# Case No.

# 7294

Application

Transcripts

Small Exhibits

ETC

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
15 July 1981

EXAMINER HEARING

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IN THE MATTER OF:

Application of ARCO Oil and Gas Company for salt water disposal, Lea County, New Mexico. CASE 7294

BEFORE: Daniel S. Nutter

TRANSCRIPT OF HEARING

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MR. NUTTER: We'll call next Case Number 7294.

MR. PEARCE: Application of ARCO Oil and Gas Company for salt water disposal, Lea County, New Mexico.

MR. BRILL: Mr. Examiner, my name is Allen Brill of the firm of Montgomery and Andrews, and I represent ARCO in this matter.

A preliminary matter, we have another amendment to this application, as well. The substance of the application is the water originally was to be taken -- let me see if I have this correct. From the Langlie Mattix and the Jalmat formations. We would like to amend the application so that the water would only be taken from the Langlie Mattix.

MR. NUTTER: No Jalmat water would be added here.

MR. BRILL: That's correct.

MR. NUTTER: The application will be so amended.

MR. NUTTER: Other appearances?

MR. KELLAHIN: Yes, sir. I'm Tom Kellahin of Kellahin and Kellahin, Santa Fe, appearing on behalf of Lewis Burleson, Inc., and Fluer Oil and Gas and

I have one witness.

(Witnesses sworn.)

BEN STOKELY

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

DIRECT EXAMINATION

BY MR. BRILL:

Q. Please state your name and address?

A. My name is Ben Stokely. I live at 3602 Godfrey Court, Midland, Texas.

Q. By whom are you employed, Mr. Stokely?

A. ARCO Oil and Gas Company.

Q. In what capacity?

A. Petroleum Engineer.

Q. Have you testified before the Division at a previous time and been qualified as an expert?

A. I have.

Q. Are you familiar with Case Number 7294 now pending before --

A. I am.

MR. BRILL: Are the witness' qualifica-

tions acceptable?

MR. NUTTER: They are.

Q. Mr. Stokely, could you summarize for us the purpose of ARCO's application in this matter?

A. ARCO seeks authority to dispose of salt water produced from its R. S. Crosby lease into its R. S. Crosby A No. 2 well, located in the southwest quarter of Section 28, Township 25 South, Range 37 East, Langlie Mattix Field, Lea County, New Mexico.

Q. Mr. Stokely, I'm showing you a copy of a document which we have stamped and marked as Exhibit One. Are you familiar with that document?

A. Yes, I am.

Q. Would you identify it, please?

A. It is an area plat showing the location of the well with a red arrow pointing to it. A half mile circle drawn around that location and a two mile circle drawn around that location.

Q. Mr. Stokely, I'm now showing you another collection of documents, which has been marked collectively as Exhibit Two. Could you identify that?

A. Yes, this is a listing of the wells within the half mile circle of this proposed salt water injection well, and behind that is an individual listing of

the tubular goods and cement that have been used in these wells. And further behind that is a set of diagrammatic sketches of these wellbores.

Q. Excuse me, Mr. Stokely, let me interrupt you a second, if I might.

I think the diagrams are selected as a separate exhibit.

A. Okay, I'm sorry.

Q. Now I will show you the collection of diagrams that's marked as Exhibit Three. I think you've already identified that.

MR. BRILL: We would move the admission of Exhibits One through Three.

MR. NUTTER: Exhibits One through Three will be admitted in evidence.

Q. Now I'm showing you a fourth document, which is marked as Exhibit Four. Can you identify that for us, please?

A. Yes. Exhibit Four is a diagrammatic sketch of the R. S. Crosby A-2 Well, the one which we plan to use as a salt water disposal well, showing all current tubular goods and cement and cement tops, plus the proposed installation of tubing and permanent -- I mean tubing and sealing packer to be used for water injection.

MR. BRILL: We would now move the admission of Exhibit Four.

MR. NUTTER: Exhibit Four will be admitted in evidence.

Q. Referring to Exhibit Four, Mr. Stokely, can you explain to the Examiner where on the sketch the casing strings are indicated?

A. Yes. Starting from the top there is 251 feet of 13 inch, which was cemented with 225 sacks, which calculated to be enough to circulate the hole.

There is 1265 feet of 9-5/8ths inch, which was cemented with 400 sacks, and it calculated to have a top at 113 feet below the surface.

At 3108 feet 7 inch casing was set in the original completion of the well and 200 sacks of cement were used to cement it. The top of this cement was estimated by calculation to be 1910 feet.

We started to workover the well and found that the 7 inch casing showed corroded parts, so we set a complete inner string of casing, 4-1/2 inch casing, to 3400 feet, and we cemented that around the bottom with 200 sacks and pumped 400 sacks into a DV tool at 2409 feet.

Now the cement did not circulate from the DV tool and that cement was squeezed to breaking.

Q. Are perforated intervals indicated on the sketch?

A. Yes. The perforated intervals are shown by the dashed lines to the righthand side of the 4-1/2 inch casing near the bottom. The perforated interval is 2996 to 3186 in the Langlie Mattix formation.

Q. Could you point out for us, please, the tubing strings and describe, if you would, their diameters and setting depths?

A. Yes, the inner string of pipe shown here is a string of 2-3/8ths inch tubing which we plan to set. We will internally plastic coat that tubing and set a sealing packer either a tension packer or a lockset packer at 2950 feet to isolate the injected fluids from the casing above the injection zone.

Q. Have any other measures been taken, Mr. Stokely, to prevent any leakage that might occur, and second, to monitor for leakage?

A. These particular items I've described were intended to prevent the leakage. In addition we will spot inert material between the tubing and casing to prevent corrosion and we will install a monitor pressure gauge at the surface on the annular space so that in case a casing -- a tubing leak should occur pressure will be observed at the

surface and immediate steps will be taken to repair this leak.

Q. Have any measures been taken other than the inert fluid to protect the tubing from corrosion?

A. It's internally plastic coated.

Q. What will the wellhead injection pressure be?

A. We plan to use no higher than 500 pounds per square inch surface wellhead pressure.

Q. Mr. Stokely into what formation will the injection be made?

A. Injection will be made into the Langlie Mattix Queen formation.

Q. And what is the basis for your opinion in that regard?

A. The basis for my opinion is first, the diagrammatic sketch which I have shown you with the cement showing that the casing is actually isolated from the formation, and the perforations which I show you here on what has been marked Figure Three, have you marked that as an exhibit?

Q. It's marked, I believe, as Exhibit Five.

A. Do you wish to call this now and have a look at it?

MR. NUTTER: Go ahead and discuss it.

A. All right. It is a neutron density log of the well, Crosby A-2, which we plan to use as an injection well. with the red band showing the perforated interval, and it also shows the tops of the Queen and Langlie Mattix formations, showing that the injection will occur substantially below the top of the Langlie Mattix formation.

MR. NUTTER: Now when you say Langlie Mattix formation, there is no such formation as the Langlie Mattix. This would be, actually, the Lower Seven Rivers, I think.

A. Yes, sir, it's what is legally defined as the Langlie Mattix, 100 feet above the --

MR. NUTTER: Right.

Q. -- top of the Queen.

MR. NUTTER: Right, but it's the Lower Seven Rivers.

A. Yes, sir, the Lower Seven Rivers.

MR. BRILL: We would move the admission of Exhibit Five at this time.

MR. NUTTER: Exhibit Five is admitted.

Q. Mr. Stokely, are you familiar with the process of channeling?

A. Yes, I am. In some cases where cement jobs are not properly done or if faults occur in them, fluids

may channel from one formation to another behind the casing.

Q. In your opinion referring to the proposed injection well, could channeling occur in the immediate area surrounding this well?

A. It is my opinion that it cannot.

Q. And what is the basis for your opinion in this respect?

A. The, first the calculated cement tops and amount of cement that was used, and secondly, a cement bond log, which was run by Dresser Atlas Corporation, showing the bonding of the cement to the casing and to the formation outside the wellbore.

Q. I'm showing you now a document marked Exhibit Six. Could you identify that for us?

A. Yes, this is a copy of this bond log which I just spoke of.

Q. Could you elaborate and explain what this bond log shows?

A. Yes. The red band here again is the perforations in this well. The top of the Queen and the top of what we referred to as the Langlie Mattix are shown, and also shown is a black band down the center of the log. This black band, according to Dresser Atlas, who furnished this log, indicates good bond. That means that the cement

is properly bonded to the casing.

At the righthand side of the log you see a bunch of wiggly lines. This is a microseismogram and reflects the bond or lack of bond to the formation.

If you will refer to the bottom section of that log, about 3300 feet, you will see some newly drilled hole that was drilled and the 4-1/2 inch casing was set in there and cemented. To the right you will see a most excellent bond of this to the formation.

Now just above that between about 3200 and 3300, you will see some old formation that -- and shot hole which was not properly bonded, but wherever you see these clear definitions of the white and blue lines, this according to my interpretation and the interpretation of the Division log analyst of Dresser Atlas, Mr. Sam Connelly, shows good bonding to the formation and would effectively isolate that portion from portions above.

MR. BRILL: We would move the admission of Exhibit Six at this time.

MR. NUTTER: Exhibit Six will be admitted.

Q. Mr. Stokely, what is the source of the water which will be disposed of in this well?

A. The water which will be disposed of here

will come from the same formation into which we will be injecting it. It will be coming from ARCO's R. S. Crosby Well No. A-3 and No. A-4. They will be seen on the area map about a half mile south of the injection well. No. 3 has a slash through it, indicating abandoned. It is not. And then on the lefthand side there you will see an open circle, which is No. 4 and is now under completion.

Q. Now what does No. 3 produce at this time?

A. No, 3 produces approximately 30 barrels of oil a day at this time and 150 barrels of water.

Q. Would you expect No. 4 to produce in similar quantities and similar ratios?

A. We have personally tested No. 4 and it looks like it's going to produce about the same way.

Q. What is the -- are there any other means of disposing of this water?

A. Yes. It can be trucked away.

Q. Do you have any idea what the cost of trucking the water is?

A. The cost of trucking water is very expensive due to the fuel and having to pay at areas where it's unloaded, and the last quotation I had for hauling in that area was $0.84 a barrel and it is going up. I would estimate an average cost of $1.00 a barrel for disposing of salt water

by trucking.

Q. Taking into account the quantities of water produced in No. 3 and the estimated quantity that would be produced in No. 4, what would the cost per month be for hauling the water by truck?

A. If we estimate the maximum amount which we plan to dispose of here of 500 barrels a day, that would cost $15,000 a month to haul this water to a disposal site.

Q. Now how does this compare to the cost of the injection method?

A. If we complete this well as an injection well and return to the formation the water which we're taking out of it, it will cost us approximately five cents a barrel, or $750 a month.

Q. Would the difference in cost of trucking as opposed to injecting the well be a factor to be considered in deciding whether to abandon wells 3 and 4?

A. Yes, it would. That would cost approximately $5.00 per barrel of oil and obviously, it would greatly shorten the economic life of these wells unless we can find a more economical way of disposing of the water.

Q. Would producable reserves be left in the ground as a result?

A. Definitely producable reserves would be

left in the ground.

Q. Referring to the water that is now being taken from No. 3, are you aware of the degree of mineralization?

A. Yes we have a water analysis on that and it shows approximately 15,000 parts per million of chlorides. I apologize for the quality of that analysis and I hand wrote the chlorides in there. But -- and I would not say that this would be a final representative analysis of the water from this well because it is a new well and it is still cleaning up. We expect the water to be identical to that which was produced from Well No. 2.

MR. NUTTER: What was that Well No. 3 formerly?

A. No. 3 is a new well drilled from the top. I don't know why it shows there as a -- with a slash through it.

MR. NUTTER: Oh, it's not an --

A. It is not an old well.

MR. NUTTER: -- old well abandoned and then recompleted?

A. No, sir, no, sir, it's not an old well. It's a newly drilled well.

MR. NUTTER: Okay.

Q. I believe, Mr. Stokely, that you have

just referred to a document marked as Exhibit Seven, is that correct?

A. That is correct.

Q. And that is the water analysis that has been prepared with respect to water taken from No. 3?

A. That is a water analysis on water taken from Well No. 3.

MR. BRILL: We would move the admission of Exhibit Seven at this time.

MR. NUTTER: Exhibit Seven will be admitted.

Q. Is this a high degree of mineralization shown by this analysis?

A. It is high as far as potable or agricultural water is concerned. It is useless for those purposes.

Q. Mr. Stokely, are you familiar with the productive capacity of the proposed injection well?

A. Yes. When we attempted to recomplete this well as a producer and after perforating and acidizing it produced approximately 200 barrels of water a day with only a show of oil and gas.

MR. NUTTER: From the Langlie Mattix?

A. From the Langlie Mattix, the same perforations which now exist.

Q. And what is the nature of any water contained in the formation into which waste water would be injected?

A. It would be the same water since it's coming from the same formation and should not form any problems as far as compatibility is concerned.

Q. Mr. Stokely, in your expert opinion are there any adverse effects that this injection might have on the Langlie Mattix-Seven Rivers- Queen formation?

A. None that I know of. In fact, there should be some beneficial effects because it would return to the formation part of what's being taken from it and thus would assist in maintaining pressure which moves the reserves from the formation into the wellbore, and could be seen as aiding production of hydrocarbons by other wells in the formation.

Q. Mr. Stokely, do you know what ARCO's reaction would be if an operator in the area felt that the water injected was contaminating his well?

A. Yes, ARCO intends to be a responsible citizen and any time we have a complaint by anybody that an unusual influx of water is occurring in their wells, or any symptom indicates trouble from water that we inject, we will take immediate steps to identify or locate the problem and

we'll cease injecting into the well while that is done, if it's indicated.

Q. Mr. Stokely, in your opinion would the granting of this application prevent economic and other types of waste and protect correlative rights?

A. Yes, it would.

Q. Thank you.

MR. BRILL: I have no other questions.

CROSS EXAMINATION

BY MR. NUTTER:

Q. Mr. Stokely, at the present time you propose to inject water only from the No. 3 and No. 4 Wells, is that it?

A. Yes, sir. We, of course, would have additional problems if we brought it from off lease. These are the only wells that we now have on the -- producing from the Langlie Mattix on the Crosby lease.

Q. Now you do have other leases in the area. What's the disposition of water produced from them?

A. We are presently trucking.

Q. I see. All this water in this area is being trucked?

A. Yes. Now --

Q. There's no community disposal system existent in this area?

A. I don't know of one here.

Q. Are there any waterfloods in this area?

A. There are some in adjacent areas but not immediately offsetting this lease.

We have taken the approach that you suggest in other places. We have approached the waterflood operators because we know that they need the water for additional volumes to inject and we're glad to cooperate with them.

Q. But there's no use for the water in this particular area?

A. Not in this immediate area, no, sir.

Q. How about these gas wells on this Crosby lease, do they make water?

A. I'm sure that they don't make very much because if they did, they wouldn't be producing. Gas wells in the Jalmat are very low pressure and if they make very much water they go off production.

Q. A lot of them have pumps on them.

A. Well, yes, when they have pumps on them we can assume that they're making water and this is - this is the reason that they're pumping.

Q. But these wells are not pumping, they're

flowing gas wells.

A. I don't recall having seen any. I don't have detailed information of the area in that regard. I'm sure that Mr. Burleson and Mr. Kellahin will bring us up to date on their ideas on that.

Q. But if you were making substantial volumes of water from these gas wells on this lease, you'd probably be pumping it. This Crosby No. 2 is a disposal well for that too, I presume.

A. Well, we'd have to come back here and ask you, in view of this. We're doing this as an attempt at conciliation with Mr. Burleson here. We did not want to bring up any more matters of contention here than we needed to, and since we immediately need to dispose of this water, well, we -- we wanted to bring this up as a clean issue and put it before the Commission.

Q. Well now, was this No. 2 Well recently drilled, also?

A. No, it is a re-entry. It's a very old well and as I said, the 7-inch casing had been in there and the well was shot with nitroglycerin on original completion down below the 7-inch, at that point where I showed you there was no bond with the formation. Obviously, most of these old shot holes you cannot bond well to the formation with

cement. You just can't get enough out there and clean it up enough.

Q. Well now, the symbol here is for -- is as a gas well for that well. Was it a producing gas well from the Langlie Mattix --

A. Yes, sir, it was. It produced and was depleted in the Jalmat. It produced on completion 4-million cubic feet a day and produced until it was depleted and was plugged and abandoned.

Q. I see, and then you re-entered it and --

A. Yes, sir. Recent events and other completions around have shown us that some of these old wells in the Langlie Mattix would produce some oil, so we went back first into -- well, we drilled the No. 3 first, and then went into the No. 2 and were disappointed with it.

Q. You wanted to try to complete it as an oil well.

A. Yes, sir, that was our intent.

Q. But it made water so you decided to go ahead and use it for --

A. It made practically 100 percent of water and we felt that since it did, the most advantageous thing for everybody would be to put water back into there that is coming out of the formation and support the pressure

that will help the other wells produce.

Q. And you have amended your application to delete any Jalmat water for this disposal.

A. Yes, sir, we have, just for the purpose of cleaning up the issue so that we wouldn't have any additional argument about it.

Q. Okay.

MR. NUTTER: Are there further questions of the witness?

MR. KELLAHIN: Yes, sir.

MR. NUTTER: Mr. Kellahin.

CROSS EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Stokely, tell me something about your experience in the Jalmat-Langlie Mattix area of Lea County with regards to producing wells and/or salt water disposal wells.

A. Well, I have not installed any salt water disposal wells in the Langlie Mattix-Jalmat area. I have observed some production curves and have been working on the completion and operation of the wells since I was transferred to this area, which is a few months back; however, I have in the past looked at the Jalmat area, oh, some ten

or fifteen years ago when I was with Sinclair, and we operated some of those wells over there, although I did not personally operate the wells.

Q. You started developing a proposed disposal well for the produced water approximately three months ago, was that it?

A. That's right.

Q. All right, sir, and in making that study, Mr. Stokely, did you examine the possibility of using any other well in the area as a disposal well?

A. I did not.

Q. Did you examine the possibility of using any other formation as a disposal formation other than the Langlie Mattix formation?

A. No, I did not, because I felt that the -- well, I knew that water injection into the Jalmat would be a problem and we agree with the commissioner's opinion on that, that you don't want to let water stand on the Jalmat very much because we do cause problems with it when you do. So we didn't want to consider it at all.

Q. Explain to me why you wouldn't want water to stand on the Jalmat.

A. It may tend to damage the formation if it stands on there for a long period of time.

Q. We've talked about the Langlie Mattix Pool, Mr. Stokely. Do you know how the Commission defines the vertical limits of the Langlie Mattix Pool?

A. Yes, I do.

Q. It's from the base of the Queen formation to 100 feet above the base of the Seven Rivers formation, is that not true?

A. That's right.

Q. And do you know how the Commission defines the Jalmat pool?

A. Well, you might refresh me on that.

Q. Am I correct in understanding that the vertical limits of the Jalmat Pool are from the top of the Yates to 100 feet above the base of the Seven Rivers?

A. That's correct.

MR. NUTTER: Well --

Q. I'm sorry, the Tansill. I got the Tansill in there too.

A. All right.

Q. All right. Anyway, my point is that the Jalmat covers the Yates portion of the Seven Rivers and that the Langlie Mattix Pool covers the balance of the Seven Rivers and the Queen formation. Are we in agreement about that?

A. That sounds like a correct assumption.

Q. All right, sir. Are you aware of any kind of barriers between the Queen formation and the Seven Rivers formation that would preclude water disposed of in the Queen from migrating up into the Seven Rivers?

A. There are barriers all throughout the formation, all of these formations. You have to be selective about your perforations because there are zones of little or no porosity and permeability in it.

Q. In looking at a log of a well that penetrates all of those formations, is there any indication between the Langlie Mattix, top of the Langlie Mattix, and the base of the Jalmat Pool, that there is any kind of impermeable barrier that would cause the water disposed of in the Langlie Mattix not to migrate up into the Jalmat Pool?

A. Well, yes, I think there is. I surely do.

Q. Would you identify for me what you see as an impermeable barrier?

A. The zones which show little porosity here are impermeable.

Q. In the proposed disposal well.

A. Yes.

Q. All right, sir. Now if I understand correctly, this disposal well was originally drilled a number

of years ago, was it not?

A. Yes, it was.

Q. And when was it originally completed?

A. I don't recall when it was. It was about 1935 or 36, something like that, it's been a long time ago.

Q. All right, sir. You said it did produce some Jalmat gas?

A. Yes, it did.

Q. All right. How do you propose to keep the Langlie Mattix water that you propose to dispose of in the disposal well from migrating up into the Yates?

A. The properly cemented casing, which exists in the well, and the impermeable barriers which exist in all these formations will keep it from migrating from where it is perforated up into the Jalmat.

Q. All right, sir, would you turn to your cement bond log, which is your exhibit Number Six?

A. Yes, sir, I will.

Q. That is a cement bond log on what casing string, Mr. Stokely?

A. This is a cement bond log on all the casing strings. It was made after the 4-1/2 inch casing was installed.

Q. That will -- that will show the bond log

for the 4-1/2 inch casing string, will it not?

A. It will show the bond log for all the casing strings.

Q. That will be the cement bond log for the 7-inch casing?

A. Yes, it will. The microseismogram will show the bond -- where the cement is bonded both to the casing and to the formation.

MR. NUTTER: I think, Mr. Stokely, that you have two casing strings in the upper portion of Exhibit 6.

A. Yes, that's right.

MR. NUTTER: Down to 3108.

A. That's right.

MR. NUTTER: And that's the shoe on the 7-inch.

A. Right.

Q. And then it would be a bond log on the 4-inch only from that point on down, wouldn't it?

A. That's true. That's true.

MR. KELLAHIN: That was my point. Thank you, Mr. Nutter.

Q. Did you ren a cement bond log on the 7-inch?

A. No --

Q. Separate and apart from this cement bond log?

A. No, not before we ran this.

Q. All right, sir.

Now in looking at Exhibit Number Six, this is simply a portion of the cement bond log, is it not, sir?

A. That is true.

Q. I believe appended to your application is a complete cement bond log from which Exhibit Six is a portion.

A. That is true.

Q. May we look at that bond log, please?

Do you have one before you, Mr. Stokely?

A. Yes, I do.

Q. All right, sir, I'm going to give this one back to the Examiner.

MR. NUTTER: We've got one.

Q. If you'll fold out the cement bond log until you get to the scale at the bottom of the log, would you help me understand how you read a cement bond log in relation to this scale?

It says percent unbonded pipe signal in this box?

A. Yes. This refers to the line which exists on the log, and as you notice, it includes -- it shows poor bond up the hole.

Q. All right, sir.

MR. NUTTER: What depth would that be?

A. Well, it shows poor bond until you get to, let's see, to about 400 feet, about 1250.

Q. Let me see if I understand. As the line moves to the left it becomes a better bond.

A. That is correct.

Q. And as it moves to the right is a poorer bond.

A. That is true.

Q. At what point in that progression of line movement would you in your opinion consider it to be an inadequate cement bond?

A. Well, that is a judgment factor and I guess a more appropriate question is where do you question the cement bond, and I will respond to your request.

Q. All right, sir. You just said above the 1200 foot line that that line indicated to you that there was poor cement bond.

A. That is right.

Q. I want to know at what point in that

line movement do you consider it to be acceptable?

A. I consider fully acceptable the part where -- opposite where the black line begins here and --

Q. That would indicate less than five percent unbonded pipe?

A. That is true.

Q. All right, anything in excess of the five percent, then, would be unacceptable to you?

A. No, I didn't say that it would be unacceptable. It would be less acceptable, and another thing that is involved is the -- the distance that you have between what is marked with the good bond as interpreted by the Welex -- I mean Dresser Atlas Corporation, and the broken or unbonded pipe.

Q. Yes, sir. I don't have Dresser Atlas to talk to today, Mr. Stokely. I need to have you tell me.

A. Okay, all right.

Q. If you'll start at the top and go down to the bottom and tell me at which points you find the bond unacceptable. We're down at 1200 feet and going down.

A. Well, I would have to go by the same criteria that Dresser Atlas does, since they are expert in the business, and they have marked everything below 1800 feet as good bond; the area between 1746 feet and 1800 feet

as partial bond; and I would say partial bond is unacceptable because you have a lot of unattenuated seismogram to the right of that.

Q. Where would we encounter the top of the Langlie Mattix on that log, Mr. Stokely?

A. I believe it's marked on the log over here at 2920 feet, approximately.

Q. What was the footage, sir?

A. 2917 feet.

Q. Mr. Stokely, do you have the daily drilling summaries for the work on this disposal well?

A. I do not have them but I furnished them to Mr. Burleson for his use and I'm sure you have a copy of them there.

Q. Yes, sir, I do.

I'd like to show you what I've marked as Burleson Exhibit Number Seven and ask you if that is the drilling summaries that you furnished to Mr. Burleson?

A. Yes, it is.

Q. Let me trade with you because that's got --

A. All right.

Q. -- the Commissio stamp on it and --

A. Okay.

Q. -- and I assure you it's the same copy.

If you'll turn to page three of the summary, Mr. Stokely, which I guess is the top, --

A. The top page, okay.

Q. -- we've got them staped in reverse order. And if you'll look to the entry on March 26th, 1981, which is the bottom entry on page three.

A. Uh-huh.

Q. It says SITP 875 pounds. What does that indicate to you, Mr. Stokely?

A. 875 pound surface tubing pressure, I mean shut-in tubing pressure.

Q. Yes, sir, shut-in tubing pressure being at 875, would that indicate to you that there is still Jalmat production in this well? I'm sorry, Langlie Mattix production in this well?

A. No, not necessarily. It would indicate that there is some gas there, that the well was swabbed down and the gas migrated up the hole causing pressure on the casing, on the tubing.

No, casing, let's see, tubing pressure, yeah.

Q. All right, sir, if you'll turn to page one of the drilling summary and look at the entry that says

February 26th, '81, which is the second from the bottom, there is language that says all pipe very poor condition. Would that not indicate for you that this well contains potential hazards for the migration of Langlie Mattix water into other formations?

A. Not with a properly cemented inner string of casing.

Q. All right, sir, let's look back then at the entry just above that on February 25th, '81, and the second line says ran cement bond log, and then it goes on to say no bond at 1640 to 1928; very poor bond from 1928 to 2024; no bond to 2024 - 2070; poor bond 2070 - 2120; no bond from 2120 to 2361.

What have you done to solve that problem, Mr. Stokely?

A. That problem does not exist opposite the formations we're talking about. That is above the top of the Yates.

MR. NUTTER: This was prior to the time you ran the 4-1/2, anyway, wasn't it?

A. Yes, sir, I had -- I had forgotten that that had been run. I do not have a copy of it with me. But this was run with the idea of finding out the condition of the pipe in order to perform a workover.

Q. Well, has a cement bond log been run below the 2361 depth?

A. It may have been. I don't know.

Q. So we don't know if there's a good bond or not, do we?

A. I think we do by the bond log that we now have.

MR. NUTTER: How long was this well plugged and abandoned?

A. Oh, several years. I think on the order of about ten years.

Q. Have you made any study to determine whether -- where the disposal interval in the proposed well is in structural relationship to any of the offsetting wells?

A. I have not personally made a study on that. I have discussed it with others and it is my understanding from these discussions that this injection section here is somewhat lower structurally than the R. S. Crosby A-3 and A-4.

Q. But you have not made a personal study --

A. I have not made a personal study --

Q. -- yourself to determine how it lies in --

A. -- of that. I have not.

Q. -- relation to the other wells within the half mile radius.

A. I have not.

Q. All right, sir.

Now you say you're going to dispose of water into the Langlie Mattix Pool, Mr. Stokely. Are there any other wells within the half mile radius that currently produce from the Langlie Mattix Pool?

A. Yes, there are.

Q. Will you identify those for us, please?

A. Well, the one that I know of particularly is our R. S. Crosby A-3. I have not got the identification of all the rest of them. I'm sure that Mr. Burleson is ready to supply us with those.

I do have records of several of them that were completed there at one time.

Q. All right, sir, with regards to the No. 3 Well, is there any way you can go back in and squeeze off the water flow in the No. 3 Well?

A. I don't know of any. We have looked at that possibility and probability and we have decided that it is not economical to try.

Q. Have you perforated the No. 4 Well?

A. Yes, we have.

Q. Did you make any effort to perforate higher in the No. 4 Well than you did in the No. 3 Well and thereby avoid the water production?

A. We did not want to leave reserves in the hole by perforating high in the well. We perforated the seven lowest perforations that we had planned and tested them and we produced 8 barrels of oil and 43 barrels of water out of those lowest perforations in eight hours, so we feel it would be inadvisable to leave that production in the -- in the hole.

Q. What is the price you received for the oil on a barrel?

A. I don't know what that price is right now. I would -- I would guess it was in the neighborhood of $30.00 a barrel, $35.00.

Q. Have you made any study of the potential risk of the disposal in this well to Mr. Burleson's well in the northwest of the northwest of 28, which is identified as a gas well and numbered No. 3?

A. Let's see, this is approximately, well, it's almost a half mile from the well. Is that right?

Q. Yes, sir. It's at the northern end of the half mile circle.

A. I have not, but at that distance and

the rate that we'll be injecting into this long section of perforations, I don't think there will be any danger to that well at that distance.

Q. Yes, sir, but the Langlie Mattix has got water in it already, does it not, sir?

A. It does.

Q. So for each barrel of water you dispose of in a disposal well, you're moving one barrel of Langlie Mattix formation water, aren't you?

A. We're only taking -- putting back a part of what we're taking out, so I guess I don't believe that that's a valid argument.

Q. Doesn't this create the problem that you mentioned to us before about interjecting water into a gas productive zone?

A. I said nothing about injecting water into a gas productive zone. I said the Jalmat is sensitive to damage by water.

Q. You don't know whether or not any of the Langlie Mattix wells also produce gas?

A. I know there are some Langlie Mattix wells in some locations that produce gas.

Q. All right, sir, we've got a well symbol on your exhibit that shows a gas well in the Langlie Mattix,

don't we?

A. I don't know if that's a Langlie Mattix gas producer at this time or not. This may not be up to date. Do you have some that are indeed producing gas from the Langlie Mattix?

Q. My only point is you've failed to make a study to determine whether or not the disposal of water in the disposal well is going to water out any Langlie Mattix producing wells, haven't you?

A. I don't believe that that's true. If we inject only what's produced from the formation I don't believe that I'm going to water out anybody, and we stand ready at any time that any operator complains that he is producing an unusual amount of water, it looks like that we're causing problems, to shut down the well, determine the source for the problem, and correct it at that time.

Q. All right, sir, can you tell me how we would propose to establish a system of monitoring that would-- could be adopted by the Division in a disposal order, that would insure that the water you dispose of in this well is going to remain confined on your lease?

A. Well, I guess I would have to depend on the Commissioner to do that. I'm sure he's had a great deal of experience in these cases, and ARCO intends to be a good

citizen in the oil field and if we have not been at any time, we apologize for it and we stand ready to correct our problems.

Q. I appreciate your willingness to cooperate, Mr. Stokely, but you don't have a specific recommendation to the Examiner as to how the disposal water could be monitored?

A. I would recommend that the disposal water be monitored by a pressure gauge at the surface to monitor the annulus between the tubing and casing, and I see no problem in issuing a special order to monitor the production from the offsetting wells. I do believe that the operators will let us know if they have any problems.

Q. Is the disposal well on a Federal lease?

A. I believe it is.

Q. What if any approval have you obtained from the USGS to use this well as a disposal well?

A. I have not as yet.

Q. Have you made a study of any of these 18 or 19 wells within the half mile radius to determine whether or not they would constitute a problem for water migration?

A. I looked at the information which you have in front of you, the diagrammatic sketches and the cement volumes, the calculated amounts, the cement tops, and I did

not see anything that looked like it would be a problem to me.

Q. Would you show us where we might find the ARCO R. S. Crosby 3 Well No. 1-B?

A. Well, I'll have to look it up. Do you have it marked on your map? I don't have it marked.

Q. I think it is the well on the half mile radius in the southwest --

A. The Devonian well?

Q. -- the southeast of the southwest of 28.

A. The deep well?

Q. No, sir. There are three wells in close proximity to ech other.

A. Uh-huh.

Q. Two of them are indicated with gas symbols?

A. Uh-huh.

Q. All right, the No. 3 Well.

A. Okay.

Q. That well.

A. All right.

Q. All right, what do you know about that well?

A. I do not have the well record with me. I have the same thing that you have in front of you.

Q. Okay, the tabulation of information is the extent of your knowledge about the quality of that well?

A. Yes, since this is on the half mile radius and it's so far away from an injection well which is only going to receive a small amount of water and that part of what's been taken out of it, I feel it offers no problem.

Q. Where is the Repollo Well, that's the Lanehart No. 1 Well? We talked about that, I think, in one of your summaries.

That's the well just south of the Burleson and Huff Langlie Mattix well in the north side of the half mile radius.

A. Now where is this again?

Q. All right, sir. If you'll look to the north you see the half mile radius line?

A. Uh-huh.

Q. Circle, and you see the well, the gas well symbol for the No. 3 Well?

A. Yeah.

Q. If you'll look to the south and east there's a No. 1 WEll.

A. No. 1, uh-huh.

Q. Is that not the Repollo Oil Company Lanehart No. 1 Well?

A. Well, if that's the cause of knowing it, that's what it is. I have open to it and it says it's 990 from the north and west of Section 28. That should be it.

Q. All right. If -- if you'll turn to your schematic summary on that well, Mr. Stokely.

A. Okay.

Q. Where are the perforations in that well, Mr. Stokely?

A. Well, I don't have those perforations marked on here, unless they're listed, and they should be listed on the summary up here, and let's see, Repollo Lanehart No. 1, was open hole 3130 to 3302, is the only report I have on it. It does not have any perforations reported.

Q. All right, let's turn then to the Texaco Lanehart No. 1 Well.

A. All right.

Q. Do you have that one, Mr. Stokely?

A. Yes, I do.

Q. This is on your plat, it's in -- the well in the northwest -- I'm sorry, the northeast quarter of Section 29?

A. Okay.

Q. Have we found that?

A. Located 1320 from the south and 1320 from the east.

Q. Puts it about in the center of that quarter section?

A. Yep.

Q. That's the No. 1 Lanehart Texaco Well?

A. Uh-huh.

Q. All right, what do you know about the perforations in that well, Mr. Stokely?

A. Well, the perforations shown here are 2516 to 2730; 3030 to 55; 3075 to 3120; and 3308 at total depth. It looks like it was open hole and perforated.

However, I would like to point to you that this is almost a half mile away from the No. 2.

MR. NUTTER: I don't seem to find that well on your plat, Exhibit Number One. Where would it be?

A. Approximately in the center of the northeast --

MR. NUTTER: Oh, okay, well then, then Exhibit Two would be wrong. It says 1320 from the south line and 1320 from the east line.

MR. KELLAHIN: It's supposed to be north line.

MR. NUTTER: It's supposed to say north line.

A. Well, now, let's see. No, I have 1320 from the south line and east line. I'm sorry. I apologize. It's 1320 from the south -- is that in error?

MR. NUTTER: Well, there's no well, there is no well on the map at that point.

MR. KELLAHIN: Well, I think we're all looking at the same well now. It's the well in the center of the northeast quarter of 29.

A. Okay.

MR. NUTTER: So it would be north line.

MR. KELLAHIN: Yes, sir.

A. Right, that should be north line. I apologize for the error.

Q. My point is, Mr. Stokely, have you made a study of the perforations in this well to determine whether the perforations cross over into both the Jalmat and Langlie Mattix Pools?

A. I can see here that if they are still open they are in both the Langlie Mattix and the Jalmat, but I would further point out that again this is approximately a half mile from the well in which we plan to inject only a part of the fluid which we're taking out of the Langlie Mattix

formation. We will be not increasing the pressure or drive in that direction by reason of the fact that we're removing more than we're putting back.

Q. All right, sir, apart from that explanation, though, this is a well within the half mile radius --

A. Yes, it is.

Q. -- that is perforated across both --

A. Yes.

Q. -- pools, is it not?

A. Yes, it is.

Q. All right, sir.

A. I'm assuming it is. I don't have any plugging records on it.

Q. Let me ask you a little bit about your economics, Mr. Stokely.

A. All right.

Q. I believe you've told us that the relationship of the expense of trucking the water away represents a cost of about $5.00 per barrel of oil produced?

A. That's the way it looks at present.

Q. All right, sir, and so you won't immediately have to abandon this project if you're still required to truck this water, will you?

A. No, not immediately.

Q. The only adverse impact is that it may have some in the future cause --

A. Early abandonment.

Q. -- early abandonment. Have --

A. That's right.

Q. -- you made any projection as to when that abandonment might take place if you had to continue to truck this water away?

A. We do not have any production projection on that well as yet. We cannot do that. However, it would be reasonably early at a $15,000 per month water bill.

Q. All right, sir. In discussing the economics of this project, Mr. Stokely, have you taken into consideration the costs of drilling a new disposal well as opposed to re-entering this old Crosby A-2 Well?

A. Drilling a new disposal well would cost in the neighborhood of $200,000.

Q. To the Langlie Mattix formation?

A. To the Langlie Mattix formation, that is true.

Q. So in summary, then, Mr. Stokely, you -- if the disposal of water into the Langlie Mattix as you've proposed is approved, you are going to be disposing of water that -- into a zone that's currently being produced by wells

within a half mile radius.

A. That is true, and they -- it will to some extent help those wells by driving hydrocarbons from the location where we inject the water towards the producing wells.

Q. You reached that conclusion without a study of the structure to determine whether you're injecting water above or below the perforations of any of those wells?

A. We know that we're injecting water in the same elevation of the perforations of the wells that we are producing there and we assume that other Langlie Mattix perforations are in the same general area.

Q. All right, sir, thank you.

MR. KELLAHIN: I have nothing further.

MR. NUTTER: Are there any questions of the witness?

MR. BRILL: I have just a few things, I think, on redirect.

REDIRECT EXAMINATION

BY MR. BRILL:

Q. Mr. Stokely, what effect will the proposed injection have on the pressure in the Langlie Mattix formation in this vicinity? Taking into account the activity at Wells No. 3 and 4?

A. If you will look at the section on the plat with the half mile circle, and look at the area from Well No. 2 down to Wells No. 3 and 4, there will be a slight decrease in the pressure in the formation due to the fact that we will be taking out more total volume including oil and gas than we will reinjecting in the way of water.

There may be a small increase in pressure around Well No. 2 but it will not be a great increase.

Q. In what vicinity can you estimate would there be any pressure increase at all with relation to the No. 2 Well?

A. I don't follow your question. Would you come back?

Q. Well, you just stated that there might be some small increase in pressure in the area surrounding the No. 2 Well. What would be the extent of the area in which there might be a small pressure increase?

A. I would say less than 500 feet.

Q. Would it be anything approaching a half a mile?

A. No.

Q. Will the water quality the change in the Langlie Mattix formation because of this injection?

A. No, we'll be reinjecting the same water

that has been produced from the Langlie Mattix, so it would not change it.

Q. So there is in fact already water in the formation at this time?

A. Yes, there is.

Q. I think the Hearing Examiner has straightened this out, but referring to what is marked page one but is the third page in the Burleson Exhibit Seven, these figures, this data is -- was collected prior to the 4-1/2 inch casing, is that --

A. No, no. This included the 4-1/2 inch casing. Well, now some of it was.

Q. Yes, I'm referring to the very back page there.

A. Yes, that was all -- all done prior to installing the 4-1/2 inch casing.

Q. The Burleson well that was referred to in cross examination, the gas well, do you recall that?

A. Uh-huh.

Q. In your expert opinion do you think that it is likely that there is an impermeable layer between the wells that you're injecting to and the Nos. 3 and 4 Wells that are producing oil and no gas, and this Burleson well which is producing gas?

A. It sounds likely that there might be. It is strange that we're unable to get any volume of gas of any quantity out of our No. 2 Well and they are in fact producing their well as a gas well.

Q. And what do you think the explanation for that probably is?

A. Well, the explanation could be a permeability barrier between the two.

Q. Is it likely from your knowledge of this vicinity that the wells to which Mr. Kellahin referred on cross examination as having perforations crossing the Langlie Mattix and Jalmat already have water present in the vicinity?

A. It could well be.

MR. BRILL: Okay, I have nothing else.

MR. NUTTER: Any further questions of the witness?

MR. KELLAHIN: No, sir.

MR. NUTTER: He may be excused.

Is that your only witness, Mr. Brill?

MR. BRILL: Yes, it is, Mr. Examiner.

LEWIS B. BURLESON

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Burleson, would you state your name and occupation for the record?

A. Lewis B. Burleson and I'm an independent operator.

Q. Do you hold any professional degrees, Mr. Burleson?

A. Yes, I do.

Q. In what field, sir?

A. I'm a geologist.

Q. You hesitated. I thought maybe you might have forgotten.

A. No.

Q. Mr. Burleson, have you previously testified as a petroleum geologist before the Oil Conservation Division?

A. Yes, I have.

Q. Would you describe generally for the Examiner what, if any, experience you've had with the Langlie

Mattix and Jalmat production in Lea County, New Mexico?

A. I have been working 33 years with Lea County Jalmat and Langlie Mattix production and this particular Crosby structure area is in my backyard. We own most of the acreage with ARCO and I have been -- I have been on the wells for the last fifteen years.

Q. You're the Lewis E. Burleson of Lewis E. Burleson, Inc.?

A. Yes, sir.

MR. KELLAHIN: We tender Mr. Burleson as an expert petroleum geologist.

MR. NUTTER: Mr. Burleson is so qualified.

Q. Mr. Burleson, I'd like to direct your attention to what we've marked as your Exhibit Number One, and have you identify that for me.

A. Exhibit Number One is a cross section as shown by A-A', with the proposed disposal well being in the center and with the following wells: The ARCO No. 3 Crosby, which is their oil producing well.

Q. Let's take a minute. You're far more familiar with your exhibit than any of us, Mr. Burleson, and let's take a moment and find the wells that you've put on the cross section, sir.

The third well from the right is ARCO's

proposed disposal well. That's the log of that well.

A. Right.

Q. All right, sir.

A. This is the log they gave me.

Q. All right, sir.

A. The well to the left is their producing well now, which is located south of the disposal well.

Q. This is the No. 3 Well that Mr. Stokely referred to?

A. That is correct.

Q. All right, sir.

A. In yellow is the perforated interval for their well. On that I have picked the top of the Queen, Seven Rivers, and the Yates.

The next well is the Burleson and Huff Gutman No. 1. It was a Langlie Mattix oil well. We plugged that back when it was making 2 barrels a day and made a Jalmat gas well out of it.

Q. This is the well in Section 29, the --

A. Which is the --

Q. -- immediate southwest offset to the disposal?

A. That is correct. No, it would be a west offset to the disposal.

Q. All right.

A. Then the next well is the disposal well. In that colored in yellow are -- is a bar, shows the -- shows the perfs. The next well --

Q. The next well, you're going back to the disposal and -- well and moving to the right?

A. Right.

Q. Which will be the second well from the entire right of the cross section.

A. That is correct.

Q. All right, tell us which one that is.

A. That is the Burleson and Huff Saunders Estate No. 3, which is a Langlie Mattix gas well, and is located 1-1/2 locations north of the proposed disposal well.

Q. This is the one I asked Mr. Stokely some questions about.

A. That is correct, and the --

Q. At the north edge of the half mile radius.

A. That is correct.

Q. All right, sir.

A. And the perforated interval is colored in yellow. It is in the Langlie Mattix.

Q. And what is the last well?

A. Ant it produces gas in the same interval

they want to inject water in.

Q. All right, sir.

A. The next well.

Q. What is this last well?

A. Which is the Burleson Shahan No. 1, which is located in the northwest corner of Unit B in Section 33. This well --

Q. Just a minute, it would be the northwest of the northeast of 33, would it not?

A. Right, but it would still be unit B.

Q. It's in -- it's in Unit B.

A. It would be the northwest corner of Unit B, and the bar shows the perforations and the pay perforated and the pay is colored in yellow.

Q. All right, sir, what's the purpose of the exhibit, Mr. Burleson?

A. To show three things. One, if anybody is familiar and has worked the platform in the New Mexico area, approximate oil/gas contact is at -100 to -125 feet.

Q. That is the line you've drawn in blue on the cross section.

A. That is correct.

Q. All right, sir.

A. This shows -- now this figure is estab-

lished in the industry and is used over most of the platform.

This shows that -- that my north offset gas well is not producing oil. It is producing gas and water. And I'll get to the reason it's producing water later on.

And you will notice that they propose to inject water in the same interval as where I am producing gas.

Q. If that is approved by the Division, what if anything, in your opinion, would happen to your Langlie Mattix gas well?

A. I can't see how, in what Mr. Stokely says, how that's going to shove extra hydrocarbons up my way. What it will do is give me pre-abandonment of a Langlie Mattix gas well.

And another, notice how high structurally this disposal well is. It's on top of the Crosby structure and I will present a structure map to show its relationship to the other producing wells in the area. This well is higher, is higher than the other two wells that they want to take water out of. Notice, I don't have to call it for you, the top of the Yates in this one well and you can see over here in the other one, these are hung on plus or minus zero and that well is higher than the No. 3, which is the oil well.

Q. All right, sir, does that conclude your explanation of your first point with regards to the cross section?

A. No, the other thing is that most people in the industry use at a -250 to below to be the water/oil contact. Now this varies some. But notice that in their well they have perforated down into water and their logs may have said that they're going to miss some hydrocarbons but they have perforated across the gas, across the oil, and across the water, and it's no wonder they're making lots of water now.

Q. All right, sir.

You said you had two other points with regards to the cross section.

A. One, that if you can -- well, they perforated a gas interval in their injection well. This well is a gas well that has water in it.

Q. How do you know that, Mr. Burleson?

A. Because they had a shut-in of 875 pounds on it.

Q. What does that indicate to you?

A. This indicates to me they had a gas well and this shut-in pressure is higher than my original shut-in pressure on my Saunders No. 3.

Q. In your opinion is the proposed disposal well still capable of production of gas in paying quantities?

A. Now, I -- that's hard for me to say, but from their drilling report, yes, it is. It will make a gas well.

Now they're in trouble with it because they re-entered one and they wouldn't get high price of gas of NGPA, but they have perforated the gas interval and therefor when they swabbed it they got water, which I can account for, but no oil, and I think they were just looking for oil.

By the way, the water they got in that swab, I mean the oil probably came from down below and channeling across in a 7-inch pipe.

Q. Does that conclude your comments with regards to the second point on this cross section?

A. Yes, I think so.

Q. All right, sir, and what was your third point?

A. Well --

Q. Or have you made it already?

A. Yeah, I think so.

Q. All right. Do you have anything else you want to direct our attention to with regards to the cross section?

A. Only that they're injecting into the gas zone and not in the oil zone, and this is an injection well and not a waterflood.

Q. Let me direct your attention to Exhibit Number Two, Mr. Burleson.

Did you prepare Exhibit Number Two?

A. Yes, sir, I did.

Q. As well as Exhibit Number One.

A. Yes, sir.

Q. All right, sir, and what is the purpose of Exhibit Number Two?

A. All right, you've got to realize that this is my backyard and let me explain where all the water is coming from.

There are four wells, and I've identified them as Well No. 1 in Section 29, the Texaco Lanehart. The No. 2 Well, which is the old Repollo Sinclair, Atlantic, or somebody, Lanehart No. 1. The proposed injection well, the Crosby No. 2.

Q. Is labeled No. 4?

A. No, 4, and No. 3 well is the old Repollo Crosby No. 1-B.

Q. All right, sir, what is the purpose of identifying those four wells?

A. These four wells were randomly perforated as I will show later in the Langlie Mattix and Jalmat and were tied into what I call is a main aquifer, and when they were plugged they put superficial plugs in the well and we have had an active water drive from our main water aquifer at 3200 feet up into the Jalmat, into the Yates, into any formation that would take it.

And ARCO has a well that I will show you that was affected by this -- these poor plugged wells.

Q. In your opinion if the Commission should approve the proposed well as a disposal well, what if any remedial action would be required with regards to the wells you have identified as 1, 2, and 3?

A. I've been able to live with those. I don't own but one of them. I own the lease on one.

ARCO owns the lease on three of them.

Now we could go in there and plug those correctly and our ultimate recovery would be greater because when I show you the amount of water some of these wells have produced, you'll understand what's happening.

Q. I don't know whether you answered my question or not, Mr. Burleson. My question is whether or not as a condition of approval of this well as a disposal well, would you recommend that ARCO be required to re-enter and re-

plug Wells 1, 2, and 3?

A. No, sir, I cannot demand they plug Wells 1 --

Q. No, sir, but the Commission can make that a condition of an order if you in your expert opinion reached the conclusion that it was necessary to do so.

A. Well, I wouldn't mind, and they could force me to plug, but I'd want them to plug their injection well, also, because remember, they have that old, old pipe in there, thousands of perforations have never had any cement squeezed across them, and we know that well itself has water circulation that is coming down from -- now they have cured part of this thing by running that new pipe through the open hole, but the injection water can go up into the Jalmat, also into the Langlie Mattix anywhere. They have no idea where it's going to go.

Q. All right, sir. Let me direct your attention to Exhibit Number Three and have you identify that for us. I've shown you what we've marked as Exhibit Number Three, Mr. Burleson. Would you identify that for us?

A. All right. This will be my tabulation of everything I could find out about this well and the perforations and how it was plugged and the scout ticket tells when the well was drilled, and it would show, in my opinion,

that we have no separation between the Langlie Mattix and the Jalmat.

Q. Let's get us all at the same point here, Mr. Burleson.

A. All right.

Q. Exhibit Number Three is related to which of the four problem wells you've identified on Exhibit Number Two?

A. All right, it will be -- refer to Well No. 3 on the map.

Q. All right, sir.

A. And the reason I picked this first is the first sheet below the next sheet is a Langlie Mattix water production xeroxed form for 1940.

Q. Where did you obtain this form?

A. From the Oil Commission in Hobbs.

Q. And what does that form indicate?

A. And if you'll notice down there, it says Republic Production Company Crosby No. 3, Unit N, 28, 25, 37, and I want you to look at the amount of water that well produced monthly. It averaged for -- it did a good average of 20 -- 250,000 barrels of water a month.

Q. What was the total cumulative water production reported for that well?

A. Well, just for that year. I don't know what -- all I know is that this was one of the biggest water wells in southeast New Mexico.

Q. For 1940 what was the cumulative production?

A. Well, it would be like 3 million barrels of water?

Q. 3 billion. You said million.

A. No, it's million, isn't it?

MR. NUTTER: Million.

A. Yeah, 3 million barrels of water for the year. Phew!

Q. What's your conclusion with regards to that well?

A. Which will be shown, my conclusion will be shown on the next sheet, which is -- will show how this well was plugged.

Q. All right, sir, what does it show?

A. It shows the pipe, 13-3/8ths at 256; 9-5/8ths at 1237; 7-inch set at 3180 with 180 sacks. I doubt the 180 sacks covered the Yates.

All right, on the other side. When Atlantic plugged this well, ARCO plugged this well, the day they plugged it I was out there, and I show a gas blow, and they perforated up at 1200 feet to squeeze cement into the

pipe and they got gas out of there, and I couldn't believe it, and neither could the water haulers. They had to kill it to plug it.

And where did that gas come from? A poor cement job across the Yates. That's the only place it could have come from.

Q. In your opinion is this well properly cemented and plugged below the top of the Yates?

A. The next thing -- I didn't show you -- yes, I did. I showed you the plugging notice done by Atlantic Richfield. They only set a bridge plug and a retainer above the Yates at 2375, put two -- cap on that; show holes in the pipe at 1275, where they got gas up the backside; cemented that with 100 sacks, and put a cement top on it, and put a cap, 10 sacks of cement in the top of the well.

So --

Q. What's the answer to my question?

A. Then the Yates and the Langlie Mattix are still connected, are still interconnected in this well.

Q. Okay. I direct your attention to Exhibit Number Four, Mr. Burleson.

A. Exhibit Number Four.

Q. Just a minute, let's get everybody with the same exhibit.

All right, would you identify Burleson Exhibit Number Four?

A. It is a -- it is the tabulation on how, and the history of the perforations on the Repollo Lanehart No. 1.

Q. All right, let's find out where it is now.

A. That is what I call problem well No. 2.

Q. Okay. And what have you compiled here, Mr. Burleson?

A. Now all of these records are -- in this well I got good information because it's on fee land.

Q. What's the source of the information?

A. From the Conservation Commission in Hobbs. On the other two wells, on the Crosby wells, it's on a Federal lease and Hobbs has a very, very, skinny file on them, and most of my information I had to get from scout tickets or the best I could get.

I do have a lot of information on the -- on the injection well that ARCO gave me.

Q. All right, sir, let me direct your attention back to the exhibits and documents you've obtained from the Commission records with regards to the Repollo Lanehart No. 1 Well, and ask you based upon your study of the informa-

tion contained in that well file, what conclusions can you make?

A. All right, that the, that, if you will turn to the graph of the well, how it was done, it produced open hole from 3130 to 3302 and made lots of water. Then they squeezed that off and perforated 2900 to 2980 and also made water. Then they perforated 2913 to 2950 and made water.

Now, when they did that, the Langlie Mattix and Jalmat are open together till they plugged the well. So we still have our main aquifer coming and feeding up through those perforations and this water is probably the source of the water that I'm making in my Langlie Mattix - Queen well, the Saunders No. 3.

Q. This is the immediate south offset to your Langlie Mattix gas well?

A. That is correct.

When you see a structure map and understand that this is the highest, almost the highest structural attitude of the Yates and the Queen on the platform, on the platform, we're +800 and we still have water in these zones, they you have to say -- you have to look beyond that and say something happened that was a bad move, and these companies followed the rules and I can't go back and say, well, they did a poor job. Today we would say they did a poor job but

at that time it eas acceptable.

Q. All right, sir, let me direct your attention to Exhibit Number Five, and have you identify that package of exhibits for me.

A. Exhibit Number Five is a tabulation and sketch of the old Texaco-El Paso Natural Lanehart No. 1.

Q. All right.

A. It is what I call my problem well No. 1.

Q. This is the well in the center of the northeast quarter of Section 29?

A. That is correct.

Q. And what is the source of the information contained in your Exhibit Number Five?

A. Everything that is -- that I obtained in this exhibit came from the Oil Conservation Commission in Hobbs, with the exception to the scout tickets that I stapled on there to show that this well was dug in 1936. You know, these wells were not dug ten years ago like Mr. Stokely said. These are -- all these wells, including his injection well, were dug in '36 or in the thirties.

Q. All right, sir, based upon your study of the information contained in the Commission offices concerning the well file in this well, what, if any, conclusions can you draw?

A. All right. The first sheet, if you'll look, is a diagram that Texaco did for me that was in the file, did in 1937. They had already done it and showed me so I just xeroxed it and stuck it in the exhibit.

I think it's very interesting that they ran a liner, see, they show a 5-inch liner and cemented it with 55 sacks of cement and they had oil at 3165 to 3308, and they produced oil and 30 percent water.

Now in 1937 the next page shows a letter they wrote to the Commission and in June guess how much water they made? 26,700 barrels of water. This well is in the main aquifer. That's on the third page.

They made 826 barrels of oil, 26,000 barrels of water, which was 97, 97 percent of -- water is 97 percent of the total fluid.

In this letter they ask for permission to use the bredenhead gas, very interesting, to gas lift this formation. Guess where the bradenhead gas is coming from? The Yates. Is it cemented? It couldn't be if they're going to just open up the backside and flow it down to the Langlie Mattix and flow the water.

So this well, from this -- from this exhibit, does not have -- did not on the original cement job, did not cover the Yates.

They subsequently perforated -- did I mark the perforations -- I did not mark the perforations on this, so I'll just say that they did perforate the 4-inch -- well, in fact they show where they did. They had gas, increasing gas, and they did perforate the 7-inch. I've marked the Jalmat and Langlie Mattix demarcation and when they plugged this well, they put a top, a cap on top of the Yates and walked away from it.

By the way, this well made lots of gas. El Paso says that it produced half the gas that went from -- filled the line from Jal to El Paso for five years. I think the total cumulative gas on this well is 10 billion.

Q. All right, sir, let me direct your attention to Exhibit Number Six. What is the source of the information for the packet of exhibits identified as Exhibit Six?

A. Much of the information came from the drilling report that I secured from Mr. Stokely and from ARCO Oil and Gas.

From the log he gave me, which showing where the old perforations were in the 7-inch 5, and then personally being out there when this well was plugged and knowing that this well also got gas up the backside, showing that the primary cement job on the 7-inch was not effective

across the Yates, and two reports that I -- two reports that I show that I got from the -- from the Commission in Hobbs, which shows what happened, which shows how they plugged it and which shows what happened to their ARCO Federal No. 1.

Q. All right. You've made a study of the information contained within this packet of exhibits concerning the proposed disposal well?

A. Yes, I have.

Q. You were present in the hearing room when Mr. Stokely testified with regards to his belief that the disposal of water into the Langlie Mattix formation would not migrate up into the Jalmat formation or cause an unfair risk to the producing Langlie Mattix or Jalmat wells?

A. Yes, sir, I did.

Q. Do you concur or disagree with that position?

A. No, I violently, violently disagree.

Q. On what do you base your disagreement?

A. All right, may I read for the Commission off of ARCO's log the total perforations that are in the 7 inch pipe, not their liner, but in the pipe before they redid this?

Q. Well, if that serves as a basis for your conclusion, yes.

A. All right, I'd like to, and there it is right there.

Q. All right, let's mark this as an exhibit then.

A. No, we just have one of them.

Q. Well, I'll have to xerox and give it back to you, Mr. Burleson.

Do you want to testify from it --

A. Well, I'll just read from it and you don't have to.

I shows that the perforations from this log from 2375 to 3075.

Q. Just one minute, let me keep track of it. What are the perforations now?

A. 2375 to 3075, and I'm going to read all these and I want you to know they have perforated this whole string of 7-inch, and remember when they plugged it they just put a plug on top of it. When ARCO re-entered it, they cleaned it out the bottom, did not find any cement across any of theinterval where it had been squeezed previously in the Yates or as I show on this thing, no cement from 2509 to 3115, and that was on the drilling report of 3-27-81. They they ran a liner inside and pumped cement about it. Now this

didn't cure the perforations, the old perforations that are still in this well, and I don't know how you ever would.

And the perforations are --

Q. Let me ask you that before you get to the perforations.

In your opinion can a prudent operator re-enter this old producing well and recomplete it as ARCO intends and make it a quality disposal well?

A. No, I don't think they can. And why dug this -- they wanted oil, undoubtedly. I have no idea, but the way they perforated, they wanted oil land didn't get any oil, but their main perforations were up to the gas zone, above -150, so they got gas and this is what they should have gotten, and then they said well, what shall we do with it, well, let's -- we're making all this water down over here, let's put the water in this well.

Q. All right, sir, let's start with the top perforations and run to the bottom and if you'll give me a tabulation of the perforations in this well.

A. All right. The perforations showed are from 2837 to 55; and 2557 to 75; and 2692 to 2780; and 2642 to 90; and 2800 to 20; and 2618 to 37; and quote from their log, old perfs -- and this is their well -- old perfs 2528 to 3069; and old perfs 2818 to 2855; has water channeling

problem was reason to P & A.

Then we get down in the new perfs, and then -- and then we get down into the new perfs and I have no -- and they have shown where they have perforated and wanted to inject water.

Q Mr. Stokely has testified that his analysis of the cement bond log shows that he believes these zones are going to be isolated insofar as the Langlie Mattix disposal formation and any other formations. Do you concur in his analysis or conclusions with regards to that cement bond log?

A Well, we know that they ran a bond log and they didn't -- and show poor cement to where they ran it, and then -- and then I know from personal experience being out in the field, that this well when they plugged the other one, this also got gas up the backside, so I know the Yates was open in this well, or the Queen.

All right, when they ran their 7-inch pipe they had a hard time doing it. They put the DV tool at the top of the Yates inside the -- inside a liner. But they had 7-inch set, so where could they put their DV tool? They put it at the top of the Yates and what did they do, they had to squeeze cement. They could not circulate that from the -- from the top of the Yates up.

So they had terrible pipe in there and their own -- their own drilling report shows bad pipe.

Q. In your opinion, Mr. Burleson, will the disposal of water into this well as ARCO proposes constitute the disposal of water into a pay zone that is being produced by any offset well?

A. Yes, it will. They will be -- they will injecting water into my gas zone in the Saunders No. 3.

Q. Can you identify any other well that you currently operate or in which you have an interest that the disposal as proposed by ARCO would constitute an infringement of your correlative rights?

A. I'd like to go to the structure map to show where the relation is so people will understand.

Q. All right,sir, just a minute. I show you what is marked as Exhibit Number Eight, and if it's not in the packet of Exhibit Number Six---

A. I think it's in there.

Q. It may be a repetition.

That's all right, let's look at the structure map.

A. Okay, I show with an arrow, if you can see it on this xeroxed copy the injection well, there in the -- what would be the northwest of the southwest of 28. Notice that my gas well to the north is approximately on

strike with this well. The line goes -- it's plus 590 on my well.

And notice that the highest point is my Langlie Mattix -- I mean my Jalmat well that is -- that is producing in the south -- southeast of the northwest, which is my Saunders No. 3.

In other -- in other words, their -- if they inject water into this well, then they are watering out the Langlie Mattix reserves, gas reserves that are structurally higher than this well.

Q. And where upon your acreage would you find gas reserves that are structurally higher than the disposal well?

A. Everything that would be above in the +700 foot contour.

Q. All right, would you identify for us what properties you have in that contour?

A. We own the northwest quarter of Section 28.

Q. All right, sir, anything else?

A. Well, in the southwest quarter of Section 28. So there --

Q. You mean Section 29.

A. No, I mean, no -- excuse me, we own the

southeast quarter of Section 28, which is our Cooke lease.

Q. All right, we've got the southeast quarter of Section 28, the northwest quarter of Section 28, is there any other acreage that would be adversely affected by the disposal well?

A. Right, it would be the north half of the southeast quarter in Section 29.

Q. Okay.

A. Which is our Gutman lease.

Q. Let me run through that again to make sure I understand.

In the southwest quarter of Section 28 that acreage, would you identify for us any of your wells that produce from either the Jalmat or Langlie Mattix Pools?

A. In the southwest quarter?

Q. Yes, sir.

A. That's their --

Q. I'm sorry, in the southeast.

A. In the southeast quarter of 28 we have one, we have two currently producing Jalmat gas wells, the Cooke No. 1 and 2, being in the south half of the south half of Section 28.

Q. Do you have any Langlie Mattix production now?

A. No, we don't, but we had a well to re-enter, being our Cooke No. 3, but this is something that we've postponed doing.

In the northwest quarter --

Q. Just a minute, I'm not through with the southeast of --

A. All right.

Q. -- 28. Apart from those two producing Jalmat wells, do you have any evidence or indication that you have potentially productive acreage in either the Jalmat or the Langlie Mattix that's not currently being produced by any of those wells?

A. Yes, sir, in our Cooke No. 1 we -- we produced it for about three months at the rate of about 15 barrels of oil per day and I believe in 1969 because of economics plugged back and made a Jalmat gas well out of it, which were at that time better economics than the oil, and we do definitely have reserves in the south half of the -- or in the southeast quarter of 28.

Q. All right, let's look at the northwest quarter of 28 now. You've talked about the Langlie Mattix Gas Well No. 3. Would you identify any other wells that are currently producing from either the Jalmat or Langlie Mattix Pools?

A. Yeah, our Saunders Estate No. 2, being -- which would be 1980 from the north and west, which is a Jalmat gas well that is -- that is shuts-in on 800 pounds, and in testimony previously given, this is some of the highest shut-in pressure on the platform, on the New Mexico platform, but our well makes water. And where does the water come from? Probably from one of these four poorly drilled wells.

Q. Do you have an opinion as to whether or not the use of ARCO's disposal well as proposed would constitute an unreasonable risk to the production in that well?

A. Yes, it would.

Q. Apart from the identification of those two wells in the northwest quarter of 28, do you have any other indication of potentially productive acreage from either the Jalmat or the Langlie Mattix formation -- pools?

A. It appears that everything in the northwest quarter will be above the oil contact and it will be gas.

Q. All right, sir, let me direct your attention to Section 29, to the north half of the southeast quarter.

A. Right.

Q. And have you identify for me what wells or what potentially productive acreage that may be adversely affected by the disposal well.

A. All right, on the cross section we showed the Burleson and Huff Gutman No. 1, which was a Langlie Mattix oil well, which had -- in 1969 because of poor economics,the well was making 5 or 6 barrels of oil a day, we plugged it back to the Jalmat, that is a Jalmat well currently, and --

MR. NUTTER: Excuse me, Mr. Burleson, I think I noticed on one of your cross sections, you said something about a good well or something?

A. A good well?

MR. NUTTER: Oh, yeah, the second well on your Exhibit Number One, down at the bottom it does say --

A. Yeah, yeah, that -- see, we --

MR. NUTTER: -- old Langlie Mattix Well, still good.

A. Okay, this well --

MR. NUTTER: Is that the well you're talking about there?

A. Yes, sir, I'm -- I'm talking about the -- that this well was producing 7 barrels of oil a day and at that time we plugged it off, but we still -- I still figure there's reserves there, and by the way, this is a north offset to where they just dug one and we're structurally higher, so I would assume that maybe -- maybe ARCO thinks so too.

We ran a different log when we perforated

the Jalmat and I just stuck the old log that was open hole done by Olson, down on the bottom of this to give you complete -- show that this was productive in the Langlie Mattix.

MR. NUTTER: So you've got two logs spliced together there on that exhibit.

A. That's correct.

MR. NUTTER: Okay.

Q. Mr. Burleson, Mr. Stokely testified that he believed that the amount of water to be disposed of in this well was such a small volume that it would not adversely impact any of your acreage around this well. Do you concur or disagree with that?

A. I disagree because any injection of water into a gas zone will just give me more problems than I have with water.

Q. Well --

A. And the pressure drawdown againts that gas well will be greater than the pressure drawdown in the oil well of ARCO's to the south.

Q. Mr. Stokely testified that he thought that the disposal interval was isolated from the producing interval in the Jalmat Pool. Do you agree or disagree with that?

A. Well, the -- the interval on the log is

in the Langlie Mattix but the old perforations which were never squeezed off or anything are still open behind that 7-inch pipe and they have no idea where it's going to go.

But, by the way, their perforations are exactly the same interval as my producing gas well half a mile away.

Q. Are you aware of any way the Commission could establish a method of monitoring the disposal water to insure that the water would remain confined to the ARCO acreage?

A. No, sir, I do not.

May I make a comment on the last two entries on this exhibit?

Q. The disposal well?

A. Right. I think it's very interesting and I doubt if these gentlemen know this, but I'll just give them a little past history.

The first one it says, to drill to re-enter, I think it's the last one, says sending notice ARCO in Hobbs to re-enter 1980 from the north and the west in the Unit K, and that's their ARC Federal No. 1, and they re-entered an old Devonian well, which is east of their disposal well, and they potentialed it for 645 Mcf a day, no water, on a 16/64th inch choke.

They pulled this well so hard it ruined one of mine and guess what, two years later, which is the one before, now this was done in 1975, two years later in '77 they are plugging this well because of excess water. Now where did the water come in the Jalmat in that location if it didn't come from one of these four wells that weren't plugged including, and the closest one to this one is, by the way, is their -- is their proposed injection well.

But you can say plugged and abandoned in 11-8-77. That well only lasted 2-1/2 years, and when they started off they had tubing pressure of 825 pounds, which should make it one of the top wells in the -- on the platform.

Q. Mr. Burleson, do you have a recommendation to the Examiner with regards to the proposed disposal well by ARCO?

A. I don't -- I would recommend that they turn down the application to inject water into this well and let ARCO complete it as a gas well. They will make water but they're in the gas cap and they have a gas well there.

Q. Apart from the exhibits that are a reproduction of documents within the Commission records, were the other exhibits that you've referred to either prepared by you or compiled under your direction and supervision?

A. Yes, they have.

MR. KELLAHIN: We move the introduction of all of Mr. Burleson's exhibits. I believe it's One through Eight.

MR. NUTTER Burleson Exhibits One through Seven, I believe.

MR. KELLAHIN: Eight, I marked the cross -- the structure map.

MR. NUTTER: The structure map was Eight, okay. Burleson Exhibits One through Eight will be admitted in evidence.

MR. KELLAHIN: That concludes my examination of Mr. Burleson.

MR. NUTTER: Are there any questions of the witness?

MR. BRILL: Mr. Examiner, if we could have five minutes to prepare cross examination, would that be -- I know it's late.

MR. NUTTER: You may.

MR. BRILL: Thank you.

