

Initial Application Part I

Received: 08/01/2019

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

RECEIVED: 08/01/2019	REVIEWER:	TYPE: SWD	APP NO: pMAM1921330046
----------------------	-----------	-----------	------------------------

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

SWD-2221

- 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

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

 Signature

 Date

 Phone Number

 e-mail Address

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	
⁴ Property Code		⁵ Property Name MUTUMBO STATE SWD			⁶ Well Number 1
⁷ OGRID No. 328805		⁸ Operator Name AWR DISPOSAL, LLC			⁹ Elevation 3704'

¹⁰Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	17	23-S	33-E	-	2294'	SOUTH	2250'	EAST	LEA

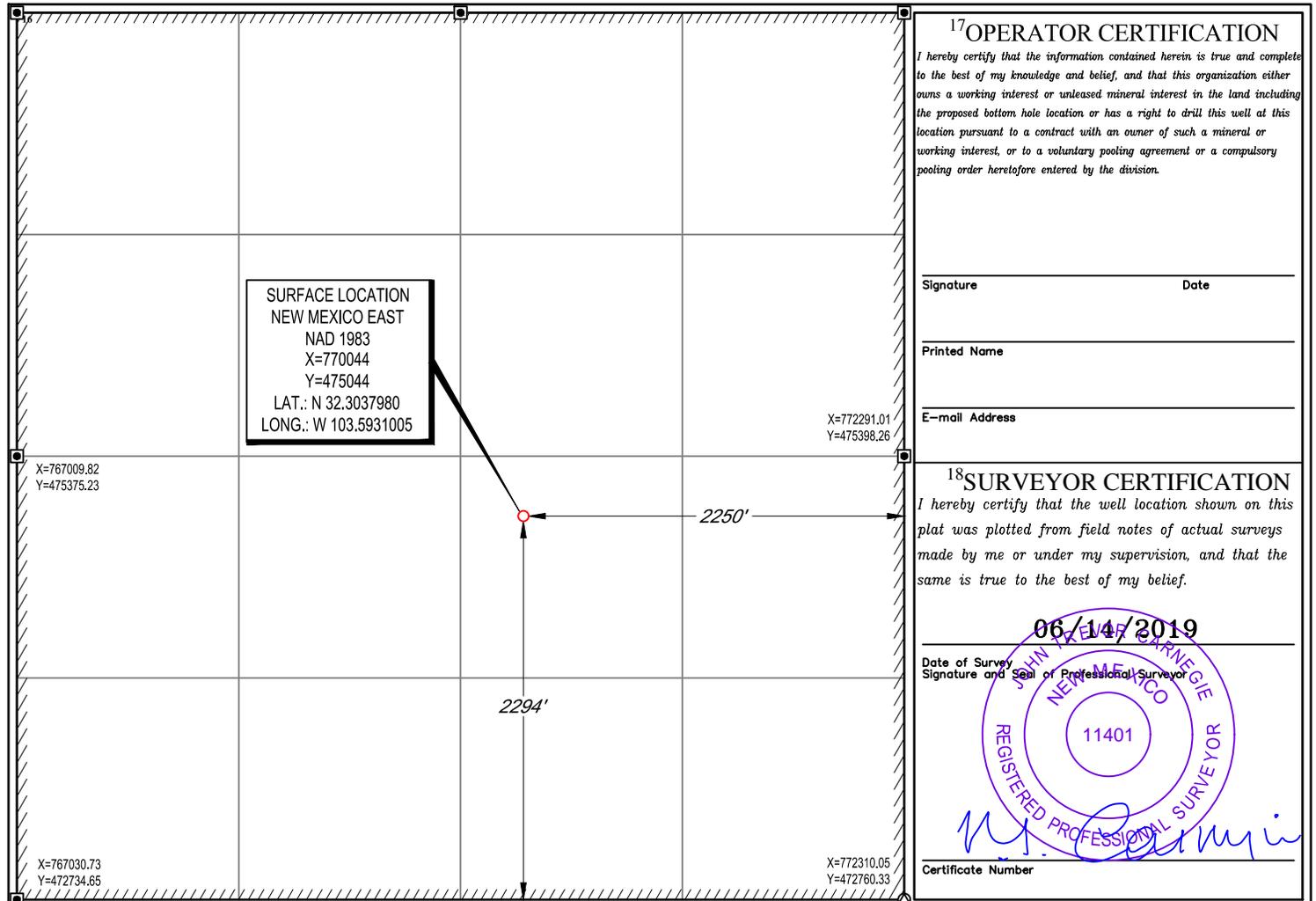
¹¹Bottom Hole Location If Different From Surface

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.

X=766988.65 X=769629.65 X=772271.28
Y=478009.10 Y=478040.50 Y=478038.69



¹⁷OPERATOR 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.

Signature _____ Date _____

Printed Name _____

E-mail Address _____

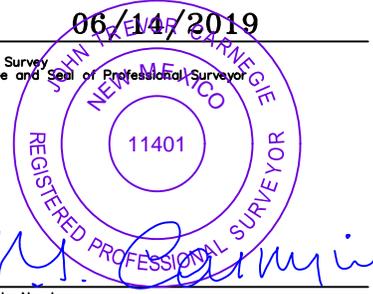
¹⁸SURVEYOR CERTIFICATION

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 to the best of my belief.

