

BEFORE THE
OIL CONSERVATION COMMISSION
STATE OF NEW MEXICO

TRANSCRIPT OF HEARING
Case No. *314 + 319*

November 20, 1951

BEFORE THE
OIL CONSERVATION COMMISSION
STATE OF NEW MEXICO

- - -

In Re:

Cases concerned with the Knowles)
(Devonian) pool and the Hightower)
(Devonian) pool, Lea County, re-)
spectively. In both the Commission)
is considering advisability of pres-)
sure maintenance or other secondary)
recovery methods, or advisability of)
40-acre spacing for the prevention)
of waste and the protection of correl-)
ative rights. In both cases, Amerada)
Petroleum Corporation is principal)
operator.)

Case No. 314 and 319

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TRANSCRIPT OF HEARING

November 20, 1951

(Notices of publication read by Mr. Kellahin.)

MR. SETH: If the Commission please, on behalf of the Amerada we request that the cases be continued until the January hearing. The Knowles case, I don't know what the number is, while pressures are continuing there is a decline in production and they are doing remedio work on Well No. 2 and it will take 30 to 60 days. In the High-towers they are drilling a well and it will be completed in 30 or 60 days and may furnish further information in the matter.

CHAIRMAN SPURRIER: Thank you. Does anyone have any comment or testimony to present in these two cases? If not, without objection, they will be continued to the regular hearing, which date has not yet been definitely set. The next case and the final case is Case No. 254.

STATE OF NEW MEXICO)
COUNTY OF BERNALILLO) ss

I HEREBY CERTIFY that the foregoing and attached Transcript of Proceedings in Case No. 314 and 319, before the Oil Conservation Commission, taken on November 20, 1951, is a true and correct record of the same to the best of my knowledge, skill and ability.

DATED at Albuquerque, New Mexico, _____,
1951.

REPORTER

OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

Transcript of Hearing

CASES 314 AND 319

January 22, 1952

**Henrickson's Reporting Service
2324 - 47th Street
Los Alamos, New Mexico**

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

January 22, 1952

Case 314 and 319: If the Commission please, cases 314 and 319 have been continued. Case 314 refers to spacing in the Knowles Pool in Lea County and Case 319 to the Hightower (Devonian) Pool in Lea County.

MR. SHEPARD: I'd like the record to show that the advertisement has been read.

VOICE: Mr. Oliver Seth representing Seth and Montgomery, appearing for Amerada. We would like, if the Commission please, to continue these two cases until sometime after February 27th or 28th.

MR. SHEPARD: Would you like to have them continued until the March hearing?

VOICE: That would be satisfactory.

MR. SHEPARD: Are there any objections? Without objection, cases 314 and 319 will be continued until the regular March hearing.

STATE OF NEW MEXICO)
) ss.
COUNTY OF LOS ALAMOS)

I hereby certify that the foregoing and attached transcript of hearing in Cases 314 and 319 before the Oil Conservation Commission on January 22, 1952, at Santa Fe is a true record of the same to the best of my knowledge, skill and ability.

DATED at Los Alamos, this 28th day of January, 1952.

Andrey M. Henrickson

My commission expires September 20, 1955.

BEFORE THE
OIL CONSERVATION COMMISSION
STATE OF NEW MEXICO

TRANSCRIPT OF PROCEEDINGS

CASE NO. ³¹⁹
~~317~~
Hightower

Regular Hearing
April 15, 1952

BEFORE THE
OIL CONSERVATION COMMISSION
STATE OF NEW MEXICO

IN THE MATTER OF:

(From October 23, 1951 hearing)
Similar in principle to Cases 314
and 319, this deals with spacing
in the Bagley-Siluro-Devonian
pool also. In it, the Oil Con-
servation Commission asks for order
directed to Amerada, Texas and
Pacific Coal and Oil Company, et al.,
setting forth approved spacing regu-
lations.

CASE NO. 315--

TRANSCRIPT OF PROCEEDINGS

April 15, 1952
Regular Hearing

MR. SPURRIER: Mr. Kellough, are you ready?

MR. KELLOUGH: Yes, sir.

MR. SPURRIER: The meeting will come to order, please.

MR. KELLOUGH: The last case is the Hightower 80 acre spacing case. The history of Hightower is not quite as lengthy as in the other pools.

In November, 1949, Amerada filed its application for the establishment of 80 acre spacing units for the Hightower Devonian pool.

At that time the State BTB #1 well (NW/4 NW/4 Sec. 26-12S-33E) had been completed in the Devonian formation at a depth of 10,090 to 10,200 feet.

