



RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

OIL & GAS DOCKET NO. 8A-0300803

THE APPLICATION OF OCCIDENTAL PERMIAN LTD TO CONSOLIDATE THE SUNDOWN (ABO) FIELD INTO THE TSTAR (ABO) FIELD AND TO AMEND FIELD RULES FOR THE CONSOLIDATED FIELD IN HOCKLEY COUNTY, TEXAS

HEARD BY: Paul Dubois – Technical Examiner
Jennifer Cook – Administrative Law Judge

HEARING DATE: July 26, 2016

CONFERENCE DATE: September 12, 2016

APPEARANCES:

John Soule	Occidental Permian Ltd.
Mark Ulrich	
Parag Bandyopadhyay	
Diana Ortega	
Justin Morris	

EXAMINERS' REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Occidental Permian Ltd. ("OXY") filed an application requesting consolidation of the Sundown (Abo) Field into the TStar (Abo) Field and to amend field rules for the resulting consolidated TStar (Abo) Field in Hockley County, Texas. OXY proposes to amend existing special field rules for the TStar (Abo) Field to expand the recognized field interval and to eliminate the between-well spacing rule. The application is unopposed. The Technical Examiner and the Administrative Law Judge ("Examiners") recommend approval.

DISCUSSION OF THE EVIDENCE

Field History

The Sundown (Abo) Field was discovered February 15, 1978. The field produces from the Abo formation. OXY is the only operator in the field. There are approximately 13 wells currently in the field, some of which are producers, some of which are injectors and others of which are shut in with plugging exceptions. The TStar (Abo) Field was discovered January 1, 1996. The field produces from the Abo formation. Chevron U.S.A. Inc. and OXY are the only operators in the field. There are approximately 130 wells in the field, mostly producers, several injectors and a few shut-in wells with plugging exceptions. Both fields were initially developed with vertical wells and are now being developed with horizontal wells. The two fields produce from the same general geologic interval (the Abo formation) and, as a result of development, have grown together geographically. OXY filed this application to eliminate confusion resulting from the two fields having grown together and to facilitate future development of the consolidated field, especially with horizontal wells.

Consolidation and New Field Interval

Although the Sundown (Abo) Field was discovered before the TStar (Abo) Field, the TStar (Abo) Field has been developed with more wells, has two operators and already has special field rules. OXY therefore believes it is appropriate to consolidate the older Sundown (Abo) Field into the newer TStar (Abo) Field. The two fields are located on the Northwest Shelf of the Central Basin Platform in the Permian Basin. Wells in both fields are completed throughout the Abo formation. The Abo formation is Leonardian in age and occurs above the Wolfcamp formation and below the Lower Clear Fork. The Abo and Lower Clear Fork are equivalent in age to the Dean in the Midland Basin.

OXY filed this application in part to avoid any concern about double-assignment of acreage on the same lease with wells completed in the two different fields, both producing from the Abo formation.

OXY has experienced both production and injection interference between and among wells in the TStar (Abo) and Sundown (Abo) Fields, confirming the two fields produce from a common source of supply, should not be regulated separately and are appropriate for consolidation.

The producing interval in the Abo cuts across traditional, time-stratigraphic tops through the Lower Leonardian Section. In the TStar/Sundown Fields area, the porosity and productive reservoir are in the lower portion of the Abo formation to the west, the upper portion of the Abo formation moving to the east and likely into the Lower Clear Fork further east. The Tubb formation, which is just above the Lower Clear Fork, creates a regional top-seal. Clinoforn depositional geometry, complicated by faulting, makes well log and seismic correlation difficult. The proposed field interval is from 7,045' MD (-3,533') to 8,659' MD (-5,147) in OXY's Slaughter Consolidated Well No. 403. The log for that well was used because OXY has seismic data that ties to the well and allows for identification, with some degree of certainty, the base of

Tubb/top of Lower Clear Fork, base of Lower Clear Fork/top of Abo and base of Abo/top of Wolfcamp. The proposed interval is relatively easy to identify and correlate. The interval includes all of the Lower Clear Fork and Abo formations. Some wells in the neighboring Kingdom (Abo Reef) Field, which does not have a field-interval rule, are completed in both the Abo and Lower Clear Fork; operators in that field classify that completion interval as the "Abo Reef." The nearest wells now producing from a field that includes the Lower Clear Fork are in the Leeper (Clearfork, Lower) Field approximately 3 miles east and the Kingdom (Clearfork 7500) Field approximately 2.5-3 miles south. The Leeper (Glorieta) Field, approximately 2-2.5 miles west, and the Slaughter (Clearfork 7190) Fields include production from the Upper and Middle Clear Fork and there may have been some completions in those fields in the Lower Clear Fork in the past.

