

October 29, 1999

**OIL AND GAS DOCKET NO. 04-0222467**

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**THE APPLICATION OF EXXON CORPORATION TO COMBINE VARIOUS VICKSBURG FIELDS, TO ADOPT A DESIGNATION OF KELSEY (VXKBG. CONSOL.) FIELD FOR THE FIELD FORMED BY SUCH COMBINATION OF FIELDS AND TO ADOPT OPERATING RULES AND REGULATIONS FOR THE KELSEY (VXKBG. CONSOL.) FIELD, BROOKS, HIDALGO, JIM HOGG AND STARR COUNTIES, TEXAS**

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**Heard by:** Margaret Allen, Technical Hearings Examiner  
Mark Tittel, Hearings Examiner

**Procedural history**

Application received: August 20, 1999  
Hearing held: September 10, 1999  
Protest withdrawn: September 30, 1999

**Appearances**

	Representing
Tim George	Exxon Corp.
Robert E. Dreyling	
Kerry A. Pollard	
Brenda L. Clayton	Lee M. Bass, Inc.
Susan Zachos	
Scott C. Pope	Coates Energy
Barry Roberts	

**EXAMINER'S REPORT AND RECOMMENDATION**

**STATEMENT OF THE CASE**

Exxon Corp. is seeking to have various Vicksburg fields in the Kelsey field area consolidated into a new field to be known as the Kelsey (VXKBG. Consol.) Field. These fields are listed in Attachment A. The existing field rules for the following fields that are to become part of the proposed consolidated field should be rescinded:

Kelsey, Deep (Frio 7250)	04-56,298	04/26/1966
Kelsey, S. (Zone 24-A&B)	04-71,419	02/20/1979

Lips Ranch (Vicksburg)	04-82,040	06/18/1984
	04-86,315	11/17/1986
Lips Ranch, North (Vicksburg)	04-82,039	05/21/1984
	04-86,314	11/17/1986
McAllen Ranch, North (Vicksburg, Lo. 14700)	04-73,508	09/04/1979

The following fields should be deleted from the following orders adopted for multiple fields:

Kelsey, Deep (Zone 25)	04-69,542	08/21/1978
Kelsey, SE. (30-D)		
Kelsey, SE. (31-A)		
Kelsey, SE. (31-A, V-S)		
Kelsey, Deep (Zone 25-II)	04-67,250	05/31/1977
Kelsey, Deep (Zone 26-A, NE)		
Kelsey, Deep (Zone 60-H)		
Kelsey, Deep (Zone 7-I)		
Kelsey, South (Zone 26-A)		
Kelsey, South (Zone 26-A,S.)		
Kelsey, SE. (26-A,II,N.)		
Kelsey, SE. (26-A,V)		
Kelsey, SE. (28-A)		
Kelsey, SE. (29-D)		
Kelsey, SE. (30-B)		
Kelsey, South (Zone 26-A)	04-59,303	07/01/1969
Kelsey, South (Zone 26-A,S.)		
Kelsey, South (7800)		
Kelsey, South (7900 Sand)		

Exxon is proposing that the following rules be adopted for the newly-designated Kelsey (VXKBG. Consol.) Field:

1. Designated interval from 8210 feet (top of Vicksburg) to 14,076 feet (top of Jackson Shale) as shown on the log of the Humble Oil & Refining Company (now Exxon Corp.) McGill Brothers Lease Well No. 416;
2. Allocation based 5% per well and 95% on deliverability
3. Notice of application or hearing for an exception to Statewide Rule 37 not required to be sent to the operator, lessee or owner of record of any adjoining tract that is one mile or more from the applied-for location, notwithstanding the provisions of Statewide Rule 37(a)(2)(B).

Exxon wants to have all gas wells classified as associated, prorated and all oil wells classified as salvage, exempt. Exxon is also seeking standing to include all fields within its proposed interval

in a large area of interest, whether or not Exxon currently operates in each particular field. The designated interval will also include any wildcat zones that have not yet been designated.

Representatives of Coates Energy were present at the hearing as observers and did ask some questions. Representatives of Lee M. Bass appeared at the hearing in possible protest to this application. Lee M. Bass does not currently operate wells in any fields in the proposed consolidation but has interests in wells in the Lips (El Coyote) Field and these wells may be recompleted to one of three fields that are part of the proposed consolidation: Lips Ranch (Vicksburg), Lips Ranch, North (Vicksburg), and McAllen Ranch, N (Vksbg. Lo 14700). At the hearing, Exxon stated that, if necessary to keep its application unopposed, it would remove these three fields from the requested consolidation. After the hearing, Lee M. Bass withdrew its objection.

