Initial Application Part I

Received: **12/09/2019**

This application is placed in file for record. It MAY or MAY NOT have been reviewed to be determined Administratively Complete

ALL CONSULTING
GOVERNMENT RELATIONS · ENERGY · PLANNING · TECHNOLOGY
ENGINEERING · ENVIRONMENTAL

December 6, 2019

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

Subject: Vista Disposal Solutions, LLC – John Federal SWD #1
Application for Authorization to Inject

To Whom It May Concern,

On behalf of Vista Disposal Solutions, LLC (Vista), ALL Consulting, LLC (ALL) is submitting the enclosed Application for Authorization to Inject for the John Federal SWD #1, a proposed salt water disposal well, in Lea County, NM. Additionally, the public notice for this application was published one December 7th, 2019, and the affidavit will be submitted once it is received.

Should you have any questions regarding the enclosed application, please contact Dan Arthur at (918) 382-7581 or darthur@all-llc.com.

Sincerely,
ALL Consulting

Dan Arthur
President/Chief Engineer

OEEJM-191209-C-1080

Revised March 23, 2017

RECEIVED: 12/9/19	REVIEWER: BLL	TYPE: SWD	APP NO: pBL1934360575

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: _____ **OGRID Number:** _____
Well Name: _____ **API:** _____
Pool: _____ **Pool Code:** _____

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

SWD-2346

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

FOR OCD ONLY
☐ Notice Complete
☐ Application Content Complete

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

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.

Print or Type Name

JAMES DANIEL ARTHUR NEW MEXICO 21680 PROFESSIONAL ENGINEER
11/26/19

Signature

Date

Phone Number

e-mail Address

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL
RESOURCES DEPARTMENT

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 ___X___Disposal
_____Storage Application qualifies for administrative approval? ___X___Yes _____No

II. OPERATOR: Vista Disposal Solutions, LLC

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

CONTACT PARTY Nate Alleman 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 ___X___No
If yes, give the Division order number authorizing the project: _____

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

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

*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

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

NAME: Dan Arthur, P.E., SPEC TITLE: President/Chief Engineer

SIGNATURE: _____ DATE: 11/26/2019

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

JAMES DANIEL ARTHUR NEW MEXICO 21986 PROFESSIONAL ENGINEER 11/26/2019

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

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

Side 2

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

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

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

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

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

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

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

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

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

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

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

(2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;

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

(4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

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

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

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

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

A.

(1) General Well Information:

Operator: Vista Disposal Solutions, LLC (OGRID No. 329051)
Lease Name & Well Number: John Federal SWD #1
Location Footage Calls: 1,429' FNL & 263' FEL
Legal Location: Unit Letter H, S29 T25S R35E
Ground Elevation: 3,236'
Proposed Injection Interval: 5,330' – 6,100'
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	975'	990	Surface	Circulation
Intermediate 1	14-3/4"	13-3/8"	68.0 lb/ft	5,310'	1,190	Surface	Circulation
Production	12-1/4"	9-5/8"	53.5 lb/ft	6,200'	335	5,200'	CBL

(3) Tubing Information:

5.5" (20# N-80 LTC) of fiberglass-coated injection tubing with setting depth of 5,310'

(4) Packer Information: Baker Hornet or equivalent packer set at 5,310'

B.

(1) Injection Formation Name: Bell Canyon
Pool Name: SWD; BELL CANYON
Pool Code: 96769
(2) Injection Interval: Cased hole injection between 5,330' – 6,100'
(3) Drilling Purpose: New Drill for Salt Water Disposal
(4) Other Perforated Intervals: No other perforated intervals exist.
(5) Overlying Oil and Gas Zones: No overlying oil and gas zones exist.
Underlying Oil and Gas Zones: Below are the approximate formation tops for known oil and gas producing zones in the area.

- Bone Springs (9,150')

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 Owernship Map
- 1/2-mile Well Detail List
- Potash Lease Map

VI – AOR Well List

There are no wells within the 1/2-mile AOR, thus no wells within the ½-mile AOR penetrate the proposed injection zone.

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

VII – Proposed Operation

(1) **Proposed Maximum Injection Rate:** 25,000 bpd
Proposed Average Injection Rate: 12,500 bpd
(2) A **closed system** will be used.
(3) **Proposed Maximum Surface Injection Pressure**: 1,066 psi (based on 0.2 psi per foot)
Proposed Average Surface Injection Pressure: approximately 750 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 Bell Canyon Formation which is a non-productive zone known to be compatible with formation water from the Wolfcamp and Bone Springs Formations. Water analyses results were selected from intervals comparable to that of the injection zone in the Bell Canyon Formation- Delaware Mountain Group. Water analysis from in the area are included in ***Attachment 4*.**

VIII – Geologic Description

The proposed injection interval includes the Bell Canyon Formations from 5,330 – 6,100 feet. This formation consists of clastic sandstones, interbedded with several tight limestone members. Several thick sections of porous sandstone capable of taking water are present within the subject formation in the area.

The base of the deepest Underground Source of Drinking Water (USDW) is at a depth of approximately 950 feet. Surface casing will be set at a depth of 975 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 50 - 270 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 well 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 & Technical Assessment & Feasbility for Injection

ALL Consulting (ALL) has examined all available public and published geologic and engineering data, and has found no evidence of open faults or any other hydrologic connection between the injection interval and overlying Underground Sources of Drinking Water (USDWs). Additionally, the casing, cementing, and completion program has been designed to further ensure that there will be no hydrologic connection, nor will it allow for migration of injectate below the proposed injection interval that could affect correlative rights issues.

Additionally, ALL Consulting has conducted an extensive technical review and geologic assessment of the alleged New Mexico Oil Conservation Division Delaware Mountain Group (DMG) saltwater disposal well impacts to production wells and drilling operations associated with the Brushy Canyon Formation. A letter from ALL's qualified geological expert not only addresses the issue of no hydrologic connection, but also states that the Bell Canyon Formation includes viable injection intervals with multiple confining zones 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: No Hydrologic Connection Statement & Technical Assessment & Feasibility for Injection

Attachment 7: Public Notice Affidavit and Notice of Application Confirmations

Attachment 1

- C-102
- Wellbore Diagram

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

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1]API Number	[2]Pool Code	[3]Pool Name
	96769	SWD; Bell Canyon

[4]Property Code	[5]Property Name	[6]Well Number
	John Federal SWD	1

[7]OGRID No.	[8]Operator Name	[9]Elevation
329051	Vista Disposal Solutions, LLC	3236'

