

**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. 16504

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 Cobra SWD #1 well at a surface location 326 feet from the North line and 718 feet from the East line of Section 19, Township 25 South, Range 36 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well.

(2) NGL seeks authority to inject salt water into the Silurian-Devonian formation at a depth of 15,600' - 17,261'.

(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 2,340 psi for this well, and it requests that a maximum pressure of 3,120 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
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500 Fourth Street NW, Suite 1000
Albuquerque, New Mexico 87103-2168
Telephone: 505.848.1800
Attorneys for Applicant

CASE NO. 1654: 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 Cobra SWD #1 well a surface location 326 feet from the North line and 718 feet from the East line of Section 19, Township 25 South, Range 36 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well. The target injection interval is the Silurian-Devonian formation at a depth of 15,600' - 17,261'. NGL further seeks approval of the use of 7 inch tubing inside the surface and intermediate casings and 5 ½ inch tubing inside the liner and requests that the Division approve a maximum daily injection rate for the well of 50,000 bbls per day. Said area is located approximately 6 miles west of Jal, New Mexico.

Revised March 23, 2017

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: COBRA SWD #1

API: TBD

Pool: SWD; SILURIAN-DEVONIAN

Pool Code: 96101

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

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

A. Location - Spacing Unit - Simultaneous Dedication

☐ NSL

☐ NSP (PROJECT AREA)

☐ NSP (PRORATION UNIT)

☐ SD

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

[I] Commingling - Storage - Measurement

☐ DHC

☐ CTB

☐ PLC

☐ PC

☐ OLS

☐ OLM

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

☐ WFX

☐ PMX

☒ SWD

☐ IPI

☐ EOR

☐ PPR

2) NOTIFICATION REQUIRED TO: Check those which apply.

A. ☒ Offset operators or lease holders

B. ☐ Royalty, overriding royalty owners, revenue owners

C. ☒ Application requires published notice

D. ☒ Notification and/or concurrent approval by SLO

E. ☒ Notification and/or concurrent approval by BLM

F. ☒ Surface owner

G. ☐ For all of the above, proof of notification or publication is attached, and/or,

H. ☐ No notice required

FOR OCD ONLY

☐ Notice Complete

☐ Application
Content
Complete

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

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

CHRIS WEYAND

Print or Type Name

Signature

09/28/2018

Date

512-600-1764

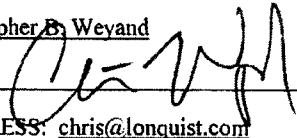
Phone Number

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: 10/1/2018
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: _____

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

Cobra SWD No. 1

FORM C-108 Supplemental Information

III. Well Data

A. Wellbore Information

1.

Well information	
Lease Name	Cobra SWD
Well No.	1
Location	S-19 T-25S R-36E
Footage Location	326' FNL & 718' FEL

2.

a. Wellbore Description

Casing Information				
Type	Surface	Intermediate	Production	Liner
OD	20"	13.375"	9.625"	7.625"
WT	0.500"	0.480"	0.545"	0.500"
ID	19.000"	12.415"	8.535"	6.625"
Drift ID	18.812"	12.259"	8.535"	6.500"
COD	21.00"	14.375"	10.625"	7.625"
Weight	106.5 lb/ft	68 lb/ft	53.5 lb/ft	39 lb/ft
Grade	J-55	HCL-80	P-110	Q-125
Hole Size	24"	17.5"	12.25"	8.5"
Depth Set	1,400'	5,400'	11,300'	15,600'

b. Cementing Program

Cement Information				
Casing String	Surface	Intermediate	Production	Liner
Lead Cement	HES Extenda Cem	Neocem	Neocem	Neocem
Lead Cement Volume	799	1,939	Stage 1: 533 sks Stage 2: 477 sks Stage 3: 733 sks	161
Tail Cement	Halcm	Halcm	Halcm	Halcm
Tail Cement Volume	1,060	2,013	Stage 1: 438 sks Stage 2: 295 sks Stage 3: 444 sks	178
Cement Excess	25%	60%	25%, 25%, 0%	10%
TOC	Surface	Surface	Surface	10,800'
Method	Circulate to Surface	Circulate to Surface	Circulate to Surface	Logged

