

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

**IN THE MATTER OF THE HEARING CALLED BY
THE OIL CONSERVATION DIVISION FOR THE
PURPOSE OF CONSIDERING:**

**APPLICATION OF OXY USA INC. FOR APPROVAL
OF INJECTION AUTHORITY FOR THE MESA
VERDE BONE SPRING RESOURCE
DEVELOPMENT UNIT FOR ENHANCED OIL
RECOVERY, EDDY AND LEA COUNTIES, NEW
MEXICO.**

**CASE NO. 25222
ORDER NO. R-24270**

ORDER OF THE DIVISION

This case came in for hearing before the Oil Conservation Division (“OCD”) at 1:30 p.m. on August 12, 2025, in Santa Fe, New Mexico.

The OCD Director, having considered the testimony, the record, the recommendations of Hearing Examiner, these findings of fact, and conclusions of law, issues this Order.

FINDINGS

1. Due public notice has been given and the Division has jurisdiction of this case and its subject matter.
2. Case Nos. 25222 and 25225 were consolidated for the purpose of hearing but separate orders shall be issued for each case.
3. In Case No. 25222, OXY USA Inc. (“OXY” or “Applicant”) filed the application for authorization to inject water and produced gas for purposes of enhanced oil recovery (“EOR”) within the Unitized Interval of the Mesa Verde Bone Spring Resource Development Unit (“Unit”) area. The Unit is located approximately five miles west of Jal, New Mexico. The Project Area comprises 3461.80 acres, more or less, of federal and state lands in Eddy and Lea Counties, New Mexico:

Township 24 South, Range 31 East, NMPM
Section 13: All

Township 24 South, Range 32 East, NMPM

Section 7: SE/4, E/2NE/4
 Section 8: All
 Section 9: W/2
 Section 16: W/2
 Section 17: All
 Section 18: All

4. The Unit is approved by Order No. R-14500 (Case No. 15798) on November 13, 2017. With approval of the order, OXY (OGRID No. 16696) is designated the Unit operator.

5. Through their application and exhibits, OXY seeks the following:

a. To establish an EOR project for injection within the Unitized Interval of the Mesa Verde; Bone Spring pool (Pool code 96229). The Unitized Interval is the Bone Spring formation as identified by the log run in the Heavy Metal 14 Federal Well No. 1 (API No. 30-015-29603) located in the NE/4 of SE/4 of Section 14, Township 24 South, Range 31 East, Eddy County, New Mexico, with the top of the Unitized Interval being found at a depth of 8,445 feet below the surface and the base of the Unitized Interval being found at a depth of 11,830 feet below the surface.

b. OXY requests authority to inject produced gas and water within the Unitized Interval at the following maximum surface injection pressures in the corresponding zones designated by OXY as the Avalon, First Bone Spring Sand (“1BSS”), Second Bone Spring Sand (“2BSS”), Third Bone Spring Sand (“3BSS”), and Third Bone Spring Lime (“3BSL”).

Zone	Maximum Surface Injection Pressure (PSI)	
	Hydrocarbon Gas	Water
Avalon	4,510	1,813
1BSS	4,810	1,949
2BSS	4,980	2,022
3BSS & 3BSL	5,700	2,361

[Where “PSI” is pounds per square inch]

c. OXY seeks authority to inject at the following maximum and average rates:

Injectant	Maximum Rate	Average Rate
Hydrocarbon Gas	45 MMSCFD	22 MMSCFD
Water	6,500 BWPD	5,000 BWPD

[Where “MMSCFD” is million standard cubic feet per day and “BWPD” is barrels of water per day]

6. The Unit has twenty-nine (29) active horizontal wells completed in the Bone Spring formation. OXY seeks to convert seven (7) of these producing horizontal wells into injection wells to implement a “huff and puff” enhanced oil recovery project. OXY intends to periodically inject water, carbon dioxide (“CO₂”), and produced gas into the Bone Spring formation within the Unitized Interval through one or more of these wells followed by a period of flowback and production. The proposed injection wells (“Wells”) identified in the Revised Application are as follows:

Well	API Number	Well Name	Zone
1	30-025-44101	Mesa Verde Bone Spring Unit No. 1H	Avalon
2	30-025-44196	Mesa Verde Bone Spring Unit No. 2H	3BSS
3	30-025-44183	Mesa Verde Bone Spring Unit No. 3H	Avalon
4	30-025-44064	Mesa Verde Bone Spring Unit No. 4H	2BSS
5	30-025-44185	Mesa Verde Bone Spring Unit No. 5H	2BSS
6	30-025-44042	Mesa Verde Bone Spring Unit No. 6H	2BSS
7	30-025-44065	Mesa Verde Bone Spring Unit No. 7H	2BSS

7. Due to facility costs and timing associated with implementing this “huff and puff” injection project, OXY seeks an exception from 19.15.26.12(C) NMAC, which requires actual injection to occur within one (1) year of approval. OXY requests authorization for injection to occur within two (2) years of approval.

