BEFORE THE OIL CONSERVATION DIVISION
EXAMINER HEARING SEPTEMBER 09, 2021

CASE NO. 22152

PATTON MDP1 "17" FEDERAL 1H, 4H, 5H, 176H WELLS
PATTON MDP1 "18"
FEDERAL 1H, 2H, 3H, 5H, 7H, 23H, 33H WELLS

EDDY COUNTY, NEW MEXICO

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. 22152

TABLE OF CONTENTS FOR SEPTEMBER 9, 2021 HEARING EXHIBITS

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. 22152

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 1,120-acre, more or less, project area for this pilot project consisting of the W/2 W/2 and the E/2 of Section 17, and Section 18, Township 24 South, Range 31 East, NMPM, Eddy County, New Mexico. *See* **Exhibit A** at 7.

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 **Patton MDP1 "17" Federal #1H well** (API No. 30-015-44459) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 170 feet FSL and 846 feet FWL (Unit M) in Section 8, and a bottom hole location 196 feet FSL and 484 feet FWL (Unit M) in Section 17.

BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Exhibit No. A
Submitted by: OXY USA INC.
Hearing Date: September 09, 2021
Case No 22152

- The **Patton MDP1 "17" Federal #4H well** (API No. 30-015-44497) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 432 feet FSL and 2,292 feet FWL (Unit N) in Section 8, and a bottom hole location 219 feet FSL and 2,158 feet FEL (Unit O) in Section 17.
- The **Patton MDP1 "17" Federal #5H well** (API No. 30-015-44444) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 834 feet FSL and 1,585 feet FEL (Unit O) in Section 8, and a bottom hole location 214 feet FSL and 1,211 feet FEL (Unit P) in Section 17.
- The **Patton MDP1 "17" Federal #176H well** (API No. 30-015-45079) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 772 feet FNL and 1,297 feet FEL (Unit A) in Section 17, and a bottom hole location 31 feet FSL and 353 feet FEL (Unit P) in Section 17.
- The **Patton MDP1 "18" Federal #1H well** (API No. 30-015-44317) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 609 feet FSL and 712 feet FWL (Lot 4) in Section 7, and a bottom hole location 209 feet FSL and 462 feet FWL (Lot 4) in Section 18.
- The **Patton MDP1 "18" Federal #2H well** (API No. 30-015-44337) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 170 feet FNL and 1,898 feet FWL (Unit C) in Section 18, and a bottom hole location 205 feet FSL and 1,466 feet FWL (Unit N) in Section 18.
- The **Patton MDP1 "18" Federal #3H well** (API No. 30-015-44333) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 170 feet

FNL and 1,928 feet FWL (Unit C) in Section 18, and a bottom hole location 200 feet FSL and 2,513 feet FWL (Unit N) in Section 18.

- The **Patton MDP1 "18" Federal #5H well** (API No. 30-015-44273) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 150 feet FNL and 285 feet FEL (Unit A) in Section 18, and a bottom hole location 20 feet FSL and 402 feet FEL (Unit P) in Section 18.
- The **Patton MDP1 "18" Federal #7H well** (API No. 30-015-44272) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 150 feet FNL and 255 feet FEL (Unit A) in Section 18, and a bottom hole location 51 feet FSL and 1,035 feet FEL (Unit P) in Section 18.
- The **Patton MDP1 "18" Federal #23H well** (API No. 30-015-44316) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 335 feet FNL and 2,122 feet FEL (Unit B) in Section 18, and a bottom hole location 192 feet FSL and 2,212 feet FEL (Unit O) in Section 18.
- The **Patton MDP1 "18" Federal #33H well** (API No. 30-015-44338) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 335 feet FNL and 2,062 feet FEL (Unit B) in Section 18, and a bottom hole location 126 feet FSL and 1,350 feet FEL (Unit O) in Section 18.

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

- The **Patton MDP1 "17" Federal #1H well**: between 9,979 feet and 9,995 feet.
- The **Patton MDP1 "17" Federal #4H well**: between 10,037 feet and 10,064 feet.
- The **Patton MDP1 "17" Federal #5H well**: between 10,056 feet and 10,056 feet.

- The **Patton MDP1 "17" Federal #176H well**: between 8,828 feet and 8,976 feet.
- The **Patton MDP1 "18" Federal #1H well**: between 9,899 feet and 10,058 feet.
- The **Patton MDP1 "18" Federal #2H well**: between 9,991 feet and 10,084 feet.
- The **Patton MDP1 "18" Federal #3H well**: between 9,896 feet and 10,010 feet.
- The **Patton MDP1 "18" Federal #5H well**: between 9,950 feet and 10,014 feet.
- The **Patton MDP1 "18" Federal #7H well**: between 10,016 feet and 10,021 feet.
- The **Patton MDP1 "18" Federal #23H well**: between 10,235 feet and 10,283 feet.
- The **Patton MDP1 "18" Federal #33H well**: between 8,850 feet and 8,878 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.

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 10-42.

7. The top of the Bone Spring formation in this area is at approximately 8,150 feet true vertical depth and extends down to the top of the Wolfcamp formation at approximately 11,500 feet true vertical depth. *See* ***Exhibit A*** at 77-78.

8. The current average surface pressures under normal operations for the proposed injection wells range from approximately 375 psi to 850 psi. *See* ***Exhibit A*** at 43. 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 44 and 56-57.

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 43. 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 43.

11. Cement bond logs[1] 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 45. OXY will undertake new tests to demonstrate 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 77-82. 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.*

[1] Electronic version of the cement bond logs will be submitted to the Division by email.

14. Zones that are productive of oil and gas are located in the overlying Brushy Canyon formation, and in the deeper Wolfcamp Formation. *See* ***Exhibit A*** at 77.

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 89.

16. The proposed average injection rate for each well is 1.8 MMSCFD with a maximum injection rate of 2.0 MMSCFD during injection. *See* ***Exhibit A*** at 43.

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 84-93. 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 91 and 94.

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 84-91. OXY's analysis concludes that there will be no adverse effect on the reservoir as a result of the injection. *Id.* at 94.

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 92. 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 47-48. 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 49-54.

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 82. 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 94.

AREA OF REVIEW

23. OXY has prepared maps depicting the trajectory of the proposed injection wells, 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 59-61.

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 62-65, along with well-bore schematics for wells that are plugged and abandoned or temporarily abandoned. *See* ***Exhibit A*** at 66-75.

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 56-57. Each injection

well will also include automated safety devices, including automatic shut-in valves among other operational safety measures. *See* ***Exhibit A*** at 44. 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 98-99, along with a map and list identifying each tract and affected persons given notice. *See* ***Exhibit A*** at 96-97.

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

By:_____

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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 1,120-acre, more or less, project area for this pilot project consisting of the W/2 W/2 and the E/2 of Section 17, and Section 18, Township 24 South, Range 31 East, NMPM, Eddy County, New Mexico, by occasionally injecting into the following wells:

- The **Patton MDP1 "17" Federal #1H well** (API No. 30-015-44459) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 170 feet FSL and 846 feet FWL (Unit M) in Section 8, and a bottom hole location 196 feet FSL and 484 feet FWL (Unit M) in Section 17.
- The **Patton MDP1 "17" Federal #4H well** (API No. 30-015-44497) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 432 feet FSL and 2,292 feet FWL (Unit N) in Section 8, and a bottom hole location 219 feet FSL and 2,158 feet FEL (Unit O) in Section 17.
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A) in Section 18, and a bottom hole location 20 feet FSL and 1,035 feet FEL (Unit P) in Section 18.

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- The **Patton MDP1 "18" Federal #23H well** (API No. 30-015-44316) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 335 feet FNL and 2,122 feet FEL (Unit B) in Section 18, and a bottom hole location 192 feet FSL and 2,212 feet FEL (Unit O) in Section 18.
- The **Patton MDP1 "18" Federal #33H well** (API No. 30-015-44338) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 335 feet FNL and 2,062 feet FEL (Unit B) in Section 18, and a bottom hole location 126 feet FSL and 1,350 feet FEL (Unit O) in Section 18.

OXY seeks authority to utilize this producing well to occasionally inject produced gas into the Bone Spring formation at true vertical depths of between approximately 8,150 feet to 11,500 feet along the horizontal portion of each wellbore at surface injection pressures of no more than 1,200 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- South Corridor

EXHIBIT A

Overview

General Project Description: Closed Loop Gas Capture Project
Oxy- South Corridor

Summary of Requested Relief

1. Authority to operate a Closed Loop Gas Capture Project ("CLGC") consisting of eleven 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 South 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
• Flare gas • Shut in production	• Store gas • Continue production • No additional surface disturbances	• Reduce greenhouse gas emissions • Improve economic recovery of mineral resources including gas that might have been flared • Utilize existing infrastructure

Proposed Operations

Oxy has an extensive high-pressure gas system in the South 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 South 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

11 wells are proposed in this application.

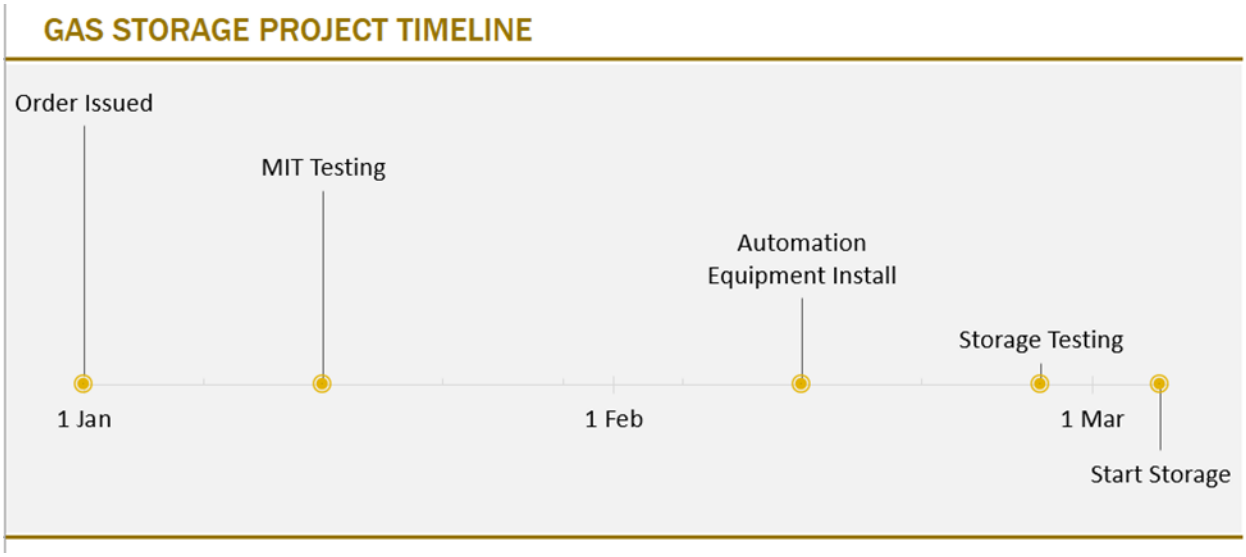
#	API 14	Well Name	Injection down the…
1	30015444970000	PATTON 17-4H	Casing
2	30015443170000	PATTON 18-1H	Casing
3	30015443160000	PATTON 18-23H	Casing
4	30015444590000	PATTON17-1H	Casing
5	30015444440000	PATTON17-5H	Casing
6	30015450790100	PATTON176ST1	Casing
7	30015443370000	PATTON18-2H	Casing
8	30015443380000	PATTON18-33H	Casing
9	30015443330000	PATTON18-3H	Casing
10	30015442720000	PATTON18-5H	Casing
11	30015442730000	PATTON18-7H	Casing

Pertinent Details

- Maximum Allowable Surface Pressure = 1250 psi
- 11 horizontal wells
- 5000 ft lateral lengths
- Injection down the casing/tubing annulus
- Target Formations = Avalon, Second Bone Spring
- Top of injection zone based off perf TVD = 8828 ft TVD
- Bottom of injection zone based off perf TVD = 10283 ft TVD

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.



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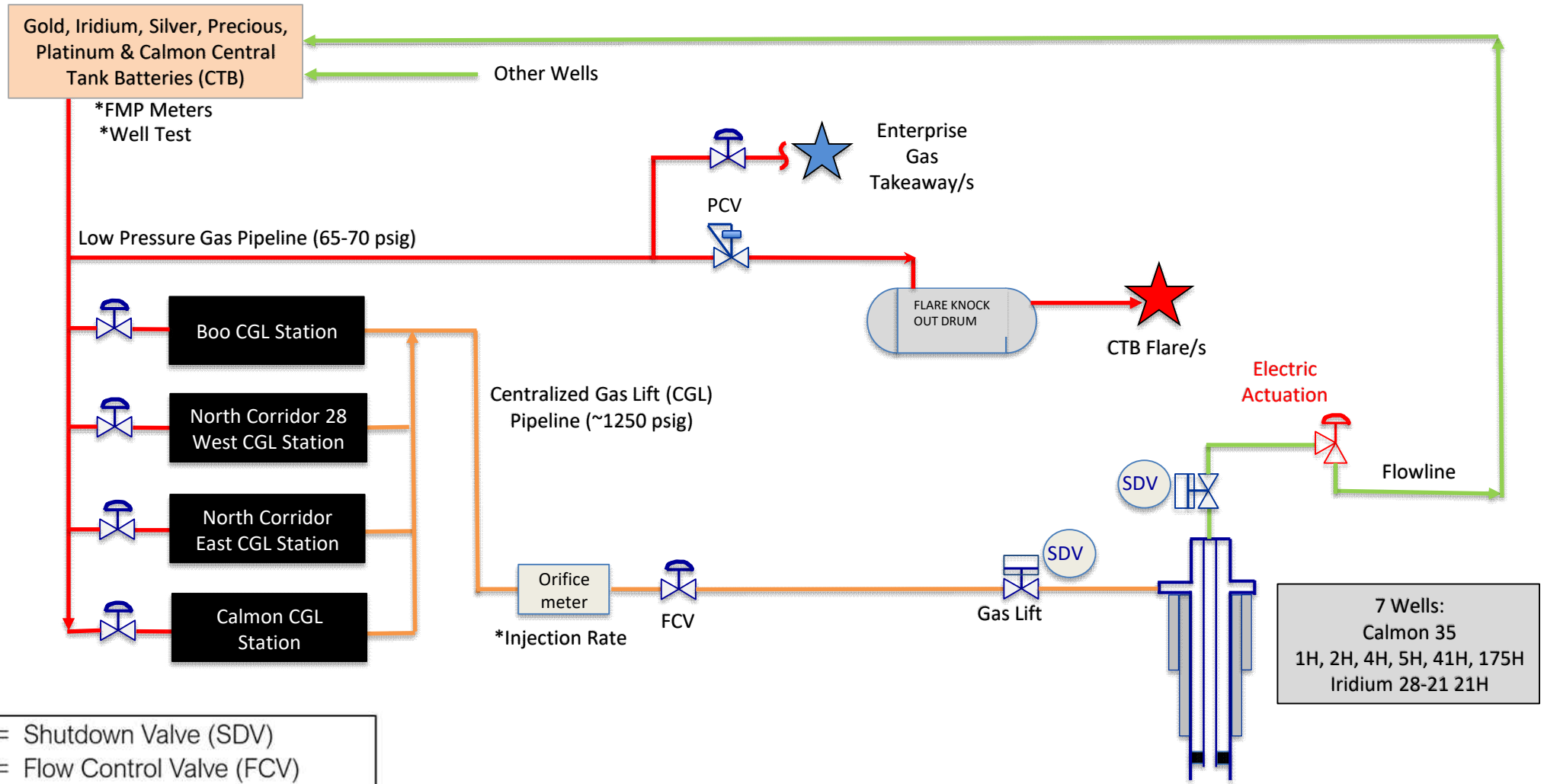
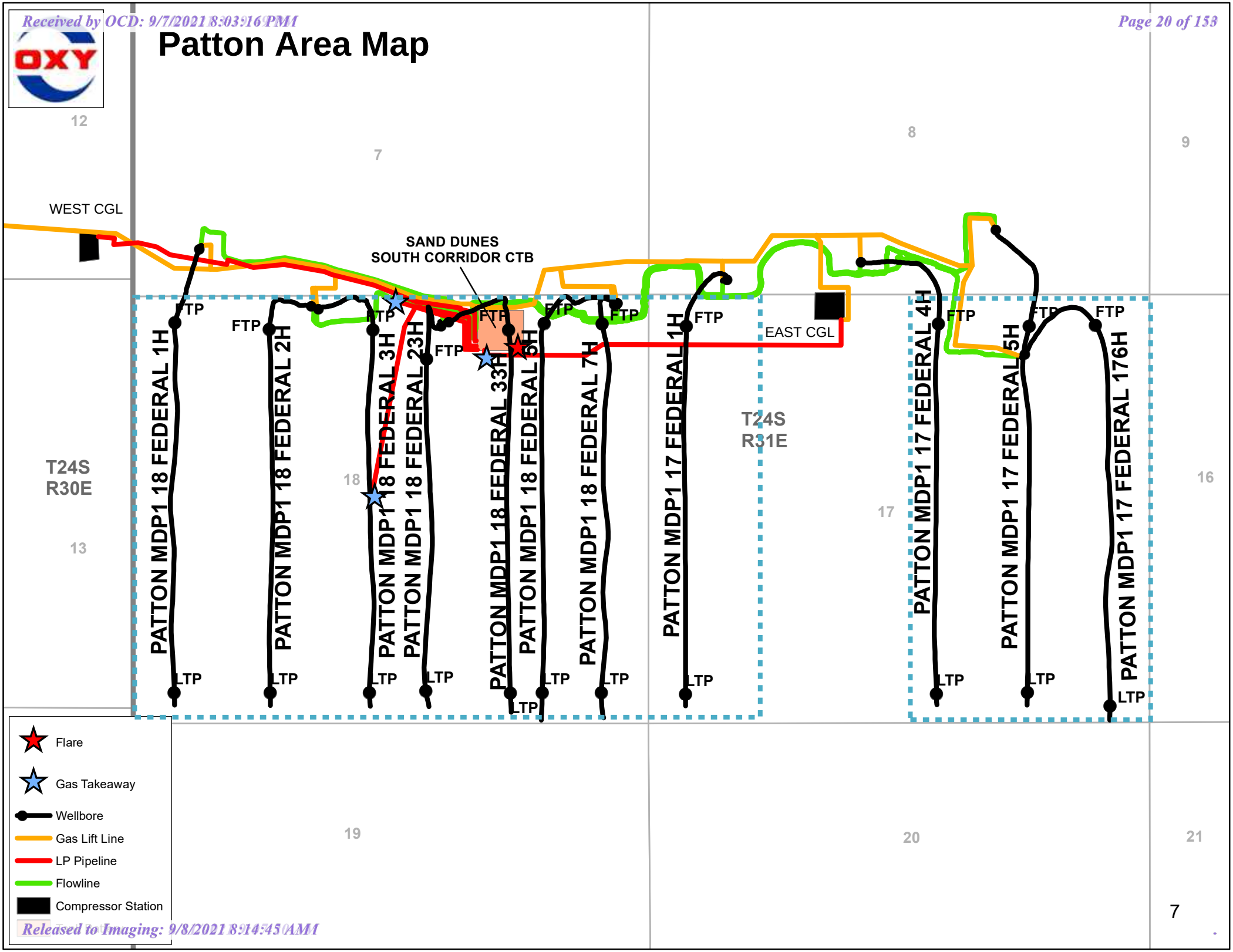
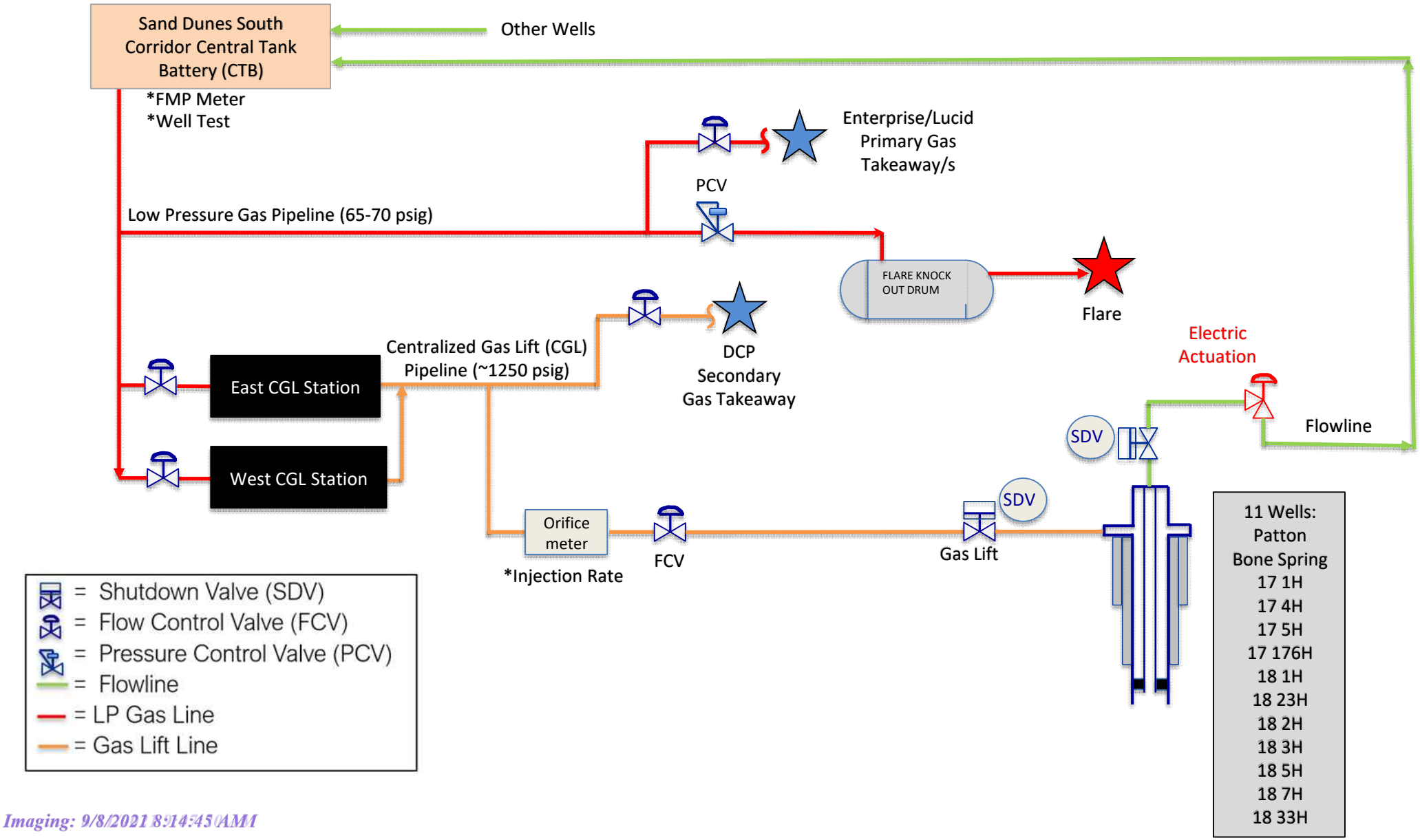
Iridium/Calmon Gas Process Flow Diagram



Patton Area Map



Patton Gas Process Flow Diagram



Injection Wellbores

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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

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

☑ AMENDED REPORT
(As-Drilled)

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-44337	13367	Cotton Draw; Bone Spring

Property Code	Property Name	Well Number
316483	PATTON MDP1 "18" FEDERAL	2H

OGRID No.	Operator Name	Elevation
16696	OXY USA INC.	3533.7'

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	18	24 SOUTH	31 EAST, N.M.P.M.		170'	NORTH	1898'	WEST	EDDY

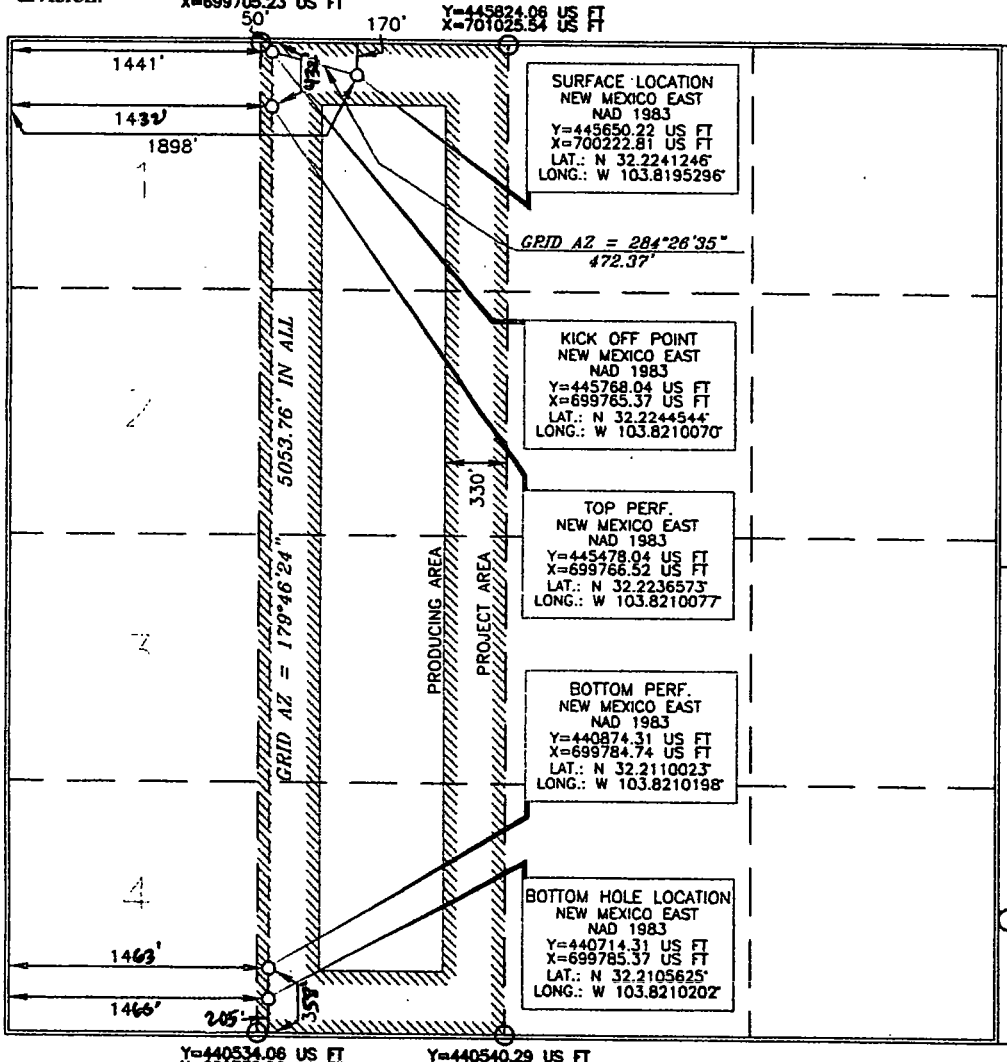
Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	18	24 SOUTH	31 EAST, N.M.P.M.		~~180'~~ 205	SOUTH	~~1441'~~ 1466	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160	Y		NSL-7522

BP - 358 FSL 1463 FWL
TP - 432 FNL 1432 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.



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.

Signature 12/4/17 Date

Jana Mendiola
Printed Name

janalyn_mendiola@oxy.com
Email Address

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.

DECEMBER 22, 2015
Date of Survey

Signature and Seal of Professional Surveyor:

NEW MEXICO TERRY J. ASEL 15079 REGISTERED PROFESSIONAL LAND SURVEYOR

Terry J. Asel 9/21/2016
Certificate Number 15079

WO# 151222WL-b-XY (Rev. C) (KA)

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
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State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

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

☑ AMENDED REPORT
(As-Drilled)

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-44333	13367	Coffm Draw; Bone Spring

Property Code	Property Name	Well Number
316483	PATTON MDP1 "18" FEDERAL	3H

OGRID No.	Operator Name	Elevation
16696	OXY USA INC.	3534.0'

Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	18	24 SOUTH	31 EAST, N.M.P.M.		170'	NORTH	1928'	WEST	EDDY

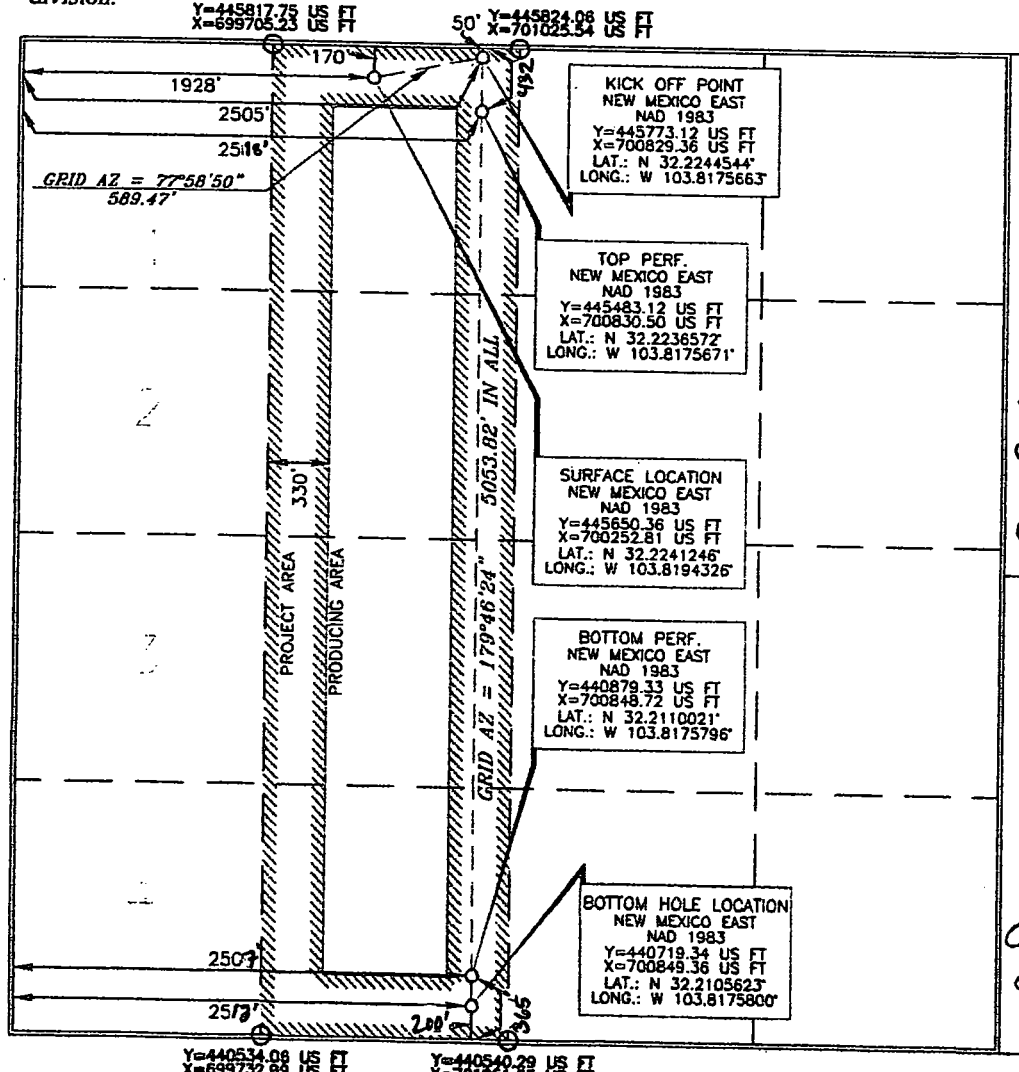
Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	18	24 SOUTH	31 EAST, N.M.P.M.		~~180'~~ 200	SOUTH	~~2505'~~ 2513	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160	Y		NSL-7523

BP- 365 FSL 2507 FWL
TP- 432 FNL 2578 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.



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.

Signature — Date: 2/12/18

Janalyn Mendiola

Printed Name

janalyn_mendiola@oxy.com

Email Address

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.

DECEMBER 22, 2017

Date of Survey

Signature and Seal of Professional Surveyor:

TERRY J. ASEL — NEW MEXICO — 15079 — PROFESSIONAL LAND SURVEYOR

Certificate Number 15079

WO# 151222WL-a-XY (Rev. C) (KA)

NM OIL CONSERVATION
ARTESIA DISTRICT
SEP 6 2018
RECEIVED

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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

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

☒ AMENDED REPORT
(As-Drilled)

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-44444	13367	COTTON DRAW; BONE SPRING

Property Code	Property Name	Well Number
319619	PATTON MDP1 "17" FEDERAL	5H

OGRID No.	Operator Name	Elevation
16696	OXY USA INC.	3543.6'

Surface Location

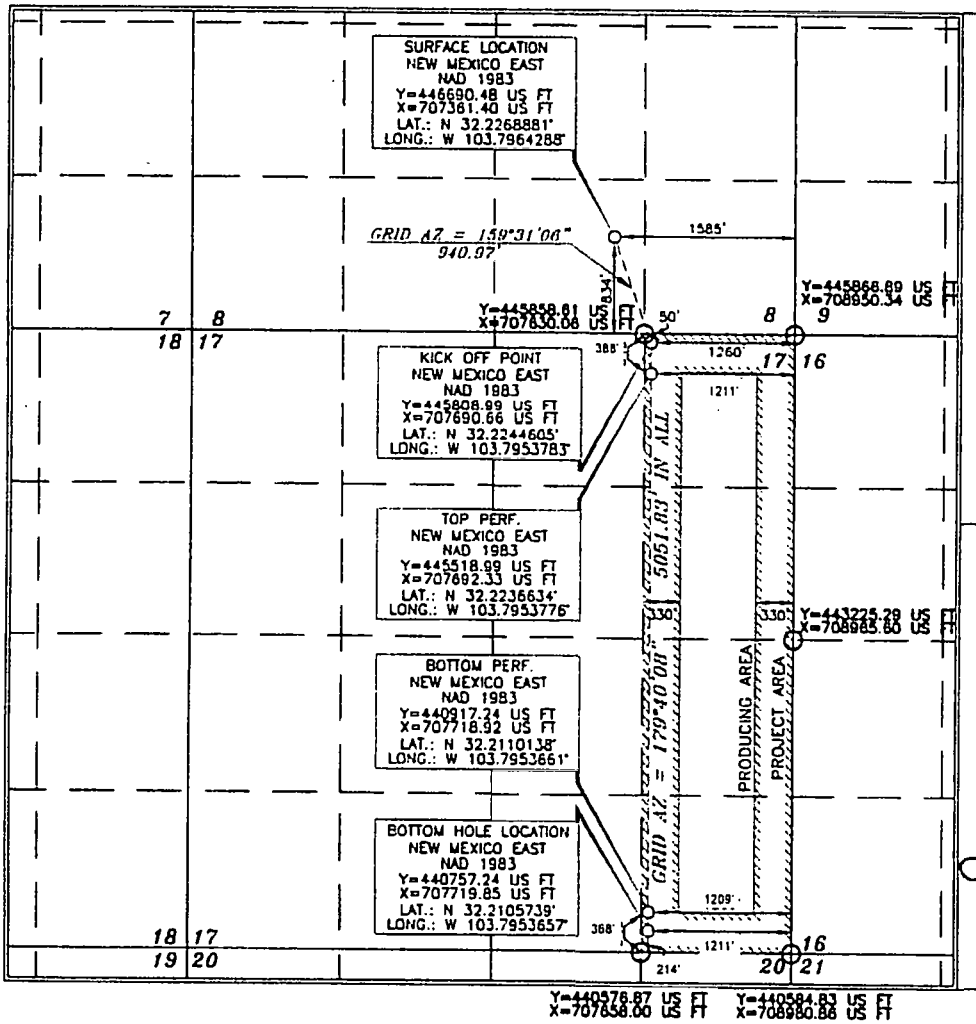
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	8	24 SOUTH	31 EAST, N.M.P.M.		834'	SOUTH	1585'	EAST	EDDY

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	17	24 SOUTH	31 EAST, N.M.P.M.		214'	SOUTH	1211'	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160	Y		NSL- 7544; TP 388 FNL 1211 FEL, BP: 368 FSL 1209 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 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.

Sarah Mitchell 3/5/18
Signature Date

Sarah Mitchell
Printed Name

sarah_mitchell@oxy.com
E-mail Address

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
OCTOBER 7, 2016
Date of Survey

Signature and Seal of Professional Surveyor

JERRY J. ASEL
NEW MEXICO
15079
REGISTERED PROFESSIONAL LAND SURVEYOR

Jerry J. Asel 11/1/2016
Certificate Number 15079

WO# 161007WL-d-XY (KA)

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
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State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

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

☒ AMENDED REPORT
As Drilled

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-44273	13367	Cotton Draw; Bone Spring

Property Code	Property Name	Well Number
316483	PATTON MDP1 "18" FEDERAL	7H

OGRID No.	Operator Name	Elevation
16696	OXY USA INC.	3524.1'

Surface Location

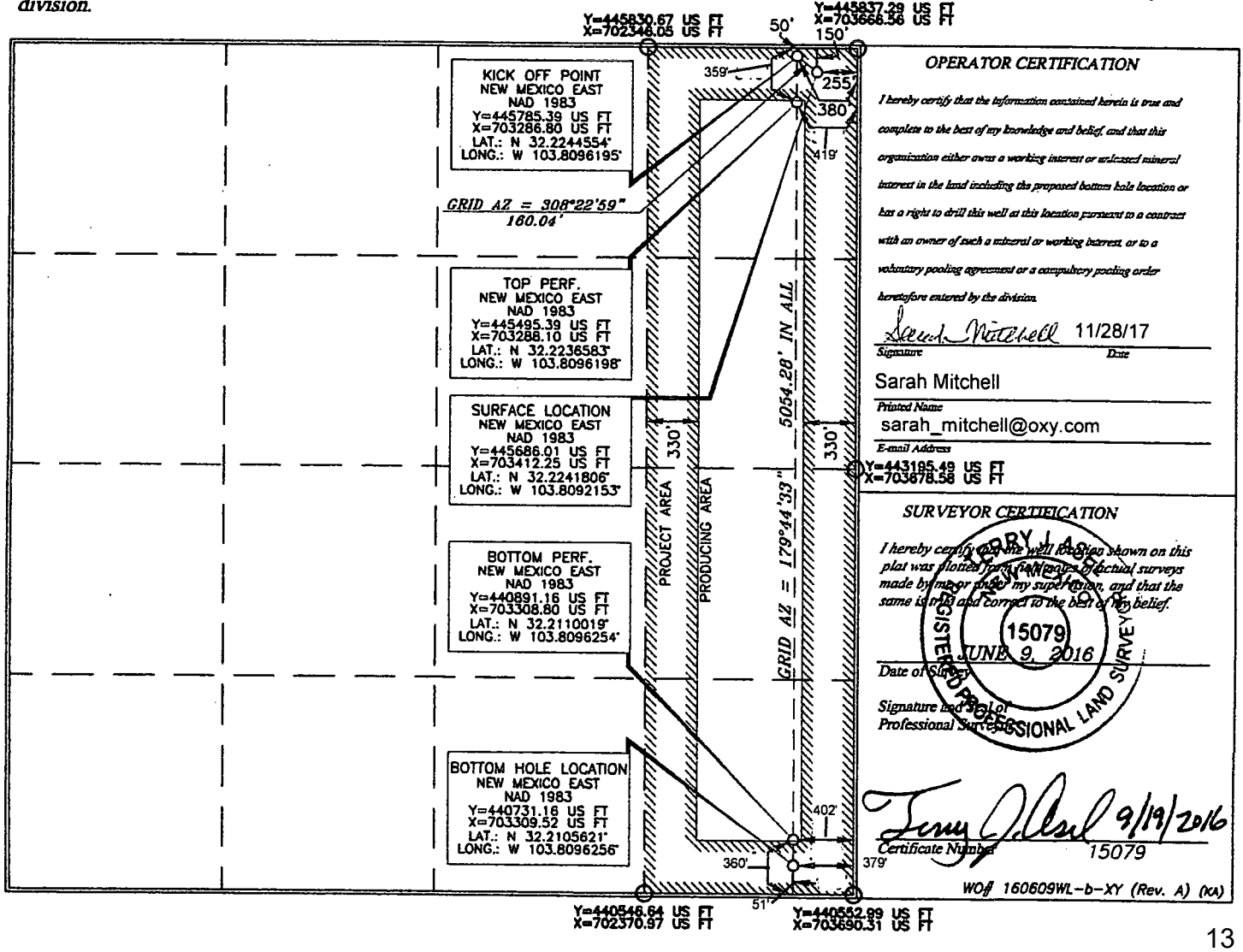
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	18	24 SOUTH	31 EAST, N.M.P.M.		150'	NORTH	255'	EAST	EDDY

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	18	24 SOUTH	31 EAST, N.M.P.M.		51'	SOUTH	402'	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160	Y		TP: 359' FNL 419' FEL BP: 360' FSL 402' 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 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.

