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* KEY ISSUES: WASTE                          *
*               Defective notice; Century    *
*               Doctrine, Best Tract Doctrine *
*               Existing Wellbore            *
*                                            *
* FINAL ORDER: R37 EXCEPTION GRANTED         *
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RULE 37 CASE NO. 0212934

APPLICATION OF DON H. WILSON, INC. FOR A RULE 37 EXCEPTION FOR ITS WELL NO. 1-R, D.O.E.- CO. UNIT, SLOCUM, N.W. (WOODBINE WOLF), BROOM CITY (UPPER WOODBINE), PETROREAL BROOM CITY (WOODBINE), AND WILDCAT FIELDS, ANDERSON COUNTY, TEXAS

APPEARANCES:	**REPRESENTING:**
FOR APPLICANT:	
George Neale DeWayne Varnador Mark Tarver Rick Johnston	Don H. Wilson, Inc.
FOR PROTESTANT:	
Glenn Johnson James E. Hightower C.T. Hamilton Waymon Gore Joel Muscat	Remora Oil Company and PetroReal, Inc.

PROPOSAL FOR DECISION

PROCEDURAL HISTORY

DATE APPLICATION FILED:	July 2, 1996
NOTICE OF HEARING:	July 24, 1996
AMENDED NOTICE OF HEARING:	August 30, 1996
HEARING DATES:	September 13 and 18, 1996

TRANSCRIPT RECEIVED: September 24, 1996
PFD CIRCULATION DATE: March 12, 1997
HEARD BY: Mickey R. Olmstead, Hearings Examiner
Jeffrey T. Pender, Hearings Examiner
Margaret Allen, Technical Examiner

STATEMENT OF THE CASE

On July 30, 1996, the Commission entered a Final Order in Docket No. 06-0211986 finding that the Key Petroleum, Inc. ("Key"), D.O.E.- Co. Unit Well No. 1-R (horizontal wellbore) in the Slocum, N.W. (Woodbine Wolf) Field, Anderson County, Texas ("subject well" and "subject lease") was drilled in violation of the notice provisions of Statewide Rule 37 and requiring Key Petroleum to plug the subject well or prove that the subject well was necessary to prevent waste or confiscation. D.O.E. Energy ("D.O.E.") drilled the subject well in February, 1995. Key subsequently purchased the subject well from D.O.E.

An application for a Rule 37 exception for the existing subject well, based on a 40-acre pooled unit ("subject tract"), was filed by Don H. Wilson, Inc. ("Wilson" or "applicant"), a contract operator for Key Petroleum on July 2, 1996, prior to the signing of the July, 1996 Final Order. The field rules for the subject field allow 467' lease-line and 1,200' between-well spacing on 40-acre units. The subject well requires an exception because it is closer than 467' to both internal and external lease lines of the 40-acre unit. The subject well has been shut in since May 21, 1996, the date of the Interim Order requiring the well to be shut in until it is properly permitted under Statewide Rule 37.

Wilson claims that its existing horizontal well is entitled to an exception to Statewide Rule 37 to prevent confiscation under the "Century Doctrine" first announced in *Railroad Commission v. Magnolia Petroleum Co.*, 130 Tex. 484, 109 S.W.2d 967 (1937). In that case, the Texas Supreme Court held that if a "separate" tract, i.e. not a voluntary subdivision, has been voluntarily subdivided so that none of the subdivisions individually are eligible for a spacing exception to prevent confiscation, then that separate, parent tract as a whole may nonetheless receive an exception permit upon proof of confiscation. Wilson does not assert any claim for an exception based on waste.

Remora Oil Company ("Remora") leased undivided mineral interests remaining under various home lots within the 40-acre pooled unit after D.O.E. drilled the subject well, and now opposes Wilson's application. PetroReal, Inc. ("PetroReal") offsets the 40-acre pooled unit to the north and east, and also opposes Wilson's application. Remora and PetroReal ("protestants") claim that there are superior locations on the 40-acre unit (closer to PetroReal's lease line) which will provide all interest owners of the 278.48-acre parent tract a better opportunity to recover their fair share of the hydrocarbons thereunder. Therefore, the protestants request that the Commission order Wilson to plug its existing horizontal well, which is at least 425' from PetroReal's lease line, and drill a vertical replacement well only 50 feet from said lease line.

