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OIL & GAS SECTION

# RAILROAD COMMISSION OF TEXAS

## OFFICE OF GENERAL COUNSEL

RULE 37 CASE NO. 0219164; DISTRICT 10

**APPLICATION OF DEVON ENERGY CORPORATION (NEVADA) FOR EXCEPTIONS TO STATEWIDE RULES 37 AND 38 TO DRILL WELL NO. 1258 ON THE BOWERS LEASE, 640 ACRES, TO THE ALLISON PARKS (MORROW UPPER) AND WILDCAT FIELDS, HEMPHILL COUNTY, TEXAS**

**APPEARANCES:**

**FOR APPLICANT:**

John Soule - Attorney  
Cary McGregor - Engineer  
Braden J. Thompson - Geologist  
Kevin Harwi - Landman

**APPLICANT:**

Devon Energy Corporation  
" " "  
" " "  
" " "

**FOR PROTESTANTS:**

Brian Sullivan - Attorney  
Kerry A. Pollard - Consulting Pet. Engineer

**PROTESTANTS:**

Ricks Exploration, Inc.  
" " "

**OTHER APPEARANCES:**

Philip Patman - Attorney  
George Neale - Attorney

Kaiser-Francis Oil Company  
Sonat Exploration Company

**PROPOSAL FOR DECISION**

**PROCEDURAL HISTORY**

**APPLICATION FILED:**  
**NOTICE OF HEARING**  
**HEARD BY:**

August 28, 1998  
September 24, 1998  
Daniel W. Ortman, Hearings Examiner  
Margaret Allen - Technical Examiner

**HEARING DATE:**  
**TRANSCRIPT RECEIVED:**  
**PPD CIRCULATION DATE:**

October 14, 1998  
October 19, 1998  
February 5, 1999

**STATEMENT OF THE CASE**

Devon Energy Corporation ("Devon") seeks exceptions to Statewide Rules 37 and 38 to drill Well No. 1258 (the "subject well") on its Bowers Lease ("Tract 3" or the "subject tract") in the Allison Parks (Morrow Upper), Allison Parks (Granite Wash) and Wildcat Fields. Devon's original application also requested exceptions to complete the well in the Washita Creek (Morrow Upper) Field but Devon withdrew its application in this Field. The Allison Parks (Morrow Upper) Field requires a minimum spacing of 467 feet to the nearest lease line and 3735 feet between wells on a minimum of 640 acres. The Allison Parks (Granite Wash) Field requires a minimum spacing of 467 feet to the nearest lease line and 1200 feet between wells on a minimum of 40 acres.

The subject tract is composed of 640 acres as outlined on the plat attached to the Form W-1 (Drilling Permit) submitted by Devon. The location of the proposed well is only 60 feet from the lease-line which separates Tract 3 from the nearest offset tract. The location of the proposed well is 4350 feet from the nearest adjacent well on the subject tract (see attachment A). Regularly spaced locations are available on the 640 acre tract.

Devon filed an alternate application asking for an exception to Statewide Rule 38 to drill a well at the same location on a 2560 acre tract. The 2560 acre tract includes the 640 acres in Devon's original application and three additional tracts: Tracts 1, 4 and 6. The proposed well would be the fifth well on the 2560 acre tract. Regularly spaced locations are also available on the 2560 acre tract.

Ricks Exploration Inc. ("Ricks") protests the instant application and operates wells on offsetting tracts, including Well No. 7-A to the north of the proposed location. Kaiser-Francis also operates offset wells but supports Devon's application for a well at the proposed location on Tract 3. Sonat Exploration Company ("Sonat") appeared at the hearing neither in support nor in opposition to Devon's applications.

**POSITIONS OF THE PARTIES AND DISCUSSION OF THE EVIDENCE****Applicant Devon's position and evidence:**

Devon presented testimony from two witnesses and offered a net pay map, a hydrocarbon pore volume map, 3D seismic data and other exhibits in support of its position. Devon argues that Ricks Exploration Bowers Well No. 7-A, drilled at a regular location approximately one year ago, is draining the subject tract.

In 1976, Earl T. Smith & Associates ("Smith"), leased the mineral rights to 18 sections (11,520 acres) in the Tumbleweed area of Hemphill County. The lease required acreage to be released at the end of the primary term if a well was not located on that acreage. In 1984, Smith released 13 sections but retained its interest in the minerals underlying the remaining 5 sections. The document which released the 13 sections also created Tract 3 which includes parts of Sections 6 and

258. Tract No. 2 was subsequently released as a result of litigation. Devon is Smith's successor in interest and operates wells on each of the remaining tracts: Tracts 1, 3, 4 and 6.

