

BEFORE THE NEW MEXICO OIL CONSERVATION DIVISION

**APPLICATION OF VISTA DISPOSAL SOLUTIONS LLC,
FOR A SALT WATER DISPOSAL WELL,
IN LEA COUNTY, NEW MEXICO.**

Case No.

APPLICATION FOR SALT WATER DISPOSAL

Vista Disposal Solutions LLC, by and through its undersigned attorney, applies for an order approving a salt water disposal well, and in support thereof, states:

1. Applicant seeks an order proposing a salt water disposal well for its Julie Federal SWD #1, (Pool Code 97869) to be drilled at a location 561' FNL and 2,534' FWL, Unit C, Section 33, Township 26 South, Range 34 East, N.M.P.M., Lea County, New Mexico.
2. Applicant proposes to set a packer at 18,550' feet below the surface of the earth and then inject into the Devonian-Silurian formation at depths between 18,570' through 20,030' open hole, as stated in the attached C-108.
3. Attached hereto as Exhibit A is the C-108.
4. The granting of this application will prevent waste and protect correlative rights.

WHEREFORE, Applicant requests that, after notice and hearing, the Division enter its order approving this application.

Respectfully submitted,

PADILLA LAW FIRM, P.A.

/s/ ERNEST L. PADILLA

ERNEST L. PADILLA,

Attorney for Vista Disposal Solutions, LLC

PO Box 2523

Santa Fe, New Mexico 87504

505-988-7577

padillalaw@qwestoffice.net

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

I. PURPOSE: Secondary Recovery Pressure Maintenance Disposal Storage Application qualifies for administrative approval? Yes No

II. OPERATOR: Vista Disposal Solutions, LLC

ADDRESS: 12444 NM 10th St., Building G, Suite 202-512, Yukon, OK 73099

CONTACT PARTY Nate Allerman
PHONE: 918-382-7581

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 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.

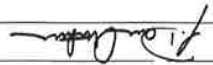
*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).

*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.

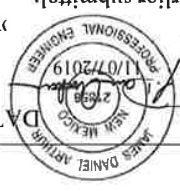
XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Dan Arthur, P.E., S.P.E.C.
SIGNATURE: 
DATE: 11/07/2019

TITLE: President/Chief Engineer

E-MAIL ADDRESS: darthur@all-llc.com

XV. If the information required under Sections VI, V, and IV has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submission: _____



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.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

(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.

(3) The formation name and depth with expected maximum injection rates and pressures; and,

(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;

(1) The name, address, phone number, and contact party for the applicant;

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:

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.

XIV. PROOF OF NOTICE

(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.

(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.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(2) The injection interval and whether it is perforated or open-hole.

(1) The name of the injection formation and, if applicable, the field or pool name.

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.

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.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(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.

(1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.

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:

III. WELL DATA

Application for Authorization to Inject
Well Name: Julie Federal SWD #1

III – Well Data (The Wellbore Diagram is included as Attachment 1)

A.

(1) General Well Information:

Operator: Vista Disposal Solutions, LLC (GRID No. 329051)
Lease Name & Well Number: Julie Federal SWD #1
Location Footage Calls: 561' FNL & 2,534' FWL
Legal Location: Unit Letter C, S33 T26S R34E
Ground Elevation: 3,274'
Proposed Injection Interval: 18,570' – 20,030'
County: Lea

(2) Casing Information:

Type	Hole Size	Casing Size	Casing Weight	Setting Depth	Sacks of Cement	Estimated TOC	Method Determined
Surface	24"	20"	133.0 lb/ft	705'	720	Surface	Circulation
Intermediate 1	14-3/4"	13-3/8"	68.0 lb/ft	5,310'	1,190	Surface	Circulation
Intermediate 2	12-1/4"	9-5/8"	53.5 lb/ft	14,825'	4,920	Surface	Circulation
Liner	8-1/2"	7-5/8"	39.0 lb/ft	18,570'	305	14,625'	CBL

Note: A DV Tool will be set at 5,000'.

(3) Tubing Information:

4.5" (composite weight string) of fiberglass-coated tubing with setting depth of 18,550'
(4) Packer Information: Baker SC-2 or equivalent packer set at 18,550'

B.

(1) Injection Formation Name: Devonian and Silurian formations
Pool Name: SWD, DEVONIAN - SILURIAN
Pool Code: 97869

(2) Injection Interval: Open-hole injection between 18,570' – 20,030'

(3) Drilling Purpose: New Drill for Salt Water Disposal

(4) Other Perforated Intervals: No other perforated intervals exist.

(5) Overlying Oil and Gas Zones: Below are the approximate formation tops for known oil and gas producing zones in the area.

- Permian Delaware Mountain Group (5,310')
- Bone Springs (9,540')
- Wolfcamp (12,580')
- Atoka (15,150')
- Morrow (16,520')

Underlying Oil and Gas Zones: No underlying oil and gas zones exist.

V – Well and Lease Maps

The following maps are included in *Attachment 2*:

- 2-mile Oil & Gas Well Map
- 2-mile Lease Map
- 2-mile Mineral Ownership Map
- 2-mile Surface Ownership Map
- 1.5-mile Deep SWD Map (Devonian/Silurian SWDs)
- 1-mile Well Detail List
- Potash Lease Map

VI – AOR Well List

There are no wells within the 1-mile AOR that penetrate the proposed injection zone.

A list of the wells within the 1-mile AOR is included in *Attachment 2*.

VII – Proposed Operation

(1) Proposed Maximum Injection Rate: 40,000 bpd

Proposed Average Injection Rate: 20,000 bpd

(2) A closed system will be used.

(3) Proposed Maximum Injection Pressure: 3,714 psi (based on 0.2 psi per foot)

Proposed Average Injection Pressure: approximately 1,500 – 2,000 psi

(4) Source Water Analysis: It is expected that the injectate will consist of produced water from production wells completed in the Wolfcamp and Bone Springs formations. Analysis of

water from these formations is included in *Attachment 3*.

(5) Injection Formation Water Analysis: The proposed SWD will be injecting water into the Devonian and Silurian formations which is a non-productive zone known to be compatible

with formation water from the Wolfcamp and Bone Springs formations. Water analyses from the Devonian-Silurian formation in the area are included in *Attachment 4*.

VIII – Geologic Description

The proposed injection interval includes the Devonian and Silurian formations from 18,570 –

20,030 feet. These formations 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 present within the subject formations in the area.

The base of the deepest Underground Source of Drinking Water (USDW) is at a depth of approximately 680 feet. Surface casing will be set at a depth of 705 feet, which is 25 feet below

the top of the Rustler formation, which isolates the USDW. Geophysical log assessment was

conducted to accurately determine the top of the Rustler formation, and the top and the base of the Salado formation in this area. Water well depths in the area range from approximately 125 -

250 feet below ground surface.

IX – Proposed Stimulation Program

A small cleanup acid job may be used to remove mud and drill cuttings from the formation. However, no other formation stimulation is currently planned.

X – Logging and Test Data

Geophysical logs will be submitted to the Division upon completion of the well.

XI – Fresh Groundwater Samples

Based on a review of data from the New Mexico Office of the State Engineer, there are no groundwater wells located within 1-mile of the proposed SWD location; therefore, no groundwater samples were collected in association with this application.

A water well map of the area is included in *Attachment 5*.

