

Casa No.

1714

Application, Transcript,
Small Exhibits, Etc.

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE No. 1714
Order No. R-1456

APPLICATION OF JOHN H. TRIGG
FOR AN ORDER AUTHORIZING A PILOT
WATER FLOOD PROJECT IN THE
CAPROCK-QUEEN POOL, LEA AND
CHAVES COUNTIES, NEW MEXICO, AND
FOR THE ESTABLISHMENT OF AN
ADMINISTRATIVE PROCEDURE FOR
EXPANDING SAID PROJECT AND FOR
GRANTING CAPACITY ALLOWABLES TO
WELLS IN SAID PROJECT

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9:00 o'clock a.m. on July 8, 1959, 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 1st day of August, 1959, 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 the applicant, John H. Trigg, proposes to institute a water flood project in the Caprock-Queen Pool, Lea and Chaves Counties, New Mexico, with a project area consisting of the following-described acreage:

TOWNSHIP 14 SOUTH, RANGE 31 EAST
Section 4: All
Section 9: All
Section 5: E/2 NE/4, NE/4 SE/4

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TOWNSHIP 14 SOUTH, RANGE 31 EAST
Section 34: SE/4

(3) That the above-mentioned acreage in Section 34, not being contiguous to the portion of the project area in Sections 4, 5, and 9, should not be included in the project at this time.

(4) That initially the applicant proposes to inject water into the Queen formation in said Caprock-Queen Pool through the following-described wells in Township 14 South, Range 31 East:

Well No. 34-5, NE/4 SE/4 of Section 5
Well No. 35-5, SE/4 NE/4 of Section 5
Well No. 36-5, NE/4 NE/4 of Section 5
Well No. 29-4, SW/4 SW/4 of Section 4

(5) That the applicant seeks capacity allowables for the following-described wells in said project:

Well No. 21-4, SE/4 SW/4 of Section 4
Well No. 22-4, NE/4 SW/4 of Section 4
Well No. 30-4, NW/4 SW/4 of Section 4
Well No. 31-4, SW/4 NW/4 of Section 4
Well No. 32-4, NW/4 NW/4 of Section 4
Well No. 20-9, NE/4 NW/4 of Section 9
Well No. 28-9, NW/4 NW/4 of Section 9

all in Township 14 South, Range 31 East.

(6) That there is no necessity for granting capacity allowables to any wells in said project at this time, but an administrative procedure should be established whereby capacity allowables may be granted to wells in said project without notice and hearing when such wells have received a response to water injection enabling them to produce in excess of top unit allowable for the Caprock-Queen Pool.

(7) That, as requested by applicant, an administrative procedure should be established whereby approval may be granted for conversion of additional wells within said project to water injection when it is established to the satisfaction of the Secretary-Director that the proposed injection well has experienced a substantial response to water injection or is directly offset by a producing well which has experienced such response.

IT IS THEREFORE ORDERED:

(1) That John H. Trigg be and the same is hereby authorized to institute a water flood project in the Caprock-Queen Pool, Lea and Chaves Counties, New Mexico, with the project area to consist of the following-described acreage:

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TOWNSHIP 14 SOUTH, RANGE 31 E. ST

Section 4: All

Section 9: All

Section 5: E/2 NE/4, NE/4 SE/4

(2) That the applicant be and the same is hereby authorized to immediately convert for the purpose of water injection into the Queen formation in the Caprock-Queen Pool, the following-described wells:

Well No. 34-5, NE/4 SE/4 of Section 5

Well No. 35-5, SE/4 NE/4 of Section 5

Well No. 36-5, NE/4 NE/4 of Section 5

Well No. 29-4, SW/4 SW/4 of Section 4

all in Township 14 South, Range 31 East, NMPM, Chaves County, New Mexico.

(3) That an administrative procedure for the conversion of additional wells in said project to water injection without notice and hearing be and the same is hereby established.

PROVIDED HOWEVER, That in order for a well in said project to be eligible for administrative approval for conversion to water injection, it must be established to the satisfaction of the Secretary-Director of the Commission that the proposed water injection well has experienced a substantial response to water injection or is directly offset by a producing well which has experienced such response, and that the proposed injection well is located on a water injection pattern which will result in a thorough and efficient sweep of oil by the water flood.

PROVIDED FURTHER, That to obtain administrative approval for the conversion of any well to water injection, applicant shall submit to the Commission in triplicate a request for such administrative approval, setting forth therein all the facts pertinent to the need for conversion of additional wells to water injection, and attaching thereto Commission Form C-116, showing production tests of the affected well or wells both before and after stimulation by water flood. Applicant shall also attach plats of the water flood project area and immediate surrounding area, indicating thereon the owner of each lease and the location of all water injection wells and producing wells, and shall submit evidence that a copy of the application to convert additional wells to water injection has been sent to each operator offsetting the proposed injection well and to the State Engineer.

