Initial Application Part I

Received 11/24/20

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

November 24, 2020

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

Subject: Anthem Water Solutions, LLC – East Federal SWD #1
Application for Authorization to Inject

To whom it may concern:

On behalf of Anthem Water Solutions, LLC, ALL Consulting, LLC (ALL) has prepared and is submitting an application for the East Federal SWD #1 to convert an existing plugged and abandoned well for the purpose of saltwater disposal into the Devonian and Silurian formations.

This re-open and re-completion is for API No. 30-015-21494, which was drilled by Bass Enterprises Production Company (Bass) in 1975 to a total depth of 13,100'. The surface and intermediate casing were cemented to the surface, and this well was properly plugged and abandoned by Bass in May of 1975 prior to completion of the well. A copy of the Sundry Notice plugging report C-103 is included with this application package.

If you have any questions regarding this application, please contact me at (918) 382-7581 or e-mail me at nalleman@all-llc.com.

Sincerely,
ALL Consulting

Nathan Alleman
Sr. Regulatory Specialist

Attachment

Revised March 23, 2017

CJG7A-201124-C-1080

RECEIVED: 11/24/20	REVIEWER:	TYPE: SWD	APP NO: pBL2032945441

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: Anthem Water Solutions, LLC **OGRID Number:** 330069
Well Name: East Federal SWD #1 **API:** 3001521494
Pool: SWD; DEVONIAN - SILURIAN **Pool Code:** 97869

SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED BELOW

1) **TYPE OF APPLICATION:** Check those which apply for [A]
A. Location – Spacing Unit – Simultaneous Dedication
☐ NSL ☐ NSP (PROJECT AREA) ☐ NSP (PRORATION UNIT) ☐ SD

B. Check one only for [I] or [II]
[I] Commingling – Storage – Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM
[II] Injection – Disposal – Pressure Increase – Enhanced Oil Recovery
☐ WFX ☐ PMX ☒ SWD ☐ IPI ☐ EOR ☐ PPR

SWD-2407

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.

Nathan Alleman
Print or Type Name

Nathan Alleman sdf
Signature

11/24/2020
Date

918-382-7581
Phone Number

nalleman@all-llc.com
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: Anthem Water Solutions, LLC

ADDRESS: 5914 W. Courtyard Dr. Suite 320, Austin, TX, 78730

CONTACT PARTY: Nathan 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: Nate Alleman TITLE: Sr. Regulatory Specialist

XV. SIGNATURE: Nathan Alleman DATE: 11/24/2020

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

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: _____

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

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: East Federal SWD #1

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

A.

(1) General Well Information:

Operator: Anthem Water Solutions, LLC (OGRID No. 330069)
Lease Name & Well Number: East Federal SWD #1
Location Footage Calls: 1,980 FSL & 1,980 FEL
Legal Location: Unit Letter J, S25 T22S R28E
Ground Elevation: 3,168'
Proposed Injection Interval: 13,810' – 14,864'
County: Eddy

(2) Casing Information:

Type	Hole Size	Casing Size	Casing Weight	Setting Depth	Sacks of Cement	Estimated TOC	Method Determined
Surface	17.5"	13.375"	48.0 lb/ft	313'	400	Surface	Circulation
Intermediate	12.25"	9.625"	36 lb/ft	2,881'	1,775	Surface	Circulation
Production	8.75"	7"	26 lb/ft	13,810'	1,775	2,680'	CBL
Tubing	-	4.5"	11.6 lb/ft	13,790'	-	-	-

(*The Wellbore Diagram is* attached) **Note:** Two DV Tools will be set in the Production casing at 6,000 ft. and 9,000 ft.

(3) Tubing Information:

4.5" (11.6# N80 IPC) with setting depth of 13,790'

(4) Packer Information: Arrowset AS1-X or equivalent packer set at 13,790'

B.

(1) Injection Formation Name: Devonian - Silurian
Pool Name: SWD; DEVONIAN - SILURIAN
Pool Code: 97869
Injection Interval: Open-hole injection between 13,810' – 14,864'

(2) Drilling Purpose: Re-Completion for Salt Water Disposal

(3) Other Perforated Intervals: No perforated intervals exist.

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

- Delaware (2,865')
- Bone Springs (6,430')
- Wolfcamp (9,978')
- Atoka (11,829')
- Morrow (12,230)

(5) 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
- 1-mile Well Detail List
- 2-mile Lease Map
- 2-mile Mineral Ownership Map
- 2-mile Surface Ownership map
- 1.5-mile Deep SWD Map (Devonian/Silurian)
- Potash Lease Map

VI – AOR Well List

There are 25 wells within the 1-mile AOR. None of those wells 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:** 30,000 bpd
Proposed Average Injection Rate: 15,000 bpd

(2) A **closed system** will be used.

(3) **Proposed Maximum Injection Pressure**: 2,762 psi (surface)
Proposed Average Injection Pressure: approximately 1,300 – 1,800 psi (surface)

(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 - Silurian formations which are non-productive zones known to be compatible with formation water from the Wolfcamp and Bone Springs formations. Water analyses from the Devonian formation in the area are included in ***Attachment 4.***

VIII – Geologic Description

The proposed injection interval includes the Devonian - Silurian formations from 13,810 – 14,864 feet. This formation consists of interbedded carbonate rocks consisting of dolomites and limestones with some interbedded siltstones and shales. Several thick sections of porous and permeable intervals capable of taking water are present within the subject formation in the area.

The base of the lowermost Underground Source of Drinking Water (USDW) is at a depth of approximately 330 feet. The USDW is covered by casing set at 2,881 feet that is cemented to surface and isolates the USDW. Geophysical log assessment was conducted to accurately determine the top of the Rustler formation as well as the top and the base of the Salado formation in this area. Water well depths in the area range from approximately 33 - 55 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

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 Carlsbad Current Argus 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
- Existing Wellbore Diagram
- Proposed Wellbore Diagram
- C-103

Attachment 2: Area of Review Information:

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

Attachment 3: Source Water Analyses

Attachment 4: Injection Formation Water Analyses

Attachment 5: Water Well Map and Well Data

Attachment 6: Public Notice Affidavit and Notice of Application Confirmations

Attachment 1

- C-102
- Existing Wellbore Diagram
- Proposed Wellbore Diagram
- C-103

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
Bass Enterprises Production Co. as agent for, Perry R. Bass	Big Eddy Unit	43

Unit Letter	Section	Township	Range	County
J	25	22 South	28 East	Eddy

Actual Footage Location of Well:
1980 feet from the South line and 1980 feet from the East line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
3168	Morrow	Wildcat	320 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

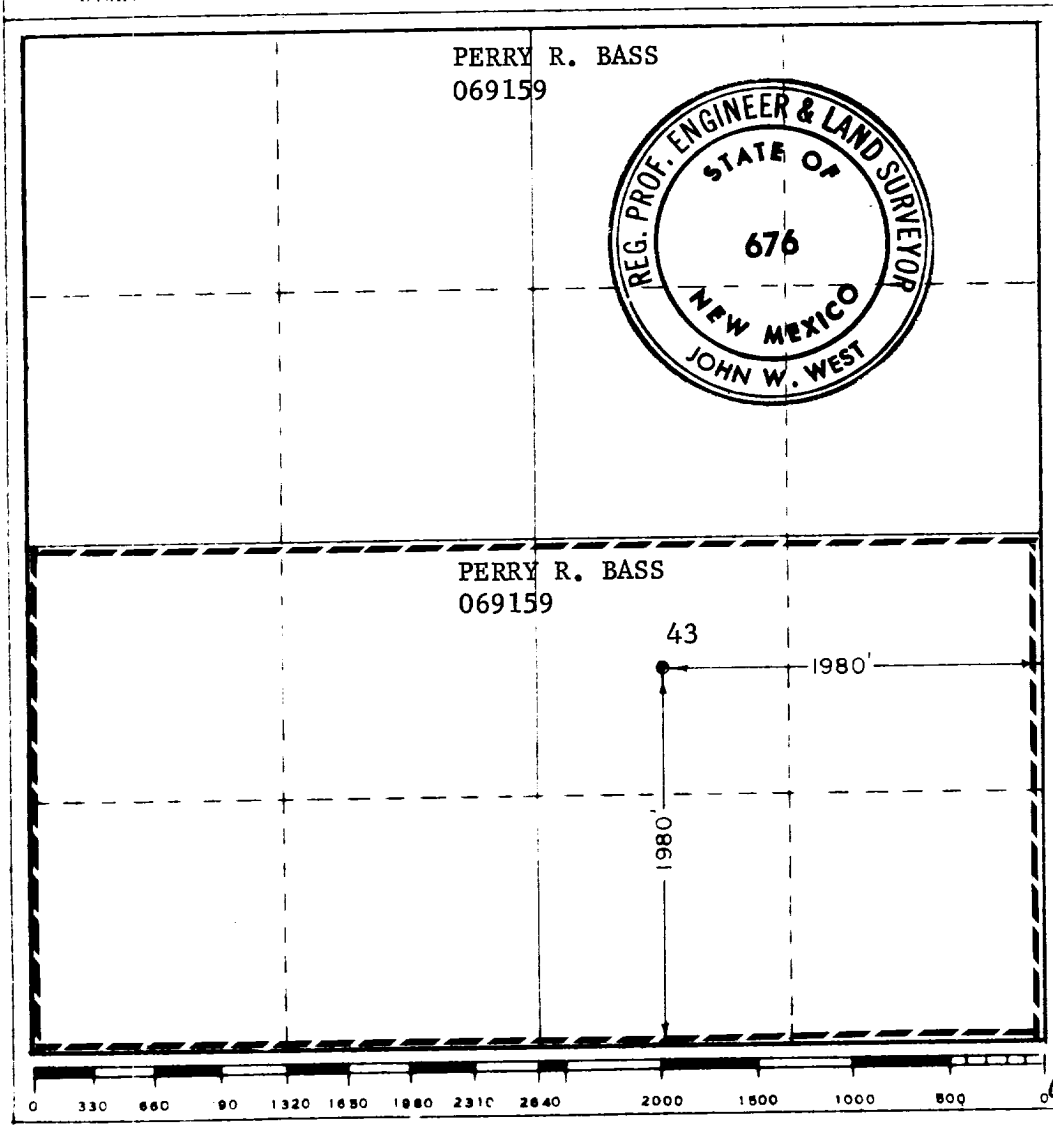
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling. etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

George A. Lee

Name
Staff Petroleum Engineer

Position
Bass Enterprises Production Co.

