

CASE 4692: MOTION OF OCC TO AMEND  
GAS WELL TESTING PROCEDURES  
PROMULGATED BY ORDER NO. R-333-F.

Case Number  
4692

Application

Transcripts

Small Exhibits

ETC.

dearnley-meier reports

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BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
COUNTRY CLUB  
HOBBS, NEW MEXICO  
April 19-20, 1972

EXAMINER HEARING

IN THE MATTER OF:

Case No. 4692

The hearing called by the Oil  
Conservation Commission on its  
own motion for the amendment of  
the gas well testing procedures  
promulgated by Order No. R-333-F,  
as amended, for Northwest, New  
Mexico.

BEFORE: Alex Armijo  
Examiner

A. L. Porter, Jr.  
Examiner

TRANSCRIPT OF HEARING

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1 MR. PORTER: We will take up Case 4692.

2 MR. HATCH: This is in the matter of the Hearing  
 3 called by the Commission on its own Motion to amend the  
 4 testing procedure promulgated by Order R-333 F.

5 ELVIS UTZ,

6 was called as a witness, and after being sworn according  
 7 to law, testified as follows:

8 DIRECT EXAMINATION

9 BY MR. HATCH:

10 Q Would you state your name and position for the  
 11 record, again?

12 A Elvis Utz, Engineer for the Oil Conservation Commission.

13 Q I think you have already testified that you are  
 14 familiar with gas prorationing and you just testified  
 15 in the previous case as a gas engineer.

16 Are you also familiar with gas well testing  
 17 requirements for northwest New Mexico?

18 A Yes, I am.

19 Q Are you familiar with Case 4692, and what it  
 20 proposes?

21 A Yes, I am.

22 Q What are the purposes of the changes that you  
 23 are going to recommend in this Case?

24 A The purpose of revising Order R-333 F is to have the  
 25 Order read in accordance with my recommendations of

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1 a one year prorating period.

2 This Order has to do with the testing of gas  
3 wells in northwest New Mexico.

4 Q You would not recommend these changes unless the  
5 Commission sees fit to go to the one year proration  
6 period?

7 A No, sir.

8 Q Do you have some Exhibits here?

9 A Yes.

10 Q In this Case, Exhibit 3 -- would you go through each  
11 of the proposed changes in R-333 F.

12 A Yes, I will be glad to.

13 The first page of the Exhibit -- by the way,  
14 what Exhibit is this?

15 MR. HATCH: It has been marked Exhibit 1 in  
16 Case 4692.

17 A Exhibit 1 shows my recommendations for the changes  
18 in Rule 33 F.

19 In Section 2 entitled "Distribution of Shut-in  
20 Pressure Tests" I recommend the following -- I don't  
21 believe I will read that in its entirety, I have  
22 underlined the changes here and they show what the  
23 old Rule was -- will that be satisfactory?

24 Q Yes.

25 A You will note that the paragraph has underlined

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1 December 1st through the following November 30th.

2 The way the old Rule reads is shown on the  
3 second page and is circled.

4 All this does is move the testing period up  
5 one month to coincide with the January 1st prorationing  
6 recommendation in the previous case.

7 Under sub-paragraph 1, you will note that  
8 September 30th is underlined and this also moves  
9 the end of this period from October 30th up to  
10 September 30th.

11 Under sub-paragraph B, you will note that  
12 60 days is underlined. This is not a recommended  
13 change here, this was already changed in R-333 G.

14 However, the dates, November 1st, November 30th,  
15 and December 10th, in the last paragraph, on the last  
16 line of the paragraph, these are the recommended  
17 changes for sub-paragraph B. The old reading is also  
18 shown on the following page.

19 Q The only changes are the changes in the dates?

20 A That is correct.

21 Under Section 3, scheduling tests, these likewise  
22 have only the dates changed. You will note that  
23 November 1st, December 1st, and January 1st are  
24 underlined and constitute the entire change that  
25 I recommend.

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1 The old reading is also shown on the following  
 2 page.

3 In addition to these recommendations, I am  
 4 at this time, going to recommend that we change the  
 5 designation of R-333 F and incorporate it with R-333 G  
 6 so that the entire Order will read as a current,  
 7 active Order rather than having to go to two Orders  
 8 to read the entire Order.

9 You will note on the second page -- or the  
 10 third page of this Exhibit, you will note that the  
 11 reading there is in accordance with R-333 G and I  
 12 recommend that we call it something else so that  
 13 we have the entire Order in one Order.

14 Q Do pages 2 and 3 accurately express the Commission  
 15 Order?

16 A Yes.

17 MR. HATCH: That's all I have.

18 MR. PORTER: Any questions of Mr. Utz?

19 (No response.)

20 MR. HATCH: We would like to introduce Exhibit 1.

21 MR. PORTER: If there is no objection, Exhibit 1  
 22 will be admitted.

23 (Whereupon, Exhibit 1 was admitted in evidence.)

24 MR. PORTER: Are there any additional questions  
 25 of Mr. Utz?

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1 (No response.)

2 MR. PORTER: The witness may be excused.

3 (Witness excused.)

4 MR. PORTER: Does anyone desire to put on any  
5 testimony or make any statements?

6 MR. MANNING: E. R. Manning, of El Paso Natural  
7 Gas. El Paso Natural Gas foresees no problem with the Oil  
8 Commission's proposal for the amendment of Rule R-333 F.

