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

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

CASE NO. 16509

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 Raptor SWD #1 well at a surface location 295 feet from the North line and 1,580 feet from the West line of Section 27, Township 26 South, Range 36 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well.

(2) NGL seeks authority to inject salt water into the Silurian and Devonian formations at a depth of 18,529 – 19,874'.

(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 2,779 psi for this well, and it requests that a maximum pressure of 3,750 psi be approved for the well.

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

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

WHEREFORE, NGL requests that this application be set for hearing before an Examiner of the Oil Conservation Division on November 1, 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: _____

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Deana Bennett
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Albuquerque, New Mexico 87103-2168
Telephone: 505.848.1800
Attorneys for Applicant

CASE NO. 16509 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 and Devonian formations through the Raptor SWD #1 well at a surface location 295 feet from the North line and 1,580 feet from the West line of Section 27, Township 26 South, Range 36 East, NMPM, Lea County, New Mexico, for the purpose of operating a salt water disposal well. The target injection interval is the Silurian and Devonian formations at a depth of 18,529 – 19,874'. 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 4 miles southwest 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: RAPTOR SWD #1 **API:** TBD
Pool: SWD; SILURIAN-DEVONIAN **Pool Code:** 96101

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

1) **TYPE OF APPLICATION:** Check those which apply for [A]
A. Location – Spacing Unit – Simultaneous Dedication
☐ NSL ☐ NSP (PROJECT AREA) ☐ NSP (PRORATION UNIT) ☐ SD

B. Check one only for [I] or [II]
[I] Commingling – Storage – Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM
[II] Injection – Disposal – Pressure Increase – Enhanced Oil Recovery
☐ WFX ☐ PMX ☒ SWD ☐ IPI ☐ EOR ☐ PPR

FOR OCD ONLY
☐ Notice Complete
☐ Application Content Complete

2) **NOTIFICATION REQUIRED TO:** Check those which apply.
A. ☒ Offset operators or lease holders
B. ☐ Royalty, overriding royalty owners, revenue owners
C. ☒ Application requires published notice
D. ☒ Notification and/or concurrent approval by SLO
E. ☒ Notification and/or concurrent approval by BLM
F. ☒ Surface owner
G. ☐ For all of the above, proof of notification or publication is attached, and/or,
H. ☐ No notice required

3) **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

CHRIS WEYAND
Print or Type Name

09/27/2018
Date

512-600-1764
Phone Number

Signature

CHRIS@LONQUIST.COM
e-mail Address

EXHIBIT
tabbies
A

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL
RESOURCES DEPARTMENT

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

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: _____Secondary Recovery _____Pressure Maintenance ___X___Disposal _____Storage
Application qualifies for administrative approval? ___X___Yes _____No

II. OPERATOR: NGL WATER SOLUTIONS PERMIAN, LLC

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

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

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

IV. Is this an expansion of an existing project? _____Yes ___X___No
If yes, give the Division order number authorizing the project: _____

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

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

VII. Attach data on the proposed operation, including:

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

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

IX. Describe the proposed stimulation program, if any.

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

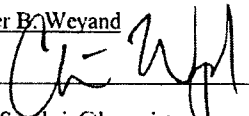
*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

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

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

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

NAME: Christopher B. Weyand TITLE: Consulting Engineer

SIGNATURE:  DATE: 9/20/2018

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: RAPTOR SWD #1

WELL LOCATION: 295 FNL & 1,580' FWL (FOOTAGE LOCATION) | C (UNIT LETTER) | 27 (SECTION) | 26S (TOWNSHIP) | 36E (RANGE)

WELLBORE SCHEMATIC

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 24.000" Casing Size: 20.000"

Cemented with: 1,487 sx. *or* _____ ft³

Top of Cement: Surface Method Determined: Circulation

1st Intermediate Casing

Hole Size: 17.500" Casing Size: 13.375"

Cemented with: 3,627 sx. *or* _____ ft³

Top of Cement: Surface Method Determined: Circulation

2nd Intermediate Casing

Hole Size: 12.250" Casing Size: 9.625"

Cemented with: 3,310 sx. *or* _____ ft³

Top of Cement: Surface Method Determined: Circulation

Production Liner

Hole Size: 8.500"

Casing Size: 7.625"

Cemented with: 452 sx.

or _____ ft^3

Top of Cement: 12,200'

Method Determined: Calculation

Total Depth: 19,874'

Injection Interval

18,529 feet to 19,874 feet

(Open Hole)

INJECTION WELL DATA SHEET

Tubing Size: 7", 26 lb/ft, P-110, TCPC from 0'- 12,100' and 5.500", 17 lb/ft, P-110 TCPC from 12,100' - 18,500'
Lining Material: Duoline

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

Packer Setting Depth: 18,500'

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

Additional Data

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

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

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

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

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

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:
   Yates-Seven Rivers: 3,125'
   Bone Spring: 8,559'
   Wolfcamp: 11,969'
   Strawn: 12,827

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

Location - Sec 27, Twp 26S, R 36E
Drilling and Complete Cost - $10.99MM

AFE #

TD 19,874
GL/KB 2,903

Directions to Site - Travel 6.5 miles from Jal along NM 205 - S/Frying Pan Road. Turn right. Lat/Long - 32.02110,-103.25669

Geologic Tops (MD ft)	Section	Problems	Bit/BHA	Mud	Casing	Logging	Cement (HOLD)	Injection String
Rustler 1741 **Surface TD - 1800**	**Surface** Drill 24" 0' - 1800 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	1800' of 20" K55 133ppf STC Centralizers - bottom 2 joints and every 3rd jt thereafter, Cement basket at 200'	No Logs	Lead - 713sx of HES Extenda Cem, 13.7ppg, 4.5hrs TT Tail - 774sx of Halcem 3hr TT 25% Excess 1000psi CSD after 10hrs	12100' of 7" P110 26# TCPC 6429' of 5-1/2" P110 17# TCPC Duoline Internally Coated Injection Tubing
Top of Salt 2010 Base of Salt 3050 Delaware 5185 **1st Int TD - 5150**	**1st Intermediate** Drill 2350' of 17-1/2" Hole 1800' - 5150' Set and Cement 13-3/8" Casing	Seepage Losses Possible H2S Anhydrite Salt Sections	17-1/2" PDC 9-5/8" x 8" MM 9 jts: 8" DC 21 jts: 5" HWDP 5 " DP to surface		5M A Section Casing Bowl 5150' 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 1800'	Lead - 1821 sx of Neocem 12.9ppg, 5hr TT Tail - 1806sx of Halcem, 14.8ppg 60% Excess 1000psi CSD after 10 hrs Cement to Surface	
ECP DV Tool - 5130 Bell Canyon 5475 Cherry Canyon - 6205 Brushy Canyon - 7045 **DV Tool - 8000** Bone Spring - 8335 **3rd Int Liner Top - 12,200** Wolfcamp - 12349 **2nd Int TD - 12,500**	**2nd Intermediate** Drill 7350' of 12-1/4" Hole 5150' - 12,500' 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 12500' of 9-5/8" 53.5# P110 BTC **Special Drift to 8.535"** Externally Coat Between DV Tools DV tool at at 8000' ECP DV Tool 15' Inside Previous Casing Centralizers - bottom jt, 100' aside of DV tool, every 3rd joint in open hole and 5 within the surface casing	MWD GR Triple combo + CBL of 13-3/8" Casing	**Stage 3: 0% Excess** Lead 663sx Neocem 12.9 ppg Tail 503sx Halcem 14.8ppg 1000psi CSD after 10 hrs Cement to Surface **Stage 2: 25% Excess** Lead 516sx Neocem 12.9 ppg Tail 295sx Halcem 14.8ppg 1000psi CSD after 10 hrs **Stage 1: 25% Excess** Lead 829sx Neocem 12.9 ppg Tail 504sx Halcem 14.8ppg. 1000psi CSD after 10hrs	
Strawn - 12827 Atoka - 12979 Morrow - 14319 Miss Lst - 17584 Woodford - 18059 Perm Packer - 18500 **3rd Int TD - 18,529**	**3rd Intermediate** Drill 6029' of 8-1/2" Hole 12500' - 18529' 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	6329 of 7-5/8" 39# V140 - DTL (FJ4) FJ (Gas Tight) VersaFlex Packer Hanger Centralizers on and 1 jt above shoe jt and then every 2nd jt.	MWD GR Triple combo, CBL of 9-5/8" Casing	Lead 278sx Neocem 12.9 ppg Tail 183sx Halcem 14.8ppg. 1000psi CSD after 10hrs 8hr TT 10% Excess 1000psi CSD after 10hrs	7-5/8" x 5-1/2" TCPC Permanent Packer with High Temp Elastomer and full Inconel 925 trim
Devonian - 18,509 Fusselman - 19279 Montoya - 19,774' TD - 19,874'	**Injection Interval** Drill 1345' of 6-1/2" hole 18529' - 19874'	Chert is possible Loss of Circulation is expected H2S encountered on the Striker 3 well BHT estimated at 280F	6-1/2" PDC 4-3/4"MM 9 jts: 4-3/4" DC 4-3/4" Drilling Jars 18 jts: 4" FH HWDP 4" FH DP to Surface	Fresh Water - possible flows	Openhole completion	MWD GR Triple Combo with FMI, CBL of 7-5/8"	Displace with 3% KCl (or heavier brine if necessary)	

