STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

CASE 9972

EXAMINER HEARING

IN THE MATTER OF:

Application of Gary L. Bennett for a Pressure Maintenance Project, Lea County, New Mexico

TRANSCRIPT OF PROCEEDINGS

BEFORE: DAVID R. CATANACH, EXAMINER

STATE LAND OFFICE BUILDING

SANTA FE, NEW MEXICO

June 27, 1990

ORIGINAL

A P P E A R A N C E S

FOR THE DIVISION:

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E X H I B I T S

APPLICANT'S EXHIBITS:

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WHEREUPON, the following proceedings were had at 9:36 a.m.:

EXAMINER CATANACH: At this time we'll call Case 9972.

MR. CARROLL: Application of Gary L. Bennett for a pressure-maintenance project, Lea County, New Mexico.

EXAMINER CATANACH: Are there appearances in this case?

MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of the Santa Fe law firm of Kellahin, Kellahin and Aubrey, appearing on behalf of the Applicant, and I have one witness to be sworn.

EXAMINER CATANACH: Any other appearances?

Will the witness please stand and be sworn in?

(Thereupon, the witness was sworn.)

GARY L. BENNETT,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Bennett, would you please state your name and occupation?

A. Gary L. Bennett, oil and gas operator.

Q. Mr. Bennett, on prior occasions have you testified before the Division?

A. One time prior in 1986, on a force-pooling.

Q. In what capacity, sir? Were you an expert or a witness?

A. Well, actually I was just a witness, yes.

Q. In what capacity?

A. As a geologist.

Q. Do you have a degree in geology?

A. I have a degree in geology.

Q. In what year and from what institution did you obtain that degree?

A. 1970, Texas Tech University.

Q. Describe for us your current involvement in the area of this Application.

A. Excuse me?

Q. This case involves your personal request as an operator for a pressure-maintenance project?

A. Yes, sir.

Q. What are you attempting to do?

A. Actually, just to recover additional reserves due to the decline in production under primary production.

Q. What formation is the target of the pressure-maintenance project?

A. Well, out there it's got several different names, but it's probably best known as the Penrose. It's the lower Queen section, labeled the Penrose.

Q. Both as a geologist and as an operator, have you made an investigation of the data and information available by which to come to conclusions about this project?

A. Yes, and also I've consulted an engineer. I am not an engineer and do not have one on the staff, but I have consulted an engineer.

Q. Did you cause to be prepared the Commission Form C-108 and the attachments for approval of this as a pressure-maintenance project?

A. Yes.

MR. KELLAHIN: We tender Mr. Bennett as an expert petroleum geologist and as an operator.

EXAMINER CATANACH: Mr. Bennett is so qualified.

Q. (By Mr. Kellahin) Mr. Bennett, let's take what is marked as Exhibit Number 1, and before we discuss the specific details of the geology, let's orient the Examiner as to what you're proposing to accomplish with this Application.

I'm also going to give the Examiner a copy of the surface plat that has your particular acreages

outlined so it might help orient him. Let's start in Section 21. There's a red dot in the southeast of the southeast of that section. What is that, sir?

A. That is the Cavalcade Federal 21 Number 1 Well, which is the proposed well to do the pressure maintenance on.

Q. This would be your injector well for your pressure-maintenance project?

A. Yes, sir.

Q. Within Section 21 identify for us that acreage that will be part of this lease pressure-maintenance project.

A. All right. The interval that we're injecting into has been encountered on all four of the wells there in the southeast quarter section.

Q. Your acreage within this lease includes the southeast quarter as well as the east half of the southwest?

A. Yes, sir.

Q. Within that area, excluding the injector, what other wells will participate in the pressure-maintenance project in this formation?

A. Actually, only the well directly to the west there of the Number 4 Well. It will actually be the Cavalcade Federal Number 1 Well.

Q. Your initial plan, then, is to use one injector and one producer for the project --

A. Yes, sir.

Q. -- determine to what extent you're successful and then decide whether or not to expand the project to include other acreage that you control in the immediate area?

