

THE APPLICATION OF HILCORP ENERGY COMPANY TO AMEND THE FIELD RULES FOR THE TOM O'CONNOR (4400) FIELD, REFUGIO COUNTY, TEXAS

Heard by: Donna K. Chandler on October 3, 2001

Appearances:

Brian Sullivan
Archie Beckett

Tim George

Representing:

Hilcorp Energy Company

Exxon Mobil Corporation

EXAMINER'S REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Field rules for the Tom O'Connor (4400) Field were adopted on March 9, 1981 in Docket No. 2-71,907. The rules in effect for the field are summarized as follows:

1. Well spacing a minimum of 467 feet from lease lines and 800 feet between wells;
2. 640 acre gas units with 10% tolerance and a maximum diagonal of 11,000 feet;
3. Allocation based on 100% acreage, with a maximum allowable of 8 MMCFD for the field.

Hilcorp requests that Rules 2 and 3 be amended to provide for optional 320 acre gas units and 100% deliverability allocation, with the elimination of the 8 MMCFD limitation, and cancellation of all overproduction.

This application was unopposed and the examiner recommends that the field rules for the field be amended as proposed by Hilcorp Energy Company.

DISCUSSION OF EVIDENCE

First production from the Tom O'Connor (4400) Field was in 1952. The field is a large associated reservoir which has produced a total of 16.5 million BO and 101 BCF of gas.

The subject reservoir is an elongated anticline running southwest to northeast which is approximately nine miles long and 2 miles wide. The original oil-water contact was at -4,346 feet and the original gas-oil contact was at -4,323 feet. Most of the completions in the oil rim have been plugged and abandoned. The remaining oil reserves are primarily on the southwest end of the reservoir, on the opposite end of the reservoir from the main gas cap area. The oil rim contained 7,858 acres, with original oil in place of 77.5 million barrels. The original gas cap contained 7,218 acres, with original gas in place of 107.5 BCF of gas.

In 1981, the Commission approved secondary recovery in the field and unitization of the Tom O'Connor (4400 Sand) Gas Unit, which encompassed 18,618 acres. The gas allowable for the associated gas wells was set at 8 MMCFD in an effort to maintain a constant gas cap size and maximize oil recovery from the oil rim. Hilcorp now believes that the goals of the secondary recovery program have been attained and the reserves are estimated to be 90% depleted. Increasing gas production from the gas cap will not adversely affect the remaining oil reserves and will increase ultimate recovery of gas from the gas cap.

There are currently 8 active gas completions in the field and 28 active oil completions. Current oil production is approximately 300 BOPD and gas production continues at near 8 MMCFD. All of the oil wells are on artificial lift and current potentials range from 5 to 35 BOPD. The produced oil has a low gravity of only 23 degrees API.

Reservoir pressure in the gas cap has been drawn down to approximately 350 psig, which is over 80% depleted. Hilcorp believes that the reservoir pressure can be further lowered 30-40 psig with the installation of compression equipment for gas cap blowdown. This 30-40 psig reduction will increase ultimate gas recovery by 1.5 BCF.

In the Unit Operating Agreement of 1981, the owners incorporated a provision to allow removal of the 8 MMCFD gas limit when oil production dropped below 10,000 BO per month for three consecutive months, if 98% of the owners voted to remove the limit. For the first six months of 2001, the oil production has been below 10,000 BO per month. Over 99% of the gas unit owners approved removal of the gas limit at this time. Many of the gas unit owners are also oil interest owners, indicating that the oil owners agree that blowdown will not affect ultimate oil recovery at this time. The only interest owner that did not consent to blowdown (0.26%) chose not to vote.

To accomplish blowdown, Hilcorp will recomplete at least three wells from other reservoirs to the 4400 Sand. This will increase gas production by about 4.5 MMCFD. Larger flowlines and additional compression will be installed will increase field production by about 1.5 MMCFD. It is estimated that total field production will be increased to 14-15 MMCFD. Hilcorp requests that, in addition to removal of the 8 MMCFD limit, that the allocation formula for the field be based on 100% deliverability and that any overproduction be canceled.

Hilcorp requests that the density rule for the field be amended to provide for optional 320 acre density. Hilcorp will then be able to use existing wellbores for recompletions as necessary to

maximize recovery of gas.

FINDINGS OF FACT

1. Notice of this hearing was given to all persons entitled to notice at least ten days prior to the date of hearing.
2. The Tom O'Connor (4400) Field is a large associated reservoir which has produced a total of 16.5 million BO and 101 BCF of gas since 1952.
3. Original oil in place in the reservoir was 77.5 million BO and original gas in place was 107.5 BCF.
4. In 1981, the Commission approved secondary recovery in the field and unitization of the Tom O'Connor (4400 Sand) Gas Unit. At that time, the gas allowable for the associated gas wells was set at 8 MMCFD in an effort to maintain a constant gas cap size and maximize oil recovery from the oil rim.
5. Current production from the field is 300 BOPD from 28 oil wells and approximately 8 MMCFD from 8 gas wells.
6. The goals of the secondary recovery program have been attained and the reserves are estimated to be 90% depleted.
7. With the installation of larger flowlines and additional compression equipment, an additional 1.5 BCF of gas will be recovered from the field without affecting the remaining oil reserves.
8. With the adoption of a 320 acre optional density rule, operators will be able to use existing wellbores for recompletions as necessary to maximize recovery of gas.

CONCLUSIONS OF LAW

1. Proper notice of this hearing was issued.
2. All things have been accomplished or have occurred to give the Commission jurisdiction in this matter.
3. Amending the field rules for the Tom O'Connor (4400) Field will prevent waste and protect correlative rights.

4. Rescinding the 8 MMCFD gas limit for the field will not cause waste.
5. Cancellation of overproduction will not cause waste or harm correlative rights.

RECOMMENDATION

Based on the above findings and conclusions of law, the examiner recommends that the field rules for the Tom O'Connor (4400) Field be amended as proposed by Hilcorp Energy Company, including cancellation of overproduction.

Respectfully submitted,

Donna K. Chandler
Technical Examiner