[10]Surface Location

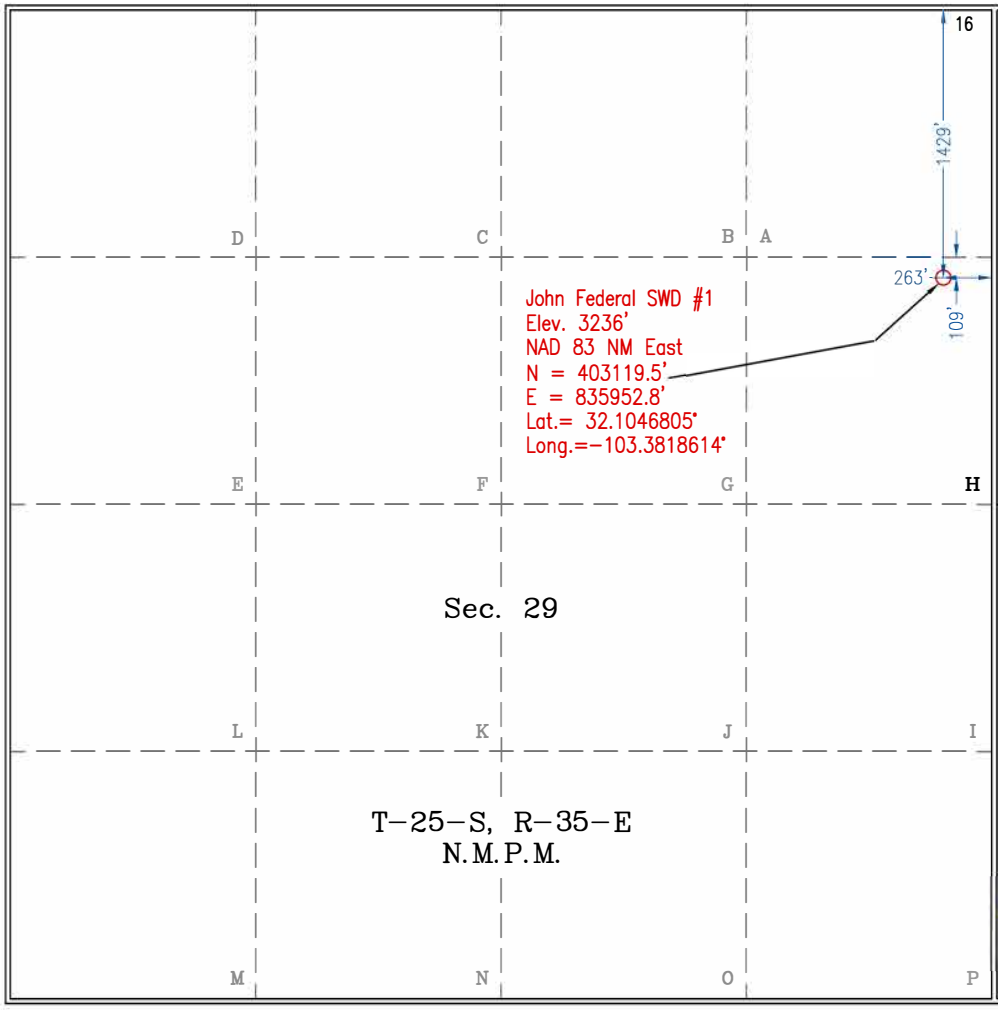
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	29	25-S	35-E		1429'	North	263'	East	Lea

[11]Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

[12]Dedicated Acres	[13]Joint or Infill	[14]Consolidation Code	[15]Order No.

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.



[17]OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Nathan Alleman — 12/06/2019
Signature — Date

Nate Alleman
Printed Name

nalleman@all-llc.com
E-mail Address

[18]SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

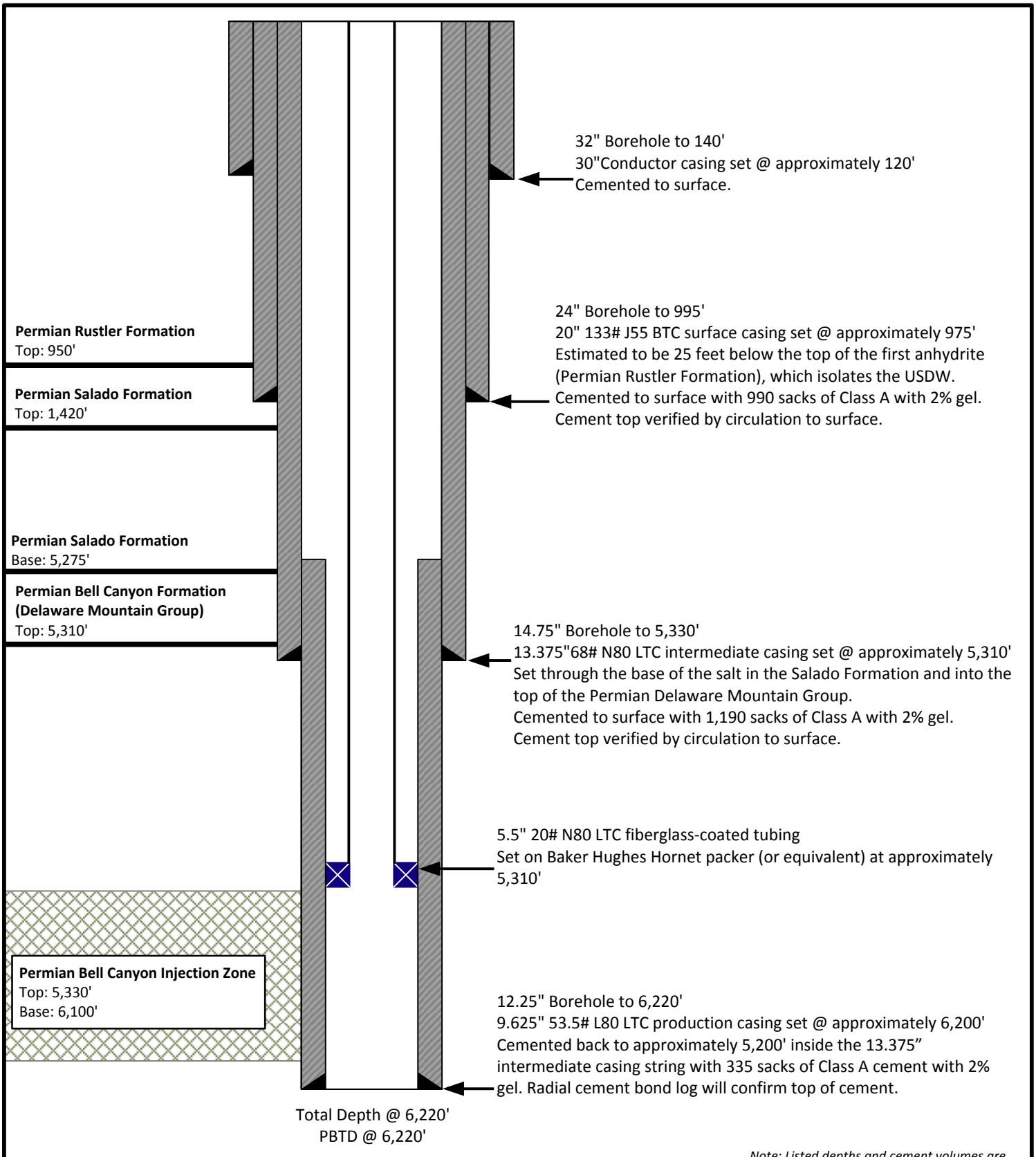
10-24-2019
Date of Survey

Signature and Seal of Professional Surveyor:

MICHAEL L. STANFORD
NEW MEXICO
10324
REGISTERED PROFESSIONAL LAND SURVEYOR

10324
Certificate Number

11.0 Miles W-SW of Jal, New Mexico. File No. A-12936



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 40% excess.

NOT TO SCALE

Prepared by: ALL CONSULTING

Prepared for: VISTA DISPOSAL SOLUTIONS, LLC

Drawn by: Joshua Ticknor

Project Manager: Dan Arthur

Date: 11/25/2019

Vista Disposal Solutions, LLC
John Federal SWD #1

HORNET Packer
Product Family No. H64682

HORNET EL Packer
Product Family No. H64683

The mechanically set HORNET™ packer offers ease of operation with quarter-turn right to set and release. Converting it for wireline-setting applications is simple and inexpensive. The HORNET packer provides for landing in compression, tension, or neutral positions. Every component from the jay track, to the internal bypass, to the packing-element system and the upper slip assembly has been developed to ensure the HORNET's setting and releasing reliability.

The HORNET EL packer is run and set on electric line using an E-4™ (Product Family No. H43702) with a slow-set power charge or a J™ setting tool (Product Family No. H41371) and a special wireline adapter kit. An L-10™ type on/off seal nipple is run on top of the packer to connect the tubing to the packer and to house a blanking plug when the packer is used as a temporary bridge plug.

