BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
May 20, 1959

EXAMINER HEARING

IN THE MATTER OF:

Case 1576:

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

BEFORE THE
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IN THE MATTER OF:

Application of Humble Oil & Refining Company for permission to produce more than sixteen wells into a common tank battery and to commingle the production from two separate leases. Applicant, in the above-styled cause, seeks permission to commingle the Gallup production from its Navajo "F" Lease comprising Sections 3, 4, 9, and 10 with the Gallup production from its Navajo "G" Lease comprising Sections 1, 2, 11, and 12, all in and adjoining the Chimney Rock-Gallup Oil Pool, Township 31 North, Range 17 West, San Juan County, New Mexico. Applicant further seeks authority to produce more than sixteen wells into said common tank battery. Case 1676

BEFORE:

Mr. E. J. Fischer, Examiner

TRANSCRIPT OF HEARING

MR. FISCHER: The next case will be 1676.

MR. PAYNE: "Application of Humble Oil & Refining Company for permission to produce more than sixteen wells into a common tank battery and to commingle the production from two separate leases."

(Marked Humble Oil & Refining Company's Exhibits Nos. 1, 2 and 3, for identification.)

MR. CHRISTY: Sim Christy of Hervey, Dow and Hinkle for Applicant Humble Oil and Refining Company. I would like to make a short statement in connection with the notice given in this case. I refer you to what will be Exhibit 2, the plat map. You'll notice, Mr. Examiner, that Byrd Frost is an offset operator in Section 16 and Bayliss is an offset operator in Section 5. As will be testified to, all offset operators except Bayliss and Byrd Frost were notified of this hearing and were given a copy of the application.

On Byrd Frost we did not have an address for, and on Bayliss we couldn't even find out who he was. Just this morning we located Bayliss, who is in Farmington, and found that the Byrd Frost acreage is now owned by El Paso, and we offer prior to the granting of any order in here to submit to the Commission waivers and consents to the application by Bayliss and El Paso.

With that statement in mind, we have one witness, Mr. Harrill, who I do not believe has been sworn.

(Witness sworn.)

SAM F. HARRILL

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

DIRECT EXAMINATION

BY MR. CHRISTY:

Q Would you state your name, address and occupation?

A Sam F. Harrill. I live in Hobbs, New Mexico. I'm a petroleum engineer for the Humble Oil and Refining Company.

Q Have you previously testified before this regulatory board as a petroleum engineer?

A Yes, sir, I have.

Q Your qualifications have been accepted?

A Yes, sir.

Q Are you familiar with the application in Case No. 1676 and the matters therein sought?

A Yes, I am.

Q Are you familiar with the general area involved in this application?

A Yes, sir.

MR. CHRISTY: Does the Commission have any questions concerning the qualification of the witness?

MR. FISCHER: No, they are accepted.

Q What is the nature of the application and what do you request by it?

A For one, we are asking permission to commingle production from the, our Navajo Tribe "F" Lease to our "G" Lease and to store this production into a common tank battery on our "F" Lease. This requires an exception to Commission Rule 309-A, in that all produced on the "G" Lease will be transported from the lease before it is measured.

Also we are asking permission to store all proration units or to produce all proration units from our Navajo "F" and our Navajo "G" Lease into a common tank battery which is located on our Navajo "F" Lease. This requires an exception to Commission Rule 309-A in that we will be producing more than sixteen wells into our common or central tank battery.

Q So that this can not be handled administratively?

A No, it can not.

Q Are the leases in the Navajo "F" and "G", are they contiguous acreage?

A Yes, sir.

Q Is all production from the same source of supply?

A Yes, sir, production is from the Chimney Rock-Gallup pool.

Q How about the ownership of the leases, is that common throughout?

A Yes, sir, the ownership is common. It is Indian land. The Navajo Tribe of Indians are royalty owners. Humble has a hundred percent of the working interest.

Q There are no overrides?

A No overrides.

Q Has your request been approved by the Geological Survey?

A Yes, sir. We have a letter from United States

Geological Survey approving our request. It is Exhibit No. 1

MR. CHRISTY: Here is Exhibit 1, Mr. Examiner.

