

CASE 5461: Application of
GENERAL AMERICAN OIL CO. for
pool extension, Eddy County

CASE No.

5461

Application,

Transcripts,

Small Exhibits

ETC.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
April 30, 1975

EXAMINER HEARING

IN THE MATTER OF:

Application of General American
Oil Company for pool extension,
Eddy County, New Mexico.

CASE 5461

BEFORE: Richard L. Stamets, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

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(Appearances continued)

APPEARANCES (Continued):

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MR. STAMETS: Case 5461.

MR. CARR: Case 5461. Application of General American Oil Company for pool extension, Eddy County, New Mexico.

MR. STAMETS: We call for appearances in this case.

MR. HINKLE: Clarence Hinkle, Hinkle, Bondurant, Cox and Eaton, appearing on behalf of American -- General American Oil Company.

MR. KELLAHIN: Tom Kellahin, Kellahin and Fox, Santa Fe, New Mexico, appearing on behalf of Anadarko Production Company, and I have one witness.

MR. HINKLE: We have one witness that I would like to have sworn.

(Witnesses sworn.)

ROY CROW

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

DIRECT EXAMINATION

BY MR. HINKLE:

Q State your name, your residence, and by whom you are employed?

A My name is Roy Crow. I reside in Loco Hills, New Mexico. I am employed by General American Oil Company

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of Texas.

Q What is your position with General American?

A I am District Superintendent for the New Mexico-California District.

Q Are you a graduate geologist?

A I am.

Q Have you previously testified before the Commission and qualified as a petroleum geologist?

A I have.

Q Have you made a study of the Grayburg-Jackson area?

A I have.

MR. HINKLE: Are his qualifications acceptable?

MR. STAMETS: They are.

BY MR. HINKLE:

Q Have you prepared or has there been prepared under your direction exhibits for introduction in this case?

A There have been three exhibits prepared under my direction.

Q Exhibits 1, 2 and 3. Refer to Exhibit 1, and explain what this is and what it shows?

First, let me ask: Are you familiar with the Application of General American in this case?

A Yes, I am.

Q What is General American seeking to accomplish?

A General American seeks the extension of the vertical limits of the Grayburg-Jackson Pool in Eddy County, New Mexico, to include the Seven Rivers Formation, excepting, however, that area of the Grayburg-Jackson Pool which is overlain by the Fren-Seven Rivers Pool.

In referring to Exhibit 1, which is the map outlining both the Grayburg-Jackson and the Fren Pools, it shows that the sharp-dashed hatch marks outline the Grayburg-Jackson and the longer-dashed outline the Fren-Seven Rivers Pool. It shows the Fren-Seven River Pool lies completely inside the larger Grayburg-Jackson Pool. Also, indicated on the plat is a well with the red circle around it which will later be referred to on the gas analysis.

Q This also shows the wells that have been drilled in the Grayburg-Jackson Pool?

A It does, and all of the wells that have been drilled in the Fren Pool.

Q What is the present definition of the Grayburg-Jackson? What formations are included in the vertical limits?

A Currently, the Grayburg-Jackson includes the Queen.

the Grayburg, the San Andres and the Lower San Andres formations. The Fren-Seven River Pool only produces and only includes the Seven Rivers Formation. Also, I would like to point out at this time that the Grayburg-Jackson Pool, which contains some 600 producing wells, is only averaging 8.8 barrels of oil per day per well, and the Fren Pool is currently only averaging 2.1 barrels per day per well, indicating both of the entire fields to be in a stripper state. Neither pool is limited by any GOR limitation.

Q Is there anything further with reference to Exhibit 1?

A I believe not.

Q Refer to Exhibit No. 2 and explain what this shows?

MR. STAMETS: One thing, Mr. Crow, in addition to this 8.8 barrels, have most of the wells in the Grayburg-Jackson been placed under waterflood at this time?

THE WITNESS: I would say, in the multi-reservoir containing the Grayburg Sands, probably 95 percent of all the sand stringers have been placed under waterflood, and several attempts have been made in the lime without too much success, however, over on the east side of the pool, I believe Windfor has what they consider one successful waterflood, but there have been several pilot floods attempted

in the lime section, and General American has been flooding for about 10 years, the lower section of the San Andres in what we call the Keeley Zone, but basically, the entire Grayburg-Jackson Pool is under secondary recovery at this time, so even with the 8.8 barrels of oil per day, there is very little likelihood of this average being increased, I would think, as a whole.

Exhibit 2 is a partial log for the convenience of size. Mainly, to show the approximate 600-feet limit we would like to raise from the top of the Queen which is current top of the Grayburg-Jackson Pool and includes approximately a 600-foot section to take in, up to the top of the Seven Rivers Pool. This Exhibit 2, as referred to with the red circle on the base map, a type log of that particular well. It also shows -- which is kind of hard on reproduction to see -- about a 6 or 7-foot shaded zone at around 1560 feet. This zone is the zone in the west part where General American wells are drilled that most consistently correlates to be gas-productive. In other parts of the field, however, some of these lower strings run 1700 and possibly produce the oil in the trend-pool area itself, but they all are stringers within the Seven Rivers Formation.

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Q The well shown by this log is the well that is circled in red on Exhibit 1?

A Right.

Q In your opinion, is this typical of the Seven Rivers Formation, basically?

A Basically, on infill wells we have drilled, I would say that where we have logs available that this is the typical log of 6 or 7-foot gas-bearing zones on the west side of the pool. Old cable-tool records also tie in basically within a few feet of this area and it is the only place that they indicate any production, basically, in the west half of the Grayburg-Jackson Pool. I would say this would be a typical log for the west half of the Grayburg-Jackson Field.

Q I now refer you to Exhibit 3, and would you explain that?

A Exhibit No. 3 is an analysis of the test well of gas from this Seven Rivers Zone. This test well was also located in Section 19 and it is not marked on the log, but it is in the southeast quarter of Section 19. The purpose of this Exhibit is to show the nature of the gas. As you will note on the analysis, 54.78 percent nitrogen and only a 616-BTU content. From other analyses that we have seen

in the field area, we would assume that this is probably an average analysis. The nitrogen seems to range from 45 to 60-percent, and the BTU content from 550 to around 700, which is the highest I have ever seen on this particular gas.

Q Do you consider this to be marketable gas?

