DEARNLEY-MEIER REPORTING SERVICE, Inc.
PHONE CH 3-6691
ALBUQUERQUE, NEW MEXICO

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
January 25, 1961

EXAMINER HEARING

IN THE MATTER OF:

Application of Yates Drilling Company for an automatic custody transfer system. Applicant, in the above-styled cause, seeks permission to install an automatic custody transfer system to handle the Pennsylvanian formation production from all wells presently completed or hereafter drilled on Federal Lease NM 03283, comprising the W/2 of Section 31, Township 8 South, Range 37 East, Roosevelt County, New Mexico. Case 2163

BEFORE:

Elvin A. Utz, Examiner

TRANSCRIPT OF HEARING

MR. UTZ: Case 2163.

MR. PAYNE: Application of Yates Drilling Company for an automatic custody transfer system.

MR. LOSEE: Mr. Examiner, A. J. Losee of Losee & Stewart, Artesia, for Yates. I have two witnesses, Mr. Reynolds and Mr. Bailey.

(Witnesses sworn.)

MR. UTZ: Other appearances in this case?

KENNETH D. REYNOLDS,

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

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DIRECT EXAMINATION

BY MR. LOSEE:

Q Will you state your name?

A Kenneth D. Reynolds.

Q Do you live in Artesia, New Mexico?

A Yes, sir.

Q What is your occupation?

A Drilling superintendent for Yates Drilling Company.

Q How long have you been employed with Yates Drilling Company in that capacity?

A Year and a half.

Q Are you familiar with the application of Yates Drilling Company in this case No. 2163 to install an automatic custody transfer system?

A Yes, sir.

Q Is Yates Drilling Company the operator of the Federal Lease New Mexico 03283 insofar as it covers the Bagley sands of the Pennsylvanian formation in Roosevelt County, New Mexico, Township 8 South, Section 31, Range 37 East, the W/2?

A Yes, sir.

Q Has Yates Drilling Company drilled any wells on this lease at this time?

A We have drilled one well, and we are T.D. on the second well, and have run casing and we are perforating today.

Q Is the first well located in the SE SW/4 of that section?

A Yes, sir.

Q What is the total depth of this first well?

A 9690.

Q Did you plug it back any?

A Yes, sir. We plugged it back 33 feet.

Q 9657?

A Right.

Q What is the gross pay in the well?

A Gross pay is 32 feet.

Q What is the net pay?

A 22 feet.

Q This second well that you are on total depth and are perforating today, what is the depth?

A 9700 feet, and it was plugged back 34 feet.

Q By the log what was the gross pay?

A The log showed 22 feet of gross pay and 16 feet of net pay.

Q You have two other locations on the lease, is that correct?

A Yes, sir.

Q One would be in the SE NW and the other in the NW NW?

A Right.

Q Based upon the present production in the area, does Yates contemplate continuing development continuously?

A Yes, sir.

Q So that you expect to drill two more wells?

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A Yes, sir.

Q I will hand you what has been marked Applicant's Exhibit 1 and ask if you would state what that is?

A This is the half section, west half of Section 31 in Range 37 East, Township 8 South that we operate.

Q This is the section that you have been testifying to, or half section?

A Yes, sir.

Q It shows the location of your existing wells, and the proposed future locations?

A Yes, sir, also the location of the LACT unit, and present tank batteries.

Q Is the ownership of this lease the same throughout?

A Yes, sir, on this part right here.

Q On this half section there is no divided ownership?

A No, sir.

Q The United States is the royalty holder?

A Yes, sir.

Q Yates Drilling Company, Nearburg & Ingram, and Lillie and Martin Yates, are they the working interest owners?

A Yes, sir.

Q Does Frances Nix and Artesia Broadcasting Company hold overriding royalty interests?

A Yes, sir.

Q I will hand you what has been marked Applicant's Exhibit

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2 and ask you if you will state what that is, sir?