A. Yes, sir.

Q. The next area that is likely area for expansion of the project is your acreage in Section 22?

A. Yes, sir.

Q. And you control the acreage in the southwest quarter of that section?

A. Yes, sir.

Q. Let's turn specifically to what conclusions you've reached about the geology as mapped on this Penrose isopach.

A. All right. Of course, again, referring to Exhibit 1, which is the top of the Penrose sandstone, this contour is done on the top of 10 percent or better porosity.

There are several lenses in there that have produced -- Almost every well on this map has a Queen interval encountered. Most of them that were not productive were not productive due to less than 10

percent porosity.

The structure map really is a little misleading from the standpoint that several of those wells on there do produce in what looks like -- you know, are several hundred feet low to other producers in there, but they're producing from other intervals, and that's the reason we have this map that includes those wells. But all wells on this do not produce out of the same Penrose zone.

Q. What's the reason to select the Number 4 Well as the injector and the Number 1 as the producer?

A. Okay, the Number -- I personally did not drill either one of these wells. They were drilled by a predecessor entitled Cavalcade Oil Corporation.

Both wells have almost identical characteristics. They're almost structurally flat. One well was completed as an oil producer, and a pretty prolific one, over a relatively short period of time.

Q. Which one was that?

A. That's the Number 1 Well, the Cavalcade Number 1, directly west of the red well there.

The Number 4 Well was drilled about a year and a half -- I believe a year to a year and a half after the Number 1 well, produced almost exclusively gas, no water, and I think on the isopach map it shows

1100 barrels cumulative production.

And we shut this well in about two years ago since we felt like we were doing nothing but venting the drive, that being a solution-gas-drive field, we were doing nothing but venting the drive off of the other well.

Q. So why, then, would you use the Number 4 as the injector?

A. Well, it being structurally, you know, in a position that -- As a matter of fact, acreagewise, it's the only well we could use on that quarter section, you know, that structurally -- that had been completed and was structurally favorable for such a completion.

Q. Your choice, then, is to use the Number 1 as the producer?

A. Yes.

Q. Have you had estimated for you the magnitude of additional ultimate recovery that might be available to you from a pressure-maintenance project such as this?

A. Well, a conservative estimate that we've gotten, we've had done by an engineering firm in Midland, gave it about 20,000 to 25,000 barrels, upper parameters of about 40,000 barrels. I think probably the 20,000 to 25,000 is more realistic.

Q. Are there similar-type projects utilizing the injection of water into the formation and then improving oil recovery?

A. Yes, in Section 20 on this same map you'll see a number of wells there. All of those wells, with the exclusion of the one labeled "A.R.Co. Young-Fed.," were Penrose and Queen producers.

Primarily, the Penrose producers were in the southeast quarter of Section 20. And the water that we propose to use for this pressure-maintenance is the water that's been used here for pressure-maintenance for about 20 years.

Q. Who operates the pressure-maintenance project in Section 20?

A. Currently, Yates Petroleum owns the property, and actually I don't think that there are very many of those wells still active.

Q. Let's turn now to Exhibit Number 2. Would you identify and describe that for us?

A. All right, this is an isopach of the Penrose Formation. Again, it includes several wells that -- on the map -- that have produced out of different other -- different intervals, labeled the Queen, but not the one that we identify as the Penrose Formation.

It's contoured on 10-foot intervals, and it

looks as though, when you refer to the cumulative map that we're going to be talking about in a few minutes, you'll see that isolated little lenses in there are thicker -- I mean little areas -- are thicker, and the cums pretty well correspond with the higher cums being in the thicker phases.

Q. Who are the offset operators to your project?

A. Mewbourne Oil Corporation, Yates -- Let me get that list out.

Q. Here you go.

A. Chevron, Mewbourne Oil Corporation, and on this old Application, Breck Operating Company was. We bought the property in Section 22, and so Breck no longer has any interests, so they -- We actually own the offset.

Q. When we look in Sections 28 and 27, the offsets to your project --

A. Uh-huh.

Q. -- are those properties operated by Mewbourne?

A. Yes, sir.

Q. Now, where is the Chevron interest?

A. Chevron owns interest in Section 21 in the north -- I mean -- Yeah, in the northwest quarter.

Q. Does your project, in your opinion, pose any

potential risk to the correlative rights of any of the offset operators or owners?

A. I don't believe it does at all.

Q. Why not?

A. Well, we're -- you know, we -- we're -- This well is a legal location away from our boundary. We own the offset. And of course all of it being federal royalty interest, I don't believe that we're going to be pushing anything off of the lease or taking it away from anyone else.

