



## RAILROAD COMMISSION OF TEXAS HEARINGS DIVISION

OIL AND GAS DOCKET NOS. 08-0318613 AND 08-0322585

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**APPLICATION OF ELEVATION RESOURCES LLC (247756) FOR SEPARATION OF THE EMMA (MISSISSIPPIAN) INTO TWO FIELDS, PERMANENT GAS WELL CLASSIFICATION FOR CERTAIN WELLS IN THE NEW FIELD, AND FOR FIELD RULES TO BE PLACED IN THE PROPOSED NEW FIELD, EMMA (BARNETT SHALE) FIELD, ANDREWS COUNTY, TEXAS**

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**HEARD BY:** Petar Buva – Technical Examiner  
Kristi M. Reeve – Administrative Law Judge

**DATE OF HEARING:** May 6, 2019

**CONFERENCE DATE:** October 1, 2019

**APPEARANCES:** **REPRESENTING:**

**APPLICANT:**

Frank J. Muser, P.E.                      Elevation Resources LLC  
Dorsey Twidwell (Consultant)

### **EXAMINERS' REPORT AND RECOMMENDATION**

#### **STATEMENT OF THE CASE**

Elevation Resources LLC ("Elevation") is requesting separation of the Emma (Mississippian) field into two fields and permanent reclassification of thirteen oil wells to gas wells. The Emma (Mississippian) Field, Andrews County, Texas, would be governed by the existing field rules amended inasmuch to reduce correlative interval and accommodate for gas well reclassification. The proposed new field would be known as the Emma (Barnett Shale) Field, Andrews County, Texas, with the following field rules:

1. Designating the correlative interval from 10,430' to 10,920'.
2. No oil or gas well shall be drilled nearer than 330' to any property line, lease line, or subdivision line. No horizontal well will be drilled with first and last take point nearer than 100' to any property line or subdivision line.

3. There will be no minimum between well spacing requirement.
4. There will be no maximum diagonal for this field.
5. The standard proration unit for an oil or gas well is 40 acres, with tolerance of 10% (4-acre) for gas wells and 50% (20-acre) for oil wells.
6. The allocation formula for gas wells shall be 95% deliverability and 5% per well. The allocation formula for oil wells shall be 1947 Yardstick.
7. There is no requirement for an operator to file proration plats for this field.

Notice of the application was sent to all operators with wells in the respective field. The application is unopposed, and the Technical Examiner and Administrative Law Judge (collectively, "Examiners") recommend approval of the filed separations, adoption of field rules, and reclassification of oil wells to gas wells as requested by Elevation.

### **DISCUSSION OF THE EVIDENCE**

The Emma (Mississippian) Field was discovered on March 6, 1958, at a depth of 10,170 feet. The field is under special field rules under Oil and Gas Docket No. 08-0303533 effective June 6, 2017. The current field interval for the Emma (Mississippian) Field is from 10,430 feet to 11,068 feet as shown on the Three Rivers Operating Company II, LLC University 30 Cobra, No. 3033 (API No. 42-003-46646).

The April 1, 2019 oil proration schedule for the Emma (Mississippian) Field shows three operators in the field, with all wells on proration schedule being oil wells. All operators in the field have received the notice of hearing and no protest was filed. Zavrona Energy LLC, one of the operators in the joined Elevation in its request for well reclassification and offered supporting evidence to Elevation's request for well reclassifications.

Elevation requests separation of the Emma (Mississippian) Field into two fields because of the difference in lithology, and the need for field rules that would accommodate unconventional development in the upper part of the field. The proposed new field, the Emma (Barnett Shale) Field, would have correlative interval from 10,430 feet to 10,920 feet as shown on the Three Rivers Operating Company II, LLC University 30 Cobra, No. 3033 (API No. 42-003-46646). The proposed Emma (Barnett Shale) field consists of a shale that transitions to a limestone with interbedded shale that is commercially viable due to unconventional development. The first horizontal well completed in the proposed field was the University 1-30 Unit, No. 1H (API No. 42-003-47340) on August 24, 2016.

The proposed Emma (Mississippian) field is a clean carbonate above the Woodford Shale at 11,118 feet. The field has limited porosity and production, with two vertical completions including the discovery well the University -F- No. 7 and the Emma - 36- No. 4 well (API No. 42-003-06656). The proposed Emma (Mississippian) field would have correlative interval from 10,921 feet to 11,118 feet as shown on the Three Rivers Operating Company II, LLC University 30 Cobra, No. 3033 (API No. 42-003-46646).

