

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

**APPLICATIONS OF NGL WATER SOLUTIONS
PERMIAN, LLC FOR APPROVAL OF SALT WATER
DISPOSAL WELLS IN LEA COUNTY, NEW MEXICO**

Case Nos. 20141 and 20142

Table of Contents

Exhibit 1:	Request for Dismissal of Applications
Exhibit 2:	Affidavit of Todd Reynolds
Exhibit 3:	Notice Affidavit and Documents

**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. 20142

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 Trident SWD #1 well at a surface location 240 feet from the North line and 1120 feet from the West line of Section 13, Township 24 South, Range 33 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 16,320' - 18,093'.

(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 2,448 psi for this well, and it requests that a maximum pressure of 3,264 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 December 6, 2018; and that after notice and hearing, the Division enter its order approving this application.

Respectfully submitted,

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

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

CASE NO. ____ : Application of NGL Water Solutions Permian, LLC for approval of salt water disposal well in Lea County, New Mexico. Applicant seeks an order approving disposal into the Silurian-Devonian formation through the Trident SWD #1 well at a surface location 240 feet from the North line and 1120 feet from the West line of Section 13, Township 24 South, Range 33 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 16,320' - 18,093'. 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 21 miles northwest of Jal, New Mexico.

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 LLCOGRID Number: 372338Well Name: TRIDENT SWD #1API: TBDPool: SWD; SILURIAN-DEVONIANPool 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☐ PPR2) **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

10/18/2018

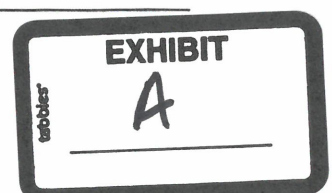
Date

512-600-1764

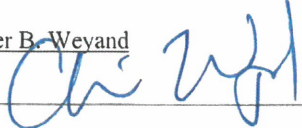
Phone Number

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: 10/18/2018
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

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.

INJECTION WELL DATA SHEET

OPERATOR: NGL WATER SOLUTIONS PERMIAN, LLC

WELL NAME & NUMBER: TRIDENT SWD #1

WELL LOCATION: 240 FNL & 1,120' FWL D 13 24S 33E
FOOTAGE LOCATION UNIT LETTER SECTION TOWNSHIP RANGE

WELLBORE SCHEMATIC

WELL CONSTRUCTION DATA
Surface Casing

Hole Size: 24.000" Casing Size: 20.000"
Cemented with: 1.005 sx. *or* _____ ft³
Top of Cement: Surface Method Determined: Circulation
1st Intermediate Casing

Hole Size: 17.500" Casing Size: 13.375"
Cemented with: 3.844 sx. *or* _____ ft³
Top of Cement: Surface Method Determined: Circulation
2nd Intermediate Casing

Hole Size: 12.250" Casing Size: 9.625"
Cemented with: 3.295 sx. *or* _____ ft³
Top of Cement: Surface Method Determined: Circulation

Production Liner

Hole Size: <u>8.500"</u>	Casing Size: <u>7.625"</u>
Cemented with: <u>313</u> sx.	<i>or</i> _____ ^{ft³}
Top of Cement: <u>11,900'</u>	Method Determined: <u>Calculation</u>
Total Depth: <u>18,093'</u>	

Injection Interval
16,320 feet to 18,093 feet
(Open Hole)

INJECTION WELL DATA SHEET

Tubing Size: 7", 26 lb/ft, P-110, TCPC from 0' - 11,800' and 5.500", 17 lb/ft, P-110 TCPC from 11,800' - 16,295'
 Lining Material: Duoline

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

Packer Setting Depth: 16,295'

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:

Delaware: 5,248'

Bone Spring: 9,134'

Wolfcamp: 12,223'

Atoka: 13,581'

Morrow: 14,636'

