

**STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION**

**APPLICATION OF AWR DISPOSAL, LLC
TO APPROVE SALT WATER
DISPOSAL WELL IN LEA
COUNTY, NEW MEXICO.**

CASE NO. _____

APPLICATION

AWR Disposal, LLC (“AWR”), OGRID No. 328805, through its undersigned attorneys, hereby makes this application to the Oil Conservation Division pursuant to the provisions of N.M. Stat. Ann. § 70-2-12, for an order approving drilling of a salt water disposal well in Lea County, New Mexico. In support of this application, AWR states as follows:

- (1) AWR proposes to drill the Muledome SWD #1 well at a surface location 1389 feet from the North line and 356 feet from the West line of Section 30, Township 22 South, Range 33 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well.
- (2) AWR seeks authority to inject salt water into the Devonian-Silurian formation at a depth of 16,083' -17,701'.
- (3) AWR intends to use 7 inch tubing inside the surface and intermediate casings and 5 ½ inch tubing inside the liner and requests that the Division approve a maximum daily injection rate for the well of 50,000 bbls per day.
- (4) AWR anticipates using an average pressure of 2,400 psi for this well, and it requests that a maximum pressure of 3,216 psi be approved for the well.
- (5) A proposed C-108 for the subject well is attached hereto in Attachment A.

(6) The granting of this application will avoid the drilling of unnecessary wells, will prevent waste, and will protect correlative rights.

WHEREFORE, AWR requests that this application be set for hearing before an Examiner of the Oil Conservation Division on February 6, 2020; and that after notice and hearing, the Division enter its order approving this application.

Respectfully submitted,

MODRALL, SPERLING, ROEHL, HARRIS
& SISK, P.A.

By: Deana M. Bennett

Deana Bennett
Post Office Box 2168
500 Fourth Street NW, Suite 1000
Albuquerque, New Mexico 87103-2168
Telephone: 505.848.1800
Attorneys for Applicant

CASE NO. ____ : Application of AWR Disposal, LLC for approval of salt water disposal well in Lea County, New Mexico. Applicant seeks an order approving the Muledome SWD #1 well at a surface location 1389 feet from the North line and 356 feet from the West line of Section 30, Township 22 South, Range 33 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well. Applicant requests authorization to inject salt water into the Devonian-Silurian formation at a depth of 16,083'-17,701'. Applicant requests that the Division approve a maximum daily injection rate for the well of 50,000 bbls per day. Said location is approximately 27.3 miles west of Eunice, New Mexico.

Revised March 23, 2017

RECEIVED:	REVIEWER:	TYPE:	APP NO:
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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: MULEDOME SWD #1 **API:** TBD
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

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

FOR OCD ONLY

Notice Complete

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.

CHRIS WEYAND

Print or Type Name

12/31/2019

Date

512-600-1764

Phone Number

CHRIS@LONQUIST.COM

e-mail Address



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL
RESOURCES DEPARTMENT

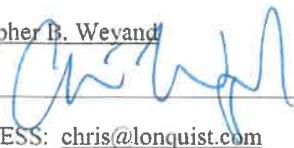
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: Secondary Recovery Pressure Maintenance 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: Chris Weyand (Agent) PHONE: 512-600-1764
- III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.
 Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? Yes No
 If yes, give the Division order number authorizing the project: _____
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- *VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- *X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
- *XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Christopher B. Weyand

SIGNATURE: 

E-MAIL ADDRESS: chris@lonquist.com

TITLE: Consulting Engineer

DATE: 12/3/2019

- * 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.

Side 1

INJECTION WELL DATA SHEET

OPERATOR: AWR DISPOSAL, LLC

WELL NAME & NUMBER: MULEDOME SWD #1

WELL LOCATION:	FOOTAGE LOCATION	E	UNIT LETTER	SECTION	22S TOWNSHIP	33E RANGE
1389' FNL & 356' FWL				30		

WELLCORE SCHEMATICWELL CONSTRUCTION DATASurface CasingHole Size: 24.000"Casing Size: 20.000"
or _____ ft³Cemented with: 1336 sx.

Top of Cement: Surface

1st Intermediate CasingHole Size: 17.500"Casing Size: 13.375"
or _____ ft³Cemented with: 4.026 sx.

Top of Cement: Surface

2nd Intermediate CasingHole Size: 12.250"Casing Size: 9.625"
or _____ ft³Cemented with: 3,433 sx.

Top of Cement: Surface

Method Determined: Circulation

Production Liner

Hole Size: 8.500" Casing Size: 7.625"
Cemented with: 202 sx. or _____ ft³
Top of Cement: 11.750' Method Determined: Logged
Total Depth: 17,701'
Injection Interval
16.083 feet to 17.701 feet
(Open Hole)

INJECTION WELL DATA SHEET

Tubing Size: 7", 26 lb/ft, P-110, TCP/C from 0'- 11,650' and 5,500", 17 lb/ft, P-110 TCP/C from 11,650' - 15,983'
 Lining Material: Duoline

Type of Packer: 7-5/8" x 5-1/2" TCP/C Permanent Packer with High Temp Elastomer and Full Inconel 925 trim

Packer Setting Depth: 15,983'

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? N/A
2. Name of the Injection Formation: Devonian, Silurian, Fuselman and Montoya (Top 100")
3. Name of Field or Pool (if applicable): SWD; Devonian-Silurian
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, new drill.
5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:
Delaware: 4,959'
Bone Spring: 8,764'
Wolfcamp: 12,182'
Strawn: 13,687'
Atoka: 13,850'
Morrow: 14,333'

AWR Disposal, LLC**Muledome SWD No. 1****FORM C-108 Supplemental Information****III. Well Data****A. Wellbore Information**

1.