Q. Have you received any objection to any of those parties that you've notified?

A. No.

Q. Describe for us the rates, approximate rates that you propose to inject into the injector.

A. I think in this case we had asked for a maximum rate of approximately 400 barrels a day, which I don't -- You know, I think we're going to be in the 200-barrel area.

And hopefully, according to the injectivity profile that we ran on it, we should be running at substantially less than the .2 gradient that is allowed.

Q. Okay. Let's turn now to --

A. At least initially.

Q. Yes, sir. Let's turn now to Exhibit Number 3. Would you identify and describe that exhibit?

A. Okay, that's a cross-section, and it's also represented on all of the other maps that we have -- all of the other exhibits that we've discussed so far.

It's a cross-section from A to A prime, being from -- A being west, A prime being almost directly east of A.

Q. When we look at the third log over from the left, that is the disposal well?

A. Yes.

Q. And the red line on the display shows what?

A. The red line on the display shows the interval that has been perforated in the well.

Q. Do you propose to maintain those same perforations for your injection, or will you change those perfs?

A. No, they'll be exactly as they are.

Q. And then when we look at the second well over from the right, that's your producing well in the project?

A. Yes. Yes, sir. And perforations remain the same on it.

Q. Okay. Anything else about the cross-section?

A. Really, it's pretty self-explanatory.

Q. All right, sir, let's go to Exhibit Number 4. What have you tabulated on Exhibit Number 4, Mr. Bennett?

A. Number 4 has the cumulative data on, I would say, the majority -- I do not think that it covers every well that's produced out of the Penrose.

Since several of these wells were completed in the Penrose and the Queen at the same time, the only thing that we can -- The only way we can estimate what came out of the Queen is by looking at the thickness and porosity of each interval.

Q. What is the current status of the Number 4 Well, the injector well?

A. It's shut in with packer set, packer fluid, between tubing and casing, exactly the way it has set for the last two years after we ran the injectivity profile.

Q. Okay. When did it last produce, approximately?

A. I'm going to say January or February of 1987.

Q. And why did Cavalcade cease to produce the well?

A. I ceased to produce it.

Q. After you took over operations from them --

A. After I took it over, right.

Q. -- you ceased production of the well?

A. Yes.

Q. For what reason?

A. Because at the time, you know, gas prices being what they are, and the fact that we -- to me, it appeared we were just venting the drive off the gas-driven oil field, that that was a waste.

Q. The conversion of this well for injection purposes, then, in your opinion, would not jeopardize remaining reserves?

A. No, I don't think so at all.

Q. And then the status, then, of the producing well, the Number 1 Well, is that still a producer?

A. Yes, sir.

Q. And at approximately what rate does it currently produce?

A. Oh, about 15 barrels a day.

Q. And that's the oil production. Is there any gas production with that?

A. About 20 MCF, and water is negligible. That figure down there, of course, is the cumulative water figure, and I think it included a lot of treatment water.

Q. Let's turn now to the documentation of the C-108, Mr. Bennett. We've marked that as Exhibit

Number 5, and then within Exhibit 5 we've numbered each of the pages, starting with number 1 and ending with page 22.

A. Uh-huh.

Q. Do you have a copy of that?

A. Yes, sir.

Q. Let's go through and start with page 3. What does the circle represent, the center of which is at the injector well?

A. The circle represents a half-mile radius surrounding the well that we propose to inject the water in, the Cavalcade 21 Number 4.

Q. Page 4 is your summary of the proposed method of operating the injector well?

A. Yes, sir.

Q. Page 5 is the geologic summary?

A. Yes, sir.

Q. In looking at the geology yourself, Mr. Bennett, do you see any open faulting or other hydrologic connections between the Penrose and Queen that would cause injection water to migrate out of the pressure-maintenance formation into freshwater sands or other sands that might be hydrocarbon-bearing?

A. No, I don't -- I don't believe there's any chance of that with the well situated where it is. Or

let's put it this way: I don't believe there's a very large chance of it. There's always a possibility.

But according to the logs that we've looked at and the cementing reports, I don't think there is, with the exception of the one well over there in Section 22, southwest-southwest.