Trident SWD									
Lea County NM									
Vertical Injection - Devonian, Silurian, Fusselman, Montoya									
Location - Sec 13, T24S, R33E									
Drilling and Complete Cost - \$10.73MM									
AFE #									
TD									
18,093									
GL/KB									
3,608									
Directions to Site - From Ial travel 20.4miles west on NM 128. Turn Right (N) on Delaware Basin Road and travel 0.6miles. Turn Left (W) and travel 0.5miles to location. Lat/Long - 32.2240650, -103.5306988									
Injection String									
Cement (HOLD)									
Logging									
Casing									
Mud									
Bit/BHA									
Problems									
Section									
Rustler Anhydrite	1280	Surface Drill 24" 0' - 1200 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	1200' of 20" K55 133ppf STC Centralizers - bottom 2 joints and every 3rd jt thereafter, Cement basket at 200'	No Logs	Lead -499 sx of HES Extenda Cem, 13.7ppg, 4.5hrs TT Tail - 506sx of Halcem 3hr TT 25% Excess 1000psi CSD after 10hrs	11,800' of 7" P110 26# TCPC
	Surface TD - 1200	1st Intermediate Drill 3980' of 17-1/2" Hole 1220' - 5200' Set and Cement 13-3/8" Casing	Seepage Losses Possible H2S Anhydrite Salt Sections	17-1/2" PDC 9-5/8" x 8" MM 9 jts: 8" DC 21 jts: 5" HWDP 5" DP to surface		5M A Section Casing Bowl 5200' of 13-3/8" 68# HCL80 BTC Centralizers - bottom jt, every 3rd joint in open hole and 2 jt inside the surface casing	Mudlogger on site by 1200'	Lead - 1997 sx of Neocem 12.9ppg, 5hr TT Tail - 1847sx of Halcem, 14.8ppg 60% Excess 1000psi CSD after 10 hrs Cement to Surface	
ECP DV Tool - Delaware	5160	2nd Intermediate Drill 7200' of 12-1/4" Hole 5200' - 12,400' Set 9-5/8" Intermediate Casing and Cement in 3 Stages	Hard Drilling in the Brushy Canyon	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	10M B Section 12400' of 9-5/8" 53.5# P110 BTC Special Drift to 8.535"	MWD GR Triple combo + CBL of 13-3/8" Casing	Stage 3: 0% Excess Lead 663sx Neocem 12.9 ppg Tail 510sx Halcem 14.8ppg 1000psi CSD after 10 hrs Cement to Surface	4495 of 5-1/2" P110 17# TCPC
	5248		Seepage to Complete Loss Water Flows Some Anhydrite H2S possible Production in the Bone Spring and Wolfcamp		UBD/MPD usig ADA	Externally Coat Between DV Tools DV tool at at 9000' ECP DV Tool 15' Inside Previous Casing Centralizers - bottom jt, 100' aside of DV tool, every 3rd joint in open hole and 5 within the surface casing	Stage 2: 25% Excess Lead 508sx Neocem 12.9 ppg Tail 590sx Halcem 14.8ppg 1000psi CSD after 10 hrs	Duoline Internally Coated Injection Tubing	
Bell Canyon	7841	Set 9-5/8" Intermediate Casing and Cement in 3 Stages							
Cherry Canyon -	6308								
DV Tool -	9000								
Bone Spring -	9134								
3rd Int Liner Top -	11,900								
Wolfcamp -	12223								
2nd Int TD -	12,400								
Strawn -	13286	3rd Intermediate Drill 3920' of 8-1/2" Hole 12400 - 16320' 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	3920' of 7-5/8" 39# Q125 - DTL (F14) FI (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 154sx Neocem 12.9 ppg Tail 159sx Halcem 14.8ppg. 1000psi CSD after 10hrs 8hr TT 35% Excess 1000psi CSD after 10hrs	7-5/8" x 5-1/2" TCPC Permanent Packer with High Temp Elastomer and full Inconel 925 trim
Atoka -	13581								
Morrow -	14636								
Miss Lst -	15749								
Woodford -	16104								
Perm Packer -	16,295								
3rd Int TD -	16,320								
Devonian -	16,300								
Fusselman -	17410	Injection Interval Drill 1880' of 6-1/2" hole 16320' - 18093'	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 -	17,993'								
	TD - 18,093'								

NGL Water Solutions Permian, LLC

Trident SWD No. 1

FORM C-108 Supplemental Information

III. Well Data

A. Wellbore Information

1.

Well information	
Lease Name	Trident SWD
Well No.	1
Location	S-13 T-24S R-33E
Footage Location	240' FNL & 1,120' FWL

2.

a. Wellbore Description

Casing Information				
Type	Surface	Intermediate	Production	Liner
OD	20"	13.375"	9.625"	7.625"
WT	0.635"	0.480"	0.545"	0.500"
ID	18.730"	12.415"	8.535"	6.625"
Drift ID	18.542"	12.259"	8.535"	6.500"
COD	21.00"	14.375"	10.625"	7.625"
Weight	133 lb/ft	68 lb/ft	53.5 lb/ft	39 lb/ft
Grade	K-55	HCL-80	P-110	Q-125
Hole Size	24"	17.5"	12.25"	8.5"
Depth Set	1,200'	5,200'	12,400'	16,320'

b. Cementing Program

Cement Information				
Casing String	Surface	Intermediate	Production	Liner
Lead Cement	Extenda Cem	Neocem	Neocem, Neocem, Neocem	Neocem
Lead Cement Volume	499	1,997	Stage 1: 553 sx Stage 2: 508 sx Stage 3: 663 sx	154
Tail Cement	Halcem	Halcem	Versacem C, Halcem, Halcem	Halcem
Tail Cement Volume	506	1,847	Stage 1: 471 sx Stage 2: 590 sx Stage 3: 510 sx	159
Cement Excess	25%	60%	25%, 25%, 0%	35%
TOC	Surface	Surface	Surface	11,900'
Method	Circulate to Surface	Circulate to Surface	Circulate to Surface	Logged

3. Tubing Description

Tubing Information		
OD	7"	5.5"
WT	0.362"	0.304"
ID	6.276"	4.892"
Drift ID	7.875"	6.050"
COD	6.151"	4.653"
Weight	26 lb/ft	17 lb/ft
Grade	P-110 TCPC	P-110 TCPC
Depth Set	0'-11,800'	11,800' -16,295'

Tubing will be lined with Duoline.

