

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. 14500

APPLICATION OF COG OPERATING, LLC FOR DESIGNATION OF A NON-
STANDARD SPACING UNIT AND FOR COMPULSORY POOLING, CHAVES
COUNTY, NEW MEXICO

CASE NO. 14507
CASE NO. 14508

APPLICATION OF CIMAREX ENERGY COMPANY FOR A NON-STANDARD
OIL SPACING AND PRORATION UNIT AND COMPULSORY POOLING,
CHAVES COUNTY, NEW MEXICO.

ORDER NO. R-13374

ORDER OF THE DIVISION

BY THE DIVISION:

These cases came on for hearing at 8:15 a.m. on July 22, 2010 and again on September 16, 2010, at Santa Fe, New Mexico, before Examiner William V. Jones.

NOW, on this 22nd day of March, 2011, 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 these cases and the subject matter.

(2) Division Case Nos. 14500, 14507, and 14508 were consolidated for the purpose of testimony and one order will be issued.

(3) Both Cimarex Energy Company ("Cimarex") and COG Operating, LLC ("COG") are seeking to drill horizontal oil wells in the lower Abo (or upper Wolfcamp) formation (the "pay interval") within **Section 3 of Township 15 South, Range 31 East,**

NMPM, Chaves County, New Mexico. Both companies seek to form non-standard oil spacing and proration units optimized for horizontal drilling and compulsory pooling of interests within those units.

(4) Cimarex and COG disagree on whether proposed horizontal well or wells within Section 3 should be drilled in a North to South ("N-S") direction or an East to West ("E-W") direction. Both companies have proposed horizontal oil wells and submitted competing compulsory pooling applications.

(5) Chesapeake Energy Corporation ("Chesapeake") entered an appearance in all three cases and appeared at the hearing as partner of COG and supporter of the COG application and in opposition to the applications of Cimarex. COG entered appearances and appeared in opposition to the Cimarex cases. Cimarex entered an appearance and appeared in opposition to the COG case. No other parties entered appearances or opposed these applications.

(6) These cases were heard on July 22, 2010; then continued to September 16, 2010, in order to provide additional evidence. At that time, all three parties submitted additional exhibits and all three cases were taken under advisement.

(7) In Case No. 14500, COG seeks:

a. An order creating a 160-acre non-standard oil spacing and proration unit consisting of Units M, N, O, and P (S/2 S/2 equivalent) of Section 3 for oil production from the lower Abo or upper Wolfcamp formation, Wildcat-Abo-Wolfcamp Pool.

b. To dedicate this 160-acre unit to COG's proposed Leo 3 Federal Com Well No. 1H (API No. 30-005-29119), to be drilled at a standard oil well location 660 feet from the South line and 430 feet from the East line (Unit P) of Section 3. The vertical pilot hole will be logged and then the well will be kicked off and drilled horizontally within the target pay interval in a westerly direction to a terminus 660 feet from the South line and 330 feet from the West line (Unit M) of Section 3.

c. To pool all uncommitted interests in this unit.

(8) In Case No. 14507, Cimarex seeks:

a. An order creating a 161.06-acre, more or less, non-standard oil spacing and proration unit consisting of Lot 2 and Units G, J, and O (W/2 E/2 equivalent) of Section 3 for oil production from the lower Abo or upper Wolfcamp formation, Wildcat-Abo-Wolfcamp Pool.

b. To dedicate this 161.06-acre unit to Cimarex's proposed Boxer 3 Fee Well No. 3 (API not available), to be drilled at a standard oil well location 375 feet from the North line and 1980 feet from the East line (Lot 2) of Section 3. The well would be kicked off and drilled horizontally within the target pay interval in a southerly direction to a terminus 330 feet from the South line and 1980 feet from the East line (Unit O) of Section 3.

c. To pool all uncommitted interests in this unit.

d. To pool all uncommitted interests within Lot 2 of Section 3 from surface to the top of the Wildcat-Abo-Wolfcamp Pool for all formations and/or pools developed on 40-acre spacing within that vertical extent, including but not limited to, the Caprock-Queen Pool (8551). This 40-acre oil spacing and proration unit would be dedicated to the above named Boxer 3 Fee Well No. 3.

