

OIL AND GAS DOCKET NO. 03-0235048

THE APPLICATION OF EXXON MOBIL CORPORATION TO CONSOLIDATE VARIOUS SOUTH CONROE MIDDLE WILCOX FIELDS INTO A NEW FIELD TO BE KNOWN AS THE CONROE (MIDDLE WILCOX CONS.) FIELD AND TO ADOPT OPERATING RULES AND REGULATIONS FOR THE RESULTANT CONROE (MIDDLE WILCOX CONS.) FIELD, MONTGOMERY COUNTY, TEXAS

Heard by: Margaret Allen, Technical Hearings Examiner

Procedural history

Application received: May 21, 2003

Hearing held: June 6, 2003

Appearances

	Representing
Tim George	ExxonMobil Corporation
William T. Duncan, Jr.	
John M. Clayton	
Andrew W. Bishop	

William Osborn	Magnum Production and Operating Co.
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EXAMINER'S REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

ExxonMobil Corporation is seeking to consolidated the following fields into a new field to be known as the Conroe (Middle Wilcox Cons.) Field:

Conroe (Wilcox 9600)
Conroe, S. (Wilcox 15)
Conroe, South (Wilcox 9900)
Conroe, S. (Wilcox 10,000)
Conroe, S. (Wilcox 25-10,300)
Conroe, South (Wilcox 11,200), and
Wildcat Fields - within the designated interval

ExxonMobil is also proposing the following rules:

1. Designated interval from 9448 feet, MD, as shown on the log of the ExxonMobil Corporation, Keystone Mills Lease, Well No. 47, to 14,800 feet, MD, as shown on the log of the ExxonMobil Corporation, H.N. Moore Lease, Well No. 67;
2. 467-933' well spacing;
3. 320 acre proration units with 40 acre optional units; and

4. allocation based 5% per well and 95% on deliverability.

A representative of Magnum Production and Operating Company, an operator in the Conroe, S. (Wilcox 15) Field appeared at the hearing as an observer. Exxon Mobil originally requested the consolidated field be known as the Conroe, S. (Middle Wilcox Cons.) Field. There is no Commission number available to be assigned alphabetically to this name, and Exxon Mobil agreed to call the new field Conroe (Middle Wilcox Cons.) Field.

DISCUSSION OF THE EVIDENCE

Exxon Mobil operates a large unit on the Conroe Dome in the Cockfield Formation. The dome is a highly-faulted anticline over a deep-seated salt structure. There is a large east-west fault through the middle of the dome and several Middle Wilcox sandstones have been productive below the Cockfield to the south of this fault. The applicant wants to develop these Middle Wilcox sandstones by consolidating the various fields. Some existing wells have already been completed in more than one sandstone and other Middle Wilcox sands will be perforated in these wells if this application is approved. Exxon Mobil also plans to drill additional wells in this area.

The proposed consolidated field will include the sandstones from the top of the Wilcox 15 interval (which is the top of the abnormally pressured section) through to the top of the Wilcox 48 interval. Because of faulting, no single well exhibits this entire section and Exxon Mobil has requested that two different wells be used for the upper and lower parts of the designated interval. The ExxonMobil Keystone Mills Lease Well No. 47 shows the top of the proposed interval at 9448' and the designated field interval will include the section from 9448' to 13,580' in this well. The interval in the ExxonMobil H.N. Moore Lease Well No. 67 between 12,530' and the base at 14,800' will show the lower portion of the correlative field interval.

The Middle Wilcox sandstones are a little more shaly than the Upper Wilcox sandstones and were deposited in deltaic environments with some fluvial elements. Diagenesis after deposition has reduced the porosity and permeability and wells completed in this section must be hydraulically fractured. Porosity is between 8 and 18%, permeability is 0.01 to 0.5 md and the average water saturation is 40 to 70%.

