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. 20235

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CASE NO. 20235

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 Javelin SWD #1 well at a surface location 1923 feet from the North line and 218 feet from the West line of Section 9, 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 17,146' to 18,859'.

(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 2,571 psi for this well, and it requests that a maximum pressure of 3,429 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 January 24, 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
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 Silurian-Devonian formation through the Javelin SWD #1 well at a surface location 1923 feet from the North line and 218 feet from the West line of Section 9, Township 25 South, Range 34 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well. NGL seeks authority to inject salt water into the Silurian-Devonian formation at a depth of 17,146' to 18,859'. 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 17.3 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: JAVELIN 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.

12/12/2018
Date

CHRIS WEYAND
Print or Type Name

Signature

512-600-1764
Phone Number

CHRIS@LONQUIST.COM
e-mail Address

EXHIBIT 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).

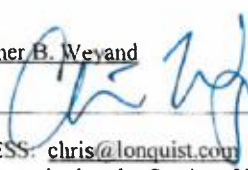
*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

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: 12/12/2018

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: JAVELIN SWD #1

WELL LOCATION:	1,923' FNL & 218' FWL	E	9	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: 1,275 sx.

or _____ ft^3

Top of Cement: Surface

Method Determined: Circulation

1st Intermediate Casing

Hole Size: 17.500"

Casing Size: 13.375"

Cemented with: 2,920 sx.

or _____ ft^3

Top of Cement: Surface

Method Determined: Circulation

2nd Intermediate Casing

Hole Size: 12.250"

Casing Size: 9.625"

Cemented with: 3,608 sx.

or _____ ft^3

Top of Cement: Surface

Method Determined: Circulation

Production Liner

Hole Size: 8.500"

Casing Size: 7.625"

Cemented with: 418 sx.

or _____ ft^3

Top of Cement: 11,900'

Method Determined: Calculation

Total Depth: 18,859'

Injection Interval

17,146 feet to 18,859 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' – 17,086'
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: 17,086'

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: 9,271'
   Wolfcamp: 12,246'
   Strawn: 13,673'
   Atoka: 13,964'
   Morrow: 14,345'

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

Location - SWNW Sec 9, Twp 25S, R 34E
Drilling Cost - $11.3MM AFE #

TD 18,859
GL/KB 3180'

Directions to Site: From Jal travel W on Hwy 128 13.8 miles. Turn SW on Battle Axe Road and travel 7.6 miles to location. Lat/Long. 32.14698100, -103.482750

Geologic Tops (MD ft)	Section	Problems	Bit/BHA	Mud	Casing	Logging	Cement	Injection String
Rustler 1007 **Surface TD - 1300**	**Surface** Drill 24" 0' - 1300 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	1300 of 20" 106.5# J55 STC Centralizers - bottom 2 joints and every 3rd jt thereafter, Cement basket at 200'	No Logs	Lead - 680sx of HES Extenda Cem, 13.7ppg, 4.5hrs TT Tail - 537sx of Halcem 3hr TT 50% Excess 1000psi CSD after 10hrs	
Salado 1,367' 1st Int TD - 5200	1st Intermediate Drill 3900' of 17-1/2" Hole 1300' - 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		SM A Section Casing Bowl 5300' 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 1300'	2920sx of Halcem, 13.7ppg 30% Excess 1000psi CSD after 10 hrs Cement to Surface	11,800' of 7" P110 26# TCPC
ECP DV Tool - 5250 Delaware 5239 Cherry Canyon - 6192 Brushy Canyon - 8005 **DV Tool - 9000** Bone Spring - 9271 **3rd Int Liner Top - 11,900** Wolfcamp - 12246 **2nd Int TD - 12,400**	**2nd Intermediate** Drill 7200' of 12-1/4" Hole 5200' - 12400' 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 12450' of 9-5/8" 53.5# P110 BTC **Special Drift to 8.535"** Externally Coat 3650' Between DV Tools DV tool at at 9000' ECP DV Tool below 1st int shoe 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: 10% Excess 1307sx Halcem 13.7ppg 1000psi CSD after 10 hrs Cement to Surface **Stage 2: 50% Excess** 1212sx Halcem 13.7ppg 1000psi CSD after 10 hrs **Stage 1: 50% Excess** 1090sx Halcem 15.6ppg. 1000psi CSD after 10hrs	5286' of 5-1/2" P110 17# TCPC Duoline Internally Coated Injection Tubing
Strawn - 13673 Atoka - 13964 Morrow - 14345 Miss Lst - 16609 Woodford - 16933 Perm Packer - 17,086 **3rd Int TD - 17,146**	**3rd Intermediate** Drill 4746' of 8-1/2" Hole 12400 - 17146' 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**	5246' 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	418sx Neocem 12.9 ppg 50% Excess 1000psi CSD after 12hrs	7-5/8" x 5-1/2" TCPC Permanent Packer with High Temp Elastomer and full Inconel 925 trim
Devonian - 17,126 Fusselman - 18185 Montoya - 18,759' TD - 18,859'	**Injection Interval** Drill 1713 of 6-1/2" hole 17146 - 18859'	Chert is possible Loss of Circulation and or Flows are expected 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	Brine Water - flows possible	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

Javelin SWD No. 1

FORM C-108 Supplemental Information

III. Well Data

A. Wellbore Information

1.

Well information	
Lease Name	Javelin SWD
Well No.	1
Location	S-9 T-25S R-34E
Footage Location	1,923' FNL & 218' FWL

2.

a. Wellbore Description

Casing Information				
Type	Surface	Intermediate	Production	Liner
OD	20"	13.375"	9.625"	7.625"
WT	0.500"	0.480"	0.545"	0.500"
ID	19"	12.415"	8.535"	6.625"
Drift ID	18.812"	12.259"	8.535"	6.500"
COD	21.00"	14.375"	10.625"	7.625"
Weight	106.5 lb/ft	68 lb/ft	53.5 lb/ft	39 lb/ft
Grade	J-55	HCL-80	P-110	Q-125
Hole Size	24"	17.5"	12.25"	8.5"
Depth Set	1,300'	5,200'	12,400'	11,900' - 17,146'

b. Cementing Program

Cement Information				
Casing String	Surface	Intermediate	Production	Liner
Lead Cement	Extenda Cem	-	-	-
Lead Cement Volume	680 sx	-	-	-
Tail Cement	Halcem	Halcem	Halcem	Neocem
Tail Cement Volume	595 sx	2,920 sx	Stage 1: 1,307 sx Stage 2: 1,212 sx Stage 3: 1,090 sx	418 sx
Cement Excess	50%	30%	50%, 50%, 10%	50%
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' -17,086'

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: 17,146' – 18,859'

   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	9,271
Wolfcamp	12,246
Strawn	13,673'
Atoka	13,964'
Morrow	14,345'

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: 2,571 PSI (surface pressure)
   Maximum Injection Pressure: 3,429 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, Strawn, Atoka, 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	1,007'
Salado	1,367'
Delaware	5,239'
Cherry Canyon	6,192'
Brushy Canyon	8,005'
Bone Spring	9,271'
Wolfcamp	12,246'
Strawn	13,673'
Atoka	13,964'
Morrow	14,345'
Mississippian Lime	16,609'
Woodford	16,933'
Devonian	17,126'
Fusselman	18,185'
Montoya	18,759'

B. Underground Sources of Drinking Water

There are no water wells within 1-mile of the proposed Javelin SWD #1 location. Water wells in the surrounding area have an average depth of 322 ft and an average water depth of 224 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 **Javelin SWD #1**) and any underground sources of drinking water.

NAME: John C. Webb

TITLE: Sr. Geologist

SIGNATURE: John C Webb

DATE: Nov. 1, 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.
	JAVELIN SWD	1

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
E	09	25S	34E	N/A	1923'	NORTH	218'	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	3,355'
16. Multiple	**17. Proposed Depth**	**18. Formation**	**19. Contractor**	**20. Spud Date**
N	18,859'	Siluro-Devonian	TBD	ASAP

Depth to Ground water	Distance from nearest fresh water well	Distance to nearest surface water
224'	> 1 mile	2,900'

☐ 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"	106.5 lb/ft	1,300'	1,275	Surface
Intermediate	17.5"	13.375"	68 lb/ft	5,200'	2,920	Surface
Production	12.25"	9.625"	53.5 lb/ft	12,400'	3,608	Surface
Prod. Liner	8.5"	7.625"	39 lb/ft	17,146'	418	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' – 17,086'	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: 12/6/2018	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-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
	JAVELIN SWD	1

[7] OGRID No.	[8] Operator Name	[9] Elevation
372338	NGL WATER SOLUTIONS PERMIAN, LLC	3355.00'±

[10] Surface Location

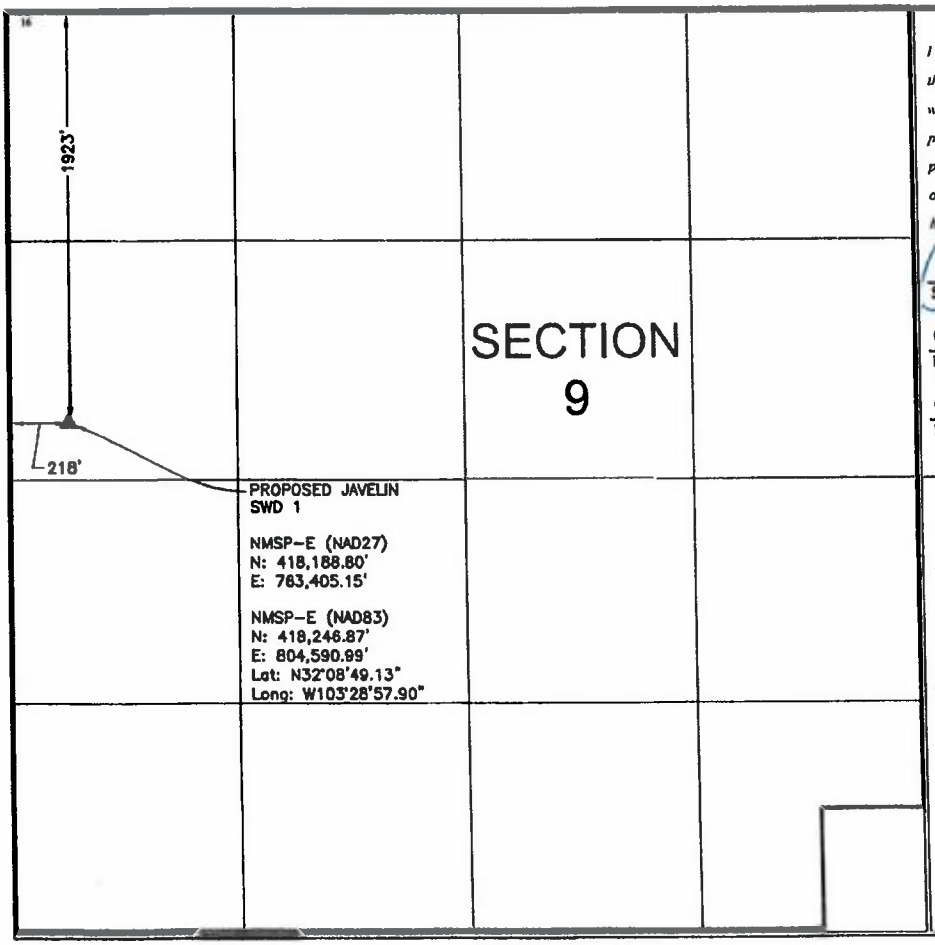
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	09	25 S	34 E	N/A	1923'	NORTH	218'	WEST	LEA

[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 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: 12/12/2018

Chris Weyand
Printed Name

chris@lonquist.com
E-mail Address

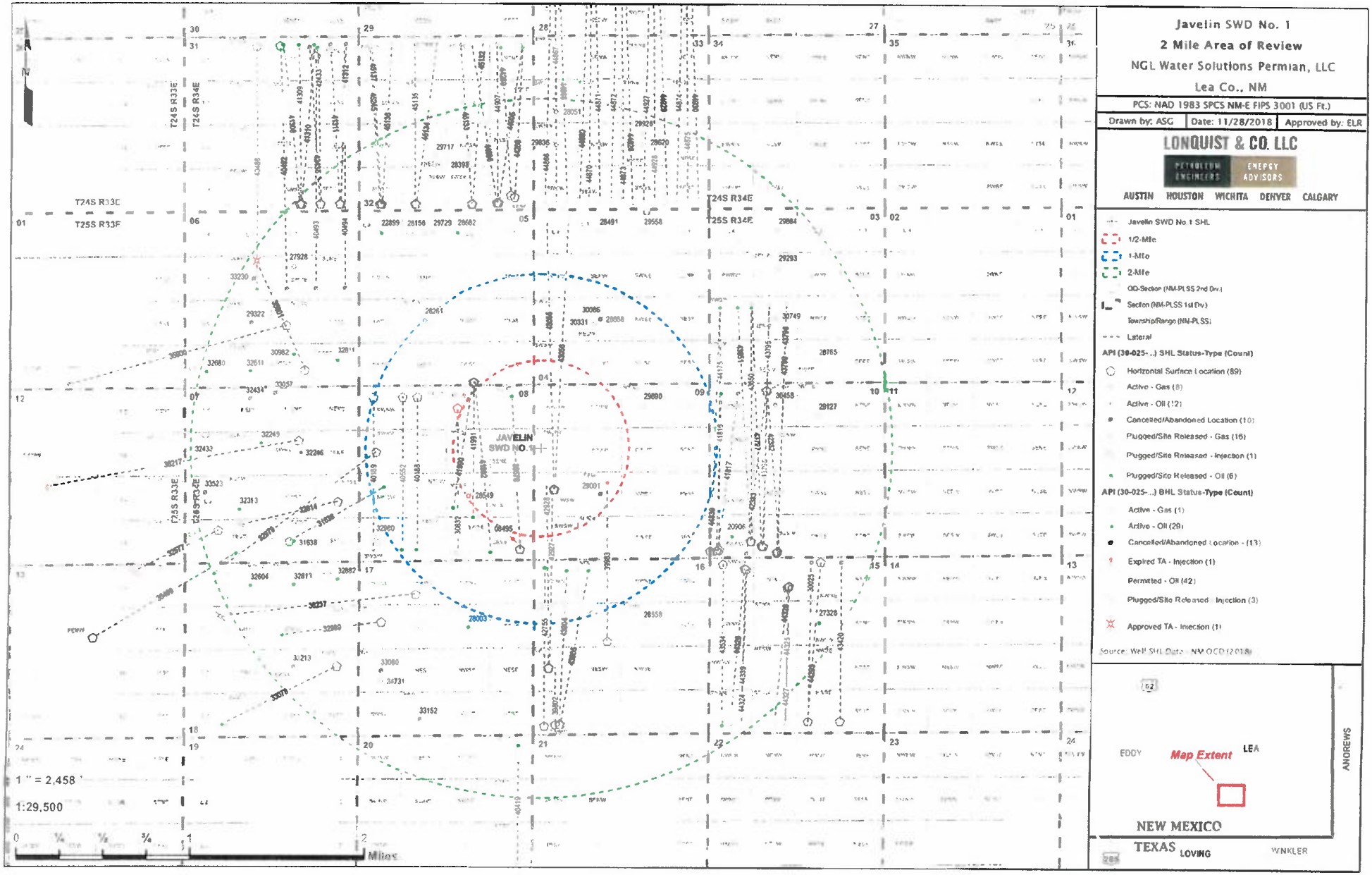
[18] SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat 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.

11/27/2018
Date of Survey

Signature and Seal of Professional Surveyor: Billy W. Barr Jr. NEW MEXICO 25114 PROFESSIONAL SURVEYOR

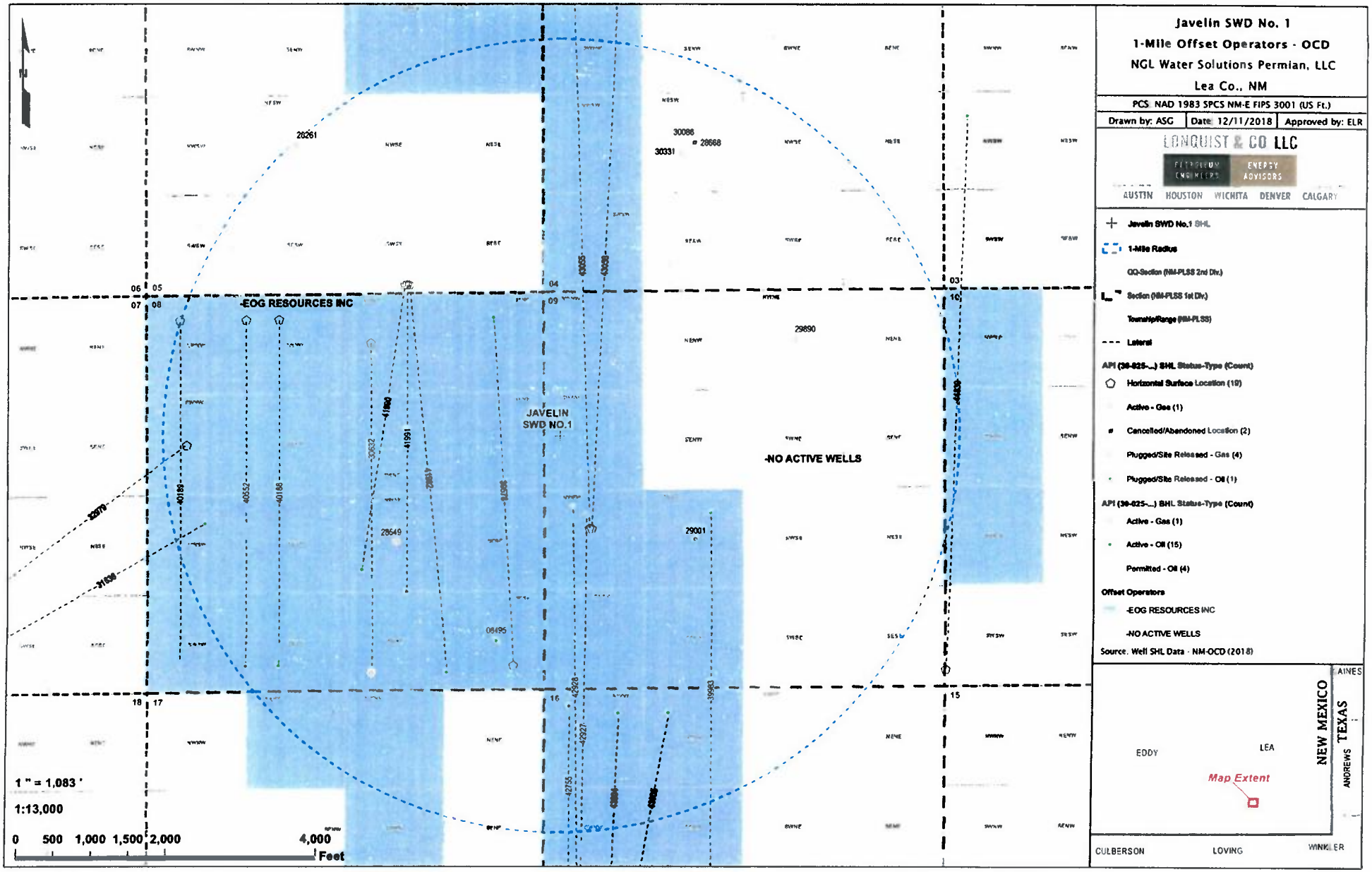
25114
Certificate Number

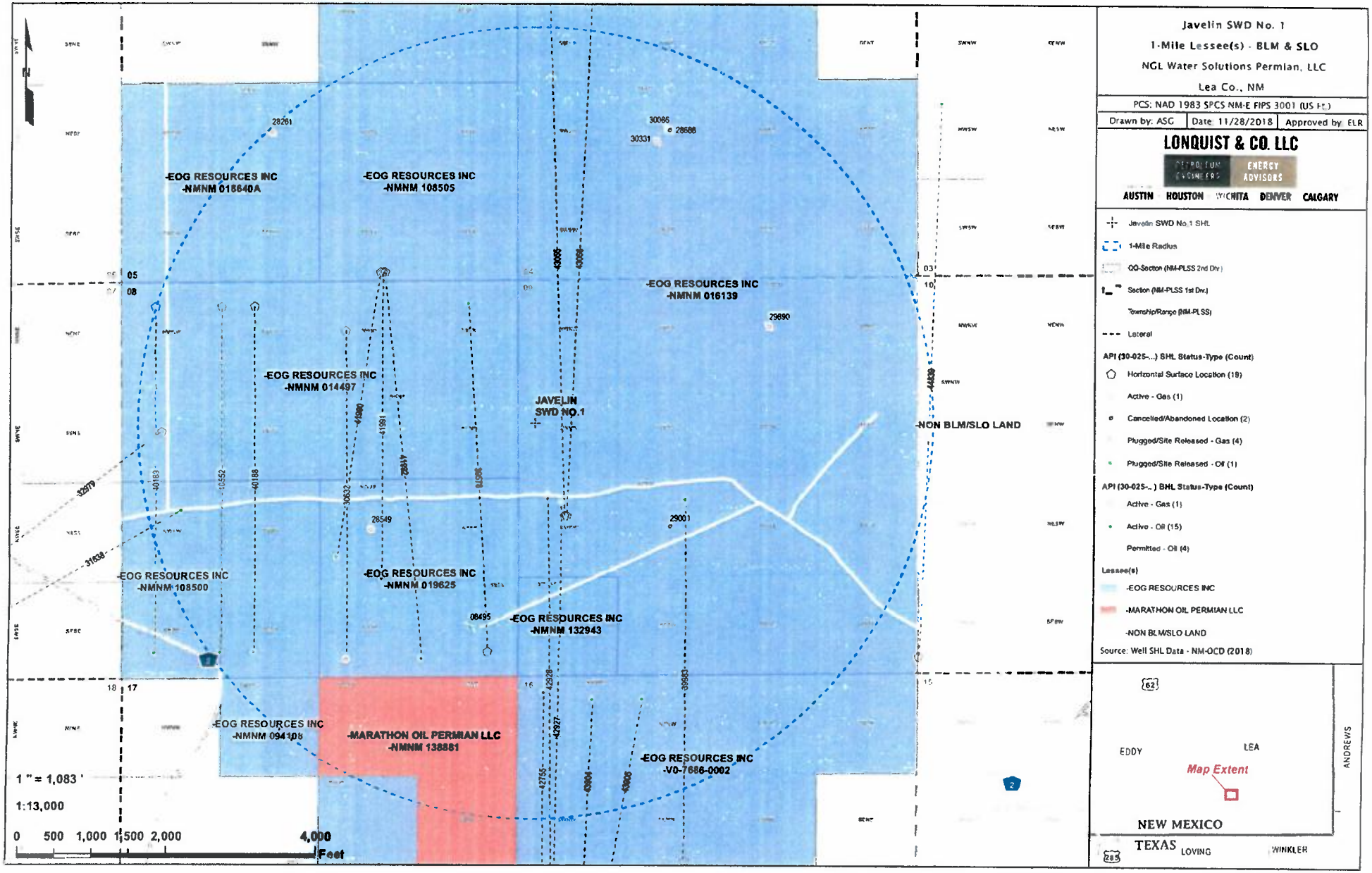

Javelin SWD No. 1
2 Mile Area of Review
NGL Water Solutions Permian, LLC
Lea Co., NM
PCS: NAD 1983 SPCS NM-E FIPS 3001 (US Ft.)
Drawn by: ASG
Date: 11/28/2018
Approved by: ELR
LONQUIST & CO. LLC
PETROLEUM ENGINEERS
ENERGY ADVISORS
AUSTIN HOUSTON WICHITA DENVER CALGARY
Javelin SWD No 1 SHL
1/2-Mile
1-Mile
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 (89)
Active - Gas (8)
Active - Oil (12)
Canceled/Abandoned Location (10)
Plugged/Site Released - Gas (16)
Plugged/Site Released - Injection (1)
Plugged/Site Released - Oil (6)
API (30-025-...) BHL Status-Type (Count)
Active - Gas (1)
Active - Oil (29)
Cancelled/Abandoned Location - (13)
Expired TA - Injection (1)
Permitted - Oil (42)
Plugged/Site Released - Injection (3)
Approved TA - Injection (1)
Source: Well SHL Data - NM OCD (2018)
JAVELIN SWD NO. 1
T24S R33E
T25S R33E
T24S R34E
T25S R34E
1 " = 2,458 '
1:29,500
0 1/4 1/2 3/4 1 2 Miles
EDDY
LEA
Map Extent
NEW MEXICO
TEXAS
LOVING
WINKLER
ANDREWS

Javelin 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
3002508495	PRE-ONGARD WELL #001	O	P	PRE-ONGARD WELL OPERATOR	5457	32.1395493000	-103.485534700	1/1/1900
3002528261	HALF 5 FEDERAL COM #001	G	P	EOG RESOURCES INC	15350	32.15771480000	-103.49403380000	7/23/1983
3002528549	LONGWAY DRAW FEDERAL COM #001	G	A	EOG RESOURCES INC	15700	32.1431847000	-103.489799500	12/31/9999
3002528668	PRE-ONGARD WELL #001C	O	C	PRE-ONGARD WELL OPERATOP	0	32.1576864342	-103.476955195	12/31/9999
3002529001	PRE-ONGARD WELL #001	O	C	PRE-ONGARD WELL OPERATOR	0	32.1431665248	-103.476974969	12/31/9999
3002529890	PITCHFORK, 8703 JV-P #001	G	P	BTA OIL PRODUCERS	15325	32.1504402000	-103.472686800	4/23/1987
3002530086	PITCHFORK 4 FEDERAL #001	G	P	EOG RESOURCES INC	15230	32.1576958000	-103.476982100	12/31/9999
3002530331	PITCHFORK 4 FEDERAL #002	G	P	EOG RESOURCES INC	13845	32.15728380000	-103.47747040000	4/24/1988
3002530632	DIAMOND 8 FEDERAL #001	G	A	EOG RESOURCES INC	9507	32.1504517000	-103.490867600	10/9/1989
3002532631	RED HILLS NORTH UNIT #705	O	A	EOG RESOURCES INC	12244	32.1395721000	-103.507270800	8/26/1994
3002532979	RED HILLS NORTH UNIT #709H	O	A	EOG RESOURCES INC	12265	32.1468353000	-103.498802200	6/14/1996
3002539578	DIAMOND 8 FEDERAL COM #002H	O	A	EOG RESOURCES INC	9432	32.1386414000	-103.484794600	2/11/2011
3002539983	JOLY 16 STATE COM #001H	O	A	EOG RESOURCES INC	9466	32.1309433000	-103.476257300	1/6/2011
3002540188	DIAMOND 8 FEDERAL COM #003H	O	A	EOG RESOURCES INC	9492	32.1513634000	-103.494796800	5/28/2012
3002540189	DIAMOND 8 FEDERAL COM #004H	O	A	EOG RESOURCES INC	9473	32.1513710000	-103.499061600	7/16/2012
3002540552	DIAMOND 8 FEDERAL COM #005H	O	A	EOG RESOURCES INC	9505	32.1513672000	-103.496215800	6/22/2012
3002541990	DIAMOND 5 FEDERAL COM #006H	O	A	EOG RESOURCES INC	9473	32.1525650000	-103.489379900	3/13/2015
3002541991	DIAMOND 5 FEDERAL COM #007H	O	A	EOG RESOURCES INC	9459	32.1525650000	-103.489280700	3/28/2015
3002541992	DIAMOND 5 FEDERAL COM #008H	O	A	EOG RESOURCES INC	9471	32.15256500000	-103.48918910000	4/11/2015
3002542755	ANDELE 16 STATE COM #702H	O	A	EOG RESOURCES INC	12578	32.1239623900	-103.482376800	9/12/2015
3002542927	MOSLEY 16 STATE COM #002H	O	N	EOG RESOURCES INC	0	32.1288002700	-103.481894900	12/31/9999
3002542928	MOSLEY 16 STATE COM #501H	O	N	EOG RESOURCES INC	0	32.12879997000	-103.48199160000	12/31/9999
3002543055	HOLYFIELD 9 FEDERAL #001H	O	N	EOG RESOURCES INC	0	32.14360989000	-103.48151420000	12/31/9999
3002543056	HOLYFIELD 9 FEDERAL #002H	O	N	EOG RESOURCES INC	0	32.1436099900	-103.481417300	12/31/9999
3002543904	ANDELE 16 STATE COM #703H	O	A	EOG RESOURCES INC	12527	32.1240999000	-103.480893000	8/1/2017
3002543905	ANDELE 16 STATE COM #704H	O	A	EOG RESOURCES INC	12535	32.1240998000	-103.480779900	8/3/2017
3002544839	OSPREY 10 #301H	O	A	EOG RESOURCES INC	10289	32.1383513000	-103.466287600	6/25/2018


Javelin 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: 12/11/2018
Approved by: ELR
LONQUIST & CO LLC
PETROLEUM ENGINEERS
ENERGY ADVISORS
AUSTIN HOUSTON WICHITA DENVER CALGARY
Javelin 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 - Gas (4)
Plugged/Site Released - Oil (1)
API (30-025-...) SHL Status-Type (Count)
Active - Gas (1)
Active - Oil (15)
Permitted - Oil (4)
Offset Operators
-EOG RESOURCES INC
-NO ACTIVE WELLS
Source: Well SHL Data - NM-OCD (2018)
-EOG RESOURCES INC
JAVELIN SWD NO.1
-NO ACTIVE WELLS
1 " = 1,083 '
1:13,000
0 500 1,000 1,500 2,000 4,000
Feet
NEW MEXICO
TEXAS
EDDY
LEA
Map Extent
CULBERSON
LOVING
WINKLER
ANDREWS



Javelin 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: 11/28/2018	Approved by: ELR

LONQUIST & CO. LLC

PETROLEUM ENGINEERS | ENERGY ADVISORS

AUSTIN HOUSTON WICHITA DENVER CALGARY

- Javelin 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 - Gas (4)
- Plugged/Site Released - Oil (1)

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

- Active - Gas (1)
- Active - Oil (15)
- Permitted - Oil (4)

Lessee(s)

- -EOG RESOURCES INC
- -MARATHON OIL PERMIAN LLC
- -NON BLM/SLO LAND

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

Javelin 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
GOEDEKE #002	3002508407	10	26S	33E	G	LEA	DELAWARE		293925						184000	85	210	
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
PRONGHORN AHO FEDERAL #001	3002526496	6	23S	33E	G	LEA	STRAWN	5.5			20.1	0	12.2		35.5	61.1	48.8	
ANTELOPE RIDGE UNIT #002	3002520444	4	24S	34E	B	LEA	ATOKA	6.7	51475						31000	317	340	
CUSTER MOUNTAIN UNIT #001	3002520756	9	24S	35E	K	LEA	MORROW		282741						176800	161	650	

Exhibits of Scott Wilson
On Behalf of NGL Water Solutions Permian, LLC

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. 20235

AFFIDAVIT OF SCOTT J. WILSON

STATE OF COLORADO)
) ss.
COUNTY OF DENVER)

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 application 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 application. A copy of my study is attached hereto as Exhibit A.

