OIL AND GAS DOCKET NO. 03-0239827

THE APPLICATION OF JOHN H. YOUNG, INC. TO SUSPEND THE ALLOCATION FORMULA IN THE ROCKY CREEK (EDWARDS) FIELD, FAYETTE COUNTY, TEXAS

Heard by: Donna K. Chandler, Technical Examiner
James M. Doherty, Hearings Examiner

Procedural history:

Application received:	August 12, 2004
Hearing held:	November 15-16, 2004
Transcript Issued:	December 6, 2004
Record Closed:	December 22, 2004
PFD Issued:	February 24, 2005

Appearances:	**Representing**:
Applicant:	
Glenn E. Johnson	John H. Young, Inc.
Wayman Gore	
Bill G. Spencer	
Protestants:	
Michael McElroy	Lower Colorado River Authority
Rick Johnston	
Dan Kruger	

EXAMINERS' REPORT AND PROPOSAL FOR DECISION

STATEMENT OF THE CASE

John Y. Young, Inc. ("Young") requests that the Commission suspend the allocation formula in the Rocky Creek (Edwards) Field, Fayette County. The application was protested by Lower Colorado River Authority ("LCRA"), the only other operator in the field.

Young believes that the allocation formula in a field must be suspended if there is a market for all gas produced from the field. Young believes that such market exists in the

Rocky Creek (Edwards) Field and that AOF status will not cause waste in the field. LCRA believes that there are insufficient transportation facilities to deliver to the market all of the gas which can be produced from the field. Additionally, LCRA believes that waste will occur as a result of higher production rates associated with AOF status.

DISCUSSION OF THE EVIDENCE

Young Evidence

The Rocky Creek (Edwards) Field is a non-associated gas field which was discovered in 1985. Wells carried in the field were actually completed as early as 1982 and placed in other fields until the new field designation was approved in 1985. There are two operators in the field: Young with eight producing wells and LCRA with five producing wells. Allocation in the field is based on 100% acreage with 320 acre field rules.

Young believes that the subject field is a depletion drive reservoir, with only minimal support from a water drive. All wells in the field produce water from initial completion. Increased water production in wells may result from poor cementing, or fracturing into other zones. Young does not believe that there is aquifer encroachment as pressure is reduced in the field. In support of its belief that mechanical problems affect water production, Young relies on LCRA documents regarding the Biegel No. 1. This well had been completed in 1989 and was re-stimulated in 1992. According to a 1992 letter from LCRA to Halliburton, the increase in water production from this well is attributed to fracturing an interval below the perforations and/or a poor cement job. To demonstrate that water production is not detrimental to a well's production, Young described the history of the Halsted No. 1. This well was initially completed in 1982, with a workover in 1988. As a result of the workover which included a very large fracture stimulation, gas and water production increased significantly (1,000 MCFD and <5 BWPD to over 6,000 MCFD and 400 BWPD). This well has produced 8 BCF of gas since the workover. Even though water production increased after the workover, there was a significant increase in gas recovery from the well after the workover. The increase in water production was related to remedial operations on the well, not a result of aquifer encroachment.

The two structurally highest wells in the field, the Park Unit No. 1 and Park Unit No. 2, both produced water on initial completion, at 62 BWPD and 85 BWPD respectively. Many wells much lower on the structure produced much less water. The Kathryn No. 1SA was completed at about the same time as the Park wells in 1989, but more than 500 feet structurally lower. The Kathryn No. 1SA produced 60 BWPD on initial test. Young presented a diagram demonstrating that there is no correlation between depth of perforated interval and water producing rate. All wells in the field produce water and the volume of water production is not dependent on structural position.

Young also presented production histories for eight wells in the offsetting Giddings (Edwards Gas) Field. For all of these eight wells, the water yield increases over time, just as it does for wells in the Rocky Creek (Edwards) Field. The Giddings (Edwards Gas) Field has been under AOF status since 1996 and Young believes the two fields are very similar.

In deposition, Mr. Dan Kruger (Oil & Gas Administrator for LCRA) testified that LCRA consumed produced gas from the field at its own facilities and, therefore there is a market demand for all gas produced from the LCRA wells in the Rocky Creek (Edwards) Field. He also testified that there is sufficient pipeline capacity for all produced gas, as long as pipeline pressures are sufficiently low to allow gas to flow into the line.

LCRA Evidence

Cumulative production from the Rocky Creek (Edwards) Field is 125 BCF of gas and remaining reserves are estimated to be a minimum of 11.7 BCF of gas. This estimate is based on a production decline curve prepared by LCRA. Current deliverabilities for wells in the field range from less than 200 MCFD to over 2,700 MCFD, based on the November 2004 proration schedule. Only one well in the field is receiving a prorated allowable; all other wells in the field are assigned a limited allowable based on production.

