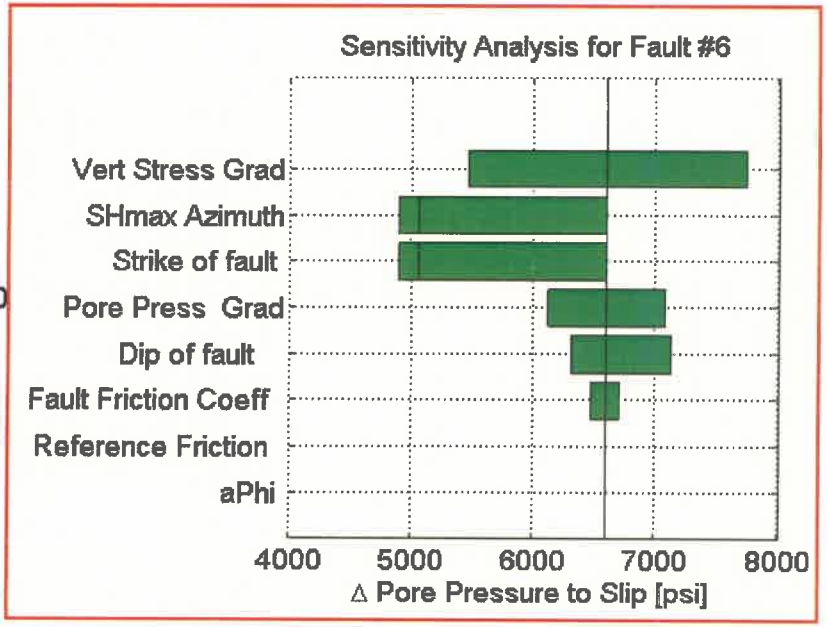
Load Distributions | Run Analysis



Max Delta PP [psi]: 10000

Export CDF data | Show Input Distributions





Exh. No. 13

Fault Slip Potential

MODEL INPUTS | GEOMECHANICS | PROB. GEOM... | HYDROLOGY | PROB. HYDRO | INTEGRATED

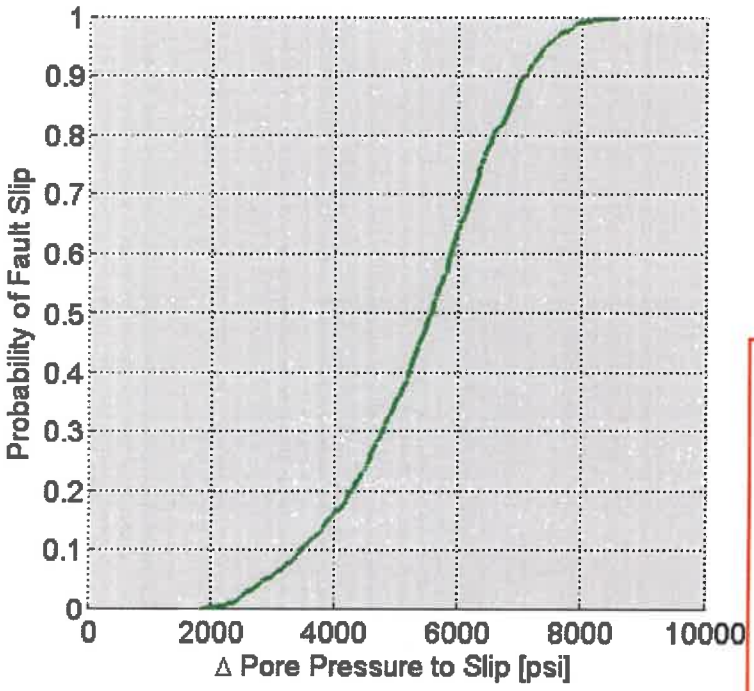
Fault Selector:

All Faults

Fault #1
Fault #2
Fault #3
Fault #4
Fault #5
Fault #6
Fault #7
Fault #8
Fault #9

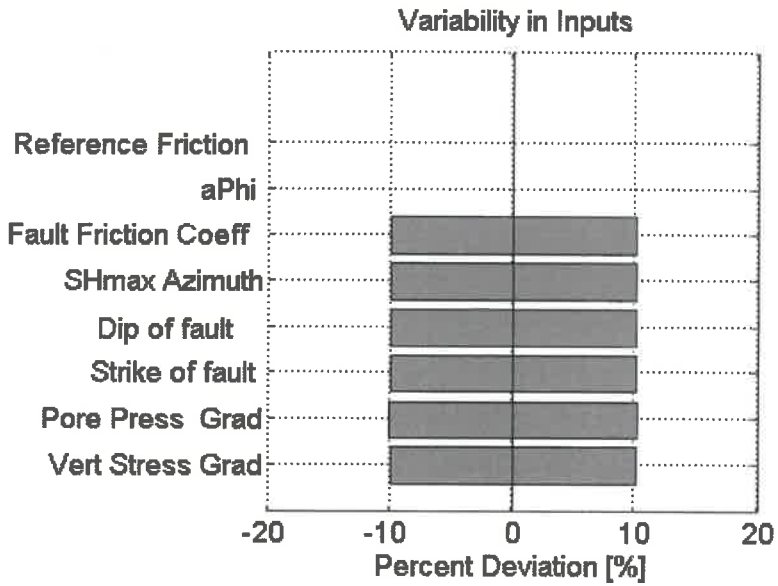
Calculate

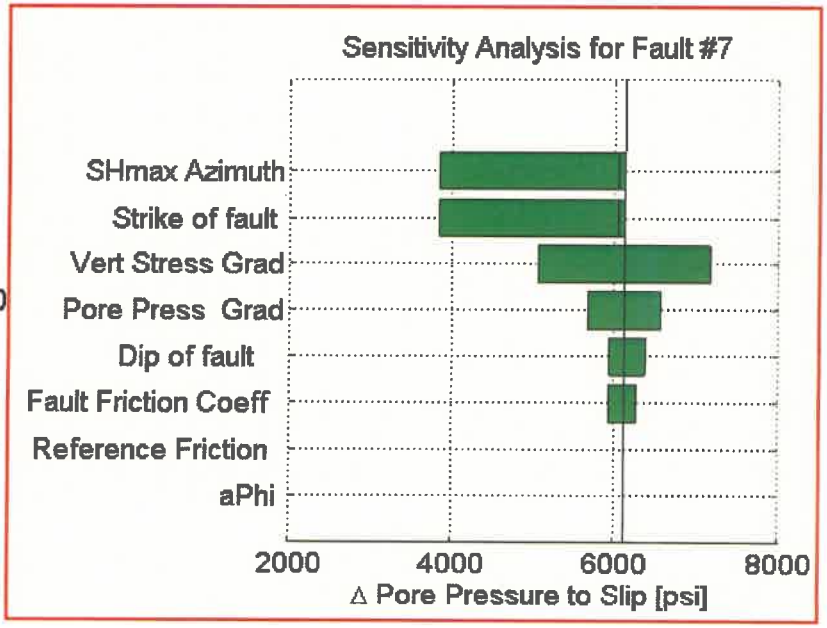
Load Distributions | Run Analysis



Max Delta PP [psi]: 10000

Export CDF data | Show Input Distributions





Exh. No. 14

Fault Slip Potential

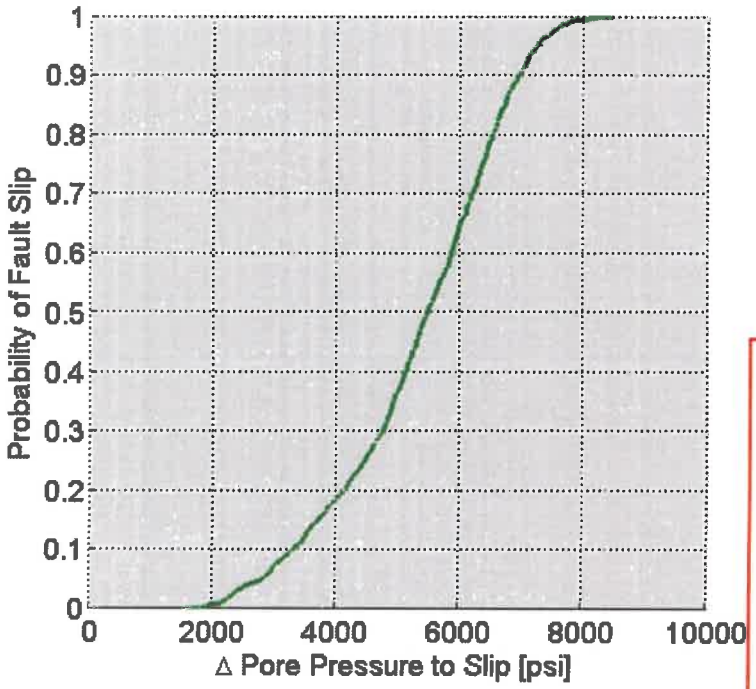
MODEL INPUTS | GEOMECHANICS | PROB. GEOM... | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

All Faults
Fault #1
Fault #2
Fault #3
Fault #4
Fault #5
Fault #6
Fault #7
Fault #8
Fault #9

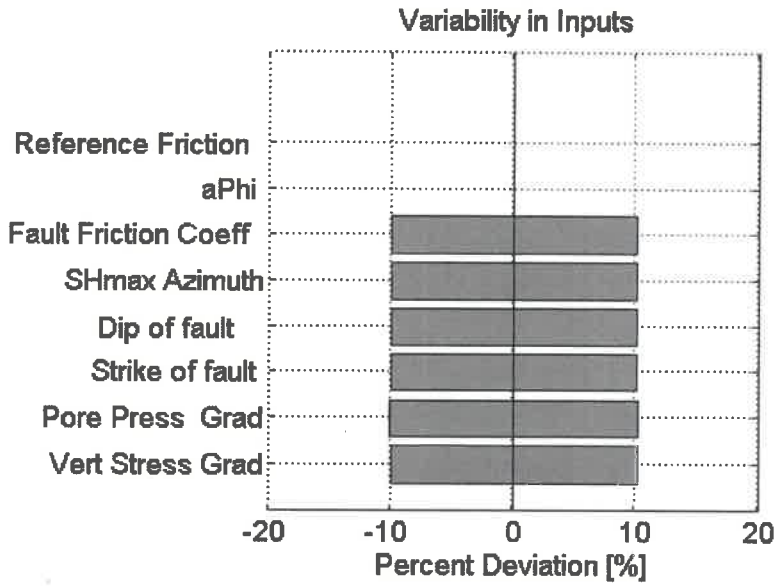
Calculate

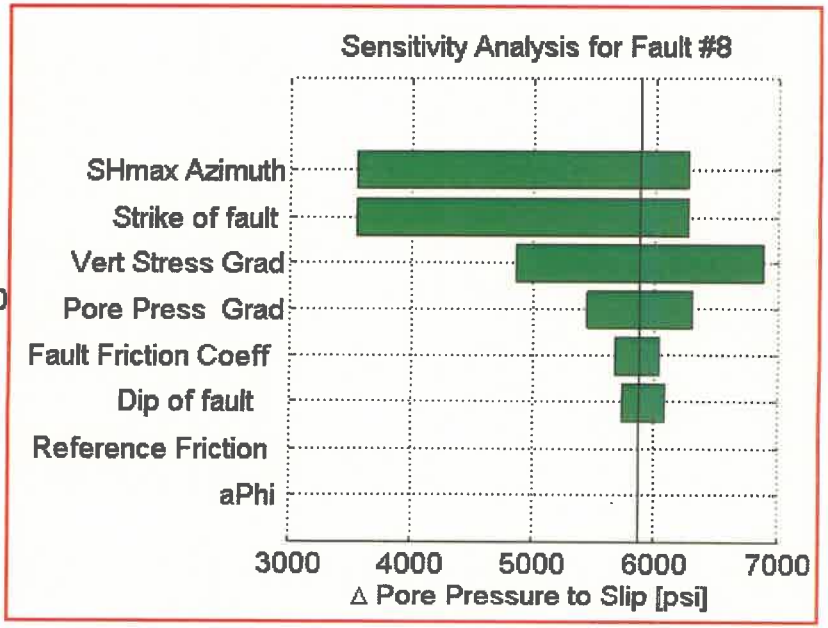
Load Distributions | Run Analysis



Max Delta PP [psi]: 10000

Export CDF data | Show Input Distributions





Exh. No. 15

Fault Slip Potential

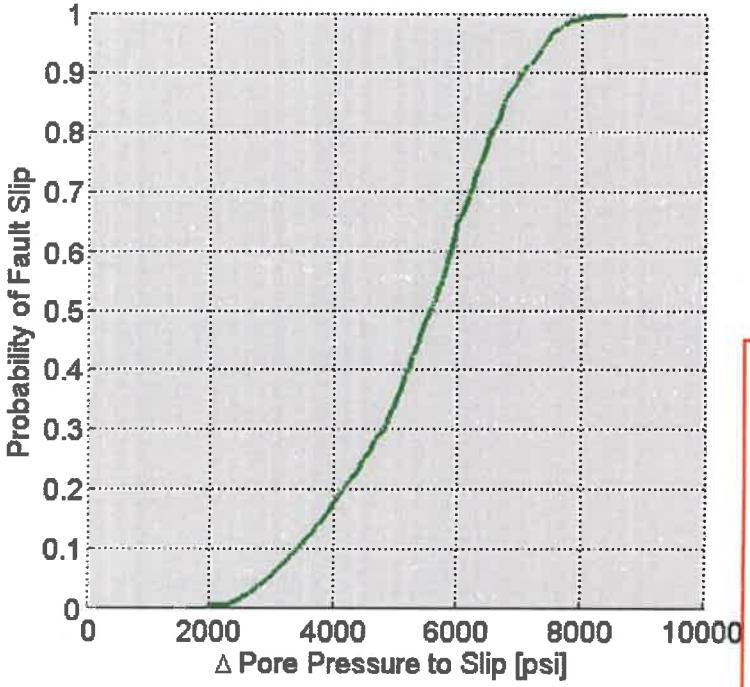
MODEL INPUTS | GEOMECHANICS | PROB. GEOM... | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

