UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. Box 997
Roswell, New Mexico
April 11, 1947

file with Case # 97

Mr. R. R. Spurrier
New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Dear Mr. Spurrier:

Reference is made to the notice issued by the Oil Conservation Commission of hearings to be held at Santa Fe, New Mexico, at 10:00 a.m., April 15, 1947, and in particular to Case No. 97, in the matter of the application of the Oil Conservation Commission upon its own motion for an order regarding tank batteries for separate pools and whether one tank battery shall serve one pool only or whether separate tank batteries shall be employed for separate pools.

In Order No. 633, Case No. 70 of the Oil Conservation Commission of the State of New Mexico, approved January 15, 1946, defining oil and gas pools in Lea, Eddy and Chaves Counties, New Mexico, effective as of January 1, 1946, under section 6 it is provided that "each pool shall be produced as a single common reservoir and wells shall be completed, cased, and maintained to that end". The operation of a pool as a single common reservoir would seem to imply without question that the oil produced from each pool must be physically separated for measurement and sale.

On March 7, 1946, I issued an order to oil and gas lessees and operators on public land of the United States in Lea, Eddy and Chaves Counties, New Mexico, requiring that production must be physically separated, measured and sold from separate tanks designated for receiving oil produced from specific wells from the separate pools. It was provided that the separate tanks so designated may be located with other tanks in a single tank battery, but no connection shall be made between tanks for oil from different pools. Separate oil and gas separators, gun-barrels, manifolds or common metering devices shall be used for tanks receiving oil from different pools. The co-mingling of oil in the same tanks or intermediate connections between wellheads and tanks and estimating production from the different pools is prohibited.

As stated in my order of March 7, 1946, the physical separation of oil from different pools is considered necessary and desirable among other reasons to obtain proper and adequate records for the determination

of oil recoveries from separate common reservoirs and for engineering studies, to obtain benefits of increased allowables under orders of the Oil Conservation Commission for pools producing below 5,000 feet, to avoid conflict with the Connally Act, and to provide records and means for obtaining any premiums or differentials in price that might result from such physical separation of the oil.

By letter of March 13, 1946, to our office at Roswell you appear to have fully concurred in the position taken by the Roswell office of the Geological Survey with respect to Federal lands by stating that order No. 633 is interpreted by your office to require separation of oil produced from separate pools whether these pools be separated by 1,000 feet vertically or 100 miles horizontally, that it is not your purpose however to specifically designate how the separation will be accomplished and that it will be suggested to operators on state and patented land that separation should be accomplished in separate tanks for the following reasons:

(1) To protect the operator from suspicion or prosecution under the Connally Act.
(2) To provide accurate production records for each pool concerned.
(3) To realize the maximum price (if any differential) from the higher gravity oils.

You further stated that if the pools which overlie one another and are separated by feet, were separated by miles horizontally, the pool or lease would of necessity require a separate battery of tanks, however, if the operator can save the expense of complete tank batteries and use only separate tanks, it would seem advisable.

Restatement of the same interpretation is contained in your letter of July 22, 1946, to Mr. George Selinger, Skelly Oil Company, Tulsa, Oklahoma. However, by letter of November 15, 1946, to Mr. Glenn Staley you stated that all operators may make use of common tank batteries as they see fit until a hearing may be called to promulgate a suitable order with reference to the separation of oil produced from separate pools and/or leases, provided that the reporting of production from all pools shall be kept separate; that is separate C-115s shall be used in reporting the production of oil and gas from all pools. Case 97 to be heard April 15 apparently is intended to provide information and data essential to the issuance of such suitable order.

The necessity and justification for the physical separation in separate tanks of oil produced from separate pools as expressed by both your office and the Roswell office of the Geological Survey appear self-explanatory and seemingly need no additional comment except for the fact that one or two operators have raised the question as to why

separate tankage is necessary, and objected solely on the basis of the economics involved in the relatively small expense involved in the additional tankage.

The majority of operators and this office are firmly convinced that accurate records of production from separate pools must be obtained in order to permit proper evaluation and engineering studies for both primary and secondary phases of production. It is a well recognized fact that the present records now maintained by the Oil Conservation Commission of withdrawals from individual wells in any single pool where oil is co-mingled in the same tank and the oil actually withdrawn from each well can only be estimated, are meaningless so far as study of individual well performance is concerned. The record of crude oil withdrawals as contained in the proration schedules of the Oil Conservation Commission and in the Lea County Operators Engineering reports can be used only for a lease or area study. It would be most undesirable and unfortunate if the records of crude oil withdrawals as between separate pools or common reservoirs should be allowed to be confused in like manner. Any exception granted that would allow co-mingling of oil from separate pools into a single tank, regardless of measuring or metering devices, could only result in confusion of essential records. Supervisory forces of both the State and Federal governments are insufficient to adequately police any system of measuring or metering co-mingled oil from separate pools and subterfuge could easily result to the serious detriment of all other parties involved.

Effective January 9, 1947, several purchasers of crude oil in Lea County posted price schedules for segregated oil produced from the Blinebry, Drinkard and Brunson pools amounting to six cents per barrel in excess of the price posted for oil of equal gravity from other pools in Lea County. In announcing the new price schedules for the high quality, high gravity crude oil from these three pools it was stated by the purchasing companies that pipeline facilities had been made for segregation of these premium oils in delivery to refineries.

It appears unquestionable that the premium differential obtained for oil produced from these three pools could have been obtained only by reason of prior physical separation of the oil withdrawn from these pools in separate tanks for measurement and sale. The desirability for continuation of physical separation of oil from these pools by use of separate tanks is obvious. It is not unreasonable to assume that other premium prices might later be established for other pools producing premium quality oil where such oils are physically separated by separate tanks.

Furthermore, we have under consideration at this time the question of computing royalties on crude oil from Federal oil and gas leases on

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What is needed to record properly and accurately the production of crude oil from individual wells is separate tankage for each well. This may be considered uneconomic under existing conditions in the industry. The nearest approach to this ultimate of recording well productivity is a periodic test into a separate tank of each individual well normally connected to tankage common to two or more wells.

It is suggested that consideration be given by the Commission to the issuance of an order requiring a 24 hour test of each individual oil well in Lea, Eddy and Chaves Counties, not less often than three months periods, to determine and record a daily capacity at least equal to the current top unit oil allowable and if the daily capacity is less than such top unit allowable, to determine and record the actual productivity of each oil well.

These data are essential for efficient operation of leases and for proper remedial work. Uniform application of the principle of individual well tests should result in reducing present oil "underages" on the proration schedule sufficient to increase the current top well allowable for the benefit of wells where the additional production would not adversely affect reservoir conditions.

the basis of the number of producing wells from each separate pool where the royalty rate is based on the average daily production per day. This becomes necessary because of the wide difference in rates of production between the wells approaching the stripper stage in the upper Permian pools and the flush, high allowable wells in the new deeper pools. Physical separation of the oil from each pool is essential under such procedure as to Federal leases.

The benefits to be obtained thereby far exceed the slight additional inconvenience or cost of physically separating oil from separate pools in separate tanks, and it is recommended that the Oil Conservation Commission issue such order or interpretation as may be necessary to re-state the principal of use of separate tanks for use of oil produced from the separate pools as originally provided under section 6 of order No. 633.

It is further requested that this letter be read at the hearing and entered in the minutes of such hearing at Santa Fe on April 15, 1947.

Very truly yours,

Foster Morrell

FOSTER MORRELL,
Supervisor, Oil and Gas Operations.