BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
July 27, 1960.

IN THE MATTER OF: APPLICATION OF PAN AMERICAN PETROLEUM CORPORATION for an order authorizing it to commingle the production from the Empire-Abo Pool from all wells on eight separate leases in Sections 27 and 34, Township 17 South, Range 28 East, Eddy County, New Mexico. Applicant also seeks authorization of an automatic custody transfer system to handle said commingled production.	CASE NO. 2028

BEFORE:

Hon. Daniel S. Nutter, Examiner.

TRANSCRIPT OF PROCEEDINGS

MR. NUTTER: The hearing will come to order, please. Next case will be Case 2028.

MR. PAYNE: Case 2028. Application of Pan American Petroleum Corporation for an order authorizing it to commingle the production from the Empire-Abo Pool.

MR. NEWMAN: Kirk Newman, of Atwood and Malone, Roswell, New Mexico, representing the applicant. We have one witness.

(Witness sworn.)

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A L B E R T H. G R E E N, a witness, called by the Applicant,

having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. NEWMAN:

Q Will you state your name and employment, please, sir?

A I am Albert H. Green, petroleum engineer, Pan American Petroleum in Lubbock, Texas.

Q Have you previously testified before this Commission?

A Yes, sir, I have.

MR. NEWMAN: Are the witness) qualifications acceptable?

MR. NUTTER: Yes, sir.

Q (By Mr. Newman) Would you state the nature and purpose of this application?

A Pan American's application in this case is for permission to commingle production from various State leases, and to install automatic custody transfer systems to handle that production.

Q You have in your hand, and I pass it to the Commission and staff, what will be referred to as Applicant's Exhibit 1, and attachments thereon. Would you refer to the map of the area which is an attachment of the exhibit, and state what that attachment shows, please sir?

(Whereupon, Applicant's Exhibit 1 marked for identification.)

A Attachment 1 of Exhibit 1, is a plat which shows the location of the proposed central battery, and the Lact installation. The acreage to be reserved by these facilities are outlined with

a dashed or broken orange colored line.

Q For the record, would you state what the acreage is, section description?

A The acreage to be reserved by these facilities include the South Half ($S\frac{1}{2}$) of the Northwest Quarter ($NW\frac{1}{4}$), the South Half ($S\frac{1}{2}$) of the Northeast Quarter ($NE\frac{1}{4}$), the North Half ($N\frac{1}{2}$) of the Southeast Quarter ($SE\frac{1}{4}$), the Southeast Quarter ($SE\frac{1}{4}$) of the Southeast Quarter ($SE\frac{1}{4}$) of Section 27, Township 17 South, Range 28 East. The Southwest Quarter ($SW\frac{1}{4}$) of the Southwest Quarter ($SW\frac{1}{4}$) of Section 27, Township 17 South, Range 28 East. The Northeast (NE) Northeast Quarter ($NE\frac{1}{4}$) of Section 34. The West Quarter ($W\frac{1}{4}$) Northeast Quarter ($NE\frac{1}{4}$), the Northeast Quarter ($NE\frac{1}{4}$) of the Northwest Quarter ($NW\frac{1}{4}$) of Section 34, and the Southwest Quarter ($SW\frac{1}{4}$) of the Northwest Quarter ($NW\frac{1}{4}$) of Section 34, the Southeast Quarter ($SE\frac{1}{4}$) of the Northwest Quarter ($NW\frac{1}{4}$) of Section 34, the Southeast Quarter ($SE\frac{1}{4}$) of the Northeast Quarter ($NE\frac{1}{4}$) of Section 34, all of the Southwest Quarter ($SW\frac{1}{4}$) of Section 34, all of those 40-acres tracts being in Township 17 South, Range 28 East.

Quarter quarter sections Central Battery are located in the Northeast Quarter ($NE\frac{1}{4}$) of the Southwest Quarter ($SW\frac{1}{4}$) of Section 34.

Q Is the number of the leases to be served by these tank batteries, as defined in the application, shown on this plat?

A Yes, sir.

Q Can you give me the royalty ownership under these leases?

A You are referring to the beneficiary?

Q Yes.

A The beneficiaries are the common schools in the State of New Mexico.

Q Do you know, are all of the leases all State of New Mexico leases?

A That is correct.

Q Do you have any further remarks in connection with this exhibit?

A No, sir, in regard to this attachment.

Q Will you refer to what has been designated as attachment 2, and state what that attachment shows?

A Attachment 2 of Exhibit 1, is a schematic flow drawing showing the proposed facilities, including the central stores in a Lact system to be located in Section 34.

