CASE NO.

6507

APPLICATION,

TRANSCRIPTS,

SMALL EXHIBITS,

ETC.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
State Land Office Building
Santa Fe, New Mexico
28 March 1979

EXAMINER HEARING

IN THE MATTER OF:

Application of Harvey E. Yates Company for an NGPA determination, Lea County, New Mexico.

CASES 6507 6480 6481

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: Lynn Teschendorf, Esq.
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I N D E X

E X H I B I T S

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MR. STAMETS: We'll call next Case 6507, being the application of Harvey E. Yates Company for an NGPA determination, Lea County, New Mexico.

Call for appearances in this case.

MR. STRAND: Mr. Examiner, I'm Robert Strand, attorney for Harvey E. Yates Company, the applicant. We have one witness who needs to be sworn.

(Witness sworn.)

MR. STRAND: Mr. Examiner, in Case Number 6507 Harvey E. Yates Company is seeking the determination under the Natural Gas Policy Act of 1978 that the gas produced from its Hanlad State No. 1 Well is entitled to a ceiling price calculated under Section 102 of the Natural Gas Policy Act, being a new onshore reservoir.

We had previously filed an application for Section 103 treatment, a separate application, which I believe has been approved and has been sent on to FERC, so we will not be considering that today.

MR. STAMETS: Okay, so your only concern today will be 102 determination.

MR. STRAND: Yes.

ANDREW LATTU

being called as a witness and having been duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. STRAND:

Q. State your name, please.

A. Andrew Lattu.

Q. Mr. Lattu, where are you employed?

A. I'm employed by Harvey Yates Company as a geologist in Midland.

Q. Mr. Lattu, have you ever testified before this Commission in the past and are your qualifications a matter of record?

A. Yes, I have and they are.

MR. STRAND: Mr. Examiner, are Mr. Lattu's qualifications acceptable?

MR. STAMETS: Yes.

Q. (Mr. Strand continuing.) Mr. Lattu, is Harvey E. Yates Company the operator of the Hanlad State No. 1 Well?

A. Yes, they are.

Q. What is the location of the well?

A. The location is in Lea County, New Mexico, 1980 feet from the south line, 1980 feet from the west line

in Section 2, Township 18 South, Range 35 East.

Q. Is the actual drill site located on a State or fee lease?

A. It is located on the State of New Mexico Lease Number L-201.

Q. What was the spud date of the well?

A. The well was spudded on 8-15-77.

Q. And what was the total depth reached in the well?

A. The total depth reached was 4,657 feet.

Q. What was the completion of the well?

A. The well was completed on 9-16-77, as a --

MR. STAMETS: What was the total depth?

A. 4,657 feet.

Q. Was the well completed as a producer, Mr. Lattu?

A. Yes, it was completed as a natural gas well.

Q. What formation was it completed in?

A. It was completed in the Queen Sand at a depth of 4,212 to 4,220 feet.

Q. Mr. Lattu, are you familiar with the definition of the term "reservoir" as found in Section 2 of the Natural Gas Policy Act?

A. Yes, I am.

Q. And in preparing for your testimony in this

case, have you analyzed geological and pressure data that's available from this well and other wells in the area?

A. Yes, I have.

Q. I refer you to Exhibit Number One. Will you please describe this exhibit?

A. Exhibit One is a land plat with a circle of radius two and a half miles drawn around the Harvey E. Yates Company No. 1 Hanlad State.

It also shows the cross section A-A', which will be Exhibit Number Three.

Q. Mr. Lattu, referring to Exhibit Number Two, will you please describe this exhibit?

A. All right. This is a structure map, as prepared by GeoMap. It's a commercial mapping service. It was mapped on -- or contoured on the shallow horizon of the Yates Sand.

Q. Is the location of the Hanlad State No. 1 Well pointed out on that map?

A. Yes, it is indicated by a red circle.

Q. Referring to Exhibit Number Three, would you please describe this exhibit and its purpose?

A. Well, Exhibit Number Three is a cross section, as indicated on Exhibit Number One.

Harvey E. Yates Company Hanlad State No. 1 Well is the only Queen gas well within this two and a half

mile radius circle, and this cross section just shows nearby wells that were drilled prior to the drilling of the Harvey E. Yates Company Hanlad well.

And the Queen Sand is present in all of these wells, and none of the wells tested or found commercial production within this Queen interval.

And the two other wells shown on the cross section here, the first one, the Hanagan Lea No. 1 on the righthand side of the cross section was a dry hole and it did core the Queen interval. It didn't, however, have a DST.

Q. Mr. Lattu, have you examined logs and data from other wells, other than these particular three you have on the cross section?

A. Yes, I have.

Q. And have any of those wells, including the wells that you refer to on the cross section, penetrated the Queen formation?

A. Yes, most of the wells here have penetrated the Queen and have a fair amount of Abo production, some San Andres production. In fact, most of the wells on this map have gone through the Queen zone.

Q. Did you find in your investigation that any of these particular wells had penetrated the Queen zone prior to April 20th, 1977?

A. Most all of them had.

Q. Mr. Lattu, have any of these wells that you've investigated produced natural gas in commercial quantities from the Queen formation or any other formation?

A. No, to my knowledge, and I checked quite thoroughly through most of them, none of them have found either by DST or by perforation any indication of Queen production.

Q. What about production from other formations or reservoirs?

A. Other formations and reservoirs have been productive and most of them have been oil.

Q. Mr. Lattu, and you may have stated this already, but would you state again, were any of these wells tested in the Queen?

A. No, none of the wells conducted a DST that I could find in any way indicating gas production within the Queen.

Q. All right. Were any of these particular wells plugged as dry holes?

A. Yes. The well on the righthand side, the number three well of the cross section, was a dry hole, and it was drilled as principally a Queen Penrose test, and it did core the Queen zone.

Q. You referred earlier to wells that had pro-

duced from other formations, other than the Queen. Have any of these wells depleted in those other formations?

A. The well on the lefthand side of the cross section, the Hanagan Superior A State No. 1, is completed as an Abo well, and has since been abandoned.

Q. And there was no indication that there was any testing done of the Queen formation before abandonment of the well, is that correct?

A. No, there is not. Or that is correct, I guess, is a better way to say it.

Q. Mr. Lattu, were Exhibits One, Two and Three prepared by you or under your supervision?

A. Yes, they were.

MR. STRAND: Mr. Examiner, I move admission of Exhibits One through Three.

MR. STAMETS: Pardon?

MR. STRAND: Move admission of Exhibits One, Two, Three.

MR. STAMETS: They will be admitted.

CROSS EXAMINATION

BY MR. STAMETS:

Q. Mr. Lattu, do you believe that this reservoir that you've found in Hanlad State No. 1 exists as a reservoir or does not exist as a reservoir in the two offset

wells you've shown on your cross section?

A. By log analysis of the one well that did core the Queen, the log looks comparable to what we produce from. They did not test it, however, and they did have a core through that interval, but they didn't have core lab -- or they didn't have a commercial test. There is nothing written up about it other than the fact that it was cored, but there's been no commercial production from it before we drilled that well.

Naturally, what I saw on the logs is what led us to want to attempt a well in the area. There hadn't been any tests or indication of actual commercial production.

Q. So the two wells on each side of your well had actually been plugged and abandoned before you drilled your well.

A. Yes, they were.

MR. STRAND: Mr. Lattu, do you have an estimate from how many wells that are shown on your exhibit actually penetrated that reservoir that we're talking about?

A. It would be a very considerable number because most of those wells go through the Queen to deeper horizons. And we're talking about well over 100 wells.

Q. (Mr. Stamets continuing.) In one of the questions that's asked in the FERC regulations is that if this zone has been penetrated by an old well, could the

reservoir have been produced from such an old well prior to April 20, 1977.

Can you answer that question?

A. I can only answer it that no one has prior to that time attempted to complete it. I mean if it was a known reservoir, someone would have tried.

That's dodging the question a little but I mean you really don't know until you re-enter one of those old wells and attempt completion, and to my knowledge that hasn't been done.

MR. STRAND: Mr. Examiner, when we're done with Mr. Lattu's testimony I have some comments I'd like to make on that aspect. That was primarily the reason we called for the hearing on this particular case, and the next two coming up.

MR. STAMETS: Okay.

A. The operators of the two wells abandoned them without, you know, attempting to -- any kind of completion in the zone.

Q. What kind of pressures did you encounter in this Hanlad State Well?

A. Specific pressures I don't remember. They were good. We did have -- we cored the zone and then we ran a DST of it.

MR. STAMETS: Mr. Strand has handed me a

copy of Division Form C-122, which shows a shut-in tubing pressure of 1303 pounds, which compares with your initial shut-in on DST of 1488 pounds, and it also shows a potential of, roughly, 2-1/2 million a day.

Q. Do you think that the offset wells have been that good in the Queen, that they would have shown up during drilling operations?

A. That would be difficult to answer. Like I say, the only well that really looked very similar to ours in the log was the Hanagan well on the righthand side of the cross section, but they did have a core of the sand.

Q. Okay, the Lea Well is the well that was cored?

A. Yes, the Hanagan Lea cored the Queen.

Q. Okay, and then the Hanagan Superior was not cored?

A. No, nor did it test it.

It's a very slim zone of porosity, if you look at the porosity log there, that we are completed in. It's my own belief just working through this area, that there are fairly limited reservoirs consisting of probably shallow water sandbars.

Q. So you believe that it is possible for wells such as the Hanlad State No. 1 to encounter these sandbars and produce them and the same bar not be found in the off-

setting wells?

A. Well, that could be, or you would find a bar and you wouldn't find it in the offsetting wells, as we found further to the south.

Q. Okay. So there is evidence to say that this reservoir could not have been produced from any other well?

A. Yes.

CROSS EXAMINATION

BY MS. TESCHENDORF:

Q. Have you looked at the logs of -- any of the logs of wells that penetrated this zone, other than the ones you've got on this cross section?

A. Yes, I have.

Q. In your opinion did any of them look as though they were promising in this zone?

A. Well, some of them --

Q. What did the zone look like in them?

A. Well, some of the zones looked good; some like the Hanagan; none of them had tested it, however, and until we drilled our well, that's the first production that's been found there.

Q. Do you have any idea why the zone, if it looked promising wasn't tested, or why any of them didn't

come to completion in that zone?

A. No, like I say, some wells have been plugged and abandoned that had the zone in it. We found in some of our other drilling that just finding the zone doesn't insure production, like two dry holes in this same area, one just to the south in Section 11, and another well down in Section 23, neither of which were commercially productive. In fact, they weren't productive at all.

So it's not a widely productive reservoir by any means.

RECROSS EXAMINATION

BY MR. STAMETS:

Q. Mr. Lattu, you indicated that you felt that these Queen reservoirs should be fairly small, fairly isolated. Can you cite an area that illustrates this same type of deposition in the Queen?

A. Not within the Queen, no. We started off first exploring this thinking that we'd have a much more widespread reservoir, and our very first well, which is coming up as the next case, was a producing well and we felt very good about it, and offset it with a well that was fairly poor, and with a dry hole, showing us that it was both small in areal extent and predictability wasn't as good as we had thought.

Q. You say in the next case, that's Case 6480?

A. Yes.

Q. And that is in Section 22.

A. 22.

MR. STAMETS: Let's go off the record a second.

(There followed a discussion off the record.)

MR. STAMETS: We'll go back on the record.

Mr. Lattu, since you have mentioned the well that is the subject of Case 6480, and your attorney advises me that Case 6482 is also involved, I think we should perhaps consolidate all three of these cases and hear testimony and develop a single record that, perhaps, will make all three of them stronger cases.

Ms. Teschendorf, would you please call those next two cases?

MS. TESCHENDORF: Cases 6480 and 6482 are both applications of Harvey E. Yates Company for NGPA determination, Lea County, New Mexico.

MR. STAMETS: I presume we have the same appearances and your witness has been sworn and qualified in these cases as well.

MR. STRAND: That's correct.

MR. STAMETS: Why don't you go ahead, Mr.

Strand, and discuss the next two cases and then we can question Mr. Lattu concerning all of the wells?

MR. STRAND: Fine.

Mr. Examiner, Case Number 6480 involves Harvey E. Yates Company's State 22 No. 1 Well, and again in this case we seek a determination that the gas produced from this well is entitled to Section 102 treatment under the Natural Gas Policy Act.

I might point out that we filed an alternate application in this case, also seeking as an alternative Section 103 treatment, and I'm going to ask that that particular part of the application be dismissed.

We had some confusion as to what the spud date was on that particular well when we originally did the application. We referred to the petroleum information and completion card, which indicated a spud date after February 19th, 1977, and the completion report indicates a spud date of February 15th, 1977, and after doing some investigation we determined that the February 15th date is the correct spud date and therefore we are not eligible for 103 treatment.

So I'm going to ask that that be dismissed.

MR. STAMETS: Okay, that's in 6480 dismiss the alternative of the onshore production well determination

MR. STRAND: Yes.

The other well we'll be discussing is Case Number 6482. That's our Mobil 27 No. 1 Well, and again we seek the same determination, that of treatment as Section 102 under the Natural Gas Policy Act, and we also in that case ask that as an alternative that we receive Section 103 treatment for the gas produced from that well.

And we will not present any testimony as to the 103 application, but just leave that to be handled administratively.

MR. STAMETS: Okay, so again, we'll just dismiss that part of the application in all three of these cases.

MR. STRAND: Yeah, as far as testimony is concerned, Mr. Stamets.

The Mobil 27-1, we are seeking as an alternative 103 treatment.

MR. STAMETS: But you're not asking for that, an order coming out on that, but only for an order on a 102 determination?

MR. STRAND: Yes. Yes.

MR. STAMETS: Okay.

Q. (Mr. Strand continuing.) Mr. Lattu, referring to the State 22 No. 1, Case Number 6480, is Harvey E. Yates Company the operator of that well?

A. Yes, they are.

Q. What is the location of the well?

A. The well is located in Lea County, New Mexico, 330 feet from the south line and 330 feet from the east line of Section 22, Township 18 South, Range 35 East.

Q. Is the drill site of that particular well located on a State or a fee lease?

A. Yes, the drill site is located on a State of New Mexico Lease L-4253.

Q. What date was the well spudded?

A. The well was spudded on February 15th, 1977.

Q. What was the total depth?

A. Total depth reached was 4,511 feet.

Q. What was the date the well was completed?

A. The well was completed on April 14th, 1977.

Q. What type of production was obtained on the well?

A. It was initially completed as an oil well with casinghead gas.

Q. Was there any production from that well prior to April 20th, 1977?

A. Not to my knowledge.

Q. Mr. Lattu, would you please refer to Exhibit Number One in Case Number 6480 and describe that exhibit?

Oh, I'm sorry. What was the producing interval in the well?