A The gas would be marketable if the vertical limits can be raised to commingle it with the Richard gas from the Grayburg-Jackson Zone below, but as the zone itself being a separate market, it would probably not be available just strictly for this high nitrogen, low BTU gas. Along with the cost of approximately \$60,000 to drill and complete a well in this alone, there is very very little likelihood that any well would pay out. So it is very imperative, due to the analysis of this gas and the volume, that we be able to commingle this while we still have some of the Grayburg-Jackson gas left to make it marketable and retain it somewhere within 1000 BTU range by commingling it with the Richard gas from down below.

Q By "commingling," you mean in the well bore, just perforate it with the other formations?

A The only way the zone is economical would be in drilling of new wells and in some of those latter wells drilled in the last few years where cement is sufficient,

to include this zone as another producing zone in the Grayburg-Jackson. For probably an additional \$7000 expense, it would be economical, but not to drill strictly for this gas.

Q Does General American have any particular plan for the drilling of additional infill wells?

A In the past three years within the Grayburg-Jackson Field, General American has drilled 40 to 50 infill wells. In several of these wells, we began to notice on the log, the encounter of this small gas zone and wells were completed such that we can go back and open these zones up and produce them with the other Grayburg-Jackson Zones. We do plan, probably in the long run if economics continue the same, 25 to 30 additional infill wells which will be completed in such a manner as to allow this zone to be produced. Very few of the old wells originally drilled are sufficiently completed in order for this zone to be put on production. So, currently, General American's plans would be, in the past infill wells drilled in the last few years and future wells in this zone, if allowed to produce with the Grayburg-Jackson, would be completed.

Q Do you have any indication that this gas can be

marketed even though it might have a lot of nitrogen in it?

A Well, we have indications that Phillips, who takes most of our gas in this area under an old old contract which has a long time to run, would have no objections to it as long as we blended it sufficiently that the BTU's over the total gas sold would not drop too much below 1000 BTU. But as far as negotiating a definite contract, we have not at this time, but we have indications that they would be in the market for the gas if it is not a burden to them.

Q I take it from your testimony that unless you are permitted to produce this gas through perforation and commingling with the other production, that the gas will not ever be produced because it would not be economically feasible to drill separate wells to produce that gas, is that right?

A This is correct.

Q In your opinion, would the approval of this Application be in the interest of conservation and prevention of waste and the protection of correlative rights?

A I believe it would.

MR. HINKLE: We would like to offer Exhibits 1, 2 and 3.

MR. STAMETS: Without objection, Exhibits 1, 2

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and 3 will be admitted.

(Whereupon, Applicant's Exhibits Nos. 1, 2 and 3 were marked for identification, and were offered and admitted into evidence.)

BY MR. HINKLE:

Q Do you have anything else to offer?

A I don't.

MR. STAMETS: Are there any questions of this witness?

CROSS EXAMINATION

BY MR. NUTTER:

Q The Grayburg-Jackson is under secondary recovery, is it not?

A As I explained earlier, I would say probably 90 percent of it is. Probably that much or more of the Grayburg Sands that are part of the Grayburg-Jackson are. In several of the pilot floods of the lime zone itself, the San Andres Zone, General American has had three attempts at it and currently is trying one in the lower part of it, but basically, there seems to be very little chance for other secondary recovery in the area except maybe 10 or 15 percent of the sands that haven't been put under floods, small outlying tracts that haven't been unitized.

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Q What kind of fluid levels do the wells have that are shut in?

A Well, I can't tell you exactly. The only indication I have had on -- there seems to be probably somewhere in the neighborhood of 400 to 450 pounds of bottomhole pressure in certain areas still after -- whether it is because there is some waterflood going on in the pool itself or what, but you wouldn't think the bottomhole pressure would be quite that high and only average 8.8 barrels a day, but maybe the well that I had an indication in was not necessarily typical.

Q Would the fluid levels stand high enough in the wells that they would come up and encounter the Seven Rivers perforations in the event the well was shut in?

A I don't believe they would unless in possibly a waterflood project they might be, but under primary circumstances, I don't believe they would.

Q What I was concerned with here, as you might see, would be the possibility that if the well were shut in that the Seven Rivers perforations would act as a thief zone, and the oil could penetrate in there, and of course, the Seven Rivers is a dry sand, is it not?

A Well, the Seven Rivers on the east side is mainly

oil productive, and on the west side is gas productive.

Q If it was gas, it would be a dry sand?

A And I would think the bottomhole pressure from the test well here is 600 pounds, which would be more than what you are going to have from the zone below, so I wouldn't expect any thieving to --

Q (Interrupting) So, even in the event the fluid levels did come up, there should be sufficient gas pressure to keep any migration of oil from penetrating into the Seven Rivers?

A Well, our test well here has a surface pressure of 525 pounds, so in calculating the gradient, if it is all gas, you still come up with 600 and something pounds of bottomhole pressure for the Seven Rivers Zone in this area that contains this marginal gas. So, in this area, I would think that the bottomhole pressure would be more than sufficient to keep any thieving from occurring.

Q Have you made any calculations as to the volumes or reserves of gas that are in the Seven Rivers stringers?

A Just a rough figure, Mr. Nutter. Over on the further east which has actually been included into the Fren Pool now, this well in Section 15, 17, 30, where the Fren Pool extension comes up and just takes in that one well,

that is the limit of the pool on the northeast and west side there. That is the General American well.

Q Right.

A And just extrapolation of that curve, which has been producing gas for some year-and-a-half now, it looks in the neighborhood of somewhere between 175 million and 200 million MCF.

Q And that well is producing as a dual completion, is it not?

A No, it is strictly producing as a Fren gas well. We plugged off the lower zone.

Q It is a single completion in the gas zone?

A And that is how we include it into the Fren Field. We plugged off what small production there was below. It was an original Grayburg well.

Q The reserves are estimated to be approximately 200 million?

A 200 million, but I think when you get further over here to the edge of this thing, probably this is more in the heart of the gas area, or whatever. This further stuff to the west is probably a little less than that because the test on this well was slower than the initial test on this well I am referring to in Section 19, which is

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the well we used for a test well, and the initial volume was lower than this initial volume over here.

Q What kind of potential did you have on the well in 15?

A Well, in 15, we had about 600,000 for a week or so and then it leveled out at about 300,000 after about two weeks production, and it is probably still making, I think, somewhere around 250,000 or 300,000 or around 6 million a month.

Q What is the gas-oil ratio limit in the Grayburg-Jackson Reservoir?

A There is no limit in either the Grayburg-Jackson or the Fren Pools. There is no limit in the COR.

MR. NUTTER: I believe that is all. Thank you.

CROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Crow, would there be any problems with correlative rights between, say, the well completed as you have proposed in the Grayburg-Jackson Pool immediately opposite the Fren Pool?

