

AA 9/20/2018
mw 9/14/2018

RECEIVED:	REVIEWER:	TYPE:	APP NO:
9/14/2018	PRG	SWD	PMAM1826.2 3115.3

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: LilyStream Water Solutions, LLC **OGRID Number:** 373500
Well Name: Rose SWD No.1 **API:** 30-015-XXXX 45221
Pool: Proposed: SWD; Devonian-Silurian **Pool Code:** 97869

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.

Ben Stone

Print or Type Name

Ben Stone

Signature

9/10/2018

Date

903-488-9850

Phone Number

ben@sosconsulting.us

e-mail Address



September 10, 2018

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

Attn: Ms. Heather Riley, Director

Re: Application of LilyStream Water Solutions, LLC to permit for salt water disposal the Rose SWD Well No.1, to be located in Section 14, Township 23 South, Range 27 East, NMPM, Eddy County, New Mexico.

Dear Ms. Riley,

Please find the enclosed form C-108 Application for Authority to Inject, supporting the above-referenced request for salt water disposal. The well will be operated as a commercial endeavor offering operators in the area additional options for produced water disposal.

LilyStream Water Solutions seeks to optimize efficiency, both economically and operationally, of its operations in southeast New Mexico. Approval of this application is consistent with that goal as well as the NMOCD's mission of preventing waste and protection of correlative rights.

I would point out that this application for a proposed Devonian SWD interval includes the currently mandated increased One-Mile Area of Review including pertinent and available seismic information for the area and region. Published legal notice will run September 11, 2018 in the Artesia Daily Press and all offset operators and other interested parties have been notified individually. The legal notice affidavit will be forwarded upon receipt. This application also includes a wellbore schematic, area of review maps, affected party plat and other required information for a complete Form C-108. The well is located on private land and minerals. There are state lands & minerals and private minerals within the one-mile radius notice area and the State Land Office and offset operators have been notified of this application.

I respectfully request that the approval of this salt water disposal well proceed swiftly and if you or your staff requires additional information or has any questions, please do not hesitate to call or email me.

Best regards,

Ben Stone, Partner
SOS Consulting, LLC
Agent for LilyStream Water Solutions, LLC

Cc: Application attachment and file

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: *Salt Water Disposal* and the application *QUALIFIES* for administrative approval.
- II. OPERATOR: *Lilystream Water Solutions, LLC (Ogrid 373500)*
ADDRESS: *1308 W. Ave. N, Lovington, NM 88260*
- CONTACT PARTY: *Agent: SOS Consulting, LLC – Ben Stone (903) 488-9850*
- III. WELL DATA: *All well data and applicable wellbore diagrams are ATTACHED.*
- IV. *This is not an expansion of an existing project.*
- V. *A map is attached* 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. A tabulation is attached of data on all wells of public record within the area of review which penetrate the proposed injection zone. *There are NO (0) Wells in the subject AOR which Penetrate the proposed Devonian interval.* The data includes a description of each well's type, construction, date drilled, location, depth, and a schematic of any plugged well illustrating all plugging detail. *NO P&A Wells penetrate.*
- VII. *The following data is ATTACHED* 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. *Appropriate geologic data on the injection zone is ATTACHED* 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. *Stimulation program – a conventional acid job may be performed to clean and open the formation.*
- *X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted). *Well Logs will be filed with OCD.*
- *XI. *There are several domestic water wells within one mile of the proposed salt water disposal well. 2 have been sampled and analyses will be forwarded upon receipt.*
- XII. *An affirmative statement is ATTACHED that available geologic and engineering data has been examined and no evidence was found* of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. *"Proof of Notice" section on the next page of this form has been completed and ATTACHED. There are 10 offset operators and/or lessees within 1 mile and State minerals - all have been noticed. Well location is Private.*
- 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: *Ben Stone* TITLE: *SOS Consulting, LLC agent for Trove Energy, LLC*

SIGNATURE:  DATE: *9/10/2018*

E-MAIL ADDRESS: *ben@sosconsulting.us*

* 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:

FORM C-108 – APPLICATION FOR AUTHORIZATION TO INJECT (cont.)**III. WELL DATA – *The following information and data is included (See ATTACHED Wellbore Schematic):***

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 *pursuant to the following criteria is ATTACHED.*

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: ***Affidavit will be FORWARDED upon receipt.***

- (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.

C-108 - Items III, IV, V

Item III - Subject Well Data

Wellbore Diagram - PROPOSED

Item IV – Tabulation of AOR Wells

NO wells penetrate the proposed injection interval.

Item V – Area of Review Maps

1. Two Mile AOR Map with One-Mile Fresh Water Well Radius
2. One-Half Mile AOR Map

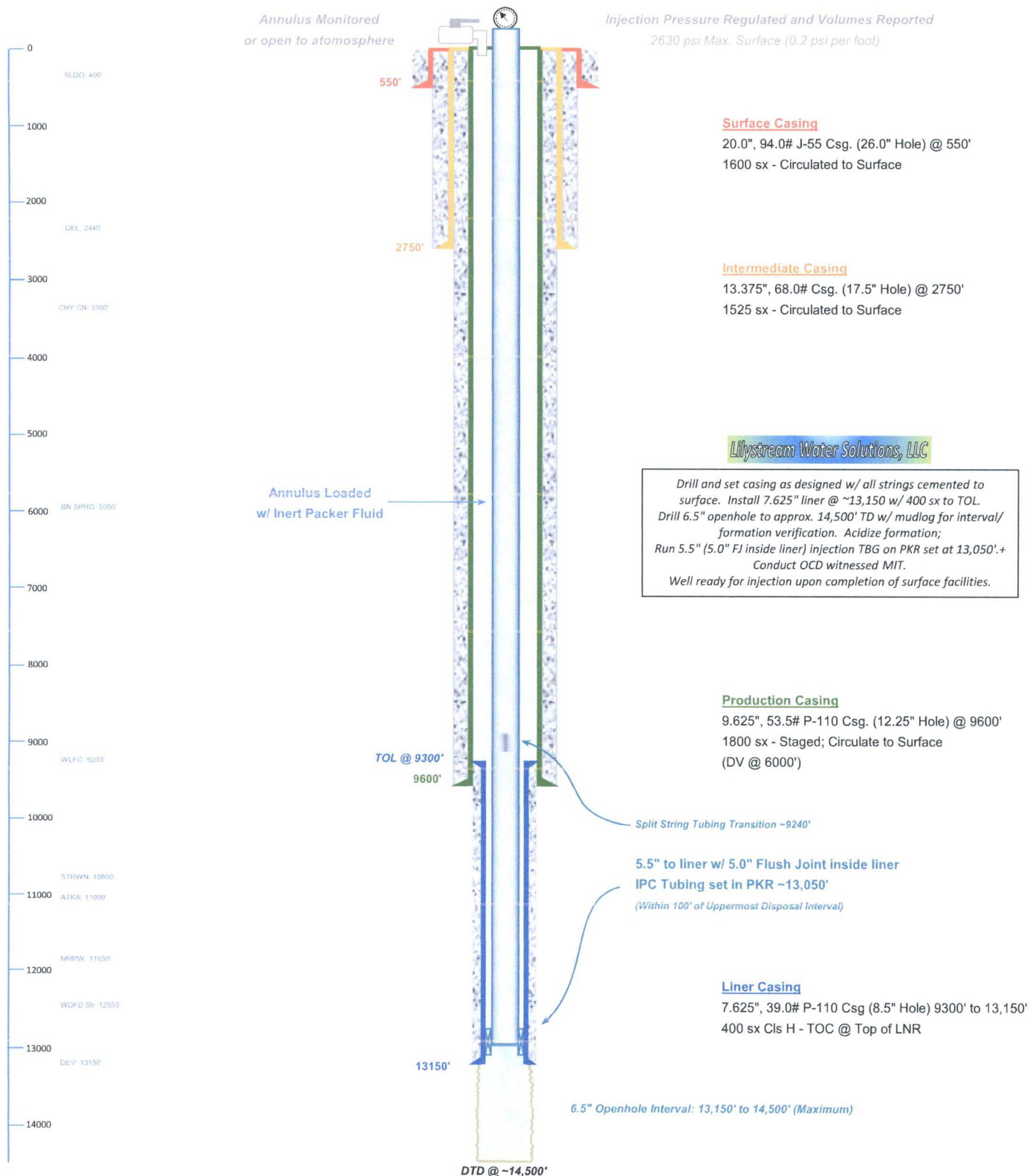
All Above Exhibits follow this page.



WELL SCHEMATIC - PROPOSED **Rose SWD Well No.1**

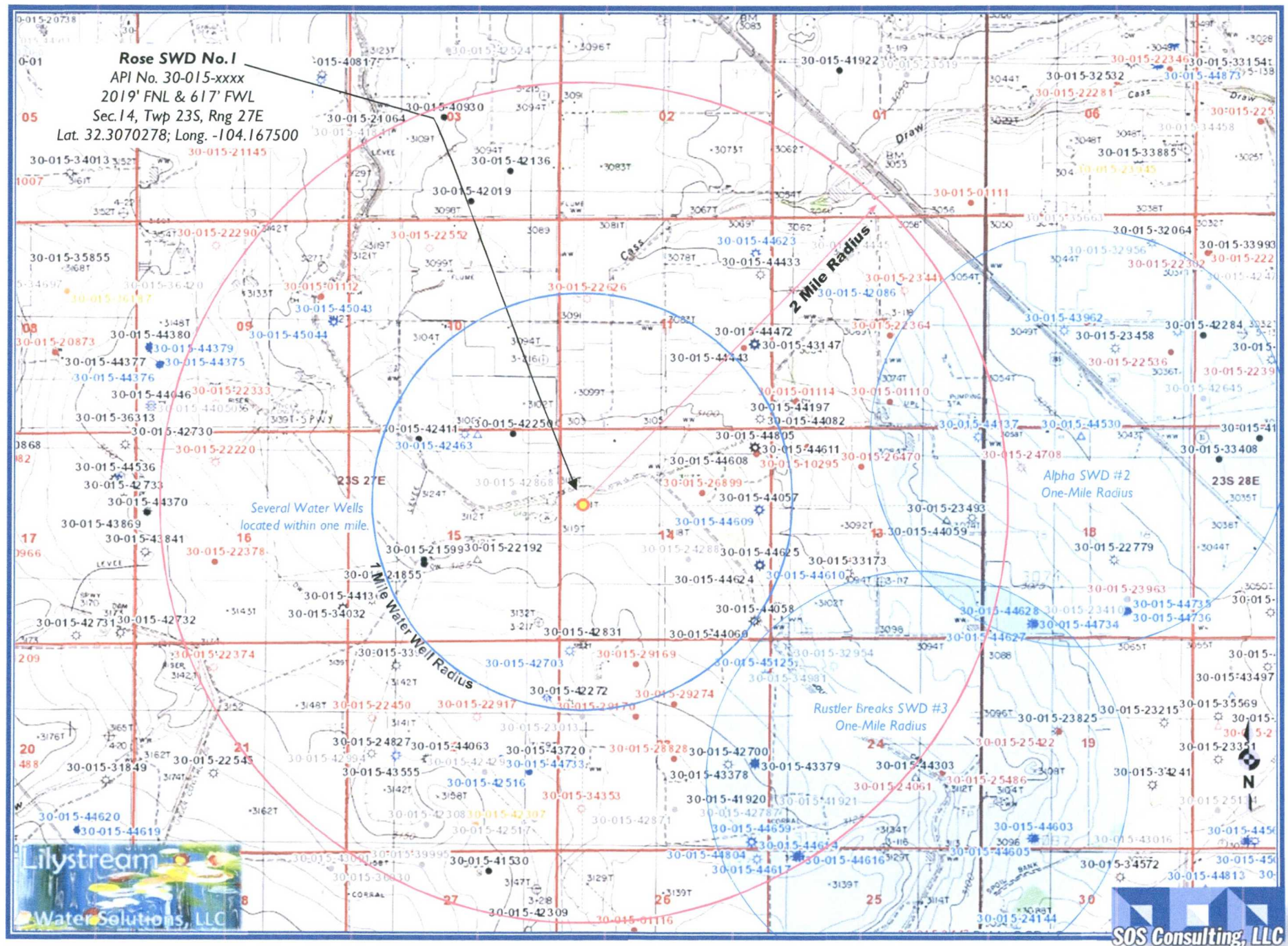
API 30-015-xxxxx
 2019' FNL & 617' FWL, SEC. 14-T24S-R27E
 EDDY COUNTY, NEW MEXICO