All Faults
Fault #1
Fault #2
Fault #3
Fault #4
Fault #5
Fault #6
Fault #7
Fault #8
Fault #9

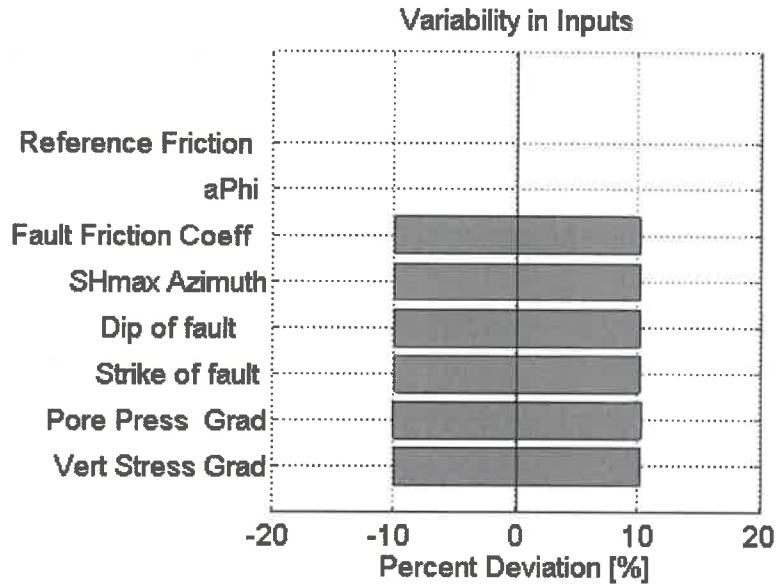
Calculate

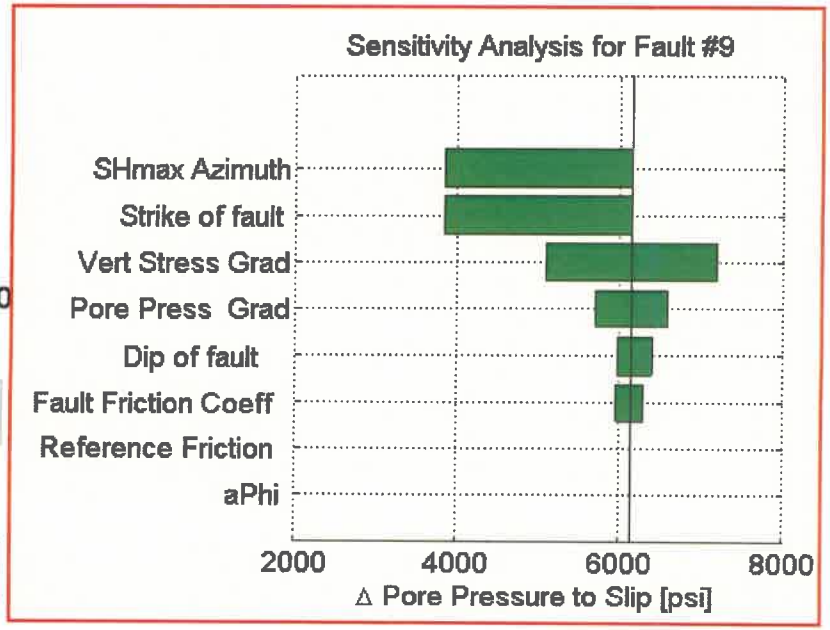
Load Distributions | Run Analysis



Max Delta PP [psi]: 10000

Export CDF data | Show Input Distributions





Exh. No. 16

Fault Slip Potential

MODEL INPUTS | GEOMECHANICS | PROB. GEOMECH | HYDROLOGY | PROB. HYDRO | INTEGRATED

Export

Fault Selector:

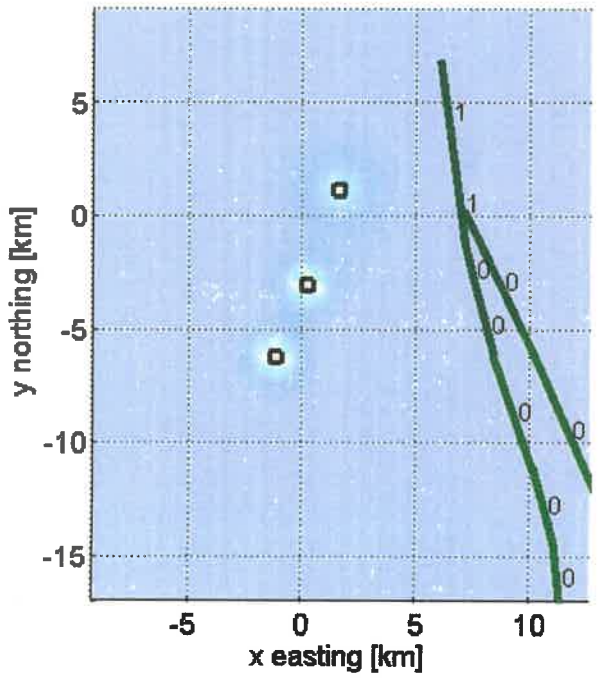
All Faults

Fault #1 0.00 FSP
Fault #2 0.00 FSP
Fault #3 0.00 FSP
Fault #4 0.00 FSP
Fault #5 0.00 FSP
Fault #6 0.00 FSP
Fault #7 0.00 FSP
Fault #8 0.00 FSP
Fault #9 0.00 FSP

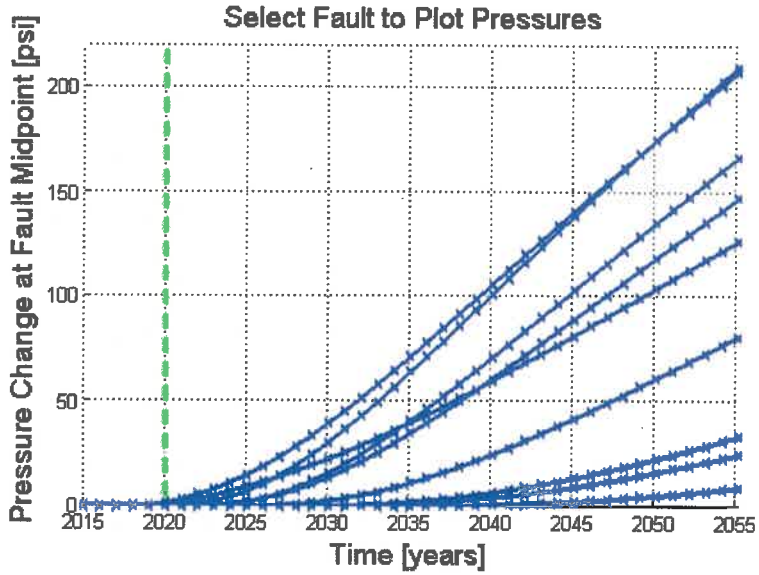
Calculate

b) PP Change at fault [psi]

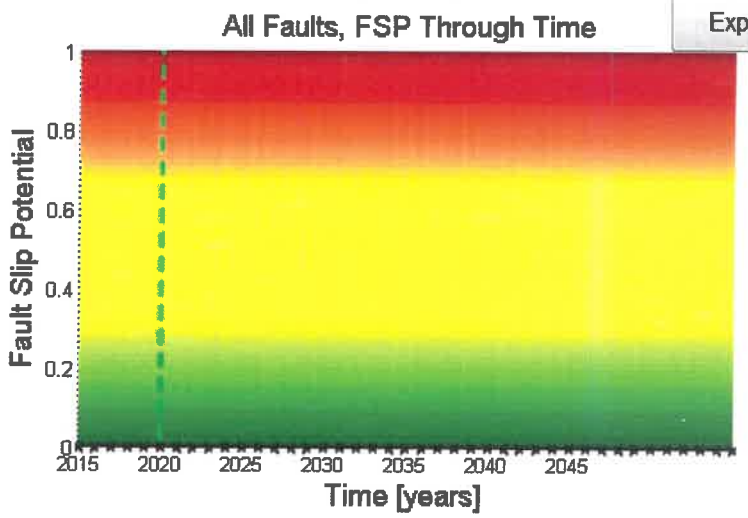
Summary Plots



Year: 2020



Export



Exh. No. 17

Fault Slip Potential

MODEL INPUTS | GEOMECHANICS | PROB. GEOMECH | HYDROLOGY | PROB. HYDRO | INTEGRATED

Export

Fault Selector:

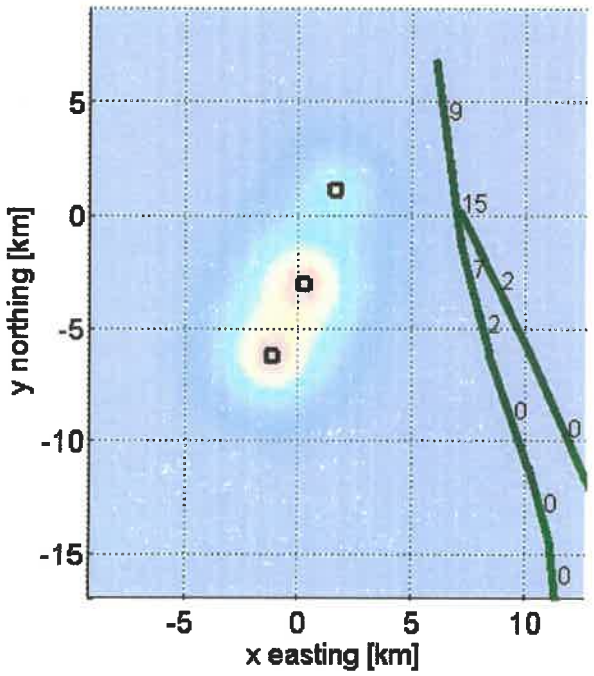
All Faults

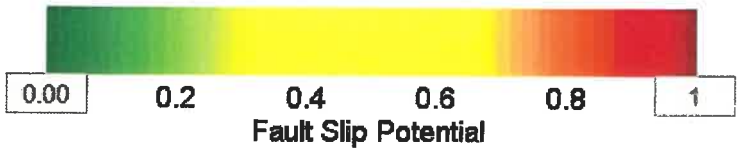
Fault #1 0.00 FSP
Fault #2 0.00 FSP
Fault #3 0.00 FSP
Fault #4 0.00 FSP
Fault #5 0.00 FSP
Fault #6 0.00 FSP
Fault #7 0.00 FSP
Fault #8 0.00 FSP
Fault #9 0.00 FSP

Calculate

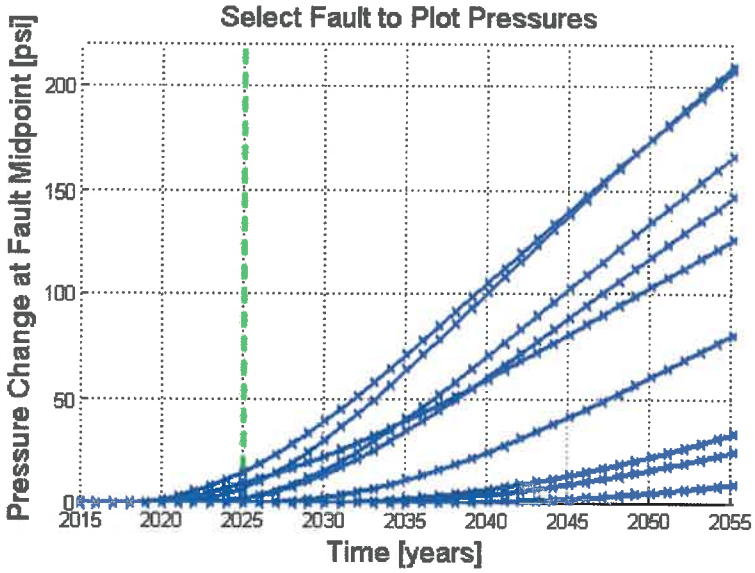
b) PP Change at fault [psi]