A. The well was completed in the Queen formation at a depth of 4,454 feet to 4,460 feet.

Q. Now referring to Exhibit Number One, Mr. Lattu, would you describe that exhibit?

A. Exhibit Number One is a land plat, scale 1 inch equals 4000 feet. It has a circle drawn on it of radius 2-1/2 miles, drawn around the Harvey E. Yates No. 1 Honeysuckle State 22.

Also shown is cross section A-A', which shows several nearby wells, and that will be Exhibit Number Three.

Q. Mr. Lattu, have you also -- do you also have an Exhibit Number One in Case 6482, which is similar to the exhibit in Case 6480?

A. Yes, I do. The only difference being Exhibit Number One in Case 6482, a circle of radius 2-1/2 miles is drawn around the Harvey E. Yates No. 127 Mobil State Well.

Q. Mr. Lattu, would you refer to Exhibit Number Two in Case Number 6480 and explain that?

A. All right, this is a structure map contoured on top of the Yates. This was prepared by GeoMap Service, which is a commercial mapping service.

Q. Do you also have a similar Exhibit Number Two that you've prepared in Case Number 6482?

A. Yes, I do. It is again a Xeroxed copy of the same map by the same service. Both maps have a red circle indicating a well of discussion on each one. This one being the Honeysuckle 122 State, and Case 6482 the well circled is Harvey E. Yates 1-27 Mobil State.

Q. Mr. Lattu, have you also prepared an Exhibit Number Three for each of these two cases, and will you please describe those exhibits?

A. Exhibit Number Three is a cross section A-A'. It is the same cross section on both cases. The only difference -- the only difference between 6480 and 6482 Exhibit Threes are in 6482 we have added the subject well there, being the Harvey E. Yates Mobil 27 State No. 1. The subject well on each exhibit is indicated by an arrow at the top of the cross section.

Q. Mr. Lattu, I think we'll go back and get the location and completion data on the Mobil 27 No. 1 Well. Is HEYCO the operator of the Mobil 27 No. 1 Well? In Case Number 6482?

A. Yes, they are.

Q. What's the location of that well?

A. The well is located in Lea County, New Mexico, 660 feet from the north and 660 feet from the east lines of Section 27, Township 18 South, Range 35 East.

Q. Mr. Lattu, is the drill site of this well

located on either a fee or State lease?

A. Yes. The drill site is located on State of New Mexico Lease V-2735.

Q. What was the spud date of this well?

A. This well was spudded on 6-28-1977.

Q. What was the total depth?

A. Total depth reached was 4,790 feet.

Q. What was the completion date?

A. The well was completed on 7-26-1977.

Q. Was the well completed as a producer and if so, what type of production was obtained?

A. It was completed as an oil well with casing-head gas.

Q. What is the producing interval? Or did you give that, I'm sorry?

A. Not yet. The producing zone is in the Queen formation and depth is 4,453 feet to 4,459 feet.

Q. Mr. Lattu, referring to Exhibits One, Two, and Three in each of Cases 6480 and 82, have you examined logs and other data from the wells that you've set out on those exhibits relating to geological and pressure data?

A. Yes, I have.

Q. Mr. Lattu, have any of the wells other than the Mobil 27 No. 1 and the State 22 No. 1 penetrated the Queen formation?

A. Yes, a lot of other wells in this area have. It was through log analysis of looking at all these other wells that got us into this prospect.

Several wells showed what looked like good porosity within the Queen and the upper and lower Penrose section, and based on that log analysis, we drilled the No. 1 Honeysuckle Well, which did not find production in the lower or upper Penrose but did find production in the Queen zone.

Q. That is the State 22 No. 1 Well, is that correct?

A. Yes.

Q. Mr. Lattu, do you feel that these two wells, the Mobil 27 No. 1 and the State 22 No. 1 are in the same reservoir?

A. I feel they probably are because of how close they are together; however their production right now is somewhat different.

MR. STAMETS: Now, which two wells? In the same reservoir?

A. The Honeysuckle, that was the well there in the southeast corner of 22.

MR. STAMETS: Okay.

A. And the well there in the northeast of 27, Mobil 27, State No. 1.

MR. STAMETS: The Mobil 27? Is that your Mobil 27?

A. Yes.

MR. STAMETS: And those are in the same reservoir?

Q. Is that your opinion?

A. Yes, I believe they probably are. That's a Queen sand approximately 6 feet thick, located about 30 feet down from the top of the Queen, top of the Queen formation.

Q. Mr. Lattu, you testified that other wells have penetrated the Queen formation. Do you feel that those wells were within the reservoir that we're talking about?

A. Well, none of them tested it. We -- we felt that we had three possibilities of production on it. I'm talking about the initial well now, being the Penrose and the Queen. We didn't find production in the Penrose but we did in the Queen.

The next well, the Mobil 27 that we drilled, again we penetrated all the upper and lower Penrose, and again found production only within the Queen.

The other wells that showed good information, or at least porosity on the logs and had not tested it, some of them had been abandoned without any attempt at completion or testing the Queen.

Q. Am I correct, though, that these other wells you're referring to probably did in fact penetrate this zone but did not test it?

A. Well, they penetrate the formation, and whether or not the zone is productive within those wells, we can't say without attempting to recomplete in them, but some wells did show a good zone of porosity equivalent to where we are completed in.

Q. Would you say that that was the same reservoir as the Mobil 27 and the State 22 are in that some of these wells may have penetrated?

A. It could be. If it's a producing reservoir in that well, then it probably is, and there is just some question in my mind as to whether or not there really would be a producing reservoir.

It might be on interest to point out, I don't know if you want to bring it up now or later, Atlantic Richfield attempted to recomplete a well which had produced from a deeper zone in the Queen zone, and that was this Well No. 3, and if you look in Section 22 on the west half, and it looks like it's approximately, oh, 330 feet from the south and maybe 21, 2200 feet from the west line of Section 22, after we drilled and completed the Honeysuckle, Atlantic Richfield attempted to complete within the Queen zone of that well, and after a period of stimulation and treating

they got production of approximately 3 barrels a day, which they later abandoned, and that well did have a zone on the logs that looked at least as good as what we were completed in, but they were not able to successfully complete it as a well, or as a commercial well, I mean.

So based on that, there is some doubt as to just the basic log analysis doesn't prove a well is possible there.

Also there is a well further up, also on the west half of that section, the ARCO No. 1 in the northeast quarter of -- northwest quarter of Section 22, and you see that well is about 660 from the north and the west. That well had the zone, at least by log analysis, that compares to what we were finally completed in, which was one of the attractions of why we got into the area as a prospect.

After that well was drilled Mr. Rhodes drilled a well between that well and the Honeysuckle Well, which was a dry hole.

MR. STAMETS: What's the location of that well?

A. That well was approximately 1980 from the north and west.

MR. STAMETS: Okay, and that's the -- in Section 22, the H. P. Rhodes Atlantic State, and that was drilled subsequent to the completion of the Honeysuckle --

A. Yes, that was drilled --

MR. STAMETS: -- and was a dry hole.

A. And that was a dry hole. The zone was not there.

And our well drilled over in Section 23 in the southwest quarter of the southwest quarter there was also a dry hole. We cored the interval and it was completely tight, but it did have some show of oil in the core, but it had no permeability.

The core lab analysis was less than one milledarse through the entire interval, so that was plugged and abandoned as a dry hole.

So, therefore, just logs alone don't prove it's a commercial reservoir, and it was partially because of this erratic nature that we stopped drilling in the area, at least for awhile, to watch the production we do have.

The oil/gas ratios climbed after several months production on the Honeysuckle State 22 Well, which just discussing it with engineers they said indicated the limited reservoir and that you -- the well, producing well, had reached the boundary of the reservoir and that's why the gas/oil ratio is rising, and it was at that time we shut the well in to try and get a gas hook-up on it.

Q. (Mr. Strand continuing.) Mr. Lattu, based

on your analysis of all three of these wells and other wells surrounding them, is it your opinion that these Queen reservoirs we've been discussing may be quite limited in nature areawise?

A. Yes, I think they're very limited in areal extent.

CROSS EXAMINATION

BY MS. TESCHENDORF:

Q. Mr. Lattu, on your Exhibit Three from Case 6480, the log of the Honeysuckle --

A. Yes.

Q. -- Well, your completion data is April 7th, '77. When did the well go on production?

A. Sometime after that. It was initially just oil production only. I don't know exactly when. I would say within a few months I think it produced oil, and it was after that that casinghead gas, the amount of gas it was making started increasing considerably.

Q. What I'm getting at is the requirement -- since this well was spudded before 2-19-77 it's an old well, and one of the questions in the FERC regs is whether or not this reservoir could have been produced in commercial quantities before April 20th, '77, and if your completion date was April 7th, did you not have a pipeline in the area to --

A. Oh, they had to have a tank battery and everything built before --

Q. So you didn't have any of that available on the 20th of April?

A. See, I don't know exactly when the first sales went. Do you have that form that shows it?

The date of first sales would be of record. It's my belief it's after the 20th or we wouldn't be here.

MR. STRAND: Mr. Examiner, if I might interject, the application we filed and -- would indicate that there were no suitable facilities for production of natural gas until October 23rd, 1978, and further the application would also indicate that there had been no commercial production of gas whatsoever as of the date of the application.

I believe that facilities are in place but have not been hooked up as of yet.

Q. (Ms. Teschendorf continuing.) If this well was producing oil, what were you doing with the casinghead gas between the date of first sales and October of '78?

A. It was being atmosphered, I think is the term.

Q. So you were producing -- your C-105 attached to your application states that the date of first production was April 13th, '77. That was oil.

A. That was oil production.

Q. You didn't have facilities to sell the gas into a pipeline until October of '78, is that correct?

A. Yes, that's correct.

MR. STAMETS: All of that would be reflected in the Division's well file.

MR. STRAND: Yes.

MR. STAMETS: As to dates of gas compression first sales, and so on, I guess.

MR. STRAND: I suspect there's also a report in the file relating to the disposition of the gas between the time of completion and when facilities were there.

MR. STAMETS: And I've got a question.

RECROSS EXAMINATION

BY MR. STAMETS:

Q. I'm still not sure about the productive horizons. The Honeysuckle 22 appears to be producing at the top of the Queen formation.

A. No. The Honeysuckle 22 is completed -- if you'll refer to Exhibit Three of 6482 you've got all the logs on it there.

Q. It still looks like the top of the Queen formation.

A. Well, it's below the top. The little dot right there connected with the porosity spikes, the perfs.

It's only -- it's a very skinny little 6-foot sand.

Q. Right. Now, if we move immediately to the left to the --

A. To the Mobil?

Q. -- Mobil Well, that appears to be producing right at the top of the Lower Penrose.

A. Well, that was -- that's a drafting error. We attempted completion there but did not find any.

Q. I see. What are the perforations on this well?

A. The perforations on the Mobil Well are 4453 to 4459.

Q. That helps a lot. Now how about the completion date and the potential, is that the same?

A. Spud date -- the cross section was made from a PI card so it says 6-29-77, where in earlier testimony from our records I gave 6-28-77. And the completion date of 7-26-77 again is from our records, and the cross section shows what the PI card would have.

Q. Now, earlier in this case before we consolidated, we were talking about the possibility of a relatively limited reservoir for the Hanlad Well.

Is what you have seen in the Honeysuckle area strong geologic evidence that you do have limited re-

servoirs in the Queen formation in this area?

A. Yes, I believe it is of this Queen formation that you have -- you have very thin reservoir of 3 to 6 feet thick of very good porosity, and as you can see, sometimes in a very close offset the zone isn't there or the porosity isn't well developed or the permeability isn't well developed enough to give commercial production, and my own belief is that what this represents is a shallow water sandbar 6 or 8 feet thick with a limited areal extent, and the Hanlad is also completed in a fairly thin zone in approximately the same interval, and I think these are all separate little sandbars and the predictability of finding them is difficult.

Q. These the only three Queen producing wells inside these two circles?

A. Let's see, yes, at this time, as I've said, Atlantic Richfield attempted to recomplete their Well No. 3 there over in the west half of Section 22, and they have abandoned it, at least talking with the geologist there over a year ago.

So to my knowledge these are the only wells.

MR. STAMETS: Any other questions of Mr. Lattu? He may be excused.

Anything further in this case?

MR. STRAND: Mr. Examiner, I move the admission of Exhibits One through Three in Case 6480 and One

through Three in Case 6482.

MR. STAMETS: These exhibits will be admitted.

If there is nothing further these cases will be taken under advisement.

(Hearing concluded.)

SALLY WALTON BOYD
CERTIFIED SHORTHAND REPORTER
3020 Plaza Blanca (505) 471-2462
Santa Fe, New Mexico 87501

REPORTER'S CERTIFICATE

I, SALLY WALTON BOYD, a Court Reporter, DO HEREBY CERTIFY that the foregoing and attached Transcript of Hearing before the Oil Conservation Division was reported by me; that said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability, knowledge, and skill, from my notes taken at the time of the hearing.

