RAILROAD COMMISSION OF TEXAS
OFFICE OF GENERAL COUNSEL

OIL AND GAS DOCKET NO. 03-0256594

THE APPLICATION OF CIMAREX ENERGY CO. TO RESCIND THE 49(B) APPLICATION TO ALL GAS WELLS IN THE LIBERTY, SOUTH FIELD, OR TO REMOVE THE APPLICATION OF RULE 49(B) TO THE BARBEAUD WELL NO. 1, OR FOR A SPECIAL ALLOWABLE FOR ITS BARBEAUD NO. 1, OR FOR A NEW PIERCEMENT TYPE SALT DOME FIELD IN THE LIBERTY, SOUTH FIELD, LIBERTY COUNTY, TEXAS

HEARD BY: Donna K. Chandler, Technical Examiner
Marshall F. Enquist, Hearings Examiner

APPEARANCES:

Applicant:	**Representing:**
Flip Whitworth	Cimarex Energy Co.
John Hicks	
Jeff Linton	
Chris Herbert	
Thomas Richter	
Tim Smith	
Joe Sanders	
Protestant:	
Glenn Johnson	TexCal Energy GP LLC
Cary McGregor	
Brady McConaty	
Lee Morton	
Kris Gravis	
Kyle Dickson	
Bill Spencer	

PROCEDURAL HISTORY

Request for Hearing:	April 15, 2008
Notice of Hearing:	August 26, 2008
Date of Hearing:	October 8-9, 22-23, November 24-25, 2008
Transcript Received:	January 21, 2009
Record Closed:	February 19, 2009
Proposal For Decision Issued:	March 26, 2009

EXAMINERS' REPORT AND PROPOSAL FOR DECISION

STATEMENT OF THE CASE

Cimarex Energy Co. ("Cimarex") requests that the Commission rescind the Rule 49(b) allowable classification for all gas wells in the Liberty, South Field, or, in the alternative, rescind the 49(b) allowable classification for its Barbeaud No. 1 in the Liberty, South Field. As further alternatives, Cimarex requests either a special allowable for its Barbeaud No. 1 or a new piercement type salt dome (PTSD) classification for its Barbeaud No. 1. Cimarex also requests cancellation of all accrued overproduction in the field.

This application, including each alternative, was protested by TexCal Energy GP LLC, an offsetting operator in the Liberty, South Field.

DISCUSSION OF THE EVIDENCE

Applicant's Evidence

Field Information - Rule 49(b)

The Liberty, South Field is designated as a piercement type salt dome (PTSD) field. The discovery date for the field is 1925. With PTSD designation, there are no minimum spacing or density requirements for drilling a well in the field. There are 157 active producing oil wells listed on the October 2008 proration schedule. The top allowable in the field is 202 BOPD per well with a casinghead gas limit of 404 MCFD per well. Additionally, there are five producing gas wells on the October 2008 proration schedule. The gas field is classified as associated - 49(b), which means that allowables for gas wells are calculated based on Statewide Rule 49(b).

Statewide Rule 49(b) states:

> Any *gas well* producing from the same reservoir in which *oil wells* are completed and producing shall be allowed to produce daily only that amount of gas which is the volumetric equivalent in reservoir displacement of the gas and oil produced from the oil well in the reservoir that withdraws the maximum amount of gas in the production of its daily oil allowable. (emphasis added)

The calculated 49(b) allowable for gas wells in the Liberty, South Field is 1,092 MCFD.

Commission staff makes the initial determination as to whether an associated gas field should be administratively classified as associated-prorated or associated-49(b). This determination is made when the field initially becomes an associated field, either by the completion of an oil well in an otherwise gas field or the completion of a gas well in an

otherwise oil field. There are guidelines on which the determination is made when both oil and gas wells are producing from a field. Generally, an associated gas field is classified as associated 49(b) when there are oil wells in the field which have potentials in excess of 20% of the field's top allowable. Otherwise, gas fields are classified as associated-prorated. Of the 157 active oil wells on the proration schedule, 83% produced less than 10 BOPD. Four wells have potentials in excess of 100 BOPD and two wells have potentials in excess of the 202 BOPD top allowable.

Cimarex does not believe that the application of Rule 49(b) is appropriate in PTSD fields. Cimarex believes that Rule 49(b) is intended to conserve reservoir energy in solution gas drive oil reservoirs by restricting gas production from such reservoirs. The language of the rule refers to production from gas wells which produce from the same reservoir as oil wells. In the case of PTSD fields, it is recognized that there are many separate reservoirs which have formed due to complex faulting. Cimarex believes that the highly faulted nature of PTSD fields is the reason that the Commission has eliminated spacing and density rules for such fields. Rule 37(l) establishes the criteria for designation of a field as a salt dome field, including a reference in Rule 37(l)(1)(A) that "....each well is likely to be completed in a separate reservoir."