CROSS EXAMINATION

BY MR. BRILL:

Q. Mr. Burleson, this has been a fascinating history of this area, but I would like to ask you a few ques-

tions about present conditions.

I would like to show you what was marked as ARCO's Exhibit Four and refer you in particular to this notation along the side. Do you know what that notation notes?

A. Yes, I do.

Q. Could you explain for us your interpretation of what that means?

A. It means there's a DV tool, which means it's set in the string of 4-1/2 at 2409, and that they had to squeeze that DV -- remember, there's cement below there. The primary cement job was below this. I think with 250 sacks. I can tell you what --

Q. I think the figure is indicated there, is it not?

A. No, but that's a squeeze.

MR. STOKELY: There's 200 sacks below.

A. There's 200 sacks below. They came up and cemented the pipe and then they tried to pump in this DV tool and couldn't get circulation. That is, they couldn't get fluid to come to the top. In normal on a DV tool you get fluid coming up to the top.

Q. But the fact is, is it not, Mr. Burleson, that this indicates that 400 sacks of cement were squeezed

in this fashion?

A. I know, but what you don't understand is there's cement below 240 --

Q. No, I --

A. That they squeezed 400 sacks and this DV tool is at top of the Yates, and all the action on the squeezing is above.

Q. You're saying the cement went above where it was squeezed?

A. I would think so and that's the reason -- the reason we put DV tools is because that the hydrostatic head of the -- the whole hydrostatic head of the cement is too great on your formation, so you put a DV tool in there so you'll have less head on it so you'll be able to circulate and cement the pipe above the DV tool.

Q. Did you miss the portion of Mr. Stokely's testimony to the effect that the cement all went down, did not come up?

Did you miss that portion?

A. Well, then --

Q. Please answer the question.

A. Well, no, I don't remember him saying that.

Q. Okay. Let me show you what we've marked

as ARCO's Exhibit Number Six, I believe, the cement bond log. Does this line mean to you a good bond? Do you agree with the --

A. This bond means that ARCO paid Dresser Atlas'fee and they'll put anything they want to on that. It means that apparently there's a good bond between the 7-inch pipe and their 4-1/2, but not their 4-1/2 -- not the 7-inch and everything else that was run in 1936.

Q. I don't understand the thrust of your comment. Are you saying that this is not an accurate representation of what the result of this test was?

A. Usually they don't put this on logs. They just let you interpret yourself.

Q. Are you saying this is falsified?

A. No, I did not.

Q. Are you implying that it's falsified?

A. I'm implying that everything can be self serving. Everything I do is self serving and everything that ARCO does is self serving.

Q. FAir enough.

So you would say that either this is falsified or bought and that it doesn't indicate that in fact the cement injected improved the bonding situation considerably to the point where there was a good bond?

A. I have no problem with the bond between your 4-1/2 inch liner and the 7-inch.

My problem is in the 7-inch that was run in 1936, where you have all those perforations.

Q. Okay, and what is your interpretation of this section of the cement bond?

A. Now, if you want, we can go interval for interval, but if remember his discussion that there is probably good bond between 3100 and 3170, but it looks like you didn't have very good bond on this whatever you call this, because you don't have this -- this relationship.

Q. So you disagree with Mr. Stokely's conclusion and Mr. Connelly's conclusion that in effect the bond was good such that it sealed off the Yates.

A. There's no such thing as -- no. This -- this bond log as far as I'm concerned is showing what's happening between your 4-1/2 inch liner and the 7-inch pipe.

Q. And this shows nothing?

A. It shows pretty good bond up through here.

Q. And what is that bond between?

A. The 4-1/2 inch liner and the 7-inch pipe.

Q. It shows no bond between the formation?

A. No, because --

Q. And anything?

A. Because this bond log, you all, where was your -- you didn't -- you had a bond log on your 7-inch pipe down through the top of the Yates and you didn't present it, and that showed no bond.

This bond log,I understand it does not cover the 7-inch pipe run in 1936.

Q. And so you would disagree with the conclusion reached by Mr. Stokely and Mr. Connelly that the injection had in fact improved the bonding situation over the old bond log that you're referring to?

A. What injection?

Q. The injection of the 400 sacks of cement?

A. The 400 sacks of cement is above, above the DV tool, and remember, the DV tool was set at the top of the Yates.

Q. I think -- I think you're confusing the testimony from Mr. Stokely to the effect that the cement went below the DV tool, not above.

In any case, we'll -- we'll continue. Now I understand the thrust of your complaint, Mr. Burleson, to be that these four wells are producing water problems for your gas well.

A. Not only for my gas well, for other wells too, and by the way ARCO's wells, too.

Q. All right. And these problems are caused by injected water in these wells?

A. No. They're - they're caused by the -- by wells that should have -- this is -- I don't know if we have time to go through some geology in here, but we'll be glad to do it, because this is so positively high, a positively high area, that it does produce from the Devonian, or did till it watered out, and we have a real water drive, a real porous zone about 3300 feet that had to produce these large volumes of water, and when you don't squeeze this off, this water has come up into the Langlie Mattix, into every horizon, into the Yates.

Q. But the source of this water is not injected water?

A. No.

Q. So lthe water is there anyway. It occures naturally and the condition is exacerbated by the plugging techniques employed in the four wells, is that what you're saying?

A. Listen, no water occurs in a gas zone naturally.

Q. Well --

A. But the water is in there and it got in there because of poor plugged wells.

Q. The only human factor then, I guess I would put it that way and see if you would agree, is the, what you would characterize as a poor plugging job on these four wells.

A. That's correct.

Q. Injection is not causing the problem.

A. No, injection is not causing the problem now.

Q. And so in effect your complaint is not about ARCO's plan to inject, it's about the condition of these four wells and the fact that you don't believe that they're plugged properly.

A. No, sir, you missed the thrust. I object because ARCO within less than a half a mile is -- plans to inject water into my gas zone, and I have never known that gas in a gas zone increased the production. It's going to give me greater problems and will give me premature abandonment of that well.

The main thing I have against this is that you all didn't even present a cross section showing the relationship of these wells to the producing wells offsetting it, and by the way, your zone is -- you are injecting water

into my gas zone, my gas pay.

Q. Now it it your contention that there is not already water in the Langlie Mattix Crosby No. 2?

A. That there was a --

Q. Is there water now in the zone into which the water would be injected?

A. Well, see, you didn't ask me what my well's doing. It makes about --

Q. Well, I'm asking you -- I'm sorry, Mr. Burleson.

A. All right.

Q. But I'm asking you if there is water now in the zone into which the water would be injected?

A. There is water and gas.

Q. Is there water?

A. Yes, there is some water.

Q. Do you deny the validity of the portion in the testimony relating to the test in March of this well?

A. Listen , if I had a well that shut-in over 800 and some pounds, I'd be happy and I'd want to put that on a choke and see if I couldn't get the gas to come and produce -- and produce a quantity of water that I could live with.

Q. But do you contest the validity of the

portion of that test that showed the water quantity ?

A. No, I don't, huh-uh.

Q. So there is already water in the area in the formation into which the water would be injected?

A. Yes.

MR. NUTTER: Does your gas well produce water?

A. Yes, it does.

MR. NUTTER: How much? What's the production of gas and the production of water?

A. It makes about -- but you can't open it on a 3/4 inch choke, you'll drown it.

MR. NUTTER: It would pull in too much water.

A. Right, it would pull in too much water. So I'm used to this area and so we flow it on a 8/64th and we make 200 to 250,000 a day and 100 barrels of water, and by the way, when we originally dug this well two and a half years ago, our shut-in pressure was a little bit less than ARCO's.

MR. NUTTER: You make -- now how much, a quarter of a million of gas --

A. And 100 barrels of water.

MR. NUTTER: 100 barrels of water. What

do you do with that water?

A. We truck it.

MR. NUTTER: I see.

Q. So you admit that there is already water in the -- in the formation in the vicinity into which this water is proposed to be injected?

A. That's correct.

Q. And it's your contention that injection of 500 barrels per day would substantially affect your well almost a half a mile away even though there's already water in the same formation?

A. But remember -- yes, it would bother me, but you're going to have a greater concentration of water right by the borehold, if you will accept my theory that that water came from below. You understand, that if this injection well is a source of the water, then you're going to have a greater volume of water right there.

Yes, because my bottom hole pressure is getting pulled down by that gas well greater than their oil well to the south.

Q. Well, it seems to me, then, you're saying exactly the way I characterized what you're saying, the main problem is migration of the water from natural sources up along one or all of these four wells and not the

injection of a relatively small amount of water into an area where the water already exists.

A. This water is not there by natural sources. God did not put that water in that formation; man did it.

Q. Well, but Mr. Burleson, if -- if ARCO did not inject water, would the water disappear?

A. No, we put -- they helped cure the problem in that well by running that liner.

Q. Oh, so the well is now better than it was?

A. Yes, because they cemented the open hole part.

Q. So the only step ARCO has taken has improved the situation to this point?

A. Well, if it -- if it stays right where it is and this Commission does not grant your right to inject water, yes, it has helped.

Q. But at this point it's helped. The well is in better shape than it was, you're admitting that at this point.

A. Oh, absolutely.

Q. So you do believe to some extent the results of this bond log?

A. Certainly. Certainly.

Q. Okay. So it is your contention that even though the main source of the problem is migration from lower aquifers because of the poor plugging job done on these wells, that the addition of 500 barrels into an improved well is going to adversely affect your well half a mile away.

A. Yes, I do.

Q. I think I understand what you're saying.

MR. BRILL: I have nothing further.

MR. NUTTER: Does anyone else have any questions of the witness? He may be excused.

Does anyone have anything further they wish to offer in Case Number 7294?

MR. PEARCE: Mr. Examiner, if the record could reflect we have received a telegram sent by Mr. Tommy Phipps, Executive Vice President, which says, and I quote:

Alpha Twenty-One Production Company is an offset operator and wished to object to ARCO Oil and Gas Company's application in Case 7294 to dispose of salt water into the zone from which we are producing gas.

Respectfully.

MR. NUTTER: Thank you.

Is there anything further in this case? We'll take the case under advisement.

# C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 7944 heard by me on 7/15 1981.

, Examiner
Oil Conservation Division

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

STATE OF NEW MEXICO
# ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

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

October 1, 1981

Re: CASE NO. 7294
ORDER NO. R-6770

Mr. Allen Brill
Montgomery & Andrews
Attorneys at Law
Post Office Box 2307
Santa Fe, New Mexico

Applicant:

ARCO Oil and Gas Company

Dear Sir:

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

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

Copy of order also sent to:

Hobbs OCD x
Artesia OCD x
Aztec OCD

Other Thomas Kellahin

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

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

CASE NO. 7294
Order No. R-6170

APPLICATION OF ARCO OIL AND GAS
COMPANY FOR SALT WATER DISPOSAL,
LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on July 15, 1981, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 28th day of September, 1981, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, ARCO Oil and Gas Company, is the owner and operator of the R. S. Crosby "A" Well No. 2, located in Unit L of Section 28, Township 25 South, Range 37 East, NMPM, Langlie Mattix Pool, Lea County, New Mexico.

(3) That the applicant proposes to utilize said well to dispose of produced salt water into the Seven Rivers-Queen formation, with injection into the perforated interval from approximately 2996 feet to 3186 feet.

(4) That an offset operator, Lewis B. Burleson, appeared at the hearing and objected to the disposal of salt water into the subject well on the grounds that it would adversely affect certain of his offsetting productive wells.

(5) That the proposed injection well is located approximately 1047 feet northwest of Burleson's Gutman Well No. 1 in Unit I of Section 29, and 2333 feet south-southwest of Burleson's

Saunders Estate Well No. 3 in Unit D of Section 28, both in Township 25 South, Range 37 East, NMPM.

(6) That said Gutman Well No. 1 is presently producing Jalmat gas from the Yates formation through perforations from 2532 feet to 2552 feet, but has remaining reserves of Langlie Mattix oil and gas in the interval from 3130 feet to 3268 feet.

(7) That said Saunders Estate Well No. 3 is presently producing as a gas well in the Langlie Mattix through perforations from 3037 feet to 3132 feet.

(8) That the Langlie Mattix oil zone in said Gutman Well No. 1, where remaining recoverable Langlie Mattix reserves are believed to exist, and the Langlie Mattix gas zone in said Saunders Estate Well, where No. 3 is completed, are the equivalent zones to the proposed disposal zone in applicant's R. S. Crosby "A" Well No. 2.

(9) That said Gutman Well No. 1 is located downstructure from the proposed disposal well and the said Saunders Estate Well No. 3 is structurally about even with the proposed disposal well.

(10) That the applicant proposes to dispose of approximately 500 barrels of water per day in the Seven Rivers-Queen formation in the proposed disposal well.

(11) That the Seven Rivers-Queen formation has a relatively high permeability.

(12) That considering the permeability of the formation, the proximity of the Burleson wells, and the structural relationship of the Burleson wells to the disposal well, there would exist a strong possibility of disposal waters migrating to the aforesaid Burleson wells, and watering out the existing and potential productivity thereof, thus causing waste.

(13) That such watering out of existing and potential reserves of oil and gas belonging to Burleson would adversely affect his correlative rights.

(14) That in the interest of protecting correlative rights and preventing waste, the application should be <u>denied</u>.

IT IS THEREFORE ORDERED:

(1) That the application of ARCO Oil and Gas Company for authority to dispose of produced salt water in its R. S. Crosby "A" Well No. 2, located in Unit L of Section 28, Township 25 South, Range 37 East, NMPM, Lea County, New Mexico, is hereby denied.

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

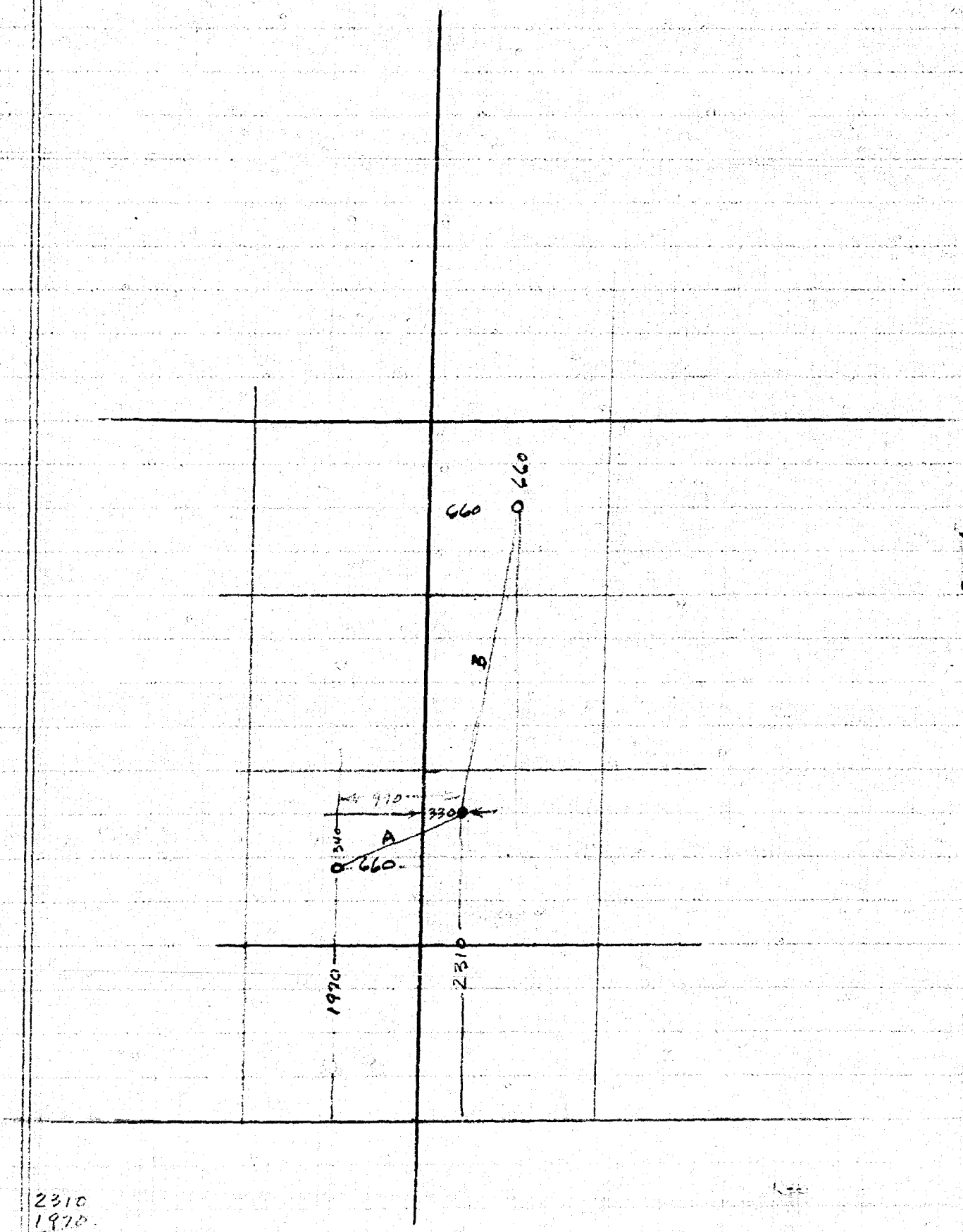
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

SEAL

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

JOE D. RAMEY
Director

fd/




2310
1970
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$A = \sqrt{340^2 + 990^2}$

$= 1047$

$B = \sqrt{330^2 + (660 + 1320 + 330)^2}$

$= 2333$

Box 1071
Midland, TX 79702
July 8, 1981

State of New Mexico
Energy and Minerals Department
Oil Conservation Division
P. O. Box 2308
Santa Fe, New Mexico 87501

Attn: Joe D. Ramey, Director

Re: Case No. 7294

Dear Sir:

I represent the Wallace W. Irwin and E. A. Culbertson royalty and working interest in Section 28, T-25-S, R-37-E, Lea County, New Mexico and we object to Arco Oil & Gas injecting salt water in the old Crosby A # 2 well in Unit L of said section. This would be injecting water into the gas pay zone of the producing wells in the immediate area and using an old well where there is no cement job in the primary pipe put into the well in the 1920s. We hope that the Commission will turn this application down as there are no plans for water flood and you do not inject water into current producing zones.

Yours very truly,

Wallace W. Irwin

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NGM. DLR IMMY PLS IF POSS. DLR
STATE LAND OFFICE BLDG
SANTA FE NM 87501
ALPHA TWENTYONE PRODUCTION COMPANY IS AN OFFSET OPERATOR AND WISHES
TO OBJECT TO ARCO OIL AND GAS COMPANYS APPLICATION IN CASE 7294 TO
DISPOSE OF SALT WATER INTO THE ZONE FROM WHICH WE ARE PRODUCING GAS
RESPECTFULLY
TOMMY PHIPPS. EXECUTIVE VICE PRESIDENT
2100 FIRST NATIONAL BANK BLDG
MIDLAND TX 79701
NNNN

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
15 July 1981

EXAMINER HEARING

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IN THE MATTER OF:

Application of ARCO Oil and Gas Company for salt water disposal, Lea County, New Mexico. CASE 7294

BEFORE: Daniel S. Nutter

TRANSCRIPT OF HEARING

A P P E A R A N C E S

| | |
|---|---|
| For the Oil Conservation Division: | Ernest L. Padilla, Esq.<br>Legal Counsel to the Division<br>State Land Office Bldg.<br>Santa Fe, New Mexico 87501 |
| For the Applicant: | Allen Brill, Esq.<br>MONTGOMERY & ANDREWS<br>Paseo de Peralta<br>Santa Fe, New Mexico 87501 |
| For Lewis Burleson & Fluer Oil and Gas: | W. Thomas Kellahin, Esq.<br>KELLAHIN & KELLAHIN<br>500 Don Gaspar<br>Santa Fe, New Mexico 87501 |

# I N D E X


BEN STOKELY

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LEWIS BURLESON

| | |
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MR. NUTTER: We'll call next Case Number 7294.

MR. PEARCE: Application of ARCO Oil and Gas Company for salt water disposal, Lea County, New Mexico.

MR. BRILL: Mr. Examiner, my name is Allen Brill of the firm of Montgomery and Andrews, and I represent ARCO in this matter.

A preliminary matter, we have another amendment to this application, as well. The substance of the application is the water originally was to be taken -- let me see if I have this correct. From the Langlie Mattix and the Jalmat formations. We would like to amend the application so that the water would only be taken from the Langlie Mattix.

MR. NUTTER: No Jalmat water would be added here.

MR. BRILL: That's correct.

MR. NUTTER: The application will be so amended.

MR. NUTTER: Other appearances?

MR. KELLAHIN: Yes, sir. I'm Tom Kellahin of Kellahin and Kellahin, Santa Fe, appearing on behalf of Lewis Burleson, Inc., and Fluer Oil and Gas and

I have one witness.

(Witnesses sworn.)

BEN STOKELY

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

DIRECT EXAMINATION

BY MR. BRILL:

Q. Please state your name and address?

A. My name is Ben Stokely. I live at 3602 Godfrey Court, Midland, Texas.

Q. By whom are you employed, Mr. Stokely?

A. ARCO Oil and Gas Company.

Q. In what capacity?

A. Petroleum Engineer.

Q. Have you testified before the Division at a previous time and been qualified as an expert?

A. I have.

Q. Are you familiar with Case Number 7294 now pending before --

A. I am.

MR. BRILL: Are the witness' qualifica-

tions acceptable?

MR. NUTTER: They are.

Q. Mr. Stokely, could you summarize for us the purpose of ARCO's application in this matter?

A. ARCO seeks authority to dispose of salt water produced from its R. S. Crosby lease into its R. S. Crosby A No. 2 well, located in the southwest quarter of Section 28, Township 25 South, Range 37 East, Langlie Mattix Field, Lea County New Mexico.

Q. Mr. Stokely I'm showing you a copy of a document which we have stamped and marked as Exhibit One. Are you familiar with that document?

A. Yes, I am.

Q. Would you identify it please?

A. It is an area plat showing the location of the well with a red arrow pointing to it. A half mile circle drawn around that location and a two mile circle drawn around that location.

Q. Mr. Stokely I'm now showing you another collection of documents, which has been marked collectively as Exhibit Two. Could you identify that?

A. Yes, this is a listing of the wells within the half mile circle of this proposed salt water injection well, and behind that is an individual listing of

tions acceptable?

MR. HUTTER: They are.

Q. Mr. Stokely. could you summarize for us the purpose of ARCO's application in this matter?

A. ARCO seeks authority to dispose of salt water produced from its R. S. Crosby lease into its R. S. Crosby A No. 2 well, located in the southwest quarter of Section 28, Township 25 South, Range 37 East, Langlie Mattix Field, Lea County New Mexico.

Q. Mr. Stokely I'm showing you a copy of a document which we have stamped and marked as Exhibit One. Are you familiar with that document?

A. Yes I am.

Q. Would you identify it please?

A. It is an area plat showing the location of the well with a red arrow pointing to it. A half mile circle drawn around that location and a two mile circle drawn around that location.

Q Mr. Stokely I'm now showing you another collection of documents, which has been marked collectively as Exhibit Two. Could you identify that?

A Yes, this is a listing of the wells within the half mile circle of this proposed salt water injection well, and behind that is an individual listing of

the tubular goods and cement that have been used in these wells. And further behind that is a set of diagrammatic sketches of these wellbores.

Q Excuse me Mr. Stokely, let me interrupt you a second, if I might.

I think the diagrams are selected as a separate exhibit.

A Okay, I'm sorry.

Q Now I will show you the collection of diagrams that's marked as Exhibit Three. I think you've already identified that.

MR. BRILL: We would move the admission of Exhibits One through Three.

MR. NUTTER: Exhibits One through Three will be admitted in evidence.

Q Now I'm showing you a fourth document, which is marked as Exhibit Four. Can you identify that for us, please?

A Yes. Exhibit Four is a diagrammatic sketch of the R. S. Crosby A-2 Well, the one which we plan to use as a salt water disposal well showing all current tubular goods and cement and cement tops, plus the proposed installation of tubing and permanent - I mean tubing and sealing packer to be used for water injection.

MR. BRILL: We would now move the admission of Exhibit Four.

MR. NUTTER Exhibit Four will be admitted in evidence.

Q. Referring to Exhibit Four, Mr. Stokely can you explain to the Examiner where on the sketch the casing strings are indicated?

A. Yes. Starting from the top there is 251 feet of 13 inch, which was cemented with 225 sacks, which calculated to be enough to circulate the hole.

There is 1265 feet of 9-5/8ths inch which was cemented with 400 sacks, and it calculated to have a top at 113 feet below the surface.

At 3108 feet 7 inch casing was set in the original completion of the well and 200 sacks of cement were used to cement it. The top of this cement was estimated by calculation to be 1910 feet.

We started to workover the well and found that the 7 inch casing showed corroded parts, so we set a complete inner string of casing 4-1/2 inch casing, to 3400 feet, and we cemented that around the bottom with 200 sacks and pumped 400 sacks into a DV tool at 2409 feet.

Now the cement did not circulate from the DV tool and that cement was squeezed to breaking.

Q. Are perforated intervals indicated on the sketch?

A. Yes. The perforated intervals are shown by the dashed lines to the righthand side of the 4-1/2 inch casing near the bottom. The perforated interval is 2996 to 3186 in the Langlie Mattix formation.

Q. Could you point out for us, please, the tubing strings and describe, if you would, their diameters and setting depths?

A. Yes, the inner string of pipe shown here is a string of 2-3/8ths inch tubing which we plan to set. We will internally plastic coat that tubing and set a sealing packer either a tension packer or a lockset packer at 2950 feet to isolate the injected fluids from the casing above the injection zone.

Q. Have any other measures been taken, Mr. Stokely, to prevent any leakage that might occur, and second, to monitor for leakage?

A. These particular items I've described were intended to prevent the leakage. In addition we will spot inert material between the tubing and casing to prevent corrosion and we will install a monitor pressure gauge at the surface on the annular space so that in case a casing -- a tubing leak should occur pressure will be observed at the

surface and immediate steps will be taken to repair this leak.

Q. Have any measures been taken other than the inert fluid to protect the tubing from corrosion?

A. It's internally plastic coated.

Q. What will the wellhead injection pressure be?

A. We plan to use no higher than 500 pounds per square inch surface wellhead pressure.

Q. Mr. Stokely into what formation will the injection be made?

A. Injection will be made into the Langlie Mattix Queen formation.

Q. And what is the basis for your opinion in that regard?

A. The basis for my opinion is first, the diagrammatic sketch which I have shown you with the cement showing that the casing is actually isolated from the formation, and the perforations which I show you here on what has been marked Figure Three, have you marked that as an exhibit?

Q. It's marked, I believe, as Exhibit Five.

A. Do you wish to call this now and have a look at it?

MR. NUTTER Go ahead and discuss it.

A. All right. It is a neutron density log of the well, Crosby A-2, which we plan to use as an injection well, with the red band showing the perforated interval and it also shows the tops of the Queen and Langlie Mattix formations, showing that the injection will occur substantially below the top of the Langlie Mattix formation.

MR. NUTTER: Now when you say Langlie Mattix formation, there is no such formation as the Langlie Mattix. This would be, actually, the Lower Seven Rivers, I think.

A. Yes, sir, it's what is legally defined as the Langlie Mattix, 100 feet above the --

MR. NUTTER: Right.

Q. -- top of the Queen.

MR. NUTTER: Right, but it's the Lower Seven Rivers.

A. Yes, sir, the Lower Seven Rivers.

MR. BRILL: We would move the admission of Exhibit Five at this time.

MR. NUTTER: Exhibit Five is admitted.

Q. Mr. Stokely, are you familiar with the process of channeling?

A. Yes, I am. In some cases where cement jobs are not properly done or if faults occur in them, fluids

may channel from one formation to another behind the casing.

Q. In your opinion referring to the proposed injection well, could channeling occur in the immediate area surrounding this well?

A. It is my opinion that it cannot.

Q. And what is the basis for your opinion in this respect?

A. The, first the calculated cement tops and amount of cement that was used, and secondly, a cement bond log, which was run by Dresser Atlas Corporation, showing the bonding of the cement to the casing and to the formation outside the wellbore.

Q. I'm showing you now a document marked Exhibit Six. Could you identify that for us?

A. Yes, this is a copy of this bond log which I just spoke of.

Q. Could you elaborate and explain what this bond log shows?

A. Yes. The red band here again is the perforations in this well. The top of the Queen and the top of what we referred to as the Langlie Mattix are shown, and also shown is a black band down the center of the log. This black band, according to Dresser Atlas, who furnished this log, indicates good bond. That means that the cement

is properly bonded to the casing.

At the righthand side of the log you see a bunch of wiggly lines. This is a microseismogram and reflects the bond or lack of bond to the formation.

If you will refer to the bottom section of that log, about 3300 feet, you will see some newly drilled hole that was drilled and the 4-1/2 inch casing was set in there and cemented. To the right you will see a most excellent bond of this to the formation.

Now just above that between about 3200 and 3300, you will see some old formation that --- and shot hole which was not properly bonded, but wherever you see these clear definitions of the white and blue lines, this according to my interpretation and the interpretation of the Division log analyst of Dresser Atlas, Mr. Sam Connelly, shows good bonding to the formation and would effectively isolate that portion from portions above.

MR. BRILL: We would move the admission of Exhibit Six at this time.

MR. NUTTER: Exhibit Six will be admitted.

Q. Mr. Stokely, what is the source of the water which will be disposed of in this well?

A. The water which will be disposed of here

will come from the same formation into which we will be injecting it. It will be coming from ARCO's R. S. Crosby Well No. A-3 and No. A-4. They will be seen on the area map about a half mile south of the injection well. No. 3 has a slash through it, indicating abandoned. It is not. And then on the lefthand side there you will see an open circle, which is No. 4 and is now under completion.

Q. Now what does No. 3 produce at this time?

A. No, 3 produces approximately 30 barrels of oil a day at this time and 150 barrels of water.

Q. Would you expect No. 4 to produce in similar quantities and similar ratios?

A. We have personally tested No. 4 and it looks like it's going to produce about the same way.

Q. What is the -- are there any other means of disposing of this water?

A. Yes. It can be trucked away.

Q. Do you have any idea what the cost of trucking the water is?

A. The cost of trucking water is very expensive due to the fuel and having to pay at areas where it's unloaded, and the last quotation I had for hauling in that area was $0.84 a barrel and it is going up. I would estimate an average cost of $1.00 a barrel for disposing of salt water

by trucking.

Q. Taking into account the quantities of water produced in No. 3 and the estimated quantity that would be produced in No. 4, what would the cost per month be for hauling the water by truck?

A. If we estimate the maximum amount which we plan to dispose of here of 500 barrels a day, that would cost $15,000 a month to haul this water to a disposal site.

Q. Now how does this compare to the cost of the injection method?

A. If we complete this well as an injection well and return to the formation the water which we're taking out of it, it will cost us approximately five cents a barrel, or $750 a month.

Q. Would the difference in cost of trucking as opposed to injecting the well be a factor to be considered in deciding whether to abandon wells 3 and 4?

A. Yes, it would. That would cost approximately $5.00 per barrel of oil and obviously, it would greatly shorten the economic life of these wells unless we can find a more economical way of disposing of the water.

Q. Would producable reserves be left in the ground as a result?

A. Definitely producable reserves would be

left in the ground.

Q. Referring to the water that is now being taken from No. 3, are you aware of the degree of mineralization?

A. Yes we have a water analysis on that and it shows approximately 15,000 parts per million of chlorides. I apologize for the quality of that analysis and I hand wrote the chlorides in there. But -- and I would not say that this would be a final representative analysis of the water from this well because it is a new well and it is still cleaning up. We expect the water to be identical to that which was produced from Well No. 2.

MR. NUTTER: What was that Well No. 3 formerly?

A. No. 3 is a new well drilled from the top. I don't know why it shows there as a -- with a slash through it.

MR. NUTTER: Oh, it's not an --

A. It is not an old well.

MR. NUTTER: -- old well abandoned and then recompleted?

A. No, sir, no, sir, it's not an old well. It's a newly drilled well.

MR. NUTTER: Okay.

Q. I believe, Mr. Stokely, that you have

just referred to a document marked as Exhibit Seven, is that correct?

A. That is correct.

Q. And that is the water analysis that has been prepared with respect to water taken from No. 3?

A. That is a water analysis on water taken from Well No. 3.

MR. BRILL: We would move the admission of Exhibit Seven at this time.

MR. NUTTER Exhibit Seven will be admitted.

Q. Is this a high degree of mineralization shown by this analysis?

A. It is high as far as potable or agricultural water is concerned. It is useless for those purposes.

Q. Mr. Stokely, are you familiar with the productive capacity of the proposed injection well?

A. Yes. When we attempted to recomplete this well as a producer and after perforating and acidizing it produced approximately 200 barrels of water a day with only a show of oil and gas.

MR. NUTTER: From the Langlie Mattix?

A. From the Langlie Mattix, the same perforations which now exist.

Q. And what is the nature of any water contained in the formation into which waste water would be injected?

A. It would be the same water since it's coming from the same formation and should not form any problems as far as compatibility is concerned.

Q. Mr. Stokely, in your expert opinion are there any adverse effects that this injection might have on the Langlie Mattix-Seven Rivers- Queen formation?

A. None that I know of. In fact, there should be some beneficial effects because it would return to the formation part of what's being taken from it and thus would assist in maintaining pressure which moves the reserves from the formation into the wellbore, and could be seen as aiding production of hydrocarbons by other wells in the formation.

Q. Mr. Stokely, do you know what ARCO's reaction would be if an operator in the area felt that the water injected was contaminating his well?

A. Yes, ARCO intends to be a responsible citizen and any time we have a complaint by anybody that an unusual influx of water is occurring in their wells, or any symptom indicates trouble from water that we inject, we will take immediate steps to identify or locate the problem and

we'll cease injecting into the well while that is done, if it's indicated.

Q. Mr. Stokely, in your opinion would the granting of this application prevent economic and other types of waste and protect correlative rights?

A. Yes, it would.

Q. Thank you.

MR. BRILL: I have no other questions.

CROSS EXAMINATION

BY MR. NUTTER:

Q. Mr. Stokely, at the present time you propose to inject water only from the No. 3 and No. 4 Wells, is that it?

A. Yes, sir. We, of course, would have additional problems if we brought it from off lease. These are the only wells that we now have on the -- producing from the Langlie Mattix on the Crosby lease.

Q. Now you do have other leases in the area. What's the disposition of water produced from them?

A. We are presently trucking.

Q. I see. All this water in this area is being trucked?

A. Yes. Now --

Q. There's no community disposal system existent in this area?

A. I don't know of one here.

Q. Are there any waterfloods in this area?

A. There are some in adjacent areas but not immediately offsetting this lease.

We have taken the approach that you suggest in other places. We have approached the waterflood operators because we know that they need the water for additional volumes to inject and we're glad to cooperate with them.

Q. But there's no use for the water in this particular area?

A. Not in this immediate area, no, sir.

Q. How about these gas wells on this Crosby lease, do they make water?

A. I'm sure that they don't make very much because if they did, they wouldn't be producing. Gas wells in the Jalmat are very low pressure and if they make very much water they go off production.

Q. A lot of them have pumps on them.

A. Well, yes when they have pumps on them we can assume that they're making water and this is -- this is the reason that they're pumping.

Q. But these wells are not pumping, they're

flowing gas wells.

A. I don't recall having seen any. I don't have detailed information of the area in that regard. I'm sure that Mr. Burleson and Mr. Kellahin will bring us up to date on their ideas on that.

Q. But if you were making substantial volumes of water from these gas wells on this lease, you'd probably be pumping it. This Crosby No. 2 is a disposal well for that too, I presume.

A. Well, we'd have to come back here and ask you, in view of this. We're doing this as an attempt at conciliation with Mr. Burleson here. We did not want to bring up any more matters of contention here than we needed to and since we immediately need to dispose of this water, well, we -- we wanted to bring this up as a clean issue and put it before the Commission.

Q. Well now, was this No. 2 Well recently drilled, also?

A. No, it is a re-entry. It's a very old well and as I said, the 7-inch casing had been in there and the well was shot with nitroglycerin on original completion down below the 7-inch, at that point where I showed you there was no bond with the formation. Obviously, most of these old shot holes you cannot bond well to the formation with

cement. You just can't get enough out there and clean it up enough.

Q Well now, the symbol here is for -- is as a gas well for that well. Was it a producing gas well from the Langlie Mattix --

A Yes, sir, it was. It produced and was depleted in the Jalmat. It produced on completion 4-million cubic feet a day and produced until it was depleted and was plugged and abandoned.

Q I see, and then you re-entered it and --

A Yes, sir. Recent events and other completions around have shown us that some of these old wells in the Langlie Mattix would produce some oil, so we went back first into -- well, we drilled the No. 3 first, and then went into the No. 2 and were disappointed with it.

Q You wanted to try to complete it as an oil well.

A Yes, sir, that was our intent.

Q But it made water so you decided to go ahead and use it for --

A It made practically 100 percent of water and we felt that since it did, the most advantageous thing for everybody would be to put water back into there that is coming out of the formation and support the pressure

that will help the other wells produce.

Q. And you have amended your application to delete any Jalmat water for this disposal.

A. Yes, sir, we have, just for the purpose of cleaning up the issue so that we wouldn't have any additional argument about it.

Q. Okay.

MR. NUTTER: Are there further questions of the witness?

MR. KELLAHIN: Yes, sir.

MR. NUTTER: Mr. Kellahin.

CROSS EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Stokely, tell me something about your experience in the Jalmat-Langlie Mattix area of Lea County with regards to producing wells and/or salt water disposal wells.

A. Well, I have not installed any salt water disposal wells in the Langlie Mattix-Jalmat area. I have observed some production curves and have been working on the completion and operation of the wells since I was transferred to this area, which is a few months back; however I have in the past looked at the Jalmat area, oh some ten

or fifteen years ago when I was with Sinclair, and we operated some of those wells over there, although I did not personally operate the wells.

Q. You started developing a proposed disposal well for the produced water approximately three months ago, was that it?

A. That's right.

Q. All right, sir, and in making that study, Mr. Stokely, did you examine the possibility of using any other well in the area as a disposal well?

A. I did not.

Q. Did you examine the possibility of using any other formation as a disposal formation other than the Langlie Mattix formation?

A. No, I did not, because I felt that the -- well, I knew that water injection into the Jalmat would be a problem and we agree with the commissioner's opinion on that, that you don't want to let water stand on the Jalmat very much because we do cause problems with it when you do. So we didn't want to consider it at all.

Q. Explain to me why you wouldn't want water to stand on the Jalmat.

A. It may tend to damage the formation if it stands on there for a long period of time.

Q. We've talked about the Langlie Mattix Pool, Mr. Stokely. Do you know how the Commission defines the vertical limits of the Langlie Mattix Pool?

A. Yes, I do.

Q. It's from the base of the Queen formation to 100 feet above the base of the Seven Rivers formation, is that not true?

A. That's right.

Q. And do you know how the Commission defines the Jalmat pool?

A. Well, you might refresh me on that.

Q. Am I correct in understanding that the vertical limits of the Jalmat Pool are from the top of the Yates to 100 feet above the base of the Seven Rivers?

A. That's correct.

MR. NUTTER: Well --

Q. I'm sorry, the Tansill. I got the Tansill in there too.

A. All right.

Q. All right. Anyway, my point is that the Jalmat covers the Yates portion of the Seven Rivers and that the Langlie Mattix Pool covers the balance of the Seven Rivers and the Queen formation. Are we in agreement about that?

A. That sounds like a correct assumption.

Q All right, sir. Are you aware of any kind of barriers between the Queen formation and the Seven Rivers formation that would preclude water disposed of in the Queen from migrating up into the Seven Rivers?

A There are barriers all throughout the formation, all of these formations. You have to be selective about your perforations because there are zones of little or no porosity and permeability in it.

Q In looking at a log of a well that penetrates all of those formations, is there any indication between the Langlie Mattix, top of the Langlie Mattix, and the base of the Jalmat Pool, that there is any kind of impermeable barrier that would cause the water disposed of in the Langlie Mattix not to migrate up into the Jalmat Pool?

A. Well, yes, I think there is. I surely do.

Q. Would you identify for me what you see as an impermeable barrier?

A. The zones which show little porosity here are impermeable.

Q. In the proposed disposal well.

A. Yes.

Q. All right, sir. Now if I understand correctly, this disposal well was originally drilled a number

of years ago, was it not?

A. Yes, it was.

Q. And when was it originally completed?

A. I don't recall when it was. It was about 1935 or 36, something like that, it's been a long time ago.

Q. All right, sir. You said it did produce some Jalmat gas?

A. Yes, it did.

Q. All right. How do you propose to keep the Langlie Mattix water that you propose to dispose of in the disposal well from migrating up into the Yates?

A. The properly cemented casing, which exists in the well, and the impermeable barriers which exist in all these formations will keep it from migrating from where it is perforated up into the Jalmat.

Q. All right, sir, would you turn to your cement bond log, which is your exhibit Number Six?

A. Yes, sir, I will.

Q. That is a cement bond log on what casing string, Mr. Stokely?

A. This is a cement bond log on all the casing strings. It was made after the 4-1/2 inch casing was installed.

Q. That will -- that will show the bond log

for the 4-1/2 inch casing string, will it not?

A. It will show the bond log for all the casing strings.

Q. That will be the cement bond log for the 7 inch casing?

A. Yes, it will. The microseismogram will show the bond -- where the cement is bonded both to the casing and to the formation.

MR. NUTTER: I think, Mr. Stokely, that you have two casing strings in the upper portion of Exhibit 6.

A. Yes, that's right.

MR. NUTTER: Down to 3108.

A. That's right.

MR. NUTTER: And that's the shoe on the 7-inch.

A. Right.

Q. And then it would be a bond log on the 4-inch only from that point on down, wouldn't it?

A. That's true. That's true.

MR. KELLAHIN: That was my point. Thank you, Mr. Nutter.

Q. Did you ren a cement bond log on the 7-inch?

A No --

Q Separate and apart from this cement bond log?

A No, not before we ran this.

Q All right, sir.

Now in looking at Exhibit Number Six, this is simply a portion of the cement bond log, is it not, sir?

A That is true.

Q I believe appended to your application is a complete cement bond log from which Exhibit Six is a portion.

A That is true.

Q May we look at that bond log, please?

Do you have one before you, Mr. Stokely?

A Yes, I do.

Q All right, sir, I'm going to give this one back to the Examiner.

MR. NUTTER: We've got one.

Q If you'll fold out the cement bond log until you get to the scale at the bottom of the log, would you help me understand how you read a cement bond log in relation to this scale?

It says percent unbonded pipe signal in this box?

A. Yes. This refers to the line which exists on the log, and as you notice, it includes -- it shows poor bond up the hole.

Q. All right, sir.

MR. NUTTER: What depth would that be?

A. Well, it shows poor bond until you get to, let's see, to about 400 feet, about 1250.

Q. Let me see if I understand. As the line moves to the left it becomes a better bond.

A. That is correct.

Q. And as it moves to the right is a poorer bond.

A. That is true.

Q. At what point in that progression of line movement would you in your opinion consider it to be an inadequate cement bond?

A. Well, that is a judgment factor and I guess a more appropriate question is where do you question the cement bond, and I will respond to your request.

Q. All right, sir. You just said above the 1200 foot line that that line indicated to you that there was poor cement bond.

A. That is right.

Q. I want to know at what point in that

line movement do you consider it to be acceptable?

A. I consider fully acceptable the part where -- opposite where the black line begins here and --

Q. That would indicate less than five percent unbonded pipe?

A. That is true.

Q. All right anything in excess of the five percent, then, would be unacceptable to you?

A. No, I didn't say that it would be unacceptable. It would be less acceptable, and another thing that is involved is the -- the distance that you have between what is marked with the good bond as interpreted by the Welex -- I mean Dresser Atlas Corporation, and the broken or unbonded pipe.

Q. Yes, sir. I don't have Dresser Atlas to talk to today, Mr. Stokely. I need to have you tell me.

A. Okay, all right.

Q. If you'll start at the top and go down to the bottom and tell me at which points you find the bond unacceptable. We're down at 1200 feet and going down.

A. Well, I would have to go by the same criteria that Dresser Atlas does, since they are expert in the business, and they have marked everything below 1800 feet as good bond; the area between 1746 feet and 1800 feet

as partial bond; and I would say partial bond is unacceptable because you have a lot of unattenuated seismogram to the right of that.

Q. Where would we encounter the top of the Langlie Mattix on that log, Mr. Stokely?

A. I believe it's marked on the log over here at 2920 feet, approximately.

Q. What was the footage, sir?

A. 2917 feet.

Q. Mr. Stokely, do you have the daily drilling summaries for the work on this disposal well?

A. I do not have them but I furnished them to Mr. Burleson for his use and I'm sure you have a copy of them there.

Q. Yes, sir I do.

I'd like to show you what I've marked as Burleson Exhibit Number Seven and ask you if that is the drilling summaries that you furnished to Mr. Burleson?

A. Yes, it is.

Q. Let me trade with you because that's got --

A. All right.

Q. -- the Commissio stamp on it and --

A. Okay.

Q. -- and I assure you it's the same copy.

If you'll turn to page three of the summary, Mr. Stokely, which I guess is the top, --

A. The top page, okay.

Q. -- we've got them staped in reverse order. And if you'll look to the entry on March 26th, 1981, which is the bottom entry on page three.

A. Uh-huh.

Q. It says SITP 875 pounds. What does that indicate to you, Mr. Stokely?

A. 875 pound surface tubing pressure, I mean shut-in tubing pressure.

Q. Yes, sir, shut-in tubing pressure being at 875, would that indicate to you that there is still Jalmat production in this well? I'm sorry, Langlie Mattix production in this well?

A. No, not necessarily. It would indicate that there is some gas there, that the well was swabbed down and the gas migrated up the hole causing pressure on the casing, on the tubing.

No, casing, let's see, tubing pressure, yeah.

Q. All right, sir, if you'll turn to page one of the drilling summary and look at the entry that says

February 26th, '81, which is the second from the bottom, there is language that says all pipe very poor condition. Would that not indicate for you that this well contains potential hazards for the migration of Langlie Mattix water into other formations?

A. Not with a properly cemented inner string of casing.

Q. All right, sir, let's look back then at the entry just above that on February 25th, '81, and the second line says ran cement bond log, and then it goes on to say no bond at 1640 to 1928; very poor bond from 1928 to 2024; no bond to 2024 - 2070; poor bond 2070 - 2120; no bond from 2120 to 2361.

What have you done to solve that problem Mr. Stokely?

A. That problem does not exist opposite the formations we're talking about. That is above the top of the Yates.

MR. NUTTER: This was prior to the time you ran the 4-1/2, anyway, wasn't it?

A. Yes, sir, I had -- I had forgotten that that had been run. I do not have a copy of it with me. But this was run with the idea of finding out the condition of the pipe in order to perform a workover.

Q Well, has a cement bond log been run below the 2361 depth?

A. It may have been. I don't know.

Q. So we don't know if there's a good bond or not, do we?

A. I think we do by the bond log that we now have.

MR. NUTTER How long was this well plugged and abandoned?

A. Oh, several years. I think on the order of about ten years.

Q. Have you made any study to determine whether -- where the disposal interval in the proposed well is in structural relationship to any of the offsetting wells?

A. I have not personally made a study on that. I have discussed it with others and it is my understanding from these discussions that this injection section here is somewhat lower structurally than the R. S. Crosby A-3 and A-4.

Q. But you have not made a personal study --

A. I have not made a personal study --

Q. -- yourself to determine how it lies in --

A. -- of that. I have not.

Q -- relation to the other wells within the half mile radius.

A. I have not.

Q. All right, sir.

Now you say you're going to dispose of water into the Langlie Mattix Pool, Mr. Stokely. Are there any other wells within the half mile radius that currently produce from the Langlie Mattix Pool?

A. Yes, there are.

Q. Will you identify those for us, please?

A. Well, the one that I know of particularly is our R. S. Crosby A-3. I have not got the identification of all the rest of them. I'm sure that Mr. Burleson is ready to supply us with those.

I do have records of several of them that were completed there at one time.

Q. All right, sir, with regards to the No. 3 Well, is there any way you can go back in and squeeze off the water flow in the No. 3 Well?

A. I don't know of any. We have looked at that possibility and probability and we have decided that it is not economical to try.

Q. Have you perforated the No. 4 Well?

A. Yes, we have.

Q. Did you make any effort to perforate higher in the No. 4 Well than you did in the No. 3 Well and thereby avoid the water production?

A. We did not want to leave reserves in the hole by perforating high in the well. We perforated the seven lowest perforations that we had planned and tested them and we produced 8 barrels of oil and 43 barrels of water out of those lowest perforations in eight hours, so we feel it would be inadvisable to leave that production in the -- in the hole.

Q. What is the price you received for the oil on a barrel?

A. I don't know what that price is right now. I would -- I would guess it was in the neighborhood of $30.00 a barrel, $35.00.

Q. Have you made any study of the potential risk of the disposal in this well to Mr. Burleson's well in the northwest of the northwest of 28, which is identified as a gas well and numbered No. 3?

A. Let's see, this is approximately, well, it's almost a half mile from the well. Is that right?

Q. Yes sir. It's at the northern end of the half mile circle.

A. I have not, but at that distance and

don't we?

A. I don't know if that's a Langlie Mattix gas producer at this time or not. This may not be up to date. Do you have some that are indeed producing gas from the Langlie Mattix?

Q. My only point is you've failed to make a study to determine whether or not the disposal of water in the disposal well is going to water out any Langlie Mattix producing wells, haven't you?

A. I don't believe that that's true. If we inject only what's produced from the formation I don't believe that I'm going to water out anybody, and we stand ready at any time that any operator complains that he is producing an unusual amount of water, it looks like that we're causing problems, to shut down the well, determine the source for the problem, and correct it at that time.

Q. All right, sir, can you tell me how we would propose to establish a system of monitoring that would-- could be adopted by the Division in a disposal order, that would insure that the water you dispose of in this well is going to remain confined on your lease?

A. Well, I guess I would have to depend on the Commissioner to do that. I'm sure he's had a great deal of experience in these cases, and ARCO intends to be a good

citizen in the oil field and if we have not been at any time, we apologize for it and we stand ready to correct our problems.

Q. I appreciate your willingness to cooperate, Mr. Stokely, but you don't have a specific recommendation to the Examiner as to how the disposal water could be monitored?

A. I would recommend that the disposal water be monitored by a pressure gauge at the surface to monitor the annulus between the tubing and casing, and I see no problem in issuing a special order to monitor the production from the offsetting wells. I do believe that the operators will let us know if they have any problems.

Q. Is the disposal well on a Federal lease?

A. I believe it is.

Q. What if any approval have you obtained from the USGS to use this well as a disposal well?

A. I have not as yet.

Q. Have you made a study of any of these 18 or 19 wells within the half mile radius to determine whether or not they would constitute a problem for water migration?

A. I looked at the information which you have in front of you, the diagrammatic sketches and the cement volumes, the calculated amounts, the cement tops, and I did

not see anything that looked like it would be a problem to me.

Q. Would you show us where we might find the ARCO R. S. Crosby 3 Well No. 1-B?

A. Well, I'll have to look it up. Do you have it marked on your map? I don't have it marked.

Q. I think it is the well on the half mile radius in the southwest --

A. The Devonian well?

Q. -- the southeast of the southwest of 28.

A. The deep well?

Q. No, sir. There are three wells in close proximity to ech other.

A. Uh-huh.

Q. Two of them are indicated with gas symbols?

A. Uh-huh.

Q. All right, the No. 3 Well.

A. Okay.

Q. That well.

A. All right.

Q. All right, what do you know about that well?

A. I do not have the well record with me. I have the same thing that you have in front of you.

Q. Okay, the tabulation of information is the extent of your knowledge about the quality of that well?

A. Yes, since this is on the half mile radius and it's so far away from an injection well which is only going to receive a small amount of water and that part of what's been taken out of it, I feel it offers no problem.

Q. Where is the Repollo Well, that's the Lanehart No. 1 Well? We talked about that, I think, in one of your summaries.

That's the well just south of the Burleson and Huff Langlie Mattix well in the north side of the half mile radius.

A. Now where is this again?

Q. All right, sir. If you'll look to the north you see the half mile radius line?

A. Uh-huh.

Q. Circle, and you see the well, the gas well symbol for the No. 3 Well?

A. Yeah.

Q. If you'll look to the south and east there's a No. 1 WEll.

A. No. 1, uh-huh.

Q. Is that not the Repollo Oil Company Lanehart No. 1 Well?

A. Well, if that's the cause of knowing it, that's what it is. I have open to it and it says it's 990 from the north and west of Section 28. That should be it.

Q. All right. If -- if you'll turn to your schematic summary on that well, Mr. Stokely.

A. Okay.

Q. Where are the perforations in that well, Mr. Stokely?

A. Well, I don't have those perforations marked on here, unless they're listed, and they should be listed on the summary up here, and let's see, Repollo Lanehart No. 1, was open hole 3130 to 3302, is the only report I have on it. It does not have any perforations reported.

Q. All right, let's turn then to the Texaco Lanehart No. 1 Well.

A. All right.

Q. Do you have that one, Mr. Stokely?

A. Yes, I do.

Q. This is on your plat, it's in -- the well in the northwest -- I'm sorry, the northeast quarter of Section 29?

A. Okay.

Q. Have we found that?

A. Located 1320 from the south and 1320 from the east.

Q. Puts it about in the center of that quarter section?

A. Yep.

Q. That's the No. 1 Lanehart Texaco Well?

A. Uh-huh.

Q. All right, what do you know about the perforations in that well, Mr. Stokely?

A. Well, the perforations shown here are 2516 to 2730; 3030 to 55; 3075 to 3120; and 3308 at total depth. It looks like it was open hole and perforated.

However, I would like to point to you that this is almost a half mile away from the No. 2.

MR. NUTTER: I don't seem to find that well on your plat, Exhibit Number One. Where would it be?

A. Approximately in the center of the northeast --

MR. NUTTER: Oh, okay, well then, then Exhibit Two would be wrong. It says 1320 from the south line and 1320 from the east line.

MR. KELLAHIN: It's supposed to be north line.

MR. NUTTER: It's supposed to say north line.

A. Well, now, let's see. No, I have 1320 from the south line and east line. I'm sorry. I apologize. It's 1320 from the south -- is that in error?

MR. NUTTER: Well, there's no well, there is no well on the map at that point.

MR. KELLAHIN: Well, I think we're all looking at the same well now. It's the well in the center of the northeast quarter of 29.

A. Okay.

MR. NUTTER: So it would be north line.

MR. KELLAHIN: Yes, sir.

A. Right, that should be north line. I apologize for the error.

Q. My point is, Mr. Stokely, have you made a study of the perforations in this well to determine whether the perforations cross over into both the Jalmat and Langlie Mattix Pools?

A. I can see here that if they are still open they are in both the Langlie Mattix and the Jalmat, but I would further point out that again this is approximately a half mile from the well in which we plan to inject only a part of the fluid which we're taking out of the Langlie Mattix

formation. We will be not increasing the pressure or drive in that direction by reason of the fact that we're removing more than we're putting back.

Q All right, sir, apart from that explanation, though, this is a well within the half mile radius --

A Yes, it is.

Q -- that is perforated across both --

A Yes.

Q -- pools, is it not?

A Yes, it is.

Q All right, sir.

A I'm assuming it is. I don't have any plugging records on it.

Q Let me ask you a little bit about your economics, Mr. Stokely.

A All right.

Q I believe you've told us that the relationship of the expense of trucking the water away represents a cost of about $5.00 per barrel of oil produced?

A That's the way it looks at present.

Q All right, sir, and so you won't immediately have to abandon this project if you're still required to truck this water, will you?

A No, not immediately.

Q. The only adverse impact is that it may have some in the future cause --

A. Early abandonment.

Q. -- early abandonment. Have --

A. That's right.

Q. -- you made any projection as to when that abandonment might take place if you had to continue to truck this water away?

A. We do not have any production projection on that well as yet. We cannot do that. However, it would be reasonably early at a $15,000 per month water bill.

Q. All right, sir. In discussing the economics of this project, Mr. Stokely, have you taken into consideration the costs of drilling a new disposal well as opposed to re-entering this old Crosby A-2 Well?

A. Drilling a new disposal well would cost in the neighborhood of $200,000.

Q. To the Langlie Mattix formation?

A. To the Langlie Mattix formation, that is true.

Q. So in summary, then, Mr. Stokely, you -- if the disposal of water into the Langlie Mattix as you've proposed is approved, you are going to be disposing of water that -- into a zone that's currently being produced by wells

within a half mile radius.

A That is true, and they -- it will to some extent help those wells by driving hydrocarbons from the location where we inject the water towards the producing wells.

Q You reached that conclusion without a study of the structure to determine whether you're injecting water above or below the perforations of any of those wells?

A We know that we're injecting water in the same elevation of the perforations of the wells that we are producing there and we assume that other Langlie Mattix perforations are in the same general area.

Q All right, sir, thank you.

MR. KELLAHIN: I have nothing further.

MR. NUTTER: Are there any questions of the witness?

MR. BRILL: I have just a few things, I think, on redirect.

REDIRECT EXAMINATION

BY MR. BRILL:

Q Mr. Stokely, what effect will the proposed injection have on the pressure in the Langlie Mattix formation in this vicinity? Taking into account the activity at Wells No. 3 and 4?

A. If you will look at the section on the plat with the half mile circle, and look at the area from Well No. 2 down to Wells No. 3 and 4, there will be a slight decrease in the pressure in the formation due to the fact that we will be taking out more total volume including oil and gas than we will reinjecting in the way of water.

There may be a small increase in pressure around Well No. 2 but it will not be a great increase.

Q. In what vicinity can you estimate would there be any pressure increase at all with relation to the No. 2 Well?

A. I don't follow your question. Would you come back?

Q. Well, you just stated that there might be some small increase in pressure in the area surrounding the No. 2 Well. What would be the extent of the area in which there might be a small pressure increase?

A. I would say less than 500 feet.

Q. Would it be anything approaching a half a mile?

A. No.

Q. Will the water quality the change in the Langlie Mattix formation because of this injection?

A. No, we'll be reinjecting the same water

that has been produced from the Langlie Mattix, so it would not change it.

Q. So there is in fact already water in the formation at this time?

A. Yes, there is.

Q. I think the Hearing Examiner has straightened this out, but referring to what is marked page one but is the third page in the Burleson Exhibit Seven, these figures, this data is -- was collected prior to the 4-1/2 inch casing, is that --

A. No, no. This included the 4-1/2 inch casing. Well, now some of it was.

Q. Yes, I'm referring to the very back page there.

A. Yes, that was all -- all done prior to installing the 4-1/2 inch casing.

Q. The Burleson well that was referred to in cross examination, the gas well, do you recall that?

A. Uh-huh.

Q. In your expert opinion do you think that it is likely that there is an impermeable layer between the wells that you're injecting to and the Nos. 3 and 4 Wells that are producing oil and no gas, and this Burleson well which is producing gas?

A. It sounds likely that there might be. It is strange that we're unable to get any volume of gas of any quantity out of our No. 2 Well and they are in fact producing their well as a gas well.

Q. And what do you think the explanation for that probably is?

A. Well, the explanation could be a permeability barrier between the two.

Q. Is it likely from your knowledge of this vicinity that the wells to which Mr. Kellahin referred on cross examination as having perforations crossing the Langlie Mattix and Jalmat already have water present in the vicinity?

A. It could well be.

MR. BRILL: Okay, I have nothing else.

MR. NUTTER: Any further questions of the witness?

MR. KELLAHIN: No, sir.

MR. NUTTER: He may be excused.

Is that your only witness, Mr. Brill?

MR. BRILL: Yes, it is, Mr. Examiner.

LEWIS B. BURLESON

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Burleson, would you state your name and occupation for the record?

A. Lewis B. Burleson and I'm an independent operator.

Q. Do you hold any professional degrees, Mr. Burleson?

A. Yes, I do.

Q. In what field, sir?

A. I'm a geologist.

Q. You hesitated. I thought maybe you might have forgotten.

A. No.

Q. Mr. Burleson have you previously testified as a petroleum geologist before the Oil Conservation Division?

A. Yes, I have.

Q. Would you describe generally for the Examiner what, if any, experience you've had with the Langlie

Mattix and Jalmat production in Lea County, New Mexico?

A. I have been working 33 years with Lea County Jalmat and Langlie Mattix production and this particular Crosby structure area is in my backyard. We own most of the acreage with ARCO and I have been -- I have been on the wells for the last fifteen years.

Q. You're the Lewis E. Burleson of Lewis E. Burleson, Inc.?

A. Yes, sir.

MR. KELLAHIN: We tender Mr. Burleson as an expert petroleum geologist.

MR. NUTTER: Mr. Burleson is so qualified.

Q. Mr. Burleson, I'd like to direct your attention to what we've marked as your Exhibit Number One, and have you identify that for me.

A. Exhibit Number One is a cross section as shown by A-A', with the proposed disposal well being in the center and with the following wells: The ARCO No. 3 Crosby, which is their oil producing well.

Q. Let's take a minute. You're far more familiar with your exhibit than any of us, Mr. Burleson, and let's take a moment and find the wells that you've put on the cross section, sir.

The third well from the right is ARCO's

proposed disposal well. That's the log of that well.

A. Right.

Q. All right, sir.

A. This is the log they gave me.

Q. All right, sir.

A. The well to the left is their producing well now, which is located south of the disposal well.

Q. This is the No. 3 well that Mr. Stokely referred to?

A. That is correct.

Q. All right, sir.

A. In yellow is the perforated interval for their well. On that I have picked the top of the Queen, Seven Rivers, and the Yates.

The next well is the Burleson and Huff Gutman No. 1. It was a Langlie Mattix oil well. We plugged that back when it was making 2 barrels a day and made a Jalmat gas well out of it.

Q. This is the well in Section 29, the --

A. Which is the --

Q. -- immediate southwest offset to the disposal?

A. That is correct. No, it would be a west offset to the disposal.

Q. All right.

A. Then the next well is the disposal well. In that colored in yellow are -- is a bar, shows the -- shows the perfs. The next well --

Q. The next well, you're going back to the disposal and -- well and moving to the right?

A. Right.

Q. Which will be the second well from the entire right of the cross section.

A. That is correct.

Q. All right, tell us which one that is.

A. That is the Burleson and Huff Saunders Estate No. 3, which is a Langlie Mattix gas well, and is located 1-1/2 locations north of the proposed disposal well.

Q. This is the one I asked Mr. Stokely some questions about.

A. That is correct, and the --

Q. At the north edge of the half mile radius.

A. That is correct.

Q. All right, sir.

A. And the perforated interval is colored in yellow. It is in the Langlie Mattix.

Q. And what is the last well?

A. Ant it produces gas in the same interval

they want to inject water in.

Q. All right, sir.

A. The next well.

Q. What is this last well?

A. Which is the Burleson Shahan No. 1, which is located in the northwest corner of Unit B in Section 33. This well --

Q. Just a minute, it would be the northwest of the northeast of 33, would it not?

A. Right, but it would still be unit B.

Q. It's in -- it's in Unit B.

A. It would be the northwest corner of Unit B, and the bar shows the perforations and the pay perforated and the pay is colored in yellow.

Q. All right, sir, what's the purpose of the exhibit, Mr. Burleson?

A. To show three things. One, if anybody is familiar and has worked the platform in the New Mexico area, approximate oil/gas contact is at -100 to -125 feet.

Q. That is the line you've drawn in blue on the cross section.

A. That is correct.

Q. All right, sir.

A. This shows -- now this figure is estab-

lished in the industry and is used over most of the platform. This shows that -- that my north offset gas well is not producing oil. It is producing gas and water. And I'll get to the reason it's producing water later on.

And you will notice that they propose to inject water in the same interval as where I am producing gas.

Q. If that is approved by the Division, what if anything, in your opinion, would happen to your Langlie Mattix gas well?

A. I can't see how, in what Mr. Stokely says, how that's going to shove extra hydrocarbons up my way. What it will do is give me pre-abandonment of a Langlie Mattix gas well.

And another, notice how high structurally this disposal well is. It's on top of the Crosby structure and I will present a structure map to show its relationship to the other producing wells in the area. This well is higher, is higher than the other two wells that they want to take water out of. Notice, I don't have to call it for you, the top of the Yates in this one well and you can see over here in the other one, these are hung on plus or minus zero and that well is higher than the No. 3, which is the oil well.

Q. All right, sir, does that conclude your explanation of your first point with regards to the cross section?

A. No, the other thing is that most people in the industry use at a -250 to below to be the water/oil contact. Now this varies some. But notice that in their well they have perforated down into water and their logs may have said that they're going to miss some hydrocarbons but they have perforated across the gas, across the oil, and across the water, and it's no wonder they're making lots of water now.

Q. All right, sir.

You said you had two other points with regards to the cross section.

A. One, that if you can -- well, they perforated a gas interval in their injection well. This well is a gas well that has water in it.

Q. How do you know that, Mr. Burleson?

A. Because they had a shut-in of 875 pounds on it.

Q. What does that indicate to you?

A. This indicates to me they had a gas well and this shut-in pressure is higher than my original shut-in pressure on my Saunders No. 3.

Q. In your opinion is the proposed disposal well still capable of production of gas in paying quantities?

A. Now, I -- that's hard for me to say, but from their drilling report, yes it is. It will make a gas well.

Now they're in trouble with it because they re-entered one and they wouldn't get high price of gas of NGPA, but they have perforated the gas interval and therefor when they swabbed it they got water, which I can account for, but no oil, and I think they were just looking for oil.

By the way, the water they got in that swab, I mean the oil probably came from down below and channeling across in a 7-inch pipe.

Q. Does that conclude your comments with regards to the second point on this cross section?

A. Yes, I think so.

Q. All right sir, and what was your third point?

A. Well --

Q. Or have you made it already?

A. Yeah, I think so.

Q. All right. Do you have anything else you want to direct our attention to with regards to the cross section?

A. Only that they're injecting into the gas zone and not in the oil zone, and this is an injection well and not a waterflood.

Q. Let me direct your attention to Exhibit Number Two, Mr. Burleson.

Did you prepare Exhibit Number Two?

A. Yes, sir, I did.

Q. As well as Exhibit Number One.

A. Yes, sir.

Q. All right, sir, and what is the purpose of Exhibit Number Two?

A. All right, you've got to realize that this is my backyard and let me explain where all the water is coming from.

There are four wells, and I've identified them as Well No. 1 in Section 29, the Texaco Lanehart. The No. 2 Well, which is the old Repollo Sinclair, Atlantic, or somebody, Lanehart No. 1. The proposed injection well, the Crosby No. 2.

Q. Is labeled No. 4?

A. No, 4, and No. 3 well is the old Repollo Crosby No. 1-B.

Q. All right, sir, what is the purpose of identifying those four wells?

A. These four wells were randomly perforated as I will show later in the Langlie Mattix and Jalmat and were tied into what I call is a main aquifer, and when they were plugged they put superficial plugs in the well and we have had an active water drive from our main water aquifer at 3200 feet up into the Jalmat, into the Yates into any formation that would take it.

And ARCO has a well that I will show you that was affected by this -- these poor plugged wells.

Q. In your opinion if the Commission should approve the proposed well as a disposal well, what if any remedial action would be required with regards to the wells you have identified as 1, 2, and 3?

A. I've been able to live with those. I don't own but one of them. I own the lease on one.

ARCO owns the lease on three of them.

Now we could go in there and plug those correctly and our ultimate recovery would be greater because when I show you the amount of water some of these wells have produced, you'll understand what's happening.

Q. I don't know whether you answered my question or not, Mr. Burleson. My question is whether or not as a condition of approval of this well as a disposal well, would you recommend that ARCO be required to re-enter and re-

plug Wells 1, 2, and 3?

A. No, sir, I cannot demand they plug Wells 1 --

Q. No, sir, but the Commission can make that a condition of an order if you in your expert opinion reached the conclusion that it was necessary to do so.

A. Well, I wouldn't mind, and they could force me to plug, but I'd want them to plug their injection well, also, because remember, they have that old, old pipe in there. thousands of perforations have never had any cement squeezed across them, and we know that well itself has water circulation that is coming down from -- now they have cured part of this thing by running that new pipe through the open hole, but the injection water can go up into the Jalmat, also into the Langlie Mattix anywhere. They have no idea where it's going to go.

Q. All right, sir. Let me direct your attention to Exhibit Number Three and have you identify that for us. I've shown you what we've marked as Exhibit Number Three, Mr. Burleson. Would you identify that for us?

A. All right. This will be my tabulation of everything I could find out about this well and the perforations and how it was plugged and the scout ticket tells when the well was drilled, and it would show, in my opinion,

that we have no separation between the Langlie Mattix and the Jalmat.