NGL Water Solutions Permian, LLC

Raptor SWD No. 1

FORM C-108 Supplemental Information

III. Well Data

A. Wellbore Information

1.

Well information	
Lease Name	Raptor SWD
Well No.	1
Location	S-27 T-26S R-36E
Footage Location	295' FNL & 1,580' FWL

2.

a. Wellbore Description

Casing Information				
Type	Surface	Intermediate	Production	Liner
OD	20"	13.375"	9.625"	7.625"
WT	0.635"	0.480"	0.545"	0.500"
ID	18.730"	12.415"	8.535"	6.625"
Drift ID	18.542"	12.259"	8.535"	6.500"
COD	21.00"	14.375"	10.625"	7.625"
Weight	133 lb/ft	68 lb/ft	53.5 lb/ft	39 lb/ft
Grade	K-55	HCL-80	P-110	V-140
Hole Size	24"	17.5"	12.25"	8.5"
Depth Set	1,800'	5,150'	12,500'	18,529'

b. Cementing Program

Cement Information				
Casing String	Surface	Intermediate	Production	Liner
Lead Cement	Extenda Cem	Neocem	Neocem, Halcem	Neocem
Lead Cement Volume	713	1,821	Stage 1: 829 sks Stage 2: 516 sks Stage 3: 663 sks	278
Tail Cement	Halcem	Halcem	Neocem, Halcem	Halcem
Tail Cement Volume	774	1,806	Stage 1: 504 sks Stage 2: 295 sks Stage 3: 503 sks	173
Cement Excess	25%	60%	25%, 25%, 0%	10%
TOC	Surface	Surface	Surface	12,200'
Method	Circulate to Surface	Circulate to Surface	Circulate to Surface	Logged

3. Tubing Description

Tubing Information		
OD	7"	5.5"
WT	0.362"	0.304"
ID	6.276"	4.892"
Drift ID	7.875"	6.050"
COD	6.151"	4.653"
Weight	26 lb/ft	17 lb/ft
Grade	P-110 TCPC	P-110 TCPC
Depth Set	0'-12,100'	12,100' -18,500'

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

B. Completion Information

1. Injection Formation: Devonian, Silurian, Fusselman, Montoya (Top 100')
2. Gross Injection Interval: 18,529' – 19,874'

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

Formation	Depth
Yates-Seven Rivers	3,125'
Bone Spring	8,559'
Wolfcamp	11,969'
Strawn	12,827'

VI. Area of Review

API No. 30-025-26557 penetrates the proposed injection zone within 1-mile of the proposed Raptor SWD #1. The completion report is attached. The well was drilled to the Devonian (TD 18,577') and plugged back to 15,550' (which is in the Morrow formation) with multiple cement plugs. A CIBP was set at 15,190'.

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: 2,779 PSI (surface pressure)
   Maximum Injection Pressure: 3,705 PSI (surface pressure)

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

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

VIII. Geological Data

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

A. Injection Zone: Siluro-Devonian Formation

Formation	Depth
Rustler	1,741'
Yates-Seven Rivers	3,125'
Delaware	5,185'
Bone Spring	8,335'
Wolfcamp	12,349'
Penn	12,419'
Atoka	12,979'
Morrow	14,319'
Mississippian Lime	16,709'
Woodford	18,059'
Devonian	18,509'

B. Underground Sources of Drinking Water

Within 1-mile of the proposed Raptor SWD #1 location, there are two water wells. Only one water well has been reported of having a depth of 800 ft. Water wells in the surrounding area have an average depth of 564 ft and an average water depth of 254 ft generally producing from the Santa Rosa. The upper Rustler may also be another USDW and will be protected.

IX. Proposed Stimulation Program

Stimulate with up to 50,000 gallons of acid.

X. Logging and Test Data on the Well

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

XI. Chemical Analysis of Fresh Water Wells

There are two water wells that exist within one mile of the well location. If samples can be obtained, analysis results will be provided as soon as possible. A map and Water Right Summary from the New Mexico Office of the State Engineer is attached for water well J-00025 POD2.

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.
	RAPTOR SWD	1

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
C	27	26S	36E	N/A	295'	NORTH	1580'	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	2,903'
16. Multiple	**17. Proposed Depth**	**18. Formation**	**19. Contractor**	**20. Spud Date**
N	19,874'	Siluro-Devonian	TBD	ASAP
Depth to Ground water	Distance from nearest fresh water well		Distance to nearest surface water	
254'	2,246'		> 1 mile	

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

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surface	24"	20"	133 lb/ft	1,800'	1,487	Surface
Intermediate	17.5"	13.375"	68 lb/ft	5,150'	3,627	Surface
Production	12.25"	9.625"	53.5 lb/ft	12,500'	3,310	Surface
Prod. Liner	8.5"	7.625"	39 lb/ft	18,529'	452	12,200'
Tubing	N/A	7"	26 lb/ft	0' – 12,100'	N/A	N/A
Tubing	N/A	5.5"	17 lb/ft	12,100' – 18,500'	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: 9/27/2018 / 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
	RAPTOR SWD	1

7 OGRID No.	8 Operator Name	9 Elevation
372338	NGL WATER SOLUTIONS PERMIAN, LLC	2903.00'±

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
C	27	26 S	36 E	N/A	295'	NORTH	1580'	WEST	LEA

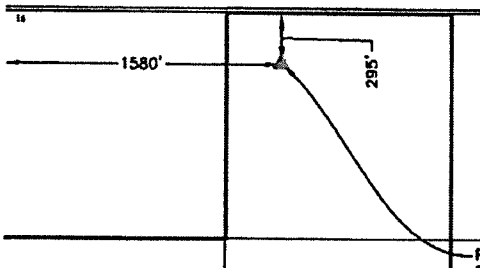
11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.