Company
February 13, 1975

Date

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 knowledge and belief.

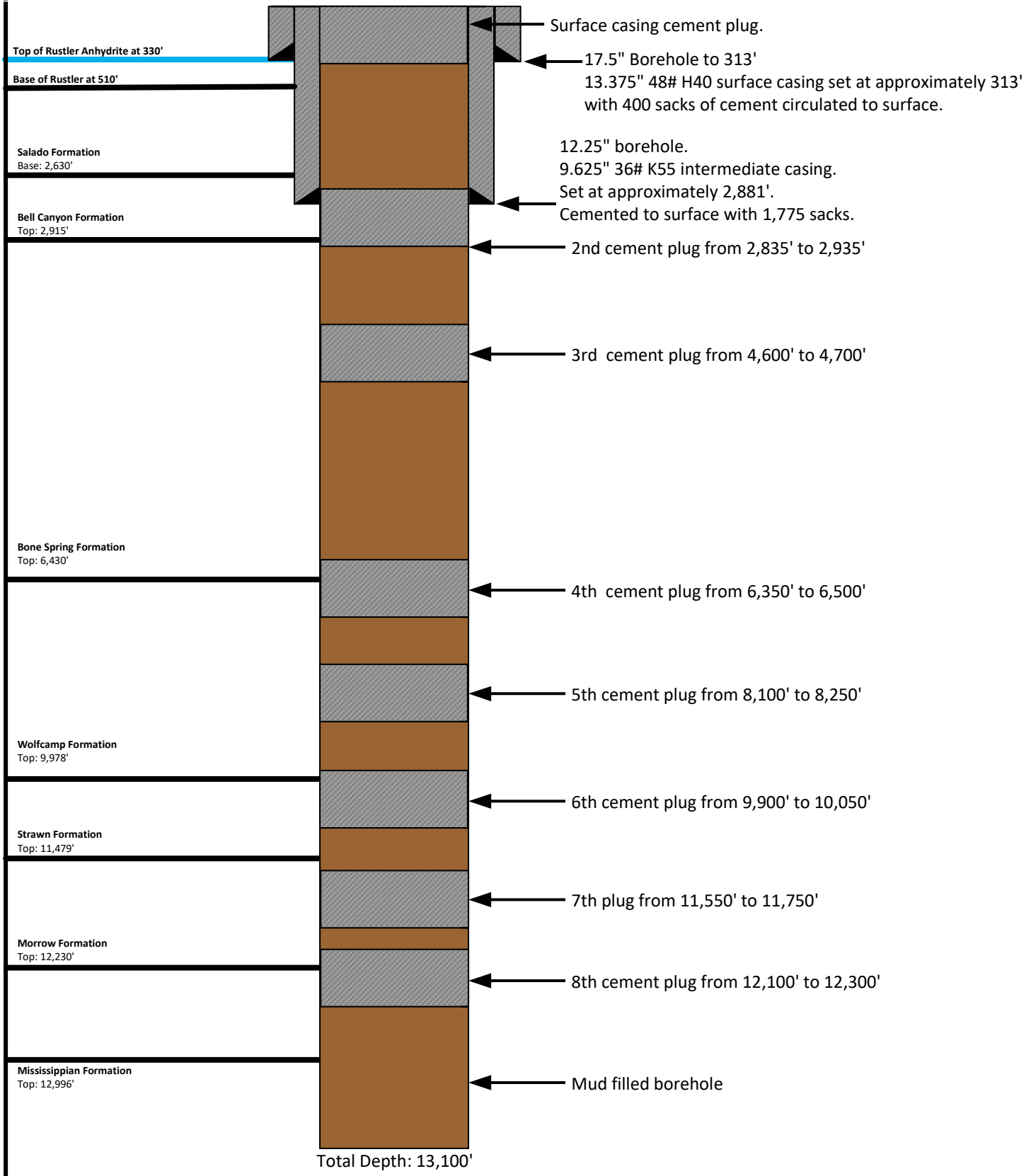
RECEIVED
FEB 14 1975
U.S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

Date Surveyed
February 1, 1975

Registered Professional Engineer and/or Land Surveyor

John W West

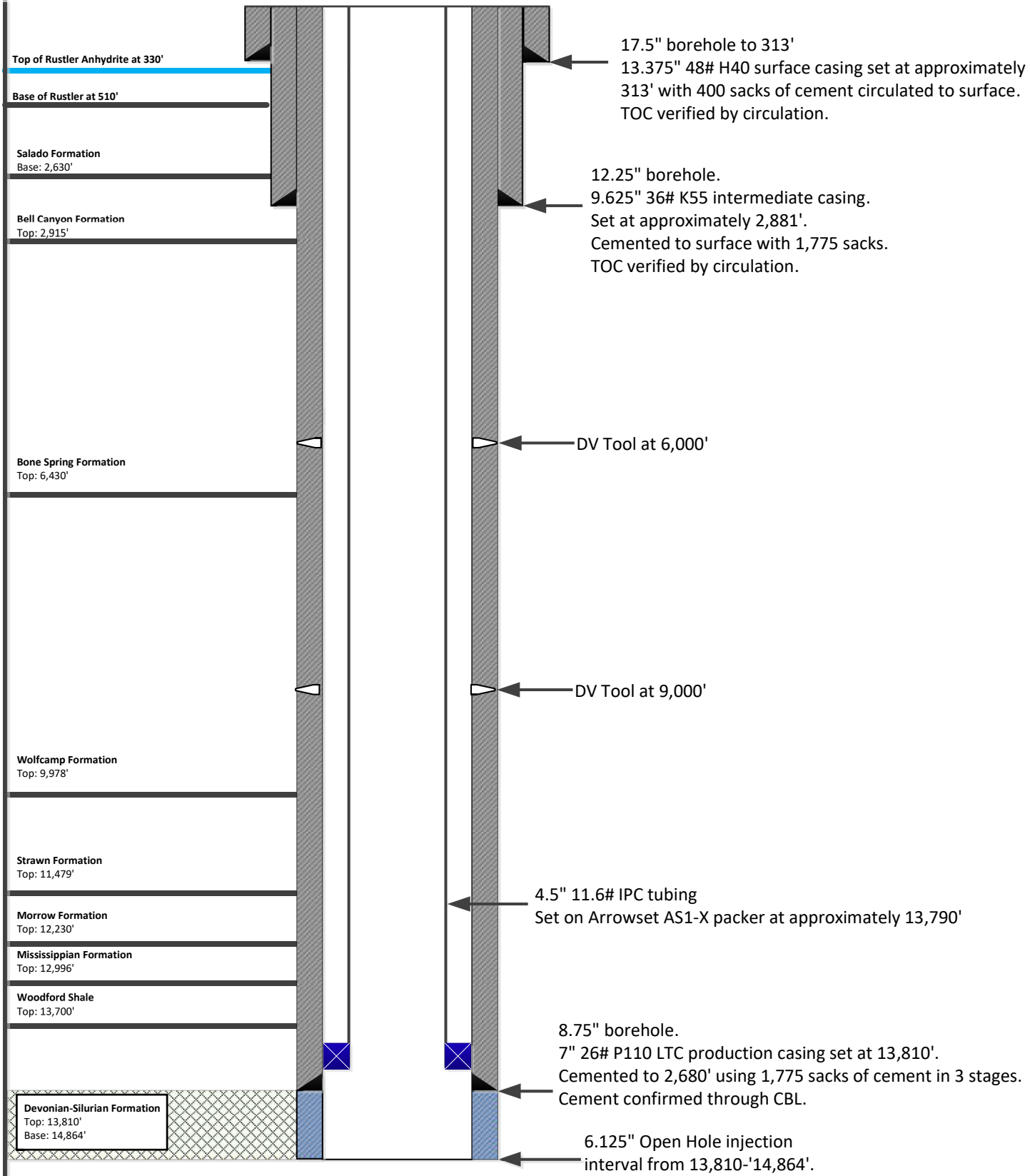
Certificate No. 676



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:* ANTHEM WATER SOLUTIONS	Drawn by: Joshua Ticknor Project Manager: Dan Arthur Date: 10/28/2020	**Wellbore Diagram – Existing Construction** Anthem Water Solutions, LLC: East Federal SWD # 1 API No. 30-015-21494 1,980' FSL & 1980' FEL Section 25, Twp. 22S, Range 28E Eddy County, New Mexico



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:* ANTHEM WATER SOLUTIONS	Drawn by: Joshua Ticknor Project Manager: Dan Arthur Date: 10/28/2020	**Wellbore Diagram – Proposed Construction** Anthem Water Solutions, : East Federal SWD # 1 API No. 30-015-21494 1,980' FSL & 1980' FEL Section 25, Twp. 22S, Range 28E Eddy County, New Mexico

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

N. M. O. C. C.
SUBMIT IN T ICATE*
(Other instruc a re-
verse side)

Form approved.
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.
LC 069159-A

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☐ OTHER Dry hole.

7. UNIT AGREEMENT NAME
Big Eddy Unit

2. NAME OF OPERATOR
Perry R. Bass

8. FARM OR LEASE NAME
Big Eddy Unit

3. ADDRESS OF OPERATOR
Box 2760, Midland, Texas 79701

9. WELL NO.
43

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
1980' FSL & 1980' FEL of section - Unit letter J.

10. FIELD AND POOL, OR WILDCAT
Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 25, T22S, R28E

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
3168' Gr.

