

**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:**

**CASE NO. 21046
ORDER NO. R-21327**

**APPLICATION OF CML EXPLORATION FOR APPROVAL OF A WATERFLOOD
PROJECT, LEA COUNTY, NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 am on February 6, 2020, at Santa Fe, New Mexico, before Examiner Phillip R. Goetze.

NOW, on this 8th day of May 2020 the Division Director, having considered the testimony, the record, and the recommendations of the Examiner,

FINDS THAT:

(1) Due public notice has been given, and the Division has jurisdiction of this case and its subject matter.

(2) No other party appeared at the hearing or otherwise opposed the application.

(3) The Applicant, CML Exploration LLC (“CML”), (OGRID 256512) seeks approval for its proposed Maljamar Cisco Waterflood Project and establishment of a waterflood project within the Sanmal:Penn Pool of the Cisco Formation (Pool Code 54340). Applicant also seeks to convert its Beams 15 State #3 well to injection, and to covert future wells within the project area to injection administratively.

(4) The proposed area for the Maljamar Cisco Waterflood Project consists of 640 acres of State Trust and Fee lands, situated in Lea County, New Mexico:

Township 17 South, Range 33 East, Lea County

Section 09: NE/4 SW/4, N/2 SE/4, and SE/4 SE/4	160 acres
Section 10: SW/4 and S/2SE/4	240 acres
Section 11: SW/4 SW/4	40 acres
Section 15: N/2 NW/4, SE/4 NW/4, and W/2 NE/4	200 acres

- (5) Applicant is proposing to convert an existing producing oil well to an injector well within the project for use in the waterflood operation:
- (a) **Beams 15 State No. 3**
API No. 30-025-41407
352 FNL & 2094 FEL
Unit B, Section 15-17S-33E
- (6) Applicant appeared at the hearing through counsel and presented the following testimony:
- (a) The proposed project area consists largely of State Trust land and a small amount of private land.
- (b) Because the proposed waterflood involves part of one active lease, the State Land Office does not require them to form a Unit, and no unitization agreement is needed. (Lease NM B2229-1)
- (c) The Project is defined as “limited to the Cisco Formation only, being defined as the subsurface interval commencing at the stratigraphic equivalent of 10,860’ and ending at the stratigraphic equivalent of 11,498’ as shown on the log of the CML Exploration , LLC- Abenaki 10 State No. 1 Well (API No. 30-025-39737). (Exhibit A-Operating Agreement)
- (d) The Project is located entirely in the Sanmal:Penn Pool (Pool Code 54340). The Cisco Formation in this area has been defined by development of existing wells and plugged and abandoned wells.
- (e) Applicant has described the proposed injection zone in the Cisco Formation at a depth of approximately 11,029 to 11,127 which are the depths of the existing perforations in the Beams 15 State No. 3, which is proposed to be converted to an injector.
- (f) The Upper Pennsylvania Cisco Formation is predominately limestone with a thickness of approximately 98 feet, described from core data as gray to tan limestone, slightly silty with scattered small vugs. Porosity from side wall cores ranges from 4.4% to 11.6 % with permeabilities between 0.047 and 5.253 mD. The targeted interval is continuous and persistent throughout the proposed project. The Cisco Formation produces from two porous intervals, the Cisco 1 and the Cisco Lower.
- (g) The waterflood project is defined laterally to the north, south and west by dry holes or wells with insufficient porosity to produce economically. This will prevent lateral migration of fluids out of the waterflood project. Constraints in net pay thickness will also limit lateral migration of injection

fluid due to decreased permeability. Oil producing wells will surround the injector well.

- (h) The reservoir is confined above and below the injection interval by low porosity limestones and shales that will prevent migration of injected fluids out of the injection interval. There is no evidence of faults which would provide a hydrologic connection from the injection zone to the underground sources of drinking water.
- (i) The proposed injector well will be properly constructed to prevent migration of the injected fluid upward to any underground source of drinking water or other hydrocarbon-producing formation.
- (j) Applicant requests a maximum surface injection pressure of 2205 psig, with an average surface injection pressure of 1,200 psig. The maximum surface pressure for the injection well shall be limited to 2205 psi based on an administratively approved gradient of 0.2 psi per foot of depth to the upper most perforation (11,029 ft). The average daily injection rate will be 600 barrels per day, and the maximum will be 1,000 barrels per day in the initial project.
- (k) Applicant testified there are approximately seven wells within one half mile of the proposed unit that penetrate the proposed injection interval. Of these, one is plugged and abandoned, one is a dry hole, and five are active oil producing wells.
- (l) Applicant was able to compile sufficient completion data for the dry well and plugged and abandoned information for the above two wells. Based on the available information and the assessment of the wellbore plugging, Applicant contends that the wells in the AOR are properly plugged and abandoned so that it will not become a conduit to allow migration of injected fluids out of the injection zone.
- (m) The source of injection fluids will be from the Yeso (Paddock) and Abo Formation from wells that CML operates in the area. There are no fluid compatibility issues. This project will be a closed system.
- (n) Applicant did locate two freshwater wells within a one-mile radius of the proposed injection well and testified there is no known hydrologic connection between the injection zone and any underground source of drinking water. Fresh water zones are located above 300 feet in depth. Water samples were provided from the two wells.
- (o) Applicant provided the required notices to affected persons pursuant to Subsection C of Division Rule 19.15.26.8 NMAC.

- (p) The project consists of one State of New Mexico leases of which Applicant has 100 percent commitment of the numerous working interest owners, ORRI and the royalty (State Trust Lands) owner.
- (q) The Commissioner of Public Lands has given preliminary approval of the waterflood project.

