

THE APPLICATION OF BC OPERATING, INC. TO CONSIDER UNITIZATION, SECONDARY RECOVERY OPERATIONS AND ENTITY FOR DENSITY AUTHORITY FOR THE PRIEST & BEAVERS EAST UNIT, PRIEST & BEAVERS (QUEEN) FIELD, PECOS COUNTY, TEXAS

HEARD BY: Richard D. Atkins, P.E. - Technical Examiner
Marshall F. Enquist - Legal Examiner

DATE OF HEARING: May 25, 2012

APPEARANCES:

REPRESENTING:

APPLICANT:

Flip Whitworth
Brian Arnold, Jr.
Jerry Vavrek
David Cromwell

BC Operating, Inc.

EXAMINERS' REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

BC Operating, Inc. ("BC") requests Commission authority for unitization of the Priest & Beavers East Unit and approval of secondary recovery operations on the Unit. BC also requests that the Priest & Beavers East Unit be approved as an entity for density purposes in the Priest & Beavers (Queen) Field.

The application was unopposed and the examiners recommend approval of unitization, secondary recovery and entity for density authority, as requested by BC.

DISCUSSION OF THE EVIDENCE

The Priest & Beavers (Queen) Field was discovered in August 1957 at an average depth of 2,200 feet. There are 16 producing oil wells and two operators carried on the proration schedule. Field Rules provide for 330'-1,200' well spacing, 40 acre oil units and allocation based on 75% acres and 25% per well. The top allowable is the 1947 Yardstick Allowable of 75 BOPD with an allowable gas-oil ratio of 2,000 cubic feet per barrel. Cumulative production from the field through April 2012 is 2.8 MMBO and 185.8 MMCFG. Cumulative production from the wells in the proposed unit is 289.4 MMBO and 40.9 MMCFG.

The unitized formation is the subsurface portion of the Unit Area commonly known as the Queen Sand formation between the subsurface depths of 2,210 feet and 2,376 feet as shown on the log of the BC Operating, Inc. - Owens State Lease, Well No. 1 (API No. 42-371-02055), Section 40, Block Z, TC RR Co. Survey, A-6777, Pecos County, Texas.

The proposed Priest & Beavers East Unit consists of two tracts which contain 640 acres. The productive interval has a solution gas drive as the primary drive mechanism. The proposed unit contains all of the productive portions of the Queen Sand formation on the east side of the Priest & Beavers (Queen) Field, as demonstrated by cross sections, structure map and net pay isopach map that were submitted by BC.

BC proposes to implement a five spot waterflood pattern by drilling three producing wells and four injection wells. The source water for the waterflood will be saltwater produced from the Ellenburger formation at depth of about 10,000 feet. BC estimates that secondary recovery will be equal to 86% of primary recovery or approximately 250 MBO. The total cost to implement the secondary recovery project is expected to be \$7.9 MM. The projected gross value of the additional production is \$17.8 MM, resulting in a gross return on investment of 2.3 to 1. This calculation is based on an oil price of \$90 per barrel.

The participation formula for each tract is based on 70% of the proportion of each tract's cumulative oil production as compared to the total unit cumulative oil production and 30% of the proportion of each tract's original oil in place as compared to the total unit original oil in place. At the time of the hearing, 100% of the working interest ownership and 100% of the mineral interest ownership had signed the unit agreement. There are state owned lands in the proposed unit.

BC requests that the Priest & Beavers East Unit be designated as an entity for density purposes. This will allow BC to drill wells to complete the waterflood pattern in optimum locations on the unit without having to obtain between-well spacing exceptions. This designation will also eliminate the need to file proration unit plats for individual wells.

FINDINGS OF FACT

1. Notice of this hearing was sent to all operators and unleased mineral interest owners within and adjacent to the proposed unit and no protest was received.
2. The proposed Priest & Beavers East Unit consists of two tracts which contain 640 acres.
3. The unitized formation is the subsurface portion of the Unit Area commonly known as the Queen Sand formation between the subsurface depths of 2,210 feet and 2,376 feet as shown on the log of the BC Operating, Inc. - Owens State Lease, Well No. 1 (API No. 42-371-02055).