Q. Let's get us all at the same point here, Mr. Burleson.

A. All right.

Q. Exhibit Number Three is related to which of the four problem wells you've identified on Exhibit Number Two?

A. All right, it will be -- refer to Well No. 3 on the map.

Q. All right, sir.

A. And the reason I picked this first is the first sheet below the next sheet is a Langlie Mattix water production xeroxed form for 1940.

Q. Where did you obtain this form?

A. From the Oil Commission in Hobbs.

Q. And what does that form indicate?

A. And if you'll notice down there, it says Republic Production Company Crosby No. 3, Unit N, 28, 25, 37, and I want you to look at the amount of water that well produced monthly. It averaged for -- it did a good average of 20 -- 250,000 barrels of water a month.

Q. What was the total cumulative water production reported for that well?

A. Well, just for that year. I don't know what -- all I know is that this was one of the biggest water wells in southeast New Mexico.

Q. For 1940 what was the cumulative production?

A. Well, it would be like 3 million barrels of water?

Q. 3 billion. You said million.

A. No, it's million, isn't it?

MR. NUTTER: Million.

A. Yeah, 3 million barrels of water for the year. Phew!

Q. What's your conclusion with regards to that well?

A. Which will be shown my conclusion will be shown on the next sheet, which is -- will show how this well was plugged.

Q. All right, sir, what does it show?

A. It shows the pipe, 13-3/8ths at 256; 9-5/8ths at 1237; 7-inch set at 3180 with 180 sacks. I doubt the 180 sacks covered the Yates.

All right, on the other side. When Atlantic plugged this well, ARCO plugged this well the day they plugged it I was out there, and I show a gas blow, and they perforated up at 1200 feet to squeeze cement into the

pipe and they got gas out of there, and I couldn't believe it, and neither could the water haulers. They had to kill it to plug it.

And where did that gas come from? A poor cement job across the Yates. That's the only place it could have come from.

Q In your opinion is this well properly cemented and plugged below the top of the Yates?

A The next thing -- I didn't show you -- yes, I did. I showed you the plugging notice done by Atlantic Richfield. They only set a bridge plug and a retainer above the Yates at 2375, put two -- cap on that; show holes in the pipe at 1275, where they got gas up the backside; cemented that with 100 sacks, and put a cement top on it, and put a cap, 10 sacks of cement in the top of the well.

So --

Q What's the answer to my question?

A Then the Yates and the Langlie Mattix are still connected, are still interconnected in this well.

Q Okay. I direct your attention to Exhibit Number Four, Mr. Burleson.

A Exhibit Number Four.

Q Just a minute, let's get everybody with the same exhibit.

All right, would you identify Burleson Exhibit Number Four?

A. It is a -- it is the tabulation on how, and the history of the perforations on the Repollo Lanehart No. 1.

Q. All right, let's find out where it is now.

A. That is what I call problem well No. 2.

Q. Okay. And what have you compiled here, Mr. Burleson?

A. Now all of these records are -- in this well I got good information because it's on fee land.

Q. What's the source of the information?

A. From the Conservation Commission in Hobbs. On the other two wells, on the Crosby wells, it's on a Federal lease and Hobbs has a very, very, skinny file on them, and most of my information I had to get from scout tickets or the best I could get.

I do have a lot of information on the -- on the injection well that ARCO gave me.

Q. All right, sir, let me direct your attention back to the exhibits and documents you've obtained from the Commission records with regards to the Repollo Lanehart No. 1 Well, and ask you based upon your study of the informa-

tion contained in that well file, what conclusions can you make?

A. All right, that the, that, if you will turn to the graph of the well, how it was done, it produced open hole from 3130 to 3302 and made lots of water. Then they squeezed that off and perforated 2900 to 2980 and also made water. Then they perforated 2913 to 2950 and made water.

Now, when they did that, the Langlie Mattix and Jalmat are open together till they plugged the well. So we still have our main aquifer coming and feeding up through those perforations and this water is probably the source of the water that I'm making in my Langlie Mattix - Queen well, the Saunders No. 3.

Q. This is the immediate south offset to your Langlie Mattix gas well?

A. That is correct.

When you see a structure map and understand that this is the highest, almost the highest structural attitude of the Yates and the Queen on the platform, on the platform, we're +800 and we still have water in these zones, they you have to say -- you have to look beyond that and say something happened that was a bad move, and these companies followed the rules and I can't go back and say, well, they did a poor job. Today we would say they did a poor job but

at that time it eas acceptable.

Q. All right sir, let me direct your attention to Exhibit Number Five. and have you identify that package of exhibits for me.

A. Exhibit Number Five is a tabulation and sketch of the old Texaco-El Paso Natural Lanehart No. 1.

Q. All right.

A. It is what I call my problem well No. 1.

Q. This is the well in the center of the northeast quarter of Section 29?

A. That is correct.

Q. And what is the source of the information contained in your Exhibit Number Five?

A. Everything that is -- that I obtained in this exhibit came from the Oil Conservation Commission in Hobbs, with the exception to the scout tickets that I stapled on there to show that this well was dug in 1936. You know, these wells were not dug ten years ago like Mr. Stokely said. These are -- all these wells, including his injection well, were dug in '36 or in the thirties.

Q. All right, sir, based upon your study of the information contained in the Commission offices concerning the well file in this well, what, if any, conclusions can you draw?

A. All right. The first sheet, if you'll look, is a diagram that Texaco did for me that was in the file, did in 1937. They had already done it and showed me so I just xeroxed it and stuck it in the exhibit.

I think it's very interesting that they ran a liner, see, they show a 5-inch liner and cemented it with 55 sacks of cement and they had oil at 3165 to 3308, and they produced oil and 30 percent water.

Now in 1937 the next page shows a letter they wrote to the Commission and in June guess how much water they made? 26,700 barrels of water. This well is in the main aquifer. That's on the third page.

They made 826 barrels of oil, 26,000 barrels of water, which was 97, 97 percent of -- water is 97 percent of the total fluid.

In this letter they ask for permission to use the bredenhead gas, very interesting, to gas lift this formation. Guess where the bradenhead gas is coming from? The Yates. Is it cemented? It couldn't be if they're going to just open up the backside and flow it down to the Langlie Mattix and flow the water.

So this well, from this -- from this exhibit, does not have -- did not on the original cement job, did not cover the Yates.

They subsequently perforated -- did I mark the perforations -- I did not mark the perforations on this, so I'll just say that they did perforate the 4-inch -- well, in fact they show where they did. They had gas, increasing gas, and they did perforate the 7-inch. I've marked the Jalmat and Langlie Mattix demarcation and when they plugged this well, they put a top, a cap on top of the Yates and walked away from it.

By the way, this well made lots of gas. El Paso says that it produced half the gas that went from -- filled the line from Jal to El Paso for five years. I think the total cumulative gas on this well is 10 billion.

Q. All right sir, let me direct your attention to Exhibit Number Six. What is the source of the information for the packet of exhibits identified as Exhibit Six?

A. Much of the information came from the drilling report that I secured from Mr. Stokely and from ARCO Oil and Gas.

From the log he gave me, which showing where the old perforations were in the 7-inch 5, and then personally being out there when this well was plugged and knowing that this well also got gas up the backside, showing that the primary cement job on the 7-inch was not effective

across the Yates, and two reports that I -- two reports that I show that I got from the -- from the Commission in Hobbs, which shows what happened, which shows how they plugged it and which shows what happened to their ARCO Federal No. 1.

Q. All right. You've made a study of the information contained within this packet of exhibits concerning the proposed disposal well?

A. Yes, I have.

Q. You were present in the hearing room when Mr. Stokely testified with regards to his belief that the disposal of water into the Langlie Mattix formation would not migrate up into the Jalmat formation or cause an unfair risk to the producing Langlie Mattix or Jalmat wells?

A. Yes, sir, I did.

Q. Do you concur or disagree with that position?

A. No, I violently, violently disagree.

Q. On what do you base your disagreement?

A. All right, may I read for the Commission off of ARCO's log the total perforations that are in the 7 inch pipe, not their liner, but in the pipe before they redid this?

Q. Well, if that serves as a basis for your conclusion, yes.

A. All right, I'd like to, and there it is right there.

Q. All right, let's mark this as an exhibit then.

A. No, we just have one of them.

Q. Well, I'll have to xerox and give it back to you, Mr. Burleson.

Do you want to testify from it --

A. Well, I'll just read from it and you don't have to.

I shows that the perforations from this log from 2375 to 3075.

Q. Just one minute, let me keep track of it. What are the perforations now?

A. 2375 to 3075, and I'm going to read all these and I want you to know they have perforated this whole string of 7-inch, and remember when they plugged it they just put a plug on top of it. When ARCO re-entered it they cleaned it out the bottom, did not find any cement across any of theinterval where it had been squeezed previously in the Yates or as I show on this thing, no cement from 2509 to 3115 and that was on the drilling report of 3-27-81. They they ran a liner inside and pumped cement about it. Now this

didn't cure the perforations, the old perforations that are still in this well, and I don't know how you ever would.

And the perforations are --

Q Let me ask you that before you get to the perforations.

In your opinion can a prudent operator re-enter this old producing well and recomplete it as ARCO intends and make it a quality disposal well?

A No, I don't think they can. And why dug this -- they wanted oil, undoubtedly. I have no idea, but the way they perforated, they wanted oil land didn't get any oil, but their main perforations were up to the gas zone, above -150, so they got gas and this is what they should have gotten, and then they said well, what shall we do with it, well, let's -- we're making all this water down over here, let's put the water in this well.

Q All right, sir, let's start with the top perforations and run to the bottom and if you'll give me a tabulation of the perforations in this well.

A All right. The perforations showed are from 2837 to 55; and 2557 to 75; and 2692 to 2780; and 2642 to 90; and 2800 to 20; and 2618 to 37; and quote from their log, old perfs -- and this is their well -- old perfs 2528 to 3069; and old perfs 2818 to 2855; has water channeling

problem was reason to P & A.

Then we get down in the new perfs, and then -- and then we get down into the new perfs and I have no -- and they have shown where they have perforated and wanted to inject water.

Q Mr. Stokely has testified that his analysis of the cement bond log shows that he believes these zones are going to be isolated insofar as the Langlie Mattix disposal formation and any other formations. Do you concur in his analysis or conclusions with regards to that cement bond log?

A. Well, we know that they ran a bond log and they didn't -- and show poor cement to where they ran it, and then -- and then I know from personal experience being out in the field, that this well when they plugged the other one, this also got gas up the backside so I know the Yates was open in this well, or the Queen.

All right, when they ran their 7-inch pipe they had a hard time doing it. They put the DV tool at the top of the Yates inside the -- inside a liner. But they had 7-inch set, so where could they put their DV tool? They put it at the top of the Yates and what did they do, they had to squeeze cement. They could not circulate that from the -- from the top of the Yates up.

So they had terrible pipe in there and their own -- their own drilling report shows bad pipe.

Q. In your opinion, Mr. Burleson, will the disposal of water into this well as ARCO proposes constitute the disposal of water into a pay zone that is being produced by any offset well?

A. Yes, it will. They will be -- they will injecting water into my gas zone in the Saunders No. 3.

Q. Can you identify any other well that you currently operate or in which you have an interest that the disposal as proposed by ARCO would constitute an infringement of your correlative rights?

A. I'd like to go to the structure map to show where the relation is so people will understand.

Q. All right,sir, just a minute. I show you what is marked as Exhibit Number Eight, and if it's not in the packet of Exhibit Number Six --

A. I think it's in there.

Q. It may be a repetition.

That's all right, let's look at the structure map.

A. Okay, I show with an arrow, if you can see it on this xeroxed copy the injection well, there in the -- what would be the northwest of the southwest of 28. Notice that my gas well to the north is approximately on

strike with this well. The line goes -- it's plus 590 on my well.

And notice that the highest point is my Langlie Mattix -- I mean my Jalmat well that is -- that is producing in the south -- southeast of the northwest, which is my Saunders No. 3.

In other -- in other words, their -- if they inject water into this well, then they are watering out the Langlie Mattix reserves, gas reserves that are structurally higher than this well.

Q And where upon your acreage would you find gas reserves that are structurally higher than the disposal well?

A Everything that would be above in the +700 foot contour.

Q All right, would you identify for us what properties you have in that contour?

A We own the northwest quarter of Section 28.

Q All right, sir, anything else?

A Well, in the southwest quarter of Section 28. So there --

Q You mean Section 29.

A No, I mean, no -- excuse me, we own the

southeast quarter of Section 28, which is our Cooke lease.

Q. All right, we've got the southeast quarter of Section 28 the northwest quarter of Section 28, is there any other acreage that would be adversely affected by the disposal well?

A. Right, it would be the north half of the southeast quarter in Section 29.

Q. Okay.

A. Which is our Gutman lease.

Q. Let me run through that again to make sure I understand.

In the southwest quarter of Section 28 that acreage, would you identify for us any of your wells that produce from either the Jalmat or Langlie Mattix Pools?

A. In the southwest quarter?

Q. Yes, sir.

A. That's their --

Q. I'm sorry, in the southeast.

A. In the southeast quarter of 28 we have one, we have two currently producing Jalmat gas wells, the Cooke No. 1 and 2, being in the south half of the south half of Section 28.

Q. Do you have any Langlie Mattix production now?

A. No, we don't but we had a well to re-enter, being our Cooke No. 3, but this is something that we've postponed doing.

In the northwest quarter --

Q. Just a minute, I'm not through with the southeast of --

A. All right.

Q. -- 28. Apart from those two producing Jalmat wells, do you have any evidence or indication that you have potentially productive acreage in either the Jalmat or the Langlie Mattix that's not currently being produced by any of those wells?

A. Yes, sir, in our Cooke No. 1 we -- we produced it for about three months at the rate of about 15 barrels of oil per day and I believe in 1969 because of economics plugged back and made a Jalmat gas well out of it which were at that time better economics than the oil, and we do definitely have reserves in the south half of the -- or in the southeast quarter of 28.

Q. All right, let's look at the northwest quarter of 28 now. You've talked about the Langlie Mattix Gas Well No. 3. Would you identify any other wells that are currently producing from either the Jalmat or Langlie Mattix Pools?

A. Yeah, our Saunders Estate No. 2, being -- which would be 1980 from the north and west, which is a Jalmat gas well that is -- that is shuts-in on 800 pounds, and in testimony previously given, this is some of the highest shut-in pressure on the platform, on the New Mexico platform, but our well makes water. And where does the water come from? Probably from one of these four poorly drilled wells.

Q. Do you have an opinion as to whether or not the use of ARCO's disposal well as proposed would constitute an unreasonable risk to the production in that well?

A. Yes, it would.

Q. Apart from the identification of those two wells in the northwest quarter of 28, do you have any other indication of potentially productive acreage from either the Jalmat or the Langlie Mattix formation -- pools?

A. It appears that everything in the northwest quarter will be above the oil contact and it will be gas.

Q. All right, sir, let me direct your attention to Section 29, to the north half of the southeast quarter.

A. Right.

Q. And have you identify for me what wells or what potentially productive acreage that may be adversely affected by the disposal well.

A. All right, on the cross section we showed the Burleson and Huff Gutman No. 1, which was a Langlie Mattix oil well, which had -- in 1969 because of poor economics, the well was making 5 or 6 barrels of oil a day we plugged it back to the Jalmat, that is a Jalmat well currently, and --

MR. NUTTER: Excuse me, Mr. Burleson, I think I noticed on one of your cross sections, you said something about a good well or something?

A. A good well?

MR. NUTTER: Oh yeah, the second well on your Exhibit Number One, down at the bottom it does say --

A. Yeah, yeah, that -- see we --

MR. NUTTER: -- old Langlie Mattix Well, still good.

A. Okay, this well --

MR. NUTTER: Is that the well you're talking about there?

A. Yes, sir, I'm -- I'm talking about the -- that this well was producing 7 barrels of oil a day and at that time we plugged it off, but we still -- I still figure there's reserves there, and by the way, this is a north offset to where they just dug one and we're structurally higher, so I would assume that maybe -- maybe ARCO thinks so too.

We ran a different log when we perforated

the Jalmat and I just stuck the old log that was open hole done by Olson, down on the bottom of this to give you complete -- show that this was productive in the Langlie Mattix.

MR. NUTTER: So you've got two logs spliced together there on that exhibit.

A. That's correct.

MR. NUTTER: Okay.

Q. Mr. Burleson Mr. Stokely testified that he believed that the amount of water to be disposed of in this well was such a small volume that it would not adversely impact any of your acreage around this well. Do you concur or disagree with that?

A. I disagree because any injection of water into a gas zone will just give me more problems than I have with water.

Q. Well --

A. And the pressure drawdown againts that gas well will be greater than the pressure drawdown in the oil well of ARCO's to the south.

Q. Mr. Stokely testified that he thought that the disposal interval was isolated from the producing interval in the Jalmat Pool. Do you agree or disagree with that?

A. Well, the -- the interval on the log is

in the Langlie Mattix but the old perforations which were never squeezed off or anything are still open behind that 7-inch pipe and they have no idea where it's going to go.

But, by the way, their perforations are exactly the same interval as my producing gas well half a mile away.

Q. Are you aware of any way the Commission could establish a method of monitoring the disposal water to insure that the water would remain confined to the ARCO acreage?

A. No, sir, I do not.

May I make a comment on the last two entries on this exhibit?

Q. The disposal well?

A. Right. I think it's very interesting and I doubt if these gentlemen know this, but I'll just give them a little past history.

The first one it says, to drill to re-enter, I think it's the last one, says sending notice ARCO in Hobbs to re-enter 1980 from the north and the west in the Unit K, and that's their ARC Federal No. 1, and they re-entered an old Devonian well, which is east of their disposal well, and they potentialed it for 645 Mcf a day, no water, on a 16/64th inch choke.

They pulled this well so hard it ruined one of mine and guess what, two years later which is the one before, now this was done in 1975, two years later in '77 they are plugging this well because of excess water. Now where did the water come in the Jalmat in that location if it didn't come from one of these four wells that weren't plugged including, and the closest one to this one is, by the way, is their -- is their proposed injection well.

But you can say plugged and abandoned in 11-8-77. That well only lasted 2-1/2 years, and when they started off they had tubing pressure of 825 pounds, which should make it one of the top wells in the -- on the platform.

Q. Mr. Burleson, do you have a recommendation to the Examiner with regards to the proposed disposal well by ARCO?

A. I don't -- I would recommend that they turn down the application to inject water into this well and let ARCO complete it as a gas well. They will make water but they're in the gas cap and they have a gas well there.

Q. Apart from the exhibits that are a reproduction of documents within the Commission records, were the other exhibits that you've referred to either prepared by you or compiled under your direction and supervision?

A. Yes, they have.

MR. KELLAHIN: We move the introduction of all of Mr. Burleson's exhibits. I believe it's One through Eight.

MR. NUTTER Burleson Exhibits One through Seven, I believe.

MR. KELLAHIN: Eight, I marked the cross -- the structure map.

MR. NUTTER: The structure map was Eight, okay. Burleson Exhibits One through Eight will be admitted in evidence.

MR. KELLAHIN: That concludes my examination of Mr. Burleson.

MR. NUTTER: Are there any questions of the witness?

MR. BRILL: Mr. Examiner, if we could have five minutes to prepare cross examination, would that be -- I know it's late.

MR. NUTTER: You may.

MR. BRILL Thank you.

CROSS EXAMINATION

BY MR. BRILL:

Q Mr. Burleson, this has been a fascinating history of this area, but I would like to ask you a few ques-

tions about present conditions.

I would like to show you what was marked as ARCO's Exhibit Four and refer you in particular to this notation along the side. Do you know what that notation notes?

A. Yes, I do.

Q. Could you explain for us your interpretation of what that means?

A. It means there's a DV tool, which means it's set in the string of 4-1/2 at 2409, and that they had to squeeze that DV -- remember, there's cement below there. The primary cement job was below this. I think with 250 sacks. I can tell you what --

Q. I think the figure is indicated there, is it not?

A. No, but that's a squeeze.

MR. STOKELY: There's 200 sacks below.

A. There's 200 sacks below. They came up and cemented the pipe and then they tried to pump in this DV tool and couldn't get circulation. That is, they couldn't get fluid to come to the top. In normal on a DV tool you get fluid coming up to the top.

Q. But the fact is, is it not, Mr. Burleson, that this indicates that 400 sacks of cement were squeezed

in this fashion?

A. I know, but what you don't understand is there's cement below 240 --

Q. No, I --

A. That they squeezed 400 sacks and this DV tool is at top of the Yates, and all the action on the squeezing is above.

Q. You're saying the cement went above where it was squeezed?

A. I would think so and that's the reason -- the reason we put DV tools is because that the hydrostatic head of the -- the whole hydrostatic head of the cement is too great on your formation, so you put a DV tool in there so you'll have less head on it so you'll be able to circulate and cement the pipe above the DV tool.

Q. Did you miss the portion of Mr. Stokely's testimony to the effect that the cement all went down, did not come up?

Did you miss that portion?

A. Well, then --

Q. Please answer the question.

A. Well, no, I don't remember him saying that.

Q. Okay. Let me show you what we've marked

as ARCO's Exhibit Number Six, I believe, the cement bond log. Does this line mean to you a good bond? Do you agree with the --

A. This bond means that ARCO paid Dresser Atlas'foe and they'll put anything they want to on that. It means that apparently there's a good bond between the 7-inch pipe and their 4-1/2, but not their 4-1/2 -- not the 7-inch and everything else that was run in 1936.

Q. I don't understand the thrust of your comment. Are you saying that this is not an accurate representation of what the result of this test was?

A. Usually they don't put this on logs. They just let you interpret yourself.

Q. Are you saying this is falsified?

A. No, I did not.

Q. Are you implying that it's falsified?

A. I'm implying that everything can be self serving. Everything I do is self serving and everything that ARCO does is self serving.

Q. FAir enough.

So you would say that either this is falsified or bought and that it doesn't indicate that in fact the cement injected improved the bonding situation considerably to the point where there was a good bond?

A. I have no problem with the bond between your 4-1/2 inch liner and the 7-inch.

My problem is in the 7-inch that was run in 1936, where you have all those perforations.

Q. Okay, and what is your interpretation of this section of the cement bond?

A. Now, if you want, we can go interval for interval, but if remember his discussion that there is probably good bond between 3100 and 3170, but it looks like you didn't have very good bond on this whatever you call this, because you don't have this -- this relationship.

Q. So you disagree with Mr. Stokely's conclusion and Mr. Connelly's conclusion that in effect the bond was good such that it sealed off the Yates.

A. There's no such thing as -- no. This -- this bond log as far as I'm concerned is showing what's happening between your 4-1/2 inch liner and the 7-inch pipe.

Q. And this shows nothing?

A. It shows pretty good bond up through here.

Q. And what is that bond between?

A. The 4-1/2 inch liner and the 7-inch pipe.

Q. It shows no bond between the formation?

A. No, because --

Q. And anything?

A. Because this bond log, you all, where was your -- you didn't -- you had a bond log on your 7-inch pipe down through the top of the Yates and you didn't present it, and that showed no bond.

This bond log, I understand it does not cover the 7-inch pipe run in 1936.

Q. And so you would disagree with the conclusion reached by Mr. Stokely and Mr. Connelly that the injection had in fact improved the bonding situation over the old bond log that you're referring to?

A. What injection?

Q. The injection of the 400 sacks of cement?

A. The 400 sacks of cement is above, above the DV tool, and remember, the DV tool was set at the top of the Yates.

Q. I think -- I think you're confusing the testimony from Mr. Stokely to the effect that the cement went below the DV tool, not above.

In any case, we'll -- we'll continue. Now I understand the thrust of your complaint, Mr. Burleson, to be that these four wells are producing water problems for your gas well.

A Not only for my gas well, for other wells too, and by the way ARCO's wells, too.

Q All right. And these problems are caused by injected water in these wells?

A No. They're - they're caused by the -- by wells that should have -- this is -- I don't know if we have time to go through some geology in here, but we'll be glad to do it, because this is so positively high, a positively high area, that it does produce from the Devonian or did till it watered out, and we have a real water drive, a real porous zone about 3300 feet that had to produce these large volumes of water, and when you don't squeeze this off, this water has come up into the Langlie Mattix, into every horizon into the Yates.

Q But the source of this water is not injected water?

A No.

Q So lthe water is there anyway. It occures naturally and the condition is exacerbated by the plugging techniques employed in the four wells, is that what you're saying?

A Listen, no water occurs in a gas zone naturally.

Q Well --

A. But the water is in there and it got in there because of poor plugged wells.

Q. The only human factor then, I guess I would put it that way and see if you would agree is the, what you would characterize as a poor plugging job on these four wells.

A. That's correct.

Q. Injection is not causing the problem.

A. No, injection is not causing the problem now.

Q. And so in effect your complaint is not about ARCO's plan to inject, it's about the condition of these four wells and the fact that you don't believe that they're plugged properly.

A. No, sir, you missed the thrust. I object because ARCO within less than a half a mile is -- plans to inject water into my gas zone, and I have never known that gas in a gas zone increased the production. It's going to give me greater problems and will give me premature abandonment of that well.

The main thing I have against this is that you all didn't even present a cross section showing the relationship of these wells to the producing wells offsetting it, and by the way, your zone is -- you are injecting water

into my gas zone, my gas pay.

Q. Now it it your contention that there is not already water in the Langlie Mattix Crosby No. 2?

A. That there was a --

Q. Is there water now in the zone into which the water would be injected?

A. Well, see, you didn't ask me what my well's doing. It makes about --

Q. Well, I'm asking you -- I'm sorry Mr. Burleson.

A. All right.

Q. But I'm asking you if there is water now in the zone into which the water would be injected?

A. There is water and gas.

Q. Is there water?

A. Yes, there is some water.

Q. Do you deny the validity of the portion in the testimony relating to the test in March of this well?

A. Listen , if I had a well that shut-in over 800 and some pounds I'd be happy and I'd want to put that on a choke and see if I couldn't get the gas to come and produce -- and produce a quantity of water that I could live with.

Q. But do you contest the validity of the

portion of that test that showed the water quantity ?

A. No, I don't, huh-uh.

Q. So there is already water in the area in the formation into which the water would be injected?

A. Yes.

MR. NUTTER: Does your gas well produce water?

A. Yes, it does.

MR. NUTTER: How much? What's the production of gas and the production of water?

A. It makes about -- but you can't open it on a 3/4 inch choke, you'll drown it.

MR. NUTTER: It would pull in too much water.

A. Right, it would pull in too much water. So I'm used to this area and so we flow it on a 8/64th and we make 200 to 250,000 a day and 100 barrels of water and by the way, when we originally dug this well two and a half years ago, our shut-in pressure was a little bit less than ARCO's.

MR. NUTTER: You make -- now how much, a quarter of a million of gas --

A. And 100 barrels of water.

MR. NUTTER: 100 barrels of water. What

do you do with that water?

A. We truck it.

MR. NUTTER I see.

Q. So you admit that there is already water in the -- in the formation in the vicinity into which this water is proposed to be injected?

A. That's correct.

Q. And it's your contention that injection of 500 barrels per day would substantially affect your well almost a half a mile away even though there's already water in the same formation?

A. But remember -- yes, it would bother me, but you're going to have a greater concentration of water right by the borehold if you will accept my theory that that water came from below. You understand, that if this injection well is a source of the water, then you're going to have a greater volume of water right there.

Yes, because my bottom hole pressure is getting pulled down by that gas well greater than their oil well to the south.

Q. Well, it seems to me, then, you're saying exactly the way I characterized what you're saying, the main problem is migration of the water from natural sources up along one or all of these four wells and not the

injection of a relatively small amount of water into an area where the water already exists.

A. This water is not there by natural sources. God did not put that water in that formation man did it.

Q. Well, but Mr. Burleson if -- if ARCO did not inject water, would the water disappear?

A. No we put -- they helped cure the problem in that well by running that liner.

Q. Oh, so the well is now better than it was?

A. Yes, because they cemented the open hole part.

Q. So the only step ARCO has taken has improved the situation to this point?

A. Well, if it -- if it stays right where it is and this Commission does not grant your right to inject water, yes, it has helped.

Q. But at this point it's helped. The well is in better shape than it was. you're admitting that at this point.

A. Oh, absolutely.

Q. So you do believe to some extent the results of this bond log?

A. Certainly. Certainly.

Q. Okay. So it is your contention that even though the main source of the problem is migration from lower aquifers because of the poor plugging job done on these wells, that the addition of 500 barrels into an improved well is going to adversely affect your well half a mile away.

A. Yes, I do.

Q. I think I understand what you're saying.

MR. BRILL: I have nothing further.

MR. NUTTER: Does anyone else have any questions of the witness? He may be excused.

Does anyone have anything further they wish to offer in Case Number 7294?

MR. PEARCE: Mr. Examiner, if the record could reflect we have received a telegram sent by Mr. Tommy Phipps, Executive Vice President, which says, and I quote:

Alpha Twenty-One Production Company is an offset operator and wished to object to ARCO Oil and Gas Company's application in Case 7294 to dispose of salt water into the zone from which we are producing gas.

Respectfully.

MR. NUTTER: Thank you.

Is there anything further in this case? We'll take the case under advisement.

# C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 7294, heard by me on 7/15 1981.

Examiner
Oil Conservation Division

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

ARCO Crosby # 3 (B-1)
Unit N, Sec. 28-25-37-Lea County

1. In 1940 production report made 3,030,882 bbls of water from our water zone.

2. Federal lease had a hard time getting information on this well, but know that the Langlie-Mattix and Jalmat were co-mingled.

3. Plugging notice shows plug at 2375' in top of Yates. This well was also plugged at the same time as the "A" # 2 and I saw the gas being made up the backside when the pipe was perforated at 1275' and filled with cement. This well has no primary cement job and definitely has no separattion between the Langlie-Mattix and Yates.

Well No. 3 on Map

BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
Burleson EXHIBIT NO. 3
CASE NO. 7294

# LANGLIE FIELD
## Water Production for 1940

| Well | Unit Well | S.T.& R | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AMERADA PET. CORP. | | | | | | | | | | | | | | | |
| Stuart, F. | 2-H | 22-25-37 | - | - | - | - | - | - | - | - | - | - | - | 157 | 157 |
| Stuart, F.B | 1-E | 22-25-37 | - | - | - | - | 205 | 156 | - | 237 | 174 | 169 | 140 | - | 1081 |
| ANDERSON-PRICHARD OIL CORP'N | | | | | | | | | | | | | | | |
| Langlie | 4-G | 8-25-37 | - | - | - | 28 | 29 | - | 25 | 23 | 24 | 25 | 19 | 24 | 197 |
| Wells | 4-D | 5-25-37 | - | - | - | 30 | 29 | 23 | 22 | 29 | 23 | 80 | - | 89 | 325 |
| Wells | 5-B | 5-25-37 | - | - | - | 89 | - | 69 | 66 | 78 | 70 | 60 | - | 67 | 499 |
| Wells | 10-B | 4-25-37 | - | - | - | - | - | - | - | - | - | - | - | 25 | 25 |
| Wells | 11-G | 4-25-37 | - | - | - | - | - | - | - | - | - | - | 70 | 76 | 146 |
| GULF OIL CORP. | | | | | | | | | | | | | | | |
| Elliott | 1-P | 15-25-37 | 31 | 29 | 31 | 33 | 36 | 30 | 31 | 29 | 30 | 18 | 9 | 16 | 323 |
| Elliott | 2-I | 15-25-37 | - | - | - | - | - | - | - | 18 | 35 | 43 | 34 | 51 | 181 |
| Shahan | 1-B | 33-25-37 | 2421 | 2334 | 2600 | 2544 | 2304 | 655 | - | 3254 | 2978 | 2739 | 2646 | 2732 | 27204 |
| Westfall | 2-J | 15-22-36 | 132 | 146 | 131 | 117 | 129 | 97 | 120 | 81 | 72 | 62 | 58 | 48 | 1193 |
| HUMBLE OIL AND REFINING CO. | | | | | | | | | | | | | | | |
| Ganahart | 1-K | 21-25-37 | 400 | - | 350 | 374 | 291 | 225 | - | - | - | 310 | 415 | 640 | 2905 |
| PHILLIPS-PURE PETROLEUM CO. | | | | | | | | | | | | | | | |
| Woolworth 3 | 1-M | 6-25-37 | 372 | 420 | 453 | 332 | 249 | 234 | 266 | 238 | 184 | 177 | 231 | 273 | 3429 |
| Woolworth | 2-H | 6-25-37 | 28 | 30 | 32 | 25 | 30 | 26 | 38 | 41 | 45 | 27 | 33 | 28 | 363 |
| REPUBLIC PROD. CO. | | | | | | | | | | | | | | | |
| Crosby | 3-N | 28-25-37 | 250581 | 222424 | 280810 | 270044 | 279000 | 253205 | 268313 | 218193 | 314312 | 217000 | 210000 | 217000 | 3050882 |
| STANOLIND OIL AND GAS CO. | | | | | | | | | | | | | | | |
| Langlie A | 1-M | 9-25-37 | 13 | 12 | 43 | 25 | 27 | 26 | 44 | 55 | 49 | 41 | 38 | 44 | 366 |
| Langlie A | 2-L | 9-25-37 | - | 88 | - | - | - | 23 | 17 | 12 | 47 | 49 | 44 | 56 | 330 |
| Langlie B | 4-D | 14-25-37 | 45 | 54 | 53 | 23 | 20 | 30 | 69 | 62 | 63 | 65 | 60 | - | 544 |
| THE TEXAS CO. | | | | | | | | | | | | | | | |
| Pristoe A | 1-I | 3-25-37 | 110 | 116 | 135 | 205 | 193 | 184 | 183 | 260 | 286 | 290 | 283 | 2245 | |

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

COPY TO O. C. C.

Form approved.
Budget Bureau No. 42-R1424.

# SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☒ OTHER Shut in

2. NAME OF OPERATOR
Atlantic Richfield Company

3. ADDRESS OF OPERATOR
P. O. Box 1978, Roswell, New Mexico 88201

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
330' FSL & 2310' FWL

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
3016' GR

5. LEASE DESIGNATION AND SERIAL NO.
LC 034117(b)

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME
[redacted] Crosby "B"

9. WELL NO.

10. FIELD AND POOL, OR WILDCAT
Jalmat-Yates

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 28, T25S, R37E

12. COUNTY OR PARISH
Lea

13. STATE
N.M.

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

| NOTICE OF INTENTION TO: | | | | SUBSEQUENT REPORT OF: | | | |
|---|---|---|---|---|---|---|---|
| TEST WATER SHUT-OFF | ☐ | PULL OR ALTER CASING | ☐ | WATER SHUT-OFF | ☐ | REPAIRING WELL | ☐ |
| FRACTURE TREAT | ☐ | MULTIPLE COMPLETE | ☐ | FRACTURE TREATMENT | ☐ | ALTERING CASING | ☐ |
| SHOOT OR ACIDIZE | ☐ | ABANDON* | ☒ | SHOOTING OR ACIDIZING | ☐ | ABANDONMENT* | ☐ |
| REPAIR WELL | ☐ | CHANGE PLANS | ☐ | (Other) | | | |
| (Other) | | | | (NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.) | | | |

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

This well has been shut in since 1962. It is non-commercial and no remedial possibilities exist. We propose to plug and abandon as follows:

1. Set 7" 24# CIBP @ 2375' and cap w/2 sx of cement
2. Perforate 7" casing w/4 holes @ 1275' and pump in 100 sx of cement, leaving 100' of cement inside casing.
3. Place 10 sx of cement in top of well.

Erect dry hole marker. Clear and level location.

AMENDMENT: Increase cement plug on top of above bridge plug from 2 sacks to a 50 foot (minimum) cement plug. Hole to be filled with mud between plugs.

18. I hereby certify that the foregoing is true and correct

SIGNED O D Fletcher TITLE Dist. Drlg. Supervisor DATE 4/16/71

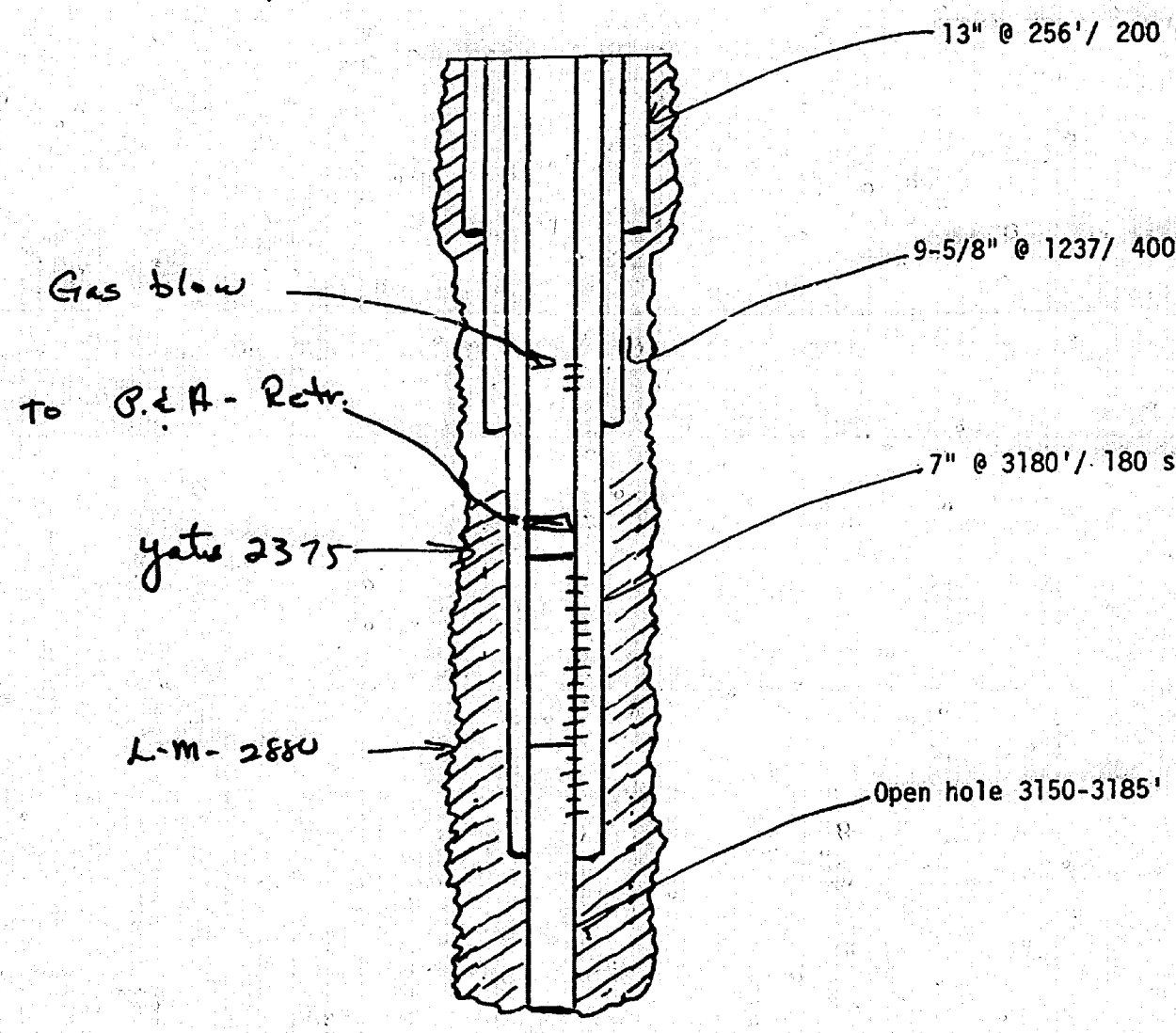
(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

APPROVED AS AMENDED
APR 19 1971
ARTHUR R. BROWN
DISTRICT ENGINEER

*See Instructions on Reverse Side

ARCO
CROSBY B-1
Unit N-28-25-37




See water report - open hole - 3150-3220

Perforations - 3118-2425 - 158 - treatment - 3000 gal. acid

from attached Sinclair report

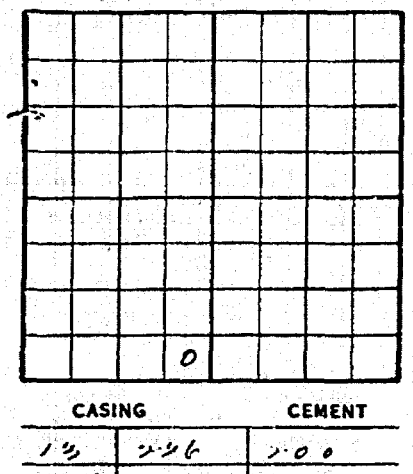
This does not separate Langlie Mattix from Yates:

Yates - 2375

Langlie-Mattix - 2880

Plugged back to 2612 Perf. 2580-2429, treatment - 500 gals. acid
from attached report

To plug set retainer @ 2375 and perf. 1225 - gas up back side (I was there, no cement in Yates)



COUNTY Lipscomb FIELD Lipscomb
SECTION 15 TWP. 7-S RANGE 24-E
SECTION ~~7~~ BLOCK ~~M~~ SURVEY
COMPANY Republic Prod Co
WELL NO. 1-B FARM NAME Crawford
FEET FROM LINE N ~~E~~ S 2310 W 2310
ELEVATION 3015 METHOD
CONTRACTOR Wilcox SCOUT
SPUDDED 7-8 COMPLETED: DATE FOR ~~BBLS. OIL~~
GRAVITY DISPOSITION ~~M. GAS~~
I. P. NATURAL TUB. CASG. PACKER

QTS. FT. TO FT. PROD. DATE
GALS. DATE
T. P. 3195 B. P. T. D. 3220 L

| CASING | | CEMENT |
|---|---|---|
| 13 | 226 | 200 |
| 7 5/8 | 1227 | 100 |
| 5 | 3150 | 150 |
| | | |
| | | |
| | 3211 | |

| | WATER | OIL & GAS |
|---|---|---|
| T. A. | | 350 3200-10 Amd. |
| T. S. | | |
| B. S. | | |
| T. Y. | | |
| T. BR. L. | | |
| T. W. L. | | |
| T. D. L. | | |
| T. D. SD. | | |

The Subsurface Library
P. O. Box 942
Midland, Texas

| DATE | | DATE |
|---|---|---|
| | AUG 26 1937 | |
| | Loc | |
| | OK | |
| 9-7 | K. W. Kelly | |
| 9-14 | 0-314 Sh N | |
| 21 | 1995 Sh L. I. Lip. | D. O. |
| 28 | 0-2748 L. | 424 - 2 Days |
| 5 | 3150 Sh L. DST 2050 | |
| | 3120 - 15 Min. 1 Hour Gas | 10 90 Water |
| | to Mud | |
| 10-12 | 3220 L. DST. 3125-25- | 3 1/2" D. C. |
| | 22 min 84.000 Gas 60 Mud | |
| | Lud | 24 Gas |

COMPLETION
OCT 21 1937

10 12 37

Well Data

Ruby S. Crossy "B" #1
Sec 28, Twp 25, Range 37-E, Lea County, N.M.
Jalmat Pool (Gas)

Completion date: March, 1942

Completed T.D. 2612'
By (Perf. 12 shots 2550-80; 65 shots 2464-85; 65 shots 2427-33; 120 shots 2468-2580
Elev-Surf. 3016
Initial Production After workover 11-50 - 2420 MCFPD
Present Prod: 375 MCFPD

The Subsurface Library
P. O. Box 942
Midland, Texas

Casing Record:
7" OD 24 # (10 thd) cemented w/ 150 sks @ 3146'

Completion data:
Perf. 3118-2425 w/158 shots - Treated w/3000 gal acid

Workover Record:
9-22-50 Squeezed all perfs. PB to 2612'
perf. 2580-2429 w/144 shots Treated w/500 gal Mud Acid.

Repollo Lanehart No. 1
NW/4 Sec. 28-25-37, Lea County

1. At TD of 3302', plugged back to 3010'. Langlie Mattix zone is at 2940 from Saunders No. 3 log.

2. Perforated from 2950-2914 - Yates-Langlie-Mattix, made water, and cemented with 50 sx. makes separation impossible.

3. Perforated 2690-2775 - made water. Cemented back with 50 sx. No separation between these zones.

4. Perforated up 2700' from 3302. Water open behind pipe. Source of water is big aquifier at 3300'.

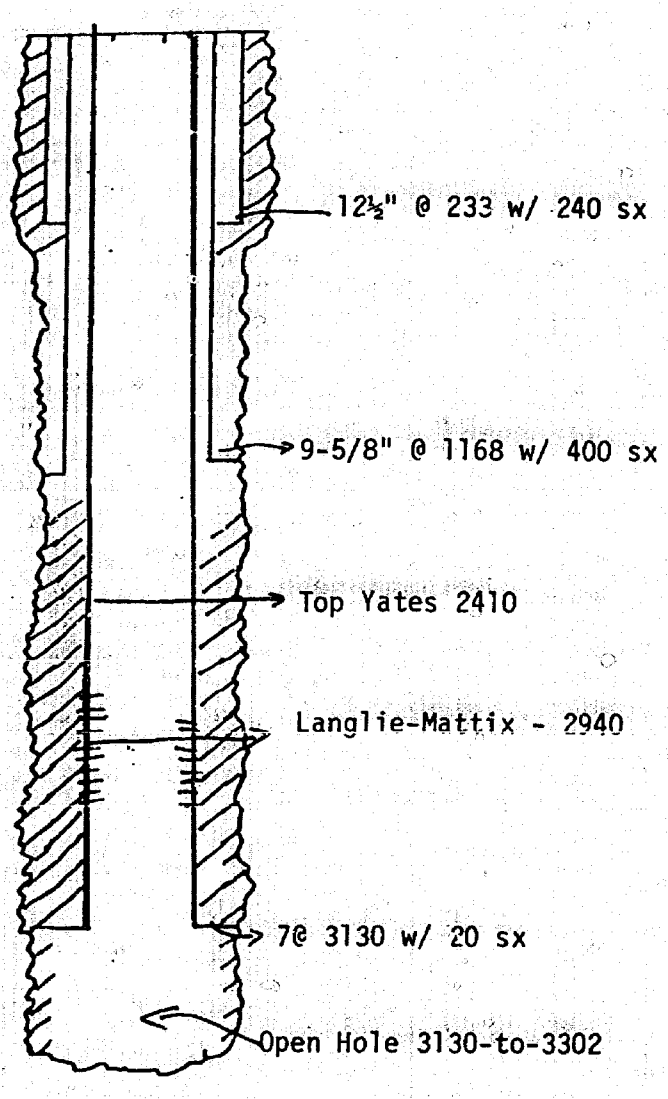
No separation between zones in this well. Poor cement job on pipe. This well is causing my water problems in Saunders # 3 Langlie-Mattix well and Saunders # 2 Jalmat well at 2200'. One of the highest Yates wells on platform.

well no. 2 on map

BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
BURLESON EXHIBIT NO. 4
CASE NO. 7294

REPOLLO LANEHART NO. 1

NW/4 - Unit D
28-25-37
Lea County

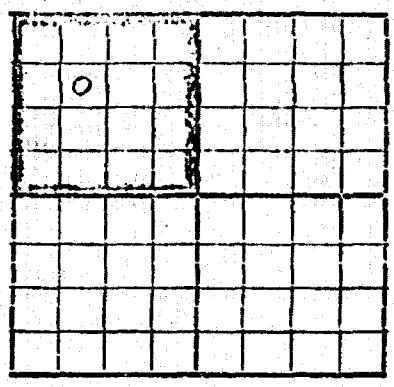



Prod. - Open hole - lots of water

Perfs - 2900-2980 - made water

Perfs. 2914 - 2950 - made water - open to main water zone

Yates & Langlie Mattix are still together with Langlie Mattix @ 2940'
Yates @ 2430'



State New Mexico County Lea

Company Repollo Oil Co

Farm Name John T. J. Lanehart Well No. 1

Description: Survey 28-25s-37e Co-od. 36

Sec. Blk. Twp. Rnge. Jal Sand

Feet From Lines: N. 990 E. S. W. 990

Elevation 3028 Method

Contractor [illegible] Scout C.F.Kimball

Spudded 5/3/36 Completed: Date For Bbls. Oil

Gravity Disposition M. Gas

I. P. Natural Tub. Casg. Packer

| Casing | | Cement |
|---|---|---|
| 12½ | 233 | 240 |
| 9⅝ | 1166 | 400 |
| 7 | 3130 | 200 |
| 2½ | 3302 | |
| Perforated | 2709 | |
| ½" Bottom Hole | | Choke. |

150 Qts. 3250 Ft. To 3302 Ft. Prod. Date 6/15/36

Gals. Date

T. P. 3210 B. P. T. D. 3302

| | Water | | Oil & Gas |
|---|---|---|---|
| T. A. | 920 | HBL +2108 | DST 3115-3190, 15 min, 90' mud + 1/2 BW gas |
| T. S. | | | DST 3181-3235, 25 min, 15' mud, slight show |
| B. S. | 2240 | DT | 3250-70 show |
| T. Y. | 2470 | A | 3290-94 " |
| T. Br. L. | 2270 | A +758 | 3294-98 " |
| T. W. L. | | | 3298-3302 " |
| T. D. L. | | | 3210-20 good sand |
| T. D. Sd. | | | |

| Date | MTM |
|---|---|
| 4/28 | C+D |
| 5/5 | 252 R [illegible] DW |
| 5/12 | 812 1 SDW |
| 5/19 | 1130 RR; RIX |
| 5/26 | 2360 L |
| 6/2 | 3186 L |
| | 3190 L stopping |
| 6/10 | 3302 L, tu 6 to flat |
| | 16 in 15-24 hr bailing 2% = 3293 BF |
| 6/15 | 2 hr rec 108-10 hre |
| | flow 224-1st 24 hr gauge, open 4 hrs. tubs |
| 6/22 | flow 30 oil/10 bw + 20 W ½" BH choke |
| 6/30 | I.P. 12 BO 30 W-24 hr 3/4" tubing choke |
| | GOR 1-2 Mgas |
| | Completed JUL 3 1936 |

| Date | |
|---|---|

The Subsurface Library
P. O. Box 942
Midland, Texas

Form C-102

DUPLICATE

# NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

## MISCELLANEOUS NOTICES

RECD FEB 10 1945

Submit this notice in triplicate to the Oil Conservation Commission or its proper agent before the work specified is to begin. A copy will be returned to the sender on which will be given the approval, with any modifications considered advisable, or the rejection by the Commission or agent, of the plan submitted. The plan as approved should be followed, and work should not begin until approval is obtained. See additional instructions in the Rules and Regulations of the Commission.

Indicate nature of notice by checking below:

| | | | |
|---|---|---|---|
| NOTICE OF INTENTION TO TEST CASING SHUT-OFF | | NOTICE OF INTENTION TO SHOOT OR CHEMICALLY TREAT WELL | |
| NOTICE OF INTENTION TO CHANGE PLANS | | NOTICE OF INTENTION TO PULL OR OTHERWISE ALTER CASING | |
| NOTICE OF INTENTION TO REPAIR WELL | XX | NOTICE OF INTENTION TO PLUG WELL | |
| NOTICE OF INTENTION TO DEEPEN WELL | | | |

Hobbs, New Mexico, (Place) Feb. 14, 1945 (Date)

OIL CONSERVATION COMMISSION,
Santa Fe, New Mexico.

Gentlemen:

Following is a notice of intention to do certain work as described below at the

Repollo Oil Company (Company or Operator) J. T. Lanehart "A" (Lease) Well No. 1 in N/2NE/4

of Sec. 28, T. 25S, R. 37E, N. M. P. M., Langlie Field,

Lea County.

### FULL DETAILS OF PROPOSED PLAN OF WORK

FOLLOW INSTRUCTIONS IN THE RULES AND REGULATIONS OF THE COMMISSION

Total Plugged Back Depth 3010'
7"OD Casing set @ 3150'

To plug off water through perforations from 2900 to 2950 and test zone at approximately 2650' for production.

To cement off perforation by Halliburton method, allow to set and test for shut off, and use sufficient cement to obtain objective.

To perforate 7"OD casing by Lane-Wells Company at recommended depths.

Approved FEB 19 1945, 19____
except as follows:

"APPROVAL CONDITIONED UPON COMPLIANCE WITH REQUIREMENTS OF OPC-WPB."

OIL CONSERVATION COMMISSION,

By Roy L. Yarbrough

Title OIL & GAS INSPECTOR

Repollo Oil Company
(Company or Operator)

By W. B. Rhees

Position Dist. Supt.

Send communications regarding well to

Name W. B. Rhees,

Address Box 1427, Hobbs, N.M.

FORM C-102

NEW MEXICO OIL CONSERVATION COMMISSION

RECEIVED APR 26 1937

Santa Fe, New Mexico

## MISCELLANEOUS NOTICES

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Indicate nature of notice by checking below:

| | | | |
|---|---|---|---|
| NOTICE OF INTENTION TO TEST CASING SHUT-OFF | | NOTICE OF INTENTION TO SHOOT OR CHEMICALLY TREAT WELL | |
| NOTICE OF INTENTION TO CHANGE PLANS | | NOTICE OF INTENTION TO PULL OR OTHERWISE ALTER CASING | |
| NOTICE OF INTENTION TO REPAIR WELL | X | NOTICE OF INTENTION TO PLUG WELL | |
| NOTICE OF INTENTION TO DEEPEN WELL | | | |

Hobbs, New Mexico (Place) April 4, 1937 (Date)

OIL CONSERVATION COMMISSION,
Santa Fe, New Mexico.

Gentlemen:

Following is a notice of intention to do certain work as described below at the

Repollo Oil Company (Company or Operator) J.T.Lanehart "A" (Lease) Well No. 1 in N/2NW/4 of Sec. 28, T. 25S, R. 37E, N. M. P. M., Langlie Field, Lea County.

DUPLICATE

### FULL DETAILS OF PROPOSED PLAN OF WORK

FOLLOW INSTRUCTIONS IN THE RULES AND REGULATIONS OF THE COMMISSION

Clean hole to bottom 3302' and cement W/ 65 sacks to shut off bottom-hole water.

Propose to shoot upper pay with 30 quarts of nitroglycerin from 3261 to 3276
Present Production- Approx. 3 Bbl. oil & 40 Bbl. Water
Purpose of shot- to increase Production
Formation to be shot - Lime & Sand
Inner string casing - 7"OD @ 3150

APR 26 1937

Approved _____, 19____

except as follows:

OIL CONSERVATION COMMISSION,
By Guy Shepard
Title Oil & Gas Inspector

Repollo Oil Company (Company or Operator)
By L. Surrett
Position Dist. Supt.
Send communications regarding well to
Name L. Surrett
Address Hobbs, N.M.

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

# MISCELLANEOUS REPORTS ON WELLS

Submit this report in triplicate to the Oil Conservation Commission or its proper agent within ten days after the work specified is completed. It should be signed and sworn to before a notary public for reports on beginning drilling operations, results of shooting well, results of test of casing shut-off, result of plugging of well, and other important operations, even though the work was witnessed by an agent of the Commission. Reports on minor operations need not be signed and sworn to before a notary public. See additional instructions in the Rules and Regulations of the Commission.

Indicate nature of report by checking below:

| | | | |
|---|---|---|---|
| REPORT ON BEGINNING DRILLING OPERATIONS | | REPORT ON REPAIRING WELL | X |
| REPORT ON RESULT OF SHOOTING OR CHEMICAL TREATMENT OF WELL | | REPORT ON PULLING OF OTHERWISE ALTERING CASING | |
| REPORT ON RESULT OF TEST OF CASING SHUT-OFF | | REPORT ON DEEPENING WELL | |
| REPORT ON RESULT OF PLUGGING OF WELL | | | |

Hobbs, New Mexico (Place) April 20, 1937 (Date)

RECEIVED MAY 28 1937 OIL CONSERVATION COMMISSION

OIL CONSERVATION COMMISSION,
Santa Fe, New Mexico.

Gentlemen:

Following is a report on the work done and the results obtained under the heading noted above at the Repollo Oil Company (Company or Operator) J. T. Lanehart"A" (Lease) Well No. 1 in the N/2NW/4 of Sec. 28, T. 25S, R. 37E, N. M. P. M., Langlie Field, Lea County.

The dates of this work were as follows: 4/15/37

Notice of intention to do the work was [~~not~~] submitted on Form C-102 on 4/15/37 19

and approval of the proposed plan was [~~not~~] obtained. (Cross out incorrect words.)

## DETAILED ACCOUNT OF WORK DONE AND RESULTS OBTAINED

Cemented hole from 3281'(Bottom) to 3010'(Top of cement). Hole tested dry. Perforated casing every two feet from 2950 to 2914( 18 holes) by Lane-Wells Casing Perforator.
Perforated casing with 13 holes from 2900' to 2914'by Lane-Wells Casing perforator. Found gas production from 2900 to 2914' and pressurebuilt up to 650# in short time.

Gas tested - 4,500,000 Cu.feet

DUPLICATE

Witnessed by Mr. R. C. Brandon (Name) Weir Drlg. Co., (Company) (Title)

Subscribed and sworn to before me this 24 day of May 19 37

Notary Public

My Commission expires 1-10-24-39

I hereby swear or affirm that the information given above is true and correct.

Name L. Lemmick

Position Dist. Supt.

Representing Repollo Oil Company (Company or Operator)

Address Hobbs, N.M.

Remarks:

Guy Shepard (Name)

Oil & Gas Inspector (Title)

MAY 28 1937

FORM C-103

DUPLICATE

# NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

RECEIVED MAR 21 1945

## MISCELLANEOUS REPORTS ON WELL

Submit this report in triplicate to the Oil Conservation Commission or its proper agent within ten days after the work specified is completed. It should be signed and sworn to before a notary public for reports on beginning drilling operations, results of shooting well, results of test of casing shut-offs, result of plugging of well, and other important operations, even though the work was witnessed by an agent of the commission. Reports on minor operations need not be signed and sworn to before a notary public. See additional instructions in the Rules and Regulations of the Commission.

Indicate nature of report by checking below:

| | | | |
|---|---|---|---|
| REPORT ON BEGINNING DRILLING OPERATIONS | | REPORT ON REPAIRING WELL | XX |
| REPORT ON RESULT OF SHOOTING OR CHEMICAL TREATMENT OF WELL | | REPORT ON PULLING OR OTHERWISE ALTERING CASING | |
| REPORT ON RESULT OF TEST OF CASING SHUT-OFF | | REPORT ON DEEPENING WELL | |
| REPORT ON RESULT OF PLUGGING OF WELL | | | |

Hobbs, New Mexico, March 19, 1945
Place Date

OIL CONSERVATION COMMISSION,
Santa Fe, New Mexico.

Gentlemen:

Following is a report on the work done and the results obtained under the heading noted above at the

Repolle Oil Company (COMPANY OR OPERATOR) J. T. Lanehart (LEASE) Well No. 1 in the

NE/4 NW/4 of Sec. 28, T. 25S, R. 37E, N. M. P. M.,

Langlie Field, Lea County

The dates of this work were as follows: as shown

Notice of intention to do the work was ~~(not)~~ submitted on Form C-102 on 2/14/45 19____ and approval of the proposed plan was (was not) obtained. (Cross out incorrect words)

## DETAILED ACCOUNT OF WORK DONE AND RESULTS OBTAINED

2/15/45- Cemented back from 3010' to 2842' with 100 sacks cement by Halliburton.
2/22/45- Top Cement 2842' bailed hole dry & tested 1 Hr. Tested dry and perforated casing by Lane-Wells w/ 120 holes from 2800 to 2840. 1080' Salt Water in hole unable to lower by bailing.
2/23/45- Cemented with 50 sacks by Halliburton. WOC.
2/27/45- Top Cement 2736' SLM, bailed dry, set 1 Hr. teste dry. Perforated casing by Lane-Wells w/ 54 holes from 2690 to 2775', Est. 200,000 Cu.Ft.Gas and 2000' Water in hole in 3 Hrs.
2/28/45- Cemented with 50 sacks by Halliburton. WOC
3/6/45 - Top Cement 2775' SLM, bailed hole dry, set 1 hr. Tested dry, perforated casing from 2752 to 2773 with 52 holes. 500' water in hole- no gas.
3/7/45 - Cemented with 25 sacks. WOC.- 3/11/45-Top Cement 2755 SLM, bailed hole dry. Tested 1 Hr. Tested Dry. Perf. Csg. with 23 holes f/ 2743 to 2752'. 1000' Water(Sulphur) 30Min. Cemented w/ 30 Sacks. WOC. 3/14/45-Top Cement 2726' SLM, Bailed hole Dry, Test 1Hr. Test Dry. Perforated Csg. w/40Holes f/2700' to 2717', filled up 300' with Sulphur Water in 30 Min. Cemented w/ 30 Sks. WOC- 3/17/45- Top Cement 2693' SLM. Bailed Dry. OK. Shot w/ 25 holes f/ 2670 to 2690 Filled up 1000' with water in 4 Hrs.- no gas or oil- Shut Down.

Witnessed by ____ Name ____ Position ____

Subscribed and sworn to before me this 19th day of March 1945

Notary Public

My Commission expires 2-1-46

I hereby swear or affirm that the information given above is true and correct.

Name ____

Position Dist.

Representing Repolle Oil Company (Company or Operator)

Address Hobbs, New Mexico

Remarks:

Roy Yarbrough
OIL & GAS INSPECTOR

Name ____

Title ____

El Paso (Texas Co) Lanehart No. 1
NE/4 Sec. 29-25-37-Lea County

1. Approximate top of Langlie-Mattix 2820' from Burleson & Huff Coll No. 1.

   a. Letter and sketch shows large volume of water at 3300'.

2. No cement in Yates as bradenhead gas used for gas lift in letter.

3. Set plug at 2830 in Langlie Mattix and no water shut off. Set plug at 2640' in Yates - no water shut off.

4. Plugged well with plug in 5" pipe at 2640 in Yates. Still have communication with lower zones.

5. No separation between zones in this P & A well being less than 1/2 mile from requested disposal well.

6. Burleson & Huff P & A the Coll No. 1 in 1969. 990' away which had 800 # SIP and gas in the Yates with 12¢ gas price. Zone in Yates is watered out in Coll "A"

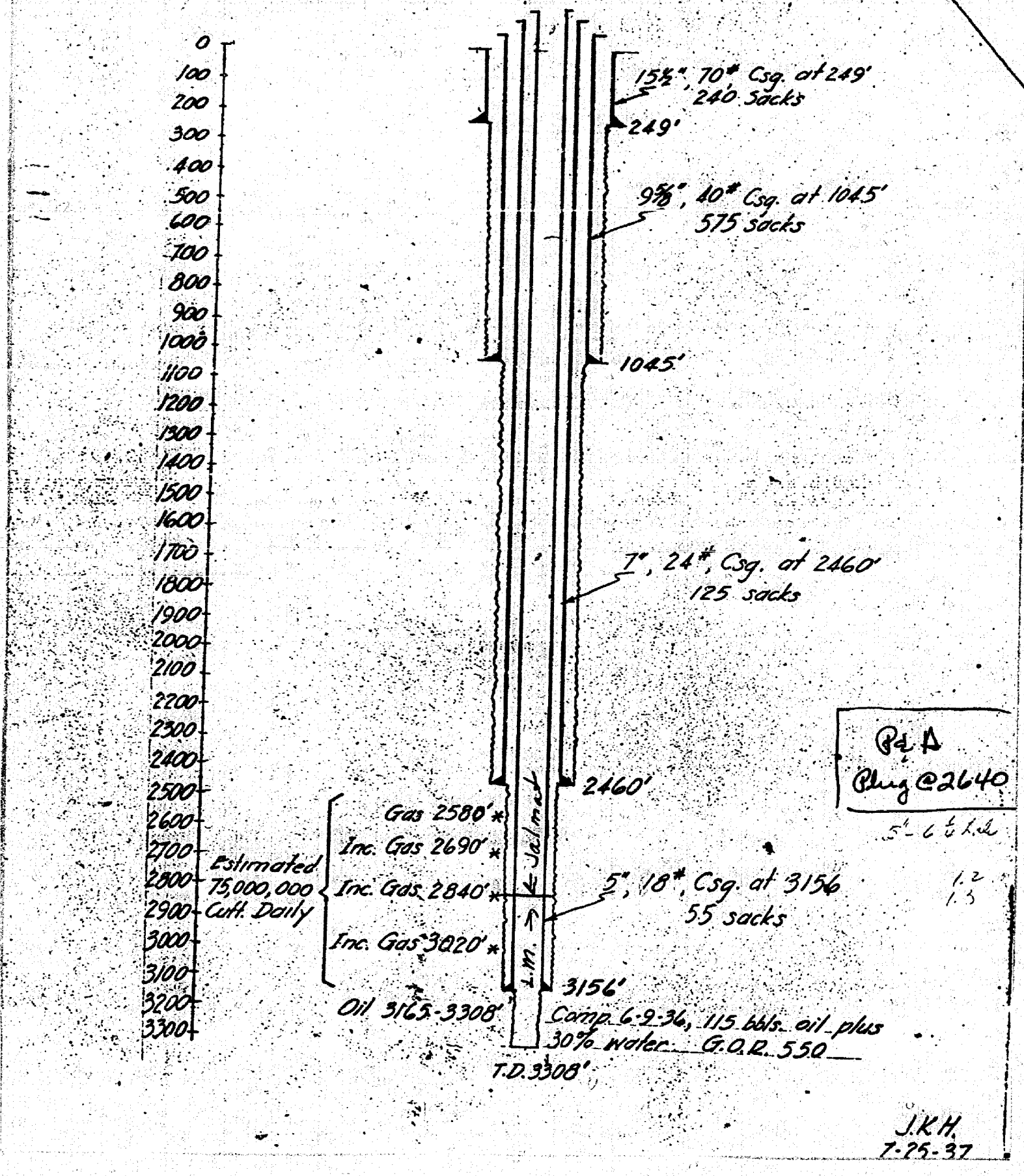
No. 2. Source of water - main aquifier at 3300'. No separation.

BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
Burleson EXHIBIT NO. 5
CASE NO. 7294

THE TEXAS CO PANY

(8)

THE TEXAS COMPANY'S W. T. LANEHART
WELL No. 1 SEC. 29, T 25 S, R 37 EAST
LANGLIE AREA, LEA CO, NEW MEXICO.




Pd A
Plug @ 2640

5½ Lnd

J.K.H.
7-25-37

THE TEXAS CO ANY

Wink, Texas, July 26, 1937

41516 - W. T. Lanehart Lease
Lea County, New Mexico

Mr. Guy Shepard,
State of New Mexico,
Oil Conservation Commission,
Hobbs, New Mexico.

Dear Sir:

Reference is made to our W. T. Lanehart well No. 1 in the Langlie area and permission to gas lift this well as discussed with you personally in Santa Feeon July 15.

We are enclosing herewith a sketch showing pertinent data on this well and displaying 5" production casing, which was set through high pressure cavernous gas zone encountered around 2700' and subsequent gas horizons for the purpose of obtaining a low gas/oil ratio well. As indicated on the attached sketch, initial production of this well when completed on June 9, 1936, was 115 bbls. oil plus 30% water in 15 hours, natural, flowing with gas/oil ratio of 550.

Since completion date, however, water percentage has increased to the extent that well can no longer be made to flow naturally, except intermittently, and we shall therefore have to resort to artificial means of lifting oil. A tabulation displaying oil-water-gas relationships of this well here follows:

| DATE | OIL Bbls. | WATER Bbls. | WATER % | GAS M. Cu. Ft. |
|---|---|---|---|---|
| June, 1936 (½ Month) | 1743 | 1160 | 40 | 1670 |
| July | 3201 | 2620 | 45 | 4300 |
| August | 3388 | 2760 | 45 | 5450 |
| Sept. | 2837 | 2310 | 45 | 4760 |

| DATE | OIL BBLS. | WATER BBLS. | WATER % | GAS M. Cu. Ft. |
|---|---|---|---|---|
| 1936 Continued. | | | | |
| October | 2825 | 2315 | 45 | 3510 |
| November | 2977 | 2435 | 45 | 4140 |
| December | 3190 | 3190 | 50 | 4140 |
| January, 1937. | 2773 | 6470 | 70 | 2050 |
| February | 2471 | 6050 | 71 | 2090 |
| March | 2689 | 8067 | 75 | 2420 |
| April | 2347 | 9388 | 80 | 4650 |
| May | 1748 | 15732 | 90 | 5220 |
| June | 826 | 26700 | 97 | 2765 |

Other wells in the vicinity of our Lanehart No. 1 are producing large volumes of gas from gas producing horizons which correspond to horizons from which this bradenhead gas, which we desire to use for gas lift purposes, would be produced. Some of these wells are as follows:

(1) Pueblo Crosby well No. 1, Sec. 29, T25S, R37E. El Paso Gas Company taking from one to two million Cu. Ft. per day and have been so doing for past several years. Total depth of this well is 3100' and production string of casing was set at 2614'. Initial production 30,000,000 Cu. Ft. per day.

