RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

OIL AND GAS DOCKET NO. 08-0285949

THE APPLICATION OF APACHE CORPORATION TO CONSIDER AN EXCEPTION TO STATEWIDE RULE 32 FOR WELLS COMPLETED ON THE CECIL LEASE SPRABERRY (TREND AREA) FIELD GLASSCOCK COUNTY, TEXAS

HEARD BY: Richard D. Atkins, P.E. - Technical Examiner
Karl Caldwell - Technical Examiner
Marshall Enquist - Legal Examiner

DATE OF HEARING: February 12, 2014

APPEARANCES: **REPRESENTING:**

APPLICANT:

Thomas Richter, P.E. Apache Corporation

EXAMINERS' REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Apache Corporation ("Apache") requests an exception to Statewide Rule 32 to flare casinghead gas from the Cecil Lease, Well No. 801, Spraberry (Trend Area) Field, Glasscock County, Texas. The subject well API No. is 42-173-35615 while the well number is referred to as both 801 and 8-1 in well documents submitted by Apache. The application submitted to the Commission requesting a hearing was for all wells on the Cecil Lease, but after further investigation, Apache is now only requesting an exception to Statewide Rule 32 for the Cecil Lease, Well No. 801 at this time. Proper notice was given to the appropriate parties surrounding the above referenced well and no protests were received. The application is therefore unprotested and the examiners recommend approval of the exception to Statewide Rule 32 to flare casinghead gas from the Cecil Lease, Well No. 801 from the date the Commission-granted flare permit order expired through December 31, 2015.

DISCUSSION OF THE EVIDENCE

Statewide Rule 32 governs the utilization for legal purposes of natural gas produced under the jurisdiction of the Railroad Commission. Specifically, Statewide Rule 32(h) provides that an exception to flare natural gas in volumes greater than 50 MCF of gas per day may be granted administratively for a period up to 180 days. Beyond that, Statewide Rule 32(h) provides that exceptions shall be granted only in a final order signed by the Commission.

Apache received administrative permit No. 13945 to flare up to a maximum of 221 MCFD of casinghead gas from the subject well. The permit was effective June 3, 2013, and expired on November 30, 2013, which totaled the maximum 180 days allowed by an administrative permit. An operator is considered temporarily compliant with Statewide Rule 32 until final Commission action on the hearing application if it has requested a hearing prior to the expiration of the administratively granted flare permit. Apache has requested a hearing for the subject well before the administratively granted flare permit expired and is requesting an exception to flare casinghead gas produced from the subject well, as provided by Statewide Rule 32(h).

The Cecil Lease, Well No. 801 was re-completed in June, 2013 to include the Upper Wolfcamp and Lower Wolfcamp intervals. The area of the Spraberry (Trend Area) Field where the subject well is located is considered an H_2S field by the commission, with an average H_2S concentration of 2,410 ppm, according to December 2013 data. The Upper Wolfcamp interval was hydraulically fracture stimulated and the well was reported with a H_2S concentration of 2100 ppm in July 2013. The Upper Wolfcamp was perforated from 7791-7984 ft, which is where Apache suspected that the H_2S was originating from. In August 2013, the Upper Wolfcamp perforations were squeezed with cement in an effort to eliminate the H_2S problem and the Lower Wolfcamp perforations were tested. Results indicated 200 BOPD, 300 MCFD gas, and 400 BWPD with H_2S concentrations of 30-50 ppm, which Apache thought may be residual H_2S from dump flooding of the upper sour zone. The well flowed, loaded up, and died on three occasions and was swabbed back to production. In October 2013, the H_2S concentration was over 1000 ppm. At this point, Apache arrived at the conclusion that the Upper Wolfcamp frac communicated behind pipe and was contaminating the current production and that the squeeze job on the Upper Wolfcamp perforations had been a success. Since production from the well was still in excess of 50 BOPD from this interval, Apache feared that a subsequent squeeze job would possibly eliminate this production.

A DCP Midstream line is located on the lease of the subject well, but the contract prohibits gas with a H_2S concentration greater than 4 ppm. At the present time, Well Nos. 602 and 702 on the Cecil Lease are going down the DCP pipeline, as the gas is not sour. Targa Midstream is 4 miles from the subject well, but they will not accept any H_2S gas in their system. WTG Gas Processing and Atlas PI Mid-Cont. are located 4.5 and 8.6 miles, respectively, from the Cecil Lease, but neither will accept gas with a H_2S concentration greater than 4 ppm. Apache has their own gas gathering system in the area, but it would require running 7.5 miles of pipeline, and the gas would have to be treated before delivery to the Deadwood Gas Plant. The contract stipulates that the H_2S concentration not exceed 4 ppm.

