

December 27, 2000

OIL AND GAS DOCKET NO. 03-0226831

THE APPLICATION OF ETOCO, INC., TO AMEND FIELD RULES FOR THE ORANGE HILL, S. (WILCOX 11000) FIELD, AUSTIN COUNTY, TEXAS

Heard by: Margaret Allen, Technical Hearings Examiner

Procedural history

Application received: November 20, 2000

Hearing held: December 21, 2000

Appearances

James Bostic

Walter Cochran

Representing

Etoco, Inc.

EXAMINER'S REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Current field rules for the Orange Hill, S. (Wilcox 11000) Field were adopted under Docket No. 3-72,586, effective June 5, 1979, and are summarized as follows:

1. Well spacing of 933-1867';
2. 220 acre gas proration units with 10% tolerance and a maximum diagonal of 5000 feet; and
3. allocation based on deliverability.

Etoco seeks to amend the spacing rule to 467-933 feet and the density rule to 160 acres with optional 80-acre proration units. The examiner recommends that rules specifying the designated interval and two allocation factors be adopted. Etoco agreed to the following Rule 1 and to allocation based 95% on acreage and 5% on deliverability:

1. Top of a 1200-foot thick designated interval shown at 11,242 feet on the log of the Etoco Kaechele Unit Lease Well No. 2.

DISCUSSION OF THE EVIDENCE

The Orange Hill, S. (Wilcox 11000) Field was discovered in 1977, but was not very active until about three years ago. Field rules specifying 220-acre units were adopted, without a hearing in 1977, at the request of the multiple operators in the field at the time. The redevelopment of the Orange Hill, S. (Wilcox 11000) Field is due to the highly successful development of an analogous Lower Wilcox field about two miles to the southwest, the Chesterville, N. (Pack) Field.

The Orange Hill, S. (Wilcox 11000) Field produces from an upthrown closure on the northwest side of a major northeast-southwest trending fault. The productive sandstones pinch out on the north side and there is another fault along the northwestern edge of the field. These pay sands are the uppermost of the Lower Wilcox section and represent a very thick section of stacked sandstone bars. An isopach map shows two areas of thicker deposition. The pay sands have very low permeability of less than 0.1 md, and the necessary large fracture stimulations are economic only if there are at least 80 feet of pay.

The first well in the field, the Tex-atic Resources Wright-Best Well No. 3B produced from 1977 to 1991, and was then re-activated in the same interval in 1999. Cumulative production is 860 MMCF, current deliverability is 400 MCF, and the estimated ultimate recovery will be 1.1 BCF. The Prize Operating Hillboldt Well No. 1 has produced 3.7 BCF since 1977. This well's production had been declining but deeper perforations in the same interval were added in 1997, and current deliverability is about 690 MCF per day. The estimated ultimate recovery of this well is 6.4 BCF. Etoco drilled its Kaechele Unit Well No. 1 in the Orange Hill, S. (Wilcox 11000) Field during November of 1998, and it has already produced 666 MMCF.

Otoco's Kaechele Unit No. 2 was drilled in January of 2000, and encountered the top of the Lower Wilcox pay sands at 11,242 feet. The well was perforated from 11,265 to 11,285 feet; from 11,304 to 11,332 feet; and from 11,432 to 11,546 feet, in five separate sandstone intervals. Current production from Well No. 2 is 2.2 MMCF per day and cumulative production as of October, 1999, is 668 MMCF of gas. The Kaechele No. 2 was not drilled to what the applicant believes may be the base of the productive Lower Wilcox section. Based on the productive section in the Chesterville, N. (Pack) Field, Etoco estimates that there may be 1200 feet of gross productive interval in the Orange Hill, S. (Wilcox 11000) Field. Because none of the well's in the Orange Hill, S. (Wilcox 11000) were drilled to the base of the correlative sands designated in the Chesterville, N. (Pack) Field, Etoco's has requested that only the top of the correlative interval be designated and that the base of the interval be indicated as being 1200 feet lower in the Lower Wilcox section.