DISCUSSION OF THE EVIDENCE

Wilson's Evidence and Argument

At the hearing, Wilson withdrew its application for all fields except the Broom City (Upper Woodbine) Field ("subject field"), the field in which Wilson claims the subject well is completed. The subject well is located on a 40-acre pooled unit on the most northerly part of the 278.48-acre parent tract (See copies of Wilson Exhibit No. 19 and PetroReal Exhibit No. 2 attached hereto as Exhibits "A" and "B" respectively for reference). The yellow-highlighted tracts on Exhibit "A" indicate residential lots under which Remora has leased some fraction of the undivided mineral interests. Key Petroleum and/or Wilson have leased or been assigned 100% of the remaining acreage in the 278.48-acre parent tract.

Wilson's engineering expert testified that the subject well is presently carried in the Slocum, N.W. (Woodbine Wolf) Field pursuant to its original drilling permit, even though it is actually completed in the Broom City (Upper Woodbine) Field. The field rules for the Slocum, N.W. (Woodbine Wolf) Field provide for 330' lease-line and 933' between-well spacing on 20-acre units. When the subject well was completed in February, 1995, the Broom City (Upper Woodbine) had not yet been recognized as a new field. The Commission-recognized discovery well for the Broom City (Upper Woodbine) Field, the PetroReal Lena May No. 1, was not completed until five months after the drilling and completion of the subject well. Because the subject well was drilled in violation of the notice provisions of Statewide Rule 37, Wilson's original permit is invalid, and Wilson must comply with the Broom City (Upper Woodbine) Field rules or obtain an exception thereto.

The 40-acre pooled unit was segregated, by unit declaration and certificate of pooling authority from the original 278.44-acre parent tract. The terminus of the subject horizontal wellbore is only 300' northwest of the boundary which Key and Wilson created between the 40-acre unit and the remaining 238.44 acres of the base lease/parent tract after Key drilled the subject well. However, the penetration point of the subject horizontal wellbore is 425' from Protestant PetroReal's lease line, while the terminus of the subject well is 457' from said lease line. There is no regular location on the 40-acre pooled unit which is at least 467 feet from all interior and exterior lease lines.

Applicant presented testimony that Key, and now Wilson, has an undivided leasehold interest in the 278.48 acres constituting the parent tract. The parent tract took its present shape and size before it was leased by James K. Polk and Ora Day Polk to J.A.R. Operations in June, 1993, two years before the discovery of oil in the Broom City (Upper Woodbine) Field in July, 1995.

Wilson presented a structure map on the top of the productive interval in the subject well. The structure map indicates that the 40-acre pooled unit is productive, but is structurally low to PetroReal's lease in this Upper Woodbine fault block. The Broom City (Upper Woodbine) Field has a strong water drive which sweeps oil generally from south to north.

Wilson places the oil/water contact somewhere between the base of the Upper Woodbine in the subject well (-5065') and the top of the Upper Woodbine in the Synergy D. Polk No. 1 (-5,100'), located 250' south of the 40-acre unit. The Synergy well was wet in the Upper Woodbine. Wilson constructed net pay maps for both cases, but opined that the oil/water contact is most likely located near the base of the Upper Woodbine in the subject well.

Using a "percent of oil versus cumulative oil production" plot, Wilson predicted that, using an economic limit of 2.6% oil cut, the subject well will cumulatively produce between 30,000 and 34,000 BO. As of June, 1996, the subject well had already produced 20,450 BO, suggesting that there are 10,000 to 14,000 BO remaining to be recovered by the subject well before it waters out. The only other well now completed in the subject field, the PetroReal Lena May No. 1, is completed about 467 feet north of the 40-acre pooled unit, close to the north-bounding fault. This well has low porosity sand with only about 2 feet of pay, and is expected to ultimately recover only 5,000 BO.

Wilson estimates, by volumetric calculations, that there are approximately 217,000 barrels of recoverable oil in the subject reservoir, assuming the most probable oil/water contact at -5065'. Wilson's volumetric analysis also predicts that there are 39,600 BO ultimately recoverable between the top of the Upper Woodbine in the subject well and the same oil/water contact. These volumetric calculations assume a porosity of 11%, which is the porosity in the Upper Woodbine in the Lena May No. 1 Well, after correcting the logs for the shaley sand. The recoverable reserve calculations of 39,000 BO are reasonably close to the estimated recoverable 34,000 BO predicted by the oil cut decline analysis done on the subject well.