Summary Plots

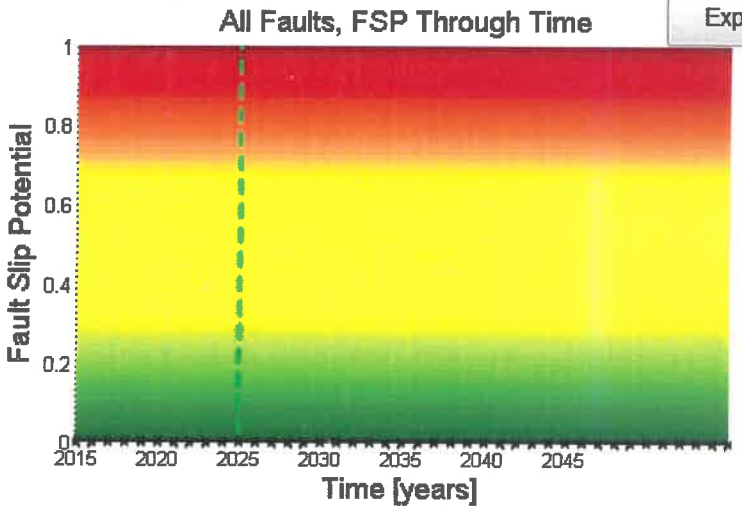




Year: 2025



Export



Exh. No. 18

Fault Slip Potential

MODEL INPUTS | GEOMECHANICS | PROB. GEOMECH | HYDROLOGY | PROB. HYDRO | INTEGRATED

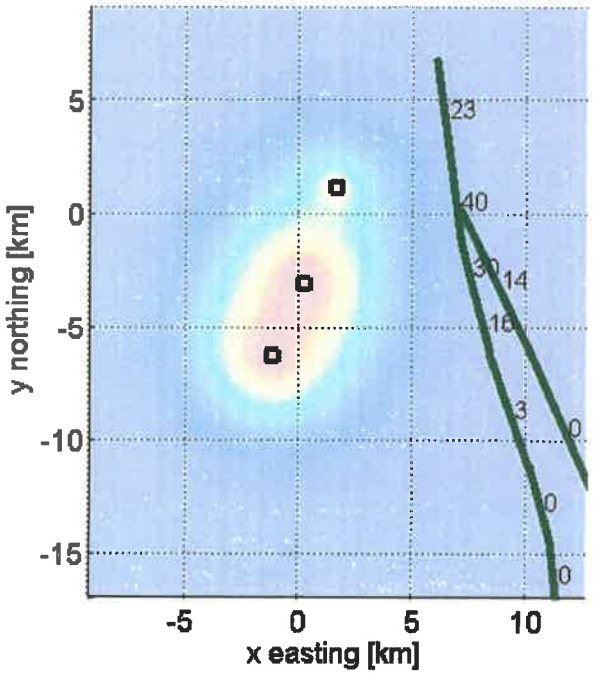
Fault Selector:

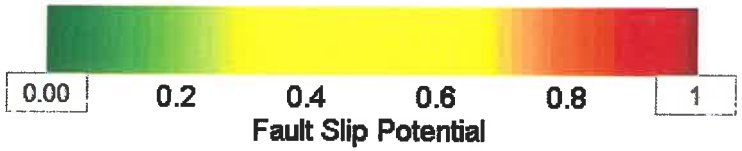
All Faults
Fault #1 0.00 FSP
Fault #2 0.00 FSP
Fault #3 0.00 FSP
Fault #4 0.00 FSP
Fault #5 0.00 FSP
Fault #6 0.00 FSP
Fault #7 0.00 FSP
Fault #8 0.00 FSP
Fault #9 0.00 FSP

Calculate

b) PP Change at fault [psi]

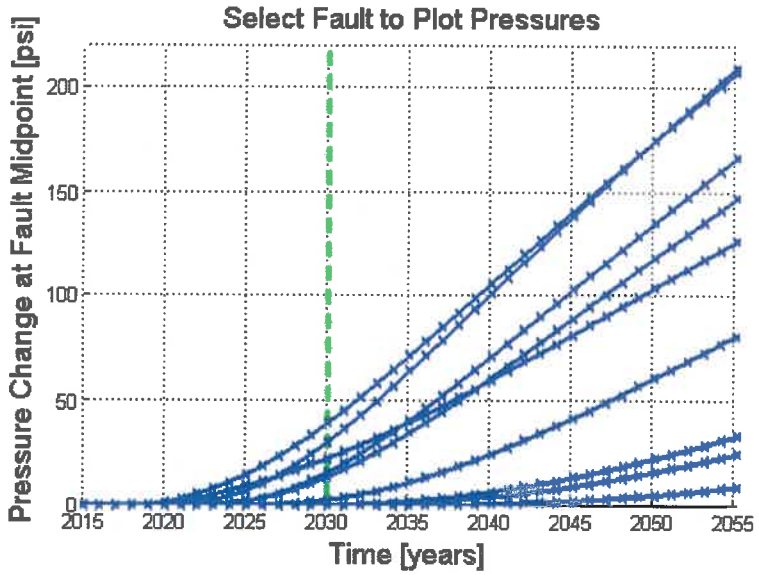
Summary Plots





Year: 2030

Export



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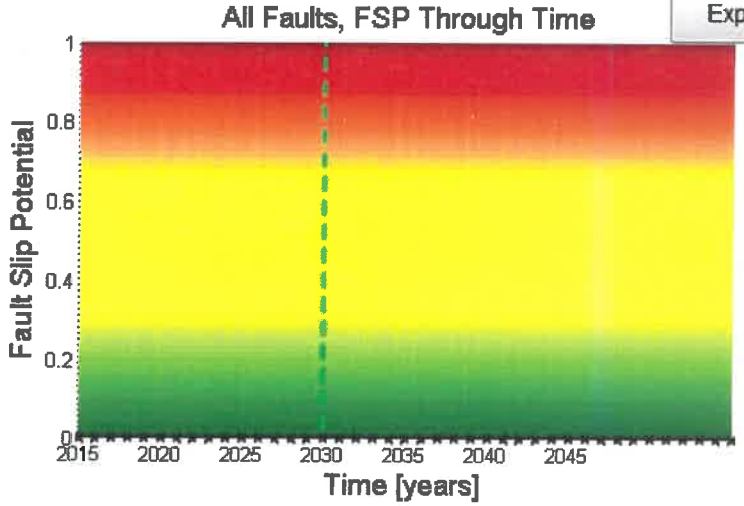


Exh. No. 19

Fault Slip Potential

MODEL INPUTS | GEOMECHANICS | PROB. GEOMECH | HYDROLOGY | PROB. HYDRO | INTEGRATED

Export

Fault Selector:

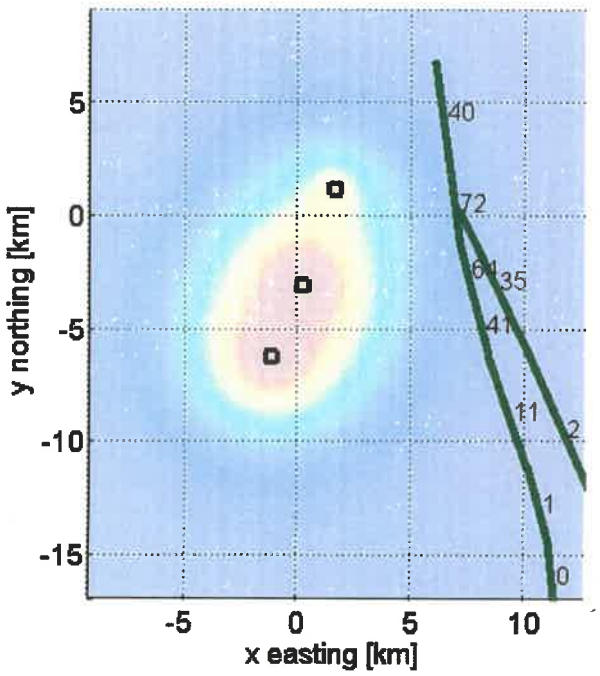
All Faults

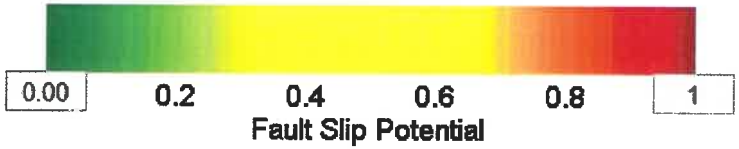
Fault #1 0.00 FSP
Fault #2 0.00 FSP
Fault #3 0.00 FSP
Fault #4 0.00 FSP
Fault #5 0.00 FSP
Fault #6 0.00 FSP
Fault #7 0.00 FSP
Fault #8 0.00 FSP
Fault #9 0.00 FSP

Calculate

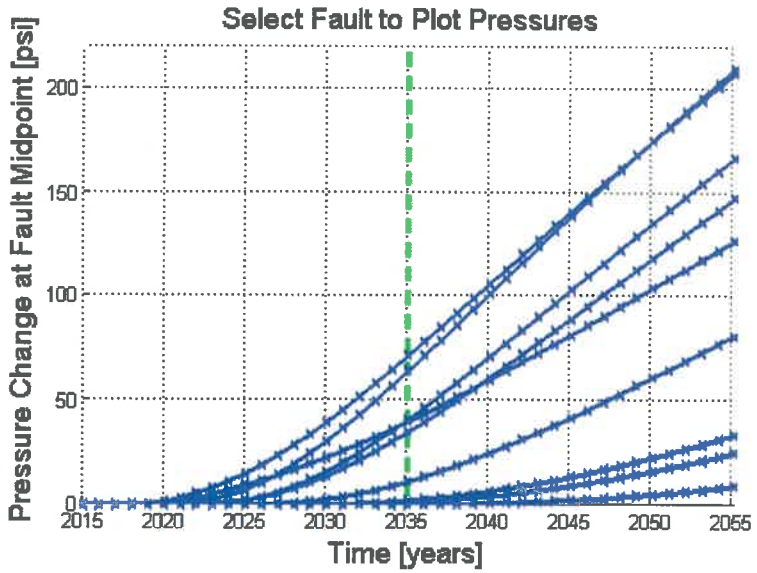
b) PP Change at fault [psi]

Summary Plots





Year: 2035



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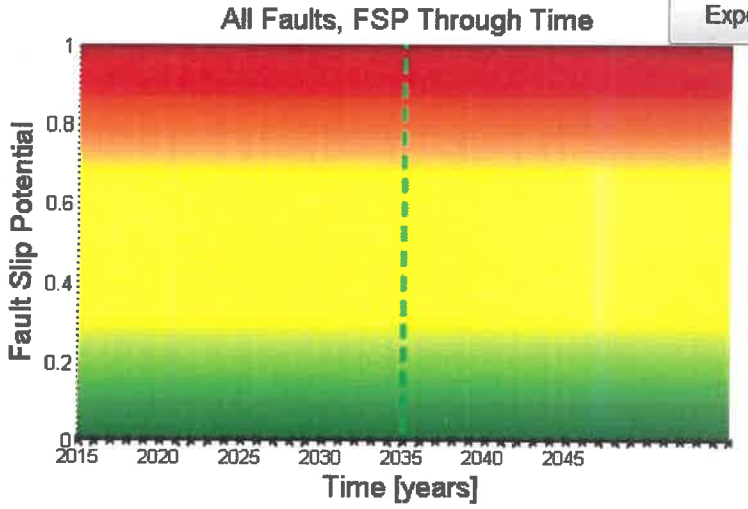


Exh. No. 20

Fault Slip Potential

MODEL INPUTS | GEOMECHANICS | PROB. GEOMECH | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

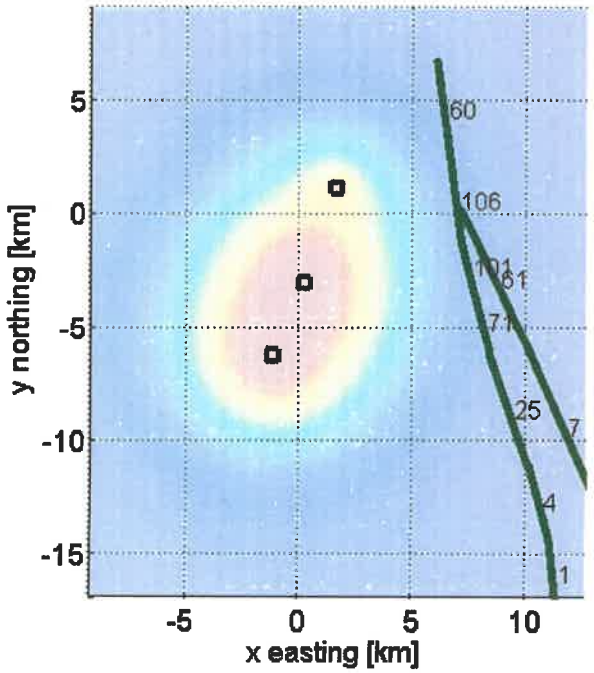
All Faults

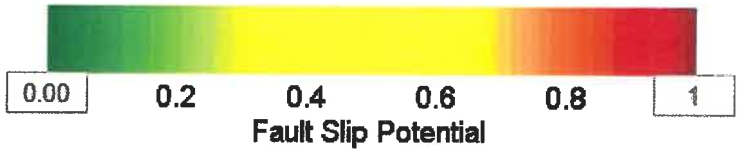
Fault #1 0.00 FSP
Fault #2 0.00 FSP
Fault #3 0.00 FSP
Fault #4 0.00 FSP
Fault #5 0.00 FSP
Fault #6 0.00 FSP
Fault #7 0.00 FSP
Fault #8 0.00 FSP
Fault #9 0.00 FSP

Calculate

b) PP Change at fault [psi]