9 It seems appropriate that if we start a  
10 prorationing period on January 1st of each year, then we  
11 should change our tests to conform with the prorationing  
12 period.

13 MR. PORTER: Anyone else?

14 (No response.)

15 MR. PORTER: The Commission will take the case  
16 under advisement.

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1 STATE OF NEW MEXICO )  
2 ) ss  
3 COUNTY OF BERNALILLO )

4 I, RICHARD E. McCORMICK, a Certified Shorthand  
5 Reporter, in and for the County of Bernalillo, State of New  
6 Mexico, do hereby certify that the foregoing and attached  
7 Transcript of Hearing before the New Mexico Oil Conservation  
8 Commission was reported by me; and that the same is a true  
9 and correct record of the said proceedings to the best of  
10 my knowledge, skill and ability.

11 *Richard E. McCormick*  
12 CERTIFIED SHORTHAND REPORTER  
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I N D E X

<u>WITNESS:</u>	<u>PAGE</u>
ELVIS UTZ	
Direct Examination by Mr. Hatch	3

E X H I B I T S

	<u>ADMITTED</u>	<u>OFFERED</u>
Exhibit 1, Utz's Recommended		
Changes for Rule 333 F	6	4

BEFORE THE OIL CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO

CASE NO. 4692  
Order No. R-333-H-1

IN THE MATTER OF THE HEARING CALLED  
BY THE OIL CONSERVATION COMMISSION  
ON ITS OWN MOTION FOR THE AMENDMENT  
OF THE GAS WELL TESTING PROCEDURES  
PROMULGATED BY ORDER NO. R-333-F, AS  
AMENDED, FOR NORTHWEST, NEW MEXICO.

NUNC PRO TUNC ORDER

BY THE COMMISSION:

It appearing to the Commission that due to clerical error and inadvertence, Order (3) of Order No. R-333-H, dated May 11, 1972, does not correctly state the intended order of the Commission,

IT IS THEREFORE ORDERED:

(1) That Order (3) on Page 2 of Order No. R-333-H, dated May 11, 1972, is hereby corrected to read in its entirety as follows:

"B. All Annual Deliverability and Shut-In Pressure Tests required by these rules must be filed with the Commission's Aztec office and with the appropriate gas transportation facility within 60 days following the completion of each test. Provided however, that any test completed between November 1 and November 30 must be filed not later than December 10. Failure to file any test within the above-prescribed times will subject the well to the loss of one day's allowable for each day the test is late. No extension of time for filing tests beyond December 10 will be granted except after notice and hearing."

(2) That this order shall be effective nunc pro tunc as of May 11, 1972.

DONE at Santa Fe, New Mexico, this 2nd day of June, 1972.

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

  
BRUCE KING, Chairman

ALEX J. ARMILLO, Member

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

BEFORE THE OIL CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING CALLED  
BY THE OIL CONSERVATION COMMISSION  
ON ITS OWN MOTION FOR THE AMENDMENT  
OF THE GAS WELL TESTING PROCEDURES  
PROMULGATED BY ORDER NO. R-333-F, AS  
AMENDED, FOR NORTHWEST, NEW MEXICO.

CASE NO. 4692  
Order No. R-333-H

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 19, 1972, at Hobbs, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 11th day of May, 1972, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, 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 Commission Order No. R-333-F, as amended by Commission Order No. R-333-G, sets forth the testing procedure for gas wells completed in San Juan, Rio Arriba, McKinley, and Sandoval Counties, New Mexico.

(3) That said testing procedure was adapted to six-month proration periods for wells in prorated gas pools.

(4) That Order No. R-1670-K established one-year proration periods for wells in prorated gas pools.

(5) That Order No. R-333-F, as amended by Order No. R-333-G, should be amended to adapt the testing rules and procedures for gas wells in Northwest New Mexico to one-year proration periods.

IT IS THEREFORE ORDERED:

(1) That Sub-Section A. of Chapter I, Section 2, Order No. R-333-F, as amended, is hereby amended to read as follows:

"A. Annual Deliverability and Shut-In Pressure Tests shall be made on all gas wells during the period from December 1 through the following November 30 each year except as follows:"

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CASE NO. 4692

Order No. R-333-H

(2) That Paragraph 1. of Sub-Section A. of Chapter I, Section 2, Order No. R-333-F, as amended, is hereby amended to read as follows:

"1. An Annual Deliverability and Shut-In Pressure Test will not be required during the current year for any well connected to a gas transportation facility after September 30. Such tests may be taken at the option of the operator of the well, however."

(3) That Sub-Section B. of Chapter I, Section 2, Order No. R-333-F, as amended, is hereby amended to read as follows:

"B. All Annual Deliverability and Shut-In Pressure Tests required by these rules must be filed with the Commission's Aztec office and with the appropriate gas transportation facility within 60 days after the end of the month during which the test is completed. Provided however, that any test completed between November 1 and November 30 must be filed not later than December 10. Failure to file any test within the above-prescribed times will subject the well to the loss of one day's allowable for each day the test is late. No extension of time for filing tests beyond December 10 will be granted except after notice and hearing."