A I am not sure I follow your question. Do you mean, if a well were drilled?

Q Yes, and completed in the Seven Rivers and the

Grayburg-Jackson pay and the old Grayburg-Jackson Pools, and there is another Seven Rivers Well in the Fren Pool; can you see any problem of correlative rights there?

A If I understand what you mean right there, I know of two cases within the Fren Pool itself where downhole commingling has been granted, so I would think in a case like that, that if there were any problems involved there that the well inside the Fren Pool could seek downhole commingling since it has been granted in at least two cases, which should make the correlative rights on either side of the line still equal.

Q This Fren Pool has been out there for many many years, hasn't it?

A 1951, I believe.

Q Is it essentially completed on primary production?

A 2.1 barrels per well per day average for the entire field.

Q So, producing gas out of the Seven Rivers in the Grayburg-Jackson Pool, would that have any effect on the rights of the owners in the Fren?

A Dick, from the zones that I have worked with, honestly, if you will refer back to Exhibit 2 and note the multitude of stringers within the Seven Rivers Zone, I

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believe you will find that most of the gas that I am talking of over here on the west side is probably above the little stringers that produced the oil over here on the east side. I don't want to lead you to believe that there is only just one little zone of Fren. Apparently, from the old records, when you are in the Fren Pool, there are several little stringers of oil over a 50 or 100-foot interval, and we do know that some oil has been produced in these little stringers around 1700, but in the two wells that I have treated, this sandy looking member at 1730 here was fracked and later was straddled with a packer and was barren as far as we got some of our load water and stuff back from it, but we had no indication of oil production on this west side.

Q You indicated you examined a lot of old cable-tool records. Did these records show any significant gas volumes in the Seven Rivers?

A None was measurable, but over on this west side when I mapped out the possible gas extent just for my own use, I used cable-tool records where they would show a show of gas that would correlate to infill wells I drilled to see if it was approximately in the same area and zone, and if it was, in my mapping, I included that well as having

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a possibility to produce this gas because there was some record indicated on the cable tool of a show of gas in the Fren area.

Q Based on your examination, then, you don't expect to run into any real barn-burners in the Seven Rivers?

A Based on the fact -- you will note the hundreds of wells drilled all around the perimeter of this Fren Field, the likelihood of any extent of production that is very good is not very likely because there is hardly a 40-acre that hasn't been drilled through to a lower zone, leaving just a very small area. I think there would be some primary production even possible there because there has been so many penetrating there, going to the Grayburg-Jackson, and most of them with cable tools. And none of these wells will respond at all, Dick, until they are fracked. This gas show is just a very minute thing until it is fracked.

Q I believe you indicated that just a very few of these existing wells will be completed into the Fren there, the Seven Rivers. It would be predominantly the infill wells?

A Well, General American at this time doesn't have any plans to go in and attempt to squeeze or whatever

might be necessary in these old wells. We would strictly, at this time, probably stick to the new wells to where we know we could get a completion without jeopardizing the production we have below. I am not saying in the future that we wouldn't, in other words, attempt some, but at this present time, I don't have any plan.

Q What kind of potentials are you getting on those infill wells in the old Grayburg-Jackson pay?

A The best wells of the last six that we drilled within a month after being on production was about 35 barrels. We had one or two in 1972 that the potential was higher than that, but they were -- the peaks were not too long until they were down in this range and then they leveled off to probably somewhere around 20 barrels a day for six to eight months and then dropped to 15 or so, in that range.

Q The only thing you haven't explored at this point is the potential for a dual completion in there. How do those costs compare to the \$7000 minimum cost and \$60,000 maximum cost?

A I really didn't explore it that far from just the fact that I don't think, economically, you can produce this stricter production from the lower packer or can

justify an additional vent string along with a production string because you are not going to be able, in most cases, to flow just this gas up the annulus. Now, one or two wells, maybe yes, but there is just enough frac fluid in these wells that we fracked a year-and-a-half ago, we got very little of the frac water back initially, but it comes back at the rate of about one to two barrels a day, where you've got to pump this well one or two hours a day in order to keep from loading up. So, on both of these two wells, we completed gas wells and got them included in the Fren Pool, they still don't have pump jacks on them, so, you are not just concerned with the annulus to flow the gas volume up; you've still got to have a string of tubing in there to lift the small amount of fluid, plus we have quite a bit of gas-locking problem already in the Grayburg-Jackson Field in keeping wells pumping. In other words, not having too much pumping time and pumping them off so that they get gas-locked and don't want to start back, so I think pumping them under a packer would even be worse.

Q To get the greatest ultimate recovery out of both of these zones, eventually what you have to do is go back in, even with a dual completion situation and jerk it out so that you can produce it efficiently?

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A Right.

MR. STAMETS: Are there any other questions of the witness? He may be excused.

MR. KELLAHIN: I am Tom Kellahin appearing on behalf of Anadarko Production Company in support of General American Oil Company's Application in this case, and I have one witness and three exhibits.

DANIEL G. KERNAGHAN

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

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

A My name is Dan Kernaghan. I am employed by Anadarko Production Company in the capacity of Division Evaluation Engineer.

Q Mr. Kernaghan, have you previously testified before this Commission?

A Yes, I have.

Q Have you made a study of the Application by General American?

A Yes, I have.

MR. KELLAHIN: If the Examiner please, are the witness' qualifications acceptable?

MR. STAMETS: They are.

BY MR. KELLAHIN:

Q Mr. Kernaghan, would you please refer to what has been marked as Applicant's Exhibit No. 1, identify it and state what information it contains?

A Exhibit No. 1 is a plat of Township 17 South, Range 30 East. It shows the limits of the Grayburg-Jackson Pool in brown, and the limits of the Fren Pool in orange within this one Township. They extend on both sides of this. This covers only the one Township. It shows the location of two Anadarko wells circled in pink that are completed in the Fren Zone. These are gas wells. They are prorated under the Fren-Yates-Seven Rivers North Associated Pools. The limits of that pool aren't shown on here, but it is 240 acres on which those two gas wells are located.

Q Are they currently both dual completions?

A These wells are currently dual completions with the Grayburg-Jackson Zone down the hole.

Q Would you continue by referring to Exhibit No. 2 and identify it?

A Exhibit No. 2 is the production history of these two gas wells. Well No. 1 has produced since 1972 and is producing at the present time up the casing-tubing annulus. It produces dry gas. Well No. 8 produced as a single completion under test conditions in 1972, and when it was completed as a dual, it ceased to produce. It loads up with fluid, both hydrocarbon and water, and won't flow up the annulus, the casing-tubing annulus, so the well is incapable of production under the present situation.