(9) In Case No. 14508, Cimarex seeks:

a. An order creating a 161.02-acre, more or less, non-standard oil spacing and proration unit consisting of Lot 1 and Units H, I, and P (E/2 E/2 equivalent) of Section 3 for oil production from the lower Abo or upper Wolfcamp formation, Wildcat-Abo-Wolfcamp Pool.

b. To dedicate this 161.02-acre unit to Cimarex's proposed Boxer 3 Fee Well No. 4 (API not available), to be drilled at a standard oil well location 375 feet from the North line and 660 feet from the East line (Lot 1) of Section 3. The well would be kicked off and drilled horizontally within the target pay interval in a southerly direction to a terminus 330 feet from the South line and 660 feet from the East line (Unit P) of Section 3.

c. To pool all uncommitted interests in this unit.

d. To pool all uncommitted interests within the 41.02-acre, more or less, unit consisting of Lot 1 of Section 3 from surface to the top of the Wildcat-Abo-Wolfcamp Pool for all formations and/or pools developed on 40-acre spacing within that vertical extent, including but not limited to, the Caprock-Queen Pool (8551). This 41.02-acre oil spacing and proration unit would be dedicated to the above named well, the Boxer 3 Fee Well No. 4.

(10) Oil well spacing in this Section 3 for both the Wildcat-Abo-Wolfcamp Pool and for the Caprock-Queen Pool is governed by statewide Rule 19.15.15.9A NMAC, which provides for 330 feet setbacks and for 40-acre units, each comprising a governmental quarter-quarter section.

(11) Division records indicate the W/2 of Section 3 is federally owned minerals and the E/2 of Section 3 is fee owned minerals.

(12) Despite the considerable thickness of the Abo and Wolfcamp formations and the proposed method of development being horizontal hydraulically fractured wellbores, both Cimarex and COG are targeting the same prospective oil pay interval. Both operators have the right to drill within the proposed spacing units, and both seek to be named operator of their respective wells and the subject proration units.

(13) COG and Chesapeake presented evidence through exhibits and testimony as follows:

- a. COG first determined to orient its well East to West ("E-W") and then worked to obtain acreage in those spacing units to support its proposed well. COG now controls approximately 80 percent of the minerals within the S/2 S/2 of Section 3 and has the right to drill in each 40-acre unit to be included in its horizontal well. COG proposed to owners to enter into a JOA in the entire S/2 of Section 3. Chesapeake has a JOA with COG in the S/2 of Section 3.
- b. The original take-offs did not agree with the latest "preliminary title report" provided just before the July hearing from an attorney hired by COG. Therefore, in effect, COG has just discovered additional parties owning interests in the south half of Section 3 and is in the process of proposing the well to these parties.
- c. COG believes that two horizontal wells located in the S/2 of Section 3 and drilled East to West will effectively drain this reservoir and four wells are not needed. Within Section 3, drilling two lay-down wells will be much more economically viable than four stand-up wells as proposed by Cimarex.
- d. Approximately 96 percent of the 319 horizontal wells permitted, drilled, or completed in this play are oriented East to West or West to East. The other 4 percent are oriented North to South or South to North.
- e. There is a nearby, recently drilled, horizontal dry hole which must be considered when deciding how to develop Section 3. This well is located directly northeast of Section 3, spud in Unit M of Section 35. COG and Chesapeake both give heavy weight to this dry hole when estimating porosity thickness trends within Section 3.
- f. The edge of this oil play, as shown in nearby Section 8, may thin rapidly from South to North. Therefore, the reservoir within Section 3 is expected to thin rapidly from South to North.
- g. If pay does exist in the N/2 of Section 3, Cimarex could orient and drill a well or wells from East to West in the N/2.
- h. COG and Chesapeake believe that if Section 3 is drilled with stand-up horizontal wells, then there is less probability that all 40-acre spacing units penetrated by such wells would contribute reserves to the well.
- i. Conversely, COG and Chesapeake believe that if the south half of Section 3 is developed with two lay-down horizontal wells, then it is very likely that each 40-acre spacing unit penetrated by those wells would contribute significant reserves to the wells.