4. Packer Description

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

B. Completion Information

1. Injection Formation: Devonian, Silurian, Fusselman, Montoya (Top 100')
2. Gross Injection Interval: 16,320' – 18,093'

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
Delaware	5,248'
Bone Spring	9,134'
Wolfcamp	12,223'
Atoka	13,581'
Morrow	14,636'

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: 2,448 PSI (surface pressure)

Maximum Injection Pressure: 3,264 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, Atoka, and Morrow formations.
5. The disposal interval is non-productive. No water samples are available from the surrounding area.

VIII. Geological Data

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

A. Injection Zone: Siluro-Devonian Formation

Formation	Depth
Rustler Anhydrite	1,280'
Delaware	5,248'
Bone Spring	9,134'
Wolfcamp	12,223'
Atoka	13,286'
Morrow	14,636'
Mississippian Lime	15,749'
Woodford	16,104'
Devonian	16,300'
Fusselman	17,410'
Montoya	17,993'

B. Underground Sources of Drinking Water

Within 1-mile of the proposed Trident SWD #1 location, there are three water wells. Two of these water wells have total depths reported to be 600 ft and 650 ft. Water wells in the surrounding area have an average depth of 360 ft and an average water depth of 230ft 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

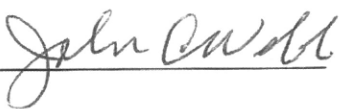
There are three water wells that exist within one mile of the well location. If samples can be obtained, analysis results will be provided as soon as possible. A map and Water Right Summaries from the New Mexico Office of the State Engineer is attached for water wells C 03666 POD1 and C 03917 POD1.

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

NAME: John C. Webb

TITLE: Sr. Geologist

SIGNATURE: 

DATE: Oct. 10, 2018

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

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

Form C-101
Revised July 18, 2013

☐ AMENDED REPORT

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

¹ Operator Name and Address 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 TRIDENT 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
D	13	24S	33E	N/A	240'	NORTH	1120'	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 SWD; Silurian-Devonian	Pool Code 96101
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Additional Well Information

¹¹ Work Type N	¹² Well Type SWD	¹³ Cable/Rotary R	¹⁴ Lease Type Private	¹⁵ Ground Level Elevation 3,608'
¹⁶ Multiple N	¹⁷ Proposed Depth 18,093'	¹⁸ Formation Siluro-Devonian	¹⁹ Contractor TBD	²⁰ Spud Date ASAP
Depth to Ground water 230'		Distance from nearest fresh water well 3,350'		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

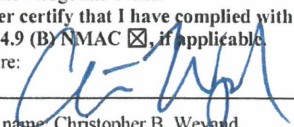
Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surface	24"	20"	133 lb/ft	1,200'	1,005	Surface
Intermediate	17.5"	13.375"	68 lb/ft	5,200'	3,844	Surface
Production	12.25"	9.625"	53.5 lb/ft	12,400'	3,295	Surface
Prod. Liner	8.5"	7.625"	39 lb/ft	16,320'	313	11,900'
Tubing	N/A	7"	26 lb/ft	0' - 11,800'	N/A	N/A
Tubing	N/A	5.5"	17 lb/ft	11,800' - 16,320'	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: 

Printed name: Christopher B. Weyand

Title: Consulting Engineer

E-mail Address: chris@lonquist.com

Date: 10/16/2018

Phone: (512) 600-1764

OIL CONSERVATION DIVISION

Approved By:

Title:

Approved Date:

Expiration Date:

Conditions of Approval Attached

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
311 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 96101	³ Pool Name SWD; Silurian-Devonian
⁴ Property Code	⁵ Property Name TRIDENT SWD	⁶ Well Number 1
⁷ OGRID No. 372338	⁸ Operator Name NGL WATER SOLUTIONS PERMIAN, LLC	⁹ Elevation 3608.00'±

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
D	13	24 S	33 E	N/A	240'	NORTH	1120'	WEST	LEA