LCRA constructed a plot of pressures vs. cumulative production for wells in the field. From this plot, original gas in place in the field is estimated to be 210-220 BCF. This is substantially higher than the volumetric calculation of 167 BCF of recoverable reserves. LCRA notes that the pressure data is very scattered, making it difficult to estimate gas in place. Bottomhole pressure data is further complicated by the fact that higher structure wells have watered out at relatively high pressures. For example, the Prairie Creek No. 1 is about 150 feet above the gas-water contact. This well watered out in 1988 when the reservoir pressure was between 5,000 and 6,000 psi. According to LCRA, the risk of wells loading and watering out is even greater now that reservoir pressure has declined to about 2,500 psi.

LCRA contends that producing rates in some wells in the field are sensitive to changes in water yield. For example, the Prairie Creek No. 2 produced at a rate of 600-700 MCFD during August and September 2004, with a water yield of about 15-18 barrels per MMCF. Production from the well was increased in October 2004 to about 1,000 MCFD, with a corresponding increase in water yield to about 25-30 barrels per MMCF of gas. Similarly, the producing rate of the Kathryn No. 1 was increased in late 2003 from about 700 MCFD to about 1,000 MCFD, resulting in an increase in water yield from less than 20 barrels per MMCF to almost 40 barrels per MMCF of gas. If the field goes to AOF status as proposed by Young, LCRA believes that it will be forced to increase production from its capable wells to stay competitive in the field. If the increased production results in increased water yield as demonstrated in some wells, these wells may be prematurely abandoned due to watering out.

LCRA's consulting engineer agrees that most wells exhibit increasing water yield over time and that there appears to be no relationship between structural position and water production in wells. On the other hand, LCRA's other witness, Mr. Kruger, believes that there is an active water drive and that downdip wells will be more adversely affected by increasing gas production than wells higher on structure.

Production from several wells in the field is restricted by line pressure. For these wells, the producing rates would not increase under AOF status. However, for other wells such as the Prairie Creek No. 2 and the Houston No. 1, both of which are LCRA wells, producing rates could be increased under AOF status because these wells are currently choked back and

have sufficient flowing tubing pressure to override line pressure. The current line pressure is 200 psi. In 1997, the pipeline agreed to reduce the line pressure from 400 psi down to 200 psi by adding compression. This reduction allowed LCRA to produce at higher rates. In this hearing, Mr. Kruger testified that gatherer would reduce the pipeline pressure to 50 psi for a charge of $0.20-0.30 per MMBtu. This reduction in line pressure would allow LCRA to produce its limited wells at higher rates.

EXAMINERS' OPINION

Pursuant to Statewide Rule 31(j), the allocation formula for a particular gas field may be suspended if each operator from that field has a market for 100% of the deliverability of its wells, and, where a hearing is requested, the Commission will also consider whether suspension is necessary to prevent waste or protect correlative rights.

By submission of Form AOF-2, John H. Young, Inc., has certified that there is a market demand for 100% of the production capacity of Young's active gas wells in the subject field. The evidence establishes that LCRA, the only other operator in the field, also has a market demand for 100% of the production capacity of LCRA's active gas wells in the field, since LCRA consumes its own gas production and can burn all the gas that it produces.

For the purposes of Statewide Rule 31, 100% market demand contemplates, among other things, that operators of wells in the field are able to transport 100% of the wells' deliverability to the purchasers. LCRA contends that because the production rates of three of LCRA's wells are limited by pipeline pressure of 200 psi, existing transportation facilities are not capable of transporting "all deliverable gas to a purchaser," citing Oil & Gas Docket No. 10-0219190; *Application of Anadarko Petroleum Corp. to Suspend the Allowable Formula in the Panhandle, West Gas Field, Moore, Carson, Donley, Gray, Oldham, Potter, Hutchison, and Hartley Counties, Texas* ("*Anadarko*") and Oil & Gas Docket No. 08-0205544; *Application of MW Petroleum Corp. to Suspend the Allocation Formula in the Emperor (Devonian) Field, Winkler County, Texas* ("*MW Petroleum*").