Q Would you refer to Exhibit No. 3 and explain the information on there?

A Exhibit No. 3 is the oil production from the Grayburg-Jackson Zones on the other side of the dual of Well No. 8 here, the well that will not produce. This exhibit shows that the oil production from the Grayburg-Jackson Zone has certainly declined to the point where its stripper is about 6 barrels a day now.

Q What is the quality or composition of the gas from the Grayburg-Jackson Zone?

A The Grayburg-Jackson Zone is a comparatively rich gas. It is over 1000 BTU per MCF and is certainly of a saleable quality. We sell this gas to Phillips and have under an old contract.

Q How about the gas from the Fren Zone?

A It is very high in nitrogen, 50-percent or so, and at the present time, the gas from Well No. 1 is being sold to Phillips under our same contract in that it is blended at the surface with this richer gas from the Grayburg-Jackson Zone.

Q In your opinion, is it marketable without blending?

A We couldn't market it without it at the time we tried. Phillips takes it only on the basis that it is blended with this other gas. At the time that the Grayburg-Jackson Field is abandoned, from what we know right now, this gas won't have any value.

Q Then, you are in general agreement with Mr. Crow of General American with regard to the necessity for commingling downhole of these two zones?

A Yes, we are. The Well No. 8, like I said before, is incapable of production under the present rules, and if we are allowed to commingle it down the hole, we can recover a similar quantity of gas that we are from the No. 1 Well.

Q Do you have any opinion with regard to the sufficiency of these reserves in order to either produce these zones separately or commingle?

A Well, obviously, the No. 8 Well can't be produced

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under the present situation. The Grayburg-Jackson Zone has sufficient reserves that we are not going to abandon it to produce the gas. The reserves are insufficient for us to drill any wells for the Fren alone. There is just nowhere near enough quality to drill for themselves.

Q In your opinion, Mr. Kernaghan, will approval of General American's requested Application be in the best interest of conservation, prevention of waste and the protection of correlative rights?

A Yes, in my opinion, it will be.

Q Is there anything else you would like to add?

A No.

Q Were Exhibits Nos. 1, 2 and 3 either prepared by you directly or under your direction and supervision?

A Yes, they were.

MR. KELLAHIN: If the Examiner please, we move the introduction of Exhibits 1, 2 and 3.

MR. STAMETS: These exhibits will be admitted in evidence.

(Whereupon, Anadarko's Exhibits Nos. 1, 2 and 3 were marked for identification, and were offered and admitted into evidence.)

MR. KELLAHIN: That concludes our direct examination.

KERNAGHAN-CROSS

CROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Kernaghan, I take it from what you have said that what you would like to have done is that the North Fren-Yates-Seven Rivers Associated Pool be abolished and would just be considered as part of this expanded Grayburg-Jackson-Seven Rivers-Queen-Grayburg and San Andres?

A That's right. That is what we would like, Mr. Examiner.

Q I believe that the produced volumes which you have shown on Exhibit No. 2 all seem to bear out what Mr. Crow has testified to, that the volumes of production are quite low?

A That is correct.

Q If the vertical limits were extended, and the proposed pool rules for the Grayburg-Jackson included your wells, would you then go in and pull the dual completions out of Well No. 8 and put it back on production in the Seven Rivers?

A Yes, we would.

MR. STAMETS: Are there any other questions of this witness? Mr. Nutter?

CROSS EXAMINATION

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BY MR. NUTTER:

Q Mr. Kernaghan, there is an extreme difference in the producing characteristics of this Well No. 1 and No. 8. To what do you attribute that? That is, the No. 1 doesn't make any liquids and the No. 8 loads up with so much liquids that it won't produce?

A They are both perforated over a pretty wide interval. A number of these little individual stringers are perforated. Well No. 8 was classified as a gas well, but in my opinion, certain of the individual stringers contribute a great deal more of the liquids than others.

Q You do have the same situation in this North Fren area that Mr. Crow was talking about where you have many little individual stringers in the Seven Rivers?

A Yes. We are perforated over a pretty large interval.

Q And you may hit one that has quite a bit of fluid in it and then another one that is completely dry?

A That's right, and probably more that don't produce anything than either the gas or liquid ones.

Q What are the horizontal limits of this North Fren Associated Pool?

A The 240 acres on which our two wells are located.

It is the southeast quarter of Section 9 and the east half of the southwest quarter.

Q So, the pool is comprised simply of that acreage where those two wells are, is that it?

A Yes.

MR. NUTTER: I believe that's all. Thank you.

MR. STAMETS: That is all the questions I have at this point. There is apparently a minor problem. It would appear as though the call of the hearing is to extend the vertical limits of the Grayburg-Jackson through the Seven Rivers everywhere except in the Fren-Seven Rivers Pool, and nothing was said about the Seven Rivers in the North Fren-Yates-Seven Rivers Associated Pool.

MR. KELLAHIN: If I might comment, Mr. Examiner, Anadarko is the operator of that North Fren Pool area and the call of the case was sufficient enough to bring us here today with notice, and I would assume that it is sufficiently broad enough to constitute an Order that would, in effect, abolish the Fren. We were on notice and we are here today.

MR. STAMETS: If the Commission were to issue an Order extending the vertical limits as advertised, in your opinion, what would the effect be as far as this North Fren-Yates-Seven Rivers Pool is concerned?

THE WITNESS: It would abolish it.

MR. HINKLE: We actually didn't have notice of this when the Application was drawn. Mr. Crow didn't advise us of it. He just overlooked it, and we just didn't contemplate that at all within this, but I think it is broad enough to cover it. I think you would be perfectly within your rights to consider that it does abolish the North Fren Pool.

THE WITNESS: We just took it at face value just exactly as it was written.

MR. CROW: It was not intentional. When I got the limits of the two pools from the local Commission, they inadvertently forgot to tell me about that, and since Anadarko is the only operator, probably you people weren't aware that the pool even exists. I didn't until after I had already made the Application.

MR. STAMETS: Is there anything further in this case?

MR. CROW: In looking through my notes here, Mr. Nutter asked me about the reserves, and I would like to clarify one thing. That 200 million I gave you was basically a figure I had adjusted for this west side over here where I intend to do the work. The well completed and

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and included in the Fren Pool itself will probably make somewhere around 150 million.

MR. NUTTER: That is that well over in 15?

MR. CROW: But it is in the Fren Pool itself.