12. COUNTY OR PARISH
Eddy

13. STATE
New Mexico

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	XX
REPAIR WELL	☐	CHANGE PLANS	☐				
(Other)				(Other)			

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

Well plugged and abandoned as follows on May 23, 1975:

Plug No. 1	12,300'-12,100' w/85 sks Class H (200')
Plug No. 2	11,750'-11,550' w/85 sks Class H (200')
Plug No. 3	10,050'-9,900' w/65 sks Class H (150')
Plug No. 4	8,250'-8,100' w/65 sks Class H (150')
Plug No. 5	6,500'-6,350' w/75 sks Class H (150')
Plug No. 6	4,700'-4,600' w/50 sks Class H (100')
Plug No. 7	2,935'-2,835' w/45 sks Class H (100')

Slurry weight on all plugs was 15.8#/gal.

Released rig at 4:00 PM May 24, 1975. Surface plug and well marker not set.
Final cleanup not yet made.

RECEIVED
JUN 12
U. S. GEOLOGICAL SURVEY
ARTESIA, NEW MEX.CO

Posted PrA 1A-2 8-25-75

18. I hereby certify that the foregoing is true and correct

SIGNED W. P. Mundy, Jr. TITLE Division Production Clerk DATE June 10, 1975

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

APPROVED
AUG 27 1975
/s/ R. L. BECKHAM
ACTING DISTRICT ENGINEER

RECEIVED
AUG 28 1975
O. C. C.
ARTESIA, OFFICE

*See Instructions on Reverse Side

AS1-X MECHANICAL PACKER

The ACT AS1-X Packer is the most versatile of the mechanically set retrievable packers and may be used in any production application. Treating, testing, injecting, pumping wells, flowing wells, deep or shallow, the AS1-X is suited for all. The packer can be left in tension or compression, depending on well conditions and the required application. A large internal by-pass reduces swabbing when running and retrieving. The by-pass closes when the packer is set and opens prior to releasing the upper slips when retrieving to allow pressure equalization.

The J-slot design allows easy setting and releasing; 1/4 turn right-hand set, right-hand release. A patented upper-slip releasing system reduces the force required to release the packer. A non directional slip is released first, making it easier to release the other slips. The AS1-X packer can withstand 7,000 psi (48 MPa) of differential pressure above or below.

FEATURES, ADVANTAGES AND BENEFITS:

- The design holds high differential pressure from above or below, enabling the packer to meet most production, stimulation, and injection needs
- The packer can be set with compression, tension, or wire line, enabling deployment in shallow and deep applications
- The packer can be set and released with only a one-quarter turn of the tubing
- The bypass valve is below the upper slips so that debris are washed from the slips when the valve is opened, reducing the times for circulation and total retrieval
- The full opening enables unrestricted flow and the passage of wire line tools and other packer systems
- The packer can be run with the T-2 on-off tool, which enables the tubing to be disconnected and retrieved without retrieving the packer

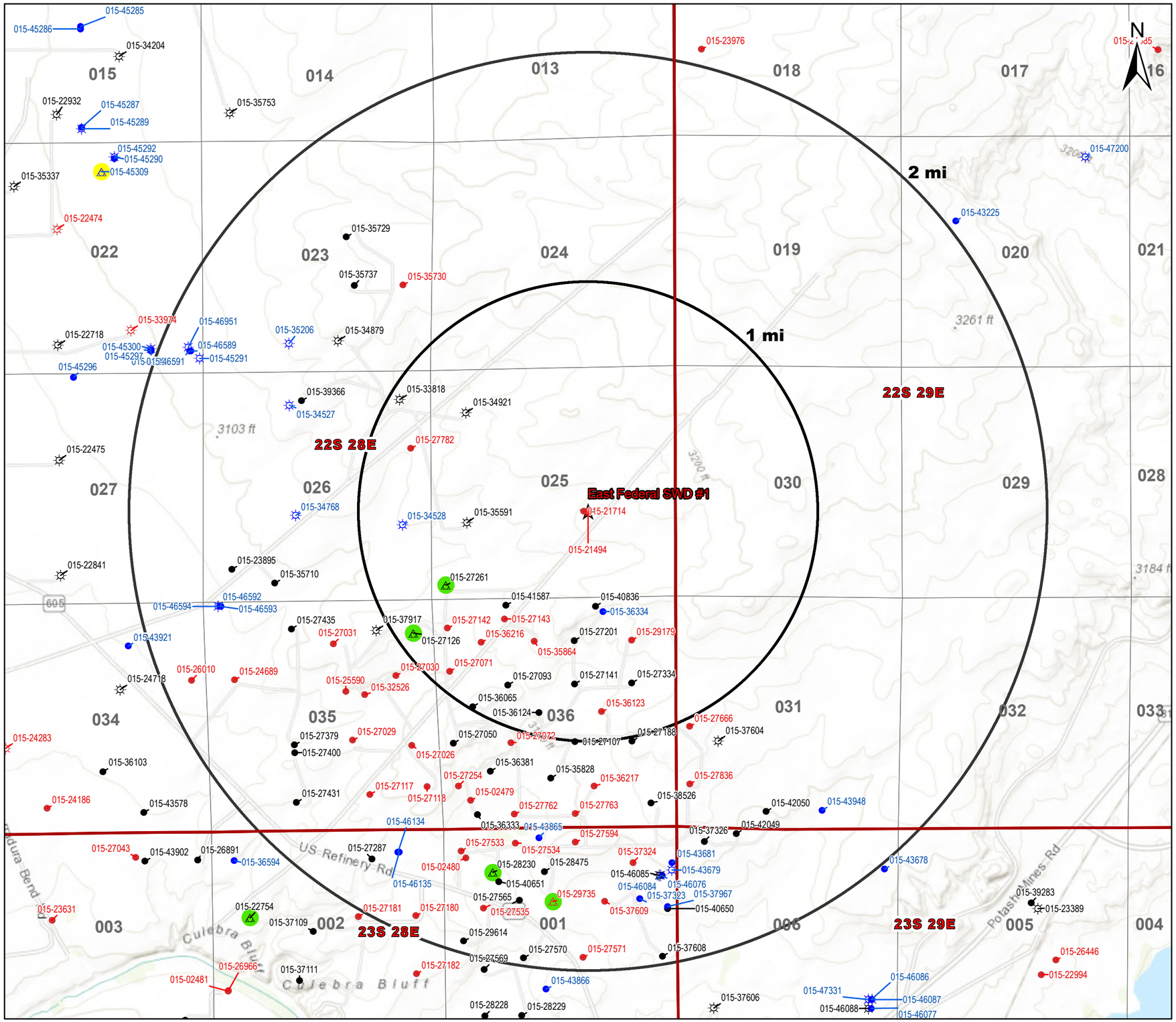
OPTIONS:

- Elastomer options are available for hostile environments
- Optional safety releases are available

Attachment 2

Area of Review Information:

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



0 0.5 1 2 Miles

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

Legend

- Proposed SWD
- Gas, Active (18)
- Gas, New (15)
- Gas, Plugged (3)
- Oil, Active (46)
- Oil, New (27)
- Oil, Plugged (49)
- Salt Water Injection, Active (4)
- Salt Water Injection, New (1)
- Salt Water Injection, Plugged (1)
- Deep Injection Zone (1)
- Shallow Injection Zone (5)

Source Info: NMOCD O&G Wells updated 10/21/2020 (http://www.emnrd.state.nm.us/OCD/ocdgis.html)