### **DISCUSSION OF THE EVIDENCE**

Exxon operates wells in a large number of the fields that are being consolidated, and believes that recovery can be increased significantly by consolidating the various fields into one. Exxon included only fields that are located on or near Exxon's acreage. It has no objection to other operators adding fields that are on adjoining acreage and within the designated interval to the proposed field. Efficient recompletions will prevent waste, partly by lowering the economic limit which would otherwise cause reservoirs to be prematurely abandoned.

The top of the proposed designated interval is the top of the Vicksburg sand/shale sequence and the base is defined as the top of the underlying Jackson Shale. The top of the Jackson Shale forms a glide plane with a listric shape. Therefore, updip wells encounter a much thinner Vicksburg section (about 1200 feet) above the glide plane than do downdip wells to the southeast (where the Vicksburg is about 7000 feet thick). Because of the multiple reservoirs included within the proposed designated interval, a two factor allocation formula is necessary. One based 5% per well and 95% on deliverability is close to the Statewide Rule and will satisfy statutory requirements.

One reason that so many Vicksburg fields have been designated in the area of interest is the large number of sympathetic and antithetic faults concentrated near the updip edge of the glide plane. These faults have broken out some sandstones, but not others, into separate reservoirs. The fields cannot really be kept separate now as the correct field for a particular recompletions often cannot be accurately determined. There are also numerous field designations in the overlying Frio section, and Exxon will propose consolidating these fields in a separate application. Some of the same wellbores will be used to complete in the consolidated Vicksburg and in the consolidated Frio sections.

The type log is from the Humble Oil & Refining (now Exxon) McGill Brothers Well No. 416. This well was drilled in 1969, and as it is located relatively downdip, most of the fields that Exxon is proposing to consolidate are shown on the log. The bottom two fields in the proposed consolidation only occur further downdip than this well and are therefore not shown on this log. They are however, above the Jackson Shale.

There are 34 wells carried on the various proration schedules but only 24 of these are active,

all as single completions. Current production from all active wells is 13,000 MCF/D, and cumulative production since 1970, from all the fields to be consolidated is 110 BCF and 1,000,000 BO. The first Vicksburg fields were developed during the 1960's, but computerized records extend back only to 1970. The average porosity from all of these Vicksburg sandstones is 8 to 14% and the water saturation ranges from 30 to 60%.

Most of the sandstones are shaly and all have low permeability. Many of the separate fields were designated because, in addition to faulting, the various sandstones are lenticular, often with small areal extents. If the consolidation is approved, some of the poorer lenticular sands that cannot support completions on their own could be produced at the same time as more economic sandstones. Some of the fields have produced black oil, rather than condensate and several fields in the proposed consolidation interval are classified as oil or oil and gas. There are no active oil wells on the proration schedules and Exxon believes that if any well in the future were classified as oil that oil would be salvage only and gas wells should not be limited by Rule 49(b).

The economic limit for a single completion in this area ranges from 100 to 250 MCF/D depending on the gas price and cost of operation. If allowed to perforated several reservoirs at the same time, operators could lower the economic limits for the various reservoirs. Producing three reservoirs, for example, in a single completion could reduce the economic limit to 33 MCF/D per reservoir, and allow the production of an incremental 730,000 MCF from that well (assuming an annual decline rate of 10%). If the field consolidation is approved, Exxon will probably drill additional wells in the area.

Little gas would flow from high pressure into lower pressure reservoirs when a well is shut-in because the sandstones in this Vicksburg interval have low permeability. In addition, sandstones in the Vicksburg are similar and have similar fluids, resulting in no waste if limited cross flow should occur.

A well was recently permitted and drilled in the Alvarado (Vicksburg) Field, just to the southeast of Exxon's acreage. The Alvarado (Vicksburg) Field itself was formed by the consolidation of several Vicksburg fields, in 1993. Wells in this area thus can already be placed in the Alvarado (Vicksburg) Field without regard to the particular reservoirs, and these wells could compete with Exxon's wells that are now limited to a single reservoir. In fact, numerous other fields consolidations have already occurred in the Vicksburg interval in other areas of South Texas.

### **FINDINGS OF FACT**

1. Notice of this hearing was given to all operators in fields within the proposed consolidated field to be known as the Kelsey (VXKBG, Consol.) Field on September 10, 1999.
2. The Kelsey Vicksburg reservoirs were first developed in the 1960's and the sandstones are lenticular and cut by numerous faults especially near the updip edge of the Jackson Shale glide block.