Features and Benefits

- Upper Slip Assembly:
  - Thoroughly tested across API minimum to maximum casing ID tolerances for each specified casing weight, for setting and releasing reliability
  - Slip-wicker configuration providing bidirectional-load support with solid upper cone to support highest tensile loads
  - Staged-release action eliminates high-overpull requirement
  - Minimal set-down weight required to anchor slips
- Internal Bypass Seal:
  - Durable bypass seal design provides sealing after unloading, under differential pressures
  - No O-ring sealing system
- Packing Element System:
  - Fully tested to combined ratings at the API's maximum ID tolerance
  - Patented enhancements to control overboost
  - High-performance, three-piece element system
- Lower Slip and Jay Assembly:
  - Slips and drag blocks tested to maximum API tolerance ID for positive set and ease of release
  - One-quarter-turn right setting and releasing action
  - Packoff of packing elements with applied tension or compression
  - Spacing in jay ensures opening of internal bypass, before slip releasing action begins–important to both ease of release and safety
  - Automatically returns to running position

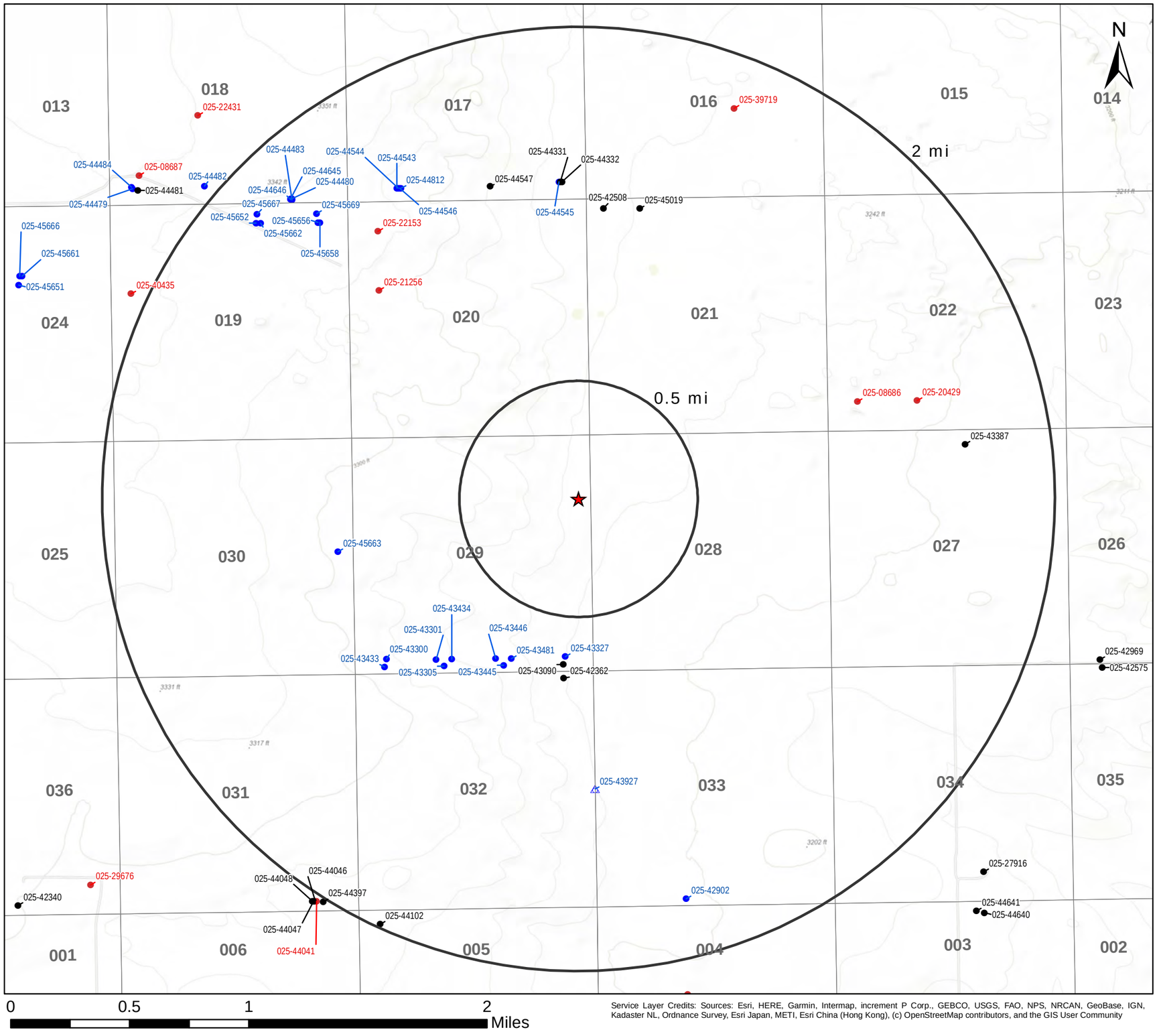
HORNET Packer Product Family No. H64682

HORNET EL Packer Product Family No. H64683

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
- 1/2-mile Well Detail List w/ Casing Information for the Penetrating Wells
- Potash Lease Map



Legend

- Proposed SWD
- Oil, Active (20)
- Oil, New (32)
- Oil, Plugged (11)
- Salt Water Injection, New (1)

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Source Info: NMOCD O&G Wells updated 7/30/2019 (http://www.emnrd.state.nm.us/OCD/ocdgis.html)