The 200 million I had was an estimate based on the initial potential of this well versus initial, but basically, that's where I am going to be doing most all of the work at this time, so those wells would not pay out because we are only getting about 20% for that gas.

MR. NUTTER: Thank you.

MR. STAMETS: Is there anything further in this case? We will take the case under advisement.

CASE 5461

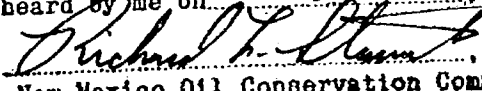
Page.....33

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

I, RICHARD L. NYE, Court Reporter, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me, and the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.


COURT REPORTER

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 5461 heard by me on 4-30, 1973.


Examiner
New Mexico Oil Conservation Commission

THE NYE REPORTING SERVICE
STATE-WIDE DEPOSITION NOTARIES
225 JOHNSON STREET
SANTA FE, NEW MEXICO 87501
TEL. (505) 982-0386



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

May 6, 1975

I. R. TRUJILLO
CHAIRMAN

LAND COMMISSIONER
PHIL R. LUCERO
MEMBER

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

Mr. Clarence Hinkle
Hinkle, Bondurant, Cox & Eaton
Attorneys at Law
Post Office Box 10
Roswell, New Mexico 88201

Re: CASE NO. 5461
ORDER NO. .R-5011

Applicant:

General American 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.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC X
Artesia OCC X
Aztec OCC

Other Mr. Tom 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. 5461
Order No. R-5011
NOMENCLATURE

APPLICATION OF GENERAL AMERICAN
OIL COMPANY FOR POOL EXTENSION,
EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 30, 1975,
at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 6th day of May, 1975, 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 the applicant, General American Oil Company,
seeks the extension of the vertical limits of the Grayburg
Jackson (Queen-Grayburg-San Andres) Pool, Eddy County, New
Mexico, to include the Seven Rivers formation excepting that
area of said Grayburg Jackson Pool overlain by the Fren-Seven
Rivers Pool.

(3) That the Seven Rivers formation overlying the Grayburg
Jackson Pool in the horizontal area of the proposed extension
consists of thin porosity and permeability zones often holding
marginally economic reserves of hydrocarbons.

(4) That the evidence presented shows that it is
uneconomical to attempt to drill to, complete, and produce
the subject Seven Rivers formation as a single completion.

(5) That the evidence presented shows that it is
uneconomical to attempt to complete the subject Seven Rivers
formation dually with the Grayburg Jackson zones.

-2-

Case No. 5461
Order No. R-5011

(6) That the evidence presented shows that the subject Seven Rivers formation can be completed and efficiently and economically produced by extending the vertical limits of the Grayburg Jackson Pool as proposed.

(7) That the nature and conditions of the Seven Rivers and Grayburg Jackson reservoirs and fluids are such that the vertical limits of the Grayburg Jackson Pool may be extended as proposed without causing waste.

(8) That the Fren-Seven Rivers Pool is an old established pool with very low marginal production.

(9) That to avoid problems associated with diverse ownership between existing completions in the Fren-Seven Rivers Pool and the Grayburg Jackson Pool and to maintain historical production statistics, the vertical limits of the Grayburg Jackson Pool should not be extended to include the Seven Rivers formation in that area of said pool overlain by the Fren-Seven Rivers Pool.

(10) That the North Fren Yates-Seven Rivers Associated Pool consisting of the SE/4 and E/2 SW/4 of Section 9, Township 17 South, Range 30 East, NMPM, Eddy County, New Mexico, should be abolished.

(11) That approval of the subject application will result in the recovery of hydrocarbons which would not otherwise be produced, will prevent waste and will not violate correlative rights.

(12) That the application to extend the vertical limits of the Grayburg Jackson Pool as proposed should be approved.

IT IS THEREFORE ORDERED:

(1) That the vertical limits of the Grayburg Jackson (Queen-Grayburg-San Andres) Pool, as previously established and defined by Commission order, are hereby extended to include the Seven Rivers formation excepting in that area where said pool is overlain by the Fren-Seven Rivers Pool.

(2) That the North Fren Yates-Seven Rivers Associated Pool is hereby abolished.

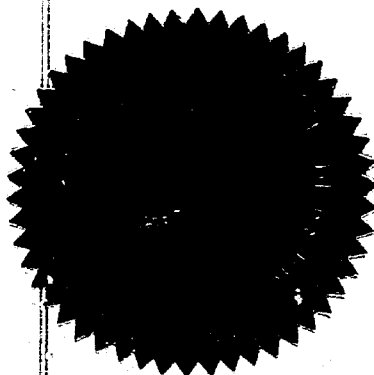
(3) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

-3-

Case No. 5461

Order No. R-5011

DONE at Santa Fe, New Mexico, on the day and year herein-
above designated.



STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

I. R. Trujillo

I. R. TRUJILLO, Chairman

Phil R. Lucero

PHIL R. LUCERO, Member

A. L. Porter, Jr.

A. L. PORTER, Jr., Member & Secretary

S E A L

dr/

GRAYBURG JACKSON FIELD

Loco Hills "B" Federal No. 8

	<u>Oil</u>	<u>Gas</u>	<u>Water</u>
<u>1973</u>			
January	272	367	
February	403	580	
March	453	940	
April	238	693	
May	241	593	
June	187	652	
July	183	679	
August	200	656	
September	268	703	84
October	253	830	84
November	178	690	<u>195</u>
December	<u>282</u>	<u>571</u>	<u>363</u>
	3,158	7,954	
<u>1974</u>			
January	308	459	75
February	263	355	50
March	328	353	62
April	292	442	60
May	327	540	62
June	244	422	60
July	232	476	62
August	238	386	62
September	223	375	54
October	262	513	62
November	237	558	60
December	<u>246</u>	<u>486</u>	<u>62</u>
	3,200	5,365	731
<u>1975</u>			
January	242	348	62
February	190	310	56
March	173	573	62
Total Well			1,274
Cumulative	6,963	14,550	

BEFORE EXAMINER STAMETS	
OIL CONSERVATION COMMISSION	
Anadarko	EXHIBIT NO. 3
CASE NO.	5461
Submitted by	
Hearing Date	30 Apr 75



EXHIBIT NO. 1
CASE NO. 5761

R - 30 - E

FREN YATES SR, NORTH (ASSOCIATED)