XII – No Hydrologic Connection Statement

ALL Consulting has examined available geologic and engineering data, and has found no evidence of faulting present in the area that would provide a hydrologic connection between the injection interval and overlying USDWs. Additionally, the casing and cementing program has been designed to further ensure there will be no hydrologic connection between the injection interval and overlying USDWs. A letter from a knowledgeable and qualified expert stating that there is a low risk of seismic activity from the proposed injection activities is included in *Attachment 6*.

XIII – Proof of Notice

A Public Notice was filed with the Hobbs News - Sun newspaper and an affidavit is included in *Attachment 7*.

A copy of the application was mailed to the OCD District Office, landowner, and leasehold operators within 1-mile of the proposed SWD location. A list of the recipients, as well as delivery confirmations, are included in *Attachment 7*.

Attachments

Attachment 1:

- C-102
- Wellbore Diagram

Attachment 2: Area of Review Information:

- 2-mile Oil & Gas Well Map
- 2-mile Lease Map
- 2-mile Mineral Ownership Map
- 2-mile Surface Ownership Map
- 1.5-mile Deep SWD Map (Devonian/Silurian SWDs)
- 1-mile Well Detail List
- Potash Lease Map

Attachment 3: Source Water Analyses

Attachment 4: Injection Formation Water Analyses

Attachment 5: Water Well Map and Well Data

Attachment 6: Induced Seismicity Assessment Letter

Attachment 7: Public Notice Affidavit and Notice of Application Confirmations

- Wellbore Diagram
- C-102

Attachment 1

18.1 Miles SW of Jalisco, New Mexico. File No. A-12937

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 as 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: *Nate Alleman*
Date: 11/26/2019

Printed Name: Nate Alleman
E-mail Address: nalleman@all-llc.com

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.

Date of Survey: 11-1-2019
Signature and Seal of Professional Surveyor: *Michael L. Stanford*
Certificate Number: 10324

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.

12 Dedicated Acres		13 Joint or Infill		14 Consolidation Code		15 Order No.	
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the North/South line	Feet from the East/West line	County
C	33	26-S	34-E		561'	2534'	Lea County

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
C	33	26-S	34-E		561'	2534'	Lea County

10 Surface Location

Property Code	Property Name	Well Number	Elevation
329051	Julie Federal SWD	1	3274'
Operator Name	Property Name	Well Number	Elevation
Vista Disposal Solutions, LLC	SWD, Devonian - Silurian	1	3274'

API Number	Pool Code	Pool Name
97869	97869	SWD, Devonian - Silurian

WELL LOCATION AND ACREAGE DEDICATION PLAT

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

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

DISTRICT III
1000 Rio Huerfano 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

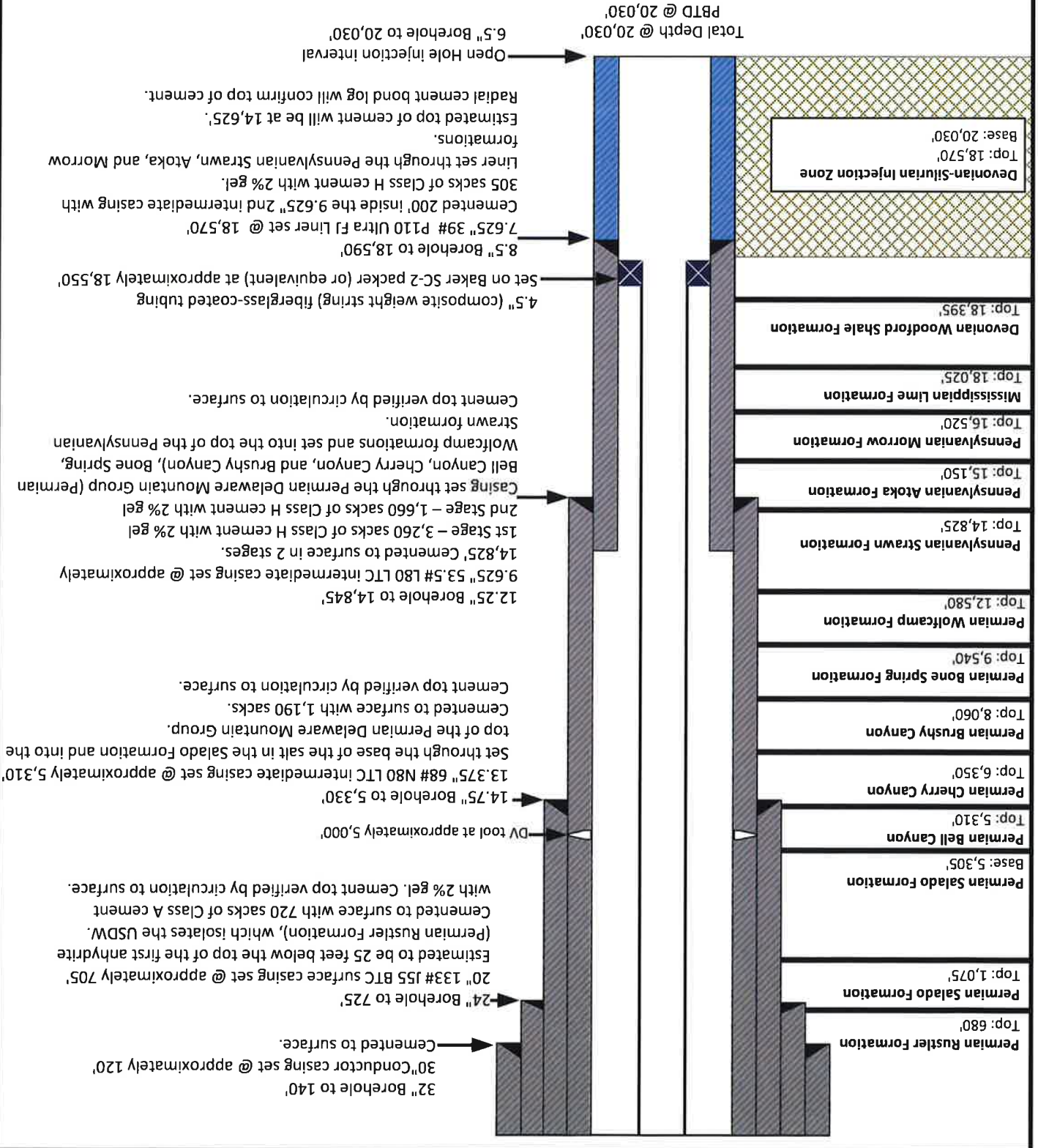


Date: 11/19/2019
 Project Manager: Dan Arthur
 Drawn by: Joshua Ticknor

Vista Disposal Solutions, LLC
 Julie Federal SWD #1

NOT TO SCALE

Note: Listed depths and cement volumes are approximates based on available information. All cement calculations use yield of 1.18 cubic foot per sack and include 25% excess.



Drawing 662-476-1



1 Introduction

The SC-2™ packer is Baker Hughes, a GE company (BHGE)' primary packer for cased hole gravel pack and frac applications where a high performance retrievable packer is required.

2 Description

The SC-2 packer is a fully retrievable, high-performance retriever production packer. Although the packer was originally designed for premium gravel pack applications, it may also be used as a standard completion packer in wells where a premium retrievable production packer is required.