A This is a letter from the U.S.G.S. approving our application to install a LACT unit on this lease, which we sent to them diagrams and what we propose to do on it, and this is their letter of approval to us.

Q Is the information you furnished the U.S.G.S. as to plans and specifications of this LACT unit identical to what you will present before the Commission?

A Yes, sir.

Q I hand you what has been marked Applicant's Exhibit 3, and ask if you will state what that is?

A This is a letter of approval from the working interest owners and overriding royalty owners, and royalty owners.

Q Of the installation of this LACT unit?

A Yes, sir.

Q What is the name of the pipeline purchaser in this area?

A Magnolia Pipeline.

Q Have they consented to the installation of this LACT unit?

A Yes, sir.

Q Is their consent evidenced by the letter marked Exhibit 4?

A Yes, sir.

Q Why does Yates Drilling Company wish to install this LACT unit on this lease?

A Due to the allowable that now exists in that area; should it remain the same after we complete the next two wells it will take

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approximately 2500 barrels of storage on this lease, and due to the money that we can save in tankage alone, which will pay approximately a third or half of the LACT unit, we feel that that is one justification for installing the LACT unit, and due to the gaugers' tight schedule in that area in the pipeline, tight schedule on being able to run the oil, we feel that being able to get the allowable out each month with this will more than pay for it.

Q Actually, then, in that area, by reason of the gaugers' schedule it is difficult to get the allowable run?

A Yes, sir.

Q And this LACT unit will overcome that difficulty?

A Yes, sir.

Q What with respect to evaporation loss?

A We feel like it will save enough in evaporation loss and waste to pay for the remaining cost of it within a year.

MR. LOSEE: I think that is all of this witness.

MR. UTZ: Any other questions of the witness?

BY MR. NUTTER:

Q Do you have any idea at all what this savings in evaporation would amount to?

A We feel like it will amount to approximately ten to twelve barrels a month.

BY MR. PAYNE:

Q Is your other witness going to testify as to the installation?

MR. LOSEE: Yes.

MR. UTZ: Witness may be excused.

JAMES A. BAILEY

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

DIRECT EXAMINATION

BY MR. LOSEE:

Q Would you state your name, please, sir?

A James A. Bailey.

Q Where do you live, Mr. Bailey?

A Midland, Texas.

Q What is your occupation?

A I am a regional salesman for Jones & Laughlin Supply.

Q You propose to testify to the installation and operation of this LACT unit that Yates desires to install?

A Yes, sir.

Q Would you briefly tell the Commission your qualifications on this subject?

A I took petroleum engineering in Tulsa University for three years. I attended Tulsa Technical College for two years, where I took industrial electronics and instrumentation.

Q You obtained a certificate from that school?

A Yes, sir.

Q What did you do then?

A I worked for Black, Sivalls & Bryson for a period of

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three years, Research and Development Laboratory, on design of instrumentation for oil field use such as is used in a LACT unit, and worked with Jones & Laughlin in the Production Equipment Section for three years. I attended a month's school at Major Engineering Company in which we went quite detailed into the manufacture and the component parts of the unit.

Q During the first two and a half years you were were Jones & Laughlin you said you served as a technical advisor; on what type of equipment?

A It was on, primarily, production equipment, on tank equipment, on waterflood and LACT equipment.

Q You had one month schooling with Major Engineering that installed this unit?

A That's right.

MR. LOSEE: I ask the Commission if Mr. Bailey's qualifications are accepted?

MR. UTZ: His qualifications are acceptable so far as the testimony in this case is concerned.

Q (By Mr. Losee) Mr. Bailey, is the unit you propose to install for Yates Drilling Company on this lease a standard LACT unit?

A Yes, sir, from the standpoint that we make only a standard package LACT unit. We do not take other specifications and build to their specifications like many other manufacturers, job shops, do. We build our own unit and stock them in our stores and sell from our

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stock.

Q All of the LACT units installed under this brand-name are standard as to size and equipment?

A That's correct.

Q How many of these units are in actual use in the United States?