3. Tubing Description

Tubing Information		
OD	7"	5.5"
WT	0.362"	0.304"
ID	6.276"	4.892"
Drift ID	7.875"	6.050"
COD	6.151"	4.653"
Weight	26 lb/ft	17 lb/ft
Grade	P-110 TCPC	P-110 TCPC
Depth Set	0' - 10,700'	10,700' - 15,580'

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: 15,600' – 17,261'

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	3,589'
Delaware	5,409'
Bone Spring	8,073'
Wolfcamp	11,145'
Strawn	11,567'

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: 2,340 PSI (surface pressure)

Maximum Injection Pressure: 3,120 PSI (surface pressure)

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

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

VIII. Geological Data

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

A. Injection Zone: Siluro-Devonian Formation

Formation	Depth
Rustler	1,351'
Delaware	5,409'
Bone Spring	8,073
Wolfcamp	11,145'
Penn	11,269'
Strawn	11,567'
Atoka	11,789'
Morrow	12,449'
Mississippian Shale	13,889'
Woodford	15,217'
Devonian	15,570'
Fusselman	16,629'
Montoya	17,161'

B. Underground Sources of Drinking Water

Within 1-mile of the proposed Cobra SWD # 1 locations, there are three water wells. One of these has been reported of having a depth of 505 ft while the depths of the other two have not been reported. Water wells in the surrounding area have an average depth of 495 ft and an average water depth of 295 ft generally producing from the Santa Rosa. The upper Rustler may also be another USDW and will be protected.

IX. Proposed Stimulation Program

Stimulate with up to 50,000 gallons of acid.

X. Logging and Test Data on the Well

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

XI. Chemical Analysis of Fresh Water Wells

There are three water wells that exist within one mile of the well location. If a sample can be obtained, analysis results will be provided as soon as possible. A map showing the three water wells and Water Right Summary from the New Mexico Office of the State Engineer for water well CP 01170 POD5 are attached.

XI. Affirmative Statement of Examination of Geologic and Engineering Data

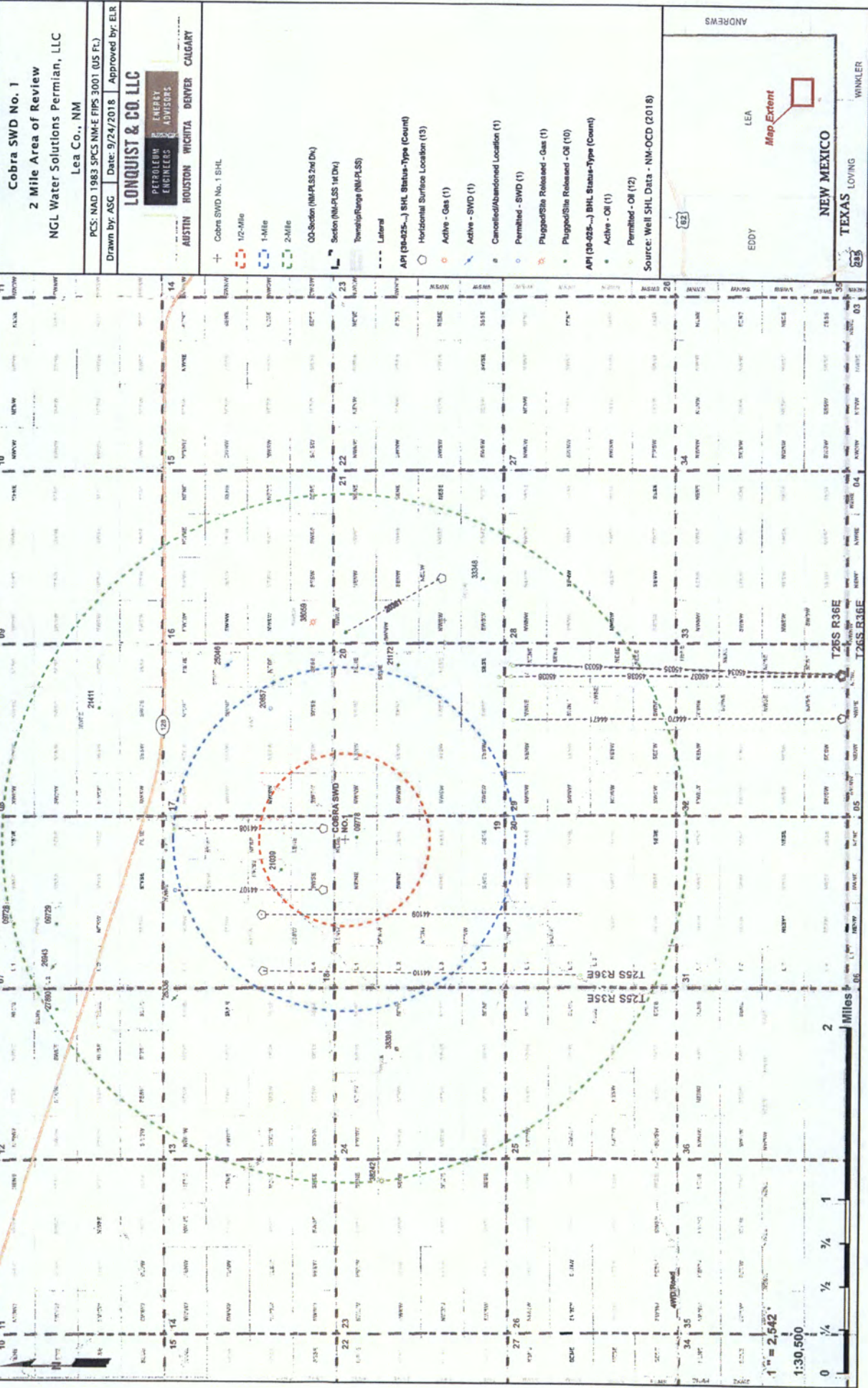
Based on the available engineering and geologic data we find no evidence of open faults or any other hydrologic connection between the disposal zone (in the proposed Cobra SWD 81) and any underground sources of drinking water.