O&G Wells Area of Review

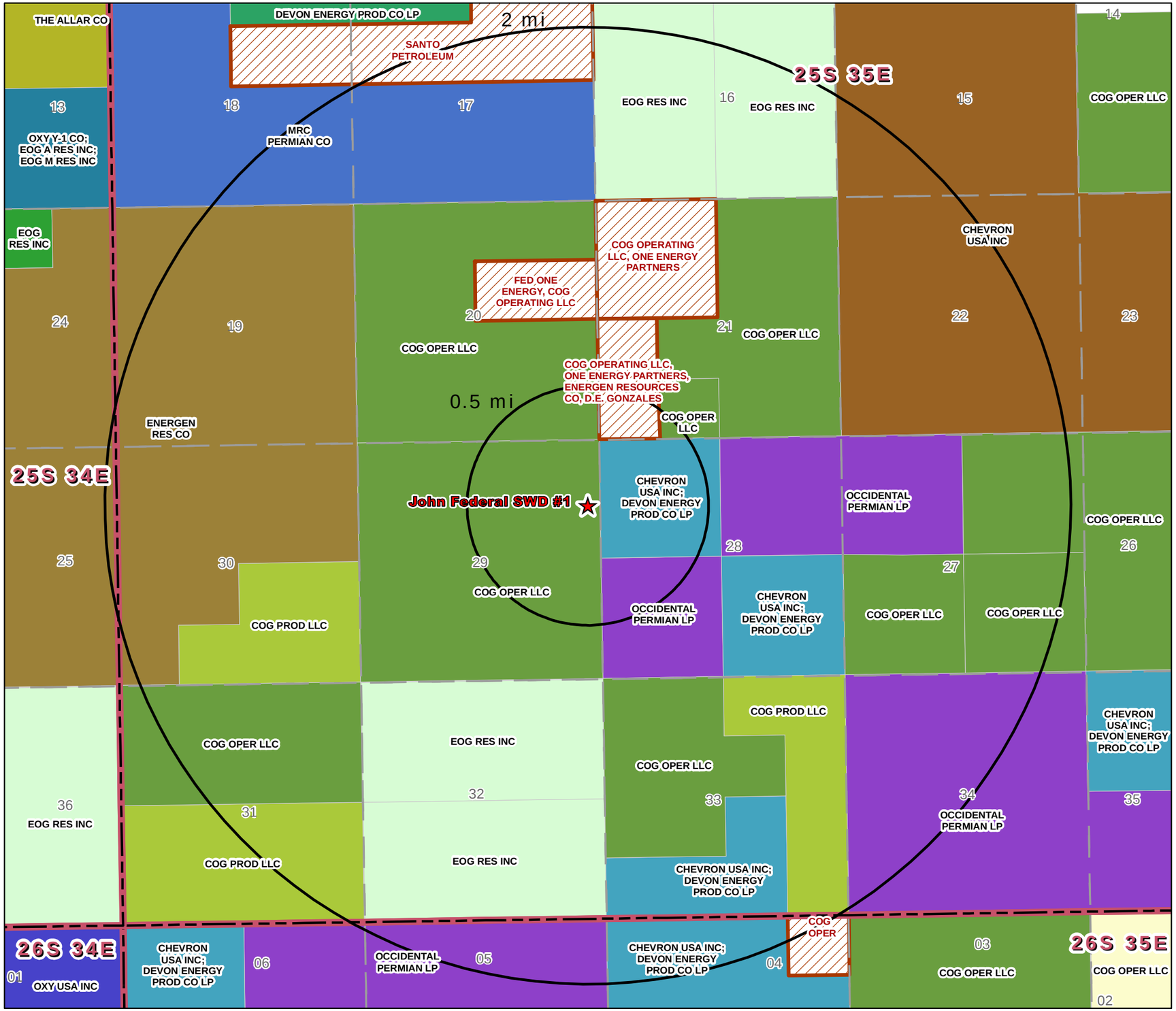
John Federal SWD #1

Lea County, New Mexico

Proj Mgr: Dan Arthur	November 22, 2019	Mapped by: Ben Bockelmann

Prepared for: VISTA

Prepared by: ALL CONSULTING



Legend

- Proposed SWD
- Private Mineral Leases

BLM Mineral Leases

- CHEVRON USA INC
- CHEVRON USA INC; DEVON ENERGY PROD CO LP
- COG OPER LLC
- COG PROD LLC
- DEVON ENERGY PROD CO LP
- ENERGEN RES CO
- EOG RES INC
- MRC PERMIAN CO
- OCCIDENTAL PERMIAN LP
- OXY USA INC
- OXY Y-1 CO; EOG A RES INC; EOG M RES
- THE ALLAR CO

NMSLO Mineral Leases

- COG OPER LLC
- EOG RES INC

N

Source Info: BLM Mineral Leases (https://catalog.data.gov/dataset/blm-new-mexico-mineral-ownership) & NMSLO O&G Leases (http://www.nmstatelands.org/maps-gis/gis-data-download/)

Mineral Lease Area of Review

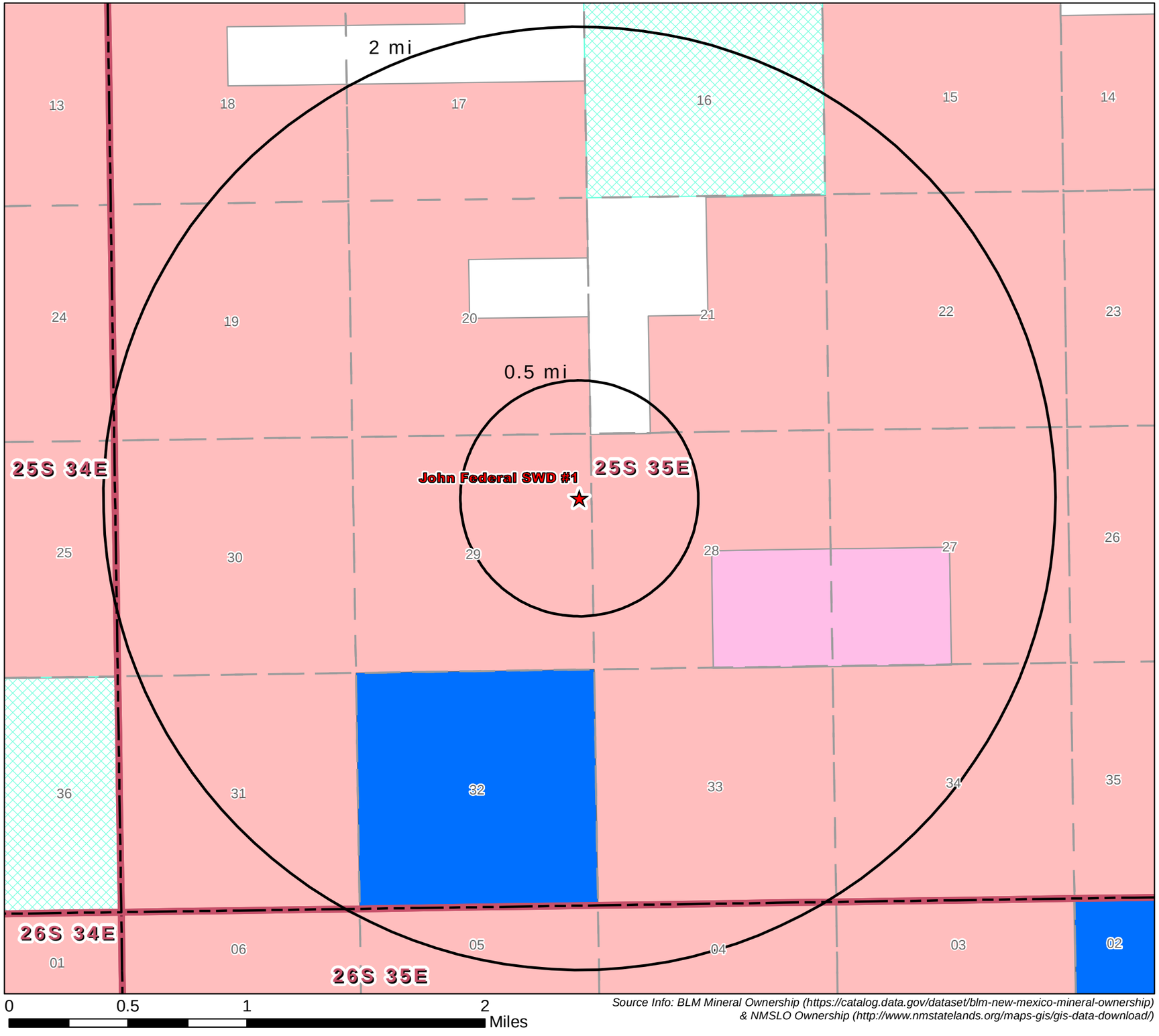
John Federal SWD #1

Lea County, New Mexico

Proj Mgr: Dan Arthur	November 22, 2019	Mapped by: Ben Bockelmann

Prepared for: VISTA

Prepared by: ALL CONSULTING



N

Legend

- Proposed SWD

Mineral Ownership

- All minerals are owned by U.S. (BLM)
- Other minerals are owned by the U.S. (BLM)
- Subsurface minerals (NMSLO)
- Surface and Subsurface minerals (NMSLO)
- Private minerals

Source Info: BLM Mineral Ownership (https://catalog.data.gov/dataset/blm-new-mexico-mineral-ownership) & NMSLO Ownership (http://www.nmstatelands.org/maps-gis/gis-data-download/)