(4) That Sub-Section A. of Chapter I, Section 3, Order No. R-333-F, as amended, is hereby amended to read as follows:

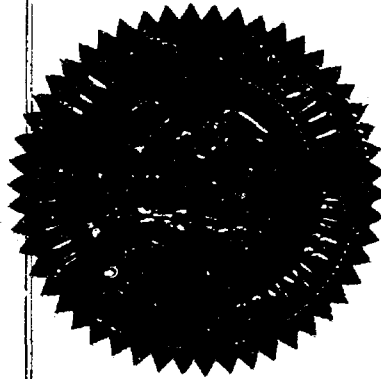
"A. Annual Deliverability Tests

By November 1 of each year, each gas transportation facility shall, in cooperation with the operators involved, prepare and submit a schedule of the wells to which it is connected which are to be tested during the ensuing December and January. Said schedule shall be entitled, "Annual Deliverability and Shut-In Pressure Test Schedule," and shall be submitted in triplicate to the Commission's Aztec office. At least one copy shall also be furnished each operator concerned. The schedule shall indicate the date of tests, pool, operator, lease, well number, and location of each well. At least 30 days prior to the beginning of each succeeding 2-month testing interval, a similar schedule shall be prepared and filed in accordance with the above."

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CASE NO. 4692  
Order No. R-333-H

(5) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.



STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

*Bruce King*  
BRUCE KING, Chairman

*Alex J. Armijo*  
ALEX J. ARMILLO, Member

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

S E A L

dr/

(SAN JUAN BASIN AREA (GAS WELL TESTING  
RULES AND PROCEDURES) - Cont'd.)

ducted in conformance with the Annual Deliverability Test Procedures of these rules. The Commission, at its discretion, may require the re-testing of any well by notification to the operator to schedule such re-test.

## Section 4: Witnessing of Tests

Any Initial or Annual Deliverability and Shut-In Pressure Test may be witnessed by any or all of the following: an agent of the Commission, an offset operator, a representative of the gas transportation facility connected to the well under test, or a representative of the gas transportation facility taking gas from an offset operator.

## CHAPTER II PROCEDURE FOR TESTING

## Section 1: Initial Deliverability and Shut-In Pressure Test Procedure

A. Within 60 days after a newly completed well is connected to a gas transportation facility, the operator shall complete a deliverability and shut-in pressure test of the well in conformance with the "Annual Deliverability and Shut-In Pressure Test Procedures" prescribed in Section 2 of this chapter. Results of the test shall be filed as required by Section 1 of Chapter I of these rules.

B. In the event it is impractical to test a newly completed well in conformance with Paragraph A above, the operator may conduct the deliverability and shut-in pressure test in the following manner (provided, however, that any test so conducted will not be accepted as the first annual deliverability and shut-in pressure test as described in Paragraph A-2 of Section 2, Chapter I):

1. A 7- or 8-day production chart may be used as the basis for determining the well's deliverability, providing the chart so used is preceded by at least 14 days continuous production. The well shall produce through either the casing or tubing, but not both, into a pipeline during these periods. The production valve and the choke settings shall not be changed during either the conditioning or flow period with the exception of the first week of the conditioning period when maximum production would over-range the meter chart or location production equipment.

2. A shut-in pressure of at least seven days duration shall be taken. This shall be the shut-in test required in Paragraph A, Section 1 of Chapter I of these rules.

3. The average daily static meter pressure shall be determined in accordance with Section 2 of Chapter II of these rules. This pressure shall be used as  $P_t$  in calculating  $P_w$  for the Deliverability Calculation.

4. The daily average rate of flow shall be determined in accordance with Section 2 of Chapter II.

5. The static wellhead working pressure ( $P_w$ ) shall be determined in accordance with Section 2 of Chapter II.

6. The deliverability of the well shall be determined by using the data determined in Paragraphs 1 through 5 above, in the deliverability formula in accordance with Section 2 of Chapter II.

7. The data and calculations for Paragraphs 1 through 6 above shall be reported as required in Section 1 of Chapter I of these rules, upon the blue-colored Form C-122-A.

## Section 2: Annual Deliverability and Shut-In Pressure Test Procedure

This test shall be taken by producing a well into the pipeline through either the casing or tubing, but not both. The production valve and choke settings shall not be changed during either the conditioning or flow periods except during the first seven days of the conditioning period when maximum production would over-range the meter chart or the location production equipment. The daily flowing rate shall be determined from an average of seven consecutive producing days, following a minimum conditioning period of 14 consecutive days production. The first seven days of said conditioning period shall have not more than one interruption, which interruption shall be no more than 36 continuous hours in duration. The eighth to fourteenth days, inclusive, of said conditioning period shall have no interruptions whatsoever. All production during

the 14-day conditioning period plus the 7-day deliverability test period shall be at static wellhead working pressures not in excess of 75 percent of the previous annual 7-day shut-in pressure of the well if such previous annual shut-in pressure information is available; otherwise, the 7-day initial deliverability shut-in pressure of the well shall be used.

In the event that the existing line pressure does not permit a drawdown as specified above with the well producing unrestrictedly into the pipeline, the operator shall request an exception to this requirement on Form C-122-A. The request shall state the reasons for the necessity for the exception.

Instantaneous pressures shall be measured by deadweight gauge during the 7-day flow period at the casinghead, tubing-head, and orifice meter, and shall be recorded along with instantaneous meter-chart static pressure reading.

When it is necessary to restrict the flow of gas between the wellhead and orifice meter, the ratio of the downstream pressure to the upstream pressure shall be determined. When this ratio is 0.57, or less, critical flow conditions shall be considered to exist across the restriction.