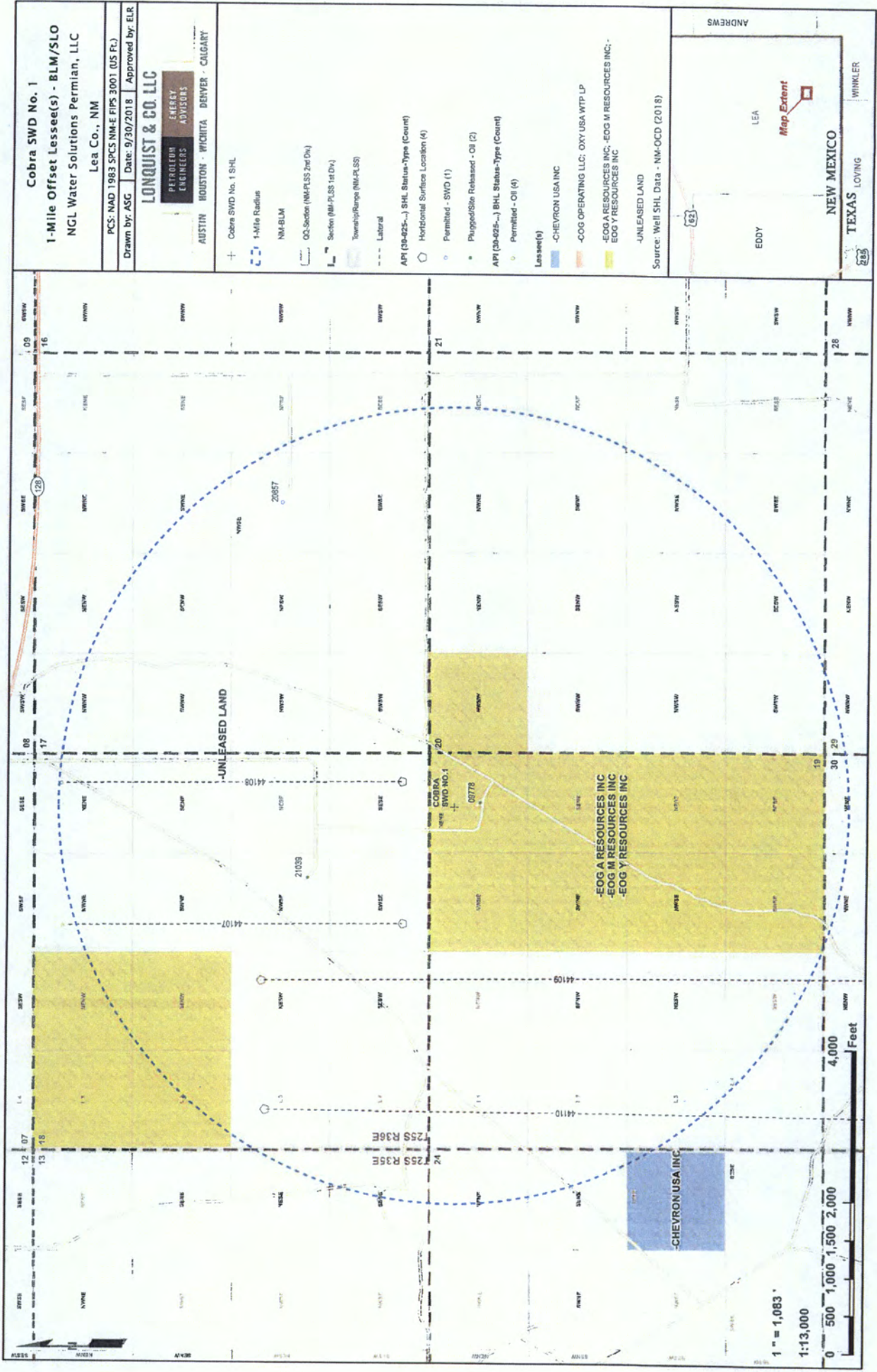
NAME: John C. Webb

TITLE: Dr. 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
	CP 01170 POD5	2	2	2	19	25S	36E	660687	3555164

Driller License: 1607

Driller Company: DURAN DRILLING

Driller Name: DURAN, LUIS (TONY)

Drill Start Date: 10/28/2014

Drill Finish Date: 11/04/2014

Plug Date:

Log File Date: 02/19/2015

PCW Rcv Date:

Source: Shallow

Pump Type:

Pipe Discharge Size:

Estimated Yield: 35 GPM

Casing Size: 8.00

Depth Well: 505 feet

Depth Water: 270 feet

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.

Side 1

INJECTION WELL DATA SHEET

OPERATOR: NGL WATER SOLUTIONS PERMIAN, LLC

WELL NAME & NUMBER: Cobra SWD #1

WELL LOCATION: 326' FNL & 718' FEL

A UNIT LETTER 19 SECTION 25S TOWNSHIP 36E RANGE

WELLBORE SCHEMATIC

WELL CONSTRUCTION DATA
Surface Casing

Hole Size: 24.000" Casing Size: 20.000"
Cemented with: 1.859 sx. or _____ ft³
Top of Cement: Surface Method Determined: Circulation

1st Intermediate Casing

Hole Size: 17.500" Casing Size: 13.375"
Cemented with: 3.952 sx. or _____ ft³
Top of Cement: Surface Method Determined: Circulation

2nd Intermediate Casing

Hole Size: 12.250" Casing Size: 9.625"
Cemented with: 2.950 sx. or _____ ft³
Top of Cement: Surface Method Determined: Circulation

Production Liner

Hole Size: 8.500"

Casing Size: 7.625"

Cemented with: 339 sx.

or _____ ^{ft³}

