

**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. 13848  
ORDER NO. R-3127-C**

**APPLICATION OF COG OPERATING, L.L.C. FOR THE APPROVAL OF THE  
THIRD AMENDMENT OF THE GRAYBURG-JACKSON WEST  
COOPERATIVE UNIT AGREEMENT EXTENDING THE VERTICAL LIMITS  
OF THE UNITIZED FORMATION TO INCLUDE THE BLINEBRY, TUBB AND  
DRINKARD INTERVALS OF THE YESO FORMATION, TO AMEND ORDER  
NO. R-3127-B TO CORRECT CERTAIN FINDINGS AND TO INCLUDE  
COMMINGLED PRODUCTION, AND FOR EXTENSION OF THE GRAYBURG  
JACKSON-SEVEN RIVERS-QUEEN-GRAYBURG-SAN ANDRES-GLORIETA-  
YESO (PADDOCK) POOL TO INCLUDE THE BLINEBRY, TUBB AND  
DRINKARD INTERVALS OF THE YESO FORMATION, EDDY COUNTY, NEW  
MEXICO.**

**ORDER OF THE DIVISION**

**BY THE DIVISION:**

This case came on for hearing at 8:15 a.m. on January 4, 2007, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 1<sup>st</sup> day of February, 2007, 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) The applicant, COG Operating, L.L.C. ("COG" or "applicant") seeks:
  - (a) to amend Division Order No. R-3127-B, dated June 13, 2006 for the Grayburg-Jackson West Cooperative Unit Agreement ("GJ West Coop. Unit Agreement") to extend the current vertical limits of the Unitized Formation to include all formations from the top of

the Seven Rivers formation to the top of the Abo formation, and for approval of production that has been commingled from the proposed expanded Unitized Formation;

- (b) to extend the vertical limits of the Grayburg Jackson Seven Rivers-Queen-Grayburg-San Andres-Glorieta-Yeso (Paddock) Pool (97558) to include the Blinbry, Tubb and Drinkard formations;
- (c) to contract the vertical limits of the East Empire-Yeso Pool (96610) to delete the Blinbry, Tubb and Drinkard formations of the Yeso interval; and
- (d) to correct Findings No. 10(b), 10(c) and 12 of Division Order No. R-3137-B.

(3) Devon Energy Production Company, L.P., an offset operator to the Grayburg-Jackson West Cooperative Unit Area, appeared at the hearing through legal counsel, but presented no evidence or testimony.

(4) Also present at the hearing were Mr. John Bemis, Assistant Commissioner of Public Lands for the State of New Mexico, and Mr. Tim Leach, CEO and Chairman of the Board for COG.

(5) The applicant testified that COG Operating, L.L.C. and COG Oil and Gas, L.P., are wholly owned subsidiaries of Concho Resources, Inc.

(6) The GJ West Coop. Unit Agreement was initially approved by Division Order No. R-3127 dated October 4, 1966. The original operator of the Grayburg-Jackson West Cooperative Unit (the "Unit") was Tenneco Oil Company. The initial Unitized Formation included that portion of the Grayburg and San Andres formations underlying the Unit Area encountered between the depths of 2,200'-3,600' ("Initial Unitized Formation"). By Order No. R-3127-A dated March 4, 1968, the Division, upon the application of Tenneco Oil Company, approved the First Amendment to the GJ West Coop. Unit Agreement by authorizing the horizontal expansion of the Unit to include an additional 400 acres. By Order No. R-3127-B dated June 13, 2006, the Division, upon the application of Mack Energy Corporation, the successor operator of the Unit, approved the Second Amendment to the GJ West Coop. Unit Agreement by authorizing the expansion of the vertical limits of the Initial Unitized Formation to include all formations from the top of the Seven Rivers formation to the base of the Glorieta-Yeso (Paddock) formation ("Current Unitized Formation").

(7) The Unit currently comprises 2,400 acres, more or less of State of New Mexico and fee lands in Eddy County, New Mexico, described as follows:

TOWNSHIP 17 SOUTH, RANGE 29 EAST, NMPM  
Section 15:           W/2 SW/4

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

(8) COG acquired the Unit, along with other properties, from Chase Oil Corporation ("Chase") on February 27, 2006. COG became the record operator of the Unit effective March 1, 2006, as successor to Mack Energy Corporation ("Mack"). Under a separate contract operating agreement with COG, Mack is currently the contract operator of the Unit.

