

May 31, 2001

OIL AND GAS DOCKET NO. 08-0228291

THE APPLICATION OF HENRY PETROLEUM LP TO CONSIDER UNITIZATION AND SECONDARY RECOVERY AUTHORITY FOR THE UNIVERSITY SAN ANDRES UNIT, SHAFTER LAKE (SAN ANDRES) FIELD, ANDREWS COUNTY, TEXAS

Heard by: Margaret Allen, Technical Examiner
Scott Petry, Hearings Examiner

Procedural History

Application filed: May 7, 2001

Hearing held: May 31, 2001

Appearances

Michael McElroy
Douglass Robison
Steve Guthrie
David T. Grace

Representing
Henry Petroleum LP

EXAMINERS' REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Henry Petroleum LP ("Henry") is seeking Commission approval of its unitization agreement and of its plan for secondary recovery in the University San Andres Unit, Shafter Lake (San Andres) Field, Andrews County, Texas.

DISCUSSION OF THE EVIDENCE

The Shafter Lake (San Andres) Field was discovered in 1956, and has cumulative production over two million barrels of oil. Current daily production from the 18 wells on the proposed unit is down to about 3 BO per well. There are about 2300 productive acres in the field and the proposed unit covers the 1610 acres on top of an anticline. Reservoir quality deteriorates down structure and the operators of wells on the outside edges of the field chose not to join the unit.

The type log, from the Henry Petroleum University 154 Lease Well No. 21, shows the unitized interval to be between 4456 and 4868 feet, from the top of the San Andres dolomite to the base of the hydrocarbon-bearing section. A cross section shows the San Andres has interconnected porosity across the proposed unit. The reservoir has a depletion drive and the average permeability is 3.1 md. Porosity is 7.5%, water saturation is 30% and the pay thickness averages 27 feet. Original reservoir pressure was 1700 psi and current reservoir pressure is about 400 psi.

Remaining primary production is estimated to be 254,000 barrels and the expected secondary recovery is an incremental 1,576,000 barrels of oil. Henry assumed that secondary recovery would be about equal to primary recovery less losses due to poorer sweep efficiency on the edges of the unit. This one to one primary to secondary ratio is typical of nearby San Andres waterfloods.

Eleven injection wells will be drilled and one producing well converted to injection. Some inactive wells will be returned to production and Henry expects to eventually have 24 producing wells. The estimated net profit of \$11,129,000 from the secondary oil will exceed the \$4,400,000 capital cost of the project. The participation formula is based 1/3 on remaining primary production and 2/3 on expected ultimate primary production. All of the working interest has signed the unit agreement, as has the State of Texas, the only royalty interest owner.

The interests of all owners in the field, whether or not they sign the unit agreement, will be protected. It is necessary to unitize the acreage in order to conduct an effective waterflood. The persons entering into the unit own interests in the unit and the unit agreement is voluntarily entered into to establish pooled units for a secondary recovery operation. The unit agreement does not bind any interest owner who does not execute it. No one was compelled to enter into the unit agreement.

The unit agreement is subject to all valid rules, orders and regulations of the Railroad Commission. The agreement does not provide for the location of wells nor does the agreement relieve Henry from its obligation to develop reasonably the leases in the unit. The agreement allows the use of dry gas in the reservoir, but the applicant does not expect it will be used. The unit agreement does not limit the amount of production from the unit properties. The unit agreement does not provide for cooperative refining or marketing of crude petroleum or its by-products. The agreement does not restrict any of the rights which persons now have to pool or unitize, nor does it attempt to set field rules.

FINDINGS OF FACT

1. Notice of these hearings was issued to all interest owners within the unit and to offset operators on May 9, 2001.
2. The proposed unit includes 8 tracts, covers 1610 acres, and is sufficiently large to operate an efficient secondary recovery project.
3. The Shafter Lake (San Andres) Field produces from an anticline and reservoir quality deteriorates down structure.
4. The unit includes eight tracts and the limits of the unit were determined by the decision of offset operators not to join the unit.
5. Only acreage that can reasonably be considered productive and that has been reasonably defined by development is included within the unit.
6. Cumulative production from the wells in the proposed unit is 2,000,000 BO, and the estimated remaining primary production is 254,000 BO.

