

**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.**

OFFICE OF THE ATTORNEY GENERAL
STATE OF NEW MEXICO

CASE NO. 16505

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 Galaxy SWD #1 well at a surface location 345 feet from the North line and 336 feet from the East line of Section 29, Township 26 South, Range 36 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well.
- (2) NGL seeks authority to inject salt water into the Silurian-Devonian formation at a depth of 18,743' – 20,088'.
- (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 2,810 psi for this well, and it requests that a maximum pressure of 3,748 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: 

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

CASE NO. 16505 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 Galaxy SWD #1 well at a surface location 345 feet from the North line and 336 feet from the East line of Section 29, Township 26 South, Range 36 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 18,743' – 20,088'. 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 5 miles southwest of Bennett, NM.

7/17/2020 11:44 AM

RECEIVED:	REVIEWER:	TYPE:	APP NO:
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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:** GALAXY SWD #1**API:** TBD**Pool:** SWD; SILURIAN-DEVONIAN**Pool Code:** 96101

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

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

A. Location - Spacing Unit - Simultaneous Dedication

☐ NSL☐ NSP (PROJECT AREA)☐ NSP (PRORATION UNIT)☐ SD

B. Check one only for [I] or [II]

[I] Commingling - Storage - Measurement

☐ DHC☐ CTB☐ PLC☐ PC☐ OLS☐ OLM

[II] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery

☐ WFX☐ PMX☒ SWD☐ IPI☐ EOR☐ PPR**2) NOTIFICATION REQUIRED TO:** Check those which apply.A. ☒ Offset operators or lease holdersB. ☐ Royalty, overriding royalty owners, revenue ownersC. ☒ Application requires published noticeD. ☒ Notification and/or concurrent approval by SLOE. ☒ Notification and/or concurrent approval by BLMF. ☒ Surface ownerG. ☐ For all of the above, proof of notification or publication is attached, and/or,H. ☐ No notice required**FOR OCD ONLY**☐ Notice Complete
☐ Application
 Content
 Complete

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

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

CHRIS WEYAND

Print or Type Name

Signature

09/28/2018

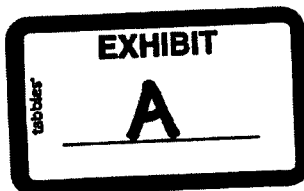
Date

512-600-1764

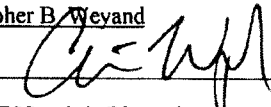
Phone Number

CHRIS@LONQUIST.COM

e-mail Address



APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: Secondary Recovery Pressure Maintenance X Disposal Storage
Application qualifies for administrative approval? X Yes No
- II. OPERATOR: NGL WATER SOLUTIONS PERMIAN, LLC
ADDRESS: 1509 W WALL ST // STE 306 // MIDLAND, TX 79701
CONTACT PARTY: SARAH JORDAN PHONE: (432) 685-0005 x1989
- III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.
Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? Yes X No
If yes, give the Division order number authorizing the project: _____
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- *VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- *X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
- *XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- NAME: Christopher B. Weyand TITLE: Consulting Engineer
SIGNATURE:  DATE: 10/2/2018
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.

NGL Water Solutions Permian, LLC

Galaxy SWD No. 1

FORM C-108 Supplemental Information

III. Well Data

A. Wellbore Information

1.

