

Initial Application Part I

Received: 07/18/2019

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

RECEIVED: 07/18/2019	REVIEWER:	TYPE: SWD	APP NO: pMAM1911940185
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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: AWR Disposal LLC **OGRID Number:** 328805
Well Name: Prime Time SWD #1 **API:** _____
Pool: Proposed: SWD, Devonian, Silurian, Fusselman, Montoya **Pool Code:** 97869

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

SWD-2196

- 1) **TYPE OF APPLICATION:** Check those which apply for [A]
- A. Location – Spacing Unit – Simultaneous Dedication
 NSL NSP (PROJECT AREA) NSP (PRORATION UNIT) SD
- B. Check one only for [I] or [II]
- [I] Commingling – Storage – Measurement
 DHC CTB PLC PC OLS OLM
- [II] Injection – Disposal – Pressure Increase – Enhanced Oil Recovery
 WFX PMX SWD IPI EOR PPR

- 2) **NOTIFICATION REQUIRED TO:** Check those which apply.
- A. Offset operators or lease holders
 B. Royalty, overriding royalty owners, revenue owners
 C. Application requires published notice
 D. Notification and/or concurrent approval by SLO
 E. Notification and/or concurrent approval by BLM
 F. Surface owner
 G. For all of the above, proof of notification or publication is attached, and/or,
 H. No notice required

<u>FOR OCD ONLY</u>	
<input type="checkbox"/>	Notice Complete
<input type="checkbox"/>	Application Content Complete

3) **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Randall Hicks (agent)