5. The applicant, NGL (OGRID No. 372338), seeks an order approving the Javelin SWD #1 well (Case No. 20235) which is a salt water disposal well.

6. The well will be spaced out and will not be located closer than approximately 1.5 miles 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 well 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

COLORADO REGISTERED PROFESSIONAL ENGINEER
SCOTT JAMES WILSON
36112
2/6/2019

SUBSCRIBED AND SWORN to before me this 6th day of February, 2019 by Scott J. Wilson.

Notary Public

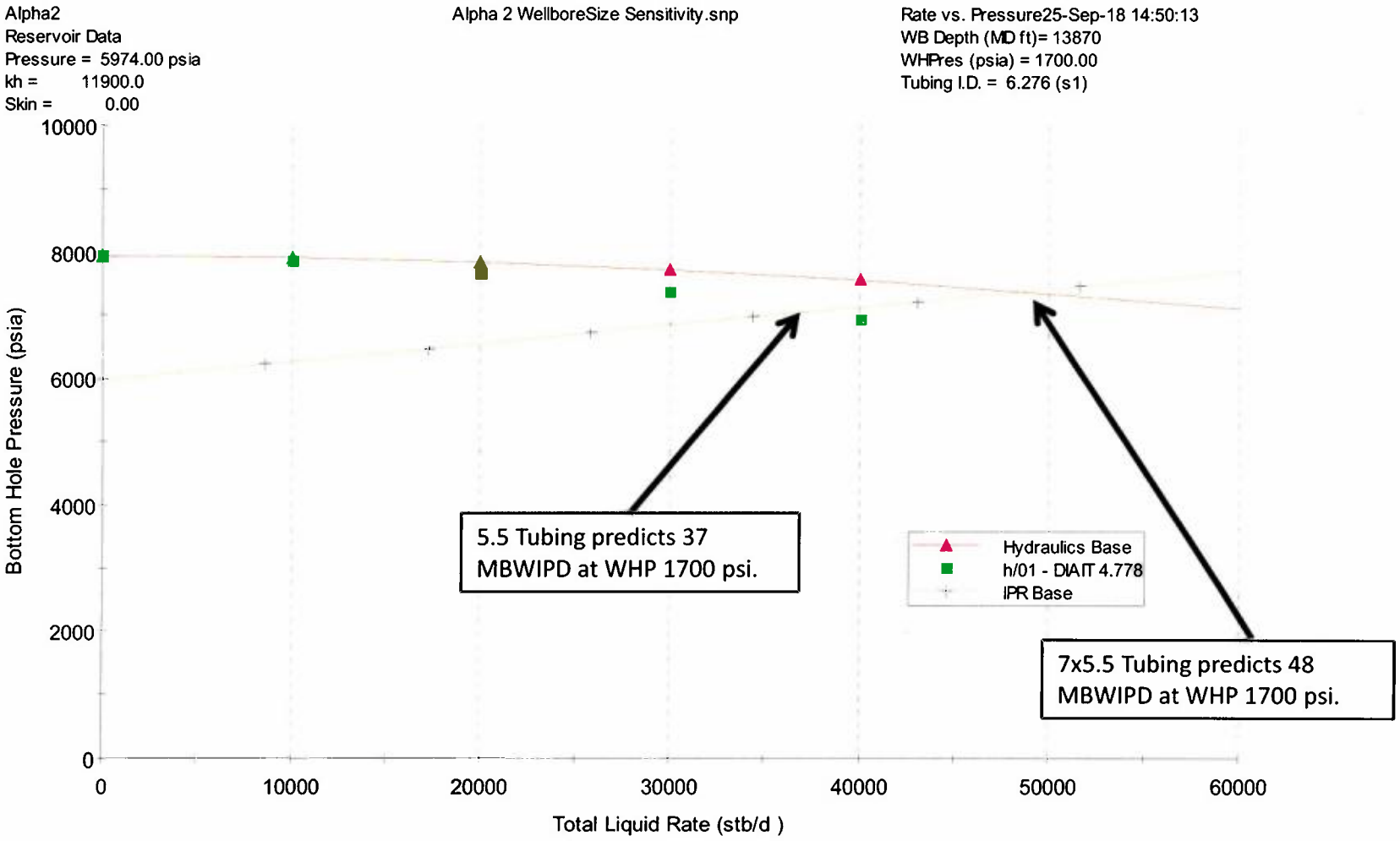
My commission expires: 8/23/21

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

Exh. 1

NGL Water Solutions, LLC

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



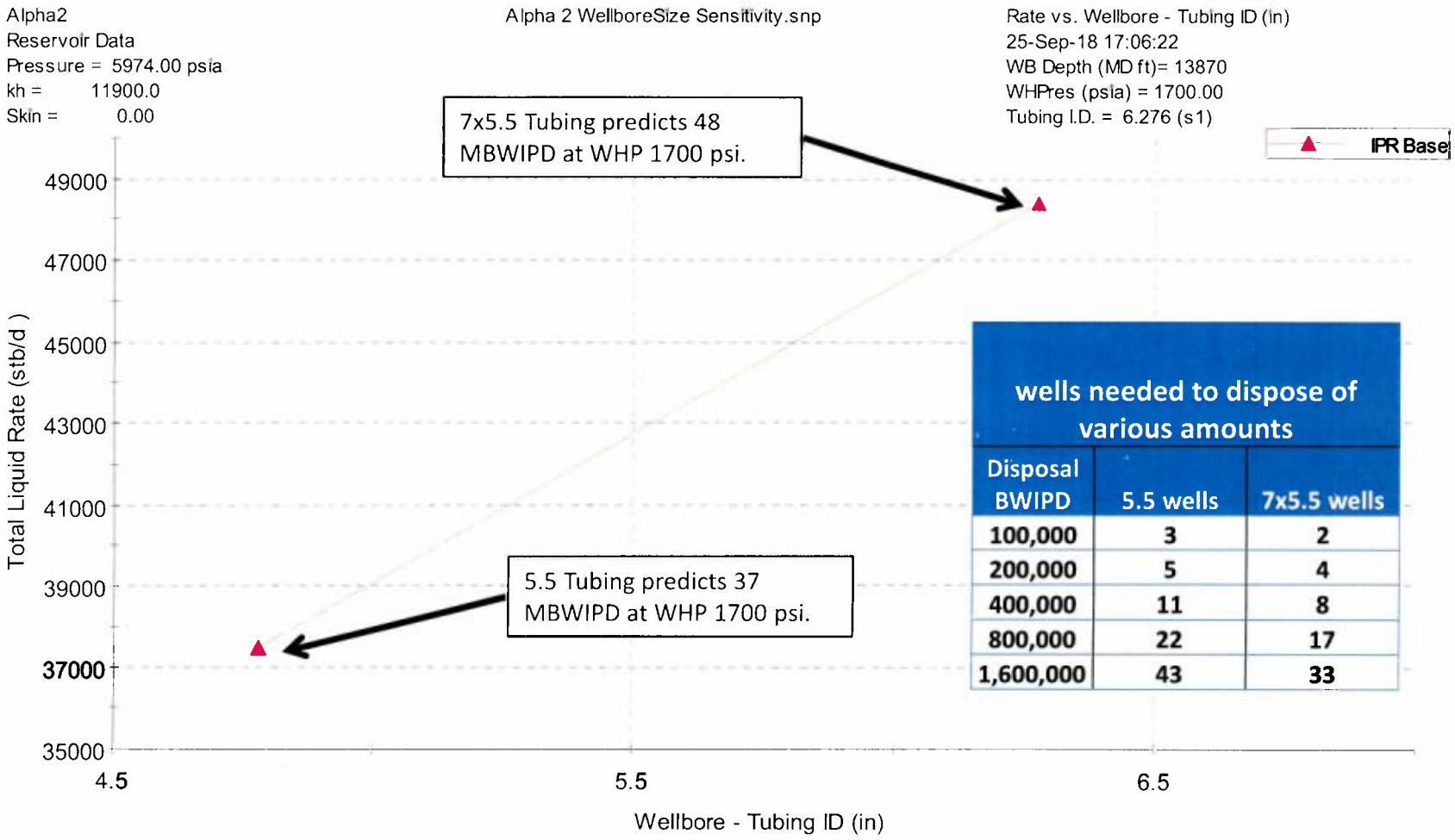
RYDER SCOTT COMPANY
PETROLEUM CONSULTANTS
TBPE FIRM LIC. NO. F-1580

2019-02-06

NGL Water Solutions, LLC

Exh. 2

Increased injection rate per well equates to fewer injectors.



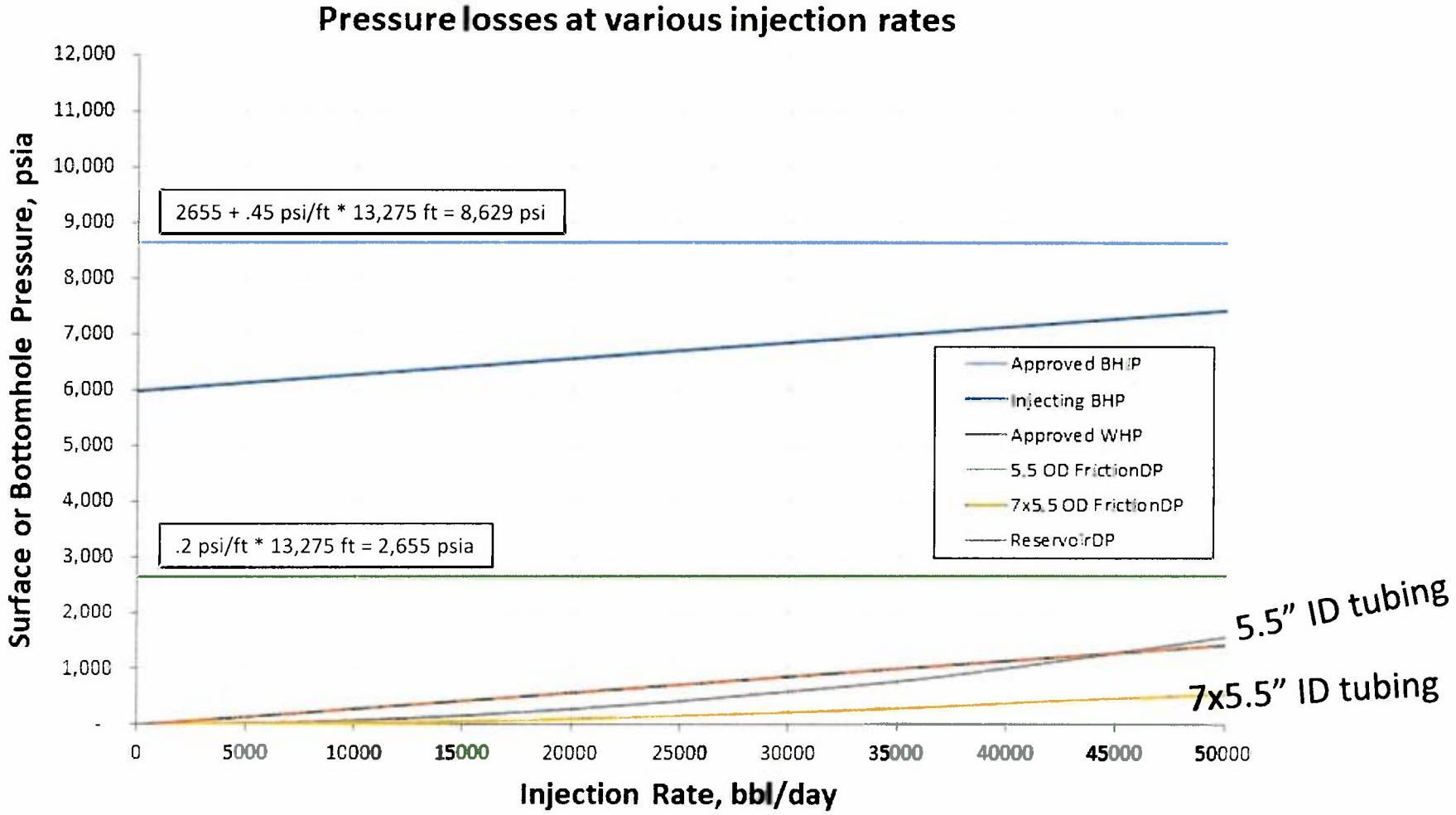
wells needed to dispose of various amounts		
Disposal BWIPD	5.5 wells	7x5.5 wells
100,000	3	2
200,000	5	4
400,000	11	8
800,000	22	17
1,600,000	43	33

NGL Water Solutions, LLC

Exh. 3

Increasing tubing size will decrease friction losses and conserve horsepower

2 example tubing sizes and their impact on friction losses



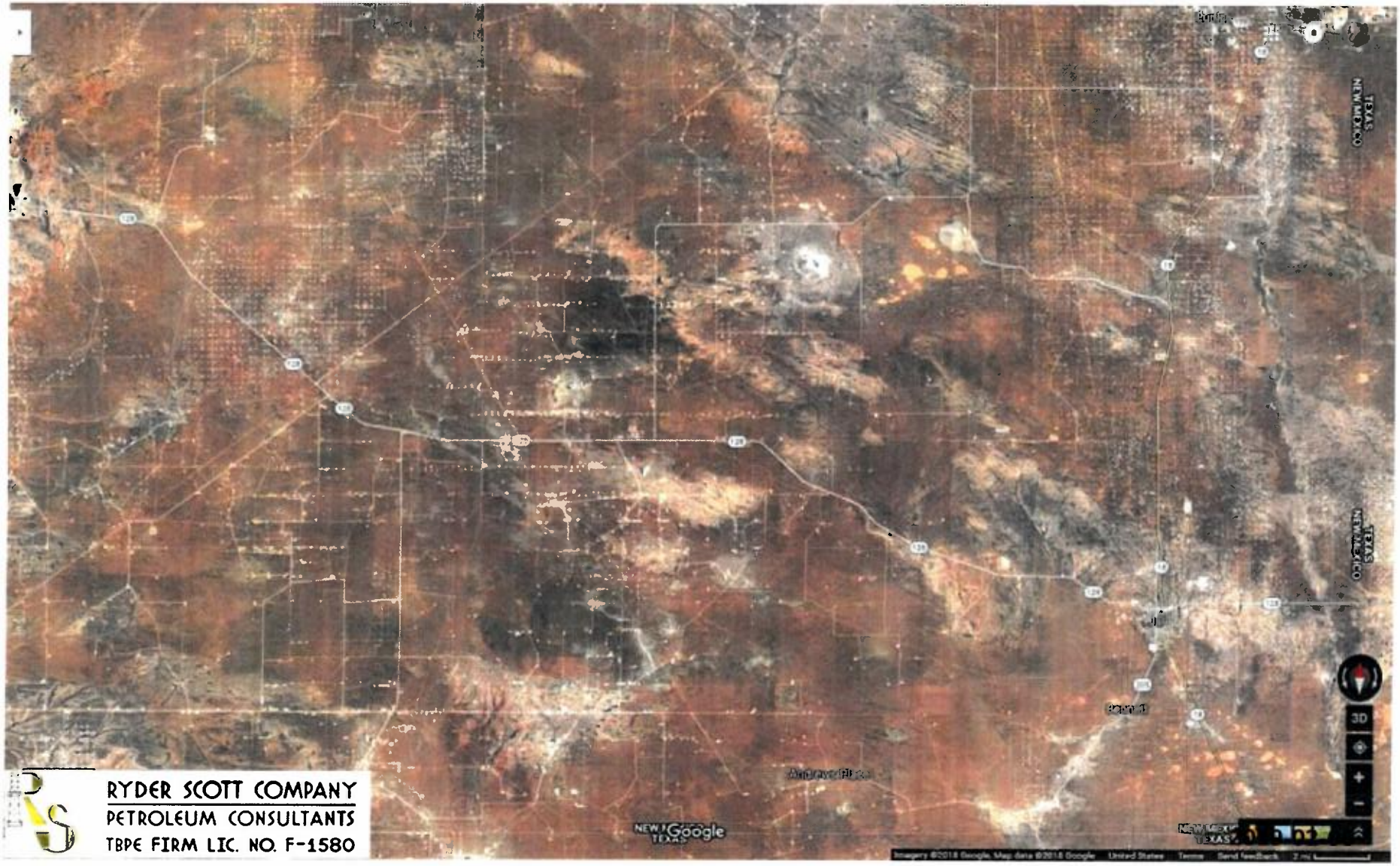
RYDER SCOTT COMPANY
PETROLEUM CONSULTANTS
TBPE FIRM LIC. NO. F-1580

2019-02-06

Exh. 4

NGL Water Solutions, LLC

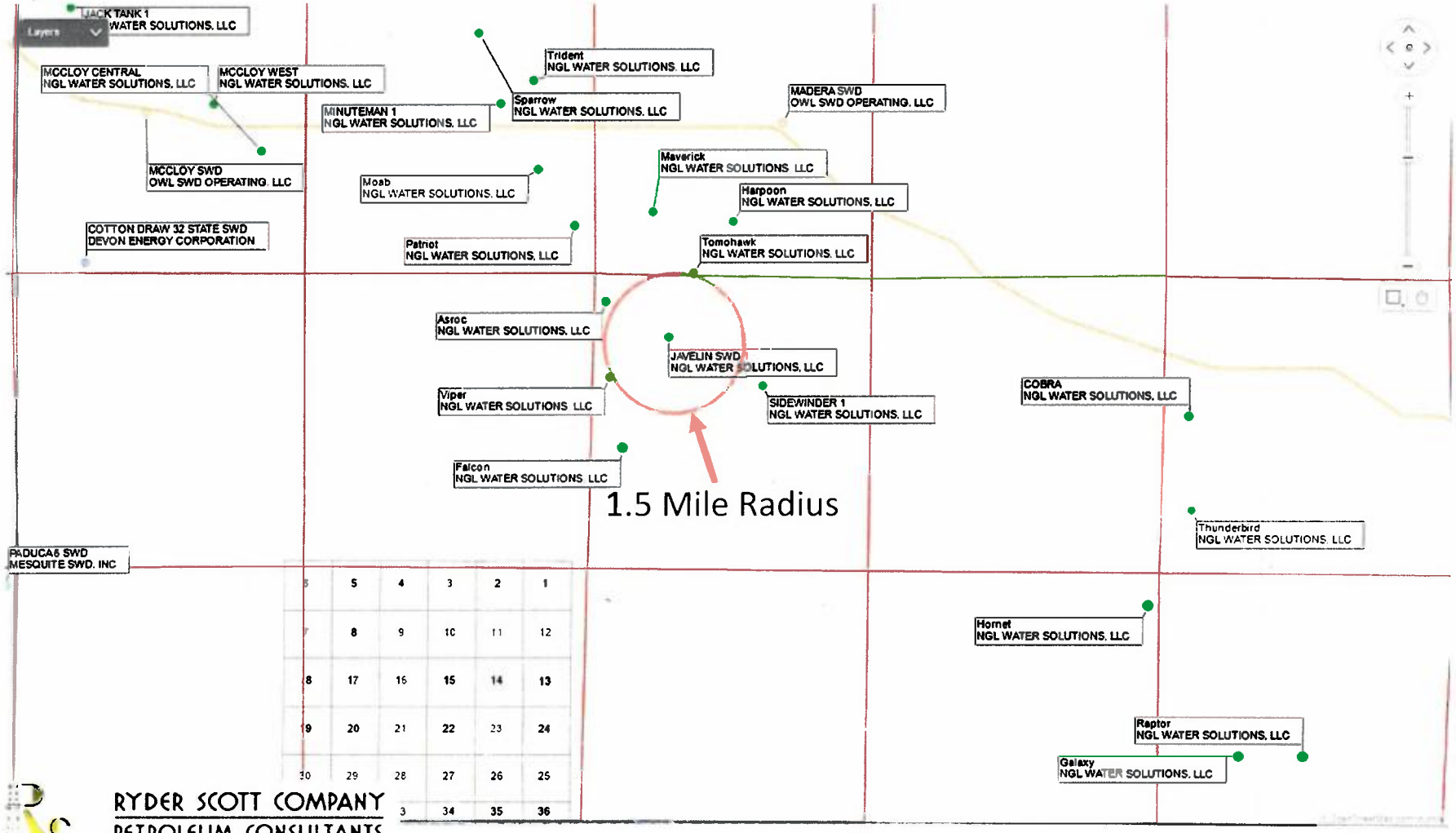
Terrain is level and infrastructure is plentiful.



NGL Water Solutions, LLC

Exh. 5

Devonian Salt Water Injection wells in the area.
Area is roughly 30 miles (E-W) by 18 miles (N-S)

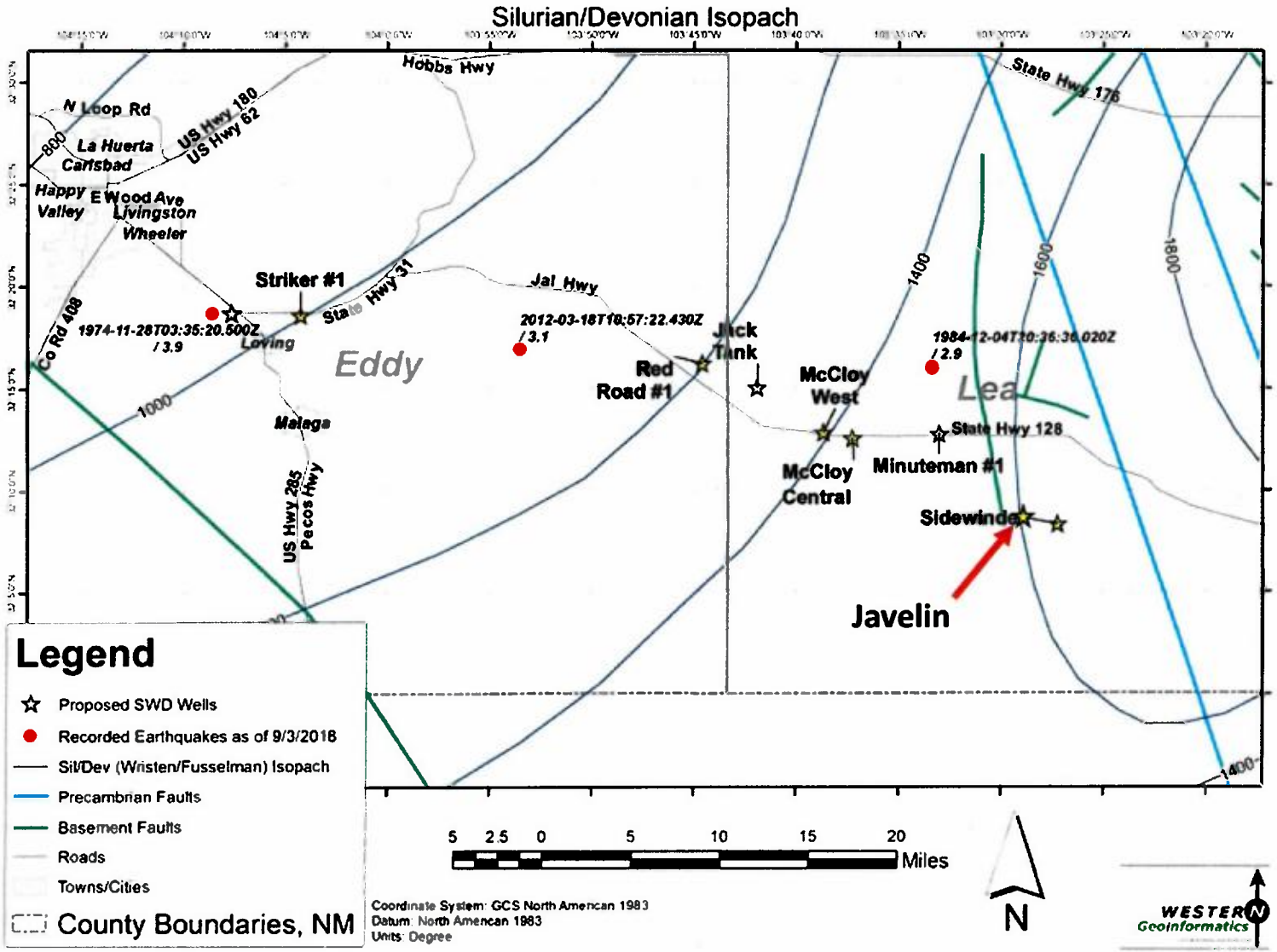


RYDER SCOTT COMPANY
PETROLEUM CONSULTANTS
TBPE FIRM LIC. NO. F-1580

2019-02-06

NGL Water Solutions, LLC

Exh. 6



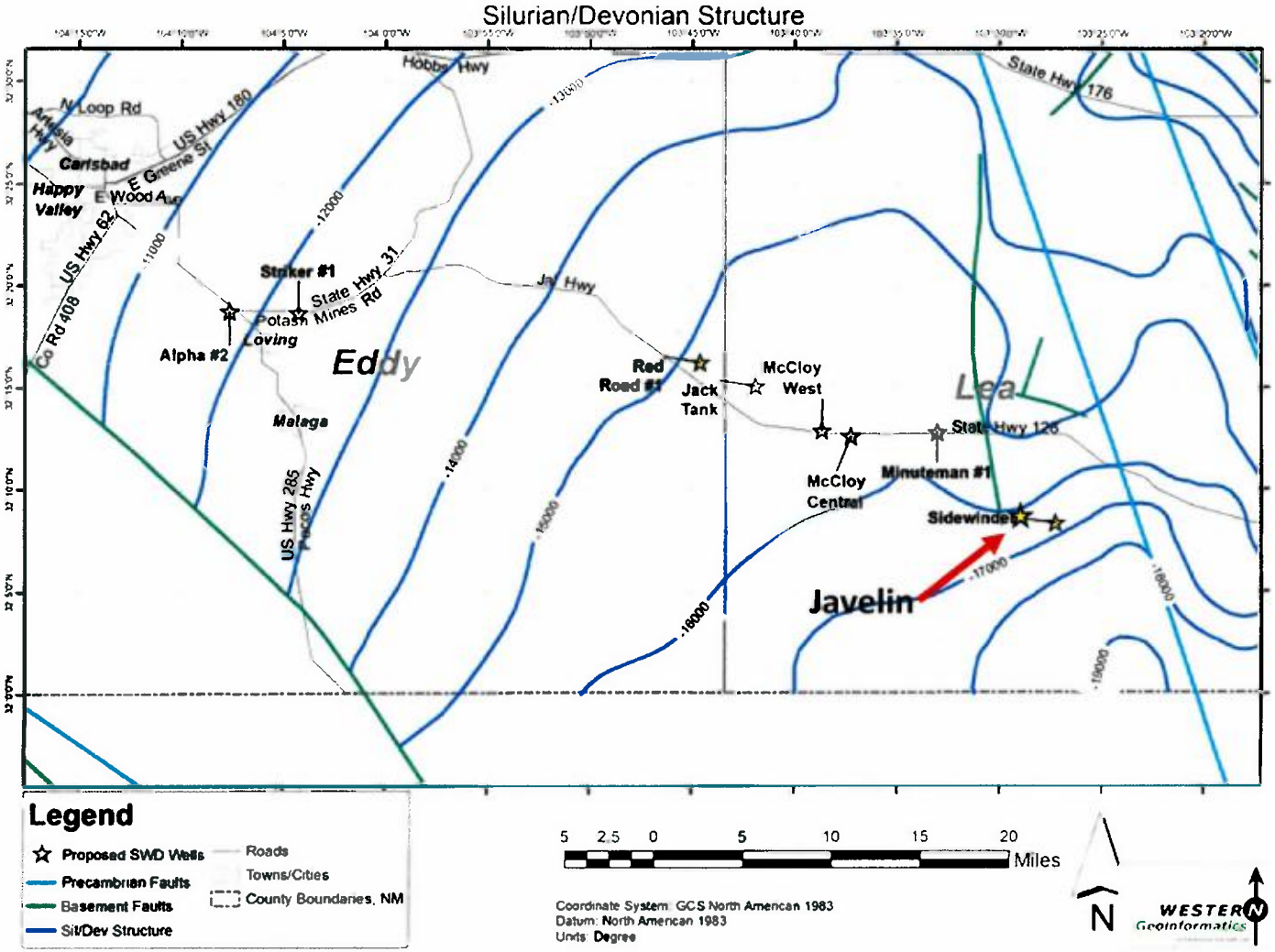
RYDER SCOTT COMPANY
PETROLEUM CONSULTANTS
TBPE FIRM LIC. NO. F-1580

2019-02-06

NGL Water Solutions, LLC

Exh. 7

Sil/Dev structure dips from NW to SE



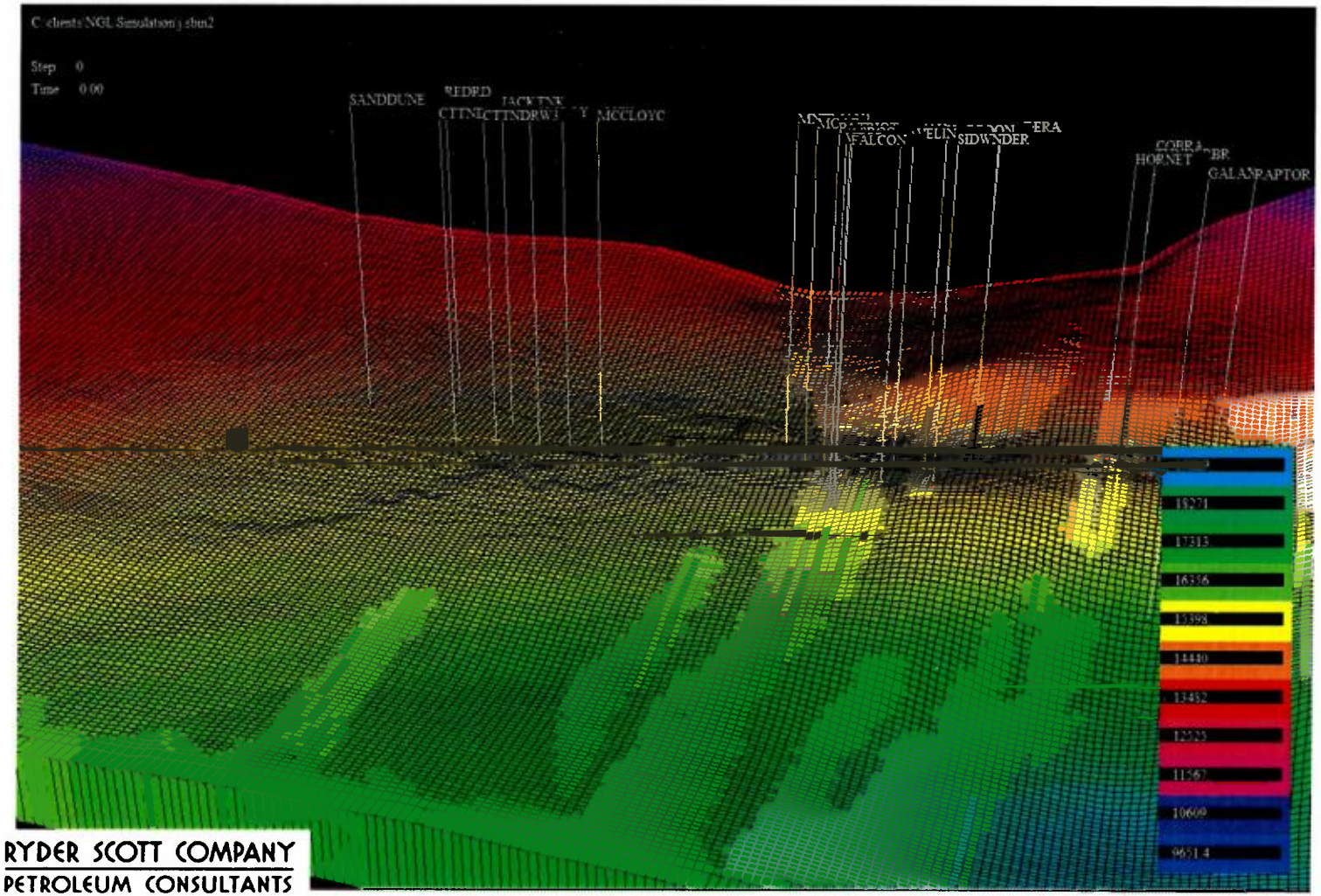
NGL Water Solutions, LLC

Exh. 8

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.