Well information	
Lease Name	Muledome SWD
Well No.	1
Location	S-30 T-22S R-33E
Footage Location	1389' FNL & 356' FWL

2.

a. Wellbore Description

Casing Information				
Type	Surface	Intermediate 1	Intermediate 2	Production Liner
OD	20"	13.375"	9.625"	7.625"
WT	0.500"	0.455"	0.545"	0.500"
ID	19.000"	12.415"	8.535"	6.625"
Drift ID	18.812"	12.259"	8.535"	6.500"
COD	21.00"	14.375"	10.625"	7.625"
Weight	106.5 lb/ft	68 lb/ft	53.5 lb/ft	39 lb/ft
Grade	J-55	HCL-80	P-110	HCP-110
Hole Size	24"	17.5"	12.25"	8.5"
Depth Set	1,250'	5,100'	12,250'	11,750' – 16,083'

b. Cementing Program

Cement Information				
Casing String	Surface	Intermediate 1	Intermediate 2	Liner
Cement Type	Lead: Extendacem Tail: Halcem	Halcem	Halcem	Neocem
Cement Volume	Lead: 714 sx Tail: 622 sx	4,026 sx	Stage 1: 1,441 sx Stage 2: 933 sx Stage 3: 1,059 sx	202
Cement Excess	75%	100%	50%	50%
TOC	Surface	Surface	Surface	11,750'
Method	Circulate to Surface	Circulate to Surface	Circulate to Surface	Logged

3. Tubing Description

Tubing Information		
OD	7"	5.5"
WT	0.362"	0.304"
ID	6.276"	4.892"
Drift ID	7.875"	6.050"
COD	6.151"	4.653"
Weight	26 lb/ft	17 lb/ft
Grade	P-110 TCPC	P-110 TCPC
Depth Set	0'-11,650'	11,650' -15,983'

Tubing will be lined with Duoline.

4. Packer Description

7-5/8" x 5-1/2" TCPC Permanent Packer with High Temp Elastomer and Full Inconel 925 trim

B. Completion Information

1. Injection Formation: Devonian, Silurian, Fusselman, Montoya (Top 100')
2. Gross Injection Interval: 16,083' – 17,701'

Completion Type: Open Hole

3. Drilled for injection.
4. See the attached wellbore schematic.

5. Oil and Gas Bearing Zones within area of well:

Formation	Depth
Delaware	4,959'
Bone Spring	8,764'
Wolfcamp	12,182'
Strawn	13,687'
Atoka	13,850'
Morrow	14,333'

VI. Area of Review

No wells within the area of review penetrate the proposed injection zone.

VII. Proposed Operation Data

1. Proposed Daily Rate of Fluids to be Injection:

Average Volume: 40,000 BPD
Maximum Volume: 50,000 BPD

2. Closed System

3. Anticipated Injection Pressure:

Average Injection Pressure: 2,400 PSI (surface pressure)
Maximum Injection Pressure: 3,216 PSI (surface pressure)

4. The injection fluid is to be locally produced water. It is expected that the source water will predominantly be from the Bone Spring and Wolfcamp formations. Attached are produced water sample analyses taken from the closest wells that feature samples from the Delaware, Bone Spring, Wolfcamp, Strawn, Atoka, and Morrow formations.
5. The disposal interval is non-productive. No water samples are available from the surrounding area.

VIII. Geological Data

The Devonian formation is a dolomitic ramp carbonate that occurs below the Woodford shale and above the Fusselman formation. Strata found in the Devonian formation include two major groups, the Wristen Buildups and the Thirtyone Deepwater Chert, with the Wristen being more abundant. The Wristen Groups is composed of mixed limestone and dolomites with mudstone to grainstone and boundstone textures. Porosity in the Wristen group is a result of both primary and secondary development. Present are moldic, vugular, karstic (including collapse breccia) features that allow for higher porosities and permeabilities. The Thirtyone Formation contains two end-member reservoir facies, skeletal packstones/grainstones and spiculitic chert, with most of the porosity and permeability found in the coarsely crystalline cherty dolomite. These particular characteristics allow for this formation to be a tremendous Salt Water Disposal horizon.

A. Injection Zone: Siluro-Devonian Formation

Formation	Depth
Rustler Anhydrite	1,101'
Castile	3,404'
Lamar	4,910'
Delaware	4,959'
Bone Spring	8,764'
Wolfcamp	12,182'
Strawn	13,687'
Atoka	13,850'
Morrow	14,333'
Mississippian	15,543'
Woodford	15,774'
Devonian	16,033'
Fusselman	17,033'
Montoya	17,601'

B. Underground Sources of Drinking Water

No water wells exist within one mile of the proposed well location. Water wells in the surrounding area have an average total depth of 320 ft and an average depth to water of 184 ft generally producing from the Santa Rosa. The upper Rustler may also be another USDW and will be protected.

IX. Proposed Stimulation Program

Stimulate with up to 50,000 gallons of acid.

X. Logging and Test Data on the Well

There are no logs or test data on the well. During the process of drilling and completion resistivity, gamma ray, and density logs will be run.

XI. Chemical Analysis of Fresh Water Wells

No water wells exist within one mile of the proposed well location.

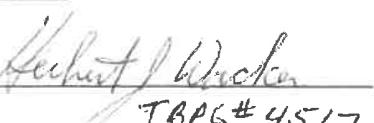
XII. Affirmative Statement of Examination of Geologic and Engineering Data

Based on the available engineering and geologic data we find no evidence of open faults or any other hydrologic connection between the disposal zone (in the proposed Muledome SWD #1) and any underground sources of drinking water.

NAME: Herb Wacker

TITLE: Geologist

SIGNATURE:


TBP# 4517

DATE: Nov. 1, 2019

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

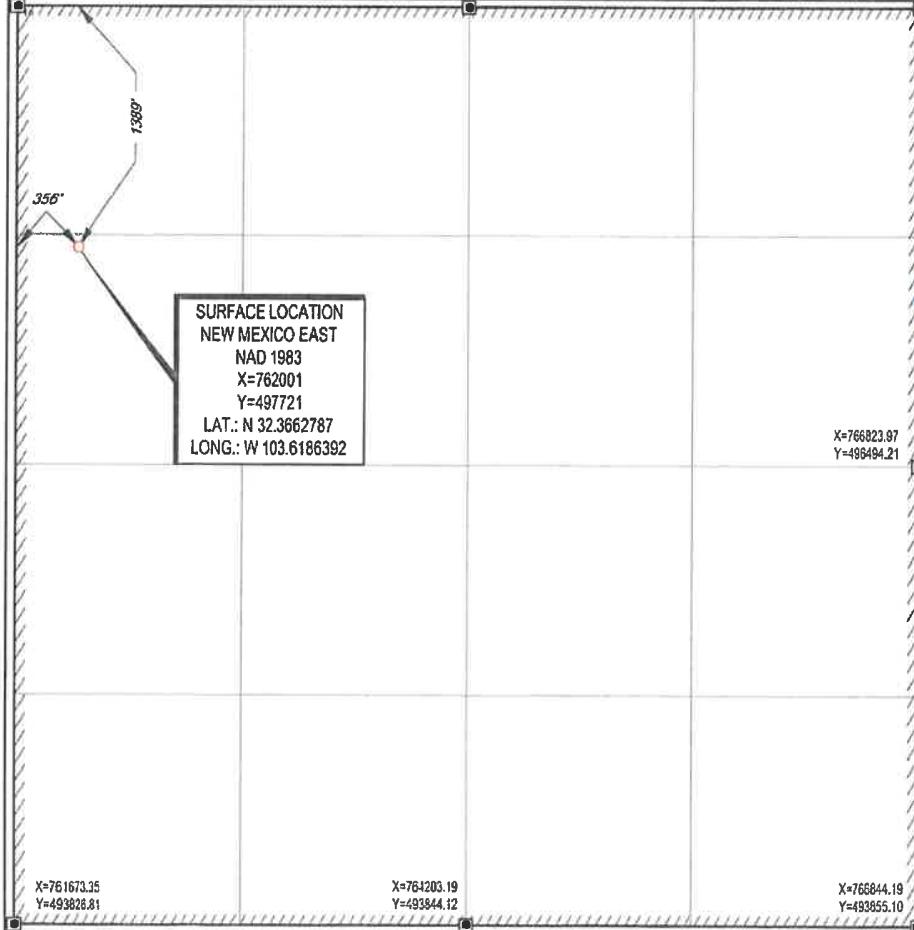
FORM C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number			² Pool Code		³ Pool Name					
			97869		SWD; DEVONIAN-SILURIAN					
⁴ Property Code		⁵ Property Name						⁶ Well Number		
		MULEDOMe SWD						1		
⁷ OGRID No.		⁸ Operator Name						⁹ Elevation		
328805		AWR DISPOSAL, LLC						3737'		
¹⁰ Surface Location										
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County	
E	30	22-S	33-E	-	1389'	NORTH	356'	WEST	LEA	
¹¹ Bottom Hole Location If Different From Surface										
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County	
¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.							

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

	X=761635.72 Y=499107.61		X=764166.30 Y=499120.59		X=766804.72 Y=499134.77	<p style="text-align: center;">17 OPERATOR CERTIFICATION</p> <p>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 leased 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.</p> <p> 12/3/2019</p> <p>Chris Weyand Printed Name</p> <p>chris@lonquist.com E-mail Address</p>				
	X=762001 Y=497721		X=766823.87 Y=499494.21							
 <p>SURFACE LOCATION NEW MEXICO EAST NAD 1983 X=762001 Y=497721 LAT.: N 32.3662787 LONG.: W 103.6188392</p>						<p>18 SURVEYOR CERTIFICATION</p> <p>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.</p> <p>04/16/2019</p> <p>Date of Survey Signature and Seal of Professional Surveyor</p>				
						<p>Certificate Number</p>				

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District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New MexicoForm C-101
Revised July 18, 2013**Energy Minerals and Natural Resources****Oil Conservation Division****1220 South St. Francis Dr.****Santa Fe, NM 87505** AMENDED REPORT**APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE**

1 Operator Name and Address AWR DISPOSAL, LLC 3300 N. A Street, Ste 220 Midland, Texas 79705					2 OGRID Number 328805		
					3 API Number TBD		
4 Property Code		5 Property Name Muledome SWD			6 Well No. 1		

7 Surface Location

UL - Lot E	Section 30	Township 22S	Range 33E	Lot Idn N/A	Feet from 1389'	N/S Line NORTII	Feet From 356'	E/W Line WEST	County LEA
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8 Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
-	-	-	-	-	-	-	-	-	-

9 Pool Information

Pool Name SWD; DEVONIAN-SILURIAN	Pool Code 97869
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Additional Well Information

11 Work Type N	12 Well Type SWD	13 Cable/Rotary R	14 Lease Type Private	15 Ground Level Elevation 3,737'
16 Multiple N	17 Proposed Depth 17,701'	18 Formation Devonian-Silurian	19 Contractor TBD	20 Spud Date ASAP
Depth to Ground water 148'	Distance from nearest fresh water well > 1 mile		Distance to nearest surface water > 1 mile	

 We will be using a closed-loop system in lieu of lined pits**21 Proposed Casing and Cement Program**

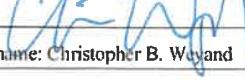
Type	Hole Size	Casing Size	Casing Weight/lft	Setting Depth	Sacks of Cement	Estimated TOC
Surface	24"	20"	106.5 lb/ft	1,250'	1,336	Surface
Intermediate 1	17.5"	13.375"	68 lb/ft	5,100'	4,026	Surface
Intermediate 2	12.25"	9.625"	53.5 lb/ft	12,250'	3,433	Surface
Prod. Liner	8.5"	7.625"	39 lb/ft	11,750' - 16,083'	202	11,750'

