



RAILROAD COMMISSION OF TEXAS

OFFICE OF GENERAL COUNSEL

RULE 37 CASE NO. 0269592
STATUS NO. 708919
DISTRICT 06

**APPLICATION OF XTO ENERGY, INC., FOR A RULE 37 EXCEPTION FOR THE BULLS
DU UNIT, WELL NO. 1H, CARTHAGE, (HAYNESVILLE SHALE) FIELD, SHELBY
COUNTY, TEXAS**

APPEARANCES:

FOR APPLICANT:

David Gross
Rick Johnston
Clint Cook

APPLICANT:

XTO Energy, Inc.

FOR PROTESTANT:

Kenneth DuBose
Kenna DuBose Starrak
Billy K. Lemons

PROTESTANTS:

Kenneth DuBose
Kenna DuBose Starrak

PROPOSAL FOR DECISION

PROCEDURAL HISTORY

DATE APPLICATION FILED:	February 5, 2011
DATE OF NOTICE OF HEARING:	April 5, 2011
DATE OF HEARING:	May 13, 2011
HEARD BY:	Christopher S. Hotchkiss, Hearings Examiner Andres J. Trevino, Technical Examiner
DATE TRANSCRIPT RECEIVED:	May 26, 2011
DATE PFD CIRCULATED:	September 8, 2011

STATEMENT OF THE CASE

XTO Energy, Inc. ("XTO") seeks an amended drilling permit pursuant to the provisions of Statewide Rule 37 for the as-drilled location of the Bulls DU Unit, Well No. 1H, a horizontal well in the Carthage (Haynesville Shale) Field, Shelby County, Texas. XTO was issued an original drilling permit on January 27, 2011, to drill Well No. 1H, the first well on the 154.68-acre pooled unit. The permit was restricted by three (3) no perforation zones and was approved as a regular drilling permit on January 27, 2011. Well No. 1H was spud on February 6, 2011, and the rig was released on March 30, 2011. Well No. 1H has not yet been completed with perforations and has not produced.

The present application seeks an amended drilling permit for the as-drilled location of Well No. 1H on the 154.68-acre Bulls DU Unit. The purpose of this application is to eliminate the three no perforation zone restrictions contained in the original permit. Just prior to the hearing date, XTO managed to secure leases on two separate tracts, which obviates the need for two of the three "no perforation zones" around those tracts. However, the Protestants, who own a small mineral interest in another tract, remain in opposition to the Rule 37 exception, and request imposition of the no perforation zones around their tract, 330' on either side. Appendix 1 (XTO Exhibit No. 16) to this PFD is a copy of the as-drilled plat associated with the present application. The as-drilled plat indicates that XTO proposes to perforate the well between the proposed upper perforation ("1H PUP") and the proposed lower perforation ("1H PLP"), eliminating all "no perforation zones" contained in the original permit for the well. The surface location of Well No. 1H is on-lease, 241 feet from the east line and 2,510 feet from the south line of the William S. Wilson Survey, A-764, Shelby County, Texas, and 207 feet from the east line and 693 feet from the north line of the Bulls DU Unit. The penetration point location is 58 feet from the north line and 473 feet from the west line of the Bulls DU Unit. The terminus location¹ is 280 feet from the south line and 527 feet from the east line of the Bulls DU Unit, and 2,340 feet from the north line and 2,700 feet from the east line of the Wiggins, Harbard L. Survey, A-763, Shelby County, Texas.

The application is protested by Mr. Kenneth D. DuBose, Mrs. Kenna DuBose Starrak, owners of a .59 net mineral acre interest in Tract 3, in the Bulls DU Unit. The as-drilled location of the Bulls DU Unit, Well No. 1H traverses Tract No. 3, in which Protestants have a partial undivided mineral interest that is unleased. Since leasing the other "holdout" tracts as mentioned earlier, XTO has now leased all tracts in the 154.68-acre Bulls DU Unit at 100% with the exception of Tract No. 3, which is leased at 98.54%.

¹ XTO refers to the terminus on the as-drilled plat as "Bottom Hole" or "BH."

DISCUSSION OF THE EVIDENCE

XTO Energy, Inc.

The Bulls DU Unit is located above the Carthage (Haynesville Shale) Field in Shelby County. The 154.68-acre Bulls DU Unit is part of a larger, 620.944-acre Bulls Unit which is the "courthouse unit." XTO submitted a unit plat (Appendix 3) of the 620.944-acre Bulls "courthouse" Unit to demonstrate that even on the larger "courthouse" unit, there is no regular location where a feasible horizontal well might be drilled. The north-south orientation of the wells in the Carthage (Haynesville) Shale is required to obtain the most gas, and the partially unleased tract within the subject Bulls Unit, and similarly-unleased tracts in the larger Bulls "courthouse" Unit transect the Unit(s) on a east-west orientation, thereby inhibiting any unfettered north-south well paths.

