Revised March 23, 2017

RECEIVED: 5 /20 /19	REVIEWER:	TYPE: CLUD	APP NO:	1121 77/7
5/20/19		ABOVE THIS TABLE FOR OCD DIVISI	PLEL	434 7367
	- Geologi	CO OIL CONSERVAT cal & Engineering I rancis Drive, Santa	TION DIVISION Bureau -	SWD-
~		RATIVE APPLICATIO		
THIS CHECKL		LL ADMINISTRATIVE APPLICATI EQUIRE PROCESSING AT THE DI		
Applicant: LilyStream Wa			OGRID	Number: <u>373500</u>
Well Name: Bonds SWD)15-xxxxx
Proposed: SWD; Devo	onian-Silurian		Pool C	ode: 97869
1) TYPE OF APPLICATION	ON: Check those	INDICATED BELOW which apply for [A]		HE TYPE OF APPLICATION
A. Location – spo	acing unit – simuli RSP _{er}	taneous Dedication	PRORATION UNIT))
DHC [II] Injection - WFX 2) NOTIFICATION REQ A. Offset oper B. Royalty, ov C. Application D. Notification E. Notification F. Surface ow G. For all of th H. No notice r	ling – Storage – M. C	LC PC OLS Ure Increase – Enhan WD IPI EOI those which apply. ders wners, revenue owned ed notice ent approval by SLO ent approval by BLM of notification or publi the information subr	iced Oil Recovery R PPR ers lication is attache	FOR OCD ONLY Notice Complete Application Content Complete ed, and/or,
administrative appr	oval is accurate of action will be talk	and complete to the ken on this application	e best of my know	vledge. I also
Note: Sta	tement must be comple	eted by an individual with m	anagerial and/or super	visory capacity.
			5/3/2019	
Joel Lowry			Date	
Print or Type Name			432-466-4450	
^ ^			Phone Number	
Signature Signature	un		joel@lowryenviron	mental.com

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

FORM C-108 Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

I.	PURPOSE: Secondary Recovery Pressure Maintenance XXX Disposal Storage Application qualifies for administrative approval? XXX Yes No
П.	OPERATOR: LilyStream Water Solutions, LLC ADDRESS: 1308 West Ave. N, Lovington, NM, 88260 CONTACT PARTY: Joel Lowry PHONE: 432-466-4450
ш.	WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injections. Additional sheets may be attached if necessary.
	Applicable Well Data is provided as Attachment #1.
IV.	Is this an expansion of an existing project? Yes XXX No If yes, give the Division order number authorizing the project: N/A
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.
	A map identifying all wells and leases within a two mile radius is provided as Figure 1 in <u>Attachment #2</u> . A map identifying all wells and leases within the one-mile expanded Area of Review is provided as Figure 2 in <u>Attachment #2</u> .
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.
	A tabulation of data on all wells of public record within the expanded area of review which penetrate the proposed injection zone is provided as <u>Attachment #3</u> .
VII.	Attach data on the proposed operation, including:
	 Proposed average and maximum daily rate and volume of fluids to be injected; Whether the system is open or closed; Proposed average and maximum injection pressure; Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and, 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.).
	Proposed operation details are provided as <u>Attachment #4</u> . Analysis from source zone produced water is provided as <u>Attachment #4a</u> . Analysis from injection zone produced water is provided as <u>Attachment #4b</u> .
*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.
	Geological data on the proposed injection zone is provided as Attachment #5.
ΙΧ	Describe the proposed stimulation program if any

IX. Describe the proposed stimulation program, if any.

Acid may be utilized to clean and open the formation in accordance with industry standards, as necessary.

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

As this is a new drill, logging and test data is not available. Well Log and test data will be filed with the NMOCD upon completion of the well. NMOCD District I Office will be notified prior to conducting MIT.

*XI.	 Attach a chemical analysis of fresh wat injection or disposal well showing loca 		er wells (if available and producing) within one mile of any s were taken.
	A map depicting fresh water wells wi as Attachment #6.	thin a one mile radius and as	sociated chemical analysis, if applicable, is provided
ХII			they have examined available geologic and engineering data n between the disposal one and any underground sources of
	An Affirmative Statement is provided	1 as Attachment #7.	
хш	I Applicants must complete the "Proof of	Notice" section on the reverse	side of this form.
	"Proof of Notice" documentation is p	rovided as <u>Attachment #8</u> .	
XIV.	Certification: I hereby certify that the in belief.	nformation submitted with the	application is true and correct to the best of my knowledge and
	NAME:	Joel Lowry	TITLE: Agent of Lilystream Water Solutions, LLC
		@lowryenvironmental.com	<u>n</u> as been previously submitted, it need not be resubmitted.
	Places show the date and sireumstance		* '

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

Well Data

(5)

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)		General Well Information
	Operator	LilyStream Water Solutions, LLC
	Lease Name & Well No.	Bonds SWD #1
	Location	20' FSL & 850' FWL, UL M, Sec. 20, T21S, R28E

(2)				C	Casing Informa	tion			
	String	Size (in.)	Grade	Weight	Setting Depth (ft bgs)	Cement (sx)	Hole Size (in.)	Estimated Top of Cement	Method of Determination
	Surface	20	J-55	94.0 lb/ft.	400	1,100	26	Surface	Circulation
	Intermediate 1	13.375	P-110	80.7 lb/ft	3,200	1,824	17.5	Surface	Circulation
	Production	9.625	P-110	53.5 lb/ft.	9,670	1,644	12.25	Surface	Circulation
	Liner	7.625	P-110	39.0 lb/ft.	9370 to 12803	360	8.5	9370' (TOL)	CBL

(3)		De	scription of Tubing	
	Size	Weight	Lining Material	Setting Depth (ft.)
	5.5"	23.0 lb/ft	Internal Plastic Coated	9,310
	5"	18.0 lb/ft	Internal Plastic Coated	12,703

(4)	Packer Information	
	Туре	Setting Depth (ft.)
	LOK-SET TM or Equivalent	12,703

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.

Injec	ction Information
Name of Injection Formation:	Devonian-Silurian
Injection Interval:	12803 to 13753 ft.
Perforated or Open-Hole:	Open Hole
Purpose of Well:	New Drill for Salt Water Disposal
Other Perforated Intervals:	None

Estimated Depth of Various Formations Inc	luding Oil and Gas Zones (ft. bgs)
T. Salt	440
T. Capitan	1,120
T. Delaware	2,920
T. Bone Spring	5,761
T. Wolfcamp	9,370
T. Strawn	10,510
T. Atoka	10,900
T. Morrow	11,365
T. Barnett	12,132
T. Woodford Shale	12,713
T. Devonian	12,803
T. Montoya	13,753

There are no known oil and gas zones beneath the proposed injection zone.