Devon mapped the net pay in the area as being the number of reservoir feet with porosity greater than 6% and water saturation less than 65%. Devon's net pay isopach map shows that the two Devon wells in Section 258 and Rick's offset well have about the same net feet of pay (40 to 50 feet) in comparison to Devon's well in the Section to the east, the Bowers No. 2-257, which is not as thick (30.5 feet). Devon's isopach map is supported by a 3D seismic survey which shows that greater amplitude-strength anomalies occur where there is greater reservoir thickness. Devon's past experience is that a correlation exists between the presence of sand and an amplitude-strength anomaly.

Devon's proposed well is shown on the net pay isopach and the seismic survey to be favorably located, but not necessarily located in the thickest part of the sand. The proposed location is also designed to be competitive with the offsetting Ricks' well, and thus minimize drainage from that direction while recovering the remaining hydrocarbons on Devon's acreage. Rick's well is located 467' north and 467' west of common lease-lines with Tract 3.

Devon also determined the average porosity and gas saturation (1 minus water saturation) for each well and multiplied this by the net pay value to determine the amount of hydrocarbon-filled pore volume present at each wellbore. Devon then contoured a hydrocarbon pore-volume map by interpolating the amount of hydrocarbon-filled pore volume between each well.

The engineer for Devon estimated the ultimate recoveries for Ricks' offsetting well and various Devon wells in the area, using both rate-time and rate-cumulative curves. The estimated ultimate recovery for Devon's Bowers Well No. 2-251 was estimated from the AOF (absolute open flow potential) and decline curves of other wells since the Bowers Well No. 2-251 has only recently been completed and has little production history. The remaining recovery for the Bowers Well No. 7, the only existing well on Tract 3, is estimated to be 757 MMCF. The remaining recovery for all four existing wells on the 2560-acre alternate lease totals 15.1 BCF.

Devon determined that the current reservoir pressure is 2430 psi to the west of the Bowers Well No. 251-2, based on BHP/Z versus cumulative production curves. These wells all appear to be in good pressure communication as their pressures are declining along the same trend. One of the easternmost wells in this area, the Bowers Well No. 251-2, recently encountered a bottomhole pressure of 7166 psi, and Devon believes that the area to the east of that well has significantly higher pressure in the range of 7166 psi.

Volumetric amounts of remaining recoverable gas were determined by multiplying the number of acre-feet (as determined from the hydrocarbon pore-volume map) by the drop in reservoir pressure expected at the time of abandonment. The remaining reserves underneath Tract 3 were determined to be 4.45 BCF. Devon alleges that Ricks' offsetting well will drain approximately 1 BCF of the remaining gas unless the proposed well is drilled. The gas reserves underneath the 2560-



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acre tract that will not be recovered by the existing four wells is estimated to be 10.97 BCF.

**Protestant Ricks Exploration position and evidence:**

Ricks argues that Devon's evidence of the volume of gas currently underlying the subject tract is not credible and therefore does not meet Devon's burden of proof. Ricks contends that Devon's hydrocarbon pore-volume map was not prepared by mapping net pay and porosity as independent variables. Ricks claims that Devon's hydrocarbon pore volume map is not sufficiently accurate to be relied upon because Devon's expert mapped the product of net pay and porosity at each data point. Ricks' expert testified that net pay and porosity must be mapped independently to create a credible hydrocarbon pore-volume map. Ricks asserts that Devon's estimate of the volume of gas currently underlying the subject tract is derived from Devon's inaccurate hydrocarbon pore-volume map and is therefore erroneous.

Section 258 comprises 640 acres and is shaped approximately as a square. In addition to the proposed well, two other wells are located on Section 258; Devon's Bowers 5A and 7. Ricks argues that Devon's application is actually an attempt to drill a third well on Section 258.

Finally, Ricks argues that Devon's application must fail because Kaiser-Francis or Devon may already be getting their fair share from existing wells in the Field. Ricks argues that the fair share analysis offered by Devon is insufficient and that Kaiser-Francis offered no fair share analysis. Ricks argued that because Kaiser-Francis offered no fair share analysis it (Kaiser-Francis) may be getting its fair share from other wells in the Field and therefore Devon's application must be denied.

**Kaiser-Francis' position and evidence:**

Kaiser-Francis is neither applicant nor protestant in this case but suggests that Devon's alternate application on 2560 acres does not offer sufficient protection to its working interest in the subject well. Kaiser-Francis contends that its correlative rights as a working-interest owner are entitled to protection from confiscation, and that drilling a well at the proposed location on the 640-acre Tract 3 will protect its working interest from confiscation.