Many of the mineral leases were originally taken by Hunt Petroleum starting in 2006. XTO acquired Hunt Petroleum in 2008, and began leasing additional tracts in the Bulls DU Unit in 2009. XTO is still involved in "clean-up leasing." XTO offered to lease the unleased 1.46% undivided mineral interest in Tract No. 3 held by the Protestants, but was unsuccessful.

Special field rules for the Carthage (Haynesville Shale) Field provide for 330' lease line spacing. As to horizontal wells, where the horizontal portion of the well is cased and cemented back above the top of the Haynesville Shale formation, the distance to any property line, lease line, or subdivision line is calculated based on the distance to the nearest perforation in the well, and not based on the penetration point or terminus. The standard drilling and proration unit for the Carthage (Haynesville Shale) Field is 320 acres. An operator is permitted to form optional drilling units of 20 acres.

At the time of filing of XTO's Form W-1 application, XTO had fewer acres under lease within the boundaries of the Bulls DU Unit. Since that time, as mentioned earlier, additional acreage has been leased. The only tract within the 154.68-acre Unit that is not 100% leased is the one in which the Protestants own an interest (Tract No. 3). The Appendix 1 plat shows the boundary of the Unit and the boundaries of separate tracts within the perimeter of the Unit. The only partially unleased tract within the perimeter of the Unit is designated as Tract No. 3, and is located in the upper middle of the Unit. Appendix 2 (known as XTO Exhibit No. 2) is a plat that shows Tract No. 3 in green cross-hatching.

XTO submitted a plat² (Appendix 3, known as XTO Exhibit No. 7), on which a 330-foot "buffer" is drawn around the only partially-unleased tract(s). The so-called "regular" locations,

² On Appendix 3, which is the "courthouse" unit plat, XTO has referred to the Protestants' tract as Tract No. 5, instead of Tract No. 3, as it is referred to in every other exhibit.

which were highlighted in yellow, are leased areas of the Unit that are 330 feet or more from any unleased tract internal to the Unit and also 330 feet or more from the external Unit boundary. The purpose for this exhibit was to show where the regular locations were, and demonstrate that the as-drilled location is the most regular location that could have been drilled given the surface location. The surface usage of the acreage within the perimeter of the Unit is primarily rural/agricultural.

XTO made multiple attempts to lease the Protestants' mineral interests. According to XTO, it offered to lease the interests for \$6,000 per net acre, and a one-fourth royalty. However, this figure was not fully agreed upon between the parties.³ XTO testified that many of the leases signed by Hunt Petroleum in and around 2006 paid in the range of \$125 to \$150 per acre with a one-sixth royalty. XTO also testified that within the Bulls DU Unit, the highest royalty and bonus terms paid to date to other mineral interest owners were \$5,000 per acre with a one-fifth royalty. In addition, XTO stated that it remains willing to lease the tract in which the Protestants have an interest at the \$6,000 per net acre and one-fourth royalty, even if the Commission grants the Rule 37 exception in this docket.

As proposed, Well No. 1H would have a drainhole length of roughly 4,875 feet. If this well were restricted with "no perforation zones" to place all perforations in the well at least 330 feet from the only unleased tract within the perimeter of the Bulls DU Unit, it would require 330 feet north of Tract No. 3, and 330 feet south of Tract No. 3 to remain unperforated. In other words, 660 feet less of the drainhole would be perforated.

Based on a structure map on the base on the Haynesville Shale and structural and stratigraphic cross-sections, an XTO consulting engineer testified that the Haynesville Shale is not only present and productive throughout the area of the Unit, but throughout the entire 5-mile radius study area. The consulting engineer testified that based on nearby well logs, the thickness of the Haynesville Shale underlying the subject Unit was estimated at 175 feet.

XTO's consulting engineer calculated current recoverable reserves beneath the Bulls DU Unit based on a traditional volumetric calculation for the Bossier (Haynesville) Section only. XTO's study developed a gas-in-place calculation of 254.1 BCF per square mile (640 acres) for Shelby County, based on a reservoir thickness of 175 feet. For the 620.944 acres within the perimeter of the entire Bulls "courthouse unit," gas-in-place is about 246.5 BCF. Based on a 30% recovery factor, XTO's consulting petroleum engineer estimated recoverable gas-in-place beneath the courthouse unit at 74.0 BCF. An extrapolation indicates that under the proposed 154.68-acre regulatory unit, the recoverable gas-in-place is approximately 18.42 BCF, assuming a 30% recovery factor. Recoverable gas beneath the tract in which the protestants own an interest is estimated to be 70,850 MCF.