(2) Continental Sholes "A" well No. 1, Sec. 29, T25S, R37E. E
R37E. El Paso Gas Company has been taking upwards of 3 Million Cu. Ft. per day from this well and are now taking around 1-1/2 Million Cu. Ft. Total depth is 3030' and 5-3/16" production string is set at 2668'. Initial production was 70,000,000 Cu. Ft. daily.

(3) Jal Natural Gas Company B. M. Justis well No. 1, Sec. 19, T25S, R37E. El Paso Gas Company taking gas varying from one and one half million to three million Cu. Ft. per day

over past several years. Total depth is 2795' and 8-1/4" production string of casing was set at 2615'. Initial production 25,000,000 Cu. Ft. daily.

(4) Harry Leonard J. W. Justis well No. 1, Sec. 20, T25S, R37E, was completed May 5, 1936, at plugged back total depth of 2970'. Production casing string was set at 2660'. Initial production was 20 barrels oil with 2,500,000 Cu. Ft gas daily.

(5) The Sun Oil Company W. T. Lanehart well No. 1, Sec. 20, T25S, R37E, was completed June 18, 1936, at total depth of 2757' with initial production of 22,000,000 Cu. Ft. gas per day.

(6) Jal Natural Gas Company's Justis well No. 1, a diagonal NE offset to our Lanehart lease was recently completed at total depth of 3020' blowing 14 million Cu. Ft. gas with 65 barrels oil per day. On July 22nd, this well was producing 9 Million Cu. Ft. gas and 55 bbls. oil per day. 7" Production string was set at 2890'.

We respectfully request that you grant permission to use sufficient gas from the bradenhead of our W. T. Lanehart well No. 1 to gas lift oil production from this same well for the reasons set out above.

Yours very truly,

THE TEXAS COMPANY
Producing Dept.,

By _____
District Supt.

JKH:WRJ

Form C-102

DUPLICATE

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

RECD JUL 6 '45

## MISCELLANEOUS NOTICES

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Indicate nature of notice by checking below:

| | | | |
|---|---|---|---|
| NOTICE OF INTENTION TO TEST CASING SHUT-OFF | | NOTICE OF INTENTION TO SHOOT OR CHEMICALLY TREAT WELL | |
| NOTICE OF INTENTION TO CHANGE PLANS | | NOTICE OF INTENTION TO PULL OR OTHERWISE ALTER CASING | |
| NOTICE OF INTENTION TO REPAIR WELL | | NOTICE OF INTENTION TO PLUG WELL | X |
| NOTICE OF INTENTION TO DEEPEN WELL | | | |

Jal, New Mexico (Place) July 2, 1945 (Date)

OIL CONSERVATION COMMISSION,
Santa Fe, New Mexico.

Gentlemen:

Following is a notice of intention to do certain work as described below at the

El Paso Natural Gas Co. (Company or Operator) Lanehart (Lease) Well No. 1 in C-NE¼

of Sec. 29, T. 25, R. 37, N. M. P. M., Langlie Field,

Lea County.

## FULL DETAILS OF PROPOSED PLAN OF WORK

FOLLOW INSTRUCTIONS IN THE RULES AND REGULATIONS OF THE COMMISSION

After setting Lane-wells bridging plugs at 2830 and 2640 and thoroughly testing each zone this well was still making 100% water with avvery small amount of gas which eleminate all possible producing zones for a commercial production. We therefore request permission to plug and abandon this well in the following manner. Place a 50' cement plug in base of 5½" casing and pull same. Then place a 50' cement plug at approximately 2300' or base of salt section and pull as much of the 7" as possible. Place another 50' cement plug at 1000' in the base of 9 5/8 with another cement plug in top of 9 5/8". The 9 5/8" and 15½" casing will be left in hole as each string was circulated with cement and balance of hole filled with heavy mud. The location will be leveled and cleaned up and proper marker placed at location.

Approved JUL 6 1945, 19
except as follows: A Bridge Should Be Set under Each cement Plug to hold cement in place

OIL CONSERVATION COMMISSION,
By Roy Yarbrough
Title Oil & Gas Inspector

El Paso Natural Gas Co.
(Company or Operator)
By W. K. Davis
Position Superintendent
Send communications regarding well to
Name W. K. Davis
Address Drawer "H"
Bennett, New Mexico

Form C-102

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

# MISCELLANEOUS NOTICES

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| NOTICE OF INTENTION TO REPAIR WELL | X | NOTICE OF INTENTION TO PLUG WELL | |
| NOTICE OF INTENTION TO DEEPEN WELL | | | |

Wink, Texas (Place) December 12,1938 (Date)

OIL CONSERVATION COMMISSION,
Santa Fe, New Mexico.

DUPLICATE

Gentlemen:

Following is a notice of intention to do certain work as described below at the

The Texas Company W.T. Lanehart Well No. 1 in NE-1/4

of Sec. 29, T. 25 S., R. 37 E., N. M. P. M., Langlie Field,

Lea County.

FULL DETAILS OF PROPOSED PLAN OF WORK
FOLLOW INSTRUCTIONS IN THE RULES AND REGULATIONS OF THE COMMISSION

Total depth - 3308' Lime.

This well was completed June 9,1936 with an initial production of 151 barrels oil plus 30% water flowing with a gas oil ratio of 550. The water percentage increased until it was necessary to use gas from the bradenhead of the same well to gas lift the well. Gas-lift operations were commenced in July 1937,and the well produced using this method until June 22,1938,when the water percentage increased to 100% and the well was shut in.

We anticipate moving in tools and plugging this well back by stages and testing in an effort to plug off this water and again make a producer of this well.

RECEIVED
DEC 14 1938
HOBBS OFFICE

Approved DEC 14 1938, 19
except as follows:

OIL CONSERVATION COMMISSION

Title Pete Walker Dist. Supv.

By OIL & GAS INSPECTOR

The Texas Company
Company or Operator

By L. T. Shepherd

Position District Superintendent

Send communications regarding well to

Name The Texas Company

Address Drawer X

Wink, Texas

Form C-1

DUPLICATE

# OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

## MISCELLANEOUS REPORTS ON WELLS

RECD SEP 4 - 1945

Submit this report in triplicate to the Oil Conservation Commission or its proper agent within ten days after the work specified is completed. It should be signed and sworn to before a notary public for reports on beginning drilling operations, results of shooting well, results of test of casing shut-off, result of plugging of well, and other important operations, even though the work was witnessed by an agent of the Commission. Reports on minor operations need not be signed and sworn to before a notary public. See additional instructions in the Rules and Regulations of the Commission.

Indicate nature of report by checking below:

| | | | |
|---|---|---|---|
| REPORT ON BEGINNING DRILLING OPERATIONS | | REPORT ON REPAIRING WELL | |
| REPORT ON RESULT OF SHOOTING OR CHEMICAL TREATMENT OF WELL | | REPORT ON PULLING OR OTHERWISE ALTERING CASING | |
| REPORT ON RESULT OF TEST OF CASING SHUT-OFF | | REPORT ON DEEPENING WELL | |
| REPORT ON RESULT OF PLUGGING OF WELL | X | | |

Jal, New Mexico (Place) August 31, 1945 (Date)

OIL CONSERVATION COMMISSION,
SANTA FE, NEW MEXICO.
Gentlemen:

Following is a report on the work done and the results obtained under the heading noted above at the

El Paso Natural Gas Co. (Company or Operator) Lanahart (Lease) Well No. 1 in the

C-NE¼ of Sec. 29, T. 25, R. 37, N. M. P. M.,

Langlie Field, Lea County.

The dates of this work were as follows: August 17, 1945

Notice of intention to do the work was (was not) submitted on Form C-102 on July, 2, 1945

and approval of the proposed plan was (was not) obtained. (Cross out incorrect words.)

DETAILED ACCOUNT OF WORK DONE AND RESULTS OBTAINED

Filled hole with heavy mud and placed 50' cement plug on top of Lane Wells bridging plug at 2640. Shot 5" casing at 1800 feet and pulled 60 joints. Shot 7" casing at 1200' and pulled. Spotted bridge and 50 feet cement plug in top of 7" at 1800, and bridge and 50 feet cement plug at 1000 in base of 9 5/8" casing. Placed bridge at 50' and circulated cement into celler. The location has been leveled and proper marker is in place.

Witnessed by George Gibbs (Name) Lea County Casing Pullers (Company) Unit Operater (Title)

Subscribed and sworn before me this 1 day of Sept, 1945

George E. Kendrick
Notary Public

My commission expires Oct 13 1945

I hereby swear or affirm that the information given above is true and correct.

Name R. H. McKay

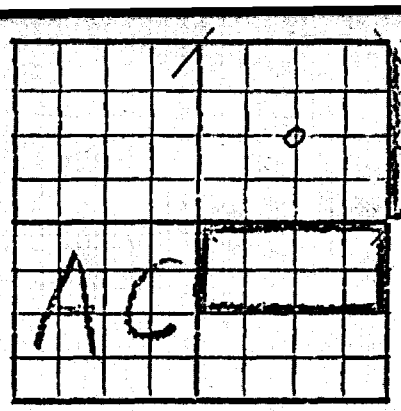
Position Production Foreman

Representing El Paso Natural Gas Company (Company or Operator)

Address Drawer "H", Bennett, New Mexico

Remarks:

Roy Yarbrough
(Name)
Oil & Gas Inspector
(Title)




State New Mexico County Lea

Company Texas Company & Republic

Farm Name Lanehart Well No. 1

Description: Survey 29-25s-37e Co-od. 36

Sec. Blk. Twp. Rnge. JAL SAND AR

Feet From Lines: N. 1320' E. 1320' S. W.

Elevation 3031 Method

Contractor Wade-Hill-Thompson Scout C. F. KIMBALL

Spudded 3/15/36 Completed: Date For

Gravity Disposition

I. P. Natural Tub. Casg. Packer

1/4 mile W #5 Lea & 1/4 mile N #11A Lea, Acreage Contr

Qts. Ft. To Ft. Prod. Date

Gals. Date

T. P. 3245 B. P. T. D. 3308

| Casing | | Cement |
|---|---|---|
| 15½ | 253 | 250 |
| 9 5/8 | 1045 | 575 |
| 7 | 2446.0 | 125 |
| 5½ | 3161 | 55 |
| 2 | 3255 | |

| | Water | | | Oil & Gas |
|---|---|---|---|---|
| T. A. | 960 B | +2071 | 18' high Pueblo #16 | 2545-70 1/2 15-20 Mgas Hi rock |
| T. S. | | | | 2687-90 show gas |
| B. S. | 3330 S | +701 | 153' high to " " " | 2725-56 " " " |
| T. Y. | | | | 2775-70 Low Oil & Gas |
| T. Br. L. | 2350 Lost +681 | | | 2746 gauged 1/2 Mcfd |
| T. W. L. | | | | 2756-70 1/2 60-65 Mgas |
| T. D. L. | | | | 3268-92 Show |
| T. D. Sd. | | | | 3297-3308 show |

| Date | Rig up First Report MAR 14 1936 |
|---|---|
| 3/17 | 340 RR 1 |
| 3/24 | 1039 a |
| 3/31 | 1605 A+R |
| 4/7 | 2570 L Killing gas |
| 4/11 | 2636 L WOC 7" |
| 4/15 | drlg plug |
| 4/21 | 2790 L Killing gas drill |
| 4/28 | WOC 650 ahead Drill |
| 5/5 | 2770 WOC 500 ahead Drill |
| 5/12 | 3000 |
| 5/19 | Drill Ahead - Stuck Drill |
| | Work on Pipe - Shot & gauged |
| | 6 MCF 170 Mgas |
| 5/25 | 3150 L, ream 5½" to 3161 Ran |
| | Ran 5½" Liner to 3161 |
| 6/2 | 3161 L WOC + ream SLM 3150=61 |
| 6/8 | 3308 L Ream 15½ hole (1:30 AM-12 noon |
| | on 6/8/36 309 ft in 9 hrs Ream 8¾ Hole |
| | Circ 11 ph 30% dry Wash Tool 4:30 PM |
| | 6/8/36 Insta |
| 6/9 | Prep to run Tubing |

| Date | |
|---|---|
| 6/16 | Flow 145-12 hrs, plus 40% W on 4 |
| | 2 MCFD 4 Mgas |
| 6/23 | 16 ph 37% W |
| 6/30 | I.P. 16 ph, cut 35% W, Tubing 14 Mg |
| | no Shut Choke in tbg |
| | C.P. 384-24 hrs |
| | Completed JUL 3 1936 |

The Subsurface Library
P. O. Box 943
Midland, Texas

3 - 1
30 - 7
2 - 7

CROSBY "A" No. 2
Proposed Injection Well
Sec. 28 - 25 - 37 - Lea

Federal Lease - file not available to me in short time I had for hearing.

1. On Arco log - on cross-section- they show that their records had old perfs 2618' to 2855', which had water channeling problems and was reason for P & A well.

2. We know that perfs at 3000' in Langlie-Mattix were also watered out. Shows that Langlie-Mattix and Yates not separated.

3. When they plugged the well they only put a plug @ 2500' which is approximately at top of the Yates. When this well was plugged in 1971 I was a Jal that day and know that when they perforated the 7" casing at 1325' the well started making a large volume of gas showing that they had no primary cement job over the Yates.

4. The encroachment of water from poorly plugged wells also affected the Arco # 1 ARC Federal as shown completed for 645 MCFPD on a 16/64" choke, no water. Tubing pressure 825#. 2½ years later well was plugged because Yates zone watered out. Source of water - main aquifier at 3300'. The Crosby "A" # 3 did not have separation between the Langlie-Mattix and Jalmat.

5. I am against using this well for injection because old pipe was not cemented properly. New liner did not fix the cement job. They squeezed old pipe but that did not repair cement job over the entire section. We have enough water problems without injecting more water in these zones.

6. Test of 223 bbls of water, 6 bbls of oil, SIP 875# shows good gas zone that has water that came from our big aquifier. Oil did also as this is too high for oil.

7. This well would be injecting water in the pay zone of offset wells in every direction. This is no water flood. This water should affect wells up dip first, being Lewis B. Burleson, Inc. leases.

Well No 4 on map

BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
Burleson EXHIBIT NO. 6
CASE NO. 7294

# ARCO (REPUBLIC PRODUCTION) CROSBY A No. 2

## PROPOSED INJECTION WELL

Perfs: 2375- 3075 -
Not squeezed off
Chev's perfs!

Drilled cement 2460-95
Drilled retainer @ 2495
Drilled cement to 2509'

No cement from 2509 - 3115 ***

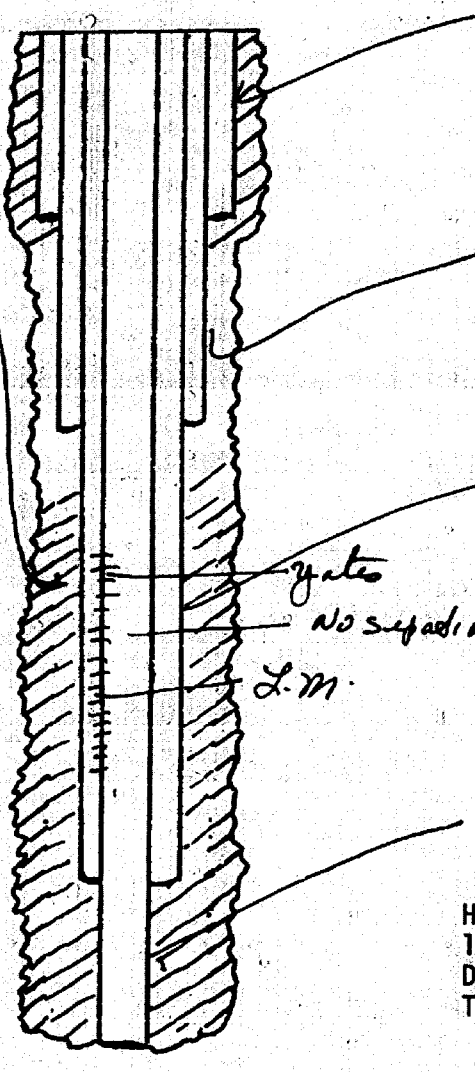
Yates & Queen are open together.

Perfs - all kinds

from attached Arco's log on
Cross-section 2375-2380'
+ 2520 to 3075'

Note: Poor pipe
Communication from 120' in
Queen to Tansill - Yates.

Note: no cement dug as above.




12½ - 270' w/ 200 sx
1976

9-5/8 - 1284' - 400 sx
1936

7 - 31085 - 200 sx
1936

Bond log - no bond or
poor bond to 2360*

All pipe in poor cond. **

4½ - 3400 - 200 sx DV Tool
300 sx

Had to Braden head squeeze
150 sx - hole in 7" pipe
DV tool - top of Yates - 2409
Trouble cementing ****

* Drilling report 2-25-81 attached

** Drilling report 2-26-81 - attached

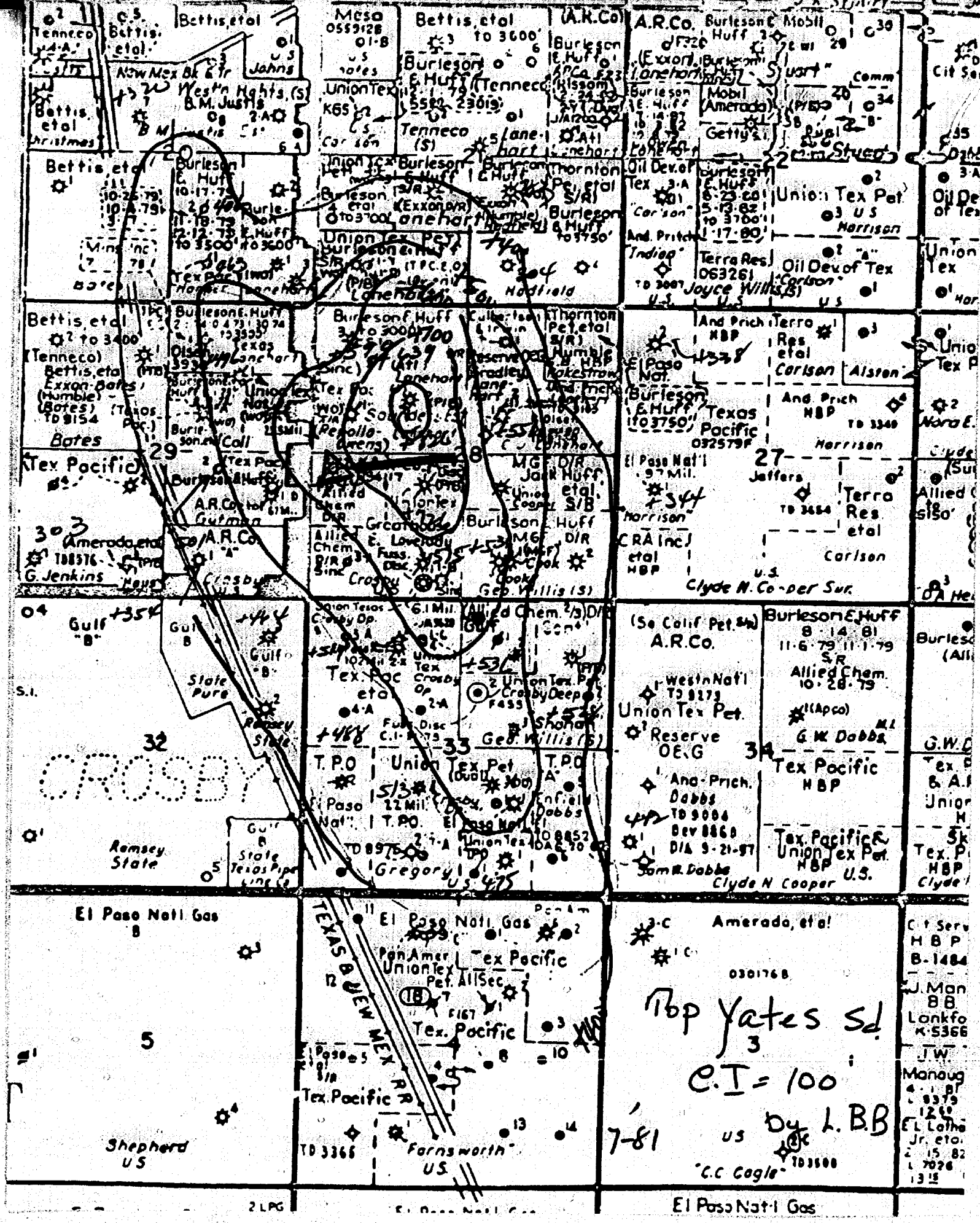
*** Drilling report 2-27-81 - attached

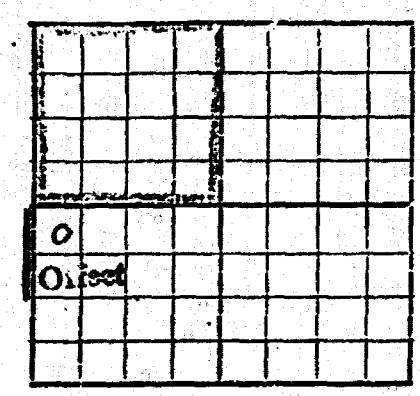
**** Drilling report 3-26-81 - attached

***** From Arco log on Cross-section

Perfs - 3030-3044, SIP 875#
flowed gas & water, as good
as Lewis B. Burleson, Inc.'s
Saunders # 3 - 200 bbls water
per day, flowing on 100# TP
200 MCFPD - 10/64" choke

Not in oil but gas, flat to
Lewis B. Burleson, Inc.
Saunders # 3


CROSBY
Bettis, etal
Tenneco
Bettis, etal
New Mex Bk & Tr
Western Hghts. (S)
B.M. Justis
Bettis, etal
Christmas
Bettis, etal
Burleson E. Huff
10-17-79
10-26-79
10-A-79
11-18-79
12-12-79
E. Huff
to 3500'
to 3600'
Tex Pac
Lanehart
Mesa
055912B
01-B
Union Tex
K65
Car 60n
Bettis, etal
to 3600'
Burleson E. Huff
(Tenneco)
5580
23019
Tenneco
(S)
Lane-Hart
(A.R.Co)
Burleson E. Huff
(Kissom)
Atl
Lanehart
A.R.Co.
Burleson E. Huff
Huff
(Exxon)
Lanehart
Mobil
(Amerada)
Getty's
Oil Dev. of Tex
Carlson
And. Pritch
"Indep"
TD 3087
Burleson E. Huff
5-23-80
5-13-82
to 3700'
1-17-80
Terra Res.
063261
Joyce Willis (S)
Union Tex Pet
Morrison
Oil Dev. of Tex
Carlson
Stuart
Comm
Bettis, etal
Burleson E. Huff
2 to 3400
(Tenneco)
Bettis, etal
Exxon-Bates
(Humble)
(Bates)
TD 3154
Bates
Burleson E. Huff
Union Tex
Nat
Burleson Coll
Tex Pacific
Tex Pac
Burleson E. Huff
A.R.Co
Gutman
A.R.Co
"A"
Amerada, etal
TD 3376
G. Jenkins
Burleson E. Huff
to 3000'
Union Tex
Sohio
(Petrollo-Greens)
Thornton Pet, etal
S/R
Humble
Hokestraw
Allied Chem
D/R
Greatbatch
E. Lovelady
Crosby
Burleson E. Huff
MG
Cook
MG D/R
Jack Huff, etal
S/B
Union Tex
Cosgrove
Geo. Willis (S)
El Paso Nat
Burleson E. Huff
to 3750'
Texas Pacific
0325798
El Paso Nat'l
97 Mil.
Morrison
CRA Inc.
etal
HBP
And Prich
HBP
Terro Res
etal
Carlson
Alston
And Prich
HBP
TD 3340
Morrison
Jeffers
Terro Res
etal
Carlson
Clyde N. Cooper Sur.
Gulf
"B"
State
Pure
Ramsey
State
Allied Chem. 2/3 D/R
Union Texas
Crosby Dp.
Tex. Pac
etal
Union Tex
Crosby Dp.
Union Tex. Pet
Crosby Deep
Shonan
Geo. Willis (S)
Fuss
Disc
(So Calif Pet. 5/6)
A.R.Co.
Western Nat'l
TD 8273
Union Tex Pet.
Reserve
O.E.G
Ana-Prich.
Dabbs
TD 9004
Dev 8868
DIA 9-21-87
Sam M. Dabbs
Burleson E. Huff
8-14-81
11-6-79
11-1-79
S/R
Allied Chem.
10-28-79
(Apco)
G.W. Dabbs
Tex Pacific
HBP
Tex. Pacific
Union Tex Pet.
HBP
U.S.
Clyde N Cooper
Ramsey
State
Gulf
B
State
Texas Pipe
Line Co
T.P.O
Gregory
Union Tex Pet
(Dual)
T.P.O
El Paso Nat'l
TD 8852
T.P.O
US 175
El Paso Nat'l Gas
B
Shepherd
US
El Paso Nat'l Gas
Pan Amer
Union Tex
Pet. All Sec.
Tex. Pacific
TEXAS & NEW MEX R.R.
Tex. Pacific
TD 3366
Farnsworth
US
Amerado, et al
0301768
Bop Yates Sd
3
C.I = 100
Dy L.B.B
7-81
US
"C.C Cagle"
TD 3588
El Paso Nat'l Gas
2 LPG




| Casing | | Cement |
|---|---|---|
| 13½ | 270 | 200 |
| 8⅝ | 1094 | 1100 |
| 7 | 3105 | 200 |

State New Mexico County Lea

Company Republic Prod. Co.

Farm Name R. S. Crosby Well No. 2

Description: Survey Sec. 28-25s-37e Co-od. 36

Sec. Blk. Twp. Rnge. Jal Sand

Feet From Lines: N. E. S. 2310 W. 330

Elevation 3[illegible]4 Method

Contractor [illegible] Scout C. F. Kimball

Spudded 8/4/36 Completed: Date For Bbls. O.

Gravity Disposition M. Ga

I. P. Natural Tub. Casg. Packer

S. offset Lanhart. E. offset #114 Lea

150 Qts. 3150 Ft. To 3760 Ft. Prod. Date 9/2/3[illegible]

1000 Gals. Date 9-12

T. P. 2528 B. P. T. D. 3460 P.B. 3069

| | | | Water | | Oil & Gas |
|---|---|---|---|---|---|
| T. A. | 570 | 5+ | | 2365 | Acy Oil & Gas |
| T. S. | | | | 2556-75 | " 3310-3460 Cored |
| B. S. | | | | 1880 | " DST 3394-3460, 50 min. |
| T. Y. | 7440(?) | | 2100 | 3211-21 | Acy 1980 sul. w. |
| T. Br. L. | 7330(?) | | 584 | 3322-[illegible] | Acy DST 3450-60, 20 min, 1340' |
| T. W. L. | | | | 3241-60 | Sat, sul. w |
| T. D. L. | | | | 3334-31 | Sat |
| T. D. Sd. | | | | 3365-73 | ✓ |
| | | | | 3384-94 | ✓ |
| | | | | 3433-41 | ✓ |

| Date | First Report JUL 10 1936 | Date | |
|---|---|---|---|
| 7/10 | Location | | I.P. 40 Mcf, 120 BRP |
| 7/14 | ✓ | | Completed OCT 23 1936 |
| 7/21 | ✓ | | |
| 28 | Rig & WOT | | |
| 8/4 | Spud | | |
| 8/11 | 1360 Ad 3 | | |
| 8/18 | 2305 Ad | | |
| 25 | 3037 ± Ld BS [illegible] | | |
| 9/1 | 3241 [illegible] Sd 3241-41 | | |
| 9/8 | 3310 ± Cs no Sand, cor 2 Mcfs | | |
| | 115 Sand to 3451, tdg @ 3452 | | |
| | [illegible] | | |
| | AA [illegible] | | |
| 9/15 | 3310 ± [illegible] | | |
| | [illegible] | | |
| 10/6 | 3460 ± [illegible] | | |
| | [illegible] | | |
| 10/1[illegible] | | | |

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Midland, Texas

**ARCO Oil and Gas Company** ◆ **Daily Well History—Interim**

Instructions: This form is used during drilling or workover operations. If testing, coring, or perforating, show formation name in describing work performed. Number all drill stem tests sequentially. Attach description of all cores. Work performed by Producing Section will be reported on "Interim" sheets until final completion. Report official or representative test on "Final" form. 1) Submit "Interim" sheets when filled out but not less frequently than every 30 days, or (2) on Wednesday of the week in which oil string is set. Submit weekly for workovers and following setting of oil string until completion.

| District | County or Parish | State |
|---|---|---|
| Permian - West Area | Lea | New Mexico |

| Field | Lease or Unit | Well no. |
|---|---|---|
| Langlie Mattix | R. S. Crosby "A" | 2 |

| Date and depth as of 8:00 a.m. | Complete record for each day while drilling or workover in progress |
|---|---|
| 3/16/81 3460' TD 3382'PBD | 3/13- SITP 575#. Bled well dn. Swbd 10 hrs, FL 900'. Rec 129 BW & 13 BO. Total +200 BW, +16 BNO. SION. 3/14- SITP 560#. Bled well dn. In 8 hrs swbd 6 BO & 281 BW, FL 900'. (+281 BW, +22 BNO). SION. |
| 3/17/81 | SITP 1000#. Bled well dn. Well flwd on 20/64" ck @ 25# FTP. Rec 4 BO & 141 BW. SION. (+422 BW, +29 BNO). Flow 148 BF in 10 hrs. |
| 3/18/81 | SITP 675#. Flwd well on 20/64" ck @ 25# for 5 hrs. Rec 41 BW. Unset pkr. RIH w/ 14 jts tbg, set pkr @ 3153'. Swbd on btm 5 perfs (3163, 70, 76, 80, 86') for 5 hrs. Csg built up to 300# while swbg. Rec 57 BW. Fluid was gas cut. SION. |
| 3/19/81 | POH w/tbg & pkr. RIH w/ BP, set BP @ 3153'. Swab on perfs 2995-3148' (19 holes). In 3 hrs rec 75 BW & tr of oil, fluid gas cut. FL stayed @ 900'. POH w/tbg. RIH w/pkr & setting tool, set pkr @ 3097'. Swab on perfs 3103-48' (8 holes). Rec 95 BW & tr of oil in 4 hrs. FL @ 900'. Fluid gas cut. Csg press built up to 350# in 4 hrs. SION. (+29 BO, +690 BW). 3/19/81 7:00 AM SITP 750#. |
| 3/20/81 | SITP 775#. Op well up. Pkr @ 3097', RBP @ 3153'. Perfs 3103-48' flwd 21 BW & tr of oil. Unset pkr. Move RBP to 3097'. Set pkr @ 3052'. Swab on perfs 3062-3091'. Rec 72 BW & tr of oil. FL stayed @ 900'. Well flwd 20 BW. Unset pkr, move RBP to 3052'. Move pkr to 2980'. Swbd on perfs 2995-3044'. Rec 30 BW while swbg. Well flwd 47 BW w/tr of oil. Rec total of 170 BF. (+29 BNO, +850 BW) 3/20/81- 7:00 AM, SITP 850#, SICP 0#. |
| 3/23/81 | 3/21- SITP 850#. Op well. Perf 2995-3044'. Flwd 10 hrs. Rec 2 BNO & 220 BLW. 3/22- SITP 875#. Op well. Unset pkr. RIH, set RBP @ 3020', set pkr @ 2973'. Swab perfs 2995-3006'. Rec 98 BW, no tr of oil. IFL 700', FFL 1900'. 3/23- 7:00 AM SITP 75#. |
| 3/24/81 | SITP 75#. Blow dn well. Unset pkr. RIH w/ RBP & set @ 3052', set pkr @ 3020'. Isolate perfs 3034-3044'. Well flwd 223 BW & 6 BO. Good show of gas. (+1491 BW, +37 BNO). SION. 3/24/81- 7:00 AM SITP 875#, SICP 75#. |
| 3/25/81 | Tstg// SITP 875#, SICP 75#. Op well, flwd 3 BO & 208 BW in 12 hrs. Perfs 3030-303903044' |
| 3/26/81 | SITP 875#, SICP 75#. Op well. Perfs 3034-44'. In 10 hrs flwd 3 BO & 210 BW. |

The above is correct

| Signature | Date | Title |
|---|---|---|
| J. W. Schmidt | 4/15/81 | Dist. Drlg. Supt. |

For form preparation and distribution see Procedures Manual Section 10, Drilling, Pages 86 and 87

Received 4/20/81 Central Files

Number all daily well history forms consecutively as they are prepared for each well. Page no. 3.

AR3B-459-2-B

**ARCO Oil and Gas Company** ◆ **Daily Well History—Interim**

Instructions: This form is used during drilling or workover operations. If testing, coring, or perforating, show formation name in describing work performed. Number all drill stem tests sequentially. Attach description of all cores. Work performed by Producing Section will be reported on "Interim" sheets until final completion. Report official or representative test on "Final" form. 1) Submit "Interim" sheets when filled out but not less frequently than every 30 days, or (2) on Wednesday of the week in which oil string is set. Submit weekly for workovers and following setting of oil string until completion.

| District | County or Parish | State |
|---|---|---|
| Permian - West Area | Lea | New Mexico |
| **Field** | **Lease or Unit** | **Well no.** |
| Langlie Mattix | R. S. Crosby "A" | 2 |

| Date and depth as of 8:00 a.m. | Complete record for each day while drilling or workover in progress |
|---|---|
| 3/02/81 3460' TD 3073'PBD | - Trip for new bit @ 3320' (205') // 2/28- Drld wood, cmt, iron & rubber 3115-3236'. SION. Drld wood, cmt, rubber & junk 3236-3320'. |
| 3/03/81 | Drld cmt 3320-3400'. Circ 1 hr. Lost all returns. FOH, LD DC. |
| 3/04/81 | Dresser ran Densilog & Neutron 3354-2400'. Ran DLL & GR 360-3354'. |
| 3/05/81 | Inst WH, chg rams in BOP. |
| 3/06/81 | RU & ran 78 jts (3426') 4½" csg, set @ 3400'. DV tool @ 2409'. Ran 2 FCs & guide swedge. Cmt 1st stage w/ 200 sx Cl C w/add, good returns. Op DV tool. Unable to break circ. WOC 1½ hr. Pump 2nd stage 300 sx Howco light w/add, 100 sx Cl C w/add. Close DV tool. Plug dn @ 3:00 PM, 3/05/81. Set slips, cut off 4½" csg. |
| 3/09/81 | - Attempt to pump dn annulus// 3/07- Weld on 4½" x 2½" tbg head. Inst BOP. PU 4 3-1/8" DC & 3-7/8" bit. GIH. SION. DO DV tool @ 2409'. Ran bit to 3382'. Circ clean. POH. Ran CBL. TOC @ 1240'. Questionable bond 1750-1800'. |
| 3/10/81 | - Braden head cmt dn 4½"x7" annulus// Howco loaded 4½" x 7" annulus w/ 4 BBW & pmpd into fm @ ½ BPM @ 300#. McCullough ran Noise log f/ 1500' to surf. 1st run indicated fluid movement @ 1125' & hole @ 60'. 2nd run, ran Base Temp log f/ 20-1500'. Pmpd 50 bbl 250° FW, indicated hole in 7" @ 85-62'. Indicated heated wtr going into fm @ 60'. SION. |
| 3/11/81 | - Prep to perf// Howco squeezed hole in 7" csg @ 60' from surf thru 4½" x 7" annulus. With 150 sx mixed, cmt broke thru the surf 15' from WH. Staged & pmpd another 30 sx cmt into fm. FP 500#. WOC 8 hrs. Ran temp survey, indicated cmt from surf to 75'. SION. |
| 3/12/81 | RIH w/52 stds tbg. Spot 150 gal 10% acetic acid 2995-3186'. POH w/ tbg. Perf @ 2995, 3001, 06, 34, 39, 44, 62, 69. 78, 82, 91, 3103, 12, 19, 26, 33, 40, 44, 48, 63, 70, 76, 80, 86'. RIH w/ pkr & 2-7/8" tbg. |
| 3/13/81 | RIH & set pkr @ 2813'. Howco pmpd 3000 gal 15% NE FE acid w/ 48 ball sealers. Max 4400#, avg 1950#, avg rate 4.87 BPM. Showed good ball action. RD Howco. Made 2 swab runs. In 6 hrs flwd 3 BO & 161 BLW. SION. |

The above is correct

| Signature | Date | Title |
|---|---|---|
| J. W. Schmidt | 4/15/81 | Dist. Drlg. Supt. |

For form preparation and distribution see Procedures Manual Section 10, Drilling, Pages 86 and 87

Received 4/24/81 Central Files

Number all daily well history forms consecutively as they are prepared for each well. Page no. 2.

AR3B-459-2-B

# ARCO Oil and Gas Company — Daily Well History—Initial Report

Instructions: Prepare and submit the "Initial Report" on the first Wednesday after a well is spudded or workover operations are started. Daily work prior to spudding should be summarized on the form giving inclusive dates only.

| District | County or Parish | State |
|---|---|---|
| Permian - West Area | Lea | New Mexico |

| Field | Lease or Unit | Well no. |
|---|---|---|
| Langlie Mattix | R. S. Crosby "A" | 2 |

| Auth. or W.O. no. | Title |
|---|---|
| A 614602 & 614611 | Recomplete to Langlie Mattix Producer |

| Operator | A.R.Co's W.I. |
|---|---|
| ARCO | 100% |

| Spudded or W.O. begun | Date | Hour | Prior status if a W.O. |
|---|---|---|---|
| W.O. | 2/18/81 | | |

| Date and depth as of 8:00 a.m. | Complete record for each day reported |
|---|---|
| 2/19/81 3460' TD 3073'PBD | DO cmt plugs// MIRU PU, inst WH, NU BOP. PU 6-1/8" bit, 1 DC. Drld top cmt plug to 45'. |
| 2/20/81 | Drlg cmt// Drill retr @ 51', hit bridge @ 75'. Ran to 1034', hit cmt. Lost returns. Unplugged bit, regain 80% returns. Drill cmt 1034-1064', getting small amt of Red Bed cutting. |
| 2/23/81 | Drld cmt, iron & wood 1034-1060'. POH, for new bit. Unable to run new 6-1/8" bit below 51'. Ran impression block, showed csg bent in. SION. RIH w/6-1/8" tapered mill, mill 53' to 56'. Ran to 100'. POH. RIH w/6-1/8" bit & 6 DCs. Drill on junk @ 1060'. POH. RIH w/5½" mag. POH. Rec small amt of junk. RIH w/hydro bailer, rec small piece of iron. RIH w/6-1/8" bit & DC. Drld on rubber & cmt @ 1090'. |
| 2/24/81 | Drlg cmt// Drld cmt 1090-1311'. |
| 2/25/81 | Rng Vertilog// Drill cmt 1311-1325'. Ran 1325 to 2300'. Drill cmt 2300-2361'. Circ clean, POH. Ran CBL. Pipe could be parted 60', 1330' & 148[illegible]'. No bond 0-1530'. Broken bond 1530-1640'. No bond 1640-1928'. Very poor bond 1928-2024'. No bond 2024-2070'. Poor bond 2070-2120'. No bond 2120-2361'. |
| 2/26/81 | Dresser ran Verta-log. Unable to get below 1332'. PU 6-1/8" tapered mill. Mill out 1332-1337', ran to 1560'. POH. Ran Verta-log 0-2360'. Pipe Cl 4 @ 60'. Pipe Cl 4 @ 1332-1337'. All pipe very poor cond. RIH w/6-1/8" bit. Drld cmt to 2460'. |
| 2/27/81 | Drill cmt 2460-2495'. Drill retr 2495'. Op hole 2495-2505'. Drill cmt 2505-2509'. Op hole 2509-3060'. Drill cmt 3060-3115'. 3108-3115' tight hole. Reaming. SION. |

The above is correct

| Signature | Date | Title |
|---|---|---|
| J. W. Schmidt | 3/15/81 | Dist. Drlg. Supt. |

For form preparation and distribution, see Procedures Manual, Section 10, Drilling, Pages 86 and 87.

received
3/30/81
Central Files

Number all daily well history forms consecutively as they are prepared for each well. Page no. 1.

AFRB-459-1-C

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.
LC 034117(a)

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME
[redacted] Crosby "A"

9. WELL NO.
2

10. FIELD AND POOL, OR WILDCAT
Jalmat-Yates

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 28, T25S, R37E

12. COUNTY OR PARISH
Lea

13. STATE
N.M.

# SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☒ OTHER Shut-In

2. NAME OF OPERATOR
Atlantic Richfield Company

3. ADDRESS OF OPERATOR
P. O. Box 1978, Roswell, New Mexico 88201

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
2310' FSL & 330' FWL

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
3022' GR

RECEIVED
APR 23 1971
GEOLOGICAL SURVEY
HOBBS, NEW MEXICO

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

| NOTICE OF INTENTION TO: | | | SUBSEQUENT REPORT OF: | |
|---|---|---|---|---|
| TEST WATER SHUT-OFF | ☐ | PULL OR ALTER CASING | ☐ | WATER SHUT-OFF ☐ REPAIRING WELL ☐ |
| FRACTURE TREAT | ☐ | MULTIPLE COMPLETE | ☐ | FRACTURE TREATMENT ☐ ALTERING CASING ☐ |
| SHOOT OR ACIDIZE | ☐ | ABANDON* | ☒ | SHOOTING OR ACIDIZING ☐ ABANDONMENT* ☐ |
| REPAIR WELL | ☐ | CHANGE PLANS | ☐ | (Other) ☐ |
| (Other) | | | | |

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

This well was shut in 4/16/50 as non-commercial. No remedial possibilities exist. We propose to P & A as outlined below:

1. Set 7" 24# CIBP @ 2500' and cap w/25 sx (100') of cement.
2. Perforate 7" casing w/4 holes @ 1325' and pump in 100 sx of cement, leaving 100' of cement inside 7" from 1225-1325'.
3. Place 10 sk cement plug in top of well.
4. Erect dry hole marker. Clear and level location.

Note: 9#/gal gel mud will be left between all cement plugs.

13" and 9-5/8" casing strings will remain intact.

18. I hereby certify that the foregoing is true and correct

SIGNED A. D. Bratcher TITLE Dist. Drlg. Supervisor DATE 4/22/71

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

APPROVED
APR 23 1971
ARTHUR R. BROWN
DISTRICT ENGINEER

*See Instructions on Reverse Side

COPY TO U.S.

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

# SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.: LC 034117(a)

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

1. OIL WELL ☐ GAS WELL ☐ OTHER P & A

8. FARM OR LEASE NAME: Ruby S. Crosby "A"

2. NAME OF OPERATOR: Atlantic Richfield Company

9. WELL NO.: 2

3. ADDRESS OF OPERATOR: P. O. Box 1978, Roswell, N.M. 88201

10. FIELD AND POOL, OR WILDCAT: Jalmat-Yates

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 2310' FSL & 330' FWL

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 28, T25S, R37E

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3022' GR

12. COUNTY OR PARISH: Lea

13. STATE: N.M.

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

| NOTICE OF INTENTION TO: | | SUBSEQUENT REPORT OF: | |
|---|---|---|---|
| TEST WATER SHUT-OFF ☐ | PULL OR ALTER CASING ☐ | WATER SHUT-OFF ☐ | REPAIRING WELL ☐ |
| FRACTURE TREAT ☐ | MULTIPLE COMPLETE ☐ | FRACTURE TREATMENT ☐ | ALTERING CASING ☐ |
| SHOOT OR ACIDIZE ☐ | ABANDON* ☐ | SHOOTING OR ACIDIZING ☐ | ABANDONMENT* X |
| REPAIR WELL ☐ | CHANGE PLANS ☐ | (Other) ☐ | |
| (Other) | | (Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.) | |

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

This well has been plugged & abandoned in the following manner:

Spotted 30 sk Class "A" cement plug 2358-2508'. Perforated 7" casing @ 1325'. Circulated 9-5/8" x 7" annulus & cemented w/100 sx cement to 1225'. WOC 12 hrs. Perforated 7" casing @ 50'. Circulated 9-5/8" x 7" annulus w/30 sx Class "A" cement. Erected dry hole marker. Well P & A 4/28/71. 9#/gal gel mud was left between all cement plugs. 13" and 9-5/8" casing strings remain intact. Erected dry hole marker. 7" casing from 0-50' left full of cement.

Your office will be notified by letter when location is ready for inspection.

18. I hereby certify that the foregoing is true and correct

SIGNED C. D. Gretkes TITLE Dist. Drlg. Supervisor DATE 5/5/71

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

APPROVED
AUG 13 1971
J L GORDON
ACTING DISTRICT ENGINEER

*See Instructions on Reverse Side

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.: LC-034117 (b)

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

# SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☐ OTHER: Plug & Abandon

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: Atlantic Richfield Company

8. FARM OR LEASE NAME: ARC Federal

3. ADDRESS OF OPERATOR: P. O. Box 1710, Hobbs, New Mexico 88240

9. WELL NO.: 1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1980' FSL & 1980' FWL (Unit letter K)

10. FIELD AND POOL, OR WILDCAT: Jalmat Yates Gas

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 28-25S-37E

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3023' DF

12. COUNTY OR PARISH: Lea

13. STATE: N.M.

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

| NOTICE OF INTENTION TO: | | | | SUBSEQUENT REPORT OF: | | | |
|---|---|---|---|---|---|---|---|
| TEST WATER SHUT-OFF | ☐ | PULL OR ALTER CASING | ☐ | WATER SHUT-OFF | ☐ | REPAIRING WELL | ☐ |
| FRACTURE TREAT | ☐ | MULTIPLE COMPLETE | ☐ | FRACTURE TREATMENT | ☐ | ALTERING CASING | ☐ |
| SHOOT OR ACIDIZE | ☐ | ABANDON* | ☐ | SHOOTING OR ACIDIZING | ☐ | ABANDONMENT* | ☐ |
| REPAIR WELL | ☐ | CHANGE PLANS | ☐ | (Other) Plug & Abandon | | | X |
| (Other) | | | | (NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.) | | | |

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

RU 10/31/77, killed well w/10# brine wtr. Installed BOP & POH w/compl assy. RIH w/9-5/8" cmt retr, set @ 2240'. Squeeze cmtd Jalmat perfs 2302-2395' w/80 sx Cl C cmt. PO of retr & dumped 18 sx cmt on top. Tagged cmt @ 2185'. Circ hole w/heavy brine gel. Spotted 50 sx cmt plug from 1120-970' FS (150' plug) inside 9-5/8" csg & across top of salt @ 1060'. Spotted 10 sx cmt plug @ surface, installed regulation dry hole marker, cleaned & leveled location according to USGS surface restoration specifications. Plugged & abandoned eff 11/3/77.

18. I hereby certify that the foregoing is true and correct

SIGNED [signature] TITLE Dist. Drlg. Supt. DATE 11/8/77

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

APPROVED
JUN 13 1978
[illegible]
ACTING DISTRICT ENGINEER

*See Instructions on Reverse Side

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.: LC 034117 (b)

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

# SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

7. UNIT AGREEMENT NAME:

1. OIL WELL ☐ GAS WELL ☒ OTHER

2. NAME OF OPERATOR: Atlantic Richfield Company

8. FARM OR LEASE NAME: ARC Federal

3. ADDRESS OF OPERATOR: P. O. Box 1710, Hobbs, New Mexico 88240

9. WELL NO.: 1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1980' FSL & 1980' FWL (Unit letter K)

10. FIELD AND POOL, OR WILDCAT: Jalmat Yates Gas

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 28, 25S, 37E

RECEIVED
APR 15 1975
U. S. GEOLOGICAL SURVEY
HOBBS, NEW MEXICO

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3023' DF

12. COUNTY OR PARISH: Lea

13. STATE: N.M.

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

| NOTICE OF INTENTION TO: | | | | SUBSEQUENT REPORT OF: | | | |
|---|---|---|---|---|---|---|---|
| TEST WATER SHUT-OFF | ☐ | PULL OR ALTER CASING | ☐ | WATER SHUT-OFF | ☐ | REPAIRING WELL | ☐ |
| FRACTURE TREAT | ☐ | MULTIPLE COMPLETE | ☐ | FRACTURE TREATMENT | ☐ | ALTERING CASING | ☐ |
| SHOOT OR ACIDIZE | ☐ | ABANDON* | ☐ | SHOOTING OR ACIDIZING | ☐ | ABANDONMENT* | ☐ |
| REPAIR WELL | ☐ | CHANGE PLANS | ☐ | (Other) Squeeze cmt & shut off wtr | | | X |
| (Other) | ☐ | | | (Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.) | | | |

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

On 3/23/75 rigged up & killed well w/10# brine. Installed BOP. POH w/completion assy. Ran csg scraper. Set RBP @ 2400' on WL. WIH w/tbg. Stung into BP @ 2400'. Squeezed perfs 2407-2429' w/100 sx Cl C w/.3% Halad 22 & 2% CaCl followed by 25 SX Cl C w/10# sd/sk. POH w/RBP. Trtd perfs 2302-2391' w/500 gals 15% HCL-LSTNE acid. MP 750#, Min 600#, ISIP 600#, 15 min 0#. Treated perfs 2302-2391' w/1000 gals 15% HCL-LSTNE acid. MP 1250#, Min 1100#, ISIP 600#, 15 min SIP 0#. POH w/tbg & pkr. Perf'd w/1 JS ea @ 2381, 84, 90, 93, 95'. RIH w/tbg & pkr. Set pkr @ 2370'. Acidized perfs 2381-2395' w/500 gals Mod-202 acid. MP 3400#, Min 1300#, ISIP vac. POH w/tbg & pkr. Ran completion assy consisting of SN, 78 jts 2-3/8" tbg & set @ 2359'. Connected up wellhead. Test. On 24 hrs potential test 4/11/75, flowed 645 MCFG, 0 BWPD on 16/64" ck. TP 825#. Final Report.

18. I hereby certify that the foregoing is true and correct

SIGNED _____ TITLE Dist Drlg. Supv. DATE 4/15/75

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

ACCEPTED FOR RECORD
APR 16 1975
U. S. GEOLOGICAL SURVEY
HOBBS, NEW MEXICO

*See Instructions on Reverse Side

ARCO Oil and Gas Company

# Daily Well History—Interim

Instructions: This form is used during drilling or workover operations. If testing, coring, or perforating, show formation name in describing work performed. Number all drill stem tests sequentially. Attach description of all cores. Work performed by Producing Section will be reported on "Interim" sheets until final completion. Report official or representative test on "Final" form. 1) Submit "Interim" sheets when filled out but not less frequently than every 30 days, or (2) on Wednesday of the week in which oil string is set. Submit weekly for workovers and following setting of oil string until completion.

BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
BURLESON EXHIBIT NO. 2
CASE NO. 7294

| District | County or Parish | State |
|---|---|---|
| Permian - West Area | Lea | New Mexico |
| **Field** | **Lease or Unit** | **Well no.** |
| Langlie Mattix | R. S. Crosby "A" | 2 |

| Date and depth as of 8:00 a.m. | Complete record for each day while drilling or workover in progress |
|---|---|
| 3/16/81 3460' TD 3382'PBD | 3/13- SITP 575#. Bled well dn. Swbd 10 hrs, FL 900'. Rec 129 BW & 13 BO. Total +200 BW, +16 BNO. SION. 3/14- SITP 560#. Bled well dn. In 8 hrs swbd 6 BO & 281 BW, FL 900'. (+281 BW, +22 BNO). SION. |
| 3/17/81 | SITP 1000#. Bled well dn. Well flwd on 20/64" ck @ 25# FTP. Rec 4 BO & 141 BW. SION. (+422 BW, +29 BNO). Flow 148 BF in 10 hrs. |
| 3/18/81 | SITP 675#. Flwd well on 20/64" ck @ 25# for 5 hrs. Rec 41 BW. Unset pkr. RIH w/ 14 jts tbg, set pkr @ 3153'. Swbd on btm 5 perfs (3163, 70, 76, 80, 86') for 5 hrs. Csg built up to 300# while swbg. Rec 57 BW. Fluid was gas cut. SION. |
| 3/19/81 | POH w/tbg & pkr. RIH w/ BP, set BP @ 3153'. Swab on perfs 2995-3148' (19 holes). In 3 hrs rec 75 BW & tr of oil, fluid gas cut. FL stayed @ 900'. POH w/tbg. RIH w/pkr & setting tool, set pkr @ 3097'. Swab on perfs 3103-48' (8 holes). Rec 95 BW & tr of oil in 4 hrs. FL @ 900'. Fluid gas cut. Csg press built up to 350# in 4 hrs. SION. (+29 BO, +690 BW). 3/19/81 7:00 AM SITP 750#. |
| 3/20/81 | SITP 775#. Op well up. Pkr @ 3097', RBP @ 3153'. Perfs 3103-48' flwd 21 BW & tr of oil. Unset pkr. Move RBP to 3097'. Set pkr @ 3052'. Swab on perfs 3062-3091'. Rec 72 BW & tr of oil. FL stayed @ 900'. Well flwd 20 BW. Unset pkr, move RBP to 3052'. Move pkr to 2980'. Swbd on perfs 2995-3044'. Rec 30 BW while swbg. Well flwd 47 BW w/tr of oil. Rec total of 170 BF. (+29 BNO, +690 BW) 3/20/81- 7:00 AM, SITP 850#, SICP 0#. |
| 3/21/81 | 3/21- SITP 850#. Op well. Perf 2995-3044'. Flwd 10 hrs. Rec 2 BNO & 220 BLW. 3/22- SITP 875#. Op well. Unset pkr. RIH, set RBP @ 3020', set pkr @ 2973'. Swab perfs 2995-3006'. Rec 98 BW, no tr of oil. IFL 700', FFL 1900'. 3/23- 7:00 AM SITP 75#. |
| 3/24/81 | SITP 75#. Blow dn well. Unset pkr. RIH w/ RBP & set @ 3052', set pkr @ 3020'. Isolate perfs 3034-3044'. Well flwd 223 BW & 6 BO. Good show of gas. (+1491 BW, +37 BNO). SION. 3/24/81- 7:00 AM SITP 875#, SICP 75#. |
| 3/25/81 | Tstg// SITP 875#, SICP 75#. Op well, flwd 3 BO & 208 BW in 12 hrs. Perfs 3030-303903044' |
| 3/26/81 | SITP 875#, SICP 75#. Op well. Perfs 3034-44'. In 10 hrs flwd 3 BO & 210 BW. |

I certify that the above is correct

| Signature | Date | Title |
|---|---|---|
| J. W. Schmidt | 4/15/81 | Dist. Drlg. Supt. |

For form preparation and distribution see Procedures Manual Section 10, Drilling, Pages 86 and 87

Received
4/20/81
Central Files

Number all daily well history forms consecutively as they are prepared for each well. Page no. 3.

ARCO Oil and Gas Company

# Daily Well History—Interim

Instructions: This form is used during drilling or workover operations. If testing, coring, or perforating, show formation name in describing work performed. Number all drill stem tests sequentially. Attach description of all cores. Work performed by Producing Section will be reported on "Interim" sheets until final completion. Report official or representative test on "Final" form. 1) Submit "Interim" sheets when filled out but not less frequently than every 30 days, or (2) Wednesday of the week in which oil string is set. Submit weekly for workovers and following setting of oil string until completion.

| District | County or Parish | State |
|---|---|---|
| Permian - West Area | Lea | New Mexico |
| **Field** | **Lease or Unit** | **Well no.** |
| Anglie Mattix | R. S. Crosby "A" | 2 |

| Date and depth as of 8:00 a.m. | Complete record for each day while drilling or workover in progress |
|---|---|
| 3/02/81 3460' TD 3073'PBD | - Trip for new bit @ 3320' (205') // 2/28- Drld wood, cmt, iron & rubber 3115-3236'. SION. Drld wood, cmt, rubber & junk 3236-3320'. |
| 3/03/81 | Drld cmt 3320-3400'. Circ 1 hr. Lost all returns. POH, LD DC. |
| 3/04/81 | Dresser ran Densilog & Neutron 3354-2400'. Ran DLL & GR 360-3354'. |
| 3/05/81 | Inst WH, chg rams in BOP. |
| 3/06/81 | RU & ran 78 jts (3426') 4½" csg, set @ 3400'. DV tool @ 2409'. Ran 2 FCs & guide swedge. Cmt 1st stage w/ 200 sx Cl C w/add, good returns. Op DV tool. Unable to break circ. WOC 1¼ hr. Pump 2nd stage 300 sx Howco light w/add, 100 sx Cl C w/add. Close DV tool. Plug dn @ 3:00 PM, 3/05/81. Set slips, cut off 4½" csg. |
| 3/09/81 | - Attempt to pump dn annulus// 3/07- Weld on 4½" x 2½" tbg head. Inst BOP. PU 4 3-1/8" DC & 3-7/8" bit. GIH. SION. DO DV tool @ 2409'. Ran bit to 3382'. Circ clean. POH. Ran CBL. TOC @ 1240'. Questionable bond 1750-1800'. |
| 3/10/81 | - Braden head cmt dn 4½"x7" annulus// Howco loaded 4½" x 7" annulus w/ 4 BBW & pmpd into fm @ ½ BPM @ 300#. McCullough ran Noise log f/ 1500' to surf. 1st run indicated fluid movement @ 1125' & hole @ 60'. 2nd run, ran Base Temp log f/ 20-1500'. Pmpd 50 bbl 250° FW, indicated hole in 7" @ 85-62'. Indicated heated wtr going into fm @ 60'. SION. |
| 3/11/81 | - Prep to perf// Howco squeezed hole in 7" csg @ 60' from surf thru 4½" x 7" annulus. With 150 sx mixed, cmt broke thru the surf 15' from WH. Staged & pmpd another 30 sx cmt into fm. FP 500#. WOC 8 hrs. Ran temp survey, indicated cmt from surf to 75'. SION. |
| 3/12/81 | RIH w/52 stds tbg. Spot 150 gal 10% acetic acid 2995-3186'. POH w/ tbg. Perf @ 2995, 3001, 06, 34, 39, 44, 62, 69. 78, 82, 91, 3103, 12, 19, 26, 33, 40, 44, 48, 63, 70, 76, 80, 86'. RIH w/ pkr & 2-7/8" tbg. |
| 3/13/81 | RIH & set pkr @ 2813'. Howco pmpd 3000 gal 15% NE FE acid w/ 48 ball sealers. Max 4400#, avg 1950#, avg rate 4.87 BPM. Showed good ball action. RD Howco. Made 2 swab runs. In 6 hrs flwd 3 BO & 161 BLW. SION. |

above is correct

| Signature | Date | Title |
|---|---|---|
| J. W. Schmidt | 4/15/81 | Dist. Drlg. Supt. |

Form preparation and distribution Procedures Manual Section 10, Drilling, Pages 86 and 87

Received 4/24/81 Central Files

| Number all daily well history forms consecutively as they are prepared for each well. | Page no. |
|---|---|
| | 2. |

ARCO Oil and Gas Company

# Daily Well History—Initial Repor

Instructions: Prepare and submit the "Initial Report" on the first Wednesday after a well is spudded or workover operations are started. Daily work prior to spudding should be summarized on the form giving inclusive dates only.

| District | County or Parish | State |
|---|---|---|
| Permian - West Area | Lea | New Mexico |

| Field | Lease or Unit | Well no. |
|---|---|---|
| Langlie Mattix | R. S. Crosby "A" | 2 |

| Auth. or W.O. no. | Title |
|---|---|
| A 614602 & 614611 | Recomplete to Langlie Mattix Producer |

| Operator | A.R.Co's W.I. |
|---|---|
| ARCO | 100% |

| Spudded or W.O. begun | Date | Hour | Prior status if a W.O. |
|---|---|---|---|
| W.O. | 2/18/81 | | |

| Date and depth as of 8:00 a.m. | Complete record for each day reported |
|---|---|
| 2/19/81 3460' TD 3073'PBD | DO cmt plugs// MIRU PU, inst WH, NU BOP. PU 6-1/8" bit, 1 DC. Drld top cmt plug to 45'. |
| 2/20/81 | Drlg cmt// Drill retr @ 51', hit bridge @ 75'. Ran to 1034', hit cmt. Lost returns. Unplugged bit, regain 80% returns. Drill cmt 1034-1064', getting small amt of Red Bed cutting. |
| 2/23/81 | Drld cmt, iron & wood 1034-1060'. POH, for new bit. Unable to run new 6-1/8" bit below 51'. Ran impression block, showed csg bent in. SION. RIH w/6-1/8" tapered mill, mill 53' to 56'. Ran to 100'. POH. RIH w/6-1/8" bit & 6 DCs. Drill on junk @ 1060'. POH. RIH w/5½" mag. POH. Rec small amt of junk. RIH w/hydro bailer, rec small piece of iron. RIH w/6-1/8" bit & DC. Drld on rubber & cmt @ 1090'. |
| 2/24/81 | Drlg cmt// Drld cmt 1090-1311'. |
| 2/25/81 | Rpr Vertilog// Drill cmt 1311-1325'. Ran 1325 to 2300'. Drill cmt 2300-2361'. Circ clean. POH. Ran CBL. Pipe could be parted 60', 1330' & 148'. No bond 0-1530'. Broken bond 1530-1640'. No bond 1640-1928'. Very poor bond 1928-2024'. No bond 2024-2070'. Poor bond 2070-2120'. No bond 2120-2361'. |
| 2/26/81 | Dresser ran Verta-log. Unable to get below 1332'. PU 6-1/8" tapered mill. Mill out 1332-1337', ran to 1560'. POH. Ran Verta-log 0-2360'. Pipe Cl 4 @ 60'. Pipe Cl 4 @ 1332-1337'. All pipe very poor cond. RIH w/6-1/8" bit. Drld cmt to 2460'. |
| 2/27/81 | Drill cmt 2460-2495'. Drill retr 2495'. Op hole 2495-2505'. Drill cmt 2505-2509'. Op hole 2509-3060'. Drill cmt 3060-3115'. 3108-3115' tight hole. Reaming. SION. |

The above is correct

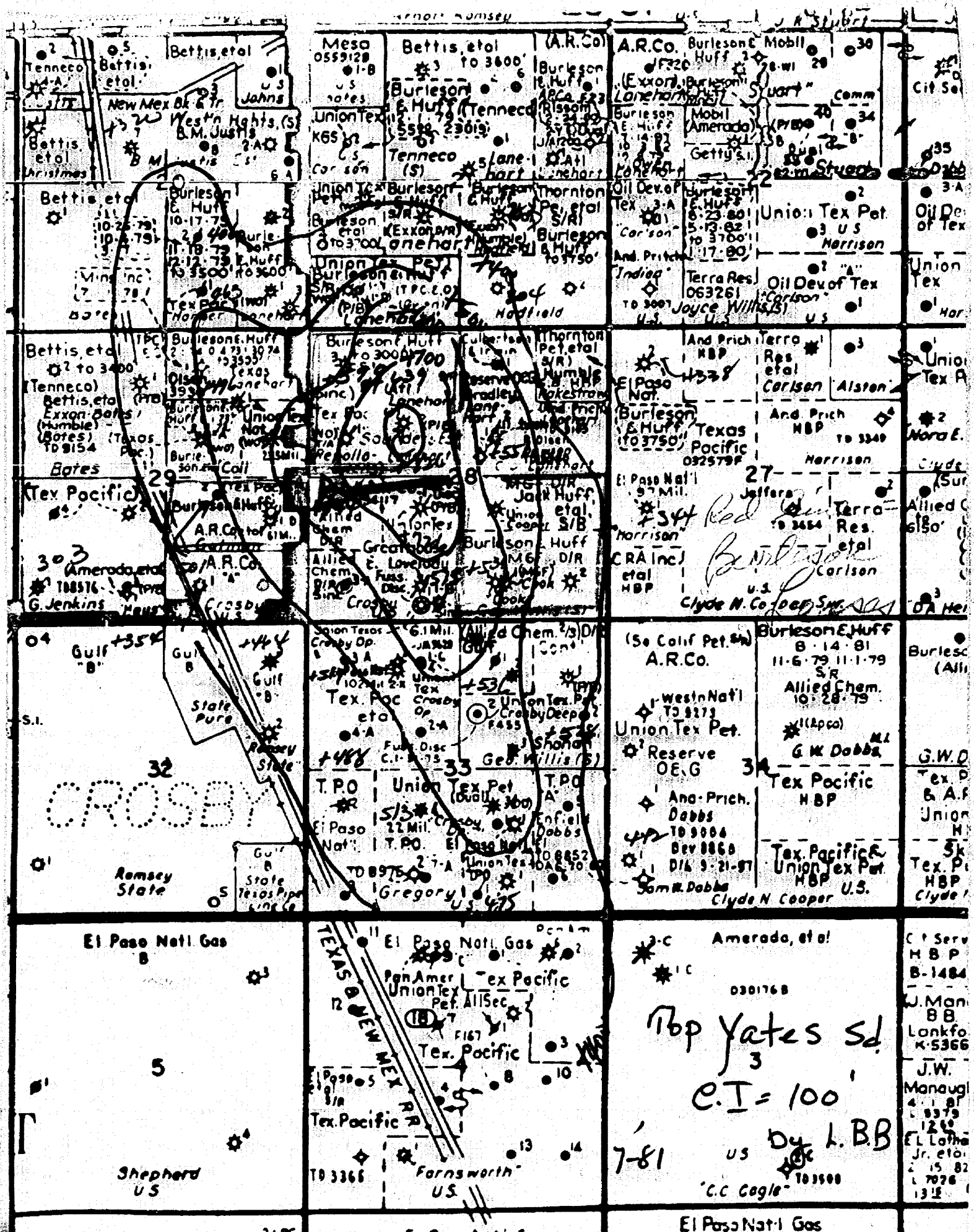
| Signature | Date | Title |
|---|---|---|
| J. W. Schmidt | 3/15/81 | Dist. Drlg. Supt. |

For form preparation and distribution, see Procedures Manual, Section 10, Drilling, Pages 8A and 87.

Received 3/30/81 Central File

Number all daily well history forms consecutively as they are prepared for each well. Page no. 1.