06/14/2019

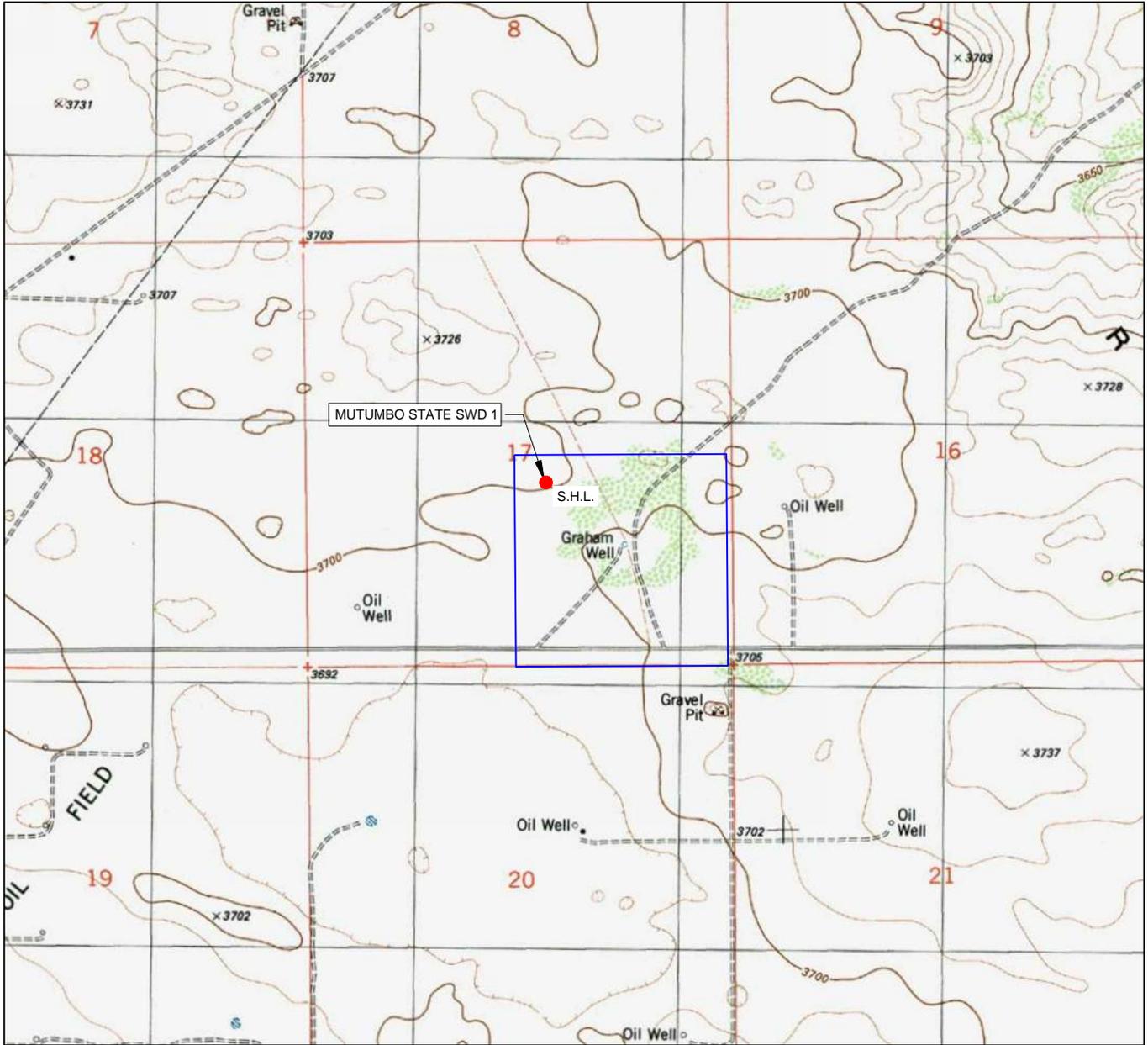
Date of Survey _____

Signature and Seal of Professional Surveyor



Certificate Number _____

LOCATION & ELEVATION VERIFICATION MAP



AWR DISPOSAL, LLC

LEASE NAME & WELL NO.: MUTUMBO STATE SWD 1

SECTION 17 TWP 23-S RGE 33-E SURVEY N.M.P.M.
 COUNTY LEA STATE NM ELEVATION 3704'
 DESCRIPTION 2294' FSL & 2250' FEL

LATITUDE N 32.3037980 LONGITUDE W 103.5931005



SCALE: 1" = 2000'
 0' 1000' 2000'

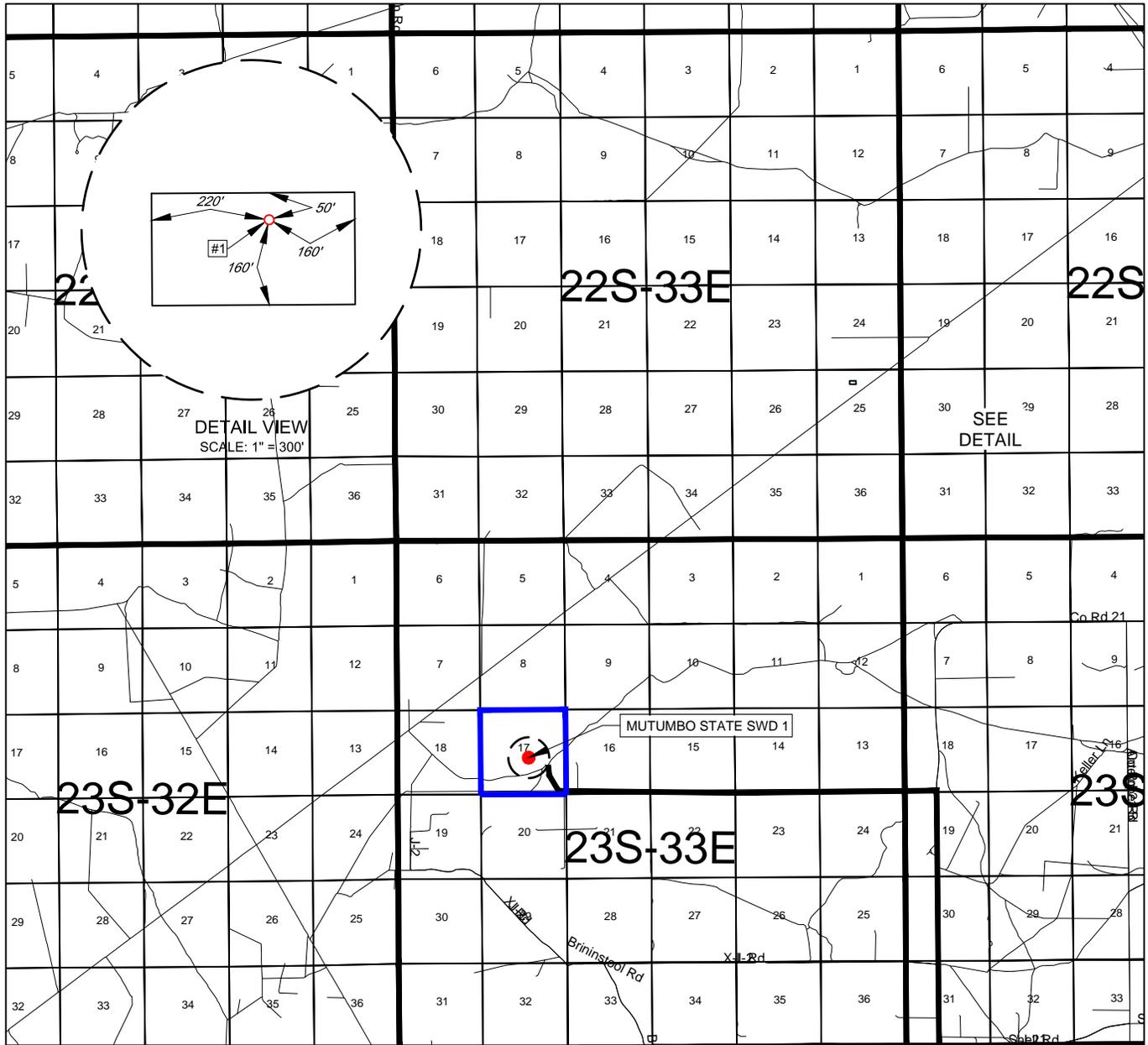
THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY AWR DISPOSAL, LLC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS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



1400 EVERMAN PARKWAY, Ste. 146 • FT. WORTH, TEXAS 76140
 TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
 2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
 TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
 WWW.TOPOGRAPHIC.COM

EXHIBIT 2
VICINITY MAP



AWR DISPOSAL, LLC

LEASE NAME & WELL NO.: MUTUMBO STATE SWD 1

SECTION 17 TWP 23-S RGE 33-E SURVEY N.M.P.M.
 COUNTY LEA STATE NM
 DESCRIPTION 2294' FSL & 2250' FEL

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.

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.



