

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

**APPLICATION OF OXY USA INC. FOR A  
CLOSED LOOP GAS CAPTURE INJECTION  
PILOT PROJECT, EDDY COUNTY, NEW  
MEXICO.**

CASE NO. \_\_\_\_\_

**APPLICATION**

OXY USA Inc. (“OXY” or “Applicant”) (OGRID No. 16696) through its undersigned attorneys, hereby files this application with the Oil Conservation Division for an order authorizing OXY to engage in a closed loop gas capture injection pilot project in the Bone Spring formation (“pilot project”). In support of this application, OXY states:

**PROJECT OVERVIEW**

1. OXY proposes to create a 800-acre, more or less, project area for this pilot project consisting of the W/2 W/2 of Sections 21, 28 and 35, and the E/2 of Section 35, Township 23 South, Range 31 East, NMPM, Eddy County, New Mexico. See **Exhibit A** at 7-8.
2. The proposed project area is part of a larger area referred to as the Sand Dunes area.
3. Within the proposed project area, OXY seeks authority to utilize the following producing wells to occasionally inject produced gas into the Bone Spring formation:
  - The **Cal-Mon MDP1 “35” Federal #1H well** (API No. 30-015-44771) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 277 feet FNL and 1077 feet FWL (Unit D) in Section 35, and a bottom hole location 202 feet FSL and 464 feet FWL (Unit M) in Section 35.

- The **Cal-Mon MDP1 “35” Federal #2H well** (API No. 30-015-44772) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 277 feet FNL and 1112 feet FWL (Unit D) in Section 35, and a bottom hole location 187 feet FSL and 1248 feet FWL (Unit M) in Section 35.
- The **Cal-Mon “35” Federal #41H well** (API No. 30-015-43140) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 250 feet FNL and 710 feet FWL (Unit D) in Section 35, and a bottom hole location 193 feet FSL and 951 feet FWL (Unit M) in Section 35.
- The **Irdium MDP1 “28-21” Federal Com #21H well** (API No. 30-015-45074) [Ingle Wells; Bone Spring Pool (Pool Code 33740)], with a surface location 610 feet FSL and 648 feet FWL (Unit M) in Section 28, and a bottom hole location 24 feet FNL and 303 feet FWL (Unit D) in Section 21.
- The **Cal-Mon “35” Federal #175H well** (API No. 30-015-45524) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 110 feet FNL and 615 feet FEL (Unit A) in Section 35, and a bottom hole location 17 feet FSL and 824 feet FEL (Unit P) in Section 35.
- The **Cal-Mon MDP1 “35” Federal #4H well** (API No. 30-015-44774) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 120 feet FNL and 2624 feet FWL (Unit C) in Section 35, and a bottom hole location 191 feet FSL and 2180 feet FEL (Unit O) in Section 35.
- The **Cal-Mon MDP1 “35” Federal #5H well** (API No. 30-015-44775) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 110 feet

FNL and 890 feet FEL (Unit A) in Section 35, and a bottom hole location 200 feet FSL and 1068 feet FEL (Unit P) in Section 35.

4. Injection along the horizontal portion of the wellbores will be at the following approximate true vertical depths:

- The **Cal-Mon MDP1 “35” Federal #1H well**: between 10,028 feet and 10,098 feet.
- The **Cal-Mon MDP1 “35” Federal #2H well**: between 9,940 feet and 10,101 feet.
- The **Cal-Mon “35” Federal #41H well**: between 10,295 feet and 10,385 feet.
- The **Irdium MDP1 “28-21” Federal Com #21H well**: between 8,664 feet and 8688 feet.
- The **Cal-Mon “35” Federal #175H well**: between 10,549 feet and 10,973 feet.
- The **Cal-Mon MDP1 “35” Federal #4H well**: between 10,226 feet and 10,368 feet.
- The **Cal-Mon MDP1 “35” Federal #5H well**: between 10,012 feet and 10,147 feet.

5. A map depicting the pipeline that ties the wells proposed for the pilot project into the gathering system and the affected compressor station is included in the attached ***Exhibit A*** at 7-8.

#### **WELL DATA**

6. Information on the well data, including well diagrams and well construction, casing, tubing, packers, cement, perforations, and other details for each proposed injection well are included in the attached ***Exhibit A*** at 18-31.

7. The top of the Bone Spring formation in this area is at approximately 8,000 feet true vertical depth and extends down to the top of the Wolfcamp formation at approximately 11,600 feet true vertical depth. *See Exhibit A* at 74-75.

8. The current average surface pressures under normal operations for the proposed injection wells range from approximately 560 psi to 860 psi. *See Exhibit A* at 32. The maximum allowable surface pressure (MASP) for the wells in the pilot project will be 1,250 psi. *Id.*

9. OXY plans to monitor injection and operational parameters for the pilot project using an automated supervisory control and data acquisition (SCADA) system with pre-set alarms and automatic shut-in safety valves that will prevent injection pressures from exceeding the MASP. *See Exhibit A* at 33, 49-50.

10. The proposed maximum allowable surface pressure will not exert pressure at the top perforation in the wellbore of any injection well with a full fluid column of reservoir brine water in excess of 90% of the burst pressure for the production casing or production liner. *See Exhibit A* at 32. In addition, the proposed maximum allowable surface pressure will not exert pressure at the topmost perforation in excess of 90% of the formation parting pressure. *See Exhibit A* at 32.

11. Cement bond logs<sup>1</sup> for each of the injection wells demonstrate the placement of cement in the wells proposed for this pilot project and that there is a good and sufficient cement bond with the production casing and the tie-in of the production casing with the next prior casing in each well.

12. The wells proposed for injection in the pilot project have previously demonstrated mechanical integrity. *See Exhibit A* at 34. OXY will undertake new tests to demonstrate

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<sup>1</sup> Electronic version of the cement bond logs will be submitted to the Division by email.



mechanical integrity for each of the wells proposed for this pilot project as a condition of approval prior to commencing injection operations.

### **GEOLOGY AND RESERVOIR**

13. Data and a geologic analysis confirming that the Bone Spring formation is suitable for the proposed pilot project is included in *Exhibit A* at 71-78. A general characterization of the geology of the Bone Spring formation and its suitability for the proposed injection, including identification of confining layers and their ability to prevent vertical movement of the injected gas is included in the analysis. *Id.*

14. Zones that are productive of oil and gas are located in the overlying Brushy Canyon formation, and the deeper Wolfcamp Formation. *See Exhibit A* at 71.

15. Reservoir modeling indicates anticipated horizontal movement of injected gas will be approximately 100 feet or less from each injection wellbore within the Bone Spring formation. *See Exhibit A* at 85.

16. The proposed average injection rate is 1.8 MMSCFPD with a maximum injection rate of 2.0 MMSCFPD during injection for each well except the Iridium MDP1 “28-21” Federal Com #21H well, which has a proposed maximum injection rate of 3.0 MMSCFPD. *See Exhibit A* at 32.

17. OXY has prepared calculations estimating the stimulated reservoir volume based on supporting empirical data and a reservoir model to evaluate potential effects on wells adjacent to the pilot project area. *See Exhibit A* at 80-89. OXY’s analysis concludes that there will be no change in the oil recovery from each of its proposed injection wells or from any of the offsetting wells. *See id.* at 87.

18. Similarly, OXY has prepared an analysis of the potential effects on the reservoir caused by the proposed injection, including consideration of commingling fluids. *Exhibit A* at 80-89. OXY's analysis concludes that there will be no adverse effect on the reservoir as a result of the injection. *Id.* at 87, 90.

19. OXY has also prepared an analysis evaluating the expected gas storage capacity for the proposed injection well relative to the gas injection volumes for an injection scenario lasting twenty days. *See Exhibit A* at 88. The analysis confirms that whether the capacity is estimated based on the fracture volume gas equivalent or the total gas equivalent volumes produced from the proposed injection zone, the anticipated gas injection volumes will be well below the estimated volume capacity within the project area.

20. The source of gas for injection will be from OXY's wells producing in the Bone Spring and Wolfcamp formations that are identified in the list of wells in *Exhibit A* at page 36-38. Each of OXY's proposed injection wells are operated by OXY and OXY holds 100% of the working interest in the CLGC wells.

21. OXY has prepared an analysis of the composition of the source gas for injection and a corrosion prevention plan. *See Exhibit A* at 39-47.

22. OXY has examined the available geologic and engineering data and found no evidence of open faults or other hydrologic connections between the injection zone and any underground source of drinking water. *See Exhibit A* at 78. OXY has also examined the available geologic and engineering data and determined that the total recoverable volume of hydrocarbons from the reservoir will not be adversely affected by the pilot project. *See Exhibit A* at 90.

### **AREA OF REVIEW**

23. OXY has prepared maps depicting the surface hole location and trajectory of the proposed injection well, the location of every well within a two-mile radius, leases within two miles, and the half-mile area of review. *See Exhibit A* at 52-56.

24. A tabulation of data for wells that penetrate the proposed injection intervals or the confining layer within the area of review is included in *Exhibit A* at pages 57-60, along with well-bore schematics for wells that are plugged and abandoned or temporarily abandoned. *See Exhibit A* at 61-69.

### **OPERATIONS AND SAFETY**

25. OXY will monitor each injection well's instantaneous rates and daily injection volumes, along with pressure in the well tubing, casing, and bradenheads using an automated supervisory control and data acquisition (SCADA) system. *See Exhibit A* at 49-50. Each injection well will also include automated safety devices, including automatic shut-in valves among other operational safety measures. *See Exhibit A* at 33. OXY will also monitor and track various operational parameters at the pilot project's central tank battery and central gas lift compressors. *See id.*


26. A copy of this application will be provided by certified mail to the surface owner on which each injection well identified herein is located, and to each leasehold operator and other affected persons within any tract wholly or partially contained within one-half mile of the completed interval of the wellbore for each of the proposed injection wells. A copy of the affected parties subject to notice is included in *Exhibit A* at 95-96, along with a map and list identifying each tract and affected persons given notice. *See Exhibit A* at 92-94.

27. Approval of this pilot project is in the best interests of conservation, the prevention of waste, and the protection of correlative rights.

WHEREFORE, OXY USA Inc. requests that this Application be set for hearing before an Examiner of the Oil Conservation Division on September 9, 2021, and that after notice and hearing this Application be approved.

Respectfully submitted,

HOLLAND & HART LLP



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**ATTORNEYS FOR OXY USA INC.**

CASE \_\_\_\_\_:

**Application of OXY USA Inc. for Closed Loop Gas Capture Injection Pilot Project, Eddy County, New Mexico.** Applicant in the above-styled cause seeks an order authorizing it to engage in a closed loop gas capture injection pilot project (“pilot project”) in the Bone Spring formation, within a 800-acre, more or less, project area for this pilot project consisting of the W/2 W/2 of Sections 21, 28, and 35, and the E/2 of Section 35, Township 23 South, Range 31 East, NMPM, Eddy County, New Mexico, by occasionally injecting into the following wells:

- The **Cal-Mon MDP1 “35” Federal #1H well** (API No. 30-015-44771) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 277 feet FNL and 1077 feet FWL (Unit D) in Section 35, and a bottom hole location 202 feet FSL and 464 feet FWL (Unit M) in Section 35.
- The **Cal-Mon MDP1 “35” Federal #2H well** (API No. 30-015-44772) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 277 feet FNL and 1112 feet FWL (Unit D) in Section 35, and a bottom hole location 187 feet FSL and 1248 feet FWL (Unit M) in Section 35.
- The **Cal-Mon “35” Federal #41H well** (API No. 30-015-43140) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 250 feet FNL and 710 feet FWL (Unit D) in Section 35, and a bottom hole location 193 feet FSL and 951 feet FWL (Unit M) in Section 35.
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OXY seeks authority to utilize these producing wells to occasionally inject produced gas into the Bone Spring formation at true vertical

depths of between approximately 8,000 feet to 11,600 feet along the horizontal portion of each wellbore at surface injection pressures of no more than 1,250 psi. The source of the produced gas will be the Bone Spring and Wolfcamp formations. The subject acreage is located approximately 17 miles east of Loving, New Mexico.



# New Mexico Closed Loop Gas Capture (CLGC) Oxy- North Corridor

## EXHIBIT A



**Occidental**

# Overview



## General Project Description: Closed Loop Gas Capture Project Oxy- North Corridor

### About North Corridor

The North Corridor is a project area composed of Iridium and Calmon wells. These wells share the same source gas wells and the same gas system.

### Summary of Requested Relief

1. Authority to operate a Closed Loop Gas Capture Project ("CLGC") consisting of seven wells to prevent waste and reduce adverse impacts from temporary interruptions of gas pipeline capacity.
2. A 2-year duration of such authority with renewal by administrative approval.
3. Authority to, when applicable, place packers in CLGC wells as deep as possible but no more than 100 feet above the top of the injection zone.
4. Authority to add CLGC wells to the proposed project by administrative approval if the well is within the Area of Review previously completed.

### Overview

Oxy USA Inc. (Oxy) is proposing a CLGC project in the North Corridor area. On occasion, third-party gas purchasers reduce takeaway capacity and cause interruptions that result in flaring or shut in production. During these interruptions, Oxy will utilize CLGC wells to capture gas and reduce flaring.

In 2020, Oxy experienced 58 days of interruptions where the third-party gas purchaser temporarily reduced takeaway capacity from this location, resulting in the flaring of 162 MMSCF of gas or the immediate shut-in of at least 21,000 BOPD. Approval of this application will significantly reduce such flaring or shut-in production in the future.

Operations During Interruption	Operations During Interruption With CLGC System	Benefits
<ul style="list-style-type: none"> <li>• Flare gas</li> <li>• Shut in production</li> </ul>	<ul style="list-style-type: none"> <li>• Store gas</li> <li>• Continue production</li> <li>• No additional surface disturbances</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce greenhouse gas emissions</li> <li>• Improve economic recovery of mineral resources including gas that might have been flared</li> <li>• Utilize existing infrastructure</li> </ul>

### Proposed Operations

Oxy has an extensive high-pressure gas system in the North Corridor area. It is used for gas lift, a type of artificial lift. Oxy plans to utilize the same system for gas storage operations. Very minimal equipment on surface will need to be installed prior to starting storage operations.

Enterprise is the third-party gas purchaser for the North Corridor area. If an interruption occurs, Oxy will divert gas from the takeaway line back into the gas lift injection system. Gas will flow from the Central

Gas Lift (CGL) Station through the flow meter, control valve, safety shutdown valve, wellhead and into the wellbore for storage. Gas will be injected down the casing/tubing annulus in all wells. Simultaneously, the CLGC well will be shut in by closing the electric choke upstream of the production flowline. After the interruption has ended, the electric choke will open and the CLGC well resumes production.

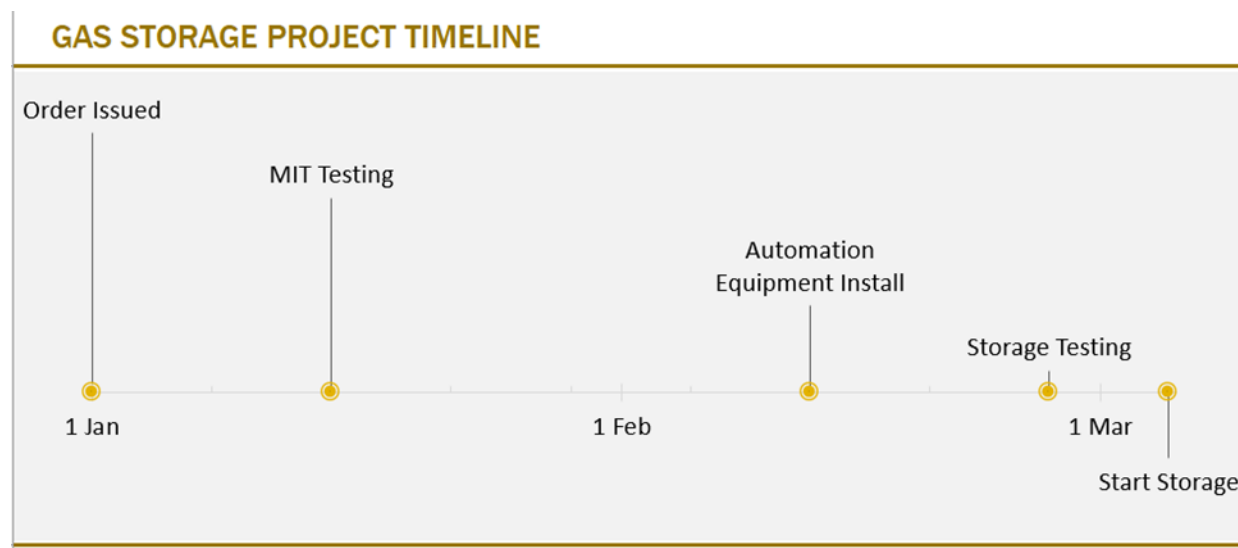
#### Wells

7 wells are proposed in this application.

#	API 14	Well Name	Injection down the...
1	30015455240000	CAL-MON-175H	Casing
2	30015447710000	CALMON-35-1H	Casing
3	30015447720000	CALMON-35-2H	Casing
4	30015447740000	CALMON-35-4H	Casing
5	30015447750000	CALMON-35-5H	Casing
6	30015431400200	CAL-MON41HST	Casing
7	30015450740000	IRI28-21-21H	Casing

#### Timeline

Since no new surface disturbances are required, this project can be implemented with minimal facility modifications. The timeline below assumes an order is issued on January 1 for illustration purposes.



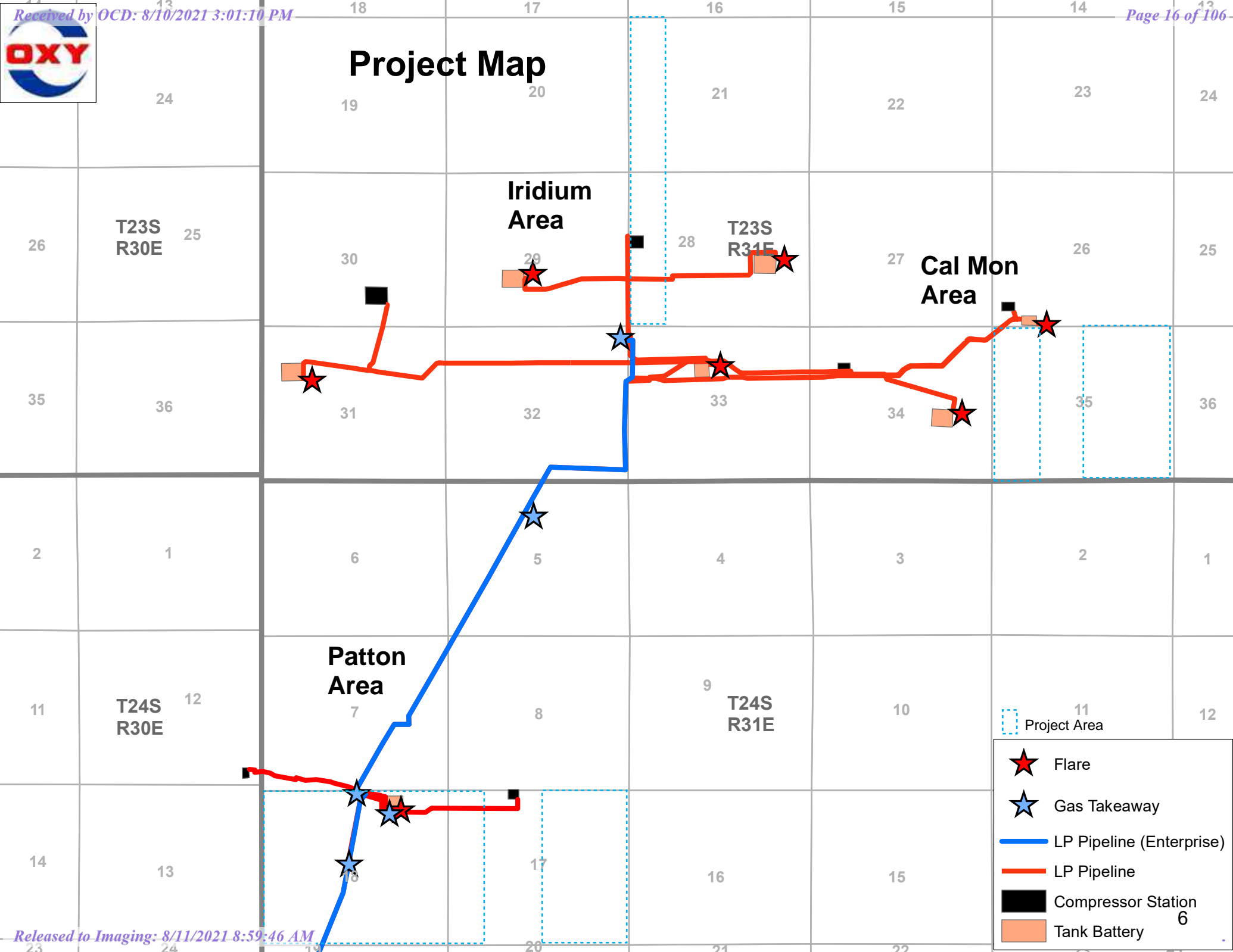
#### Pertinent Details

- Maximum Allowable Surface Pressure = 1250 psi
- 7 horizontal wells
- Roughly 5000 ft and 10000 ft lateral lengths
- Injection down the casing/tubing annulus

- Target Formations = Avalon, Second Bone Spring, Harkey
- Top of injection zone based off perf TVD = 8664 ft TVD
- Bottom of injection zone based off perf TVD = 10973 ft TVD

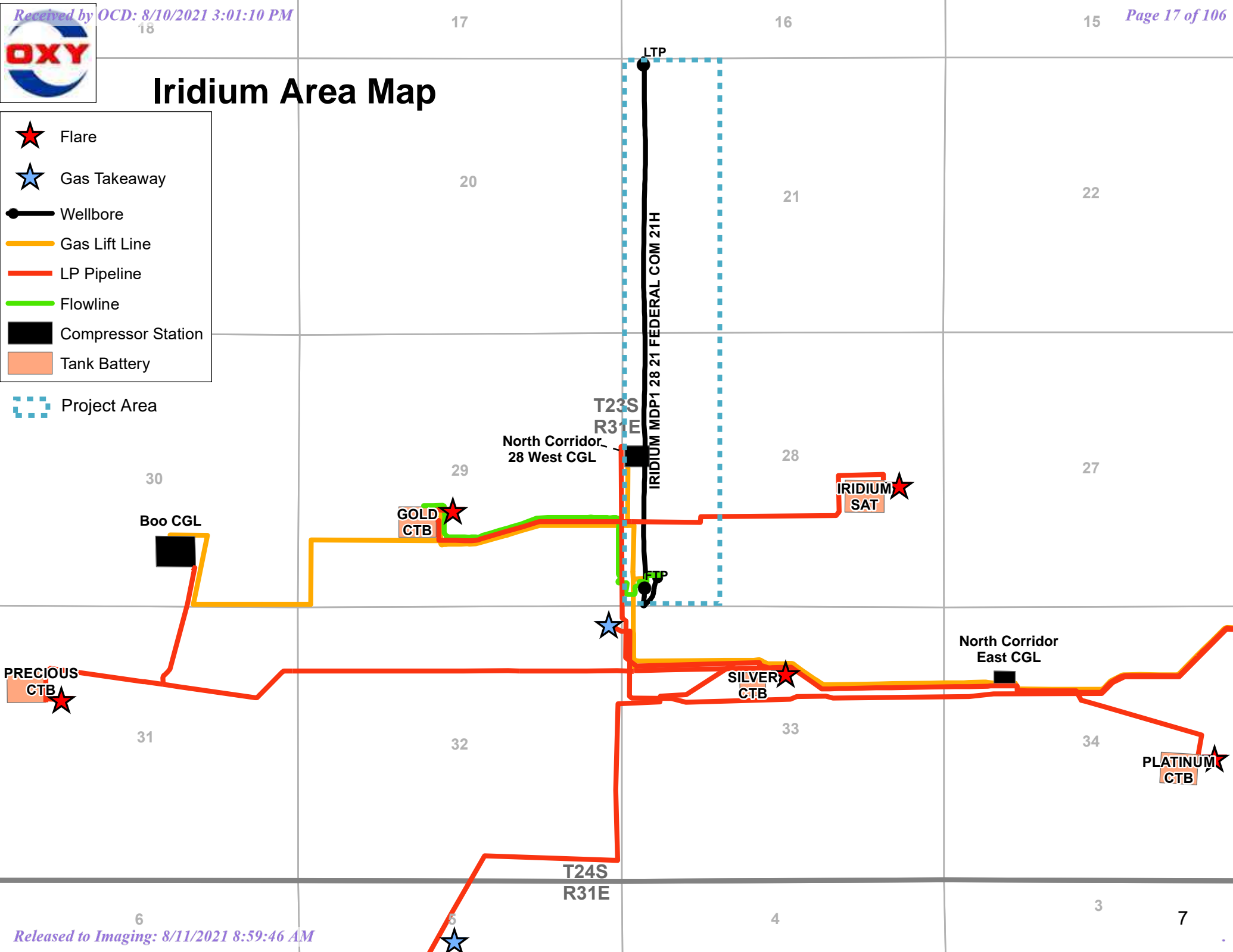


# Project Map



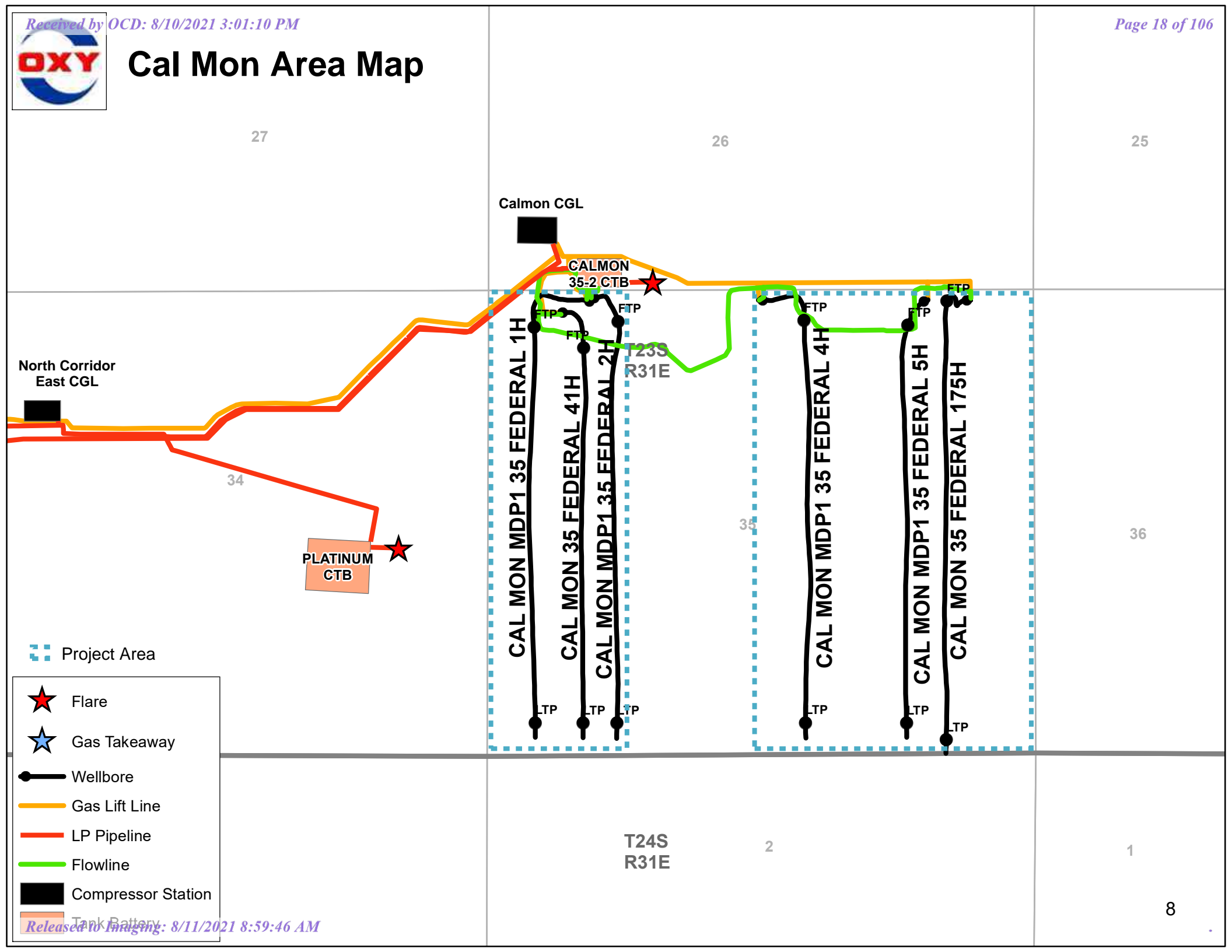
- ★ Flare
- ★ Gas Takeaway
- Wellbore
- Gas Lift Line
- LP Pipeline
- Flowline
- Compressor Station
- Tank Battery

Project Area



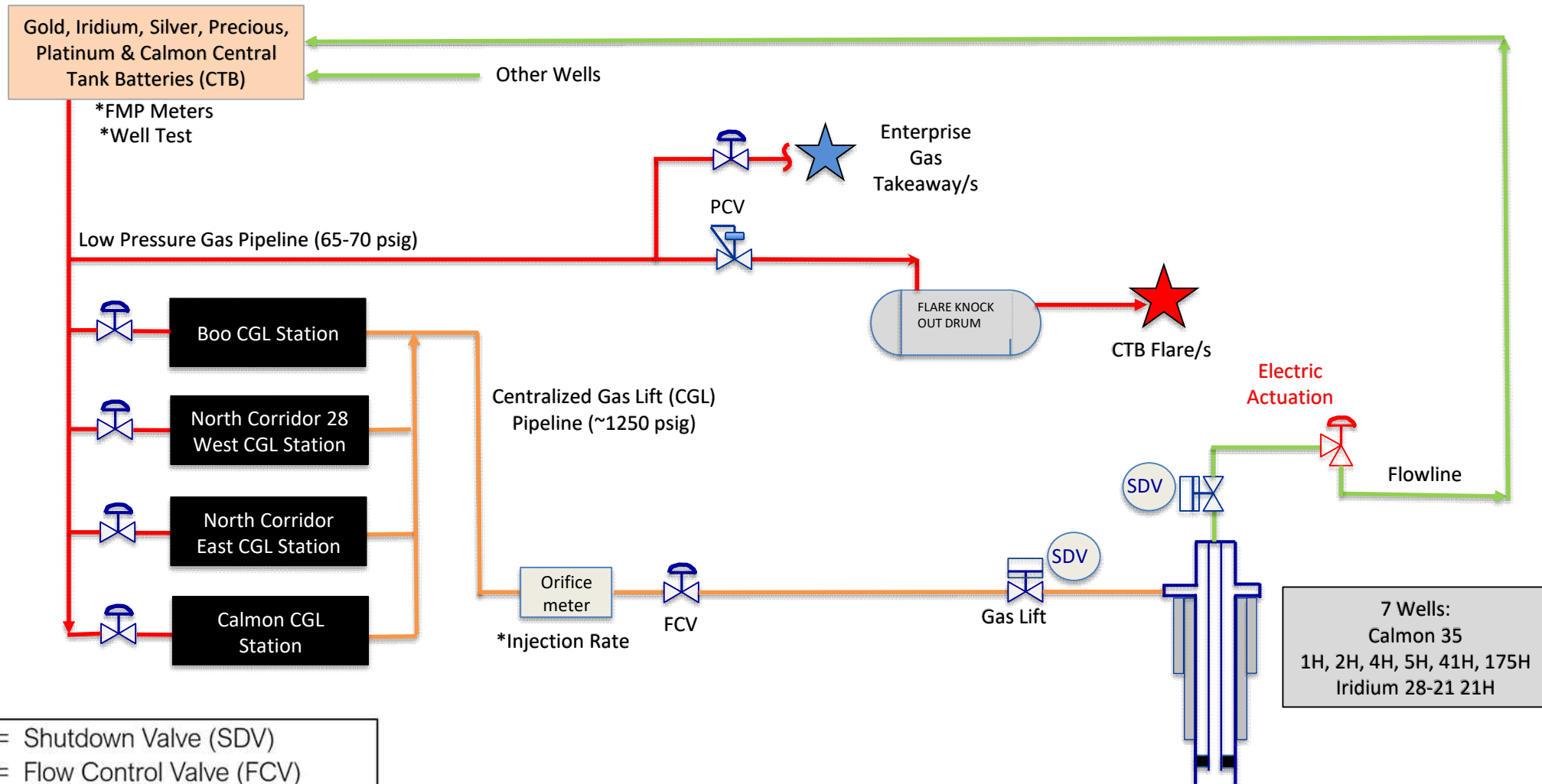


# Cal Mon Area Map



- ★ Flare
- ★ Gas Takeaway
- Wellbore
- Gas Lift Line
- LP Pipeline
- Flowline
- Compressor Station
- Tank Battery

# Iridium/Calmon Gas Process Flow Diagram



-  = Shutdown Valve (SDV)
-  = Flow Control Valve (FCV)
-  = Pressure Control Valve (PCV)
-  = Flowline
-  = LP Gas Line

# Injection Wellbores



NM OIL CONSERVATION  
ARTESIA DISTRICT

JUN 13 2018

Form C-102

Revised August 1, 2011

**RECEIVED** copy to appropriate  
District Office☒ AMENDED REPORT  
AS Drilled

District I  
1425 N. Francis 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

## WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number <b>30-015-44771</b>	Pool Code <b>13367</b>	Pool Name <b>Cotton Draw Bone Spring</b>
Property Code <b>320832</b>	Property Name <b>CAL-MON MDP1 "35" FEDERAL</b>	Well Number <b>1H</b>
OGRID No. <b>16096</b>	Operator Name <b>OXY USA INC.</b>	Elevation <b>3457.9'</b>

## Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
<b>D</b>	<b>35</b>	<b>23 SOUTH</b>	<b>31 EAST, N.M.P.M.</b>		<b>277'</b>	<b>NORTH</b>	<b>1077'</b>	<b>WEST</b>	<b>EDDY</b>

## 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
<b>M</b>	<b>35</b>	<b>23 SOUTH</b>	<b>31 EAST, N.M.P.M.</b>		<b>202'</b>	<b>SOUTH</b>	<b>464'</b>	<b>WEST</b>	<b>EDDY</b>

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
<b>160</b>	<b>Y</b>		<b>TP: 424' ENL 454' ENL BP: 367' ENL 464' ENL</b>

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.