Well information	
Lease Name	Galaxy SWD
Well No.	1
Location	S-29 T-26S R-36E
Footage Location	345' FNL & 336' FEL

2.

a. Wellbore Description

Casing Information				
Type	Surface	Intermediate	Production	Liner
OD	20"	13.375"	9.625"	7.625"
WT	0.635"	0.480"	0.545"	0.500"
ID	18.730"	12.415"	8.535"	6.625"
Drift ID	18.542"	12.259"	8.535"	6.500"
COD	21.00"	14.375"	10.625"	7.625"
Weight	133 lb/ft	68 lb/ft	53.5 lb/ft	39 lb/ft
Grade	K-55	HCL-80	P-110	V140
Hole Size	24"	17.5"	12.25"	8.5"
Depth Set	2,000'	5,400'	12,800'	18,743'

b. Cementing Program

Cement Information				
Casing String	Surface	Intermediate	Production	Liner
Lead Cement	HES Extenda	Neocem	Neocem	Neocem
Lead Cement Volume	713	1,762	Stage 1: 829 sks Stage 2: 447 sks Stage 3: 773 sks	198
Tail Cement	Halcem	Halcem	Halcem	Halcem
Tail Cement Volume	953	2,013	Stage 1: 602 sks Stage 2: 295 sks Stage 3: 444 sks	253
Cement Excess	25%	10%	25%, 25%, 0%	10%
TOC	Surface	Surface	Surface	12,300'
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' - 12,200'	12,200' – 18,720'

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: 18,743' – 20,088'

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	3,339'
Bone Spring	8,549'
Wolfcamp	12,563'
Strawn	13,041'

Note: The South Lea Federal #1 (API No. 30-025-23197) produced 172 MMcf from the Devonian ~1.5 miles to the NE from Dec. 1998 through June 2000.

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: 2,810 PSI (surface pressure)

Maximum Injection Pressure: 3,748 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 currently 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	2,064'
Delaware	5,399'
Bone Spring	8,549'
Wolfcamp	12,563'
Penn	12,633'
Atoka	13,193'
Morrow	14,533'
Mississippian Lime	16,923'
Woodford	18,273'
Devonian	18,723'
Fusselman	19,493'
Montoya	19,988'

B. Underground Sources of Drinking Water

Depths have been reported for two water wells within 1-mile of the proposed Galaxy 1 SWD #1 location. These depths are 604 ft and 800 ft. Water depth has been reported for one of these wells at 270 ft. Water wells in the surrounding area have an average depth of 566 ft and an average water depth of 254 ft generally producing from the Santa Rosa. The upper Rustler may also be another USDW and will be protected.

IX. Proposed Stimulation Program

Stimulate with up to 50,000 gallons of acid.

X. Logging and Test Data on the Well

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

XI. Chemical Analysis of Fresh Water Wells

Attached is a map of all water wells that exist within one mile of the well location. A 3rd party is currently attempting to identify active wells and obtain sample. If samples can be obtained, analysis results will be provided as soon as possible. Water Right Summaries from the New Mexico Office of the State Engineer are attached for water wells J-00025 POD2 and J-00004POD1.

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 Galaxy SWD #1) and any underground sources of drinking water.

NAME: John C. Webb

TITLE: Sr. Geologist

SIGNATURE: John C. Webb

DATE: 7/24/2018





New Mexico Office of the State Engineer

Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE)			
		(quarters are smallest to largest)		(NAD83 UTM in meters)	
Well Tag	POD Number	Q64 Q16 Q4 Sec Tws Rng	X	Y	
J 00004	POD1	4 1 3 29 26S 36E	661366	3542970	

Driller License: 298	Driller Company: LINK RAT HOLE DRILLING				
Driller Name:					
Drill Start Date: 07/05/1969	Drill Finish Date:	10/04/1969	Plug Date:		
Log File Date: 12/16/1969	PCW Rcv Date:	03/26/1973	Source:	Shallow	
Pump Type:	Pipe Discharge Size:	Estimated Yield:			
Casing Size: 8.63	Depth Well:	604 feet	Depth Water:	270 feet	

Water Bearing Stratifications:	Top	Bottom	Description
	490	525	Sandstone/Gravel/Conglomerate
	575	604	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	490	525
	575	604

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.