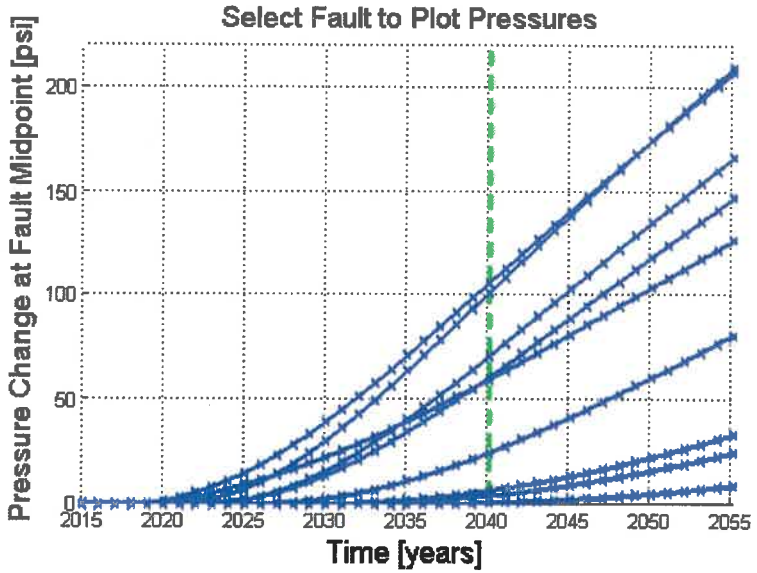
Summary Plots





Year: 2040

Export



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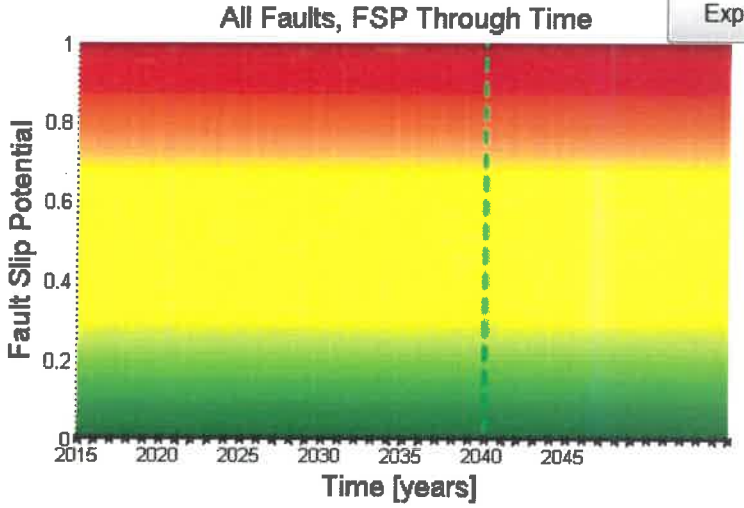


Fault Slip Potential v1.07

File Data Inputs Export Image Zoom

Fault Slip Potential

MODEL INPUTS | GEOMECHANICS | PROB. GEOMECH | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

All Faults

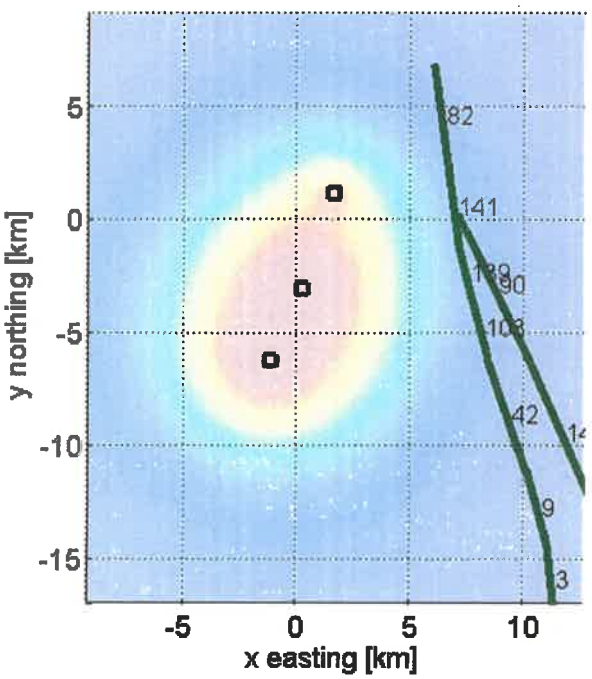
Fault #1, 0.00 FSP
Fault #2, 0.00 FSP
Fault #3, 0.00 FSP
Fault #4, 0.00 FSP
Fault #5, 0.00 FSP
Fault #6, 0.00 FSP
Fault #7, 0.00 FSP
Fault #8, 0.00 FSP
Fault #9, 0.00 FSP

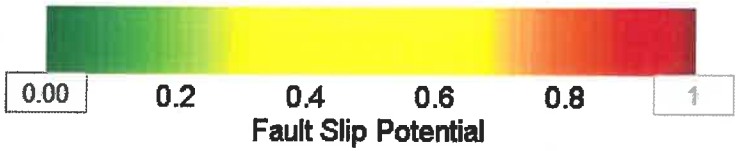
Calculate

Export

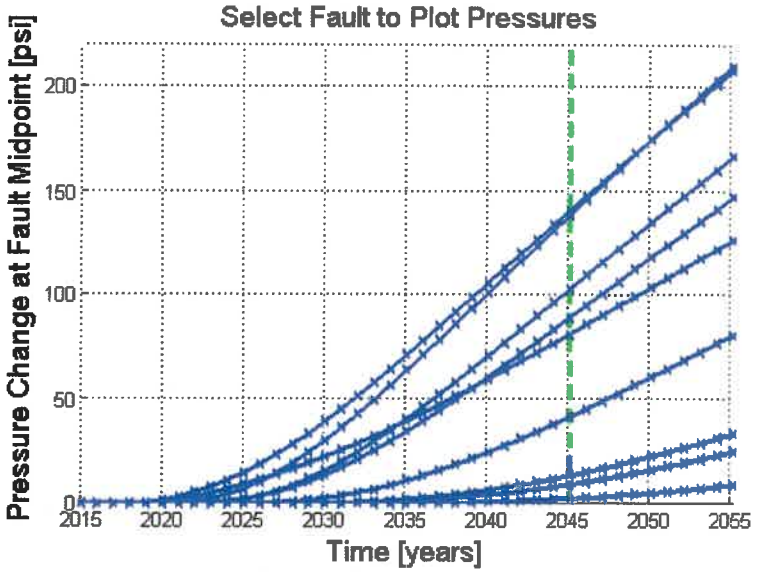
b) PP Change at fault [psi]

Summary Plots





Year: 2045



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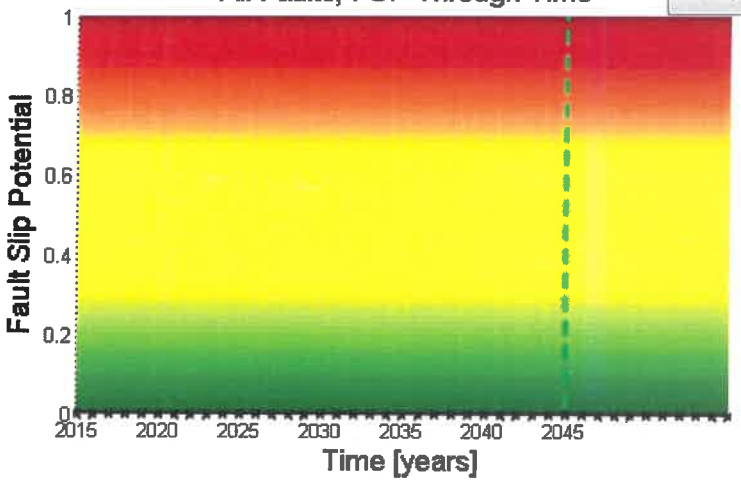


DECLARATION OF STEVEN NAVE

I, Steven Nave, declare under penalty of perjury under the law of New Mexico that the following is true and correct to the best of my knowledge and belief.

1. I am over eighteen (18) years of age and am otherwise competent to make this declaration.

2. I am the president of Nave Oil and Gas, which is a fishing tool company that performs fishing operations in several areas, including the area of Southeastern, New Mexico.

3. I worked as a fisherman for Star Tool Company, a fishing tool company, from 1980 until 2001. I later became a partner in Star Tool Company until that company was sold. I then later started my own company, Nave Oil and Gas, which also performs fishing operations. Over the years, I have developed expertise in fishing operations and I have performed fishing operations on Devonian salt water disposal wells located within Southeastern, New Mexico.

4. I am familiar with tubing and casing design requested by NGL Water Solutions Permian, LLC which consists of using tapered string tubing that is 7" x 5 1/2".

5. I have been informed that NGL's wells will be isolated to the Devonian and Silurian formations and will have four strings of casing protecting the fresh water, the salt interval, the Permian aged rocks through the Wolfcamp formation, and the depths to the top of the Devonian. There is a liner, and the deepest casing is 7 5/8", which will be cemented and cement will be circulated.

6. Based on my experience as a fisherman, it is my opinion that there is sufficient clearance between the 7 5/8" 39 pounds per foot or less casing and the proposed 5 ½" tubing to

perform fishing operations. My company regularly performs fishing operations in situations involving similar dimensions and clearances.

7. Fishing can be performed through different methods when 7 5/8" 39 pounds per foot or less casing and the proposed 5 ½" tubing is utilized; such as through the use of overshot tools, spear fishing tools, and (if needed) cutting tools.

8. The use of 7 5/8" 39 pounds per foot or less casing and the proposed 5 ½" tubing will actually allow for the use of a wider variety of fishing tools that cannot typically be used within salt water disposal wells equipped with smaller tubing and casing sizes. This is because there is more room to run tools through the inside of the tubing. Additionally, it is my opinion that it is easier to perform fishing operations when 5 ½" tubing is used.

9. Recently, I supervised a fishing job which involved a horizontal Wolfcamp well which was equipped with casing with a diameter of 7 5/8" 39 pounds per foot or less and casing with a diameter of 5 ½". In that situation, my company was able to mill off the collar and use overshot tools to latch on to the piping that needed to be fished out of the well.

10. In my opinion, fishing operations could be successfully performed even at deeper depths for Devonian disposal wells provided that a sufficient rig is obtained for the operation.

[Signature Page Follows.]

Steven Nave

Stephan Nave

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

APPLICATION OF NGL WATER SOLUTIONS PERMIAN, LLC FOR APPROVAL OF SALT WATER DISPOSAL WELL IN LEA COUNTY, NEW MEXICO

CASE NO. 20063

APPLICATION OF NGL WATER SOLUTIONS PERMIAN, LLC FOR APPROVAL OF SALT WATER DISPOSAL WELL IN LEA COUNTY, NEW MEXICO

CASE NO. 20084

APPLICATION OF NGL WATER SOLUTIONS PERMIAN, LLC FOR APPROVAL OF SALT WATER DISPOSAL WELL IN LEA COUNTY, NEW MEXICO

CASE NO. 20093

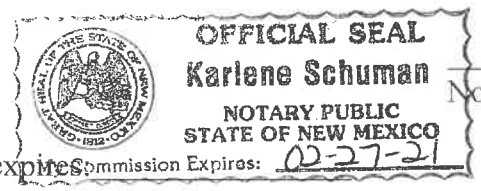
AFFIDAVIT

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

Deana M. Bennett, attorney in fact and authorized representative of NGL Water Solutions Permian LLC, the Applicant herein, being first duly sworn, upon oath, states that the above-referenced Applications were provided under a notice letter and that proof of receipt is attached hereto.

Deana M. Bennett

SUBSCRIBED AND SWORN to before me this 14th day of November, 2018 by Deana M. Bennett.



