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Testimony for January 22, 1975
N.M.O.C.C. Hearing

At the conclusion of a hearing on December 3, 1974, the N.M.O.C.C. established a study committee of operators consisting of Amerada-Hess, Anadarko Production Company, Agua Inc., Continental Oil, Gulf Oil Corp., John Hendrix, Petro-Lewis, Skelly Oil Co., and Texas Pacific Oil Co.

This study committee was charged with making an investigation into the condition of all wells in Sec. 13 through 36, T22S, R37E, and Sec. 1 through 12, T23S, R37E with respect to casing, cementing, and plugging. A meeting of this study committee was held in the N.M.O.C.C. office in Hobbs on December 5, 1974. At this time a recommendation was made concerning the information needed by the study committee. The study committee recommended that each operator supply the following information on each of their wells in the area covered by Order No. R-4936.

- a) Each bore hole size, casing size, amount of casing and the amount of cement used. Cement top information was requested if available.
- b) Surface and intermediate casing pressure was requested. If pressure existed, it was requested that the pressure be bled down to check for a water flow. If was produced, they were requested to get a flow rate and an analysis for chlorides and sulfates.
- c) For plugged and abandoned wells, the operators were requested to supply the amount of casing pulled and the amount and location of all plugs placed to plug the well.

Mr. Ramey agreed to contact all of the operators and request the information needed by the study committee. At a second meeting the area was divided in two by a line commencing at the southeast corner of Sec. 36, then running west along section lines to the southeast corner of the LMPSU, then westward along the south line of the LMPSU boundary to a point on the south line of Sec. 29, the west corner of Sec. 30 along section lines to the south.

This is a report of the study made by the North Sub-committee. As well data was received from individual operators, the data was compiled into several categories and then tabulated. These categories consisted of wells exhibiting a water flow from either the surface or intermediate casing, wells with indicated cement tops below 3100', plugged and abandoned wells, and wells with no apparent problems. Operators supplied information which indicated that 25 wells had exhibited a water flow from either the surface or intermediate casing. Using the information supplied by the operators, a total of 39 wells indicated a cement top below 3100'. Two plugged and abandoned wells indicated potential problems.

North Committee
Anadarko Ex (H) 1
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Concerning the wells with cement tops below 3100', guide lines were established for this study by Mr. Joe Ramey, District Director for the N.M.O.C.C. The guide line used for calculating cement tops, where no temperature survey was reported, was a yield of 1.1 ft.³ per sack and a fill efficiency of 65%. A figure of 3100' was set for the minimum acceptable cement top. This would give an average of 400' of cement cover above the uppermost water injection interval. Wells within the area indicated on the map exhibit were require to have an cement top 3100' or higher.

A number of plugged and abandoned wells were studied. Only two presented questions concerning whether the well bore could act as a channel for water migrating from one zone to another.

Recommendations from the study committee, based on the guide lines established by the Oil Conservation Commission and the well data supplied by the operators is as follows:

- a) It is recommended that wells having surface or intermediate casing water flow should have a temperature survey run as soon as possible. This information will be used to determine if remedial action is needed on that well and to give overall information for the entire problem area.
- b) It is recommended that the 39 wells, listed on Exhibit No. ___ having cement tops below 3100', be required to bring the cement from its present depth up to 3100' or to the intermediate casing, whichever is the greater depth. This work should be done at the earliest date possible.
- c) It is recommended that a further study be made to determine the feasibility of re-entering the two plugged and abandoned wells.
- d) It is recommended that all wells in the area covered by Order No. 4936 be equipped so that periodic surface and/or intermediate casing pressures can be obtained. These reports should include the pressure, fluid flow rate, and a water analysis showing the chlorides and sulfates. For the 12 months of 1975, quarterly pressure tests should be required and thereafter semi-annual reports.
- e) It is recommended that the operators of the four water flood units in the area cooperate with Agua, Inc., in an attempt to use the water going into Agua's disposal well in an effort to eliminate such disposal well as soon as possible.

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- f) It is recommended that when the required remedial work has been accomplished on the wells included in Order No. R-4936, that the injection rate be set at 150% of the oil, gas, and water withdrawals.

These recommendations are presented by the North Sub-committee in order to expedite the remedial work in this area.