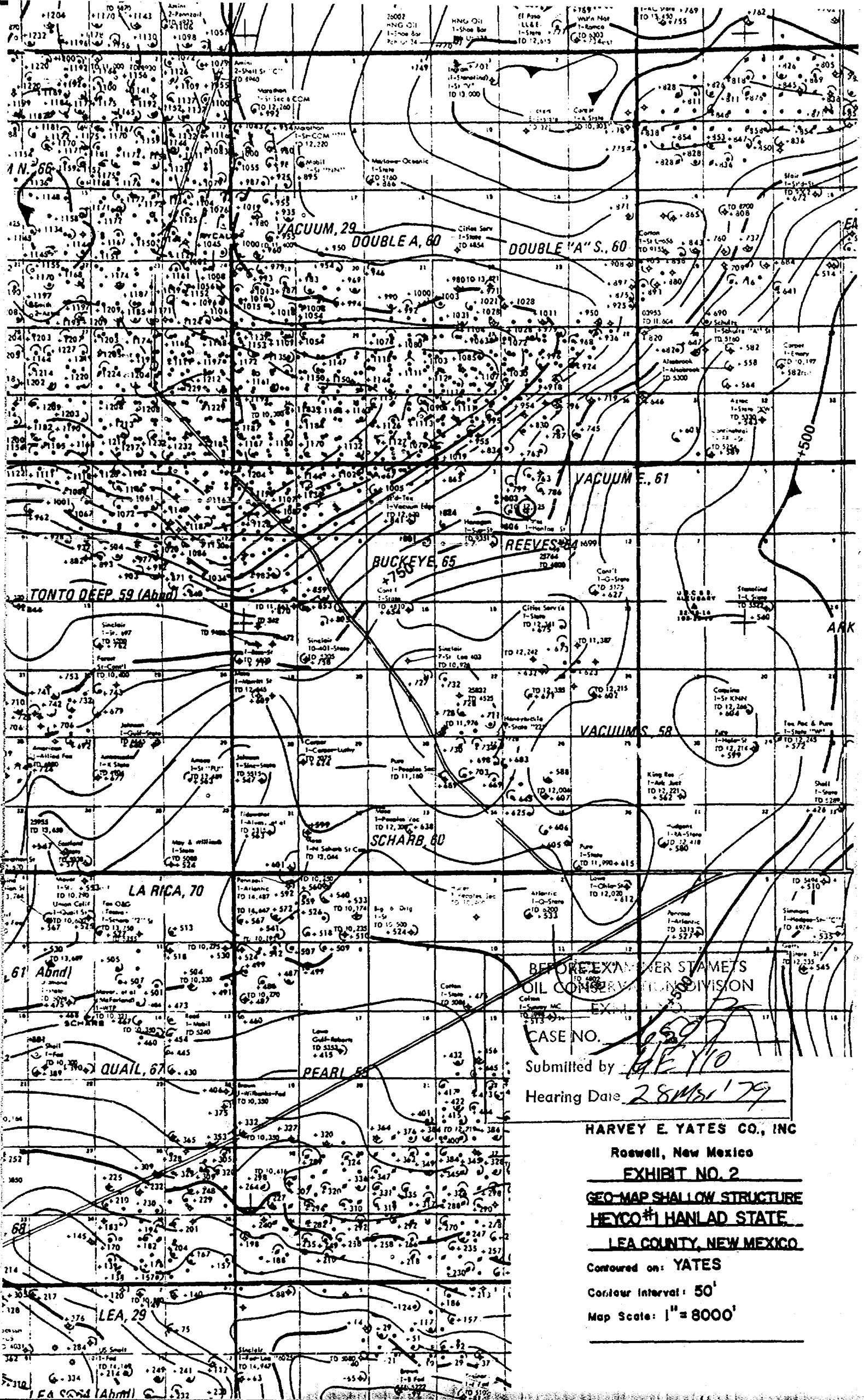
Sally W. Boyd
Sally W. Boyd, C.S.R.

SALLY WALTON BOYD
CERTIFIED SHORTHAND REPORTER
3020 Plaza Blanca (505) 471-2462
Santa Fe, New Mexico 87501

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
EXHIBIT NO. _____
CASE NO. _____
Submitted by _____
Hearing Date _____

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 6507, 6480, 6482 heard by me on 3-28 19 79.

Richard L. Stamets, Examiner
Oil Conservation Division



BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
EX.
CASE NO.
Submitted by HEYCO
Hearing Date 28 Mar '79

HARVEY E. YATES CO., INC

Roswell, New Mexico

EXHIBIT NO. 2

GEO-MAP SHALLOW STRUCTURE

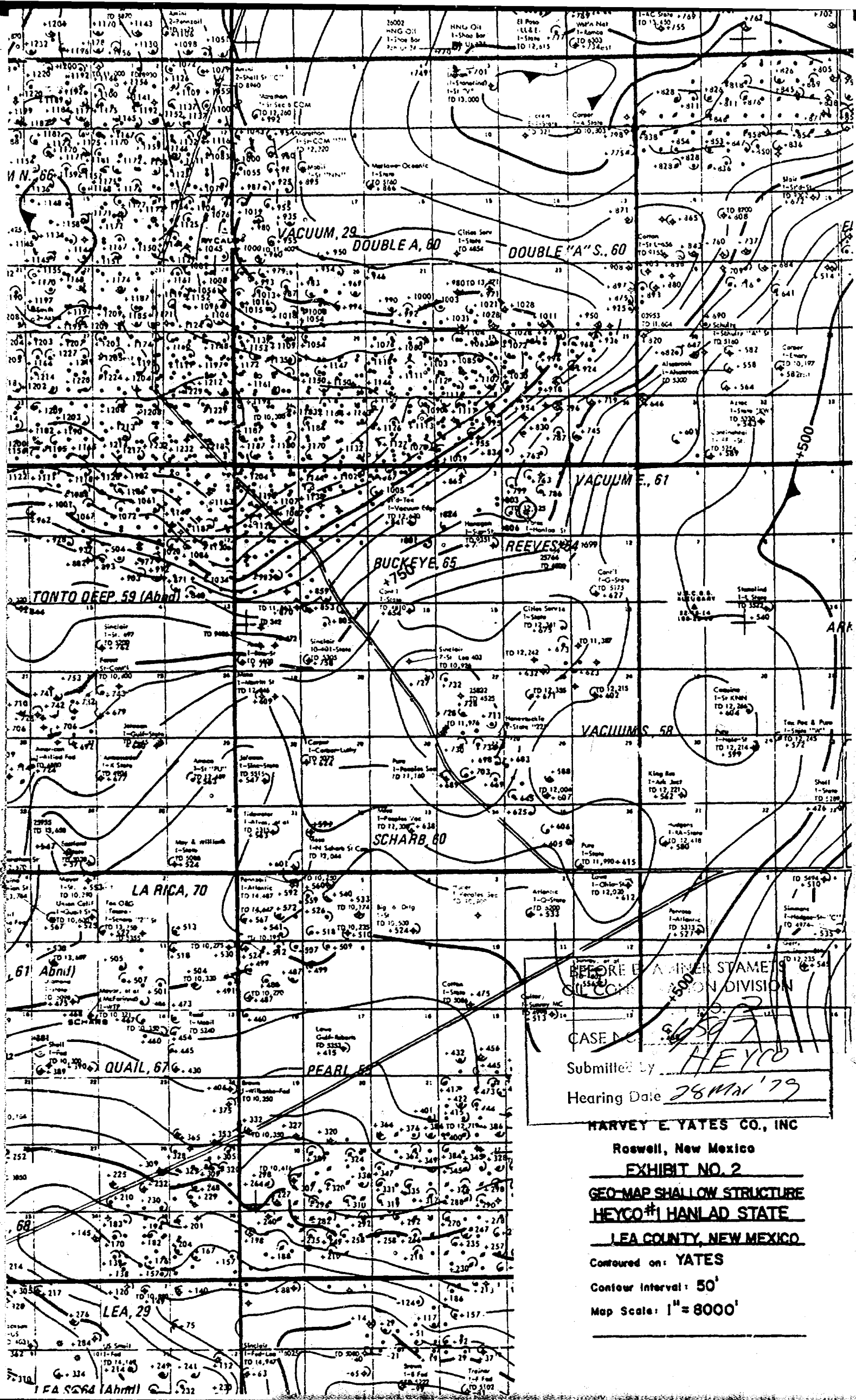
HEYCO #1 HANLAD STATE

LEA COUNTY, NEW MEXICO

Contoured on: YATES

Contour Interval: 50'

Map Scale: 1" = 8000'



BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION

CASE NO. 6594

Submitted by HEYCO

Hearing Date 28 Mar '79

HARVEY E. YATES CO., INC

Roswell, New Mexico

EXHIBIT NO. 2

GEO-MAP SHALLOW STRUCTURE

HEYCO #1 HANLAD STATE

LEA COUNTY, NEW MEXICO

Contoured on: YATES

Contour Interval: 50'

Map Scale: 1" = 8000'

FORM C-132

NEW MEXICO OIL CONSERVATION DIVISION
P. O. Box 2088, Santa Fe, New Mexico 87501

APPLICATION FOR WELLHEAD
PRICE CEILING CATEGORY DETERMINATION

1. FOR DIVISION USE ONLY

DATE OF: APPLICATION 2-20-79
DETERMINATION 5-18-79
CONTESTED No
PARTICIPANTS Yates

2. Operator
Harvey E. Yates Company

3. Address of Operator
P. O. Box 1933, Roswell, New Mexico 88201

4. Location of Well
UNIT LETTER K, 1980 FEET FROM THE South LINE AND 1980 FEET FROM
West LINE, SECTION 2 TOWNSHIP 18S RANGE 35E NMPM.

5. Name and Address of Transporter(s)
Northern Natural Gas Company - Omaha

5. Kind of Lease
State, Federal or Fee State

6. Lease No.
L-201

7. Unit Agreement Name
-

8. Farm or Lease Name
Hanlad State

9. Well No.
1

10. Field and Pool, or Wildcat
Wildcat

11. County
Lea

WELL CATEGORY INFORMATION

Check appropriate box for category sought and information submitted.

1. Category(ies) Sought (By NGPA Section No.) 102
2. All Applications must contain:

[X] a. C-101 APPLICATION FOR PERMIT TO DRILL, DEEPEN OR PLUG BACK

[X] b. C-105 WELL COMPLETION OR RECOMPLETION REPORT

[ ] c. DIRECTIONAL DRILLING SURVEY, IF REQUIRED UNDER RULE 111

[X] d. AFFIDAVITS OF MAILING OR DELIVERY

3. NEW NATURAL GAS UNDER SEC. 102(c)(1)(B) (using 2.5 Mile or 1000 Feet Deeper Test)

[ ] a. Location Plat

4. NEW NATURAL GAS UNDER SEC. 102(c)(1)(C) (new onshore reservoir)

[ ] a. C-122 Multipoint and one point back pressure test

5. NEW ONSHORE PRODUCTION WELL

[ ] a. C-102 WELL LOCATION AND ACREAGE DEDICATION PLAT

[ ] b. No. of order authorizing infill program _____

6. STRIPPER GAS

[ ] a. C-116 GAS-OIL RATIO TEST

[ ] b. PRODUCTION CURVE FOR 12-MONTH PERIOD

[ ] c. PRODUCTION CURVE FOR THE 90-DAY PERIOD ON WHICH THE APPLICATION IS BASED

I HEREBY CERTIFY THAT THE INFORMATION CONTAINED HEREIN IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

George M. Yates
NAME OF APPLICANT (Type or Print)

Title Vice President

Date February 16, 1979

Signed [signature]

DIVISION USE ONLY

[✓] Approved

[ ] Disapproved

The information contained herein includes all of the information required to be filed by the applicant under Subpart B of Part 274.

[signature]
EXAMINER

Exhibit B

FERC-121

Form Approved
OMB No. 038-R0381

U.S. DEPARTMENT OF ENERGY
Federal Energy Regulatory Commission
Washington, D.C. 20426

APPLICATION FOR DETERMINATION OF THE MAXIMUM LAWFUL PRICE UNDER THE NATURAL GAS POLICY ACT (NGPA)

(Sections 102, 103, 107 and 108)

PLEASE READ BEFORE COMPLETING THIS FORM:

General Instructions:

Complete this form if you are applying for price classification under sections 102, 103, 107 or 108 of the NGPA. A separate application is required for each well. If any reservoir qualifies for a category which differs from the category applicable to the producing well, separate applications must be made for the producing well and the reservoir. Complete each appropriate item on the reverse side of this page. The code numbers used in items 4.0 and 6.0 can be obtained from the Buyer/Seller Code Book. If there is more than one purchaser or contract, identify the additional information in the space below. Enter any additional remarks in the space below.

Submit the completed application to the appropriate Jurisdictional Agency as listed in title 18 of the CFR, part 270.103. If there are any questions, call (202) 275-4539.

Specific Instructions for Item 2.0, Type of Determination:

Section of NGPA	Category Code	Description
102	1	New OCS Lease
102	2	New onshore well (2.5 mile test)
102	3	New onshore well (1,000 feet deeper test)
102	4	New onshore reservoir
102	5	New reservoir on old OCS Lease
103	–	New onshore production well
107	–	High cost natural gas
108	–	Stripper well

Other Purchasers/Contracts:

Contract Date (Mo. Day Yr.)	Purchaser	Buyer Code
February 9, 1978	Northern Natural Gas Company	

Remarks:

FT7900806/1-2

FERC-121

1.0 API well number: (If not available, leave blank. 14 digits.)	30-025-25593
2.0 Type of determination being sought: (Use the codes found on the front of this form.)	102 (Section of NGPA) ; 4 (Category Code)
3.0 Depth of the deepest completion location: (Only needed if sections 103 or 107 in 2.0 above.)	feet
4.0 Name, address and code number of applicant: (35 letters per line maximum. If code number not available, leave blank.)	Harvey E. Yates Company (Name) ; (Seller Code) P. O. Box 1933 (Street) Roswell, (City) NM (State) 88201 (Zip Code)
5.0 Location of this well: (Complete (a) or (b).) (a) For onshore wells (35 letters maximum for field name.)	None - Wildcat Well (Field Name) Lea County (County) NM (State)
(b) For OCS wells:	(Area Name) ; (Block Number) Date of Lease: Mo. Day Yr. ; (OCS Lease Number)
(c) Name and identification number of this well: (35 letters and digits maximum.)	Hanlad State #1
(d) If code 4 or 5 in 2.0 above, name of the reservoir: (35 letters maximum.)	
6.0 (a) Name and code number of the purchaser: (35 letters and digits maximum. If code number not available, leave blank.)	Northern Natural Gas Company (Name) ; (Buyer Code)
(b) Date of the contract:	12 09 78 (Mo. Day Yr.)
(c) Estimated annual production:	100 MMcf.

	(a) Base Price ($/MMBTU)	(b) Tax	(c) All Other Prices (Indicate (+) or (-).)	(d) Total of (a), (b) and (c)
7.0 Contract price: (As of filing date. Complete to 3 decimal places.)	2.078	.135		2.213
8.0 Maximum lawful rate: (As of filing date. Complete to 3 decimal places.)	2.116	.116		2.232

9.0 Person responsible for this application:

George M. Yates (Name) ; Vice President (Title)

(Signature)

Feb 16th, 1979 (Date Application is Completed)

505/623-6601 (Phone Number)

Agency Use Only
Date Received by Juris. Agency
Date Received by FERC

FERC/900806/3-2

BEFORE THE OIL CONSERVATION DIVISION - STATE OF NEW MEXICO

IN THE MATTER OF THE)
)
APPLICATION OF HARVEY E.)
)
YATES COMPANY FOR WELLHEAD)
)
PRICE CEILING DETERMINATION)
)
UNDER THE NATURAL GAS POLICY)
)
ACT OF 1978)

APPLICATION

Comes now Harvey E. Yates Company, a New Mexico Corporation, hereinafter referred to as "Applicant" and states:

1. Applicant owns an interest in and is operator of the Hanlad State #1 well, located 1980' FSL and 1980' FEL, Section 2, T-18S, R-35E, N.M.P.M., Lea County, New Mexico.