New Mexico Office of the State Engineer

Point of Diversion Summary

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

Well Tag	POD Number	Q64 Q16 Q4	Sec	Tws	Rng	X	Y
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

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

INJECTION WELL DATA SHEET

OPERATOR: NGL WATER SOLUTIONS PERMIAN, LLCWELL NAME & NUMBER: GALAXY SWD #1WELL LOCATION: 345 FNL & 336' FEL
FOOTAGE LOCATIONUNIT LETTER A SECTION 29 TOWNSHIP 26S RANGE 36EWELLBORE SCHEMATICWELL CONSTRUCTION DATA
Surface Casing

Hole Size: 24.000" Casing Size: 20.000"
 Cemented with: 1.666 sx. or _____ ft³
 Top of Cement: Surface Method Determined: Circulation
1st Intermediate Casing

Hole Size: 17.500" Casing Size: 13.375"
 Cemented with: 3.775 sx. or _____ ft³
 Top of Cement: Surface Method Determined: Circulation
2nd Intermediate Casing

Hole Size: 12.250" Casing Size: 9.625"
 Cemented with: 3.390 sx. or _____ ft³
 Top of Cement: Surface Method Determined: Circulation

Production Liner

Hole Size: 8.500"

Casing Size: 7.625"

Cemented with: 451 sx.

or _____ ft³

Top of Cement: 12,300'

Method Determined: Calculation

Total Depth: 20,088'

Injection Interval

18,743 feet to 20,088 feet

(Open Hole)

INJECTION WELL DATA SHEET

Tubing Size: 7", 26 lb/ft. P-110. TCPC from 0' - 12,200' and 5,500", 17 lb/R. P-110 TCPC from 12,200' - 18,720'
 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: 18,720'

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: 3,339'

Bone Spring: 8,549'

Wolfcamp: 12,563'

Strawn: 13,041'