The Secretary-Director may, if in his opinion there is need for conversion of additional wells to water injection, authorize such conversion without notice and hearing, provided that no offset

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operator nor the State Engineer objects to the proposed conversion within fifteen (15) days. The Secretary-Director may grant immediate approval of the proposed conversion upon receipt of waivers of objection from all operators offsetting the proposed injection well and from the State Engineer.

(4) That the Proration Manager of the Commission be and the same is hereby authorized to assign an allowable equal to the well's ability to produce for any well in the project area; provided, however, that no well shall receive an allowable greater than the top unit allowable for the Caprock-Queen Pool unless the ability of said well to produce in excess of such top unit allowable is based upon a response from water injection. In order to obtain such capacity allowables, the operator shall file Form C-116 showing the producing capacity of the wells for which such request is made.

(5) That monthly progress reports on the water flood project herein authorized shall be submitted to the Commission in accordance with Rule 704 and Rule 1119 of the Commission Rules and Regulations.

(6) That jurisdiction of this cause is hereby retained by the Commission and the case may be reopened at any time to permit the operator to show cause why wells which produce with a high capacity and with a high gas-oil ratio should not be curtailed, or to show cause why a formula should not be instituted which would allow credit for water injected to be applied against excess gas production from high gas-oil ratio wells.

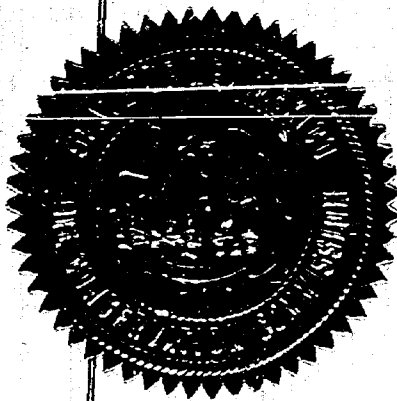
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

John Burroughs
JOHN BURROUGHS, Chairman

Murray E. Morgan
MURRAY E. MORGAN, Member

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



vem/

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

August 3, 1959

Mr. Jack Campbell
Box 721
Roswell, New Mexico

Dear Mr. Campbell:

On behalf of your client, John H. Trigg, we enclose two copies of Order No. R-1456, issued on August 1, 1959, by the Oil Conservation Commission in Case No. 1714.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

lr/

Enclosures

*Copy sent
to Hobbs Artesia*

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OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date 7-24-59

CASE NO. 1714

HEARING DATE 9am 7-8-59
DSN @ SF

My recommendations for an order in the above numbered case(s) are as follows:

Enter an order authorizing John H. Trigg to institute a pilot water flood project in the Caprock Queen Pool as requested. (Four injection wells) Trigg acreage in Sec 4 & 5. Leave out 34 as it cannot be a part of this pilot. Authorize administrative expansion of the flood by addition of new injection wells upon receipt of proof of substantial response by direct or diagonally offsetting wells. (Include State Engineer as party to notification)

Authorize Proration Dept to grant allowances equal to ability to produce for the Trigg No 29, 34, 35, and 36.

(over)

Sam J. [Signature]
Staff Member
Examiner

Throw in an extra paragraph retaining jurisdiction of this cause and putting operators on notice that the Commission may, at its discretion, call a hearing on its own motion to permit operators to come in and show cause why ~~the~~ any wells which produce with a high capacity and a high GOR should not be curtailed, or to show why a formula should not be instituted which would allow credit for water injected ~~off~~ to be applied against such high GORs.

monday
Proffers
rpts.
R-1352

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE 1714

TRANSCRIPT OF HEARING

JULY 8, 1959

DEARNLEY - MEIER & ASSOCIATES
GENERAL LAW REPORTERS
ALBUQUERQUE NEW MEXICO
Phone CHapel 3-6691

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
JULY 8, 1959

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IN THE MATTER OF:

CASE 1714 Application of John H. Trigg for an order authorizing a pilot water flood project, for capacity allowables for seven wells in said project area, and for establishment of an administrative procedure for expansion of said project and for granting capacity allowables. Applicant, in the above-styled cause, seeks an order authorizing it to institute a pilot water flood project in the Caprock-Queen Pool in Chaves County, New Mexico. Applicant proposes to inject water into the Queen formation through 4 wells located in Sections 4 and 5, Township 14 South, Range 31 East. Applicant also seeks capacity allowables for seven wells in said project. Applicant further seeks the establishment of a procedure whereby the project area may be expanded and capacity allowables granted without notice and hearing.

BEFORE:

Daniel S. Nutter, Examiner.

T R A N S C R I P T O F P R O C E E D I N G S

MR. NUTTER: We will take next Case 1714.