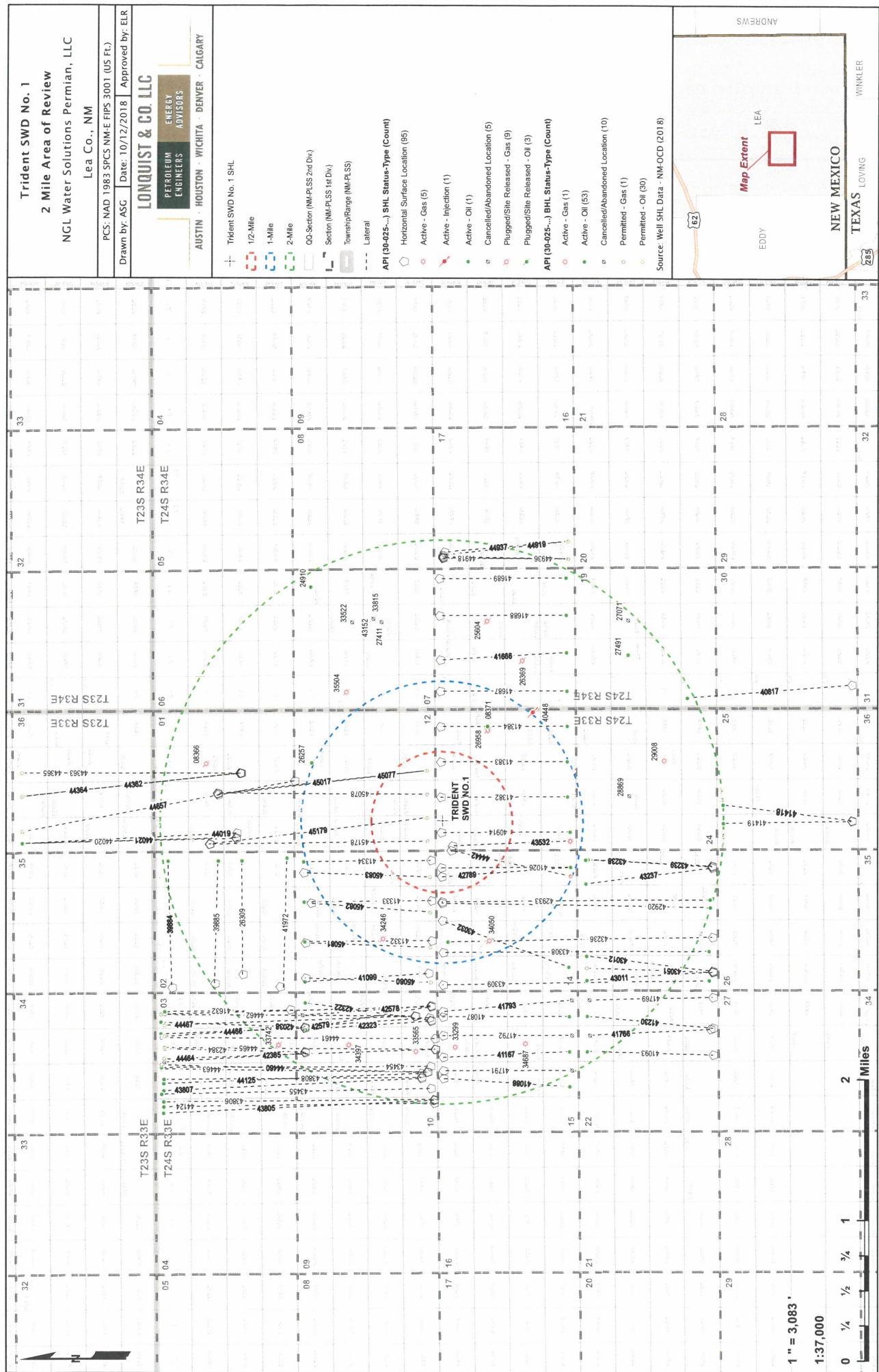
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
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¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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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.

