



RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

OIL & GAS DOCKET NO. 7B-0300517

COMMISSION CALLED HEARING TO DETERMINE THE CORRECT ALLOWABLE
FOR THE VAN OPERATING, LTD SOUTH GREEN "54" LEASE, WELL NO. 3,
PAM (CHESTER) FIELD, SHACKLEFORD COUNTY, TEXAS

HEARD BY: Paul Dubois – Technical Examiner
Ryan Lammert – Administrative Law Judge

HEARING DATE: February 10, 2017

CONFERENCE DATE: March 21, 2017

APPEARANCES:

APPLICANT:

John W. Camp
Tim Smith, P.E.

Van Operating, LTD

RESPONDENT:

David Nelson
James Terracio, P.E.
Stephen H. Hudson
Dale E. Miller

Midville Energy, LLC

EXAMINERS' REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

On January 12, 2016, the Railroad Commission of Texas issued a Final Order in Rule 37 Case No. 0286341, granting the application of Van Operating, LTD. ("Van") for a Rule 37 Exception for its South Green 54 Lease, Well No. 3, Pam (Chester) Field, Shackelford County, Texas. Rule 37 Case No. 0286341 was protested by Midville Energy, LLC, ("Midville") an offset operator in the field. In that Final Order, the Commission directed the Hearings Division to call a hearing to hear arguments, gather evidence, and make a recommendation to the Commission regarding the appropriate gas production allowable pursuant to Statewide Rule 49(b)¹ for the subject well.

¹ 16 Tex. Admin. Code §3.49(b).

The parties in this case, Van and Midville, are in agreement that the subject well should be assigned an allowable rate of 150 thousand cubic feet ("mcf") per day pursuant to Statewide Rule 49(b). Both parties provided evidence that the proposed 49(b) allowable is the correct rate for the subject well. The matter is not protested. The Examiners recommend the proposed Rule 49(b) allowable of 150 mcf gas per day be adopted.

DISCUSSION OF THE EVIDENCE

MIDVILLE'S EVIDENCE

To determining the production rate that would prevent waste, Midville conducted reservoir simulation modeling to match the historical performance (oil production, gas production and reservoir pressure) of the reservoir over time. The model was run recursively with refinements to the model inputs to achieve a solution that accurately matched the observed historical data. Midville based its model development on the following:

- Surveyed well position data.
- Reservoir geometry based on logs and 3-D seismic digital data.
- Reservoir characterization based on well logs and core data.
- Pressure data measured from Van's South Green "54" Well No. 3.
- Relative permeability curves based on correlations using fluid properties.
- Fluid data based on well production characteristics and fluid analysis.

Midville acknowledges that the reservoir data is limited; only two wells in the field are in pressure communication.

Midville's analysis indicates the primary recoverable hydrocarbons to be 236 thousand barrels of oil and 374 million cubic feet of gas, yielding 298 thousand barrels of oil equivalent. Further, the model predicts:

- An allowable production rate of 150 mcf gas from Van's South Green "54" Well No. 3 will result in a recovery of 279 thousand barrels of oil equivalent, or a 6 percent reduction from the primary recoverable hydrocarbons.
- An allowable production rate of 50 mcf gas from Van's South Green "54" Well No. 3 will result in a recovery of 283 thousand barrels of oil

equivalent, or a 5 percent reduction from the primary recoverable hydrocarbons.

Thus, Midville concludes that reservoir performance is not materially enhanced when the production rate of Van's South Green "54" Well No. 3 is reduced from 150 mcf gas per day to 50 mcf gas per day. Further, Midville concludes that the 6 percent reduction in recovery from 298 to 279 thousand barrels of oil equivalent (6 percent) exceeds the accuracy and resolution of the model. Therefore, an allowable of 150 mcf gas per day for Well No. 3 will prevent waste, and further reductions in the allowable will not incrementally enhance reservoir performance or waste prevention.

VAN'S EVIDENCE

Van's expert engineering witness stated that he has reviewed and agrees with the conclusions of Midville's reservoir modeling work. However, Van approached the question of determining the appropriate allowable for the South Green "54" Well No. 3 in a different but complementary manner than Van by examining the origins of Statewide Rule 49(b), how it was developed, how it has been applied, and then applying the methodology of Rule 49(b) to the South Green "54" Well No. 3 and the Pam (Chester) Field.

In statewide Docket No. 20-6839 on October 20, 1944, the Commission issued for the first time a rule establishing a basis for calculating the allowable for an associated gas well. This rule establishes allowables for associated gas wells based on the volumetric equivalent in reservoir displacement of the gas and oil produced from that oil well in the field which withdraws the maximum amount of gas in the production of its daily oil allowable. Further, the maximum amount of gas was limited to 2,000 standard cubic feet per barrel, as that was the gas limit placed on oil wells.

In statewide Docket No. 20-22,429² on December 1951, the Commission introduced a mathematical formula for calculating the gas well allowable, and that formula survives today in Statewide Rule 49(b)(1) regarding gas wells with gas-oil ratios greater than 100,000 standard cubic feet ("scf") of gas per barrel of oil. The new formula was developed through other field-specific cases,³ and it allows for the actual solution gas-oil ratio to be used in lieu of the standard 2,000 scf per barrel gas-oil ratio. The Commission determined that the use of actual solution gas-oil ratio was necessary in those cases to prevent waste and protect correlative rights, and the same approach should be adopted for statewide use.