MR. PAYNE: Case 1714. Application of John H. Trigg for an order authorizing a pilot water flood project, for capacity allowables for seven wells in said project area, and for establishment of an administrative procedure for expansion of said

project and for granting capacity allowables.

MR. CAMPBELL: Jack M. Campbell, Campbell & Russell, Roswell, New Mexico, appearing on behalf of the applicant. We have one witness, Mr. Snow.

(Witness sworn)

GENE SNOW,
called as a witness, having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. CAMPBELL:

Q Will you state your name, please?

A Gene Snow.

Q Where do you live, Mr. Snow?

A Maljamar, New Mexico.

Q By whom are you employed?

A John H. Trigg Company.

Q In what capacity?

A Production superintendent.

Q And how long have you worked for John H. Trigg?

A Approximately five years.

Q Would you give the Examiner a brief resume of your experience in the producing end of the oil business, please?

A Well, I was employed as field engineer for Odex Engineering and Equipment Company in sales, installation and maintenance. And following that, two years self employment as an oil

field service contractor. Following that, five years for E. J. McCurdy, Fort Worth, as production superintendent in production and drilling.

Q When you were employed by Mr. McCurdy, where was your work done?

A In the Maljamar area, particularly the Young and the Force fields.

Q And for the past ten years with Mr. McCurdy and Mr. Trigg, you had been working in the completion, drilling and production of oil wells in Lea and Eddy County area, New Mexico, is that right?

A That is right.

Q Are you presently in charge of all such operations for Mr. Trigg?

A Yes, sir, I am.

Q Have you been so since Mr. Trigg started the development of the area that is involved in this particular hearing?

A Yes, sir, from the beginning.

Q And in your work you are acquainted with the drilling and production history of the wells that are involved in this hearing?

A Yes, sir, that's right.

MR. CAMPBELL: Are the witness' qualifications acceptable?

MR. NUTTER: Yes, sir, they are.

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(Thereupon, John H. Trigg's Exhibit No. 1 was marked for identification.)

Q Mr. Snow, I refer you to what has been identified as Applicant's Exhibit No. 1 in this case, and ask you, please, to state what that is?

A This is a plat showing a portion of the Caprock-Queen field outlining our project area and our pilot area in Section 34, Township 13, Range 31 East. Also in Sections 4, 5 and 9 in Township 14 South, Range 31 East. It also shows the injection wells, circled in red, producing wells circled in green, in the pilot area.

Q I notice, Mr. Snow, that you have some wells or have outlined in yellow some wells in the SE/4 of Section 34, Township 13 South, Range 31 East, is that correct?

A That is right.

Q Is it the intention of Mr. Trigg, if this application is granted, to work out the development of that particular isolated tract in connection with the Cities Service project --

A Yes, sir.

Q -- on the basis of a line agreement?

A Yes, sir.

Q Mr. Snow, what formations do you propose to flood in this pilot area?

A The Queen formation, the Permian series.

Q At what depth does that occur?

A 2750 to 2800.

Q Are there any other water flood projects operating in this area at this time?

A Yes, sir. Cities Service has a pilot project immediately to the east.

Q And is that particular project developing toward Mr. Trigg's properties that are involved here?

A Yes, sir, it will.

Q Are the wells which you propose to use as injection wells and the proposed producing wells in the pilot area now producing at a full unit allowable?

A No, sir, they are not.

Q What is the average rate of production on those wells, Mr. Snow?

A Twelve barrels.

Q Do you have logs of all of the wells in the proposed pilot flood area?

A Yes, sir, every injection and every producing well.

(Thereupon, John H. Trigg's Exhibits 2-A, 2-B, 2-C and 2-D were marked for identification.)

Q I refer you to what has been identified as Applicant's Exhibits 2-A, 2-B, 2-C and 2-D, and ask you, please, to state what those are?

A This is a radioactive log, gamma ray curve and neutron curve of the wells.

Q Are those the proposed injection wells?

A These particular logs here are for the proposed injection wells.

Q Have those wells been recently drilled?

A Yes, sir.

(Thereupon, John H. Trigg's Exhibits 3-A through 3-G were marked for identification.)

Q I refer you now to what has been identified as Applicant's Exhibits 3-A through 3-G, and ask you to state what those are?

A That is also a radioactive log showing the gamma ray and neutron curve on the producing wells in the project area.

Q Do Exhibits 2 and 3 and their supplementals encompass all of the wells, either injection or producing, contained in the pilot area?

A That is right.

Q Without going into detail, Mr. Snow, as to the information contained on the logs, will you state how these wells are completed?

A Each well was drilled to an approximate depth of 20 to 30 feet below the producing pay. The casing was set through, cemented with a hundred sacks of cement and perforated opposite the Queen sand.