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

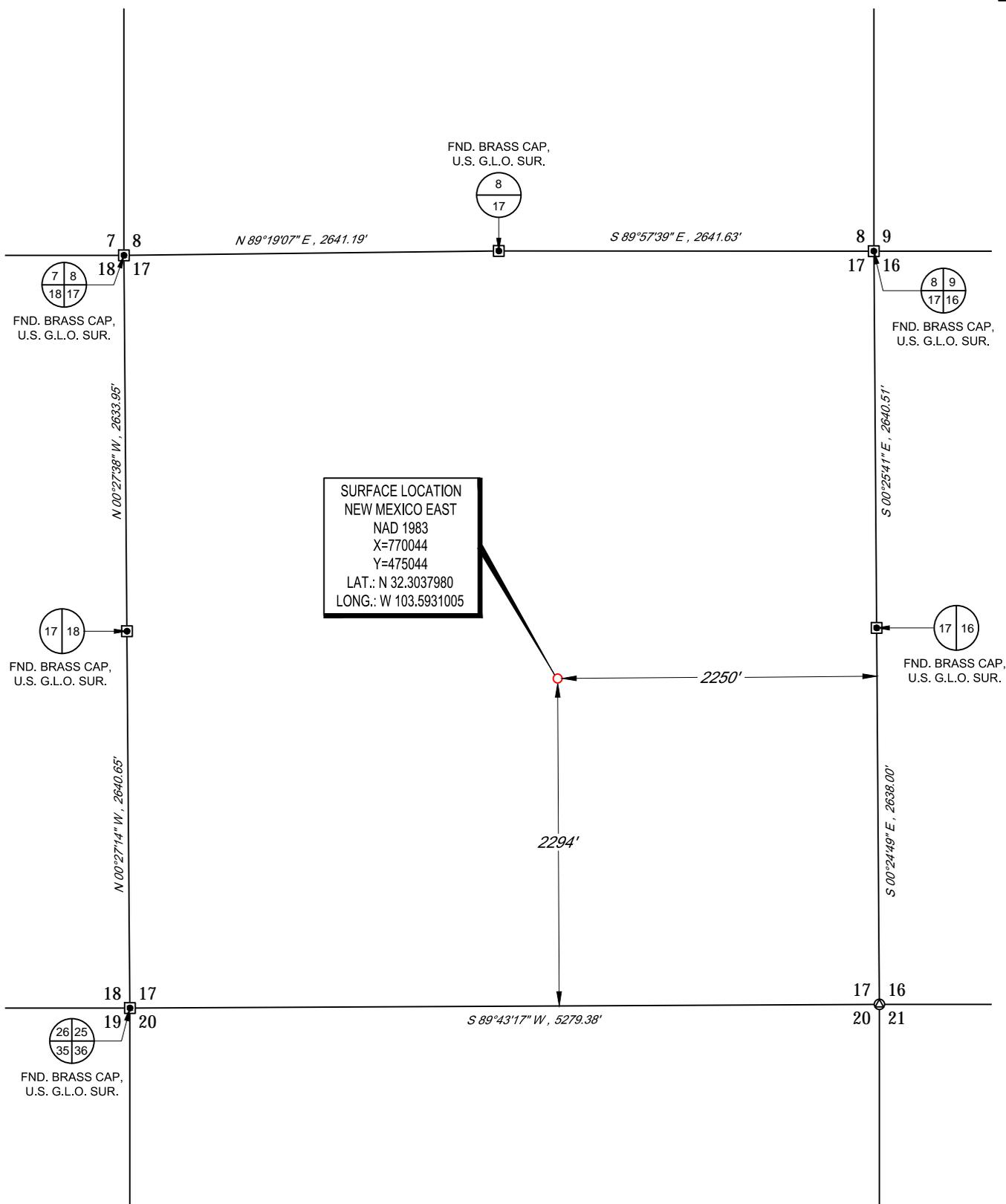


1400 EVERMAN PARKWAY, Ste. 146 • FT. WORTH, TEXAS 76140
 TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
 2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
 TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
 WWW.TOPOGRAPHIC.COM

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

EXHIBIT 2A AWR DISPOSAL, LLC

SECTION 17, TOWNSHIP 23-S, RANGE 33-E, N.M.P.M.
 LEA COUNTY, NEW MEXICO



LEASE NAME & WELL NO.: MUTUMBO STATE SWD 1

SECTION 17 TWP 23-S RGE 33-E SURVEY N.M.P.M.
 COUNTY LEA STATE NM
 DESCRIPTION 2294' FSL & 2250' FEL

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. 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.



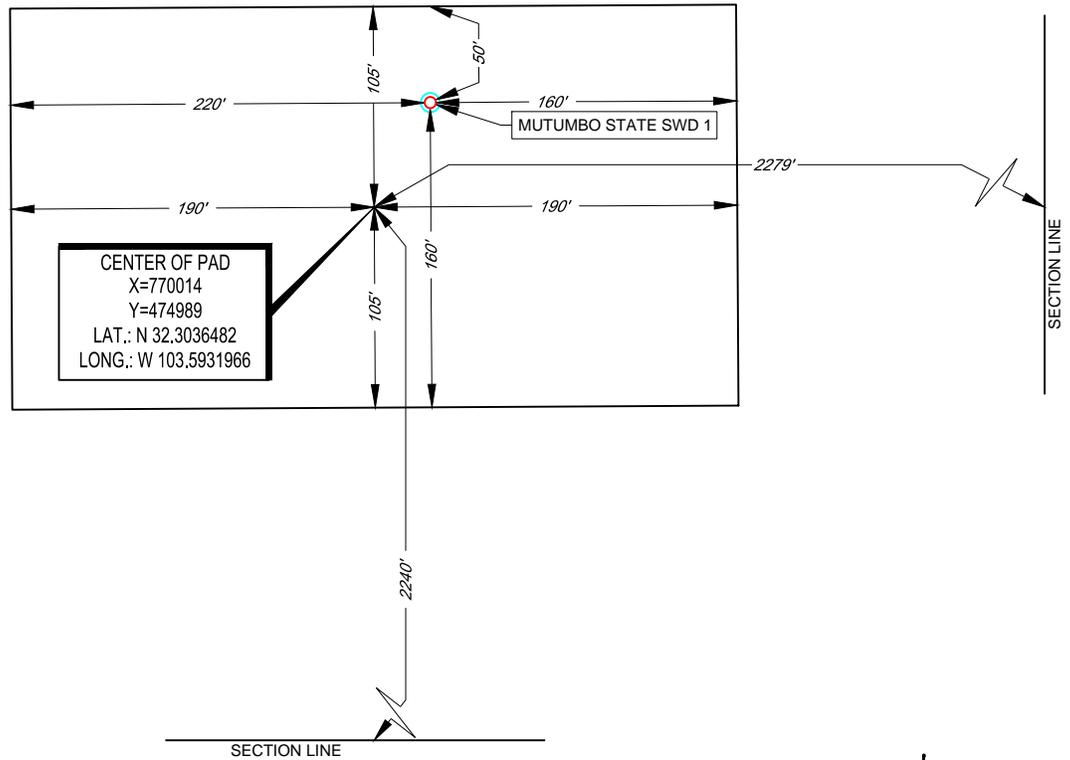
John Trevor Carnegie
 John Trevor Carnegie, P.S. No. 11401
 JUNE 14, 2019



1400 EVERMAN PARKWAY, Ste. 146 • FT. WORTH, TEXAS 76140
 TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
 2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
 TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
 WWW.TOPOGRAPHIC.COM

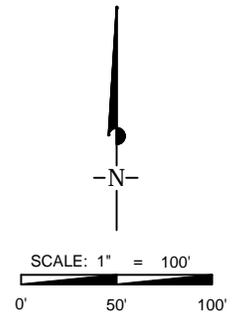
EXHIBIT 2B AWR DISPOSAL, LLC

SECTION 17, TOWNSHIP 23-S, RANGE 33-E, N.M.P.M.
LEA COUNTY, NEW MEXICO



LEASE NAME & WELL NO.: MUTUMBO STATE SWD 1
 1 LATITUDE N 32.3037980 1 LONGITUDE W 103.5931005

CENTER OF PAD IS 2240' FSL & 2279' FEL



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.



1400 EVERMAN PARKWAY, Ste. 146 • FT. WORTH, TEXAS 76140
 TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
 2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
 TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
 WWW.TOPOGRAPHIC.COM

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, Texas 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: 07/31/2019
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

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? X Yes No

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

2. Name of the Injection Formation:

3. Name of Field or Pool (if applicable): Proposed: SWD, Devonian, Fusselman, Montoya

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

Date Spudded: TBD

AWR Disposal LLC

Mutumbo State SWD #1

Unit Letter J, Sec 17, T23S R33E

2294' FSL, 2250' FEL

Lea County, NM

Latitude + 32°18'13.67"N, Longitude 103°35'35.16"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 @ 11,000'.

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.

12.25" Hole

5.5" Tubing

5" Tubing

Maximum Proposed Injection Rate: 40,000 BBLs PER DAY

Maximum Proposed Injections Pressure: 3,000 psi

7-5/8" Liner, 39#, P-110 casing @ 16,930'.

Cmt w/ 230 sks 11.9 ppg Class C

Injection Interval: 8.5" Hole

16,930 - 17,804

17,804 - 18,283

18,283 - 18,671

SLRN

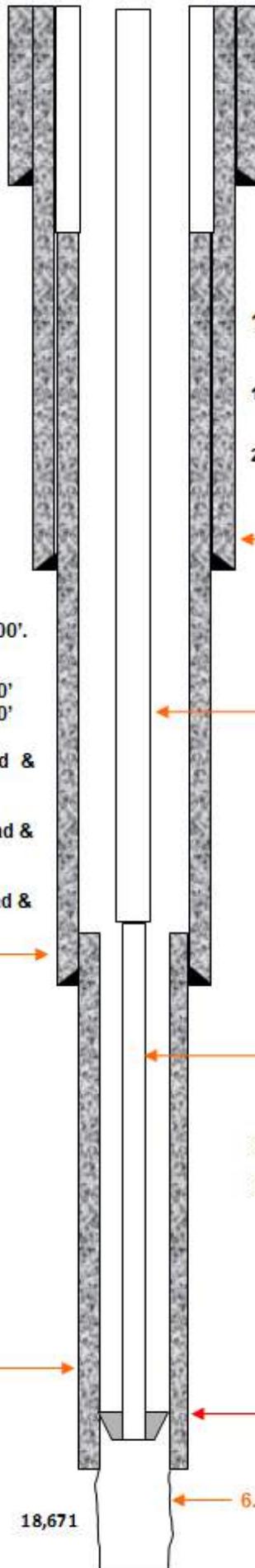
FSLM

MNTY

Packer set @ 16,830

TD: 18,671

6.5" Openhole



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

Lease Name: Mutumbo State SWD #1

Unit Letter J, Section 17, T23S R33E, 2,294' FSL, 2,250' FEL

Limestone Basin Prop Ranch LLC owns the surface upon which the SWD is located.