When more than one restriction between the wellhead and orifice meter causes the pressures to reflect critical flow between the wellhead and orifice meter, the pressures across each of these restrictions shall be measured to determine whether critical flow exists at any restriction. When critical flow does not exist at any restriction, the pressures taken to disprove critical flow shall be reported to the Commission on Form C-122-A in the "Remarks" section of the form. When critical flow conditions exist, the instantaneous flowing pressures required hereinabove shall be measured during the last 48 hours of the 7-day flow period.

When critical flow exists between the wellhead and orifice meter, the measured wellhead flowing pressure of the string through which the well flowed during test shall be used as  $P_t$  when calculating the static wellhead working pressure ( $P_w$ ) using the method established below.

When critical flow does not exist at any restriction,  $P_t$  shall be the corrected average static pressure from the meter chart plus friction loss from the wellhead to the orifice meter.

The static wellhead working pressure ( $P_w$ ) of any well under test shall be the calculated 7-day average static tubing pressure if the well is flowing through the casing; it shall be the calculated 7-day average static casing pressure if the well is flowing through the tubing. The static wellhead working pressure ( $P_w$ ) shall be calculated by applying the tables and procedures set out in the New Mexico Oil Conservation Commission Manual entitled "Method of Calculating Pressure Loss Due to Friction in Gas Well Flow Strings for San Juan Basin."

(As Amended by Order No. R-333-G, February 1, 1972)

To obtain the shut-in pressure of a well under test, the well shall be shut in some time during the annual testing season for a period of seven to fourteen consecutive days. Such shut-in pressure shall be measured during the eighth to fifteenth day following shutting in of the well. The 7-day shut-in pressure shall be measured on both the tubing and the casing when communication exists between the two strings. The higher of such pressures shall be used as  $P_c$  in the deliverability calculation. When any such shut-in pressure is determined by the Commission to be abnormally low, the shut-in pressure to be used shall be determined by one of the following methods:

1. A Commission-designated value.

2. An average shut-in pressure of all offset wells completed in the same zone.

3. A calculated surface pressure based on a measured bottom-hole pressure. Such calculation shall be made in accordance with the New Mexico Oil Conservation Commission "Back Pressure Manual," Example No. 7.

All wellhead pressures as well as the flowing meter pressure tests which are to be taken during the 7-day deliverability test period as required hereinabove shall be taken with a deadweight gauge. The deadweight reading and the date and time according to the chart shall be recorded and maintained in the operator's records with the test information.

CASE 4692: In the matter of the hearing called by the Oil Conservation Commission on its own motion for the amendment of the gas well testing procedures promulgated by Order No. R-333-F, as amended, for Northwest New Mexico. The Commission will consider changing certain dates as set forth in said Order No. R-333-F, as amended, to adapt the testing rules and procedures for gas wells in Northwest New Mexico to a one-year proration period beginning January 1 of each year, and to incorporate said rules and procedures into one order.

CASE 4693: In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider instituting gas prorationing in the South Carlsbad-Morrow Gas Pool, Eddy County, New Mexico. The Commission will consider fixing the total allowable natural gas production from the South Carlsbad-Morrow Gas Pool, Eddy County, New Mexico, at an amount equal to reasonable market demand and to the capacity of gas transportation facilities. The Commission will also consider adoption of special rules and regulations for the pool including provisions for allocating the allowable production among the wells in the pool and a proration period of one year.

CASE 4694: In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider instituting gas prorationing in the South Carlsbad-Strawn Gas Pool, Eddy County, New Mexico. The Commission will consider fixing the total allowable natural gas production from the South Carlsbad-Strawn Gas Pool, Eddy County, New Mexico, at an amount equal to reasonable market demand and to the capacity of gas transportation facilities. The Commission will also consider adoption of special rules and regulations for the pool including provisions for allocating the allowable production among the wells in the pool and a proration period of one year.

CASE 4695: Southeastern New Mexico nomenclature case calling for an order for the creation and extension of certain pools in Lea, Eddy and Chaves Counties, New Mexico.

(a) Create a new pool in Eddy County, New Mexico, classified as a gas pool for Morrow production and



Amend R-333-F

BEFORE THE OIL CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING CALLED  
BY THE OIL CONSERVATION COMMISSION  
ON ITS OWN MOTION FOR THE AMENDMENT  
OF THE GAS WELL TESTING PROCEDURES  
PROMULGATED BY ORDER NO. R-333-F, AS  
AMENDED, FOR NORTHWEST, NEW MEXICO.

CASE NO. 4692  
Order No. R-333-H

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 19, 1972, at Hobbs, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 11th day of May, 1972, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, 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 Commission Order No. R-333-F, as amended by Commission Order No. R-333-G, sets forth the testing procedure for gas wells completed in San Juan, Rio Arriba, McKinley, and Sandoval Counties, New Mexico.

(3) That said testing procedure was adapted to six-month proration periods for wells in prorated gas pools.

(4) That Order No. R-1670-K established one-year proration periods for wells in prorated gas pools.

(5) That Order No. R-333-F, as amended by Order No. R-333-G, should be amended to adapt the testing rules and procedures for gas wells in Northwest New Mexico to one-year proration periods.

IT IS THEREFORE ORDERED:

(1) That Sub-Section A. of Chapter I, Section 2, Order No. R-333-F, as amended, is hereby amended to read as follows:

"A. Annual Deliverability and Shut-In Pressure Tests shall be made on all gas wells during the period from December 1 through the following November 30 each year except as follows:"

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CASE NO. 4692  
Order No. R-333-H

(2) That Paragraph 1. of Sub-Section A. of Chapter I, Section 2, Order No. R-333-F, as amended, is hereby amended to read as follows:

"1. An Annual Deliverability and Shut-In Pressure Test will not be required during the current year for any well connected to a gas transportation facility after September 30. Such tests may be taken at the option of the operator of the well, however."