2. Prior to drilling said well, Applicant caused to be made/prepared pursuant to its officers' instructions:
   (a) diligent examination of:
      (1) the real property records maintained in the county where said well is situated.
      (2) commercially produced ownership and well location maps maintained currently in applicant's office.
      (3) commercially produced well completion records, covering the Southeast New Mexico area and maintained currently in applicant's office.
   (b) a title opinion covering the proposed proration unit prepared by an attorney experienced in oil and gas title examination, based on commercially prepared abstracts covering the county records and where applicable, the records of the New Mexico State Office of the Bureau of Land Management or the New Mexico State Land Office. Said abstracts and title opinions are located in applicant's office.
   (c) application to drill said well with the appropriate governmental agency. Said application was duly approved and copies are on file in applicant's office

and with said agency. A copy of said application is attached hereto as Exhibit 1.

3. During the drilling of said well, Applicant caused to be made/prepared pursuant to its officers' instructions:
   (a) a daily drilling log, copies of which are on file in applicant's office. The portion of said log showing the date the producing reservoir was penetrated is attached hereto as Exhibit 2.
   (b) a directional drilling survey, copies of which are on file in applicant's office and a copy of said survey is attached hereto as Exhibit 3.

4. Subsequent to completion of said well, Applicant caused to be made/prepared pursuant to its officers' instructions:
   (a) A diligent examination of:
      (1) production records compiled for the State of New Mexico by the New Mexico Oil Conservation Division. Copies of said records are on file in applicant's office and the offices of the New Mexico Oil Conservation Division in Santa Fe, New Mexico.
      (2) examination of royalty and severance tax records to the extent they were examined during the title opinion process referred to above.
   (b) a completion report which was filed with the appropriate governmental agency. Copies are on file in applicant's office and the offices of said agency, and a copy is attached hereto as Exhibit 4.
   (c) a well location and acreage dedication plat dedicating the subject proration unit and filed with the appropriate governmental agency. Said dedication is on file in applicant's office and the offices of the New Mexico Oil Conservation Division in Santa Fe, New Mexico, and a copy is attached hereto as Exhibit 5.
   (d) a title opinion for division order purposes by an attorney experienced in oil and gas title examination utilizing abstracts as described above.
   (e) monthly report of operations and production which have been filed with the appropriate governmental agency. Copies are on file in applicant's office and the offices of said agency. A copy of the report showing first commercial production from the subject reservoir is attached hereto as Exhibit 6.

5. Applicant has also caused to be prepared pursuant to its officers' instructions:
   (a) location plat which locates and identifies the subject well and other wells, data from which is utilized to support this application. Copies of said location plat

are on file in applicant's office and a copy is attached hereto as Exhibit 7.

(b) a summary of geological data supporting this application including the following to the extent reasonably available:

(1) Well Log Section defining the top and bottom of the reservoir - Exhibit 8 (a)

(2) Bottom-hole or Surface Pressure Surveys - Exhibit 8 (b)

(3) Well Potential Tests - Exhibit 8 (c)

(4) Formation Structure Map - Exhibit 8 (d)

(5) Subsurface Cross-section Chart - Exhibit 8 (e)

6. The above described are the only records and data reasonably available to Applicant, and there are no other public records maintained which are relevant to this application.

7. Suitable facilities for production and delivery of natural gas from the subject reservoir were in existence on February 2, 1978.

8. On the basis of the above, applicant has concluded that there is substantial evidence to support a determination:

(a) that the natural gas for which its seeks a determination is produced from a new onshore reservoir as defined under Section 102 (c)(1)(C) of the Natural Gas Policy Act of 1978.

(b) that natural gas was not produced in commercial quantities from said reservoir prior to April 20, 1977.

(c) that there were no suitable facilities available to produce and deliver natural gas from the subject well to a pipeling on or before April 20, 1977.

(d) that said reservoir was penetrated before April 20, 1977, by an old well from which natural gas or crude oil have been produced in commercial quantities from other reservoirs, however, said reservoir was not considered commercially producible prior to drilling of the subject well.

9. Applicant has no knowledge of any information which is inconsistent with the above stated conclusions.

10. Applicant has prepared and enclosed with this Application, F.E.R.C. Form 121, and (United States Geological Survey Form GS-102) (New Mexico Oil Conservation Division Form C-132) and delivered copies of F.E.R.C. Form 121 (and New Mexico Oil Conservation Division Form C-132) by U.S. Mail, postage prepaid, to all co-lessees, working interest owners, and gas purchasers under the subject well. A list of such co-lessess, working interest owners, and gas purchasers is attached hereto as Exhibit 9.

WHEREFORE, Applicant requests that a determination be made that the natural gas produced from the subject well is from a new on-shore reservoir as defined in §102 (c)(1)(C) of the Natural Gas Policy Act of 1978, and that said gas is entitled to a ceiling price calculated pursuant to §102 (a) and (b) of said Act.

HARVEY E. YATES COMPANY

By: _____
George M. Yates

STATE OF NEW MEXICO)
)
COUNTY OF CHAVES)

VERIFICATION

George M. Yates, being duly sworn upon his oath, deposes and states that he is a Vice President of Harvey E. Yates Company, the applicant herein, that he is authorized on behalf of said applicant to make the statements contained herein, and that said statements and Exhibits herewith, are true and correct to the best of his information, knowledge and belief.

_____
George M. Yates

Subscribed and sworn to before me this 16 day of February, 1979.

My Commission Expires:
July 27, 1980

_____
Notary Public

INDEX OF EXHIBITS

1. Application to Drill

2. Daily Drilling Log (Reservoir Penetration)

3. Directional Drilling Survey

4. Completion Report

5. Well Location and Acreage Dedication Plat

6. Operations and Production Report (First Commercial Production from Reservoir)

7. Well Location Plat (Reservoir Definition)

8. Geological Data
   a. Well Log Sections
   b. Pressure Surveys
   c. Well Potential Tests
   d. Structure Map
   e. Cross-Section
   f. Gas Analysis Data

9. List of Co-Lessees, Working Interest Owners, and Gas Purchaser

EXHIBIT 1

Application to Drill

NO. OF COPIES RECEIVED		
DISTRIBUTION		
STATE FE		
[illegible]		
U.S.		
LAND OFFICE		
OPERATOR		

NEW MEXICO OIL CONSERVATION COMMISSION

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

Type of Work

DRILL [XX] DEEPEN [ ] PLUG BACK [ ]

Type of Well: OIL [XX] GAS WELL [ ] OTHER [ ] SINGLE ZONE [ ] MULTIPLE ZONE [ ]

Name of Operator
Harvey E. Yates Company, Inc.

Address of Operator
P. O. Box 1933, Roswell, New Mexico 88201

Location of Well: UNIT LETTER K LOCATED 1980 FEET FROM THE South LINE AND 1980 FEET FROM THE West LINE OF SEC. 2 TWP. 18S RGE. 35E

A. Indicate Type of Lease: STATE [XX] FEE [ ]

L-201

Unit Agreement Name

Lease Name
Hanlad State

Well No.
1

Field and Pool, or Wildcat
Wildcat

County
Lea

Elevation (Show whether DF, RT, etc.)	21A. Kind & Status Plug. Bond	21B. Drilling Contractor	22. Approx. date work will start
3906' GL	Nationwide	WEK Drilling Co., Inc.	August 1, 1977

19. Proposed Depth	20. Formation	20A. Rotary or C.T.
4700'	Queen	Rotary

PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
12 1/4"	8 5/8"	20#	400'	Circulate	
7 7/8"	4 1/2"	9.5#	4700'	See below	

Cement program for production string:
1st stage - from TD (4700') to bottom of salt formation (2964') with 550 Sx of 50-50 Poz Class C w/6# salt, 1/2 of 1% CFR2 and 1/4# Flocele/Sx.

2nd stage - DV tool @ 1760' (base of anhydrite) and 2 cement baskets below DV tool. Cement back to surface with 325 Sx Halliburton Lite w/9# salt and 1/4# Flocele/Sx.

3000 Series, 10" Schaeffer Type E Blowout Preventer will be used.

APPROVAL VALID FOR 180 DAYS UNLESS DRILLING COMMENCED, EXPIRES Oct 9, 1977

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: IF PROPOSAL IS TO DEEPEN OR PLUG BACK, GIVE DATA ON PRESENT PRODUCTIVE ZONE AND PROPOSED NEW PRODUCTIVE ZONE. GIVE BLOWOUT PREVENTER PROGRAM, IF ANY.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

Signed Jack L. Yates Title Vice President Date July 8, 1977

(This space for State Use)

APPROVED BY John W. Runyan TITLE Geologist DATE JUL 11 1977

CONDITIONS OF APPROVAL, IF ANY:

EXHIBIT 2

Daily Drilling Log (Reservoir Penetration)

HARVEY E. YATES CO., INC. WEK 1980' FSL & 1980' FWL
HANLAD STATE #1 Section 2, T-18-S, R-35-E

8/24/77 Drilling at 4397' in Lime. 149' progress. Mud wt. 10.2; Visc.-37; water loss-16; filter cake-2/32; pump, drill clrs., etc., same as 8/23/77.

8/25/77 Drilling at 4507' in Lime. 110' progress. Mud wt.-10.2; water loss-12; Pump and drl. clrs.--same as 8/23/77.

8/26/77 Drilling at 4643' in Lime. 136' progress. Mud wt.-10.2; Visc.-37; water loss-10; filter cake-2/32; Pump, drl. clrs., etc., same as 8/23/77.

Up-date: (26th). Reached TD - 4699' at approximately 6 PM. Logging - 9:00 PM.

8/27/77 Rigged down Schlumberger at 5AM. Trip in hole with drill pipe. Lay down drill pipe and drill collars. Rigged up to run 4 1/2" OD (9.5# per ft. J-55 8-Round ST&C casing). Ran 117 jnts (4,689.12') and set at 4699' KB; Float collar at 4655' KB; Rough-coated casing at 4172' to 4293'; Marker joint at 4071' KB (19.85'); DV tool at 1770' KB. Cemented casing in two stages - 1st stage: Mixed 550 sks 50-50 Poz; 6# salt and 5/10% CFR_2 per sack. Displaced cement with 46 BBL water and 30 BBL mud at 500 PSIG. Plugged down at 4 PM. Bumped plug with 2000 PSIG - held OK. Dropped opening bomb; pressured casing to 1200 PSIG and opened DV tool at 4:05 PM. Circulated mud with rig pump through DV tool at 1770' KB for 4 hrs. Cemented 2nd stage with 500 sks. Halliburton light weight with 9# salt and 1/4# flo-seal per sack. Displaced cement with 29 BBL fresh water. Plugged down 8:15 PM. Maximum pressure - 800 PSIG. Bumped plug w/2000 PSIG and closed DV tool. Circulated estimated 87 sks cement. Installed 4 1/2" casing slips and released rig at 9 PM 8/27/77.

8/28/77 Moving out rotary rig; prep to move in completion unit.

8/29/77 Rigged up well service unit. Installed tubing head; ran 3 3/4" rock bit; casing scraper and 6 (3 1/8") OD drill collars and 49 jnts 2 3/8" tubing to 1763' KB. Installed BOP and nippled up reverse drilling head. SD 5 PM. Prep to drill out DV tool.

8/30/77 Finished rigging up reverse unit and drilled out DV tool. Ran tubing in hole to 4655'. Pressure tested 4 1/2" casing and DV tool to 1500 PSIG. Held OK. Displaced hole with 2% KCL water. Pulled out of hole and lay down drilling tools (bit and drl. collars). Released Starr Tool Co. reverse unit and closed well in.

8/31/77 Rigged up Vann Tool Co. logging unit. Ran Gamma Ray depth control log from 4659' to 2700'. Ran Bond log from 4657' to 2700'. Top cement at 2965' KB. Good Bond through zones to be perforated and tested. SD 6:30 PM. Prep to perf Queen zone 9/1/77.

9/1/77 Perforated Queen from 4212' to 4220' KB. Total-16 shots. Ran tubing and packer to 4255' and pumped 1 BBL acid to spot. Set packer at 4155' KB. Formation broke at 3800 PSIG to 2500 PSIG. Displaced 1 BBL acid at 2 BBL per min. at 2300 PSIG. Pumped remaining 1000 gals 7 1/2% easy-flow Morrow-type acid to spot. Treated at 1.75 BBL per min. at 2000 PSIG. Injected 3 ball sealers per 2 BBL acid. Good ball action - did not ball out. Final pump in pressure - 2100 PSIG; ISIP-1700; 5 min. SITP-vac. 45 BBL load and acid water to recover. Swabbed 17 BBL load water. Well kicked off flowing gas with strong spray of acid water. Too wet to flare. Shut well in - lay down swab. SITP-1200 PSIG in 15 min. Flowed well to clean. Reduced choke to 20/64". Pressure stabelized at 400 PSIG. Estimated rate--1000 MCF/d. Closed well in 5 PM. Prep to flow 9/2/77 and rig down.

EXHIBIT 3

Directional Drilling Survey

KENNETH O. REYNOLDS - ARTESIA
LESLIE K. EVERTSON - ROSWELL

WEK DRILLING CO., INC. – OIL WELL DRILLING CONTRACTORS

P. O. Box 2055 ROSWELL, NEW MEXICO 88201
TELEPHONES: ARTESIA 505/746-6757
ROSWELL 505/623-5070

August 31, 1977

Harvey Yates Co., Inc.
P.O. Box 1933
Roswell, New Mexico 88201

Re: Hanlad State #1

Gentlemen:

The following is a Deviation Survey of the above well:

260'-1/4	2925'-2 1/2
730'-1/2	3419'-1 3/4
1210'-1/2	3490'-1 3/4
1700'-1	3976'-1 1/2
2175'-1 1/2	4205'-1 1/2
2467'-1 3/4	4699'-1 1/2 TD

Yours very truly,

WEK DRILLING CO., INC.
Arnold Newkirk
Arnold Newkirk

STATE OF NEW MEXICO)
)
COUNTY OF CHAVES)

The foregoing was acknowledged before me this 31st day of August, 1977 by Arnold Newkirk.

