CASE 3063: Application of SHELL FOR AN UNORTHODOX OIL WELL LOCATION, LEA COUNTY, NEW MEXICO.

CASE No.

5063

Application,

Transcripts,

Small Exhibits

ETC.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
OIL CONSERVATION COMMISSION CONFERENCE ROOM
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO
Tuesday, November 27, 1973

IN THE MATTER OF:

Application of Shell Oil Company for an unorthodox oil well location, Lea County, New Mexico.

Case No. 5063

BEFORE:

A. L. Porter, Secretary-Director

Ralph Trujillo

TRANSCRIPT OF REGULAR HEARING

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MR. PORTER: The hearing will come to order, please. There is only one case on the docket this morning. Let the record show that Commission Trujillo and Commissioner Porter are present for this hearing. We will take up Case No. 5063.

MR. CARR: Application of Shell Oil Company for an unorthodox oil well location, Lea County, New Mexico.

MR. PORTER: Appearances at this time.

MR. BUELL: Sumner Buell of Montgomery, Federici, Andrews,Hannahs and Buell, appearing on behalf of applicant. We will have one witness, Mr. William Greene.

MR. PORTER: One witness, all right. Mr. Kellahin.

MR. KELLAHIN: Jason Kellahin, Kellahin and Fox, Santa Fe, New Mexico, appearing on behalf of Samedan Oil Corporation. We are appearing here in association with Mr. John P. Cusack and appearing here for his brother, Michael Cusack, as well as Samedan. We will have three witnesses.

At this time I would like to move the admission of the record in the original hearing before Examiner Elvis A. Utz held on September the 19th, 1973; that it be incorporated into the record. I believe it would be in the interest of time to take that record under advisement rather than repeating all that's on that. However, if Shell prefers to go ahead with additional testimony, we certainly will, too.

MR. BUELL: It will be repetitious, but we would like to go ahead with testimony.

MR. PORTER: You would not object to incorporating the record of the previous hearing?

MR. BUELL: Not at all.

MR. KELLAHIN: The record and all the exhibits.

MR. PORTER: The record and the exhibits in the previous case will be incorporated into the record of this case.

I'd like to have all four witnesses stand and be sworn at this time.

(Whereupon, the witnesses were sworn.)

MR. PORTER: Mr. Kellahin, would you like to proceed?

MR. KELLAHIN: There is always a question in a hearing as exactly how to proceed. We would be happy to proceed. However, Shell was the applicant in the original case and I think it would be proper for them to proceed.

MR. BUELL: I would be inclined to agree with Mr. Kellahin.

MR. PORTER: That's fine. I remembered that Samedan was the applicant in the De Novo case and in the original.

WILLIAM E. GREENE,

a witness, having been first duly sworn according to law, upon his oath testified as follows:

DIRECT EXAMINATION

BY MR. BUELL:

Q Would you state your name, please, and by whom you are employed and in what capacity?

A William R. Greene; I am employed by Shell Oil Company as a staff production engineer in Midland, Texas.

Q And have you previously testified before this Commission or an Examiner and are your qualifications accepted as a matter of record?

A Yes, I have.

Q Are you familiar with what Shell seeks in the application in Case No. 5063?

A I am.

Q Would you briefly state for the Commission what you do seek here?

A We are asking approval of an unorthodox location or replacement well in the Hobbs, New Mexico field. This well will be Sanger No. 6Y to replace Sanger No. 6. This well is located in the City of Hobbs on a city block that is currently, there is construction currently going on around this well location. We seek this unorthodox location for three reasons.

The first is topographical because of the construction of the shopping center around our well. The second is to protect correlative rights which we think are not being properly protected now. The third is to prevent waste.

We believe that if we were not allowed to drill a replacement well there will be unrecovered oil on this 40-acre tract.

Q Do you know the present location of the Sanger 6 well insofar as its distance from the east lines?

A Sanger No. 6 is presently located 1200 feet from the north line, 470 feet from the west line, Section 27, Township 18 South, Range 38 East, in Lea County, New Mexico.

Q What is the proposed location of the Sanger 6Y at the unorthodox location?

A Sanger 6Y will be located approximately 300 feet to the west of Sanger No. 6 and its location will be 1220 feet from the north line, 180 feet from the west line of Section 27, same township and range.

Q And about how far will that be to the nearest well on the west, offsetting?

A Approximately 1200 feet from Samedan's well due west.

Q I refer you to what has been marked for identification as Exhibit No. 1. Will you please explain what this shows?

A Exhibit No. 1 shows a portion of the Hobbs field, the eastern flank of the field, shows Section 27 which is Shell's Sanger Lease. The Texas-New Mexico Railroad Track is depicted on this exhibit from the upper left-hand corner running down through the middle of the page. It indicates the offset leases to Shell's Sanger No. 6, the operators of those leases. It also shows the location

of the proposed replacement well, No. 6Y, very close to the railroad. It's actually in the railroad right-of-way. It also shows three other wells to the south along the railroad track and they are also located in the railroad right-of-way. This whole area is in the City of Hobbs.

Q Referring you to what has been marked for identification as Exhibit No. 2, would you please explain what that exhibit shows?

A This is a close-up of the same proration tract, showing part of the housing development. Actually, this doesn't show all of the development. There are houses covering this whole proration tract.

The cross-hatched area is the area owned by Pacific Coast Properties, Inc., where they are now constructing a major shopping center. This shows the present location of our Sanger No. 6, showing that it is 470 feet from the west line and 120 feet from the south line of this proration tract. It shows Turner Street which is just to the west of the present location. To the west of Turner Street it shows the new location that we propose for Sanger No. 6Y. It is located 180 feet from the west line and 100 feet from the south line of the proration tract. To the west of that proposed location it shows the railroad track and the two lines on both sides of the railroad track indicated to be

100 feet on both sides is the railroad right-of-way.

Q This also shows the orthodox location in this particular area, does it not?

A Right. It shows the location that the normal location which would be 330 feet from the west line and 330 feet from the south line.

Q And that location is in the shopping center parking lot?

A It's the entrance to the shopping center, correct.

Q Would you outline for the Commission some of the history of the Sanger 6 Well and what has occurred?

A Sanger No. 6 was spudded January the 17th, 1970. It was drilled and potentially tested February the 17th, 1970, for 35 barrels of oil and 5 barrels of water. A gas-oil ratio at that time was 2000 cubic feet per barrel. The cumulative production through August of this year was 23,191 barrels. The well was drilled --

MR. PORTER: 23,000, what?

THE WITNESS: 23,191.

MR. PORTER: Thank you.

A Drilling was set at 4222 feet, which is 581 feet below sea level. The well was drilled out through the casing to a depth of 4250 feet which is a subsea depth of 609.

We stopped at that point because it was believed at that time that the oil-water contact was at 614 feet

below sea level. We swabbed the well at that point and the well swabbed dry, recovering only a small amount of water. We deepened the well an additional 25 feet to 4275 feet which is 634 feet below sea level. This penetrated the upper San Andres Zone 1 by about seven feet. We swabbed the well at that point and recovered oil for the first time in the well.

The well was potentialed and put on production at that time. It never produced as well as we thought it should, so in April of 1971 the well was fracture treated and we realized no improvement from that treatment. We anticipated that if the well had been damaged by drilling fluid invasion that this fracture treatment would increase production from the well. Since it did not we believe now that there is a good possibility that this well is simply drilled into a low permeable rock.

The present production in this well is from 10 to 15 barrels per day of oil and 5 barrels of water. The gas-oil ratio is approximately 4000 cubic feet per barrel.

Q Would you describe the physical features of the zone that this well penetrated in the San Andres?

A I think we should go on with the exhibit. I can explain that exhibit and cover this point at the same time,

Exhibit No. 3.

Q All right. Going to Exhibit No. 3, would you explain what that is?

A That is a log cross section through the Sanger Lease wells with the Sanger No. 6 being the left-hand-most log to the north and the Sanger No. 4 being the next log, Sanger No. 3 the third log and so on to the south. The log referring to Sanger No. 6, the darkened area at the very bottom of the log is Zone No. 1 of the San Andres pay, and all of this is fairly small. I believe you can see that the zone was penetrated by approximately seven feet. Our estimate of the porosity from this log is 23 percent.

The third log from the left which is labeled Sanger No. 3 also is darkened in the area which is Zone No. 1 of the San Andres. The height of this Zone 1 in Sanger No. 3 which is completely penetrated is approximately 28 feet. Since the Zone 1 was not penetrated in the Sanger No. 6 or in Sanger No. 4, we are using Sanger No. 3 as a representative thickness in our estimate of what we might recover from Sanger No. 6. In other words, we are assuming that there is also a 28-foot Zone 1 in Sanger No. 6.

Q Would you tell the Commission what the average field porosity is for this formation throughout the Grayburg

Field here?

A According to the Hobbs Engineering Committee Report the average porosity in the San Andres was only 14 to 15 percent. The 14 percent being in the gas cap and the 15 percent being in the oil column.

Q Your average porosity was 23 percent?

A Right.

Q And have you drawn any conclusions with such good porosity and thickness why this well is not a better producing well?

A It is possible that this well is still damaged by drilling fluid. However, the frac job in 1971 was designed to penetrate beyond that. However, with good porosity and 20-foot zone the frac treatment would not really penetrate too far. However, there is also a good possibility that this well is completed in a very porous yet very tight rock. In other words, the permeability in this area around this well could be very low. We believe that to be the case.

Q And this would be just a localized condition?

A It could be, right.

Q What does Shell propose insofar as the Sanger 6Y well is concerned; what are your intentions in connection with this well?

A We intend to drill this well across Turner Street,

approximately 300 feet from the present well which would be 150 feet nearer the west line than the 330 location would allow. We plan to drill this well to a depth of 4325 feet. Our plan is also to core Zone 1 and Zone 2 intervals of the San Andres in order to gain core information on this side of the field, run analyses on these cores and possibly from the capillary pressures that we can determine more accurately what the actual oil-water contact is on this east edge of the field, possibly even proving that some other drilling locations on this Sanger Lease are possible.

We also believe that since we intend to penetrate both Zone 1 and Zone 2 completely that this well will be valuable in the future not only as a producer but as an injector in the proposed waterflood for the Hobbs field.

Q Referring you to what has been marked as Exhibit 4, would you identify what that is, please, and explain that?

A Exhibit 4 is our estimate of the drilling costs that we anticipate for Sanger No. 6Y. The actual drilling cost which would be the sum of the drilling site, the drilling cost and the evaluation cost adds up to $43,000. That's to get the well to its total depth. The completion costs would be an additional $23,000 which would result in a total cost of the well of $66,000. The remaining

costs on that page are estimates of what the equipment moved from Sanger No. 6 would cost, a total cost of the well being $90,000.

Q Referring to what is marked as Exhibit No. 5, would you explain what this shows?

A This is an estimate of what it would cost us to directionally drill Sanger No. 6Y to a 330-foot location. There are two columns, Case 1 and Case 2. Case 1 being the probable cost and Case 2 being the cost which would result if some trouble was encountered. The Case 1 cost would be approximately $13,000 and Case 2 approximately $21,000, so an average cost for deviation we estimate would be about $17,000.

Q And would Shell be willing to drill this well if it was required that it be directionally drilled?

A I don't think we would because this is a marginal prospect to begin with and we would not be even considering drilling this well were it not for the construction in progress around our Sanger No. 6.

Q Do you think the granting of this application would set an unusual precedent in the Hobbs-Grayburg San Andres Field?

A I don't believe it would because of the unique conditions of this topographical consideration in this case.

Q Am I correct that this proposed location is the only

drillable location within the 40-acre proration unit?

A It's the only location not presently occupied by family dwellings or construction by Pacific Coast Properties Company. It is also the only location that would probably never be encroached upon by commercial development since it is in the railroad right-of-way.

Q Do you feel that the granting of this application would prevent waste and protect correlative rights?

A Yes, I do. Sanger No. 6 is currently completed in a very low permeable reservoir with high porosity. We're not certain that this 40-acre tract is all productive. We think there's a good chance that it is. With 23 percent porosity and an oil column in this Zone 1 of 28 feet, there's a great amount of reserves left on this 40-acre tract. It's very doubtful that the present Sanger No. 6 well could effectively drain this area. It is more likely that the well would be abandoned prematurely and result in oil being left behind and wasted.

Q Were Exhibits 1 through 5 prepared either by you or under your supervision?

A Yes, they were.

MR. BUELL: At this time I move the introduction of Exhibits 1 through 5.

MR. PORTER: Exhibits 1 through 5 will be admitted.

MR. BUELL: I would also ask the Commission to take administrative notice of the fact that there are two letters, one from the Hobbs Chamber of Commerce and the other from Pacific Coast Properties urging the move of this well to the west.

MR. PORTER: The Commission will take administrative notice of the letters mentioned by Counsel.

Does anyone have a question of the witness? Mr. Kellahin.

CROSS-EXAMINATION

BY MR. KELLAHIN:

Q Mr. Greene, I understand that you would not consider drilling the well were it not the construction of the shopping center; is that correct?

A That's true.

Q That's the primary reason for moving the well?

A That's the primary reason. We also expected to get a better well by moving toward better porosity, better permeability.

Q You'll get a better structural position?

A True, we expect to gain from 10 to 20 feet of structural height.

Q Now, in connection with gaining structural position you just testified that in your opinion it was doubtful that No. 6 well would drain the unit. How would you

expect the No. 6Y to drain that unit?

A By drilling into a better permeability zone we can effectively get more of a drainage area.

Q You can effectively get more of a drainage area from where?

A From the surrounding reservoir.

Q But not necessarily from the 40-acre tract dedicated to the well; is that correct?

A Well, primarily from that tract.

Q Well, it's your opinion that the present well is completed in a very tight zone; isn't it? Am I stating that correctly?

A That's true.

Q Then it wasn't draining because of the low permeability. How would a well 330 feet away drain that same zone with low permeability? It just isn't going to do it; is it, in the No. 6 well?

A It would do a better job.

Q If the No. 6 won't drain it, the No. 6Y won't drain it.

A If we complete the well in a better permeability, if the well will produce more fluid it can drain a larger area, yes.

Q But not necessarily in the tight permeable area?

A Well, if this well is in a tight permeability area right now, then its drainage wall around the well bore is

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a bottleneck to the transmission of fluid into the well bore. By moving into a better permeability area we effectively extend the drainage or the well bore drainage area. In other words, although the whole 40-acre tract may be of low permeability it could be, there could be a tremendous transmission of fluid to the west, for example, to better permeability areas because the entire formation faces across that gray vast area, along these lines (indicating). So with only a small pressure drop across a very tight rock you can still get a tremendous volume of fluid transmitted.

Around this well bore which is completed in the low permeable area there is a bottleneck. If we can effectively extend the well bore by drilling it much larger we could effectively drain the area.

Q Well, first of all your drainage area, all things being equal, would be radial; would it?

A In an ideal case in a homogenous reservoir it would be.

Q But this is neither an ideal case nor a homogenous reservoir?

A That's correct.

Q Is tighter on the base your experience to the west instead of the east?

A I believe it is.

Q Wouldn't the production from the 6Y come from the areas

of higher permeability?

A The initial production would, I believe that it would.

Q Now, in connection with your topographical reason again, you said there were houses covering all the tract. You don't mean the entire tract; you mean off to the west there are houses; is that right?

A I've driven through the area and as far as I can tell there are houses over the whole tract.

Q Well, according to your map there are no houses where your present well is.

A Well, I made that --

Q That's what I wanted to clarify.

A The cross-hatched area on our Exhibit No. 2 is owned by Pacific Coast Properties where they plan to put a shopping center.

Q Now, Shell sold this property to Pacific Coast Properties; did it not?

A Either Pacific Coast Properties or Northgate Development Company which later sold it to Pacific Coast Properties.

Q And at the time Shell sold that they reserved the minerals with the right to develop them; did they not?

A True.

Q And the well was already there; wasn't it?

A No, the well wasn't there when we sold the property.

Q But it was drilled subsequent to the time you sold it?

A Right.
Q Did Northgate or Pacific Coast Properties, either one, raise any objection to your drilling the well?
A I'm not the best witness on this subject.
Q Well, you're the only witness that has been sworn. Can you answer the question?
A I'm aware that they subsequently raised an objection. As a matter of fact, there was a lawsuit over the location.
Q Has that been completed?
A Yes.
Q And did Shell pay damages for the use of the area?
A They did.
Q So the topographical reason is not because of anything Northgate is complaining about today; is that correct?
A Northgate is no longer in the picture; Pacific Coast Properties is.
Q Their successor?
A And there is no doubt as that they would like for us to move the well very much. In fact, they intend to put a building on this same location if Sanger 6 is moved.
Q But as of today they have no right to require Shell to move?
A As far as I know, they have no legal recourse.
MR. PORTER: They intend to put a building where

your existing well is?

THE WITNESS: Yes, sir.

MR. KELLAHIN: We'll correct my statement a while ago. I asked you if it was tighter to the west than to the east and I mean to the east.

THE WITNESS: I saw what you meant; it is tighter to the east.

MR. KELLAHIN: I correct the record on that.

Q (By Mr. Kellahin) Now, in connection with your Exhibit No. 3 which is the cross section, you testified from that and I assume from the examination of the actual log itself over the porosity of the No. 6 well. Where is that porosity confined on the log?

A In the bottom seven feet that was logged.

Q Now, the bottom seven feet was not logged on the gamma ray neutron; was it?

A Yes, there is a gamma ray neutron log.

Q I mean, the gamma ray -- it doesn't show any.

A No, it does not.

Q So you don't have that information on which to determine what type of formation actually existed there; do you?

A We only have the logs on the other wells which we can project to this well.

Q But you don't have it on this well?

A We don't have a gamma ray at that depth on this well,

that's right.

Q So confining it solely on this well from the log, you can't tell whether you're in shale or sand or what?

A Well, we know that we're producing from this zone due to a radioactive survey that was run last summer. There's no doubt in my mind that the zone, that we see porosity in here on the neutron log at a porous interval.

Q Now, you then made reference to your No. 3 well and said it had 28 feet of porosity. You didn't observe that 28 feet in the No. 6 well; did you?

A We didn't penetrate 28 feet; we only penetrated its top seven feet in the No. 6 well. We are getting water at the time.

Q If your statement that 28 feet of porosity drainage or 23 percent is correct wouldn't it be wise to go in and recomplete that well at a greater depth?

A That's a possibility. We considered that but we are also trying to accommodate Pacific Coast Properties and get out of their shopping center.

Q Well, it would be much less expensive to deepen the well than to drill a new one; wouldn't it?

A It certainly would.

Q Do you know of any other well in the Hobbs Pool that has 23 percent porosity?

A I personally do not.

Q I think you testified it ranged up to 14 percent?
A Up to 15 percent, that's the average.
Q That's the average.
A I assume that about half the wells have better than 15 percent average.
Q But you don't know of your own knowledge of any with 23 percent?
A I haven't studied the Hobbs field at all, only this particular area.
Q On your estimate of costs, your Exhibit No. 4 is your drilling estimate for the No. 6Y well, have you seen the order that was entered by the Oil Conservation Commission as a result of the previous hearing, that being Order No. R4639?
A Yes, I have.
Q Are you aware that it required that Shell make a multi-point directional survey of the well throughout the drilling?
A Yes, sir.
Q You have not included that as part of the cost here; have you?
A No, I have not.
Q That would add quite a bit to the cost; wouldn't it?
A The multi-point survey itself would only add about $1500 in my opinion.

Q Well, you have run a little bit higher in connection with directional drilling on that; don't you?

A Well, I'm giving the estimate of the survey. If we had to go back and directionally drill the well it would cost considerably more than that.

Q In order to keep that well, and the order further requires you bottom it at least 180 feet from the property line, aren't you going to have to directionally survey that?

A Not necessarily. I think we can drill a straight hole.

Q If it starts drilling up-structure you're going to have to directionally drill; aren't you?

A We certainly would but there's no indication in the Hobbs field that the wells do climb up-structure. As a matter of fact, there are three directional surveys that indicate that there is no trend that in the Hobbs field the wells do climb up-structure. That's reported in the Engineering Committee Study of the Hobbs field.

Q Now, there was quite a deviation from the vertical in the No. 6 well, wasn't there?

A I'm not aware of what it is. I know there was a survey run.

Q Yes, sir. And it deviated somewhat, at least up to 2-1/2 percent degrees.

A I would accept that.

Q 2-1/2 degrees would take you clear over on Samedan's lease, if it went in the same direction from your proposed location.

A Yes, it would. I think we could take special precautions in drilling this well which were not taken on Sanger No. 6. Sanger No. 6 was 470 feet from the west line so there was no concern at that time.

Q Now, it would be possible for you to drill at another location and bottom your well at a legal location; would it not? It would be possible?

A If we had another location?

Q Yes, sir. Another surface from that surface location you could bottom at 330 feet.

A We could deviate the well at a cost and complete it at a legal location, yes, sir.

Q Now, when the No. 6 well was completed open?

A It's currently completed open hole.

Q So when you fractured the zone you fractured the open hole?

A Right.

Q Do you have anything to show that the fracture treatment actually went into the producing formation?

A We ran a radioactive tracer survey this past summer and it showed all fluid injected went down, out the bottom of the hole in Zone 1.

Q In Zone 1. ...ou said you were attempting to accommodate the owners of the shopping center. Have they offered to help pay the cost of drilling the well?

A No, they haven't.

MR. KELLAHIN: That's all I have. Thank you.

MR. BUELL: If I may have just a few more questions.

REDIRECT EXAMINATION

BY MR. BUELL:

Q You mentioned that this present Sanger 6 well is located within the shopping center parking lot; is that correct?

A Yes, it is.

Q And to a greater or lesser degree doesn't this also present a safety problem to the patrons of the shopping center and people in the area?

A We think there is a possibility of our future liability due to the property damage or possibly personal injury. We think this is remote but it is a possibility and we put some value on that.

Q And you have put a fairly substantial fence or wall around this well, have you not?

A There is a wall around the pumping equipment on the well and the well itself, about ten feet tall, to keep out curious children, that sort of thing.

Q But however, there is going to be a safety hazard if you have to work over this well or do any additional work on

it when you bring equipment in?
A During work-over operation the wall will be removed; the work-over rig will be there. There's always a possibility of oil spills or tubing falling over the derrick, that could happen.
Q And what was the gas, oil, water contact in this well; do you recall?
A The oil-water contact?
Q I'm sorry, yes.
A We didn't reach the oil-water contact in this well; so previously it was thought to be minus 614. We did not produce oil in this well until we penetrated deeper than 614.
Q And how deep did you penetrate?
A To subsea depth of minus 634.
Q And you have not encountered the oil-water contact yet?
A No, sir.
Q Now, Mr. Kellahin asked you a question concerning deviating this well and completing it, the well, at a legal location. Would Shell be willing to do that, considering the cost of deviating the well and the risk involved?
A I don't believe we would. Like I said earlier, it's a very marginal prospect and we would not even be considering it were it not the construction of this shopping center. If we expected to get only the type

of well that we have in Sanger No. 6, we would not drill the well. We're attempting to accommodate Pacific Coast Properties and the City of Hobbs and with the belief that there is a possibility we may get a better well, we're willing to take that risk and try to drill a replacement well for it.

MR. BUELL: I have nothing else.

MR. PORTER: Mr. Kellahin.

MR. KELLAHIN: A couple questions.

RECROSS-EXAMINATION

BY MR. KELLAHIN:

Q Mr. Greene, you say the only reason, the primary reason is the shopping center. Will you get a price of new oil if this well is completed?

A That hasn't really been determined. There is a possibility that we could get the new price. I'm not sure that that's been resolved in our state.

MR. PORTER: I'd like to get the answer to that one myself.

MR. KELLAHIN: I would, too.

A Certainly if we got the $6 a barrel or so it would make the well more profitable, but if we got only the price that we have now it would still be uneconomical.

Q (By Mr. Kellahin) Now, there's a prospect of secondary recovery in the Hobbs Pool; is there not?

A Yes, sir.
Q If you got a well which was a better producer it would be an advantage to Shell in connection with unitization of the pool; would it not?
A I believe that it would.

MR. KELLAHIN: Thank you.

MR. PORTER: Anyone else have a question of this witness?

(No response.)

RECROSS-EXAMINATION

BY MR. PORTER:

Q I believe this is in the area of what used to be referred to as the Shell camp property.
A Yes, sir. As a matter of fact, the houses that are on Exhibit No. 2 are from a drawing of the Shell camp. The old Shell camp is now in the City of Hobbs.
Q When did you say this well was drilled originally? I missed that date.
A It was spudded on January the 17th, 1970, and completed February the 17th, 1970.
Q It was completed in January?
A It was completed on February the 17th, 1970.
Q Do you have information how the bottom hole pressures are in this well related to original pressures of Shell's in the Hobbs Pool or in this area?

A We've never run a bottom hole pressure in this well.

Q You've never had a bottom hole pressure?

A No, sir. It pumped the very beginning; it didn't flow.

Q I see. So you did not compare with the original pressures?

A No, sir.

MR. PORTER: No further questions. The witness may be excused.

MR. BUELL: We have nothing else, Mr. Commissioner.

MR. PORTER: Fine. Mr. Kellahin.

MR. KELLAHIN: In connection with one question Mr. Buell was asking about the condition of the well, we call your attention to Exhibits 1 through 4 in the original hearing which are photographs of the well showing the wall and so forth.

MR. PORTER: I believe we have those here.

MR. KELLAHIN: We have a couple of exhibits we would like to put up, if you want us to go ahead or take a short break.

MR. PORTER: Let's take a short break while the exhibits are being put up.

(Whereupon, a brief recess was held.)

MR. PORTER: The hearing will come to order, please. The Commission will recognize Mr. Kellahin.

MR. KELLAHIN: I would like to call as our witness Mr. Cliff Matthews.

CLIFFORD W. MATTHEWS,

a witness, having been first duly sworn according to law, upon his oath testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?

A Clifford W. Matthews.

Q By whom are you employed and in what position, Mr. Matthews?

A Samedan Oil Company as division manager and also acting in the capacity of a geologist.

Q Now, where are you located?

A Midland, Texas.

Q Does the area involved in Shell's application present before the Commission come under your jurisdiction as manager for Samedan as a geologist?

A Yes, it does. We handle West Texas and New Mexico out of Midland for exploration.

Q What is your education as a geologist?

A I was graduated from Southern Methodist University, B.S. degree in geology.

Q When was that?

A That was 1940.

Q And what have you had subsequent to that?

A Well, I was in the service for a period of time during

World War II. After returning from the service I entered O.U. for two years studying on my Master's.

Q Was that also in geology?

A Yes, it was. And then I came with the Western Company working in West Texas and New Mexico for a period of three years. And then I joined Samedan and I have been in West Texas and New Mexico for approximately 20 years with Samedan.

Q In connection with your work for Samedan have you had anything to do with the Hobbs Pool?

A Yes, we have. We have had some development in the field and we have done a number of work-overs and we are operating some 16 wells in the Hobbs field.

Q Now, Mr. Matthews, have you made a study of the application of Shell Oil Company in the case before the Commission?

A Yes, I have.

Q Now, referring to what has been marked as Samedan's Exhibit 1-R would you step over to the exhibit and using the pointer discuss the information shown on that exhibit?

A All right, sir. Exhibit 1-R is a reproduction of the San Andres structure map.

Q Get around to the other side so Mr. Porter and Mr. Trujillo can see.

A The San Andres structure map taken from the Hobbs

engineering study.

Q Now, would you briefly identify what the Hobbs engineering study is?

A The Hobbs engineering study was conducted by AMACO and involved all of the companies that were involved in the study of this field for secondary recovery, AMACO, Atlantic Richfield, Shell, Continental, Phillips and Texaco. Numerous, all of the operators in the field participated in this study to some extent.

Q And they provided the information which is the basis of your Exhibit No. 1?

A They made available logs and information from their files and wells for the study.

Q Would you go ahead with your discussion now?

A This Exhibit 1-R is a structure map on the top of the San Andres and actually it depicts the configuration of the Hobbs field, indicating the steep dip on the west side and the relatively steep dip on the east side.

Q I believe you have them reversed; do you?

A Well, the steep dip on the east side and the steep dip on the west side.

MR. PORTER: This pointer won't show up on the record, Mr. Kellahin.

A And also shown is the Shell Sanger Lease in Section 27 and the Samedan Moon A and Moon B Lease in Section 28.

Q In addition to that we have shown other wells which we have looked into that would have some possibility of improving their production.

Q Before you get to that, would you just generally discuss the characteristics of the pool? Where is the better productivity of this pool located?

A The better productivity is in the higher portion of the field.

Q Is it a structural formation?

A Yes, it is a structure. It has some 300 feet of closure on it.

Q In your opinion is it completely developed?

A Is it completely developed?

Q Yes.

A Not completely. Perhaps it's far down the scale in development, yes.

Q You would not anticipate any great expansion at present?

A No, I would not anticipate any great expansion of development in this area.

Q Now, you say the better production is down through the center of the pool. How would you characterize the location of the Sanger Lease?

A Well, the Sanger -- actually Shell's Sanger Lease is somewhat similarly located to Samedan's Moon Lease. They have five excellent wells; Samedan has four excellent

wells, the Moon A and Moon B Lease. The Shell 6 is located in the northwest quarter of Section 27 and is located on the extreme flank of the field. Actually, that would be a relatively poor location structurally of the well as to porosity and permeability, in general.

Q Now, on the basis of the engineering study, would that indicate that the 40-acre tract dedicated to No. 6 well is doubtful of its productivity?

A A good portion of it is quite doubtful as to the productivity of it. The eastern portion of the 40-acre tract is extremely doubtful as to whether it would be productive or not. There is a small portion of it that we estimate as approximately 11 acres, that is 11.40 acres, that we believe would be productive.

Q Now, you started to discuss other wells that could possibly gain an advantage by moving their locations. Would you point out what you have done with Exhibit No. 1-R?

A We actually made a study of the area, not an exhausted study. We looked into it for possible other wells that could be drilled as proposed by Shell, crowding the line or moving in close to the offset properties.

No. 1 is Samedan Oil Corporation's Bowers No. 1 located 330 feet from the north and 2310 feet from the east line of Section 3, Township 19 South, Range 38 East.

The present production on that well is seven and a half barrels a day. It is offset to the north by an 80-barrel-a-day well and that it would be possible to improve our structural position by moving in that direction for the drilling of another test.

The Samedan Oil Corporation Bowers 3 is located 620 feet from the north and 1293 feet from the east line of Section 3, Township 19 South, Range 38 East. The present production on that well is 13 barrels a day. The north offset to it is 42 barrels a day. Samedan could consider moving that location approximately 400 feet to the north and be within the range that Shell's talking about here.

Another one is the Continental State B No. 2.

Q What's the number on the map?

A On the State B No. 2 the No. 3 located on the west side of the field. That well is located 660 feet from the north line and 660 feet from the east line of Section 25, Township 18 South, Range 37 East. The present production is six barrels per day. This well could possibly be moved east and the structural position could possibly be improved by 35 to 40 feet and it would be moving in the direction of a well that's presently producing 75 barrels a day.

The AMACO State A No. 22, No. 4, located in the

southwest portion of the field, that well is 660 feet from the north line, 660 feet from the west line of Section 5, Township 19 South, Range 38 East. Present production is 22 barrels a day. It is offset by a top allowable 80-barrel-a-day well to the east, and also it is offset to the northeast by AMACO's McKinley No. 29 well that's making 58 barrels a day. Your structural position in this case could possibly be improved by 25 to 30 feet.

The Shell McKinley A No. 10 located in this area here (indicating) --

MR. PORTER: Would you identify that area, please?

A Yes, sir, I will. It is located near the center, or the central portion of the field. And the well is 1750 feet from the south line and 660 feet from the east line in Section 19, Township 18 South, Range 38 East. The present production on that well is six barrels per day. The Shell McKinley No. 5, the east offset, is a top allowable well. The Chevron No. 2 H.D. McKinley well northeast offset at 75 barrels a day. Shell could move in that direction; you would not be improving your structural position but you would be moving in the direction of top allowable wells.

The No. 6 example is the AMACO Bowers No. 8 in the south central portion of the field. That well is 660

feet from the north line and 1980 feet from the east line of Section 4, Township 19 South, Range 38 East. Present production is 21 barrels a day. It is offset to the north by Continental State No. 5. The present production on that well is 74 barrels a day. The structural position could be improved 15 to 20 feet by moving north and crowding the line.

Now, these are just a few examples. We did not make an exhaustive study; we simply wanted to show that there are several cases in the Hobbs field where the structural position could be improved by moving near the offset operator's line.

Q (By Mr. Kellahin) How does that compare with the example you've given in the situation on the Shell Sanger Lease?

A Well, Shell's Sanger No. 6 is presently located in the extreme south portion of the northwest quarter of Section 27 and Shell proposes to move that location approximately 300 feet to the west improving their structural position and moving toward top allowable wells.

Q Are the Samedan wells top allowable wells?

A Yes, all the Samedan on the Moon A and Moon B are top allowable wells at this time.

Q And I believe in the testimony here it was testified that the Shell Sanger No. 6 was making six barrels a day;

is that correct?

A Well, approximately six barrels a day according to the Commission reports. I beg your pardon. Approximately ten barrels per day according to the Commission reports.

Q Now, turning what has been marked as Samedan's Exhibit No. 2-R, which was Exhibit 6 in the former hearing, previous hearing, will you discuss that exhibit, please?

A Our Exhibit 2-R is an enlarged portion of Exhibit 1-R in the vicinity of the Shell Sanger Lease and the Samedan Moon A and Moon B Lease. It is a map on the top of the San Andres District, the structure in the immediate area. Shell's Sanger 6 proration unit is shown in red; Samedan's Moon A and Moon B Lease is shown in green. The A prime to A cross section is indicated to the brown line traversing from east to west.

Q On the basis of that exhibit, I believe you have already testified that moving their location as proposed would give them a structural advantage. Do you have anything else to add to that?

A We estimate that they would gain 20 to 25 feet by moving their position from the present producing Sanger 6 to their proposed location, 6Y.

Q And there will be further testimony on that later?

A Yes, sir.

Q That completes our discussion of Exhibit No. 2-R?

A Yes, sir.

Q Now, turning to Samedan's Exhibit 3-R; it was Exhibit No. 7 in the former hearing; will you discuss that exhibit, please?

A Exhibit 3-R is a cross section as indicated on Exhibit 2-R from A to A prime. It traverses from east to west and the Sanger No. 6 through the Samedan A 2 Moon and the Samedan B 2 Moon onto what is at this time Atlantic Richfield Grimes 2 A and Atlantic Richfield Grimes No. 3. We prepared this cross section actually for two purposes. One is actually to show the structure that they would be possibly gaining by moving their location from the present location of the No. 6 to the 6Y. If you will note the 6Y or actually the Shell Sanger No. 6 is low to the Samedan Moon A and Moon B and on across the cross section. It is structurally low to those and it would be indicated that they would gain structural position by moving their location to the west.

Now, the other thing we prepared it for, or actually just to show this log which is also included in Shell's exhibit, we believe that the porosity indicated on this log would average about 11 percent for seven feet. The maximum porosity we will say is 23 percent as indicated on the log. We would have some hesitation to actually pick that and say it's 23 percent porosity

because you don't have a gamma ray log on the lower portion of the hole. Therefore, you cannot actually determine how much silt is in the lower portion of the hole and silt content, shale content will sometimes over-exaggerate your porosity.