The first gas well was not placed in the Liberty, South Field until 1967. However, there are many gas fields on the Liberty salt dome which have been designated as separate fields and are not classified as 49(b) fields.

Barbeaud No. 1

Cimarex received a drilling permit for its Barbeaud No. 1 on April 18, 2007. The well was permitted in the Liberty, South Field on a 75.976 acre tract. (See attached plat). The well was initially completed on July 5, 2007 with perforations in the lower part of the Cook Mountain 1 reservoir, from 10,624-10,640 feet (MD). This interval was tested for two days and an ASTM Distillation test was performed on the stock tank liquid and a compositional analysis was run on the separator gas and condensate. The cumulative gas-oil ratio during the two day test was 21,000 cubic feet/bbl. The API gravity of the liquid hydrocarbon was 48°API.

A PVT analysis was not performed on a sample from these lowermost perforations until June 2008. The PVT analysis was run based on an initial reservoir pressure of 4,186 psia. The analysis resulted in the determination of a dew point pressure of 5,556 psia, with a conclusion from the testing company that the reservoir fluid exists as a saturated gas and condensed retrograde liquid at reservoir conditions. The analysis further shows that the maximum percentage of hydrocarbon pore space occupied by retrograde liquid

is 9.5%.[1] The mole% heptanes plus (C_7+) was 2.79%.[2] A retrograde condensate reservoir is a reservoir in which liquid comes out of the gas as pressure is lowered in the reservoir. In typical oil reservoirs, gas comes out of the liquid hydrocarbon as pressure is lowered.

On July 9, 2007, Cimarex added perforations from 10,568-10,596' and 10,612-10,618' (MD) feet. With all perforations open between 10,568' and 10,640' (MD), a test indicated a gas-oil ratio of 25,400 cubic feet per barrel, with a condensate gravity of 53°API. Cimarex filed Form G-1 for the well to classify it as a gas well in the Liberty, South Field. On October 2, 2007, the Commission notified Cimarex that the well could not be classified as a gas well based on Commission guidelines regarding Form G-5. Cimarex obtained gas and liquid samples from the separator on October 22, 2007 and a PVT analysis was performed on the sample, using a reservoir pressure of 4,739 psia and a reservoir temperature of 195°F. Based on the PVT results, the Commission classified the well as a gas well on November 15, 2007. The analysis resulted in the determination of a dew point pressure of 5,724 psia, with a conclusion that the reservoir fluid exists as a saturated gas and condensed retrograde liquid at reservoir conditions. The analysis further shows that the maximum percentage of hydrocarbon pore space occupied by retrograde liquid is 4.6% and the C_7+ component was 2.2%.[3]

The Barbeaud No. 1 began producing into the pipeline on October 8, flowing at a rate of approximately 3 MMCFD. By February 1, 2008, the well was overproduced over 467 MMCF of gas, based on the 1,092 MCFD allowable assigned to the well effective December 25, 2007. The allowable was not assigned sooner because Cimarex failed to file Form P-4 until January 11, 2008. On April 15, 2008, Cimarex requested a hearing to address the overproduction from the well.

Welder No. 14

On February 27, 2008, TexCal received a drilling permit for its Welder No. 14. The well was permitted for the Liberty, South Field and did not encounter the target Cook Mountain 1 reservoir. Subsequently, TexCal obtained a drilling permit to sidetrack the

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[1] According to published literature, liquids in a reservoir are usually immobile below percentages of 30%. Such liquids are not produced at the surface as liquids.

[2] One of the Commission's criteria for approval of gas well classification is mole% heptanes plus (C_7+) less than 11%

[3] The reservoir pressure and temperature supplied by Cimarex to the testing company for the PVT analysis of the sample taken October 22, 2007 PVT were incorrect. The PVT analysis was re-run on June 5, 2008, using the correct reservoir pressure of 4,186 psia and correct reservoir temperature of 218°F. From the re-run of the data, a dew point pressure of 5,535 psia was determined, with maximum percentage of hydrocarbon pore space occupied by retrograde liquid of 3.9% and the C_7+ component was unchanged at 2.2%.

Welder No. 14 toward the Barbeaud No. 1. On April 22, 2008, the Welder No. 14 (sidetrack) was completed with a bottomhole location only 28 feet from the common Cimarex/TexCal leaseline. The well is perforated from 10,502-10,519 feet (MD) in the Cook Mountain 1. On May 16, 2008, a sample was taken from the separator of the No. 14 well for PVT analysis. Completion papers were filed in June 2008 for the Welder No. 14 and the well was classified as a gas well in the Liberty, South Field. The well is carried on Commission records as the Welder No. 14, without reference to "sidetrack".