Print or Type Name

Signature

June 26, 2019

Date

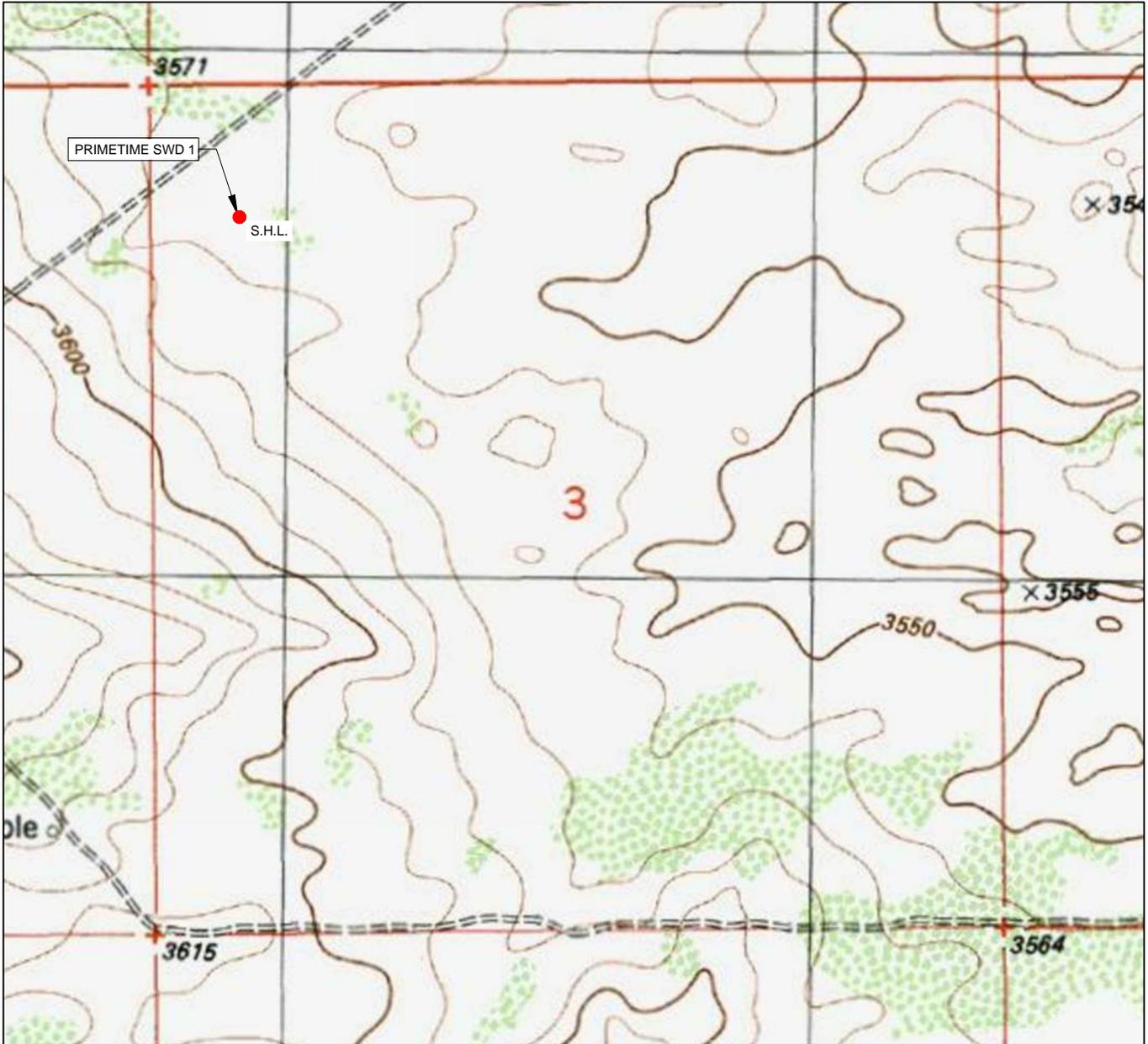
505 238 9515

Phone Number

r@rthicksconsult.com

e-mail Address

LOCATION & ELEVATION VERIFICATION MAP

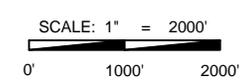


AWR DISPOSAL, LLC

LEASE NAME & WELL NO.: PRIME TIME SWD #1

SECTION 3 TWP 23-S RGE 33-E SURVEY N.M.P.M.
 COUNTY LEA STATE NM ELEVATION 3566'
 DESCRIPTION 802' FNL & 613' FWL

LATITUDE N 32.3387926 LONGITUDE W 103.5668237



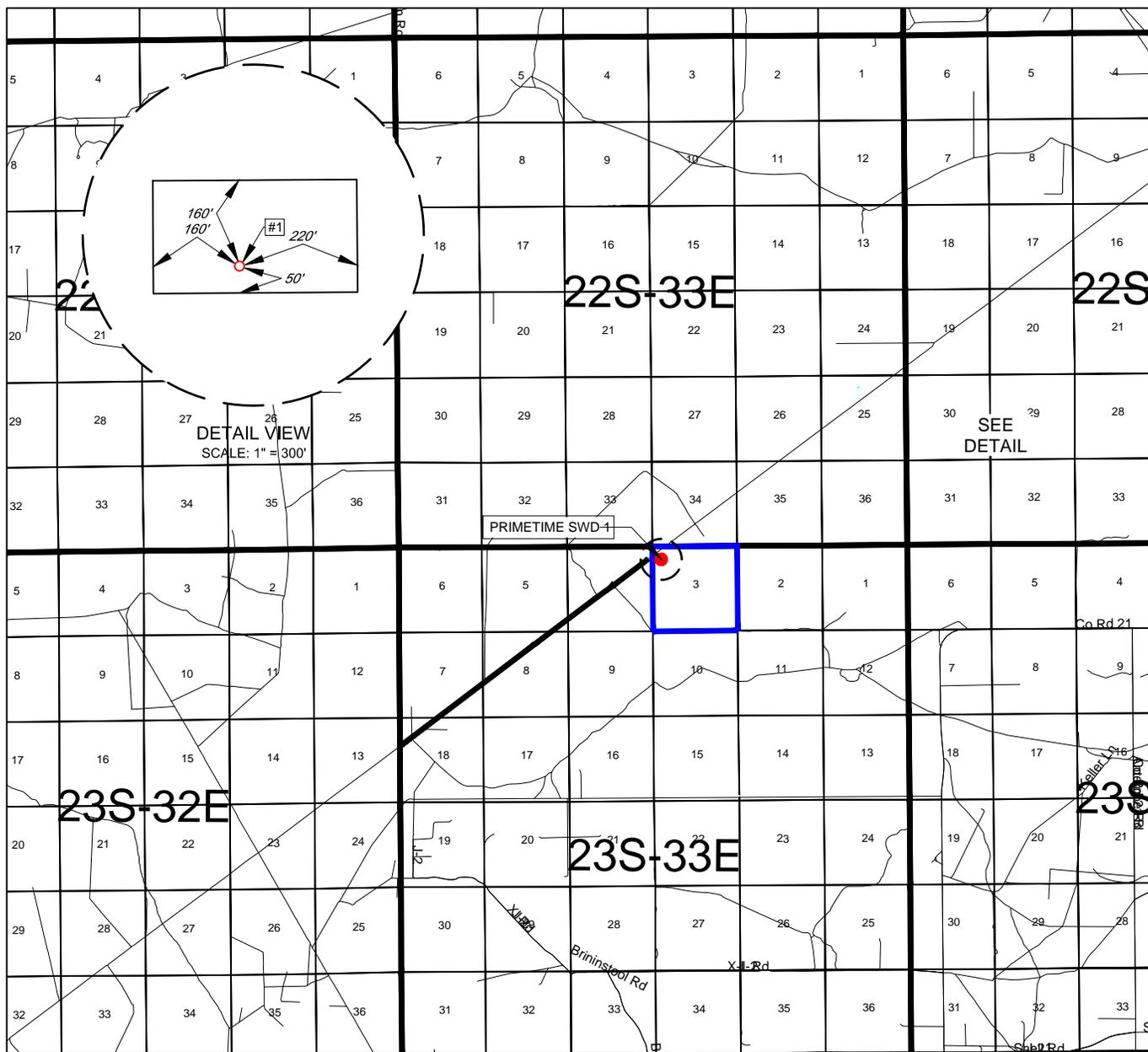
THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY AWR DISPOSAL, LLC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM, EAST ZONE OF THE NORTH AMERICAN DATUM 1983, U.S. SURVEY FEET.



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 2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
 TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
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EXHIBIT 2
VICINITY MAP



AWR DISPOSAL, LLC

LEASE NAME & WELL NO.: PRIME TIME SWD #1

SECTION 3 TWP 23-S RGE 33-E SURVEY N.M.P.M.
 COUNTY LEA STATE NM
 DESCRIPTION 802' FNL & 613' FWL

DISTANCE & DIRECTION

FROM INT. OF NM-128 & DELAWARE BASIN RD., GO NORTH ON DELAWARE
BASIN RD. ±6.0 MILES, THENCE WEST (LEFT) ON LEASE RD. ±2.4 MILES,
THENCE NORTH (RIGHT) ON LEASE RD. ±3.6 MILES, THENCE NORTHEAST
(RIGHT) ON PADUCA BREAKS LN. ±3.2 MILES, TO A POINT ±750 FEET
SOUTHEAST OF THE LOCATION.



SCALE: 1" = 10000'
 0' 5000' 10000'



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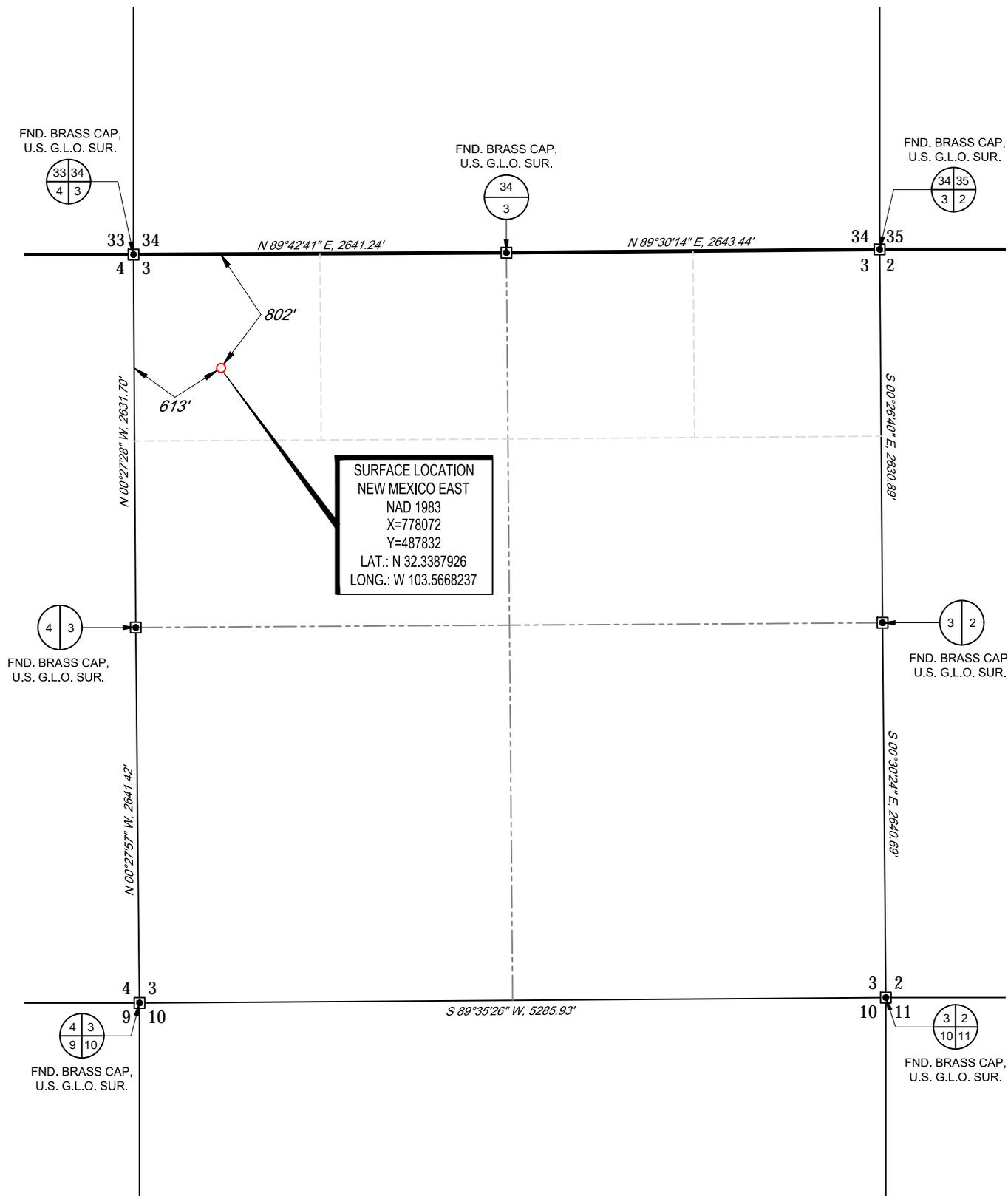
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SCALE: 1" = 1000'
 0' 500' 1000'

EXHIBIT 2A AWR DISPOSAL, LLC

SECTION 3, TOWNSHIP 23-S, RANGE 33-E, N.M.P.M.
 LEA COUNTY, NEW MEXICO



LEASE NAME & WELL NO.: PRIME TIME SWD #1

SECTION 3 TWP 23-S RGE 33-E SURVEY N.M.P.M.
 COUNTY LEA STATE NM
 DESCRIPTION 802' FNL & 613' FWL

DISTANCE & DIRECTION
 FROM INT. OF NM-128 & DELAWARE BASIN RD., GO NORTH ON DELAWARE BASIN RD. ±6.0 MILES, THENCE WEST (LEFT) ON LEASE RD. ±2.4 MILES, THENCE NORTH (RIGHT) ON LEASE RD. ±3.6 MILES, THENCE NORTHEAST (RIGHT) ON PADUCA BREAKS LN. ±3.2 MILES, TO A POINT ±750 FEET SOUTHEAST OF THE LOCATION.