Q Now, is that well, in your opinion, producing as though it had 23 percent porosity?

A In our opinion it is not. A well having 23 percent porosity in this area should produce better than this well is producing.

Q Now, I believe the testimony shows that in Shell's opinion they had seven feet of 21 percent porosity. I gather you do not accept that figure; is that correct?

A No. We believe that it has seven feet of 11 percent porosity. The average porosity in Zone 1 indicated on the log we think is approximately 11 percent for the seven feet.

Q Do you know of any wells in the Hobbs Pools that have 23 percent porosity?

A Offhand, I do not. I've looked at a number of logs in there. I have not specifically observed any that have that high porosity.

Q Now, what type of reserves, in your opinion, would exist under the proposed new location?

A In my opinion, Shell would improve their reserve picture

by moving their well from the 6 to the 6Y proposed location.

Q Would that be both as to structure and as to permeability and porosity?

A That is correct. They should improve structurally and they would be improving in the direction of better porosity and permeability insofar as generally indicated by field development.

Q Is the porosity and the permeability better developed toward the Samedan wells?

A Generally that is true. The porosity and permeability is better developed to the west, moving toward the center of the field.

Q Now, you heard Mr. Greene's testimony to the effect that a well drilled in the more permeable area on this 40-acre tract would be more apt to drain the entire tract than their present location. Do you have any comments on that?

A I would differ somewhat with his statement of that. In my opinion, the well would be more apt to drain the 11 acres in the southwest corner of that 40-acre tract. You would have less drainage in all probability to the east and northeast of that 40-acre tract.

Q Well, would there be drainage from the offsetting leases?

A In my opinion, a well located as they have proposed it,

the major portion of the oil would come from offsetting leases.

Q And not from the 40-acre tract dedicated to the well?

A That would be my opinion, that is correct.

MR. KELLAHIN: That completes direct examination of the witness.

MR. PORTER: Mr. Buell, do you have a question of the witness?

MR. BUELL: Yes, please.

CROSS-EXAMINATION

BY MR. BUELL:

Q Mr. Matthews, going to your Exhibit 1-R and the well that you have labeled No. 1, your Bowers No. 1, you move that well towards the lease line. Would you be improving your position structurally?

A Structurally? If you move it to the north and to the west you could possibly improve your structure.

Q But you've indicated that you would move it approximately straight north; is that correct? To move near the offsetting well.

A To move near the offsetting well, you would move north; to improve your structural position you would probably be better off to move northwest.

Q But as you have indicated on this exhibit, if you move this well you would not, in the manner you have

indicated, you would not improve your structural position?

A If you move straight north you probably would not improve your structural position.

Q In fact, you're just moving right along the contour line?

A You would probably be moving up-structure, generally, if you move straight north.

Q And this is true of the well you've labeled No. 2, your Bowers No. 3?

A If you move straight north there, generally speaking, move to the strike line.

Q Now, the offsetting wells in Section 34 that you have indicated in the green, one is a top allowable and the other was 42 barrels per day; is that correct?

A That is correct.

Q And both of those are locationed on the flank of the Hobbs-Grayburg-San Andres Pool; is that not so?

A That is correct.

Q So you have a top allowable well right here on the flank even though you've indicated that the better production is towards the center of the formation?

A Not a top allowable on the flank, the one on the flank is 42 barrels per day. The one inside is 80 barrels per day and I believe you'll find that the same thing is true up in the Shell area, you have a dry hole that

is offset by approximately a top allowable well.

Q And those Shell wells that you're talking about up in Section 27, most of them are top allowable wells; are they not?

A To our knowledge, that is correct. They are mostly top allowable wells. The five that we indicated on the southwest portion of the Sanger Lease.

Q And those are also, most of them, drilled on the flank of this formation as indicated?

A That is correct.

Q These wells that are offsetting the Bowers No. 1 and Bowers No. 3, do you know what zone they're completed in?

A The actual zone that they're completed in, no, not Zone 1 or Zone 2 or Zone 3. I do not know specifically which zones those wells are completed in.

Q How about the other offsetting wells that you used for examples, do you know what zones they're completed in?

A No, I do not.

Q So they could be producing from completely different zones, the green wells from the red wells as shown on this exhibit?

A That is correct, and the reason we brought this out is that you would be moving in order to improve your position structurally and to move toward a better producing well, top allowable well or good well.

Q So some of these wells that you have shown on here, your proposed movement of those wells would improve them structurally and some would not? You're just moving closer to production?
A That is correct.
Q But you don't know where that production is coming from in these wells?
A Yes, sir.
Q Now, do any of these six examples that you have here, do any of those have a problem with shopping centers or people's housing?
A Not insofar as I know.
Q So that is not a consideration?
A No, it was just pointed out that there are a number of wells in this field that could probably be redrilled if the Commission would permit you to move 180 feet from the lease line.
Q In your Example No. 5, you're using an example of the Shell McKinley A No. 10 up in Section 19 and you proposed moving that well.
A Actually, I indicated that to move it to the east or northeast you would be moving in the direction of a top allowable well.
Q I see.
A That well is presently making, reported to be making six

barrels per day and you could move it toward a well that's a top allowable well.

Q Were you aware that that well, that Shell McKinley A No. 10 is now making 50 barrels a day after work over last month?

A No, I'm not.

MR. BUELL: I have nothing else.

MR. PORTER: Any further questions?

MR. STAMETZ: Yes.

RECROSS-EXAMINATION

BY MR. STAMETZ:

Q Mr. Matthews, referring to your Exhibit No. 1-R, I notice that some of the wells that you suggested could be moved to improve their position in the reservoir are well inside the field boundaries; isn't that correct?

A Yes, sir, they are.

Q Is the problem with these wells that they're occasioned in a tight zone or reservoir?

A The problem, we did not make a study of that. We just simply pointed these out as examples of possibilities. We did not make an exhaustive study as to what zone they were producing from or why the production was at this low level. But we did want to point out that there were a number of wells that were offset by top allowable wells that you could move in one direction or another

to improve the possible production from that well.

Q That would indicate that there are problems inside the field, anyway, that do tend to restrict production in the individual wells. Is it possible that Shell may have discovered a possible strike in this formation in their Sanger No. 6 well and that just the fact it's not producing very well now doesn't condemn the whole 40-acre tract? I'm saying, if you have this bad situation inside the field, what you described as the field, is it possible that well may have this bad situation at the end of the field and just this fact doesn't condemn their whole 40-acre tract?

A No, it doesn't condemn their whole 40, but we are firmly convinced that a good portion of the 40-acre tract is condemned. And as noted by the engineering report, they point out the same situation.

Q A water-oil contact is shown here. If we move up to the northern end of the field, talking about Section 13, 18 South, 37 East, in the north half of that section there appear to be a number of wells completed beyond the water-oil contact. Are these wells producing?

A I am not specifically acquainted with those wells. It's somewhat like the Shell well. You are in an area of low permeability when you approach the limits of the field. I'm not specifically informed.

Q So this water-oil contact does not condemn the tracts outside the water-oil contact?

A Not necessarily, but we believe that actually it somewhat limits the production on that east side.

Q Referring to the Shell well, I see that it's located structurally lower than the minus 600-foot contour line here. Going back to Section 13 I see again that there appears to be some wells locationed structurally lower than this 600-foot contour interval. Again, just the fact that the whole property is lower than minus 600 feet does not condemn the 40-acre tract?

A No, it doesn't condemn it.

MR. STAMETZ: I believe that's all.

MR. PORTER: Anyone else have a question? Mr. Kellahin.

REDIRECT EXAMINATION

BY MR. KELLAHIN:

Q Mr. Matthews, the Hobbs Pool underlays the City of Hobbs; does it not?

A Yes, sir.

Q Are there a number of Hobbs Pool wells located within the city limits?

A Yes, there are a great number of wells located throughout the city.

Q And they're close to housing?

A Some of them are very near houses and other structures.
Q Business buildings?
A Business buildings.
Q So the problem of being near a shopping center is not unique in Hobbs?
A No, it is not, not for a town site development such as the Hobbs field.
Q In your opinion, would the approval of the proposed location result in waste?
A In my mind it will result in waste. There will be a portion of the 40-acre tract that will not be drained.
Q Now, in the event this pool is unitized and the well becomes an injection well as was suggested in the first hearing in this case, would that result in a loss of any oil?
A In my opinion, all of the oil to the north, northeast and east of the proposed 6Y would probably be lost to secondary recovery. You would not drive that oil up-structure.
Q And would approval of the proposed location of Shell protect correlative rights?
A In my opinion, it does not protect correlative rights.
Q Even with the penalty factor that was assigned by the Commission after the previous hearing?
A In my opinion, the 58 percent assigned by the Commission

did not protect correlative rights of the working interest owners and royalty owners under the Samedan Moon Leases.

MR. KELLAHIN: That's all I have.

MR. PORTER: Any further questions?

MR. BUELL: One question.

RECROSS-EXAMINATION

BY MR. BUELL:

Q Mr. Matthews, going to Exhibit R-3, it is your log cross section, you have indicated that you felt that the porosity shown on the log was 11 percent; is that correct?

A Yes, sir.

Q For seven feet?

A I averaged across the entire porosity zone.

Q And you have assigned seven feet of porosity?

A We gave it seven feet, and that we feel is optimistic in relation when you study the log.

Q And how did you arrive at the seven feet? Was that because the log stopped after seven feet?

A No, looking at your total depth there as indicated on the log and to the top of the porosity break, we picked seven feet.

Q Well, am I correct that that seven feet was picked because that's all the log shows?

A That is correct.

Q In other words, if the log had been deeper there could be more there?
A If you had drilled the well deeper, yes, sir.
Q There would be that probability?
A Yes, sir.
Q So that there is a possibility that there is more than seven feet there if it were drilled?
A Yes, that is correct.
Q Now, you've picked 11 percent but you did not have the aid of a gamma ray neutron log in making that determination; did you?
A I did not. This is our best estimate on the information that is available to us.
Q So that although Shell picks 23 percent porosity and you pick 11 percent, it's a matter of interpretation; is it not?
A That is correct. And we believe that a study of the log would indicate that we are more nearly correct than Shell.

MR. BUELL: I have no further questions.

MR. PORTER: Does anyone else have a question?

(No response.)

MR. PORTER: You may be excused.

Mr. Kellahin, call your next witness.

MR. KELLAHIN: We will call Robert Layhe.

Mr. Porter, we want to substitute another exhibit. We have some information marked on it which is not on the exhibit on the board.

MR. PORTER: You mean in place of Exhibit R-4?

MR. LAYHE: R-4, may I?

MR. PORTER: Yes.

MR. LAYHE: It's the same map with a little more information on it.

MR. PORTER: Do you have the new R-4?

MR. BUELL: No, I don't. I have the original one.

MR. KELLAHIN: This information is simply there for his information; it is not going to be submitted as an exhibit.

ROBERT LAYHE,

a witness, having been previously duly sworn according to law, upon his oath testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Will you state your name, please?

A Robert E. Layhe.

Q How do you spell Layhe?

A L-a-y-h-e.

Q By whom are you employed and in what position?

A Samedan Oil Corporation, manager of production.

Q And are you a petroleum engineer?

A Yes, sir, I am.
Q Where did you receive your education and when?
A University of Texas, 1949.
Q What has been your work experience subsequent to your graduation?
A Worked for Ohio Oil Company three years to the day; Gulf Oil Company, three years to the day; and Samedan, 18 years plus.
Q Where has your work been performed?
A The Gulf Coast of New Mexico, Lea County -- Gulf Coast of Mexico, Lea County, New Mexico, West Texas, Canada, Oklahoma, East Texas, Louisiana.
Q And was all of that work in your capacity as a petroleum engineer?
A Mostly I have been in a manager's position for the last eight years.
Q In your position with Samedan, does the Hobbs Pool come under your jurisdiction?
A Yes.
Q And you said you had worked for Samedan for 18 years. Have you worked in the Hobbs Pool?
A Yes.
Q Are you familiar with the pool as a petroleum engineer?
A Yes.
Q And have you made a study preparatory to this hearing?

A I am familiar with the study that has been made; I have not actually worked on the study myself.

Q The study was made by Mr. Veeder; was it not?

A He participated in the Hobbs engineering study as our representative. He is under me.

Q And you supervised that work; did you not?

A Yes, I did.

Q Supervising manager?

MR. PORTER: What was the man's name?

THE WITNESS: Leon Veeder, V-e-e-d-e-r.

MR. KELLAHIN: Mr. Veeder testified in the previous case. He is not in the state at the present time and not available.

Q (By Mr. Kellahin) Now, Mr. Layhe, refer to what has been marked as Samedan's Exhibit No. 4-R which was Exhibit No. 8 in the previous hearing. Will you discuss that exhibit, please?

A Yes, sir. This is taken from the text of the Hobbs engineering study. It's a porosity foot map. It shows, it's a portion of it that includes the Samedan Leases under discussion and the Shell Sanger Lease in Section 27 which is under discussion.

It merely shows the porosity feet of each proration unit on the Shell Lease and, of course, our own on the Moon Lease. The Hobbs engineering study did not have

a porosity footage for the proration unit assigned the No. 6 well. I can't testify why. It's either log quality or the thing is so small that they did not choose to include it. I'm speculating, but anyway, they did not have one. We chose to put one in. We came up with .77 porosity feet. This is not on your exhibit.

What we have added on this exhibit and which we'd like to point out which we think is of interest, we have put the 40-acre proration units around each of the Shell wells. The unit assigned the No. 6 well has 11.44 acres that are underlying by production according to this Hobbs engineering study. The proration unit for the No. 4 well has 38.15 acres underlying by productions according to the same study. The No. 3 well is underlying by 40 acres; the No. 1 is underlain by 40 acres; the No. 2 well is underlain by 37.69 acres; and the No.5 well is only underlain by 22.54 acres.

We'd also like to point out on this exhibit that the No. 2 well and the No. 5 well are either on the line on their west boundary or awfully close to it. The No. 4 well is either on the south boundary line of that proration unit or awfully close to it. The thing we're trying to point out is that in our opinion Shell's correlative rights are fully protected. They have five top allowable wells there that are not fully underlain

by productive acreage. They have this No. 6 well which is only underlain by 11.44 acres.

Q Now, you prepared that exhibit setting that out further, Exhibit No. 6-R?

A I beg your pardon.

Q I say, have you prepared that exhibit showing this as compared to the Moon Lease?

A Oh, yes, I have. If I may return to my chair.

Q Yes.

A At the examiner hearing previous to this hearing, quite a thing was made about Samedan having produced a certain percent of the reserves assigned by this Hobbs Engineering Committee. Our exhibit, Exhibit 6 is designed to show how our Moon Leases compare to the Shell Sanger Lease with cumulative production and withdrawals. On our Samedan Moon Leases we have produced 2.672 million barrels of oil. On Shell's Sanger Lease they have produced 3.288 million barrels of oil. The Samedan leases have 160 acres productive underlain by the productive acreage. This reduces to 16,701 barrels recovery per acre. Shell, according to the Hobbs engineering study again has 186.7 productive acres under their Sanger Lease. This reduces to 17,613 barrels per acre.

Going back to the Samedan leases, we have recovered

204.75 barrels per acre foot where Shell has recovered 317.1 barrels per acre foot.

The second page of this exhibit shows accumulative oil for each lease. Again, Samedan has four wells on their lease or leases which reduces to 668,054 barrels per well. Shell has five commercial wells on their Sanger Lease. We took their cumulative production, subtracted the reported cumulative production for the No. 6 well, used the resulting figure, divided it by the five commercial wells and came up with 652,947 barrels per well. We have noted here that the No. 6 well was completed late in February of 1970. And it has a cumulation of 23,723 barrels. At the bottom of this page we have listed the completion dates of the six Sanger wells and the four Samedan wells under discussion.

Q On the basis of the present development in that pool and particularly with reference to the Shell Lease, Sanger Lease, are the correlative rights of the offsetting operators presently being protected?

A Probably.

Q Now, would you refer to Exhibit 5-R which was Exhibit No. 9 in the previous hearing and discuss further the situation as to that 40-acre tract?

A Okay. 5-R is a blown-up picture of the No. 6 well proration unit. In other words, this is a 40-acre

proration unit. On it we have transcribed the line from the Hobbs engineering study, again east of which this report says this 40 acres is non-productive. West of this line this report says this 40 acres is productive. West of that line perimeters on 11.44 acres. Also on this exhibit we have spotted the present location of Sanger No. 6, the proposed location by Shell of the Sanger No. 6Y. We also have spotted a legal 330, 330 location on this exhibit.

Q Now, what advantage is Shell going to gain by moving to their proposed location?

A Shell, in my opinion, stands to gain several advantages. They're going to gain structure by moving to an illegal, at this time, location. They're going to probably gain reservoir quality at the expense of the west offset operators. They are going to improve their position in any future secondary unit by several factors. Cumulative oil is one; current production would be one; gas sales would probably be one. There are a number of factors in the secondary formula that would probably be involved that would be in Shell's benefit.

Q Now, on the basis of your experience, it is possible in the Hobbs Pool to drill a vertical hole without having some control over the drilling of the well?

A No, sir, I don't think they can without controlling it

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in some manner.

Q And on the basis of the structure and other information available to you, which way would the hole migrate, in your opinion?

A Well, the hole will migrate up-dip. If it doesn't, in the Hobbs Pool it's a unique situation, any time, as a matter of fact. This is the way that some directional holes are controlled, by making them climb up-dip. There are ways that they can control the deviation of this well; they can do it by a bottom hole motor; they can do it by setting whipstocks or they can do it probably by applying proper centralizers and probably weight on the bit which will add significantly to the cost of drilling this well.

Shell I think has presented an AFE. They admitted that it was proposed prior to the Commission order, that it would have to be bottomed 180 feet from the west line. They have not updated that AFE and, in my opinion, they will have to add significantly to that AFE to drill an absolutely vertical well.

Q Now, if the well does migrate up-dip would that put it closer to the lease line than 180 feet?

A It certainly will. It could even possibly cross the lease line; if the deviation got high enough it could cross the lease line.

Q I hand you Shell's Exhibits 4 and 5, being the AFE for drilling that well and for drilling a directionally controlled well. Do you have any comment on those?

A Yes. I think that at least in my opinion that the $9000 AFE that they propose for drilling an ordinary well, plus probably the $12,725 that they submit would be the additional cost to drill a deviated hole would be a likely cost to drill a controlled hole that would be absolutely vertical. In other words, to kick this well, in my opinion, to kick this well to the northeast to a legal location would be no more expensive than it would to control drill from a surface location 180 feet from the west line and make the bottom of the hole come out 180 feet from the west line.

Q In other words, you're saying there would be no material difference in the cost of either drilling to a legal location or directionally drilling to a location and drilling a vertical well?

A This is my opinion, where they have to control drill the thing absolutely vertical.

Q And in your opinion it would be necessary to control it?

A Definitely.

Q In your opinion, would approval of the proposed location of Shell's well result in a waste?

A Yes, in my opinion it would. I think that anything

east, northeast or north of the proposed well would not be adequately drained. As a matter of fact, I think that the present well would more adequately drain this area than the proposed well would.

Q Now, in the event of secondary recovery in this pool, would the proposed location result in waste?

A Yes, and for the same reasons. This area that would lie in the same direction from the proposed well would not be swept by any secondary recovery method. The oil would be left in place.

Q Now, you heard Mr. Greene's testimony that a well located in the more permeable area would more adequately drain their 40-acre tract than their present well that is very tight. Do you agree with that?

A No, I quarrel with that. I think that their new location would recover more oil. I think they would do it at the expense of the west offset operator.

Q Well, in your opinion, then would the proposed location protect correlative rights?

A No, sir.

Q Now, in the Commission order which was entered November 17th on the prior case, a penalty factor of 58 percent was allowed this well for proration purposes. Is 58 percent adequate to protect correlative rights to the offset operators?

A In my opinion, no. In my opinion, the 40-acre proration unit is only underlain by 11.44 productive acres out of the 40; and this results, if you use a straight proration, this results in a proration factor of 28.6 percent or a penalty factor of 100 less this 28.6 percent which would be 71.4 percent penalty. This is all the productive acres that they have.

Q Is that a reasonable basis for penalizing the well on account of its location?

A In my opinion, yes.

Q Do you know what the basis on 58 percent was?

A No, I do not.

MR. KELLAHIN: I believe that's all the questions of this witness.

THE WITNESS: If I may add something here that I forgot. When going through the recovery per acre foot that the Sanger No. 6 by itself has recovered 296 barrels per acre foot, which compares with the Sanger Lease altogether of the 317.1 barrels and Samedan's Leases of 204.775 barrels per acre foot. They have adequately drained, produced what they have under their lease.

MR. PORTER: Mr. Buell.

CROSS-EXAMINATION

BY MR. BUELL:

Q Mr. Layhe, you've mentioned that you feel that the

granting of the application would result in waste because oil to the east and northeast and the north would be left in place and not produced.

A This is my opinion.

Q Yet you draw a line on your Exhibit R-5 and say that there is no oil to the south there.

A There will be oil north, northeast and east of your present location and of your proposed location, not underlying the full 40, but there will be in this area here. Here is your present location (indicating); there's also east of it out to this red line, there's oil northeast of it; there's oil north of it out of this productive line.

Q And you do not think the proposed location would drain that?

A No, sir, I do not.

Q Do you think the present location is draining it?

A Yes, to an extent. I think, in my opinion, the porosity and permeability probably gets better going west so you are coming over to drain this area with this location than you would with the new proposed location.

Q But if the well on the proposed location were permitted, if it were better right around the well bore and if the formation were not damaged around the well bore, then that well would tend to produce at a higher rate and

pick up that oil?

A I think this is true. But I also think that if this situation exists that it could just well exist to a legal location which would be 330 from the west and south lines. You have just as good a chance if this situation exists of finding better permeability up here and remain legal as you would moving west, crowding an offset line and trying to gain the same.

Q But that would not be true if the so-called orthodox location were in an area of low permeability, localized area?

A This is true, it would not also be true if that situation existed on your new proposed location.

Q But there is a greater indication that it would not exist to the west rather than to the north?

A I think there is an indication any time that you gain structure, go towards top allowable wells that your chances are better; but I don't think that Samedan or the west offset operator ought to pay, in effect, for this exploration effort on Shell's part.

Q What were the opening primary reserves assigned to the Samedan Moon B Leases by the Engineering Committee?

A I knew you were going to ask that and may I go down and get the Hobbs Engineering Report? It's right here.

Q I can quote you a figure and see if it sounds right.

How about 1,274,662 barrels, this was the Moon B?

A I believe that's right; I'll accept that.

Q And what is the cumulative production on that to date?

A Okay.

Q Or to 9-1-73? According to your Exhibit R it's 1,288,007 barrels.

A Correct.

Q So you have already produced more than 100 percent of the assigned primary reserves?

A This is true, for whatever the assigned reserve means.

Q You quarrel with that figure that the Engineering Committee assigned to the Moon B Lease?

A Yes, sir, I certainly do. We have already produced more of it.

Q And do you know where that oil is coming from?

A Not definitely, but I think it's probably coming from the west, some component of the west, either southwest, west or northwest because in my opinion this is where the active water drive is coming from.

Q So there is a water drive seeping somewhere from the west toward the east?

A True.

Q And so oil is being swept onto the Samedan lease?

A Yes, true, and also onto the Shell Sanger Lease.

Q Do you know what the ultimate primary reserves were

assigned on the Sanger Lease by the Engineering Committee?

A If you will quote me a figure, I'll probably accept it. I can look it up in this book.

Q 3,563,953.

A I'll accept that.

Q And your R-6 exhibit shows the cumulative production of the Sanger Lease as being 3,288,466.

A This is true.

Q So the Sanger Lease has not yet produced the ultimate primary reserves assigned to it?

A This is true.

Q Now, going to your --

A May I expound on this a moment?

Q Sure.

A I think you would find this same situation true in any water drive reservoir. The wells on the leases and wells further west from the water drive will probably gain the most oil per acre, per acre foot by any standard that you want to use, they will get the most oil. This is a fortunate position to be in.

Q Now, going to your Exhibit R-5 and the red line, where does that red line come from?

A I think I identified that at the time from the Hobbs Engineering Committee study.

Q This is the same study that you refused to accept

insofar as the ultimate primary reserves assigned to your acreage?

A This is true.

Q And where did they get the red line on R-5?

A It's the result of this mini-company study that we participated in, Shell participated in, AMACO, Texaco, Marathon, anybody that has production in this field participated in this study at one time or another.

Q Well, why do you pick this red line in its very definite fashion across this acreage?

A Shell has chosen to quote this study as gospel; I don't know why Samedan shouldn't. We have reviewed this study over and beyond the engineering study and we find no quarrel with that.

Q But you of your own knowledge have no knowledge where this line comes from?

A It comes from the Hobbs Engineering Study Committee Study.

Q Do you know what was used to control this line?

A No, not definitely; but I assume that they did a workmanlike job, since Shell was on the study as well as others.

Q Thank you. I do want to make it clear that you do not have any knowledge of the controls used on this line?

A This is true. I'm not that close to it.

Q Going to your Exhibit R-4, do you know in the south

half of Section 27 there is a dry hole called R. H. King No. 1?

A Yes.

Q What is the total depth on that well, subsea; do you know?

A No, sir, I don't.

Q How about the No. Section 21 to the northwest of the problem area, there is a Turner Well No. 1. Do you know the total depth on that?

A On this map it's 4255.

Q That's its drilled; that's not its subsea depth.

A I understood you to say it was total depth.

Q Excuse me, I'm sorry, subsea.

A I have no idea.

Q Back to this red line that you have put on Exhibit R-5, it's nothing but estimated or projected from other information; is that not correct?

A I believe that is true.

Q Would you have any personal knowledge of what that other information was?

A No. Like I say, we took this from the same report that a lot of these other figures are taken from.

Q Now, you mentioned that it is your opinion that the well in this case, if it's drilled, would tend to climb up-dip.

A Yes, sir.

Q Are you aware that the same engineering report has found that of the three wells that they had directional surveys on that they did not climb up-dip?
A No, I'm not.
Q If you have your report, I'd refer you to Page 7 of it.
A Yes, sir.
Q And under the section Structure and Reservoir Zonation, the second paragraph, go to the next to the last sentence where it states: "From the three wells surveyed, the deviations show no relation to formation dip."
A I see that.
Q Do you quarrel with that finding in the engineering report?
A No.
Q In fact, do you recall that that is correct?
A No.
Q You do not believe that is correct?
A I think that's too much of a generalization. I think later we have one more witness I think that we can show you your own deviation on the Sanger 6 and although a bottom-hole location survey was not run on that well, it would be my honest opinion that it had climbed up-dip.
Q But if the eingeering report is correct, this well could just as easily go east as west; is that not so?
A If you accept this second from the last sentence in this

paragraph as representing everything in the field, I think you could say that. I quarrel with that. There have been many thousands of wells drilled all over West Texas that I think you could take the same information if they had bottom-hole locations, it would prove they have climbed up-dip. I do not know why the Hobbs Pool would not.

MR. BUELL: Okay. I have nothing else, Mr. Porter.

MR. PORTER: Any further questions?

MR. KELLAHIN: Yes, sir.

REDIRECT EXAMINATION

BY MR. KELLAHIN:

Q Mr. Layhe, if one of the wells to which Mr. Buell is referring deviated would depend largely on where they're located on the structure; wouldn't it?

A This is true. If they're on top of the structure, there is no up-dip to go. If they're located on the flank where the dip is extremely steep, I don't know. I have no idea where these three wells that they're referring to are located.

Q If they were on a general dip, it would be less likely to climb?

A This is true.

Q So it could be on toward the flank and still not deviate?

A This is true.

MR. KELLAHIN: That's all I have.

MR. PORTER: Any further questions?

(No response.)

MR. PORTER: The witness may be excused.

MR. KELLAHIN: Call Mr. Max Curry.

MAX CURRY,

a witness, having been previously duly sworn according to law, upon his oath testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?

A Max E. Curry.

Q What business are you engaged in, Mr. Curry?

A I am a consulting petroleum engineer.

Q And where are you located?

A Midland, Texas.

Q Would you state your education and experience as a petroleum engineer, please?

A I have attended the University of Oklahoma from which I received a Bachelor of Science degree in petroleum in 1950. I subsequently went to work for Skelly Oil Company in Oklahoma City, then to Sweetwater from which we operated all of the Scurry County activity, 1952 until 1954. I moved to Hobbs, transferred by Skelly Oil Company and I was district engineer for Skelly Oil

Company out of their Hobbs office for several years. In 1955 I left their employ and became production superintendent engineer for Buffalo Oil Company in Artesia until they were purchased, their company was purchased by Continental Oil Company in 1958; at which time I stayed with the owners of Buffalo Oil Company and formed Buffalo Petroleum Corporation. I moved to Fort Worth and was active in property acquisition and production, regional production superintendent out of the Fort Worth office. I was later moved to Midland in 1959, latter part of 1959, and stayed with them for a few months until that company went through a dissolution process. At that time I set up consulting engineering offices there in Midland and have been active there and in that profession since that time.

Q Now, in connection with your employment and in your subsequent work as a consulting engineer, have you had any experience in the Hobbs Pool?

A Yes, sir. I've had quite a bit of experience in the Hobbs Pool and have been familiar with it for quite a few years.

Q Now, have you on behalf of Samedan Oil Corporation and Mr. Cusack done any work in preparation for this hearing?

A Yes, we have.

Q Now, referring to what has been marked as Exhibit No. 7-R

would you identify that exhibit, please?

A Exhibit No. 7-R is a State-required report that is prepared by the drilling contractor, in this particular case Cactus Drilling Company, for the drilling of a well. It's a deviation report; it is not a directional survey, but it shows the amount of deviation from a straight hole that is reported on each well as it is drilled. This recording is made and filed by the drilling contractor.

The particular well which is shown here is the Sanger Well No. 6 owned by Shell and it shows that the maximum deviation of the well was 2-1/2 degrees and the cumulative displacement that could possibly be caused by this deviation would be 102.8 feet at its total depth of 4222; or the last recording of a deviation was at 4222 feet.

Q Now, that's assuming that all of the deviation was in one direction?

A That is correct.

Q On the basis of your experience in this pool and the location in this well, generally which direction would you expect the well to deviate?

A Well, according to ordinary drilling and production practices we assumed that it's a general practice to assume that the deviation of a well on the flanks of structure will be moved up-dip.

Q Now, referring to what has been marked as Exhibit A-R would you identify that exhibit?

A Exhibit A-R is a portion of the 40-acre tract in question. This is taken from a map furnished as one of Shell's exhibits, I believe. I have taken the general strike and dip that's relatively assured to be recognized by the Engineering Committee and by most operators in the field as being representative, at least in this particular portion of the field. I have made a rather generalized strike and dip of the formation there to show the relative positions, structural positions that may be gained or lost by moving the subject well to various locations on this lease.

The present well has approximately the same structural position that it would be found, I believe, at a 330 location were it drilled straight for a perpendicular hole. It also shows that approximately 15 feet of structural position could be gained on the proration unit and still remain 330 feet from the lease line. This would be relatively close to Shell's proration unit line to the south, but would be more or less configured to the spacing that has been utilized on the lease in the prior development.

Q You're referring to the lease on the unit?

A The Sanger Lease.

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Q To the south?
A The Sanger Lease, yes.
Q So it would be, in relation to the south units, a normal location?
A They would be comparable.
Q A comparable location?
A Yes.
Q Now, is it your testimony that that location, assuming a well were bottomed there, would be as good as their proposed location?
A No, I do not. But I do think that it would be possibly the best location which they could enjoy the benefits that they're entitled by regular spacing rules and regulations in the state and would protect their correlative rights and not impair the correlative rights of the lease to the west.
Q Now, where could they locate their well on the surface in that unit?
A This map as furnished by Shell shows the surface improvements or physical structures that are on this lease. It shows the railroad track with its right-of-way, the highway or Turner Street, and its right-of-way and the bottom-hole location could be very simply reached with ordinary drilling practices from either the present location or could be located on the proration unit to

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the south on the surface and bottomed at the point marked A prime which would be approximately 330 from the line of the section and the proration unit and would be a few feet, say 50 feet or so from the south line of the 40-acre proration unit in question.

Q Now, have you made any investigation to determine if there is any housing or other structures on the unit to the south of this proposal?

A Yes, we have made an investigation of it, and this was done yesterday. The location lies between the highway and the railroad track and would be of no detriment to construction of the proposed shopping center and would not, very likely, be a problem in the future.

Q Now, would directionally drilling that well as proposed cause any problems?

A I think it would probably be as easy or easier than a required well to be drilled straight.

Q And would it be any more expensive?

A Probably not.

Q Now, in your opinion, would permitting Shell to drill at their proposed location result in waste?

A Yes, it would.

Q And what kind of waste, what are you talking about?

A Well, I would reiterate some of Mr. Layhe's testimony. I agree with him that most of the oil, however much of

it may be where this line on Exhibit R-5 is, that very little of it would be recovered, either primary or secondary. Principally because the oil production would tend to be coming from the higher permeable areas to the west and very little production would be realized from the areas to the north and east. As a matter of fact, I agree with him also that the location from which the No. 6 Sanger exists would more adequately drain that area, both primary and secondary.

Q Now, you heard Mr. Greene's testimony that in his opinion a well located in a more permeable area would more adequately drain the unit than their present location. Do you agree with that?

A Yes, I do. It will very surely drain more oil.

Q I'm talking about the unit, though, will it more adequately drain the unit dedicated to the well?

A Well, I would qualify that in this way. The well would tend to be producing much longer because of the additional oil that it will be producing from the west and possibly from the south and would remain there for a longer amount of time, but I think it would be an impairment of correlative rights to permit this well to produce at a longer time to drain some of this oil above or to the east and I do not think that it would, if it were to drain the oil exclusively from that area, I don't

think it would drain as much of it.

Q It's prolonging the life of the well that would result in more production from the unit; is that what you're saying?

A At the expense of correlative rights in a sense, it would help prevent waste.

Q But it would impair correlative rights in your opinion?

A Yes, definitely, sir.

Q Then, the major portion of production, am I correct in saying,would be coming from somebody else's lease?

A Yes, in my opinion it very definitely would be.

MR. KELLAHIN: That's all I have of this witness.

MR. PORTER: Mr. Buell.

CROSS-EXAMINATION

BY MR. BUELL:

Q Mr. Curry, going to your Exhibit R-7, you have indicated and circled the figure of 102.8511, that is the deviation from the so-called center or where the well should have bottomed; is that correct?

A Not necessarily. This is the maximum deviation that it could possibly be, assuming that all deviation is in any one direction.

Q Okay. You don't know which direction that is there?

A No, I do not.

Q You don't know whether it's east or west or not?

A No, I do not.

Q In fact, a well can be drilled, if drills are trained to make it pretty straight; is that correct?

A The directional controlling or controlled drilling can be done relatively straight, but generally it's a series of corrections to maintain it within a certain radius of penetration. But very little can be done to assure that the well will be straight without such corrections as appear to be necessary from continuance.

Q Do you know if any of these controls were used on the Sanger 6 well?

A The controls that I am referring to are correctional controls. I would assume that being as this well is drilled on the flanks, that Shell as a prudent operator would use as many preventive-type controls as necessary. But I do not know that they used any correctional controls at all; apparently they were not necessary in this case as their preventive operations maintained within 2-1/2 degrees which are certainly well within the requirements of the State on the well of this type at this location.