Apache procured costs estimates for a monthly rental option and an out-right purchase option from four different vendors for their smallest amine units to treat H_2S gas to output levels of less than 4 ppm. The capital expense of the smallest commercially available amine unit is $30,000. The installation expense would be an additional $50,000, and the required line heater would cost $45,000. In addition, the chemical cost would be $1.87 per MCF of gas treated. The unit would also require 10 MCFD to operate. The rental cost estimate Apache received included a plant installation cost of $125,000 and a monthly rental expense of $17,500 for the unit. Again, the fuel required to run the unit would be 10 MCFD. Once the sour gas is treated to a H_2S concentration below 4 ppm, it could be sold at a sales price of $2.70 per MCF. The current casinghead gas production of the Cecil Lease, Well No. 801 is 100 MCFD. The current gas volume produced from the subject well renders both options uneconomical at this time.

Another consideration is that the minimum input capacity required to run the smallest amine unit is 200 MCFD. Currently, the only well on the lease that is producing sour gas that requires treatment is the subject well and the gas production of 100 MCFD of casinghead gas is insufficient to operate the amine unit. Apache is drilling more wells and since there is H_2S in the area, at some point in the future they may have cumulative production of casinghead gas in excess of 200 MCFD, as which time they would have the minimum input capacity required for the smallest amine unit. At this time however, the sour gas production is insufficient to operate the smallest of the commercially available amine units.

FINDINGS OF FACT

1. Proper notice of this hearing was given at least ten (10) days prior to the date of hearing and no protests to the application were received.

2. The Cecil Lease, Well No. 801, is completed in the Spraberry (Trend Area) Field, in Glasscock County, Texas. Cumulative production as of December 2013, is 8,077 BO and 17,846 MCF of gas.

3. Statewide Rule 32(h) stipulates that the Commission may administratively grant an exception to Statewide Rule 32 for a period no greater than 180 days.

4. Apache Corporation ("Apache") received administrative Permit No. 13945 to flare up to a maximum of 221 MCFD of casinghead gas from the subject well. The permit was effective June 3, 2013, and expired on November 30, 2013, which totaled the maximum 180 days allowed by an administrative

permit.

5. An operator is considered temporarily compliant with Statewide Rule 32 until final Commission action on the hearing application if it has requested a hearing prior to the expiration of the administratively granted flare permit.

6. Apache has requested a hearing for the subject well before the administratively granted flare permit expired.

7. The subject well currently produces 120 -150 BOPD, 100 MCFD of sour gas, which has a H_2S concentration of 3600 ppm, and 160 BWPD.

    a. There are five gas gathering pipelines in the area of the subject well, but contracts prohibit them from accepting gas with a H_2S concentration greater than 4 ppm.

    b. Apache explored options to purchase or rent an amine unit that would reduce the H_2S concentration of the gas to less than 4 ppm. The purchase cost of the smallest commercially available unit was $125,000, with an additional chemical cost of $1.87 per MCF. The rental option for a unit would require a plant installation expense of $125,000 and a rental expense of $17,500 per month.

    c. Under the current conditions, it is uneconomic to treat the gas to levels required by the gas gathering systems in the area. Additionally, the current sour gas production of the subject well does not meet the minimum required input capacity for the smallest amine unit.

8. An exception to Statewide Rule 32 from the date the administratively granted flare permit expired through December 31, 2015, for the subject well to flare casinghead gas is appropriate.

9. For the Cecil Lease, Well No. 801, Spraberry (Trend Area) Field, Glasscock County, Texas, API No. 42-173-35615, Apache Corporation requests to flare a maximum of 200 MCFD of casinghead gas.

CONCLUSIONS OF LAW

1. Proper notice was issued as required by all applicable statutes and regulatory codes.

2. All things have occurred and been accomplished to give the Commission jurisdiction in this matter.

3. Approval of the requested authority pursuant to Statewide Rule 32 will

prevent waste, will not harm correlative rights and will promote development of the field.

EXAMINERS' RECOMMENDATION

Based on the above findings of fact and conclusions of law, the examiners recommend that the Commission approve an exception to Statewide Rule 32 from the date the administratively granted flare permit expires through December 31, 2015, for the Cecil Lease, Well No. 801, Spraberry (Trend Area) Field, Glasscock County, Texas as requested by Apache Corporation.

Respectfully submitted,

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