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

The attached Wellbore Data Sheet provides all of the design specifics required and a tabulation of these data are shown on the diagram.

The formation tops for the Mutumbo State SWD #1 were established by Geologist Herb Wacker TBPG license #4517.

Tops from surface to Morrow for the Mutumbo State SWD #1 well were picked in part by using the offset open hole logs on wells less than 0.5 miles away. The Mississippian to Siluro-Devonian tops are picked from the Pure Brinninstool P Unit 1 (API 30-025-21081) 3.6 miles SW of Mutumbo State SWD #1. Tops for Siluro-Devonian to Simpson are picked from the Amerada Bell Lake North Fed 3 (API 30-025-33077) 5.5 miles northeast.

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

5-1/2" (20#) internal plastic coated tubing swaged down to 5" (18#) with setting depth of 16,830'.

AWR Mutumbo State SWD #1 Sec. 17 T23S R33E		
Geologist	GL	3700
H. Wacker	KB	3730
	MD	SS
Dockum	414	3316
Santa Rosa	440	3290
Dewey Lake	963	2767
Rustler	1312	2418
Salt	1568	2162
Castile	3846	-116
Delaware	5178	-1448
Bell Canyon	5222	-1492
Cherry Canyon	6151	-2421
Brushy Canyon	7470	-3740
Bone Spring	9020	-5290
Bone Spg. Lm.	9025	-5295
Avalon	9836	-6106
1st Bone Spg SS	10178	-6448
2nd Bone Spg SS	10880	-7150
3rd Bone Spg SS	12015	-8285
Wolfcamp	12351	-8621
Strawn	14030	-10300
Atoka	14265	-10535
Morrow	14901	-11171
Barnett	15814	-12084
Miss Lime	16512	-12782
Siluro-Devonian	16899	-13169
Fusselman	17804	-14074
Montoya	18283	-14553
Simpson	18701	-14971
Top of Interval	16930	Siluro-Devonian +31'
Bottom of Interval	18671	Simpson - 30'
TD	18671	Simpson - 30'

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

Tryton Tools, 7" Arrow Set 1-X Nickel Plated Injection Packer will be set at 16,830'.

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 Siluro-Devonian, Fusselman and Montoya 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 16,930-18,671 (1,741 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.

Overlying Oil & Gas Zone (Using GL of 3700'):

Bone Spring	9020
Bone Spg. Lm.	9025
Avalon	9836
1st Bone Spg SS	10178
2nd Bone Spg SS	10880
3rd Bone Spg SS	12015
Wolfcamp	12351
Strawn	14030
Atoka	14265
Morrow	14901

Underlying Oil & Gas Zones:

Siluro-Devonian	16899
-----------------	-------

The Siluro-Devonian rocks are oil and gas reservoirs in the Delaware Basin, but no producing wells lie within 2-miles of the proposed SWD.

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 2 identifies all of the leases within 2-miles of the proposed SWD as well as leases within the 1-mile area of review.

- Plate 2a presents the lease numbers for the SLO and BLM oil and gas leases
- Plate 2b presents land ownership for the same area and identifies the oil and gas mineral rights ownership.

Table 2a lists the BLM leaseholders for the lease numbers within the 1-mile AOR presented on Plate 2a.

Table 2b lists the SLO leaseholders for the lease numbers within the 1-mile AOR presented on Plate 2a.

Table 2c presents surface ownership information for the private land within the 1-mile AOR.

Table 2d lists the mineral ownership information for the private land within the 1-mile area of review.

The Mutumbo State SWD #1 location is on private land owned by Limestone Basin Prop Ranch LLC (Plate 2b and Table 2c).

Note that Plate 2a shows the southeast corner of Section 7 T23S R33E is unleased (unit letter P). Plates 2a and 2b and Table 2d show that all minerals in this unleased area are owned by the U.S.

The BLM, as the administrator for the U.S., has been notified of this proposed SWD.

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

Table 1 shows that there are no wells that penetrate 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 from recycling 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: 3,000 psi
Proposed Average Injection Rate: 2,000 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 Spring Formations are the subjects of the analyses. These formations and perhaps the Wolfcamp 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 any Formations into the Siluro-Devonian, Fusselman and 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-Fusselman-Montoya producing wells. As stated above, we are unaware of any problems associated with disposal of produced water derived from the Delaware, Avalon, Bone Spring, and Wolfcamp Formations into the Siluro-Devonian, Fusselman and 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 Siluro-Devonian, Fusselman and Montoya 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 Siluro-Devonian and the base of the Montoya are 16,899 and 18,701 respectively. The depth interval of the injection interval is 16,930 - 18,671 (1,741 feet), within the Siluro-Devonian, 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 Rustler Formation and the Chinle Formation yield water to supply wells in southeastern Eddy County and southwestern Lea County. In the immediate area of the Mutumbo State SWD #1, the closest water well (well Misc-99) is associated with a stock tank, about 0.25 miles to the southeast of the Mutumbo State SWD #1 site (Plate 3a). In November of 2013, a depth to water of 208 feet was measured by the Hicks Consultants. The well USGS-15071, which is mapped 1/2 mile south of the Mutumbo State SWD #1 location, is not visible at this location in Google Earth images and was not observed during our 2013 ground survey of this area.

In this area of Lea County, the Chinle yields water to wells from 100-200 feet below the ground surface (bgs) to a depth of about 600 feet. The upper portion of the Rustler Formation yields fresh water to wells in Eddy County and in the area of the Mutumbo State SWD #1, the depth interval of this potential source of fresh water is about -1300-1400 feet. The OSE database contains no well information (e.g. driller's logs) for nearby wells. Based upon investigation of the area by Hicks Consultants, we conclude most water supply wells are completed in the Chinle or Santa Rosa at depth of less than 1000 feet.

The locations of all water supply wells listed in public databases are shown in Plate 3b. As stated above, there is one active water supply wells within 1/2 mile of the proposed location. The location of nearby mapped surface water bodies is shown in Plate 4. No mapped surface water exists within the Area of Review.

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 with water chemistry data 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 Mutumbo State SWD #1¹
- The Texas Bureau of Economic Geology has mapped older faults (e.g. basement and Woodford) in New Mexico and the closest mapped fault is more than 4 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 10,000 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.