INJECTION WELL DATA SHEET

OPERATOR:

LilyStream Water Solutions, LLC

WELL NAME & NUMBER:

Bonds SWD #1

WELL LOCATION

20' FSL & 850' FWL

FOOTAGE LOCATION

M UNIT LETTER 20 SECTION

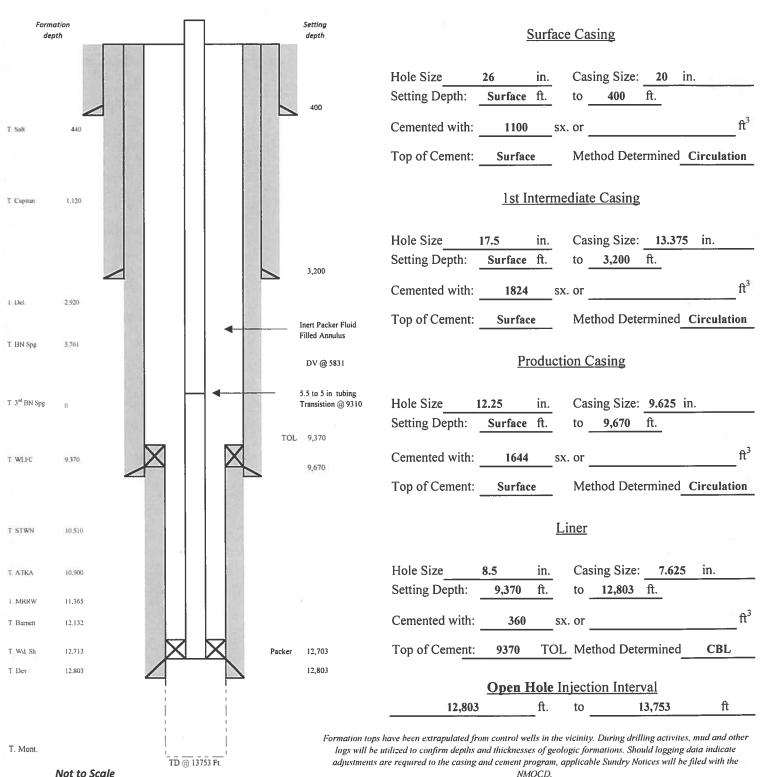
TOWNSHIP

21S

28E RANGE

WELLBORE SCHEMATIC

WELL CONSTRUCTION DATA

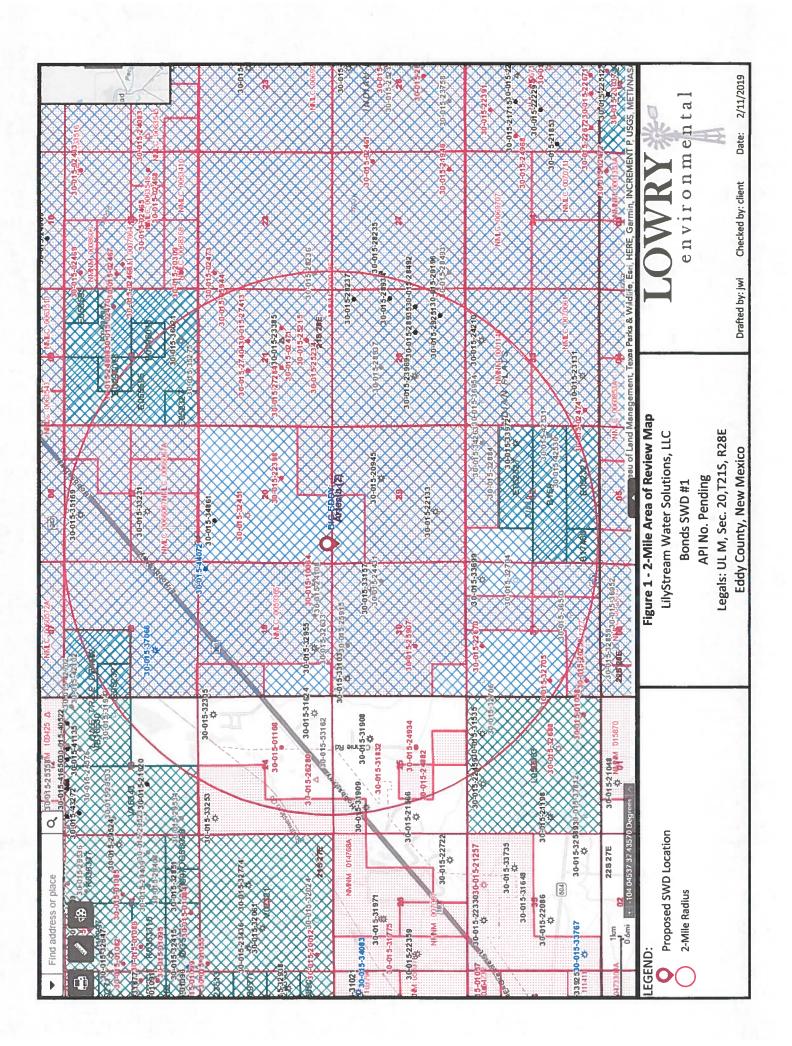


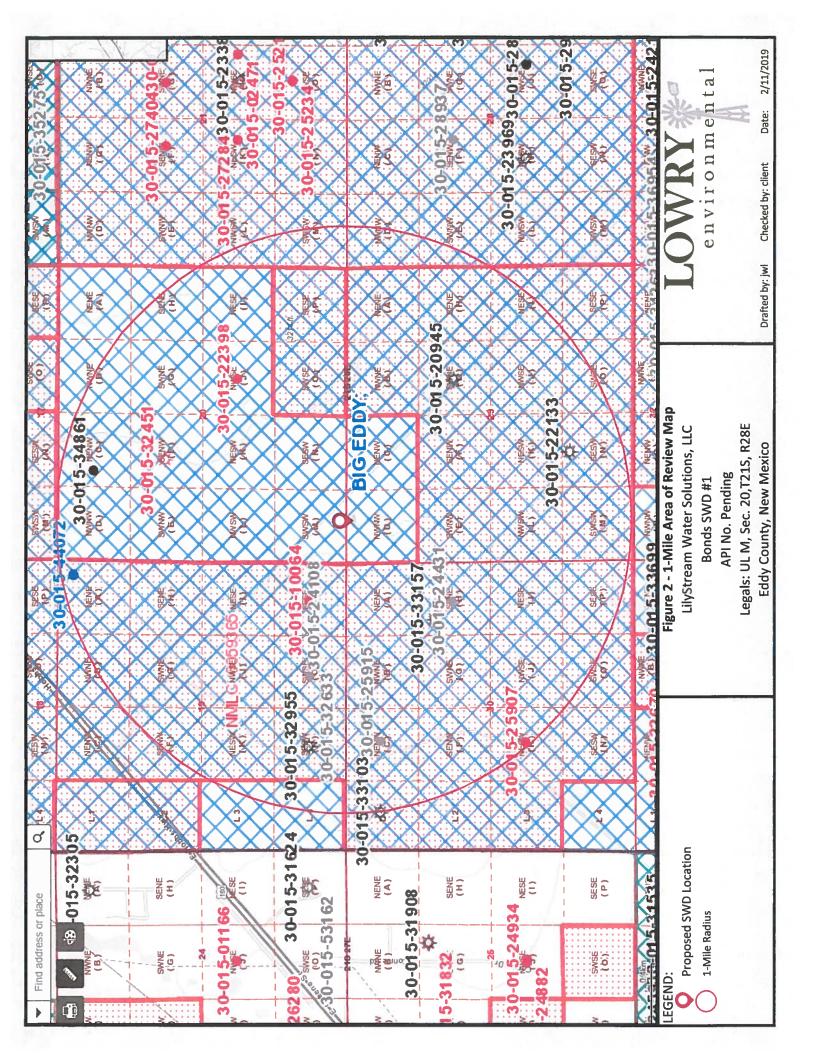
INJECTION WELL DATA SHEET

Tubing S	Size:	5.5" tapered to 5"	Lining Matrial:	Internal P	lastic Coated (ICP)
Type of	Packer:	LOK-S	ET TM or Equivalent		
Packer S	Setting Depth:	12,703 Ft.			
Other T	ype of Tubing/	Casing Seal (if applicable):		Not Applical	ole
		Add	itional Data		
1.	Is this a ne	ew well drilled for injection?	XXX	Yes	No
	If no, for v	what purpose was the well oring	ngally drilled?		N/A
2.	Name of t	he Injection Formation:		Devonian-Silur	ian
3.	Name of F	Field or Pool (if applicable):		SWD; Devonia	n-Silurian
4.		ell ever been perforated in any and give plugging detail, i.e. sa		-	ed N/A
5.		name and depths of any oil or gone in this area: name	gas zones underlying	g or overlying the p	oroposed
		T. Salt		440	
		T. Capitan		1,120	
		T. Delaware		2,920	
		T. Bone Spring		5,761	
		T. Wolfcamp		9,370	
		T. Strawn		10,510	
		T. Atoka		10,900	
		T. Morrow		11,365	
		T. Barnett		12,132	
		T. Woodford T. Devonian	×	12,713 12,803	
		T. Montoya		13,753	
		1. Montoya		13,733	
				100 014	
	Th4	ere are no known oil and gas :	zones underlying the	e proposed injecti	on interval
	1113	cie are no known on ana 603 /	Lones anachymig till	a proposed injecti	J

Figure 1 - 2-Mile Area of Review Map

Figure 2 - 1-Mile Area of Review Map





Tabulation of Data Wells within AOR

The second secon		The second second	Summer you went when you and someone you			Jun 200	2011	Vicinity	
API No.	Well Name	Type	Status	Section	Township	Range	Unit	OCRID Name	Oi loog
30-015-10064	PRE-ONGARD WELL #002	ō	Plugged (Site Released	19	215	28E	۵	PRE-ONGARD WELL OPERATOR	No Data
30-015-20945	BIG EDDY UNIT #039	Gas		59	215	28E	v	BOPCO, L.P.	[71640] BASS, MORROW (GAS)
20.000	91G EDDV #054	ş	4.444	92	216	305	2	a - CCaOa	[71640] BASS, MORROW (GAS); [79070] INDIAN
30.015.33300	BIG EDOV INIT #060	3 2	Discould Cite Deleased	3 5	215	286	-	BOBCO I O	[2430] EENTON BONE CODING
30-015-22670	PRE-ONGARD WELL #065	ō		31	215	28E		PRE-ONGARD WELL OPERATOR	No Data
30-015-23969	BIG EDDY UNIT #087	Gas		28	215	28E	¥	BOPCO, L.P.	[79070] INDIAN FLATS, ATOKA, WEST (GAS)
30-015-24108	PRE-ONGARD WELL #091	8	Cancelled APD	19	215	28E	0	PRE-ONGARD WELL OPERATOR	No Data
30-015-24431	PRE-ONGARD WELL #091	õ	Cancelled APD	8	215	28E	Ξ	PRE-ONGARD WELL OPERATOR	No Data
