RAILROAD COMMISSION OF TEXAS

OFFICE OF GENERAL COUNSEL

OIL AND GAS DOCKET NO. 06-0273280

COMMISSION CALLED HEARING TO DETERMINE THE EFFECTIVENESS OF THE TEMPORARY FIELD RULES FOR THE CARTHAGE (HAYNESVILLE SHALE) FIELD, GREGG, HARRISON, NACOGDOCHES, PANOLA, RUSK, SABINE, SAN AUGUSTINE AND SHELBY COUNTIES, TEXAS

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

HEARING DATE: December 16, 2011

APPEARANCES:	**REPRESENTING:**
APPLICANT:	
Brian R. Sullivan Sandra Bolz Buch Dale Greenfeather Ben Wilson Bradley F. Hall	Devon Energy Production Co, LP
OBSERVERS:	
Glenn E. Johnson Randal L. Maxwell Collin Sniff	Samson Lone Star, LLC
George C. Neale	Energen Resources Corporation
Chris Hosek	EXCO Resources, Inc.
Ana Maria Marsland-Griffith	Anadarko E & P Company, LP

EXAMINERS' REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Temporary Field Rules for the Carthage (Haynesville Shale) Field were adopted in Final Order No. 06-0262000, effective December 15, 2009. The Temporary Field Rules in effect for the field are summarized as follow:

1. Designation of the field as the correlative interval from 9,568 feet to 11,089 feet as shown on the log of the Devon Energy Production Co., LP - Hull Unit A Lease, Well No. 102;

2. 330' lease line spacing and no between well spacing with special provisions for "take points", an "off-lease" penetration point and a 50' "box" rule for horizontal drainhole wells;

3. 640 acre gas proration units with 10% tolerance and optional 40 acre density;

4. Allocation based on 95% acres and 5% per well with AOF status;

5. Special provisions for stacked laterals in horizontal drainhole wells.

At the review hearing, Devon Energy Production Co, LP ("Devon") requested that the Temporary Field Rules be made permanent for the Carthage (Haynesville Shale) Field.

The examiners recommend that the Temporary Field Rules be made permanent for the Carthage (Haynesville Shale) Field.

DISCUSSION OF THE EVIDENCE

The Carthage (Haynesville Shale) Field was created by the consolidation of nine Bossier and Haynesville Shale fields in December 2009. The field occurs at an average depth of 10,500 feet and is classified as non-associated. There are 378 producing gas wells and 40 operators carried on the proration schedule. The field operates under Temporary Field Rules that provide for a designated interval, 330'-0' well spacing with special provisions for horizontal drainhole wells and 640 acre gas units with optional 40 acre density. The allocation formula is currently suspended. Cumulative production from the field through November 2011 is 585.6 BCFG and 119.9 MBO.

The designated interval for the field includes the entire Bossier and Haynesville Shales and is located stratigraphically between the base of the Cotton Valley and the top of the Louann Salt formations. The gross thickness of the Bossier and Haynesville Shale

interval is over 2,000 feet. Devon submitted a structure map, cross sections and an AAPG Bulletin (V. 95, No. 10, pp 1643 - 1666) that demonstrated that the Carthage (Haynesville Shale) Field produces from the Bossier and Haynesville Shale formations which extend from the State of Louisiana through several counties in East Texas, including all or portions of Gregg, Harrison, Nacogdoches, Panola, Rusk, Sabine, San Augustine and Shelby Counties. To date, the RRC has issued 671 drilling permits and there have been 453 completions made. Currently, there are 33 active drilling rigs running in the East Texas portion of the field.

Operators are currently developing the field with horizontal wellbores. Devon believes that the field could not be commercially developed with vertical wells and that several separate laterals may be necessary to effectively develop the reservoir with horizontal wells. The historic unit size for gas wells in the Haynesville trend is 640 acres and most of the acreage is held by production from existing units that are approximately 640 acres in size. Where field rules have been adopted for gas fields producing above the Carthage (Haynesville Shale) Field, 640 acres plus 10% tolerance has been the predominant standard unit size and most of the fields have adopted optional 40 acre density. In addition, the standard development unit size for wells in the State of Louisiana is 640 acres. Devon feels that a density rule similar to the other shallower fields in the area will provide consistency in developing the Carthage (Haynesville Shale) Field and will allow greater flexibility in selecting future drilling locations.