A We would like to say something in regard to that letter. In our request to the United States Geological Survey we mentioned that we would use metering separators. However, as will be brought out later, we will not necessarily use metering separators and our request as discussed here today has been discussed with Mercer Thomason of the United States Geological Survey and the United States Geological Survey is in accord with what we propose.

Q Now, with the exceptions mentioned in my opening statement, have all offset operators been notified of this hearing and furnished a copy of the application?

A Yes, sir, they have.

Q And those exceptions are Pyrd Frost, who is now El Paso, and Bayliss?

A Yes, sir, Bayliss has been notified by telephone.

Q That was this morning? A Yes, sir.

Q Now, do you have an exhibit showing the location of the Navajo "F" and "G" Lease and the wells on the leases and the central battery system you show?

A Yes, sir, it is our Exhibit No. 2.

Q Will you discuss that exhibit, please, and explain it to the Examiner?

A Our Navajo "G" Lease consists of Sections 1, 2, 11 and 12 in Township 32 North, Range 17 West, San Juan County, New Mexico. The area is outlined in red on the exhibit. We currently have two producing wells on the Lease, No. 1 is recovering lode oil, No. 2 is producing into a test tank. Our Navajo "F" Lease consists of Sections 3, 4, 9 and 10. It is outlined in green on the exhibit.

Q That's the same township and range?

A Same township and range, yes, sir.

Q All right.

A We currently have our Wells No. 1 and 2 producing into the original tank battery. Our Wells No. 3 through 19 with the exception of 14, 15 and 16, are producing into the tank battery indicated on the plat. Well No. 14 is a shutin gas well, Nos. 15 and 16 are locations. That gives us fourteen wells that are currently completed or producing into our central tank battery, two wells which are producing into another battery.

Our Well No. 20 is currently being completed and we show it on the map as being connected to the battery since it eventually will be.

Q Will you explain to the Commission why you wish to produce more than sixteen wells into the one tank battery?

A The terrain is exceedingly rough and cut by ditches make the tank battery site difficult to construct and to maintain.

Also a central tank battery will permit us to have an earlier pipeline connection to service all wells.

Currently the oil is being trucked out, we are now making negotiations with El Paso Natural Products Company to tie our central or main battery into their pipeline.

Q Is there any mechanical reason why the Navajo "F" and "G" Leases can not be produced from a common tank battery?

A No, sir.

Q With respect to commingling, how do you propose to account for production on the separate leases?

A We will meter production from each lease.

Q Do you have a schematic or flow diagram showing how this meter will be accomplished?

A Yes, Exhibit 3 is a schematic diagram of our proposed method.

Q Will you explain to the Examiner Exhibit 3 and also what the red and green lines are, please?

A All right. I might mention first that since the red and green aren't related to our red and green on Exhibit No. 2, the green represents oil flow and the red represents gas flow. This is a standard Humble tank battery hookup with the exception that provision is made to receive production from two leases into a central battery. It consists of going through our legend, A would be the production separator for the Navajo "F". B would be

the production separator for the Navajo "G". C is a common test separator; D is the Navajo "F" Lease meter. E is the Navajo "G" Lease meter, F is the common test meter and G are storage or stock tanks.

The little "x's" represent plug valves and the little "s's" represent check valves. Just district production we show flow on our Navajo "G" as it would go through the test site, and we show flow from the Navajo "F" as it would go through the normal or production side. Just to trace it out on the "F" as oil and gas production came in from a well, the test manifold valve would be closed, the production manifold valve would be open, whereby the fluid flow would be diverted into our production manifold and then it would pass into the production separator A. At this point the gas would be separated off and pass into the gas system. The oil would pass out through the Navajo lease meter, thence into the stock tank.

On the test side it is illustrated on our Navajo "G". The production valve is closed, the common test valve is open; the production coming in from a well would go into the test manifold, go into the test separator, the gas would go on past through an orifice meter where it would be measured. The oil would flow through a test meter where it would be measured, then the oil would pass through a three-way two position routing valve; since the "G" Lease is on test it would be routed back to the "G" Lease

side. Thence it would pass through the "G" Lease meter, then into the stock tank.

Q Now, test facilities are common on both leases?

A Yes, sir, they are.

Q Speaking of this three-way, how did you pronounce it, three-way two -- what is the terminology for this?

A It is a three-way two position valve.