30-015-25907	PRE-ONGARD WELL #102	ਲੋ	Plugged (Site Released	8	215	28E	¥	PRE-ONGARD WELL OPERATOR	No Data
30-015-25915	PRE-ONGARD WELL #108	ö	Cancelled APD	8	215	28E	υ	PRE-ONGARD WELL OPERATOR	No Data
30-015-27284	GARRETSON AMI FEDERAL #001	ē	Plugged (Site Released	21	215	28E	×	EOG Y RESOURCES, INC.	[24320] FENTON, DELAWARE
30-015-27404	PRE-ONGARD WELL #003	ō	Plugged (Site Released	21	215	28E	ч	PRE-ONGARD WELL OPERATOR	No Data
30-015-28937	NIX FEDERAL #006	ਲੋ	Cancelled APD	78	215	38E	Ŀ	READ & STEVENS INC	No Data
30-015-31624	CHEYENNE #001	Gas	Active	24	215	27E	۵	EOG RESOURCES INC	[73920] CARLSBAD, MORROW, EAST (GAS)
30-015-31832	CARSON CITY #001	Gas	Plugged (Site Released	25	215	27E	g	EOG M RESOURCES, INC.	[96838] DRY AND ABANDONED
30-015-31908	CARSON CITY 25 FEE COM #001Y	Gas		25	215	27E	U	EOG RESOURCES INC	[73920] CARLSBAD, MORROW, EAST (GAS)
									[24340] FENTON DRAW, STRAWN, [71640] BASS,
30-015-32451	BOND #001	Gas	Plugged (Not Released)	20	215	28E	u	MARATHON OIL PERMIAN LLC	MORROW (GAS)
30-015-32633	BIG EDDY UNIT #140	Gas	Cancelled APD	19	215	28E	0	BOPCO, L.P.	No Data
30-015-32704	PANTHER CITY 31 FEE COM #001	Gas	Cancelled APD	31	215	28E	I	EOG M RESOURCES, INC.	No Data
30-015-32884	THROCKMORTON 32 FEDERAL COM #001 Gas	Gas	Cancelled APD	32	215	28E	<	EOG M RESOURCES, INC.	No Data
30-015-32955	BIG EDDY UNIT #143	Gas	Active	19	215	28E	z	BOPCO, L.P.	[73920] CARLSBAD, MORROW, EAST (GAS)
									[73920] CARLSBAD, MORROW, EAST (GAS);
30-015-33103	BIG EDDY UNIT #144	Gas	Active	30	215	28E	1	BOPCO, L.P.	[74080] CARLSBAD, STRAWN, EAST (GAS)
									[73920] CARLSBAD, MORROW, EAST (GAS);
									[74080] CARLSBAD, STRAWN, EAST (GAS); [74160]
30-015-33157	BIG EDDY UNIT #151	Gas	Active	8	215	28E	Ŧ	BOPCO, L.P.	CARLSBAD, WOLFCAMP, EAST (GAS)
				ļ	;	į	;		[24340] FENTON DRAW, STRAWN; [76580]
30-015-33231	BIG EDDY UNIT #150	Sas	Active	7	213	78F	2	BOPCO, L.P.	FENTON DRAW, MORROW (GAS)
000000000000000000000000000000000000000	ACCULATION OF THE RESIDENCE OF THE STATE OF	į		ř		L	•		[73920] CARLSBAD, MORROW, EAST (GAS);
30-0TD-22223	PAINITIES CIT 31 FEE COM #001	Ses	Active	10	577	107	٤ .	EOG RESCONCES INC	[/4060] CARLSBAD, STRAWN, EAST (SAS)
30-015-34263	BIG EDUY UNII #149	5	Cancelled APU	35	712	782	∢	BEPCO, LP	[/3920] CARLSBAD, MORROW, EAST (GAS)
									[24320] FENTON, DELAWARE; [24340] FENTON DRAW, STRAWN: [71640] BASS, MORROW (GAS);
30-015-34861	BOND FEE #002	ĪŌ	Active	20	215	28E	υ	MARATHON OIL PERMIAN LLC	[79060] INDIAN FLATS, ATOKA (GAS)
30-015-44072	BOND 20 FEE #001H	iö	New (Not Drilled/Completed)	19	215	28E	A	MARATHON OIL PERMIAN LLC	[24300] FENTON, BONE SPRING
30-015-53162	CHEYENNE #001	Gas	Cancelled APD	24	215	27E	۵	EOG M RESOURCES, INC.	No Data