Sarah Mitchell 11/28/17
Signature Date

Sarah Mitchell
Printed Name

sarah_mitchell@oxy.com
E-mail Address

Y=443185.49 US FT
X=703678.58 US FT

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.

JUNE 9, 2016
Date of Survey

Signature and Seal of Professional Surveyor

15079
Certificate Number

9/19/2016

WO# 160609WL-b-XY (Rev. A) (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
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State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

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

☒ AMENDED REPORT
As Drilled

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-44272	13367	Cotton Draw; Bone spring

Property Code	Property Name	Well Number
316483	PATTON MDP1 "18" FEDERAL	5H

OGRID No.	Operator Name	Elevation
16696	OXY USA INC.	3523.8'

Surface Location

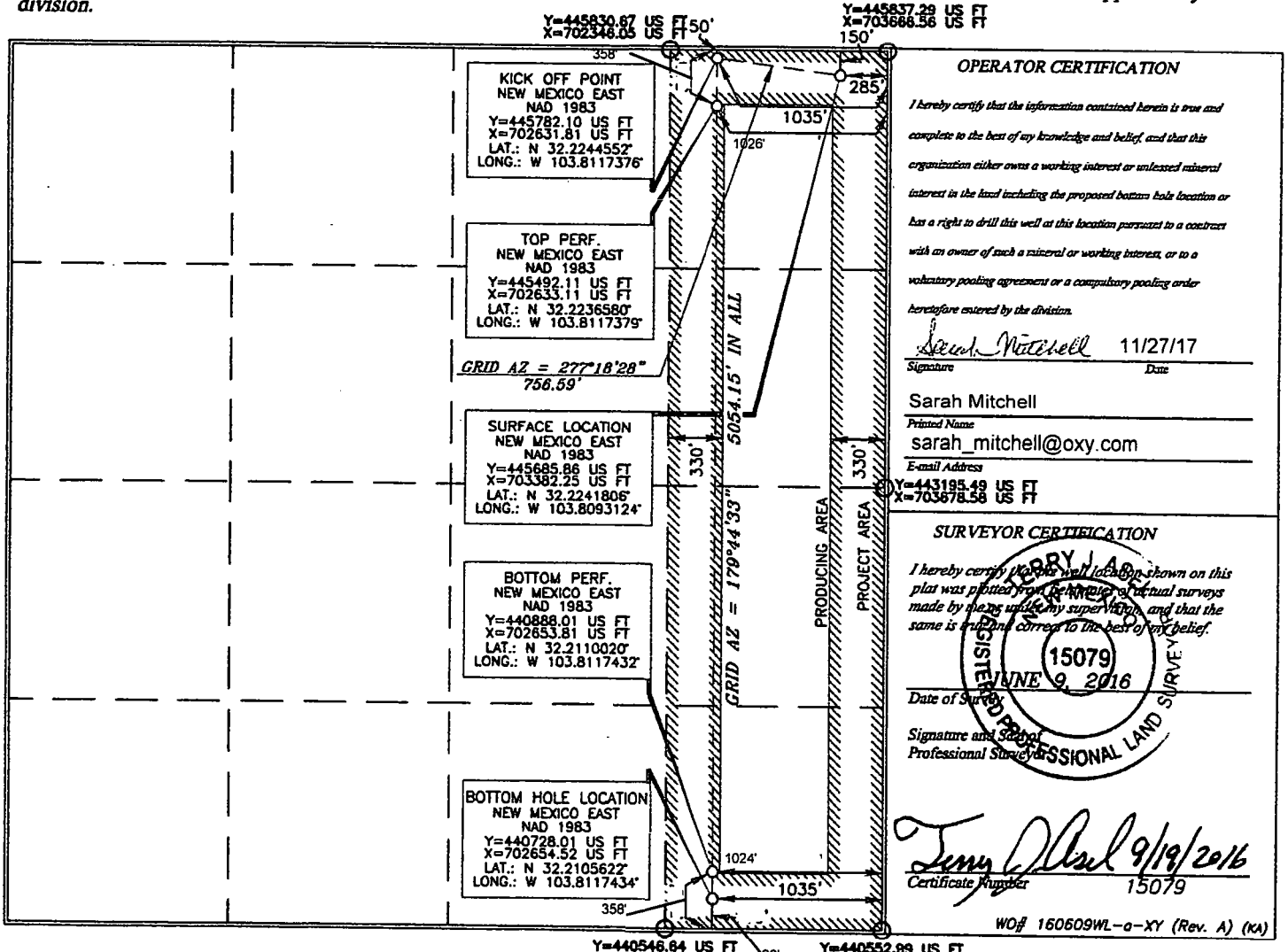
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	18	24 SOUTH	31 EAST, N.M.P.M.		150'	NORTH	285'	EAST	EDDY

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	18	24 SOUTH	31 EAST, N.M.P.M.		20'	SOUTH	1035'	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160	Y		NSL-7524, TP: 358 FNL 1026 FEL, BP: 358 FSL 1024 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 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.

Sarah Mitchell 11/27/17
Signature Date

Sarah Mitchell
Printed Name

sarah_mitchell@oxy.com
E-mail Address

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.

JUNE 9, 2016
Date of Survey

Signature and Seal of Professional Surveyor

NEW MEXICO
15079
REGISTERED PROFESSIONAL LAND SURVEYOR

Terry J. Asel 9/19/2016
Certificate Number 15079

WO# 160609WL-a-XY (Rev. A) (KA)

District I
1625 N. French Dr., Hobbs, NM 88240
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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
SEP 6 2018
RECEIVED

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

☑ AMENDED REPORT
(As-Drilled)

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-44459	13367	Cotton Draw Bone Spring

Property Code	Property Name	Well Number
319619	PATTON MDP1 "17" FEDERAL	1H

OGRID No.	Operator Name	Elevation
16696	OXY USA INC.	3529.5'

Surface Location

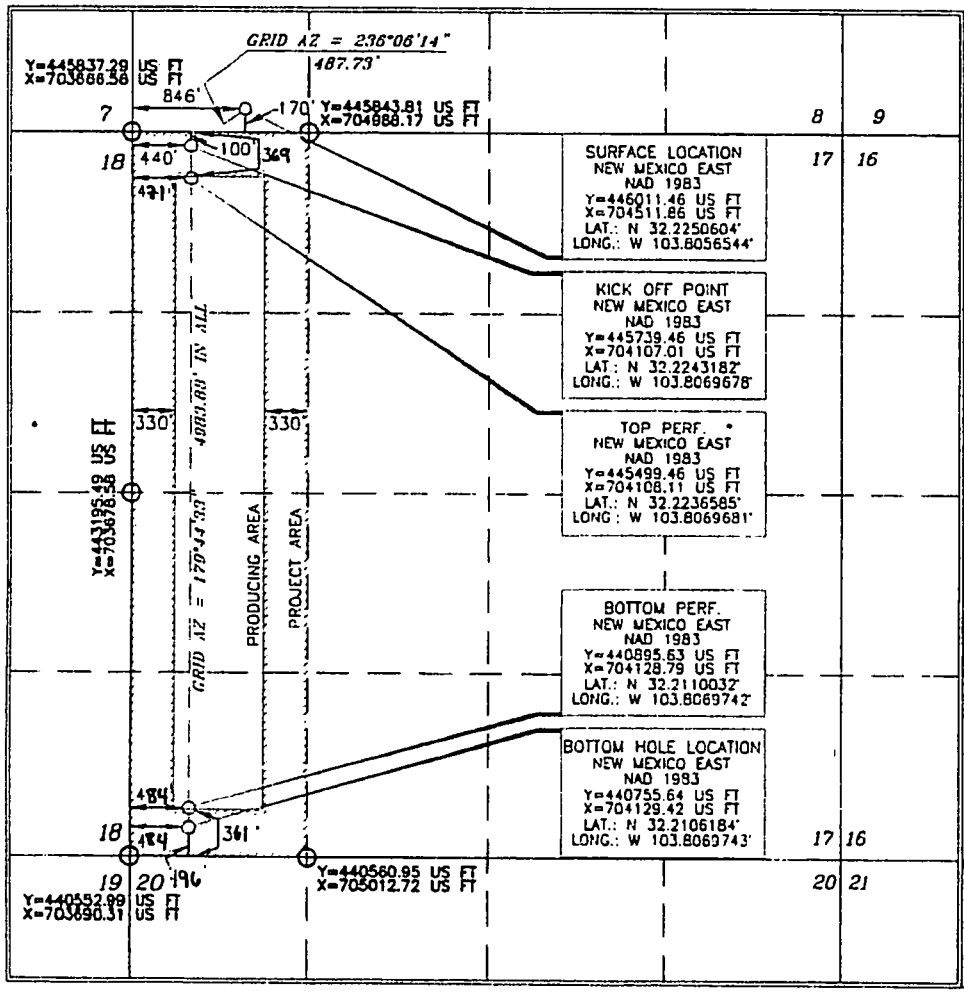
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	8	24 SOUTH	31 EAST, N.M.P.M.		170'	SOUTH	846'	WEST	EDDY

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	17	24 SOUTH	31 EAST, N.M.P.M.		~~660'~~ 196	SOUTH	~~440'~~ 484	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	~~Order No.~~
160	Y		BP- 361 FSL 484 FWL TP- 369 FNL 471 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.



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.

Signature — Date: 3/26/18

Jana Mendiola
Printed Name

janalyn_mendiola@oxy.com
E-mail Address

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.

NEW MEXICO — TERRY J. ASEL — 15079 — REGISTERED PROFESSIONAL LAND SURVEYOR

FEBRUARY 4, 2016
Date of Survey

Signature and Seal of Professional Surveyor

12/2/2016

Certificate Number 15079

WO# 160204WL-a-XY (Rev. A) (KA)

RECEIVED

JUN 06 2018

DISTRICT II-ARTESIA O.C.D.

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

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

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

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

As Drilled

API Number	Pool Code	Pool Name
30-015-44338	13367	Cotton Draw; Bone Spring

Property Code	Property Name	Well Number
316483	PATTON MDP1 "18" FEDERAL	33H

OGRID No.	Operator Name	Elevation
16696	OXY USA INC.	3533.2'

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	18	24 SOUTH	31 EAST, N.M.P.M.		335'	NORTH	2062'	EAST	EDDY

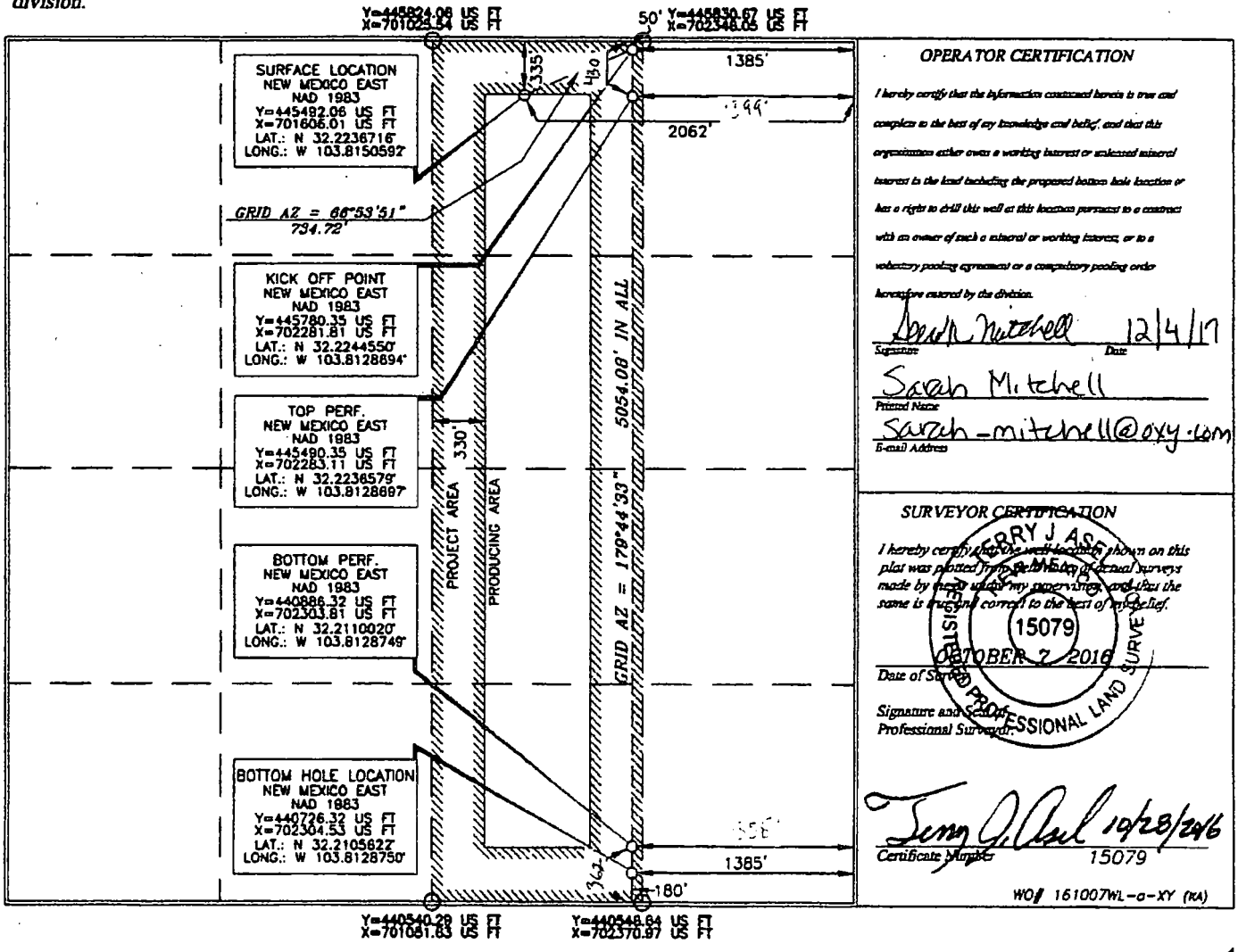
Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	18	24 SOUTH	31 EAST, N.M.P.M.		~~330'~~ 126'	SOUTH	~~1980'~~ 1350'	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160	Y		NSL-7561

TP 430 FNL 1399 FEL
BP 362 FSL 1358 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 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.

Sarah Mitchell 12/4/17
Signature Date

Sarah Mitchell
Printed Name

sarah_mitchell@oxy.com
E-mail Address

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.

JERRY J. ASE
NEW MEXICO
15079
REGISTERED PROFESSIONAL LAND SURVEYOR

OCTOBER 2, 2016
Date of Survey

Signature and Seal of Professional Surveyor:

Certificate Number 15079

WO# 161007WL-a-XY (KA)

NM OIL CONSERVATION
ARTESIA DISTRICT

NOV 02 2018

RECEIVED

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

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

☑ AMENDED REPORT
(As-Drilled)

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-45079	13367	Cotton Draw Bone Spring

Property Code	Property Name	Well Number
319619	PATTON MDP1 "17" FEDERAL	176H

OGRID No.	Operator Name	Elevation
16696	OXY USA INC.	3546.3'

Surface Location

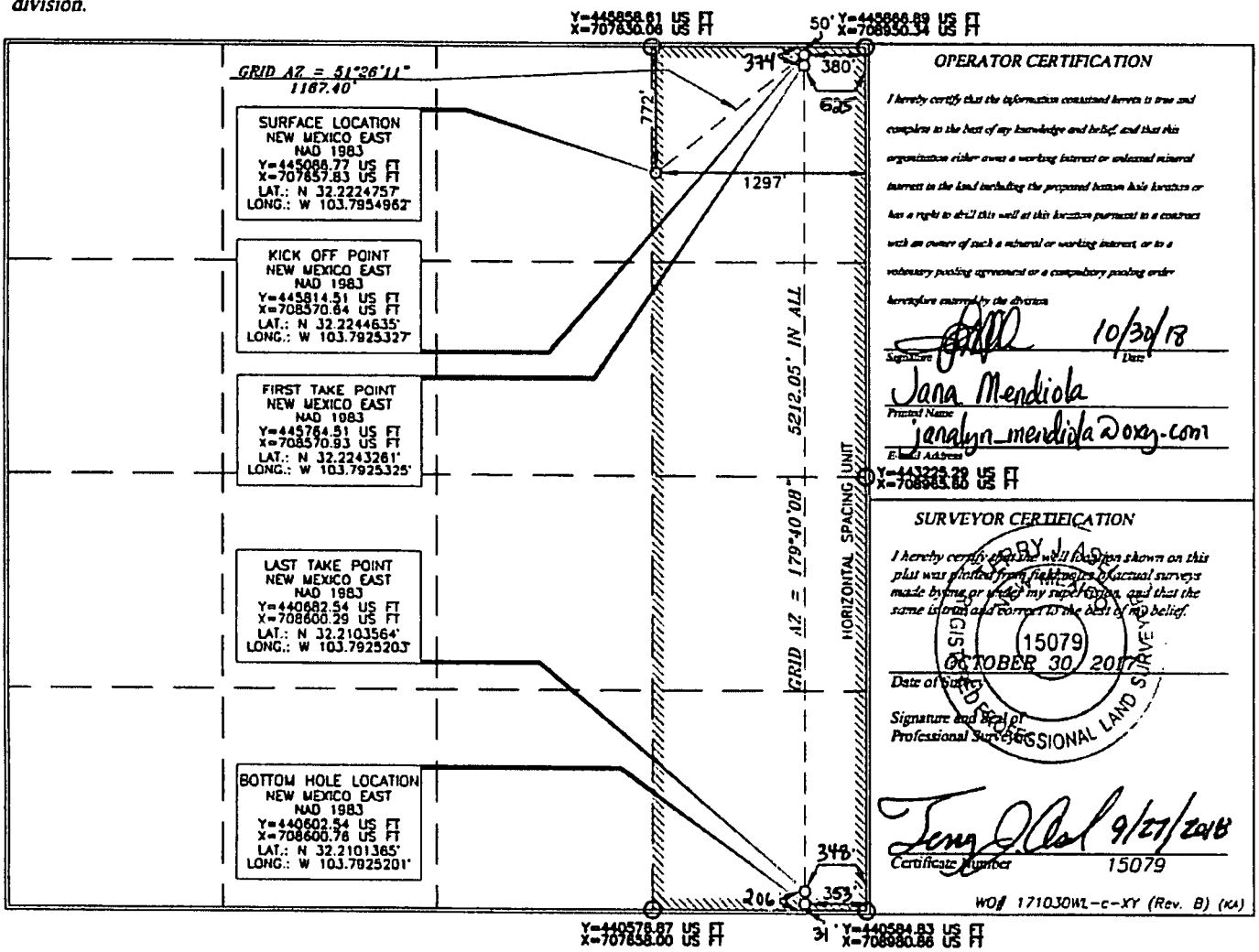
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	17	24 SOUTH	31 EAST, N.M.P.M.		772'	NORTH	1297'	EAST	EDDY

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	17	24 SOUTH	31 EAST, N.M.P.M.		~~20'~~ 31	SOUTH	~~380'~~ 353	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	~~Order No.~~
160	Y		LTP- 206 FSL 348 FEL FTP- 374 FNL 525 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 unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature 10/30/18 Date

Jana Mendiola
Printed Name

janalyn_mendiola@oxy.com
E-mail Address

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
OCTOBER 30, 2017
Date of Survey

Signature and Seal of Professional Surveyor

9/27/2018

15079
Certificate Number

WO# 171030WL-c-XY (Rev. 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
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State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

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

☒ AMENDED REPORT
As Drilled

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-44497	13367	COTTON DRAW; BONE SPRING

Property Code	Property Name	Well Number
319619	PATTON MDP1 "17" FEDERAL	4H

OGRID No.	Operator Name	Elevation
16696	OXY USA INC.	3540.7'

Surface Location

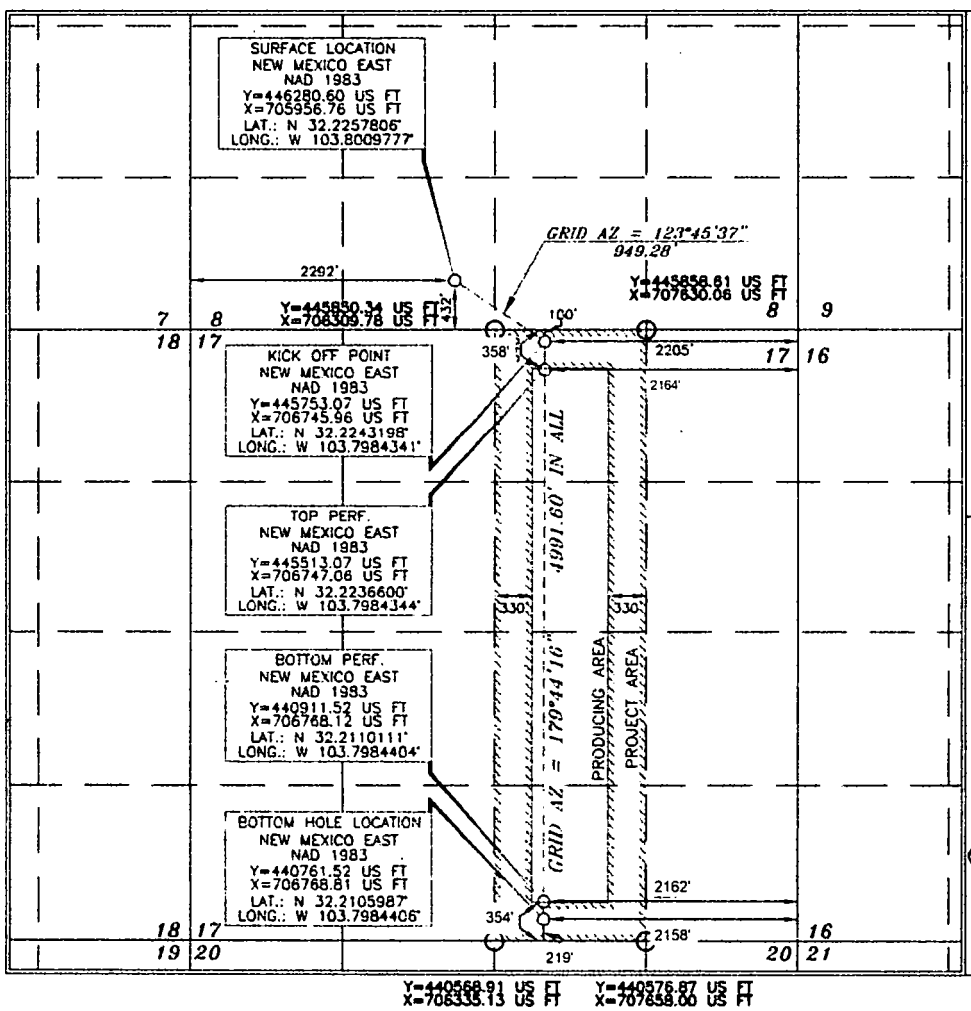
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	8	24 SOUTH	31 EAST, N.M.P.M.		432'	SOUTH	2292'	WEST	EDDY

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	17	24 SOUTH	31 EAST, N.M.P.M.		219'	SOUTH	2158'	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160	Y		TP: 358 FNL 2164 FEL BP: 354 FSL 2162 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

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Sarah Mitchell 3/28/18
Signature Date

Sarah Mitchell
Printed Name

sarah_mitchell@oxy.com
E-mail Address

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
OCTOBER 7, 2016
Date of Survey

Signature and Seal of Professional Surveyor:

Terry J. Asel 12/9/2016
Certificate Number 15079

W.O.# 161007WL-c-XY (KA)

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
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State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

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

☒ AMENDED REPORT
(As-Drilled)

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-44317	13367	COTTON DRAW; BONE SPRING

Property Code	Property Name	Well Number
316483	PATTON MDP1 "18" FEDERAL	1H

OGRID No.	Operator Name	Elevation
16696	OXY USA INC.	3530.6'

Surface Location

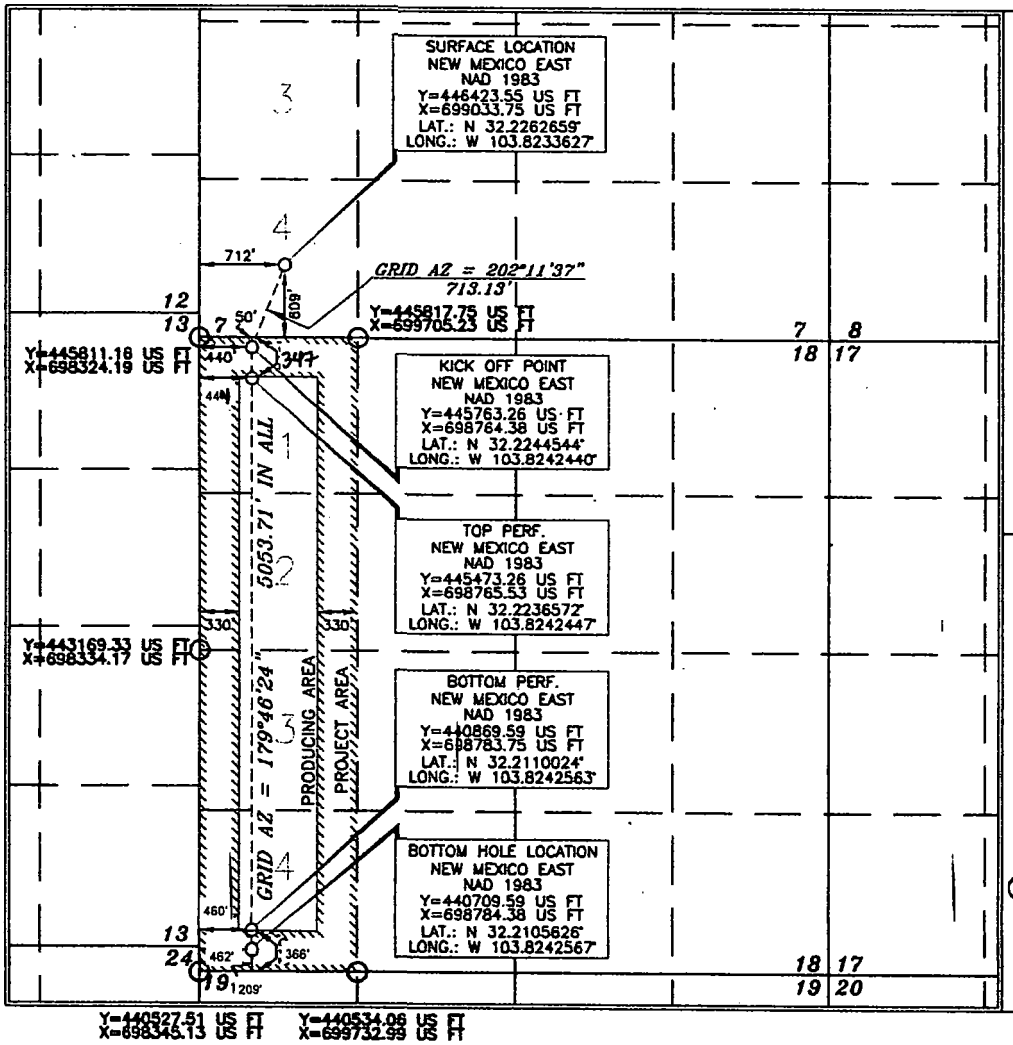
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
4	7	24 SOUTH	31 EAST, N.M.P.M.		609'	SOUTH	712'	WEST	EDDY

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
4	18	24 SOUTH	31 EAST, N.M.P.M.		209'	SOUTH	462'	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160	Y		TP: 347 FNL 444 FWL, BP: 366 FSL 460 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.



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.

Sarah Mitchell 2/9/2018
Signature Date

Sarah Mitchell
Printed Name

sarah_mitchell@oxy.com
E-mail Address

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.

JERRY J. ASEL
NEW MEXICO
15079
REGISTERED PROFESSIONAL LAND SURVEYOR

JUNE 28, 2016
Date of Survey

Signature and Seal of Professional Surveyor

Jerry J. Asel 9/26/2016

15079
Certificate Number

WO# 160628WL-b-XY (Rev. A) (KA)

OIL CONSERVATION DIVISION
ARTESIA, DISTRICT
MAR 09 2018

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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

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

☒ AMENDED REPORT (As Drilled)

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-44316	13367	Cotton Draw; Bone Spring

Property Code	Property Name	Well Number
316483	PATTON MDP1 "18" FEDERAL	23H

OGRID No.	Operator Name	Elevation
16696	OXY USA INC.	3532.8'

Surface Location

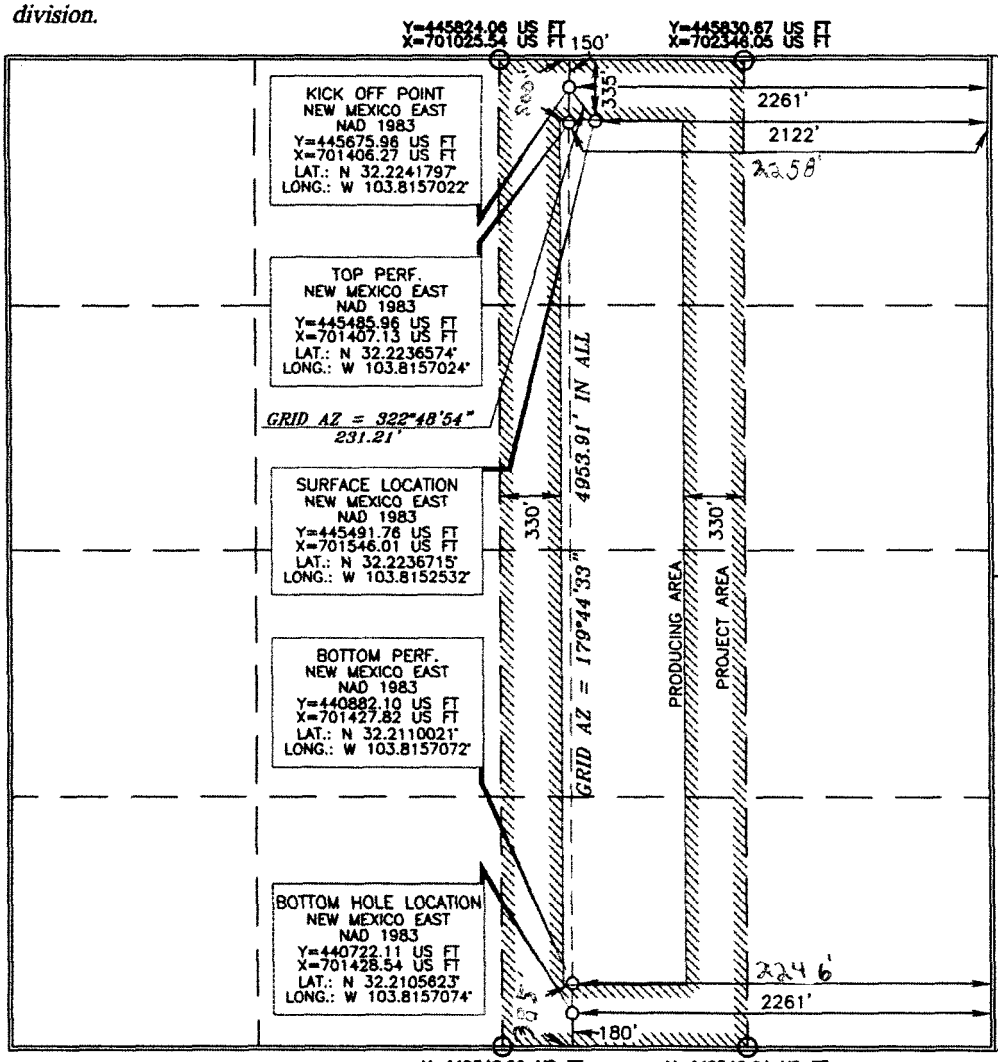
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	18	24 SOUTH	31 EAST, N.M.P.M.		335'	NORTH	2122'	EAST	EDDY

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
O	18	24 SOUTH	31 EAST, N.M.P.M.		~~180'~~ 192'	SOUTH	~~2261'~~ 2212'	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160	Y		TP 800 FNL 2258 FEL BP 385 FSL 2246 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 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.

Sarah Mitchell 12/4/17
Signature Date

Sarah Mitchell
Printed Name

sarah_mitchell@oxy.com
E-mail Address

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.

TERRY J ASEL
NEW MEXICO
15079
PROFESSIONAL LAND SURVEYOR

SEPTEMBER 29, 2016
Date of Survey

Signature and Seal of Professional Surveyor

Terry J Asel 10/28/2016
Certificate Number 15079

WO# 160929WL-d-XY (KA)

Side 1

OPERATOR: OXY USA INC

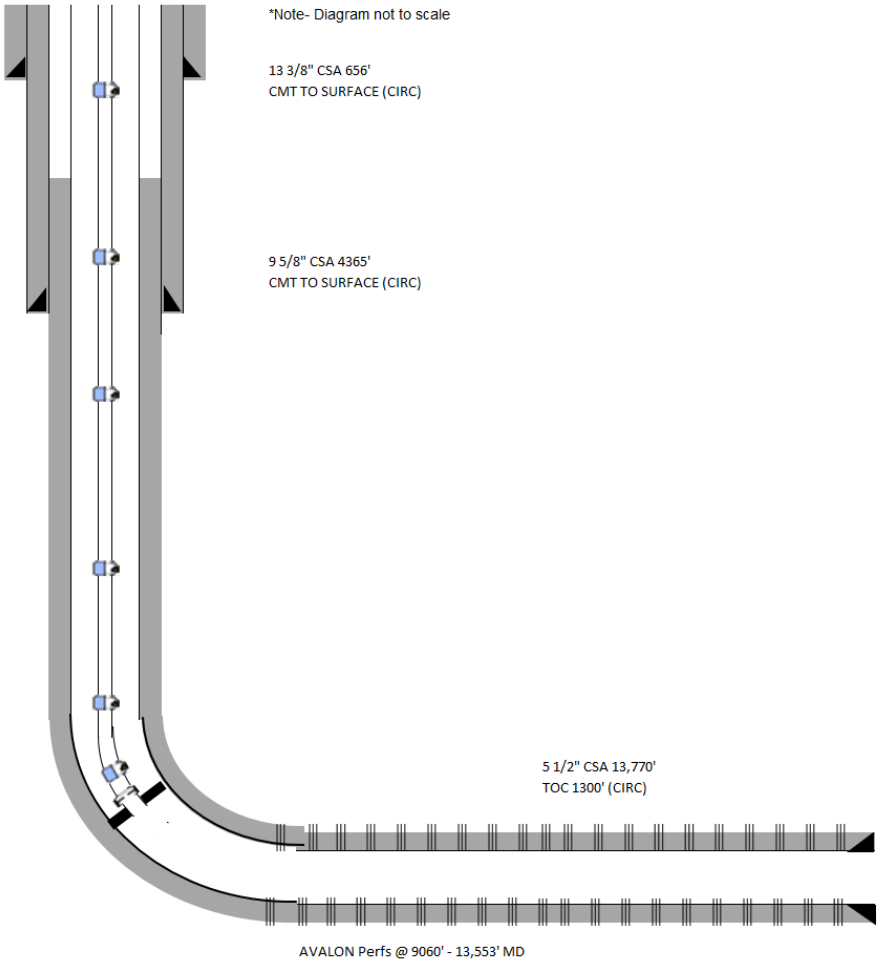
WELL NAME & NUMBER: PATTON MDP1 18 FEDERAL 033H

WELL LOCATION: 335' FNL 2062' FEL | B | 18 | 24S | 31E

FOOTAGE LOCATION | UNIT LETTER | SECTION | TOWNSHIP | RANGE

WELLBORE SCHEMATIC

PATTON MDP1 18 FEDERAL 033H



WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 17.5" Casing Size: 13-3/8"

Cemented with: 650 sx. ***or*** _____ ft^3

Top of Cement: SURFACE Method Determined: CIRC

Intermediate Casing

Hole Size: 12.25" Casing Size: 9-5/8"

Cemented with: 1350 sx. ***or*** _____ ft^3

Top of Cement: SURFACE Method Determined: CIRC

Production Casing

Hole Size: 8.5" Casing Size: 5.5"

Cemented with: 1480 sx. ***or*** _____ ft^3

Top of Cement: 1300' Method Determined: CBL

Total Depth: 13,770' MD/8878' TVD

Injection Interval

9060' MD/8850' TVD feet to 13,553' MD/8878' TVD

(Perforated or Open Hole; indicate which)

Side 2

PERF

Tubing Size: 2-7/8" Lining Material: _____

Type of Packer: BAKER HORNET PACKER - 5.5"

Packer Setting Depth: 8446' MD/8366' 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 INC

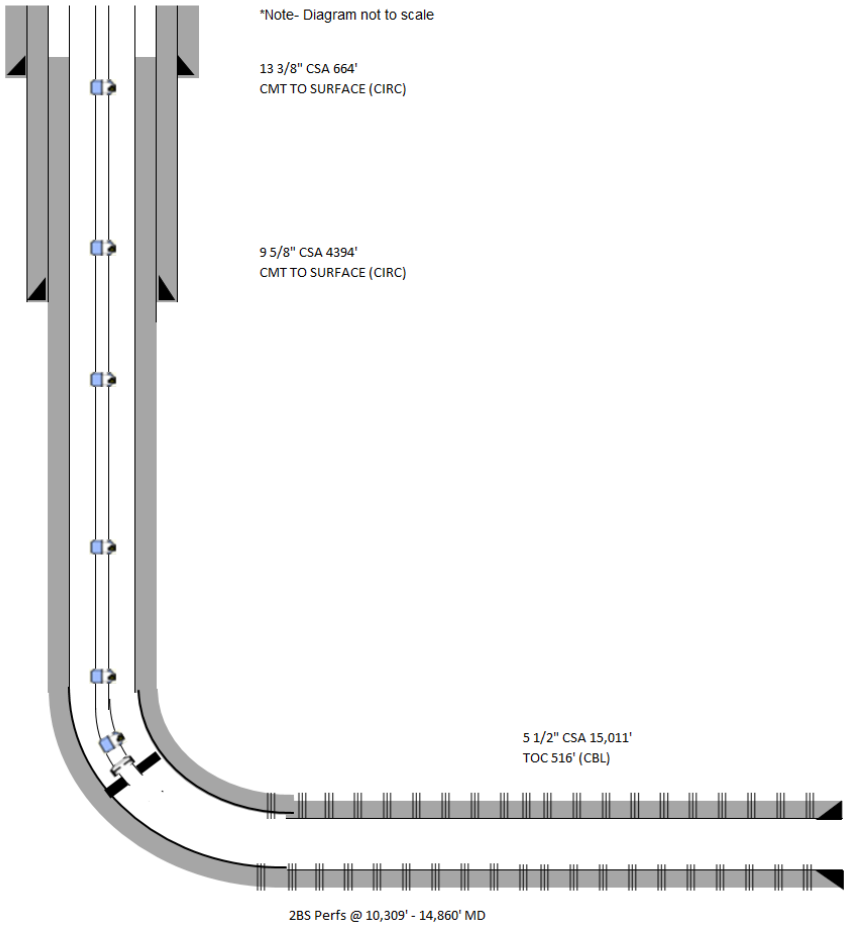
WELL NAME & NUMBER: PATTON MDP1 17 FEDERAL 001H