A Twenty-nine, and this will be the thirtieth.

Q Any in New Mexico?

A One at Eunice, New Mexico.

Q Who is the operator of that lease?

A Continental Oil.

Q How long have they had it?

A Approximately a year.

Q I will hand you what has been marked Applicant's Exhibit 5 and ask you if you will state what that is, sir?

A It is a schematic drawing of how we propose to install this equipment as far as physical layout.

Q Would you briefly explain that drawing?

A The four wells that are proposed would be routed to the inlet of the 6-foot by 20-foot vertical motion treater in which the oil would be separated from the gas and water. At that time the oil will be piped to the oil discharge valve into the storage tank. From this point the LACT system will be started and stopped by the levels in the tank by hydrostatic switch. When the level reaches ~~10-foot it will come on; three or four feet, the unit will stop.~~

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Actually, the operation from there on is from discharge of the unit through a prover loop and on to the pipeline.

Q I hand you what has been marked Exhibit 6 and ask if that is the plans and specifications of the package LACT unit?

A Yes, sir, that is correct. It is marked our Model 700 in this literature.

Q What is the capacity of that unit?

A The unit will deliver a thousand barrels a day at 25 pounds, or 1200 barrels at 20 pounds.

Q I will refer you to the diagram on the inside of the page which is the plan of the unit itself and ask you if you will explain that, having in mind the equipment that Yates has ordered to be installed on this lease?

A Yes, sir. Actually, this drawing is of a little bit larger unit. For that reason, some of the components, being separate components in this particular unit, would be a combination.

Q Would you explain, after the flow of oil goes into the unit, what takes place?

A The hydrostatic switch turns on the unit, at which time the centrifugal pump starts and draws the fluid from the tank, through the pump, and it is pumped up the vertical run of piping to the strainer and air eliminator, which are a combination on the unit we propose. It is then pumped on horizontally across the top of the unit and down through an instrument, BS&W monitor probe, at which time the monitor, which is, technically, tied to the probe,

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analyzes the product passing, and if the BS & W is below the pipeline allowable the oil is passed through the meter. However, if the BS & W content exceeds that specified the monitor sends a signal to this No. 7 on the drawing, electric 3-way valve, which diverts the flow of the oil to the heater treater to be cleaned up. After passing the probe, (9), the electric sampler, takes a sample.

Q Would you refer to the numbers in the process?

A Yes, sir. This No. 10 is the sample container, and No. 9 is the sampler -- at which time the sampler draws a sample proportionate to the rate of flow from the stream, pumps it into a pressurized sampling container. This will store an adequate sampling for a period of a month, or whatever the runs are planned to be taken.

After the sample is taken it passes, it being good oil, on through the 3-way valve to the meter. Bad oil is passed on to the treater.

Q And recirculates through the same system?

A Yes, sir, until it becomes merchantable. After passing through the 3-way valve, if good oil, we come to a No. 20, 25, and No. 8, which are temperature compensated positive displacement type meters which we propose to put in (Brodie, Granco, Rockwell or A. O. Smith,) whatever is acceptable to the Commission. In this case, probably a Rockwell or any other meter that would be acceptable. From the discharge of the meter, flow of oil goes through a back-pressure valve which maintains a constant pressure on the unit, and,

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in turn, constant flow rate through the unit controls the flow of the centrifugal pump. The discharge of the back pressure valve passes on, then, through the three valve prover bypass and on to the pipeline.

Q Exhibit 7 is a specification sheet and diagram of the prover tank. Would you briefly explain that, sir?

A Yes, sir. In an effort to maintain the accuracy of the meter that is required we propose to supply Major double-wear type prover tank with which to calibrate the meters at any specified time during the month. Whatever the case may be we feel that it will offer much more accurate calibration than any other type tank, and, therefore, maintain better accuracy in measurement of oil to the pipeline. We feel that is accomplished by the fact we have no horizontal surfaces in which to collect paraffin. It has better insulation externally. It is plastic-coated inside to prevent paraffin build-up. We feel it is most accurate and will provide a means of keeping the meter very accurate.