O&G Wells Area of Review

East Federal SWD #1

Eddy County, New Mexico

Proj Mgr: Dan Arthur	November 03, 2020	Mapped by: Ben Bockelmann

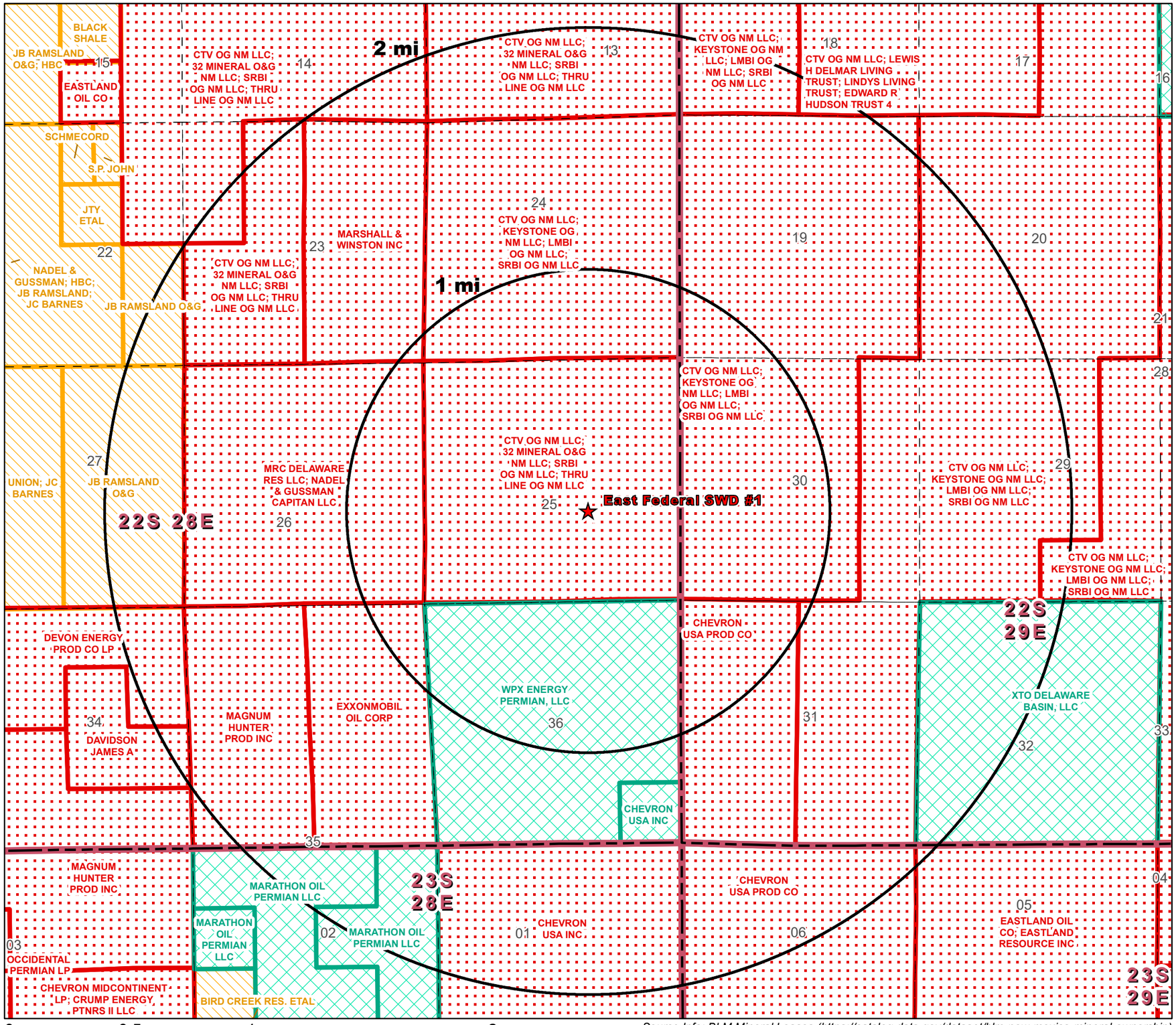
Prepared for: ANTHEM WATER SOLUTIONS

Prepared by: ALL CONSULTING

AOR Tabulation for East Federal SWD #1 (Top of Injection Interval: 13,810')							
Well Name	**API#**	**Well Type**	**Operator**	**Spud Date**	**Location (Sec., Tn., Rng.)**	**Total Vertical Depth (feet)**	**Penetrate Inj. Zone?**
BIG EDDY UNIT #43	30-015-21494	Plugged	Subject Well				
BIG EDDY UNIT #046	30-015-21714	Plugged	BOPCO, L.P.	2/8/1976	J-25-22S-28E	Plugged (6200)	No
PINNACLE STATE #035H	30-015-40836	Oil	WPX Energy Permian, LLC	12/2/2012	B-36-22S-28E	7565	No
PINNACLE STATE #024	30-015-36334	Oil	WPX Energy Permian, LLC	Not Drilled	B-36-22S-28E	Proposed (7061)	No
BIG EDDY UNIT #171	30-015-35591	Gas	XTO PERMIAN OPERATING LLC.	5/7/2008	25-22S-28E	12764	No
PINNACLE STATE 36 #032H	30-015-41587	Oil	WPX Energy Permian, LLC	8/31/2013	C-36-22S-28E	8100	No
PINNACLE STATE #009	30-015-27201	Oil	WPX Energy Permian, LLC	12/10/1993	36-22S-28E	6480	No
PINNACLE STATE #015	30-015-29179	Plugged	WPX Energy Permian, LLC	8/30/1996	A-36-22S-28E	Plugged (6475)	No
PINNACLE STATE #008	30-015-27143	Plugged	WPX Energy Permian, LLC	10/13/1992	C-36-22S-28E	Plugged (6430)	No
PINNACLE STATE #017	30-015-35864	Plugged	WPX Energy Permian, LLC	11/24/2001	C-36-22S-28E	Plugged (6672)	No
BIG EDDY UNIT #155	30-015-34921	Gas	XTO PERMIAN OPERATING LLC.	8/4/2006	D-25-22S-28E	13060	No
BIG EDDY UNIT #117	30-015-27261	Salt Water Disposal	WPX Energy Permian, LLC	1/4/1993	M-25-22S-28E	6484	No
PINNACLE STATE #022	30-015-36216	Plugged	WPX Energy Permian, LLC	6/2/2008	D-36-22S-28E	Plugged (6670)	No
PINNACLE STATE #006	30-015-27141	Oil	WPX Energy Permian, LLC	10/26/1992	G-36-22S-28E	6420	No
PINNACLE STATE #014	30-015-27334	Oil	WPX Energy Permian, LLC	9/17/1995	36-22S-28E	6456	No
PINNACLE STATE #007	30-015-27142	Plugged	WPX Energy Permian, LLC	9/30/1992	D-36-22S-28E	Plugged (6440)	No
CROWN ROYAL FED #002	30-015-34528	Gas	COG OPERATING LLC	Not Drilled	I-26-22S-28E	Proposed (13200)	No
RED ARROW FED #001	30-015-27782	Plugged	FORTSON OIL CO	12/23/1993	26-22S-28E	Plugged (6380)	No
PINNACLE STATE #004	30-015-27093	Oil	WPX Energy Permian, LLC	9/3/1992	F-36-22S-28E	6390	No
PINNACLE STATE #018	30-015-36123	Plugged	WPX Energy Permian, LLC	2/29/2008	G-36-22S-28E	Plugged (7120)	No
PINNACLE STATE #020	30-015-36124	Oil	WPX Energy Permian, LLC	11/21/2008	K-36-22S-28E	6595	No
PINNACLE STATE #002	30-015-27071	Plugged	WPX Energy Permian, LLC	8/9/1992	E-36-22S-28E	Plugged (6400)	No
SANTA FE FEDERAL #008	30-015-27126	Salt Water Disposal	WPX Energy Permian, LLC	10/21/1992	A-35-22S-28E	6350	No
IRISH WHISKEY FEDERAL #001	30-015-33818	Gas	COG OPERATING LLC	5/18/2005	A-26-22S-28E	13010	No
PINNACLE STATE #019	30-015-36065	Oil	WPX Energy Permian, LLC	2/10/2008	E-36-22S-28E	6650	No

Notes:

- No wells within a 1-mile AOR penetrated the injection interval.



Legend

- Proposed SWD
- NMSLO Mineral Leases
- BLM Mineral Leases
- Private Mineral Leases
- Unleased Minerals - Private Owned

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

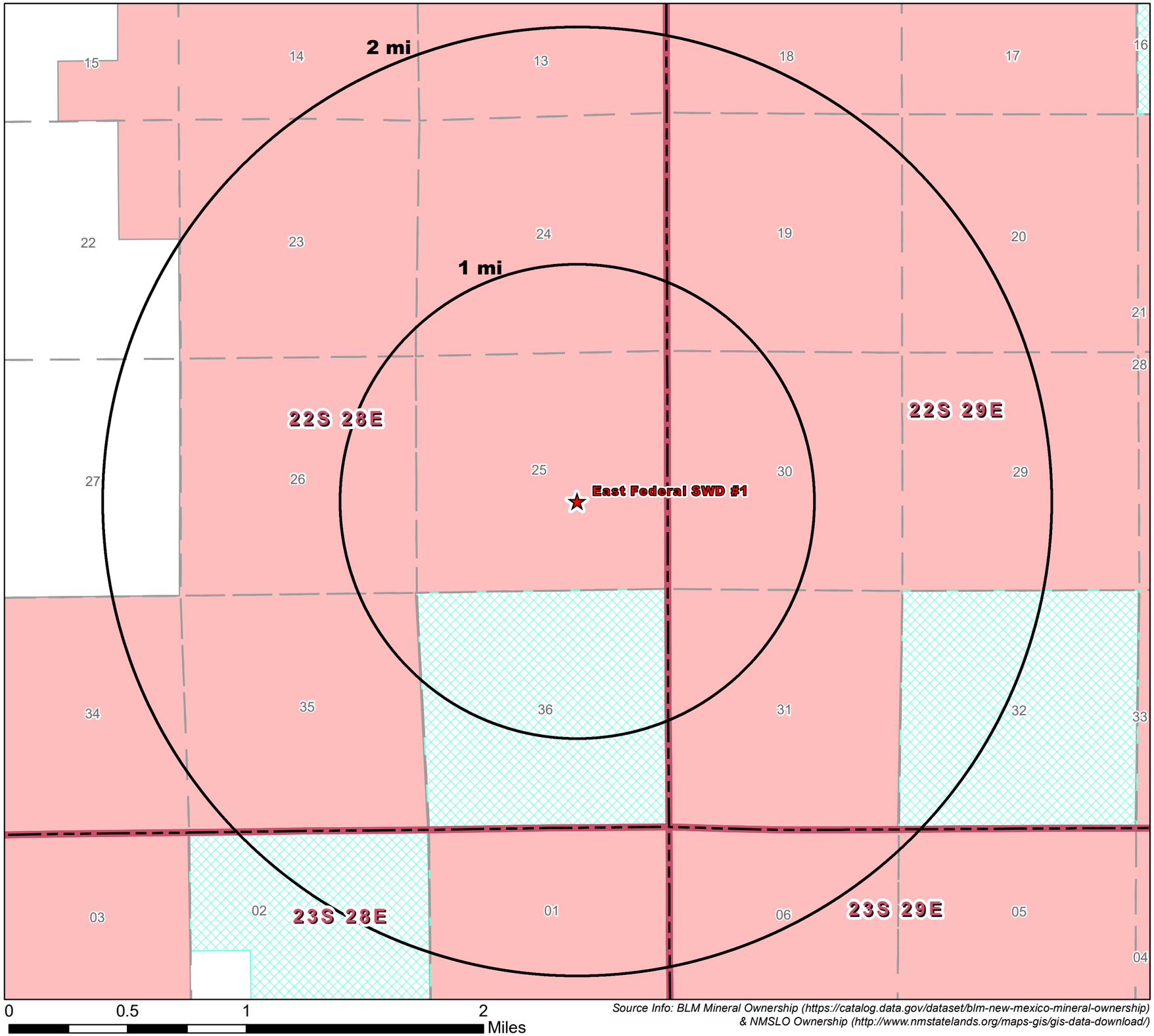
East Federal SWD #1

Eddy County, New Mexico

Proj Mgr: Dan Arthur	November 05, 2020	Mapped by: Ben Bockelmann

Prepared for: ANTHEM WATER SOLUTIONS

Prepared by: ALL CONSULTING



N

Legend

- Proposed SWD

Mineral Ownership

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

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/)