RYDER SCOTT COMPANY
PETROLEUM CONSULTANTS
TBPE FIRM LIC. NO. F-1580

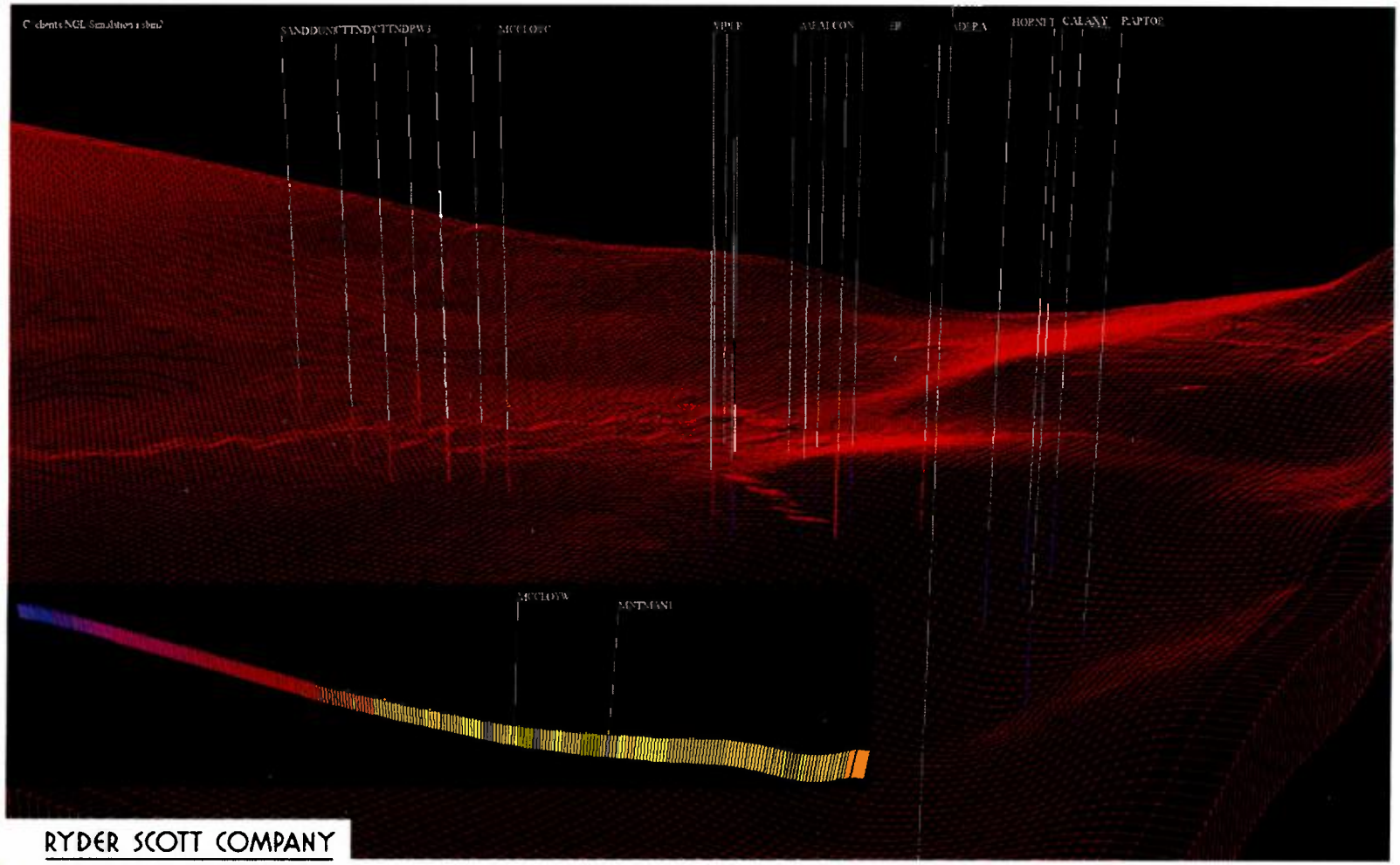
2019-02-06

NGL Water Solutions, LLC

Exh. 9

3D view of grid shows Structural Relief.

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



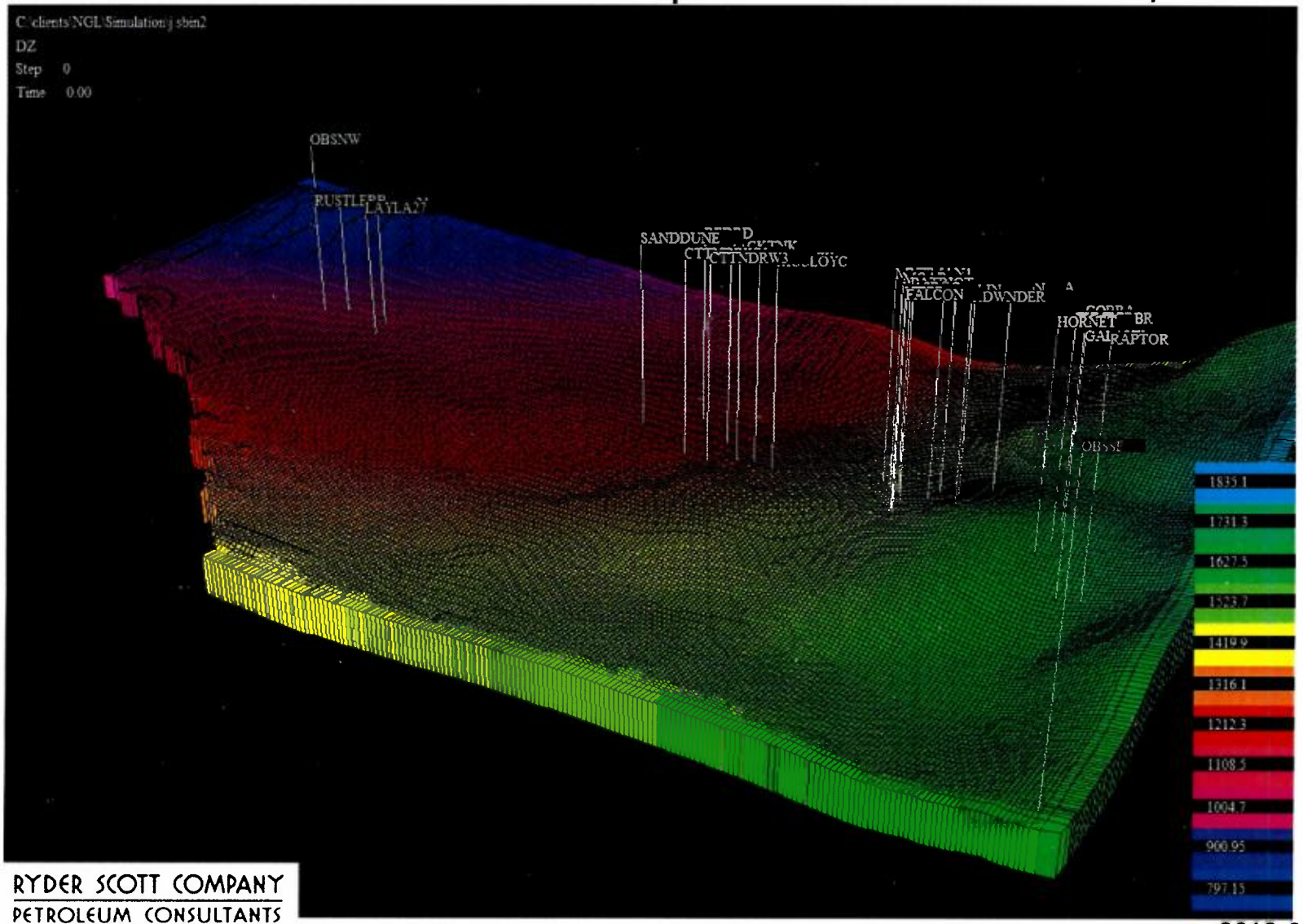
RYDER SCOTT COMPANY
PETROLEUM CONSULTANTS
TBPE FIRM LIC. NO. F-1580

2019-02-06

NGL Water Solutions, LLC

Exh. 10

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



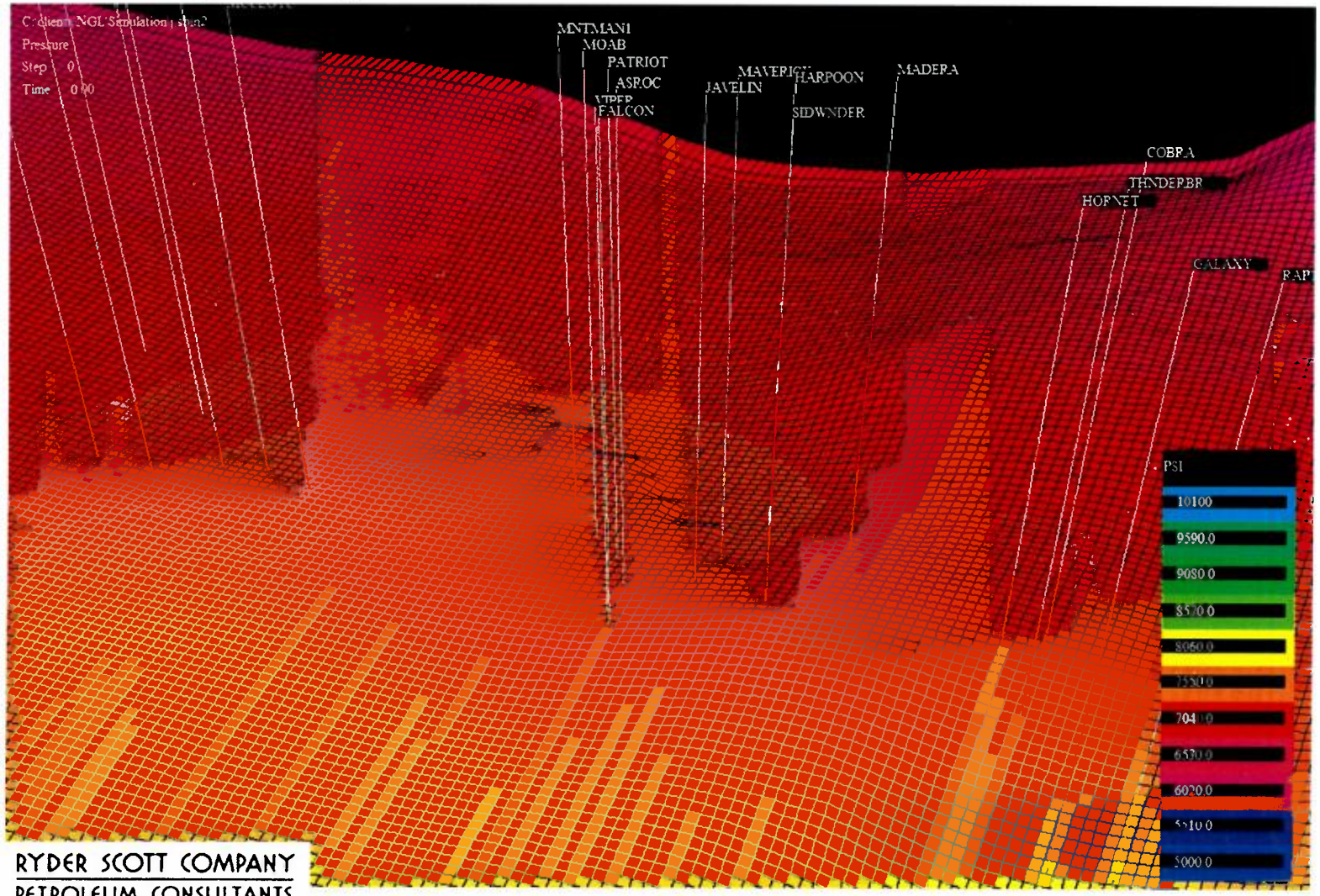
RYDER SCOTT COMPANY
PETROLEUM CONSULTANTS
TBPE FIRM LIC. NO. F-1580

2019-02-06

NGL Water Solutions, LLC

Exh. 11

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



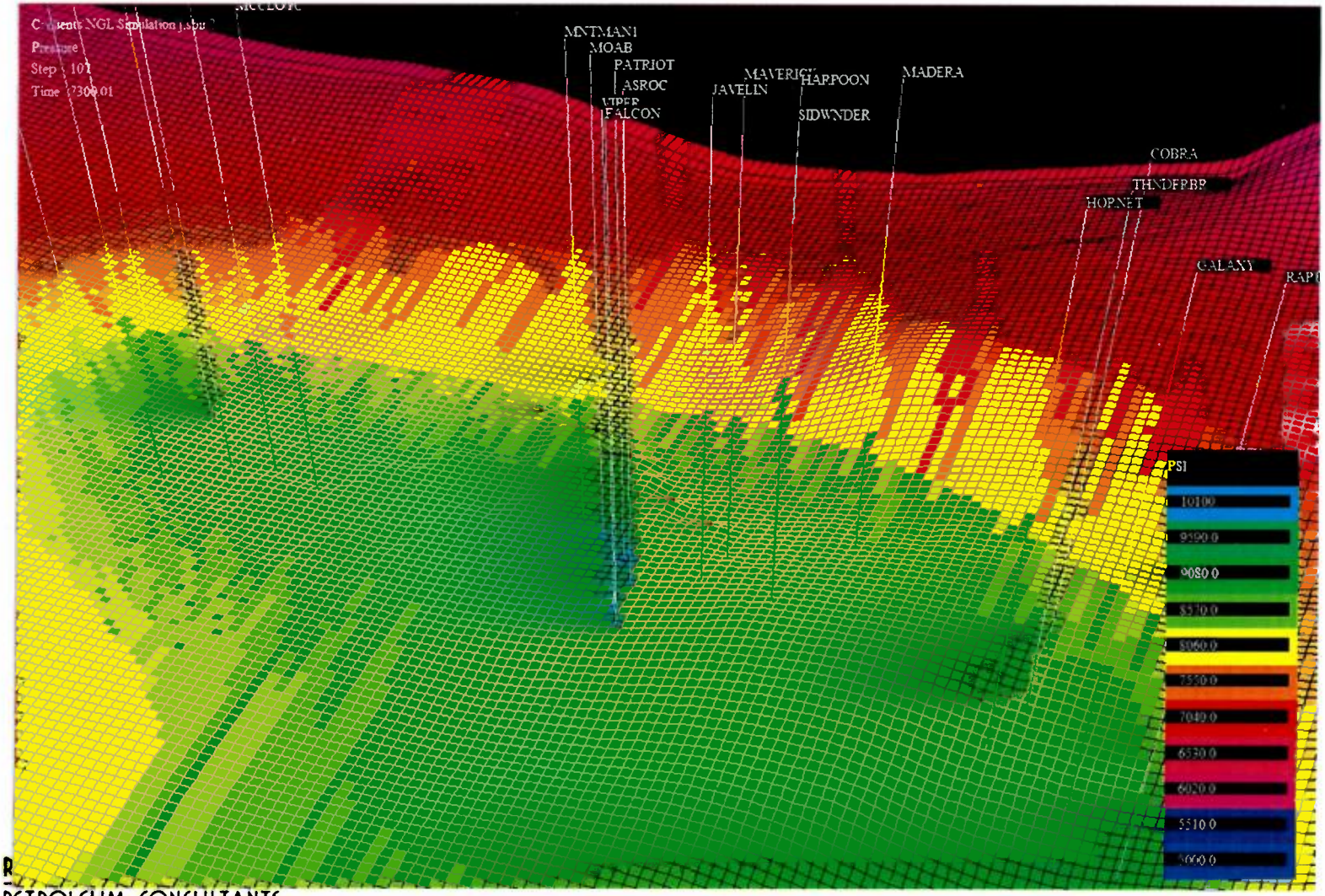
RYDER SCOTT COMPANY
PETROLEUM CONSULTANTS
TBPE FIRM LIC. NO. F-1580

2019-02-06

NGL Water Solutions, LLC

Exh 12

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



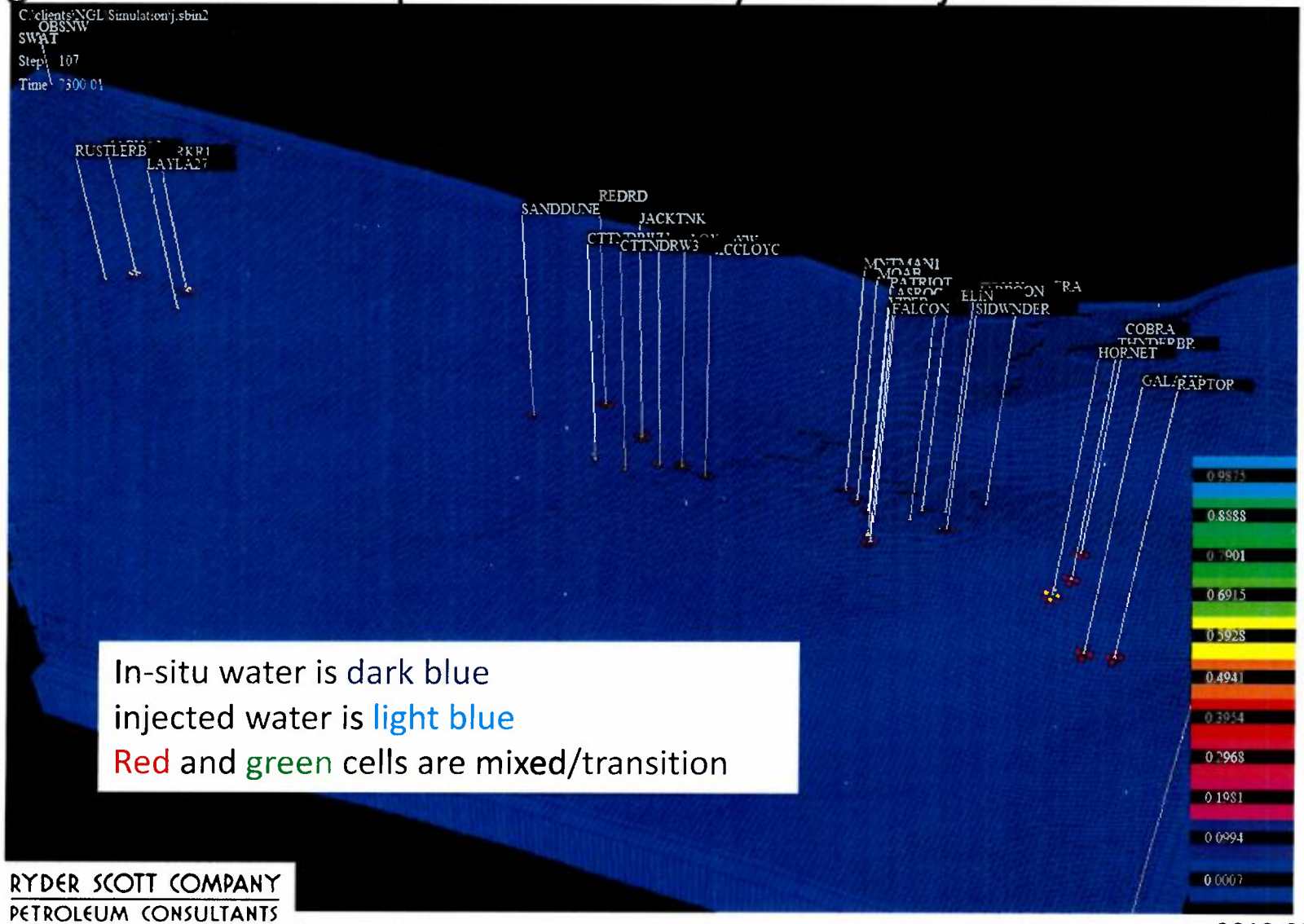
PETROLEUM CONSULTANTS
TBPE FIRM LIC. NO. F-1580

2019-02-06

NGL Water Solutions, LLC

Exh. 13

Large scale saturation profiles after 20 years of injection.



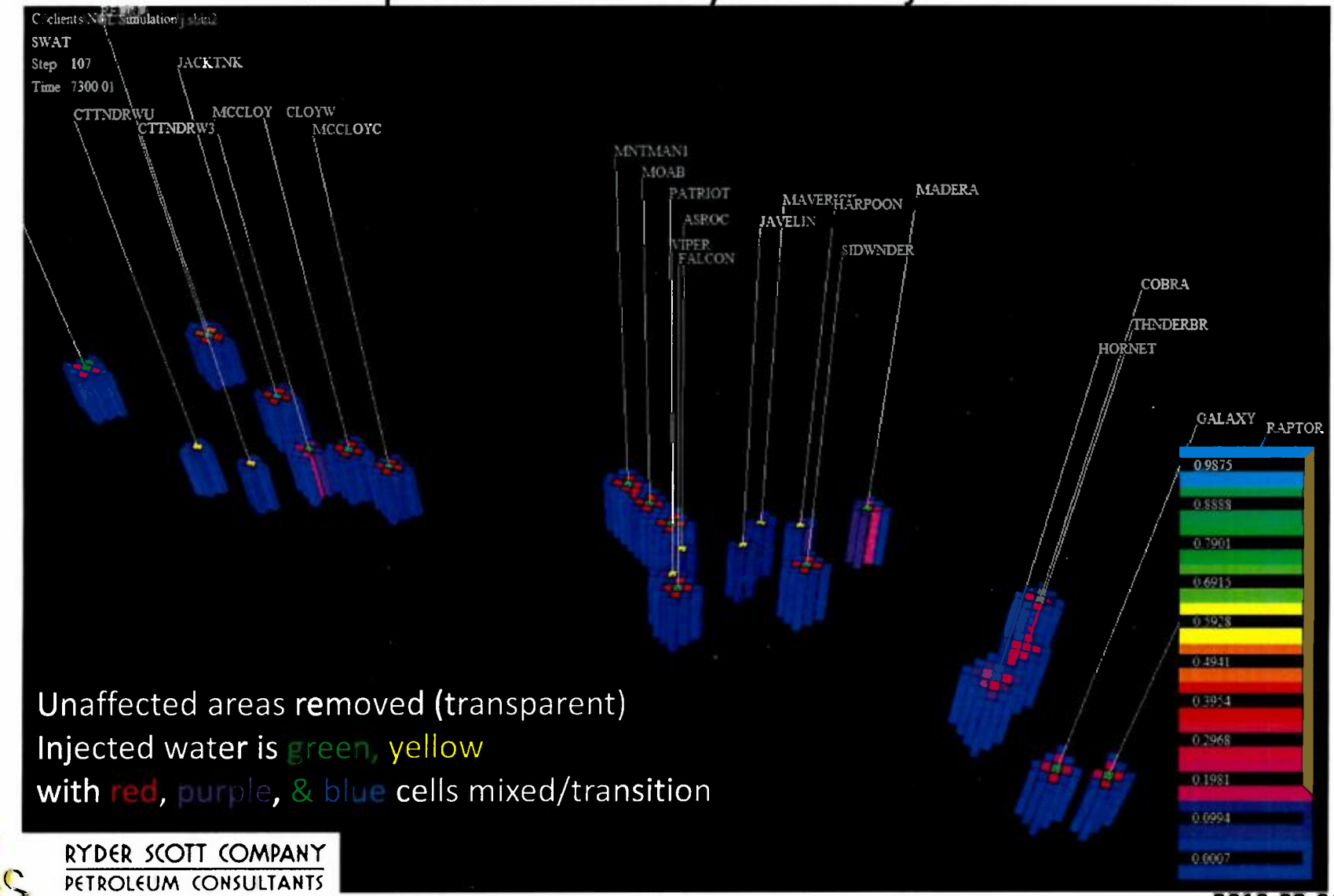
RYDER SCOTT COMPANY
PETROLEUM CONSULTANTS
TBPE FIRM LIC. NO. F-1580

2019-02-06

Exh. 14

NGL Water Solutions, LLC

Detailed saturation profiles after 20 years of injection.



Unaffected areas removed (transparent)
Injected water is green, yellow
with red, purple, & blue cells mixed/transition

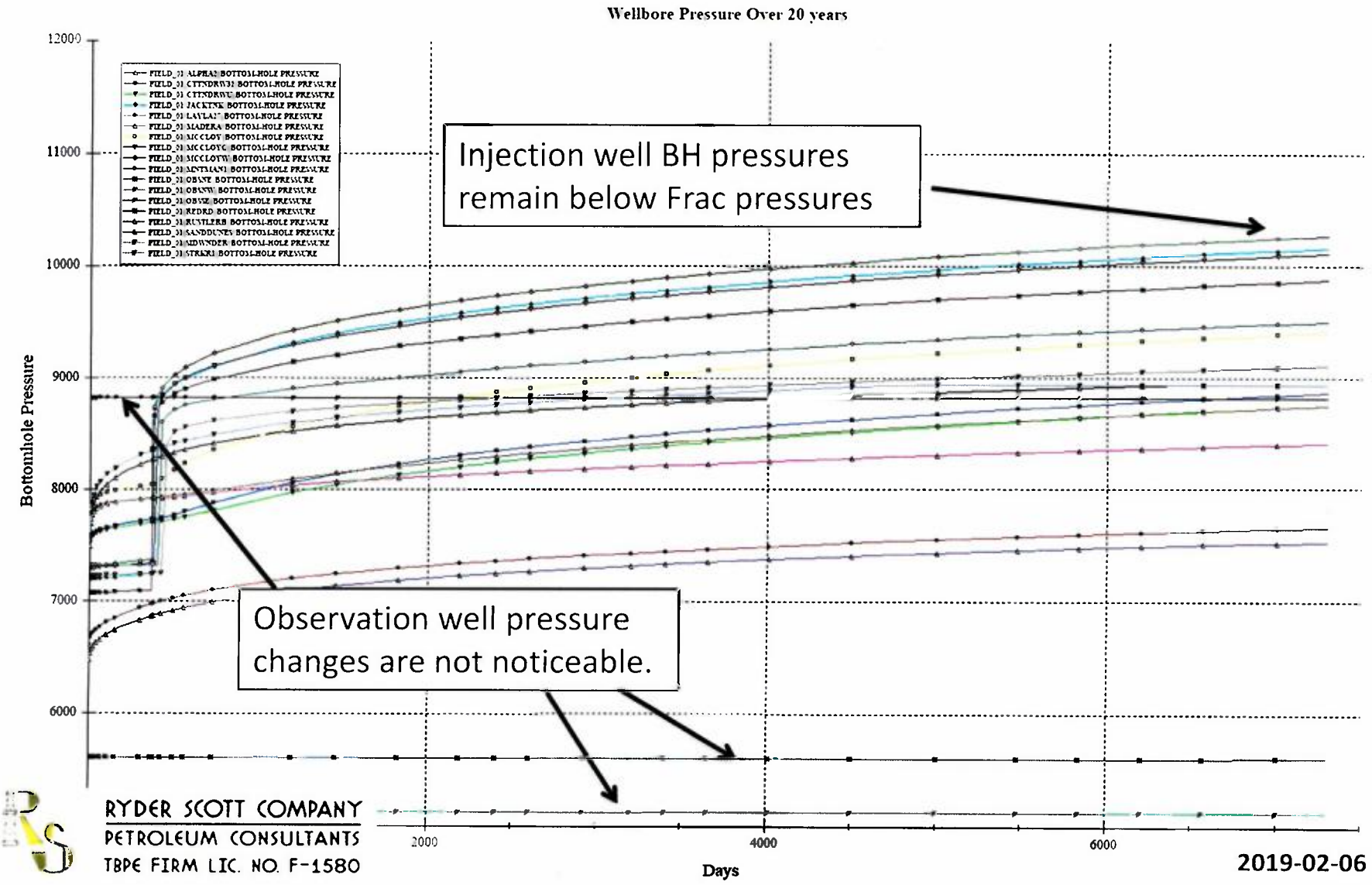
RYDER SCOTT COMPANY
PETROLEUM CONSULTANTS
TBPE FIRM LIC. NO. F-1580

2019-02-06

NGL Water Solutions, LLC

Exh. 15

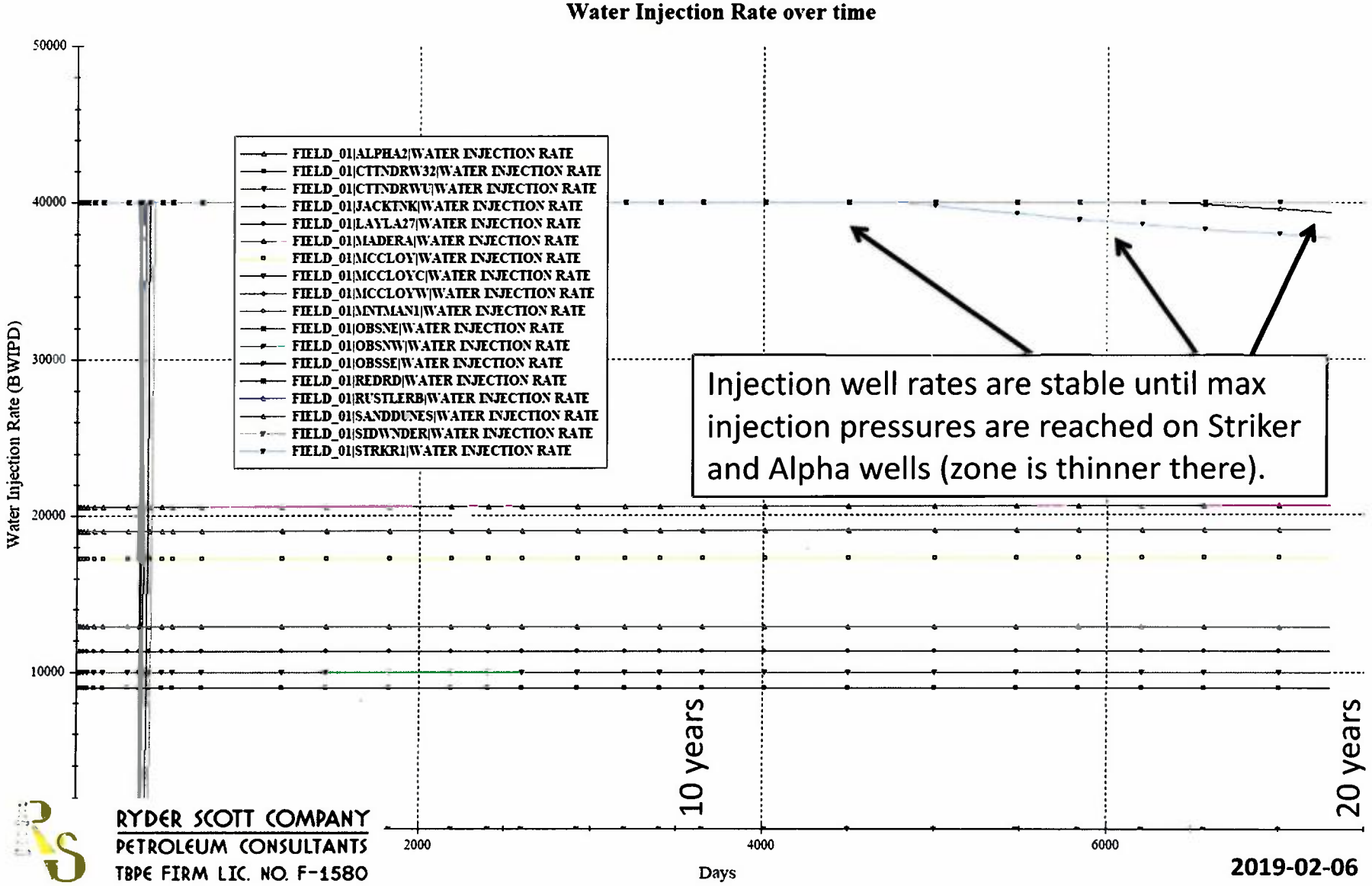
Simulation predictions for individual wells over time



NGL Water Solutions, LLC

Exh. 16

Simulation predictions for individual wells over time



Exhibits of Kate Zeigler
On Behalf of NGL Water Solutions Permian, LLC

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. 20235

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 application 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 application. A copy of my geologic study, including cross sections, a structure map and isopach are is included in Attachment A to this affidavit.