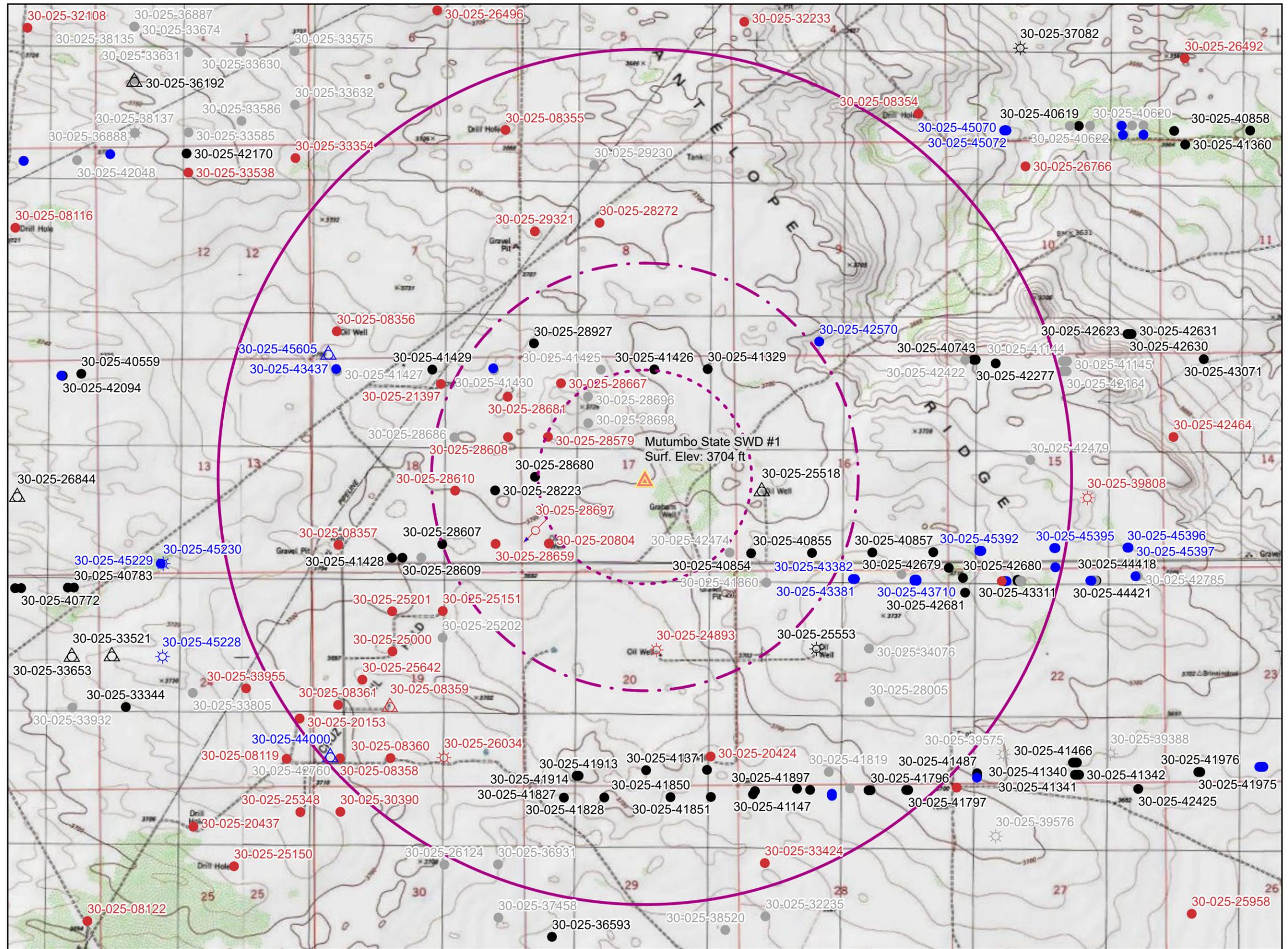
¹ <https://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=5a6038b3a1684561a9boaadf88412fcf>

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); Woodford Faults (Comer 1991, plate 1). [Http://www.beg.utexas.edu/resprog/permianbasin/gis.htm](http://www.beg.utexas.edu/resprog/permianbasin/gis.htm)

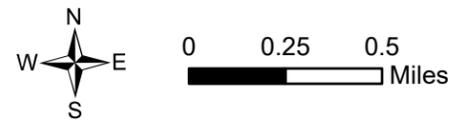
- There is no evidence that the pressure regime in the oil and gas reservoirs is sufficient to cause the upward migration of formation water through the bedded salt and into the Rustler or Chinle aquifers.
- There is no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water

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



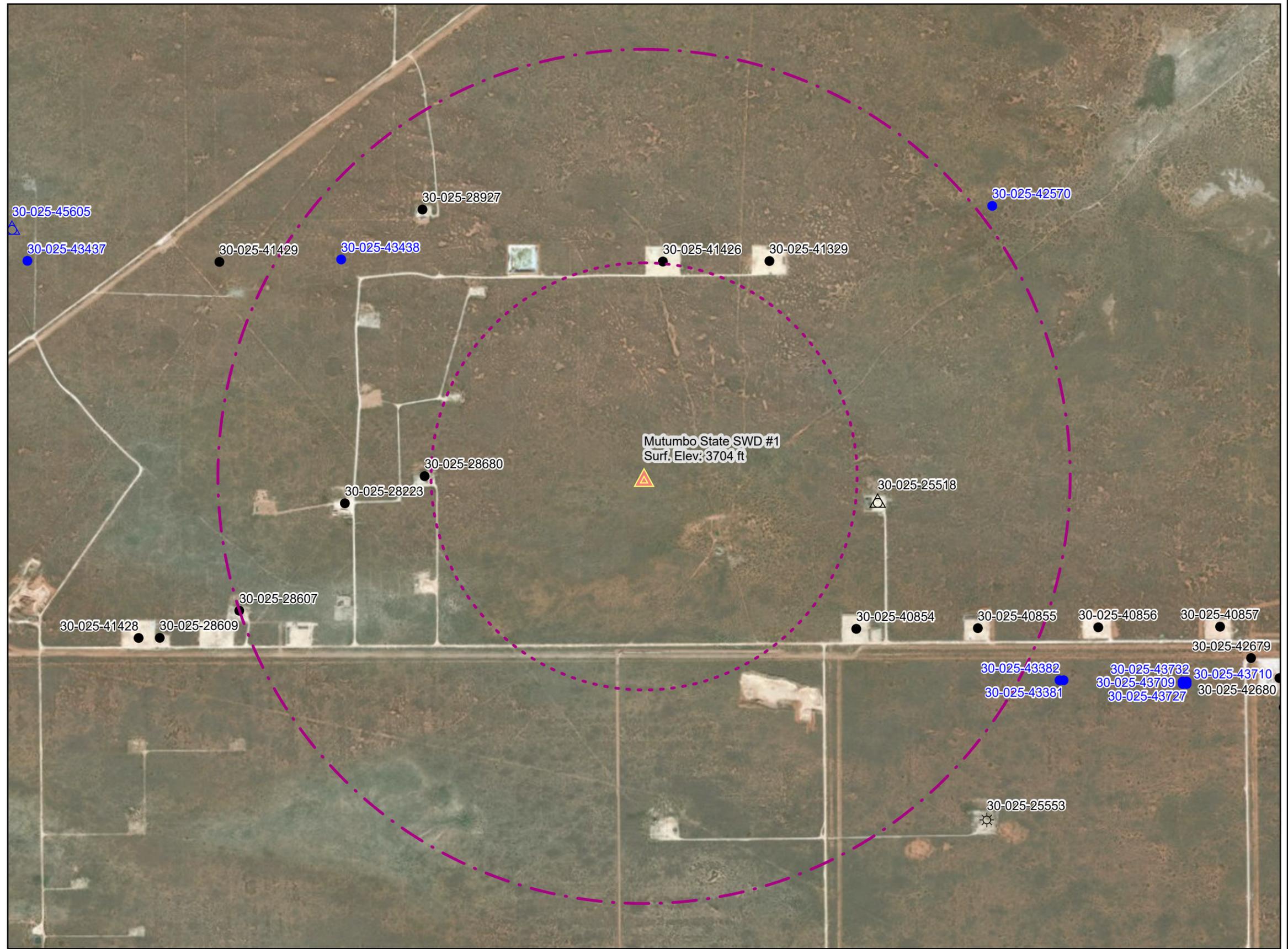
	SWD
Distance (miles)	
	0.5
	1
	2
Oil and Gas (NMOCD)	
	Gas, Active
	Gas, Cancelled
	Gas, New
	Gas, Plugged
	Injection, Plugged
	Oil, Active
	Oil, Cancelled
	Oil, New
	Oil, Plugged
	Salt Water Injection, Active
	Salt Water Injection, Cancelled
	Salt Water Injection, New
	Salt Water Injection, Plugged



R.T. Hicks Consultants, Ltd
 901 Rio Grande Blvd NW Suite F-142
 Albuquerque, NM 87104
 Ph: 505.266.5004