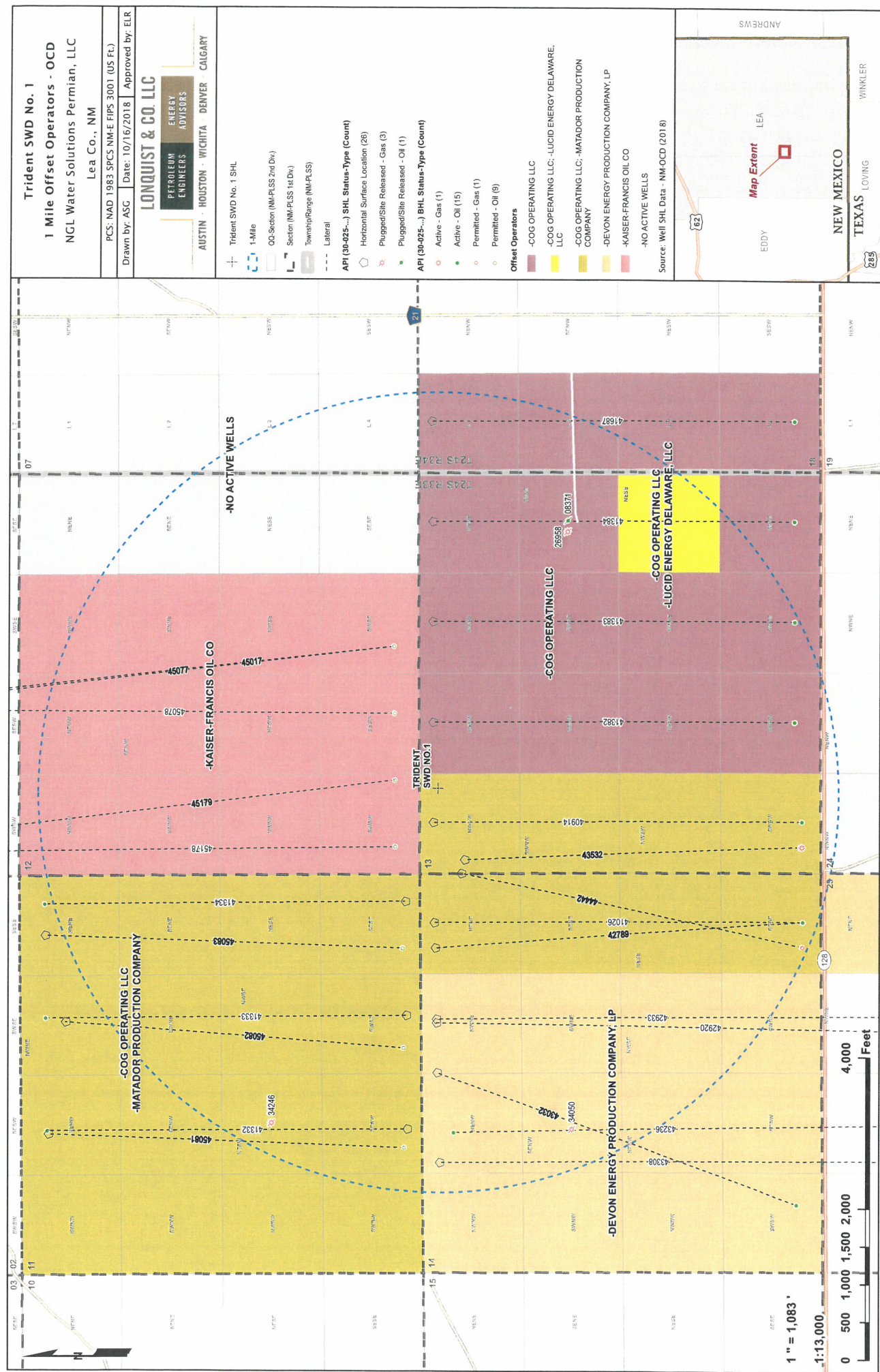
	PROPOSED TRIDENT SWD 1 NMSP-E (NAD27) N: 446,160.93' E: 748,269.02' NMSP-E (NAD83) N: 446,219.70' E: 789,453.30' Lat: N32°13'27.08" Long: W103°31'51.53"	SECTION 13	¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Signature: Date: 10/18/2018 Chris Weyand Printed Name chris@lonquist.com E-mail Address
	¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. 10/19/18 Date of Survey Signature and Seal of Professional Surveyor: Certificate Number: 23001		