The OCD concludes as follows:

(7) The proposed project should, in reasonable probability, result in production of substantially more hydrocarbons from the project area than would otherwise be produced therefrom, will prevent waste, and will not impair correlative rights.

- (8) This application and proposed project should be approved.

IT IS THEREFORE ORDERED THAT:

(1) The Maljamar Cisco Project executed by CML Exploration, LLC (“CML”), is hereby approved for the following described 640 acres in Township 17 South, Range 33 East, NMPM. Lea County NM

Township 17 South, Range 33 East, Lea County

Section 09: NE/4 SW/4, N/2 SE/4, and SE/4 SE/4	160 acres
Section 10: SW/4 and S/2SE/4	240 acres
Section 11: SW/4 SW/4	40 acres
Section 15: N/2 NW/4, SE/4 NW/4, and W/2 NE/4	200 acres

(2) The application of CML for authorization to inject produced water into the Beams 15 State No. 3 well is hereby approved. CML is authorized to inject produced water into the Sanmal:Penn Pool of the Cisco Formation (Pool Code 54340) through its Beams 15 State No. 3 well using existing perforations in the proposed injection well from 11,029 to 11,127 feet.

(3) The Project is defined as “limited to the Cisco Formation only, being defined as the subsurface interval commencing at the stratigraphic equivalent of 10,860’ and ending at the stratigraphic equivalent of 11,498 feet as shown on the log of the CML Exploration, LLC- Abenaki 10 State No. 1 Well (API No. 30-025-39737)”. (Exhibit A-Operating Agreement)

- (4) The following proposed well is approved for injection under this Order:

- (a) **Beams 15 State No. 3**
API No. 30-025-41407
352 FNL & 2094 FEL
Unit B, Section 15-17S-33E

- (5) CML Exploration LLC is hereby designated the Operator of the Project.
- (6) 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) Injection shall be accomplished through plastic-lined tubing installed in a packer set in the casing within 100 feet of the uppermost injection perforations. The casing-tubing annulus shall be filled with an inert fluid, and a gauge or approved leak-detection device shall be attached to the annulus in order to detect leakage in the casing, tubing or packer.
- (8) Each injection well shall pass a mechanical integrity test prior to initial commencement of injection and prior to resuming injection each time the injection packer is unseated. All testing procedures and schedules shall conform to the requirements of Division Rule 19.15.26.11.A NMAC. The Division Director retains the right to require at any time wireline verification of completion and packer setting depths.
- (9) Each of the injection wells shall be initially equipped with a pressure control device or acceptable substitute that will limit the surface injection pressure on the well. The maximum surface injection pressure on any injection well within this waterflood project shall be limited to no more than 2205 psi unless the result of the step-rate test conducted in Ordering Paragraph (11) indicates a significant deviation from the test results submitted in evidence for Division Order No. R-11674-A. If there is significant deviation in the test results, the Operator shall be required to submit an application to the Division Director for approval of a new maximum surface pressure based on the result of the step-rate test.
- (10) The Division Director may administratively authorize an increase in the maximum injection pressure upon a showing by the Operator that such higher pressure will not result in fracturing of the injection formation or confining strata.
- (11) The Division Director may administratively authorize additional injection wells within the Unit as provided in Division Rule 19.15.26.8G.(5) NMAC without the necessity for further hearings.
- (12) For each injection well, the Operator shall give at least 72 hours advance notice to the supervisor of the Division's Hobbs District Office of the date and time (i) injection equipment will be installed, and (ii) the mechanical integrity pressure tests will be conducted, so that these operations may be witnessed.
- (13) The operator shall provide written notice of the date of commencement of injection operations into each well to the Hobbs District Office.
- (14) The injection authority granted under this Order is not transferable except upon Division approval. The Division may require the operator to demonstrate mechanical integrity of any injection well that will be transferred prior to approving transfer of authority to inject.

(15) The operator shall immediately notify the supervisor of the Division's Hobbs District Office of the failure of the tubing, casing or packer in any of the injection wells, or the leakage of water, oil, gas or other fluid from or around any producing or abandoned well within one-half mile of the injection well, and shall take all steps as may be timely and necessary to correct such failure or leakage.

(16) The Project shall be governed by applicable provisions of Division Rules 19.15.26.8 through 26.15 NMAC. Operator shall submit monthly reports of the injection operations on Division Form C-115, in accordance with Division Rules 19.15.26.13 and 19.15.7.28 NMAC.

(17) The injection authority granted herein shall terminate two years after the effective date of this order if the operator has not commenced injection operations. However, the Division, upon written request by the Operator filed prior to the expiration of the two-year time period, may grant an extension for good cause.

(18) In accordance with Division Rule 19.15.26.12.C NMAC, the injection authority granted herein shall terminate, if after injection commences, any continuous period of one year elapses without reported injection into any authorized injection well in the project area; provided, however, the Division, upon written request by the Operator filed prior to the expiration of the one-year period of non-injection, may grant an extension for good cause.

(19) Operator shall provide written notice to the Division upon permanent cessation of injection into the Project.

(20) 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 Division rules or other state, federal or local laws or regulations.

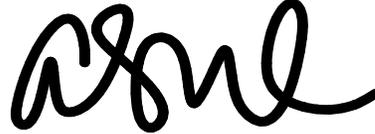
(21) Upon failure of the operator to conduct operations (1) in such manner as will protect fresh water, or (2) in a manner consistent with the requirements in this order, the Division may, after notice and hearing, (or without notice and hearing in event of an emergency), terminate the injection authority granted herein.

(22) This Order is subject to final approval of the Maljamar Cisco Waterflood Project by the New Mexico State Land Office.

(23) Jurisdiction of this case is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

A handwritten signature in black ink, appearing to read 'AS', written in a cursive style.

ADRIENNE SANDOVAL
Director

AS/KAM