The PVT analysis for the Welder No. 14 resulted in the determination of a dew point pressure of 5,954 psia, with a conclusion by the testing company that the reservoir fluid exists as a saturated gas and condensed retrograde liquid at reservoir conditions. The analysis further shows that the maximum percentage of hydrocarbon pore space occupied by retrograde liquid is 1.5% and the C_7+ component was 1.38%.

Geology/geophysics

Cimarex has been involved in the drilling of 79 wells in the area since 2001, 56 of which were productive and 23 of which were dry holes. All of the wells were drilled based on seismic anomalies of high amplitude, or "bright spots". Cimarex has extensive 3-D seismic data in the area, including near offset, mid offset and far offset data, as well as full offset data.[4] In this area, Cimarex has found that far offset data is the best indicator of hydrocarbons. In far offset data, the reflections are stronger because the travel time within a particular interval is longer.

After a well is drilled and logged, Cimarex creates a tie between the seismic time data and log depths of the well. This tie, called a synthetic tie, is necessary to insure that maps are created on the appropriate seismic reflector. In this case, Cimarex is confident that its maps are drawn on the Cook Mountain 1 Sand which is productive in both wells, because, in its opinion, the synthetic tie is very good between log and seismic data.

Cimarex created an amplitude map based on far offset data, then integrated known net pay values to create a net pay isopach map. The Barbeaud No. 1 has 44 feet of pay; the Welder No. 14 has 26.5 feet of pay. The limits of the reservoir extend slightly to the north of the Barbeaud lease onto the Welder lease. The limits also extend to the south of the Barbeaud lease onto acreage controlled by Exxon, on which there are no wells. The reservoir is interpreted to be a stratigraphic trap which pinches out to the west and is fault separated from other Cook Mountain 1 wells to the east toward the dome. The reservoir covers an area of 82.7 acres based on the limits determined by Cimarex. There

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[4]Near offset data is that from geophones located from 0-10,000 feet from the dynamite explosion; mid offset data is from geophones located 10,000-20,000 feet from the dynamite explosion; far offset data is from geophones located 20,000-30,000 feet from the dynamite explosion. Full offset data sums all geophone data from 0-30,000 feet from the dynamite explosion.

are 9.1 productive acres on the Welder lease, 37.1 productive acres on the Barbeaud lease and 36.5 acres on the Exxon acreage to the south.

Cimarex believes that a large section of the Cook Mountain 1 Sand is faulted out in the Welder No. 14 (sidetrack). The sand is much thicker in its Barbeaud No. 1 and the log of the Barbeaud No. 1 indicates a gas-water contact at 10,477 feet subsea. The contact is not seen on the log of the Welder No. 14 because the bottom portion of the sand is missing.

Reserves

The initial reservoir pressure measured in the Barbeaud No. 1 was 4,186 psia. The initial pressure measured in the Welder No. 14 was 2,539 psia, after the Barbeaud No. 1 had produced almost 1 BCF of gas. The material balance analysis indicates original gas-in-place in the reservoir to be 2.7 BCF. Assuming 500 psia abandonment pressure, recoverable gas is 2.4 BCF. A reservoir simulation of the production from the Barbeaud No. 1 production prior to curtailment confirms that the reservoir is a volumetric gas drive reservoir. The isopach map of the reservoir depicts a reservoir volume of 2.809 BCF of gas, 0.186 BCF of which underlies the Welder lease and 1.103 BCF of which underlies the Barbeaud lease. The volumetric estimate is in close agreement with the material balance of 2.7 BCF.

Through September 22, 2008, the Barbeaud No. 1 had produced 1.059 BCF of gas and 28,821 BC (barrels of condensate). The Welder No. 14 had produced 0.135 BCF of gas and 2,850 BC. Based on 2.484 BCF of recoverable gas, remaining reserves as of September 22, 2008 are 1.29 BCF of gas. Based on the Cimarex mapping, 52.4% of the reserves underlie the Barbeaud lease and 6.6% of the reserves underlie the Welder lease. The remaining reserves in the reservoir underlie Exxon acreage to the south. Assuming that the two wells are required to produce pursuant to Rule 49(b) allowable, the Barbeaud No. 1 will ultimately produce 1.7 BCF and the Welder No. 14 will ultimately produce 0.78 BCF. Under the continued 49(b) scenario, the Welder No. 14 would be allowed to recover more than its proportionate share of the reserves from the reservoir.

Alternatives

To support its request for removal of 49(b) status to the Barbeaud No. 1 in the Liberty, South Field, Cimarex presented an example of similar Commission approval in the Hull Field in 1965. After hearing, the Commission classified a single gas well in that PTSD field as non-associated, based on geological evidence that the well produces from a separate fault block than other wells carried in the field, including oil wells.