Galaxy 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
09856	PRE-ONGARD WELL #006	O	P	PRE-ONGARD WELL OPERATOR	1247	32.02330400000	-103.28069310000	1/1/1900
09857	PRE-ONGARD WELL #006	O	P	PRE-ONGARD WELL OPERATOR	3349	32.02239990000	-103.28069310000	1/1/1900
09858	PRE-ONGARD WELL #001	O	P	PRE-ONGARD WELL OPERATOR	3940	32.02693180000	-103.27217860000	1/1/1900
25784	PRE-ONGARD WELL #003	O	P	PRE-ONGARD WELL OPERATOR	887	32.00788880000	-103.27353520000	1/1/1900
25829	LEA 7406 JV-S #004	O	P	BTA OIL PRODUCERS	3268	32.01151166000	-103.27110290000	12/31/9999
25841	PRE-ONGARD WELL #002	O	P	PRE-ONGARD WELL OPERATOR	284	32.01514820000	-103.26896670000	1/1/1900
25890	PRE-ONGARD WELL #005	O	P	PRE-ONGARD WELL OPERATOR	3266	32.01333240000	-103.27336010000	1/1/1900
25909	LEA 7406 JV-S #006	O	P	BTA OIL PRODUCERS	3250	32.01514050000	-103.27323150000	12/31/9999
25911	QUANAH PARKER #002Y	O	P	WHITING OIL AND GAS CORPORATION	3258	32.01459880000	-103.26888280000	12/31/9999
25920	PRE-ONGARD WELL #007	O	P	PRE-ONGARD WELL OPERATOR	3270	32.01695250000	-103.27749630000	1/1/1900
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
25957	LEA 20 #001	S	A	CHANCE PROPERTIES COMPANY	3420	32.02421190000	-103.27963260000	5/21/1978
26056	PRE-ONGARD WELL #009	O	P	PRE-ONGARD WELL OPERATOR	1406	32.01967620000	-103.27536770000	1/1/1900
26068	LEA 7406 IV-S #009Y	O	P	BTA OIL PRODUCERS	3270	32.01956560000	-103.27536770000	12/31/9999
26131	WILSON 21 FEDERAL #001	O	A	FULFUR OIL & CATTLE LLC	3340	32.02239610000	-103.27323910000	12/31/9999
26132	WILSON 21 FEDERAL #002	O	A	FULFUR OIL & CATTLE LLC	3500	32.02239610000	-103.27323910000	12/31/9999
26133	WILSON 21 FEDERAL #003	O	A	FULFUR OIL & CATTLE LLC	3797	32.02674100000	-103.27275850000	12/31/9999
26134	WILSON 21 FEDERAL #004	O	A	FULFUR OIL & CATTLE LLC	3575	32.02602390000	-103.27323910000	12/31/9999
26135	WILSON 21 FEDERAL #005	O	A	FULFUR OIL & CATTLE LLC	3800	32.03051380000	-103.27323910000	12/31/9999
26136	PRE-ONGARD WELL #006	O	P	PRE-ONGARD WELL OPERATOR	1682	32.03133770000	-103.27538300000	1/1/1900
26138	WILSON 21 FEDERAL #008	O	A	FULFUR OIL & CATTLE LLC	3700	32.03427890000	-103.27538300000	12/31/9999
26718	PRE-ONGARD WELL #06Y	O	P	PRE-ONGARD WELL OPERATOR	3750	32.03133770000	-103.27538300000	1/1/1900
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	-103.26365298700	12/31/9999
27028	LEA 21, 7406 IV-S #002	O	A	FULFUR OIL & CATTLE LLC	3658	32.03056720000	-103.26791380000	12/31/9999
27029	LEA 21, 7406 IV-S #003	O	A	FULFUR 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
27043	LEA 21, 7406 IV-S #008	O	A	FULFUR OIL & CATTLE LLC	3570	32.02330400000	-103.26364900000	12/31/9999
27197	LEA 20 7426 IV-S #002	O	P	BTA OIL PRODUCERS	3670	32.03510670000	-103.27964780000	12/31/9999
27207	LEA 21, 7406 IV-S #004Y	O	A	FULFUR OIL & CATTLE LLC	3550	32.02421190000	-103.26684570000	1/26/1981
42733	WILDHOG BWX STATE COM #001H	O	A	Impetro Operating LLC	12517	32.03547200000	-103.28921400000	9/1/2015
44104	AZALEA 26 36 28 STATE #111H	O	A	AMERDEV OPERATING, LLC	11966	32.02088300000	-103.27775280000	12/15/2017
44105	AZALEA 26 36 28 STATE #121H	O	N	AMERDEV OPERATING, LLC	0	32.02088320000	-103.27768840000	12/31/9999
44112	WILDHOG BWX STATE COM #002H	O	A	Impetro Operating LLC	12008	32.03534380000	-103.28189170000	1/21/2018
44229	AZALEA 26 36 28 STATE #121Y	O	A	AMERDEV OPERATING, LLC	12434	32.02088300000	-103.27781670000	11/30/2017
44522	WILDHOG BWX STATE COM #003H	O	N	Impetro Operating LLC	0	32.03506600000	-103.28605410000	12/31/9999

Galaxy SWD #1: Offsetting Produced Water Analysis

wellname	api	county	formation	ph	tds_mg/L	sodium_mg/L	calcium_mg/L	iron_mg/L	magnesium_mg/L	manganese_mg/L	chloride_mg/L	bicarbonate_mg/L	sulfate_mg/L	co2_mg/L
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
BELL LAKE 19 STATE #004H	3002541517	Lea	BONE SPRING 2ND SAND	6.3		76378	6238	11	834	0	131397		159	670
BELL LAKE 19 STATE #003H	3002541516	Lea	BONE SPRING 2ND SAND	6.7		59599	7326	11	942	0.69	108190		171	230
SALADO DRAW 6 FEDERAL #001H	3002541293	Lea	BONE SPRING 3RD SAND	6.7	95604	31066	3196	10	394	0.5	59071		183	0
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