4. Secondary recovery operations are expected to result in the recovery of an estimated 250 MBO which would otherwise go unrecovered.
5. The total cost to implement the secondary recovery project is expected to be \$7.9 MM. The projected gross value of the additional production is \$17.8 MM, resulting in a gross return on investment of 2.3 to 1. The cost does not exceed the value of additional reserves to be recovered.
6. The participation formula for each tract is based on 70% of the proportion of each tract's cumulative oil production as compared to the total unit cumulative oil production and 30% of the proportion of each tract's original oil in place as compared to the total unit original oil in place.
7. The secondary recovery project will not be successful unless the area is unitized.
8. BC proposes to implement a five spot waterflood pattern by drilling three producing wells and four injection wells. The source water for the waterflood will be saltwater produced from the Ellenburger formation at depth of about 10,000 feet.
9. The agreement was voluntarily executed by all parties affixing their signatures thereto and no person has been compelled or required to enter into the agreement. The unit agreement binds only those persons who have executed it, their heirs, successors, assigns and legal representatives. The rights of all owners of interests in the field will be protected under the operation of the unit, regardless of whether an owner signed the unit agreement.
10. The owners of interest in the oil and gas under each tract of land within the area reasonably defined by development have been given an opportunity to enter into the unit on the same yardstick basis as owners of interest in the oil and gas under the other tracts in the unit.
11. The proposed injection program will move hydrocarbons across lease lines, and unitization is necessary in order to protect the correlative rights of the various interest owners.
12. The unitization agreement is necessary to accomplish the purposes of establishing a unit to effect secondary recovery operations for water injection and to operate cooperative facilities necessary thereto. Other available or existing methods or facilities for secondary recovery operations are

inadequate for the purpose of secondary recovery.

13. The unit agreement does not provide, either directly or indirectly, for the cooperative refining or marketing of crude petroleum, distillate, condensate, or gas, or any by-product thereof.
14. The unit agreement is subject to all valid orders, rules and regulations of the Railroad Commission.
15. The unit agreement contains no provision regarding field rules, nor does it limit the amount of production of oil or gas from the unitized area. The unit agreement does not release the operator from his obligation to reasonably develop lands or leases as a whole.
16. The unit agreement is a voluntary agreement entered into for the purpose of conducting secondary recovery operations.
17. The unit agreement does not provide for the location of wells.
18. There are state owned lands in the proposed unit.
19. The unit agreement is in the interest of public welfare as being reasonably necessary to prevent waste and to promote conservation.
20. The reservoir described in the unit agreement is identified as a single reservoir for Commission purposes and is a suitable reservoir for a water injection secondary recovery operation.
21. The unit agreement contains only the acreage reasonably necessary to accomplish the proposed secondary recovery project.
22. At the time of the hearing, 100% of the working interest ownership and 100% of the mineral interest ownership had signed the unit agreement.
23. Designation of the unit as an entity for density purposes will allow for the drilling of new wells without obtaining between-well spacing exceptions, provided the density is not exceeded.

CONCLUSIONS OF LAW

1. Proper notice was given to all persons legally entitled to notice.
2. All things have occurred or have been accomplished that are necessary to give the Commission jurisdiction in this matter.

3. Applicant's proposed secondary recovery project satisfies all of the requirements set out in TEX. NAT. RES. CODE ANN. §§101.001 *et seq.*
4. Approval of the proposed unit agreement, secondary recovery operations and entity for density authority is in the public interest and is necessary to prevent waste and to promote the conservation of oil or gas or both.

EXAMINERS' RECOMMENDATION

Based on the above findings of fact and conclusions of law, the examiners recommend that the Commission approve the proposed Priest & Beavers East Unit, secondary recovery operations and entity for density authority, as set out in the attached order.

Respectfully submitted,

Marshall F. Enquist
Legal Examiner

Richard D. Atkins, P.E.
Technical Examiner