ILLEGIBLE

(Case 3997 continued)

White Ranch Well No. 1 located in Unit A of Section 1, Township 12 South, Range 28 East, West White Ranch-Devonian Pool, Chaves County, New Mexico. Applicant seeks authority to continue to dispose of produced salt water in an unlined surface pit located in the aforesaid quarter-quarter section.

CASE 3998: Application of H. N. Sweeney and Paul Slayton for an exception to Order No. R-3221, as amended, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Commission Order No. R-3221, as amended, which order prohibits the disposal of water produced in conjunction with the production of oil or gas, or both, on the surface of the ground in Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico, after January 1, 1969. Said exception would be for applicant's leases in Section 36 of Township 8 South, Range 28 East, and in Section 1 of Township 9 South, Range 28 East, Twin Lakes-Devonian and Twin Lakes-San Andres Pools, Chaves County, New Mexico. Applicant seeks authority to continue to dispose of produced salt water in unlined surface pits located in said Sections 1 and 36.

CASE 3999: Southeastern nomenclature case calling for an order for the creation, extension, and contraction of certain pools in Lea and Roosevelt Counties, New Mexico.

(a) Create a new pool in Lea County, New Mexico, classified as an oil pool for Wolfcamp production and designated as the Cindy-Wolfcamp Pool comprising the following:

TOWNSHIP 11 SOUTH, RANGE 36 EAST, NMPM
Section 22: SW/4

Further, for the assignment of approximately 49,590 barrels of oil discovery allowable to the discovery well, the Meadco Properties, Ltd., and Chambers and Kennedy Phillips-State Well No. 1 located in Unit N of said Section 22.

(b) Contract the Eumont Gas Pool in Lea County, New Mexico, by the deletion of the following area:

TOWNSHIP 22 SOUTH, RANGE 36 EAST, NMPM
Section 11: NE/4

(c) Extend the Jalmat Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 36 EAST, NMPM
Section 11: NE/4

Q And the only source of water in that lake bed would be runoff from the north?

A Well, north and west.

Q How about the windmill shown on that map?

A Fifteen or twenty years ago they had a hand-dug well that was seepage out of the lake.

Q And that has since been abandoned?

A Not even a hole there any more.

Q Approximately two miles to the southeast, there is another lake bed shown with a windmill on that. What is the status there, please?

A Tanks would get baggy when they got low on water, and they fenced them and put a windmill, and pumped the water out of the lake into the tank.

Q So this windmill didn't reflect any underground water?

A It was a transfer from the lake into the tank.

Q And as far as the windmills shown on this map are concerned, then the nearest one would be the Graham windmill which is six or seven miles west?

A Yes, sir.

Q How about east, Mr. Dougherty, how far?

A Oh, ten miles, approximately.

Q Would that be over on the O'Brien Ranch?

A It would be on the Crosby Ranch.

Q That is getting over toward that Cato San Andres Pool?

A It is right in the middle of that field.

MR. NUTTER: That is all.

MR. PORTER: Does anyone else have a question? The witness may be excused. You don't have any exhibits?

MR. MORRIS: No.

MR. PORTER: Mr. Morris, is it agreeable if we recess the hearing at this time until one-thirty, and give Mr. Sweeney time to come in?

MR. MORRIS: I would appreciate it very much.

(Whereupon, the hearing was recessed until 1:30 o'clock, P.M., at which time the hearing was resumed, and the following proceedings were held:)

(Whereupon, Applicant's Exhibits Numbers 1 through 6, inclusive, were marked for identification.)

H. N. SWEENEY

called as a witness by the Applicant, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. MORRIS:

Q Mr. Sweeney, will you state your name and where you

reside?

A My name is H. N. Sweeney, Roswell, New Mexico.

Q Mr. Sweeney, have you previously testified before the Commission or one of its Examiners, and had your qualifications as a geologist established as a matter of record?

A I have.

MR. MORRIS: Are the witness's qualifications acceptable?

MR. PORTER: Yes, they are.

Q Please refer to what has been marked as Exhibit Number 1 in this case, and point out what is shown by that exhibit.

A The areas outlined in red is present acreage controlled by me and by Mr. Slayton, and I've outlined, circled in red, the present producing wells in the Twin Lakes Field. The four wells in 36, and one well in Section 1 are San Andres wells. They are to the north. And the southernmost well is the Devonian well, which is producing.

Q And the wells shown in yellow?

A Are dry holes and temporarily abandoned wells in the area. Of those, I've drilled, oh, I've drilled ten wells altogether in the area. About five of those dry holes are mine.

Q Will you please refer to Exhibit Number 2, and point

out where the location of your tank batteries and surface pits are in this area?

A This is a more detailed map of the Twin Lakes Field, showing the present producing wells in the field and the location of the pits for each tank battery. Due to varying State leases, we only have two wells producing to a common tank battery. It has been necessary to set a separate battery and a separate pit, just primarily for tank bottoms on three of the wells.