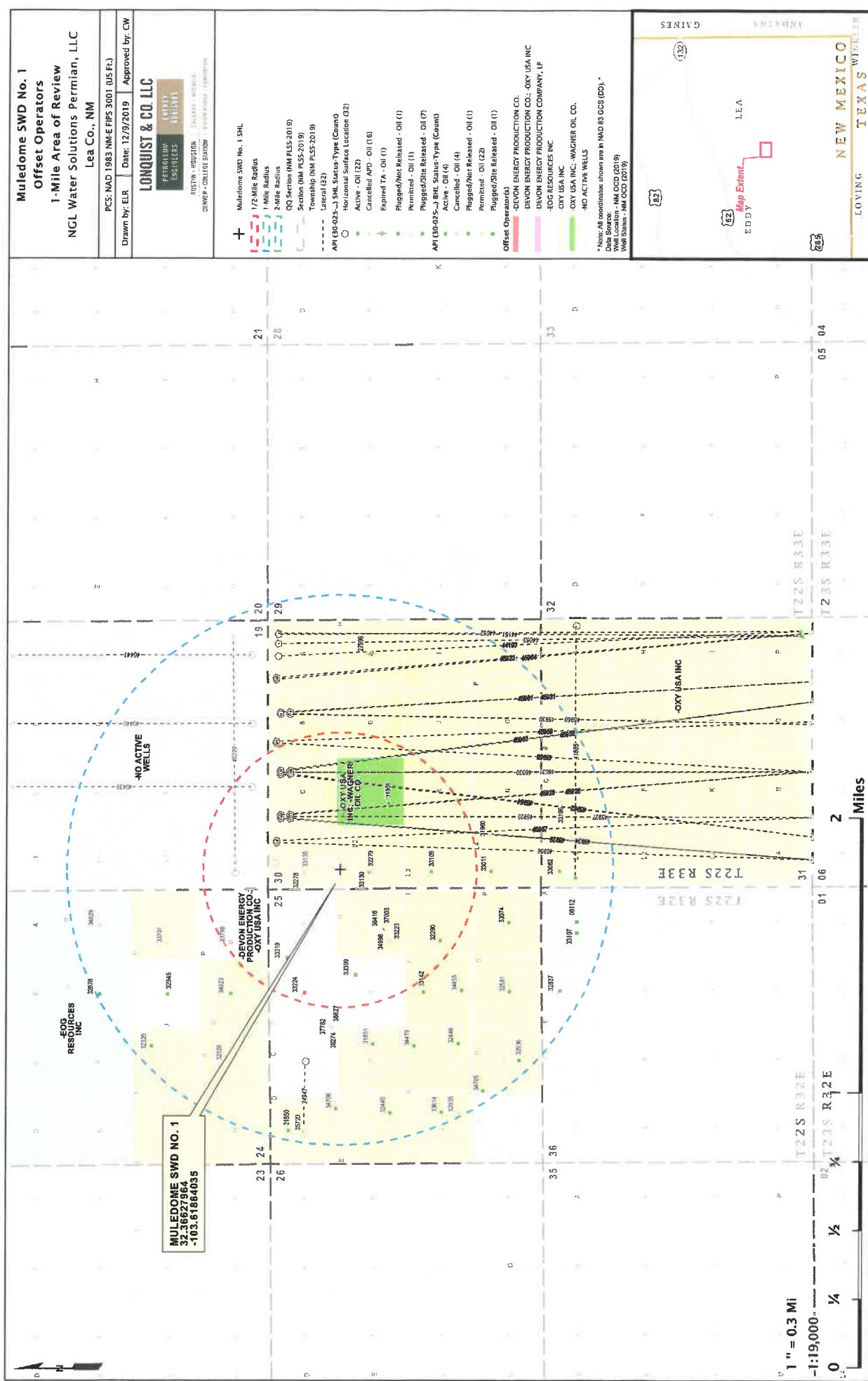
Casing/Cement Program: Additional Comments

See attached schematic.

22 Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Hydraulic/Blinds, Pipe	10,000 psi	8,000 psi	TBD - Schaffer/Cameron

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify that I have complied with 19.15.14.9 (A) NMAC <input type="checkbox"/> and/or 19.15.14.9 (B) NMAC <input checked="" type="checkbox"/> if applicable. Signature: 	OIL CONSERVATION DIVISION	
	Approved By:	
Printed name: Christopher B. Weyand	Title:	
Title: Consulting Engineer	Approved Date:	Expiration Date:
E-mail Address: chris@lonquist.com		
Date: 12/3/2019	Conditions of Approval Attached	



