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

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

CASE NO. _____

APPLICATION

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

PROJECT OVERVIEW

1. OXY proposes to create a 3,821.32-acre, more or less, project area for this Pilot Project consisting of the following acreage identified below in Eddy County, New Mexico (the "Project Area"). *See* **Exhibit A** at 5.

Township 19 South, Range 29 East

Section 3: All
Section 4: All
Section 7: All
Section 8: All
Section 9: All
Section 10: All

2. The proposed Project Area is part of a larger area OXY refers to as the Turkey Track area.

3. OXY seeks authority for this Pilot Project to avoid the temporary flaring of gas or the shut-in of producing wells during pipeline capacity constraints, mechanical difficulties, plant shutdowns, or other events impacting the ability to deliver gas into a pipeline.

4. Within the proposed Project Area, OXY seeks authority to utilize the following producing wells to occasionally inject produced gas into the Bone Spring formation:

- **Turkey Track 4-3 State 21H** (API No. 30-015-44396) with a surface location 1072 feet FNL and 110 feet FWL (Lot 4) in Section 4, Township 19 South, Range 29 East, and a bottom hole location 457 feet FNL and 21 feet FEL (Lot 1) in Section 3, Township 19 South, Range 29 East, NMPM, Eddy County, New Mexico.
- **Turkey Track 4-3 State 22H** (API No. 30-015-44537) with a surface location 1107 feet FNL and 110 feet FWL (Lot 4) in Section 4, Township 19 South, Range 29 East, and a bottom hole location 1946 feet FNL and 24 feet FEL (Unit H) in Section 3, Township 19 South, Range 29 East, NMPM, Eddy County, New Mexico.
- **Turkey Track 4-3 State 23H** (API No. 30-015-44517) with a surface location 1660 feet FSL and 360 feet FWL (Lot 4) in Section 4, Township 19 South, Range 29 East, and a bottom hole location 1790 feet FSL and 19 feet FEL (Lot 1) in Section 3, Township 19 South, Range 29 East, NMPM, Eddy County, New Mexico.
- **Turkey Track 4-3 State 24H** (API No. 30-015-44518) with a surface location 1625 feet FSL and 360 feet FWL (Lot 4) in Section 4, Township 19 South, Range 29 East, and a bottom hole location 344 feet FSL and 20 feet FEL (Unit

P) in Section 3, Township 19 South, Range 29 East, NMPM, Eddy County, New Mexico.

- **Turkey Track 8-7 State 22H** (API No. 30-015-44142) with a surface location 1118 feet FNL and 70 feet FWL (Unit D) in Section 9, Township 19 South, Range 29 East, and a bottom hole location 1782 feet FNL and 188 feet FWL (Lot 2) in Section 7, Township 19 South, Range 29 East, NMPM, Eddy County, New Mexico.
- **Turkey Track 8-7 State 23H** (API No. 30-015-44143) with a surface location 1254 feet FSL and 195 feet FWL (Unit M) in Section 9, Township 19 South, Range 29 East, and a bottom hole location 1999 feet FSL and 186 feet FWL (Lot 3) in Section 7, Township 19 South, Range 29 East, NMPM, Eddy County, New Mexico.
- **Turkey Track 8-7 State 24H** (API No. 30-015-44145) with a surface location 1224 feet FSL and 195 feet FWL (Unit M) in Section 9, Township 19 South, Range 29 East, and a bottom hole location 524 feet FSL and 187 feet FWL (Lot 4) in Section 7, Township 19 South, Range 29 East, NMPM, Eddy County, New Mexico.
- **Turkey Track 8-7 State 201H** (API No. 30-015-45681) with a surface location 1114 feet FNL and 475 feet FWL (Unit D) in Section 9, Township 19 South, Range 29 East, and a bottom hole location 345 feet FNL and 25 feet FWL (Lot 1) in Section 7, Township 19 South, Range 29 East, NMPM, Eddy County, New Mexico.