XTO's consulting petroleum engineer performed a study of all Carthage (Haynesville) Shale

³ According to testimony of the Protestants' witness, Mr. Billy K. Lemons, who is the Protestants' minerals management agent, the figure last discussed in negotiations between the two parties was \$8,000 per acre, and 25% royalty.

wells within five miles of the proposed Bulls DU Unit, Well No. 1H. There are 11 Haynesville Shale wells within this study area that had adequate production history and completion information to be included in the study. Estimated ultimate recoveries were calculated for these wells by decline curve and data was also compiled regarding the perforated lateral length of each well. From this information, a plot of estimated ultimate recovery versus drainhole length was generated and a least squares regression of the data points on the plot developed a line through the data points with a positive slope of 0.7779. The implication of this study is that every foot of horizontal drainhole ultimately will recover 777 MCF of gas. XTO also noted that based on the study, the approval of this application would allow XTO to complete the 660 feet of drainhole, and recover an additional 513 million cubic feet of gas. Further, the engineer noted that the regression coefficient (88%) was extraordinarily high, suggesting it to be a particularly reliable study.

Protestants

The protestants, Kenneth DuBose and Kenna DuBose Starrak, appeared at the hearing, cross-examined XTO's witnesses, and presented one exhibit through their one witness. Protestants argued that XTO used unethical and harassing tactics in an attempt to lease the Protestants' mineral interest. Protestants admit that they were willing to lease their mineral interest, and even entered into negotiations with XTO through their agent.⁴ However, agreeable terms could not be met, and negotiations failed, resulting in the subject hearing. Protestants' main objections to XTO in this case revolve around aggressive and "emotional tactics" that XTO employed to attempt to lease the Protestants' mineral interests. Finally, Protestants argue that XTO cannot meet its burden of proof in the case because it created the problem by refusing to be fair and reasonable.

Protestants' witness was their minerals management agent, who testified that because XTO had ratified leases that were taken by Hunt and other companies prior to XTO acquiring Hunt (and other companies' leases offered by its predecessors) in 2008, XTO was under an obligation to offer and/or accept the same terms and more stringent lease clauses in previous leases offered by XTO.

EXAMINERS' OPINION

An owner of oil and gas is entitled to an opportunity to recover the reserves underlying his tract, and any denial of that opportunity amounts to confiscation. *Atlantic Refining Co. v. Railroad Commission*, 346 S.W.2d 801 (Tex. 1961); *Imperial American Resources Fund, Inc. v. Railroad Commission*, 557 S.W.2d 280 (Tex. 1977). When the subject tract is capable of supporting a regular location, the applicant for a Rule 37 exception based on confiscation must prove that the proposed irregular location is necessary because of surface or subsurface conditions and that the proposed location is reasonable. To do this, the applicant must show that it is not feasible to recover its fair

⁴ In his opening statement, Protestant Mr. DuBose noted that "[E]verything on this deal was agreeable but the actual lease form that was used to sign the lease. We agreed on terms ... as far as the amount figure for the bonus, all was done but the actual lease form and specific language was the holding point."

share of hydrocarbons from regular locations.

The examiners are of the opinion that XTO proved that the requested Rule 37 exception is necessary to prevent confiscation. Proposed Well No. 1H is the first horizontal well on the 154.68-acre Bulls DU Unit. Current recoverable reserves beneath the Unit are estimated to be 18.42 BCF, assuming a 30% recovery factor. Drilling of vertical wells does not appear to be a conventional or reasonable method of developing the Carthage (Haynesville) Shale in this particular region. Additionally, horizontal wells with short laterals that might be drilled on the subject Unit, even if they could be drilled economically, would not enable XTO and its lessors to recover their fair share of gas. Although XTO holds surrounding acreage, the location of the unleased tracts on that surrounding acreage and the necessity of drilling horizontal wells with a north-south orientation means that there are no feasible locations either on the 154.68-acre Bulls Unit, or the larger, 620 acre Bulls "courthouse" unit, even if the surrounding acreage is considered.

