

**OIL AND GAS DOCKET NO. 7C-0258433**

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**THE APPLICATION OF TXP, INCORPORATED FOR INCREASED NET GAS-OIL RATIO AUTHORITY FOR EACH WELL IN THE LUCKY-MAG (DIVIDE SAND) FIELD, IRION COUNTY, TEXAS**

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**Heard by:** Richard D. Atkins, P.E.

**Date of Hearing:** September 24, 2008

**Appearances:**

Dale E. Miller

**Representing:**

TXP, Incorporated

**EXAMINER'S REPORT AND RECOMMENDATION**

**STATEMENT OF THE CASE**

TXP, Incorporated requests an increased net gas-oil ratio authority with a casinghead gas limit of 500 MCFGPD for each well in the Lucky-Mag (Divide Sand) Field, Irion County, Texas. TXP also requests that all overproduction in the field be canceled.

This application was unopposed and the examiner recommends approval of the increased net gas-oil ratio authority with a daily gas limit of 500 MCFGPD for each well in the field and cancellation of all overproduction.

**DISCUSSION OF THE EVIDENCE**

The Lucky-Mag (Divide Sand) Field was discovered in May 1956. The field operates under Statewide Rules with a top allowable of 111 BOPD and an allowable gas-oil ratio of 2,000 cubic feet per barrel. There are fourteen oil wells and one shut-in well carried on the proration schedule. TXP, Incorporated operates four flowing and two pumping oil wells that were drilled after July 2007. Fortune Production Co. operates six flowing, two pumping and one shut-in oil wells and Strand Energy, LC operates one pumping oil well. Cumulative production from the field through August 2008 is 274.1 MBO and 1.3 BCFG.

The gross pay section in the Lucky-Mag (Divide Sand) Field is approximately sixty feet thick and the wells are perforated over the majority of the lower portion of the pay interval to enable the recovery of the maximum amount of oil reserves. The primary drive mechanism for the reservoir is a solution gas drive, which results in decreasing oil

production, increasing gas production and higher well GORs.

In order to determine rate sensitivity, TXP tested four of their flowing wells from August 7th through September 5th, 2008. In general, the tests showed that when the choke size was reduced from 22/64ths of an inch down to 16/64ths of an inch, each well's GOR would increase and the flowing tubing pressure would decrease, indicating that the wells were loading up with fluid. The lowest GORs were obtained on a choke size of 22/64ths of an inch.

The GOR for the Bingham "22" Lease, Well No. 1, increased from 25,357 up to 27,278 and the flowing tubing pressure decreased from 80 psi down to 70 psi. On a choke size of 22/64ths of an inch, the average daily rate was 16 BO and 399 MCFG.

The GOR for the Noelke "28" Lease, Well No. 1, increased from 10,201 up to 12,100 and the flowing tubing pressure decreased from 150 psi down to 120 psi. On a choke size of 22/64ths of an inch, the average daily rate was 37 BO and 381 MCFG.

The GOR for the Noelke "28" Lease, Well No. 2, increased from 3,557 up to 4,579 and the flowing tubing pressure decreased from 380 psi down to 230 psi. On a choke size of 22/64ths of an inch, the average daily rate was 75 BO and 266 MCFG.

The GOR for the Noelke "28" Lease, Well No. 3, increased from 3,592 up to 4,550 and the flowing tubing pressure decreased from 320 psi down to 280 psi. On a choke size of 22/64ths of an inch, the average daily rate was 59 BO and 271 MCFG.

These examples clearly demonstrate that the most efficient rate to produce wells in this reservoir is at higher gas rates, which result in the lowest gas-oil ratio. In order to maximize production and prevent waste, TXP requests an increased net gas-oil ratio authority with a casinghead gas limit of 500 MCFGPD be approved for the entire field. The requested rate is slightly higher than the actual test rates, but it will give flexibility in producing rates to keep the wells unloaded. This will also allow for the depletion of the reservoir without any reservoir damage and will increase the ultimate recovery from the field.

TXP estimates that, through July 2008, its Bingham "22" Lease is overproduced by 34,028 MCFG and its Noelke "28" Lease is overproduced by 2,201 BO and 26,527 MCFG. TXP requests that all overproduction in the field be canceled.

### **FINDINGS OF FACT**

1. Notice of this hearing was given to all persons entitled to notice and there were no protests.

2. The Lucky-Mag (Divide Sand) Field was discovered in May 1956. The field operates under Statewide Rules with a top allowable of 111 BOPD and an allowable gas-oil ratio of 2,000 cubic feet per barrel.
3. TXP, Incorporated operates four flowing and two pumping oil wells that were drilled after July 2007. Fortune Production Co. operates six flowing, two pumping and one shut-in oil wells and Strand Energy, LC operates one pumping oil well.
4. The gross pay section in the Lucky-Mag (Divide Sand) Field is approximately sixty feet thick and the wells are perforated over the majority of the lower portion of the pay interval to enable the recovery of the maximum amount of oil reserves.
5. The primary drive mechanism for the reservoir is a solution gas drive, which results in decreasing oil production, increasing gas production and higher well GORs.
6. In order to determine rate sensitivity, TXP tested four of their flowing wells from August 7th through September 5th, 2008.
  - a. The GOR for the Bingham "22" Lease, Well No. 1, increased from 25,357 up to 27,278 and the flowing tubing pressure decreased from 80 psi down to 70 psi. On a choke size of 22/64ths of an inch, the average daily rate was 16 BO and 399 MCFG.
  - b. The GOR for the Noelke "28" Lease, Well No. 1, increased from 10,201 up to 12,100 and the flowing tubing pressure decreased from 150 psi down to 120 psi. On a choke size of 22/64ths of an inch, the average daily rate was 37 BO and 381 MCFG.
  - c. The GOR for the Noelke "28" Lease, Well No. 2, increased from 3,557 up to 4,579 and the flowing tubing pressure decreased from 380 psi down to 230 psi. On a choke size of 22/64ths of an inch, the average daily rate was 75 BO and 266 MCFG.
  - d. The GOR for the Noelke "28" Lease, Well No. 3, increased from 3,592 up to 4,550 and the flowing tubing pressure decreased from 320 psi down to 280 psi. On a choke size of 22/64ths of an inch, the average daily rate was 59 BO and 271 MCFG.
7. The tests showed that when the choke size was reduced from 22/64ths of an inch down to 16/64ths of an inch, each well's GOR would increase and the flowing tubing pressure would decrease, indicating that the wells were

loading up with fluid. The lowest GORs were obtained on a choke size of 22/64ths of an inch.

8. Approval of an increased net gas-oil ratio authority with a casinghead gas limit of 500 MCFGPD will allow for the depletion of the reservoir without any reservoir damage and will increase the ultimate recovery from the field.
9. Cancellation of all overproduction in the field will not harm correlative rights.

**CONCLUSIONS OF LAW**

1. Proper notice of this hearing was given to all persons legally entitled to notice.
2. All things have occurred or been accomplished to give the Railroad Commission jurisdiction in this matter.
3. Approving the increased net gas-oil ratio authority with a daily gas limit of 500 MCFGPD for each well and canceling overproduction in the Lucky-Mag (Divide Sand) Field will not cause waste or harm correlative rights.

**EXAMINER'S RECOMMENDATION**

Based on the above findings of fact and conclusions of law, the examiner recommends approval of the increased net gas-oil ratio authority with a daily gas limit of 500 MCFGPD for each well in the Lucky-Mag (Divide Sand) Field. It is further recommended that all overproduction in the field be canceled.

Respectfully submitted,

Richard D. Atkins, P.E.  
Technical Hearings Examiner