BEFORE THE

Oil Conservation Commission

SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE NO. 1174

TRANSCRIPT OF PROCEEDINGS

DEARNLEY-MEIER AND ASSOCIATES
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November 13, 1956

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
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IN THE MATTER OF:

Application of the Oil Conservation Commission upon its own motion for an order granting exception to Rule 502 I (a) of the Commission Statewide Rules and Regulations for all wells in the Caprock-Queen Pool, Chaves and Lea Counties, New Mexico. Applicant, in the above-styled cause, seeks an order granting exception to Rule 502 I (a) in permitting production greater than 125% of the daily allowable for all wells in the Caprock-Queen Pool.

BEFORE:

Mr. A. L. Porter
Mr. E. S. (Johnny) Walker

TRANSCRIPT OF PROCEEDINGS

MR. PORTER: We will proceed to Case No. 1147.

MR. GURLEY: Case 1174, application of the Oil Conservation Commission upon its own motion for an order granting exception to Rule 502 I (a) of the Commission Statewide Rules and Regulations for all wells in the Caprock-Queen Pool, Chaves and Lea Counties, New Mexico.

MR. ADKINS: Grant Adkins, representing Union Oil Company of California.

MR. PORTER: Did you bring your witness?

MR. ADKINS: Yes, sir, Mr. W. D. Owens.

(Witness sworn.)

W. D. OWNES

a witness, of lawful age, having been first duly sworn on oath, testified as follows:

DIRECT EXAMINATION

BY: MR. ADKINS:

Q State your name, please.

A W. D. Ownes.

Q All right, by whom are you employed and in what capacity?

A Union Oil Company of California, Division Engineer.

Q Where did you go to school and what degree did you obtain?

A Colorado School of mines, Petroleum Engineer.

Q You graduated when?

A 1945.

Q What have you been doing in the oil industry subsequent to that date?

A I worked in the oil industry for nine years, the last eight of which have been with Union Oil Company of California.

Q You said you are Union's division engineer?

A Yes.

Q Do you have charge of the Union's production in the Caprock Queen Pool?

A Yes, I do.

MR. ADKINS: Is the witness qualified?

MR. PORTER: Yes, sir.

Q What is the allowable in the Caprock-Queen Field?

A The normal daily unit allowable is thirty-nine barrels of oil per calendar day with a production tolerance of 125% of the daily unit allowable, and this application is to increase the daily unit allowable tolerance from 125% to a miniumum of 200%.

Q Now, do you mean the monthly tolerance is to remain unchanged?

A Yes.

Q But the daily production tolerance would be increased from 125% to 200%?

A Yes, sir.

Q What is the necessity for this daily tolerance increase?

A The crude oil in the Caprock-Rock Queen Field has an unsual viscosity condition and production from many of the wells in the field is erratic because of the extreme paraffin difficulties. Periodic treatment with hot fluid is required, and sucker rods equipped with paraffin control devices are essential. Periodically, the wells may head up and flow and produce considerably in excess of the daily allowable tolerance.

Q How does the viscosity of the Caprock-Queen crude compare with other crudes?

A We have prepared a chart showing the temperature viscosity relationship of the Caprock-Queen crude and other typical crude oils in the area. At normal temperatures, the Caprock-Queen crude has many times the viscosity of the normal crude.

MR. ADKINS: We would like to introduce this chart in evidence.

MR. PORTER: Is it specified as Exhibit No. 1?

MR. ADKINS: No, sir, I haven't marked it as yet. I would like to have it marked as Exhibit A or 1.

(Exhibit No. A marked for identification.)

MR. ADKINS: I would like to offer in evidence Exhibit A.

MR. PORTER: Is there an objection to the admittance of this exhibit? It will be admitted.

Q How have you attempted to control this paraffin condition?

A We have equipped all of our wells with sucker rods and paraffin scrapers, and all of our pumping installations are equipped with electric motors and time clocks so that we can operate the pump part time. We have attempted to control our pumping cycles so that the present daily tolerance will be produced in a twenty-four hour period, but the wells flow either through the tubing or the casing after the pumping action is stopped and we have not been successful in controlling within the 125% tolerance.

Q Do you mean the well continues to flow after the pump has ceased to operate?

A Yes. With a normal crude oil, many of these wells would be flowing wells and installation of pumping equipment would not be necessary. Because of the paraffin condition, we have installed pumping equipment.

Q Do you know whether the pump action can be stopped when the pump ceases?

A We have attempted the use of chokes on the flow line without much success because of the aggravation of the paraffin problem. We are unable to operate with shut in casing because of gas lock difficulties with our pumps. We are currently attempting to establish a short pumping cycle followed by a long idle period in an effort to keep the wells from flowing.

Q All right, is there any way, any economically feasible way by the use of automatic controls that you can limit this production within the daily tolerance?

A Not to my knowledge.

Q Is there any way that the wells can be held to their present daily tolerance?

A Only by having a pumper stand by to open the flow line so that the daily tolerance can be produced and then close the valve.

Q Is this practical from an economic standpoint?

A No, sir.

Q Is there any other reason why this 200% tolerance should be allowed by the Commission?

A Yes, the pipe line deliveries are erratic because of viscous crude oil and overloaded lines. For instance, due to the viscosity of the oil, it has taken as long as forty-eight hours to empty the storage facilities into the pipe line when ordinarily the tanks should be emptied in about one day. Therefore, in order to produce the monthly allowable with reasonable storage facilities, it may be necessary to over produce the 125% daily tolerance.