NM Oil and Gas Wells within 2 Miles
 AWR Disposal, LLC
 Mutumbo State SWD #1

Plate 1a
 July 2019



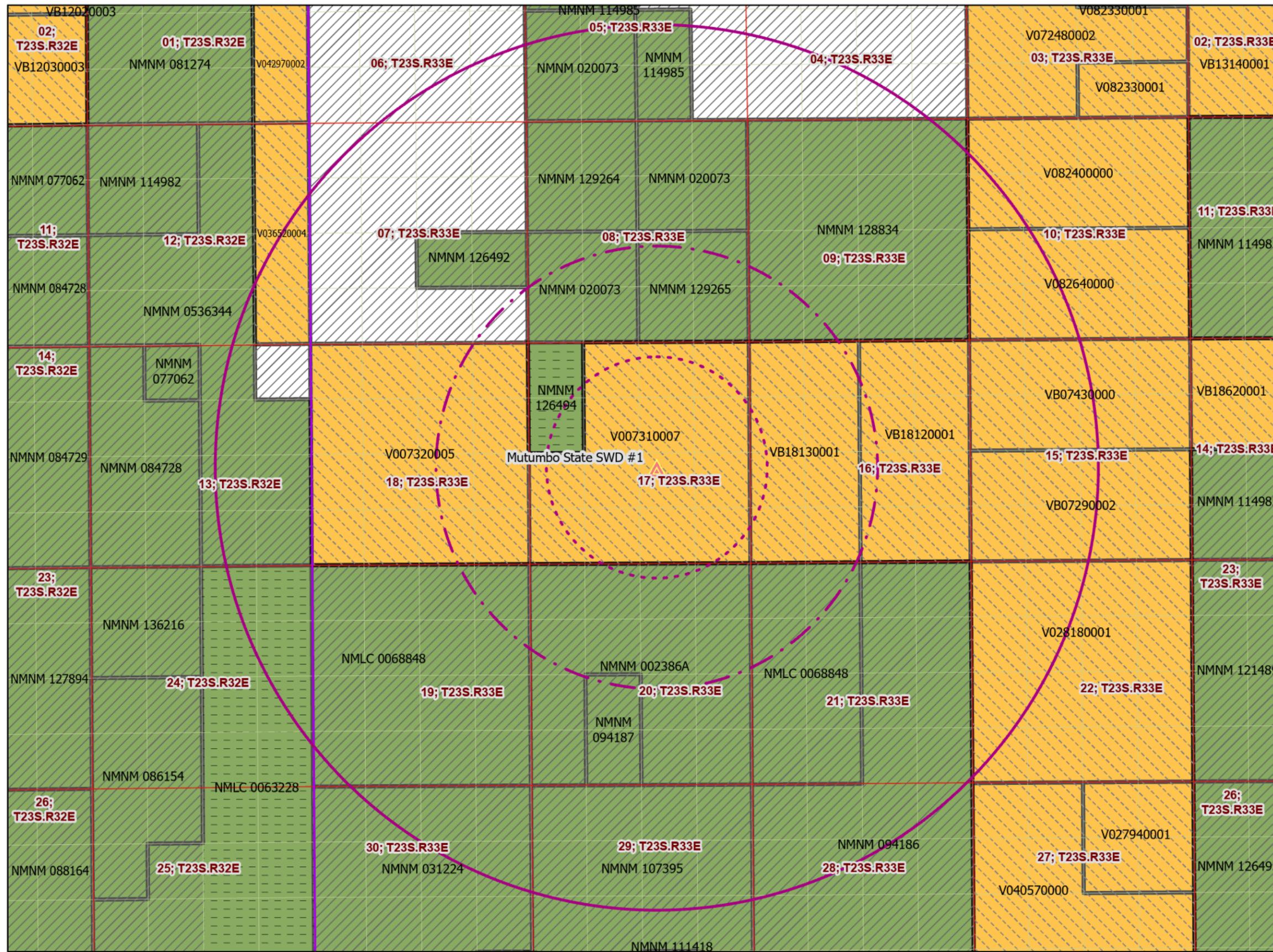
	SWD
Distance (miles)	
	0.5
	1
	2
Oil and Gas (NMOCD)	
	Gas, Active
	Oil, Active
	Oil, New
	Salt Water Injection, Active
	Salt Water Injection, New



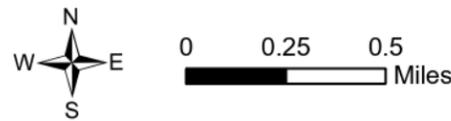
R.T. Hicks Consultants, Ltd
 901 Rio Grande Blvd NW Suite F-142
 Albuquerque, NM 87104
 Ph: 505.266.5004

NM Oil and Gas Wells within 1 Mile
 (Active Only)
 AWR Disposal, LLC
 Mutumbo State SWD #1

Plate 1b
 July 2019



SWD
 Distance (miles)
 0.5
 1
 2
 Oil and Gas Leases
 SLO Leases
 BLM Leases
 Mineral Ownership (BLM Dataset)
 All minerals are owned by the BLM (U.S.)
 No minerals are owned by the BLM (U.S.)
 Other minerals are owned by the BLM (U.S.)
 Township Range Section
 Township Range
 Section
 UL (qq)



R.T. Hicks Consultants, Ltd
 901 Rio Grande Blvd NW Suite F-142
 Albuquerque, NM 87104
 Ph: 505.266.5004

Oil and Gas Leases with Mineral Ownership
 within 2-Miles
 AWR Disposal, LLC
 Mutumbo State SWD #1

Plate 2a
 July 2019

SWD

Distance (miles)

- 0.5
- 1
- 2

NM Land Ownership

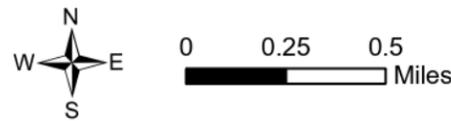
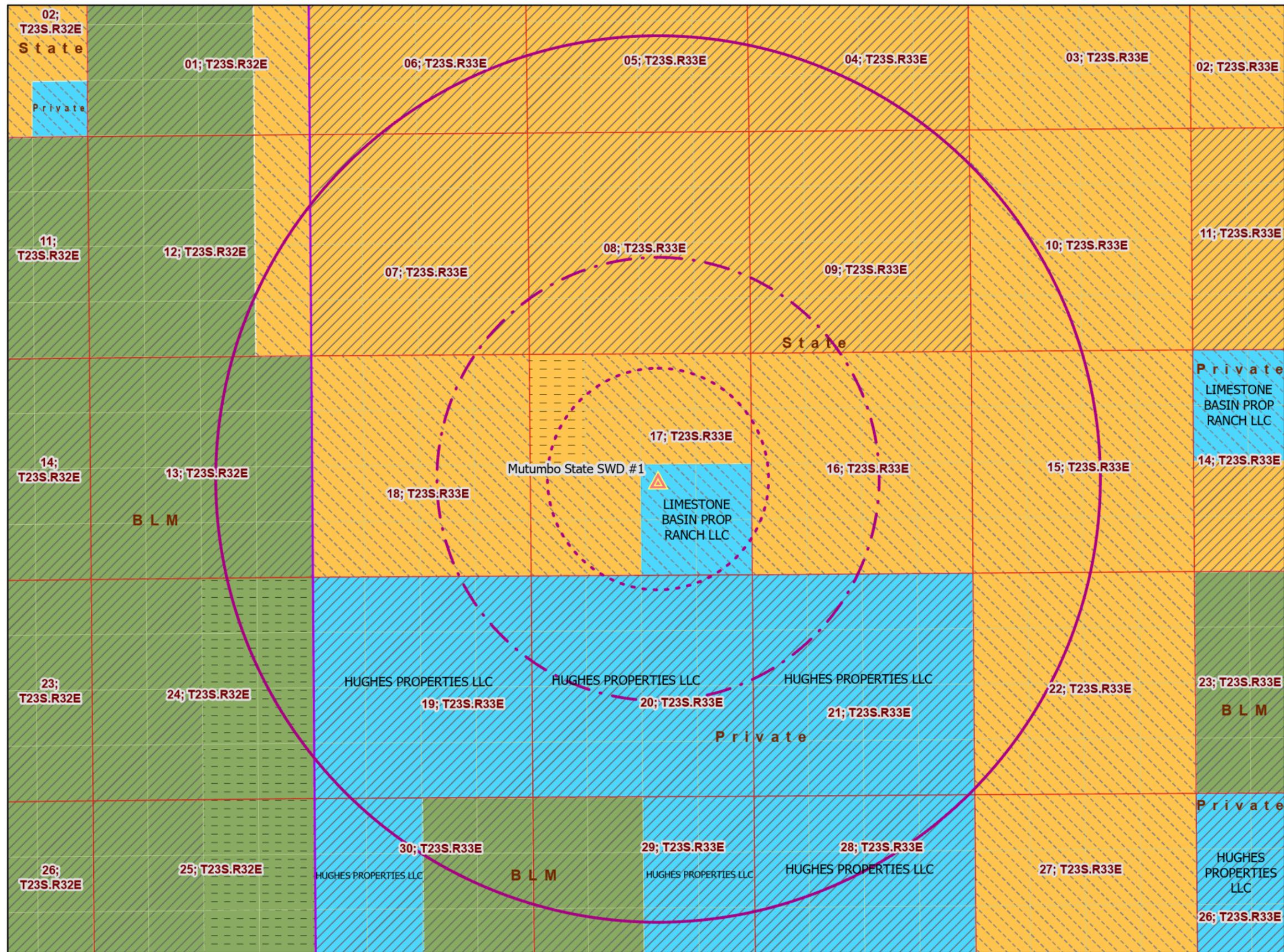
- BLM
- State
- Private

Mineral Ownership (BLM Dataset)

- All minerals are owned by the BLM (U.S.)
- No minerals are owned by the BLM (U.S.)
- Other minerals are owned by the BLM (U.S.)