Galaxy SWD Leo County NM				Location - Sec 29, Twp 26S, R 36E				TD		20,088		Directions to Site - Travel 6.8 miles from Jai along NM 205 - S/Frying Pan Road. Turn right (North and travel to location. Lat/Long - 32.02111, -103.27939					
Vertical Injection - Devonian, Silurian, Fusselman, Montoya				Drilling and Complete Cost - \$11.2MM				GL/KB		2.920							
Geologic Tops (MD ft)				Problems				Bit/BHA		Mud		Logging		Cement (HOLD)		Injection String	
				Section													
Rustler	2064	2000	2010	Surface Drill 24" 0' - 2000' 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	2000' of 20" 133# K55 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 - 953sx of Halcem 3hr TT 25% Excess 1000psi CSD after 10hrs	12200' of 7" P110 26# TPCP						
	Top of Salt			2010	Salado	2010	1st Intermediate Drill 2400' of 17-1/2" Hole 2000' - 5400' 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	Mudlogger on site by 2000'		Lead - 1762 sx of Neocem 12.9ppg, 5hr TT Tail - 2013sx of Halcem, 14.8ppg 60% Excess 1000psi CSD after 10 hrs Cement to Surface					
Base of Salt	3050	5399	5400	2nd Intermediate Drill 7400' of 12-1/4" Hole 5400' - 12,800' 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	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 using ADA	10M B Section 12800' of 9-5/8" 53.5# P110 BTC Special Drift to 8.535" Externally Coat 3600' Between DV Tools	MWD GR Triple combo + CBL of 13-3/8" Casing	Lead 773sx Neocem 12.9 ppg Tail 444sx Halcem 14.8ppg 1000psi CSD after 10 hrs Cement to Surface	6520' of 5-1/2" P110 17# TPCP						
	Delaware				5399	DV Tool - 8000				Stage 2: 25% Excess Lead 447sx 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 602sx Halcem 14.8ppg. 1000psi CSD after 10hrs					
Bone Spring -	8549	12,300	12563	3rd Intermediate Drill 5943' of 8-1/2" Hole 12800' - 18743' Set 7-5/8" Liner and Cement in Single Stage	Ballooning is possible in Cherry Canyon and Brushy if Broken Down	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	6543' of 7-5/8" 39# V140 - DTL (F14) FI (Gas Tight) VersaFlex Packer Hanger	MWD GR Triple combo, CBL of 9-5/8" Casing	Lead 198sx Neocem 12.9 ppg Tail 253sx Halcem 14.8ppg. 1000psi CSD after 10hrs 8hr TT 10% Excess 1000psi CSD after 10hrs	7-5/8" x 5-1/2" TPCP Permanent Packer with High Temp Elastomer and full Inconel 925 trim						
Wolfcamp -	12563				2nd Int TD - 12,800												
Strawn -	13041	13041	13193	14533	17798	18273	18720	18,743	Devonian - 18,723	Fusselman - 19,493	Montoya - 19,988' TD - 20,088'						
Atoka -	13193																
Morrow -	14533																
Miss Lst -	17798																
Woodford -	18273																
Perm Packer -	18720																
3rd Int TD -	18,743																
				Injection Interval Drill 1365' of 6-1/2" hole 18743' - 20088'	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 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)							

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 NGL WATER SOLUTIONS PERMIAN, LLC 1509 W WALL ST. STE 306 MIDLAND, TX 79701		² OGRID Number 372338
		³ API Number TBD
⁴ Property Code	⁵ Property Name GALAXY SWD	⁶ Well No. 1

⁷ Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
a	29	26S	36E	N/A	345'	NORTH	336'	EAST	LEA

⁸ Proposed Bottom Hole Location

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

⁹ Pool Information

Pool Name SWD, Silurian-Devonian	Pool Code 96101
-------------------------------------	--------------------