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM, EAST ZONE OF THE NORTH AMERICAN DATUM 1983, U.S. SURVEY FEET

THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY AWR DISPOSAL, LLC. LP THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.



John Trevor Carnegie

John Trevor Carnegie, P.S. No. 11401
 JUNE 14, 2019

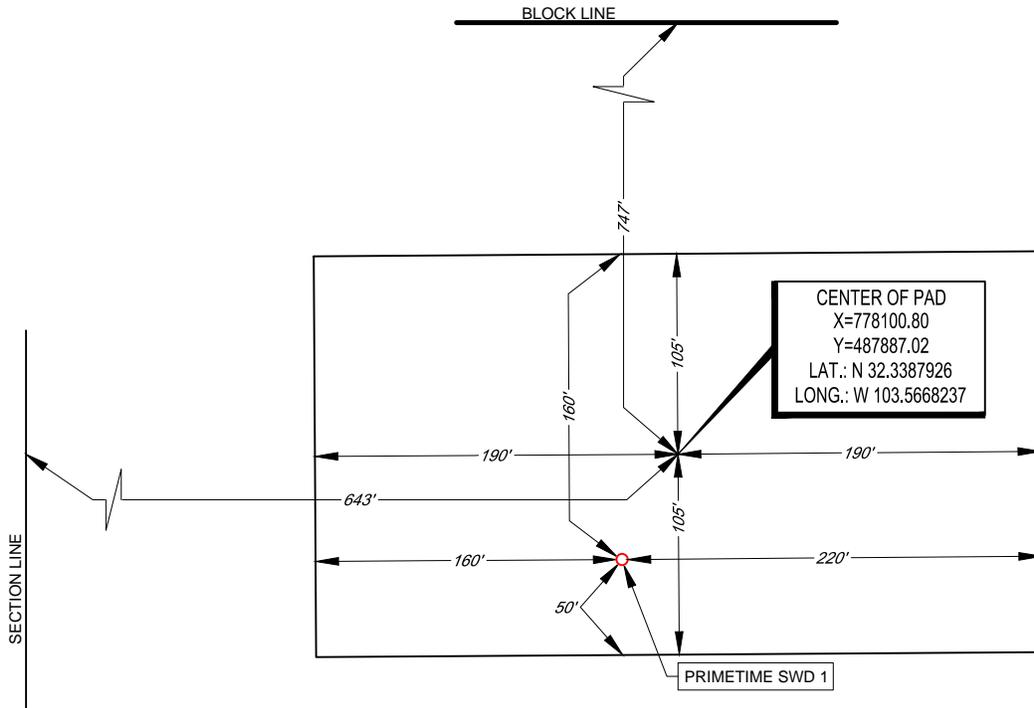


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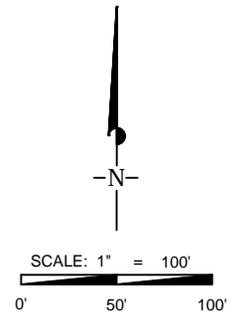
EXHIBIT 2B

AWR DISPOSAL, LLC

SECTION 3, TOWNSHIP 23-S, RANGE 33-E, N.M.P.M.
LEA COUNTY, NEW MEXICO



LEASE NAME & WELL NO.: _____ PRIME TIME SWD #1
 1 LATITUDE N 32.3387926 1 LONGITUDE W 103.5668237
 CENTER OF PAD IS 747' FNL & 643' FWL



ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM, EAST ZONE OF THE NORTH AMERICAN DATUM 1983, U.S. SURVEY FEET

THIS PROPOSED PAD SITE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY AWR DISPOSAL, LLC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

TOPOGRAPHIC
 LOYALTY INNOVATION LEGACY
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 TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
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APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: _____ Secondary Recovery _____ Pressure Maintenance Disposal _____ Storage
Application qualifies for administrative approval? Yes _____ No
- II. OPERATOR: AWR Disposal, LLC.
ADDRESS: 3300 N. A Street, Ste 220, Midland, TX 79705
CONTACT PARTY: Randall Hicks (Agent) PHONE: 505 238 9515
- III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.
Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? _____ Yes No
If yes, give the Division order number authorizing the project: _____
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
- Proposed average and maximum daily rate and volume of fluids to be injected;
 - Whether the system is open or closed;
 - Proposed average and maximum injection pressure;
 - Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
 - If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- *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: Randall Hicks TITLE: Agent
SIGNATURE:  DATE: 06/26/2019
E-MAIL ADDRESS: R@rthicksconsult.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: _____

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.

INJECTION WELL DATA SHEET

OPERATOR: AWR Disposal LLC.

WELL NAME & NUMBER: Prime Time SWD #1

WELL LOCATION: 802 FNL 613 FWL D 3 23S 33E
FOOTAGE LOCATION UNIT LETTER SECTION TOWNSHIP RANGE

WELLBORE SCHEMATIC

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: See Attachments Casing Size: _____

Cemented with: _____ sx. **or** _____ ft³

Top of Cement: _____ Method Determined: _____

Intermediate Casing

Hole Size: _____ Casing Size: _____

Cemented with: _____ sx. **or** _____ ft³

Top of Cement: _____ Method Determined: _____

Production Casing

Hole Size: _____ Casing Size: _____

Cemented with: _____ sx. **or** _____ ft³

Top of Cement: _____ Method Determined: _____

Total Depth: _____

Injection Interval

_____ feet to _____

(Perforated or Open Hole; indicate which)

INJECTION WELL DATA SHEET

Tubing Size: See Attachments Lining Material: _____

Type of Packer: _____

Packer Setting Depth: _____

Other Type of Tubing/Casing Seal (if applicable): _____

Additional Data

1. Is this a new well drilled for injection? Yes No

If no, for what purpose was the well originally drilled? _____

2. Name of the Injection Formation: Proposed: SWD, Devonian, Silurian, Fusselman, Montoya

3. Name of Field or Pool (if applicable): _____

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. No _____

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: See Attachments _____

Attachments to C-108

Copy of well bore diagram

Section III-XII Written descriptions to supplement C-108

Plates referenced in written descriptions

Tables referenced in written descriptions

OSE well logs referenced in written descriptions

Section XIII Proof of Notice

Directions to the Prime Time SWD #1

Date Spudded: TBD

AWR Disposal LLC

Prime Time SWD #1

Unit Letter D, Sec. 3, T23S R32E
802' FNL, 613' FWL

Lea County, NM

Latitude + 32°20'16.6"N, Longitude 103°34'0.56"W

From Carlsbad:

20", 133#, J-55 casing @ 1,050'.
Cmt w/ 450 sks, 13.7 lead and 450 sks, 14.8 tail

24" Hole

13-3/8", 68# L-80 EZ-GO FJ3 casing @ 4,550'.
DV Tool w/ 10' pkr at 4,000'

1st Stg Cmt w/ 1000 sks 11.8 ppg lead & 400 sks 13.2 ppg tail.