We have four tank batteries for five wells on the San Andres. And then there is one well, the one Devonian well produces in the tank battery in the northwest-northwest of Section 1. I've marked on that what I would say would be the present maximum amount of water that would be produced per day on the average, but I think it would run somewhat less than those figures I've shown on the map.

Q Now, I notice that you have shown a pit over in Section 2, and zero barrels of water per day.

A There is no production now in the northeast quarter of Section 2, but the pit is in existence at the present time.

Q Your application in this case is to secure an exemption with respect to the pits located in Section 36 and in Section 1?

A That would be sufficient for our purposes.

Q So you are not seeking an exception with respect to the pits over in Section 2?

A No, I don't think the circumstances are any different, but we don't need it now.

MR. PORTER: Mr. Sweeney, apparently you have only four pits that you are now producing water into?

THE WITNESS: Five, including that Devonian pit.

Q One of your pits up in Section 36, the southernmost pit in Section 36, you show no disposal into that?

A Those two wells don't make any water at all. That pit is used for tank bottoms.

Q Mr. Sweeney, Mr. Dougherty previously testified where these wells were located with respect to his ranch headquarters. Could you state spproximately where the headquarters of the ranch are with respect to some feature on either Exhibit 1 or 2?

A Oh, from the gas well there in Section 36 that I have marked, that Cities Service drilled, the headquarters is approximately three-quarters of a mile northwest of the gas well. That is in the northwest of the southwest of 36.

MR. PORTER: You say the ranch headquarters from there is what?

THE WITNESS: About three-quarters of a mile from that

closest well.

Q Please refer to Exhibit Number 3, the gas-oil ratio test, and point out the pertinent information shown on that exhibit.

A That is introduced primarily to show the amounts -- those are all recent tests that were made around the 1st of September of this year, and those are actual amounts of water under optimum producing conditions of those wells.

Now, the one San Andres well which shows the most amount of water is fifteen barrels a day. On leveled out production, it won't make as much as five barrels a day. It just happened conditions were such -- we also made 70 barrels of oil on that test. The well will average closer to 25 barrels. But it happened, due to the fact that it had been shut in shortly before the test, that it did make more than the normal production at this particular time, but none of the wells make an excessive amount of water.

Q With respect to your Devonian well, I note that the test shows 90 barrels of water. Is the same condition --

A Normally, that well will average less than 50 barrels a day. Of course, this test was made by Mobil, but since we took over the operation on November 11th, I would say during the ten days that we produced it, which we have good records, I would

say it averaged less than 40 barrels from the Devonian of water, and about the same amount of oil. It makes about the same amount of oil and water.

Q Mr. Sweeney, Mobil previously in Case 3757 made application to the Commission for an exception in this area, and then abandoned its application. As Exhibit Number 4, we have marked here a copy of Mobil's original application to the Commission. Would you comment with respect to the information that is stated in that application?

A Would you like for me to read the entire thing into the record, or would you just like to refer to it with my comments?

Q As you see fit.

Q It is not long, let me read it, and make a few comments on what they had to say.

MR. PORTER: All right, sir.

A Mobil Oil Corporation respectfully submits this request for an exception to Order No. R-3221, surface pit elimination, upon the grounds of hardship and the absence of fresh water bearing aquifers in the vicinity of the below described lands.

Mobil is the operator of the C. L. O'Brien "C" Well No. 1, located in the southwest-southwest of Section 1, Township

9, Range 28 East, Chaves County, New Mexico. I suppose it's been brought out that since then Mobil has sold that well, and Slayton and I are now the operators.

Said well is the only well currently producing from the Devonian Formation in the Twin Lakes Field. Average daily production during the month of January, 1968, was 31 barrels of oil and 39 barrels of water. The produced water is stored in a surface pit and disposed of by evaporation. The pit is located in the northwest-northwest of Section 1, Township 9, Range 28 East.

A recent investigation was conducted seeking a suitable underground disposal zone for the produced water. Based upon analysis of the log of Mobil's C. L. O'Brien "C" Well No. 2, originally drilled to the Devonian, but now a temporarily abandoned San Andres well, the basal Devonian appeared the most likely disposal zone. The quantity of produced water disposed of in the basal Devonian from the Knowles and East Cap Rock Fields clearly verifies the log analysis. However, the expenses of converting and equipping the C. L. O'Brien "C" Well No. 2 to dispose of produced water in the basal Devonian Formation is conservatively estimated at $26,000. The reserves in the Twin Lakes Devonian Field make this expense prohibitive, since it is estimated that this lease will be wholly depleted in three or

four years.

We also sought other means of disposal. We found no other disposal well is situated in this area. The expenses involved in trucking the produced water from this remote location would be greater than the costs of conversion, and are thus also prohibited by reason of the low reserves. In order to protectively line the disposal pit and adequately maintain such lining, the cost figures would exceed $30,000. It is also not economically feasible or mechanically desirable to inject this produced water into the basal Devonian Formation through the well bore.