To drill horizontal wells in the field, OXY has been cutting a window in some of its older vertical wells in order to sidetrack the well with a horizontal lateral landed in the Abo. In some cases the windows had to be cut in the Lower Clear Fork to allow room for building the curve necessary to land the well in the Abo. The proposed amended field interval includes all completions in OXY's and Chevron's existing wells in the TStar (Abo) and Sundown (Abo) Fields, including OXY's open hole intervals in the Lower Clear Fork for laterals landed in the Abo. The proposed field interval will facilitate the drilling of new horizontal wells and recompletion of existing vertical wells as horizontal wells in the field, increasing the recovery of oil.

Spacing

The Sundown (Abo) Field operates under Statewide rules. Temporary special field were adopted for the TStar (Abo) Field in 1998 and were made permanent in 1999. Those special field rules can be summarized as follows:

1. Interval from 7,780' to 8,039' in the Bob Slaughter No. 600;
2. 330'/660' well spacing;
3. 40-acre drilling and proration units with 20-acre options and 20-acres tolerance for the last well on a lease; and
4. 340 bopd top allowable with 100% acreage allocation.

As discussed above, OXY is proposing to amend Rule 1 (the interval rule) to include all of the Abo and Lower Clear Fork formations. OXY is proposing no change to the lease-line spacing rule (Rule 2), the density rule (Rule 3) or the top allowable and allocation formula (Rule 4). OXY is proposing to amend the between-well spacing rule (Rule 2) from 660' to 0'. Zero between-well spacing is requested to facilitate the drilling of horizontal wells in the consolidated field where there are a number of existing vertical wells, eliminating the need for numerous between-well Rule 37 spacing exceptions. Zero between-well spacing will allow maximum flexibility for locating horizontal drainholes to maximize the recovery of hydrocarbons from the Abo formation. An Entity for Density (EFD) has been approved for OXY's Slaughter

Consolidated Lease in the TStar (Abo) Field and zero between-well spacing is common for fields being developed with horizontal wells. The minimum lease-line spacing rule will provide continuing protection of correlative rights.

OXY's 4,431-acre Slaughter Consolidated Lease has RRC Lease ID numbers in both the Sundown (Abo) Field (RRC Lease ID# 68017) and the TStar (Abo) Field (RRC Lease ID# 68016). OXY has approved EOR projects on both RRC leases. With consolidation of the Sundown (Abo) Field into the TStar (Abo) Field and transfer of all wells on OXY's Slaughter Consolidated Lease in the Sundown (Abo) Field to OXY's Slaughter Consolidated Lease in the TStar (Abo) Field, OXY understands that it may lose the benefits of the EOR project in the Sundown (Abo) Field. OXY does not anticipate needing the benefits of that EOR project and understands it will be responsible for taking action to retain those benefits if it turns out they are needed.

FINDINGS OF FACT

1. Notice of this hearing was given to all parties entitled to notice at least ten days prior to the date of the hearing. No protests were received.
2. The Sundown (Abo) Field was discovered in 1978. The TStar (Abo) Field was discovered in 1996. Both fields are located in Hockley County, Texas. At the time of the hearing, there were more than 140 wells in the two fields, the majority of them operated by OXY. The two fields produce from the same geologic interval and have grown together geographically.
3. Wells in the Sundown (Abo) and TStar (Abo) Fields produce from the Abo formation. Some vertical wells being recompleted as horizontal wells in the fields are also open-hole completions in the Lower Clear Fork because of the need to cut windows in the Lower Clear Fork in order to land the horizontal laterals in the Abo.
4. As the reservoir productive in the Sundown (Abo) and TStar (Abo) Fields progresses over the edge of the Northwest Shelf into the Midland Basin, the reservoir shifts from the lower Abo, to the upper Abo, to the Lower Clear Fork, all below the Tubb. Wells in the neighboring Kingdom (Abo Reef) Field are completed in both the Abo and Lower Clear Fork, with operators calling the entire interval in that field the "Abo Reef."
5. Historical development in the Sundown (Abo) and TStar (Abo) Fields was with vertical wells. Development with horizontal wells is now occurring. Additional development with a significant number of horizontal wells is planned for the future.
6. The proposed consolidation, the proposed designated field interval and 0' between-well spacing will provide for the orderly development of the consolidated field, particularly the drilling of new horizontal wells and the sidetracking of existing vertical wells.

CONCLUSIONS OF LAW

1. Resolution of the subject application is a matter committed to the jurisdiction of the Railroad Commission of Texas. Tex. Nat. Res. Code § 81.051.
2. All notice requirements have been satisfied. 16 Tex. Admin. Code § 1.45.
3. The proposed field rule amendments will prevent waste, protect correlative rights and promote the orderly development of the Field.

EXAMINERS' RECOMMENDATION

Based on the above findings of fact and conclusions of law, the Examiners recommend that the Sundown (Abo) Field be consolidated into the TStar (Abo) Field, that wells on the Slaughter Consolidated Lease (68017) in the Sundown (Abo) Field be transferred to the Slaughter Consolidated Lease (68016) in the TStar (Abo) Field and that the field rules for the consolidated TStar (Abo) Field be amended as requested by Occidental Permian, Ltd.

Respectfully submitted,



Paul Dubois
Technical Examiner



Jennifer Cook
Administrative Law Judge