3. The following fields have special field rules that should be rescinded if these fields are consolidated into the Kelsey (VXKBG. Consol.) Field:

Kelsey, Deep (Frio 7250)	04-56,298	04/26/1966
Kelsey, S. (Zone 24-A&B)	04-71,419	02/20/1979
Lips Ranch (Vicksburg)	04-82,040	06/18/1984
	04-86,315	11/17/1986
Lips Ranch, North (Vicksburg)	04-82,039	05/21/1984
	04-86,314	11/17/1986
McAllen Ranch, North (Vicksburg, Lo. 14700)	04-73,508	09/04/1979

4. The following fields have special rules that should be rescinded, only as they apply to the specific fields to be consolidated into the (VXKBG. Consol.) Field:

Kelsey, Deep (Zone 25)	04-69,542	08/21/1978
Kelsey, SE. (30-D)		
Kelsey, SE. (31-A)		
Kelsey, SE. (31-A, V-S)		
Kelsey, Deep (Zone 25-II)	04-67,250	05/31/1977
Kelsey, Deep (Zone 26-A, NE)		
Kelsey, Deep (Zone 60-H)		
Kelsey, Deep (Zone 7-I)		
Kelsey, South (Zone 26-A)		
Kelsey, South (Zone 26-A,S.)		
Kelsey, SE. (26-A,II,N.)		
Kelsey, SE. (26-A,V)		
Kelsey, SE. (28-A)		
Kelsey, SE. (29-D)		
Kelsey, SE. (30-B)		
Kelsey, South (Zone 26-A)	04-59,303	07/01/1969
Kelsey, South (Zone 26-A,S.)		
Kelsey, South (7800)		
Kelsey, South (7900 Sand)		

5. The designated interval for the proposed Kelsey (VXKBG. Consol.) Field extends from the top of the Vicksburg at 8210 feet to the top of the underlying Jackson Shale at 14,076 feet as shown on the log of the Humble McGill Brothers Well No. 416.
6. The designated interval includes multiple, stratigraphic reservoirs and a two factor allocation is required for statutory reasons.
7. Allocation based 5% per well and 95% on deliverability will protect correlative rights and satisfy statutory requirements.

8. Current production from the 24 active wells in the proposed consolidated field is about 13,000 MCF/D and the cumulative production since 1970, from all wells ever assigned to a field within the proposed consolidation is 110 BCF and 1,000,000 BO.
9. Commingling production from the fields in the proposed consolidation and any Wildcat fields within the designated interval will result in the recovery of incremental reserves, estimated to be 730,000 MCF in some wells.
  - a. Allowing various reservoirs to be perforated in the same completion will lower the economic limit for each reservoir, allowing more reserves to be recovered before a reservoir becomes uneconomic.
  - b. Marginal zones, that could not economically support a separate completion, can contribute reserves if allowed to produce along with more prolific reservoirs.
  - c. Allowing commingling of various reservoirs downhole will encourage more drilling by reducing the risk of drilling an uneconomic well.
8. The producing sandstones are all within the Vicksburg Formation and have similar properties including very low permeability which will discourage cross flow within a wellbore.
9. The fluids in these reservoirs are compatible and limited crossflow will not cause waste.
10. There are no active oil wells and any remaining oil production is salvage and should not require that associated gas wells be subject to Statewide Rule 49(b).
11. Some of the leases within the proposed fields to be consolidated are large and there is no need to give notice of between-well Rule 37 exception to adjacent leases that are over a mile from the applied-for well.

#### **CONCLUSIONS OF LAW**

1. Proper notice was given as required by statute.
2. All things have been done or occurred to give the Railroad Commission jurisdiction to resolve this matter.
3. Consolidation of the fields listed in Attachment A is a matter within the jurisdiction of the Railroad Commission and will prevent waste and protect correlative rights, while encouraging conservation.
4. The requested field rules will prevent waste, protect correlative rights within the field, and satisfy statutory requirements.

**EXAMINER'S RECOMMENDATION**

Based on the above findings and conclusions, the examiner recommends that the fields listed in Attachment A be consolidated into a new field to be known as the Kelsey (VXKBG, Consol.) Field and that the requested field rules be adopted. Any field rules as they apply to the fields listed in Findings of Fact 3 and 4 should be rescinded. All oil wells in the consolidated fields should be classified as salvage, exempt and all gas wells should be classified as associated, prorated.

Respectfully submitted,

Margaret Allen  
Technical Hearings Examiner

Date of Commission Action: November 2, 1999