Q Would you explain how it operates?

A At any time you want to prove, you close valve 6 and open -- well, they are all valve 6. You open valve 6 which goes to the pipeline and open the valve to the prover tank. At this time you fill the tank and drain it. This wets down the walls, brings the temperature of the tank up, and when you drain it you drain only from this bottom weir, and you don't drain the bottom. It leaves a liquid bottom in the tank. You would never have a horizontal

surface for paraffin build-up. Then you would read your meter, start another run, fill up until it spills over the top. This level is controlled by the stainless steel weir located in the top. The amount that spills over is that which is in excess of ten barrels. This is a ten barrel proving tank we propose. Along this large gauge is a calibrated scale which is calibrated in thousandths of a barrel. Calibrations are three-tenths of an inch apart which enables interpolation to ten-thousandths of a barrel, which is ten times more accurate than a meter you are proving. When this has been effected you take your temperature readings and correct the capacity in the tank to 60 degrees, divide this valve into the meter reading and establish a meter facotr with which you can adjust your meter readings for that period of time. You do this a second time and if the readings agree within five-hundredths of one percent you consider the proving valid and feel your meter factor is correct. You use this meter factor to correct your meter readings until you prove again.

Q Do you know how Yates proposes to test each of the wells on this lease?

A Yes. I feel they are going to manually test these wells, and shut in three wells while they test one.

Q While they produce one?

A Right.

MR. LOSEE: I have no further questions of the witness.

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BY MR. UTZ:

Q In regard to your storage tanks, you have only a high-level and a low-level switch?

A That's correct, sir.

Q To actuate and shut off your pump?

A Yes, sir.

Q Do you know how much storage will be in that tank?

A How much additional storage?

Q Yes. What is the total storage for the system?

A Well, actually, we feel that we will operate primarily on half a tank, being a 400-barrel tank, somewhere in the vicinity of 200 barrels, which will be active, 200 more which will be non-active; two additional 400-barrel tanks, giving a thousand additional storage which we won't use.

Q Your total storage would be around 1200 barrels?

A Yes, sir, total storage, 1200, in the tanks.

Q Do you know how much the lease is producing at this time?

A No, sir, I sure don't.

MR. UTZ: Can you answer that, sir?

MR. REYNOLDS: 163 barrels a day until we get our second well in production.

MR. UTZ: Do you intend to drill four wells on this lease?

MR. REYNOLDS: Yes, sir.

MR. UTZ: What will the alloable be on these wells, do you know?

MR. REYNOLDS: On other leases up there I understand it is 167 barrels a day, and we feel that ours will be 163 to 167 barrels a day per well.

MR. UTZ: In other words, your storage capacity here is almost two days production?

MR. REYNOLDS: Yes, sir.

MR. UTZ: How often will your pumpers visit this lease?

MR. REYNOLDS: At least once a day.

MR. UTZ: What type of flow lines do you intend to lay to this system?

MR. REYNOLDS: Two and one-half inch.

MR. UTZ: What would their test be?

MR. REYNOLDS: 1500 pounds.

MR. UTZ: And how about flowing wellhead pressures?

MR. REYNOLDS: Approximately 11 to 1500.

MR. UTZ: So that if the system did shut down you would build up an excess of 1500 pounds on these flow lines, wouldn't you?

MR. REYNOLDS: Yes, sir. These lines are tested for testing pressure of 2500, 1500 working pressure.

MR. UTZ: What is your shut in wellhead pressure?

MR. REYNOLDS: 18 to 1900 pounds on this one well.

MR. UTZ: You anticipate that is about what it will be on the other wells?

MR. REYNOLDS: Our geologist seems to think it will be around 1500 on the others.

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BY MR. UTZ:

Q What type of crude are you going to meter in this unit?

A (By Mr. Bailey) It is 49 gravity.

Q Is it corrosive?

A Not particularly, apparently.

