



# RAILROAD COMMISSION OF TEXAS

## HEARINGS DIVISION

OIL AND GAS DOCKET NO. 06-0287734

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THE APPLICATION OF SEM OPERATING, LLC TO AMEND FIELD RULES FOR THE EASTHAM STATE FARM (GLENROSE) FIELD, HOUSTON COUNTY, TEXAS

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OIL AND GAS DOCKET NO. 03-0287735

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THE APPLICATION OF SEM OPERATING, LLC FOR A BLANKET RULE 10 EXCEPTION FOR VARIOUS FORT TRINIDAD FIELDS IN HOUSTON AND MADISON COUNTIES, TEXAS

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**HEARD BY:** Karl Caldwell - Technical Examiner  
Michael Crnich- Legal Examiner

**HEARING DATE:** April 24, 2014

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

**APPLICANT:**

Doug Dashiell  
C.H. Odom  
Mark Tarver  
Harold McGowen III

SEM Operating Company, LLC  
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### EXAMINER'S REPORT AND RECOMMENDATION

#### STATEMENT OF THE CASE

Permanent Field Rules for the Eastham State Farm (Glenrose) Field were adopted in Final Order No. 6-85,304, and amended in Final Order 6-92,979. The current Field Rules are summarized as follows:

1. 660' - 2640' spacing;
2. 640 acre gas proration units with 10% tolerance provision with a maximum diagonal of 10,000 feet;

3. 100% acreage allocation formula.

A correlative interval for the Eastham State Farm (Glenrose) Field was also designated in Final Order 6-92,979 as the correlative geologic interval between a depth of 11,518 feet to 12,270 feet as shown on the Dual Induction - SFL Sonic Log of the Eastham State Farm Well No. 2.

SEM Operating Company, LLC ("SEM") requests that the Field Rules be amended to provide for optional 320 acre drilling and proration units, and to amend the well spacing rule to provide 660 feet lease line and 1,320 feet between well spacing. SEM also requests to Transfer the 42 wells listed in Attachment 1 from the Fort Trinidad (Glen Rose, Upper) Field to the Eastham State Farm (Glenrose) Field.

SEM requests to include the Eastham State Farm (Glenrose) Field to the list of fields that were granted blanket Rule 10 authority in Final Order No. 03-0263210. SEM requests that the 42 SEM wells granted Statewide Rule ("SWR") 10 authority pursuant to Final Order No. 03-0263210 be granted SWR 10 authority to include the Eastham State Farm (Glenrose) Field.

The applications are unopposed and the examiners recommend that Field Rules for the Eastham State Farm (Glenrose) Field be amended, as well as an exception to SWR 10 for the Eastham State Farm (Glenrose) Field be granted.

### **DISCUSSION OF EVIDENCE**

The Eastham State Farm (Glenrose) Field was discovered June 1, 1983 at a depth of 11,308 feet. There is currently one well and operator carried on the gas proration schedule. SEM has acquired assets from Navidad Resources, LLC which include 42 wells which are permitted in the Fort Trinidad (Glenrose, Upper) Field. SEM requests to transfer these 42 wells, listed in Attachment 1, from the Fort Trinidad (Glenrose, Upper) Field to the Eastham State Farm (Glenrose) Field. SEM testified that the 42 subject wells listed in Attachment 1 are geologically similar to the discovery well for the Eastham State Farm (Glenrose) Field, and not the Fort Trinidad (Glen Rose, Upper) Field discovery well.

The Fort Trinidad (Glen Rose, Upper) Field was discovered in January 1961. The productive interval was determined to be a continuous reservoir approximately 24 square miles in area. The productive reservoir is a fractured limestone, with an average sonic log porosity of 10.3%, and an average water saturation of 25.1%.

The Eastham State Farm (Glenrose) Field is located down-dip from the Fort Trinidad (Glen Rose, Upper) Field. The down-dip Glen Rose formation appears to range from mudstone to oolitic packstone. Mud logs tend to indicate poor, but potentially productive reservoir rock.