Q In fact, what is really important is where the well bottoms, that is the directional deviation?

A That's true.

Q And are you aware that the Commission has previously

ordered in this case that we have to take such controls as to assure that the well is located, bottomed no closer than 180 feet from the west line?

A Yes, and my experience would say that these will necessarily be corrective controls rather than preventive.

Q You heard Mr. Layhe and myself discussing the findings of the Engineering Committee. Do you agree with those, that the Engineering Committee found that wells do not tend to climb up-dip in the Hobbs-Grayburg-San Andres?

A If I knew where the wells were and the surveys they were in and could see the surveys that were taken in these wells, I might agree that those wells did not tend to go up-dip. However, normal drilling operations to control direction is generally performed by weight on the bit. We can almost always make them go up-dip.

Q But when you speak of your general knowledge that wells tend to go up-dip as they're drilled, you are speaking generally; is that so?

A Yes, I'm speaking generally.

Q Now, direct your remarks specifically to this field.

A Or those three wells?

Q Or those three wells.

A But if I were to drill a well today on the edge, any edge, I believe I could make it go up-dip by controlling the weight of my bit.

Q Well, yes. But also if one wants to drill it straight, can he make it go straight by controlling the weight of the bit, too?

A By using centralizers and other devices, it can be improved.

Q Yes.

MR. BUELL: That's all.

RECROSS-EXAMINATION

BY MR. PORTER:

Q Mr. Curry, would the bit have a tendency to go up-dip without additional weight?

A Well, a variation of additional weight is kind of a relative thing. It would depend from any weight which you were drilling, if you increased the weight, it would tend to make the bit go up-dip more.

Q But I'm talking about just the natural laws of drilling, so to speak. Would it cause a bit to tend to go up-dip?

A Yes, sir.

MR. PORTER: Anyone else have a question of the witness?

(No response.)

MR. PORTER: You may be excused.

MR. KELLAHIN: If the Commission please, that concludes our case. I would like to offer Exhibits R-1 through R-8.

MR. BUELL: We would object to the introduction of Exhibit R-5. The witness testified that he had no knowledge of the controls used, that it was not prepared by him. It was hearsay taken from somebody else's information and that he had no personal knowledge of why or where this line came from.

MR. KELLAHIN: If the Commission please, R-5 is simply based on the prior exhibit which was fully identified and discussed and this is merely a close-up of the 40-acre tract involved in the same area.

I would also point out that it was offered as Exhibit 9 in the prior case and was accepted at that time with no objection. It's in the record already because we've already offered the evidence.

MR. BUELL: This is another hearing.

MR. PORTER: The Commission will overrule the objection and admit Exhibit No. 5-R along with the other Samedan exhibits.

Mr. Buell, would your witness yield to one more question?

MR. BUELL: Certainly, sir.

MR. PORTER: I don't think it will be necessary for you to take the stand. The record will show you're previously sworn.

WILLIAM R. GREENE,

a witness, having been previously duly sworn according to law, upon his oath testified as follows:

RECROSS-EXAMINATION

BY MR. PORTER:

Q You testified as to how many productive acres you thought were in this quarter, quarter section. Would you care to testify as to how many acres you think are productive?

A I think it's probable that the entire 40 acres is productive.

Q You think it's possible in the entire 40?

A That's one thing we'd like to find by drilling this well is to correlate this core data, run tests on the core data and determine from that, if we can, where the actual oil-water contact in this area is. If we find that it's deeper, then we may even have other drilling locations.

MR. PORTER: Thank you. Mr. Kellahin.

RECROSS-EXAMINATION

BY MR. KELLAHIN:

Q In view of the question and answer, I would ask the witness if he is familiar with the testimony that was offered in the civil case of Federal District Court in which Shell was a party, being the Northgate Development Company versus Shell Oil Corporation.

MR. PORTER: What was the description of that case?

MR. KELLAHIN: Northgate Development Company versus Shell Oil Company, Case No. 8871, United States District Court.

A I'm aware of it but I'm not familiar with the testimony.

Q Are you aware that a Shell witness testified in the case that they were primarily concerned with encountering a dry hole in the north well location?

MR. BUELL: Could Counsel cite the remarks that he is referring to?

MR. KELLAHIN: Page 9 of the deposition of Mr. Jack D. Duran. He stated in answer to a question, "Now, you refer to a small target, upon what do you base your aspersion that was a small target? What geological information?"

Answer, "The geological information is that there is control off of this lease to the northwest; there is control on this lease to the southeast, drilled a dry hole. And the oil-water contacts producing, or the approximately oil-water contact in a horizon would have to be established and if we drilled into this horizon down then or beyond the oil-water contact it would have been a dry hole. Therefore, it is difficult to hit our target somewhere structurally higher than this oil-water contact. To the best of my knowledge, anything beyond the 330-foot level on the east would have been a dry hole."

A Well, subsequent to that testimony we have additional information that we obtained from drilling Sanger No. 6. At that time, as your testimony there reveals, we thought the oil-water contact was at minus 614 feet. After we drilled this well we found that it was not, but deeper and now we don't know where it is.

Q And now you don't know where it is?

A It's somewhere below the bottom of our well.

Q Testimony has been offered here today that does indicate that the oil-water contact is not in the Sanger 6 well.

A It indicates that it is some place below that, yes, sir.

Q But on what do you base your conclusions that all of this acreage can be productive?

A Because we don't know where the oil-water contact is.

Q Well, you don't know whether it is or isn't there?

A That's true.

MR. KELLAHIN: Thank you.

MR. BUELL: Just one or two questions.

REDIRECT EXAMINATION

BY MR. BUELL:

Q Not knowing where it is means it could be almost anywhere and make the entire acreage productive; isn't that correct?

A That's my opinion.

MR. BUELL: Okay.

RECROSS-EXAMINATION

BY MR. KELLAHIN:

Q That answer ignores the dry holes to the south and north of that. They both had oil contact; didn't they?

A It doesn't ignore those wells. They're some distance away. It doesn't ignore the original oil-water contact that was found first of all, but in this edge of the field it could be different. We found it different.

Q You found it differently only in the Sanger 6 well?

A Only the Sanger well, that's the closest well.

Q And is that the reason that you only penetrated Moro and San Andres formation?

A At the time we are still concerned about the oil-water contact.

Q And you didn't know what would happen if you went another ten feet up the hill?

A That's speculation, that's true.

Q The whole thing is speculation, the productivity of that acreage; isn't it? It is all speculation as to whether the whole acreage is productive or not?

A We don't know whether the entire 40 acres are productive. We hope it is.

MR. KELLAHIN: Thank you.

MR. PORTER: No further testimony to be directed in this case, we will hear your closing statements at this

time.

MR. BUELL: Mr. Commissioner, just briefly on behalf of the applicant. Much has been said about our gaining structure and we certainly hope to gain structure by moving, there's no doubt about that. Much has been said about gaining some more permeability; certainly we hope to gain this. However, we feel that any structure that we may gain or any permeability we may gain could more than be handled by a reasonable proration factor applied by this Commission.

This is a high-risk well. It's a marginal venture and consequently the costs and the productivity of the well become paramount in a decision whether to drill it or not. We think the 58 percent proration factor the Commission assigned earlier is almost the maximum that we can live with at this time. It's my understanding that Shell is presently studying whether they can feasibly bring in the well at this time. We hope with this well to find out more reservoir information on this eastern flank. We hope to find out whether the line as drawn on Exhibit R-5 is, in fact, correct.

Again, we would point out to the Commission that the testimony of this witness does not know the source of control for this line and he's speculating and we think the entire line is speculative. I think it can fairly

be said that Samedan did not know how much of this acreage is productive. We don't know this. We hope to find out some of this information with the well that has a chance of being a good well, or at least an economically feasible well.

We feel that the granting of the application would allow us to produce this acreage. We would also point out that although we are close to the lease line, and that's what this hearing is all about, we are 1200 feet from the nearest offsetting well on the west which is a substantial distance. Again, we think correlative rights would be protected by reasonable proration factors and we think the granting of the application would prevent waste by allowing production from this 40-acre tract. I have nothing else.

MR. PORTER: Mr. Kellahin.

MR. KELLAHIN: If the Commission please. The witness at the outset, Mr. Greene, testified that there were three reasons for moving the well. Number one was a topographical reason, the parking lot of the shopping center. Number two, to protect correlative rights and number three, to prevent waste.

Now, taking the first one, the topographical reason, I would point out that, and the witness in response on cross-examination admitted that any dispute they had

with Northgate Development Company and its successor was settled in Case 8871 in United States District Court in Albuquerque, back in 1971. Excuse me, the case was heard in Roswell. The topographical reason is simply this: There is a parking lot and somebody may want them to move. They have no right to demand that they move and the witness so stated. And their only reason as I pointed out is to say they want to get out of the parking lot. Well, the well was there; it's already drilled. The parking lot as of last year had not been completed. I don't know whether it has been now or not; but in any event, Shell owned the acreage. They sold it to the people; they knew the circumstances which they were faced with when they bought it. And if it poses a problem to the shopping center, it's a problem which they assumed when they purchased the surface of the acreage and any dispute has already been litigated between the parties.

Now, when you come to the question of protecting correlative rights, certainly as Mr. Buell has indicated they're getting 180 feet from Samedan's lease line. There is required a survey to be sure they don't get closer. The area of drainage, if we just take it on the basis of radial drainage alone, so a substantial part of the oil recovered by that well is not going to come

from the Samedan Lease; it's going to come from the Moon Leases owned by Samedan and Mr. Cusack and his brother. In that event the whole area of recovery, as we have pointed out, and there may be some dispute as to whether that minus amount is to the right or left, but a rather confident group of engineers have established that there is a cutoff point, a zero line crossing through the Sanger Lease and at least the 40-acre portion of the 40-acre lease, and that certainly a good part of that lease is not productive in the Hobbs Pool. Now, by no stretch of the imagination can 58 percent of that unit be productive from the Hobbs Pool. There is absolutely no testimony in here that would support such a conclusion. The only testimony regarding the penalty factor that has been offered in this hearing and the prior hearing does not show that 58 percent is correct. The only thing offered along that line says that 28 percent factor would be the right factor based on the productive acreage.

Now, there may be some quarrel with our conclusion as to what is productive acreage, but I think it's highly significant that Shell has not made the slightest effort to come out with any testimony to counter our conclusions. They've offered nothing which they can base a conclusion that X number of acres in a unit are productive. They have speculated that maybe if that

line is wrong, the whole tract is productive. This is highly speculative and certainly not substantial evidence on which this Commission can base any order.

Now, all of the testimony goes further to show that an approval of this unit of this well location will result in that portion of oil which lies in the reservoir to the east of their proposed location, it simply won't be produced except, as Mr. Max Curry pointed out, if they get enough oil off of somebody else's lease to develop a well going long enough by getting a little more oil from their lease than they had on it. Now, that's a pretty high price for us to pay in order that Shell can produce oil underlying their tract. The only evidence that has been offered here is that any production from this well is going to be produced from the area to the west and it would damage correlative rights of those operators and that waste will occur. We ask that the Commission deny the application.

MR. PORTER: Anything further to be offered? Mr. Cusack.

MR. CUSACK: I kind of feel like I'm sitting out in the left field of this thing, but I didn't want to ask any questions for fear you might think I had a fool for a client, Mr. Porter. But historically, we go back a long way, probably longer than anyone in this room except

Mr. Porter. These wells were all drilled, with the exception of No. 6, back in the mid-'30's, '33, '34, '35. I tried to pin it down but it sticks in my mind that my dad, who drilled the well that the Moon Lease has on the Shell Lease and at one time they let it go, which has nothing to do with this.

But listening to all this testimony, from layman's standpoint which I am and which I am an operator and not an operator, but my brother and I own the other half of this working interest. Now, we're not as big as Shell. We are not as big as Samedan. We have some little production down there and we'd like to keep it. Everybody had a fair shot at drilling that thing up for the last 40 years. And now it appears to me that what they're attempting to do is move up-structure, get better porosity, get a better permeability and drill and drain Samedan and the J. P. Cusack interest. Now, that would be delightful. If you set that precedent I think you're going to find a heck of a lot of applications come in from everybody that wants to move toward wells that have a greater capacity to produce oil. The mere fact that you have a shopping center is really not quite material because I am sure Mr. Porter and everybody else knows you've got wells drilled all over Hobbs. We had one right next to the Hardin Hotel, if my memory serves me,

and it still may be there. That hotel existed, I guess, for years and years and years and was sort of unique in that way. But anyway, we didn't have any objections from the occupants of the Hardin Hotel.

I had an occasion one time down there and I got a grid survey of that entire town and it's sitting on prime core. I think you could blow the whole thing up if you put a proper detonator to it. So just the fact of moving it is immaterial. I think Shell's real reason is they want to make more money. I think they want to move up and take our oil. I think they want to be in our structural position which is unitization which is what their great push is for. They just want more and I don't think it's fair and I think this Commission was set up to prevent waste, primarily, and to protect correlative rights. And incidentally, historically, as Mr. Porter knows, my family has a little bit to do with proration at its very outset back when oil was 10 cents a barrel. And we'd like to keep our oil. Of course, I don't know that $6 oil might be a nice thing, too. But anyway, I think along with Mr. Kellahin that they have not produced any substantial testimony upon which this Commission can issue an order and say that by allowing them to do what they propose to do they were going to save any oil or that they're going

to protect any correlative rights. They're going to waste oil and they're going to encroach -- I could use the word steal; I won't. I use the word encroach on our oil production and our correlative rights.

Thank you, Mr. Porter and Commission.

MR. BUELL: Just one brief comment after Mr. Cusack's observation that we want more. I would refer the Commission to the primary reserves that were assigned to the Samedan Moon Leases and the fact that they have now already exceeded those assigned reserves and if somebody is either wanting more or stealing oil, I think it's a two-way street it the finger gets pointed.

MR. PORTER: Anything further?

(No response.)

MR. PORTER: The Commission will take the case under advisement. The hearing will stand in recess.

(Whereupon, the Oil Conservation Commission hearing stood in recess at 11:55 a.m.)

C E R T I F I C A T E

I, CLAUDIA FAHRENHOLD, a Court Reporter, in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings to the best of my knowledge, skill and ability.

Claudia Fahrenhold
COURT REPORTER

NEW MEXICO OIL CONSERVATION COMMISSION

COMMISSION HEARING

SANTA FE, NEW MEXICO

Hearing Date NOVEMBER 27, 1973 TIME: 9 A.M.

NAME	REPRESENTING	LOCATION
Jason Kellahin	Kellahin & Fox	Santa Fe
John P. Cusack	Cusack Interests	Roswell
Sumner G. Buell	Montgomery, et al.	Santa Fe
William R. Green	Shell Oil Co.	Midland, Tex.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO
September 19, 1973

EXAMINER HEARING

IN THE MATTER OF:

The Application of Shell Oil Company for an unorthodox oil well location, Lea County, New Mexico

Case No. 5063

BEFORE: ELVIS A. UTZ, Examiner

TRANSCRIPT OF HEARING

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MR. UTZ: Our first case for today will be 5063.

MR. DERRYBERRY: Application of Shell Oil Company for an unorthodox oil well location, Lea County, New Mexico.

MR. BUELL: Mr. Examiner, I am Sumner Buell representing the applicant, Shell Oil Company. We have one witness, Mr. William Greene.

MR. UTZ: Other appearances?

MR. KELLAHIN: Jason Kellahin, Santa Fe, appearing for Samedan Oil Corporation, John P. Cusack and Michael Cusack.

MR. UTZ: Are there other appearances?

(No response.)

MR. UTZ: Do you have some witnesses, Mr. Kellahin?

MR. KELLAHIN: I have two witnesses.

MR. UTZ: Will you all stand and be sworn, please?

WILLIAM R. GREENE,

a witness, having been first duly sworn according to law, upon his oath testified as follows:

DIRECT EXAMINATION

BY MR. BUELL

Q Would you state your name, please?

A William R. Greene.

Q Mr. Greene, that is a Greene with an e on the end; is that correct?

A With an e.

Q By whom are you employed and in what capacity and where?

A Employed by Shell Oil Company as a staff production engineer in Midland, Texas.

Q Have you previously testified before the New Mexico Oil Conservation Commission or one of its examiners and had your qualifications accepted as a matter of record?

A Yes, I have.

Q Are you familiar with what Shell seeks in Case No. 5063?

A Yes.

Q Would you briefly explain what that is?

A We seek approval of an unorthodox location for a replacement well in the Hobbs (Grayburg-San Andres) field.

Q What is your present facility there?

A We presently have one well on this lower place tract, Sanger Number 6.

Q Where is it located?

A It's located 1200 feet from the north line, 470 feet from the west line, Section 27, Township 18 South, Range 38 East, Lea County, New Mexico.

Q Is that presently in an unorthodox location?

A It is.

Q Why is it in an unorthodox location at the present time?

A Well, this well was drilled in 1970. There were plans

to build a shopping center on this city block in the City of Hobbs. We moved this well to the southeast to get out of the entranceway of that shopping center.

Q I refer you to what's been marked for identification as Applicant's Exhibit No. 1. Would you briefly explain what that is, please?

A This is a map of the east flank of the Hobbs (Grayburg-San Andres) field, showing the well locations, the producers of these lease certificates. Section 27 on this plat is Shell's Sanger lease; and on this lease, Sanger Number 6 is shown; and the proposed location of Sanger Number 6Y is also shown by the railroad track running down through the center of the page.

Q Sanger Number 6Y of the applicant's would be located in the railroad right-of-way; is that correct?

A That's right. We have three wells in this right-of-way at the present time.

Q I refer you to what has been marked for identification as Applicant's Exhibit No. 2. Would you please explain what this shows?

A This is a close-up of the same area around the proposed location which shows some of the houses in this area. In fact, this entire area is developed into family dwellings or is occupied by this cross-marked area. Noted is the new shopping center. It also shows Turner

Street angling across the left-hand corner of this proration unit and that is a main artery going through the City of Hobbs. It also shows a railroad track and its right-of-way in the lower left-hand corner of this proration tract. It shows the normal 330 by 330 location, the present location of Well Number 6, which is 470 feet from the west line and 1200 feet from the north line. It also shows the new location 180 feet from the west line and 1220 feet from the north line.

Q Am I correct in understanding that this location within the railroad right-of-way is the only unopened land in this proration unit?

A That's right. This is the only vacancy that's not occupied by houses, family dwellings or by planned construction of this new shopping center.

Q Would you give the Examiner some history of what you've experienced with the present Sanger Number 6?

A Sanger Number 6 was flooded January 17, 1970. It was potentialed on February the 17, 1970 for 35 barrels of oil, and five barrels of water per day with a gas-oil ratio of 2000 cubic feet per barrel. This was less than the 80-barrel top allowable; we attributed this at the time to either drilling damage as a result of drilling fluid invasion or of the well being completed to a basically low permeability rock. We fracture treated

this well in April of 1971 in order to improve its production should the well have been damaged by drilling fluids. That fracture treatment which consisted of 2500 gallons of jellious crude made no improvement in the well. We concluded from that result that this well is implemented in a low permeability area.

Q How deep was this well drilled?

A The total depth of this well is from 175 feet which is 634 feet below sea level.

Q During the drilling of this well, did you test any other formations?

A Yes, the well was originally drilled to a depth of minus 609. At that point we stopped and tested the supposed Grayburg zone, that zone swabbed at 100 percent water and swabbed down. The original oil-water contact was thought to be at minus 614 feet. However, we contained the drill to a depth of minus 634. This penetrated seven feet of the zone 1 porous interval of the San Andres. It wasn't until we penetrated this porous interval that we record any oil. The well is now producing from this interval ten barrels a day of oil, five barrels a day of water. We have accumulative oil production in this well of 23,191 barrels. The gas-oil ratio is presently 3500 cubic feet per barrel. This low ratio is indicative of the fact that this well

has not been depleted. It's still being fed by a surrounding reservoir, otherwise the gas-oil ratio would be much higher.

Q Do you have any information as to the nature of the formation in which the well is located?

A The location on this well so that the top interval of this Zone 1 porosity is 23 percent which is much better than the field average of 14 to 15 percent. Sanger Number 3 on this same lease penetrated 28 feet of Zone 1 porosity; we suspect that Sanger Number 6 also has that much Zone 1 porosity.

Q Based upon the fact that you have excellent porosity here and some thickness of formation, have you reached any conclusions as to why this well had been such a poor producer?

A We believe that it was either damaged by drilling fluid which this fracture treatment did not reach beyond or that we are in a localized area of poor permeability.

Q But if the formation had been damaged by drilling fluids the fracture should have cured that?

A It should have.

Q I refer you to what's been marked as Exhibit No. 3. Would you explain what that shows?

A This is a log cross-section through the Sanger lease well which we had logs on showing on the left-hand side as

Sanger Number 6 well and showing that we penetrated only the top seven feet of the porous interval. The well labeled Sanger Number 3 which is the third from the left shows that this porous interval is continuous, not separated by any impermeable streaks and has a pay thickness of approximately 28 feet.

Q I notice that you have a line drawn on this exhibit down here near the base of the logs. Would you explain that line with the question marks in it?

A That line represents the depth of minus 614 which was the estimate of the original oil-water contact in this field. As you can see, the porosity of Sanger Number 6 is below that depth.

Q Would you briefly explain what your proposed drilling program is for 6Y and why you feel that the proposed Sanger 6Y should be drilled?

A We propose to drill Sanger Number 6Y as a replacement of Sanger Number 6. We propose this location at the well 120 feet from the north line, 180 feet from the west line, Section 27, in the same township and range. We propose to drill this well in order to remove it from the shopping center parking lot in this busy section of Hobbs, New Mexico. We also contend that this will reduce waste by better drainage on this 40-acre tract by improving permeability slightly. We think we can

better drain this well, drain it on this 40-acre tract to a lower reservoir pressure and hence prevent waste from oil left behind and unrecovered. We also feel that a well with better permeability in this good porosity interval will protect the correlative rights on this 40-acre tract by allowing it to drain the acreage that's allocated to this well.

Q Is there a waterflood project proposed in this field at some future date?

A Yes, there is an engineering committee trying to unitize the north half and the south half of this field at the present time.

Q Would this well act as an injection well in that waterflood project?

A Yes, even if this well does not recover oil, it will be a good injection point. Let me add that we plan to cover this well from the Grayburg zone through Zone 2 porosity in San Andres which should provide good injection points in either the Grayburg or the San Andres Zone 1 and San Andres Zone 2. We plan to have these cores analyzed and from the capillary pressure tests that are run on the cores we feel that we can better determine what the actual oil-water contact is on this eastern flank and determine for certain how far the productive acreage in this area extends.

Q Do you feel that if this Application is granted that the drainage from the well on the western offsetting leases will be significant? Will there be significant drainage?

A Excuse me. Would you repeat that question?

Q If this Application is granted and this well is drilled, do you think there will be significant drainage to the western leases?

A I think there probably will be some drainage from the offsetting leases just as we now believe that those offsetting leases are draining our lease. That their recovery from a reservoir is related directly to the producing rate of wells completed in a reservoir with all other parameters being equal except permeability. We feel that since our 40-acre tract demonstrates excellent porosity and poor permeability that the offsetting lease is draining our acreage, in this case.

Q The well to the west is a top allowable well; is it not?

A Yes, it is, 80 barrels a day.

MR. UTZ: How many?

THE WITNESS: 80 barrels.

MR. UTZ: Which well is that?

THE WITNESS: Samedan's Moon "B" Number 2.

Q (By Mr. Buell) I hand you what's been marked as Exhibit No. 4. Would you please refer to that and

explain what this shows?

A This is a drilling cost estimate for drilling a straight hole at the proposed location. We estimate that the drilling cost will be $43,000 to drill and evaluate this zone. The completion costs for drilling and evaluation will be an additional $23,000 and the total is $66,000 which is the subtotal on the fifth line from the top on the right-hand side. The costs below that are estimates of the tangible equipment that will be moved from Sanger Number 6. Of course, we intend to plug and abandon Sanger Number 6 upon the completion of Sanger Number 6Y.

Q Now, I hand you what's been marked as Exhibit No. 5. Would you please explain that?

A This is our estimate of the cost that would be required to deviate this hole. You have two columns here, Case 1 and Case 2. Because of the uncertainty of what we might run into while we're deviating this hole, so there is a range of cost which we have estimated here in the two totals. It would be $12,725 probable cost and $20,600 including any sort of trouble that we may run into. This gives an average of about $17,000.

Q If Shell were required to correct this well, would they undertake that project?

A I don't think we would. This is a marginal project to

begin with and would not have been considered at all had it not been for the construction of the shopping center in this busy town district.

Q With correctional drilling an additional cost would be incurred as well as additional risks?

A There would also be additional risks moving the short distance to get this well 330 feet from the east line and would still place it fairly close to the existing well and probably in a similar permeability so that would entail additional risk which I don't believe Shell is prepared to take at this time.

Q Yet there are reserves in place there that would be unrecovered if some well is not put in there?

A We feel that there's a very good possibility that this 40 acres is productive. We feel that we've demonstrated that the good porosity that much of the leases along this eastern flank have produced more total reserve at this time than the calculations were that they would ever recover. And this could be for two reasons. Either migration of oil from the west or recovering oil from leases similar to this 40-acre tract with poor permeability on the east.

Q Do you feel that granting this Application would set an unofficial or unusual precedent in the Hobbs (Grayburg-San Andres) field?

A No, I think this is a unique case. It would not set any precedent because we were moving this location to accommodate the City of Hobbs and the contractors of this shopping center area and to lose the liability that Shell may have in this area.

Q Do you believe the granting of this Application would prevent waste and protect correlative rights?

A Yes, I do. I feel like by allowing Shell to drill at this unorthodox location with a straight hole, even though it's risky, I believe we could probably get a higher productivity well and adequately drain this very tight 40 acres which otherwise the oil on this 40 acres will be unrecovered and it will be wasted. I also feel like because of the nature of the reservoir on this eastern flank, this zone is very likely being drained now and that the correlative rights on this lease are not being protected at the present time.

Q Were Exhibits 1 through 5 prepared by you or under your supervision?

A Yes, they were.

MR. BUELL: I move the admission of Exhibits 1 through 5.

MR. UTZ: Without objection, they will be entered into the record of this case.

CROSS-EXAMINATION

BY MR. UTZ:

Q Mr. Greene, is there any other location on this 40-acre tract that you could drill this well at a standard location, say on the north end? First let me ask you, is this Exhibit No. 2, the top of the page north?

A Yes, it is. We would have drilled this well at a standard location when it was first drilled had it not been for the topographical considerations in the City of Hobbs. We were aware that this area would be built up at some time and that there were plans at that time for a shopping center there on this acreage, so our original well would have been drilled at the 330 location had it not been for the topographical locations. At the present time, this whole area is under construction or is occupied by family dwellings. There are no other drilling locations except the right-of-way in this railroad track.

Q This street, referring to Exhibit No. 2, the street on the north edge running east and west, is that Turner?

A Turner Street is the diagonal running across the corner of this proration unit, the lower left-hand corner.

Q Where is the Lovington Highway from this?

A That is the Lovington Highway; it goes straight out to Lovington.

Q It goes straight across the Lovington Highway?
A No, it turns. It is the Lovington Highway.
Q What is this street at the north edge?
A It's Bender Boulevard.
Q Bender.
A The one on the left is Grimes.
Q Now, I gather from your testimony that your contention is that the entire 40 acres productive of oil is in the San Andres?
A Yes, it is.
Q But you do admit that you have a problem recovering it in that tight formation?
A Yes.
Q Do you think the entire 40 is tight?
A We don't really have much control over the geology on this side. We don't have good control over the oil and water and we don't have good control over the permeability. I think that's one thing this well would give us. There are several other drilling leases besides this one. I think it's a good possibility that by drilling and coring this well and running tests on the cores that we could prove that some other drilling could be done in this area.
Q Now, from a normal 330, 330 location this well is 230 feet to our south and a hundred fifty feet to our west;

is that correct?

A Yes, that's right.

Q Then assuming radial draining, you will be draining an area over into the south and the west tracts?

A That's right.

Q Are these dimensions?

A Assuming the radial drainage, we would be draining some of the adjoining lease, but on that point we believe that the other lease at the present time is draining the north end of our lease because of the poor permeability in that area. That total recovery is related directly to the productivity of the well. If the reserves are under there, then it's being drained now.

Q Even though that well is in the extreme southeast or southwest portion of the 40-acre tract on the west, you feel it is draining your 40-acre tract?

A We feel that it is. This proposal of the proposed location will still be 1200 feet from the closest offset well.

Q Do you own the tract south of this proposed location?

A Yes.

Q And Samedan owns the tract on the west?

A Yes.

Q Now, in the tract south of you, is that royalty interest the same as the Number 6 tract?

A Yes, it's the same throughout this section, Section 27.
Q So that by moving this location to your proposed Y location, you would only be harming correlative rights to the extent that you would drain Samedan?
A Only, I agree that we would be draining, possibly draining, some of the oil under Samedan's lease; but equalizing that with the fact that we think they are draining us now. So this is not unusual in a field.

MR. UTZ: Are there any other questions of this witness?

MR. KELLAHIN: Yes, sir. Just a few.

CROSS-EXAMINATION

BY MR. KELLAHIN:

Q Mr. Greene, Mr. Utz asked about the well on the south. All of those wells are unorthodox locations; are they not? The five wells immediately south of your present location.
A They were drilled in the 1930's and I'm not sure that they had any orthodox locations at that time.
Q Well, under the present controls they were unorthodox?
A They would be unorthodox now.
Q Every one of them?
A I'm not sure. Let's see. I believe that's right.
Q How about on the east side at the lower part of the section there. Could you give me the distance how far those are from the lease line or the unit line to the west?

A I don't have those exact locations. It appears to me that they're right on the line.
Q Right on the line. So then there's a dry hole on the east of that; is that correct?
A That's right.
Q So that's the only control you have it is dry on the west?
A That was a farm-out well that was drilled in the 1950's. The records that we have on that well indicate that it never reached the Zone 1 permeability where we're now producing, so I think that is a definite drilling possibility.
Q Reached the Grayburg formation?
A Yes.
Q It was dry in the Grayburg?
A They swabbed, according to the scanty records that we have, two drums of oil and one drum of water and abandoned the well.
Q But they did not drill the San Andres; is that your testimony?
A That's indicated by the records that we have which are fairly scanty.
Q Now, would it be possible that your Number 6 well is at the eastern edge of the reservoir?
A It is possible.
Q There are no wells on the east of it; are there?

A Well, there are no wells on the northeast of it.
Q There is no well due east of it; is there?
A Not due east of that well.
Q The only wells east of it would be in the south part of the section?
A That's right.
Q Is is structurally lower than say the Samedan well, for example?
A Yes, it is.
Q Quite a bit?
A It is lower. We have not logged the Samedan's wells so we weren't able to determine how much deeper, how much lower they were.
Q Now, you talked about the fact that Samedan's draining you. You're proposing to drill 180 feet from the west line of your proration unit. How far is Samedan's well from the east line of their unit; do you know?
A No, I don't.
Q Would you accept 1120 feet?
A From the east line?
Q Yes, sir.
A Yes, sir, I'd accept that.
Q And the only well to the south of that would be 1150 feet; would you accept that?
A That looks reasonable.

Q But you want to get 180 feet from their line?
A They're also very close to their west line.
Q Yes, but they own the other half of that section; do they not?
A That's right.
Q Now, as I gather, you will not object, do not choose to deviate the well from your proposed location to bottom it at a standard location 330 from the line?
A I don't believe we could afford to drill the well. It's a risky project to begin with.
Q Actually, you'll be bettering your structural position considerably by moving to the west; don't you?
A We estimate that we'll gain from 10 to 20 feet of structural position.
Q There's no requirement by this parking lot operator or anybody else involved that you do move this well; is there?
A I don't believe they could legally make us move the well since it's already at an existing location.
Q It was there when they came into the picture; was it not?
A Well, they already owned the property when we drilled the well.
Q Did they not buy the property from Shell?
A Yes.
Q And Shell had a camp there at one time; did they not?

A They had -- I'm not sure that they bought the campsite. They did buy the pipe terminal and the office site from Shell.

Q Now, Shell, then I presume, reserved the surface rights to drill on this unit when they sold the surface?

A We had the right to drill the well, yes.

Q Was a tracer survey run on your well to determine where your production is coming from?

A Yes, we ran a tracer survey this past summer to determine whether the fracture went back to April of 1971, give some indication of where the present production is coming from.

Q Where is it coming from?

A It's coming from a porous interval in the bottom of the hole.

Q You do not get the production from the Grayburg hole?

A None, except at the bottom of the hole.

Q That would depend on how the tracer survey is done to make an accurate reading; would it not?

A I don't know how it could have given us any other reading.

Q Where is the porosity in the Grayburg?

A There's a low porosity interval in the Grayburg at this location, but there's no producible porosity as far as we can determine in the Grayburg at that location.

Q So you haven't preserve rated that interval then?

A No.
Q Now, you've referred to this proposed waterflood project. Actually, the operator in the Hobbs Pool have been working for about three years trying to form a unit; have they not?
A That's right.
Q The location of injection wells would be somewhat premature at this time; would it not?
A I think they would be, but I believe that the wells around the perimeter would make good locations for injection wells. They usually do.
Q Now, you were talking about the low productivity of the Number 6 well. Could you give us a production from the other five wells to the south of that?
A They're all top-level wells, 80 barrels a day.
Q They're all crowding to the west; aren't they, of their proration units?
A They're on the west side. As far as I know, they're all at legal locations.
Q Well, I won't question the legality of the wells considering the time they were drilled. But on the present rules they were on the west side of the unit?
A They're on the west side of their proration units. It appears that there are at least three 130 feet from the west line.

Q Now, you said that the gas-oil ratio indicated by the pressure had not been completed. Where did this pressure come from?

A From the well, from the surrounding walk in the reservoir either under this proration tract or from the reservoir as a whole.

Q What's the producing mechanism in this reservoir?

A This particular zone is probably partially water drive and partially depletion.

Q Is your Number 6 making any water drive?

A It's making five barrels of water, but it's not watered out by any means.

Q Could you give any estimate of what direction the pressure's coming from, the water drive?

A On this particular lease, I can't tell you where the pressure that's heating this well is coming from. It could be from the east or the west.

Q From the east or the west?

A We feel.

Q The water driver reservoir, your pressure, would be coming from in the reservoir?

A I'm not calling this a water-drive zone. I say it may be partially water drive. I don't believe that's been resolved by the engineering committee that is working on this field.

Q It would be more apt to be coming from the south and west; would it not?

A Are you speaking of the pressure?

Q Yes, sir. Your water-drive pressure or your gas pressure.

A Of course, that's what we're trying to find out here. We think there's a good possibility that it could be coming from the east.

MR. KELLAHIN: That's all. Thank you, Mr. Greene.

MR. UTZ: Any other questions of the witness?

MR. BUELL: If I may ask just a few, Mr. Examiner.

REDIRECT EXAMINATION

BY MR. BUELL:

Q Mr. Kellahin mentioned something about the shopping center owners forcing you to move this well. Is it not so that the present Number 6 is in a parking lot or will be in a parking lot for a shopping center?