WELL LOCATION: 170' FSL 846' FWL | M | 8 | 24S | 31E

FOOTAGE LOCATION | UNIT LETTER | SECTION | TOWNSHIP | RANGE

WELLBORE SCHEMATIC

PATTON MDP1 17 FEDERAL 001H



WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 17.5" Casing Size: 13-3/8"

Cemented with: 850 sx. ***or*** _____ ft^3

Top of Cement: SURFACE Method Determined: CIRC

Intermediate Casing

Hole Size: 12.25" Casing Size: 9-5/8"

Cemented with: 1380 sx. ***or*** _____ ft^3

Top of Cement: SURFACE Method Determined: CIRC

Production Casing

Hole Size: 8.5" Casing Size: 5.5"

Cemented with: 2165 sx. ***or*** _____ ft^3

Top of Cement: 516' Method Determined: CBL

Total Depth: 15,011' MD/9996' TVD

Injection Interval

10,309' MD/9979' TVD feet to 14,860' MD/9995' TVD

(Perforated or Open Hole; indicate which)

Side 2

PERF

Tubing Size: 2-7/8" Lining Material: _____

Type of Packer: BAKER HORNET PACKER - 5.5"

Packer Setting Depth: 9764' MD/9710' 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 INC

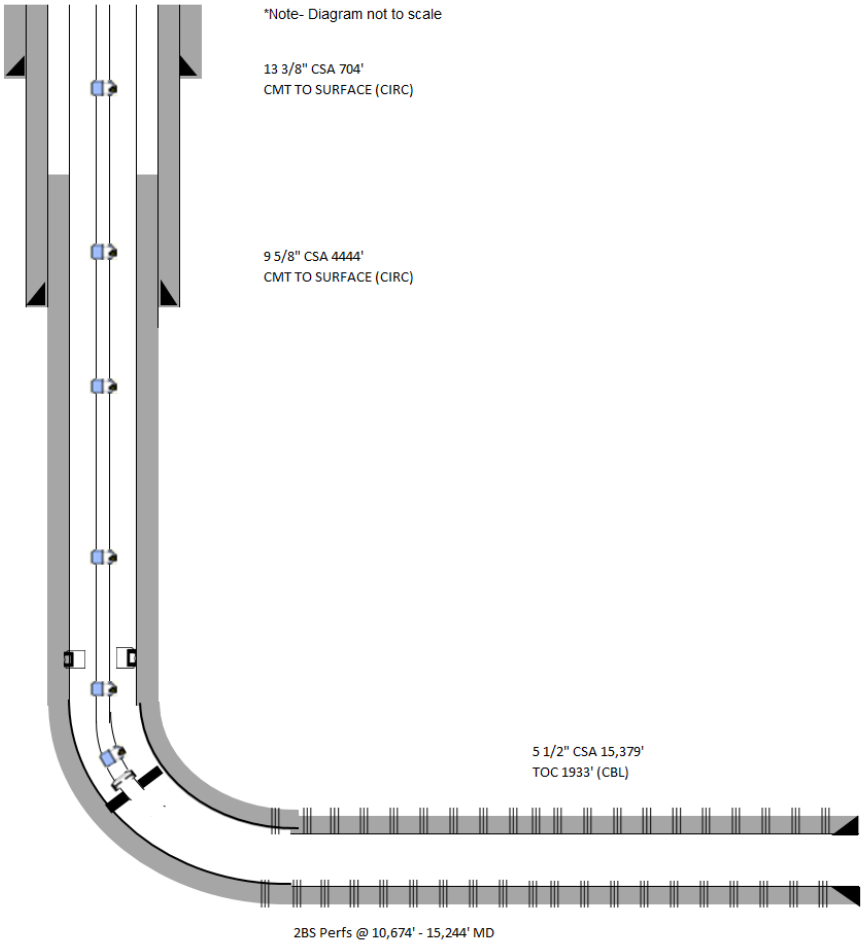
WELL NAME & NUMBER: PATTON MDP1 17 FEDERAL #004H

WELL LOCATION: 432' FSL 2292' FWL | N | 08 | 24S | 31E

FOOTAGE LOCATION | UNIT LETTER | SECTION | TOWNSHIP | RANGE

WELLBORE SCHEMATIC

PATTON MDP1 17 FEDERAL 004H



WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 17.5" Casing Size: 13-3/8"

Cemented with: 915 sx. ***or*** _____ ft^3

Top of Cement: SURFACE Method Determined: CIRC

Intermediate Casing

Hole Size: 12.25" Casing Size: 9-5/8"

Cemented with: 1235 sx. ***or*** _____ ft^3

Top of Cement: SURFACE Method Determined: CIRC

Production Casing

Hole Size: 8.5" Casing Size: 5.5"

Cemented with: 2175 sx. ***or*** _____ ft^3

Top of Cement: 1933' Method Determined: CBL

Total Depth: 15,379' MD/10,064' TVD

Injection Interval

10,674' MD/10,037' TVD feet to 15,244' MD/10,064' TVD

(Perforated or Open Hole; indicate which)

Side 2

PERF

Tubing Size: 2-7/8" Lining Material: _____

Type of Packer: 5.5" AX-1X WATSON

Packer Setting Depth: 9848' MD/9776' 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 INC

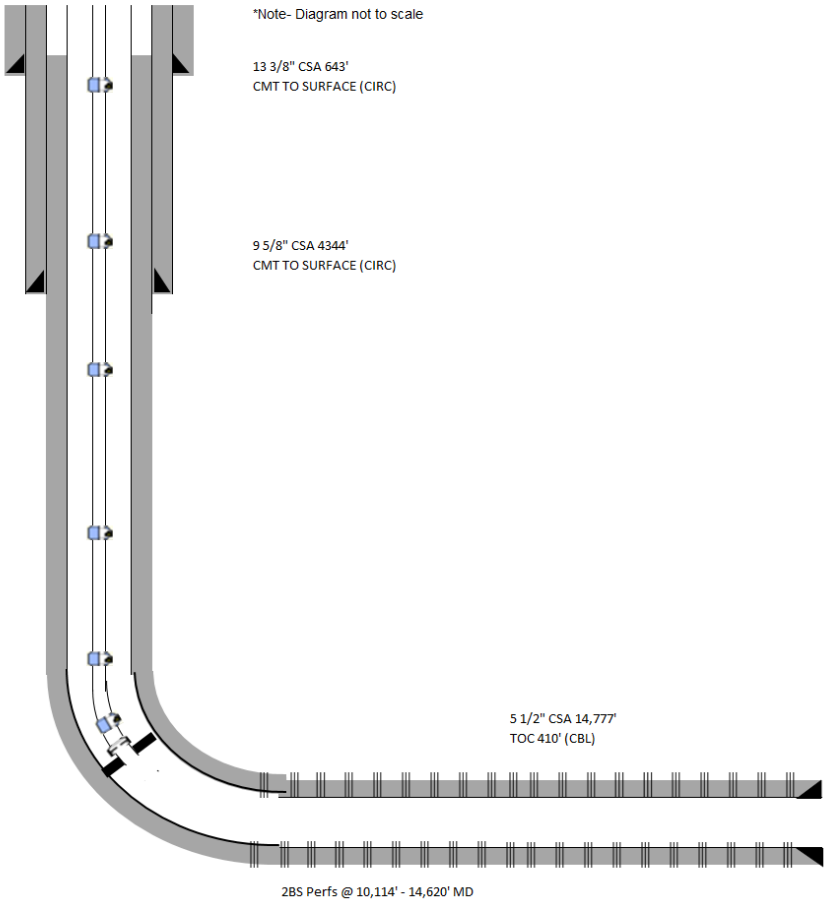
WELL NAME & NUMBER: PATTON MDP1 18 FEDERAL 003H

WELL LOCATION: 170' FNL 1928' FWL | C | 18 | 24S | 31E

FOOTAGE LOCATION | UNIT LETTER | SECTION | TOWNSHIP | RANGE

WELLBORE SCHEMATIC

PATTON MDP1 18 FEDERAL 003H



WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 17.5" Casing Size: 13-3/8"

Cemented with: 830 sx. ***or*** _____ ft^3

Top of Cement: SURFACE Method Determined: CIRC

Intermediate Casing

Hole Size: 12.25" Casing Size: 9-5/8"

Cemented with: 1220 sx. ***or*** _____ ft^3

Top of Cement: SURFACE Method Determined: CIRC

Production Casing

Hole Size: 8.5" Casing Size: 5.5"

Cemented with: 2125 sx. ***or*** _____ ft^3

Top of Cement: 410' Method Determined: CBL

Total Depth: 14,777' MD/10,010' TVD

Injection Interval

10,114' MD/9896' TVD feet to 14,620' MD/10,010' TVD

(Perforated or Open Hole; indicate which)

Side 2

PERF

Tubing Size: 2-7/8" Lining Material: _____

Type of Packer: ARROWSET PACKER 5.5"

Packer Setting Depth: 9735' MD/9645' 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 INC

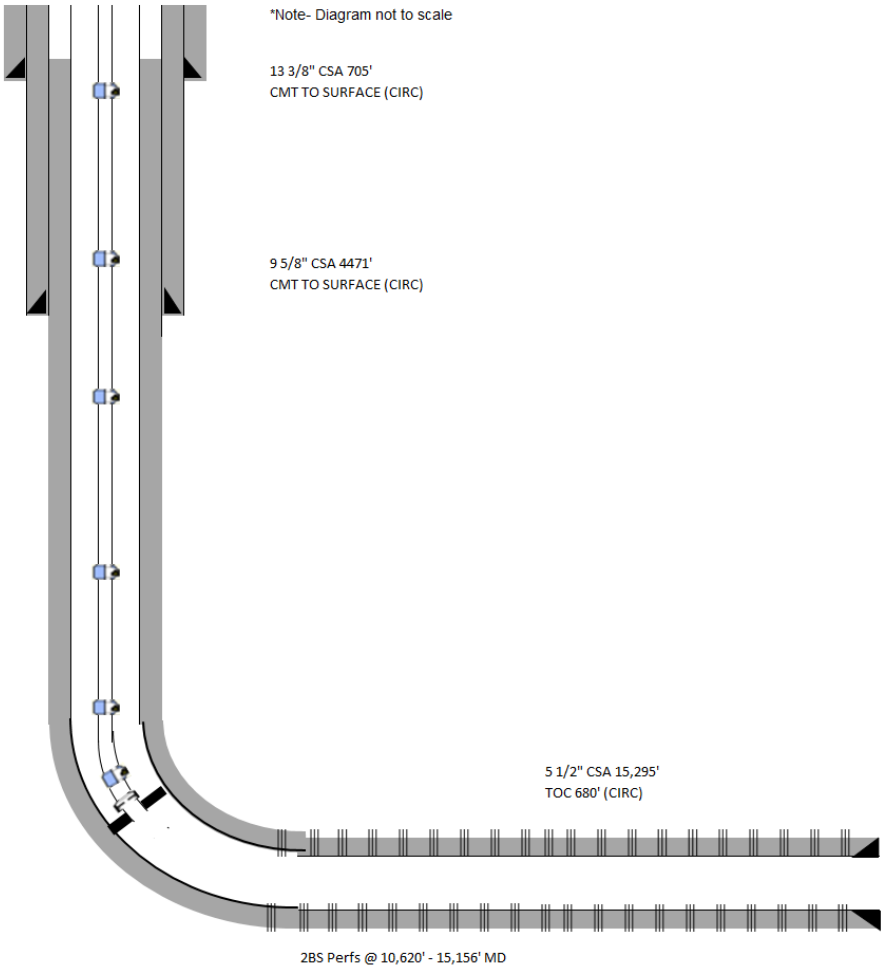
WELL NAME & NUMBER: PATTON MDP1 17 FEDERAL 005H

WELL LOCATION: 834' FSL 1585' FEL | O | 8 | 24S | 31E

FOOTAGE LOCATION | UNIT LETTER | SECTION | TOWNSHIP | RANGE

WELLBORE SCHEMATIC

PATTON MDP1 17 FEDERAL 005H



WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 17.5" Casing Size: 13-3/8"

Cemented with: 910 sx. ***or*** _____ ft^3

Top of Cement: SURFACE Method Determined: CIRC

Intermediate Casing

Hole Size: 12.25" Casing Size: 9-5/8"

Cemented with: 1380 sx. ***or*** _____ ft^3

Top of Cement: SURFACE Method Determined: CIRC

Production Casing

Hole Size: 8.5" Casing Size: 5.5"

Cemented with: 2200 sx. ***or*** _____ ft^3

Top of Cement: 680' Method Determined: CBL

Total Depth: 15,295' MD/10,056' TVD

Injection Interval

10,620' MD/10,056' TVD feet to 15,156' MD/10,056' TVD

(Perforated or Open Hole; indicate which)

Side 2

PERF

Tubing Size: 2-7/8" Lining Material: _____

Type of Packer: 5.5" X 2 3/8" AS-1X 10K

Packer Setting Depth: 9792' MD/9721' 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

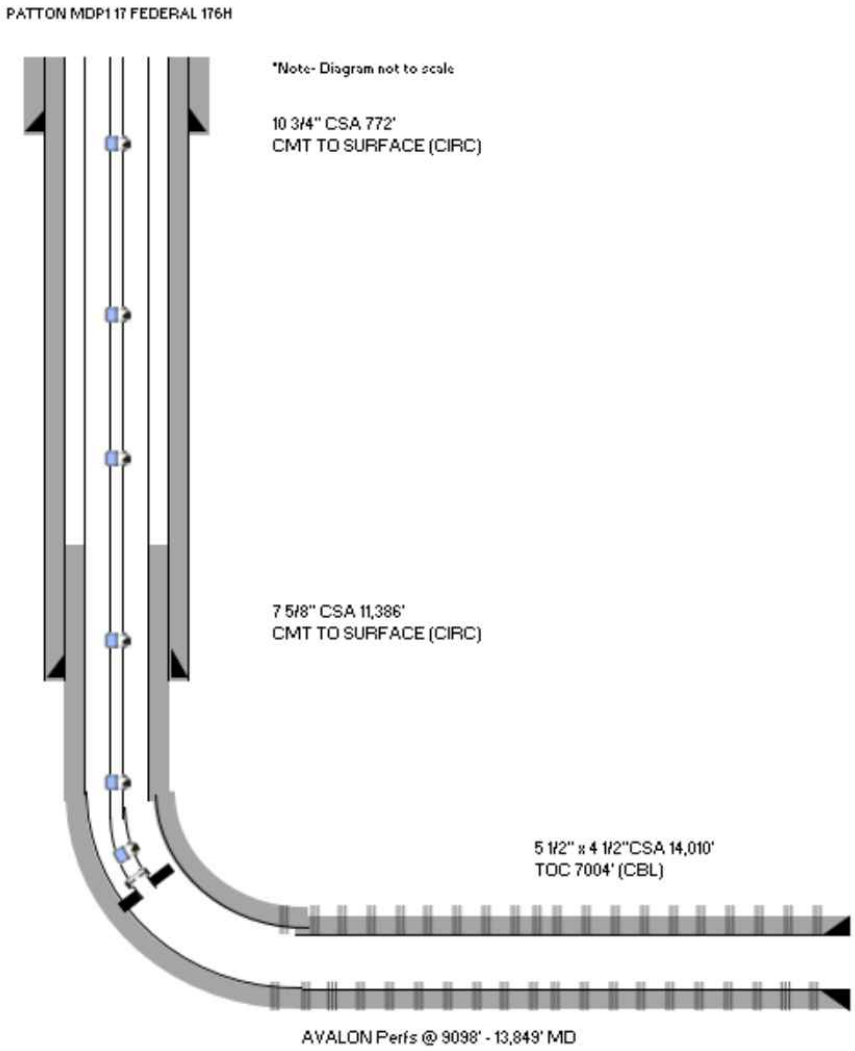
OPERATOR: OXY USA INC

WELL NAME & NUMBER: PATTON MDP1 17 FEDERAL 176H

WELL LOCATION: 772' FNL 1297' FEL | A | 17 | 24S | 31E

FOOTAGE LOCATION | UNIT LETTER | SECTION | TOWNSHIP | RANGE

WELLBORE SCHEMATIC



WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 14.75" Casing Size: 10-3/4"

Cemented with: 776 sx. ***or*** _____ ft^3

Top of Cement: SURFACE Method Determined: CIRC

Intermediate Casing

Hole Size: 9.875" Casing Size: 7-5/8"

Cemented with: 2075 sx. ***or*** _____ ft^3

Top of Cement: SURFACE Method Determined: CIRC

Production Casing

Hole Size: 6.75" Casing Size: 5.5" / 4.5"

Cemented with: 715 sx. ***or*** _____ ft^3

Top of Cement: 7004' Method Determined: CBL

Total Depth: 14,010' MD/8976' TVD

Injection Interval

9098' MD/8828' TVD feet to 13,849' MD/8976' TVD

(Perforated or Open Hole; indicate which)

Side 2

PERF

Tubing Size: 2-7/8" Lining Material: _____

Type of Packer: ARROWSET PACKER 5.5"

Packer Setting Depth: 8600' MD/8463' 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): [98220] PURPLE SAGE; WOLFCAMP (GAS)

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 INC

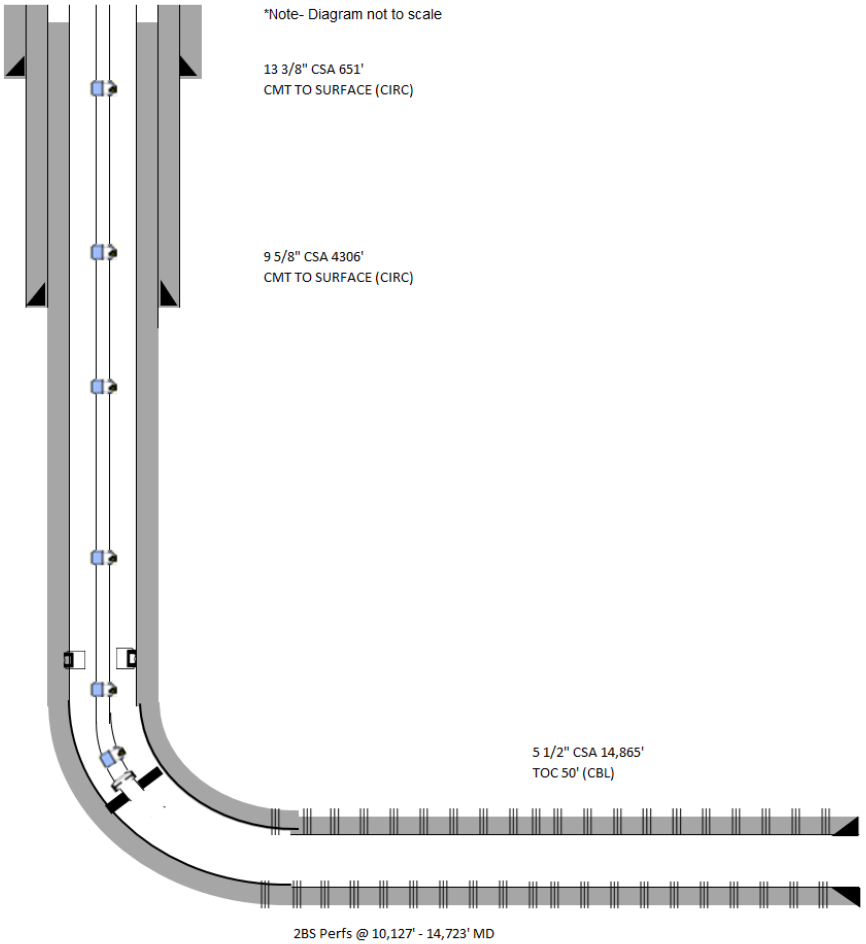
WELL NAME & NUMBER: PATTON MDP1 18 FEDERAL #001H

WELL LOCATION: 609' FSL 712' FWL | M | 07 | 24S | 31E

FOOTAGE LOCATION | UNIT LETTER | SECTION | TOWNSHIP | RANGE

WELLBORE SCHEMATIC

PATTON MDP1 18 FEDERAL 001H



WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 17.5" Casing Size: 13-3/8"

Cemented with: 815 sx. ***or*** _____ ft^3

Top of Cement: SURFACE Method Determined: CIRC

Intermediate Casing

Hole Size: 12.25" Casing Size: 9-5/8"

Cemented with: 1446 sx. ***or*** _____ ft^3

Top of Cement: SURFACE Method Determined: CIRC

Production Casing

Hole Size: 8.5" Casing Size: 5.5"

Cemented with: 2759 sx. ***or*** _____ ft^3

Top of Cement: 50' Method Determined: CBL

Total Depth: 14,865' MD/10055' TVD

Injection Interval

10,127' MD/9899' TVD feet to 14,723' MD/10,058' TVD

(Perforated or Open Hole; indicate which)

Side 2

PERF

Tubing Size: 2-7/8" Lining Material: _____

Type of Packer: 5.5" AX-1X

Packer Setting Depth: 9735' MD/9666' 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 INC

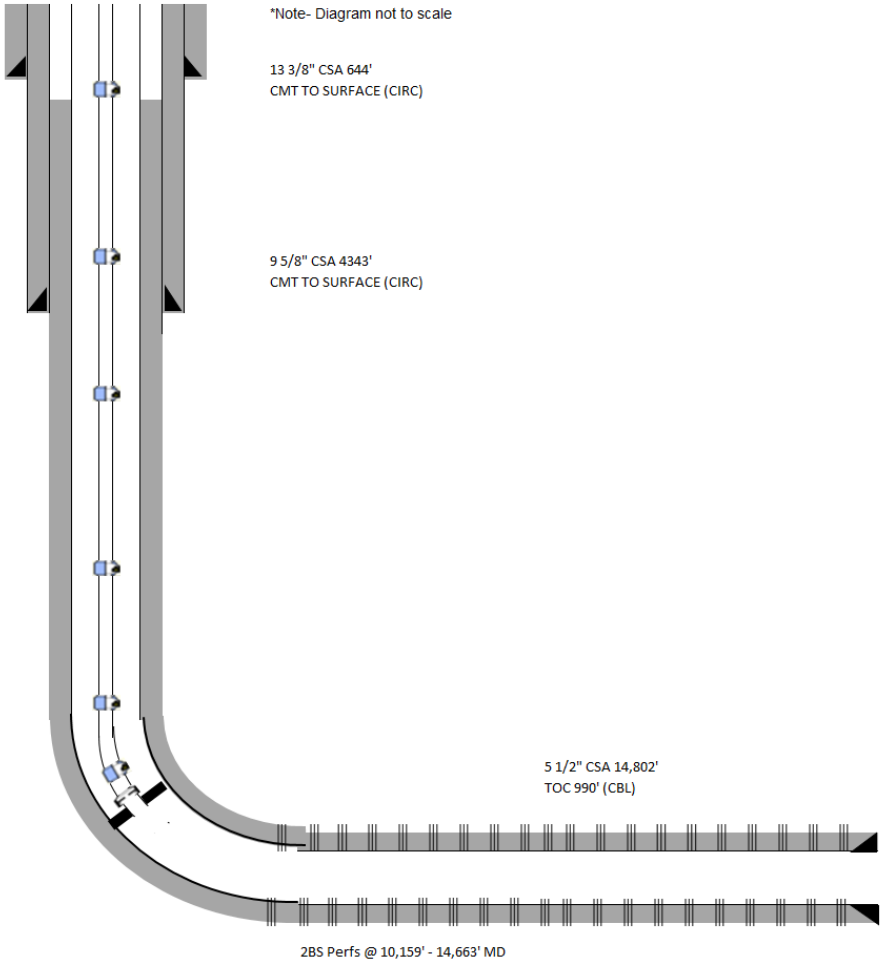
WELL NAME & NUMBER: PATTON MDP1 18 FEDERAL 002H

WELL LOCATION: 170' FNL 1898' FWL | C | 18 | 24S | 31E

FOOTAGE LOCATION | UNIT LETTER | SECTION | TOWNSHIP | RANGE

WELLBORE SCHEMATIC

PATTON MDP1 18 FEDERAL 002H



WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 17.5" Casing Size: 13-3/8"

Cemented with: 830 sx. ***or*** _____ ft^3

Top of Cement: SURFACE Method Determined: CIRC

Intermediate Casing

Hole Size: 12.25" Casing Size: 9-5/8"

Cemented with: 1215 sx. ***or*** _____ ft^3

Top of Cement: SURFACE Method Determined: CIRC

Production Casing

Hole Size: 8.5" Casing Size: 5.5"

Cemented with: 2130 sx. ***or*** _____ ft^3

Top of Cement: 990' Method Determined: CBL

Total Depth: 14,802' MD/10,084' TVD

Injection Interval

10,159' MD/9991' TVD feet to 14,663' MD/10,084' TVD

(Perforated or Open Hole; indicate which)

Side 2

PERF

Tubing Size: 2-7/8" Lining Material: _____

Type of Packer: WATSON AS1X 10K PACKER 20-23# 5.5"

Packer Setting Depth: 9935' MD/9863' 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 INC

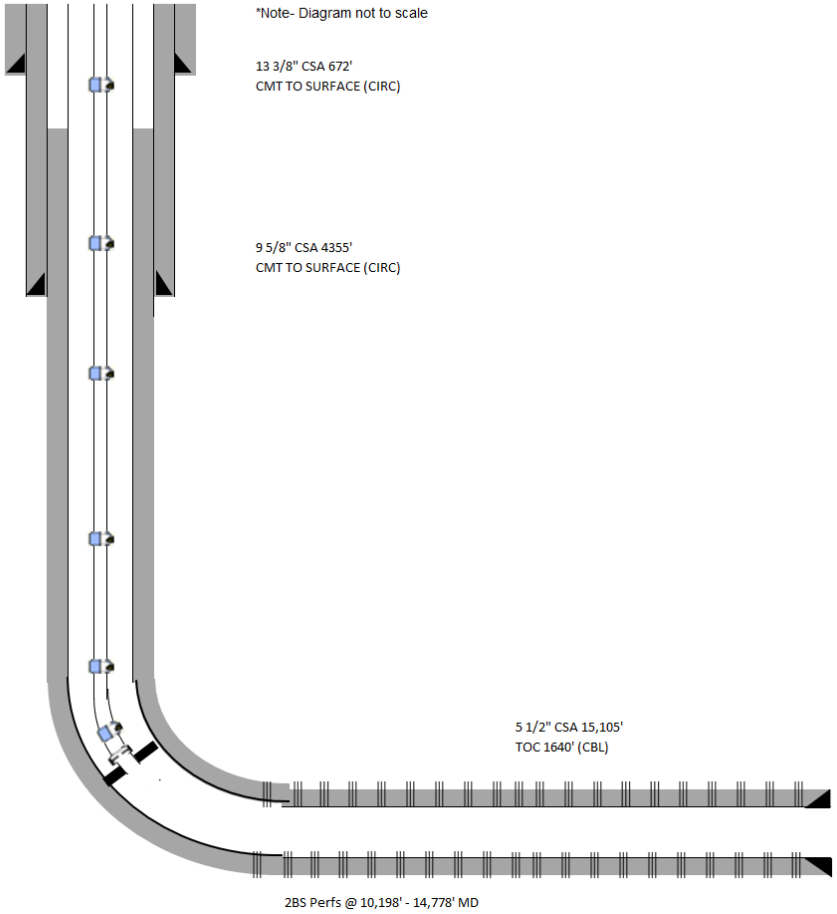
WELL NAME & NUMBER: PATTON MDP1 18 FEDERAL 005H

WELL LOCATION: 150' FNL 285' FEL | A | 18 | 24S | 31E

FOOTAGE LOCATION | UNIT LETTER | SECTION | TOWNSHIP | RANGE

WELLBORE SCHEMATIC

PATTON MDP1 18 FEDERAL 005H



WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 17.5" Casing Size: 13-3/8"

Cemented with: 947 sx. ***or*** _____ ft^3

Top of Cement: SURFACE Method Determined: CIRC

Intermediate Casing

Hole Size: 12.25" Casing Size: 9-5/8"

Cemented with: 1970 sx. ***or*** _____ ft^3

Top of Cement: SURFACE Method Determined: CIRC

Production Casing

Hole Size: 8.5" Casing Size: 5.5"

Cemented with: 1480 sx. ***or*** _____ ft^3

Top of Cement: 1640' Method Determined: CBL

Total Depth: 15,105' MD/10,016' TVD

Injection Interval

10,198' MD/9950' TVD feet to 14,778' MD/10,014' TVD

(Perforated or Open Hole; indicate which)

Side 2

PERF

Tubing Size: 2-7/8" Lining Material: _____

Type of Packer: AS-1X PACKER 5.5"

Packer Setting Depth: 9897' MD/9769' 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 INC

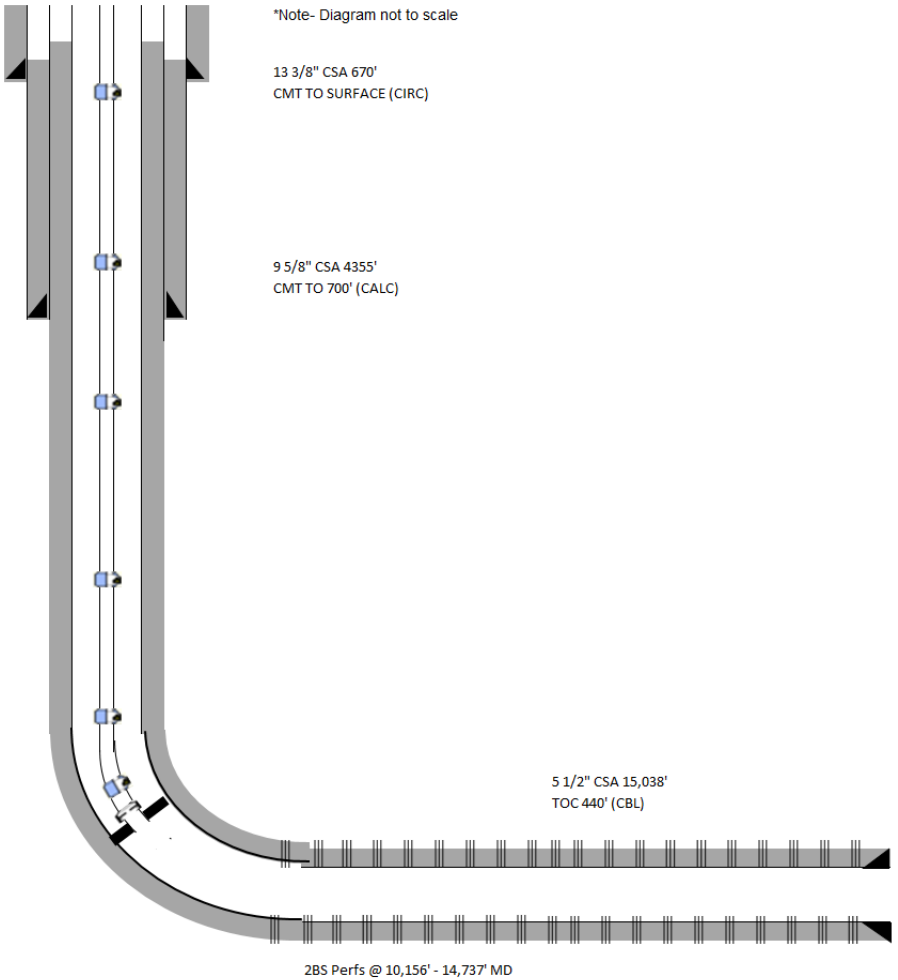
WELL NAME & NUMBER: PATTON MDP1 18 FEDERAL 007H

WELL LOCATION: 150' FNL 255' FEL | A | 18 | 24S | 31E

FOOTAGE LOCATION | UNIT LETTER | SECTION | TOWNSHIP | RANGE

WELLBORE SCHEMATIC

PATTON MDP1 18 FEDERAL 007H



WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 17.5" Casing Size: 13-3/8"

Cemented with: 850 sx. ***or*** _____ ft^3

Top of Cement: SURFACE Method Determined: CIRC

Intermediate Casing

Hole Size: 12.25" Casing Size: 9-5/8"

Cemented with: 1630 sx. ***or*** _____ ft^3

Top of Cement: 700' Method Determined: CALC

Production Casing

Hole Size: 8.5" Casing Size: 5.5"

Cemented with: 2263 sx. ***or*** _____ ft^3

Top of Cement: 440' Method Determined: CBL

Total Depth: 15,038' MD/10,018' TVD

Injection Interval

10,156' MD/10,016' TVD feet to 14,737' MD/10,021' TVD

(Perforated or Open Hole; indicate which)

Side 2

PERF

Tubing Size: 2-7/8" Lining Material: _____

Type of Packer: AS-1X PACKER 5.5"

Packer Setting Depth: 9892' MD/9851' 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 INC

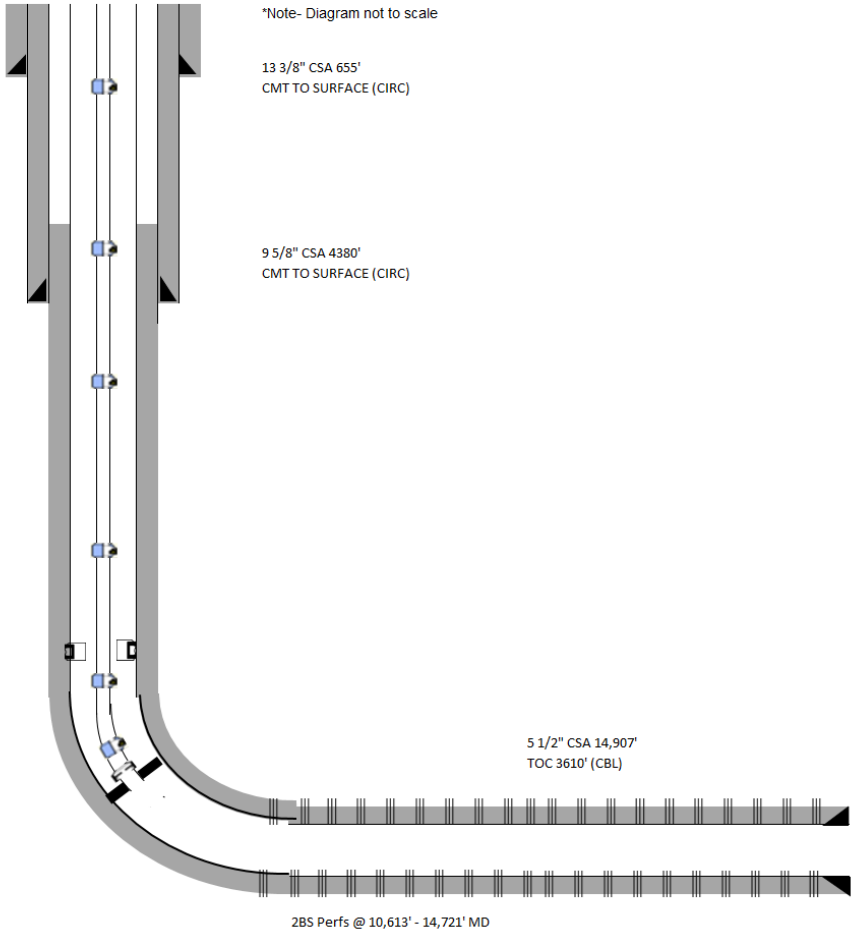
WELL NAME & NUMBER: PATTON MDP1 18 FEDERAL #023H

WELL LOCATION: 335' FNL 2122' FEL | B | 18 | 24S | 31E

FOOTAGE LOCATION | UNIT LETTER | SECTION | TOWNSHIP | RANGE

WELLBORE SCHEMATIC

PATTON MDP1 18 FEDERAL 023H



WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 17.5" Casing Size: 13-3/8"

Cemented with: 650 sx. ***or*** _____ ft^3

Top of Cement: SURFACE Method Determined: CIRC

Intermediate Casing

Hole Size: 12.25" Casing Size: 9-5/8"

Cemented with: 1350 sx. ***or*** _____ ft^3

Top of Cement: SURFACE Method Determined: CIRC

Production Casing

Hole Size: 8.5" Casing Size: 5.5"

Cemented with: 1650 sx. ***or*** _____ ft^3

Top of Cement: 3160 Method Determined: CBL

Total Depth: 14,907' MD/10,286' TVD

Injection Interval

10,613' MD/10,235' TVD feet to 14,721' MD/10,283' TVD

(Perforated or Open Hole; indicate which)

Side 2

PERF

Tubing Size: 2-7/8" Lining Material: _____

Type of Packer: 5.5" AX-1X WEATHERFORD

Packer Setting Depth: 10,026' MD/9950' 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

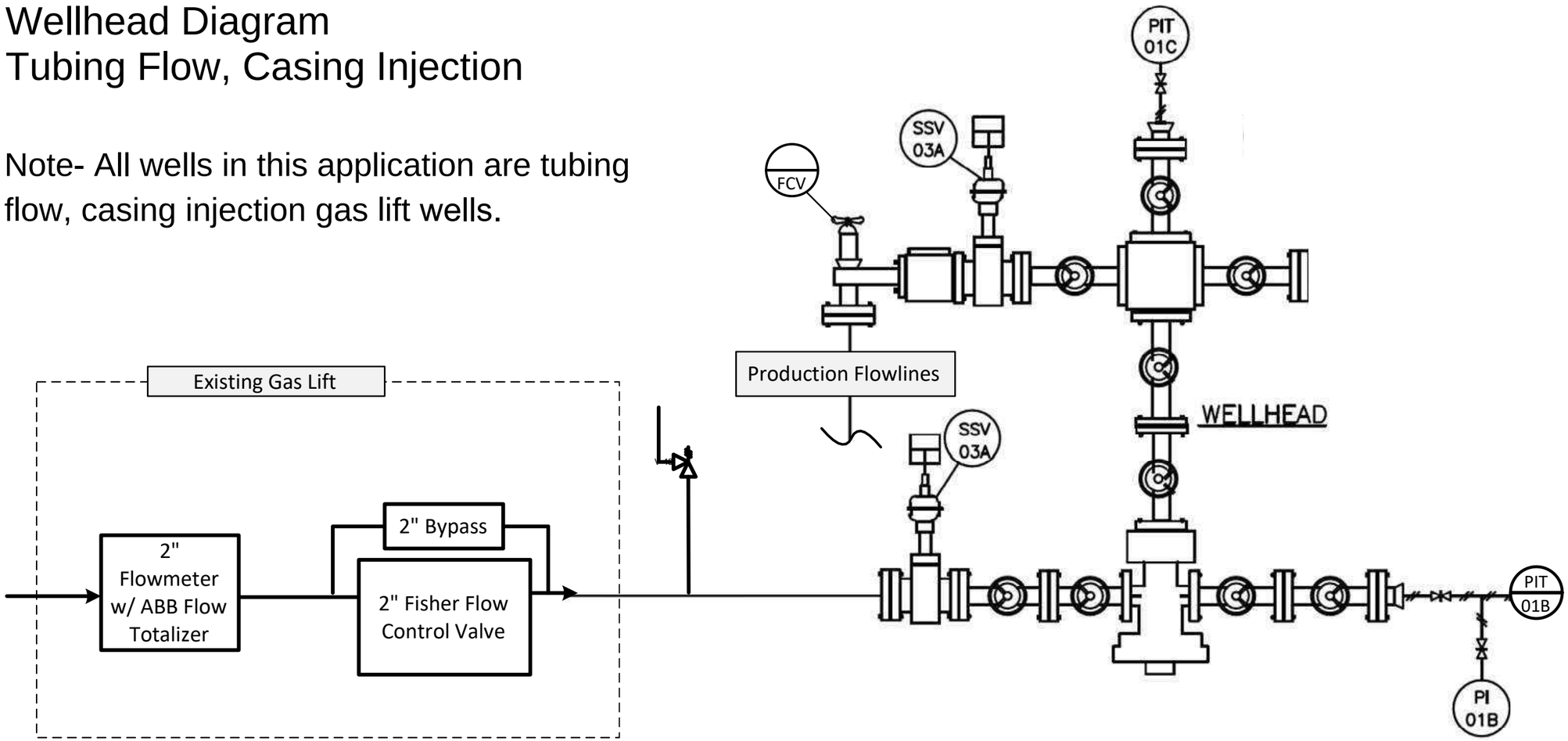
5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: _____

