

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

IN THE MATTER OF CASES NOS. 1192 and 1193

TRANSCRIPT OF PROCEEDINGS

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ALBUQUERQUE - SANTE FE
3-6691 2-2211

January 9, 1957.

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
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IN THE MATTER OF:

Application of Amerada Petroleum Corporation
for permission to convert its State S "G" No.
1 Well into a salt water disposal well in the
San Andres, Paddock, Clearfork, and Abo for-
mations of the Saunders Pool in accordance with
New Mexico Oil Conservation Commission State-
wide Rule 701. Applicant, in the above-styled
cause seeks an order granting permission to
convert its State S "G" No. 1 Well into a salt
water disposal well; said well is located in
the NE/4 SW/4 of Section 10, Township 15 South,
Range 33 East, Lea County, New Mexico. Ap-
plicant proposes to inject said salt water into
the aforesaid four non-productive zones in the
Saunders Pool through the annulus space between
the intermediate and production casing.

Case No.
1192

IN THE MATTER OF:

Application of Amerada Petroleum Corporation
for permission to convert its Amerada State
S "C" No. 5 Well into a salt water disposal
well in the Pennsylvanian formation in the
Saunders Pool, Lea County, New Mexico, in ac-
cordance with New Mexico Oil Conservation
Commission Statewide Rule 701. Applicant,
in the above-styled cause, seeks an order grant-
ing permission to convert its previously abandon-
ed State S "C" No. 5 Well into a salt water dis-
posal well by injecting water into the Pennsyl-
vanian formation, producing horizon in the
Saunders Pool; said well is located in the SW/4
SW/4 of Section 4, Township 15 South, Range 33
East, Lea County, New Mexico.

Case No.
1193

BEFORE:

Mr. Warren W. Mankin, Examiner

TRANSCRIPT OF PROCEEDINGS

MR. MANKIN: The next case on the docket is Case 1192.

MR. GURLEY: Case 1192. Application of Amerada Petroleum Corporation for permission to convert its State S "G" No. 1 Well into a salt water disposal well in the San Andres, Paddock, Clearfork, and Abo formations of the Saunders Pool in accordance with New Mexico Oil Conservation Commission Statewide Rule 701.

MR. ABBOTT: I would like to combine this with Case No. 1193.

MR. GURLEY: Case No. 1193. Application of Amerada Petroleum Corporation for permission to convert its Amerada State S "C" No. 5 Well into a salt water disposal well in the Pennsylvanian formation in the Saunders Pool, Lea County, New Mexico, in accordance with New Mexico Oil Conservation Commission Statewide Rule 701.

You are counsel and witness?

A Yes, sir.

(Witness sworn.)

MR. ABBOTT: My name is W. G. Abbott, and I am a district engineer for Amerada Petroleum Corporation in Monument, New Mexico.

MR. MANKIN: You have previously testified as an expert

witness, have you not, Mr. Abbott?

MR. ABBOTT: Yes, sir.

MR. MANKIN: Your qualifications are acceptable.

MR. ABBOTT: The general disposal plan for this Saunders Pool will be a gravity gathering system which will cost the operators around one hundred sixty-eight thousand dollars. I have a diagram, map, of that gathering system. I would like you to mark that Exhibit 1, please.

MR. MANKIN: Will this be for both Cases, 1192 and 1193, Exhibit 1?

MR. ABBOTT: Yes, that's right.

(Amerada's Exhibit No. 1 marked for identification in cases Nos. 1192 and 1193.)

MR. ABBOTT: We have to dispose of about three thousand barrels of salt water a day, and we designed this system for, to take care of two hundred and fifty barrels per day per well. That is tied into the system.

Under Case 1192, we plan to use this, the Amerada State S "G" No. 1 for a disposal well, and we'll do that by disposing of the well water between the five and a half inch casing and the eight and five-eighths inch casing. I have a diagram of that. This will be Exhibit No. 2.

(Amerada's Exhibit No. 2 marked for identification.)

MR. MANKIN: Will this just concern itself with Case 1192?

MR. ABBOTT: Yes, sir, this particular disposal well. We tested this injection rate on this annular space at six hundred and forty-eight barrels per day at three hundred pounds per square inch gauge. We raised the pressure to three hundred and fifty pounds per square inch gauge, and we could put away twelve hundred and twenty-four barrels per day. We extrapolated this to around three thousand barrels per day, and we have to pump the salt water at five hundred and fifty pounds per square inch gauge.

This San Andres Zone, we feel, will take the water for some time. When we were drilling the Saunders Pool, we had lost circulation through this zone in seventeen of our drill wells, generally in the south part of the pool.

I've got a map showing the wells that we lost circulation in, and I would like to have you mark this as Exhibit No. 3. The wells where we had the lost circulation trouble are circled in red on that map.

MR. MANKIN: Then, this would pertain to both 1192 and 1193?

MR. ABBOTT: No, just 1192.

MR. MANKIN: 1192?

MR. ABBOTT: Yes.