Township Range Section

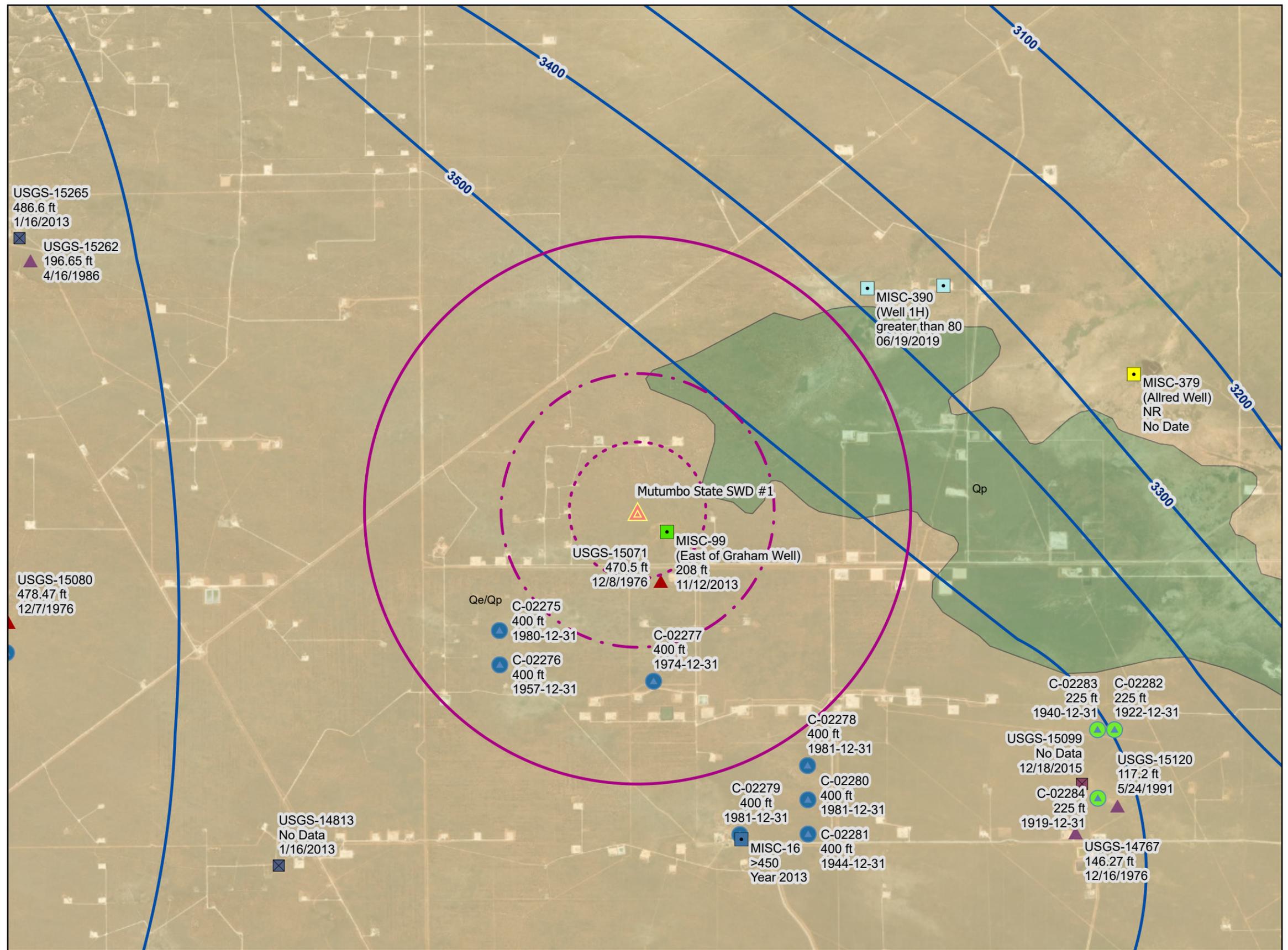
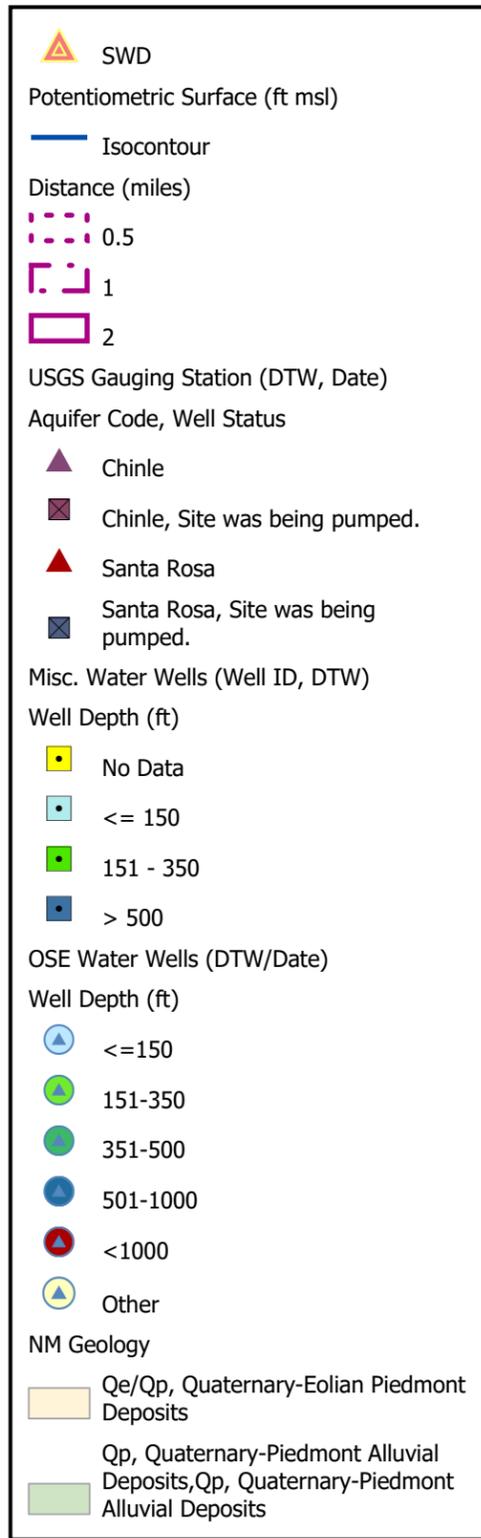
- Township Range
- Section
- UL (qq)



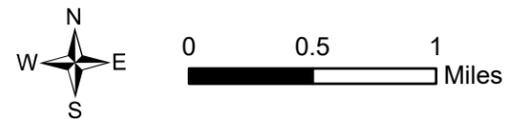
R.T. Hicks Consultants, Ltd
 901 Rio Grande Blvd NW Suite F-142
 Albuquerque, NM 87104
 Ph: 505.266.5004

Surface and Mineral Ownership
 within 2-Miles
 AWR Disposal, LLC
 Mutumbo State SWD #1