Loco Hills "B" Federal

	Well No. 1		Well No. 8	
	<u>Gas</u>	<u>Cond.</u>	<u>Gas</u>	<u>Cond.</u>
<u>1972</u>				
August	4,060	0	2,179	424
September	--		--	--
October	5,139		749	530
November	2,633		384	180
December	--		--	--
	<u>11,832</u>		<u>3,312</u>	<u>1,134</u>
<u>1973</u>				
January	2,348	0		
February	3,804			
March	4,686			
April	4,519			
May	4,739			
June	4,729			
July	4,922			
August	4,483			
September	4,028			
October	5,008			
November	4,760			
December	<u>4,740</u>			
	<u>52,766</u>	0		
<u>1974</u>				
January	4,739			
February	4,266			
March	4,777			
April	4,552			
May	4,746			
June	4,544			
July	4,395			
August	4,021			
September	3,742			
October	4,439			
November	4,218			
December	<u>3,568</u>			
	<u>52,007</u>	0		
<u>1975</u>				
January	3,783			
February	3,630			
March	3,800			
Total Well				
Cumulative	127,818	0	3,312	1,134

BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION
Final EXHIBIT NO. 2
CASE NO. 5461
Submitted by _____
Hearing Date 30 Apr 75

Form 206 11 63

PHILLIPS PETROLEUM COMPANY

Analysis Results Summary

Location Odessa, Texas

S. F.

R. F.

D. F.

T. F.

S. F.

S. F.

A Sample of Gas Well Gas - General American Oil Company

From Seven Rivers Field

Secured from Well #27 Burch "A" Lease

Location NW SE 19-17-30

County Eddy

State New Mexico

Purpose Survey

Secured by E. G. Cooper

Sampling Conditions: Atmos. Temp.

64

°F; Pressure on Bomb

Ex. S. in 100 cu. ft.

Volume/day

Weather conditions of time of sampling

Raining

Field Gas Pressure

PSIG; Line Pressure

PSIG

Chromo

Analysis 14.65 PSI at 60 F

	Mol. %	Liq. %
Carbon Dioxide		
Oxygen		
Nitrogen	54.78	
Hydrogen Sulfide		
Methane	32.65	
Ethane	6.93	
Propane	3.46	
Iso-Butane	.43	
Nor-Butane	.97	
Iso-Pentane	.22	
Nor-Pentane	.24	
Hexanes	.16	
Heptanes Plus	.16	
Total	100.00	100.00

Propane	Calc. G.P.M.	1.950
Iso-Butane	Calc. G.P.M.	1.340
Nor-Butane	Calc. G.P.M.	1.306
Pentane	Calc. G.P.M.	1.306
Propane	Calc. G.P.M.	1.703

Test Cor. (Data)	
B.T.U./cu. ft. W.B.	616
Calc. Specific Gravity	.889
Calc. A.P.I. @ 60 F	
Observed A.P.I. Av.	

H ₂ S - CO ₂ by orsat	
H ₂ S grams/100 cu. ft.	
Mercaptans g./100 cu. ft.	

Calc. Vap. Pressure/50 in.	Zero
Reid Vap. Press. - 14.7 in.	Neg. to L.A.

Cu. Ft. gas/100 cu. ft. liq.

Calc. Gasoline Factors

Run by Magee

Calculated by

26.70 Gallons

Checked by Brantley

Approved by

Excess Butane

Excess Propane

Excess Ethane & Light

Additional Data and Remarks

Distillate

BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION

EXHIBIT NO. 2

CASE NO. 5461

Submitted by J. C. Lawrence

Received Date 4/28/77

Docket No. 10-75

Dockets Nos. 11-75 and 12-75 are tentatively set for hearing on May 14 and May 28, 1975. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - APRIL 30, 1975

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

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

CASE 5459: Application of McClellan Oil Corporation for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the East Henshaw Unit Area covering 1282 acres, more or less, of State and Federal lands in Township 16 South, Range 30 East, Eddy County, New Mexico.

CASE 5460: Application of McClellan Oil Corporation for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in its East Henshaw Unit Area by the injection of water into the Grayburg formation through eight wells located in Sections 1 and 2, Township 16 South, Range 30 East, West Henshaw-Grayburg Pool, Eddy County, New Mexico.

CASE 5461: Application of General American Oil Company for pool extension, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the extension of the vertical limits of the Grayburg-Jackson (Queen-Grayburg-San Andres) Pool, Eddy County, New Mexico, to include the Seven Rivers formation excepting, however, that area of said Grayburg-Jackson Pool overlain by the Fren-Seven Rivers Pool.

CASE 5462: Application of General American Oil Company for an unorthodox location and administrative procedure, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for an unorthodox oil well location 825 feet from the North line and 1295 feet from the West line of Section 13, Township 16 South, Range 29 East, East High Lonesome Penrose Unit, High Lonesome Pool, Eddy County, New Mexico. Applicant further seeks the establishment of an administrative procedure whereby additional unorthodox producing and injection well locations could be approved for said unit area without hearing.

CASE 5463: Application of J. Gregory Merrion for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle undesignated Mesaverde and Devils Fork-Gallup production in the wellbore of his Edna Well No. 4 located in Unit H of Section 7, Township 24 North, Range 6 West, Rio Arriba County, New Mexico.

- CASE 5464: Application of Petro-Lewis Corporation for a unit agreement, Sandoval County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Media Entrada Unit Area covering 580 acres of Federal lands, Media-Entrada Oil Pool, Township 19 North, Range 3 West, Sandoval County, New Mexico.
- CASE 5465: Application of Petro-Lewis Corporation for a pressure maintenance project, Sandoval County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pressure maintenance project in its Media Entrada Unit Area by the injection of water into three wells, being the Fluid Power Pump Wells Nos. 4 and 2 located, respectively, 990 feet from the South line and 1650 feet from the East line, and 2310 feet from the North line and 330 feet from the East line, of Section 15, and the Federal Media Well No. 4 located 990 feet from the South line and 1650 feet from the West line of Section 14, all in Township 19 North, Range 3 West, Media-Entrada Oil Pool, Sandoval County, New Mexico.
- CASE 5466: Application of Mark Production Company for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for an unorthodox gas well location 1650 feet from the South line and 1980 feet from the West line of Section 1, Township 18 South, Range 26 East, Atoka-Pennsylvanian Gas Pool, Eddy County, New Mexico, the W/2 of said Section 1 to be dedicated to the well.
- CASE 5467: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Colfax Carbon Dioxide Corporation, F. E. Sauble, American Surety Company of New York, and all other interested parties to appear and show cause why the Tex-Mex Cattle Co. Well No. 1 located in Unit D of Section 2, Township 26 North, Range 24 East, Colfax County, New Mexico, should not be plugged and abandoned in accordance with a Commission-approved plugging program.
- CASE 5468: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Kenneth M. Hankins, Great American Insurance Company, and all other interested parties to appear and show cause why the Virginia Branch Well No. 1 located in Unit D of Section 9, Township 10 North, Range 25 East, Guadalupe County, New Mexico, should not be plugged and abandoned in accordance with a Commission-approved plugging program.