5. The applicant, NGL (OGRID No. 372338), seeks an order approving the Javelin SWD #1 well (Case No. 20235), which is a salt water disposal well.

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, 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 to 220 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 1,600 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]

OFFICIAL SEAL
MISTI GUTIERREZ
NOTARY PUBLIC-State of New Mexico
My Commission Expires 03-15-2021

Kate Zeigler

SUBSCRIBED AND SWORN to before me this 5 th day of February, 2019 by Kate Zeigler.

Misti Gutierrez
Notary Public

My commission expires: March 15th, 2021

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.

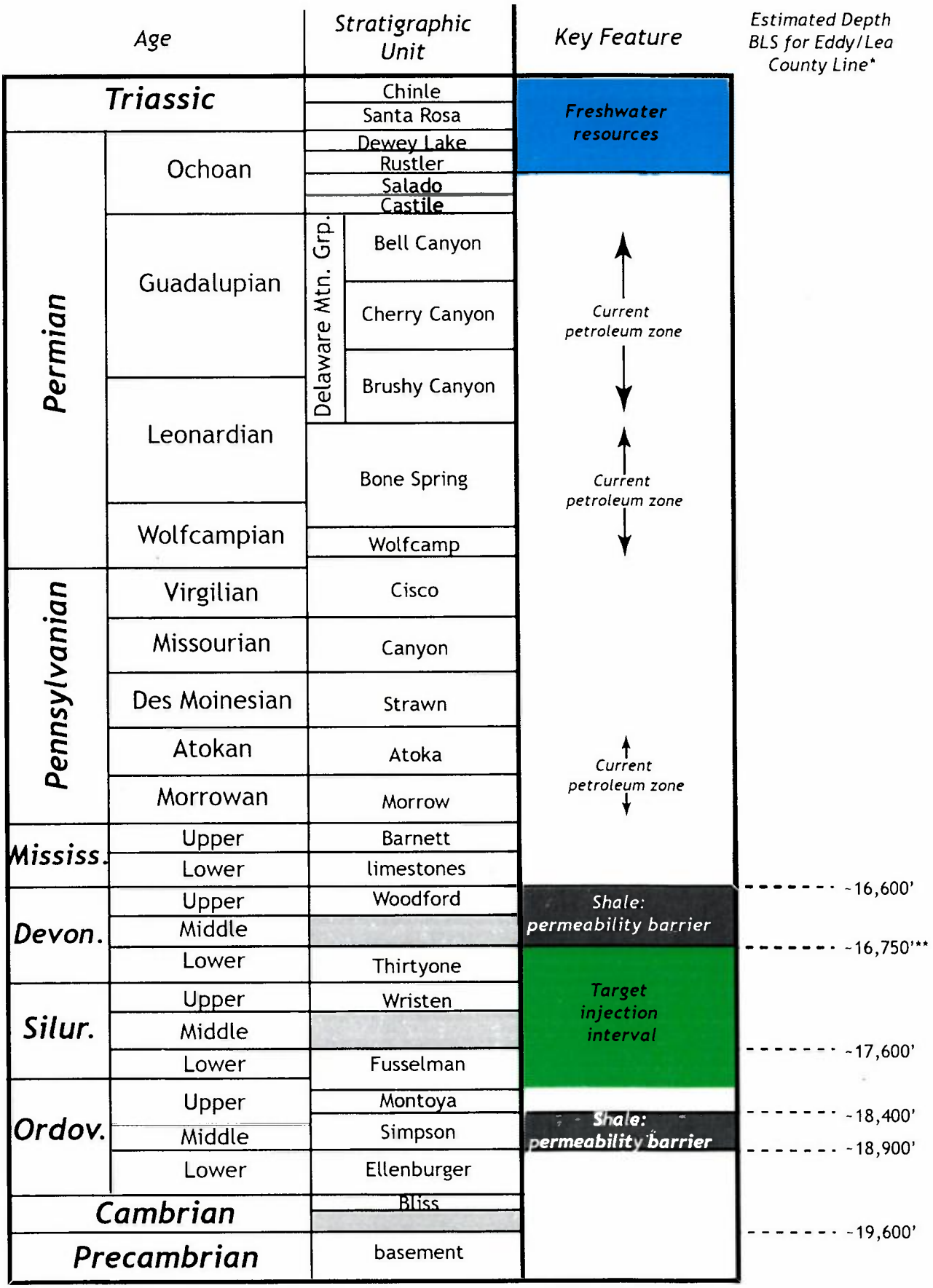
References

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.

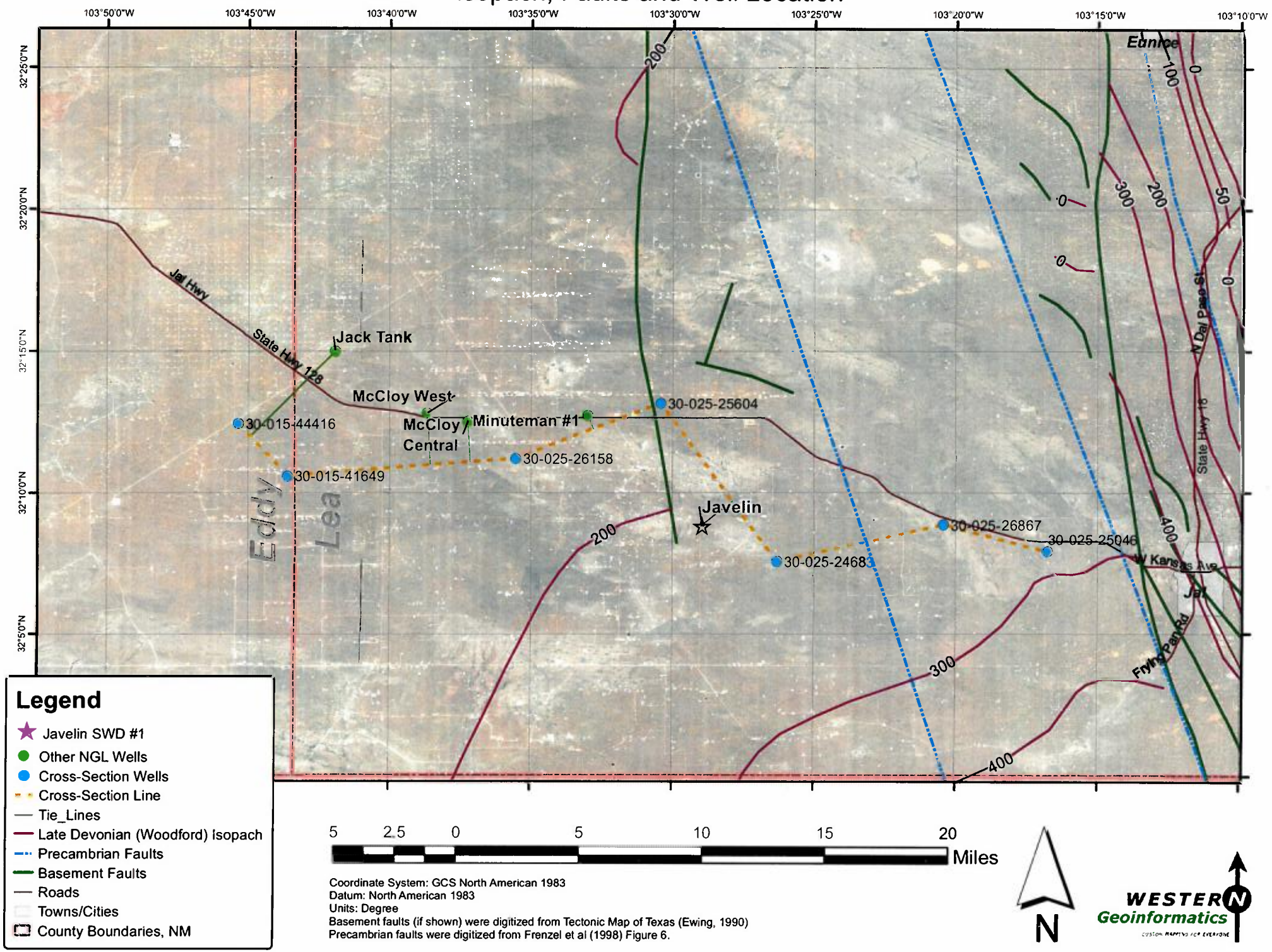
Hemmesch, N.T., Harris, N.B., Mnich, C.A. and Selby, D., 2014, A sequence-stratigraphic framework for the Upper Devonian Woodford Shale, Permian Basin, west Texas: American Association of Petroleum Geologists Bulletin, v. 98, no. 1, p. 23-47, doi:10.1306/05221312077

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.

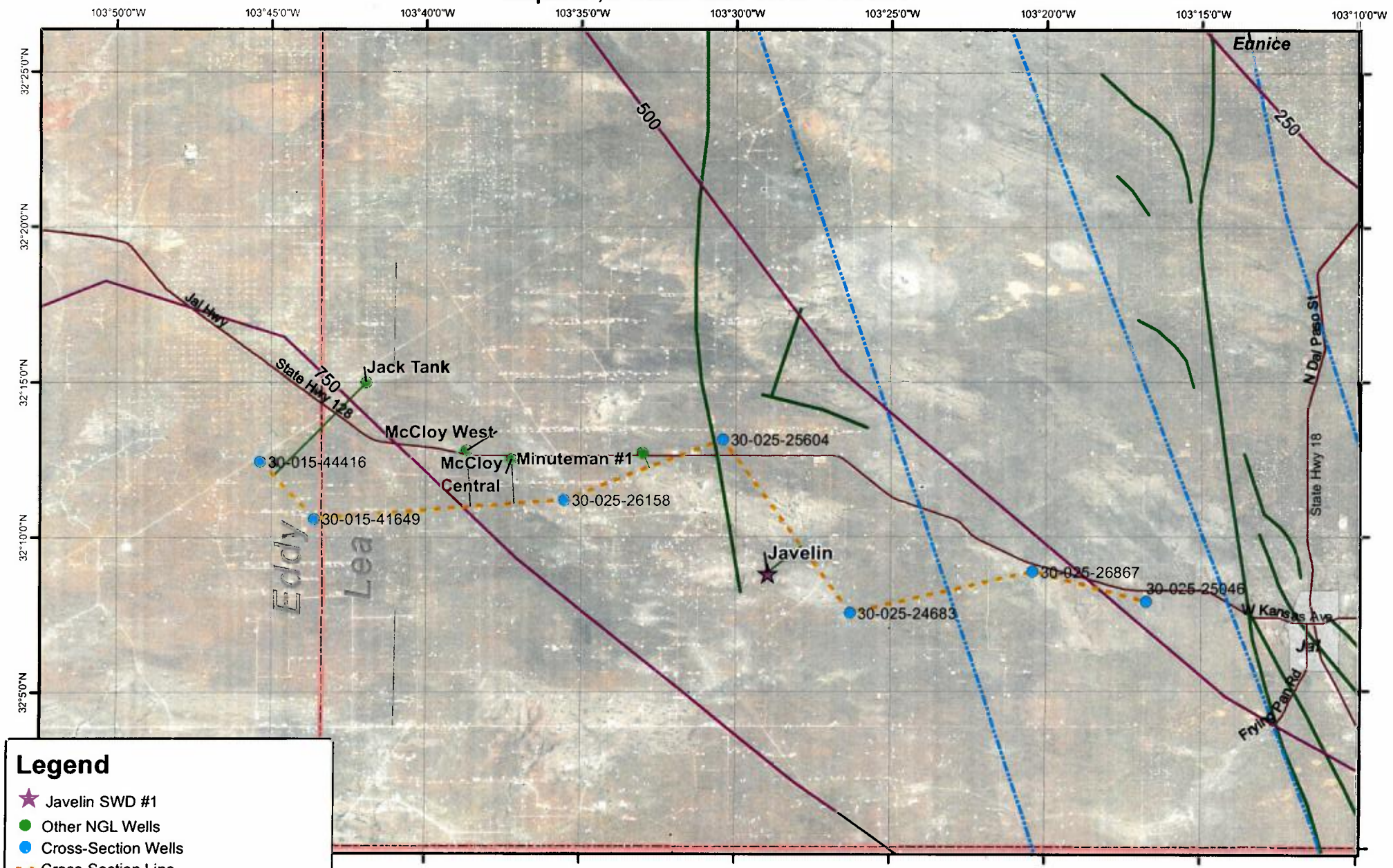
Isopach, Faults and Well Location



Legend

- Javelin SWD #1
- Other NGL Wells
- Cross-Section Wells
- Cross-Section Line
- Tie_Lines
- Late Devonian (Woodford) Isopach
- Precambrian Faults
- Basement Faults
- Roads
- Towns/Cities
- County Boundaries, NM

Isopach, Faults and Well Location



Legend

- Javelin SWD #1
- Other NGL Wells
- Cross-Section Wells
- Cross-Section Line
- Tie_Lines
- Lower Ordovician (Ellenburger) Isopach
- Precambrian Faults
- Basement Faults
- Roads
- Towns/Cities
- County Boundaries, NM

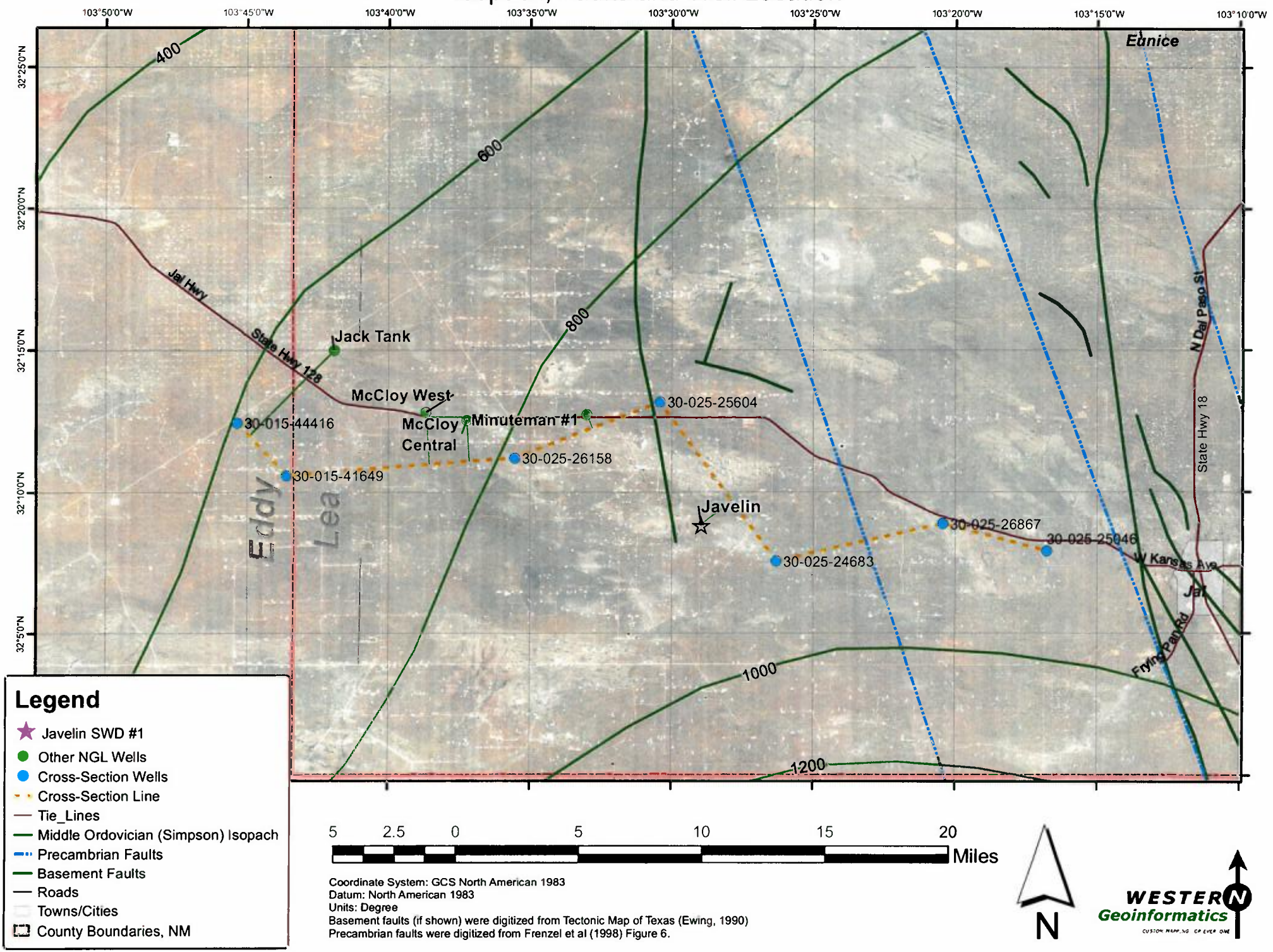
5 2.5 0 5 10 15 20 Miles

N

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

WESTERN Geoinformatics

Isopach, Faults and Well Location



Legend

- Javelin SWD #1
- Other NGL Wells
- Cross-Section Wells
- Cross-Section Line
- Tie_Lines
- Middle Ordovician (Simpson) 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 (if shown) were digitized from Tectonic Map of Texas (Ewing, 1990)
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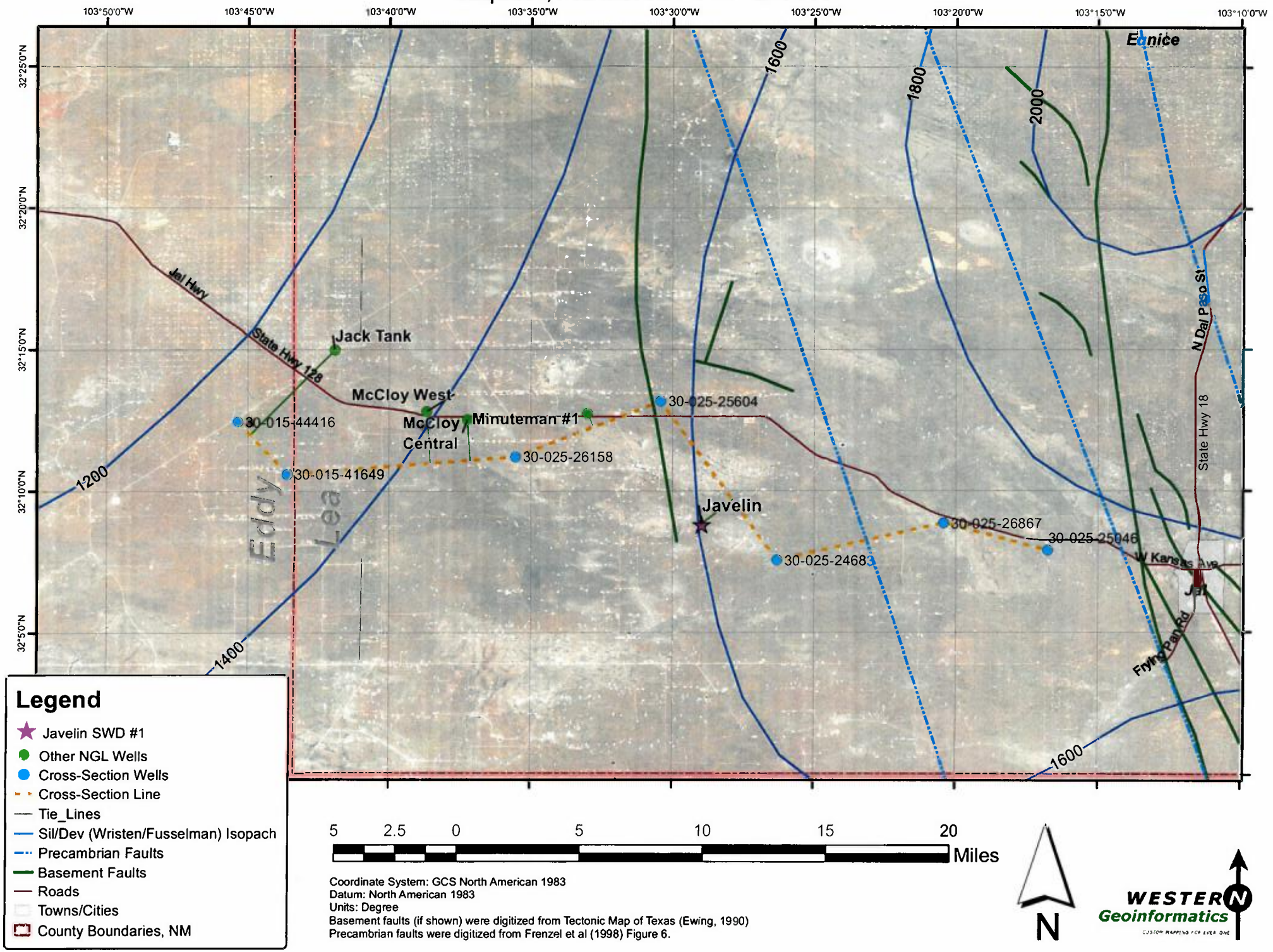
Isopach, Faults and Well Location



Legend

- Javelin SWD #1
- Other NGL Wells
- Cross-Section Wells
- Cross-Section Line
- Tie_Lines
- Sil/Dev (Wristen/Fusselman) Isopach
- Precambrian Faults
- Basement Faults
- Roads
- Towns/Cities
- County Boundaries, NM

Coordinate System: GCS North American 1983
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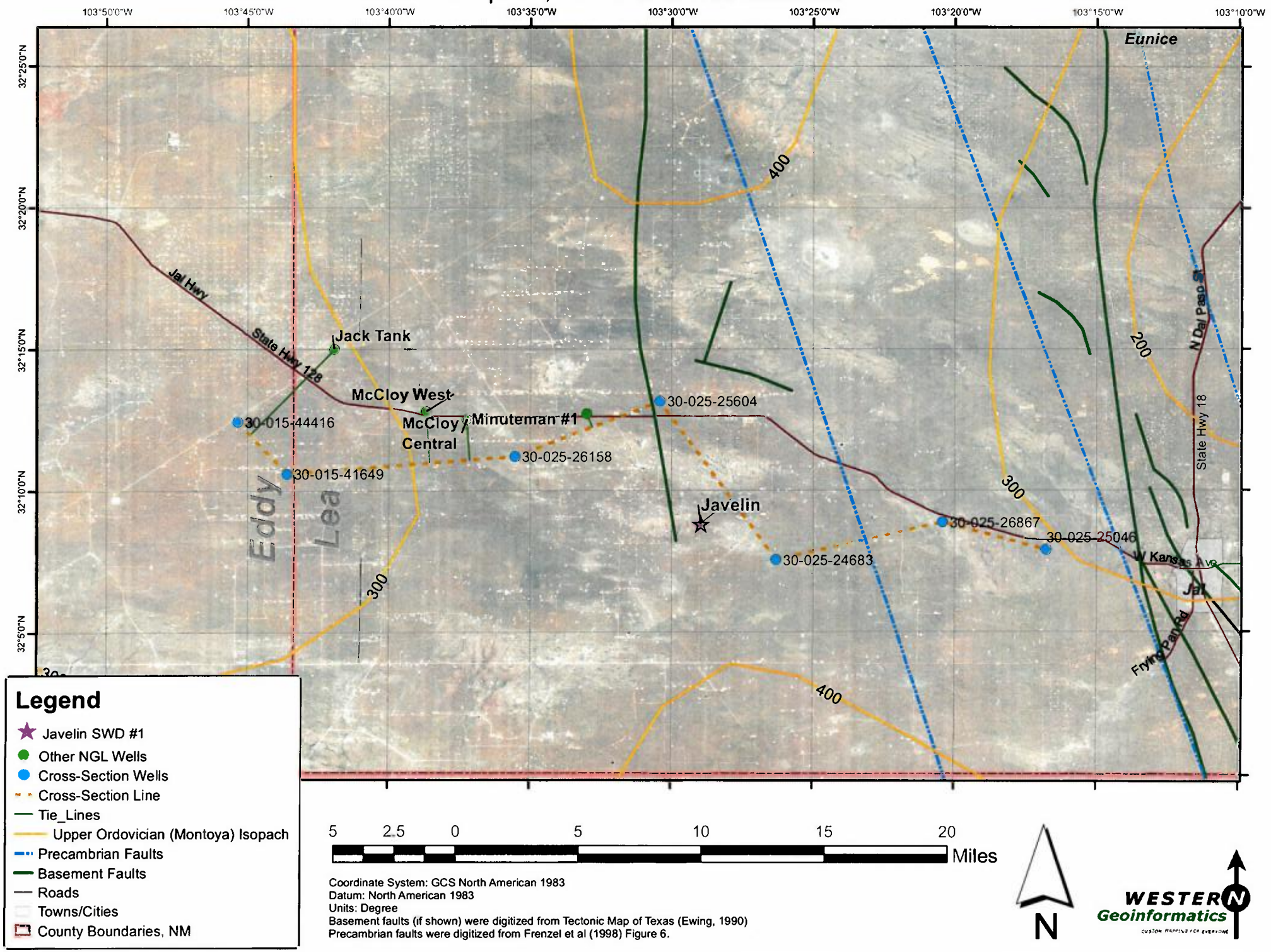
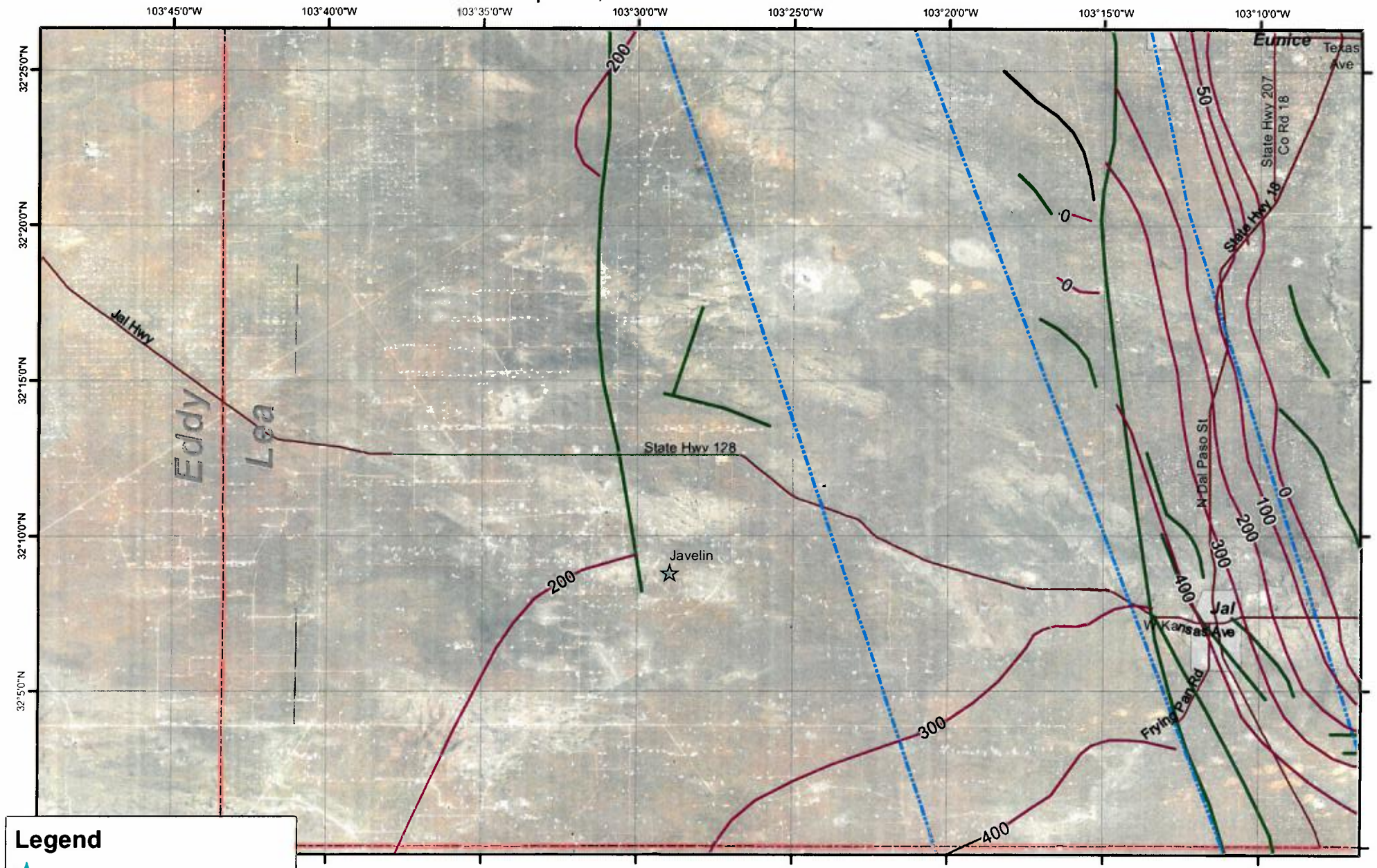
Isopach, Faults and Well Location



