BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

Case No. 1580

TRANSCRIPT OF HEARING

JANUARY 7, 1959

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BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

Case 1580 Application of Cities Service Oil Company for permission to install lease automatic custody transfer equipment. Applicant, in the above-styled cause, seeks an order authorizing it to install lease automatic custody transfer equipment to receive and measure the oil produced and marketed from its Government "B" Lease in Sections 3 and 10, Township 14 South, Range 31 East, Chaves County, New Mexico. Applicant proposes to utilize positive displacement meters for measurement of the oil delivered to the pipeline.

Mabry Hall
Santa Fe, New Mexico
January 7, 1959

BEFORE:

Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

MR. UTZ: We will take up Case 1580.

MR. PAYNE: Case 1580, "Application of Cities Service Oil Company for permission to install lease automatic custody transfer equipment."

MR. KELLAHIN: Jason Kellahin, Kellahin and Fox, Santa Fe, New Mexico, representing the applicant. We have one witness, Mr. Motter.

(Witness sworn in).

(Whereupon, the documents were marked as Applicant's Exhibits One through Five for identification).

MR. UTZ: You may proceed.

E. F.MOTTER

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Will you state your name, please?

A E. F. Motter.

Q By whom are you employed?

A Cities Service Oil Company.

Q In what position?

A Division Engineer.

Q Have you previously testified before this Commission as an expert petroleum engineer and have your qualifications been accepted?

A Yes, sir.

MR. KELLAHIN: Are the witness' qualifications acceptable?

MR. UTZ: They are.

Q (By Mr. Kellahin) Are you familiar with the application in Case Number 1580?

A Yes sir, I submitted the application myself.

Q Mr. Motter, generally are you familiar with the type of installation that is the subject of this application?

A Yes sir, we have numerous installations such as this, but this will be our first in New Mexico.

Q Now, have you prepared an exhibit in regard to the gathering system on this lease?

A Yes sir, Exhibit Number One shows our Government "B" Lease composed of 960 acres. It is composed of Section 3 and the north half of Section 10, Range 31 East, Township 13 South, Chaves County, New Mexico, and it is in the Caprock-Queen Pool. I have four wells circled there that are water injection wells allowed by Commission Order--I'll have to find it.

MR. UTZ: 1128.

A 1128, yes sir.

Q (By Mr. Kellahin) Exhibit Number One shows the lease ownership?

A Yes sir, Cities Service owns the lease, the Federal Government is the royalty owner.

Q Is the lease ownership and royalty ownership common throughout the area involved in this application?

A Yes sir, it is. To go a little bit further, Wells 1, 2, 3, 4, 5 and 6 are tank batteries on that Government "B" Lease now, composed of 19 tanks in the 6 batteries. We propose to remove 15 of those tanks, put in flow lines and test lines to where the various batteries are now located.

Q Now, would you refer to what has been marked as Exhibit Number Two and state what that is designed to show?

A Exhibit Number Two is the proposed gathering system that I have just outlined, it will enable us to reclaim 15 tanks.

Flow lines will be installed from the various positions where tanks are now located. The dotted lines indicate test lines from each one of those headers. We are in the process of forming a unit to be known as the Ricky-Queen water flood unit in this area. This installation is designed to accommodate considerably more production and area whenever this unit is formed.

A little bit further on this while I have this plat in front of me, our LACT unit will have an allowable shutdown switch which will pressure up the flow and test lines to these various wells, and we will use pressure operated motor control valves to drop the relays in the electric motors at each one of these wells. All wells on the lease are on a beam and are operated by electric motors.

Q Will you explain briefly the function of these test lines?

A Well, our testing procedure will be manual with this setup. We will be able to test any well on the lease at any time we choose through a manipulation of manual valves, both at the headers and at the location of the LACT unit.

Q Now, referring to that exhibit again, what is the approximate location of the central tank battery to be used?

A Well, it probably would be within a very few feet of the southeast corner of the northwest quarter of Section 3, Range 31 East, Township 13 South. The reason for choosing this particular location is that if this water flood unit is formed, this

will be more centrally located, not necessarily for the Government "B" Lease, but for our other wells that we plan to take into this unit. Furthermore, it is somewhat higher than our injection plant for our water flood and it will be very easy for us to grab the water for our LACT unit and to have the injection water rejected from the input wells.