Q. Let's look at that well. Find us a locator map, and you can use any of them. Perhaps Number 4 --

A. Right.

Q. -- will serve the purpose. Show us the one questionable well that you have encountered --

A. What have you labeled Number 4 here?

Q. It's the production map.

A. All right.

Q. Does that show on the production map?

A. Yes.

Q. All right, in the southwest of the southwest of 22 there are two well symbols, one virtually on top of the other?

A. Yes, sir.

Q. Does that represent two different wells?

A. Yes, sir.

Q. The one where you have the dry-hole symbol --

A. Yes, sir.

Q. -- is that what we'll characterize as the

problem well?

A. Yes, sir, this --

Q. Describe for us in what way it's a problem.

A. This well, when we bought the property, according to both the office here and our office in Hobbs, nobody had any record of that well.

We had to go to -- Let's see, we went to the BLM office in Carlsbad after going to their -- no, in Roswell, after going to their Carlsbad and their Hobbs office, and we kept coming up -- We ordered the logs for the area, kept coming up with a log, but no completion, no record of any kind.

And so I consulted with Jerry Sexton after we had obtained the information from the Carls- -- the Roswell BLM office. And they had two sheets of information on them that -- One of them was a completion -- plugging form that gave the pipe that they had run. It was a cable-tooled hole. They had recovered the surface pipe out of it and then left an interval of pipe in there that was 7-inch, if I remember right.

Q. Did you describe to Mr. Sexton of the OCD District Office your plan of operation for the injection well, the Number 4 Well?

A. Yes, sir.

Q. And you told him your anticipated pressures and rates of injection?

A. Yes, sir.

Q. Did you share with him the information that you had obtained on this plugged and abandoned well in the southwest of 22?

A. Yes, sir.

Q. What opinions or recommendations did Mr. Sexton have for you with regards to what to do with the plugged and abandoned well?

A. Well, we discussed it, and he mentioned to me, you know, that if the information -- you know, if I had not -- I provided him, made him a file of everything that I obtained. And then we went over this thing, and I believe he was to get with you all.

He didn't see any objection as long as we maintained the Q-4 Well as a producing well and could monitor any pressure, you know, problem that might be -- that might occur.

There is no dry-hole marker out there for that well. As a matter of fact, the way it's situated, according to the data that we obtained off those logs and from the BLM, that well should be about 100 feet from the existing well there.

Q. There's no apparent surface indication of the

presence of that well?

A. No, sir. Now, there may have been a -- It says that they erected a dry-hole marker. And when they built the pad for that Q-4 Well, they may have removed it.

But according to the way they plugged it, there was 294 feet, I believe, of surface pipe removed, and so you couldn't find it with a metal detector to re-enter it.

Q. Mr. Sexton's recommended solution for you was to maintain the production on the Q-4 Well?

A. Yes, sir.

Q. And that would serve as a method by which to monitor the status of the pressure and the fluids that --

A. That's right.

Q. -- were being produced?

A. Now, the well was plugged, and I believe we've got the data, you know, that's been furnished with this.

Q. Do you propose to maintain the Q-4 as a producer?

A. Yes, sir.

Q. And what is its current producing rates now?

A. It's probably two to three barrels a day of

oil and zero water.

Q. Did Mr. Sexton see any reason to have you re-enter the plugged and abandoned well to verify the status of that well?

A. No, as a matter of fact, he and I both felt like chances of getting back in that hole were about -- just nearly no chance at all, since there's no surface casing to locate. We just don't have any idea how we'd even go about it.

Q. Other than that one, did you find any well within the half-mile area of review that had inadequate or insufficient cement over the casing interval that might be exposed in the flood or the pressure-maintenance zone in either the Queen or the Penrose?

A. After talking to Jerry about this problem, we discussed all of these other wells in the area, and he did not see any problem, you know, with them.

The Linam Number 3 Well there does not have cement across the interval, and it is a Strawn -- It was a Strawn test, completed in the Wolf Camp. It has 5-1/2 casing set to, I believe it's 10,7, and we have proposed Strawn recompletion in it right now.

Of course, that well being in this -- As a matter of fact, I don't believe it's even in that -- Yes, it is. It is within the one-half mile radius.