² See Van Ex. No. 2. The docket number is unclear, and may be "20-22,427."

³ See (1) Van Ex. No. 3, Oil and Gas Docket No. 129, 4-10,126, Special Order Prescribing Rules and Regulations for the Production of Oil and Gas in the Upper and Middle Pflueger Sand Reservoirs in the Agua Dulce Field, Nueces County, Texas; and (2) Van Ex. No. 4, Oil and Gas Docket No. 129, 4-10,743, Special Order Prescribing Rules and Regulations to Govern the Production of Oil and Gas From the Bertram and Wardner Sand Reservoirs in the Stratton Field, Nueces, Jim Wells and Kleburg Counties, Texas..

Finally, Van calculated the appropriate allowable based on the equation in Statewide Rule 49(b)(1) for a gas well producing with a gas-oil ratio of 100,000 scf per barrel of oil or more (such as the South Green "54" Lease Well No. 3), and using the solution gas ratios determined for the Pam (Chester) Field. Van calculated the 49(b) allowable to be 155 mcf gas per day. The variables used in this calculation were based on data gathered from Van's South Green "54" Lease Well No. 3 and Midville's South Green Well No. 1. Therefore, Van agrees with Midville that 150 mcf gas per day is the appropriate allowable for the South Green "54" Lease Well No. 3.

FINDINGS OF FACT

1. Notice of this hearing was given to all parties entitled to notice at least ten days prior to the date of the hearing.
2. The primary recoverable hydrocarbons in the Pam (Chester) Field are estimated to be 236 thousand barrels of oil and 374 million cubic feet of gas, yielding 298 thousand barrels of oil equivalent.
3. An allowable production rate of 150 mcf gas from Van's South Green "54" Well No. 3 will result in a recovery of 279 thousand barrels of oil equivalent from the Pam (Chester) Field, or a 6 percent reduction from the primary recoverable hydrocarbons.
4. An allowable production rate of 50 mcf gas from Van's South Green "54" Well No. 3 will result in a recovery of 283 thousand barrels of oil equivalent, or a 5 percent reduction from the primary recoverable hydrocarbons.
5. Reservoir performance is not materially enhanced when the production rate of Van's South Green "54" Well No. 3 is reduced from 150 mcf gas per day to 50 mcf gas per day.
6. A 6 percent reduction in recovery from 298 to 279 thousand barrels of oil equivalent (6 percent) exceeds the accuracy and resolution of the model.
7. In statewide Docket No. 20-6839, issued on October 20, 1944, the Commission established a basis for calculating the allowable for an associated gas well based on the volumetric equivalent in reservoir displacement of the gas and oil produced from that oil well in the field which withdraws the maximum amount of gas in the production of its daily oil allowable.
8. In statewide Docket No. 20-22,429, issued on December 1951, the Commission introduced a mathematical formula for calculating the gas well allowable for wells producing at gas-oil ratios greater than 100,000 standard cubic feet ("scf") of gas per barrel of oil, and the new formula

allows for the actual solution gas-oil ratio to be used in lieu of the standard 2,000 scf per barrel gas-oil ratio.

9. The Commission's Statewide Rule 49(b)(1) provides that the use of solution gas-oil ratios to calculate gas well allowables may be necessary to prevent waste and protect correlative rights.
10. For the South Green "54" Lease Well No. 3, Van calculated the appropriate allowable based on the equation in Statewide Rule 49(b)(1) for a gas well producing with a gas-oil ratio of 100,000 scf per barrel of oil or more (such as), and using the solution gas ratios determined for the Pam (Chester) Field, to be 155 mcf gas per day.
11. Therefore, an allowable of 150 mcf gas per day for South Green "54" Lease Well No. 3 will prevent waste, and further reductions in the allowable will not incrementally enhance reservoir performance or waste prevention.
12. Van Operating, LTD and Midville Energy, LLC agree that an allowable of 150 mcf gas per day for South Green "54" Lease Well No. 3 is appropriate.
13. At the hearing, the parties agreed on the record that a Final Order in this case is to be effective when the Master Order is signed.

CONCLUSIONS OF LAW

1. Resolution of the subject application is a matter committed to the jurisdiction of the Railroad Commission of Texas. Tex. Nat. Res. Code § 81.051.
2. All notice requirements have been satisfied. 16 Tex. Admin. Code §§ 1.43 and 1.45.
3. The proposed 49(b) allowable will prevent waste and protect correlative rights.
4. Pursuant to §2001.144(a)(4)(A), of the Texas Government Code, and the agreement of the parties, this Final Order is effective when a Master Order relating to this Final Order is signed on April 4, 2017.

EXAMINERS' RECOMMENDATION

Based on the above findings of fact and conclusions of law, the Examiners recommend that Van's South Green "54" Lease Well No. 3 be allowed to produce at a

Rule 49(b) allowable rate of 150 thousand cubic feet of gas per day, as set out in the attached Final Order.

Respectfully submitted,



Paul Dubois
Technical Examiner



Ryan Lammert
Administrative Law Judge