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

16



PROPOSED
RAPTOR SWD 1

NMSP-E (NAD27)
N: 372,882.76'
E: 833,905.31'

NMSP-E (NAD83)
N: 372,940.24'
E: 875,094.03'
Lat: N32°01'14.59"
Long: W103°15'23.19"

SECTION
27

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 9/28/2018
Date

Chris Weyand
Printed Name

chris@lonquist.com
E-mail Address

18 SURVEYOR CERTIFICATION

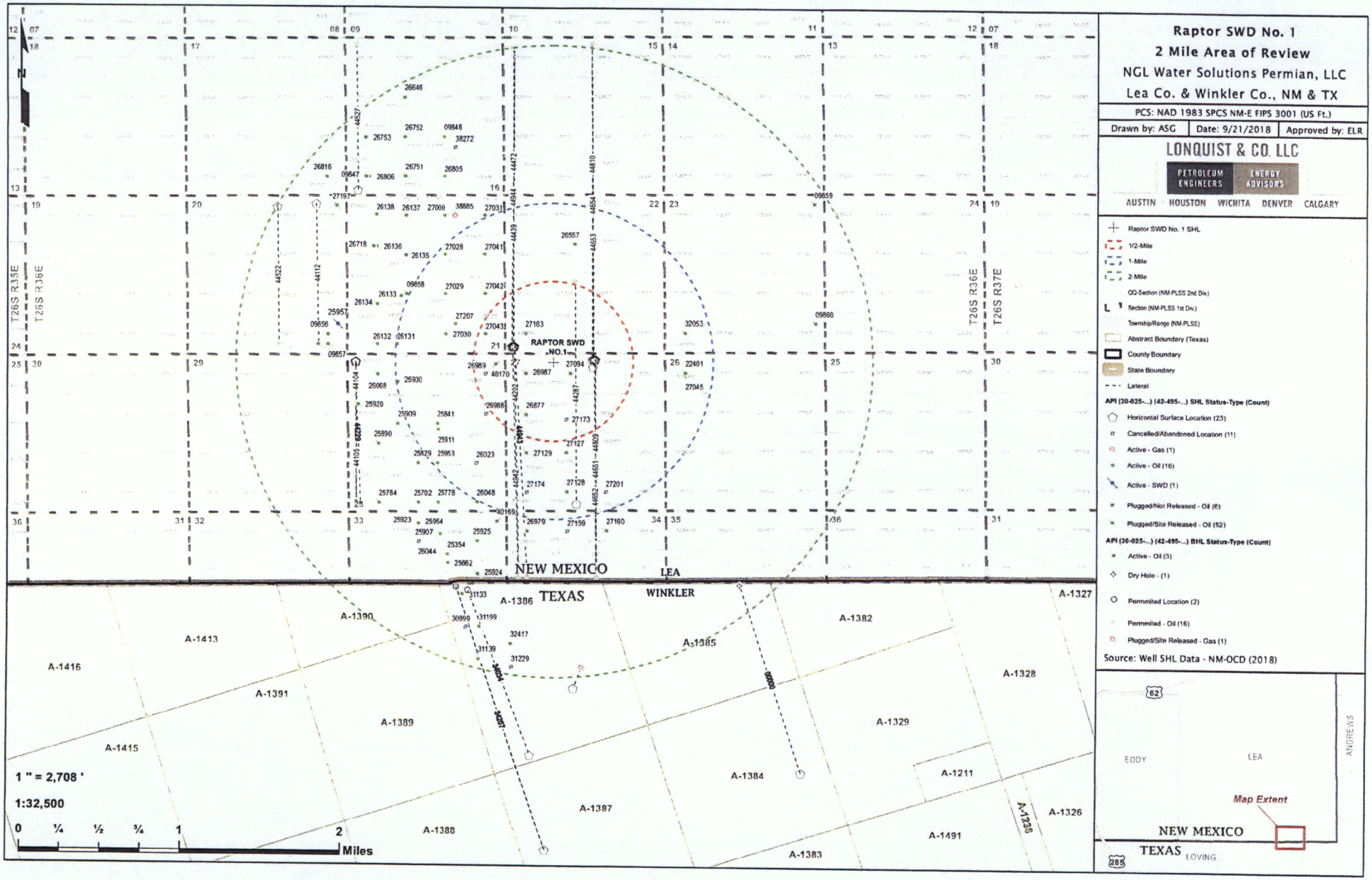
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

09/13/2018
Date of Survey

Signature and Seal of Professional Surveyor

CODY A. CLARK
NEW MEXICO
23001
PROFESSIONAL SURVEYOR

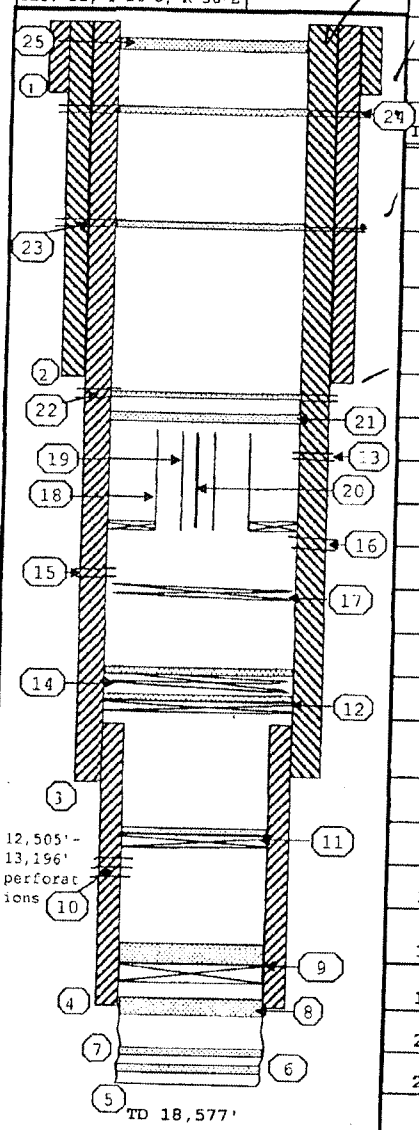
23001
Certificate Number


Raptor SWD No. 1
2 Mile Area of Review
NGL Water Solutions Permian, LLC
Lea Co. & Winkler Co., NM & TX
PCS: NAD 1983 SPCS NM-E FIPS 3001 (US Ft.)
Drawn by: ASG
Date: 9/21/2018
Approved by: ELR
LONQUIST & CO. LLC
PETROLEUM ENGINEERS
ENERGY ADVISORS
AUSTIN HOUSTON WICHITA DENVER CALGARY
Raptor 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)
Abstract Boundary (Texas)
County Boundary
State Boundary
Lateral
API (30-025-...) (42-495-...) SHL Status-Type (Count)
Horizontal Surface Location (23)
Cancelled/Abandoned Location (11)
Active - Gas (1)
Active - Oil (16)
Active - SWD (1)
Plugged/Not Released - Oil (6)
Plugged/Site Released - Oil (52)
API (30-025-...) (42-495-...) BHL Status-Type (Count)
Active - Oil (3)
Dry Hole - (1)
Permmited Location (2)
Permmited - Oil (16)
Plugged/Site Released - Gas (1)
Source: Well SHL Data - NM-OCD (2018)
RAPTOR SWD NO.1
T26S R35E
T26S R36E
T26S R36E
T26S R37E
NEW MEXICO
TEXAS
LEA
WINKLER
A-1386
A-1390
A-1413
A-1416
A-1391
A-1389
A-1415
A-1388
A-1387
A-1384
A-1385
A-1382
A-1327
A-1328
A-1329
A-1211
A-1326
A-1491
A-1383
1 " = 2,708 '
1:32,500
0 ¼ ½ ¾ 1 2 Miles
EDDY
LEA
ANDREWS
Map Extent
NEW MEXICO
TEXAS
LOVING
62
285