- j. COG has predicted reserves contained in each quarter-quarter section of Section 3. These reserves predictions have been input into an economic model along with drilling costs. The results indicate unfavorable drilling economics for any of the four wells proposed from North to South in Section 3.
- k. The minimum thickness for consideration of drilling a well is approximately 20 feet. Therefore the geologic isopach map was truncated for purposes of considering which 40-acre tracts were prospective for drilling.
- l. Orienting wells N-S instead of the normal E-W direction adds an element of risk to the economics and degrades the reserves category allowed by the federal Securities Exchange Commission - until the well is actually drilled.
- m. The E-W development as opposed to four N-S wells may result in less additional surface facilities and surface disturbance.

(14) Cimarex presented evidence through exhibits and testimony as follows:

- a. Cimarex Energy Company owns the interests, but Cimarex Energy Company of Colorado is the operating entity. Cimarex has been working on this Section 3 since 2007. Cimarex has made a good faith effort to obtain the voluntary joinder of parties in these well units. The surface location for the well to be located in the E/2 E/2 of Section 3 is unorthodox because of surface issues.
- b. In the well unit consisting of the W/2 E/2 of Section 3, Cimarex has obtained over 81 percent of the working interests as committed to its well. In the well unit consisting of the E/2 E/2 of Section 3, Cimarex has obtained approximately 75 percent of the working interests as committed to its well.
- c. In the E/2 SE/4, ownership is again being checked and additional parties may need to be notified and asked to join in this well. Cimarex is of the opinion that the acreage shown as owned by Oxy, (in COG Exhibit 2), is actually owned by Cimarex.
- d. Cimarex is obtaining more title opinions but assumes it owns 100 percent of the NW/4 of Section 3 and most of the NE/4.
- e. Cimarex has drilled 20 wells in this township, which is more than COG has drilled.
- f. The offsetting dry hole to the northeast had no porosity logging tool run on it and the issue of whether the reservoir exists at or near that location in Unit M of Section 35 is still in question.
- g. Cimarex would like to drill a properly logged vertical pilot hole in the northern portion of this Section 3 to get a better idea of the reservoir extent.
- h. Cimarex likes to drill horizontal wells with the toe of the well extending toward the best well control – as is proposed in these cases. The COG-proposed well is less optimum because it extends the horizontal leg in the direction of the poorly defined reservoir.
- i. Cimarex is planning seismic surveys to help determine the northern edge of this play. As yet, this northern edge has not been determined.

- j. Cimarex has drilled a successful North to South horizontal well in Section 18 and believes that a North to South oriented well here would be appropriate.
- k. The stimulation fracturing treatments have been successful, even on wells drilled in a North to South direction. The orientation of the hydraulic fractures may be closer to East-West than Northeast-Southwest, which would make drilling wells from North to South more successful in intersecting natural fractures.
- l. If only two E-W wells are drilled in the S/2 of Section 3, rather than four N-S wells, oil and gas would be left in the ground and waste would occur.

(15) All parties presenting evidence referred to Marshall & Winston, Inc's, Caprock 35 State Well No. 1H (API No. 30-005-29114) horizontal dry hole which was spud within the past year in Unit M of Section 35 and oriented E-W. This well is one of the few wells drilled in this play that has been plugged and may, or may not, be indicative of the northern pinch-out of this play. This location is only one spacing unit northeast of Cimarex' proposed Boxer 3 Fee Well No. 4, so it is pertinent to the Section 3 proposed wells.

(16) Division records are not complete on this well as no log or drilling sundry exists on the Division's web site, even in March of 2011. The evidence presented indicates this well had a mudlog and induction log. Exhibits presented of the mudlog and drill time plot showed thinner than expected reservoir at this location.

(17) The geologists from all three companies presenting evidence used this northeastern control point, along with additional control points primarily to the south, to construct their respective isopach maps.

(18) COG's reservoir prediction and resulting development strategy honors this dry hole more than the Cimarex prediction and strategy. Cimarex' map differs from COG's in that it shows a confidence that even the northwestern portion of Section 3 may still be prospective. Indeed, Cimarex intends to drill four standup wells in Section 3 while COG is content with only two laydown wells located in the southern half. Scientists from both companies agree the SE/4 of Section 3 has a high likelihood of being productive.