Karlene Schuman

Notary Public

My commission expires:

Falcon Mailing

Karlene Schuman
Modrall Sperling Roehl Harris & Sisk P.A.
500 Fourth Street, Suite 1000
Albuquerque NM 87102

PS Form 3877

Type of Mailing: CERTIFIED
10/24/2018

0003

Firm Mailing Book ID: 154182

Line	Article Number	Name, Street & P.O. Address	Postage	Fee	R.R.Fee	Reference	Rest.Del.Fee Contents
1	9314 8699 0430 0052 1120 69	NGL WATER SOLUTIONS PERMIAN, LLC 1509 W Wall St., Ste. 306 Midalnd TX 79701	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
2	9314 8699 0430 0052 1120 76	NEW MEXICO STATE LAND OFFICE P.O. Box 1148 Santa Fe NM 87504	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
3	9314 8699 0430 0052 1120 83	BUREAU OF LAND MGMT 301 Dinosaur Trail Santa Fe NM 87508	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
4	9314 8699 0430 0052 1120 90	EOG RESOURCES INC P.O. Box 2267 Midland TX 79702	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
5	9314 8699 0430 0052 1121 06	EOG RESOURCES INC 333 CLAY ST #4200 Houston TX 77002	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
		Totals:	**$8.15**	**$17.25**	**$7.50**		**$0.00**
						Grand Total:	**$32.90**

List Number of Pieces Listed by Sender	Total Number of Pieces Received at Post Office	Postmaster: Name of receiving employee	Dated:
5			

Transaction Report Details - CertifiedPro.net
Firm Mail Book ID= 154182
Generated: 11/14/2018 7:52:23 AM

Certified Mail Article Number	Date Created	Name 1	Address	City	State	Zip	Certified Mailing Status	Service Options	Mail Delivery Date
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9314869904300052112090	2018-10-24 10:15 AM	EOG RESOURCES INC	P.O. Box 2267	Midland	TX	79702	Undelivered	Return Receipt - Electronic	
9314869904300052112083	2018-10-24 10:15 AM	BUREAU OF LAND MGMT	301 Dinosaur Trail	Santa Fe	NM	87508	Undelivered	Return Receipt - Electronic	
9314869904300052112076	2018-10-24 10:15 AM	NEW MEXICO STATE LAND OFFICE	P.O. Box 1148	Santa Fe	NM	87504	Delivered	Return Receipt - Electronic	10-26-2018
9314869904300052112069	2018-10-24 10:15 AM	NGL WATER SOLUTIONS PERMIAN, LLC	1509 W Wall St., Ste. 3	Midalnd	TX	79701	Delivered	Return Receipt - Electronic	10-29-2018

Transaction Details

Recipient:
EOG RESOURCES INC
333 CLAY ST #4200
Houston, TX 77002

Sender:
Karlene Schuman
Modrall Sperling Roehl Harris & Sisk P.A.
500 Fourth Street, Suite 1000
Albuquerque, NM 87102

Transaction created by: Karlenes
User ID: 20660
Firm Mailing Book ID: 154182
Batch ID: 140592

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Return Receipt Article Number:	
Service Options:	Return Receipt - Electronic
Mail Service:	Certified
Reference #:	87806-0003
Postage:	$1.63
Fees:	$4.95
Status:	To be Returned
Custom Field 1:	87806-0003
Custom Field 2:	87806-0003
Custom Field 3:	87806-0003

Transaction History

Event Description	Event Date	Details
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USPS® Certified Mail	10-24-2018 08:48 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-24-2018 10:27 PM	[USPS] - DEPART USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-26-2018 09:38 AM	[USPS] - PROCESSED THROUGH USPS FACILITY at NORTH HOUSTON,TX
USPS® Certified Mail	10-26-2018 09:53 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at NORTH HOUSTON,TX
USPS® Certified Mail	10-27-2018 09:56 AM	[USPS] - NO ACCESS at HOUSTON,TX
USPS® Certified Mail	11-03-2018 11:40 AM	[USPS] - ARRIVAL AT UNIT at HOUSTON,TX

Transaction Details

Recipient:
EOG RESOURCES INC
P.O. Box 2267
Midland, TX 79702

Sender:
Karlene Schuman
Modrall Sperling Roehl Harris & Sisk P.A.
500 Fourth Street, Suite 1000
Albuquerque, NM 87102

Transaction created by: Karlenes
User ID: 20660
Firm Mailing Book ID: 154182
Batch ID: 148592

Certified Mail Article Number: 93148699043000521120 90
Return Receipt Article Number:

Service Options: Return Receipt - Electronic
Mail Service: Certified
Reference #: 87806-0003
Postage: $1.63
Fees: $4.95
Status: Undelivered
Custom Field 1: 87806-0003
Custom Field 2: 87806-0003
Custom Field 3: 87306-0003

Transaction History

Event Description	Event Date	Details
Mailbook Generated	10-24-2018 10:19 AM	[WALZ] - Firm Mailing Book 154182 generated by Karlenes
USPS® Certified Mail	10-24-2018 03:20 PM	[USPS] - PRESHIPMENT INFO SENT USPS AWAITS ITEM at TEMECULA,CA
USPS® Certified Mail	10-24-2018 08:48 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-24-2018 10:27 PM	[USPS] - DEPART USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-26-2018 07:57 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at MIDLAND,TX
USPS® Certified Mail	10-27-2018 12:55 AM	[USPS] - DEPART USPS FACILITY at MIDLAND,TX
USPS® Certified Mail	10-27-2018 04:00 AM	[USPS] - PROCESSED THROUGH USPS FACILITY at MIDLAND,TX

Transaction Details

Recipient:
BUREAU OF LAND MGMT
301 Dinosaur Trail
Santa Fe, NM 87508

Sender:
Karlene Schuman
Modrall Sperling Roehl Harris & Sisk P.A.
500 Fourth Street, Suite 1000
Albuquerque, NM 87102

Transaction created by: Karlenes
User ID: 20660
Firm Mailing Book ID: 154182
Batch ID: 148592

Certified Mail Article Number:	9314869904300052112083
Return Receipt Article Number:	
Service Options:	Return Receipt - Electronic
Mail Service:	Certified
Reference #:	87806-0003
Postage:	$1.63
Fees:	$4.95
Status:	Undelivered
Custom Field 1:	87806-0003
Custom Field 2:	87806-0003
Custom Field 3:	87806-0003

Transaction History

Event Description	Event Date	Details
Mailbook Generated	10-24-2018 10:19 AM	[WALZ] - Firm Mailing Book 154182 generated by Karlenes
USPS® Certified Mail	10-24-2018 03:20 PM	[USPS] - PRESHIPMENT INFO SENT USPS AWAITS ITEM at TEMECULA,CA
USPS® Certified Mail	10-24-2018 08:48 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-24-2018 10:27 PM	[USPS] - DEPART USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-25-2018 07:43 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at ALBUQUERQUE,NM

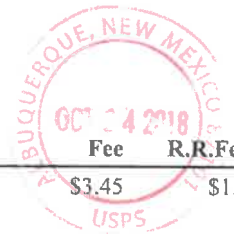
Hornet Mailing

Karlene Schuman
Modrall Sperling Roehl Harris & Sisk P.A.
500 Fourth Street, Suite 1000
Albuquerque NM 87102

PS Form 3877

Type of Mailing: CERTIFIED
10/24/2018

Firm Mailing Book ID: 154217



Line	Article Number	Name, Street & P.O. Address	Postage	Fee	R.R.Fee	Reference	Rest.Del.Fee Contents
1	9314 8699 0430 0052 1370 00	NGL WATER SOLUTIONS PERMIAN, LLC 1509 W Wall St., Ste. 306 Midland TX 79701	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
2	9314 8699 0430 0052 1370 17	NEW MEXICO STATE LAND OFFICE P.O. Box 1148 Santa Fe NM 87504	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
3	9314 8699 0430 0052 1370 24	BUREAU OF LAND MGMT 301 Dinosaur Trail Santa Fe NM 87508	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
4	9314 8699 0430 0052 1370 31	COG OPERATING LLC 550 W TEXAS MIDLAND TX 79701	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
5	9314 8699 0430 0052 1370 48	DEVON ENERGY PRODUCTION COMPANY, LP 20 N BROADWAY Oklahoma City OK 73102	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
6	9314 8699 0430 0052 1370 55	DEVON ENERGY PROD CO LP 333 W SHERIDAN AVE Oklahoma City OK 73102	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
7	9314 8699 0430 0052 1370 62	CHEVRON USA INC 6301 DEAUVILLE Midland TX 79706	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
8	9314 8699 0430 0052 1370 79	CAZA PETROLEUM, LLC 16945 NORTHCHASE DR. STE 1430 Houston TX 77060	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
9	9314 8699 0430 0052 1370 86	AMEREDEV NEW MEXICO LLC 5707 SOUTHWEST PKWY STE 1- 275 Austin TX 78735	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
10	9314 8699 0430 0052 1370 93	EOG RESOURCES INC 333 CLAY ST #4200 Houston TX 77002	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
11	9314 8699 0430 0052 1371 09	CUSTER & WRIGHT PO BOX 2334 Midland TX 79702	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
12	9314 8699 0430 0052 1371 16	FORTSON BEN J 500 THROCKMORTON ST. Fort Worth TX 76102	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
13	9314 8699 0430 0052 1371 23	ROSEHILL OPERATING CO LLC 16200 PARK ROW STE 300 Houston TX 77084	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
14	9314 8699 0430 0052 1371 30	MARATHON OIL PERMIAN LLC 5555 SAN FELIPE ST Houston TX 77056	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
		Totals:	**$22.82**	**$48.30**	**$21.00**		**$0.00**
						Grand Total:	**$92.12**

List Number of Pieces Listed by Sender	Total Number of Pieces Received at Post Office	Postmaster: Name of receiving employee	Dated:
14			

Transaction Report Details - CertifiedPro.net
Firm Mail Book ID= 154217
Generated: 11/14/2018 7:40:09 AM

Certified Mail Article Number	Date Created	Name 1	Address	City	State	Zip	Certified Mailing Status	Service Options	Batch ID	Mail Delivery Date
9314869904300052137130	2018-10-24 12:42 PM	MARATHON OIL PERMIAN LLC	5555 SAN FELIPE ST	Houston	TX	77056	Delivered	Return Receipt - Electronic	148636	10-29-2018
9314869904300052137123	2018-10-24 12:42 PM	ROSEHILL OPERATING CO LLC	16200 PARK ROW STE 300	Houston	TX	77084	Delivered	Return Receipt - Electronic	148636	10-29-2018
9314869904300052137116	2018-10-24 12:42 PM	FORTSON BEN J	500 THROCKMORTON ST.	Fort Worth	TX	76102	Delivered	Return Receipt - Electronic	148636	11-06-2018
9314869904300052137109	2018-10-24 12:42 PM	CUSTER & WRIGHT	PO BOX 2334	Midland	TX	79702	Delivered	Return Receipt - Electronic	148636	11-05-2018
9314869904300052137093	2018-10-24 12:42 PM	EOG RESOURCES INC	333 CLAY ST #4200	Houston	TX	77002	To be Returned	Return Receipt - Electronic	148636	
9314869904300052137086	2018-10-24 12:42 PM	AMEREDEV NEW MEXICO LLC	5707 SOUTHWEST PKWY STE 1- 275	Austin	TX	78735	Delivered	Return Receipt - Electronic	148636	10-31-2018
9314869904300052137079	2018-10-24 12:42 PM	CAZA PETROLEUM, LLC	16945 NORTHCHASE DR. STE 1430	Houston	TX	77060	Delivered	Return Receipt - Electronic	148636	10-29-2018
9314869904300052137062	2018-10-24 12:42 PM	CHEVRON USA INC	6301 DEAUVILLE	Midland	TX	79706	Delivered	Return Receipt - Electronic	148636	10-29-2018
9314869904300052137055	2018-10-24 12:42 PM	DEVON ENERGY PROD CO LP	333 W SHERIDAN AVE	Oklahoma City	OK	73102	Delivered	Return Receipt - Electronic	148636	10-29-2018
9314869904300052137048	2018-10-24 12:42 PM	DEVON ENERGY PRODUCTION COMPANY, LP	20 N BROADWAY	Oklahoma City	OK	73102	Delivered	Return Receipt - Electronic	148636	10-29-2018
9314869904300052137031	2018-10-24 12:42 PM	COG OPERATING LLC	550 W TEXAS	MIDLAND	TX	79701	Delivered	Return Receipt - Electronic	148636	10-27-2018
9314869904300052137024	2018-10-24 12:42 PM	BUREAU OF LAND MGMT	301 Dinosaur Trail	Santa Fe	NM	87508	Undelivered	Return Receipt - Electronic	148636	
9314869904300052137017	2018-10-24 12:42 PM	NEW MEXICO STATE LAND OFFICE	P.O. Box 1148	Santa Fe	NM	87504	Delivered	Return Receipt - Electronic	148636	10-26-2018
9314869904300052137000	2018-10-24 12:42 PM	NGL WATER SOLUTIONS PERMIAN, LLC	1509 W Wall St., Ste. 306	Midland	TX	79701	Delivered	Return Receipt - Electronic	148636	10-29-2018

Transaction Details

Recipient:
EOG RESOURCES INC
333 CLAY ST #4200
Houston, TX 77002

Sender:
Karlene Schuman
Modrall Sperling Roehl Harris & Sisk P.A.
500 Fourth Street, Suite 1000
Albuquerque, NM 87102

Transaction created by: Karlenes
User ID: 20600
Firm Mailing Book ID: 154217
Batch ID: 148636

Certified Mail Article Number: 93148699043000521370 93
Return Receipt Article Number:

Service Options: Return Receipt - Electronic
Mail Service: Certified
Reference #: 87806-0003
Postage: $1.63
Fees: $4.95
Status: To be Returned
Custom Field 1: 87806-0003
Custom Field 2: 87806-0003
Custom Field 3: 87806-0003

Transaction History

Event Description	Event Date	Details
Mailbook Generated	10-24-2018 12:56 PM	[WALZ] - Firm Mailing Book 154217 generated by Karlenes
USPS® Certified Mail	10-24-2018 05:09 PM	[USPS] - PRESHIPMENT INFO SENT USPS AWAITS ITEM at TEMECULA,CA
USPS® Certified Mail	10-24-2018 08:48 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-24-2018 10:27 PM	[USPS] - DEPART USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-26-2018 09:38 AM	[USPS] - PROCESSED THROUGH USPS FACILITY at NORTH HOUSTON,TX
USPS® Certified Mail	10-26-2018 09:53 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at NORTH HOUSTON,TX
USPS® Certified Mail	10-27-2018 09:56 AM	[USPS] - NO ACCESS at HOUSTON,TX
USPS® Certified Mail	11-03-2018 11:40 AM	[USPS] - ARRIVAL AT UNIT at HOUSTON,TX

Transaction Details

Recipient:
BUREAU OF LAND MGMT
301 Dinosaur Trail
Santa Fe, NM 87508

Sender:
Karlene Schuman
Modrall Sperling Roehl Harris & Sisk P.A.
500 Fourth Street, Suite 1000
Albuquerque, NM 87102