To support its request that a new PTSD field be established for the Barbeaud No. 1 and Welder No. 14 wells, Cimarex presented an example of similar Commission action in the Esperson Dome (Vicksburg) Field. The Esperson Dome (Vicksburg) Field was

separated from the Esperson Dome Field in 1964 and set up as a separate field. Both are designated as PTSD fields. Similarly, the Boling (Iago) Field was separated from the Boling Field in 1964 and both are classified as PTSD fields. More examples include the Moores Orchard (Mio and Frio) Field split from the Moores Orchard Field and the Hankamer (Miocene) Field split from the Hamkamer Field.

Another choice for relief sought by Cimarex is changing the 49(b) status of the Liberty, South gas field to associated-prorated status for gas wells. The Commission has approved similar action in the Clay Creek Field and the Goose Creek Field, both of which are PTSD fields.

Cimarex believes that the Barbeaud No. 1 and the Welder No. 14 produce from a common reservoir, as defined by Statewide Rule 78, and that no other wells produce from the common reservoir. The two wells are entitled to a new field designation. Because the two wells are classified as gas wells by the Commission and there are no oil wells producing from the common source of supply, the application of Statewide Rule 49(b) to the new field is inappropriate.

Protestant's Evidence

Allowable

The Barbeaud No. 1 was completed in July 2007 but Cimarex did not file completion papers for the well until January 11, 2008. Statewide Rule 16 requires that completion papers be filed within 30 days of completion of a well. The Barbeaud No. 1 produced small amounts of gas in July and August 2007 but was not produced into a pipeline until October 2007. Cimarex did not file any production reports for the well until January 18, 2008, at which time production reports covering July thru October 2007 were filed. The well was not assigned an allowable until December 2007 due to the late filing of completion papers. As a result of failure to file timely production reports, the Commission was unaware of the Barbeaud No. 1 overproduction status until the production reports were processed. TexCal urges that the Barbeaud No. 1 be shut-in until all overage is made up.

The Commission didn't notify Cimarex of overproduction until March 26, 2008. Cumulative overproduction through January 31, 2008 was 467 MMCF. On April 30, 2008, the Commission again notified Cimarex of the Barbeaud overproduction, which was 559 MMCF by February 28, 2008. By the time production was curtailed from the well in May 2008, the Barbeaud had cumulative overproduction of 764 MMCF. TexCal believes that the Cimarex should have curtailed the well long before May 2008. If the Barbeaud No. 1 were shut-in to make up its overproduction, it would take approximately 2 years for all the overage to be made up.

Geology/geophysics

After the drilling of the Barbeaud No. 1, TexCal began the process of selecting a location to encounter the same reservoir as the Barbeaud No. 1. TexCal's geophysicist used full offset seismic data in selecting the location for the original Welder No. 14. A sonic log of the Barbeaud No. 1 was available to TexCal and was incorporated into TexCal's mapping of the horizon. The location for the Welder No. 14 was picked on a similar amplitude as the Barbeaud No. 1. Because the Welder No. 14 missed the reservoir, it was apparent to TexCal that the wrong amplitude had been mapped and that amplitude was obviously not representative of pay in the subject fault block. TexCal then prepared a synthetic tie using the log of the Welder No. 14 and mapped a slightly deeper horizon. TexCal drilled the sidetrack to the original Welder No. 14 and found productive reservoir at a bottomhole location to the southwest of the original wellbore. Additional data from the Barbeaud No. 1 and the Welder No. 14 sidetrack was used to confirm that TexCal's second synthetic tie was accurate and that the correct pay horizon could now be mapped. TexCal calls this pay the Y-13 sand, but it is the same as the Cook Mountain 1 referred to by Cimarex.

TexCal's structure map of the Y-13 indicates the reservoir to be bounded by faults to the north, east and south, with a water contact to the west. The fault block has only three wells, the Barbeaud No. 1, the Welder No. 14 (original straight hole) and Welder No. 14 (sidetrack). From log analysis, TexCal believes the Welder 14 has 36 feet of net pay, all in the gas portion of the reservoir. TexCal believes the Barbeaud No. 1 has 52 feet of net pay, most of which is above the interpreted gas-oil contact at 10,404 feet subsea. TexCal constructed a gross gas isopach map and a net oil isopach map based on these log calculations. From the maps, the gas portion of the reservoir covers 101.9 acres and the oil portion covers 57.8 acres.

TexCal believes that its interpretation of the reservoir is consistent with that found in other fault blocks which produce from the Y-13, in that there are oil wells and gas wells producing from the same fault block. TexCal believes that the lowermost perforations in the Barbeaud No. 1 are in the oil column of the reservoir and that the well should be classified as an oil well.

