

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:

(Nomenclature)  
CASE NO. 14885  
ORDER NO. R-12678-A

APPLICATION OF COG OPERATING, LLC FOR THE CREATION OF A NEW  
POOL, SPECIAL POOL RULES, THE CONTRACTION OF THE GRAYBURG-  
JACKSON-SEVEN RIVERS-QUEEN-GRAYBURG-SAN ANDRES-GLORIETA-  
YESO (PADDOCK) POOL AND CANCELLATION OF OVERPRODUCTION,  
EDDY COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on August 23, 2012, at Santa Fe, New Mexico, before Examiner David K. Brooks.

NOW, on this 10<sup>th</sup> day of October, 2012, the Division Director, having considered the testimony, the record and the recommendations of the Examiner,

FINDS THAT:

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

(2) COG Operating, LLC ("Applicant") seeks an order:

(a) vertically contracting the existing Grayburg-Jackson-Seven Rivers-Queen-Grayburg-San Andres-Glorieta-Yeso Pool (Pool Code 97558) (hereinafter called "the subject pool") by establishing the base thereof at the top of the Glorieta formation;

(b) creating a new pool with horizontal limits identical to those of the subject pool, extending vertically from the top of the Glorieta formation, as its top, to the top of the Abo formation as its base;

(c) adopting special pool rules for the new pool with a top unit allowable of 300 barrels of oil per day, and a limiting gas-oil ratio of 3,000 standard cubic feet of gas per barrel of oil; and

(d) cancelling all existing overproduction within the new pool.

(3) The subject pool was created by Order No. R-12678, issued in Case No. 13829 on November 30, 2006, as the Grayburg-Jackson-Seven Rivers-Queen-Grayburg-San Andres-Glorieta-Yeso (Paddock) Pool. Its vertical boundaries were established as extending from the top of the Sever Rivers formation to the top of the Abo formation, and its horizontal boundaries, which coincided with the boundaries of the Grayburg-Jackson West Cooperative Unit, were defined as follows:

TOWNSHIP 17 SOUTH, RANGE 29 EAST, NMPM

Section 15:	W/2 SW/4
Section 16:	All
Section 21:	All
Section 22:	W/ W/2, E/2 NW/4, NE/4 SW/4 and NW/4 NE/4
Section 27:	W/2 SW/4
Section 28:	All

(4) Within the Seven Rivers, Queen, Grayburg and San Andres formations, the subject pool was carved out of the Grayburg-Jackson-Seven Rivers-Queen-Grayburg-San Andres Pool (Pool Code 28509), the horizontal boundaries of which were simultaneously contracted. However, Pool 28509 is a separate and distinct pool from the subject pool, does not extend below the base of the San Andres formation, and is not affected by this Order.

(5) By Order No. R-3127-C, issued in Case No. 13848 on February 1, 2007, the name of the subject pool was changed to the Grayburg-Jackson-Seven Rivers-Queen-Grayburg-San Andres-Glorieta-Yeso Pool. However, the vertical and horizontal boundaries remained the same as they do to this day.

(6) In Case No. 14613, filed in 2011, Applicant sought the establishment of special pool rules, including increased top unit allowables and provision for unlimited gas-oil ratios for several Glorieta-Yeso pools that comprise the area Applicant characterizes as "Yeso shelf" in Eddy and Lea Counties, New Mexico. By Order No. R-13382-D, issued in said Case No. 14613 on May 25, 2011, the Division dismissed that Application as to, *inter alia*, the subject pool, without prejudice, finding that Applicant did not intend to present any evidence showing that its proposed special pool rules would be appropriate for portions of the subject pool above the top of the Glorieta, and that Division rules do not provide for increasing allowables for a portion only of a pool.

(7) By Order No. R-13382-E, issued in consolidated Cases Nos. 14613 and 14647 on September 8, 2011, the Division adopted special pool rules for the pools remaining in those cases, providing for top unit allowables of 300 barrels of oil per day

and a limiting gas-oil ratio of 3,000 standard cubic feet of gas per barrel of oil. The purpose of the application filed in this case is to extend these special rules to the portions of the Glorieta and Yeso formations within the Grayburg-Jackson West Cooperative Unit, and presently included in the subject pool.

(8) At the hearing, Applicant appeared through counsel and presented geologic and engineering testimony as follows:

(a) The Glorieta and Yeso formations and the Paddock and Blinebry members of the Yeso formation are all continuous throughout the entire extent of the Yeso shelf, which extends across several ranges of the United States Public Land Surveys in Lea and Eddy Counties, New Mexico. These formations exhibit similar characteristics within the subject pool as elsewhere in the Yeso shelf.

(b) The Glorieta formation in this area is non-productive, exhibits low permeability, and provides a cap or hydraulic barrier that separates the San Andres formation above from the Yeso below.