The SC-2 packer is fully compatible with standard BHGE sealing accessories, including retrievable and expendable plugs.

Refer to the specifications guide in the Packer Size/Model Availability Guide, Specification Guide, and Packer/Accessory Guide for SC™ and HPM™ Packers (Product Family H48861, Unit 5750 under Sand Control Tools for packer/accessory size and packer size/model availability.

3 Application

The SC-2 packer is primarily used in gravel pack or frac pack applications where a higher differential pressure production rating, treating pressure rating and temperature are required. The SC-2 may also be used as a production packer.

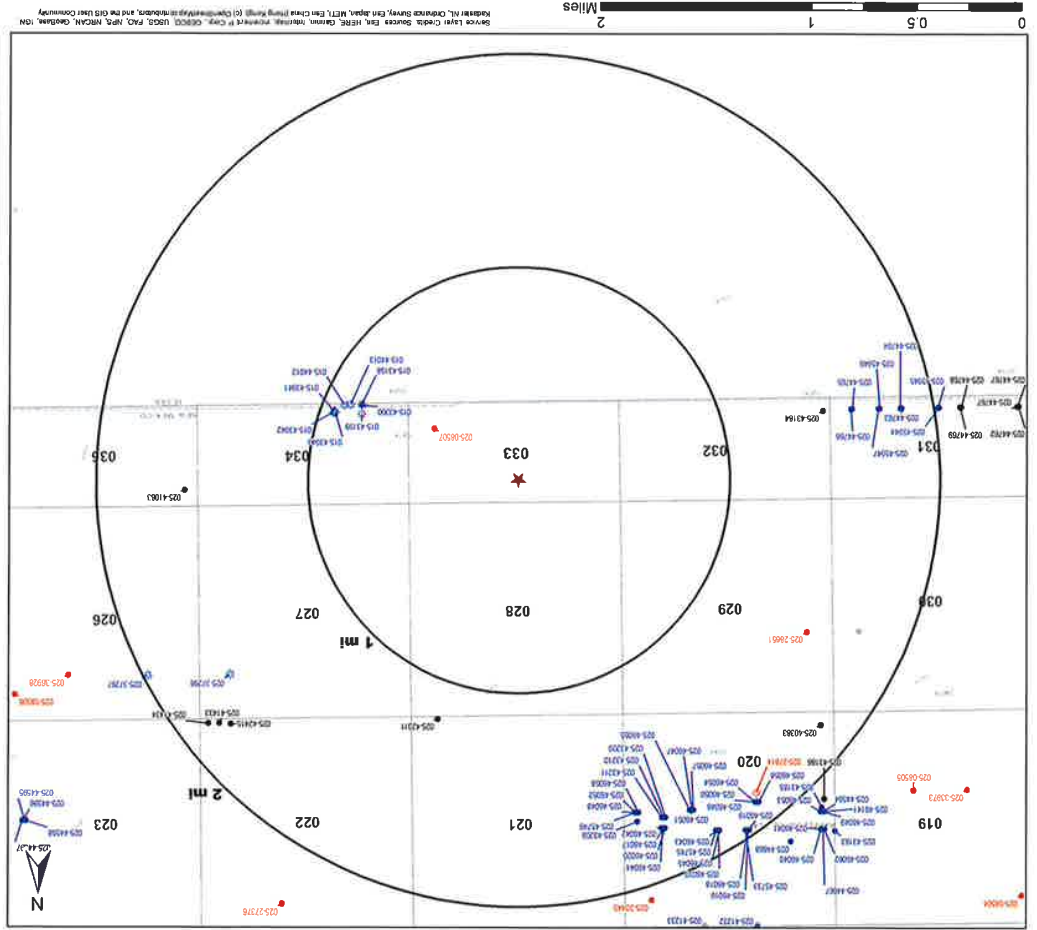
Attachment 2

Area of Review Information:

- 2-mile Oil & Gas Well Map
- 2-mile Lease Map
- 2-mile Mineral Ownership Map
- 2-mile Surface Ownership Map
- 1.5-mile Deep SWD Map (Devonian/Silurian SWDs)
- 1-mile Well Detail List
- Potash Lease Map

			
Prepared by: Dan Arthur		Mapped by: Ben Backmann	
Project: Lea County, New Mexico		Date: November 26, 2019	
Julie Federal SWD #1			
O&G Wells Area of Review			

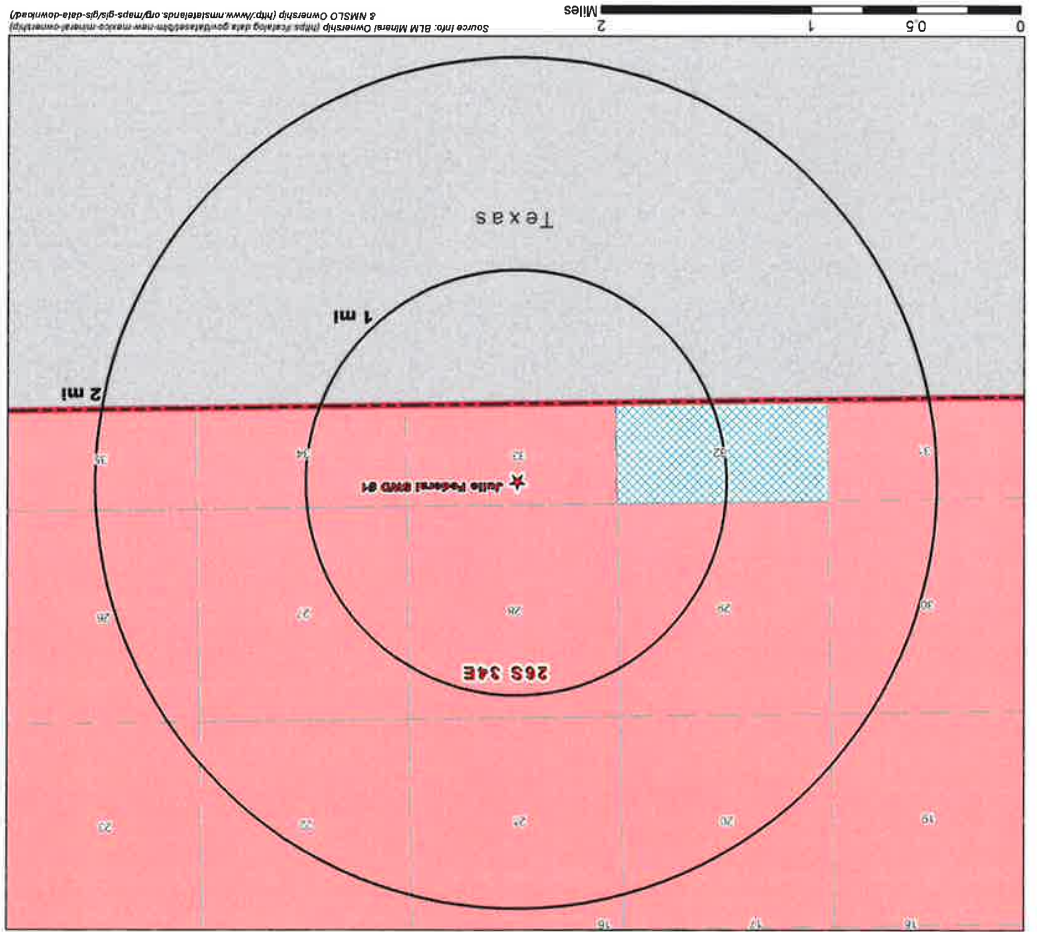
Source: NMOC O&G Wells updated 7/30/19
 (http://www.nmrd.state.nm.us/OCD/oogs.htm)