Raptor 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
22401	PRE-ONGARD WELL #001	O	P	PRE-ONGARD WELL OPERATOR	3502	32.01966860000	-103.24238590000	1/1/1900
25841	PRE-ONGARD WELL #002	O	P	PRE-ONGARD WELL OPERATOR	284	32.01514820000	-103.26896670000	1/1/1900
25911	QUANAH PARKER #002Y	O	P	WHITING OIL AND GAS CORPORATION	3258	32.01459880000	-103.26888280000	12/31/9999
25930	LEA 7406 JV-S #008	O	P	BTA OIL PRODUCERS	3270	32.01901250000	-103.27323910000	12/31/9999
25953	NEW MEXICO CV STATE #001	O	P	WHITING OIL AND GAS CORPORATION	3239	32.01150130000	-103.26896670000	6/23/1978
26023	PRE-ONGARD WELL #003	O	C	PRE-ONGARD WELL OPERATOR	0	32.01152777980	-103.26471870700	12/31/9999
26131	WILSON 21 FEDERAL #001	O	A	FULFER OIL & CATTLE LLC	3340	32.02239610000	-103.27323910000	12/31/9999
26557	PAWNEE DEEP UNIT #001	O	P	HERITAGE RESOURCES, INC.	18577	32.03146740000	-103.25407410000	11/25/1979
26877	BUFFALO HUMP #001	O	P	WHITING OIL AND GAS CORPORATION	3585	32.01591110000	-103.25938420000	12/31/9999
26987	BUFFALO HUMP #002	O	P	WHITING OIL AND GAS CORPORATION	3545	32.01967620000	-103.25938420000	12/31/9999
26988	PRE-ONGARD WELL #003	O	C	PRE-ONGARD WELL OPERATOR	0	32.01605629660	-103.26365298700	12/31/9999
26989	PRE-ONGARD WELL #004	O	C	PRE-ONGARD WELL OPERATOR	0	32.01968494540	-103.26365625500	12/31/9999
27028	LEA 21, 7406 JV-S #002	O	A	FULFER OIL & CATTLE LLC	3658	32.03056720000	-103.26791380000	12/31/9999
27029	LEA 21, 7406 JV-S #003	O	A	FULFER OIL & CATTLE LLC	3574	32.02693180000	-103.26791380000	3/23/2010
27030	PRE-ONGARD WELL #004	O	P	PRE-ONGARD WELL OPERATOR	1060	32.02330400000	-103.26790620000	1/1/1900
27041	LEA 21, 7406 JV-S #006	O	A	FULFER OIL & CATTLE LLC	3495	32.03056340000	-103.26365660000	11/21/1980
27042	LEA 21, 7406 JV-S #007	O	A	FULFER OIL & CATTLE LLC	3525	32.02693560000	-103.26364900000	12/31/9999
27043	LEA 21, 7406 JV-S #008	O	A	FULFER OIL & CATTLE LLC	3570	32.02330400000	-103.26364900000	12/31/9999
27045	LEA 26 7406 JV-S #001	O	P	BTA OIL PRODUCERS	3660	32.01939010000	-103.24238590000	12/31/9999
27094	PRE-ONGARD WELL #003	O	P	PRE-ONGARD WELL OPERATOR	3608	32.01967240000	-103.25464630000	1/1/1900
27127	BUFFALO HUMP #005	O	P	WHITING OIL AND GAS CORPORATION	3554	32.01242070000	-103.25511930000	12/31/9999
27128	BUFFALO HUMP #006	O	P	WHITING OIL AND GAS CORPORATION	3564	32.00879290000	-103.25511930000	12/31/9999
27129	BUFFALO HUMP #008	O	P	WHITING OIL AND GAS CORPORATION	3606	32.01242450000	-103.25938420000	12/31/9999
27163	AMERICAN EAGLE #001	O	P	WHITING OIL AND GAS CORPORATION	3550	32.02330400000	-103.25939180000	1/23/1981
27173	PRE-ONGARD WELL #004	O	C	PRE-ONGARD WELL OPERATOR	0	32.01550009560	-103.25509350400	12/31/9999
27174	PRE-ONGARD WELL #007	O	C	PRE-ONGARD WELL OPERATOR	0	32.00880363520	-103.25936686400	12/31/9999
27201	PRE-ONGARD WELL #001	O	C	PRE-ONGARD WELL OPERATOR	0	32.00879094530	-103.25093918500	12/31/9999
27207	LEA 21, 7406 JV-S #004Y	O	A	FULFER OIL & CATTLE LLC	3550	32.02421190000	-103.26684570000	1/26/1981
32053	BEARTOOTH STATE UNIT #001	O	P	EOG Y RESOURCES, INC.	7725	32.02329640000	-103.24238590000	7/26/1993
40170	GOOD CHIEF STATE #001	O	H	RMR OPERATING, LLC	3873	32.02058410000	-103.26258090000	7/13/2011
44202	AMEN CORNER 26 36 27 STATE COM #111H	O	N	AMEREDEV OPERATING, LLC	0	32.02216530000	-103.26060600000	12/31/9999
44287	BOSSHOG #001H	O	N	Impetro Operating LLC	0	32.00769392000	-103.25411597000	12/31/9999
44439	MAGNOLIA 26 36 22 STATE COM #111H	O	N	AMEREDEV OPERATING, LLC	0	32.02216540000	-103.26073510000	12/31/9999
44472	MAGNOLIA 26 36 22 STATE COM #101H	O	N	AMEREDEV OPERATING, LLC	0	32.02216530000	-103.26067060000	12/31/9999
44651	AMEN CORNER 26 36 27 STATE COM #115H	O	N	AMEREDEV OPERATING, LLC	0	32.02097400000	-103.25202220000	12/31/9999
44652	AMEN CORNER 26 36 27 STATE COM #125H	O	N	AMEREDEV OPERATING, LLC	0	32.02097420000	-103.25208670000	12/31/9999
44653	MAGNOLIA 26 36 22 STATE COM #105H	O	N	AMEREDEV OPERATING, LLC	0	32.02097430000	-103.25215130000	12/31/9999
44654	MAGNOLIA 26 36 22 STATE COM #115H	O	N	AMEREDEV OPERATING, LLC	0	32.02027440000	-103.25221580000	12/31/9999
44809	AMEN CORNER 26 36 27 STATE COM #105H	O	N	AMEREDEV OPERATING, LLC	0	32.02097390000	-103.25195770000	12/31/9999
44810	MAGNOLIA 26 36 22 STATE COM #125H	O	N	AMEREDEV OPERATING, LLC	0	32.02097450000	-103.25228030000	12/31/9999
44942	AMEN CORNER 26 36 27 STATE COM #121H	O	N	AMEREDEV OPERATING, LLC	0	32.02216550000	-103.26079970000	12/31/9999
44943	AMEN CORNER 26 36 27 STATE COM #091H	O	N	AMEREDEV OPERATING, LLC	0	32.02216530000	-103.26054150000	12/31/9999
44944	MAGNOLIA 26 36 22 STATE COM #121H	O	N	AMEREDEV OPERATING, LLC	0	32.02216540000	-103.26086450000	12/31/9999

HERITAGE RESOURCES, INC.					WELL NAME: PAWNEE DEEP UNIT #1				
COMPANY REP:	CASING	SIZE:	WT:	GRADE:	THREAD:	PACKER FLUID:			
COUNTY: LEA STATE: NEW MEXICO	LINER	SIZE:	WT:	GRADE:	THREAD:	TUBING WT. ON	LOWER:	MIDDLE:	UPPER:
SEC. 22, T-26-S, R-36-E		SIZE:	WT:	GRADE:	THREAD:	TYPE LATCH	LOWER:	MIDDLE:	UPPER:
		SIZE:	WT:	GRADE:	THREAD:	OPERATOR: HERITAGE RESOURCES, INC.			
		SIZE:	WT:	GRADE:	THREAD:	OFFICE:		DATE: 10/30/2013	



ITEM	DEPTH	LENGTH	JTS	DESCRIPTION
1	925'	925'		20" @925' w/1700 sx cmt circ. to surface
2	4,950'	4,950'		13 3/8" @4,950' w/3800 sx cmt circ to surfac
3	11,854'	11,854'		9 5/8" @11,854' w/2425 sx cmt. Top of cmt @5800' by temp survey.
4	16,504'	4,943'		7 3/4" liner set @11,561' - 16,504' w/700 sx cmt
5				Open hole from 16,504' to TD of 18,577'
6	18,035'			18,035' - 18,535' cmt plug spotted
7	17,000'			17,000' - 17,500' cmt plug spotted
8	15,550'			15,550' - 16,550' cmt plug spotted
9	15,190'			Castiron bridge plug @15190' w/10' cmt on top
10				Perforations 12,505' - 13,196'
11	12400'			7 5/8" CIBP set at 12,400' w/8 sx cmt. to 12,365'
12	11,500'			7.71" CIBP set at 11,500' w/12 sx cmt.
13	6,652'			Perforations 6,652'-6,672' squeezed w/150 sx cmt.
14	11,500'			Loose 9 5/8" packer w/cmt. on top & dump bailer left in hole.
15				Perforations 9,498'-9,526'
16				Perforations 9,332'-9,372'
17	9,650'			Loose 9 5/8" packer.
18	9,306'	9,306		5 1/2" casing set on 9 5/8" pkr @9,306'. 2,930' remaining in well.
19	9,306'	2,930		2,930' of 2 7/8" tubing remaining in well.
20				2,930 ' of 1" steel rods remaining in well.
21				50 sx cement plug @ 6,390'.
22				Perforate @ 5,000', 65 sx cmt. in & out of casing with packer and tag.
23				Perforate @ 2,195', 65 sx cmt. in & out of casing with packer and tag.
24				Perforate @975', 65 sx cmt. in & out of casing with packer and tag.
25				Circulate cement thru parted casing @340' w/250 sx cmt.