A Yes. They have plans to extend their parking lot to this area and the last time I talked to their developer, they planned on putting a building at the location when the well is moved.

Q And if the well exists there will be pedestrians and traffic around the well, as I understand it.

A Yes. This is a very busy street and we expect that there will be both pedestrians and automotive traffic.

Q And this well would present some hazards to the public, to the motoring public, the pedestrians in the area; is that correct?

A We feel that it would.

MR. BUELL: I have nothing more.

RECROSS-EXAMINATION

BY MR. KELLAHIN:

Q Mr. Greene, the well is quite adequately housed and protected from the public; is it not?

A We've tried to make it as safe as possible by putting a wall around it.

(Whereupon, Samedan's Exhibits Nos. 1, 2, 3 and 4 were marked for identification.)

Q (By Mr. Kellahin) Mr. Greene, I hand you what has been marked as Samedan Exhibit Nos. 1, 2, 3 and 4. Does that correctly represent the present appearance of your Number 6 well?

A Yes, it does.

Q And there's a fence completely around the well; is there not?

A There's a wall about ten feet high, I'd say, extending around the well. We've tried to make it safe from kids and that sort of thing.

Q So it actually poses no hazard to pedestrians, traffic at the present; does it?

A I think there is always a possibility while we are working on the well something could happen.

Q That's always a possibility on any well; is it not?

A It's always a possibility.

Q Now, in regard to the street, your proposed location is actually closer to Turner Street than your present location, is it not?

A Pardon me.

Q The street right-of-way, your present location is further from the street right-of-way than your proposed location; is it not? It appears from your exhibit. It appears to me that it is.

A They appear to me to be the same from the Turner Street right-of-way. It could be that the proposed location is slightly closer; it's certainly out of the congested parking area, however.

Q Well, there was no parking area when you drilled the well; we agree.

A No, there is no parking area there now. It's just under construction. I might add, or may I? That none of those pictures shows the construction that's underway and had there been one taken toward the north you could see that there is a large reinforced steel building being constructed just to the north of that well.

Q I believe one of them shows that.

MR. UTZ: Yes, on Exhibit No. 1.

Q (By Mr. Kellahin) Has Shell represented to the parking lot developer that they will move this well?

A We've told them if we were able to get a well of adequate production at the new location, we would plug and abandon the existing well.

Q You're not going to plug and abandon it until you drill the new one?

A That's right.

Q And if it's not a good one you'll keep the old one?

A That's right.

MR. KELLAHIN: At this time I would offer Samedan Exhibits 1 through 4.

MR. UTZ: Without objection, Samedan's Exhibits 1 through 4 will be admitted into the record of this case.

MR. KELLAHIN: That's all.

RECROSS-EXAMINATION

BY MR. UTZ:

Q Because of a non-standard location, would Shell be receptive to accepting a penalty factor based on the distance moved from a standard location, Mr. Greene?

A Ratio of the distance?

Q Yes.

A We have run some checks on this well. Of course, it's the recovery, the total amount recovery is a little

uncertain. We estimate that with our initial production rate of 60 barrels per day, this would be an economical well. I'm not sure what the ratio of the distance would be.

Q I'm not sure. I thought maybe you'd worked it out.

A I only worked out the distance that we would still be from the Samedan's Moon "B" Number 2 which would be in excess of 1200 feet. We're only moving 150 feet closer to the line than the standard 330 feet would be.

Q 60 barrels would be 75 percent of 80 barrels; right? 80 barrels is the expected allowable approved.

A Right.

Q So if your penalty factor was 25 percent, it would still be an economical situation?

A Yes, I believe it would.

MR. UTZ: Other questions?

RECROSS-EXAMINATION

BY MR. KELLAHIN:

Q Would you be willing to make a bottom hole survey to determine what the bottom is bottomed at?

A Assuming we drilled a relatively straight hole?

Q Well, assuming you drill a hole. Will you make a bottom hole survey to determine where it is actually bottomed?

A Yes. You mean a deviation survey to determine the angle?

Q I mean a directional survey.

A Yes.

MR. UTZ: Well, that brings up another question.

RECROSS-EXAMINATION

BY MR. UTZ:

Q How straight is it practical to drill a well of this nature? In other words, how much closer to the 180 feet from the west line do you think you could get at the bottom of the hole?

A I think we can. I'm not the drilling engineer, but I think we can assure the Commission that we can stay within the bounds of the State rules, whatever those are, as far as deviations.

Q The State rules would put you clear over on the Samedan lease since you're only 180 feet. I guess my question would be can you bottom the hole 180 feet from the west lease line?

A Well, I feel like we can get the bottom of the hole within 50 feet. This is a very shallow well. With good deviation control, I believe we could assure the commission that we would be at least within 50 feet from the proposed target.

Q If you deviated to the west to bring it over to about 130 feet from the lease line.

A That would be a possibility or the other direction for that matter.

Q We understand that. Of course, I don't think anybody would object if you went in the other direction.

MR. UTZ: Other questions?

(No response.)

MR. UTZ: The witness may be excused.

MR. BUELL: I have no other witnesses.

MR. UTZ: Why don't we take a short coffee break while they're pasting up the exhibits.

(Whereupon, a brief recess was held.)

MR. UTZ: The hearing will come to order. You may proceed, Mr. Kellahin.

LEON VEEDER,

a witness, having been first duly sworn according to law, upon his oath testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?

A Leon Veeder.

Q Mr. Veeder, by whom are you employed and in what position?

A Samedan Oil Corporation as a staff engineer.

Q Where is it located?

A Ardmore, Oklahoma.

Q Have you ever testified before the Oil Conservation Commission or one of its Examiners?

A No, not New Mexico.
Q For the benefit of the Examiner, would you briefly outline your education and experience as an engineer?
A I have a B.S. degree in petroleum engineering from the University of Tulsa and 21 years of experience.
Q Where was your experience? When did you graduate from college?
A In January, 1952.
Q Where did you go to work then?
A I started working for Skelly Oil Company in Southern Oklahoma.
Q Have you worked for other companies?
A Yes, I have. I worked for an independent oil producer in Kansas; I worked for Home State Production Company in Tulsa and have been with Samedan for over 13 years.
Q During all of this time was your work as a petroleum engineer?
A Yes, it was.

MR. KELLAHIN: Are the witness' qualifications acceptable?

MR. UTZ: Yes, they are.

Q (By Mr. Kellahin) Mr.Veeder, you are familiar with the Application of Shell Oil Company in Case 5063; are you not?
A Yes, I am.

Q Have you made an examination of their proposal and its effect on Samedan?
A Yes, sir.
Q All right. Referring to what has been marked as Samedan's Exhibit No. 5, on the wall, would you identify that exhibit and discuss the information shown on it?
A Exhibit No. 5 is a Grayburg marker structural contour map. This map was constructed on the log marker in the lower Grayburg formation. This mark is the same mark that was used by the engineering committee in the recent Hobbs field study. All the tops are essentially the same, other than the Shell Sanger Number 6. We picked the Grayburg marker about 19 feet higher than the engineering committee did.
Q Now, you refer to the engineering committee. Would you identify this engineering committee; what is it and who constitutes it?
A This engineering committee was a group of people representing all of the field operators which were consigned by AMOCO in an effort to study this reservoir for purposes of unitization and possible secondary recovery.
Q How long has that engineering committee been working?
A I would say approximately three years.
Q Have they had available to them substantial amounts of

information on the Hobbs Pool? Have the operators made available to them their core information and other information?

A Yes, as far as I know. Every operator in the field availed all of his information to this committee.

Q Now, in connection with your Exhibit No. 5 is there anything else you want to point out on that exhibit?

A Only that this is the 40-acre proration unit in question. It does show the existing structural position of the Shell Sanger Number 6 and their proposed location of Sanger 6Y.

Q And he is in the Grayburg?

A Yes, sir.

Q Now, referring to Exhibit No. 6, would you identify that exhibit and discuss it?

A This map is the top, the San Andres structural contour map, and it shows the structural position of the Shell Sanger lease relative to the field proper as well as the Sanger Number 6 well and the proposed Number 6Y location. In red is the 40-acre proration unit in question. In green are Samedan's leases in the northeast quarter of Section 28. Also on this map is, in the brown, a line designated as A, A prime, which depicts a cross section. This cross section has been drawn through ARCO's Moon Number 3, Number 2A, Samedan's A, Number 2 Moon and our

Moon B2 and Shell's Number 6 Sanger.

Q Referring to what has been marked as Exhibit No. 7, would you identify it and discuss that, please?

A Exhibit No. 7 is the Cross Section A, A prime, as shown by the brown line on Exhibit No. 6.

This cross section has logs for the two ARCO wells, stick diagrams for two Samedan wells which have no logs and the Shell well has a log. The top of the Grayburg marker is indicated by this line (indicating), the top of the San Andres zone is indicated by this line (indicating), the cross section is hung on a minus 400 feet and the cross section indicates the existence of structure in the area of the field. It likewise shows the lease boundaries between Samedan's Moon "B" lease and Shell's Sanger lease. It also shows the proposed Shell Sanger Number 6Y location. It further indicates the structural gain that Shell might enjoy by moving their well from the present 6 location to the proposed 6Y location.

Q In this reservoir is your structural position of any importance?

A I would say that structural position is definitely significant.

Q Is this a significant advantage that Shell would gain by moving to the west?

A Yes, sir. I believe that it would be.
Q Now, you say you have no logs on the Samedan wells. How were the tops determined on those two wells?
A The tops were picked by drilling samples and, of course, the stick diagrams are hung to the minus 400 subsea with the TD's depicted at the bottom of each well.
Q Do you have anything else in connection with that exhibit, Mr. Veeder?
A I believe not.
Q Now, returning to what has been marked as Exhibit No. 8, would you discuss that exhibit?
A Exhibit No. 8 is the San Andres Zone 1 porosity foot map. The construction of this map, the pictures that were made by the Hobbs field engineering committee were taken from that report and posted to this map. In the case of the Shell No. 6 Sanger it was our finding that Zone 1, in fact, did have seven feet of net pay with an average porosity of 11 percent. Consequently, the value .77 as shown for their well which is contrary to the engineering committee report which did have the zero line going directly through their well. The other values in the immediate area were checked and found to be accurate.
Q Now, does that also indicate a structural advantage to Shell by moving to the west?
A It does not indicate a structural advantage.

Q A porosity advantage?
A But it would appear that they would gain porosity feet by moving to their proposed location.
Q Would that be a significant gain, in your opinion?
A In my opinion, the porosity feet in their proposed location would be greater by approximately a third, but relative to the area that they could effectively drain I could see no particular gain.
Q Now, what control do you have for the zero line on that exhibit?
A The zero line on the Exhibit No. A coincides with the engineering subcommittee zero line with the exception of this one location. Upon examining this map a little closer, you will notice that there are dry holes -- should I give all those locations?
Q Yes, I believe so.
A There is a dry hole located in the southwest-northwest of 21; another dry hole located in the southwest-northwest-southeast of Section 21; there's another dry hole located in the center of the south half-south half of Section 27. These dry holes afford the basic control for this zero line.
Q Do you have anything else in connection with that exhibit?
A No, sir.
Q Now, turning to what has been marked as Exhibit No. 9, would you identify that exhibit, please?

A Exhibit No. 9 is a blown-up 40-acre proration unit taken from the Exhibit No. 8 map covering the 40 acres in question. We have simply transposed on this blown-up figure the zero line with this area on the north and east being San Andres non-productive, with the area to the south and west being productive. It also shows the existing Sanger Number 6 well; it also shows Shell's proposed Sanger Number 6Y location; it also shows the position of illegal location 330 feet out of the southwest corner. From this figure, we have determined that there are 11.44 acres of this 40-acre proration unit, in our opinion, productive.

Q If the proposed location is approved, would you recommend that the Commission treat that as an 11.44-acre proration unit?

A Yes, sir.

Q And adjust the allowable accordingly?

A Yes, sir.

Q Now, referring to what has been marked as Exhibit No. 10, would you identify that exhibit?

A Exhibit No. 10 is shot out of the Hobbs Pool engineering committee report dated March, 1972, and is the Zone 1 water-cut map. This portion indicates the existing water cuts as of 1-1-71, along with the productive limits of the field as depicted by this committee. This

figure also shows the 640-acre proration units that are in existence on Shell's Sanger lease. It further indicates that the productive limits as determined by Hobbs engineering committee was determined or defined by the original water-oil contact at a minus 614. Now, that was a field-wide determination.

Q You're not in complete agreement with that 614 figure; are you?

A Not in complete agreement, no, sir. We feel that there are exceptions to this.

Q And would one of the exceptions be the Shell's 40-acre tract involved here?

A It must be because their well is producing commercial oil at a subsea of minus 634.

Q Did the engineering committee make any study of a water drive in this pool?

A Let me answer your question this way: The zones of porosity in the San Andres are difficult to separate in that there is communication between these zones and the well bores as well as indirect connection with the porosity. The engineering committee as a whole did not elect to calculate reserves and the future performances of the field using partial water drive. This committee was under the direction of AMOCO and that was the consensus of that group, but conversely this report

was never approved by the operators' committee in the Hobbs field. I'm not at liberty to say how each operator felt; I don't know their reasons for turning it down. Samedan did not approve that report.

Q Do you find any occasion of a water drive in the south and east?

A It is my opinion that in the upper portion of the San Andres which is depicted to be Zone 1 by this committee and in the method that they've used in correlating, it is my opinion that there has been and there is an existing partial water drive in this part of the San Andres in this portion of the field, this northeast portion in question.

Q From what direction is that water drive coming?

A From the configurations shown in that engineering report, it's indicated that the water is coming primarily from the southwest but could very possibly be coming from the west and northwest as well.

Q Do you want to come back to your chair, Mr. Veeder? Now, Shell already has four or five unorthodox well locations immediately south of their proposed unorthodox location; do they not?

A Yes, sir.

Q And those locations generally are toward the west?

A Yes, sir.

Q Would it be feasible, in your opinion, for Shell to directionally drill to bottom at a standard location if they move to their proposed location? Would it be feasible?

A I could not answer that question. I think Shell would have to determine the feasibility.

Q Shell's economically unfeasible. You don't have an opinion on that; is that your testimony?

A No, sir. I have not run out any economics on this.

Q You testified in connection with the 40-acre proration unit exhibit, it was Exhibit No. 9, that in your opinion they're 11.44 productive acreage based on porosity development?

A Yes, sir.

Q Disregarding that for a moment and considering the drainage of a well located as Shell proposes to locate their well, should any penalty effect be applied to the well?

A Yes, sir, in my opinion it should be.

Q Do you have any idea of what penalty should be applied? Do you have any suggestion based on drainage only?

A I would suggest that a fraction of 11.44 divisible by 40, which calculates to be 28.6 percent be a factor applied to the top allowable for that 40-acre proration unit.

Q Well, do you have any other comments, Mr. Veeder?
A No, sir.
Q Supposing for a moment the Commission approves the location, is there any risk that the well would deviate from the vertical in this pool?
A Yes, sir.
Q Why is that?
A Drilling experience has indicated that drilling will normally climb updip if it's essentially uncontrolled. It has a tendency to climb structure.
Q What direction would that take it in, in this instance?
A Based on those structure maps that well would have to climb structure on the southwest.
Q And that would take it closer then to the Samedan than to the surface location?
A Yes, sir, that's right.
Q Would you ask if the Commission approves the location that Shall be required to make a directional survey?
A Yes, sir, I would.
Q And any allowable assigned to the well be based on the bottom hole location rather than the surface?
A Yes, sir.
Q What deviation could be anticipated in this pool; have you any estimate on that?
A I'm not experienced in drilling practices in this area.

I would only offer this bit of information in answer to your question that only 3 degrees of deviation would result in the possibility of the bottom of the hole being over 200 feet from the surface location, if the drift is in the same direction.

Q And if the drift were to the south and west, as you indicated it might be, that would put it on Samedan's lease?

A Yes, sir. The bottom of the hole would be on Samedan's lease.

Q Do you have anything else, Mr. Veeder?

A I believe not, sir.

MR. KELLAHIN: At this time, I'd like to offer into evidence Samedan's Exhibits 5 through 10, inclusive.

MR. UTZ: Without objection, Samedan's Exhibits 5 through 10 will be entered into the record of this case.

MR. BUELL: Mr. Examiner, we would object. They were not shown that they have been prepared by him.

MR. KELLAHIN: Were they prepared by you or under your supervision?

THE WITNESS: Under my supervision.

MR. KELLAHIN: We will again offer these exhibits.

MR. UTZ: Without objection, they will be accepted into the record, Exhibits 5 through 10.

Questions of the witness?

CROSS-EXAMINATION

BY MR. BUELL:

Q Mr. Veeder, you mentioned that there is an engineering committee formed for this pool; do I understand that correctly?

A Yes, sir. That's correct.

Q Did this committee as part of its work allocate reserves on operators' leases in the pool area?

A Yes, they did.

Q And they allocated reserves to the Samedan Moon lease, as I understand it?

A That's correct.

Q Am I correct in my understanding that Samedan has already pumped 98 percent of those allocated reserves in that lease and produced them?

A I don't have those figures at my fingertips.

Q Would you quarrel with my premise that they have or close to 98 percent?

A I'm just totally unprepared to commit myself on that question.

Q Do you know how much those wells have recovered on the Samedan lease?

A No, sir. I didn't bring any figures.

Q But they've been top allowables all the time they've been producing?

A Yes, sir, that's correct.
Q Would you deny that they've pumped 98 percent of their allowable reserves by the committee?
A 98 percent of the top allowable?
Q 98 percent of the assigned reserves to them.
A Are you speaking of the remaining primary or the secondary or the ultimate?
Q Total reserves assigned to them, primary reserves.
A Would Counsel give me a few moments?
Q Sure.
A Without calculating, I would say that the Samedan Moon leases have produced in excess of 90 percent of the ultimate primary oil reserves assigned by the Hobbs Pool engineering committee.
Q In excess of 90 percent?
A Yes, sir.
Q I understand that the Moon "B" was assigned 1,274,652 barrels.
A That's correct.
Q Am I correct in my understanding that the Moon "B" has, as of June 1, '73, had accumulative production of 1,249,522?
A I have available to me the accumulative production to 1-1-72. Would that be acceptable?
Q That was 1,191,224?

A Yes, sir, that's correct.
Q Then it's been producing for a year since then?
A Yes, sir, top allowable.
Q So would you quarrel with my figure of January, '73, of 1,249,522?
A No, I think not.
Q I think if you calculate that, that's approximately 98 percent.
A Yes, sir.
Q So Samedan has pretty well taken out all the oil assigned to them under this lease?
A That is a question that revolves around the validity of this report which I testified previously that Samedan did not approve.
Q Do you disagree with the assigned ultimate recoverable reserves there?
A Yes, I do.
Q How much do you disagree with it? Do you think the figure should be higher or lower?
A It should be higher.
Q Substantially higher or is it just a small amount?
A I would say that it should be substantially higher.
Q But the engineers on the committee disagree with you; is that correct?
A The engineers, yes, sir.

Q Now, you mentioned that because of water drive water is moving through this field from the westerly direction; is that correct, southwest, northwest and west?

A Yes, sir.

Q As that water moves through the field and waters out your Sanger Moon "B", unless there is a producing well on the east of that, I understand that the oil moving in front of that water will be lost and not recovered; is that correct?

A If there are no additional producing wells east of the Moon lease, that's correct.

Q Good producing wells, some of the oil will not be recovered?

A Correct.

Q Would you explain again for me on the exhibit, on the 40-acre proration unit, how you pick that red line that you drew there?

A Yes, sir. The red line on Exhibit No. 9 coincides with the zero line as shown on Exhibit No. 8 which is the San Andres Zone 1 porosity foot map. This line is controlled by the existence of several dry holes whose locations I gave previously. Also the fact that there are only .77 porosity feet in the Shell Sanger Number 6 existing well.

Q How deep were those dry holes to the north and west

drilled?

A According to this map -- do you want me to identify these again?

Q Certainly, please.

A All right, sir. The well located in the southwest and northwest of Section 21 was drilled to 4294. The well located in southwest of the northwest of southeast was drilled to 4255 feet. The well drilled on Shell's Sanger lease in Section 27 located at the center of the south half-south half was drilled to 4286 feet.

Q Did all of those wells penetrate the San Andres?

MR. MATTHEWS: I don't know; I would say so. I'm not on testimony. We have not examined the logs on all of those. Unless they have a San Andres top on them, why I would be unprepared to say. So if they have a San Andres top on them, it did penetrate at least sufficient to identify the San Andres.

Q (By Mr. Buell) So for purposes of your testimony here you don't know whether those three wells that you've used for control then hit the San Andres formation?

A That is not true, sir.

Q Correct me. I'm sorry.

A They all have subsea top pictures on the top of San Andres.

Q They do?

A Yes, sir.

MR. UTZ: Mr. Matthews, are you going to testify in this case?

MR. MATTHEWS: If I'm required, yes, sir.

MR. UTZ: Would you desire that we swear in Mr. Matthews to answer your question?

MR. BUELL: Fine.

MR. UTZ: Why don't you postpone your question until we're through with Mr. Veeder.

Q (By Mr. Buell) Mr. Veeder, you have no controls north and east of the Shell proration unit that's in question; do you?

A No, sir, I do not.

Q So the nearest controls that you have are in excess of half a mile away; correct?

A No, sir, that's not true on Shell's Sanger lease itself.

Q I'm referring to the three dry holes that you've used to pick the edge of porosity.

A Oh, pardon me. Besides those three dry holes, there is an additional dry hole in the southwest of the northwest of Section 21 that was drilled at 11,211 feet. So that would be an additional control point for these two dry holes.

Q Did the oil-water contact that's been used by the engineering committee enter into your considerations

at all in drawing your diagonal red line on Exhibit 9, I believe it is?

A No, sir, it did not.

Q So you have drawn that line based upon two wells that are located in excess of a half mile from the lease that were dry holes; is that fair?

A That's not entirely true. This porosity foot map is contoured in a customary fashion such that it would tend to grade in porosity feet from in field towards the estimated productive.

Q Are all your drawings here based upon your interpretation or use of information as to Zone 1 in the San Andres formation?

A These were not drawn specifically to Zone 1, no, sir. They were drawn specifically with respect to the top of San Andres, yes, sir.

Q Is the diagonal red line there that you've used on Exhibit 9 take into account that there are three producing zones in the San Andres, two of which are below this Zone 1?

A I would say yes. It was the engineering committee's finding that the oil-water contact was common not only to all the zones depicted in the San Andres, but also in the Grayburg which is also one common source of supply.

Q That oil-water contact is somewhat in question; is it not, where it has been used?

A In general, I'd say that it is a good -- it's a valid pick, but I also recognize that there are exceptions.

Q Well, your .77 figure. I'm not clear how you arrived at that over in this exhibit, you've labeled it over here. Next one over, 6, I believe is the number.

A Exhibit No. 8.

Q You assigned a porosity value of .77 to the Shell lease; is that correct?

A That's correct.

Q How did you pick that again?

A If the Commission desires, I'd like to ask our other witness, Mr. Matthews, to answer that question.

MR. UTZ: Would you refer that question to Mr. Matthews?

MR. BUELL: Yes.

Q (By Mr. Buell) Mr. Veeder, knowing the properties of this reservoir, would you quarrel with Mr. Greene's statement that at the present time the Samedan well is draining oil from underneath the Shell lease?

A Yes, I would question that statement.

Q You disagree with him?

A Yes, sir, I would.

MR. BUELL: I have nothing else.

RECROSS-EXAMINATION

BY MR. UTZ:

Q Mr. Veeder, does Samedan have any bottom hole pressures?

A No, sir, we do not.

Q Do they take bottom hole pressures of this pool anymore?

A Mr. Matthews might correct me if I'm wrong, sir; but it's my understanding that the gas-oil ratios are the only requirement. It's also my understanding that some special pressures were run for the purposes of this hearing committee report on the field-wide study and I'm speaking strictly from memory now. It's my understanding that the pressures in this area are generally in the 600-pound range.

Q Do you know whether or not those pressures are available at this time?

A No, sir, I do not.

Q Well, will Mr. Matthews be able to answer that?

MR. MATTHEWS: What is that, sir?

MR. UTZ: Are those pressures run in this latest survey available at this time?

MR. MATTHEWS: They would be if we have run them. I'm not familiar with whether they have run those that are required by the Commission, but I'm not familiar whether they have run them to date on these particular wells or not, sir.

MR. UTZ: You're saying you don't know whether there are any bottom hole pressures available or not?

MR. MATTHEWS: That is correct, as far as I'm concerned.

MR. UTZ: Can you find this out?

MR. MATTHEWS: Yes, we could from our division engineer in Midland, sir.

MR. UTZ: Does Mr. Greene know whether there are any bottom hole pressures available?

MR. GREENE: There have been bottom hole pressures done on key wells, but whether they're our key wells or not; I don't remember where they were run. They were used by the engineering subcommittee.

MR. UTZ: You can see what I'm after. I'd like to, if possible, I'd like to know the pressures on your well and the Samedan wells.

MR. GREENE: Our well is a pump well that has been since it was drilled. So we haven't run any pressures on it. I don't know if the Samedan's wells are pumping or flowing. We haven't taken any bottom hole pressures on our Sanger Number 6.

MR. UTZ: I think it is very apparent that there are not pressures available.

MR. GREENE: There are none on our well.

MR. MATTHEWS: We would meet any requirements from

the Commission.

MR. UTZ: I really don't know whether the Commission requires them.

MR. VEEDER: I believe Mr. Greene's statement is, there are key wells that are still surveyed.

MR. UTZ: Other questions of the witness?

(No response.)

MR. UTZ: You may be excused. Mr. Kellahin, do you desire to call Mr. Matthews at this time?

MR. KELLAHIN: Yes.

MR. MATTHEWS: I have been sworn in, sir.

MR. UTZ: Yes, I realize that.

CLIFFORD W. MATTHEWS,

a witness, having been earlier duly sworn according to law, upon his oath testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN

Q Would you state your name, please?

A Clifford W. Matthews.

Q By whom are you employed and in what position?

A Division manager, Samedan Oil Corporation, Midland, Texas.

Q Have you testified before the Oil Conservation Commission before?

A Yes, sir, I have.

Q What are your qualifications?
A I have testified before. I'm a graduate of Southern Methodist University, B.S. degree in geology. Two years at OU for my Master's.
Q You are testifying then as a geologist?
A Yes, as a geologist.
Q Mr. Matthews, you heard the questions that have been asked by Mr. Buell of Mr. Veeder in regard to pressure. Do you have any pressure information?
A No, I have no pressure information as far as actual pressure on our particular Moon "A" and Moon "B" leases.
Q I don't remember the other question you had. Would you restate your question?

CROSS-EXAMINATION

BY MR. BUELL:

Q I was inquiring about the depths of those dry holes and the top of the formation. What was penetrated?
A Actually the tops of the formations were either picked by me or taken from the engineering committee. I picked and double checked all of the formation tops in this area here (indicating). Now, this as it is marked on the log is an estimated top off the King well.
Q What well are you pointing to?
A This is the R. H. King well in the south half of the south half of Shell Oil Company Sanger lease.

Q So that's an estimated line down there?

A That's correct. That is an estimated line and estimated top. It is also based on the log tops picked in the other wells on the Sanger lease. In each case it indicates a tip off the structure on the northeast.

Q But there is nothing off the northeast from the Shell unit there to use as controls?

A Other than the King well which has the estimated top based on sample descriptions and so forth from scout records.

Q That's what I wanted to make clear, that it is all estimated and somewhat speculative.

A Estimated on the basis of the best information available.

MR. BUELL: I have nothing else.

REDIRECT EXAMINATION

BY MR. KELLAHIN:

Q Mr. Matthews, the question was asked Mr. Veeder to the effect that if there is a water drive somewhere in this area from the north and west or south and west or west, would that possibly keep oil over to the east side of the area that would not be recovered unless there was a producing well on the east side?

A In my opinion, that there is water invasion or movement from the westerly direction and in my opinion the wells that are producing in that area would probably cramp

the movement of oil across by water invasion.

Q Now, if it passed your wells and they watered out, would it be feasible for Samedan to drill on the east side of their present lease at a legal location to capture the oil that would be swept by?

A We would have to consider the economics of the cost of the well.

Q That is a possibility?

A It is a possibility.

Q Have you any observations on any effect Shell's proposed location would have on Samedan?

A Very definitely. In my opinion, it will cause drainage from our lease, a well located 180 feet from our line on the surface with a good probability that the bottom of the hole would drift upstructure. I think it would very definitely cause drainage and will not protect correlative rights.

Q Now, with your nearest well to Shell's lease line being 1120 feet, in your opinion are you draining Shell's lease at the present time?

A In my opinion, we are not draining that lease. I think that it is tight and the movement of oil from underneath Shell's Sanger lease on the northwest portion would probably not be moving. It's that tight. That's just based on the productivity of that particular well

and what we know about the zone.

MR. KELLAHIN: That's all I have.

MR. BUELL: May I ask a few more questions?

MR. UTZ: Yes, you may.

RECROSS-EXAMINATION

BY MR. BUELL:

Q I understand by computing the permeability up there --

A Porosity.

Q You used a figure of 11 percent porosity?

A I used an average figure of 11 percent porosity. The porosity in the bottom of the hole calculates out approximately 21 percent and then we used, approximately grading that across from all of the San Andres, we had about seven feet of what we would say as an average 11 percent.

Q Would you quarrel with Shell's finding that they found that the porosity in the San Andres there would be 23 percent?

A I would quarrel with the fact that they have seven feet of 23 percent porosity.

Q But this is what they did find?

A You'd have to ask him on that.

Q I believe he testified to that.

A That he had seven feet of 23 percent porosity?

Q I believe he testified to that.

A I would question that there is actually seven feet of 23 percent porosity depicted on the log sheet.

Q But that would be a matter of interpretation.

MR. BUELL: I have nothing.

MR. UTZ: Other questions?

(No response.)

MR. UTZ: You may be excused. Do you have any further testimony, Mr. Kellahin?

MR. KELLAHIN: That's all I have.

MR. UTZ: Well, are there any statements at this time?

MR. CHRISTY: Sim Christy, representing John Hendrix. Mr. Hendrix is the operator of several wells in the general area although not exactly in this particular thing, this particular case. We have listened to testimony here today. We would caution the Commission that you may be setting an inadvisable precedent by granting the Application and you may format many more Applications of this nature and for that reason we support the position of Samedan in the case.

MR. UTZ: Anyone else?

MR. KELLAHIN: Mr. Examiner, please. Samedan obviously opposes the proposed location.

MR. UTZ: I gathered that.

MR. KELLAHIN: The only reason that has been advanced for this location is to move it off of a parking lot

which was non-existent at the time the well was drilled and certainly the parking lot operator of the shopping center developer knew the existence of the well at the time they bought it. The witness has testified that there is no requirement on his part that they do move the well; the only other reason for moving the well is to gain an advantage both as to structure and porosity development.

Putting their well 180 feet from Samedan's lease line obviously is going to cause drainage far in excess of that which would occur from a well at a standard location. For that reason, of course, we oppose the proposed location and in addition feel that if the well is to be drilled at this location, first of all the Commission should require a directional survey to determine exactly where the well is bottomed and that any allowable assigned to the well be penalized in proportion to its location. Our witness has testified he proposes that it be based on 11.44 productive acres.

Now, there's two reasons for penalizing the well. First, the location causing drainage to the offset operator which is impossible to compensate by counter-drainage. The other reason is we have shown that the entire 40-acre tract to be dedicated to the well is non-productive and that there are actually only approximately

11.44 productive acres to be assigned to this well.

We agree with Mr. Christy's statement that if the Commission were to approve this proposed location, it would be setting a dangerous precedent which could cause a number of other Applications based on similar reasons to move well locations to a better structural position or better porosity position without regard to the effect on the offsetting operators. Therefore, we ask the Commission to deny the Application.

MR. UTZ: Do I understand, Mr. Kellahin, that you're suggesting a penalty for dry acreage as well as a penalty for location?

MR. KELLAHIN: We're saying there is a dual reason for the penalty. Now, what the Commission bases their actual penalty on, I think they should take both factors into consideration.

MR. UTZ: But you're not suggesting any penalty?

MR. KELLAHIN: We are suggesting a penalty. I believe the witness testified with regard to that figure.

MR. VEEDER: We suggested an 11.44 divisible by 40 or a 28.6 percent factor.

MR. UTZ: Other statements?

MR. BUELL: Mr. Examiner, on behalf of Shell. We'd like to point out that the topography that's forced upon an operator has always been a consideration when an

unorthodox location is sought. In this case, there has been testimony that the well is drilled in a relatively dangerous place. It's not imminent, but it is a dangerous location where there will be lots of traffic. It can be moved to a vacant railroad right-of-way and drilled in a safer location. Unfortunately, it is the only location on the lease where it can be drilled and it does move it closer to Samedan's lease. However, we feel that the lines that they have drawn on these maps are speculative at best. I think it's been amply demonstrated that the figures that are being used for the engineering committee reports are now in question. They have also assumed a subsea level of oil-water contact of 614 feet, yet it was somewhere below 634 feet in this well.

There's a lot of interpretation involved. I would also point out that shell asked for the opportunity to produce any reserves that are under their 40 acres. I would point out that Samedan has more than produced their fair share that has been assigned in this reservoir. The figure comes out to be 98 percent and they're still pumping at a top allowable. If they were stating that they were not draining the Shell lease, I think that at best they have pumped this at a high rate. They are bound to influence the oil under that lease.

As far as setting a precedent, one of these Applications always might set a precedent, but I think the Commission has always considered each case on its own individual facts. In this case we have one piece of vacant land in a 40-acre tract and if there is going to be a producible well and if the well is going to recover reserves that will otherwise go unrecovered, I think that the prevention of waste weighs against the possible precedent of the case and the Application should be granted.

MR. UTZ: Thank you, sir. Any other statements?

(No response.)

MR. UTZ: The case will be taken under advisement.

-oOo-

STATE OF NEW MEXICO)
) SS
COUNTY OF BERNALILLO)

I, CLAUDIA FAHRENTHOLD, a court reporter in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings to the best of my knowledge, skill and ability.

Claudia Fahrenthold
COURT REPORTER

I do hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case No. 7263,
heard by me on [illegible], 1973.

[illegible], Examiner
New Mexico Oil Conservation Commission

dearnley, meier & associates
209 SIMMS BLDG.• P.O. BOX 1092•PHONE 243-6691•ALBUQUERQUE, NEW MEXICO 87103
1216 FIRST NATIONAL BANK BLDG. EAST•ALBUQUERQUE, NEW MEXICO 87108

OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

December 11, 1973

Mr. Sumner Buell
Montgomery, Federici, Andrews,
Hannahs & Buell
Attorneys at Law
Post Office Box 2307
Santa Fe, New Mexico

Re: CASE NO. 5063
ORDER NO. R-4639-B
Applicant:
Shell Oil Company

Dear Sir:

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

Very truly yours,

A. L. Porter, Jr.

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC x
Artesia OCC
Aztec OCC

Other Mr. Jason Kellahin

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE NO. 5063 De Novo
Order No. R-4639-B

APPLICATION OF SHELL OIL COMPANY
FOR AN UNORTHODOX OIL WELL LOCATION,
LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on November 27, 1973, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 11th day of December, 1973, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS:

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

(2) That applicant, Shell Oil Company, seeks an exception to Rule 104 of the Commission Rules and Regulations for approval of an unorthodox oil well location for its Sanger Well No. 6-Y, proposed to be located 1220 feet from the North line and 180 feet from the West line of Section 27, Township 18 South, Range 38 East, NMPM, Hobbs Grayburg-San Andres Pool, Lea County, New Mexico.

