

THE APPLICATION OF ERNEST ANGELO JR. TO CONSIDER UNITIZATION AND SECONDARY RECOVERY AUTHORITY FOR THE MCFADDIN (TANNEHILL) UNIT, TWO TEE (TANNEHILL) FIELD, KNOX COUNTY, TEXAS

HEARD BY: Donna K. Chandler, Technical Examiner
Mark J. Helmueller, Hearings Examiner

DATE OF HEARING: November 8, 2000

APPEARANCES:

Thane Akins

REPRESENTING:

Ernest Angelo Jr.

EXAMINERS' REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Ernest Angelo Jr. requests Commission authority for unitization of the McFaddin (Tannehill) Unit and approval of secondary recovery operations on the Unit in the Two Tee (Tannehill) Field, Knox County.

This application was unopposed and the examiners recommend approval.

DISCUSSION OF THE EVIDENCE

The Two Tee (Tannehill) Field was discovered in 1958 at approximately 2,550 feet. Cumulative production from the field is approximately 922,000 BO. There are currently 3 producing wells in the field which produce a total of 22 BOPD. Henderson & Erickson, Inc. operates two wells; Ernest Angelo, Jr. operates one producing well.

The unitized formation is the interval underlying the Unit Area which is the stratigraphic interval and its correlative equivalent between the log depths of 2,530 and 2,610 feet in the Katz Oil Company - Warren No. 1 well located 330 feet FNEL and 330 feet FSEL of Section 73, Block 13, H & TC RR Co. Survey, Knox County, Texas, as shown on the Induction log run on September 2, 1958.

The subject reservoir is a channel sand with an oil-water contact at 1,015 feet subsea. Numerous dry holes define the reservoir limits. This high permeability Tannehill reservoir has a solution gas drive which is supplemented by gravity drainage.

The proposed McFaddin (Tannehill) Unit consists of 4 tracts which contain 195 acres. There is some productive acreage in the field which is not included in the unit. Ernest Angelo, Jr. made offers to these interest owners but they declined to join the unit.

Ernest Angelo, Jr. intends to implement a line drive with an injection well at both ends of the channel. The injected water will be salt water produced from the Tannehill. Maximum injection is expected to be 1,000 barrels per day.

Ultimate primary recovery is estimated to be 993,000 BO, which is 24% of original oil in place. Estimated secondary recovery is 447,000 BO. Estimated cost to implement the project is \$840,000.

Average porosity of this reservoir is 24% and average water saturation is 20%. Average net pay thickness is 12 feet. Original reservoir pressure was 1,090 psi and current pressure is less than 200 psi.

The participation formula is based on 25% useable wells, 25% floodable reservoir, 40% ultimate primary recovery and 10% current oil production. The Unit agreement has been signed by 100% of the working interest ownership and over 98% of the royalty interest ownership. On tracts where 100% sign-up is not attained, applicant will maintain separate tanks to account for production.

FINDINGS OF FACT

1. Notice of this hearing was sent to all operators and royalty interest owners within the proposed unit and to offset operators and mineral owners of unleased tracts.
2. The proposed unit consists of 4 tracts which contain 195 acres.
3. The unitized formation is the interval underlying the Unit Area which is the stratigraphic interval and its correlative equivalent between the log depths of 2,530 and 2,610 feet in the Katz Oil Company - Warren No. 1 well located 330 feet FNEL and 330 feet FSEL of Section 73, Block 13, H & TC RR Co. Survey, Knox County, Texas, as shown on the Induction log run on September 2, 1958.
4. Cumulative recovery from the leases proposed for unitization is 922,000 BO. Secondary recovery operations will result in the recovery of an estimated 447,000 BO which would otherwise go unrecovered.
5. Estimated cost to recover the secondary reserves is \$10 per barrel of oil. The cost does not exceed the value of additional reserves to be recovered.
6. The participation formula is based on 25% useable wells, 25% floodable reservoir, 40% ultimate primary recovery and 10% current oil production.

7. The secondary recovery project will not be successful unless the area is unitized.
8. The secondary recovery program will use salt water from the Tannehill as the injection fluid.
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 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 no state lands in the 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 the proposed secondary recovery operation.
21. The unit agreement contains only the acreage reasonably necessary to accomplish the proposed secondary recovery project.
22. The unit agreement has been ratified by 100% of the working interest ownership and over 98% of the royalty interest ownership.
23. On tracts where 100% sign-up is not attained, applicant will maintain separate tanks to account for production from that tract.

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. (Vernon 1993).
4. Approval of the proposed unit agreement and 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 McFaddin (Tannehill) Unit and secondary recovery operations project as set out in the attached order.

Respectfully submitted,

Donna K. Chandler
Technical Examiner

Mark J. Helmueller
Hearings Examiner