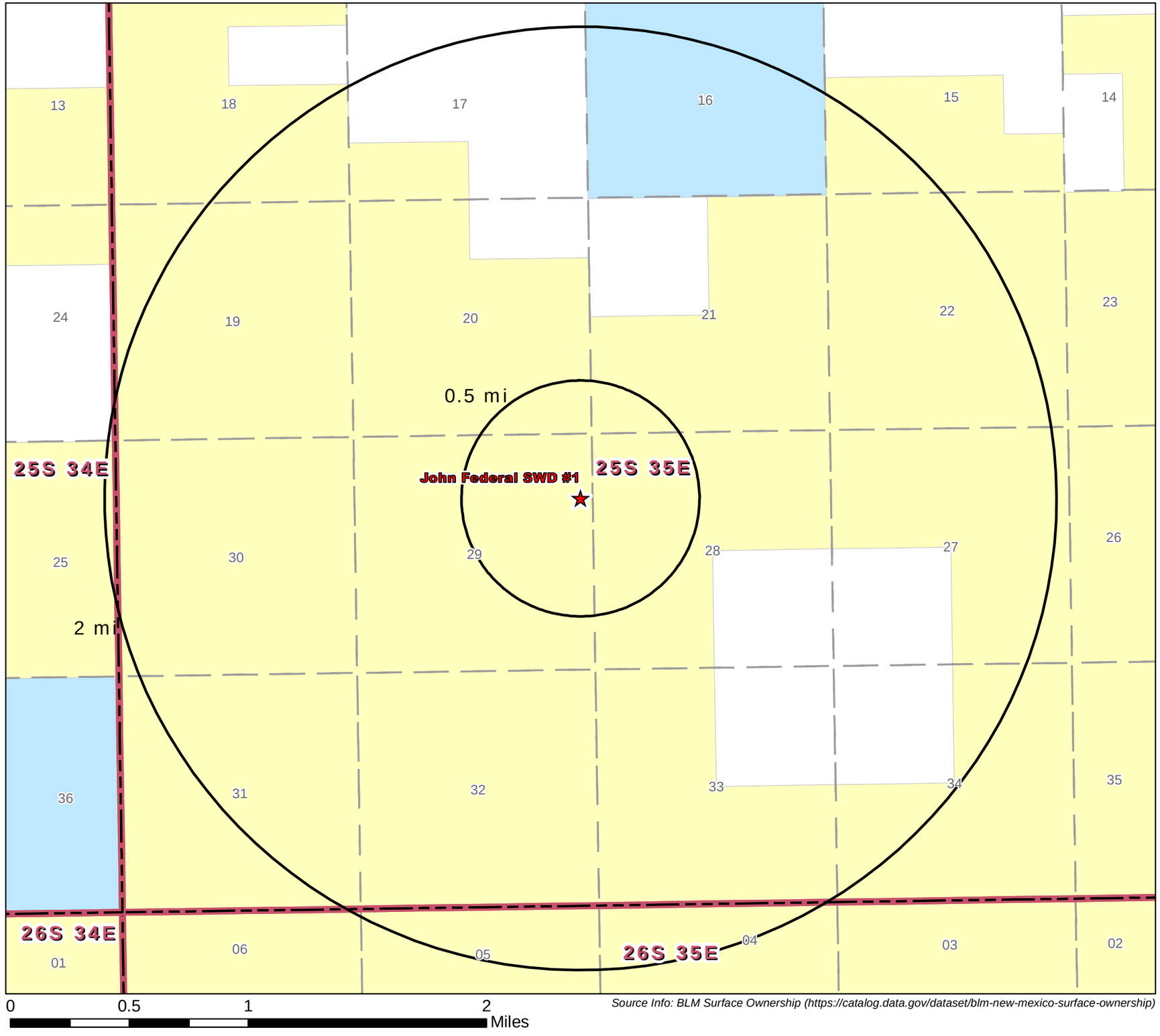
Mineral Ownership
Area of Review

John Federal SWD #1
Lea County, New Mexico

Proj Mgr: Dan Arthur	December 06, 2019	Mapped by: Ben Bockelmann

Prepared for: VISTA MINERAL SOLUTIONS, LLC

Prepared by: ALL CONSULTING



N

Legend

- Proposed SWD

Surface Ownership

- BLM
- Private
- State

Source Info: BLM Surface Ownership (https://catalog.data.gov/dataset/blm-new-mexico-surface-ownership)

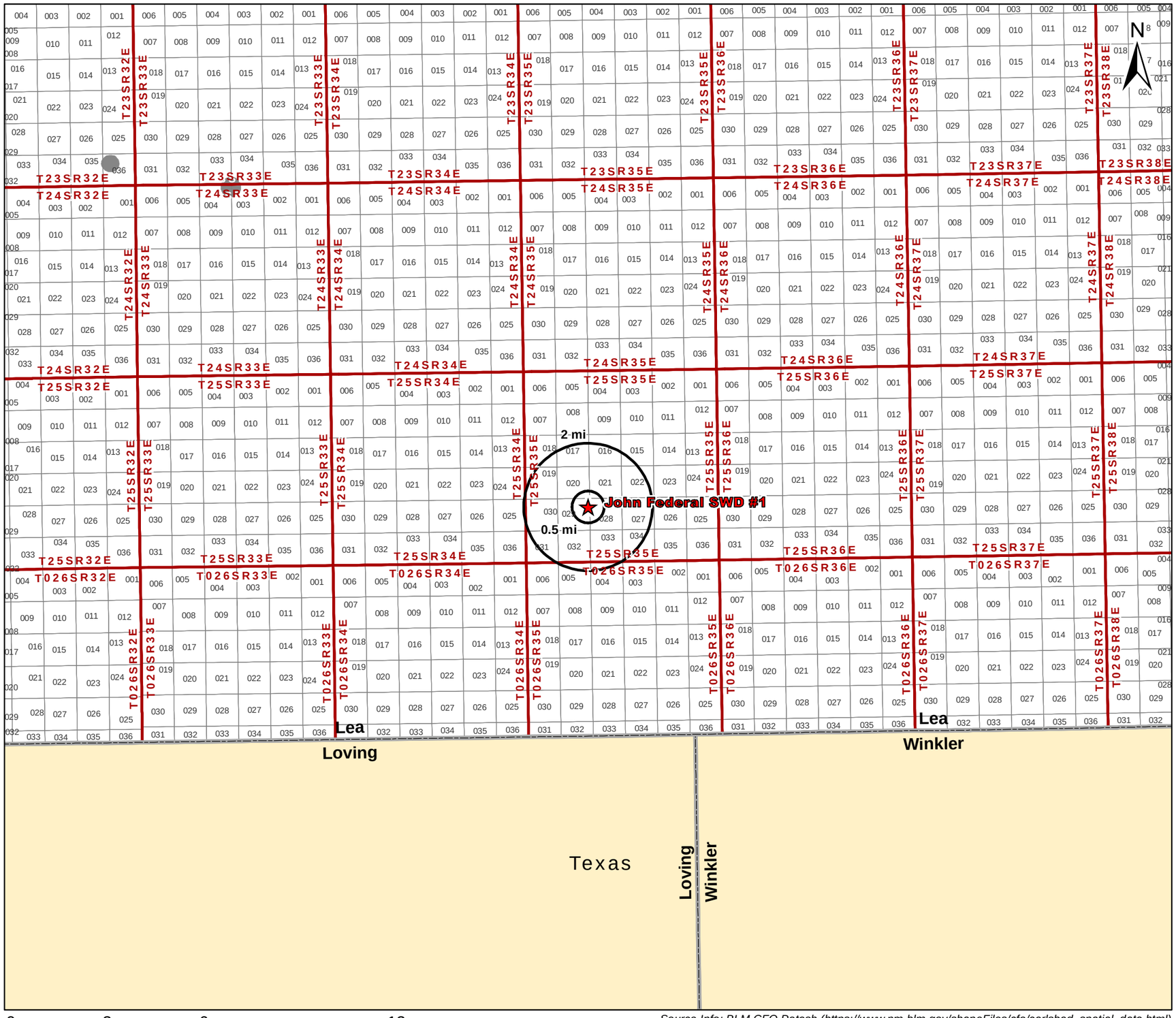
Surface Ownership
Area of Review

John Federal SWD #1
Lea County, New Mexico

Proj Mgr:		Mapped by:
Dan Arthur	December 04, 2019	Ben Bockelmann

Prepared for:	*Prepared by:*
VISTA NATURAL RESOURCES, LLC	ALL CONSULTING

AOR Tabulation for John Federal SWD #1 (Top of Injection Interval: 5,330')							
Well Name	**API#**	**Well Type**	**Operator**	**Spud Date**	**Location (Sec., Tn., Rng.)**	**Total Vertical Depth (feet)**	**Penetrate Inj. Zone?**
Notes: There are no wells within the 1/2-mile AOR.							