Q In the event water is injected in the injection wells, do you consider that there is any danger of that water finding its

way into any horizons above the horizon you intend to flood here?

A No, sir. We intend to use a packer set on tubing with cement lining tubing.

Q How much water do you anticipate you will be able to inject in the injection wells in the pilot area?

A In the beginning, 300 barrels a day.

Q Is that during the fill-up period?

A During the fill-up period.

Q Do you know what, or have any present idea, of what you may want to accomplish by way of rate of water injection after the fill-up --

A Well, as an example, Cities Service has had to cut theirs back. We will probably cut ours back to a hundred, hundred and fifty barrels a day.

Q What equipment do you intend to use in connection with the operation of this pilot water flood?

A The water flood consists of 2, 100 tanks, one for raw water and filtered water, an injection pump capable of injecting water at the pressure of 2,000 pounds, and a filtering system to filter water.

Q Do you also have a pipe line running into the area from your source of water supply?

A Yes, sir, we do.

Q What is that source of water, Mr. Snow?

A The Ogallala sand. It is in the Lovington water basin.

Q In the Lea County water basin?

A Yes, sir, Lea County.

Q Have you obtained permits for water from the office of the State Engineer?

A Yes, sir, we have.

Q What is the extent of your water right?

A One hundred seventy-nine acre feet per year, which would be approximately 3600 barrels of water per day.

Q Do you consider that that will be adequate to operate the pilot flood and what you reasonably intend to expand in the immediate future?

A Yes, sir, we do.

Q You have stated that Cities Service has a water flood project immediately to the east of your leases. Has Mr. Trigg, to your knowledge, executed a lease line agreement with Cities Service in connection with the two projects?

A Yes, sir, he has, and --

Q What generally does that line well agreement provide, Mr. Snow?

A Well, they are to furnish water for the No. 1 and 3 on our Federal "V" lease.

Q Just a moment until the Examiner gets those spotted there.

A We, in turn, furnish water for the Kerr McGee No. 1 Government "A."

MR. NUTTER: What's the location of that?

A That is the SE of the SW, Section 33. Do you have

it --

MR. NUTTER: Yes, sir.

A And the Government "C", Cities Service well, Government "C" No. 7; that is the SE of the SE of Section 33. Now, they are to furnish water to our 1 and 3, and we to their 1 and 7, and they are to inject the water in their 23 -- just a minute -- 21 and 17 on their Government "B" lease.

Q Which is adjacent to the lease line of Mr. Trigg's property in Section 4, is it not?

A That's right, and we'll inject in our Wells No. 7 and 5. That pattern is to be carried throughout the north, east, and south boundaries on the line agreement.

Q Do you consider that, by the use of this line agreement, you will be able to efficiently operate the flood at such time as it expands into that area?

A Yes, sir, we could operate it as well as under one unit, the same thing.

Q Do you feel, Mr. Snow, that in order to protect the properties of Mr. Trigg in Sections 4 and 9, that it is necessary that he commence some sort of water flood project at this time?

A Yes, sir, I do.

Q Now, you have requested in your application administrative procedures for the addition of water injection wells, have

you not?

A That's right.

Q Have you set out in your application the procedures that you are suggesting?

A Yes, sir.

Q Are you acquainted with the procedures that the Commission is presently using in water flood projects with regard to the administrative approval for water injection wells?

A Yes, sir.

Q Is that procedure generally satisfactory insofar as you are concerned?

A Yes, sir.

Q I believe also that you have requested capacity allowables for the seven producing wells shown on your Exhibit No. 1. Will you state what your reason is for presently requesting capacity allowables for those wells, please?

A Well, Cities Service got a kick on their pilot in three to three and a half months. We expect a kick sooner than that because of injection up-dip from the gas-oil contact line; and to eliminate just having to come right back for another hearing.

Q I believe the notice of hearing in this case also refers to administrative procedures for granting capacity allowables in the future. What suggestions do you have with regard to such procedures?

A Well, similar to expanding the injection wells, by -- if we feel a need or if our wells are producing at a capacity above the top allowable, and by proof that our production is below top allowable or above top allowable.

Q Do you feel that that is necessary to avoid the necessity for requesting emergency orders and hearings before the Examiner or Commission on capacity allowables?

A That's right, I do.

Q Do you believe, Mr. Snow, that if the pilot flood project here is approved by the Commission and you are permitted to commence a water flood operation, that you will be able to recover oil from this area which would not otherwise be recoverable by primary methods?

A That's right.

Q Who is purchasing the oil from this area, Mr. Snow?

A Cities Service.

Q Have you experienced any difficulty in moving oil from these leases, Mr. Trigg's, in the past?

A Not recently, no.

Q Do you anticipate any difficulty in moving this oil in the event you embark on this water flood project?

A No, sir.