2nd Stg Cmt w/ 1000 sks 11.8 ppg lead & 380 sks 13.2 ppg tail.

17.5" Hole

9-5/8", 35.5#, HCP-110 BTC casing @ 11,750'.

Upper DV Tool w/ 10' pkr at 7,000'
Lower DV Tool w/ 10' pkr at 9,000'

1st Stg Cmt w/ 600 sks 11.8 ppg lead & 400 sks 13.2 ppg tail.

2nd Stg Cmt w/ 600 sks 11.8 ppg lead & 380 sks 13.2 ppg tail.

3rd Stg Cmt w/ 600 sks 11.8 ppg lead & 380 sks 13.2 ppg tail.

5.5" Tubing

12.25" Hole

5" Tubing

7-5/8" Liner, 39#, P-110 casing @ 16,790'.

Cmt w/ 230 sks 11.9 ppg Class C

Maximum Proposed Injection Rate: 40,000 BBL S PER DAY

Maximum Proposed Injections Pressure: 3,350 psi

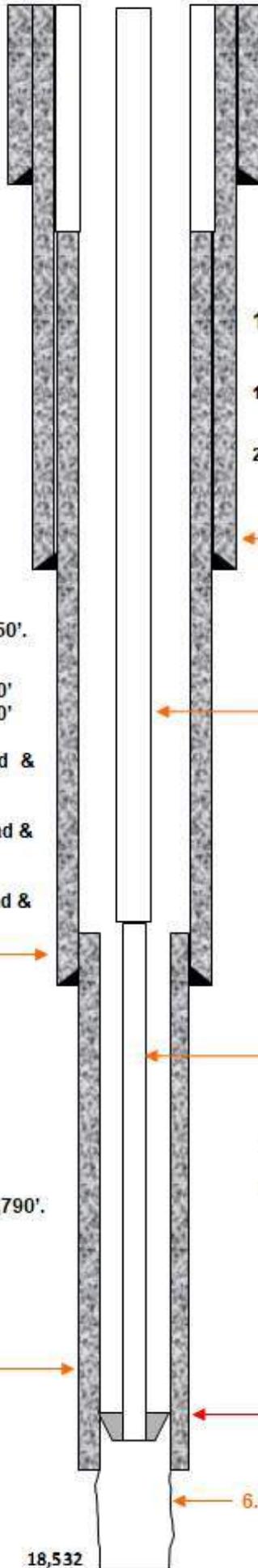
Injection Interval: 8.5" Hole

Packer set @ 16,710

16,790	-	17,643	SLRN
17,643	-	18,144	FSLM
18,144	-	18,532	MNTY

6.5" Openhole

TD : 18,532



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

The proposed injection intervals include the Devonian, Silurian, Fusselman, and Montoya Formations in an open-hole interval.

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

The depth interval of the open-hole injection interval is 16,790-18,532 (1,742 feet).

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

The well will be drilled for disposal.

(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

There are no perforated intervals, only the open-hole completion described above.

(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.

Tops for the Prime Time SWD #1 well were picked in part by using the offset open hole logs on the surrounding wells. The Woodford formation top and deeper formations were correlated with open hole logs and picked using the formation thicknesses of the three nearest wells drilled below the Simpson formation.

Overlying Oil & Gas Zone (Using GL of 3575'):

Delaware (5223')
1st BS Sand (10,268')
2nd BS Sand (10,793')
3rd BS Sand (12,010')
Wolfcamp (12,321')
Strawn (13,821')
Atoka (14,067')
Morrow (14,771')
Mississippian Limestone (16,353')

Underlying Oil & Gas Zones:

Devonian/Silurian (16,762')

1.Active 3.7 miles due east 30-025-33077 CUM: 1,560 BO x 1.25 BCF x 2.2 MBW)

2.Inactive 3.5 miles ESE 30-025-08483 CUM: 32 BCF x 6.6 MMBW

Ellenburger (19,120')

3.Inactive 3.7 miles due east 30-025-33077 CUM: 3.3 BCF x 255MBW

The proposed injection intervals in the Pre-Mississippian Carbonates are well cemented and will provide the necessary open hole integrity while allowing salt water to be injected. Because of the competency of the rock, the open hole section has very little chance of collapsing.

IV. Is this an expansion of an existing project

No.

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

Plate 1a identifies all OCD listed wells and API numbers and shows circles with radii of 0.5, 1.0, and 2.0 miles. Note that where numerous wells are closely-spaced, the API number may not be labeled for clarity. New wells, active wells, plugged wells, and canceled wells have color-coded symbols. Plate 1b shows only new and active wells and circles with radii of 0.5 and 1.0 miles.

Table 1 lists all of the wells shown on Plate 1a within the circle having a 2.0 mile radius.

Plate 2a shows BLM and SLO oil and gas leases and leaseholder names within the 2-mile area of review. Grey lines indicate lease boundaries within the sections. Private land ownership is also shown by line shading. Plate 2b shows surface land ownership as State, BLM, or Private. Tabular listing of all mapped leases and ownership is presented as:

Table 2a	BLM leases
Table 2b	State of NM leases
Table 2c	Surface Owners

The Prime Time SWD #1 location is on land owned by the State of New Mexico (Table 2c).

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

According to the data presented in Table 1, there are no active or plugged wells within the area of review that penetrates the proposed injection zone.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected

Proposed Maximum Injection Rate: 40,000 bbl/day

Proposed Average Injection Rate: 30,000 bbl/day

2. Whether the system is open or closed

This is will be an open system. All AWR Disposal LLC SWDs may receive produced water and recycled produced water from storage facilities, such as in-ground containments or above-ground steel-walled containments, which are registered or permitted under Rule 34.

3. Proposed average and maximum injection pressure

Proposed Maximum Injection Pressure: 3,350 psi

Proposed Average Injection Rate: 2,550 psi

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

The attached Table 3 “Produced Water Chemistry of Nearby Wells” provides the requisite analyses. The Delaware and Bone Springs Formations are the subjects of the analyses. These formations will provide most of the produced water to the proposed SWD. At the time of writing, we are unaware of any problems associated with disposal of produced water derived from the Delaware, Avalon, and Bone Springs Formations into the Devonian/Fusselman/Montoya injection zone.

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.).

Table 4 presents formational water quality data from the Go-Tech site for Devonian-Fussleman-Montoya producing wells. As stated above, we are unaware of any problems associated with disposal of produced water derived from the Delaware, Avalon, and Bone Springs Formations into the Devonian/Fusselman/Montoya injection zone.

***VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth.**

The proposed injection intervals include the Devonian, Silurian, Fusselman and Montoya Formations in an open-hole interval. The proposed injection intervals in the Pre-Mississippian Carbonates are well cemented and will provide the necessary open hole integrity while allowing salt water to be injected. Because of the competency of the rock, the open hole section has very little chance of collapsing.

As indicated in Section III.A.2, the approximate depths to the top of the Silurian and the base of the Montoya are 16,762 and 18,562 respectively. The depth interval of the injection interval is 17,066-18,400 (1,334 feet), within the Silurian, Fusselman, and Montoya Formations.

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.