Q Couldn't you commingle oil from one lease to the other on that?

A It would be possible. It would be remote. What would happen, the pumper could make an error in position valve such that if he were testing the "G" as shown, he could test "G", the valve to put the production into the "F" Lease. However, the pumper will be instructed to double check his actions in testing a well and the lines will be clearly marked.

Q Do you feel there is any great risk of that happening as a practical matter?

A No, sir.

Q What type of meter are you going to use?

A We would like permission to use a dump type or positive displacement meter.

Q At your option? A At our option.

Q How about corrosion?

A The oil is not corrosion. It is sweet, it is possible

that some time water may be produced. At such time we will take measure to protect the meters or have the meters have a corrosive resistant material.

Q How can the meters be calibrated?

A As indicated here, they can be calibrated into the stock tank. Like on the Navajo "F" side where the flow of oil is going into the first stock tank, we could close the valve where it is going into that stock tank, open the valve on the other stock tank, thence both leases would be blowing into separate tanks and we could calibrate each meter at that time, or one separately against the tanks.

To calibrate our test meter we would, we don't expect many wells to be producing on our "G" wells, possibly three or four at the most. What we would do would be just turn all wells on the "G" Lease through our test side and thence route that production into one stock tank. At some future time we may desire, or it may be necessary, to produce or rather to calibrate the meters against a prover meter or into a prover tank.

Q That would be if you had an automatic custody system?

A Not necessarily, it would be, say that we needed our tankage or could spare the tankage for calibrating and then we would use some acceptable method of calibration.

Q A moment ago you mentioned water production. I don't think in tracing the flow of the fluids you indicated

what you would do if water were encountered.

Q Well, no water at this time is being produced. The oil is pipeline quality and produced directly into the tank. In the event of water production, what we propose to do would be to sample the fluid as it leaves the meter and then it will be determined how much water and how much oil is passing through. It may be necessary if that is done to install three water knock-outs. What we will do is do whatever is necessary to assure accurate sampling.

Q How often do you plan to test these facilities?

A The meters?

Q Yes, the meters.

A We will test the meters as so described or presently described by the Commission.

Q Would you suggest every sixty days or what?

A Well, I think it's normally required by the Commission at this time every thirty days.

Q I noticed in your application you have requested temporary permission to store more than sixteen wells in the existing tank battery. Would you explain why that request was made?

MR. CHRISTY: I might state to the Examiner before the witness answers the question, that would be in the event that an order was not issued within the next ten or twelve days, I

assume that it might well be. Go ahead and answer the question, please.

A Well, sir, we currently have seventeen producing wells on the lease. Two are going into a separate battery. That means fifteen wells are going into our central battery. It only takes four or five days to drill and complete a well, so in a very short time we are going to be in the position of being able to produce more than sixteen wells into our central battery, or make other arrangements.

Q Your No. 20 is just now going on production?

A Yes, sir.

Q You have another drilling?

A Yes, No. 21.

Q Do you feel that the granting of this application would be in the interest of conservation and the prevention of waste and the protection of correlative rights?

A Yes, sir, it would.

MR. CHRISTY: That's all.

MR. FISCHER: Are there any questions of Mr. Harrill?

MR. PAYNE: Yes.

CROSS EXAMINATION

BY MR. PAYNE:

Q What is the storage capacity?

A These are 1,000 barrel tanks.

Q 4,000?

A 1,000. We currently have 2,000 barrels of storage.

Q How many wells do you anticipate will ultimately be producing into the common tank battery?

A It is hard to tell now. We haven't really defined the limits of the field. However, our No. 14 Well, if you'll refer to Exhibit 2, was a gas well. No. 9 is a high ratio oil well. Nos. 1 and 2 are limited capacity wells, and No. 7 and 10 are limited capacity wells.

MR. FISCHER: This is all on your "F" Lease?

A All on "F". Now, our No. 1 and 2 "G" Wells are good wells. The point I'm trying to make is we nearly have defined the limits. We expect thirty wells ultimately on both leases.

Q You are seeking an open ended order, are you not? By that I mean no limit on the total number of wells that can produce into the common tank battery.

A That is correct.

Q Is all of this acreage in the Chimney Rock-Gallup Oil Pool?

A Yes, it is.