SWD; Devonian-Sillurian (97869)
 Spud Date: 11/15/2018
 SWD Config Dt: 12/15/2018



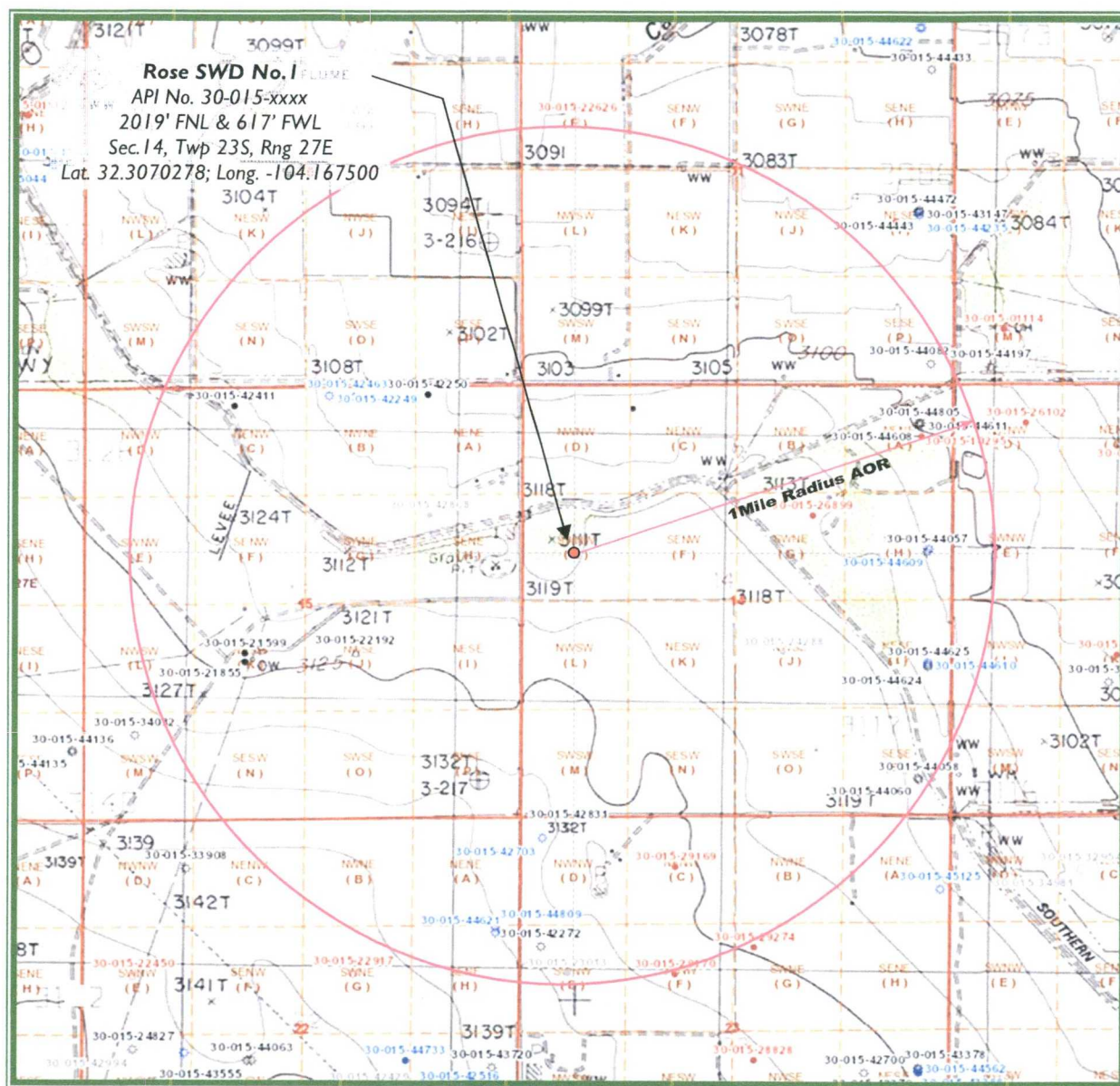
Drawn by: Ben Stone, 8/30/2018

(Attachment to NMOCD Form C-108 - Item V)



Rose SWD Well No.1 – One Mile Area of Review / Overview Map

(Attachment to NMOCD Form C-108, Application for Authority to Inject.)



4.3 miles NW of Loving, NM



Eddy County, New Mexico

C-108 - Item VI

Area of Review Well Data

**THERE ARE NO WELLS WHICH PENETRATE THE
PROPOSED DEVONIAN FORMATION IN THE
ONE-HALF MILE AREA of REVIEW**

C-108 ITEM X

LOGS and AVAILABLE TEST DATA

Some Cross-Sections of Wells in the Area are included in the Geological Information Section of this application.

A Standard Suite of Logs will be run after drilling the well and submitted to the Division.

C-108 ITEM X

Logs and Available Test Data

Cross Section w/ Offsetting Wells Hung on Devonian

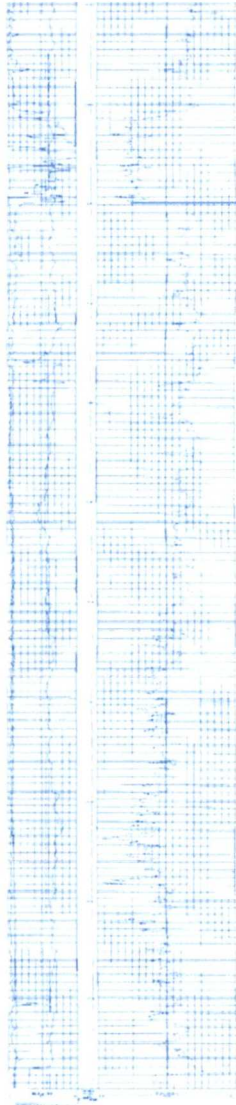
Top Gun Fed SWD - 3230' GL
30-015-31075; 30-18S-27E
Interval: 12900'-14000'

5.02 m

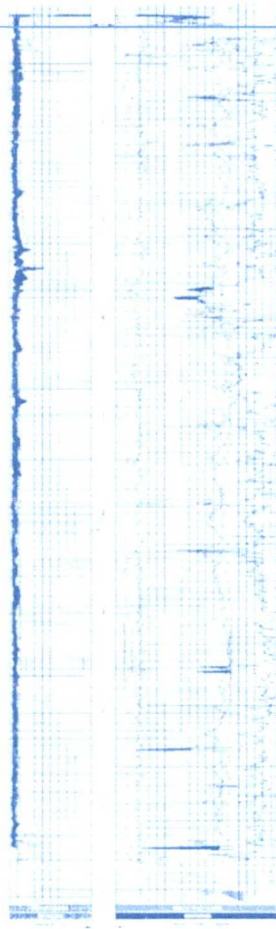
Rustler Breaks SWD - 3137' GL
30-015-44303; 24-23S-27E
Interval: 13610'-14499'

1.76 m

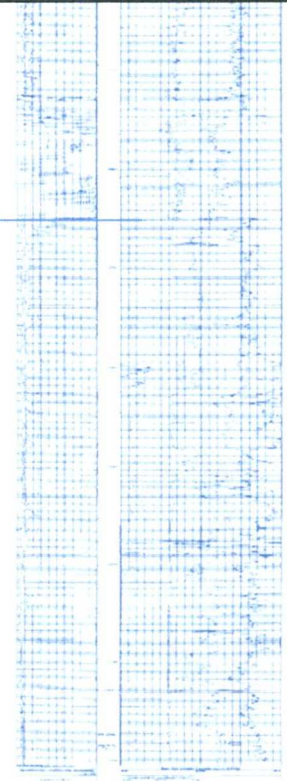
Cigarillo SWD - 3137' GL
30-015-44303; 19-18S-27E
Interval: 13650'-14130'



ROSE SWD Est. DEVONIAN INTERVAL 13150'-14500'



DEVONIAN



*Logs will be run and submitted to
OCD upon completion of the well.*

C-108 ITEM X

Logs and Available Test Data

Cross Section Offsetting Wells And Devonian Contours



C-108 ITEM VII – PROPOSED OPERATION

Rose SWD No.1

Commercial SWD Facility

Upon approval of all permits for SWD, operations would begin within 30 days. Completion of the well operations will take approximately 6-8 weeks. Facility construction including installation of the tank battery, berms, plumbing and other and associated equipment would be occurring during the same interval but at a different location from the well. In any event, it is not expected for the construction phase of the project to last more than 60 days, depending on availability of contractors and equipment.

Configure for Salt Water Disposal

Prior to commencing any work, an NOI sundry(ies) will be submitted to configure the well for SWD and will detail the completion workover including all work otherwise described above, any change to the procedure noted herein and to perform mechanical integrity pressure test per OCD test procedures. (Notify NMOCD 24 hours prior.) The casing/tubing annulus will be monitored for communication with injection fluid or loss of casing integrity.

Operational Summary

The SWD facility will not be fenced so that trucks may access for load disposal 24/7.

The well and injection equipment will be a closed system and equipped with pressure limiting devices and volume meters. The annulus, loaded with an inert, anti-corrosion packer fluid, will be monitored for pressure.