The Chinle Formation yields water to supply wells in this area of Lea County. In the immediate area of the Prime Time SWD #1, the closest mapped water wells are shown in Plate 3b as C-3582 and Misc 379. According to the driller's log, C-3582 was drilled in 2012 to a depth of 590 feet and penetrated a 52-foot thick water-bearing sand at a depth of 310-362 feet, which is probably the Santa Rosa Sandstone of the Chinle. The driller's log also suggests that water-bearing zones were encountered at various depths from about 50 feet to total depth. Evaluation of this location on Google Earth suggests this well supplies fresh water for oil and gas operations. Misc-379 is associated with a corral, about 2.75 miles southeast of the Prime Time SWD #1 site (Plate 3a). There is no data for this well. About 3 miles southwest of the proposed SWD is Misc- 99, which shows a measured depth to water of 208 feet by Hicks Consultants in 2013. Hicks Consultants logged the conductor pipe borings Misc ## and Misc ##, at Devon Energy North Thistle wells, which are also in Section 3, T23S R33E. We found no evidence of saturated condition to a depth of 80 feet in these two auger borings. These data, which we know to be reliable, are in contrast to a driller's log of a water well drilled with mud that recorded wet conditions at 65 feet.

According to driller's logs in the OSE database (that we believe are reliable), in this area of Lea County, the Chinle yields water to wells from about 200-700-feet below the ground surface (bgs). The upper portion of the Rustler Formation yields fresh water to wells in Eddy County and in the area of the Prime Time SWD #1, the depth interval of this potential source of fresh (<10,000 mg/L TDS) water is about 1200 feet.

Geophysical logs of oil wells in the area suggest that about 300 feet of the Dewey Lake (aka Quartermaster Formation) overlies the Rustler on the Limestone Ranch. At the time of writing, neither the Dewey Lake nor the Rustler are used as a fresh water supply and, to our knowledge, have not been tested as a fresh water (<10,000 mg/L TDS) unit.

As stated above, there are no active water supply wells within 1.5 miles of the proposed location. The location of nearby mapped surface water bodies are shown in Plate 4. No mapped surface water exists within the Area of Review.

In the area of the Prime Time SWD #1, the depth interval of the Rustler is about 1200-1500 feet bgs, according to the BLM and OCD and, we agree with this assessment. The bottom of the Rustler Formation is characterized by evaporates (anhydrite) and is not considered an underground source of drinking water. Thus, in this area, surface casing required by OCD to prevent impairment of fresh water runs from ground surface to a depth of 1032 feet at the proposed Prime Time SWD #1.

Fresh water does not exist in any formations below the proposed injection zone.

IX. Describe the proposed stimulation program, if any

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

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

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

***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**

No active water supply wells were identified within one mile of the proposed SWD. Data from various sources permit a conclusion that groundwater within the Chinle Formation is potable. In this area, groundwater in the underlying Rustler formation may be relatively brackish.

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

Randall T. Hicks, a Professional Geologist with decades of experience in hydrogeology, affirms, on behalf of AWR Disposal LLC, that

- The USGS has mapped quaternary faults in New Mexico and no such faults are mapped in the area of the proposed Prime Time SWD #1¹

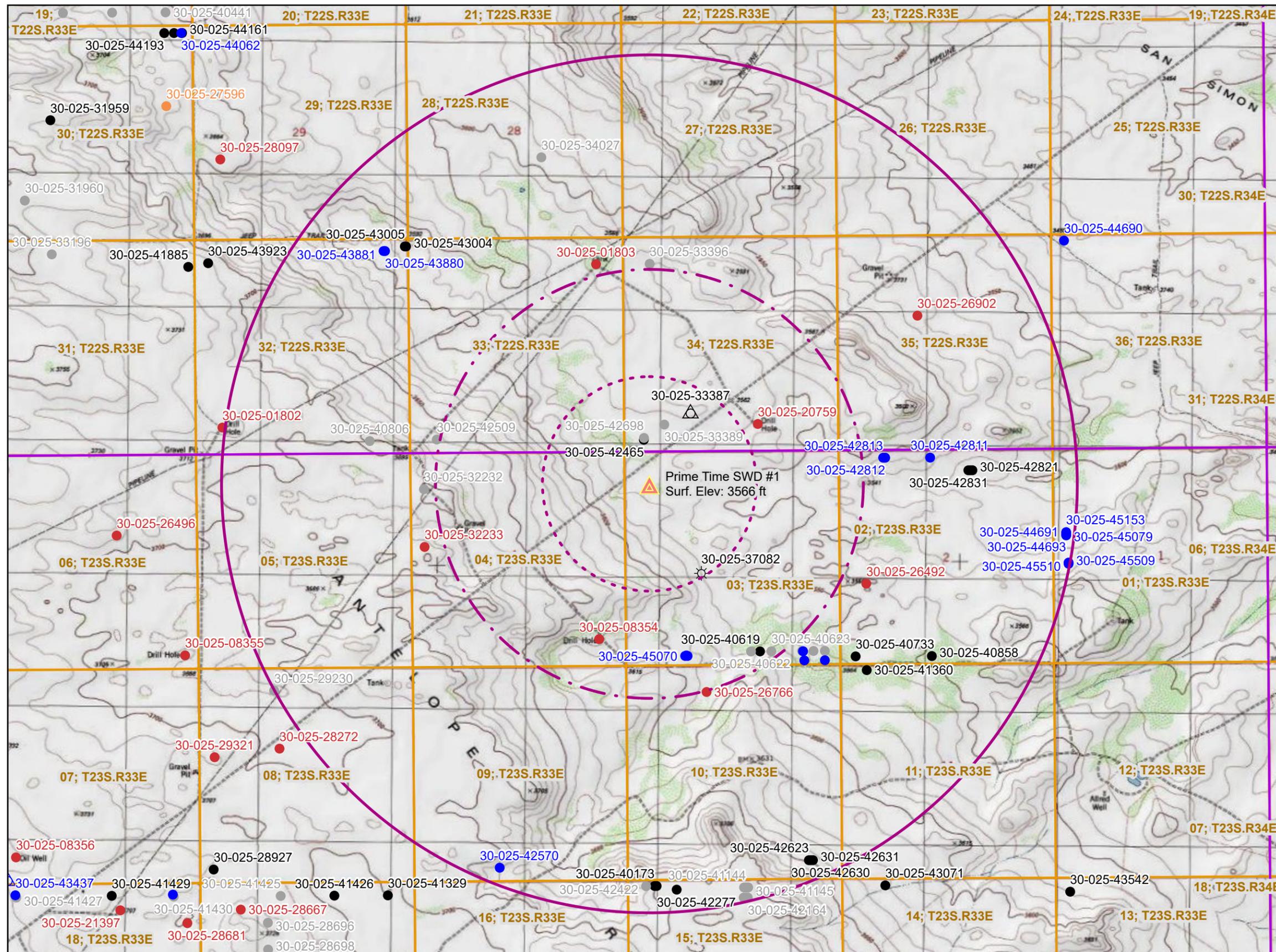
¹ <https://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=5a6038b3a1684561a9b0aadf88412fcf>

- The Texas Bureau of Economic Geology has mapped older faults (e.g. basement and Woodford) in New Mexico and the closest mapped fault is 2.7 miles to the east²
- With respect to migration of produced water from the injection zone to underground sources of drinking water via faults or other natural conduits, the following conditions were considered
 - The lowest underground source of drinking water is the middle and upper Rustler Formation.
 - More than 14,000 feet of sedimentary rock separates the bottom of the Rustler Formation and the top of the injection zone. Many of the formations that lie between the injection zone and the lowermost aquifer are permeable and contain oil, gas or water at various pressures. Any excursion of injected fluids from the Devonian disposal zone would undoubtedly enter these permeable formations prior to moving through the 2800-foot low-permeability salt zone that underlies the Rustler Formation.
 - There is no evidence that the pressure regime in the oil and gas reservoirs is sufficient to cause the upward migration of formation water through the bedded salt and into the Rustler or Chinle aquifers.
- There is no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water