Because the Protestants' tract lies directly in the middle of the proposed 154.68-acre regulatory unit, with no way around on either side, there are no "regular locations" where a feasible horizontal well might be drilled. Imposition of 660 feet of no perforation zones (330 feet on either side) would leave more than 0.5 BCF of gas unrecovered and impede the opportunity for XTO and its lessors to recover their fair share of gas.

The examiners have considered the correlative rights of the protestants, but these rights must consequently be weighed against the correlative rights of XTO and the scores of its lessors that have been pooled into the Bulls DU Unit. XTO has leased 98.54% of the mineral interest in the Protestants' tract. XTO made an attempt to lease the Protestants' interests and include them in the Unit, and has represented that it is still willing to lease these interests on terms that are comparable to the terms on which other owners in the Unit have leased. Protestants are thus not without a remedy to protect their correlative rights. Furthermore, the Applicant points out that under Texas co-tenancy principles, the Protestants will participate in the production of the proposed well, if the wells pays out, based on Protestants' unleased interest in a drillsite tract.

The land encompassed by the "no perforation zones" imposed on the original permit for the Bulls DU Unit, Well No. 1H, is 100% leased by XTO. If the "no perforation zones" are not removed, XTO would be disallowed from recovering gas from land it has 100% leased, to protect property that is 98.5% leased, from drainage. Encumbering Well No. 1H with the "no perforation zones" on either side of Tract No. 3 would inhibit XTO and its lessors from the reasonable opportunity to which the law entitles them to recover their fair share of gas, and would disproportionately affect XTO and its lessors versus the Protestants.

The Protestants' complaints regarding leasing tactics and the acceptability of lease clauses are not within the jurisdiction of the Commission, and do not factor into the discussion regarding a Rule 37 exception application.

Based on the record in this case, the examiners recommend adoption of the following Findings of Fact and Conclusions of Law:

FINDINGS OF FACT

1. At least ten (10) days notice of this hearing was provided to all affected persons as defined by Statewide Rule 37(a)(2) and 37(a)(3) and the special field rules for the Carthage (Haynesville Shale) Field.
2. XTO Energy, Inc. ("XTO") seeks an amended drilling permit pursuant to the provisions of Statewide Rule 37 for the Bulls DU Unit, Well No. 1H, a proposed horizontal well in the Carthage (Haynesville Shale) Field, Shelby County, Texas.
3. Special field rules for the Carthage (Haynesville Shale) Field provide for 330' lease line spacing. As to horizontal wells, where the horizontal portion of the well is cased and cemented back above the top of the Haynesville Shale formation, the distance to any property line, lease line, or subdivision line is calculated based on the distance to the nearest perforation in the well, and not based on the penetration point or terminus. Where an external casing packer is placed in a horizontal well and cement is pumped above the external casing packer to a depth above the top of the Haynesville Shale formation, the distance to any property line, lease line, or subdivision line is calculated based on the top of the external casing packer or the closest open hole section in the Haynesville Shale. The standard drilling and proration unit for the Carthage (Haynesville Shale) Field is 320 acres. An operator is permitted to form optional drilling units of 20 acres.
4. The surface location of Well No. 1H is on-lease, 241 feet from the east line and 2,510 feet from the south line of the William S. Wilson Survey, A-764, Shelby County, Texas, and 207 feet from the east line and 693 feet from the north line of the Bulls DU Unit. The penetration point location is 58 feet from the north line and 473 feet from the west line of the Bulls DU Unit. The terminus location is 280 feet from the south line and 527 feet from the east line of the Bulls DU Unit, and 2,340 feet from the north line and 2,700 feet from the east line of the Wiggins, Harbard L. Survey, A-763, Shelby County, Texas.
5. Appendix 1 to this proposal for decision, incorporated into this finding by reference, is an as-drilled plat depicting the 154.68-acre Bulls Unit and Well No. 1H as proposed by XTO. Although all of the 154.68 acres within the perimeter of the Unit are under lease to XTO and pooled into the Unit, a small .59 net mineral acre interest in one of the component tracts is unleased. The Appendix 1 plat shows the boundary of the Unit and the boundaries of separate tracts within the perimeter of the Unit. The sole, partially-unleased tract within the perimeter of the Unit is cross-hatched on Appendix 2.
6. A Rule 37 exception is needed for the proposed Bulls DU Unit, Well No. 1H because the