Q. All right, what are the plans, then, for the Linam Number 3 Well?

A. It's going to be recompleted as a Strawn producer. But it does not have cement across that interval at this time.

Q. When it's re-entered for completion, you can check and verify and fix the integrity of the well and squeeze and recement?

A. Yes.

Q. Let's turn now to the possibility of freshwater sands.

A. Yes, sir.

Q. Have you made a study to determine whether or not there were any freshwater sands in the area?

A. Well, as far as contact from the, you know, state hydrologist or somebody -- something like that, we have not.

There was a water well in Section 22 used to drill those wells. The water interval is covered, you know, by the surface casing on all of the existing wells on 22 and 21, with the exception, again, of the one well here that we did not know about until recently in Section 22.

Q. What is your opinion of the likely deepest distance for any fresh water that might be utilized?

A. I would say probably about where they -- That's probably the reason for their casing being set at 400 feet.

Q. All right. Within this area, then, if we look at freshwater sands being shallower than 400 feet?

A. They would all be covered by surface...

Q. The source of water to be used for the project is fresh water?

A. Yes, sir.

Q. And what is your anticipated source of that water?

A. Currently we've got a contract offer from both the City of Carlsbad who maintains a line through there that comes through Section 22 -- I mean 20 -- and also crosses down here in Section 33.

We also have a contract offer from Yates Petroleum, who just recently purchased the Yoka Water System that's -- both of them being the same source of water, Ogallala Aquifer up on top of the cap there, and both of them having been used in all of these Queen-Grayburg-Penrose floods for years and years and years.

MR. KELLAHIN: Mr. Examiner, Exhibit Number 6 is our certificate of mailing to the parties that may have a potential interest in this area.

Q. (By Mr. Kellahin) The owner of the surface,

as best you can determine it, Mr. Bennett, is the Bureau of Land Management for this acreage, is it not?

A. Yes, sir.

Q. And they would have control of the surface at the injection-well location?

A. (Nods)

Q. Yes?

A. Yes, sir.

MR. KELLAHIN: That concludes my presentation and my examination of Mr. Bennett.

We would move the introduction of Exhibits 1 through 6.

EXAMINER CATANACH: Exhibits 1 through 6 will be admitted as evidence.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Bennett, this is all in the Querrecho Plains Queen Pool; is that right?

A. Yes, sir. I think it's labeled the Querrecho Plains Associated.

Q. Associated Queen, right.

Is this pool fairly well depleted?

A. Yes sir, I think it -- it basically -- It basically is. Little isolated pods like this in Section -- well, those two wells in Section 21. The

wells on both sides have been drilled several years before and were down to relatively low productive rates.

Yet that Federal 21-1 Well came in, when frac'd, at 200 barrels a day. So I don't want to tell you it's totally depleted and then the records show, you know, that that well obviously did real well after the others showed pretty good depletion.

Q. The fact that it's an associated pool tells me that there may be some gas production centered somewhere around this pool. Do you know where that might be, in relation to your --

A. The only gas well that has been completed in that whole field, to my knowledge, is the one in Section 23 over there that shows a gas well marker on it, yet it's cum'd -- Let's see, I believe on the cum map there it should show it. 35,000 barrels of oil and 259 million cubic feet of gas.

So the well was originally completed as a gas well, but at some point in its productive history something happened.

And I would anticipate you're going to probably end up with something similar there on the Number 4. For some reason, when you correlate those logs in there, there's not a -- there's not a good

reason for that well to have been a gas producer. But I don't -- I have no idea why it is.

Q. Okay. Now --

A. That well was also completed -- That's another reason for that, I just now remembered.

If you'll open this cross-section up, you'll see that that well is perforated in an additional interval. That is the one farthest to the east, and you'll see there's an interval that was not perforated in these others, a 10-foot interval from -- actually 11-foot, I believe -- from 4089 to 4100.

And I suspect that there is a logical reason for that to have been a gas well. Both of them were turned in to have been completed at the same time, both intervals, and that could be at the gas-depleted, again, to make some oil out of the lower zone. That's the only excuse I've got for it.

Q. Okay. Now, initially the project will only consist of one producing well and one injection well. Do you have any ideas of what you would like the project area to consist of at this time, when the Order is issued?