Max Allowable Surface Pressure (MASP) Table
South 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 (%)
3001544337	PATTON18-2H	1,250	765	1,250	1.8	2.0	9,991	0.468	12,360	48%	9,991	0.125	9,991	0.200	0.650	50%
3001544333	PATTON18-3H	1,250	610	1,250	1.8	2.0	9,896	0.468	12,360	48%	9,896	0.126	9,896	0.200	0.650	50%
3001544444	PATTON17-5H	1,250	850	1,250	1.8	2.0	10,056	0.468	12,360	48%	10,056	0.124	10,056	0.200	0.650	50%
3001544273	PATTON18-7H	1,250	680	1,250	1.8	2.0	10,016	0.468	12,360	48%	10,016	0.125	10,016	0.200	0.650	50%
3001544272	PATTON18-5H	1,250	700	1,250	1.8	2.0	9,950	0.468	12,360	48%	9,950	0.126	9,950	0.200	0.650	50%
3001544459	PATTON17-1H	1,250	675	1,250	1.8	2.0	9,979	0.468	12,360	48%	9,979	0.125	9,979	0.200	0.650	50%
3001544338	PATTON18-33H	1,250	375	1,250	1.8	2.0	8,850	0.468	8,990	60%	8,850	0.141	8,850	0.200	0.650	52%
3001545079	PATTON176ST1	1,250	450	1,250	1.8	2.0	8,828	0.468	12,360	44%	8,828	0.142	8,828	0.200	0.650	53%
3001544316	PATTON18-23H	1,250	720	1,250	1.8	2.0	10,235	0.468	12,360	49%	10,235	0.122	10,235	0.200	0.650	50%
3001544497	PATTON17-4H	1,250	695	1,250	1.8	2.0	10,037	0.468	12,360	48%	10,037	0.125	10,037	0.200	0.650	50%
3001544317	PATTON18-1H	1,250	840	1,250	1.8	2.0	9,899	0.468	12,360	48%	9,899	0.126	9,899	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
3001544337	PATTON18-2H	11/21/2017	CBL was run from 100'-TD with 1000 psi.	2/1/2018	Pressure tested casing/tubing annulus to 1500 psi for 15 min.
3001544333	PATTON18-3H	11/20/2017	CBL was run from TD to surface with 1000 psi.	1/20/2018	Tested casing & packer to 900 psi (no duration specified).
3001544444	PATTON17-5H	2/13/2018	CBL was run from TD to surface with 1000 psi	2/15/2018	Test casing/packer to 9800 psi for 30 min.
3001544273	PATTON18-7H	11/7/2017	CBL was run from TD to surface with 1000 psi	11/1/2017	Pressure test casing after 1st stage of cement to 2500 psi. No duration listed.
3001544272	PATTON18-5H	10/29/2017	CBL was run from TD to surface with 1000 psi	1/25/2018	Tested casing & packer to 1500 psi (no duration specified).
3001544459	PATTON17-1H	3/2/2018	CBL was run from TD to surface with 1000 psi	3/16/2018	Tested casing & packer to 9800 psi for 30 min
3001544338	PATTON18-33H	10/22/2017	CBL was run from TD to surface with 1000 psi	10/23/2017	Tested casing & packer to 6750 psi for 30 min
3001545079	PATTON176ST1	10/10/2018	CBL was run from TD to surface with 300 psi	11/19/2018	Tested casing & packer to 1000 psi (no duration specified)
3001544316	PATTON18-23H	10/22/2017	6750 for 30 min	10/22/2017	CBL run from TD to surface with 1000 psi
3001544497	PATTON17-4H	2/16/2018	CBL run from 10,201' to surface with 1000 psi	2/15/2018	9800 psi for 15 min
3001544317	PATTON18-1H	1/8/2018	CBL run from 9500' to surface with 1000 psi	1/7/2018	9800 psi for 15 min

Gas Analysis and Operations

Patton Gas Source Well List

Name	Route Name	API 14
NIMITZ MDP1 12 FEDERAL 001H	SE_SAND DUNES ROUTE	30015445260000
NIMITZ MDP1 12 FEDERAL 002H	SE_SAND DUNES ROUTE	30015445800000
NIMITZ MDP1 12 FEDERAL 009H	SE_SAND DUNES ROUTE	30015445810000
NIMITZ MDP1 12 FEDERAL COM 006H	SE_SAND DUNES ROUTE	30015445280000
NIMITZ MDP1 12 FEDERAL COM 007H	SE_SAND DUNES ROUTE	30015445290000
NIMITZ MDP1 13 FEDERAL COM 003H	SE_SAND DUNES ROUTE	30015445250000
NIMITZ MDP1 13 FEDERAL COM 2H	SE_SAND DUNES ROUTE	30015444980000
PALLADIUM MDP1 7 6 FEDERAL COM 1H	SE_SAND DUNES ROUTE	30015442980000
PALLADIUM MDP1 7 6 FEDERAL COM 2H	SE_SAND DUNES ROUTE	30015442990000
PALLADIUM MDP1 7 6 FEDERAL COM 3Y	SE_SAND DUNES ROUTE	30015444570000
PALLADIUM MDP1 7 6 FEDERAL COM 4H	SE_SAND DUNES ROUTE	30015442950000
PALLADIUM MDP1 7 6 FEDERAL COM 5H	SE_SAND DUNES ROUTE	30015442940000
PALLADIUM MDP1 7 6 FEDERAL COM 6H	SE_SAND DUNES ROUTE	30015442930000
PATTON MDP1 17 FEDERAL 171H	SE_SAND DUNES ROUTE	30015449890000
PATTON MDP1 17 FEDERAL 172H	SE_SAND DUNES ROUTE	30015449900000
PATTON MDP1 17 FEDERAL 173H	SE_SAND DUNES ROUTE	30015449910000
PATTON MDP1 17 FEDERAL 174H	SE_SAND DUNES ROUTE	30015450770000
PATTON MDP1 17 FEDERAL 175H	SE_SAND DUNES ROUTE	30015450780000
PATTON MDP1 17 FEDERAL 176H ST1	SE_SAND DUNES ROUTE	30015450790100
PATTON MDP1 17 FEDERAL 1H	SE_SAND DUNES ROUTE	30015444590000
PATTON MDP1 17 FEDERAL 2H ST	SE_SAND DUNES ROUTE	30015444600100
PATTON MDP1 17 FEDERAL 3H	SE_SAND DUNES ROUTE	30015444960000
PATTON MDP1 17 FEDERAL 4H	SE_SAND DUNES ROUTE	30015444970000
PATTON MDP1 17 FEDERAL 5H	SE_SAND DUNES ROUTE	30015444440000
PATTON MDP1 17 FEDERAL 6H ST	SE_SAND DUNES ROUTE	30015444450100
PATTON MDP1 18 FEDERAL 1H	SE_SAND DUNES ROUTE	30015443170000
PATTON MDP1 18 FEDERAL 23H	SE_SAND DUNES ROUTE	30015443160000
PATTON MDP1 18 FEDERAL 2H	SE_SAND DUNES ROUTE	30015443370000
PATTON MDP1 18 FEDERAL 33H	SE_SAND DUNES ROUTE	30015443380000
PATTON MDP1 18 FEDERAL 3H	SE_SAND DUNES ROUTE	30015443330000
PATTON MDP1 18 FEDERAL 5H	SE_SAND DUNES ROUTE	30015442720000
PATTON MDP1 18 FEDERAL 6H	SE_SAND DUNES ROUTE	30015438540000
PATTON MDP1 18 FEDERAL 73H	SE_SAND DUNES ROUTE	30015443180000
PATTON MDP1 18 FEDERAL 7H	SE_SAND DUNES ROUTE	30015442730000
SUNRISE MDP1 8 5 FEDERAL COM 002H	SE_SAND DUNES ROUTE	30015443950000
SUNRISE MDP1 8-5 FEDERAL COM 173H	SE_SAND DUNES ROUTE	30015449310000
SUNRISE MDP1 8-5 FEDERAL COM 174H	SE_SAND DUNES ROUTE	30015451120000
SUNRISE MDP1 8-5 FEDERAL COM 175H	SE_SAND DUNES ROUTE	30015451520000
SUNRISE MDP1 8-5 FEDERAL COM 176H	SE_SAND DUNES ROUTE	30015451530000
SUNRISE MDP1 8-5 FEDERAL COM 1H	SE_SAND DUNES ROUTE	30015443690000
SUNRISE MDP1 8-5 FEDERAL COM 3H	SE_SAND DUNES ROUTE	30015444740000
SUNRISE MDP1 8-5 FEDERAL COM 4H	SE_SAND DUNES ROUTE	30015444750000
SUNRISE MDP1 8-5 FEDERAL COM 5H	SE_SAND DUNES ROUTE	30015444760000
SUNRISE MDP1 8-5 FEDERAL COM 6H	SE_SAND DUNES ROUTE	30015444730000

SUNRISE MPD1 8-5 FEDERAL COM 171H	SE_SAND DUNES ROUTE	30015449300000
SUNRISE MPD1 8-5 FEDERAL COM 172H	SE_SAND DUNES ROUTE	30015449770000

South Corridor Gas Analysis Summary

- All producing wells flow to the Sand Dunes South Corridor Central Tank Battery (CTB).
- Gas flows into the low-pressure gas pipeline to the following Compressor Gas Lift Stations (CGL's).
    - East CGL Station
    - West CGL Station
- The CGL's combine downstream in the same gas lift line to feed wells collectively.
- Gas analysis is provided for:
    - East CGL Station
    - West CGL Station
    - Avalon production
    - 2nd Bone Spring production

East CGL

Certificate of Analysis

Number: 6030-20100243-001A

Artesia Laboratory
200 E Main St.
Artesia, NM 88210
Phone 575-746-3481

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

Oct. 30, 2020

Field:	Sand Dunes	Sampled By:	Scott Beasley
Station Name:	Sand Dunes SC East CGL	Sample Of:	Gas Spot
Station Number:	N/A	Sample Date:	10/29/2020 12:02
Sample Point:	Inlet to Dehy	Sample Conditions:	1220 psig, @ 60 °F Ambient: 60 °F
Meter Number:		Effective Date:	10/29/2020 12:02
County:	Eddy	Method:	GPA 2286
Type of Sample:	Spot-Cylinder	Cylinder No:	1111-002437
Heat Trace Used:	N/A	Instrument:	6030_GC2 (Agilent GC-7890B)
Sampling Method:	Fill and Purge	Last Inst. Cal.:	08/25/2020 9:12 AM
Sampling Company:	OXY	Analyzed:	10/30/2020 11:05:26 by PGS

Analytical Data

Components	Un-normalized Mol %	Mol. %	Wt. %	GPM at 14.65 psia		
Nitrogen	1.797	1.775	2.274		GPM TOTAL C2+	5.973
Methane	76.243	75.316	55.264		GPM TOTAL C3+	2.862
Carbon Dioxide	1.755	1.734	3.491		GPM TOTAL iC5+	0.506
Ethane	11.799	11.655	16.030	3.111		
Propane	5.798	5.727	11.551	1.575		
Iso-butane	0.733	0.724	1.925	0.236		
n-Butane	1.755	1.734	4.610	0.545		
Iso-pentane	0.398	0.393	1.297	0.144		
n-Pentane	0.412	0.407	1.343	0.148		
Hexanes Plus	0.542	0.535	2.215	0.214		
	101.232	100.000	100.000	5.973		

Calculated Physical Properties	Total	C6+
Relative Density Real Gas	0.7574	3.1164
Calculated Molecular Weight	21.86	90.26
Compressibility Factor	0.9963	
GPA 2172 Calculation:		
Calculated Gross BTU per ft³ @ 14.65 psia & 60°F		
Real Gas Dry BTU	1250	4837
Water Sat. Gas Base BTU	1228	4753
Ideal, Gross HV - Dry at 14.65 psia	1245.2	4837.3
Ideal, Gross HV - Wet	1223.5	0.000
Net BTU Dry Gas - real gas	1135	
Net BTU Wet Gas - real gas	1115	

Comments: H2S Field Content 0 ppm

Hydrocarbon Laboratory Manager

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

West CGL

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

Company:	OXY USA INC	**Work Order**	4000299133
Field/Location :	NMSW	**Sampled by:**	OXY/JE
Station Name :	SAND DUNES SOUTH WEST COMP STATION	**Sample Type :**	SPOT-CYLINDER
Station Number :	COMP STATION INLET	**Sample Temperature (F):**	60
Sample Date:	5/11/21 12:18 AM	**Sample Pressure (PSIG):**	78
Analysis Date:	5/14/21 4:52 PM	**Flow rate (MCF/Day):**	
Instrument:	VARIAN CP 490 GC	**Ambient Temperature (F):**	73
Calibration/Verification Date:	5/14/2021	**Sampling method:**	FILL & EMPTY
Heat Trace used:	YES	**Cylinder Number:**	27706

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	1.5496	1.5416			
Methane	74.0127	73.6324			
Carbon Dioxide	1.6884	1.6798			
Ethane	11.8917	11.8306	3.159	3.176	3.240
Propane	6.3143	6.2819	1.728	1.737	1.772
Isobutane	0.8655	0.8611	0.281	0.283	0.289
N-butane	2.1576	2.1465	0.676	0.679	0.693
Isopentane	0.5174	0.5147	0.188	0.189	0.193
N-Pentane	0.5888	0.5858	0.212	0.213	0.217
Hexanes Plus	0.9304	0.9256	0.403	0.405	0.414
Total	**100.5164**	**100.0000**			

Hexanes plus split (60%-30%-10%)

Physical Properties (Calculated)	**14.650 psia**	**14.730 psia**	**15.025 psia**
Total GPM Ethane+	6.647	6.684	6.817
Total GPM Iso-Pentane+	0.803	0.808	0.824
Compressibility (Z)	0.9959	0.9959	0.9958
Specific Gravity (Air=1) @ 60 °F	0.7872	0.7873	0.7873
Molecular Weight	22.716	22.716	22.716

Gross Heating Value	**14.650 psia**	**14.730 psia**	**15.025 psia**
Dry, Real (BTU/Ft^3)	1302.0	1309.1	1335.5
Wet, Real (BTU/Ft^3)	1279.3	1286.3	1312.2
Dry, Ideal (BTU/Ft^3)	1296.6	1303.7	1329.8
Wet, Ideal (BTU/Ft^3)	1274.1	1281.0	1306.7

Temperature base 60 °F

Comment: FIELD H2S = 0 PPM

Verified by

Mostaq Ahammad
Petroleum Chemist

Approved by

Deann Friend
Laboratory Manager

Avalon Produced Gas Analysis

SPL

Certificate of Analysis

Number: 6030-21040026-010A

Artesia Laboratory
200 E Main St.
Artesia, NM 88210
Phone 575-746-3481

Chandler 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

Calculated Physical Properties	Total	C9+
Calculated Molecular Weight	23.97	128.26
Compressibility Factor	0.9962	
Relative Density Real Gas	0.8306	4.4283
GPA 2172 Calculation:		
Calculated Gross BTU per ft³ @ 14.65 psia & 60°F		
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 Montgomery

Digitally 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.

2nd Bone Spring Produced Gas Analysis

SPL

Certificate of Analysis

Number: 6030-21040026-007A

Artesia Laboratory
200 E Main St.
Artesia, NM 88210
Phone 575-746-3481

Chandler 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	100.00000	100.000	6.405

Calculated Physical Properties	Total	C9+
Calculated Molecular Weight	22.24	128.26
Compressibility Factor	0.9961	
Relative Density Real Gas	0.7705	4.4283
GPA 2172 Calculation:		
Calculated Gross BTU per ft³ @ 14.65 psia & 60°F		
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/day

Chandler Montgomery

Digitally 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.

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 3rd 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 ACQUISTION (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.

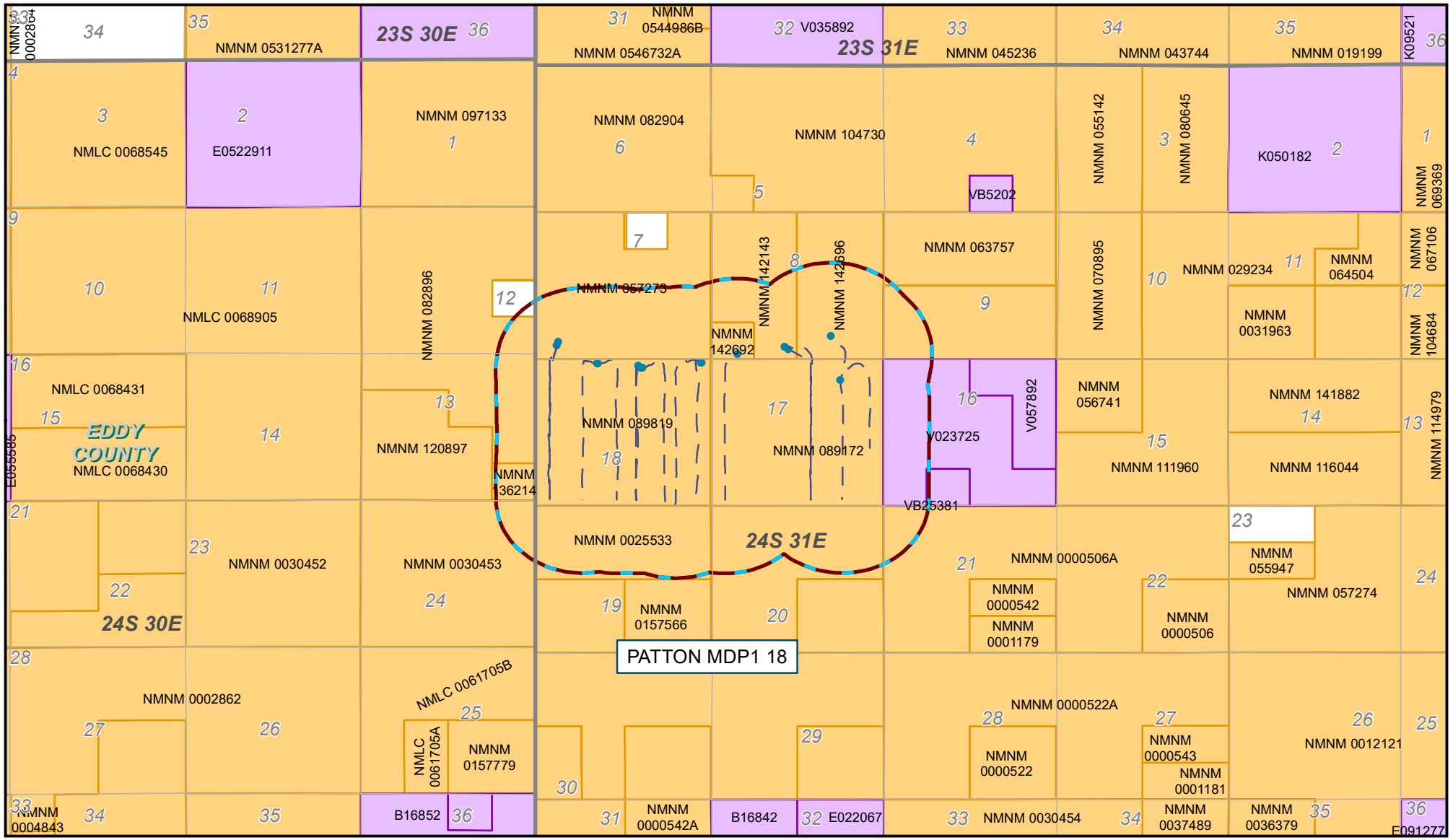
ENVIRONMENTAL/SPILL RESPONSE

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

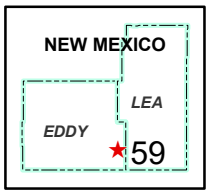
SOUTH CORRIDOR GAS LIFT
EDDY COUNTY, NEW MEXICO



County
1/2 mile AOR
Surface Hole Location
Wellbore Trajectory

Lease Owner Type:
Federal
State

0 0.5 1 2 Miles



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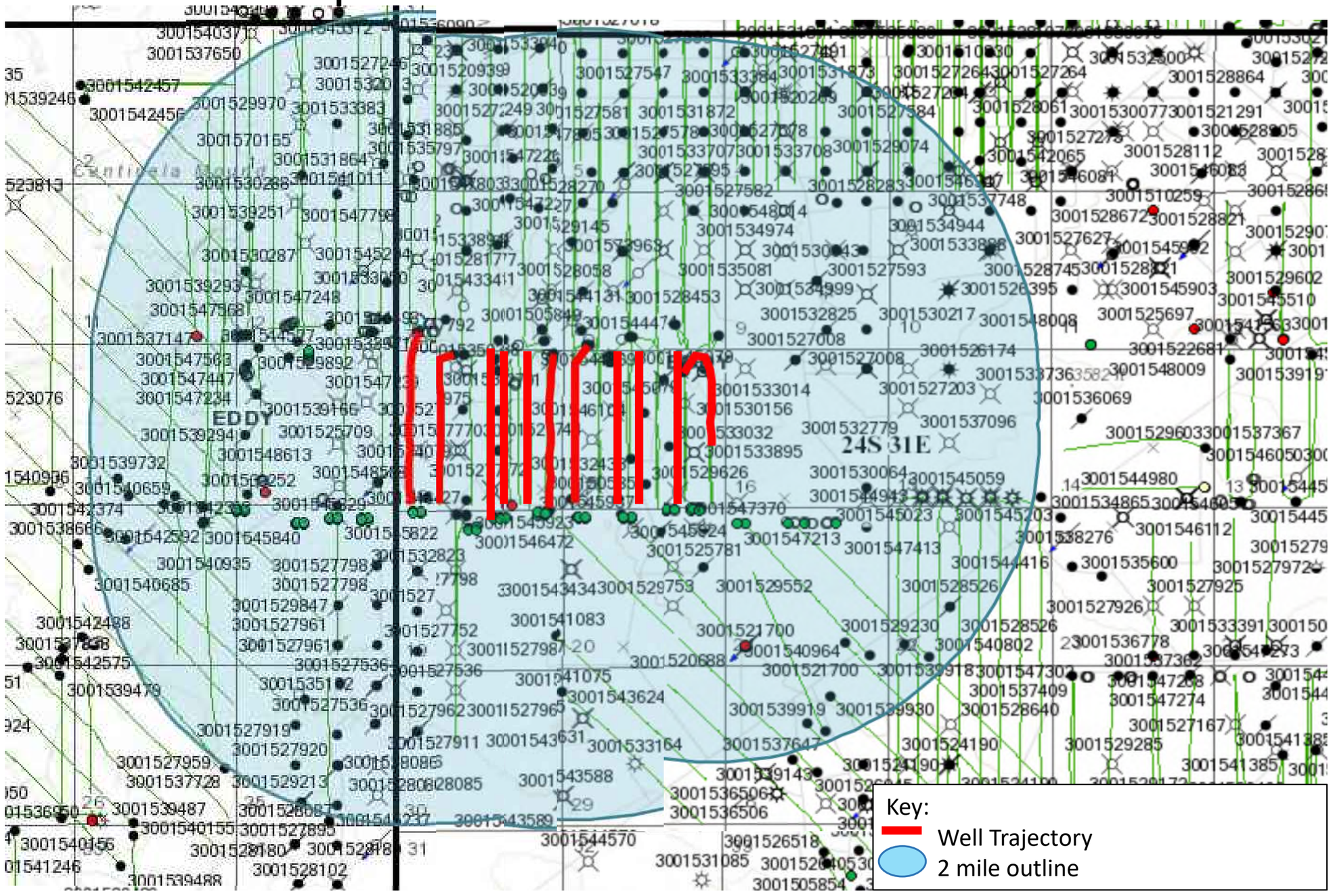
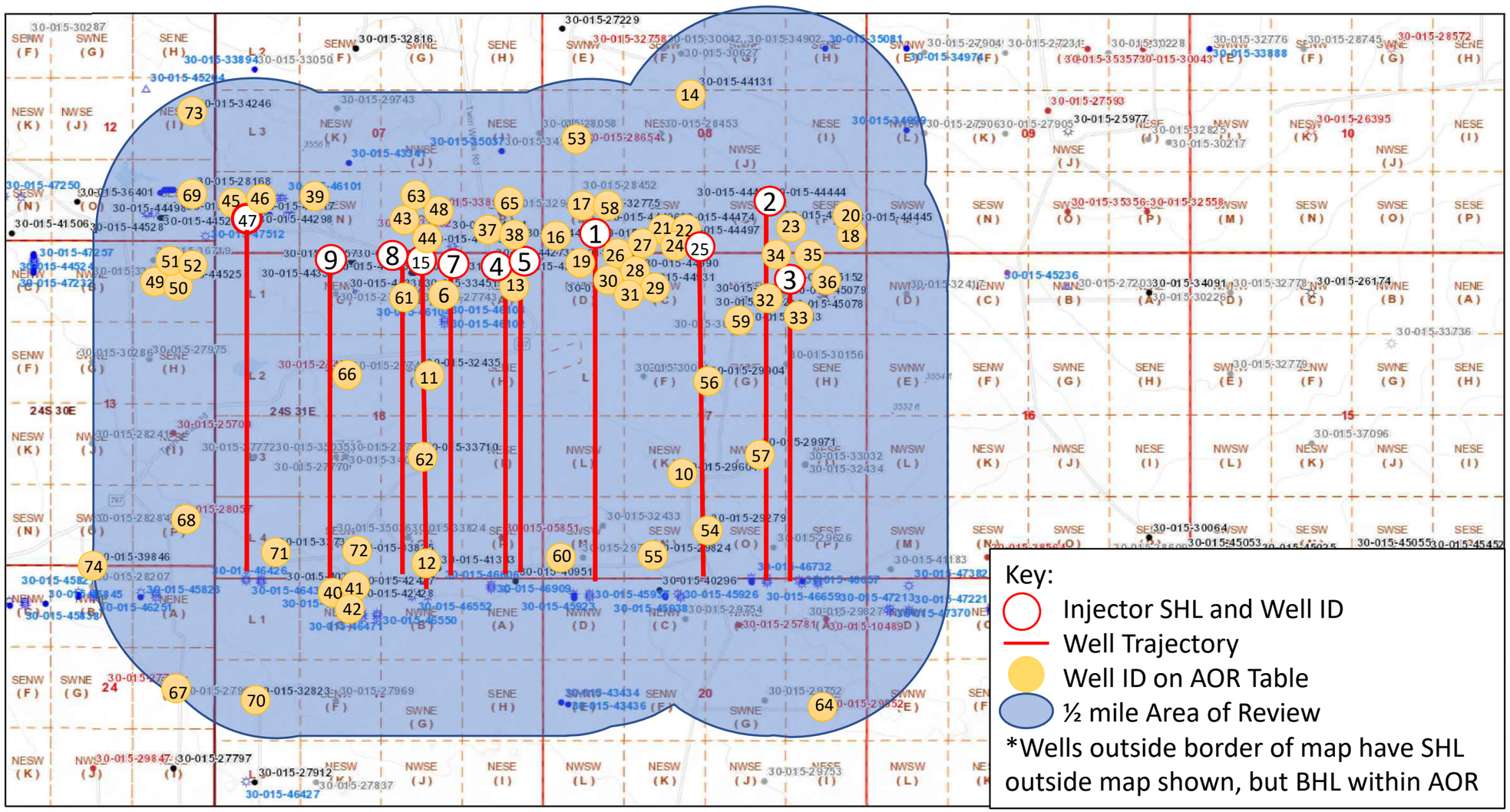
Patton 2 Mile Map



Patton Combined AOR



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Wells - Large Scale

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

1:22,000

0 0.23 0.45 0.9 mi

0 0.38 0.75 1.5 km

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

Patton (South Corridor) AOR Table

Well ID	API NUMBER	Current Operator	LEASE NAME	WELL NUMBER	Well Type:	Status:	Footages N/S	N/S	Footages E/W	E/W	Surface Location Unit	Surface Location Section	Surface Location TShip	Surface Location Range	Spud:	True Vertical Depth:	Measured Vertical Depth:	HOLE SIZE	CSG SIZE	SET AT	SX CMT	CMT TO	HOW MEASURED	Current Completion	Comment	Current Producing Pool
1	30-015-44459	OXY USA INC	PATTON MDP1 17 FEDERAL	001H	Oil	Active	170	S	846	W	M	8	24S	31E	11/3/2017	9996	15025	17.500	13.375	664	850	Surf	Circ	10309-14860		[13367] COTTON DRAW; BONE SPRING
																		12.250	9.625	4394	1380	Surf	Circ			
																		8.500	5.500	15011	2165	516	CBL			
2	30-015-44444	OXY USA INC	PATTON MDP1 17 FEDERAL	005H	Oil	Active	834	S	1585	E	O	8	24S	31E	11/28/2017	10056	15310	17.500	13.375	705	910	Surf	Circ	10620-15156		[13367] COTTON DRAW; BONE SPRING
																		12.250	9.625	4471	1380	Surf	Circ			
																		8.500	5.500	15295	2200	680	CBL			
3	30-015-45079	OXY USA INC	PATTON MDP1 17 FEDERAL	176H	Gas	Active	772	N	1297	E	A	17	24S	31E	7/18/2018	8976	14025	14.750	10.750	772	776	Surf	Circ	9098-13849		[98220] PURPLE SAGE; WOLFCAMP (GAS)
																		9.875	7.625	11386	2075	Surf	Circ			
																		6.75	5.500	9115	715	7004	CBL			
																		6.750	4.500	14010	715	7004	CBL			
4	30-015-44272	OXY USA INC	PATTON MDP1 18 FEDERAL	005H	Oil	Active	150	N	285	E	A	18	24S	31E	8/26/2017	10016	15115	17.500	13.375	672	947	Surf	Circ	10198-14778		[13367] COTTON DRAW; BONE SPRING
																		12.250	9.625	4355	1970	Surf	Circ			
																		8.500	5.500	15105	2220	1640	CBL			
5	30-015-44273	OXY USA INC	PATTON MDP1 18 FEDERAL	007H	Oil	Active	150	N	255	E	A	18	24S	31E	8/29/2017	10018	15048	17.500	13.375	670	850	Surf	Circ	10156-14737		[13367] COTTON DRAW; BONE SPRING
																		12.250	9.625	4355	1630	700	Calc			
																		8.500	5.500	15038	2263	440	CBL			
6	30-015-44318	OXY USA INC	PATTON MDP1 18 FEDERAL	073H	Oil	Active	335	N	2092	E	B	18	24S	31E	8/14/2017	11193	15810	20.000	16.000	660	765	Surf	Circ	11169-15639	4.5" liner top 10369'	[13367] COTTON DRAW; BONE SPRING
																		13.500	10.750	4358	1615	Surf	Circ			
																		9.875	7.625	10503	1070	5150	CBL			
																		6.750	4.500	15810	560	10369	Circ			
7	30-015-44338	OXY USA INC	PATTON MDP1 18 FEDERAL	033H	Oil	Active	335	N	2062	E	B	18	24S	31E	8/15/2017	8878	13790	17.500	13.375	656	650	Surf	Circ	9060-13553		[13367] COTTON DRAW; BONE SPRING
																		12.250	9.625	4365	1350	Surf	Circ			
																		8.5	5.500	13770	1480	1300	CBL			
8	30-015-44333	OXY USA INC	PATTON MDP1 18 FEDERAL	003H	Oil	Active	170	N	1928	W	C	18	24S	31E	9/7/2017	10010	14784	17.500	13.375	643	830	Surf	Circ	10114-14620		[13367] COTTON DRAW; BONE SPRING
																		12.250	9.625	4344	1220	Surf	Circ			
																		8.500	5.500	14777	2125	410	CBL			
9	30-015-44337	OXY USA INC	PATTON MDP1 18 FEDERAL	002H	Oil	Active	170	N	1898	W	C	18	24S	31E	9/6/2017	10084	14817	17.500	13.375	644	830	Surf	Circ	10159-14663		[13367] COTTON DRAW; BONE SPRING
																		12.250	9.625	4343	1215	Surf	Circ			
																		8.500	5.500	14802	2130	990	CBL			
10	30-015-29604	OXY USA INC	PATTON 17 FEDERAL	002	Oil	Active	1650	S	2250	W	K	17	24S	31E	5/8/1997	9700	9700	13.375	13.375	668	750	Surf	Circ	8122-8161		[50382] POKER LAKE; DELAWARE
																		8.625	8.625	4275	1760	22	Temp Survey			
																		5.500	5.500	9700	1100	6710	CBL			
11	30-015-32435	OXY USA INC	PATTON 18 FEDERAL	001	Gas	Active	1980	N	1980	E	G	18	24S	31E	9/20/2003	13223	13223	17.500	13.375	758	1050	Surf	Circ	7868-8060		[50382] POKER LAKE; DELAWARE
																		11.000	8.625	4175	1550	Surf	Circ			
																		7.875	5.500	11770	1520	4218	Temp Survey			
																		4.75	2.875	13223	150	11400	CBL			
12	30-015-41343	OXY USA INC	PATTON 18 FEDERAL	008H	Oil	Active	150	S	1700	E	O	18	24S	31E	7/22/2013	10011	14468	14.750	11.750	930	650	Surf	Circ	10464-14320		[13367] COTTON DRAW; BONE SPRING
																		10.625	8.625	4207	2150	Surf	Circ			
																		7.875	5.500	14460	2100	Surf	Circ			
13	30-015-43854	OXY USA INC	PATTON MDP1 18 FEDERAL	006H	Gas	Active	150	N	505	E	A	18	24S	31E	8/15/2016	11613	16441	20.000	16.000	700	800	Surf	Circ	11759-16145	4.5" liner top 10828'	[98220] PURPLE SAGE; WOLFCAMP (GAS)
																		13.500	10.750	4290	1835	Surf	Circ			
																		9.875	7.625	11972	2400	Surf	Circ			
																		6.750	4.500	16359	540	10828	Circ			
14	30-015-44131	NGL WATER SOLUTIONS PERMIAN, LLC	SAND DUNES SWD	002	SWD	Active	2600	S	2500	W	K	8	24S	31E	5/2/2017	17920	17920	26.000	20.000	822	1142	Surf	Circ	16547-17920		[96101] SWD; DEVONIAN
																		17.500	13.375	4250	2315	Surf	Circ			
																		12.250	9.625	11698	2650	Surf	Circ			
																		8.500	7.625	16547	375	Surf	Circ			
15	30-015-44316	OXY USA INC	PATTON MDP1 18 FEDERAL	023H	Oil	Active	335	N	2122	E	B	18	24S	31E	8/12/2017	10286	14917	17.500	13.375	655	650	Surf	Circ	10613-14721		[13367] COTTON DRAW; BONE SPRING
																		12.250	9.625	4380	1350	Surf	Circ			
																		8.500	5.500	14911	1650	Surf	Circ			
16	30-015-44369	OXY USA INC	SUNRISE MDP1 8 5 FEDERAL COM	001H	Oil	Active	170	S	816	W	M	8	24S	31E	11/2/2017	9941	20405	17.500	13.375	671	815	Surf	Circ	10370-20250		[13367] COTTON DRAW; BONE SPRING
																		12.250	9.625	4418	1230	Surf	Circ			
																		8.500	5.500	20389	2940	Surf	Circ			
17	30-015-44395	OXY USA INC	SUNRISE MDP1 8 5 FEDERAL COM	002H	Oil	Active	170	S	876	W	M	8	24S	31E	11/6/2017	9990	20335	17.500	13.375	669	850	Surf	Circ	10299-20156		[13367] COTTON DRAW; BONE SPRING
																		12.250	9.625	4418	1228	Surf	Circ			
																		8.500	5.500	20320	2935	Surf	Circ			
18	30-015-44445	OXY USA INC	PATTON MDP1 17 FEDERAL	006H	Oil	Active	427	S	177	E	P	8	24S	31E	11/30/2017	10077	15026	17.500	13.375	699	895	Surf	Circ	10299-14848		[97975] WC-015 G-06 S243119C; BONE SPRING
																		12.250	9.625	4406	1570	Surf	Circ			
																		8.500	5.500	15021	2216	Surf	Circ			
19	30-015-44460	OXY USA INC	PATTON MDP1 17 FEDERAL	002H	Oil	Active	170	S	906	W	M	8	24S	31E	11/8/2017	9985	15165	17.500	13.375	671	850	Surf	Circ	10265-14841		[13367] COTTON DRAW; BONE SPRING
																		12.250	9.625	4410	1230	Surf	Circ			
																		8.500	5.500	15150	2160	Surf	Circ			
20	30-015-44473	OXY USA INC	SUNRISE MDP1 8 5 FEDERAL COM	006H	Oil	Active	457	S	177	E	P	8	24S	31E	12/2/2017	9996	20290	17.500	13.375	720	895	Surf	Circ	10285-20137		[13367] COTTON DRAW; BONE SPRING
																		12.250	9.625	4407	1260	Surf	Circ			
																		8.500	5.500	20277	3045	Surf	Circ			
21	30-015-44474	OXY USA INC	SUNRISE MDP1 8 5 FEDERAL COM	003H	Oil	Active	432	S	2202	W	N	8	24S	31E	11/17/2017	10050	20620	17.500	13.375	708	895	Surf	Circ	10591-20485		[13367] COTTON DRAW; BONE SPRING
																		12.250	9.625	4438	1235	Surf	Circ			
																		8.500	5.500	20610	2900	Surf	Circ			
22	30-015-44475	OXY USA INC	SUNRISE MDP1 8 5 FEDERAL COM	004H	Oil	Active	432	S	2262	W	N	8	24S	31E	11/22/2017	10059	20405	17.500	13.375	713	915	Surf	Circ	10406-20250		[13367] COTTON DRAW; BONE SPRING
																		12.250	9.625	4431	1235	Surf	Circ			
																		8.500	5.500	20388	2900	Surf	Circ			
23	30-015-44476	OXY USA INC	SUNRISE MDP1 8 5 FEDERAL COM	005H	Oil	Active	834	S	1555	E	O	8	24S	31E	11/26/2017	9933	20490	17.500	13.375	714	910	Surf	Circ	10450-20234		[13367] COTTON DRAW; BONE SPRING
																		12.250	9.625	4449	1380	Surf	Circ			
																		8.500	5.500	20445	2950	Surf	Circ			
24	30-015-44496	OXY USA INC	PATTON MDP1 17 FEDERAL	003H	Oil	Active	432	S	2232	W	N	8	24S	31E	11/20/2017	10060	15210	17.500	13.375	706	870	Surf	Circ	10466-15036		[13367] COTTON DRAW; BONE SPRING
																		12.250	9.625	4447	1235	Surf	Circ			
																		8.500	5.500	15200	2175	Surf	Circ			
25	30-015-44497	OXY USA INC	PATTON MDP1 17 FEDERAL	004H	Oil	Active	432	S	2292	W	N	8	24S	31E	11/24/2017	10063	15379	17.500	13.375	704	915	Surf	Circ	10674-15244		[13367] COTTON DRAW; BONE SPRING