Top of Cement: 10,800'

Method Determined: Calculation

Total Depth: 17,621'

Injection Interval

15,600 feet to 17,261 feet

(Open Hole)

INJECTION WELL DATA SHEET

Tubing Size: 7", 26 lb/ft, P-110, TCPC from 0' - 10,700' and 5,500", 17 lb/ft, P-110 TCPC from 10,700' - 15,580'
 Lining Material: Duoline

Type of Packer: 7.625" x 5.5" TCPC Permanent Packer with High Temp Elastomer and Full Inconel

Packer Setting Depth: 15,580'

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: 3,589'

Delaware: 5,409'

Bone Spring: 8,073'

Wolfcamp: 11,145'

Strawn: 11,567'

Cobra 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
20857	WEST JAL B #001	S	N	BC & D OPERATING INC.	12275	32.12848280000	-103.28498080000	3/12/1964
09778	PRE-ONGARD WELL #001	O	P	PRE-ONGARD WELL OPERATOR	3891	32.12124250000	-103.29780580000	1/1/1900
21039	PRE-ONGARD WELL #001	O	P	PRE-ONGARD WELL OPERATOR	12950	32.12760160000	-103.30099490000	1/1/1900
44107	BRANDY FEE WCB #001H	O	N	ONEENERGY PARTNERS OPERATING, LLC	0	32.12417500000	-103.30298600000	12/31/9999
44108	SHIFT FEE WCB #001H	O	N	ONEENERGY PARTNERS OPERATING, LLC	0	32.12415500000	-103.29631400000	12/31/9999
44109	CONVERT FEE WCB #001H	O	N	ONEENERGY PARTNERS OPERATING, LLC	0	32.12934600000	-103.30542500000	12/31/9999
44110	PINCH FEE WCB #001H	O	N	ONEENERGY PARTNERS OPERATING, LLC	0	32.12923000000	-103.31103400000	12/31/9999

