

**OIL AND GAS DOCKET NO. 08-0227559**

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**THE APPLICATION OF CITATION OIL & GAS COMPANY FOR INCREASED GAS OIL RATIO AND MER AUTHORITY FOR THE ABELL (DETRITAL) FIELD, CRANE COUNTY, TEXAS**

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

**Procedural history**

Application received: February 20, 2001

Hearing held: April 19, 2001

**Appearances**

Dale Miller

Representing

Citation Oil & Gas Company

**EXAMINER'S REPORT AND RECOMMENDATION**

**STATEMENT OF THE CASE**

Citation Oil & Gas Company is seeking increased gas/oil ratio authority and an MER determination for both wells in the Abell (Detrital) Field. This will allow wells in the field to produce up to 1000 cubic feet and 500 barrels of oil per day. Citation is also requesting that all overproduction for its wells in the Abell (Detrital) Field be canceled.

**DISCUSSION OF THE EVIDENCE**

The Abell (Detrital) Field was discovered in March, 1975, at a depth of 5212 feet. Field rules specify 330-933' well spacing on 40 acre oil proration units, with a daily allowable of 102 BO and a daily gas limit of 500 MCF.

There are two active wells in the field, both operated by Citation. The D.K. Glenn No. 2 was drilled in 1975, and has produced 505,000 BO, 1.8 BCF and 1,695,000 BW. The well's production had declined to about 400 BO per month before a submersible pump was installed early in 2001. By March, 2001, production increased to 11,063 BO, with 8222 MCF and 48,025 BW. The water rate is 8 to 12 barrels of water per barrel of oil.

The Mobil-Glenn No. 7 was drilled in 1995, and its cumulative production is 29,000 BO, 185 MMCF and 887,000 BW. Production was about 500 BO per month before a submersible pump was also installed in this well. During February, the first month on the submersible pump, production

in this well jumped to 5000 barrels of oil and 13,000 barrels of water. However, early in March, 2001, water broke through and monthly gas production jumped from 33 MMCF to 56 MMCF. March's production was 1500 BO and 19 MMCF.

The submersible pumps were installed to lower the fluid levels in each well's tubing/casing annulus. Produced water is corrosive and both wells have had to be worked on frequently to maintain production. The pump on the D.K. Glenn Well No. 2 has been very successful, but the pump on the Mobil-Glenn Well No. 7 is less successful because of the water break through. There are several open intervals in the Mobil-Glenn No. 7 and Citation thinks it may be possible to determine the source of the excess water in the Mobil-Glenn No. 7 and squeeze that zone off.

Because of the pumps, it is difficult to test these wells at different rates. Between February 5 and March 4, Citation varied the pump speed in the D.K. Glenn No. 2. At the slowest rate, the average gas/oil ratio was 1922 cubic feet per barrel and water/oil ratio was 8.75. When the pump speed was increased, the gas/oil ratio decreased to 1050 and water/oil ratio decreased to 5.19. At the fastest pump speed, the gas/oil ratio was 842 cubic feet per barrel and the water ratio was 4.38 barrels per barrel of oil. The daily producing oil rate increased from 173 barrels of oil to 378 barrels of oil by the end of the test, while the daily gas rate remained about 325 MCF. The highest daily production from the D.K. Glenn No. 2 was 392 barrels of oil and 350 MCF.

A similar test on the Mobil-Glenn No. 7 had erratic results due to the water break through, but also indicated lower gas/oil and water/oil ratios at higher pumping rates. The highest daily production from this well was 451 barrels of oil and 1170 MCF.

To limit pumping enough to keep the Citation wells within their allowables would require the installation of different submersible pumps. Lower pumping rates causes reservoir energy to be wasted when the gas/oil ratio increases. Lower pumping rates also cause the production of less oil per barrel of water, increasing disposal costs. During February and March, 2001, the D.K. Glenn No. 2 became overproduced by about 11,000 BO. At the same time, the Mobil-Glenn No. 7 accumulated 800 barrels and 3500 MCF of overproduction. The only way to make up this overproduction would be to shut the pumps on these wells down. Given the frequent history of well failures, this would pose considerable risk of further well problems.

### **FINDINGS OF FACT**

1. Notice of this hearing was given to all operators in the subject Field on March 20, 2001.
2. The first well in the subject field, the D.K. Glenn No. 2, has produced 505,000 BO, 1.8 BCF and 1,695,000 BW, since 1975.
3. This well's production was only 400 BO per month before a submersible pump increased monthly production to 11,063 BO, and 8222 MCF with 48,025 BW.
4. The other well in the field has produced 29,000 BO, 185 MMCF and 887,000 BW since 1995.

5. Monthly production of the second well was 500 BO before a submersible pump increased production to 5000 BO and 13,000 barrels of water. Water break through in this well has since reduced the efficiency of the pump at increasing oil production.
6. The submersible pumps make it difficult to do rate tests on these wells but in general, the higher the oil rate, the lower the gas/oil ratio and the lower the water/oil ratio.
7. The allowable for wells in the Abell (Devonian) Field has been 102 BOPD and 500 MCF/D.
8. The highest daily rates during the well tests of either well were 451 BO and 1170 MCF.
9. Both wells can produce at oil rates more efficiently than they can at the allowable rate.
10. Both wells have accumulated overproduction but the only way to make up this overproduction would be to shut off the submersible pumps.
11. Both wells have considerable records of mechanical problems due to corrosion, making shutting the wells in risky.

### **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 increase in allowables for wells in the Abell (Detrital) Field 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 wells in the Abell (Detrital) Field, be allowed to produce up to 1000 MCF of gas and 500 barrels of oil per day. All overproduction for wells in the field should be canceled.

Respectfully submitted,

Margaret Allen  
Technical Hearings Examiner

Date of Commission Action: May 8th, 2001