My Commission Expires:
April 9, 1980

Notary Public

EXHIBIT 4

Completion Report

Form C-105
Revised

NEW MEXICO OIL CONSERVATION COMMISSION
WELL COMPLETION OR RECOMPLETION REPORT AND LOG

No. of copies received / Distribution / Santa Fe / File / U.S.G.S. / Land Office / Operator

State [X] Fee [ ]

L-201

Type of Well: Oil Well [ ] Gas Well [X] Dry [ ] Other

Type of Completion: New Well [X] Work Over [ ] Deepen [ ] Plug Back [ ] Diff. Resvr. [ ] Other

Name of Operator: Harvey E. Yates Company, ~~Inc.~~

Address of Operator: P. O. Box 1933, Roswell, New Mexico 88201

Farm or Lease Name: Hanlad State

Well No.: 1

Field and Pool, or Wildcat: Wildcat

Location of Well: Unit Letter K located 1980 feet from the South line and 1980 feet from the West line of sec. 2 twp. 18S rge. 35E NMPM

County: Lea

Date Spudded	16. Date T.D. Reached	17. Date Compl. (Ready to Prod.)	18. Elevations (DF, RKB, RT, GR, etc.)	19. Elev. Casinghead
8-15-77	8-26-77	9-16-77	3906' GL	

Total Depth	21. Plug Back T.D.	22. If Multiple Compl., How Many	23. Intervals Drilled By	Rotary Tools	Cable Tools
4699' KB	4657' KB	Single	→	0' - 4699'	

Producing Interval(s), of this completion — Top, Bottom, Name: Queen 4212' - 4220' KB

Was Directional Survey Made: Yes

Type Electric and Other Logs Run: DLL/MSFL AND CNL/FDC

Was Well Cored: Yes

CASING RECORD (Report all strings set in well)

Casing Size	Weight Lb./Ft.	Depth Set	Hole Size	Cementing Record	Amount Pulled
8 5/8"	20#	255'	12¼"	175 Sx Cl C w/2% CaCl	Circ 20 Sx
4 1/2"	9.5#	4699' KB	7 7/8"	1 Stage: 550 Sx 50-50 POZ 2 Stage: 550 Sx Halliburton Lite - Circ 87 Sx	

LINER RECORD

Size	Top	Bottom	Sacks Cement	Screen

TUBING RECORD

Size	Depth Set	Packer Set
2 3/8"	4162' KB	4162' KB

Perforation Record (Interval, size and number): 4212' - 4220' KB - 16 shots

ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

Depth Interval	Amount and Kind Material Used
4212' - 4220' KB	1000 Gals 7½% EZEFLO Morrow type acid

PRODUCTION

Date First Production: 9-16-77
Production Method (Flowing, gas lift, pumping — Size and type pump): Flowing
Well Status (Prod. or Shut-in): SI

Date of Test	Hours Tested	Choke Size	Prod'n. For Test Period	Oil — Bbl.	Gas — MCF	Water — Bbl.	Gas—Oil Ratio
9-16-77	16 Hrs	11/64	→	0	2414.9 (AOF)	0	

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil — Bbl.	Gas — MCF	Water — Bbl.	Oil Gravity — API (Corr.)
1209	Packer	→				

Disposition of Gas (Sold, used for fuel, vented, etc.)

Test Witnessed By: Tefteller, Inc.

List of Attachments: Form C-122 (2 copies) Multipoint & one point back pressure test

I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.

SIGNED Fred G Yates TITLE Vice President DATE 10-6-77

EXHIBIT 5

Well Location and Acreage Dedication Plat

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

Operator: Harvey E. Yates Co., Inc.		Lease: Bamlet State		Well No.: 1
Unit Letter: K	Section: 2	Township: 18S	Range: 35E	County: Lea
Actual Footage Location of Well: 1980 feet from the South line and 1980 feet from the West line				
Ground Level Elev.: 3906' GL	Producing Formation: Queen	Pool: Wildcat		Dedicated Acreage: 160 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

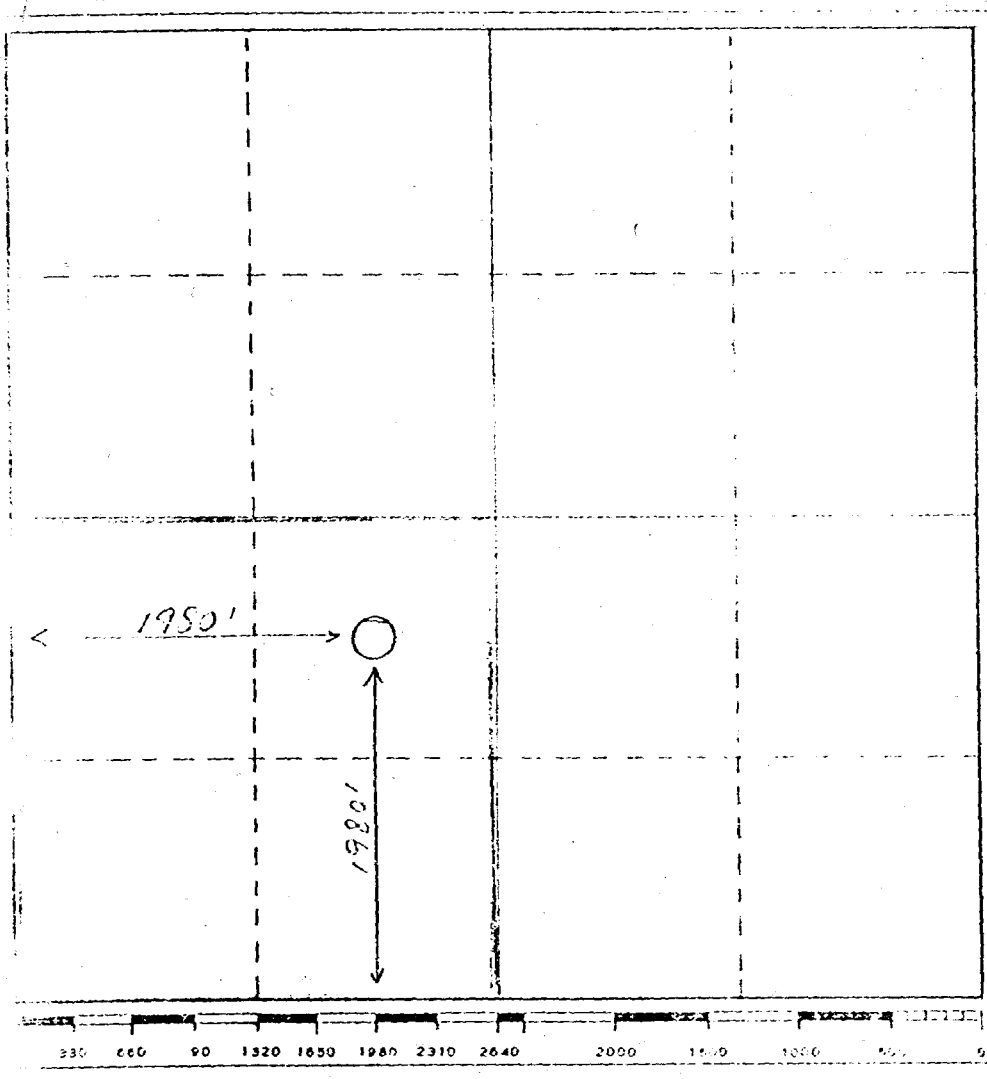
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: Jud C. Yates

Position: Vice President

Company: Harvey E. Yates Co., Inc.

Date: October 18, 1977

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed

Registered Professional Engineer and/or Land Surveyor

Certificate No.

EXHIBIT 6

Operations and Production Report
(First Commercial Production)

ORIGINAL TO OCC SANTA FE
ONE COPY TO OCC DIST. OFFICE
ONE COPY TO TRANSPORTER(S)

(Rev. 8-1-77)

(Company or Operator) Harvey E. Yates Company (Address) P.O. Box 1933, Roswell, New Mexico (Zip) 88201 (Month) April 1978 Page 6 of 6

POOL NAME (Underline) *Lease Name WELL NO UNIT SEC TWP RNG	WELL STATUS	INJECTION VOLUME	INJECTION PRESS.	TOTAL LIQUIDS PRODUCED MONTHLY OIL ALLOWABLE	TOTAL LIQUIDS PRODUCED ACTUAL BARRELS PRODUCED	TOTAL LIQUIDS PRODUCED BARRELS OF WATER PRODUCED	GAS PRODUCED (MCF)	DAYS PROD.	DISPOSITION OF GAS SOLD	DISPOSITION OF GAS TRANSPORTER	DISPOSITION OF GAS OTHER	DISPOSITION OF GAS CODE	DISPOSITION OF OIL OIL ON HAND AT BEG. OF MONTH	DISPOSITION OF OIL BARRELS TO TRANSPORTER	DISPOSITION OF OIL TRANSPORTER	DISPOSITION OF OIL OTHER	DISPOSITION OF OIL CODE	DISPOSITION OF OIL OIL ON HAND AT END OF MONTH
*LEASE NAME - Include State Land Lease Number or Federal Lease Number																		
Scanlon Morrow (Gas)																		
Pennzoil Fed. NM-7071 1 F 32 30 29	F				21	85	4,345	30	4,345	TWP			59	-0-	NCO			80
South Empire Morrow (Gas)																		
Empire South Deep Unit 13 N 30 17 29	S				-0-	-0-	-0-	0	-0-	EPG			126	-0-	NCO			126
Wildcat																		
Travis Deep Unit NM-28417 3 B 13 18 28	F				402	-0-	40,250	14	40,250	EPG			166	373	NCO			195
South Empire Morrow																		
Travis Bassett-Birney NM-14842 1 J 7 18 29	F				1,399	-0-	73,854	30	73,854	EPG			240	1282	NCO			357
Reeves Queen																		
Hanlad St. #1 1 K 2 18 35	F				-0-	-0-	39,904	21	39,904	NNG			-0-	-0-				-0-

STATUS CODE
F.....FLOWING
P.....PUMPING
G.....GAS LIFT
S.....SHUT IN
T.....TEMP ABANDONED
I.....INJECTION
D.....DISCONTINUED

"OTHER" GAS DISPOSITION CODE
X.....USED OFF LEASE } DETAIL ON FORM C-111
D.....USED FOR DRILLING }
G.....GAS LIFT
L.....LOST (MCF ESTIMATED)
E.....EXPLANATION ATTACHED
R.....REPRESSURING OR PRESSURE MAINTENANCE
V.....VENTED

"OTHER" OIL DISPOSITION CODE
C.....CIRCULATING OIL
L.....LOST
S.....SEDIMENTATION (BS&W)
E.....EXPLANATION ATTACHED

I HEREBY CERTIFY THAT THE INFORMATION GIVEN IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE

Arlene Trammell
(Name)
Production Clerk
(Position)

Arlene Trammell 5/24/78

EXHIBIT 7

Well Location Plat (Reservoir Definition)

EXHIBIT 8

Geological Data

a. Well Log Sections
b. Pressure Surveys
c. Well Potential
d. Structure Map
e. Cross-Section
f. Gas Analysis Data

EXHIBIT 9

List of Co-Lessees, Working Interest Owners, and Gas Purchaser

Co-Leessees and/or Working Interest Owners

Harvey E. Yates, Sr.
James H. Yates
Fred G. Yates, Inc.
Explorers Petroleum Corp.
J. E. Cieszinski
P. O. Box 1933
Roswell, New Mexico 88201

Mrs. Louise D. Yates
Box 379
Artesia, New Mexico 88210

Coronado Exploration Corporation
Yates Exploration, Inc.
1007 Marquette, NW
Albuquerque, New Mexico 87102

Mr. Carl W. Swan
1101 Oil Center
2601 NW Expressway
Oklahoma City, Oklahoma 73116

Mr. Chester Armbruster
1212 Oil Center
2601 NW Expressway
Oklahoma City, Oklahoma 73116

Mr. James L. Bruin
P. O. Box 550
Roswell, New Mexico 88201

Visa Exploration Company
490 Colorado State Bank Building
Denver, Colorado 80202

Gas Purchaser

Northern Natural Gas Company
2223 Dodge St.
Omaha, Nebraska 68102

HEYCO
PETROLEUM PRODUCERS

HARVEY E. YATES COMPANY
P. O. BOX 1933 SUITE 300 SECURITY NATIONAL BANK BUILDING 505-623-6601
ROSWELL, NEW MEXICO 88201

February 16, 1979

Case 6481
Case 6507

New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Mr. Richard Stamets

Re: Application Wellhead
Ceiling Price Determination
Hanlad State #1 Well
Unit K Section 2,
T-18S, R-35E N.M.P.M.
Lea County, New Mexico

Dear Mr. Stamets:

Enclosed please find an original and two copies of the above referenced application seeking §102 new onshore reservoir treatment for our Hanlad State #1. Exhibits 7 and 8 to the application (location plat and geological data) are in the process of being prepared, and will be forwarded to you as soon as they are completed. Also, they will be part of our testinomy at the hearing scheduled on February 28th. If you have any questions please advise.

Sincerely,

Robert H. Strand

RHS/lh

Enclosures

FEB 19 1979

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 6507
Order No. R-5986

APPLICATION OF HARVEY E. YATES
COMPANY FOR AN NGPA DETERMINATION,
LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on March 28, 1979, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 25th day of April, 1979, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Harvey E. Yates Company, seeks a new onshore reservoir or, in the alternative, a new onshore production well determination for its Hanlad State Well No. 1 located in Unit K of Section 2, Township 18 South, Range 35 East, Queen formation, Lea County, New Mexico.

(3) That said Hanlad State Well No. 1 was spudded on August 15, 1977, and was completed as a shut-in wildcat Queen gas well from perforations at 4212 feet to 4220 feet on September 16, 1977.

(4) That while this Queen interval was penetrated by a number of other wells within 2 1/2 miles of said Hanlad State Well No. 1, no other well had been completed in, produced from, or could have produced from, said interval at the time of the subject well's completion.

(5) That the geologic evidence presented established that the Queen productive interval in said well is a shallow water sand bar characterized by limited areal extent.

(6) That the weight of the evidence presented establishes that said Hanlad State Well No. 1 has encountered a new onshore reservoir from which natural gas was not produced in commercial quantities before April 20, 1977.

(7) That the applicant has requested dismissal of the new onshore production well determination portion of the application.

(8) That said portion of the application should be dismissed.

IT IS THEREFORE ORDERED:

(1) That the Harvey E. Yates Company Hanlad State Well No. 1 located in Unit K of Section 2, Township 18 South, Range 35 East, Lea County, New Mexico, is completed in a new onshore reservoir (Queen formation) as defined by Sections 2(6) and 102(c) of the Natural Gas Policy Act of 1978.

(2) That that portion of the application seeking an alternative determination of a new onshore production well for said Hanlad State Well No. 1 is hereby dismissed.