On cross examination, the protestants questioned Wilson's representation of the true position of the drainhole claiming that Wilson did not really know its location. In response, Wilson produced directional surveys suggesting that the position of the full length of the horizontal drainhole was reasonably ascertainable. Wilson asserts that the survey pinpoints the well's location to within a maximum of 13' northerly error, 12' easterly error and 12' vertical error. The protestants also pointed out that, because the terminus of the drainhole is structurally higher than the penetration point and the lowest elevation is about one-third of the way down the drainhole, the middle of the subject horizontal wellbore will water out before the terminus does.

Wilson admitted that a vertical well further updip, as proposed by the protestants, could recover more oil from the subject tract, but would be located within a housing subdivision. There is no justification for drilling further downdip (to the south, southwest) from the subject well because that part of the reservoir has most likely watered out.

Based on a survey of recent drilling costs in RRC District 6, Wilson estimated that to drill a 5,600' vertical well to the subject reservoir, as the protestants have proposed, would cost approximately $280,000. Wilson's geologist, independently estimated drilling costs for a vertical well in the area to be about $150,000 to $200,000. Wilson's engineer testified that the subject horizontal well cost $650,000 to drill and complete.

PetroReal/Remora's Evidence and Argument

The basis of Remora's complaint is that it does not want to be forced to participate in a well that will not pay out. However, Wilson has offered to allow the unpooled lessors of Remora in the 40-acre unit to participate cost free in all production from the subject well . Wilson has held in suspense for Remora's benefit all cost-free production proceeds attributable to the unpooled interests leased to Remora.

The protestants believe that there are locations updip at which the interest owners in the subject tract will have a better opportunity to recover a greater amount of the hydrocarbons from under their pooled unit. At the hearing, the protestants made an offer to waive any objections to a Rule 37 application for a vertical well at a location northeast of the subject well and only 50 feet from the northwest lease line (see copy of PetroReal Exhibit No. 2 attached hereto as Exhibit "B"). PetroReal indicated its desire to pool its acreage to the north into a pooled unit for a new well to be drilled updip of the existing well.

A geologist for the protestants, presented cross-sections and log analyses which indicate that at the protestants' alternate location sand quality should be almost as good as it is at the location of the subject well. Protestants' geologist suggested that, notwithstanding lease line considerations, the best location to recover the remaining oil in this reservoir would be to drill 100 feet to the northwest of the subject 40-acre pooled unit, on PetroReal's lease. This location would be structurally high, yet far enough from the fault to expect good sand quality.

Protestants' engineering expert testified that the expenses for drilling the Lena May No.1, a well similar to the well proposed by the protestants, totalled $176,000. He also testified that the subject well was not prudently drilled and will water-out shortly. Gore testified that the difference between the low-side estimate of ultimate production from the subject horizontal well (30,000 BO) and the amount of oil under the applicant's 40-acre pooled unit recoverable by the existing well according to volumetric calculations (39,000 BO) is approximately 9,000 BO. Protestants believe that a vertical well near the terminus of the existing horizontal wellbore could recover the 9,000 barrel difference if it were more prudently drilled than was Wilson's horizontal well. He also testified that such a well could be drilled at a regular location from PetroReal's lease lines (467'), because the terminus of the existing horizontal wellbore is already 457 feet from the northern exterior lease line adjacent to PetroReal's property.

Protestants assert that a vertical well at the protestants' proposed alternate location 50' from PetroReal's lease line should recover about 111,600 BO (85,000 BO if Wilson's formation volume factor value of 1.8 is used) under original conditions. Because the subject well has only recovered about 20,000 BO, at least 65,000 BO could be recovered by a vertical well at the protestants' alternate location. Protestants suggest that such a well will be profitable even if Wilson's higher drilling cost estimates for a vertical well are correct. Even if the subject well is allowed to continue producing and recovers a total of 34,000 BO, the remaining oil at the protestants' alternate location would likely allow a profitable well to be drilled thereon.

The protestants also testified that, if surface obstructions prevented the applicant from drilling at the protestants' alternate location, they would work with the applicant to find a suitable location on Petroreal's lease to the northwest. (Such a location would not be on either the 40-acre unit or the 278.48-acre parent tract).