² Bureau of Economic Geology (Accessed April 2019). University of Texas at Austin. Basement Faults (Ewing 1990, Tectonic Map of Texas); Precambrian Faults (Frenzel et al. 1988, Figure 6); Woodord Faults (Comer 1991, plate 1). [Http://www.beg.utexas.edu/resprog/permianbasin/gis.htm](http://www.beg.utexas.edu/resprog/permianbasin/gis.htm)

Plates

Plate 1	OCD wells within the area of review
Plate 2	Mineral leases within the area of review
Plate 3	Water supply wells within the area of review
Plate 4	Surface water within the area of review



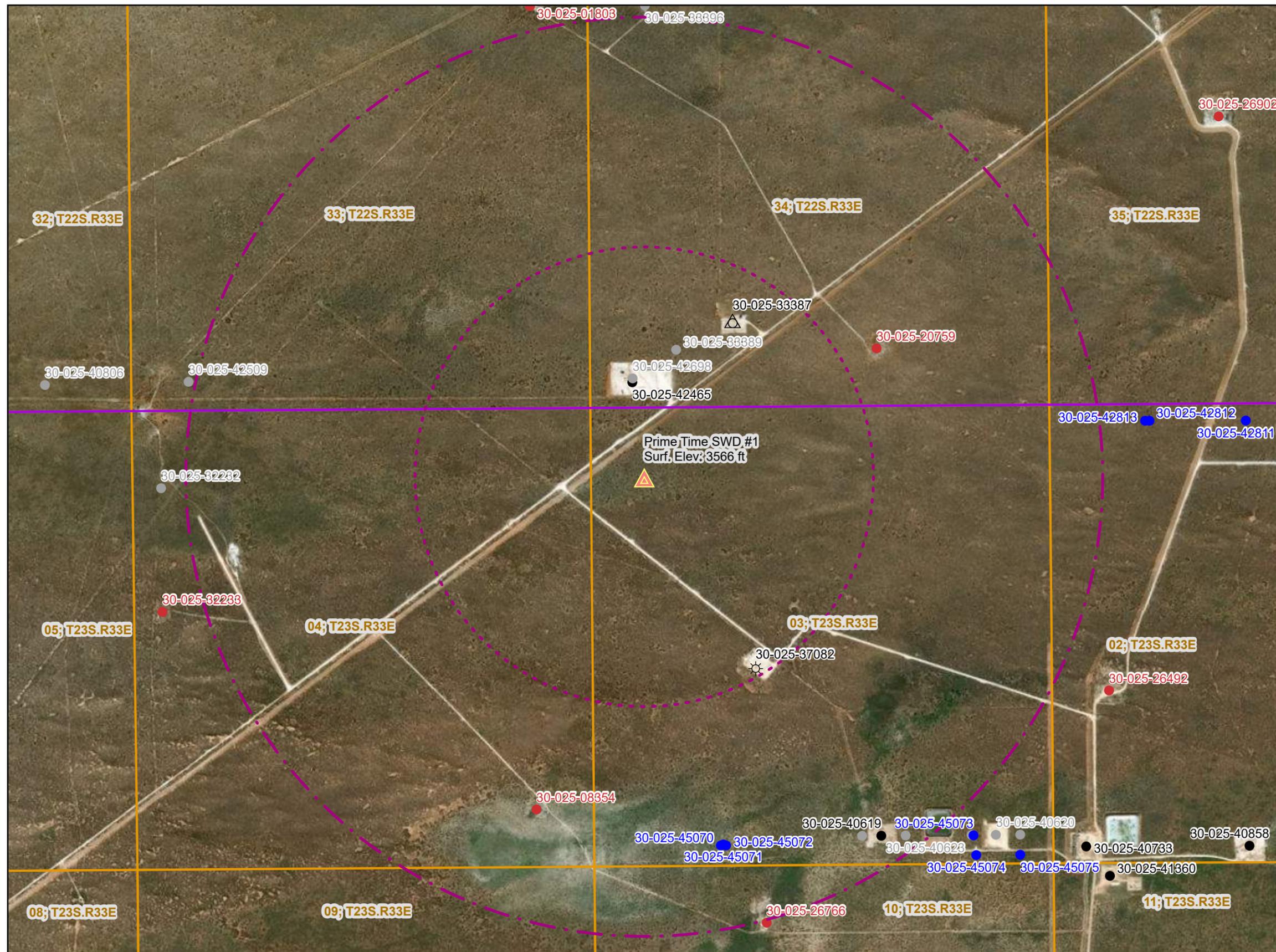
	SWD
Distance (miles)	
	0.5
	1
	2
Oil and Gas (NMOCD)	
	Gas, Active
	Oil, Active
	Oil, Cancelled
	Oil, New
	Oil, Plugged
	Oil, Temporarily Abandoned
	Salt Water Injection, Active
	Salt Water Injection, New



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NM Oil and Gas Wells within 2 Miles
 AWR Disposal, LLC
 Prime Time SWD #1

Plate 1a
 May 2019



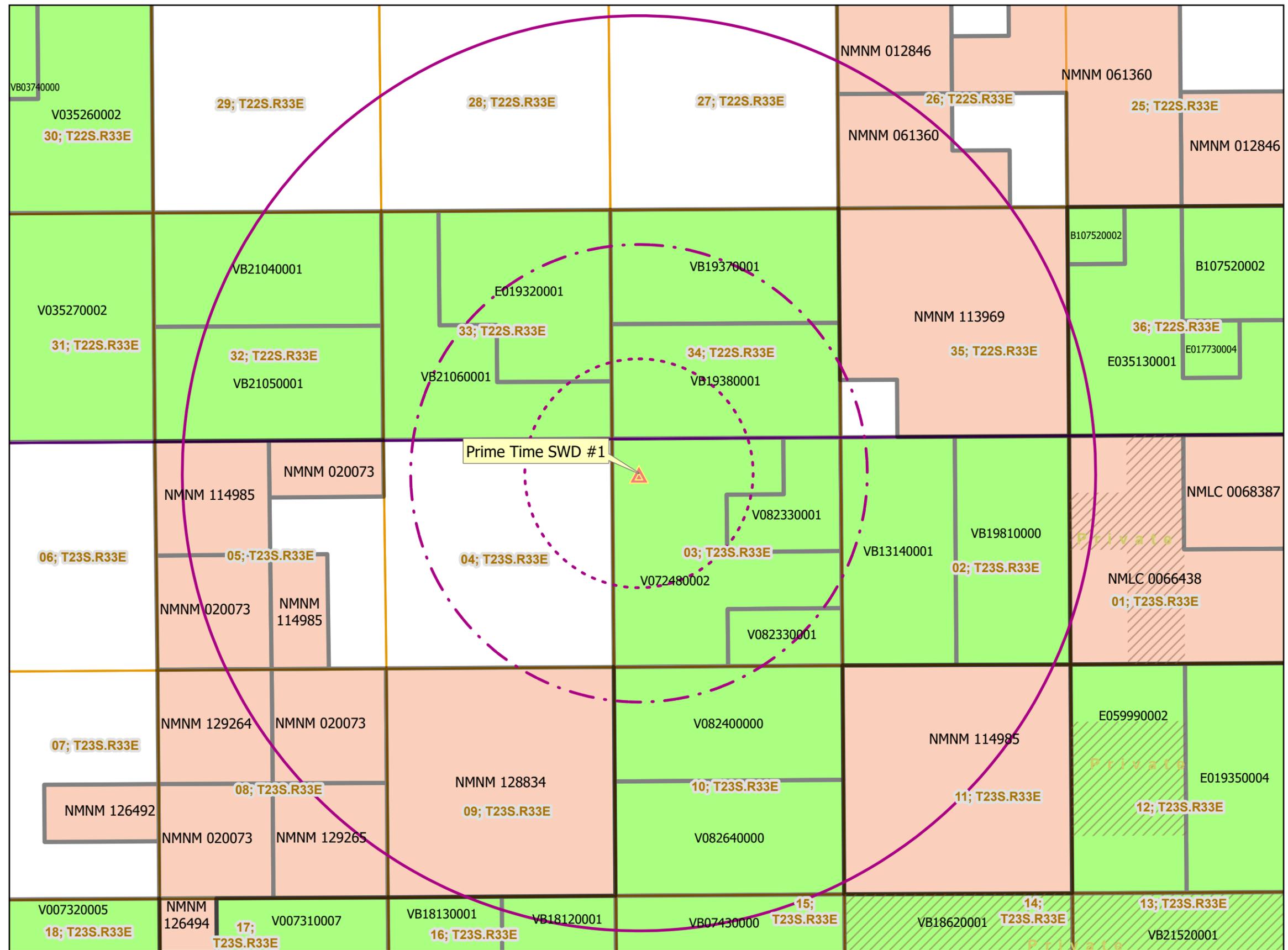
	SWD
Distance (miles)	
	0.5
	1
	2
Oil and Gas (NMOCD)	
	Gas, Active
	Oil, Active
	Oil, Cancelled
	Oil, New
	Oil, Plugged
	Salt Water Injection, Active