PROPOSED

Submit 3 Copies To Appropriate District Office
District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Ave., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

HOBBS OCD
JUN 19 2014
RECEIVED

Form C-103
May 27, 2004

WELL API NO.
30-025-26557

5. Indicate Type of Lease
STATE ☒ FEE ☐

6. State Oil & Gas Lease No.
LG 3340

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name
Pawnee Deep Unit

1. Type of Well: Oil Well ☒ Gas Well ☐ Other

8. Well Number 1

2. Name of Operator
Heritage Resources, Inc.

9. OGRID Number
289348

3. Address of Operator 3131 McKinney, Avenue, Suite 710
Dallas, Texas 75204

10. Pool name or Wildcat
Bone Spring

4. Well Location
Unit Letter F : 1650 feet from the North line and 2310 feet from the West line
Section 22 Township 26S Range 36E NMPM County LEA

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)*

Pit or Below-grade Tank Application ☐ or Closure ☐

Pit type_____ Depth to Groundwater_____ Distance from nearest fresh water well_____ Distance from nearest surface water_____

Pit Liner Thickness: _____ mil Below-Grade Tank: Volume _____ bbls; Construction Material _____

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

E-PERMITTING - CSNG_____

PERFORM (P&A) Kz TA_____ ON ☐
TEMPORA COMP_____ NEW WELL_____ ☐
PULL OR LOC CHG_____ ☐

OTHER: ☐

SUBSEQUENT REPORT OF:
REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ P AND A ☒
CASING/CEMENT JOB ☐

OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

5/13/14- Spot 50sx Cmt @ 6340' POOH WOC & Tag @ 6338' Spoke w/ Mark RRC advised to spot 50sx more WOC & Tag. RIH w/ Tbg. Tag Cmt @ 6268' POOH

5/20/14- Perf @ 5000' RIH w/ Pkr to 4850' Sqz 75sx Cmt WOC & Tag @ 4785'

5/21/14- @ 2995' Load hole set Pkr & Pump fluid up to 2000 PSI. Did not Sqz down to 2230' Spot 65sx Cmt. POOH w/ Tbg WOC & Tag RIH w/ Tbg Cmt @ 2180' Spot 65sx more @ 2119' WOC & Tag @ 1956'

5/22/14- Perf @ 975' Set Pkr @ 847' Sqz 100sx Cmt WOC & Tag @ 838' POOH w/ Pkr. Pump fluid to backside up to 300 PSI. Advised to RBIH w/ Pkr to 260' Sqz 100sx Cmt. Pump fluid did not get Pres. RIH w/ Tbg. Did not Tag Cmt

5/23/14- 100sx Started pump Cmt Pres. to 1500 PSI. Was able to Sqz 35sx Co. Man advised to Disp to 302' Shut Tbg valve w/ 1000 PSI & SDFD

5/27/14- Perf @ 60' Try Sqz. Did not Inj. RIH w/ Tbg to 230' spot Cmt to Surf. Visual w/ 85sx Cmt. WOC & Tag @ 10'

I hereby certify that the information above is true and complete to the best of my knowledge and belief. **I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☐, a general permit ☐ or an (attached) alternative OCD-approved plan ☐.**

SIGNATURE [signature] TITLE General Manager DATE 6.2.14

Type or print name E-mail address: Telephone No.

For State Use Only

APPROVED BY: Maley Brown TITLE Dist. Supervisor DATE 6/23/2014

Conditions of Approval (if any):

JUN 24 2014

WORKOVER PROCEDURE

PROJECT: Pawnee Deep Unit #1 – Acidize and Jet Tubing

DRILLED & COMPLETED: 11/79 LAST WO: 11/89 – Change Tbg from 3 1/2" to 2 3/8"

LOCATION: 1650' FNL and 2310' FWL, Sec. 22-26S-36E API# 30-025-26557

FIELD: Pawnee (Strawn) COUNTY: Lea STATE: NM

TD: 18,577' PBTD: 15,180' KB: 26'

CASING AND LINER RECORD

SIZE	WEIGHT	DEPTH	CEMENT	HOLE SIZE	TOC	REMARKS
20"	94#	925'	1700 sx	26"	surf	Circ
13 3/8"	61/68#	4950'	3800 sx	17 1/2"	surf	Circ
9 5/8"	47#	11,854'	2425 sx	12 1/4"	5800'	By TS
7 3/4" Liner	46.1#	16,504'	700 sx	8 1/2"		Liner top 11,561'

Producing formation: Strawn (12,505' – 13,196') w/21 – 0.29" holes

Tubing: See Attached Schematic
(NOTE: One 3 1/2", 12.95# C-75 PH-6-CB Hydril Tbg as top jt)

Note: Tight spot at 9393'. Could not broach w/ 1.89 pineapple broach.
2.31" Model F Nipple w/ FSP Blanking plug in place at 12,324'.
Tbg perforated 12,320' – 12,324' w/ 12 – 0.43" holes
CIBP set at 15,190' w/ 10' cmt cap. OH f/(16,504' – 18,577').
Cmt plugs spotted at (18,035' – 18,535'), (17,000' – 17,500') and (15,550' – 16,550').

PROCEDURE

- **Run acid compatibilities on produced fluids.**
- **Use 2% KCl for all water pumped into the well.**
- **Install 500 bbl frac tank and flow line prior to workover.**

1. MIRU CTU. RU BOP's and CT Packoff.
2. RIH w/ 1 1/4" CT and 1 11/16" gauge ring to the 2.31" FSP blanking plug @ 12,324'.
3. POH w/ CT.
4. RU Wireline. RIH w/ 1 11/16" jet cutter and cut tbg at +/- 12,324'. Tag "F" plug to see if tubing is cut. Repeat as needed. POH w/ WL. RD WL.
5. RIH w/ 1 1/4" CT to 13,196'. Spot acid across Strawn perfs 12,505' – 13,196'. PUH +/- 100'. SI CT annulus. Pump 2000 gal 15% AS acid at +/- 1 BPM using 200 – 300 scf/bbl N_2. Flush to btm perf w/ 2% KCl and 200 – 300 scf/bbl N_2. Record injection rates and ISIP.
6. Open CT annulus and flow back load if possible.
7. PUH to +/- 5000'.
8. Start N_2 injection at +/- 200 – 300 SCF per minute.
9. FIH to 13,200', adjusting N_2 flowrate as needed to jet fluid from well.
10. POOH w/ CT. RD CTU.
11. Flow well back to frac tank to recover load and clean up.
12. Return well to production. Monitor tests and flowing pressures.