8. Pursuant to 19.15.26.8(F)(2) NMAC, OXY requests that additional injection wells in the Project Area be approved administratively, subject to the applicable notice requirements.

9. A copy of the application was provided to all affected parties as required by Division Rules and notice of the hearing on this application was provided in a newspaper of general circulation in Eddy and Lea Counties.

10. Objections to the Application proceeding by affidavit were received from Burlington Resources Oil and Gas, LP; COG Production, LLC; and COG Operating, LLC. The objections were subsequently withdrawn based upon the following revisions of the application by OXY (Revised Application submitted for hearing on August 12, 2025):

a. Removal of Wells in Sections 9 and 16 which resulted in a reduced well count from fifteen (15) to seven (7).

b. Removal of CO₂ from the list of permissible injectants.

c. Downward revision to the maximum injection rates for water and produced gas.

11. With the resolution of the objections, the Revised Application was presented by affidavit at Division hearing on August 12, 2025.

12. In support of the Application, OXY presented exhibits by affidavit and witnesses that provided the following testimony:

a. During testimony, OXY confirmed that all fluids for the EOR project will be sourced from OXY's Central Tank Battery. Furthermore, since all the wells are operated by OXY, and the Bone Spring formation is unitized, and OXY does not anticipate any issues with respect to the allocation of produced gas and/or injected fluids. Furthermore, OXY testified that the Bureau of Land Management ("BLM") has not imposed any reporting requirements for gas production or gas allocation associated with this EOR project.

b. The Project Area includes a Closed Loop Gas Capture ("CLGC") pilot project that was approved through Case No. 22087 and associated Division Order No. R-22106. During testimony, OXY confirmed that all CLGC operations will cease once EOR injection operations commence, and Order No. R-22106 can be terminated.

c. Testimony by OXY confirmed that all of the Bone Spring production wells included in the Application were fracture stimulated. Furthermore, as a result of fracture stimulation operations, OXY did acknowledge that wells completed in the deepest portion of the Bone Spring formation may be in communication with the underlying Wolfcamp formation. However, since OXY holds the working interest for both zones, it should not result in any issues with respect to accounting or allocation.

d. OXY testified that the initial reservoir pressure for the Second Bone Spring interval ranged from approximately 6,000 PSI to 6,200 PSI. As a result of production-to-date, the current reservoir pressure is estimated to be approximately 2,000 PSI.

e. The Technical Examiner questioned OXY regarding Exhibit D-3 and whether the fault that extends from the Wolfcamp formation to the Bone Spring formation is transmissive or sealing. In response, OXY testified that historical production data during completion operations suggests the fault is sealing and does not provide a communication pathway between the two units.

f. In response to a question from the Technical Examiner, OXY testified that CO₂ was removed as an injection fluid because offset operators had concerns with the potential for breakthrough of CO₂.

g. OXY testified that the estimated production uplift associated with the EOR project was determined using a sequential process whereby the reservoir simulator was history-matched to the field's primary production data, followed by a simulation forecast using historical performance data from analogue fields.

h. OXY presented evidence that all adjacent penetrating wells within the one-half mile area of review were properly cased and cemented to prevent vertical migration of injected fluids.

i. OXY identified 20 Points of Diversion (“PODs”), as recorded in the Office of the State Engineer database, within a two-mile radius of the Project Area. However, OXY did not sample any of the identified locations nor characterize the individual hydrologic characteristics of the PODs.

j. OXY provided water analyses from its Mesa Verde Central Tank Battery which indicated that this produced water was compatible with the formation waters in the Unitized Interval and suitable for use as an injection fluid for the EOR project.