No Wells within AOR penetrate the proposed injection zone.

Proposed Operations

- A. Source Zone Produced Water Analysis
- **B.** Injection Zone Produced Water Analysis

VII. Proposed Operations

Attach data on the proposed operation, including:

Propo	sed Operation	
Average Rate:	20,000 bbls	
Maximum Rate:	30,000 bbls	
Open or Closed:	Open	4
Average Injection Pressure:	1,500 - 2,000	psi
Maximum Injection Pressure:	2,561	psi

(4) Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and

The anticipated sources of produced water proposed to be injected into the Devonian and Silurian formations are from the Delaware, Wolfcamp and Bone Springs Formations, which are known to be compatible with formation water from the Devonian Formation. Laboratory analysis of water samples collected from the respective formations is provided as **Attachment** #4a.

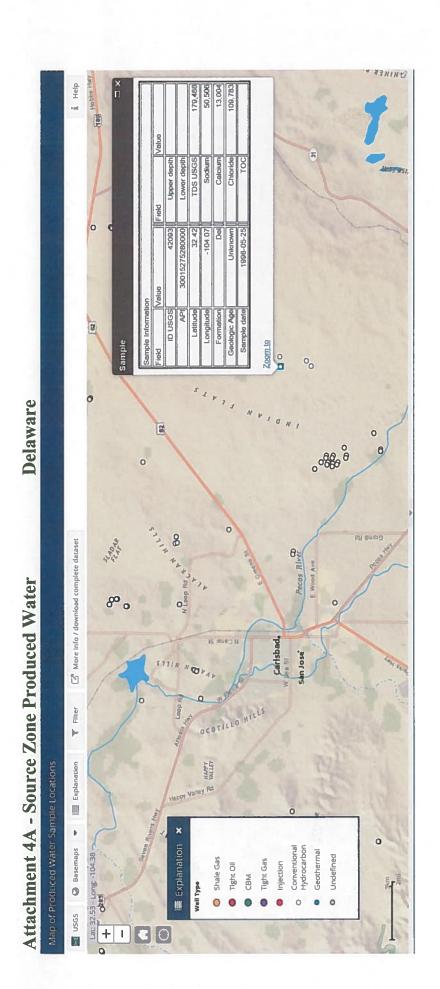
(5) If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water

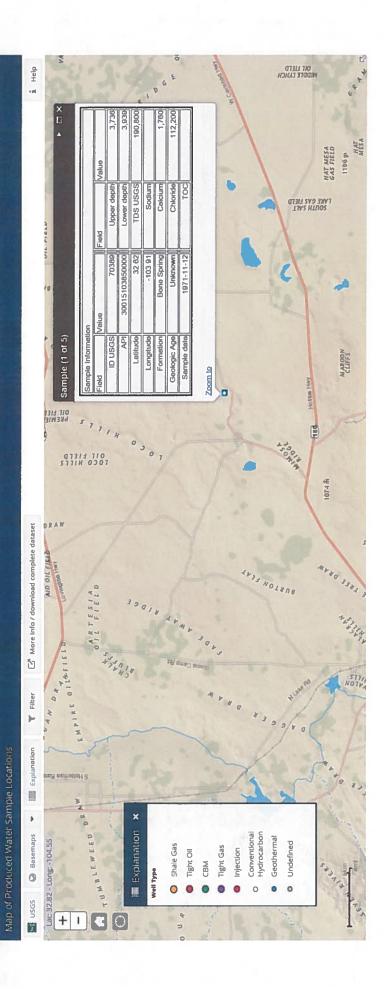
Laboratory analysis of water samples collected from the Devonian and Fusselman Formations are provided as Attachment #4b.

Safety, Spill Prevention and Release Response

Above-ground storage tanks (ASTs) associated with the SWD operation will be placed into a steel-walled, lined containment system. The well, injection equipment and ASTs will be equipment with metering and pressure sensing devices in an effort to monitor and ensure the integrity of the equipment and prevent accidental releases to the environment.

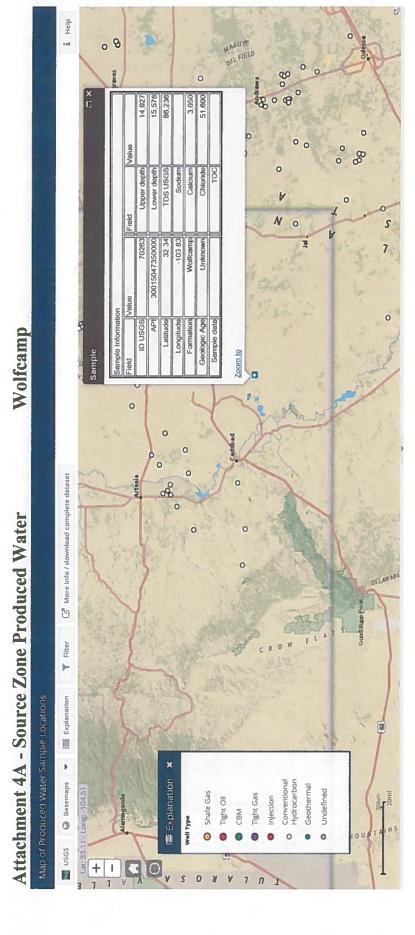
In the event of an accidental releases to the environment, a Release Notification (NMOCD Form C-141) will be prepared, characterizing the release and proposing remediation activates designed to mitigate environmental impacts, as necessary. In the event of an accidental discharge of greater than 25 bbls, the NMOCD will be notified immediately.