Q Was Exhibit No. 1 prepared by you or under your supervision?

A Yes, sir, myself and a geologist.

Q Are Exhibits Nos. 2 and 3 and their supplementals, Exhibits which were prepared for you by the companies indicated, the well logs, the companies indicated?

A That's right.

MR. CAMPBELL: I would like to offer Applicant's Exhibits 2-A through D and 3-A through G in evidence.

MR. NUTTER: Without objection, John A. Trigg's Exhibits 1, 2-A through D, and 3-A through 3-G will be admitted in evidence.

MR. CAMPBELL: That's all the questions I have at this time.

CROSS EXAMINATION

BY MR. PAYNE:

Q Mr. Snow, what precautions have been taken to protect any fresh waters that may be in the area? By that, I mean do you intend to inject through tubing or casing only?

A Through tubing, cement lined.

Q Now, your application asks that the SE/4 of Section 34 be included in this project area. Do you think that is necessary at this time, in view of the fact that the Cities Service water flood has not reached the N/2 of Section 3 as yet?

A Yes, sir, I do for this reason. They are going to have to expand their pilot area very soon, and if they do, we are going to be affected by it.

Q You would like the SE/4 of Section 34 to be in this

same projection with Sections 4 and 9?

A That's right.

Q Is there any possibility of your trading acreage with Cities Service, the SE/4 of 34 for the SE/4 of 33?

A No, sir, I don't think so.

Q Are any of the wells within this proposed project area top allowable wells at present?

A No, sir, they are not.

Q So that you would be able to state affirmatively that the water flood project is what was causing the well to produce in excess of top unit allowable?

A Would you repeat that again, please?

Q Since none of these wells are capable of producing top unit allowable, as soon as one is capable, it will be the water flood project which was causing that?

A Yes, sir, that's right.

MR. PAYNE: That's all. Thank you.

QUESTIONS BY MR. NUTTER:

Q Mr. Snow, where is the gas-oil contact in this area, at what depth?

A At what depth?

Q Yes, sir.

A Well, it varies, but approximately 2780, I'd say.

Q Is the line of wells which is in the W/2 of the W/2 of Section 4, being Wells Nos. 32, 31, 30 and 29, is that area,

is the perforated interval for those wells above or below, or does it intersect the gas-oil contact?

A Below the gas-oil contact.

Q How about the new wells that you drilled in Section 35, being 36, 35 and 34, are those wells completed below or above the gas-oil contact?

A Above.

Q They are in the gas?

A Yes, sir.

Q Is Well No. 29 in the SW, SW of Section 4, a very recently drilled well?

A Yes, sir.

Q It was drilled for the purpose of water injection?

A Yes, sir.

Q What are the actual allowables for the wells in Section 4?

A In the pilot area?

Q The wells in Section 4; no, sir, all of them?

A I couldn't tell you.

Q You said that the average of these wells was twelve barrels per day, and I just wondered what the actual productivity of the various wells is. Are some of them in excess of twelve barrels?

A Yes, sir, over on the east side of Section 4.

Q Are those wells in that area capable of making top

unit allowable?

A No, sir. No, sir.

Q None of the wells in Section 4 or 9, either one --

A No, sir.

Q -- are top allowable wells?

A That's right.

Q What is the highest productivity of any of the wells in Sections 4 and 9?

A Well now, No. 15, it is approximately 25 barrels.

Q Are there any other wells in there capable of making 25 barrels?

A 16 would be close to it.

Q How much can it make?

A I'd say 22.

Q What is the next highest well in the area?

A Our No. 6, which is in the neighborhood of 18 barrels.

Q How about Nos. 32, 31 and 30, how much can they make?

A Our last test on 32 and 31, 32 was 12 barrels and 31 was 8.

Q How about No. 30?

A About 5.

Q Are the wells in the W/2 of Section 4 high gas-oil ratio wells?

A Yes, sir.

Q When do you believe that it will be necessary to con-

vert your No. 5 and your No. 7 to water injection? I believe you mentioned that those are two of the wells you had this agreement -- this line agreement with Cities Service?

A In the line agreement I think Cities Service stated September the 1st, but it wouldn't be necessary for us except for --

Q In other words, the conversion of those wells is going to be necessitated by the water flood that Cities Service is operating rather than the water flood that you are expecting to operate on the Trigg lease?

A That's right.

Q Now, Mr. Snow, you stated in your application and also in your testimony that you desire capacity allowables for seven wells, and administrative procedure for the granting of capacity allowables for additional wells in the future. What actually is the necessity for the capacity allowables based on?

A In the first place, as I stated before, that we expect a kick almost immediately, and that we **will just have to come back** for additional hearings.

Q Well, you still haven't stated the necessity for the capacity allowables.