	<b>SURFACE LOCATION</b> NEW MEXICO EAST NAD 1983 Y=461506.46 US FT X=720513.75 US FT LAT.: N 32.2674258° LONG.: W 103.7536386° GRID AZ = 289°21'00" 876.46'	<b>OPERATOR CERTIFICATION</b>  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 undivided 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  Hereby entered by the division Signature <u>Sarah Chapman</u> Date <u>6/12/18</u> Printed Name <u>Sarah Chapman</u> E-mail Address <u>sarah_chapman@oxy.com</u>
	<b>KICK OFF POINT</b> NEW MEXICO EAST NAD 1983 Y=461730.80 US FT X=719887.50 US FT LAT.: N 32.2680513° LONG.: W 103.7556996° GRID AZ = 177°36'45" 374.35'	
	<b>TOP PERF.</b> NEW MEXICO EAST NAD 1983 Y=461356.57 US FT X=719891.09 US FT LAT.: N 32.2670230° LONG.: W 103.7556556°	
	<b>BOTTOM PERF.</b> NEW MEXICO EAST NAD 1983 Y=456864.95 US FT X=719925.90 US FT LAT.: N 32.2546761° LONG.: W 103.7556212° GRID AZ = 179°42'55" 184.96'	
<b>BOTTOM HOLE LOCATION</b> NEW MEXICO EAST NAD 1983 Y=456899.99 US FT X=719926.72 US FT LAT.: N 32.2542227° LONG.: W 103.7556214°	<b>SURVEYOR CERTIFICATION</b>  I hereby certify that the well location shown on this plat was plotted from reliable and accurate surveys made by me or under my supervision and that the same is true and correct to the best of my belief.  Date of Survey <u>FEBRUARY 15, 2018</u> Signature and Seal of Professional Land Surveyor <u>[Signature]</u> Certificate Number <u>15079</u> WO# 161019WL-o (Rev. B) (NA)	

District I  
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Form C-102  
Revised August 1, 2011  
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☒ AMENDED REPORT  
AS Drilled

## WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-44772	Pool Code 13367	Pool Name Cotton Draw Bone Spring
Property Code 320832	Property Name CAL-MON MDP1 "35" FEDERAL	Well Number 2H
OGRID No. 16696	Operator Name OXY USA INC.	Elevation 3458.4'

## Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	35	23 SOUTH	31 EAST, N.M.P.M.		277'	NORTH	1112'	WEST	EDDY

## 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
M	35	23 SOUTH	31 EAST, N.M.P.M.		187'	SOUTH	1248'	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160	Y		TP: 360' ENL 1263' FWL BP: 365' FSL 1253' FWL

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.

Administrative Order #: 7592-N5L

	<p><b>OPERATOR CERTIFICATION</b></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 undivided 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.</p> <p>Permitted by the division:</p> <p><u>Josh Chapin</u> 4/12/18 Signature Date</p> <p><u>Sarah Chapman</u> Printed Name</p> <p><u>Sarah_chapman@oxy.com</u> E-mail Address</p>
	<p><b>SURVEYOR CERTIFICATION</b></p> <p>I hereby certify that the well location shown on this plat was plotted from the best of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p><u>TERRY J. ASH</u> Date of Survey</p> <p><u>Terry J. Ash</u> Signature and Seal of Professional Surveyor</p> <p>Certificate Number 15079</p>
	<p>W09 161019WL-b (Rev. B) (M)</p>

# NM OIL CONSERVATION

ARTESIA DISTRICT

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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

☒ AMENDED REPORT  
(As -drilled)

## WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number <b>30-015-43140</b>	Pool Code <b>13367</b>	Pool Name <b>Cotton Draw Bone Spring</b>
Property Code <b>314855</b>	Property Name <b>CAL-MON "35" FEDERAL</b>	Well Number <b>41H</b>
OGRID No. <b>16696</b>	Operator Name <b>OXY USA INC.</b>	Elevation <b>3456.2'</b>

### Surface Location

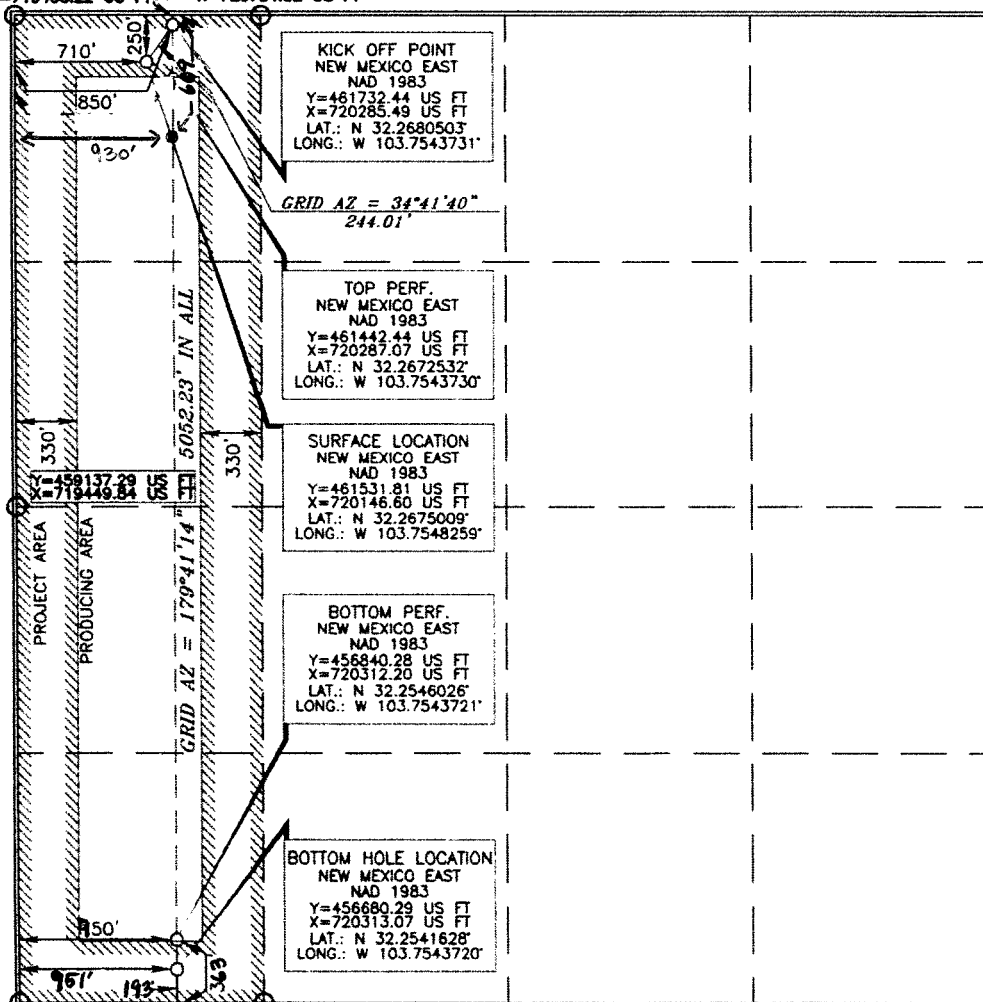
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	35	23 SOUTH	31 EAST, N.M.P.M.		250'	NORTH	710'	WEST	EDDY

### 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
M	35	23 SOUTH	31 EAST, N.M.P.M.		100' 193'	SOUTH	850' 951'	WEST	EDDY
Dedicated Acres <b>160</b>	Joint or Infill <b>N</b>	Consolidation Code	Order No.	<b>BO - 363 FSL 950 FWL TP - 669 FSL 930 FWL</b>					

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=461778.63 US FT  
Y=719435.22 US FT



### OPERATOR CERTIFICATION

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

**10/12/17**  
Signature: **Jana Mendiola**  
Printed Name: **Jana Mendiola**  
E-mail Address: **jana.mendiola@oxy.com**

### SURVEYOR CERTIFICATION

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

**15079**  
Date of Survey: **AUGUST 3, 2016**  
Signature and Seal of Professional Surveyor: **Terry J. Alar**

Certificate Number: **15079**

WO# 150803WL-XY (Rev. B) (KA)

District I  
1623 N. French Dr., Hobbs, NM 88240  
Phone: (505) 393-6161 Fax: (505) 393-0720  
District II  
811 S. First St., Artesia, NM 88210  
Phone: (505) 748-1283 Fax: (505) 745-9720  
District III  
1000 Rio Grande Road, Arroyo, NM 87410  
Phone: (505) 334-6175 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  
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District Office

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WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number <b>30-015-45074</b>	Pool Code <b>33740</b>	Pool Name <b>Ingle Wells Bone Spring</b>
Property Code <b>321632</b>	Property Name <b>IRIDIUM MDP1 "28-21" FEDERAL COM</b>	Well Number <b>21H</b>
OGRID No. <b>16696</b>	Operator Name <b>OXY USA INC.</b>	Elevation <b>3368.4'</b>

Surface Location

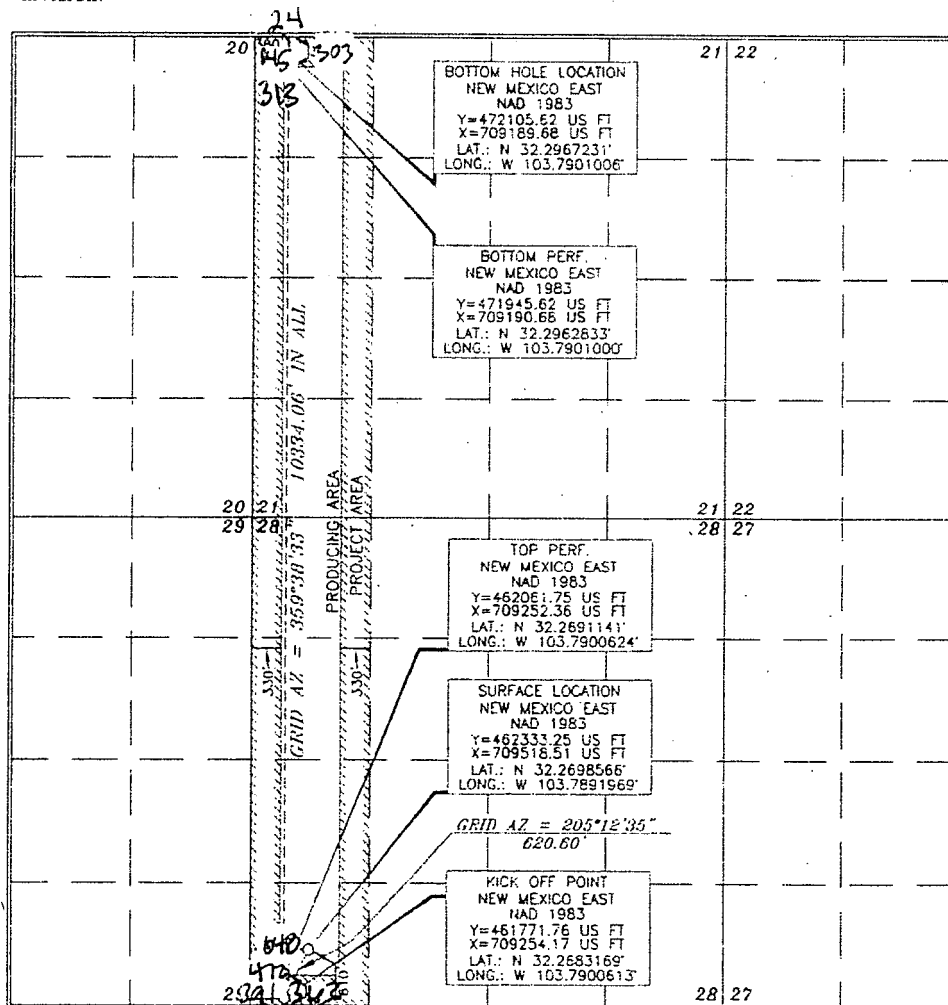
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
<b>M</b>	<b>28</b>	<b>23 SOUTH</b>	<b>31 EAST, N.M.P.M.</b>		<b>610'</b>	<b>SOUTH</b>	<b>648'</b>	<b>WEST</b>	<b>EDDY</b>

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
<b>D</b>	<b>21</b>	<b>23 SOUTH</b>	<b>31 EAST, N.M.P.M.</b>		<b>24</b>	<b>NORTH</b>	<b>303'</b>	<b>WEST</b>	<b>EDDY</b>

Dedicated Acres <b>320</b>	Joint or Infill	Consolidation Code	Order No. <b>FTP: 472' FSL 391' FWL LTP: 145' FNL 313' FWL</b>
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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.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or undivided 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 is a voluntary pooling agreement or a compulsory pooling order.

Signature of the Operator

**Sarah Chapman** 12/19/18  
Signature Date

**Sarah Chapman**  
Printed Name

**sarah\_chapman@oxy.com**  
E-mail Address

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was planned from **NEW MEXICO** official surveys made by the **Surveyor General** and that the same is true and correct to the best of my belief.

**15079**  
Date of Survey

**15079**  
Signature and Seal of Professional Surveyor

**15079**  
Certificate Number

WO# 170920WL-b (KA)



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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 Bravos 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) 476-3450 Fax: (505) 476-3452

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

Form C-102  
Revised August 1, 2011  
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## WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-45524	Pool Code 13367	Pool Name Cotton Draw Bme Spring
Property Code 320832	Property Name CAL-MON "35" FEDERAL	Well Number 175H
OGRID No. 16696	Operator Name OXY USA INC.	Elevation 3472.5'

## Surface Location

UL or lot no.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
A	35	23 SOUTH	31 EAST, N.M.P.M.		110'	NORTH	615'	EAST	EDDY

## Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
P	35	23 SOUTH	31 EAST, N.M.P.M.		17	SOUTH	824	EAST	EDDY
Dedicated Acres 160	Joint or Infill	Consolidation Code	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.

<p>KICK OFF POINT NEW MEXICO EAST NAD 1983 Y=461747.59 US FT X=723862.84 US FT LAT.: N 32.2680384° LONG.: W 103.7427993°</p> <p>FIRST TAKE POINT NEW MEXICO EAST NAD 1983 Y=461697.59 US FT X=723863.11 US FT LAT.: N 32.2679009° LONG.: W 103.7427994°</p> <p>GRID AZ = 284°05'24" 242.62'</p> <p>SURFACE LOCATION NEW MEXICO EAST NAD 1983 Y=461688.52 US FT X=724088.16 US FT LAT.: N 32.2678725° LONG.: W 103.7420391°</p> <p>LAST TAKE POINT NEW MEXICO EAST NAD 1983 Y=456619.91 US FT X=723889.88 US FT LAT.: N 32.2539433° LONG.: W 103.7428028°</p> <p>BOTTOM HOLE LOCATION NEW MEXICO EAST NAD 1983 Y=456539.91 US FT X=723890.40 US FT LAT.: N 32.2537234° LONG.: W 103.7428029°</p>	<p>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 undivided 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>Signature: Sarah Chapman Date: 3/28/19</p> <p>Printed Name: Sarah Chapman E-mail Address: sarah_chapman@oxy.com</p> <p>SURVEYOR CERTIFICATION</p> <p>I hereby certify that the well location shown on this plat was plotted on field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>Date of Survey: FEBRUARY 14, 2019</p> <p>Signature and Seal of Professional Surveyor: Tony J. Paul Certificate Number: 15079</p> <p>WO# 171107WL-o (Rev. B) (KA)</p>
---	---

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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) 748-1263 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

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## WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-44774	Pool Code 13367	Pool Name COTTON DRAW; BONE SPRING
Property Code 320823	Property Name CAL-MON MDP1 "35" FEDERAL	Well Number 4H
OGRID No. 16696	Operator Name OXY USA INC.	Elevation 3462.3'

## Surface Location

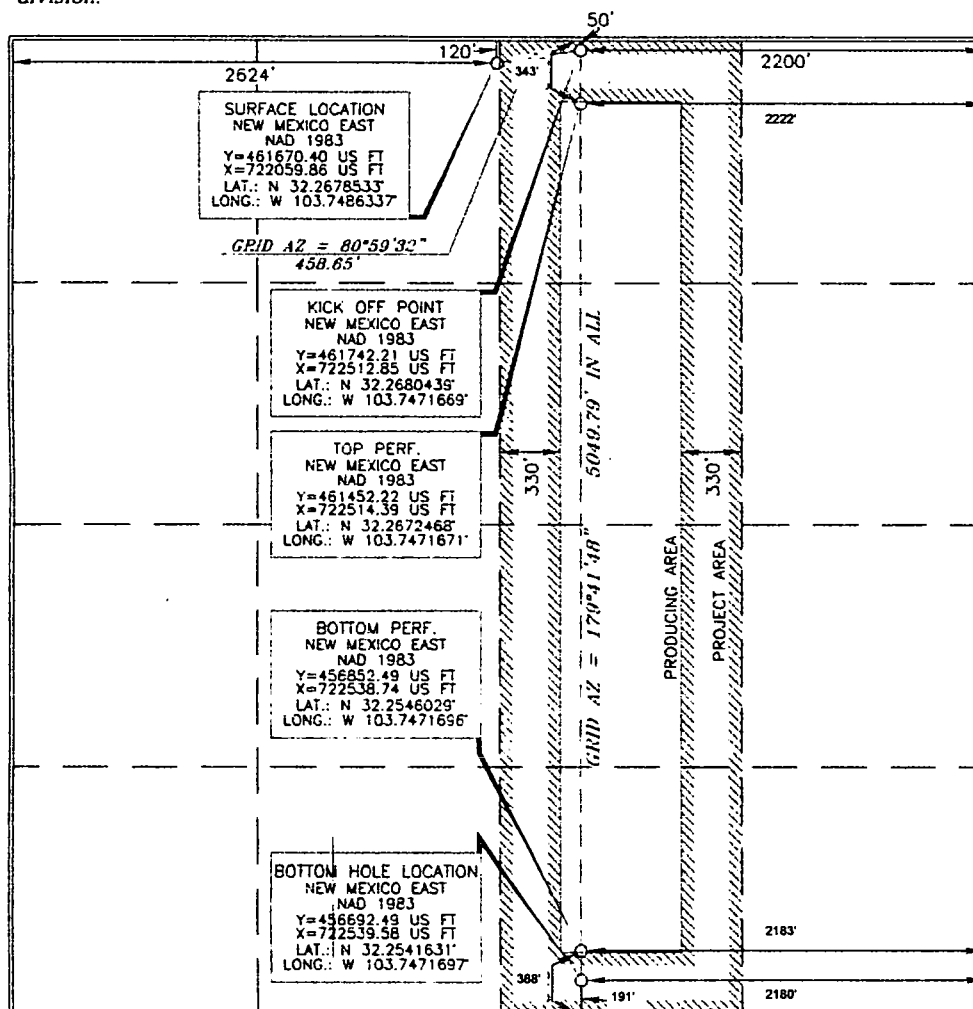
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	35	23 SOUTH	31 EAST, N.M.P.M.		120'	NORTH	2624'	WEST	EDDY

## 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
O	35	23 SOUTH	31 EAST, N.M.P.M.		191'	SOUTH	2180'	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160	Y		TP: 343 FNL 2222 FEL BP: 368 FSL 2183 FEL

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.



## OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or undivided 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: *Sarah Mitchell* Date: 6/6/18

Printed Name: Sarah Mitchell  
E-mail Address: sarah\_mitchell@oxy.com

## SURVEYOR CERTIFICATION

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

Signature and Seal: *Jerry J. As...*  
Date of Survey: NOVEMBER 8, 2016  
Professional Surveyor

Signature: *Jerry J. As...* Certificate Number: 15079

WO# 161108WL-b (KA)

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 Grande Road, Artesia, 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

NM OIL CONSERVATION  
ARTESIA DISTRICT  
Revised August 1, 2011  
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District Office

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### WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-44775	Pool Code 13367	Pool Name COTTON DRAW, BONE SPRING
Property Code 320832	Property Name CAL-MON MDP1 "35" FEDERAL	Well Number 5H
OGRID No. 16696	Operator Name OXY USA INC.	Elevation 3469.0'

#### Surface Location

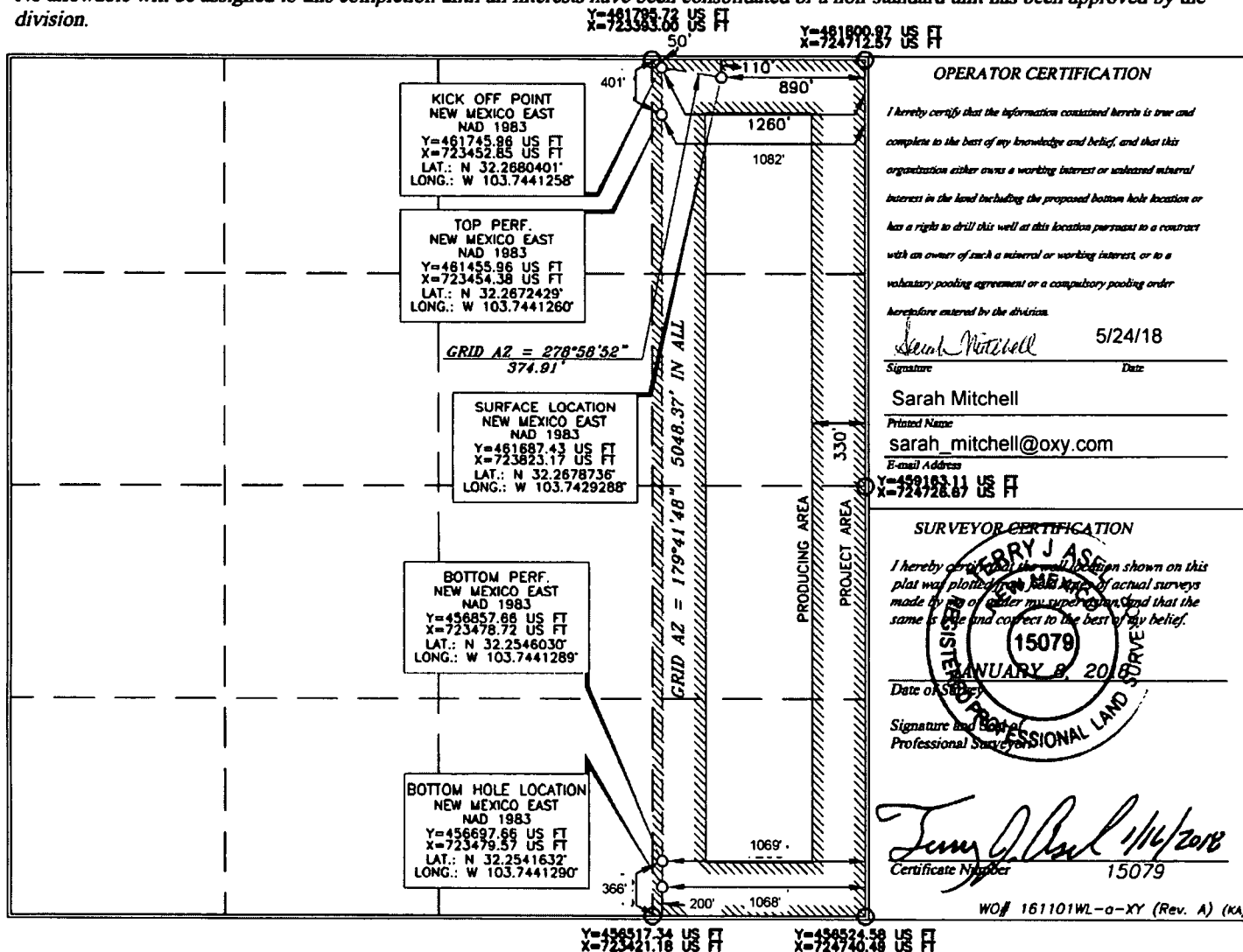
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	35	23 SOUTH	31 EAST, N.M.P.M.		110'	NORTH	890'	EAST	EDDY

#### 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
P	35	23 SOUTH	31 EAST, N.M.P.M.		200'	SOUTH	1068'	EAST	EDDY

Dedicated Acres 160	Joint or Infill Y	Consolidation Code	Order No. NSL 7593 TP: 401 FNL 1082 FEL, BP: 366 FSL 1069 FEL
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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.



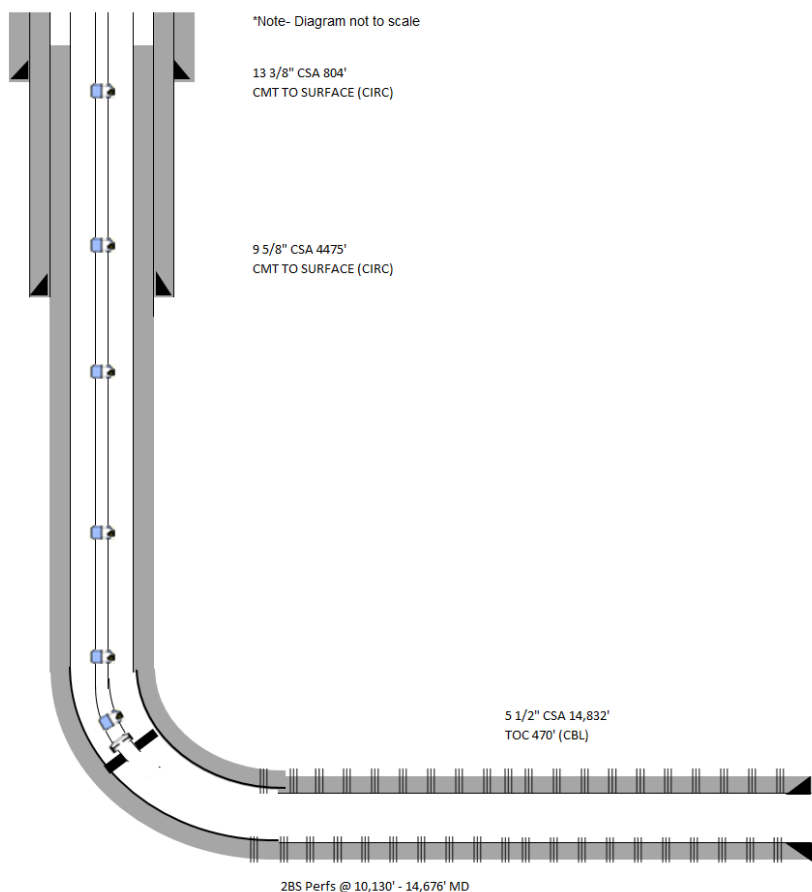
Side 1

OPERATOR: OXY USA INCWELL NAME & NUMBER: CAL MON MDP1 35 FEDERAL 5H

WELL LOCATION: <u>110' FNL 890' FEL</u>	<u>A</u>	<u>35</u>	<u>23S</u>	<u>31E</u>
FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE

**WELLBORE SCHEMATIC**

CAL MON MDP1 35 FEDERAL 005H

**WELL CONSTRUCTION DATA**Surface CasingHole Size: 17.5" Casing Size: 13-3/8"Cemented with: 1045 sx. **or** \_\_\_\_\_ ft<sup>3</sup>Top of Cement: SURFACE Method Determined: CIRCIntermediate CasingHole Size: 12.25" Casing Size: 9-5/8"Cemented with: 1365 sx. **or** \_\_\_\_\_ ft<sup>3</sup>Top of Cement: SURFACE Method Determined: CIRCProduction CasingHole Size: 8.5" Casing Size: 5.5"Cemented with: 2025 sx. **or** \_\_\_\_\_ ft<sup>3</sup>Top of Cement: 470' Method Determined: CBLTotal Depth: 14,832' MD/10,147' TVDInjection Interval10,130' MD/10,012' TVD feet to 14,676' MD/10,147' TVD

(Perforated or Open Hole; indicate which)



Side 2

PERFTubing Size: 2-7/8" Lining Material: \_\_\_\_\_Type of Packer: WATSON AS1X 10K PACKER 20-23# 5.5"Packer Setting Depth: 9710' MD/9700' TVD

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

Additional Data

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

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

PRODUCER-OIL

2. Name of the Injection Formation: \_\_\_\_\_

3. Name of Field or Pool (if applicable): [13367] COTTON DRAW; BONE SPRING

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: \_\_\_\_\_

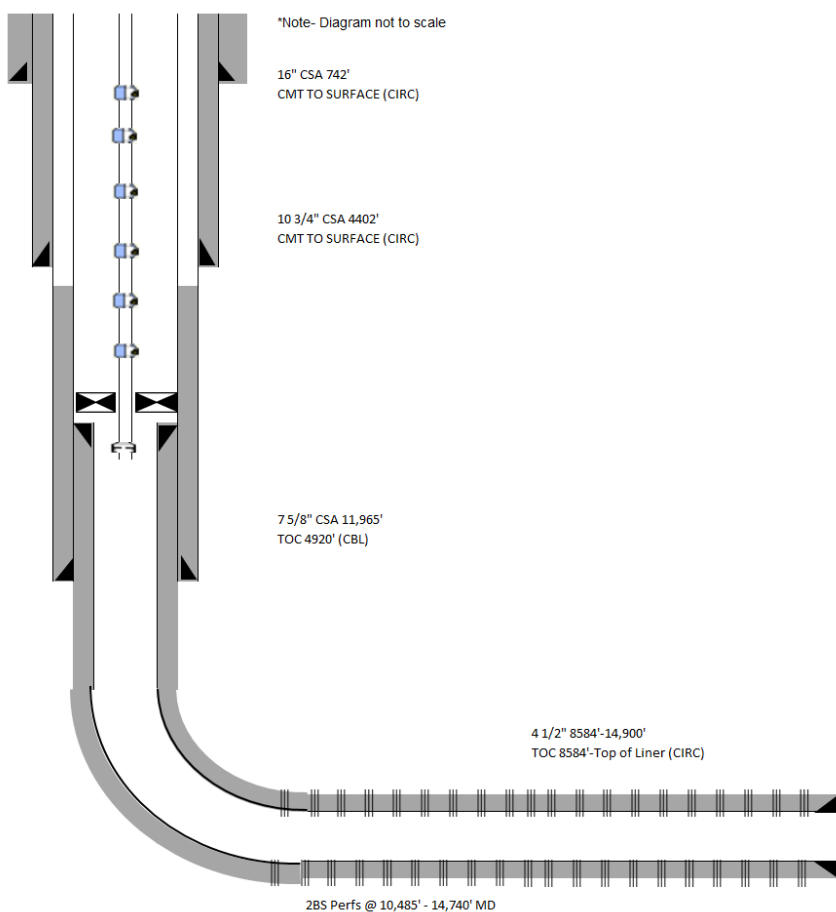
Side 1

OPERATOR: OXY USA INCWELL NAME & NUMBER: CAL MON 35 FEDERAL 41H

WELL LOCATION:	250' FNL 710' FWL	D	35	23S	31E
	FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE

**WELLBORE SCHEMATIC****WELL CONSTRUCTION DATA**Surface Casing

CAL MON 35 FEDERAL 41H

Hole Size: 18.5" Casing Size: 16"Cemented with: 700 sx. *or*  ft<sup>3</sup>Top of Cement: SURFACE Method Determined: CIRCIntermediate CasingHole Size: 13.5" Casing Size: 10-3/4"Cemented with: 2420 sx. *or*  ft<sup>3</sup>Top of Cement: SURFACE Method Determined: CIRCProduction CasingHole Size: 9.875" / 6.75" Casing Size: 7-5/8" / 4-1/2"Cemented with: 3270 / 620 sx. *or*  ft<sup>3</sup>Top of Cement: 4920' / 8584' Method Determined: CBL / CIRCTotal Depth: 14,820' MD/10,387' TVDInjection Interval10,485' MD/10,295' TVD feet to 14,740' MD/10,385' TVD

(Perforated or Open Hole; indicate which)

Side 2

PERFTubing Size: 2-7/8" Lining Material: \_\_\_\_\_Type of Packer: WEATHERFORD AS-1X PACKERPacker Setting Depth: 8477' MD/8477' TVD