Well Classification/Reserves

TexCal believes that the PVT analyses performed on both the Barbeaud No. 1 and the Welder No. 14 indicate that the reservoir has an oil column and a gas cap. TexCal studied the characteristics of the C_7+ (heavier components) from the PVT for the lowest perforations in the Barbeaud No. 1, the PVT for the entire perforated interval in the Barbeaud No. 1 and the PVT for the Welder No. 14. TexCal believes that the lowermost perforations in the Barbeaud No. 1 are entirely in the oil column and all of the perforations in the Welder No. 14 are in the gas cap, except the lowest two feet. Looking at the entire perforated interval in the Barbeaud No. 1, the gas-oil contact is straddled by the

perforations in the well. TexCal believes that this is demonstrated by the decreasing molecular weights, increasing API gravities and decreasing gas-oil ratios of the C_7+ components, as the sample depth moves structurally down and into the oil column. Additionally, the Form G-5 filed for the Barbeaud well did not pass various criteria the Commission uses for gas well classification of a well.

The fact that the calculated dew point pressures for the various samples exceeds the original reservoir pressure indicates to TexCal that there is free oil in the sample, not just condensed hydrocarbons. The reservoir was apparently not a single phase gas reservoir at initial conditions. The PVT reports state that "..the reservoir fluids exist as a saturated gas and condensed retrograde liquid at static reservoir conditions....", verifying that two phases exist.

TexCal also studied hourly testing of the Barbeaud No. 1. With only the lowest perforations open in the well, the oil yield over a 14 hour test was 40-50 BO/MMCF. After the additional perforations were added, the oil yield during a 28 hour test was generally 30-40 BO/MMCF. TexCal believes this is further evidence that the higher perforations were in the gas cap, resulting in lower oil yield. Additionally, the current yields of the two wells are significantly different under the curtailed rates of about 1,000 MCFD. The current Barbeaud yield is 40-50 BO/MMCF and the Welder yield is 20-30 BO/MMCF. TexCal believes this demonstrates further that the Welder is producing from the gas cap.

Based on P/Z data, TexCal estimates that original gas-in-place in the reservoir is 2.8 BCF, 2.5 BCF of which is recoverable. This compares favorably with its volumetric estimate of 2.99 BCF of gas-in-place. This volumetric estimate is based on the gas and oil isopach maps which depict an area of 101.9 acres for the gas cap, with 2,433 net acre-feet. TexCal also calculated the oil reserves attributable to the oil column in the reservoir. The oil column mapping indicates 57.8 acres, with recoverable oil estimated to be 51,500 BO.

TexCal's study indicates that a gas cap well completion should have a yield of 45 BO/MMCF. This equates to a producing gas-oil ratio of 44,444 cubic feet/BO. TexCal believes that any well in this reservoir which produces with a gas-oil ratio less than 44,444 cubic feet/BO should be classified as an oil well. By TexCal's estimates, over 12,000 BO have been lost to date as a result of the Barbeaud No. 1 overproducing its 49(b) allowable.

EXAMINERS' OPINION

The examiners recommend that the reservoir from which the Barbeaud No. 1 and the Welder No. 14 produce be designated as a new field. There is no dispute that these two wells produce from a reservoir which is separate from all other wells. It is recommended that the two wells be transferred into a new field called the Liberty, South (Barbeaud) Field and that the new field be classified as a non-associated piercement type

salt dome field. It is also recommended that all overproduction accumulated by both wells be canceled.

The Liberty, South (Barbeaud) Field should be classified as non-associated. There is no oil well producing from the field and therefore Rule 49(b) cannot be implemented in this field as the rule provides that Rule 49(b) allowable will be calculated when "Any gas well producing from the same reservoir in which oil wells are completed and producing ...." The Commission has determined on initial completion that the two producing wells are properly classified as gas wells. The determination is supported by the PVT analyses which had been submitted to the Commission at the administrative level and submitted in this hearing. Most importantly, there is a PVT analysis from the lowermost perforations in the Barbeaud well, which TexCal insists is completed in the oil column of the reservoir. This analysis indicates that this lowest portion of the reservoir was in two phases at discovery, existing as a saturated gas and condensed retrograde liquid. The C_7+ component of the sample was only 2.7 mole%, substantially less than the 11% guideline used by the Commission for gas well classification. Additionally, the sample was almost 85 mole% methane. These two pieces of data are in conflict with the notion that the lowermost interval in the Barbeaud No. 1 is an oil zone. TexCal argued that the sample failed several of the criteria on Form G-5, including API gravity and color of the liquid. This is the reason that PVT analyses are performed: to give additional information about the reservoir fluid. The PVT analyses for both the Barbeaud No. 1 and the Welder No. 14 indicate very similar fluid properties, all had calculated dew points, and all had retrograde liquid volumes less than10% of hydrocarbon pore space. The two wells are gas wells.

