THE APPLICATION OF LEGADO MIDCON, LLC TO CONSOLIDATE THE CREST (DES MOINES) FIELD INTO THE ALLEN-PARKER (MARMATON) FIELD AND TO AMEND FIELD RULES FOR THE ALLEN-PARKER (MARMATON) FIELD, LIPSCOMB AND OCHILTREE COUNTIES, TEXAS

HEARD BY: Richard D. Atkins, P.E. - Technical Examiner

HEARING DATE: August 14, 2009

APPEARANCES:

REPRESENTING:

William Osborn Rick Whitehead Legado Midcon, LLC

EXAMINER'S REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Field Rules for the Allen-Parker (Marmaton) Field were originally adopted in Order No. 10-57,971, effective November 6, 1967. The rules currently in effect for the field are summarized as follows:

- 1. 933'-1,867' well spacing;
- 2. 160 acre units with a 40 acre tolerance;
- 3. Allocation based on 100% acres.

Field Rules for the Crest (Des Moines) Field were originally adopted in Order No. 10-55,919, effective January 3, 1966. The rules currently in effect for the field are summarized as follows:

- 1. 933'-1,867' well spacing;
- 2. 160 acre units with a 40 acre tolerance;
- 3. Allocation based on 100% acres.

Legado Midcon, LLC ("Legado") requests that the Crest (Des Moines) Field be consolidated into the Allen-Parker (Marmaton) Field. Legado also requests that the Field Rules for the Allen-Parker (Marmaton) Field be amended to provide for a correlative interval, 330'-933' well spacing with a 100 foot overlap for parallel or sub-parallel wells, 160 acre units with a 40 acre tolerance and an additional acreage assignment formula for horizontal wells and allocation based on 100% acres.

This application was unprotested and the examiner recommends that the Crest (Des Moines) Field be consolidated into the Allen-Parker (Marmaton) Field and that Field Rules for the Allen-Parker (Marmaton) Field be amended, as proposed by Legado.

DISCUSSION OF EVIDENCE

The Allen-Parker (Marmaton) Field was discovered in May 1967. The field is classified as an oil field with 8 producing oil wells carried on the proration schedules. Cumulative production from the field through June 2009 is 51.6 BCFG and 4.3 MMBO.

The Crest (Des Moines) Field was discovered in August 1965. The field is classified as an oil field with 5 producing oil wells carried on the proration schedules. Cumulative production from the field through June 2009 is 6.9 BCFG and 741.1 MBO.

The two fields produce from a correlative Marmaton interval at approximately 6,750 feet. Over the years, the two fields have "grown together". The fields overlap and consolidating the Crest (Des Moines) Field into the Allen-Parker (Marmaton) Field will eliminate unnecessary paperwork and aid in the proration of the fields by creating a single field. Legado requests that the entire correlative interval from 6,743 feet to 7,377 feet as shown on the log of the Falcon Petroleum Company - Crum Lease, Well No. 1-138 (API No. 42-357-31750), Ochiltree County, Texas, be considered as the designated interval for the consolidated Allen-Parker (Marmaton) Field.

Operators will be developing the Allen-Parker (Marmaton) Field with horizontal wellbores. The proposed well spacing of 330 feet from lease lines and 933 feet between wells with a 100 foot overlap for parallel or sub-parallel wells will accommodate horizontal drilling and allow operators to maximize drainhole length.

Legado requests that a field rule be adopted which includes language relevant to measurement of distances to lease lines for horizontal drainhole wells. Legado's proposed rule specifies that, for purposes of lease line and between-well spacing, the nearest "take point" in a horizontal well be used. This take-point could be a perforation, if a horizontal well is cased and cemented, an external casing packer in a cased well, or any open-hole section in an uncased well. Similar rules have been adopted in many Granite Wash fields in the area, including the Hemphill (Granite Wash) and Mendota, NW. (Granite Wash) Fields.

The proposed rule would allow operators to drill horizontal wells with penetration points, as defined by Rule 86, at distances closer than 330 feet to a lease line, as long as no take-point is closer than 330 feet to any lease line. Horizontal drainhole length on a lease is then maximized, resulting in the additional recovery of oil.

Legado submitted a tabulation of the production results of 586 vertical wells that produced from the Marmaton formation in the Texas Panhandle and western Oklahoma. There was a 10% probability that wells would produce at least 92.4 MBO and a 90% probability that wells would produce at least 3.0 MBO. The mean cumulative production was 34.9 MBO. Using the mean cumulative production, an average pay thickness of 20 feet, an average porosity of 5%, an average oil saturation of 40% and a recovery factor of 10%, Legado calculated a drainage area of 125 acres for an average vertical well.