(3) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

JOE D. RAMEY
Director

S E A L

fd/

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

JERRY APODACA
GOVERNOR

NICK FRANKLIN
SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-2434

May 1, 1979

Re: CASE NO. 6507
ORDER NO. R-5986

Mr. Robert Strand
Attorney
Harvey E. Yates Company
P. O. Box 1933
Roswell, New Mexico 88201

Applicant:

Harvey E. Yates Company

Dear Sir:

Enclosed herewith are two copies of the above-referenced Division order recently entered in the subject case.

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

Copy of order also sent to:

Hobbs OCC x
Artesia OCC x
Aztec OCC

Other

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 6507
Order No. R-5986

APPLICATION OF HARVEY E. YATES
COMPANY FOR AN NGPA DETERMINATION,
LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on March 28, 1979, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 25th day of April, 1979, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Harvey E. Yates Company, seeks a new onshore reservoir or, in the alternative, a new onshore production well determination for its Hanlad State Well No. 1 located in Unit K of Section 2, Township 18 South, Range 35 East, Queen formation, Lea County, New Mexico.

(3) That said Hanlad State Well No. 1 was spudded on August 15, 1977, and was completed as a shut-in wildcat Queen gas well from perforations at 4212 feet to 4220 feet on September 16, 1977.

(4) That while this Queen interval was penetrated by a number of other wells within 2 1/2 miles of said Hanlad State Well No. 1, no other well had been completed in, produced from, or could have produced from, said interval at the time of the subject well's completion.

(5) That the geologic evidence presented established that the Queen productive interval in said well is a shallow water sand bar characterized by limited areal extent.

(6) That the weight of the evidence presented establishes that said Hanlad State Well No. 1 has encountered a new onshore reservoir from which natural gas was not produced in commercial quantities before April 20, 1977.

(7) That the applicant has requested dismissal of the new onshore production well determination portion of the application.

(8) That said portion of the application should be dismissed.

IT IS THEREFORE ORDERED:

(1) That the Harvey E. Yates Company Hanlad State Well No. 1 located in Unit K of Section 2, Township 18 South, Range 35 East, Lea County, New Mexico, is completed in a new onshore reservoir (Queen formation) as defined by Sections 2(6) and 102(c) of the Natural Gas Policy Act of 1978.

(2) That that portion of the application seeking an alternative determination of a new onshore production well for said Hanlad State Well No. 1 is hereby dismissed.

(3) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

JOE D. RAMEY
Director

fd/

Dockets Nos. 14-79 and 15-79 are tentatively set for hearing on April 11 and 18, 1979. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - MARCH 28, 1979

9 A.M. - OIL CONSERVATION DIVISION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Richard L. Stamets, Examiner, or Daniel S. Nutter, Alternate Examiner:

CASE 6500: Application of Gulf Oil Corporation for approval of infill drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks a finding that the Division waived existing well-spacing requirements and found that the drilling of additional wells was necessary to effectively and efficiently drain those portions of the proration units in the Central Drinkard Unit located in Sections 28, 29, 32 and 33, Township 21 South, Range 37 East, Lea County, New Mexico, which could not be so drained by the existing wells.

CASE 6501: Application of Delta Drilling Company for directional drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to re-enter the Williamson State Unit Well No. 1, the surface location of which is 660 feet from the North and West lines of Section 30, Township 16 South, Range 33 East, Lea County, New Mexico, and directionally drill said well in such a manner as to bottom it in the Morrow formation within 100 feet of a point 1980 feet from the North and West lines of said Section 30, the N/2 of the section to be dedicated to the well.

CASE 6502: Application of Stevens Oil Company for compulsory pooling, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the San Andres formation underlying the SW/4 SW/4 of Section 30, Township 8 South, Range 29 East, Chaves County, New Mexico, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 6503: Application of Sundance Oil Company for salt water disposal, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the San Andres formation through the perforated interval from 4207 feet to 4228 feet in its Cone Federal Well No. 8 located in Unit P of Section 31, Township 7 South, Range 32 East, Tomahawk-San Andres Pool, Roosevelt County, New Mexico.

CASE 6504: Application of Phoenix Resources Company for a unit agreement, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks approval for its Buckhorn Canyon Unit Area No. 2, comprising 23,009 acres, more or less, of Federal and State lands in Township 19 South, Ranges 19 and 20 East, Chaves County, New Mexico.

CASE 6505: Application of Doyle Hartman for vertical pool limit redefinition, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order extending the vertical limits of the Langlie Mattix Pool in Lea County, New Mexico, to include the lowermost 200 feet of the Seven Rivers formation and the concomitant contraction of the vertical limits of the Jalmat Gas Pool underlying the following described lands in Township 23 South, Range 36 East: Section 35: SW/4, S/2 SE/4, and NW/4 SE/4; Section 36: W/2 SW/4; and in Township 24 South, Range 36 East: Section 1: NW/4, S/2 NE/4, and NW/4 NE/4; Section 2: W/2.

CASE 6506: Application of Bedford, Inc. for approval of infill drilling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks a waiver of existing well-spacing requirements and a finding that the drilling of its Ram Well No. 1-A located in Unit G of Section 8, Township 26 North, Range 12 West, WAW-Fruitland Pictured Cliffs Pool, San Juan County, New Mexico, is necessary to effectively and efficiently drain that portion of the proration unit which cannot be so drained by the existing well.

CASE 6507: Application of Harvey E. Yates Company for an NGPA determination, Lea County, New Mexico. Applicant, in the above-styled cause, seeks a new onshore reservoir or in the alternative a new onshore production well determination for its Hanlad State Well No. 1 located in Unit K of Section 2, Township 18 South, Range 35 East, Queen formation, Lea County, New Mexico.

CASE 6508: Application of Harvey E. Yates Company for an unorthodox well location and a non-standard proration unit, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 62.75-acre non-standard gas proration unit comprising Lots 1 and 2 of Section 19, Township 18 South, Range 29 East, Eddy County, New Mexico, to be dedicated to its Depco Federal Well No. 1 to be located 330 feet from the North line and 660 feet from the West line of said Section 19.

CASE 6509: Application of Harvey E. Yates Company for pool creation and special pool rules, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order creating a new gas pool in the Yates formation for its Depco Federal Well No. 1 located in Unit D of Section 19, Township 18 South, Range 29 East, Eddy County, New Mexico, and for promulgation of special pool rules, including provision for 80-acre gas well spacing.

CASE 6480: (Continued from February 28, 1979, Examiner Hearing)

Application of Harvey E. Yates Company for an NGPA determination, Lea County, New Mexico. Applicant, in the above-styled cause, seeks a new onshore reservoir or in the alternative a new onshore production well determination for its State 22 Well No. 1 located in Unit P of Section 22, Township 18 South, Range 35 East, Queen formation, Lea County, New Mexico.

CASE 6482: (Continued from February 28, 1979, Examiner Hearing)

Application of Harvey E. Yates Company for an NGPA determination, Lea County, New Mexico. Applicant, in the above-styled cause, seeks a new onshore reservoir or in the alternative a new onshore production well determination for its Mobil 27 State Well No. 1 located in Unit A of Section 27, Township 18 South, Range 35 East, Queen formation, Lea County, New Mexico.

CASE 6072: (Continued from March 14, 1979, Examiner Hearing)

In the matter of Case 6072 being reopened pursuantto the provisions of Order No. R-5643 which order created the Travis-Upper Pennsylvanian Pool, Eddy County, New Mexico, with provisions for 80-acre spacing. All interested parties may appear and show cause why the Travis-Upper Pennsylvanian Pool should not be developed on 40-acre spacing units.

CASE 6492: (Continued from March 14, 1979, Examiner Hearing)

Application of Yates Petroleum Corporation for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the San Andres formation underlying the NE/4 NW/4 of Section 13, Township 17 South, Range 25 East, Eddy County, New Mexico, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 6510: Application of Yates Petroleum Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location for the Wolfcamp through Mississippian formations of its Rio Pecos Federal "KO" Well No. 1, to be located 660 feet from the North line and 1300 feet from the East line of Section 28, Township 18 South, Range 27 East, Eddy County, New Mexico, the E/2 of said Section 28 to be dedicated to the well.

CASE 6511: Application of Yates Petroleum Corporation for a dual completion and downhole commingling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion of its Tom Brown "GO" Com. Well No. 1 located in Unit C of Section 22, Township 17 South, Range 26 East, Kennedy Farms Field, Eddy County, New Mexico, to produce gas from the Lower Morrow formation through tubing and to commingle and produce the Strawn and Upper Morrow zones in the annulus of said well.

CASE 6512: Application of Yates Petroleum Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its Hilliard "BF" Federal Well No. 2, to be located 330 feet from the North line and 2310 feet from the West line of Section 14, Township 21 South, Range 22 East, to test the Wolfcamp through Mississippian formations, Eddy County, New Mexico, the W/2 of said Section 14 to be dedicated to the well.

CASE 6513: Application of Yates Petroleum Corporation for downhole commingling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Atoka and Morrow production in the wellbore of its Stebbins GQ Fed. Well No. 1 located in Unit B of Section 20, Township 20 South, Range 29 East, East Burton Flats Field, Eddy County, New Mexico.

CASE 6514: Application of Yates Petroleum Corporation for downhole commingling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of North Burton Flats-Atoka and East Burton Flats-Morrow production in the wellbore of its Williamson BC Fed. Well No. 4 located in Unit K of Section 7, Township 20 South, Range 29 East, Eddy County, New Mexico.

CASE 6515: Application of Southland Royalty Company for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Dakota formation underlying the W/2 of Section 31, Township 31 North, Range 11 West, San Juan County, New Mexico, to be dedicated to its Grenier Well No. 23 drilled at a location 1190 feet from the South and West lines of said Section 31. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 6516: Application of Union Oil Company of California for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for its Maduro Unit Area, comprising 2,560 acres, more or less, of Federal and State lands in Township 19 South, Range 33 East, Lea County, New Mexico.

CASE 6452: (Continued and Readvertised)

Application of Burleson & Huff for a non-standard gas proration unit and approval of infill drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 160-acre non-standard gas proration unit comprising the SW/4 of Section 25, Township 24 South, Range 36 East, Jalmat Gas Pool, Lea County, New Mexico. Applicant further seeks a finding that the recompletion of its Harrison Well No. 2 located in Unit N or in the alternative, the drilling of its Harrison Well No. 4 in Unit L, of Section 25 is necessary to effectively and efficiently drain that portion of the previously approved 160-acre proration unit which cannot be drained by the old unit well.

NEW MEXICO OIL CONSERVATION COMMISSION

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

Type Test: [XX] Initial [ ] Annual [ ] Special			Test Date: 9-16-77	
Company: Harvey E. Yates Co., Inc.				
Pool:		Lease: Reeves Queen		Unit:
Completion Date: 9-16-77	Total Depth: 4699		Plug Back T.D.: 4657	Elevation: 3916 KB
Csg. Size: 4½ / Wt.: 9.5 / d: 4.090 / Set At: 4699			Perforations: From 4212 To 4220	Farm or Lease Name: Hanlad State
Tbg. Size: 2 3/8 / Wt.: 4.7 / d: 1.995 / Set At: 4162			Perforations: From To	Well No.: 1
				Unit: — Sec.: 2 Twp.: 18S Rge.: 35E
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single			Packer Set At: 4162	County: Lea
Producing Thru: Tubing	Reservoir Temp. °F: 103@4116	Mean Annual Temp. °F:	Baro. Press. – P_a:	State: New Mexico
L: 4216 / H: 4216	Gg: .652	% CO_2:	% N_2:	% H_2S:
Prover: Pos.Ck.	Meter Run:	Taps:		

NO.	FLOW DATA: Prover Line Size X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	TUBING DATA: Press. p.s.i.g.	Temp. °F	CASING DATA: Press. p.s.i.g.	Temp. °F	Duration of Flow
SI		1303			1303				
1.	2 X 6/64"	1285		76	1285	76	pkr		1 hr.
2.	2 X 7/64"	1273		78	1273	78	"		1 hr.
3.	2 X 9/64"	1245		77	1245	77	"		1 hr.
4.	2 X 11/64"	1209		77	1209	77	"		1 hr.
5.									

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor F_t	Gravity Factor F_g	Super Compress. Factor, F_{pv}	Rate of Flow Q, Mcfd
1	0.1880		1298.2	0.9850	1.238	1.124	334.52
2	0.2610		1286.2	0.9831	1.238	1.124	459.23
3	0.3346		1258.2	0.9840	1.238	1.122	575.42
4	0.5090		1222.2	0.9840	1.238	1.117	846.50
5							

NO.	P_t	Temp. °R	T_t	Z
1	1.94	536	1.43	.791
2	1.92	538	1.43	.792
3	1.88	537	1.43	.795
4	1.82	537	1.43	.801
5				

Gas Liquid Hydrocarbon Ratio: Dry Gas Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons: None Deg.
Specific Gravity Separator Gas: 0.652 XXXXXXXXX
Specific Gravity Flowing Fluid: XXXXX
Critical Pressure: 670 P.S.I.A. ____ P.S.I.A.
Critical Temperature: 375 R ____ R

P_f 1512.2 P_f^2 2287

NO.	P_t^2	P_s	P_s^2	$P_f^2 - P_s^2$
1		1499.2	2248	39
2		1484.2	2203	84
3		1455.2	2118	169
4		1416.2	2006	281
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 8.13879$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 2.85286$

Abs. Flow $= Q\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 2414.943$

Absolute Open Flow: 2414.943 Mcfd @ 15.025 Angle of Slope θ: 63° 30' Slope, n: 0.5000

Remarks: BHP measured with Amerada RPG-3 gauge serial No. 32030, 0-4000 PSIG

Approved By Commission:	Conducted By:	Calculated By:	Checked By:
	Tefteller, Inc.	B. Combest	

NEW MEXICO OIL CONSERVATION COMMISSION

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

Type Test: XX Initial [ ] Annual [ ] Special				Test Date: 9-16-77	
Company: Harvey E. Yates Co., Inc.					
Pool:		Formation: Reeves Queen			Unit:
Completion Date: 9-16-77	Total Depth: 4699		Plug Back TD: 4657	Elevation: 3916 KB	Farm or Lease Name: Hanlad State
Csg. Size: 4½ / Wt.: 9.5 / d: 4.090 / Set At: 4699			Perforations: From 4212 To 4220		Well No.: 1
Tbg. Size: 2 3/8 / Wt.: 4.7 / d: 1.995 / Set At: 4162			Perforations: From To		Unit: — / Sec.: 2 / Twp.: 18S / Rge.: 35E
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single			Packer Set At: 4162		County: Lea
Producing Thru: Tubing	Reservoir Temp. °F: 103° 4116		Mean Annual Temp. °F:	Baro. Press. – P_a:	State: New Mexico
L: 4216	H: 4216	Gg: .652	% CO_2:	% N_2:	% H_2S:
Prover: Pos.Ck.	Meter Run:	Taps:			

FLOW DATA					TUBING DATA		CASING DATA		
NO.	Prover Line Size X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI		1303			1303				
1.	2 X 6/64"	1285		76	1285	76	pkr		1 hr.
2.	2 X 7/64"	1273		78	1273	78	"		1 hr.
3.	2 X 9/64"	1245		77	1245	77	"		1 hr.
4.	2 X 11/64"	1209		77	1209	77	"		1 hr.
5.									