Elevation requests that the following wells be transferred into the Emma (Barnett Shale) Field:

Well	API
UL G 1-15 Unit, No. 2H	42-003-47464
UL G 1-20, No. 6H	42-003-47534
UL G 10-24 Unit, No. 3H	42-003-47599
UL G 9-41 Unit, No. 2H	42-003-47676
UL G 1-22 Unit, No. 5H	42-003-47661
UL G 1-4 Unit, No. 5H	42-003-47740
UL G 1-15, No. 4H	42-003-47804
UL G 1-28 Unit, No. 3H	42-003-47523

Apart from the field separation, Elevation seeks a field rule provision that allows wells to be classified as gas wells based on the ratio of produced gas to liquid hydrocarbons ("GLR"). In support of this request Zarvona Energy LLC ("Zarvona"), an operator in the field, joined Elevation in providing evidence from wells in the current Emma (Mississippian) field, as well as other studies and evidence.

The classification of well is dependent on whether the hydrocarbons exist as a gas or liquids in-situ. In 1986, in a Journal of Petroleum Technology paper, Phillip Moses concluded that "there is fairly sharp dividing line... C7+ of 12.5% and greater are almost always in the liquid phase. Less than 12.5% are almost always in the gas phase in the reservoir." In William McCain's 2011 publication it was further determined that if the composition of the reservoir fluid contains more than 12.9 mol % heptanes plus, the reservoir fluid is an oil. If the composition of heptanes plus in the reservoir fluid is less than 12.9 mol % the fluid is a gas.

Elevation and Zarvona provided evidence from a Retrograde Gas PVT Fluid Study for the UL G 1-15 Unit No. 2H. The study showed that the initial pressure of the reservoir was 6215 psia at static conditions at 163° F and a dew point was observed at 5985 psia; therefore, the reservoir fluid exists as under-saturated (single phase gas). In addition to the PVT study, Elevation presented data from six wells (including the PVT study) for C7+ fractions. A similar study was presented in a prior hearing for the Emma (Devonian) Field. Further, Elevation and Zarvona documented producing GLR values and calculated C7+ for wells in the field through about 180 days of production. In all of these wells upon stabilization of production, the initial producing GLR had achieved a stable or increasing rate in excess of 3,000 standard cubic feet per barrel.

Elevation and Zarvona assert that the evidence indicates that a 3,000 standard cubic feet per barrel GLR correlates with the C7+ data to support permanent gas well classification in accordance with technical basis underlying current Commission policy. The Commission has adopted similar provisions in certain other fields across the state.

In addition to the adoption of a field rule for gas classification, Elevation and Zarvona request that thirteen wells be reclassified as permanent gas wells, effective the date of initial completion on the basis of the PVT, GLR and C7+ data. The thirteen wells are listed below:

Elevation Resources LLC

<b>Lease</b>	<b>Well No.</b>	<b>RRC Identifier</b>	<b>API No.</b>
UL G 1-15 Unit	2H	Lease No. 48805	42-003-47464
UL G 1-28 Unit	2H	Lease No. 51038	42-003-47760
UL G 1-28 Unit	3H	Drilling Permit No. 824678	42-003-47523
UL G 1-22 Unit	5H	Lease No. 51074	42-003-47661
UL G 1-15	4H	Drilling Permit No. 839006	42-003-47804

Zarvona Energy LLC

<b>Lease</b>	<b>Well No.</b>	<b>RRC Identifier</b>	<b>API No.</b>
University 1-30 Unit,	1H	Lease No. 48035	42-003-47340
University 1-36 Unit,	2H	Lease No. 48617	42-003-47512
University 1-36 Unit,	3H	Lease No. 48617	42-003-47573
University 1-36 Unit,	4H	Lease No. 48617	42-003-47431
University 1-36 Unit,	5H	Lease No. 48617	42-003-47574
University 1-36 Unit,	6H	Lease No. 48617	42-003-47420
University 1-37 Unit,	4H	Lease No. 51472	42-003-47682
University 1-37 Unit A	6H	Lease No. 51424	42-003-47580

**FINDINGS OF FACT**

1. Notice of this hearing was provided to all operators in the field at least ten (10) days prior to the date of the hearing. A supplemental notice was issued after the hearing due to a change in the correlative intervals for both the Emma (Barnett Shale) Field and the Emma (Mississippian), amendment of the field rule allowing for gas well classification, and the permanent gas classification for the Zarvona wells.
2. The application is unopposed.
3. Elevation Resources LLC is requesting separation of the Emma (Mississippian) field into two fields with field rules governing each field.

