

March 9, 2000

**OIL AND GAS DOCKET NO. 7C-0223554**

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**THE APPLICATION OF APACHE CORPORATION FOR PERMANENT FIELD RULES  
FOR THE HONDO RAINBOW (FUSSELMAN) FIELD, REAGAN COUNTY, TEXAS**

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

**Procedural history**

Hearing requested: December 17, 1999

Hearing held: February 23, 2000

**Appearances**

Bill G. Spencer  
Steve Davis

Representing  
Apache Corporation

**EXAMINER'S REPORT AND RECOMMENDATION**

**STATEMENT OF THE CASE**

Apache is requesting the following permanent field rules for the Hondo Rainbow (Fusselman) Field:

1. Designated interval from 9334 to 9361 feet as shown in the log of the Apache Corp. Recycler Well No. 1;
2. 467-1200 foot well spacing;
3. 80 acre proration units with 40 acre tolerance for the last well on a lease and a maximum diagonal of 3250 feet; and
3. Allocation based on acreage.

**DISCUSSION OF THE EVIDENCE**

The Hondo Rainbow (Fusselman) Field was discovered in December of 1990, with the completion of Hondo Oil & Gas Company Delaware's Rainbow "19" Lease Well No. 1. This well had an initial daily potential of 180 BO and watered out in 1993, after producing 30,000 BO. There are currently three wells in the field, one operated by the applicant and two operated by Queen Sand Operating Company (formerly by Northland Operating Company).

Apache completed its Recycler Well No. 1 in December of 1999. This well was perforated between 9339 and 9348 feet and had an initial potential of 173 BOPD with a gas/oil ratio of 2271 cubic feet per barrel. The Fusselman Formation extends from 9334 to 9361 feet in the Recycler No. 1. The current daily allowable for all wells in the subject field is 157 BO and 314 MCF, though the Recycler No. 1's allowable is penalized to 138 BOPD because of its high gas/oil ratio. This well had accumulated 1300 barrels of overproduction by the end of January, 2000..

Queen Sand's Balinese Lease Well No. 1 was completed the Hondo Rainbow (Fusselman) Field in 1996, with an initial potential of 184 BOPD and a current potential of 133 BOPD. By the time a second well was drilled on the Balinese Lease, Well No. 1 had already produced over 100,000 BO and a decline curve predicted the well will recover an additional 141,000 BO. The Balinese No. 2 was completed in July of 1998, with an initial daily potential of 115 BO; its current daily potential is 56 BO.

The Balinese No. 1 has average porosity of 10% and net pay of 14 feet, with 34% water saturation. A recovery factor of 35% was assumed because of the partial water drive. Volumetric calculations indicate that if this well reaches its predicted ultimate recovery it will have drained 172 acres. Apache also studied a number of analogous Fusselman wells from other fields in the area to predict the average drainage areas for wells in the Hondo Rainbow (Fusselman) Field. The ultimate recoveries of these wells, predicted from their decline curves, ranged from 212,000 to 379,000 BO. Volumetric calculations, using each well's individual net pay and porosity values, indicate the drainage areas of these wells from nearby Fusselman fields ranges from 77 acres to 177 acres. Using a decline rate similar to those of other wells, Apache's Recycler No. 1 will produce 194,000 BO and drain 70 acres.

#### FINDINGS OF FACT

1. Notice of this hearing was given to all operators in the Hondo Rainbow (Fusselman) Field on December 23, 1999.
2. The field was discovered in 1990, but the discovery well watered out in 1993, after producing 30,000 BO.
3. The second field well, the Queen Sand Balinese Lease Well No. 1 was completed in 1996 and produced 100,000 BO before a second well was drilled on this lease.
4. Decline curve and volumetric calculations indicate the Balinese No. 1 will recover 240,000 BO and thus drain 177 acres.
5. Wells from other Fusselman fields in the area have calculated drainage areas of 77 to 177 acres.
6. The Recycler No. 1 was completed in December of 1999, with an initial potential of 177 BOPD and a gas/oil ratio of 2271 cubic feet per barrel.

7. There is little production history from Apache's Recycler Well No. 1 but calculations based on the decline rates of other Fusselman wells indicate that it may produce 194,000 BO and drain 70 acres.
8. The field's daily allowable is 157 BO and 314 MCF and the Recycler No. has become overproduced by 1300 barrels because of its high gas/oil ratio.
9. The existing three wells in the field have been drilled under Statewide spacing rules of 467-1200 feet.
10. Allocation based on acreage will protect correlative rights.
11. The Fusselman Formation extends from 9334 and 9361 feet in the type log from the Recycler Well No. 1.

**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 field rules will prevent waste, protect correlative rights and permit orderly development of the reservoir.

**EXAMINER'S RECOMMENDATION**

Based on the above findings and conclusions, the examiner recommends that the requested field rules for the Hondo Rainbow (Fusselman) Field be adopted on a permanent basis.

Respectfully submitted,

Margaret Allen  
Technical Hearings Examiner

Date of Commission Action: March 10, 2000

Exhibits

1. Proration schedule
2. Map with analogous wells
3. Forms W-2 and rate/time production graphs from analogous wells
4. Drainage area calculations from analogous wells
5. Log (late-filed)
6. From W-2 for discovery well
7. Form P-7 for discovery well
8. Production history of discovery well