

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

**APPLICATION OF CONOCOPHILLIPS COMPANY TO MAKE PERMANENT THE AUTHORITY GRANTED UNDER ADMINISTRATIVE ORDER WFX-945 TO INJECT WATER, CARBON DIOXIDE AND PRODUCED GAS FOR ENHANCED OIL RECOVERY WITHIN THE EAST VACUUM GRAYBURG-SAN ANDRES UNIT; TO AMEND THE SPECIAL RULES ENACTED UNDER ORDER R-5897 GOVERNING ENHANCED OIL RECOVERY OPERATIONS WITHIN THE UNIT; TO ALLOW ADMINISTRATIVE APPROVAL OF ADDITIONAL INJECTION WELLS WITHIN THE UNIT WITHOUT FURTHER NOTICE AND HEARING; AND TO CLARIFY THE SURFACE INJECTION PRESSURES AND INJECTION AUTHORITY PREVIOUSLY AUTHORIZED BY THE DIVISION, LEA COUNTY, NEW MEXICO.**

CASE NO. 15497

**APPLICATION**

ConocoPhillips Company, Inc, OGRID NO. 217817, ("COP") files this application with the New Mexico Oil Conservation Division seeking the following relief for the enhanced oil recovery operations within its East Vacuum Grayburg-San Andres Unit ("the Unit"):

- (a) to make permanent the authority granted under Administrative Order WFX-945 to use water-alternating-gas (WAG) injection utilizing water, carbon dioxide and produced gas in the twelve wells identified in the Order;
- (b) to modify the Special Rules adopted under Division Order R-5897 governing the enhance oil recovery operations within the Unit as follows:
  - i. to eliminate the project area allowable and associated requirements set forth in Rules 2, 3, 4, 6, 7, 15 and 16;
  - ii. to eliminate the annual determination and submission of a "weighted average project area reservoir pressure" as set forth in Rule 5;
  - iii. to eliminate the requirement in Rule 8 that wells remain at least 10 feet from any quarter-quarter section line or subdivision inner boundary within the Unit; and
  - iv. to modify Rule 12 and subsequent Division administrative orders as necessary to reflect that the maximum surface injection pressures for injection wells within the Unit are as follows:

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1350 psi for water;  
1850 psi for carbon dioxide; and  
1850 psi for produced gas.

- (c) to grant an exception to the requirements in NMAC 19.15.26.8.C and 19.15.26.8.F to allow for administrative approval of additional injection wells for water, carbon dioxide and produced gas within the Unit without further notice and hearing;
- (d) to confirm that the well limitation for quarter-quarter sections set forth in NMAC 19.15.15.9(A) does not apply to the enhance oil recovery operations within the Unit; and
- (e) to modify Administrative Order WFX-887 to reflect approval of the injection of water, carbon dioxide and produced gas.

In support of this application, COP states:

1. Division records reflect that the following orders have been issued for the Unit and the enhanced oil recovery operations following notice and hearing:

a. Order No. R-5871, dated November 27, 1978, approved the Unit comprised of the following 7,025.3 acres, more or less, in Lea County, New Mexico:

**Township 17 South, Range 34 East, NMPM**

Section 24: SE/4

**Township 17 South, Range 35 East, NMPM**

Section 18: Lots 3 & 4 (W/2 SW/4 equivalent) and SE/4 SW/4

Section 19: Lots 1 – 4 (W/2 W/2 equivalent), S/2 NE/4, E/2 W/2, and SE/4

Section 20: SW/4 NE/4, W/2 NW/4, SE/4 NW/4, SW/4, W/2 SE/4, and SE/4 SE/4

Section 21: NE/4 SW/4, S/2 SW/4, and SE/4

Section 22: SW/4, W/2 SE/4, and SE/4 SE/4

Section 23: S/2 SW/4

Section 24: SW/4 SW/4

Section 25: W/2 NW/4

Section 26: N/2, SW/4, N/2 SE/4, and SW/4 SE/4

Sections 27- 29: All

Section 31: N/2 SE/4 and SE/4 SE/4

Section 32 and 33: All

Section 34: N/2, SW/4, and NW/4 SE/4

Section 35: N/2 NW/2

**Township 18 South, Range 35 East, NMPM**

Section 4:	Lots 2, 3, and 4 (NW/4 NE/4 and N/2 NW/4 equivalent)
Section 5:	Lots 1 through 4 and S/2 S/2 (N/2 equivalent) and NW/4 SW/4