The reservoirs are compartmentalization due to the shaly stratigraphy and small faults. There have been no completions in the interval between the Wilcox 37 and top of the Wilcox 48 sandstone, but Exxon Mobil believes there is potential in this section. Few wells have been drilled below the base of the proposed interval as the deeper sandstones are known to have had their porosity and permeability reduced even more.

The initial reservoir pressure was about 8200 psi and the upper sandstones are somewhat depleted compared to the sandstones that have not yet been produced. Gas from the active wells has similar compositions, with 84 to 91% methane and 5 to 7% carbon dioxide. All of the fields to be consolidated are non-associated gas fields. These Middle Wilcox sandstones produce relatively water-free, and analyses of the produced water shows that scaling will not be an issue.

Three of the fields to be consolidated already have special field rules: Conroe, S. (Wilcox 15); Conroe (Wilcox 9600); and Conroe, South (Wilcox 11,200). Rules for the Conroe, S. (Wilcox 15) Field

were adopted March 28, 1988, under Docket No. 3-88,400, and rules for the Conroe, South (Wilcox 11,200) field were adopted November 19, 1979, under Docket No. 3-74,173. These two fields have rules that specify 320 acre density with 1320-2640' well spacing. The rules for the Conroe (Wilcox 9600) Field were adopted December 11, 1978, under Docket No. 3-70,586, and specify 160 acre density with 467-1200' well spacing.

The fields at these depths have been developed slowly. Only one well produced between 1965 and 1974. Between 1978 and late 1985, there were four producing wells. Eleven new wells have produced from these fields between 1985 and the present. New drilling in 2002 significantly increased production from the Middle Wilcox in this area.

Two the fields proposed for consolidation have no active wells. Exxon Mobil has two active wells in the Conroe, S. (Wilcox 10,000) Field and one in the Conroe (Wilcox 9600) Field and is the only active operator in both fields. Magnum has the only active well in the Conroe, S. (Wilcox 15) Field, but Exxon Mobil also has a well with a Rule 14(b)(2) extension in this field. Exxon Mobil has the only active well in the Conroe, S. (Wilcox 25-10,300) Field, and this well has a deliverability of 7255 MCF/D.

The Conroe (Wilcox 9600) Field has been the most prolific of the fields to be consolidated, having produced over 14 BCF. The other fields have produced between 1.6 and 4.7 BCF except the Conroe, South (Wilcox 11200) which produced less than 60 MMCF. Exxon Mobil calculated the expected drainage areas of two of its wells to determine that 320-acre density with 40-acre optional density was appropriate. The Keystone Mills Lease Well No. 40 in the Conroe, S. (Wilcox 25-10,300) Field produced 1.6 BCF and drained an estimated 411 acres. The H.N. Moore Lease Well No. 61 in the Conroe, S. (Wilcox 15) Field produced only 300 MMCF of gas and drained an estimated 40 acres.

Exxon Mobil requested well spacing of 467-933' to facilitate infill drilling between existing wells. Because of the multiple reservoirs included within the proposed designated interval, a two-factor gas allocation formula is necessary. Basing allocation 5% per well and 95% on deliverability will satisfy statutory requirements and this formula is close to Statewide rules.

FINDINGS OF FACT

1. Notice of this hearing was given to all operators in the fields proposed for consolidation on May 23, 2003.
2. The Conroe (Wilcox 9600), Conroe, S. (Wilcox 15), Conroe, South (Wilcox 9900), Conroe, S. (Wilcox 10,000), Conroe, S. (Wilcox 25-10,300), Conroe, South (Wilcox 11,200) and Wildcat Fields should be consolidated into a new field to be known as the Conroe (Middle Wilcox Cons.) Field.
3. Consolidation of these Middle Wilcox sandstones, found under the Conroe Cockfield waterflood unit on the Conroe Dome, will facilitate development of the compartmentalized reservoirs.
4. The Middle Wilcox has been developed slowly in this area since 1965, and most all of the fields

have had only one or two wells completed in them.