- (9) The applicant presented evidence that demonstrates that:
- (a) there are ten separate tracts of land contained within the Unit. Nine of the tracts are State of New Mexico leases and one 40-acre tract comprising the NW/4 NW/4 of Section 22, is a fee lease. The fee lease is owned by Mossman-Midwest Company;
  - (b) 100% of the working interest within the Unit is owned by COG. The only other royalty interest owners within the Unit are Mossman-Midwest Company and the State of New Mexico;
  - (c) the proposed expansion of the Current Unitized Formation has been approved by COG and Mossman-Midwest Company; and
  - (d) by letter dated January 3, 2007, the Commissioner of Public Lands for the State of New Mexico granted preliminary approval of the proposed expansion of the Current Unitized Formation.

(10) Within the Unit, there are a total of 120 wells. Of these wells, eighty-one are active producing wells, ten are active injection wells, nine are producing wells that are currently shut-in and twenty wells are plugged and abandoned. The eighty-one active producing wells and nine shut-in producing wells are producing from single formations, or combinations of formations, described as follows:

Number of Wells	Producing Interval(s)
8	San Andres
16	Grayburg & San Andres
39	San Andres & Yeso (Paddock)
4	Queen, Grayburg, San Andres & Yeso (Paddock)
2	Grayburg, San Andres & Yeso (Paddock)
12	Yeso (Paddock)
4	Yeso (Paddock) & Blinebry (Shut-in)
3	San Andres, Yeso (Paddock) & Blinebry (Shut-in)

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Grayburg, San Andres, Yeso (Paddock) & Blinebry  
(Shut-in)

(11) The four wells that are completed in the Yeso (Paddock) and Blinebry intervals, the three wells that are completed in the San Andres, Yeso (Paddock) and Blinebry intervals, and the two wells that are completed in the Grayburg, San Andres, Yeso (Paddock) and Blinebry intervals have been voluntarily shut-in by COG pending the outcome of this case.

(12) COG presented additional evidence regarding operations that were conducted within the Unit prior to March 1, 2006, the date COG became operator of record of the Unit. This evidence demonstrates that:

- (a) for a period of time from 1984 through May 1997, the prior operator(s) of the Unit drilled or deepened wells so as to access and produce formations not included within the Initial Unitized Formation. These non-unitized formations included the Yeso (Paddock) and Blinebry formations. These operations were conducted without Division approval, and all regulatory filings made with the Division, including production reporting, inaccurately reflected that the wells were producing only from the Grayburg-San Andres interval. Applicant's Exhibit No. (4) shows that of the 90 active and shut-in producing wells within the Unit, sixty-six Unit wells were completed outside of the Initial Unitized Formation during that period of time ("non-compliant wells");
- (b) all production from non-compliant wells within the Unit during that period of time was reported to the Division as Grayburg-San Andres production, even if the wells were completed in and producing from non-unitized formations;
- (c) the non-compliant wells were also downhole commingled in various producing formations without Division approval;
- (d) production from the non-compliant wells was also surface commingled without Division approval; and
- (e) royalty payments to the State of New Mexico were incorrect as a result of these actions,

(13) COG testified that once it became aware of all known instances of non-compliance within the Unit, it voluntarily disclosed this information to the Commissioner of Public Lands for the State of New Mexico and to the Division. In addition, COG has prepared and filed amended well reports for non-compliant Unit wells. These reports were provided to the Division on September 14, 2006.

(14) COG further testified that Mack Energy Corporation has entered into a settlement agreement with the Commissioner of Public Lands for the State of New Mexico to pay additional royalties owed for Unit production during the period from 1984 through May 1997. These additional royalty payments, plus interest, total \$615,444.30.

(15) COG further testified that Mack Energy Corporation has reached a settlement agreement with the Division that resolves, as to the responsibility of Mack Energy Corporation, all of the issues of non-compliance within the Unit.

(16) With regards to COG and Mack Energy Corporation, there do not appear to be, at this time, any unresolved non-compliance issues with regards to operations within the Unit.