Q Now, are you going to install adequate facilities to permit the testing of each individual well at least once a month to determine the individual production from each well?

A Yes, sir, wells. We will test the wells as prescribed by the Commission. We would prefer to have permission to test the wells every sixty days if the Commission so sees fit.

Q I believe you stated that the ownership is entirely common in the "F" Lease and "G" Lease, is that right?

A Yes, sir, if it went for Federal regulation which limits the size of the lease to four sections, this would all be one lease.

Q As a matter of fact of information, why do you intend to, in view of that fact, to meter separately the production from each of these leases?

A Well, the United States Geological Survey requires they retain their separate identity. In fact, the United States Geological Survey is requiring the metering. Otherwise, we would not meter.

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

MR. FISCHER: Any other questions?

BY MR. UTZ:

Q What kind of gas-oil ratios do these wells have?

A Very low, one or two hundred cubic feet per barrel except for No. 9. It is sensitive to flow. Oh, I would say it's normal rate or ratio is around 4,000. I could give you some additional information if you like, Mr. Utz. No. 9 is the only well that has shown any tendency at all to be high ratio.

Q What kind of wells are these, are they mostly non-marginal top allowable?

A Well, sir, four of them are marginal, one is penalized and the others are top allowable.

Q I believe you said that you thought that ultimately you would have about thirty wells producing into the battery?

A I would say somewhere between thirty and thirty-five wells.

Q The allowable for these wells, non-marginal or top allowable, is I believe what, fifty-three barrels?

A Fifty-four.

Q Fifty-four. If you had thirty wells, that would be 1,620 barrels a day. Do you think you have enough tank battery?

A No, sir, not at this time. This Exhibit 3 is purely to show our flow diagram. We will at all times have sufficient equipment and storage facilities to handle production. We only indicate two tanks here to show how we could calibrate the meter. Now, actually at the site at the present time there are only two tanks, but in the very near future we will have to install additional storage facilities if we go to this central tank battery. Otherwise, if our request is not approved, we will then have to install additional tank batteries on the lease.

Q Would it be a fair estimate that you will be producing in the neighborhood of 200,000 cubic feet of gas a day

off this lease when it's fully developed?

A I haven't tried to calculate that. Let's just see what it would be. You say 2,000 cubic feet per day?

Q I would say 200 M.C.F. per day.

A Yes, sir. Actually it might be more than that, possibly in the neighborhood of 300 to 400.

Q Do you intend to flare all of this gas?

A Except what is used on the lease. As you know, there is no market in that area whatever for gas.

Q What is the relationship between this pool, that is geographically between this pool and the horseshoe, is it northwest of horseshoe?

A Yes, sir, that is correct.

Q How far from the El Paso line from Aneth is this pool?

A Is that El Paso's pipeline?

Q Yes.

A I do not know how far it is, but we are already, in fact negotiations have already been completed with El Paso Natural Gas Products Company to lay a pipeline into our central tank battery.

Q For sale of gas?

A No, sir, just oil.

Q Just oil. You have no plans to try to sell the gas?

A None that I know of at this time.

MR. UTZ: That's all I have.

MR. FISCHER: Any other questions of Mr. Harrill?

MR. PAYNE: One further question.

BY MR. PAYNE:

Q When do you expect the seventeen wells to be producing into this battery, how many days from now?

A Well, since we have two wells producing into a separate temporary battery, our Well No. 20 would be the 15th well, the 21 is in the process of being completed would be our 16th, it could be within say a week.

Q So that if an order was issued within ten days, you probably wouldn't have to shut in any producing well?

A That is correct.

MR. FISCHER: Any other questions?

MR. CHRISTY: I have a question of the witness. Are you through?

MR. FISCHER: No, I'm not.

MR. CHRISTY: Go ahead.

BY MR. FISCHER:

Q Is the No. 15 well on your "F" Lease completed?

A No, sir. The plain circle indicates a location. We have, since this map came out things are changing rapidly, this map was corrected Friday and we have since cancelled our

location for No. 15.

Q The No. 14 you say is a gas well?

A Yes, it's gas, it produces no oil whatever. We fracted the well and we produced a small load of fracted oil back and the well went to producing gas.

Q What is the production of your No. 13 well on the "F" Lease?

A It's a top allowable.