Legend

- Javelin SWD #1
- Other NGL Wells
- Cross-Section Wells
- Cross-Section Line
- Tie_Lines
- Upper Ordovician (Montoya) Isopach
- Precambrian Faults
- Basement Faults
- Roads
- Towns/Cities
- County Boundaries, NM

Isopach, Faults and Well Location



Legend

- Javelin SWD #1
- Late Devonian (Woodford) Isopach
- Precambrian Faults
- Basement Faults
- Roads
- Towns/Cities
- County Boundaries, NM

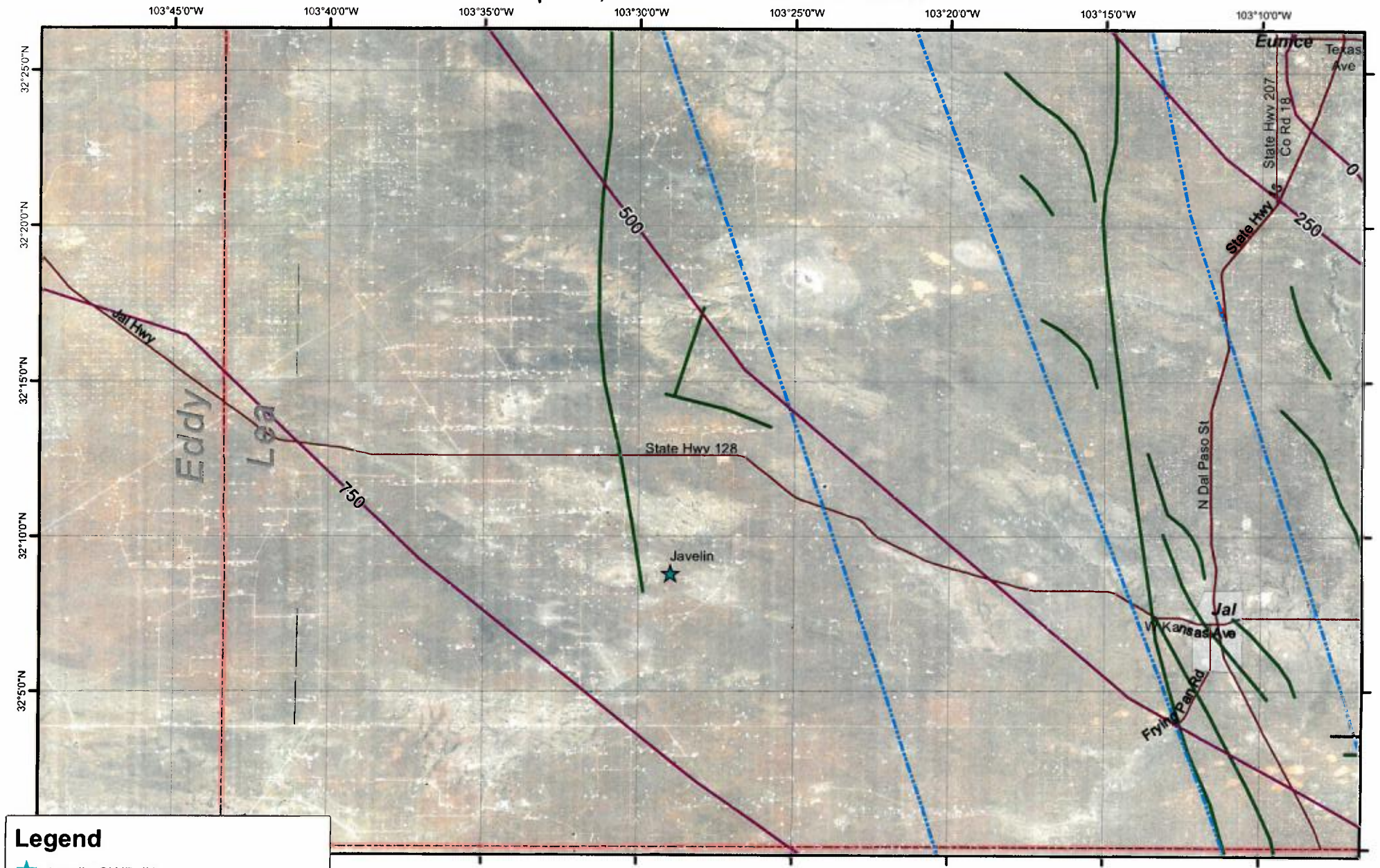
5 2.5 0 5 10 15 20 Miles

N

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

WESTERN Geoinformatics
CUSTOM MAPPING FOR EVERYONE

Isopach, Faults and Well Location



Legend

- Javelin SWD #1
- Lower Ordovician (Ellenburger) Isopach
- Precambrian Faults
- Basement Faults
- Roads
- Towns/Cities
- County Boundaries, NM

5 2.5 0 5 10 15 20 Miles

N

Coordinate System: GCS North American 1983
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Basement faults (if shown) were digitized from Tectonic Map of Texas (Ewing, 1990)
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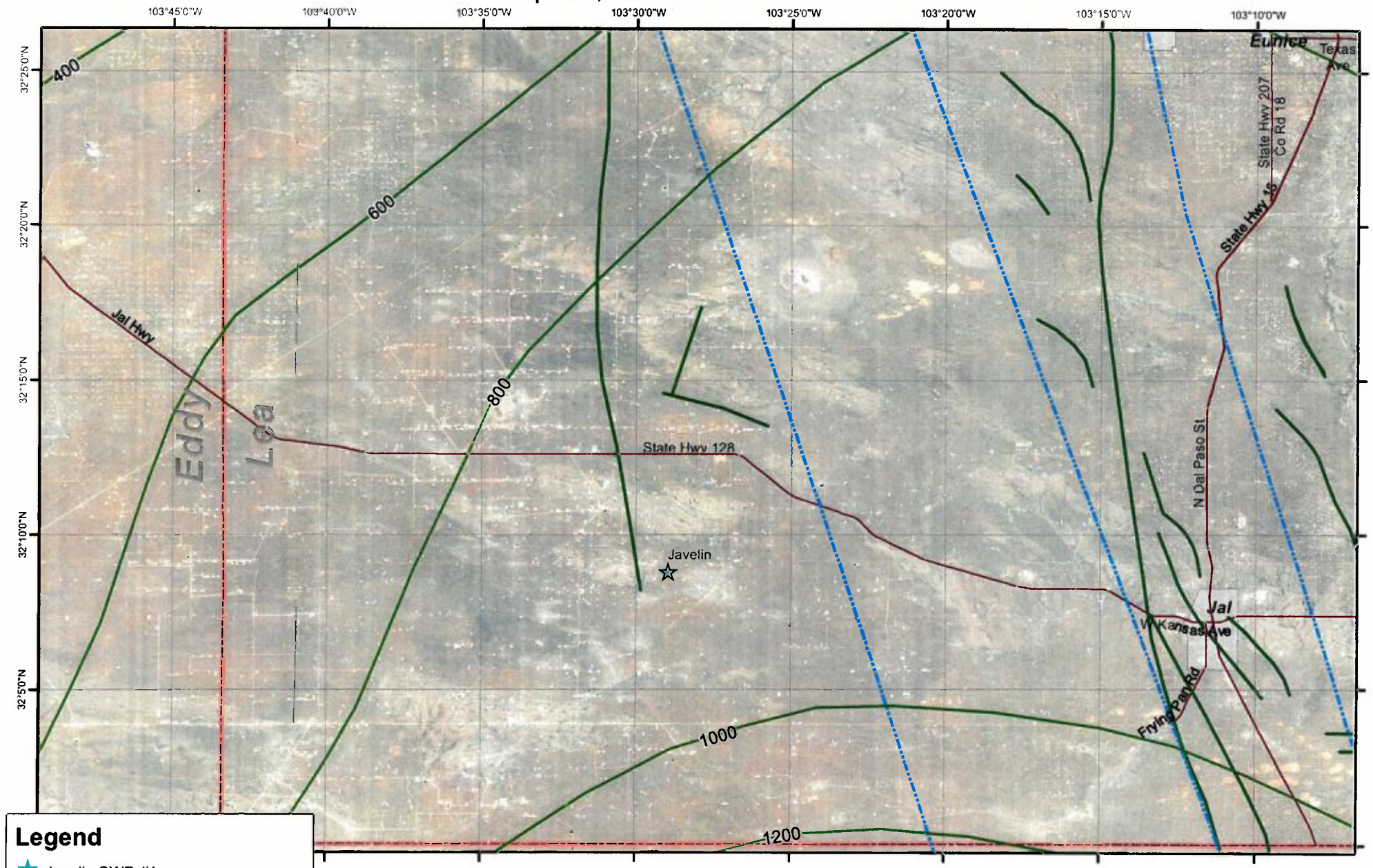
Isopach, Faults and Well Location



Legend

- Javelin SWD #1
- Middle Ordovician (Simpson) Isopach
- Precambrian Faults
- Basement Faults
- Roads
- Towns/Cities
- County Boundaries, NM

5 2.5 0 5 10 15 20 Miles

N

Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree
Basement faults (if shown) were digitized from Tectonic Map of Texas (Ewing, 1990)
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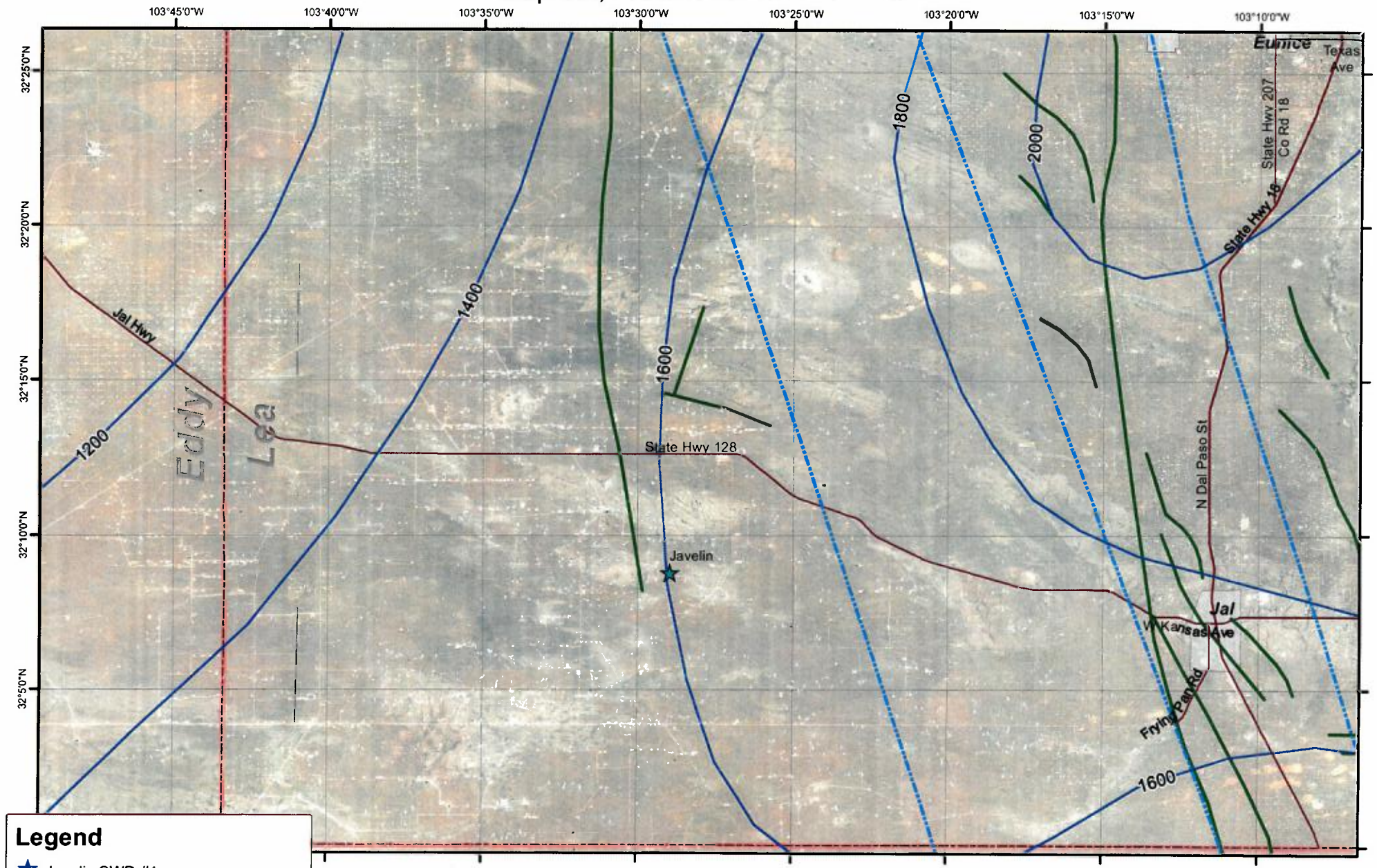
WESTERN Geoinformatics

Isopach, Faults and Well Location



Legend

- Javelin SWD #1
- Sil/Dev (Wristen/Fusselman) Isopach
- Precambrian Faults
- Basement Faults
- Roads
- Towns/Cities
- County Boundaries, NM

5 2.5 0 5 10 15 20 Miles

N

Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree
Basement faults (if shown) were digitized from Tectonic Map of Texas (Ewing, 1990)
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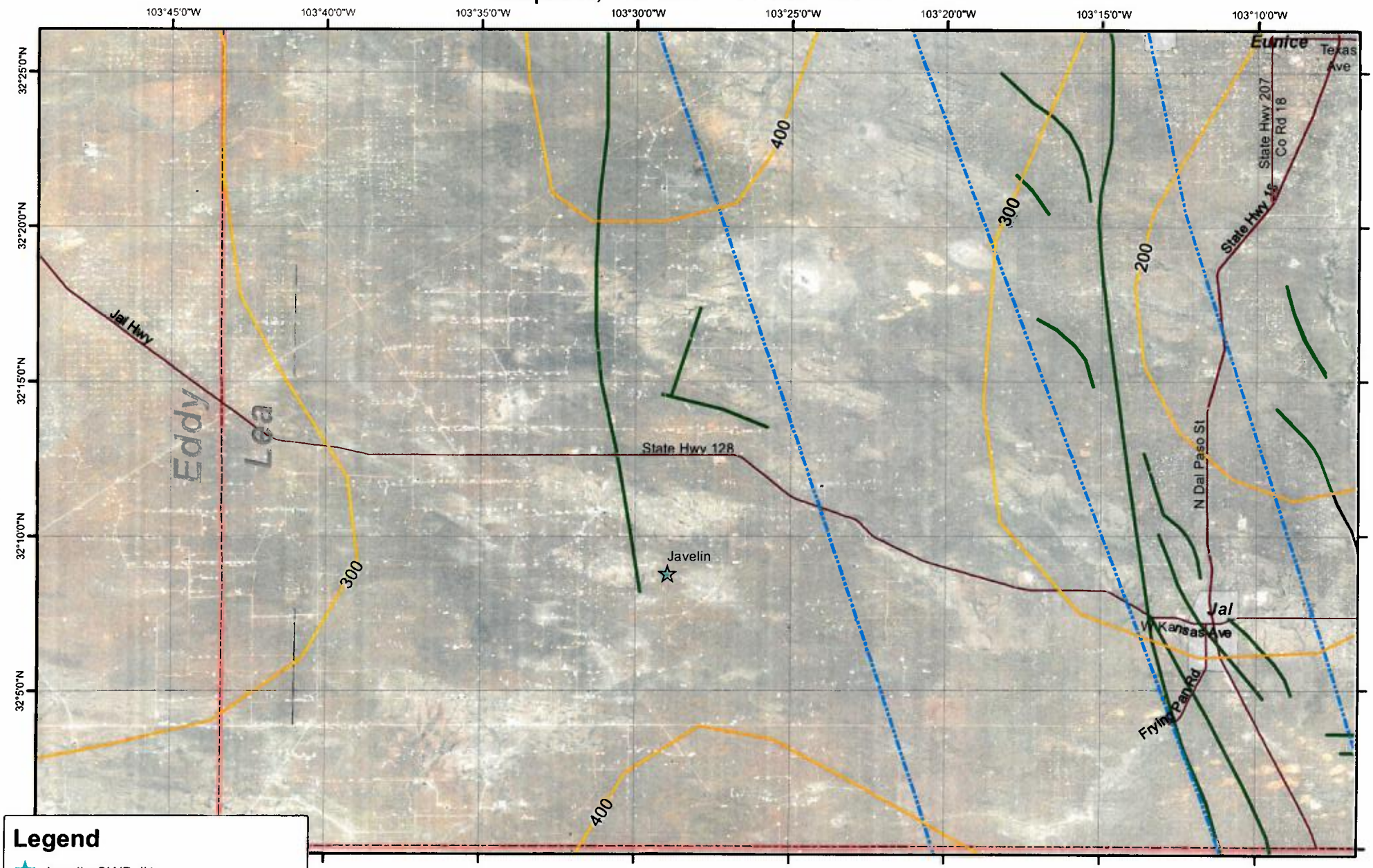
WESTERN Geoinformatics

Isopach, Faults and Well Location



Legend

- Javelin SWD #1
- Upper Ordovician (Montoya) Isopach
- Precambrian Faults
- Basement Faults
- Roads
- Towns/Cities
- County Boundaries, NM

5 2.5 0 5 10 15 20 Miles

N

Coordinate System: GCS North American 1983
Datum: North American 1983
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Precambrian faults were digitized from Frenzel et al (1998) Figure 6.

WESTERN Geoinformatics

Northwest

Southeast

NGL Jack Tank
05-24S-32E
TD: -17,601'

30-015-44416
Striker 2 SWD #1
23-24S-31E
TD: 18,100'

30-015-41649
Cotton Draw SWD 181
36-24S-31E
TD: 16,700'

NGL McCloy West
14-23S-32E
TD: -18,451'

NGL McCloy Central
24-23S-32E
TD: -18,533'

30-025-26158
State 29 J #1
29-24S-33E
TD: 17,652'

NGL Minuteman
16-24S-33E
TD: -18,196'

30-025-25604
Government L #1
18-24S-34E
TD: 17,620'

NGL Javelin
09-25S-34E
TD: -18,859'

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'

Woodford Sh

"Devonian"

Fusselman

Montoye

Simpson

Ellenburger

100'

Exhibits of Dr. Steven Taylor
On Behalf of NGL Water Solutions Permian, LLC

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. 20235

AFFIDAVIT OF DR. STEVEN TAYLOR

STATE OF IDAHO)
) ss.
COUNTY OF VALLEY)

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 application 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 the application.

5. The applicant, NGL (OGRID No. 372338), seeks an order approving the Javelin SWD #1 well (Case No. 20235), which is a salt water disposal well.

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 Taylor
Dr. Steven Taylor

SUBSCRIBED AND SWORN to before me this 5 th day of February, 2019 by Dr. Steven Taylor.

TRISHA BACKUS
COMMISSION #70072
NOTARY PUBLIC
STATE OF IDAHO
MY COMMISSION EXPIRES 05/31/2023

Notary Public

My commission expires: 05/31/2023

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

Seismic Catalog Analysis Within 50 km of Javelin SWD Well

Prepared for NGL-Permian
by
GeoEnergy Monitoring Systems
January 31, 2019

Analysis is based on NMT seismic catalogs, unpublished catalogs and USGS catalogs for the time period 2010-2017 selecting events within 50 km of the Striker 2 SWD well. Additionally, seismic monitoring through January 30, 2019 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 are 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, there have been event detections and having preliminary locations using available regional data (**Table 2**; **Figure 3**). Due to the small magnitudes, the signal-to-noise levels are low so the locations have large uncertainty and there is little constraint on depth.

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	0.00
10/13/18	22:07:22.259	32.0998	-103.4560	6	5.64	1.60	0.12
11/18/18	09:04:52.707	32.2526	-103.7853	5	3.77	1.75	0.20
12/09/18	18:51:00.805	32.3634	-103.8510	1	2.09	1.44	0.08
01/03/19	09:15:48.809	32.2761	-103.6732	6	5.64	1.63	0.00
01/03/19	23:05:33.122	32.2599	-103.7654	4	5.51	1.60	0.25
01/04/19	09:45:38.943	32.2346	-103.7798	4	4.34	1.98	0.38

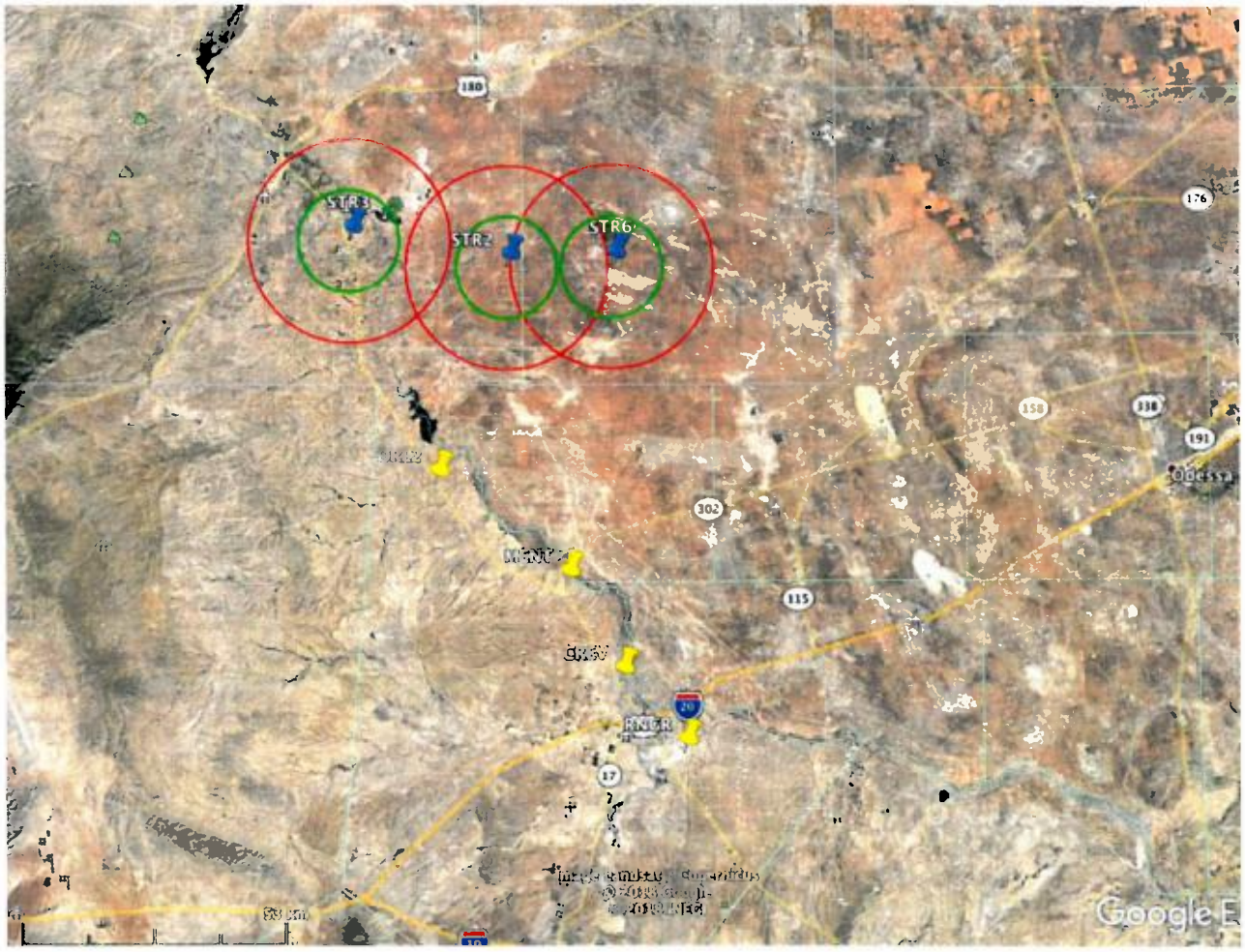

Figure 1. Striker SWD wells seismic station locations (blue push pins) and existing NGL-Permian seismic stations (yellow pushpins). Green and red circles around stations show approximate detection levels for ML 1.0 and 1.5, respectively.

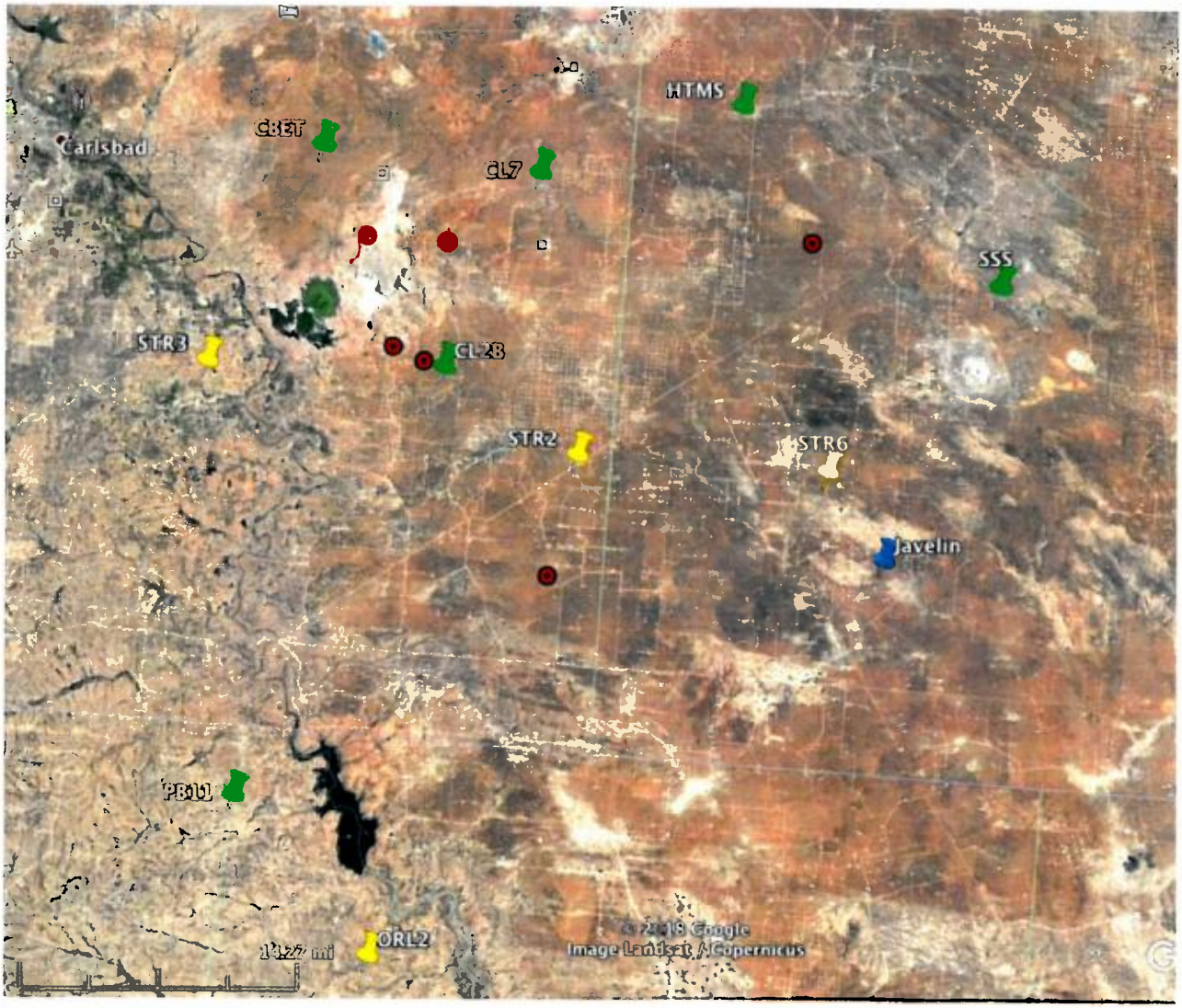

Figure 2. Striker SWD wells seismic station locations (yellow push pins) and existing NGL-Permian seismic stations (yellow pushpins). Other regional seismic stations run by TexNet and New Mexico Tech are shown as green pushpins. Historic seismicity listed in Table 1 shown as red circles. Javelin SWD well is shown as blue pushpin.