A Well, I'm going on Cities Service mostly. They were operating under a unit allowable in the beginning, and now they are above that and have had to ask for capacity allowable. We think the time between our injection date and the time that we'll be above

unit allowable will be much shorter than what theirs was, so we felt it necessary to ask for it now. Am I making myself clear?

QUESTIONS BY MR. PAYNE:

Q Do you think it causes waste to restrict the production from water flood producing wells?

A Yes, sir.

Q Mr. Snow, in completing these new water injection wells, was surface casing run?

A Ninety feet of eight and five-eighths.

Q Was cement circulated on that?

A Yes, sir.

Q And you run four and a half inch pipe in the well, is that right?

A That's right.

Q How much cement was used?

A One hundred sacks.

Q What was the top of the cement?

A On No. 36, 2198; 35, 2224; 34, 2202; 29, 2247.

Q So there is an interval from ninety feet to approximately 2200 feet that has no cement, is that correct?

A That is right.

Q Now, you stated that you would inject your water down tubing set on a packer. Where will the packer be set, Mr. Snow?

A Immediately above casing perforations.

Q Mr. Snow, is there any known corrosive problem that

exists in this area?

A No, sir.

Q What do you expect to do with the annulus around the tubing, will that be filled with a non-corrosive medium?

A Yes, sir, I intend to use chemically treated water, fill it, pressure test it to five hundred pounds.

Q Will the pressure be maintained on the annulus, then?

A Yes, sir, it will be with gauge.

Q So that any leakage in the tubing or the casing, either one, could be determined from the surface?

A That's right.

QUESTIONS BY MR. PORTER:

Q Mr. Snow, you referred to some high gas-oil ratio wells. Does Trigg have any high gas-oil ratio wells that are shut in or any wells that are shut in because of high gas-oil ratio?

A Yes, sir, we do.

Q Now, in the wells that you are producing, what is being done with the gas at the present time?

A Vented.

Q Is this commercial gas salvageable?

A No, sir, it is not.

Q What is the percentage of nitrogen?

A Thirty to fifty percent.

Q And it is not combustible?

A Yes, sir, it will burn, but the BTU is very low.

Q Nobody wants to buy it?

A No. Sure can't sell it.

Q Now, Mr. Campbell asked if you had any difficulty moving the oil, and you mentioned Cities Service as a purchaser, and you said not recently, which indicated that you might have had some trouble in the past. Were you referring to periods of cold weather when the oil was hard to move because of the low viscosity of the oil?

A No, sir, I was not. I was referring to a strike.

Q You didn't have any trouble at the time that other operators in the pool had trouble -- difficulty getting their oil into the pipeline?

A No, sir, we did not because in the beginning we installed heaters, and we had -- all of your crude was at least fifty degrees temperature.

Q You had it ready for the pipeline?

A Yes, sir.

MR. PORTER: That's all I have.

QUESTIONS BY MR. NUTTER:

Q Mr. Snow, what are the wells in Sections 4 and 9 that you ultimately expect to put on water injection?

A Beginning with Section 4, Well No. 16, 7, 5, 3, 2.

Q Where is No. 3?

A That is on down in Section 9. I am just going around the outside edge. Well No. 17 in Section 9. Now, these would come

first because of the line agreement with Cities Service. Now, to to back to Section 4, Well No. 23, 14, down in Sections 9, 12, 10, 19, 26, this could carry out the pattern, 80-acre five spot, that is already in use throughout the field.

Q That would be the complete water flood program?

A That's right. Yes, sir.

Q And then on Federal "V" lease you would intend to put Nos. 1 and 3 on injection, is that right?

A Yes, sir, that's right.

MR. NUTTER: Any further questions of Mr. Snow? The witness may be excused.

(Witness excused)

MR. NUTTER: Does anyone have anything further in Case 1714? We will take the case under advisement.

STATE OF NEW MEXICO)
) ss
 COUNTY OF BERNALILLO)

I, J. A. Trujillo, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me in Stenotype and reduced to typewritten transcript by me, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal this, the 23rd day of July 1959, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Joseph A. Trujillo
 NOTARY PUBLIC

My Commission Expires:

October 5, 1960

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 1714 heard by me on 7-8, 1959.

Asst. Sec. 1, Examiner
 New Mexico Oil Conservation Commission

CASE 1719:

Application of Sinclair Oil & Gas Company to commingle the production from several separate pools. Applicant, in the above-styled cause, seeks authority to commingle the production from the Penrose-Skelly Pool and the Paddock Pool from all wells on its Brunson lease comprising the NW/4 SW/4 of Section 3 and the W/2 SE/4 of Section 4, Township 22 South, Range 37 East, Lea County, New Mexico. Applicant further seeks permission to commingle the production from the Hare Pool, Drinkard Pool and Tubb Gas Pool from all wells on said lease.