TexCal maps an oil column in the reservoir based on its interpretation that the Barbeaud No. 1 well log indicates a gas-oil-contact. The examiners disagree with TexCal's opinion that a gas-oil contact exists in the reservoir. TexCal's opinion regarding the presence of a gas-oil contact at 10,404 feet subsea is based on the lack of density/neutron "crossover" on the log of the Barbeaud No. 1. TexCal believes the reservoir below the point where crossover exists is not gas-bearing. Cimarex pointed out the flaw in this interpretation by showing that the reservoir rock gets much shalier below this supposed "contact" and the crossover therefore diminishes. This lack of crossover does not prove lack of gas, just less quality reservoir. The examiners do not believe that a gas-oil contact is present in the reservoir. Additionally, TexCal's mapping of the reservoir is questionable because the contouring of the seismic time structure map and the contouring of the structure map constructed from well logs are in conflict. The structure map therefore cannot be relied upon for determining reservoir limits to the west of well control. TexCal's isopach map incorporating the gas-oil contact is also not reliable because it incorporates the nonexistent gas-oil contact.

Cimarex's mapping of the reservoir results in a reservoir volume closely agrees with the material balance determination of original gas-in-place in the reservoir of 2.7 BCF of gas. This value also matches closely to Cimarex's modeling of the reservoir based on the

stable production of the Barbeaud No. 1 prior to curtailment of the well.

Cimarex's seismic interpretation, in contrast to TexCal's, did not have to be "stretched and squeezed" to allow the creation of an accurate synthetic tie of well logs to seismic. Additionally, TexCal criticized Cimarex's isopach map for connecting acreage to the south as part of the reservoir, when initially, Cimarex had mapped this southern acreage as a separate reservoir. When Cimarex refined its isopach map, it was clear that the interpretation was valid and the reservoir volume depicted by the map matched the material balance. Cimarex used far offset seismic data in constructing its seismic interpretation of the field. This data has proven to be superior to use of full offset data, which TexCal used, in predicting the presence of hydrocarbons in similar fields in the area.

There are 9.1 productive acres on the Welder lease and 37.1 productive acres on the Barbeaud lease, based on Cimarex's mapping. There are 36.5 acres on the Exxon acreage to the south. When thickness is considered, the Welder lease has only 151 acre-feet and the Barbeaud lease has 1,196 acre-feet. There is no dispute that the Barbeaud well has significantly more net pay than the Welder No. 14, while the Welder original dry hole, only 250 feet from the sidetrack, has no pay in the subject sand.

FINDINGS OF FACT

1. Notice of this hearing was given to all parties entitled to notice at least ten days prior to the date of hearing.

2. All things have occurred necessary to give the Railroad Commission jurisdiction in this matter.

3. On April 15, 2008, Cimarex Energy Co. requested a hearing to consider various matters regarding its Barbeaud No. 1 in the Liberty, South Field.

4. On October 8-9, 22-23 and November 23-25, 2008, a hearing was held on the application of Cimarex Energy Co. for the Commission to rescind the Rule 49(b) allowable classification for all gas wells in the Liberty, South Field, or, to rescind the 49(b) allowable classification for its Barbeaud No. 1 in the Liberty, South Field, or, for a special allowable for the Barbeaud No. 1, or, for a new piercement type salt dome (PTSD) classification for its Barbeaud No. 1. Cimarex also requested cancellation of all accrued overproduction in the field.

5. TexCal Energy GP, LLC protested all aspects of the subject application.

6. The Liberty, South Field is designated as a piercement type salt dome (PTSD) field discovered in 1925. As with all PTSD designations, there are no minimum spacing or density requirements for drilling a well in the field.

7. The Liberty, South Field is classified as an associated field and gas well allowables are assigned pursuant to Statewide Rule 49(b). Statewide Rule 49(b) states:

> Any gas well producing from the same reservoir in which oil wells are completed and producing shall be allowed to produce daily only that amount of gas which is the volumetric equivalent in reservoir displacement of the gas and oil produced from the oil well in the reservoir that withdraws the maximum amount of gas in the production of its daily oil allowable.

8. According to the October 2008 proration schedule, there are 157 active producing oil wells and five active producing gas wells in the Liberty, South Field. The calculated 49(b) allowable for gas wells in the Liberty, South Field is 1,092 MCFD.