Plate 2b
 July 2019



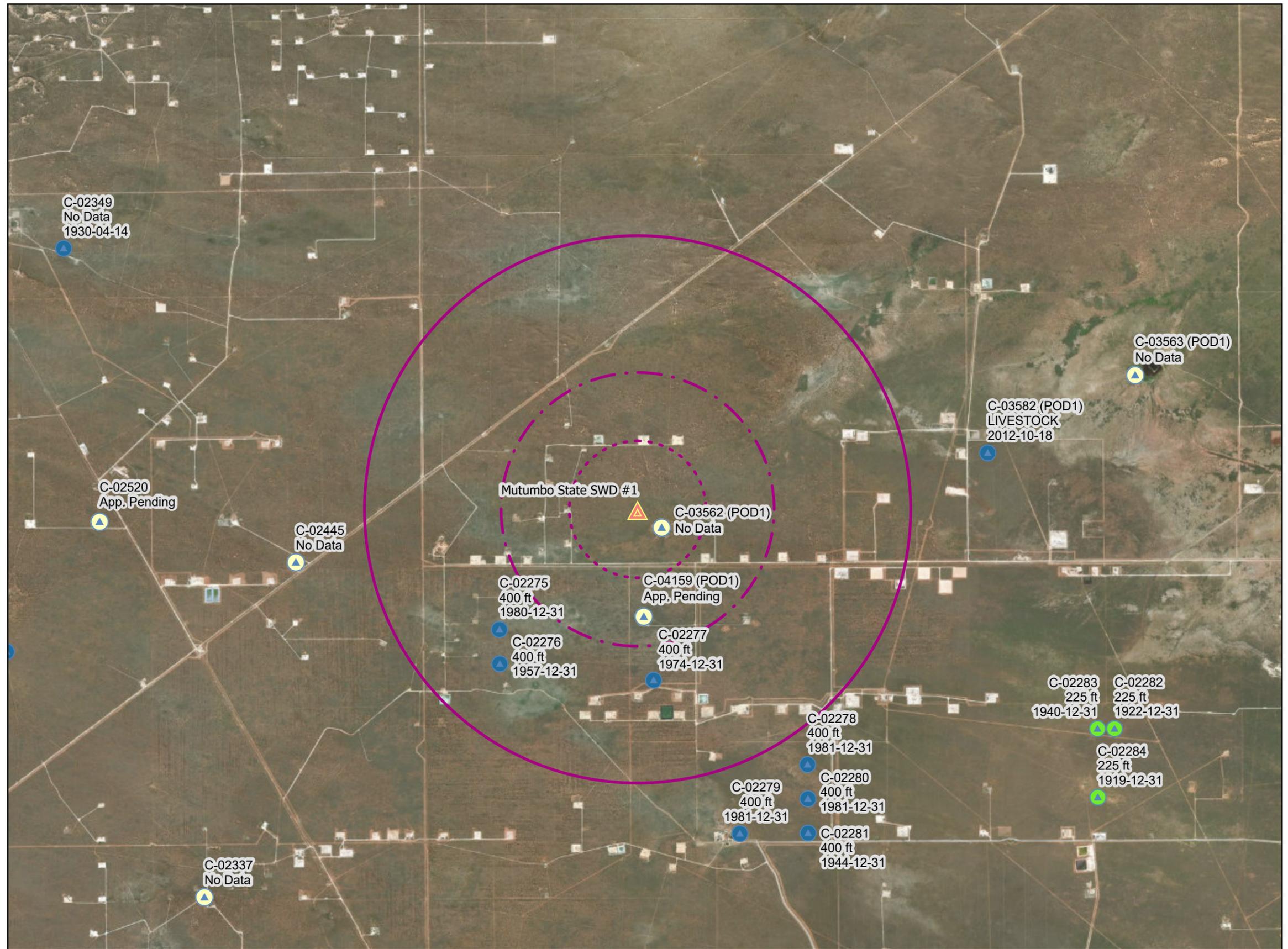
Note: Some features not present in map extent.



R.T. Hicks Consultants, Ltd
 901 Rio Grande Blvd NW Suite F-142
 Albuquerque, NM 87104
 Ph: 505.266.5004

Depth to Water with Potentiometric and Geology
 AWR Disposal, LLC
 Mutumbo State SWD #1

Plate 3a
 July 2019



Legend

- SWD
- Distance (miles)**
 - 0.5
 - 1
 - 2
- OSE Water Wells (DTW/Date)**
- Well Depth (ft)**
 - <=150
 - 151-350
 - 351-500
 - 501-1000
 - <1000
 - Other

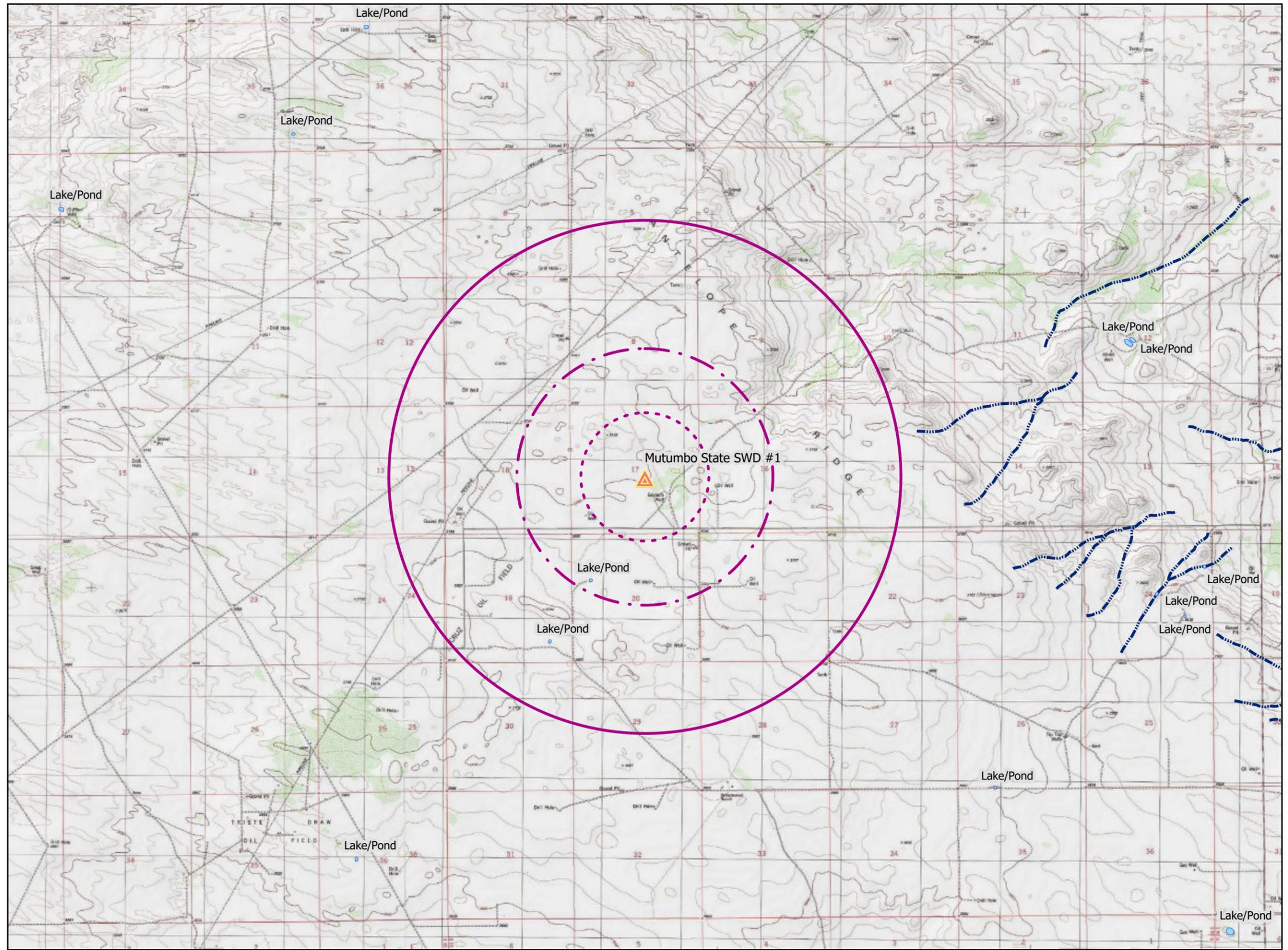
Note: Some features not present in map extent.



R.T. Hicks Consultants, Ltd
 901 Rio Grande Blvd NW Suite F-142
 Albuquerque, NM 87104
 Ph: 505.266.5004

Nearby OSE Water Wells
 AWR Disposal, LLC
 Mutumbo State SWD #1

Plate 3b
 July 2019



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



R.T. Hicks Consultants, Ltd
 901 Rio Grande Blvd NW Suite F-142
 Albuquerque, NM 87104
 Ph: 505.266.5004

Surface Water
 AWR Disposal, LLC
 Mutumbo State SWD #1

Plate 4
 July 2019