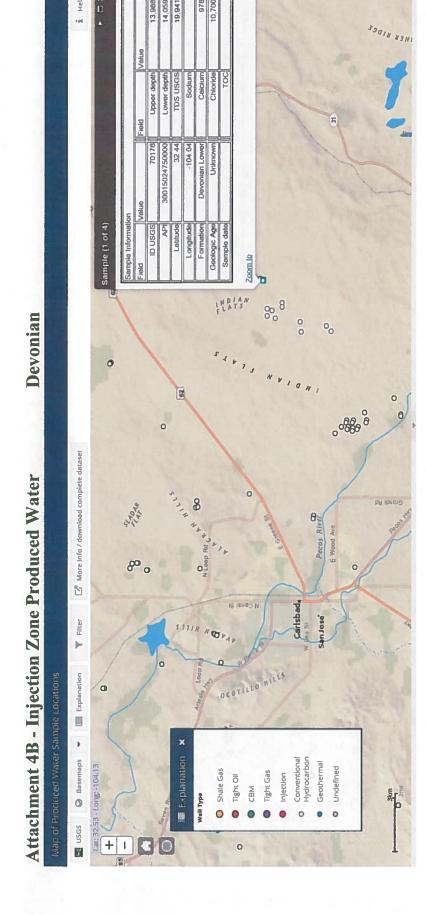




Bone Spring

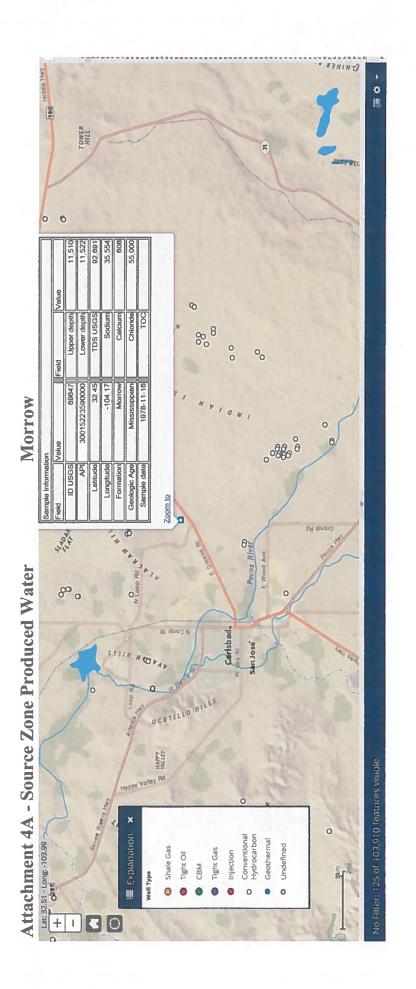
Attachment 4A - Source Zone Produced Water





Attachment 4B - Injection Zone Produced Water

Fusselman



- A. Geological Description
- **B.** Seismic Information

a. Attach appropriate geologic data on the injection zone including appropriate lithological detail, geologic name, thickness, and depth.

The proposed injection interval consists of sedimentary rock formations deposited during the Devonian and Silurian Periods. The Devonian Formation consists of porous dolomites, chert intervals and limestone (McGlasson, E.H. 1967). The thickness of the Devonian and Silurian Formations is estimated to be approximately 1,000 feet (ft.) locally. Sections of porous dolomite and limestone are believed to be present at the proposed injection site. The proposed injection interval is overlain by the Woodford Shale, which ranges in thickness from 100 to 300 ft. consists of organic-rich dark shales, black cherts, siltstone, sandstone and greenish-colored shales (Broadhead, R.F., 2010). Inferred depths of the proposed injection zone were estimated utilizing completions data from wells within the vicinity.

During the advancement of the proposed well, mud logging data will be utilized to ensure that the thickness of the Devonian and Silurian Formation is adequately defined, allowing for the proper placement of the packer, casing shoe and determination of the open-hole injection interval. Should logging data indicate depth adjustments are required for the casing program, applicable Sundry Notices will be filed with the NMOCD.

b. 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/kg or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.

A search of the USGS database suggests the historic presence of five (5) inactive wells and one (1) active well within the vicinity of the Site. Two (2) of the wells were completed in Alluvium and Bolson Deposits. Two (2) of the wells were completed in the Capitan Limeston formation. One (1) of the wells was completed in the Rustler Formation and one (1) of the wells was completed in the Carlsbad Limestone formation. Data from wells with available information suggested static water levels ranged from 13.29 ft. bgs as measured in a well approximately 0.90 Mi Southwest of the Site to 37.92 ft. bgs as measured in a well approximately 1.1 Mi. North - Northwest of the Site. Available data suggests the historic presense of four (4) USGS wells within a 1-Mile radius of the proposed injection well. The status of the wells is unknown.

A search of the NMOSE database suggests the historic presence of **two (2)** wells within a 1-mile radius of the Site. The wells are were drilled to depths ranging from **70 to 80 ft. bgs**. If available and producing, **two (2)** of the identified fresh water wells will be sampled. Analytical results, if applicable, are provided in Attachment #6.

Other known water sources in the area include the Rustler Formation, which outcrops in the area, the underlying Salado and Castile Formations and the Capitan Reef. Groundwater within the Rustler, Salado, Castile and Capitan Reef is not a a source of drinking water. No usable water is expected to be encountered beyond 300 Ft. bgs.



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

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

No records found.

UTMNAD83 Radius Search (in meters):