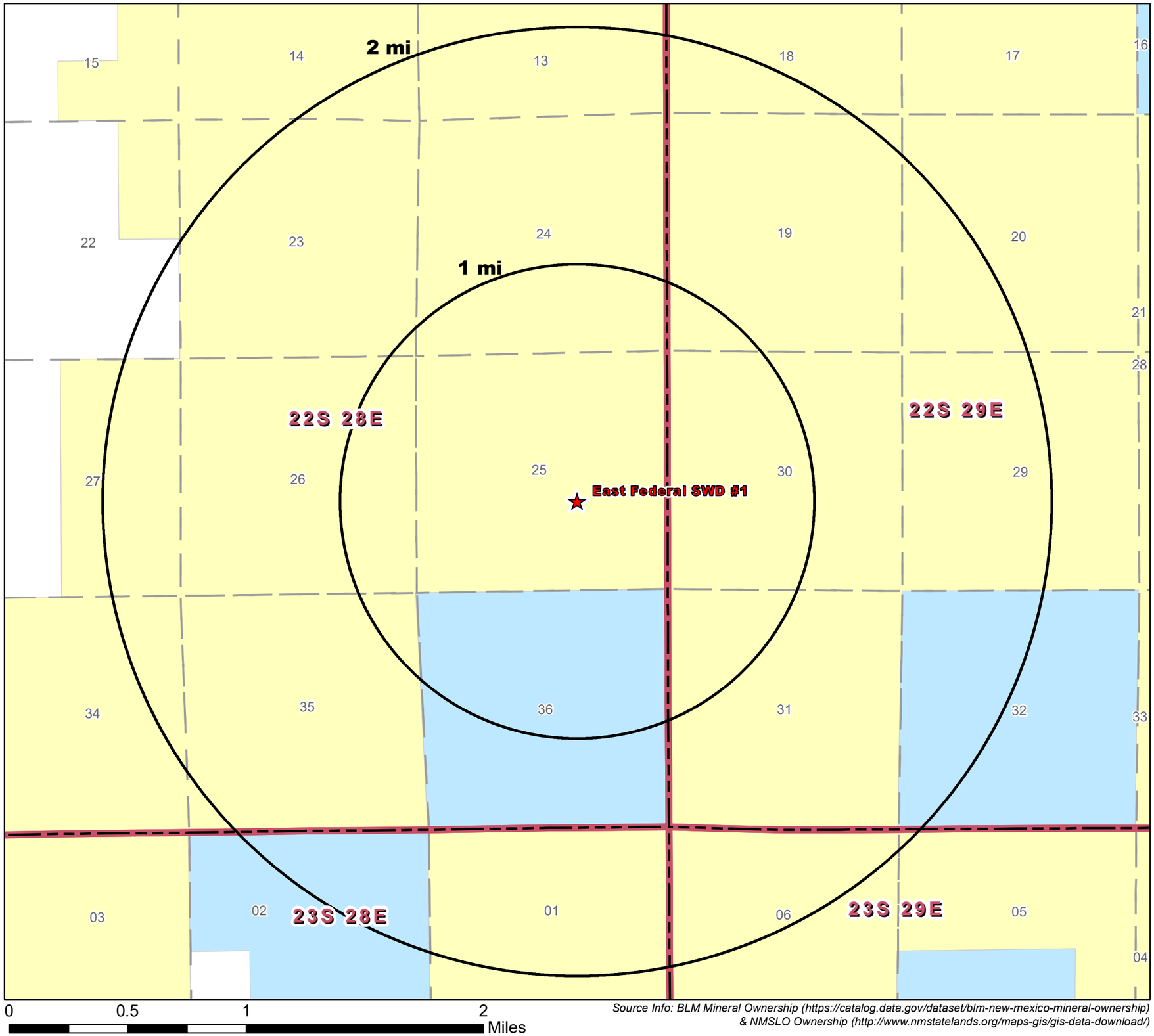
Mineral Ownership
Area of Review

East Federal SWD #1
Eddy County, New Mexico

Proj Mgr: Dan Arthur	November 05, 2020	Mapped by: Ben Bockelmann

Prepared for: ANTHEM WATER SOLUTIONS

Prepared by: ALL CONSULTING



N

Legend

- Proposed SWD

Surface Ownership

- BLM
- Private
- State

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/)

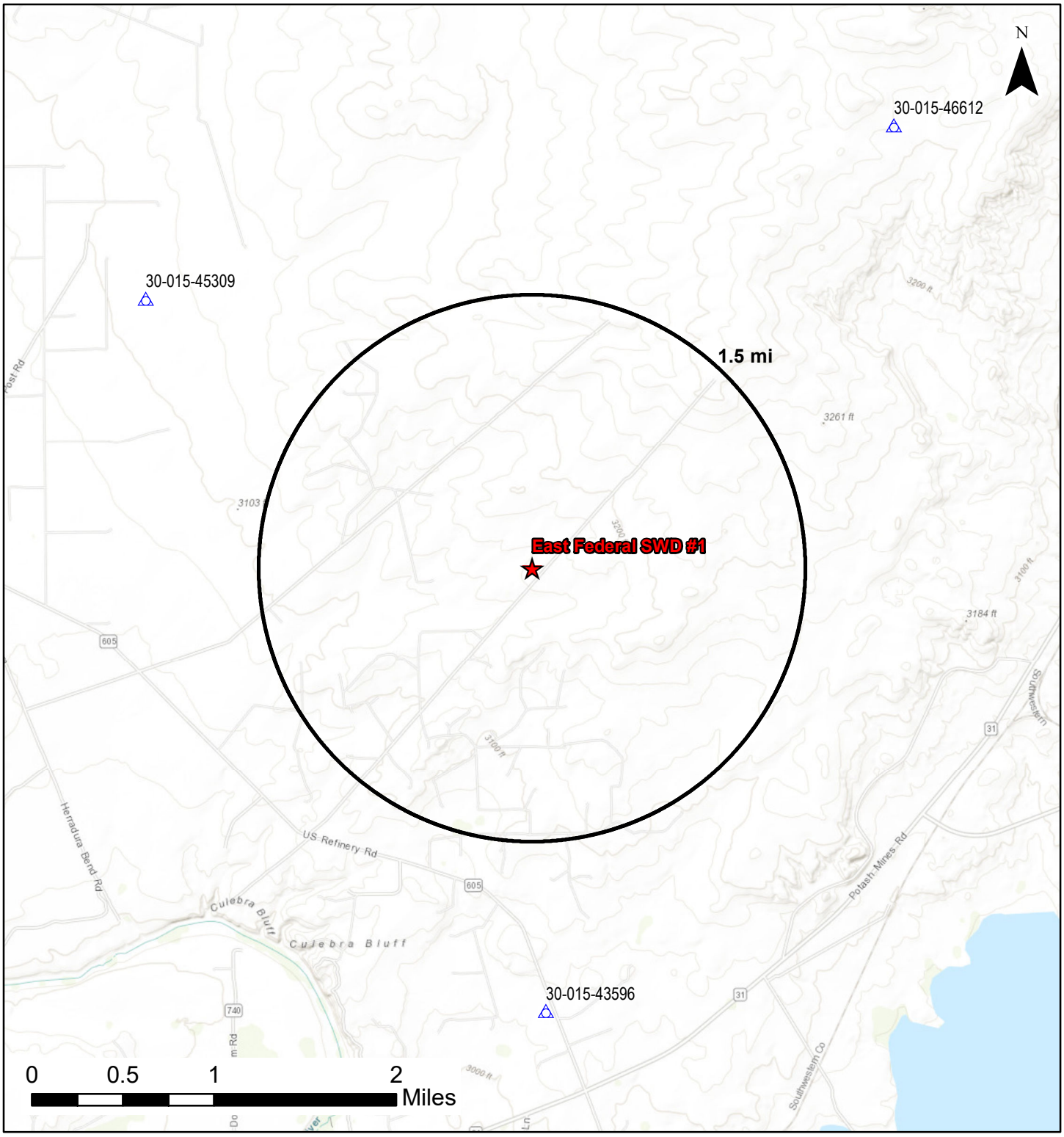
Surface Ownership
Area of Review

East Federal SWD #1
Eddy County, New Mexico

Proj Mgr: Dan Arthur	November 05, 2020	Mapped by: Ben Bockelmann

Prepared for: ANTHEM WATER SOLUTIONS

Prepared by: ALL CONSULTING



East Federal SWD #1
Deep SWDs AOR

Proj Mgr: Dan Arthur	Nov 11, 2020	Mapped by: Ben Bockelmann

Prepared by:

ALL CONSULTING

Legend

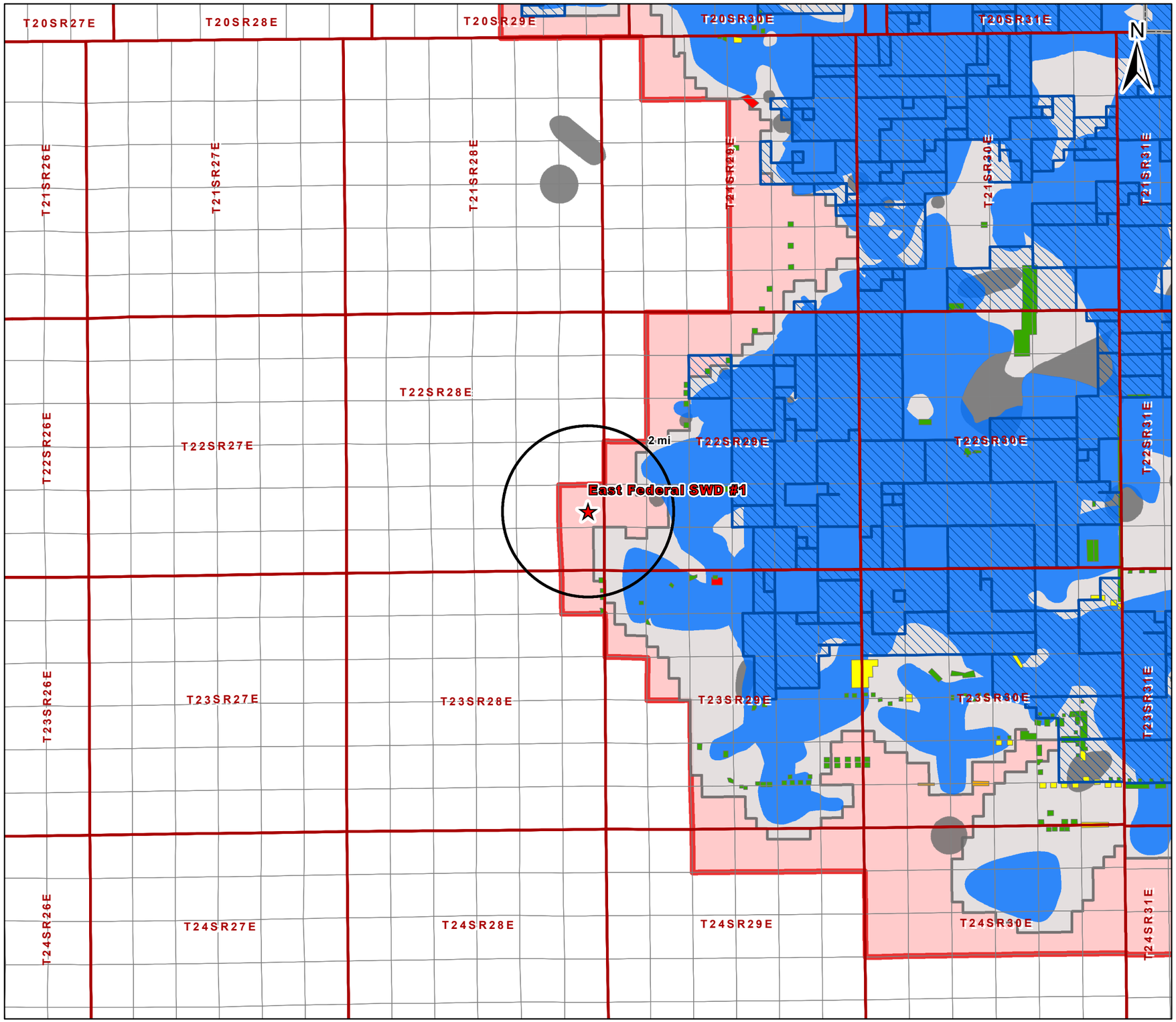
★ Proposed SWD

Devonian/Silurian SWDs

△ Salt Water Injection, Active (0)

△ Salt Water Injection, New (3)

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

Legend

- Proposed SWD
- Potash Leases
- Ore Type - Measured
- Ore Type - Indicated
- KPLA
- SOPA

Drill Islands

Status

- Approved
- Denied
- Nominated
- Withdrawn

Potash Leases
Area of Review

East Federal SWD #1
Eddy County, New Mexico

Proj Mgr: Dan Arthur	November 05, 2020	Mapped by: Ben Bockelmann

Prepared for: ANTHEM WATER SOLUTIONS

Prepared by: ALL CONSULTING

Daniel Arthur

From: Rutley, James S <JRutley@blm.gov>
Sent: Monday, July 13, 2020 12:01 PM
To: Nathan Alleman
Subject: Re: [EXTERNAL] SWD Potash Concurrence
Attachments: East State SWD 1 - 2020-07-13.jpg

Good Morning Nathan,

The East Federal SWD 1 is within an area that does not require a drill island and/or development area so you have no restrictions relating to siting a well anywhere within the section.

The East State SWD 1 surface location is within the quarter mile buffer to Mosaic's mine workings. Being on State Lands, you would need a waiver from Mosaic because the State Section is within Mosaic's Life of Mine Reserves (LMR) boundary. Proposing a location outside of a half mile to mine workings (aqua blue line) would be a better proposal to them.

Thanks,

Jim

From: Nathan Alleman <nalleman@all-llc.com>
Sent: Monday, July 13, 2020 10:04 AM
To: Rutley, James S <JRutley@blm.gov>
Subject: [EXTERNAL] SWD Potash Concurrence

Jim,
Could you please check the following proposed SWD locations with regard to potash proximity?
These are both existing wellbores that would be recompleted for disposal.

Well Name	Section	Township	Range	Footage	Latitude	Longitude
East Federal SWD #1	25	22S	28E	1980’ FSL - 1980’ FEL	32.3620071	-104.0383224
East State SWD #3	16	22S	29E	1980’ FSL – 660’ FWL	32.3908463	-103.9955597

Thank You!

Nate Alleman
Energy & Environmental Consultant
ALL Consulting
1718 South Cheyenne Avenue
Tulsa, OK 74119
Office: 918-382-7581

Attachment 3

Source Water Analyses

Source Water Analysis																	
Anthem Water Solutions, LLC																	
Well Name	API	Latitude	Longitude	Section	Township	Range	Unit	Ftgns	Ftgew	County	State	Field	Formation	TDS (Mg/L)	Chloride (Mg/L)	Bicarbonate (Mg/L)	Sulfate (Mg/L)
ROOKIE STATE #001	3001510060	32.4132729	-104.3302536	7	22S	26E	B	150N	2056E	EDDY	NM	HAPPY VALLEY SOUTH	BONE SPRING	67985	39150	61	1148
STONEWALL DS FEDERAL COM #002	3001521640	32.5426216	-104.1979904	29	20S	28E	J	1980S	1980E	EDDY	NM	AVALON	BONE SPRING	131898	85953.5	635.033	2418.81
STONEWALL DS FEDERAL COM #002	3001521640	32.5426216	-104.1979904	29	20S	28E	J	1980S	1980E	EDDY	NM	AVALON	BONE SPRING	142444	93828.2	678.602	1878.7
STATE AC COM #001	3001522299	32.5572166	-104.1806107	21	20S	28E	J	1980S	1980E	EDDY	NM	BURTON FLAT NORTH	WOLFCAMP	41597	25000	449	76
STATE AC COM #001	3001522299	32.5572166	-104.1806107	21	20S	28E	J	1980S	1980E	EDDY	NM	BURTON FLAT NORTH	WOLFCAMP	43441	26100	446	100
FED UNION #001	3001502416	32.5527229	-104.1623917	22	20S	28E	O	330S	1650E	EDDY	NM		WOLFCAMP	55965	32400	252	2260
COLT FEDERAL #001	3001527288	32.5981598	-104.175827	4	20S	28E	P	990S	660E	EDDY	NM	OLD MILLMAN RANCH	BONE SPRING	1594.98	65	93	5
COLT FEDERAL #001	3001527288	32.5981598	-104.175827	4	20S	28E	P	990S	660E	EDDY	NM	OLD MILLMAN RANCH	BONE SPRING	6037.86	3352.36	220.88	141.564
STATE AC COM #001	3001522299	32.5572166	-104.1806107	21	20S	28E	J	1980S	1980E	EDDY	NM	BURTON FLAT NORTH	WOLFCAMP	40785	24300	688	44
STATE AC COM #001	3001522299	32.5572166	-104.1806107	21	20S	28E	J	1980S	1980E	EDDY	NM	BURTON FLAT NORTH	WOLFCAMP	144926	87600	37	1350
FED UNION #001	3001502416	32.5527229	-104.1623917	22	20S	28E	O	330S	1650E	EDDY	NM	APACHE SPRINGS	WOLFCAMP	297557	186000	143	447