Legend

- Proposed SWD
- Ore Type - Indicated

Source Info: BLM CFO Potash (https://www.nm.blm.gov/shapeFiles/cfo/carlsbad_spatial_data.html)

Potash Leases
Area of Review

John Federal SWD #1
Lea County, New Mexico

Proj Mgr: Dan Arthur	December 05, 2019	Mapped by: Ben Bockelmann

Prepared for: VISTA Disposal Solutions, LLC

Prepared by: ALL Consulting

Attachment 3

Source Water Analyses

Wolfcamp

BAKER HUGHES

Water Analysis

Date: 23-Aug-11

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

Analyzed For Brushy Draw 1 #1

Company	Well Name	County	State
	BD	~~Lea~~ Eddy	New Mexico 1-26S-29E

Sample Source	Swab Sample	**Sample #**	1
Formation		**Depth**	

Specific Gravity	1.170	SG @ 60 °F	1.172
pH	6.30	Sulfides	Absent
Temperature (°F)	70	Reducing Agents	

Cations

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

Anions

Chlorides	in Mg/L	130,000	in PPM	110,922
Sulfates	in Mg/L	250	in PPM	213
Bicarbonates	in Mg/L	127	in PPM	108
Total Hardness (as CaCO3)	in Mg/L	15,000	in PPM	12,799
Total Dissolved Solids (Calc)	in Mg/L	213,549	in PPM	182,209
Equivalent NaCl Concentration	in Mg/L	182,868	in PPM	156,031

Scaling Tendencies

*Calcium Carbonate Index 507,520

Below 500,000 Remote / 500,000 - 1,000,000 Possible / Above 1,000,000 Probable

*Calcium Sulfate (Gyp) Index 1,000,000

Below 500,000 Remote / 500,000 - 10,000,00 Possible / Above 10,000,000 Probable

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

Remarks RW=.048@70F

Report # 3188

Sec 22, T25S, R28E

North Permian Basin Region
P.O. Box 740
Sundown, TX 79372-0740
(806) 229-8121
Lab Team Leader - Sheila Hernandez
(432) 495-7240

Bone Spring

Water Analysis Report by Baker Petrolite

Company:		Sales RDT:	33514.1
Region:	PERMIAN BASIN	Account Manager:	TONY HERNANDEZ (575) 910-7135
Area:	ARTESIA, NM	Sample #:	534665
Lease/Platform:	PINOCHLE 'BPN' STATE COM	Analysis ID #:	106795
Entity (or well #):	2 H	Analysis Cost:	$90.00
Formation:	UNKNOWN		
Sample Point:	WELLHEAD		

Summary	
Sampling Date:	03/10/11
Analysis Date:	03/18/11
Analyst:	SANDRA GOMEZ
TDS (mg/l or g/m3):	184911.1
Density (g/cm3, tonne/m3):	1.113
Anion/Cation Ratio:	1
Carbon Dioxide:	0 50 PPM
Oxygen:	
Comments:	

Analysis of Sample 534665 @ 75 °F

Anions	mg/l	meq/l	Cations	mg/l	meq/l
Chloride:	109618.0	3091.92	Sodium:	70275.7	3056.82
Bicarbonate:	2135.0	34.99	Magnesium:	195.0	16.04
Carbonate:	0.0	0.	Calcium:	844.0	42.12
Sulfate:	747.0	15.55	Strontium:	220.0	5.02
Phosphate:			Barium:	0.8	0.01
Borate:			Iron:	6.5	0.23
Silicate:			Potassium:	869.0	22.22
			Aluminum:		
Hydrogen Sulfide:		0 PPM	Chromium:		
pH at time of sampling:		7	Copper:		
pH at time of analysis:			Lead:		
pH used in Calculation:		7	Manganese:	0.100	0.
			Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite $CaCO_3$		Gypsum $CaSO_4*2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$		CO_2 Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	1.08	188.52	-1.20	0.00	-1.18	0.00	-0.11	0.00	0.58	0.29	1.72
100	0	1.10	206.05	-1.29	0.00	-1.20	0.00	-0.15	0.00	0.35	0.29	2.35
120	0	1.12	224.17	-1.36	0.00	-1.19	0.00	-0.17	0.00	0.16	0.00	3.17
140	0	1.13	243.17	-1.42	0.00	-1.18	0.00	-0.18	0.00	0.00	0.00	4.21