Q Do you anticipate any paraffin problems with this crude?

A Yes, sir.

Q What type of meter is best suited to handle the paraffin problem?

A Well, sir, the meter we propose is an aluminum-fitted meter which the manufacturer claims to be the best meter for the application.

Q Is that a positive displacement meter?

A Yes, sir.

MR. UTZ: Any other questions of the witness?

BY MR. NUTTER:

Q Mr. Bailey, is it the intention of Yates to install this prover tank as a permanent part of this installation?

A Yes, sir.

Q And the discharge from the ACT unit, which is in a package, comes in at this little opening right here on this Exhibit No. 7; is that correct?

A Yes, sir.

Q When you want to test your meter you close valve 6, right there, and open this valve; is that correct, this valve 6?

A Yes, sir.

Q And you fill the tank up?

A Yes, sir.

Q Then you open this valve 6 over here to drain the prover tank?

A Yes, sir.

Q This prover tank, I presume, is calibrated at your factory?

A That's right, sir.

Q And it is plastic-coated?

A Yes, sir.

Q In the event you had a paraffin build-up on the inside of this tank, even though it is plastic-coated, could that be detected?

A Only by examination of the tank itself, sir. It has a very small opening there in which to check the tank. However, the entire top can be removed to clean it.

Q This little 13, I suppose that is readily openable, isn't it?

A Yes, sir.

Q And you can look down in there and detect whether there is a paraffin build-up or not?

A Yes, sir.

Q The unit you are selling to Yates, does it have two meters as you show on the diagram in Exhibit No. 6?

A No, sir.

Q It is a single meter unit, then?

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A Yes, sir. We have one thing I failed to mention, meter monitor, which there is an electric pulse transmitter in the register of the meter which sends a signal to this electronic time delay which, if the register ever fails for any reason, this monitor will shut the unit down, or if it slows down, even, it will.

Q Where does the sample come from that goes into the sampler; is that from this vertical, you are sampling a vertical flow of fluid?

A Yes, sir, that is correct.

Q What is the little line that comes off of the sampler downward and then runs across over here to No. 26, which is the liquid control pressure switch; what is that little line for?

A When you get through taking your sample -- you have, say, five gallons of this -- and you take a very small sample to see how good oil your are getting, rather than pump it on the ground or in a bucket you take this, a bicycle pump and pump air in the diaphragm, which forces the fluid back and you see it there.

BY MR. UTZ:

Q That comes back and joins the flow of the liquid into the surge tank?

A Yes, sir.

BY MR. NUTTER:

Q You are going to install three tanks, 12-foot diameter and 20-feet high?

A Yes, sir.

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Q Normally, a high-level working tank is ten feet?

A Yes, sir.

Q There will be ten feet available above that?

A That's right.

Q The normal storage in two 400-barrel tanks adjacent is zero, is that correct?

A That's right.

Q 800 barrels, plus 200 in the working tank?

A Yes, sir.

MR. UTZ: Other questions? The witness may be excused. Other statements in this case?

MR. LOSEE: I will move for the introduction of Applicant's Exhibits 1 through 7.

MR. UTZ: Without objection Exhibits 1 through 7 will be entered into the record.

MR. LOSEE: I have no further statement.

MR. UTZ: Any other statements? Case will be taken under advisement.

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STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, JUNE PAIGE, 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 3rd day of February, 1961.

June Paige
Notary Public-Court Reporter

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EXHIBITS

NUMBER	EXHIBIT	IDENTIFIED	OFFERED	ADMITTED
Ex.#1	Plat	4	19	19
Ex.#2	Letter, USGS	5	19	19
Ex.#3	Letter, Royalty Owners	5	19	19
Ex.#4	Letter, Pipeline Co.	5	19	19
Ex.#5	Schematic Drawing	9	19	19
Ex.#6	LACT Unit, Plans	10	19	19
Ex.#7	Specification Sheet	12	19	19

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No: 2163, heard by me on Dec. 25, 1961.

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