Additional Well Information

¹¹ Work Type N	¹² Well Type SWD	¹³ Cable/Rotary R	¹⁴ Lease Type Private	¹⁵ Ground Level Elevation 2,920'
¹⁶ Multiple N	¹⁷ Proposed Depth 20,088'	¹⁸ Formation Siluro-Devonian	¹⁹ Contractor TBD	²⁰ Spud Date ASAP
Depth to Ground water 254'		Distance from nearest fresh water well < 100 ft		Distance to nearest surface water > 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	2,000'	1,666	Surface
Intermediate	17.5"	13.375"	68 lb/ft	5,400'	3,775	Surface
Production	12.25"	9.625"	53.5 lb/ft	12,800'	3,390	Surface
Prod. Liner	8.5"	7.625"	39 lb/ft	18,743'	451	12,300'
Tubing	N/A	7"	26 lb/ft	0' - 12,200'	N/A	N/A
Tubing	N/A	5.5"	17 lb/ft	12,200' - 18,720'	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 - Schaffner/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:

Printed name: Christopher B. Weyand

Title: Consulting Engineer

E-mail Address: chris@lonquist.com

Date: 9/28/2018

Phone: (512) 600-1764

OIL CONSERVATION DIVISION

Approved By:

Title:

Approved Date:

Expiration Date:

Conditions of Approval Attached

District I
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Phone: (575) 393-6161 Fax: (575) 393-0720
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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 96101	³ Pool Name SWD; Silurian-Devonian
⁴ Property Code	⁵ Property Name GALAXY SWD	⁶ Well Number 1
⁷ OGRID No. 372338	⁸ Operator Name NGL WATER SOLUTIONS PERMIAN, LLC	⁹ Elevation 2920.00'±

" Surface Location

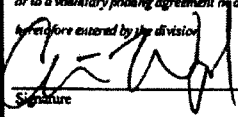
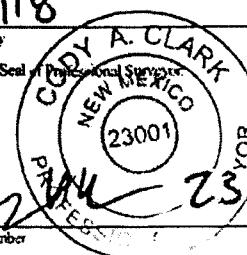
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	29	26 S	36 E	N/A	345'	NORTH	336'	EAST	LEA