(19) Cimarex controls the majority of the N/2 of Section 3 while COG controls the SW/4.

(20) Cimarex claims to have 75 percent and 81 percent of acreage signed on its two proposed standup wells. COG claims to have 80 percent of the acreage signed within the S/2 of Section 3.

(21) Within the W/2 SE/4, neither Cimarex nor COG has signed agreements with all owners. The ownership of the E/2 SE/4 of Section 3 was disputed at the hearing, both parties indicating more title research was in progress.

(22) Cimarex has shown that N-S horizontal wells in this play can be successful although the vast majority of wells have been drilled E-W and very few have been dry holes. Natural fracture direction in this reservoir seems to be only suspected and does not seem to be a deciding factor. Horizontal wells can be drilled without losing the hole in either direction. There was no testimony from a drilling or completion specialist at these hearings but it seems that hydraulic fracturing can be done with wells oriented in either direction.

(23) Cimarex has a large acreage position in the N/2 of Section 3, believes the data from the Caprock 35 State Well No. 1H is not definitive, and believes its acreage is still prospective until drilling has proven otherwise. Indeed, Cimarex is willing to drill pilot holes within the N/2 of Section 3 and intends to shoot and process seismic to attempt to define the reservoir boundary. Cimarex says it believes the N/2 of Section 3 is prospective, but has proposed wells to be drilled from North to South instead of East to West.

(24) COG believes that it is prudent to drill wells in the prevailing E-W direction; that two horizontal wells located in the S/2 of Section 3 will effectively drain the reservoir within Section 3; and four wells are not needed and would be, in fact, uneconomic. COG believes, as per its experience in Section 8, that the reservoir may thin rapidly from South to North and the northern portion of Section 3 is risky and likely non-prospective.

(25) The preponderance of the evidence supports developing Section 3 with laydown, E-W oriented horizontal oil wells, first drilled within the S/2 of Section 3 as close as possible to the existing successful wells. Development in this fashion would then orderly encroach on the northern portion of Section 3 and, if successful, Cimarex would then have the data to support drilling its own horizontal well or wells within the N/2 of Section 3.

(26) Development of Section 3 with wells drilled E-W will most likely result in 160-acre wells with some contribution from each 40-acre spacing unit in their respective project areas. Wells drilled N-S may result in wells with little contribution from some of the penetrated 40-acre units.

(27) The applications of Cimarex Energy Company in Cases 14507 and 14508 should be denied.

(28) The application of COG in Case No. 14500 should be approved in order to prevent waste and protect correlative rights.

(29) The 160-acre horizontally drilled oil wells are accepted by all three parties to these hearings as being necessary for development of this reservoir, and choosing one drilling direction within Section 3, means the other drilling direction cannot be used, and

correlative rights of the parties owning excluded or deferred lands are in that manner affected.

(30) The decision to drill wells in the northern portion of Section 3 should be aided by shared data gathered from drilling within the southern portion of Section 3. In order to protect correlative rights, COG should be required to promptly provide data obtained while drilling its wells to owners in Section 3 including Cimarex.

(31) COG should be required, in this instance, to drill a pilot hole prior to drilling the horizontal portion of the hole. The pilot hole should be mudlogged and electric logged (if possible) with resistivity and porosity logs including a density tool. COG should immediately supply these logs to Cimarex and all other working interest owners in Section 3 along with drilltime plots of the horizontal hole and any logs run on the horizontal hole.

(32) The COG-proposed 160-acre non-standard oil spacing and proration unit consisting of Units M, N, O, and P (S/2 S/2 equivalent) of Section 3 should be approved for oil production from the lower Abo or upper Wolfcamp formation, Wildcat-Abo-Wolfcamp Oil Pool.

(33) The unit should be dedicated to COG's proposed Leo 3 Federal Com Well No. 1H (API No. 30-005-29119), to be drilled at a standard oil well surface location 660 feet from the South line and 430 feet from the East line (Unit P) of Section 3. The well will be kicked off and drilled horizontally within the target pay interval in a westerly direction to a terminus 660 feet from the South line and 330 feet from the West line (Unit M) of Section 3.

