

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

**APPLICATION OF OXY USA INC. TO RE-OPEN CASE NO. 15616 TO REINSTATE, MODIFY AND MAKE PERMANENT THE INJECTION AUTHORITY GRANTED BY ORDER R-14322, EDDY COUNTY, NEW MEXICO.**

**CASE NO. 21996  
ORDER NO. R-21832**

**ORDER OF THE DIVISION**

This case came in for hearing before the Oil Conservation Division (“OCD”) at 8:15 a.m. on July 1, 2021, in Santa Fe, New Mexico.

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

**FINDINGS OF FACT**

1. Due notice has been given, and the OCD has jurisdiction of the subject matter of this case.
2. By this application, OXY USA, Inc. ("Applicant" or “OXY”) seeks the following:
  - a. To reinstate and make permanent the injection authority approved under Division Hearing Order No. R-14322;
  - b. To authorize the use of carbon dioxide for injection in the project area; and
  - c. To authorize the addition of injection wells within the project area by administrative application.
3. Applicant proposes to re-establish the pressure maintenance project, originally designated the **Cedar Canyon Pressure Maintenance Pilot Project**, utilizing the original two horizontal wells for injection into the Bone Spring formation, Pierce Crossing; Bone Spring, East pool (Pool code 96473), within the horizontal boundaries of the project area described below, in Eddy County, New Mexico.

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4. XTO Holding, LLC and Empire C Permian Company appeared through counsel at the hearing but did not oppose the application and the related presentation through affidavits. No other party appeared at the hearing or otherwise opposed the application.

5. Applicant previously reopened Case No. 15616 and provided testimony and exhibits at the Division Hearing on January 11, 2019. This hearing was to satisfy the OCD requirement for a report on the performance of the pilot project and to consider the authorizations being sought in this new application. The delay of OCD in providing a final order for the re-opened case along with impacts of COVID-19 pandemic resulted in the loss of injection authority under 19.15.26.12(C)(1) NMAC.

6. Applicant appeared through counsel and presented engineering testimony and exhibits to the effect that:

a. In this area of Eddy County, the 2nd Bone Spring sand is a productive interval within the Bone Spring formation and is well delineated and characterized.

b. Testimony on the performance of the pilot project showed for each injection well an oil response increase that was six times greater than the pre-injection production. Additionally, the same wells after the injection procedure were able to produce without artificial lift as previously required.

c. The current review of the modified Area of Review (AOR) for the project area showed all active and abandoned wells that penetrate the injection interval are properly plugged as to prevent vertical migration of injected fluids.

d. Applicant provided evidence of proper notice under 19.15.4 NMAC as required for approval of project.

7. Applicant provided supplement information in response to the Examiner's questions on the current perforation configuration of each well, the tubing design, and information on the proposed maximum surface injection pressures for both produced gas and carbon dioxide.

### **CONCLUSIONS OF LAW**

8. The operation of the pressure maintenance unit during the period as a pilot project demonstrated the feasibility of the project as enhanced recovery without evidence of fluid migration out of the approved injection interval or the lateral boundary of the project area

9. All the wells (active and plugged) in the one-half mile modified AOR surrounding the proposed injection well appear to be adequately cased and cemented, so that none will become a conduit for the escape of injected fluid or gas from the permitted injection formation. Accordingly, there is no requirement for remedial work on any wells within the modified AOR for each of the injection wells.

10. Applicant should be authorized to inject fluids at a surface injection pressure not to exceed 1720 pounds per square inch (psi) for produced water, 4250 psi for produced gas and 2200 psi for carbon dioxide. Applicant may apply to the OCD for a higher injection pressure upon satisfactorily demonstrating that an increase in injection pressure will not result in fracturing of the injection formation or confining strata.
11. The proposed project will, in reasonable probability, result in production of substantially more hydrocarbons from the project area that would otherwise be produced therefrom, will prevent waste, and will not impair correlative rights.
12. Accordingly, the application should be approved.

### **ORDER**

1. OXY USA, Inc. ("operator") is hereby authorized to inject produced water, carbon dioxide, and produced gas into the Bone Spring formation [Pierce Crossing; Bone Spring, East pool (Pool code: 96473)], at a true vertical depth interval from approximately 8426 feet to approximately 8739 feet below the surface, through two of its horizontal wells located within the Cedar Canyon State 16 Lease.
2. The project area shall consist of 640 acres, more or less, of the Cedar Canyon State 16 Lease within the following lands described as:  

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3. This project is hereby redesignated the **Cedar Canyon State 16 Pressure Maintenance Project** ("Project").
4. OXY USA, Inc. (OGRID 16696) is the designated operator of the Project.
5. Two existing horizontal wells ("injection wells") used in the pilot project are approved for injection within this Project:
  - a. Cedar Canyon 16 State Well No. 7H (API No. 30-015-41251) with a surface location of 2485 feet from the North line and 330 feet from the West line (Unit letter E) of Section 15, Township 24 South, Range 29 East, NMPM, and a terminus of 2037 feet from the North line and 535 feet from the West line (Unit letter E) of Section 16, Township 24 South, Range 29 East, NMPM. [The injection interval being the perforations from a measured depth of 9200 feet to a measured depth of 13680 feet.]
  - b. Cedar Canyon 16 State Well No. 12H (API No. 30-015-42683) with a surface location of 900 feet from the South line and 860 feet from the West line (Unit letter M) of Section 15, Township 24 South, Range 29 East, NMPM, and a terminus of 901 feet from the South line and 133 feet from the West line (Unit letter M) of Section 16, Township 24

South, Range 29 East, NMPM. [The injection interval being the perforations from a measured depth of 9704 feet to a measured depth of 14214 feet.]