13. Following the conclusion of the hearing, Applicant provided supplement information in response to the Technical Examiner’s questions on the following items:

a. Confirmation that mechanical integrity testing (“MIT”) can be performed on the producer/injector “huff and puff” wells with gas lift valves installed.

b. Confirmation that the pressure ratings for the wellhead (Christmas Tree) and wellhead components are suitably designed and/or upgraded to accommodate injection conditions for produced gas and water.

c. Confirmation that OXY will submit a hydrogen sulfide (“H₂S”) contingency plan if H₂S is encountered during the operation of the EOR project in the future.

d. Confirmation that OXY has received approvals from the BLM and the New Mexico State Land Office for the proposed EOR project and were provided a Plan of Development.

e. Confirmation that all pressure trends, alarms and shutdowns are monitored by the Supervisory Control and Data Acquisition (“SCADA”) system. However, the pressure relief valve is a mechanical device not monitored or controlled by the SCADA system and vents to atmosphere through a flare stack.

CONCLUSIONS OF LAW

1. Applicant provided the information required by 19.15.26 NMAC and the Form C-108 for an application to inject produced gas and water for operation of an EOR project.

2. Based upon empirical data from analogue fields, the operation of the proposed EOR project will increase the ultimate recovery from the Mesa Verde Bone Spring Resource Development Unit.

3. The proposed EOR project will, in reasonable probability, result in production of substantially more hydrocarbons from the Project Area that would otherwise not be recovered without the implementation of the proposed project.

4. Applicant complied with the notice requirements of 19.15.4 NMAC.
5. Applicant provided evidence that the existing wells within the AOR are sufficiently cased and cemented such that the operation of the proposed EOR project will not impact fresh water or underground sources of drinking water
6. Applicant affirmed in a sworn statement by a qualified person that it examined the available geologic and engineering data and found no evidence of open faults or other hydrologic connections between the approved injection interval and any underground sources of drinking water.
7. Applicant is in compliance with 19.15.5.9 NMAC.
8. Approval of this application is in the best interests of conservation, the prevention of waste and the protection of correlative rights. Accordingly, the application should be approved.

ORDER

1. The application of OXY USA, Inc. ("OXY" or "Operator") to authorize injection of water and produced gas for enhanced oil recovery ("EOR") within the existing Mesa Verde Bone Spring Resource Development Unit **is hereby approved**. The operation is designated the **Mesa Verde Bone Spring Resource Development Unit Enhanced Recovery Project** ("Project").
2. The Project Area is the same acreage approved for the Mesa Verde Bone Spring Resource Development Unit in Division Order No. R-14500 and comprises 3461.80 acres, more or less, of federal and state lands in Eddy and Lea Counties, New Mexico:

Township 24 South, Range 31 East, NMPM

Section 13: All

Township 24 South, Range 32 East, NMPM

Section 7: SE/4, E/2NE/4

Section 8: All

Section 9: W/2

Section 16: W/2

Section 17: All

Section 18: All

3. The Unitized Interval for the Project shall be the Bone Spring formation as approved in Ordering Paragraph (5) of Division Order R-14500 and as presented in Exhibit C of the Unit Agreement.
4. OXY (OGRID No. 16696) shall be the designated operator of the Project.

5. OXY is authorized to inject produced gas and water within the Unitized Interval through plastic-lined tubing and packer. The packer shall be set at a depth as close to the first perforation as practical and below the base of the confining zone for the Unitized Interval. The annular space between the tubing and the production casing shall contain packer fluid for the initial gas injection cycle with the packer fluid displaced once the first gas lift operation commences. OCD shall approve the request not to replace the packer fluid for subsequent injection/production cycles with the condition for bradenhead monitoring as stipulated in Ordering Paragraph (11c).

6. OXY is authorized to inject the following approved fluids with the listed maximum surface injection pressures (“MSIP”) for the corresponding Bone Spring subdivisions (“Zone”) as defined by OXY in Exhibit No. D-1 of the Revised Application provided at hearing : the Avalon, the First Bone Spring Sand (“1BSS”), the Second Bone Spring Sand (“2BSS”), the Third Bone Spring Sand (“3BSS”), and the Third Bone Spring Lime (“3BSL”).

Zone	Maximum Surface Injection Pressure (PSI)	
	Hydrocarbon Gas	Water
Avalon	4,510	1,813
1BSS	4,810	1,949
2BSS	4,980	2,022
3BSS & 3BSL	5,700	2,361

7. OXY is authorized to inject the listed fluids at the following maximum and average rates:

Injection Fluid	Maximum Rate	Average Rate
Hydrocarbon Gas	45 MMSCFD	22 MMSCFD
Water	6,500 bwpd	5,000 bwpd

8. The injection wells shall be equipped with a pressure control device or acceptable substitute that will limit the maximum MSIP for the fluids listed in Ordering Paragraph (6) with an injection rate not to exceed the maximum rates listed in Ordering Paragraph (7).