																		12.250	9.625	4444	1235	Surf	Circ					
																		8.500	5.500	15379	2175	1933	CBL					
26	30-015-44930	OXY USA INC	SUNRISE MDP1 8 5 FEDERAL COM	171H	Gas	Active	194	N	1544	W	C	17	24S	31E	2/4/2019	11603	22315	14.750	10.750	678	745	Surf	Circ	11906-22195	[98220] PURPLE SAGE; WOLFCAMP (GAS)			
																		9.875	7.625	11006	2139	Surf	Circ					
																		6.750	5.500	22315	800	Surf	Circ					
27	30-015-44931	OXY USA INC	SUNRISE MDP1 8 5 FEDERAL COM	173H	Gas	Active	194	N	1614	W	C	17	24S	31E	2/6/2019	11604	21515	14.750	10.750	690	745	Surf	Circ	11725-21589	[98220] PURPLE SAGE; WOLFCAMP (GAS)			
																		9.875	7.625	11067	1899	Surf	Circ					
																		6.750	5.500	21705	775	Surf	Circ					
28	30-015-44977	OXY USA INC	SUNRISE MDP1 8 5 FEDERAL COM	172H	Gas	Active	194	N	1579	W	C	17	24S	31E	2/4/2019	11751	22395	14.75	10.75	681	745	Surf	Circ	12044-22159	[98220] PURPLE SAGE; WOLFCAMP (GAS)			
																		9.875	7.625	11148	2199	Surf	Circ					
																		6.75	5.5	22395	826	10645	CBL					
29	30-015-44989	OXY USA INC	PATTON MDP1 17 FEDERAL	171H	Gas	Active	374	N	1545	W	C	17	24S	31E	7/4/2018	11702	16873	14.750	10.750	704	680	Surf	Circ	12213-16688	[98220] PURPLE SAGE; WOLFCAMP (GAS)			
																		9.875	7.625	11242	2045	Surf	Circ					
																		6.75	5.500	12033	675	7180	CBL					
																		6.750	4.500	16858	675	7180	CBL					
30	30-015-44990	OXY USA INC	PATTON MDP1 17 FEDERAL	172H	Gas	Active	374	N	1580	W	C	17	24S	31E	7/5/2018	11801	16667	14.750	10.750	725	680	Surf	Circ	11956-16506	[98220] PURPLE SAGE; WOLFCAMP (GAS)			
																		9.875	7.625	11084	2410	Surf	Circ					
																		6.750	5.500	11899	675	6500	CBL					
																		6.750	4.500	16651	675	6500	CBL					
31	30-015-44991	OXY USA INC	PATTON MDP1 17 FEDERAL	173H	Gas	Active	374	N	1615	W	C	17	24S	31E	7/6/2018	11815	16764	14.750	10.750	735	700	Surf	Circ	12034-16584	[98220] PURPLE SAGE; WOLFCAMP (GAS)			
																		9.875	7.625	11104	2310	Surf	Circ					
																		6.75	5.500	12020	675	6234	CBL					
																		6.750	4.500	16749	675	6234	CBL					
32	30-015-45077	OXY USA INC	PATTON MDP1 17 FEDERAL	174H	Gas	Active	772	N	1367	E	B	17	24S	31E	7/18/2018	11876	16939	14.750	10.750	762	985	Surf	Circ	12042-16593	[98220] PURPLE SAGE; WOLFCAMP (GAS)			
																		9.875	7.625	11334	2320	Surf	Circ					
																		6.75	5.500	11765	675	9865	CBL					
																		6.750	4.500	16758	675	9865	CBL					
33	30-015-45078	OXY USA INC	PATTON MDP1 17 FEDERAL	175H	Gas	Active	772	N	1332	E	B	17	24S	31E	7/18/2018	11644	16394	14.750	10.750	762	823	Surf	Circ	12071-16222	[98220] PURPLE SAGE; WOLFCAMP (GAS)			
																		9.875	7.625	11125	2040	Surf	Circ					
																		6.75	5.500	11715	675	9857	CBL					
																		6.750	4.500	16388	675	9857	CBL					
34	30-015-45112	OXY USA INC	SUNRISE MDP1 8 5 FEDERAL COM	174H	Gas	Active	592	N	1369	E	B	17	24S	31E	1/31/2019	11773	22572	14.750	10.750	740	845	Surf	Circ	12115-22448	[98220] PURPLE SAGE; WOLFCAMP (GAS)			
																		9.875	7.625	11215	1990	Surf	Circ					
																		6.750	5.500	22543	825	10710	CBL					
35	30-015-45152	OXY USA INC	SUNRISE MDP1 8 5 FEDERAL COM	175H	Gas	Active	592	N	1334	E	B	17	24S	31E	2/2/2019	11580	22385	14.750	10.750	745	775	Surf	Circ	11949-22281	[98220] PURPLE SAGE; WOLFCAMP (GAS)			
																		9.875	7.625	11133	2393	Surf	Circ					
																		6.750	5.500	22306	825	10631	CBL					
36	30-015-45153	OXY USA INC	SUNRISE MDP1 8 5 FEDERAL COM	176H	Gas	Active	592	N	1299	E	A	17	24S	31E	2/2/2019	11761	22520	14.750	10.750	730	845	Surf	Circ	12079-22411	[98220] PURPLE SAGE; WOLFCAMP (GAS)			
																		9.875	7.625	11225	2065	Surf	Circ					
																		6.750	5.500	22452	820	10725	CBL					
37	30-015-44293	OXY USA INC	PALLADIUM MDP1 7 6 FEDERAL COM	006H	Oil	Active	293	S	562	E	P	7	24S	31E	8/15/2017	10059	20095	17.500	13.375	672	856	Surf	Circ	10058-19910	[13367] COTTON DRAW; BONE SPRING			
																		12.250	9.625	4374	1625	Surf	Circ					
																		8.500	5.500	20075	3015	1370	Calc					
38	30-015-44294	OXY USA INC	PALLADIUM MDP1 7 6 FEDERAL COM	005H	Oil	Active	293	S	592	E	P	7	24S	31E	8/13/2017	10064	20288	17.500	13.375	671	865	Surf	Circ	10094-19979	[13367] COTTON DRAW; BONE SPRING			
																		12.250	9.625	4372	1330	Surf	Circ					
																		8.500	5.500	20278	2955	1565	Calc					
39	30-015-33969	OXY USA INC	PALLADIUM 7 FEDERAL	010	Oil	PA	990	S	1650	W	N	7	24S	31E	6/1/2005	9450	9070	17.500	13.375	1005	850	Surf	Circ	NA	NA			
																		11.000	8.625	4200	1450	Surf	Circ					
																		7.875	5.500	9450	1840	Surf	Circ					
40	30-015-40261	XTO PERMIAN OPERATING LLC.	POKER LAKE CVX JV BS FEDERAL COM	014H	Oil	Active	140	N	1980	W	C	19	24S	31E	5/17/2012	9550	14240	17.500	13.375	713	1000	Surf	Circ	9843-14121	[97975] WC-015 G-06 S243119C; BONE SPRING			
																		11.000	8.625	4173	2000	Surf	Circ					
																		7.875	5.500	14240	2000	Surf	Calc					
41	30-015-42427	XTO PERMIAN OPERATING LLC.	POKER LAKE UNIT CVX JV BS	035H	Oil	Active	190	N	2332	W	C	19	24S	31E	9/23/2014	10230	17248	13.375	17.500	903	740	Surf	Circ	10560-17222	[97975] WC-015 G-06 S243119C; BONE SPRING			
																		9.625	12.250	4290	1230	Surf	Circ					
																		5.500	8.750	17248	3335	Surf	Circ					
42	30-015-42428	XTO PERMIAN OPERATING LLC.	POKER LAKE UNIT CVX JV BS	036H	Oil	Active	2323	N	1985	W	C	19	24S	31E	9/21/2014	10785	17915	17.500	13.375	895	755	Surf	Circ	10721-17549	3.5" liner top 9722	[97975] WC-015 G-06 S243119C; BONE SPRING		
																		12.250	9.625	4290	4290	Surf	Circ					
																		8.750	5.500	17915	3495	Surf	Circ					
																		5.500	3.500	17820	485	9722	Circ					
43	30-015-44292	OXY USA INC	PALLADIUM MDP1 7 6 FEDERAL COM	003H	Oil	PA	169	N	2255	W	C	18	24S	31E	8/22/2017	10895	10895	17.5	13.375	635	850	Surf	Circ	NA	NA			
																		12.25	9.625	4341	1672	Surf	Circ					
44	30-015-44295	OXY USA INC	PALLADIUM MDP1 7 6 FEDERAL COM	004H	Oil	Active	169	N	2285	W	C	18	24S	31E	8/24/2017	10034	20283	17.500	13.375	641	850	Surf	Circ	10251-19963	[13367] COTTON DRAW; BONE SPRING			
																		12.250	9.625	4348	1458	Surf	Circ					
																		8.500	5.500	20273	3958	Surf	Circ					
45	30-015-44298	OXY USA INC	PALLADIUM MDP1 7 6 FEDERAL COM	001H	Oil	Active	609	S	682	W	M	7	24S	31E	10/16/2017	10050	19890	17.500	13.375	657	845	Surf	Circ	9756-19720	[13367] COTTON DRAW; BONE SPRING			
																		12.250	9.625	4326	1446	Surf	Circ					
																		8.500	5.500	19874	3893	Surf	Circ					
46	30-015-44299	OXY USA INC	PALLADIUM MDP1 7 6 FEDERAL COM	002H	Oil	Active	609	S	742	W	M	7	24S	31E	10/10/2017	10033	20085	17.500	13.375	661	845	Surf	Circ	10053-19769	[13367] COTTON DRAW; BONE SPRING			
																		12.250	9.625	4304	1519	Surf	Circ					
																		8.500	5.500	20070	3767	Surf	Circ					
47	30-015-44317	OXY USA INC	PATTON MDP1 18 FEDERAL	001H	Oil	Active	609	S	712	W	M	7	24S	31E	10/18/2017	10055	14880	17.500	13.375	632	815	Surf	Circ	10272-14723	[13367] COTTON DRAW; BONE SPRING			
																		12.250	9.625	4306	1446	Surf	Circ					
																		8.500	5.500	14865	2759	Surf	Circ					

Patton (South Corridor) AOR Table

48	30-015-44457	OXY USA INC	PALLADIUM MDP1 7 6 FEDERAL COM	003Y	Oil	Active	169	N	2225	W	C	18	24S	31E	10/8/2017	10001	20117	17.500	13.375	655	820	Surf	Circ	10092-19929	[96473] PIERCE CROSSING; BONE SPRING, EAST
																		12.250	9.625	4352	1536	Surf	Circ		
																		8.500	5.500	20102	3693	Surf	Circ		
49	30-015-44498	OXY USA INC	NIMITZ MDP1 13 FEDERAL COM	002H	Oil	Active	379	S	838	E	P	12	24S	30E	3/15/2018	9953	15077	17.500	13.375	615	825	Surf	Circ	10138-14911	[13367] COTTON DRAW; BONE SPRING
																		12.250	9.625	4309	1330	Surf	Circ		
																		8.500	5.500	15062	2140	1430	CBL		
50	30-015-44525	OXY USA INC	NIMITZ MDP1 13 FEDERAL COM	003H	Oil	Active	379	S	808	E	P	12	24S	30E	3/16/2018	10249	14954	17.500	13.375	635	825	Surf	Circ	9798-14796	[13367] COTTON DRAW; BONE SPRING
																		12.250	9.625	4277	1330	Surf	Circ		
																		8.500	5.500	14945	2831	1180	CBL		
51	30-015-44528	OXY USA INC	NIMITZ MDP1 12 FEDERAL COM	006H	Oil	Active	379	S	778	E	P	12	24S	30E	3/17/2018	10190	19787	17.500	13.375	638	1050	Surf	Circ	9766-17399	[13367] COTTON DRAW; BONE SPRING
																		12.250	9.625	4281	1330	Surf	Circ		
																		8.500	5.500	17500	2513	1476	CBL		
52	30-015-44529	OXY USA INC	NIMITZ MDP1 12 FEDERAL COM	007H	Oil	Active	379	S	868	E	P	12	24S	30E	3/14/2018	10005	20009	17.500	13.375	636	825	Surf	Circ	9645-19839	[13367] COTTON DRAW; BONE SPRING
																		12.250	9.625	4276	1330	Surf	Circ		
																		8.500	5.500	19987	2895	270	CBL		
53	30-015-28654	CHEVRON U S A INC	LOTOS FEDERAL	802	Oil	PA	1980	S	660	W	L	8	24S	31E	2/8/1998	8340	8340	14.75	11.750	643	590	Surf	Circ	NA	NA
																		11	8.625	4160	1525	Surf	Circ		
																		7.875	5.500	8340	1250	4100	Calc		
54	30-015-29279	OXY USA INC	PATTON 17 FEDERAL	001	Oil	Active	822	S	2581	E	O	17	24S	31E	12/20/1996	8280	8280	17.5	13.375	655	900	Surf	Circ	8128-8144	[50382] POKER LAKE; DELAWARE
																		11	8.625	3995	2108	Surf	Circ		
																		7.875	5.500	8280	1630	Surf	Circ		
55	30-015-29824	OXY USA INC	PATTON 17 FEDERAL	006	Oil	Active	330	S	1800	W	N	17	24S	31E	10/10/1997	8290	8290	14.75	10.750	668	650	Surf	Circ	8094-8132	[50382] POKER LAKE; DELAWARE
																		9.875	7.625	4225	1678	Surf	Circ		
																		6.75	4.500	8290	910	2120	Calc		
56	30-015-29904	OXY USA INC	PATTON 17 FEDERAL	007	Oil	Active	2075	N	2600	E	G	17	24S	31E	5/23/1998	8320	8320	14.75	10.750	635	600	Surf	Circ	7974-8150	[50382] POKER LAKE; DELAWARE
																		9.875	7.625	4250	1090	Surf	Circ		
																		6.75	4.500	8320	1135	3375	Calc		
57	30-015-29971	OXY USA INC	PATTON 17 FEDERAL	004	Oil	Active	2050	S	1750	E	J	17	24S	31E	1/15/1998	8320	8320	14.75	10.750	672	650	Surf	Circ	8150-8170	[50382] POKER LAKE; DELAWARE
																		9.875	7.625	4260	1220	Surf	Circ		
																		6.75	4.500	8320	810	3250	Calc		
58	30-015-32775	OXY USA INC	SUNDANCE 8 FEDERAL	003Q	Oil	Active	660	S	660	W	M	8	24S	31E	5/19/2003	8350	8350	17.5	13.375	1010	1100	Surf	Circ	7904-8084	[53818] SAND DUNES; DELAWARE, SOUTH
																		11	8.625	4218	1300	Surf	Circ		
																		7.875	5.5	8350	1600	Surf	Circ		
59	30-015-33013	OXY USA INC	PATTON 17 FEDERAL	012Z	Oil	Active	990	N	1980	E	B	17	24S	31E	9/28/2004	8380	8380	17.500	13.375	960	760	Surf	Circ	8162-9746	[50382] POKER LAKE; DELAWARE
																		11.000	8.625	4261	1750	Surf	Circ		
																		7.875	5.500	8380	1755	Surf	Circ		
60	30-015-33034	OXY USA INC	PATTON 17 FEDERAL	009T	Oil	PA	330	S	330	W	M	17	24S	31E	10/17/2004	8375	8375	17.500	13.375	1005	800	Surf	Circ	NA	NA
																		11.000	8.625	4215	1500	2780	Temp Survey		
																		7.875	5.500	8375	1550	600	CBL		
61	30-015-33451	OXY USA INC	PATTON 18 FEDERAL	003	Oil	Active	660	N	1980	E	B	18	24S	31E	9/8/2004	8270	8270	17.500	13.375	900	1100	Surf	Circ	7950-8047	[96046] POKER LAKE; DELAWARE, NORTHWEST
																		11.000	8.625	4170	1450	Surf	Circ		
																		7.875	5.500	8270	1570	Surf	Circ		
62	30-015-33710	OXY USA INC	PATTON 18 FEDERAL	004	Oil	Active	1980	S	1980	E	J	18	24S	31E	11/29/2004	8300	8300	17.500	13.375	965	975	Surf	Circ	7944-8042	[50382] POKER LAKE; DELAWARE
																		11.000	8.625	4207	1350	Surf	Circ		
																		7.875	5.500	8300	1480	4590	Calc		
63	30-015-33732	OXY USA INC	PALLADIUM 7 FEDERAL	009	Oil	PA	330	S	1980	E	O	7	24S	31E	1/10/2005	8308	8308	17.500	13.375	1007	1000	Surf	Circ	NA	NA
																		11.000	8.625	4193	1300	Surf	Circ		
																		7.875	5.500	8303	1975	Surf	Circ		
64	30-015-29552	XTO PERMIAN OPERATING LLC.	POKER LAKE UNIT	129	Oil	PA	1980	N	660	E	H	20	24S	31E	7/13/1997	8306	8306	14.750	11.750	790	510	Surf	Circ	NA	NA
																		11.000	8.625	4363	1330	Surf	Circ		
																		7.875	5.500	8306	605	4295	Temp Survey		
65	30-015-33890	OXY USA INC	PALLADIUM 7 FEDERAL	006Q	Oil	PA	660	S	660	E	P	7	24S	31E	10/29/2005	8400	8400	17.500	13.375	995	950	Surf	Circ	NA	NA
																		11.000	8.625	4165	1500	Surf	Circ		
																		7.875	5.500	8400	1625	1450	Calc		
66	30-015-27453	EOG RESOURCES INC	POKER LAKE 18 FEDERAL	001	Oil	PA	1980	N	2180	W	F	18	24S	31E	6/5/1993	8250	8250	17.5	13.375	465	475	Surf	Circ	NA	NA
																		12.25	8.625	4264	2190	Surf	Circ		
																		7.875	5.500	8250	405	6200	Temp Survey		
67	30-015-27798	BOPCO, L.P.	POKER LAKE UNIT	093	Oil	PA	1980	N	660	E	H	24	24S	30E	5/2/1996	8199	8199	14.75	11.750	815	500	Surf	Circ	NA	NA
																		11	8.625	4209	1210	Surf	Circ		
																		7.875	5.500	8199	3900	3470	Temp Survey		
68	30-015-28057	BOPCO, L.P.	PALLADIUM 13 FEDERAL	001	SWD	PA	740	S	660	E	P	13	24S	30E	8/7/1994	8170	8170	17.5	13.375	423	325	Surf	Circ	NA	NA
																		11	8.625	4145	1200	Surf	Circ		
																		7.875	5.500	8170	550	3200	CBL		
69	30-015-28168	EOG RESOURCES INC	GILA 12 FEDERAL	001	Oil	Active	800	S	330	E	P	12	24S	30E	10/26/1994	8291	8291	17.5	13.375	503	530	Surf	Circ	7972-8022	[96046] POKER LAKE; DELAWARE, NORTHWEST
																		12.25	8.625	4147	1800	Surf	Circ		
																		7.875	5.500	8291	1020	Surf	Calc		
70	30-015-32823	XTO PERMIAN OPERATING LLC.	POKER LAKE UNIT	099Q	Oil	Active	1080	N	660	W	E	19	24S	31E	12/29/2003	8250	8250	12.250	8.625	914	520	Surf	Circ	7897-7995	[96047] POKER LAKE; DELAWARE, SOUTHWEST
																		7.875	5.500	8250	350	5592	Calc		
71	30-015-33731	OXY USA INC	PATTON 18 FEDERAL	007	Oil	Active	430	S	990	W	4	18	24S	31E	3/24/2005	8270	8270	17.500	13.375	946	750	Surf	Circ	7936-8034	[96046] POKER LAKE; DELAWARE, NORTHWEST
																		11.000	8.615	4185	1250	Surf	Circ		
																		7.875	4.500	8270	1675	2600	Calc		
72	30-015-33825	OXY USA INC	PATTON 18 FEDERAL	006	Oil	Active	330	S	2310	W	N	18	24S	31E	1/29/2005	8275	8275	17.500	13.375	935	800	Surf	Circ	7872-8050	[96046] POKER LAKE; DELAWARE, NORTHWEST
																		11.000	8.625	4200	1225	Surf	Circ		
																		7.875	5.500	8275	1250	3000	Est		
73	30-015-34246	EOG RESOURCES INC	SQUIRES ALR	002	Oil	Active	2050	S	330	E	I	12	24S	30E	1/2/2006	8240	8240	17.500	13.375	648	550	Surf	Circ	5970-8088	[96046] POKER LAKE; DELAWARE, NORTHWEST
																		11.000	8.625	4102	1120	Surf	Circ		
																		7.875	5.500	8240	635	3838	Calc		
74	30-015-39846	XTO PERMIAN OPERATING LLC.	POKER LAKE UNIT CVX JV BS	010H	Oil	Active	10	N	1980	E	B	24	24S	30E	1/29/2012	9346	13966	17.500	13.375	665	700	29	Circ	9606-13931	[96403] WILDCAT; BONE SPRING
																		11.000	8.625	4053	1350	27	Circ		
																		7.875	5.500	13966	2100	3500	Calc		

Patton (South Corridor) AOR Table

75	30-015-41011	OXY USA INC	NIMITZ 12 FED	003H	Oil	Active	330	N	2010	E	B	12	24S	30E	2/9/2013	7955	12296	16.000	13.375	642	450	Surf	Circ	8625-12160	[96046] POKER LAKE; DELAWARE, NORTHWEST
																		8.750	5.500	12295	2190	Surf	Circ		
																		12.25	9.625	4166	1400	Surf	Circ		

PATTON AOR WELL 39

Palladium 7 Federal 010

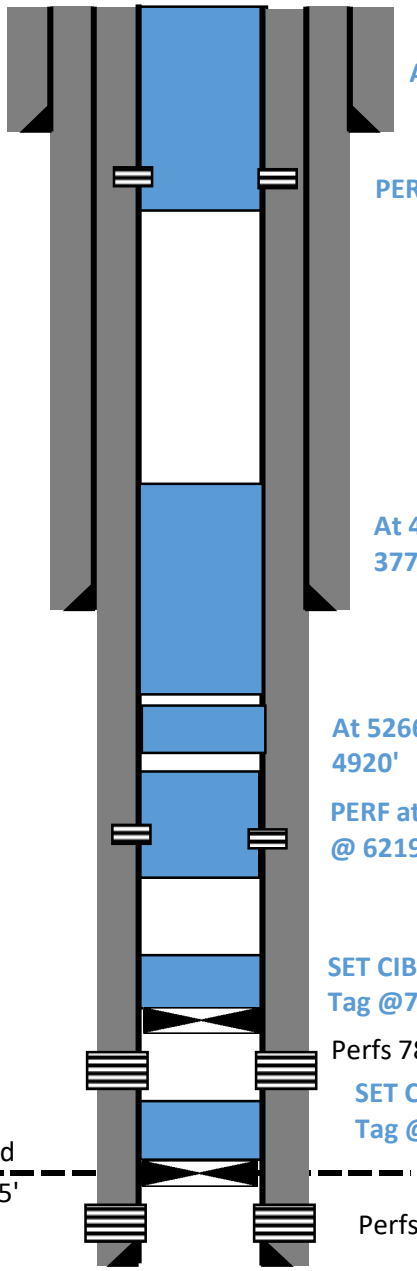
30-015-33969-0000

Eddy

String 1
OD 13.375 in
TD 1005 ft
TOC 0 ft, Circ

String 2
OD 8.625 in
TD 4200 ft
TOC 0 ft, Circ

String 3
OD 5.5 in
TD 9450 ft
TOC 0 ft, Circ



At 1108', spot 125 sx to surface

PERF @ 1055', no leak off

At 4358', Spot 45 sx cmt, tag @ 3773'

At 5266', Spot 35 sx cmt, tag @ 4920'

PERF at 6556', Spot 35 sx cmt, tag @ 6219'

SET CIBP @ 7825'. Dump 25 sx cmt. Tag @7586'.

Perfs 7875-8018' (Delaware)

SET CIBP @ 8975'. Dump 25 sx cmt. Tag @8755'.

Top of Proposed Inj Interval 9105'

Perfs 9158-9178' (Bone Spring)

PATTON AOR WELL 43

Current Wellbore

4/7/2021

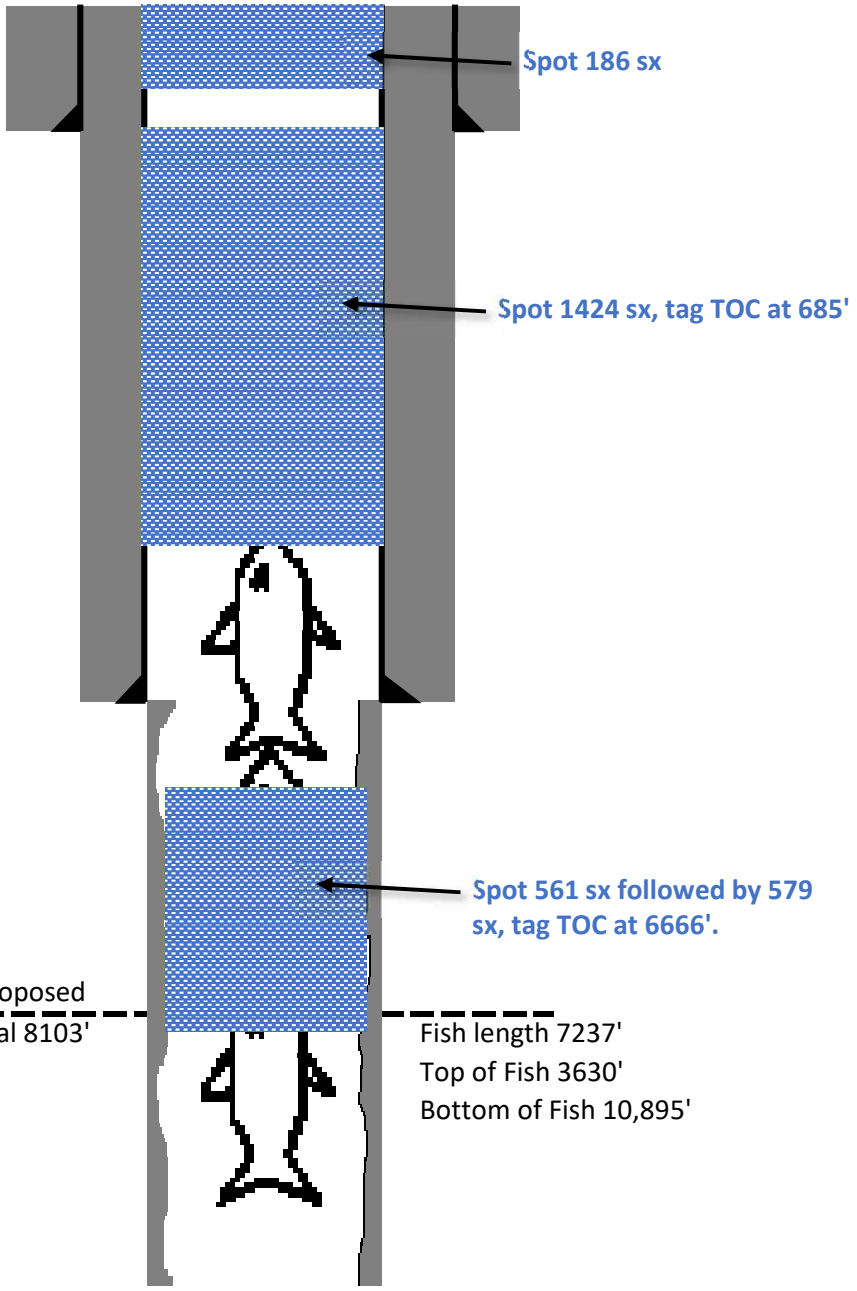
PALLADIUM MDP1-7-6 FEDERAL COM3H

30-015-44292-0000

Eddy

String 1
OD 13.375 in
TD 654 ft
TOC 0 ft

String 2
OD 9.625 in
TD 4351 ft
TOC 0 ft



8.5" OH

TD 10895 ft

P&A WBD

LOTOS C FEDERAL #802

Well #:	802 St. Lse:	API	30-015-28654
Lease:	LOTOS FEDERAL	Unit Ltr.:	Section: 8
Field:	SAND DUNES SOUTH	TSHP/Rng:	24S-31E
Surf. Loc.:	1980' FSL & 660' FWL	Unit Ltr.:	Section:
Bot. Loc.:			
County:	Eddy St.: NM	Directions:	
Status:		Chevno:	

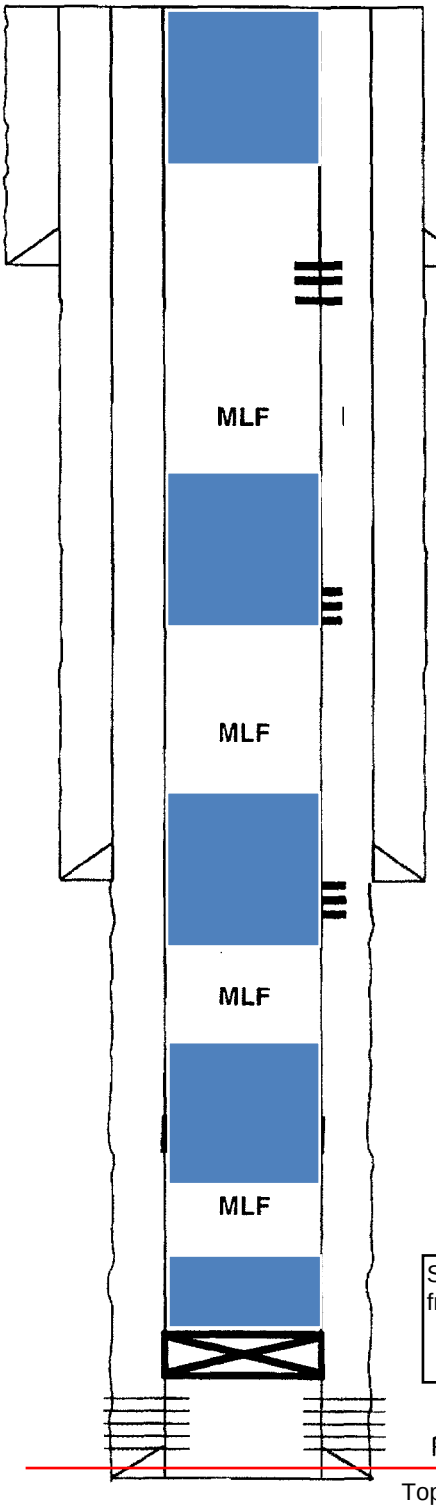
Surface Casing

Size:	11-3/4"
Wt., Grd.:	42#
Depth:	643'
Sxs Cmt:	590
Circulate:	Yes
TOC:	Surface
Hole Size:	14-3/4"

Intermediate Casing

Size:	8 5/8"
Wt., Grd.:	24#
Depth:	4160'
Sxs Cmt:	1625
Circulate:	Yes
TOC:	Surface
Hole Size:	11"

Size:	5 1/2"
Wt., Grd.:	17#
Depth:	8340'
Sxs Cmt:	1250
TOC	4100' est.
Hole Size:	7 7/8"



Spot 306 sx class C cmt at 250'.
TOC @ surface

Circulate 55 sx class C cmt from 2410-2210'.
Tag TOC @2151'.

Circ 55 sx class C from 4450'-3944'.
Tag TOC @ 3940'

Spot 60 sx class C cmt from 6050'-5443'.
Tag TOC @ 5445'

Set CIBP @ 7290'. Spot 25sx class C cmt from 7290'-7047'.

Perfs: 7344'-8128'(OA)

Top of proposed injection interval
BS top 8178'

PBTD: 8250'
TD: 8340'

OXY USA Inc
Patton 17 Federal #9
API No. 30-015-33034

Spot 85sx class C cmt to surface

17-1/2" hole @ 1005'
13-3/8" csg @ 1005'
w/ 800sx-TOC-Surf-Circ

Perf @ 550'

Spot 40sx class C cmt @1120'.
Tag @ 818'

*Perf @ 2400'sqz 850sx to Surface

*Perf @ 2690',sqz 200sx to 2560'

Spot 40sx class C cmt @3822'.
Tag @ 3482'

11" hole @ 4215'
8-5/8" csg @ 4215'
w/ 1500sx-TOC-*2780'-TS

Spot 40sx class C cmt @4349'.
Tag @ 3959'

Spot 40 sx class C cmt @ 5304'
TOC @4951'

Spot 40 sx class C cmt @6095'.
Tag @5748'

7-7/8" hole @ 8375'
5-1/2" csg @ 8375'
DVT @ 5994' 3725'
1st w/ 750sx-TOC-5989'-Circ
2nd w/ 600sx-TOC-3720'-Circ
3rd w/ 200sx-TOC-600'-CBL

Pump 35 sx class H cmt. Tag @7822'
Pump 25 sx class H cmt. Tag @8007'

Perfs @ 7964-8064'

Pump 80 sx class H cmt. Tag @ 8021'

Top of proposed injection interval
BS top 8134'

PB-8311'

TD-8375'

OXY USA Inc.
Palladium 7 Federal #9
API No. 30-015-33732

Perf @ 250'. Squeeze 40sx class C cmt to surface

25 sx @1032'. Tag TOC @853'

25 sx @2398'. Tag TOC @2132'

25 sx @3772'. Tag TOC @3532'

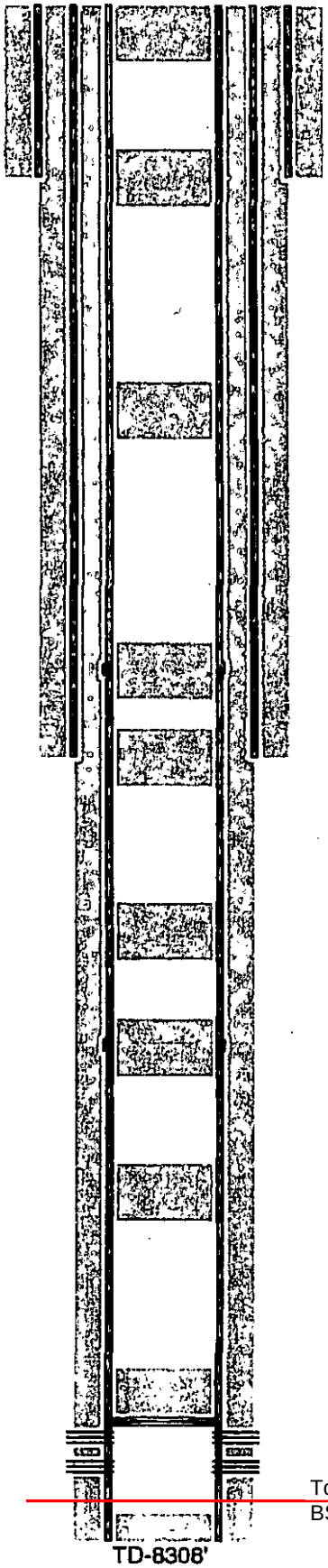
Packer @3770'
Perf @4185'
Squeeze 25sx class C @4264'.
Tag TOC @4002'.

25 sx @5248'. Tag TOC @4953'

25 sx @5904'. Tag TOC @5692'

25 sx @6593'. Tag TOC @6351'

CIBP @ 7878' w/ 25sx
Tag TOC @ 7680'



PB-8204'

TD-8308'

17-1/2" hole @ 1007'
13-3/8" csg @ 1007'
w/ 1000sx-TOC-Surf-Circ

TOS 945
Del 4285
BS 8106

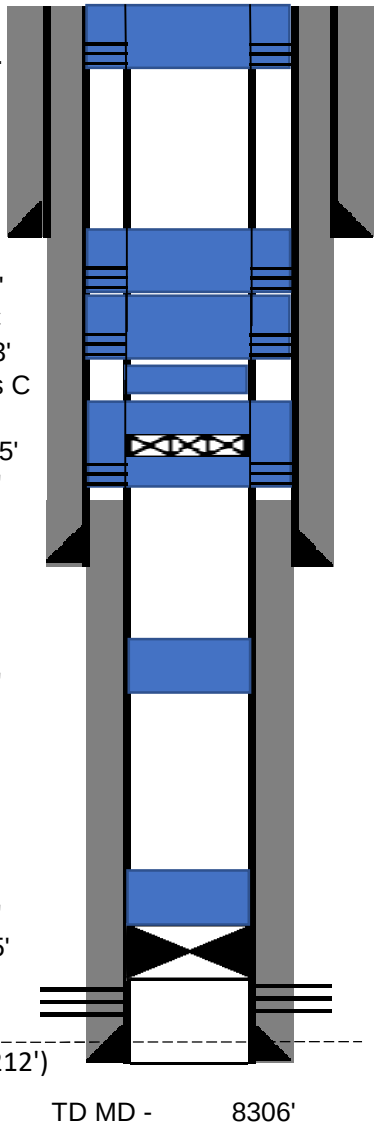
11" hole @ 4193'
8-5/8" csg @ 4193'
w/ 1300sx-TOC-Surf-Circ

7-7/8" hole @ 8308'
5-1/2" csg @ 8308'
w/ 1975sx-TOC-Surf-Circ
DVT @ 3694', 5823'

Perfs @ 7928-8052'

Top of proposed injection interval
BS top 8106'

XTO PERMIAN OPERATING LLC.
POKER LAKE UNIT 129
30-015-29552



Perf @100'. Pump 30sx class C.
TOC @ surface.

14 3/4" hole
11-3/4" casing @ 790'
510 sx cmt to surface

Perf @ 1050'. Squeeze 100 sx class C.
Tag TOC @633'
Perf @3550'. Squeeze 40 sx class C
Tag TOC@3373'
Spot 45 sx class C

Tag TOC @3985'
Perf @ 4455'. Set cmt ret @4414'
Pump 150 sx class C cmt.

11" hole
8-5/8" casing @ 4363'
1330 sx cmt to surface

Spot 25x class C @4867'. TOC @4600'

37.8sx class H, tag TOC @7742'
Set CBP @7995'

Perfs
8038-8175'

Top of Proposed
Injection Zone (Bone Spring 8212')

7-7/8" hole, 5-1/2" csg @ 8306'
605 sx cmt to 4295'

TD MD - 8306'

*not to scale

PATTON AOR WELL #65

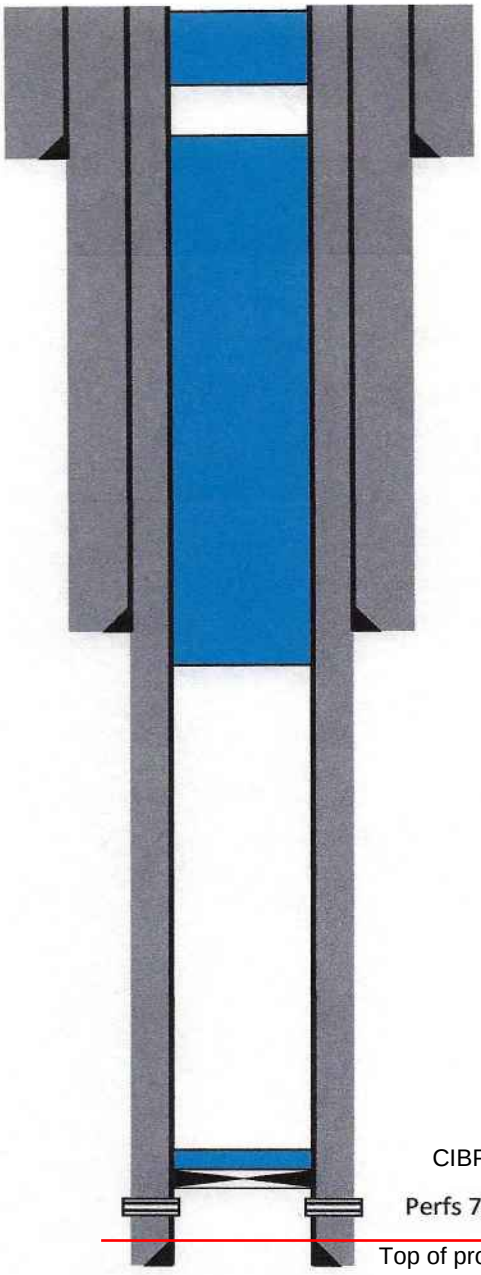
Stephen Janacek

7/14/2020

PALLADIUM 7 FEDERAL #006Q

30-015-33890-0000

Eddy



90 sx CMT @815'. TOC @ surface

String 1
OD 13.375 in
TD 995 ft
TOC 0 ft

40sx CMT @900'. tag TOC @ 853'.