The natural fractures in the up-dip Fort Trinidad (Upper Glen Rose) Field appear to differ from the natural fractures found in the down-dip Eastham State Farm (Glenrose) Field in terms of intensity and clustering. In the down-dip area of the Eastham State Farm (Glenrose) Field, single zone vertical wells that are not hydraulically fracture stimulated are uneconomic. The up-dip area, the Fort Trinidad (Upper Glen Rose) Field, contains wells that have not been hydraulically fractured stimulated and have prolific production resulting from acid treatments according to SEM. The well performance of the up-dip area appears to be a result of matrix porosity and intense natural fractures. The down-dip area appears to contain a few natural macro fractures and many natural micro aperture fractures at a relatively high density in some horizons across the entire area.

The Fort Trinidad (Upper Glen Rose) Field has been producing for more than 53 years and the reservoir pressure is depleted. Efforts have been made by operators to extend the Fort Trinidad (Upper Glen Rose) Field down-dip and to the northwest, but attempts to complete wells with acid stimulation have proven unsuccessful. Well-developed Oolitic Shoals characteristic of the Fort Trinidad (Upper Glen Rose) Field were not found down-dip or to the northwest.

The rock properties encountered down-dip from the Fort Trinidad (Upper Glen Rose) Field are considered poor in comparison, with 4% to 5% porosity and low permeability. However, near-virgin reservoir pressure was encountered in the down-dip area. Reservoir pressure data indicates that the Eastham State Farm (Glenrose) Field is not in communication with the Fort Trinidad (Upper Glen Rose) Field and the two fields are separate fields.

Acid-only treatments have proven to be unsuccessful in the Eastham State Farm (Glenrose) Field, but slick water hydraulic fracture stimulation treatments and multi-zone completions have resulted in an economic completion technique to recover hydrocarbons. Records indicate that the discovery well for the Eastham State Farm (Glenrose) Field, the Parten ESPF No. 2, was the first Glen Rose well hydraulically fracture stimulated in the area. The porosity of the producing interval from 11, 445 feet to 11, 451 feet averaged between 5% and 8% porosity.

All wells in the following fields were granted a blanket exception to SWR 10 Final Order No. 03-0263210:

Fort Trinidad (Glen Rose, Upper) Field	(Field No. 32156852)
Fort Trinidad, East (Buda) Field	(Field No. 32157071)
Fort Trinidad, East (Georgetown) Field	(Field No. 32157568)
Ft. Trinidad, E. (Edwards) Field	(Field No. 32157497)
Ft Trinidad, E. (Edwards -A-) Field	(Field No. 32157525)
Ft. Trinidad, SE (Edwards) Field	(Field No. 32176400)

SEM requests an exception to SWR 10 to include the Eastham State Farm (Glenrose)

Field (Field No. 27347500) to the list of fields that were granted an exception to SWR 10 in Final Order No. 03-0263210. SEM requests that the wells listed in Attachment 1, which have been granted exceptions to SWR 10, be granted an exception to SWR 10 to commingle between any of the fields listed above, along with the Eastham State Farm (Glenrose) Field. SEM states that the recovery of hydrocarbons from the individual fields are uneconomic, however, the ability to produce from all fields collectively is economic and will prevent waste.

SEM requests that wells that are downhole commingled in the subject fields be assigned to any field at the operator's choice, as each zone may not be productive in each wellbore.