(3) That Unit D in the NW/4 of the NW/4 of Section 27, Township 18 South, Range 38 East, NMPM, Lea County, New Mexico, is now dedicated to applicant's Sanger Well No. 6, which is presently operating.

(4) That the matter came on for hearing before Examiner Elvis A. Utz on September 19, 1973, and pursuant to this hearing Order No. R-4639 was issued on October 11, 1973, which granted Shell's application and provided inter alia for an acreage factor for proration purposes of 58 percent for production from the Grayburg-San Andres formation.

(5) That on October 29, 1973, application for Hearing De Novo was made by Samedan Oil Corporation and the matter set for hearing before the full Commission.

(6) That the matter came on for hearing de novo on November 27, 1973, at which time both Shell Oil Company and Samedan Oil Corporation made extensive presentations.

(7) That based on the evidence presented at the de novo hearing the Commission concludes that a well drilled at the proposed location would drain offsetting operators.

(8) That the substitution of applicant's proposed Sanger Well No. 6-Y in the proposed unorthodox location for applicant's Sanger Well No. 6 will enable the applicant an opportunity to produce in excess of its just and equitable share of the subject pool, will cause economic loss by the drilling of unnecessary wells, will augment risk arising from the drilling of an excessive number of wells, and will neither prevent waste nor protect correlative rights.

(9) That the application should be denied.

IT IS THEREFORE ORDERED:

(1) That the application of Shell Oil Company for an exception to Rule 104 of the Commission Rules and Regulations for approval of an unorthodox oil well location for its Sanger Well No. 6-Y is hereby denied.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

I. R. TRUJILLO, Chairman

ALEX J. ARMIJO, Member

A. L. PORTER, Jr., Member & Secretary

S E A L

dr/

HOBBS CHAMBER OF COMMERCE

(505) 397-3202 P. O. BOX 1136 HOBBS, NEW MEXICO 88240

Today is Monday, September 10, 1973

Mr. A. L. (Pete) Porter, Director
New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Dear Mr. Porter:

It is our understanding a hearing is scheduled September 19th for a non-standard oil well re-location in Hobbs.

We respectfully request this correspondence be entered as supporting the proposed re-location. The following information is submitted to substantiate our supportive position in this hearing.

(1) Shopping Center Site - The growth of any community is entirely dependent upon the size and accessibility of its market place. This particular site is ideally situated due to the planned growth in this area. There is an immediate need for additional shopping conveniences and services to accommodate the residential and business area. Construction will begin in January on a 60 unit housing complex within a short distance to the center. Residential homes have and will continue to be constructed in this vicinity. The additional residences add to the present need.

(2) Cost Factor - With construction well under way on the buildings, it would be prohibitive cost wise, to redesign and re-locate the ones being constructed. As you are aware, shopping center areas are required to provide a specific number of square feet for parking for each square foot of sales area. If the present well were to remain, it would require permanent fencing of an area 50 x 80 feet (4,000 square feet less necessary parking area). Additional land is not available in the proximity needed to offset the parking loss.

(3) Safety - If the permanent fence were installed; there is always the danger of automobiles colliding with it or involvement with another vehicle creating a hazard. Although, quite unusual, there is always the possibility of broken pipes, valves or overflow.

(4) Environmental and Aesthetic Affects - The proposed new location is less conspicuous and noticeable and is more compatible with the immediate area. Any fumes and odors would be negligent.

Our position of supporting the proposed location was established by study and trying to determine the best approach for the entire community. We therefore strongly urge your favorable ruling in this hearing to the proposed new location.

Respectfully submitted,

Stanley E. Newman

Stanley E. Newman
President

SEN:lk

HOBBS - HOME OF THE PEOPLE PLEASERS

Docket No. 34-73

DOCKET: COMMISSION HEARING - TUESDAY - NOVEMBER 27, 1973

OIL CONSERVATION COMMISSION - 9 A.M. - MORGAN HALL,
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

CASE 5063: (De Novo)

Application of Shell Oil Company for an unorthodox oil well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox location for its Sanger Well No. 6Y to be located 1220 feet from the North line and 180 feet from the West line of Section 27, Township 18 South, Range 38 East, Hobbs Pool, Lea County, New Mexico.

Upon application of Samedan Oil Corporation, this case will be heard De Novo pursuant to the provisions of Rule 1220.

OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

I. R. TRUJILLO
CHAIRMAN
LAND COMMISSIONER
ALEX J. ARMIJO
MEMBER
STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

October 25, 1973

Re: CASE NO. 5063
ORDER NO. R-4639-A
Applicant:
Shell Oil Company

Mr. Sumner Buell
Montgomery, Federici, Andrews,
Hannahs & Buell
Attorneys at Law
Post Office Box 2307
Santa Fe, New Mexico

Dear Sir:

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

Very truly yours,

A. L. Porter, Jr.

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC x
Artesia OCC
Aztec OCC

Other Mr. Jason Kellahin

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE NO. 5063
Order No. R-4639

APPLICATION OF SHELL OIL
COMPANY FOR AN UNORTHODOX
WELL LOCATION, LEA COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on September 19, 1973, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 11th day of October, 1973, the Commission, a quorum being present, 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 Commission has jurisdiction of this cause and the subject matter thereof.

(2) That applicant, Shell Oil Company, seeks an exception to Rule 104 of the Commission Rules and Regulations for approval of an unorthodox oil well location for its Sanger Well No. 6-Y, proposed to be located 1220 feet from the North line and 180 feet from the West line of Section 27, Township 18 South, Range 38 East, NMPM, Hobbs Grayburg-San Andres Pool, Lea County, New Mexico.

(3) That Unit D in the NW/4 of the NW/4 of Section 27, Township 18 South, Range 38 East, NMPM, Lea County, New Mexico, is now dedicated to applicant's Sanger Well No. 6, which is presently operating.

(4) That upon completion of applicant's Sanger Well No. 6-Y, Unit D in the NW/4 of the NW/4 of Section 27, Township 18 South, Range 38 East, NMPM, Lea County, New Mexico, should be dedicated to said well.

(5) That a well drilled at the proposed location should encounter a zone of more favorable porosity for the production of oil than a well drilled at a standard location.

(6) That the location of applicant's No. 6 well is undesirable because of the imminent construction of a shopping center parking lot surrounding the site.

(7) That the substitution of applicant's proposed Sanger Well No. 6-Y in the proposed unorthodox location for applicant's Sanger Well No. 6 will promote safety, will afford the applicant a greater opportunity to produce its just and equitable share of the oil in the subject pool, will prevent the economic loss caused by the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells, and will otherwise prevent waste and protect correlative rights.

(8) That a rateable take factor of 58 percent will afford the applicant the opportunity to produce its just and equitable share of oil in place and will afford protection to the correlative rights of the lease holders directly to the west of the NW/4 of the NW/4 of Section 27, Township 18 South, Range 38 East, NMPM, Lea County, New Mexico.

(9) That the applicant should be required to determine the subsurface location of the hole by means of a continuous multi-shot directional drilling survey to determine that the bottom of the hole is no nearer than 180 feet to the west line of Section 27, and the results of that survey should be furnished to the Commission.

IT IS THEREFORE ORDERED:

(1) That an unorthodox oil well location for the Grayburg-San Andres formation is hereby approved for applicant's Sanger Well No. 6-Y, to be drilled at a surface location 1220 feet from the North line and 180 feet from the West line of the NW/4 of the NW/4 of Section 27, Township 18 South, Range 32 East, NMPM, Hobbs Pool, Lea County, New Mexico.

(2) That said well shall be drilled in such a manner as to ensure that the bottom of the well is no closer than 180 feet to the west line of said Section 27.

(3) That upon completion of applicant's Sanger Well No. 6-Y, Unit D, in the NW/4 of the NW/4 of said Section 27 shall be dedicated to said well.

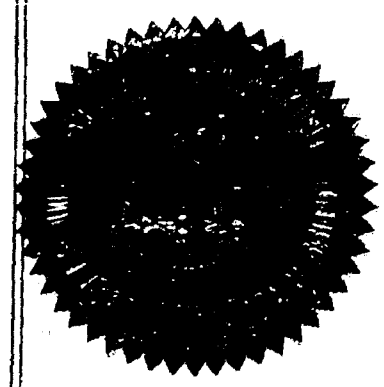
(4) PROVIDED HOWEVER, that the well is assigned an acreage factor for proration purposes of 58 percent for production from the Grayburg-San Andres formation.

(5) PROVIDED FURTHER, that upon completion of applicant's Sanger Well No. 6-Y, a continuous multi-shot directional survey shall be made of the well-bore of said well for the entire length of the well-bore with shot points no more than 100 feet apart; that the operator shall cause the surveying company to forward a copy of the survey report directly to the Santa Fe office of the Commission, P. O. Box 2088, Santa Fe, New Mexico, and that the operator shall notify the Commission's Hobbs district office of the date and time said survey is to be commenced.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION



I. R. TRUJILLO, Chairman

ALEX J. ARMIJO, Member

A. L. PORTER, Jr., Member & Secretary

S E A L

dr/

OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

I. R. TRUJILLO
CHAIRMAN
LAND COMMISSIONER
ALEX J. ARMIJO
MEMBER
STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

October 15, 1973

Re: CASE NO. 5063
ORDER NO. R-4639
Applicant:
SHELL OIL COMPANY

Mr. Sumner Buell
Montgomery, Federici, Andrews,
Hannahs & Buell
Attorneys at Law
Post Office Box 2307
Santa Fe, New Mexico

Dear Sir:

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

Very truly yours,

A. L. Porter, Jr.

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC x
Artesia OCC
Aztec OCC

Other Mr. Jason Kellahin

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

APPLICATION OF SHELL OIL COMPANY
FOR AN UNORTHODOX WELL LOCATION,
LEA COUNTY, NEW MEXICO.

CASE NO. 5063
Order No. R-4639-A

NUNC PRO TUNC

BY THE COMMISSION:

It appearing to the Commission that due to clerical error and inadvertence, Order No. R-4639, dated October 11, 1973, does not correctly state the intended order of the Commission,

IT IS THEREFORE ORDERED:

(1) That Order No. (1) on Page 2 of Order No. R-4639 should read in its entirety as follows:

"(1) That an unorthodox oil well location for the Grayburg-San Andres formation is hereby approved for applicant's Sanger Well No. 6-Y, to be drilled at a surface location 1220 feet from the North line and 180 feet from the West line of Section 27, Township 18 South, Range 38 East, NMPM, Hobbs Pool, Lea County, New Mexico."

(2) That this order shall be effective nunc pro tunc as of October 11, 1973.

DONE at Santa Fe, New Mexico, this 25th day of October, 1973.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

I. R. TRUJILLO, Chairman

ALEX J. ARMIJO, Member

A. L. PORTER, Jr., Member & Secretary

S E A L

dr/

Docket No. 34-73

DOCKET: COMMISSION HEARING - TUESDAY - NOVEMBER 27, 1973

OIL CONSERVATION COMMISSION - 9 A.M. - MORGAN HALL,
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

CASE 5063: (De Novo)

Application of Shell Oil Company for an unorthodox oil well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox location for its Sanger Well No. 6Y to be located 1220 feet from the North line and 180 feet from the West line of Section 27, Township 18 South, Range 38 East, Hobbs Pool, Lea County, New Mexico.

Upon application of Samedan Oil Corporation, this case will be heard De Novo pursuant to the provisions of Rule 1220.

Docket No. 36-73

DOCKET: EXAMINER HEARING - TUESDAY - DECEMBER 11, 1973

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

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

ALLOWABLE: (1) Consideration of the allowable production of gas for January, 1974, from fifteen prorated pools in Lea, Eddy, Roosevelt and Chaves Counties, New Mexico;

(2) Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico, for January, 1974.

Docket No. 35-73

DOCKET: EXAMINER HEARING - WEDNESDAY - NOVEMBER 28, 1973

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

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

CASE 5115: Application of Mobil Oil Corporation for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Corral Draw Unit Area comprising 19,199 acres, more or less, of Federal and State lands in Townships 25 and 26 South, Range 29 East, Eddy County, New Mexico.

CASE 5116: Application of Mobil Oil Corporation for a pressure maintenance project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pressure maintenance project by the injection of water and/or gas into the Middle Pennsylvanian formation of its Bridges State Well No. 147 located in Unit F of Section 13, Township 17 South, Range 34 East, Vacuum-Middle Pennsylvanian Pool, Lea County, New Mexico, the W/2 of said Section 13 to be the initial project area. Applicant further seeks the promulgation of rules for said project including a provision for administrative approval for expansion thereof.

CASE 5117: Application of Roger C. Hanks for creation of a new pool and special rules, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the creation of the North Dagger Draw-Cisco Canyon Oil Pool in Sections 24, 25, and 36, Township 19 South, Range 24 East, Sections 18, 19, 30 and 31, Township 19 South, Range 25 East, and Section 1, Township 20 South, Range 24 East, Eddy County, New Mexico, and the promulgation of special pool rules therefor, including a provision for 320-acre spacing and proration units and specified well locations.

CASE 5118: Application of Shell Oil Company for an extension of Order No. R-4289, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the indefinite extension of Order No. R-4289, which order as extended authorized temporary downhole commingling of the Morrow Pennsylvanian and Devonian production in the wellbore in its Antelope Ridge Well No. 2 located in Unit B of Section 4, Township 24 South, Range 34 East, Antelope Ridge Field, Lea County, New Mexico.

CASE 5119: Application of Getty Oil Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Stock Unit Area comprising 5,760 acres, more or less, of State lands in Township 21 South, Range 33 East, Lea County, New Mexico.

CASE 5120: Application of Lone Star Producing Company for a dual completion and salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water by

(Case 5120 continued from Page 1)

injection into the San Andres formation through the annulus between 5 1/2-inch and 8 5/8-inch casing strings of its New Mexico State 80 Well No. 1 located in Unit B of Section 33, Township 14 South, Range 34 East, Tres Papalotes-Pennsylvanian Pool, Lea County, New Mexico, and to produce oil from said pool through 2 3/8-inch tubing installed within the 5 1/2-inch casing.

CASE 5121: Application of Texaco Inc. for a non-standard gas proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for a 160-acre non-standard gas proration unit comprising the SE/4 of Section 25, Township 20 South, Range 32 East, South Salt Lake-Morrow Gas Pool, Lea County, New Mexico, to be dedicated to its Audie Richards Well No. 1 located in Unit P of said Section 25.

CASE 5122: Application of Sun Oil Company for the creation of a new oil pool and special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new oil pool for Wolfcamp production for its Shern Federal Well No. 1 located in Unit M of Section 15, Township 19 South, Range 32 East, Lusk Field, Lea County, New Mexico, and the promulgation of special pool rules therefor including a provision for 160-acre spacing and proration units and a special limiting gas-oil ratio of 4000 to 1.

CASE 5123: Application of Consolidated Oil & Gas Inc. for downhole commingling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle gas production from the Flora Vista-Gallup Gas Pool and the Basin Dakota-Gas Pool in the wellbore of its Clayton Well No. 1-2 located in Unit N of Section 2, Township 30 North, Range 12 West, San Juan County, New Mexico.

CASE 5124: Application of Belco Petroleum Corporation for compulsory pooling and an unorthodox gas well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests underlying the S/2 of Section 30, Township 20 South, Range 33 East, South Salt Lake-Morrow Gas Pool, Lea County, New Mexico, to be dedicated to a well to be drilled at an unorthodox location 660 feet from the South line and 1300 feet from the East line of said Section 30. Also to be considered will be the cost of drilling and completing said well and the allocation of such costs, as well as actual operating costs and charges for supervision. Also to be considered is the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 5126: Application of Atlantic Richfield Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Avalon Deep Unit Area comprising 10, 117 acres, more or less, of fee, Federal, and State lands in Township 21 South, Ranges 26 and 27 East, Eddy County, New Mexico.

CASE 5127: Application of Skelly Oil Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Salt Lake South Unit Area comprising 7080.12 acres, more or less, of State and Federal lands in Township 21 South, Range 32 East, Lea County, New Mexico.

CASE 5125: Northwestern nomenclature case calling for the creation and extension of certain pools in McKinley, San Juan, Rio Arriba and Sandoval Counties, New Mexico:

(a) Create a new pool in McKinley County, New Mexico, classified as an oil pool for Mesaverde production and designated as the Blackeye-Mesaverde Oil Pool. The discovery well is the K & W Oil Co. #55-Y Jaco located in Unit D of Section 32, Township 20 North, Range 9 West, NMPM. Said pool would comprise:

TOWNSHIP 20 NORTH, RANGE 9 WEST, NMPM
Section 29: W/2 SW/4
Section 30: SE/4 NE/4 and NE/4 SE/4
Section 32: NW/4 NW/4

(b) Create a new pool in McKinley County, New Mexico, classified as an oil pool for Dakota production and designated as the Blackeye-Dakota Oil Pool. The discovery well is the Colorado Plateau Geological Services, Inc. #1 Blackeye located in Unit M of Section 29, Township 20 North, Range 9 West, NMPM. Said pool would comprise:

TOWNSHIP 20 NORTH, RANGE 9 WEST, NMPM
Section 29: SW/4 SW/4

(c) Create a new pool in McKinley County, New Mexico, classified as a gas pool for Dakota A production and designated as the Lone Pine-Dakota A Pool. The discovery well is the Tenneco Oil Co. #2 SFPRR located in Unit L of Section 13, Township 17 North, Range 9 West, NMPM. Said pool would comprise:

TOWNSHIP 17 NORTH, RANGE 9 WEST, NMPM
Section 13: SW/4
Section 23: NE/4
Section 24: NW/4

(d) Create a new pool in San Juan County, New Mexico, classified as a gas pool for Fruitland production and designated as the Mt. Nebo-Fruitland Pool. The discovery well is the Amoco Production Co. #1 Keys Gas Com E located in Unit D of Section 27, Township 32 North, Range 10 West, NMPM. Said pool would comprise:

TOWNSHIP 32 NORTH, RANGE 10 WEST, NMPM
Section 27: NW/4
Section 28: NE/4

(e) Extend the Angels Peak-Gallup Pool in San Juan County, New Mexico, to include therein:

TOWNSHIP 26 NORTH, RANGE 9 WEST, NMPM
Section 6: N/2
Section 7: SW/4
Section 8: All
Section 9: W/2
Section 18: W/2 & SE/4
Section 23: W/2

TOWNSHIP 26 NORTH, RANGE 10 WEST, NMPM
Section 3: SW/4 & S/2 SE/4
Section 11: S/2
Section 12: All
Section 13: N/2

(f) Extend the Aztec-Pictured Cliffs Pool in San Juan County, New Mexico, to include therein:

TOWNSHIP 28 NORTH, RANGE 8 WEST, NMPM
Section 18: W/2

TOWNSHIP 29 NORTH, RANGE 9 WEST, NMPM
Section 18: S/2
Section 20: SW/4

TOWNSHIP 29 NORTH, RANGE 10 WEST, NMPM
Section 12: SW/4

TOWNSHIP 31 NORTH, RANGE 11 WEST, NMPM
Section 18: SE/4
Section 21: SW/4
Section 28: SE/4
Section 31: E/2
Section 32: SW/4

TOWNSHIP 31 NORTH, RANGE 12 WEST, NMPM
Section 2: N/2
Section 3: NE/4

(g) Extend the Ballard-Pictured Cliffs Pool in Rio Arriba, Sandoval and San Juan Counties, New Mexico, to include therein:

TOWNSHIP 22 NORTH, RANGE 2 WEST, NMPM
Section 6: N/2 & SE/4
Section 7: NE/4
Section 8: W/2

TOWNSHIP 23 NORTH, RANGE 3 WEST, NMPM
Section 15: S/2
Section 16: S/2
Section 21: All
Section 22: All
Section 23: All
Section 26: N/2
Section 27: N/2 & SE/4
Section 28: NE/4

TOWNSHIP 23 NORTH, RANGE 4 WEST, NMPM
Section 24: NE/4

TOWNSHIP 23 NORTH, RANGE 5 WEST, NMPM
Section 14: NW/4

TOWNSHIP 24 NORTH, RANGE 6 WEST, NMPM
Section 17: SW/4
Section 20: N/2

(h) Extend the Blanco-Mesaverde Pool in Rio Arriba and San Juan Counties, New Mexico, to include therein:

TOWNSHIP 26 NORTH, RANGE 5 WEST, NMPM
Section 8: E/2
Section 9: All
Section 10: W/2
Section 14: N/2

TOWNSHIP 27 NORTH, RANGE 9 WEST, NMPM
Section 9: SE/4
Section 34: S/2

TOWNSHIP 28 NORTH, RANGE 9 WEST, NMPM
Section 7: All (Partial)
Section 18: All
Section 19: All
Section 31: W/2

TOWNSHIP 28 NORTH, RANGE 10 WEST, NMPM
Section 13: E/2

(i) Extend the Blanco-Pictured Cliffs Pool in San Juan County, New Mexico, to include therein:

TOWNSHIP 29 NORTH, RANGE 7 WEST, NMPM
Section 30: SW/4
Section 31: W/2

TOWNSHIP 29 NORTH, RANGE 8 WEST, NMPM

Section 5:	SE/4	Section 25:	W/2 & SE/4
Section 8:	S/2	Section 26:	E/2
Section 14:	N/2	Section 33:	W/2
Section 15:	S/2	Section 34:	NE/4
Section 16:	S/2	Section 35:	N/2
Section 17:	S/2 & NE/4	Section 36:	N/2
Section 23:	SE/4		

TOWNSHIP 29 NORTH, RANGE 9 WEST, NMPM

Section 6:	S/2
Section 7:	All
Section 18:	NE/4

TOWNSHIP 30 NORTH, RANGE 9 WEST, NMPM

Section 14:	NE/4

TOWNSHIP 30 NORTH, RANGE 10 WEST, NMPM

Section 2:	All	Section 14:	NE/4
Section 5:	SE/4	Section 15:	SW/4
Section 6:	NE/4	Section 16:	N/2 & SE/4
Section 9:	NE/4	Section 22:	SE/4
Section 10:	N/2	Section 23:	S/2
Section 11:	All	Section 24:	SW/4
Section 12:	SW/4	Section 25:	All
Section 13:	All	Section 26:	NE/4

TOWNSHIP 31 NORTH, RANGE 9 WEST, NMPM

Section 31:	S/2

TOWNSHIP 31 NORTH, RANGE 10 WEST, NMPM

Section 18:	SW/4	Section 32:	E/2
Section 29:	SE/4	Section 35:	S/2
Section 31:	S/2	Section 36:	S/2

TOWNSHIP 31 NORTH, RANGE 11 WEST, NMPM

Section 3:	All	Section 12:	All
Section 4:	All	Section 13:	E/2
Section 5:	N/2 & SE/4	Section 14:	N/2
Section 8:	SW/4	Section 17:	N/2
Section 9:	N/2	Section 23:	W/2
Section 10:	N/2	Section 25:	SW/4
Section 11:	All		

TOWNSHIP 32 NORTH, RANGE 11 WEST, NMPM

Section 21:	E/2	Section 32:	All
Section 22:	SW/4	Section 33:	All
Section 27:	All	Section 34:	All
Section 28:	All	Section 35:	S/2
Section 29:	N/2 & SE/4		

(j) Extend the South Blanco-Pictured Cliffs Pool in Rio Arriba, Sandoval and San Juan Counties, New Mexico, to include therein:

TOWNSHIP 23 NORTH, RANGE 1 WEST, NMPM
Section 8: SE/4

TOWNSHIP 25 NORTH, RANGE 6 WEST, NMPM
Section 9: E/2 Section 16: NE/4

TOWNSHIP 27 NORTH, RANGE 6 WEST, NMPM
Section 17: NE/4

TOWNSHIP 28 NORTH, RANGE 6 WEST, NMPM
Section 26: SW/4 Section 35: W/2
Section 27: E/2 Section 36: NW/4

TOWNSHIP 28 NORTH, RANGE 7 WEST, NMPM
Section 16: E/2

TOWNSHIP 28 NORTH, RANGE 8 WEST, NMPM

Section 8:	All (Partial)	Section 18:	E/2
Section 9:	All (Partial)	Section 19:	NE/4
Section 14:	W/2 & SE/4	Section 20:	NW/4
Section 15:	N/2	Section 23:	NE/4
Section 16:	NE/4	Section 24:	W/2 & SE/4
Section 17:	All	Section 25:	N/2

(k) Extend the Choza Mesa-Pictured Cliffs Pool in Rio Arriba County, New Mexico, to include therein:

TOWNSHIP 28 NORTH, RANGE 4 WEST, NMPM
Section 23: W/2

(l) Extend the Flora Vista-Fruitland Pool in San Juan County, New Mexico, to include therein:

TOWNSHIP 30 NORTH, RANGE 12 WEST, NMPM
Section 1: SW/4
Section 2: S/2
Section 3: SE/4

(m) Extend the South Gallegos-Fruitland Pool in San Juan County, New Mexico, to include therein:

TOWNSHIP 26 NORTH, RANGE 12 WEST, NMPM
Section 1: SW/4

(n) Extend the Gonzales-Mesaverde Pool in Rio Arriba County, New Mexico, to include therein:

TOWNSHIP 25 NORTH, RANGE 5 WEST, NMPM
Section 4: SW/4 Section 9: NW/4
Section 5: SE/4

TOWNSHIP 26 NORTH, RANGE 5 WEST, NMPM
Section 31: W/2 Section 32: SW/4

TOWNSHIP 26 NORTH, RANGE 6 WEST, NMPM

Section 21:	SW/4	Section 33:	E/2
Section 26:	NW/4 & SE/4	Section 34:	All
Section 27:	All	Section 36:	S/2

TOWNSHIP 26 NORTH, RANGE 7 WEST, NMPM
Section 11: N/2

(v) Extend the Pinon-Fruitland Pool in San Juan County, New Mexico, to include therein:

TOWNSHIP 28 NORTH, RANGE 11 WEST, NMPM
Section 8: All (Partial)
Section 9: All (Partial)

(w) Extend the Tapacito-Pictured Cliffs Pool in Rio Arriba County, New Mexico, to include therein:

TOWNSHIP 26 NORTH, RANGE 3 WEST, NMPM
Section 21: NE/4

TOWNSHIP 27 NORTH, RANGE 5 WEST, NMPM
Section 6: SE/4 Section 27: N/2
Section 15: SE/4

(x) Extend the Tocito Dome-Pennsylvanian D Oil Pool in San Juan County, New Mexico, to include therein:

TOWNSHIP 26 NORTH, RANGE 18 WEST, NMPM
Section 26: NW/4 Section 27: NE/4

(y) Extend the Ute Dome-Dakota Pool in San Juan County, New Mexico, to include therein:

TOWNSHIP 31 NORTH, RANGE 14 WEST, NMPM
Section 10: All Section 11: All

TOWNSHIP 32 NORTH, RANGE 14 WEST, NMPM
Section 25: E/2

(z) Extend the Ute Dome-Paradox Pool in San Juan County, New Mexico, to include therein:

TOWNSHIP 31 NORTH, RANGE 14 WEST, NMPM
Section 10: All

TOWNSHIP 32 NORTH, RANGE 14 WEST, NMPM
Section 25: All

TOWNSHIP 26 NORTH, RANGE 5 WEST, NMPM
Section 29: SW/4 Section 32: W/2
Section 31: S/2

(o) Extend the Hospah-Dakota Oil Pool in McKinley County, New Mexico, to include therein:

TOWNSHIP 17 NORTH, RANGE 8 WEST, NMPM
Section 5: SW/4 SW/4 Section 7: N/2 NE/4
Section 6: SE/4 SE/4

(p) Extend the Kutz-Fruitland Pool in San Juan County, New Mexico, to include therein:

TOWNSHIP 28 NORTH, RANGE 11 WEST, NMPM
Section 13: W/2

(q) Extend the Largo-Chacra Pool in Rio Arriba & San Juan Counties, New Mexico, to include therein:

TOWNSHIP 27 NORTH, RANGE 8 WEST, NMPM

Section 10:	NE/4	Section 16:	S/2
Section 11:	All	Section 17:	SE/4
Section 13:	W/2 & SE/4	Section 23:	N/2
Section 14:	All	Section 25:	W/2
Section 15:	S/2	Section 26:	E/2

(r) Extend the South Lindrith-Gallup Dakota Oil Pool in Rio Arriba County, New Mexico, to include therein:

TOWNSHIP 24 NORTH, RANGE 4 WEST, NMPM
Section 21: SE/4 Section 28: N/2 & SW/4

(s) Extend the Lone Pine-Dakota D Oil Pool in McKinley County, New Mexico, to include therein:

TOWNSHIP 17 NORTH, RANGE 3 WEST, NMPM
Section 7: S/2 NE/4 Section 8: W/2 NW/4

(t) Extend the North Los Pinos-Fruitland Pool in San Juan County, New Mexico, to include therein:

TOWNSHIP 32 NORTH, RANGE 8 WEST, NMPM
Section 13: SE/4

(u) Extend the Otero-Chacra Pool in Rio Arriba County, New Mexico, to include therein:

TOWNSHIP 25 NORTH, RANGE 5 WEST, NMPM

Section 2:	SW/4	Section 12:	W/2
Section 3:	SE/4	Section 14:	NW/4
Section 10:	SE/4	Section 15:	NE/4
Section 11:	S/2 & NE/4		

SAMEDAN OIL CORPORATION
2207 WILCO BUILDING
MIDLAND, TEXAS 79701

September 21, 1973

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

Attention: Mr. E. A. Utz

Dear Mr. Utz:

Please find enclosed bottom hole pressure data from the Hobbs Grayburg San Andres Pool that has been compiled during 1973. You will probably recall that the Hobbs Engineering Committee conducts these tests on certain select wells.

Both Samedan and Shell Oil Company participate in the Hobbs Engineering Committee work. You will note that the Shell-Sanger Lease has three wells that have bottom hole pressure data. Samedan's Moon Lease was not on the leases selected to conduct bottom hole pressure surveys during 1973.

If any additional information is needed, please inform me.

Very truly yours,

SAMEDAN OIL CORPORATION

Clifford W. Matthews
Division Manager

CWM:ls

Enclosure

HOBBS DRINKARD POOL BOTTOM HOLE PRESSURES
POOL DATUM -3200' NOMINAL SHUT IN TIME 48 HOURS

COMPANY / LEASE	WELL UNIT	S.T.R.	DATE PRESS. RUN(1973)	TIME S.I. HRS./MIN.	ELEV.	GAUGE DEPTH	GRADIENT TBG.#/100'	B.H.P. @ GAUGE DEPTH	B.H.P. @ POOL DATUM
GETTY OIL COMPANY									
Grimes	6 I	29-18-38	4-18	27/00	3658	6848	3.0		951
McKinley	11 A	30-18-38			3650	6850			

HOBBS (GRAYBURG SAN ANDRES) POOL BOTTOM HOLE PRESSURES
POOL DATUM -400' NOMINAL SHUT IN TIME 24 HOURS

AMERADA HESS CORPORATION									
McKinley	3 C	30-18-38	Not S.I.		3660	4000			
AMOCO PRODUCTION COMPANY									
Byers "B"	11 A	4-19-38			3623	4023			
"	33 G	"	4-6	24/00	3617	4017	4.7		518
State "G"	1 E	33-18-38	4-6	26/00	3640	4040	9.3		532
"	2 F	"			3642	4000			
Turner Tr. 2	26 N	34-18-38	4-6	25/00	3613	3950	22.0	700	714
CONTINENTAL OIL COMPANY									
State A-29	3 K	29-18-38	4-12	24/00	3651	3950	4.7	709	714
GETTY OIL COMPANY									
Grimes	4 H	29-18-38			3657	3950			
McKinley	2 H	30-18-38	4-18	29/00	3651	4051	29.5		858
"	11 A	"	"	28/00	3650	4050	34.0		606
SAMEDAN OIL CORPORATION									
State "C"	3 L	24-18-37	4-16	28/00	3678	3900	3.0	911	916
Turner B-1	1 I	34-18-38	"	29/00	3624	3740	24.0	679	747
SHELL OIL COMPANY									
Grimes	1 M	28-18-38	Pump		3639	4039			
"	2 L	"	4-26	26/00	3641	4041	21.6		550
"	3 K	"	"	25/00	3643	4043	23.0		532
"	4 N	"	"	24/00	3638	4038	34.3		513
McKinley "A"	2 O	19-18-38	Pump		3650	4050			
Sanger	1 M	27-18-38	4-25	24/00	3636	4036	1.3		776
"	2 N	"	"	25/00	3635	4035	34.0		807
"	3 L	"	"		3634	4034	Paraffin @ 49'		
"	4 E	"	"	26/00	3633	4033	1.7		653
State "A"	3 H	32-18-38	"	27/00	3627	4027	2.3		520
State "B"	1 D	33-18-38	Pumping		3642	4042			

These have BHP

HOBBS DRINKARD POOL BOTTOM HOLE PRESSURES
POOL DATUM -3200' NOMINAL SHUT IN TIME 48 HOURS

[illegible]	WELL UNIT	S.T.R.	DATE PRESS. RUN(1973)	TIME S.I. HRS./MIN.	ELEV.	GAUGE DEPTH	GRADIENT TBG.#/100'	B.H.P. @ GAUGE DEPTH	B.H.P. @ POOL DATUM	PREVIOUS TEST PRESS. DATE(1972)
OIL COMPANY										
s	6 I	29-18-38	4-18	27/00	3658	6848	3.0		951	964 2-16
ley	11 A	30-18-38			3650	6850				729 "

HOBBS (GRAYBURG SAN ANDRES) POOL BOTTOM HOLE PRESSURES
POOL DATUM -400' NOMINAL SHUT IN TIME 24 HOURS

DA HESS CORPORATION										
ley	3 C	30-18-38	Not S.I.		3660	4000				370 2-8
PRODUCTION COMPANY										
s "B"	11 A	4-19-38			3623	4023				521 2-8
	33 G	"	4-6	24/00	3617	4017	4.7		518	515 "
e "C"	1 E	33-18-38	4-6	26/00	3640	4040	9.3		532	
	2 F	"			3642	4000				598 2-8
er Tr. 2	26 N	34-18-38	4-6	25/00	3613	3950	22.0	700	714	
INENTAL OIL COMPANY										
e A-29	3 K	29-18-38	4-12	24/00	3651	3950	4.7	709	714	746 2-7
Y OIL COMPANY										
es	4 H	29-18-38			3657	3950				519 2-7
nley	2 H	30-18-38	4-18	29/00	3651	4051	29.5		858	800 "
	11 A	"	"	28/00	3650	4050	34.0		606	
EDAN OIL CORPORATION										
e "C"	3 L	24-18-37	4-16	28/00	3678	3900	3.0	911	916	871 2-9
her B-1	1 I	34-18-38	"	29/00	3624	3740	24.0	679	747	888 "
LL OIL COMPANY										
nes	1 M	28-18-38	Pump	[illegible]	3639	4039				455 2-14
	2 L	"	4-26	26/00	3641	4041	21.6		550	440 "
	3 K	"	"	25/00	3643	4043	23.0		532	484 "
	4 N	"	"	24/00	3638	4038	34.3		513	514 "
inley "A"	2 O	19-18-38	Pump	[illegible]	3650	4050				816 "
ger	1 M	27-18-38	4-25	24/00	3636	4036	1.3		776	943 2-15
	2 N	"	"	25/00	3635	4035	34.0		807	781 "
	3 L	"	"		3634	4034	Paraffin @ 49'			805 "
	4 E	"	"	26/00	3633	4033	1.7		653	723 "
te "A"	3 H	32-18-38	"	27/00	3627	4027	2.3		520	651 "
te "B"	1 D	33-18-38	Pumping		3642	4042				455 "

HOBBS GRAYBURG S.A. - BOTTOM HOLE PRESSURES - CONT'D.