Transaction created by: Karlenes
User ID: 20600
Firm Mailing Book ID: 154217
Batch ID: 148636

Certified Mail Article Number:	9314869904300052137024
Return Receipt Article Number:	
Service Options:	Return Receipt - Electronic
Mail Service:	Certified
Reference #:	87806-0003
Postage:	$1.63
Fees:	$4.95
Status:	Undelivered
Custom Field 1:	87806-0003
Custom Field 2:	87806-0003
Custom Field 3:	87806-0003

Transaction History

Event Description	Event Date	Details
Mailbook Generated	10-24-2018 12:56 PM	[WALZ] - Firm Mailing Book 154217 generated by Karlenes
USPS® Certified Mail	10-24-2018 05:09 PM	[USPS] - PRESHIPMENT INFO SENT USPS AWAITS ITEM at TEMECULA,CA
USPS® Certified Mail	10-24-2018 08:48 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-24-2018 10:27 PM	[USPS] - DEPART USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-25-2018 07:43 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at ALBUQUERQUE,NM

Thunderbird Mailing

Karlene Schuman
Modrall Sperling Rochl Harris & Sisk P.A.
500 Fourth Street, Suite 1000
Albuquerque NM 87102

PS Form 3877

Type of Mailing: CERTIFIED
10/24/2018

NGL Thunder-Bird

Firm Mailing Book ID: 154240

Line	Article Number	Name, Street & P.O. Address	Postage	Fee	R.R.Fee	Reference	Rest.Del.Fee Contents
1	9314 8699 0430 0052 1457 08	NGL WATER SOLUTIONS PERMIAN, LLC 1509 W Wall St., Ste. 306 Midland TX 79701	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
2	9314 8699 0430 0052 1457 15	NEW MEXICO STATE LAND OFFICE P.O. Box 1148 Santa Fe NM 87504	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
3	9314 8699 0430 0052 1457 22	BUREAU OF LAND MGMT 301 Dinosaur Trail Santa Fe NM 87508	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
4	9314 8699 0430 0052 1457 39	ONEENERGY PARTNERS OPERATING, LLC 2929 ALLEN PARKWAY, SUITE 200 Houston TX 77019	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
5	9314 8699 0430 0052 1457 46	FULFER OIL & CATTLE LLC P.O. BOX 1224 Jal NM 88252	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
6	9314 8699 0430 0052 1457 53	AMEREDEV OPERATING, LLC 5707 Southwest Parkway BUILDING 1, SUITE 275 Austin TX 78735	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
7	9314 8699 0430 0052 1457 60	AMEREDEV NEW MEXICO, LLC 5707 Southwest Parkway BUILDING 1, SUITE 275 Austin TX 78735	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
8	9314 8699 0430 0052 1457 77	EOG A RESOURCES INC 105 S 4TH ST Artesia NM 88210	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
9	9314 8699 0430 0052 1457 84	EOG M RESOURCES INC 105 S 4TH ST Artesia NM 88210	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
10	9314 8699 0430 0052 1457 91	EOG Y RESOURCES INC 105 S 4TH ST Artesia NM 88210	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
11	9314 8699 0430 0052 1458 07	CHEVRON USA INC 6301 DEAUVILLE Midland TX 79706	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
12	9314 8699 0430 0052 1458 14	CAZA PETROLEUM, LLC 16945 NORTHCHASE DR. STE 1430 Houston TX 77060	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
13	9314 8699 0430 0052 1458 21	Blackbeard Resources, LLC 201 W Wall St. Midland TX 79701	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
14	9314 8699 0430 0052 1458 38	KEW Drilling 4925 Greenville Ave #500 Dallas TX 75206	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
15	9314 8699 0430 0052 1458 45	Resonance Resources Energy, LLC 9337B Katy Frwy #315 Houston TX 77024	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice

Karlene Schuman
Modrall Sperling Roehl Harris & Sisk P.A.
500 Fourth Street, Suite 1000
Albuquerque NM 87102

PS Form 3877

Type of Mailing: CERTIFIED
10/24/2018

Firm Mailing Book ID: 154240

Line	Article Number	Name, Street & P.O. Address	Postage	Fee	R.R.Fee	Reference	Rest.Del.Fee Contents
16	9314 8699 0430 0052 1458 52	Lilis Energy, Inc One Riverway Ste #1700 Houston TX 77002	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
17	9314 8699 0430 0052 1458 69	Cristyn B. Casey 412 Rockwood Ln. Allenspark CO 80510	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
18	9314 8699 0430 0052 1458 76	Hycook Corporation 1719 1 Natl Bldg Oklahoma City OK 73111	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
19	9314 8699 0430 0052 1458 83	CBR Oil Properties, LLC P.O. Box 1518 Roswell NM 88202	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
20	9314 8699 0430 0052 1458 90	Norman L. Stevens P.O. Box 1 Hondo NM 88336	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
21	9314 8699 0430 0052 1459 06	Flag-Redfern Oil Corporation 1200 Wall Towers W Midland TX 79701	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
22	9314 8699 0430 0052 1459 13	Lynne C. Dittmer 3169 N. Redwood Rd Walkerton IN 46574	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
23	9314 8699 0430 0052 1459 20	Randall Properties P.O. Box 187 Midland TX 79702	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
24	9314 8699 0430 0052 1459 37	John A. Dittmer 3525 W. Ottowa St. Crawfordsville IN 47933	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
25	9314 8699 0430 0052 1459 44	Rosalind Marie Doss 1635 Maple Ln. Apt. 4 Elgin IL 60123	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
26	9314 8699 0430 0052 1459 51	Donald Woods 714 Center St. Ruidoso NM 88345	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
27	9314 8699 0430 0052 1459 68	Walker Royalty, LP 4925 Greenville Avenue, Suite 500 Dallas TX 75206	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
		Totals:	**$44.01**	**$93.15**	**$40.50**		**$0.00**
						Grand Total:	**$177.66**

List Number of Pieces Listed by Sender	Total Number of Pieces Received at Post Office	Postmaster: Name of receiving employee	Dated:
27			

Transaction Report Details - CertifiedPro.net
Firm Mail Book ID= 154240
Generated: 11/14/2018 7:27:52 AM

Certified Mail Article Number	Date Created	Name 1	Name 2	Address	City	State	Zip	Certified Mailing Status	Service Options	Mail Delivery Date
9314869904300052145968	2018-10-24 2:03 PM	Walker Royalty, LP		4925 Greenville Avenue, Suite 500	Dallas	TX	75206	Mailed	Return Receipt - Electronic	
9314869904300052145951	2018-10-24 2:03 PM	Donald Woods		714 Center St.	Ruidoso	NM	88345	Delivered	Return Receipt - Electronic	11-06-2018
9314869904300052145944	2018-10-24 2:03 PM	Rosalind Marie Doss		1635 Maple Ln. Apt. 4	Elgin	IL	60123	To be Returned	Return Receipt - Electronic	
9314869904300052145937	2018-10-24 2:03 PM	John A. Dittmer		3525 W. Ottowa St.	Crawfordsville	IN	47933	To be Returned	Return Receipt - Electronic	
9314869904300052145920	2018-10-24 2:03 PM	Randall Properties		P.O. Box 187	Midland	TX	79702	Delivered	Return Receipt - Electronic	11-05-2018
9314869904300052145913	2018-10-24 2:03 PM	Lynne C. Dittmer		3169 N. Redwood Rd	Walkerton	IN	46574	To be Returned	Return Receipt - Electronic	
9314869904300052145906	2018-10-24 2:03 PM	Flag-Redfern Oil Corporation		1200 Wall Towers W	Midland	TX	79701	To be Returned	Return Receipt - Electronic	
9314869904300052145890	2018-10-24 2:03 PM	Norman L. Stevens		P.O. Box 1	Hondo	NM	88336	Delivered	Return Receipt - Electronic	10-27-2018
9314869904300052145883	2018-10-24 2:03 PM	CBR Oil Properties, LLC		P.O. Box 1518	Roswell	NM	88202	Delivered	Return Receipt - Electronic	10-29-2018
9314869904300052145876	2018-10-24 2:03 PM	Hycook Corporation		1719 1 Natl Bldg	Oklahoma City	OK	73111	To be Returned	Return Receipt - Electronic	
9314869904300052145869	2018-10-24 2:03 PM	Cristyn B. Casey		412 Rockwood Ln.	Allenspark	CO	80510	To be Returned	Return Receipt - Electronic	
9314869904300052145852	2018-10-24 2:03 PM	Lilis Energy, Inc		One Riverway Ste #1700	Houston	TX	77002	Delivered	Return Receipt - Electronic	11-09-2018
9314869904300052145845	2018-10-24 2:03 PM	Resonance Resources Energy, LLC		9337B Katy Frwy #315	Houston	TX	77024	Undelivered	Return Receipt - Electronic	
9314869904300052145838	2018-10-24 2:03 PM	KEW Drilling		4925 Greenville Ave #500	Dallas	TX	75206	Delivered	Return Receipt - Electronic	10-27-2018
9314869904300052145821	2018-10-24 2:03 PM	Blackbeard Resources, LLC		201 W Wall St.	Midland	TX	79701	Delivered	Return Receipt - Electronic	10-29-2018
9314869904300052145814	2018-10-24 2:03 PM	CAZA PETROLEUM, LLC		16945 NORTHCHASE DR. STE 1430	Houston	TX	77060	Delivered	Return Receipt - Electronic	10-31-2018
9314869904300052145807	2018-10-24 2:03 PM	CHEVRON USA INC		6301 DEAUVILLE	Midland	TX	79706	Delivered	Return Receipt - Electronic	10-29-2018
9314869904300052145791	2018-10-24 2:03 PM	EOG Y RESOURCES INC		105 S 4TH ST	Artesia	NM	88210	Delivered	Return Receipt - Electronic	10-29-2018
9314869904300052145784	2018-10-24 2:03 PM	EOG M RESOURCES INC		105 S 4TH ST	Artesia	NM	88210	Delivered	Return Receipt - Electronic	10-29-2018
9314869904300052145777	2018-10-24 2:03 PM	EOG A RESOURCES INC		105 S 4TH ST	Artesia	NM	88210	Delivered	Return Receipt - Electronic	10-29-2018
9314869904300052145760	2018-10-24 2:03 PM	AMEREDEV NEW MEXICO, LLC	5707 Southwest Parkway	BUILDING 1, SUITE 275	Austin	TX	78735	Delivered	Return Receipt - Electronic	10-31-2018
9314869904300052145753	2018-10-24 2:03 PM	AMEREDEV OPERATING, LLC	5707 Southwest Parkway	BUILDING 1, SUITE 275	Austin	TX	78735	Delivered	Return Receipt - Electronic	10-31-2018
9314869904300052145746	2018-10-24 2:03 PM	FULFER OIL & CATTLE LLC		P.O. BOX 1224	Jal	NM	88252	Delivered	Return Receipt - Electronic	10-30-2018
9314869904300052145739	2018-10-24 2:03 PM	ONEENERGY PARTNERS OPERATING, LLC		2929 ALLEN PARKWAY, SUITE 200	Houston	TX	77019	Undelivered	Return Receipt - Electronic	
9314869904300052145722	2018-10-24 2:03 PM	BUREAU OF LAND MGMT		301 Dinosaur Trail	Santa Fe	NM	87508	Undelivered	Return Receipt - Electronic	
9314869904300052145715	2018-10-24 2:03 PM	NEW MEXICO STATE LAND OFFICE		P.O. Box 1148	Santa Fe	NM	87504	Delivered	Return Receipt - Electronic	10-26-2018
9314869904300052145708	2018-10-24 2:03 PM	NGL WATER SOLUTIONS PERMIAN, LLC		1509 W Wall St., Ste. 306	Midland	TX	79701	Delivered	Return Receipt - Electronic	10-29-2018

Transaction Details

Recipient:
Walker Royalty, LP
4925 Greenville Avenue, Suite 500
Dallas, TX 75206

Sender:
Karlene Schuman
Modrall Sperling Roehl Harris & Sisk P.A.
500 Fourth Street, Suite 1000
Albuquerque, NM 87102

Transaction created by: Karlenes
User ID: 20600
Firm Mailing Book ID: 154240
Batch ID: 143669

Certified Mail Article Number:	93148699043000521459 68
Return Receipt Article Number:	
Service Options:	Return Receipt - Electronic
Mail Service:	Certified
Reference #:	87806-0003
Postage:	$1.63
Fees:	$4.95
Status:	Mailed
Custom Field 1:	87806-0003
Custom Field 2:	87806-0003
Custom Field 3:	87806-0003