A. Well, at some point we're going to -- which I estimate to be approximately a year to a year and a half -- we're going to want to inject water into

various other wells here to the east in Section 22.

But we want to monitor that situation on the southwest-southwest quarter there of 22, you know. And if we don't -- You know, if we encounter some response, then we will probably apply for additional approval to inject water in several of those other wells and attempt to expand that thing.

MR. KELLAHIN: I believe our initial request, Mr. Examiner, was to include the southeast quarter of 22 and the east half of the southwest quarter.

Q. (By Examiner Catanach) Now, that is all one lease? That is the Cavalcade lease?

A. Yes.

Q. All of that in 21 and 22?

A. No, no, everything in Section 21 where we have it is one lease. Everything in Section 22, there are six Queen wells over there, and they're -- involve two leases. But it is, like you said, all federal.

Q. Section 22, you have the Federal Q and Federal J Lease?

A. Yes, sir.

Q. Have you talked to the feds at all about this project, Mr. Bennett?

A. Yes, sir, I talked to Shannon Shaw over in the Carlsbad office.

Q. Did he express any concern at all about that?

A. Not to me. As a matter of fact, he just recently, of course, approved the Strawn recompletion and Morrow recompletion in the same area there for us.

But as far -- To my knowledge, they have no objection.

Q. Why do you consider this a pressure-maintenance type project as opposed to a waterflood?

A. Well, I don't think effectively, you know, to -- to effectively drive oil one direction or another with only one point, I just don't believe you have a great deal of control there. I -- You know, you could call it a waterflood.

I'd have to say it would probably be a -- it might be a -- That's another reason why we are just kind of feeling along here. We do not -- We don't have any idea whether it's actually going to perform at all without other additional support.

Q. I see. So this is just a project, pilot-type project --

A. Yes, sir.

Q. -- down in this area?

A. We are currently talking with the offset operators there, to make an agreement, possibly, in the future when the economics are a little more favorable

to do that.

Q. I'm not sure I understand the ownership of the offsetting leases. Can we go over that one more time?

A. All right.

Q. Section 28 is owned by whom?

A. Section 28 is owned -- The shallow rights, which go to the Penrose, are owned by Mewbourne Oil Company, 27 --

Q. Same thing?

A. Yeah. -- 26 and 23.

Q. Okay. And you own all of Section 21 with the exception of the northwest quarter; is that --

A. Yes, sir.

Q. And all of Section 22?

A. No, I take that back. In Section 21 we do not own all of the section except for the northwest quarter.

Q. Okay, the acreage outlined in yellow --

A. Yes.

Q. -- on that --

A. Yes.

Q. -- first exhibit? Okay.

The north half of Section 21 would be who?

A. The north half of Section 21?

Q. Yes.

A. Well, in the -- I believe it's Chevron that owns the northwest quarter section, and let's see. I believe it's Chevron has the entire ownership of it.

Q. That whole area?

A. Uh-huh, I believe that's right.

Q. Okay, and Mewbourne has been notified and they have not expressed any opposition or --

A. Yes.

Q. -- voiced any concern --

A. As a matter of fact, I've contacted them, in addition to this, within the week, within the last week.

Q. Okay. Now, the well in the south -- What was it? The southwest-southwest of Section 22, that Q-4 Well, that's producing from the same interval that you're going to be injecting into; is that correct?

A. Yes, sir.

Q. So you will be able to monitor any kind of breakthrough or pressure?

A. Yes, sir.

Q. Okay.

A. And since it's making -- all six of those wells are making less than three barrels a day of water, it will be an immediate -- you should be able to

tell immediately.

Q. Mr. Bennett, the Linam Number 3, that is in the area of review for this injection well?

A. Yes. Yes, sir.

Q. What do you propose to do as far as cementing across the injection zone? Do you plan to do that?

A. Well, we ran a casing inspection log on this well back about eight months ago, and the inspection log that we ran, of course, does outside, interior, you know, and actual defect in the pipe. And we ran it over the deeper intervals for other reasons, but we did carry it on up across this -- this interval, you know, to see what the integrity of the pipe was, because the cement top does not go that far.

And, you know, we didn't see any problem, you know, to cause us to be alarmed. But by the same token, the odd thing that -- You now, you could eventually, you know, if you build up a -- you know, enough pressure which I think it's 1000, at the maximum, a 1000-pound injection pressure, that would be pretty remote.