Q Would you outline for the Commission the procedure of flow pattern, of flow through this system?

A Yes, sir. The flow from individual wells to be served by these facilities enters the battery through individual flow lines, through individual automatic well flow control valves, and into the production headers, which are marked item "A". From the production header, a flow passes to the individual lease production separators, and then through the individual lease production meters, which are marked "C" on the attachment. Then the individual lease production is commingled for the first time, and flows into

the Lact unit surge tank, marked item "D". When sufficient oil has entered the surge tank to rise to the level of the float switch, that switch actually actuates the Lact transfer pump, which is item "G". Delivery of oil then commences to the pipeline. From the pipeline pump oil passes through a strainer, a deaerator, and a B. S. and W. monitor which is marked item "J" in the flow drawing.

If the oil is of commercial quality, then the flow continues through the diverting valve and past the sampling point, then through another positive displacement meter, and through a back pressure valve, and past the meter prover tank in a loop and through a back pressure valve, then to the pipeline. If, in the event that the B. S. and W. monitor detects an uncommercial quality, the diverting valve then stops the flow of oil to the pipeline, and diverts that oil into the resurgical tank, which is item "Q".

As I understand it, at the present time, production on those leases to be served by the facilities, make little if any water. We will collect any unmerchantable oil in tank "Q", and subsequently economically treat it in that tank. After the oil-water emulsion is broken down by economic treatment, the water will be drawn off the tank bottom; the treated oil will be returned to the Lact surge tank. I believe that covers it.

Q What kind of diverters are used in this system?

A Meter devices, all meters including those to serve the

individual lease are the positive displacement meter type.

Q Do you have systems with similar equipment presently in use in the Empire-Abo Field?

A Yes, sir, we have similar installations which have been approved by the Commission and now in operation in the Empire-Abo Field.

Q Is this system designed to permit individual well testing?

A Yes, sir. This particular installation is set up so that every well and every lease could be individually tested, as prescribed by the Commission. That testing can be done by manipulation of the valves in the production headers, item "A", and causing the oil to flow from any one particular well from the production header into the lease -- or, excuse me--the well test separator, which is marked item "T", and through the individual well test meter which is marked item "U"; thence from that point into the commingled header, and into the surge tank "D".

Q What safety factors are included in this to prevent the escaping of oil under any circumstances?

A In the event that the Lact unit working level float switches in the surge tank "D", that is, the high level float switch should fail to operate, production will overflow from the surge tank through the equalizing line into the resurgical tank. If this situation continues until the fluid level in the resurgical tank reaches an emergency high level, the fluid level will cause the float, which is item "I", to actuate and cause all of the well,

flow control wells to shut in.

Q Do you have any further remarks in connection with , this attachment?

A One other; I might add that all flow lines from the wells to this central battery are the high pressure design, and will exceed any well-head shut-in pressures that may be encountered in this field.

Q Is this system designed to protect the correlative rights of both adjoining lease-hold owners and royalty owners?

A Yes, sir, it is.

Q What is the effect of the installation of this system with regard to waste?

A I feel that it will prevent the waste of hydrocarbons to the extent that it will reduce vapor losses and other than the hydrocarbon saving, it will effect labor savings for the producer as well as the pipeline, and it will save capital expenditures for the producer, because such facilities are less expensive than would be individual lease batteries to serve similar acreage.

Q Was this entire exhibit, including the attachments thereto, prepared by you or under your direction?

A Yes, sir, they were.

MR. NEWMAN: That completes the direct examination. We would like at this time to offer the Exhibit 1 in evidence.

MR. NUTTER: Pan American's Exhibit 1 will be received. Any further questions of Mr. Green?

CROSS-EXAMINATION

BY MR. PAYNE:

Q Mr. Green, what is the average well-head shut-in pressure in this area?

A I am a little bit in doubt about that. I would say it averages between 500 and 1,000 pounds, depending on the well.

Q Have you actually pressure-tested your flow lines?

A No, sir, not to my knowledge. The flow lines which we are installing, however, are high pressure tubing, which is rated at 3,000 pounds.

Q 3,000, you said?

A Yes.

Q Has Pan American, with any other of their Lact systems, had any difficulty when they first put the wells on, by getting a big slug of gas which throws it out in the pipe in the separator, thereby causing oil to go out the gas line to the pit?

A Not to my knowledge. Now --

Q Have you actually worked in the field with any of Pan American's existing Lact systems?

A No, sir, my duties have been limited to engineering design in the Lubbock district office.

MR. PAYNE: I see. Thank you.

QUESTIONS BY MR. NUTTER:

Q Mr. Green, these wells eventually make a certain amount of emulsion, is that correct?