**Sonat's position:**

Sonat Exploration ("Sonat") is an operator in the Allison Parks Field and appeared only as an interested party. Sonat introduced no evidence and neither supports, nor protests, Devon's application.

EXAMINERS' OPINION

Confiscation:

Devon argues that the requested exception is necessary to prevent confiscation of the minerals underlying its 640 acre tract, Tract 3. In the alternative, Devon asserts that an exception is necessary to prevent confiscation of the minerals underlying a 2560 acre area composed of Tracts 1, 3, 4 and 6. Devon prefers the application be granted on the 640 acre tract. The parties do not dispute that the 640 acre tract is a regular size and shape.

Devon's evidence shows differences between the royalty owners, working interest owners and overriding royalty owners in Tracts 1, 3, 4 and 6. Devon argues that royalty owners in Tract 3 are entitled to protection from confiscation. The parties agree that Devon is the lessee of Tracts 1, 3, 4 and 6. Both the lessor and lessee of a regular-sized tract are entitled to protection from confiscation. Texaco, Inc. v. Railroad Comm'n of Texas, 716 S.W.2d 138, 141-142 (Tex. App. -- Austin 1986; writ ref'd n.r.e.). If Devon is not recovering its fair share from the subject tract, or from other tracts in the Field, Devon is entitled to exceptions to Rules 37 and 38. Id. Devon sponsored testimony and introduced an exhibit demonstrating that Devon's adjacent tracts, Tracts 1, 3, 4 and 6, will not recover Devon's fair share from the Allison Parks (Morrow Upper) Field. Ricks argues that Devon's evidence does not meet Devon's burden of proof.

Even if Kaiser-Francis, a working interest owner, is recovering its fair share from other wells in the Field, Devon as lessee of Tract 3, is entitled to a reasonable opportunity to recover its fair share of reserves currently underlying its tract.

Applicant's hydrocarbon pore-volume map:

Ricks argues that Devon will not suffer from confiscation if its applications are not granted because Devon's estimate of reserves under the subject tract is inflated and not accurate. Ricks presented no testimony, or other evidence, of the volume of reserves underlying the subject tract. But if Ricks' arguments are correct, Devon's evidence does not prove that Devon will suffer confiscation if its exceptions are not granted.

Ricks argues that net pay is an independent variable from porosity and water saturation, and therefore, each must be mapped separately to accurately map hydrocarbon pore-volume. Ricks argues that Devon's hydrocarbon pore-volume map is inaccurate and Devon's estimate of reserves underlying Tract 3 are inaccurate and not probative. Ricks did not put on a direct case and adduced no evidence, other than the stipulation discussed below, of Devon's fair share.<sup>1</sup>

<sup>1</sup> In a letter filed after the hearing, Counsel for Ricks quotes a recent Supreme Court opinion:

Whether the expert's opinion is relevant and whether the methods and research upon which it is based are reliable, there is a difference between the reliability of the underlying theory or technique and the credibility of the witness who proposes to testify about it. An expert witness may be very believable, but his or her conclusions may be based on unreliable methodology.

E.I. du Pont de Mours & Co. v. Robinson, 923 S.W.2d 549 (Tex. 1995)

Devon offered its witnesses as experts without objection. Neither the qualifications nor the credibility of Devon's experts are at issue in this case. Ricks argues that Devon made a "clear technical error" in mapping the hydrocarbon pore-volume; therefore, the examiners cannot consider the map as evidence.<sup>2</sup> But the hydrocarbon pore-volume map was admitted into the record without objection and the record includes no evidence which tends to establish that the hydrocarbon pore-volume map is inaccurate.

The cases cited by Ricks are generally referred to as "junk science" cases. Estimating the volume of reserves underlying the subject tract based on a geologic interpretation of well logs is not junk science. Devon's approach to estimating the volume of reserves underlying the subject tract is consistent with the type of evidence generally accepted in Rule 38 proceedings.

Ricks may be correct in its argument that mapping porosity and hydrocarbon pore volume independently produces a more accurate estimate, but the examiners ascribe to a broader view of the weight to assign to expert testimony: "[A] rigid standard would be at odds with the Rules' liberal thrust and their general approach of relaxing the traditional barriers to "opinion" testimony." Daubert v. Merrill Dow Pharmaceutical, Inc. 113 S. Ct. 2786, 2790 (1993). Evaluating the procedure used to map hydrocarbon pore-volume does not require the examiners to adduce proof through their own expertise but to "make a preliminary assessment of whether the testimony's underlying reasoning or methodology is scientifically valid and properly can be applied to the facts at issue." *Id.* at 2790.

