OIL AND GAS DOCKET NO. 06-0257403

THE APPLICATION OF PENN VIRGINIA OIL & GAS L.P. TO ADOPT FIELD RULES FOR THE CARTHAGE, N. (BOSSIER SHALE) FIELD, HARRISON, PANOLA AND RUSK COUNTIES, TEXAS

Heard by: Andres J. Trevino P.E., Technical Examiner

Hearing Date: July 25, 2008

Appearances:	**Representing:**
Tim George James M. Clark	Penn Virginia Oil & Gas L.P.
Bill Spencer Barry Tarman	Chesapeake Operating, Inc.
David Gross	Comstock Oil & Gas

EXAMINER'S REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Penn Virginia Oil & Gas L.P. requests that field rules for the Carthage, N. (Bossier Shale) Field be adopted. The field is currently governed by Statewide Rules that provide for a 467'-1,200' well spacing and 40 acre density. Penn Virginia requests that the between well spacing vary between vertical and horizontal wells, special lease line spacing calculation based on perforation points and stacked lateral rules be adopted. Penn Virginia proposes the following field rules be adopted for the field:

1. Designation of the field as the correlative interval from 9,850 feet to 11,280 feet as shown on the log of the Sylvia & Sandra Herrin GU No. 1, Well No. 2;

2. 330' lease line spacing, 0' between well spacing between vertical and horizontal wells, 500' between vertical wells and 500' between horizontal wells, special lease line calculation provisions;

3. 40 acre gas units, 10% tolerance;

4. Stacked Lateral rules, special provisions for spacing of stacked lateral wells;

5. Allocation based on 100% acreage with AOF status, no Plats required while allocation formula is suspended.

This application was unprotested and the examiner recommends that the field rules for the Carthage, N. (Bossier Shale) Field be adopted as proposed.

DISCUSSION OF EVIDENCE

The Carthage, N. (Bossier Shale) Field was discovered in April 2006 and there are currently 17 vertical wells and one horizontal well completed in the field. Penn Virginia considers the vertical wells as marginal producers. Penn Virginia has drilled the first horizontal well in field which has yielded better results. Average monthly production is about 250 MMCF per month. Cumulative production from the field is about 2.3 BCF of gas and 13 MBC of condensate. The field is classified as non-associated with AOF status.

Penn Virginia believes that horizontal drilling in the Carthage, N. (Bossier Shale) Field will have comparable results to the Newark, East (Barnett Shale) Field. Penn Virginia seeks to adopt numerous field rules adopted in the Barnett Shale field. Penn Virginia requests 0 feet between vertical and horizontal wells to allow horizontal drilling between the 17 vertical wells without Rule 37 exceptions. Penn Virginia requests a distance of 500 feet between vertical to vertical wells and horizontal to horizontal wells. This will allow the placing of horizontal wells at optimum locations in order to drain hydrocarbons within the tight Bossier Shale formation. Penn Virginia requests a well density of 40 acres, similar to the optional units in the Barnett Shale field as the Bossier Shale is tight and wells are believed to drain no more than 40 acres each.

The Bossier Shale formation in the Carthage, N. (Bossier Shale) Field is thicker (1,430 feet) than the Newark, East (Barnett Shale) Field (494 feet). Penn Virginia believes that the Bossier Shale formation in the subject field will require development using two separate laterals per vertical well to drain existing reserves. This approach to development has been successful in the Newark, East (Barnett Shale) Field which is governed by rules for “stacked lateral” wells. Penn Virginia requests a rule for Carthage, N. (Bossier Shale) Field which mirrors the Newark rules. Such rule would allow stacked horizontal laterals within the Bossier Shale correlative interval to be drilled from different wellbores and to be considered as a single well for regulatory purposes. It is proposed that a stacked lateral be defined as a multiple horizontal drainholes which are drilled (1) from different surface

locations on the same lease unit no more than 200 feet from each other at the surface and (2) no more than 500 feet from each other in a horizontal plane within the correlative interval. There will be no vertical distance restriction between stacked laterals.

Penn Virginia requests that a field rule be adopted which includes language relevant to measurement of distances to lease lines for horizontal drainhole wells. The 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 other tight reservoirs, including the Barnett Shale and Cotton Valley Sand 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 additional recovery of gas. For purposes of assignment of additional acreage pursuant to Rule 86, it is proposed that the distance between the first and last take-point in a horizontal well be used.

Penn Virginia requests to eliminate the requirement to file individual proration plats while the allocation formula remains suspended. The requirement to amend plats presents a substantial paperwork burden for operators and the Commission. While the field is AOF, Penn Virginia proposes that operators in the Carthage, N. (Bossier Shale) Field be required to file a form P-15 indicating on the Form P-15 the number of acres to be assigned to each well on the unit, thus assuring the Commission that there is sufficient acreage in the lease or unit to comply with Commission rules. If the allocation formula is ever reinstated, individual proration plats will be required. Similar rules for the Newark, East (Barnett Shale) Field have been adopted since 2005. Deletion of the requirement to file plats when the field is not prorated will avoid the filing of unnecessary paperwork. Penn Virginia requests the allocation formula remain suspended.

FINDINGS OF FACT

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

2. Statewide field rules for the Carthage, N. (Bossier Shale) Field provide 467'-1,200' well spacing, 40 acre units and allocation based on 100% acreage with AOF status.

3. The Carthage, N. (Bossier Shale) Field was discovered in April 2006 and there are currently 17 vertical wells and one horizontal well producing from the field.

4. Horizontal drilling in the field is expected to increase reserves.

   a. Vertical wells completed in the Carthage, N. (Bossier Shale) Field are considered marginal producers.

   b. Horizontal drilling has yielded better results

5. The Bossier Shale designated interval in the Carthage, N. (Bossier Shale) Field is 1,430 feet thick while the designated interval in the Newark, East (Barnett Shale) Field is 494 feet thick. The Carthage, N. (Bossier Shale) wells may require several horizontal laterals in some wells to effectively and efficiently drain the reservoir.

6. The proposed "stacked lateral" rule for the Carthage, N. (Bossier Shale) Field will allow stacked horizontal laterals within the Bossier Shale correlative interval that are drilled from different wellbores to be considered a single well for regulatory purposes.

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 Bossier Shale is a tight formation and is not commercially productive unless fracture-stimulated.

   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. For purposes of assignment of additional acreage pursuant to Rule 86, the distance between the first and last take-point in a horizontal well should be used.

9. Deletion of the requirement to file Forms P-15 and plats when the allocation formula is suspended and deletion of the requirement to file plats with proration units outlined will avoid the need for the filing of unnecessary

paperwork.

10. The allocation formula has been suspended since January 1, 2007.

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. Adopting the field rules for the Carthage, N. (Bossier Shale) Field as proposed by Penn Virginia Oil & Gas L.P. is necessary to prevent waste and protect correlative rights.

RECOMMENDATION

Based on the above findings and conclusions of law, the examiner recommends that the field rules for the Carthage, N. (Bossier Shale) Field be adopted as proposed by Penn Virginia Oil & Gas L.P.

Respectfully submitted,

Andres J. Trevino, P.E.
Technical Examiner