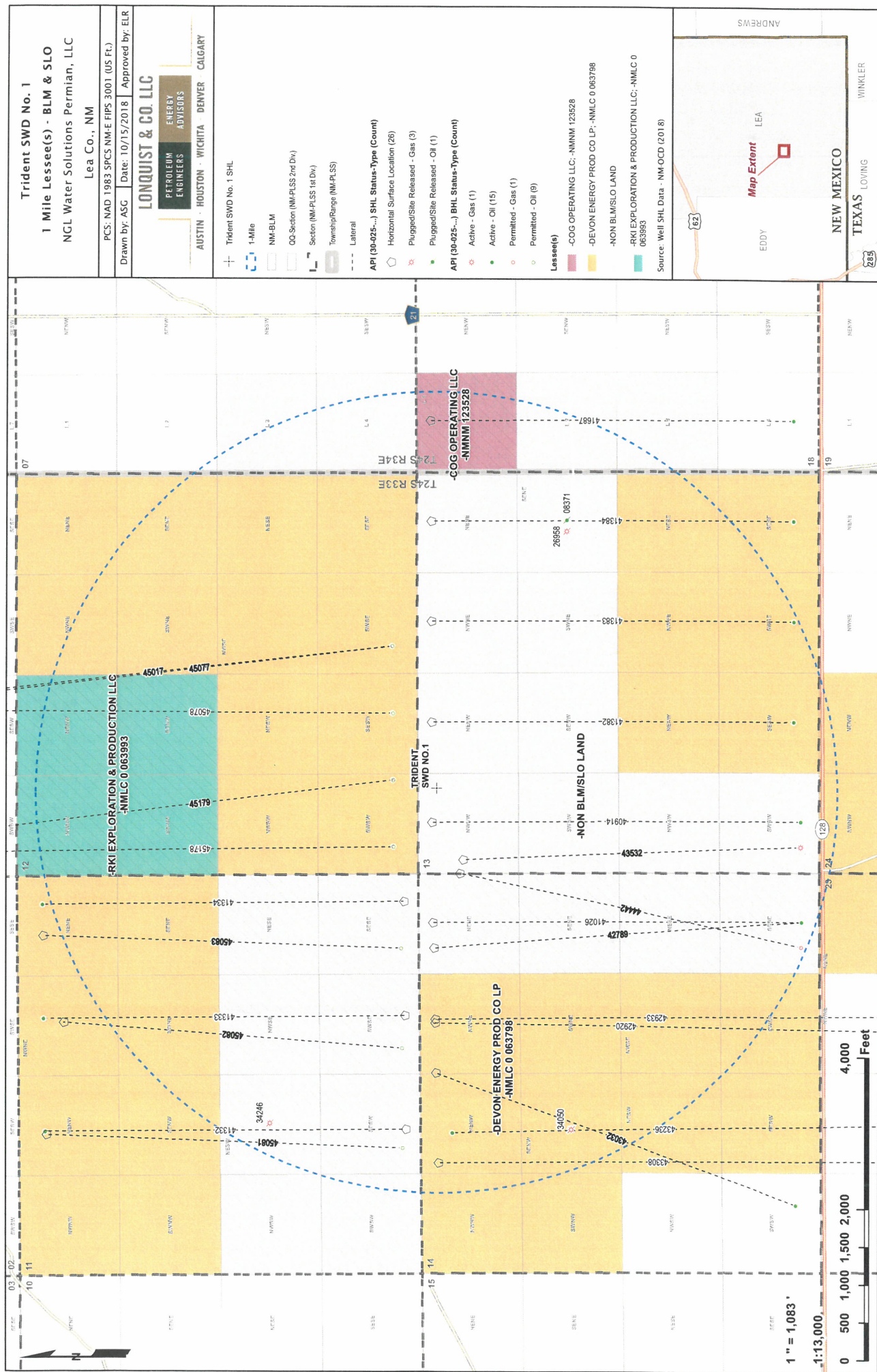


Trident SWD No. 1
1 Mile Area of Review List

API (30-025-...)	WELL NAME	WELL TYPE	STATUS	OPERATOR	TVD (FT.)	LATITUDE (NAD83 DD)	LONGITUDE (NAD83 DD)	DATE DRILLED
34050	LELA MAE STEVENS FEDERAL COM #001	G	P	EOG RESOURCES INC	13840	32.2194481000	-103.545562700	10/23/1997
08371	PRE-ONGARD WELL #001	O	P	PRE-ONGARD WELL OPERATOR	5425	32.21940230000	-103.5195990000	1/1/1900
26958	SIMS #001	G	P	BOPCO, L.P.	15007	32.2194061000	-103.520057700	12/31/1999
34246	STEVENS 11 #001	G	P	DEVON ENERGY PRODUCTION COMPANY, LP	15250	32.2303352000	-103.545234700	1/20/1998
40914	DECKARD FEE #001H	O	A	COG OPERATING LLC	11034	32.2243690000	-103.532440200	3/15/2013
41026	TYRELL FEE #001H	O	A	COG OPERATING LLC	10951	32.2243729000	-103.536712600	4/24/2013
41332	ROY BATTY FEDERAL COM #002H	O	A	COG OPERATING LLC	11101	32.2254143000	-103.545532200	11/1/2013
41333	ROY BATTY FEDERAL COM #003H	O	A	COG OPERATING LLC	11116	32.2254181000	-103.540679900	11/28/2013
41334	ROY BATTY FEDERAL COM #004H	O	A	COG OPERATING LLC	10899	32.2254181000	-103.535804700	12/26/2013
41382	DECKARD FEDERAL COM #002H	O	A	COG OPERATING LLC	11067	32.2243538000	-103.528167700	6/3/2014
41383	DECKARD FEDERAL COM #003H	O	A	COG OPERATING LLC	11162	32.2243385000	-103.523872400	8/30/2014
41384	DECKARD FEDERAL COM #004H	O	A	COG OPERATING LLC	11103	32.2243233000	-103.519607500	6/1/2014
41687	SEBASTIAN FEDERAL COM #001H	O	A	COG OPERATING LLC	10944	32.2243195000	-103.515335100	2/1/2015
42789	TYRELL FEE #002H	O	A	COG OPERATING LLC	9359	32.2243379000	-103.537804400	11/4/2015
42920	BOOMSLANG 14 23 FEDERAL #001H	O	A	DEVON ENERGY PRODUCTION COMPANY, LP	9517	32.2243153000	-103.541004700	7/28/2017
42933	BOOMSLANG 14 23 FEDERAL #004H	O	A	DEVON ENERGY PRODUCTION COMPANY, LP	11274	32.2243151000	-103.540843200	7/5/2017
43032	BOOMSLANG 14 23 FEDERAL #009H	O	A	DEVON ENERGY PRODUCTION COMPANY, LP	10658	32.2243126000	-103.543132200	8/13/2017
43236	BLUE KRAIT 23 14 FEDERAL #002H	O	A	DEVON ENERGY PRODUCTION COMPANY, LP	11851	32.1963990000	-103.545243200	6/18/2017
43308	BOOMSLANG 14 23 FEDERAL #002H	O	A	DEVON ENERGY PRODUCTION COMPANY, LP	9485	32.2242469000	-103.546969700	8/18/2017
43532	LEO THORSNESS 13 24 33 #211H	G	A	MATADOR PRODUCTION COMPANY	12383	32.2232488000	-103.534043900	12/10/2017
44442	STRONG 14 24 33 AR #214H	G	N	MATADOR PRODUCTION COMPANY	0	32.2233735000	-103.534618000	7/31/2018
45017	BELL LAKE UNIT SOUTH #404H	O	N	KAISER-FRANCIS OIL CO	0	32.2472790000	-103.527559000	12/31/1999
45077	BELL LAKE UNIT SOUTH #204H	O	N	KAISER-FRANCIS OIL CO	0	32.2472400000	-103.527680000	12/31/1999
45078	BELL LAKE UNIT SOUTH #403H	O	N	KAISER-FRANCIS OIL CO	0	32.2472980000	-103.527498000	12/31/1999
45081	CHARLES LING FEDERAL COM #212H	O	N	MATADOR PRODUCTION COMPANY	0	32.2383890000	-103.545685100	12/31/1999
45082	CHARLES LING FEDERAL COM #213H	O	N	MATADOR PRODUCTION COMPANY	0	32.2377444000	-103.540892600	12/31/1999
45083	CHARLES LING FEDERAL COM #214H	O	N	MATADOR PRODUCTION COMPANY	0	32.2384826000	-103.537187800	12/31/1999
45178	BELL LAKE UNIT SOUTH #201H	O	N	KAISER-FRANCIS OIL CO	0	32.2480890000	-103.533657000	12/31/1999
45179	BELL LAKE UNIT SOUTH #202H	O	N	KAISER-FRANCIS OIL CO	0	32.2481710000	-103.533656000	12/31/1999