COMPANY LEASE	WELL UNIT	S.T.R.	DATE PRESS. RUN(1973)	TIME S.I. HRS./MIN.	ELEV.	GAUGE DEPTH	GRADEINT TBG.#/100'	B.H.P. @ GAUGE DEPTH	B.H.P. @ POOL DATUM	PREVIOUS TEST PRESS.	PREVIOUS TEST DATE(1972)
SKELLY OIL COMPANY											
Fowler, C.	1 C	31-18-38			3651	4051				942	2-28
"	2 F	"	4-17	24/00	3646	4046			920	937	"
Turner	1 F	34-18-38	"	"	3637	4037			728	764	"
"	2 C	"	"	"	3642	3970		756	781	849	"
TEXAS PACIFIC OIL COMPANY, INC.											
State G	1 P	24-18-37	4-12	24/00	3667	4067	4.0		928	934	2-9
"	3 J	"	"	25/00	3669	4069	30.3		919	943	"

TOTAL WELLS RUN	TOTAL PRESSURES	AVERAGE PRESSURE	CHANGE	
26 Wells Run February, 1972	18,264	702.4		
20 Wells Run April, 1973	14,232	711.6	+	9.2
COMPARABLE WELLS RUN				
17 Wells Run February, 1972	12,783	751.9		
17 Wells Run April, 1973	12,380	728.2	=	-23.7

PACIFIC COAST PROPERTIES, INC.

September 18, 1973

Mr. E. A. Utz
New Mexico Oil Conservation Commission
Post Office Box 2088
Santa Fe, New Mexico 87501

Re: Case #5063
Replacement Well for Sanger #6
Hobbs (Grayburg San Andres) Field
Lea County, New Mexico

Dear Mr. Utz:

Pacific Coast Properties, Inc., the developer of the Shopping Center as shown on the attached drawing which shows in red where Sanger Well #6 is now located, request that the New Mexico Oil Conservation Commission approve the proposed relocation by Shell Oil of the Well to the Westside of Turner Street.

The Well as now located would present a potential danger to users of the shopping center and thus an added liability to all parties involved. This danger would arrise during the maintenance and/or redrilling that would be periodically required. Not only is there the possibility of harm to shoppers during these periods of work, but the users of the center would be inconvenienced by the blocking of the entrance off of Kingsby Street and the disruption of parking around the Well area.

The relocation of Sanger #6 from where it is now located would also allow us to freely develop the parcel to its best configuration and use. This would enhance the asthetics and value of the individual parcel as well as the total shopping center.

The danger and inconvenience to the patrons of the Shopping Center and the problems that can be avoided in the development of the individual parcel and the total Shopping Center are the reasons that we feel it would be advantageous to all parties that Well #6 be relocated to across Turner Street and strongly request from the Commission an approval of Shell Oils Request #5063.

1633 26th STREET, SANTA MONICA, CALIFORNIA 90404 (213) 829-4383

Pacific Coast Properties, Inc. would be glad to assist you and/or your office in anyway regarding this matter.

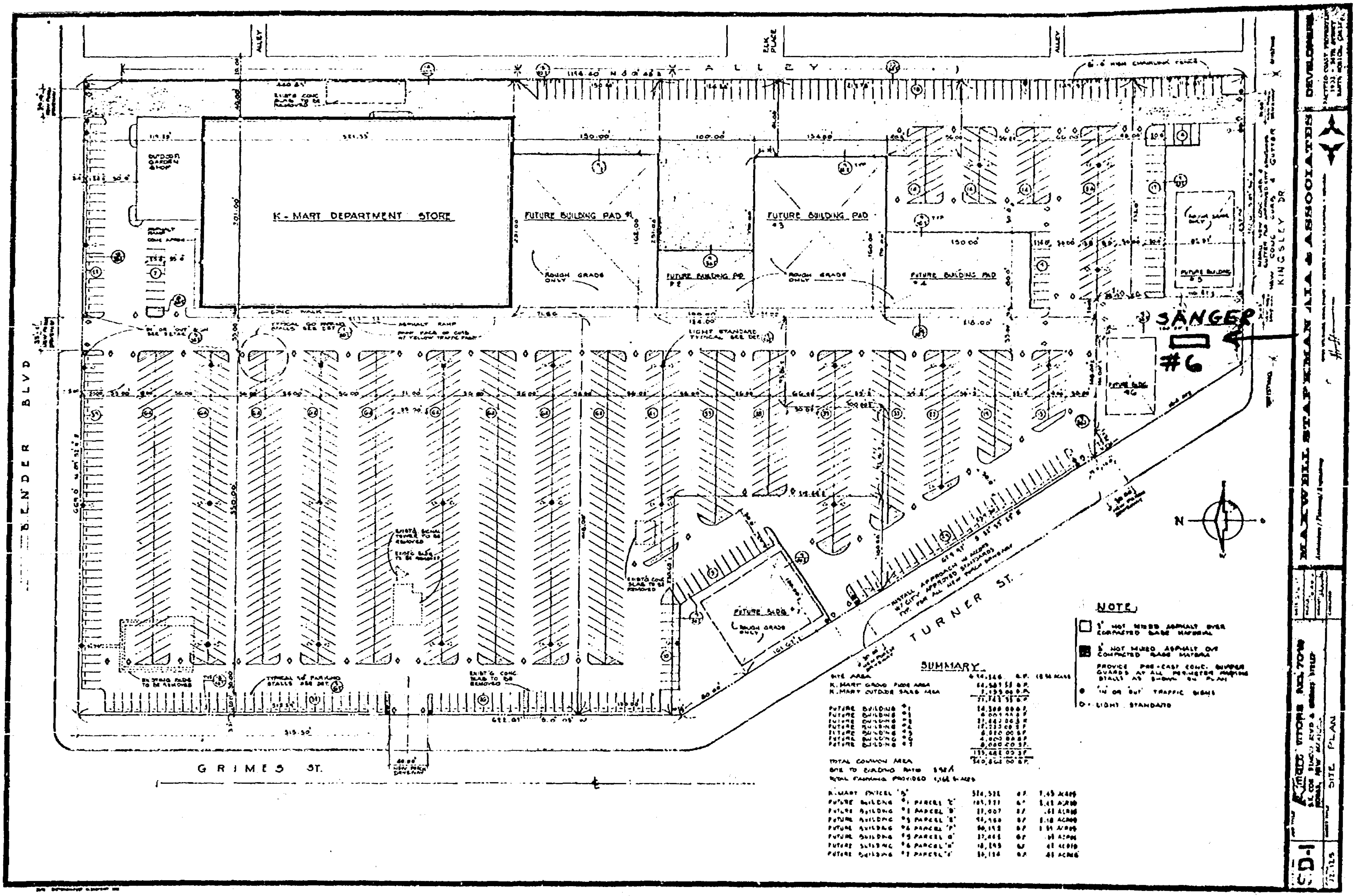
Very truly yours,

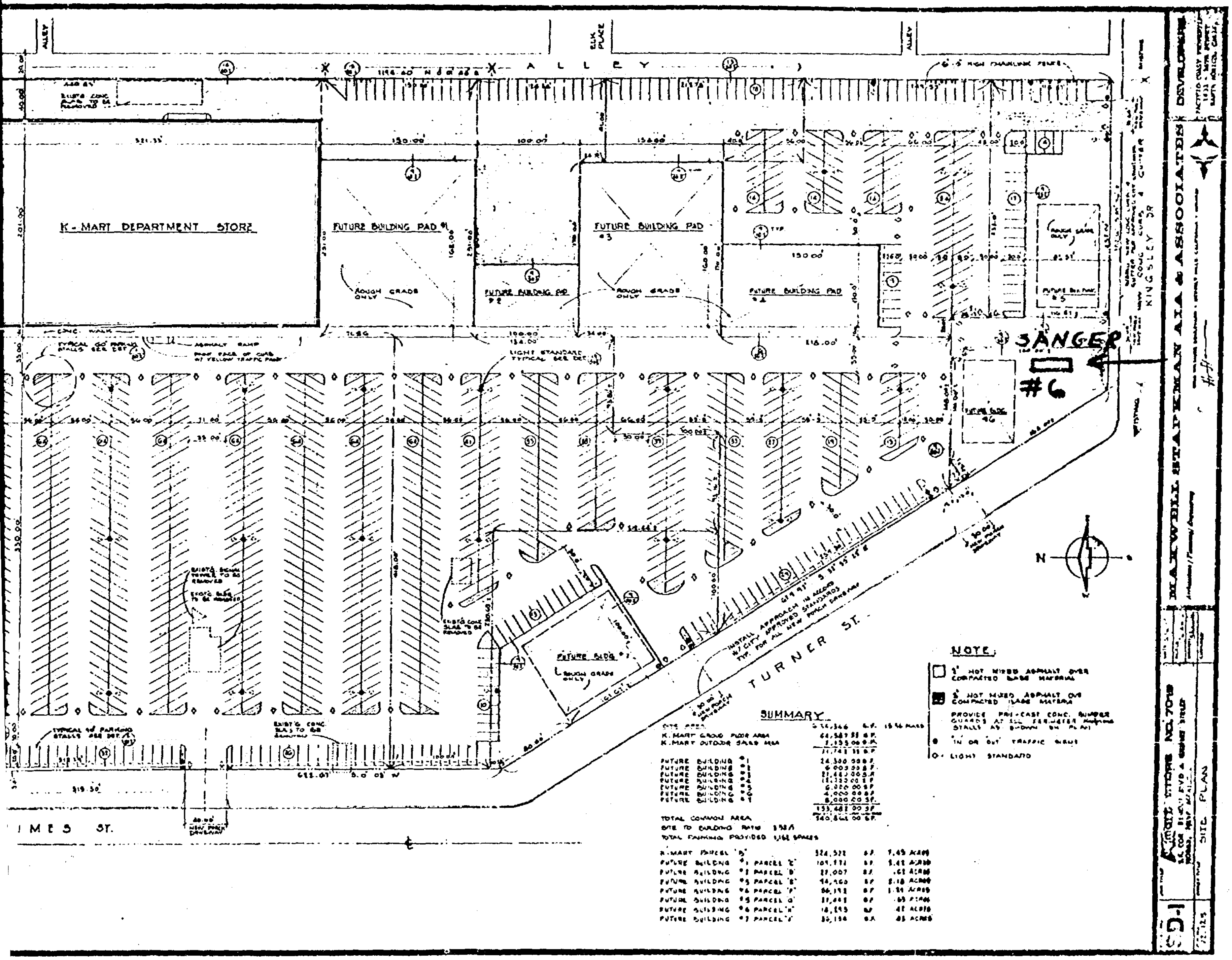
Douglas Dennis
Project Manager

DD:pls

Enclosure

cc: Mr. W. R. Greene, Shell Oil Company
Mr. Sumner G. Buell, Montgomery, Federici, Andrews, Hannahs and Morris


ALLEY
ALLEY
K-MART DEPARTMENT STORE
OUTDOOR GARDEN SHOP
FUTURE BUILDING PAD #1
FUTURE BUILDING PAD #2
FUTURE BUILDING PAD #3
FUTURE BUILDING PAD #4
FUTURE BUILDING #5
ROUGH GRADE ONLY
FUTURE BLDG
SANGER
#6
KINGSLEY DR
TURNER ST.
GRIMES ST.
BLVD
N
NOTE
SUMMARY
LIGHT STANDARD
MAXWELL STARKMAN AIA & ASSOCIATES
SITE PLAN
C-D-1



ALLEY
ELK PLACE
K-MART DEPARTMENT STORE
FUTURE BUILDING PAD #1
FUTURE BUILDING PAD #3
FUTURE BUILDING PAD #2
FUTURE BUILDING PAD #4
FUTURE BLDG
ROUGH GRADE ONLY
KINGSLEY ST
TURNER ST.
SANGER #6
NOTE:
SUMMARY
MAXWELL STARKMAN AIA & ASSOCIATES
SITE PLAN

SAMEDAN OIL CORPORATION
2207 WILCO BUILDING
MIDLAND, TEXAS 79701

August 14, 1973

Case 5063

Oil Conservation Commission
State of New Mexico
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Mr. A. L. Porter, Jr.

RE: Unorthodox Location Request
Shell Oil Company
Sanger Lease, Well No. 6Y
Hobbs (Grayburg-San Andres) Field
Lea County, New Mexico

Dear Mr. Porter:

Samedan Oil Corporation, as offset operator, hereby objects to Shell Oil Company's request of August 9, 1973, for approval of an unorthodox location for their proposed Sanger Lease, Well No. 6Y, located in the Hobbs (Grayburg-San Andres) Field, Lea County, New Mexico.

The location of this well, as proposed by Shell, would offset the east boundary of Samedan's Moon "B" Lease (E/2, NE/4, Section 28, T-18-S, R-38-E) by only 180 feet instead of the 330 feet as required by New Mexico Oil Conservation Commission Statewide Rule 104, Section C. Samedan believes that such a location for the proposed well would result in the migration of oil and gas from Samedan's Moon "B" Lease to Shell's Sanger Lease and would deny Samedan and the other owners of mineral interests under the Moon "B" Lease proper protection of correlative rights.

Very truly yours,

SAMEDAN OIL CORPORATION

Clifford W. Matthews

Clifford W. Matthews
Division Manager

DEH:ls

Docket No. 26-73

DOCKET: EXAMINER HEARING - WEDNESDAY - SEPTEMBER 19, 1973

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

The following cases will be heard before Elvis A. Utz, Examiner, or Richard L. Stamets, Alternate Examiner:

CASE 4745: (Reopened) (Continued from the August 22, 1973, Examiner Hearing)

In the matter of Case No. 4745 being reopened pursuant to the provisions of Order No. R-4365, which order established special rules and regulations for the Penasco Draw San Andres-Yeso Pool, Eddy County, New Mexico, including a provision for classification of oil wells and gas wells, the spacing thereof, and a limiting gas-oil ratio of 3000 to 1. All interested parties may appear and show cause why said pool rules should remain in effect.

CASE 5047: (Continued and Readvertised)

Application of Chace Oil Company for the amendment of Order No. R-4555, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of the special rules and regulations for the South Lindrith Gallup-Dakota Pool, Rio Arriba County, New Mexico, as promulgated by Order No. R-4555, to provide for the classification of oil wells and gas wells, the assignment of 320-acre units to gas wells, and to provide for approval of unorthodox locations for wells drilled as oil wells but classified as gas wells upon completion.

CASE 5063: Application of Shell Oil Company for an unorthodox oil well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox location for its Sanger Well No. 6Y to be located 1220 feet from the North line and 180 feet from the West line of Section 27, Township 18 South, Range 38 East, Hobbs Pool, Lea County, New Mexico.

CASE 5064: Application of Exxon Corporation for a dual completion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of its South Carlsbad 2 Gas Com. Well No. 1 located in Unit J of Section 27, Township 23 South, Range 26 East, Eddy County, New Mexico, to produce gas from the South Carlsbad-Strawn and South Carlsbad-Morrow Gas Pools through the casing-tubing annulus and tubing, respectively.

CASE 5065: Application of Roberts, Koch & Cartwright for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Deer Canyon Unit Area comprising 10,620 acres, more or less, of Federal and State lands in Township 20 South, Range 21 East, Eddy County, New Mexico.

CASE 5057: (Continued and readvertised)

Application of Coquina Oil Corporation for an unorthodox location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a proposed gas well at an unorthodox location 330 feet from the South and East lines of Section 12, Township 18 South, Range 25 East, West Atoka-Morrow Gas Pool, Eddy County, New Mexico, the S/2 of Section 12 to be dedicated to the well. In the alternative, applicant seeks approval of an unorthodox location 660 feet from the South and East lines of said Section 12.

CASE 5066: Application of Burleson & Huff for a non-standard gas proration unit and compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 160-acre non-standard gas proration unit comprising the NE/4 of Section 29, Township 25 South, Range 37 East, Jalmat Gas Pool, Lea County, New Mexico, to be dedicated to its Coll Well No. 1-A located in Unit G of said Section 29.

Applicant further seeks an order of the Commission pooling all mineral interests in the Jalmat Gas Pool underlying the aforesaid quarter section. Also to be considered will be the cost of recompleting said well and the allocation of such costs, as well as actual operating costs and charges for supervision. Also to be considered is the designation of applicant as operator of the well and a charge for risk involved in recompleting said well.

CASE 5067: Application of American Quasar Petroleum Co. of New Mexico for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Dune Unit Area comprising 2,576 acres, more or less, of Federal and Fee lands in Township 23 South, Range 31 East, and Township 24 South, Ranges 30 and 31 East, Lea County, New Mexico.

CASE 5068: Southeastern nomenclature case calling for the creation and extension of the vertical and horizontal limits of certain pools in Lea County, New Mexico:

(a) Create a new pool in Lea County, New Mexico, classified as an oil pool for Strawn production and designated as the Townsend-Strawn Pool, with special vertical limits defined as being the Strawn formation from 11,325 feet to 11,535 feet as on the log of the discovery well, the Ralph E. & J. C. Williamson Harrod State No. 1 in Unit U of Section 4, Township 16 South, Range 35 East, NMPM. Said pool would comprise:

TOWNSHIP 16 SOUTH, RANGE 35 EAST, NMPM
Section 4: SW/4

(b) Extend the vertical limits of the Tubb Gas Pool in Lea County, New Mexico, as established by Rule 25 of the Special Rules for said pool as promulgated by Order No. R-1670, downward to include the entire interval from 100 feet above the Tubb marker to the top of the

(Case 5068 continued from Page 2)

Drinkard formation, in order to eliminate the zone of no-nomenclature which exists between the Tubb and Drinkard Pools.

(c) Extend the Bell Lake-Pennsylvanian Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 24 SOUTH, RANGE 34 EAST, NMPM
Section 6: NW/4

(d) Extend the Querecho Plains-Queen Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 32 EAST, NMPM
Section 23: SW/4
Section 26: W/2

(e) Extend the Wantz-Granite Wash Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM
Section 24: NE/4

Case 5063 [illegible]

Summer

Wm R Green — Midland (Shell)

Jason X move will give better structural position
w/ move = more drainage — not necessarily from the tract — but adjacent area

< r direct to see if Green said anything about present well having trouble draining the present dedicated acreage)

forty acre units

drainage — radial [illegible]
— tighter permeability to east
(well being moved to the west)

Shell sold [illegible]
mineral rights were reserved —
then there was a suit with damages paid by Shell.
a building will go where present well exists

— might get greater pay — if deepen this well.

Jason called [illegible] to OCC previous order —
wells in certain parts will climb up structure in certain situations — maybe here to 2½° — this could take well under Saunders lease.
— to avoid this, Shell will have to directionally drill — w/ inherent costs.

other [illegible] on Shell lease [illegible].

Sumner re D — possible injury to those who use shopping center.
1. as well as our existing
2. during a workover

—634 — no wells ... yet

re X Jason — if well completed — might get a new price for the oil.

Clifford W. Mathews — Saundau from Midland

Jason Direct

move to 64 = better location on a ... structure and toward better permeability & porosity.
away from flank of structure

Sumner X — 664 — production from off-set leases.

Jason Re D — waste will result — less drainage of present Shell 40 acres. < loss of oil >

58% penalty — will not protect c/k of working interest and royalty owners.

Bob Layne. LAYNE — Saundau ... Engineer

< legal v. illegal >

71.4 — penalty being sought

Docket No. 34-73

DOCKET: COMMISSION HEARING - TUESDAY - NOVEMBER 27, 1973

OIL CONSERVATION COMMISSION - 9 A.M. - MORGAN HALL,
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

CASE 5063: (De Novo)

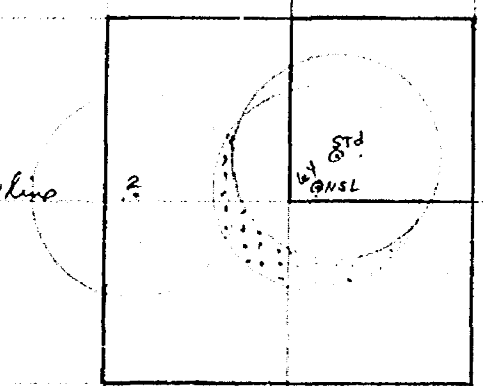
Application of Shell Oil Company for an unorthodox oil well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox location for its Sanger Well No. 6Y to be located 1220 feet from the North line and 180 feet from the West line of Section 27, Township 18 South, Range 38 East, Hobbs Pool, Lea County, New Mexico.

Upon application of Samedan Oil Corporation, this case will be heard De Novo pursuant to the provisions of Rule 1220.

Deny
A.L.P.

NE/4 Sec 27-18S-38E

5/S line + 200 W line



100/S line + 150'/W line.

$\pi R^2 = A$

$R^2 = \frac{A}{\pi}$

$R^2 = \frac{1,742,400}{3.1416}$

$R^2 = 554,621.8$

$R = \sqrt{554,621.8}$

$744.5 = \sqrt{554621.8}$

$.4 \times 21 = \frac{-8.4 \; 40}{40} = \frac{31.6}{40} = 79.0$

$.4 \times 12 = \frac{40 - 4.8}{40} \quad \frac{35.2}{40} = .88$ Based on Seminole area drainage

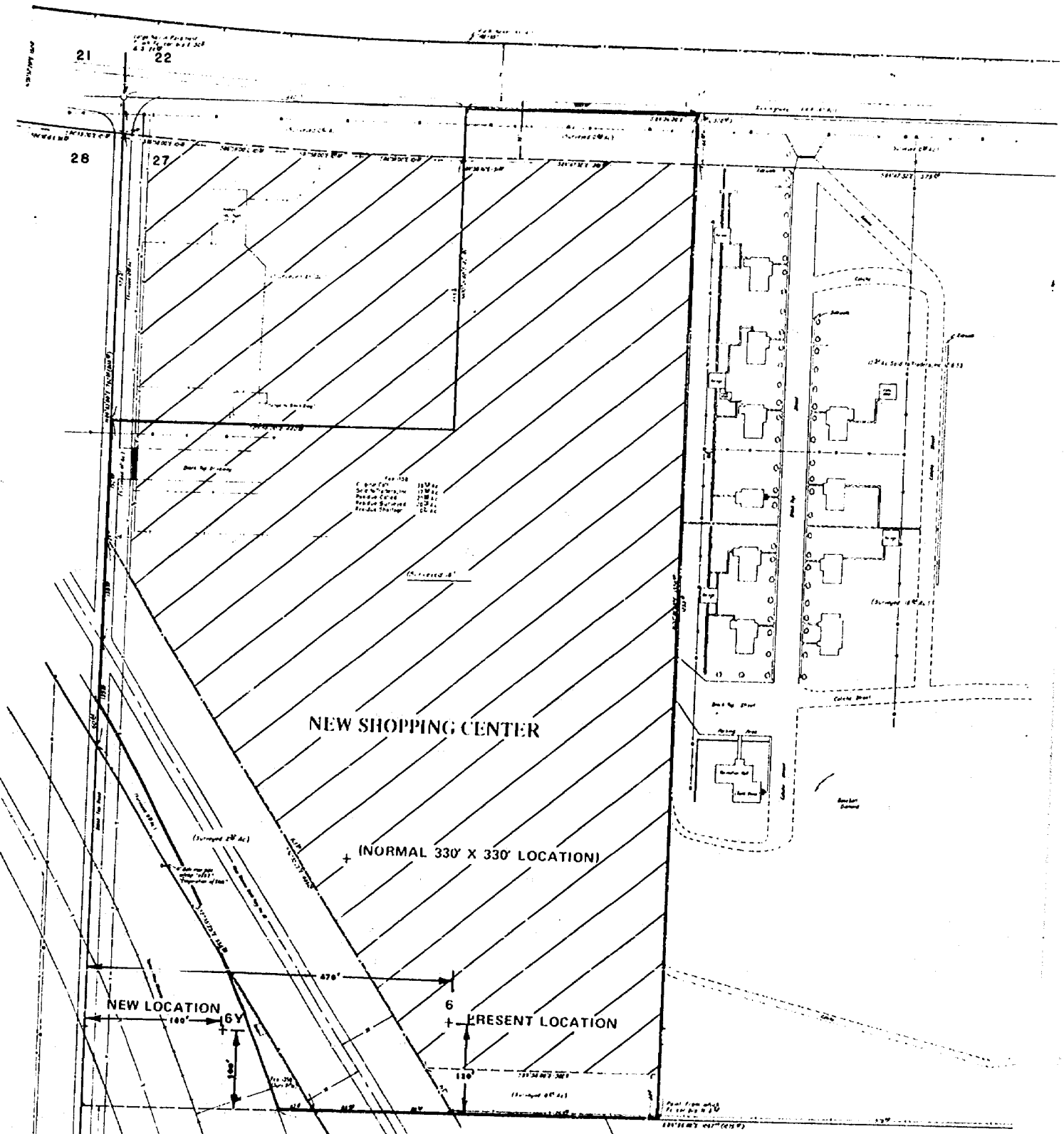
$\frac{11.44}{40} = 28.6$

88.0
2)116.6
58.3

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5063 Exhibit No. 1
Submitted by Shell Oil
Hearing Date Nov. 27, 1973

PROPOSED LOCATION

SHELL OIL COMPANY
SANGER NO. 6Y
HOBBS (GRAYBURG–SAN ANDRES) FIELD
LEA COUNTY, NEW MEXICO
AUGUST 1973
SCALE 1" = 2000'



BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5063 Exhibit No. R
Submitted by: Shell Oil
Hearing Date Nov 27, 1973

SHELL OIL COMPANY
SANGER NO. 6Y
HOBBS FIELD
LEA COUNTY, NEW MEXICO
AUGUST 1973

SCALE NONE

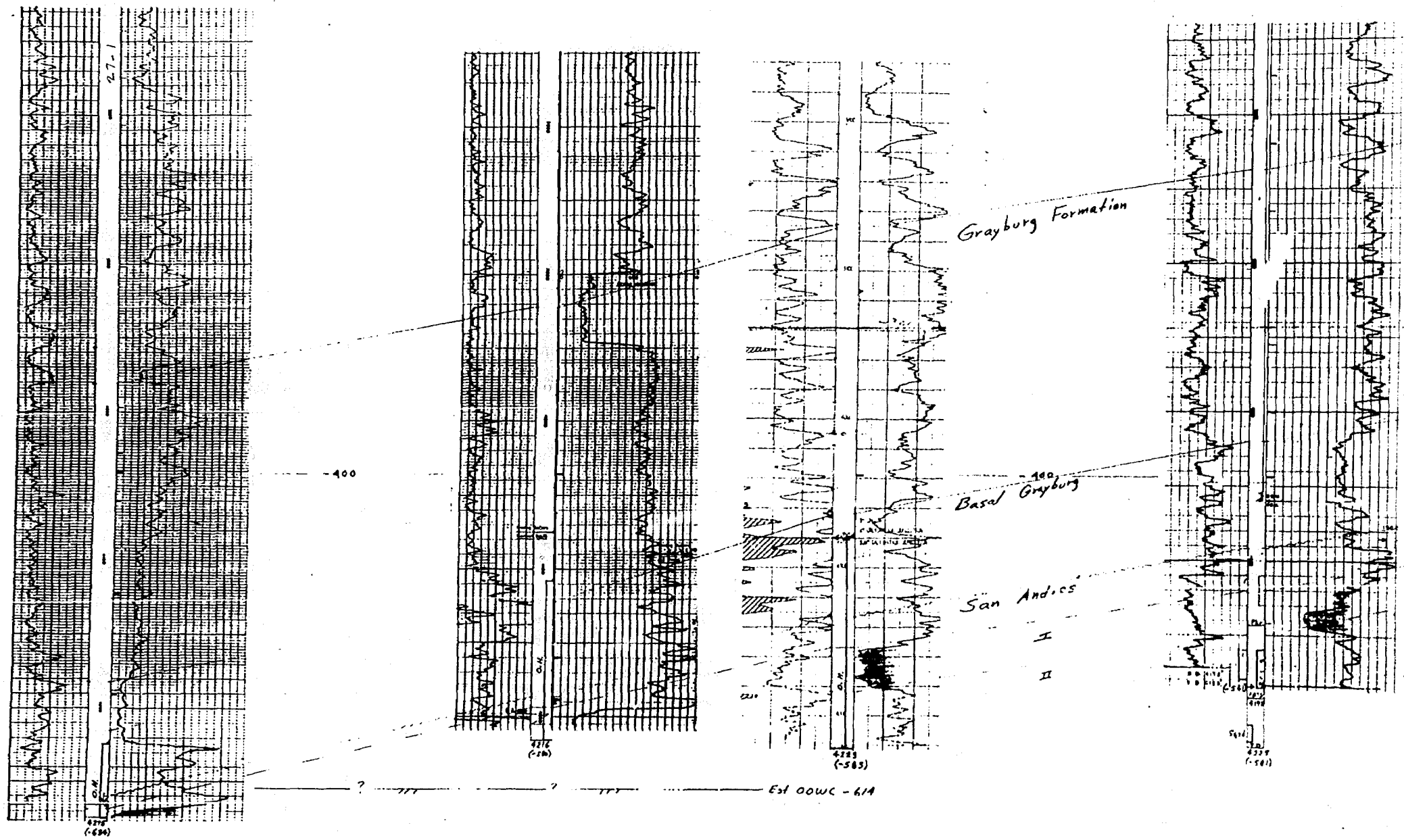
N

SHELL
SANGER NO. 6
ELEV. 3641'

SHELL
SANGER NO. 4
ELEV. 3636'

SHELL
SANGER NO. 3
ELEV. 3638'

SHELL
SANGER NO. 1
ELEV. 3644'

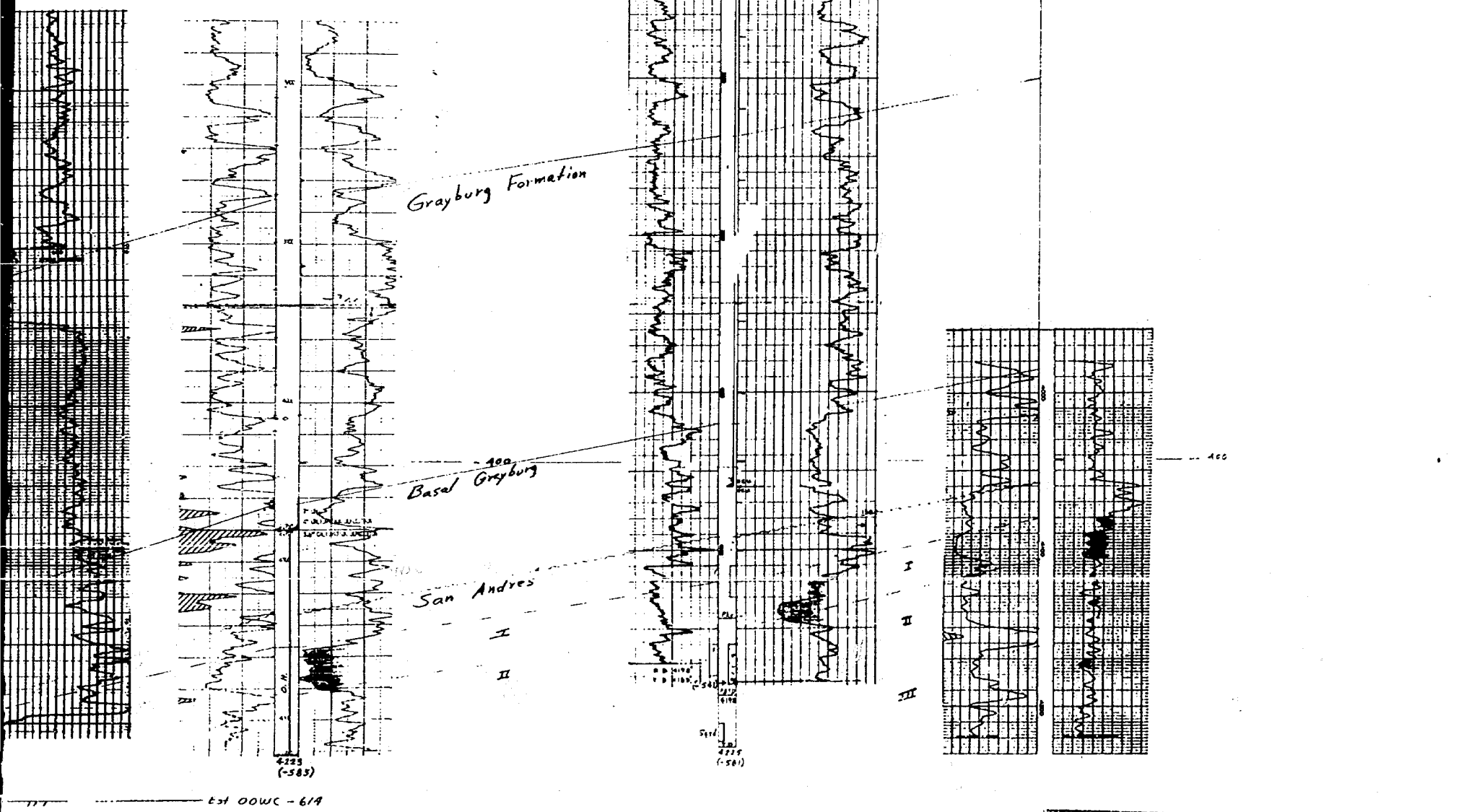


S

SHELL
SANGER NO.3
ELEV. 3638'

SHELL
SANGER NO.1
ELEV. 3644'

AMOCO
TURNER NO.8
ELEV. 3643'



BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5063 Exhibit No. 3
Submitted by Shell Oil
Hearing Date Nov. 27, 1973

DRILLING WELL COST ESTIMATE

FORM NO - EP-228 (4-66)

LEASE NAME AND WELL NUMBER	FIELD	COUNTY
SANGER NO. 6Y (Grayburg-San Andres)	Hobbs	Lea County, New Mexico

	COST CLASSIFICATION		TOTAL (100%)
	BUDGET		
1	DRILLING SITE		$ 2,000
	DRILLING COST		
2	Install and Remove Rig		
3	Rig Cost Drilling $5.50 foot, 9 days	$ 25,000	
4	Mud	3,000	
5	Surface & Protective Casing & Cementing	4,500	
6	Miscellaneous Drilling Cost	500	
7	TOTAL DRILLING COST		$ 33,000
	EVALUATION COST		
8	Logging 1 day	3,400	
9	Testing		
10	Coring 1 day	1,800	
11	Rig Cost - Evaluation (2 days)	2,800	
12	Miscellaneous Evaluation Cost		
13	TOTAL EVALUATION COST		$ 8,000
	COMPLETION COST		
14	Production Casing and Cementing	15,000	
15	Well Stimulation and Testing	4,600	
16	Rig Cost - Completion		
17	Miscellaneous Completion Costs	3,400	
18	TOTAL COMPLETION COST		$ 23,000
19	TOTAL DRILLING WELL COSTS (Lines 1, 7, 13, 18)		$ 66,000
	PRODUCTION EQUIPMENT TO COMPLETE WELL		
20	Tubing, Other Subsurface & Wellhead Equipment		$ 6,000
21	OFFSHORE WELL JACKET		$
22	TOTAL DRILLING & COMPLETION COSTS (Lines 19-21)		$ 72,000
	OTHER PRODUCTION EQUIPMENT		
23	Surface Pumping Equipment/Flowline	15,000	
24	Testing, Treating, Storage Facilities, Electrification, Housing	3,000	
25	TOTAL OTHER PRODUCTION EQUIPMENT		$ 18,000
26	TOTAL WELL COST ESTIMATE - BUDGET (Lines 22 & 25)		$ 90,000
	NON BUDGET		
27	M&T DEPRECIATION AND OTHER		$
28	LABOR BURDEN		$
29	TOTAL WELL COST ESTIMATE		$ 90,000
30	PROJECTED TOTAL DEPTH	4325'	

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5063 (Exhibit No.) 4

ESTIMATED BY		DATE	AFE NO.
K. S./R. A. P.	Submitted by Shell Oil	6/8/73	938381
	Hearing Date Nov 22, 1973		

INTEROFFICE MEMORANDUM

TO: N. W. HARRISON

FROM: R. A. PATTAROZZI

COPIES TO: D. S. ARTUS

DATE: SEPTEMBER 12, 19 73

SUBJECT: DIRECTIONALLY DRILL-SANGER 6Y

Per your request, the additional cost to directionally drill the Sanger 6Y well is as follows:

Assumptions:

1. Begin deviating hole at 2900'± below the salt section.
2. Build angle at 2.5 degrees per 100 feet.
3. Build angle to a maximum of 15-20 degrees and pass through a small target at 4150'± TVD and maintain this angle to total depth.
4. Horizontal displacement 300± feet in the northeasterly direction at 4150' TVD.
5. Begin coring operations at 4160' TVD and continuous core to TD. No further directional control required.
6. Run a multi-shot directional survey prior to kicking off the well and again at TD.