Muledome SWD No. 1
1-Mile Area of Review List

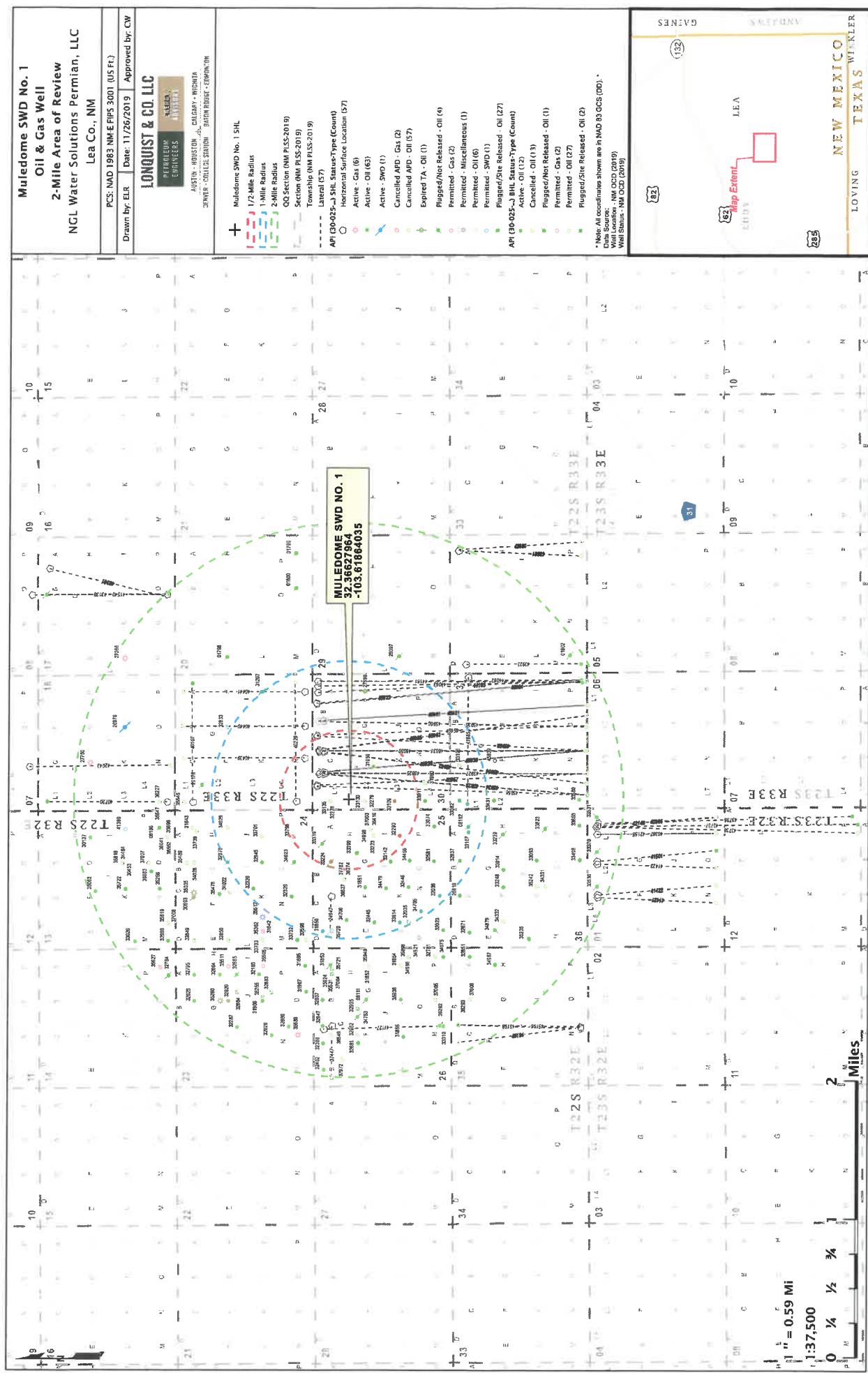
API (30-025-...)	WELL NAME	WELL TYPE	STATUS	OPERATOR	TVD (FT.)	LATITUDE (NAD83 DD)	LONGITUDE (NAD83 DD)	DATE DRILLED	FIELD
08112	PIE-INGARD WELL #001	D	P	PRE-ON-GARD WELL OPERATOR:	5068	37.35359490	-103.62197110	1/1/1900	
24947	COVINGTON A FEDERAL #001	D	P	OXY USA INC	15550	37.36818110	-103.63055890	2/7/1975	[51683] RED TANK, BONE SPRINGS; [51683] RED TANK, DELAWARE, WEST [6930] BOOTLEG RIDGE, DELAWARE
27956	RED TANK 30 STATE #003	D	E	OXY USA INC	5112	37.36458390	-103.60232220	10/7/4/1961	
31850	COVINGTON A FEDERAL #002	O	A	OXY USA INC	10120	37.36507380	-103.63815900	11/18/1993	[51683] RED TANK, BONE SPRINGS; [51683] RED TANK, DELAWARE, WEST
31851	COVINGTON A FEDERAL #006	D	A	OXY USA INC	10104	37.36455220	-103.62463320	B/4/1995	[51683] RED TANK, BONE SPRINGS; [51683] RED TANK, DELAWARE, WEST
31919	BISHOPIN 30 STATE #002	O	A	WAGNER OIL CO	10191	37.36348560	-103.61502600	12/31/1999	[51683] RED TANK, BONE SPRINGS, EAST
31960	BISHOPIN 30 STATE #003	O	C	DEVON ENERGY OPERATING COMPANY LP	9999	37.36546079	-103.61552025	12/7/1999	
32035	COVINGTON A FEDERAL #007L	O	C	POGO PRODUCING CO	9999	37.36599950	-103.63720530	12/31/1999	
32036	COVINGTON A FEDERAL #009	O	A	OXY USA INC	10100	37.35679630	-103.63052370	9/23/1993	[51683] RED TANK, DELAWARE, WEST; [66429] RED TANK, DELAWARE, SO [ABOLISHED]
32278	BISHOPIN 30 STATE #005	O	C	DEVON ENERGY OPERATING COMPANY LP	99999	37.36822218	-103.6178032	12/31/1999	
32279	BISHOPIN 30 STATE #004	O	C	DEVON ENERGY OPERATING COMPANY LP	99999	37.36459374	-103.61077135	12/31/1999	
32290	COVINGTON A FEDERAL #004	D	A	OXY USA INC	9010	37.36015050	-103.62046590	1/12/1996	[51683] RED TANK, BONE SPRINGS; [51683] RED TANK, DELAWARE, WEST
32320	RED TANK 24 FEDERAL #002	O	A	OXY USA INC	10156	37.37655420	-103.62448610	8/24/1995	[51683] RED TANK, BONE SPRINGS; [51683] RED TANK, DELAWARE, WEST
32326	RED TANK 24 FEDERAL #003	O	A	OXY USA INC	10160	37.37236400	-103.61954660	12/7/1994	[51683] RED TANK, BONE SPRINGS; [51683] RED TANK, DELAWARE, WEST
32445	COVINGTON A FEDERAL #003	O	A	OXY USA INC	6950	37.36383600	-103.63174330	3/6/1998	[51683] RED TANK, BONE SPRINGS; [51683] RED TANK, DELAWARE, WEST
32446	COVINGTON A FEDERAL #005	O	A	OXY USA INC	6900	37.36061970	-103.62463230	4/9/1995	[51683] RED TANK, BONE SPRINGS; [51683] RED TANK, DELAWARE, WEST
32581	COVINGTON A FEDERAL #010	O	A	OXY USA INC	8950	37.35720740	-103.62125120	5/15/1995	[51683] RED TANK, BONE SPRINGS; [51683] RED TANK, DELAWARE, WEST
32827	MULE DEER 36 STATE #001	O	P	EDG RESOURCES INC	5018	37.35458760	-103.62124360	4/7/1995	[51683] RED TANK, BONE SPRINGS; [51683] RED TANK, DELAWARE, WEST
32828	JACKALOPE 24 FEDERAL #003	O	P	EDG RESOURCES INC	5014	37.37909320	-103.62128940	11/3/1995	[51683] RED TANK, BONE SPRINGS; [51683] RED TANK, DELAWARE, WEST
32945	CHECKER 24 FEDERAL #001	O	A	DEVON ENERGY PRODUCTION COMPANY, LP	9025	37.37545780	-103.62462770	8/29/1997	[51683] RED TANK, BONE SPRINGS; [51683] RED TANK, DELAWARE, WEST
33011	RED TANK 30 STATE #001	O	A	OXY USA INC	9020	37.35824200	-103.6176880	7/19/1995	[51683] RED TANK, BONE SPRINGS; [51683] RED TANK, DELAWARE, WEST
33014	COVINGTON A FEDERAL #011	O	A	OXY USA INC	9010	37.3572650	-103.62497110	10/28/1995	[51683] RED TANK, BONE SPRINGS; [51683] RED TANK, DELAWARE, WEST
33032	RED TANK 31 STATE #003	O	H	OXY USA INC	9010	37.35461040	-103.61876680	9/23/1995	[51683] RED TANK, BONE SPRINGS; [51683] RED TANK, DELAWARE, WEST
33107	MULE DEER 36 STATE #004	O	A	EDG RESOURCES INC	9007	37.35369490	-103.62125120	10/10/1995	[51683] RED TANK, BONE SPRINGS; [51683] RED TANK, DELAWARE, WEST
33109	RED TANK 30 STATE #002	O	A	OXY USA INC	9020	37.36141590	-103.61871440	4/23/2000	[51683] RED TANK, BONE SPRINGS; [51683] RED TANK, DELAWARE, WEST
33120	CALMON 30 STATE #001	O	A	OXY USA INC	9000	37.36473980	-103.61878200	11/27/1995	[51683] RED TANK, BONE SPRINGS; [51683] RED TANK, DELAWARE, WEST
33135	CALMON 30 STATE #002	O	C	POGO PRODUCING CO	0	37.36522218	-103.61878032	12/31/1995	
33142	COVINGTON A FEDERAL #013	D	A	OXY USA INC	9000	37.35154600	-103.62125860	12/27/1995	[51683] RED TANK, BONE SPRINGS; [51683] RED TANK, DELAWARE, WEST
33156	RED TANK 31 STATE #003	O	C	POGO PRODUCING CO	0	37.35460556	-103.61465135	12/31/1995	
33223	COVINGTON A FEDERAL #012	O	C	POGO PRODUCING CO	0	37.35367545	-103.62068550	12/31/1995	
33224	COVINGTON A FEDERAL #016	O	P	OXY USA INC	8980	37.35820220	-103.62126550	7/23/1996	[51683] RED TANK, BONE SPRINGS; [51683] RED TANK, DELAWARE, WEST
33319	COVINGTON A FEDERAL #015	O	P	OXY USA INC	9010	37.35911770	-103.62105290	7/31/1997	[51683] RED TANK, BONE SPRINGS; [51683] RED TANK, DELAWARE, WEST
33359	COVINGTON A FEDERAL #014	O	P	OXY USA INC	8956	37.35548230	-103.62121070	4/27/1996	[51683] RED TANK, BONE SPRINGS; [51683] RED TANK, DELAWARE, WEST
33614	COVINGTON A FEDERAL #007	O	A	OXY USA INC	8930	37.36209280	-103.63337570	11/13/1995	[51683] RED TANK, BONE SPRINGS; [51683] RED TANK, DELAWARE, WEST
33701	CHECKERS 24 FEDERAL #003	O	C	DEVON ENERGY PRODUCTION CO.	0	37.37545672	-103.62308836	12/31/1995	
33798	CHECKERS 24 FEDERAL #002	O	C	DEVON ENERGY PRODUCTION CO.	0	37.3711428	-103.62308288	12/31/1995	
34023	CHECKERS 24 FEDERAL #007	O	P	DEVON ENERGY PRODUCTION COMPANY LP	9065	37.37210460	-103.62212410	4/9/1998	[51683] RED TANK, BONE SPRINGS
34029	JACKALOPE 24 FEDERAL #004	O	C	BURLINGTON RESOURCES OIL & GAS CO	0	37.37910522	-103.62202022	12/31/1999	[51683] RED TANK, BONE SPRINGS; [51683] RED TANK, DELAWARE, WEST
34455	COVINGTON A FEDERAL #037	O	A	OXY USA INC	8960	37.35982510	-103.62315970	11/4/1999	[51683] RED TANK, BONE SPRINGS; [51683] RED TANK, DELAWARE, WEST
34479	COVINGTON A FEDERAL #036	O	A	OXY USA INC	8950	37.36235430	-103.62257760	8/6/1998	[51683] RED TANK, BONE SPRINGS; [51683] RED TANK, DELAWARE, WEST