The tanks will be equipped with telemetry devices and visual alarms to alert the operator and customers of full tanks or an overflow situation.

Anticipated daily maximum volume is 30,000 bpd and an average of 17,500 bpd at a maximum surface injection pressure of 2630 psi (.2 psi/ft gradient – maximum pressure will be adjusted if the top of interval is modified after well logs are run).

Potential releases will be contained and cleaned up immediately. The operator shall repair or otherwise correct the situation within 48 hours before resuming operations. OCD will be notified within 24 hours of any release greater than 5 bbls. If required, remediation will start as soon as practicable. Operator shall comply with 19.15.29 NMAC and 19.15.30 NMAC; as necessary and appropriate and OCD form C-141 will be submitted promptly.

C-108 ITEM VII – PRODUCED WATER ANALYSES

Item VII.4 – Water Analysis of Source Zone Water

Glorieta/ Yeso
Bone Spring
Wolfcamp

Item VII.5 – Water Analysis of Disposal Zone Water

Devonian

Water Analyses follow this page.

C-108 Item VII.5 - Produced Water Data
Lilystream Water Solutions, LLC - Rose SWD No.1 Prospect

SOURCE ZONE

GLO/YESO

API No	3001524754	Lab ID	
Well Name	PLATT PA	Sample ID	1146
	009	Sample No	
Location	ULSTR 26 18 S 26 E	Lat / Long	32.71216 -104.35742
	330 S 990 W	County	Eddy
Operator (when sampled)	Yates Petroleum Corp.		
	Field ATOKA	Unit	M
Sample Date	8/4/1984	Analysis Date	
	Sample Source Wellhead	Depth (if known)	
	Water Typ Produced Water		
ph	7.5	alkalinity_as_caco3_mgL	
ph_temp_F		hardness_as_caco3_mgL	
specificgravity		hardness_mgL	1800
specificgravity_temp_F		resistivity_ohm_cm	
tds_mgL	120382	resistivity_ohm_cm_temp	
tds_mgL_180C		conductivity	
chloride_mgL	113000	conductivity_temp_F	
sodium_mgL	71415	carbonate_mgL	0
calcium_mgL	2560	bicarbonate_mgL	476
iron_mgL	0	sulfate_mgL	2001
barium_mgL		hydroxide_mgL	
magnesium_mgL	0	h2s_mgL	0
potassium_mgL		co2_mgL	
strontium_mgL		o2_mgL	
manganese_mgL		anionremarks	

Remarks

(Produced water data courtesy of NMT Octane NM WAIDS database.)



C-108 Item VII.5 - Produced Water Data
Lilystream Water Solutions, LLC - Rose SWD No.1 Prospect

SOURCE ZONE

GLO/YESO

API No	3001524619	Lab ID	
Well Name	PLATT PA 008	Sample ID	1207
		Sample No	
Location	ULSTR 26 18 S 26 E 430 S 2260 W	Lat / Long	32.71245 -104.35329
		County	Eddy
Operator (when sampled)	Yates Petroleum Corporation		
	Field ATOKA	Unit	N
Sample Date	1/19/1985	Analysis Date	
	Sample Source well head	Depth (if known)	
	Water Typ Produced Water		
ph	6	alkalinity_as_caco3_mgL	
ph_temp_F		hardness_as_caco3_mgL	
specificgravity		hardness_mgL	11500
specificgravity_temp_F		resistivity_ohm_cm	
tds_mgL	136324	resistivity_ohm_cm_temp	
tds_mgL_180C		conductivity	
chloride_mgL	121000	conductivity_temp_F	
sodium_mgL	61571	carbonate_mgL	
calcium_mgL	4160	bicarbonate_mgL	104
iron_mgL	0	sulfate_mgL	3720
barium_mgL		hydroxide_mgL	
magnesium_mgL	7340	h2s_mgL	
potassium_mgL		co2_mgL	
strontium_mgL		o2_mgL	
manganese_mgL		anionremarks	

Remarks

(Produced water data courtesy of NMT Octane NM WAIDS database.)



C-108 Item VII.5 - Produced Water Data
Lilystream Water Solutions, LLC - Rose SWD No.1 Prospect

SOURCE ZONE

BONE SPRING

API No	3001520225	Lab ID	
Well Name	BIG EDDY UNIT 012	Sample ID	5847
		Sample No	
Location	ULSTR 21 20 S 31 E 660 N 660 W	Lat / Long	32,56399 -103,87994
		County	Eddy
Operator (when sampled)	MALLON OIL COMPANY		
	Field BIG EDDY	Unit D	
Sample Date	8/27/1999	Analysis Date	8/31/1999
	Sample Source	Depth (if known)	
	Water Typ		
ph	5.2	alkalinity_as_caco3_mgL	
ph_temp_F		hardness_as_caco3_mgL	
specificgravity	1.125	hardness_mgL	
specificgravity_temp_F		resistivity_ohm_cm	
tds_mgL	181697	resistivity_ohm_cm_temp	
tds_mgL_180C		conductivity	
chloride_mgL	123750	conductivity_temp_F	
sodium_mgL	73895.6	carbonate_mgL	
calcium_mgL	5625	bicarbonate_mgL	13,725
iron_mgL	337.5	sulfate_mgL	787.5
barium_mgL		hydroxide_mgL	
magnesium_mgL		h2s_mgL	0
potassium_mgL		co2_mgL	
strontium_mgL		o2_mgL	
manganese_mgL		anionremarks	

Remarks

(Produced water data courtesy of NMT Octane NM WAIDS database.)



C-108 Item VII.5 - Produced Water Data
Lilystream Water Solutions, LLC - Rose SWD No.1 Prospect
SOURCE ZONE

WOLFCAMP

API No	3001520138		Lab ID	
			Sample ID	5688
Well Name	MAHUN STATE	001	Sample No	
Location	ULSTR 16 22 S 22 E	Lat / Long	32.39340	-104.70979
	1800 N 1980 W	County	Eddy	
Operator (when sampled)				
	Field	ROCKY ARROYO	Unit	F
Sample Date	5/17/1968	Analysis Date		
	Sample Sourc	DST	Depth (if known)	
	Water Typ			
ph	8.6	alkalinity_as_caco3_mgL		
ph_temp_F		hardness_as_caco3_mgL		
specificgravity		hardness_mgL		
specificgravity_temp_F		resistivity_ohm_cm		
tds_mgL	35495	resistivity_ohm_cm_temp_		
tds_mgL_180C		conductivity		
chloride_mgL	19000	conductivity_temp_F		
sodium_mgL		carbonate_mgL		
calcium_mgL		bicarbonate_mgL	830	
iron_mgL		sulfate_mgL	2500	
barium_mgL		hydroxide_mgL		
magnesium_mgL		h2s_mgL		
potassium_mgL		co2_mgL		
strontium_mgL		o2_mgL		
manganese_mgL		anionremarks		

Remarks

(Produced water data courtesy of NMT Octane NM WAIDS database.)



C-108 Item VII.5 - Produced Water Data
Lilystream Water Solutions, LLC - Rose SWD No.1 Prospect

DISPOSAL ZONE

DEVONIAN

API No.	3001510280	Lab ID	
Well Name	JURNEGAN POINT 001	Sample ID	6170
		Sample No	
Location	ULSTR 05 24 S 25 E	Lat / Long	32.24037 -104.42375
	660 S 660 W	County	Eddy
Operator (when sampled)			
	Field WILDCAT	Unit	M
Sample Date	12/14/1964	Analysis Date	
Sample Source	DST	Depth (if known)	
Water Type			
ph	7	alkalinity_as_caco3_mgL	
ph_temp_F		hardness_as_caco3_mgL	
specificgravity		hardness_mgL	
specificgravity_temp_F		resistivity_ohm_cm	
tds_mgL	229706	resistivity_ohm_cm_temp_	
tds_mgL_180C		conductivity	
chloride_mgL	136964	conductivity_temp_F	
sodium_mgL		carbonate_mgL	
calcium_mgL		bicarbonate_mgL	198
iron_mgL		sulfate_mgL	2511
barium_mgL		hydroxide_mgL	
magnesium_mgL		h2s_mgL	
potassium_mgL		co2_mgL	
strontium_mgL		o2_mgL	
manganese_mgL		anionremarks	

Remarks

(Produced water data courtesy of NMT Octane NM WAIDS database.)



C-108 – Item VIII

Geologic Information

The Devonian and Silurian consist of carbonates including light colored dolomite and chert intervals interspersed with some tight limestone intervals. Several thick sections of porous dolomite capable of taking water are believed present within the subject formations in the area. Depth control data was inferred from deep wells to the south and east. If the base of Devonian and top of Silurian rocks come in as expected the well will only be drilled deep enough for adequate logging rathole.

At a proposed depth of 14,500' BGL (Below Ground Level) the well will TD approximately 1,350' below the estimated top of the Devonian. Mud logging through the interval will ensure the target interval remains in Devonian and Silurian. Once Devonian is determined, the casing shoe depth will be set at an approximate maximum upper depth of 13,150' BGL. Injection will occur through the resulting openhole interval. Should mud or other logs indicate depth adjustment is required to exploit the desired formation as described; sundries with appropriate data will be filed with the OCD.

The Devonian is overlain by the Woodford Shale and Mississippian Lime and underlain by the Middle and Lower Ordovician; Simpson, McKee and Ellenburger.

Fresh water in the area is generally available from valley and basin fill of the Carlsbad-Pecos segment of the lower Pecos Valley complex of Quaternary alluvial sand and gravel deposits. State Engineer's records show water wells in the area with a depth to groundwater of 25 to 150 feet with an average depth to groundwater of 115 feet.

