

**OIL AND GAS DOCKET NO. 03-0227766**

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**THE APPLICATION OF COBRA OIL & GAS CORP. FOR TEMPORARY FIELD RULES,  
YONAHOSA, SW. (MIDDLE COOK MT.) FIELD, HARDIN COUNTY, TEXAS**

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**Heard by:** Margaret Allen, Technical Hearings Examiner

**Procedural history**

Application received: March 9, 2001

Hearing held: April 11, 2001

**Appearances**

Dick Schmidt

Representing  
Cobra Oil & Gas Corp.

**EXAMINER'S REPORT AND RECOMMENDATION**

**STATEMENT OF THE CASE**

Cobra is seeking the following temporary field rules:

1. Designated interval from 9804 to 9922 feet, as shown on the log of the Cobra Oil & Gas Black Stone Minerals Company Well No. 1;
2. 467-1200 feet well spacing;
3. 320 acre gas proration units with 10% tolerance and a maximum diagonal of 7500 feet; and
4. allocation based on acreage.

**DISCUSSION OF THE EVIDENCE**

The Yonahosa, SW. (Middle Cook Mt.) Field was discovered June 24, 2000, with the completion of the Cobra's Black Stone Minerals Company Lease Well No. 1. This well was perforated from 9920 to 9922 feet, and its initial test rate was 4822 MCF/D. Since its completion, the Black Stone Minerals Company Well No. 1, the only well in the field, has produced 19,353 BC and 1677 MMCF. The well's producing rate is about 300 MMCF per month and has not declined yet. The initial bottom-hole pressure was 7474 psi.

The well became overproduced by 673,000 MCF, before it was retested in March of 2001. As there are no other wells in the field to have been hurt by the overproduction, Cobra has requested

that it be canceled.

The Yonahosa, SW. (Middle Cook Mt.) reservoir is located south of an east-west trending fault. The nearest Middle Cook Mountain well is 6000 feet to the northwest, across the fault. The other nearby completions produce from the Upper Cook Mountain or Yegua formations. The pay sand extends from 9804 to 9922 feet, but the well is producing only from a two-foot section at the base which was intended to be squeezed prior to the main perforations. Cobra intends to locate more wells in this sand, using 3d seismic. It has requested smaller spacing than standard to be able to locate these wells in the optimal positions identified by the seismic. Cobra owns all of the leases around the Black Stone Minerals Company Well No. 1.

Porosity in the Black Stone Minerals Company Well No. 1 is 30%, water saturation is 20% and the net pay is 30 feet. The well will ultimately recover 25.7 BCF, assuming its production declines 14% per year. Material balance equations indicate that 2782 MCF are recoverable per acre-foot. Volumetric calculations indicate 26.7 BCF recoverable from underneath 320 acres, which is 83% of the original gas-in-place.

There are no Middle Cook Mountain fields in Hardin County, but there are several in Liberty County which have 320 acre density. Allocation based on acreage will protect correlative rights.

### **FINDINGS OF FACT**

1. Notice of this hearing was given to all operators in the field and to all operators and unleased mineral interest owners of tracts offsetting the discovery tract on March 21, 2001.
2. The discovery well, the Black Stone Minerals Company Well No. 1, was perforated from 9920 to 9922 feet, and its initial test rate in June of 2000, was 4822 MCF/D.
3. The initial reservoir pressure was 7474 psi.
4. Temporary rules specifying 320 acre units are appropriate for a period of 18 months.
  - a. The only well in the field has produced 19,353 BC and 1677 MMCF of gas.
  - b. The well is now producing at a daily rate of about 10 MMCF.
  - c. The Black Stone Minerals Company Well No. 1 will ultimately recover 25.7 BCF, assuming its production declines 14% per year.
  - d. Volumetric calculations indicate recoverable reserves of 26.7 BCF underneath 320 acres, which is 83% of the original gas-in-place.
  - e. There are Middle Cook Mountain gas fields in Liberty County that also have 320 acre

gas proration units.

5. Well spacing of 467-1200 feet will allow extra flexibility in locating wells at the optimal locations shown by 3d seismic.
6. The pay sand extends from 9804 feet to 9922 feet, but only the two lowermost feet are perforated.
7. Allocation based on acreage will protect correlative rights.

#### **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 temporary field rules will prevent waste, protect correlative rights within the field, and promote orderly development of the reservoir.

#### **EXAMINER'S RECOMMENDATION**

Based on the above findings and conclusions, the examiner recommends that the requested temporary field rules for the Yonahosa, SW. (Middle Cook Mt.) Field be approved and reviewed in 18 months. All overproduction for the Cobra Black Stone Minerals Company Well No. 1 should be canceled.

Respectfully submitted,

Margaret Allen  
Technical Hearings Examiner

Date of Commission Action: May 8, 2001.