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

Additional Data

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

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

PRODUCER-OIL

2. Name of the Injection Formation: \_\_\_\_\_

3. Name of Field or Pool (if applicable): [13740] COTTON DRAW; BONE SPRING

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: \_\_\_\_\_

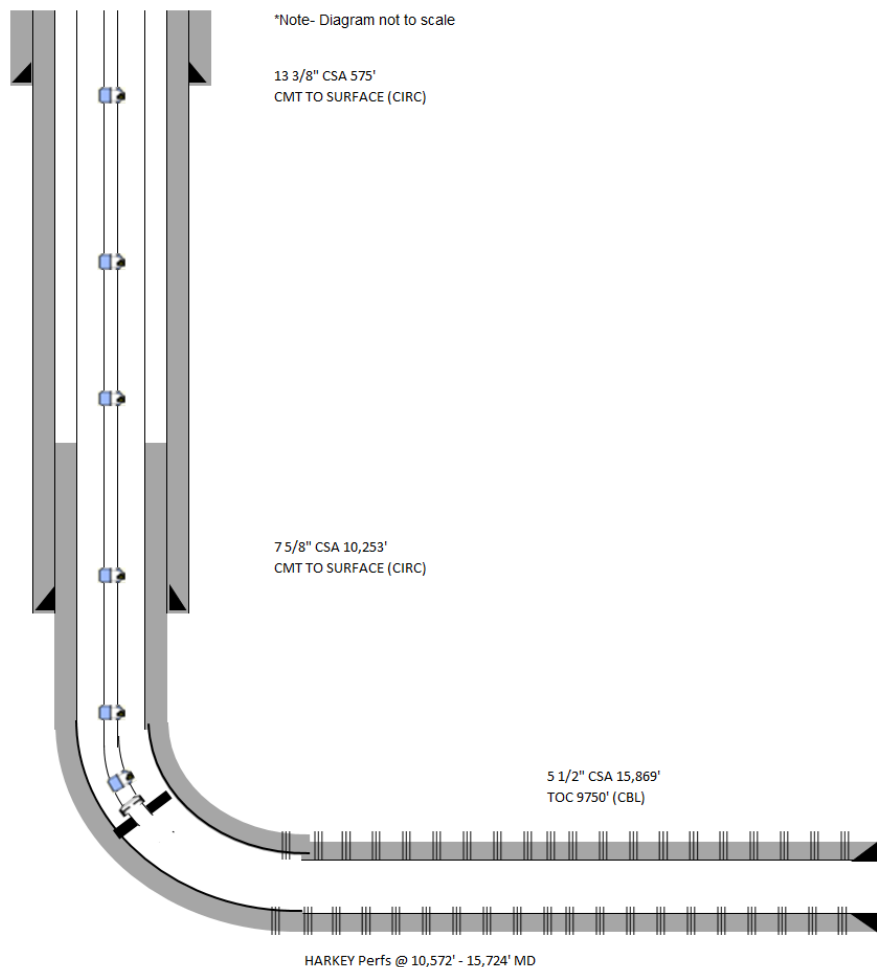
Side 1

OPERATOR: OXY USA INCWELL NAME & NUMBER: CAL MON 35 FEDERAL 175H

WELL LOCATION: <u>110' FNL 615' FEL</u>	<u>A</u>	<u>35</u>	<u>23S</u>	<u>31E</u>
FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE

**WELLBORE SCHEMATIC****WELL CONSTRUCTION DATA**Surface Casing

CAL MON 35 FEDERAL 175H

Hole Size: 14.75" Casing Size: 10-3/4"Cemented with: 575 sx. **or** \_\_\_\_\_ ft<sup>3</sup>Top of Cement: SURFACE Method Determined: CIRCIntermediate CasingHole Size: 9.875" Casing Size: 7-5/8"Cemented with: 2055 sx. **or** \_\_\_\_\_ ft<sup>3</sup>Top of Cement: SURFACE Method Determined: CIRCProduction CasingHole Size: 6.75" Casing Size: 5.5" / 4.5"Cemented with: 670 sx. **or** \_\_\_\_\_ ft<sup>3</sup>Top of Cement: 9750' Method Determined: CBLTotal Depth: 15,869' MD/10,973' TVDInjection Interval10,572' MD/10,549' TVD feet to 15,724' MD/10,973' TVD

(Perforated or Open Hole; indicate which)

Side 2

PERFTubing Size: 2-7/8" Lining Material: \_\_\_\_\_Type of Packer: AS1-X PACKER 5.5"Packer Setting Depth: 10,440' MD/10,421' TVD

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

Additional Data

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

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

PRODUCER-OIL

2. Name of the Injection Formation: \_\_\_\_\_

3. Name of Field or Pool (if applicable): [98236] WC-015 G-08 S233135D; WOLFCAMP

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: \_\_\_\_\_

Side 1

OPERATOR: OXY USA INCWELL NAME & NUMBER: IRIDIUM MDP1 28 21 FEDERAL COM 021H

WELL LOCATION:	610' FSL 648' FWL	M	28	23S	31E
	FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE

**WELLBORE SCHEMATIC****WELL CONSTRUCTION DATA**Surface Casing

IRIDIUM MDP1 28 21 FEDERAL COM 21H

\*Note- Diagram not to scale

13-3/8" CSA 628'  
CMT TO SURFACE (CIRC)9-5/8" CSA 4278'  
CMT TO SURFACE (CIRC)7 5/8" CSA 8180'  
CMT TO SURFACE (CIRC)5 1/2" CSA 19,047'  
TOC 5350' (CBL)

AVALON Perfs @ 8835' - 18,933' MD

Hole Size: 17.5" Casing Size: 13-3/8"Cemented with: 862 sx. **or**  ft<sup>3</sup>Top of Cement: SURFACE Method Determined: CIRCIntermediate CasingHole Size: 12.25" / 8.5" Casing Size: 9-5/8" / 7-5/8"Cemented with: 1450 / 687 sx. **or**  ft<sup>3</sup>Top of Cement: SURFACE Method Determined: CIRCProduction CasingHole Size: 6.75" Casing Size: 5.5"Cemented with: 705 sx. **or**  ft<sup>3</sup>Top of Cement: 5350' Method Determined: CBLTotal Depth: 19,047' MD/8689' TVDInjection Interval8835' MD/8664' TVD feet to 18,933' MD/8688' TVD

(Perforated or Open Hole; indicate which)

Side 2

PERFTubing Size: 2-7/8" Lining Material: \_\_\_\_\_Type of Packer: WATSON AS1X 10K PACKER 20-23# 5.5"Packer Setting Depth: 7997' MD/7910' TVD

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

Additional Data

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

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

PRODUCER-OIL

2. Name of the Injection Formation: \_\_\_\_\_

3. Name of Field or Pool (if applicable): [33740] INGLE WELLS; BONE SPRING

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: \_\_\_\_\_

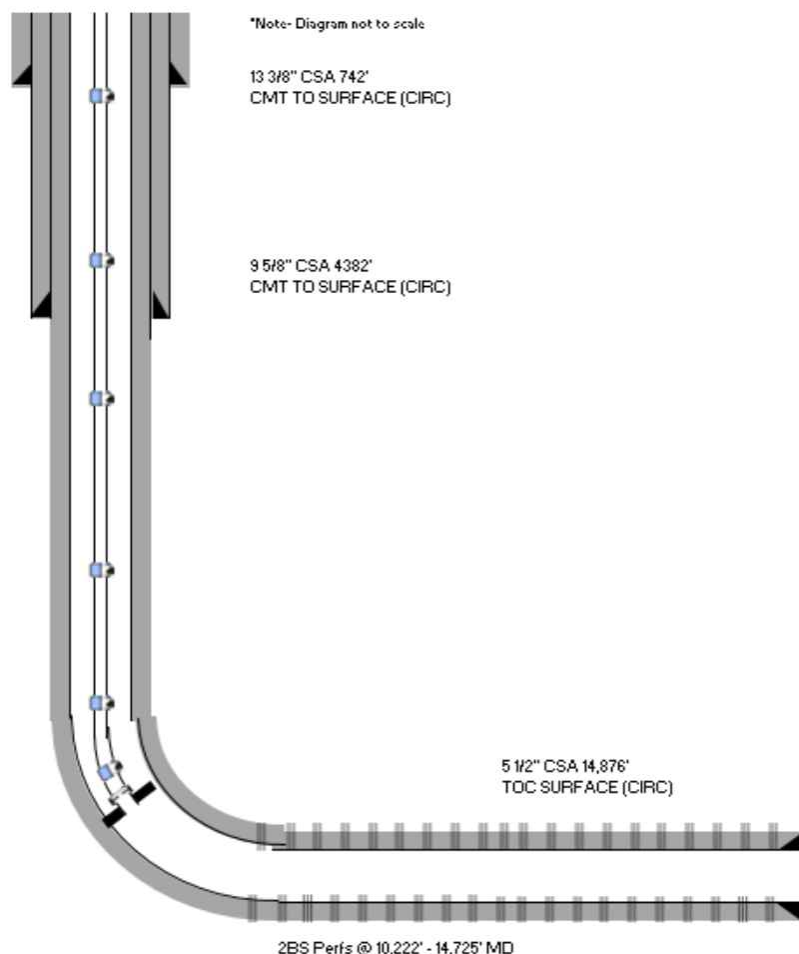
Side 1

OPERATOR: OXY USA INCWELL NAME & NUMBER: CAL MON MDP1 35 FEDERAL 1H

WELL LOCATION: <u>227' FNL 1077' FWL</u>	<u>D</u>	<u>35</u>	<u>23S</u>	<u>31E</u>
FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE

**WELLBORE SCHEMATIC****WELL CONSTRUCTION DATA**Surface Casing

CAL MON MDP1 35 FEDERAL 001H

Hole Size: 17.5" Casing Size: 13-3/8"Cemented with: 960 sx. **or**                      ft<sup>3</sup>Top of Cement: SURFACE Method Determined: CIRCIntermediate CasingHole Size: 12.25" Casing Size: 9-5/8"Cemented with: 1380 sx. **or**                      ft<sup>3</sup>Top of Cement: SURFACE Method Determined: CIRCProduction CasingHole Size: 8.5" Casing Size: 5.5"Cemented with: 2565 sx. **or**                      ft<sup>3</sup>Top of Cement: SURFACE Method Determined: CIRCTotal Depth: 14,876' MD/10,101' TVDInjection Interval10,222' MD/10,028' TVD feet to 14,725' MD/10,098' TVD

(Perforated or Open Hole; indicate which)



Side 2

PERFTubing Size: 2-7/8" Lining Material: \_\_\_\_\_Type of Packer: WATSON AS1X 10K PACKER 20-23# 5.5"Packer Setting Depth: 9781' MD/9712' TVD

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

Additional Data

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

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

PRODUCER-OIL

2. Name of the Injection Formation: \_\_\_\_\_

3. Name of Field or Pool (if applicable): [13367] COTTON DRAW; BONE SPRING

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: \_\_\_\_\_

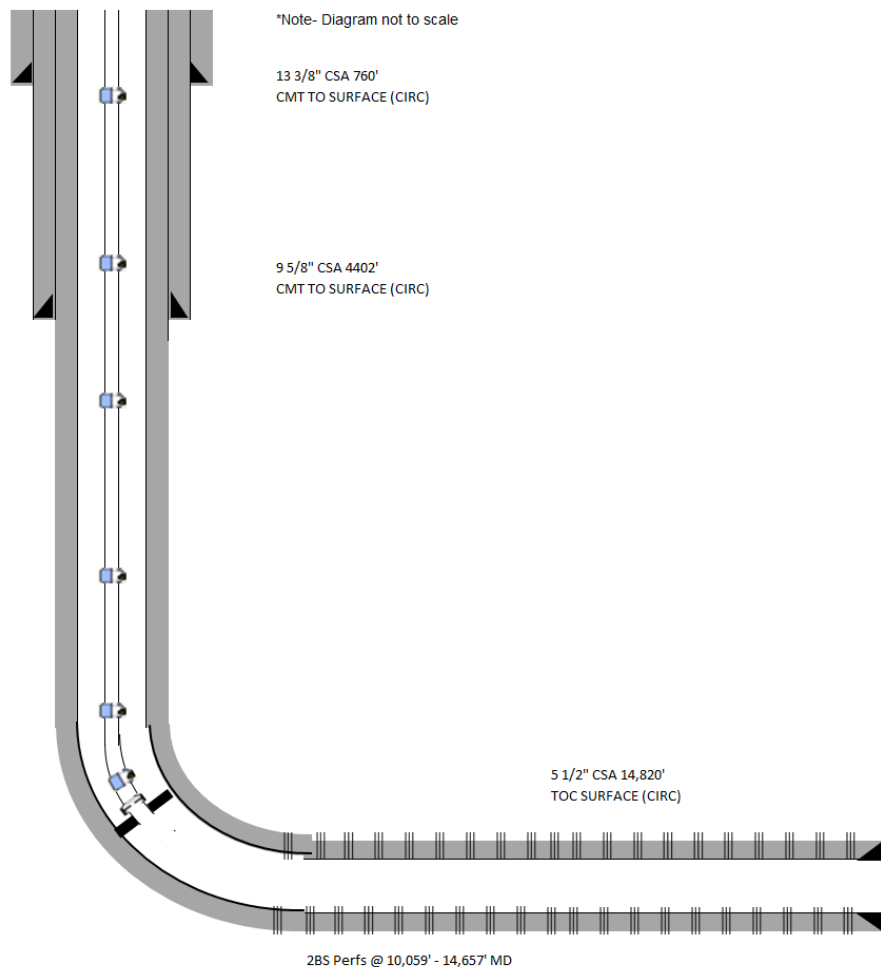
Side 1

OPERATOR: OXY USA INCWELL NAME & NUMBER: CAL MON MDP1 35 FEDERAL 2H

WELL LOCATION: <u>227' FNL 1112' FWL</u>	<u>D</u>	<u>35</u>	<u>23S</u>	<u>31E</u>
FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE

**WELLBORE SCHEMATIC**

CAL MON MDP1 35 FEDERAL 002H

**WELL CONSTRUCTION DATA**Surface CasingHole Size: 17.5" Casing Size: 13-3/8"Cemented with: 920 sx. **or**                      ft<sup>3</sup>Top of Cement: SURFACE Method Determined: CIRCIntermediate CasingHole Size: 12.25" Casing Size: 9-5/8"Cemented with: 1380 sx. **or**                      ft<sup>3</sup>Top of Cement: SURFACE Method Determined: CIRCProduction CasingHole Size: 8.5 Casing Size: 5.5"Cemented with: 2628 sx. **or**                      ft<sup>3</sup>Top of Cement: SURFACE Method Determined: CIRCTotal Depth: 14,820' MD/10,101' TVDInjection Interval10,059' MD/9940' TVD feet to 14,657' MD/10,101' TVD

(Perforated or Open Hole; indicate which)

Side 2

PERFTubing Size: 2-7/8" Lining Material: \_\_\_\_\_Type of Packer: WATSON AS1X 10K PACKER 20-23# 5.5"Packer Setting Depth: 9759' MD/9726' TVD

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

Additional Data

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

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

PRODUCER-OIL

2. Name of the Injection Formation: \_\_\_\_\_

3. Name of Field or Pool (if applicable): [13367] COTTON DRAW; BONE SPRING

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: \_\_\_\_\_

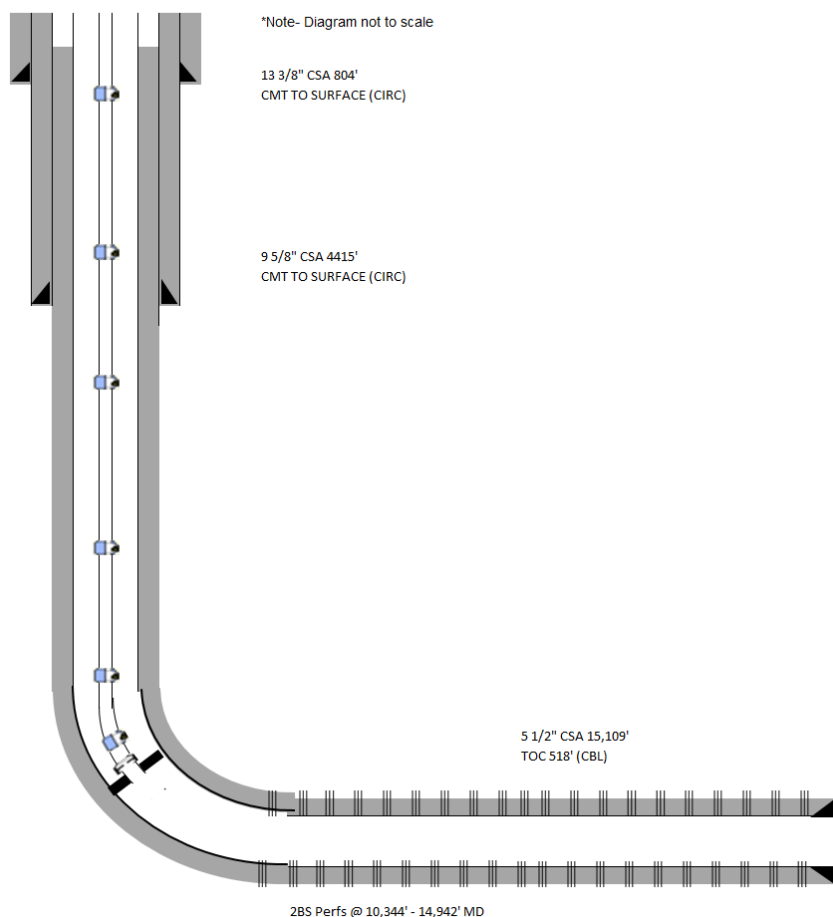
Side 1

OPERATOR: OXY USA INCWELL NAME & NUMBER: CAL MON MDP1 35 FEDERAL 4H

WELL LOCATION: <u>120' FNL 2624' FWL</u>	<u>C</u>	<u>35</u>	<u>23S</u>	<u>31E</u>
FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE

**WELLBORE SCHEMATIC****WELL CONSTRUCTION DATA**Surface Casing

CAL MON MDP1 35 FEDERAL 004H

Hole Size: 17.5" Casing Size: 13-3/8"Cemented with: 804 sx. *or* \_\_\_\_\_ ft<sup>3</sup>Top of Cement: SURFACE Method Determined: CIRCIntermediate CasingHole Size: 12.25" Casing Size: 9-5/8"Cemented with: 1245 sx. *or* \_\_\_\_\_ ft<sup>3</sup>Top of Cement: SURFACE Method Determined: CIRCProduction CasingHole Size: 8.5" Casing Size: 5.5"Cemented with: 2225 sx. *or* \_\_\_\_\_ ft<sup>3</sup>Top of Cement: 518' Method Determined: CBLTotal Depth: 15,109' MD/10,366' TVDInjection Interval10,344' MD/10,226' TVD feet to 14,942' MD/10,368' TVD

(Perforated or Open Hole; indicate which)

Side 2

PERFTubing Size: 2-7/8" Lining Material: \_\_\_\_\_Type of Packer: WATSON AS1X 10K PACKER 20-23# 5.5"Packer Setting Depth: 10,038' MD/9991 TVD

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

Additional Data

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

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

PRODUCER-OIL

2. Name of the Injection Formation: \_\_\_\_\_

3. Name of Field or Pool (if applicable): [13367] COTTON DRAW; BONE SPRING

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: \_\_\_\_\_

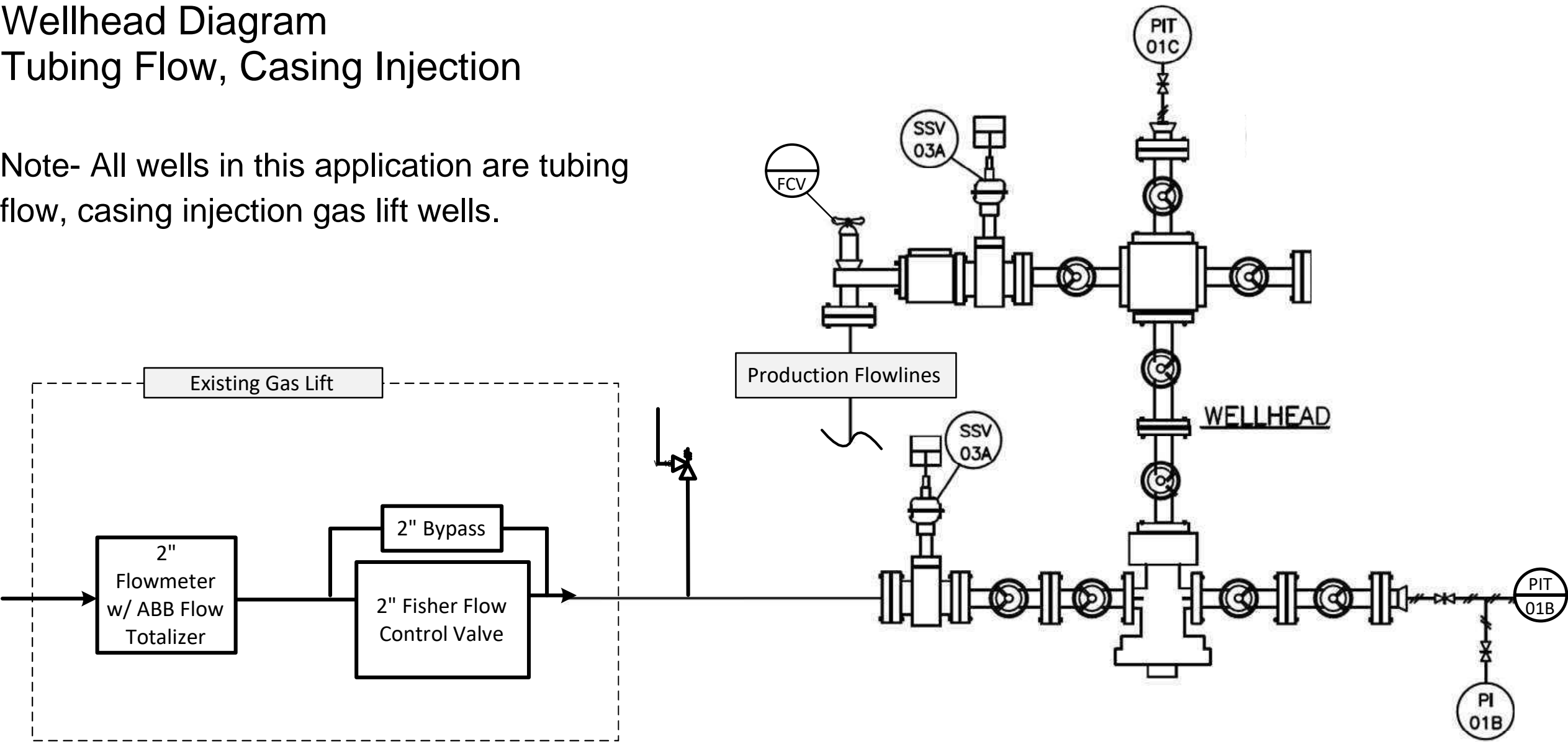
Max Allowable Surface Pressure (MASP) Table  
North Corridor

	Column	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	Calculation									(1+6*7)/8		1/10				(1+12*13)/(12*14)	
API10	Well Name	Proposed Max Allowable Surface Pressure (MASP) (PSI)	Current Average Surface Pressure (PSI)	Max Achievable Surface Pressure, Current Infrastructure (PSI)	Proposed Average Injection Rate (MMSCFD)	Proposed Max Injection Rate (MMSCFD)	Burst Calculation Depth (FT TVD)	Brine Pressure Gradient (PSI/FT)	Casing or Liner Burst (PSI)	MASP + Reservoir Brine Hydrostatic as a percentage of Casing or Liner Burst Pressure (%)	Top Perforation Depth (FT TVD)	MASP Gradient (PSI/FT)	Top Perforation Depth (FT TVD)	Gas Pressure Gradient (PSI/FT)	Formation Parting Pressure Gradient (PSI/FT)	MASP + Gas Hydrostatic as a percentage of Formation Parting Pressure (%)	
	3001544771	CALMON-35-1H	1,250	860	1,250	1.8	2.0	10,028	0.468	12,360	48%	10,028	0.125	10,028	0.200	0.650	50%
	3001544772	CALMON-35-2H	1,250	730	1,250	1.8	2.0	9,940	0.468	12,360	48%	9,940	0.126	9,940	0.200	0.650	50%
	3001543140	CAL-MON41HST	1,250	570	1,250	1.8	2.0	8,584	0.468	6,890	76%	10,295	0.121	10,295	0.200	0.650	49%
	3001545074	IRI28-21-21H	1,250	560	1,250	1.8	3.0	8,664	0.468	12,360	43%	8,664	0.144	8,664	0.200	0.650	53%
	3001545524	CAL-MON-175H	1,250	775	1,250	1.8	2.0	10,549	0.468	12,360	50%	10,549	0.118	10,549	0.200	0.650	49%
	3001544774	CALMON-35-4H	1,250	810	1,250	1.8	2.0	10,226	0.468	12,360	49%	10,226	0.122	10,226	0.200	0.650	50%
	3001544775	CALMON-35-5H	1,250	755	1,250	1.8	2.0	10,012	0.468	12,360	48%	10,012	0.125	10,012	0.200	0.650	50%

# Wellhead Diagram

## Tubing Flow, Casing Injection

Note- All wells in this application are tubing flow, casing injection gas lift wells.



KEY
SSV – Safety Shutdown Valve
PI – Pressure Indicator
PIT – Pressure Indicating Transmitter
FCV- Flow Control Valve

Mechanical Integrity Test (MIT) Summary Table

API10	Well Name	MIT #1		MIT #2	
		Date	Surface Pressure	Date	Surface Pressure
3001544771	CALMON-35-1H	5/18/2018	9800 psi for 30 min		
3001544772	CALMON-35-2H	5/18/2018	9800 psi for 30 min	5/22/2018	CBL run from 10,344' to surface with 1000 psi
3001543140	CAL-MON41HST	8/22/2017	9500 psi for 30 min	8/24/2017	1000 psi, no time given
3001545074	IRI28-21-21H	12/5/2018	9800 psi for 30 min	12/5/2018	CBL run from TD to surface with 1000 psi
3001545524	CAL-MON-175H	3/5/2019	9800 psi for 30 min		
3001544774	CALMON-35-4H	5/5/2018	9800 psi for 30 min	5/6/2018	CBL run from TD to surface with 1000 psi
3001544775	CALMON-35-5H	4/21/2018	9800 psi for 30 min	4/22/2018	CBL run from 9700' to surface with 1000 psi



# Gas Analysis and Operations

## Iridium/Calmon Gas Source Well List

Name	Route Name	API 14
CAL-MON 018	SE_CALMON ROUTE	30015280260000
STERLING SILVER 34 003	SE_CALMON ROUTE	30015279370000
CAL MON MDP1 35 FED 001H	SE_CALMON ROUTE	30015447710000
CAL MON MDP1 35 FED 002H	SE_CALMON ROUTE	30015447720000
CAL MON MDP1 35 FED 003H	SE_CALMON ROUTE	30015447730000
CAL MON MDP1 35 FED 004H	SE_CALMON ROUTE	30015447740000
CAL MON MDP1 35 FED 005H	SE_CALMON ROUTE	30015447750000
CAL MON MDP1 35 FED 006H	SE_CALMON ROUTE	30015447760000
CAL-MON 006	SE_CALMON ROUTE	30015268850000
CAL-MON 007	SE_CALMON ROUTE	30015270810000
CAL-MON 008	SE_CALMON ROUTE	30015271130000
CAL-MON 009	SE_CALMON ROUTE	30015272060000
CAL-MON 010	SE_CALMON ROUTE	30015272690000
CAL-MON 011	SE_CALMON ROUTE	30015272230000
CAL-MON 012Q	SE_CALMON ROUTE	30015316450000
CAL-MON 017	SE_CALMON ROUTE	30015280240000
TRIPLE S 33 FEDERAL 001	SE_CALMON ROUTE	30015257690000
CAL-MON 019	SE_CALMON ROUTE	30015274960000
CAL-MON 020	SE_CALMON ROUTE	30015275490000
CAL-MON 35 FED 171H	SE_CALMON ROUTE	30015442690100
CAL-MON 35 FED 172H	SE_CALMON ROUTE	30015455210000
CAL-MON 35 FED 173H	SE_CALMON ROUTE	30015455220000
CAL-MON 35 FED 174H	SE_CALMON ROUTE	30015455230000
CAL-MON 35 FED 175H	SE_CALMON ROUTE	30015455240000
CAL-MON 35 FED 176H ST	SE_CALMON ROUTE	30015455250100
CAL-MON FEDERAL 35 41H ST2	SE_CALMON ROUTE	30015431400200
STERLING SILVER 33 017	SE_CALMON ROUTE	30015338920000
STERLING SILVER 33 011	SE_CALMON ROUTE	30015276110000
FNR 26 FEDERAL #2H	SE_CALMON ROUTE	30015416470000
FNR 26 FEDERAL #4H	SE_CALMON ROUTE	30015410120000
FNR 26 FEDERAL 001	SE_CALMON ROUTE	30015304120000
FNR 35 FEDERAL #1H	SE_CALMON ROUTE	30015422750000
FNR 35 FEDERAL #3H	SE_CALMON ROUTE	30015422980000
IRIDIUM MDP1 28-21 FED COM 11H	SE_GOLD ROUTE	30015450730100
IRIDIUM MDP1 28-21 FED COM 171H	SE_GOLD ROUTE	30015450760100
IRIDIUM MDP1 28-21 FED COM 21H	SE_GOLD ROUTE	30015450740000
IRIDIUM MDP1 28-21 FED COM 41H	SE_GOLD ROUTE	30015450750000
IRIDIUM MDP1 28-21 FEDERAL COM 173H	SE_GOLD ROUTE	30015452490000
IRIDIUM MDP1 28-21 FEDERAL COM 175H	SE_GOLD ROUTE	30015453330000
IRIDIUM MDP1 28-21 FEDERAL COM 176H	SE_GOLD ROUTE	30015453340000
IRIDIUM MDP1 28-21 FEDERAL COM 1H	SE_GOLD ROUTE	30015452420000
IRIDIUM MDP1 28-21 FEDERAL COM 2H	SE_GOLD ROUTE	30015452430000
IRIDIUM MDP1 28-21 FEDERAL COM 3H	SE_GOLD ROUTE	30015452440000
IRIDIUM MDP1 28-21 FEDERAL COM 4H	SE_GOLD ROUTE	30015452450000

IRIDIUM MDP1 28-21 FEDERAL COM 5H	SE_GOLD ROUTE	30015452460000
IRIDIUM MDP1 28-21 FEDERAL COM 6H	SE_GOLD ROUTE	30015452470000
PLATINUM MDP1 34-3 FED COM 13H	SE_PLATINUM ROUTE	30015461790000
PLATINUM MDP1 34-3 FED COM 14H	SE_PLATINUM ROUTE	30015461800000
PLATINUM MDP1 34-3 FED COM 171H	SE_PLATINUM ROUTE	30015452300000
PLATINUM MDP1 34-3 FED COM 172H	SE_PLATINUM ROUTE	30015452310000
PLATINUM MDP1 34-3 FED COM 174H	SE_PLATINUM ROUTE	30015452320000
PLATINUM MDP1 34-3 FED COM 175H	SE_PLATINUM ROUTE	30015452510000
PLATINUM MDP1 34-3 FED COM 176H	SE_PLATINUM ROUTE	30015452330000
PLATINUM MDP1 34-3 FED COM 177H	SE_PLATINUM ROUTE	30015460460000
PLATINUM MDP1 34-3 FED COM 1H	SE_PLATINUM ROUTE	30015452260000
PLATINUM MDP1 34-3 FED COM 23H	SE_PLATINUM ROUTE	30015461920000
PLATINUM MDP1 34-3 FED COM 24H	SE_PLATINUM ROUTE	30015461930000
PLATINUM MDP1 34-3 FED COM 25H	SE_PLATINUM ROUTE	30015465580000
PLATINUM MDP1 34-3 FED COM 26H	SE_PLATINUM ROUTE	30015465590000
PLATINUM MDP1 34-3 FED COM 2H	SE_PLATINUM ROUTE	30015452270000
PLATINUM MDP1 34-3 FED COM 3H	SE_PLATINUM ROUTE	30015452280000
PLATINUM MDP1 34-3 FED COM 4H	SE_PLATINUM ROUTE	30015452290000
PLATINUM MDP1 34-3 FED COM 5H	SE_PLATINUM ROUTE	30015451710000
PLATINUM MDP1 34-3 FED COM 6H	SE_PLATINUM ROUTE	30015451720000
PLATINUM MDP1 34-3 FED COM 7H	SE_PLATINUM ROUTE	30015452500000
STERLING SILVER 33 FED 012	SE_CALMON ROUTE	30015349430000
STERLING SILVER 3 006	SE_CALMON ROUTE	30015276380000
STERLING SILVER 33 005	SE_CALMON ROUTE	30015274240000
PURE GOLD MDP1 29-17 FEDERAL COM 1H	SE_GOLD ROUTE	30015456450000
PURE GOLD MDP1 29-17 FEDERAL COM 2H	SE_GOLD ROUTE	30015456460000
PURE GOLD MDP1 29-17 FEDERAL COM 3H	SE_GOLD ROUTE	30015456470000
PURE GOLD MDP1 29-17 FEDERAL COM 4H	SE_GOLD ROUTE	30015456480000
PURE GOLD MDP1 29-17 FEDERAL COM 5H	SE_GOLD ROUTE	30015456490000
PURE GOLD MDP1 29-17 FEDERAL COM 6H	SE_GOLD ROUTE	30015456500000
STERLING SILVER 3 007	SE_CALMON ROUTE	30015277140000
STERLING SILVER 3 001	SE_CALMON ROUTE	30015258310000
STERLING SILVER 3 002	SE_CALMON ROUTE	30015282820000
STERLING SILVER 3 003	SE_CALMON ROUTE	30015281840000
STERLING SILVER 3 004	SE_CALMON ROUTE	30015282830000
STERLING SILVER 3 005	SE_CALMON ROUTE	30015276370000
STERLING SILVER 33 006	SE_CALMON ROUTE	30015278120000
STERLING SILVER 3 008Q	SE_CALMON ROUTE	30015324770000
STERLING SILVER 33 002	SE_CALMON ROUTE	30015256960000
STERLING SILVER 33 007	SE_CALMON ROUTE	30015275880000
STERLING SILVER 33 008	SE_CALMON ROUTE	30015276010000
STERLING SILVER 33 009	SE_CALMON ROUTE	30015339750001
STERLING SILVER 33 010	SE_CALMON ROUTE	30015275500000
STERLING SILVER 33 014	SE_CALMON ROUTE	30015275520000
STERLING SILVER 33 015	SE_CALMON ROUTE	30015292750000
STERLING SILVER 33 016	SE_CALMON ROUTE	30015310910000
STERLING SILVER 33 018	SE_CALMON ROUTE	30015327670000