Q Referring to what has been marked as Exhibit Number Three, state what that shows?

A That's the proposed LACT installation. We plan to incorporate the present four tanks that are in this battery, which I mentioned the location of previously, and add some components to it to form our LACT installation. I'll be glad to run through the flow diagram. Oil will come from the well through a header into the treater, from the treater through a monitor. The oil that goes through this will go through a diversion valve into tank "A," which is a good oil tank. Tank "A" will have liquid level switches at various levels to control the pipeline pump, and at present we plan to--anticipate to start the pipeline pump at about four feet. The pipeline pump, when the level reaches fourteen feet in tank "A," the valve wich is also drilled into the monitor will diverisfy it over into tank "B" in case the pipeline pressure is not adequate to make delivery in the monitor. In case bad oil is coming from the treater, the oil will go to tank "B" and this will have liquid level controls in three positions. At six feet, it will start the bad oil pump and it will

run it back through the treater with chemical treatment. At the two-foot level, the pump will be stopped. If, for some reason, we are still unable to clear up the situation of the bad oil or if the pipeline is unable to make delivery, it will build up in tank "B" and will be equalized into tanks "C" and "D" and after equalization into those tanks, we will have a level of approximately fourteen and a half feet, which will shut in the lease. That is the valve which is shown just upstream of the header. And I omitted one valve in the drawing, we will actually have two valves in conjunction with the test line and one direct from the header, which will shut in the lease.

Q Do those valves function automatically?

A Yes, these are electrically controlled and neumatically controlled.

Q The functions of the monitor are automatically?

A Yes sir, it is entirely electrically controlled.

Q Now, would you explain briefly the function of the test equipment?

A Well, as I stated previously, all testing or manipulation valves will be done manually, but we will be able to test any well on this lease or any of those that we propose to take into the unit later on. This is a Rollo test separator which we have already purchased and is in use now testing some wells on the lease. It is equipped with flood-type pump meters and two half barrel dump meters. We have checked it against some tanks and

found it to be very accurate. Wells will be tested probably at least once a month or perhaps sooner if necessary. They probably will be tested as often as once a week.

Q Under this type of equipment, is it sufficient to enable you to make the tests which may become necessary in connection with the flood program?

A Yes sir, and we can also use this same equipment to make any necessary GOR tests as requested by the Conservation Commission.

Q Do you have a GOR situation in this lease?

A No sir, all wells on the lease are under the 2,000 limit, I might point out. I know that on this one bottom pump on this drawing in the Caprock Pool we have had a bad parafin problem. We propose to pump the bottoms of the good oil tanks about once every six or eight hours. This pump will be operated by a time clock and it will probably operate for just a short amount of time, maybe ten minutes or something so we can get about five barrels of oil out to the treater and that way we will not be affected by the high bottoms.

Q You have a water injection pump here, but are you producing any quantities of water at the present time?

A No sir, we are not producing any water now, but we anticipate probably a good deal of water once we get water back from our injection wells. All this water will go to the treater and test separator and will go back to our injection plant where

we have facilities to treat this water and then it will be re-injected with any make-up water then coming from our supply wells.

Q Under this arrangement, is it going to be possible for you to measure the production from the individual wells on the lease?

A Yes sir, through this test meter, test separator.

Q Now, how about the line and delivery components on your --

A Well, that's outlined on Exhibit Number Four. These are the SR components, I'll just briefly run down through them. Item "A" is a filler which we plan to use, an AO Smith filler. "B" is an AO Smith deareator. Item "C" is an AO Smith S-12 PD meter, cast iron. It has a temperature compensating pack of 60 degrees and an automatic set stop counter to shut down the pipeline pump once each allowable has been produced. "D" is a prover connection and this will be set up so that we can use either a PD master meter or a prover tank. "E" is a Fischer back pressure valve. "F" is a McFarland gas operated sampler. It operates whenever delivery is being made to the pipeline and both the amount of oil taken and the frequency can be controlled with this type of sampler.

Q Your PD meter which is to be installed, is that a positive displacement meter?

A Yes, sir.

Q Is this type of equipment throughout the type of

equipment which has been recognized by the Commission?

A Yes sir, it is.

Q At various installations?