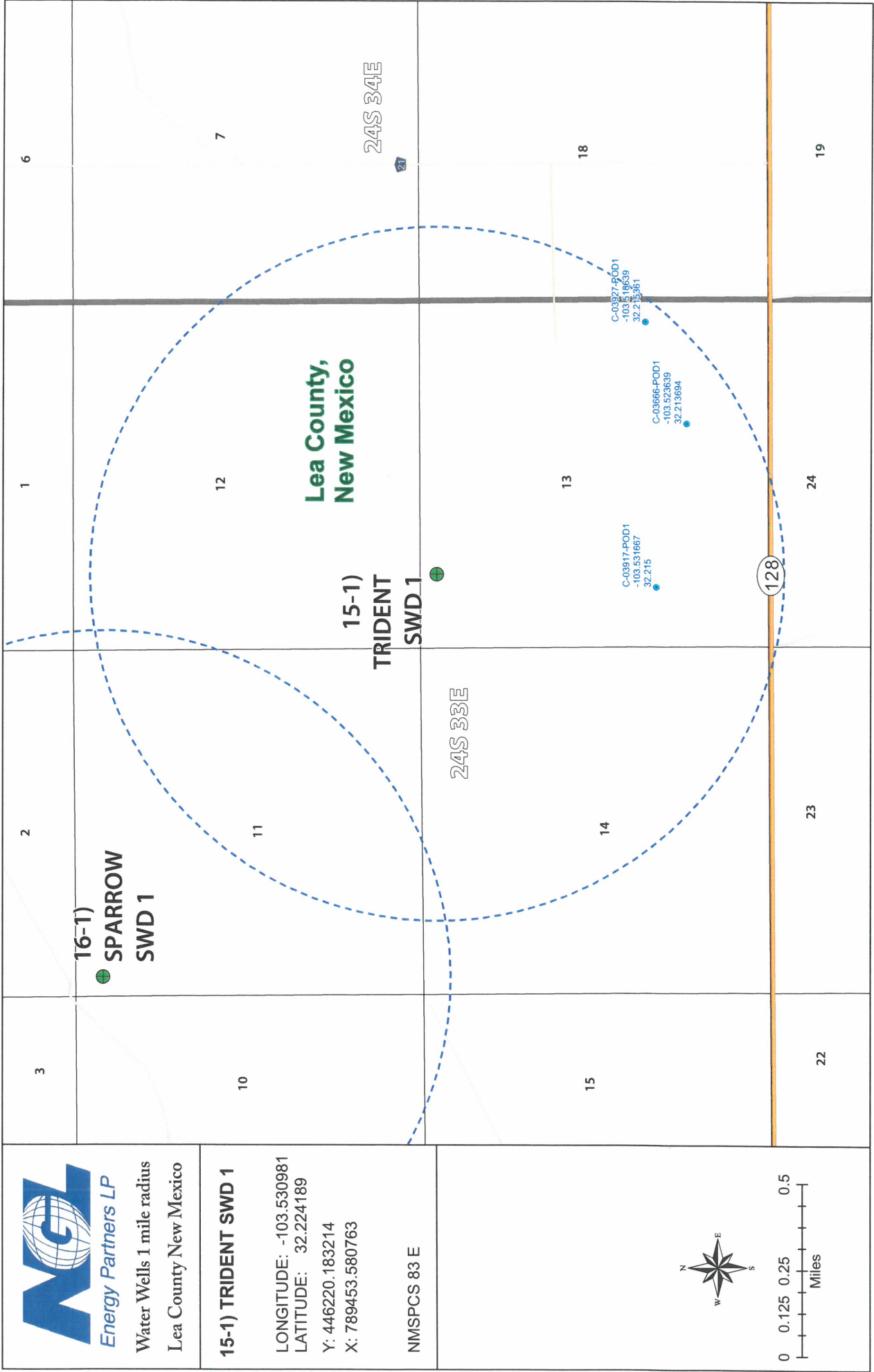
Trident SWD No. 1 - 1 Mile Area of Review List
NM-OCDD (2018)