9. The Barbeaud No. 1 was drilled as a directional well and completed on July 5, 2007.

   a. The well was initially perforated in the lower part of the Cook Mountain 1 reservoir, from 10,624-10,640 feet (MD).

   b. After testing the lowermost interval, perforations were added in the Barbeaud No. 1 from 10,568-10,596' and 10,612-10,618' (MD) feet.

   c. Based on results of a PVT analysis, the Commission administratively classified the Barbeaud No. 1 as a gas well on November 15, 2007.

   d. The Barbeaud No. 1 was assigned an allowable effective December 25, 2007.

   e. As of February 1, 2008, the Barbeaud No. 1 was overproduced approximately 467 MMCF of gas.

   f. Through September 22, 2008, the Barbeaud No. 1 had produced 1.059 BCF of gas and 28,821 BC (barrels of condensate).

10. TexCal drilled its Welder No. 14 in March 2008. The well did not encounter the Cook Mountain 1 reservoir from which the Barbeaud No. 1 produces.

11. The Welder No. 14 was sidetracked to the southwest and completed in the Cook Mountain 1 reservoir with perforations between 10,502-10,519 feet (MD).

    a. On July 7, 2008, the Welder No. 14 (sidetrack) was administratively classified as a gas well in the Liberty, South Field, based on a compositional analysis submitted by TexCal.

    b. Through September 22, 2008, the Welder No. 14 had produced 0.135 BCF of gas and 2,850 BC.

12. The Barbeaud No. 1 is entitled to a new field designation called the Liberty, South (Barbeaud) Field.

    a. The Barbeaud No. 1 and the Welder No. 14 produce from a common reservoir which is not in communication with any other wells carried in the Liberty, South Field.

    b. The Barbeaud No. 1 encountered virgin reservoir pressure of 4,186 psia.

    c. The Welder No. 14 encountered depleted reservoir pressure of 2,539 psia.

    d. There is no dispute that the two wells produce from a separate fault block on the Liberty salt dome.

13. There is no gas-oil contact at 10,404 feet subsea in the Liberty, South (Barbeaud) Field. TexCal's interpretation of a gas-oil contact on the log of the Barbeaud No. 1 is flawed because it is based solely on the lack of crossover of the neutron and density porosity readings.

14. Cimarex's mapping of the Liberty, South (Barbeaud) Field is more accurate than TexCal's.

    a. TexCal's mapping includes a non-existent gas-oil contact in the field.

    b. TexCal's mapping is unreliable because the contouring of the seismic time structure map and the log depth structure map are not consistent.

    c. Cimarex's seismic interpretation of the field is based on far offset data, which has been shown to be superior to use of full offset data for predicting hydrocarbons in this area.

d. Cimarex's isopach of the field indicates a reservoir volume of 2.7 BCF of gas, which agrees closely with the material balance calculations.

e. Cimarex's synthetic tie of well logs to seismic was made without the necessity to manipulate the data as Texcal did in creating it's synthetic tie.

15. The Barbeaud No. 1 is properly classified as a gas well.

a. The PVT analysis of a sample taken from the lowermost perforations in the Barbeaud well indicates that reservoir at that interval was in two phases at discovery, existing as a saturated gas and condensed retrograde liquid.

b. The C_7+ (heptanes plus) component of the sample taken from the lowermost perforations in the Barbeaud No. 1 was only 2.7 mole%, substantially less than the 11% maximum mole% C_7+ guideline used by Commission staff for administrative gas well classification.

16. The Liberty, South (Barbeaud) Field is a non-associated gas field because the only two wells producing from the field are properly classified as gas wells. Statewide Rule 49(b) does not apply unless there is an oil well in the field.

17. Because the Liberty, South (Barbeaud) Field is located on the flanks of the Liberty salt dome, it should be classified as a piercement type salt dome field.

CONCLUSIONS OF LAW

1. Proper notice was issued in accordance with the applicable statutory and regulatory requirements.

2. All things have occurred to give the Railroad Commission jurisdiction to consider this matter.

3. The Barbeaud No. 1 is entitled to a new field designation called the Liberty, South (Barbeaud) Field. The Barbeaud No. 1 and the Welder No. 14 should be transferred from the Liberty, South Field to the new field.

4. The Liberty, South (Barbeaud) Field is currently a non-associated gas field which has two producing gas wells, the Barbeaud No. 1 and the Welder No. 14.

5. The Liberty, South (Barbeaud) Field is a piercement type salt dome field as defined by Statewide Rule 37.

6. Cancellation of overproduction in the Liberty, South (Barbeaud) Field will not harm correlative rights or cause waste because the field is a non-associated gas field with no oil column.