A At least four installations have been approved in New Mexico using this type of meter. We propose to prove this meter once each month for a period of three months and if we have no appreciable drift in that period, we would like to have the meter proven every six months thereafter. However, that is only for forms for the Commission that we are proposing that. We will probably prove this meter for our own satisfaction at least once a month and possibly much more often than that when it is first installed.

Q Now, is it possible then to effectively and accurately measure the production throughout?

A Yes, sir.

Q In your opinion, is this installation in the interests of conservation and the prevention of waste?

A We believe it is.

Q Now, have you made any check with the pipeline company, and who is the pipeline purchaser?

A Texas-New Mexico Pipe Line is the purchaser. We have gone over this installation numerous times with them and we have Exhibit Number Five, which is a copy of a letter from Texas-New Mexico stating that they are willing to co-operate and that this installation is acceptable to them.

Q Do you have the original of that letter in your files?

A Yes, I do have it.

Q In the event it was requested, would you make it available to the Commission?

A Yes sir, I have it with me now.

Q Were Exhibits One through Four prepared by you or under your direction?

A Yes sir, they were.

MR. KELLAHIN: At this time, we would like to offer in evidence Exhibits One through Five inclusive.

MR. UTZ: Without objection, Exhibits One through Five will be accepted.

Q (By Mr. Kellahin) Do you have anything you care to add to your testimony, Mr. Motter?

A I don't believe so.

MR. KELLAHIN: That's all the questions I have.

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Motter, is the royalty working interest in this entire Government "B" Lease equal?

A Yes, it is.

Q Are you requesting exception to Rule 309 also in this case?

A Well, I assume that we should have made--there will be twenty wells when this is first put in the LACT unit; however,

as our need develops, there will only be twelve wells off of this particular lease that will be through the LACT unit in a five-spot pattern, so every other well will be converted to an injection well. I might --

Q Go ahead.

A I was going to say that we have storage with these four tanks for approximately eight hundred and fifty barrels on the levels that we have on tanks "A" and "B," which we feel is adequate perhaps when our flood is in full scale. That will only amount to some fifteen or sixteen hours storage, but we have switcher lifting within just a very short distance of here, which will be notified by signals if there is ever anything wrong, so we feel that we have adequate storage. Right now our production is approximately four hundred and fifty barrels a day, so that will give us about two days storage from those four tanks.

Q You will have more than six wells at first?

A Yes sir, we will have twenty on the Government "B" Lease when this system is first installed.

MR. UTZ: Mr. Kellahin, I believe this will be the proper time if you want to request exception to Rule 309, if you wish to do so.

MR. KELLAHIN: Mr. Examiner, in connection with this application, we do move for exception to Rule 309.

MR. UTZ: Is there objection to Counsel's request?

If not, it will be included in your application.

Q (By Mr. Utz) Do you intend to commingle in the Queen?

A That's correct, this is all Queen production.

MR. UTZ: Are there other questions of the witness?

MR. FISCHER: Yes, sir.

MR. UTZ: Mr. Fischer?

CROSS EXAMINATION

BY MR. FISCHER:

Q Is this treater a heater treater?

A Yes sir, that is a horizontal heater treater. The reason we are proposing to use a horizontal heater treater is that we feel we can drop out large quantities of free water without it being treated in the horizontal treater. That is about the only treater on the market that you can do that with.

Q Now, you will have gas for the heater treater?

A Yes, sir.

Q And you'll have gas operating some of your equipment here?

A Yes, sir.

Q Do you believe that when you get fully developed on your water flood plan of say twelve producing wells, that you will have enough gas left to perform the operation you need?

A If we do not have, we can safely install a compressor and operate on air then, but right now we feel we'll have an adequate supply of gas for all the neumatic valves and controls.

Q Does the Texas-New Mexico Pipe Line require you to

heat your oil to any extent before delivery in the winter?

A Yes sir, in this particular pool, they sent a letter, I believe it was in 19--the winter of 1956, that they would not accept oil from any tank less than 50 degrees. We have heaters installed in all those--all of these tanks now, and we feel that our experience is adequate to show that our treater will be adequate to keep that oil at 50 degrees because it will almost be a continuous delivery to the pipe line.

Q Now, on these old tank batteries on your Exhibit One, there will be a heater there?

A Yes sir, those are all headers.

Q Except for the Will Number 8 and 9 and they will be delivering through the back header?

A That's correct.

MR. FISCHER: Thank you, that's all.