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

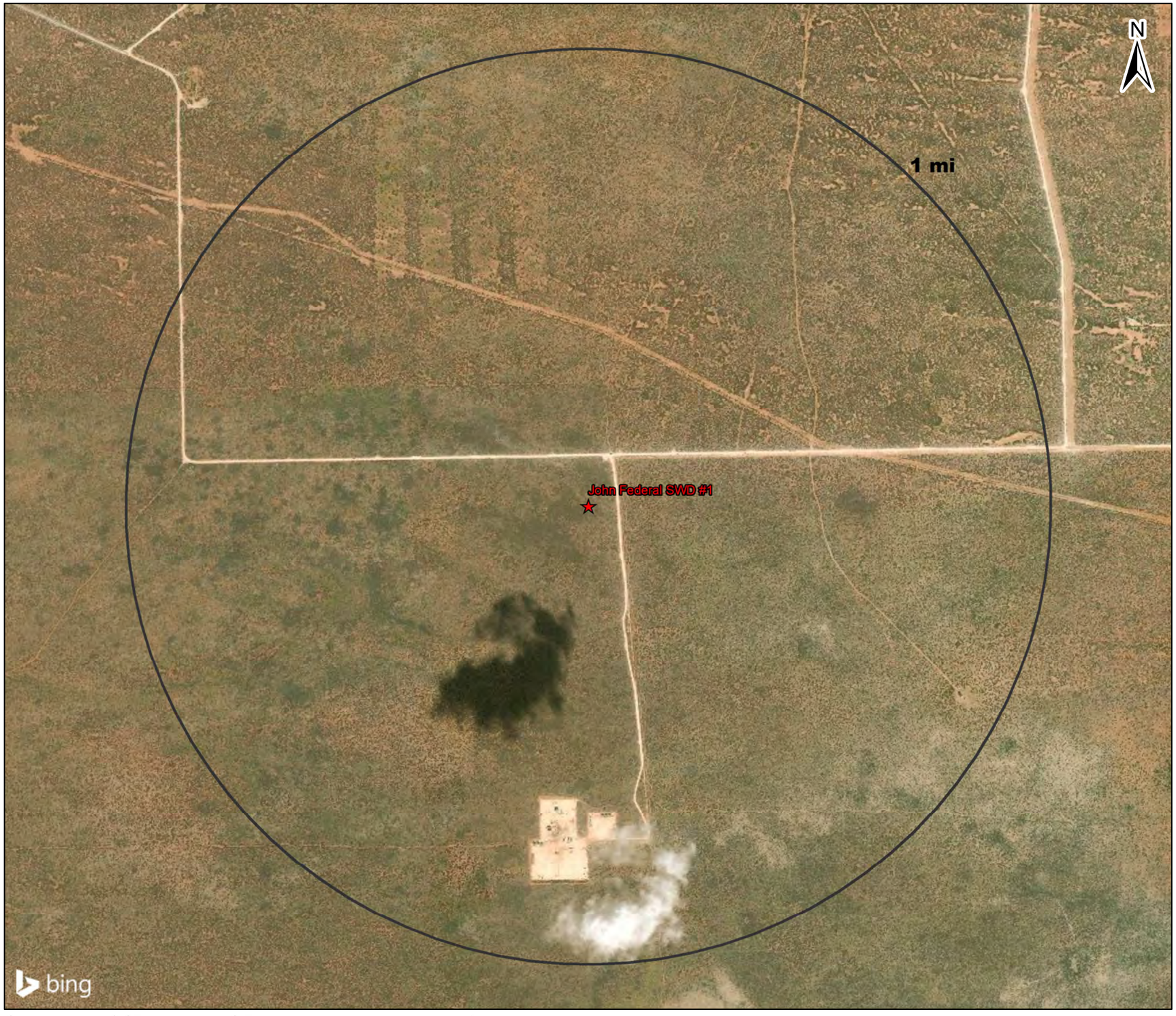
Attachment 4

Injection Formation Water Analyses

Injection Formation Water Analysis																		
Vista Disposal Solutions, LLC - Delaware Mountain Group Formation																		
Wellname	API	Latitude	Longitude	Section	Township	Range	Unit	Ftgns	Ftgew	County	State	Company	Field	Formation	Depth	Tds_mgL	Chloride_mgL	Bicarbonate_mgL	Sulfate_mgL
NORTH EL MAR UNIT #017	3002508430	32.016605	-103.617691	30	26S	33E	E	1880N	660W	LEA	NM		EL MAR	DELAWARE	4742	254756	159400	80	210
NORTH EL MAR UNIT #057	3002508440	32.001946	-103.6131134	31	26S	33E	F	1935N	2090W	LEA	NM		EL MAR	DELAWARE	4777	259554	163000	61	253
GOEDEKE #002	3002508407	32.059799	-103.5579987	10	26S	33E	G	1980N	1980E	LEA	NM		SALADO DRAW	DELAWARE	5200	293925	184000	85	210
MARSHALL #001	3002508358	32.284832	-103.6176224	19	23S	33E	M	660S	660W	LEA	NM		CRUZ	DELAWARE	5237	238931	148600	127	156
NORTH EL MAR UNIT #022	3002508278	32.011662	-103.6262207	25	26S	32E	J	1980S	1980E	LEA	NM		EL MAR	DELAWARE	4749	244815	153500	88	220
NORTH EL MAR UNIT #032	3002508291	32.008019	-103.6434479	26	26S	32E	O	660S	1980E	LEA	NM		EL MAR	DELAWARE	4605	254895			
NORTH EL MAR UNIT #028	3002508296	32.011654	-103.6521072	26	26S	32E	L	1980S	660W	LEA	NM		EL MAR	DELAWARE	4565	249479	156000	976	373
NORTH EL MAR UNIT #045	3002508308	32.004387	-103.6381302	35	26S	32E	A	660N	330E	LEA	NM		EL MAR	DELAWARE	4633	255115	160000	85	310
COTTON DRAW UNIT #024	3002508176	32.143189	-103.6650696	10	25S	32E	K	1980S	1980W	LEA	NM		PADUCA	DELAWARE	4787	246555	152600	112	939
COTTON DRAW UNIT #001	3002508182	32.125053	-103.6693573	15	25S	32E	M	660S	660W	LEA	NM		PADUCA	DELAWARE	4804	308600			
COTTON DRAW UNIT #001	3002508182	32.125053	-103.6693573	15	25S	32E	M	660S	660W	LEA	NM		PADUCA	DELAWARE	4804	309990			
MONSANTO STATE #001	3002508196	32.128666	-103.6736145	16	25S	32E	I	1980S	660E	LEA	NM		PADUCA	DELAWARE	4800	224016	138600	139	462
COTTON DRAW UNIT #004	3002508221	32.121422	-103.6693649	22	25S	32E	D	660N	660W	LEA	NM		PADUCA	DELAWARE	4685	276839	170500	198	552
G E JORDAN NCT-1 #021	3002508226	32.107822	-103.6704102	27	25S	32E	D	330N	330W	LEA	NM		PADUCA	DELAWARE	4498	239464	147800	64	908
HANAGAN B FEDERAL #001	3002508151	32.212124	-103.6603851	15	24S	32E	O	660S	1980E	LEA	NM		DOUBLE X	DELAWARE	4955	229878	142200	168	491
HANAGAN B FEDERAL #001	3002508151	32.212124	-103.6603851	15	24S	32E	O	660S	1980E	LEA	NM		DOUBLE X	DELAWARE	4955	229709	142100	168	491

Attachment 5

Water Well Map and Well Data



0 0.25 0.5 1 Miles

Legend

★ Proposed SWD

NMOSE PODs

Status

- Active (0)
- Pending (0)
- Change Location of Well (0)
- Capped (0)
- Plugged (0)
- Incomplete (0)
- Unknown (0)

Water Wells Area of Review

John Federal SWD #1

Lea County, New Mexico

Proj Mgr: Dan Arthur	November 25, 2019	Mapped by: Ben Bockelmann

Prepared for: VISTA DISPOSAL SOLUTIONS, LLC

Prepared by: ALL CONSULTING

Water Well Sampling Rationale						
Vista Disposal Solutions, LLC - John 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.						

Attachment 6

Technical Assesment & Feasibility for Injection Letter

ALL CONSULTING
GOVERNMENT RELATIONS · ENERGY · PLANNING · TECHNOLOGY
ENGINEERING · ENVIRONMENTAL

December 06, 2019

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

Subject: Vista Disposal Solutions, LLC – Hydrologic Connection Statement

To Whom It May Concern:

The purpose of this letter is to affirm that ALL Consulting (ALL), on behalf of Vista Disposal Solutions, LLC (Vista), has conducted an extensive technical review of the available geologic and engineering data and finds no evidence of open faults or any other hydrologic connection between the proposed Bell Canyon Formation disposal zone and any underground sources of drinking water.

Additionally, please find attached ALL's Technical Assessment and Feasibility document addressing injection into the Bell Canyon Formation at the proposed disposal well location.

Sincerely,

Tom Tomastik

Tom Tomastik, CPG
Chief Geologist
ALL Consulting

ALL CONSULTING
GOVERNMENT RELATIONS · ENERGY · PLANNING · TECHNOLOGY
ENGINEERING · ENVIRONMENTAL

VISTA DISPOSAL SOLUTIONS

TECHNICAL ASSESSMENT AND FEASIBILITY FOR INJECTION INTO THE BELL CANYON FORMATION OF THE DELAWARE MOUNTAIN GROUP

ALL Consulting (ALL) has conducted an extensive technical review and geological assessment of the alleged New Mexico Oil Conservation Division (OCD) Delaware Mountain Group (DMG) saltwater disposal well (SWD) impacts to production wells and drilling operations associated with the Brushy Canyon Formation of the DMG in the Lea County, New Mexico area. This technical review included evaluation and analysis of the OCD DMG Cases and technical data submitted by both Chevron and Occidental (OXY) in defense of their disposal operations into the Bell Canyon and Cherry Canyon formations in Eddy County. OCD found in favor of both Chevron and OXY to continue disposal operations at their injection wells with additional technical requirements and testing. ALL is providing the following technical information in support of allowing the permitting of new disposal operations by Vista Disposal Solutions, LLC (Vista) into the Bell Canyon Formation (Bell Canyon).

- ALL will be submitting permit applications for Vista to dispose of oilfield waste fluids into only the Bell Canyon of the DMG.
- All disposal operations will be cased hole with perforations.
- There is approximately 600 to 800 feet of viable injection interval within the Bell Canyon with porosities ranging from 12 to 28% and averaging approximately 18%. These zones are consistent with the Bell Canyon across the area of interest (AOI) for Vista.
- All these proposed injection intervals show resistivity readings less than 10 ohm/meters, which is indicative of natural brine in the formation, so there is adequate porosity and permeability.
- Proposed bottom perforations would be approximate 100 to 150 feet above the top of the Cherry Canyon Formation and at least 1,500 to 1,600 feet above the top of the Brushy Canyon Formation.
- ALL has identified three to four consistent confining zones within the bottom of the Bell Canyon that have low porosities and high resistivities indicating that these zones will serve as barriers to downward fluid migration.
- There is no oil and gas production from the Bell Canyon or Cherry Canyon formations within a two-mile radius of the proposed SWD and there are adequate barriers and rock thickness to prevent fluid migration into the Brushy Canyon Formation.
- Injection pressures will be limited to the regulatory approved maximum allowable surface pressure based on 0.2 psi per foot.
- If OCD requires additional downhole testing requirements like was required in the Chevron and Oxy cases, Vista would be willing to perform the OCD required downhole testing such as initial pressure fall-off testing, radioactive tracer and temperature surveys,

and record original bottom hole pressures to further demonstrate the technical feasibility of injection into the Bell Canyon.