The examiners agree with Ricks that since porosity, water saturation and net pay vary independently, a better technique for mapping reservoir volume would be to contour separate maps of porosity and water saturation and then combine these maps with the net pay map. However, the method used by Devon does give a correct value at each data point and is preferable to one which combines an average reservoir porosity and water saturation with an isopach map of net pay, which is commonly accepted in Commission hearings. The porosity varies from 8.5 to 12.6 %, and water saturation varies from 20 to 44%. Iso-contouring these values separately would improve the volumetric estimates only slightly. Since the remaining volumetric estimates indicate that the remaining unrecoverable gas (absent the proposed well) is much larger than remaining recoveries of the existing wells (considering Tract 3 only or the 2560-acre tract), the examiners conclude that the evidence shows the need for at least one additional well.

The examiners do not conclude that Devon's map would be sufficient if the record reflected conflicting or competing evidence nor do the examiners conclude that Devon's map would be sufficient if the qualification of Devon's expert witnesses had been successfully challenged. The examiners only conclude that the hydrocarbon pore-volume map is sufficiently helpful to the examiners in this case to be probative. In the absence of objections to the admissibility of the hydrocarbon pore-volume map, conflicting or competing evidence, or objections to the qualifications

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<sup>2</sup> Counsel for Devon, in his response of October 30, 1998, writes: "There is no evidence to support the argument that the methodology used to create Devon's hydrocarbon pore-volume map was incorrect [emphasis in original]. The argument must therefore be rejected."



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of Devon's expert witnesses, the examiners determine that Devon's hydrocarbon pore-volume map is based on methodology sufficiently accurate to support Devon's confiscation argument.

**Devon's alternate application:**

Devon has filed an alternate application and proffered evidence showing that the larger 2560 acre tract is also being drained. The examiners conclude that the 640 acre tract is entitled to protection from confiscation, and Devon urges this application in preference to its alternative application. Because the evidence discussed above established that Tract 3, the subject tract, is entitled to protection from confiscation, Devon's alternative application to drill a well at the same location on 2560 acres is moot and need not be considered further.

Ricks argues that certain wells on the larger tract may not now be carried on Commission records in the field in which they were originally permitted. If Ricks can establish that Devon has improperly permitted certain wells, then Ricks may file an appropriate complaint with the Commission. If Ricks shows, at a hearing called for that purpose, that wells have been improperly permitted, then Ricks may ask for the appropriate remedy. Ricks' complaint regarding a well on an adjacent tract is insufficient, alone, to defeat Devon's application for an additional well on Tract 3.

**Location:**

Ricks argues that the applied-for well will be the third well, not the second, on the subject tract. Two wells currently exist on Section 258, Devon's Wells No. 5A and 7. But Tract 3 includes only a portion of Section 258 and does not include the acreage upon which Devon's Bowers Well No. 5A is located. Only one existing well, Devon's Well No. 7, produces from the Allison Parks (Morrow Upper) Field on Tract 3. Therefore, the proposed well is only the second well on the subject tract in the Allison Parks (Morrow Upper) Field.

The proposed location is only 60' from the lease-line separating Devon's Tract 3 from the offset tract, Tract 1. Regular locations are available on Tract 3 (see attachment B). For an exception to Rule 37, based on confiscation the applicant must show that available regular locations will not give it a reasonable opportunity to recover its fair share of reserves and that the proposed irregular location is reasonable. Devon did not present any evidence to refute its ability to recover its fair share from a regular location. The proposed location is only 60' from the nearest lease lines. Devon stated several times that it would not consider a decision adverse if the decision required Devon to drill the well at a regular location. Without proof that the regular locations are not reasonable, the examiners must find that the regular locations are reasonable and recommend that the well be drilled at a regular location.

**Devon's application in the Allison Parks (Granite Wash) Field:**

Devon's application to drill Well No. 1258 on 640 acres indicates that Devon plans to complete Well No. 1258 in the Allison Parks (Granite Wash) Field. The applied-for location is 60' from the nearest lease line but the examiners recommend that Devon's application be granted to drill

the proposed well at a regular location. Devon's Well No. 1258 will be the first well on Tract 3 drilled to the Allison Parks (Granite Wash) Field. Ricks presented no evidence that it will be adversely affected by completing Devon's proposed Well No. 1258 for the Allison Parks (Granite Wash) Field at a regular location.