Cobra 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	ico2_mgl
BELL LAKE UNIT #009	3002520261	LEA	BONE SPRING		204652						130000	512		260
THIS TITLE UNIT #071H	3002524225	LEA	BONE SPRING 1ST SAND	5.6	171476.3	55363.2	9140	40.4	102.3	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	700	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 #0011H	3002541293	LEA	BONE SPRING 3RD SAND	6.7	95604	31066	3196	10	394	0.5	59071	183	0	100
SALADO DRAW 6 FEDERAL #0011H	3002541293	LEA	BONE SPRING 3RD SAND	7			3289	0.3	474.5	0.38	219.6			300
NORTH EL MAR UNIT #057	3002508440	LEA	DELAWARE		259554						165000	61	253	
GOEDKE #002	3002508407	LEA	DELAWARE		239925						184000	85	210	
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	WOLFECAMP	7.3	81366.4	26319.4	2687.4	26.1	376.7		50281.2		399.7	100

Cobra SWD										
Lea County NM										
Vertical Injection - Devonian, Shinarump, Permian, Pennsylvanian, Mississippian, Devonian										
Location - Sec 29, Twp 28S, R 36E										
Drilling and Completions Cost - \$10.65MM										
APL #										
TD 17,261										
GL/KB 3,130										
Directions to Site - Travel 6.8 miles from Lea NM along NM 225W. Turn left (south) and travel to location. Lat/Long: 32.12287, -103.25917										
Geologic Tops (MD ft)	Section	Problems	Bit/BHA	Mud	Casing	Logging	Cement (HOLD)	Injection String		
Rustler Surface TD - 1400'	Surface Drill 24" 0' - 1400' 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	1400' of 20" 106.5# J55 STC Centralizers - bottom 2 joints and every 3rd jt thereafter, Cement basket at 200'	No Logs	Lead - 799sx of HES Extenda Cem, 13.7ppg, 4.5hrs TT Tail - 1060sx of Halcem 3hr TT 25% Excess 1000psi CSD after 10hrs	10700' of 7" P110 26# TCPC		
Top of Salt Salado 1719'	1st Intermediate Drill 4000' of 17-1/2" Hole 1080' - 5280' 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 5400' 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 1400'	Lead - 1939 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 Delaware 5409'										
1st Int TD - 5400'										
ECP DV Tool - 5380'	2nd Intermediate Drill 5900' of 12-1/4" Hole 5400' - 11300' 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 11300' of 9-5/8" 53.5# P110 BTC Special Drift to 8.535" Externally Coat 3600' Between DV Tools DV tool at at 8000' ECP DV Tool 15' Inside Previous Casing	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 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 553sx Neocem 12.9 ppg Tail 438sx Halcem 14.8ppg 1000psi CSD after 10hrs	4880' of 5-1/2" P110 17# TCPC Ductline Internally Coated Injection Tubing		
Bell Canyon 5459'										
Cherry Canyon - 5897'										
Brushy Canyon - 7197'										
DV Tool - 8000'										
Bone Spring - 8073'										
3rd Int Liner Top - 10,800'										
Wolfcamp - 11145'										
2nd Int TD - 11300'										
Strawn - 11567'	3rd Intermediate Drill 4300' of 8-1/2" Hole 11300' - 15600' 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	4800' of 7-5/8" 39# Q125 - DTL (F14) FI (Gas Tight) VersaFlex Packer Hanger Centralizers on and 1 ft above shoe it and then every 2nd jt.	MWD GR Triple combo, CBL of 9-5/8" Casing	Lead 161sx Neocem 12.9 ppg Tail 178sx 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		
Atoka - 11789'										
Morrow - 12449'										
Miss Lst - 14733'										
Woodford - 15217'										
Perm Packer - 15580'										
3rd Int TD - 15600'										
Devonian - 15,570'										
Fuselman - 16629'	Injection Interval Drill 1661' of 6-1/2" hole 15600' - 17261'	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)			
Montoya - 17,161'										
TD - 17,261'										