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NM Oil and Gas Wells within 1 Mile
AWR Disposal, LLC Prime Time SWD #1

Plate 1b
May 2019

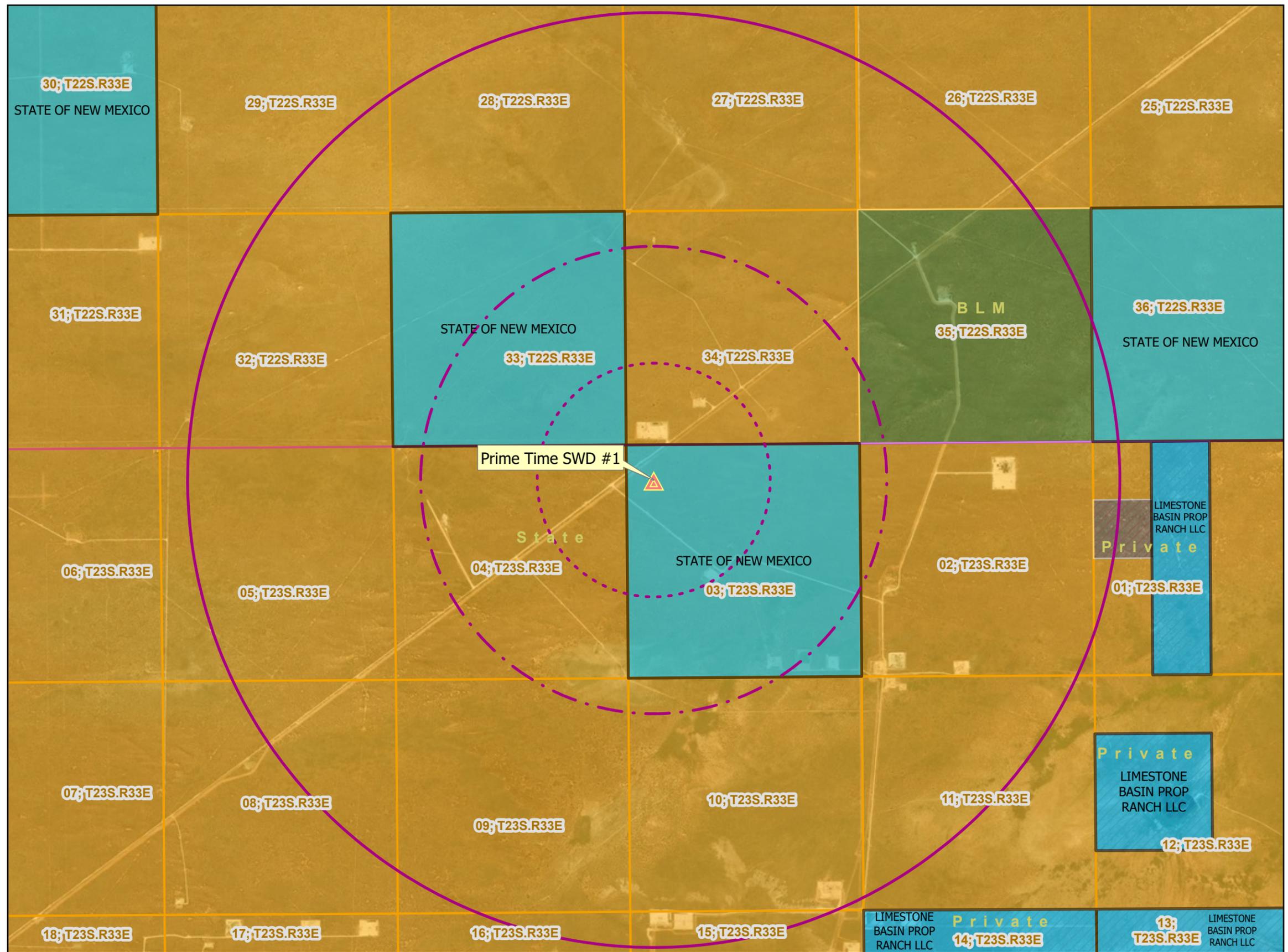


Legend

- SWD
- Distance (miles)
 - 0.5
 - 1
 - 2
- Township Range Section
 - Township Range
 - Section
- Oil and Gas Leases
 - BLM Leases
 - SLO Leases
- NM Land Ownership
 - Private



R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	NM BLM and SLO Leases within 2 Miles	Plate 2a
	AWR Disposal, LLC Prime Time SWD #1	July 2019



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NM Surface Ownership within 2 Miles	Plate 2b
AWR Disposal, LLC Prime Time SWD #1	July 2019

▲ SWD

Distance (miles)

- 0.5
- 1
- 2

USGS Gauging Station (DTW, Date)

Aquifer Code, Well Status

- ▲ Chinle
- Chinle, Site had been pumped recently.
- Chinle, Site was being pumped.
- ▲ Santa Rosa
- Santa Rosa, Site was being pumped.

Misc. Water Wells (Well ID, DTW)

Well Depth (ft)

- No Data
- 151 - 350

OSE Wells (DTW, Date)

