

Entered May 7, 1958
A.L.P.

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF THE STATE OF NEW
MEXICO FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 1369
Order No. R-1173

IN THE MATTER OF THE HEARING
CALLED ON THE MOTION OF THE
OIL CONSERVATION COMMISSION AT
THE REQUEST OF ATLANTIC REFINING
COMPANY TO REVISE RULE 107 OF THE
COMMISSION RULES AND REGULATIONS
PERTAINING TO CASING, TUBING, AND
CEMENTING REQUIREMENTS.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on January 15, 1958, and again on February 13, 1958, at Santa Fe, New Mexico, before the Oil Conservation Commission, hereinafter referred to as the "Commission."

NOW, on this 5th day of May, 1958, the Commission, a quorum being present, having considered the testimony and evidence adduced, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That Rule 107 of the Commission Rules and Regulations should be revised since advances in technology and equipment within the last several years make certain changes desirable.

IT IS THEREFORE ORDERED:

That effective June 1, 1958, Rule 107 of the Commission Rules and Regulations be and the same is hereby revised to read as follows:

RULE 107 - CASING AND TUBING REQUIREMENTS

(a) All wells drilled for oil or natural gas shall be completed with a string of casing which shall be properly cemented at a sufficient depth to protect adequately the oil or natural gas bearing strata to be produced. In addition thereto, such other casing and cement shall be used as necessary in order to seal off all oil, gas, and water strata which may be encountered in the well, except the interval(s) to be produced.

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Sufficient cement shall be used on surface casing to fill the annular space back of the casing to the top of the hole, provided however, that authorized field personnel of the Commission may, at their discretion, allow deviations from the foregoing requirement when known conditions in a given area render the same impracticable.

All cementing shall be by pump and plug method unless some other method is expressly authorized by the Commission.

All casing strings shall be tested and proved satisfactory as provided in paragraph (c) below.

(b) After cementing, but before commencing tests required in paragraph (c) below, all casing strings shall stand cemented in accordance with Option 1 or Option 2 below. Regardless of which option is taken, the casing shall remain stationary and under pressure for at least eight hours after the cement has been placed. Casing shall be considered to be "under pressure" if some acceptable means of holding pressure is used or if one or more float valves are employed to hold the cement in place.

Option 1. Allow all casing strings to stand cemented a minimum of eighteen (18) hours prior to commencing tests. Operators using this option shall report on Form C-103 the actual time the cement was in place before initiating tests.

Option 2. (May be used in the Counties of San Juan, Rio Arriba, McKinley, Sandoval, Lea, Eddy, Chaves, and Roosevelt only.) Allow all casing strings to stand cemented until the cement has reached a compressive strength of at least 500 pounds per square inch in the "zone of interest" before commencing tests, provided however, that no tests shall be commenced until the cement has been in place for at least eight (8) hours.

The "zone of interest" for surface and intermediate casing strings shall be the bottom 20 percent of the casing string, but shall be no more than 1000 feet nor less than 300 feet of the bottom part of the casing unless the casing is set at less than 300 feet. The "zone of interest" for production casing strings shall include the interval or intervals where immediate completion is contemplated.

To determine that a minimum compressive strength of 500 pounds per square inch has been attained, operators shall use the typical performance data for the particular cement mix used in the well, at the minimum temperature indicated for the zone of interest by Figure 107-A, Temperature Gradient Curves. Typical performance data used shall be that data furnished by the cement manufacturer or by a competent materials testing agency, as determined in accordance with the latest edition of API Code RP 10 B "Recommended Practice for Testing Oil-Well Cements."

Operators using the compressive strength criterion (Option 2) shall report the following information on Form C-103:

1. Volume of cement slurry (cubic feet).
2. Brand name of cement and additives, percent additives used, and sequence of placement if more than one type cement slurry is used.
3. Approximate temperature of cement slurry when mixed.
4. Estimated minimum formation temperature in zone of interest.
5. Estimate of cement strength at time of testing.
6. Actual time cement in place prior to starting casing test.

(c) All casing strings except conductor pipe shall be tested after cementing and before commencing any other operations on the well. Form C-103 shall be filed for each casing string reporting the grade and weight of pipe used. In the case of combination strings utilizing pipe of varied grades or weights, the footage of each grade and weight used shall be reported. The results of the casing test, including actual pressure held on pipe and the pressure drop observed shall also be reported on the same Form C-103.

(1) Casing strings in wells drilled with rotary tools shall be pressure tested. Minimum casing test pressure shall be approximately one-third of the manufacturer's rated internal yield pressure except that the test pressure shall not be less than 600 pounds per square inch and need not be greater than 1500 pounds per square inch. In cases where combination strings are involved, the above test pressures shall apply to the lowest pressure rated casing used. Test pressures shall be applied for a period of 30 minutes. If a drop of more than 10 percent of the test pressure should occur, the casing shall be considered defective and corrective measures shall be applied.

(2) Casing strings in wells drilled with cable tools may be tested as outlined in sub-paragraph (c) (1) above, or by bailing the well dry in which case the hole must remain satisfactorily dry for a period of at least one (1) hour before commencing any further operations on the well.

- (d)
- (1) All flowing oil wells shall be tubed.
 - (2) All gas wells shall be tubed.
 - (3) Tubing shall be set as near the bottom as practical and tubing perforations shall not be more than 250 feet above the top of the pay.

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- (4) The Secretary-Director of the Commission may, upon proper application, grant administrative exceptions to the provisions of sub-paragraphs (2) and (3) above, without notice and hearing, provided waste will not be caused thereby.

DONE at Santa Fe, New Mexico, on the day and year herein-
above designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION



EDWIN L. MECHEM, Chairman



MURRAY E. MORGAN, Member



A. L. PORTER, Jr., Member & Secretary

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FIG. 107-A
TEMPERATURE GRADIENT
CURVES, NW & SE NEW MEXICO