Attachment 4

Injection Formation Water Analyses

Injection Formation Water Analysis

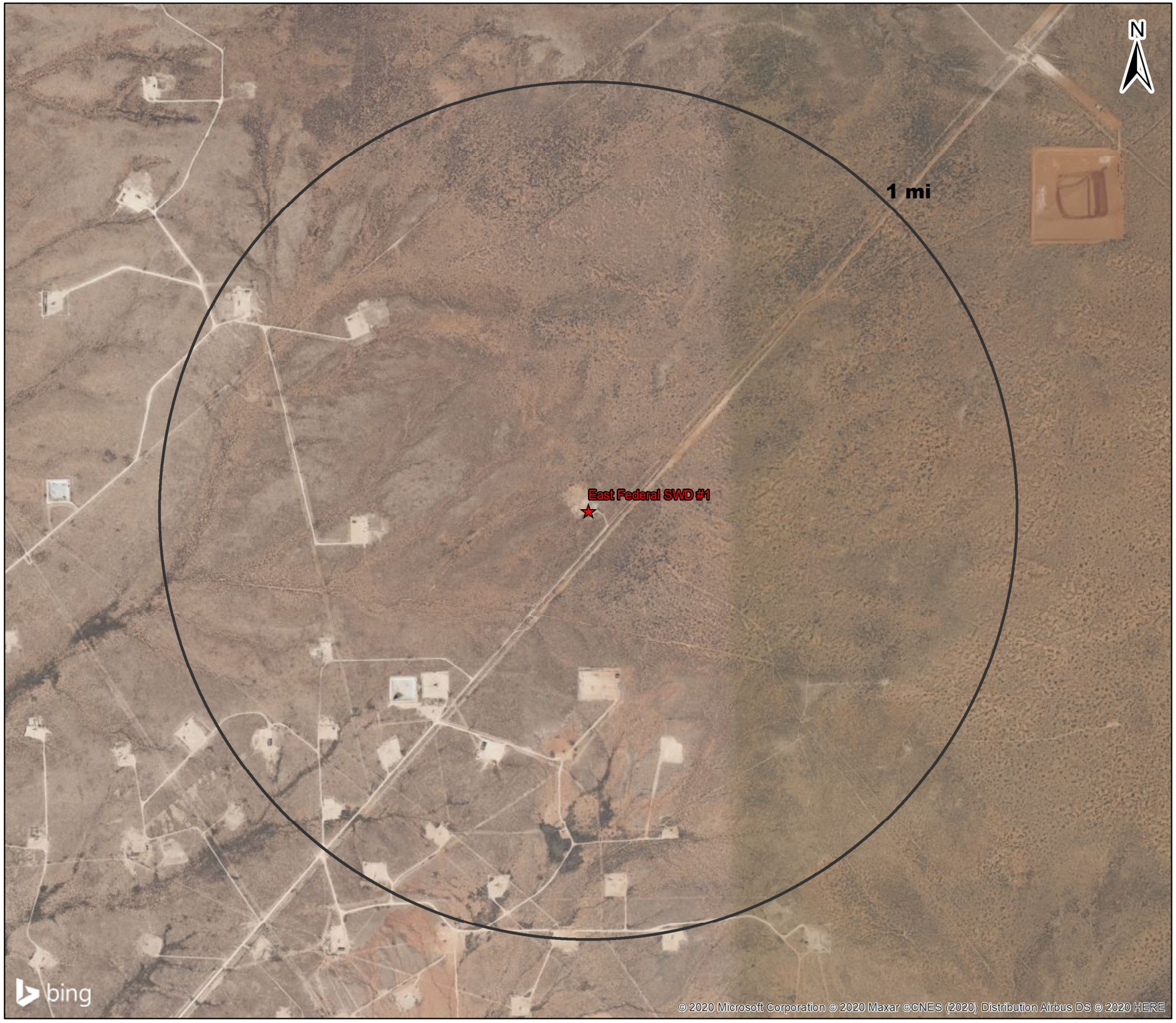
Anthem Water Solutions, LLC

Well Name	API	Latitude	Longitude	Section	Township	Range	Unit	Ftgns	Ftgew	County	State	Field	Formation	TDS (Mg/L)	Chloride (Mg/L)	Bicarbonate (Mg/L)	Sulfate (Mg/L)
BANDANA POINT UT #001	3001500044	32.2986107	-104.5515823	13	23S	23E	O	750S	1900E	EDDY	NM	BANDANA POINT	DEVONIAN	15500	8020	500	1190
REMUDA BASIN UNIT #001	3001503691	32.2886238	-103.9360428	24	23S	29E	J	1980S	1980E	EDDY	NM	REMUDA	DEVONIAN	56922	29000	1740	4980
TORTOISE ASB COM #001	3001510490	32.2766914	-104.5190887	29	23S	24E	G	1980N	2250E	EDDY	NM		DEVONIAN	15601	7780	476	1600
BIG EDDY UT #001	3001502475	32.4421539	-104.042305	36	21S	28E	C	660N	1980W	EDDY	NM		DEVONIAN	16223	7000	1030	2290

Attachment 5

Water Well Map and Well Data

Water Well Sampling Rationale						
Anthem Water Solutions, LLC - East Federal SWD #1						
Water Wells	Owner	Available Contact Information	Use	Coordinates	Sampling Required	Notes
Notes: No water wells are located within 1-mile of the proposed SWD location.						



Legend

- Proposed SWD

NMOSE Points of Diversion

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

SourceInfo: ttps://gis.ose.state.nm.us/arcgis/rest/services/WatersPod/OSE_PODs/MapServer/0

Water Wells Area of Review

East Federal SWD #1

Eddy County, New Mexico

Proj Mgr: Dan Arthur	November 05, 2020	Mapped by: Ben Bockelmann

Prepared by:

ALL CONSULTING

Attachment 6

Induced Seismicity Assessment Letter

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

November 16, 2020

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

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

Dear Mr. Goetze,

This letter provides information regarding the seismic potential associated with injection operations related to Anthem Water Solutions (Anthem), proposed East Federal SWD #1, hereinafter referred to as the "Subject Well."

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 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 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.

The Subject Well, is located 1,980' FSL & 1,980' FEL of Section 25, in T22-S and R28-E of Eddy 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 M3.9 that occurred on November 28th, 1974 and was located approximately 7.1 miles southwest of the Subject Well (See Exhibit 1). The closest Class IID well injecting into the same formations (Devonian-Silurian) of the Subject Well is approximately 2.4 miles to the south (See Exhibit 1).

Anthem does not own either 2D or 3D seismic reflection data in the area of the Subject Well. Fault data from USGS indicates that the closest known fault is approximately 10.3 miles southwest of the Subject Well (See Exhibit 1).

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

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

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 Ellenberger Formation and Precambrian basement rock. See the stratigraphic column for the Delaware Basin included in Exhibit 3.

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.

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.

Sincerely,
ALL Consulting

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

Enclosures
References
Exhibits

References

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).

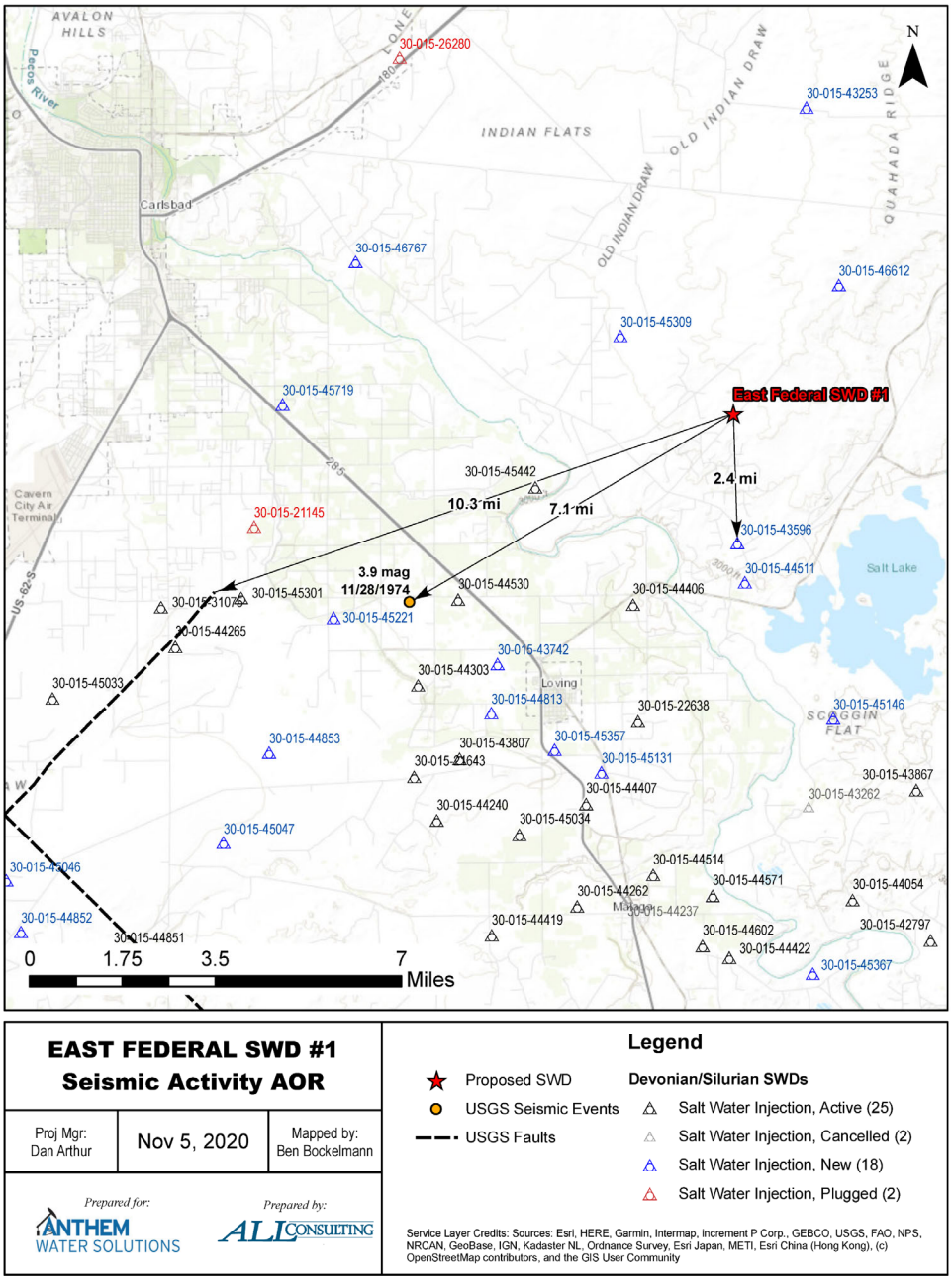
Green, G.N., and G.E. Jones. 1997. "The Digital Geologic Map of New Mexico in ARC/INFO Format." U.S. Geological Survey Open-File Report 97-0052. https://mrdata.usgs.gov/geology/state/state.php?state=NM (accessed June 14, 2018).

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/PBGSP_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



EAST FEDERAL SWD #1
Seismic Activity AOR

Proj Mgr: Dan Arthur	Nov 5, 2020	Mapped by: Ben Bockelmann

Prepared for: ANTHEM WATER SOLUTIONS

Prepared by: ALL CONSULTING

Legend

- Proposed SWD
- USGS Seismic Events
- USGS Faults

Devonian/Silurian SWDs

- Salt Water Injection, Active (25)
- Salt Water Injection, Cancelled (2)
- Salt Water Injection, New (18)
- Salt Water Injection, Plugged (2)

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

Exhibit 1. Map Showing the Distances from Known and Inferred Faults, Seismic Event, and Closest Deep Injection Well