EXAMINER'S OPINION

Exceptions to Statewide Rule 37 may be granted to prevent waste or to protect correlative rights. To obtain an exception to Statewide Rule 37 to protect correlative rights, the applicant must show: 1) It is not possible for the applicant to recover his fair share by placing the well at any regular location; and, 2) that the proposed irregular location is reasonable. Statewide Rule 37(g)(2) provides that a voluntary subdivision is not entitled to an exception permit only to prevent confiscation if it were segregated from a larger tract in contemplation of hydrocarbon development. Wilson does not assert any claim to an exception based on waste. Because the pooled unit contains 40 acres, no exception to Rule 38 is required.

Because the 40-acre unit is a tract of such shape that it is necessary to obtain a spacing exception and because it was segregated from a larger tract in contemplation of hydrocarbon development, it is a voluntary subdivision under Statewide Rule 37(g)(2)(A). Nonetheless, the parent tract as a whole may receive a well permit, upon proof of confiscation, under the Century Doctrine first announced in *Railroad Commission v. Magnolia Petroleum Co.*, *Supra*.

As required under the Century Doctrine, Wilson has successfully reconstructed a separate parent tract designated as the 278.48-acre Polk Lease. Because the 278.48-acre parent tract is not a voluntary subdivision, having taken its size and shape prior to the lease dated June 16, 1993, before the Broom City (Upper Woodbine) Field was discovered and the subject spacing rule became effective in July, 1995, and because the parent tract as a whole is not receiving its fair share of oil, proof of the parent tract's net confiscation establishes the right to a Rule 37 exception on the 40-acre unit subdivision. The spacing exception is granted to protect the entire parent tract rather than just the applicant's voluntarily subdivided unit tract. The existing subject well is the only well on the 278.48 Polk Lease/parent tract capable of producing and completed in the subject field.

It is undisputed that the protestants' proposed alternate location, 50 feet from PetroReal's lease line, would likely recover more hydrocarbons than the existing subject well because of its updip position. Consequently, protestants have argued that *Ryan Consolidated Petroleum Corp. v. Pickens*, 155 Tex. 221, 285 S.W.2d 201 (1955), *cert. denied*, 351 U.S. 933 (1956), holds that Wilson is not entitled to a Rule 37 spacing exception for the existing subject well because it is not the best location on the 40-acre pooled unit. Protestants' reliance on *Ryan* is misplaced.

Ryan involved a suit for equitable relief by a mineral lessee of one-half of a voluntarily subdivided tract who had been denied a permit to drill a well on its portion of the tract, against the mineral lessee of the other one-half portion of the tract, who was granted a permit to drill. There,

the Supreme Court held that the Railroad Commission has broad discretion to locate the well on the subdivided tract or lot that best protects the parent tract. *Id*, at 206. *Ryan* clearly does not hold that the Commission must order an existing well to be plugged and redrilled at a better location on the same subdivided tract. The policy basis for the *Ryan* decision is that the original right of the parent tract to a first well should not be destroyed; yet, operators cannot be allowed to circumvent Commission spacing rules by creating new subdivided tracts, and thus new rights thereon.

The only two voluntarily subdivided tracts in the instant proceeding are the subject 40-acre pooled unit and the remaining 238.48 acres of the 278.48-acre parent tract. It is uncontested that, between these two subdivided tracts, the 40-acre pooled unit is the best, and only, tract to provide the mineral interest owners of the parent tract a reasonable opportunity of recovering their fair share of hydrocarbons under the 278.48-acre reconstituted parent tract. The subject formation under the parent tract has most likely watered out. Therefore, the only issue remaining is whether the location of the existing subject well is a reasonable location. Wilson has shown that it is.

The examiners believe that the subject well is rapidly approaching abandonment and will be fortunate to produce the projected 10,000 to 14,000 BO remaining in the life of the well. The applicant projects that, at most, only 39,000 of the currently recoverable reserves under the 40-acre unit will be recovered by the subject well.

There is no dispute that the applicant's 40-acre unit contains the only productive acreage within the 278.48 parent tract. Considering the strong water drive, it is also fairly certain that the maximum amount of hydrocarbon recovery would be obtained from a well at the highest elevation of the subject formation on the 40-acre unit; however, residential development and other surface obstructions may prohibit such a location. It is also undisputed that, because of the strong updip water drive flowing toward PetroReal's lease, PetroReal is not being drained by the existing subject well. Moreover, if protestants are correct regarding the reserve estimates under their proposed alternate location, PetroReal should be able to obtain a Rule 37 exception based on waste and drill a well on its own lease.