- Legend**
- ★ Proposed SWD
 - ☆ Gas, New (9)
 - Gas, Plugged (1)
 - Oil, Active (12)
 - Oil, Cancelled (3)
 - Oil, New (54)
 - Oil, Plugged (9)



SWD #1: Julie Federal SWD #1, Lea County, NM. SWD #2: Julie Federal SWD #2, Lea County, NM. SWD #3: Julie Federal SWD #3, Lea County, NM. SWD #4: Julie Federal SWD #4, Lea County, NM. SWD #5: Julie Federal SWD #5, Lea County, NM. SWD #6: Julie Federal SWD #6, Lea County, NM. SWD #7: Julie Federal SWD #7, Lea County, NM. SWD #8: Julie Federal SWD #8, Lea County, NM. SWD #9: Julie Federal SWD #9, Lea County, NM. SWD #10: Julie Federal SWD #10, Lea County, NM. SWD #11: Julie Federal SWD #11, Lea County, NM. SWD #12: Julie Federal SWD #12, Lea County, NM. SWD #13: Julie Federal SWD #13, Lea County, NM. SWD #14: Julie Federal SWD #14, Lea County, NM. SWD #15: Julie Federal SWD #15, Lea County, NM. SWD #16: Julie Federal SWD #16, Lea County, NM. SWD #17: Julie Federal SWD #17, Lea County, NM. SWD #18: Julie Federal SWD #18, Lea County, NM. SWD #19: Julie Federal SWD #19, Lea County, NM. SWD #20: Julie Federal SWD #20, Lea County, NM. SWD #21: Julie Federal SWD #21, Lea County, NM. SWD #22: Julie Federal SWD #22, Lea County, NM. SWD #23: Julie Federal SWD #23, Lea County, NM. SWD #24: Julie Federal SWD #24, Lea County, NM. SWD #25: Julie Federal SWD #25, Lea County, NM. SWD #26: Julie Federal SWD #26, Lea County, NM. SWD #27: Julie Federal SWD #27, Lea County, NM. SWD #28: Julie Federal SWD #28, Lea County, NM. SWD #29: Julie Federal SWD #29, Lea County, NM. SWD #30: Julie Federal SWD #30, Lea County, NM. SWD #31: Julie Federal SWD #31, Lea County, NM. SWD #32: Julie Federal SWD #32, Lea County, NM. SWD #33: Julie Federal SWD #33, Lea County, NM. SWD #34: Julie Federal SWD #34, Lea County, NM. SWD #35: Julie Federal SWD #35, Lea County, NM.

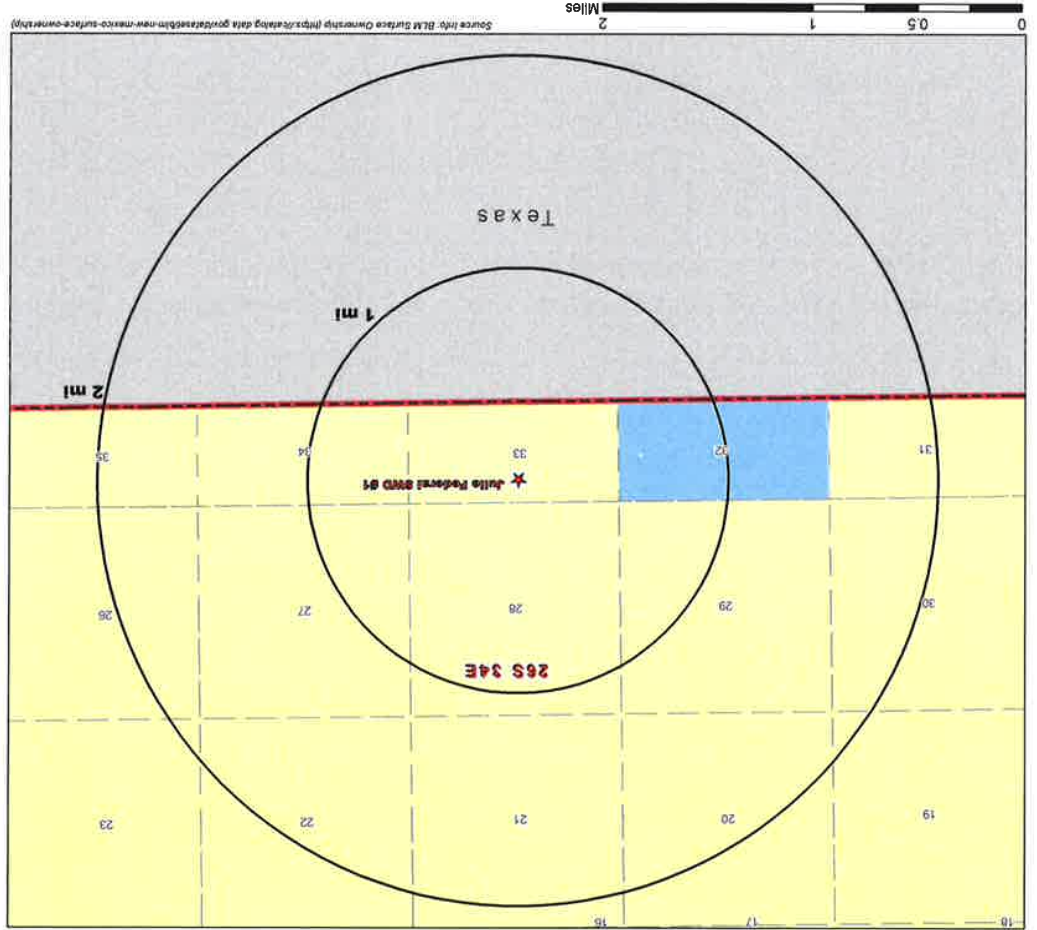
			
Prepared by: Dan Avitur		Prepared by: Ben Bockelmann	
Project: November 22, 2019		Mapped by: Ben Bockelmann	
Julie Federal SWD #1 Lea County, New Mexico			
Area of Review Mineral Ownership			






- Legend**
- ★ Proposed SWD
 - Mineral Ownership
 - All minerals are owned by U.S. (BLM)
 - Subsurface mineral (NMSLO)
 - Surface and Subsurface mineral (NMSLO)
 - Private minerals





			
Project: Julie Federal SWD #1 Area of Review: Surface Ownership Location: Lea County, New Mexico		Project Manager: Dan Arthur Date: November 22, 2019	
Mapped by: Ben Bockelmann			