Case 5461

CLARENCE E. HINKLE
W. E. BONDURANT, JR. (914-1074)
LEWIS C. COX, JR.
PAUL W. EATON, JR.
CONRAD E. COFFIELD
HAROLD L. HENSLEY, JR.
STUART D. SHANOR
C. D. MARTIN
PAUL J. KELLY, JR.
JAMES H. BOZARTH
ANDREW ALLEN
RONALD G. HARRIS

LAW OFFICES
HINKLE, BONDURANT, COX & EATON
600 HINKLE BUILDING
POST OFFICE BOX 10
ROSWELL, NEW MEXICO 88201

TELEPHONE (505) 822-8510

MIDLAND, TEXAS OFFICE
521 MIDLAND TOWER
(915) 683-4691

March 31, 1975

Oil Conservation Commission
Box 2088
Santa Fe, New Mexico 87501

Gentlemen:

We enclose herewith in triplicate application of General American Oil Company of Texas to re-define the vertical limits of the Grayburg-Jackson Pool to include the Seven Rivers formation.

We would appreciate your placing this matter on the docket for the examiner's hearing to be held on April

*23
30th*

Yours very truly,

HINKLE, BONDURANT, COX & EATON

By *Clarence E. Hinkle*
CS

CEH:cs
Enc.
cc: Roy Crow
cc: General American
Dallas office

*4-15-75
Hinkle, Bondurant, Cox & Eaton
Hearing for these cases would be April 30 -
Not 23rd.*

DOCKET MAILED

Date *4-18-75*

BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

APPLICATION OF GENERAL AMERICAN
OIL COMPANY OF TEXAS TO RE-DEFINE
THE VERTICAL LIMITS OF THE GRAYBURG-
JACKSON POOL (QUEEN-GRAYBURG-SAN
ANDRES-LOWER SAN ANDRES) EDDY COUNTY,
NEW MEXICO TO INCLUDE THE SEVEN RIVERS
FORMATION, EXCEPTING, HOWEVER, THE FREN
POOL (SEVEN RIVERS).

Case 5461

Oil Conservation Commission
Box 2088
Santa Fe, New Mexico 87501

Comes now General American Oil Company of Texas and hereby makes application to re-define the vertical limits of the Grayburg-Jackson Pool (Queen-Grayburg-San Andres-Lower San Andres) Eddy County, New Mexico to include the Seven Rivers formation, excepting however the Fren Pool (Seven Rivers) and in support thereof respectfully shows:

1. The Grayburg-Jackson Pool was originally defined under Order 850 on January 1, 1950 and a number of orders have been issued re-defining the pool, the last of which was Order R-4937 issued on February 1, 1975. The Grayburg-Jackson Pool as re-defined includes the Queen Grayburg, San Andres and Lower San Andres formations.

2. On April 30, 1951 the Commission issued Order R-71 defining the Fren Pool covering the Seven Rivers formation within the boundaries of the Grayburg-Jackson Pool. The Fren Pool has been re-defined by several orders, the last of which was Order R-4734 issued March 1, 1974.

3. There is attached hereto, made a part hereof and for purposes of identification marked Exhibit "A" a plat showing the boundaries of the Grayburg-Jackson and Fren Pools.

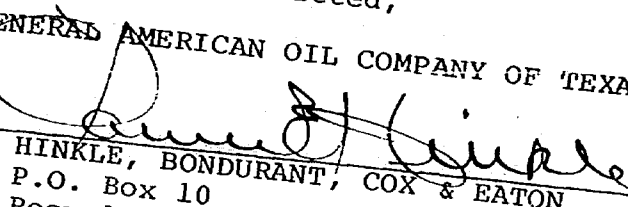
4. Applicant is the owner of a large portion of the oil and gas leasehold interests within the Grayburg-Jackson Pool and has been engaged in drilling a number of in-fill wells in said pool. In drilling these wells, applicant has found that gas can be produced in many instances from the Seven Rivers formation, which is above the Queen formation which is the highest formation included in the present

definition of the vertical limits of the Grayburg-Jackson Pool. The Seven Rivers formation is a relatively thin section, averaging 6 or 7 feet in thickness, and the gas which can be produced from said formation is around 600 BTUs and approximately 50% nitrogen. Because of the low BTU content the gas is not marketable but when commingled with gas produced from the other formations within the vertical limits of the Grayburg-Jackson Pool the BTU content can be raised to a marketable BTU content. It is not economically feasible to drill, complete and produce wells in the Seven Rivers formation because of the low BTU content of the gas and the high nitrogen content and unless the vertical limits of the Grayburg-Jackson Pool are re-defined to include the Seven Rivers formation in the Grayburg-Jackson Pool along with the Queen, Grayburg, San Andres and Lower San Andres formations to permit the production of said gas, the gas in the Seven Rivers formation will never be produced and consequently waste will occur.

5. Inasmuch as the Fren Pool already covers the Seven Rivers formation, the present limits of said pool should not be disturbed.
6. Applicant believes that a re-definition of the vertical limits of the Grayburg-Jackson Pool so as to include the Seven Rivers formation will be in the interest of conservation, the protection of correlative rights and the prevention of waste.
7. Applicant requests that this matter be heard at the examiner's hearing to be held on April 23, 1975.