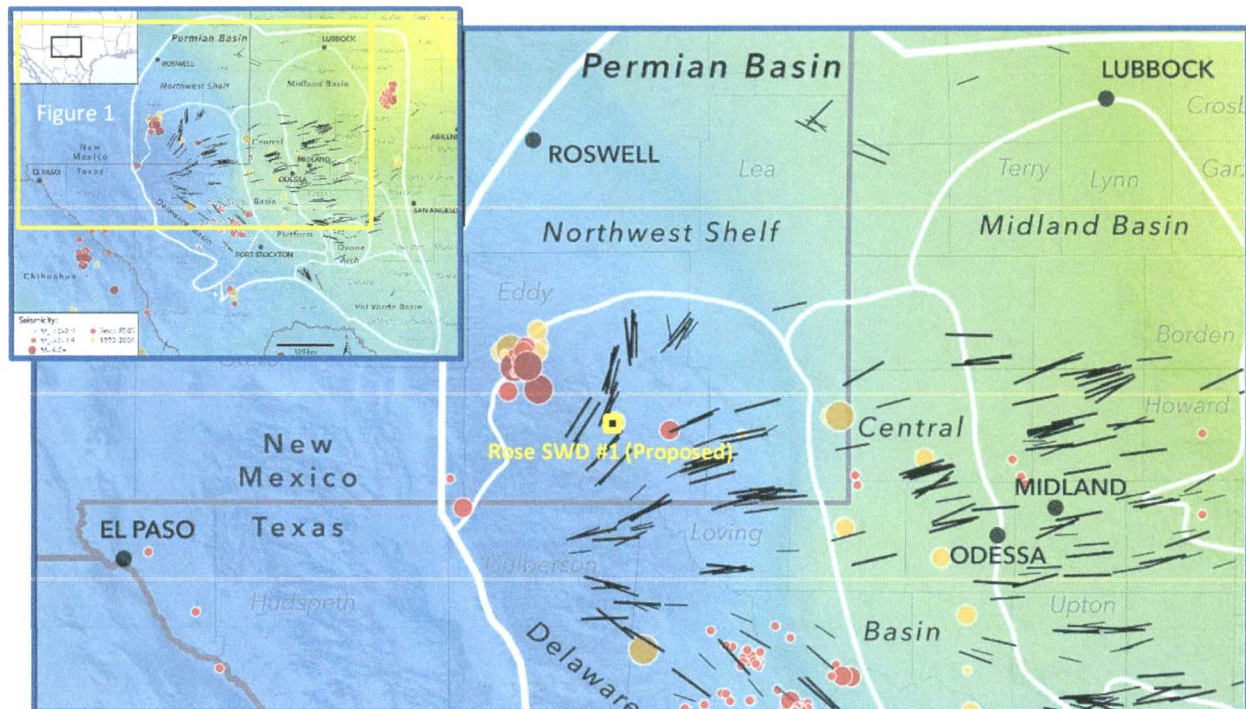
There are several water wells located within one mile of the proposed SWD; 2 have been sampled and analyses will be forwarded upon receipt.

C-108 - Item VIII

Geological Data

EARTHQUAKE / SEISMIC INFORMATION SUPPLEMENT

Map Source: State of stress in the Permian Basin, Texas and New Mexico: Implications for induced seismicity (Figure 1); Jens-Erik Lund Sneek / Mark Zoback, February 2018



PROJECT VICINITY

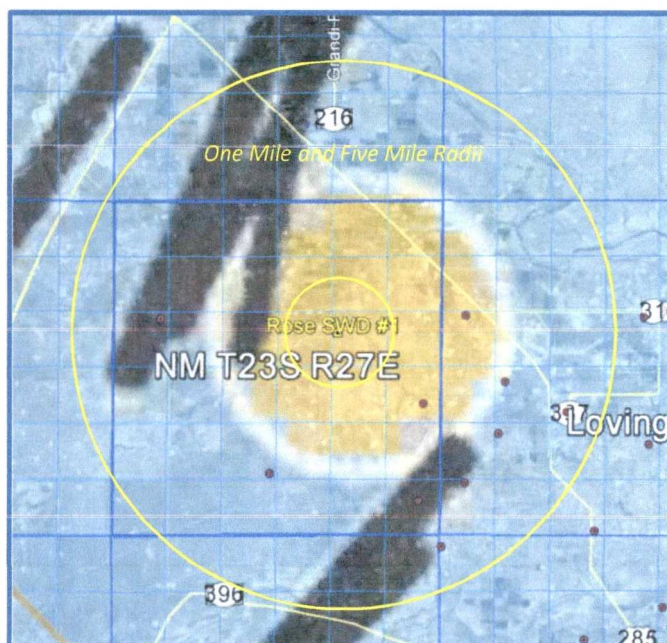


Figure 1. State of stress in the Permian Basin, Texas and New Mexico. Black lines are the measured orientations of the maximum horizontal stress (SHmax), with line length scaled by data quality. The colored background is an interpolation of measured relative principal stress magnitudes (faulting regime) expressed using the A_0 parameter (see text for details) of Simpson (1997). Blue lines are fault traces known to have experienced normal-sense offset within the past 1.6 Ma, from the USGS Quaternary Faults and Folds Database (Crone and Wheeler, 2000). The boundary between the Shawnee and Mazatzal basement domains is from Lund et al. (2015), and the Precambrian Grenville Front is from Thomas (2006). The Permian Basin boundary is from the U.S. Energy Information Administration, and the subbasin boundaries are from the Texas Bureau of Economic Geology Permian Basin Geological Synthesis Project. Earthquakes are from the USGS National Earthquake Information Center, the TexNet Seismic Monitoring Program, and Gan and Frohlich (2013). Focal mechanisms are from Saint Louis University (Herrmann et al., 2011).

C-108 - Item VIII

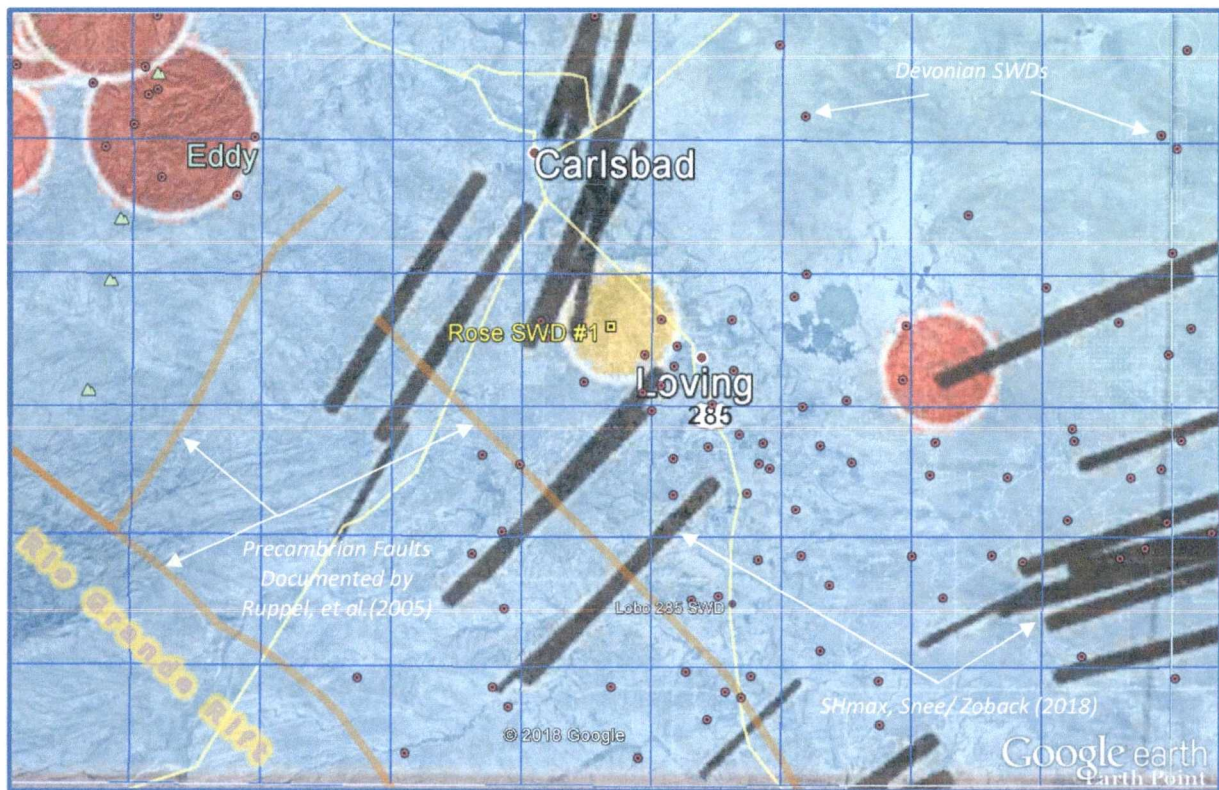
Geological Data

EARTHQUAKE / SEISMIC INFORMATION SUPPLEMENT (cont.)

In the following map, a layer with USGS historical earthquake data is overlaid and, a layer showing lines to represent Precambrian faults as documented by Ruppel, et al. (2005). Finally, a layer showing all currently permitted SWDs completed or proposed to be completed in the Devonian (Silurian) formation.

The USGS earthquakes shown are well know to the area. The cluster to the NW represents the seismic events in and around the Dagger Draw area (43.4 miles) in 2002. The 2012 quake located approximately 13 miles due east of Loving is also shown (14.3 miles). This was perhaps the most significant of the area in recent years but was determined to not be related to oil and gas activity.

The Precambrian faults and existing Devonian SWDs are discussed in more detail on the next page.



REGIONAL VIEW - DEVONIAN SWD LOCATIONS, PRECAMBRIAN FAULTS, S_{Hmax} , USGS MAGNITUDE

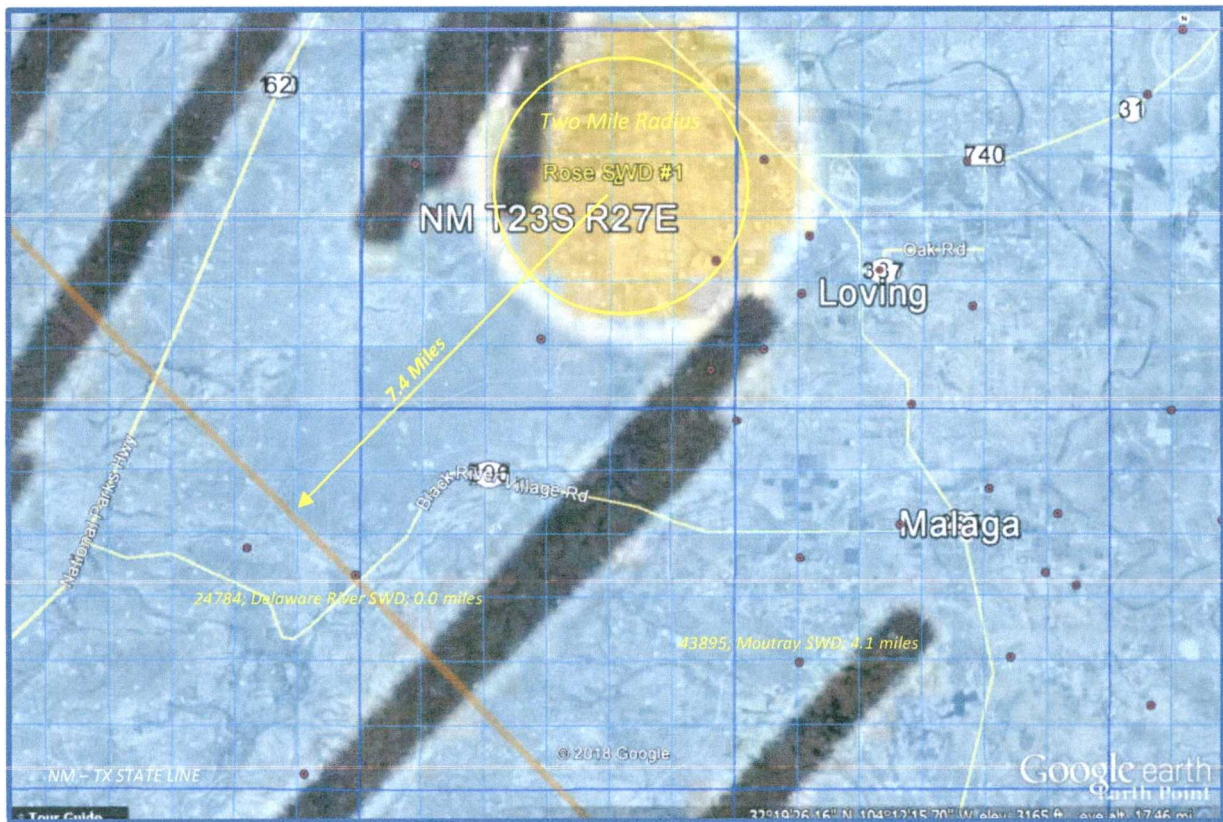
C-108 - Item VIII

Geological Data

EARTHQUAKE / SEISMIC INFORMATION SUPPLEMENT (cont.)