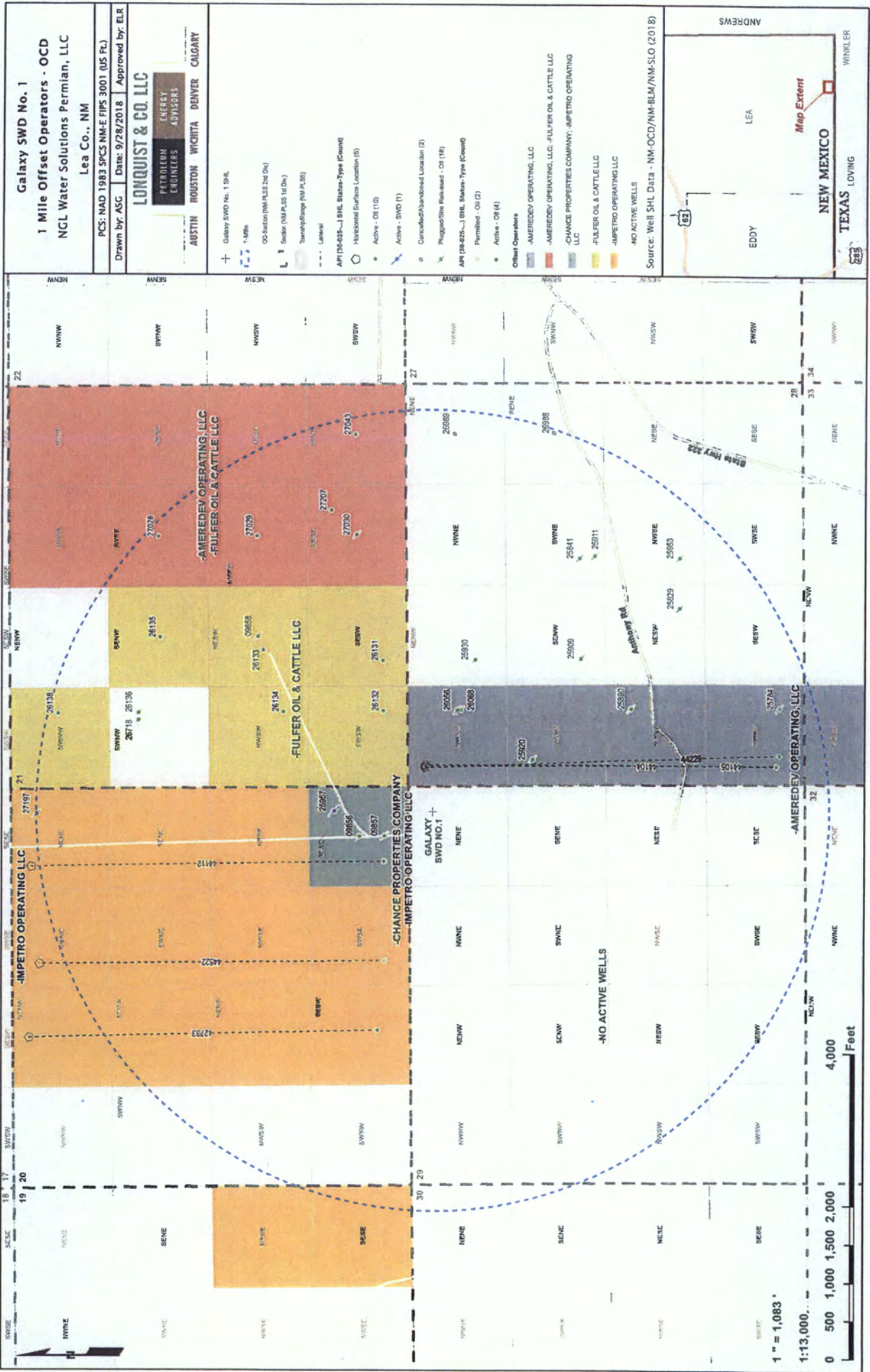
" Bottom Hole Location If Different From Surface

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.

<p>SECTION 29</p>	<p>PROPOSED GALAXY SWD 1</p> <p>NMSP-E (NAD27) N: 372,771.80 E: 826,705.24'</p> <p>NMSP-E (NAD83) N: 372,829.20' E: 867,893.90' Lat: N32°01'14.20" Long: W103°18'48.83"</p>	<p>¹⁷ OPERATOR CERTIFICATION</p> <p>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.</p> <p>Signature:  Date: 10/2/2018</p> <p>Chris Weyand Printed Name</p> <p>chris@lonquist.com E-mail Address</p>
		<p>¹⁸ SURVEYOR CERTIFICATION</p> <p>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.</p> <p>9/18/18 Date of Survey</p> <p>Signature and Seal of Professional Surveyor: </p> <p>Cody A. Clark Certificate Number</p>