(34) Two or more separately owned tracts are embraced within the Unit, and/or there are royalty interests and/or undivided interests in oil and gas minerals in one or more tracts included in the Unit that are separately owned.

(35) Applicant is an owner of an oil and gas working interest within the Unit. Applicant has the right to drill and proposes to drill in the S/2 S/2 of Section 3.

(36) There are interest owners in the proposed Units that have not agreed to pool their interests. In addition, title information in the target formation in the E/2 SE/4 of Section 3 is complex and unclear, indicating the need to set up an escrow account.

(37) To avoid the drilling of unnecessary wells, protect correlative rights, prevent waste and afford to the owner of each interest in the Units the opportunity to recover or receive without unnecessary expense its just and fair share of hydrocarbons, this application should be approved by pooling all uncommitted interests, whatever they may be, in the oil and gas within the Units.

(38) Any pooled working interest owner who does not pay its share of estimated well costs should have withheld from production its share of reasonable well costs plus an additional 200% (pursuant to rule 35.A) thereof as a reasonable charge for the risk involved in drilling the well.

(39) In the application and hearing for Case No. 14500, COG failed to propose the initial drilling and operating "combined fixed rate" charges. The rates proposed in the hearings by Cimarex within this same Section 3 for the same target formation and type of wells should reasonably be used for COG operated wells.

(40) Reasonable charges for supervision (combined fixed rates) should be fixed at \$7,000 per month while drilling and \$700 per month while producing, provided that these rates should be adjusted annually pursuant to Section III.1.A.3 of the COPAS form titled "Accounting Procedure-Joint Operations."

(41) To avoid the drilling of unnecessary wells, protect correlative rights, prevent waste, and afford to the owner of each interest in the Unit the opportunity to recover or receive without unnecessary expense its just and fair share of hydrocarbons, COG's applications proposal should be approved to pool all uncommitted interests, whatever they may be, within the Units or Project areas.

IT IS THEREFORE ORDERED THAT:

(1) Pursuant to the application of COG Operating, LLC in Case No. 14500, all uncommitted interests in the lower Abo and/or upper Wolfcamp formations underlying the S/2 S/2 of Section 3, Township 15 South, Range 31 East, NMPM, Chaves County, New Mexico, are hereby pooled to form a non-standard 160-acre oil spacing and proration unit within the Wildcat-Abo Wolfcamp Oil Pool.

(2) The ("Unit") shall be dedicated to COG's proposed Leo 3 Federal Com Well No. 1H (API No. 30-005-29119), to be drilled at a standard oil well surface location 660 feet from the South line and 430 feet from the East line (Unit P) of Section 3. The well will be kicked off and drilled horizontally within the target pay interval in a westerly direction to a terminus 660 feet from the South line and 330 feet from the West line (Unit M) of Section 3.

(3) The proposed well shall be drilled vertically through the targeted pay interval, mudlogged, and also electric logged including, if feasible, a density log. All mudlogs, drill time plots, and electric logs obtained on this well whether on the vertical pilot hole or on the horizontal portion of the hole shall be supplied, as soon as they are available, to Cimarex Energy Company and to all other working interest owners within Section 3.

(4) The applications of Cimarex Energy Company in Case No. 14507 and Case No. 14508 are hereby denied.

(5) COG Operating, LLC (OGRID No. 229137) is hereby designated the operator of the proposed well and of the pooled Unit.

(6) The operator of the Unit shall commence drilling the proposed well on or before September 15, 2011, and shall thereafter continue drilling the well with due diligence to test the Wolfcamp formation.

(7) In the event the operator does not commence drilling the proposed well on or before September 15, 2011, Ordering Paragraph (1) shall be of no effect, unless the operator obtains a time extension from the Division Director for good cause.

(8) Should the subject well not be drilled and completed within 120 days after commencement thereof, Ordering Paragraph (1) shall be of no further effect, and the Unit created by this Order shall terminate unless the operator appears before the Division Director and obtains an extension of time to complete the well for good cause demonstrated by satisfactory evidence.

(9) Upon final plugging and abandonment of the subject well, and all other wells drilled on the Unit pursuant to Division Rule 13.9, the pooled Unit created by this Order shall terminate, unless this order has been amended to authorize further operations.