Respectfully submitted,

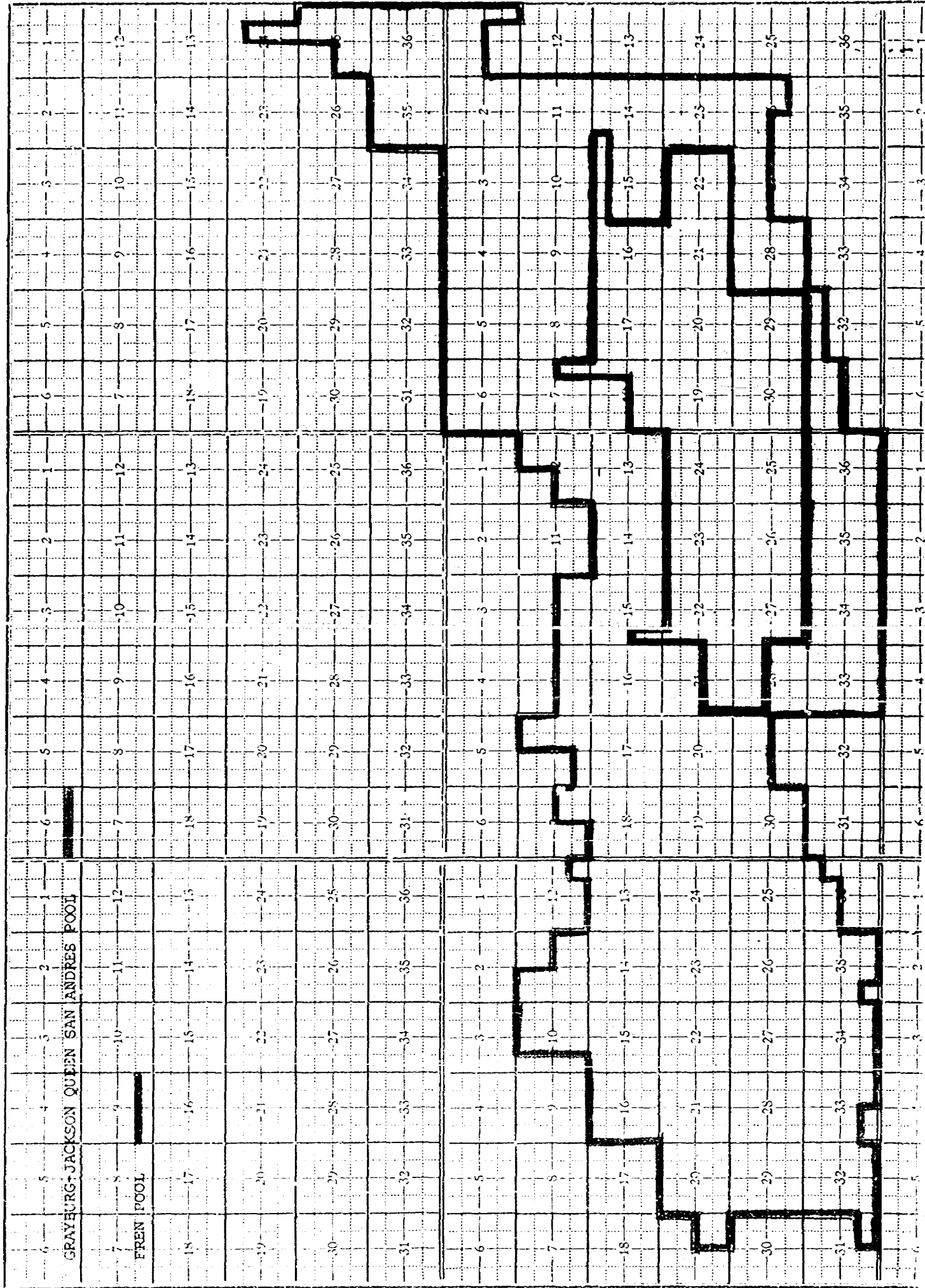
GENERAL AMERICAN OIL COMPANY OF TEXAS

By 
HINKLE, BONDURANT, COX & EATON
P.O. Box 10
Roswell, New Mexico 88201
Attorneys for Applicant

County

Rge 2/E

Rge 30E



Twp.
165

EXHIBIT "A"

Twp.
175

Phone application - 3-31-75 - Mr. Hunkle

(1) Application of General American Oil Company
of Texas for extension of vertical pool limits,
Eddy County, New Mexico.

in the above styled
cause:
Applicant seeks an order extending the
vertical limits of the Grayburg-Jackson Pool, Eddy
County, New Mexico to include therein the Seven
Rivers formation excepting that portion of
the Seven Rivers formation ~~which lies~~ lying
within the horizontal limits of the Seven
Rivers Pool.

DRAFT

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:

APPLICATION OF GENERAL AMERICAN
OIL COMPANY FOR POOL EXTENSION,
EDDY COUNTY, NEW MEXICO.

CASE No. 5461

Order No. R-5011

NOMENCLATURE

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 30, 1975,
at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this day of May, 1975, 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 the applicant, General American Oil Company,
seeks the extension of the vertical limits of the Grayburg
Jackson (Queen-Grayburg-San Andres) Pool, Eddy County, New Mexico,
to include the Seven Rivers formation excepting that area of
said Grayburg Jackson Pool overlain by the Fren-Seven Rivers
Pool.

(3) That the Seven Rivers formation overlying the Grayburg Jackson Pool in the horizontal area of the proposed extension consists of thin porosity and permeability zones often holding marginally economic reserves of hydrocarbons.

(4) That the evidence presented shows that it is uneconomical to attempt to drill, to complete, and produce the subject Seven Rivers formation as a single completion.

(5) That the evidence presented shows that it is uneconomical to attempt to complete the subject Seven Rivers formation dually with the Grayburg Jackson zones.

(6) That the evidence presented shows that the subject Seven Rivers formation can be completed and efficiently and economically produced by extending the vertical limits of the Grayburg Jackson Pool as proposed.

(7) That the nature and conditions of the Seven Rivers and Grayburg Jackson reservoirs and fluids are such that the vertical limits of the Grayburg Jackson Pool may be extended as proposed without causing waste.

(8) That the Fren-Seven Rivers Pool is an old established pool with very low marginal production.

(9) That to avoid problems associated with diverse ownership between ^{existing completions in} the Fren-Seven Rivers Pool and the Grayburg Jackson Pool and to maintain historical production statistics, the vertical limits of the Grayburg Jackson Pool should not be extended to include the Seven Rivers formation in that area of said pool overlain by the Fren-Seven Rivers Pool.

(10) That the North Fren Yates-Seven Rivers Associated Pool consisting of the SE/4 and E/2 SW/4 of Section 9, Township 17 South, Range 30 East, NMPM, Eddy County, New Mexico, should be abolished.

(11) That approval of the subject application will result in the recovery of hydrocarbons which would not otherwise be produced, will prevent waste and will not violate correlative rights.

(12) That the application to extend the vertical limits of the Grayburg Jackson Pool as proposed should be approved.

IT IS THEREFORE ORDERED:

(1) That the vertical limits of the Grayburg Jackson (Queen-Grayburg-San Andres) Pool, as ^{previously} established and defined by Commission order, are ^{hereby} extended to include the Seven Rivers formation excepting in that area where said pool is overlain by the Fren-Seven Rivers Pool.

(2) That the North Fren Yates-Seven Rivers Associated Pool is hereby abolished.

(3) 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.