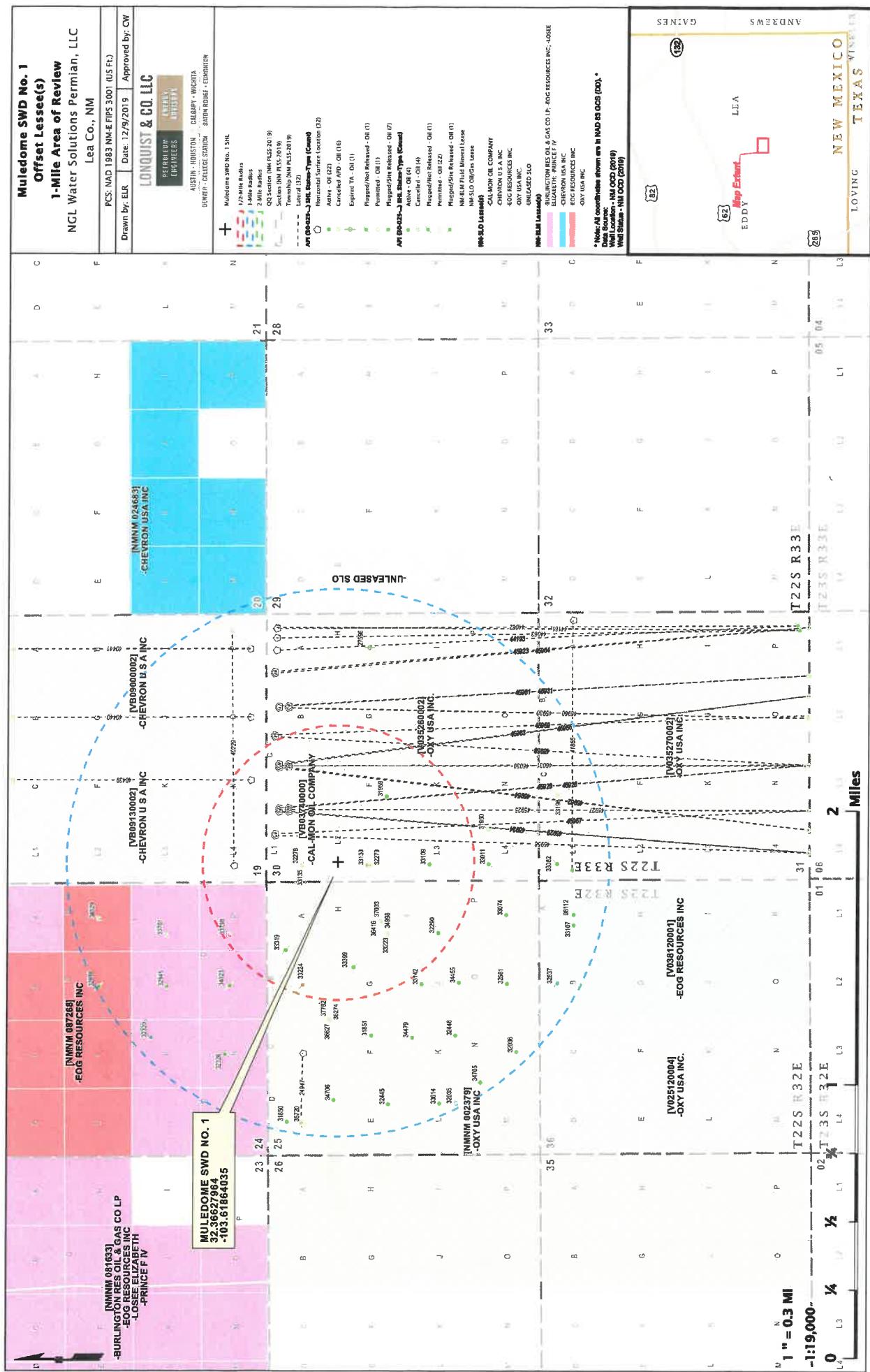
Muledome SWD No. 1
1-Mile Area of Review List
NM-OCD (2019)

