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\* KEY ISSUES: \_\_\_\_\_ \*  
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\* FINAL ORDER: R37 Exception Granted \*  
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**RULE 37 CASE NO. 0201724**

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**APPLICATION OF MERIDIAN OIL PRODUCTION, INC. FOR AN EXCEPTION TO  
STATEWIDE RULE 37 FOR ITS WELL NO. 1H, R. RIOS LEASE, 124.88 ACRES, JOHN  
HENRY SURVEY, A-12, LULING-BRANYON FIELD, CALDWELL COUNTY, TEXAS**

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**APPEARANCES:**

**APPLICANT:**

Jeffrey E. Larson, Senior Geologist  
Charles Lane, Petroleum Engineer  
Phillip Whitworth, Attorney

**REPRESENTING:**

Meridian Oil Production, Inc.

**PROTESTANTS:**

Robert Patterson, Petroleum Engineer

Texas Vanguard Oil

Robert J. Perez

Julio R. Perez

Leon Rios Ybarra

Himself

**AMENDED PROPOSAL FOR DECISION**

**PROCEDURAL HISTORY**

**NOTICE OF APPLICATION:**

April 21, 1993

**DATE OF HEARING:**

June 4, 1993

**TRANSCRIPT RECEIVED:**

June 25, 1993

**ORIGINAL PFD CIRCULATED:**

October 15, 1993

**AMENDED PFD CIRCULATED:**

November 12, 1993

**HEARD BY:**

Jim McDougal, Hearings Examiner

James Irwin, P.E., Technical Examiner

### **STATEMENT OF THE CASE**

This is a Rule 37 exception application of Meridian Oil Production, Inc. (Meridian) to drill Well No. 1H (a horizontal well) on its R. Rios Lease in the Luling-Branyon Field, Caldwell County, Texas. The R. Rios Lease consists of 151.5 acres and contains 24 producing wells and four shut-in wells, all of which are operated by Meridian. Field rules for the subject field are: 150' lease line spacing; 300' between well spacing; and density patterns of two acres. The proposed location of Well 1H is: surface location - 165.3' from southwest lease line; penetration point - 292.4' from northwest lease line. The horizontal displacement is 2,237'. The distance to other producing wells on the lease is approximately 125'. Meridian based this application on waste and confiscation.

This application was protested by three parties: 1) Texas Vanguard Oil, operator of the T. C. Johnson Lease to the south of the subject lease; 2) Julio R. Perez, a southern offset mineral interest owner; and 3) Mr. Leon Rios Ybarra, another southern offset mineral interest owner.

The examiners are of the opinion that Meridian showed that it is entitled to an exception to Statewide Rule 37 based on confiscation and therefore recommend that Meridian's application be granted.

### **DISCUSSION OF THE EVIDENCE**

#### **APPLICANT'S EVIDENCE**

Meridian introduced 12 exhibits and presented three witnesses.

Meridian representatives testified and presented demonstrative evidence that the subject field was discovered in 1922 and has produced approximately 4.5 million barrels of oil. The subject lease is underlain by the Upper Edwards carbonate reservoir. The carbonate is very discontinuous and heterogeneous with highly variable porosities and permeabilities both vertically and laterally. The permeability of the reservoir varies from 1 to 600 millidarcies. The reservoir energy is a strong water drive and the reservoir dips to the south. The average water cut for the field as a whole is 99.7% at present and has averaged greater than 97% since 1987. This geological pattern is uniform not only on the subject lease but also across the field, including several adjacent leases.

Meridian presented evidence that eight of its producing wells are within a Rule 37 distance from the proposed horizontal wellbore and are producing a total of 42.4 barrels of oil per day with an economic limit of 39.6 barrels of oil per day. Meridian estimates that there are 11,000 barrels of total recoverable reserves remaining to the economic limit in these eight vertical wellbores. Meridian estimates that the proposed horizontal wellbore would recover 120,000 barrels of oil that would not be recovered by the existing eight surrounding vertical wellbores. Meridian also established that this 120,000 barrels is a portion of the original oil in place underneath the lease.

Meridian also showed that the closest point between its proposed horizontal wellbore and any protestant's lease well was 1,150 feet. Meridian argued that because of the low permeabilities and the distance between its proposed well and the nearest protestant's well, protestant would not be affected by drainage of its hydrocarbons.

Subsequent to the hearing, Meridian filed a letter at the examiners' request. The letter provided economic limits for the nearby Stair, Proctor and Maggie Moore Leases also producing from the subject field. The limits established the point when commercial operations on the three leases would terminate had horizontal wellbores not been drilled and completed. From the supplemental information and by examination of Exhibits 6, 7 and 8, it is clear that additional recoverable oil ranging from 40,000 STB to 140,000 STB can be expected from each of the three leases.

### **PROTESTANTS' EVIDENCE**

Since all three protestants basically argued the same points, all of their arguments will simply be referred to collectively as protestants.

The protestants presented three primary arguments against the application of Meridian: 1) an additional well pulling on the water drive would cause the water moving updip to move faster than would otherwise be the case and thus cause down dip wells to water out prematurely; 2) the proposed well would be near a creek and there was a concern about pollution of fresh water resources; and 3) the proposed well operations would pose a hazard to cattle grazing in the area.

Protestant, Texas Vanguard Oil, operates as many as four producing wells on adjacent southern leases. Each well produces 1/2 to 3/4 barrels of oil per day. It presented a series of exhibits which showed that total water withdrawals from both the subject lease and surrounding leases has averaged four to five million barrels over the past several years. This protestant theorized that the drilling of additional horizontal wells would prematurely increase the water cut on his lease to the south. He continued by saying that the increased updip water production would displace moveable oil from leases to the south of the subject lease.