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	0.1880		1298.2	0.9850	1.238	1.124	334.52
2.	0.2610		1286.2	0.9831	1.238	1.124	459.23
3.	0.3346		1258.2	0.9840	1.238	1.122	575.42
4.	0.5090		1222.2	0.9840	1.238	1.117	846.50
5.							

NO.	P_t	Temp. °R	T_r	Z
1.	1.94	536	1.43	.791
2.	1.92	538	1.43	.792
3.	1.88	537	1.43	.795
4.	1.82	537	1.43	.801
5				

Gas Liquid Hydrocarbon Ratio: Dry Gas Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons: None Deg.
Specific Gravity Separator Gas: 0.652 XXXXXXXXXX
Specific Gravity Flowing Fluid: XXXXX
Critical Pressure: 670 P.S.I.A. ____ P.S.I.A.
Critical Temperature: 375 R ____ R

P_c 1512.2 P_c^2 2287

NO	P_t^2	P_s	P_s^2	$P_c^2 - P_s^2$
1		1499.2	2248	39
2		1484.2	2203	84
3		1455.2	2118	169
4		1416.2	2006	281
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 8.13879$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 2.85286$

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Approved By Commission:	Conducted By:	Calculated By:	Checked By:
	Tefteller, Inc.	B. Combest	

NEW MEXICO OIL CONSERVATION COMMSSION

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

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Revised 9-1-65

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Producing Thru: Tubing	Reservoir Temp. °F: 103@ 4116	Mean Annual Temp. °F:	Baro. Press. – P_a:		State: New Mexico
L: 4216 / H: 4216 / Gg: .652	% CO_2:	% N_2:	% H_2S:	Prover: Pos.Ck.	Meter Run: / Taps:

NO.	Prover Line Size X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	TUBING DATA Press. p.s.i.g.	TUBING DATA Temp. °F	CASING DATA Press. p.s.i.g.	CASING DATA Temp. °F	Duration of Flow
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Remarks: BHP measured with Amerada RPG-3 gauge serial No. 32030, 0-4000 PSIG

Approved By Commission:	Conducted By:	Calculated By:	Checked By:
	Tefteller, Inc.	B. Combest	

HEYCO
PETROLEUM PRODUCERS

HARVEY E. YATES COMPANY
P. O. BOX 1933 SUITE 300, SECURITY NATIONAL BANK BUILDING 505/623-6601
ROSWELL, NEW MEXICO 88201

March 13, 1979

Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Mr. Richard Stamets

Re: Hanlad State #1
NGPA Application
Docket # 6507

Dear Dick:

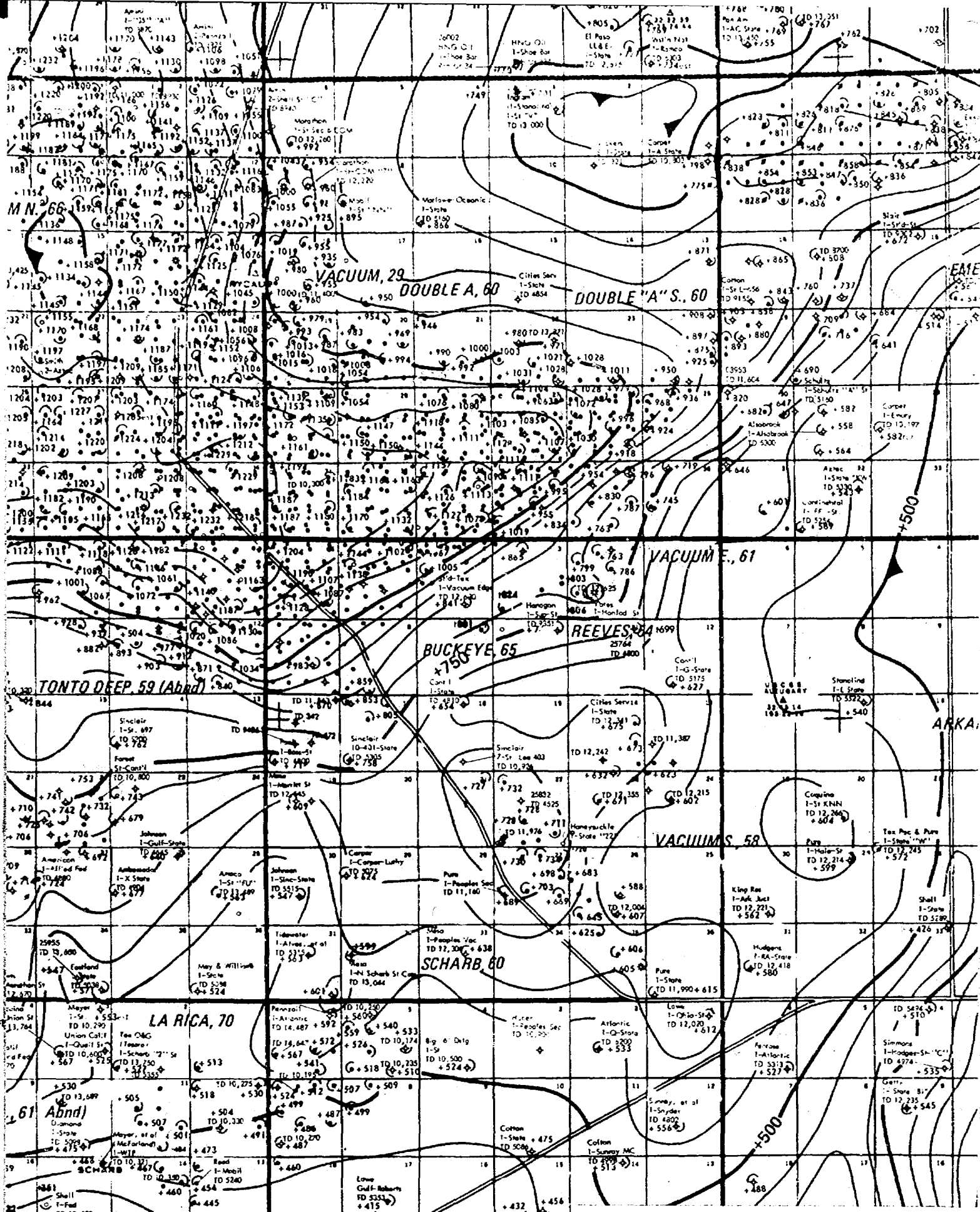
Enclosed are geological exhibits to be filed with the Application in the above referenced case which was submitted to you previously. This case has been set for examiner hearing on March 28, 1979.

Sincerely,

Robert H. Strand

RHS/lh

Enclosur



HARVEY E. YATES CO., INC

Roswell, New Mexico

EXHIBIT NO. 2

GEO-MAP SHALLOW STRUCTURE

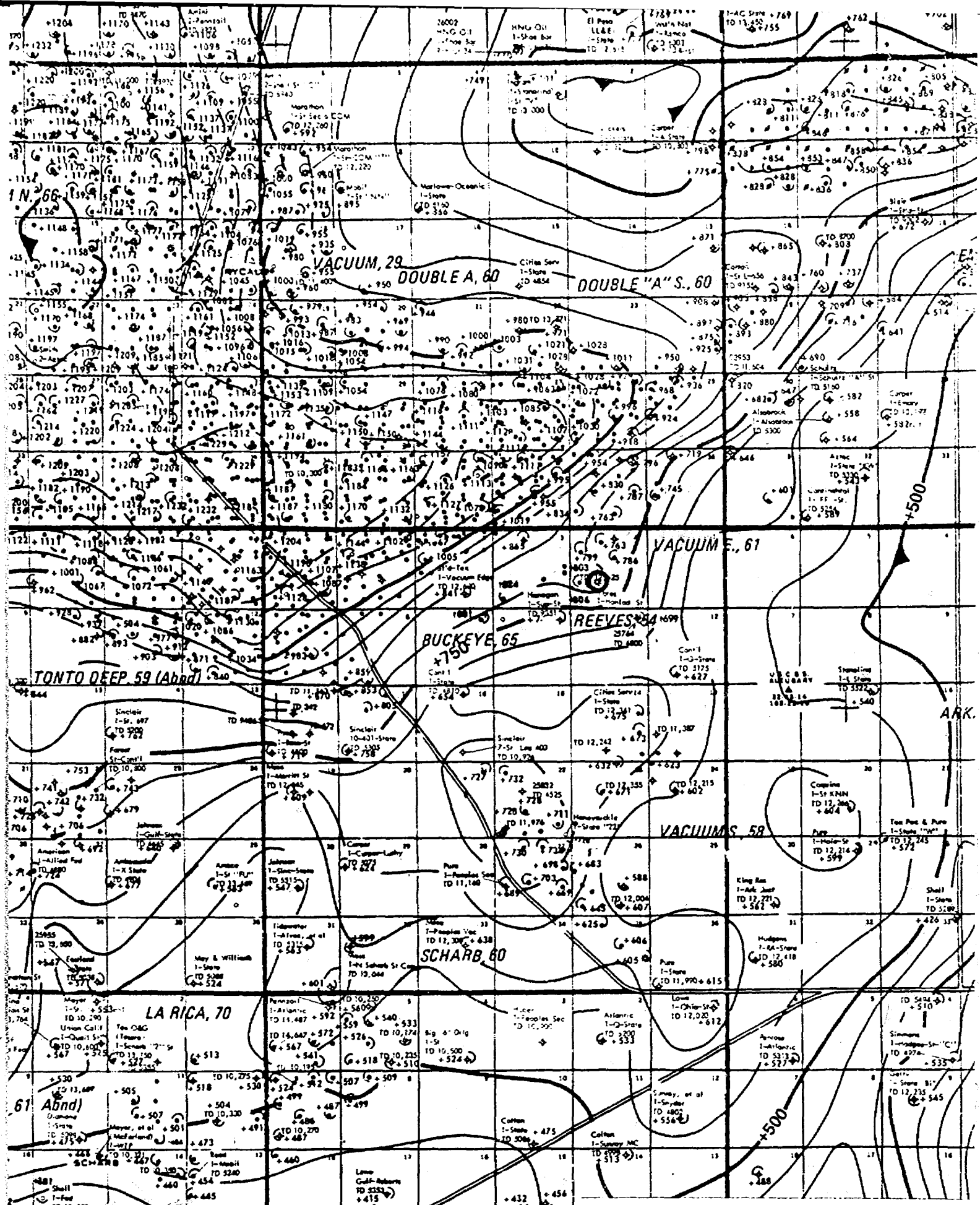
HEYCO* HANLAD STATE

LEA COUNTY, NEW MEXICO

Contoured on: YATES

Contour Interval: 50'

Map Scale: 1" = 8000'



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Roswell, New Mexico

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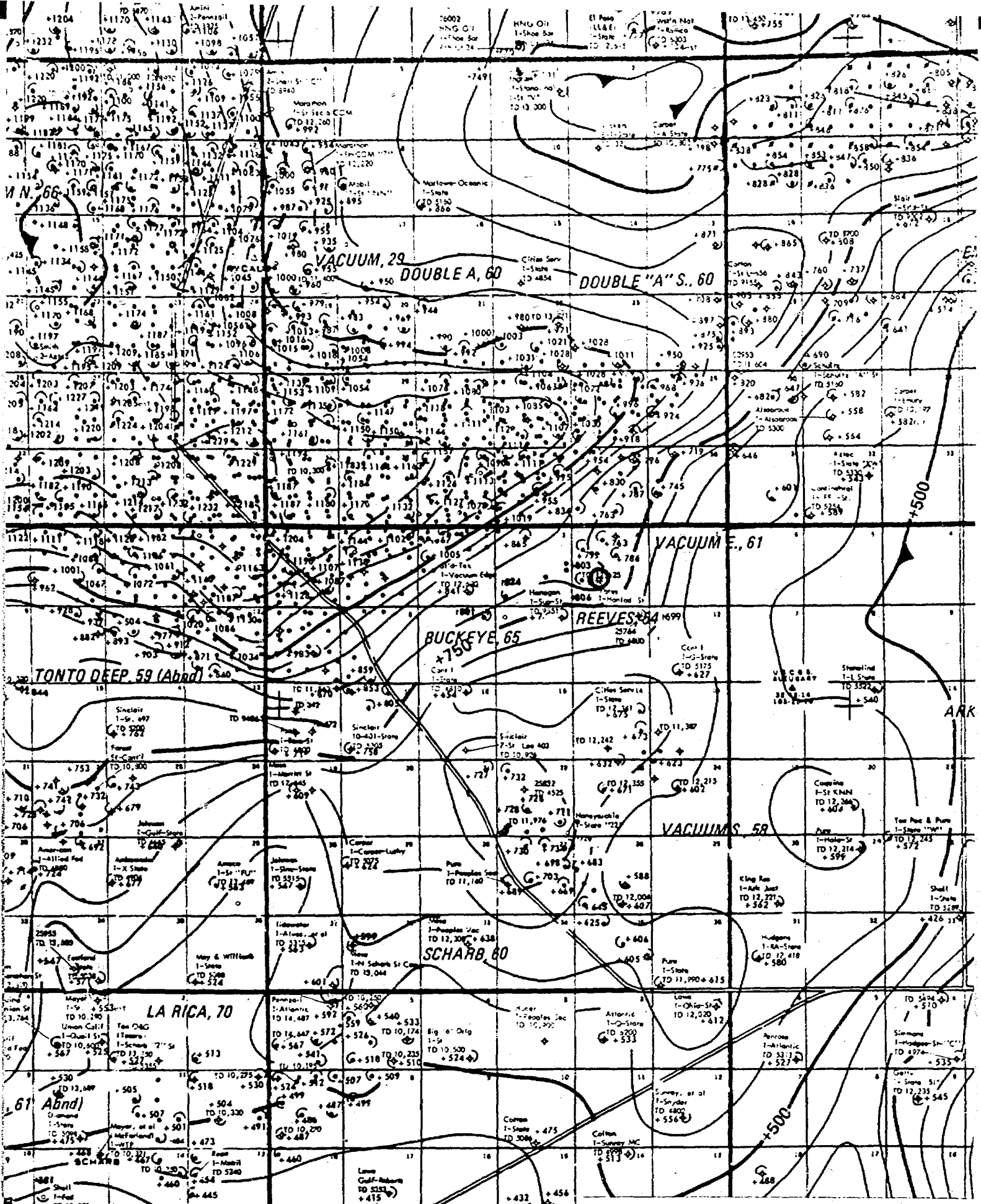