The primary Precambrian fault in the area as documented by Ruppel, et al. (2005) is represented on this map by the tan colored line; the fault is running southeast to northwest. The proposed Rose SWD is located 7.4 miles from the fault. Other Devonian SWDs in the area are also shown by small purple dots completed or proposed to be completed in the Devonian (Silurian) formation.

The previously referenced study by Snee and Zoback evaluated the strike-slip probability using probabilistic FSP (Fault Slip Potential) analysis of known faults in the Permian Basin. The study predicts that the Precambrian fault shown here has less than a 10% probability of being critically stressed to the point of creating an induced seismicity event. The main reason for the low probability is due to the relationship of the strike of the fault to the regional S_{Hmax} orientation in this area.

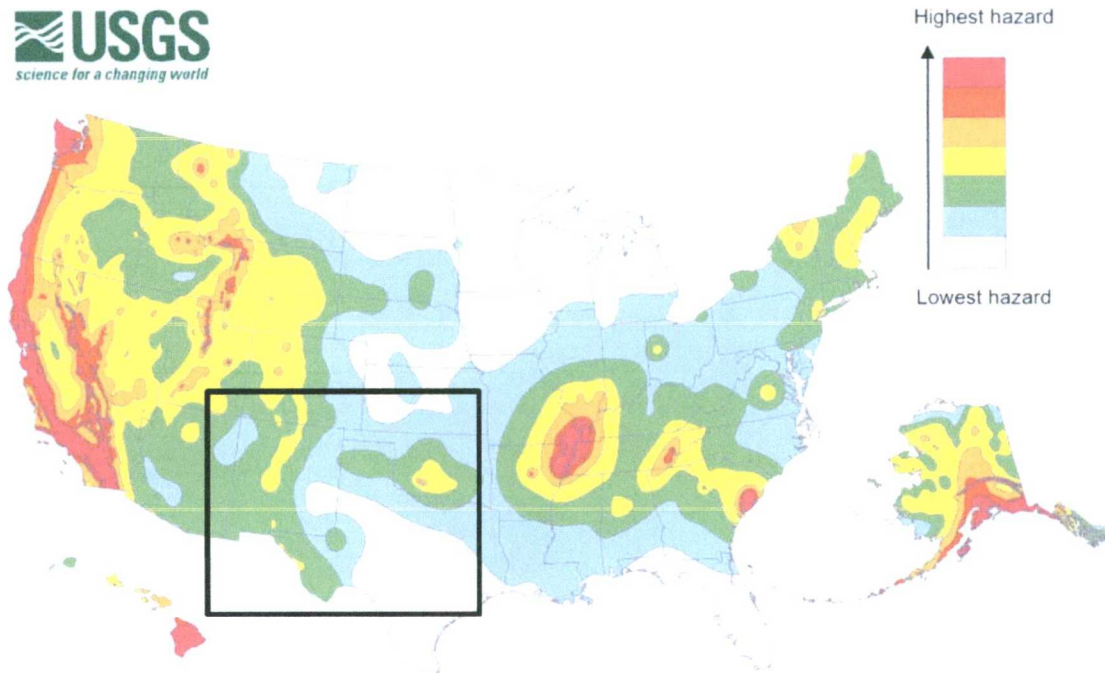


VICINITY - PERMITTED DEVONIAN SWDs, PRECAMBRIAN FAULT, S_{Hmax}

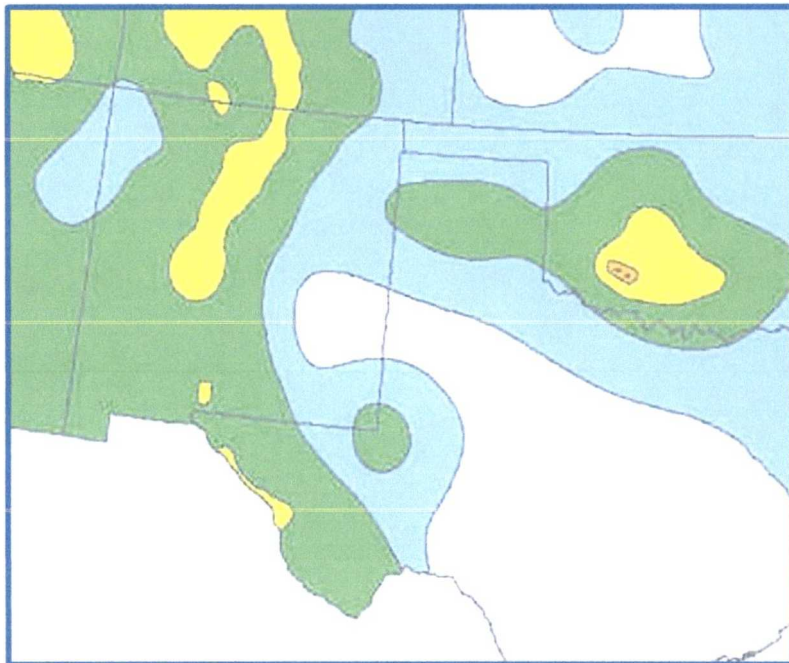
C-108 - Item VIII

Geological Data

EARTHQUAKE / SEISMIC INFORMATION SUPPLEMENT (cont.)



2014 map data: The USGS notes in its report that fracking may be to blame for a sizeable uptick in earthquakes in places like Oklahoma. "Some states have experienced increased seismicity in the past few years that may be associated with human activities such as the disposal of wastewater in deep wells," the report says. USGS hopes to use that data in future maps but it isn't included in this one. "Injection-induced earthquakes are challenging to incorporate into hazard models because they may not behave like natural earthquakes and their rates change based on man-made activities," the report says.

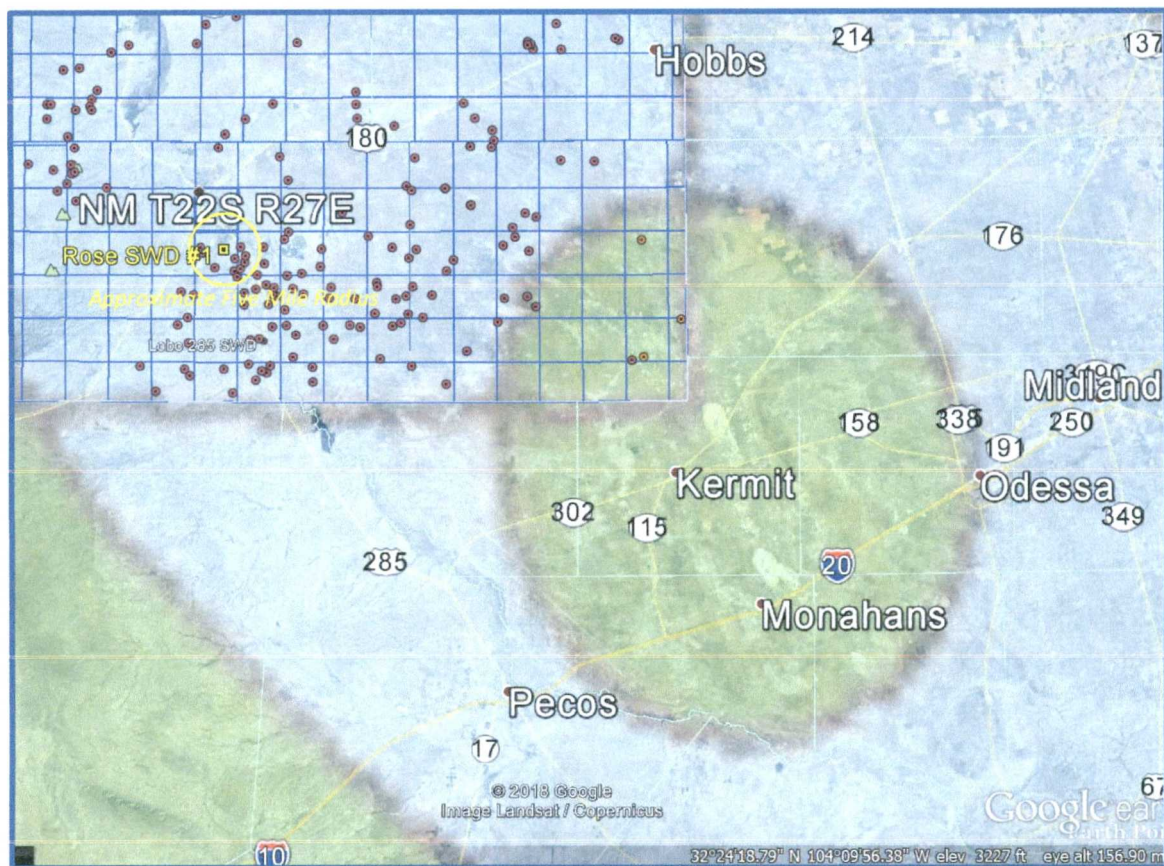


C-108 - Item VIII

Geological Data

EARTHQUAKE / SEISMIC INFORMATION SUPPLEMENT (cont.)