The average reservoir porosity is 15% and the water saturation is 40%. Cumulative field production is 6,240 MMCF and 50,000 barrels of condensate, with 60% liquid water cut. New wells have encountered the same 5000 psi of reservoir pressure as the discovery well. Etoco believes this demonstrates that the field is not being adequately drained on the current 220-acre density pattern. Etoco has calculated the ultimate drainage areas of the older Best Well No. 3 and Hillboldt Well No. 1 at 15 and 84 acres respectively. One other well that produced between 1978 and 1990, has a

calculated drainage area of 16 acres.

Etoco has not yet estimated the ultimate drainage areas of the Kaechele Nos. 1 and 2 but they have produced much better than the Hillboldt No. 1 did during its first two years on production. The applicant has requested 160-acre proration units with 80-acre optional units because of the variation in estimated drainage areas. Etoco has requested that well spacing of 467-933 feet be adopted to facilitate infill drilling and because there may be areas of the field that have to be developed to 40-acre density.

Because of the multiple reservoirs, a two-factor allocation formula is required by statute. One based 5% on deliverability and 95% on acreage will satisfy the statutory requirement for two factors. The allocation formula is currently suspended and should remain so.

FINDINGS OF FACT

1. Notice of this hearing was given to all operators in the Orange Hill, S. (Wilcox 11000) Field on December 8, 2000.
2. The Orange Hill, S. (Wilcox 11000) Field was discovered in 1977, and has produced 6.24 BCF and 50,000 barrels of condensate.
3. Proration units of 160 acres with 80-acre optional units are appropriate for the subject field.
 - a. Two of the older wells in the field, the Tex-atic Resources Wright-Best No. 3B and Prize Operating Hillboldt No. 1 are still active and have daily deliverabilities of about 400 MCF and 690 MCF, respectively.
 - b. These two wells will recover an estimated 7.5 BCF and the Wright-Best No. 3B has an anticipated drainage area of 15 acres and the Hillboldt No. 1 has an anticipated drainage area of 84 acres.
 - c. The newest wells in the field, drilled after 1998, encountered virgin pressure and have been producing at higher rates than the Hillboldt No. 1 did in the 1970's.
 - d. Etoco's Kaechele Well No. 1 produced 668 MMCF in its first two years on production and the Kaechele Well No. 2 produced about the same amount in one year.
 - e. Both the Kaechele Well Nos. 1 and 2 are now producing about 1500 MMCF per day.
4. Well spacing of 467-933 feet will facilitate infill drilling, particularly as some parts of the field may have to be developed on 40 acre density.

5. The top of the Lower Wilcox sands in Etoco's Kaechele Well No. 2 is at 11,242 feet and there are five separate sandstones perforated in this well.
6. The productive Lower Wilcox interval in the analogous Chesterville, N. (Pack) Field is about 1200 feet thick, but none of the wells in the Orange Hill, S. (Wilcox 11000) Field are deep enough to encounter all of the section thought productive in the subject field.
7. Allocation based 5% per well and 95% on deliverability will protect correlative rights and satisfy the statutory requirement for two factors in multiple-reservoir fields.

CONCLUSIONS OF LAW

1. Proper notice was given as required by statute.
2. All things have been done or occurred to give the Railroad Commission jurisdiction to resolve this matter.
3. The requested amendments to the field rules will prevent waste, protect correlative rights, and promote conservation.

EXAMINER'S RECOMMENDATION

Based on the above findings and conclusions, the examiner recommends that the requested rule amendments be adopted for the Orange Hill, S. (Wilcox 11000) Field.

Respectfully submitted,

Margaret Allen
Technical Hearings Examiner

Date of Commission Action: January 9, 2001

Exhibits

1. Structure map
2. Log
3. Cross section
4. isopach of net pay
5. proration schedule for Chesterville, N (Pack) Field
6. Field rule order
7. Reservoir data sheet
8. Pressure vs cum decline curves
9. Rate/time decline curves
10. Historical production
11. EUR
12. Volumetric and drainage calculations
13. Requested rules