It is submitted that the reserves recoverable from said lease will be lost to the economy unless some satisfactory means of disposing of the producing water is discovered.

Our investigation of the geology of the Twin Lakes Field area convinces us that surface pit evaporation disposal constitutes no pollution hazard to fresh water sands, since they are either non-existent in this area, or under impermeable formations. The following geological observations are offered in support of this view:

Surface rocks in the vicinity of this field are Triassic Red Beds and thin quaternary alluvium. Water in contact with Triassic rocks become saline because of the salts solution

from the rocks. The water, if any, in the alluvium is probably saline because of contact with the Triassic rocks. At present, Playa Lakes lie on the surface in contact with surface rocks, and the high evaporation rates result in saline waters. There are no tributary streams connected to or from the lakes which further concentrates the saline content of the water. Our findings indicate that all of the surface waters in the area are saline and have been for a considerable time. Thus, nature has contributed a polluted surface system.

I might comment that of the wells I drilled in the area, five of these wells we drilled a surface hole with air, with instructions to the driller to shut down and test any show of water, because we were looking for drilling water in the area, as well as a courtesy to the O'Briens. I told them I would try to find any water, if there was any there, and I think drilling with air we would have found it. There was only one well which had any show of water at a shallow depth at all. There is one of them that had a little water at 800 feet, but it was too deep to be of interest to anybody, and it appeared to be salty. But this one show of water at around 250 feet in the O'Brien No. 2 well, which was the dry hole in the area, we went in and perforated it and got well testers out there to test the water, and the volume was very low, less than 2 gallons

per minute. I mean it would be a poor windmill well, and on top of that it was salty. That was at 250 feet, and was the shallowest sand we encountered in there, so I wouldn't anticipate any fresh water. I think it is partly due to a certain amount of salt in those surface beds. It would be difficult to find any fresh water in the area.

The seepage of oil well brines from pits through several hundred feet of impermeable Triassic shales into the Santa Rosa water sand is so improbable as to constitute no real pollution hazard.

Now, I think that sand we tested was probably the Santa Rosa, and it outcrops, oh, about six miles west of this location, which is updepth, and the logs indicate it to be thoroughly capped at the outcrop with caliche, and it appears to be real shallow and relatively impermeable even in this area, from the logs.

The Santa Rosa recharge area is from a higher elevation to the west. Thus, any pollution hazard to the recharge system is not present because the subject pits are so situated, both geographically and topographically, as to remove the possibility.

I might mention this little field is in a shallow depression with higher elevations in all directions, so there is

no possible way that any surface waters in here could drain into any other surface system. We are twenty miles from the Pecos River, and every shallow subsurface formation in this area outcrops between us and the Pecos, which is updip. So we couldn't drain into anything we put in the subsurface here into the Pecos.

The volume of produced water requiring disposal is negligible in terms of time and accumulation.

The following items are attached for your information and evaluation.

These are the exhibits that they had, and I will go on.

Mobil Oil Corporation respectfully submits that surface pit evaporation disposal of produced water from the C. L. O'Brien "C" Well No. 1 is the only economically feasible way of disposal, and such method constitutes no pollution hazard in the Twin Lakes Field area.

We will put this in the record, that since Mobil no longer has any interest in this, I am introducing this as independent testimony at this time, and the same applies to Exhibit Number 5, which is the Cities Service concurrence with Mobil's conclusions.

Q Mr. Sweeney, is Exhibit Number 6 a waiver from the

landowners stating their concurrence in your application?

A Yes, I have discussed this with the surface owners, the O'Briens, who operate the O'Brien Company, and they say they have no objection whatsoever to our continuing to dispose of what little water we have through surface pit evaporation.

Q Do you have anything else you wish to add to your testimony?

A I think that just about covers it. If there are any questions, I have logs in the area that I can indicate some of these points I have made. But I am convinced that in this particular case, the surface pits can't damage anyone.

Q Were Exhibits 1 and 2 prepared by you?

A Yes.

MR. MORRIS: At this time, if the Commission please, we offer Exhibits 1 through 6 in evidence.

MR. PORTER: If there is no objection, the exhibits will be admitted.

(Whereupon, Applicant's Exhibits Numbers 1 through 6, inclusive, were admitted in evidence.)

MR. PORTER: Does anyone have any questions? If there are no questions, the witness may be excused. Mr. Morris, does this conclude the testimony of the applicant?

MR. MORRIS: Yes, it does.

MR. PORTER: Does anyone else desire to present testimony or offer anything further in this case? The Commission will take the case under advisement. The hearing is adjourned.

(Whereupon, the hearing was adjourned.)

I N D E X

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

I, SAMUEL MORTELETTE, Court Reporter 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, and that the same is a true and correct record of the said proceedings to the best of my knowledge, skill and ability.

Samuel Mortelette
COURT REPORTER