Legado also investigated three fields that had vertical and horizontal wells completed to determine the average ratio of horizontal to vertical well production. The Giddings (Austin Chalk) Field had 410 horizontal wells and 367 vertical wells, the Bakken (Shale) Field in Montana had 63 horizontal wells and 34 vertical wells and the Perry and Lipscomb (Cleveland) Fields had 44 horizontal wells and 63 vertical wells. Based on the mean production from these three fields, Legado calculated an average horizontal to vertical well production ratio of 4.3. Using this ratio, the field base density unit of 160 acres and an horizontal lateral length of 2, 372 feet, Legado calculated an acreage assignment factor of 0.22 and requested that the acreage assignment be rounded upward to the next number evenly divisible by 40 acres.

As a result, the following formula is proposed to determine the proper assignment of acreage for a horizontal drainhole well:

 $A = (L \times 0.22) + 160$ acres

Where: A = calculated acreage assignable, if available, to a horizontal drainhole for proration purposes rounded upward to the next whole number evenly divisible by 40 acres;

L = the horizontal drainhole distance measured in feet between the first take point and the last take point within the Marmaton formation.

For purposes of assignment of additional acreage, it is proposed that the distance between the first and last take-point in a horizontal well be used.

FINDINGS OF FACT

1. Notice of this hearing was given to all persons entitled to notice and no protests were received.

- 2. The Allen-Parker (Marmaton) Field was discovered in May 1967. The field is classified as an oil field with 8 producing oil wells carried on the proration schedules.
- 3. The Crest (Des Moines) Field was discovered in August 1965. The field is classified as an oil field with 5 producing oil wells carried on the proration schedules.
- 4. The two fields produce from a correlative Marmaton interval at approximately 6,750 feet. Over the years, the two fields have "grown together". The fields overlap and consolidating the Crest (Des Moines) Field into the Allen-Parker (Marmaton) Field will eliminate unnecessary paperwork and aid in the proration of the fields by creating a single field.
- 5. The designated interval for the consolidated Allen-Parker (Marmaton) Field is the entire correlative interval from 6,743 feet to 7,377 feet as shown on the log of the Falcon Petroleum Company - Crum Lease, Well No. 1-138 (API No. 42-357-31750), Ochiltree County, Texas.
- 6. Operators will be developing the Allen-Parker (Marmaton) Field with horizontal wellbores. The proposed well spacing of 330 feet from lease lines and 933 feet between wells with a 100 foot overlap for parallel or sub-parallel wells will accommodate horizontal drilling and allow operators to maximize drainhole length.
- 7. A spacing rule which utilizes "take-points" in a horizontal well for determination of distances to lease lines will prevent waste and will not harm correlative rights.
 - a. The Marmaton formation is a tight formation and horizontal wells will increase the recovery of reserves from the reservoir.
 - b. A take-point in a horizontal well in this field may be a perforation, if a horizontal well is cased and cemented, an external casing packer in a cased well, or any open-hole section in an uncased portion of the wellbore.
 - c. Adoption of the proposed rule would allow operators to drill horizontal wells with penetration points, as defined by Rule 86, at distances closer than 330 feet to a lease line, as long as no take-point is closer than 330 feet to any lease line.

- d. Adoption of the proposed rule will allow the horizontal drainhole length on a lease to be maximized.
- 8. The mean cumulative production from the Marmaton formation is 34.9 MBO and the drainage area for an average vertical well is 125 acres.
- 9. The formula $(A = (L \times 0.22) + 160 \text{ acres})$ is a reasonable method to determine the proper assignment of acreage for a horizontal drainhole well.
- 10. For purposes of assignment of additional acreage, the distance between the first and last take-point in a horizontal well should be used.

CONCLUSIONS OF LAW

- 1. Proper notice of this hearing was issued.
- 2. All things have been accomplished or have occurred to give the Commission jurisdiction in this matter.
- 3. Consolidating the Crest (Des Moines) Field into the Allen-Parker (Marmaton) Field and amending the Field Rules for the Allen-Parker (Marmaton) Field is necessary to prevent waste, protect correlative rights and promote development of the field.

RECOMMENDATION

Based on the above findings of fact and conclusions of law, the examiner recommends that the Commission consolidate the Crest (Des Moines) Field into the Allen-Parker (Marmaton) Field and amend the Field Rules for the Allen-Parker (Marmaton) Field, as proposed by Legado.

Respectfully submitted,

Richard D. Atkins, P.E. Technical Examiner