STERLING SILVER 33 FEDERAL 001H	SE_CALMON ROUTE	30015398310100
STERLING SILVER 34 002	SE_CALMON ROUTE	30015279360000
STERLING SILVER 34 004	SE_CALMON ROUTE	30015310920000
STERLING SILVER 34 005	SE_CALMON ROUTE	30015282400000
STERLING SILVER 34 006	SE_CALMON ROUTE	30015282390000
STERLING SILVER 34 007	SE_CALMON ROUTE	30015312480000
STERLING SILVER 34 008	SE_CALMON ROUTE	30015310930000
STERLING SILVER MDP1 33-4 FED COM 171H	SE_SILVER ROUTE	30015453360000
STERLING SILVER MDP1 33-4 FED COM 172H ST1	SE_SILVER ROUTE	30015453370100
STERLING SILVER MDP1 33-4 FED COM 175H	SE_SILVER ROUTE	30015453880000
STERLING SILVER MDP1 33-4 FED COM 177H	SE_SILVER ROUTE	30015460470000
STERLING SILVER MDP1 33-4 FED COM 178H	SE_SILVER ROUTE	30015460480000
STERLING SILVER MDP1 33-4 FED COM 1H	SE_SILVER ROUTE	30015453350000
STERLING SILVER MDP1 33-4 FED COM 2H	SE_SILVER ROUTE	30015453900000
STERLING SILVER MDP1 33-4 FED COM 3H	SE_SILVER ROUTE	30015453910000
STERLING SILVER MDP1 33-4 FED COM 5H	SE_SILVER ROUTE	30015453930000
STERLING SILVER MDP1 33-4 FED COM 6H	SE_SILVER ROUTE	30015453860000
STERLING SILVER MDP1 33-4 FED COM 7H	SE_SILVER ROUTE	30015453890000
STERLING SILVER MDP1 33-4 FED COM 8H	SE_SILVER ROUTE	30015453870000

## North Corridor Gas Analysis Summary

- All producing wells flow to the following Central Tank Batteries (CTB).
  - Gold CTB
  - Iridium CTB
  - Silver CTB
  - Precious CTB
  - Platinum CTB
  - Calmon CTB
- Gas flows into the low-pressure gas pipeline to the following Compressor Gas Lift Stations (CGL's).
  - Boo CGL Station
  - North Corridor 28 West CGL Station
  - North Corridor East CGL Station
  - Calmon CGL Station
- The CGL's combine downstream in the same gas lift line to feed wells collectively.
- Gas analysis is provided for:
  - Boo CGL Station
  - North Corridor 28 West CGL Station
  - North Corridor East CGL Station
  - Cal Mon Gas Lift Meter
  - Avalon production
  - 2<sup>nd</sup> Bone Spring production
  - Harkey production

Boo CGL



## Certificate of Analysis

Number: 6030-21050197-001A

Artesia Laboratory

200 E Main St.

Artesia, NM 88210

Phone 575-746-3481

Chandler Montgomery  
Occidental Petroleum  
1502 W Commerce Dr.  
Carlsbad, NM 88220

May 21, 2021

Field: Boo  
Station Name: Oxy Boo Outlet  
Station Number: 17521C  
Station Location: Comp Station  
Sample Point: Meter  
Formation: Monthly  
County: Eddy  
Type of Sample: : Spot-Cylinder  
Heat Trace Used: N/A  
Sampling Method: : Fill and Purge  
Sampling Company: : SPL

Sampled By: Michael Mirabal  
Sample Of: Gas Spot  
Sample Date: 05/19/2021 02:42  
Sample Conditions: 1301 psia, @ 119 °F Ambient: 84 °F  
Effective Date: 05/19/2021 02:42  
Method: GPA-2261M  
Cylinder No: 1111-001214  
Instrument: 70104124 (Inficon GC-MicroFusion)  
Last Inst. Cal.: 05/18/2021 0:00 AM  
Analyzed: 05/21/2021 13:44:58 by EJ R

## Analytical Data

Components	Un-normalized Mol %	Mol. %	Wt. %	GPM at 14.65 psia		
Hydrogen Sulfide	0.000	0.000	0.000		GPM TOTAL C2+	7.295
Nitrogen	1.812	1.812	2.233		GPM TOTAL C3+	3.584
Methane	71.345	71.345	50.341		GPM TOTAL iC5+	0.501
Carbon Dioxide	0.939	0.939	1.818			
Ethane	13.898	13.898	18.381	3.711		
Propane	7.529	7.529	14.603	2.071		
Iso-butane	0.948	0.948	2.424	0.310		
n-Butane	2.231	2.231	5.704	0.702		
Iso-pentane	0.443	0.443	1.406	0.162		
n-Pentane	0.448	0.448	1.422	0.162		
Hexanes Plus	0.407	0.407	1.668	0.177		
	100.000	100.000	100.000	7.295		

## Calculated Physical Properties

Relative Density Real Gas	Total	C6+
	0.7880	3.2176
Calculated Molecular Weight	22.74	93.19
Compressibility Factor	0.9959	

## GPA 2172 Calculation:

Calculated Gross BTU per ft<sup>3</sup> @ 14.65 psia & 60°F

Real Gas Dry BTU	1317	5113
Water Sat. Gas Base BTU	1295	5024
Ideal, Gross HV - Dry at 14.65 psia	1312.0	5113.2
Ideal, Gross HV - Wet	1289.0	5023.7
Net BTU Dry Gas - real gas	1197	
Net BTU Wet Gas - real gas	1177	

Comments: H2S Field Content 0 ppm  
Mcf/day 34643

Report generated by: Eric Ramirez

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.



## Certificate of Analysis

Number: 6030-21050197-003A

Artesia Laboratory

200 E Main St.

Artesia, NM 88210

Phone 575-746-3481

Chandler Montgomery  
Occidental Petroleum  
1502 W Commerce Dr.  
Carlsbad, NM 88220

May 21, 2021

Field: Pure Gold  
Station Name: Sand Dunes NCW CGL  
Station Number: 17505C  
Station Location: Comp Station  
Sample Point: Meter  
Formation: Monthly  
County: Eddy  
Type of Sample: : Spot-Cylinder  
Heat Trace Used: N/A  
Sampling Method: : Fill and Purge  
Sampling Company: : SPL

Sampled By: Michael Mirabal  
Sample Of: Gas Spot  
Sample Date: 05/19/2021 02:19  
Sample Conditions: 84 psia, @ 81 °F Ambient: 85 °F  
Effective Date: 05/19/2021 02:19  
Method: GPA-2261M  
Cylinder No: 5030-00508  
Instrument: 6030\_GC6 (Inficon GC-3000 Micro)  
Last Inst. Cal.: 05/03/2021 0:00 AM  
Analyzed: 05/21/2021 13:45:47 by KNF

## Analytical Data

Components	Un-normalized Mol %	Mol. %	Wt. %	GPM at 14.65 psia		
Hydrogen Sulfide	0.000	0.000	0.000		GPM TOTAL C2+	7.239
Nitrogen	2.330	2.344	2.830		GPM TOTAL C3+	3.828
Methane	70.698	71.109	49.168		GPM TOTAL iC5+	0.796
Carbon Dioxide	1.258	1.265	2.400			
Ethane	12.700	12.774	16.556	3.411		
Propane	7.072	7.113	13.519	1.957		
Iso-butane	0.952	0.958	2.400	0.313		
n-Butane	2.406	2.420	6.063	0.762		
Iso-pentane	0.554	0.557	1.732	0.203		
n-Pentane	0.585	0.588	1.829	0.213		
Hexanes Plus	0.867	0.872	3.503	0.380		
	99.422	100.000	100.000	7.239		

## Calculated Physical Properties

Relative Density Real Gas	0.8042	C6+	3.2176
Calculated Molecular Weight	23.20		93.19
Compressibility Factor	0.9957		

## GPA 2172 Calculation:

Calculated Gross BTU per ft<sup>3</sup> @ 14.65 psia & 60°F

Real Gas Dry BTU	1325	5113
Water Sat. Gas Base BTU	1303	5024
Ideal, Gross HV - Dry at 14.65 psia	1319.8	5113.2
Ideal, Gross HV - Wet	1296.7	5023.7
Net BTU Dry Gas - real gas	1205	
Net BTU Wet Gas - real gas	1184	

Comments: H2S Field Content 0 ppm  
Mcf/day 20921

Report generated by: Eric Ramirez

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.

NC East CGL



## Certificate of Analysis

Number: 6030-20120099-004A

Artesia Laboratory

200 E Main St.

Artesia, NM 88210

Phone 575-746-3481

Chandler Montgomery  
Occidental Petroleum  
1502 W Commerce Dr.  
Carlsbad, NM 88220

Dec. 15, 2020

Field: Sundance  
Station Name: Sand Dunes NCE CGL Check  
Station Number: 17500C  
Station Location: OXY  
Sample Point: Downstream  
Formation: Monthly  
County: Eddy  
Type of Sample: : Spot-Cylinder  
Heat Trace Used: N/A  
Sampling Method: : Fill and Purge  
Sampling Company: : SPL

Sampled By: Michael Mirabal  
Sample Of: Gas Spot  
Sample Date: 12/11/2020 02:17  
Sample Conditions: 94 psia, @ 66 °F Ambient: 62 °F  
Effective Date: 12/11/2020 02:17  
Method: GPA-2261M  
Cylinder No: 5030-01146  
Instrument: 6030\_GC6 (Inficon GC-3000 Micro)  
Last Inst. Cal.: 12/14/2020 0:00 AM  
Analyzed: 12/15/2020 12:30:47 by KNF

## Analytical Data

Components	Un-normalized Mol %	Mol. %	Wt. %	GPM at 14.65 psia		
Nitrogen	1.604	1.593	1.985		GPM TOTAL C2+	6.847
Methane	74.468	73.947	52.782		GPM TOTAL C3+	3.543
Carbon Dioxide	0.485	0.482	0.944		GPM TOTAL iC5+	0.730
Ethane	12.461	12.374	16.554	3.304		
Propane	6.564	6.518	12.788	1.793		
Iso-butane	0.901	0.895	2.314	0.292		
n-Butane	2.329	2.313	5.981	0.728		
Iso-pentane	0.574	0.570	1.830	0.208		
n-Pentane	0.647	0.642	2.061	0.232		
Hexanes Plus	0.671	0.666	2.761	0.290		
	100.704	100.000	100.000	6.847		

## Calculated Physical Properties

Relative Density Real Gas	Total	C6+
	0.7789	3.2176
Calculated Molecular Weight	22.48	93.19
Compressibility Factor	0.9959	

## GPA 2172 Calculation:

Calculated Gross BTU per ft<sup>3</sup> @ 14.65 psia & 60°F

Real Gas Dry BTU	1318	5113
Water Sat. Gas Base BTU	1296	5024
Ideal, Gross HV - Dry at 14.65 psia	1313.0	5113.2
Ideal, Gross HV - Wet	1290.0	5023.7
Net BTU Dry Gas - real gas	1198	
Net BTU Wet Gas - real gas	1177	

Comments: H<sub>2</sub>S Field Content 0 ppm  
Mcf/day 18277

Hydrocarbon Laboratory Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.

Powered By

SURECHEM

Page 1 of 1

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## Cal Mon Gas Lift Meter



Volumetrics US, Inc  
3001 N Cameron St, Victoria, TX-77901  
Tel: 361-827-4024

<b>Company:</b>	OXY USA INC	<b>Job ID:</b>	
<b>Field/Location :</b>	NMSE	<b>Sampled by:</b>	VOLUMETRICS/CE
<b>Station Name :</b>	CAL MON 35 FEDERAL 171H GAS LIFT	<b>Sample Type :</b>	SPOT-CYLINDER
<b>Station Number :</b>	171071	<b>Sample Temperature (F):</b>	96
<b>Sample Date:</b>	10/12/20 3:31 PM	<b>Sample Pressure (PSIG):</b>	1165
<b>Analysis Date:</b>	10/19/20 3:47 PM	<b>Flow rate (MCF/Day):</b>	571
<b>Instrument:</b>	VARIAN- 490 GC	<b>Ambient Air Temperature (F):</b>	67
<b>Calibration/Verification Date:</b>	9/30/2020	<b>Sampling method:</b>	FILL & EMPTY
<b>Heat Trace used:</b>	YES	<b>Cylinder Number:</b>	1013

## NATURAL GAS ANALYSIS: GPA 2261

Components	Un-Normalized Mol%	Normalized Mol%	GPM 14.650	GPM 14.730	GPM 15.025
Hydrogen Sulfide	0.0000	0.0000			
Nitrogen	1.5007	1.4936			
Carbon Dioxide	0.2421	0.2410			
Methane	76.6586	76.2972			
Ethane	12.1266	12.0695	3.222	3.239	3.304
Propane	6.0069	5.9786	1.644	1.653	1.686
Isobutane	0.7521	0.7486	0.245	0.246	0.251
N-butane	1.8039	1.7954	0.565	0.568	0.579
Isopentane	0.3688	0.3671	0.134	0.135	0.137
N-Pentane	0.3989	0.3970	0.144	0.144	0.147
Hexanes Plus	0.6149	0.6120	0.267	0.268	0.273
<b>Total</b>	<b>100.4735</b>	<b>100.0000</b>			

Hexane Plus split (60%-30%-10%)

Physical Properties (Calculated)	14.650 psia	14.730 psia	15.025 psia
Total GPM Ethane+	6.219	6.253	6.378
Total GPM Iso-Pentane+	0.544	0.547	0.558
Compressibility (Z)	0.9962	0.9962	0.9961
Specific Gravity ( Air=1) @ 60 °F	0.7494	0.7494	0.7494
Molecular Weight	21.630	21.630	21.630

Gross Heating Value	14.650 psia	14.730 psia	15.025 psia
Dry, Real (BTU/Ft <sup>3</sup> )	1280.4	1287.4	1313.3
Wet, Real (BTU/Ft <sup>3</sup> )	1258.1	1265.0	1290.4
Dry, Ideal (BTU/Ft <sup>3</sup> )	1275.5	1282.5	1308.2
Wet, Ideal (BTU/Ft <sup>3</sup> )	1253.3	1260.2	1285.4

Temperature base 60 °F

**Comment:** H<sub>2</sub>S = 0 PPM

Verified by  
Mostaq Ahammad  
Petroleum Chemist

Approved by  
*Deann Friend*  
Deann Friend  
Laboratory Manager



## Certificate of Analysis

Number: 6030-21040026-010A

Artesia Laboratory  
200 E Main St.  
Artesia, NM 88210  
Phone 575-746-3481Chandler Montgomery  
Occidental Petroleum  
1502 W Commerce Dr.  
Carlsbad, NM 88220

Apr. 08, 2021

Field:	Sand Dunes	Sampled By:	Javier Lazo
Station Name:	Patton MDP1 18-33H/Sand Dunes CTB Test	Sample Of:	Gas Spot
Station Number:	17005T	Sample Date:	03/30/2021 12:14
Station Location:	OXY	Sample Conditions:	97 psig. @ 86 °F Ambient: 62 °F
Sample Point:	Downstream	Effective Date:	03/30/2021 12:14
Formation:	Monthly	Method:	GPA-2261M
County:	Eddy	Cylinder No:	1111-001222
Type of Sample:	Spot-Cylinder	Instrument:	70104251 (Inficon GC-MicroFusion)
Heat Trace Used:	N/A	Last Inst. Cal.:	04/05/2021 0:00 AM
Sampling Method:	Fill and Purge	Analyzed:	04/08/2021 13:35:42 by KJM
Sampling Company:	SPL		

## Analytical Data

Components	Un-normalized Mol %	Mol. %	Wt. %	GPM at 14.65 psia
Hydrogen Sulfide	NIL	NIL	NIL	
Nitrogen	2.539	2.54846	2.978	
Carbon Dioxide	11.734	11.77741	21.620	
Methane	68.371	68.62596	45.921	
Ethane	9.049	9.08311	11.392	2.425
Propane	4.653	4.67003	8.590	1.284
Iso-Butane	0.526	0.52766	1.279	0.172
n-Butane	1.337	1.34228	3.254	0.422
Iso-Pentane	0.358	0.35903	1.080	0.131
n-Pentane	0.396	0.39697	1.195	0.144
Hexanes	0.273	0.27432	0.986	0.113
Heptanes	0.325	0.32601	1.363	0.150
Octanes	0.044	0.04376	0.208	0.022
Nonanes Plus	0.025	0.02500	0.134	0.014
	99.630	100.00000	100.000	4.877

<b>Calculated Physical Properties</b>	<b>Total</b>	<b>C9+</b>
Calculated Molecular Weight	23.97	128.26
Compressibility Factor	0.9962	
Relative Density Real Gas	0.8306	4.4283
<b>GPA 2172 Calculation:</b>		
<b>Calculated Gross BTU per ft<sup>3</sup> @ 14.65 psia &amp; 60°F</b>		
Real Gas Dry BTU	1098.8	6974.4
Water Sat. Gas Base BTU	1080.0	6852.4
Ideal, Gross HV - Dry at 14.65 psia	1094.6	6974.4
Ideal, Gross HV - Wet	1075.5	6852.4

Comments: H2S Field Content 0 ppm  
1162 Mcf/day  
Chandler  
MontgomeryDigitally signed by Chandler  
Montgomery  
Date: 2021.04.13 12:22:35 -06'00'  
Hydrocarbon Laboratory Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.



## Certificate of Analysis

Number: 6030-21040026-007A

Artesia Laboratory

200 E Main St.  
Artesia, NM 88210  
Phone 575-746-3481Chandler Montgomery  
Occidental Petroleum  
1502 W Commerce Dr.  
Carlsbad, NM 88220

Apr. 08, 2021

Field:	Sand Dunes	Sampled By:	Javier Lazo
Station Name:	Patton MDP1 17-5H/Sand Dunes CTB Test 3	Sample Of:	Gas Spot
Station Number:	17003T	Sample Date:	03/30/2021 11:30
Station Location:	OXY	Sample Conditions:	100 psig, @ 87 °F Ambient: 62 °F
Sample Point:	Downstream	Effective Date:	03/30/2021 11:30
Formation:	Monthly	Method:	GPA-2261M
County:	Eddy	Cylinder No:	1111-001235
Type of Sample:	Spot-Cylinder	Instrument:	70104124 (Inficon GC-MicroFusion)
Heat Trace Used:	N/A	Last Inst. Cal.:	04/05/2021 0:00 AM
Sampling Method:	Fill and Purge	Analyzed:	04/08/2021 13:53:16 by KJM
Sampling Company:	SPL		

## Analytical Data

Components	Un-normalized Mol %	Mol. %	Wt. %	GPM at 14.65 psia
Hydrogen Sulfide	NIL	NIL	NIL	
Nitrogen	1.734	1.74387	2.197	
Carbon Dioxide	1.368	1.37557	2.722	
Methane	73.887	74.31188	53.610	
Ethane	11.727	11.79446	15.949	3.149
Propane	6.609	6.64682	13.181	1.828
Iso-Butane	0.784	0.78801	2.060	0.257
n-Butane	1.892	1.90268	4.973	0.599
Iso-Pentane	0.419	0.42151	1.368	0.154
n-Pentane	0.440	0.44243	1.435	0.160
Hexanes	0.258	0.25979	1.007	0.107
Heptanes	0.196	0.19753	0.890	0.091
Octanes	0.091	0.09162	0.471	0.047
Nonanes Plus	0.024	0.02383	0.137	0.013
	99.429	100.0000	100.000	6.405

<b>Calculated Physical Properties</b>	<b>Total</b>	<b>C9+</b>
Calculated Molecular Weight	22.24	128.26
Compressibility Factor	0.9961	
Relative Density Real Gas	0.7705	4.4283
<b>GPA 2172 Calculation:</b>		
<b>Calculated Gross BTU per ft<sup>3</sup> @ 14.65 psia &amp; 60°F</b>		
Real Gas Dry BTU	1280.4	6974.4
Water Sat. Gas Base BTU	1258.6	6852.4
Ideal, Gross HV - Dry at 14.65 psia	1275.4	6974.4
Ideal, Gross HV - Wet	1253.1	6852.4

Comments: H2S Field Content 0 ppm  
966 Mcf/dayChandler  
MontgomeryDigitally signed by Chandler  
Montgomery  
Date: 2021.04.13 12:34:10 -06'00'

Hydrocarbon Laboratory Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.

**Atchafalaya Measurement Inc**  
416 East Main Street, Artesia NM 88210 575-746-3481

**Sample Information**

Sample Information	
Sample Name	OXY__Cal Mon 35 Federal 175H__GC2-41119-04
Station Number	N/A
Lease Name	Cal Mon 35 Federal 175H
Analysis For	OXY USA
Producer	OXY USA
Field Name	N/A
County/State	Eddy,NM
Frequency/Spot Sample	Spot
Sampling Method	Fill Empty
Sample Deg F	110
Atmos Deg F	70
Flow Rate	N/A
Line PSIG	126.2
Date Sampled/Time Sampled	4-8-19
Cylinder Number	N/A
Cylinder Clean Date	N/A
Sampled By	Victor Urias
Analysis By	Pat Silvas
Verified/Calibrated Date	4-8-19
Report Date	2019-04-11 08:05:21

**Component Results**

Component Name	Ret. Time	Peak Area	Norm%	GPM (Dry) (Gal. / 1000 cu.ft.)
Nitrogen	22.960	17041.9	1.2566	0.000
H2S	0.000	0.0	0.0000	0.000
Methane	23.740	774901.4	75.6221	0.000
Carbon Dioxide	27.760	2771.5	0.1750	0.000
Ethane	36.980	222521.2	13.1448	3.509
Propane	77.360	137364.0	6.1320	1.686
i-Butane	29.840	58581.6	0.7131	0.233
n-Butane	32.140	140341.4	1.6956	0.534
i-Pentane	39.240	31316.3	0.3289	0.120
n-Pentane	42.060	36744.5	0.3756	0.136
C6's	50.750	23667.0	0.2128	0.067
C7's	67.000	24474.0	0.2119	0.098
C8's	84.000	12097.0	0.1117	0.057
C9's	102.000	5270.0	0.0175	0.010
C10 Plus	146.000	639.0	0.0024	0.001
Total:			100.0000	6.471

**Results Summary**

Result	Dry	Sat. (Base)
Total Raw Mole% (Dry)	101.6290	
Pressure Base (psia)	14.650	
Temperature Base	60.00	
Gross Heating Value (BTU / Ideal cu.ft.)	1283.6	1261.1
Gross Heating Value (BTU / Real cu.ft.)	1288.5	1266.5
Relative Density (G), Ideal	0.7484	0.7462
Relative Density (G), Real	0.7509	0.7490
Compressibility (Z) Factor	0.9962	0.9958



# Corrosion Prevention Plan

## Existing Corrosion Prevention Plan

- Produced gas is processed through a gas dehydration unit to remove water.
- Corrosion inhibitor is added to the system downstream of the gas dehydration unit.
- Fluid samples are taken regularly and checked for Fe, Mn, and residual corrosion inhibitor in produced fluids.
- Continuously monitor and adjust the chemical treatment over the life of the well.

**Oxy will continue the existing corrosion prevention plan in place for the gas lift system due to the similar nature of gas storage operations.**

- Fluid samples will be taken prior to injection to establish a baseline for analysis.
- After a storage event, fluid samples will be taken to check for Fe, Mn, and residual corrosion inhibitor in the produced fluids.
- Continuously monitor and adjust the chemical treatment over the life of the project.





# NM GAS STORAGE OPERATIONAL PLAN

# Operational Plan

## WELLSITE CLGC

**Oxy USA Inc. (Oxy) will monitor the following items on each Closed Loop Gas Capture (CLGC) well via SCADA system:**

- Injection flow rate and volume
  - Instantaneous Rate
  - Total Injected by Day (volume)
- Tubing Pressure
- Casing Pressure
- Bradenhead Pressures
- Safety devices
  - Pressure kills have an automated kill sequence that is initiated by SCADA system readings.
  - Injection pressure kills on production stream for injection
  - Relief Valves for both production and gas storage/injection streams to prevent overpressure (not monitored via SCADA other than pressure trend)
  - Control of injection rate and pressures via control valve at each well injection stream
  - Control of production stream via automated choke valves to ensure controlled production and prevent over pressurization of flowline

## CENTRAL TANK BATTERY (CTB)

**Oxy will monitor the following items at each CTB via SCADA system:**

- Production Rates
  - Oil
  - Gas
  - Water
- Safety devices
  - Flares at CTBs
  - Injection pressure kills on production/gas storage stream for injection
  - Emergency Shutdown (ESD) of wells that are local and remote for automatic shut downs to safe the system
  - Control of injection rate and pressures via control valve at each well injection stream

## CENTRAL GAS LIFT (CGL) COMPRESSOR(S)

**Oxy will monitor the following items on each Central Gas Lift (CGL) Compressor Station via SCADA system:**

- Safety devices
  - Discharge/injection pressure kills of each compressor and for the station
  - Relief Valves on 3<sup>rd</sup> stage of compressors, to prevent over pressurization (not monitored via SCADA other than pressure trend)
  - Station recycle valves (that recycle discharge pressure back to suction) if the pressure is getting too high for the compressor or station. (not all control valves are capable of

remote monitoring of valve position; but still monitored in some sense of the pressure trend for the station)

## SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA)

**Oxy SCADA system consists of PLCs at each CTB, Wellsite, and Central Gas Lift compressor or station.**

- The Programmable Logic Controller (PLCs) will take action immediately (within seconds or minutes) as programmed to automatically safe the system as required; for the system and certain device shut down(s).
- The High Alarms and High-High Alarms will be logged and registered in the SCADA system. Also the call center will take the High Alarm and make the physical phone call notification to the production techs to acknowledge the alarm & take action.

## ENVIRONMENTAL/SPILL RESPONSE

**Oxy will report and track any spill recordable or non-recordable via our CDR system**

- Any spill or gas release will be reported by operations calling in to our Call Center to make the report of spill/release. The fluid type and release amount will be disclosed along with location details; and if it's a recordable or non-recordable spill.
- Liquids will be contained and isolated and vacuum trucks will be called in to recover the liquid and will also report the amount of liquid recovered on the same CDR spill form.
  - Additional reclamation will be coordinated to ensure proper recovery of contaminated soil and liquid.

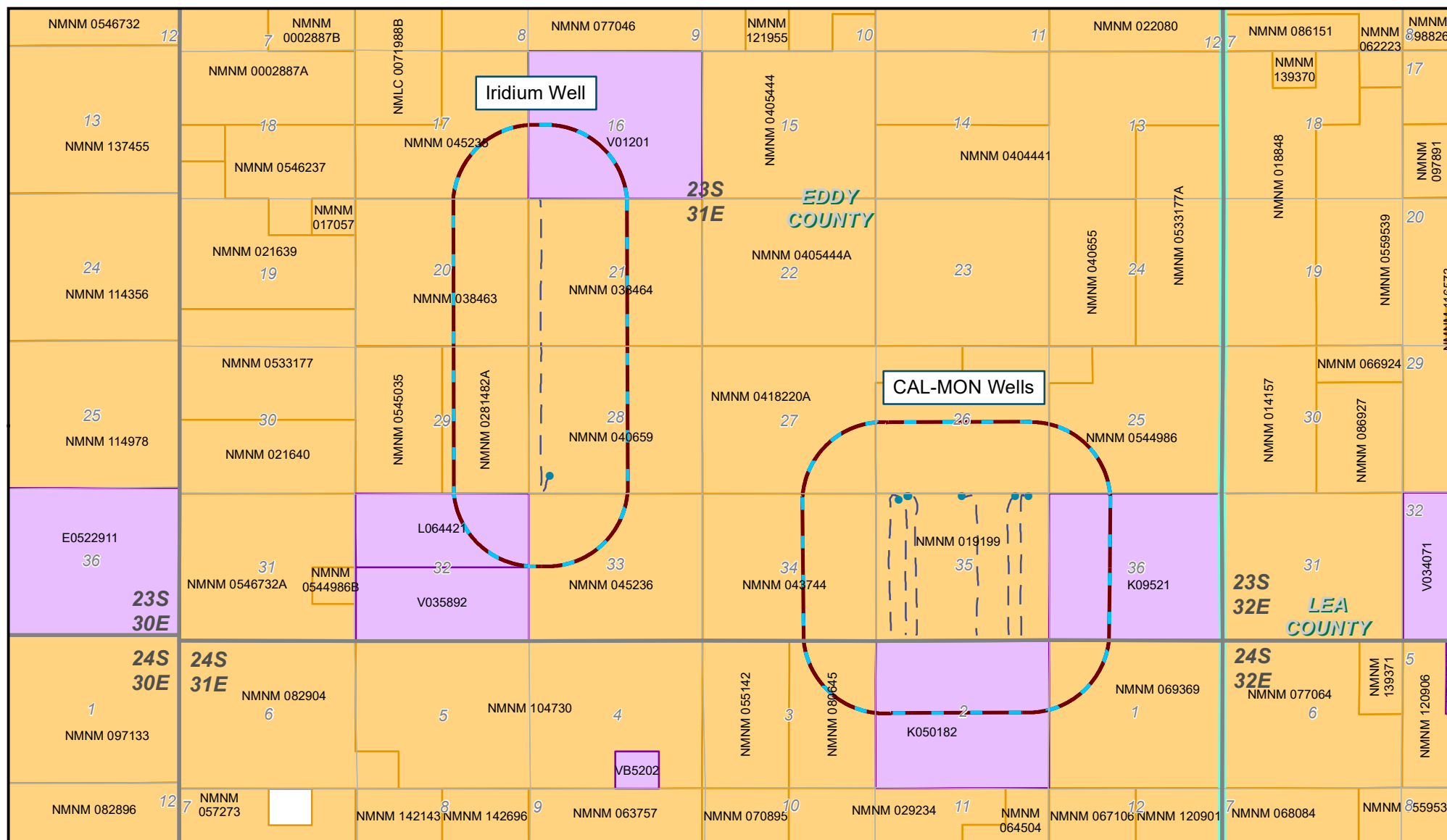


# Area of Review



# EXHIBIT "A"

## EDDY COUNTY, NEW MEXICO



County



1/2 mile AOR



Surface Hole Location



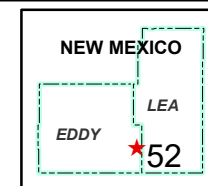
Wellbore Trajectory

Land Owner Type:

Federal

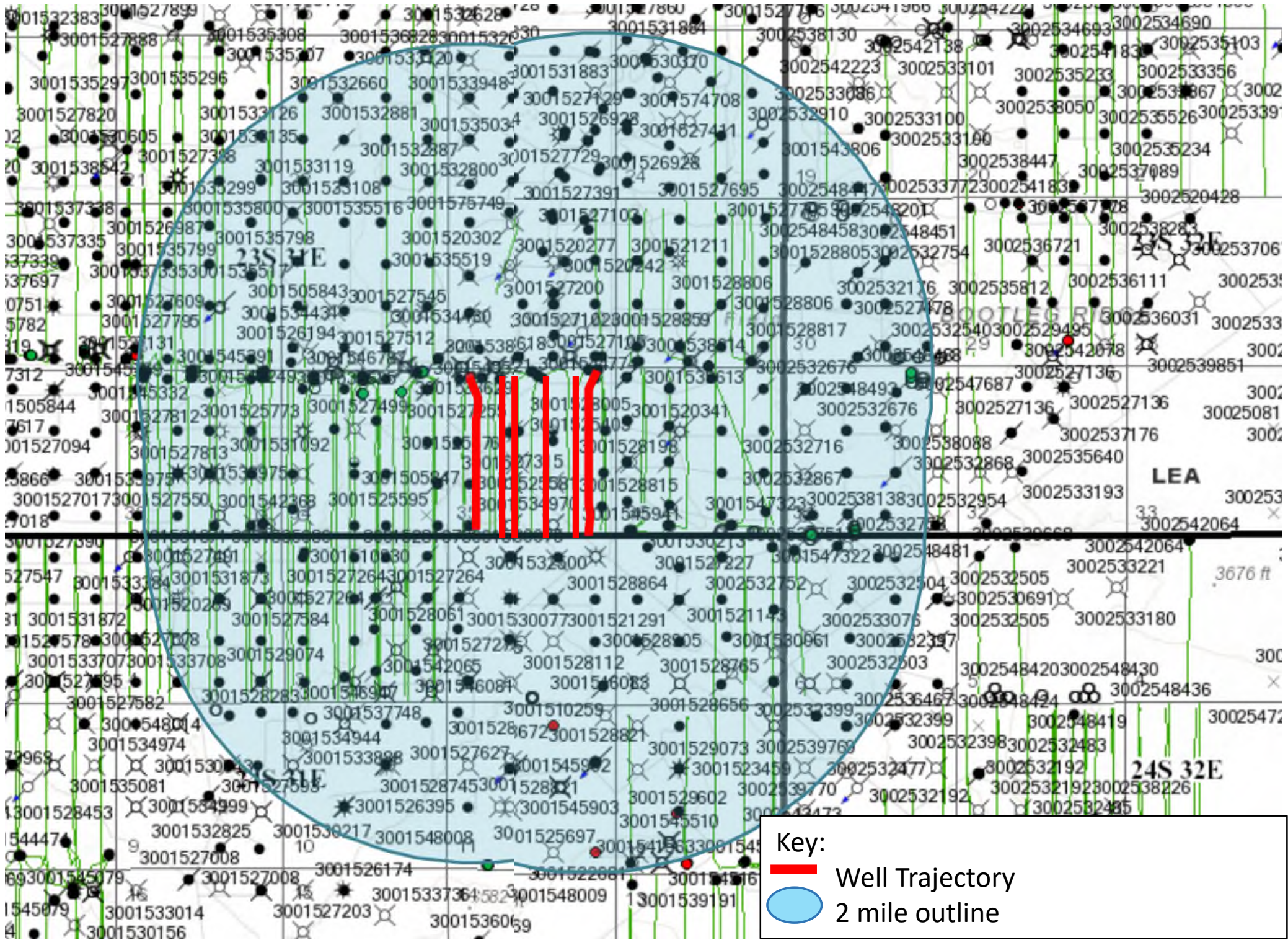
State

0 0.5 1 2 Miles



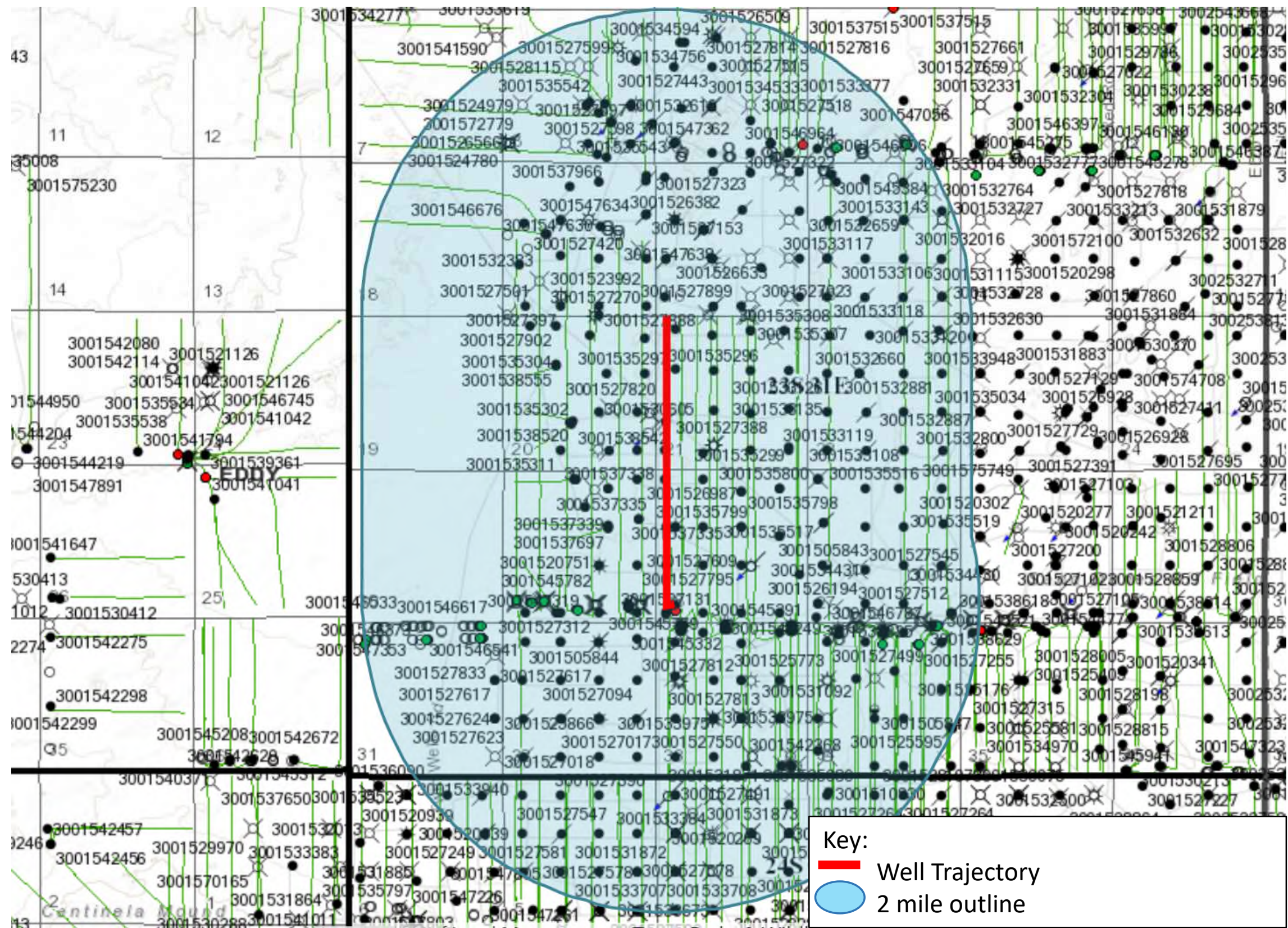


# Cal Mon 2 Mile Map

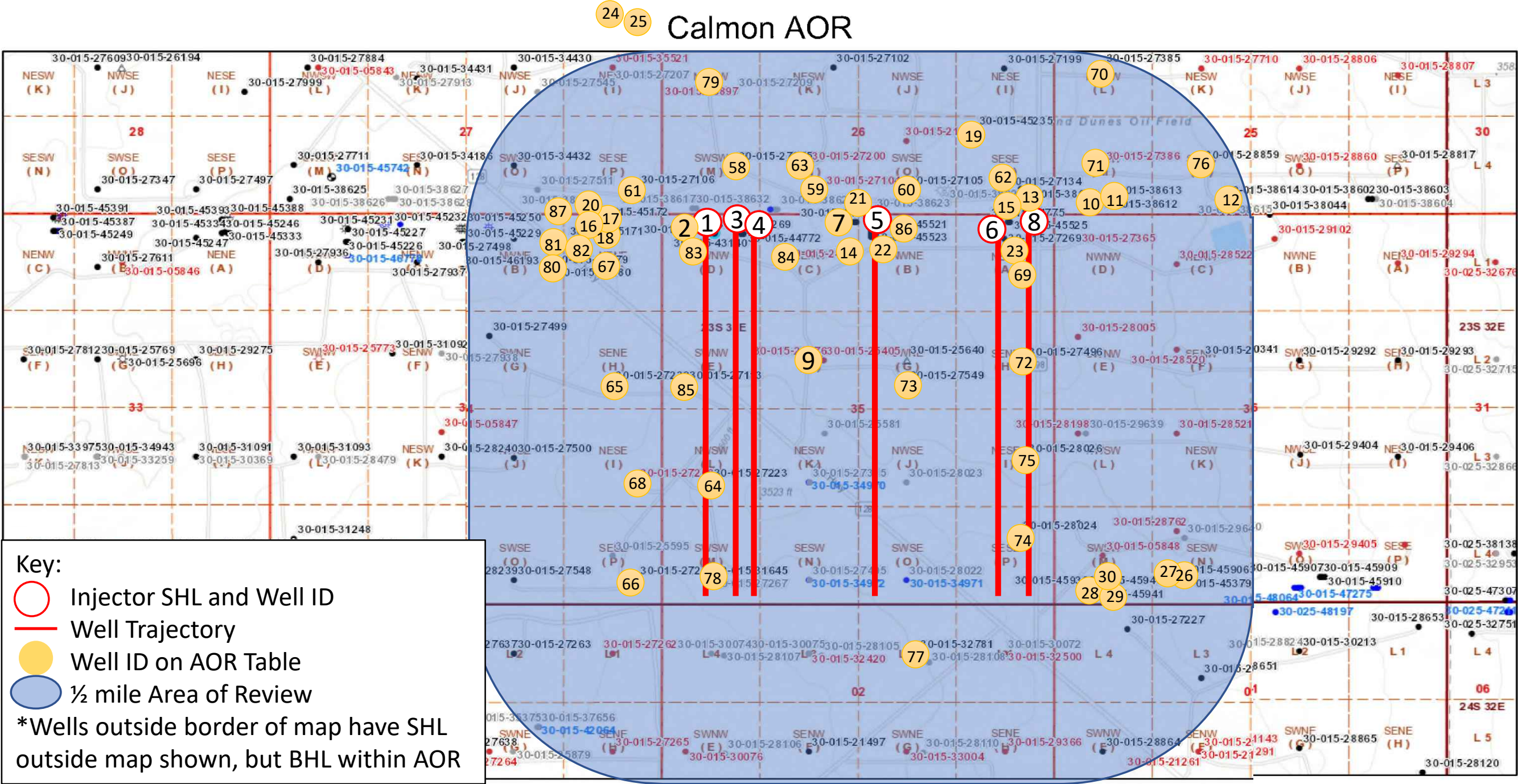




# Iridium AOR 2 Mile Map

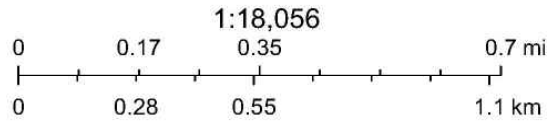






4/8/2021, 8:28:38 AM

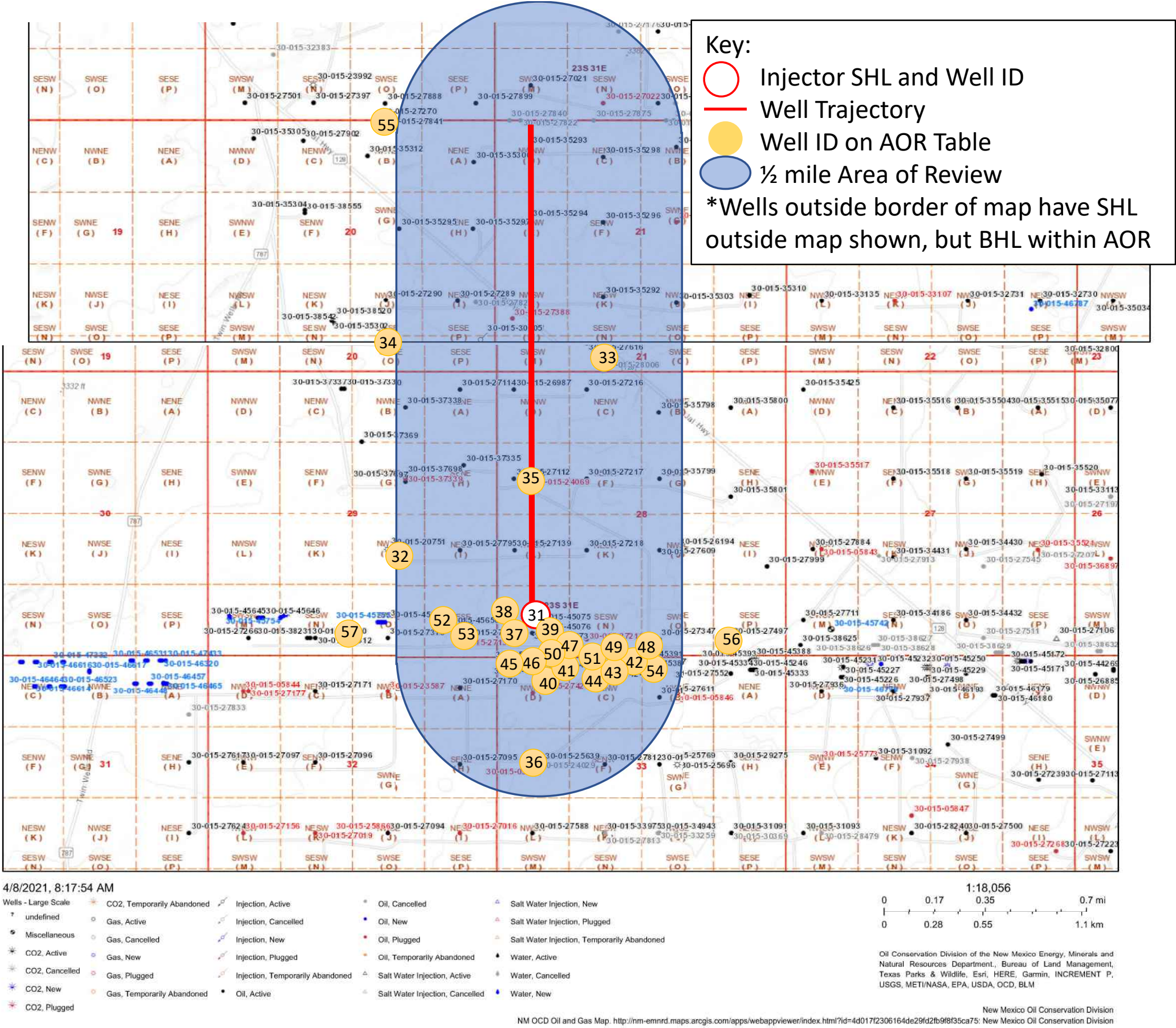
Wells - Large Scale	CO2, Temporarily Abandoned	Injection, Active	Oil, Cancelled	Salt Water Injection, New
undefined	Gas, Active	Injection, Cancelled	Oil, New	Salt Water Injection, Plugged
Miscellaneous	Gas, Cancelled	Injection, New	Oil, Plugged	Salt Water Injection, Temporarily Abandoned
CO2, Active	Gas, New	Injection, Plugged	Oil, Temporarily Abandoned	Water, Active
CO2, Cancelled	Gas, Plugged	Injection, Temporarily Abandoned	Salt Water Injection, Active	Water, Cancelled
CO2, New	Gas, Temporarily Abandoned	Oil, Active	Salt Water Injection, Cancelled	Water, New
CO2, Plugged				



Oil Conservation Division of the New Mexico Energy, Minerals and Natural Resources Department, Bureau of Land Management, Texas Parks & Wildlife, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA, OCD, BLM



Iridium AOR Map



Cal Mon and Iridium (North Corridor) AOR Table

Well ID	API NUMBER	Current Operator	LEASE NAME	WELL		Status:	Footages		Footages		Surface Location Unit	Surface Location Section	Surface Location TShip	Surface Location Range	Spud [date]	True Vertical Depth [ft]	Measured Depth [ft]	HOLE		CSG SIZE		SET AT	SX CMT	CMT TO [ft]	HOW MEASURED	Current Completion [ft]	Comment	Current Producing Pool
				NUMBER	Well Type:		N/S	N/S	E/W	E/W								SIZE [in]	[in]									
1	30-015-43140	OXY USA INC	CAL MON 35 FEDERAL	041H	Oil	Active	250	N	710	W	D	35	23S	31E	11/29/2016	10390	14910	18.500	16.000	742	700	Surf	Circ	10485-14740	[33740] INGLE WELLS; BONE SPRING			
																		13.500	10.750	4402	2420	Surf	Circ					
																		9.875	7.625	11965	3270	5440	CBL					
																		6.750	4.500	8584-14900	620	Surf	Circ					
2	30-015-44269	OXY USA INC	CAL MON 35 FEDERAL	171H	Oil	Active	280	N	710	W	D	35	23S	31E	6/22/2017	11705	16342	20.000	16.000	753	805	Surf	Circ	11662-16115	[98236] WC-015 G-08 S233135D; WOLFCAMP			
																		13.500	10.750	4431	1675	Surf	Circ					
																		9.875	7.625	10580	630	Surf	Circ					
																		6.750	4.500	16330	765	1150	CBL					
3	30-015-44771	OXY USA INC	CAL MON MDP1 35 FEDERAL	001H	Oil	Active	277	N	1077	W	D	35	23S	31E	3/28/2018	10101	14890	17.500	13.375	742	960	Surf	Circ	10222-14725	[13367] COTTON DRAW; BONE SPRING			
																		12.250	9.625	4382	1380	Surf	Circ					
																		8.500	5.500	14876	2565	Surf	CBL					
																		17.500	13.375	760	920	Surf	Circ				10059-14657	[13367] COTTON DRAW; BONE SPRING
																		12.250	9.625	4402	1380	Surf	Circ					
4	30-015-44772	OXY USA INC	CAL MON MDP1 35 FEDERAL	002H	Oil	Active	277	N	1112	W	D	35	23S	31E	3/29/2018	10101	14835	17.500	13.375	760	920	Surf	Circ	10059-14657	[13367] COTTON DRAW; BONE SPRING			
																		12.250	9.625	4402	1380	Surf	Circ					
																		8.500	5.500	14820	2628	Surf	CBL					
																		17.500	13.375	804	1045	Surf	Circ				10344-14942	[13367] COTTON DRAW; BONE SPRING
																		12.250	9.625	4415	1245	Surf	Circ					
5	30-015-44774	OXY USA INC	CAL MON MDP1 35 FEDERAL	004H	Oil	Active	120	N	2624	W	C	35	23S	31E	3/9/2018	10366	15119	17.500	13.375	804	1045	Surf	Circ	10344-14942	[13367] COTTON DRAW; BONE SPRING			
																		12.250	9.625	4415	1245	Surf	Circ					
																		8.500	5.500	15109	2225	518	CBL					
																		17.500	13.375	804	1045	Surf	Circ				10130-14676	[13367] COTTON DRAW; BONE SPRING
																		12.250	9.625	4475	1365	Surf	Circ					
6	30-015-44775	OXY USA INC	CAL MON MDP1 35 FEDERAL	005H	Oil	Active	110	N	890	E	A	35	23S	31E	3/11/2018	10148	14842	17.500	13.375	804	1045	Surf	Circ	10130-14676	[13367] COTTON DRAW; BONE SPRING			
																		12.250	9.625	4475	1365	Surf	Circ					
																		8.500	5.500	14832	2025	470	CBL					
																		17.500	13.375	804	1045	Surf	Circ				11931-16807	[98236] WC-015 G-08 S233135D; WOLFCAMP
																		9.875	7.625	11292	2402	Surf	Circ					
7	30-015-45521	OXY USA INC	CAL MON 35 FEDERAL	172H	Oil	Active	275	N	2458	E	B	35	23S	31E	1/4/2019	16880	11930	14.75	10.75	841	850	Surf	Circ	11931-16807	[98236] WC-015 G-08 S233135D; WOLFCAMP			
																		9.875	7.625	11292	2402	Surf	Circ					
																		6.75	5.5	12048	720	10875	CBL					
																		6.75	4.5	16880	720	10875	CBL					
8	30-015-45524	OXY USA INC	CAL MON 35 FEDERAL	175H	Oil	Active	110	N	615	E	A	35	23S	31E	12/27/2018	10973	15869	14.75	10.75	847	575	Surf	Circ	10572-15724	[98236] WC-015 G-08 S233135D; WOLFCAMP			
																		9.875	7.625	10253	2055	surf	Circ					
																		6.75	5.5	10893	670	9678	CBL					
																		6.75	4.5	15869	670	9678	CBL					
9	30-015-25176	POGO PRODUCING CO	CAL-MON	002	Oil	PA	1980	N	1980	W	F	35	23S	31E	3/19/1985	15371	15375	26	20	599	825	surf	circ	NA	NA			
																		17.5	13.375	4441	3500	surf	circ					
																		12.25	9.625	11862	3395	6300	Calc					
																		8.5	7	14720	700	11464	circ					
10	30-015-38612	DEVON ENERGY PRODUCTION COMPANY, LP	ALDABRA 25 FEDERAL COM	001H	Oil	Active	200	S	635	W	M	25	23S	31E	3/29/2014	11611	16174	26.000	20.000	898	1850	Surf	Circ	11702-16067	[97860] JENNINGS; BONE SPRING, WEST			
																		17.500	13.375	4468	3270	Surf	Circ					
																		12.250	9.625	8332	1785	Surf	Circ					
																		8.500	5.500	16174	2920	Surf	Circ					
11	30-015-38613	DEVON ENERGY PRODUCTION COMPANY, LP	ALDABRA 25 FEDERAL COM	002H	Oil	Active	200	S	685	W	M	25	23S	31E	5/11/2014	10440	15047	26.000	20.000	900	1590	Surf	Circ	10577-14937	[96403] WILDCAT; BONE SPRING			
																		17.500	13.375	4460	2992	Surf	Circ					
																		12.250	9.625	8324	2375	Surf	Circ					
																		8.500	5.500	15047	2220	Surf	Circ					
12	30-015-38614	DEVON ENERGY PRODUCTION COMPANY, LP	ALDABRA 25 FEDERAL	003H	Oil	Active	200	S	2260	W	N	25	23S	31E	3/31/2013	11694	16698	17.500	13.375	936	885	Surf	Circ	12185-16622	[96403] WILDCAT; BONE SPRING			
																		12.250	9.625	4512	1450	Surf	Circ					
																		8.75	7.000	10897	1140	Surf	Circ					
																		6.125	4.500	16689	575	Unknown	Unknown					
13	30-015-38624	DEVON ENERGY PRODUCTION COMPANY, LP	ALDABRA 26 FEDERAL	008H	Oil	Active	350	S	445	E	P	26	23S	31E	10/28/2013	11603	16104	26.000	20.000	850	1460	Surf	Circ	11845-16042	[96403] WILDCAT; BONE SPRING			
																		17.550	13.375	4420	3215	Surf	Circ					
																		12.250	9.625	8335	2040	Surf	Circ					
																		8.500	5.500	16104	2065	Surf	Circ					
14	30-015-44773	OXY USA INC	CAL MON MDP1 35 FEDERAL	003H	Oil	Active	120	N	2594	W	C	35	23S	31E	3/8/2018	10098	14865	17.500	13.375	803	1127	Surf	Circ	10102-14697	[13367] COTTON DRAW; BONE SPRING			
																		12.250	9.625	4437	1245	Surf	Circ					
																		8.500	5.500	14859	2560	Surf	Circ					
																		17.500	13.375	803	1025	Surf	Circ				10271-14821	[13367] COTTON DRAW; BONE SPRING
																		12.250	9.625	4446	1365	Surf	Circ					
15	30-015-44776	OXY USA INC	CAL MON MDP1 35 FEDERAL	006H	Oil	Active	110	N	855	E	A	35	23S	31E	3/13/2018	10149	14979	17.500	13.375	803	1025	Surf	Circ	10271-14821	[13367] COTTON DRAW; BONE SPRING			
																		12.250	9.625	4446	1365	Surf	Circ					
																		8.500	5.500	14961	2025	Surf	Circ					
																		17.500	13.375	709	900	Surf	Circ				10419-20333	[97494] COTTONWOOD DRAW; BONE SPRING
																		12.250	9.625	4465	1511	Surf	Circ					
16	30-015-45171	OXY USA INC	PLATINUM MDP1 34 3 FEDERAL COM	005H	Oil	Active	110	N	968	E	A	34	23S	31E	9/17/2018	10270	20532	17.500	13.375	709	900	Surf	Circ	10419-20333	[97494] COTTONWOOD DRAW; BONE SPRING			
																		12.250	9.625	4465	1511	Surf	Circ					
																		8.500	7.625	9755	670	12	echometer					
																		6.75	5.500	20522	822	9237	CBL					
17	30-015-45172	OXY USA INC	PLATINUM MDP1 34 3 FEDERAL COM	006H	Oil	Active	110	N	933	E	A	34	23S	31E	9/16/2018	10011	20295	17.500	13.375	685	900	Surf	Circ	9959-20155	[97494] COTTONWOOD DRAW; BONE SPRING			
																		12.250	9.625	4488	1507	Surf	Circ					
																		8.500	7.625	9613	670	7	echometer					
																		6.75	5.500	20285	822	9100	CBL					
18	30-015-45233	OXY USA INC	PLATINUM MDP1 34 3 FEDERAL COM	176H	Gas	Active	110	N	1003	E	A	34	23S	31E	5/28/2019	11808	21902	6.750	5.500	21877	775	10445	Circ	Circ	11935-21795	[98236] WC-015 G-08 S233135D; WOLFCAMP		
																		17.5	13.375	687	540	Surf	Circ					
																		12.25	9.625	4455	1358	Surf	Circ					
																		8.5	7.625	10947	670	Surf	Circ					
19	30-015-45235	NGL WATER SOLUTIONS PERMIAN, LLC	RED ROAD SWD	001	Salt Water Disposal	Active	1107	S	1057	E	P	26	23S	31E	11/15/2018	17890	17894	24.000	20.000	1065	1168	Surf	Circ	16513-17894	[96101] SWD; DEVONIAN			
																		17.500	13.375	4543	2520	Surf	Circ					
																		12.250	9.625	11662	3555	Surf	Circ					
																		8.500	7.625	16513	380	Surf	Circ					
20	30-015-45251	OXY USA INC	PLATINUM MDP1 34 3 FEDERAL COM	175H	Gas	Active	110	N	1038	E	A	34	23S	31E	5/29/2019	11638	21690	17.5	13.375	685	807	Surf	Circ	11764-21584	[98236] WC-015 G-08 S233135D; WOLFCAMP			
																		12.25	9.625	4479								



Cal Mon and Iridium (North Corridor) AOR Table

23	30-015-45525	OXY USA INC	CAL MON 35 FEDERAL	176H	Oil	Active	110 N	580 E	A	35 23S	31E	12/30/2018	11758	16725 14.75 9.875 7.625 10609 6.75 5.5 11785 6.75 4.5 16715	10.75 7.625 5.5 4.5	848 10609 11785 16715	850 2210 900 10105	Surf Surf CBL CBL	Circ Circ CBL CBL	11819-16569	[98236] WC-015 G-08 S233135D; WOLFCAMP
24	30-015-47062	DEVON ENERGY PRODUCTION COMPANY, LP	MALDIVES 15 27 FEDERAL COM	236H	Oil	Active	15 S	715 E	P	10 23S	31E	7/18/2020	10307	25817 17.5 12.25 10.750 4401 9.875 8.625 8338 7.875 5.500 25767	13.625 10.750 8.625 5.500	748 4401 8338 25767	605 770 715 3135	Surf Surf Surf Surf	Circ Circ Circ Circ	10442-25754	[33840] JAMES RANCH; BONE SPRING
25	30-015-47084	DEVON ENERGY PRODUCTION COMPANY, LP	MALDIVES 15 27 FEDERAL COM	235H	Oil	Active	15 S	745 E	P	10 23S	31E	7/17/2020	10083	25570 12.25 17.5 13.375 746 9.875 8.625 8383	10.750 13.375 8.625 8.625	4410 770 868 515	770 770 Surf Surf	Circ Circ Circ Circ	10255-25557	[33840] JAMES RANCH; BONE SPRING	
26	30-015-45379	DEVON ENERGY PRODUCTION COMPANY, LP	TODD 36 STATE	231H	Oil	Active	330 S	1629 W	N	36 23S	31E	6/21/2019	10564	15207 17.500 12.250 9.625 8427 8.750 5.500 15192	13.375 9.625 5.500 5.500	822 8427 15192 817	855 2415 1380 851	Surf Surf CBL Surf	Circ Circ CBL Circ	10704-15178	[53805] SAND DUNES; BONE SPRING, SOUTH
27	30-015-45906	DEVON ENERGY PRODUCTION COMPANY, LP	TODD 36 25 STATE FEDERAL COM	232H	Oil	Active	330 S	1659 W	N	36 23S	31E	7/8/2019	10280	20500 17.5 12.25 9.625 8431 8.5 5.500 20479	13.375 9.625 5.500 13.375	817 8431 20479 855	851 3156 2430 1045	Surf Surf CBL Surf	Circ Circ CBL Circ	10374-20464	[53805] SAND DUNES; BONE SPRING, SOUTH
28	30-015-45939	DEVON ENERGY PRODUCTION COMPANY, LP	TODD 36 STATE	625H	Oil	Active	180 S	485 W	M	36 23S	31E	8/27/2019	11873	17038 10.625 7.875 5.500 17028 17.5 13.375 855	8.625 5.500 13.375 8.625	11460 17028 855 11460	1435 790 1045 1435	Calc Surf Surf Calc	2425 4120 855 2425	12134-16919	[98236] WC-015 G-08 S233135D; WOLFCAMP
29	30-015-45940	DEVON ENERGY PRODUCTION COMPANY, LP	TODD 36 STATE	715H	Oil	Active	180 S	425 W	M	36 23S	31E	8/26/2019	12029	17063 17.5 10.625 8.625 11357 7.875 5.500 17035	13.375 8.625 5.500 13.375	850 11357 17035 850	1150 2930 1230 1150	Surf Surf Calc Surf	Circ Circ Calc Circ	12181-16924	[98236] WC-015 G-08 S233135D; WOLFCAMP
30	30-015-45941	DEVON ENERGY PRODUCTION COMPANY, LP	TODD 36 STATE	335H	Oil	Active	180 S	455 W	M	36 23S	31E	8/27/2019	11653	16657 17.500 10.625 8.625 10248 7.875 5.500 16647	13.375 8.625 5.500 13.375	855 10248 16647 855	320 2930 1310 320	Surf Surf Surf Surf	Circ Circ Circ Circ	11858-16541	[53805] SAND DUNES; BONE SPRING, SOUTH
31	30-015-45074	OXY USA INC	IRIDIUM MDP1 28 21 FEDERAL COM	021H	Oil	Active	610 S	648 W	M	28 23S	31E	7/22/2018	8690	19056 17.500 12.250 9.875 4278 8.500 7.625 8180 6.750 5.500 19047	13.375 9.875 7.625 5.500	628 4278 8180 19047	862 1450 687 705	Surf Surf Surf CBL	Circ Circ Circ CBL	8835-18933	[33740] INGLE WELLS; BONE SPRING
32	30-015-20751	OXY USA INC	MOBIL FEDERAL	001	Gas	Active	1980 S	1980 E	J	29 23S	31E	9/30/1972	14890	14890 26.000 17.500 13.375 4049 12.250 9.625 12492 8.5 5.500 14854	20.000 13.375 9.625 5.500	740 4049 12492 14854	1500 2110 1350 1400	Surf Surf Surf Surf	Circ Circ Circ Circ	14375-14599 5-1/2" liner set at 12001'	[84720] SAND DUNES; MORROW, WEST (GAS)
33	30-015-23175	OXY USA INC	PURE GOLD A FEDERAL	001	Gas	PA	800 S	1980 W	N	21 23S	31E	8/12/1980	14967	14967 26 17.5 13.375 4206 12.25 9.625 12398 8.5 7.875 14161 6.5 5.000 14976	20.000 13.375 9.625 7.875 5.000	583 4206 12398 14161 14976	625 2550 1450 615 200	Surf Surf Surf Surf Circ	Circ Circ Circ Circ Circ	NA	NA
34	30-015-23739	KAISER-FRANCIS OIL CO	PURE GOLD B FEDERAL	001	Gas	Active	660 S	1980 E	O	20 23S	31E	7/11/1981	14860	14865 26 17.5 13.375 4106 12.25 9.625 12395 8.5 7.625 14268 6.5 5.5 14865	20 13.375 9.625 7.625 5.5	600 4106 12395 14268 14865	1100 4000 3650 1116 320	Surf Surf Surf Surf Circ	Circ Circ Circ Circ Circ	13590-13894	[84640] SAND DUNES; ATOKA, WEST (GAS)
35	30-015-24069	POGO PRODUCING CO	PURE GOLD D FEDERAL	001	Oil	PA	1980 N	660 W	E	28 23S	31E	6/25/1985	14950	14950 26 17.5 13.375 4170 12.25 9.625 11490 9.5 5.5 14950	20 13.375 9.625 5.5	532 4170 11490 14950	825 3500 1975 11116	Surf Surf TS Circ	Circ Circ Circ Circ	NA	NA
36	30-015-25639	DEVON ENERGY PRODUCTION COMPANY, LP	STERLING SILVER 33 FEDERAL	001	Gas	Active	1980 N	810 W	E	33 23S	31E	7/28/1986	15050	15050 13.375 9.625 9.625 4183 7.000 7.000 12000 6 4.5 15050	13.375 9.625 7.000 4.5	630 4183 12000 15050	670 2400 900 740	Surf Surf Surf Surf	Circ Unknown TS Circ	13785-13807 4.5" Liner top at 11503'	[84720] SAND DUNES; MORROW, WEST (GAS)
37	30-015-45073	OXY USA INC	IRIDIUM MDP1 28 21 FEDERAL COM	011H	Oil	Active	430 S	648 W	M	28 23S	31E	7/21/2018	9762	19919 17.500 12.250 9.875 4281 8.500 7.625 8049 6.750 5.500 19907	13.375 9.875 7.625 5.500	598 4281 8049 19907	700 1456 606 893	Surf Surf Surf Surf	Circ Circ Circ Circ	9903-19557	[33740] INGLE WELLS; BONE SPRING
38	30-015-45075	OXY USA INC	IRIDIUM MDP1 28 21 FEDERAL COM	041H	Oil	Active	610 S	683 W	M	28 23S	31E	7/23/2018	9377	18073 17.500 12.250 9.875 4275 8.500 7.625 8960 6.750 5.500 18057	13.375 9.875 7.625 5.500	608 4275 8960 18057	862 1310 464 705	Surf Surf Surf Surf	Circ Circ Circ Circ	9475-17951	[33740] INGLE WELLS; BONE SPRING
39	30-015-45076	OXY USA INC	IRIDIUM MDP1 28 21 FEDERAL COM	171H	Oil	Active	430 S	683 W	M	28 23S	31E	7/20/2018	11469	21640 17.500 12.250 9.875 4265 8.500 7.625 10368 6.750 5.500 21663	13.375 9.875 7.625 5.500	600 4265 10368 21663	700 1454 993 865	Surf Surf Surf Surf	Circ Circ Circ Circ	11582-21330	[98236] WC-015 G-08 S233135D; WOLFCAMP
40	30-015-45242	OXY USA INC	IRIDIUM MDP1 28 21 FEDERAL COM	001H	Oil	Active	270 N	834 W	D	33 23S	31E	11/27/2018	10118	20591 17.500 12.250 9.625 4305 8.500 7.625 9530 6.750 5.500 20591	13.375 9.625 7.625 5.500	692 4305 9530 20591	915 1374 532 848	Surf Surf Surf Surf	Circ Circ Circ Circ	10297-20495	[33740] INGLE WELLS; BONE SPRING
41	30-015-45243	OXY USA INC	IRIDIUM MDP1 28 21 FEDERAL COM	002H	Oil	Active	270 N	904 W	D	33 23S	31E	11/28/2018	9912	20470 17.500 12.250 9.625 4307 8.500 7.625 9387 6.750 5.500 20470	13.375 9.625 7.625 5.500	692 4307 9387 20470	900 1386 532 848	Surf Surf Surf Surf	Circ Circ Circ Circ	10068-20367	[33740] INGLE WELLS; BONE SPRING
42	30-015-45244	OXY USA INC	IRIDIUM MDP1 28 21 FEDERAL COM	003H	Oil	Active	249 N	2369 W	C	33 23S	31E	11/24/2018	9814	20235 17.500 12.250 9.625 4345 8.500 7.625 9232 6.750 5.500 20180	13.875 9.625 7.625 5.500	683 4345 9232 20180	950 1210 598 830	Surf Surf Surf CBL	Circ Circ Circ CBL	10046-20143	[33740] INGLE WELLS; BONE SPRING
43	30-015-45245	OXY USA INC	IRIDIUM MDP1 28 21 FEDERAL COM	004H	Oil	Active	249 N	2474 W	C	33 23S	31E	11/26/2018	10189	21026 17.000 12.250 9.625 4336 8.500 7.625 9537 6.750 5.500 20972	13.375 9.625 7.625 5.500	680 4336 9537 20972	880 1215 565 825	Surf Surf Surf Surf	Circ Circ Circ echometer	10822-20921	[33740] INGLE WELLS; BONE SPRING
44	30-015-45249	OXY USA INC	IRIDIUM MDP1 28 21 FEDERAL COM	173H	Oil	Active	249 N	2404 W	C	33 23S	31E	7/20/2019	11666	22600 6.750 17.5 13.375 534	5.500 13.375 534	22579 534 830	914 9720 830	CBL Surf Circ	12307-22487	[98236] WC-015 G-08 S233135D; WOLFCAMP	