The Unitized Formation is defined in Ordering Paragraph (3) of Commission Order No. R-5871

as follows:

The upper limit of the Unitized Formation is determined by correlation to the depth of 4050 feet (103 feet subsea) on the Lane Wells Acoustilog, Run No. 1, dated April 14, 1964, in the New Mexico State K Well No. 19 (API No. 30-025-20710), located in Unit letter P, Township 17 South, Range 35 East, NMPM, Lea County, New Mexico.

b. Division Order No. R-5897, dated January 16, 1979, authorized the Unit operator to institute a pressure maintenance project within the unitized area by the injection of water into the San Andres formation and adopted Special Rules for this project.

c. Division Order R-6856, issued December 16, 1981, amended Order R-5897 to authorize injection of carbon dioxide along with water in the San Andres formation through 45 wells within the following Unit area designated as the "Qualified Tertiary Project Area":

**Township 17 South, Range 35 East, NMPM**

Section 26:	N/2, SW/4, N/2 SE/4, and SW/4 SE/4
Sections 27 – 29:	All
Section 31:	N/2 SE/4 and SE/4 and SE/4 SE/4
Sections 32 & 33:	All
Section 34:	N/2, SW/4, and NW/4 SE/4
Section 35:	N/2 NW/4

**Township 18 South, Range 35 East, NMPM**

Section 4:	Lots 2, 3, and 4 (NW/4 NE/4 and N/2 NW/4 equivalent)
Section 5:	Lots 1 – 4 and S/2 S/2 (N/2 equivalent) and NW/4 SW/4

Order R-6856 further designated this Qualified Tertiary Project Area as a qualifying project under the Crude Oil Windfall Profits Tax Act.

d. Division Order No. R-6856-A, issued on September 19, 1990, approved the reinjection of produced gas in the Qualified Tertiary Project Area.

e. Division Order No. R-6856-B, issued on November 12, 1993, qualified five separate portions of the East Vacuum Grayburg-San Andres Unit as an “Enhanced Oil Recovery Project” pursuant to the Enhanced Oil Recovery Act, Laws 1992, Chapter 38, Sections 1 through 5.

f. Division Order No. R-5897-A, issued On May 30, 2012, revised Rule 11 of the Special Rules governing the packer setting depths for injection wells within the Unit.

2. The Division has issued a number of administrative orders approving the injection of water, carbon dioxide and/or produced gas into the unitized formations for specific wells within the Unit. *See* PMX-176 (approving water and carbon dioxide injection into the San Andres for five wells); PMX-228 (approving water and carbon dioxide injection into the San Andres for three wells); PMX-246 (approving water, carbon dioxide and produced gas injection into the Grayburg and San Andres for three wells); WFX-873 (approving water injection into the unitized interval for three wells); WFX-887 (approving water and carbon dioxide<sup>1</sup> injection into the unitized interval for two wells); and WFX-912 (approving water injection into the San Andres for a well).