CASE 1720:

Application of Skelly Oil Company for an oil-oil dual completion. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its W. P. Saunders Well No. 1, located in the SW/4 SE/4 of Section 11, Township 26 North, Range 11 West, San Juan County, New Mexico, in such a manner as to produce oil from the Gallegos-Gallup Oil Pool and to produce oil from an undesignated Dakota pool through parallel strings of tubing.

CASE 1721:

Application of Great Western Drilling Company for an automatic custody transfer system, for permission to commingle the production from separate leases, for permission to produce more than 16 wells into a common tank battery, and for an administrative procedure whereby wells may be produced in excess of top unit allowable. Applicant, in the above-styled cause, seeks an order authorizing installation of an automatic custody transfer system and for permission to commingle the Caprock-Queen Pool production from more than 16 wells located on separate leases within the confines of the North Central Caprock Queen Unit Area in Township 13 South, Ranges 31 and 32 East, Lea and Chaves Counties, New Mexico. Applicant further proposes the establishment of an administrative procedure whereby wells in said Unit Area may be permitted to produce in excess of top unit allowable for said Caprock-Queen Pool.

MAIN OFFICE OCC *application*
1959 JUN 16 PM 4:36 *for hearing*
BEFORE THE OIL CONSERVATION COMMISSION
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. 1714

THE APPLICATION OF JOHN H. TRIGG FOR
AUTHORITY TO (1) INSTITUTE A PILOT
WATER FLOOD PROJECT IN THE CAPROCK-QUEEN
POOL IN CHAVES COUNTY, NEW MEXICO,
(2) PRODUCE AT CAPACITY ALLOWABLE FOR
SEVEN WELLS IN THE PROJECT AREA OF HIS
WATER FLOOD PROJECT

TO: THE NEW MEXICO OIL CONSERVATION
COMMISSION
SANTA FE, NEW MEXICO

Comes now the Applicant, John H. Trigg, whose address is P. O. Box 5629,
Roswell, New Mexico, and (1) makes application for authority to institute a
pilot water flood project in the Caprock-Queen Pool in Chaves County, New Mexico,
(2) produce at capacity allowable for seven wells in the project area of his
water flood project, and in support of such application, states:

I

1. That there is attached hereto and made a part of this application, a
Plat of the area involved in this application, which plat shows:

(a). The lands involved herein, which are more particularly described
as follows:

(i). SE $\frac{1}{4}$ Section 34, T. 13 S., R. 31 E., N.M.P.M., which is
embraced in United States Oil and Gas Lease LC 062476, owned by the Applicant.

(ii). All of Section 4, E $\frac{1}{2}$ NE $\frac{1}{4}$, NE $\frac{1}{4}$ SE $\frac{1}{4}$ Section 5, and All of
Section 9, T. 14 S., R. 31 E., N.M.P.M., which is embraced in United States Oil
and Gas Lease LC 062486, which is owned by Applicant

(b). The location of the proposed intake wells.

(c) The location of all oil and gas wells, including drilling wells
and dry holes.

*Docket
Trigg
6-25-59*

1714

(d). The name of the lessees within one-half mile of the proposed intake wells.

(e). The name of each offset operator within one-half mile of the lands embraced in the application.

2. That all producing wells on the lands involved in this application are now producing from the Queen Formation of the Guadalupe Series, a part of the Permian System; that none of the wells on the lands embraced in this application have produced from any other formation.

3. The name, description, and depth of the formations to be effected by the proposed injection sought in this application is:

(a). Name: Queen Sand

(b). Description: A member of the Queen Formation of the Guadalupe Series, a part of the Permian System, which is found at 2755 feet to 2772 feet in the John H. Trigg, Federal No. 22-4 Well, located in the NE $\frac{1}{4}$ SW $\frac{1}{4}$, Section 4, T 14 S., R. 31 E., N.M.P.M.

(c). Depth of the Formations to be effected by injection: 2755 feet to 2772 feet from the surface.

4. A log of the proposed intake wells, Nos. 29 and 35, is attached to this application and made a part hereof; the log of the proposed intake well No. 36, is now being compiled and will be furnished to the Commission in the immediate future; the log on the proposed intake well No. 34, has not been compiled, but this will be shortly accomplished, and when so compiled will be furnished to the Commission.

5. Each of the proposed intake wells has 4 $\frac{1}{2}$ inch casing set through the producing interval, and perforated. 2" tubing with packer is run and set immediately above the casing perforations. Pressure tests up to 1,000 pounds are made in annulus between the 4 $\frac{1}{2}$ inch casing and 2 inch tubing.