Cal Mon and Iridium (North Corridor) AOR Table

68	30-015-27268	OXY USA INC	SAND DUNES 34 FEDERAL	004	Oil	PA	1650 S	330 E	I	34 23S	31E	10/21/1993	8380	7.875	5.500	8338	1485	Surf	Circ	NA	NA	
														8380	17.5	13.375	802	950	Surf			Circ
														11	8.625	4253	1700	Surf	Circ			
														7.875	5.500	8380	1905	Surf	Circ			
69	30-015-27269	OXY USA INC	CAL MON	010	Oil	Active	330 N	660 E	A	35 23S	31E	3/2/1993	8374	8374	17.5	13.375	818	950	Surf	Circ	8174-8224	[33745] INGLE WELLS; DELAWARE
														11	8.625	4305	1850	Surf	Circ			
														7.875	5.500	8420	1645	Surf	Circ			
70	30-015-27385	DEVON ENERGY PRODUCTION COMPANY, LP	TODD 25 L FEDERAL	012	Oil	Active	1982 S	660 W	L	25 23S	31E	8/30/1993	8400	8400	17.5	13.375	872	700	Surf	Circ	8045-8228	[33745] INGLE WELLS; DELAWARE
														11	8.625	4353	1650	Surf	Circ			
														7.875	5.5	8400	1100	Surf	Calc			
71	30-015-27386	DEVON ENERGY PRODUCTION COMPANY, LP	TODD 25 M FEDERAL	013	Oil	PA	662 S	660 W	M	25 23S	31E	10/21/1993	8370	8370	17.5	13.375	860	700	Surf	Circ	NA	NA
														11	8.625	4370	1500	Surf	Circ			
														7.875	5.500	8370	1075	Surf	Calc			
72	30-015-27496	OXY USA INC	CAL MON	019	Oil	Active	1980 N	380 E	H	35 23S	31E	9/22/1993	8400	8400	17.5	13.375	813	950	Surf	Circ	8170-8225	[33745] INGLE WELLS; DELAWARE
														11	8.625	4300	1800	Surf	Circ			
														7.875	5.500	8400	1705	Surf	Circ			
73	30-015-27549	OXY USA INC	CAL MON	020	Oil	Active	2310 N	1980 E	G	35 23S	31E	7/16/1993	8350	8350	17.5	13.375	816	950	Surf	Circ	8174-8220	[33745] INGLE WELLS; DELAWARE
														11	8.625	4303	1800	Surf	Circ			
														8.625	5.500	8390	1665	Surf	Circ			
74	30-015-28024	OXY USA INC	CAL MON	017	Oil	Active	930 S	460 E	P	35 23S	31E	1/2/1997	8440	8440	14.75	10.750	865	800	Surf	Circ	8214-8254	[33745] INGLE WELLS; DELAWARE
														9.875	7.625	4375	975	Surf	Circ			
														6.75	4.500	8440	675	Surf	Calc			
75	30-015-28026	OXY USA INC	CAL MON	018	Oil	Active	1980 S	385 E	I	35 23S	31E	9/30/1994	8402	8402	17.5	13.365	800	850	Surf	Circ	8053-8240	[33745] INGLE WELLS; DELAWARE
														11	8.625	4305	1600	Surf	Circ			
														7.875	5.500	8402	2035	Surf	Circ			
76	30-015-28859	DEVON ENERGY PRODUCTION COMPANY, LP	TODD 25 N FEDERAL	014	Salt Water Disposal	Active	660 S	1980 W	N	25 23S	31E	4/19/1996	8673	8673	17.5	13.375	877	700	Surf	Circ	6799-8274	[53810] SAND DUNES; CHERRY CANYON
														11	8.625	4373	1220	Surf	Circ			
														7.875	5.500	8672	935	Surf	Calc			
77	30-015-30810	PENROC OIL CORP	BARCLAY STATE	009	Oil	Active	660 N	1980 E	B	2 23S	31E	3/18/2000	8600	8600	17.5	13.375	895	700	Surf	Circ	6560-8220	[96149] LIVINGSTON RIDGE; DELAWARE, SOUTH
														12.25	8.625	4479	1800	Surf	Circ			
														7.875	5.500	8600	860	Surf	Calc			
78	30-015-31645	OXY USA INC	CAL MON	012Q	Oil	Active	330 S	660 W	M	35 23S	31E	3/29/2001	8424	8424	14.75	10.750	760	450	Surf	Circ	8194-8218	[33745] INGLE WELLS; DELAWARE
														9.875	7.625	4250	1470	Surf	Circ			
														6.75	4.500	8424	1550	Surf	Circ			
79	30-015-36897	DEVON ENERGY PRODUCTION COMPANY, LP	TODD 26 L FEDERAL	017	Oil	PA	1800 S	660 W	L	26 23S	31E	12/10/2009	8400	8400	17.500	13.375	740	770	Surf	Circ	NA	NA
														11.000	8.625	4378	1320	Surf	Circ			
														8.750	5.500	8396	1140	Surf	CBL			
80	30-015-46179	OXY USA INC	PLATINUM MDP1 34 3 FEDERAL COM	013H	Oil	Active	750 N	1480 E	B	34 23S	31E	1/3/2020	9416	18842	8.750	7.625	8710	1020	Surf	Circ	9758-18750	[13367] COTTON DRAW; BONE SPRING
														17.5	13.375	700	780	Surf	Circ			
														12.25	9.625	4473	1464	Surf	Circ			
														6.75	5.500	18822	845	Surf	Calc			
81	30-015-46180	OXY USA INC	PLATINUM MDP1 34 3 FEDERAL COM	014H	Oil	Active	750 N	1445 E	B	34 23S	31E	1/4/2020	9513	19888	17.5	13.375	700	880	Surf	Circ	9757-19750	[13367] COTTON DRAW; BONE SPRING
														12.25	9.625	4479	1400	Surf	Circ			
														8.75	7.625	8888	604	Surf	Circ			
														6.75	5.500	19869	842	Surf	Calc			
82	30-015-46559	OXY USA INC	PLATINUM MDP1 34 3 FEDERAL COM	026H	Oil	Active	110 N	793 E	A	34 23S	31E	1/14/2020	8935	19165	17.5	13.375	722	935	Surf	Circ	9037-19030	[13367] COTTON DRAW; BONE SPRING
														12.25	9.625	4454	1697	Surf	Circ			
														8.75	7.625	8271	424	Surf	Calc			
														6.75	5.500	19150	840	Surf	Calc			
83	30-015-26885	OXY USA INC	CAL MON	006	Oil	Active	330 N	380 W	D	35 23S	31E	2/21/1992	8309	8309	17.5	13.375	825	950	surf	circ	8007-8046	[33745] INGLE WELLS; DELAWARE
														11	8.625	4340	1575	surf	circ			
														7.875	5.5	8309	1404	4400	CBL			
84	30-015-27081	OXY USA INC	CAL MON	007	Oil	Active	330 N	1650 W	C	35 23S	31E	8/9/1992	8400	8400	17.5	13.375	797	1000	surf	circ	6996-8125	[33745] INGLE WELLS; DELAWARE
														11	8.625	4275	1525	surf	circ			
														7.875	5.5	8400	1275	2800	Calc			
85	30-015-27113	OXY USA INC	CAL MON	008	Oil	Active	2310 N	330 W	E	35 23S	31E	11/7/1992	8330	8330	17.5	13.375	815	1000	surf	circ	8149-8214	[33745] INGLE WELLS; DELAWARE
														11	8.625	4240	1525	surf	circ			
														7.875	5.5	8330	1505	Surf	Circ			
86	30-015-27206	OXY USA INC	CAL MON	009	Oil	Active	330 N	2310 E	B	35 23S	31E	12/6/1992	8370	8370	17.5	13.375	815	950	surf	circ	8102-8198	[33745] INGLE WELLS; DELAWARE
														11	8.625	4270	1850	surf	circ			
														7.875	5.5	8370	1680	Surf	circ			
87	30-015-46558	OXY USA INC	PLATINUM MDP1 34 3 FEDERAL COM	025H	Oil	Active	110 N	898 E	A	34 23S	31E	1/15/2020	8850	19189	17.5	13.375	722	935	Surf	Circ	9057-19038	[13367] COTTON DRAW; BONE SPRING
														12.25	9.625	4477	1721	Surf	Circ			
														8.75	7.625	8246	568	Surf	Circ			
														6.75	5.5	19164	774	7600	Calc			

4/6/2021

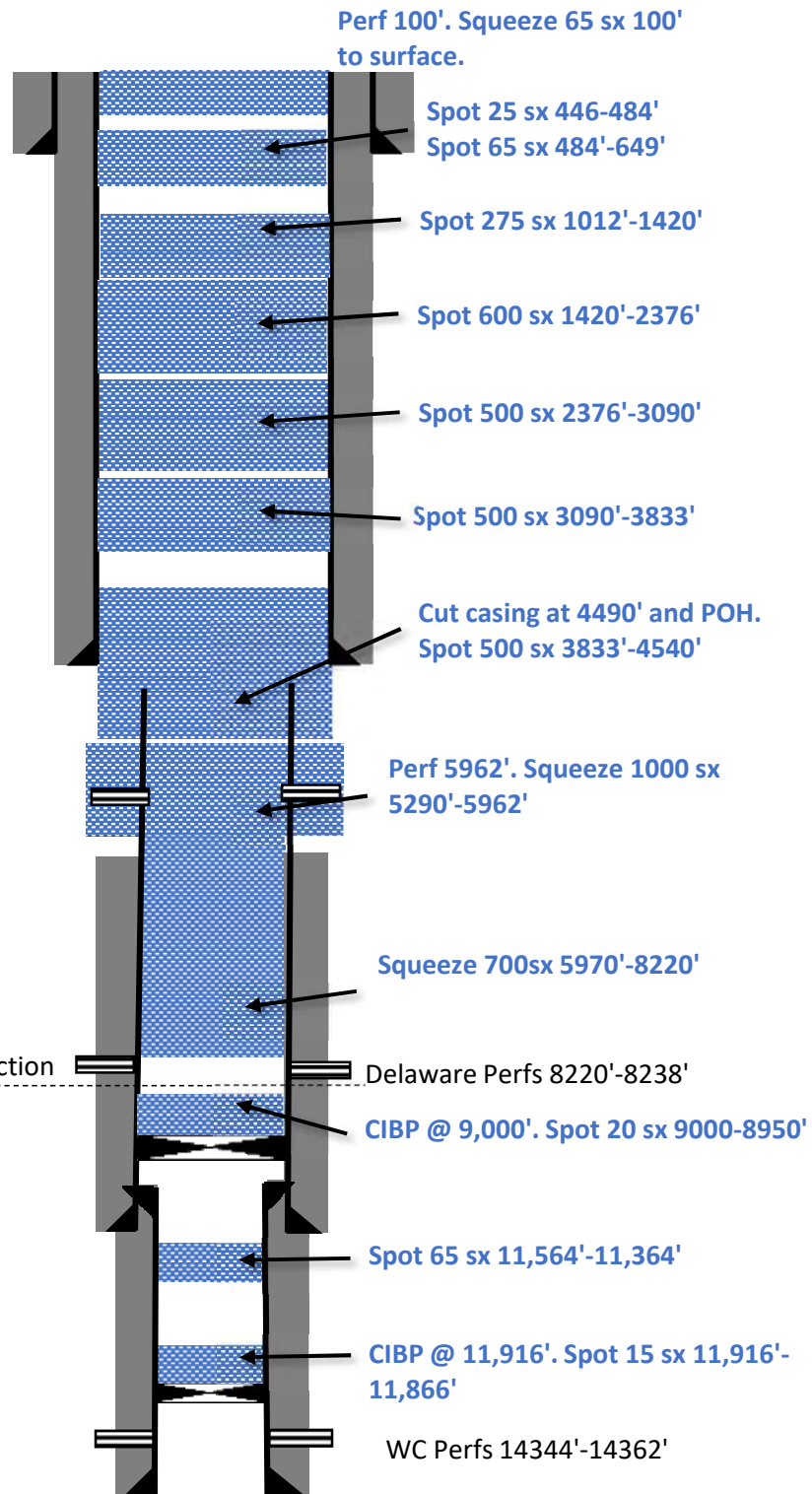
Current Wellbore  
**Calmon 2**  
 30-015-25176-0000  
 Eddy

String 1  
 OD 20 in  
 TD 599 ft  
 TOC 0 ft  
 825 sx, circ

String 2  
 OD 13-3/8 in  
 TD 4441 ft  
 TOC 0 ft  
 3500 sx, circ

String 3  
 OD 9-5/8 in  
 TD 11862 ft  
 TOC 6200 ft  
 3395 sx

String 4  
 OD 7 in  
 TD 14720'  
 TOC/Liner Top 11,464'  
 700 sx



- CALMON/IRIDIUM AOR WELL #35

## MAVERICK WELL PLUGGERS

COMPANY: Pogo Producing Co.

WELL NAME: Pure Gold "D" Federal

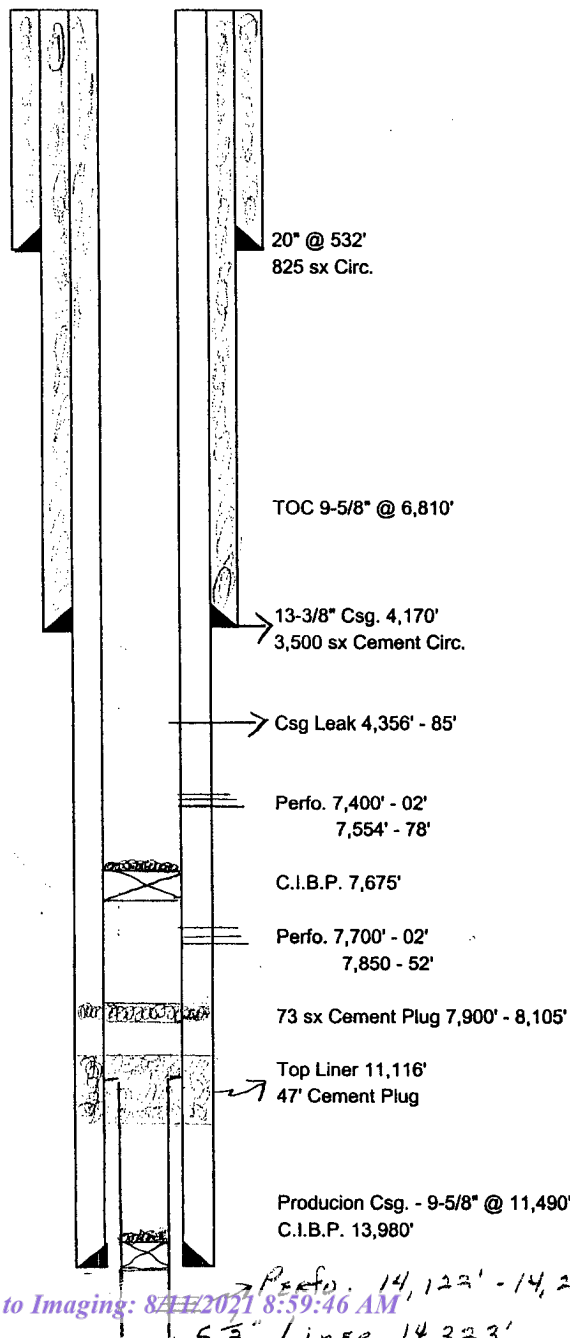
WELL #: # 1

COUNTY: Lea, New Mexico

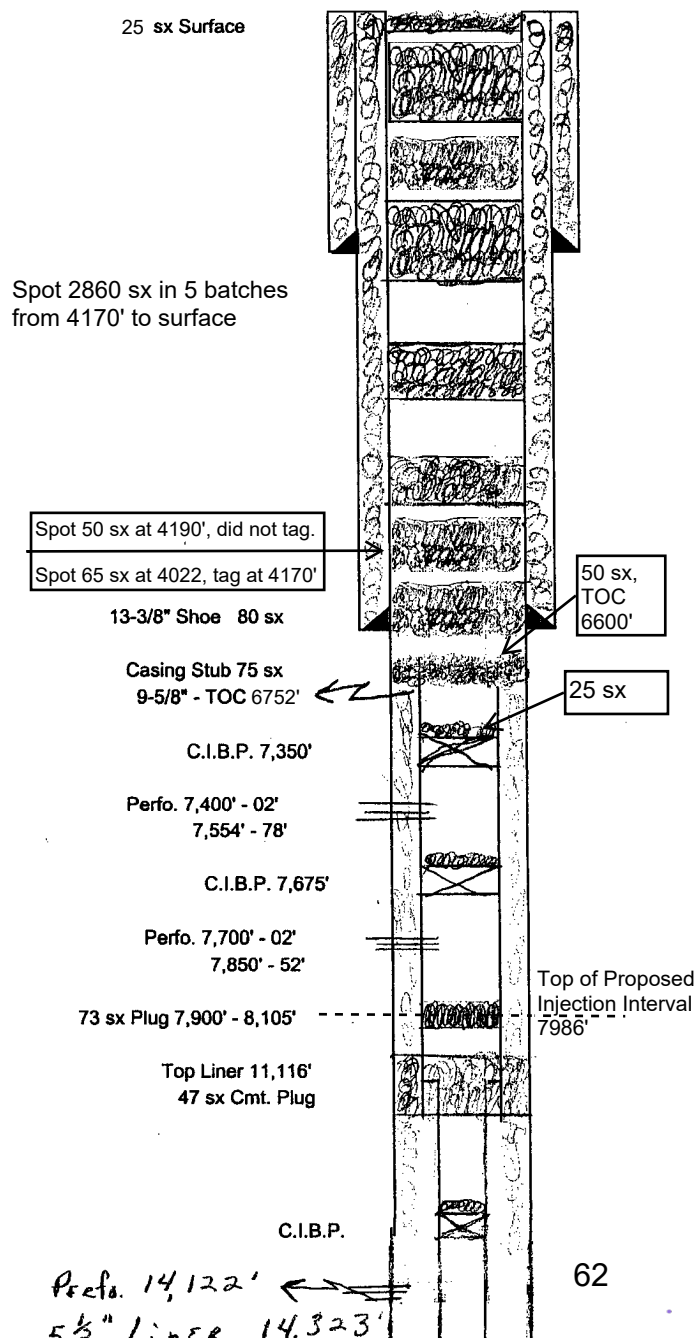
LEASE ID:

SURFACE CASING				
OD	WT/FT	GRADE	SET AT	TOC
20	94 #	K-55	532'	Surface
INTERMEDIATE CASING				
OD	WT/FT	GRADE	SET AT	TOC
13-3/8"	68 & 61	S-80-K55	4,170'	Surf.
PRODUCTION CASING				
OD	WT/FT	GRADE	SET AT	TOC
9-5/8"	47 & 43.5	S-95	11,490'	6,810'
TUBING				
OD	WT/FT	GRADE	SET AT	TAL
5-1/2"	17 #	S-95	14,323'	11,116'

BEFORE



AFTER



OXY USA Inc. (Kaiser Francis Oil Co.) - Final  
 Pure Gold A Federal #1  
 API No. 30-015-23175

67sx @ 72'-Surface VC  
 255sx @ 509-72' Tagged  
 200sx @ 1122-509' Tagged

400sx @ 1608-1122' Tagged

400sx @ 2896-1608' Tagged

400sx @ 3550-2896' Tagged

115sx @ 4256-4089' Tagged

200sx @ 5140-4640' Tagged

400sx @ 6350-5880' Tagged

120sx @ 6792-6411' Tagged

200sx @ 7415-6792' Tagged

400sx @ 8239-7415' Tagged

400sx @ 9479-8239' Tagged

2-3/8" tbg @ 9340 w/ pkr @ 13478'

CIBP @ 13590' w/ 10' - 13580'

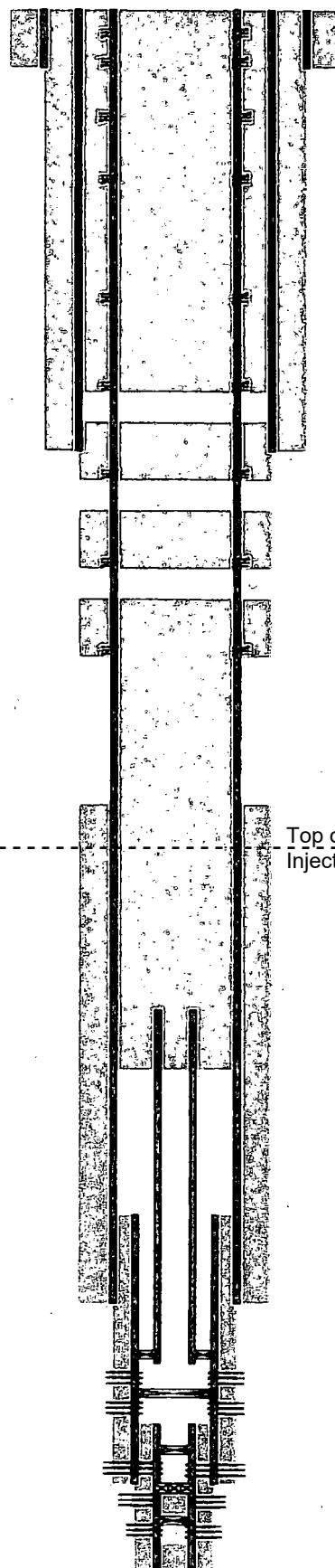
CIBP @ 14050 w/ 2sx - 14030'

CR @ 14142'sqz 200sx w/ 10' - 14132'

CIBP @ 14370' w/ 35' cmt-14335'

PB-14924'

TD-14967



Perf @ 72' 26" hole @ 600'  
 Perf @ 509' 20" csg @ 583'  
 w/ 1125sx-TOC-Surf-Circ

Perf @ 1122' - Pressure to 750#

Perf @ 1608' TOC-509'CBL

Perf @ 2896'

Perf @ 3550' 17-1/2" hole @ 4206'  
 13-3/8" csg @ 4206'  
 w/ 2850sx-TOC-Surf-Circ

Perf @ 4256'

Perf @ 5140'

Perf @ 6350'

Top of Proposed  
 Injection Interval 8400'

12-1/4" hole @ 12400'  
 9-5/8" csg @ 12398'  
 w/ 1450sx-TOC-7850'-TS

8-3/4" hole @ 14161'  
 7-5/8" liner @ 11860-14161'  
 w/ 615sx-TOC-11860'-Sqz

6-3/4" hole @ 14976'  
 5" liner @ 13702-14976'  
 w/ 200sx-TOC-13702'-Circ

Perfs @ 13506-13510'  
 Perfs @ 13624-13634'

Perfs @ 14084-14100'  
 Perfs @ 14165-14228'  
 Perfs @ 14414-14633'

DEVON ENERGY PRODUCTION COMPANY LP			
Well Name: TODD 26 N FEDERAL 14		Field: TODD SOUTHWEST	
Location: 330' FSL & 2180' FWL; 26-T235-R31E		County: EDDY	State: NM
Elevation: 3477' KB; 3458' GL; 19' KB to GL		Spud Date: 12/12/92	Compl Date: 2/20/93
API#: 30-015-27104	Prepared by: Ronnie Slack	Date: 2/13/18	Rev:

17-1/2" hole  
13-3/8", 48#, H40, @ 850' ✓  
 Cmt'd w/650 sx to surf

*Rustler 1025*  
*B/Saleto 4146*  
*Lamar 4380*  
*Bone Spring 8400*

TOC @ 3,885'-CBL (1/25/93)

11" Hole  
8-5/8", 32#, K55, @ 4,412' ✓  
 Cmt'd w/2050 sx to surf

DV Tool @ 5,700' ✓

DELAWARE  
 6,024' - 6,039' (1/15/04)

6,980' - 6,998' (9/29/94)

8,020' - 8,064' (1/29/93) ✓  
 8,128' - 8,184' (1/25/93) ✓

7-7/8" Hole  
5-1/2", 15.5# & 17#, @ 8,400' ✓  
 Cmt'd Stg 1 w/650 sx; Stg 2 w/400 sx

10# Mud

8,400' MD

Perf/squeeze 35sx class C cmt @140'  
 TOC @ surface

Perf/squeeze 125 sx class C cmt @1255'  
 Tag TOC @766'

Perf/squeeze 325 sx class C cmt @2705'.  
 Tag TOC @1278'

Spot 45 sx class C cmt @4313'.  
 Tag TOC @ 2715'.

Spot 40 sx class C cmt. Tag TOC @4313'.  
 CIBP@ 5980'

Top of proposed injection interval  
 BS 8232'



Well Name: TODD 26J FEDERAL #21		Field: INGLE WELLS	
Location: 1980' FSL & 1980' FEL; 26-T23S-R31E		County: EDDY	State: NM
Elevation: 3448' GL		Spud Date: 3/18/93	Compl Date: 6/15/93
API#: 30-015-27200	Prepared by: Max Lubitz	Date: 6/28/18	Rev:

Top of proposed injection interval  
BS 8216'

**OXY USA Inc.**  
**Sand Dunes 34 Federal #1**  
**API No. 30-015-27255**

Spot 140 sx class C cmt @1173'  
 TOC @ surface

17-1/2" hole @ 806'  
 13-3/8" csg @ 806'  
 w/ 1000sx-TOC-Surf-Circ

Spot 200 sx class C cmt @3072'  
 Tag TOC @ 1173'

CIBP @4340'. Spot 130sx class C cmt.  
 Tag TOC @ 3072'

3993  
 11" hole @ 4220'  
 8-5/8" csg @ 4220'  
 w/ 1650sx-TOC-Surf-Circ

Perfs @ 4390-4414' Basal Hdy 4112  
 Ramsey Del. 4344

Ball Gm 4390

Cherry Gm 5295

Brushy Gm 6543

Perfs @ 6218-6233' (CH) 8224  
 BS

CIBP @6170'. Spot 55 sx class C cmt.  
 Tag TOC @ 5412'

5806

Perfs @ 6780-6792' (BC) 502 100 sx

Perfs @ 7352-7358' (BC)  
 7-7/8" hole @ 8338'  
 5-1/2" csg @ 8338'  
 w/ 1485sx-TOC-Surf-Circ  
 DVT's @ 5806', 3993'

Top of proposed injection interval  
 BS 8224'

Perfs @ 8114-8182' (BC)

PB-8291'

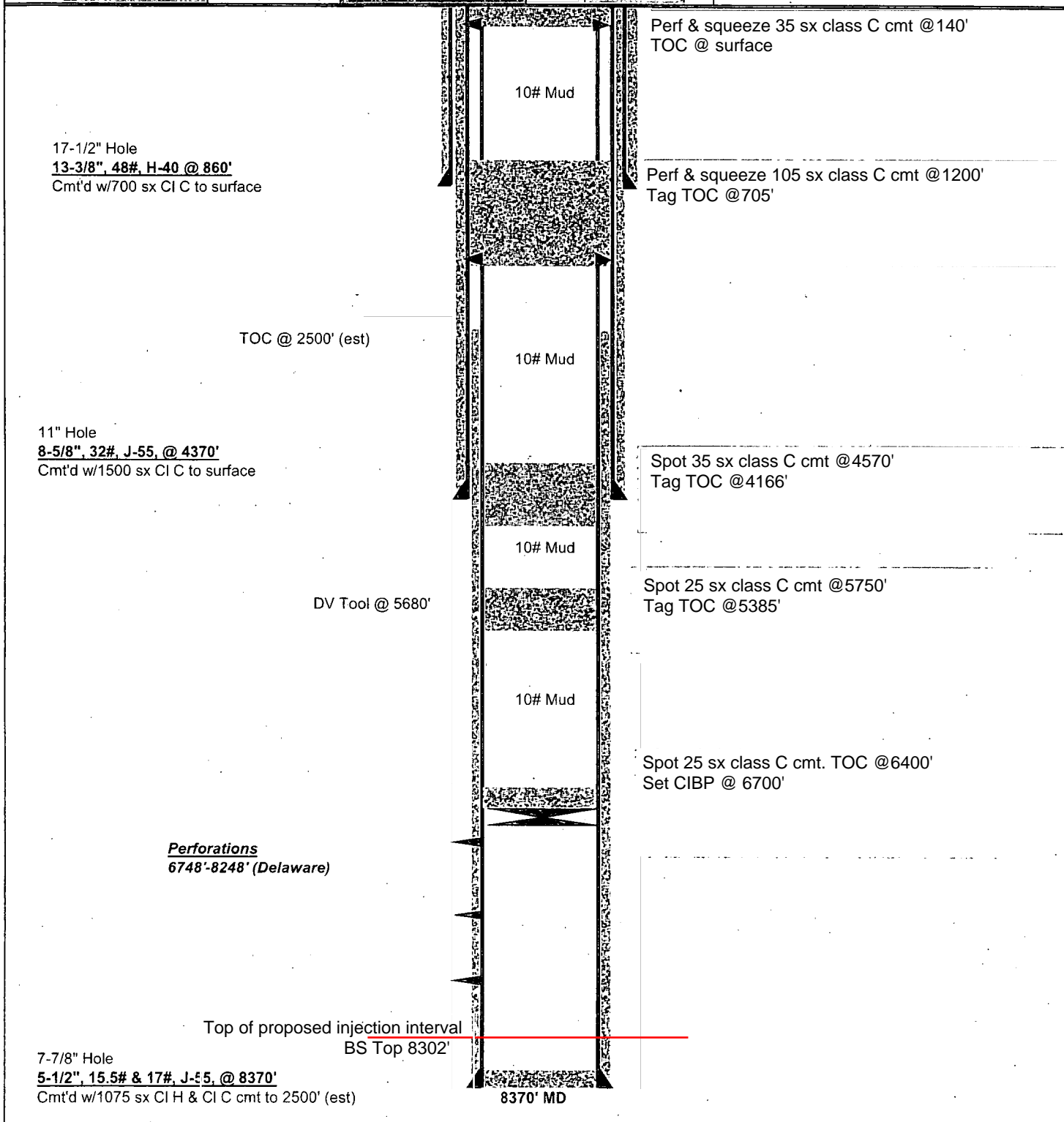
TD-8338'