The examiners recommend that Wilson be granted an exception to Statewide Rule 37 to continue producing the subject well. Without an exception to Rule 37, the applicant will not recover its fair share of the hydrocarbons under the subject lease, or its equivalent in kind. The existing subject well is near the geometric center of the 40-acre unit, and is reasonable because no less irregular locations exist on the unit. The existing location is reasonable for the reconstituted parent tract because the subject reservoir conditions are now known as a result of the subject well being drilled. The substantial risk involved in redrilling a well is certainly a factor to be considered in determining the reasonableness of an existing location.

FINDINGS OF FACT

1. On July 29, 1996, Don H. Wilson, Inc. ("Wilson") filed an amended Form W-1 to apply for an exception to Statewide Rule 37 for its 40-acre, horizontal, D.O.E.- Co. Unit Well No. 1-R in the Slocum, N.W. (Woodbine Wolf), Broom City (Upper Woodbine), PetroReal Broom City (Woodbine) and Wildcat Fields, Anderson County, Texas ("subject lease" and "subject well"). The Slocum, N.W. (Woodbine Wolf) requires 330' lease-line, and 933' between-well spacing on 20-acre units. The other applied-for fields are on statewide spacing.

2. At least 10 days notice of the hearing on the application was given to all designated operators, lessees of record for tracts that have no designated operator, and owners of record of unleased mineral interests for each adjacent tract and each tract nearer to the well than 330'.

3. At the hearing, Wilson withdrew its application for all fields except the Broom City (Upper Woodbine) Field ("subject field"), which requires 467' lease-line and 1,200' between-well spacing on 40-acre units.

4. The subject well's terminus is 300 feet to the boundary which Wilson created between the 40-acre unit and the remaining 238.44 acres of the base lease/parent tract.

5. The penetration point and terminus of the subject horizontal wellbore are 425' and 457', respectively, from Protestant PetroReal's lease line.

6. The subject well was completed in February, 1995.

7. The Broom City (Upper Woodbine) Field was designated in July, 1995.

8. The 278.48-acre parent tract took its present shape and form prior to the lease from James K. Polk and Ora Day Polk to J.A.R. Operations in June, 1993, about two years before the discovery of oil in the Broom City (Upper Woodbine) Field.

9. The 40-acre unit upon which the subject well is located was segregated from the 278.48 acre base tract in mid-1996, after the discovery of oil in the area.

10. There are reserves under the subject tract that can be recovered by the existing subject well.

11. The subject well will, at most, recover a total of 39,000 BO before it is abandoned.

12. Wilson and its lessors have no interest in tracts offsetting the 278.48-acre parent tract which are capable of producing the subject reserves.

13. The existing location is reasonable because it is in the approximate geometric center of the 40-acre unit, all downdip locations (south) have watered out, and all updip locations are less regular and involve the risk of encountering poorer porosity and permeability.

14. Granting an exception to Statewide Rule 37 to Wilson to continue producing the subject well is necessary to give the owners of the parent tract a reasonable opportunity to recover their fair share of hydrocarbons.

CONCLUSIONS OF LAW

1. Proper notice of hearing was timely given to all persons legally entitled to notice.

2. All things have occurred and/or have been done to give the Commission jurisdiction to decide this matter.

3. The subject 40-acre unit is a voluntary subdivision. The 278.48 acre Polk Lease is a reconstituted parent tract entitled to a well on the subject 40-acre unit to protect the correlative rights of the owners of the parent tract.

4. The existing well location is reasonable because no less irregular locations exist at which the mineral interest owners of the parent tract will be able to recover their fair share of hydrocarbons from beneath their tract.

5. An exception to the lease-line spacing requirements is necessary to permit the existing subject well to produce.

6. The existing well location is a reasonable location that will give the mineral interest owners of the parent tract a reasonable opportunity to recover their fair share of hydrocarbons in the applied-for fields underlying the parent tract, or the equivalent in kind, thereby preventing confiscation.

RECOMMENDATION

The examiners recommend that the above findings of fact and conclusions of law be adopted and that Don H. Wilson, Inc. be granted an exception to Statewide Rule 37 in accordance with the attached Final Order.

Respectfully submitted,

Mickey R. Olmstead
Hearings Examiner

Margaret Allen
Technical Examiner