6. Water is to be used for injection; it's source is in the NW $\frac{1}{4}$ NE $\frac{1}{4}$ Section 36, T. 14 S., R. 31 E., N.M.P.M. The fluid is fresh water from the Ogallala formation at a depth of approximately 345 feet. It is estimated that approximately

300 barrels of water per well must be injected daily to "fill up" and thereafter a decreasing amount of water sufficient to sustain an efficient secondary recovery.

7. The name and address of the proposed operator of the project is John H. Trigg, P. O. Box 5629, Roswell, New Mexico.

8. Simultaneously with the filing of this application, applicant has filed with the Office of the State Engineer, P. O. Box 1079, Santa Fe, New Mexico:

- (a). Copy of this application.
- (b). Geographical location of the water source.
- (c). Name and depth of formation from which water is to be obtained.
- (d). Within the immediate future, there will further be furnished to the Office of the State Engineer, an analysis of the water to be used in this project.

9. (a). A description of the proposed initial intake wells are as follows:

Well No.	Subdivision	Section	Township	Range
34-5	NE $\frac{1}{4}$ SE $\frac{1}{4}$	5	14 South	31 East
35-5	SE $\frac{1}{4}$ NE $\frac{1}{4}$	5	14 South	31 East
36-5	NE $\frac{1}{4}$ NE $\frac{1}{4}$	5	14 South	31 East
29-4	SW $\frac{1}{4}$ SW $\frac{1}{4}$	4	14 South	31 East

(b). A description of the initial wells under which capacity allowables have been requested, being off-set, or diagonal off-set wells to the proposed initial intake wells are as follows:

Well No.	Subdivision	Section	Township	Range
21-4	SE $\frac{1}{4}$ SW $\frac{1}{4}$	4	14 South	31 East
22-4	NE $\frac{1}{4}$ SW $\frac{1}{4}$	4	14 South	31 East
30-4	NW $\frac{1}{4}$ SW $\frac{1}{4}$	4	14 South	31 East
31-4	SW $\frac{1}{4}$ NW $\frac{1}{4}$	4	14 South	31 East
32-4	NW $\frac{1}{4}$ NW $\frac{1}{4}$	4	14 South	31 East
20-9	NE $\frac{1}{4}$ NW $\frac{1}{4}$	9	14 South	31 East
28-9	NW $\frac{1}{4}$ NW $\frac{1}{4}$	9	14 South	31 East

10. Applicant further requests that it be authorized to convert any other well located within the above described area for water injection, without notice and hearing, subject to administrative approval by the Commission, when it has been established to satisfaction of the Secretary-Director of the Commission that the proposed water injection well has experienced a substantial response to the water flood project, or is directly off-set by a producing well which has

experienced such response. Applicant hereby stipulates that the State Engineer of the State of New Mexico is an interested party and is to be notified of any requests for the expansion of this pilot project. Applicant suggests to the Commission that such administrative procedure provide for conversion of any well to an intake well by:

(a). Submitting to the Commission triplicate copies of an application for such administrative approval, setting forth all pertinent facts for the need of such expansion of the project, and attaching thereto Commission Form C-16 showing production tests of the effected well or wells, both before and after stimulation by water flood; and attaching thereto plats of the water flood project area, and the immediate surrounding area, indicating thereon the owner of each lease and the location of all water injection wells and producing wells.

(b). Submit evidence that a copy of the application to expand the water flood project area has been sent to each operator offsetting the proposed expansion and to the State Engineer.

(c). That the Secretary-Director of the Commission may, if in his opinion there is a need for the expansion of the water flood project area, authorize said expansion without notice and hearing, provided no off-set operator nor the State Engineer object to said expansion within fifteen days from the filing of such application therefor. That the Secretary-Director of the Commission may further grant immediate approval of the expansion upon receipt of waivers of objection from all operators offsetting the proposed expansion and the State Engineer.

II

Applicant further requests that exception to Rule 502 be granted, in order to prevent waste, and that capacity allowables may be authorized for expansion of the water flood project area.

WHEREFORE, Applicant respectfully requests that a public hearing be held on this application and that upon such hearing that the Commission enter its Order:

(a). Authorizing the institution of a pilot water flood project ✓
in the Caprock-Queen Pool within the exterior boundaries of the following
described land situated in Chaves County, New Mexico:

Township 13 South, Range 31 East, N.M.P.M.

Section 34

~~SP1~~

Township 14 South, Range 31 East, N. M. P. M.

Section 4

Section 5

Section 9

All

E $\frac{1}{2}$ NE $\frac{1}{4}$, NE $\frac{1}{4}$ SE $\frac{1}{4}$

All

and,

(b). Providing for administrative approval of the expansion of
said waterflood project. ✓

(c). Authorizing capacity allowables for seven wells within the
project area of his water flood project. ✓

DATED: June 15, 1959

Respectfully submitted

JOHN H. TRIGG

By

John H. Trigg
P. O. Box 5629

Roswell, New Mexico