4. Elevation is requesting a field rule provision that allows wells to be classified as gas wells and that thirteen wells be reclassified as permanent gas wells.
5. The Emma (Mississippian) Field was discovered on March 6, 1958, at a depth of 10,170 feet.
6. The proposed Emma (Barnett Shale) field is a shale that transitions to a limestone interbedded with shale.
7. The proposed Emma (Mississippian) field is a clean limestone above the Woodford Shale with limited porosity and production.
8. Elevation is requesting designation of correlative interval in the proposed Emma (Mississippian) field to be from 10,921 feet to 11,118 feet, under the existing field rules and a provision allowing for gas well classification.
9. Elevation is requesting designation of the correlative interval in the proposed Emma (Barnett Shale) field to be from 10,430' to 10,920'.
10. Elevation is requesting no oil or gas well in the Emma (Barnett Shale) field can be drilled nearer than 330' to any property line, lease line, or subdivision line. No horizontal well will be drilled with first and last take point nearer than 100' to any property line or subdivision line.
11. Elevation is requesting no minimum between well spacing requirement and no maximum diagonal for this field in the Emma (Barnett Shale) field.
12. Elevation is requesting that the standard proration unit for an oil or gas well in the Emma (Barnett Shale) field to be 40 acres, with tolerance of 10% (4-acre) for gas wells and 20-acre for oil wells.
13. Elevation requests that the allocation formula for gas wells in the Emma (Barnett Shale) Field to be 95% deliverability and 5% per well. The allocation formula for oil wells shall be 1947 Yardstick.
14. Elevation requested that wells in the Emma (Barnett Shale) field completed with a gas-liquid hydrocarbon ratio of 3,000 cubic feet per barrel and above, to be permanently classified as a gas well.
15. There is no requirement for an operator to file proration plats for this field.
16. The Emma (Barnett Shale) and the Emma (Mississippian) Fields exhibit gas reservoir characteristics, including the depth of the reservoir, reservoir

temperature, initial reservoir pressure, and the presence of a dew point below the initial reservoir pressure.

17. The compositional analysis of hydrocarbon fluids from six wells in the Emma (Barnett Shale) and the Emma (Mississippian) fields, including PVT data for the Elevation Resources LLC UL G 1-15 Unit, No. 2H, indicates these wells can be classified as permanent gas wells.
18. The producing GLR values for wells in the fields through first 180 days of production are consistent with the C7+ data. In most cases, the wells demonstrate that, upon stabilization of production, the initial producing GLR had achieved a stable or increasing rate in excess of 3,000 standard cubic feet per barrel.
19. A stabilized production gas-liquid hydrocarbon ratio of 3,000 standard cubic feet per barrel is sufficient evidence to permanently classify a well as a gas well in the Emma (Barnett Shale) and the Emma (Mississippian) Fields.
20. Elevation agreed in writing or on the record that, pursuant to the provisions of Texas Government Code § 2001.144(a)(4)(A), this Final Order can be final and effective on the date a Master Order relating to this Final Order is signed.

#### **CONCLUSIONS OF LAW**

1. Proper notice was issued as required by all applicable statutes and regulatory codes.
2. All things have occurred and been accomplished to give the Commission jurisdiction in this matter.
3. Separation of fields and amending the field rules for the Emma (Mississippian) and Emma (Barnett Shale) Field as requested by Elevation will prevent waste.
4. Pursuant to § 2001.144(a)(4)(A) of the Texas Government Code and by agreement of the parties in writing or on the record, the Final Order can be final and effective when a Master Order relating to this Final Order is signed.



**EXAMINERS' RECOMMENDATION**

Based on the above findings of fact and conclusions of law, the Examiners recommend that the Commission separating the Emma (Mississippian) Field into the Emma (Barnett Shale) and Emma (Mississppian) Fields, adopting field rules for both fields, and permanently reclassifying the thirteen subject wells as gas wells, effective the date of initial completion, as requested by Elevation Jackson County, Texas, as proposed by Elevation Resources LLC.

Respectfully submitted,



Petar Buva  
Technical Examiner



Kristi M. Reeve  
Administrative Law Judge