Estimated Cost:

Item	Case I (Probable Cost)	Case II (Including Trouble Costs)
1. Multi-shot survey from 3000' to 400' ($0.10/ft). (Including wireline truck, transportation, etc.)	$ 1,000	$ 1,000
2. Dyna-Drill costs	2 runs- 2,000	3 runs- 3,000
3. Directional personnel & tools- ($500/first day, $250/add'l day)	7 days- 2,000	10 days- 2,800
4. Monel Drill Collars($50/day)	350	500
5. Lost in hole coverings for DD & MDC	75	100
6. Reamers, misc. subs, etc. ($100/day)	700	1,000

BEFORE THE OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5063 Exhibit No. 5
Submitted by Shell Oil
Hearing Date Nov. 27, 1973

Item	Case I (Probable Cost)	Case II (Including Trouble Costs)
7. Multi-shot survey @ TD	$ 1,000	$ 1,000
8. Additional mud cost	500	1,000
9. Additional rig cost ($1700/day)	3 days 5,100	6 days 10,200
Total Est. Cost	$12,725	$20,600

I believe the cost estimates shown above are realistic. The $13,000 estimate is what I think the well could easily be drilled for. However, if any major directional control problems were encountered attempting to hit the small available target, the total additional cost could be as high as $21,000.

If you need any additional numbers or would like to discuss the potential drilling problems associated with directionally drilling the well, give me a call.

RAP:LA

R. A. Pattarozzi

Samedan

Moon "A" Lease
Cumulative to 9-1-73 — 1,384,202 BO

Moon "B" Lease
Cumulative to 9-1-73 — 1,288,007 BO

Total Moon "A" & "B"
Cumulative to 9-1-73 — 2,672,209 BO

Shell

Sanger Lease
Cumulative to 9-1-73 — 3,288,466 BO

SUMMARY

Samedan Oil Corporation - Moon "A" & Moon "B" Lease

Productive Acreage (Hobbs Engineering Committee Report) — 160 acres

Recovery Per Acre To August 1, 1973 — 16,701 bbls.

Recovery Per Ac./ft = 204.75 bbls.

Shell Oil Company - Sanger Lease

Productive Acreage (Hobbs Engineering Committee Report) — 186.7 acres

Recovery Per Acre To August 1, 1973 — 17,613 bbls.

Recovery Per Ac./ft. = 317.1 bbls

R-6

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5063 Exhibit No. 6-R
Submitted by Samedan
Hearing Date Nov. 27, 1973

Samedan

Moon "A" Lease
Cumulative to 9-1-73 — 1,384,202 BO

Moon "B" Lease
Cumulative to 9-1-73 — 1,288,007 BO

Total Moon "A" & "B"
Cumulative to 9-1-73 — 2,672,209 BO

4 Wells $\frac{2,672,209}{4}$

Recovery Average per Well = 668,052 B.O.

Shell

Sanger Lease
Cumulative to 9-1-73 — 3,288,466 BO

5 Wells (Sanger 1, 2, 3, 4, 5) $\frac{3,264,739}{5}$

Recovery Average per Well = 652,947

Note Sanger #4 was drilled and Completed 2/18/1970 Cumulative prod 9/1/73 = 23,727 B.O.

Sanger Well	Completion Dates
Sanger #1	Nov 9 1934
Sanger #2	Feb 8 1935
Sanger #3	June 10 1935
Sanger #4	June 19 1936
Sanger #5	July 22 1937
Sanger #6	Feb 18, 1970

Samedan Moon Lease Completion Dates	
Moon A #1	Feb 22, 1935
Moon A #2	July 12, 1935
Moon B #1	June 7, 1935
Moon B #2	May 1, 1936

R-6

NEW MEXICO OIL CONSERVATION COMMISSION

OPERATOR Shell Oil Company ADDRESS P. O. Box 1509, Midland, Texas

FIELD _____ LEASE Songer WELL NO. 6

LOCATION 1200' FNL & 470' FWL, Sec. 27, T-18-S, R-38-E, Lea County, N. M.

DEVIATION RECORD

350'	1/4	1.5400	1.5400
850'	3/4	6.5500	8.0900
1350'	1	8.7500	16.8400
1757'	1-1/2	10.6634	27.5034
2250'	1-1/2	12.9166	40.4200
2750'	1-1/4	10.9000	51.3200
2952'	1	3.5350	54.8550
3440'	1-3/4	14.8840	69.7390
3840'	2-1/2	17.4400	87.1790
4000'	2-1/2	6.9760	94.1550
4113'	2	3.9437	98.0987
4222'	2-1/2	4.7524	102.8511

Certification of personal knowledge of Deviation Record:

I hereby certify that I have personal knowledge of the data and facts placed on this form, and that such information is true and complete.

Signature

Cactus Drilling Company

Company

STATE OF TEXAS
COUNTY OF MIDLAND

Before me, the undersigned authority, on this day personally appeared Ronnie Ramsey, known to me to be the person whose name is subscribed hereto. who, after being duly sworn, on oath states that he is acting at the direction and on benalf of the operator of the well identified in this instrument and that such well was not intentionally deviated from the vertical.

Signature

Sales Conbact

Title

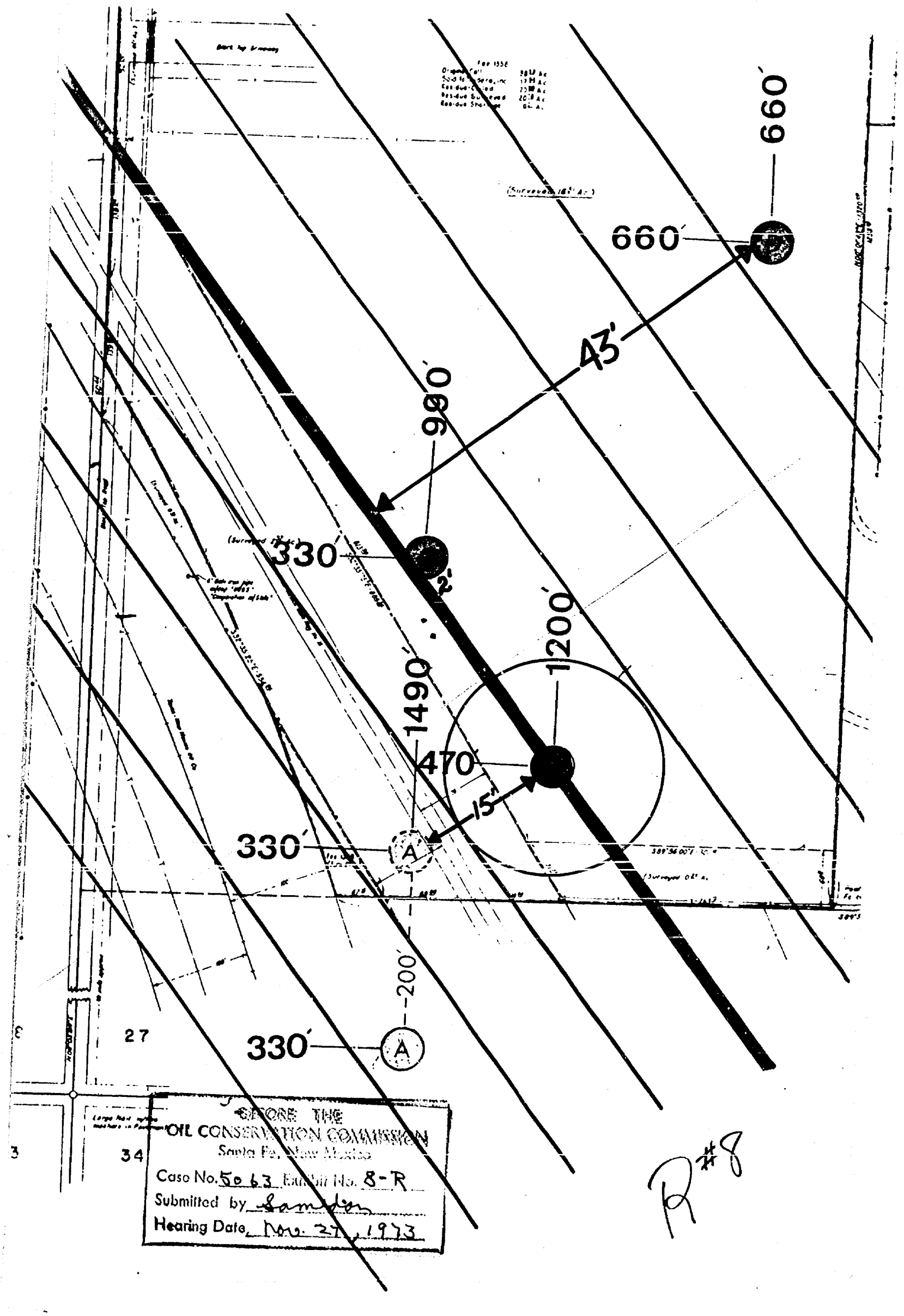
Sworn and Subscribed to before me, this the 26 day of January, 1970

Notary Public in and for Midland County, Texas.

2.5

R#7

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5063 Exhibit No. 7-R
Submitted by Lamesa
Hearing Date Nov. 27, 1973

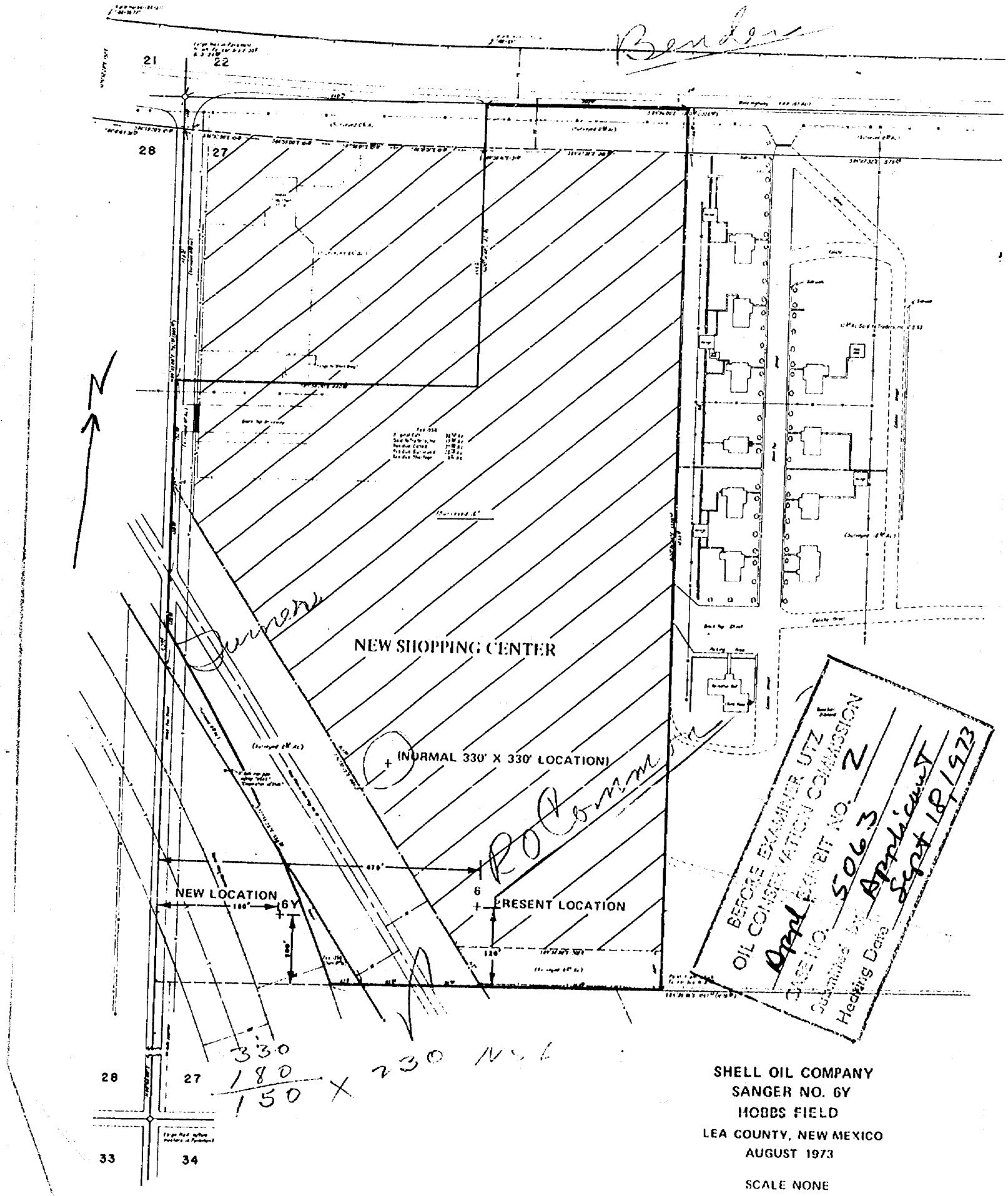

660'
660'
43'
990'
330'
1200'
1490'
470'
15'
330'
A
200'
330'
A
27
34
3
BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5063 Exhibit No. 8-R
Submitted by Lamdon
Hearing Date Nov. 27, 1973
R-#8

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 1
CASE NO. 5063
Submitted by Appl.
Hearing Date Sept. 19, 1973

TEXAS NEW MEXICO R.R.

PROPOSED LOCATION

SHELL OIL COMPANY
SANGER NO. 6Y
HOBBS (GRAYBURG–SAN ANDRES) FIELD
LEA COUNTY, NEW MEXICO
AUGUST 1973
SCALE 1" = 2000'



SHELL OIL COMPANY
SANGER NO. 6Y
HOBBS FIELD
LEA COUNTY, NEW MEXICO
AUGUST 1973

SCALE NONE

N

SHELL
SANGER NO.6
ELEV: 3641'

SHELL
SANGER NO.4
ELEV: 3636'

SHELL
SANGER NO.2
ELEV: 3638'

SHELL
SANGER NO.1
ELEV: 3644'

27-1

-400

Grayburg Formation

-400

Basal Grayburg

San Andres

I

II

O.W.C.

4276
(-635)

O.W.C.

4276
(-638)

O.W.C.

4223
(-585)

4219
4172
(-540)

4225
(-581)

? ? Est OOWC - 614

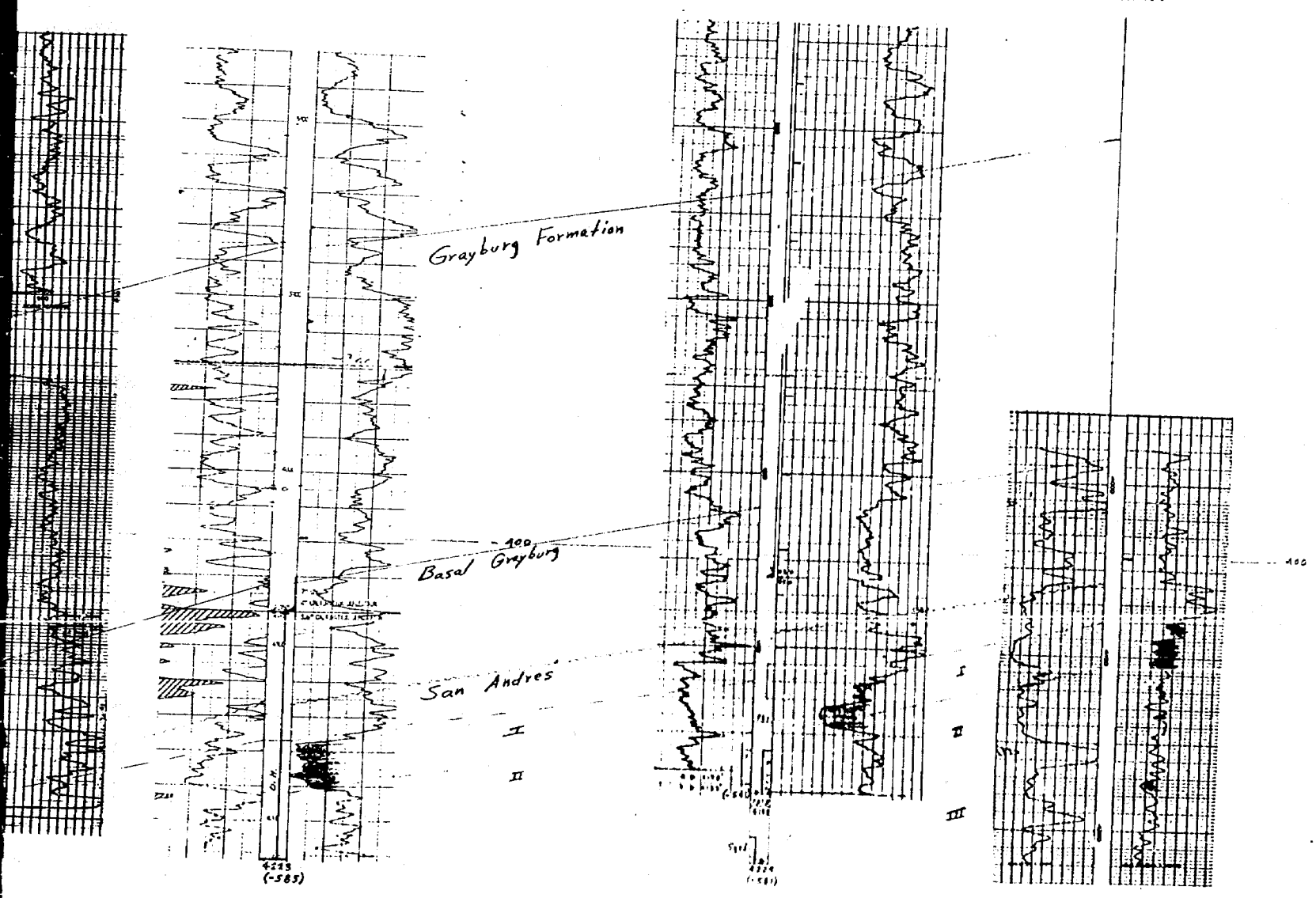
BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
Appl EXHIBIT NO. 3
CASE NO. 5063
Submitted by Applicant
Hearing Date Sept 19, 1973

SHELL
SANGER NO.3
ELEV. 3638'

SHELL
SANGER NO.1
ELEV. 3644'

AMOCO
TURNER NO.8
ELEV. 3643'

S



N - S SECTION 27-1

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
Appl EXHIBIT NO. 4
CASE NO. 5063
Submitted by Appl
Hearing Date Sept 18, 1973

DRILLING WELL COST ESTIMATE

FORM NO - EP-228 (4-66)

LEASE NAME AND WELL NUMBER	FIELD	COUNTY
SANGER NO. 6Y (Grayburg-San Andres)	Hobbs	Lea County, New Mexico

	COST CLASSIFICATION	BUDGET	TOTAL (100%)
1	DRILLING SITE		$ 2,000
	DRILLING COST		
2	Install and Remove Rig		
3	Rig Cost Drilling $5.50 foot, 9 days	$ 25,000	
4	Mud	3,000	
5	Surface & Protective Casing & Cementing	4,500	
6	Miscellaneous Drilling Cost	500	
7	TOTAL DRILLING COST		$ 33,000
	EVALUATION COST		
8	Logging 1 day	3,400	
9	Testing		
10	Coring 1 day	1,800	
11	Rig Cost - Evaluation (2 days)	2,800	
12	Miscellaneous Evaluation Cost		
13	TOTAL EVALUATION COST		$ 8,000
	COMPLETION COST		
14	Production Casing and Cementing	15,000	
15	Well Stimulation and Testing	4,600	
16	Rig Cost - Completion		
17	Miscellaneous Completion Costs	3,400	
18	TOTAL COMPLETION COST		$ 23,000
19	TOTAL DRILLING WELL COSTS (Lines 1, 7, 13, 18)		$ 66,000
	PRODUCTION EQUIPMENT TO COMPLETE WELL		
20	Tubing, Other Subsurface & Wellhead Equipment		$ 6,000
21	OFFSHORE WELL JACKET		$
22	TOTAL DRILLING & COMPLETION COSTS (Lines 19-21)		$ 72,000
	OTHER PRODUCTION EQUIPMENT		
23	Surface Pumping Equipment/Flowline	15,000	
24	Testing, Treating, Storage Facilities, Electrification, Housing	3,000	
25	TOTAL OTHER PRODUCTION EQUIPMENT		$ 18,000
26	TOTAL WELL COST ESTIMATE - BUDGET (Lines 22 & 25)		$ 90,000
	NON BUDGET		
27	M&T DEPRECIATION AND OTHER		$
28	LABOR BURDEN		$
29	TOTAL WELL COST ESTIMATE		$ 90,000
30	PROJECTED TOTAL DEPTH (/9d + /3E)	4325'	

ESTIMATED BY	DATE	AFE NO.
K. S./R. A. P.	6/8/73	738381

INTEROFFICE MEMORANDUM

TO N. W. HARRISON

FROM R. A. PATTAROZZI

COPIES TO D. S. ARTUS

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 5
CASE NO. 5063
DATE SEPTEMBER 12, 19 73
SUBJECT Hearing Date Sept 18, 1973
DIRECTIONALLY DRILL SANGER 6Y

Per your request, the additional cost to directionally drill the Sanger 6Y well is as follows:

Assumptions:

1. Begin deviating hole at 2900'± below the salt section.

2. Build angle at 2.5 degrees per 100 feet.

3. Build angle to a maximum of 15-20 degrees and pass through a small target at 4150'± TVD and maintain this angle to total depth.

4. Horizontal displacement 300± feet in the northeasterly direction at 4150' TVD.

5. Begin coring operations at 4160' TVD and continuous core to TD. No further directional control required.

6. Run a multi-shot directional survey prior to kicking off the well and again at TD.

Estimated Cost:

Item	Case I (Probable Cost)	Case II (Including Trouble Costs)
1. Multi-shot survey from 3000' to 400' ($0.10/ft). (Including wireline truck, transportation, etc.)	$ 1,000	$ 1,000
2. Dyna-Drill costs	2 runs- 2,000	3 runs- 3,000
3. Directional personnel & tools- ($500/first day, $250/add'l day)	7 days- 2,000	10 days- 2,800
4. Monel Drill Collars($50/day)	350	500
5. Lost in hole coverings for DD & MDC	75	100
6. Reamers, misc. subs, etc. ($100/day)	700	1,000

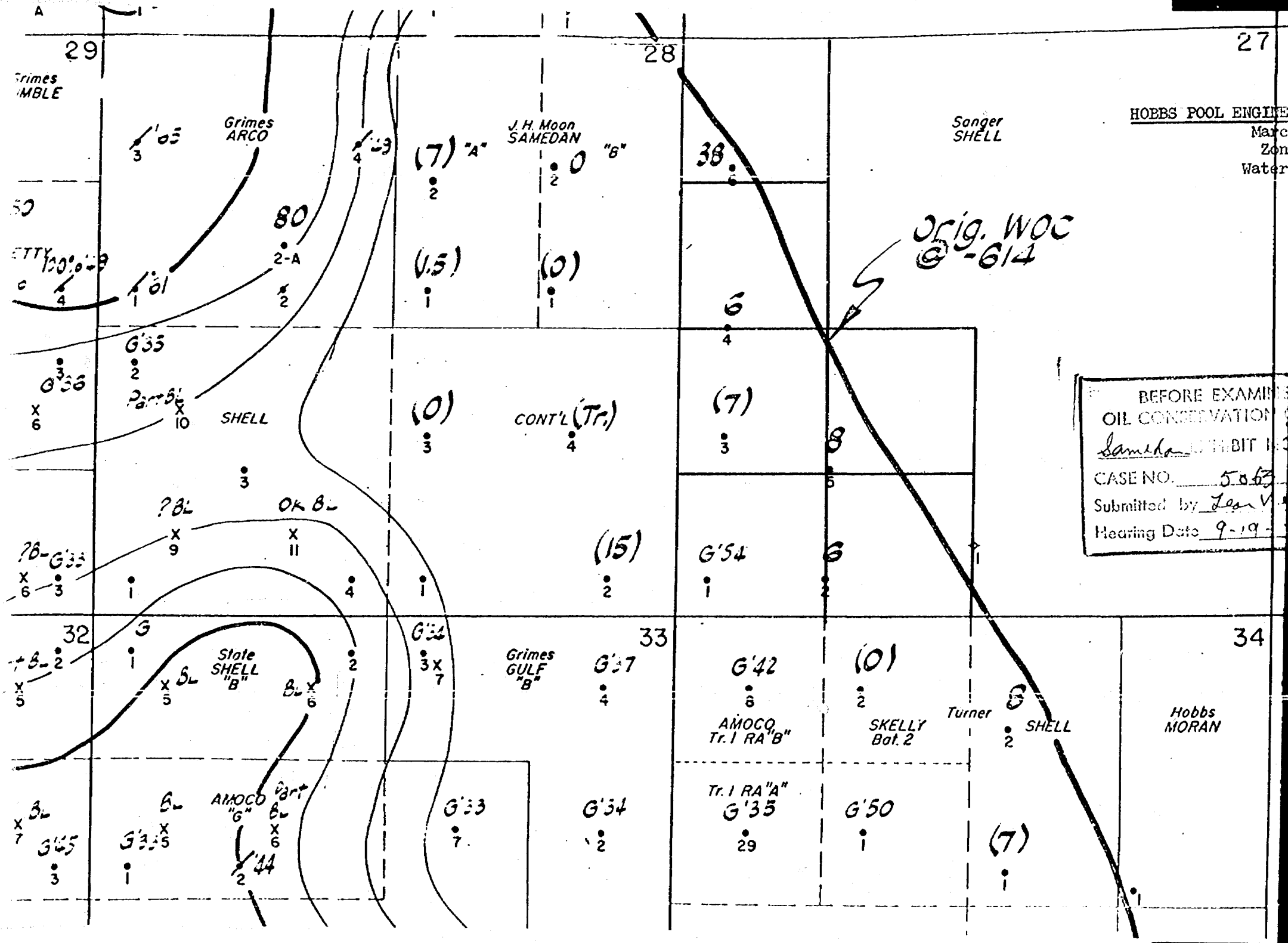
Item		Case I (Probable Cost)		Case II (Including Trouble Costs)
7. Multi-shot survey @ TD		$ 1,000		$ 1,000
8. Additional mud cost		500		1,000
9. Additional rig cost ($1700/day)	3 days	5,100	6 days	10,200
Total Est. Cost		$12,725		$20,600

I believe the cost estimates shown above are realistic. The $13,000 estimate is what I think the well could easily be drilled for. However, if any major directional control problems were encountered attempting to hit the small available target, the total additional cost could be as high as $21,000.

If you need any additional numbers or would like to discuss the potential drilling problems associated with directionally drilling the well, give me a call.

RAP:LA

R. A. Pattarozzi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Grimes
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ARCO
J. H. Moon
SAMEDAN
Songer
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Orig. WOC
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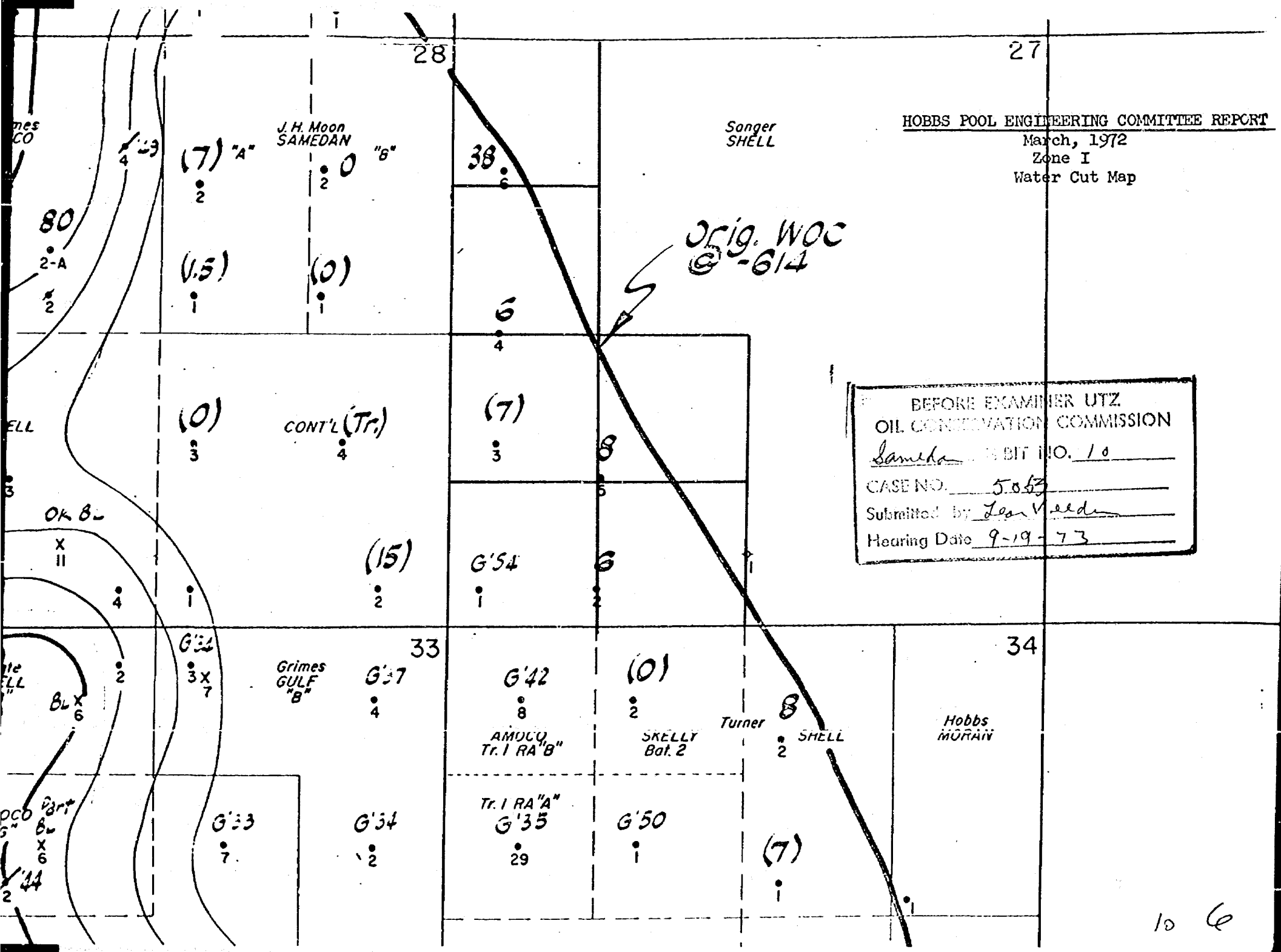
SHELL
"B"
Grimes
GULF
"B"
AMOCO
"G"
AMOCO
Tr. 1 RA "B"
SKELLY
Bot. 2
Turner
SHELL
Hobbs
MORAN
Tr. 1 RA "A"
BEFORE EXAMINER
OIL CONSERVATION
Samedan EXHIBIT
CASE NO. 5063
Submitted by Lea
Hearing Date 9-19

HOBBS POOL ENGINEERING COMMITTEE REPORT

March, 1972
Zone I
Water Cut Map



BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
Samedan EXHIBIT NO. 10
CASE NO. 5053
Submitted by Lea Needham
Hearing Date 9-19-73

NOO 27-

BEFORE THE

OIL CONSERVATION COMMISSION OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

Case No. 5063
Order No. R-4639

APPLICATION OF SHELL OIL COMPANY
FOR AN UNORTHODOX WELL LOCATION,
LEA COUNTY, NEW MEXICO

APPLICATION FOR HEARING DE NOVO

COMES NOW, SAMEDAN OIL CORPORATION, an interested party adversely affected by the order entered in the above captioned case, and pursuant to the provisions of Rule 1220 of the Rules and Regulations of the New Mexico Oil Conservation Commisson applies to the Oil Conservation Commission of New Mexico for a Hearing De Novo of the above captioned Case No. 5063, and Order No. R-4639 issued pursuant thereto.

Respectfully submitted,

SAMEDAN OIL CORPORATION

By W. T. Kellahin

KELLAHIN & FOX
P. O. Box 1769
Santa Fe, New Mexico 87501

11-16-73

SHELL OIL COMPANY

PETROLEUM BUILDING
P.O. BOX 1509
MIDLAND, TEXAS 79701

August 9, 1973

Subject: Unorthodox Location Request
Sanger Lease, Well No. 6Y
Hobbs (Grayburg-San Andres) Field
Lea County, New Mexico

Oil Conservation Commission
State of New Mexico
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention Mr. A. L. Porter, Jr.

Gentlemen:

Shell Oil Company requests administrative approval of an unorthodox location for its Sanger Well No. 6Y in the Hobbs (Grayburg-San Andres) Field, Lea County, New Mexico under Rule 104, Section F of the Rules and Regulations of the Commission. The proposed location is 1220 feet from the north line and 180 feet from the west line of Section 27, Township 18 South, Range 38 East, Lea County, New Mexico.