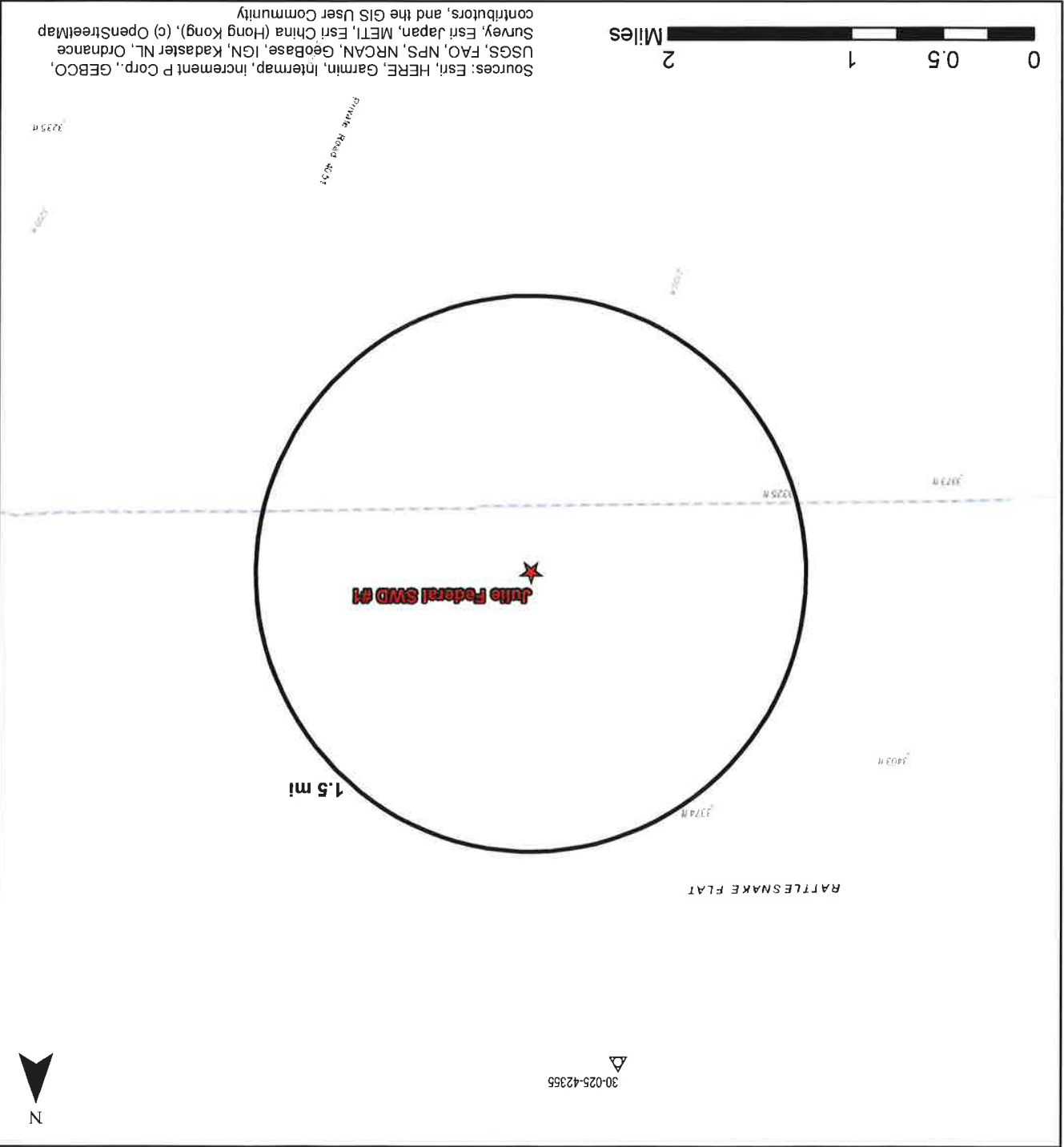


Legend

-  Proposed SWD
-  BLM Surface Ownership
-  State





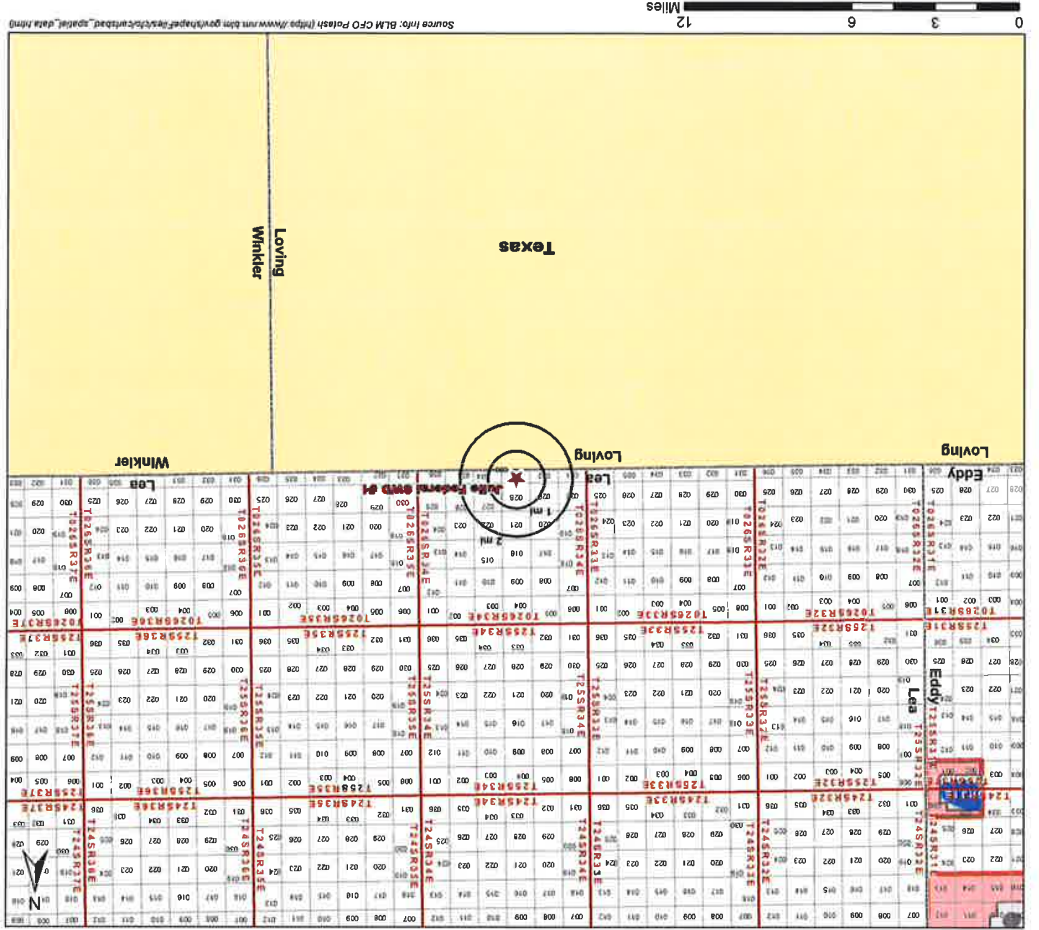
 Prepared for:		 Prepared by:	
Proj Mgr: Dan Arthur		Mapped by: Ben Bockelmann	
Nov 25, 2019		Julie Federal SWD #1 Deep SWDs AOR	
Legend ★ Proposed SWD ▲ Devonian/Silurian SWDs ▲ Salt Water Injection, Active (1)			
Source Info: NMOCD O&G Wells updated 7/30/2019 http://www.emnrd.state.nm.us/OCD/ocdgis.html			