- **Turkey Track 9-10 State 21H** (API No. 30-015-44117) with a surface location 2120 feet FNL and 395 feet FEL (Unit H) in Section 8, Township 19 South, Range 29 East, and a bottom hole location 942 feet FNL and 168 feet FEL (Unit A) in Section 10, Township 19 South, Range 29 East, NMPM, Eddy County, New Mexico.
- **Turkey Track 9-10 State 22H** (API No. 30-015-44122) with a surface location 2150 feet FNL and 395 feet FEL (Unit H) in Section 8, Township 19 South, Range 29 East, and a bottom hole location 2288 feet FNL and 171 feet FEL (Unit H) in Section 10, Township 19 South, Range 29 East, NMPM, Eddy County, New Mexico.
- **Turkey Track 9-10 State 23H** (API No. 30-015-44154) with a surface location 1195 feet FSL and 220 feet FEL (Unit P) in Section 8, Township 19 South, Range 29 East, and a bottom hole location 1203 feet FSL and 188 feet FEL (Unit I) in Section 10, Township 19 South, Range 29 East, NMPM, Eddy County, New Mexico.
- **Turkey Track 9-10 State 24H** (API No. 30-015-44156) with a surface location 1165 feet FSL and 220 feet FEL (Unit P) in Section 8, Township 19 South, Range 29 East, and a bottom hole location 389 feet FSL and 203 feet FEL (Unit P) in Section 10, Township 19 South, Range 29 East, NMPM, Eddy County, New Mexico. *See* **Exhibit A** at 7-18.

5. The proposed average injection rate for each well is 3 MMSCFD with a maximum injection rate of 5 MMSCFD during injection. *See* **Exhibit A** at 43.

6. The maximum achievable surface pressure (MASP) for the wells in the Pilot Project is proposed to be 1,335 psi. *See* **Exhibit A** at 43. The current average surface pressures under normal operations for the proposed injection wells range from approximately 580 psi to 899 psi. *Id.*

7. Injection along the horizontal portion of the wellbores will be within the Bone Spring formation, Turkey Track; Bone Spring East Pool (Pool Code 60660), at the following approximate true vertical depths:

- **Turkey Track 4-3 State 21H** between 7,648 feet to 7,954 feet.
- **Turkey Track 4-3 State 22H** between 7,505 feet to 7,957 feet.
- **Turkey Track 4-3 State 23H** between 7,637 feet to 7,960 feet.
- **Turkey Track 4-3 State 24H** between 7,682 feet to 7,976 feet.
- **Turkey Track 8-7 State 22H** between 7,806 feet to 7,672 feet.
- **Turkey Track 8-7 State 23H** between 7,860 feet to 7,631 feet.
- **Turkey Track 8-7 State 24H** between 7,799 feet to 7,678 feet.
- **Turkey Track 8-7 State 201H** between 7,825 feet to 7,661 feet.
- **Turkey Track 9-10 State 21H** between 7,840 feet to 7,976 feet.
- **Turkey Track 9-10 State 22H** between 7,989 feet to 7,983 feet.
- **Turkey Track 9-10 State 23H** between 7,852 feet to 7,963 feet.
- **Turkey Track 9-10 State 24H** between 7,799 feet to 7,947 feet. *See* **Exhibit A** at 19-42.

8. 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 5.

WELL DATA

9. 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 pages 19-42.

10. The proposed maximum achievable 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 achievable 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 well 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 pages 62-68. A general characterization

[1] Electronic versions of the cement bond logs will be submitted to the Division through each well file.

of the geology of the Bone Spring formation and its suitability for the proposed injection, including identification of confining layers and their ability to prevent vertical movement of the injected gas is included in the analysis. *Id.*

14. The top of the Bone Spring formation in this area is at approximately 4,287 feet total vertical depth and extends down to the top of the Wolfcamp formation. *See* **Exhibit A** at 56.

15. Zones that are productive of oil and gas are located above and below the targeted injection interval. *See* **Exhibit A** at 56, 64.

16. 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 76.

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 Project Area. *See* **Exhibit A** at 70-80. 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 79.

18. The source of gas for injection will be from OXY's wells producing from the Bone Spring and Wolfcamp formations that are identified in the list of wells in **Exhibit A** at page 46. All proposed temporary injection wells and gas source wells are commingled under the approved gas surface commingling permit PLC-517. Additional source wells may be added over time under an approved surface commingling authorization. Each of OXY's proposed injection wells are operated by OXY.