Q Why did you recommend a 200% tolerance rather than another figure?

A We were granted temporay permission to produce at 200% tolerance and we find that we can operate within this limit, but that it is impractical to operate with less than 200% tolerance.

Q If this tolerance is granted, will it effect in any way the ultimate recovery of oil from the reservoir?

A I don't believe it will be effective.

MR. ADKINS: I believe that's all the questions I have.

MR. PORTER: Does any one have a question of the witness?

MR. MANKIN: I do.

MR. PORTER: Mr. Mankin.

CROSS EXAMINATION

BY: MR. MANKIN:

Q Mr. Owens, you indicated considerable trouble in the Caprock-Queen Pool for pipeline capacities. Is it true that most of the pipelines operate on a gravity system?

A I believe that is correct, sir. The pipeline that we are connected to is the Artesia pipeline.

Q In other sites it is necessary to use pumps to transfer it to trucks or some other facility, rather than the private system, is that true?

A Yes, sir. Artesia has provided portable pumps which they set at your battery and we have provided one of our own pumps for that purpose, to facilitate the movement from the tank to the pipeline.

Q Is it also true that in this particular pool, the major pipeline, of the field which we are speaking of, caused the heating of oil to go into effect October 1st of this particular year?

A Yes, sir, We have only two leases with them, and they are provided with heating facilities.

Q Do you know of any other pool in New Mexico that requires such handling and treatment?

A No, sir, I don't.

Q Do you have anything on the actual viscosity of this oil the year round or at the present time, the viscosity? What is the viscosity in degrees, or what is the viscosity at the present time?

A Well, sir, the figure we had on the Caprock-Queen crude was down to 60 degrees, and I believe the viscosity was 200 ordinary centipoises.

Q The oil has to be kept above, approximately, 50 degrees to be able to move the oil?

A Oh, we have cases where it has moved at 50 degrees from the tank into the pipeline.

Q And there is considerable problem on paraffin, which requires hot oil treatment, scrapers, and other things?

A Yes, sir. It is aggravated by a salt problem. In some cases we use hot water instead of hot oil.

Q You use hot oil or hot fluid, depending on the conditions?

A Yes, sir. You also have the paraffin and have the salt.

Q Do you feel that the 200% which has been granted you as a temporary measure, that you can live with it throughout the winter?

A Our fieldmen say that they can, yes, sir.

Q Do you have any other knowledge of what the opertors might feel that they might live with during the winter in regard to the

200% capacity?

A Not an accurate figure. I have talked to other operators, and it is a common field problem, but I don't have recommendations on a percentage tolerance.

Q You are aware that you made an application for an exception, which was granted temporarily pending this hearing?

A Yes, sir.

Q And the Commission set it on their own motion, feeling that this was a field-wide problem, is that true?

A Yes, sir.

MR. MANKIN: That is all.

MR. PORTER: Does anyone have a question of the witness? The witness may be excused.

(Witness excused.)

MR. PORTER: Does anyone have a statement? Mr. Motter.

MR. MOTTER: E. J. Motter, with Cities Serice. If the Commission please, I prepared a statement on the views of my company.

Cities Service Oil Company is an operator of oil producing properties in the Caprock-Queen Pool and wishes to offer the following statements in support of Case No. 1174, regarding the daily producing rate of wells at daily rates in excess of 125% of the daily allowable for the following reasons:

1. Viscous crude oil during the winter months and overloaded pipeline facilities lead to erratic pipeline deliveries. The pipeline company since October 1, 1956, refuses to accept crude oil if the temperature in the tanks is less than 50 degress. It will take up to 24 hours to heat this oil to a temperature where it will be accepted by the pipeline company. Lease storage is insufficient to absorb this fluctuation without occasional shut down of production.

2. Extreme paraffin difficulties cause fluctuating production. Paraffin control measures such as hot oiling, chemical treatment and scrapper rods are only a partial solution to this problem.

3. Several wells frequenlty head and flow either through the casing, tubing or both and when this occurs, a well may greatly exceed its allowable.

4. Salt deposition on down hole and surface equipment causes fluctuating production and considerable down time.

5. Sand produced from the unconsolidated formations cause pumping difficulties and plug surface equipment. As a result production fluctuates and much down time occurs.

6. Electric power failures during electrical storms and the windy season causes a loss of production.

From the preceding statements we urge the Oil Conservation Commission to grant an exception to Rule 5021 (a) permitting

production greater than the 125% of the daily allowable for all wells in the Caprock-Queen Pool.

MR. PORTER: Anyone else have a statement? Mr. Walker.

MR. WALKER: Walker, with Gulf Oil. We too are operators in this pool, and have encountered similar difficulties as outlined by the witness, and we would like to endorse the request for the exception to the rule requiring only 125% of the daily allowable, and I understand, I don't have any evidence, that our troubles are restricted to the winter time.

MR. PORTER: Anyone else have a statement? Mr. Kell.

MR. KELL: C. L. Kell with Standard Oil and Gas Company. As an operator in that pool, we too have also run into the same difficulty, and we would like to endorse the application and the statements made by the previous companies.

MR. PORTER: Are there any more statements in this case? The case will be taken 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 Hearing before the New Mexico Oil Conservation Commission was reported by me in Stenotype and reduced to typewritten transcript by me; and that same is a true and correct record to the best of my knowledge, skill, and ability.

WITNESS my Hand and Seal, this, the 26th day of November, 1956, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

J. A. Trujillo
NOTARY PUBLIC

My Commission Expires:

October 5, 1960