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		⁷ OGRID Number 372338
		⁸ API Number TBD
⁴ Property Code	⁵ Property Name COBRA SWD	⁶ Well No. 1

² Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
A	19	25S	36E	N/A	326'	NORTH	718'	EAST	LEA

³ 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 3,130'
¹⁶ Multiple N	¹⁷ Proposed Depth 17,261'	¹⁸ Formation Siluro-Devonian	¹⁹ Contractor TBD	²⁰ Spud Date ASAP
Depth to Ground water 295'		Distance from nearest fresh water well 507'		Distance to nearest surface water 1,900'

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

²¹ Proposed Casing and Cement Program

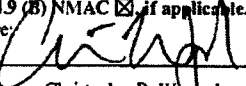
Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surface	24"	20"	106.5 lb/ft	1,400'	1,859	Surface
Intermediate	17.5"	13.375"	68 lb/ft	5,400'	3,952	Surface
Production	12.25"	9.625"	53.5 lb/ft	11,300'	2,950	Surface
Prod. Liner	8.5"	7.625"	39 lb/ft	15,600'	339	10,800'
Tubing	N/A	7"	26 lb/ft	0' - 10,700'	N/A	N/A
Tubing	N/A	5.5"	17 lb/ft	10,700' - 15,580'	N/A	N/A

Casing/Cement Program: Additional Comments

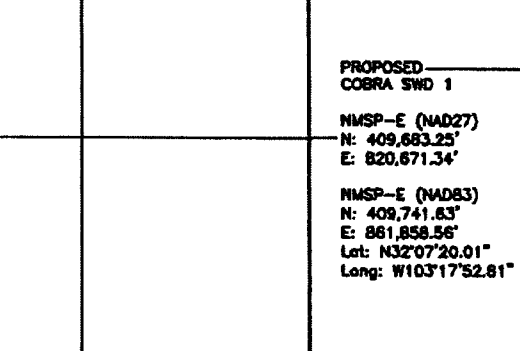


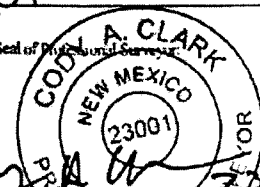

See attached schematic.