- The potential for over pressurization of this injection interval can be addressed with the spacing of hundreds of perforations into porous and permeable zones within the Bell Canyon, which allows for injectate dispersion and reduces the potential for pressure build-up. Additionally, ALL has found several Bell Canyon SWDs in the OCD records that operated under a vacuum situation.
- With a sound pre-treatment and filtering system at the surface, issues such as skin effect and even potential formation damage can be avoided, which often leads to formation pressure build-up. ALL has extensive experience and expertise with pre-treatment and filtering systems to avoid these issues.
- Additional technical documentation can be provided by ALL if OCD deems additional information is necessary.

Attachment 7

Public Notice Affidavit and Notice of Application Confirmations

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: John Federal SWD #1
SE ¼ NE ¼, Section 29, Township 25S, Range 35E
1,429' FNL & 263' FEL
Lea County, NM

NAME AND DEPTH OF DISPOSAL ZONE: Bell Canyon (5,330' – 6,100')

EXPECTED MAXIMUM INJECTION RATE: 25,000 Bbls/day

EXPECTED MAXIMUM INJECTION PRESSURE: 1,066 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 Alleman at 918-382-7581.

John 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				
NMOCD District 1	1625 N. French Drive	Hobbs	NM	88240
Leasehold Operators				
COG Operating, LLC (COG OPER LLC) (COG OPERATING LLC)	600 W. Illinois Ave.	Midland	TX	79701
Chevron USA Inc. (Chevron USA INC)	6301 Deauville Blvd	Midland	TX	79706
Daniel E. Gonzales (D.E. GONZALES)	P.O. Box 2475	Sante Fe	NM	87501
Devon Energy Production Company, LP (DEVON ENERGY PROD CO LP)	333 W. Sheridan Ave.	Oklahoma City	OK	73102
Energen Resource Corporation (ENERGEN RESOURCE CO)	605 Richard Arrington Jr. Blvd. North	Birmingham	AL	35202
Occidental Permian, LP (OCCIDENTAL PERMIAN LP)	5 Greenway Plaza, Suite 110	Houston	TX	77046
OneEnergy Partners II, LLC (ONE ENERGY PARTNERS)	2925 Richmond Ave., Suite 1200	Houston	TX	77098

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).

Certified Mail® Labels Top of the page Print postage using Stamps.com Template **SDC-3610**

Place label at top of the center of the envelope and fold at dotted line.

Place label at top of the center of the envelope and fold at dotted line.

Place label at top of the center of the envelope and fold at dotted line.

Place label at top of the center of the envelope and fold at dotted line.

ALL Consulting
1718 S. Cheyenne Ave.
Tulsa, OK 74119

$5.60
US POSTAGE
FIRST-CLASS
FROM 74119
DEC 06 2019
stamps.com

0625000866991

CERTIFIED MAIL®

CERTIFIED MAIL®

9414 8118 9956 1377 7003 87

Daniel E. Gonzales
P.O. Box 2475
Santa Fe NM 87504-2475

For best results, feed this sheet through your printer as few times as possible.
To purchase or for printing instructions go to **www.stamps.com/3610.**

stamps.com® 03/18

Certified Mail® Labels Top of the page Print postage using Stamps.com Template **SDC-3610**

ALL Consulting
1718 S. Cheyenne Ave.
Tulsa, OK 74119

$5.60 US POSTAGE FIRST-CLASS FROM 74119 DEC 06 2019 stamps.com 062S0008663991

Place label at top of the center of the envelope and fold at dotted line.

CERTIFIED MAIL®

CERTIFIED MAIL®

9414 8118 9956 1377 7004 17

Chevron USA Inc.
6301 Deauville
Midland TX 79706-2964

ALL Consulting
1718 S. Cheyenne Ave.
Tulsa, OK 74119

$5.60 US POSTAGE FIRST-CLASS FROM 74119 DEC 06 2019 stamps.com 062S0008663991

Place label at top of the center of the envelope and fold at dotted line.

CERTIFIED MAIL®

CERTIFIED MAIL®

9414 8118 9956 1377 7004 48

COG Operating, LLC
600 W. Illinois Ave.
Midland TX 79701-4882

ALL Consulting
1718 S. Cheyenne Ave.
Tulsa, OK 74119

$5.60 US POSTAGE FIRST-CLASS FROM 74119 DEC 06 2019 stamps.com 062S0008663991

Place label at top of the center of the envelope and fold at dotted line.

CERTIFIED MAIL®

CERTIFIED MAIL®

9414 8118 9956 1377 7005 23

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

ALL Consulting
1718 S. Cheyenne Ave.
Tulsa, OK 74119

$5.60 US POSTAGE FIRST-CLASS FROM 74119 DEC 06 2019 stamps.com 062S0008663991

Place label at top of the center of the envelope and fold at dotted line.

CERTIFIED MAIL®

CERTIFIED MAIL®

9414 8118 9956 1377 7082 60

Energen Resource Corporation
605 Arrington Blvd. North
Birmingham AL 35203-2707

For best results, feed this sheet through your printer as few times as possible.
To purchase or for printing instructions go to **www.stamps.com/3610.**

stamps.com® 03/18

Certified Mail® Labels Top of the page Print postage using Stamps.com Template **SDC-3610**

ALL Consulting
1718 S. Cheyenne Ave.
Tulsa, OK 74119

$5.60 US POSTAGE FIRST-CLASS FROM 74119 DEC 06 2019 stamps.com 062S0008663991

Place label at top of the center of the envelope and fold at dotted line.

CERTIFIED MAIL®

CERTIFIED MAIL®

9414 8118 9956 1377 7088 19

New Mexico BLM
620 E Greene St.
Carlsbad NM 88220-6292

ALL Consulting
1718 S. Cheyenne Ave.
Tulsa, OK 74119

$5.60 US POSTAGE FIRST-CLASS FROM 74119 DEC 06 2019 stamps.com 062S0008663991

Place label at top of the center of the envelope and fold at dotted line.

CERTIFIED MAIL®

CERTIFIED MAIL®

9414 8118 9956 1377 7088 33

NMOCD District 1
1625 N. French Drive
Hobbs NM 88240-9273

ALL Consulting
1718 S. Cheyenne Ave.
Tulsa, OK 74119

$5.60 US POSTAGE FIRST-CLASS FROM 74119 DEC 06 2019 stamps.com 062S0008663991

Place label at top of the center of the envelope and fold at dotted line.

CERTIFIED MAIL®

CERTIFIED MAIL®

9414 8118 9956 1377 7087 41

Occidental Permian, LP
5 Greenway Plaza, Suite 110
Houston TX 77046-0521

ALL Consulting
1718 S. Cheyenne Ave.
Tulsa, OK 74119

$5.60 US POSTAGE FIRST-CLASS FROM 74119 DEC 06 2019 stamps.com 062S0008663991

Place label at top of the center of the envelope and fold at dotted line.

CERTIFIED MAIL®

CERTIFIED MAIL®

9414 8118 9956 1377 7089 56

OneEnergy Partners II, LLC
2925 Richmond Ave., Suite 1200
Houston TX 77098-3143

For best results, feed this sheet through your printer as few times as possible.
To purchase or for printing instructions go to **www.stamps.com/3610.**

stamps.com® 03/18