9. OXY is authorized to convert seven (7) of these producing horizontal wells into injection wells to implement a “huff and puff” enhanced oil recovery project. OXY is permitted to periodically inject water and produced gas into the Bone Spring formation within the Unitized Interval through one or more of these wells followed by a period of flowback and production. The injection wells (“Wells”) approved in this Order are as follows:

Well	API Number	Well Name	Zone
1	30-025-44101	Mesa Verde Bone Spring Unit No. 1H	Avalon
2	30-025-44196	Mesa Verde Bone Spring Unit No. 2H	3BSS
3	30-025-44183	Mesa Verde Bone Spring Unit No. 3H	Avalon
4	30-025-44064	Mesa Verde Bone Spring Unit No. 4H	2BSS
5	30-025-44185	Mesa Verde Bone Spring Unit No. 5H	2BSS
6	30-025-44042	Mesa Verde Bone Spring Unit No. 6H	2BSS
7	30-025-44065	Mesa Verde Bone Spring Unit No. 7H	2BSS

10. The Operator shall take all steps necessary to ensure that the injected fluid enters only the injection interval and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

11. To satisfy the Mechanical Integrity Testing (“MIT”) requirements of 19.15.26.11(A) NMAC, OXY shall comply as follows:

a. Prior to commencing injection operations, OXY shall submit a Form C-103X General Sundry detailing the MIT procedure(s) that will be utilized for performing MITs with gas lift valves installed in the tubing. The procedure shall include the MIT methodology, detailed procedural steps and contingencies (if applicable) to perform MITs in the Wells where gas lift valves are installed.

b. After receiving OCD approval for the aforementioned MIT procedure(s), an initial MIT shall be required prior to commencing injection for huff and puff operations in the Wells with subsequent testing at least once every five (5) years thereafter.

c. Following the initial injection/production cycle (and the production casing -tubing annulus containing only gas), OXY shall conduct active bradenhead monitoring for each Well that measures the pressure in the annular spaces for the production casing-intermediate casing annular space and the intermediate casing to surface casing annular space. Monitoring shall be required for each annular space including completions reported as “cement circulated to surface”. The description of the active monitoring program shall be included with the MIT procedure required for submittal and approval in Ordering Paragraph (11a).

d. An acceptable MIT shall be required prior to resumption of injection each time either the packer is unseated or tubing is removed from the Well.

The OCD Director retains the right to require, at any time, wireline verification of completion and packer setting depths.

12. The Operator shall provide written notice, using Form C-103Z, the date on which injection commenced and the date injection terminated for the individual operation of the Wells. This notice shall be required for each individual cycle of injection and shall detail the fluid used for injection period. The submittal of the form shall be no later than three (3) business days following commencement or termination of the injection activity.

13. The Project shall be governed by Rules 19.15.26.8 through 19.15.26.15 NMAC except where modified by this Order. The Operator shall submit monthly reports of the injection operations on Form C-115, in accordance with Rules 19.15.26.13 and 19.15.7.28 NMAC. The monthly reports shall include the volume of injected fluid, the days of operation, and the maximum injection pressure recorded during the month of operation.
14. Due to costs and timing associated with implementing the Project, OXY shall be granted an exception from 19.15.26.12(C) NMAC and OXY shall be authorized to initiate the first injection into any of the approved wells within two (2) years of approval of this Order. Additionally, OXY may seek an extension of time of this Order by filing a written request showing good cause prior to the deadline to commence injection within the Project.
15. If hydrogen sulfide (“H₂S”) is observed in any well within the Project, OXY shall submit a H₂S contingency plan as required in 19.15.11 NMAC for approval by the OCD.
16. The OCD Director may administratively authorize alternative or additional injection wells within the Project Area as provided in 19.15.26.8 NMAC.
17. With the approval of this Order, all injection authority approved under Division Order No. R-22106 is revoked and the associated CLGC pilot project is terminated.
18. Operator shall provide written notice to the OCD of the termination of the Project approved in this Order.
19. Jurisdiction is retained by the OCD for the entry of such further orders as may be necessary for the prevention of waste and/or protection of correlative rights or upon failure of the operator to conduct operations (1) to protect fresh or protectable waters or (2) consistent with the requirements in this order; whereupon the OCD may, after notice and hearing or prior to notice and hearing in event of an emergency, terminate the injection authority granted herein.



ALBERT C.S. CHANG
DIVISION DIRECTOR

Date: 3/27/26

AC/th