3. On April 13, 2015, the Division issued Administrative Order WFX-945 approving a twelve-well “pilot project” for enhanced oil recovery in the San Andres formation “using

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<sup>1</sup> While the first sentence of the ordering paragraph in WFX-887 only references approval to “inject water,” the succeeding language provides an authorized surface injection pressure for carbon dioxide. Further, the application resulting in WFX-887 requested approval to inject both water and carbon dioxide. It therefore appears WFX-887 approves water and carbon dioxide injection in the two referenced wells.

water-alternating-gas (WAG) injection utilizing carbon dioxide combined with produced gas.”<sup>2</sup>

This Administrative Order contains the following requirements in a bolded provision:

This administrative order that approves WAG injection for the 12 subject wells shall be effective for one (1) year following the commencement of injection into the first of the subject wells listed in this order. Within the one year period, ConocoPhillips shall make application for Division hearing to present results of the WAG operation that shall make the injection authority permanent for the 12 subject wells and to amend the exiting Division orders to accommodate future expansions. If applicant does not make application for Division hearing within the one-year time period, then the subject wells contained in this order will lose their injection authority ipso facto.

4. Pursuant to WFX-945, COP requests a hearing for the purpose of presenting the results of the WAG operation and to make permanent the injection authority granted therein

5. Pursuant to another directive in WFX-945, COP seeks an exception to the notice and application requirements set forth in NMAC 19.15.26.8.C and 19.15.26.8.F to allow for administrative approval of additional water, carbon dioxide and produced gas injection wells within the Unit area without further notice and hearing. The Oil Conservation Commission has approved a similar administrative process for tertiary recovery projects in New Mexico. *See* R-6199-F, Ordering paragraph 3 (North Hobbs Unit); R-4934-F, Ordering paragraph 3 (South Hobbs Unit).

6. Division Rule 19.15.15.9(A) currently states: “Only those 40-acre spacing units committed to active *secondary recovery* projects shall be permitted more than four wells.” In order to efficiently recover the remaining oil within the Unit, COP requests a similar exception for the *tertiary recovery* project within the Unit.

7. In order to more efficiently operate the enhanced oil recovery project within the Unit, COP requests the following changes to the Special Rules adopted under Order R-5897:

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<sup>2</sup> Since one of the twelve injection wells approved under WFX-945 included the injection well approved under WFX-912, the entry of subsequent order WFX-945 expressly “rescinded” WFX-912.

a. Rules 2, 3, 4, 6, 7, 15 and 16 establish a “project area allowable” for the Unit and set forth procedures for identifying, calculating, producing and reporting this “project area allowable.” The Oil Conservation Commission has recently recognized that gas-oil ratios and oil allowables do not apply to enhance oil recovery projects. *See* Order R-4943-F, Ordering paragraph 21 (South Hobbs Unit); R-6199-F, Ordering paragraph 5 (North Hobbs Unit). COP requests that the Special Rules imposing and governing the “project area allowable” for the enhanced oil recovery operations in this Unit likewise be abolished.

b. Rule 5 currently requires the annual determination and submission of a “weighted average project area reservoir pressure.” Since this requirement no longer serves any discernable purpose, COP requests that Rule 5 be abolished.

c. Rule 8 of the Special Rules, as well as the Division’s statewide Rule 19.15.15.13.A, require that wells within the Unit remain at least 10 feet from a quarter-quarter section line or subdivision inner boundary. In order to optimize the injection and producing well patterns within the Unit area, COP requests an exception to this requirement. Similar relief was granted by the Commission for the North Hobbs Unit tertiary recovery operation. *See* R-6199-F, Ordering paragraph (5).

8. COP also requests that the Division clarify and amend prior orders to provide a uniform surface injection pressure for injection wells within the Unit.

a. Rule 12 adopted under R-5897 provides that injection wells in the Unit shall be limited to “no more than 0.2 psi per foot of depth to the uppermost perforation.” Division Order R-6856 amended this requirement “to authorize injection of carbon dioxide up to an average maximum bottom hole pressure of 3150 psi.”

b. Subsequent administrative orders issued by the Division expanding the injection operations in the Unit have uniformly listed a maximum surface injection pressure of 1350 psi for water. However, for carbon dioxide and produced gas there currently lacks uniformity. Administrative orders PMX-176, PMX-228, PMX-246<sup>3</sup> and WFX-912 list 1850 psi as the maximum surface injection pressure while WFX-887 and WFX-945 list the maximum surface injection pressure as 1800 psi for carbon dioxide and produced gas.

c. COP requests that the Division clarify and amend prior orders to provide the following uniform maximum surface injection pressures for injection wells within the Unit:

1350 psig for water;  
1850 psig for carbon dioxide; and  
1850 psig for injection of produced gases.