- a. The Conroe (Wilcox 9600) Field has been the most prolific of the fields to be consolidated, having produced over 14 BCF.
 - b. The other fields have produced between 1.6 and 4.7 BCF except the Conroe, South (Wilcox 11200) Field which produced less than 60 MMCF.
5. Not all of the fields proposed for consolidation have active wells.
 - a. Exxon Mobil has two active wells in the Conroe, S. (Wilcox 10,000) Field and one in the Conroe (Wilcox 9600) Field and is the only active operator in both fields.
 - b. Magnum Production and Operating Company has the only active well in the Conroe, S. (Wilcox 15) Field, but Exxon Mobil also has a well with a Rule 14(b)(2) extension in this field.
 - c. Exxon Mobil has the only active well in the Conroe, S. (Wilcox 25-10,300) Field.
6. Three hundred twenty acre density with 40-acre optional density is appropriate for the consolidated field.
 - a. The Keystone Mills Lease Well No. 40 in the Conroe, S. (Wilcox 25-10,300) Field produced 1.6 BCF and drained an estimated 411 acres.
 - b. The H.N. Moore Lease Well No. 61 in the Conroe, S. (Wilcox 15) Field produced only 300 MMCF of gas and drained an estimated 40 acres.
7. Three fields have had special rules approved which will no longer be applicable if these fields are consolidated into the proposed Conroe (Middle Wilcox Cons.) Field.
 - a. The rules for the Conroe, S. (Wilcox 15) Field were approved March 28, 1988, under Docket No. 3-88,400, and specify 320 acre density and 1320-2640' well spacing.
 - b. The rules for the Conroe, South (Wilcox 11,200) Field were adopted November 19, 1979, under Docket No. 3-74,173, and specify 320 acre density and 1320-2640' well spacing.
 - c. The rules for the Conroe (Wilcox 9600) Field were adopted December 11, 1978, under Docket No. 3-70,586, and specify 160 acre density and 467-1200' well spacing.
8. Well spacing of 467'-933' will facilitate infill drilling between existing wells.
9. The proposed consolidated field will include the sandstones from the top of the Wilcox 15 interval (which is the top of the abnormally pressured section) through to the top of the Wilcox 48 interval.
 - a. Because of faulting, no single well exhibits this entire section and Exxon Mobil has

requested that two different wells be used for the upper and lower parts of the designated interval.

- b. The ExxonMobil Keystone Mills Lease Well No. 47 shows the top of the proposed interval at 9448' and the designated field interval will include the section from 9448' to 13,580' in this well.
 - c. The interval in the ExxonMobil H.N. Moore Lease Well No. 67 between 12,530' and the base at 14,800' will show the lower portion of the correlative field interval.
- 10. As the designated interval includes multiple, stratigraphic reservoirs, a two-factor allocation formula is required for statutory reasons.
 - 11. Allocation based 5% per well and 95% on deliverability will protect correlative rights and satisfy statutory requirements.

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 Conroe (Wilcox 9600), Conroe, S. (Wilcox 15), Conroe, South (Wilcox 9900), Conroe, S. (Wilcox 10,000), Conroe, S. (Wilcox 25-10,300), Conroe, South (Wilcox 11,200) and Wildcat Fields into a new field to be known as the Conroe (Middle Wilcox Cons.) Field will prevent waste and promote 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 Conroe, (Wilcox 9600), Conroe, S. (Wilcox 15), Conroe, South (Wilcox 9900), Conroe, S. (Wilcox 10,000), Conroe, S. (Wilcox 15-10,300), Conroe, South (Wilcox 11,200) and Wildcat Fields be consolidated into a new field to be known as the Conroe (Middle Wilcox Cons.) Field, and that the requested rules for the newly-designated Conroe (Middle Wilcox Cons.) Field be approved.

Respectfully submitted,

Margaret Allen
Technical Hearings Examiner

Date of Commission Action: August 5, 2003