7. Other San Andres waterfloods in the area have recovered about the same amount of secondary oil as the primary recovery.
8. Eleven new injection wells will be drilled and one producing well will be converted to injection.
9. There will eventually be 24 producing wells in the proposed 40-acre five-spot injection pattern.
10. The San Andres reservoir has a depletion drive and interconnected pay in the proposed unit.
11. The estimated secondary recovery is 1,576,000 BO, and the net undiscounted profit will be \$11,129,000.
12. The State of Texas owns all of the royalty interest in all tracts and has agreed to join the unit.
13. The waterflood project will not be successful unless the area is unitized; waterflood operations will sweep hydrocarbons across lease lines.
14. The value of the anticipated additional recovery from the reservoir by means of the secondary recovery program will more than offset the cost of the proposed secondary recovery operation.
15. The rights of the owners of all interests in the field whether or not they join the unit will be protected under the operation of this unit.
16. The owners of interest in the oil and gas under each tract of land within the area reasonably defined by development and capable of inclusion in a contiguous unit have been given an opportunity to enter the unit on the same yardstick basis as the owners of interest in the oil and gas under the other tracts in the unit.
17. To date, 100% of the working interest ownership has signed or ratified the unit agreement.
18. Such agreement does not bind any interest owner who does not execute the agreement.
19. No one was compelled to enter into the unit agreement; the owners of interests not desiring to enter the unit on the yardstick basis may continue to participate in production from the field on an independent basis governed by Commission rules and by the provision of the individual lease contract.
20. The persons entering into the unit own or control production, leases, royalty or other interest in the Shafter Lake (San Andres) Field.
21. The unit agreement is subject to all valid rules, orders and regulations of the Railroad Commission.
22. The unit agreement does not attempt to contain the field rules for the area or field.
23. The unit agreement does not limit the amount of production.

24. The unit agreement does not provide for cooperative refining or marketing of crude petroleum or its by-products.
25. The agreement was voluntarily entered into to establish pooled units to conduct secondary recovery operations.
26. The unit agreement does not restrict the rights which persons now have to make and enter into unitization and pooling agreements.
27. Such agreement does not provide for the location of wells.
28. The unit agreement does not relieve Henry Petroleum LP from its obligation to develop reasonably its leases committed to the unit.
29. There are no other existing alternate methods or facilities available that are adequate for the purpose of secondary recovery; the unitization agreement is necessary to accomplish the purposes set forth in Section 101.011 of the Texas Natural Resources Code, specifically the establishment of pooled units necessary to effect secondary recovery operations for oil or gas.
30. The unit agreement is in the interest of public welfare as reasonably necessary to prevent waste and promote conservation.
31. The injection fluid will be produced water from the Ellenburger, Devonian and Clear Fork Formations.

CONCLUSIONS OF LAW

1. Proper notice of this application and hearing was provided in accordance with all applicable regulatory statutes and rules.
2. All things have occurred or have been accomplished to afford the Commission the opportunity to consider and decide this matter.
3. Consideration of a secondary recovery program that will prevent the waste of otherwise recoverable hydrocarbon resources is a matter properly within the statutory jurisdiction of the Commission.
4. Approval of the proposed secondary waterflood injection program will foster conservation and prevent waste by providing for the recovery of hydrocarbons that would not otherwise be recovered.
5. The application complies with Chapter 101 of the Texas Natural Resources Code.
6. Because waterflood operations will sweep hydrocarbons across lease lines, a unit agreement is necessary to protect the correlative rights of working interest owners.

EXAMINERS' RECOMMENDATION

Based on the above findings of fact and conclusions of law, the examiners recommend the approval of the requested unitization and secondary recovery project in the University San Andres Unit, Shafter Lake (San Andres) Field.

Respectfully submitted,

Scott Petry
Legal Examiner

Margaret Allen
Technical Hearings Examiner

Date of Commission Action: June 21, 2001