9. Finally, Division records reflect that the filed application resulting in the issuance of Administrative Order WFX-887 sought and provided public notice for approval of the injection of water and carbon dioxide into the two referenced wells. While the first sentence of the ordering paragraph in WFX-887 only references approval to “inject water,” the succeeding language provides an authorized surface injection pressure for carbon dioxide. COP requests that the Division modify Administrative Order WFX-887 to reflect approval to inject water, carbon dioxide and produced gas into the referenced wells.

10. Notice of this application has been provided to all affected parties within one-half mile of the Unit boundary.

11. Approval of this application will be in the best interest of conservation, the prevention of waste and the protection of correlative rights.

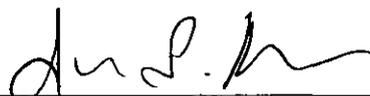
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<sup>3</sup> PMX-246 approving the injection of water, carbon dioxide and produced gas does not set forth a specific surface injection pressure limit for produced gas.

WHEREFORE, COP requests that this application be set for hearing before the Oil Conservation Division on May 26, 2016, and after notice and hearing as required by law, the Division enter its order granting the relief requested herein.

Respectfully submitted,

HOLLAND & HART LLP



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**ATTORNEYS FOR  
CONOCOPHILLIPS COMPANY, INC.**

**CASE 15497 Application Of ConocoPhillips Company to Make Permanent the Authority Granted Under Administrative Order WFX-945 To Inject Water, Carbon Dioxide And Produced Gas For Enhanced Oil Recovery Within The East Vacuum Grayburg-San Andres Unit; To Amend The Special Rules Enacted Under Order R-5897 Governing Enhanced Oil Recovery Operations Within The Unit; To Allow Administrative Approval Of Additional Injection Wells Within The Unit Without Further Notice And Hearing; And To Clarify The Surface Injection Pressures And Injection Authority Previously Authorized By The Division, Lea County, New Mexico.** Applicant seeks the following relief for the enhanced oil recovery operations within its East Vacuum Grayburg-San Andres Unit (“the Unit”):

(a) to make permanent the authority granted under Administrative Order WFX-945 to use water-alternating-gas (WAG) injection utilizing water, carbon dioxide and produced gas in the twelve wells identified in the Order;

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i. to eliminate the project area allowable and associated requirements set forth in Rules 2, 3, 4, 6, 7, 15 and 16;

ii. to eliminate the annual determination and submission of a “weighted average project area reservoir pressure” as set forth in Rule 5;

iii. to eliminate the requirement in Rule 8 that wells remain at least 10 feet from any quarter-quarter section line or subdivision inner boundary within the Unit; and

iv. to modify Rule 12 and subsequent Division administrative orders as necessary to reflect that the maximum surface injection pressures for injection wells within the Unit are as follows:

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(d) to confirm that the well limitation for quarter-quarter sections set forth in NMAC 19.15.15.9(A) does not apply to the enhance oil recovery operations within the Unit; and

(e) to modify Administrative Order WFX-887 to reflect approval of the injection of water, carbon dioxide and produced gas.

The Unit includes all or a portion of the acreage in Section 24 in Township 17 South, Range 34 East; Sections 18-29 and 31-35 in Township 17 South, Range 35 East; and Sections 4 and 5 in Township 18 South, Range 35 East, NMPM, Lea County, New Mexico. This Application has been set for hearing before the Oil Conservation Division on May 26, 2016. Any further information about this Application can be obtained from the following ConocoPhillips representative: Susan B. Mauder, [Susan.B.Mauder@conocophillips.com](mailto:Susan.B.Mauder@conocophillips.com), Post Office Box 51810, Midland, Texas 79710-1810, (281) 206-5281.