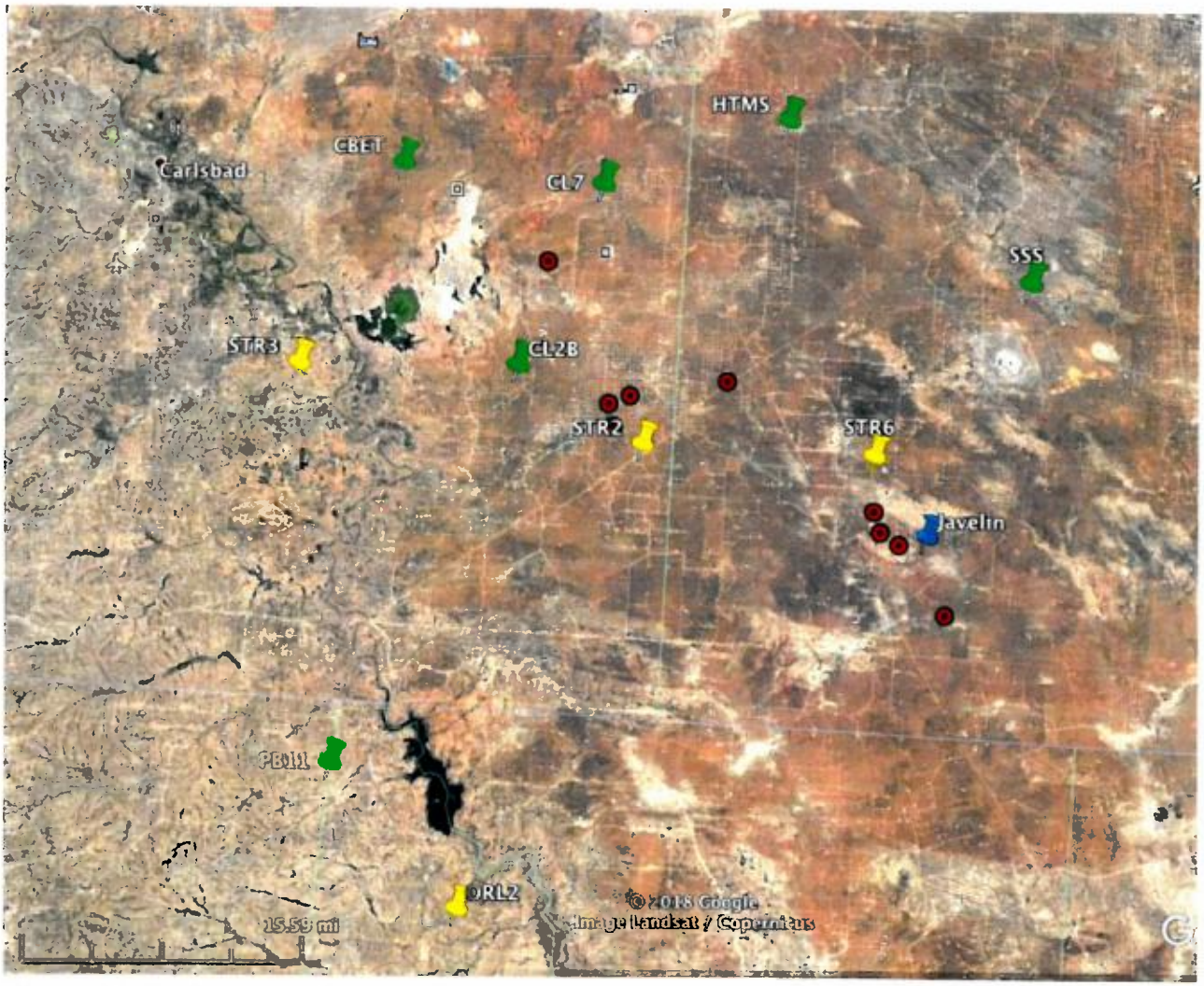

Figure 3. Seismic events in between September 6 and January 30, 2019 as red circles (Table 2). Javelin SWD well shown as blue pushpin. Seismic stations as yellow (NGL) or green (NMT and TexNet) pushpins.

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February 6, 2019

RE: FSP Analysis Multiple NGL SWD well locations
Lea Counties, 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 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 necessary 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. Historical USGS earthquake events are denoted by the "blue" bulls-eye symbols.

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 fault traces 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

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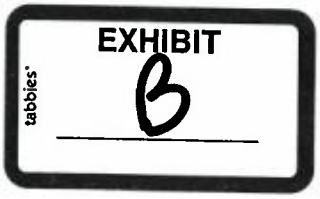

orientation relative to the stress orientation in determination of fault slip potential. Based on their limited analysis of the area they concluded the faults have low slip potential based on orientation/azimuth. My analysis further incorporates the injection history and future injection projections 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 highlighted Subject wells were modelled at 40,000 bbls/day and held constant for the life of the analysis (+25 years). Additionally, proposed wells FA, TL and AS were modelled at 40,000 bbls/day. The remaining proposed wells were all modelled at 30,000 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)**

AR – Asroc SWD

AS – Aspen SWD

FA – Falcon SWD

HP – Harpoon SWD

JV – Javelin SWD

MC – McCloy Central SWD

MM – Minuteman SWD

MV – Maverick SWD

MW – McCloy West SWD

Mo – Moab SWD

PT - Patriot SWD

SR - Sparrow SWD

SW - Sidewinder SWD

TL – Telluride SWD

TB – Thunderbolt SWD

TD -Trident SWD

TH - Tomahawk SWD

VP - Viper SWD

Also included in the model are existing SWD injection wells as follows: **(Exhibit No. 3)**

MD - Madera SWD
S6 – Striker Six SWD
VD – Vaca Draw 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 into 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 ΔP to slip. Faults 15-17 have the highest potential for slip and Faults 1-14 have very low potential for slip.

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 low probability for slip on the faults in the area of review. An increase of 750 psi at Fault 15 still only results in a 10% probability of fault slip.

Exhibit No. 7 takes a closer look at fault 15. The sensitivity analysis is highlighted in the lower right portion of this exhibit and shows that without any variability of inputs the ΔP needed to slip is 1,150 psi along this fault. A 10% decrease in the friction coefficient of the fault could lower ΔP needed to slip to 750 psi.

Exhibit No. 8 takes a closer look at fault 16. The sensitivity analysis is highlighted in the lower right portion of this exhibit and shows that without any variability of inputs the ΔP needed to slip is 1,530 psi along this fault. A 10% decrease in the friction coefficient of the fault could lower ΔP needed to slip to 1,100 psi. Fault 17 shows similar FSP values as fault 16.

Exhibit No. 9 takes a closer look at fault 14. The sensitivity analysis is highlighted in the lower right portion of this exhibit and shows that without any variability of inputs the ΔP needed to slip is +3,500

psi along this fault. A 10% change in the fault strike or SHmax azimuth could lower ΔP needed to slip to 1,850 psi.

Exhibit No. 10 takes a closer look at fault 1. The sensitivity analysis is highlighted in the lower right portion of this exhibit and shows that without any variability of inputs the ΔP needed to slip is +5,600 psi along this fault. A 10% change in the fault strike or SHmax azimuth could lower ΔP needed to slip to 3,050 psi. Faults 2-13 all exhibit similar high ΔP pressure values needed to initiate slip and thus fault slip potential is very low along all of the N-S trending faults.

In general, only Fault segment 15 shows any concern for fault slip potential. The following exhibits will track the pressure changes at the faults moving forward in time based upon the anticipated injection in the future from these proposed wells and the existing wells in the Subject Area.

Exhibit No. 11 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 7 psi at F15 and 53 psi at F17.

Exhibit No. 12 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 51 psi at F15 and 109 psi at F17.

Exhibit No. 13 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 141 psi at F15 and 180 psi at F17. Note that these pressures are still well below the pressures that could initiate fault slip. F9 shows a ΔP pressure increase of 1,160 psi however this fault requires extremely high pressures (+4,400 psi) to initiate fault slip.

Exhibit No. 14 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 260 psi at F15 and 271 psi at F17. Note that these pressures are still well below the pressures that could initiate fault slip. F9 shows a ΔP pressure increase of 1,521 psi however this fault requires extremely high pressures (+4,400 psi) to initiate fault slip.

Exhibit No. 15 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 387 psi at F15 and 373 psi at F17. Note that these pressures are still well below the pressures that could initiate fault slip. F9 shows a ΔP pressure increase of 1,821 psi however this fault requires extremely high pressures (+4,400 psi) to initiate fault slip.

Exhibit No. 16 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 514 psi at F15 and 478 psi at F17. Note that these pressures are still well below the pressures that could initiate fault slip. F9 shows a ΔP pressure increase of 2,078 psi however this fault requires extremely high pressures (+4,400 psi) to initiate fault slip.

The pressure analysis over time shows that pressure is expected to increase along the faults however pressures remain 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	5,600	3,050	45
F2	6,300	3,850	338
F3	7,000	4,750	905
F4	7,000	4,750	1,345
F5	6,850	4,400	1,559
F6	6,850	4,400	1,730
F7	6,850	4,400	1,979
F8	6,850	4,400	2,024
F9	6,850	4,400	2,078
F10	6,850	4,400	1,944
F11	6,850	4,400	1,881
F12	6,850	4,400	1,120
F13	6,990	4,750	268
F14	3,500	1,800	224
F15	1,150	750	514
F16	1,530	1,100	490
F17	1,530	1,100	478

This analysis demonstrates that there is a 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 +1,000 psi) based on the fixed input parameters and the ΔP increase at the most vulnerable fault only reaches 512 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
Managing Director, Economics/FTI Platt Sparks

FTI Platt Sparks
512.327.6930 office

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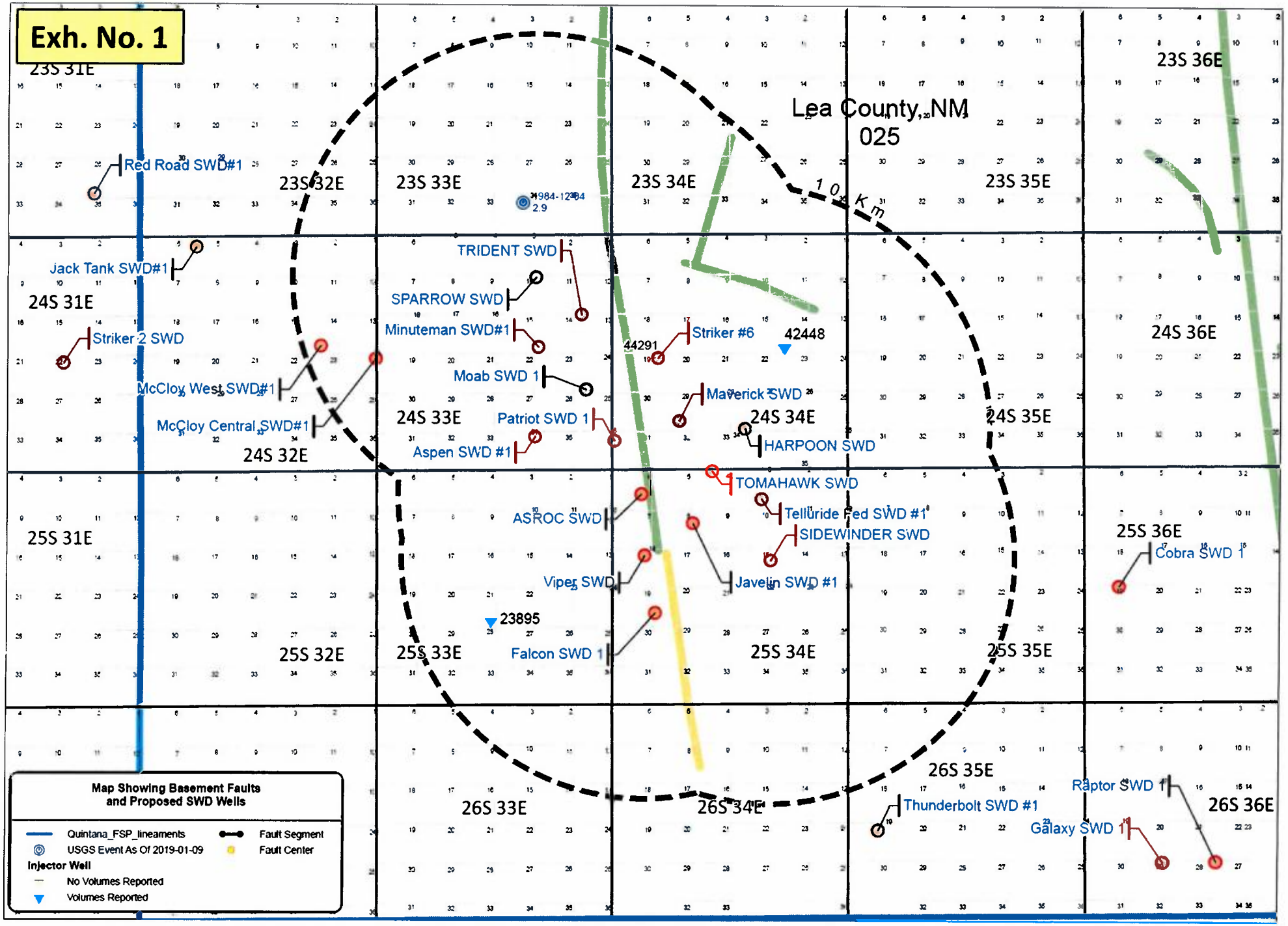

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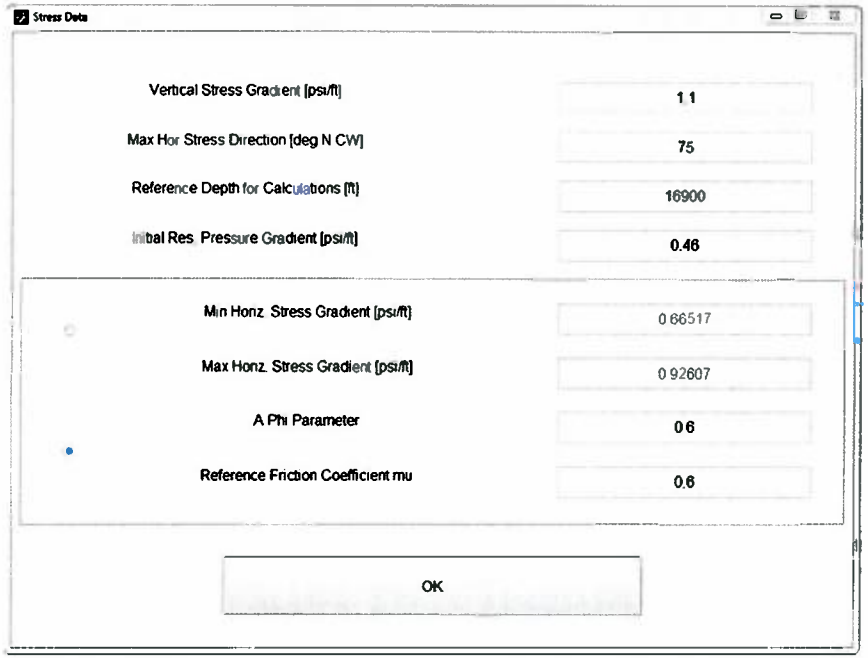
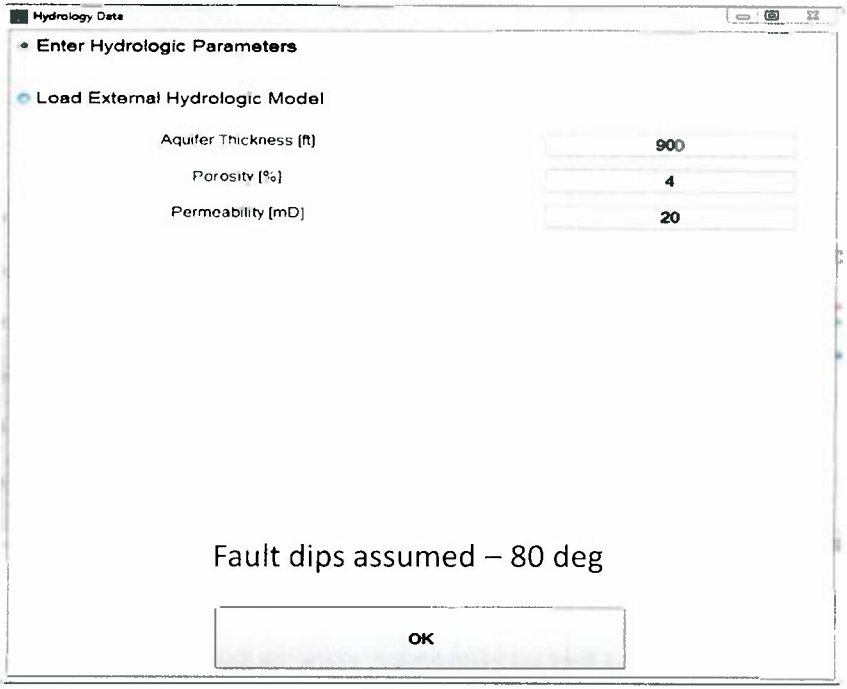
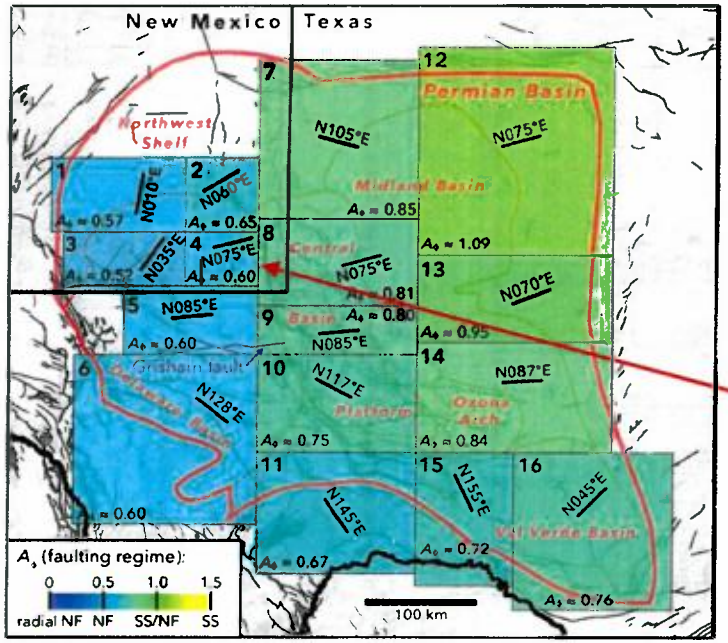
Exh. No. 2

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

Zoom

Fault Slip Potential

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

Fault Selector:

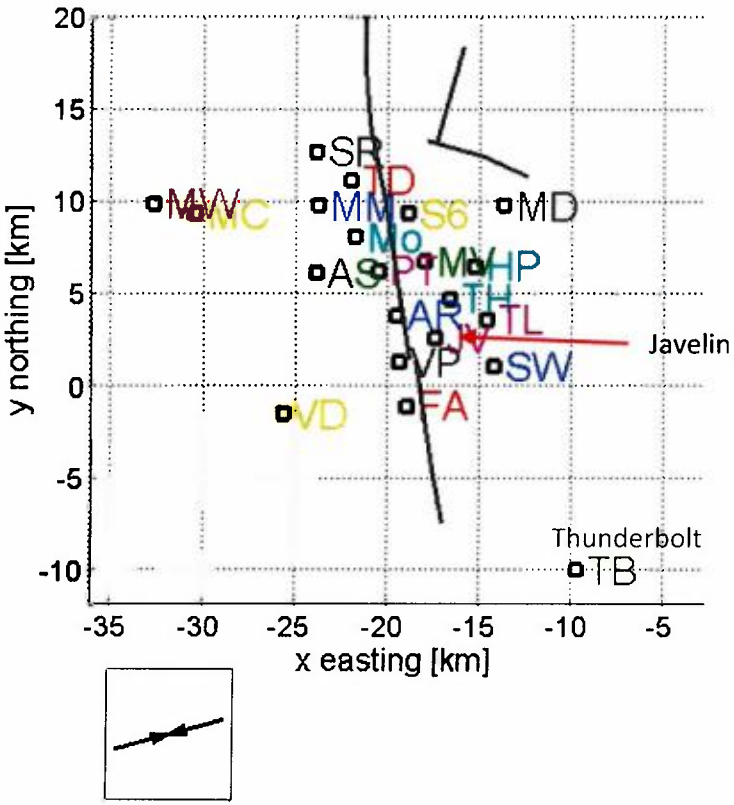
- All Faults
- Fault #1
- Fault #2
- Fault #3
- Fault #4
- Fault #5
- Fault #6
- Fault #7
- Fault #8
- Fault #9
- Fault #10
- Fault #11
- Fault #12
- Fault #13
- Fault #14
- Fault #15
- Fault #16
- Fault #17

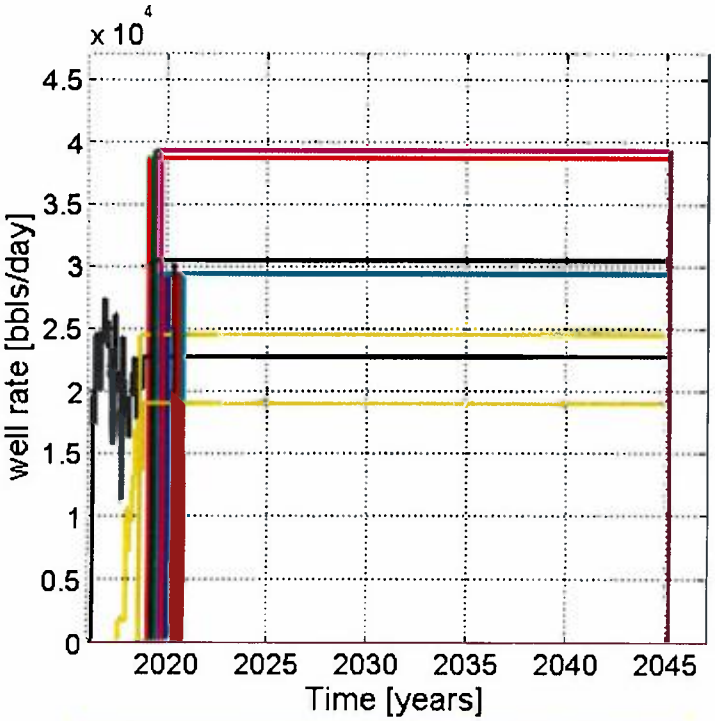
Calculate

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)

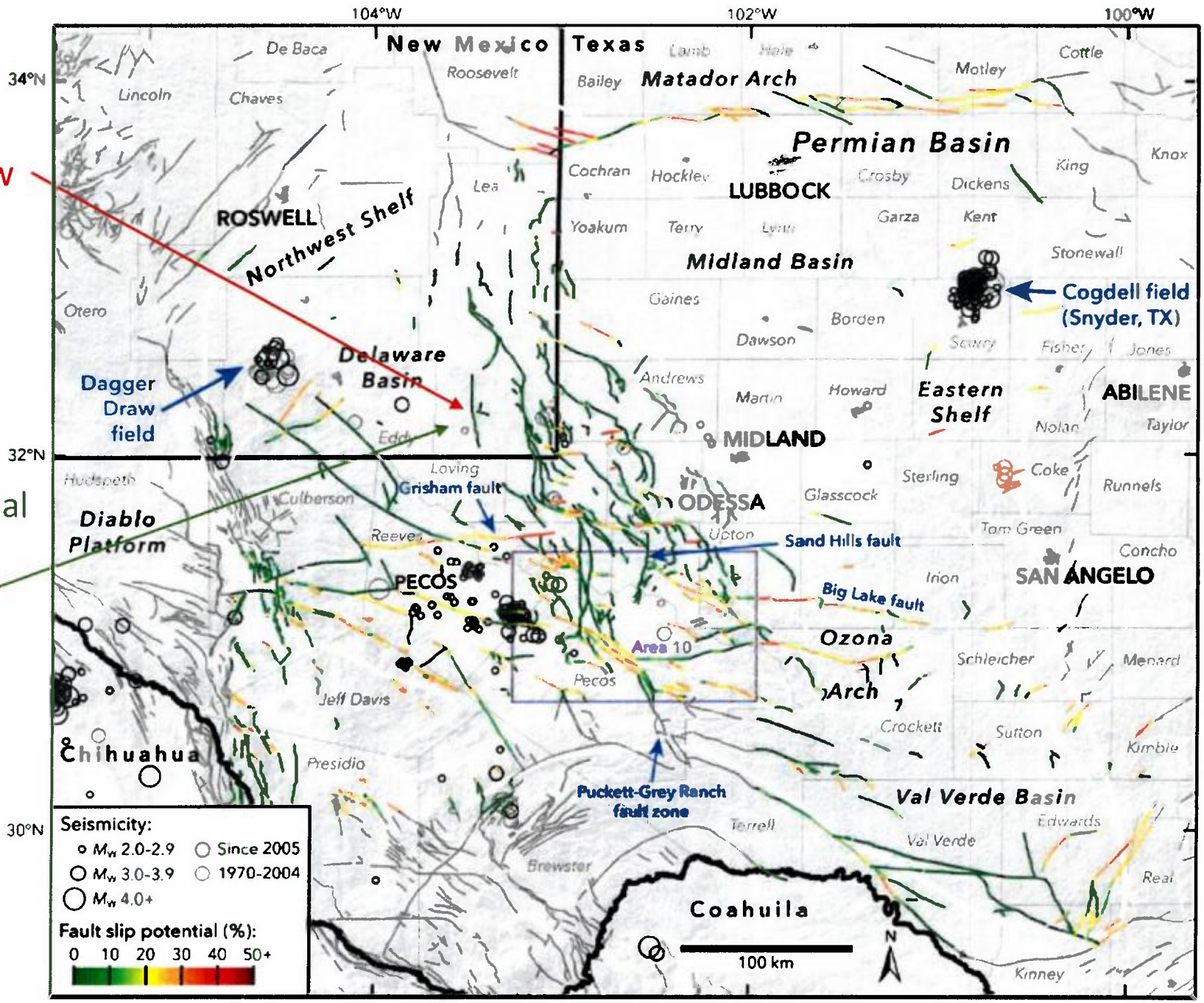


Figure 3. Results of our probabilistic FSP analysis across the Permian Basin. Data sources are as in Figures 1 and 2.

From Lund Snee and Zoback (2018)

Exh. No. 5

Fault Slip Potential

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

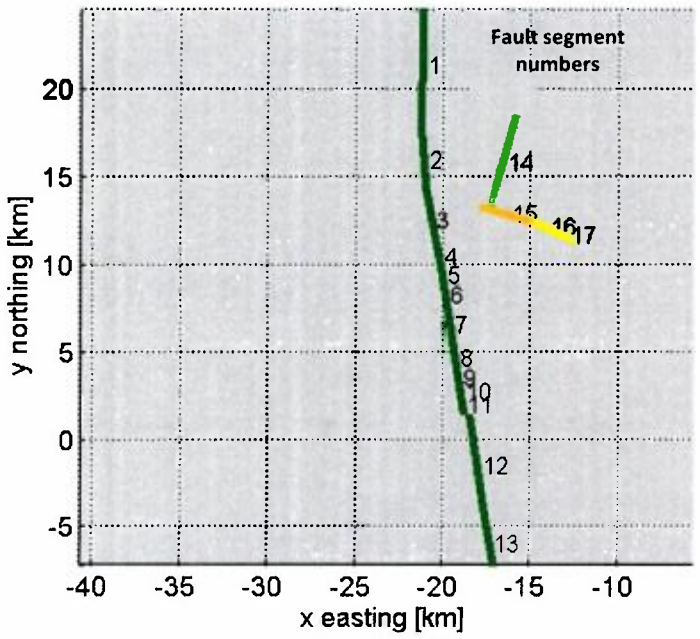
Fault Selector

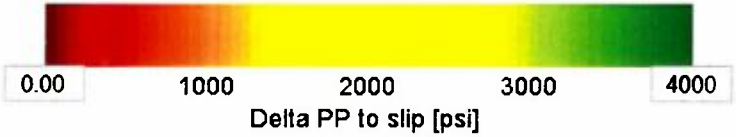
All Faults
Fault #1
Fault #2
Fault #3
Fault #4
Fault #5
Fault #6
Fault #7
Fault #8
Fault #9
Fault #10
Fault #11
Fault #12
Fault #13
Fault #14
Fault #15
Fault #16
Fault #17

Calculate

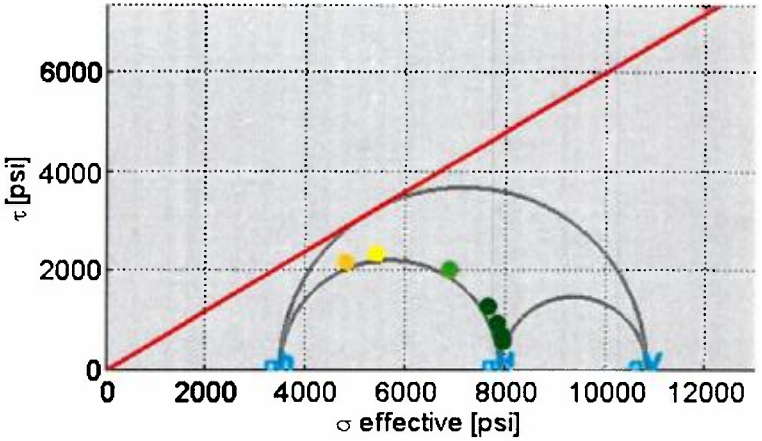
a) Fault Number

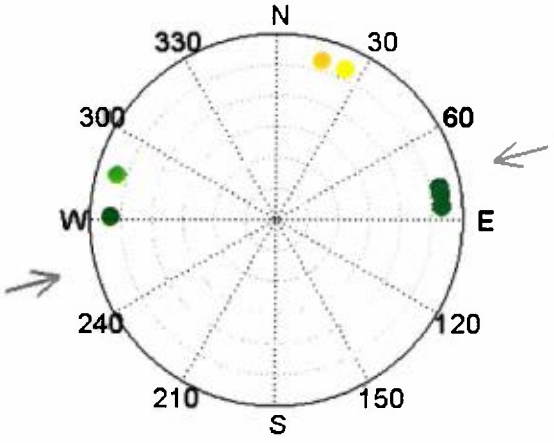
Help





Stress Regime: Normal Faulting





Stereonet Show: Fault Normals

Exh. No. 6

File Data Inputs Export Image Zoom

Fault Slip Potential

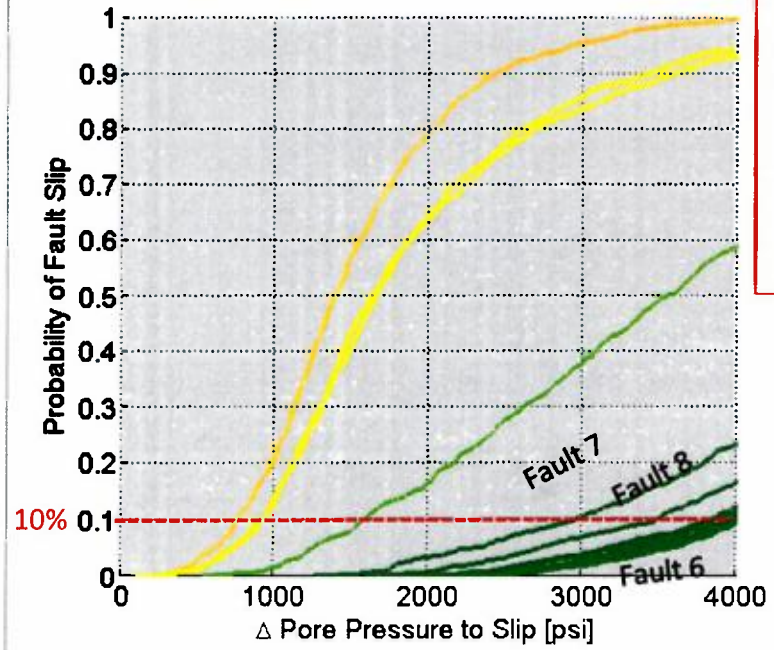
MODEL INPUTS | GEOMECHANICS | PROB. GEOM... | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