Transaction History

Event Description	Event Date	Details
Mailbook Generated	10-24-2018 02:17 PM	[WALZ] - Firm Mailing Book 154240 generated by Karlenes
USPS® Certified Mail	10-24-2018 05:09 PM	[USPS] - PRESHIPMENT INFO SENT USPS AWAITS ITEM at TEMECULA,CA
USPS® Certified Mail	10-24-2018 08:48 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-24-2018 10:27 PM	[USPS] - DEPART USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-26-2018 03:58 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at DALLAS,TX
USPS® Certified Mail	10-27-2018 05:32 AM	[USPS] - DEPART USPS FACILITY at DALLAS,TX
USPS® Certified Mail	10-29-2018 06:30 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at COPPELL,TX
USPS® Certified Mail	10-29-2018 07:16 PM	[USPS] - DEPART USPS FACILITY at COPPELL,TX
USPS® Certified Mail	10-29-2018 07:27 PM	[USPS] - DEPART USPS FACILITY at COPPELL,TX
USPS® Certified Mail	10-29-2018 08:11 PM	[USPS] - ARRIVE USPS FACILITY at DALLAS,TX
USPS® Certified Mail	10-29-2018 08:18 PM	[USPS] - ARRIVE USPS FACILITY at DALLAS,TX
USPS® Certified Mail	10-29-2018 08:24 PM	[USPS] - ARRIVE USPS FACILITY at DALLAS,TX
USPS® Certified Mail	10-29-2018 08:45 PM	[USPS] - ARRIVE USPS FACILITY at DALLAS,TX
USPS® Certified Mail	10-30-2018 05:40 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at DALLAS,TX
USPS® Certified Mail	10-31-2018 04:35 AM	[USPS] - ARRIVAL AT UNIT at DALLAS,TX
USPS® Certified Mail	10-31-2018 08:28 AM	[USPS] - SORTINGPROCESSING COMPLETE at DALLAS,TX
USPS® Certified Mail	10-31-2018 08:38 AM	[USPS] - OUT FOR DELIVERY at DALLAS,TX
USPS® Certified Mail	10-31-2018 10:38 PM	[USPS] - AWAITING DELIVERY SCAN at DALLAS,TX

Transaction Details

Recipient:
Rosalind Marie Doss
1635 Maple Ln. Apt. 4
Elgin, IL 60123

Sender:
Karlene Schuman
Modrall Sperling Roehl Harris & Sisk P.A.
500 Fourth Street, Suite 1000
Albuquerque, NM 87102

Transaction created by: Karlenes
User ID: 20600
Firm Mailing Book ID: 154240
Batch ID: 148609

Certified Mail Article Number:	93148699043000521459 44
Return Receipt Article Number:	
Service Options:	Return Receipt - Electronic
Mail Service:	Certified
Reference #:	87806-0003
Postage:	$1.63
Fees:	$4.95
Status:	To be Returned
Custom Field 1:	87806-0003
Custom Field 2:	87806-0003
Custom Field 3:	87806-0003

Transaction History

Event Description	Event Date	Details
Mailbook Generated	10-24-2018 02:17 PM	[WALZ] - Firm Mailing Book 154240 generated by Karlenes
USPS® Certified Mail	10-24-2018 05:09 PM	[USPS] - PRESHIPMENT INFO SENT USPS AWAITS ITEM at TEMECULA,CA
USPS® Certified Mail	10-24-2018 08:44 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-24-2018 10:27 PM	[USPS] - DEPART USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-25-2018 12:40 AM	[USPS] - PROCESSED THROUGH USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-26-2018 10:37 AM	[USPS] - PROCESSED THROUGH USPS FACILITY at CAROL STREAM,IL
USPS® Certified Mail	10-29-2018 03:11 AM	[USPS] - ARRIVAL AT UNIT at ELGIN,IL
USPS® Certified Mail	10-29-2018 08:42 AM	[USPS] - SORTINGPROCESSING COMPLETE at ELGIN,IL
USPS® Certified Mail	10-29-2018 08:52 AM	[USPS] - OUT FOR DELIVERY at ELGIN,IL
USPS® Certified Mail	10-29-2018 05:26 PM	[USPS] - UNABLE TO DELIVER PROBLEM WITH ADDRESS at ELGIN,IL
USPS® Certified Mail	10-29-2018 06:04 PM	[USPS] - ADDRESSEE UNKNOWN at ELGIN,IL
USPS® Certified Mail	11-06-2018 10:09 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at PALATINE,IL
USPS® Certified Mail	11-07-2018 04:25 AM	[USPS] - DEPART USPS FACILITY at PALATINE,IL
USPS® Certified Mail	11-08-2018 08:34 AM	[USPS] - PROCESSED THROUGH USPS FACILITY at CHICAGO,IL
USPS® Certified Mail	11-09-2018 08:39 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at BEDFORD PARK,IL
USPS® Certified Mail	11-10-2018 02:53 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at CAROL STREAM,IL
USPS® Certified Mail	11-11-2018 09:55 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at CAROL STREAM,IL

Transaction Details

Recipient:
John A. Dittmer
3525 W. Ottowa St.
Crawfordsville, IN 47933

Sender:
Karlene Schuman
Modrall Sperling Roehl Harris & Sisk P.A.
500 Fourth Street, Suite 1000
Albuquerque, NM 87102

Transaction created by: Karlenes
User ID: 20660
Firm Mailing Book ID: 154240
Batch ID: 148669

Certified Mail Article Number:	93148699043000521459 37
Return Receipt Article Number:	
Service Options:	Return Receipt - Electronic
Mail Service:	Certified
Reference #:	87806-0003
Postage:	$1.63
Fees:	$4.95
Status:	To be Returned
Custom Field 1:	87806-0003
Custom Field 2:	87806-0003
Custom Field 3:	87806-0003

Transaction History

Event Description	Event Date	Details
Mailbook Generated	10-24-2018 02:17 PM	[WALZ] - Firm Mailing Book 154240 generated by Karlenes
USPS® Certified Mail	10-24-2018 05:09 PM	[USPS] - PRESHIPMENT INFO SENT USPS AWAITS ITEM at TEMECULA,CA
USPS® Certified Mail	10-24-2018 08:44 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-24-2018 10:27 PM	[USPS] - DEPART USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-26-2018 01:14 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at INDIANAPOLIS,IN
USPS® Certified Mail	10-26-2018 08:21 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at INDIANAPOLIS,IN
USPS® Certified Mail	10-29-2018 08:56 AM	[USPS] - FORWARDED at CRAWFORDSVILLE,IN
USPS® Certified Mail	10-29-2018 10:08 AM	[USPS] - MOVED, LEFT NO ADDRESS at CRAWFORDSVILLE,IN
USPS® Certified Mail	11-02-2018 12:56 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at INDIANAPOLIS,IN
USPS® Certified Mail	11-06-2018 10:15 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at INDIANAPOLIS,IN
USPS® Certified Mail	11-07-2018 11:08 AM	[USPS] - PROCESSED THROUGH USPS FACILITY at INDIANAPOLIS,IN
USPS® Certified Mail	11-07-2018 07:44 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at INDIANAPOLIS,IN

Transaction Details

Recipient:
Lynne C. Dittmer
3169 N. Redwood Rd
Walkerton, IN 46574

Sender:
Karlene Schuman
Modrall Sperling Roehl Harris & Sisk P.A.
500 Fourth Street, Suite 1000
Albuquerque, NM 87102

Transaction created by: Karlenes
User ID: 20600
Firm Mailing Book ID: 154240
Batch ID: 148069

Certified Mail Article Number:	93148699043000521459l3
Return Receipt Article Number:	
Service Options:	Return Receipt - Electronic
Mail Service:	Certified
Reference #:	87806-0003
Postage:	$1.63
Fees:	$4.95
Status:	To be Returned
Custom Field 1:	87806-0003
Custom Field 2:	87806-0003
Custom Field 3:	87806-0003

Transaction History

Event Description	Event Date	Details
Mailbook Generated	10-24-2018 02:17 PM	[WALZ] - Firm Mailing Book 154240 generated by Karlenes
USPS® Certified Mail	10-24-2018 05:09 PM	[USPS] - PRESHIPMENT INFO SENT USPS AWAITS ITEM at TEMECULA,CA
USPS® Certified Mail	10-24-2018 08:44 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-24-2018 10:27 PM	[USPS] - DEPART USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-25-2018 12:40 AM	[USPS] - PROCESSED THROUGH USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-26-2018 02:16 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at FORT WAYNE,IN
USPS® Certified Mail	10-26-2018 09:20 PM	[USPS] - DEPART USPS FACILITY at FORT WAYNE,IN
USPS® Certified Mail	10-27-2018 12:51 AM	[USPS] - PROCESSED THROUGH USPS FACILITY at SOUTH BEND,IN
USPS® Certified Mail	10-27-2018 07:44 AM	[USPS] - ARRIVAL AT UNIT at WALKERTON,IN
USPS® Certified Mail	10-27-2018 07:45 AM	[USPS] - SORTINGPROCESSING COMPLETE at WALKERTON,IN
USPS® Certified Mail	10-27-2018 07:55 AM	[USPS] - OUT FOR DELIVERY at WALKERTON,IN
USPS® Certified Mail	10-27-2018 12:33 PM	[USPS] - NO AUTHORIZED RECIPIENT AVAILABLE at WALKERTON,IN
USPS® Certified Mail	11-01-2018 04:13 AM	[USPS] - REMINDER TO SCHEDULE REDELIVERY at WALKERTON,IN
USPS® Certified Mail	11-09-2018 03:30 PM	[USPS] - UNCLAIMEDBEING RETURNED TO SENDER at WALKERTON,IN

Transaction Details

Recipient:
Flag-Redfern Oil Corporation
1200 Wall Towers W
Midland, TX 79701

Sender:
Karlene Schuman
Modrall Sperling Roehl Harris & Sisk P.A.
500 Fourth Street, Suite 1000
Albuquerque, NM 87102

Transaction created by: Karlenes
User ID: 20660
Firm Mailing Book ID: 154240
Batch ID: 148209

Certified Mail Article Number:	93148699043000521459O6
Return Receipt Article Number:	
Service Options:	Return Receipt - Electronic
Mail Service:	Certified
Reference #:	87806-0003
Postage:	$1.63
Fees:	$4.95
Status:	To be Returned
Custom Field 1:	87806-0003
Custom Field 2:	87806-0003
Custom Field 3:	87806-0003

Transaction History

Event Description	Event Date	Details
Mailbook Generated	10-24-2018 02:17 PM	[WALZ] - Firm Mailing Book 154240 generated by Karlenes
USPS® Certified Mail	10-24-2018 05:09 PM	[USPS] - PRESHIPMENT INFO SENT USPS AWAITS ITEM at TEMECULA,CA
USPS® Certified Mail	10-24-2018 08:44 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-24-2018 10:27 PM	[USPS] - DEPART USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-26-2018 07:57 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at MIDLAND,TX
USPS® Certified Mail	10-27-2018 12:55 AM	[USPS] - DEPART USPS FACILITY at MIDLAND,TX
USPS® Certified Mail	10-27-2018 02:22 AM	[USPS] - PROCESSED THROUGH USPS FACILITY at MIDLAND,TX
USPS® Certified Mail	10-27-2018 05:48 AM	[USPS] - ARRIVAL AT UNIT at MIDLAND,TX
USPS® Certified Mail	10-27-2018 05:51 AM	[USPS] - UNABLE TO DELIVER PROBLEM WITH ADDRESS at MIDLAND,TX
USPS® Certified Mail	10-27-2018 07:40 AM	[USPS] - SORTINGPROCESSING COMPLETE at MIDLAND,TX
USPS® Certified Mail	10-27-2018 07:50 AM	[USPS] - OUT FOR DELIVERY at MIDLAND,TX
USPS® Certified Mail	11-02-2018 02:50 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at OKLAHOMA CITY,OK
USPS® Certified Mail	11-02-2018 09:00 PM	[USPS] - DEPART USPS FACILITY at OKLAHOMA CITY,OK

Transaction Details

Recipient:
Hycook Corporation
1719 1 Natl Bldg
Oklahoma City, OK 73111

Sender:
Karlene Schuman
Modrall Sperling Roehl Harris & Sisk P.A.
500 Fourth Street, Suite 1000
Albuquerque, NM 87102

Transaction created by: Karlenes
User ID: 20600
Firm Mailing Book ID: 154240
Batch ID: 148669

Certified Mail Article Number:	93148699043000521458 76
Return Receipt Article Number:	
Service Options:	Return Receipt - Electronic
Mail Service:	Certified
Reference #:	87806-0003
Postage:	$1.63
Fees:	$4.95
Status:	To be Returned
Custom Field 1:	87806-0003
Custom Field 2:	87806-0003
Custom Field 3:	87806-0003

Transaction History

Event Description	Event Date	Details
Mailbook Generated	10-24-2018 02:17 PM	[WALZ] - Firm Mailing Book 154240 generated by Karlenes
USPS® Certified Mail	10-24-2018 05:09 PM	[USPS] - PRESHIPMENT INFO SENT USPS AWAITS ITEM at TEMECULA,CA
USPS® Certified Mail	10-24-2018 08:44 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-24-2018 10:27 PM	[USPS] - DEPART USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-26-2018 10:37 AM	[USPS] - PROCESSED THROUGH USPS FACILITY at OKLAHOMA CITY,OK
USPS® Certified Mail	10-26-2018 09:20 PM	[USPS] - DEPART USPS FACILITY at OKLAHOMA CITY,OK
USPS® Certified Mail	10-27-2018 04:38 AM	[USPS] - PROCESSED THROUGH USPS FACILITY at OKLAHOMA CITY,OK
USPS® Certified Mail	10-27-2018 11:17 AM	[USPS] - ADDRESSEE UNKNOWN at OKLAHOMA CITY,OK
USPS® Certified Mail	10-29-2018 02:48 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at OKLAHOMA CITY,OK
USPS® Certified Mail	11-01-2018 05:43 AM	[USPS] - ARRIVAL AT UNIT at ALBUQUERQUE,NM