(17) Based upon evidence and witness testimony that was presented in Case No. 13609 on April 13, 2006, the Division entered *inter alia* Finding No. 10(b) of Division Order No. R-3127-B that stated "The Yeso/Paddock interval has not been tested or developed within the Unit Area. However, Mack expects that interval will be productive." The Division also entered Finding No. 10(c) of such order that stated "Mack plans to drill approximately 145 additional wells within the Unit Area in the next several years. Where it believes that the Yeso/Paddock interval is likely to be productive, it will drill or deepen its Grayburg/San Andres wells to test this formation. The feasibility of conducting secondary recovery operations within the Yeso/Paddock interval will be evaluated, tested and implemented on an ongoing basis as development occurs." The Division also entered Finding No. (12) of such order that stated "That portion of the application in this case that seeks approval for secondary recovery operations (injection wells) in the Yeso/Paddock interval is, however, premature. There has been no development of that interval in the Unit Area, and Mack presented testimony that it does not contemplate secondary recovery operations in that interval until after further development. Accordingly, the Division cannot now make the required findings to support an order authorizing such operations."

(18) Upon review of the evidence presented in this case, it appears that the witness testimony and Findings No. 10(b), 10(c) and (12) of Division Order No. R-3127-B are not accurate, as the Division now finds that from 1984 through May, 1997, prior operators have drilled, tested, developed and produced the Yeso (Paddock) and the Yeso (Blinberry) intervals within the Unit Area, and that production from those intervals continues today.

(19) There is sufficient evidence to grant COG's request to amend Order No. R-3127-B by correcting Findings No. 10(b), 10(c) and 12.

(20) The evidence presented and Division records show that by Order No. R-12678 issued in Nomenclature Case No. 13829 on December 5, 2006, the Division created the Grayburg Jackson-Seven Rivers-Queen-Grayburg-San Andres-Glorieta-Yeso (Paddock) Pool (97558). The horizontal boundaries of this pool coincide with the boundaries of the Unit Area. The vertical limits of the pool, although not stated in the

order, extend from the top of the Seven Rivers formation to the base of the Yeso (Paddock) formation. The acreage placed within the new pool was carved out of the existing Grayburg Jackson-Seven Rivers-Queen-Grayburg-San Andres Pool (28509), which pool was also contracted by Order No. R-12678.

(21) The evidence presented and Division records further show that by Order No. R-12567 entered in Case No. 13608 on June 13, 2006, the Division, upon the application of Mack Energy Corporation, contracted the horizontal limits of the East Empire-Yeso Pool (96610) by deleting acreage contained within the Unit Area. The vertical limits of the East Empire-Yeso Pool were also expanded by Order No. R-12699 entered in Nomenclature Case No. 13857 on January 18, 2007 to include the Glorieta formation, and the pool was redesignated as the East Empire Glorieta-Yeso Pool.

(22) Based upon the previously approved contraction of the East Empire-Glorieta-Yeso Pool, there is no existing Yeso (Blinbry, Tubb and Drinkard) pool within the Unit Area, therefore, COG's request to contract the horizontal limits of that pool is not necessary.

(23) COG presented geologic evidence that demonstrates that:

- (a) the Paddock formation is characterized by a major porosity zone that is fairly continuous throughout the Unit. The major porosity zone is comprised of numerous producing intervals that are separated by small (<50 feet thick) non-productive dolomite sections. These producing intervals appear to be generally non-continuous. The Paddock interval has been extensively developed within the Unit;
- (b) the Blinbry formation is characterized by thin, discrete porosity zones that are scattered throughout the entire Blinbry interval. These thin productive intervals are generally non-continuous within the Unit. Blinbry development within the Unit Area has been limited, thus far, to approximately nine producing wells. The geologic evidence demonstrates however, that there is potential for future further development of the Blinbry within the Unit;
- (c) the Tubb formation contains no reservoir quality rock and is not expected to produce within the Unit; and
- (d) the Drinkard formation is potentially productive in the northern portion of the Unit, however, currently, there is no Drinkard production within the Unit.