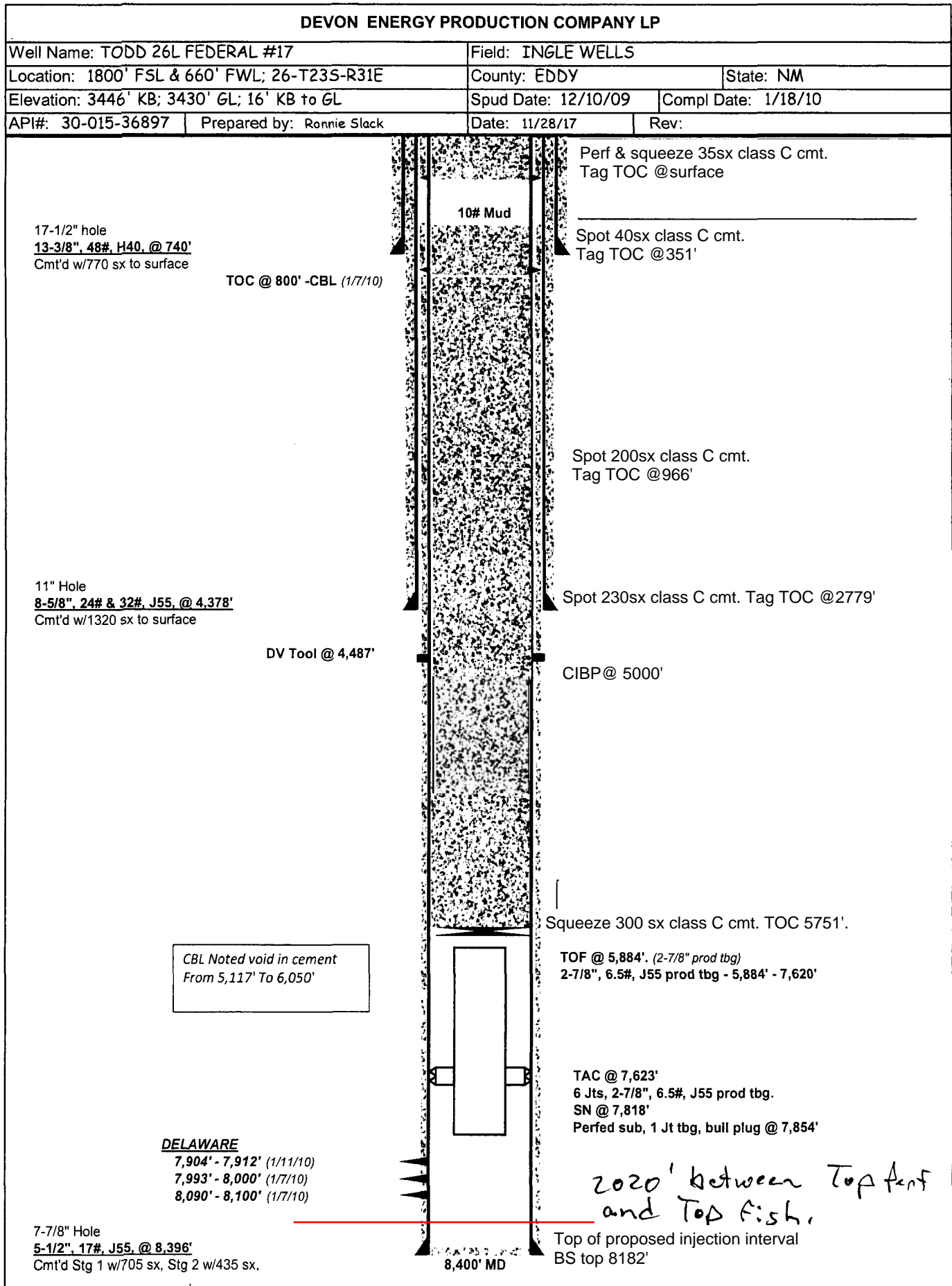


TD-8380'

## DEVON ENERGY PRODUCTION COMPANY LP

Well Name:	TODD 25M FED 13			Field:	Todd East		
Location:	602 FSL	660 FWL	SEC 25 T23S R31E	County:	Eddy	State:	New Mexico
Elevation:	3430' CL			Spud Date:	10/21/1993	Compl Date:	1/2/1994
API#:	30-015-27386	Prepared by:	Arnon Radfar	Date:	7/8/19	Rev:	





# Geology

# North Corridor Type Log

CAL-MON 35 FEDERAL 171H PILOT					
Operator: OXY USA INC			UWI: 30015442690000		
Well datum value: 3482.7 ft TD (MD): 12925.0 ft					
XGR	TVD	MD	XRES	XNPHIL	Lime
0.00 gAPI 150.00			0.0000 0.0000	0.3000 -0.1000	Sand
					Clay
XCAL			XRESS	420_XPEF	
6.0 in 16.0			0.0000 0.0000	0.0000 0.0000	
Gamma Ray					
				420_XRHOB	

CAL-MON 35 FEDERAL 171H PILOT					
Operator: OXY USA INC			UWI: 30015442690000		
Well datum value: 3482.7 ft TD (MD): 12925.0 ft					
XCHGR	TVD	XRES	XNPHIL	Lime	
0.00 gAPI 150.00		0.0000 0.0000	0.3000 -0.1000	Sand	
				Clay	
XCAL			XRESS	420_XPEF	
6.0 in 16.0			0.0000 0.0000	0.0000 0.0000	
Gamma Ray					
				420_XRHOB	

## Barriers protecting fresh water

- Rustler
- Salado Salt (~2,000ft thick)
- Castile Formation (~1,400ft thick)
  - > Low permeability anhydrite, gypsum, and calcite
- Delaware Mountain Group (~3,900ft thick)
  - > Low porosity/ low permeability sands

## Bone Spring and Wolfcamp Reservoir Characteristics

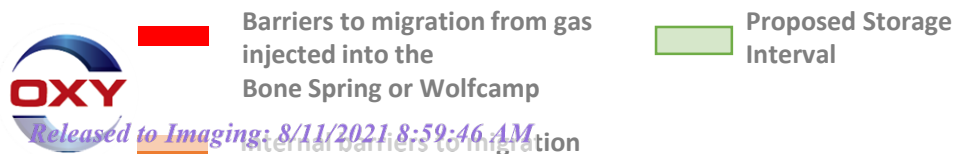
- Composed of large-scale cycles of alternating carbonate and siliclastic-dominated successions
- Siliclastic members are low stand turbidite channel, fans & distal sheets
  - > Very fine-grained sandstones and silts, mudstones, and shales
  - > Porosity 4-9% Permeability 400-800nD
  - > Authigenic clays are present
- Carbonate members are high stand submarine debris flows & sheets and act as internal barriers to flow between the different sandstone members

## Immediate barriers to flow outside of Bone Spring/ Wolfcamp

- Low permeability & porosity limes and siltstones at the top of the Avalon
- Low permeability & porosity siltstones and shales of the lower Wolfcamp

## Surrounding Production

- Delaware Mountain Group
  - > Brushy Canyon oil production: Deepest production ~7,500' TVD
- Wolfcamp
  - > Oil production: Shallowest production ~11,600' TVD



Brushy Canyon

Bone Springs

Avalon

Middle Avalon

1<sup>st</sup> Bone Spring Lime1<sup>st</sup> Bone Spring Sand2<sup>nd</sup> Bone Spring Lime2<sup>nd</sup> Bone Spring Sand3<sup>rd</sup> Bone Spring Lime

Harkey Sand

Harkey Shale

3<sup>rd</sup> Bone Spring Sand

Wolfcamp

Wolfcamp A Lime

Lowest water near base of Rustler

Higher Oil Zone  
Brushy Canyon  
~7,500' TVD

Lower Oil Zone  
Wolfcamp  
~11,600' TVD

Delaware Mountain Group

Bone Springs

Wolfcamp

Rustler

Salado

Castile

Bell Canyon

Cherry Canyon

Brushy Canyon

Bone Springs

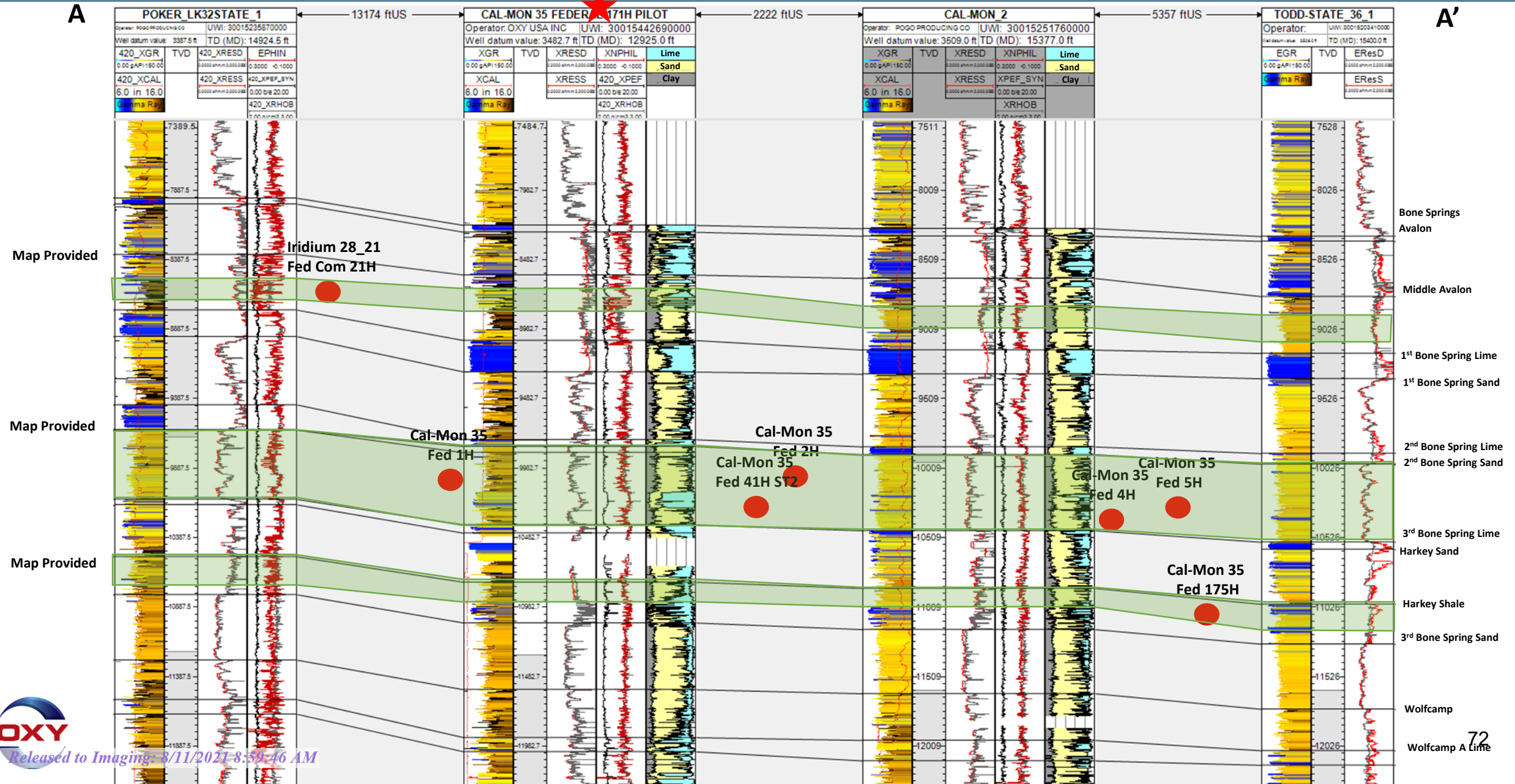
Avalon

1<sup>st</sup> Bone Spring Lime1<sup>st</sup> Bone Spring Sand2<sup>nd</sup> Bone Spring Lime2<sup>nd</sup> Bone Spring Sand3<sup>rd</sup> Bone Spring Lime3<sup>rd</sup> Bone Spring Sand

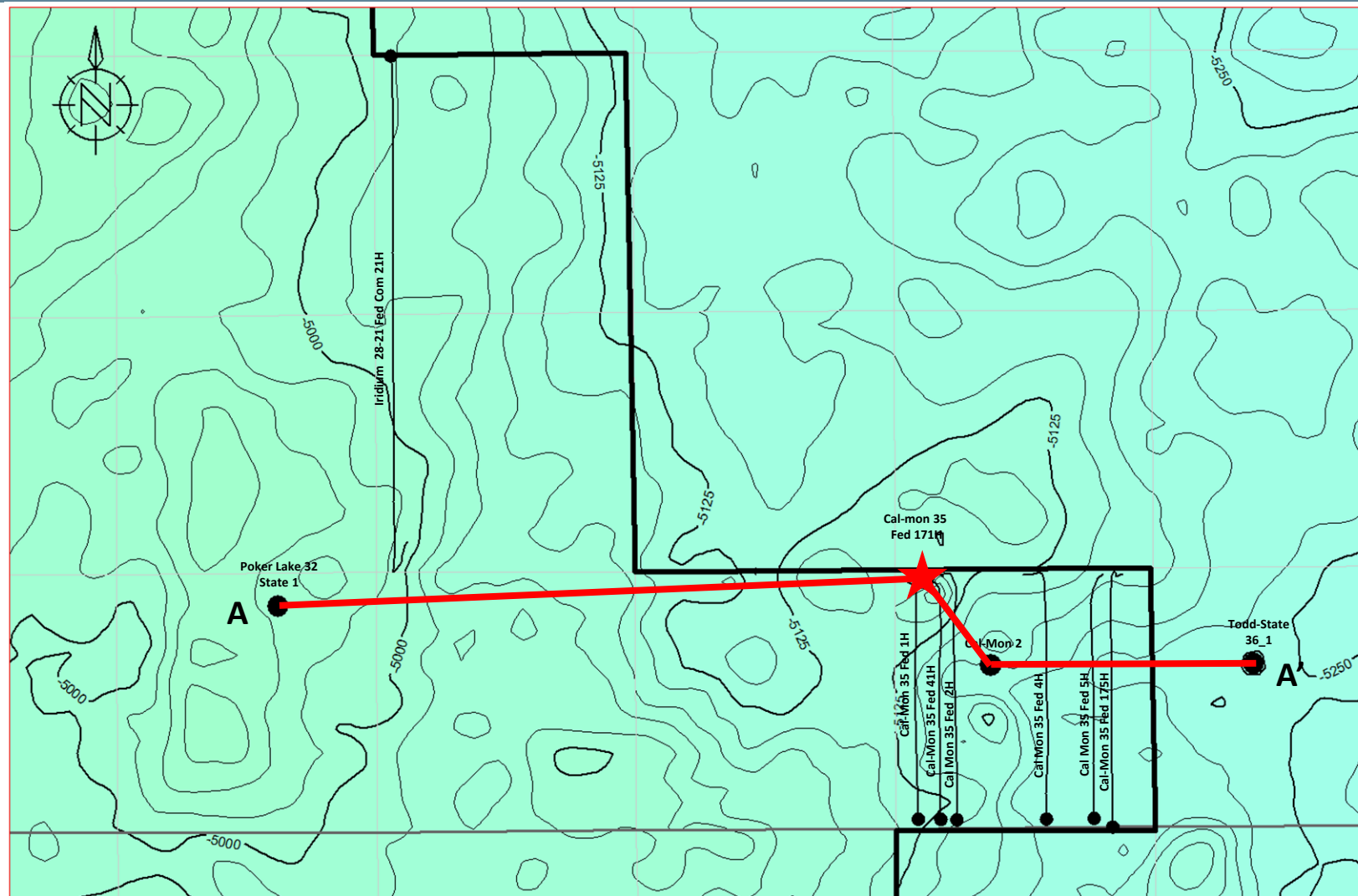
Wolfcamp



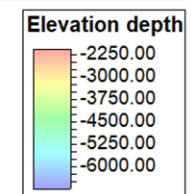
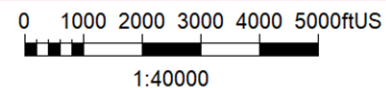
# North Corridor Cross-Section



# North Corridor Maps- Middle Avalon



Middle Avalon Structure Map	
Scale	User name
1:40000	wiechmam
Contour inc	Date
25	08/04/2021



## Geologic Information for Wells injecting into the Avalon member of the Bone Spring Formation

One well will be injecting into the lower portion of the Avalon member of the Bone Spring Formation. The well has an average TVD of approximately 8,700 ft. with a lateral length of approximately 10,500 ft. The Avalon is a very fine-grained quartz-rich and brittle siltstone with alternating cycles of carbonate rich mudstones deposited by gravity flows. Core data and petrophysical analysis indicates a tight reservoir with an average porosity of 8.4% and an average permeability of 0.000340mD. The reservoir has a clay content of 20–26% including illite and smectite. Cements include Fe-calcite, Fe-dolomite, with some quartz overgrowths. Minor amounts of pyrite (<1%) are present.

Low-permeability barriers within the upper Avalon and the 1<sup>st</sup> Bone Spring Lime act as barriers directly above and below the reservoir. The upper Avalon consist of fine-grained siltstones, carbonate mudstone and dolomudstone that have very low vertical permeabilities and an average thickness of 450 ft. Underlying is the 1<sup>st</sup> Bone Spring Lime, a ~ 200ft thick carbonate rich interval that acts as a flow barrier. Laterally the injection will be primarily contained by the reservoir volume that has been previously and partially depleted by the adjacent producing wells. The tight low-permeability reservoir and the production from the adjacent wells will be the primary constraints on the conformance of the injection to the project area and are expected to contain the injected gas.

The top of the Bone Spring Formation is at approximately 8,000 ft. TVD, with over 2,000 ft. of carbonate mudstones and shales acting as permeability barriers to upward migration of injected gas. Overlying the Bone Springs is the Delaware Mountain Group, which consists of connate-water bearing and hydrocarbon-bearing low permeability and porosity sands, with minor limestone and shale intervals and is approximately 3,700 ft. thick. Above that is the Castile Formation consisting of very low permeability anhydrite, gypsum, and calcite that acts as another 1,500 ft. thick barrier to upward movement of fluids. The Salado overlies the Castile and forms a 1,000 ft. thick barrier of salt. The top of the Salado is at approximately 750 ft. TVD and the deep aquifers found just above the Salado at the base of the Rustler are saline water. The top of Rustler Formation is at approximately 400 ft. The Rustler top is a continuous anhydrite layer that acts as another permeability barrier creating a perched aquifer above it that is the lowest level where fresh water is known in the area, water wells drilled in the area typically have not reached this depth. Due to the thickness of multiple impermeable rock layers above the injection reservoir there is little possibility for migration upward into freshwater aquifers where they exist.

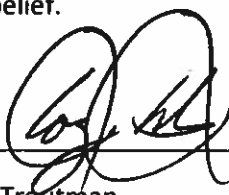
### Locate freshwater wells within two miles:

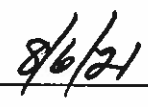
An investigation of existing shallow water wells has not found any freshwater wells within a two mile radius of this injector.

### Well List:

Iridium MDP1 28-21 Fed Com 21H

I hereby certify that the information presented above is true and correct to the best of my knowledge and belief.

  
\_\_\_\_\_  
Tony Troutman  
Geologist

  
\_\_\_\_\_  
Date



### **Geologic Information for Wells injecting into the 2<sup>nd</sup> Bone Spring Sand Member of the Bone Spring Formation**

Five wells will be injecting into the 2<sup>nd</sup> Bone Spring Sandstone of the Bone Spring Formation. The wells have an average TVD of approximately 9,800 ft. with lateral lengths of approximately 5,000 ft. The wells inject into a reservoir composed of tight siltstone, laminated mudstone, and pelagic shales. Core data and petrophysical analysis indicates a tight reservoir with a 7% average porosity and an average permeability of 0.0016mD. The reservoir has a clay content of 20–26% including illite and smectite. Cements include Fe-calcite, Fe-dolomite, with some quartz overgrowths. Minor amounts of pyrite (<1%) are present.

Low-permeability carbonate mudstones and dolomudstone barriers of the 2<sup>nd</sup> Bone Spring Lime and 3<sup>rd</sup> Bone Spring Lime act as flow barriers directly above and below the reservoir. Laterally the injection will be primarily contained by the reservoir volume that has been previously and partially depleted by the adjacent producing wells. The tight low-permeability reservoir and the production from the adjacent wells will be the primary constraints on the conformance of the injection to the project area and are expected to contain the low pressure injected gas.

The top of the Bone Spring Formation is at approximately 8,000 ft. TVD, with over 2,000 ft. of carbonate mudstones and shales acting as permeability barriers to upward migration of injected gas. Overlying the Bone Springs is the Delaware Mountain Group, which consists of connate-water bearing and hydrocarbon-bearing low permeability and porosity sands, with minor limestone and shale intervals and is approximately 3,700 ft. thick. Above that is the Castile Formation consisting of very low permeability anhydrite, gypsum, and calcite that acts as another 1,500 ft. thick barrier to upward movement of fluids. The Salado overlies the Castile and forms a 1,000 ft. thick barrier of salt. The top of the Salado is at approximately 750 ft. TVD and the deep aquifers found just above the Salado at the base of the Rustler are saline water. The top of Rustler Formation is at approximately 400 ft. The Rustler top is a continuous anhydrite layer that acts as another permeability barrier creating a perched aquifer above it that is the lowest level where fresh water is known in the area, water wells drilled in the area typically have not reached this depth. Due to the thickness of multiple impermeable rock layers above the injection reservoir there is little possibility for migration upward into freshwater aquifers where they exist.

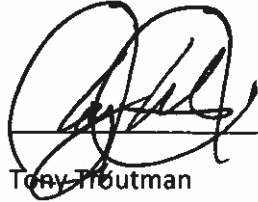
#### **Locate freshwater wells within two miles:**

An investigation of existing shallow water wells has not found any freshwater wells within a two mile radius of this injector.

#### **Well List:**

Cal-mon MDP1 35 Federal 1H  
Cal-mon MDP1 35 Federal 2H  
Cal-mon 35 Federal 41H ST1  
Cal-mon MDP1 35 Federal 4H  
Cal-mon MDP 1 35 Federal 5H

I hereby certify that the information presented above is true and correct to the best of my knowledge and belief.



Tony Troutman  
Geologist



Date

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### Geologic Information for Wells injecting into the 3<sup>rd</sup> Bone Spring Lime Member, Bone Spring Formation

One well will be injecting into the 3<sup>rd</sup> Bone Lime; specifically, into the siliciclastic member the Harkey Shale. The well has an average TVD of approximately 10,950 ft. with lateral length of approximately 5,000 ft. The well injects into a reservoir which is composed of tight siltstones and mudstones deposited in a lowstand turbidite environment and has an average porosity of 7% and an average permeability of 0.0003 mD.

Where developed the middle 3<sup>rd</sup> Bone Lime acts as barrier directly above the injection reservoir, where less developed shales and tight siltstones act as a barrier. This upper barrier is approximately 200ft. Low permeability and porosity siltstones, carbonate mudstones, and shales of the 3<sup>rd</sup> Bone Spring Lime act as a barrier below the Harkey; this interval is approximately 250 ft. thick. Laterally the injection will be primarily contained by the reservoir volume that has been previously and partially depleted by the adjacent producing wells. The tight low-permeability reservoir and the production from the adjacent wells will be the primary constraints on the conformance of the injection to the project area and are expected to contain the injected gas.

The top of the Bone Spring Formation is at approximately 8,000 to 8,200 ft. TVD depending on location within the field, with over 2,000 ft. of carbonate mudstones and shales acting as permeability barriers to upward migration of injected gas. Overlying the Bone Springs is the Delaware Mountain Group, which consists of connate-water bearing and hydrocarbon-bearing low permeability and porosity sands, with minor limestone and shale intervals and is approximately 3,700 ft. thick. Above that is the Castile Formation consisting of very low permeability anhydrite, gypsum, and calcite that acts as another 1,500 ft. thick barrier to upward movement of fluids. The Salado overlies the Castile and forms a 1,000 ft. thick barrier of salt. The top of the Salado is at 750-900 ft. TVD (depending on location within the field) and the deep aquifers found just above the Salado at the base of the Rustler are saline water. The top of Rustler Formation is at approximately 500 ft. The Rustler top is a continuous anhydrite layer that acts as another permeability barrier creating a perched aquifer above it that is the lowest level where fresh water is known in the area, water wells drilled in the area typically have not reached this depth. Due to the thickness of multiple impermeable rock layers above the injection reservoir there is little possibility for migration upward into freshwater aquifers where they exist.

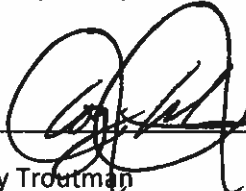
#### Locate freshwater wells within two miles:


An investigation of existing shallow water wells has not found any freshwater wells within a two mile radius of this injector.

#### Well List:

Cal-Mon 35 Federal 175H

I hereby certify that the information presented above is true and correct to the best of my knowledge and belief.

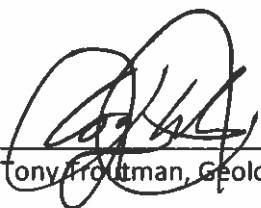
  
\_\_\_\_\_  
Tony Troutman  
Geologist

  
\_\_\_\_\_  
Date


Closed Loop Gas Capture (CLGC) Project

Affirmative Statement 1

The operator examined the available geologic and engineering data and found no evidence of open faults or other hydrologic connections between the disposal zone and any underground source of drinking water.

  
Tony Troutman, Geologist

  
Xueying Xie, Reservoir Engineer

  
Date

6/10/2021  
Date

# Reservoir Engineering

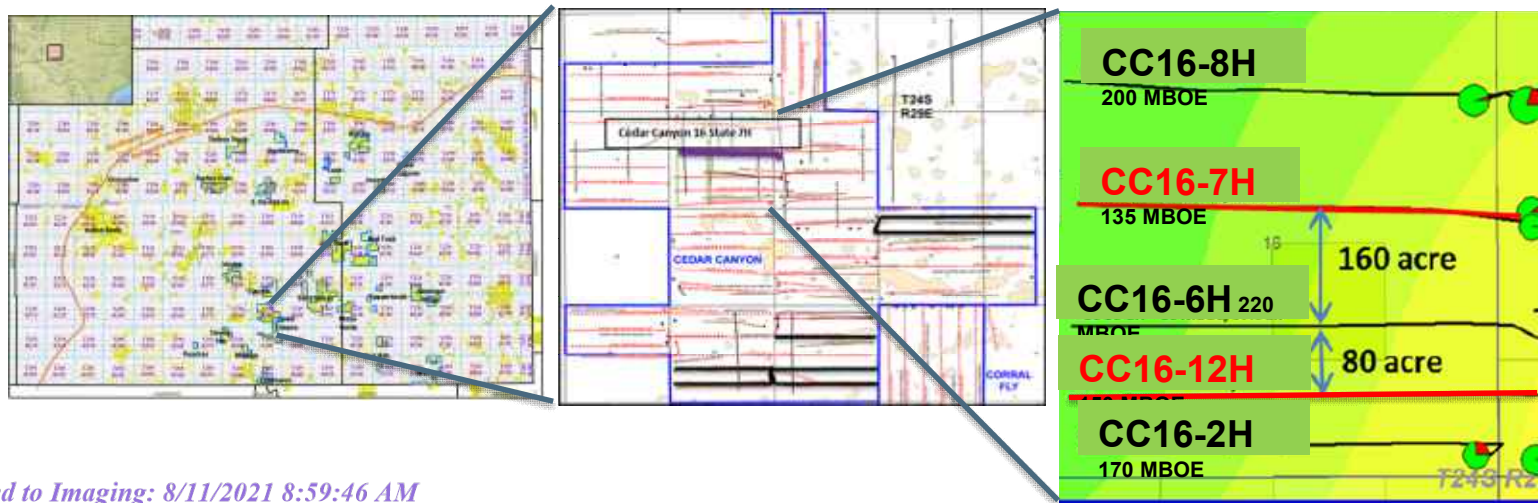
# Project Overview- NC

- Closed loop gas capture project (CLGC) IN Oxy's NM assets
- Produced gas injection into productive formations in NM (Avalon, 2<sup>nd</sup> Bone Spring, Harkey)
- Gas injection into horizontal wells of varying lateral length (5,000'-10,000')
- Purpose of Modeling
  - > Review potential effects on wells adjacent to the CLGC area
  - > Quantify movement of the injected gas
  - > Utilize data from Cedar Canyon Huff and Puff Projects



# Model Set-up

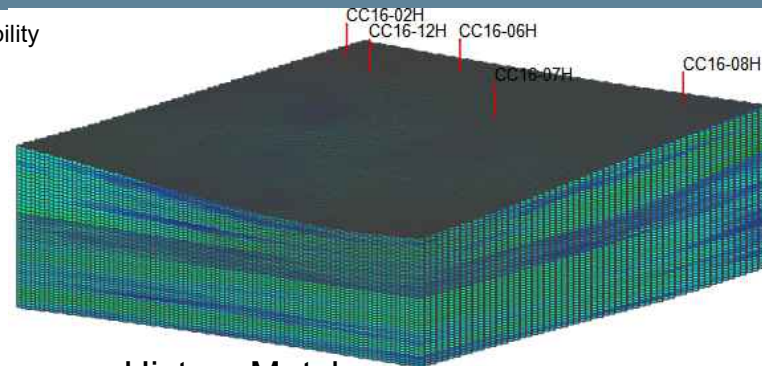
- Uses Cedar Canyon Sec 16 2<sup>nd</sup> BSS (as shown in layout below)
- Gas Injection pilot (EOR) was implemented in CC16-7H well in 2017
- Reservoir model is history matched for primary production and gas injection pilot
- Model is also tuned to capture injection gas breakthrough in offset wells that was observed during pilot period
- Gas injection pilot wells are 4 wells per section; model is adjusted to simulate the effect of closer wells (6 wps)



# Cedar Canyon Section-16 Reservoir Model

Location: Lea County, NM  
 Model Acreage: 640  
 Pay Horizon: 2<sup>nd</sup> Bone Springs Sand  
 Lithology: Sandstone interbedded with Limestone  
 Trap Type: Stratigraphic  
 Nominal Depth: 8400 ft  
 Gas Cap (at discovery): No  
 Primary Drive Mechanism: Solution Gas Drive

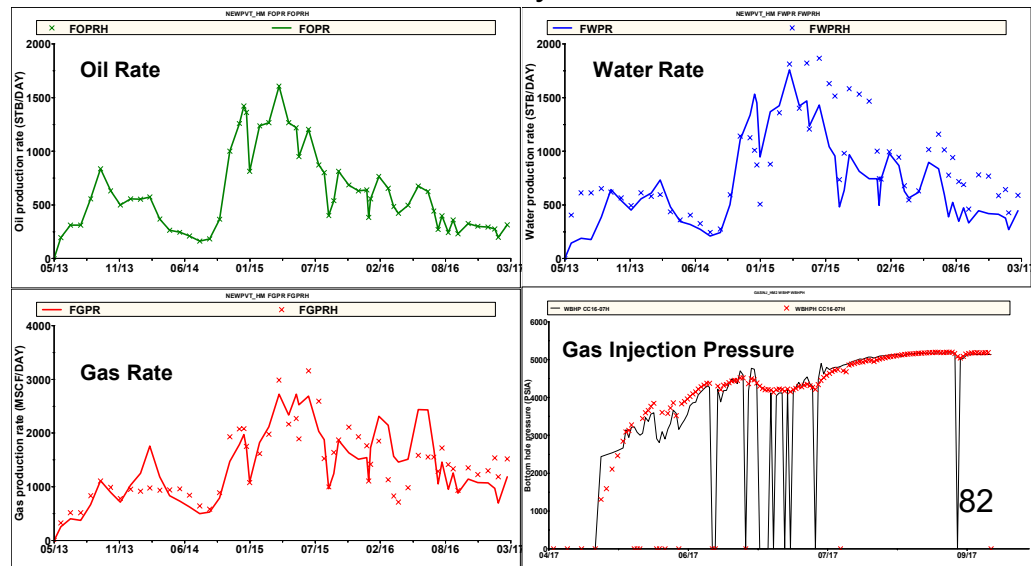
Structure & Permeability  
 1,177,400 Grids  
 56 Layers



## History Match

Gross Pay:	320 ft
Net Pay:	320 ft
Avg Porosity:	6.8%
Initial Sw:	50%
Permeability:	0.001md (matrix)
Initial Reservoir Pressure:	4500 psi
Reservoir Temperature:	150 F
Oil Gravity:	42 API
Boi:	1.63 RB/STB
Rsi:	1480 SCF/STB
Original Oil in Place:	28 MMSTB

Model Inputs



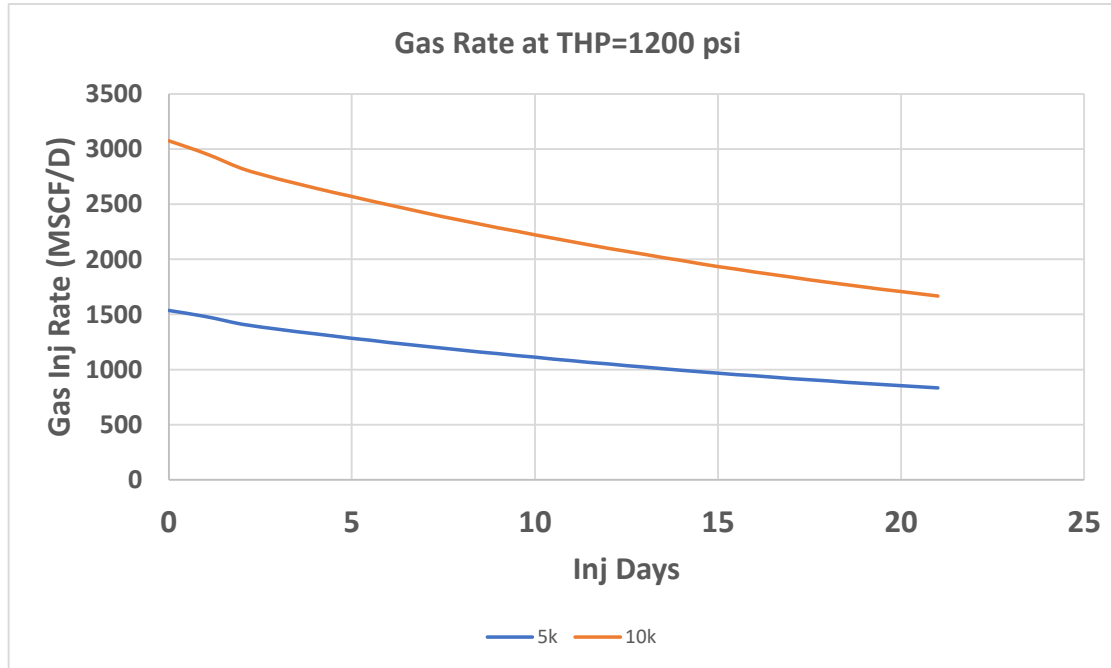


# Gas Storage Simulation Process

- Run primary production for all wells for additional period (post history match) – Base Case
- Inject gas in injection well at 2MMSCFPD for 7 days
- Produce the injection well post injection – Injection Case
- Observe the effect on oil, gas rate/recovery in injection well and offset wells by comparing Base and Injection cases

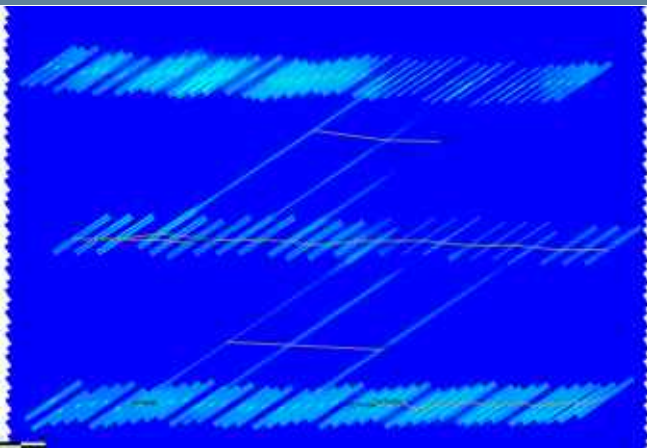


# Gas injection rates

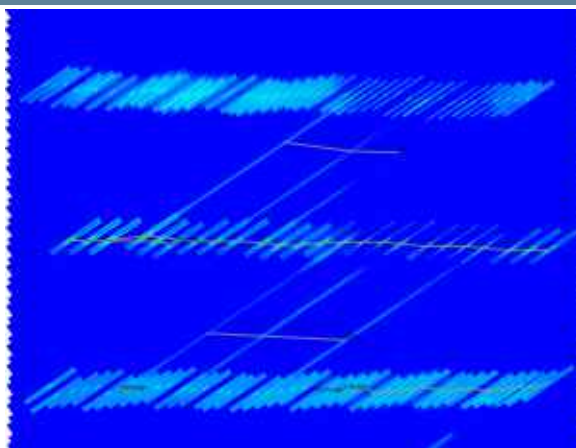


For a 10k well, 3 MMSCFPD is the max injection rate at THP of 1200 psi. Injection rate declines to about 50% of its initial value in 3 weeks. For long injection case a flat injection rate of 3MMSCFPD for 3 weeks is used as worst-case scenario. There is not a major increase in rate if THP is increased to 1250 psi.