AR3B-459-1-C


Tenneco
Bettis, etal
New Mex & Tr
Western Hghts. (S)
B.M. Justis
Mesa
Union Tex
Tenneco (S)
Lanehart
A.R.Co.
Burleson & Huff
Mobil
Getty
Union Tex Pet
Harrison
Oil Dev of Tex
Carlson
Indigo
Terra Res.
Joyce Willis (S)
Thornton Pet. etal
Humble
Hatfield
Jack Huff, etal
Allied Chem.
Greenlee
Lovelady
Cook
Crosby
Tex. Pac etal
Gulf
State
Ramsey State
Gregory
Geo. Willis (S)
Shonan
Dobbs
Enfield
Amerada, et al
Tex. Pacific
Farnsworth
Texas Pacific
Jeffers
Red Bluff
Clyde N. Cooper
El Paso Nat'l Gas
Shepherd
C.C. Cagle
Yates Sd
C.I. = 100'
By L.B.B.
7-81

BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
CASE NO. EXHIBIT NO. 2
2294

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: Allied Chemical Corporation

Lease Name: Crosby Deep  Well No: 1

Location: 330' FSL, 1980' FWL

Sec: 28

Lea County, New Mexico

Pay Zone: Fusselman
Prod. Interval: 8774'-78'
TD: 10,946'

| Pipe Size: | 13 3/8" | 9 5/8" | 5 1/2" |
|---|---|---|---|
| Depth Set: | 502' | 3806' | 10500' |
| Cemented with: | 500sx | 2324sx | 720sx |
| Top of Cement | Surf | Surf | 2400 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: Anderson Prichard

Lease Name: Lanehart  Well No: 1

Location: 1950' FNL 1980' FEL

Sec: 28

Lea County, New Mexico

Pay Zone: Devonian Dry Hole
Prod. Interval: 7734-50'
TD: 9170'

| Pipe Size: | 13 3/8" | 9 5/8" | 5 1/2" |
|---|---|---|---|
| Depth Set: | 523' | 3606' | 7917' |
| Cemented with: | 525sx | 3500sx | 175sx |
| Top of Cement | Surf | Surf | 6737 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: ARCO Oil and Gas Company

Lease Name: R. S. Crosby "A" Well No: 2

Location: 2310' FSL 330' FWL Pay Zone: *7R Queen *Yates 7R

Sec: 28 Prod. Interval: 3108-3460' 2528-3069'

TD: 3460'

Lea County, New Mexico

*4-1/2" full liner set and cemented at 3400' Perf 7R Queen

| Pipe Size: | 13" | 9 5/8" | 7" | 4 1/2" |
|---|---|---|---|---|
| Depth Set: | 251 | 1265' | 3108' | 3400' |
| Cemented with: | 225sx | 400sx | 200sx | 600sx |
| Top of Cement | Surf | 113 | 1910 | 1400 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: ARCO Oil and Gas Company

Lease Name: R. S. Crosby (3) Well No: 1-B

Location: 330' FSL 2310' FWL Pay Zone: Yates 7 R

Sec: 28 Prod. Interval: 2425'-3118'

TD: 3220'

Lea County, New Mexico

| Pipe Size: | 13" | 95/8" | 7" |
|---|---|---|---|
| Depth Set: | 256' | 1237' | 3150' |
| Cemented with: | 200sx | 400sx | 180sx |
| Top of Cement | Surf | Surf | 1749 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: Repollo Oil Company

Lease Name: Lanehart

Well No: 1

Location: 990' FNL 990' FWL

Pay Zone: 7 R Queen
Prod. Interval: OH 3130'-3302'
RD: 3302'

Sec: 28

Lea County, New Mexico

| Pipe Size: | 12 1/2" | 9 5/8" | 7" |
|---|---|---|---|
| Depth Set: | 233' | 1168' | 3130' |
| Cemented with: | 225sx | 400sx | 200sx |
| Top of Cement | Surf | Surf | 1745 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: Anderson Prichard

Lease Name: Coll

Well No: 1

Location: 1980' FNL 660' FEL

Pay Zone: Devonian
Prod. Interval: 8555'-8685'
TD: 9365'

Sec: 29

Lea County, New Mexico

| Pipe Size: | 13 3/8" | 8 5/8" | 5 1/2" |
|---|---|---|---|
| Depth Set: | 512' | 3655' | 9208' |
| Cemented with: | 500sx | 3095sx | 800sx |
| Top of Cement | Surf | Surf | 3962 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: ARCO Oil and Gas Company

Lease Name: ARC Federal

Well No: 1

Location: 1980' FSL 1980' FWL

Sec: 28

Lea County, New Mexico

| | | |
|---|---|---|
| Pay Zone: | Devonian | Yates |
| Prod. Interval | 8270-390' | 2302-429' |
| TD: | 10,830' | |

| | | | |
|---|---|---|---|
| Pipe Size: | 13 3/8" | 9 5/8" | 5 1/2" |
| Depth Set: | 368' | 3605' | 8498' |
| Cemented with: | 300sx | 4350sx | 800sx |
| Top of Cement | Surf | Surf | 2532 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: Burleson & Huff

Lease Name: Saunders Estate

Well No: 1

Location: 1980' FNL 660'FWL

Sec: 28

Lea County, New Mexico

| | |
|---|---|
| Pay Zone: | Yates |
| Prod. Interval: | 2263'-2463' |
| TD: | 2463' |

| | | |
|---|---|---|
| Pipe Size: | 9 5/8" | 7" |
| Depth Set: | 293' | 2263' |
| Cemented with: | 200sx | 500sx |
| Top of Cement | Surf | Surf |

(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: Burleson and Huff

Lease Name: Saunders Estate — Well No: 2

Location: 1650' FNL 1650' FWL — Pay Zone: Devonian Abo Langlie Mattix

Sec: 28 — Prod. Interval: 8434-8597 6982-7019 2916-2993

Lea County, New Mexico — TD: 8600'

Temporarily Abandoned

| Pipe Size: | 13 3/8" | 9 5/8" | 7" |
|---|---|---|---|
| Depth Set: | 918' | 3650' | 8600' |
| Cemented with: | 1000sx | 4920sx | 400sx |
| Top of Cement | Surf | Surf | 3112 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: Burleson and Huff

Lease Name: Saunders Estate — Well No: 3

Location: 660' FNL 660' FWL — Pay Zone: Queen

Sec: 28 — Prod. Interval: 3037-3132'

Lea County, New Mexico — TD: 3400'

| Pipe Size: | 8 5/8" | 4 1/2" |
|---|---|---|
| Depth Set: | 928' | 3400' |
| Cemented with: | 525sx | 500sx |
| Top of Cement | Surf | 831 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: Greathouse and Lovelady

Lease Name: Crosby US  Well No: 1

Location: 660' FS 1980' FWL  Pay Zone: Devonian

Sec: 28  Prod. Interval: 8066'-8160'

Lea County, New Mexico  TD: 8160'

| | | | |
|---|---|---|---|
| Pipe Size: | 12 3/4" | 8 5/8" | 5 1/2" |
| Depth Set: | 518' | 3604' | 8066' |
| Cemented with: | 600sx | 370sx | 475sx |
| Top of Cement | Surf | 1017 | 1416 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: Jal Oil Company

Lease Name: Repollo  Well No: 2

Location: 660' FN 1980' FWL

Sec: 28

Lea County, New Mexico

Pipe Size: Abandoned Location

Depth Set:

Cemented with:

Top of Cement

(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: Burleson and Huff

Lease Name: Coll "A" Well No: 2

Location: 1980' FNL 330' FEL Pay Zone: Yates 7 R

Sec: 29 Prod. Interval: 2999'-3129'

TD: 3330'

Lea County, New Mexico

| | | |
|---|---|---|
| Pipe Size: | 8 5/8" | 4 1/2" |
| Depth Set: | 940 | 3330' |
| Cemented with: | 500sx | 300sx |
| Top of Cement | Surf | 1800 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: Burleson and Huff

Lease Name: Gutman Well No: 1

Location: 1980' FSL 660' FEL Pay Zone: 7R Queen Yates

Sec: 29 Prod. Interval: 3130'-3270' 2532'-2552'

TD: 3270'

Lea County, New Mexico

| | | |
|---|---|---|
| Pipe Size: | 9 5/8" | 7" |
| Depth Set: | 297' | 3130' |
| Cemented with: | 200sx | 500sx |
| Top of Cement | Surf | Surf |

(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: Jal Oil Company

Lease Name: Coll

Well No: 1

Location: 660' FNL 660' FEL

Sec: 29

Lea County, New Mexico

Pay Zone: Langlie Mattix
Prod. Interval: 2540'-2700'
TD: 3936'

Dry and abandoned (not plugged)

| | | |
|---|---|---|
| Pipe Size: | 10 3/4" | 7" |
| Depth Set: | 278' | 3135' |
| Cemented with: | 200sx | 400sx |
| Top of Cement | Surf | Surf |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: Olsen

Lease Name: Gutman

Well No: 2

Location: 2310' FSL 1650'FEL

Sec: 29

Lea County, New Mexico

Pay Zone: Langlie Mattix
Prod. Interval: 3139'-3157'
TD: 3297'

| | | |
|---|---|---|
| Pipe Size: | 8 5/8" | 5 1/2" |
| Depth Set: | 280' | 3282' |
| Cemented with: | 150sx | 400sx |
| Top of Cement | Surf | Surf |

(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: Olsen

Lease Name: Gutman

Well No: 1-D

Location: 1880' FSL 660' FEL

Pay Zone: Devonian
Prod. Interval: 8457'-8590'
TD: 8628'

Sec: 29

Lea County, New Mexico

| | | | |
|---|---|---|---|
| Pipe Size: | 13 3/8" | 9 5/8" | 7" |
| Depth Set: | 597' | 3601' | 8625' |
| Cemented with: | 300sx | 2000sx | 500sx |
| Top of Cement | Surf | Surf | 5737 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: Olsen and Blount

Lease Name: Coll "A"

Well No: 1

Location: 1980' FNL 1980' FEL

Pay zone: 7 Rivers Queen
Prod. Interval: 3120'-3186'
TD: 3186'

Sec: 29

Lea County, New Mexico

| | | |
|---|---|---|
| Pipe Size: | 10 3/4" | 7" |
| Depth Set: | 287' | 3170' |
| Cemented with: | 200sx | 600sx |
| Top of Cement | Surf | Surf |

(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: Texaco

Lease Name: Lanehart  Well No: 1

Location: 1320' FNL 1320' FEL  Pay zone: Yates 7R
Prod. Interval: 2516'-3110'
TD: 3308'

Sec: 29

Lea County, New Mexico

| | | | | |
|---|---|---|---|---|
| Pipe Size: | 15 1/2" | 9 5/8" | 7" | 5" |
| Depth Set: | 253' | 1045' | 2460' | 3156' |
| Cemented with: | 250sx | 575sx | 125sx | 55sx |
| Top of Cement | Surf | Surf | 1335 | (Liner) |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator:

Lease Name:  Well No:

Location:

Sec:

Lea County, New Mexico

Pipe Size:

Depth Set:

Cemented with:

Top of Cement
(Cement Tops Calculated unless temperature surveys or bond logs available).

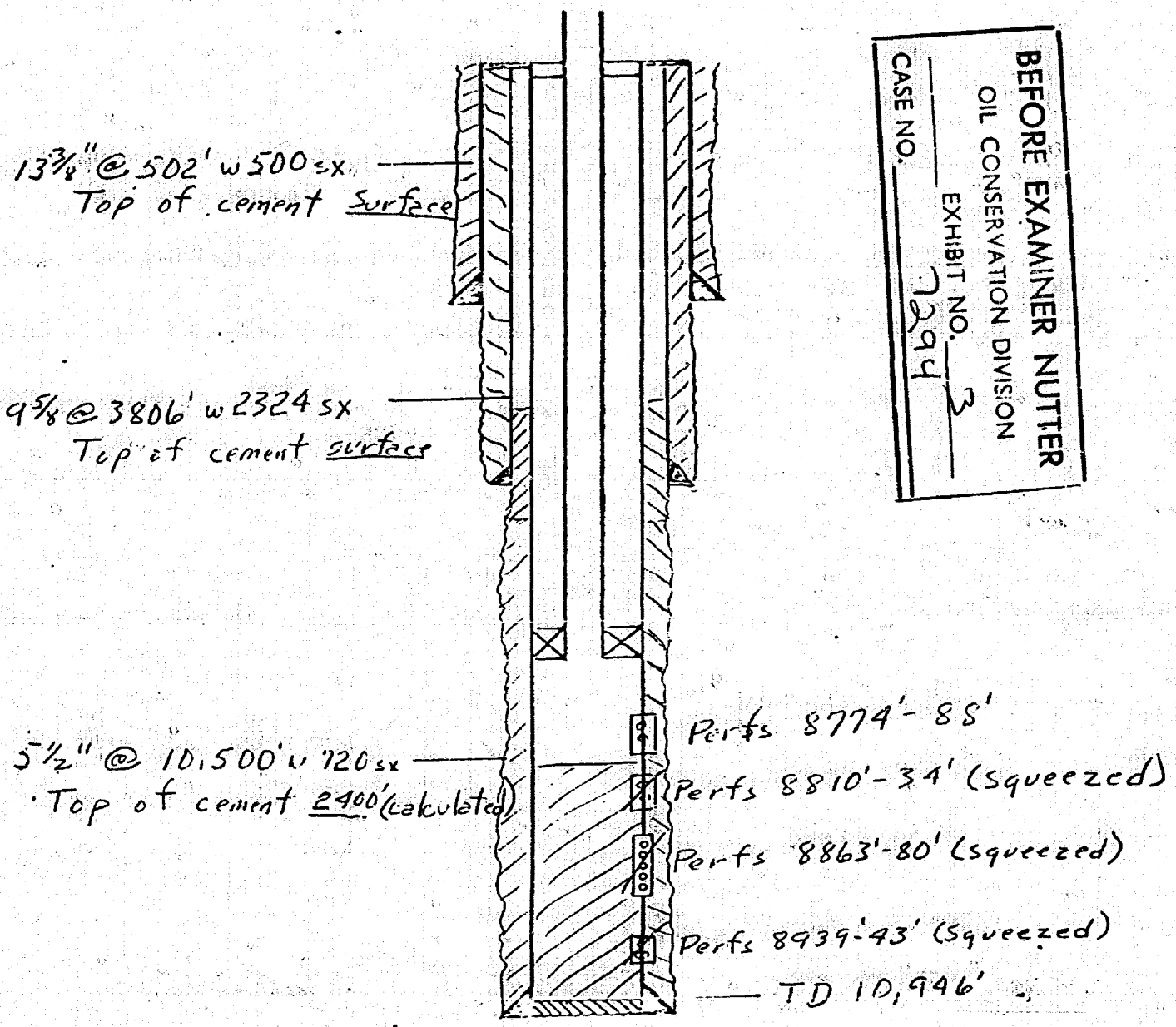
Allied Chemical
Crosby Deep #1

**LOCATION**

Section 28, T-25-S, R-37-E

330' FSL, 1980' FWL

Lea County, New Mexico

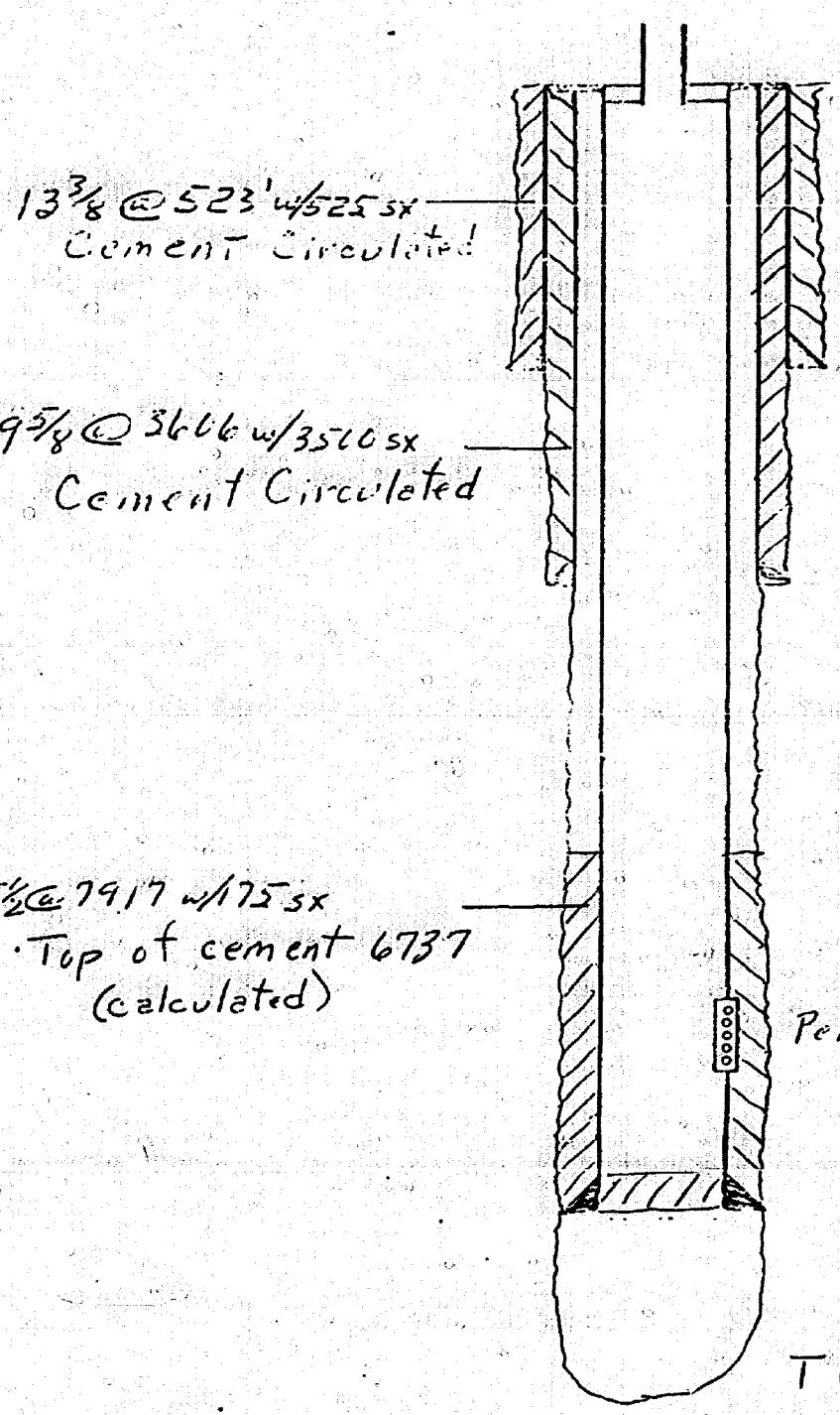



BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
EXHIBIT NO. 3
CASE NO. 7294

Anderson Prichard
Clyde Lanehart #1
Dry & Abandoned
4-17-55

**LOCATION**

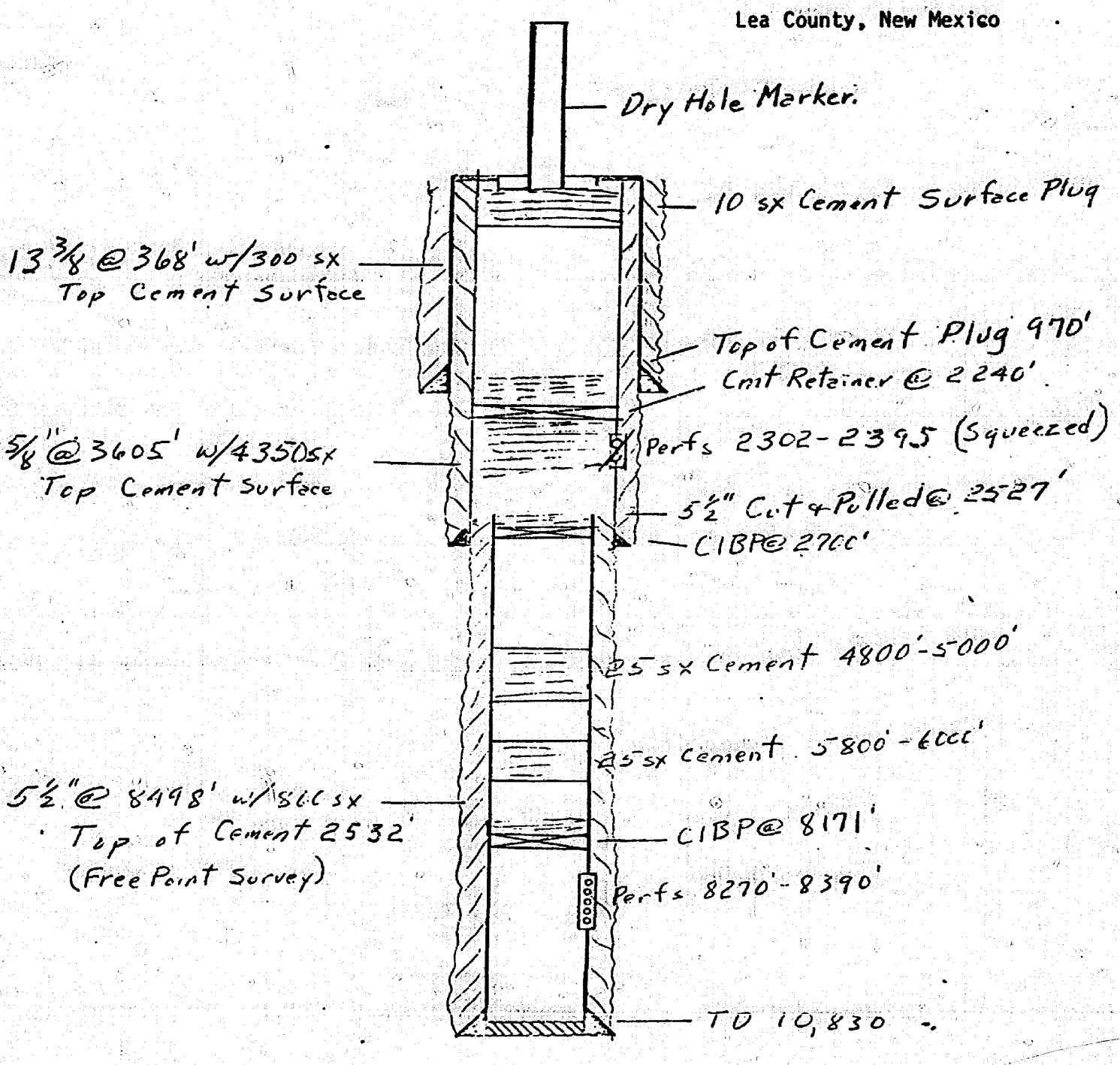
Section 25, T-25-S, R-32-E
1950' FNL, 1980' FEL
Lea County, New Mexico



ARCO Oil & Gas Co.
ARC Federal #1
Status - Abd

**LOCATION**

Section 28, T-25, R-37-E
1980' FSL, 1980' FWL
Lea County, New Mexico



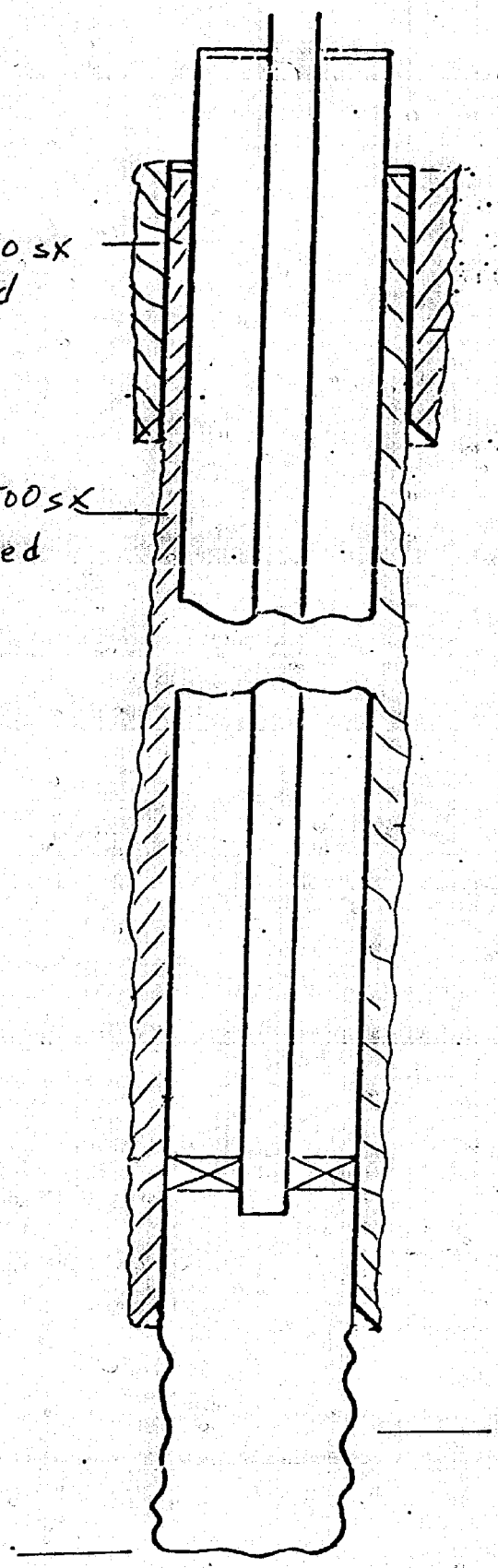
Burleson & Huff
Saunders Estate #1

**LOCATION**

Section 28, T-25-S, R-37-E

1980 FNL, 660' FWL

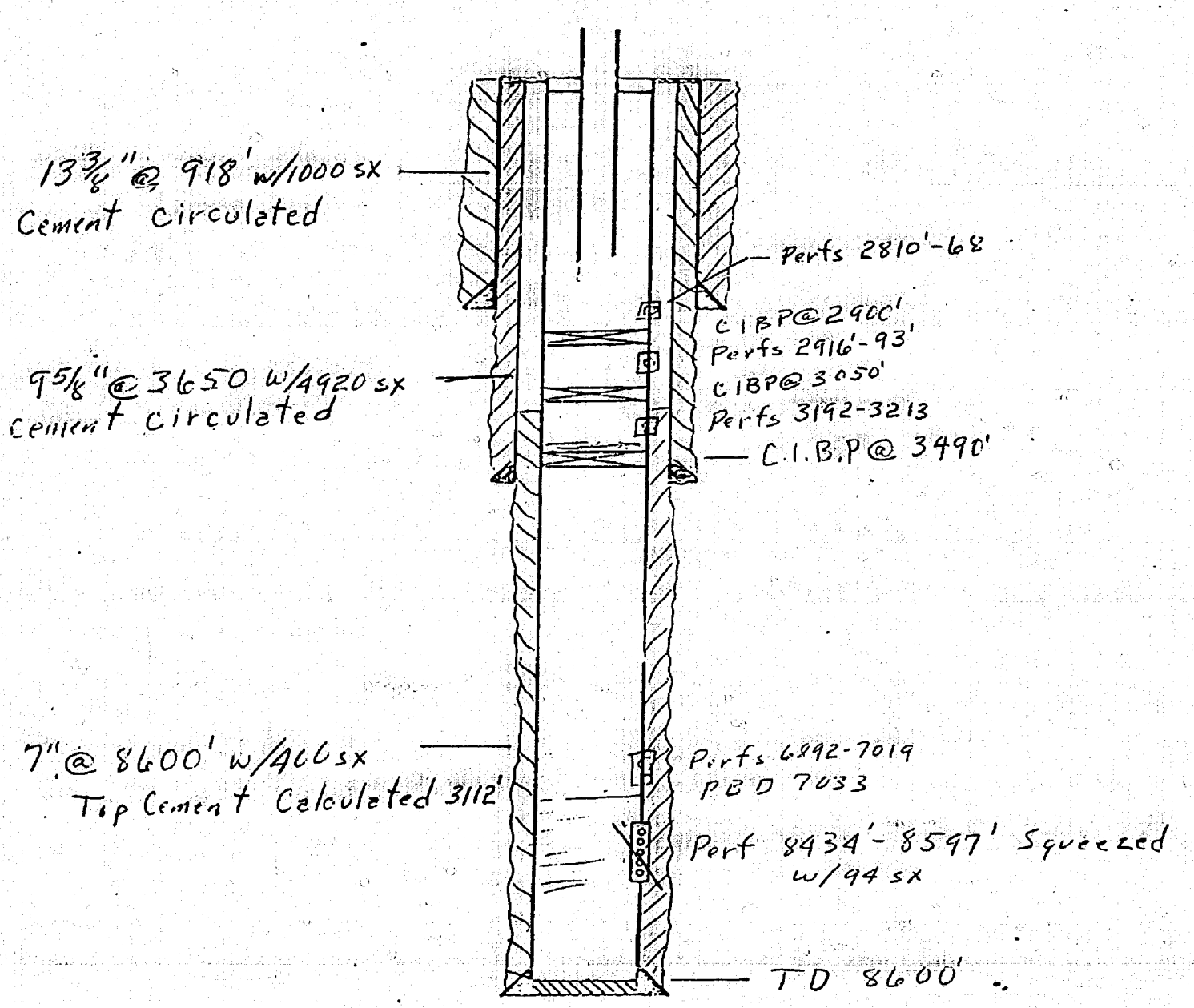
Lea County, New Mexico



Burleson + Huff
Saunders #2
Status - TA

**LOCATION**

Section 28, T-25S, R-37-E
1650' FNL, 1650' FWL
Lea County, New Mexico



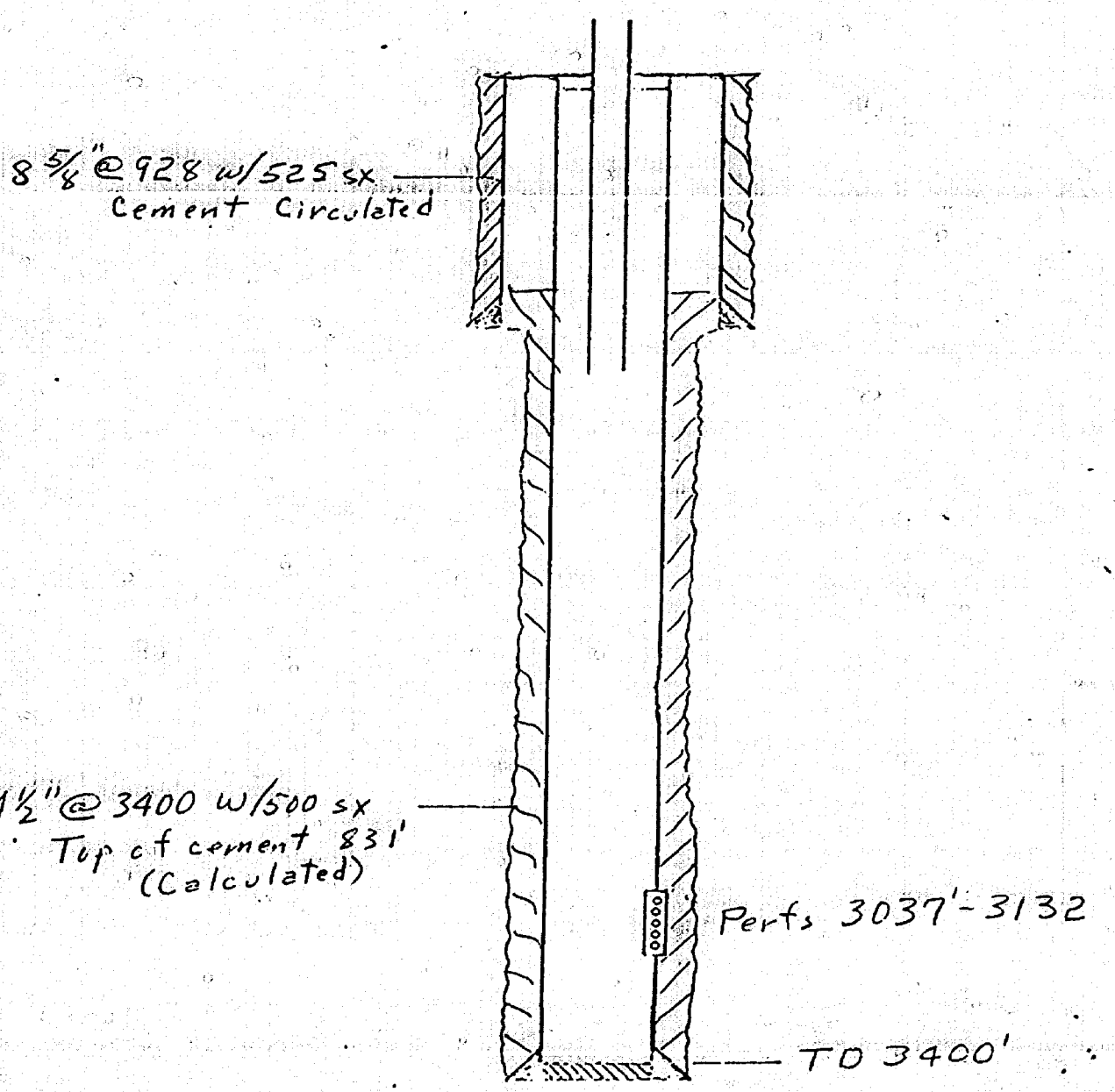
Burleson & Huff
Saunders Est. #3

LOCATION

Section 28, T-25-S, R-37-E

660' FNL, 1650' FWL

Lea County, New Mexico



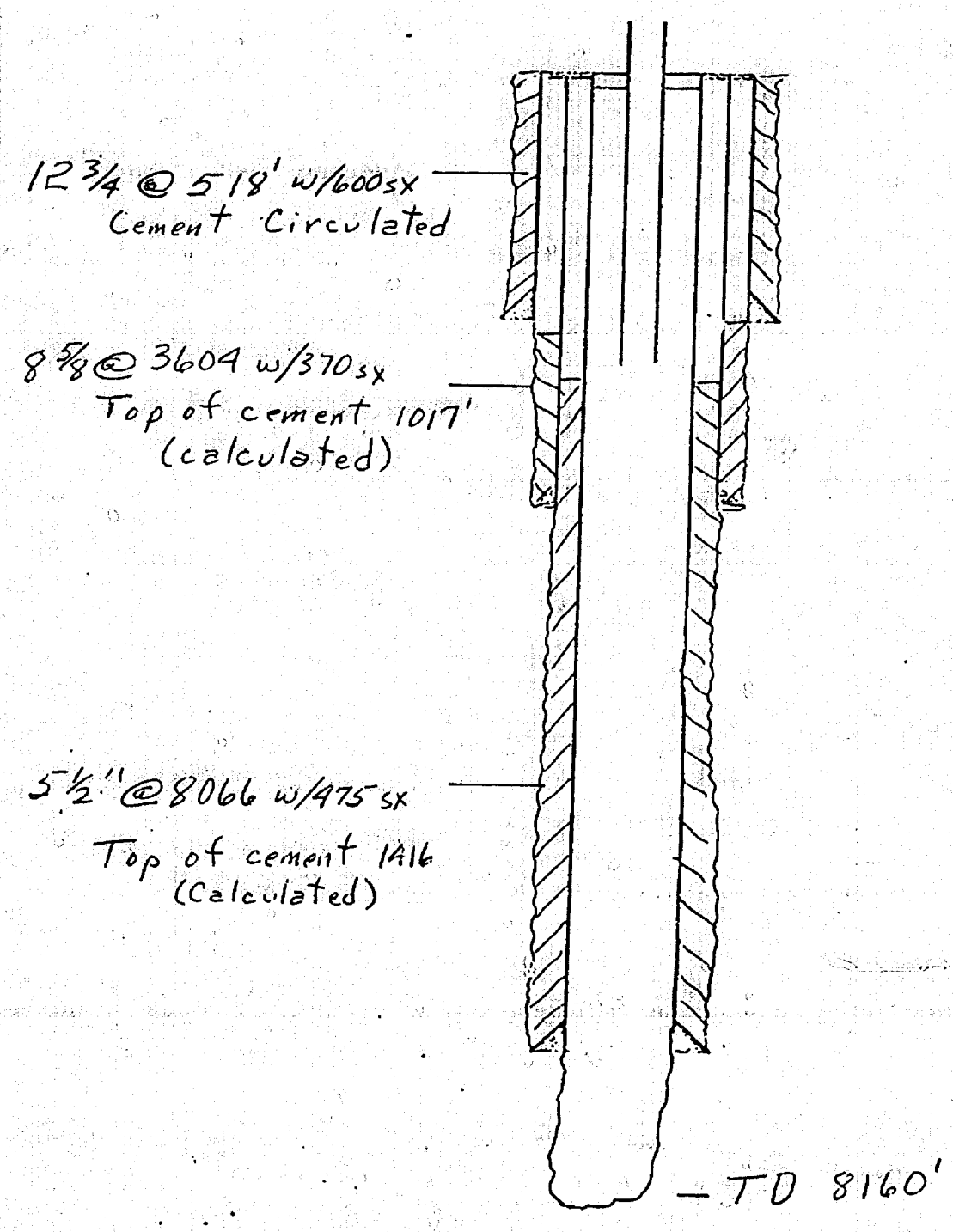
Greathouse & Lovelady
U.S. Crosby #1

LOCATION

Section 28, T-25-S, R-37-E

660' FSL, 1980' FWL

Lea County, New Mexico



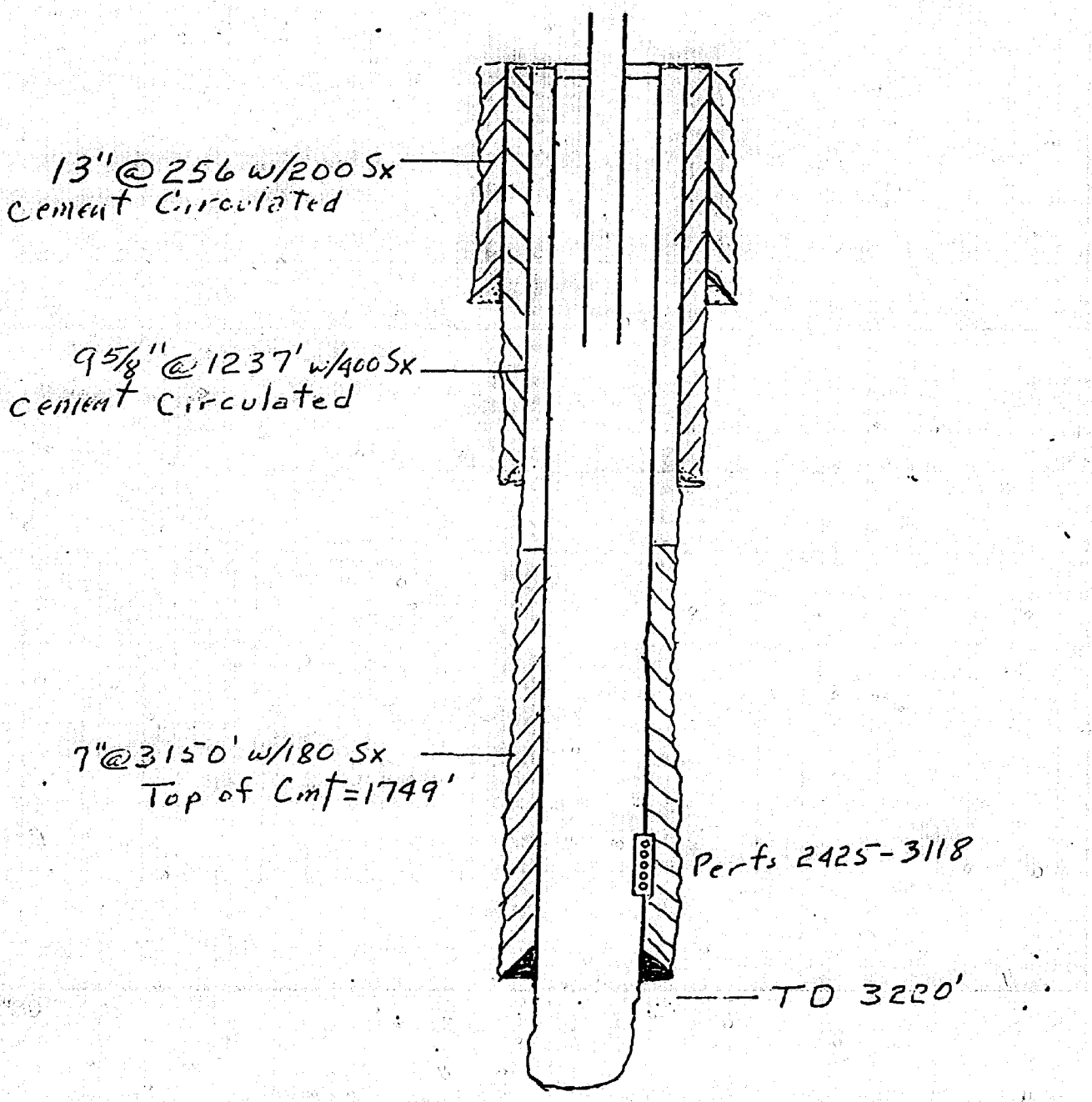
ARCO Oil & Gas Co.
R.S. Crosby (3) 1B

LOCATION

Section 28, T-25-S, R-37-E

330' FSL, 2310' FEL

Lea County, New Mexico



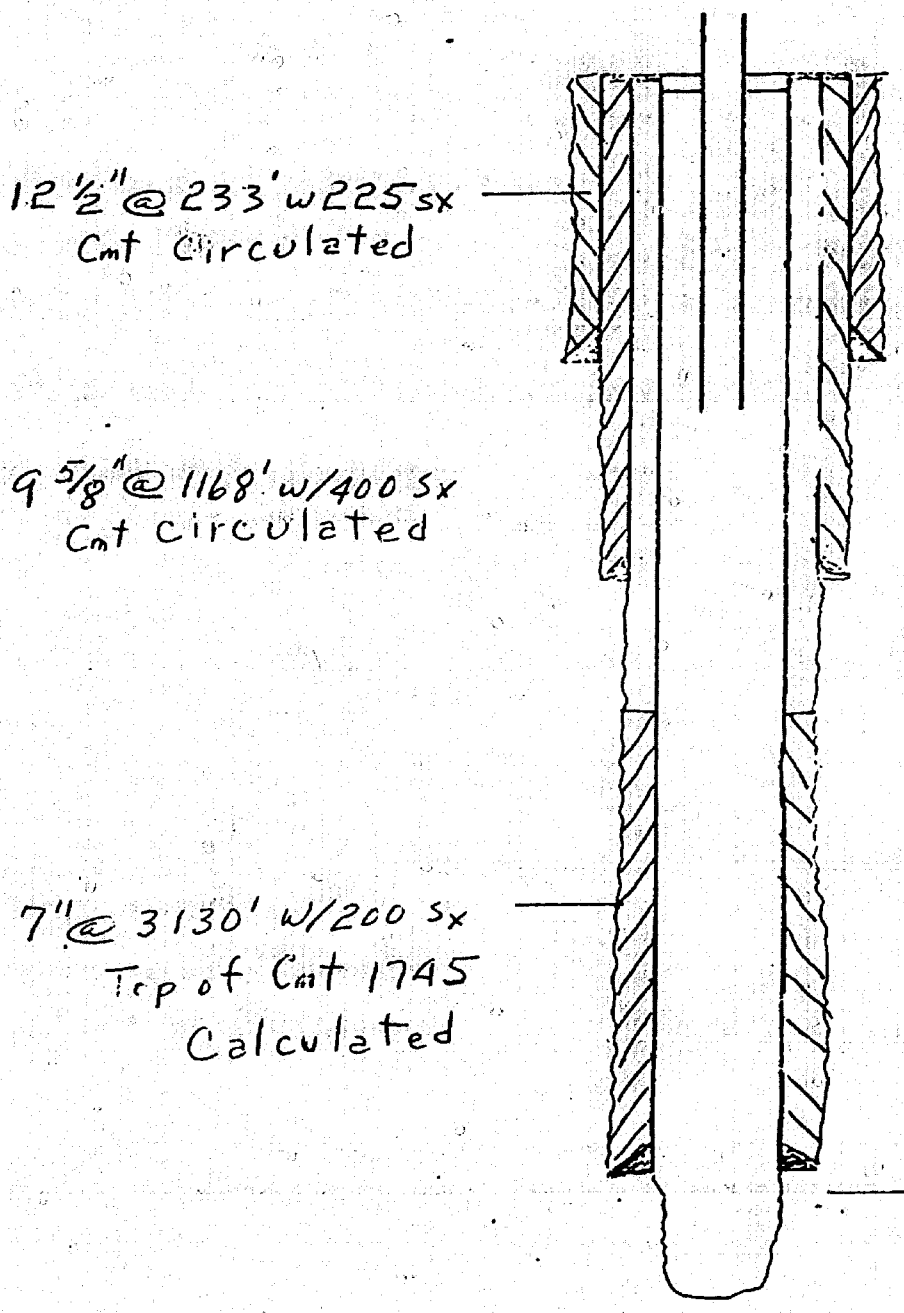
Repollo
T. J. Lanehart #1

LOCATION

Section 28, T-25-S, R-37-E

990' FNL, 990' FWL

Lea County, New Mexico



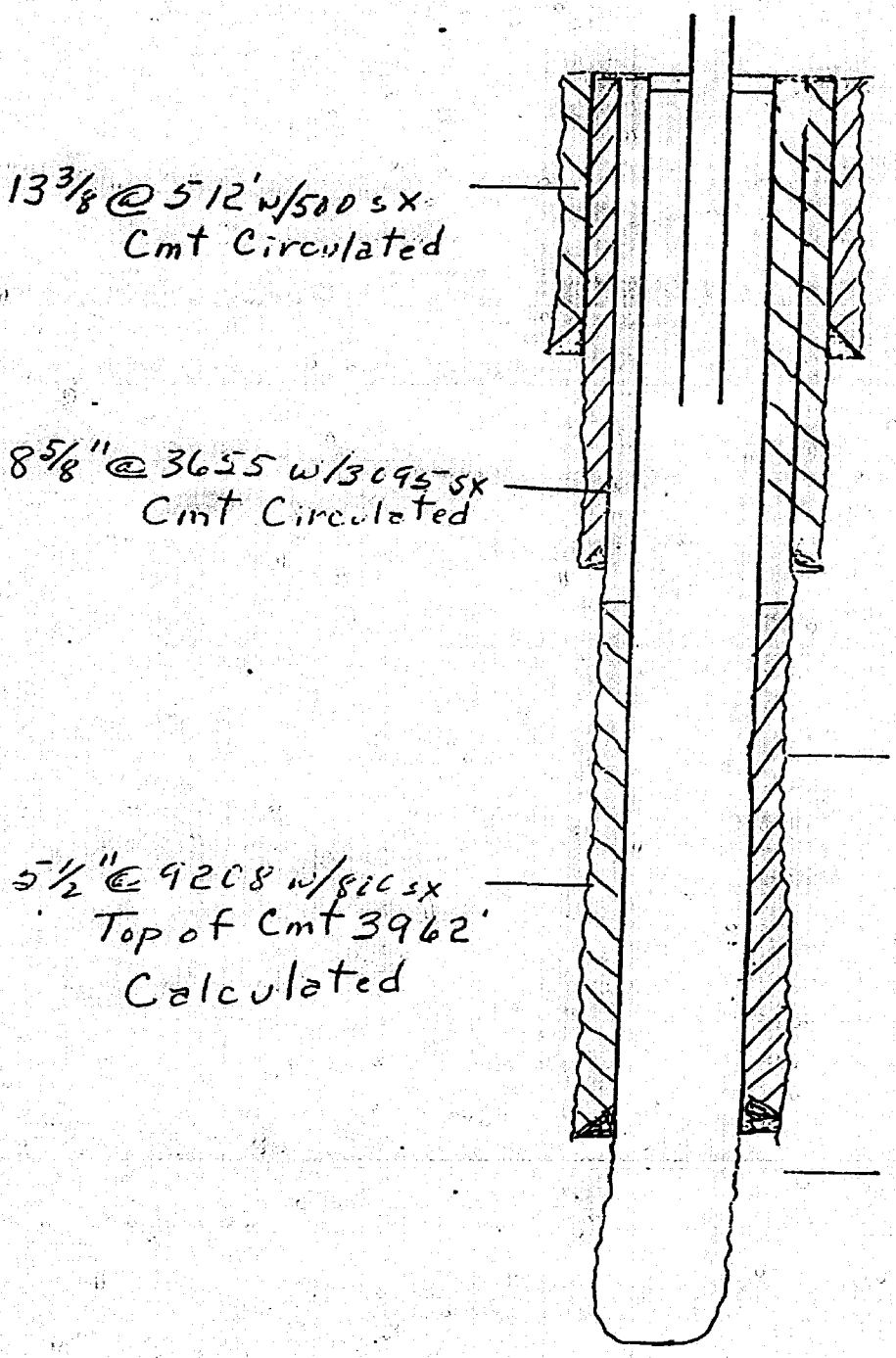
Anderson Prichard
Coll #1

LOCATION

Section 29, T-25-S, R-37-E

1980' FNL, 660' FEL

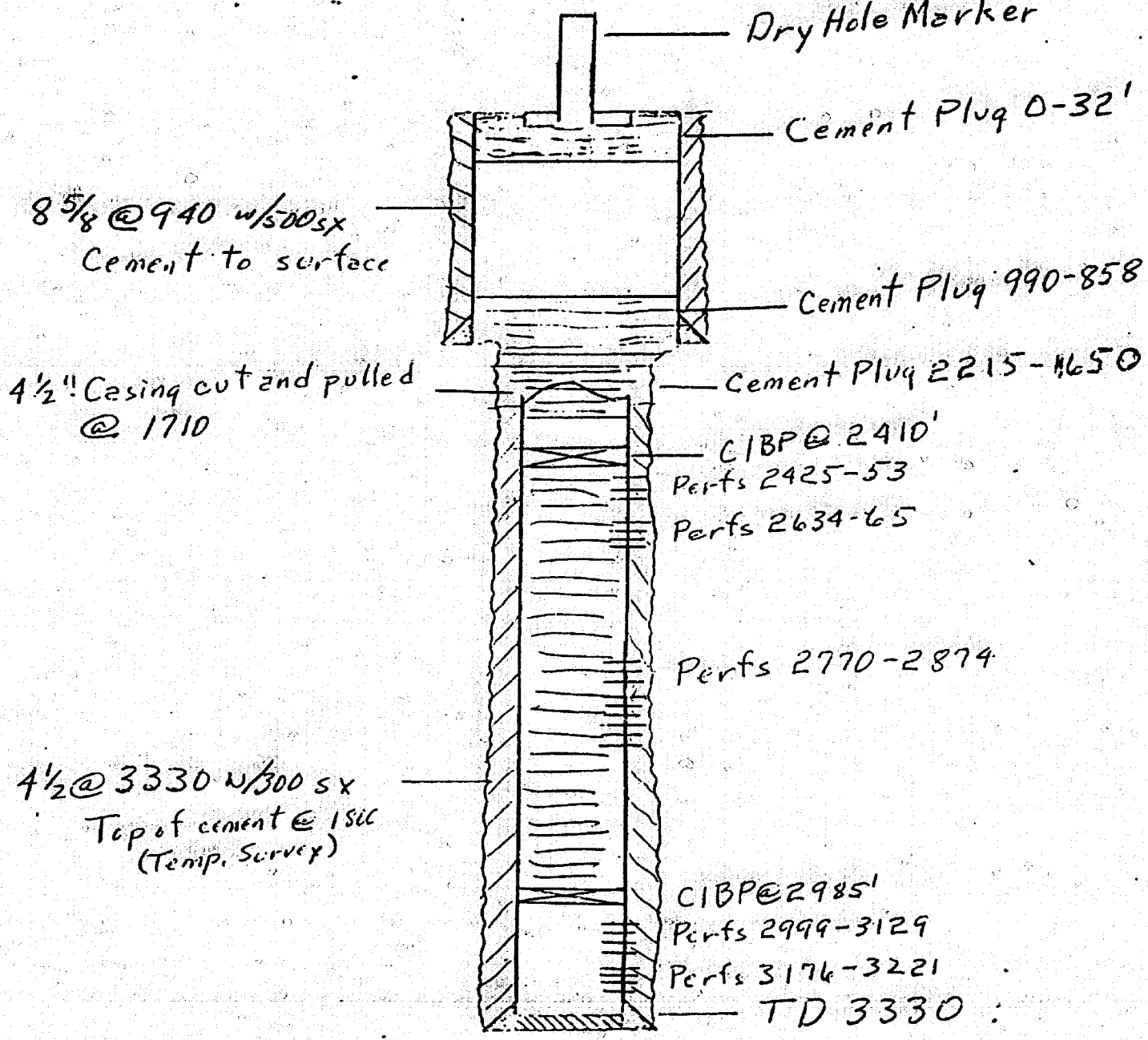
Lea County, New Mexico



Burleson & Huff
Coll A-2
Dry & Abandoned
8-27-79

**LOCATION**

Section 29, T-25-S, R-37-E
1980' FNL, 330' FEL
Lea County, New Mexico



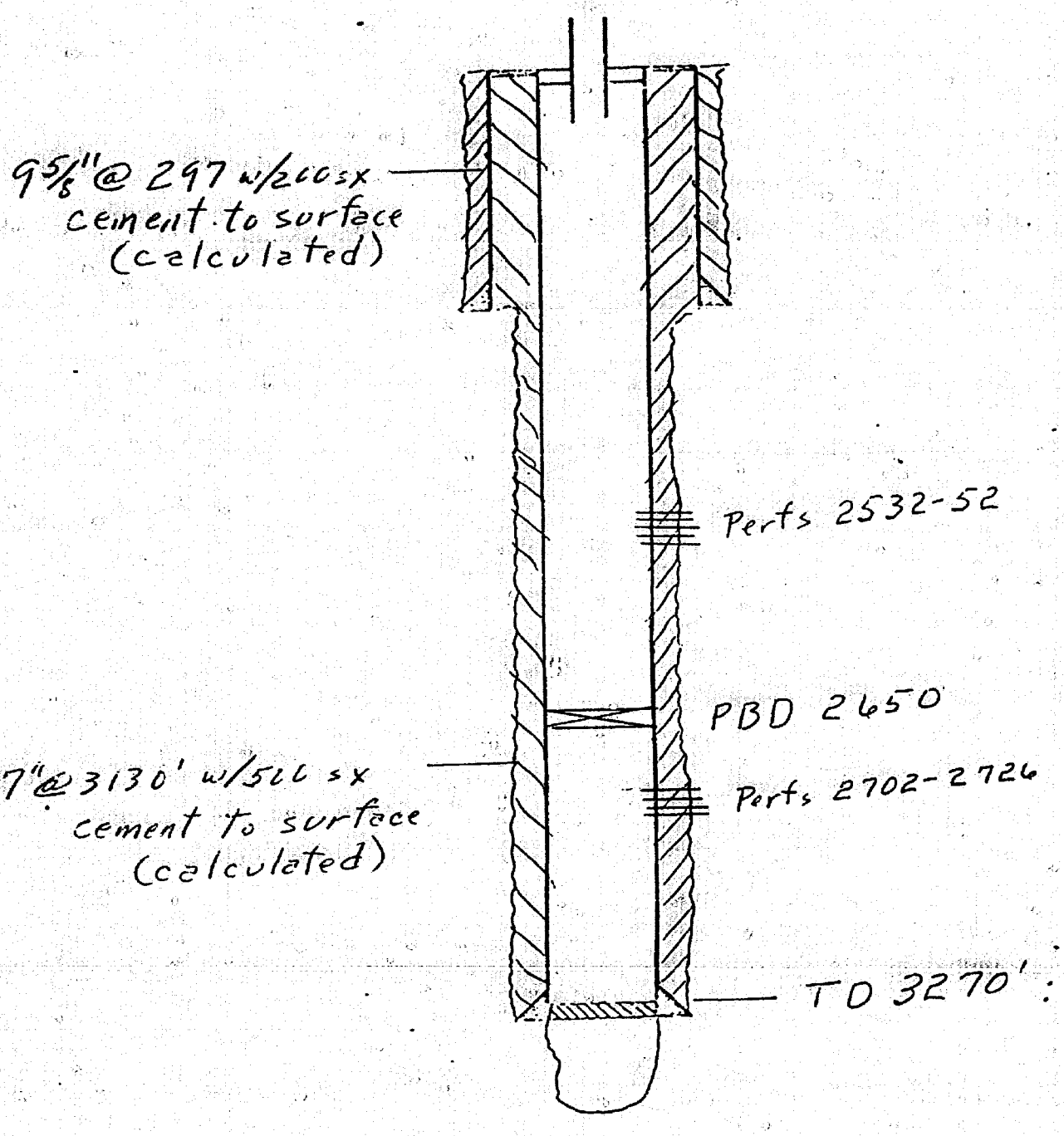
Burleson + Huff
Gutman #1

LOCATION

Section 29, T-25-S, R-37-E

1980' FSL, 660' FEL

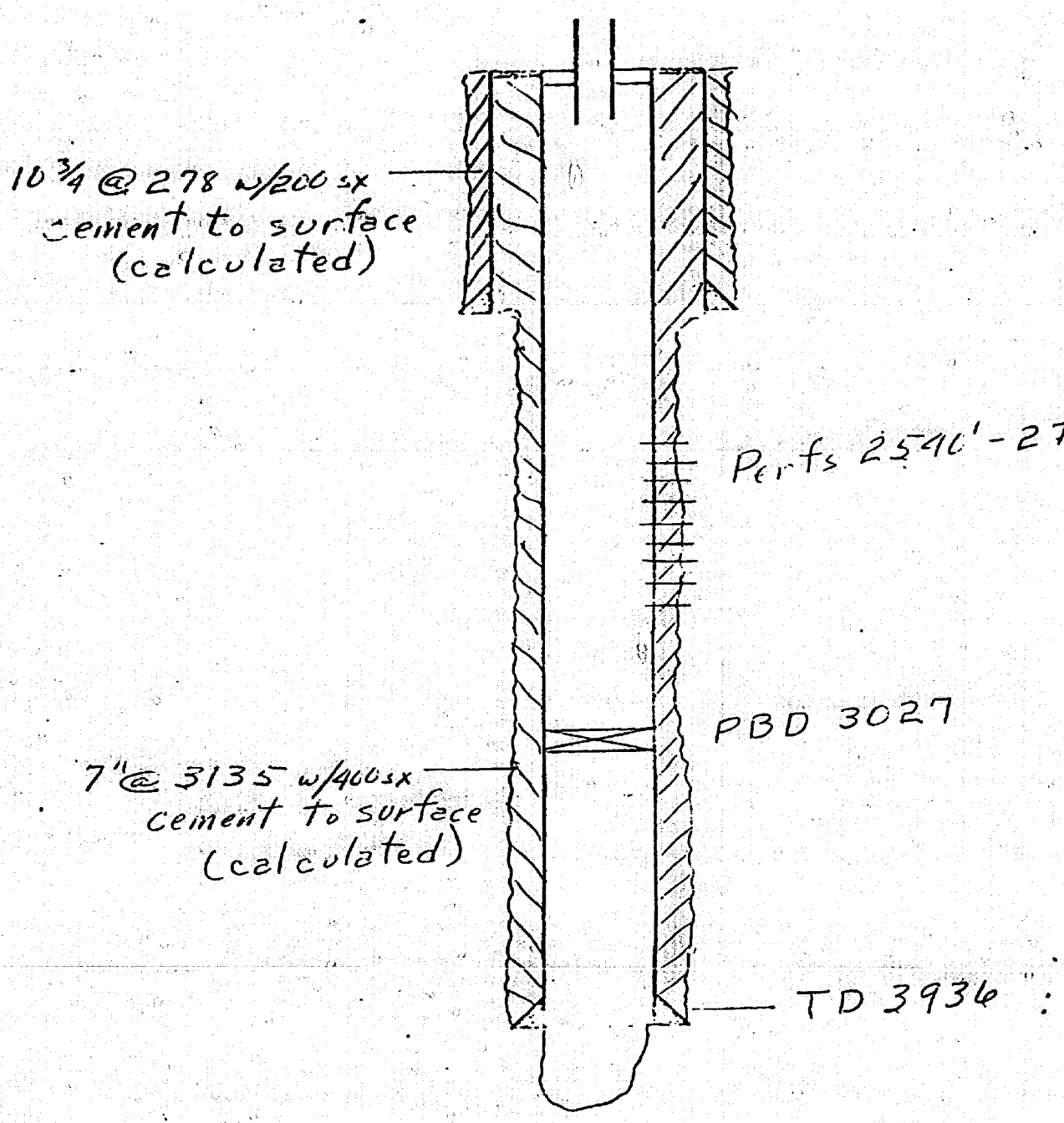
Lea County, New Mexico



Jal Oil Co.
Coll #1
P&A 8-30-60

LOCATION

Section 29, T-25-S, R-37-E
660' FNL, 660' FEL
Lea County, New Mexico



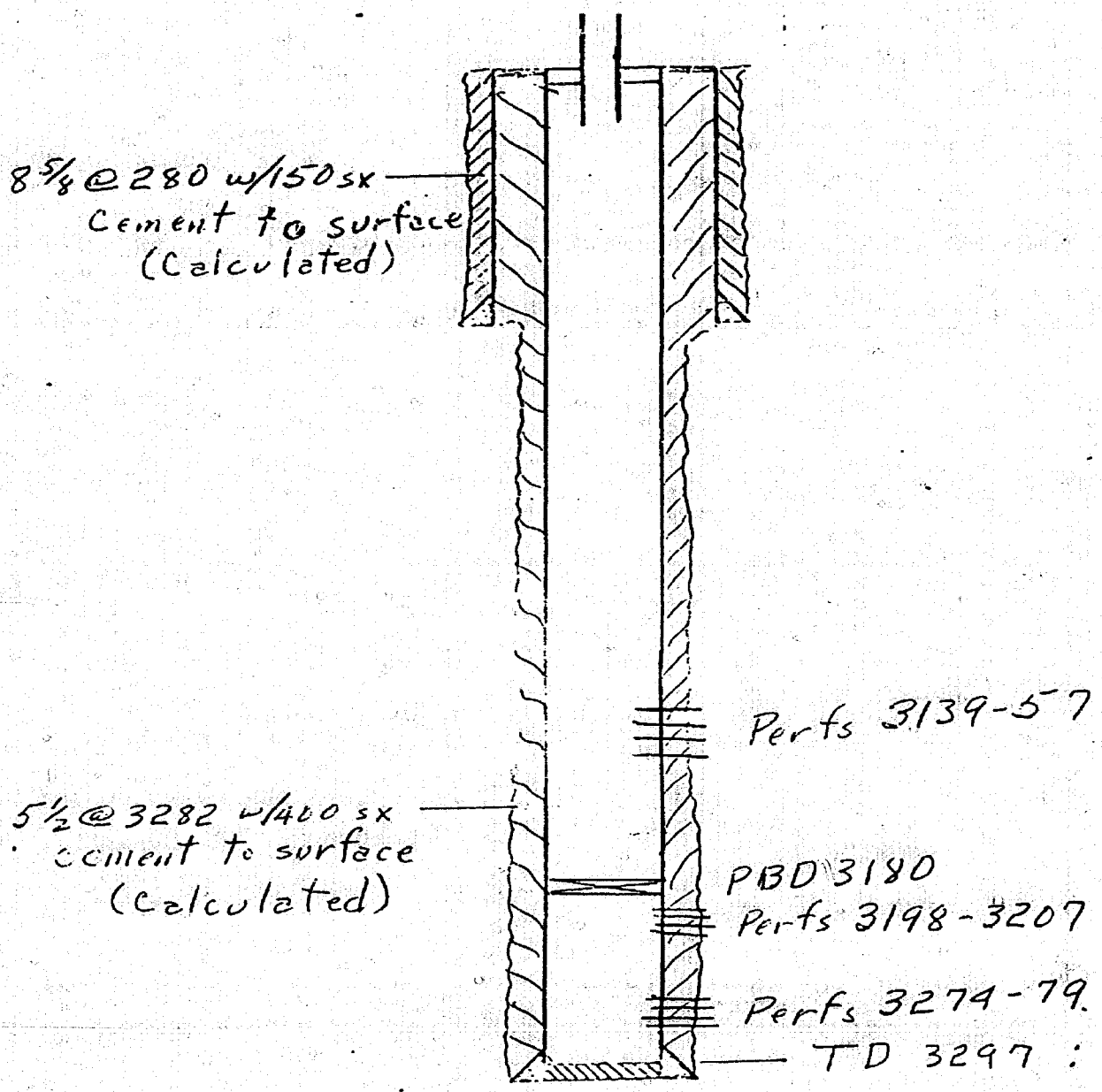
R. Olsen
Gutman #2

LOCATION

Section 29, T-25-S, R-37-E

2312' FSL, 1650' FEL

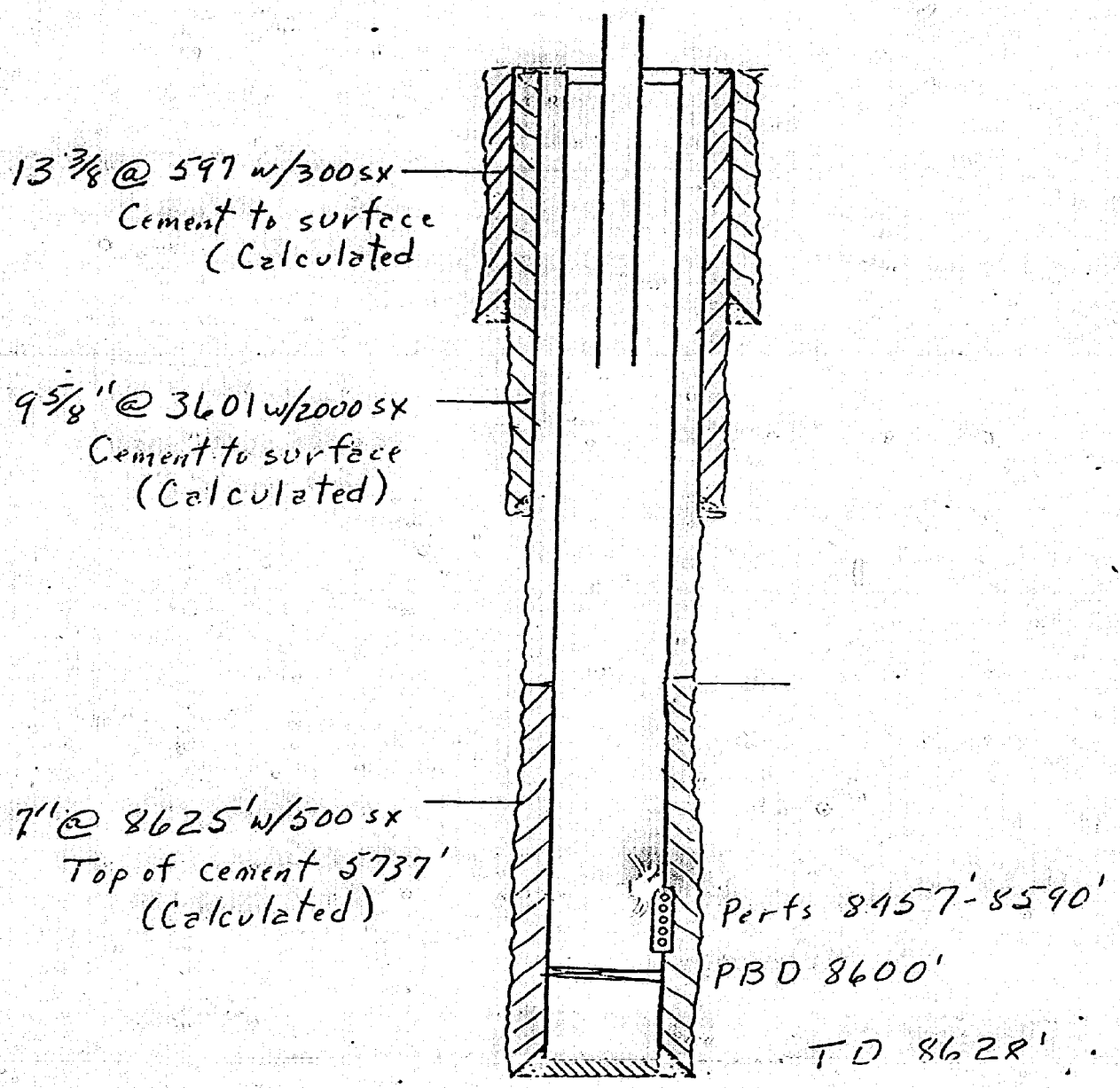
Lea County, New Mexico



R Olsen
Gutman #1-D

LOCATION

Section 29, T-25-S, R-37-E
660' FEL, 1880' FSL
Lea County, New Mexico



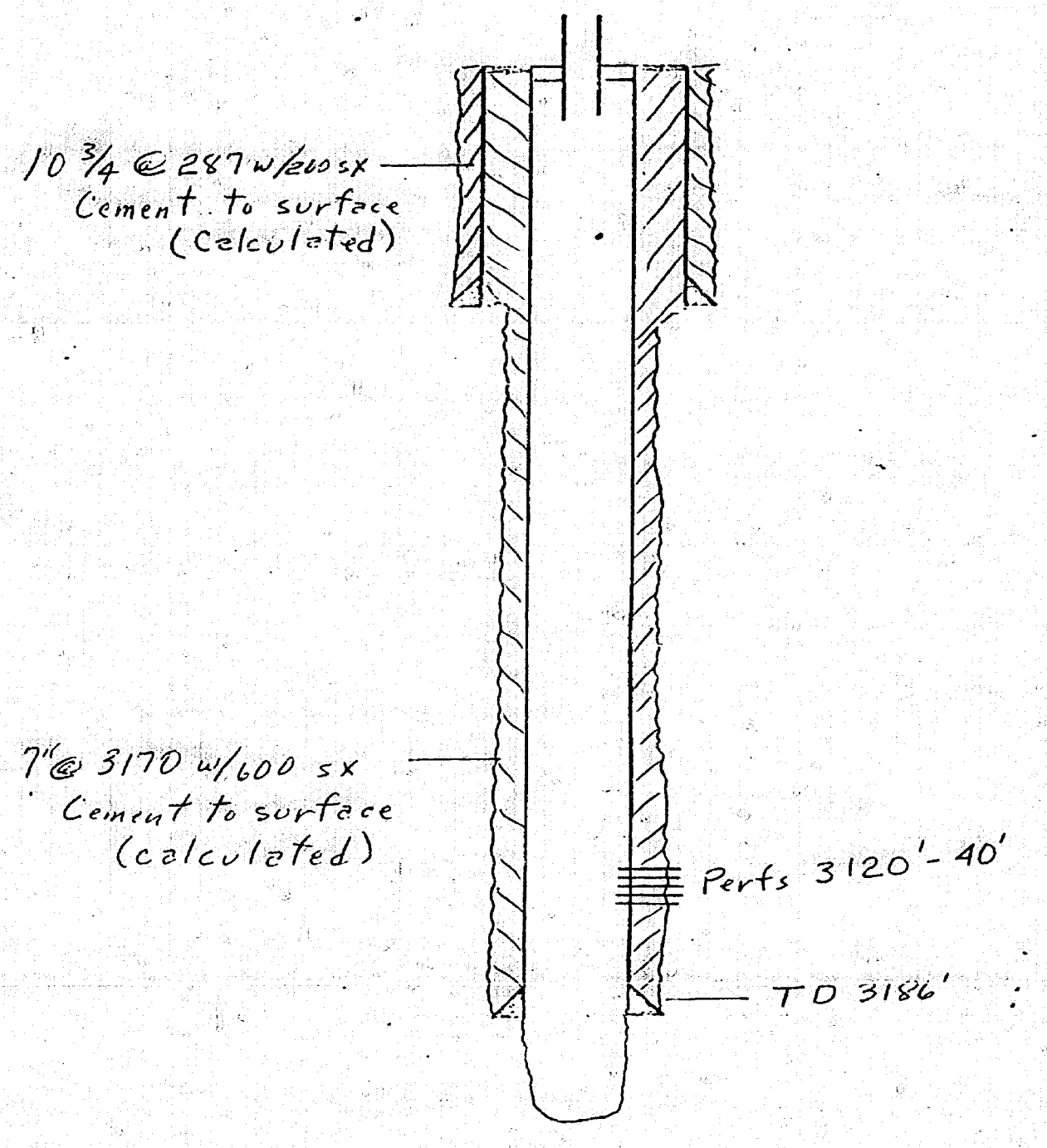
Olsen & Blount
Coll "A" 1

LOCATION

Section 29, T-25-S, R-37-E

1980 FNL, 1980' FEL

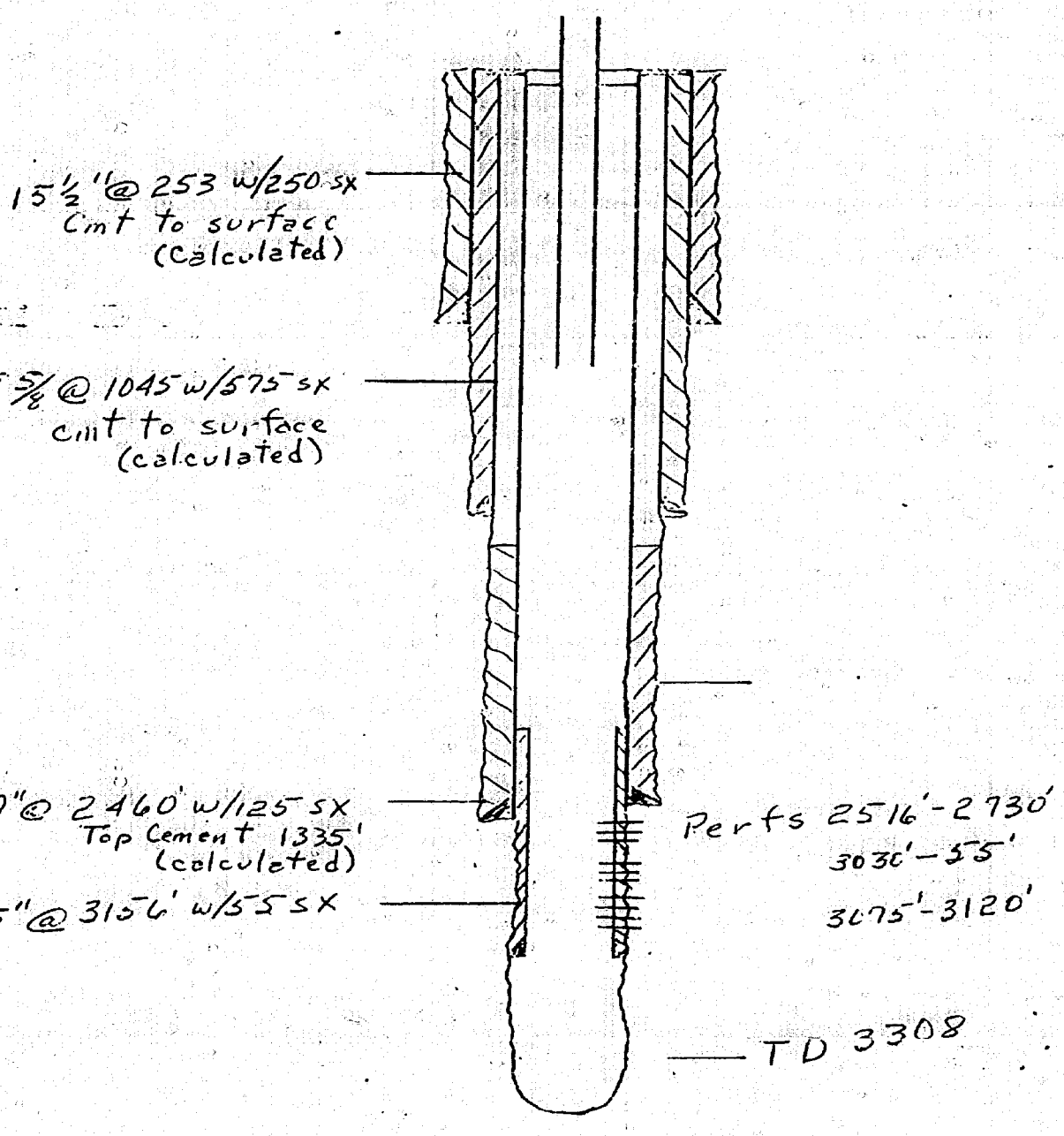
Lea County, New Mexico



Texaco
Lanchart #1

**LOCATION**

Section 29, T-25-S, R-37-E
1320' FSL, 1320' FEL
N
Lea County, New Mexico

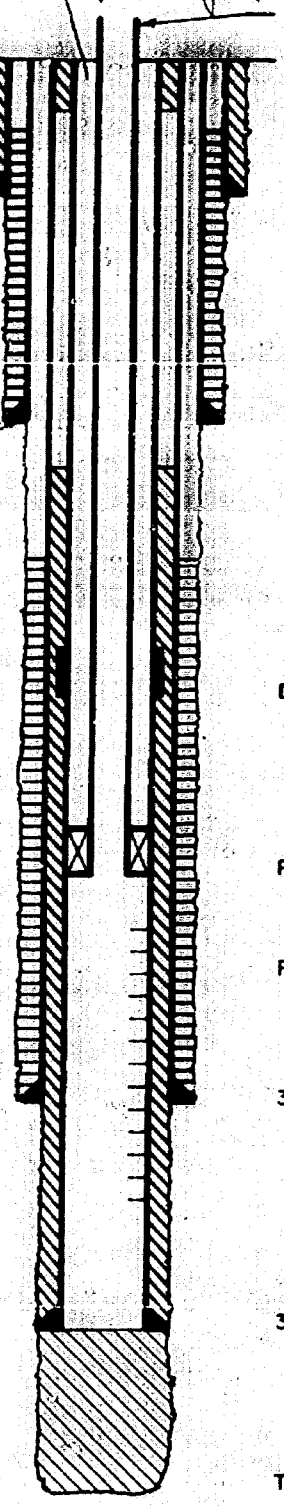


# LANGLIE - MATTIX FIELD

## ARCO R. S. CROSBY "A" NO. 2
## PROPOSED SALT WATER DISPOSAL WELL

2310' FSL, 330' FWL, SEC 28, T 25 S, R 37 E
LEA COUNTY, NEW MEXICO

BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
EXHIBIT NO. 4
CASE NO. 7294




2996
12
3192

Exhibit II

EXHIBIT VII

Martin Water Laboratories, Inc

[illegible]

700 W. INDIANA
MIDLAND, TEXAS 79701
PHONE 683-6521

RESULT OF WATER ANALYSES

LABORATORY NO. 58122
SAMPLE RECEIVED 5-1-61
RESULTS REPORTED 5-3-61

TO: Mr. Jim Curfew
P. O. Box 1710, Hobbs, New Mexico

COMPANY ARCO OIL & GAS Co. LEASE R. S. Crosby "A"
FIELD OR POOL Langlie-Mattix
SECTION BLOCK SURVEY COUNTY Lea STATE N. M.
SOURCE OF SAMPLE AND DATE TAKEN:
NO. 1 Produced water - taken from R. S. Crosby "A" #3. 4-28-61

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
CASE NO. 7864
EXHIBIT 7

CHEMICAL AND PHYSICAL PROPERTIES

| | NO. 1 | me/l | NO. 2 | me/l |
|---|---|---|---|---|
| [illegible] at 77° F. | 1.0230 | | | |
| [illegible] | 7.0 | | | |
| [illegible] | 0 | | | |
| [illegible] as NaCl | 1,403 | 23.0 | | |
| [illegible] as CaCO3 | | | | |
| [illegible] as CaCO3 | | | | |
| [illegible] as CaCO3 | 4,100 | | | |
| [illegible] | 710 | 35.5 | | |
| [illegible] | 565 | 46.5 | | |
| [illegible] | 9,205 | 400.2 | | |
| [illegible] | 1,375 | 28.6 | | |
| [illegible] Chlorides | 15,269 | 430.6 | | |
| [illegible] | 1.2 | 0.0 | | |
| [illegible] | | | | |
| [illegible] | | | | |
| [illegible] | | | | |
| [illegible] | 28,527 | | | |
| [illegible] | | | | |
| [illegible] | | | | |
| [illegible] | | | | |
| [illegible] - Total | 250. | | | |
| [illegible] at 77° F. | 0.260 | | | |
| [illegible] | | | | |
| [illegible] | | | | |
| [illegible] | | | | |
| [illegible] | | | | |
| [illegible] | | | | |
| [illegible] | | | | |

Results Reported As Milligrams Per Liter

Remarks and Recommendations: Please contact us if we can be of any assistance in regard to interpretation of these results.