### FINDINGS OF FACT

1. Notice of this hearing was given to all persons entitled to notice at least ten days prior to the date of the hearing and no protests were received.
2. The Eastham State Farm (Glenrose) Field was discovered on June 1, 1983 at a depth of 11,308 feet by the Parten Eastham State Farm Well No. 2.
3. Near-virgin reservoir pressure has been encountered in the Eastham State Farm (Glenrose) Field.
  - A. The Fort Trinidad (Upper Glen Rose) Field has been producing for more than 53 years and the reservoir pressure is depleted.
  - B. The discovery well for the Eastham State Farm (Glenrose) Field was the first Glen Rose well hydraulically fracture stimulated in the area.
  - C. The Fort Trinidad (Upper Glen Rose) Field contains wells that have not been hydraulically fractured stimulated and have prolific production resulting from acid treatments.
  - D. The 42 subject wells that SEM is requesting to move from the Fort Trinidad (Upper Glen Rose) Field to the Eastham State Farm (Glenrose) Field require hydraulic fracture stimulation and multi-zone completions to be considered economic wells.
  - E. Various Fort Trinidad fields were granted an exception to SWR 10 in Final Order No. 03-0263210.
  - F. Including the Eastham State Farm (Glenrose) Field to the list of fields granted an exception to SWR 10 in Final Order No. 03-0263210 would prevent waste and promote development.

## Attachment 1

Wells to Transfer to the Eastham State Farm (Glenrose) Field (Field No. 27347500)

API	Lease	Well #
4222531164	Chester Adams	1
4222531226	R.C. Adams	1
4222531183	Blair-A	1
4222531170	Byers	1
4222531202	Crespi	1
4222531171	Elliott	1
4222520085	Eastham State Prison Farm	A01
4222531256	Eastham State Prison Farm	A02
4222531243	Eastham State Prison Farm	A03
4222531261	Eastham State Prison Farm	C01
4222531260	Eastham State Prison Farm	C02
4222531174	Eastham State Prison Farm	0101
4222531291	Eastham State Prison Farm	0102
4222531284	Eastham State Prison Farm	0103
4222531294	Eastham State Prison Farm	0202
4222531249	Eastham State Prison Farm	0204
4222531275	Eastham State Prison Farm	0401
4222531292	Eastham State Prison Farm	0510
4222531274	Eastham State Prison Farm	0601
4222531285	Eastham State Prison Farm	0602
4222531258	Eastham State Prison Farm	0604
4222531247	Eastham State Prison Farm	0606
4222531126	Eastham State Prison Farm	0701
4222531270	Eastham State Prison Farm	0703
4222530433	Eastham State Prison Farm	0801
4222531201	Eastham State Prison Farm	1001
4231330855	Ferguson Prison Unit	0101
4231330856	Ferguson Prison Unit	0201
4231330890	Ferguson Prison Unit	0601H
4231330858	Ferguson Prison Unit	0801H
4231330928	Ferguson Prison Unit	0802
4231330859	Ferguson Prison Unit	0901
4231330857	Ferguson Prison Unit	1001
4222531199	Garrison	1
4222531176	Hanley	1
4222531177	Hyde	1
4222531231	Marty Hyde	3
4222531169	Little	1
4222531209	Miles Timber	1
4222531165	Miller	1
4222531168	Mosley	1
4222531158	Von Rosenberg	1

**CONCLUSIONS OF LAW**

1. Proper notice of this hearing was issued.
2. All things have been accomplished or have occurred to give the Commission jurisdiction in this matter.
3. Amending Field Rules and granting an exception to Statewide Rule 10 for the Eastham State Farm (Glenrose) Field will prevent waste and promote development of the field.

**RECOMMENDATION**

Based on the above findings of fact and conclusions of law, the examiners recommend that the Commission amend field rules for the Eastham State Farm (Glenrose) Field, transfer all wells listed in Attachment 1 from the Fort Trinidad (Glen Rose, Upper) Field to the Eastham State Farm (Glenrose) Field, and include the Eastham State Farm (Glenrose) Field to the list of fields granted an exception to Statewide Rule 10 in final Order No. 03-0263210, as requested by SEM Operating Company, LLC.

Respectfully submitted,



Karl Caldwell  
Technical Examiner



Michael Crnich  
Legal Examiner