AOR Tabulation for Julie Federal SWD #1 (Top of Injection Interval: 18,570')							
Well Name	API#	Well Type	Operator	Spud Date	Location (Sec., Tn., Rng.)	Total Vertical Depth (feet)	Penetrate Inj. Zone?
STAMPEDE 34 FEDERAL COM W2 #014H	30-015-43942	G	CONOCOPHILLIPS COMPANY	Not Drilled	3-34-26S-31E	Proposed (12057)	No
STAMPEDE 34 FEDERAL COM TC #004H	30-015-43200	O	CONOCOPHILLIPS COMPANY	Not Drilled	D-34-26S-31E	Proposed (11322)	No
STAMPEDE 34 FEDERAL COM W1 #015H	30-015-43943	G	CONOCOPHILLIPS COMPANY	Not Drilled	3-34-26S-31E	Proposed (11322)	No
STAMPEDE 34 FEDERAL COM #005H	30-015-44013	G	CONOCOPHILLIPS COMPANY	Not Drilled	4-34-26S-31E	Proposed (11322)	No
STAMPEDE 34 FEDERAL COM W3 #013H	30-015-43941	G	CONOCOPHILLIPS COMPANY	Not Drilled	3-34-26S-31E	Proposed (1234)	No
STAMPEDE 34 FEDERAL COM W3 #002H	30-015-43198	G	CONOCOPHILLIPS COMPANY	Not Drilled	4-34-26S-31E	Proposed (12225)	No
STAMPEDE 34 FEDERAL COM W2 #003H	30-015-43199	G	CONOCOPHILLIPS COMPANY	Not Drilled	4-34-26S-31E	Proposed (11855)	No
STAMPEDE 34 FEDERAL COM W2 #010H	30-015-44012	G	CONOCOPHILLIPS COMPANY	Not Drilled	3-34-26S-31E	Proposed (11967)	No
PRE-ONGARD WELL #001	30-025-08507	Plugged	PRE-ONGARD WELL OPERATOR (Mallard Petroleum, Inc.)	12/22/1962	1-33-26S-34E	Plugged (5560)	No

Notes: No wells within the 1-mile AOR penetrate the injection interval.

			
Prepared by:		Proj Mgr:	
Ben Bookmann		Dan Arthur	
November 25, 2019		Mapped by:	
Lea County, New Mexico			
Julie Federal SWD #1			
Area of Review			
Potash Leases			



Source Water Analyses

Attachment 3

Report # 3188

Remarks RW=.048@70F

*This calculation is only an approximation and is only valid before treatment of a well or several weeks after treatment.

*Calcium Carbonate Index
Below 800,000 Remote / 500,000 - 1,000,000 Possible / Above 1,000,000 Probable
507,520

*Calcium Sulfate (Gyp) Index
Below 500,000 Remote / 500,000 - 10,000,000 Possible / Above 10,000,000 Probable
1,000,000

Scaling Tendencies

Chlorides	Sulfates	Bicarbonates	Total Hardness (as CaCO3)	Total Dissolved Solids (Calc)	Equivalent NaCl Concentration
110,822 in PPM	213 in PPM	108	15,000 in Mg/L	12,799 in PPM	182,209 in PPM
130,000 in Mg/L	250 in Mg/L	127	15,000 in Mg/L	213,549 in Mg/L	182,968 in Mg/L

Anions

Sodium (Calc)	Calcium	Magnesium	Soluble Iron (FE2)
66,520 in PPM	3,413 in PPM	1,024 in PPM	9 in PPM
77,962 in Mg/L	4,000 in Mg/L	1,200 in Mg/L	10.0 in Mg/L

Cations

Specific Gravity	pH	Temperature (°F)	Reducing Agents
1.170	6.30	70	Absent
SG @ 60 °F	Sulfides		

Formation

Depth

Sample Source	Swab Sample	Sample #	Depth
BD		1	1-265-29F

Company	Well Name	County	State
BD		Los	New Mexico

Analyzed For

Bradley Jones #1

2708 West County Road, Hobbs NM 88240
Phone (575) 392-5556 Fax (575) 392-7307



Wolfcamp

Water Analysis
Date: 23-Aug-11

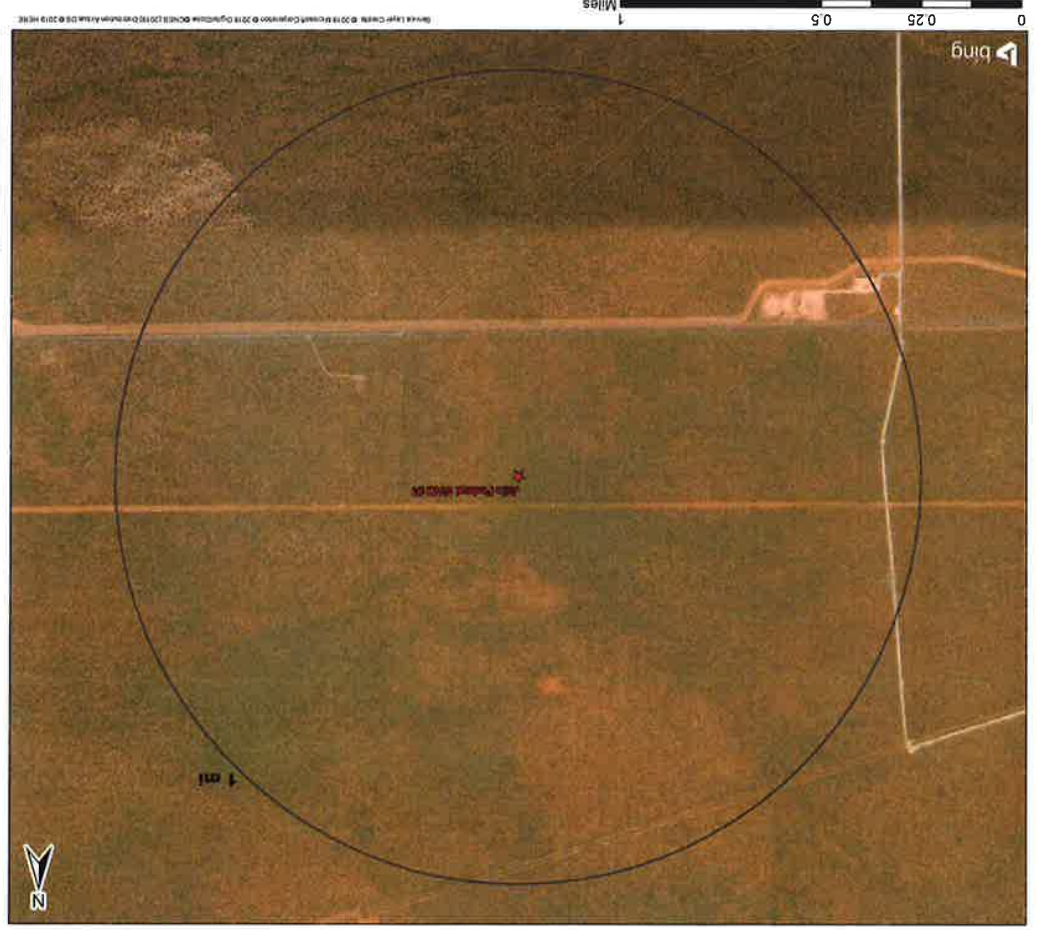
Attachment 4
Injection Formation Water Analyses

Water Well Map and Well Data

Attachment 5

			
Prepared by: Ben Bockelmann		Prepared by: Dan Arthur	
Mapped by: Ben Bockelmann		November 25, 2019	
Julie Federal SWD #1 Lea County, New Mexico			
Water Wells Area of Review			

- Legend**
- ★ Proposed SWD
 - NMOSE PODS**
 - Status
 - Active (0)
 - Pending (0)
 - Change Location of Well (0)
 - Capped (0)
 - Plugged (0)
 - Incomplete (0)
 - Unknown (0)



Water Well Sampling Rationale						
Vista Disposal Solutions, LLC - Julie Federal SWD #1						
SWD	Water Wells	Owner	Available Contact Information	Use	Sampling Required	Notes

Note: No water wells are present within 1 mile of the proposed SWD location.