OIL & GAS CORP.

al Purpose Worksheet

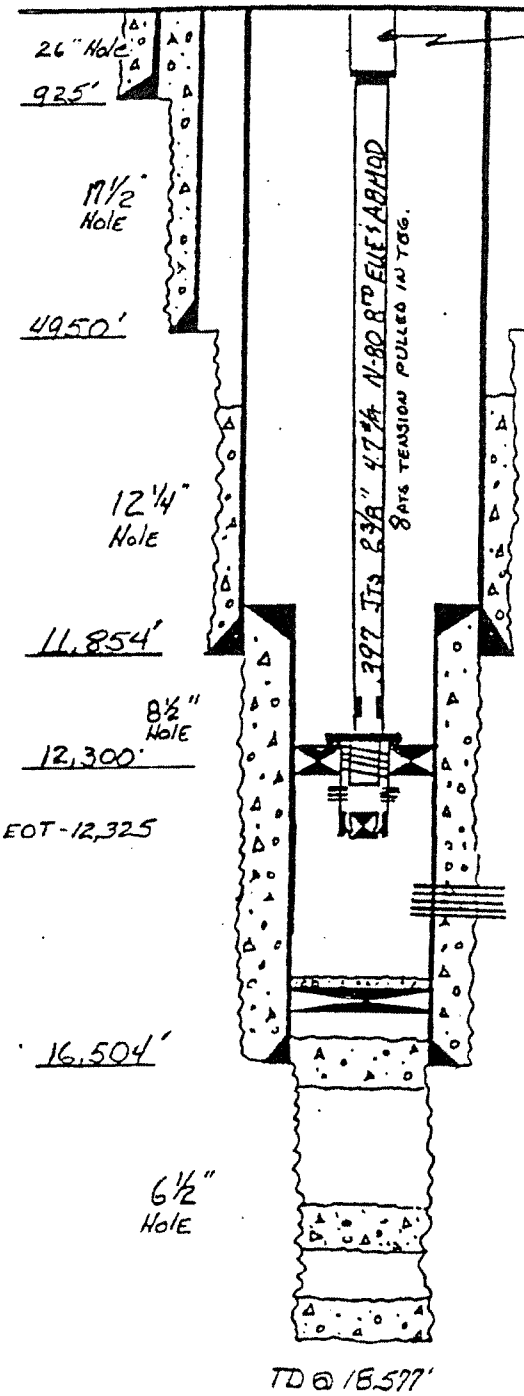
PAWNEE DEEP UNIT # 1 | Page No. 1 Of 2

PAWNEE FIELD (STRAWN) | By DE Kelly | Date MAY 29, 91

TSIGER 8/17/00

PRESENT STATUS

G.L. @ 2909 KB @ 2935'



1 JT 3½" 12.95 #/FT C-75 PH-6-CB HYDRIL Tbg w/ X-O

20" 94 ppf Csg w/ 1700 sx CMT - CIRC'd

13⅜" 61 & 68 ppf Csg w/ 3800 sx CMT - CIRC'd

TOC @ 5800' by T.S.

* NOTE TIGHT SPOT IN TUBING AT 9393'.

7¾" BOT LINER HNGR @ 11,561'. *SQUE'D W/ 175 sx CMT.

9⅝" 47 ppf Csg w/ 2425 sx CMT

BAKER MODEL DB (88-32) W/ SEAL BORE EXTESION ! 10' N-80 Sub
2⅞" N-80 sub (perf'd w/ 12-.43" holes F/ 12,320-324')
MODEL F NIPPLE (2.31") W/ FSP BLANKING PLUG IN PLACE

STRAWN PERF'S 12,505-13,196 (21 SHOTS)

PBTD @ 15,180'
CIBP @ 15,190' W/ 10' CMT ON TOP

7¾" 46.1 ppf LINER W/ 700 sx CMT
150 sx CMT plug F/ 15,550-16,550

75 sx CMT plug F/ 17,000-17,500

75 sx CMT plug F/ 18,035'-18,535'

(NOTE DETAILED THIS SCHEMATIC ON FOLLOWING PAGE)

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LAND OFFICE		
OPERATOR		

Form C-105
Revised 1-1-65

NEW MEXICO OIL CONSERVATION COMMISSION
WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5a. Indicate Type of Lease: State [X] Fee [ ]

5. State Oil & Gas Lease No.: LG - 3340

1a. TYPE OF WELL

b. TYPE OF COMPLETION: NEW WELL [X] WORK OVER [ ] DEEPEN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] OIL WELL [ ] GAS WELL [X] DRY [ ] OTHER

7. Unit Agreement Name: GMW - Pawnee Deep

8. Farm or Lease Name: White Eagle

2. Name of Operator: Gifford, Mitchell & Wisenbaker

9. Well No.: 1

3. Address of Operator: 1280 Midland National Bank Tower Midland, Texas 79701

10. Field and Pool, or Wildcat: Wildcat

4. Location of Well: UNIT LETTER F LOCATED 1650 FEET FROM THE North LINE AND 2310 FEET FROM THE West LINE OF SEC. 22 TWP. 26-S RGE. 36-E NMPM

12. County: Lea

15. Date Spudded	16. Date T.D. Reached	17. Date Compl. (Ready to Prod.)	18. Elevations (DF, RKB, RT, GR, etc.)	19. Elev. Cashinghead
11/25/79	3/28/80	4/18/80	GR 2910	2908

20. Total Depth	21. Plug Back T.D.	22. If Multiple Compl., How Many	23. Intervals Drilled By	Rotary Tools	Cable Tools
18,577	15,180		→	All	

24. Producing Interval(s), of this completion — Top, Bottom, Name: 12,505' - 13,196' (Strawn)

25. Was Directional Survey Made: yes (dipmeter)

26. Type Electric and Other Logs Run: Dual Laterolog & Comp. Neutron Density

27. Was Well Cored: No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
20"	94	925'	26"	1700 sx	
13 3/8"	61 & 68	4950'	17-1/2"	3800 sx	
9 5/8"	47	11854'	12-1/4"	2425 sx	

29. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN
7-3/4"	11,561	16,504	875	

30. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
3-1/2	12,300	12,300

31. Perforation Record (Interval, size and number): 21 holes (0.29") from 12,505 to 13,196

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
12,505 - 13,196	5000 gals. of 15% HCL aci

33. PRODUCTION

Date First Production	Production Method (Flowing, gas lift, pumping — Size and type pump)	Well Status (Prod. or Shut-in)
4/18/80	Flowing	shut-in (WO pipeline)

Date of Test	Hours Tested	Choke Size	Prod'n. For Test Period →	Oil — Bbl.	Gas — MCF	Water — Bbl.	Gas — Oil Ratio
4/21/80	1	15/64		7.88	214.25	0.87	27.9 MCF/bbl.

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate →	Oil — Bbl.	Gas — MCF	Water — Bbl.	Oil Gravity — API (Corr.)
4790	pkr.		189	5142	21	47.7

34. Disposition of Gas (Sold, used for fuel, vented, etc.): well shut in - waiting on pipeline connection

Test Witnessed by: Delton Shirley

35. List of Attachments: One copy of each elec. log and deviation survey

36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.

SIGNED J. B. Stiff TITLE Production Engineer DATE 4/29/80

577

This form is to be filed with the appropriate District Office of the Commission not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radioactivity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 33 through 34 shall be reported for each zone. The form is to be filed in quintuplicate except for state land, where six copies are required. See Rule 1105.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico				Northwestern New Mexico			
T. Anhy	2195	T. Canyon	12,430	T. Ojo Alamo		T. Penn. "B"	
T. Salt		T. Strawn		T. Kirtland-Fruitland		T. Penn. "C"	
B. Salt		T. Atoka	13,274	T. Pictured Cliffs		T. Penn. "D"	
T. Yates	3364	T. Miss		T. Cliff House		T. Leadville	
T. 7 Rivers		T. Devonian	17,330	T. Menefee		T. Madison	
T. Queen		T. Silurian		T. Point Lookout		T. Elbert	
T. Grayburg		T. Montoya		T. Mancos		T. McCracken	
T. San Andres		T. Simpson		T. Gallup		T. Ignacio Qtzte	
T. Glorieta		T. McKee		Base Greenhorn		T. Granite	
T. Paddock		T. Ellenburger		T. Dakota		T.	
T. Blinebry		T. Gr. Wash		T. Morrison		T.	
T. Tubb		T. Granite		T. Todilto		T.	
T. Drinkard		T. Delaware Sand	5247	T. Entrada		T.	
T. Abo		T. Bone Springs	8235	T. Wingate		T.	
T. Wolfcamp	11,304	T.		T. Chinle		T.	
T. Penn.	11,948	T.		T. Permian		T.	
T Cisco (Bough C)		T.		T. Penn. "A"		T.	