We request administrative approval of an unorthodox location for this replacement well because of the topographical problems which have developed at the existing Sanger No. 6 location. This well is in the city of Hobbs immediately adjacent to the east curb of Turner Street, a main traffic artery, and is on a city block where a major shopping center is being constructed. We were, of course, aware of the shopping center plans when we drilled Sanger No. 6 at its present location, but felt we could satisfy the building planners by keeping the well clean, attractive and safe. We now feel that it would be in the best interest of all concerned to attempt a replacement of this well for the following reasons:

1. Pacific Coast Properties, the coordinator of the shopping center installation, has made it very clear that they wish to see Sanger No. 6 removed. They feel that the removal of this well from their side of Turner Street would significantly improve the overall appearance and appeal of their shopping location.

2. The probability of Sanger No. 6 being involved in some future personal injury or property damaging accident will be reduced by removing it from this shopping area. The proposed location

Date 9-7-73

about 300 feet to the southwest will be on the west side of Turner Street in the right-of-way of the Texas-New Mexico Railroad Company spur track to Lovington. This location should never be commercially developed. Shell currently has three other wells on the Sanger lease located in this right-of-way.

3. Sanger No. 6 has never produced as well as was expected when it was drilled. Perhaps even this very short move across Turner Street will place the well in more permeable reservoir rock and improve its producing capability. Should this happen the well will also be much more useful as a possible injector in the waterflood project proposed for this field.

The proposed redrill location for Sanger No. 6Y is in the same proration Unit D as Sanger No. 6 and is the only remaining location in this unit not occupied by private dwellings, commercial structures or utility equipment. Form C-101 and location plats showing the proposed new well site and the surrounding topographical obstructions are attached.

The offset operators to this proration unit have been sent copies of this application.

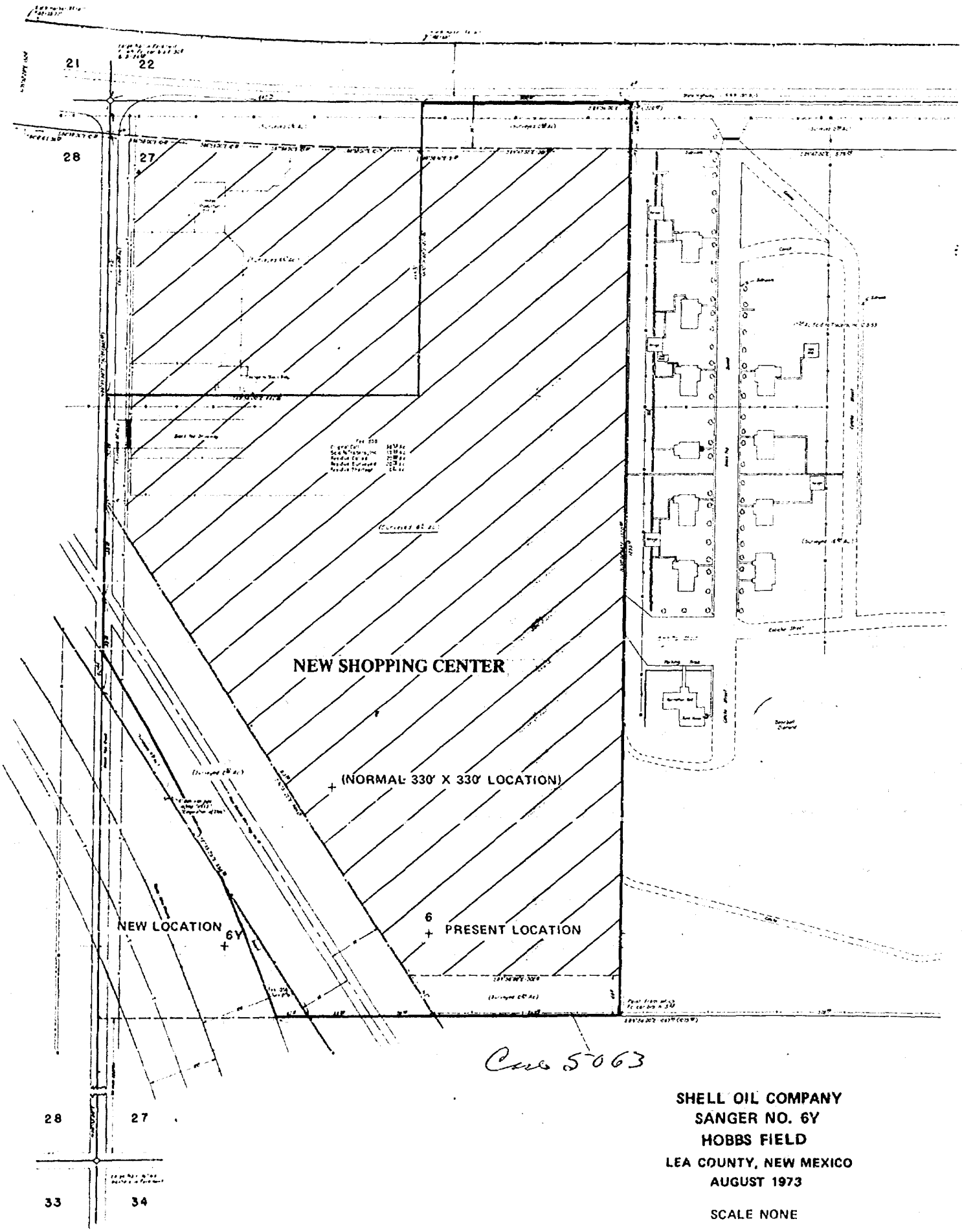
Yours very truly,

H. L. Conrad

For: Jack L. Mahaffey
Production Manager
Mid-Continent Division

WRG:LA

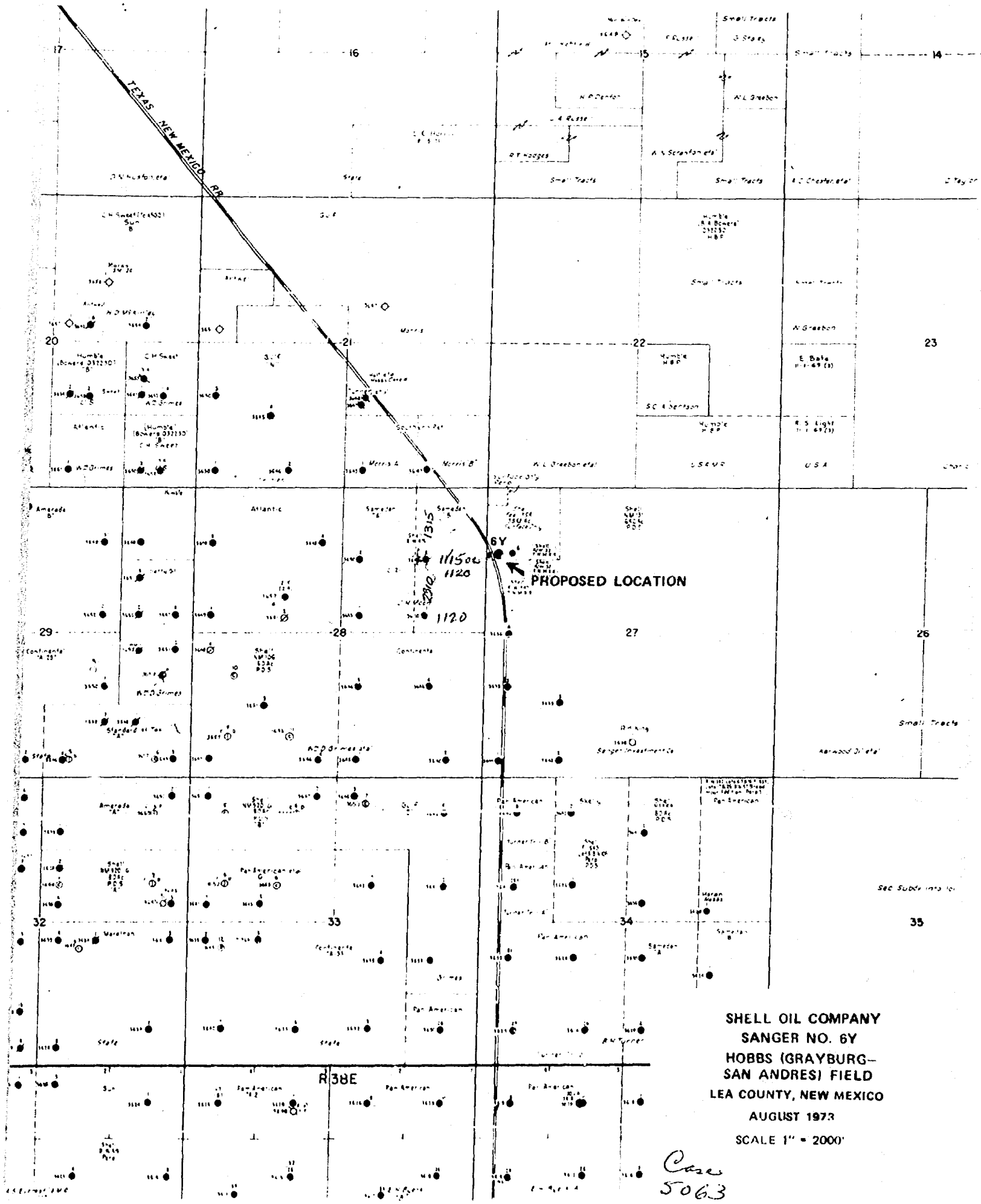
Attachments



Case 5063

SHELL OIL COMPANY
SANGER NO. 6Y
HOBBS FIELD
LEA COUNTY, NEW MEXICO
AUGUST 1973

SCALE NONE



SHELL OIL COMPANY
SANGER NO. 6Y
HOBBS (GRAYBURG–SAN ANDRES) FIELD
LEA COUNTY, NEW MEXICO
AUGUST 1973
SCALE 1" = 2000'

Case 5063

Case 5063

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LAND OFFICE		
OPERATOR		

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-101
Revised 1-1-65

5A. Indicate Type of Lease STATE ☐ FEE ☒

5. State Oil & Gas Lease No.

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work

b. Type of Well
DRILL ☒ DEEPEN ☐ PLUG BACK ☐
OIL WELL ☒ GAS WELL ☐ OTHER SINGLE ZONE ☒ MULTIPLE ZONE ☐

7. Unit Agreement Name

8. Farm or Lease Name: Sanger

2. Name of Operator: Shell Oil Company

9. Well No.: 6Y

3. Address of Operator: P. O. Box 1509, Midland, Texas 79701

10. Field and Pool, or Wildcat: Hobbs (G-SA)

4. Location of Well UNIT LETTER D LOCATED 1220 FEET FROM THE North LINE AND 180 FEET FROM THE West LINE OF SEC. 27 TWP. 18S RGE. 38E NMPM

12. County: Lea

19. Proposed Depth	19A. Formation	20. Rotary or C.T.
4400'	San Andres	Rotary

21. Elevations (Show whether DF, RT, etc.)	21A. Kind & Status Plug. Bond	21B. Drilling Contractor	22. Approx. Date Work will start
Est. 3641 DF	Blanket	Unknown	Upon approval

23.

PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
16"	13 3/8"	48#	40'	Readymix	Surface
12 1/4"	8 5/8"	24#	400'	275 sx	Surface
7 7/8"	5 1/2"	14#	4400'	450 sx	3600'

BOP Program: 10" Double BOP with blind and pipe rams, 2000# WP, Series 900

A copy of this application was sent to the City of Hobbs, New Mexico

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 W. R. Greene Title Staff Production Engineer Date 8-6-73

(This space for State Use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

Case 5063

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
SHELL OIL COMPANY	Sanger	6 Y

Unit Letter	Section	Township	Range	County
D	27	18 South	38 East	Lea

Actual Footage Location of Well:
1220 feet from the north line and 180 feet from the west line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
Not available	Grayburg-San Andres	Hobbs Grayburg San Andres	40 Acres

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

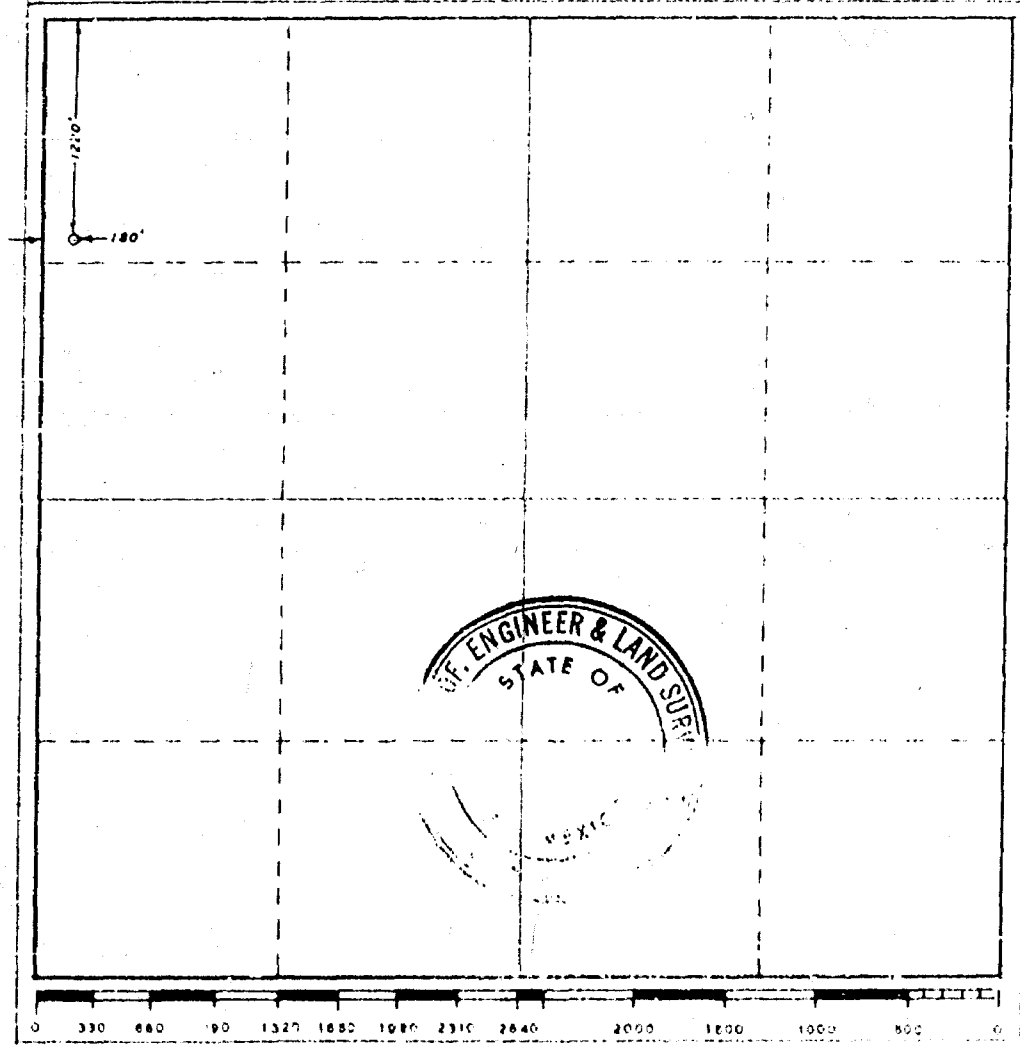
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

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: W. R. Greene

Position: Staff Production Engineer

Company: Shell Oil Company

Date: August 1, 1973

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: July 31, 1973

Registered Professional Engineer and/or Land Surveyor:

Certificate No. 676

Case 5063

No. 547984

RECEIPT FOR CERTIFIED MAIL—30¢ (plus postage)

SENT TO
Gulf Oil Co. - U. S

STREET AND NO.
P. O. Box 1150

P.O., STATE AND ZIP CODE
Midland, Texas 79701

POSTMARK OR DATE

OPTIONAL SERVICES FOR ADDITIONAL FEES

RETURN RECEIPT SERVICES
1. Shows to whom and date delivered ..... 15¢
With delivery to addressee only ..... 65¢
2. Shows to whom, date and where delivered .. 35¢
With delivery to addressee only ..... 85¢

DELIVER TO ADDRESSEE ONLY ..... 50¢
SPECIAL DELIVERY (extra fee required) .....

PS Form 3800 Apr. 1971
NO INSURANCE COVERAGE PROVIDED—NOT FOR INTERNATIONAL MAIL
(See other side)
* GPO : 1972 O - 460-743

No. 547983

RECEIPT FOR CERTIFIED MAIL—30¢ (plus postage)

SENT TO
Continental Oil Co.

STREET AND NO.
P. O Box 460

P.O., STATE AND ZIP CODE
Hobbs, New Mexico 88240

POSTMARK OR DATE

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No. 547981

RECEIPT FOR CERTIFIED MAIL—30¢ (plus postage)

SENT TO
Southern Petroleum Explr. Inc.

STREET AND NO.
P. O. Box 1434

P.O., STATE AND ZIP CODE
Roswell, New Mexico 88201

POSTMARK OR DATE

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POSTMARK OR DATE
MIDLAND, TX ANNEX
USPO

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(See other side)
* GPO : 1972 O - 460-743

No. 547986

RECEIPT FOR CERTIFIED MAIL—30¢ (plus postage)

SENT TO
Skelly Oil Co.
STREET AND NO.
P. O. Box 1351
P.O., STATE AND ZIP CODE
Midland, Texas 79701
OPTIONAL SERVICES FOR ADDITIONAL FEES
RETURN RECEIPT SERVICES
1. Shows to whom and date delivered ..... 15¢
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DELIVER TO ADDRESSEE ONLY ..... 50¢
SPECIAL DELIVERY (extra fee required) .....

POSTMARK OR DATE

PS Form 3800 Apr. 1971
NO INSURANCE COVERAGE PROVIDED—NOT FOR INTERNATIONAL MAIL
(See other side)
* GPO : 1972 O - 460-743

No. 547987

RECEIPT FOR CERTIFIED MAIL—30¢ (plus postage)

SENT TO
City of Hobbs
STREET AND NO.
City Hall
P.O., STATE AND ZIP CODE
Hobbs, New Mexico 88240
OPTIONAL SERVICES FOR ADDITIONAL FEES
RETURN RECEIPT SERVICES
1. Shows to whom and date delivered ..... 15¢
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POSTMARK OR DATE

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NO INSURANCE COVERAGE PROVIDED—NOT FOR INTERNATIONAL MAIL
(See other side)
* GPO : 1972 O - 460-743

Case 5065

RECEIPT FOR CERTIFIED MAIL—30¢ (plus postage)

No. 547984

SENT TO: Gulf Oil Co. - U. S

STREET AND NO.: P. O. Box 1150

P.O., STATE AND ZIP CODE: Midland, Texas 79701

POSTMARK OR DATE: MIDLAND, TX 1973 USPO

OPTIONAL SERVICES FOR ADDITIONAL FEES

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DELIVER TO ADDRESSEE ONLY ..... 50¢

SPECIAL DELIVERY (extra fee required) .....

PS Form 3800 Apr. 1971 — NO INSURANCE COVERAGE PROVIDED— NOT FOR INTERNATIONAL MAIL — (See other side)

* GPO : 1972 O - 460-743

RECEIPT FOR CERTIFIED MAIL—30¢ (plus postage)

No. 547983

SENT TO: Continental Oil Co.

STREET AND NO.: P. O Box 460

P.O., STATE AND ZIP CODE: Hobbs, New Mexico 88240

POSTMARK OR DATE: HOBBS, NEW MEXICO 1973 USPO

OPTIONAL SERVICES FOR ADDITIONAL FEES

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DELIVER TO ADDRESSEE ONLY ..... 50¢

SPECIAL DELIVERY (extra fee required) .....

PS Form 3800 Apr. 1971 — NO INSURANCE COVERAGE PROVIDED— NOT FOR INTERNATIONAL MAIL — (See other side)

* GPO : 1972 O - 460-743

RECEIPT FOR CERTIFIED MAIL—30¢ (plus postage)

No. 547981

SENT TO: Southern Petroleum Explr. Inc

STREET AND NO.: P. O. Box 1434

P.O., STATE AND ZIP CODE: Roswell, New Mexico 88201

POSTMARK OR DATE: 1973

OPTIONAL SERVICES FOR ADDITIONAL FEES

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RECEIPT FOR CERTIFIED MAIL—30¢ (plus postage)

No. 547986

SENT TO: Skelly Oil Co.

STREET AND NO.: P. O. Box 1351

P.O., STATE AND ZIP CODE: Midland, Texas 79701

POSTMARK OR DATE

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SPECIAL DELIVERY (extra fee required) .....

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* GPO : 1972 O - 460-743

RECEIPT FOR CERTIFIED MAIL—30¢ (plus postage)

No. 547987

SENT TO: City of Hobbs

STREET AND NO.: City Hall

P.O., STATE AND ZIP CODE: Hobbs, New Mexico 88240

POSTMARK OR DATE

OPTIONAL SERVICES FOR ADDITIONAL FEES

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DELIVER TO ADDRESSEE ONLY ..... 50¢

SPECIAL DELIVERY (extra fee required) .....

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* GPO : 1972 O - 460-743

No. 547982

RECEIPT FOR CERTIFIED MAIL—30¢ (plus postage)

SENT TO
Samedan Oil Corp.

STREET AND NO.
2207 Wilco Building

P.O., STATE AND ZIP CODE
Midland, Texas 79701

POSTMARK OR DATE

OPTIONAL SERVICES FOR ADDITIONAL FEES

RETURN RECEIPT SERVICES
1. Shows to whom and date delivered ..... 15¢
With delivery to addressee only ..... 65¢
2. Shows to whom, date and where delivered .. 35¢
With delivery to addressee only ..... 85¢

DELIVER TO ADDRESSEE ONLY ..... 85¢

SPECIAL DELIVERY (extra fee required) ..... 50¢

PS Form 3800 Apr. 1971

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See other side)

* GPO : 1972 O - 460-743

No. 547985

RECEIPT FOR CERTIFIED MAIL—30¢ (plus postage)

SENT TO
Amoco Production Co.

STREET AND NO.
P O. Box 68

P.O., STATE AND ZIP CODE
Hobbs, New Mexico 88240

POSTMARK OR DATE

OPTIONAL SERVICES FOR ADDITIONAL FEES

RETURN RECEIPT SERVICES
1. Shows to whom and date delivered ..... 15¢
With delivery to addressee only ..... 65¢
2. Shows to whom, date and where delivered .. 35¢
With delivery to addressee only ..... 85¢

DELIVER TO ADDRESSEE ONLY ..... 85¢

SPECIAL DELIVERY (extra fee required) ..... 50¢

PS Form 3800 Apr. 1971

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See other side)

* GPO : 1972 O - 460-743

DRAFT

TWD/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE NO. 5063

Order No. R-4629

APPLICATION OF SHELL OIL
COMPANY FOR AN UNORTHODOX
WELL LOCATION, LEA COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on September 19, 1973 at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this _____ day of October, 1973, the Commission, a quorum being present, 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 Commission has jurisdiction of this cause and the subject matter thereof.

(2) That applicant, Shell Oil Company, seeks an exception to Rule 104 of the Commission Rules and Regulations for approval of an unorthodox oil well location for its Sanger Well No. 6-Y, proposed to be located 1220 feet from the North line and 180 feet from the West line of Section 27, Township 18 South, Range 38 East, NMPM, Hobbs Grayburg-San Andres Pool, Lea County, New Mexico.

(3) That Unit D in the NW/4 of the NW/4 of Section 27, Township 18 South, Range 38 East, NMPM, Lea County, New Mexico, is now dedicated to applicant's Sanger Well No. 6, which is presently operating.

(4) That upon completion of applicant's Sanger Well No. 6-Y, Unit D in the NW/4 of the NW/4 of Section 27, Township 18 South, Range 38 East, NMPM, Lea County, New Mexico, should be dedicated to said well.

(5) That a well drilled at the proposed location ~~will~~ should encounter a zone of more favorable porosity for the production of oil than a well drilled at a standard location.

(6) That the location of applicant's well No. 6 is undesirable because of the imminent construction of a shopping center parking lot surrounding the site.

(7) That the substitution of applicant's proposed Sanger Well No. 6-Y in the proposed unorthodox location for applicant's Sanger Well No. 6 will promote safety, will afford the applicant a greater opportunity to produce its just and equitable share of the oil in the subject pool, will prevent the economic loss caused by the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells, and will otherwise prevent waste and protect correlative rights.

(8) That a rateable take factor of 58 percent will afford the applicant the opportunity to produce its just and equitable share of oil in place and will afford protection to the correlative rights of the lease holders directly to the west of the NW/4 of the NW/4 of Section 27, Township 18 South, Range 38 East, NMPM, Lea County, New Mexico.

(9) That the applicant should be required to determine the subsurface location of the hole by means of a continuous multi-shot directional drilling survey to determine that the bottom of the hole is no nearer than 180 feet to the west line of Section 27, and the results of that survey should be furnished to the Commission.

IT IS THEREFORE ORDERED:

(1) That an unorthodox oil well location for the Grayburg-San Andres formation is hereby approved for applicant's Sanger Well No. 6-Y, to be drilled at a surface location ~~to be located~~ 1220 feet from the North line and 180 feet from the West line of the NW/4 of the NW/4 of Section 27, Township 18 South, Range 32 East, NMPM, Hobbs Pool, Lea County, New Mexico.

(3) That upon completion of applicant's Sanger Well No. 6-Y, Unit D, in the NW/4 of the NW/4 of said Section 27 shall be dedicated to said well.

(4) PROVIDED HOWEVER, that the well is assigned an acreage factor for proration purposes of 58 percent for production from the Grayburg-San Andres formation.

(5) PROVIDED FURTHER, that upon completion of applicant's Sanger Well No. 6-Y, a continuous multi-shot directional survey shall be made of the well-bore of said well for the entire length of the well-bore with shot points no more than 100 feet apart; that the operator shall cause the surveying company to forward a copy of the survey report directly to the Santa Fe office of the Commission, P. O. Box 2088, Santa Fe, New Mexico, and that the operator shall notify the Commission's Hobbs district office of the date and time said survey is to be commenced.

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

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

(2) That said well shall be drilled in such a manner as to insure that the bottom of the well is no closer than 180 feet to the west line of said Section 27.

Application of Shell Oil Company for an unorthodox well location, Lea County, New Mexico.

Case 5063

19 Sept, 1973 - Ellis A. Utz

FINDS

(1) Notice

(2) That Applicant Shell Oil Company seeks an exception to Rule 104 of the Commission Rules & Regulations for approval of an unorthodox oil well location 1220 feet from the North line and 180 feet from the West line of Section 27, Township 18 S., Range 38 E., NMPM, Hobbs Graybury - San Andres Pool, Lea County New Mexico.

For its Sanger No. 6 Y well to be located

(3) That Unit D in the NW/4 of the NW/4 of Section 27, Township 18 S., Range 38 E., NMPM, Lea County, New Mexico is ~~not~~ now dedicated to Applicant's Sanger No. 6 well, which is presently operating.

(4) That upon completion of Applicant's Sanger No. 6-Y well, Unit D in the NW/4 of the NW/4 of Section 27, Township 18 S., Range 38 E., NMPM, [redacted] Lea County, NM. ~~Shell~~ is dedicated to said well.

(5) That a well drilled at the proposed location will [redacted] encounter

a zone of more favorable porosity for the production of oil than a well drilled at a standard location.

(6) That the ~~[illegible]~~ location of Applicant's No. 6 well is undesirable because of the imminent construction of a shopping center parking lot surrounding the site.

(7) That the substitution of Applicant's proposed ~~Sanger No. 6-Y well in the proposed unorthodox location~~ for Applicant's Sanger No. 6 well will promote safety, will afford the Applicant a greater opportunity to produce ~~[illegible]~~ its just and equitable share of the oil in the subject pool, will prevent the economic loss caused by the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells, and will otherwise prevent waste and protect correlative rights.

(8) That a ~~netoff take factor~~ of 58% will afford ~~the Applicant the opportunity~~ to produce its just and equitable share of ~~g~~ oil in place and will afford protection to the correlative rights of the lease holders directly to the west of the NW/4 of the NW/4 of Section 27, Township 18 S., Range 38 E. NMPM, Lea County, NM.

(9) That the Applicant should be required to determine the subsurface location of the hole by means of a continuous multi-shot directional drilling survey to determine that the bottom of the hole is no ~~nearer~~ than 10 feet to the west line of Section 27, ~~[illegible]~~ and the results

IT IS THEREFORE ORDERED

~~(A)~~ That ~~Applicant, Shell Oil Co. is hereby~~ authorized to

(1) That an unorthodox oil well location for the ~~[illegible]~~ Grayburg - San Andres formation is hereby approved for Applicants' Sanger No. 6-4 Well, to be located 1220 feet from the North line and 180 feet from the West line of the NW/4 of the NW/4 of Section 27, Township 18 S., Range 32 E. NMPM, Lea County, New Mexico.

(2) That upon completion of Applicants' Sanger No. 6-4 well ~~[illegible]~~ Unit D in the NW/4 of the NW/4 of ~~[illegible]~~ said Section 27 shall be dedicated to said well.

(3) Provided however that the well is ~~[illegible]~~ assigned an acreage factor ~~[illegible]~~ for proration purposes of 58% for production from the Grayburg - San Andres Formation.

(4) Provided further that, upon completion of Applicants Sanger No. 6-4 well, a continuous multi-shot directional survey shall be made of the well bore ~~[illegible]~~ for the entire length of the well bore with shot points no more than 100 feet apart; that the operator shall cause the surveying company to forward a copy of the survey report directly to the Santa Fe office of the Commission, Box 2088, Santa Fe, New Mexico, and that the operator

shall notify the commissioner Hobbs District Office of the date and time said survey is to be commenced.

Industrial

Done.

S-063
Recd 8-12-73
P
Rec 8-13-73

Grant Shell permission to drill their Sanger 6Y well. 1320/N + 150/W line 27-18-38 an NSL in the Hobbs S.A. oil pool. Due to the NSL and the acreage that may be in the 40 A allocated, apply a proration + Penalty factor of .58 of the depth factor allowable of 80 barrels.

There should be little interference from the [illegible] Moore 'B' #2 which is 1320/N and 200/W line of sec. 27

Big reason for move is:

1. Sour well at present location
2. Building shopping center around well

[illegible signature]

DRAFT

DSN/dr

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

APPLICATION OF SHELL OIL COMPANY
FOR AN UNORTHODOX WELL LOCATION,
LEA COUNTY, NEW MEXICO.

CASE NO. 5063
Order No. R-4639-A

NUNC PRO TUNC

BY THE COMMISSION:

It appearing to the Commission that due to clerical error and inadvertence, Order No. R-4639, dated October 11, 1973, does not correctly state the intended order of the Commission,

IT IS THEREFORE ORDERED:

(1) That Order No. (1) on Page 2 of Order No. R-4639 should read in its entirety as follows:

"(1) That an unorthodox oil well location for the Grayburg-San Andres formation is hereby approved for applicant's Sanger Well No. 6-Y, to be drilled at a surface location 1220 feet from the North line and 180 feet from the West line of [redacted] Section 27, Township 18 South, Range 38 East, NMPM, Hobbs Pool, Lea County, New Mexico."

(2) That this order shall be effective nunc pro tunc as of October 11, 1973.

DONE at Santa Fe, New Mexico, this_____day of October, 1973.

(5) That a well drilled at the proposed location should encounter a zone of more favorable porosity for the production of oil than a well drilled at a standard location.

(6) That the location of applicant's No. 6 well is undesirable because of the imminent construction of a shopping center parking lot surrounding the site.

(7) That the substitution of applicant's proposed Sanger Well No. 6-Y in the proposed unorthodox location for applicant's Sanger Well No. 6 will promote safety, will afford the applicant a greater opportunity to produce its just and equitable share of the oil in the subject pool, will prevent the economic loss caused by the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells, and will otherwise prevent waste and protect correlative rights.

(8) That a rateable take factor of 58 percent will afford the applicant the opportunity to produce its just and equitable share of oil in place and will afford protection to the correlative rights of the lease holders directly to the west of the NW/4 of the NW/4 of Section 27, Township 18 South, Range 38 East, NMPM, Lea County, New Mexico.

(9) That the applicant should be required to determine the subsurface location of the hole by means of a continuous multi-shot directional drilling survey to determine that the bottom of the hole is no nearer than 180 feet to the west line of Section 27, and the results of that survey should be furnished to the Commission.

IT IS THEREFORE ORDERED:

(1) That an unorthodox oil well location for the Grayburg-San Andres formation is hereby approved for applicant's Sanger Well No. 6-Y, to be drilled at a surface location 1220 feet from the North line and 180 feet from the West line of the ~~NW/4 of the NW/4~~ of Section 27, Township 18 South, Range 32 East, NMPM, Hobbs Pool, Lea County, New Mexico.

(2) That said well shall be drilled in such a manner as to ensure that the bottom of the well is no closer than 180 feet to the west line of said Section 27.

(3) That upon completion of applicant's Sanger Well No. 6-Y, Unit D, in the NW/4 of the NW/4 of said Sectio· 27 shall be dedicated to said well.

(4) PROVIDED HOWEVER, that the well is assigned an acreage factor for proration purposes of 58 percent for production from the Grayburg-San Andres formation.

dr/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE NO. 5063 De Novo

Order No. R-4639-B

APPLICATION OF SHELL OIL COMPANY
FOR AN UNORTHODOX OIL WELL LOCATION,
LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on November 27, 1973, ~~at~~ at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this _____ day of _____, 197_, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS:

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

(2) That applicant, Shell Oil Company, seeks an exception to Rule 104 of the Commission Rules and Regulations for approval of an unorthodox oil well location for its Sanger Well No. 6-Y, proposed to be located 1220 feet from the North line and 180 feet from the West line of Section 27, Township 18 South, Range 38 East, NMPM, Hobbs Grayburg-San Andres Pool, Lea County, New Mexico.

(3) That Unit D in the NW/4 of the NW/4 of Section 27, Township 18 South, Range 38 East, NMPM, Lea County, New Mexico, is now dedicated to applicant's Sanger Well No. 6, which is presently operating.

(4) That the matter came on for hearing before Examiner Elvis A. Utz on September 19, 1973, and pursuant to this hearing Order No. R-4639 was issued on October 11, 1973, which granted Shell's application and provided inter alia for an acreage factor for proration purposes of 58 percent for production from the Grayburg-San Andres formation.

(5) That on October 29, 1973, application for Hearing De Novo was made by Samedan Oil Corporation and the matter set for hearing ~~de novo~~ before the full Commission.

(6) That the matter came on for hearing de novo on November 27, 1973, at which time both ~~the applicant~~ Shell Oil Company and Samedan Oil Corporation made extensive presentations.

(7) That a well drilled at the proposed location would drain offsetting operators. Based on the evidence presented at the de novo hearing the Commission concludes that

(8) That the substitution of applicant's proposed Sanger Well No. 6-Y in the proposed unorthodox location for applicant's Sanger Well No. 6 will enable the applicant an opportunity to produce in excess of its just and equitable share of the subject pool, will cause economic loss by the drilling of unnecessary wells, will augment risk arising from the drilling of an excessive number of wells, and will neither prevent waste nor protect correlative rights.

(9) That the application should be denied.

IT IS THEREFORE ORDERED:

(1) That the application of Shell Oil Company for an exception to Rule 104 of the Commission Rules and Regulations for approval of an unorthodox oil well location for its Sanger Well No. 6-Y is hereby denied.

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

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

CASE 5064: Application of EXXON CORPORATION FOR A DUAL COMPLETION, EDDY COUNTY, NEW MEXICO.