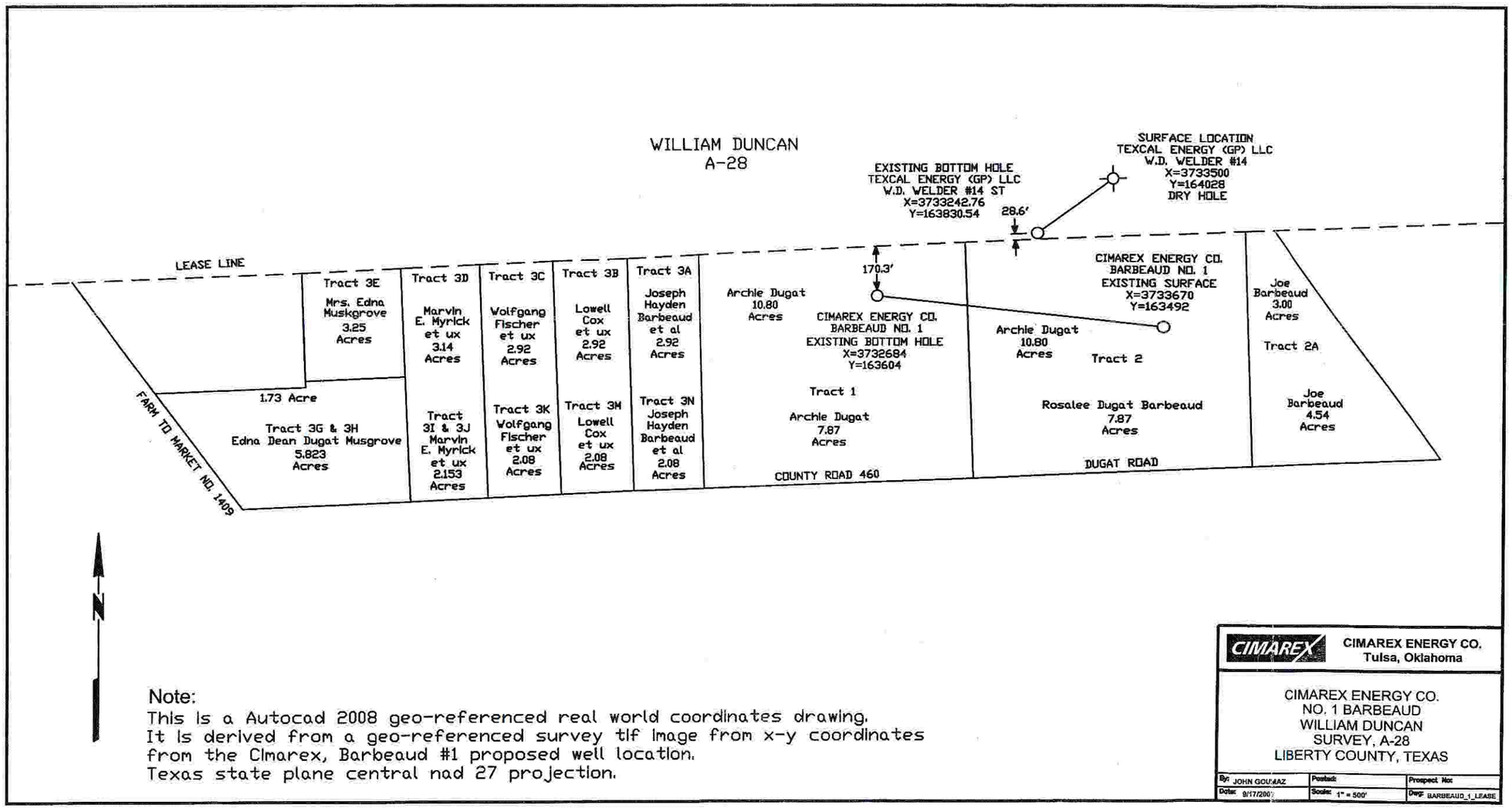
EXAMINERS' RECOMMENDATION

Based on the above findings and conclusions, the examiners recommend that a new field be approved called the Liberty, South (Barbeaud) Field and that the Barbeaud No. 1 and the Welder No. 14 be transferred from the Liberty, South Field into the new field. The field should be classified as a piercement type salt dome field and non-associated. All overproduction in the field should be canceled.

Respectfully submitted,

Donna K. Chandler
Technical Examiner

Marshall F. Enquist
Hearings Examiner



Note:
This is a Autocad 2008 geo-referenced real world coordinates drawing.
It is derived from a geo-referenced survey tif image from x-y coordinates
from the Cimarex, Barbeaud #1 proposed well location.
Texas state plane central nad 27 projection.

CIMAREX ENERGY CO.
Tulsa, Oklahoma

CIMAREX ENERGY CO.
NO. 1 BARBEAUD
WILLIAM DUNCAN
SURVEY, A-28
LIBERTY COUNTY, TEXAS

By: JOHN GOURAZ	Posted:	Prospect No:
Date: 9/17/2008	Scale: 1" = 500'	Dwg: BARBEAUD_1_LEASE

Cimarex Energy Exh. 6
Docket No. 03-0256594
October 8, 2008