(24) The applicant presented engineering evidence that demonstrates that:

- (a) due to their mechanical configuration, existing wells within the Unit that are producing from the Queen-Grayburg-San Andres interval are not viable candidates to utilize to access hydrocarbon reserves in the Blinebry, Tubb and Drinkard intervals;
- (b) it is economically beneficial to drill a single wellbore to develop the reserves within the proposed expanded Unitized Formation rather than accessing these reserves by separate wellbores;
- (c) the recoverable reserves on a per well basis in the Blinebry formation in the Unit Area are approximately 40,000 barrels of oil and 198 MMCF of gas. For the Paddock interval the reserves are approximately 40,000 barrels of oil and 159 MMCF of gas;
- (d) the characteristics of the producing reservoirs in the proposed expanded Unitized Formation are such that downhole commingling of these pools will not cause reservoir damage nor result in crossflow; and
- (e) downhole commingling of the producing reservoirs in the proposed expanded Unitized Formation should result in the recovery of additional oil and gas from the Unit Area that may otherwise not be recovered, thereby preventing waste, and will not violate correlative rights.

(25) The applicant provided notice of this application to all interest owners within the Unit Area, and to all offset operators within a ½-mile radius of the Unit Area boundaries. No interest owner and/or offset operator appeared at the hearing in opposition to the application.

(26) Approval of the subject application and the unitized management of the oil and gas reserves in the proposed expanded Unitized Formation within the Unit Area should result in the recovery of additional oil and gas reserves, will prevent the drilling of unnecessary wells, and will not violate correlative rights.

(27) COG has requested approval of past production that was commingled within the Unit Area. While this commingling has occurred without Division approval, the evidence presented in this case shows that appropriate action has already been taken by the Division and by the Commissioner of Public Lands for the State of New Mexico to cure correlative rights inequities and to levy fines and/or penalties against those parties responsible for non-compliance issues within the Unit Area. Accordingly, the applicant's request in this regard is unnecessary and should be dismissed.

**IT IS THEREFORE ORDERED THAT :**

(1) Pursuant to the application of COG Operating, L.L.C., the Third Amendment of the Grayburg-Jackson West Cooperative Unit Agreement to include the Blinebry, Tubb and Drinkard formations within the Unitized Formation is hereby approved.

(2) The Unitized Formation within the Grayburg-Jackson West Cooperative Unit Area, described in Finding No. (7) shall comprise that interval from the top of the Seven Rivers to the top of the Abo formation, being the geologic equivalent of those depths from 1,121 feet to 6,037 feet below the Kelly Bushing as shown on the Halliburton Dual Spaced Neutron Spectral Density Gamma Ray Log of the GJ West Coop. Unit Well No. 140 located 1700 feet from the South line and 1980 feet from the West line (Unit K) of Section 21, Township 17 South, Range 29 East, NMPM, Eddy County, New Mexico.

(3) The Grayburg-Jackson Seven Rivers-Queen-Grayburg-San Andres-Glorieta-Yeso (Paddock) Pool, which currently comprises that area within the Grayburg-Jackson West Cooperative Unit Area, is hereby redesignated as the Grayburg-Jackson Seven Rivers-Queen-Grayburg-Glorieta-Yeso Pool. The vertical limits of this pool shall comprise the interval from the top of the Seven Rivers formation to the top of the Abo formation.

(4) Findings No. 10(b), 10(c) and 12 of Division Order No. R-3127-B, dated June 13, 2006, are hereby amended to reflect that from 1984 through May, 1997, prior operators have drilled, tested, developed and produced the Yeso (Paddock) and the Yeso (Blinebry) intervals within the Unit Area, and that production from those intervals continues today.

(5) The portion of COG Operating, L.L.C.'s application seeking to contract the vertical limits of the East Empire Glorieta-Yeso Pool is hereby dismissed.

(6) The portion of COG Operating, L.L.C.'s application seeking Division approval of past production that has been commingled from the expanded Unitized Formation within the Unit Area, is hereby dismissed.

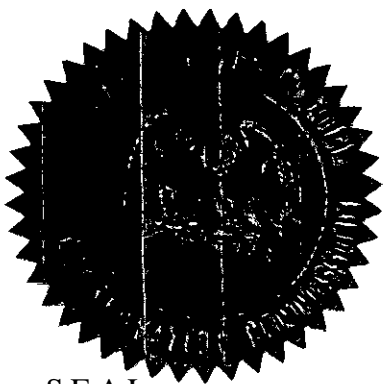
(7) Jurisdiction is hereby retained for the entry of such further orders as the Division may deem necessary.



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



SEAL

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

A handwritten signature in cursive script, appearing to read "Mark E. Fesmire".

MARK E. FESMIRE, P.E.  
Director