USGS 2014 MAP DATA OVERLAY IN GOOGLE EARTH



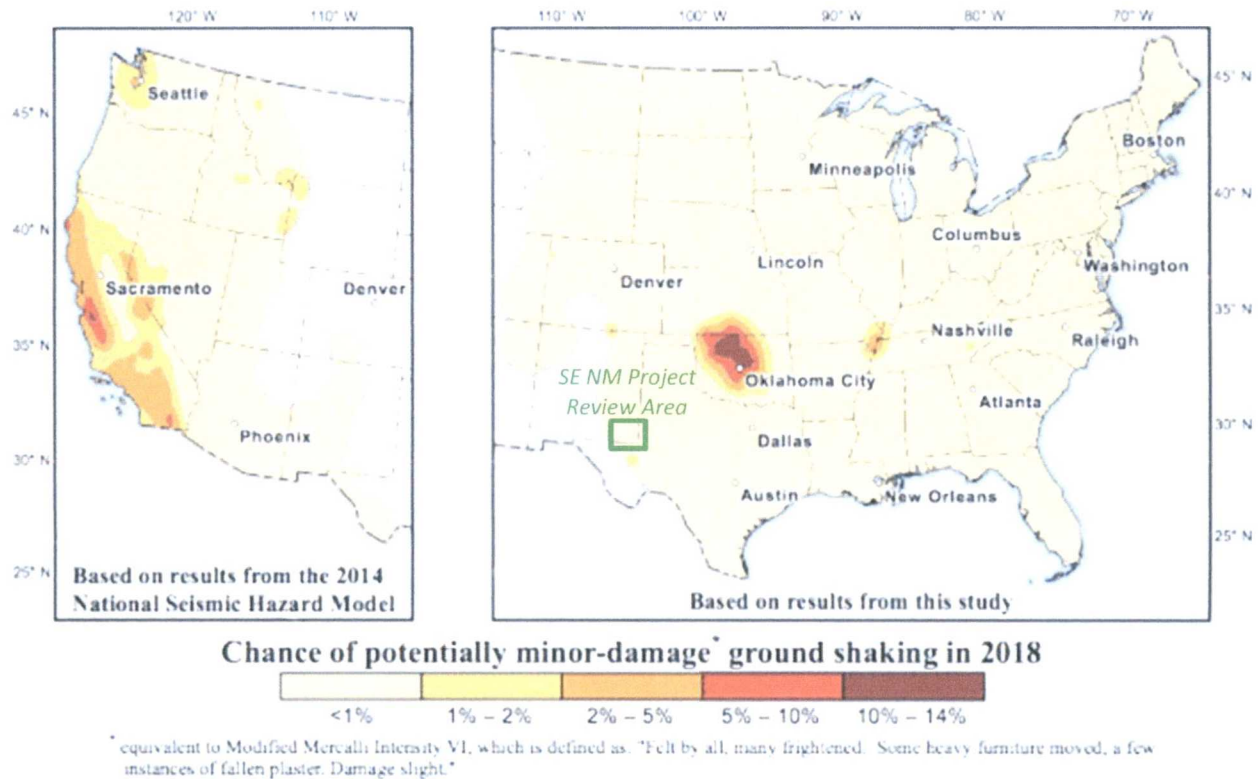
An updated USGS map for 2018 is on the next page. While methodology remained essentially the same according to USGS, the interpreted results and color-coding did have some modification. However, the subject area in southeast New Mexico on both maps remains very low and on the 2018 map, the area is assigned a value of <1% of “potentially minor-damage ground shaking”.

C-108 - Item VIII

Geological Data

EARTHQUAKE / SEISMIC INFORMATION SUPPLEMENT (cont.)

USGS 2018 ONE-YEAR MODEL



Map showing chance of damage from an earthquake in the Central and Eastern United States during 2018. Percent chances are represented as follows: pale yellow, less than 1 percent; dark yellow, 1 to 2 percent; orange, 2 to 5 percent; red, 5 to 10 percent; dark red, 10 to 12 percent. See Hazard from the western United States from the [2014 National Seismic Hazard Maps \(Petersen et al., 2014\)](#) for comparison.

The USGS has produced the 2018 one-year probabilistic seismic hazard forecast for the central and eastern United States from induced and natural earthquakes. For consistency, the updated 2018 forecast is developed using the same probabilistic seismicity-based methodology as applied in the two previous forecasts.

Based on publicly available data for the subject area, it is reasonable to believe the risk of induced seismic activity due to disposal injection into this well is extremely low.

C-108 ITEM XI – WATER WELLS IN AOR

Depth to Ground Water



New Mexico Office of the State Engineer Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,
O=orphaned,

C=the file is (quarters are 1=NW 2=NE 3=SW 4=SE)

closed) (quarters are smallest to largest) (NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
C 03766 POD1	C	ED		3	3	1	14	23S	27E	578373	3574609	260	25	235
C 03767 POD1	C	ED		4	3	1	14	23S	27E	578503	3574702	235	140	95
C 03997 POD1	CUB	ED		2	3	1	14	23S	27E	578534	3574872	230	125	105
C 04045 POD1	CUB	ED		3	3	2	14	23S	27E	579013	3574571	240	150	90
C 04126 POD1	CUB	ED		2	4	1	14	23S	27E	578870	3574935	282	135	147

Average Depth to Water: **115 feet**

Minimum Depth: **25 feet**

Maximum Depth: **150 feet**

Record Count: 5

PLSS Search:

Section(s): 14

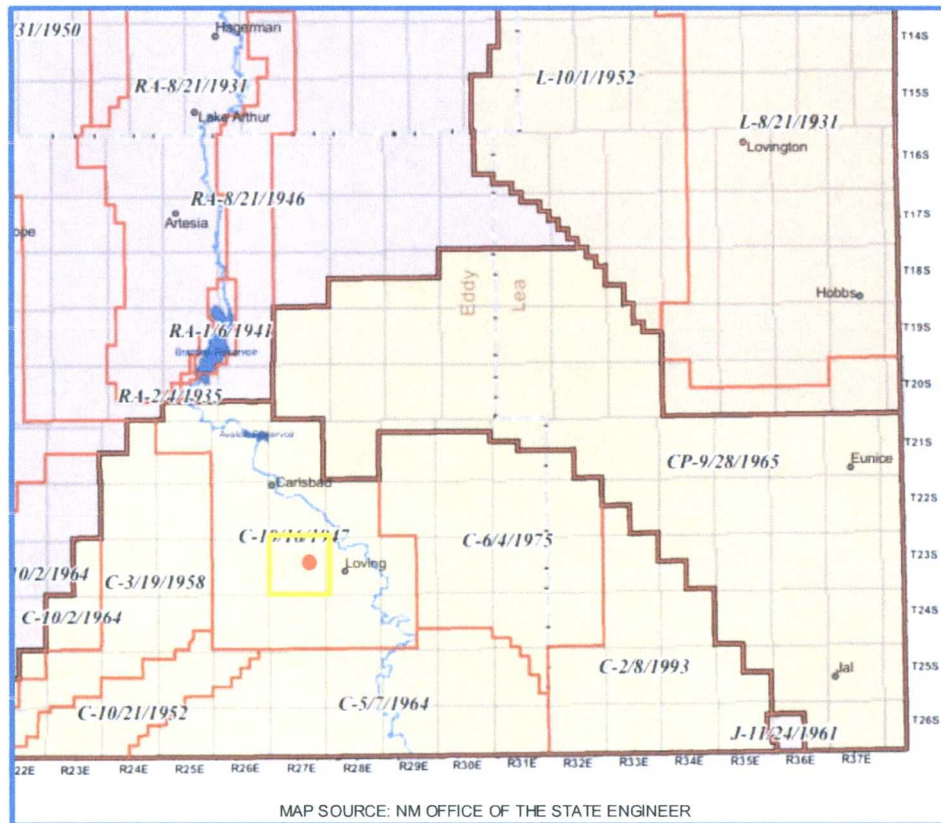
Township: 23S

Range: 27E

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.

C-108 - Item XI

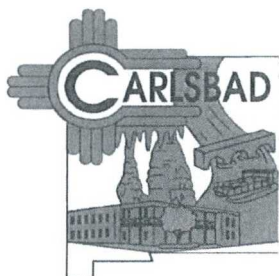
Groundwater Basins - Water Column / Depth to Groundwater



The subject well is located within the Carlsbad Basin.

Fresh water in the area is generally available from valley and basin fill of the Carlsbad-Pecos segment of the lower Pecos Valley complex of Quaternary alluvial sand and gravel deposits. State Engineer's records show water wells in 25S-28E with an average depth to water at 115 feet.

There are several water wells located within one mile of the proposed SWD; two have been sampled and analyses will be forwarded upon receipt.



**CITY of CARLSBAD
WATER ANALYSIS REPORT
CARLSBAD CITY LABORATORY
Wastewater Treatment Plant
Carlsbad, New Mexico 88220**

CUSTOMER : Water Spur
ADDRESS: PO Drawer 1322
CITY/STATE: Carlsbad, NM 88221-1322

ANALYSIS No. _____
SAMPLE RECEIVED 10/12/18

SAMPLE LOCATION: C-3766
SAMPLE SOURCE: Well

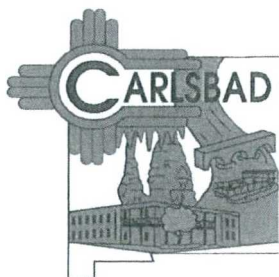
Physical Characteristics as Received

COLOR _____: ODOR _____: TURBIDITY _____:

CHEMICAL CHARACTERISTICS	Parts per	PPM as	GRAINS per
	Million	CaCO ₃	GALLON
Alkalinity-M Alkalinity as Calcium Carbonate		134	
Alkalinity-P		0	
Total Hardness		2275	133.04
Calcium	607	1518	88.77
Magnesium	189.25	757	44.27
Chlorides	993		
Fluorides	1.06		
pH (as received)	6.95		
Specific Conductance (u-mhos/cm)	5252		
TDS (as NaCl)	2574		

Note:

ANALYST: Jose C. Ramirez



**CITY of CARLSBAD
WATER ANALYSIS REPORT
CARLSBAD CITY LABORATORY
Wastewater Treatment Plant
Carlsbad, New Mexico 88220**

CUSTOMER : Water Spur
ADDRESS: PO Drawer 1322
CITY/STATE: Carlsbad, NM 88221-1322

ANALYSIS No. _____
SAMPLE RECEIVED 10/12/18

SAMPLE LOCATION: C-3767
SAMPLE SOURCE: Well

Physical Characteristics as Received

COLOR _____: ODOR _____: TURBIDITY _____:

CHEMICAL CHARACTERISTICS	Parts per Million	PPM as CaCO_3	GRAINS per GALLON
Alkalinity-M Alkalinity as Calcium Carbonate		146	
Alkalinity-P		0	
Total Hardness		2151	125.79
Calcium	592	1480	86.55
Magnesium	167.75	671	39.24
Chlorides	864		
Fluorides	1.23		
pH (as received)	6.96		
Specific Conductance (u-mhos/cm)	4802		
TDS (as NaCl)	2353		

Note:

ANALYST: Jose C. Ramirez

Well Name	API # 30-045-	Surface Location			Communication Agreement No. (If Established)	Pool	Production ①			Spacing Unit	Dates for SC, OLM & S ①			
		% 4	Sec-Twn-Rng	Lease No.			MCFD	BWPD	Cumulative		Application	BLM	APPROVAL	
WELLS TO BE ADDED TO CDP** (2 WELLS):														
Kirby Federal #1	22143	NENE	5-26N-13W	NM-308	Federal	WAW Fruitland Sand PC	23.7	0.02	187,294	NW/4 160.14				
Ross Federal #1	22484	NENE	4-26N-13W	NM-11775	Federal	WAW Fruitland Sand PC	65.0	22.8	494,125	NE/4 159.81				
WELLS APPROVED FOR KINGFISH CDP (3 wells):														
Kingfish #1	24235	SWNE	3-26N-13W	NM-37912	Federal	WAW Fruitland Sand PC	4.7	0.1	171,705	NE/4 159.81	1/17/2007	3/23/2007	2/20/2007	N/A
Kingfish Com #90	29832	SENE	3-26N-13W	NM-37912	Federal	Basin Fruitland Coal	27.1	3.2	474,584	NW/2 319.56	7/21/2006	9/12/2006	7/25/2006	N/A
Kingfish Com #90S	32987	SENW	3-26N-13W	NM-1336	Federal	Basin Fruitland Coal	3.9	4.4	30,708	N/2 319.56	7/21/2006	9/12/2006	7/25/2006	N/A

1 - Status of well 10/31/18

Loc = proposed general location

LOC A = proposed location - staked

LOC B = proposed location - APD submitted

NC = not connected to gathering system

P = producing, includes wells temporarily shut in but able to produce

2 - Previous 6 months production, plus cumulative production

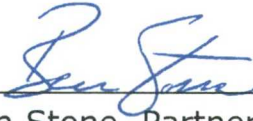
3 - The gathering systems will include 5 wells. Gas is to be sold at the Kingfish CDP.