Muledome SWD No. 1
1-Mile Area of Review List

34705	COVINGTON A FEDERAL #034	0	A	OXY USA INC	8975	32.35465980	-103.63240810	10/20/1995	[51689] RED TANK, DELAWARE, WEST
34706	COVINGTON A FEDERAL #035	0	A	OXY USA INC	8950	32.36555040	-103.63306560	10/31/1998	[51689] RED TANK, DELAWARE, WEST
34698	COVINGTON A FEDERAL #012	0	C	POGO PRODUCING CO	0	32.36402566	-103.62223805	12/31/1998	
35720	COVINGTON A FEDERAL #040	0	C	POGO PRODUCING CO	0	32.36315770	-103.62469595	12/31/1998	
36274	COVINGTON A FEDERAL #025C	0	C	POGO PRODUCING CO	0	32.36787931	-103.62842647	12/31/1998	
36216	COVINGTON A FEDERAL #012H	0	C	POGO PRODUCING CO	0	32.36502566	-103.62223805	12/31/1998	
36227	COVINGTON A FEDERAL #05	0	C	POGO PRODUCING CO	0	32.36787931	-103.62842547	12/31/1998	
37003	COVINGTON A FEDERAL #012	0	N	OXY USA INC	0	32.36402566	-103.62227630	12/31/1998	
37782	COVINGTON A FEDERAL #045	0	C	POGO PRODUCING COMPANY LLC	0	32.36678931	-103.62842647	12/31/1998	
40729	MERCHANT LIVESTOCK 19, 22, 33 STATE COM #020C	0	C	CIMAREX ENERGY CO.	0	32.37182050	-103.61878608	12/31/1998	[51687] RED TANK, BONE SPRINGS, EAST
40239	MERCHANT LIVESTOCK 19, 22, 33 STATE COM #020C	0	C	CIMAREX ENERGY CO.	0	32.37094210	-103.61344150	12/31/1998	[51687] RED TANK, BONE SPRINGS, EAST
40440	MERCHANT LIVESTOCK 19, 22, 33 STATE COM #020C	0	C	CIMAREX ENERGY CO.	0	32.37094210	-103.60937130	12/31/1998	[51687] RED TANK, BONE SPRINGS, EAST
40441	MERCHANT LIVESTOCK 19, 22, 33 STATE COM #020C	0	C	CIMAREX ENERGY CO.	0	32.37094210	-103.60523990	12/31/1998	[51687] RED TANK, BONE SPRINGS, EAST
41985	RED TANK 31 STATE #050H	0	A	OXY USA INC	10755	32.35359780	-103.60356140	7/9/2014	[51687] RED TANK, BONE SPRINGS, EAST
44062	RED TANK 30, 31 STATE COM #024	0	H	OXY USA INC	1,090	32.36572830	-103.60394590	10/19/2017	[51687] RED TANK, BONE SPRINGS, EAST
44053	RED TANK 30, 31 STATE COM #054H	0	A	OXY USA INC	11,986	32.36552900	-103.60427750	11/5/2017	[51687] RED TANK, BONE SPRINGS, EAST
44161	RED TANK 30, 31 STATE COM #024H	0	A	OXY USA INC	10,833	32.36552930	-103.60329770	11/21/2017	[51687] RED TANK, BONE SPRINGS, EAST
44193	RED TANK 30, 31 STATE COM #044H	0	A	OXY USA INC	9,407	32.36557980	-103.60525480	8/1/2018	[51687] RED TANK, BONE SPRINGS, EAST
45923	AVOGATO 30, 31 STATE COM #004H	0	N	OXY USA INC	0	32.36564100	-103.60663800	12/31/1998	[51687] RED TANK, BONE SPRINGS, EAST
45924	AVOGATO 30, 31 STATE COM #021H	0	N	OXY USA INC	0	32.36569560	-103.61545200	7/13/2019	[51687] RED TANK, BONE SPRINGS, EAST
45925	AVOGATO 30, 31 STATE COM #022H	0	N	OXY USA INC	0	32.36569360	-103.61510800	7/10/2019	[51687] RED TANK, BONE SPRINGS, EAST
45926	AVOGATO 30, 31 STATE COM #023H	0	N	OXY USA INC	0	32.36569360	-103.61515900	7/8/2019	[51687] RED TANK, BONE SPRINGS, EAST
45927	AVOGATO 30, 31 STATE COM #004H	0	N	OXY USA INC	0	32.36543100	-103.61515900	5/20/2019	[51687] RED TANK, BONE SPRINGS, EAST
45928	AVOGATO 30, 31 STATE COM #023H	0	N	OXY USA INC	0	32.36543000	-103.61515900	5/24/2019	[51687] RED TANK, BONE SPRINGS, EAST
45929	AVOGATO 30, 31 STATE COM #032H	0	N	OXY USA INC	0	32.36549100	-103.61542200	7/3/2019	[51687] RED TANK, BONE SPRINGS, EAST
45930	AVOGATO 30, 31 STATE COM #021H	0	N	OXY USA INC	0	32.36542400	-103.60856500	5/20/2019	[51687] RED TANK, BONE SPRINGS, EAST
45931	AVOGATO 30, 31 STATE COM #023H	0	N	OXY USA INC	0	32.36544200	-103.60883600	5/22/2019	[51687] WC-025-09 223332A, UP R/WOLF CAMP
45934	AVOGATO 30, 31 STATE COM #032H	0	N	OXY USA INC	0	32.36593300	-103.61268500	12/31/1998	[51687] RED TANK, BONE SPRINGS, EAST
45955	AVOGATO 30, 31 STATE COM #004H	0	N	OXY USA INC	0	32.36593500	-103.61255800	12/31/1998	[51687] RED TANK, BONE SPRINGS, EAST
45956	AVOGATO 30, 31 STATE COM #025H	0	N	OXY USA INC	0	32.36565300	-103.61652800	12/31/1998	[51687] RED TANK, BONE SPRINGS, EAST
45957	AVOGATO 30, 31 STATE COM #012H	0	N	OXY USA INC	0	32.36565300	-103.61651400	12/31/1998	[51687] RED TANK, BONE SPRINGS, EAST
45958	AVOGATO 30, 31 STATE COM #035H	0	N	OXY USA INC	0	32.36565600	-103.61074800	12/31/1998	[51687] RED TANK, BONE SPRINGS, EAST
45959	AVOGATO 30, 31 STATE COM #014H	0	N	OXY USA INC	0	32.36565600	-103.61063400	12/31/1998	[51687] RED TANK, BONE SPRINGS, EAST
45960	AVOGATO 30, 31 STATE COM #024H	0	N	OXY USA INC	0	32.36593500	-103.60845000	5/24/2019	[51687] RED TANK, BONE SPRINGS, EAST
45961	AVOGATO 30, 31 STATE COM #025H	0	N	OXY USA INC	0	32.36569350	-103.60855000	7/18/2019	[51687] RED TANK, BONE SPRINGS, EAST
45962	AVOGATO 30, 31 STATE COM #072H	0	N	OXY USA INC	0	32.36542800	-103.61268200	12/31/1998	[51687] RED TANK, BONE SPRINGS, EAST
45963	AVOGATO 30, 31 STATE COM #073H	0	N	OXY USA INC	0	32.36542800	-103.61268200	12/31/1998	[51687] RED TANK, BONE SPRINGS, EAST
45964	AVOGATO 30, 31 STATE COM #074H	0	N	OXY USA INC	0	32.36565100	-103.60567900	12/31/1998	[51687] RED TANK, BONE SPRINGS, EAST
46030	AVOGATO 30, 31 STATE COM #002H	0	N	OXY USA INC	0	32.36593300	-103.61237100	12/31/1998	[51687] RED TANK, BONE SPRINGS, EAST
46031	AVOGATO 30, 31 STATE COM #007H	0	N	OXY USA INC	0	32.36594200	-103.61237100	12/31/1998	[51687] RED TANK, BONE SPRINGS, EAST