The Roach well (NW/4 SW/4 Sec. 26-12S-33E) and the Gulf N.M.M.I. #1 well (SE/4 SE/4 Sec. 22-12S-33E) were then drilling, but not yet completed. Both of these wells resulted in dry holes in the Devonian.

The application asked that four sections be covered (Secs. 22, 23, 26, 27-12S-33E) and that all wells be located in the center of the NW and SE quarter of each governmental quarter section.

1. ORDER NO. 846

The application was heard by the Commission on November 1, 1949. There was no opposition. Evidence was offered in support of the allegations of the application.

On November 18, 1949, the Commission entered its Order

846 establishing 80 acre proration units comprising the E/2 and W/2 of each governmental quarter section. The order provided for wells to be located in the center of the NW and SE quarter of each quarter section with 150 feet tolerance. All wells were on the pattern locations.

The allowable for each 80 acre unit was a single top allowable with deep well adaption as for a regular 40 acre unit, "until such time as the Commission may issue such further and additional orders as may be deemed necessary herein."

Paragraph 9 of the order provided:

"That the Commission retains jurisdiction of this case for the purpose of issuing such further and additional orders as may seem necessary to meet changed conditions, preclude inequities and preserve correlative rights; all upon the motion of the Commission or upon the petition of any interested operator upon public hearing, after notice as provided by law."

Exhibit 1 is a copy of Order 846.

2. ADDITIONAL DEVELOPMENT

Since the entry of the order one additional oil well has been completed in the Devonian formation. That is State BTE #1 (SE/4 SW/4 Sec. 23-12S-33E). Five other Devonian dry holes have been drilled:

- (1) Gulf N.M.M.I. (SE/4 SE/4 Sec. 22)
- (2) State BTF #1 (SE/4 NW/4 Sec. 23)
- (3) State BTH #1 (NW/4 NE/4 Sec. 26)

(4) Roach (NW/4 SW/4 Sec. 26)

(5) BTB #2 (SW/4 NW/4 Sec. 26)

Exhibit 2 is a map showing the present Devonian development.

3. ISSUES INVOLVED IN PRESENT HEARING

The Commission has now, on its own motion, requested that Amerada show cause why the 80-acre spacing order now in effect for the Hightower pool should not be revoked. Exhibit 3 is a copy of the Notice for the present hearing.

The order expressly provides that the Commission retains jurisdiction to make such further orders "as may seem necessary to meet changed conditions, preclude inequities and preserve correlative rights." Thus the Commission has itself defined the scope of this hearing.

The order is final except for changed conditions. There is no inference that the Commission intended to reconsider the same issues heretofore presented.

Therefore, the question now properly before the Commission is whether there is a change of condition by reason of subsequent development which justifies the revocation of the 80 acre proration units or which is causing inequities.

The question of the allowable was temporary in the order and subject to review at any time.

Also, there is before the Commission the question of whether a pressure maintenance program is feasible at this time.

MR. KELLOUGH: We now offer into evidence Exhibit No. 1, which is the original 80-acre spacing order; Exhibit No. 2, which is the map of the Hightower Devonian; and Exhibit No. 3, which is a Notice of the present hearing.

JOHN A. VEEDER,

having been first duly sworn, testified as follows:

DIRECT EXAMINATION

By MR. KELLOUGH:

Q You are the Mr. Veeder who testified in a previous case before this Commission?

A That is right.

Q You are a Geologist for Amerada Petroleum Corporation?

A That is right.

MR. KELLOUGH: Are the qualifications of this witness acceptable?

MR. SPURRIER: Yes.

Q Mr. Veeder, since the last hearing on the Hightower case, will you state how many additional oil wells or dry holes have been drilled?

A Since the last hearing, one additional oil well has been completed and five Devonian dry holes have been drilled.

Q Are these oil wells and dry holes shown on the map which is Exhibit 2?

A All of these wells are shown on the map, Exhibit 2.

Q I hand you Exhibit 4 and ask you to state what that is.

A Exhibit 4 is Schlumberger and Amerada No. 1 State BTE.

Q Exhibit 5?

A Schlumberger on the Amerada No. 1 Roach.

Q Exhibit 6?

A Schlumberger on Amerada No. 1 State BTF.

Q Exhibit No. 7?

A Schlumberger on the No. 1 State BTH.

Q Exhibit No. 8.

A Amerada No. 2 State BTB.

Q Have all of the electric logs now been offered in evidence that effect the Devonian Hightower?

A All of Amerada's Schlumberger have been submitted.

MR. KELLOUGH: We offer in evidence Exhibits 4 through 8.

MR. SPURRIER: Without objection, they will be received.

