

January 3, 2007

OIL AND GAS DOCKET NO. 08-0249609

APPLICATION OF XTO ENERGY, INC. TO AMEND THE FIELD RULES FOR THE UNIVERSITY BLOCK 9 (DEVONIAN) FIELD, ANDREWS COUNTY, TEXAS

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

DATE OF HEARING: December 22, 2006

APPEARANCES:

David Gross, attorney
Greg Cloud

REPRESENTING:

XTO Energy, Inc.

EXAMINER'S REPORT AND RECOMMENDATION
STATEMENT OF THE CASE

This is the unprotested application of XTO Energy, Inc. to amend the field rules as adopted in Order No. 8-31,288, effective April 11, 1955, as amended, for the University Block 9 (Devonian) Field that currently provide for the following:

1. The entire combined correlative interval from 10,242' to 11,700' as shown on the Compensated Sonic Gamma Ray Caliper log of the Exxon Company, U.S.A., St. University CF Lease Well No. 1, Sect. 22, Blk 9, University Survey, Andrews County, Texas, is designated as the University Block 9 (Devonian) Field.
2. Minimum well spacing of 467'/660' (lease line/between well);
3. 40 acre proration units plus 20 acres tolerance and a maximum diagonal of 2,100'; and optional 20 acre density and a maximum diagonal of 1,500'; and
4. An allocation formula based on 75% acreage and 25% per well.

XTO Energy proposes the following:

1. The entire combined correlative interval from 10,224' to 11,770' as shown on the Compensated Sonic Gamma Ray Caliper log of the Exxon Company, U.S.A., St. University CF Lease Well No. 1, Sect. 22, Blk 9, University Survey, Andrews County, Texas, is designated as the University Block 9 (Devonian) Field.
2. Minimum well spacing of 100'/0' (lease line/between well);
3. The addition of optional 10 acre density and a maximum diagonal of 2,100'; and
4. An allocation formula based on 95% per well and 5% acreage.

5. An MER allowable of 2000 BOPD per well for a well with a 40 acre proration unit and proportionate allowable assignment for a well with smaller proration designation.

It is further requested that any over-production be cancelled.

DISCUSSION OF THE EVIDENCE

The University Block 9 (Devonian) Field was discovered in 1954 at 10,450' subsurface depth. Special Field Rules were adopted pursuant to Order No. 8-31,288, effective April 11, 1955, as amended. The top allowable for a well in the subject field completed at this depth is 262 BOPD. XTO Energy is the only operator in the field with 46 wells.

The field size is approximately 3,700 acres. Basic reservoir parameters are: 5.4 % porosity, water saturation of 16.5% and an average permeability is 1.9 millidarcies. A total of 132 wells have produced from the field. Cumulative production is 28.7 MMBO and 14.5 BCF of casinghead gas and the current production is 4,230 BOPD.

It is proposed that the entire combined correlative interval from 10,224' to 11,770' as shown on the Compensated Sonic Gamma Ray Caliper log of the Exxon Company, U.S.A., St. University CF Lease Well No. 1, Sect. 22, Blk 9, University Survey, Andrews County, Texas, is designated as the University Block 9 (Devonian) Field. The original designated interval from 10,242' to 11,700' did not include the *entire* Devonian Formation as found in subsequent wells.

Optional 10 acre density is necessary for the efficient and effective depletion of the reservoir. In the 1997 hearing (Oil & Gas Docket No. 08-0216043) the evidence presented at the time supported 40 acre and optional 20 acre density. The bottomhole pressure in the existing wells was approximately 600 psi. The drilling of the in-fill wells encountered reservoir virgin pressure. A drainage analysis was performed on the 59 wells in the field at that time. Calculated drainage areas ranged from 2 to 79 acres (40% of the wells drained less than 20 acres). Since 1997, a total of 46 horizontal lateral drainholes have been drilled and completed. A subsequent drainage study shows that there are wells that have or will drain 10 acres or less. Drainage analysis was performed on several adjacent horizontal drainhole laterals that ranged in distance from 300' to 500' apart. Log analysis, pressure data and production data substantiate the need for 10 acre density.

The proposed minimum well spacing, 100'/0' (leaseline/between well) is necessary to provide flexibility in locating wells for optimum drainage. A total of 19 wells have been drilled less than 467' from the lease line (11 wells are approximately 100' from the lease line). Eight of the horizontal drainhole laterals have between-well distances ranging from 601' to 392' that required exceptions to Statewide Rule 37.

Because the field interval combines multiple productive zones, a two-factor allocation formula is necessary for the protection of correlative rights pursuant to State Statutes. The proposed two-factor allocation formula based on 95% deliverability and 5% acreage satisfies this requirement

and reflects the capability of a well to recover reserves. Cancellation of any overproduction will not harm correlative rights as the entire field is University Public Lands.