(3) That Sub-Section B. of Chapter I, Section 2, Order No. R-333-F, as amended, is hereby amended to read as follows:

"B. All Annual Deliverability and Shut-In Pressure Tests required by these rules must be filed with the Commission's Aztec office and with the appropriate gas transportation facility *the completion of each test.* within 60 days after the end of the month during which the test is completed. Provided however, that any test completed between November 1 and November 30 must be filed not later than December 10. Failure to file any test within the above-prescribed times will subject the well to the loss of one day's allowable for each day the test is late. No extension of time for filing tests beyond December 10 will be granted except after notice and hearing.

(4) That Sub-Section A. of Chapter I, Section 3, Order No. R-333-F, as amended, is hereby amended to read as follows:

"A. Annual Deliverability Tests

By November 1 of each year, each gas transportation facility shall, in cooperation with the operators involved, prepare and submit a schedule of the wells to which it is connected which are to be tested during the ensuing December and January. Said schedule shall be entitled, "Annual Deliverability and Shut-In Pressure Test Schedule," and shall be submitted in triplicate to the Commission's Aztec office. At least one copy shall also be furnished each operator concerned. The schedule shall indicate the date of tests, pool, operator, lease, well number, and location of each well. At least 30 days prior to the beginning of each succeeding 2-month testing interval, a similar schedule shall be prepared and filed in accordance with the above."

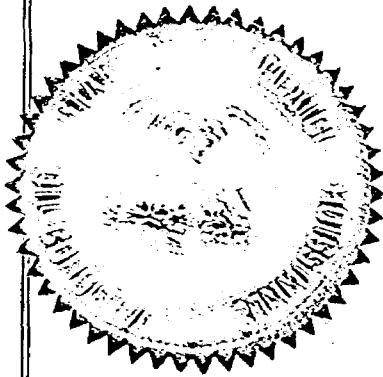
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CASE NO. 4692

Order No. R-333-II

(5) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.



STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

*Bruce King*  
BRUCE KING, Chairman

*Alex J. Armijo*  
ALEX J. ARMILLO, Member

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

S E A L

dr/

RULES GOVERNING DELIVERABILITY TESTING IN  
NORTHWEST NEW MEXICO

CHAPTER I TYPE OF TESTS REQUIRED

Section 2: Annual Deliverability and Shut-In Pressure Tests

- A. Annual Deliverability and Shut-In Pressure Tests shall be made on all gas wells during the period from December 1 through the following November 30 each year except as follows:
1. An Annual Deliverability and Shut-In Pressure Test will not be required during the current year for any well connected to a gas transportation facility after September 30. Such tests may be taken at the option of the operator of the well, however.
- B. All Annual Deliverability and Shut-In Pressure Tests required by these rules must be filed with the Commission's Aztec office and with the appropriate gas transportation facility within 60 days after the end of the month during which the test is completed. Provided however, that any test completed between November 1 and November 30 must be filed not later than December 10. Failure to file any test within the above-prescribed times will subject the well to the loss of one day's allowable for each day the test is late. No extension of time for filing tests beyond December 10 will be granted except after notice and hearing.

Section 3: Scheduling of Tests

A. Annual Deliverability Tests

By November 1 of each year, each gas transportation facility shall, in cooperation with the operators involved, prepare and submit a schedule of the wells to which it is connected which are to be tested during the ensuing December and January. Said schedule shall be entitled, "Annual Deliverability and Shut-In Pressure Test Schedule," and shall be submitted in triplicate to the Commission's Aztec office. At least one copy shall also be furnished each operator concerned. The schedule shall indicate the date of tests, pool, operator, lease, well number, and location of each well. At least 30 days prior to the beginning of each succeeding 2-month testing interval, a similar schedule shall be prepared and filed in accordance with the above.

EXHIBIT 41

**SAN JUAN BASIN AREA**  
(Gas Well Testing Rules and Procedures)  
San Juan, Rio Arriba, McKinley and Sandoval Counties,  
New Mexico

Order No. R-333-F, Adopting Revised Gas Well Testing Rules and Procedures for the San Juan Basin Area, San Juan, Rio Arriba, McKinley and Sandoval Counties, New Mexico, November 30, 1962, as Amended by Order No. R-333-G, February 1, 1972.

Order No. R-333-F Supersedes Order No. R-333, June 17, 1953, as Superseded by Order No. R-333-A, June 10, 1954, Order No. R-333-B, May 9, 1955, Order No. R-333-C & D, October 13, 1955, as Amended by Order No. R-333-E, January 28, 1958.

See separate Order No. R-3673, granting exception to annual deliverability and shut-in pressure testing for the San Juan Basin Area.

The Application of the Oil Conservation Commission Upon Its Own Motion for an Order Revising, Amending, or Deleting Certain Portions of Order R-333-C & D as Amended by Order R-333-E Pertaining to Gas Well Testing Procedure Applicable to Gas Wells Completed in San Juan, Rio Arriba, McKinley, and Sandoval Counties, New Mexico.