6. 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.

7. The injection wells shall use the existing construction with injection occurring through perforations currently in place.

8. Water from outside the operator's Cedar Canyon Treating Facility shall not be injected into the approved injection wells within the project area. The operator shall utilize its Cedar Canyon Central Delivery Point for the source of the produced gas to be used in the injection phases of the Project.

9. The injection wells shall be equipped with a pressure control device or acceptable substitute that will limit the maximum surface injection pressure **to no more than 1720 pounds per square inch (psi) for produced water, 4250 psi for produced gas and 2200 psi for carbon dioxide.**

10. The OCD Director shall have the authority to administratively authorize an increase in injection pressure upon a showing supported by an approved Step-Rate Tests (using only water) that such higher pressure will not result in fracturing of the injection formation or confining strata.

11. The operator shall provide written notice on Form C-103 to OCD E-Permitting and notify the OCD Engineering Bureau by email of the submittal at least 72 hours in advance of the date and time (i) injection equipment will be installed, and (ii) the mechanical integrity pressure test will be conducted, so these operations may be witnessed.

12. Injection shall be accomplished through tubing installed in a packer set in the production casing so as to provide a proper seal while being as close as practical to the uppermost injection perforations. The limit for the upper placement of the packer in the production casing shall be no greater than 100 feet above the true vertical depth of the kick-off point for the individual well.

13. The casing-tubing annulus shall be filled with an inert fluid. Operator shall continuously monitor the annulus including a gauge attached to the annulus in order to detect leakage in the casing, tubing or packer.

14. The injection wells shall pass a mechanical integrity test prior to recommencement of injection under this Order and prior to resumption of injection each time the packer is unseated. All testing procedures and schedules shall conform to the

requirements of Rule 19.15.26.11(A) NMAC. The OCD Director retains the right to require at any time wireline verification of completion and packer setting depths.

15. The operator shall immediately notify the appropriate OCD Inspections Supervisor and OCD Engineering Bureau by email of the failure of the tubing, casing or packer in either injection well, or the leakage of water, oil, gas or other fluid from or around any producing or abandoned well within one-half mile of either injection well and shall take all steps as may be timely and necessary to correct such failure or leakage. If the monitoring system indicates communication of the tubing with the annulus due to loss of mechanical integrity, the operator shall immediately proceed to shut-in the injection well and notify the appropriate OCD Inspections Supervisor and OCD Engineering Bureau by email.

16. The injection wells shall be monitored with a SCADA system and the operator shall ensure that additional sensor systems for each injection well, as proposed in the C-108 application, are installed and monitored.

17. The operator shall provide written notice using Form C-103 to OCD E-Permitting and notify the OCD Engineering Bureau by email of the submittal no later than two (2) business days following the date on which injection commenced into the Wells.

18. The Project shall be governed by OCD Rules 19.15.26.8 through 19.15.26.15 NMAC. The operator shall submit monthly reports of the injection operations on OCD Form C-115, in accordance with Rules 19.15.26.13 and 19.15.7.28 NMAC.

19. The injection authority granted herein shall terminate two years after the effective date of this order if the operator has not commenced injection operations; provided, however, the OCD, upon written request by the operator filed prior to the expiration of the two-year time period, may grant an extension for good cause.

20. The injection authority granted herein shall be subject to 19.15.26.12(C)(1) NMAC [Abandonment of injection authority]. If necessary due to operational requirements that all injection wells in the Project are simultaneously not injecting for a continuous one-year period, the operator shall maintain the injection authority of the Order by requesting an extension as provided in 19.15.26.12(C)(2) NMAC.

21. The OCD Director may administratively authorize alternative or additional injection wells within this lease as provided in 19.15.26.8 NMAC.

22. The operator shall provide written notice to the OCD upon permanent cessation of injection into the Project.

23. This Order does not relieve the operator of responsibility should its operations cause any actual damage or threat of damage to protectable fresh water, human health or

the environment; nor does it relieve the operator of responsibility for complying with applicable OCD rules or other state, federal or local laws or regulations.

24. This Order supersedes Division Order No. R-14322 (Case No. 15616) and the associated extension letter approved February 18, 2019. Order No. R-14322 and its content are hereby null and void.

25. Upon failure of the operator to conduct operations (1) in such manner as will protect fresh water or (2) in a manner consistent with the requirements in this Order, the OCD may, after notice and hearing (or without notice and hearing in event of an emergency, subject to the provisions of NMSA 1978 Section 70-2-23), terminate the injection authority granted herein.

26. Jurisdiction of this case is retained for the entry of such further orders as the OCD may deem necessary.

DONE at Santa Fe, New Mexico, on this 24th day of September 2021.

**STATE OF NEW MEXICO**  
**OIL CONSERVATION DIVISION**



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**ADRIENNE SANDOVAL**  
**DIRECTOR**