Easting (X): 583182.7

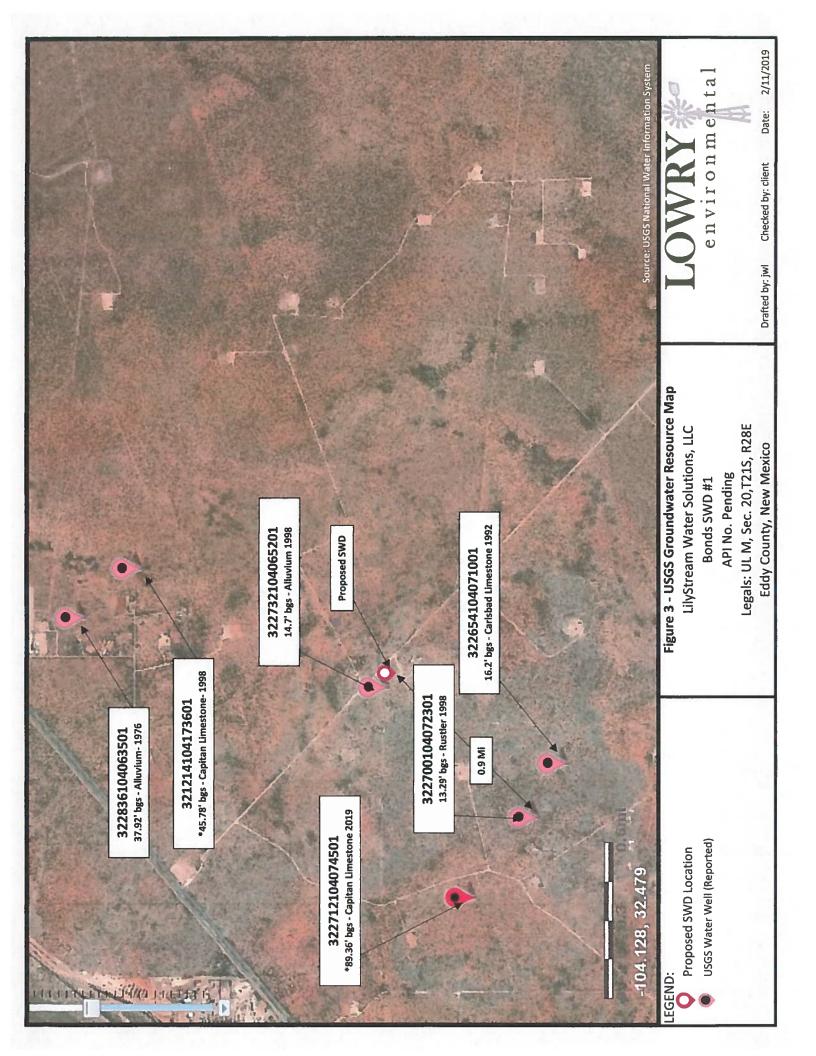
Northing (Y): 3591624.2

Radius: 1608

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.

4/15/19 12:20 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER

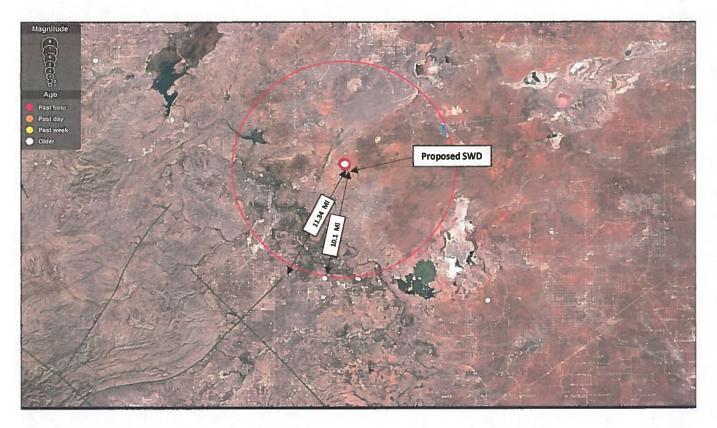


VIIIb Seismic Information

The proposed injection well is located within the western portion of the Delaware Basin in Unit Letter "M", Section 20, Township 21 South, Range 28 East in Eddy County, New Mexico. A review of USGS data available on the ComCat Earthquake Catalog indicates the nearest seismic event exceeding a magnitude of 0.1 occurred approximately 10.1 Mi Southwest of Site. The seismic event was reported as a magnitude 3.9 occurring in November of 1974.

The nearest fault trace is approximately 11.34 Mi Southwest of the proposed injection well. The fault trace is indicative of a normal fault striking Northeast-Southwest.

Data available on the ComCat Earthquake Catalog suggests the recorded seismic events within the region did not occur on the described faults.



Faults traces are depicted as green linear features. Seismic events with available data are depicted as grey dots of which the size is representative of the magnitude. Details regarding the depicted faults are provided on the following page.

Sources:

Bureau of Economic Geology. Accessed February 2019. Permian Basin Geologic Synthesis Project. https://gis.utlands.utsystem.edu/ags/rest/services/GeologicFeatures/MapServer

U.S. Geological Survey (USGS). February 2019. Earthquakes Hazard Program: ComCat Earthquake Catalog. https://earthquake.usgs.gov/learn/kml.php

VIIIb Seismic Information

A recent publication prepared by Snee and Zoback (2018) entitled "State of Stress in the Permian Basin, Texas and New Mexico" discusses the fault slip potential of fault traces complied from Ewing et al. (1990), Green and Jones (1997), Ruppel et al. (2005) as well the USGS Quaternary Faults and Fold Database. A map detailing their findings with the proposed injection well location superimposed is provided below:

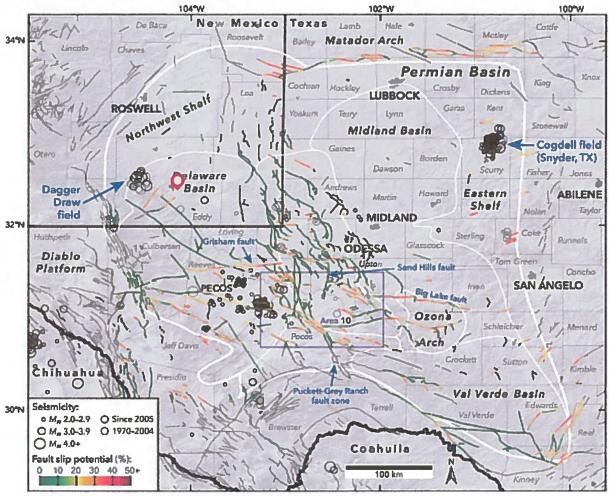


Figure 3. Results of our probabilistic FSP analysis across the Permian Basin. Data sources are as in Figures 1 and 2.

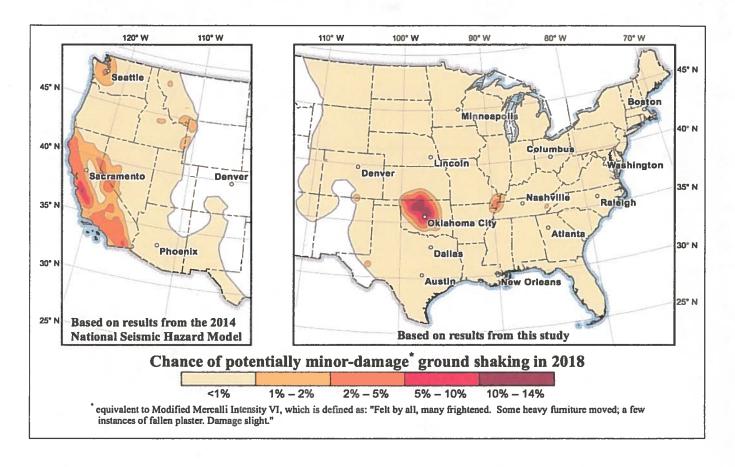
Based on the proposed injection well's distance to known faults, relative low faulting and seismic activity in the area, review of historical earthquake data and the presence of confining layers above and beneath the proposed injection zone, it is unlikely that the proposed injection activities will contribute to a fault-slip event.