Q I hand you Exhibit 9 and please state what that is.

A This is the tabulation of the pertinent drilling data. This will cover all the wells drilled in the Devonian in the Hightower field.

Q Including the original BTB No. 1 well? A That is right.

Q What data does that show?

A The sheet shows the well number, lease name, top of the Devonian with datum, top of Devonian pay with datum, Devonian cap and the Devonian completion history.

MR. KELLOUGH: We offer in evidence Exhibit No. 9.

MR. SPURRIER: Without objection it will be received.

Q Mr. Veeder, I hand you Exhibit No. 10 and ask you to state what that exhibit is and what it shows.

A No. 10 is a structural map on top of the Devonian of the Hightower Devonian Pool. Contour interval, 100 feet.

MR. KELLOUGH: We offer in evidence Exhibit No. 10.

MR. SPURRIER: Without objection it will be received.

Q From a study of all the available geological data, what is your opinion with reference to the porosity and permeability at Hightower Devonian Pool?

A The Hightower Devonian Pool has good porosity and good permeability.

Q Mr. Veeder, do you know of any change in the condition, from a geological point of view, which should require or justify a revocation or modification of the existing 80-acre spacing order for this pool?

A There has been no change.

Q Have you read the statement which has been prepared in connection with the Hightower Pool?

A Yes, sir, I have.

Q And are the facts which are set forth in that statement true and correct to the best of your knowledge and belief?

A That is right.

MR. KELLOUGH: That is all for this witness.

MR. SPURRIER: Any questions of this witness?

By MR. MACEY:

Q These dry holes on the map pertain only to the Devonian?

A If you look on the bottom of the map, the pay wells are spotted.

MR. KELLOUGH: He doesn't have that map. That is Exhibit 2. This is the structural map.

A This map contains only the devonian wells.

Q Actually this 2 BTB is a plug-back?

A That is right.

MR. MACEY: That is all.

(Witness excused.)

R. S. CHRISTIE,
having been first duly sworn, testified as follows:

DIRECT EXAMINATION

By MR. KELLOUGH:

Q You are Mr. R. S. Christie?

A Yes, sir.

Q Petroleum Engineer for Amerada Petroleum Corporation who testified this morning?

A Yes, sir.

MR. KELLOUGH: Are the qualifications of this witness acceptable?

MR. SPURRIER: Certainly.

Q I hand you Exhibit No. 11, and ask that you state to the Commission what this exhibit is.

A Exhibit 11 is a graph showing the number of wells completed and monthly oil production, monthly water production and cumulative oil production, bottom hole pressure of the Hightower Pool.

Q To what date?

A To April 1, 1952.

Q What does the pressure information which is depicted on this map indicate to you as a petroleum engineer?

A The bottom hole pressure declined very little from the beginning up until October of 1951. For the last six months period, the bottom hole pressure has declined approximately 76 pounds. That is attributed to a higher withdrawals. The withdrawals for the last six months average was 1567 barrels per day, as against 577 barrels per day for the preceeding six months.

Q Does that indicate a uniform withdrawal?

A Yes, sir, I believe it does.

Q Would you say that the draw down had been excessive or not excessive?

A The draw down has not been excessive. I might, for the record, state that PI tests were taken on both producing wells and one case ^{was} it/ producing at a rate of 1,000 barrels per day. The PI was approximately 32. The pressure drop at that rate of 1,000 barrels per day was 31 pounds. That was on State BTB

No. 1. Test on State BTE No. 1, producing at a rate of 967 barrels, had a drop of only 4 pounds and had a PI of infinity.

Q What is your opinion as to the permeability of this reservoir?

A Those tests would indicate a very good permeability.

Q Considering the withdrawals and the draw down, what would your opinion be as to whether there is any likelihood of channelling in the Hightower Devonian Pool?

A My opinion is there is no appreciable amount of channelling, if any.

Q Does the pressure information indicate good communication in all parts of this reservoir?

A Yes, it does.

Q Is it your opinion that this is a water drive pool?

A It is.

Q What is your opinion as to whether one well in the Hightower Devonian Pool is capable of draining 80 acres?

A It is my opinion that one well will drain in excess of 80 acres.

Q Do you know of any waste which is now being committed under the present spacing order of the Commission?

A No, I do not.

Q Do you know of any change in the conditions from the view point of reservoir performance that would justify or require a revocation or a modification of the original order?

A No, sir I do not.

Q What has been the average cost of the producing Devonian well in the Hightower Pool?

A The average cost of the two producing wells has been \$227,000.00.

Q Amerada owns the full lease and interest in all the area within the productive limits of this pool?