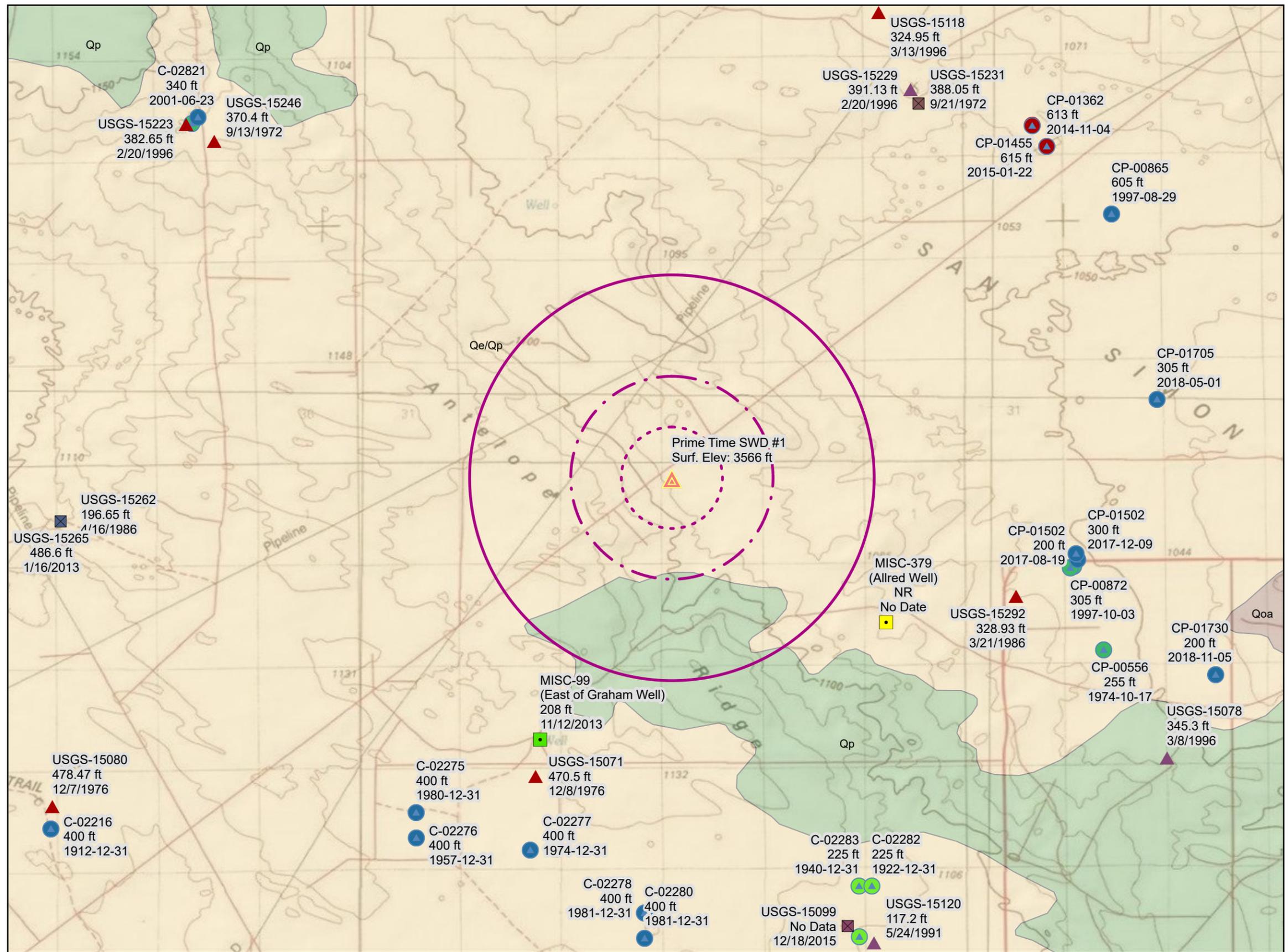
Well Depth (ft)

- 151 - 350
- 351 - 500
- 501 - 1000
- > 1000

NM Geology

Map Unit, Description

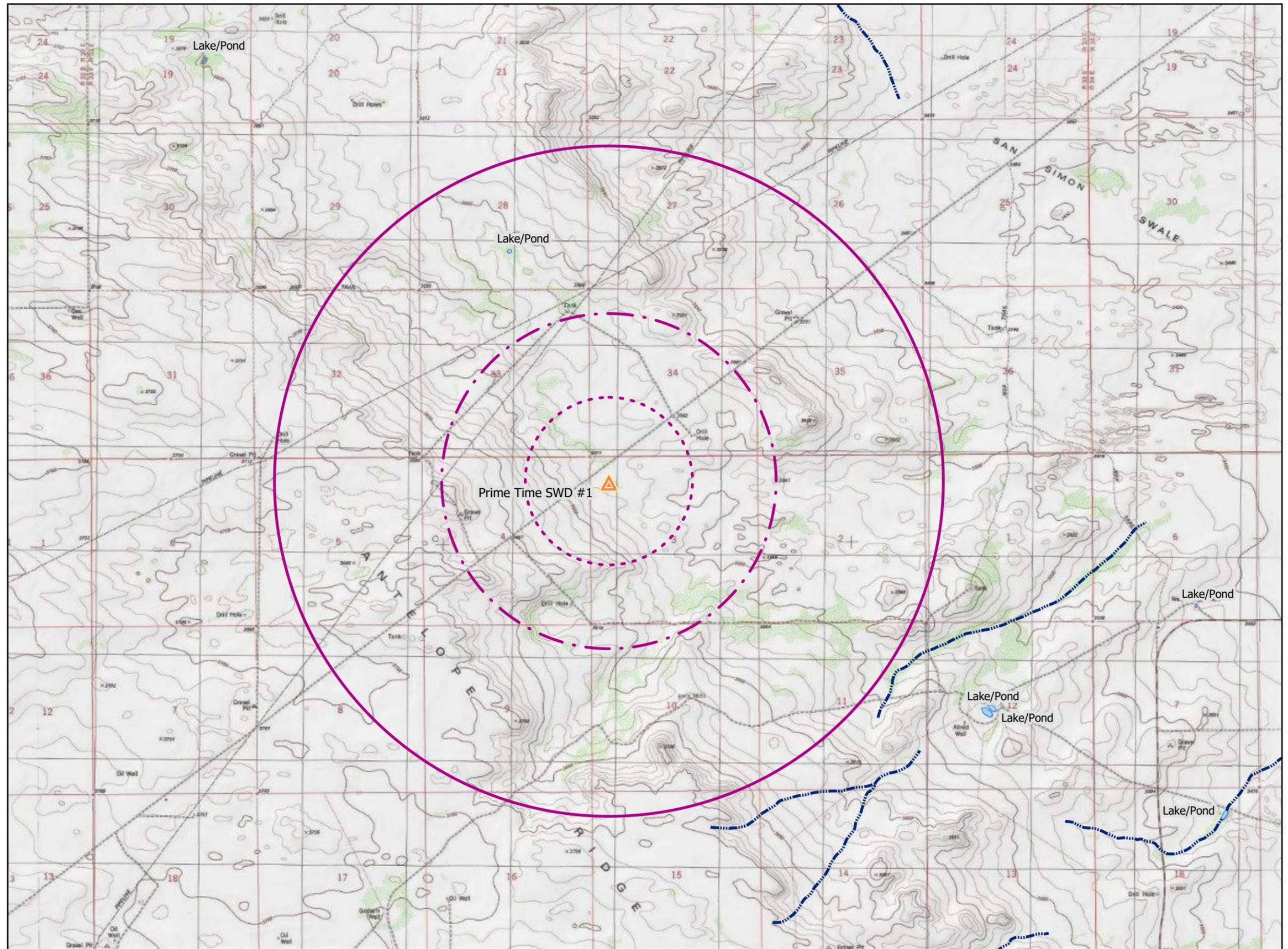
- Qe/Qp, Quaternary-Eolian Piedmont Deposits
- Qoa, Quaternary-Older Alluvial Deposits, Qoa, Quaternary-Older Alluvial Deposits
- Qp, Quaternary-Piedmont Alluvial Deposits, Qp, Quaternary-Piedmont Alluvial Deposits



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Depth to Water and Ground Water Elevation
 AWR Disposal, LLC
 Prime Time SWD #1

Plate 3a
 May 2019



	SWD
Distance (miles)	
	0.5
	1
	2
Water Bodies (1307)	
	Lake/Pond
River and Drainages (1307)	
	Stream/River Artificial Path
	Intermittent Stream



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Nearby Surface Water
AWR Disposal, LLC Prime Time SWD #1

Plate 4
May 2019