

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

**APPLICATION OF EOG RESOURCES, INC. FOR A GAS CAPTURE PILOT
PROJECT INVOLVING THE OCCASIONAL INJECTION OF PRODUCED GAS INTO
THE BONE SPRING FORMATION, LEA COUNTY, NEW MEXICO.**

CASE NO. _____

APPLICATION

EOG Resources, Inc. (“EOG”) (OGRID No. 7377) through its undersigned attorneys, hereby files this application with the Oil Conservation Division, for an order authorizing EOG to engage in a second gas capture pilot project in the Leonard Shale interval of the Bone Spring formation (“pilot project”). In support of this application, EOG states:

1. EOG previously sought approval for a similar gas capture pilot project targeting the Leonard Shale interval of the Bone Spring formation in Case No. 20965 at a hearing before a Division examiner on December 12, 2019. The Division approved the pilot project in Order No. R-21061, entered on January 31, 2020.

2. As EOG stated at the hearing on that application, if the initial pilot project is viable, EOG would potentially implement similar projects at other wells in New Mexico. Based on the results of that initial pilot project, EOG now seeks Division approval to implement a second expanded pilot project within the same interval of the Bone Spring formation as was approved in Order No. R-21061.

3. For this second pilot project, EOG proposes to include the following seven horizontal wells, all of which are operated by EOG, located in Lea County, New Mexico, and are completed in and producing from in the Bone Spring formation:

- The **Diamond 31 Fed #03H well** (API No. 30-025-40485), a horizontal well at a surface location in the NW/4 NW/4 (Lot 1) of Section 31, Township 24 South, Range 34 East, NMPM, and the **Diamond 31 Fed #04H well** (API No. 30-025-40486), a horizontal well at a surface location in the NE/4 NW/4 (Unit C) of Section 31. These wells are currently producing from the Bone Spring formation (Red Hills; Upper Bone Spring Shale Pool [Pool Code 97900]), and dedicated to a standard horizontal well spacing unit comprised of the E/2 W/2 of Section 31, Township 24 South, Range 34 East, NMPM, and the E/2 NW/4 of Section 6, Township 25 South, Range 34 East, NMPM.
- The **Black Bear 36 State #04H well** (API No. 30-025-40580), a horizontal well at a surface location in the SW/4 SE/4 (Unit O) of Section 36, Township 25 South, Range 33 East, NMPM. This well is currently producing from the Bone Spring formation (Red Hills; Upper Bone Spring Shale Pool [Pool Code 97900]), and dedicated to a standard horizontal well spacing unit comprised of the E/2 of Section 36, Township 25 South, Range 33 East, NMPM.
- The **Brown Bear 36 State #01H well** (API No. 30-025-40371), a horizontal well at a surface location in the SW/4 SW/4 (Unit M) of Section 36, Township 25 South, Range 33 East, NMPM. This well is currently producing from the Bone Spring formation (Red Hills; Upper Bone Spring Shale Pool [Pool Code 97900]), and dedicated to a standard horizontal well spacing unit comprised of the W/2 of Section 36, Township 25 South, Range 33 East, NMPM.
- The **Ophelia 27 #1H well** (API No. 30-025-41114), a horizontal well at a surface location in the SE/4 NE/4 (Unit H) of Section 27, Township 26 South,

Range 33 East, NMPM. This well is currently producing from the Bone Spring formation (Red Hills; Upper Bone Spring Shale Pool [Pool Code 97900]), and dedicated to a standard horizontal well spacing unit comprised of the E/2 NE/4 of Section 27, and the E/2 SE/4 of Section 22, Township 26 South, Range 33 East, NMPM.

- The **Hawk 25 Fed #01H well** (API No. 30-025-41494), and the **Hawk 25 Fed #02H well** (API No. 30-025-41419), horizontal wells located in the SW/4 SW/4 (Unit M) of Section 25, Township 24 South, Range 33 East, NMPM. These wells are currently producing from the Bone Spring formation (Red Hills; Bone Spring, North Pool [Pool Code 96434]), and dedicated to a standard horizontal well spacing unit comprised of the of W/2 W/2 of Section 25, Township 24 South, Range 33 East, NMPM.

4. EOG seeks to authority to utilize the foregoing producing wells to occasionally inject produced gas into the Leonard Shale interval of the Bone Spring formation at the following total vertical depths along the horizontal portion of each wellbore at surface injection pressures of no more than 3,500 psi:

- **Diamond 31 Fed #03H well—approximately 9,489-9,513 total vertical depth;**
- **Diamond 31 Fed #04H well—approximately 9,461-9,502 feet total vertical depth;**
- **Black Bear 36 State #04H well—approximately 9,481-9,595 feet total vertical depth;**
- **Brown Bear 36 State #04H well—approximately 9,420.97-9,522 feet total vertical depth;**
- **Ophelia 27 #1H well—approximately 9,515-9,567 feet total vertical depth;**
- **Hawk 25 Fed #01H well—approximately 9,387-9,457 feet total vertical depth; and**

- **Hawk 25 Fed #02H well—approximately 9,390-9,453 feet total vertical depth.**

5. The source of the produced gas will be the Bone Spring, Wolfcamp, and Atoka formations delivered to the Localized Gas Lift Compressor Stations associated with each well.

6. EOG seeks authority for this second pilot project to avoid the shut-in of producing wells or the temporary flaring of gas during pipeline capacity constraints, mechanical difficulties, plant shut downs, or other events impacting the ability to deliver gas into a pipeline.

7. EOG will submit monthly C-115 Forms to the Division that identify the production and injection volumes, pressures, and days in operation for this pilot project.