Q. So you don't have any -- I mean, you've got plans right now to re-enter it and recomplete to the Strawn?

A. It has been re-entered.

Q. It has been re-entered?

A. To 9900 feet. And it's currently, we're -- I'm assuming we'll be on that in the next two or three weeks. We've got approval from -- from everyone.

Q. Well, are -- Let me ask you this: Are you willing to perform any remedial cement operations that we may deem necessary on that well?

A. Well, we hate to until -- You know, because anytime you shoot squeeze holes, you know, you're asking for a problem. But, by the same token, I'm sure something can be worked out on that.

Q. Now, your testimony was that you had an engineering -- your engineering consultants estimated 25,000 to 40,000 additional reserves?

A. Well, depending on how many wells we convert, and the fact that this well -- Several of the wells to the -- in Section 22 -- were never frac'd; they were acidized.

These two wells were acidized and frac'd, and based on the cumulative reserves there on the Number 1, you know, they came up with an idea that it's -- it should be possible, if an effective waterflood was implemented, to -- or a pressure-maintenance situation was implemented -- to recover a one-for-one in secondary recovery.

On a more conservative basis, you know, they -- Pretty much the things we've covered here, strictly a pressure-maintenance situation, using one well, it's probably more realistic to cut that down to their figure of -- I think they gave it 25, and I'm using 20.

Q. There is a current pressure-maintenance project in Section 20?

A. Uh-huh.

Q. That's Yates that you said?

A. Yeah, a unit that was formed of -- originally by Newmont.

Q. Has that been successful in that zone, in that field?

A. The average well in there, I think there were 16 producing wells total in that unit. They cum'd 66,000 barrels. And according to the data that I pulled on it -- I have not looked at what rates of water was injected. I know there were about, if I remember right, 8 to 10 million barrels of oil [sic] total injected there. Total recovery was about -- a little over 2 million barrels, I believe, for that field.

You know, as I said before, that thing -- They opened up the Queen and Penrose, I think they had

water going several different places back when Newmont operated it. And I think Yates has proposed at one -- or at one time was looking into even CO_2 in the area there since CO_2 is in there close. But that's all information that's derived from other sources besides Yates.

In other words, I have not discussed with them whether they're planning on any tertiary recovery or anything like that.

Q. Uh-huh.

A. We are definitely downdip from them, yet producing water-free, and they've been waterflooding for 20 years. So...

Q. Now, what did you say about the freshwater situation in the area? Do you know if there actually is some fresh water?

A. There was a well drilled back in the Fifties that is still -- that belongs to the -- was assigned back to the federal government back in about 1968, and has set dormant since that time, and we are currently contacting the -- them.

As a matter of fact, an attempt was made yesterday to get a water analysis out of that well, to find out whether that's actually fresh or brackish, and maybe to use that water for pressure maintenance.

Prior to this, you know, prior to talking with them yesterday, I didn't -- You know, no contact has been made to find out whether that's actually fresh or not.

I was over -- As a matter of fact, I looked at some maps over there which indicate that there shouldn't be any fresh water there. But obviously there's one well in the location that furnished enough water to drill that well, is all I can tell you. And at one time the federal government requested it be given back to them, with the understanding that water would be available for operations on that lease at a future date.

Q. You don't know how deep that well is?

A. No, I don't.

EXAMINER CATANACH: I believe that's all the questions I have of the witness. He may be excused.

Is there anything further, Mr. Kellahin?

MR. KELLAHIN: No, sir.

EXAMINER CATANACH: If not, Case 9972 will be taken under advisement.

(Thereupon, these proceedings were concluded at 10:22 a.m.)