HARVEY E. YATES CO., INC

Roswell, New Mexico

EXHIBIT NO. 2

GEO-MAP SHALLOW STRUCTURE

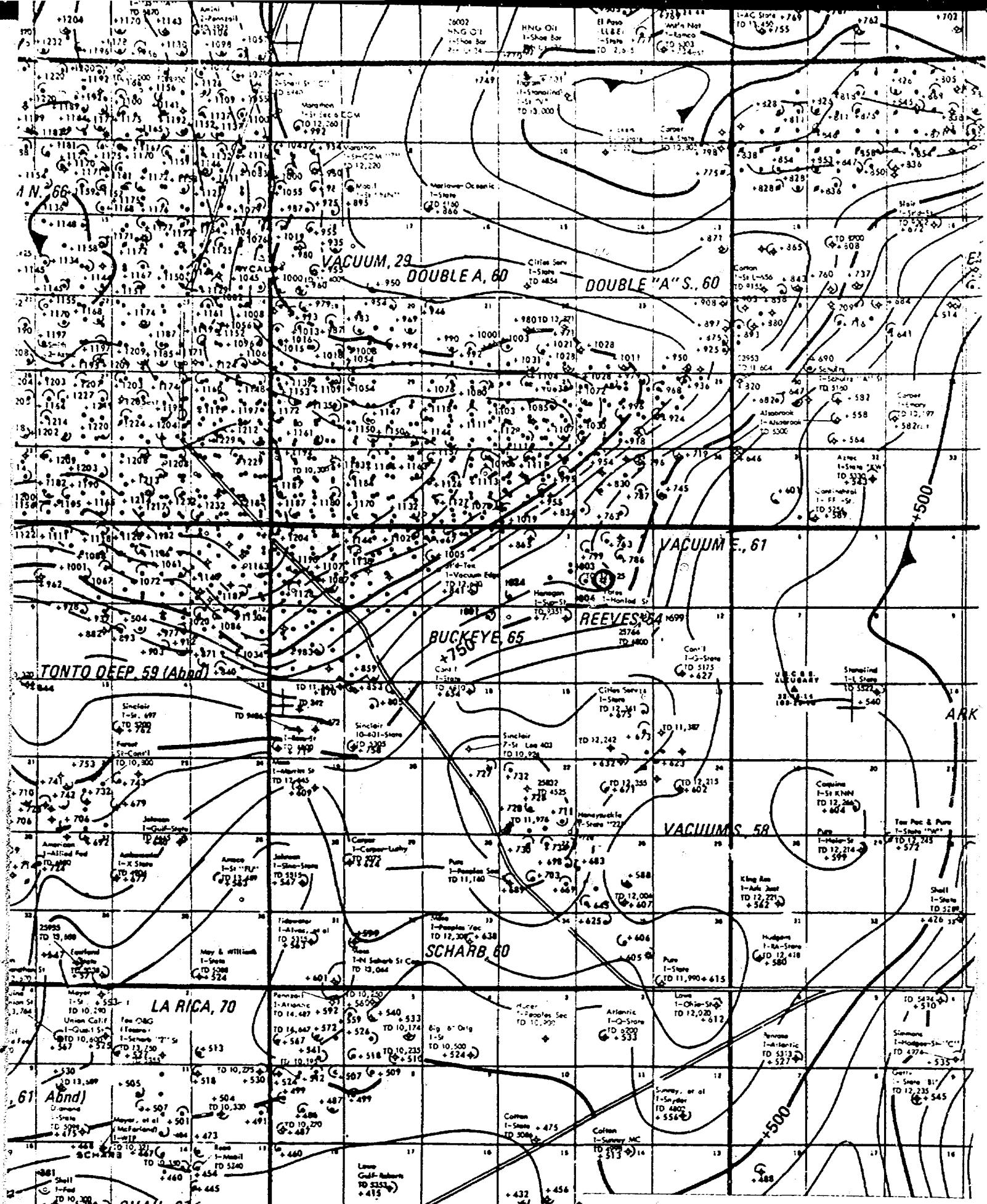
HEYCO*1 HANLAD STATE

LEA COUNTY, NEW MEXICO

Contoured on: YATES

Contour Interval: 50'

Map Scale: 1" = 8000'



HARVEY E. YATES CO., INC

Roswell, New Mexico

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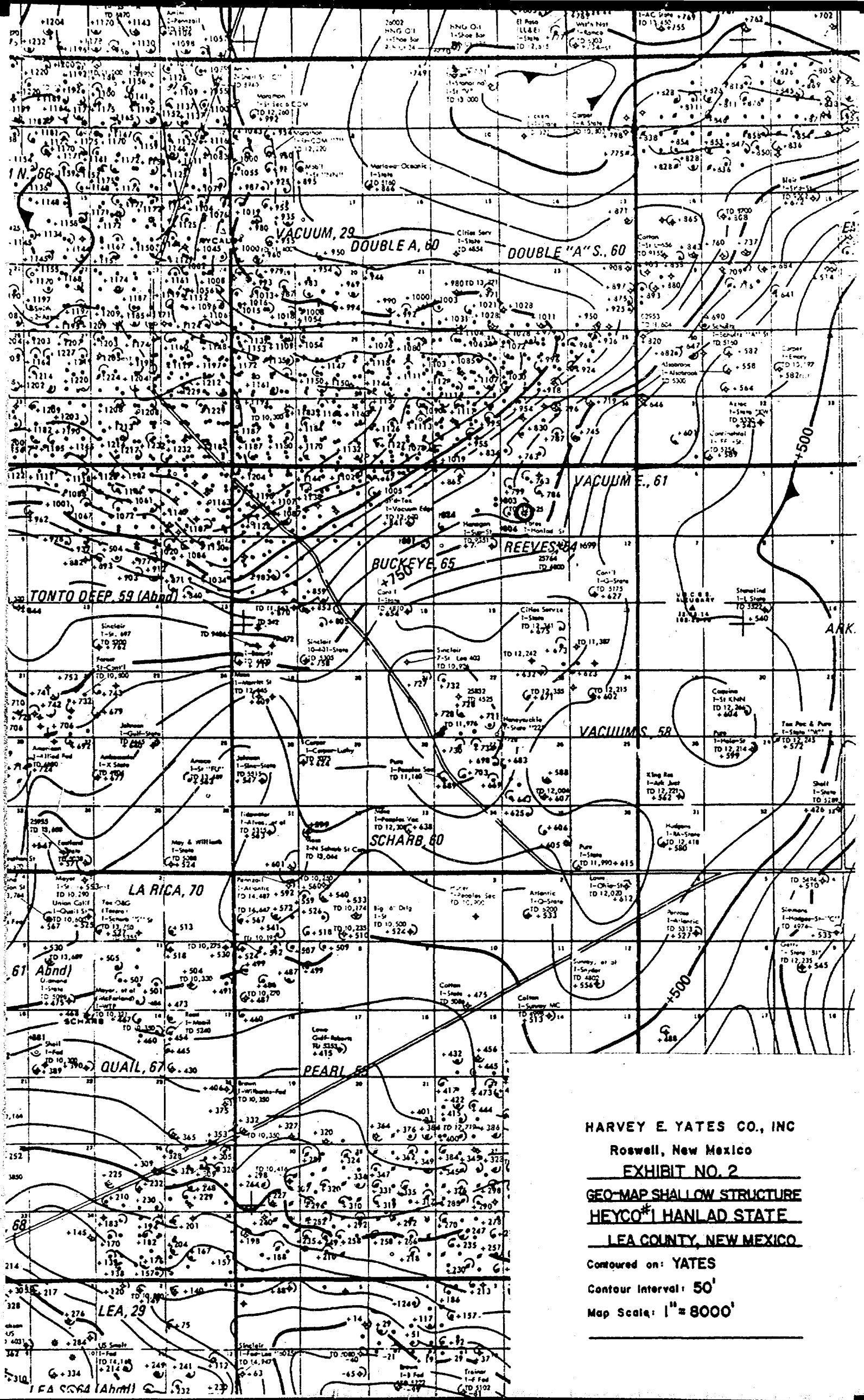

HARVEY E. YATES CO., INC

Roswell, New Mexico

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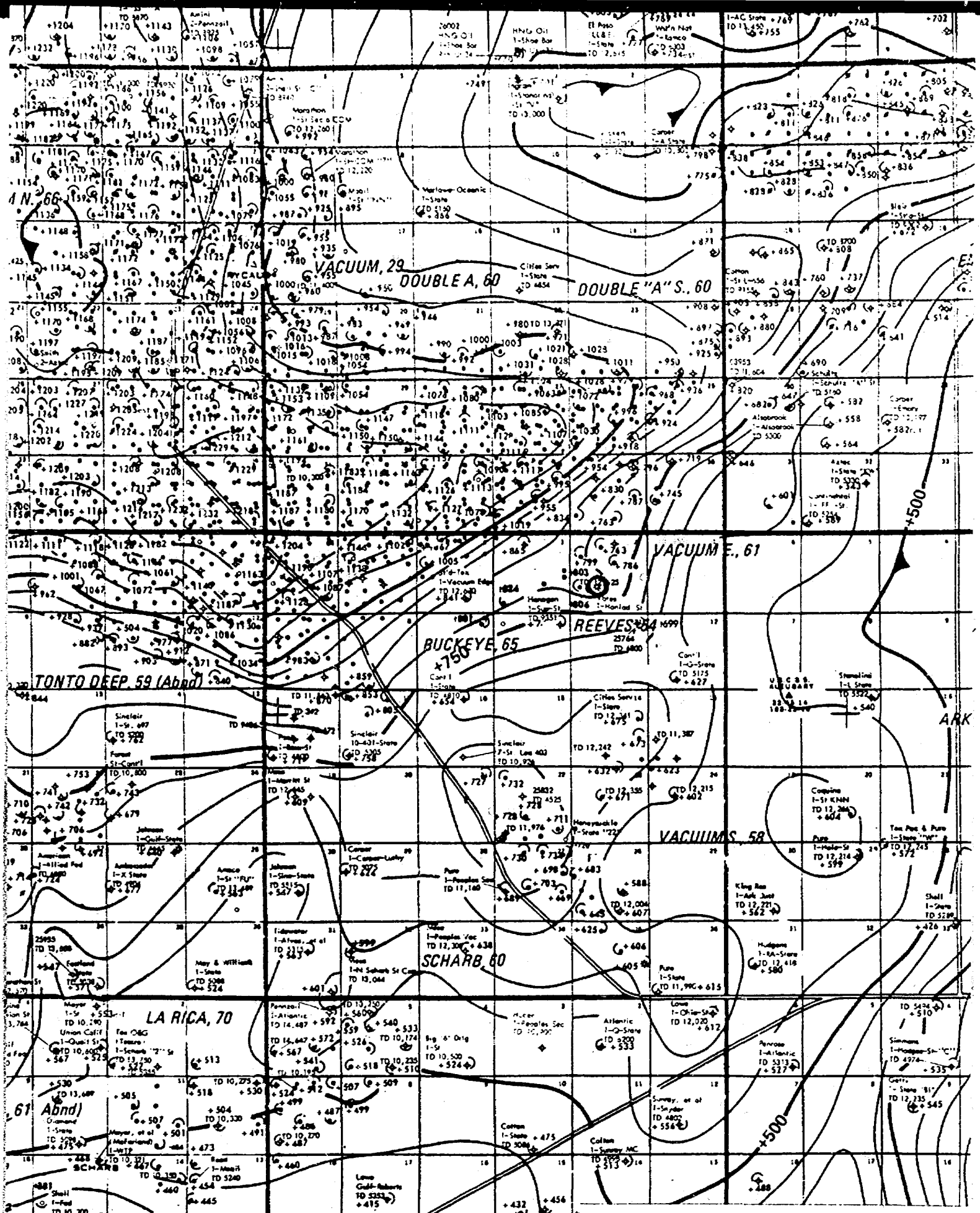

HARVEY E. YATES CO., INC

Roswell, New Mexico

EXHIBIT NO. 2

GEO-MAP SHALLOW STRUCTURE

HEYCO* HANLAD STATE

LEA COUNTY, NEW MEXICO

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ROUGH

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 6507

Order No. R-5986

Application of Harvey E. Yates Company for an NGPA determination, Lea County, New Mexico.

JAR

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on March 28, 19 79, at Santa Fe, New Mexico, before Examiner RLS.

NOW, on this _____ day of _____, 19_____, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Harvey E. Yates Company, seeks a new onshore reservoir or in the alternative a new onshore production well determination for its Hanlad State Well No. 1 located in Unit K of Section 2, Township 18 South, Range 35 East, Queen formation, Lea County, New Mexico.

(3) That said Hanlad State Well No. 1 was spudded on August 15, 1977, and was completed as a shut-in wildcat Queen gas well from perforations at 4212 feet to 4220 feet on September 16, 1977.

(4) That while this Queen interval was penetrated by a number of other wells within 2 1/2 miles of said Hanlad State Well No. 1, no other well ~~was~~ had been completed in, ~~nor~~ produced from, ~~nor~~ or could have produced ~~therefrom~~ from, said interval at the time of the subject well's completion.

(5) That the geologic evidence presented established that the Queen productive interval in said well is a shallow water sand bar characterized by limited areal extent.

(6) That the weight of the evidence presented establishes that said Hanlad State Well No. 1 has encountered a new onshore reservoir from which natural gas was not produced in commercial quantities before April 20, 1977.

(7) That the applicant has requested dismissal of the new onshore production well determination portion of the application.

(8) That said portion of the application should be dismissed.

IT IS THEREFORE ORDERED:

(1) That the Harvey E. Yates Company Hanlad State Well No. 1 located in Unit K of Section 2, Township 18 South, Range 35 East, Lea County, New Mexico, is completed in a new onshore reservoir (Queen formation) as defined by Sections 2(6) and 102(c) of the Natural Gas Policy Act of 1978.

(2) That that portion of the application seeking an alternative determination of a new onshore production well for said Hanlad State Well No. 1 is hereby dismissed.

(3) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.