A Very little, if any. Some of the newer wells make some emulsion while they are cleaning up load waters.

Q They are not making any free water?

A No, sir.

Q Well, now, you stated that the royalty is identical under all these leases, being 100 percent common school lands. How about overrides?

A The overrides vary. We have contacted the overrides by registered mail, notifying them of our plans, and soliciting their approval. We have that approval from all those from whom we have heard, they have given their approval, and we have received, I believe, the return card on a registered letter from all the overrides.

Q Is the working interest identical throughout?

A No, sir, it is not. The working interest is varied, and working interest owner approval will be obtained.

Q If you turn up with some emulsion in your final commingled stream, how do you -- now, then, how do you distribute the emulsion to the proper lease it came from?

A The first time we detect this, it will then necessarily have to be allocated on an equal basis. It's when we do find there has been, or there is a well producing water, then we will take the necessary steps to determine which well that it is, and if it is consistently making enough water to justify, we will substitute a heater treater for a separator to accomplish the

proper treatment.

Q You have properly received production from the lessor from a well?

A From each one of these.

Q From each one of these?

A Yes, sir.

Q You are not using heat at all at this time?

A Not at this time, no, sir.

Q Mr. Green, what do you think about the advisability, in the event a lessor, some lease makes emulsion of various quantities, of installing samplers on the oil outlet of the separators to determine the amount of emulsion that is being produced into that separator?

A We have considered that for certain particular installations where the quantity of oil may be insufficient to load up a commercially available heater treater. However, if the quantity of the emulsion coming into the separator from a particular lease is of sufficient quantity to justify a heater treater installation, then it is our first thought -- or if it is suitable to install a heater treater, because sooner or later we have to make the separation of oil and water, any one of which can accomplish the separation prior to water metering, then we meter nothing but the emergent oil, and the need for a sampler at that point would be eliminated, it seems to me.

Q I noticed on some installations that have been made in New Mexico where rather than spend five or six thousand dollars on the heater on the one individual lease, you have some 40-acre leases

which is a rather large expenditure of money for a small lease, that they would install samplers downstream from where there may be any water knocked out of the separator, or past the commingled production, through a heater treater.

A As a matter of fact, I am very interested in that, and while that doesn't particularly apply to our application, maybe, I would like to know more about the Commission's thinking on that very subject, because we have been considering that from the standpoint of economics where we have -- Well, the sum and substance, leases which have some production and do make water, we would like to consider some knowledge of say, a water knock-out installation, and then commingle and heat treat.

Q The commingled production?

A Yes, sir. Under certain conditions, we feel that would be very attractive from the economic standpoint.

Q It can save money, and I am sure you can get an accurate measurement of the production and the emulsion from each lease.

A Has the Commission previously approved installations of this type?

Q Yes, sir, we do have some.

A I am glad to know that.

Q What percentage of the oil that is being produced at this present time, do you believe will require chemical treatment?

A I would say less than one percent at the present time.

Q I see. So you are producing a very small percentage of

emulsion at this time?

A That is right.

MR. PAYNE: Then your present test system is actually metering prior to separating water and emulsion from the oil?

A Yes, sir, when there is any water produced; as I said previously, about the only water that we are producing now is that water that is produced when a well is cleaning up after initial completion.

Q (By Mr. Nutter) Now, as they start making water, you are going to either put a heater treater or --

A We will have to go to heat treating prior to metering, or sampling with metering, and then heat treating the commingled.

Q And Pan American is willing to make those arrangements?

A Yes, sir.

MR. PAYNE: You do not feel it is necessary at this time?

A No, sir, I do not feel it is necessary at this time. When the day comes when these leases do make water, if they do, then certainly to make proper allocation of production, we have to separate the oil and water.

MR. PAYNE: I see.

MR. NUTTER: Any further questions of Mr. Green?

(No response.)

MR. NUTTER: You may be excused.

(Witness excused.)

MR. NUTTER: Do you have anything further, Mr. Newman?

MR. NEWMAN: No, sir.

MR. NUTTER: Does anyone have anything further for Case 2028?

(No response.)

MR. NUTTER: We will take the case under advisement.

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

I, LLEWELYN NELSON, 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, 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 2nd day of August, 1960, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Llewelyn F. Nelson
NOTARY PUBLIC.

My Commission Expires:

June 14, 1964.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2028, heard by me on 7/27, 1960.

....., Examiner
New Mexico Oil Conservation Commission

I N D E X

NUMBER	EXHIBIT	MARKED FOR IDENTIFICATION	OFFERED	RECEIVED
APP.#1	Plat	2	7	7