In the temporary field rule hearing, recoverable reserves beneath four 640 acre tracts were estimated to be between 12 and 20 BCFG. In this hearing, Devon provided production curves for the same four wells in the field. The wells now have estimated recoverable reserves between 8 and 13 BCFG. Devon submitted three examples where interference was observed between wells after fracture stimulation. The wells were located 2200, 3197 and 4562 feet apart. Devon opines that conventional drainage area calculations do not apply, but believes that fracture stimulated horizontal wells are impacting a drainage area over 320 acres and up to 640 acres.

Six operators submitted letters in support of Devon's application to make the Temporary Field Rules permanent. The operators included XTO Energy, EXCO Resources, Cabot Oil and Gas, Samson Lone Star and BP America Production.

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 hearing.

2. The Carthage (Haynesville Shale) Field was created by the consolidation of nine Bossier and Haynesville Shale fields in December 2009.

    a. The field occurs at an average depth of 10,500 feet and is classified as non-associated.

b. There are 378 producing gas wells and 40 operators carried on the proration schedule.

c. The field operates under Temporary Field Rules that provide for a designated interval, 330'-0' well spacing with special provisions for horizontal drainhole wells and 640 acre gas units with optional 40 acre density.

d. The allocation formula is currently suspended.

3. The designated interval for the Carthage (Haynesville Shale) Field includes the entire Bossier and Haynesville Shales and is located stratigraphically between the base of the Cotton Valley and the top of the Louann Salt formations.

a. The gross thickness of the Bossier and Haynesville Shale interval is over 2,000 feet.

b. The field extends from the State of Louisiana through several counties in East Texas, including all or portions of Gregg, Harrison, Nacogdoches, Panola, Rusk, Sabine, San Augustine and Shelby Counties.

c. To date, the RRC has issued 671 drilling permits and there have been 453 completions made. Currently, there are 33 active drilling rigs running in the East Texas portion of the field.

4. Operators are currently developing the field with horizontal wellbores.

a. The Carthage (Haynesville Shale) Field can not be commercially developed with vertical wells and several separate laterals may be necessary to effectively develop the reservoir with horizontal wells.

b. The historic unit size for gas wells in the Haynesville trend is 640 acres and most of the acreage is held by production from existing units that are approximately 640 acres in size.

c. Where field rules have been adopted for gas fields producing above the Carthage (Haynesville Shale) Field, 640 acres plus 10% tolerance has been the predominant standard unit size and most of the fields have adopted optional 40 acre density.

d. The standard development unit size for wells in the State of Louisiana is 640 acres.

e. A density rule similar to the other shallower fields in the area will provide consistency in developing the Carthage (Haynesville Shale) Field and will allow greater flexibility in selecting future drilling locations.

f. Devon submitted three examples where interference was observed between wells after fracture stimulation. The wells were located 2200, 3197 and 4562 feet apart.

5. Six operators submitted letters in support of Devon's application to make the Temporary Field Rules permanent. The operators included XTO Energy, EXCO Resources, Cabot Oil and Gas, Samson Lone Star and BP America Production.

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. Adopting the Temporary Field Rules as permanent for the Carthage (Haynesville Shale) Field is necessary to prevent waste, protect correlative rights and promote the orderly development of the field.

EXAMINERS' RECOMMENDATION

Based on the above findings of fact and conclusions of law, the examiners recommend that the Commission adopt the Temporary Field Rules as permanent for the Carthage (Haynesville Shale) Field, as proposed by Devon Energy Production Co, LP.

Respectfully submitted,

Richard D. Atkins, P.E.
Technical Examiner

Marshall F. Enquist
Legal Examiner