- section of the well proposed to be perforated is closer than 330 feet to the mineral property lines of a tract internal to the Unit in which there is a partial undivided interest that is unleased.
7. The XTO application is opposed by owners of a partial undivided interest in one tract internal to the Bulls DU Unit that is traversed by the as-drilled wellbore of the Bulls DU Unit, Well No. 1H. The Protestants own an undivided 1.46% of the minerals, equivalent to a .59 net mineral acre interest in Tract No. 3.
 8. The Bossier Haynesville Shale is about 175 feet thick in the area of the Bulls DU Unit and is present and productive throughout the area of the Unit.
 9. Haynesville Shale gas wells within five miles of the terminus of proposed Well No. 1H recover an average of 134.98 MMCF of gas plus 777 MCF per foot of horizontal drainhole.
 - a. XTO studied production data, effective drainhole length, and decline curves to develop estimated ultimate recoveries for 11 Haynesville Shale wells within this study area that had adequate production history and completion information to be included in the study.
 - b. XTO generated a plot of estimated ultimate recovery versus drainhole length for the 11 study wells ("regional recovery study"). A computer generated least squares regression of the data points on the plot developed a line through the data points with a positive slope and intercept that imply that a horizontal well in this area ultimately will recover 134.98 MMCF of gas plus 777 MCF for every foot of drainhole.
 10. For the 620.944 acres within the perimeter of the Bulls "courthouse" Unit, gas-in-place in the Haynesville Shale is about 246.5 BCF, and based on a 30% recovery factor, recoverable gas-in-place beneath the Unit is about 74.0 BCF. For the 154.68 acres within the perimeter of the proposed Bulls DU Unit, gas-in-place in the Haynesville Shale is about 61.41 BCF, and based on a 30% recovery factor, recoverable gas in place beneath the Unit is about 18.42 BCF. Recoverable gas beneath the tract in which the Protestants own an interest is about 70,850 MCF.
 11. XTO made multiple attempts to lease all of the tracts and mineral interests within the perimeter of the Bulls DU Unit, but was not successful in leasing the Protestants' small interest in Tract No. 3. XTO remains willing to lease the Protestants' interest in Tract No. 3. XTO has leased 98.54% of the mineral interest in Tract No. 3.
 12. Given the location of Tract No. 3, in which there is an unleased interest, there are no regular locations on the Bulls DU Unit where a feasible horizontal well could be drilled that would provide XTO and its lessors with an opportunity to recover their fair share of gas.

13. Given the locations of all tracts with unleased interests within the entire Bulls DU "courthouse" Unit, there are no regular locations where a feasible horizontal well could be drilled that would provide XTO and its lessors with an opportunity to recover their fair share of gas.
14. Imposition of "no perforation zone" restrictions on proposed Well No. 1H such that the section of the well that could be perforated would be 330 feet or more from Tract No. 3 in the Bulls DU Unit would leave a substantial amount of gas unrecovered and preclude XTO and its lessors from recovering their fair share of gas beneath the Unit.
 - a. Well No. 1H, as drilled by XTO, would have drainhole length of 4,785 feet, and based on XTO's regional recovery study, the well would recover about 3.78 BCF of gas.
 - b. If Well No. 1H were "no perforation zone" restricted, such that the sections of the well that could be perforated were at least 330 feet from the tract in which Protestants have an unleased interest, these "no perforation zones" would cause about 0.51 BCF of gas to go unrecovered. This compares to about 70,850 MCF recoverable gas attributable to the Protestants' mineral interest.
15. The proposed location of the Bulls DU Unit, Well No. 1H is reasonable.
 - a. This location is roughly in the center of the Bulls DU Unit.
 - b. There is no less irregular location in relationship to the unleased tracts that are internal to the Bulls DU Unit.
 - c. Perforation of Well No. 1H as proposed by XTO is necessary to provide XTO and its lessors with a reasonable opportunity to recover their fair share of gas from the subject reservoir.

CONCLUSIONS OF LAW

1. Proper notice of hearing was timely issued by the Railroad Commission to appropriate persons legally entitled to notice.
2. All things necessary to the Commission attaining jurisdiction over the subject matter and the parties in this hearing have been performed.
3. Approval of a Rule 37 exception for the Bulls DU Unit, Well No. 1H, Carthage (Haynesville Shale) Field, Shelby County, Texas, at the location specified in the Commission's final order is necessary to prevent confiscation and protect the correlative rights of mineral owners.

RECOMMENDATION

The examiners recommend that a Rule 37 exception for the Bulls DU Unit, Well No. 1H, be granted as necessary to prevent confiscation and protect correlative rights.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'C. Hotchkiss', written over a horizontal line.

Christopher S. Hotchkiss
Hearings Examiner

A handwritten signature in blue ink, appearing to read 'A. Trevino', written over a horizontal line.

Andres J. Trevino
Technical Examiner