8. During this pilot project, EOG intends to gather information on injection rates, injection volumes, injection interval durations, maximum pressures reached during injection intervals (surface and downhole), production rates, gas recovery rates and delta pressures from nearby wells for reporting back to the Division at an appropriate time.

9. Prior to or at the hearing in this matter, EOG will provide the information requested by the Division in the October 24, 2019, letter attached hereto as **Exhibit A**.

10. A copy of this application will be provided by certified mail to the surface owner on which each 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 wells identified above.

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

WHEREFORE, EOG Resources, Inc. requests that this Application be set for hearing before an Examiner of the Oil Conservation Division on January 7, 2021, and that after notice and hearing this Application be approved.

Respectfully submitted,

HOLLAND & HART LLP



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ATTORNEYS FOR EOG RESOURCES, INC.

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Deputy Secretary

Adrienne Sandoval, Director
Oil Conservation Division



October 24, 2019

EOG Resources, INC.
Attention: Patrick Padilla
5509 Champions Dr, Midland TX 79706

Re: EOG Resources Closed Loop Gas Capture Pilot Project

Dear Patrick Padilla,

This letter responds to your request for guidance regarding the procedure for requesting approval from the Oil Conservation Division ("OCD") for the EOG Resources Closed Loop Gas Capture Pilot Project ("Pilot Project"). On October 4, 2019, EOG Resources gave a presentation to OCD regarding the Pilot Project, which does not appear to fall within the types of injection wells regulated under 19.15.26 NMAC. Accordingly, the OCD Director will exercise her authority under the Oil and Gas Act, NMSA 1978, Section 70-2-11(A), to consider an application for an order to implement the Pilot Project, subject to the following conditions:

- 1) No later than sixty (60) days after the date of this letter, submit an application for hearing containing or agreeing to provide the following information:

Project Description

- i) Describe the need and background for the project.
- ii) Summarize the project goals and steps to obtain them.

Duration

- i) Provide a project timeline that does not extend more than 1 year after the date of issuance of an order.

Technical Information and Standards for Installation and Operation

- i) Supply a reservoir characterization and justification of reservoir suitability including the formation's lithology, and the general stratigraphy of the injection interval.
- ii) Provide reservoir modeling and technical analysis to analyze whether the injected gas will migrate from the formation, interfere with other wells, or affect underground sources of drinking water.
- iii) Provide a technical analysis to evaluate whether the injected gas will have a net positive, neutral, or negative effect on the pool's ultimate recovery.

OCD Review Process for EOG Resources Closed Loop Gas Capture Pilot Project
October 24, 2019
Page 2 of 3

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- iv) Provide a well diagram, casing information, drilling reports, and CBL for the well.
 - v) Confirm that the well will meet the following minimum requirements: (a) the casing burst pressure shall be at least 120% of the maximum allowable surface pressure plus the hydrostatic pressure from a full column of reservoir fluid; and (b) the drilling reports and CBL reflect complete cement coverage for the entire vertical length of the well.
 - vi) Perform an assessment of the surrounding wells to ensure they meet the requirements in subsection (v).
 - vii) Demonstrate that the mechanical integrity of the well complies with 19.15.26.11(A)(1) NMAC to a minimum pressure of 110% of the maximum allowable surface pressure.
 - viii) Demonstrate that the injected gas does not contain corrosive gas such as H₂S or CO₂ that may damage the casing.
 - ix) If the proposed maximum allowable surface pressure is greater than 0.14 psi/ft, comply with the following requirements:
 - (a) Justify the proposed maximum allowable surface pressure.
 - (b) Demonstrate with appropriate data the fracture and propagation pressure for the targeted horizon.
 - (c) Provide the expected bottom hole hydrostatic pressure generated by a fluid column consisting of the injected gas.
 - (d) Demonstrate with appropriate data that the maximum allowable surface pressure will not exceed 90% of the horizon's propagation pressure minus the expected bottom hole hydrostatic pressure generated by a fluid column consisting of the injected gas.
 - (e) Install equipment to prevent the downhole pressure from exceeding 90% of the reported propagation pressure.
 - x) Provide any additional information requested by the OCD Director.

Monitoring

- i) Install equipment to prevent the surface pressure from exceeding the maximum allowable surface pressure.
- ii) If operations will be conducted remotely, establish a SCADA system to collect all relevant data for safe operations, including the production flow rate, injection gas flow rate, surface pressure, and downhole pressure.

Reporting

- i) Submit a C-115 form each month which identifies the production and injection volumes, pressures, and days in operation.

Corrective Action

- i) Provide a plan of action for environmental and engineering emergencies.

Post-Project Report

- ii) Submit a compilation of the following data: injection rates, injection volumes, injection interval durations, maximum pressure reached during injection intervals (surface and downhole), production rates, gas recovery rate, and delta pressures for adjacent wells during injection.

OCD Review Process for EOG Resources Closed Loop Gas Capture Pilot Project
October 24, 2019
Page 3 of 3

- 2) Give notice of the application and the hearing in accordance with 19.15.26.8(B)(2) NMAC.
- 3) Interested persons may attain party status in the hearing pursuant to 19.15.4.10 & 11 NMAC.
- 4) The hearing will be conducted in accordance with 19.15.4.13 through 26 NMAC.
- 5) The OCD Director may approve this application and impose conditions in the order as she deems necessary to prevent waste, protect correlative rights, and protect the public health and environment.
- 6) OCD will determine the process for broader implementation of the technology used in the Pilot Project after review of the results and further consideration of the regulatory and technical issues.
- 7) This procedure is applicable only to the Pilot Project.

We look forward to working with you on this Pilot Project. If you have any questions about this letter, please call Phil Goetz, UIC Coordinator, at (505)476-3466.

Sincerely,



Adrienne Sandoval
Director

cc: Phil Goetz