Induced Seismicity Assessment Letter

Attachment 6

In a recent paper written by Snee and Zoback (2018) entitled "State of Stress in the Permian Basin, Texas and New Mexico: Implications for Induced Seismicity," the authors found that large groups of mostly north-south striking Precambrian basement faults, predominantly located along the Central Basin Platform, the western Delaware Basin, and large parts of the Northwest Shelf (which includes Eddy and Lea counties, New Mexico) have low FSP at the modeled fluid-pressure

Vista does not own either 2D or 3D seismic reflection data in the area of the Subject Well. Publicly available fault data from USGS indicates that the closest known fault is approximately 8.0 miles northeast of the Subject Well (See Exhibit 1).

The Subject Well, is located 561' FNL & 2,534' FWL of Section 33, in T26-S and R34-E of Lea County, New Mexico. Historically, the Eddy and Lea Counties area has experienced very limited recorded seismic activity (per the U.S. Geological Survey [USGS] earthquake catalog database). There has been one known seismic event located within a 25-mile radius of the proposed Subject Well. The closest recorded seismic event was a M2.9 that occurred on December 4th, 1984 and was located approximately 18.6 miles northwest of the Subject Well (See Exhibit 1). The closest Class IID well injecting into the same formations (Devonian-Stilurian) of the Subject Well is approximately 2.7 miles to the north (See Exhibit 1).

As outlined herein, based on my experience as an expert on the issue of induced seismicity, it is my opinion that the potential for the proposed injection well to cause injection-induced seismicity activity and faulting in the area, (2) the low fault slip potential (FSP) of Precambrian faults in the area, (3) the presence of confining layers, and (4) the overall vertical distance between the proposed injection zone and basement rock.

This letter provides information regarding the seismic potential associated with injection operations associated with Vista Disposal Solutions, LLC (Vista), proposed Julie Federal SWD #1, hereinafter referred to as the "Subject Well."

Dear Mr. Goetze,

Subject: Induced Seismicity Potential Statement for the Julie Federal SWD #1

Mr. Phillip Goetze, P.G.
NM EMNRD – Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

November 26, 2019



Enclosures
References
Exhibits

J. Daniel Arthur, P.E., SPFC
President and Chief Engineer



Sincerely,
ALL Consulting

Conclusion

As an expert on the issue of induced seismicity, it is my opinion that the potential for the proposed injection well to cause injection-induced seismicity is expected to be minimal, at best. This conclusion is based on (1) the lack of historic seismic activity and faulting in the area, (2) the low FSP of Precambrian faults in the area, (3) the presence of confining layers, and (4) the overall vertical distance between the proposed injection zone and basement rock.

In the Eddy and Lea Counties area of New Mexico, the Simpson Group is comprised of a series of Middle to Upper Ordovician carbonates, several sandstones, and sandy shales that range from approximately 350 to 650 feet thick (Jones 2008). This group of rocks is capped by the limestones of the Bromide Formation, which is approximately 200 feet thick in this area (Jones 2008). The closest deep well drilled into the Precambrian basement was completed by the Skelly Oil Company in 1975. This well is located in Section 17, Range 36E, Township 25S of Lea County (API No. 30-025-25046) and encountered 602 feet of Ellenburger Formation before reaching the top of the Precambrian granite at a depth of 18,920 feet. Based on the estimated thickness of the Simpson Group and Ellenburger Formation in this area, the Precambrian basement should be approximately 1,000 to 1,200 feet below the bottom of the proposed injection zones in the Subject Well.

Geologic analysis indicates that the proposed Devonian-Silurian injection zone is overlain by approximately 200 to 400 feet of Woodford Shale, which is the upper confining zone and will serve as a barrier for upward injection fluid migration. Additionally, the Simpson Group that lies directly below the Montoya Formation will act as a lower confining zone to prohibit fluids from migrating downward into the underlying Ellenburger Formation and Precambrian basement rock. See the stratigraphic column for the Delaware Basin included in Exhibit 3.

The map in Exhibit 2 depicts the low probability risk of FSP for the Delaware Basin and Northwest Shelf areas (Snee and Zoback 2018).

References

Induced Seismicity Potential Statement for the Julie Federal SWD #1
November 26, 2019

Ball, Mahlon M. 1995. "Permian Basin Province (044)." In *National Assessment of United States Oil and Gas Resources—Results, Methodology, and Supporting Data*. U.S. Geological Survey. <https://certmapper.cr.usgs.gov/data/noga95/prov44/text/prov44.pdf> (accessed June 18, 2018).

Green, G.N., and G.E. Jones. 1997. "The Digital Geologic Map of New Mexico in ARC/INFO Format." U.S. Geological Survey Open-File Report 97-0052. <https://mrdata.usgs.gov/geology/state.php?state=NM> (accessed June 14, 2018).