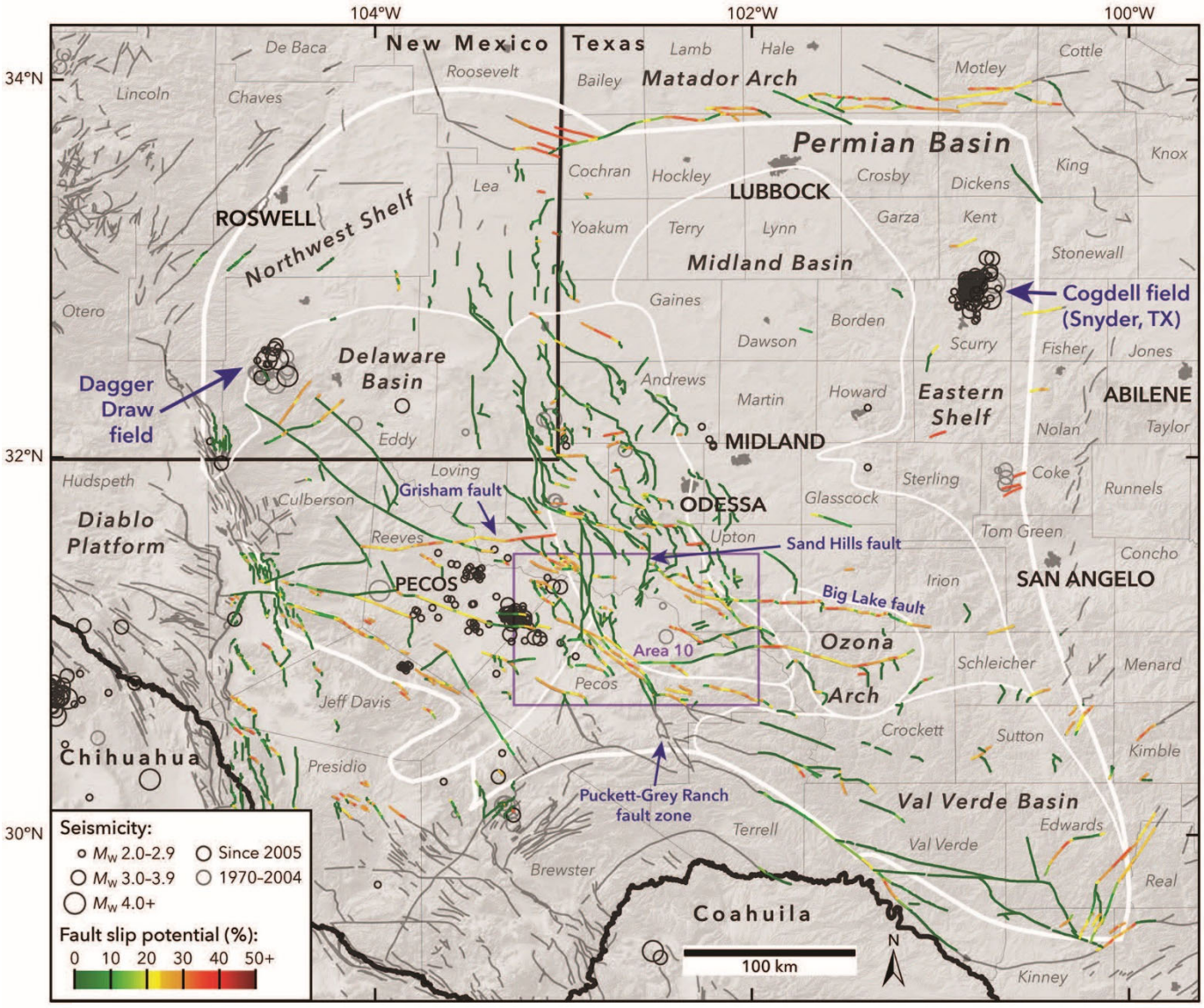


Exhibit 2. Results of the Snee and Zoback (2018) Probabilistic FSP Analysis Across the Permian Basin

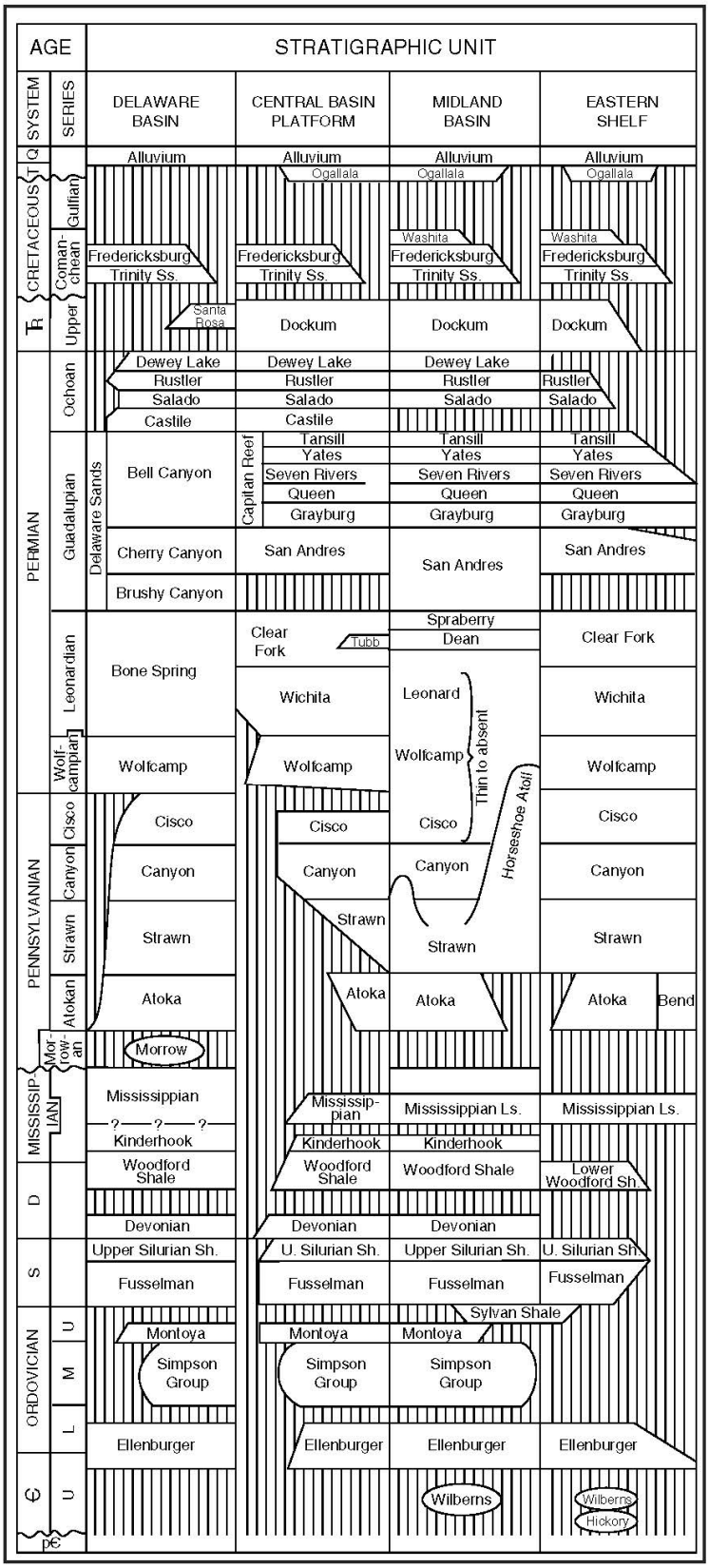


Exhibit 3. Delaware Basin Stratigraphic Chart (Ball 1995)

Attachment 7

Public Notice Affidavit and Notice of Application Confirmations

APPLICATION FOR AUTHORIZATION TO INJECT

NOTICE IS HEREBY GIVEN: That Anthem Water Solutions, LLC, 5914 W. Courtyard Dr, Suite 320, Austin, TX, 78730, 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: East Federal SWD #1
Located 6.3 miles northeast of Loving, NM
NW ¼ SE ¼, Section 25, Township 22S, Range 28E
1,980' FSL & 1,980' FEL
Eddy County, NM

NAME AND DEPTH OF DISPOSAL ZONE: Devonian - Silurian (13,810 – 14,864)

EXPECTED MAXIMUM INJECTION RATE: 30,000 Bbls/day

EXPECTED MAXIMUM INJECTION PRESSURE: 2,762 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.

Carlsbad Current Argus.
PART OF THE USA TODAY NETWORK

Affidavit of Publication

Ad # 0004454096

This is not an invoice

ALL CONSULTING- CARL SBAD
1718 SOUTH CHEYENNE AVENUE

TULSA, OK 74119

I, a legal clerk of the **Carlsbad Current Argus**, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

11/05/2020

Legal Clerk

Subscribed and sworn before me this November 5, 2020:

State of WI, County of Brown
NOTARY PUBLIC

5.15.23

My commission expires

APPLICATION FOR AUTHORIZATION TO INJECT

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Additional information may be obtained by contacting Nate Alleman at 918-382-7581.
#4454096, Current Argus, November 5, 2020

Ad # 0004454096
PO #: East Federal SWD #1
# of Affidavits1

This is not an invoice

NANCY HEYRMAN
Notary Public
State of Wisconsin

East 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 2	811 S. 1st St.	Artesia	NM	88210
Leasehold Operators				
Chevron USA Production Company (CHEVRON USA PROD CO)	P.O. Box 1635	Houston	TX	77251
COG Operating, LLC (COG OPERATING LLC)	600 W. Illinois Ave.	Midland	TX	79701
Commission of Public Lands - State Land Office	310 Old Santa Fe Trail	Santa Fe	NM	87501
CTV Oil & Gas New Mexico, LLC (CTV OG NM LLC)	201 Main Street, Suite 2700	Fort Worth	TX	76102
Exxon Oil Corporation (EXXONMOBIL OIL CORP)	P.O. Box 2443	Houston	TX	77210
Keystone Petroleum NM, LLC (KEYSTONE OG NM LLC)	222 W. Las Colinas Blvd.	Irving	TX	75039
LMBI Oil & Gas New Mexico, LLC (LMBI OG NM LLC)	201 Main Street, Ste 2700	Fort Worth	TX	76102
Marshall & Winston, Inc. (MARSHALL & WINSTON INC)	10 Destra Dr., Suite 310 W. Tower	Midland	TX	79705
MRC Permian Company (MRC DELAWARE RES LLC)	5400 LBL Freeway, Suite 1500	Dallas	TX	75240
Nadel & Gussman Permian, LLC. (NADEL & GUSSMAN CAPITAN LLC)	601 N. Marienfeld, Suite 508	Midland	TX	79701
SRBI Oil & Gas New Mexico, LLC (SRBI OG NM LLC)	201 Main Street, Suite 3200	Fort Worth	TX	76102
Thru Line Oil & Gas New Mexico, LLC (THRU LINE OG NM LLC)	201 Main Street, Suite 2700	Fort Worth	TX	76102
WPX Energy Production, LLC (WPX ENERGY PERMIAN LLC)	721 S. Main Ave.	Aztec	NM	87410
XTO Energy, Inc. (XTO PERMIAN OPERATING INC)(XTO PERMIAN, LLC)	810 Houston St., Suite 2000	Fort Worth	TX	76102
32 Mineral Oil & Gas New Mexico, LLC (32 MINERAL O&G NM LLC)	123 E Marcy St., Suite 101	Santa Fe	NM	87501

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

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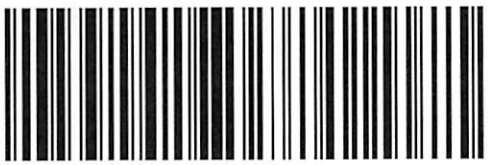

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Carlsbad NM 88220-6292

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