70sx CMT @4705' tag TOC @ 3423'

String 2
OD 8.625 in
TD 4165 ft
TOC 0 ft

CIBP @7893'. 6SX CMT TOC @7837'

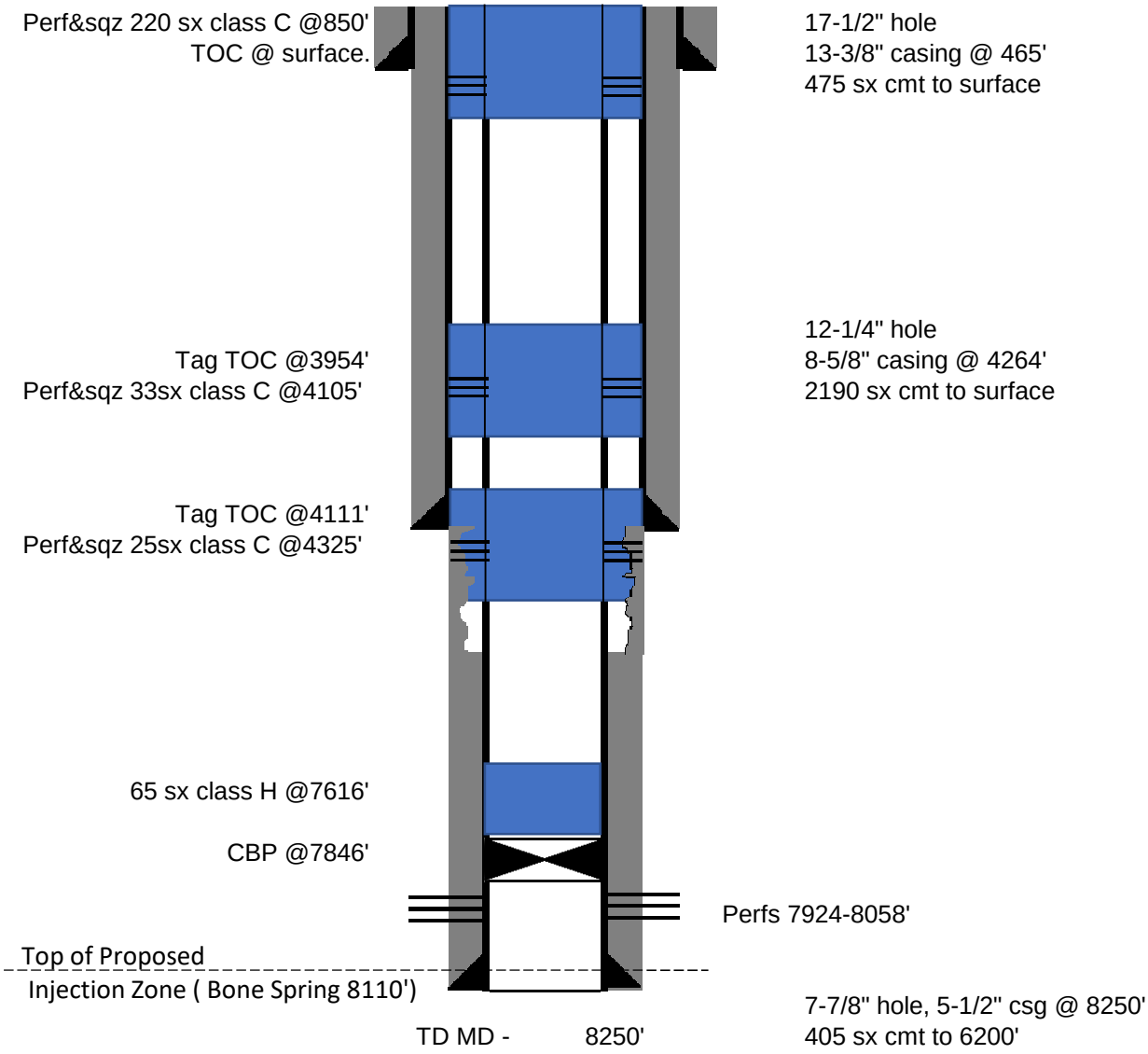
String 3
OD 5.5 in
TD 8400 ft
TOC 0 ft
PBTD 8400 ft

Perfs 7940-8056

Top of proposed injection interval
BS top 8070'

EOG RESOURCES INC
POKER LAKE 18 FEDERAL 001
30-015-27453

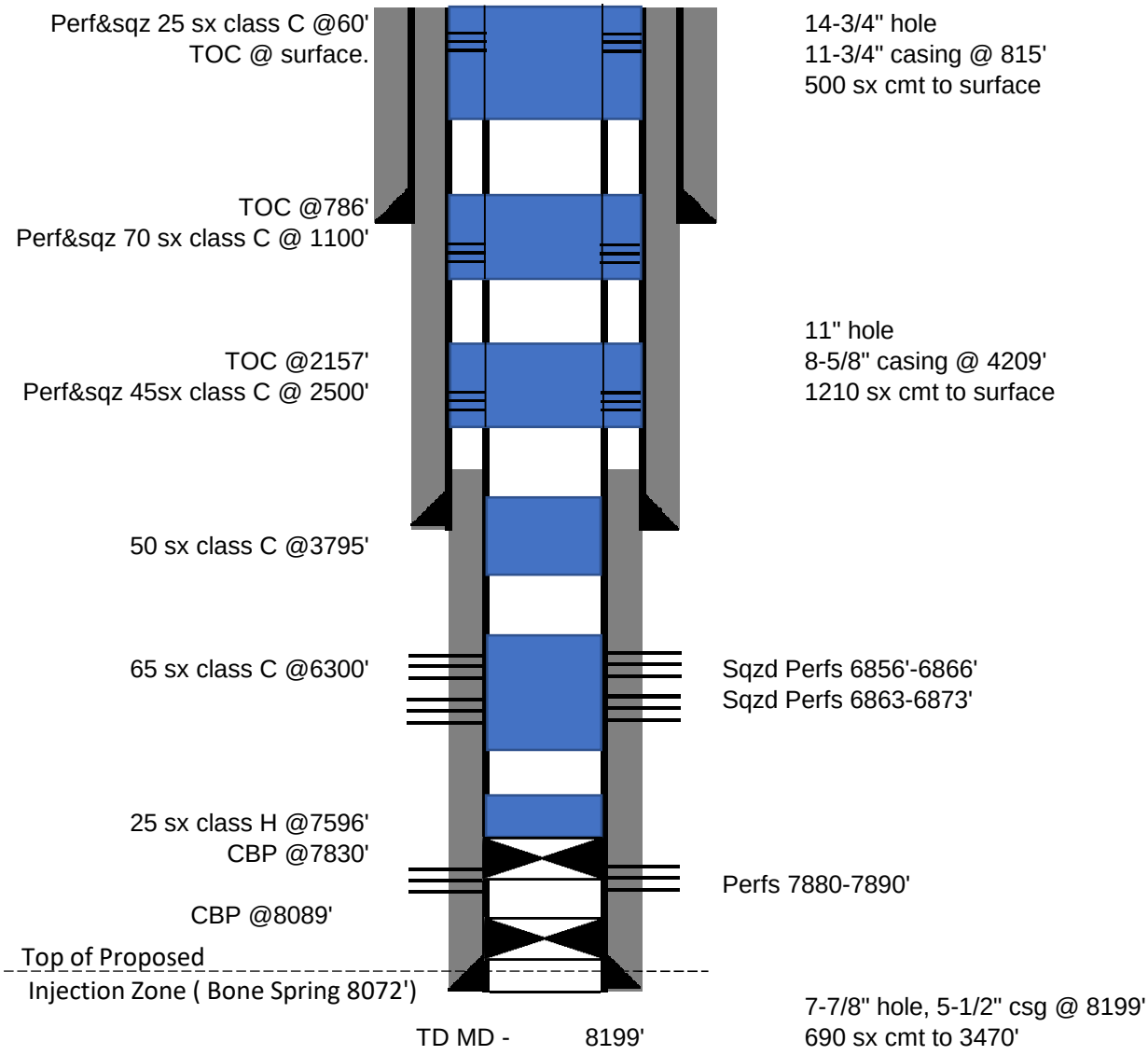
PATTON AOR WELL 66



*not to scale

BOPCO LP
POKER LAKE UNIT #93
30-015-27798

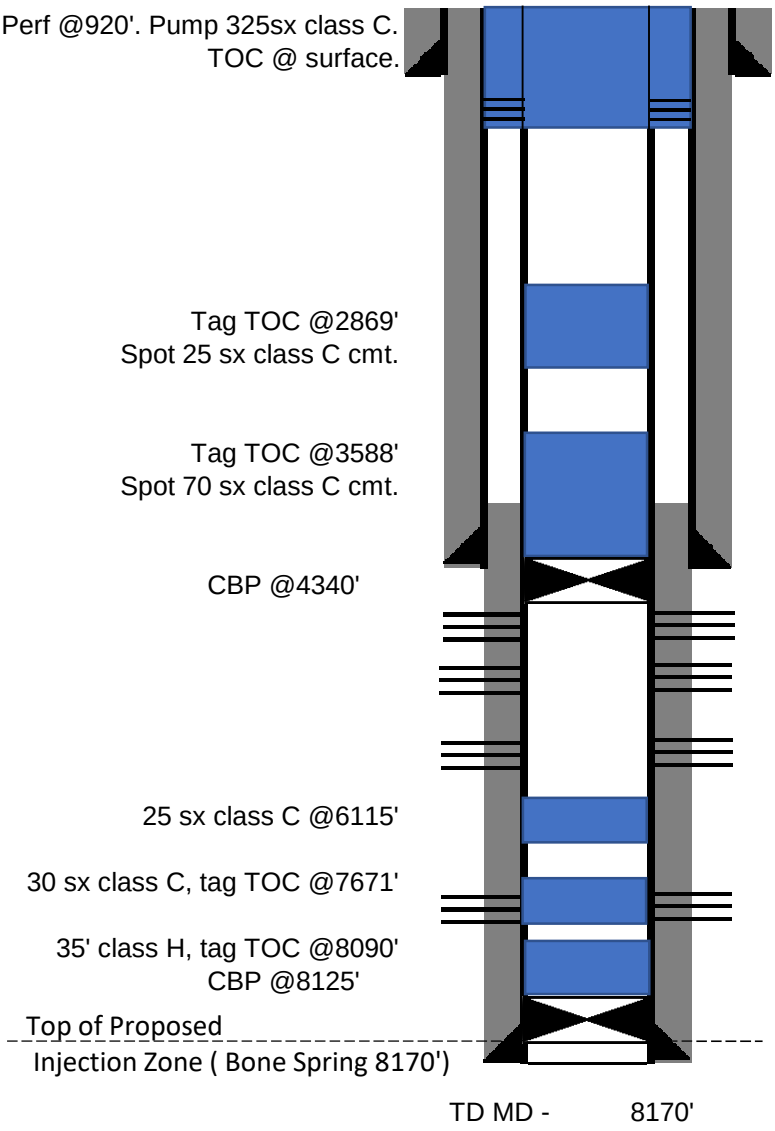
PATTON AOR WELL 67



*not to scale

BOPCO LP
PALLADIUM 13 FEDERAL #1W
30-015-28057

PATTON AOR WELL 68



*not to scale

Geology

South Corridor Type Log

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

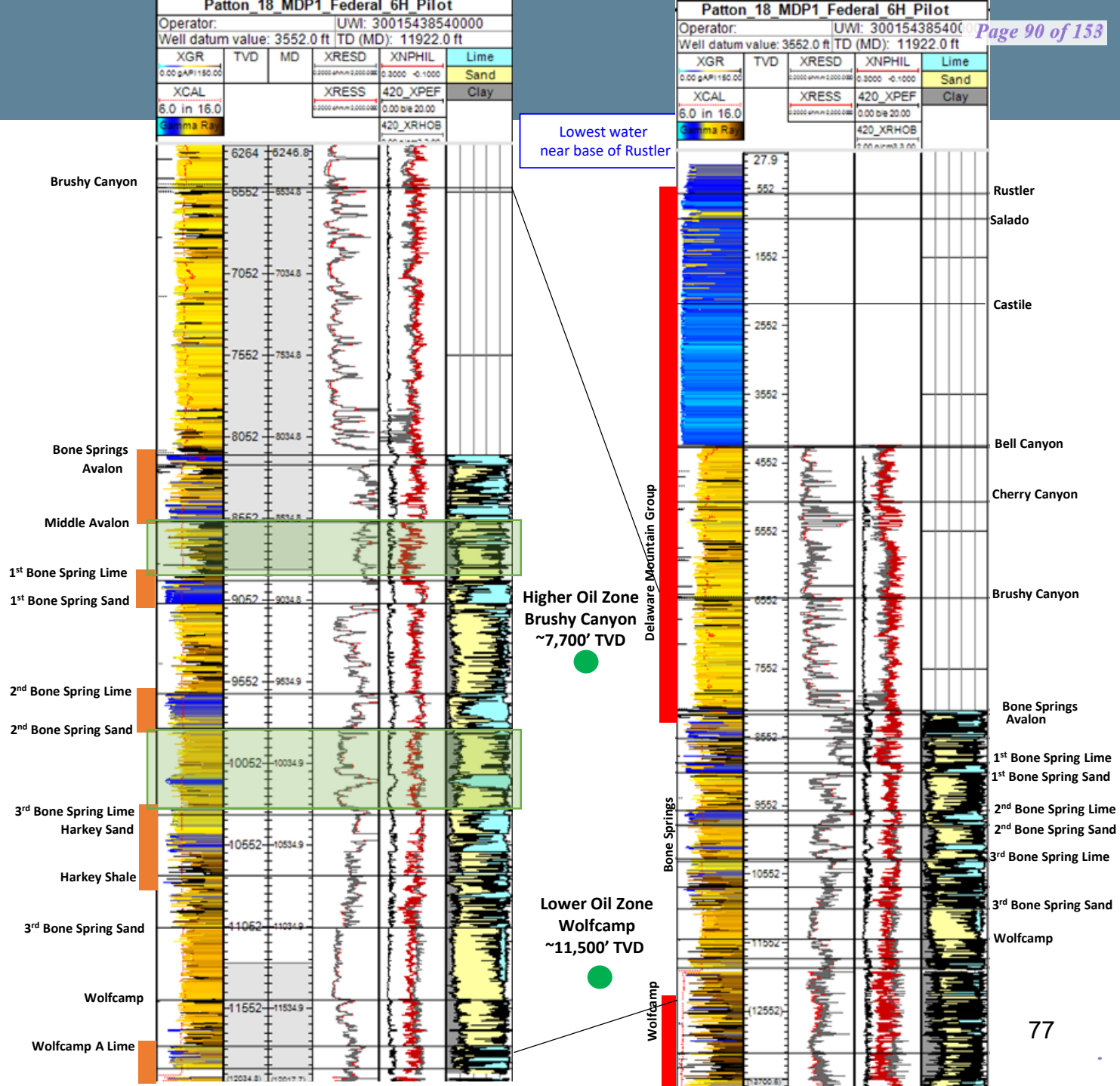
- Composed of large-scale cycles of alternating carbonate and siliclastic-dominated successions
- Siliclastic members are low stand turbidite channel, fans & distal sheets
  - > Very fine-grained sandstones and silts, mudstones, and shales
  - > Porosity 4-9% Permeability 400-800nD
  - > Authigenic clays 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

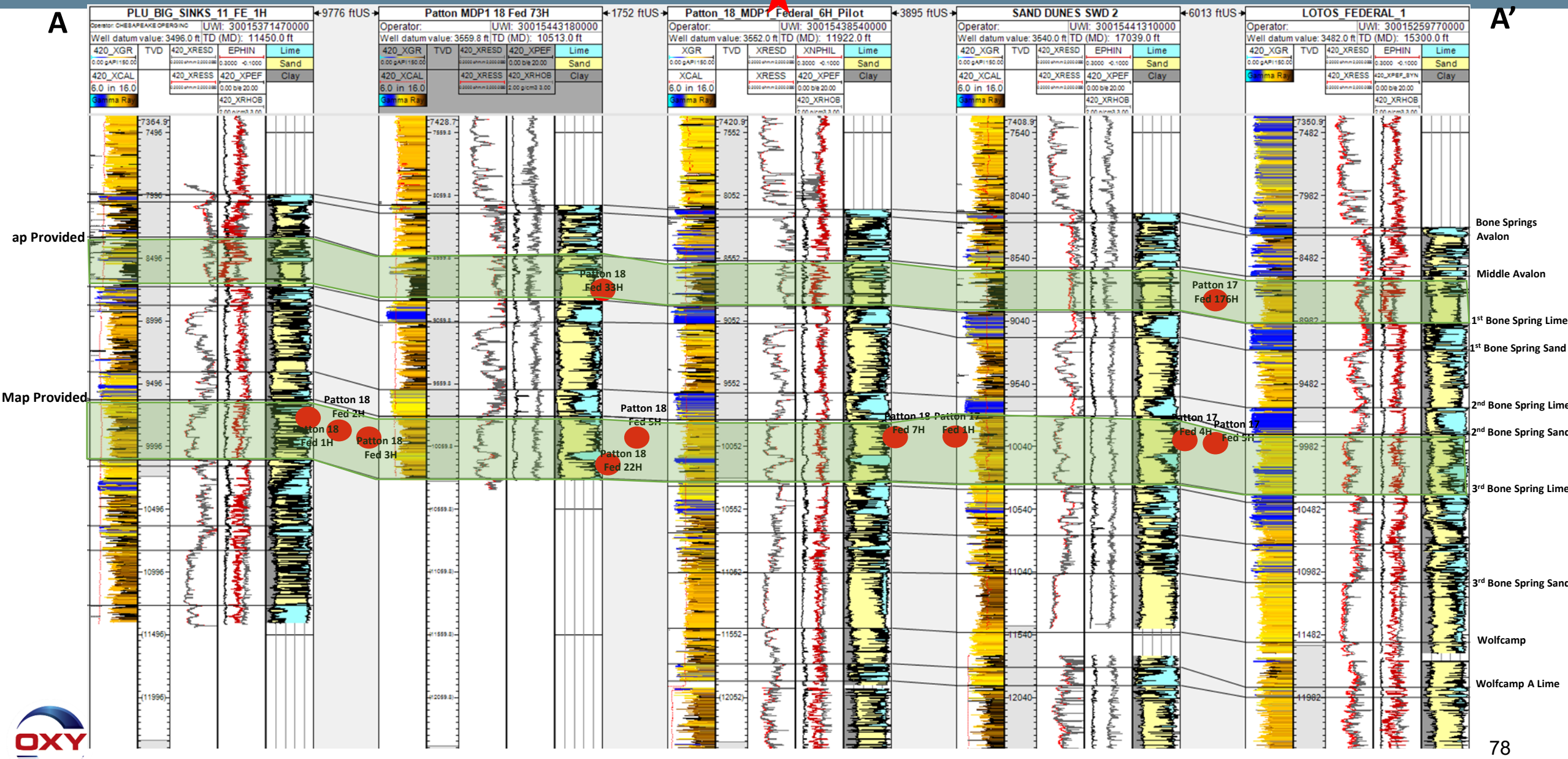
- Delaware Mountain Group
  - > Brushy Canyon oil production: Deepest production ~7,700’ TVD
- Wolfcamp
  - > Oil production: Shallowest production ~11,500’ TVD



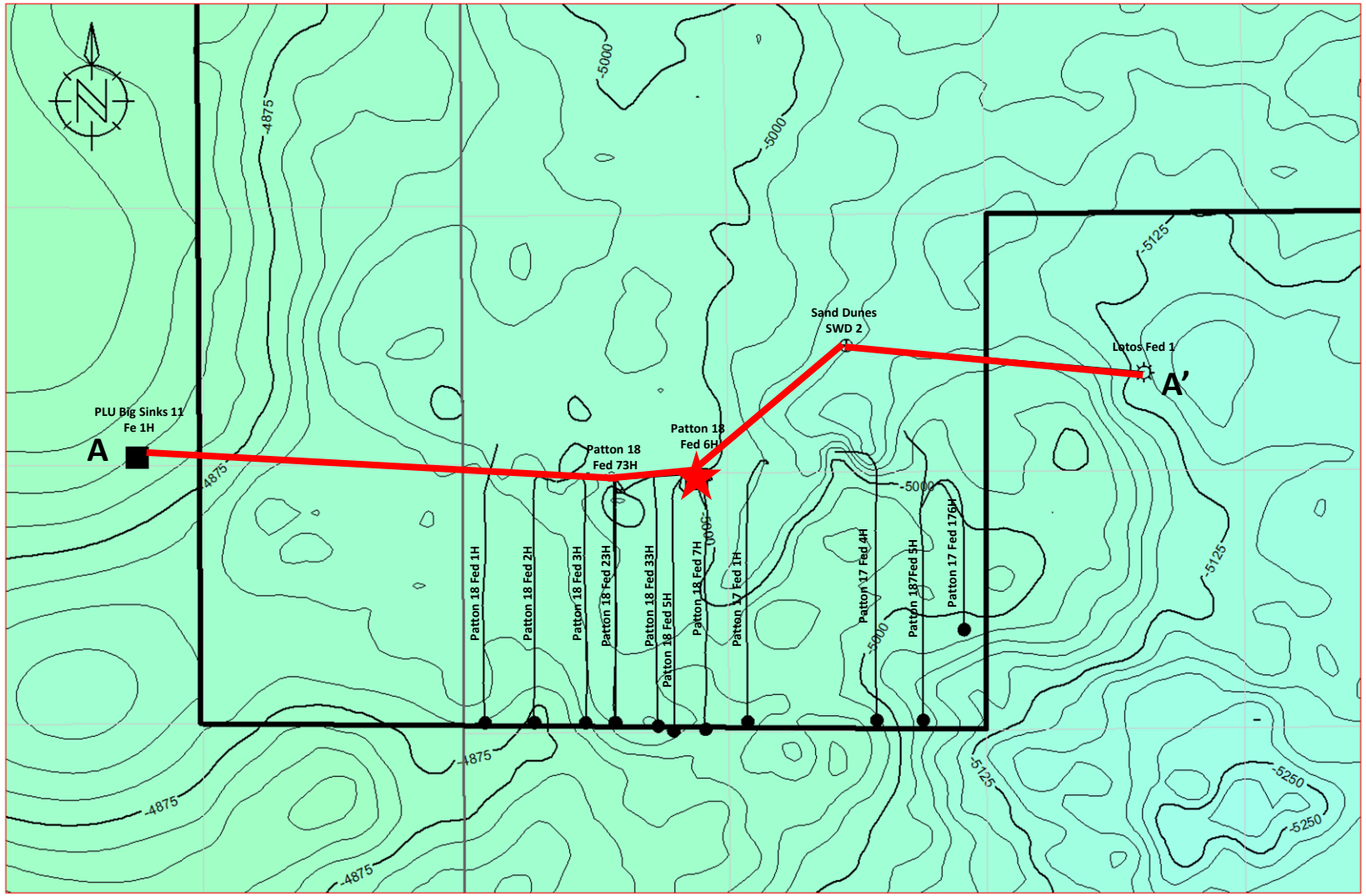
Barriers to migration from gas injected into the Bone Spring or Wolfcamp

Proposed Storage Interval

South Corridor Cross-Section



South Corridor Maps-Avalon



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

0 1000 2000 3000 4000 5000ftUS

1:40000

Elevation depth

-2250.00
-3000.00
-3750.00
-4500.00
-5250.00
-6000.00

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

Two wells will be injecting into the lower portion of the Avalon member of the Bone Spring Formation. The wells have an average TVD of approximately 8,700 ft. (actual depth varies across the field) with lateral lengths ranging from 3,000 ft to 5,000 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 1st 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 1st 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 8,150 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 980 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 520 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:
Patton MDP1 18 Federal 33H
Patton MDP1 17 Federal 176H ST01

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

Tony Troutman
Geologist

8/6/21
Date

Geologic Information for Wells injecting into the 2nd Bone Spring Sand Member of the Bone Spring Formation

Seven wells will be injecting into the 2nd Bone Spring Sandstone of the Bone Spring Formation. The wells have an average TVD of approximately 10,100 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 2nd Bone Spring Lime and 3rd 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 8,150 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 980 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 520 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:
Patton MDP1 18 Federal 1H
Patton MDP1 18 Federal 2H
Patton MDP1 18 Federal 3H
Patton MDP1 18 Federal 5H
Patton MDP1 18 Federal 7H
Patton MDP1 18 Federal 22H
Patton MDP1 17 Federal 1H
Patton MDP1 17 Federal 5H
Patton MDP1 17 Federal 4H

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

Tony Troutman
Geologist

8/9/21
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

6/10/2021
Date

Xueying Xie, Reservoir Engineer

6/10/2021
Date

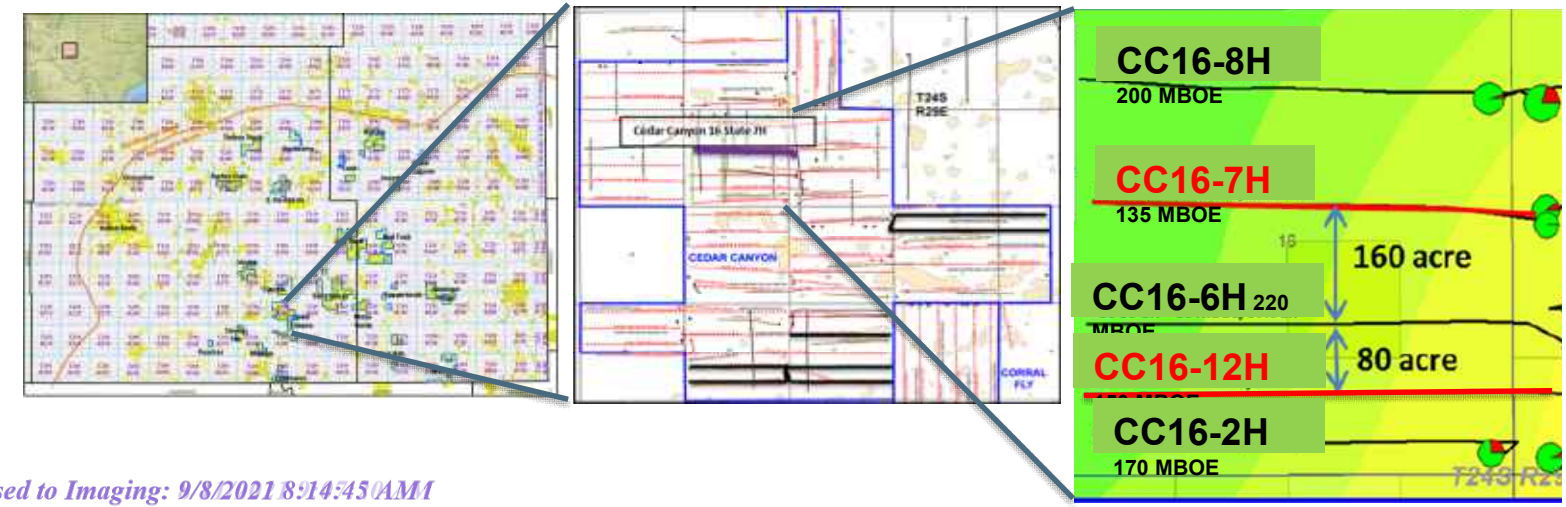
Reservoir Engineering

Project Overview- SC

- Closed loop gas capture project (CLGC) IN Oxy's NM assets
- Produced gas injection into productive formations in NM (Avalon, 2nd Bone Spring)
- Gas injection into horizontal wells of 5000' lateral length
- 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

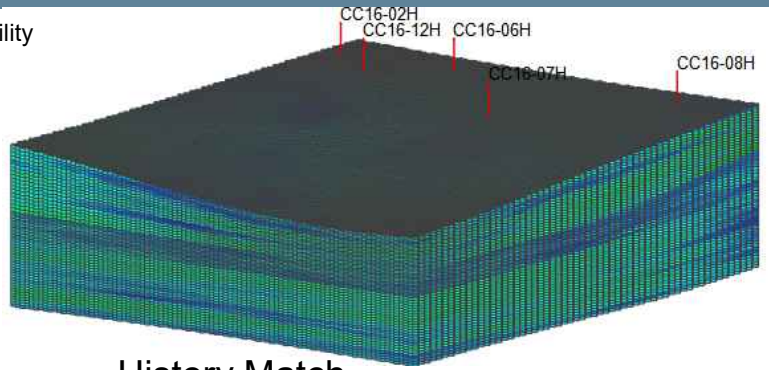
- Uses Cedar Canyon Sec 16 2nd BSS (as shown in layout below)
- Gas Injection pilot (EOR) was implemented in CC16-7H well in 2017
- Reservoir model is history matched for primary production and gas injection pilot
- Model is also tuned to capture injection gas breakthrough in offset wells that was observed 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:	2nd 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

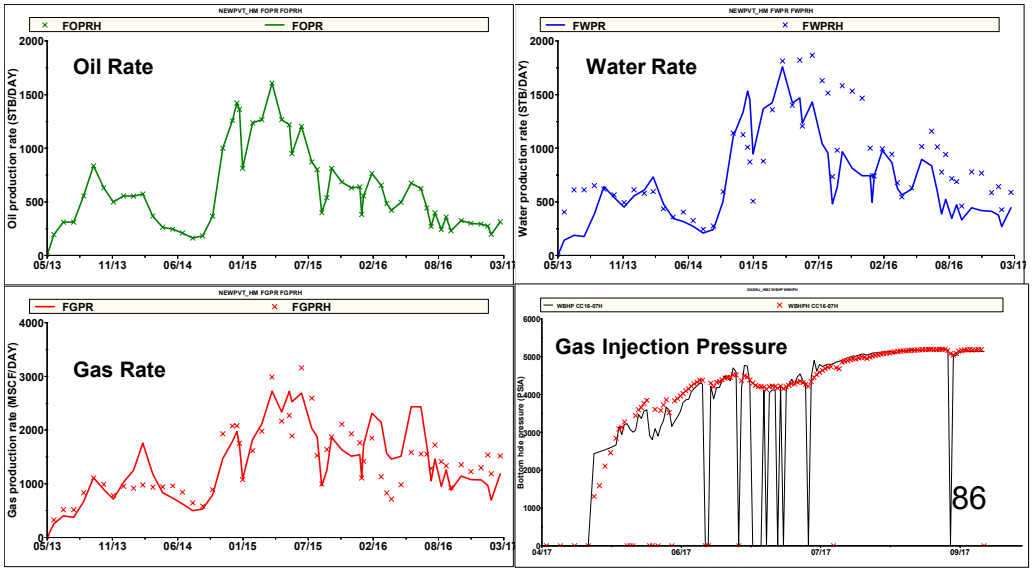
Structure & Permeability
1,177,400 Grids
56 Layers



Model Inputs

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

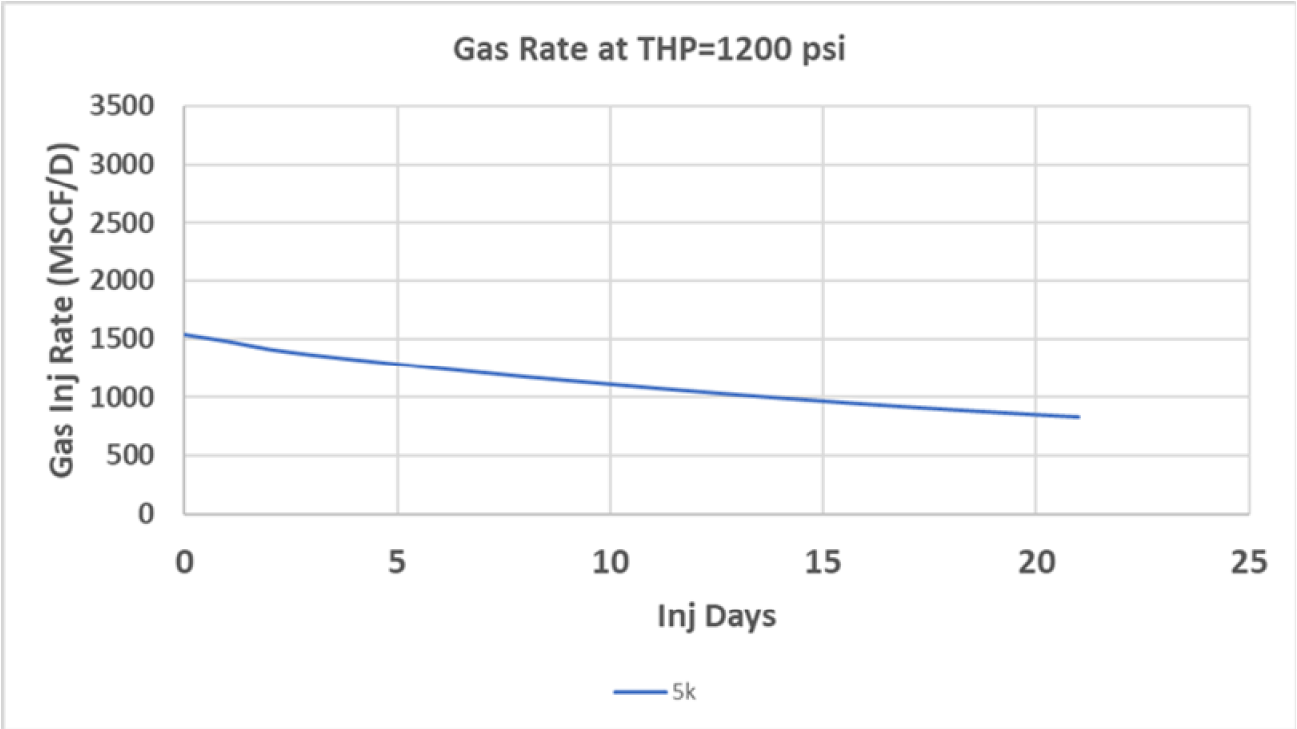
History Match



Gas Storage Simulation Process

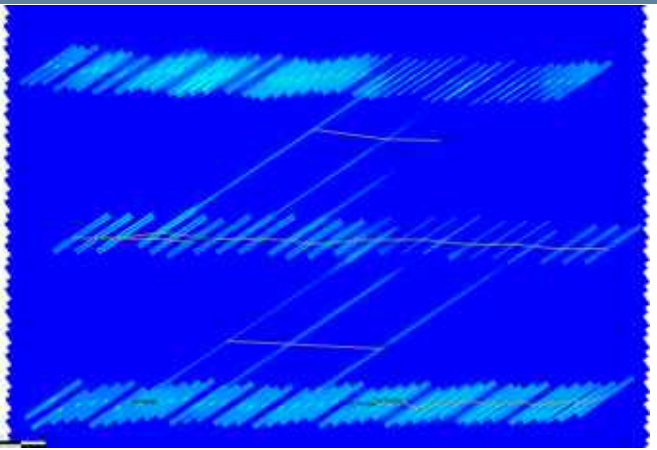
- Run primary production for all wells for additional period (post history match) – Base Case
- Inject gas in injection well at 2MMSCFPD for 7 days
- Produce the injection well post injection – Injection Case
- Observe the effect on oil, gas rate/recovery in injection well and offset wells by comparing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

Gas Injection Rate

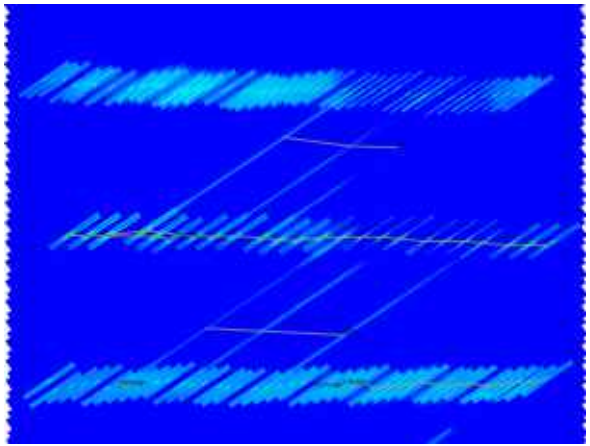


For a 5k well, 1.5 MMSCFPD is the max injection rate at THP of 1200 psi. Injection rate declines to about 50% of its initial value in 3 weeks. There is not a major increase in rate if THP is increased to 1250 psi.

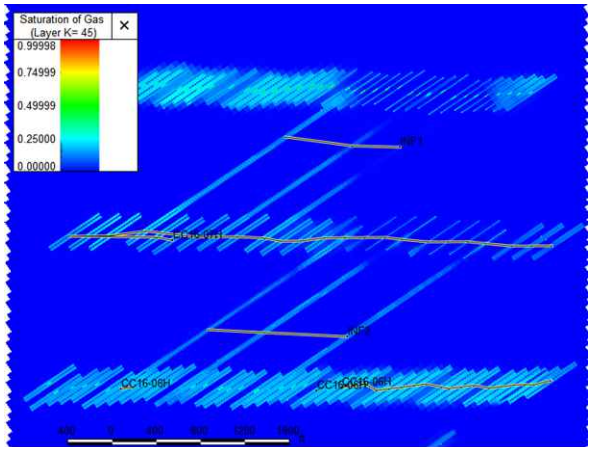
Gas Injection Profile



Before injection



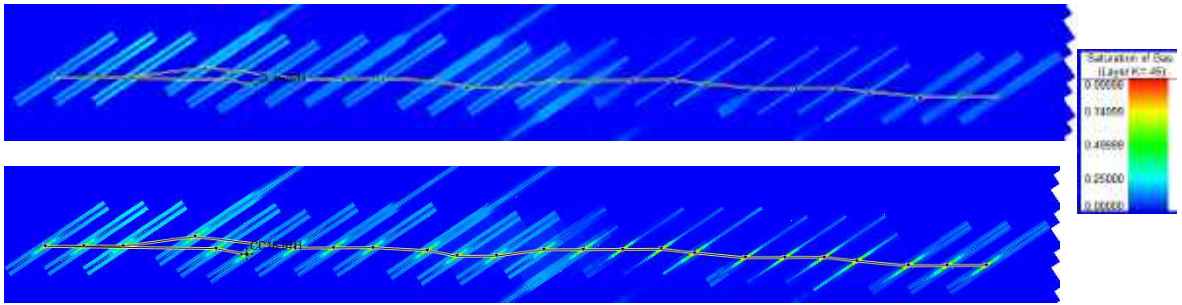
After 1 week of injection (3 MMSCFPD)



After 16 months production

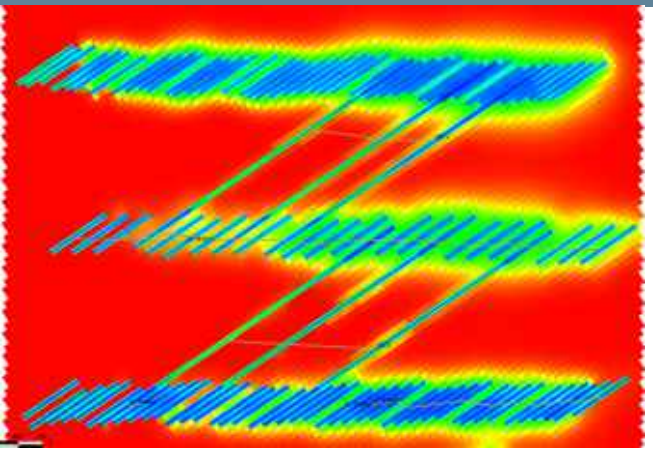
Before Injection CC16-7H Blow-up

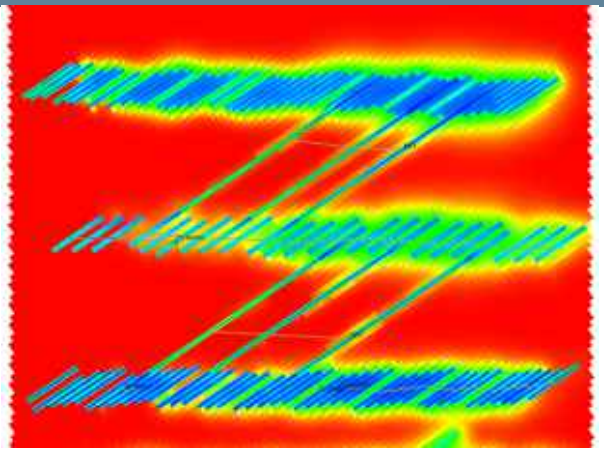
After Injection CC16-7H Blow-up

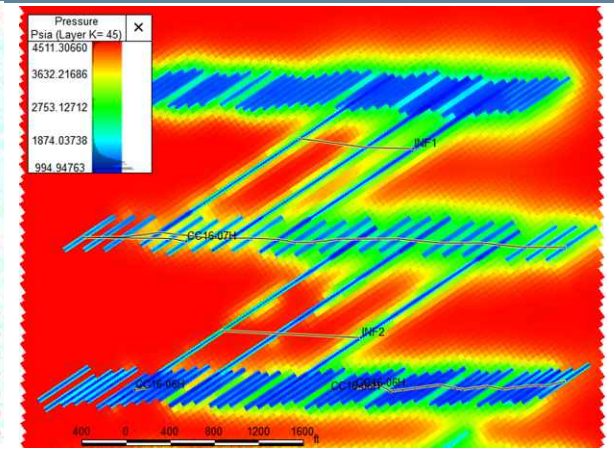


- Gas is stored within fractures.
- All injection cases indicate horizontal gas movement of 100 ft or less into the fractures.