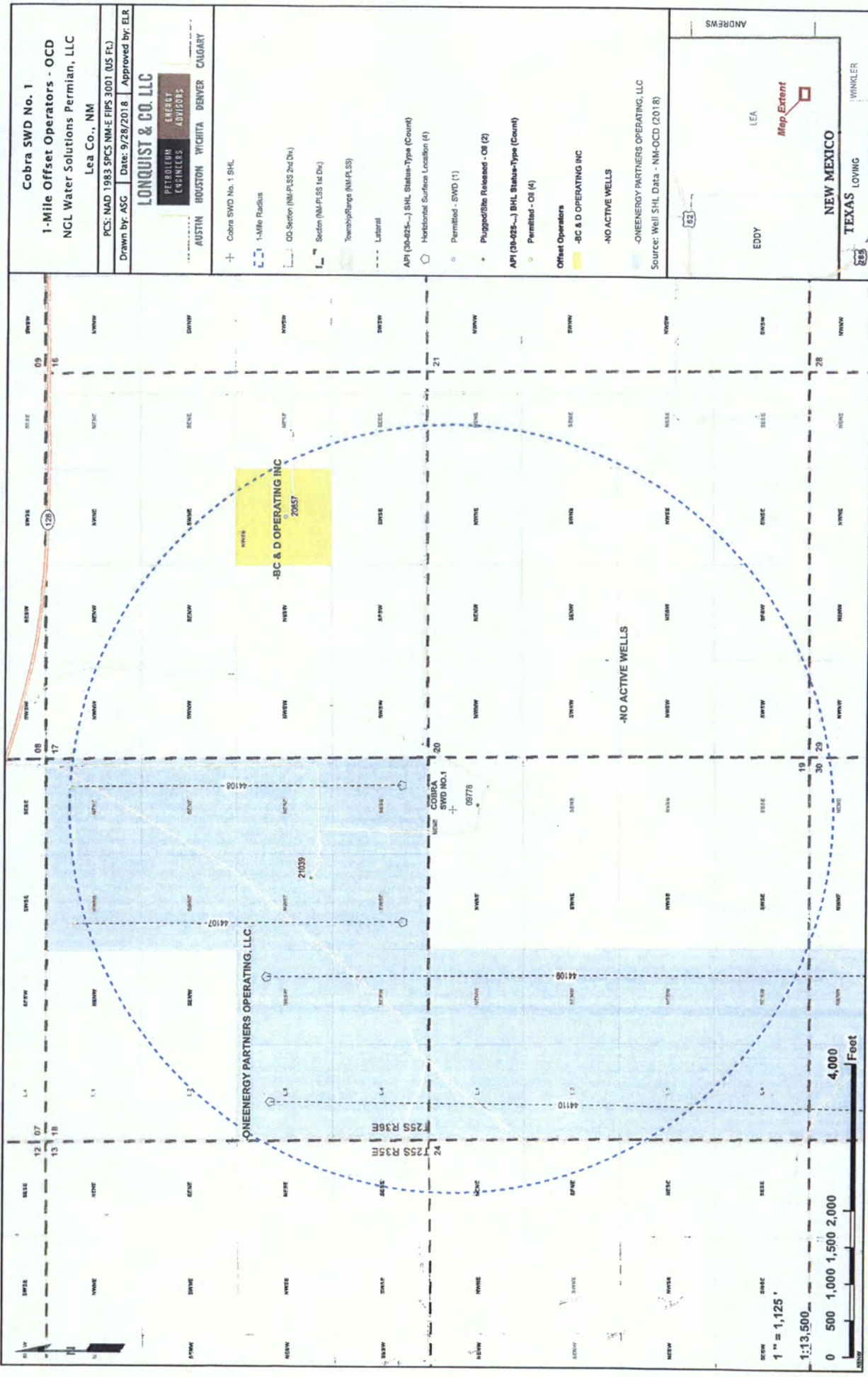
²² Proposed Blowout Prevention Program

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 <input type="checkbox"/> and/or 19.15.14.9 (B) NMAC <input checked="" type="checkbox"/> if applicable. Signature:  Printed name: Christopher B. Wayand Title: Consulting Engineer E-mail Address: chris@longquist.com Date: 9/28/2018	OIL CONSERVATION DIVISION	
	Approved By:	
	Title:	
	Approved Date:	Expiration Date:
	Conditions of Approval Attached	

Phone: (512) 600-1764

<div style="text-align: center; font-size: 2em; font-weight: bold; margin-bottom: 20px;">SECTION 19</div> <div style="text-align: center;">  </div> <div style="margin-top: 20px;"> <p>PROPOSED COBRA SWD 1</p> <p>NMSP-E (NAD27) N: 409,683.25' E: 820,871.34'</p> <p>NMSP-E (NAD83) N: 409,741.83' E: 861,858.56' Lat: N32°07'20.01" Long: W103°17'52.81"</p> </div>	<div style="text-align: center; font-weight: bold; margin-bottom: 10px;">"OPERATOR CERTIFICATION"</div> <p><i>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.</i></p> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 60%;"> <p></p> <p>Signature</p> </div> <div style="width: 35%; text-align: center;"> <p>9/28/2018</p> <p>Date</p> </div> </div> <p style="text-align: center; margin-top: 10px;">Chris Weyand</p> <hr/> <p style="text-align: center;">Printed Name</p> <p style="text-align: center; margin-top: 10px;">chris@lonquist.com</p> <hr/> <p style="text-align: center;">E-mail Address</p>
	<div style="text-align: center; font-weight: bold; margin-bottom: 10px;">"SURVEYOR CERTIFICATION"</div> <p><i>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.</i></p> <div style="text-align: center; margin-top: 10px;"> <p>9/18/2018</p> <p>Date of Survey</p> </div> <div style="margin-top: 10px;"> <p></p> <p>Signature and Seal of Professional Surveyor</p> </div> <div style="text-align: center; margin-top: 10px;">  </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 60%;"> <p></p> <p>Signature and Seal of Professional Surveyor</p> </div> <div style="width: 35%; text-align: center;"> <p>23001</p> <p>Certificate Number</p> </div> </div>