- All Faults
- Fault #1
- Fault #2
- Fault #3
- Fault #4
- Fault #5
- Fault #6
- Fault #7
- Fault #8
- Fault #9
- Fault #10
- Fault #11
- Fault #12
- Fault #13
- Fault #14
- Fault #15
- Fault #16
- Fault #17

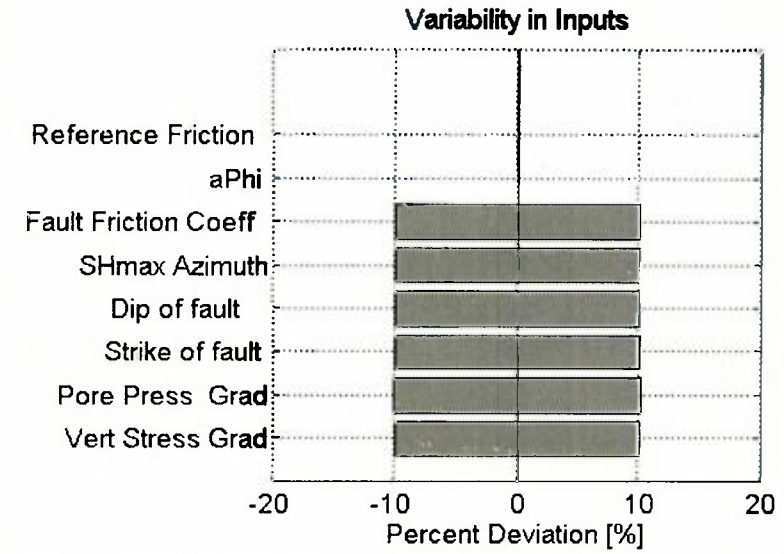
Calculate

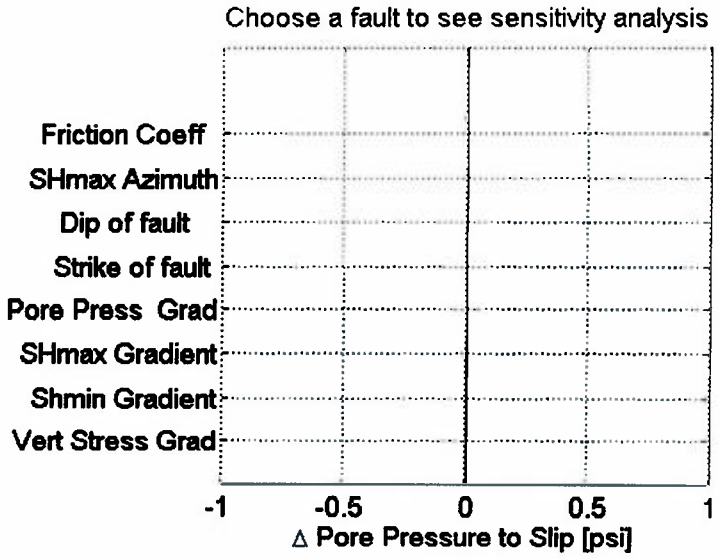
Load Distributions | Run Analysis



Max Delta PP [psi]: 4000

Export CDF data | Show Input Distributions





Exh. No. 7

File Data Inputs Export Image Zoom

Fault Slip Potential

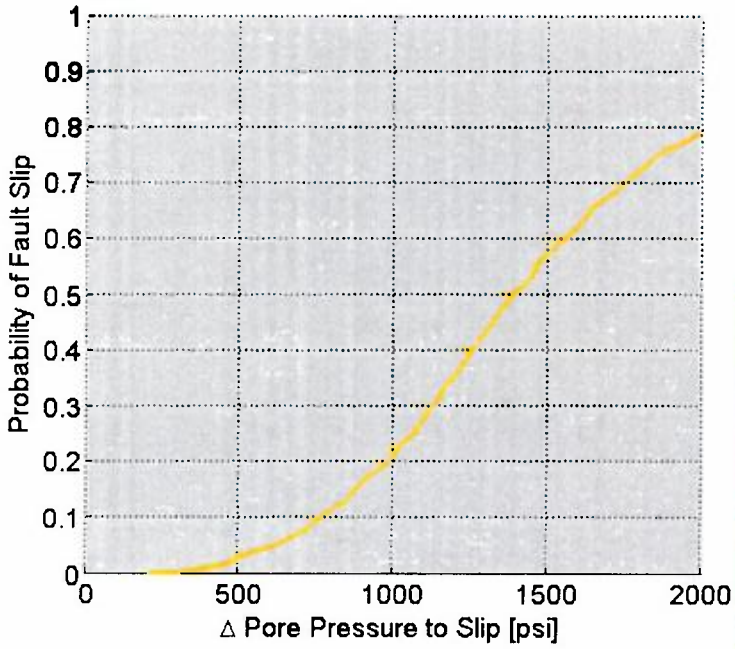
MODEL INPUTS | GEOMECHANICS | PROB. GEOM... | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

All Faults
Fault #1
Fault #2
Fault #3
Fault #4
Fault #5
Fault #6
Fault #7
Fault #8
Fault #9
Fault #10
Fault #11
Fault #12
Fault #13
Fault #14
Fault #15
Fault #16
Fault #17

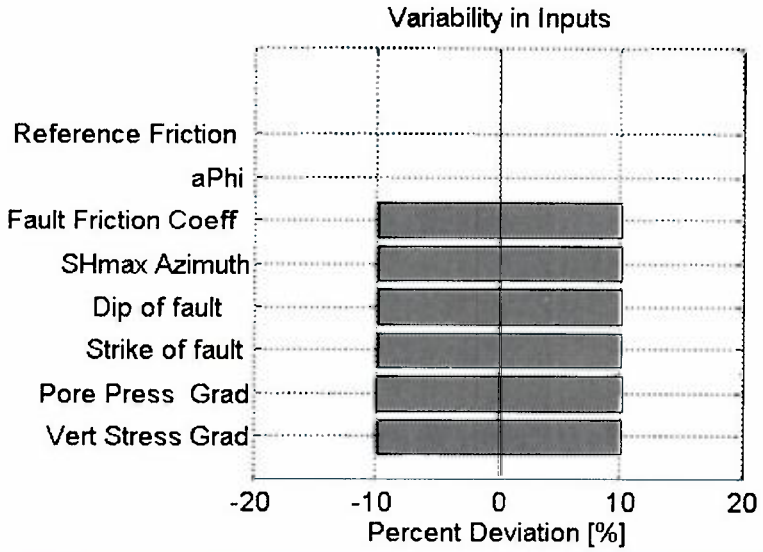
Calculate

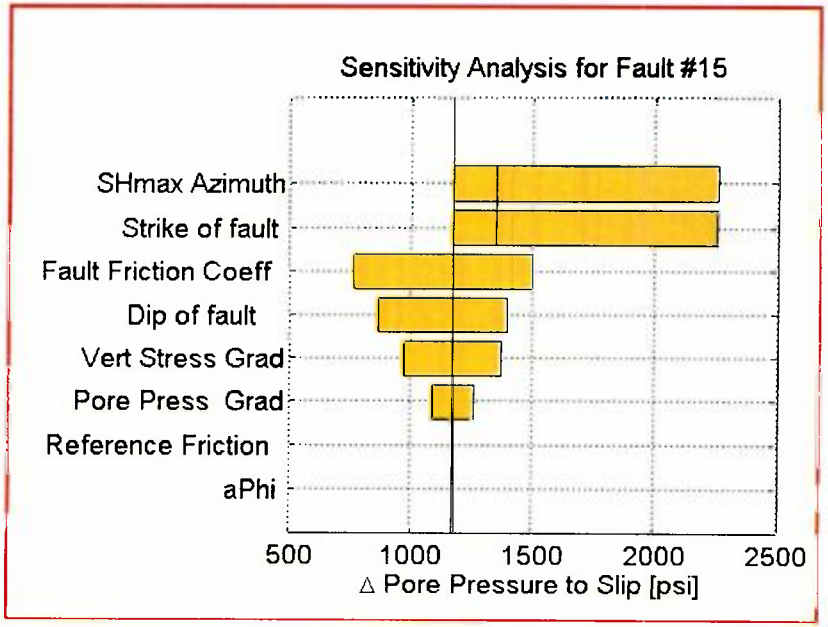
Load Distributions | Run Analysis



Max Delta PP [psi]: 2000

Export CDF data | Show Input Distributions





Exh. No. 8

File Data Inputs Export Image Zoom

Fault Slip Potential

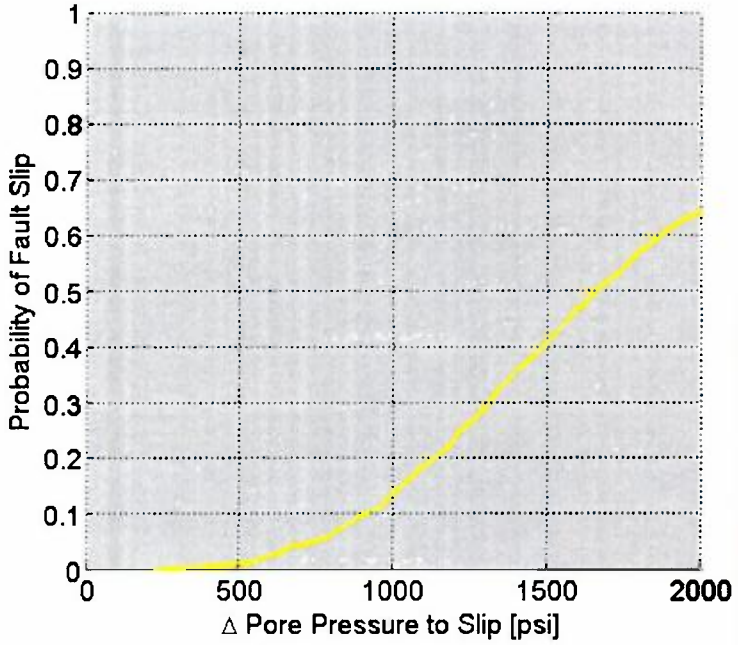
MODEL INPUTS | GEOMECHANICS | PROB. GEOM... | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

All Faults
Fault #1
Fault #2
Fault #3
Fault #4
Fault #5
Fault #6
Fault #7
Fault #8
Fault #9
Fault #10
Fault #11
Fault #12
Fault #13
Fault #14
Fault #15
Fault #16
Fault #17

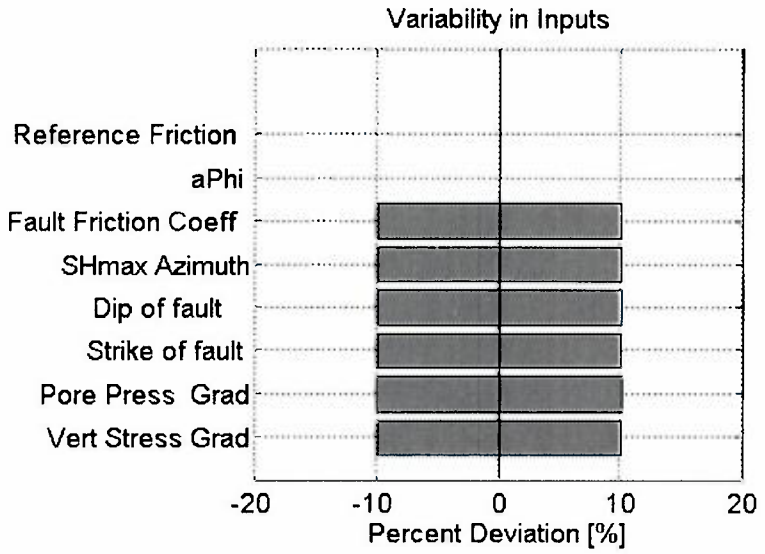
Calculate

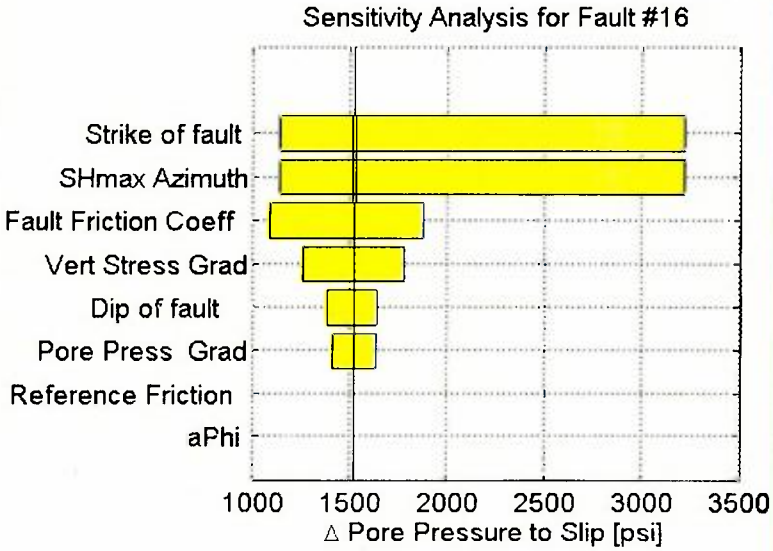
Load Distributions | Run Analysis



Max Delta PP [psi]: 2000

Export CDF data | Show Input Distributions





Exh. No. 9

File Data Inputs Export Image Zoom

Fault Slip Potential

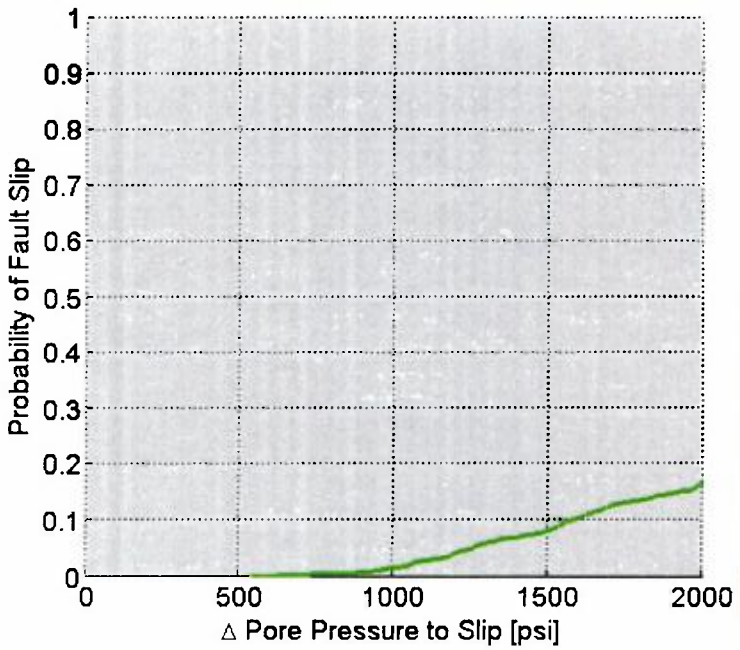
MODEL INPUTS | GEOMECHANICS | PROB. GEOM... | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

- All Faults
- Fault #1
- Fault #2
- Fault #3
- Fault #4
- Fault #5
- Fault #6
- Fault #7
- Fault #8
- Fault #9
- Fault #10
- Fault #11
- Fault #12
- Fault #13
- Fault #14
- Fault #15
- Fault #16
- Fault #17

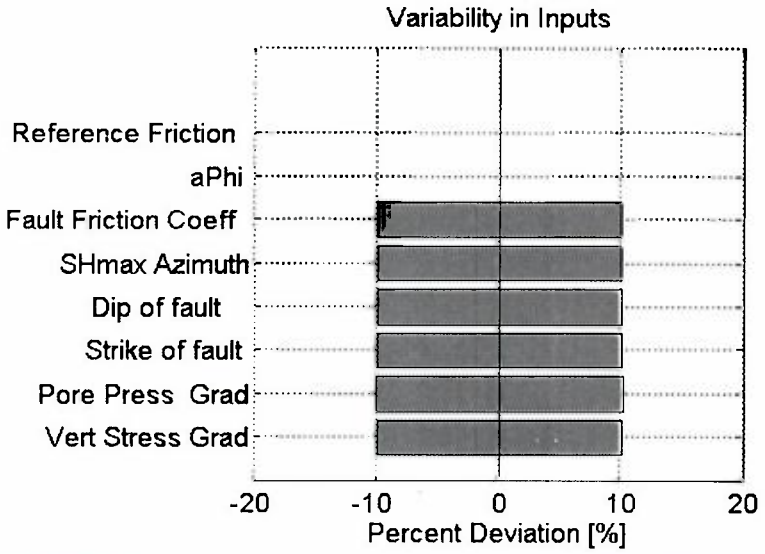
Calculate

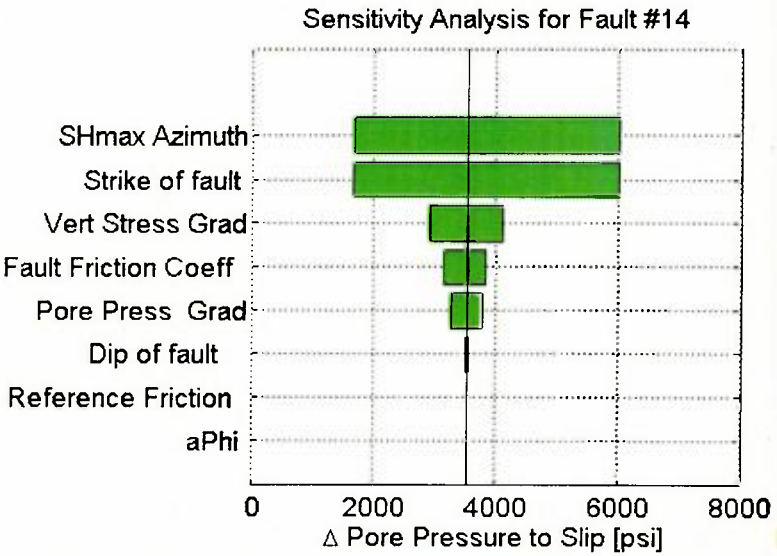
Load Distributions | Run Analysis



Max Delta PP [psi]: 2000

Export CDF data | Show Input Distributions





Exh. No. 10

File Data Inputs Export Image Zoom

Fault Slip Potential

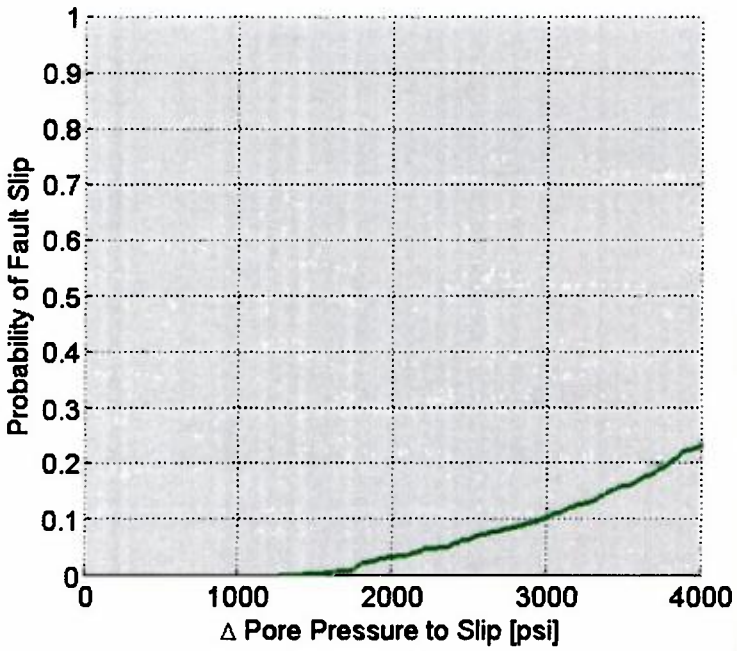
MODEL INPUTS | GEOMECHANICS | PROB. GEOM... | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

- All Faults
- Fault #1
- Fault #2
- Fault #3
- Fault #4
- Fault #5
- Fault #6
- Fault #7
- Fault #8
- Fault #9
- Fault #10
- Fault #11
- Fault #12
- Fault #13
- Fault #14
- Fault #15
- Fault #16
- Fault #17

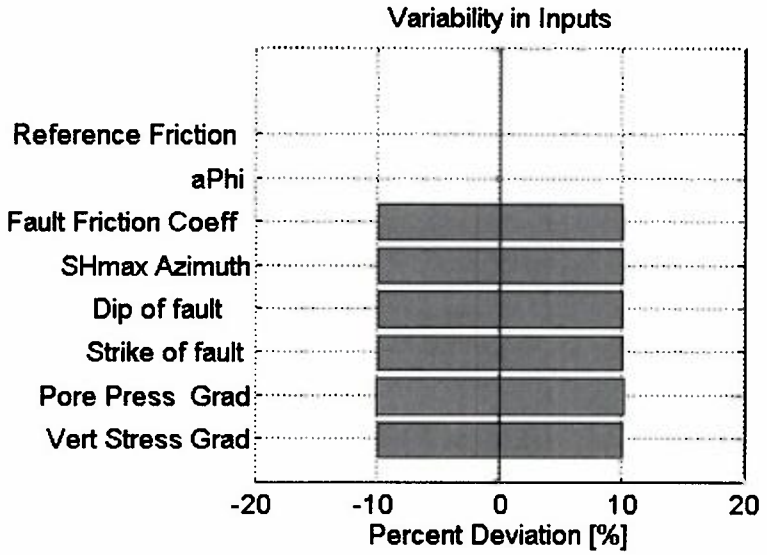
Calculate

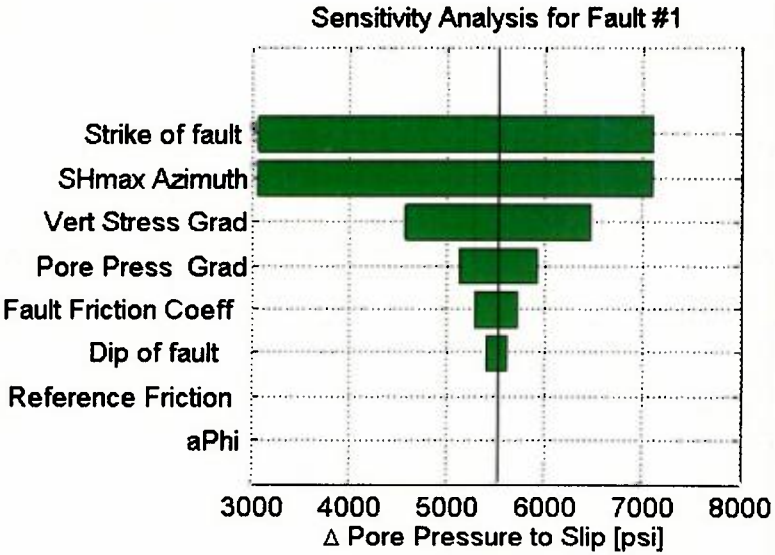
Load Distributions | Run Analysis



Max Delta PP [psi]: 4000

Export CDF data | Show Input Distributions





Exh. No. 11

Fault Slip Potential

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

Fault Selector:

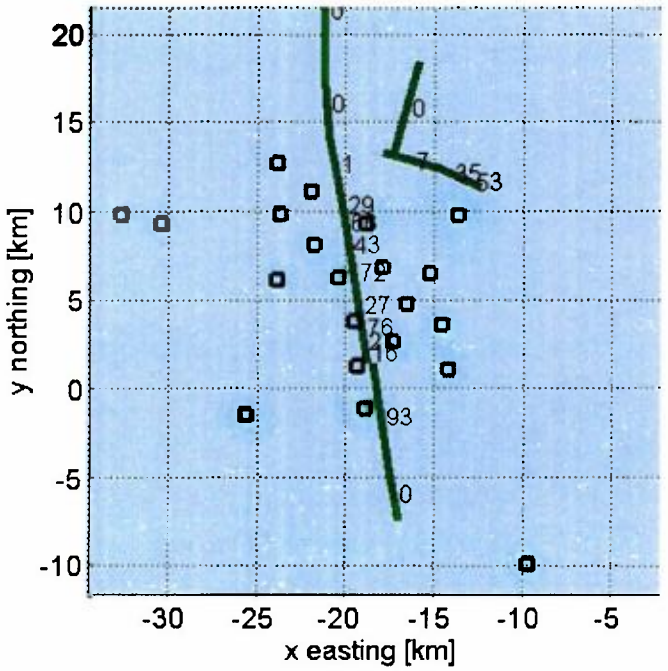
All Faults
Fault #1, 0.00 FSP
Fault #2, 0.00 FSP
Fault #3, 0.00 FSP
Fault #4, 0.00 FSP
Fault #5, 0.00 FSP
Fault #6, 0.00 FSP
Fault #7, 0.00 FSP
Fault #8, 0.00 FSP
Fault #9, 0.00 FSP
Fault #10, 0.00 FSP
Fault #11, 0.00 FSP
Fault #12, 0.00 FSP
Fault #13, 0.00 FSP
Fault #14, 0.00 FSP
Fault #15, 0.00 FSP
Fault #16, 0.00 FSP
Fault #17, 0.00 FSP

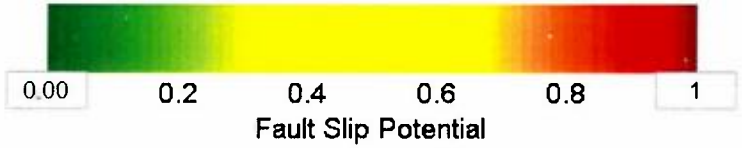
Calculate

Export

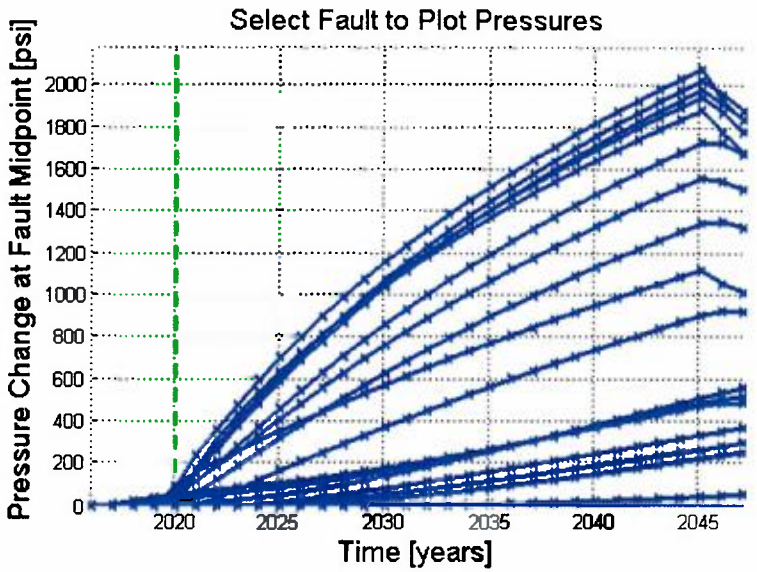
b) PP Change at fault [psi]

Summary Plots

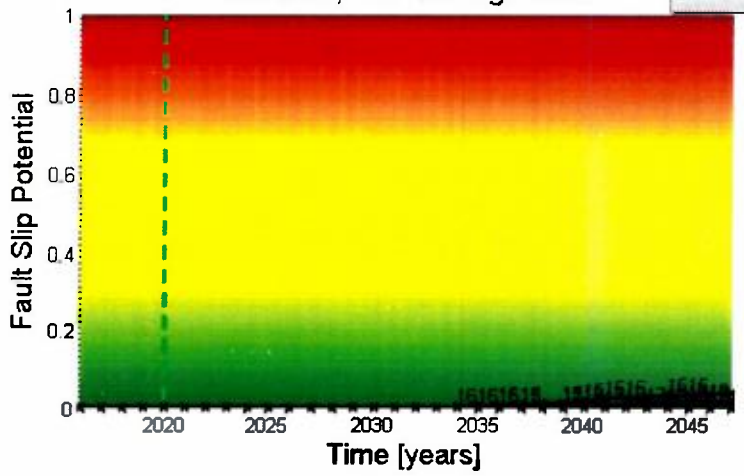




Year: 2020



Export



Exh. No. 12

Fault Slip Potential

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

Fault Selector:

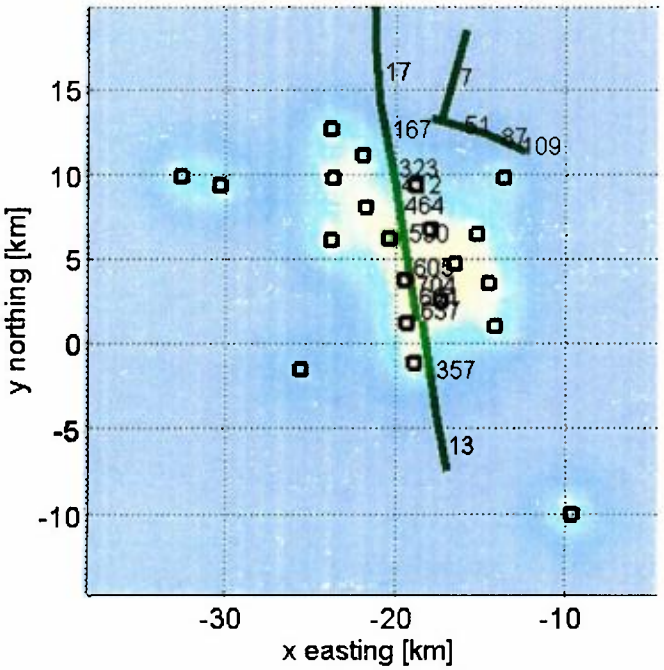
All Faults
Fault #1, 0.00 FSP
Fault #2, 0.00 FSP
Fault #3, 0.00 FSP
Fault #4, 0.00 FSP
Fault #5, 0.00 FSP
Fault #6, 0.00 FSP
Fault #7, 0.00 FSP
Fault #8, 0.00 FSP
Fault #9, 0.00 FSP
Fault #10, 0.00 FSP
Fault #11, 0.00 FSP
Fault #12, 0.00 FSP
Fault #13, 0.00 FSP
Fault #14, 0.00 FSP
Fault #15, 0.00 FSP
Fault #16, 0.00 FSP
Fault #17, 0.00 FSP

