

OIL AND GAS DOCKET NO. 7C-0229665

**THE APPLICATION OF TEXACO E&P, INC. FOR INCREASED GAS OIL RATIO
AUTHORITY FOR ITS WEST 'B' LEASE WELL NO. 4, POZO RICO (WOLFCAMP)
FIELD, SCHLEICHER COUNTY, TEXAS**

Heard by: Margaret Allen, Technical Hearings Examiner

Procedural history

Application received: October 4, 2001

Hearing held: November 28, 2001

Appearances

Travis Flowers

Mike Reeves

Representing

Texaco E&P, Inc.

EXAMINER'S REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Texaco is seeking increased gas/oil ratio authority for its West 'B' Lease Well No. 4 to allow this well to produce at the optimum rate. The examiner recommends a daily gas limit of 675 MCF.

DISCUSSION OF THE EVIDENCE

The West 'B' Lease Well No. 4 was drilled in 1995 and produced from the Bell Canyon Formation until 2001. In September of 2001, the well was recompleted to the Pozo Rico (Wolfcamp) Field with an initial potential of 262 BOPD and 452 MCF/D. The well's top perforation is at 4871 feet and the bottom perforation at 5080 feet, with 58 net feet of net perforations in between.

The Pozo Rico (Wolfcamp) Field was discovered in 1995, and Ricks Barrow No. 1 has been the only oil well in the field. This well produced over 100 BOPD at first but its potential is now shown on the proration schedule as 1 BOPD. There are also three gas wells in the field whose allowable is shown as associated, 100% AOF. The top oil allowable is 102 BOPD with a corresponding gas limit of 204 MCF/D. The Wolfcamp production is very lenticular, with isolated lenses, some containing oil and others containing gas.

It is not possible in advance to determine which lenses produce oil and which gas, and therefore to predict whether a well will be classified as oil or gas. Initial decline rates for Wolfcamp wells are 80 to 90% during the first year and the applicant does not expect this well to produce more than its current gas limit at the end of a year.

A step-rate test was conducted between October 3 and November 20, 2001, which showed that producing the well at its current gas limit will cause waste. The first choke size tested for several days was 14/64th inches, and during this period the well's daily oil production declined from 200 barrels to 85 barrels and the gas/oil ratio increased from 2225 to 6165 cubic feet per barrel. As the choke size was

decreased the daily producing oil and gas rates decreased and the gas/oil ratio increased. The worst gas/oil ratio occurred when the well produced closest to its daily gas limit of 204 MCF.

When the average daily rates were 14 BO and 211 MCF, on a 6/64th inch choke, the gas/oil ratio was over 15,000 cubic feet per barrel. The applicant calculated that producing the well at this allowable gas limit would result in total production of 40,000 BO and 345 MMCF. If the well can be produced at the optimum rate, the ultimate recovery would be 80,000 BO and 353 MMCF. The best method of production will probably be to increase the choke size for a few days and then reduce it to encourage oil to build around the wellbore. Increasing the choke size again will cause flush oil production for a few days.

Near the end of the test, the choke size was increased back to 14/64th inches again, though this time the average daily rates were 74 barrels and 614 MCF, for an average gas/oil ratio of 8300. The choke size was increased again to 16/64th inches but the gas/oil ratio on this choke was 9330 cubic feet per barrel. The applicant requested a daily gas limit of 800 MCF but the highest gas rate during the test was 668 MCF/D. The examiner suggested that a daily rate of 675 MCF was sufficient to produce the well efficiently on a 14/64th inch choke. The applicant did not consider this an adverse recommendation.

The well has produced 5186 BO and 29,236 MCF since it was recompleted to the Wolfcamp. Gas overproduction is 16,588 MCF. All the gas wells in this field produce at deliverability and the other oil well has a capability of only 1 BOPD. Restricting production from the West 'B' Well No. 4 is not necessary to protect correlative rights.

FINDINGS OF FACT

1. Notice of this hearing was given to all operators in the Pozo Rico (Wolfcamp) Field and to all offset operators on October 17, 2001.
2. The subject well, the West 'B' No. 4, was recompleted to the Pozo Rico (Wolfcamp) Field in September, 2001, with an initial potential of 262 BOPD and 452 MCF/D.
3. The well's top perforation is at 4871 feet and the bottom perforation at 5080 feet, with 58 net feet of net perforations in between.
4. The current allowable is 102 BOPD with 204 MCF of gas per day.
5. The well was step-rate tested between October 3 and November 20, 2001,
 - a. The first choke size tested for several days was 14/64th inches, and during this period the well's daily oil production declined from 200 barrels to 85 barrels and the gas/oil ratio increased from 2225 to 6165 cubic feet per barrel.
 - b. On a 6/64th inch choke, the average daily rates were 14 BO and 211 MCF, for a gas/oil ratio over 15,000 cubic feet per barrel.
 - c. When the choke size was increased back to 14/64th inches again, the average daily rates

were only 74 barrels and 614 MCF, for an average gas/oil ratio of 8300.

- d. The choke size was increased again to 16/64th inches but the gas/oil ratio on this choke was 9330 cubic feet per barrel.
6. Producing the well at its current gas limit will cause waste.
 - a. Producing the well at the allowable gas limit would result in total production of 40,000 BO and 345 MMCF.
 - b. If the well can be produced at the optimum rate, the ultimate recovery would be 80,000 BO and 353 MMCF.
 - c. The highest producing rate on a 14/64th inch choke, the most efficient size, was 688 MCF/D.
 7. The well's cumulative production is 5186 BO and 29,236 MCF since it was recompleted to the Wolfcamp. Gas overproduction is 16,588 MCF.
 8. Requiring the well to stay within its current daily gas limit of 204 MCF will not increase the well's ultimate oil recovery.
 9. Requiring the subject well to make up overproduction is not necessary to protect correlative rights.
 - a. There are three gas wells in the field whose allowable is shown as associated, 100% AOF.
 - b. The only other oil well has a potential of 1 BOPD, according to the proration schedule.

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. An increase in gas allowable for the West 'B' Lease Well No. 4 to 675 MCF per day will not cause waste and will protect correlative rights within the field.

EXAMINER'S RECOMMENDATION

Based on the above findings and conclusions, the examiner recommends that the West 'B' Lease Well No. 4, operated by Texaco E&P, Inc., in the Pozo Rico (Wolf camp) Field, be allowed to produce up to 675 MCF of gas per day. All overproduction for this well should be canceled.

Respectfully submitted,

Margaret Allen
Technical Hearings Examiner

Date of Commission Action: December 20th, 2001