Transaction Details

Recipient:
Cristyn B. Casey
412 Rockwood Ln.
Allenspark, CO 80510

Sender:
Karlene Schuman
Modrall Sperling Roehl Harris & Sisk P.A.
500 Fourth Street, Suite 1000
Albuquerque, NM 87102

Transaction created by: Karlenes
User ID: 20600
Firm Mailing Book ID: 154240
Batch ID: 148669

Certified Mail Article Number:	93148699043000521458 69
Return Receipt Article Number:	
Service Options:	Return Receipt - Electronic
Mail Service:	Certified
Reference #:	87806-0003
Postage:	$1.63
Fees:	$4.95
Status:	To be Returned
Custom Field 1:	87806-0003
Custom Field 2:	87806-0003
Custom Field 3:	87806-0003

Transaction History

Event Description	Event Date	Details
Mailbook Generated	10-24-2018 02:17 PM	[WALZ] - Firm Mailing Book 154240 generated by Karlenes
USPS® Certified Mail	10-24-2018 05:09 PM	[USPS] - PRESHIPMENT INFO SENT USPS AWAITS ITEM at TEMECULA,CA
USPS® Certified Mail	10-24-2018 08:44 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-24-2018 10:27 PM	[USPS] - DEPART USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-26-2018 05:07 AM	[USPS] - PROCESSED THROUGH USPS FACILITY at DENVER,CO
USPS® Certified Mail	10-26-2018 05:26 AM	[USPS] - DEPART USPS FACILITY at DENVER,CO
USPS® Certified Mail	10-26-2018 02:23 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at DENVER,CO
USPS® Certified Mail	10-26-2018 06:46 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at DENVER,CO
USPS® Certified Mail	10-27-2018 10:40 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at DENVER,CO
USPS® Certified Mail	10-29-2018 03:00 PM	[USPS] - ARRIVAL AT UNIT at ALLENSPARK,CO
USPS® Certified Mail	10-29-2018 03:00 PM	[USPS] - AVAILABLE FOR PICKUP at ALLENSPARK,CO
USPS® Certified Mail	10-29-2018 03:01 PM	[USPS] - MISSENT at ALLENSPARK,CO
USPS® Certified Mail	11-05-2018 04:52 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at COLORADO SPRINGS,CO
USPS® Certified Mail	11-05-2018 08:31 PM	[USPS] - DEPART USPS FACILITY at COLORADO SPRINGS,CO
USPS® Certified Mail	11-09-2018 11:10 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at DENVER,CO
USPS® Certified Mail	11-11-2018 01:57 AM	[USPS] - PROCESSED THROUGH USPS FACILITY at DENVER,CO
USPS® Certified Mail	11-13-2018 03:01 PM	[USPS] - ADDRESSEE UNKNOWN at ALLENSPARK,CO
USPS® Certified Mail	11-13-2018 05:34 PM	[USPS] - MOVED, LEFT NO ADDRESS at ALLENSPARK,CO

Transaction Details

Recipient:
ONEENERGY PARTNERS OPERATING, LLC
2929 ALLEN PARKWAY, SUITE 200
Houston, TX 77019

Sender:
Karlene Schuman
Modrall Sperling Roehl Harris & Sisk P.A.
500 Fourth Street, Suite 1000
Albuquerque, NM 87102

Transaction created by: Karlenes
User ID: 20600
Firm Mailing Book ID: 154240
Batch ID: 148659

Certified Mail Article Number: 93148699043000521457 39
Return Receipt Article Number:

Service Options: Return Receipt - Electronic
Mail Service: Certified
Reference #: 87806-0003
Postage: $1.63
Fees: $4.95
Status: Undelivered
Custom Field 1: 87806-0003
Custom Field 2: 87806-0003
Custom Field 3: 87806-0003

Transaction History

Event Description	Event Date	Details
Mailbook Generated	10-24-2018 02:17 PM	[WALZ] - Firm Mailing Book 154240 generated by Karlenes
USPS® Certified Mail	10-24-2018 05:09 PM	[USPS] - PRESHIPMENT INFO SENT USPS AWAITS ITEM at TEMECULA,CA
USPS® Certified Mail	10-24-2018 08:48 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-24-2018 10:27 PM	[USPS] - DEPART USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-26-2018 09:38 AM	[USPS] - PROCESSED THROUGH USPS FACILITY at NORTH HOUSTON,TX
USPS® Certified Mail	10-26-2018 05:11 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at NORTH HOUSTON,TX
USPS® Certified Mail	10-27-2018 07:45 AM	[USPS] - ARRIVAL AT UNIT at HOUSTON,TX
USPS® Certified Mail	10-27-2018 10:16 AM	[USPS] - SORTINGPROCESSING COMPLETE at HOUSTON,TX
USPS® Certified Mail	10-27-2018 10:26 AM	[USPS] - OUT FOR DELIVERY at HOUSTON,TX
USPS® Certified Mail	10-28-2018 12:26 AM	[USPS] - AWAITING DELIVERY SCAN at HOUSTON,TX

Transaction Details

Recipient:
ONEENERGY PARTNERS OPERATING, LLC
2929 ALLEN PARKWAY, SUITE 200
Houston, TX 77019

Sender:
Karlene Schuman
Modrall Sperling Roehl Harris & Sisk P.A.
500 Fourth Street, Suite 1000
Albuquerque, NM 87102

Transaction created by: Karlenes
User ID: 20600
Firm Mailing Book ID: 154240
Batch ID: 148669

Certified Mail Article Number: 9314869904300052145739
Return Receipt Article Number:

Service Options:	Return Receipt - Electronic
Mail Service:	Certified
Reference #:	87806-0003
Postage:	$1.63
Fees:	$4.95
Status:	Undelivered
Custom Field 1:	87806-0003
Custom Field 2:	87806-0003
Custom Field 3:	87806-0003

Transaction History

Event Description	Event Date	Details
Mailbook Generated	10-24-2018 02:17 PM	[WALZ] - Firm Mailing Book 154240 generated by Karlenes
USPS® Certified Mail	10-24-2018 05:09 PM	[USPS] - PRESHIPMENT INFO SENT, USPS AWAITS ITEM at TEMECULA,CA
USPS® Certified Mail	10-24-2018 08:48 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-24-2018 10:27 PM	[USPS] - DEPART USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-26-2018 09:38 AM	[USPS] - PROCESSED THROUGH USPS FACILITY at NORTH HOUSTON,TX
USPS® Certified Mail	10-26-2018 05:11 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at NORTH HOUSTON,TX
USPS® Certified Mail	10-27-2018 07:45 AM	[USPS] - ARRIVAL AT UNIT at HOUSTON,TX
USPS® Certified Mail	10-27-2018 10:16 AM	[USPS] - SORTINGPROCESSING COMPLETE at HOUSTON,TX
USPS® Certified Mail	10-27-2018 10:26 AM	[USPS] - OUT FOR DELIVERY at HOUSTON,TX
USPS® Certified Mail	10-28-2018 12:26 AM	[USPS] - AWAITING DELIVERY SCAN at HOUSTON,TX

Transaction Details

Recipient:
BUREAU OF LAND MGMT
301 Dinosaur Trail
Santa Fe, NM 87508

Sender:
Karlene Schuman
Modrall Sperling Roehl Harris & Sisk P.A.
500 Fourth Street, Suite 1000
Albuquerque, NM 87102

Transaction created by: Karlenes
User ID: 20060
Firm Mailing Book ID: 154240
Batch ID: 149669

Certified Mail Article Number:	9314869904300052145722
Return Receipt Article Number:	
Service Options:	Return Receipt - Electronic
Mail Service:	Certified
Reference #:	87806-0003
Postage:	$1.63
Fees:	$4.95
Status:	Undelivered
Custom Field 1:	87806-0003
Custom Field 2:	87806-0003
Custom Field 3:	87806-0003

Transaction History

Event Description	Event Date	Details
Mailbook Generated	10-24-2018 02:17 PM	[WALZ] - Firm Mailing Book 154240 generated by Karlenes
USPS® Certified Mail	10-24-2018 05:09 PM	[USPS] - PRESHIPMENT INFO SENT USPS AWAITS ITEM at TEMECULA,CA
USPS® Certified Mail	10-24-2018 08:48 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-24-2018 10:27 PM	[USPS] - DEPART USPS FACILITY at ALBUQUERQUE,NM
USPS® Certified Mail	10-25-2018 07:43 PM	[USPS] - PROCESSED THROUGH USPS FACILITY at ALBUQUERQUE,NM

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 02, 2018
and ending with the issue dated
November 02, 2018.

Publisher

Sworn and subscribed to before me this
2nd day of November 2018.

Business Manager

My commission expires
January 29, 2019
(Seal)

OFFICIAL SEAL
GUSSIE BLACK
Notary Public
State of New Mexico
My Commission Expires 1-29-19

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
NOVEMBER 2, 2018

CASE NO. 20063: Notice to all affected parties, as well as the heirs and devisees of NEW MEXICO STATE LAND OFFICE, BUREAU OF LAND MGMT, EOG RESOURCES INC, of NGL WATER SOLUTIONS PERMIAN, LLC'S application for approval of a salt water disposal well, Lea County, New Mexico. The State of New Mexico, through its Oil Conservation Division, hereby gives notice that the Division will conduct a public hearing at 8:15 a.m. on November 15, 2018. Applicant seeks an order approving disposal into the Silurian-Devonian formation through the Falcon SWD #1 well at a surface location 1722 feet from the South line and 221 feet from the West line of Section 20, Township 25 South, Range 34 East, NMPM, Lea County, New Mexico, for the purpose of operating a salt water disposal well. The target injection interval is the Silurian-Devonian formation at a depth of 17,152' — 19,032'. NGL further seeks approval of the use of 7 inch tubing inside the surface and intermediate casings and 5 ½ inch tubing inside the liner and requests that the Division approve a maximum daily injection rate for the well of 50,000 bbls per day. Said area is located approximately 18 miles west of Jal, New Mexico.

CASE NO. 20093: Notice to all affected parties, as well as the heirs and devisees of NEW MEXICO STATE LAND OFFICE, BUREAU OF LAND MGMT, ONEENERGY PARTNERS OPERATING, LLC, FULFER OIL & CATTLE LLC, AMEREDEV OPERATING, LLC, AMEREDEV NEW MEXICO, LLC, EOG A RESOURCES INC, EOG M RESOURCES INC, EOG Y RESOURCES INC, CHEVRON USA INC, CAZA PETROLEUM, LLC, BLACKBEARD RESOURCES, LLC, KEW DRILLING, RESONANCE RESOURCES ENERGY, LLC, LILIS ENERGY, INC, CRISTYN B. CASEY, HYCOOK CORPORATION, CBR OIL PROPERTIES, LLC, NORMAN L STEVENS, FLAG-REDFERN OIL CORPORATION, LYNNE C. DITTMER, RANDALL PROPERTIES, JOHN A. DITTMER, ROSALIND MARIE DOSS, DONALD WOODS, WALKER ROYALTY, LP, of NGL WATER SOLUTIONS PERMIAN, LLC'S application for approval of a salt water disposal well, Lea County, New Mexico. The State of New Mexico, through its Oil Conservation Division, hereby gives notice that the Division will conduct a public hearing at 8:15 a.m. on November 15, 2018. Applicant seeks an order approving disposal into the Devonian formation through the Thunderbird SWD #1 well at a surface location 190 feet from the South line and 314 feet from the East line of Section 30, Township 25 South, Range 36 East, NMPM, Lea County, New Mexico, for the purpose of operating a salt water disposal well. The target injection interval is the Devonian formations at a depth of 15,430' — 17,100'. NGL further seeks approval of the use of 7 inch tubing inside the surface and intermediate casings and 5 ½ inch tubing inside the liner and requests that the Division approve a maximum daily injection rate for the well of 50,000 bbls per day. Said area is located approximately 6.2 miles west of Jal, New Mexico.

CASE NO. 20084: Notice to all affected parties, as well as the heirs and devisees of NGL WATER SOLUTIONS PERMIAN, LLC, NEW MEXICO STATE LAND OFFICE, BUREAU OF LAND MGMT, COG OPERATING LLC, DEVON ENERGY PRODUCTION COMPANY, LP, DEVON ENERGY PROD CO LP, CHEVRON USA INC, CAZA PETROLEUM, LLC, AMEREDEV NEW MEXICO LLC, EOG RESOURCES INC, CUSTER & WRIGHT, FORTSON BEN J, ROSEHILL OPERATING CO LLC, MARATHON OIL PERMIAN LLC, of NGL WATER SOLUTIONS PERMIAN, LLC'S application for approval of a salt water disposal well, Lea County, New Mexico. The State of New Mexico, through its Oil Conservation Division, hereby gives notice that the Division will conduct a public hearing at 8:15 a.m. on November 15, 2018. Applicant seeks an order approving disposal into the Devonian formation through the Hornet SWD #1 well at a surface location 351 feet from the South line and 333 feet from the West line of Section 6, Township 26 South, Range 36 East, NMPM, Lea County, New Mexico, for the purpose of operating a salt water disposal well. The target injection interval is the Silurian-Devonian formation at a depth of 18,220' — 19,930'. NGL further seeks approval of the use of 7 inch tubing inside the surface and intermediate casings and 5 ½ inch tubing inside the liner and requests that the Division approve a maximum daily injection rate for the well of 50,000 bbls per day. Said area is located approximately 6 miles west of Bennett, New Mexico.
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