(1) C

cc: Mr. Vergil Herring, Hobbs
Mr. W. C. Price, Midland
Mr. J. P. McDonald, Dallas
[illegible]

By Waylan C. Martin, M. A.

ARCO Crosby # 3 (B-1)
Unit N, Sec. 28-25-37-Lea County

1. In 1940 production report made 3,030,882 bbls of water from our water zone.

2. Federal lease had a hard time getting information on this well, but know that the Langlie-Mattix and Jalmat were co-mingled.

3. Plugging notice shows plug at 2375' in top of Yates. This well was also plugged at the same time as the "A" # 2 and I saw the gas being made up the backside when the pipe was perforated at 1275' and filled with cement. This well has no primary cement job and definitely has separattion between the Langlie-Mattix and Yates. NO

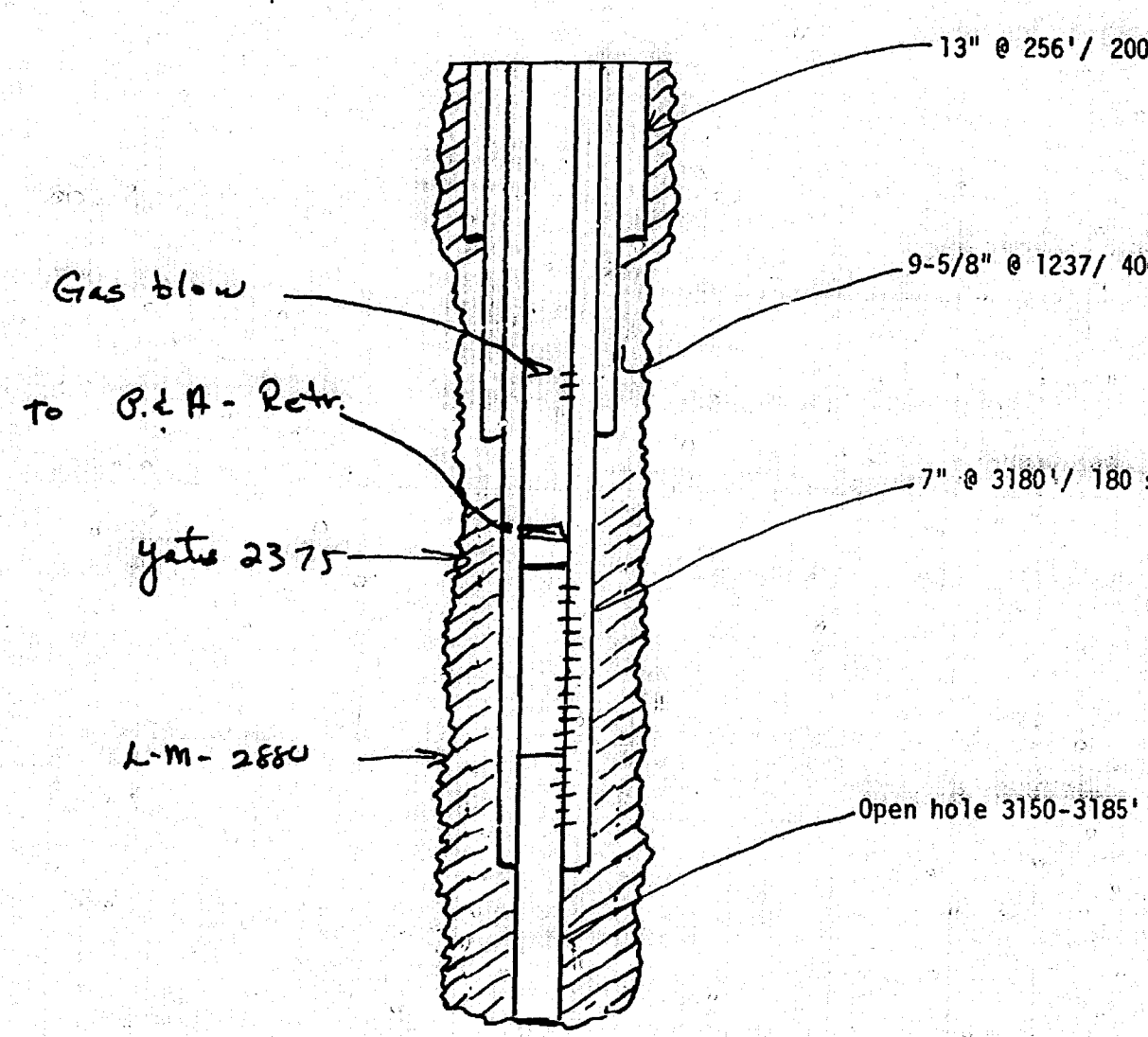
well No. 3 on map

BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
Burleson EXHIBIT NO. 3
CASE NO. 7294

## LANGLIE FIELD
### Water Production for 1940

| Well | Unit Well | S.T.& R | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALERADA PET. CORP. | | | | | | | | | | | | | | | |
| Stuart, F. | 2-H | 22-25-37 | - | - | - | - | - | - | - | - | - | - | - | 157 | 157 |
| Stuart, F.B | 1-E | 22-25-37 | - | - | - | - | 205 | 156 | - | 237 | 174 | 169 | 140 | - | 1081 |
| ANDERSON-PRICHARD OIL CORP'N | | | | | | | | | | | | | | | |
| Langlie | 4-G | 8-25-37 | - | - | - | 28 | 29 | - | 25 | 23 | 24 | 25 | 19 | 24 | 197 |
| Wells | 4-D | 5-25-37 | - | - | - | 30 | 29 | 23 | 22 | 29 | 23 | 80 | - | 89 | 325 |
| Wells | 5-B | 5-25-37 | - | - | - | 89 | - | 69 | 66 | 78 | 70 | 60 | - | 67 | 499 |
| Wells | 10-B | 4-25-37 | - | - | - | - | - | - | - | - | - | - | - | 25 | 25 |
| Wells | 11-G | 4-25-37 | - | - | - | - | - | - | - | - | - | - | 70 | 76 | 146 |
| GULF OIL CORP. | | | | | | | | | | | | | | | |
| Elliott | 1-P | 15-25-37 | 31 | 29 | 31 | 33 | 36 | 30 | 31 | 29 | 30 | 18 | 9 | 16 | 324 |
| Elliott | 2-I | 15-25-37 | - | - | - | - | - | - | - | 18 | 35 | 43 | 34 | 51 | 181 |
| Shahan | 1-B | 33-25-37 | 2421 | 2334 | 2600 | 2544 | 2304 | 655 | - | 3254 | 2978 | 2739 | 2646 | 2732 | 27204 |
| Westfall | 2-J | 15-22-36 | 132 | 146 | 131 | 117 | 129 | 97 | 120 | 81 | 72 | 62 | 58 | 48 | 1193 |
| HUMBLE OIL AND REFINING CO. | | | | | | | | | | | | | | | |
| Lanehart | 1-K | 21-25-37 | 400 | - | 350 | 374 | 291 | 225 | - | - | - | 310 | 415 | 540 | 2905 |
| PHILLIPS-PURE PETROLEUM CO. | | | | | | | | | | | | | | | |
| Woolworth 3 | 1-M | 6-25-37 | 372 | 420 | 453 | 332 | 249 | 234 | 266 | 238 | 184 | 177 | 231 | 273 | 3429 |
| Woolworth | 2-H | 6-25-37 | 28 | 30 | 32 | 25 | 30 | 26 | 36 | 41 | 45 | 27 | 33 | 28 | 361 |
| REPUBLIC PROD. CO. | | | | | | | | | | | | | | | |
| Crosby | 3-N | 28-25-37 | 250581 | 222424 | 280810 | 270044 | 279000 | 253205 | 268313 | 218193 | 314312 | 217000 | 210000 | 217000 | 3030882 |
| STANOLIND OIL AND GAS CO. | | | | | | | | | | | | | | | |
| Langlie A | 1-M | 9-25-37 | 13 | 12 | 43 | 25 | 27 | 26 | 44 | 35 | 49 | 41 | 38 | 44 | 398 |
| Langlie A | 2-L | 9-25-37 | - | 88 | - | - | - | 23 | 17 | 12 | 41 | 49 | 44 | 56 | 330 |
| Langlie B | 4-D | 14-25-37 | 45 | 54 | 53 | 23 | 20 | 30 | 69 | 62 | 63 | 65 | 60 | - | 544 |
| THE TEXAS CO. | | | | | | | | | | | | | | | |
| Fristoe A | 1-I | 3-25-37 | 110 | 116 | 135 | - | 205 | 193 | 184 | 183 | 260 | 286 | 290 | 283 | 2245 |

ARCO
CROSBY B-1
Unit N-28-25-37




See water report - open hole - 3150-3220

Perforations - 3118-2425 - 158 - treatment - 3000 gal. acid

from attached Sinclair report

This does not separate Langlie Mattix from Yates:

Yates - 2375

Langlie-Mattix - 2880

Plugged back to 2612 Perf. 2580-2429, treatment - 500 gals. acid
from attached report

To plug set retainer @ 2375 and perf. 1225 - gas up back side (I was there, no cement in Yates)

(N)

COUNTY Lea FIELD Langlie

SECTION 15 TWP. 25 RANGE 37

SECTION BLOCK SURVEY

COMPANY Republic Prod Co

WELL NO. 1-B FARM NAME Crosby

FEET FROM LINE N E S 330 W 2310

ELEVATION 3015 METHOD

CONTRACTOR Wilson SCOUT

SPUDDED 9-8 COMPLETED: DATE FOR { BBLS. OIL / M. GAS

GRAVITY DISPOSITION

I. P. NATURAL TUB. CASG. PACKER

QTS. FT. TO FT. PROD. DATE

GALS. DATE

T. P. 3195 B. P. T. D. 3220 L

| CASING | | CEMENT |
|---|---|---|
| 13 | 296 | 200 |
| 7 5/8 | 1227 | 100 |
| 7 | 3180 | 150 |
| | | |
| | | |
| 2" | 3211 | |

| | WATER | OIL & GAS |
|---|---|---|
| T. A. | | 550 3200-10 sand |
| T. S. | | |
| B. S. | | |
| T. Y. | | |
| T. BR. L. | | |
| T. W. L. | | |
| T. D. L. | | |
| T. D. SD. | | |

The Subsurface Library
P. O. Box 942
Midland, Texas

| DATE | | DATE | |
|---|---|---|---|
| | AUG 26 1937 | | |
| | LOC | | |
| | OK | | |
| 9-7 | K W Kelly | | |
| 9-14 | 0 914 Cmt | | |
| 21 | 1995 Cmt Ld. Lip. | | L. O. |
| 28 | 0 2748 L. | | |
| 5 | 3150 Sdy L. DST 3050 | | 424 - Hour |
| | 3122 - 1/2 Hr. 2 lb. 000 Gas | | 1090 Water |
| | 60 Mud | | 3/4" Ck. C. |
| 10-12 | 3220 L. DST. 3125-22 | | 2 M Gas |
| | 2 hr min 84.000 Gas 60' Mud | | COMPLETION |
| | Lud | | OCT 21 1937 |
| | | | 10-12-37 |

Well Data

Ruby S. Crosby "B" #1
Sec 28, Twp 25, Range 37-E, Lea County, N.M.
Jalmat Pool (Gas)

Completion date: March, 1942

Completed T.D. 2612'
Pay (Perf. 12 shots 2550-80; 65 shots 2484-85; 65 shots 2427-32; 120 shots 2468-2580
Elev-surf. 3016
Initial Production after workover 11-50 - 2420 MCFPD
Present Prod: 375 MCFPD

The Subsurface Library
P. O. Box 942
Midland, Texas

Casing Record:
7" OD 24 # (10 thd) cemented w/150 sks @ 3146

Completion data:
Perf. 3118-2425 w/158 shots - Treated w/3000 gal acid
Workover Record:
9-22-50: Squeezed all perfs, PB to 2612. perf. 2580-2429 w/144 shots Treated w/500 gal Mud Acid.

Form 9-331a
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.
LC 034117(b)

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME
Crosby "B"

9. WELL NO.

10. FIELD AND POOL, OR WILDCAT
Jalmat-Yates

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 28, T25S, R37E

12. COUNTY OR PARISH
Lea

13. STATE
N.M.

# SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☒ OTHER Shut in

2. NAME OF OPERATOR
Atlantic Richfield Company

3. ADDRESS OF OPERATOR
P. O. Box 1978, Roswell, New Mexico 88201

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
330' FSL & 2310' FWL

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
3016' GR

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

| NOTICE OF INTENTION TO: | | | SUBSEQUENT REPORT OF: | |
|---|---|---|---|---|
| TEST WATER SHUT-OFF | ☐ | PULL OR ALTER CASING ☐ | WATER SHUT-OFF ☐ | REPAIRING WELL ☐ |
| FRACTURE TREAT | ☐ | MULTIPLE COMPLETE ☐ | FRACTURE TREATMENT ☐ | ALTERING CASING ☐ |
| SHOOT OR ACIDIZE | ☐ | ABANDON* ☒ | SHOOTING OR ACIDIZING ☐ | ABANDONMENT* ☐ |
| REPAIR WELL | ☐ | CHANGE PLANS ☐ | (Other) ☐ | |
| (Other) | | | (NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.) | |

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

This well has been shut in since 1962. It is non-commercial and no remedial possibilities exist. We propose to plug and abandon as follows:

1. Set 7" 24# CIBP @ 2375' and cap w/2 sx of cement.
2. Perforate 7" casing w/4 holes @ 1275' and pump in 100 sx of cement, leaving 100' of cement inside casing.
3. Place 10 sx of cement in top of well.

Erect dry hole marker. Clear and level location.

AMENDMENT: Increase cement plug on top of above bridge plug from 2 sacks to a 50 foot (minimum) cement plug. Hole to be filled with mud between plugs.

18. I hereby certify that the foregoing is true and correct

SIGNED O. D. Fletcher TITLE Dist. Drlg. Supervisor DATE 4/16/71

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

APPROVED AS AMENDED
APR 19 1971
ARTHUR R. BROWN
DISTRICT ENGINEER

*See Instructions on Reverse Side

Repollo Lanehart No. 1
NW/4 Sec. 28-25-37, Lea County

Abo
Outs
3108-3460
2528-3169
TD-3460

1. At TD of 3302', plugged back to 3010'. Langlie Mattix zone is at 2940 from Saunders No. 3 log.

2. Perforated from 2950-2914 - Yates-Langlie-Mattix, made water, and cemented with 50 sx. makes separation impossible.

3. Perforated 2690-2775 - made water. Cemented back with 50 sx. No separation between these zones.

4. Perforated up 2700' from 3302. Water open behind pipe. Source of water is big aquifier at 3300'.

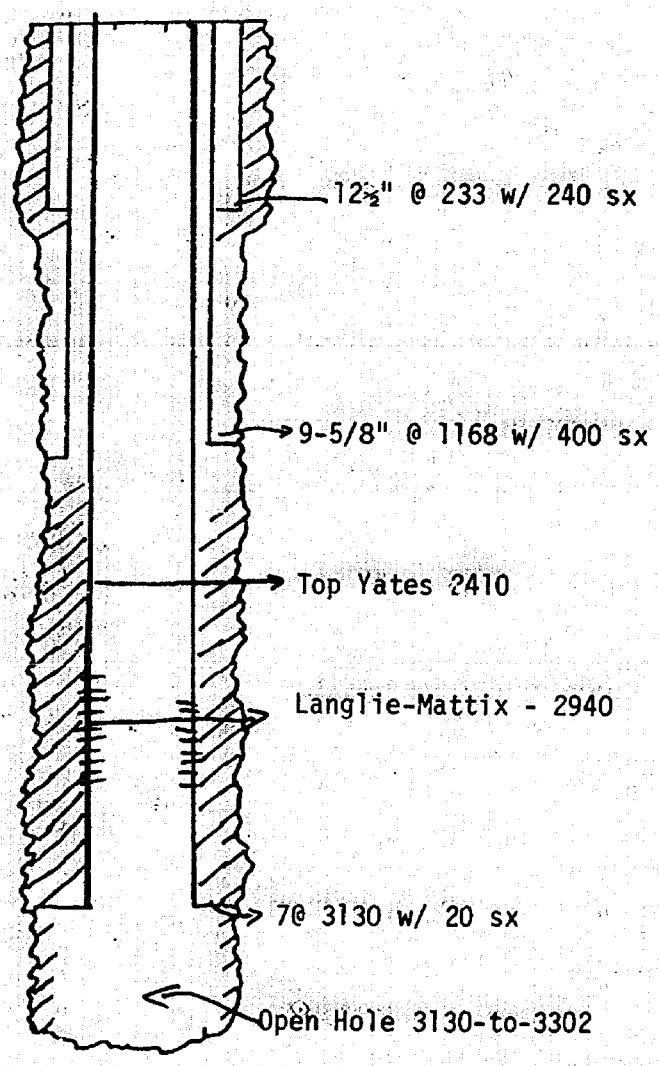
No separation between zones in this well. Poor cement job on pipe. This well is causing my water problems in Saunders # 3 Langlie-Mattix well and Saunders # 2 Jalmat well at 2200'. One of the highest Yates wells on platform.

well No. 2 on map

BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
Burleson EXHIBIT NO. 4
CASE NO. 7294

REPOLLO LANEHART NO. 1

NW/4 - Unit D
28-25-37
Lea County

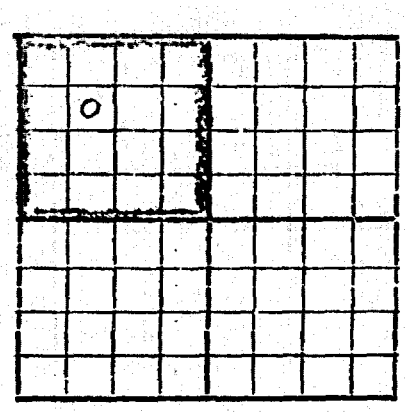



Prod. - Open hole - lots of water

Perfs - 2900-2980 - made water

Perfs. 2914 - 2950 - made water - open to main water zone

Yates & Langlie Mattix are still together with Langlie Mattix @ 2940'
Yates @ 2430'




State New Mexico County Lea

Company Repollo Oil Co

Farm Name John T. Lanehart Well No. 1

Description: Survey 28-25s-37e Co-od. 36

Sec. Blk. Twp. Rnge. Jal Sand

Feet From Lines: N. 990 E. S. W. 990

Elevation 3028 Method

Contractor J. M. L. Scout C.F.Kimball

Spudded 5/3/36 Completed: Date For Bbls. Oil

Gravity Disposition M. Gas

I. P. Natural Tub. Casg. Packer

150 Qts. 3200 Ft. To 3302 Ft. Prod. Date 6/1/36

Gals. Date

T. P. 3210 B. P. T. D. 3302

| Casing | | Cement |
|---|---|---|
| 12½ | 233 | 240 |
| 9⅝ | 1168 | 400 |
| 7 | 3130 | 200 |
| 2½ | 3302 | |
| Perf. | 2700 | |
| ½" Bottom hole | choke. | |

| Water | | | Oil & Gas |
|---|---|---|---|
| T.A. | 920 | Nul | +2108 DST 3115-3190, 15 min, 90' mud + 1118 Mgas |
| T.S. | | | DST 3181-3235, 25 min, 35' mud, sli gas |
| B.S. | 2240 | DT | 3250-90 show |
| T.Y. | 9430 | A | 3290-94 " |
| T.Br.L. | 2270 | A | +758 3294-98 " |
| T.W.L. | | | 3298-3302 " |
| T.D.L. | | | 3210-20 good sand |
| T.D. Sd. | | | |

| Date | |
|---|---|
| 4/28 | C+D |
| 5/5 | 252 R.R. [illegible] |
| 5/12 | 8/2 / SDW |
| 5/19 | 1130 R.R. Rix |
| 5/25 | 2300 A |
| 6/2 | 3186 L |
| | 3190 L wtr sand |
| 6/10 | 3302 L, tub to test |
| | flow 15-24 bbls/hr/ 1/2" 3193 BS |
| 6/12 | B.S. rec 108-10 hrs |
| | flow 224-12" 24 hr gauge, open at perf. tube |
| 6/22 | Flow 30 oil/10 hrs + 20 W ½" BH choke |
| 6/30 | I.P. 12 bbls 30 W-24 hrs ½" tub choke |
| | est 1-2 Mgas |
| | Completed JUL 3 1936 |

| Date | |
|---|---|
| | |

The Subsurface Library
P. O. Box 942
Midland, Texas

Form C-103

DUPLICATE

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

# MISCELLANEOUS NOTICES

RECD FEB 19 1945

Submit this notice in triplicate to the Oil Conservation Commission or its proper agent before the work specified is to begin. A copy will be returned to the sender on which will be given the approval, with any modifications considered advisable, or the rejection by the Commission or agent, of the plan submitted. The plan as approved should be followed, and work should not begin until approval is obtained. See additional instructions in the Rules and Regulations of the Commission.

Indicate nature of notice by checking below:

| | | | |
|---|---|---|---|
| NOTICE OF INTENTION TO TEST CASING SHUT-OFF | | NOTICE OF INTENTION TO SHOOT OR CHEMICALLY TREAT WELL | |
| NOTICE OF INTENTION TO CHANGE PLANS | | NOTICE OF INTENTION TO PULL OR OTHERWISE ALTER CASING | |
| NOTICE OF INTENTION TO REPAIR WELL | XX | NOTICE OF INTENTION TO PLUG WELL | |
| NOTICE OF INTENTION TO DEEPEN WELL | | | |

Hobbs, New Mexico, (Place) Feb. 14, 1945 (Date)

OIL CONSERVATION COMMISSION,
Santa Fe, New Mexico.

Gentlemen:

Following is a notice of intention to do certain work as described below at the

Republic Oil Company (Company or Operator) J. T. Lanehart "A" (Lease) Well No. 1 in N/2NW/4

of Sec. 28, T. 25S, R. 37E, N. M. P. M., Langlie Field,

Lea County.

## FULL DETAILS OF PROPOSED PLAN OF WORK

FOLLOW INSTRUCTIONS IN THE RULES AND REGULATIONS OF THE COMMISSION

Total Plugged Back Depth 3010'
7"OD Casing set @ 3180'

To plug off water through perforations from 2900 to 2950 and test zone at approximately 2650' for production.

To cement off perforation by Halliburton method, allow to set and test for shut off, and use sufficient cement to obtain objective.

To perforate 7"OD casing by Lane-Wells Company at recommended depths.

Approved FEB 19 1945, 19__
except as follows:

"APPROVAL CONDITIONED UPON COMPLIANCE WITH REQUIREMENTS OF OPC-WPB."

OIL CONSERVATION COMMISSION,

By Roy A. Yarbrough
GEOL. & GAS INSPECTOR

Title

Republic Oil Company
(Company or Operator)

By W. B. Rhees

Position Dist. Supt.

Send communications regarding well to

Name W. B. Rhees,

Address Box 1427, Hobbs, N.M.

FORM C-102

NEW XICO OIL CONSERVATION COMMISSION

RECEIVED APR 26 1937

Santa Fe, New Mexico

## MISCELLANEOUS NOTICES

Submit this notice in triplicate to the Oil Conservation Commission or its proper agent before the work specified is to begin. A copy will be returned to the sender on which will be given the approval, with any modifications considered advisable, or the rejection by the Commission or its agent, of the plan submitted. The plan as approved should be followed, and work should not begin until approval is obtained. See additional instructions in the Rules and Regulations of the Commission.

Indicate nature of notice by checking below:

| | | | |
|---|---|---|---|
| NOTICE OF INTENTION TO TEST CASING SHUT-OFF | | NOTICE OF INTENTION TO SHOOT OR CHEMICALLY TREAT WELL | |
| NOTICE OF INTENTION TO CHANGE PLANS | | NOTICE OF INTENTION TO PULL OR OTHERWISE ALTER CASING | |
| NOTICE OF INTENTION TO REPAIR WELL | X | NOTICE OF INTENTION TO PLUG WELL | |
| NOTICE OF INTENTION TO DEEPEN WELL | | | |

Hobbs, New Mexico (Place) April 4, 1937 (Date)

OIL CONSERVATION COMMISSION,
Santa Fe, New Mexico,
Gentlemen:

Following is a notice of intention to do certain work as described below at the

Repollo Oil Company (Company or Operator) J.T.Lanehart "A" (Lease) Well No. 1 in N/2NW/4 of Sec. 26, T. 25S, R. 37E, N. M. P. M., Langlie Field, Lea County.

DUPLICATE

### FULL DETAILS OF PROPOSED PLAN OF WORK

FOLLOW INSTRUCTIONS IN THE RULES AND REGULATIONS OF THE COMMISSION

Clean hole to bottom 3302' and cement W/ 65 sacks to shut off bottom-hole water.

Propose to shoot upper pay with 30 quarts of nitroglycerin from 3261 to 3276
Present Production- Approx. 5 Bbl. oil & 40 Bbl. Water
Purpose of shot- to increase Production
Formation to be shot - Lime & Sand
Inner string casing - 7"OD @ 3130

APR 26 1937
Approved _____, 19____
except as follows:

OIL CONSERVATION COMMISSION,
By Guy Shepard
Title Oil & Gas Inspector

Repollo Oil Company (Company or Operator)
By L. Surratt
Position Dist. Supt.
Send communications regarding well to
Name L. Surratt
Address Hobbs, N.M.

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

## MISCELLANEOUS REPORTS ON WELLS

Submit this report in triplicate to the Oil Conservation Commission or its proper agent within ten days after the work specified is completed. It should be signed and sworn to before a notary public for reports on beginning drilling operations, results of shooting well, results of test of casing shut-off, result of plugging of well, and other important operations, even though the work was witnessed by an agent of the Commission. Reports on minor operations need not be signed and sworn to before a notary public. See additional instructions in the Rules and Regulations of the Commission.

Indicate nature of report by checking below:

| | | | |
|---|---|---|---|
| REPORT ON BEGINNING DRILLING OPERATIONS | | REPORT ON REPAIRING WELL | X |
| REPORT ON RESULT OF SHOOTING OR CHEMICAL TREATMENT OF WELL | | REPORT ON PULLING OR OTHERWISE ALTERING CASING | |
| REPORT ON RESULT OF TEST OF CASING SHUT-OFF | | REPORT ON DEEPENING WELL | |
| REPORT ON RESULT OF PLUGGING OF WELL | | | |

Hobbs, New Mexico (Place) April 20, 1937 (Date)

OIL CONSERVATION COMMISSION,
Santa Fe, New Mexico.

Gentlemen:

Following is a report on the work done and the results obtained under the heading noted above at the

Repollo Oil Company (Company or Operator) J. T. Lanehart"A" (Lease) Well No. 1 in the

N/2NW/4 of Sec. 28, T. 25S, R. 37E, N. M. P. M.,

Langlie Field, Lea County.

The dates of this work were as follows: 4/15/37

Notice of intention to do the work was ~~not~~ submitted on Form C-102 on 4/15/37 19

and approval of the proposed plan was ~~not~~ obtained. (Cross out incorrect words.)

RECEIVED MAY 28 1937

### DETAILED ACCOUNT OF WORK DONE AND RESULTS OBTAINED

Cemented hole from 3281'(Bottom) to 3010'(Top of cement). Hole tested dry. Perforated casing every two feet from 2950 to 2914( 18 holes) by Lane-Wells Casing Perforator.
Perforated casing with 13 holes from 2900' to 2914'by Lane-Wells Casing perforator. Found gas production from 2900 to 2914' and pressurebuilt up to 650# in short time.

Gas tested - 4,500,000 Cu.feet

DUPLICATE

Witnessed by Mr. R. C. Brandon (Name) Weir Drlg. Co., (Company) (Title)

Subscribed and sworn to before me this 24
day of May 19 37
Notary Public

My Commission expires 1-0-24-39

I hereby swear or affirm that the information given above is true and correct.

Name L. Lemmick

Position Dist. Supt.

Representing Repollo Oil Company (Company or Operator)

Address Hobbs, N.M.

Remarks:

Guy Shepard (Name)
Oil & Gas Inspector (Title)
MAY 28 1937

FORM C-103

DUPLICATE

NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

MAR 21 1945

## MISCELLANEOUS REPORTS ON WELL

Submit this report in triplicate to the Oil Conservation Commission or its proper agent within ten days after the work specified is completed. It should be signed and sworn to before a notary public for reports on beginning drilling operations, results of shooting well, results of test of casing shut-offs, result of plugging of well, and other important operations, even though the work was witnessed by an agent of the commission. Reports on minor operations need not be signed and sworn to before a notary public. See additional instructions in the Rules and Regulations of the Commission.

Indicate nature of report by checking below:

| | | | |
|---|---|---|---|
| REPORT ON BEGINNING DRILLING OPERATIONS | | REPORT ON REPAIRING WELL | XX |
| REPORT ON RESULT OF SHOOTING OR CHEMICAL TREATMENT OF WELL | | REPORT ON PULLING OR OTHERWISE ALTERING CASING | |
| REPORT ON RESULT OF TEST OF CASING SHUT-OFF | | REPORT ON DEEPENING WELL | |
| REPORT ON RESULT OF PLUGGING OF WELL | | | |

Hobbs, New Mexico, March 19, 1945
Place Date

OIL CONSERVATION COMMISSION,
Santa Fe, New Mexico.

Gentlemen:

Following is a report on the work done and the results obtained under the heading noted above at the

Repollo Oil Company (COMPANY OR OPERATOR) J. T. Lanehart (LEASE) Well No. 1 in the

N/2NW/4 of Sec. 28, T. 25S, R. 37E, N. M. P. M.,

Langlie Field, Lea County

The dates of this work were as follows: as shown

Notice of intention to do the work was ~~XXXXXXXX~~ submitted on Form C-102 on 2/14/45 19____
and approval of the proposed plan was (was not) obtained. (Cross out incorrect words)

### DETAILED ACCOUNT OF WORK DONE AND RESULTS OBTAINED

2/15/45- Cemented back from 3010' to 2842' with 100 sacks cement by Halliburton.
2/22/45- Top Cement 2842' bailed hole dry & tested 1 Hr. Tested dry and perforated casing by Lane-Wells w/ 120 holes from 2800 to 2840. 1080' Salt Water in hole unable to lower by bailing.
2/23/45- Cemented with 50 sacks by Halliburton. WOC.
2/27/45- Top Cement 2756' SLM, bailed dry, set 1 Hr. teste dry. Perforated casing by Lane-Wells w/ 34 holes from 2690 to 2775', Est. 200,000 Cu.Ft.Gas and 2000' Water in hole in 3 Hrs.
2/28/45- Cemented with 50 sacks by Halliburton. WOC
3/6/45 - Top Cement 2775' SLM, bailed hole dry, set 1 hr. Tested dry, perforated casing from 2752 to 2773 with 34 holes. 500' water in hole- no gas.
3/7/45 - Cemented with 25 sacks. WOC.- 3/11/45-Top Cement 2755 SLM, bailed hole dry. Tested 1 Hr. Tested Dry. Perf. Csg. with 25 holes f/ 2745 to 2752'. 1000' Watar(Sulphur) 30Min. Cemented w/ 50 Sacks. WOC. 3/14/45-Top Cement 2728' SLM, Bailed hole Dry, Test 1Hr. Test Dry. Perforated Csg. w/40Holes f/2700' to 2717' filled up 300' with Sulphur Water in 30 Min. Cemented w/ 30 Sks. WOC- 3/17/45-T. Cement 2693' SLM. Bailed Dry. OK. Shot w/ 35 holes f/ 2670 to 2690 Filled up 2000' with water in 4 Hrs.-, no gas or oil. Shut Down.

Witnessed by _____ Name _____ Company _____ Title _____

Subscribed and sworn to before me this 19th day of March, 1945

_____ Notary Public

My Commission expires 2-4-46

I hereby certify that the information given above is true and correct.

Name _____

Position Dist.

Representing Repollo Oil Company (Company or Operator)

Address Hobbs, New Mexico

Remarks:

Roy Yarbrough.
OIL & GAS INSPECTOR

R. E. Lees
Name
Supt.
Title

El Paso (Texas Co) Lanehart No. 1
NE/4 Sec. 29-25-37-Lea County

1. Approximate top of Langlie-Mattix 2820' from Burleson & Huff Coll No. 1.

   a. Letter and sketch shows large volume of water at 3300'.

2. No cement in Yates as bradenhead gas used for gas lift in letter.

3. Set plug at 2830 in Langlie Mattix and no water shut off. Set plug at 2640' in Yates - no water shut off.

4. Plugged well with plug in 5" pipe at 2640 in Yates. Still have communication with lower zones.

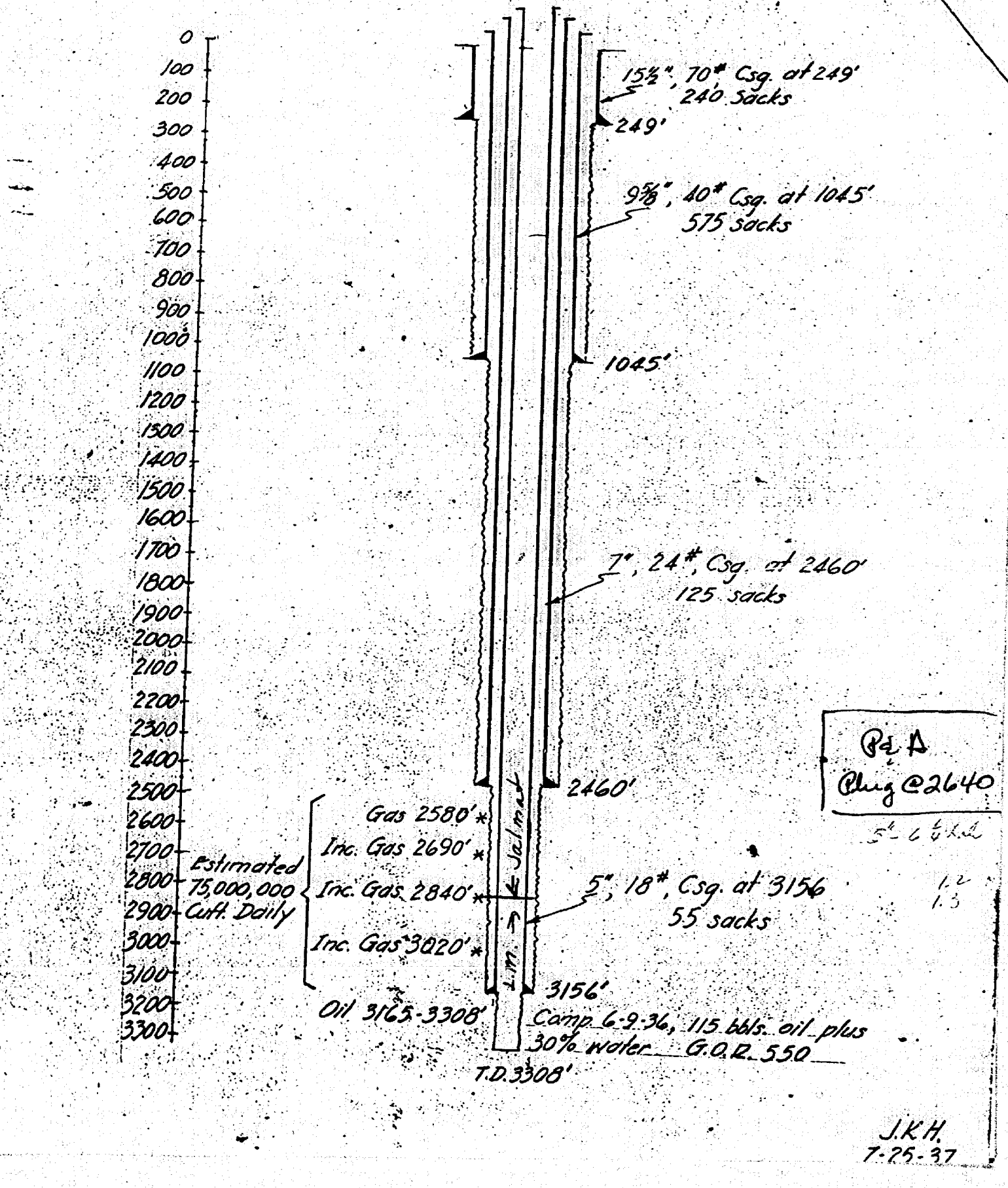
5. No separation between zones in this P & A well being less than 1/2 mile from requested disposal well.

6. Burleson & Huff P & A the Coll No. 1 in 1969. 990' away which had 800 # SIP and gas in the Yates with 12¢ gas price. Zone in Yates is watered out in Coll "A" No. 2. Source of water - main aquifier at 3300'. No separation.

BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
Burleson EXHIBIT NO. 5
CASE NO. 7294

THE TEXAS COMPANY

THE TEXAS COMPANY'S W. T. LANEHART
WELL No. 1 Sec. 29, T 25 S, R 37 E. A.S.T.
LANGLIE AREA, LEA CO., NEW MEXICO.



THE TEXAS C[illegible]PANY

Wink, Texas, July 26, 1937

41516 - W. T. Lanehart Lease
Lea County, New Mexico

Mr. Guy Shepard,
State of New Mexico,
Oil Conservation Commission,
Hobbs, New Mexico.

Dear Sir:

Reference is made to our W. T. Lanehart well No. 1 in the Langlie area and permission to gas lift this well as discussed with you personally in Santa Feeon July 15.

We are enclosing herewith a sketch showing pertinent data on this well and displaying 5" production casing, which was set through high pressure cavernous gas zone encountered around 2700' and subsequent gas horizons for the purpose of obtaining a low gas/oil ratio well. As indicated on the attached sketch, initial production of this well when completed on June 9, 1936, was 115 bbls. oil plus 30% water in 15 hours, natural, flowing with gas/oil ratio of 550.

Since completion date, however, water percentage has increased to the extent that well can no longer be made to flow naturally, except intermittently, and we shall therefore have to resort to artificial means of lifting oil. A tabulation displaying oil-water-gas relationships of this well here follows:

| DATE | OIL Bbls. | WATER Bbls. | WATER % | GAS M. Cu. Ft. |
|---|---|---|---|---|
| June, 1936 (½ Month) | 1743 | 1160 | 40 | 1670 |
| July | 3201 | 2620 | 45 | 4300 |
| August | 3388 | 2760 | 45 | 5450 |
| Sept. | 2837 | 2310 | 45 | 4760 |

| DATE | OIL BBLS. | WATER BBLS. | WATER % | GAS M. Cu. Ft. |
|---|---|---|---|---|
| 1936 Continued. | | | | |
| October | 2825 | 2315 | 45 | 3510 |
| November | 2977 | 2435 | 45 | 4140 |
| December | 3190 | 3190 | 50 | 4140 |
| January, 1937. | 2773 | 6470 | 70 | 2050 |
| February | 2471 | 6050 | 71 | 2090 |
| March | 2689 | 8067 | 75 | 2420 |
| April | 2347 | 9388 | 80 | 4650 |
| May | 1748 | 15732 | 90 | 5220 |
| June | 826 | 26700 | 97 | 2765 |

Other wells in the vicinity of our Lanehart No. 1 are producing large volumes of gas from gas producing horizons which correspond to horizons from which this bradenhead gas, which we desire to use for gas lift purposes, would be produced. Some of these wells are as follows:

(1) Pueblo Crosby well No. 1, Sec. 29, T25S, R37E. El Paso Gas Company taking from one to two million Cu. Ft. per day and have been so doing for past several years. Total depth of this well is 3100' and production string of casing was set at 2614'. Initial production 30,000,000 Cu. Ft. per day.

(2) Continental Sholes "A" well No. 1, Sec. 29, T25S, R37E. El Paso Gas Company has been taking upwards of 3 Million Cu. Ft. per day from this well and are now taking around 1-1/2 Million Cu. Ft. Total depth is 3030' and 5-3/16" production string is set at 2668'. Initial production was 70,000,000 Cu. Ft. daily.

(3) Jal Natural Gas Company B. M. Justis well No. 1, Sec. 19, T25S, R37E. El Paso Gas Company taking gas varying fro one and one half million to three million Cu. Ft. per day

over past several years. Total depth is 2795' and 8-1/4" production string of casing was set at 2615'. Initial production 25,000,000 Cu. Ft. daily.

(4) Harry Leonard J. W. Justis well No. 1, Sec. 20, T25S, R37E, was completed May 5, 1936, at plugged back total depth of 2970'. Production casing string was set at 2660'. Initial production was 20 barrels oil with 2,500,000 Cu. Ft gas daily.

(5) The Sun Oil Company W. T. Lanehart well No. 1, Sec. 20, T25S, R37E, was completed June 18, 1936, at total depth of 2757' with initial production of 22,000,000 Cu. Ft. gas per day.

(6) Jal Natural Gas Company's Justis well No. 1, a diagonal NE offset to our Lanehart lease was recently completed at total depth of 3020' blowing 14 million Cu. Ft. gas with 65 barrels oil per day. On July 22nd, this well was producing 9 Million Cu. Ft. gas and 55 bbls. oil per day. 7" Production string was set at 2890'.

We respectfully request that you grant permission to use sufficient gas from the bradenhead of our W. T. Lanehart well No. 1 to gas lift oil production from this same well for the reasons set out above.

Yours very truly,

THE TEXAS COMPANY
Producing Dept.,

By _____
District Supt.

JKH:WRJ

Form C-102

DUPLICATE

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

RECD JUL 6 '45

## MISCELLANEOUS NOTICES

Submit this notice in triplicate to the Oil Conservation Commission or its proper agent before the work specified is to begin. A copy will be returned to the sender on which will be given the approval, with any modifications considered advisable, or the rejection by the Commission or its agent, of the plan submitted. The plan as approved should be followed, and work should not begin until approval is obtained. See additional instructions in the Rules and Regulations of the Commission.

Indicate nature of notice by checking below:

| | | | |
|---|---|---|---|
| NOTICE OF INTENTION TO TEST CASING SHUT-OFF | | NOTICE OF INTENTION TO SHOOT OR CHEMICALLY TREAT WELL | |
| NOTICE OF INTENTION TO CHANGE PLANS | | NOTICE OF INTENTION TO PULL OR OTHERWISE ALTER CASING | |
| NOTICE OF INTENTION TO REPAIR WELL | | NOTICE OF INTENTION TO PLUG WELL | X |
| NOTICE OF INTENTION TO DEEPEN WELL | | | |

Jal, New Mexico (Place) July 2, 1945 (Date)

OIL CONSERVATION COMMISSION,
Santa Fe, New Mexico.

Gentlemen:

Following is a notice of intention to do certain work as described below at the

El Paso Natural Gas Co. (Company or Operator) Lanehart (Lease) Well No. 1 in C-NE¼

of Sec. 29, T. 25, R. 37, N. M. P. M., Langlie Field,

Lea County.

## FULL DETAILS OF PROPOSED PLAN OF WORK

FOLLOW INSTRUCTIONS IN THE RULES AND REGULATIONS OF THE COMMISSION

After setting Lane-wells bridging plugs at 2830 and 2640 and thoroughly testing each zone this well was still making 100% water with avvery small amount of gas which eleminate all possible producing zones for a commercial production. We therefore request permission to plug and abandon this well in the following manner. Place a 50' cement plug in base of 5½" casing and pull same. Then place a 50' cement plug at approximately 2300' or base of salt section and pull as much of the 7" as possible. Place another 50' cement plug at 1000' in the base of 9 5/8 with another cement plug in top of 9 5/8". The 9 5/8" and 15½" casing will be left in hole as each string was circulated with cement and balance of hole filled with heavy mud. The location will be leveled and cleaned up and proper marker placed at location.

Approved JUL 6 1945, 19
except as follows: A Bridge should be set under each cement plug to hold cement in place

OIL CONSERVATION COMMISSION,
By Roy Yarbrough
Title Oil & Gas Inspector

El Paso Natural Gas Co.
Company or Operator
By W. K. Davis
Position Superintendent
Send communications regarding well to
Name W. K. Davis
Address Drawer "H"
Bennett, New Mexico

Form C-102

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

# MISCELLANEOUS NOTICES

Submit this notice in triplicate to the Oil Conservation Commission or its proper agent before the work specified is to begin. A copy will be returned to the sender on which will be given the approval, with any modifications considered advisable, or the rejection by the Commission or agent, of the plan submitted. The plan as approved should be followed, and work should not begin until approval is obtained. See additional instructions in the Rules and Regulations of the Commission.

Indicate nature of notice by checking below:

| | | | |
|---|---|---|---|
| NOTICE OF INTENTION TO TEST CASING SHUT-OFF | | NOTICE OF INTENTION TO SHOOT OR CHEMICALLY TREAT WELL | |
| NOTICE OF INTENTION TO CHANGE PLANS | | NOTICE OF INTENTION TO PLUG OR OTHERWISE ALTER CASING | |
| NOTICE OF INTENTION TO REPAIR WELL | X | NOTICE OF INTENTION TO PLUG WELL | |
| NOTICE OF INTENTION TO DEEPEN WELL | | | |

Wink, Texas — Place — December 12,1938 — Date

OIL CONSERVATION COMMISSION,
Santa Fe, New Mexico.

DUPLICATE

Gentlemen:

Following is a notice of intention to do certain work as described below at the

The Texas Company W.T. Lanehart Well No. 1 in NE-1/4 of Sec. 29, T. 25 S., R. 37 E., N. M. P. M., Langlie Field, Lea County.

FULL DETAILS OF PROPOSED PLAN OF WORK
FOLLOW INSTRUCTIONS IN THE RULES AND REGULATIONS OF THE COMMISSION

Total depth - 3308' Lime.

This well was completed June 9,1936 with an initial production of 151 barrels oil plus 30% water flowing with a gas oil ratio of 550. The water percentage increased until it was necessary to use gas from the bradenhead of the same well to gas lift the well. Gas-lift operations were commenced in July 1937,and the well produced using this method until June 22,1938,when the water percentage increased to 100% and the well was shut in.

We anticipate moving in tools and plugging this well back by stages and testing in an effort to plug off this water and again make a producer of this well.

RECEIVED
DEC 14 1938
HOBBS OFFICE

Approved DEC 14 1938, 19..... except as follows:

OIL CONSERVATION COMMISSION

By Ross Sheller

Title OIL & GAS INSPECTOR

The Texas Company
Company or Operator

By L.E. Lloyd

Position District Superintendant

Send communications regarding well to

Name The Texas Company

Address Drawer K

Wink, Texas

Form

DUPLICATE

OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

# MISCELLANEOUS REPORTS ON WELLS

RECD
SEP 4 - 1945

Submit this report in triplicate to the Oil Conservation Commission or its proper agent within ten days after the work specified is completed. It should be signed and sworn to before a notary public for reports on beginning drilling operations, results of shooting well, results of test of casing shut-off, result of plugging of well, and other important operations, even though the work was witnessed by an agent of the Commission. Reports on minor operations need not be signed and sworn to before a notary public. See additional instructions in the Rules and Regulations of the Commission.

Indicate nature of report by checking below:

| | | | |
|---|---|---|---|
| REPORT ON BEGINNING DRILLING OPERATIONS | | REPORT ON REPAIRING WELL | |
| REPORT ON RESULT OF SHOOTING OR CHEMICAL TREATMENT OF WELL | | REPORT ON PULLING OR OTHERWISE ALTERING CASING | |
| REPORT ON RESULT OF TEST OF CASING SHUT-OFF | | REPORT ON DEEPENING WELL | |
| REPORT ON RESULT OF PLUGGING OF WELL | X | | |

Jal, New Mexico (Place) August 31, 1945 (Date)

OIL CONSERVATION COMMISSION,
SANTA FE, NEW MEXICO.
Gentlemen:

Following is a report on the work done and the results obtained under the heading noted above at the

El Paso Natural Gas Co. (Company or Operator) Lanehart (Lease) Well No. 1 in the C-NE¼ of Sec. 29, T. 25, R. 37, N. M. P. M., Langlie Field, Lea County.

The dates of this work were as follows: August 17, 1945

Notice of intention to do the work was (was not) submitted on Form C-102 on July 2, 1945 and approval of the proposed plan was (was not) obtained. (Cross out incorrect words.)

DETAILED ACCOUNT OF WORK DONE AND RESULTS OBTAINED

Filled hole with heavy mud and placed 50' cement plug on top of Lane Wells bridging plug at 2640. Shot 5" casing at 1800 feet and pulled 60 joints. Shot 7" casing at 1200' and pulled. Spotted bridge and 50 feet cement plug in top of 7" at 1800, and bridge and 50 feet cement plug at 1000 in base of 9 5/8" casing. Placed bridge at 50' and circulated cement into cellar. The location has been levsled and proper marker is in place.

Witnessed by George Gibbs (Name) Lea County Casing Pullers (Company) Unit Operator (Title)

Subscribed and sworn before me this 1 day of Sept, 1945

George E. Kendrick
Notary Public

My commission expires Oct 1.3 1945

I hereby swear or affirm that the information given above is true and correct.

Name R. H. McKay

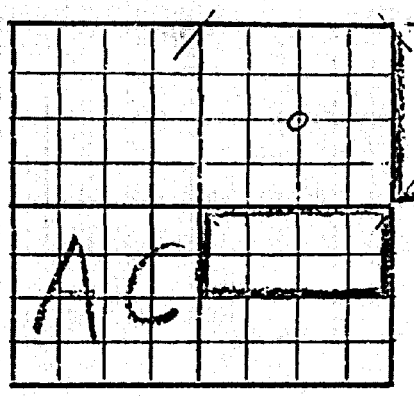
Position Production Foreman

Representing El Paso Natural Gas Company (Company or Operator)

Address Drawar "H", Bennett, New Mexico

Remarks:

Roy Yarbrough
Name
Oil & Gas Inspector
Title



State New Mexico County Lea

Company Texas Company ~~& Republic~~

Farm Name Lanehart Well No. 1

Description: Survey 29-25s-37e Co-od. 36

Sec. Blk. Twp. Rnge. JAL SAND AR

Feet From Lines: N. 1320' E. 1320' S. W.

Elevation 3033 Method

Contractor Macandrew & Thompson Scout C. F. KIMBALL

Spudded 3/15/36 Completed: Date For B

Gravity Disposition

I. P. Natural Tub. Casg. Packer

1/4 mile W ~~#25 Lea~~ Lauchart & 1/4 mile N #114 Lea, Acreage Contr

Qts. Ft. To Ft. Prod. Date

Gals. Date

T. P. 3245 B. P. T. D. 3308

| Casing | | Cement |
|---|---|---|
| 15½ | 253 | 250 |
| 9 5/8 | 1045 | 575 |
| 7 | 2440 | 125 |
| 5½ | 3161 | 55 |
| 2 | 3255 | |
| | | |
| | | |

| | Water | | | Oil & Gas |
|---|---|---|---|---|
| T. A. | 960 B | +2071 | 18' light Pumble #1 Sd | 2545-70 ~~1/8~~ 15-20 Mgas blow on 8 |
| T. S. | | | | 2687-90 ~~1/8~~ no gas |
| B. S. | 2330 S | +701 | 153' light to " " " | 2725-56 " " |
| T. Y. | | | | 2725-70 Lost Circ |
| T. Br. L. | 2350 Lunch + 681 | | | 2746 gauged 34½ Mcf |
| T. W. L. | | | | 2756-70 ~~1/8~~ 60-65 Mgas |
| T. D. L. | | | | 3148-92 ACO |
| T. D. Sd. | | | | 3292-3308 ACO |

| Date | Rig up First Report MAR 14 1936 |
|---|---|
| 3/17 | 349 RR 11 |
| 3/24 | 1039 A |
| 3/31 | 1605 A+R |
| 4/7 | 2570 L Rolling gas |
| 4/11 | 3636 L WOC 7" |
| 4/15 | drlg ahead |
| 4/21 | 2790 L Rolling to drill |
| 4/28 | WOC 650 ahr. Commenced to drill |
| 5/5 | 2770 WOC 500 ahr. more |
| 5/12 | ✓ 680 ✓ ✓ |
| 5/19 | Commenced to Shoot to drill |
| | on 5/18 at 3250 ft. gauged |
| | over 100 Mcf. |
| 5/25 | 3150 L, ran 5½" to 3161 ft. w/ |
| | 55 sx Lone Star Cement |
| 6/2 | 3161 L WOC + ran SL M 3150=61 |
| 6/8 | 3308 L Blew 15½ ph gas 6:57 AM-Increased |
| | on 6/8/36 30% drlg W. Texas Nat. Blew |
| | down 11ph 30% drlg Resumed 4:30 PM |
| | 2809 Drlg |
| 6/9 | 3292 Cut Show Delg |

| Date | |
|---|---|
| 6/16 | 11 ph 145-12 hr 2, plus 40% W on 4 |
| | 2nd 14 Mcf |
| 6/23 | 16 ph 37 Mcf W |
| 6/30 | I.P. 16 ph, on 8/32" W. Tubing 1/4 M |
| | no Sulphur water |
| | Gas IP 384-24 hr |
| | Completed JUL 3 1936 |

The Subsurface Library,
P. O. Box 942
Midland, Texas

CROSBY "A" No. 2
Proposed Injection Well
Sec. 28 - 25 - 37 - Lea

Federal Lease - file not available to me in short time I had for hearing.

1. On Arco log - on cross-section- they show that their records had old perfs 2618' to 2855', which had water channeling problems and was reason for P & A well.

2. We know that perfs at 3000' in Langlie-Mattix were also watered out. Shows that Langlie-Mattix and Yates not separated.

3. When they plugged the well they only put a plug @ 2500' which is approximately at top of the Yates. When this well was plugged in 1971 I was a Jal that day and know that when they perforated the 7" casing at 1325' the well started making a large volume of gas showing that they had no primary cement job over the Yates.

4. The encroachment of water from poorly plugged wells also affected the Arco # 1 ARC Federal as shown completed for 645 MCFPD on a 16/64" choke, no water. Tubing pressure 825#. 2½ years later well was plugged because Yates zone watered out. Source of water - main aquifier at 3300'. The Crosby "A" # 3 did not have separation between the Langlie-Mattix and Jalmat.

5. I am against using this well for injection because old pipe was not cemented properly. New liner did not fix the cement job. They squeezed old pipe but that did not repair cement job over the entire section. We have enough water problems without injecting more water in these zones.

6. Test of 223 bbls of water, 6 bbls of oil, SIP 875# shows good gas zone that has water that came from our big aquifier. Oil did also as this is too high for oil.

7. This well would be injecting water in the pay zone of offset wells in every direction. This is no water flood. This water should affect wells up dip first, being Lewis B. Burleson, Inc. leases.

Well No. 4 on map

BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
Burleson EXHIBIT NO. 6
CASE NO. 7294

# ARCO (REPUBLIC PRODUCTION) CROSBY A No. 2

## PROPOSED INJECTION WELL

Perfs: 2375- 3075 -
Not squeezed off

Arco's perfs.

Drilled cement 2460-95
Drilled retainer @ 2495
Drilled cement to 2509'

No cement from 2509 - 3115 ***

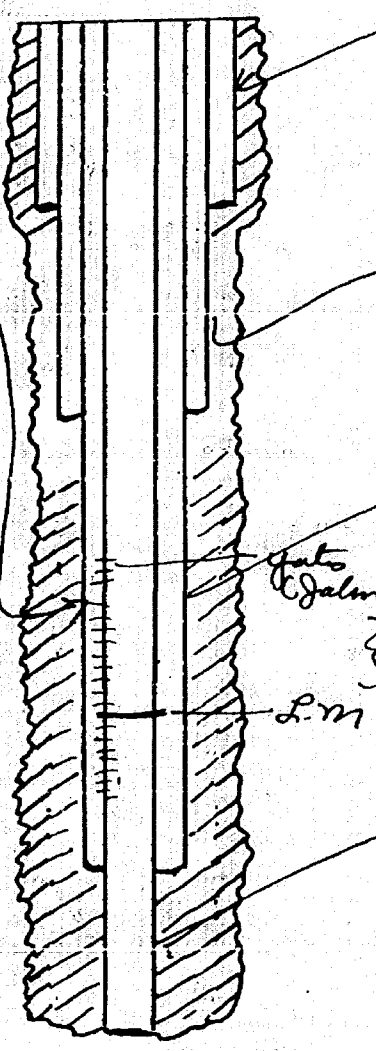
Yates & Queen are open together.

Perfs - all kinds

from attached Arco's log on
Cross-section 2375-2380'
+ 2520 to 3075'

Note: Poor pipe
Communication from 120' in
Queen to Tansill - Yates.

Note: no cement dug as above.