(Amerada's Exhibit No. 3 marked for identification in Case No. 1192)

MR. ABBOTT: You can see on Exhibit No. 2 that we have the Saunders Zone, the Paddock, Clearfork, and Abo open in this annular space, but we feel since we had this lost circulation trouble in the Saunders, that any disposal water will go in that zone. It's very permeable. Of course, if any of the salt water did go into the Paddock, Clearfork, or Abo, it wouldn't matter because of these formations that are productive in this area.

Under Case 1193, we are asking for permission to dispose of our salt water and our State S "C" No. 5. Now, this well is temporarily abandoned in the Saunders Pool. This disposal will be in the Pennsylvanian, or the zone we are producing in the Saunders Pool.

For Exhibit No. 4 I would like to turn in a well diagram of this, Amerada's State S "C" No. 5.

MR. MANKIN: This Exhibit No. 4 is to apply to Case 1193?

MR. ABBOTT: Yes.

MR. GURLEY: Only?

MR. ABBOTT: Yes, sir.

(Amerada's Exhibit No. 4 marked for identification in Case No. 1193.)

MR. ABBOTT: We plan to perforate additionally in this

well, an additional perforation to our producing well. Original producing perforations will be 9,820 to 9,885; 9,900 to 9,955; 9,978 to 10,016; and 10,030 to 10,065. I would like to turn in Exhibit No. 5 which is a cross section to show this. It is an east-west cross section to show this State S "C" No. 5. The proposed perforations are marked on this exhibit.

(Amerada's Exhibit No. 5 marked for identification in Cases Nos. 1192 and 1193.)

MR. MANKIN: Mr. Abbott, is this cross section which you have designated as "AA" Prime, the one that is shown on Exhibit No. 3 as the wells outlined?

MR. ABBOTT: Yes, that's right. And I would also like to turn in Exhibit No. 6, which is an electric log of this S "C" No. 5 and perforations are marked on that, and also the formations tops are marked on that log.

(Amerada's Exhibit No. 6 marked for identification in Cases Nos. 1192 and 1193.)

MR. ABBOTT: Now, do you have any need for, just one, or do you need this? I have three.

MR. MANKIN: We'll just borrow those.

MR. ABBOTT: The reason for using this well as a disposal well is because we want to determine the injection data so that in the future we may be able to put in a full scale water flood in this Pennsylvanian Zone. Since the pool was discovered at bottom hole, pressure has dropped an average of twenty-three hundred and ninety-two per square inch, so any injection of water should increase that pressure, if we can get enough water in this producing zone, and that's one reason why we are applying for this hearing, to see if

if we can inject enough water in there so that we will get an increase in pressure in that Pennsylvanian Zone. Of course, any full scale water flood would entail more than one injection well, but we hope to secure some injection data from using this one well. I believe that's all I have on it.

MR. MANKIN: Mr. Abbott, these two wells which you have proposed under Cases 1192 and 1193, is one to be the alternate of the other, or are they supposed to be both in operation at the same time?

MR. ABBOTT: Well, I imagine we'll try this State S "C", No. 5 to put--

MR. MANKIN: Which is into the Pennsylvanian?

MR. ABBOTT: Yes, and if we find out that it takes too much pressure or we can't put in the three thousand barrels a day, we'll switch over to the State S "G", No. 1.

MR. MANKIN: Which is the Bradenhead disposal well?

MR. ABBOTT: Yes.

MR. MANKIN: Have you determined from this State S "C", No. 5 where the oil-water contact is?

MR. ABBOTT: No, we produced the well originally and it went to just about a hundred per water so we assumed that most of the producing zone is below the water-oil contact.

MR. MANKIN: This prior production from the Pennsylvanian and the State S "C", No. 5, was it from an open hole at the time, below the five-eighths casing or was it from a perforation?

MR. ABBOTT: Perforations.

MR. MANKIN: The same perforations which you proposed to be made for disposal purposes?

MR. ABBOTT: The same perforations, but we have included some more zones in each perforation.

MR. MANKIN: Higher or lower?

MR. ABBOTT: Well, some of them are higher and some of them are lower. I have a test on this well. The commission on this State S "C", No. 5, was, it included fourteen barrels of oil and eighty-three barrels of water in twenty-one hours by gas lift. I don't know if I have the completion date on this, when we completed this well, but shortly thereafter the production had decreased to one hundred and forty barrels of water and no oil in twenty-four hours. It is a very poor well.

MR. MANKIN: Do you have any water production on the offset wells, which is the Amerada's Exhibit No. 1?

MR. ABBOTT: I imagine that is producing water but I don't have any late information on it. We feel that the Saunders Pool has a water drive, but it isn't effective and that by injecting water in the producing zone, we may increase the pressure on the whole reservoir.

MR. MANKIN: Is it bottom water, or from some particular water?

MR. ABBOTT: No, seems to be just bottom water. We can't find a direction on it.

MR. MANKIN: Any further questions of the witness?

MR. GURLEY: This Exhibit was prepared by you or under your instructions?

MR. ABBOTT: Yes, sir.

MR. UTZ: Mr. Abbott, referring to Amerada's State S "C", No. 5, do you know of any other wells in the Saunders Pools producing

structurally lower than this well?