Pressure Profile





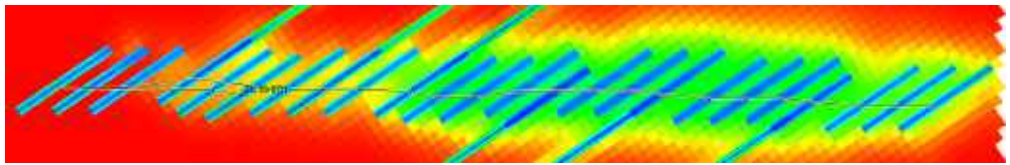


Before injection

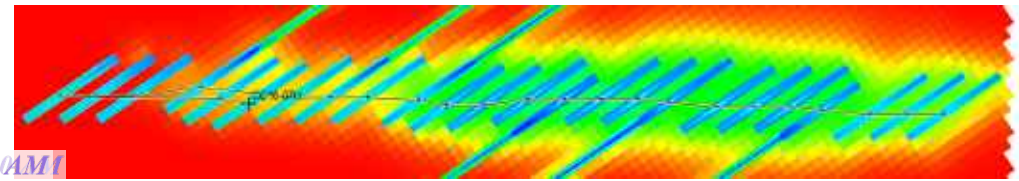
After 1 week of injection (3 MMSCFPD)

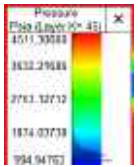
After 16 months production

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 - SC

		Gas Storage Capacity with 1200 psi WHP Injection	
API	Well Name	Fracture volume gas equavalent, mmscf	Total prod gas equivalent, mmscf
30015450790100	PATTON MDP1 17 FEDERAL 176H ST1	137	857
30015444590000	PATTON MDP1 17 FEDERAL 1H	131	734
30015444970000	PATTON MDP1 17 FEDERAL 4H	127	853
30015444440000	PATTON MDP1 17 FEDERAL 5H	124	624
30015443170000	PATTON MDP1 18 FEDERAL 1H	123	777
30015443160000	PATTON MDP1 18 FEDERAL 23H	136	822
30015443370000	PATTON MDP1 18 FEDERAL 2H	125	886
30015443380000	PATTON MDP1 18 FEDERAL 33H	136	1085
30015443330000	PATTON MDP1 18 FEDERAL 3H	129	628
30015442720000	PATTON MDP1 18 FEDERAL 5H	129	961
30015442730000	PATTON MDP1 18 FEDERAL 7H	126	879

- 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 - SC

- Frac height:
  - Avalon: Based on Tanks Avogato
    - XH= 340’
    - Xf = 350’
  - 2BSS: Based on Nimitz
    - XH = 285’,
    - Xf = 300-400’

- SRV
  - SRV= 2*Xf*Xh*Well length

API 14	Well Name	SRV, ft^3
30015443370000	PATTON18-2H	898,548,000
30015443330000	PATTON18-3H	898,947,000
30015444440000	PATTON17-5H	904,732,500
30015442730000	PATTON18-7H	894,159,000
30015442720000	PATTON18-5H	913,510,500
30015444590000	PATTON17-1H	907,924,500
30015443380000	PATTON18-33H	1,069,334,000
30015450790100	PATTON176ST1	1,130,738,000
30015443160000	Patton 18-23H	977,704,000
30015444970000	Patton 17-4H	1,087,898,000
30015443170000	Patton 18-1H	1,093,848,000

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

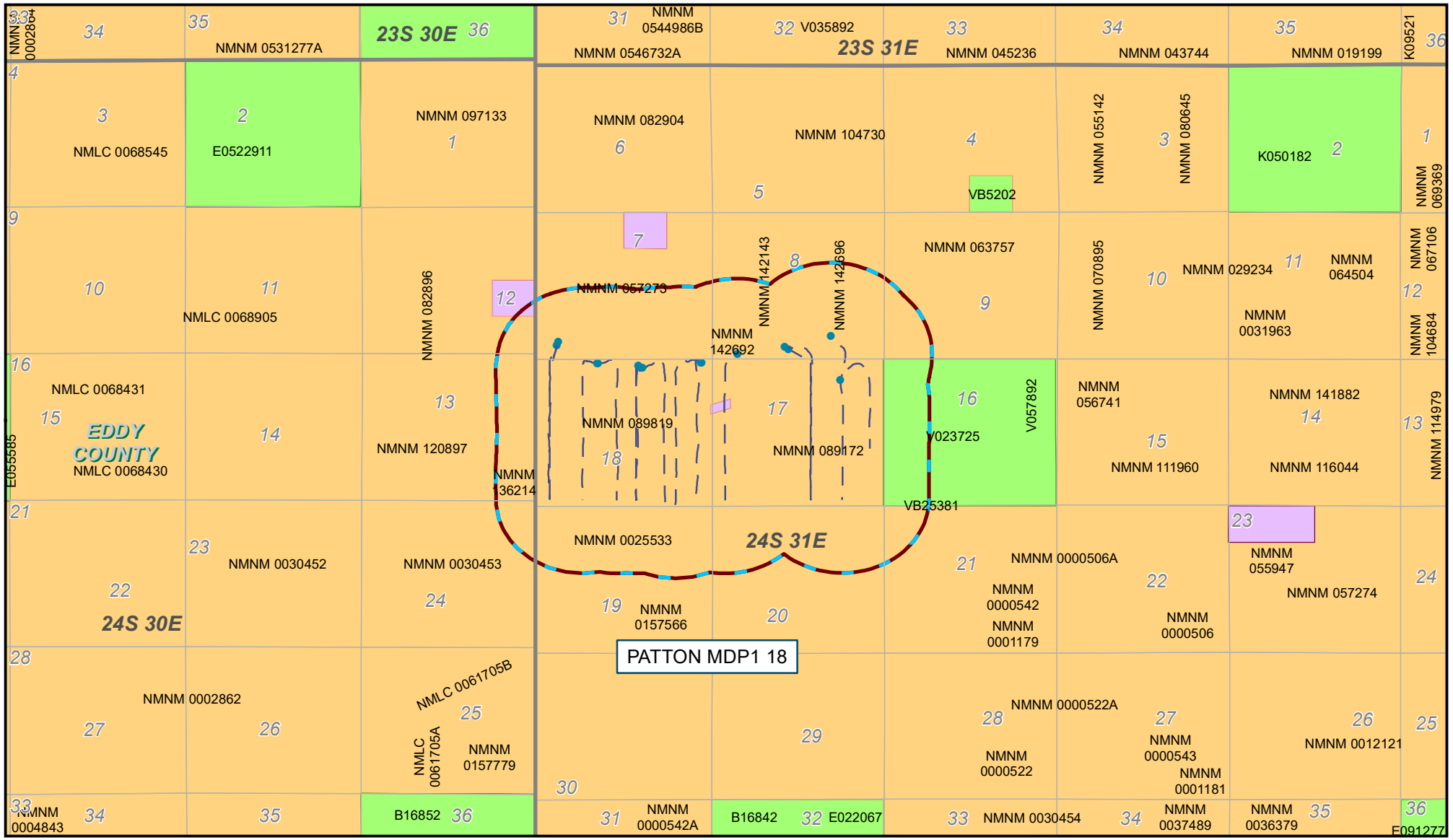
6/9/2021

_____ _____

Xueying Xie, Reservoir Engineer Date

Notice

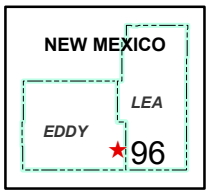
SOUTH CORRIDOR GAS LIFT
EDDY COUNTY, NEW MEXICO



County
1/2 mile AOR
Surface Hole Location
Wellbore Trajectory

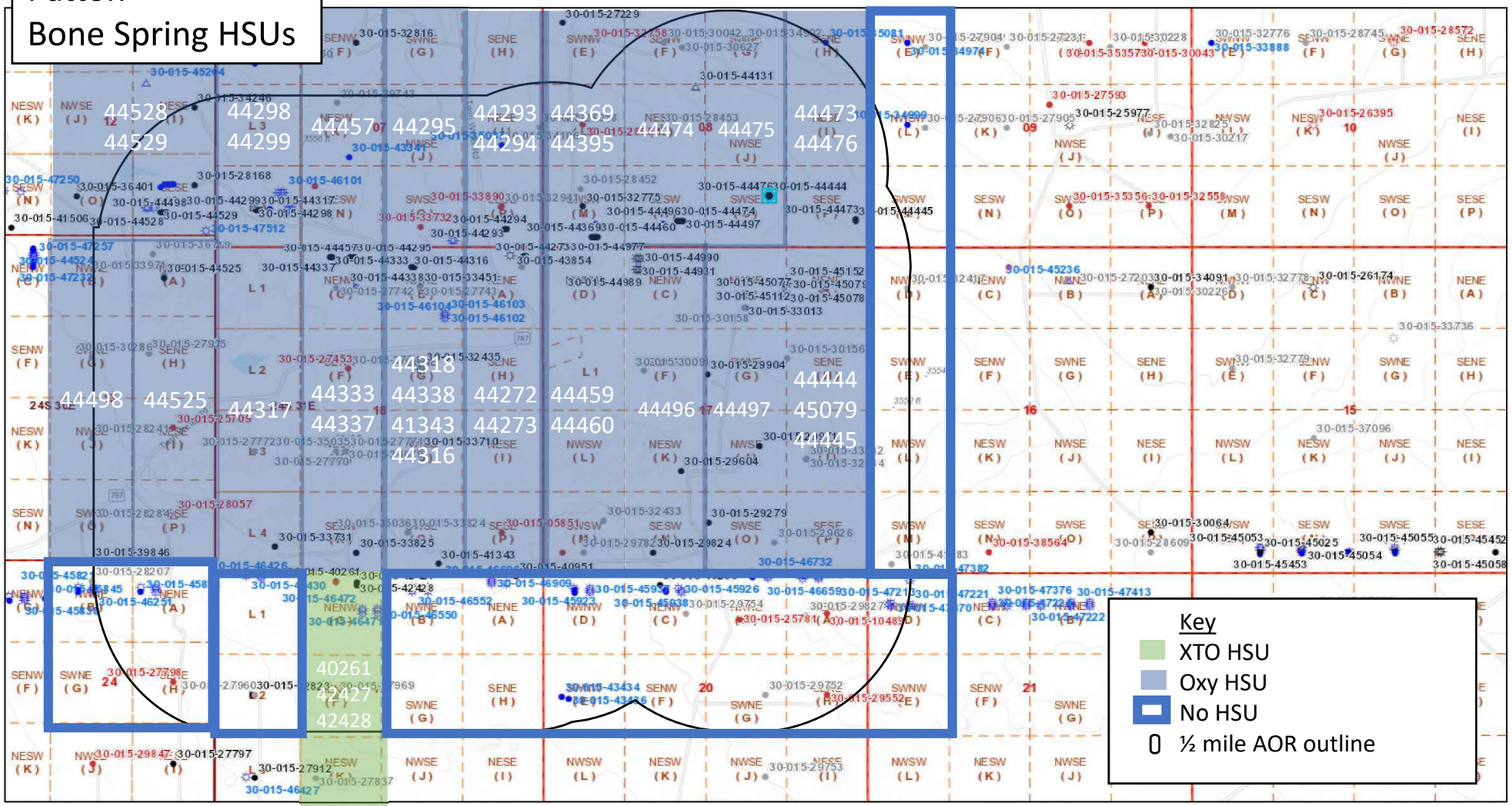
Surface Ownership:
Federal
Private
State

0 0.5 1 2 Miles



M:\Land\New_Mexico\New_Mexico_SE\Comm_Boundary_Ownership\MXD\NMGasStorage_SouthCorridorGasLift.mxd

Patton
Bone Spring HSUs



4/12/2021, 11:48:45 AM

1:22,000

0 0.23 0.45 0.9 mi

0 0.38 0.75 1.5 km

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

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- SC

Name	Street	City	State	Zip	Merged Address
Surface Owner					
BLM	620 E. Greene St.,	Carlsbad	NM	88220	BLM 620 E. Greene St., Carlsbad,NM 88220
Leasehold Operators					
BEPCO, LP	PO BOX 2760	MIDLAND	TX	79702	BEPCO, LP PO BOX 2760 MIDLAND,TX 79702
BOPCO, L.P.	6401 HOLIDAY HILL RD BLDG 5	MIDLAND	TX	79707	BOPCO, L.P. 6401 HOLIDAY HILL RD BLDG 5 MIDLAND,TX 79707
BURLINGTON RESOURCES OIL & GAS CO	PO BOX 51810	MIDLAND	TX	79710	BURLINGTON RESOURCES OIL & GAS CO PO BOX 51810 MIDLAND,TX 79710
BURLINGTON RESOURCES OIL & GAS COMPANY LP	PO BOX 2197	HOUSTON	TX	77252	BURLINGTON RESOURCES OIL & GAS COMPANY LP PO BOX 2197 HOUSTON,TX 77252
CHESAPEAKE OPERATING, INC.	PO BOX 11050	MIDLAND	TX	79702	CHESAPEAKE OPERATING, INC. PO BOX 11050 MIDLAND,TX 79702
Chevron USA Inc.	6301 Deauville	Midland	TX	79706	Chevron USA Inc. 6301 Deauville Midland,TX 79706
COG PRODUCTION, LLC	600 W. ILLINOIS AVE	MIDLAND	TX	79701	COG PRODUCTION, LLC 600 W. ILLINOIS AVE MIDLAND,TX 79701
DEVON SFS OPERATING INC	20 N BROADWAY STE 1500	OKLAHOMA CITY	OK	73102	DEVON SFS OPERATING INC 20 N BROADWAY STE 1500 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
POGO PRODUCING COMPANY LLC	700 MILLIAM SUITE 1300	HOUSTON	TX	77002	POGO PRODUCING COMPANY LLC 700 MILLIAM SUITE 1300 HOUSTON,TX 77002
SANTA FE ENERGY OPERATING PARTNERS L P	1616 S VOSS STE 600	HOUSTON	TX	77057	SANTA FE ENERGY OPERATING PARTNERS L P 1616 S VOSS STE 600 HOUSTON,TX 77057
XTO PERMIAN OPERATING LLC.	6401 HOLIDAY HILL ROAD BUILDING 5	MIDLAND	TX	79707	XTO PERMIAN OPERATING LLC. 6401 HOLIDAY HILL ROAD BUILDING 5 MIDLAND,TX 79707
Affected Persons					
AGS Resources 2004 LLLP	10 Inverness Dr. East	Englewood	CO	80112	AGS Resources 2004 LLLP 10 Inverness Dr. East Englewood,CO 80112
Bettis Brothers Inc.	500 W. Texas #830	Midland	TX	79701	Bettis Brothers Inc. 500 W. Texas #830 Midland,TX 79701

Chesapeake Exploration LLC	6100 N. Western	Oklahoma City	OK	73118	Chesapeake Exploration LLC 6100 N. Western Oklahoma City,OK 73118
Chevron USA Inc.	P O Box 730436	Dallas	TX	75373-0436	Chevron USA Inc. P O Box 730436 Dallas,TX 75373-0436
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 Resources Inc.	P.O. Box 840321	Dallas	TX	75284	EOG Resources Inc. P.O. Box 840321 Dallas,TX 75284
EP Energy E&P Co. LP	P.O. Box 4660	Houston	TX	77210	EP Energy E&P Co. LP P.O. Box 4660 Houston,TX 77210
Finley Production Co LP	P.O. Box 2200	Fort Worth	TX	76113	Finley Production Co LP P.O. Box 2200 Fort Worth,TX 76113
Fortson Oil Co	301 Commerce Ste #3301	Fort Worth	TX	76102	Fortson Oil Co 301 Commerce Ste #3301 Fort Worth,TX 76102
Franklin Mountain Energy LLC	44 Cook St, Ste 1000	Denver	CO	80206	Franklin Mountain Energy LLC 44 Cook St, Ste 1000 Denver,CO 80206
Grasslands Energy LP	5128 Apache Plume Rd.	Fort Worth	TX	76109	Grasslands Energy LP 5128 Apache Plume Rd. Fort Worth,TX 76109
McCombs Energy LTD	750 Mulberry Ave Ste 403	San Antonio	TX	78212	McCombs Energy LTD 750 Mulberry Ave Ste 403 San Antonio,TX 78212
Merit Energy Partners	13727 Noel Rd, Ste 500	Dallas	TX	75240	Merit Energy Partners 13727 Noel Rd, Ste 500 Dallas,TX 75240
Merit Energy Partners II LP	13727 Noel Rd, Ste 500	Dallas	TX	75240	Merit Energy Partners II LP 13727 Noel Rd, Ste 500 Dallas,TX 75240
Merit Energy Partners III LP	13727 Noel Rd, Ste 500	Dallas	TX	75240	Merit Energy Partners III LP 13727 Noel Rd, Ste 500 Dallas,TX 75240
Merit Energy Partners IV LP	13727 Noel Rd, Ste 500	Dallas	TX	75240	Merit Energy Partners IV LP 13727 Noel Rd, Ste 500 Dallas,TX 75240
PENROC OIL CORP	P.O. Box 2769	Hobbs	NM	88241	PENROC OIL CORP P.O. Box 2769 Hobbs,NM 88241
Plains Production Inc.	1313 Campbell Rd., BLDG D	Houston	TX	77055	Plains Production Inc. 1313 Campbell Rd., BLDG D Houston,TX 77055
State Land Office	P O BOX 1148	SANTA FE	NM	87504	State Land Office P O BOX 1148 SANTA FE,NM 87504
Suzanne Thomas	3936 Byron St	Houston	TX	77005	Suzanne Thomas 3936 Byron St Houston,TX 77005
XTO Delaware Basin LLC	6401 Holiday Hill Rd	Midland	TX	79707	XTO Delaware Basin LLC 6401 Holiday Hill Rd Midland,TX 79707

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. 22151

AFFIDAVIT OF STEPHEN JANACEK

I, Stephen Janacek, of lawful age and being first duly sworn, declare as follows:

1. My name is Stephen Janacek and I am employed by OXY USA Inc. ("OXY") as a petroleum engineer.

2. I have previously testified before the New Mexico Oil Conservation Division as an expert witness in petroleum engineering.

3. I am familiar with the application filed by OXY in this case, and the Division guidance and requirements regarding closed loop gas capture injection projects (CLGC Project) such as this one. I also prepared exhibits in support of this application from pages 3 through 75 and 96-99 in ***Exhibit A*** attached to OXY's application.

4. In this case, OXY seeks an order approving the 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*** to the Application, at 7-8. The proposed project area is part of a larger area referred to as the Sand Dunes area. A locator map identifying the general location of OXY's proposed North Corridor CLGC Project is included in ***Exhibit A*** at page 6. The Iridium Area and the Cal Mon Area are in the North Corridor area. Wells in the Patton area are the subject of a separate application.

BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Exhibit No. B
Submitted by: OXY USA INC.
Hearing Date: September 09, 2021
Case No 22152

5. OXY requests an initial project duration of two years. OXY also requests the ability to administratively extend the project without the need for a hearing.

6. Within the proposed project area, OXY seeks authority to utilize the following producing wells to occasionally inject produced gas into the Bone Spring formation, as identified on the project locator map, included at page 6 of Exhibit A:

- 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 **Iridium 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.

7. 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 **Iridium MDP1 "28-21" Federal Com #21H well**: between 8,664 feet and 8,688 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.

8. OXY seeks authority to add CLGC wells to the proposed project by administrative approval if the well is within the Area of Review previously completed.

9. A summary overview of the pilot project is located at pages 3-5 of ***Exhibit A***.

10. A process flow diagram of the closed loop gas capture system is in the Attached ***Exhibit A*** at page 9. This diagram reflects the current and proposed system to be used for gas storage. OXY will utilize the existing gas lift infrastructure so no changes are shown. During normal operations, produced fluids flow from the wells down the green flowline to the Central Tank Batteries (CTBs). The source wells, which consist of all wells connected to the CTBs, produce from the Bone Spring and Wolfcamp formations. Oil, water, and gas are separated out and leave the CTBs. Oil is sold through the Lease Automatic Custody Transfer (LACT) at each CTB, water is sent to a disposal well, and gas enters the red Low Pressure Gas Pipeline. Gas can then be sold to the Enterprise Gas Takeaway, flared, or delivered to the Centralized Gas Lift (CGL) Stations for compression and re-injection as gas lift gas. After the gas goes through the CGL Stations, the pressure increases to a maximum of 1250 psig in the orange Centralized Gas Lift (CGL) Pipeline. Then it flows back to the wells with gas lift systems. The flow of fluids is similar yet different during a gas storage event. A gas storage event is initiated when gas cannot be sold to Enterprise and the source wells are not shut-in. The major changes are to the Enterprise Gas Takeaway (which ceases taking gas) and the CLGC wells (which cease producing and become CLGC wells). Since gas cannot be sold, it will begin to build up in the Low-Pressure Gas Pipeline as wells continue to produce oil, water, and gas. Once the pressure in the Low-Pressure Gas Pipeline increases to a certain point, the CLGC wells will be activated in a cascade fashion. CLGC wells are activated by closing the Shutdown Valve (SDV) at the wellhead. If the pressure in the Low-Pressure Gas Pipeline does not decrease, an additional CLGC well will be

activated. Additional CLGC wells will be activated in this cascade system. When the interruption ends and gas can once again be sold to Enterprise, the gas storage event ends. The Shutdown Valves open and the CLGC wells produce down the flowline to a test separator at the CTB for measurement.

11. A map depicting the pipeline that ties the CLGC wells for the pilot project into the gathering system and the affected compressor stations is included in the attached ***Exhibit A*** at page 7-8. The colors and components of the system are the same as the process flow diagram in the attached ***Exhibit A*** at page 9 with some additional items. The black lines represent the wellbore trajectories of the CLGC wells. The First Take Point (FTP) and Last Take Point (LTP) are labeled on the well trajectory. The project area is outlined with a dashed, dark-blue line, which is based on each CLGC well's horizontal spacing unit as shown on the attached ***Exhibit A*** at pages 11-17. Gas source wells are not on this map.

12. Data for each CLGC well, 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 pages 18-31. All wells have gas lift systems which inject down the casing and produce up the tubing with a packer in the hole.

13. OXY proposes to place packers as deep as possible but no higher than 100 feet above the top of the Bone Spring formation.

14. Cement bond logs for each of the CLGC wells demonstrate the placement of cement in the CLGC wells 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.

15. The current average surface pressures under normal operations for the CLGC 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.*

16. Assuming a full fluid column of reservoir brine water, 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 exceed 0.14 psi per foot as measured at the top of the uppermost perforation in any injection well and will not exert pressure at the topmost perforation in excess of 90% of the formation parting pressure. *See* ***Exhibit A*** at 32.

17. 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 49-50. The wellhead diagram for all CLGC wells is found in ***Exhibit A*** at 33. Injection starts at the flowmeter where the injection rate is measured and moves through the following components: first, the injection flow control valve which controls the injection pressure, the casing safety shutdown valve (SSV), which can open and close automatically, the casing-tubing annulus, the tubing, the tubing SSV, which can open and close automatically and is also closed when a CLGC well is activated, and finally another flow control valve (FCV), which controls flowline pressure. Pressure Indicating Transmitters (PITs) are located on the casing valve and tubing valves. PITs capture pressure data that is stored in the SCADA system and then used to automatically control the SSVs and FCVs.

18. The proposed average injection rate for each CLGC well is 1.8 MMSCFD. All wells will have a maximum injection rate of 2.0 MMSCFD during injection except for the Iridium 28-21 21H, which will have a maximum injection rate of 3.0 MMSCFPD due to its longer lateral length. *See* ***Exhibit A*** at 32.

19. The wells proposed for the CLGC project have previously demonstrated mechanical integrity. *See* ***Exhibit A*** at 34. OXY will undertake new tests to demonstrate mechanical integrity for each of the wells proposed for this pilot project as a condition of approval prior to commencing injection operations.

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 CLGC wells are operated by OXY and OXY holds 100% of the working interest in the 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. ***Exhibit A*** at 39 is a summary of the gas analyses included in the application and the components in the system. Source wells flow to multiple CTBs. From there gas flows to CGL Stations. Gas analyses have been provided for the CGL Stations and the formation for gas injection. The gas analyses for the CGL Stations are similar to the gas analyses for the zones for gas injection. H2S is not found in any of the gas analyses. CO2 is found in all the analyses at various amounts.

22. Since CO2 is already present in this system, OXY intends to continue with its existing Corrosion Prevention Plan in these CLGC wells outlined at page 47 of ***Exhibit A***. In the existing Corrosion Prevention Plan, produced gas is processed through a gas dehydration unit to remove water. Then corrosion inhibitor is added to the system of each well downstream of the

gas dehydration unit. Fluid samples are taken regularly and checked for iron, manganese, and residual corrosion inhibitor in the produced fluids. The process allows OXY to continuously monitor and adjust the chemical treatment over the life of the well to minimize corrosion. Additionally, fluid samples will be taken prior to gas injection to establish a baseline for analysis. After a CLGC event, fluid samples will be taken to check for iron, manganese, and residual corrosion inhibitor in the produced fluids in the CLGC wells. OXY will continue to monitor and adjust the chemical treatment over the life of the project.

23. Using an automated supervisory control and data acquisition (SCADA) system, OXY will monitor a multitude of rates and pressures to allow for efficient and safe operation, proper allocation and reporting of volumes, and immediate response to unexpected events. *See* ***Exhibit A*** at 49-50. Each CLGC well will also include automated safety devices, including automatic shut-in valves among other operational safety measures. OXY will also monitor and track various operational parameters at the pilot project's central tank battery and central gas lift compressor. *See* ***Exhibit A*** at 49-50.

24. OXY proposes a Data Collection Plan for the North Corridor CLGC Project as seen in its Data Collection Plan, attached as **Exhibit B-1**, to collect and report data pertinent to CLGC operations. The plan is similar to the data collection process outlined in the Injection Order R-21747 but proposes some changes. Consistent with Order R-21747, the Data Collection Plan will apply to the wells listed in the table in the Exhibit. The spatial relationship of these wells is illustrated in the Gun Barrel View that I have attached to this affidavit as **Exhibit B-2**. This diagram shows the proposed North Corridor CLGC wells (blue circles) and any offset wells in the same correlative zone (yellow circles). There is one proposed CLGC well in the Avalon, 5 in the Second Bone Spring, and one in the Harkey. In the OXY Data Collection Plan for North

Corridor, there are some changes to the reporting requirements. First, to lessen the administrative burden of these requirements, OXY proposes status updates every 12 months instead of every 3 months. Second, the recovery analysis required for each involved CLGC well and for each well related to each involved CLGC well will be required only if the change in production casing pressure or production volume is related to the CLGC event. These wells are on gas lift most of the time, and changes in casing pressure or production volumes are not unusual for artificially lifted wells. Third, because the CLGC wells and the involved CLGC wells are being produced pursuant to an approved commingling permit, OXY will attempt to collect the data at the requested resolution, but we need the flexibility to substitute well tests when equipment constraints prevent such high resolution. Fourth, some allowance needs to be incorporated into the requirements for interruptions that occur with less than 24 hours' notice. Lastly, OXY shall not be required to install additional facilities or measurement equipment to collect the data described. These changes create an achievable Data Collection Plan for the North Corridor. If a data collection plan is required as outlined in the Injection Order R-21747, additional well testing equipment will be required which will severely impact OXY's ability to pursue this project due to the additional capital costs.

25. I also conducted an analysis of the half-mile area of review and two-mile area surrounding each of the proposed CLGC wells. A map depicting wells and their trajectories within a two-mile radius around the injection wells is located at page 53-54 of ***Exhibit A***. A map identifying each surface tract by ownership type within the half-mile area of review and two-mile area surrounding each of the proposed injection wells is located at page 52 of ***Exhibit A***. Finally, a map depicting all wells identified with completed laterals all or partially within the half-mile area of review is located at page 55-56 of ***Exhibit A***. It assigns a well identification number to each

well within the area of review that may be cross referenced in the following well data tabulation chart on pages 57-60 of ***Exhibit A***. The well data tabulation chart provides detailed information for identification, location, drilling, casing, cement, current completion, and current producing pool of each well. Additionally, I have prepared a map of the half-mile area of review reflecting each of the injection well trajectories, which is attached as **Exhibit B-3.**

26. Wellbore schematics for the nine wells that penetrate the top of the proposed injection interval and have been plugged and abandoned are included at pages 61-69 in ***Exhibit A***. Review of the wellbore diagrams indicate adequate casing, cement, and cement plug placement to sufficiently contain gas within the injection interval.

27. To properly determine gas production from each CLGC well, OXY will apply a GOR Gas Allocation Method. *See* Gas Allocation, attached as **Exhibit B-4**. Per existing commingling permits,[1] gas sales are allocated by well test. For a period of time after a storage event, the GOR Gas Allocation Method will be used to differentiate between native gas (owned by the owners of the CLGC well) and recovery of previously stored gas (owned by the owners of the source wells). I believe it is a fair and reasonable method for allocating gas production after a storage event.

28. The Gas Allocation Plan will utilize the Tapered Testing Methodology as outlined in **Exhibit B-5**. The Tapered Testing Methodology is designed based on the Division's current approach to well testing requirements for surface commingling permits that utilize allocation by well testing. OXY believes that such well testing requirements can be accomplished with existing equipment and connections and allow us to accurately measure and interpolate well tests for allocation and reporting purposes.

[1] PLC-749.

29. Working with OXY's in-house land department, I also prepared a list of affected parties required to receive notice of this application. The maps on pages 92-94 of ***Exhibit A*** reflect that the Bureau of Land Management and Oxy are the surface owners with respect to the proposed CLGC wells. The map depicts the area of review and identifies the designated operator for each tract that falls within the half-mile area of review for each of the wells within the Bone Spring formation.

30. Pages 95-96 of ***Exhibit A*** identify all leasehold operators 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 entitled to notice in accordance with Division regulations, including the Bureau of Land Management as the surface owner for some of the CLGC wells.

31. Parties entitled to notice were identified based on a determination of the title of lands and interests as recorded in the records of Eddy County or from a review of New Mexico Oil Conservation Division and Bureau of Land Management operator records as of the time the application was filed or from OXY's internal records (division orders).

32. It is my opinion that OXY undertook a good faith effort to locate and identify the correct parties and valid addresses required for notice within the half-mile area of review. To the best of my knowledge the addresses used for notice purposes are valid and correct. There were no unlocatable parties for whom we were unable to locate a valid address.

33. I provided the law firm of Holland & Hart LLP a list of names and addresses of the affected parties identified on pages 95-96 for purposes of providing notice.

34. As reflected on **Exhibit B-6**, notice of this application was provided in accordance with 19.15.26.8(B)(2) NMAC. Notice was also published in the Hobbs Daily News.

35. Pages 3 through 75 and 96-99 in **Exhibit A** and **OXY Exhibits B-1** through **B-3** were either prepared by me or compiled under my direction and supervision.

FURTHER AFFIANT SAYETH NOT.

FURTHER AFFIANT SAYETH NOT.

Stephen Janacek

STATE OF TEXAS)
)
COUNTY OF Collin)

SUBSCRIBED and SWORN to before me this 7 day of September 2021 by STEPHEN JANACEK.

NOTARY PUBLIC

My Commission Expires:

08-27-2022

MATTHEW C. OWENS
Notary Public, State of Texas
Comm. Expires 08-27-2022
Notary ID 125728578

Data Collection Plan for South Corridor CLGC Project

CLGC Well Name	Completion Reservoir	Involved Well (West Side)	Involved Well (East Side)
Patton 18-1H	Second Bone Spring	Nimitz 13-3H	None
Patton 18-2H	Second Bone Spring	None	None
Patton 18-3H	Second Bone Spring	None	None
Patton 18-23H	Second Bone Spring	None	Patton 18-8H
Patton 18-33H	Avalon	None	None
Patton 18-5H	Second Bone Spring	Patton 18-8H	None
Patton 18-7H	Second Bone Spring	None	None
Patton 17-1H	Second Bone Spring	None	Patton 17-2H
Patton 17-4H	Second Bone Spring	Patton 17-3H	None
Patton 17-5H	Second Bone Spring	None	Patton 17-6H
Patton 17-176H	Avalon	None	None

A Gunbarrel View is attached showing the relationship of CLGC wells and Offset wells in South Corridor.

Applicant shall provide to the OCD Engineering Bureau at ocd.engineer@state.nm.us, project status updates every twelve (12) months after the approval of this Order and a summary report no later than three (3) months after the cessation of the pilot project or upon request from OCD. Status updates shall include a summary of the actions taken and problems and solutions identified and implemented. The summary report(s) shall include:

a. a summary of all project-related activity;

b. a review regarding any problems and solutions identified and implemented;

c. for each period of injection, a summary of the results, including for each CLGC Well in which injection occurred ("involved CLGC Well"):

i. average and maximum injection flow rates;

ii. injection duration; and

iii. total injected volume.

d. for each period of injection, the following data graphed and tabulated with a resolution of at least: one (1) data point per hour beginning twenty-four (24) hours before the injection (provided adequate notice is received beforehand), four (4) data points per hour during the injection, and one (1) data point per hour ending twenty-four (24) hours after the injection:

i. for each involved CLGC Well, the oil and gas production and injection flow rates and annulus pressure of all casing strings; and

ii. for each well related to each involved CLGC Well, the oil and gas production and injection flow rates and production casing pressure.

BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Exhibit No. B1
Submitted by: OXY USA INC.
Hearing Date: September 09, 2021
Case No 22152

iii. for situations where equipment constraints do not allow for data collection at the resolution specified above or injection periods lasting more than twenty-four (24) hours, periodic well tests may be substituted, provided such well tests are conducted by separating and metering the oil and gas production from each well for a minimum of six (6) hours.

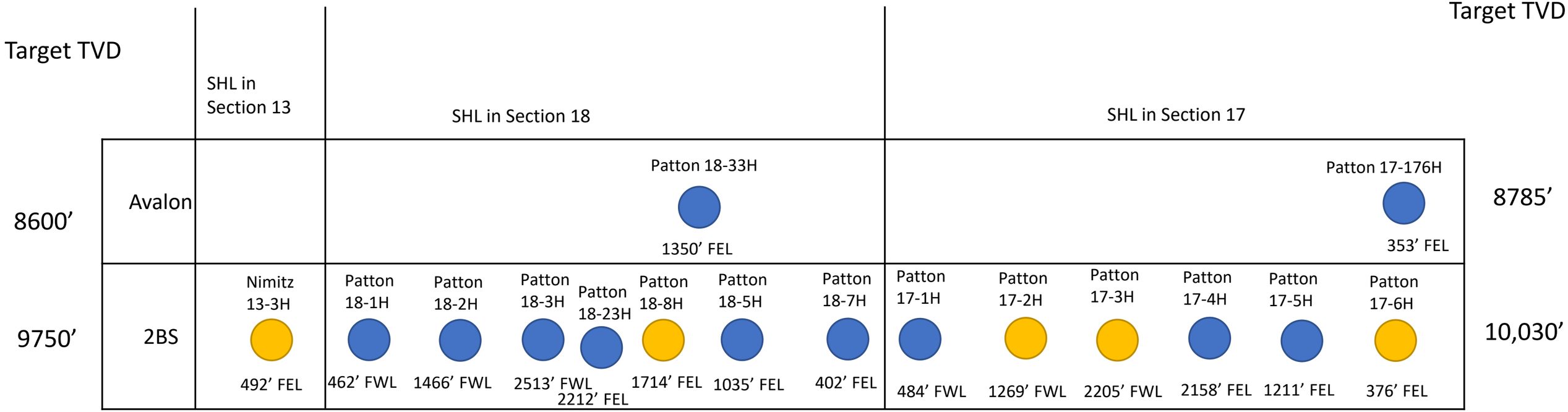
e. for each period of injection, a recovery profile for each involved CLGC Well and for each well related to each involved CLGC Well which experienced a change in production casing pressure or production volume related to the injection during or immediately following the injection. The volume of recovered gas shall be determined by taking the difference between the gas production following the injection and baseline production. The baseline production shall be determined by using well tests to create a production curve that estimates what the production would have been had injection not occurred. The production curve shall be calculated by interpolating daily production for each day using the known daily production obtained by well tests conducted prior to the start of injection and shall use a method of interpolation that is at minimum as accurate as maintaining a constant rate of change for each day's production between the known daily production. The recovery profile shall include:

i. a summary of the results, including the volume and percent of total production recovered and the duration of time required to achieve that recovery; and

ii. a tabulation of daily oil and gas production and baseline production totals; beginning a week before the injection and ending when either the gas production is near equal to its baseline production or Applicant conducts another period of injection on an involved CLGC Well.

f. If any of the CLGC wells or the involved CLGC wells are being produced pursuant to an approved commingling permit, applicant shall not be required to install additional facilities or measurement equipment to collect the data described above in subparagraphs (d) or (e) above.

South Corridor GBV



BEFORE THE OIL CONSERVATION DIVISION
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Submitted by: OXY USA INC.
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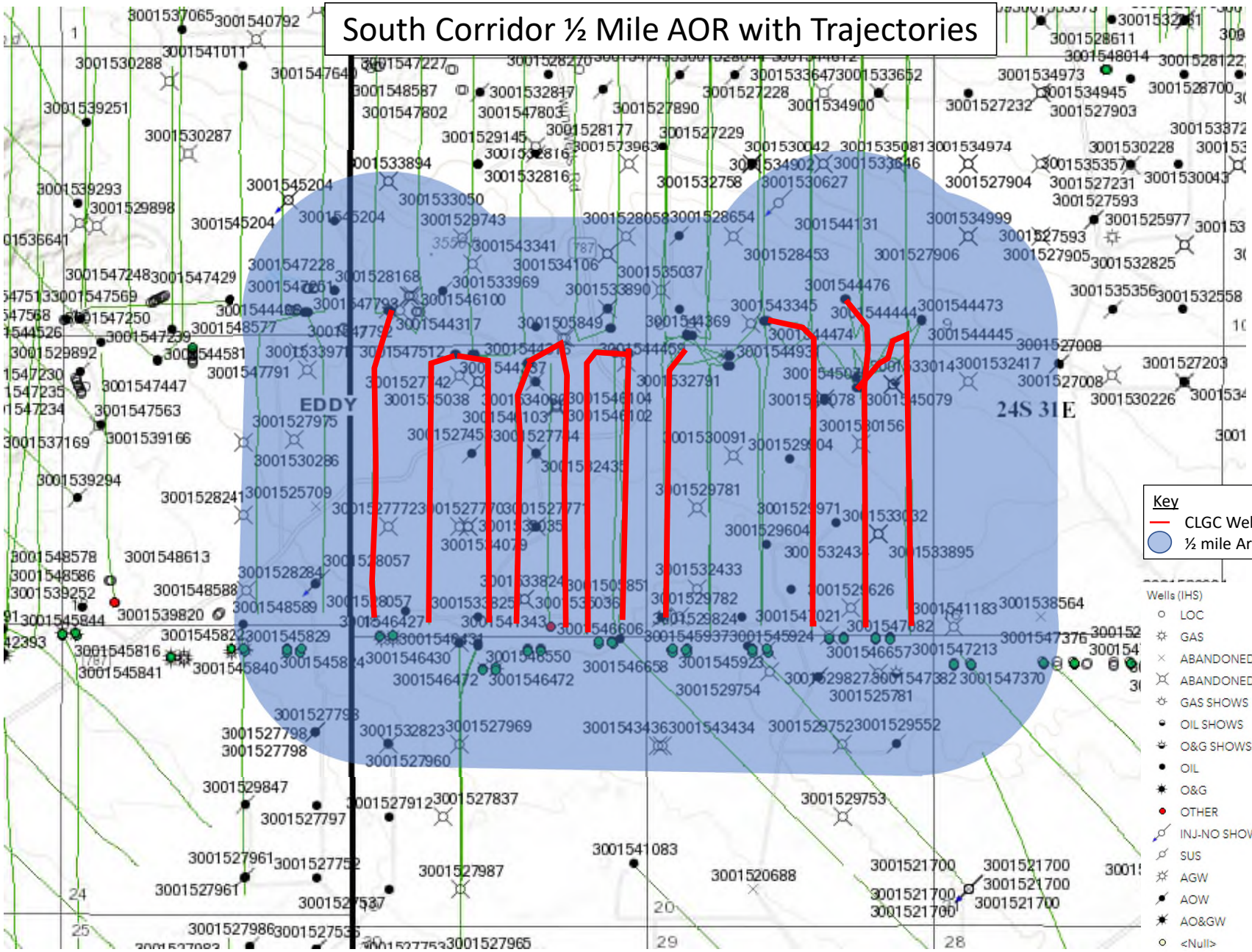
Note-not to scale. Location info based on BHL.
No nearby Avalon offsets.