12½ - 270' w/ 200 sx
1976

9-5/8 - 1284' - 400 sx
1936

7 - 31085 - 200 sx
1936

Bond log - no bond or
poor bond to 2360*

All pipe in poor cond. **

4½ - 3400 - 200 sx DV Tool
300 sx

Had to Braden head squeeze
150 sx - hole in 7" pipe
DV tool - top of Yates - 2409
Trouble cementing ****

* Drilling report 2-25-81 attached

** Drilling report 2-26-81 - attached

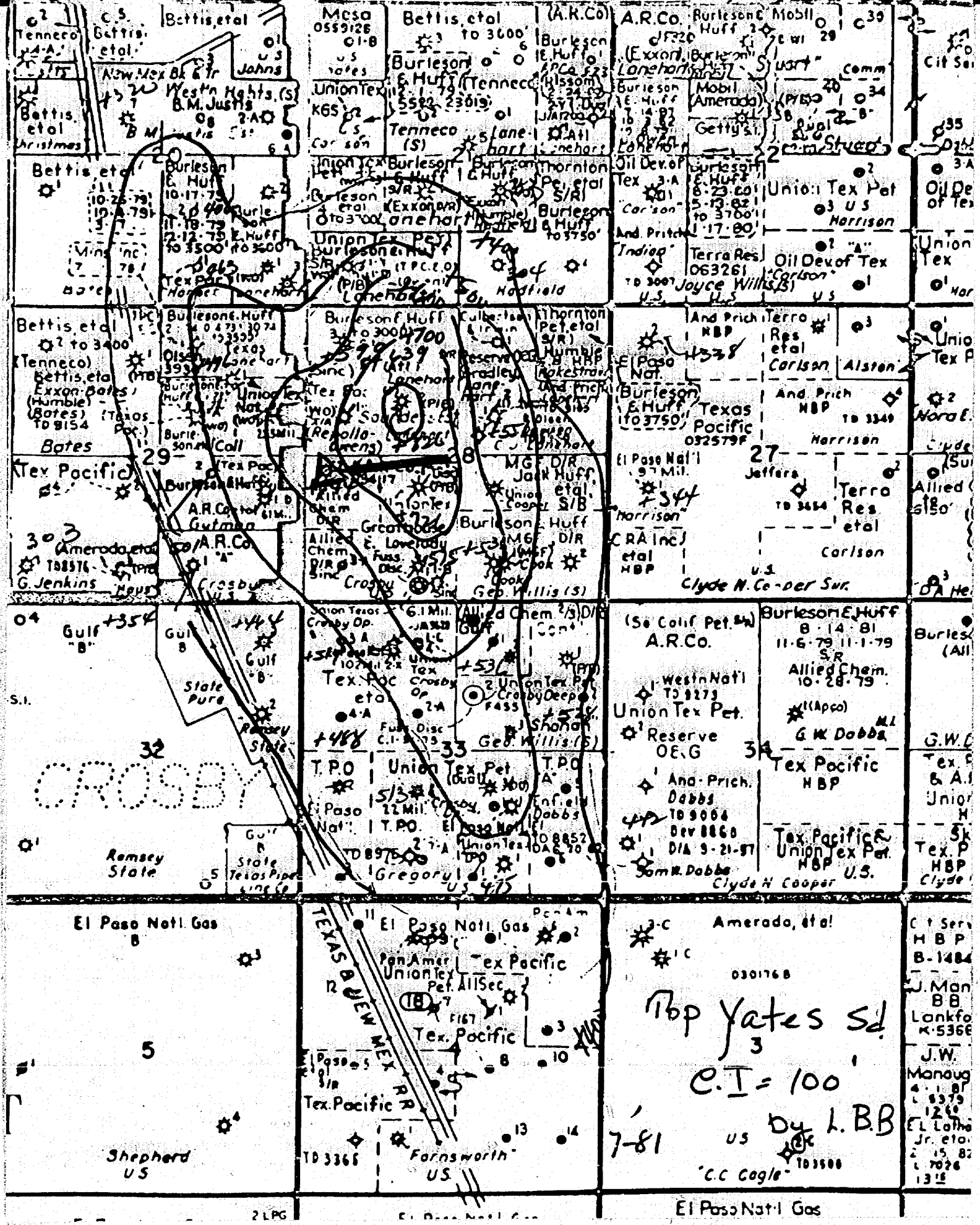
*** Drilling report 2-27-81 - attached

**** Drilling report 3-26-81 - attached

***** From Arco log on Cross-section

Perfs - 3030-3044, SIP 875#
flowed gas & water, as good
as Lewis B. Burleson, Inc.'s
Saunders # 3 - 200 bbls water
per day, flowing on 100# TP
200 MCFPD - 10/64" choke

Not in oil but gas, f'at to
Lewis B. Burleson, Inc.
Saunders # 3


CROSBY
Tenneco
Bettis, etal
New Mex Bk & Tr
Western Hghts. (S)
B.M. Justis
Bettis etal
Christmas
Burleson E. Huff
Union Tex Pet
Tex Pac
Hooper
Lonehart
Mesa
Union Tex
K65
Carlson
Tenneco (S)
Lane-Hart
Thornton Pet. etal
Humble
Hatfield
Oil Dev. of Tex
Carlson
And. Pritch
Indiana
Terra Res
Joyce Wills (S)
Union Tex Pet
Harrison
Oil Dev. of Tex
Carlson
Bettis, etal
Exxon-Bates
(Humble)
(Bates)
TD 9154
Bates
Texas Pac.
Call
Reppollo-Owens
Allied Chem
Crosby
Tex Pacific
Gutman
A.R.Co.
Amerada, etal
TD 8576
G. Jenkins
Hess
Jack Huff etal
S/B
Union Sooner
Cook
Geo. Willis (S)
El Paso Nat.
Texas Pacific
032579F
El Paso Nat'l
9 Mil.
Jeffers
TD 3454
Terro Res etal
Carlson
CRA Inc etal
HBP
Clyde N. Cooper Sur.
Gulf
State Pure
Ramsey
Ramsey State
Union Texas Crosby Op.
Tex. Pac etal
Union Tex Pet
Crosby Deep
Shonak
Gen. Willis (S)
T.P.O
El Paso Nat'l
TD 8976
Gregory
US 87
(So Calif Pet. Sub)
A.R.Co.
Western Nat'l
TD 9273
Union Tex Pet.
Reserve
O.E.G
Ana-Prich.
Dabbs
TD 9064
Dev 8860
DIA 9-21-87
Burleson E. Huff
8-14-81
11-6-79 11-1-79
S.R.
Allied Chem.
10-28-79
(Apco)
G.W. Dabbs
Tex Pacific
HBP
Tex. Pacific & Union Tex Pet.
HBP U.S.
Clyde N Cooper
El Paso Natl Gas
Shepherd
US
TEXAS & NEW MEX. R.R.
Pan Amer
Union Tex Pet. All Sec.
Tex. Pacific
Farnsworth
TD 3365
Amerada, etal
030176B
Tbp Yates Sd
3
C.I = 100'
7-81
by L.B.B
C.C Cagle
TD 3500
El Paso Nat'l Gas

ARCO Oil and Gas Company

# Daily Well History—Interim

Instructions: This form is used during drilling or workover operations. If testing, coring, or perforating, show formation name in describing work performed. Number all drill stem tests sequentially. Attach description of all cores. Work performed by Producing Section will be reported on "Interim" sheets until final completion. Report official or representative test on "Final" form. 1) Submit "Interim" sheets when filled out but not less frequently than every 30 days, or (2) on Wednesday of the week in which oil string is set. Submit weekly for workovers and following setting of oil string until completion.

| District | County or Parish | State |
|---|---|---|
| Permian - West Area | Lea | New Mexico |

| Field | Lease or Unit | Well no. |
|---|---|---|
| Langlie Mattix | R. S. Crosby "A" | 2 |

| Date and depth as of 8:00 a.m. | Complete record for each day while drilling or workover in progress |
|---|---|
| 3/16/81 3460' TD 3382'PBD | 3/13- SITP 575#. Bled well dn. Swbd 10 hrs, FL 900'. Rec 129 BW & 13 BO. Total +200 BW, +16 BNO. SION. 3/14- SITP 560#. Bled well dn. In 8 hrs swbd 6 BO & 281 BW, FL 900'. (+281 BW, +22 BNO). SION. |
| 3/17/81 | SITP 1000#. Bled well dn. Well flwd on 20/64" ck @ 25# FTP. Rec 4 BO & 141 BW. SION. (+422 BW, +29 BNO). Flow 148 BF in 10 hrs. |
| 3/18/81 | SITP 675#. Flwd well on 20/64" ck @ 25# for 5 hrs. Rec 41 BW. Unset pkr. RIH w/ 14 jts tbg, set pkr @ 3153'. Swbd on btm 5 perfs (3163, 70, 76, 80, 86') for 5 hrs. Csg built up to 300# while swbg. Rec 57 BW. Fluid was gas cut. SION. |
| 3/19/81 | POH w/tbg & pkr. RIH w/ BP, set BP @ 3153'. Swab on perfs 2995-3148' (19 holes). In 3 hrs rec 75 BW & tr of oil, fluid gas cut. FL stayed @ 900'. POH w/tbg. RIH w/pkr & setting tool, set pkr @ 3097'. Swab on perfs 3103-48' (8 holes). Rec 95 BW & tr of oil in 4 hrs. FL @ 900'. Fluid gas cut. Csg press built up to 350# in 4 hrs. SION. (+29 BO, +690 BW). 3/19/81 7:00 AM SITP 750#. |
| 3/20/81 | SITP 775#. Op well up. Pkr @ 3097', RBP @ 3153'. Perfs 3103-48' flwd 21 BW & tr of oil. Unset pkr. Move RBP to 3097'. Set pkr @ 3052'. Swab on perfs 3062-3091'. Rec 72 BW & tr of oil. FL stayed @ 900'. Well flwd 20 BW. Unset pkr, move RBP to 3052'. Move pkr to 2980'. Swbd on perfs 2995-3044'. Rec 30 BW while swbg. Well flwd 47 BW w/tr of oil. Rec total of 170 BF. (+29 BNO, +850 BW) 3/20/81- 7:00 AM , SITP 850#, SICP 0#. |
| 3/23/81 | 3/21- SITP 850#. Op well. Perf 2995-3044'. Flwd 10 hrs. Rec 2 BNO & 220 BLW. 3/22- SITP 875#. Op well. Unset pkr. RIH, set RBP @ 3020', set pkr @ 2973'. Swab perfs 2995-3006'. Rec 98 BW, no tr of oil. IFL 700', FFL 1900'. 3/23- 7:00 AM SITP 75#. |
| 3/24/81 | SITP 75#. Blow dn well. Unset pkr. RIH w/ RBP & set @ 3052', set pkr @ 3020'. Isolate perfs 3034-3044'. Well flwd 223 BW & 6 BO. Good show of gas. (+1491 BW, +37 BNO). SION. 3/24/81- 7:00 AM SITP 875#, SICP 75#. |
| 3/25/81 | Tstg// SITP 875#, SICP 75#. Op well, flwd 3 BO & 208 BW in 12 hrs. Perfs 3030-303903044' |
| 3/26/81 | SITP 875#, SICP 75#. Op well. Perfs 3034-44'. In 10 hrs flwd 3 BO & 210 BW. |

The above is correct

| Signature | Date | Title |
|---|---|---|
| J. W. Schmidt | 4/15/81 | Dist. Drlg. Supt. |

For form preparation and distribution see Procedures Manual Section 10, Drilling, Pages 86 and 87

Received
4/20/81
Central Files

Number all daily well history forms consecutively as they are prepared for each well. Page no. 3.

AR3B-459-2-B

ARCO Oil and Gas Company

# Daily Well History—Interim

Instructions: This form is used during drilling or workover operations. If testing, coring, or perforating, show formation name in describing work performed. Number all drill stem tests sequentially. Attach description of all cores. Work performed by Producing Section will be reported on "Interim" sheets until final completion. Report official or representative test on "Final" form. 1) Submit "Interim" sheets when filled out but not less frequently than every 30 days, or (2) on Wednesday of the week in which oil string is set. Submit weekly for workovers and following setting of oil string until completion.

| District | County or Parish | State |
|---|---|---|
| Permian - West Area | Lea | New Mexico |
| **Field** | **Lease or Unit** | **Well no.** |
| Langlie Mattix | R. S. Crosby "A" | 2 |

| Date and depth as of 8:00 a.m. | Complete record for each day while drilling or workover in progress |
|---|---|
| 3/02/81 3460' TD 3073'PBD | - Trip for new bit @ 3320' (205') // 2/28- Drld wood, cmt, iron & rubber 3115-3236'. SION. Drld wood, cmt, rubber & junk 3236-3320'. |
| 3/03/81 | Drld cmt 3320-3400'. Circ 1 hr. Lost all returns. POH, LD DC. |
| 3/04/81 | Dresser ran Densilog & Neutron 3354-2400'. Ran DLL & GR 360-3354'. |
| 3/05/81 | Inst WH, chg rams in BOP. |
| 3/06/81 | RU & ran 78 jts (3426') 4½" csg, set @ 3400'. DV tool @ 2409'. Ran 2 FCs & guide swedge. Cmt 1st stage w/ 200 sx Cl C w/add, good returns. Op DV tool. Unable to break circ. WOC 1¼ hr. Pump 2nd stage 300 sx Howco light w/add, 100 sx Cl C w/add. Close DV tool. Plug dn @ 3:00 PM, 3/05/81. Set slips, cut off 4½" csg. |
| 3/09/81 | - Attempt to pump dn annulus// 3/07- Weld on 4½" x 2½" tbg head. Inst BOP. PU 4 3-1/8" DC & 3-7/8" bit. GIH. SION. DO DV tool @ 2409'. Ran bit to 3382'. Circ clean. POH. Ran CBL. TOC @ 1240'. Questionable bond 1750-1800'. |
| 3/10/81 | - Braden head cmt dn 4½"x7" annulus// Howco loaded 4½" x 7" annulus w/ 4 BBW & pmpd into fm @ ½ BPM @ 300#. McCullough ran Noise log f/ 1500' to surf. 1st run indicated fluid movement @ 1125' & hole @ 60'. 2nd run, ran Base Temp log f/ 20-1500'. Pmpd 50 bbl 250° FW, indicated hole in 7" @ 85-62'. Indicated heated wtr going into fm @ 60'. SION. |
| 3/11/81 | - Prep to perf// Howco squeezed hole in 7" csg @ 60' from surf thru 4½" x 7" annulus. With 150 sx mixed, cmt broke thru the surf 15' from WH. Staged & pmpd another 30 sx cmt into fm. FP 500#. WOC 8 hrs. Ran temp survey, indicated cmt from surf to 75'. SION. |
| 3/12/81 | RIH w/52 stds tbg. Spot 150 gal 10% acetic acid 2995-3186'. POH w/ tbg. Perf @ 2995, 3001, 06, 34, 39, 44, 62, 69. 78, 82, 91, 3103, 12, 19, 26, 33, 40, 44, 48, 63, 70, 76, 80, 86'. RIH w/ pkr & 2 7/8" tbg. |
| 3/13/81 | RIH & set pkr @ 2813'. Howco pmpd 3000 gal 15% NE FE acid w/ 48 ball sealers. Max 4400#, avg 1950#, avg rate 4.87 BPM. Showed good ball action. RD Howco. Made 2 swab runs. In 6 hrs flwd 3 BO & 161 BLW. SION. |

The above is correct

| Signature | Date | Title |
|---|---|---|
| J. W. Schmidt | 4/15/81 | Dist. Drlg. Supt. |

For form preparation and distribution see Procedures Manual Section 10, Drilling, Pages 86 and 87

Received 4/24/81 Central Files

Number all daily well history forms consecutively as they are prepared for each well. Page no. 2.

AR3B-459-2-B

# ARCO Oil and Gas Company — Daily Well History—Initial Report

Instructions: Prepare and submit the "Initial Report" on the first Wednesday after a well is spudded or workover operations are started. Daily work prior to spudding should be summarized on the form giving inclusive dates only.

| District | County or Parish | State |
|---|---|---|
| Permian - West Area | Lea | New Mexico |

| Field | Lease or Unit | Well no. |
|---|---|---|
| Langlie Mattix | R. S. Crosby "A" | 2 |

| Auth. or W.O. no. | Title |
|---|---|
| A 614602 & 614611 | Recomplete to Langlie Mattix Producer |

| Operator | A.R.Co's W.I. |
|---|---|
| ARCO | 100% |

| Spudded or W.O. begun | Date | Hour | Prior status if a W.O. |
|---|---|---|---|
| W.O. | 2/18/81 | | |

| Date and depth as of 8:00 a.m. | Complete record for each day reported |
|---|---|
| 2/19/81 3460' TD 3073'PBD | DO cmt plugs// MIRU PU, inst WH, NU BOP. PU 6-1/8" bit, 1 DC. Drld top cmt plug to 45'. |
| 2/20/81 | Drlg cmt// Drill retr @ 51', hit bridge @ 75'. Ran to 1034', hit cmt. Lost returns. Unplugged bit, regain 80% returns. Drill cmt 1034-1064', getting small amt of Red Bed cutting. |
| 2/23/81 | Drld cmt, iron & wood 1034-1060'. POH, for new bit. Unable to run new 6-1/8" bit below 51'. Ran impression block, showed csg bent in. SION. RIH w/6-1/8" tapered mill, mill 53' to 56'. Ran to 100'. POH. RIH w/6-1/8" bit & 6 DCs. Drill on junk @ 1060'. POH. RIH w/5½" mag. POH. Rec small amt of junk. RIH w/hydro bailer, rec small piece of iron. RIH w/6-1/8" bit & DC. Drld on rubber & cmt @ 1090'. |
| 2/24/81 | Drlg cmt// Drld cmt 1090-1311'. |
| 2/25/81 | Rng Vertilog// Drill cmt 1311-1325'. Ran 1325 to 2300'. Drill cmt 2300-2361'. Circ clean, POH. Ran CBL. Pipe could be parted 60', 1330' & 148[illegible]'. No bond 0-1530'. Broken bond 1530-1640'. No bond 1640-1928'. Very poor bond 1928-2024'. No bond 2024-2070'. Poor bond 2070-2120'. No bond 2120-2361'. |
| 2/26/81 | Dresser ran Verta-log. Unable to get below 1332'. PU 6-1/8" tapered mill. Mill out 1332-1337', ran to 1560'. POH. Ran Verta-log 0-2360'. Pipe Cl 4 @ 60'. Pipe Cl 4 @ 1332-1337'. All pipe very poor cond. RIH w/6-1/8" bit. Drld cmt to 2460'. |
| 2/27/81 | Drill cmt 2460-2495' Drill retr 2495'. Op hole 2495-2505'. Drill cmt 2505-2509'. Op hole 2509-3060'. Drill cmt 3060-3115'. 3108-3115' tight hole. Reaming. SION. |

L.M

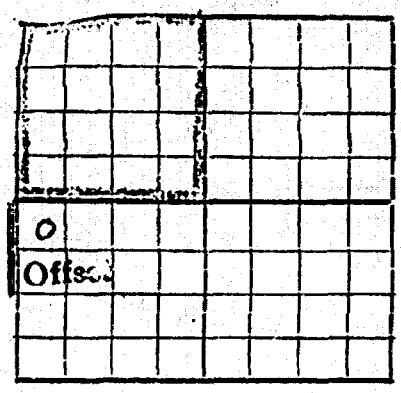
The above is correct

| Signature | Date | Title |
|---|---|---|
| J. W. Schmidt | 3/15/81 | Dist. Drlg. Supt. |

For form preparation and distribution, see Procedures Manual, Section 10, Drilling, Pages 86 and 87.

received 3/30/81 Central Files

Number all daily well history forms consecutively as they are prepared for each well. Page no. 1.




State New Mexico County Lea

Company Republic Prod. Co.

Farm Name R. S. Crosby Well No. 2

Description: Survey Sec. 28-25s-37e Co-od. 36

Sec. Blk. Twp. Rnge. Jal Sand

Feet From Lines: N. E. S. 2310 W. 330

Elevation 3027 Method

Contractor Reed-Keeton Scout C. E. Kimball

Spudded 8/4/36 Completed: Date For Bbls. O

Gravity Disposition M. G

I. P. Natural Tub. Casg. Packer

S. offset Lanhart. E. offset #114 Lea

| Casing | | Cement |
|---|---|---|
| 10¾ | 278 | 200 |
| 8¼ | 1054 | 100 |
| 7 | 3105 | 200 |

150 Qts. 3150 Ft. To 3260 Ft. Prod. Date 9/2/3

1000 Gals. Date 9-17-

T. P. 2528 B. P. T. D. 3460 P.B. 3069

| | Water | | Oil & Gas |
|---|---|---|---|
| T. A. | 870 S+ | | 2365 sdy Oil & Gas |
| T. S. | | | 2556-75 " |
| B. S. | | | 1820 " |
| T. Y. | 3440 (?) | 3445 | 3211-21 sdy |
| T. Br. L. | 3320 (?) | 3324 | 3222 sdy |
| T. W. L. | | | 3241-60 sdy, sul. w |
| T. D. L. | | | 3334-31 sdy |
| T. D. Sd. | | | 3365-73 " |
| | | | 3384-94 " |
| | | | 3433-40 " |

3310-3460 cored

DST 3394-3460, 50 min, 1980' sul. w.

DST 3450-60, 20 min, 1340' sul. w

| Date | First Report JUL 10 1936 |
|---|---|
| 7/10 | Location |
| 7/14 | " |
| 7/21 | " |
| 28 | Rig IVOT |
| 8/4 | Spud. |
| 8/11 | 1960 Rig S |
| 8/18 | 2305 " |
| 25 | 3037 + Ld BS to 3060 Ld |
| 9/1 | 3241 Ld 3211 3111 |
| 9/8 | 3310 + Cs sd Swd. Ld 2 Mgas |
| | 115 Swd in 10 hrs, tbg @ 3152 |
| | AR to 3310 + Ld 10-in |
| 9/22 | 3310 + Ld 2 Mgas |
| 9/24 | |
| 10/6 | 3460 + Ld 10-in sul. w |
| 10/13 | Rig IVOT |
| | TD 3460 |
| | TP 2528 |

Date

IP 40 Mcf, 1360 RP

Completed OCT 23 1936

The Subsurface Library
P. O. Box 942
Midland, Texas

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.: LC 034117(a)

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: [redacted]. Crosby "A"

9. WELL NO.: 2

10. FIELD AND POOL, OR WILDCAT: Jalmat-Yates

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 28, T25S, R37E

12. COUNTY OR PARISH: Lea

13. STATE: N.M.

# SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☒ OTHER Shut-In

2. NAME OF OPERATOR: Atlantic Richfield Company

3. ADDRESS OF OPERATOR: P. O. Box 1978, Roswell, New Mexico 88201

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 2310' FSL & 330' FWL

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3022' GR

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

| NOTICE OF INTENTION TO: | | | | SUBSEQUENT REPORT OF: | | | |
|---|---|---|---|---|---|---|---|
| TEST WATER SHUT-OFF | ☐ | PULL OR ALTER CASING | ☐ | WATER SHUT-OFF | ☐ | REPAIRING WELL | ☐ |
| FRACTURE TREAT | ☐ | MULTIPLE COMPLETE | ☐ | FRACTURE TREATMENT | ☐ | ALTERING CASING | ☐ |
| SHOOT OR ACIDIZE | ☐ | ABANDON* | X | SHOOTING OR ACIDIZING | ☐ | ABANDONMENT* | ☐ |
| REPAIR WELL | ☐ | CHANGE PLANS | ☐ | (Other) | | | |
| (Other) | | | | | | | |

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

This well was shut in 4/16/50 as non-commercial. No remedial possibilities exist. We propose to P & A as outlined below:

1. Set 7" 24# CIBP @ 2500' and cap w/25 sx (100') of cement.
2. Perforate 7" casing w/4 holes @ 1325' and pump in 100 sx of cement, leaving 100' of cement inside 7" from 1225-1325'.
3. Place 10 sk cement plug in top of well.
4. Erect dry hole marker. Clear and level location.

Note: -9#/gal gel mud will be left between all cement plugs.

13" and 9-5/8" casing strings will remain intact.

18. I hereby certify that the foregoing is true and correct

SIGNED A. D. Fletcher TITLE Dist. Drlg. Supervisor DATE 4/22/71

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

APPROVED
APR 23 1971
ARTHUR R. BROWN
DISTRICT ENGINEER

*See Instructions on Reverse Side

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE
(Other instructions on reverse side)

Budget Bureau No. 42-R1424

5. LEASE DESIGNATION AND SERIAL NO.: LC 034117(a)

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Ruby S. Crosby "A"

9. WELL NO.: 2

10. FIELD AND POOL, OR WILDCAT: Jalmat-Yates

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 28, T25S, R37E

12. COUNTY OR PARISH: Lea

13. STATE: N.M.

# SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☐ OTHER P & A

2. NAME OF OPERATOR: Atlantic Richfield Company

3. ADDRESS OF OPERATOR: P. O. Box 1978, Roswell, N.M. 88201

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 2310' FSL & 330' FWL

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3022' GR

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

| NOTICE OF INTENTION TO: | | | | SUBSEQUENT REPORT OF: | | | |
|---|---|---|---|---|---|---|---|
| TEST WATER SHUT-OFF | ☐ | PULL OR ALTER CASING | ☐ | WATER SHUT-OFF | ☐ | REPAIRING WELL | ☐ |
| FRACTURE TREAT | ☐ | MULTIPLE COMPLETE | ☐ | FRACTURE TREATMENT | ☐ | ALTERING CASING | ☐ |
| SHOOT OR ACIDIZE | ☐ | ABANDON* | ☐ | SHOOTING OR ACIDIZING | ☐ | ABANDONMENT* | X |
| REPAIR WELL | ☐ | CHANGE PLANS | ☐ | (Other) | | | |
| (Other) | ☐ | | | (NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.) | | | |

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

This well has been plugged & abandoned in the following manner:

Spotted 30 sk Class "A" cement plug 2358-2508'. Perforated 7" casing @ 1325'. Circulated 9-5/8" x 7" annulus & cemented w/100 sx cement to 1225'. WOC 12 hrs. Perforated 7" casing @ 50'. Circulated 9-5/8" x 7" annulus w/30 sx Class "A" cement. Erected dry hole marker. Well P & A 4/28/71. 9#/gal gel mud was left between all cement plugs. 13" and 9-5/8" casing strings remain intact. Erected dry hole marker. 7" casing from 0-50' left full of cement.

Your office will be notified by letter when location is ready for inspection.

18. I hereby certify that the foregoing is true and correct

SIGNED C. W. Whitehead TITLE Dist. Drlg. Supervisor DATE 5/5/71

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

APPROVED
AUG 13 1971
J L GORDON
ACTING DISTRICT ENGINEER

*See Instructions on Reverse Side

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.
LC-034117 (b)

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

# SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☐ OTHER Plug & Abandon

7. UNIT AGREEMENT NAME

2. NAME OF OPERATOR
Atlantic Richfield Company

8. FARM OR LEASE NAME
ARC Federal

3. ADDRESS OF OPERATOR
P. O. Box 1710, Hobbs, New Mexico 88240

9. WELL NO.
1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
1980' FSL & 1980' FWL (Unit letter K)

10. FIELD AND POOL, OR WILDCAT
Jalmat Yates Gas

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
28-25S-37E

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
3023' DF

12. COUNTY OR PARISH
Lea

13. STATE
N.M.

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

| NOTICE OF INTENTION TO: | | | | SUBSEQUENT REPORT OF: | | | |
|---|---|---|---|---|---|---|---|
| TEST WATER SHUT-OFF | ☐ | PULL OR ALTER CASING | ☐ | WATER SHUT-OFF | ☐ | REPAIRING WELL | ☐ |
| FRACTURE TREAT | ☐ | MULTIPLE COMPLETE | ☐ | FRACTURE TREATMENT | ☐ | ALTERING CASING | ☐ |
| SHOOT OR ACIDIZE | ☐ | ABANDON* | ☐ | SHOOTING OR ACIDIZING | ☐ | ABANDONMENT* | ☐ |
| REPAIR WELL | ☐ | CHANGE PLANS | ☐ | (Other) Plug & Abandon | | | X |
| (Other) | | | | (NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.) | | | |

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

RU 10/31/77, killed well w/10# brine wtr. Installed BOP & POH w/compl assy. RIH w/9-5/8" cmt retr, set @ 2240'. Squeeze cmtd Jalmat perfs 2302-2395' w/80 sx Cl C cmt. PO of retr & dumped 18 sx cmt on top. Tagged cmt @ 2185'. Circ hole w/heavy brine gel. Spotted 50 sx cmt plug from 1120-970' FS (150' plug) inside 9-5/8" csg & across top of salt @ 1060'. Spotted 10 sx cmt plug @ surface, installed regulation dry hole marker, cleaned & leveled location according to USGS surface restoration specifications. Plugged & abandoned eff 11/3/77.

18. I hereby certify that the foregoing is true and correct

SIGNED [signature] TITLE Dist. Drlg. Supt. DATE 11/8/77

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

APPROVED
JUN 13 1978
[illegible]
ACTING DISTRICT ENGINEER

*See Instructions on Reverse Side

Form approved.
Budget Bureau No. 42-R1425

'TED STATES
DEPARTM.. OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TR... (Other instruc... verse side)

5. LEASE DESIGNATION AND SERIAL NO.: LC 034117 (b)

# SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☒ OTHER

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: Atlantic Richfield Company

8. FARM OR LEASE NAME: ARC Federal

3. ADDRESS OF OPERATOR: P. O. Box 1710, Hobbs, New Mexico 88240

9. WELL NO.: 1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1980' FSL & 1980' FWL (Unit letter K)

RECEIVED
APR 15 1975
U.S. GEOLOGICAL SURVEY
HOBBS, NEW MEXICO

10. FIELD AND POOL, OR WILDCAT: Jalmat Yates Gas

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 28, 25S, 37E

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3023' DF

12. COUNTY OR PARISH: Lea

13. STATE: N.M.

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

| NOTICE OF INTENTION TO: | | | | SUBSEQUENT REPORT OF: | | | |
|---|---|---|---|---|---|---|---|
| TEST WATER SHUT-OFF | ☐ | PULL OR ALTER CASING | ☐ | WATER SHUT-OFF | ☐ | REPAIRING WELL | ☐ |
| FRACTURE TREAT | ☐ | MULTIPLE COMPLETE | ☐ | FRACTURE TREATMENT | ☐ | ALTERING CASING | ☐ |
| SHOOT OR ACIDIZE | ☐ | ABANDON* | ☐ | SHOOTING OR ACIDIZING | ☐ | ABANDONMENT* | ☐ |
| REPAIR WELL | ☐ | CHANGE PLANS | ☐ | (Other) Squeeze cmt & shut off wtr | | | X |
| (Other) | | | | (NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.) | | | |

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

On 3/23/75 rigged up & killed well w/10# brine. Installed BOP. POH w/completion assy. Ran csg scraper. Set RBP @ 2400' on WL. WIH w/tbg. Stung into BP @ 2400'. Squeezed perfs 2407-2429' w/100 sx Cl C w/.3% Halad 22 & 2% CaCl followed by 25 SX Cl C w/10# sd/sk. POH w/RBP. Trtd perfs 2302-2391' w/500 gals 15% HCL-LSTNE acid. MP 750#, Min 600#, ISIP 600#, 15 min 0#. Treated perfs 2302-2391' w/1000 gals 15% HCL-LSTNE acid. MP 1250#, Min 1100#, ISIP 600#, 15 min SIP 0#. POH w/tbg & pkr. Perf'd w/1 JS ea @ 2381, 84, 90, 93, 95'. RIH w/tbg & pkr. Set pkr @ 2370'. Acidized perfs 2381-2395' w/500 gals Mod-202 acid. MP 3400#, Min 1300#, ISIP vac. POH w/tbg & pkr. Ran completion assy consisting of SN, 78 jts 2-3/8" tbg & set @ 2359'. Connected up wellhead. Test. On 24 hrs potential test 4/11/75, flowed 645 MCFG, 0 BWPD on 16/64" ck. TP 825#. Final Report.

18. I hereby certify that the foregoing is true and correct

SIGNED _____ TITLE Dist Drlg. Supv. DATE 4/15/75

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

ACCEPTED FOR RECORD
DATE
APR 16 1975
U. S. GEOLOGICAL SURVEY
HOBBS, NEW MEXICO

*See Instructions on Reverse Side

ARCO Oil and Gas Company

# Daily Well History—Interim

Instructions: This form is used during drilling or workover operations. If testing, coring, or perforating, show formation name in describing work performed. Number all drill stem tests sequentially. Attach description of all cores. Work performed by Producing Section will be reported on "Interim" sheets until final completion. Report official or representative test on "Final" form. 1) Submit "Interim" sheets when filled out but not less frequently than every 30 days, or (2) on Wednesday of the week in which oil string is set. Submit weekly for workovers and following setting of oil string until completion.

| District | County or Parish | State | |
|---|---|---|---|
| Permian - West Area | Lea | New Mexico | |
| **Field** | **Lease or Unit** | | **Well no.** |
| Langlie Mattix | R. S. Crosby "A" | | 2 |

| Date and depth as of 8:00 a.m. | Complete record for each day while drilling or workover in progress |
|---|---|
| 3/16/81 3460' TD 3382'PBD | 3/13- SITP 575#. Bled well dn. Swbd 10 hrs, FL 900'. Rec 129 BW & 13 BO. Total +200 BW, +16 BNO. SION. 3/14- SITP 560#. Bled well dn. In 8 hrs swbd 6 BO & 281 BW, FL 900'. (+281 BW, +22 BNO). SION. |
| 3/17/81 | SITP 1000#. Bled well dn. Well flwd on 20/64" ck @ 25# FTP. Rec 4 BO & 141 BW. SION. (+422 BW, +29 BNO). Flow 148 BF in 10 hrs. |
| 3/18/81 | SITP 675#. Flwd well on 20/64" ck @ 25# for 5 hrs. Rec 41 BW. Unset pkr. RIH w/ 14 jts tbg, set pkr @ 3153'. Swbd on btm 5 perfs (3163, 70, 76, 80, 86') for 5 hrs. Csg built up to 300# while swbg. Rec 57 BW. Fluid was gas cut. SION. |
| 3/19/81 | POH w/tbg & pkr. RIH w/ BP, set BP @ 3153'. Swab on perfs 2995-3148' (19 holes). In 3 hrs rec 75 BW & tr of oil, fluid gas cut. FL stayed @ 900'. POH w/tbg. RIH w/pkr & setting tool, set pkr @ 3097'. Swab on perfs 3103-48' (8 holes). Rec 95 BW & tr of oil in 4 hrs. FL @ 900'. Fluid gas cut. Csg press built up to 350# in 4 hrs. SION. (+29 BO, +690 BW). 3/19/81 7:00 AM SITP 750#. |
| 3/20/81 | SITP 775#. Op well up. Pkr @ 3097', RBP @ 3153'. Perfs 3103-48' flwd 21 BW & tr of oil. Unset pkr. Move RBP to 3097'. Set pkr @ 3052'. Swab on perfs 3062-3091'. Rec 72 BW & tr of oil. FL stayed @ 900'. Well flwd 20 BW. Unset pkr, move RBP to 3052'. Move pkr to 2980'. Swbd on perfs 2995-3044'. Rec 30 BW while swbg. Well flwd 47 BW w/tr of oil. Rec total of 170 BF. (+29 BNO, +860 BW) 3/20/81- 7:00 AM, SITP 850#, SICP 0#. |
| 3/23/81 | 3/21- SITP 850#. Op well. Perf 2995-3044'. Flwd 10 hrs. Rec 2 BNO & 220 BLW. 3/22- SITP 875#. Op well. Unset pkr. RIH, set RBP @ 3020', set pkr @ 2973'. Swab perfs 2995-3006'. Rec 98 BW, no tr of oil. IFL 700', FFL 1900'. 3/23- 7:00 AM SITP 75#. |
| 3/24/81 | SITP 75#. Blow dn well. Unset pkr. RIH w/ RBP & set @ 3052', set pkr @ 3020'. Isolate perfs 3034-3044'. Well flwd 223 BW & 6 BO. Good show of gas. (+1491 BW, +37 BNO). SION. 3/24/81- 7:00 AM SITP 875#, SICP 75#. |
| 3/25/81 | Tstg// SITP 875#, SICP 75#. Op well, flwd 3 BO & 208 BW in 12 hrs. Perfs 3030-303903044' |
| 3/26/81 | SITP 875#, SICP 75#. Op well. Perfs 3034-44'. In 10 hrs flwd 3 BO & 210 BW. |

The above is correct

| Signature | Date | Title |
|---|---|---|
| J. W. Schmidt | 4/15/81 | Dist. Drlg. Supt. |

For form preparation and distribution see Procedures Manual Section 10, Drilling, Pages 86 and 87

Received
4/21/81
Central Files

Number all daily well history forms consecutively as they are prepared for each well. Page no. 3.

AR3B-459-2-B

ARCO Oil and Gas Company

# Daily Well History—Interim

Instructions: This form is used during drilling or workover operations. If testing, coring, or perforating, show formation name in describing work performed. Number all drill stem tests sequentially. Attach description of all cores. Work performed by Producing Section will be reported on "Interim" sheets until final completion. Report official or representative test on "Final" form. 1) Submit "Interim" sheets when filled out but not less frequently than every 30 days, or (2) on Wednesday of the week in which oil string is set. Submit weekly for workovers and following setting of oil string until completion.

| District | County or Parish | State |
|---|---|---|
| Permian - West Area | Lea | New Mexico |
| **Field** | **Lease or Unit** | **Well no.** |
| Langlie Mattix | R. S. Crosby "A" | 2 |

| Date and depth as of 8:00 a.m. | Complete record for each day while drilling or workover in progress |
|---|---|
| 3/02/81 3460' TD 3073'PBD | - Trip for new bit @ 3320' (205') // 2/28- Drld wood, cmt, iron & rubber 3115-3236'. SION. Drld wood, cmt, rubber & junk 3236-3320'. |
| 3/03/81 | Drld cmt 3320-3400'. Circ 1 hr. Lost all returns. POH, LD DC. |
| 3/04/81 | Dresser ran Densilog & Neutron 3354-2400'. Ran DLL & GR 360-3354'. |
| 3/05/81 | Inst WH, chg rams in BOP. |
| 3/06/81 | RU & ran 78 jts (3426') 4½" csg, set @ 3400'. DV tool @ 2409'. Ran 2 FCs & guide swedge. Cmt 1st stage w/ 200 sx Cl C w/add, good returns. Op DV tool. Unable to break circ. WOC 1¼ hr. Pump 2nd stage 300 sx Howco light w/add, 100 sx Cl C w/add. Close DV tool. Plug dn @ 3:00 PM, 3/05/81. Set slips, cut off 4½" csg. |
| 3/09/81 | - Attempt to pump dn annulus// 3/07- Weld on 4½" x 2½" tbg head. Inst BOP. PU 4 3-1/8" DC & 3-7/8" bit. GIH. SION. DO DV tool @ 2409'. Ran bit to 3382'. Circ clean. POH. Ran CBL. TOC @ 1240'. Questionable bond 1750-1800'. |
| 3/10/81 | - Braden head cmt dn 4½"x7" annulus// Howco loaded 4½" x 7" annulus w/ 4 BBW & pmpd into fm @ ½ BPM @ 300#. McCullough ran Noise log f/ 1500' to surf. 1st run indicated fluid movement @ 1125' & hole @ 60'. 2nd run, ran Base Temp log f/ 20-1500'. Pmpd 50 bbl 250° FW, indicated hole in 7" @ 85-62'. Indicated heated wtr going into fm @ 60'. SION. |
| 3/11/81 | - Prep to perf// Howco squeezed hole in 7" csg @ 60' from surf thru 4½" x 7" annulus. With 150 sx mixed, cmt broke thru the surf 15' from WH. Staged & pmpd another 30 sx cmt into fm. FP 500#. WOC 8 hrs. Ran temp survey, indicated cmt from surf to 75'. SION. |
| 3/12/81 | RIH w/52 stds tbg. Spot 150 gal 10% acetic acid 2995-3186'. POH w/ tbg. Perf @ 2995, 3001, 06, 34, 39, 44, 62, 69. 78, 82, 91, 3103, 12, 19, 26, 33, 40, 44, 48, 63, 70, 76, 80, 86'. RIH w/ pkr & 2-7/8" tbg. |
| 3/13/81 | RIH & set pkr @ 2813'. Howco pmpd 3000 gal 15% NE FE acid w/ 48 ball sealers. Max 4400#, avg 1950#, avg rate 4.87 BPM. Showed good ball action. RD Howco. Made 2 swab runs. In 6 hrs flwd 3 BO & 161 BLW. SION. |

The above is correct

| Signature | Date | Title |
|---|---|---|
| J. W. Schmidt | 4/15/81 | Dist. Drlg. Supt. |

For form preparation and distribution see Procedures Manual Section 10, Drilling, Pages 86 and 87

Received 4/24/81 Central Files

Number all daily well history forms consecutively as they are prepared for each well. Page no. 2.

# ARCO Oil and Gas Company — Daily Well History—Initial Report

Instructions: Prepare and submit the "Initial Report" on the first Wednesday after a well is spudded or workover operations are started. Daily work prior to spudding should be summarized on the form giving inclusive dates only.

| District | County or Parish | State |
|---|---|---|
| Permian - West Area | Lea | New Mexico |

| Field | Lease or Unit | Well no. |
|---|---|---|
| Langlie Mattix | R. S. Crosby "A" | 2 |

| Auth. or W.O. no. | Title |
|---|---|
| A 614602 & 614611 | Recomplete to Langlie Mattix Producer |

| Operator | A.R.Co's W.I. |
|---|---|
| ARCO | 100% |

| Spudded or W.O. begun | Date | Hour | Prior status if a W.O. |
|---|---|---|---|
| W.O. | 2/18/81 | | |

| Date and depth as of 8:00 a.m. | Complete record for each day reported |
|---|---|
| 2/19/81 3460' TD 3073'PBD | DO cmt plugs// MIRU PU, inst WH, NU BOP. PU 6-1/8" bit, 1 DC. Drld top cmt plug to 45'. |
| 2/20/81 | Drlg cmt// Drill retr @ 51', hit bridge @ 75'. Ran to 1034', hit cmt. Lost returns. Unplugged bit, regain 80% returns. Drill cmt 1034-1064', getting small amt of Red Bed cutting. |
| 2/23/81 | Drld cmt, iron & wood 1034-1060'. POH, for new bit. Unable to run new 6-1/8" bit below 51'. Ran impression block, showed csg bent in. SION. RIH w/6-1/8" tapered mill, mill 53' to 56'. Ran to 100'. POH. RIH w/6-1/8" bit & 6 DCs. Drill on junk @ 1060'. POH. RIH w/5½" mag. POH. Rec small amt of junk. RIH w/hydro bailer, rec small piece of iron. RIH w/6-1/8" bit & DC. Drld on rubber & cmt @ 1090'. |
| 2/24/81 | Drlg cmt// Drld cmt 1090-1311'. |
| 2/25/81 | Rng Vertilog// Drill cmt 1311-1325'. Ran 1325 to 2300'. Drill cmt 2300-2361'. Circ clean, POH. Ran CBL. Pipe could be parted 60', 1330' & 1482'. No bond 0-1530'. Broken bond 1530-1640'. No bond 1640 -1928'. Very poor bond 1928-2024'. No bond 2024-2070'. Poor bond 2070-2120'. No bond 2120-2361'. |
| 2/26/81 | Dresser ran Verta-log. Unable to get below 1332'. PU 6-1/8" tapered mill. Mill out 1332-1337', ran to 1560'. POH. Ran Verta-log 0-2360'. Pipe Cl 4 @ 60'. Pipe Cl 4 @ 1332-1337'. All pipe very poor cond. RIH w/6-1/8" bit. Drld cmt to 2460'. |
| 2/27/81 | Drill cmt 2460-2495'. Drill retr 2495'. Op hole 2495-2505'. Drill cmt 2505-2509'. Op hole 2509-3060'. Drill cmt 3060-3115'. 3108-3115' tight hole. Reaming. SION. |

The above is correct

| Signature | Date | Title |
|---|---|---|
| J. W. Schmidt | 3/15/81 | Dist. Drlg. Supt. |

For form preparation and distribution, see Procedures Manual, Section 10, Drilling, Pages 86 and 87.

received 3/30/81 Central Files

Number all daily well history forms consecutively as they are prepared for each well. Page no. 1.

J. O. SETH (1883-1963)
FRANK ANDREWS (1914-1981)

A. K. MONTGOMERY
SETH D. MONTGOMERY
FRANK ANDREWS III
OWEN M. LOPEZ
VICTOR R. ORTEGA
JOHN E. CONWAY
JEFFREY R. BRANNEN
JOHN B. POUND
GARY R. KILPATRIC
THOMAS W. OLSON
WALTER J. MELENDRES
BRUCE L. HERR
MICHAEL W. BRENNAN
ROBERT P. WORCESTER
JOHN B. DRAPER
NANCY M. ANDERSON
RUDOLPH B. SACKS, JR.
JANET McL. McKAY
EDWARD F. MITCHELL III
ALLEN H. BRILL
CARRIE L. PARKER

MONTGOMERY & ANDREWS
PROFESSIONAL ASSOCIATION
ATTORNEYS AND COUNSELORS AT LAW
325 PASEO DE PERALTA
POST OFFICE BOX 2307
SANTA FE, NEW MEXICO 87501

TELEPHONE 505-982-3873
TELECOPY 505-982-4289

ALBUQUERQUE OFFICE
SUITE 918
BANK OF NEW MEXICO BUILDING
4TH AND GOLD AVENUE, S.W.
POST OFFICE BOX 1396
ALBUQUERQUE, NEW MEXICO 87103

TELEPHONE 505-243-3733

June 22, 1981

Case 7294

Oil Conservation Division
Post Office Box 2088
State Land Office
Santa Fe, New Mexico 87501

Re: Application of ARCO Oil & Gas Company for Salt Water Disposal, Lea County, New Mexico

Gentlemen:

On June 11, 1981, this firm filed on behalf of ARCO an application for salt water disposal. By that application, ARCO requested that it be allowed to utilize the R.S. Crosby No. A-2 well located in the SW 1/4 of Section 28, T. 25 S., R. 37 E., N.M.P.M., Langlie Mattix Field, in Lea County, to dispose of produced salt water into the Langlie Mattix Seven Rivers Queen formation.

At the time of filing the application, ARCO did not have all the information it needed to prepare the exhibits required by Rule 701 in Memo 3-77.

Enclosed with this letter please find the required exhibits as follows:

1. A plat showing the location of the proposed injection well and the location of all other wells within a radius of two miles from the proposed injection wells as well as those within a radius of one-half mile as required by Rule 701 A1.

2. A compensated neutron gamma ray log and an acoustic cement bond log of the proposed injection well as required by Rule 701 B2.

3. A diagramatic sketch of the proposed injection well showing all the items required by Rule 701 B3.

4. A tabular summary of all wells within one-half mile of the injection well which penetrate the injection zone showing all of the information required by Oil Conservation Commission Memo 3-77 dated August 24, 1977.

5. A schematic of all plugged and abandoned wells within the one-half mile radius referred to above which have penetrated the injection zone setting forth all the information required in Memo 3-77.

Should any of the enclosed exhibits be insufficient, or if ARCO is required to supply more information with its application, please do not hesitate to contact this office.

Very truly yours,

Gary R Kilpatrick

GRK:cl
Enclosures
cc: Mr. Horace N. Burton
Mr. B. L. Stokley
Mr. Huan Pham
All Without Enclosures

CASE 7250: (Continued from June 17, 1981, Examiner Hearing)

Application of Southland Royalty Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the N/2 of Section 22, Township 18 South, Range 29 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7292: (Continued from July 2, 1981, Examiner Hearing)

Application of ARCO Oil and Gas Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Devonian thru Ellenburger formations underlying the S/2 of Section 6, Township 25 South, Range 37 East, Custer Field, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7293: (Continued from July 2, 1981, Examiner Hearing)

Application of ARCO Oil and Gas Company for an amendment to Order No. R-6649, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an amendment to Division Order No. R-6649 which authorized compulsory pooling in Section 33, Township 22 South, Range 36 East, Langlie Field, to extend to February 1, 1982, the commencement of drilling required in said order.

CASE 7294: (Continued from July 2, 1981, Examiner Hearing)

Application of ARCO Oil and Gas Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Seven Rivers-Queen formation at a depth of 2996 feet to 3186 feet in its R. S. Crosby Well No. A-2 located in Unit L of Section 28, Township 25 South, Range 37 East, Langlie Mattix Pool.

CASE 7280: (Continued from July 2, 1981, Examiner Hearing)

Application of Northwest Pipeline Corporation for a dual completion and downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its Rosa Unit Well No. 77 located in Unit L of Section 33, Township 31 North, Range 5 West, to produce gas from the Mesaverde formation and commingled Gallup and Dakota production through separate strings of tubing.

Docket No. 22-81

Dockets Nos. 23-81 and 24-81 are tentatively set for July 29 and August 12, 1981. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - JULY 15, 1981

9 A.M. - OIL CONSERVATION DIVISION 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 August, 1981, from fifteen prorated pools in Lea, Eddy, and Chaves Counties, New Mexico.

(2) Consideration of the allowable production of gas for August, 1981, from four prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico.

CASE 7302: Application of El Paso Natural Gas Company for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Chacra and Mesaverde production in the wellbores of four wells to be drilled in the SE/4 and SW/4 of Section 34, Township 27 North, Range 7 West, and the SW/4 and NW/4 of Section 2, Township 26 North, Range 7 West, respectively.

CASE 7303: Application of Florida Hydrocarbons Company for surface commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the surface commingling of Morrow, Strawn, Atoka, and Wolfcamp gas produced from five wells located in Unit F of Section 10, Units G and O of Section 15, and Units A and I of Section 22, all in Township 23 South, Range 34 East, Antelope Ridge Field, after separately metering the gas produced from each well and each zone. Lease liquids would be separated out at the wellhead and the gas processed in a plant, allocating plant production back to each well on the basis of meter readings. Applicant further seeks a procedure whereby additional wells could be similarly commingled in said system.

CASE 7304: Application of ARCO Oil and Gas Company for directional drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to directionally drill its Custer Well No. 1, the surface location of which is 810 feet from the North line and 2164 feet from the West line of Section 6, Township 25 South, Range 37 East, Custer Field, to a bottom hole location within 100 feet of a point 1650 feet from the North line and 660 feet from the West line of said Section 6, at a true vertical depth of approximately 12,800 feet.

CASE 7305: Application of Amoco Production Company for compulsory pooling and an unorthodox well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the W/2 of Section 34, Township 23 South, Range 28 East, to be dedicated to a well to be drilled at an unorthodox location 660 feet from the South line and 1980 feet from the West line of said Section 34. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7306: Application of Getty Oil Company for pool creation, special pool rules, and a non-standard proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Lower Pennsylvanian gas pool for its Federal 33 Well No. 1 located in Unit G of Section 33, Township 26 South, Range 33 East, and the promulgation of special rules therefor, including provisions for 640-acre spacing. Applicant also seeks approval of a 616.24-acre non-standard gas proration unit comprising Sections 33 and 34, Township 26 South, Range 33 East.

CASE 7307: Application of Mesa Petroleum Company for compulsory pooling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all royalty interests in the Mesaverde formation underlying the W/2 of Section 23, Township 26 North, Range 6 West, to be dedicated to its Federal Well No. 12E drilled at a standard location thereon.

CASE 7308: Application of Mesa Petroleum Company for compulsory pooling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all royalty interests in the Mesaverde formation underlying the E/2 of Section 23, Township 26 North, Range 6 West, to be dedicated to its Federal Well No. 11E drilled at a standard location thereon.

CASE 7074: (Reopened and Readvertised)

In the matter of Case 7074 being reopened pursuant to the provisions of Order No. R-6565, which order created the South Elkins-Fusselman Gas Pool in Chaves County, New Mexico, to permit all interested parties to appear and present evidence as to the exact nature of the reservoir, and more particularly, as to the proper rate of withdrawal from the reservoir if it is determined to be a retrograde gas condensate reservoir.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
2 July 1981

EXAMINER HEARING

---

IN THE MATTER OF:

Application of ARCO Oil and Gas Company for salt water disposal, Lea County, New Mexico. CASE 7294

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: W. Perry Pearce, Esq.
Ernest L. Padilla, Esq.
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant:

MR. STAMETS: We will call next Case 7294.

MR. PEARCE: Application of ARCO Oil and Gas Company for salt water disposal, Lea County, New Mexico.

MR. STAMETS: At the request of the applicant, this case will be continued to the July 15th Examiner Hearing.

(Hearing concluded.)

# C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 7294 heard by me on 7-23 1981.

Richard L. Stamets, Examiner
Oil Conservation Division

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
2 July 1981

EXAMINER HEARING

---

IN THE MATTER OF:

Application of ARCO Oil and Gas Company for salt water disposal, Lea County, New Mexico. CASE 7294

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: W. Perry Pearce, Esq.
Ernest L. Padilla, Esq.
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant:

MR. STAMETS: We will call next Case 7294.

MR. PEARCE: Application of ARCO Oil and Gas Company for salt water disposal, Lea County, New Mexico.

MR. STAMETS: At the request of the applicant, this case will be continued to the July 15th Examiner Hearing.

(Hearing concluded.)

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

# C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. _____, heard by me on _____ 19____.

_____, Examiner
Oil Conservation Division

Dockets Nos. 22-81 and 23-81 are tentatively set for July 15 and 29, 1981. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - THURSDAY - JULY 2, 1981

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

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

CASE 7283: Application of Harvey E. Yates Company for amendment of Division Order No. R-6382, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Division Order No. R-6382 to provide that said order authorizing the McDonald Unit Agreement shall have an effective date of June 1, 1981.

CASE 7284: Application of Energy Reserves Group, Inc. for an unorthodox gas well location, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox Cisco location of its Miller Well No. 1 located 660 feet from the South and West lines of Section 12, Township 6 South, Range 33 East, the S/2 of said Section 12 to be dedicated to the well.

CASE 7285: Application of J. C. Williamson for two non-standard gas proration units and two unorthodox locations, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for two non-standard 320-acre Wolfcamp gas proration units in Section 10, Township 23 South, Range 34 East, the first comprising the NW/4, W/2 NE/4, and N/2 SW/4, and the second comprising the E/2 NE/4, S/2 SW/4, and SE/4. Applicant further seeks approval for two unorthodox locations, the first for a well drilled 1560 feet from the North line and 1830 feet from the West line of said Section 10, and the second for a well to be drilled 1980 feet from the South and East lines of the section.

CASE 7286: Application of Supron Energy Corporation for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Basin-Dakota and Blanco Mesaverde production in the wellbore of its Jicarilla F Well No. 6 located in the SW/4 of Section 34, Township 26 North, Range 4 West.

CASE 7287: Application of Benson-Montin-Greer Drilling Corporation for compulsory pooling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the West Puerto Chiquito-Mancos Oil Pool underlying a previously approved 640-acre non-standard proration unit comprising the W/2 of Section 17 and the W/2 of Section 20, Township 26 North, Range 1 West, to be dedicated to a well to be drilled thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7288: Application of Southern Union Exploration Company of Texas for contraction of the West Puerto Chiquito-Mancos Oil Pool, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks the contraction of the West Puerto Chiquito-Mancos Oil Pool by the deletion of Section 36, Township 24 North, Range 1 West, therefrom.

CASE 7251: (Continued from June 3, 1981, Examiner Hearing)

Application of Southern Union Exploration Company of Texas for compulsory pooling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the West Puerto Chiquito-Mancos Oil Pool underlying all of Section 36, Township 24 North, Range 1 West, to be dedicated to its Mobil Federal Well No. 1 drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7289: Application of Exxon Corporation for a salt water disposal well, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Queen formation at a depth of 2638 feet to 2774 feet in its Strange Federal Well No. 3 in Unit J of Section 25, Township 7 South, Range 31 East, Tomahawk-San Andres Pool.

CASE 7290: Application of Yates Petroleum Corporation for compulsory pooling, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Abo formation underlying the NE/4 of Section 26, Township 5 South, Range 24 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7291: Application of ARCO Oil and Gas Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Silurian and Fusselman formations underlying the S/2 of Section 6, Township 25 South, Range 37 East, Custer Field, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7292: Application of ARCO Oil and Gas Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Devonian thru Ellenburger formations underlying the S/2 of Section 6, Township 25 South, Range 37 East, Custer Field, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7293: Application of ARCO Oil and Gas Company for an amendment to Order No. R-6649, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an amendment to Division Order No. R-6649 which authorized compulsory pooling in Section 33, Township 22 South, Range 36 East, Langlie Field, to extend to February 1, 1982, the commencement of drilling required in said order.

CASE 7294: Application of ARCO Oil and Gas Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Seven Rivers-Queen formation at a depth of 2996 feet to 3186 feet in its R. S. Crosby Well No. A-2 located in Unit L of Section 28, Township 25 South, Range 37 East, Langlie Mattix Pool.

CASE 7248: (Continued from June 3, 1981, Examiner Hearing)

Application of Inexco Oil Company for pool creation, special pool rules, and an oil discovery allowable, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Wolfcamp oil pool for its Federal 10 State Com. Well No. 1 located in Unit L of Section 10, Township 21 South, Range 26 East, and the promulgation of special rules therefor, including provisions for 160-acre spacing. Applicant further seeks the assignment of approximately 42,290 barrels of discovery allowable to the aforesaid well.

CASE 7280: (Continued from June 17, 1981, Examiner Hearing)

Application of Northwest Pipeline Corporation for a dual completion and downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its Rosa Unit Well No. 77 located in Unit L of Section 33, Township 31 North, Range 5 West, to produce gas from the Mesaverde formation and commingled Gallup and Dakota production through separate strings of tubing.

CASE 7295: Application of Gulf Oil Corporation for rescission of Division Order No. R-2429-C, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the rescission of Division Order No. R-2429-C which authorized 320-acre spacing units in the White City-Pennsylvanian Gas Pool. Applicant seeks the reinstatement of 640-acre spacing units in said pool with provision for 320-acre infill drilling and appropriate findings relative thereto.

CASE 7296: Application of J. Gregory Merrion and Robert L. Bayless for amendment of pool rules, contraction of the Otero-Gallup Pool, and extension of the Devils Fork-Gallup Associated Pool, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of the Devils Fork-Gallup Associated Pool Rules to provide for 160-acre spacing rather than 80 acres. Applicant further seeks the contraction of the Otero-Gallup Pool by the deletion of the following acreage: E/2 and NE/4 SW/4 of Section 2, Township 24 North, Range 6 West, and the E/2 of Section 35, Township 25 North, Range 6 West. Applicant seeks the extension of the Devils Fork-Gallup Associated Pool to include the following acreage: In Township 24 North, Range 6 West: All of Sections 2 and 3; S/2 and NE/4 of Section 4; S/2 of Section 5; S/2 of Section 6; and N/2 of Section 11. In Township 25 North, Range 6 West: SE/4 of Section 33; S/2 of Section 34; and all of Section 35.

CASE 7297: (This case will be dismissed.)

Application of Amoco Production Company for an NGPA determination, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks a new onshore reservoir determination in the Morrow formation for its Alley Unit Well No. 1 in Unit E of Section 1, Township 19 South, Range 25 East.

CASE 7249: (This case will be dismissed.)

Application of Amoco Production Company for an NGPA determination, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks a new onshore reservoir determination in the Morrow formation for its Lancaster Springs Com Well No. 1 in Unit I of Section 1, Township 22 South, Range 26 East.

CASE 7250: (This case will be dismissed.)

Application of Amoco Production Company for an NGPA determination, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks a new onshore reservoir determination in the Morrow formation for its State IL Com Well No. 1 in Unit G of Section 3, Township 19 South, Range 24 East.

CASE 7300: Application of Dome Petroleum Corporation for designation of a tight formation, Sandoval County, New Mexico. Applicant, in the above-styled cause, seeks the designation of the Chacra formation underlying portions of Townships 21 and 22 North, Ranges 5, 6, and 7 West, containing 73,016 acres, more or less, as a tight formation pursuant to Section 107 of the Natural Gas Policy Act and 18 CFR Section 271.701-705.

CASE 7301: In the matter of the hearing called by the Oil Conservation Division on its own motion for an order creating, redesignating, and extending vertical and horizontal limits of certain pools in Chaves, Eddy, Lea, and Roosevelt Counties, New Mexico:

(a) CREATE a new pool in Lea County, New Mexico, classified as a gas pool for Morrow production and designated as the East Lusk-Morrow Gas Pool. The discovery well is Grace Petroleum Corporation West Tonto Federal Com Well No. 1 located in Unit L of Section 24, Township 19 South, Range 32 East, NMPM. Said pool would comprise:

TOWNSHIP 19 SOUTH, RANGE 32 EAST, NMPM
Section 24: W/2

(b) CREATE a new pool in Roosevelt County, New Mexico, classified as an oil pool for Mississippian production and designated as the Peterson-Mississippian Pool. The discovery well is Enserch Exploration, Inc. Finley Well No. 1 located in Unit A of Section 6, Township 5 South, Range 33 East, NMPM. Said pool would comprise:

TOWNSHIP 4 SOUTH, RANGE 33 EAST, NMPM
Section 20: SW/4
Section 29: S/2
Section 32: W/2

TOWNSHIP 5 SOUTH, RANGE 33 EAST, NMPM
Section 5: NW/4
Section 6: NE/4

(c) CREATE a new pool in Lea County, New Mexico, classified as a gas pool for Wolfcamp production and designated as the Salado Draw-Wolfcamp Gas Pool. The discovery well is Amoco Production Company State GR Well No. 1 located in Unit G of Section 17, Township 26 South, Range 33 East, NMPM. Said pool would comprise:

TOWNSHIP 26 SOUTH, RANGE 33 EAST, NMPM
Section 17: E/2

(c) CREATE a new pool in Lea County, New Mexico, classified as a gas pool for Strawn production and designated as the Talco-Strawn Gas Pool. The discovery well is American Trading and Producing Corporation Talco Unit Well No. 1 located in Unit K of Section 11, Township 26 South, Range 35 East, NMPM. Said pool would comprise:

TOWNSHIP 26 SOUTH, RANGE 35 EAST, NMPM
Section 11: E/2

(e) EXTEND the Lusk-Seven Rivers Pool in Lea County, New Mexico, to the North Lusk Seven Rivers Pool described as:

TOWNSHIP 19 SOUTH, RANGE 32 EAST, NMPM
Section 24: All

(f) EXTEND the vertical limits of the Lusk-Yates Pool in Eddy and Lea Counties, New Mexico, to include the Seven Rivers formation and redesignate pool as the Lusk Yates-Seven Rivers Pool described as:

TOWNSHIP 19 SOUTH, RANGE 31 EAST, NMPM
Section 24: All

TOWNSHIP 19 SOUTH, RANGE 32 EAST, NMPM
Section 19: W/2 and W/2 NE/4

(g) EXTEND the Angell Ranch Atoka-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 27 EAST, NMPM
Section 11: S/2
Section 14: All

TOWNSHIP 19 SOUTH, RANGE 28 EAST, NMPM
Section 32: S/2

(h) EXTEND the Antelope Ridge-Atoka Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 23 SOUTH, RANGE 34 EAST, NMPM
Section 2: W/2 and NE/4
Section 11: W/2

(i) EXTEND the Atoka-Yeso Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 26 EAST, NMPM
Section 26: NW/4 SW/4
Section 33: S/2 SE/4

TOWNSHIP 19 SOUTH, RANGE 26 EAST, NMPM
Section 4: NW/4 NE/4

(j) EXTEND the Boyd-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 24 EAST, NMPM
Section 34: S/2

TOWNSHIP 18 SOUTH, RANGE 25 EAST, NMPM
Section 34: E/2

TOWNSHIP 19 SOUTH, RANGE 24 EAST, NMPM
Section 3: All
Section 10: N/2
Section 11: W/2

(k) EXTEND the Bull's Eye-San Andres Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 8 SOUTH, RANGE 28 EAST, NMPM
Section 12: N/2 SE/4

TOWNSHIP 8 SOUTH, RANGE 29 EAST, NMPM
Section 7: N/2 SW/4

(l) EXTEND the South Culebra Bluff-Bone Springs Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 23 SOUTH, RANGE 28 EAST, NMPM
Section 27: N/2 NE/4

(m) EXTEND the Dublin Ranch-Atoka Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 28 EAST, NMPM
Section 33: N/2

(n) EXTEND the East Eagle Creek Atoka-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 26 EAST, NMPM
Section 30: N/2

(o) EXTEND the Southwest Eunice-San Andres Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM
Section 17: NE/4

(p) EXTEND the Gem-Morrow Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 33 EAST, NMPM
Section 31: E/2

(q) EXTEND the Gladiola-Wolfcamp Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 12 SOUTH, RANGE 38 EAST, NMPM
Section 20: NE/4
Section 21: N/2

(r) EXTEND the Grayburg Jackson Seven Rivers-Queen-Grayburg-San Andres Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 31 EAST, NMPM
Section 1: W/2 SW/4

(s) EXTEND the North Illinois Camp-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 28 EAST, NMPM
Section 16: E/2

(t) EXTEND the Langlie Mattix Seven Rivers-Queen-Grayburg Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM
Section 31: SW/4

(u) EXTEND the North Loving-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 23 SOUTH, RANGE 28 EAST, NMPM
Section 7: S/2

(v) EXTEND the West Nadine-Blinebry Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM
Section 5: E/2
Section 8: NE/4

(w) EXTEND the East Red Lake Queen-Grayburg Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 16 SOUTH, RANGE 28 EAST, NMPM
Section 25: W/2 NE/4 and NW/4 SE/4

(x) EXTEND the Richard Knob Atoka-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 25 EAST, NMPM
Section 9: N/2

(y) EXTEND the West Sawyer-San Andres Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 9 SOUTH, RANGE 37 EAST, NMPM
Section 16: S/2

(z) EXTEND the Scharb-Wolfcamp Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 35 EAST, NMPM
Section 5: E/2

(aa) EXTEND the Tomahawk-San Andres Pool in Roosevelt County, New Mexico, to include therein:

TOWNSHIP 7 SOUTH, RANGE 32 EAST, NMPM
Section 19: NW/4

(bb) EXTEND the Wantz-Abo Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM
Section 11: SW/4
Section 14: NW/4

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Docket No. 21-81

DOCKET: COMMISSION HEARING - WEDNESDAY - JULY 8, 1981

OIL CONSERVATION COMMISSION - 9 A.M. - ROOM 205
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

CASE 7226: (DE NOVO)

Application of Enserch Exploration, Inc. for salt water disposal, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Montoya formation in the interval from 7902 feet to 7930 feet in its Roder Well No. 2 in Unit E of Section 32, Township 5 South, Range 33 East.

Upon application of Enserch Exploration, Inc. this case will be heard De Novo pursuant to the provisions of Rule 1220.

CASE 7275: (Continued from June 17, 1981, Examiner Hearing)

Application of S. P. Yates for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp-Pennsylvanian formations underlying the N/2 of Section 21, Township 19 South, Range 27 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7270: (Continued from June 17, 1981, Examiner Hearing)

Application of Southland Royalty Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp and Pennsylvanian formations underlying the N/2 of Section 21, Township 19 South, Range 27 East, to be dedicated to its Pecos River Federal 21-A Com Well No. 1 drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

BEFORE THE NEW MEXICO OIL CONSERVATION DIVISION

APPLICATION OF ARCO OIL AND GAS COMPANY FOR SALT WATER DISPOSAL, LEA COUNTY, NEW MEXICO

Case No. 7294

AMENDED APPLICATION

COMES NOW, ARCO Oil and Gas Company (ARCO), by its attorneys, Montgomery and Andrews, P.A., and in support of its Application for salt water disposal, states as follows:

1. Applicant is the owner and operator of the R.S. Crosby No. A-2 well located in the SW 1/4 of Section 28, T. 25 S., R. 37 E., N.M.P.M., Langlie Mattix Field, Lea County, New Mexico.

2. The Applicant proposes to utilize said well to dispose of produced salt water into the Langlie Mattix Seven Rivers Queen formation with injection into the interval from 2,996 feet to 3,186 feet.

3. The injection is expected to be approximately 500 barrels per day of Langlie Mattix from ARCO's R.S. Crosby lease.

4. Prior to the hearing on this Application, ARCO shall submit the exhibits required by Rule 701 of the Oil Conservation Division's Rules and Regulations and Oil Conservation Commission Memo 3-77 relating to applications for approval of secondary recovery or salt water disposal injection wells.

5. The approval of this Application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

Respectfully submitted,

MONTGOMERY & ANDREWS, P.A.

By _____
Allen H. Brill
Gary R. Kilpatric
P.O. Box 2307
Santa Fe, New Mexico 87501
(505) 982-3873

BEFORE THE NEW MEXICO OIL CONSERVATION DIVISION

APPLICATION OF ARCO OIL AND GAS COMPANY FOR SALT WATER DISPOSAL, LEA COUNTY, NEW MEXICO

Case No. _____

AMENDED APPLICATION

COMES NOW, ARCO Oil and Gas Company (ARCO), by its attorneys, Montgomery and Andrews, P.A., and in support of its Application for salt water disposal, states as follows:

1. Applicant is the owner and operator of the R.S. Crosby No. A-2 well located in the SW 1/4 of Section 28, T. 25 S., R. 37 E., N.M.P.M., Langlie Mattix Field, Lea County, New Mexico.

2. The Applicant proposes to utilize said well to dispose of produced salt water into the Langlie Mattix Seven Rivers Queen formation with injection into the interval from 2,996 feet to 3,186 feet.

3. The injection is expected to be approximately 500 barrels per day of Langlie Mattix from ARCO's R.S. Crosby lease.

4. Prior to the hearing on this Application, ARCO shall submit the exhibits required by Rule 701 of the Oil Conservation Division's Rules and Regulations and Oil Conservation Commission Memo 3-77 relating to applications for approval of secondary recovery or salt water disposal injection wells.

5. The approval of this Application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

Respectfully submitted,

MONTGOMERY & ANDREWS, P.A.

By _____
Allen H. Brill
Gary R. Kilpatric
P.O. Box 2307
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(505) 982-3873

BEFORE THE NEW MEXICO OIL CONSERVATION DIVISION

APPLICATION OF ARCO OIL AND GAS COMPANY FOR SALT WATER DISPOSAL, LEA COUNTY, NEW MEXICO

Case No. 7294

AMENDED APPLICATION

COMES NOW, ARCO Oil and Gas Company (ARCO), by its attorneys, Montgomery and Andrews, P.A., and in support of its Application for salt water disposal, states as follows:

1. Applicant is the owner and operator of the R.S. Crosby No. A-2 well located in the SW 1/4 of Section 28, T. 25 S., R. 37 E., N.M.P.M., Langlie Mattix Field, Lea County, New Mexico.

2. The Applicant proposes to utilize said well to dispose of produced salt water into the Langlie Mattix Seven Rivers Queen formation with injection into the interval from 2,996 feet to 3,186 feet.

3. The injection is expected to be approximately 500 barrels per day of Langlie Mattix from ARCO's R.S. Crosby lease.

4. Prior to the hearing on this Application, ARCO shall submit the exhibits required by Rule 701 of the Oil Conservation Division's Rules and Regulations and Oil Conservation Commission Memo 3-77 relating to applications for approval of secondary recovery or salt water disposal injection wells.

5. The approval of this Application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

Respectfully submitted,

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Allen H. Brill
Gary R. Kilpatric
P.O. Box 2307
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BEFORE THE NEW MEXICO OIL CONSERVATION DIVISION

RECEIVED
JUN 11 1981
OIL CONSERVATION DIVISION
SANTA FE

APPLICATION OF ARCO OIL AND GAS COMPANY FOR SALT WATER DISPOSAL, LEA COUNTY, NEW MEXICO

Case No. 7294

## APPLICATION

COMES NOW, ARCO Oil and Gas Company (ARCO), by its attorneys, Montgomery and Andrews, P.A., and in support of its Application for salt water disposal, states as follows:

1. Applicant is the owner and operator of the R.S. Crosby No. A-2 well located in the SW 1/4 of Section 28, T. 25 S., R. 37 E., N.M.P.M., Langlie Mattix Field, Lea County, New Mexico.