MR. UTZ: Any other questions of the witness?

CROSS EXAMINATION

BY MR. UTZ:

Q Did I understand you to state that in the event of line breakage between the header and the wellhead that you had arrangements made to shut down the pumps?

A We do not have any arrangements made and don't propose anything to shut down between the pumps. The only thing we have proposed currently is to install pressure switches at the pumps that will shut down the pump on pressure build-up in the line.

We are planning to install a pressure relief valve at the header in that it will, in the event one of the pumps will not shut down--say for instance lightening had struck the control box and frozen the contacts, we will put a pressure relief valve to pop at say some fifty pounds above what the well should shut in and this oil will be diversified to a pit and we will then have to pick it up from the pit and put it back through the heater treater. We investigated numerous types of controls and to be quite frank, we just think that they are a little too expensive to use. These are all fairly new lines and all the lines we propose to install will be new lines and we just don't feel we are going to have too much trouble with breakage because we will have very little corrosion and all the lines are laid in the surface and any severe corrosion would be easily visible, so we don't anticipate any trouble at all with flow lines on breakage.

Q These lines are buried or on the surface?

A They will all be on the surface.

Q Speaking of expense in order to protect this system against wasteage in case of line breakage, how much would each one of these valves cost?

A Well, the valve that we propose to use, the pressure operated valve, is very inexpensive. It runs about twenty-five dollars to put a valve that would operate both for pressure--your high and low pressure shut-down would entail some

four or five hundred dollars per well.

Q Couldn't that be done with two separate valves, low pressure valves --

A Not unless we could run electric controls back to each pumping unit to shut it in. It would mean the installation of separate valves at each pumping unit installation. We had thought about running an electric power line from the control at the back to the pumping unit, but it proved to be quite costly also.

Q There are some things I don't know about this unit, but it seems to me that if the high pressure valve only runs twenty-five dollars the low pressure valve couldn't run much more.

A Well, you have some other things to consider on that. That would also give us a lot of possible trouble on the low pressure shutdown due to the fact that the high pressure valve at the well to shut it down, it would probably be set at approximately a hundred pounds above what the normal line pressure is. The low pressure valve would have to be set somewhere below what that normal line pressure is. In the wintertime, you would have that line pressure possibly as much as fifty or sixty pounds above what you would in the summer and that would entail you to go around and make some adjustments on this. In other words, if we had our low pressure shutdown for say fifteen or twenty pounds past the breakage on the header, we may have that much flexion from the well to that point and it would never shut down until we had re-adjusted the valves in the wintertime.

Q Then it is not an operational problem you are speaking of, it is probably more of an expense problem?

A Yes. Of course, we have switchers that are practically continuously traveling over the field looking after the injection wells and everything. I just don't feel we will have any problem at all from line breakage, not any more than could be found in any other normal installation right now.

Q The switcher will be on it at all times?

A No sir, just daylight hours.

MR. UTZ: Any other questions of the witness?

MR. FISCHER: One other question. Mr. Motter, do you think that the salt behind the operation of those valves, the one coming off the header to the treater and the one to the test, in case that you did have a signal sent back to shut those valves in, wouldn't it seem like the salt might be behind the operation of those?

A Well, admittedly, the crude in the Caprock Pool carries a considerable amount of salt. We feel that once the water comes through with our crude production, it will probably eliminate any salt trouble we might have.

MR. FISCHER: That's all.

MR. UTZ: Are there other questions?

If not --

MR. KELLAHIN: In connection with your water, is that fresh water that is being injected?

A Yes, it is right now. When we get water returned from the wells, it will be used only as make-up.

MR. KELLAHIN: That's all.

MR. UTZ: Any other questions of the witness?

If not, the witness may be excused.

(Witness excused).

MR. UTZ: Any other statements to be made in this case?

If not, the case will be taken under advisement.

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STATE OF NEW MEXICO)
: ss
COUNTY OF BERNALILLO)

I, JERRY MARTINEZ, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing was reported by me in Stenotype and that the same was reduced to typewritten transcript by me and contains a true and correct record of said hearing, to the best of my knowledge, skill and ability.

DATED this 22nd day of January, 1959, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

ILLEGIBLE

Notary Public

My Commission Expires:
January 24, 1962

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. [illegible] heard by me on Jan. 7, 1959.

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