Q Is it of a high ratio?

A No, it has a low ratio. That's one of the things we need to find out as far as defining our limits, it doesn't tie in with No. 9 too well.

Q Is 16 completed on the "F" Lease?

A No, sir, we have also cancelled that location at this time.

Q Your lines in your tank battery setup, are they above ground, all above ground?

A Normally they are below ground. Now, of course, the lines actually, the line from the regular separators are from the separators down through the meters would be above ground. In other words, that would be very short distance between the separators and the meters.

Q You say normally they would be. Are they now?

A I would say yes. I'm not familiar with the tank

battery site itself, but normally Humble buries their flow lines.

Q You mentioned something about test separator or dump separators. Would you restate that again, please, as to your desire for dump type separators?

A Well, our, possibly you are referring to our request with the United States Geological Survey, we stated there we would use a metering dump type separator, which may not be the case. Actually our test facilities will probably be a metering dump type separator.

Q Your test facilities at C?

A Yes, well, actually C and F would be one integral unit. There's essentially no difference in the meter separator and a meter and a separator that are separate. Usually a meter separator has the metering compartment integral with the separator.

Q So the positions at A and D, these separators are just normal production type separators?

A Yes, normally our tank battery comes off C and D, a production separator and test separator, which is the way it is now. What we propose to do is add another separator. Actually I should have said A and C, we would add another separator B to take care of that.

Q This three-way two position valve, is it gas operated?

A No, it will be a manually operated valve.

Q Do you know of any wells in this pool that produce

water at this time?

A No, sir, I do not.

Q You don't know of any?

A I do not know of any.

Q El Paso, you said that the Byrd Frost has been purchased by El Paso. Is that El Paso Natural Gas or Products?

A Natural Gas.

MR. CHRISTY: Gas.

Q Are you familiar with this No. 2 well on the Byrd Frost Lease in Section 15?

A No, sir, except to know it is a gas well.

Q The new tankage that you will require will also be thousand barrel tanks, what new tankage you add will be thousand barrel?

A In all probability it will be, but it wouldn't necessarily have to be, and it could just as well fit into our plan as well as a thousand barrel tank could.

Q Now, at the present time do you know the production of the "F" Lease and the production of the "G" Lease, total per day production approximately?

A While I'm figuring that, No. 1 is the only producing well on the "G" Lease is a top allowable at 54 barrels per day. No. 2 is currently recovering lode oil. It would be right at 800 barrels per month.

Q Per day?

A Per day, excuse me, about 750 per day.

Q Is your oil presently being trucked out from this?

A Yes, it is presently being trucked out.

Q So you've got a little over two days' storage at the present time?

A In the one battery actually Wells 1 and 2 go into a separate battery and Well G wouldn't be included in that also.

Q Still this "F" Lease, you have a little bit over two days' storage, is that correct?

A Let me do some checking here. It would be about three days' storage. Actually since the oil is pipeline quality and no treating is involved, no high bottom is involved, we have had no trouble whatever in getting our oil trucked out. It will, of course it's obvious that in the very near future we will need additional tankage. We will also have sufficient tankage on the lease.

MR. FISCHER: Any other questions?

MR. CHRISTY: I have a question if you are through.

RE-DIRECT EXAMINATION

BY MR. CHRISTY:

Q I believe Exhibit 1 is the original letter received by you in the Geological Survey in your Midland Office?

A Yes.

Q Your Exhibits 2 and 3 were prepared by you or under your direct supervision?

A That's correct.

MR. CHRISTY: We now offer Exhibits 1, 2 and 3 inclusive.

MR. FISCHER: Without objection they will be so received.

MR. CHRISTY: That's all we have from the witness.

MR. FISCHER: The witness will be excused.

(Witness excused.

Any statements to be made in this case? The case will be taken under advisement.

There will be a short recess.

(Whereupon a recess was taken.)

STATE OF NEW MEXICO )
) ss
COUNTY OF BERNALILLO )

I, ADA DEARNLEY, 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 2nd day of June, 1959.

Ada Dearnley
Notary Public-Court Reporter

My Commission Expires:

June 19, 1959.

BEFORE EXAMINER FISCHER
OIL CONSERVATION COMMISSION
Exhibit No. 16
Case No.