Beckham Ranch
Proposed SWD Locations
Lea County, NM

3) COBRA

LAT: -103.298003
LONG: 32.122226
X: 861858.560084
Y: 409741.62998

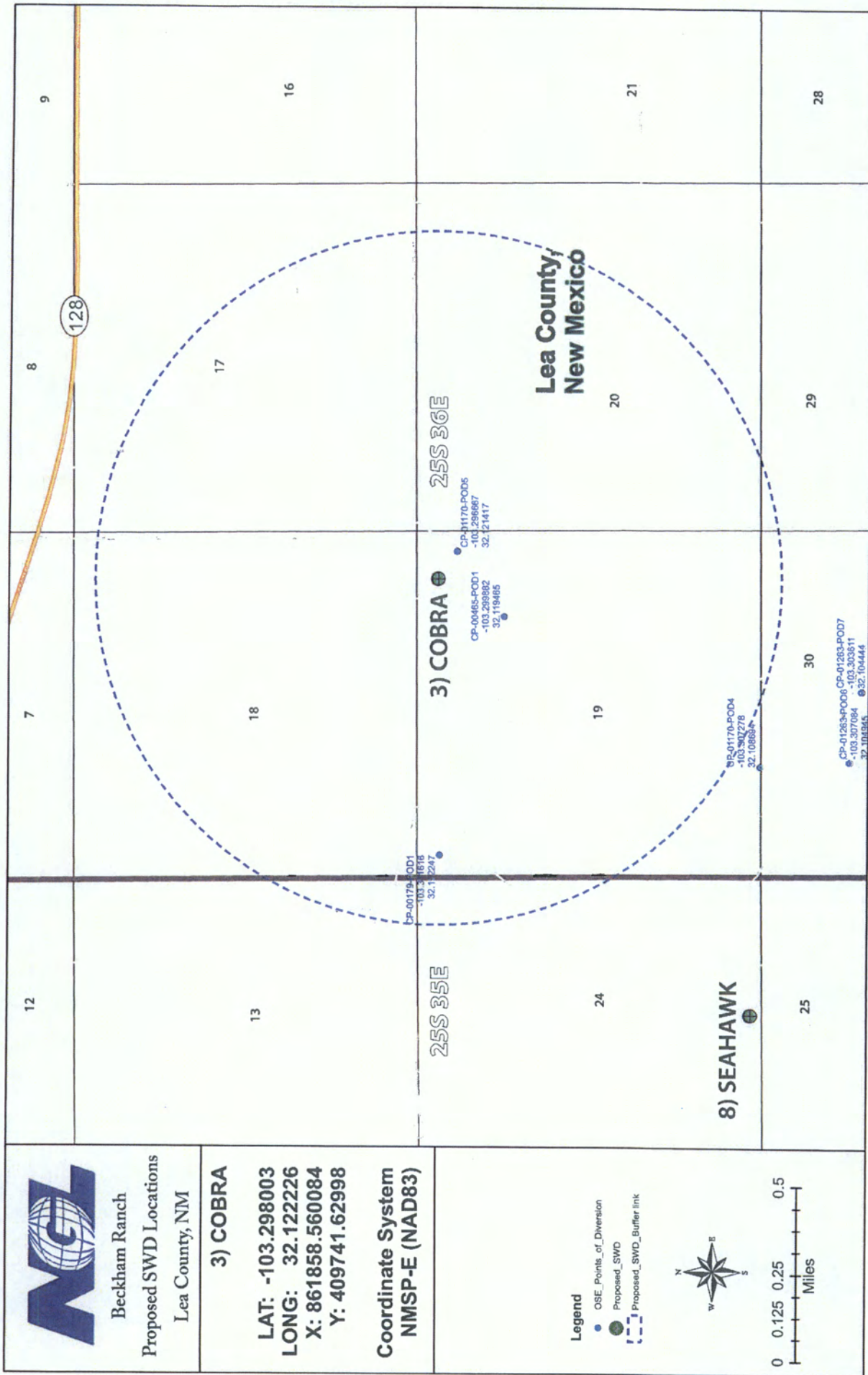
Coordinate System
NMSP-E (NAD83)

Legend

- OSE Points of Diversion
- Proposed SWD
- Proposed SWD Buffer link



0 0.125 0.25 0.5
Miles



CASE NO. 16504 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 Cobra SWD #1 well a surface location 326 feet from the North line and 718 feet from the East line of Section 19, Township 25 South, Range 36 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well. The target injection interval is the Silurian-Devonian formation at a depth of 15,600' - 17,261'. NGL further seeks approval of the use of 7 inch tubing inside the surface and intermediate casings and 5 ½ inch tubing inside the liner and requests that the Division approve a maximum daily injection rate for the well of 50,000 bbls per day. Said area is located approximately 6 miles west of Jal, New Mexico.

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