OIL OR GAS SANDS OR ZONES

No. 1, from ..... to ..... No. 4, from ..... to .....

No. 2, from ..... to ..... No. 5, from ..... to .....

No. 3, from ..... to ..... No. 6, from ..... to .....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from ..... to ..... feet. .....

No. 2, from ..... to ..... feet. .....

No. 3, from ..... to ..... feet. .....

No. 4, from ..... to ..... feet. .....

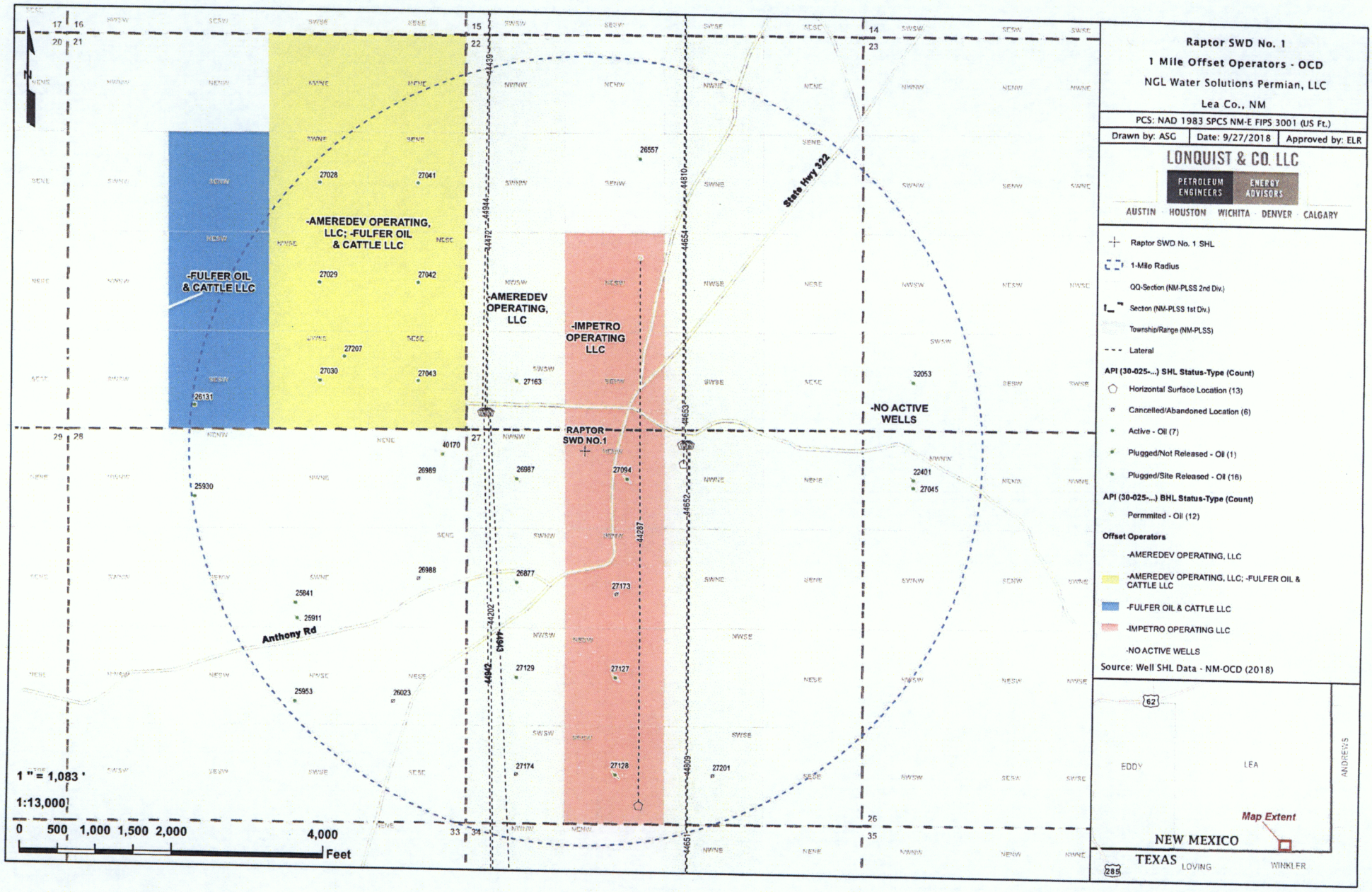
FORMATION RECORD (Attach additional sheets if necessary)

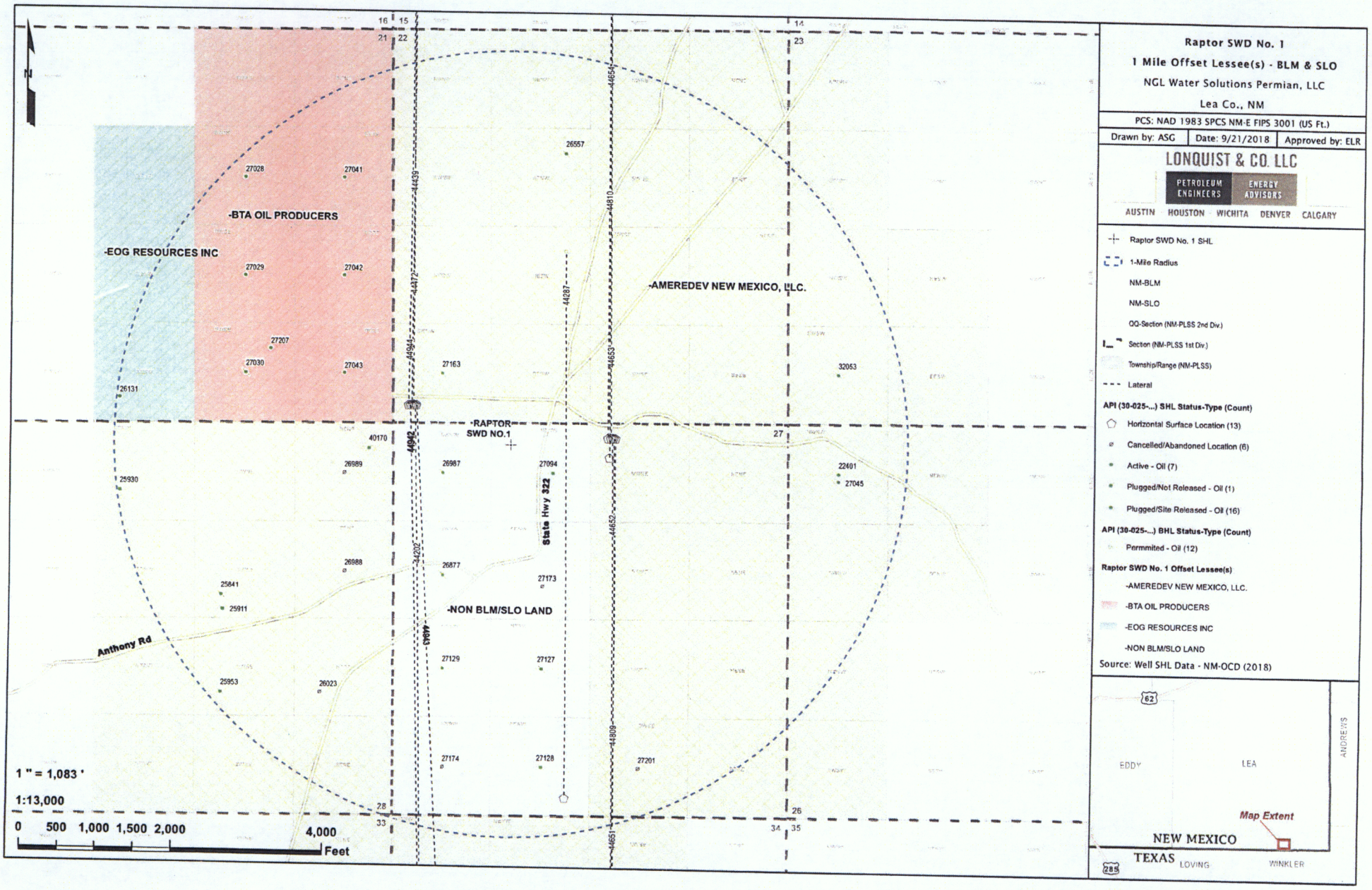
From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation

RECEIVED

APR [illegible] 1980

OIL CONSERVATION DIV.