19. OXY has prepared an analysis of the composition of the source gas for injection and a corrosion prevention plan. *See* **Exhibit A** at 47-49.[2]

20. 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 68. 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 80.

GAS ALLOCATION

28. OXY's proposes a method of gas allocation following a temporary injection event has been previously approved by the Division. *See* **Exhibit A** at 83-84.

AREA OF REVIEW

21. OXY has prepared maps depicting the surface hole location and 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 pages 84-87.

22. A tabulation of data for wells that penetrate the proposed injection interval or the confining layer within the half-mile area of review is included in **Exhibit A** at pages 53-59, along with well-bore schematics for wells that are plugged and abandoned or temporarily abandoned. *See* **Exhibit A** at 60.

OPERATIONS AND SAFETY

23. 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

[2] OXY is preparing a gas analysis for the Second Bone Spring formation and will present it at the hearing on this matter.

and automatic shut-in safety valves that will prevent injection pressures from exceeding the MASP. *See* **Exhibit A** at pages 51-52. OXY will also monitor and track various operational parameters at the Pilot Project's central tank battery and central gas lift compressors. *See id*.

24. 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 list of the affected parties subject to notice is included in **Exhibit A** at 89-90, along with a map and list identifying each tract subject to notice. *See* **Exhibit A** at 82-83.

25. 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 August 3, 2023, and that after notice and hearing this Application be approved.

Respectfully submitted,

HOLLAND & HART LLP

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ATTORNEYS FOR OXY USA INC.

CASE _____: **Application of OXY USA Inc. for a 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 3,821.32-acre, more or less, project area for this Pilot Project consisting of the following acreage identified below in Eddy County, New Mexico (the "Project Area"):

Township 19 South, Range 29 East

Section 3: All
Section 4: All
Section 7: All
Section 8: All
Section 9: All
Section 10: All

Applicant proposes to occasionally inject into the following producing wells to avoid the temporary flaring of gas or the shut-in of producing wells during pipeline capacity constraints, mechanical difficulties, plant shutdowns, or other events impacting the ability to deliver gas into a pipeline:

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Section 9, Township 19 South, Range 29 East, and a bottom hole location 1782 feet FNL and 188 feet FWL (Lot 2) in Section 7, Township 19 South, Range 29 East, NMPM, Eddy County, New Mexico.

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- **Turkey Track 9-10 State 21H** (API No. 30-015-44117) with a surface location 2120 feet FNL and 395 feet FEL (Unit H) in Section 8, Township 19 South, Range 29 East, and a bottom hole location 942 feet FNL and 168 feet FEL (Unit A) in Section 10, Township 19 South, Range 29 East, NMPM, Eddy County, New Mexico.
- **Turkey Track 9-10 State 22H** (API No. 30-015-44122) with a surface location 2150 feet FNL and 395 feet FEL (Unit H) in Section 8, Township 19 South, Range 29 East, and a bottom hole location 2288 feet FNL and 171 feet FEL (Unit H) in Section 10, Township 19 South, Range 29 East, NMPM, Eddy County, New Mexico.
- **Turkey Track 9-10 State 23H** (API No. 30-015-44154) with a surface location 1195 feet FSL and 220 feet FEL (Unit P) in Section 8, Township 19 South, Range 29 East, and a bottom hole location 1203 feet FSL and 188 feet FEL (Unit I) in Section 10, Township 19 South, Range 29 East, NMPM, Eddy County, New Mexico.
- **Turkey Track 9-10 State 24H** (API No. 30-015-44156) with a surface location 1165 feet FSL and 220 feet FEL (Unit P) in Section 8, Township 19 South, Range 29 East, and a bottom hole location 389 feet FSL and 203 feet FEL (Unit P) in Section 10, Township 19 South, Range 29 East, NMPM, Eddy County, New Mexico.

OXY seeks authority to utilize these producing wells to occasionally inject produced gas into the Bone Spring formation at total vertical depths of between approximately 7,505 feet to 7,983 feet along the horizontal portion of each wellbore at surface injection pressures of no more than 1,335 psi at an average injection rate of 3 MMSCF per day and a maximum injection rate of 5 MMSCF per day. The source of the produced gas will be from the Bone Spring and Wolfcamp formations. The subject acreage is located approximately 20 miles northeast of Carlsbad, New Mexico.