CERTIFICATE OF REPORTER

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

I, Steven T. Brenner, Certified Shorthand Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I transcribed my notes; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

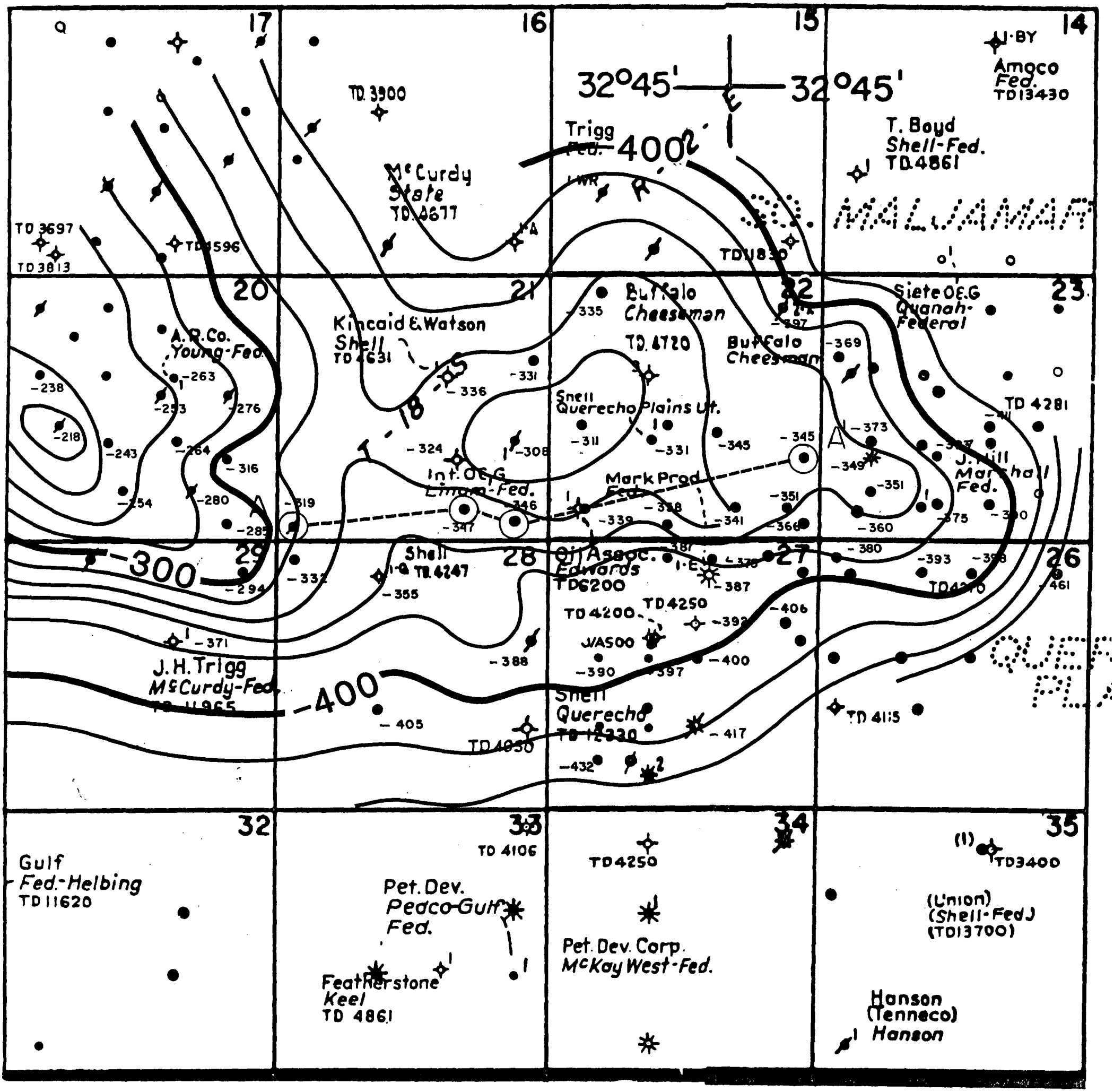
WITNESS MY HAND AND SEAL July 9, 1990.

STEVEN T. BRENNER
CSR No. 106

My commission expires: October 14, 1990

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 9972, heard by me on June 27 1990.

David R. Catanach, Examiner
Oil Conservation Division



BEFORE EXAMINER CATANACH

OIL CONSERVATION DIVISION

BENNETT EXHIBIT NO. 1

CASE NO. 9972

LEA COUNTY, N. M.

T/Penrose Ss.

>10% porosity

AUTHORED BY: G. BENNET	Drawn By: L. M. Date:
DATE: 6-90 DATUM:	REVISIONS BY / DATE
CONTOUR INT.: 20' SCALE: 1" = 2000'	DWG./GRP. NO.