The examiners agree that *Anadarko and MW Petroleum* stand for the general principle that 100% market demand contemplates that operators of wells in the field are able to transport 100% of the wells' deliverability to purchasers, but disagree with LCRA's position that application of this principle requires a conclusion that a 100% market demand is not established in this case. Deliverability of gas wells is determined under normal and usual operating conditions using the normal and usual operating equipment in place while the well is produced against the normal and usual line pressure prevailing in the line into which the well produces. *See* Statewide Rule 28(c). The "deliverability" of LCRA's wells which LCRA claims are limited is the volume of gas that the wells can produce into the pipeline against the normal and usual line pressure of 200 psi. The evidence shows that gas is flowing into the pipeline from the wells that LCRA claims are "limited," and there is no direct claim that LCRA is not able to transport 100% of the gas that these wells can produce into the pipeline against the normal and usual line pressure.

The examiners conclude that LCRA's claim about "inadequate transportation facilities" is not that LCRA is not able to transport 100% of its wells' deliverability to purchasers, but a complaint that its so-called "limited" wells cannot produce absolute open flow against normal

and usual pipeline pressure of 200 psi. This is not the inquiry in determining whether there is a 100% market demand. Furthermore, any present limitation on LCRA's ability to produce its "limited" wells at absolute open flow and transport all of the gas to itself for its own consumption is not the result of lack of gathering system capacity, but due to LCRA's own decision not to exercise its contractual right to require the gatherer to reduce gathering system line pressure.

The evidence shows that LCRA has the ability to contract with its gatherer to lower line pressure and that in 1997 it exercised this right resulting in a reduction of line pressure from 400 psi to 200 psi, allowing LCRA to produce certain of its wells at a higher rate. LCRA's own evidence also establishes that the gatherer has the ability at its Moore compressor station to reduce line pressure to 50 psi, increasing LCRA's cost of gathering, compression, and treating from about 60 cents per MMBtu to about 80 cents per MMBtu. The examiners conclude that under normal and usual operating conditions using the normal and usual operating equipment in place, LCRA is able to transport 100% of its wells' deliverability to purchasers, and there is a market demand for 100% of the gas from the subject field.

LCRA contends that AOF status will cause waste in the field. The examiners disagree with this contention. Wells in this field produce water from initial completion, and there is no relationship between a well's structural position and water yield. Higher structure wells have watered out before wells much lower on the structure. The reservoir appears to have little influence from a water drive. The recovery efficiency in the field is much higher than the 50% recovery normally associated with a water drive reservoir. Young also showed that increased water production in some wells was due to mechanical problems such as bad cement jobs and/or fracturing into water zones separate from the producing interval. Additionally, even though the water yield in the Halsted No. 1 increased after a workover in 1988, the well still produced an additional 8 BCF of gas, indicating that increasing water yield is not detrimental to ultimate recovery. Further, LCRA presented no evidence regarding movement of the gas-water contact in the field, which would have substantiated the water drive theory.

FINDINGS OF FACT

1. Notice of this hearing was given to all persons entitled to notice at least ten (10) days prior to the hearing.

2. The Rocky Creek (Edwards) Field is a non-associated gas field producing under an allocation formula based on 100% acreage.

3. John H. Young, Inc. operates eight producing wells in the field and Lower Colorado River Authority operates five producing wells in the field.

4. Cumulative production from the field is 125 BCF of gas.

5. The Rocky Creek (Edwards) Field does not have an effective water drive and waste will not occur as a result of increased production rates.

    a. All wells in the field produce water from initial completion.

b. Water yield is not dependent on structural position. High structural wells have watered out before lower structural wells.

c. The recovery efficiency in the field will far exceed 50%, which would normally associated with a water drive gas reservoir.

d. There is no evidence that the water-contact in the field is rising as pressure in the field is reduced.

6. There is a market for all gas available to be produced from the field, including transportation of each well's deliverability.

a. John H. Young, Inc. filed Form AOF-2 certifying 100% market for the deliverability of its wells in the field.

b. All gas produced from Lower Colorado River Authority wells is consumed at its power plant and the plant can burn all the gas that can be produced from LCRA wells in the field.

c. The normal and usual operating conditions in the field include a pipeline pressure of 200 psi.

d. LCRA has options available to reduce pipeline pressure and therefore increase production from its wells into the pipeline.

CONCLUSIONS OF LAW

1. Proper notice was given to all parties entitled to notice as required by all applicable rules and applicable statutory and regulatory provisions.

2. All things necessary to give the Commission jurisdiction to decide this matter have been performed or have occurred.

3. The subject field meets all the criteria established for suspension of the allocation formula pursuant to Statewide Rule 31(j).

4. Suspension of the allocation formula in the Rocky Creek (Edwards) Field will not cause waste.

EXAMINERS' RECOMMENDATION

Based on the above findings and conclusions, the examiners recommend that the allocation formula in the Rocky Creek (Edwards) Field be suspended.

Respectfully submitted,

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Technical Examiner

James M. Doherty
Hearings Examiner