Key
CLGC Well
Offset well

South Corridor ½ Mile AOR with Trajectories



BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Exhibit No. B3
Submitted by: OXY USA INC.
Hearing Date: September 09, 2021
Case No 22152

GOR Gas Allocation Plan for CLGC Wells

Application

The following methodology will apply to CLGC wells on a well by well basis. The application will start after a CLGC storage event and will end after 100% of the Storage Gas Injection Inventory is recovered. Afterwards, Gas Allocation will revert to previous accounting procedures.

Overview

During a CLGC storage event, a portion of the combined gas streams from source wells will be stored in a CLGC well. After a storage event, the wellhead gas produced from a CLGC well will consist of three components: Gas Lift Gas, Native Gas, and Storage Gas Production. Both Native Gas and Storage Gas Production are produced from the reservoir, and the combined production is Reservoir Gas.

Wellhead Gas Produced = Gas Lift Gas + Native Gas + Storage Gas Production

Gas Lift Gas is measured continuously for each well. This methodology applies a Gas-Oil-Ratio (GOR) Calculation to determine the Native Gas (owned by the owners of the CLGC well) and Storage Gas Production (owned by the owners of the source wells).

A Well Test Allocation Method will be utilized after a storage event. In the example below, the well tests values are highlighted. The values between are interpolated.

Example

The following data is a simulated, 1-Day storage event.

- 2000 mscf is injected over 24 consecutive hours.
- The well is produced back immediately following a storage event.
- The data has been truncated at 24 days because it is included for illustration purposes.

The input and calculated values for an example well are listed below:

Values	Description
Wellhead Gas Produced, mscf/d	Wellhead gas, measured with well test
Gas Lift Gas, mscf/d	Gas Lift Gas injection, measured with flow meter
Reservoir Gas, mscf/d	Reservoir Gas, the difference between Wellhead Gas and Gas Lift Gas, calculated
Oil, bbl/d	Oil production, measured with well test
Water, bbl/d	Water production, measured with well test
GOR, scf/bbl	Gas Oil Ratio (GOR), engineer calculation based on previous oil and gas well tests before a storage event
Native Gas- GOR Calc, mscf/d	Minimum of Reservoir Gas or Native Gas Production using GOR, calculated
Storage Gas Injection, mscf/d	Storage Gas Injection, measured with flow meter

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Storage Gas Injection Inventory, mscf	Storage Gas Injection Inventory, cumulative amount of storage gas injection minus storage gas production, calculated
Storage Gas Production, mscfd	Storage Gas Production, difference between Reservoir Gas and Calculated Native Gas Production, calculated

Column	1	2	3	4	5	6	7	8	9	10
Calculation or measurement	Well Test	Flow Meter	1-2	Well Test	Well Test	Engineer Analysis	MIN (3,4*6/1000)	Flow Meter	8-10 + 9_PreviousRow	IF(9>0, 3-7,0)
Day	Wellhead Gas Produced, mscf/d	Gas Lift Gas, mscf/d	Reservoir Gas, mscf/d	Oil, bbl/d	Water, bbl/d	GOR, scf/bbl	Native Gas-GOR Calc, mscf/d	Storage Gas Injection, mscf/d	Storage Gas Injection Inventory, mscf	Storage Gas Production, mscfd
-90	626	500	126	63	103	2,005	126	0	0	0
-60	625	500	125	62	101	2,032	125	0	0	0
-30	624	500	124	60	99	2,053	124	0	0	0
1	623	500	123	59	96	2,081	123	0	0	0
2	0	0	0	0	0	2,050	0	2000	2000	0
3	850	500	350	45	80	2,050	92	0	1743	257
4	741	500	241	50	86	2,050	102	0	1604	139
5	713	500	213	52	88	2,050	107	0	1498	106
6	685	500	185	54	91	2,050	111	0	1424	73
7	675	500	175	55	92	2,050	113	0	1362	62
8	665	500	165	56	93	2,050	115	0	1313	50
9	661	500	161	57	93	2,050	116	0	1267	45
10	657	500	157	57	94	2,050	117	0	1227	40
11	653	500	153	57	94	2,050	117	0	1192	35
12	649	500	149	58	95	2,050	118	0	1161	31
13	647	500	147	58	95	2,050	118	0	1133	28
14	645	500	145	58	95	2,050	119	0	1106	26
15	643	500	143	58	95	2,050	119	0	1082	24
16	641	500	141	58	95	2,050	119	0	1060	22
17	640	500	140	58	95	2,050	119	0	1038	21
18	639	500	139	58	94	2,050	119	0	1018	20
19	639	500	139	58	94	2,050	119	0	998	20
20	638	500	138	58	94	2,050	119	0	980	19
21	637	500	137	58	93	2,050	119	0	962	18
22	636	500	136	58	93	2,050	119	0	945	17
23	635	500	135	58	93	2,050	119	0	930	16
24	634	500	134	58	92	2,050	119	0	915	15

Well Test Allocation Method

Following an injection period, the allocation of oil and gas production shall be based on the production life of each CLGC well as measured for three periods: (a) the initial production period shall be measured from the end of the injection period until the peak gas production rate is reached; (b) the plateau period shall be measured from the end of the initial production period to the peak decline rate; and (c) the decline period shall be measured from the end of the plateau period until the well has recovered the previously-injected volume.

During the initial production period, the oil and gas production for each CLGC well shall be allocated using daily well tests or separated and metered individually prior to commingling.

During the plateau period, the oil and gas production for each CLGC well shall be allocated using a production curve calculated from a minimum of three (3) well tests per month. The production curve shall be calculated by interpolating daily production for each day using the known daily production obtained by well tests and shall use a method of interpolation that is at minimum as accurate as maintaining a constant rate of change for each day's production between the known daily production values.

During the decline period, the oil and gas production for each CLGC well shall be allocated using a production curve calculated from a minimum well testing frequency as follows: (a) a minimum of three (3) well tests per month when the decline rate is greater than 22% per month; (b) a minimum of two (2) well tests per month when the decline rate is between 22% and 10% per month; and (c) a minimum of one (1) well test per month when the decline rate is less than 10% per month. The production curve shall be calculated by interpolating daily production for each day using the known daily production obtained by well tests and shall use a method of interpolation that is at minimum as accurate as maintaining a constant rate of change for each day's production between the known daily production values.

Applicant shall conduct a well test by separating and metering the oil and gas production from each well for either (a) a minimum of twenty-four (24) consecutive hours; or (b) a combination of nonconsecutive periods that meet the following conditions: (i) each period shall be a minimum of six (6) hours; and (ii) the total duration of the nonconsecutive periods shall be a minimum of eighteen (18) hours.

BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Exhibit No. B5
Submitted by: OXY USA INC.
Hearing Date: September 09, 2021
Case No 22152

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. 22152

AFFIDAVIT

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

Adam G. Rankin, attorney in fact and authorized representative of OXY USA Inc, the Applicant herein, being first duly sworn, upon oath, states that the above-referenced Application has been provided under the notice letters and proof of receipts attached hereto.

Adam G. Rankin

SUBSCRIBED AND SWORN to before me this 7th day of September, 2021 by Adam G. Rankin.

Notary Public

My Commission Expires:

January 28, 2023

OFFICIAL SEAL
ANNA K. STORM
NOTARY PUBLIC - STATE OF NEW MEXICO
My Commission Expires: January 28, 2023

BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Exhibit No. B6
Submitted by: OXY USA INC.
Hearing Date: September 09, 2021
Case No 22152

HOLLAND&HART LLP

Adam G. Rankin
Phone (505) 988-4421
agrankin@hollandhart.com

August 20, 2021

VIA CERTIFIED MAIL
CERTIFIED RECEIPT REQUESTED

TO: ALL AFFECTED PARTIES

Re: Application of OXY USA Inc. for Closed Loop Gas Capture Injection Pilot Project, Eddy County, New Mexico.
Patton MDP1 "17" Federal 1H, 4H, 5H, 176H wells, Patton MDP1 "18" Federal 1H, 2H, 3H, 5H, 7H, 23H, 33H wells

Ladies & Gentlemen:

This letter is to advise you that OXY USA Inc. has filed the enclosed application with the New Mexico Oil Conservation Division.

During the COVID-19 Public Health Emergency, state buildings are closed to the public and hearings will be conducted remotely. The hearing will be conducted on September 9, 2021 beginning at 8:15 a.m., until it is concluded. To participate in the electronic hearing, see the instructions posted on the OCD Hearings website: https://www.emnrd.nm.gov/ocd/hearing-info/.

You are not required to attend this hearing, but as an owner of an interest that may be affected by this application, you may appear and present testimony. Failure to appear at that time and become a party of record will preclude you from challenging the matter at a later date. Parties appearing in cases are required by Division Rule 19.15.4.13.B to file a Pre-hearing Statement four business days in advance of a scheduled hearing. This statement must be filed online or in person at the Division's Santa Fe office and should include: the names of the parties and their attorneys; a concise statement of the case; the names of all witnesses the party will call to testify at the hearing; the approximate time the party will need to present its case; and identification of any procedural matters that are to be resolved prior to the hearing.

If you have any questions about this matter, please contact Stephen Janacek, at (713) 497-2417, or Stephen_Janacek@OXY.com.

Sincerely,

Adam G. Rankin
ATTORNEY FOR OXY USA INC.

Oxy - Closed Loop Gas Capture Sand Dunes Patton
Case no. 22152 Postal Delivery Report

TrackingNo	ToName	DeliveryAddress	City	State	Zip	USPS_Status
9402811898765800080718	Devon Sfs Operating Inc	20 N Broadway Ste 1500	Oklahoma City	OK	73102-9213	Your package is moving within the USPS network and is on track to be delivered to its final destination. It is currently in transit to the next facility.
9402811898765800080831	Cog Production, Llc	600 W Illinois Ave	Midland	TX	79701-4882	Your item was picked up at a postal facility at 8:34 am on August 24, 2021 in MIDLAND, TX 79702.
9402811898765800080886	Chevron Usa Inc.	6301 Deauville	Midland	TX	79706-2964	Your item was delivered to the front desk, reception area, or mail room at 3:23 pm on August 24, 2021 in MIDLAND, TX 79706.
9402811898765800080848	Chesapeake Operating, Inc.	PO Box 11050	Midland	TX	79702-8050	Your package will arrive later than expected, but is still on its way. It is currently in transit to the next facility.
9402811898765800080893	Burlington Resources Oil & Gas Company Lp	PO Box 2197	Houston	TX	77252-2197	Your item was picked up at a postal facility at 7:50 am on August 27, 2021 in HOUSTON, TX 77002.
9402811898765800080800	Burlington Resources Oil & Gas Co	PO Box 51810	Midland	TX	79710-1810	Your package is moving within the USPS network and is on track to be delivered to its final destination. It is currently in transit to the next facility.
9402811898765800080121	XTO Delaware Basin LLC	6401 Holiday Hill Rd	Midland	TX	79707-2156	Your item was delivered to an individual at the address at 1:01 pm on August 24, 2021 in MIDLAND, TX 79707.
9402811898765800080169	Suzanne Thomas	3936 Byron St	Houston	TX	77005-3628	This is a reminder to arrange for redelivery of your item or your item will be returned to sender.
9402811898765800080114	State Land Office	PO Box 1148	Santa Fe	NM	87504-1148	Your item was picked up at a postal facility at 6:49 am on August 24, 2021 in SANTA FE, NM 87501.
9402811898765800080671	Plains Production Inc.	1313 Campbell Rd Bldg D	Houston	TX	77055-6458	Your item was delivered to an individual at the address at 4:30 pm on August 23, 2021 in HOUSTON, TX 77055.
9402811898765800080633	PENROC OIL CORP	PO Box 2769	Hobbs	NM	88241-2769	Your item was delivered at 1:14 pm on August 24, 2021 in HOBBS, NM 88240.
9402811898765800080688	Merit Energy Partners IV LP	13727 Noel Rd Ste 500	Dallas	TX	75240-7312	Your item was delivered to an individual at the address at 2:54 pm on August 24, 2021 in DALLAS, TX 75240.
9402811898765800080640	Merit Energy Partners III LP	13727 Noel Rd Ste 500	Dallas	TX	75240-7312	Your item was delivered to an individual at the address at 2:54 pm on August 24, 2021 in DALLAS, TX 75240.
9402811898765800080695	Merit Energy Partners II LP	13727 Noel Rd Ste 500	Dallas	TX	75240-7312	Your item was delivered to an individual at the address at 2:54 pm on August 24, 2021 in DALLAS, TX 75240.
9402811898765800080602	Merit Energy Partners	13727 Noel Rd Ste 500	Dallas	TX	75240-7312	Your item was delivered to an individual at the address at 2:54 pm on August 24, 2021 in DALLAS, TX 75240.
9402811898765800080626	McCombs Energy LTD	750 E Mulberry Ave Ste 403	San Antonio	TX	78212-3105	Your item was delivered to the front desk, reception area, or mail room at 11:42 am on August 24, 2021 in SAN ANTONIO, TX 78212.
9402811898765800080824	BOPCO, L.P.	6401 Holiday Hill Rd Bldg 5	Midland	TX	79707-2157	Your item was delivered to the front desk, reception area, or mail room at 2:17 pm on August 23, 2021 in MIDLAND, TX 79707.
9402811898765800080664	Grasslands Energy LP	5128 Apache Plume Rd	Fort Worth	TX	76109-1580	Your item was delivered to an individual at the address at 11:50 am on August 26, 2021 in FORT WORTH, TX 76109.
9402811898765800080657	Franklin Mountain Energy LLC	44 Cook St Ste 1000	Denver	CO	80206-5827	Your item was delivered to the front desk, reception area, or mail room at 10:27 am on August 24, 2021 in DENVER, CO 80206.
9402811898765800080619	Fortson Oil Co	301 Commerce St Ste 3301	Fort Worth	TX	76102-4133	Your package will arrive later than expected, but is still on its way. It is currently in transit to the next facility.
9402811898765800080978	Finley Production Co LP	PO Box 2200	Fort Worth	TX	76113-2200	Your item has been delivered and is available at a PO Box at 9:32 am on August 25, 2021 in FORT WORTH, TX 76102.
9402811898765800080930	EP Energy E&P Co. LP	PO Box 4660	Houston	TX	77210-4660	Your item was picked up at a postal facility at 4:26 am on August 27, 2021 in HOUSTON, TX 77002.
9402811898765800080985	EOG Resources Inc.	PO Box 840321	Dallas	TX	75284-0321	Your item was delivered at 5:28 am on August 26, 2021 in DALLAS, TX 75266.
9402811898765800080947	EOG Resources Inc.	PO Box 2267	Midland	TX	79702-2267	Your item was picked up at a postal facility at 7:50 am on August 26, 2021 in MIDLAND, TX 79702.
9402811898765800080992	Devon Energy Production Company LP	333 W Sheridan Ave	Oklahoma City	OK	73102-5010	Your item was delivered at 8:32 am on August 24, 2021 in OKLAHOMA CITY, OK 73102.
9402811898765800080909	Chevron USA Inc.	PO Box 730436	Dallas	TX	75373-0436	Your item was delivered at 3:16 am on August 26, 2021 in DALLAS, TX 75266.
9402811898765800080961	Chesapeake Exploration LLC	6100 N Western Ave	Oklahoma City	OK	73118-1044	Your item was picked up at a postal facility at 6:18 am on August 25, 2021 in OKLAHOMA CITY, OK 73118.
9402811898765800080862	BEPCO, LP	PO Box 2760	Midland	TX	79702-2760	This is a reminder to arrange for redelivery of your item or your item will be returned to sender.
9402811898765800080954	Bettis Brothers Inc.	500 W Texas Ave Ste 830	Midland	TX	79701-4276	Your item was delivered to an individual at the address at 2:22 pm on August 24, 2021 in MIDLAND, TX 79701.
9402811898765800080916	AGS Resources 2004 LLLP	10 Inverness Dr E	Englewood	CO	80112-5610	Your item was delivered to an individual at the address at 3:09 pm on August 23, 2021 in ENGLEWOOD, CO 80112.
9402811898765800080770	Xto Permian Operating Llc.	6401 Holiday Hill Rd Bldg 5	Midland	TX	79707-2157	Your item was delivered to an individual at the address at 1:01 pm on August 24, 2021 in MIDLAND, TX 79707.
9402811898765800080732	Santa Fe Energy Operating Partners L P	1616 S Voss Rd Ste 600	Houston	TX	77057-2620	Your item was forwarded to a different address at 4:08 pm on August 24, 2021 in HOUSTON, TX. This was because of forwarding instructions or because the address or ZIP Code on the label was incorrect.
9402811898765800080787	Pogo Producing Co	PO Box 10340	Midland	TX	79702-7340	Your item was returned to the sender on August 24, 2021 at 1:17 pm in MIDLAND, TX 79702 because the addressee moved and left no forwarding address.

Oxy - Closed Loop Gas Capture Sand Dunes Patton
Case no. 22152 Postal Delivery Report

9402811898765800080794	Ngl Water Solutions Permian, Llc	865 Albion St Ste 400	Denver	CO	80220-4809	The U.S. Postal Service was electronically notified by the shipper on August 21, 2021 to expect your package for mailing. This does not indicate receipt by the USPS or the actual mailing date. Delivery status information will be provided if/when available.
9402811898765800080725	Kaiser-Francis Oil Co	PO Box 21468	Tulsa	OK	74121-1468	Your item was picked up at a postal facility at 5:44 am on August 25, 2021 in TULSA, OK 74103.
9402811898765800080763	Eog Y Resources, Inc.	104 S 4th St	Artesia	NM	88210-2123	Your item was delivered to the front desk, reception area, or mail room at 7:45 am on August 24, 2021 in ARTESIA, NM 88210.
9402811898765800080756	Eog Resources Inc	PO Box 2267	Midland	TX	79702-2267	Your item was picked up at a postal facility at 7:50 am on August 26, 2021 in MIDLAND, TX 79702.
9402811898765800080855	BLM	620 E Greene St	Carlsbad	NM	88220-6292	Your item was delivered to an individual at the address at 1:01 pm on August 24, 2021 in CARLSBAD, NM 88220.

Carlsbad Current Argus.

Affidavit of Publication

Ad # 0004880654

This is not an invoice

HOLLAND AND HART
POBOX 2208

SANTA FE, NM 87504

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

08/24/2021

Legal Clerk

Subscribed and sworn before me this August 24, 2021:

State of WI, County of Brown
NOTARY PUBLIC

1-7-25
My commission expires

KATHLEEN ALLEN
Notary Public
State of Wisconsin

Ad # 0004880654
PO #:
# of Affidavits 1

This is not an invoice

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

The State of New Mexico, Energy Minerals and Natural Resources Department, Oil Conservation Division ("Division") hereby gives notice that the Division will hold public hearings before a hearing examiner on the following case. During the COVID-19 Public Health Emergency, state buildings are closed to the public and Division hearings will be conducted remotely. The public hearing for the following case will be electronic and conducted remotely. The hearing will be conducted on **Thursday, September 9, 2021, beginning at 8:15 a.m.** To participate in the electronic hearing, see the instructions posted below. The docket may be viewed at https://www.emnrd.nm.gov/ocd/hearing-info/ or obtained from Marlene Salvidrez, at Marlene.Salvidrez@state.nm.us. Documents filed in the case may be viewed at http://ocdimage.emnrd.state.nm.us/imaging/CaseFileCriteria.aspx. If you are an individual with a disability who needs a reader, amplifier, qualified sign language interpreter, or other form of auxiliary aid or service to attend or participate in a hearing, contact Marlene Salvidrez at Marlene.Salvidrez@state.nm.us, or the New Mexico Relay Network at 1-800-659-1779, no later than **August 29, 2021.**

Persons may view and participate in the hearings through the following link:

https://nmemnrd.webex.com/nmemnrd/onstage/g.php?MTID=e379adae1410a8aecfd0fe5582b1917ea
Event number: 146 427 9260
Event password: HxJBs523k3Y

Join by video: 1464279260@nmemnrd.webex.com
Numeric Password: 857180
You can also dial 173.243.2.68 and enter your meeting number

Join by audio: 1-844-992-4726 United States Toll Free Access code: 146 427 9260

STATE OF NEW MEXICO TO:
All named parties and persons having any right, title, interest or claim in the following case and notice to the public.

(NOTE: All land descriptions herein refer to the New Mexico Principal Meridian whether or not so stated.)

To: All affected parties, including: BLM; BEPCO, LP; BOPCO, L.P.; Burlington Resources Oil & Gas Co; Burlington Resources Oil & Gas Company LP; Chesapeake Operating, Inc.; Chevron USA Inc.; COG Production, LLC; Devon SFS Operating Inc; EOG Resources Inc; EOG Y Resources, Inc.; Kaiser-Francis Oil Co; NGL Water Solutions Permian, LLC; Pogo Producing Co; Pogo Producing Company LLC; Santa Fe Energy Operating Partners LP; XTO Permian Operating LLC.; AGS Resources 2004 LLLP; Bettis Brothers Inc.; Chesapeake Exploration LLC; Devon Energy Production Company LP; EP Energy E&P Co. LP; Finley Production Co LP; Fortson Oil Co; Franklin Mountain Energy LLC; Grasslands Energy LP; McCombs Energy LTD; Merit Energy Partners; Merit Energy Partners II LP; Merit Energy Partners III LP; Merit Energy Partners IV LP; Penroc Oil Corp; Plains Production Inc.; State Land Office; Suzanne Thomas, her heirs and devisees; and XTO Delaware Basin LLC.

Case No. 22152: 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 1,120-acre, more or less, project area for this pilot project consisting of the W/2 W/2 and the E/2 of Section 17, and Section 18, Township 24 South, Range 31 East, NMPM, Eddy Coun-

ty, New Mexico, by occasionally injecting into the following wells:

- **The Patton MDP1 "17" Federal #1H well** (API No. 30-015-44459) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 170 feet FSL and 846 feet FWL (Unit M) in Section 8, and a bottom hole location 196 feet FSL and 484 feet FWL (Unit M) in Section 17.
- **The Patton MDP1 "17" Federal #4H well** (API No. 30-015-44497) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 432 feet FSL and 2,292 feet FWL (Unit N) in Section 8, and a bottom hole location 219 feet FSL and 2,158 feet FEL (Unit O) in Section 17.
- **The Patton MDP1 "17" Federal #5H well** (API No. 30-015-44444) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 834 feet FSL and 1,585 feet FEL (Unit O) in Section 8, and a bottom hole location 214 feet FSL and 1,211 feet FEL (Unit P) in Section 17.
- **The Patton MDP1 "17" Federal #176H well** (API No. 30-015-45079) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 772 feet FNL and 1,297 feet FEL (Unit A) in Section 17, and a bottom hole location 31 feet FSL and 353 feet FEL (Unit P) in Section 17.
- **The Patton MDP1 "18" Federal #1H well** (API No. 30-015-44317) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 609 feet FSL and 712 feet FWL (Lot 4) in Section 7, and a bottom hole location 209 feet FSL and 462 feet FWL (Lot 4) in Section 18.
- **The Patton MDP1 "18" Federal #2H well** (API No. 30-015-44337) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 170 feet FNL and 1,898 feet FWL (Unit C) in Section 18, and a bottom hole location 205 feet FSL and 1,466 feet FWL (Unit N) in Section 18.
- **The Patton MDP1 "18" Federal #3H well** (API No. 30-015-44333) [Cotton

Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 170 feet FNL and 1,928 feet FWL (Unit C) in Section 18, and a bottom hole location 200 feet FSL and 2,513 feet FWL (Unit N) in Section 18.

- **The Patton MDP1 "18" Federal #5H well** (API No. 30-015-44272) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 150 feet FNL and 285 feet FEL (Unit A) in Section 18, and a bottom hole location 20 feet FSL and 1,035 feet FEL (Unit P) in Section 18.
- **The Patton MDP1 "18" Federal #7H well** (API No. 30-015-44273) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 150 feet FNL and 255 feet FEL (Unit A) in Section 18, and a bottom hole location 51 feet FSL and 402 feet FEL (Unit P) in Section 18.
- **The Patton MDP1 "18" Federal #23H well** (API No. 30-015-44316) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 335 feet FNL and 2,122 feet FEL (Unit B) in Section 18, and a bottom hole location 192 feet FSL and 2,212 feet FEL (Unit O) in Section 18.
- **The Patton MDP1 "18" Federal #33H well** (API No. 30-015-44338) [Cotton Draw; Bone Spring Pool (Pool Code 13367)], with a surface location 335 feet FNL and 2,062 feet FEL (Unit B) in Section 18, and a bottom hole location 126 feet FSL and 1,350 feet FEL (Unit O) in Section 18.

OXY seeks authority to utilize this producing well to occasionally inject produced gas into the Bone Spring formation at true vertical depths of between approximately 8,150 feet to 11,500 feet along the horizontal portion of each wellbore at surface injection pressures of no more than 1,200 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.
#4880654, Current Argus, August 24, 2021

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. 22152

AFFIDAVIT OF TONY TROUTMAN

I, Tony Troutman, of lawful age and being first duly sworn, declare as follows:

1. My name is Tony Troutman. I work for OXY USA, Inc. ("OXY"), as a petroleum geologist.

2. I have previously testified before the New Mexico Oil Conservation Division as an expert witness in petroleum geology.

3. I am familiar with the application filed by OXY in this case for approval of a closed loop gas capture injection pilot project in the Bone Spring formation, and I have conducted a geologic study of the lands in the subject area that is included in ***Exhibit A*** to OXY's application. My analysis and conclusions are summarized at pages 77-82 of the Exhibit.

4. 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 my analysis. *See* ***Exhibit A*** at 77-82.

5. Page 77 of ***Exhibit A*** depicts a type log for the project area, showing the proposed injection zones, adjacent oil and gas zones, and confining layers. The proposed injection zone is in the Avalon Shale and the 2nd Bone Spring Sand, sub-units of the larger Bone Spring Formation. Adjacent oil and gas zones to the Avalon are the underlying 1st Bone Spring Sand, and overlying

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Avalon Sand and Brushy Canyon Formation. Adjacent oil and gas zones for the 2nd Bone Spring Sand are the overlying 1st Bone Spring Sand and underlying 3rd Bone Spring Sand. Confining layers that will prevent migration of injected gas into adjacent oil and gas zones are the overlying Avalon shales and carbonates, and the underlying 3rd Bone Spring Limestone Member. Between the Avalon Shale Member and the 2nd Bone Spring Sand Member are the 1st and 2nd Bone Spring Lime Members which serve as barriers between the two injection zones.

6. Page 78 is a cross-section map using five representative wells in the pilot project area as shown on the following page. This cross section indicates that the Bone Spring Formation containing the Avalon Shale Member and the 2nd Bone Spring Sand Member dips to the east and maintains a consistent thickness across the project area. There is no evidence of faults, pinch-outs, or other potential pathways for out-of-zone migration indicated by the cross-sections.

7. Page 79 is a structure map on the top of the Avalon Shale that shows the structure gently dipping to the east. There is no evidence of faults, pinch-outs, or other potential pathways for out-of-zone migration indicated by the structure map.

8. In this proposed CLGC Project, the following wells will inject into the Avalon Shale at the following depths:

- Patton MDP1 18 Federal 33H: 8,850 ft. to 8,878 ft. TVD
- Patton MDP1 17 Federal 176H: ST01 8,828 ft. to 8976 ft. TVD

The following wells will inject into the 2nd Bone Spring Sand at the following depths:

- Patton MDP1 18 Federal 1H:9,899 ft. to 10,058 ft. TVD
- Patton MDP1 18 Federal 2H:9,991 ft. to 10,084 ft. TVD
- Patton MDP1 18 Federal 3H:9,896 ft. and 10,010 ft. TVD
- Patton MDP1 18 Federal 5H: 9,950 ft. and 10,014 ft. TVD

- Patton MDP1 18 Federal 7H: 10,016 ft. and 10,021 ft. TVD
- Patton MDP1 18 Federal 23H: 10,235 ft. and 10,282 ft. TVD
- Patton MDP1 17 Federal 1H 9,979 ft. to 9,995 ft TVD
- Patton MDP1 17 Federal 5H 10,056 ft. to 10,056 ft. TVD
- Patton MDP1 17 Federal 4H 10,037 ft. to 10,064 ft. TVD

9. The proposed injection intervals are in an unconventional reservoir composed of very fine-grained quartz-rich and brittle siltstone. *See* ***Exhibit A*** at 80-81. Low-permeability barriers to fluid flow exist within the Bone Spring Formation above and below the proposed injection intervals. Above the Avalon Shale, the highest of the two intervals, the Bone Spring Formation consists of fine-grained siltstones and carbonate mudstones that have very low permeabilities with an average thickness of 300 feet and provide isolation from the overlying productive Avalon Sand and Brushy Canyon Formation. Above the Brushy Canyon Formation are impermeable anhydrite, gypsum, and salt layers of the Castile, Salado, and Rustler Formations. 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. Below the Avalon Shale is the First Bone Spring Lime, a low permeability, approximately 200-foot thick carbonate-rich interval which provides isolation from the underlying productive First Bone Spring Sand.

10. The 2nd Bone Spring Sand injection interval is isolated from overlying 1st Bone Spring Sand reservoir by the 2nd Bone Spring Lime member of the Bone Spring Formation. This mudstone unit has very low permeability and averages 200-feet in thickness. Below the 2nd Bone Spring Sand interval is the 3rd Bone Spring Lime of low permeability carbonate mudstones averaging 600 feet in thickness. *See* ***Exhibit A*** *at 81*.

11. Laterally, the injection will be contained in the reservoir volume that has been previously and partially depleted by the CLGC wells. The low-permeability reservoir will be the primary constraint on movement of the injection gas and is expected to contain the injected gas within the pilot project area. *See* ***Exhibit A*** at 77-82.

12. My analysis concludes that the Bone Spring formation in this area is suitable for the proposed CLGC Project and that there are geologic barriers that will contain the proposed injection within the Bone Spring formation. *See* ***Exhibit A*** at 80-81.

13. I have 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 82.

14. In my opinion, the granting of OXY's application in this case is in the best interest of conservation, the prevention of waste, and protection of correlative rights.

15. Pages 77 through 82 of **Exhibit A** were either prepared by me or compiled under my direction and supervision.

FURTHER AFFIANT SAYETH NOT.

Tony Troutman

STATE OF TEXAS)
)
COUNTY OF Harris)

SUBSCRIBED and SWORN to before me this 1st day of September 2021 by Tony Troutman.

NOTARY PUBLIC

My Commission Expires:

02-08-2025

NUBIA SMITH
My Notary ID # 130998946
Expires February 8, 2025

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. 22152

AFFIDAVIT OF XUEYING XIE

I, Xueying Xie, of lawful age and being first duly sworn, declares as follows:

1. My name is Xueying Xie and I am employed by Oxy USA Inc. ("OXY") as a reservoir engineer.

2. I have previously testified before the New Mexico Oil Conservation Division as an expert witness.

3. I am familiar with the application filed by OXY in this case and the Division guidance regarding closed loop gas capture injection (CLGC) projects such as this one. I have conducted an engineering study of the reservoir to evaluate the potential effects of the proposed temporary injection on the reservoir and future production. The conclusions I have drawn from my analysis are summarized in pages 82-94 in ***Exhibit A*** attached to OXY's application.

4. I have 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 82.

5. The CLGC project will inject produced gas into horizontal wells with 5000 ft laterals and into the productive zone of the Bone Spring formations of Avalon and 2nd Bone Spring Sand. We applied simulation modeling techniques to investigate gas movement in the

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injection zone and any potential impacts on production performance of the CLGC wells and direct offset wells.

6. The model utilized data from our Cedar Canyon Section 16 Gas EOR Project ("CC 16 EOR Project") for verification. The CC 16 EOR Project began in 2017. It is located 10-11 miles away from the South Corridor CLGC project area. The bottom left box of page 86 shows the reservoir properties and conditions of the Bone Spring formation at the CC 16 EOR Project. In general, the Cedar Canyon and South Corridor areas have very similar reservoir properties, except the Avalon Shale in South Corridor has a permeability less than 0.001mD. The section, location, and well layout for the CC 16 EOR Project are shown on page 85. In this EOR project, Cedar Canyon 16-7H injected produced gas for five months in 2017 at a rate of 7 mmscf/d. After the five months of EOR gas injection, the final surface tubing head pressure was 4100 psi and bottom hole pressure was about 5000 psi. The simulation model incorporated both the primary production history of wells in the CC 16 EOR Project area and the EOR gas injection history with gas communication occurring between the EOR injection well and offset producing wells. During the first three months of EOR gas injection, there was no observed gas communication. However, after three months of EOR gas injection, there was gas communication in offset producers and the model was able to predict it. This gives us confidence in the ability of the model to predict impacts on offset wells resulting from CLGC operations.

7. The reservoir model is a full section model with five wells. The top right of page 86 shows the 3D model grid. It has 56 layers and over a million cells. The four plots in the bottom right show history match results of all five wells in the CC 16 EOR project area. The dots represent historical field data and the curves are modeling results. The first three plots show the primary production match from 2013 to 2017 for all five wells in the section. The green plot

shows oil rate match, the blue plot shows water rate match, and the red plot shows gas rate match. The bottom right plot shows gas injection bottom hole pressure match of EOR gas injection in 2017. The model shows a good match for all rates and pressure.

8. With the high EOR gas injection rates and injection pressures in the CC 16 EOR Project, the reservoir simulation model was created to capture the gas communication between injection wells and the offset producers. This modeling improved our understanding of the complexity of connected fractures based on actual field response. The model was used to simulate the effects of CLGC operations in the South Corridor and other areas, since the reservoirs have similar properties. We believe the model should be able to predict communication caused by CLGC operations because it was "tuned" based on actual gas communication between wells. First, we created a base case for normal production without any gas injection. Then we ran numerous gas injection cases to simulate CLGC operations and compared those with the base case to determine the impact on well production rate and recovery in both CLGC wells and offset wells. To further validate our injection rate assumptions, we integrated the reservoir model with a Prosper wellbore model to predict the injection rate at a wellhead injection pressure of 1200 psi. The results are shown on the plot of page 88. For a 5000 ft lateral length well (representative of our proposed South Corridor CLGC wells), 1.5 (rounded to 2) mmscf/day is the predicted max injection rate. It declines to about 50% of the initial value after three weeks of injection. Despite the injection rate decline over time, Oxy ran all cases in the model with flat injection rates to simulate worst-case scenarios. The results of these model runs are shown on page 91 and discussed more fully below.

9. Reservoir modeling indicates the horizontal movement of injected gas is anticipated to be approximately 100 feet or less from each CLGC wellbore within the

Bone Spring formation. *See* ***Exhibit A*** at 89. This is illustrated by comparing gas saturation pre-injection and post-injection. The top left plot on page 89 shows pre-injection gas saturation. The wellbores are depicted as east-west lines, and the numerous hydraulic fractures created in each wellbore are shown as NE-SW angled lines. The blue color shows no gas while the cyan color shows gas exists in the fractures. A warmer color indicates a higher gas saturation. The middle plot shows gas saturation after one week of 3 mmscf/d of injection. The gas injected into the middle well and the fractures near wellbore show a warmer color. The bottom plots have a magnified view of the CLGC well gas saturation for a clearer comparison. We can clearly see that the fractures near wellbore in the injection case have a warmer color than those of the pre-injection case. Additionally, further away from the CLGC wellbore, there is no gas saturation change in the factures even though there are connected fractures between wells. This is because the injected gas volume during CLGC operations is too small to move very far away from the CLGC wellbore. And even when we have fracture communication between wells, there is not very high conductivity for immediate gas communication as was observed in our CC 16 EOR project which had a much higher injection rate and pressure. The gas storage injection in South Corridor will occur at a much lower rate (<2 mmscf/d) for a shorter period of time with much lower tubing head pressure (1200psi) compared with CC 16 EOR Project in 2017, so it is not unexpected that the model shows no gas communication. Finally, after a long period of production following a gas storage event, the gas saturation in the near wellbore of CLGC wells is restored to pre-injection values as shown in the plot on

the upper right of page 89. This is because the majority of injected gas has been recovered.

10. The pressure map plots of page 90 tell the same story as the gas saturation map plots. With gas injection, the pressure increases only in the fractures nearest the wellbore within 100 feet of the CLGC well.

11. We modeled all possible CLGC scenarios including different well spacing (from 4-8 Wells Per Section, or "WPS"), single well injection, multi-well injection, and a worst case with a higher injection rate and a longer injection period than historical upsets. The modeling results are summarized in the table on page 91 and in each case show no impact. South Corridor wells have well spacing of 6-7 WPS, and the model scenarios even tested narrower spacing of 8 WPS which still shows no impact. For the injection parameters, all possible scenarios— including the worst-case gas storage scenario—have much lower injection volumes and injection pressures compared to CC 16 EOR Project. In conclusion, the analysis indicates that there will be no change in the oil recovery from each of its proposed injection wells or from any of the offsetting wells because of CLGC operations. *See id.* at 91.

12. As a cross-check of the model results, I prepared an analysis of the expected gas storage capacity in the fracture network of the CLGC well relative to the gas injection volumes for the worst-case injection scenario lasting twenty days. *See* ***Exhibit A*** at 92. My 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 considerably less than the estimated volume capacity for gas storage within the project area.

13. Fracture dimensions are predicted by a fracture model software package called Gohfer, which is based on reservoir geo-mechanical properties and actual well hydraulic fracturing procedure history matching. The fracture dimensions for Bone Spring wells at different zones are shown at page 93. The table on the right show Stimulated Reservoir Volume (SRV) for each individual CLGC well, which is around 1 billion cubic feet.

14. In my analysis, examining the available geologic and engineering data, I have determined that the total recoverable volume of hydrocarbons from the reservoir will not be adversely affected by the pilot project and that the gas composition of the injected gas will not damage the reservoir. *See* ***Exhibit A*** at 94.

15. Pages 82 through 94 of **Exhibit A** were either prepared by me or compiled under my direction and supervision.

FURTHER AFFIANT SAYETH NOT.

Xueying Xie

Xueying Xie

STATE OF TEXAS)
)
COUNTY OF Harris)

SUBSCRIBED and SWORN to before me this 7th day of September 2021, by XUEYING XIE.

IGNACIO BONILLA NOTARY PUBLIC STATE OF TEXAS NOTARY ID 130150206 MY COMM. EXP. 04-08-2023

NOTARY PUBLIC

My Commission Expires:

04/18/2023