

April 5, 2005

**OIL AND GAS DOCKET NO. 05-0246068**

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**APPLICATION OF BARROW-SHAVER COMPANY TO CONSIDER AMENDING THE  
FIELD RULES FOR THE RED OAK (DEXTER) FIELD, LEON COUNTY, TEXAS**

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**HEARD BY:** Thomas H. Richter, P.E.

**DATE OF HEARING:** March 23, 2006

**APPEARANCES:**

Philip Whitworth, attorney  
Kerry A. Pollard  
Scott Shaver  
Davis Gross, attorney  
Rick Johnston  
Billy Lee  
George C. Neale, attorney

**REPRESENTING:**

Barrow-Shaver Company  
  
XTO Energy, Inc.  
  
Resource Reserves Co.  
Diasu Oil & Gas Co., Gasper Rice  
Resources, Ltd., SuCo Energy  
Partners, L.P., Resource Reserves Co.

**EXAMINER'S REPORT AND RECOMMENDATION**  
**STATEMENT OF THE CASE**

This is the unopposed application of Barrow-Shaver Co. for the Commission to consider amending the field rules for the Red Oak (Dexter) Field as adopted in Order No. 05-0243053, effective July 22, 2005 which provide for:

1. The entire correlative interval between 6505' and 6543' as shown on the Induction log, of the Miller Energy (now XTO Energy, Inc) Harrington Lease Well No. 1 (API No. 42-289-31372), J.J. Burton Survey, Leon County, Texas should be designated as the Red Oak (Dexter) Field.
2. Minimum well spacing of 467'/933' (lease line/between well),
3. 40 acre proration units with 20 acre tolerance and maximum diagonal of 2,100';
4. An allocation formula based on 100% acreage.

Barrow-Shaver proposes the following:

1. Multiple 49(b) gas proration units up to 160 acres and 10% tolerance.
2. Top allowable for a gas well on 40 acres is 300 MCFD; incremental allowable proportionally with the size of the multiple 49(b) units providing an allowable of 1200 MCFD for 160 acres.
3. Cancellation of any gas well overproduction.

The examiner recommends approval.

### **DISCUSSION OF THE EVIDENCE**

The Red Oak (Dexter) Field was discovered in 2003 by completion of the Miller Energy, Harrington Lease Well No. 1 through perforations from 6515' to 6523' subsurface depth. In June 2005, there were only eight wells in the field. As of March 2006, there are 15 wells in the field. The field was classified as oil until completion of the Barrow-Shaver, Coldiron Well No. 1-W on December 7, 2005 through perforations from 6510' to 6517'. The well potentialed at 617 MCFD. XTO operates all the oil wells and Barrow-Shaver operates the only gas well. The MER allowable for a well in the field is 200 BOPD and 400 MCFD.

The subject field is an elongated reservoir with an Aoil leg@ and a gas gap. The Agas@ well was drilled well southwest of the existing Aoil@ field. There are no wells between what appears to be the Aoil@ column and the Agas@ cap. Pending further development of the gas cap, the restriction of gas withdrawals from gas wells is a prudent conservation matter. Applicant accordingly proposes that the top allowable for a gas well on 40 acres be 300 MCFD.

Cumulative oil from the field is 600 thousand barrels and 194 MMCF of gas through 2005. Basic reservoir parameters are: average porosity of 20%, average water saturation of 30%, and net pay thickness of 20'.

The proposed multiple 49(b) gas well allowable up to 160 acre density is appropriate and warranted. This is based on the radial flow rate of a gas compared to a liquid. The radial flow rate is inversely proportional to the viscosity (F) measured in centipoise (cp). The lower the viscosity the higher the radial flow rate. The viscosity of gas and oil from the Red Oak (Dexter) reservoir were analyzed using various pressures. At original reservoir pressure ("2800 psia), oil F was 0.89 cp and gas was 0.019 cp. At "2200 psia, oil F was 0.84 cp and gas was 0.017 cp. At "1000 psia, oil F was 1.05 cp and gas was 0.014 cp. This data indicates that the proposed multiple 49(b) rule allowing gas wells be assigned 160 acres plus 10% tolerance will avoid the drilling of unnecessary wells.

The Barrow-Shaver gas well is located several sections from the closest oil wells in the field. The field is an elongated reservoir with a southwest-northeast axis. It appears that the gas well is located in the reservoir's gas cap. There will be some gas-oil transition area eventually developed. The proposed gas withdrawal for one gas well assigned 160 acres is 1200 MCFD and is the same as four gas wells assigned 40 acres each.

Cancellation of gas well over production will not adversely affect correlative rights.

### **FINDINGS OF FACT**

1. Notice of this hearing was sent to all operators in the subject field at least ten (10) days prior to the subject hearing.
2. There was no protest at the call of the hearing.
3. The Red Oak (Dexter) Field was discovered in 2003 by completion of the Miller Energy, Harrington Lease Well No. 1 through perforations from 6515' to 6523' subsurface depth.
  - a. There are 15 oil wells in the field.
  - b. Special Field Rules Order No. 05-0243053 provide for 40 acre density. The MER allowable for an oil well is 200 BOPD and a casinghead gas limit of 400 MCFD .
  - c. The first gas well was completed in December 2005.
  - d. The restriction of gas withdrawals for gas wells on 40 acres to 300 MCFD is a prudent conservation measure during the initial stage of the development and delineation of the gas cap.
4. The proposed multiple 49(b) gas well allowable up to 160 acre density is appropriate and warranted.
  - a. The proposed gas withdrawal for one gas well assigned 160 acres is 1200 MCFD and is the same total withdrawal allowed for four gas wells assigned 40 acres each.
  - b. The relative viscosities of oil and gas in this reservoir confirm that the gas wells will drain substantially more acreage than oil wells.
  - c. Allowing gas wells to be assigned up to 160 acres will avoid the drilling of unnecessary wells.
5. Cancellation of gas well over production will not adversely affect correlative rights.

**CONCLUSIONS OF LAW**

1. Proper notice was given to all parties as set out in the provisions of all applicable codes and regulatory statutes.
2. All things have occurred and been accomplished to give the Commission jurisdiction in this matter.
3. Consideration of field rules, a determination of their effectiveness and appropriate actions is a matter within the Commission jurisdiction.
4. Adoption of the proposed amended field rules will prevent waste, foster conservation and protect correlative rights.

**EXAMINER'S RECOMMENDATION**

Based on the above findings and conclusions of law, the examiner recommends approval of the proposed amended field rules for the Red Oak (Dexter) Field.

Respectfully submitted,

Thomas H. Richter, P.E.  
Technical Examiner  
Office of General Counsel