Muledome SWD No. 1
1-Mile Area of Review List
 NM-OCD (2019)





Muledome SWD #1: Offsetting Produced Water Analysis																	
wellname	api	section	township	range	unit	county	formation	ph	tds_mgl	sodium_mgl	calcium_mgl	iron_mgl	magnesium_mgl	bicarbonate_mgl	chloride_mgl	sulfate_mgl	co2_mgl
ANTELOPE RIDGE UNIT #002	3002520444	4	24S	34E	B	LEA	ATOKA	6.7	51475					31000	3117	340	
TODD 26 G FEDERAL #001	3001520242	26	23S	31E	G	EDDY	ATOKA	6.7	202478					126000	93	540	
THYME A/P FEDERAL #002	3002533529	1	23S	32E	G	LEA	BONE SPRING	6.1	172896	0	0	2025		104976	781	1150	
CORIANER AOC STATE #002	3002533574	1	23S	32E	H	LEA	BONE SPRING	5.2		24176	0	3815		167962	61.1	165	
THISTLE UNIT #071H	3002542425	27	23S	33E	A	Lea	BONE SPRING 1ST SAND	5.6	171476.3	55363.2	9140	40.4	1023	1.1	104576.4	244	560
UNDIARY RAIDERS FEDERAL #001	300252491884	7	23S	32E	A	Lea	BONE SPRING 2ND SAND	6	1117284.4	36911	5399.2	88.1	706.6	1.33	71443.9	373	177
JULBREY BASIN 1 STATE COMM #0001	3002540987	5	22S	32E	N	Lea	BONE SPRING 2ND SAND	6.3	72558	5821	42	884	0.08	124350	159	650	
ALDABRA 26 FEDERAL #008H	30015386524	26	23S	31E	P	EDDY	BONE SPRING 3RD SAND	7.1	117079	37414.7	5610.4	22.6	690.7	1.1	71000	134	190
GAUCHO UNIT #011H	30025431184	17	22S	34E	O	Lea	BONE SPRING 3RD SAND	6.8	43301	5338	0	769	0	78300	122	640	
GRAHAM AKB STATE #002	3001526876	2	22S	31E	H	EDDY	DELAWARE	6	301948	30260	19	5956		168957	54	100	
GAUCHO 21 FEDERAL #002H	3002540626	21	22S	34E	M	Lea	DELAWARE-BRUSHY CANYON	5.9	266467.8	71664.2	20660.8	50.2	3492.5	3.8	167562	365	0
SNAPPING 2 STATE #014H	3001542688	2	26S	31E	P	EDDY	WOLFCAMP	7.3	813366.4	26319.4	2687.4	26.1	326.7		50281.2	399.7	100
BELICO 2 STATE #002H	3001542895	2	23S	31E	C	EDDY	WOLFCAMP	6.8	119471.8	37359.2	5658.1	22.4	746.1		73172.5	1035.5	250
WILSON DEEP UNIT #001	3002520461	13	21S	34E	F	LEA	MORROW		11648						566	216.1	5252
HAT MESA #001	3002524403	14	21S	32E	H	LEA	MORROW	6.4	271555	74925.6	40019.2	123.136	3750.91		199015	288.896	529.248