



RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

OIL & GAS DOCKET NO. 8A-0284932

THE APPLICATION OF CITATION OIL AND GAS CORP. TO CONSIDER UNITIZATION AND SECONDARY RECOVERY AUTHORITY FOR THE PROPOSED NORTH ROBERTSON SAN ANDRES UNIT, NORTH ROBERTSON (SAN ANDRES) FIELD, GAINES COUNTY, TEXAS

HEARD BY: Paul Dubois – Technical Examiner
Michael Crnich - Legal Examiner

DATE OF HEARING: November 6, 2013

APPEARANCES:

REPRESENTING:

APPLICANT:

Michael McElroy
Stuart Scarborough
David Keck
Fred Richter

Citation Oil and Gas Corp.

EXAMINERS' REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Citation Oil and Gas Corp. (Citation) requests Commission authority for unitization of the North Robertson San Andres Unit (NRSAU) and approval of secondary recovery operations on the Unit. The application is unopposed and the examiners recommend approval of the authority for unitization of the NRSAU and approval of secondary recovery operations on the Unit.

DISCUSSION OF THE EVIDENCE

The North Robertson (San Andres) Field is located in south central Gaines County, on the northern end of the Central Basin Platform. The North Robertson (San Andres) Field is one of several fields in the area producing from the San Andres Formation. The field was discovered in 1978. Wells in the proposed unit area have produced 1,095,808

BO, 1,082,435 MCFG and 11,081999 BW from 1978 through March 2013. Initially the field exhibited a fluid expansion drive mechanism that transitioned to a solution gas drive mechanism. Production declined until about 2009 when an aggressive drilling program began and production peaked at 822 BOPD in April 2011. Currently there are 57 producing wells in the unit.

The proposed unitized formation is the subsurface portion of the Unit Area commonly known as the San Andres Formation, being more particularly described as that stratigraphic interval or its correlative equivalent between the log depths of 4,392 feet and 5,816 feet in the Exxon Shell Fee No. 8 Well located 1,900 feet from the south line and 800 feet from the east line of Section 10, A-24, Public School Land Survey, Gaines County, Texas, as shown on the Dresser Atlas 2-inch Compensated Neutron Log run on January 21, 1981. The proposed interval represents the entire San Andres Formation, extending from the base of the Grayburg Formation to the top of the Glorieta Formation. The proposed NRSAU consists of nine tracts occupying three sections (about three square miles) of land.

A well log cross-section from west to east showed good correlation of the formation markers and productive interval across the NRSAU area, and Citation's expert geologist stated these markers also correlated with other nearby unitized fields. Immediately south of the NRSAU is the Robertson San Andres Unit operated by Occidental, and beyond that is the South Robertson San Andres Unit operated by Sheridan, both of which are ongoing waterfloods. The east boundary of the unit is determined by low structure and a dry hole in the San Andres. The west boundary is determined by low structure and deteriorating porosity. The northern boundary of the unit is established by the extent of development.

The nearby Occidental Robertson San Andres and Sheridan South Robertson San Andres Units provide Citation with models of reservoir response to waterflooding. Both fields demonstrated significant increased recovery with the onset of unitization and waterflooding, and with the reduction of well spacing to 20 and then 10 acres. Both of the existing units demonstrated estimated ultimate recovery from waterflooding in excess of 100 percent of primary recovery. Citation believes a similar response for the NRSAU is reasonable and can be expected.

The participation formula for each tract is based on 28 percent available usable wells, 55 percent monthly production, 12 percent surface acres, and 5 percent on the cumulative production. At the time of the hearing, 100% of the working interest ownership and 80.32% of the royalty interest ownership had signed the unit agreement. There are no state lands in the Unit and Citation will conduct regular well tests to allocate production to wells on tracts for which 100% sign-up was not achieved.

FINDINGS OF FACT

1. Notice of this hearing was sent to all operators and royalty interest owners within and adjacent to the proposed unit at least ten days prior to the hearing.
2. The proposed NRSAU consists of nine tracts which cover about three square miles.
3. The unitized formation is the subsurface portion of the unit area commonly known as the San Andres Formation, being more particularly described as that stratigraphic interval or its correlative equivalent between the log depths of 4,392 feet and 5,816 feet in the Exxon Shell Fee No. 8 Well located 1,900 feet from the south line and 800 feet from the east line of Section 10, A-24, Public School Land Survey, Gaines County, Texas, as shown on the Dresser Atlas 2-inch Compensated Neutron Log.
4. The productive interval is located on the San Andres Formation, which has a solution gas drive as the primary drive mechanism.
5. At the time of the hearing, 100% of the working interest ownership and 80.32% of the mineral interest ownership had signed the unit agreement.
6. Secondary recovery operations are expected to result in the recovery of an estimated 3.5 MMBO, which would otherwise go unrecovered.
7. The total cost to implement the secondary recovery project is expected to be \$104 million. The cost does not exceed the value of additional reserves to be recovered.
8. The participation formula for each tract is based on 28 percent available usable wells, 55 percent monthly production, 12 percent surface acres, and 5 percent on the cumulative production.
9. The secondary recovery project will not be successful unless the area is unitized.
10. Citation proposes to implement a secondary recovery waterflood project with injection and producing wells on 20 and 10-acre spacing.
11. 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.
12. The owners of interests 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 interests in the oil and gas under the other tracts in the unit.
 13. 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.
 14. The unitization agreement is necessary to accomplish the purposes of establishing a unit to effect secondary recovery operations for water injection and operating cooperative facilities necessary thereto. Other available or existing methods or facilities for secondary recovery operations are inadequate for the purpose of secondary recovery.
 15. 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.
 16. The unit agreement is subject to all valid orders, rules and regulations of the Railroad Commission.
 17. 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.
 18. The unit agreement is a voluntary agreement entered into for the purpose of conducting secondary recovery operations.
 19. The unit agreement does not provide for the location of wells.
 20. There are no state owned lands in the proposed unit.
 21. The unit agreement is in the interest of public welfare as being reasonably necessary to prevent waste and to promote conservation.
 22. 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.

23. The unit agreement contains only the acreage reasonably necessary to accomplish the proposed secondary recovery project.
24. Well tests will be conducted to allocate production to wells on tracts for which 100% sign-up was not achieved.

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. §§101.001-052.
4. Approval of the proposed unit agreement for secondary recovery operations 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 approval of the proposed North Robertson San Andres Unit and secondary recovery operations, as set out in the attached order.

Respectfully submitted,



Paul Dubois
Technical Examiner



Michael Crnich
Legal Examiner