The proposed MER of 2000 BOPD per well reflects the production potential of the infill wells (vertical or multiple horizontal drainhole lateral wells). Production rates range to as high as 2,000 BOPD. The reservoir has produced over 112 MMBW. All the wells are either pumping or using downhole centrifugal pumps. Ultimate recovery for the existing wells is 37 MMBO for a recovery of 37.5% of the original oil-in-place.

EXAMINER'S OPINION

The examiner does not recommend that an MER allowable be adopted for the subject field. An MER allowable is based on *reservoir well producing efficiency rate* and not on a maximum obtainable production rate. No step rate testing data was submitted though the examiner does note that the wells are produced using some form of artificial lift. The December 2006 Proration Schedule shows that the producing gas-oil ratios are all less than 1000:1. Only ten wells had maximum production rates greater than the top allowable for a well in the field. Only one of these wells, a vertical well, was shown as having a maximum initial production rate of 2,000 BOPD. The next highest maximum rate was 700 BOPD and the lowest is 340 BOPD. Horizontal drainhole wells may apply for additional allowable pursuant to Statewide Rule 86.

From a reservoir stand point, a well does not know it has been assigned 10 acres up to 40 acres. A 2,000 BOPD would be granted a well regardless of the acreage assigned. The examiner recommends that a top allowable be designated thus allowing wells completed on less than 40 acres proportionate allowable based on the acreage assigned. The examiner recommends that the top allowable for a well in the field to be 520 BOPD for a well on 40 acres be adopted.¹ This provides for a higher initial producing rates for horizontal drainhole wells based on the additional acreage assigned pursuant to Statewide Rule 86.

The allocation formula should remain 75% acreage and 25% per well at the recovery from the reservoir is based on 40 acre and optional 10 acre density. This requested density is indicative that recoverable reserves are a function of drainage area and thus acreage should be a dominant factor in allowable assignment.

These recommendations were discussed with XTO Energy subsequent to the hearing and XTO Energy stated that the recommendation would not be considered adverse.

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.

¹ Based on XTO Exhibit 23, averaging the sum of 8 wells removing the highest and the lowest rates..

2. There was no protest at the call of the hearing.
3. The University Block 9 (Devonian) Field was discovered in 1954 at 10,450' subsurface depth.
 - a. Special Field Rules were adopted pursuant to Order No. 8-31,288, effective April 11, 1955, as amended.
 - b. XTO Energy is the only operator in the field with 46 wells.
4. The entire combined correlative interval from 10,224' to 11,770' as shown on the Compensated Sonic Gamma Ray Caliper log of the Exxon Company, U.S.A., St. University CF Lease Well No. 1, Sect. 22, Blk 9, University Survey, Andrews County, Texas, is designated as the University Block 9 (Devonian) Field.
5. Optional 10 acre density is necessary for the efficient and effective depletion of the reservoir.
 - a. Since 1997 the drilling of in-fill wells has encountered reservoir virgin pressure whereas surrounding wells are at \pm 600 psi.
 - b. Drainage analysis was performed on 59 wells and the drainage areas range from 2 to 79 acres (40% of the wells drained less than 20 acres).
 - c. A total of 46 horizontal lateral drainholes have been drilled and completed and a subsequent drainage study shows that there are wells that have or will drain 10 acres or less.
 - d. Drainage analysis and pressure determinations were made on several adjacent horizontal drainhole laterals that ranged in distance from 300' to 500' apart that substantiate the need for 10 acre density.
6. The proposed minimum well spacing, 100'/0' (leaseline/between well), is necessary to provide flexibility in locating wells for optimum drainage.
 - a. A total of 19 wells have been drilled less than 467' from the lease line (11 wells are approximately 100' from the lease line).
 - b. Eight of the horizontal drainhole laterals have between-well distances ranging from 601' to 392' that required exceptions to Statewide Rule 37.
7. The field interval combines multiple productive zones and a two-factor allocation formula is necessary for the protection of correlative rights pursuant to State Statutes. The proposed two-factor allocation formula based on 95% deliverability and 5% acreage satisfies this

requirement and reflects the capability of a well to recover reserves.

8. Cancellation of any overproduction will not harm correlative rights as the entire field is University Public Lands.
9. An MER of 520 BOPD per well reflects the production potential of wells (vertical or multiple horizontal drainhole lateral wells).

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 are a matter within the Commission jurisdiction.
4. Adoption of the proposed amended field rules will prevent waste, foster conservation and protect correlative rights.
5. A top allowable of 520 BOPD will not adversely effect the ultimate recovery of reserves from the reservoir.

EXAMINER'S RECOMMENDATION

Based on the above findings and conclusions of law, the examiner recommends approval of the proposed amended field rules for the University Block 9 (Devonian) Field.

Respectfully submitted,

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