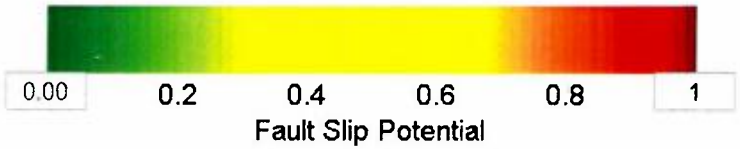
Calculate

Export

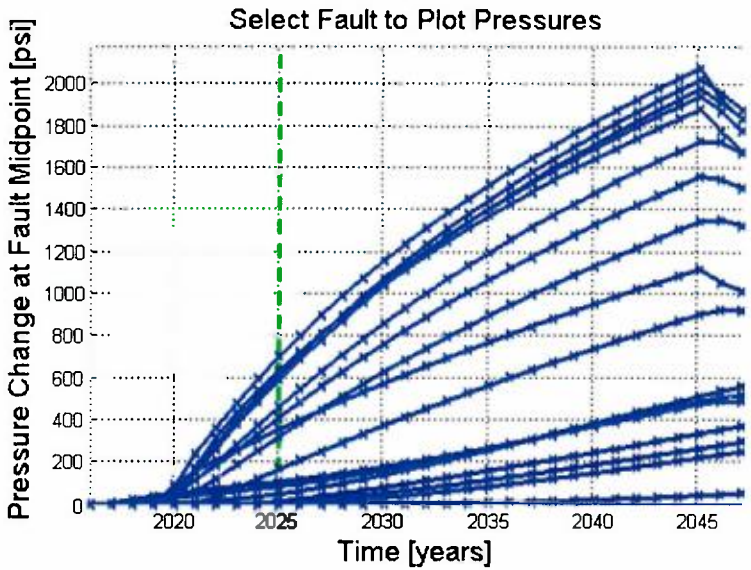
b) PP Change at fault [psi]

Summary Plots

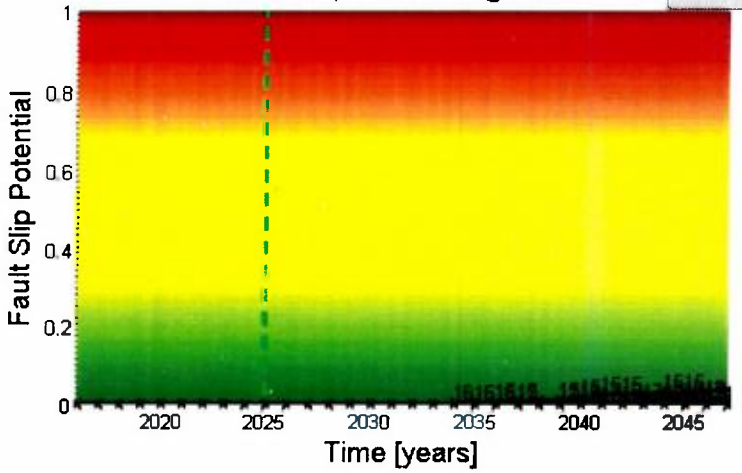




Year: 2025



Export



Exh. No. 13

Fault Slip Potential

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

Export

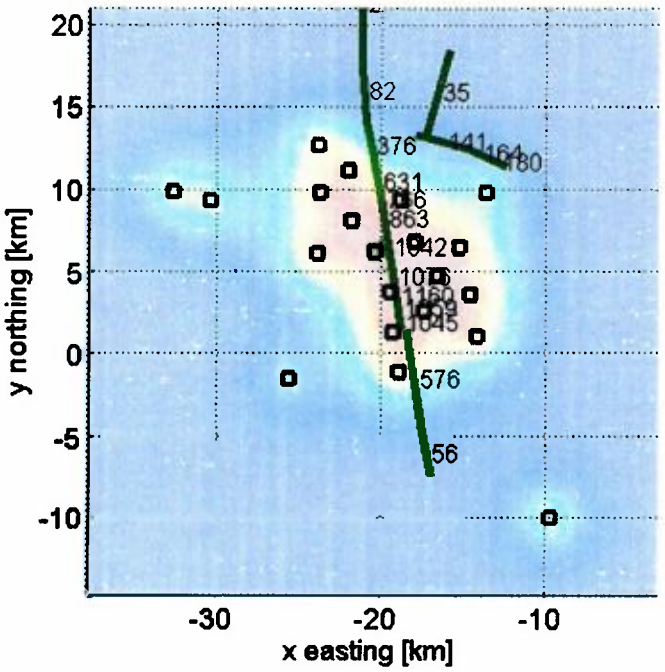
Fault Selector:

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
Fault #10, 0.00 FSP
Fault #11, 0.00 FSP
Fault #12, 0.00 FSP
Fault #13, 0.00 FSP
Fault #14, 0.00 FSP
Fault #15, 0.00 FSP
Fault #16, 0.00 FSP
Fault #17, 0.00 FSP

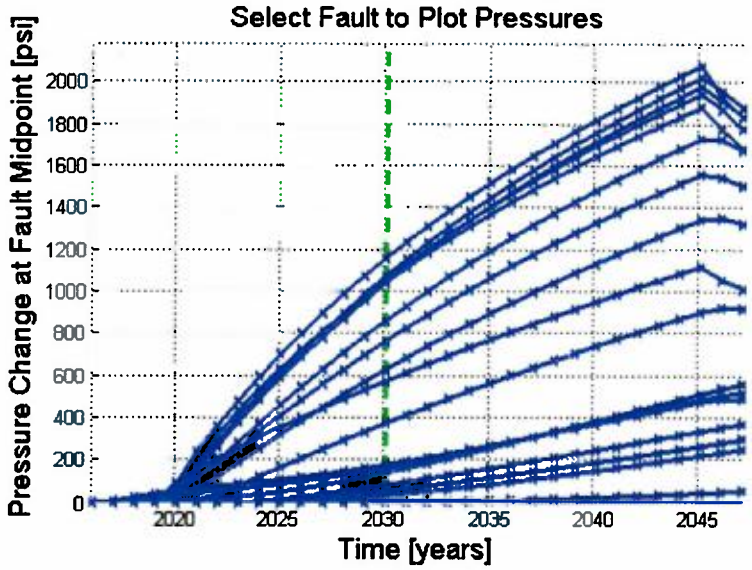
Calculate

b) PP Change at fault [psi]

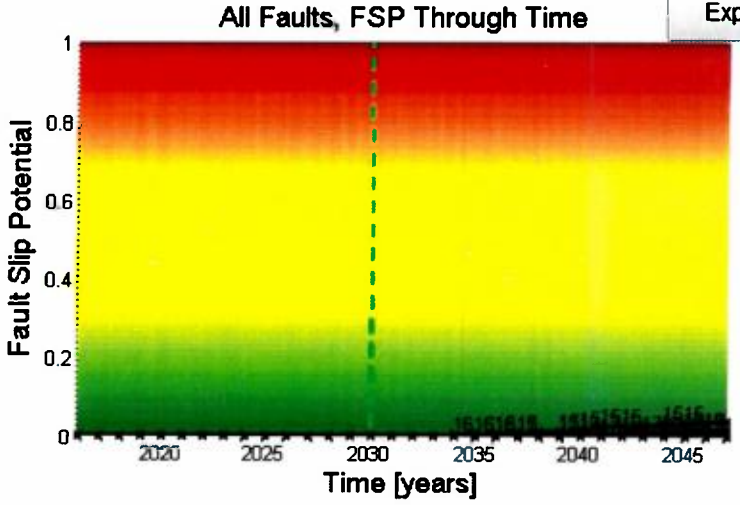
Summary Plots



Year: 2030



Export



Exh. No. 14

Fault Slip Potential

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

Fault Selector:

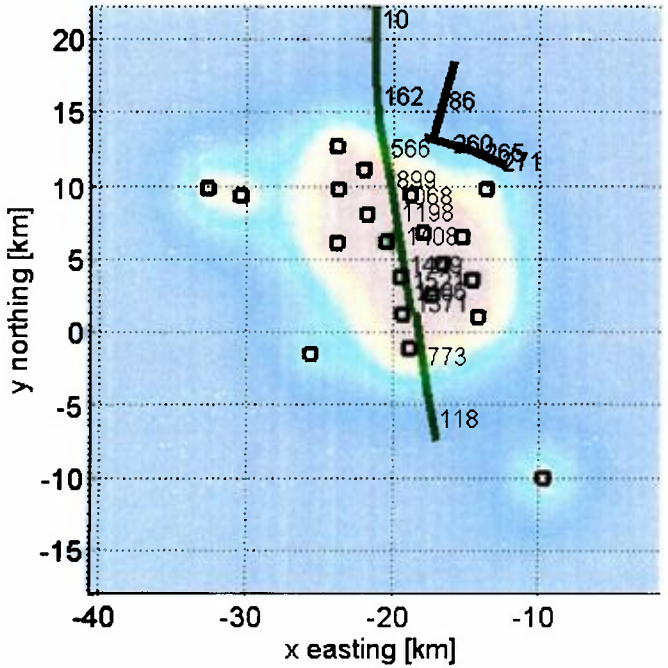
All Faults
Fault #1, 0.00 FSP
Fault #2, 0.00 FSP
Fault #3, 0.00 FSP
Fault #4, 0.00 FSP
Fault #5, 0.00 FSP
Fault #6, 0.00 FSP
Fault #7, 0.00 FSP
Fault #8, 0.00 FSP
Fault #9, 0.00 FSP
Fault #10, 0.00 FSP
Fault #11, 0.00 FSP
Fault #12, 0.00 FSP
Fault #13, 0.00 FSP
Fault #14, 0.00 FSP
Fault #15, 0.01 FSP
Fault #16, 0.00 FSP
Fault #17, 0.00 FSP

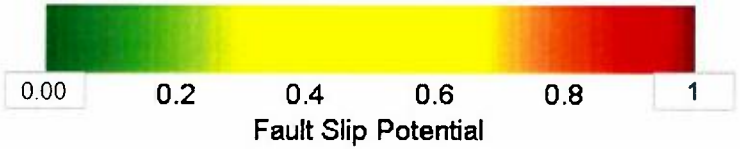
Calculate

Export

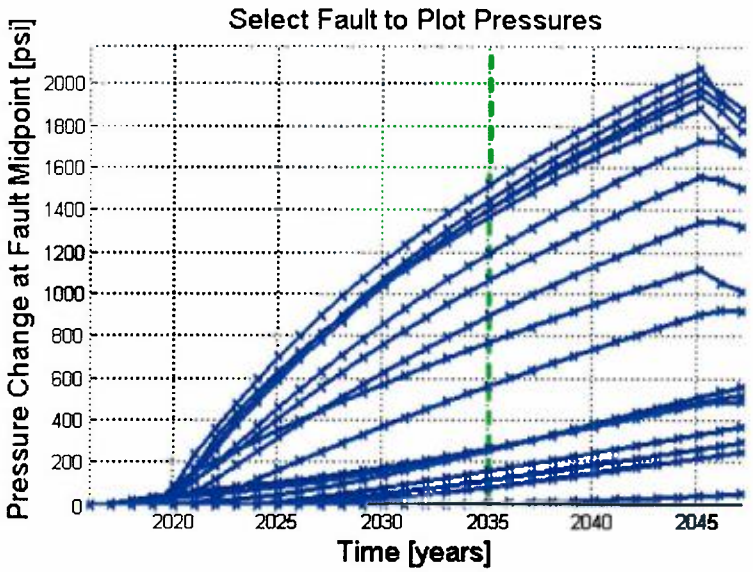
b) PP Change at fault [psi]

Summary Plots

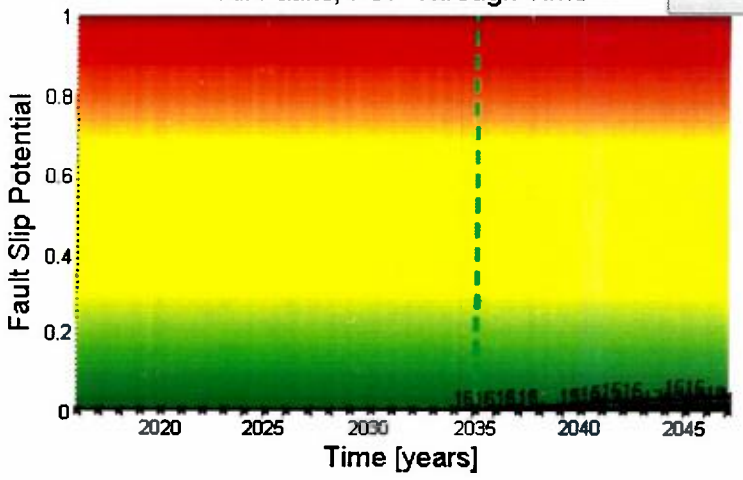




Year: 2035



Export



Exh. No. 15

File Data Inputs Export Image Zoom

Fault Slip Potential

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

Fault Selector:

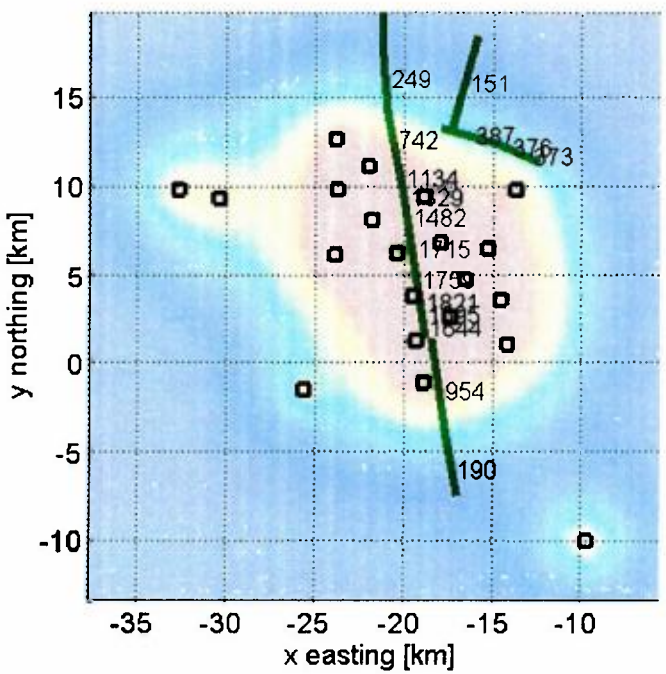
All Faults
Fault #1, 0.00 FSP
Fault #2, 0.00 FSP
Fault #3, 0.00 FSP
Fault #4, 0.00 FSP
Fault #5, 0.00 FSP
Fault #6, 0.00 FSP
Fault #7, 0.00 FSP
Fault #8, 0.00 FSP
Fault #9, 0.00 FSP
Fault #10, 0.00 FSP
Fault #11, 0.00 FSP
Fault #12, 0.00 FSP
Fault #13, 0.00 FSP
Fault #14, 0.00 FSP
Fault #15, 0.02 FSP
Fault #16, 0.01 FSP
Fault #17, 0.01 FSP

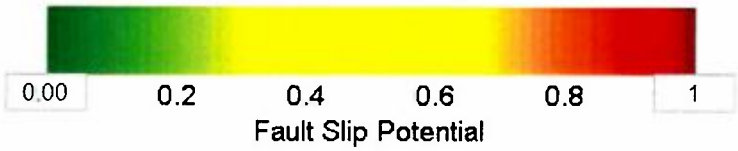
Calculate

Export

b) PP Change at fault [psi]

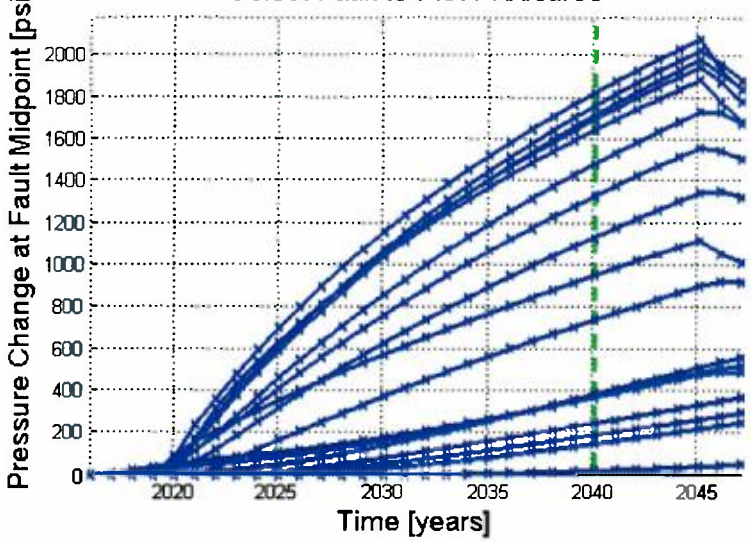
Summary Plots





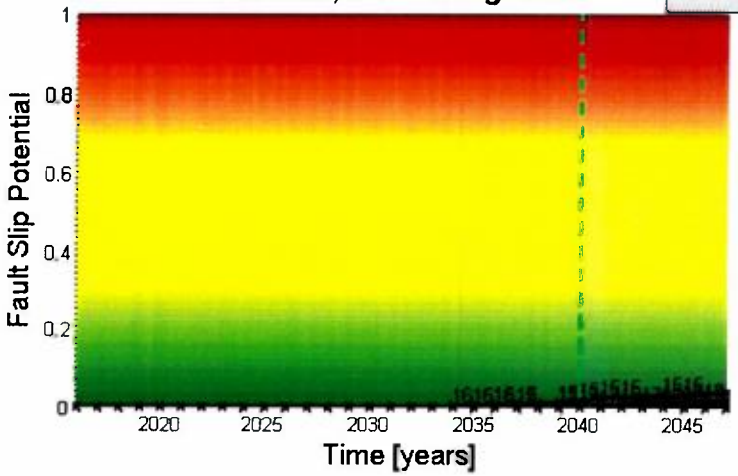
Year: 2040

Select Fault to Plot Pressures



Export

All Faults, FSP Through Time



Exh. No. 16

Fault Slip Potential

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

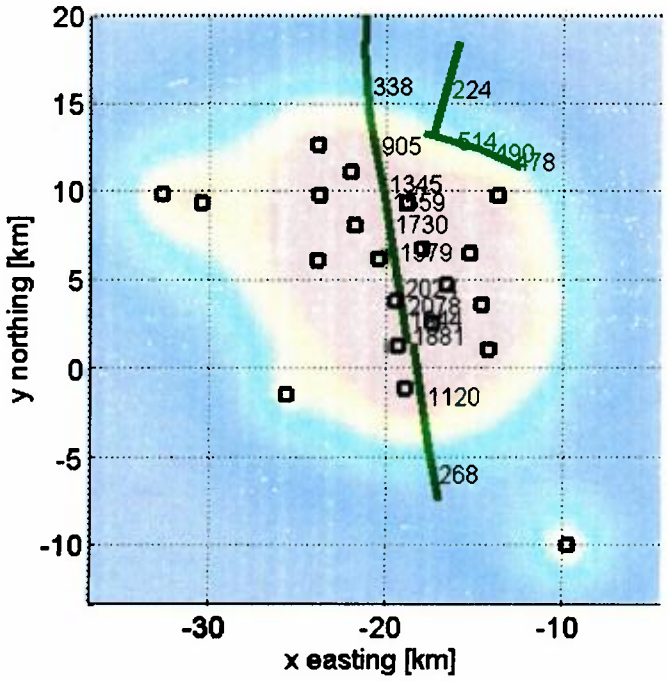
Fault Selector:

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, 0.00 FSP
Fault #8, 0.00 FSP
Fault #9, 0.00 FSP
Fault #10, 0.00 FSP
Fault #11, 0.00 FSP
Fault #12, 0.00 FSP
Fault #13, 0.00 FSP
Fault #14, 0.00 FSP
Fault #15, 0.03 FSP
Fault #16, 0.02 FSP
Fault #17, 0.01 FSP

Calculate

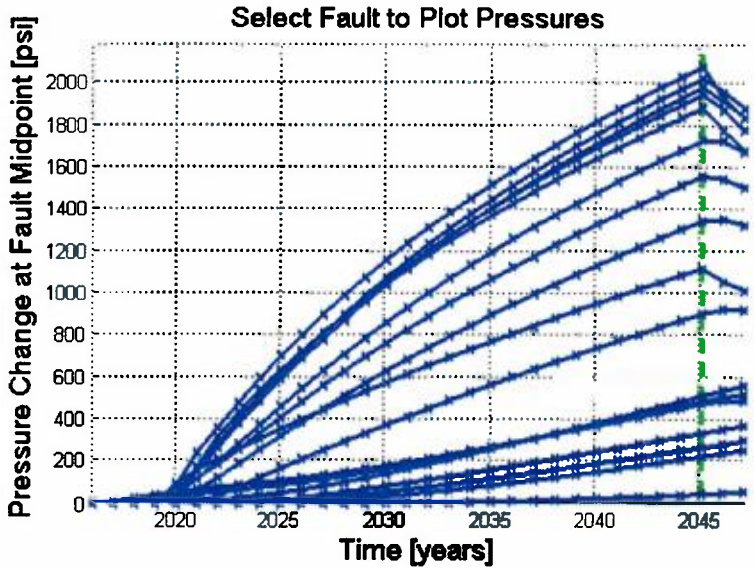
b) PP Change at fault [psi]

Summary Plots

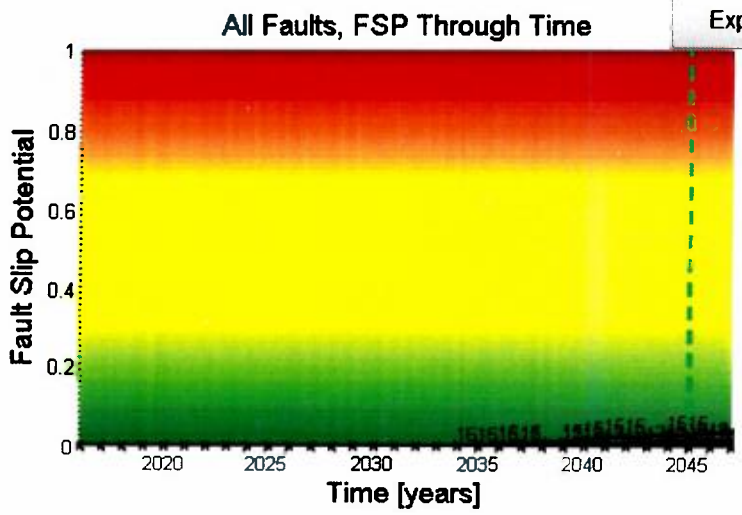


Year: 2045

Export



Export



Declaration of Stephan Nave
On Behalf of NGL Water Solutions Permian, LLC

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

Notice Affidavit

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. 20235

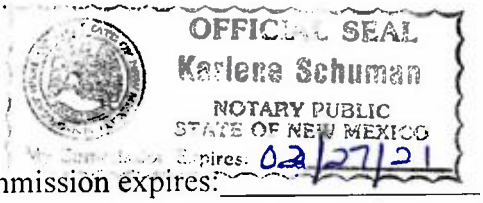
AFFIDAVIT

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 Application was provided under a notice letter and that proof of receipt is attached hereto.

Deana M. Bennett

SUBSCRIBED AND SWORN to before me this 1st day of February, 2019 by Deana M. Bennett.



Karlene Schuman
Notary Public

My commission expires: 02/27/21

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

PS Form 3877

Type of Mailing: CERTIFIED
01/04/2019

Javelina
KS

Firm Mailing Book ID: 158444

Line	Article Number	Name, Street & P.O. Address	Postage	Fee	R.R.Fee	Reference	Rest.Del.Fee Contents
1	9314 8699 0430 0054 5093 24	Oil Conservation Division District IV 1220 South St. Francis Drive Santa Fe NM 87505	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
2	9314 8699 0430 0054 5093 31	Oil Conservation Division District I - Hobbs 1625 N. French Drive Hobbs NM 88240	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
3	9314 8699 0430 0054 5093 48	NGL WATER SOLUTIONS PERMIAN, LLC Attn: Joe Vargo 1509 W Wall St., Ste. 306 Midland TX 79701	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
4	9314 8699 0430 0054 5093 55	NEW MEXICO STATE LAND OFFICE P.O. Box 1148, Santa Fe Santa Fe NM 87504	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
5	9314 8699 0430 0054 5093 62	BUREAU OF LAND MGMT 301 Dinosaur Trail Santa Fe NM 87508	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
6	9314 8699 0430 0054 5093 79	EOG RESOURCES INC P.O. Box 2267 Midland TX 79702	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
7	9314 8699 0430 0054 5093 86	EOG RESOURCES INC 333 CLAY ST #4200 Houston TX 77002	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
8	9314 8699 0430 0054 5093 93	EOG RESOURCES INC PO Box 4362 Houston TX 77210	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
9	9314 8699 0430 0054 5094 09	Marathon Oil Permian LLC 5555 San Felipe St. Houston TX 77056	$1.63	$3.45	$1.50	87806-0003	$0.00 Notice
		Totals:	$14.67	$31.05	$13.50		$0.00
						Grand Total:	$59.22

List Number of Pieces Listed by Sender

9

Total Number of Pieces Received at Post Office

Postmaster: Name of receiving employee

Dated:

Transaction Report Details - CertifiedPro.net
Firm Mail Book ID= 158444
Generated: 2/1/2019 10:40:15 AM

Certified Mail Article Number	Date Created	Name 1	Name 2	Address	City	State	Zip	Certified Mailing Status	Service Options	Mail Delivery Date
9314869904300054509409	2019-01-04 12:35 PM	Marathon Oil Permian LLC		5555 San Felipe St	Houston	TX	77056	Undelivered	Return Receipt - Electronic	
9314869904300054509393	2019-01-04 12:35 PM	EOG RESOURCES INC		PO Box 4362	Houston	TX	77210	Delivered	Return Receipt - Electronic	01-14-2019
9314869904300054509386	2019-01-04 12:35 PM	EOG RESOURCES INC		333 CLAY ST #4200	Houston	TX	77002	Delivered	Return Receipt - Electronic	01-14-2019
9314869904300054509379	2019-01-04 12:35 PM	EOG RESOURCES INC		P.O. Box 2267	Midland	TX	79702	Delivered	Return Receipt - Electronic	01-09-2019
9314869904300054509362	2019-01-04 12:35 PM	BUREAU OF LAND MGMT		301 Dinosaur Trail	Santa Fe	NM	87508	Undelivered	Return Receipt - Electronic	
9314869904300054509355	2019-01-04 12:35 PM	NEW MEXICO STATE LAND OFFICE		P.O. Box 1148, Santa Fe	Santa Fe	NM	87504	Delivered	Return Receipt - Electronic	01-07-2019
9314869904300054509348	2019-01-04 12:35 PM	NGL WATER SOLUTIONS PERMIAN, LLC	Attn: Joe Vargo	1509 W Wall St., Ste. 306	Midland	TX	79701	Delivered	Return Receipt - Electronic	01-07-2019
9314869904300054509331	2019-01-04 12:35 PM	Oil Conservation Division District I - Hobbs		1625 N. French Drive	Hobbs	NM	88240	Delivered	Return Receipt - Electronic	01-07-2019
9314869904300054509324	2019-01-04 12:35 PM	Oil Conservation Division District IV		1220 South St. Francis Drive	Santa Fe	NM	87505	Delivered	Return Receipt - Electronic	01-07-2019

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
January 10, 2019
and ending with the issue dated
January 10, 2019.

Publisher

Sworn and subscribed to before me this 10th day of January 2019.

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
JANUARY 10, 2019

CASE NO. _____: 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; MARATHON OIL PERMIAN LLC that NGL Water Solutions Permian, LLC, 1509 W. Wall Street, Suite 306, Midland, Texas 79701 is filing an amended application for hearing along with a C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division for approval of salt water disposal well in Lea County, New Mexico.
The State of New Mexico, through its Oil Conservation Division, hereby gives notice that the Division will conduct a public hearing at 8:15 a.m. on January 24, 2019, to consider this application. In its application, NGL seeks an order approving disposal into the Silurian-Devonian formation through the Javelin SWD #1 well at a surface location 1923 feet from the North line and 218 feet from the West line of Section 9, Township 25 South, Range 34 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well. NGL seeks authority to inject salt water into the Silurian-Devonian formation at a depth of 17,146' to 18,859'. 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 17.3 miles west of Jal, New Mexico.

CASE NO. _____: Notice to all affected parties, as well as the heirs and devisees of Bureau of Land Management; EOG Y RESOURCES INC; EOG M RESOURCES INC; EOG A RESOURCES INC; SHARBRO OIL LTD CO; OXY Y-1 COMPANY; EOG RESOURCES INC; DEVON ENERGY PRODUCTION COMPANY, LP; OXY USA INC; OXY USA INC; JUMBO AMERICAN PETROLEUM CORPORATION; MARATHON OIL PERMIAN LLC; BLACK ROCK CAPITAL INC; DEVON ENERGY PROD CO LP; BMOG, LLC; BLACK MOUNTAIN OPERATING, LLC; PROVIDENCE ENERGY PARTNERS III, LLC; COLGATE PRODUCTION, LLC; BOAZ ENERGY II, LLC; TAP ROCK RESOURCES, LLC; TALON OIL & GAS III, LLC ; SANTA ELENA MINERALS IV, LP; PEGASUS RESOURCES, LLC; EASTERLING NEW MEXICO MINERALS, LLC; TUNDRA HOLDINGS, LLC; BRIGHAM MINERALS, LLC; WILLIAM BRIAN BECKHAM; MONTY BRAD BECKHAM; GGM EXPLORATION, INC.; CMP ACQUISITIONS, LLC; LELA ELLEN MADERA; KATHERINE ROSS MADERA; LEA CLAIRE MCDONALD BROOKER; FORTIS MINERALS, LLC; C. D. MARTIN; WILDERPAN, LLC; CROWN ROCK MINERALS, LP; BERNARD LEE HOUSE FAMILY TRUST; TOMMIE KNIGHT CALLEY; MALCOLM RAYMOND SHARBUTT; WILL ROSS SHARBUTT; DIANA NORTHINGTON; ROBERT C. NORTHINGTON; JOHN W. B. NORTHINGTON; KATHERINE MADEA JARRETT; SALT CREEK MIDSTREAM, LLC that NGL Water Solutions Permian, LLC, 1509 W. Wall Street, Suite 306, Midland, Texas 79701 is filing an amended application for hearing along with a C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division for approval of salt water disposal well in Lea County, New Mexico. The State of New Mexico, through its Oil Conservation Division, hereby gives notice that the Division will conduct a public hearing at 8:15 a.m. on January 24, 2019, to consider this application. In its application, NGL seeks an order approving disposal into the Silurian-Devonian formation through the Thunderbolt SWD #1 well at a surface location 1,152 feet from the North line and 1,436 feet from the East line of Section 19, Township 26 South, Range 35 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well. NGL seeks authority to inject salt water into the Silurian-Devonian formation at a depth of 18,966' to 20,722'. 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 location is 11.6 miles southwest of Bennett, NM.
#33619

01104570 00223193

DOLORES SERNA
MODRALL, SPERLING, ROEHL, HARRIS &
P. O. BOX 2168
ALBUQUERQUE, NM 87103-2168