Raptor 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: 9/27/2018
Approved by: ELR
LONQUIST & CO. LLC
PETROLEUM ENGINEERS
ENERGY ADVISORS
AUSTIN HOUSTON WICHITA DENVER CALGARY
-AMEREDEV OPERATING, LLC; -FULFER OIL & CATTLE LLC
-FULFER OIL & CATTLE LLC
AMEREDEV OPERATING, LLC
-IMPETRO OPERATING LLC
-NO ACTIVE WELLS
RAPTOR SWD NO.1
State Hwy 322
Anthony Rd
Raptor 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 (13)
Cancelled/Abandoned Location (6)
Active - Oil (7)
Plugged/Not Released - Oil (1)
Plugged/Site Released - Oil (16)
API (30-025-...) BHL Status-Type (Count)
Permmited - Oil (12)
Offset Operators
-AMEREDEV OPERATING, LLC
-AMEREDEV OPERATING, LLC; -FULFER OIL & CATTLE LLC
-FULFER OIL & CATTLE LLC
-IMPETRO OPERATING LLC
-NO ACTIVE WELLS
Source: Well SHL Data - NM-OCD (2018)
1 " = 1,083 '
1:13,000
0 500 1,000 1,500 2,000 4,000
Feet
EDDY
LEA
ANDREWS
Map Extent
NEW MEXICO
TEXAS
LOVING
WINKLER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1 Mile Offset Lessee(s) - BLM & SLO
NGL Water Solutions Permian, LLC
Lea Co., NM
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-AMEREDEV NEW MEXICO, LLC.
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Anthony Rd
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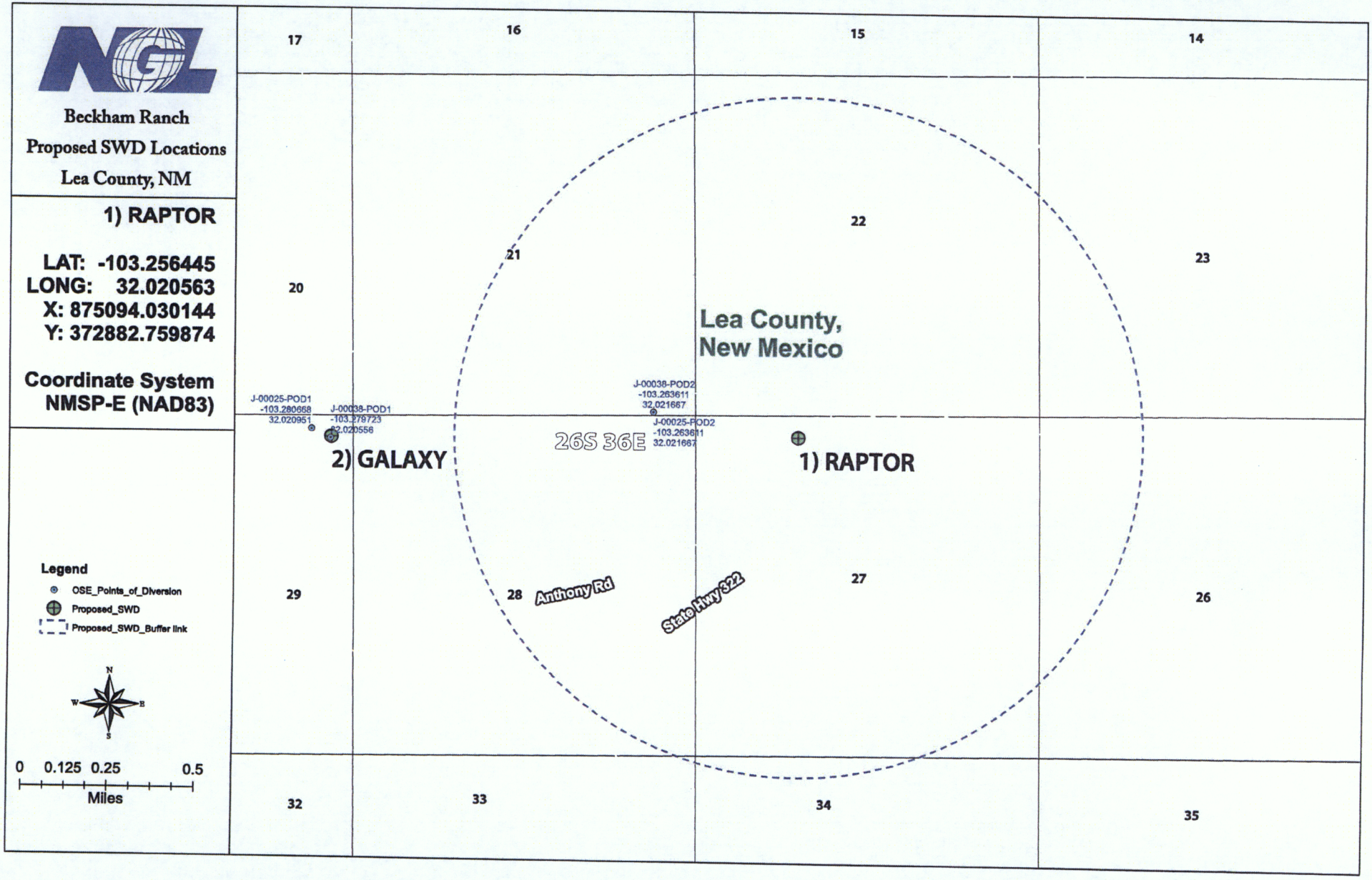
1 " = 1,083 '
1:13,000
0 500 1,000 1,500 2,000 4,000
Feet
EDDY
LEA
ANDREWS
Map Extent
NEW MEXICO
TEXAS
LOVING
WINKLER

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


Beckham Ranch
Proposed SWD Locations
Lea County, NM
1) RAPTOR
LAT: -103.256445
LONG: 32.020563
X: 875094.030144
Y: 372882.759874
Coordinate System
NMSP-E (NAD83)
Legend
OSE_Points_of_Diversion
Proposed_SWD
Proposed_SWD_Buffer link
N
W
E
S
0 0.125 0.25 0.5
Miles
17
16
15
14
20
21
22
23
29
28
27
26
32
33
34
35
Lea County,
New Mexico
26S 36E
2) GALAXY
1) RAPTOR
J-00025-POD1
-103.280658
32.020951
J-00038-POD1
-103.279723
32.020556
J-00038-POD2
-103.263611
32.021667
J-00025-POD2
-103.263611
32.021667
Anthony Rd
State Hwy 322

New Mexico Office of the State Engineer
Point of Diversion Summary

Well Tag	POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) Q64	Q16	Q4	Sec	Tws	Rng	(NAD83 UTM in meters) X	Y
	J 00025 POD2	3	4	4	21	26S	36E	663984	3544155

Driller License:	331	**Driller Company:**	SBQ2, LLC DBA STEWART BROTHERS DRILLING CO.		
Driller Name:	BRUNSON, WILLIAM				
Drill Start Date:	03/16/2017	**Drill Finish Date:**	04/03/2017	**Plug Date:**	
Log File Date:	04/07/2017	**PCW Rcv Date:**		**Source:**	Artesian
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:	12.00	**Depth Well:**	800 feet	**Depth Water:**	

Casing Perforations:	Top	Bottom
	287	800