CASE NO. 2695  
Order No. R-333-F

**ORDER OF THE COMMISSION**

BY THE COMMISSION: This cause came on for hearing at 9 o'clock a. m. on November 2, 1962, at Santa Fe, New Mexico, before Daniel S. Nutter, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 30th day of November, 1962, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Daniel S. Nutter, 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 there is need for a number of additions to and revisions of Order No. R-333-C & D as amended by Order No. R-333-E, heretofore entered by the Commission, said order outlining a testing procedure for gas wells completed in the Counties of San Juan, Rio Arriba, McKinley, and Sandoval, New Mexico.

(3) That the following rules and regulations should be adopted, and that said rules and regulations are in the interest of conservation.

**IT IS THEREFORE ORDERED:**

(1) That the following Special Rules and Regulations governing gas well testing in the San Juan Basin (Counties of San Juan, Rio Arriba, McKinley, and Sandoval, New Mexico), superseding the rules and regulations contained in Commission Order No. R-333-C & D, as amended by Order No. R-333-E, are hereby promulgated and adopted as an exception to Rules 401 and 402 of the general statewide rules and regulations of this Commission relating to gas well testing procedures.

**GAS WELL TESTING RULES AND PROCEDURES**  
**SAN JUAN BASIN, NEW MEXICO**

**CHAPTER I TYPES OF TESTS REQUIRED**

Section 1: Initial Deliverability and Shut-In Pressure Tests for Newly Completed Wells

A. Immediately upon completion of each gas well in the San Juan Basin, a shut-in pressure test of at least seven days duration shall be made.

B. Within 60 days after a well is connected to a gas transportation facility, the well shall have been tested in accordance

with Section 1 of Chapter II of these rules, "Initial Deliverability and Shut-In Pressure Test Procedures," and the results of the test filed with the Commission's Aztec office and with the gas transportation facility to which the well is connected. Failure to file said test within the above-prescribed 60-day period will subject the well to the loss of one day's allowable for each day the test is late.

C. The requirements for Initial Tests and Annual Deliverability and Shut-In Pressure Tests and the notification requirements and scheduling of such tests which apply to newly completed wells shall also apply to reworked or recompleted wells.

D. Any tests taken for informational purposes prior to pipeline connection shall not be recognized as official tests for the assignment of allowables.

Section 2: Annual Deliverability and Shut-In Pressure Tests  
A. Annual Deliverability and Shut-In Pressure Tests shall be made on all gas wells during the period from January 1 through December 31 each year except as follows:

1. An Annual Deliverability and Shut-In Pressure Test will not be required during the current year for any well connected to a gas transportation facility after October 31. Such tests may be taken at the option of the operator of the well, however.

2. When the Initial Deliverability and Shut-In Pressure Test required by Section 1-B above has been taken in accordance with the annual testing procedure outlined in Section 2 of Chapter II of these rules, the initial test may be considered the annual test for the year in which the test was completed. Provided however, that if an operator intends to use such initial test as the first annual test, he must notify the Commission and the gas transportation facility to which the well is connected of his intent in writing prior to the conclusion of the 14-day conditioning period.

B. (As Amended by Order No. R-333-G, February 1, 1972.)

Annual Deliverability and Shut-In Pressure Tests required by these rules must be filed with the Commission's Aztec office and with the appropriate gas transportation facility within 60 days following the completion of each test. Provided however, that any test completed between December 1 and December 31 must be filed not later than January 10. Failure to file any test within the above-prescribed times will subject the well to the loss of one day's allowable for each day the test is late. No extension of time for filing tests beyond January 10 will be granted except after notice and hearing.

Section 3: Scheduling of Tests

A. Annual Deliverability Tests

By December 1 of each year, each gas transportation facility shall, in cooperation with the operators involved, prepare and submit a schedule of the wells to which it is connected which are to be tested during the ensuing January and February. Said schedule shall be entitled, "Annual Deliverability and Shut-In Pressure Test Schedule," and shall be submitted in triplicate to the Commission's Aztec office. At least one copy shall also be furnished each operator concerned. The schedule shall indicate the date of tests, pool, operator, lease, well number, and location of each well. At least 30 days prior to the beginning of each succeeding 2-month testing interval, a similar schedule shall be prepared and filed in accordance with the above.

(As Amended by Order No. R-333-G, February 1, 1972)

The gas transportation facility shall be notified immediately by any operator unable to conduct any test as scheduled. In the event a well is not tested in accordance with the test schedule, the well shall be re-scheduled by the gas transportation facility, and the Commission and the operator of the well so notified in writing. Notice to the Commission must be received prior to the conclusion of the 14-day conditioning period. Notice to the Commission of shut-in pressure tests which are scheduled at a time other than immediately following the flow test must be received prior to the time that the well is shut-in.

B. Deliverability Re-Tests

An operator may, in cooperation with the gas transportation facility, schedule a well for a deliverability re-test upon notification to the Commission's Aztec office at least ten days before the test is to be commenced. Such re-test shall be for good and substantial reason, and shall be subject to the approval of the Commission. Re-tests shall in all ways be con-

(SAN JUAN BASIN AREA (GAS WELL TESTING  
RULES AND PROCEDURES) - Cont'd.)

ducted in conformance with the Annual Deliverability Test Procedures of these rules. The Commission, at its discretion, may require the re-testing of any well by notification to the operator to schedule such re-test.

## Section 4: Witnessing of Tests

Any Initial or Annual Deliverability and Shut-In Pressure Test may be witnessed by any or all of the following: an agent of the Commission, an offset operator, a representative of the gas transportation facility connected to the well under test, or a representative of the gas transportation facility taking gas from an offset operator.