(10) After pooling, uncommitted working interest owners are referred to as pooled working interest owners. ("Pooled working interest owners" are owners of working interests in the Unit, including un-leased mineral interests, who are not parties to an operating agreement governing the Unit.) After the effective date of this order, the operator shall furnish the Division and each known pooled working interest owner in the Unit an itemized schedule of estimated costs of drilling, completing and equipping the subject well ("well costs").

(11) Within 30 days from the date the schedule of estimated well costs is furnished, any pooled working interest owner shall have the right to pay its share of estimated well costs to the operator in lieu of paying its share of reasonable well costs out of production as hereinafter provided, and any such owner who pays its share of estimated well costs as provided above shall remain liable for operating costs but shall not be liable for risk charges. Pooled working interest owners who elect not to pay their share of estimated well costs as provided in this paragraph shall thereafter be referred to as "non-consenting working interest owners."

(12) The operator shall furnish the Division and each known pooled working interest owner (including non-consenting working interest owners) an itemized schedule of actual well costs within 90 days following completion of the proposed well. If no objection to the actual well costs is received by the Division, and the Division has not objected within 45 days following receipt of the schedule, the actual well costs shall be deemed to be the reasonable well costs. If there is an objection to actual well costs within

the 45-day period, the Division will determine reasonable well costs after public notice and hearing.

(13) Within 60 days following determination of reasonable well costs, any pooled working interest owner who has paid its share of estimated costs in advance as provided above shall pay to the operator its share of the amount that reasonable well costs exceed estimated well costs and shall receive from the operator the amount, if any, that the estimated well costs it has paid exceed its share of reasonable well costs.

(14) The operator is hereby authorized to withhold the following costs and charges from production:

- (a) The proportionate share of reasonable well costs attributable to each non-consenting working interest owner; and
- (b) as a charge for the risk involved in drilling the well, 200% of the above costs.

(15) The operator shall distribute the costs and charges withheld from production, proportionately, to the parties who advanced the well costs.

(16) Reasonable charges for supervision (combined fixed rates) are hereby fixed at \$7,000 per month while drilling and \$700 per month while producing, provided that these rates shall be adjusted annually pursuant to Section III.1.A.3. of the COPAS form titled "*Accounting Procedure-Joint Operations*." The operator is authorized to withhold from production the proportionate share of both the supervision charges and the actual expenditures required for operating the well, not in excess of what are reasonable, attributable to pooled working interest owners.

(17) Except as provided in Paragraphs (14) and (16) above, all proceeds from production from the well(s) that are not disbursed for any reason shall be placed in escrow in Chaves County, New Mexico, to be paid to the true owner thereof upon demand and proof of ownership. The operator shall notify the Division (Attention: Records Clerk) of the name and address of the escrow agent not later than one year from the date of issuance of this order.

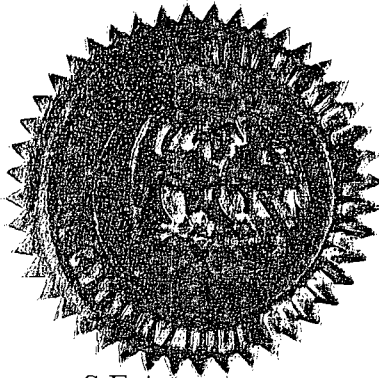
(18) Any unleased mineral interest shall be considered a seven-eighths (7/8) working interest and a one-eighth (1/8) royalty interest for the purpose of allocating costs and charges under this order. Any well costs or charges that are to be paid out of production shall be withheld only from the working interests' share of production, and no costs or charges shall be withheld from production attributable to royalty interests.

(19) Should all the parties to this compulsory pooling order reach voluntary agreement subsequent to entry of this order, this order shall thereafter be of no further effect.

(20) The operator of the wells and the Unit shall notify the Division in writing of the subsequent voluntary agreement of all parties subject to the forced pooling provisions of this order.

(21) 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.



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STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

A handwritten signature in black ink, appearing to read "Daniel Sanchez", written over a horizontal line.

DANIEL SANCHEZ
Acting Director