(CDP) located in NWSW, Section 3, T-26N, R-13W on Enterprise Field Services Meter No. 98208

** - Previously approved under Ross Gathering System, application dated 9/1/17; NMOCD approval 10/6/17; BLM approval 1/24/18

C-108 ITEM XII – GEOLOGIC AFFIRMATION

We have examined available geologic and engineering data and have found no evidence of open faults or other hydrologic connection between the disposal interval and any underground sources of drinking water.



Ben Stone, Partner
SOS Consulting, LLC

Project: Lilystream Water Solutions, LLC
Rose SWD No.1
Reviewed 9/06/2018

C-108 ITEM XIII – PROOF OF NOTIFICATION

IDENTIFICATION AND NOTIFICATION OF INTERESTED PARTIES

Exhibits for Section

Affected Parties Map

List of Interested Parties

Notification Letter to Interested Parties

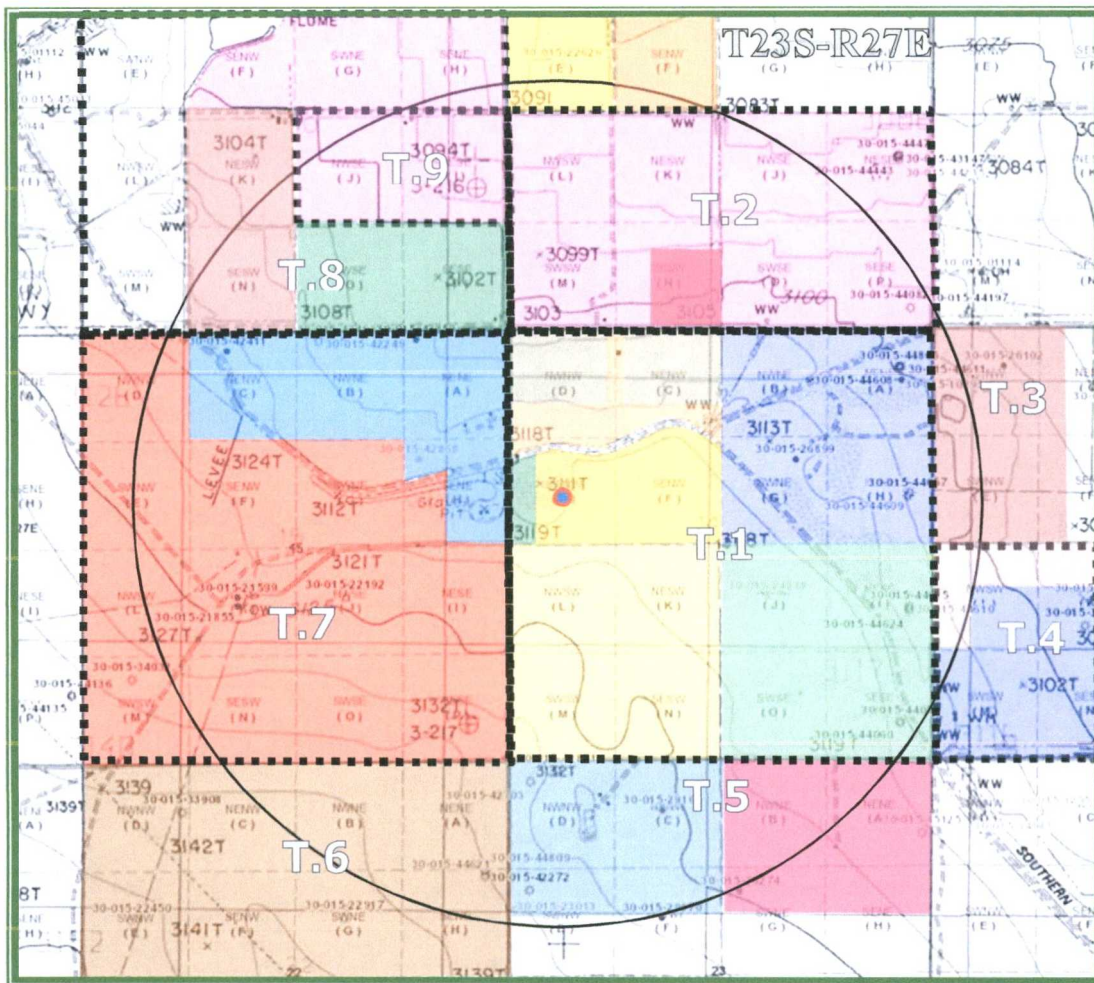
Proof of Certified Mailing

Published Legal Notice

Rose SWD Well No.1 – Affected Parties Plat

~ ONE MILE EXTENDED AREA of REVIEW ~

(Attachment to NMOCD Form C-108, Application for Authority to Inject.)



LEGEND

Operators

- | | |
|--------------------------------------|---|
| T.1 – Matador Production Company | T.6 – Caza Operating, LLC
State Lease V0-6957-0003 |
| T.2 – Matador Production Company | T.7 – RKI E&P, Ray Westall |
| T.3 – Mewbourne, Matador, Key Energy | T.8 – RKI, MRC Permian, others
Lessees |
| T.4 – Matador Production Company | T.9 – Patricia Hopkins
Mineral Owner |
| T.5 – Matador Production Company | |

Research performed by Adventure Resources

C-108 ITEM XIII – PROOF OF NOTIFICATION AFFECTED PARTIES LIST

SOS Consulting is providing electronic delivery of C-108 applications.

**ALL APPLICABLE AFFECTED PARTIES ARE PROVIDED A LINK IN THE NOTICE LETTER
TO A SECURE SOS/ CITRIX SHAREFILE® SITE TO VIEW AND DOWNLOAD
A FULL COPY OF THE SUBJECT C-108 APPLICATION IN PDF FORMAT.**

SURFACE & MINERAL OWNER

- 1 J.D. ROSE
P.O. Box 1322
Carlsbad, NM 88221
Certified: 7017 2400 0000 5297 5805

OFFSET OPERATORS and MINERALS LESSEES (All Notified via USPS Certified Mail)

Private Leases (T.1, T.2, T.4 and T.7 on Affected Parties Map)

Operator

- 2 MATADOR PRODUCTION COMPANY
One Lincoln Center
5400 LBJ Freeway, Ste.1500
Dallas, TX 75240
Certified: 7017 2400 0000 5297 5812

Private Lease (T.3 on Affected Parties Map)

Operators

- 3 MEWBOURNE OIL COMPANY
Attn: Tim Harrington
P.O. Box 7698
Tyler, TX 75711
Certified: 7017 2400 0000 5297 5829

MATADOR PRODUCTION COMPANY
One Lincoln Center
5400 LBJ Freeway, Ste.1500
Dallas, TX 75240

- 4 KEY ENERGY SERVICES, LLC
1301 McKinney St., Ste.1800
Houston, TX 77010
Certified: 7017 2400 0000 5297 5836

State Lease V0-6957-0003 (T.6 on Affected Parties Map)

Lessee & Operator

- 5 CAZA OPERATING, LLC
200 N. Loraine Street, Ste.1550
Midland, TX 79701
Certified: 7017 2400 0000 5297 5843

C-108 ITEM XIII – PROOF OF NOTIFICATION
AFFECTED PARTIES LIST (cont.)

Private Lease (T.7 on Affected Parties Map)

Operators

- 6 RKI EXPLORATION & PRODUCTION CO.
3500 One Williams Center
Tulsa, OK 74172
Certified: 7017 2400 0000 5297 5850
- 7 RAY WESTALL OPERATING, INC.
P.O. Box 4
Loco Hills, NM 88255
Certified: 7017 2400 0000 5297 5867

Private Lease (T.8 on Affected Parties Map)

Lessees

- RKI EXPLORATION & PRODUCTION CO.
3500 One Williams Center
Tulsa, OK 74172
- 8 MRC PERMIAN COMPANY
5400 LBJ Freeway, Suite 1500
Dallas, Texas 75240
Certified: 7017 2400 0000 5297 6116
- 9 GABLER ENERGY INVESTMENTS, LLC
1223 N. 15th Street
Wolfforth, Texas 79382
Certified: 7017 2400 0000 5297 6123

Private Leases (T.9 Affected Parties Map)

Mineral Owner

- 10 Patricia Hopkins
2331 Westside Blvd., Ste.127
Rio Rancho, NM 87124
Certified: 7017 2400 0000 5297 6130

OFFSET MINERALS OWNERS (Notified via USPS Certified Mail)

- 11 STATE OF NEW MEXICO
Oil, Gas and Minerals Division
310 Old Santa Fe Trail
Santa Fe, NM 87504
Certified: 7017 2400 0000 5297 6147

REGULATORY (FedEx'ed original and copy)

NEW MEXICO OIL CONSERVATION DIVISION
1220 S. St. Francis Dr.
Santa Fe, NM 87505

NMOCD District II Office
811 S. First St.
Artesia, NM 88210



September 10, 2018

NOTIFICATION TO INTERESTED PARTIES
via U.S. Certified Mail – Return Receipt Requested

To Whom It May Concern:

Lilystream Water Solutions, LLC, Lovington, New Mexico, has made application to the New Mexico Oil Conservation Division to drill and complete for salt water disposal the Rose SWD Well No.1. The proposed commercial operation will be for produced water disposal from area operators. As indicated in the notice below, the well is located in Section 14, Township 23 South, Range 27 East in Eddy County, New Mexico.