Source:

Snee, Jens-Erik Lund, and Mark D. Zoback. 2018 "State of Stress in the Permian Basin, Texas and New Mexico; Implication for Induced Seismicity." The Leading Edge 37 (February 2018).

VIIIb Seismic Information

Data from the 2018 USGS One-Year probabilistic seismic hazard forecast suggests there was a less than 1% chance of potentially minor-damage from induced and natural ground shaking in 2018, as depicted on the map below:



Source:

U.S. Geological Survey (USGS). February 2019. Earthquakes Hazard Program: Short-term Induced Seismicity Models. https://earthquake.usgs.gov/hazards/induced/index.php#2018

Fresh Water Laboratory Analysis (if applicable)

Fresh Water Sample Location Map (if applicable)



April 29, 2019

JOEL LOWRY

LOWRY ENVIROMENTAL & ASSOCIATES

PO BOX 296

LOVINGTON, NM 88260

RE: BONDS

Enclosed are the results of analyses for samples received by the laboratory on 04/18/19 12:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab-accred-certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2 Total Haloacetic Acids (HAA-5)
Method EPA 524.2 Total Trihalomethanes (TTHM)
Method EPA 524.4 Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2 Regulated VOCs and Total Trihalomethanes (TTHM)

Method EPA 552.2 Total Haloacetic Acids (HAA-5)

Celey D. Keine

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



Analytical Results For:

LOWRY ENVIROMENTAL & ASSOCIATES

Project: BONDS

Reported:

PO BOX 296

LOVINGTON NM, 88260

Project Number: NONE GIVEN

GIVEN

Project Manager: JOEL LOWRY

29-Apr-19 15:28

Fax To:

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	
BOUNDS #1 -1	H901421-01	Water	16-Apr-19 15:20	18-Apr-19 12:15	

Sample project changed from 'Bounds' to 'Bonds' as per Joel 04/29/19. This is the revised report and will replace the one sent on 04/26/19.

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence are any other cause whatsoever shall be determed waived unless made in winting and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by Cardinal, regardless of whether sur claims based unless on successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether sur claims based unless on successors that incurred by Cardinal Laborationes.

Celeg L. Keens



Analytical Results For:

LOWRY ENVIROMENTAL & ASSOCIATES

PO BOX 296

LOVINGTON NM, 88260

Project: BONDS

Project Number: NONE GIVEN

Project Manager: JOEL LOWRY

Fax To:

Reported:

29-Apr-19 15:28

BOUNDS #1-1 H901421-01 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardin	al Laborat	ories					
Inorganic Compounds										
Chloride*	52.0		4.00	mg/L	1	9042202	AC	22-Apr-19	4500-CI-B	
TDS*	2530		5,00	mg/L	1	9042303	AC	24-Apr-19	160.1	

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim ansing, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence are any other cause whatsoever shall be deemed valved unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether sur claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celley To Keene



Analytical Results For:

LOWRY ENVIROMENTAL & ASSOCIATES

PO BOX 296

LOVINGTON NM, 88260

Project: BONDS

ct: BOND2

Project Number: NONE GIVEN Project Manager: JOEL LOWRY

Fax To:

Reported:

29-Apr-19 15:28

Inorganic Compounds - Quality Control

Cardinal Laboratories

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 9042202 - General Prep - Wet Chem										
Blank (9042202-BLK1)				Prepared &	Analyzed	22-Apr-19				
Chloride	ND	4.00	mg/L							
LCS (9042202-BS1)				Prepared &	Analyzed:	22-Apr-19				
Chloride	104	4.00	mg/L	100		104	80-120			
LCS Dup (9042202-BSD1)				Prepared &	Analyzed:	22-Apr-19				
Chloride	104	4.00	mg/L	100		104	80-120	0.00	20	
Batch 9042303 - Filtration										
Blank (9042303-BLK1)				Prepared: 2	23-Apr-19 A	nalyzed: 2	4-Apr-19			
TDS	ND	5.00	mg/L							
LCS (9042303-BS1)				Prepared: 2	23-Apr-19 A	nalyzed: 2	4-Apr-19			
TDS	558		mg/L	527		106	80-120			
Duplicate (9042303-DUP1)	Sou	rce: H901409-	18	Prepared 2	23-Apr-19 A	nalyzed: 2	4-Apr-19			
TDS	325000	5-00	mg/L		391000			18.3	20	

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Celeg & Kenne



Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

** Samples not received at proper temperature of 6°C or below.

*** Insufficient time to reach temperature.

- Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

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Celeg Z. Keine



101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476

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Project Manager:	Joel Lowry								0	P.O. #:	*																			
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Phone #: 432-	432-466-4450 Fax #:								▶	8	88	70	Q	Address: PO Box 896																
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□ Yes

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Received By:

Mantan

Sampler - UPS - Bus - Other: 0.60

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Sample Condition
Cool Infact
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No No

Delivered By: (Circle One)

Relinquished By:

Affirmative Statement

XII. AFFIRMATIVE STATEMENT

Re: LilyStream Water Solutions, LLC

Bonds SWD #1

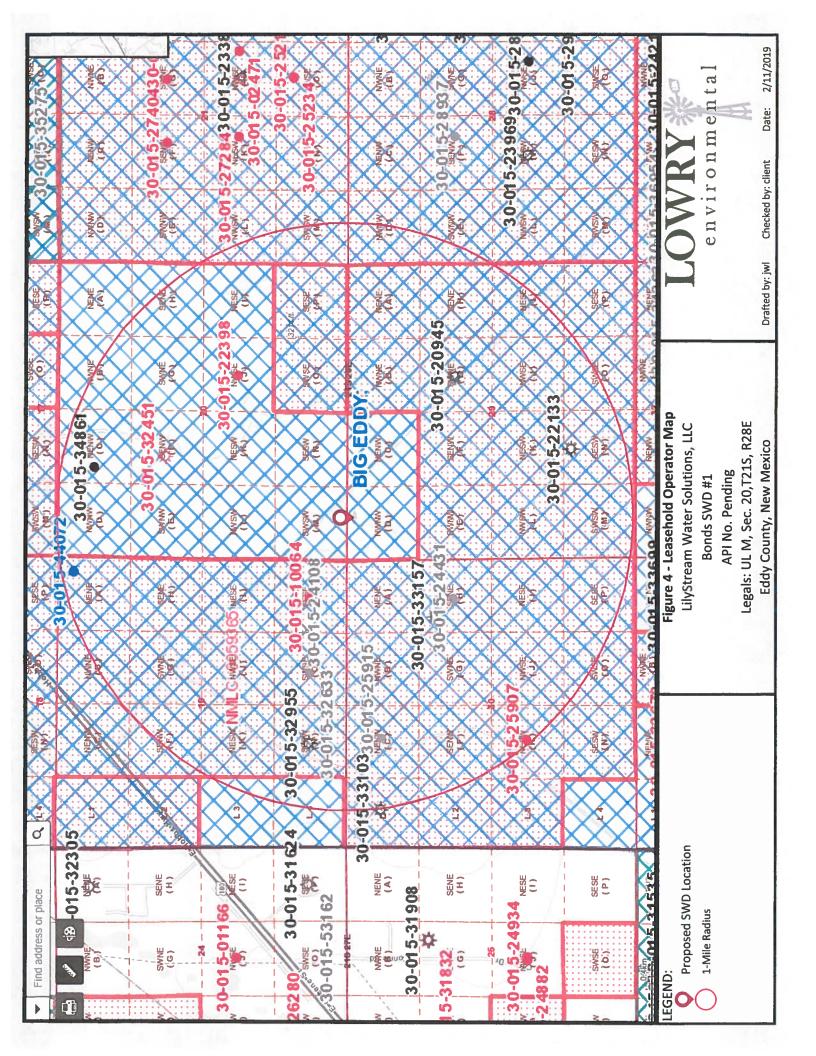
Legals: UL M, Sec. 20, T21S, R28E

Available geologic and engineering data has been examined and we find no evidence of open faults or any hydrologic connection between the disposal interval and any underground sources of drinking water.

Joel W. Lowry

LOWRY environmental

Proof of Notice Documentation



XIV. PROOF OF NOTICE

Surface Owner: 1

Mark Bond

2917 Ocotillo Canyon Drive Carlsbad, NM 88220 7018 2290 0000 5825 4830

Leasehold Operators within a One-Mile Radius:

BOPCO, LP

6401 Holiday Hill Rd Bldg 5 Midland, TX 79707 7018 2290 0000 5825 4946

BEPCO, LP

201 Main St. Fort Worth, TX 76102 7018 2290 0000 5825 4946

POCO Resources, LLC

3307 E. Castleberry Road Artesia, NM 88210 7018 2290 0000 5825 4878

Altura Energy LTD

P.O. Box 4294 Houston, TX 77210 7018 2290 0000 5825 4922

Marathon Oil Permian LLC

5555 San Felipe St. Houston, TX 77056 7018 2290 0000 5825 4939

Regulatory Agency:

NMOCD - Santa Fe 1220 S. St. Francis Dr. Santa Fe, NM 87505

CMB OG NM LLC

201 Main St Ste 2700 Fort Worth, TX 76102 7018 2290 0000 5825 4847

CTV OG NM LLC

201 Main St Ste 2700 Fort Worth, TX 76102 7018 2290 0000 5825 4861

MRC Permian Company

5400 LBJ Freeway, Suite 1500 Dallas, TX 75240 7018 2290 0000 5825 4892

Thru Line OG NM LLC

201 Main St #2700 Fort Worth, TX 76102 7018 2290 0000 5825 4885

SRBI OG NM LLC

201 Main St #2700 Fort Worth, TX 76102 7018 2290 0000 5825 4908

NMOCD - District 2

811 S. First Artesia, NM 88210 7018 2290 0000 5825 4854























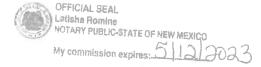




XIV. PROOF OF NOTICE

Affidavit of Publication

Affidavit of Publication 25099 State of New Mexico County of Eddy: Danny Scott being duly sworn saves 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 Consecutive weeks day on the same day as follows: First Publication May 3, 2019 Second Publication Third Publication Fourth Publication Sixth Publication Seventh Publication Subscribed and sworn before me this day of May 2019



Latisha Romine

Notary Public, Eddy County, New Mexico

Copy of Publication

Legal Notice

LilyStream Water Solutions, LLC, 1308 W. Ave D, Lovington, NM 88260, is filing Form C-108 for an application for Authority to Inject with the New Mexico Oil and Conservation Division requesting administrative approval for a salt water disposal well. The proposed newly drilled well, the Bonds SWD No. 1 is located at 20' FSL & 850' FWL, Section 20, Township 21S Range 28E, N.M.P.M., Eddy County, New Mexico: approximately 7 miles East of Carlsbad down NM 62-180 and 1 Mile South on Creosote Road . (API # to be assigned). Produced water from area oil and gas producing wells will be commercially disposed into the Devonian and Silurian formations from 12,803' to 13,753' below surface. Expected maximum injection rate is 30,000 bpd, and the expected maximum injection pressure is 2,561 psi. Questions concerning the application can be directed to the applicant's agent Lowry Environmental, LLC, PO Box 948, Lovington, NM 88260, by phone (432) 466-4450 or email joel@lowryenvironmental. com. Objections or request for hearing must be directed to the Oil Conservation Division, (505) 476-3440, 1220 South Saint Francis Drive, Santa Fe, NM 87504, within 15 days.

Published in the Artesia Daily Press, Artesia, N.M., May 3, 2019 Legal No. 25099.

NOTIFICATION TO INTERESTED PARTIES

Via U.S. Certified Mail - Return Receipt Requested

RE:

Application for Authroization to Inject

Bonds SWD #1

Township 21S, Range 28E, N.M.P.M Section 20, 20' FSL & 850' FWL Eddy County, New Mexico

To Whom It May Concern:

Enclosed for your review is a copy of a C-108 Application submitted by LilyStream Water Solutions, LLC, Lovington, New Mexico, to the New Mexico Oil Conservation Division to drill and complete for produced water disposal the Bonds SWD #1.

The well is located in Section 20, Township 21S, Range 28E, 20' FSL and 850' FWL, Eddy County, New Mexico.

As required by NMOCD, we are notifying you because you have been indentified as an operator or surface owner and therefor an affected party by this action. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter.

The well will be a commercial SWD well taking produced water from oil and gas operations in the surrounding area. Please contact Joel Lowry with Lowry Environmental and Associates, LLC, at 432.466.4450, with any questions or concerns regarding this well or application.

Respectfully,

Joel W. Lowry

environmental

MAY 0 2 2019

LAND DEPARTMENT

NOTIFICATION TO INTERESTED PARTIES

Via U.S. Certified Mail - Return Receipt Requested

RE:

Application for Authroization to Inject Bonds SWD #1

Township 21S, Range 28E, N.M.P.M Section 20, 20' FSL & 850' FWL Eddy County, New Mexico

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Respectfully,

Joel W. Lowry

LOWRY

environmental

Harl copies maild to CTV OFNMLLC Bepco LP OMB OG NMLLC Thru Line DG NMLLC TRBI OG NM LLC ZID Main St. Ste 2700 FHUNTAN 76102

Omailed Christian 5/2/19