

**APPLICATION OF SAMSON LONE STAR, L.LC TO AMEND THE FIELD RULES FOR THE BETHANY, EAST (COTTON VALLEY) FIELD, PANOLA COUNTY, TEXAS**

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**Heard by:** Andres J. Trevino, P.E. on November 10, 2010

**Appearances:**

Jim Clark

**Representing:**

Samson Lone Star, LLC

**EXAMINER'S REPORT AND RECOMMENDATION**

**STATEMENT OF THE CASE**

This is the unprotested application of Samson Lone Star, LLC to amend the field rules last adopted in Order No. 06-0246727, effective May 16, 2006 for the Bethany, East (Cotton Valley) Field that currently provide for the following:

1. The entire correlative interval from 8,112' to 9,435' as shown on the log of the Texaco, T.C. Adams Well No. 1, Thomas Cox Survey, Panola County, Texas should be designated as the Bethany, East (Cotton Valley) Field .
2. Minimum well spacing of 467'/933';
3. 640 acre gas proration units plus 10% tolerance and optional 40 acre gas proration units with a 3,250' maximum diagonal; and
4. An allocation formula based on 95% deliverability and 5% per well with AOF Status.

Samson Lone Star, LLC proposes that Field Rule No. 2 be amended to decrease lease line spacing from 467 feet to 330 feet, eliminate between well spacing for all wells in the field, add take point provisions, off lease penetration, a horizontal box rule, Field Rule No. 5 be added to add a stacked lateral rule.

The examiner recommends that field rules for the Bethany, East (Cotton Valley) Field be amended as proposed by Samson Lone Star, LLC.

### DISCUSSION OF THE EVIDENCE

The Bethany, East (Cotton Valley) Field was discovered in June 1973 at approximately 8,110' subsurface depth. Special field rules were first adopted in 1973 and were last amended in May 2006. The gas field is designated as an associated field with the allocation formula suspended. There are 11 operators and 225 gas wells and three oil well in the field. The field has produced 353.4 BCF and 4.5 MMBC.

Samson requests to adopt 330' lease line spacing and 0' between well spacing be adopted to be consistent with the spacing rules of the Carthage (Haynesville Shale) Field. The Carthage (Haynesville Shale) Field lies below the Bethany, East (Cotton Valley) Field. Samson plans to recomplete existing Carthage (Haynesville Shale) Field wells into the Bethany, East (Cotton Valley) Field once the Haynesville Shale wells are depleted. The commingling of the Haynesville with the Cotton Valley will allow the recovery of additional reserves without drilling additional wells. The 0' between well spacing will allow the drilling of horizontal wells in between the numerous existing vertical wells.

Samson is amending the existing field rules in the Bethany, East (Cotton Valley) Field to adopt horizontal rules to allow efficient and orderly development of the Bethany, East (Cotton Valley) Field with horizontal wells. The proposed horizontal rules are similar to horizontal rules found in other Cotton Valley and Haynesville fields in the area.

Samson requests several standard horizontal well provisions commonly adopted when horizontal well development is anticipated. The provisions include take point language to allow flexible drilling of the laterals and off-lease penetration to allow the additional recovery of reserves by allowing the lateral to be horizontal at a legal lease line location. An additional stage frac will be placed on each lateral if off lease penetration is allowed.

The gross thickness of the Cotton Valley in this field is over 1,300 feet. The initial horizontal drilling target within the Cotton Valley interval will be the Taylor Sands followed by the Davis Sands. In planning future development of the subject field, it has been determined that stacked laterals will be required to develop this thick reservoir than was not anticipated by the "standard" stacked lateral rules. Samson foresees that laterals will need to be drilled from multiple surface locations, including some locations off lease. Amending the rule as proposed will allow stacked lateral drainholes to be simultaneously drilled from multiple surface locations. Deleting the standard 250 foot surface location maximum distance will facilitate future workovers on wells without having to shut-in other wells which may have wellheads clustered close together. The stacked lateral rules also require that each point of a stacked lateral horizontal drainhole be no more than 300 feet in a horizontal direction from any point along any other horizontal drainhole of the same stacked lateral well.

Samson proposes a 50 foot "box rule" for horizontal drainhole wells that would allow drainholes to deviate 50 feet from either side of their permitted track without the necessity

of obtaining a Statewide Rule 37 exception. Samson requests that the allocation formula for the field remain suspended.

**FINDINGS OF FACT**

1. Notice of this hearing was given to all operators of wells in the Bethany, East (Cotton Valley) Field at least ten days prior to the date of hearing.
2. The Bethany, East (Cotton Valley) Field was discovered in 1973 at a depth of 8,110'.
3. There are 11 operators and 225 gas wells and three oil wells in the field. Cumulative production from the field is about 353.4 BCF and 4.5 MMBC.
4. The Bethany, East (Cotton Valley) Field is an associated gas field with three oil wells. Rules governing the gas wells provide for 467'-933' well spacing, 640/optional 40 acre density and 95% deliverability and 5% per well allocation. The allocation formula was suspended in 1996.
5. Adopting field rules that provide for 330 feet lease line spacing and eliminating between well spacing, similar to the Carthage (Haynesville Shale) Field will assist in commingling of the Bethany, East (Cotton Valley) Field and the Carthage (Haynesville Shale) Field.
6. Given that the gross thickness of the Cotton Valley in this field is almost 1,300 feet, multiple stacked laterals will be required to fully develop the reservoir. The initial horizontal drilling target will be the Taylor Sands followed by the Davis Sands.
7. The proposed 50 foot "box rule" is necessary to allow operators reasonable minor deviations from the wellbore track that has been permitted.
8. Field rules that provide for 330 feet lease line spacing, eliminate between well spacing for all wells in the field, take point language, stacked laterals and a "box rule" for horizontal wells will provide consistency with other Cotton Valley fields under going horizontal drilling.
9. Allowing off-lease penetration will allow an additional stage frac to be placed on each lateral causing the recovery of additional reserves that would otherwise be left in the ground.
10. Continued suspension of the allocation formula is appropriate, as there is a 100% market for all the gas produced.

**CONCLUSIONS OF LAW**

1. Proper notice of this hearing was given to all persons legally entitled to notice.
2. All things have occurred or been accomplished to give the Railroad Commission jurisdiction in this matter.
3. Amending field rules as proposed by Samson Lone Star, LLC is necessary to prevent waste and protect correlative rights.

**EXAMINER'S RECOMMENDATION**

Based on the above findings and conclusions, the examiner recommends that field rules be amended for the Bethany, East (Cotton Valley) Field to reduce lease line spacing to 330 feet, eliminate between well spacing for all wells, add take points, allow off lease penetration, add stacked lateral language and a 50 foot "box " rule.

Respectfully submitted,

Andres J. Trevino, P.E.  
Technical Hearings Examiner