## CHAPTER II PROCEDURE FOR TESTING

## Section 1: Initial Deliverability and Shut-In Pressure Test Procedure

A. Within 60 days after a newly completed well is connected to a gas transportation facility, the operator shall complete a deliverability and shut-in pressure test of the well in conformance with the "Annual Deliverability and Shut-In Pressure Test Procedures" prescribed in Section 2 of this chapter. Results of the test shall be filed as required by Section 1 of Chapter I of these rules.

B. In the event it is impractical to test a newly completed well in conformance with Paragraph A above, the operator may conduct the deliverability and shut-in pressure test in the following manner (provided, however, that any test so conducted will not be accepted as the first annual deliverability and shut-in pressure test as described in Paragraph A-2 of Section 2, Chapter I):

1. A 7- or 8-day production chart may be used as the basis for determining the well's deliverability, providing the chart so used is preceded by at least 14 days continuous production. The well shall produce through either the casing or tubing, but not both, into a pipeline during these periods. The production valve and the choke settings shall not be changed during either the conditioning or flow period with the exception of the first week of the conditioning period when maximum production would over-range the meter chart or location production equipment.

2. A shut-in pressure of at least seven days duration shall be taken. This shall be the shut-in test required in Paragraph A, Section 1 of Chapter I of these rules.

3. The average daily static meter pressure shall be determined in accordance with Section 2 of Chapter II of these rules. This pressure shall be used as  $P_t$  in calculating  $P_w$  for the Deliverability Calculation.

4. The daily average rate of flow shall be determined in accordance with Section 2 of Chapter II.

5. The static wellhead working pressure ( $P_w$ ) shall be determined in accordance with Section 2 of Chapter II.

6. The deliverability of the well shall be determined by using the data determined in Paragraphs 1 through 5 above, in the deliverability formula in accordance with Section 2 of Chapter II.

7. The data and calculations for Paragraphs 1 through 6 above shall be reported as required in Section 1 of Chapter I of these rules, upon the blue-colored Form C-122-A.

## Section 2: Annual Deliverability and Shut-In Pressure Test Procedure

This test shall be taken by producing a well into the pipeline through either the casing or tubing, but not both. The production valve and choke settings shall not be changed during either the conditioning or flow periods except during the first seven days of the conditioning period when maximum production would over-range the meter chart or the location production equipment. The daily flowing rate shall be determined from an average of seven consecutive producing days, following a minimum conditioning period of 14 consecutive days production. The first seven days of said conditioning period shall have not more than one interruption, which interruption shall be no more than 36 continuous hours in duration. The eighth to fourteenth days, inclusive, of said conditioning period shall have no interruptions whatsoever. All production during

the 14-day conditioning period plus the 7-day deliverability test period shall be at static wellhead working pressures not in excess of 75 percent of the previous annual 7-day shut-in pressure of the well if such previous annual shut-in pressure information is available; otherwise, the 7-day initial deliverability shut-in pressure of the well shall be used.

In the event that the existing line pressure does not permit a drawdown as specified above with the well producing unrestrictedly into the pipeline, the operator shall request an exception to this requirement on Form C-122-A. The request shall state the reasons for the necessity for the exception.

Instantaneous pressures shall be measured by deadweight gauge during the 7-day flow period at the casinghead, tubinghead, and orifice meter, and shall be recorded along with instantaneous meter-chart static pressure reading.

When it is necessary to restrict the flow of gas between the wellhead and orifice meter, the ratio of the downstream pressure to the upstream pressure shall be determined. When this ratio is 0.57, or less, critical flow conditions shall be considered to exist across the restriction.

When more than one restriction between the wellhead and orifice meter causes the pressures to reflect critical flow between the wellhead and orifice meter, the pressures across each of these restrictions shall be measured to determine whether critical flow exists at any restriction. When critical flow does not exist at any restriction, the pressures taken to disprove critical flow shall be reported to the Commission on Form C-122-A in the "Remarks" section of the form. When critical flow conditions exist, the instantaneous flowing pressures required hereinabove shall be measured during the last 48 hours of the 7-day flow period.

When critical flow exists between the wellhead and orifice meter, the measured wellhead flowing pressure of the string through which the well flowed during test shall be used as  $P_t$  when calculating the static wellhead working pressure ( $P_w$ ) using the method established below.

When critical flow does not exist at any restriction,  $P_t$  shall be the corrected average static pressure from the meter chart plus friction loss from the wellhead to the orifice meter.

The static wellhead working pressure ( $P_w$ ) of any well under test shall be the calculated 7-day average static tubing pressure if the well is flowing through the casing; it shall be the calculated 7-day average static casing pressure if the well is flowing through the tubing. The static wellhead working pressure ( $P_w$ ) shall be calculated by applying the tables and procedures set out in the New Mexico Oil Conservation Commission Manual entitled "Method of Calculating Pressure Loss Due to Friction in Gas Well Flow Strings for San Juan Basin."

(As Amended by Order No. R-333-G, February 1, 1972)

To obtain the shut-in pressure of a well under test, the well shall be shut in some time during the annual testing season for a period of seven to fourteen consecutive days. Such shut-in pressure shall be measured during the eighth to fifteenth day following shutting in of the well. The 7-day shut-in pressure shall be measured on both the tubing and the casing when communication exists between the two strings. The higher of such pressures shall be used as  $P_c$  in the deliverability calculation. When any such shut-in pressure is determined by the Commission to be abnormally low, the shut-in pressure to be used shall be determined by one of the following methods:

1. A Commission-designated value.
2. An average shut-in pressure of all offset wells completed in the same zone.
3. A calculated surface pressure based on a measured bottom-hole pressure. Such calculation shall be made in accordance with the New Mexico Oil Conservation Commission "Back Pressure Manual," Example No. 7.