A Yes, sir.

Q The State of New Mexico owns all their oil?

A Yes, sir.

Q Do you know of -- from an engineering point of view -- of any inequities that are now existing in this pool?

A No, sir, I do not.

Q What is your opinion as to what the allowable should be?

A My opinion is the allowable should not be changed.

Q Have you considered the question of whether a pressure maintenance program of any kind is advisable, necessary, at Hightower?

A Yes, sir, we have, and we do not think it would be advisable or necessary or would recover any additional oil.

Q You have read the statement which we prepared in connection with the Hightower case?

A Yes, sir.

Q With the exception of the date to which the pressure graph is made, which in the statement was March 1st, I believe our testimony was April 1, 1952.

A I will correct that. It is to March 1st on the graph.

Q In 1952?

A 1952, yes, sir.

Q Well, there seems to be an error in the statement wherein it is given as March 1st of 1951, but the date shown on the graph of March 1, 1952.

A Yes.

Q With that exception, are the statements in this true to your knowledge and belief?

A Yes.

MR. KELLOUGH: That is all the evidence we have from this witness. However, we offer into evidence Exhibit No. 11.

MR. SPURRIER: Without objection it will be received.

MR. KELLOUGH: We wish to offer the facts contained in this statement into evidence and argument by way of a brief.

That concludes our case at the Hightower. Mr. Oliver Seth and Mr. Justin Reed appear with Amerada as co-counsel in this case. Do either of you have any further statements you wish to make?

MR. SETH: I don't believe we do. We believe the matter has been adequately covered and we couldn't add anything further to it.

By MR. WHITE:

Q Mr. Christie, how many wells do you have producing in this pool?

A Two wells.

Q Your bottom hole pressures were taken on both wells?

A Yes, sir.

MR. SPURRIER: Any further question of the witness?

If not the witness may be excused.

(Witness excused.)

MR. SPURRIER: We would like to have Mr. Veeder again,
Mr. Kellough.

JOHN A. VEEDER,

having been previously duly sworn, recalled as a witness, testified
as follows:

EXAMINATION

By MR. MACEY:

Q On Exhibit No. 10 I notice you have a complete closure.
Isn't it entirely possible that structurally it should be drawn
higher?

A It is possible it could be higher or else it could be
about the same datum that you have here.

Q You have no evidence, of course?

A And of course, this is down the southeast side. This
is not closed.

Q Is it entirely possible that it could be completely
closed?

A Yes, I believe so, because of the --

Q (Interrupting) In the event you had migration of water
up-dip to the point where the area in the middle of your closure
was structurally high enough so that these two producing wells
were drowned out, you could still have oil trapped in there?

A If you did have enough relief in the central part, yes. Of course, if the area is a rather flat area, it is possible it could be obtained.

Q The only way you could ever prove or disprove the presence of that would be drilling, wouldn't it? There is no other way.

A That would be the only definite proof.

MR. MACEY: That is all.

MR. KELLOUGH: In connection with Mr. Macey's examination, I would like to ask Mr. Veeder another question or two.

By MR. KELLOUGH:

Q Mr. Veeder, Amerada is now in the process of drilling a well located in the southwest-northeast of 26, projected to the Pennsylvanian formation, is that right?

A That is right.

Q Will that well give information which may be of use geologically in evaluating the structure?

A Yes, sir, it will give very pertinent information, I would say, although Pennsylvanian and Devonian structures do not exactly conform. A high well on the Pennsylvanian would indicate accordingly high well on Devonian. That information would be very pertinent.

Q That will possibly throw some light upon the relief which you may have on top of the structure. That would give you an indication, of course, whether you did have closure.

A Out here, yes.

MR. KELLOUGH: That is all.

MR. SPURRIER: Anymore testimony in this case?

MR. KELLOUGH: That is all.

MR. SPURRIER: If not, the witness may be excused.

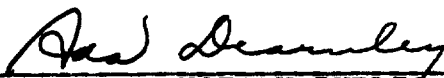
(Witness excused.)

MR. SPURRIER: These cases will be taken under advisement and the next case on the Docket is Case 333.

STATE OF NEW MEXICO)
 : SS.
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, hereby certify that the foregoing and attached transcript of proceedings in Cases No. 314 & 319, before the Oil Conservation Commission, State of New Mexico, at Santa Fe, taken on April 15, 1952, is a true and correct record to the best of my knowledge, skill and ability.

DATED AT ALBUQUERQUE, this 24th day of April,
1952.



NOTARY PUBLIC
COURT REPORTER

My Commission Expires:

June 19, 1955.