
THE APPLICATION OF CHEVRON USA, INC., TO PERMANENTLY CLASSIFY THE BRUNI MINERAL TRUST LEASE WELL NO. B-31 AS A GAS WELL OR, IN THE ALTERNATIVE, FOR INCREASED GAS/OIL RATIO AUTHORITY, BRAZIL PASTURE (WILCOX SECOND) FIELD, WEBB COUNTY, TEXA

Heard by: Margaret Allen, Technical Hearings Examiner

Procedural history

Application received: September 4, 2002

Hearing held: September 27, 2002 and April 16, 2003

Appearances

Brian Sullivan
William McCain
Lynn E. Wilson

Representing
Chevron USA, Inc.

EXAMINER'S REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Chevron USA initially asked for increased net gas/oil ratio authority for its Bruni Mineral Trust Lease Well No. B-31 in the Brazil Pasture (Wilcox Second) Field. After a step-rate test, it changed its request to permanent classification as a gas well. The evidence at the first hearing on September 4, 2002, did not demonstrate the well was producing from a retrograde condensate reservoir. Chevron requested that the hearing be re-opened and on April 16, 2003, asked for increased net gas/oil ratio with a daily gas limit of 800 MCF/D. The examiner recommends a daily gas limit of 350 MCF/D. The applicant would also like to have the well's overproduction canceled.

DISCUSSION OF THE EVIDENCE

The Brazil Pasture (Wilcox Second) Oil Field was discovered in 1969 at a depth of 4560', but had no wells by 2000. The Statewide daily allowables for an oil well in a field at this depth are 93 barrels of oil and 186 MCF of gas. Chevron USA's Bruni Mineral Trust Lease Well No. B-31 was recompleted to this field on October 7, 2001. A G-1 Test showed a rate of 762 MCF/D at an initial reservoir pressure of 2286 psi, through perforations between 4415' and 4440'.

The Commission reviewed a Form G-5 on the subject well and determined that the Bruni Mineral Trust Lease Well No. B-31 should be classified as an oil well. The parameters leading to that determination included a gas/oil ratio of 41,276 cubic feet per barrel, oil gravity of 40° API, an initial boiling temperature of 127° and an end point of 722°. To have been classified as a gas well, the well must have met the following criteria, *inter alia*, gas/oil ratio of 12,500, oil gravity of 50° API, initial boiling temperature of 120° and end point of 720°.

Chevron had a PVT analysis made of the reservoir fluid to determine if the well produced from a retrograde condensate reservoir. A fluid sample, collected December 15, 2001, was recombined at initial reservoir temperature (164°F) and pressure, and the recombined fluid was evaluated at various pressures. The reservoir fluid was not a single phase gas until the reservoir pressure reached 6648 psig (the retrograde dew point pressure). The initial reservoir pressure at discovery was estimated to have been only 2369 psi. This analysis does not show that the well produces from a retrograde condensate reservoir. The most likely reason that the dew point pressure is so much higher than the initial reservoir is that more than one reservoir is commingled downhole.

Chevron admitted that several sets of perforations were made in this well when it was recompleted to the Brazil Pasture (Wilcox Second) Field. The applicant first perforated from 4513' to 4515', and then set a bridge-plug at 4500'. The well was perforated from 4472' to 4490' and from 4472' to 4447', and these perforations were then squeezed. Additional perforations between 4390' and 4392', above the remaining interval, were block squeezed. The only perforations now reported open are from 4415' to 4440'.

The applicant believes that the cement squeeze operations in 2001 were unsuccessful at sealing some of the perforations and caused communication between oil-bearing and gas-bearing intervals. Any attempt at further squeezes would probably be unsuccessful and might jeopardize the remaining reserves in this well. No additional wells are likely to be completed in this field.

Daily production was reported from October 16, 2001, through April 14, 2003. The well initially produced about 800 MCF and 23 BOPD, and the cumulative production for 2001 was 65 MMCF and 1300 BO. The gas/oil ratio varied during 2002, decreasing generally from 60,000 to about 30,000 cubic feet per barrel by early 2003. During January and February of 2003, the well produced about 300 MCF and 10 BOPD. Since March 1, the liquid production is down to approximately one barrel per day, and the gas/oil ratio has risen to almost 300,000 cubic feet per barrel. Cumulative production from the subject well is 220 MMCF and 5000 BO.

Chevron USA has also requested cancellation of overproduction. This is the only well in the field and correlative rights will not be harmed by the cancellation of overproduction.

EXAMINER'S OPINION

The examiner recommends that the application for increased net gas/oil ratio be approved with a gas limit of 300 MCF/D. The subject well has been producing less than 350 MCF/D for the last year, and even if the liquid production can be restored, the gas rate will probably be much less than 800 MCF/D. The gas and oil are coming from different strata within the Wilcox and restricting the gas production will not increase the ultimate oil recovery. The applicant does not consider this an adverse recommendation.

FINDINGS OF FACT

1. Notice of this hearing was given to all operators and interest owners in the Brazil Pasture (Wilcox Second) Field on September 13, 2002.

2. The Brazil Pasture (Wilcox Second) Oil Field was discovered in 1969, and daily allowables for oil wells are 93 barrels of oil and 186 MCF of gas.
3. The Chevron USA Bruni Mineral Trust Lease Well No. B-31 was recompleted to this field October, 2001, and is likely to be the only well in the field.
4. Several intervals were perforated in the subject well, but all the perforations except those between 4415' and 4440' have been cement squeezed.
5. PVT analysis found the dew point pressure much higher (6648 psi) than the initial reservoir pressure (2369 psi), indicating that more than one reservoir is commingled downhole.
6. There is probable communication between oil-bearing and gas-bearing sandstone intervals due to an incomplete cement squeeze operation.
7. Any attempt at further cement squeezes would probably be unsuccessful and might jeopardize the remaining reserves in this field.
8. The gas and oil produced by the Bruni Minerals Trust Well No. B-31 are coming from different strata within the Wilcox and restricting the gas production will not increase the ultimate oil recovery.
9. Current producing rates are about 300 MCF/D and 1 BOPD.
10. The subject well has produced at a daily gas rate averaging less than 350 MCF for about a year.
11. Cancellation of the overproduction will not harm correlative rights as it is likely there will be no other wells in the Brazil Pasture (Wilcox Second) Field.

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. Producing the Chevron USA, Inc., Bruni Mineral Trust Lease Well No. B-31 at a maximum daily gas rate of 300 MCF will not cause waste and will promote conservation.
4. Cancellation of the overproduction for the Bruni Minerals Trust Well No. B-31 will not harm correlative rights.

EXAMINER'S RECOMMENDATION

Based on the above findings and conclusions, the examiner recommends denial of the request to classify the Chevron USA, Inc., Bruni Mineral Trust Lease Well No. B-31 permanently as a gas well. The examiner recommends that the Chevron USA, Inc., Bruni Mineral Trust Lease Well No. B-31 be

allowed to produce under increased net gas/oil ratio authority at a maximum daily rate of 300 MCF. The overproduction for this well should be canceled as of the day that this order is final.

Respectfully submitted,

Margaret Allen
Technical Hearings Examiner

Date of Commission Action: August 5, 2003