All wellhead pressures as well as the flowing meter pressure tests which are to be taken during the 7-day deliverability test period as required hereinabove shall be taken with a deadweight gauge. The deadweight reading and the date and time according to the chart shall be recorded and maintained in the operator's records with the test information.

GMH/dr

BEFORE THE OIL CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING CALLED  
BY THE OIL CONSERVATION COMMISSION  
ON ITS OWN MOTION FOR THE AMENDMENT  
OF THE GAS WELL TESTING PROCEDURES  
PROMULGATED BY ORDER NO. R-333-F, AS  
AMENDED, FOR NORTHWEST, NEW MEXICO.

CASE NO. 4692  
Order No. R-333-H

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 19, 1972, at Hobbs, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this \_\_\_\_\_ day of \_\_\_\_\_, 1972, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, 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 Commission Order No. R-333-F, as amended by Commission Order No. R-333-G, sets forth the testing procedure for gas wells completed in San Juan, Rio Arriba, McKinley, and Sandoval Counties, New Mexico.

(3) That said testing procedure was adapted to six-month proration periods for wells in prorated gas pools.

(4) That Order No. R 1670-K established one-year proration periods for wells in prorated gas pools.

(5) That Order No. R-333-F, as amended by Order No. R-333-G, should be amended to adopt the testing rules and procedures for gas wells in Northwest New Mexico to one-year proration periods.

IT IS THEREFORE ORDERED:



(1) That Sub-Section A. of Chapter I, Section 2, Order No. R-333-F, as amended, is hereby amended to read as follows:

"A. Annual Deliverability and Shut-In Pressure Tests shall be made on all gas wells during the period from December 1 through the following November 30 each year except as follows:"

(2) That Paragraph 1. of Sub-Section A. of Chapter I, Section 2, Order No. R-333-F, as amended, is hereby amended to read as follows:

"1. An Annual Deliverability and Shut-In Pressure Test will not be required during the current year for any well connected to a gas transportation facility after September 30. Such tests may be taken at the option of the operator of the well, however."

(3) That Sub-Section B. of Chapter I, Section 2, Order No. R-333-F, as amended, is hereby amended to read as follows:

"B. All Annual Deliverability and Shut-In Pressure Tests required by these rules must be filed with the Commission's Aztec office and with the appropriate gas transportation facility within 60 days after the end of the month during which the test is completed. Provided however, that any test completed between November 1 and November 30 must be filed not later than December 10. Failure to file any test within the above-prescribed times will subject the well to the loss of one day's allowable for each day the test is late. No extension of time for filing tests beyond December 10 will be granted except after notice and hearing.

↓  
(3) That Sub-Section A. of Chapter I, Section 3, Order No. R-333-F, as amended, is hereby amended to read as follows:

"A. Annual Deliverability Tests

By November 1 of each year, each gas transportation facility shall, in cooperation with the operators involved, prepare and submit a schedule of the wells to which it is connected which are to be tested during the ensuing December and January. Said schedule shall be entitled, "Annual Deliverability and Shut-In Pressure Test Schedule," and shall be submitted in triplicate to the Commission's Aztec office. At least one copy shall also be furnished each operator concerned. The schedule shall indicate the date of tests, pool, operator, lease, well number, and location of each well. At least 30 days prior to the beginning of each succeeding 2-month testing interval, a similar schedule shall be prepared and filed in accordance with the above."

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

BEFORE THE OIL CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO

CASE NO. 4692  
Order No. R-333-H-1

IN THE MATTER OF THE HEARING CALLED  
BY THE OIL CONSERVATION COMMISSION  
ON ITS OWN MOTION FOR THE AMENDMENT  
OF THE GAS WELL TESTING PROCEDURES  
PROMULGATED BY ORDER NO. R-333-F, AS  
AMENDED, FOR NORTHWEST, NEW MEXICO.

NUNC PRO TUNC ORDER

BY THE COMMISSION:

It appearing to the Commission that due to clerical error  
and inadvertence, <sup>Order (3) 7</sup> Order No. R-333-H, dated May 11, 1972, does  
not correctly state the intended order of the Commission,

IT IS THEREFORE ORDERED:

(1) That <sup>Order (3) 7</sup> paragraph ~~(3) B~~ on page 2 of Order No. R-333-H,  
dated May 11, 1972, is hereby corrected to read in its entirety  
as follows:

"B. All Annual Deliverability and Shut-In Pressure  
Tests required by these rules must be filed  
with the Commission's Aztec office and with  
the appropriate gas transportation facility  
within 60 days following the completion of  
each test. Provided however, that any test  
completed between November 1 and November 30  
must be filed not later than December 10.  
Failure to file any test within the  
above-prescribed times will subject the  
well to the loss of one day's allowable for  
each day the test is late. No extension of  
time for filing tests beyond December 10  
will be granted except after notice and  
hearing."

-2-

CASE NO. 4692

Order No. R-

(2) That this order shall be effective nunc pro tunc as of

May 11, 1972.

DONE at Santa Fe, New Mexico, this \_\_\_\_\_ day of

\_\_\_\_\_, 1972.