The published notice states that the interval will be from 13,150 feet to 14,500 feet into the Devonian-Silurian formation.

Following is the notice published in the Artesia Daily Press, Artesia, New Mexico on or about September 11, 2018.

LEGAL NOTICE

Lilystream Water Solutions, LLC, 1308 W. Ave. N, Lovington, NM 88260, is filing Form C-108 (Application for Authority to Inject) with the New Mexico Oil Conservation Division seeking administrative approval for a salt water disposal well. The proposed well, the Rose SWD No.1, is located 2019' FNL and 617' FWL, Section 14, Township 23 South, Range 27 East, Eddy County, New Mexico; approximately 4.3 miles West/ Northwest of Loving, NM.

Produced water from area production will be commercially disposed into the Devonian and Silurian formations at a maximum interval depth of 13,150' to 14,500' at a maximum surface pressure of 2630 psi and a rate limited only by such pressure.

Interested parties wishing to object to the proposed application must file with the New Mexico Oil Conservation Division, 1220 St. Francis Dr., Santa Fe, NM 87505, (505)476-3460 within 15 days of the date of this notice. Additional information may be obtained from the applicant's agent, SOS Consulting, LLC, (903)488-9850 or, email info@sosconsulting.us.

You have been identified as a party who may be interested as an offset lessee or operator.

You are entitled to a full copy of the application. A full copy in PDF format is posted on the SOS Consulting **ShareFile** site and is available for immediate download.

Use the URL link: <https://sosconsulting.sharefile.com/d-s92b1e07cfd14ec19>

(Please Note: The ShareFile service is powered by Citrix Systems and is completely secure.*)

The link to this file will be active for 30 days from the date of this letter. Your company can access and download the file a maximum of five (5) times. (One copy may be downloaded and shared as needed amongst your company.)

Alternatively, you may call SOS Consulting, LLC at 903-488-9850, or email info@sosconsulting.us, and the same PDF file copy will be expedited to you via email.

Please use a subject like, **"Rose SWD Sept2018 PDF Copy Request"**.

Thank you for your attention in this matter.

Best regards,



Ben Stone, SOS Consulting, LLC
Agent for Lilystream Water Solutions, LLC

Cc: Application File

SOS Consulting is committed to providing superior quality work using technology to assist clients and interested parties in obtaining the documentation required. SOS will continue to utilize methods for reducing papers copies and are less energy and resource intensive.

We hope you'll partner with us and appreciate these efforts.

* You will be asked for your name and email. This will not be used for anything except to track the file downloads. You will not be solicited by SOS or anyone else. Data is stored on Citrix Systems servers only.

C-108 - Item XIV

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7017 2400 0000 5297 5829
7017 2400 0000 5297 5843

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City, State, Zi	200 N. Lorraine Street, Ste. 1550
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Newspaper of General Circulation

Legal Notice

Lilystream Water Solutions, LLC, 1308 W. Ave. N, Lovington, NM 88260, is filing Form C-108 (Application for Authority to Inject) with the New Mexico Oil Conservation Division seeking administrative approval for a salt water disposal well. The proposed well, the Rose SWD No.1, is located 2019' FNL and 617' FWL, Section 14, Township 23 South, Range 27 East, Eddy County, New Mexico; approximately 4.3 miles West/Northwest of Loving, NM.

Produced water from area production will be commercially disposed into the Devonian and Silurian formations at a maximum interval depth of 13,150' to 14,500' at a maximum surface pressure of 2630 psi and a rate limited only by such pressure.

Interested parties wishing to object to the proposed application must file with the New Mexico Oil Conservation Division, 1220 St. Francis Dr., Santa Fe, NM 87505, (505)476-3460 within 15 days of the date of this notice. Additional information may be obtained from the applicant's agent, SOS Consulting, LLC, (903)488-9850 or, email info@sosconsulting.us.

Published in the Artesia Daily Press, Artesia, N.M., Sept. 11, 2018 Legal No. 24824.

The above is the "Proof Copy" sent from the Artesia Daily Press. The affidavit of publication will be forwarded as soon as it is received.

McMillan, Michael, EMNRD

From: McMillan, Michael, EMNRD
Sent: Wednesday, September 19, 2018 8:48 AM
To: Ben Stone
Cc: Goetze, Phillip, EMNRD
Subject: LilyStream Water Solution, LLC Rose SWD Well No.1

Ben:
The administrative application for the LilyStream Water Solution, LLC Rose SWD Well No.1 has been suspended on September 19, 2018 because there is no affidavit of publication.

When the OCD receives the affidavit of publication, the 15-day clock will start.

Thanks

Mike

Michael McMillan
1220 South St. Francis
Santa Fe, New Mexico
505-476-3448
Michael.mcmillan@state.nm.us

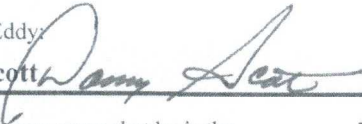
Affidavit of Publication

No. 24824

State of New Mexico

County of Eddy

Danny Scott



being duly sworn says that he is the **Publisher**
of the Artesia Daily Press, a daily newspaper of General
circulation, published in English at Artesia, said county
and state, and that the hereto attached

Legal Ad

was published in a regular and entire issue of the said
Artesia Daily Press, a daily newspaper duly qualified
for that purpose within the meaning of Chapter 167 of
the 1937 Session Laws of the state of New Mexico for

1 Consecutive weeks/day on the same
day as follows:

First Publication September 11, 2018

Second Publication _____

Third Publication _____

Fourth Publication _____

Fifth Publication _____

Sixth Publication _____

Seventh Publication _____

Subscribed and sworn before me this

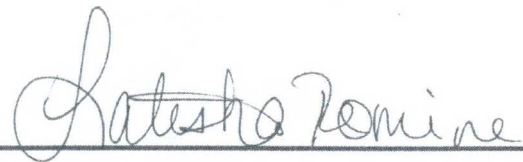
20th day of September 2018



OFFICIAL SEAL
Latisha Romine
NOTARY PUBLIC-STATE OF NEW MEXICO

My commission expires:

5/12/2019



Latisha Romine

Notary Public, Eddy County, New Mexico

Copy of Publication:

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FORM C-108 Technical Review Summary [Prepared by reviewer and included with application; V16.2]

DATE RECORD: First Rec: 9/14/2018 Admin Complete: 9/20/2018 or Suspended: _____ Add. Request/Reply: _____

ORDER TYPE: WFX / PMX / SWD Number: _____ Order Date: _____ Legacy Permits/Orders: _____

Well No. 1 Well Name(s): ROSE SWD

API : 30-0 15-45221 Spud Date: _____ New or Old (EPA): _____ (UIC Class II Primacy 03/07/1982)

Footages 617 FTL Lot _____ or Unit E Sec 14 Tsp 23S Rge 27E County EDDY

General Location: 5 miles SE/CARLSBAD Pool: SWD, DEVONIAN-SILURIAN Pool No.: 47869

BLM 100K Map: CARLSBAD Operator: LILY WATER SOLUTIONS LLC OGRID: 37350 Contact: Ben Stone, Agent

COMPLIANCE RULE 5.9: Total Wells: 1 Inactive: 0 Fincl Assur: OK Compl. Order? MA IS 5.9 OK? X Date: 12-14-2018

WELL FILE REVIEWED 0 Current Status: Proposed

WELL DIAGRAMS: NEW: Proposed ☐ or RE-ENTER: Before Conv. ☐ After Conv. ☐ Logs in Imaging: N/A

Planned Rehab Work to Well: _____

Well Construction Details		Sizes (in) Borehole / Pipe	Setting Depths (ft)	Cement Sx or Cf	Cement Top and Determination Method
Planned ___ or Existing ___	Surface	26" / 20"	550	Stage Tool	1600
Planned ___ or Existing ___	Interm/Prod	17 1/2" / 13 3/4"	2750		1525
Planned ___ or Existing ___	Interm/Prod	12 1/4" / 9 5/8"	9600	6000	1800
Planned ___ or Existing ___	Prod/Liner	23 5/8" / 19 1/2"	13150		400
Planned ___ or Existing ___	Liner				9300 / C-B-L
Planned ___ or Existing <input checked="" type="radio"/> OH / PERF		13150 / 14500		Inj Length	

Injection Lithostratigraphic Units:		Depths (ft)	Injection or Confining Units	Tops
Adjacent Unit: Litho. Struc. Por.			1250	12550
Confining Unit: Litho. Struc. Por.			10 V	13150
Proposed Inj Interval TOP:				
Proposed Inj Interval BOTTOM:				
Confining Unit: Litho. Struc. Por.				
Adjacent Unit: Litho. Struc. Por.				

Completion/Operation Details:	
Drilled TD	14500 PBDT
NEW TD	NEW PBDT
NEW Open Hole	<input checked="" type="radio"/> or NEW Perfs <input type="radio"/>
Tubing Size	9 in. Inter Coated? <u>X</u>
Proposed Packer Depth	13050 ft
Min. Packer Depth	13050 (100-ft limit)
Proposed Max. Surface Press.	2630 psi
Admin. Inj. Press.	2630 (0.2 psi per ft)

AOR: Hydrologic and Geologic Information

POTASH: R-111-P N/A Noticed? _____ BLM Sec Ord ☐ WIPP ☐ Noticed? _____ Salt/Salado T: _____ B: _____ NW: Cliff House fm _____

FRESH WATER: Aquifer Quaternary Max Depth 151 HYDRO AFFIRM STATEMENT By Qualified Person 0

NMOSE Basin: CARLSBAD CAPITAN REEF: thru adj. NA No. GW Wells in 1-Mile Radius? 25 FW Analysis? X

Disposal Fluid: Formation Source(s) WOLF CAMP Analysis? X On Lease ☐ Operator Only ☐ or Commercial ☒

Disposal Interval: Inject Rate (Avg/Max BWPD): 17.5K/30K Protectable Waters? _____ Source: N/A System: Closed or Open

HC Potential: Producing Interval? MA Formerly Producing? _____ Method: Logs/DST/P&A/Other regional 2-Mi Radius Pool Map ☐

AOR Wells: 1/2-M Radius Map and Well List? X No. Penetrating Wells: 0 [AOR Horizontals: _____ AOR SWDs: _____]

Penetrating Wells: No. Active Wells 0 Num Repairs? _____ on which well(s)? _____ Diagrams? _____

Penetrating Wells: No. P&A Wells 0 Num Repairs? _____ on which well(s)? _____ Diagrams? _____

NOTICE: Newspaper Date 9-11-2018 Mineral Owner DANIEL HOPKINS Surface Owner J.D. ROSE N. Date 9-10-2018

RULE 26.7(A): Identified Tracts? X Affected Persons: McBourne, Matudon, Key N. Date 9-10-2018

Order Conditions: Issues: C-B-L Across Line

Additional COAs: _____

(A) 5 1/2" -> Surface + FTL
5" -> Liner