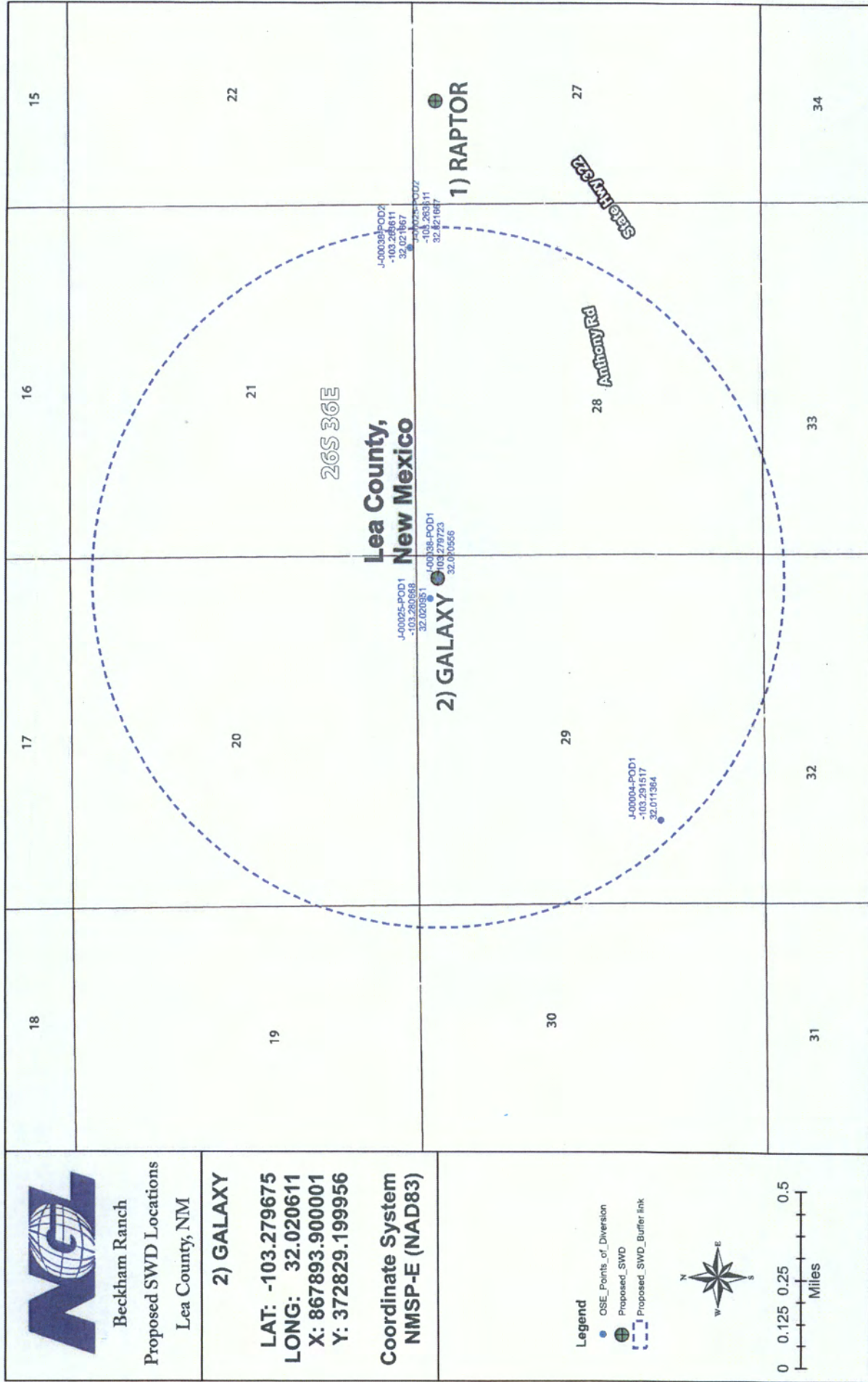
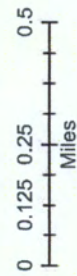
Beckham Ranch
Proposed SWD Locations
Lea County, NM

2) GALAXY

LAT: -103.279675
LONG: 32.020611
X: 867893.900001
Y: 372829.199956

Coordinate System
NMSP-E (NAD83)

- Legend**
- OSE_Points_of_Diversion
 - ⊕ Proposed_SWD
 - ⋮ Proposed_SWD_Buffer_Link



CASE NO. 16505: 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 Galaxy SWD #1 well at a surface location 345 feet from the North line and 336 feet from the East line of Section 29, Township 26 South, Range 36 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 18,743' – 20,088'. 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 5 miles southwest of Bennett, NM.

OCT 02 2018 PM04:32