Kaiser-Francis' correlative rights:

Kaiser-Francis supports Devon's application for a well at the proposed location on Tract 3 but is opposed to any order which would move the well further to the south. Kaiser-Francis adduced no evidence in support of its position. Devon clearly stated that it would not consider an order granting its applications at a regular location to be an adverse decision. Kaiser-Francis adduced no evidence that the regular locations are not reasonable locations nor did Kaiser-Francis show that a well at a regular location will cause confiscation or waste. Regular locations are available on the subject tract and the evidence does not support a Finding of Fact that the regular locations are not reasonable locations.

CONCLUSION:

Devon has filed an application for exceptions to Rules 37 and 38 on Tract 3, a 640 acre tract. Devon has filed, in the alternative, an application for an exception to Rule 38 at the same location on a much larger 2560 acre tract. Devon urges its application on the smaller tract. At the hearing Devon withdrew its application to complete its well in the Washita Creek (Morrow Upper) Field. The examiners recommend granting Devon's application to drill a well on the subject tract as an exception to Statewide Rule 38 at a regular location and recommend dismissing Devon's alternative application on 2560 acres.

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

FINDINGS OF FACT

1. At least 10 days notice of this hearing was given to the designated operator, all lessees of record for tracts that have no designated operator, and all owners of unleased mineral interests for each tract nearer to the proposed well location than the prescribed minimum distance.
2. An application for exceptions to Rule 37 and 38 was filed with the Commission by Devon Energy Corporation ("Devon" or "applicant") on Form W-1 (Application to Drill, Deepen, Plug Back or Re-Enter) on April 15, 1998. An amended application was filed on August 28, 1998 (the "application").
3. By the Application, Devon seeks exceptions to Statewide Rules 37 and 38 to drill Well No. 1258 on Tract 3 (the "subject tract") of the Bowers Lease in the Allison Parks (Morrow Up) Field, Allison Parks (Granite Wash) and Wildcat Fields. The location of the proposed well is 60 feet from the nearest lease line and 4350 feet from the nearest well on the subject tract.



4. The Allison Parks (Morrow Up) Field requires a minimum spacing of 467 feet to the nearest lease line and 3735 feet between wells on a minimum of 640 acres. The Allison Parks (Granite Wash) Field requires a minimum spacing of 467 feet to the nearest lease line and 1200 feet between wells on a minimum of 40 acres.
5. The applied-for well is the first well in the Allison Parks (Granite Wash) Field and the second well in the Allison Parks (Morrow Upper) Field on the subject tract.
6. Regular locations are available on the subject tract, and will give Devon a reasonable opportunity to recover its fair share of reserves from the subject fields.
7. Drilling a well at a regular location as an exception to Statewide Rule 38 on the subject tract is necessary to allow Devon a reasonable opportunity to recover Devon's fair share of reserves currently underlying Tract 3 in the Allison Parks (Morrow Upper) and Allison Parks (Granite Wash) Fields.
8. A well would not be drilled on the subject tract only to recover previously undiscovered reserves in a Wildcat Field.

#### CONCLUSIONS OF LAW

1. Proper notice of hearing was timely issued by the Railroad Commission to the 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 Devon's application to drill a second well on the subject tract at a regular location is necessary to prevent confiscation of hydrocarbons underlying the subject tract in the Allison Parks (Morrow Upper).
4. Approval of Devon's application to drill a well at a regular location is necessary to prevent confiscation of reserves of hydrocarbons underlying the subject tract in the Allison Parks (Granite Wash) Field.

#### EXAMINERS' RECOMMENDATION

The examiners recommend that Devon Energy Corporation's application for an exception to Statewide Rule 38 to drill Well No. 1258 into the Allison Parks (Morrow Up), Allison Parks (Granite Wash) and Wildcat Fields a regular location on Tract 3 of the Bowers Lease in Hemphill County be **GRANTED** and that the request for an exception to Statewide Rule 37 be **DENIED**.

The examiners recommend that Devon Energy Corporation's application for exceptions to Statewide Rules 37 and 38 to drill Well No. 1258 into the Washita Creek (Morrow Upper) Fields on Tract 3 of the Bowers Lease in Hemphill County be **DISMISSED**.

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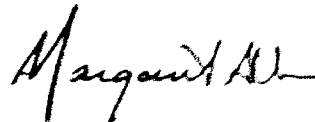
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The examiners recommend that Devon Energy Corporation's application for exceptions to Statewide Rule 38 to drill a well into the Allison Parks (Granite Wash) and Washita Creek (Morrison Upper) and Wildcat Fields on 2560 acres of the Bowers Lease in Hemphill County be **DEMITTED**.

Respectfully submitted,



D. W. Ortman  
Hearings Examiner



Margaret Allen  
Technical Examiner