

**THE APPLICATION OF R. M. HILL OPERATING INC. FOR INCREASED NET GAS-OIL RATIO AUTHORITY FOR EACH WELL IN THE KENDALL (BEND CONGLOMERATE) FIELD, YOUNG COUNTY, TEXAS**

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

**Date of Hearing:** July 22, 2008

**Appearances:**

Dale E. Miller

**Representing:**

R. M. Hill Operating Inc.

**EXAMINER'S REPORT AND RECOMMENDATION**

**STATEMENT OF THE CASE**

R. M. Hill Operating Inc. requests an increased net gas-oil ratio authority with a casinghead gas limit of 250 MCFGPD for each well in the Kendall (Bend Conglomerate) Field, Young County, Texas. Hill Operating 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 250 MCFGPD and cancellation of the overproduction.

**DISCUSSION OF THE EVIDENCE**

The Kendall (Bend Conglomerate) Field was discovered in May 1943. The field operates under Statewide Rules with a top allowable of 73 BOPD and an allowable gas-oil ratio of 2,000 cubic feet per barrel. There are 4 oil wells and 2 associated gas wells carried on the proration schedules. The gas field is 100% AOF. Cumulative production from the field through May 2008 is 378.3 MBO, 6.9 MBC and 2.5 BCFG.

R. M. Hill Operating, Inc. operates two oil wells that have had significant production. Antle Operating, Inc. and Ranger Operating Co. operate one oil well each that are producing only 1 to 2 barrels of oil per month and no gas. Antle Operating Inc. operates one gas well that has averaged 30 MCFGPD and no condensate for over one year. S. B. Street Operating, Inc. operates one gas well that has had no production since August 2007.

The gross pay section in the Kendall (Bend Conglomerate) Field varies from 8 feet to 12 feet and the wells are perforated over the entire pay interval to enable recovery of the maximum amount of oil reserves. Hill Operating stated that the Bend Conglomerate

reservoirs in this area typically have a reservoir bubble point at approximately 1,400 psi. Once a producing oil well's bottom hole pressure drops below the bubble point, the oil production decreases and the gas production and GOR increase.

This is clearly illustrated by the R. M. Hill Operating, Inc. - Allar 1723 Lease Well No. 1. This well was completed in January 1987 and its producing GOR remained below 2,000 standard cubic feet per barrel until January 2002. Since then, the GOR has steadily increased and in May 2008 was 11,818 standard cubic feet per barrel. Recent step-rate tests at pumping rates between 4 and 8 strokes per minute showed that the GOR does not change, while the oil production increases from 10 to 16 BOPD and the water production increases from 50 BWPD to only 60 BWPD.

The most recent well completed by R. M. Hill Operating, Inc., the Gerold Graham Lease Well No.1, potentialed in May 2008 for 73 BOPD, 657 MCFGPD and 0 BWPD with an initial GOR of 9,000 standard cubic feet per barrel. This well was recently tested flowing on a 16/64" choke with a flowing tubing pressure of 270 psi. The well produced 14 BOPD, 160 MCFGPD and 5 BWPD with a GOR of 11,429 standard cubic feet per barrel. Any attempt to reduce the choke size will cause the well to load up and cease to flow.

These two examples clearly demonstrate that the reservoir pressure has fallen below the bubble point and that the producing GOR will continue to rise. In order to maximize production and prevent waste, Hill Operating requests an increased net gas-oil ratio authority with a casinghead gas limit of 250 MCFGPD be approved for the entire field. This will allow for the depletion of the reservoir without any reservoir damage and will increase the ultimate recovery from the field.

Hill Operating estimates that its Allar 1723 Lease Well No. 1 is overproduced by 6,477 MCF of casinghead gas through May 2008. Hill Operating 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 Kendall (Bend Conglomerate) Field was discovered in May 1943. The field operates under Statewide Rules with a top allowable of 73 BOPD and an allowable gas-oil ratio of 2,000 cubic feet per barrel.
3. There are 4 oil wells and 2 associated gas wells carried on the proration schedules. The gas field is 100% AOF.
4. The gross pay section in the field varies from 8 feet to 12 feet and the wells

are perforated over the entire pay interval to enable recovery of the maximum amount of oil reserves.

5. The Bend Conglomerate reservoirs in this area typically have a reservoir bubble point at approximately 1,400 psi. Once a producing oil well's bottom hole pressure drops below the bubble point, the oil production decreases and the gas production and GOR increase.
6. The R. M. Hill Operating, Inc. - Allar 1723 Lease Well No. 1 was completed in January 1987 and its producing GOR remained below 2,000 standard cubic feet per barrel until January 2002. Since then, the GOR has steadily increased and in May 2008 was 11,818 standard cubic feet per barrel.
7. Recent step-rate tests at pumping rates between 4 and 8 strokes per minute showed that the GOR does not change, while the oil production increases from 10 to 16 BOPD and the water production increases from 50 BWPD to only 60 BWPD.
8. The most recent well completed by R. M. Hill Operating, Inc., the Gerold Graham Lease Well No.1, potentialed in May 2008 for 73 BOPD, 657 MCFGPD and 0 BWPD with an initial GOR of 9,000 standard cubic feet per barrel.
9. On a recent test, the well flowed on a 16/64" choke at the rate of 14 BOPD, 160 MCFGPD and 5 BWPD with a GOR of 11,429 standard cubic feet per barrel. Any attempt to reduce the choke size will cause the well to load up and cease to flow.
10. Approval of an increased net gas-oil ratio authority with a casinghead gas limit of 250 MCFGPD will allow for the depletion of the reservoir without any reservoir damage and will increase the ultimate recovery from the field.
11. 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 250 MCFGPD and canceling overproduction in the Kendall (Bend Conglomerate) 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 250 MCFGPD for the Kendall (Bend Conglomerate) Field. It is further recommended that all overproduction in the field be canceled.

Respectfully submitted,

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