Trident SWD #1: Offsetting Produced Water Analysis

wellname	api	section	township	range	unit	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
ANTELOPE RIDGE UNIT #002	3002520444	4 24S	34E	B	LEA	ATOKA	6.7	51475								31000	317	340
TODD 26 G FEDERAL #001	3001520242	26 23S	31E	G	EDDY	ATOKA	6.7	202478								126000	93	540
BELL LAKE UNIT #009	3002520261	18 23S	34E	K	LEA	BONE SPRING		204652								130000	512	260
THYME APY FEDERAL #002	3002533529	1 23S	32E	G	LEA	BONE SPRING	6.1	172896				0	2025			104976	781	1150
THISTLE UNIT #071H	3002542425	27 23S	33E	A	Lea	BONE SPRING 1ST SAND	5.6	171476.3				9140	40.4		1.1	104576.4	244	560
BELL LAKE 19 STATE #002H	3002541515	19 24S	33E	O	Lea	BONE SPRING 2ND SAND	6.8					8214	18		0.47	91000	220	550
BELL LAKE 19 STATE #004H	3002541517	19 24S	33E	O	Lea	BONE SPRING 2ND SAND	6.7					10300	79		1.7	87000	220	658
COTTON DRAW UNIT #244H	3001542331	36 24S	31E	D	EDDY	BONE SPRING 3RD SAND	6.7	108465				4943.2	26.4		1.01	67351.3	122	0
ALDABRA 26 FEDERAL #008H	3001538624	26 23S	31E	P	EDDY	BONE SPRING 3RD SAND	6.4	173144				1211	43		0.6	105600	2074	1603
BELL LAKE UNIT A #007	3002508367	1 24S	33E	A	LEA	DELAWARE		87686								53920	391	749
HANAGAN B FEDERAL #001	3002508151	15 24S	32E	O	LEA	DELAWARE	7.1	229813				18727				142188	168	491
SNAPPING 2 STATE #014H	3001542688	2 26S	31E	P	EDDY	WOLF CAMP	7.3	81366.4				2687.4	26.1			50281.2		399.7
BELLOO 2 STATE #002H	3001542895	2 23S	31E	C	EDDY	WOLF CAMP	6.8	119471.8				5659.1	22.4			73172.5		1035.5
CUSTER MOUNTAIN UNIT #001	3002520756	9 24S	35E	K	LEA	MORROW		282741								176800	161	650





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
C 03666 POD1		2 3 4	13	24S	33E	639132	3565078

Driller License: 1058	Driller Company: KEY'S DRILLING & PUMP SERVICE	
Driller Name: CASEY KEYS		
Drill Start Date: 10/18/2013	Drill Finish Date: 10/26/2013	Plug Date:
Log File Date: 11/14/2013	PCW Rcv Date:	Source: Shallow
Pump Type:	Pipe Discharge Size:	Estimated Yield: 38 GPM
Casing Size: 8.00	Depth Well: 650 feet	Depth Water: 390 feet

Water Bearing Stratifications:	Top	Bottom	Description
	460	465	Sandstone/Gravel/Conglomerate
	490	535	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	485	650



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
NA	C 03917 POD1	4 1 3	13	24S	33E	638374	3565212

Driller License: 1058

Driller Company: KEY'S DRILLING & PUMP SERVICE

Driller Name: CASE KEY

Drill Start Date: 03/01/2016

Drill Finish Date: 03/04/2016

Plug Date:

Log File Date: 03/11/2016

PCW Rcv Date:

Source: Shallow

Pump Type:

Pipe Discharge Size:

Estimated Yield: 30 GPM

Casing Size: 6.00

Depth Well: 600 feet

Depth Water: 420 feet

Water Bearing Stratifications:

Top Bottom Description

520 600 Sandstone/Gravel/Conglomerate

Casing Perforations:

Top Bottom

300 600

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.