MR. ABBOTT: No, I believe this is the low well. I might mention at this time that when we were discussing salt water disposal, we asked the offset operators, I believe there are City Service and Magnolia, if they had any objection to putting this water in the Pennsylvanian Zone and they didn't have any objection.

MR. UTZ: And referring to your Amerada State S "G", No. 2--

MR. ABBOTT: S "G" No. 1?

MR. UTZ: No, I am referring to your S "G", No. 2, the one on the Prime cross section.

MR. ABBOTT: S "D", No. 2?

MR. UTZ: Well, I'll change that to the S "G", No. 3. What I am trying to determine is whether or not you feel that Amerada is structurally high in the pool? Are there any other wells higher than that one?

MR. ABBOTT: That is a high well. I believe we have a higher well than the S "G", No. 3.

MR. UTZ: Do you have any idea how much higher structurally the higher well in the pool is?

MR. ABBOTT: No, there is, throughout the whole pool, there is very little relief, but I don't remember which well it is. I think the high on the Saunders Pool is on our S "B" lease, State S "B" lease, those are the highest wells in the pool.

MR. MANKIN: Which is in section three?

MR. ABBOTT: Yes, sir,

MR. UTZ: That is all I have.

MR. MANKIN: Mr. Abbott, is this request for salt water disposal in the Saunders Pool to be a joint venture by all operators

within the pool?

MR. ABBOTT: Yes, sir.

MR. MANKIN: Amerada will dispose the water for the other operators in the pool?

MR. ABBOTT: Yes, sir.

MR. MANKIN: Including Texaco and Magnolia?

MR. ABBOTT: Shell.

MR. MANKIN: And Shell?

MR. ABBOTT: Yes.

MR. MANKIN: And Gulf?

MR. ABBOTT: Yes.

MR. GURLEY: Have you notified these other companies of your intentions other than through the application and notice of the hearing?

MR. ABBOTT: Yes.

MR. GURLEY: Have you had any response from the companies?

MR. ABBOTT: No, I have had no response. They are all in agreement on it.

MR. GURLEY: Well, now, if there was no response, how do you know they were in agreement?

MR. ABBOTT: I feel they would have responded if they weren't in agreement.

MR. GURLEY: In other words, they had no comment either way.

MR. ABBOTT: No.

MR. MANKIN: Mr. Abbott, is it not true that you have had pool meetings with the other operators where you were essentially in agreement with this project?

MR. ABBOTT: Yes, we have had two or three meetings on the

Saunders Pool disposal.

MR. MANKIN: Relating again to Case No. 1192, Mr. Abbott, S "C", No. 1, you intend to produce this well from the Pennsylvanian in addition to disposing of the water?

MR. ABBOTT: Yes, that's right. This is a very poor well, I imagine it has around a five barrel allowable, but we need this well for a disposal well and if we, if we abandon the oil zone, we'd lose the lease.

MR. MANKIN: It is the only well on the lease?

MR. ABBOTT: That's right, so we'll continue to produce the well by gas lift and dispose of the water in the Bradenhead.

MR. MANKIN: In your application for Case No. 1192, and here today, you are seeking disposal in the San Andres, Paddock, Clearfork and Abo if necessary.

MR. ABBOTT: Yes, that's right. We feel most of the water will be into the San Andres.

MR. MANKIN: And in Case No. 1193, you will be injecting water into the, into the edge of the Saunders Pool in the Pennsylvanian Formation?

MR. ABBOTT: Yes, that's right.

MR. MANKIN: Are there any other questions of the witness? Do you wish to enter Exhibits 1 through 6 in this case, in these cases, Cases No. 1192 and 1193?

MR. ABBOTT: Yes, sir.

MR. MANKIN: Is there any objection to entering Exhibits Nos. 1 through 6 in Cases No. 1192, and 1193? If not, it will be so entered. Do you have anything further?

MR. ABBOTT: No, sir, that's all.

MR. GURLEY: Just a moment, I have a letter from the Texaco Company. It should be read into the record, signed by Mr. V. T. Osmaeta, to the attention of Mr. W. W. Mankin, Examiner.

Gentlemen:

The Texaco Company is an operator in the Saunders Pool, and has participated in efforts to form a co-operative salt water disposal system for this field. The Texaco Company urges the Commission to give its approval to the salt water disposal wells covered in Amerada's applications in Cases Nos. 1192 and 1193.

MR. MANKIN: Nothing further, the witness may be excused. Are there any statements to be made in this case? If there is nothing further, we'll take these cases under advisement, Cases Nos. 1192 and 1193.

(Witness excused.)

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, J. A. Trujillo, Court Reporter, do hereby certify that the foregoing and attached transcript of proceedings before the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, is a true and correct record to the best of my knowledge, skill, and ability.

IN WITNESS WHEREOF I have affixed my hand and notarial seal this, the 23rd day of January, 1957.

J. A. Trujillo
NOTARY PUBLIC COURT REPORTER

My Commission Expires:
October 5, 1960