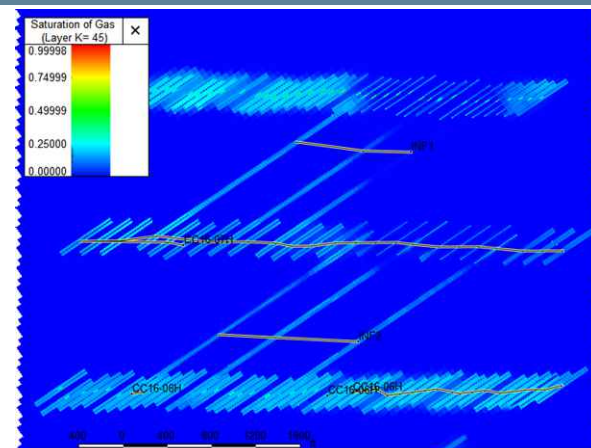
# Gas Injection Profile



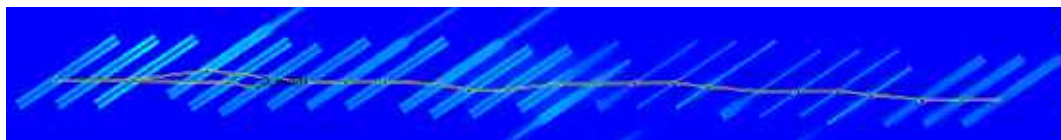
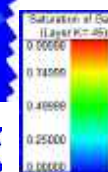
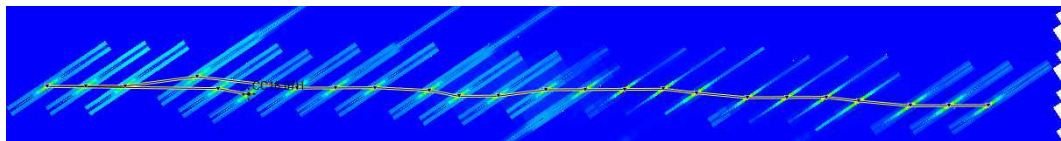
Before injection



After 1 week of injection (3 MMSCFPD)

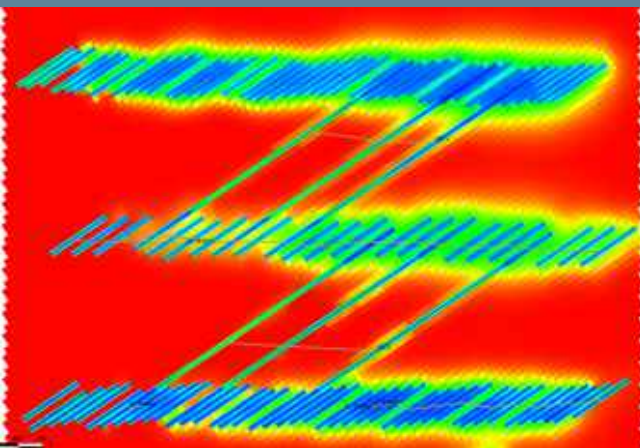


After 16 months production

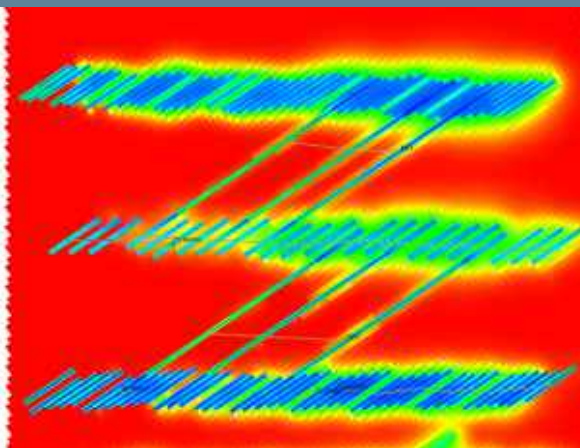
Before Injection CC16-7H  
Blow-upAfter Injection CC16-7H  
Blow-up

- Gas is stored within fractures.
- All injection cases indicate horizontal gas movement of 100 ft or less into the fractures.

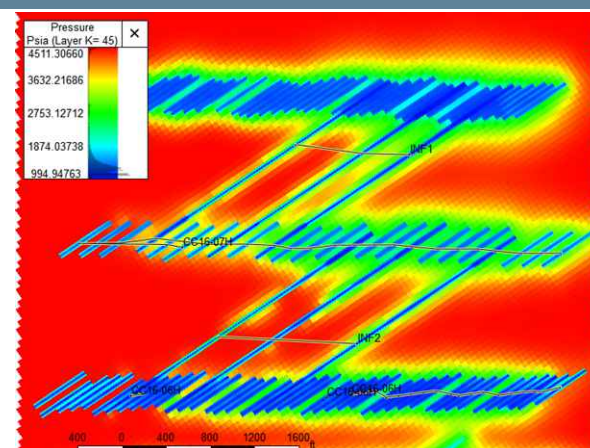
# Pressure Profile



Before injection

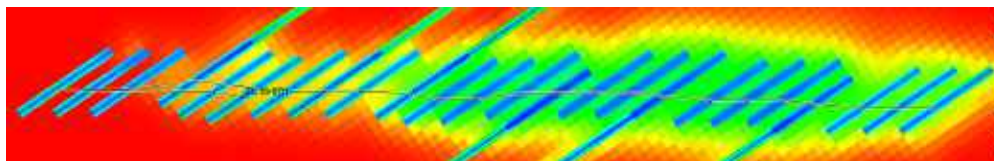


After 1 week of injection (3 MMSCFPD)

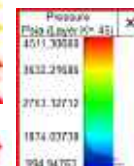
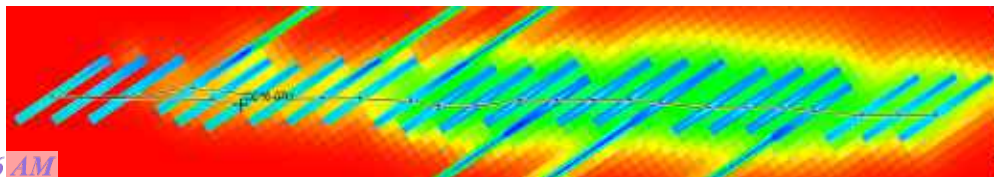


After 16 months production

Before Injection CC16-7H  
Blow-up



After Injection CC16-7H  
Blow-up



# Summary of Cases

Case	Injection Description*	WPS	Oil recovery effect in injected well (MBO)	Oil recovery effect in offset wells (MBO)	Gas breakthrough in Offset well
1	Single Well	4	No change	No change	No
2	Single Well**	6	No change	No change	No
3	Single Well	8	No change	No change	No
4	Single Well (Multiple injection and production cycles)	6	No change	No change	No
5	Single well***	6	No change	No change	No
6	Multiple Adjacent Wells	4	No change	No change	No
7	Multiple Adjacent Wells	6	No change	No change	No
8	Multiple Adjacent Wells	8	No change	No change	No

\*All injection at 2MMSCF/DAY for 7 days except cases 2 and 5

\*\*Injection at 3MMSCF/DAY for 7 days

\*\*\*Injection at 3MMSCF/DAY for 21 days



# Gas Storage Capacities - NC

API	Well Name	Gas Storage Capacity with 1200 psi WHP Injection	
		Fracture volume gas equivalent, mmscf	Total prod gas equivalent, mmscf
30015447710000	CAL MON MDP1 35 FED 001H	130	722
30015447720000	CAL MON MDP1 35 FED 002H	130	762
30015447740000	CAL MON MDP1 35 FED 004H	129	613
30015447750000	CAL MON MDP1 35 FED 005H	129	789
30015455240000	CAL-MON 35 FED 175H	133	376
30015431400200	CAL-MON FEDERAL 35 41H ST2	145	883
30015450740000	IRIDIUM MDP1 28-21 FED COM 21H	276	1806

- **Gas storage capacity is high for each well**
  - **Even just stored gas in fractures, the capacity is over 100 mmscf**
- **The expected gas injection volume for each well during each event could be up to 60 mmscf, this is way below the storage capacity**

# Frac Height and SRV - NC

- **Frac height:**
  - **Avalon: Based on Tanks Avogato**
    - XH= 340'
    - Xf = 350'
  - **2BSS: Based on Nimitz**
    - XH = 285',
    - Xf = 300-400'
  - **Harkey**
    - XH = 350'
    - Xf=400'
- **SRV**
  - $SRV = 2 * Xf * Xh * \text{Well length}$

API 14	Well Name	SRV, ft <sup>3</sup>
30015447710000	CALMON-35-1H	898,348,500
30015447720000	CALMON-35-2H	917,301,000
30015431400200	CAL-MON41HST	848,673,000
30015450740000	IRI28-21-21H	2,403,562,000
30015455240000	CAL-MON-175H	1,442,840,000
30015447740000	CALMON-35-4H	917,301,000
30015447750000	CALMON-35-5H	907,126,500



Closed Loop Gas Capture (CLGC) Project

Affirmative Statement 2

The operator examined the available geologic and engineering data and determined 1) the total recoverable volume of hydrocarbons from the reservoir will not be adversely affected by the project and 2) the gas composition will not damage the reservoir.

Xueying Xie

6/9/2021

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Xueying Xie, Reservoir Engineer

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Date

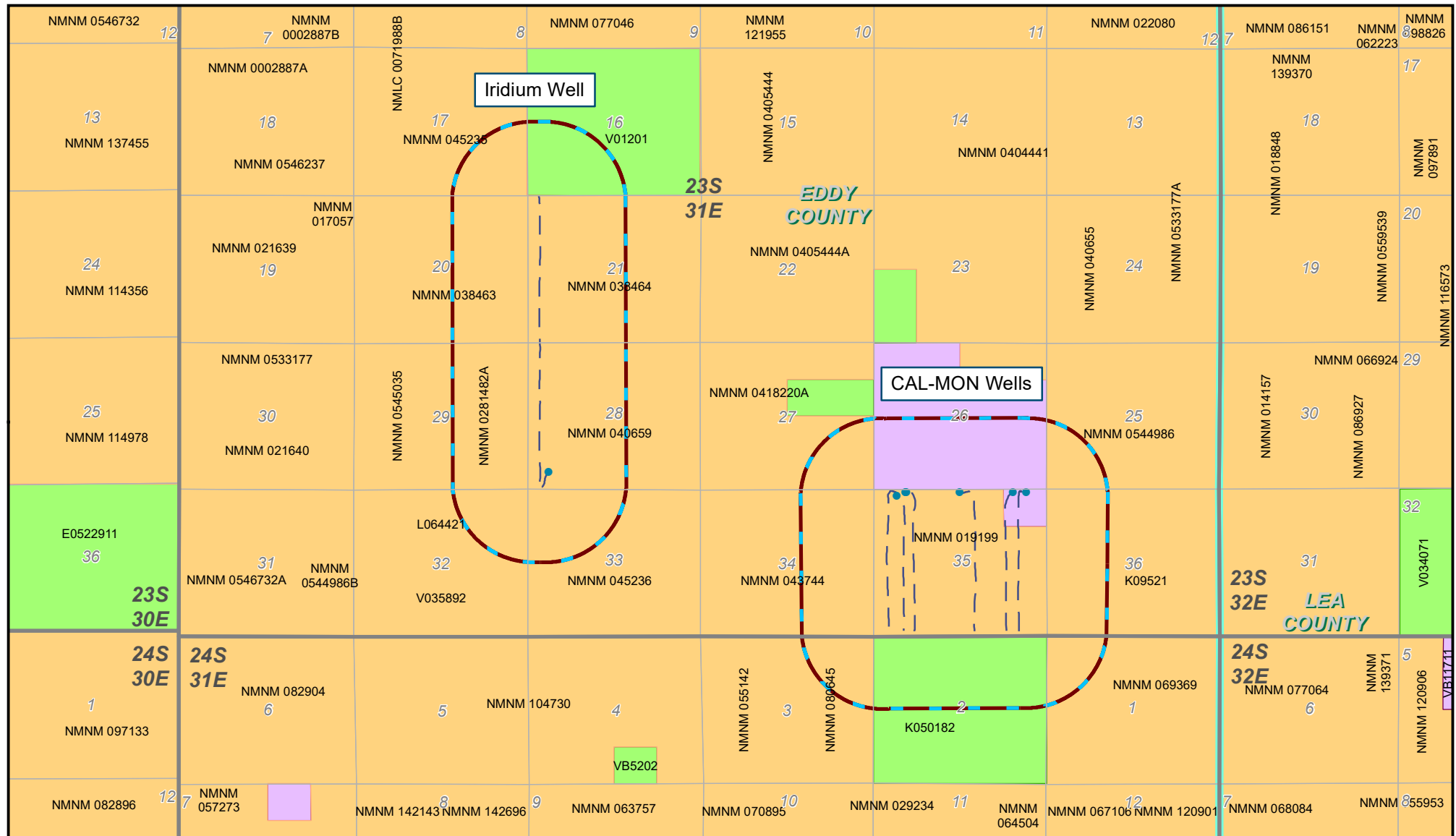


# Notice



# EXHIBIT "A"

## EDDY COUNTY, NEW MEXICO



County

1/2 mile AOR

Surface Hole Location

Wellbore Trajectory

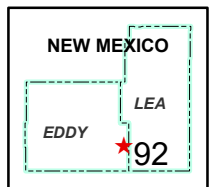
Surface Ownership:

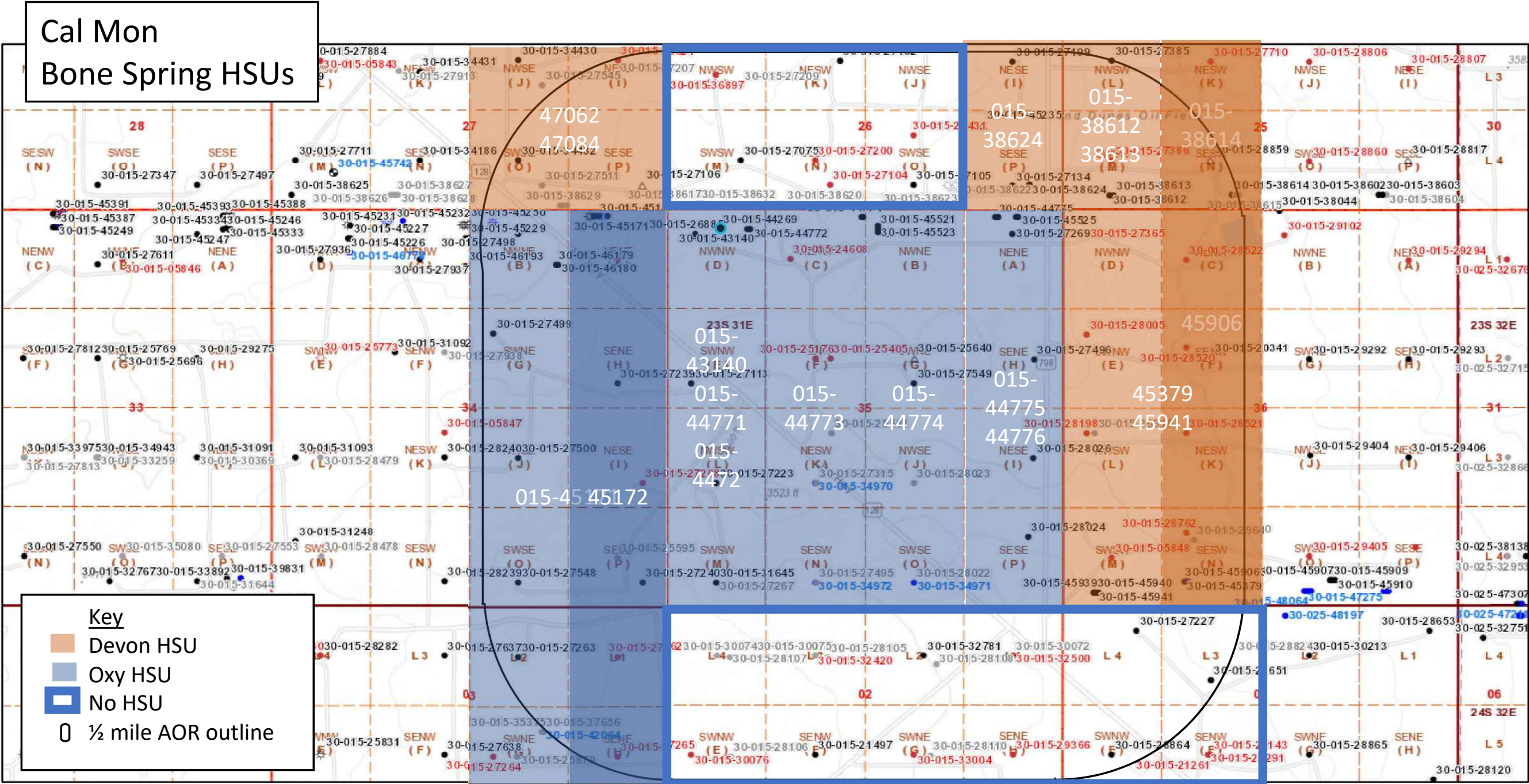
Federal

Private

State

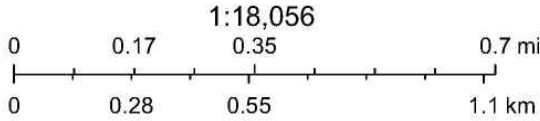
0 0.5 1 2 Miles





4/8/2021, 8:28:38 AM

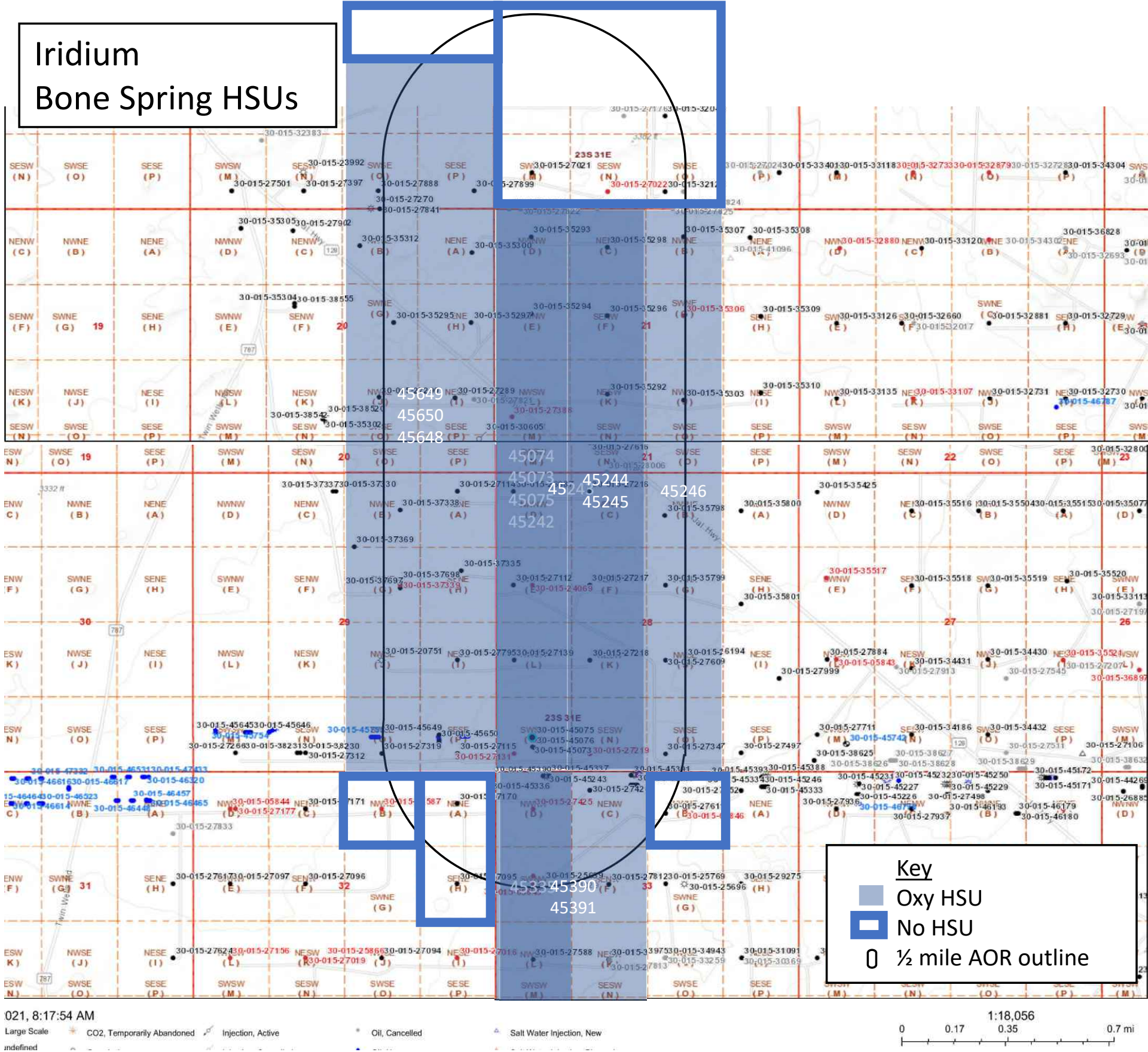
Wells - Large Scale	CO2, Temporarily Abandoned	Injection, Active	Oil, Cancelled	Salt Water Injection, New
undefined	Gas, Active	Injection, Cancelled	Oil, New	Salt Water Injection, Plugged
Miscellaneous	Gas, Cancelled	Injection, New	Oil, Plugged	Salt Water Injection, Temporarily Abandoned
CO2, Active	Gas, New	Injection, Plugged	Oil, Temporarily Abandoned	Water, Active
CO2, Cancelled	Gas, Plugged	Injection, Temporarily Abandoned	Salt Water Injection, Active	Water, Cancelled
CO2, New	Gas, Temporarily Abandoned	Oil, Active	Salt Water Injection, Cancelled	Water, New
CO2, Plugged				



Oil Conservation Division of the New Mexico Energy, Minerals and Natural Resources Department, Bureau of Land Management, Texas Parks & Wildlife, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA, OCD, BLM

New Mexico Oil Conservation Division  
NM OCD Oil and Gas Map. <http://nm-emnrd.maps.arcgis.com/apps/webappviewer/index.html?id=4d017f2306164de29fd2fb9f8f35ca75>: New Mexico Oil Conservation Division





## Notice List- NC

Name	Street	City	State	Zip	Merged Address
<b>Surface Owner</b>					
BLM	620 E. Greene St.,	Carlsbad	NM	88220	BLM 620 E. Greene St., Carlsbad,NM 88220
<b>Leasehold Operators</b>					
Chevron USA Inc.	6301 Deauville	Midland	TX	79706	Chevron USA Inc. 6301 Deauville Midland,TX 79706
Devon Energy Production Company LP	333 W. Sheridan Ave	Oklahoma City	OK	73102	Devon Energy Production Company LP 333 W. Sheridan Ave Oklahoma City,OK 73102
EOG Resources Inc.	P.O. Box 2267	Midland	TX	79702	EOG Resources Inc. P.O. Box 2267 Midland,TX 79702
EOG Y RESOURCES, INC.	104 S 4TH ST	ARTESIA	NM	88210	EOG Y RESOURCES, INC. 104 S 4TH ST ARTESIA,NM 88210
Kaiser-Francis Oil Co.	P.O. Box 21468	Tulsa	OK	74121	Kaiser-Francis Oil Co. P.O. Box 21468 Tulsa,OK 74121
NGL WATER SOLUTIONS PERMIAN, LLC	865 NORTH ALBION ST. SUITE 400	DENVER	CO	80220	NGL WATER SOLUTIONS PERMIAN, LLC 865 NORTH ALBION ST. SUITE 400 DENVER,CO 80220
POGO PRODUCING CO	PO BOX 10340	MIDLAND	TX	79702	POGO PRODUCING CO PO BOX 10340 MIDLAND,TX 79702
SONAT EXPLORATION COMPANY	PO BOX 1513	HOUSTON	TX	77251	SONAT EXPLORATION COMPANY PO BOX 1513 HOUSTON,TX 77251
HARVARD PETROLEUM COMPANY, LLC	PO BOX 936 200 E SECOND	ROSWELL	NM	88202	HARVARD PETROLEUM COMPANY, LLC PO BOX 936 200 E SECOND ROSWELL,NM 88202
<b>Affected Persons</b>					
AGS Resources 2004 LLLP	10 Inverness Dr. East	Englewood	CO	80112	AGS Resources 2004 LLLP 10 Inverness Dr. East Englewood,CO 80112
Camterra Res Ptnrs	2615 E. End Blvd S	Marshall	TX	75670	Camterra Res Ptnrs 2615 E. End Blvd S Marshall,TX 75670
Chevron USA Inc.	P O Box 730436	Dallas	TX	75373-0436	Chevron USA Inc. P O Box 730436 Dallas,TX 75373-0436
CNX Gas Co LLC	P.O. Box 1248	Jane Lew	WV	26378	CNX Gas Co LLC P.O. Box 1248 Jane Lew,WV 26378
Devon Energy Production Company LP	333 W. Sheridan Ave	Oklahoma City	OK	73102	Devon Energy Production Company LP 333 W. Sheridan Ave Oklahoma City,OK 73102
Devon Energy Production, LP	333 W. Sheridan Avenue	Oklahoma City	OK	73102	Devon Energy Production, LP 333 W. Sheridan Avenue Oklahoma City,OK 73102
EOG Resources Inc.	P.O. Box 2267	Midland	TX	79702	EOG Resources Inc. P.O. Box 2267 Midland,TX 79702
EOG Resources Inc.	P.O. Box 840321	Dallas	TX	75284	EOG Resources Inc. P.O. Box 840321 Dallas,TX 75284

Finley Production Co LP	P.O. Box 2200	Fort Worth	TX	76113	Finley Production Co LP P.O. Box 2200 Fort Worth, TX 76113
Grasslands Energy LP	5128 Apache Plume Rd.	Fort Worth	TX	76109	Grasslands Energy LP 5128 Apache Plume Rd. Fort Worth, TX 76109
Harken Exploration Co	P.O. Box 619024	Dallas	TX	75261	Harken Exploration Co P.O. Box 619024 Dallas, TX 75261
Kaiser-Francis Oil Co.	P.O. Box 21468	Tulsa	OK	74121	Kaiser-Francis Oil Co. P.O. Box 21468 Tulsa, OK 74121
Marbob Energy Corp	P.O. Box 227	Artesia	NM	88211	Marbob Energy Corp P.O. Box 227 Artesia, NM 88211
Merit Energy Partners	13727 Noel Rd, Ste 500	Dallas	TX	75240	Merit Energy Partners 13727 Noel Rd, Ste 500 Dallas, TX 75240
Mid-Continent Energy	100 W. 5th St, Ste 450	Tulsa	OK	74103	Mid-Continent Energy 100 W. 5th St, Ste 450 Tulsa, OK 74103
Orion OG Properties	P.O. Box 2523	Roswell	NM	88202	Orion OG Properties P.O. Box 2523 Roswell, NM 88202
Petrohawk Properties LP	1100 Louisiana Ste 4400	Houston	TX	77002	Petrohawk Properties LP 1100 Louisiana Ste 4400 Houston, TX 77002
Petrojarl Inc.	P.O. BOX 820467	Houston	TX	77282	Petrojarl Inc. P.O. BOX 820467 Houston, TX 77282
Plains Production Inc.	1313 Campbell Rd., BLDG D	Houston	TX	77055	Plains Production Inc. 1313 Campbell Rd., BLDG D Houston, TX 77055
PXP Producing Co LLC	717 Texas St., Ste 2100	Houston	TX	77002	PXP Producing Co LLC 717 Texas St., Ste 2100 Houston, TX 77002
Richard S. Briggs	17 Meadowbrook Ln	Trophy Club	TX	76262	Richard S. Briggs 17 Meadowbrook Ln Trophy Club, TX 76262
Richard Scott Briggs	1920 E. Riverside Dr. STE A-120 #505	Austin	TX	78741	Richard Scott Briggs 1920 E. Riverside Dr. STE A-120 #505 Austin, TX 78741
Riverbend Production LP	500 Dallas St., Suite 2835	Houston	,TX	77002	Riverbend Production LP 500 Dallas St., Suite 2835 Houston,, TX 77002
Siete Oil & Gas Corp	P.O. Box 2523	Roswell	NM	88202	Siete Oil & Gas Corp P.O. Box 2523 Roswell, NM 88202
Suzanne Thomas	3936 Byron St	Houston	TX	77005	Suzanne Thomas 3936 Byron St Houston, TX 77005
Titus Oil & Gas Corp	420 Throckmorton St, Ste 1150	Fort Worth	TX	76102	Titus Oil & Gas Corp 420 Throckmorton St, Ste 1150 Fort Worth, TX 76102
XTO Holdings, LLC	22777 Springwoods Village Pkwy	Spring	TX	77389	XTO Holdings, LLC 22777 Springwoods Village Pkwy Spring, TX 77389
State Land Office	P O BOX 1148	SANTA FE	NM	87504	State Land Office P O BOX 1148 SANTA FE, NM 87504
PENROC OIL CORP	P.O. Box 2769	Hobbs	NM	88241	PENROC OIL CORP P.O. Box 2769 Hobbs, NM 88241