(c) The separation of these formations is confirmed by the different API gravities of the oil and different water resistivities exhibited in each.

(d) The separation is further confirmed by the production history of COG's Western Federal Well No. 8 (API No. 30-015-34815), located in Section 30, Township 17 South, Range 29 East, which, after depletion in the Yeso formation, was re-completed successfully in the San Andres.

(e) The Yeso reservoirs in this area are lenticular in nature so that different wells may intersect and produce from reservoirs not in effective communication with each other, even if the wells are in close proximity. Accordingly, efficient development requires, in many cases, drilling all four wells allowed in a spacing unit even though one, two or three wells will produce the top unit allowable.

(f) Initial gas-oil ratios of wells drilled to the Yeso in this pool have not generally increased over time, as one would expect if the pool was being over-produced. Also, a plot of the initial production rate for the fourth well drilled in each proration unit versus the first well in the same spacing unit does not indicate significantly lower production in the fourth wells in the units than in the first wells in the same unit, indicating that pressure depletion is not occurring.

(g) Average drainage radius for Yeso wells in this area is estimated at nine acres, so that production of all four wells in these spacing units at full deliverability will not over produce the reservoir or cause drainage from adjoining units.

(h) Since there is no evidence that production from the subject pool to date has depleted, or is depleting, reservoir pressure, there is no reason to restrict future production to compensate for past overproduction.

(i) No technical basis is apparent for limiting production in this pool. However, a top unit allowable of 300 barrels of oil per day and a limiting gas-oil ration of 3,000 standard cubic feet of gas per barrel of oil would be sufficient to permit efficient production of the Yeso formation in this pool, and would be consistent with the rules established by Order No. R-13382-E for adjacent and nearby pools.

(9) Although all offsetting operators within one mile of the subject pool were duly noticed, no other party appeared in the case or communicated any opposition to the granting of the application.

The Division accordingly concludes that:

(10) For the reasons shown in the evidence presented by Applicant, separating the Glorieta and Yeso interval from the San Andres and shallower interval within the horizontal limits of the subject pool, and establishing for the Glorieta and Yeso formations the same top unit allowable and limiting gas-oil ratio as in other Glorieta-Yeso pools in the vicinity will permit production of oil that might otherwise not be produced, thereby preventing waste, and will not impair correlative rights.

**IT IS THEREFORE ORDERED THAT:**

(1) Pursuant to the application of COG Operating, LLC (OGRID 229137), a new oil pool is hereby established in Eddy County, New Mexico, to be called the West Grayburg-Jackson-Glorieta-Yeso Pool (Pool Code to be assigned by the Artesia District Office). The vertical boundaries of this pool shall extend from the top of the Glorieta formation to the top of the Abo formation, and the horizontal boundaries shall circumscribe the following area:

**TOWNSHIP 17 SOUTH, RANGE 29 EAST, NMPM**

Section 15:	W/2 SW/4
Section 16:	All
Section 21:	All
Section 22:	W/ W/2, E/2 NW/4, NE/4 SW/4 and NW/4 NE/4
Section 27:	W/2 SW/4
Section 28:	All

(2) The existing Grayburg-Jackson-Seven Rivers-Queen-Grayburg-San Andres-Glorieta-Yeso Pool (Pool Code 97558) is hereby contracted vertically to remove therefrom the area within the vertical and horizontal boundaries defined in Ordering Paragraph (1).

(3) The existing Grayburg-Jackson-Seven Rivers-Queen-Grayburg-San Andres-Glorieta-Yeso Pool is re-named the West Grayburg-Jackson-Seven Rivers-Queen-Grayburg-San Andres Pool and shall retain its existing pool code (97558).

(4) The following special rules are hereby adopted for the West Grayburg-Jackson- Glorieta-Yeso Pool:

SPECIAL RULES FOR THE WEST GRAYBURG-JACKSON  
GLORIETA-YESO POOL

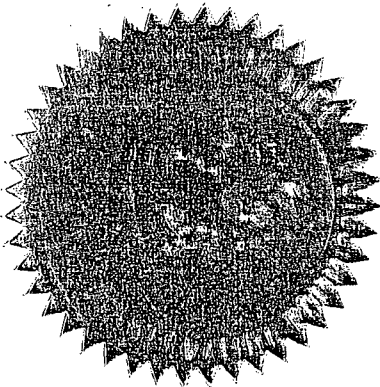
**Rule 1:** The top unit allowable for each standard oil spacing and proration unit within this pool shall be 300 barrels of oil per day.

**Rule 2:** The limiting gas-oil ratio for this pool shall be 3,000 standard cubic feet of gas per barrel of oil.

**Rule 3:** All overproduction from any unit within this pool occurring prior to the adoption of these rules is hereby cancelled.


(5) 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.



SEAL

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

  
JAMI BAILEY  
Director