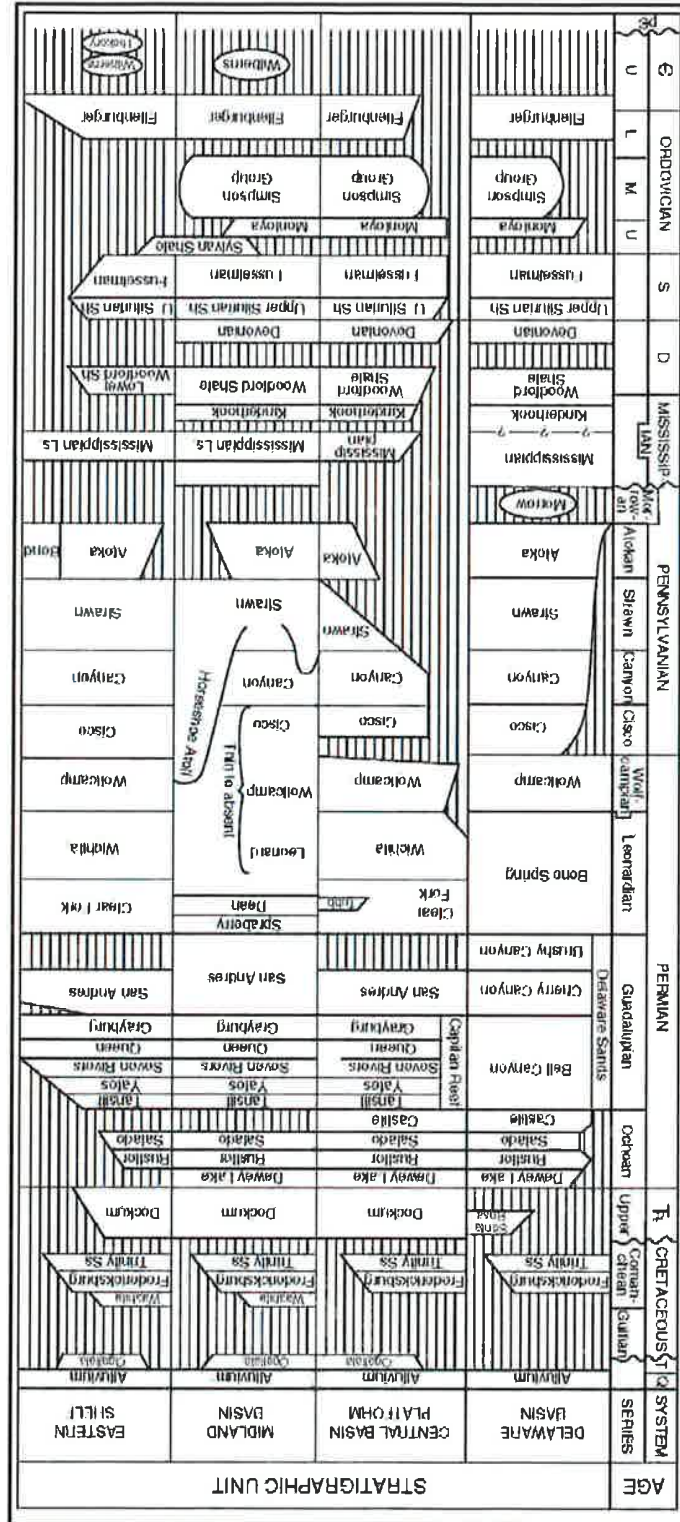
Jones, Rebecca H. 2008. "The Middle-Upper Ordovician Simpson Group of the Permian Basin: Deposition, Diagenesis, and Reservoir Development." http://www.beg.utexas.edu/resprog/permianbasin/PBGSF_members/writ_synth/Simpson.pdf (accessed June 19, 2018).

Snee, Jens-Erik Lund, and Mark D. Zoback. 2018. "State of Stress in the Permian Basin, Texas and New Mexico: Implications for Induced Seismicity." *The Leading Edge* 37, no. 2 (February 2018): 127-34.

U.S. Geological Survey (USGS). No date. Earthquakes Hazard Program: Earthquake Catalog. <https://earthquake.usgs.gov/earthquakes/search/> (accessed June 14, 2018).

Exhibits

Exhibit 3. Delaware Basin Stratigraphic Chart (Ball 1995)



Public Notice Affidavit and Notice of Application Confirmations

Attachment 7

APPLICATION FOR AUTHORIZATION TO INJECT

NOTICE IS HEREBY GIVEN: That Vista Disposal Solutions, LLC, 12444 NW 10th St., Building G, Suite 202-512, Yukon, OK 73099, is requesting that the New Mexico Oil Conservation Division administratively approve the APPLICATION FOR AUTHORIZATION TO INJECT as follows:

PURPOSE: The intended purpose of the injection well is to dispose of salt water produced from permitted oil and gas wells.

WELL NAME AND LOCATION: Julie Federal SWD #1
NE ¼ NW ¼, Section 33, Township 26S, Range 34E
561st FNL & 2,534th FWL
Lea County, NM

NAME AND DEPTH OF DISPOSAL ZONE: Devonian – Silurian (18,570' – 20,030')
EXPECTED MAXIMUM INJECTION RATE: 40,000 Bbls/day
EXPECTED MAXIMUM INJECTION PRESSURE: 3,714 psi (surface)

Objections or requests for hearing must be filed with the New Mexico Oil Conservation Division within fifteen (15) days. Any objection or request for hearing should be mailed to the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505.

Additional information may be obtained by contacting Nate Allemann at 918-382-7581.

Affidavit of Publication

STATE OF NEW MEXICO
COUNTY OF LEA

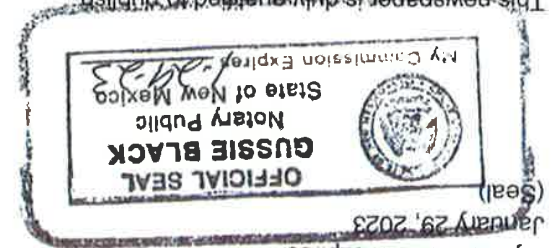
I, Todd Bailey, Editor of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

Beginning with the issue dated
November 13, 2019
and ending with the issue dated
November 13, 2019

Editor
[Signature]

Sworn and subscribed to before me this
13th day of November 2019.

[Signature]
Business Manager



This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937 and payment of fees for said

LEGAL NOTICE
NOVEMBER 13, 2019

APPLICATION FOR AUTHORIZATION TO INJECT

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Additional information may be obtained by contacting Nate Allemann at 918-382-7581. #34853

67115320 00236042

DANIEL ARTHUR
ALL CONSULTING
1718 S. CHEYENNE AVE.
TULSA, OK 74119

Julie Federal SWD #1 - Notice of Application Recipients				
Entity	Address	City	State	Zip Code
Landowner & Mineral Owner				
New Mexico BLM	620 E Greene St.	Carlsbad	NM	88220
OCD District				
NMOC District 1	1625 N. French Drive	Hobbs	NM	88240
Leasehold Operators				
Chevron USA Inc. (Chevron USA INC)	6301 Deauville Blvd	Midland	TX	79706
Commission of Public Lands - State Land Office	310 Old Santa Fe Trail	Santa Fe	NM	87501
ConocoPhillips Company	P.O. Box 7500	Bartlesville	OK	79705
Devon Energy Production Company, LP (DEVON ENERGY PROD CO LP) (DEVON ENERGY PROD CO)	333 W. Sheridan Ave.	Oklahoma City	OK	73102
Echo Production, Inc. (ECHO PROD INC)	P.O. Box 1210	Graham	TX	76450
Railroad Commission of Texas Technical Permitting Section - UIC Program (TEXAS)	P.O. Box 12967	Austin	TX	78711

Notes: The table above shows the Entities who were identified as parties of interest requiring notification on either the 1-mile well detail list (Attachment 2) or on the 2-mile Mineral Lease Map (Attachment 2). The names listed above in parenthesis, are the abbreviated entity names used on either the 1-mile well detail list (Attachment 2) or on the 2-mile Mineral Lease Map (Attachment 2).

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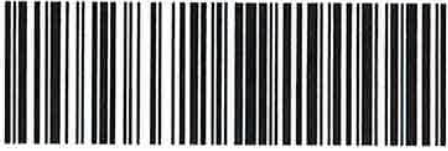
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1625 N. French Drive
Hobbs NM 88240-9273

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Railroad Commission of Texas
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New Mexico BLM
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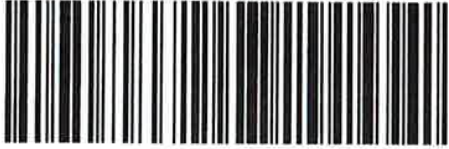
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P.O. Box 7500
Bartlesville OK 74005-7500

Devon Energy Production Company, LP
333 W. Sheridan Ave.
Oklahoma City OK 73102-5010

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Midland TX 79706-2964

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Commission of Public Lands
310 Old Santa Fe Trail
Santa Fe NM 87501-2708

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