This protestant provided no evidence, other than his opinion, that the field was undergoing "edge-water drive" rather than "bottom-water drive" in the vicinity of his lease.

The issue about the possible pollution of fresh water resources was addressed by Meridian in showing that it had sufficiently cased, and would sufficiently case, its wells to those depths required by the Texas Water Commission.

### **EXAMINERS' OPINION**

Upon review of the Exceptions filed by the Applicant to the original Proposal for Decision as well as a review of the record of the hearing, the examiners change their recommendation from a denial to a grant.

An applicant is entitled to an exception to Statewide Rule 37 based on confiscation. Confiscation is defined as a.) uncompensated drainage, and b.) denial of a lessee's fair chance to recover the oil or gas in or under its lease. It is the examiners' opinion that Meridian has shown that it is entitled to an exception to Statewide Rule 37 based on confiscation. And therefore, the examiners recommend Meridian be granted its exception request based on Meridian needing the proposed location to have a fair chance to recover the oil underneath its lease.

The field rules for the subject field call for two acre density patterns. This is the smallest density pattern allowed under statewide rules. The uncontroverted evidence in this record shows that the permeability of the subject reservoir varies from 1 to 600 millidarcies. Thus, the subject geology is consistently inconsistent but contains pockets where oil is trapped and will not move because of extremely tight permeability. Thus, any oil trapped in these type pockets is, by definition, original oil in place and therefore, within Meridian's "fair share" of hydrocarbons underneath its lease. Since that oil will not move, in order to recover it, it is necessary to directly encounter the pocket of oil, which, in this case, requires infill drilling. Meridian put on competent evidence which estimates the oil in these tight pockets to be recovered by the proposed wellbore and not recoverable by any other existing wellbore to be 120,000 barrels.

The lease development plan called for by the proposed wellbore is consistent with lease development plans on adjacent leases. A look at a regional map shows that infill horizontal wells are common, necessary, and economical to efficiently drain the leases in this field. The examiners hesitate to call this fact pattern unique but it is certainly rare. As mentioned before, the subject field rules allow two acre density patterns. Thus, it would be a rare but very tight development pattern that would call for infill drilling on two acre density patterns. The examiners believe that such a rare and tight development pattern is necessary in this instance. And, that absent an exception to Statewide Rule 37, Meridian will be denied an opportunity to recover its "fair share" of the oil in place underneath its lease.

**FINDINGS OF FACT**

1. At least 10 days' notice was given to the following persons for each adjacent tract, and each tract nearer to the well than the prescribed minimum lease line distance:
  - a. Designated operator;
  - b. All owners of record for tracts that have no designated operator; and
  - c. All owners of record of unleased mineral interests.
2. The subject application is for an exception to Statewide Rule 37 for Well No. 1H on the R. Rios Lease, Luling Branyon Field, Caldwell County, Texas. The R. Rios Lease consists of 151.5 acres and has 24 producing wells and four shut-in wells.
3. Field rules for the Luling Branyon Field are: 150' lease line spacing; 300' between well spacing; and two acre density patterns.
4. The proposed location of Well 1H is: surface location - 165.3' from southwest lease line; penetration point - 292.4' from northwest lease line. The horizontal displacement is 2,237'. The distance to other producing wells on the lease is approximately 125'.
5. This application is protested by three parties: a) Texas Vanguard Oil, a southern offset lease; b) Mr. Robert J. Perez representing Mr. Julio R. Perez, another southern offset; and c) Mr. Leon Rios Ybarra, a southeastern offset.
6. The subject lease is underlain by the Upper Edwards carbonate reservoir. The carbonate is heterogeneous with highly variable porosities and permeabilities both vertically and laterally. The permeability of the reservoir varies from 1 to 600 millidarcies. The reservoir energy is a strong water drive and the reservoir dips to the south. The average water cut for the field as a whole is 99.7% at present and has averaged greater than 97% since 1987. This geological pattern is uniform not only throughout the subject lease but also throughout the entire field.
7. The geology and reservoir characteristics in the area of the drillsite tract are common to the rest of the Upper Edwards reservoir.
8. Applicant's estimated incremental oil recovery from the proposed well is 120,000 Stock Tank Barrels. This 120,000 Stock Tank Barrels represents original oil in place and therefore, is within Meridian's "fair share" of oil or its equivalent underneath its lease.
9. Because of the distance between the proposed wellbore and the protestant's leases, the

protestants may not be affected by the proposed horizontal well.

10. Current total production from eight wells surrounding the proposed well is 42.4 barrels of oil per day. Their economic limit is 39.6 barrels of oil per day. Approximately 11,000 barrels of oil remain to be recovered from these eight vertical wells on the R. Rios Lease.
11. Significant additional recoverable oil can reasonably be expected from infill drilling of high volume horizontal wells on the R. Rios Lease.

### **CONCLUSIONS OF LAW**

1. Proper notice of hearing was timely given to all persons legally entitled to notice.
2. All things have occurred and have been done to give the Commission jurisdiction to decide this matter.
3. Statewide Rule 37 allows an exception to its spacing requirements, inter alia, upon a showing that the applicant would suffer confiscation of the hydrocarbons underneath its lease if not allowed to drill at an exception location. Applicant showed that there are approximately 120,000 barrels of oil in place underneath its lease that will not be recovered by any existing wellbore. Accordingly, Applicant showed that it is entitled to an exception to Statewide Rule 37 on the basis of confiscation.

### **EXAMINERS' RECOMMENDATION**

The examiners recommend that Meridian's application for an exception to Statewide Rule 37 for its Well No. 1H on its R. Rios Lease in the Luling-Branyon Field, Caldwell County, Texas be **GRANTED**.

Respectfully submitted,

Jim McDougal  
Hearings Examiner

James Irwin, P.E.  
Technical Examiner