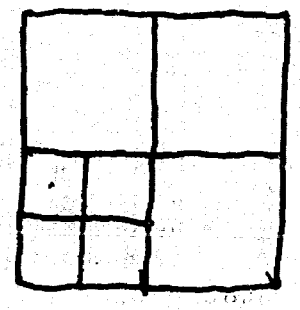
2. The Applicant proposes to utilize said well to dispose of produced salt water into the Langlie Mattix Seven Rivers Queen formation with injection into the interval from 2,996 feet to 3,186 feet.

3. The injection is expected to be approximately 500 barrels per day of Langlie Mattix ~~or Jalmat salt water~~ from ARCO's R.S. Crosby lease. no Jalmat wtr (amended at hearing)

4. Prior to the hearing on this Application, ARCO shall submit the exhibits required by Rule 701 of the Oil Conservation Division's Rules and Regulations and Oil Conservation Commission Memo 3-77 relating to applications for approval of secondary recovery or salt water disposal injection wells.

5. The approval of this Application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

NW/4



Respectfully submitted,

MONTGOMERY & ANDREWS, P.A.

By Gary R. Kilpatric

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Santa Fe, New Mexico 87501
(505) 982-3873

BEFORE THE NEW MEXICO OIL CONSERVATION DIVISION

RECEIVED
JUN 11 1981
OIL CONSERVATION DIVISION
SANTA FE

APPLICATION OF ARCO OIL AND GAS COMPANY FOR SALT WATER DISPOSAL, LEA COUNTY, NEW MEXICO

Case No. 7294

## APPLICATION

COMES NOW, ARCO Oil and Gas Company (ARCO), by its attorneys, Montgomery and Andrews, P.A., and in support of its Application for salt water disposal, states as follows:

1. Applicant is the owner and operator of the R.S. Crosby No. A-2 well located in the SW 1/4 of Section 28, T. 25 S., R. 37 E., N.M.P.M., Langlie Mattix Field, Lea County, New Mexico.

2. The Applicant proposes to utilize said well to dispose of produced salt water into the Langlie Mattix Seven Rivers Queen formation with injection into the interval from 2,996 feet to 3,186 feet.

3. The injection is expected to be approximately 500 barrels per day of Langlie Mattix or Jalmat salt water from ARCO's R.S. Crosby lease.

4. Prior to the hearing on this Application, ARCO shall submit the exhibits required by Rule 701 of the Oil Conservation Division's Rules and Regulations and Oil Conservation Commission Memo 3-77 relating to applications for approval of secondary recovery or salt water disposal injection wells.

5. The approval of this Application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

Respectfully submitted,

MONTGOMERY & ANDREWS, P.A.

By Gary R. Kilpatric

Gary R. Kilpatric
P.O. Box 2307
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(505) 982-3873

ARCO Oil and Gas Company
Permian District
Engineering Section
Division of Atlantic Richfield Company

Subject: ARCO Oil and Gas Company
R. S. Crosby "A" No. 2
Proposed Salt Water Disposal Well

Page of Pages

By

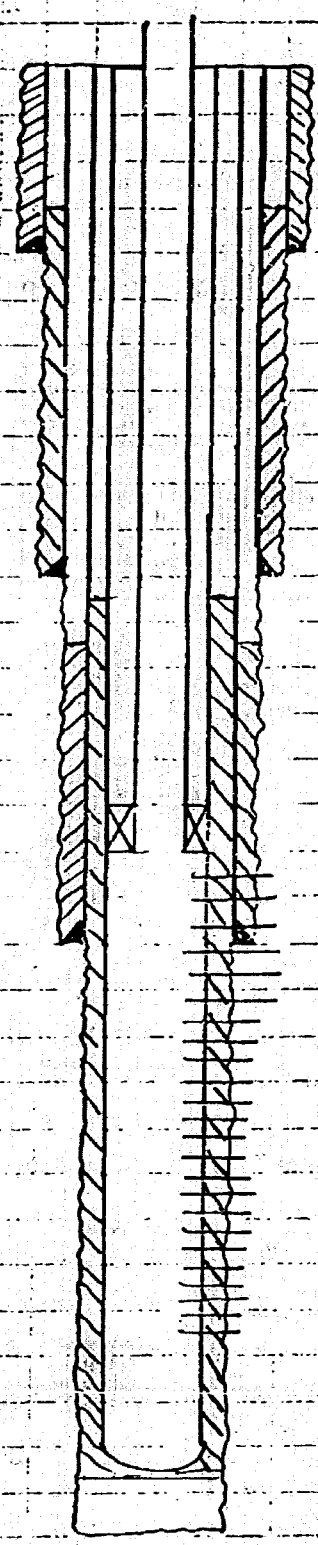
Date

12-1/2" Csg. @ 251' Cmt w/ 225 sx
Cement to surface

9-5/8" Csg @ 1265' Cmt w/ 400 sx
Top of cement 200' (calculated)

7" Csg @ 3108' Cmt w/ 200 sx
Top of cement 1910' (calculated)

4-1/2" Casing @ 3400' Cmt w/ 200 sx
Top of cement 1400'
(Bond Log)
DV tool @ 2409 w/ 400 sx



2-3/8" tubing with Lok-Set
packer approximately 2950'

Perforations 2996-3186'

TD 3460'

ted in U.S.A.

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: Allied Chemical Corporation

Lease Name: Crosby Deep  Well No: 1

Location: 330' FSL, 1980' FWL  Pay Zone: Fusselman
Sec: 28  Prod. Interval: 8774'-78'
TD: 10,946'

Lea County, New Mexico

| Pipe Size: | 13 3/8" | 9 5/8" | 5 1/2" |
|---|---|---|---|
| Depth Set: | 502' | 3806' | 10500' |
| Cemented with: | 500sx | 2324sx | 720sx |
| Top of Cement | Surf | Surf | 2400 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: Anderson Prichard

Lease Name: Lanehart  Well No: 1

Location: 1950' FNL 1980' FEL  Pay Zone: Devonian Dry Hole
Sec: 28  Prod. Interval: 7734-50'
TD: 9170'

Lea County, New Mexico

| Pipe Size: | 13 3/8" | 9 5/8" | 5 1/2" |
|---|---|---|---|
| Depth Set: | 523' | 3606' | 7917' |
| Cemented with: | 525sx | 3500sx | 175sx |
| Top of Cement | Surf | Surf | 6737 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: ARCO Oil and Gas Company

Lease Name: R. S. Crosby "A" Well No: 2

Location: 2310' FSL 330' FWL

Sec: 28

Lea County, New Mexico

Pay Zone: *7R Queen *Yates 7R
Prod. Interval: 3108-3460' 2528-3069'
TD: 3460'

*4-1/2" full liner set and cemented at 3400' Perf 7R Queen

| Pipe Size: | 13" | 9 5/8" | 7" | 4 1/2" |
|---|---|---|---|---|
| Depth Set: | 251 | 1265' | 3108' | 3400' |
| Cemented with: | 225sx | 400sx | 200sx | 600sx |
| Top of Cement | Surf | 113 | 1910 | 1400 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: ARCO Oil and Gas Company

Lease Name: R. S. Crosby (3) Well No: 1-B

Location: 330' FSL 2310' FWL

Sec: 28

Lea County, New Mexico

Pay Zone: Yates 7 R
Prod. Interval: 2425'-3118'
TD: 3220'

| Pipe Size: | 13" | 95/8" | 7" |
|---|---|---|---|
| Depth Set: | 256' | 1237' | 3150' |
| Cemented with: | 200sx | 400sx | 180sx |
| Top of Cement | Surf | Surf | 1749 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: Repollo Oil Company

Lease Name: Lanehart

Well No: 1

Location: 990' FNL 990' FWL

Pay Zone: 7 R Queen
Prod. Interval: OH 3130'-3302'
RD: 3302'

Sec: 28

Lea County, New Mexico

| | | | |
|---|---|---|---|
| Pipe Size: | 12 1/2" | 9 5/8" | 7" |
| Depth Set: | 233' | 1168' | 3130' |
| Cemented with: | 225sx | 400sx | 200sx |
| Top of Cement | Surf | Surf | 1745 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: Anderson Prichard

Lease Name: Coll

Well No: 1

Location: 1980' FNL 660' FEL

Pay Zone: Devonian
Prod. Interval: 8555'-8685'
TD: 9365'

Sec: 29

Lea County, New Mexico

| | | | |
|---|---|---|---|
| Pipe Size: | 13 3/8" | 8 5/8" | 5 1/2" |
| Depth Set: | 512' | 3655' | 9208' |
| Cemented with: | 500sx | 3095sx | 800sx |
| Top of Cement | Surf | Surf | 3962 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: Burleson and Huff

Lease Name: Saunders Estate

Well No: 2

Location: 1650' FNL 1650' FWL

Sec: 28

Lea County, New Mexico

Pay Zone: Devonian Abo Langlie Mattix
Prod. Interval: 8434-8597 6982-7019 2916-2993
TD: 8600'

Temporarily Abandoned

| Pipe Size: | 13 3/8" | 9 5/8" | 7" |
|---|---|---|---|
| Depth Set: | 918' | 3650' | 8600' |
| Cemented with: | 1000sx | 4920sx | 400sx |
| Top of Cement | Surf | Surf | 3112 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: Burleson and Huff

Lease Name: Saunders Estate

Well No: 3

Location: 660' FNL 660' FWL

Sec: 28

Lea County, New Mexico

Pay Zone: Queen
Prod. Interval: 3037-3132'
TD: 3400'

| Pipe Size: | 8 5/8" | 4 1/2" |
|---|---|---|
| Depth Set: | 928' | 3400' |
| Cemented with: | 525sx | 500sx |
| Top of Cement | Surf | 831 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: ARCO Oil and Gas Company

Lease Name: ARC Federal

Well No: 1

Location: 1980' FSL 1980' FWL

Sec: 28

Lea County, New Mexico

| | | |
|---|---|---|
| Pay Zone: | Devonian | Yates |
| Prod. Interval | 8270-390' | 2302-429' |
| TD: | 10,830' | |

| Pipe Size: | 13 3/8" | 9 5/8" | 5 1/2" |
|---|---|---|---|
| Depth Set: | 368' | 3605' | 8498' |
| Cemented with: | 300sx | 4350sx | 800sx |
| Top of Cement | Surf | Surf | 2532 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: Burleson & Huff

Lease Name: Saunders Estate

Well No: 1

Location: 1980' FNL 660'FWL

Sec: 28

Lea County, New Mexico

| | | |
|---|---|---|
| Pay Zone: | Yates | |
| Prod. Interval: | 2263'-2463' | |
| TD: | 2463' | |

| Pipe Size: | 9 5/8" | 7" |
|---|---|---|
| Depth Set: | 293' | 2263' |
| Cemented with: | 200sx | 500sx |
| Top of Cement | Surf | Surf |

(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: Greathouse and Lovelady

Well No: 1

Lease Name: Crosby US

Location: 660' FS 1980' FWL

Pay Zone: Devonian
Prod. Interval: 8066'-8160'
TD: 8160'

Sec: 28

Lea County, New Mexico

| Pipe Size: | 12 3/4" | 8 5/8" | 5 1/2" |
|---|---|---|---|
| Depth Set: | 518' | 3604' | 8066' |
| Cemented with: | 600sx | 370sx | 475sx |
| Top of Cement | Surf | 1017 | 1416 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: Jal Oil Company

Well No: 2

Lease Name: Repollo

Location: 660' FN 1980' FWL

Sec: 28

Lea County, New Mexico

Pipe Size: Abandoned Location

Depth Set:

Cemented with:

Top of Cement
(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: Burleson and Huff

Lease Name: Coll "A" Well No: 2

Location: 1980' FNL 330' FEL

Sec: 29

Lea County, New Mexico

Pay Zone: Yates 7 R
Prod. Interval: 2999'-3129'
TD: 3330'

| Pipe Size: | 8 5/8" | 4 1/2" |
|---|---|---|
| Depth Set: | 940 | 3330' |
| Cemented with: | 500sx | 300sx |
| Top of Cement | Surf | 1800 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: Burleson and Huff

Lease Name: Gutman Well No: 1

Location: 1980' FSL 660' FEL

Sec: 29

Lea County, New Mexico

Pay Zone: 7R Queen Yates
Prod. Interval: 3130'-3270' 2532'-2552'
TD: 3270'

| Pipe Size: | 9 5/8" | 7" |
|---|---|---|
| Depth Set: | 297' | 3130' |
| Cemented with: | 200sx | 500sx |
| Top of Cement | Surf | Surf |

(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: Jal Oil Company

Lease Name: Coll

Well No: 1

Location: 660' FNL 660' FEL

Sec: 29

Lea County, New Mexico

| | |
|---|---|
| Pay Zone: | Langlie Mattix |
| Prod. Interval: | 2540'-2700' |
| TD: | 3936' |

Dry and abandoned (not plugged)

| | | |
|---|---|---|
| Pipe Size: | 10 3/4" | 7" |
| Depth Set: | 278' | 3135' |
| Cemented with: | 200sx | 400sx |
| Top of Cement | Surf | Surf |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: Olsen

Lease Name: Gutman

Well No: 2

Location: 2310' FSL 1650'FEL

Sec: 29

Lea County, New Mexico

| | |
|---|---|
| Pay Zone: | Langlie Mattix |
| Prod. Interval: | 3139'-3157' |
| TD: | 3297' |

| | | |
|---|---|---|
| Pipe Size: | 8 5/8" | 5 1/2" |
| Depth Set: | 280' | 3282' |
| Cemented with: | 150sx | 400sx |
| Top of Cement | Surf | Surf |

(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: Olsen

Lease Name: Gutman

Well No: 1-D

Location: 1880' FSL 660' FEL

Pay Zone: Devonian
Prod. Interval: 8457'-8590'
TD: 8628'

Sec: 29

Lea County, New Mexico

| | | | |
|---|---|---|---|
| Pipe Size: | 13 3/8" | 9 5/8" | 7" |
| Depth Set: | 597' | 3601' | 8625' |
| Cemented with: | 300sx | 2000sx | 500sx |
| Top of Cement | Surf | Surf | 5737 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: Olsen and Blount

Lease Name: Coll "A"

Well No: 1

Location: 1980' FNL 1980' FEL

Pay zone: 7 Rivers Queen
Prod. Interval: 3120'-3186'
TD: 3186'

Sec: 29

Lea County, New Mexico

| | | |
|---|---|---|
| Pipe Size: | 10 3/4" | 7" |
| Depth Set: | 287' | 3170' |
| Cemented with: | 200sx | 600sx |
| Top of Cement | Surf | Surf |

(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: Texaco

Lease Name: Lanehart  Well No: 1

Location: 1320' FSL 1320' FEL  Pay zone: Yates 7R
Prod. Interval: 2516'-3110'

Sec: 29  TD: 3308'

Lea County, New Mexico

| | | | | |
|---|---|---|---|---|
| Pipe Size: | 15 1/2" | 9 5/8" | 7" | 5" |
| Depth Set: | 253' | 1045' | 2460' | 3156' |
| Cemented with: | 250sx | 575sx | 125sx | 55sx |
| Top of Cement | Surf | Surf | 1335 | (Liner) |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator:

Lease Name:  Well No:

Location:

Sec:

Lea County, New Mexico

Pipe Size:

Depth Set:

Cemented with:

Top of Cement
(Cement Tops Calculated unless temperature surveys or bond logs available).

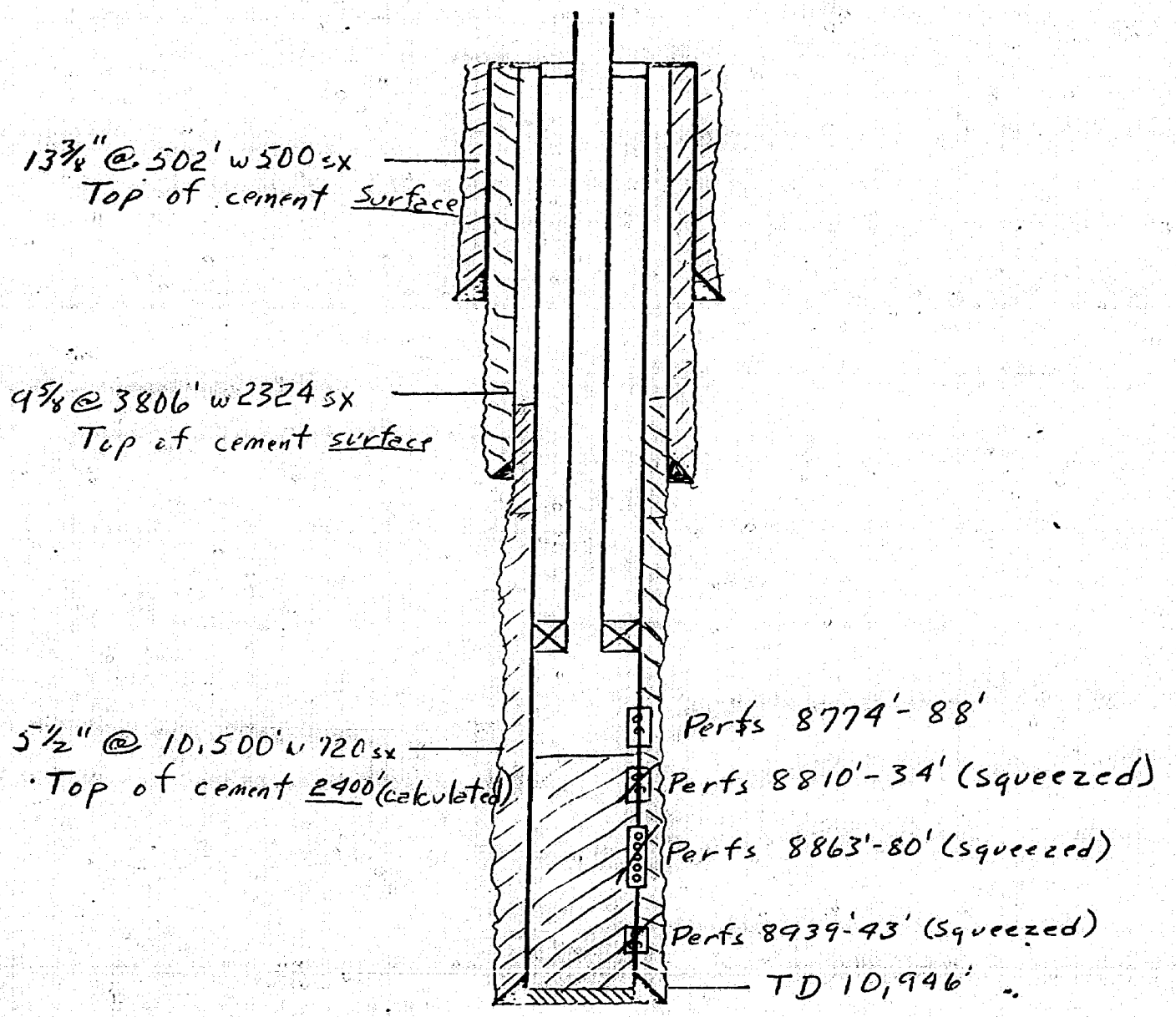
Allied Chemical
Crosby Deep #1

LOCATION

Section 28, T-25-S, R-37-E

330' FSL, 1980' FWL

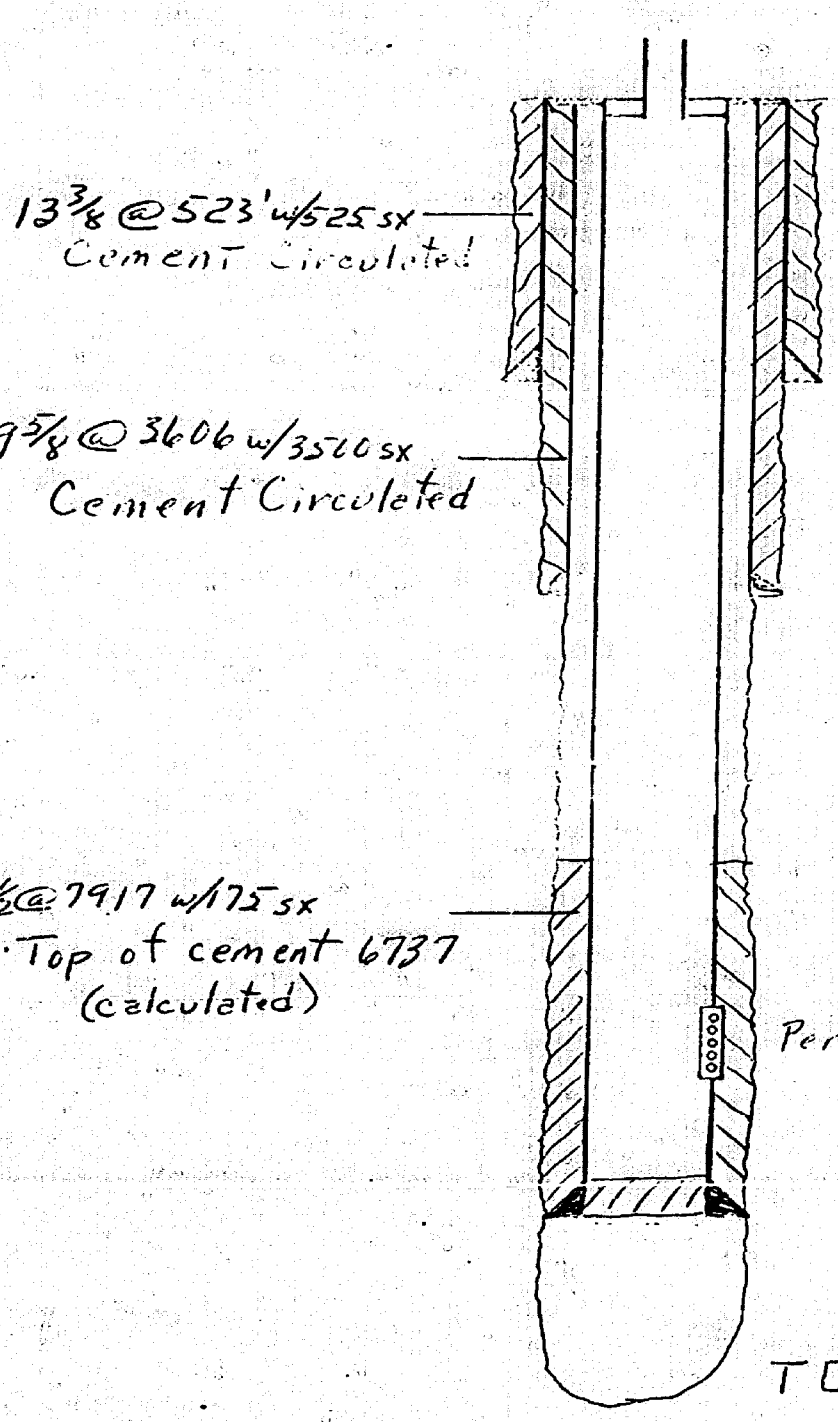
Lea County, New Mexico



Anderson Prichard
Clyde Lanehart #1
Dry & Abandoned
4-17-55

LOCATION

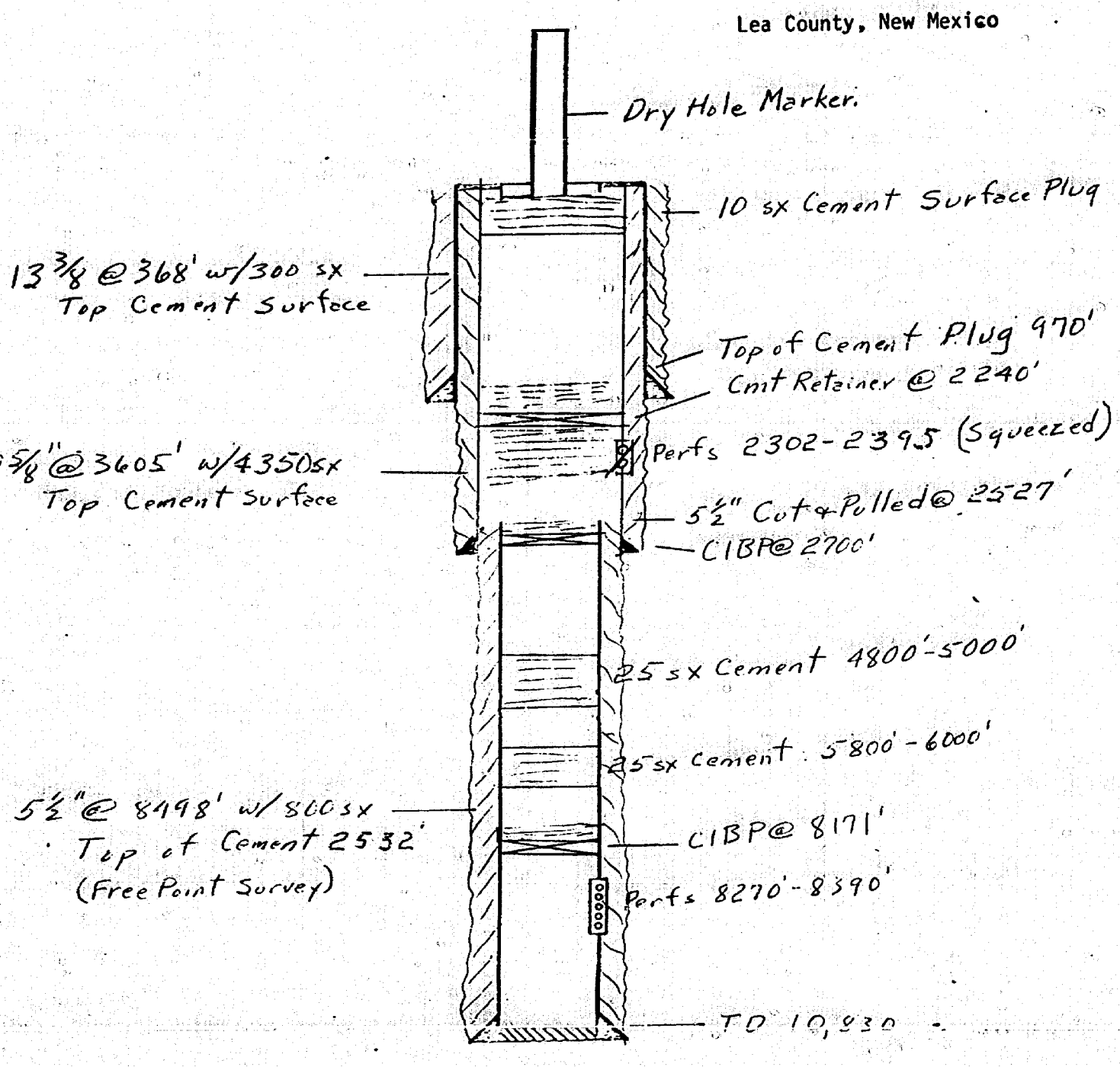
Section 25, T-25-S, R-32-E
1950' FNL, 1980' FEL
Lea County, New Mexico



ARCO Oil & Gas Co.
ARC Federal #1
Status - Abd

LOCATION

Section 28, T-25, R-37-E
1980' FSL, 1980' FWL
Lea County, New Mexico



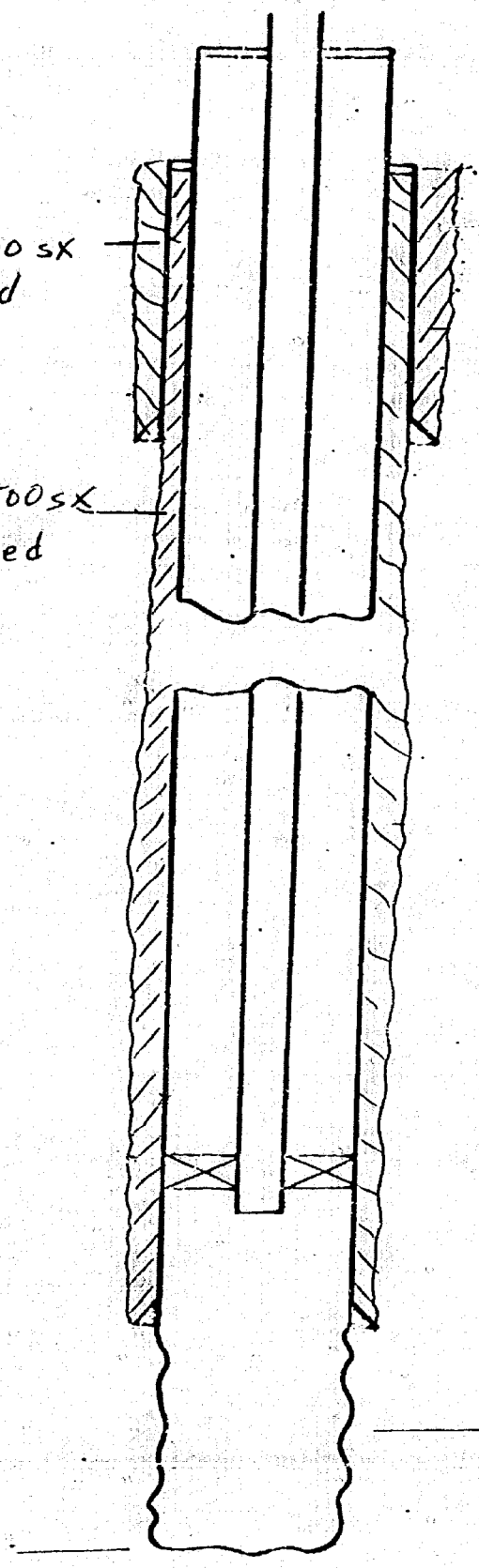
Burleson & Huff
Saunders Estate #1

LOCATION

Section 28, T-25-S, R-37-E

1980' FNL, 660' FWL

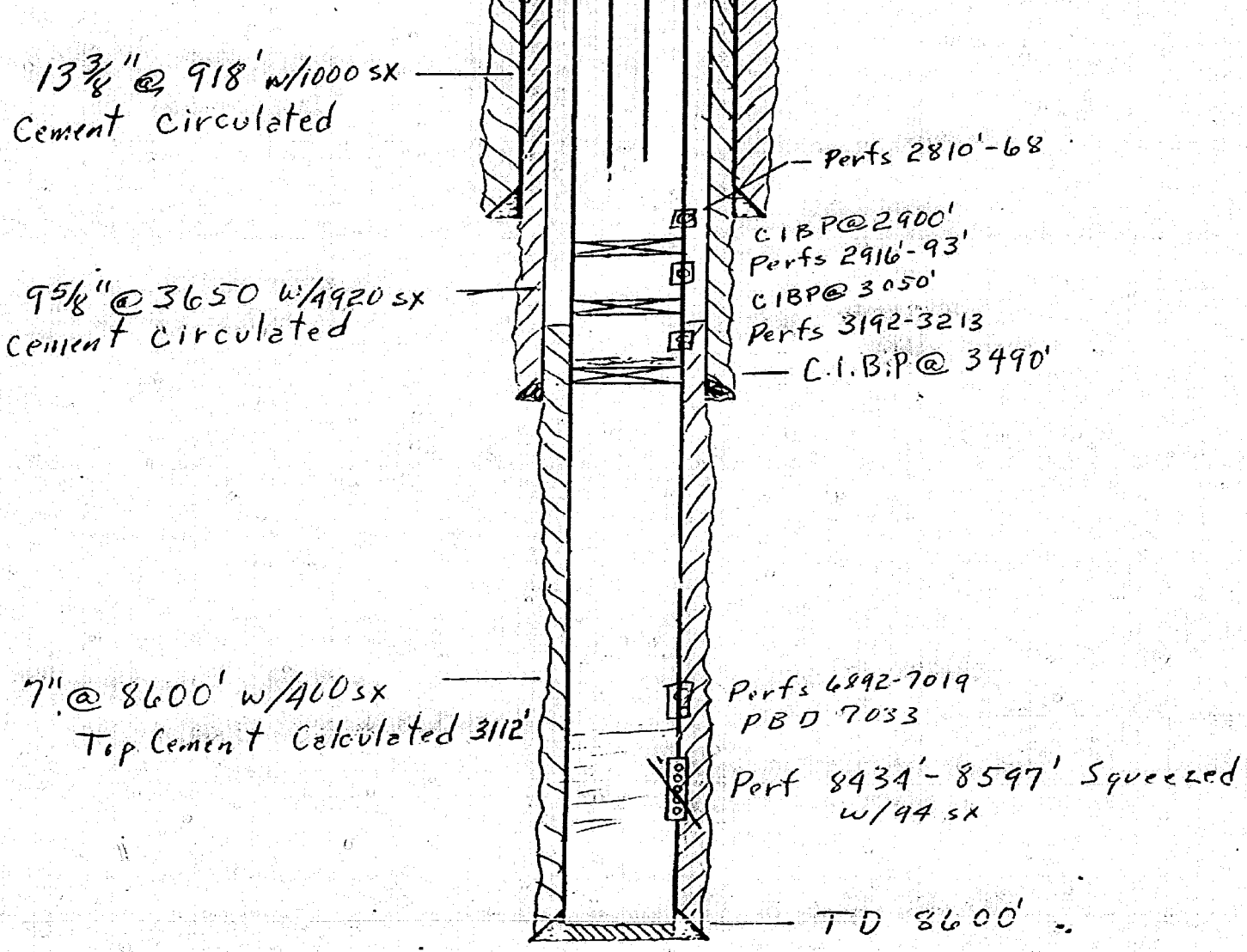
Lea County, New Mexico



Burleson + Huff
Saunders #2
Status - TA

LOCATION

Section 28, T-25S, R-37-E
1650' FNL, 1650' FWL
Lea County, New Mexico



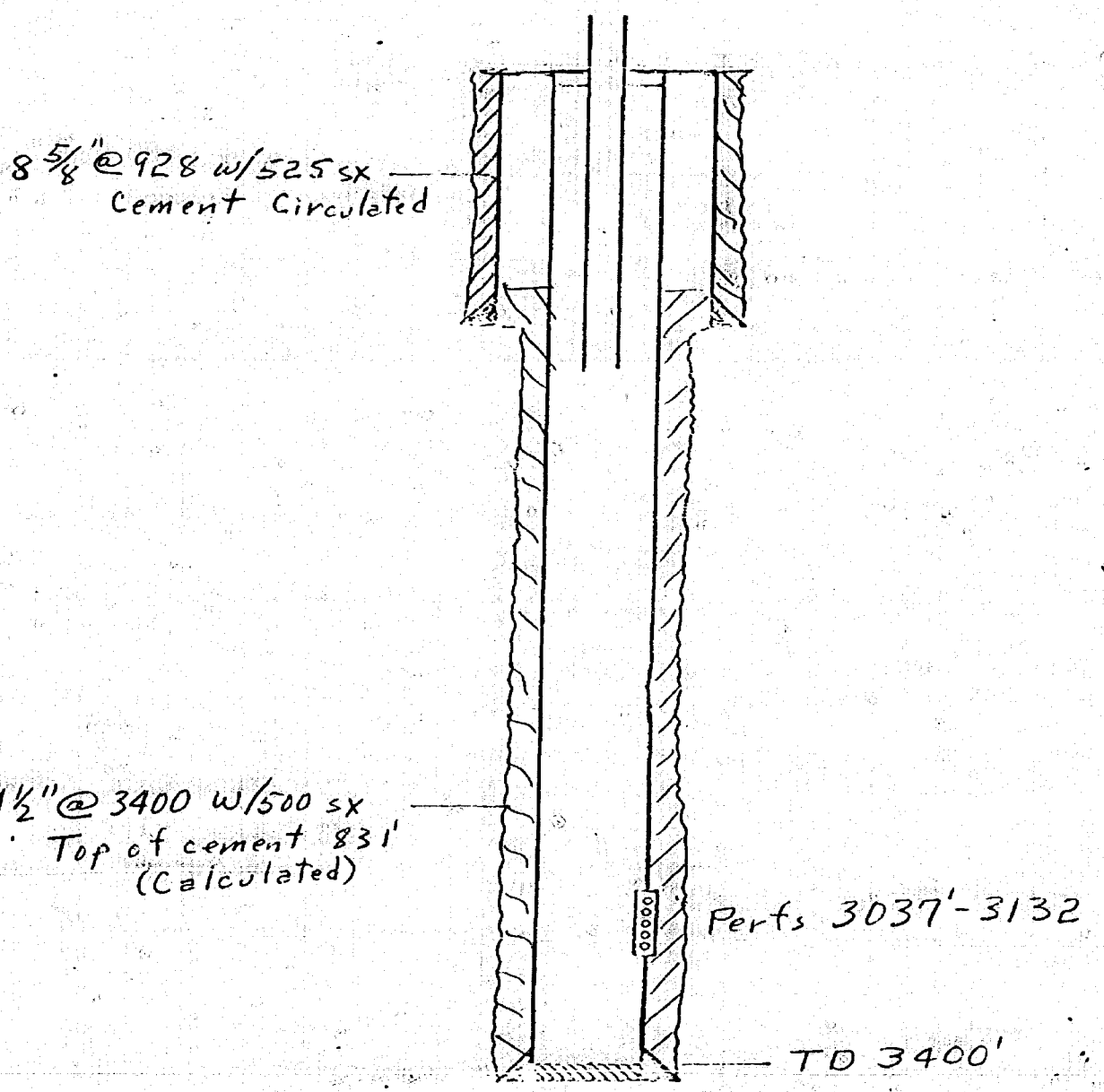
Burleson & Huff
Saunders Est. #3

LOCATION

Section 28, T-25-S, R-37-E

660' FNL, 1650' FWL

Lea County, New Mexico



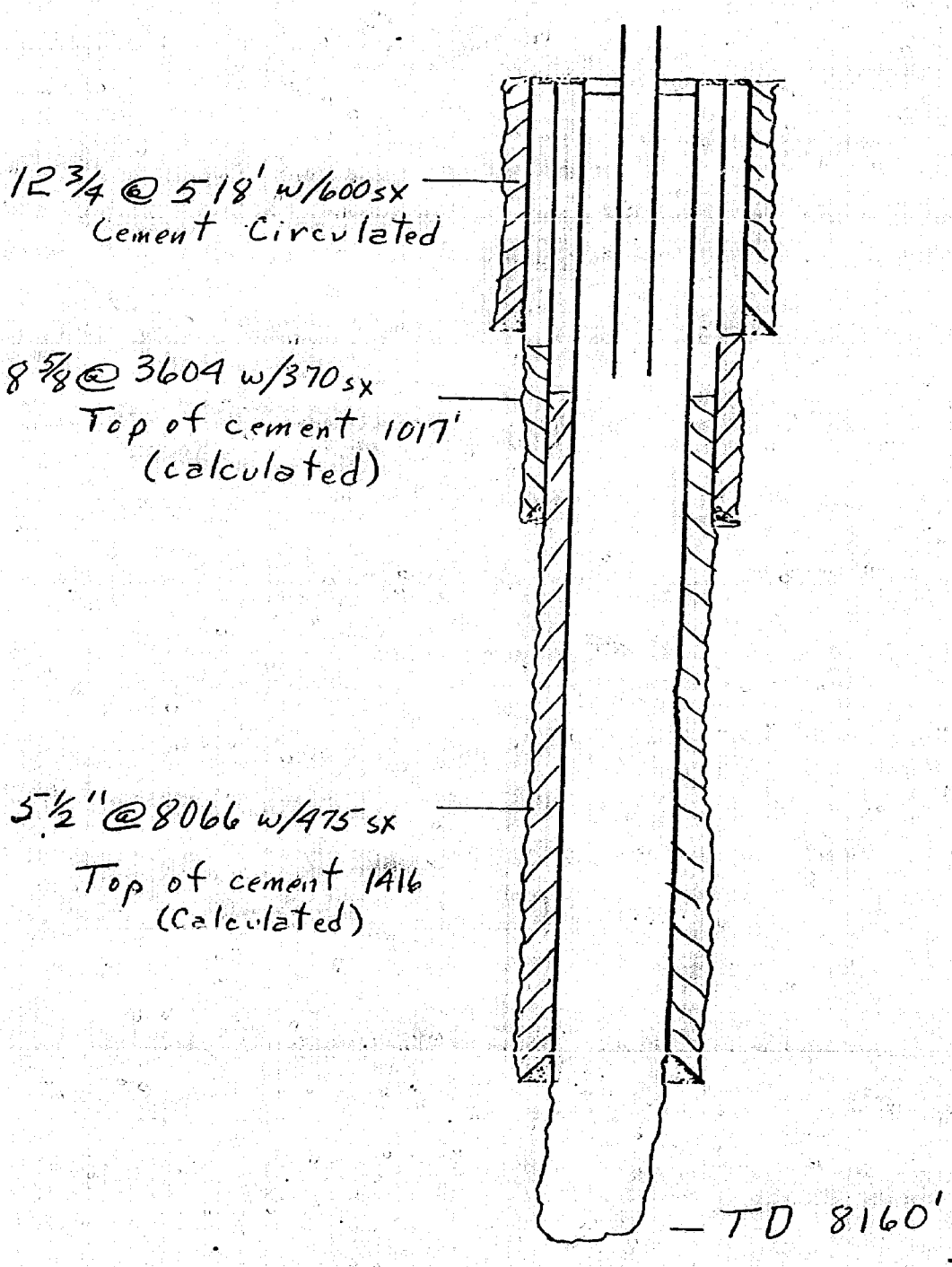
Greathouse & Lovelady
U.S. Crosby #1

LOCATION

Section 28, T-25-S, R-37-E

660' FSL, 1980' FWL

Lea County, New Mexico



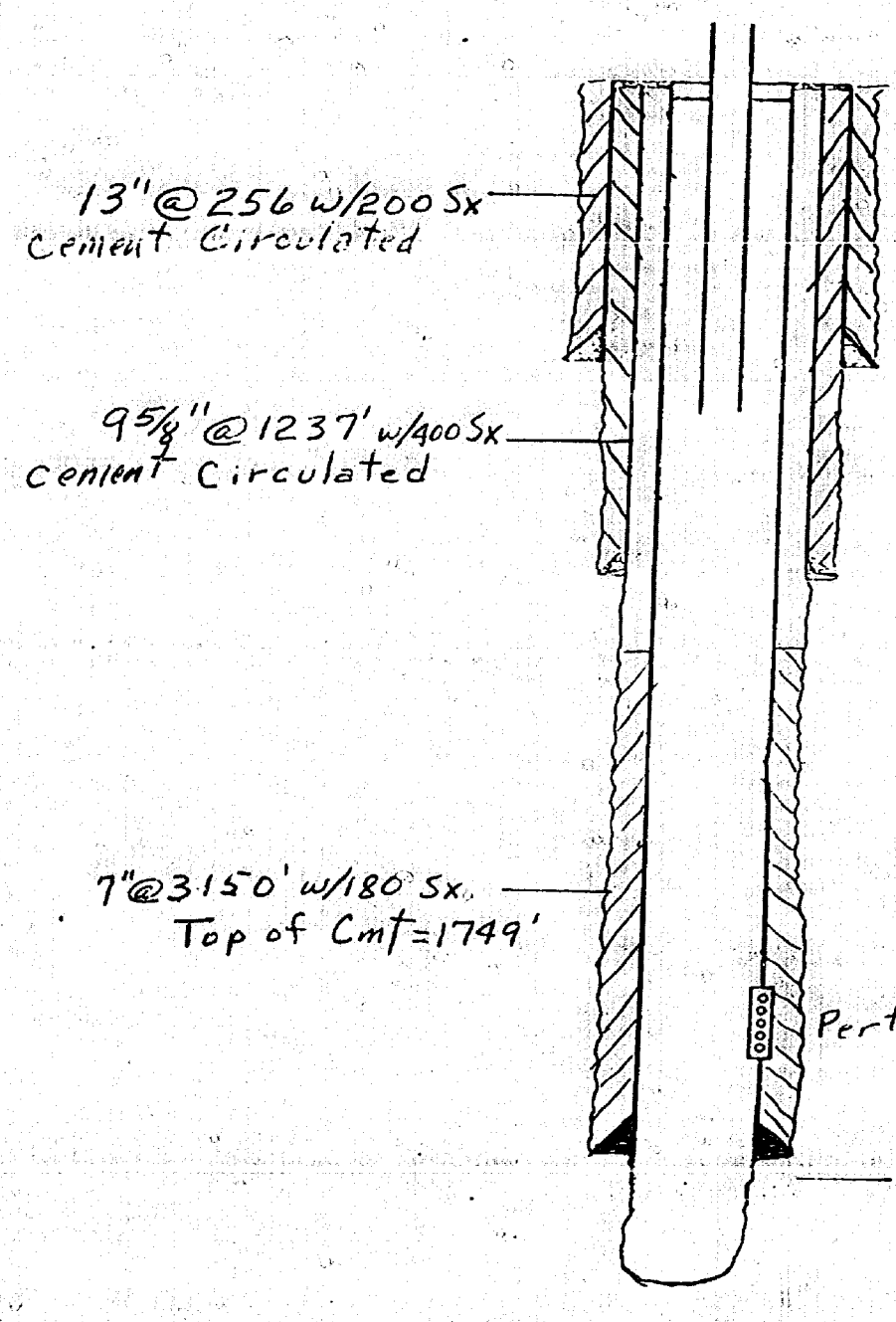
ARCO Oil & Gas Co.
R.S. Crosby (3) 1B

LOCATION

Section 28, T-25-S, R-37-E

330' FSL, 2310' FEL

Lea County, New Mexico



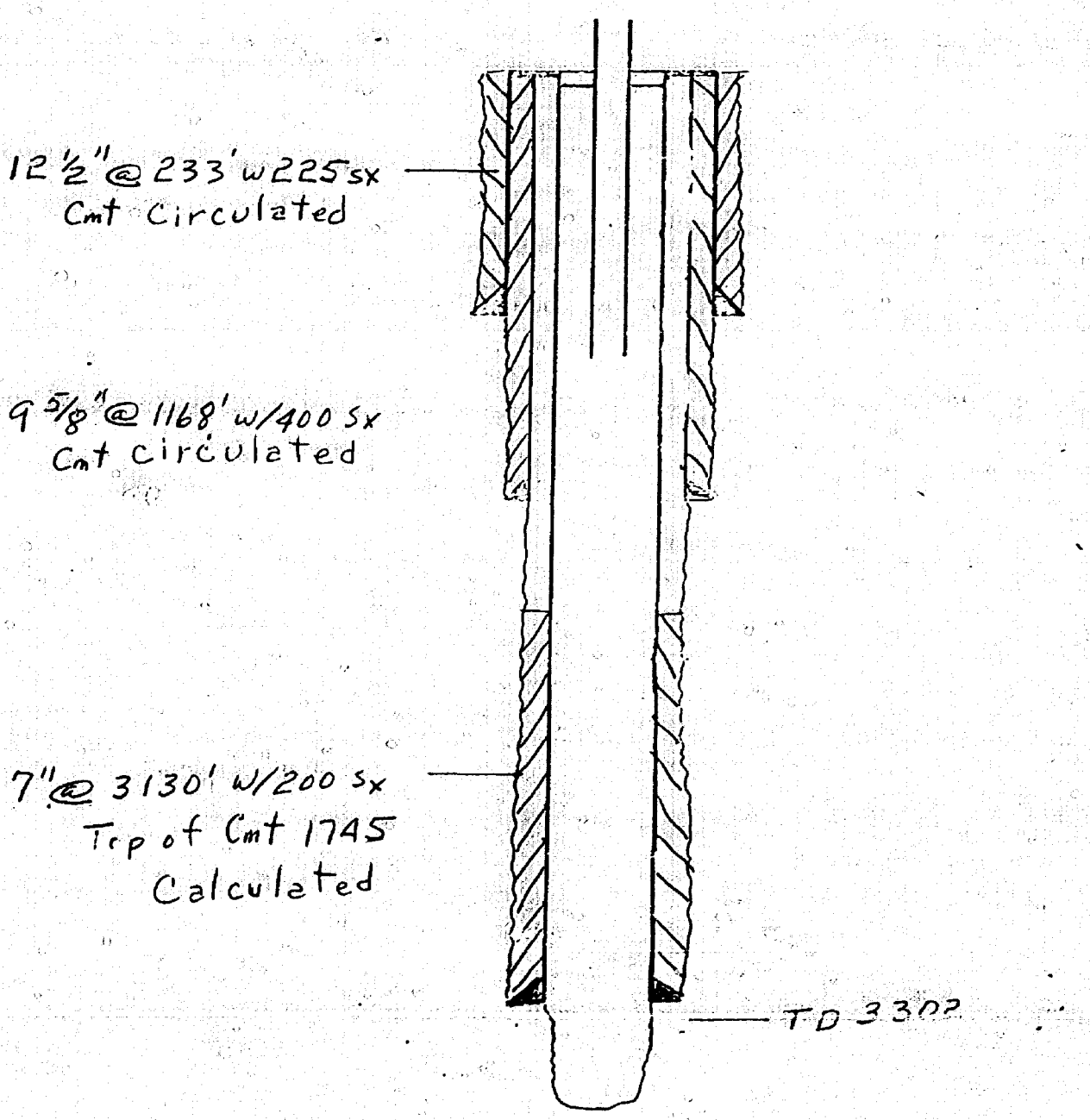
Repollo
T. J. Lanehart #1

LOCATION

Section 28, T-25-S, R-37-E

990' FNL, 990' FWL

Lea County, New Mexico



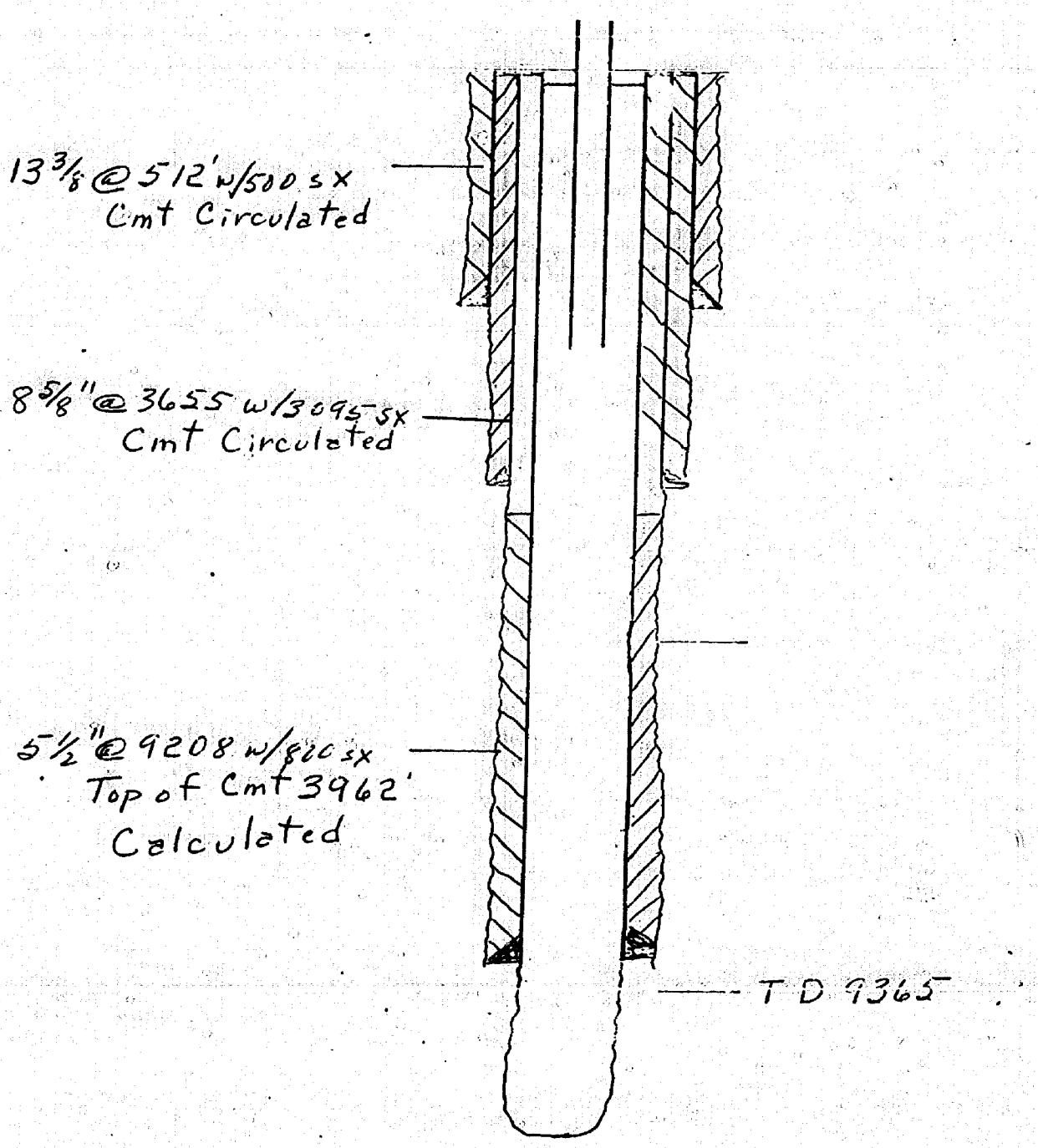
Anderson Prichard
Coll #1

LOCATION

Section 29, T-25-S, R-37-E

1980' FNL, 660' FEL

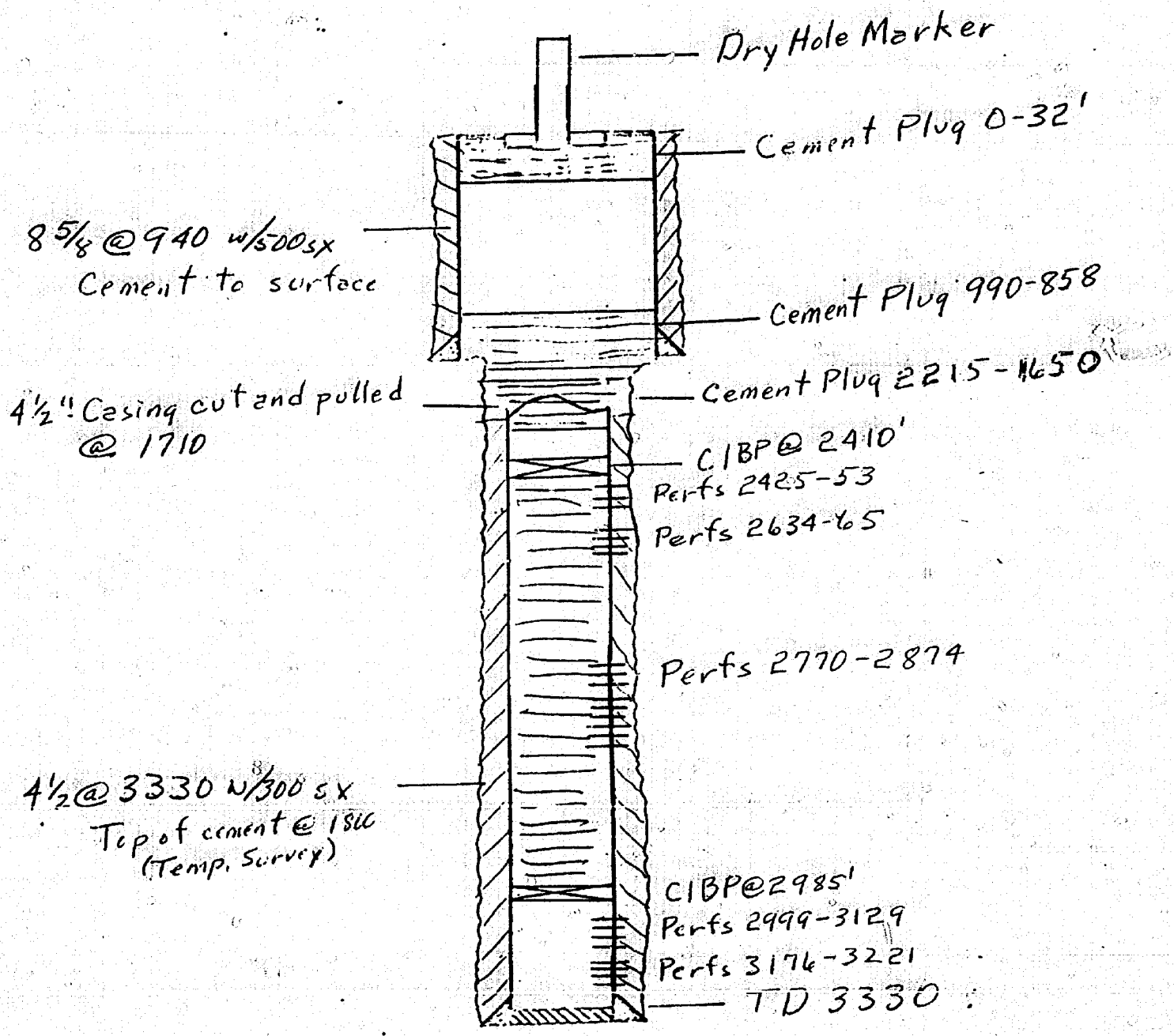
Lea County, New Mexico



Burleson & Huff
Coll A-2
Dry & Abandoned
8-27-79

LOCATION

Section 29, T-25-S, R-37-E
1980' FNL, 330' FEL
Lea County, New Mexico



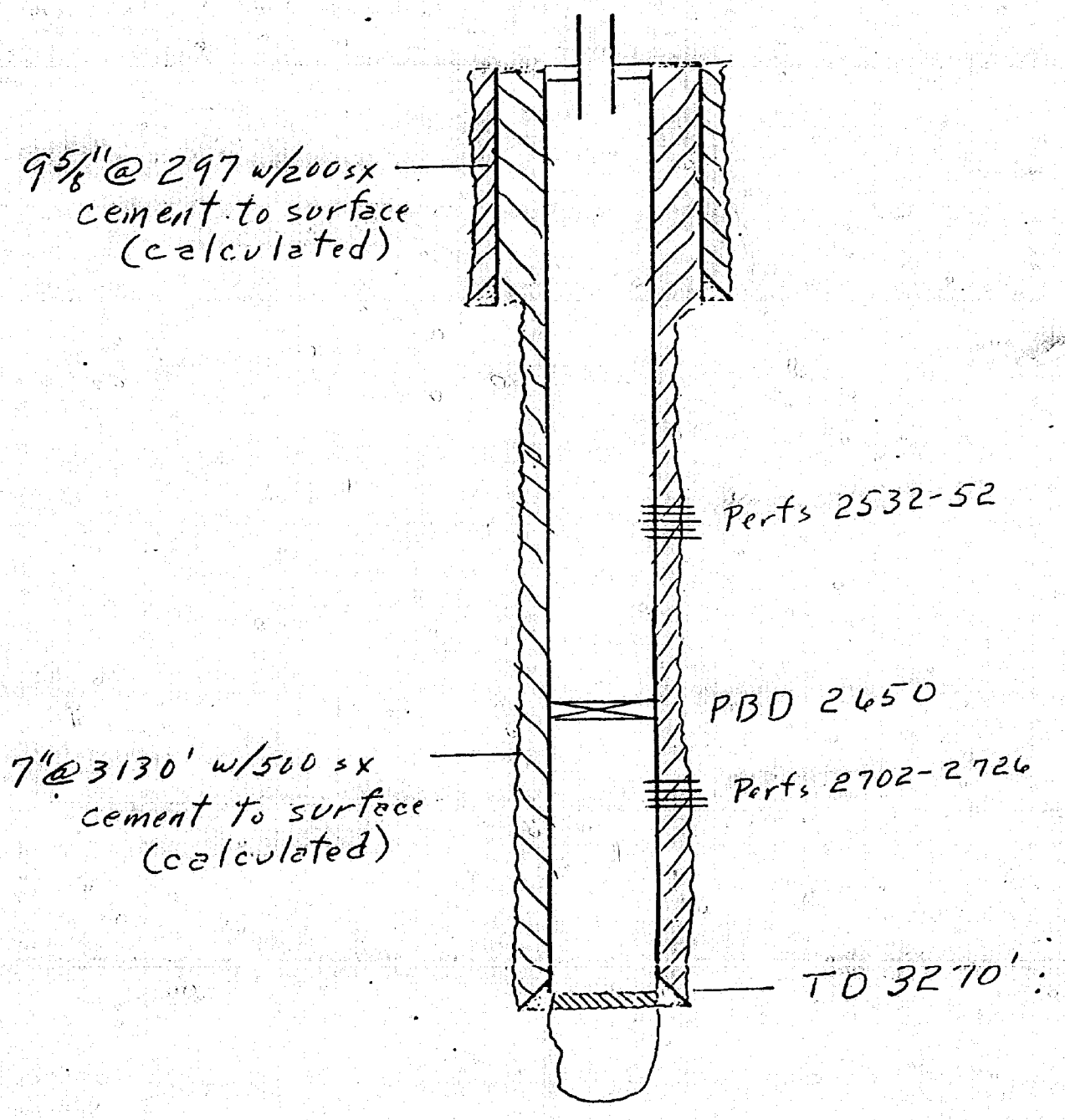
Burleson + Huff
Gutman #1

LOCATION

Section 29, T-25-S, R-37-E

1980' FSL, 660' FEL

Lea County, New Mexico



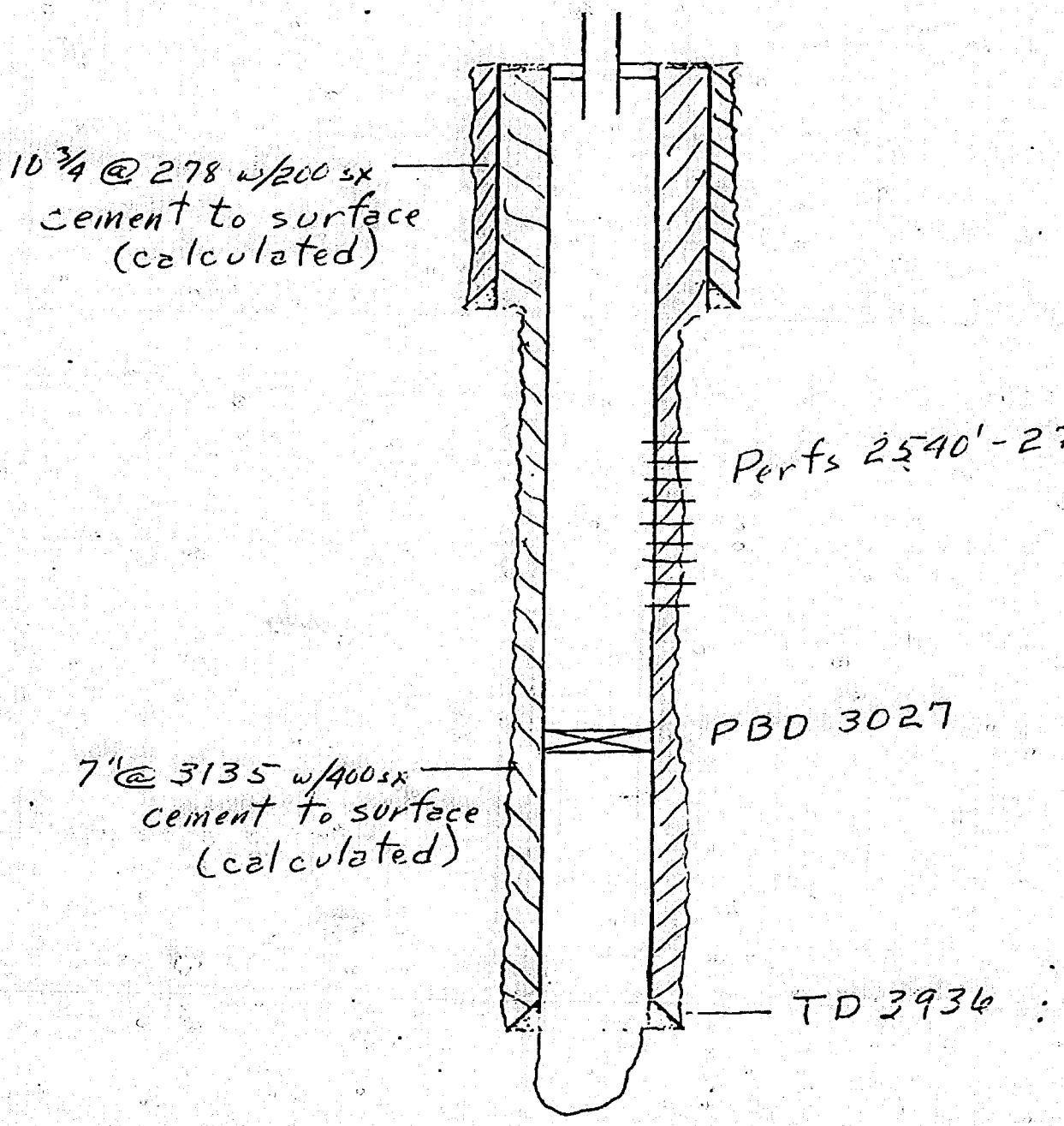
Jal Oil Co.
Coll #1
Pq-A 8-30-60

LOCATION

Section 29, T-25-S, R-37-E

660' FNL, 660' FEL

Lea County, New Mexico



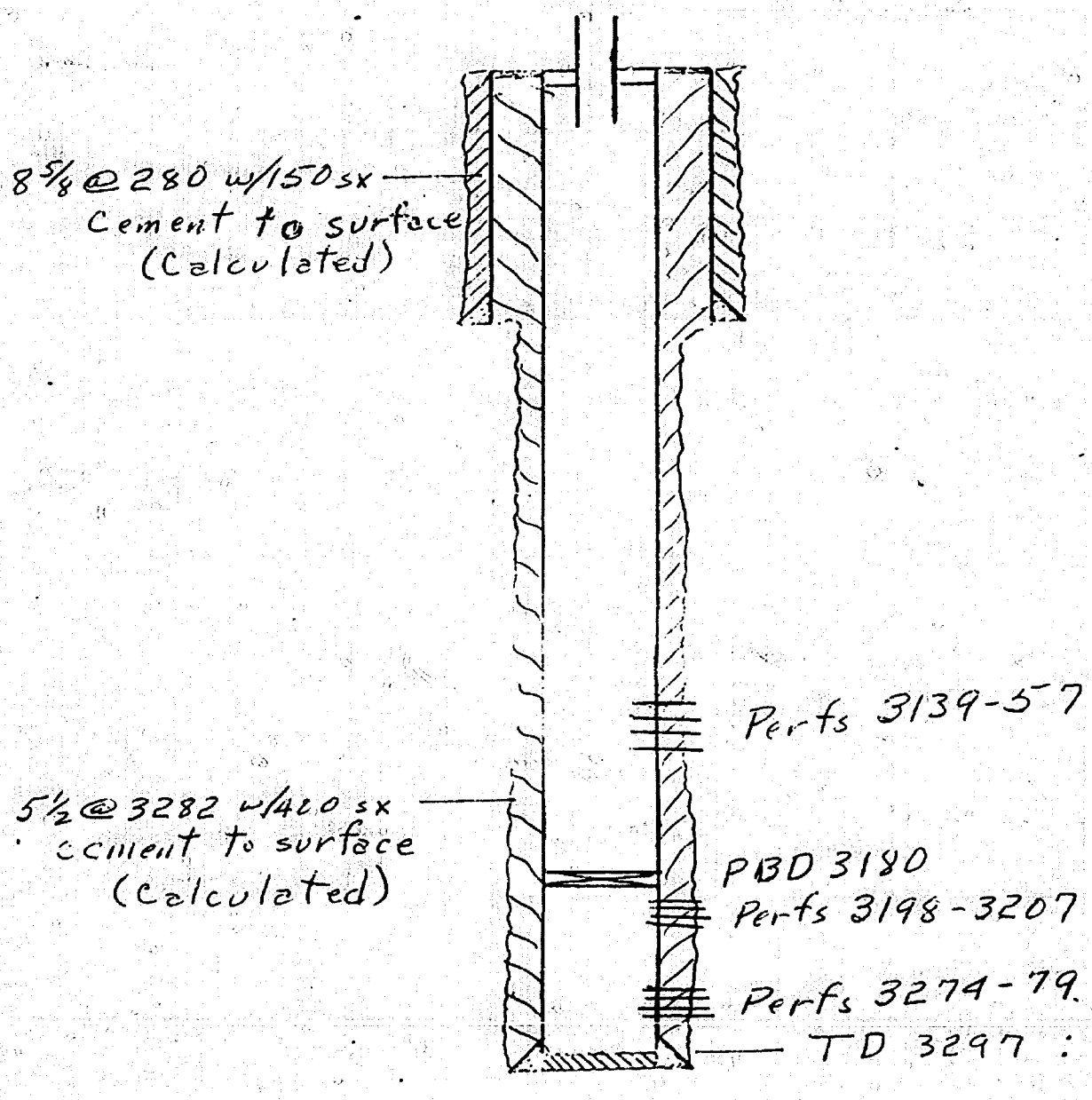
R. Olsen
Gutman #2

LOCATION

Section 29, T-25-S, R-37-E

2310' FSL, 1650' FEL

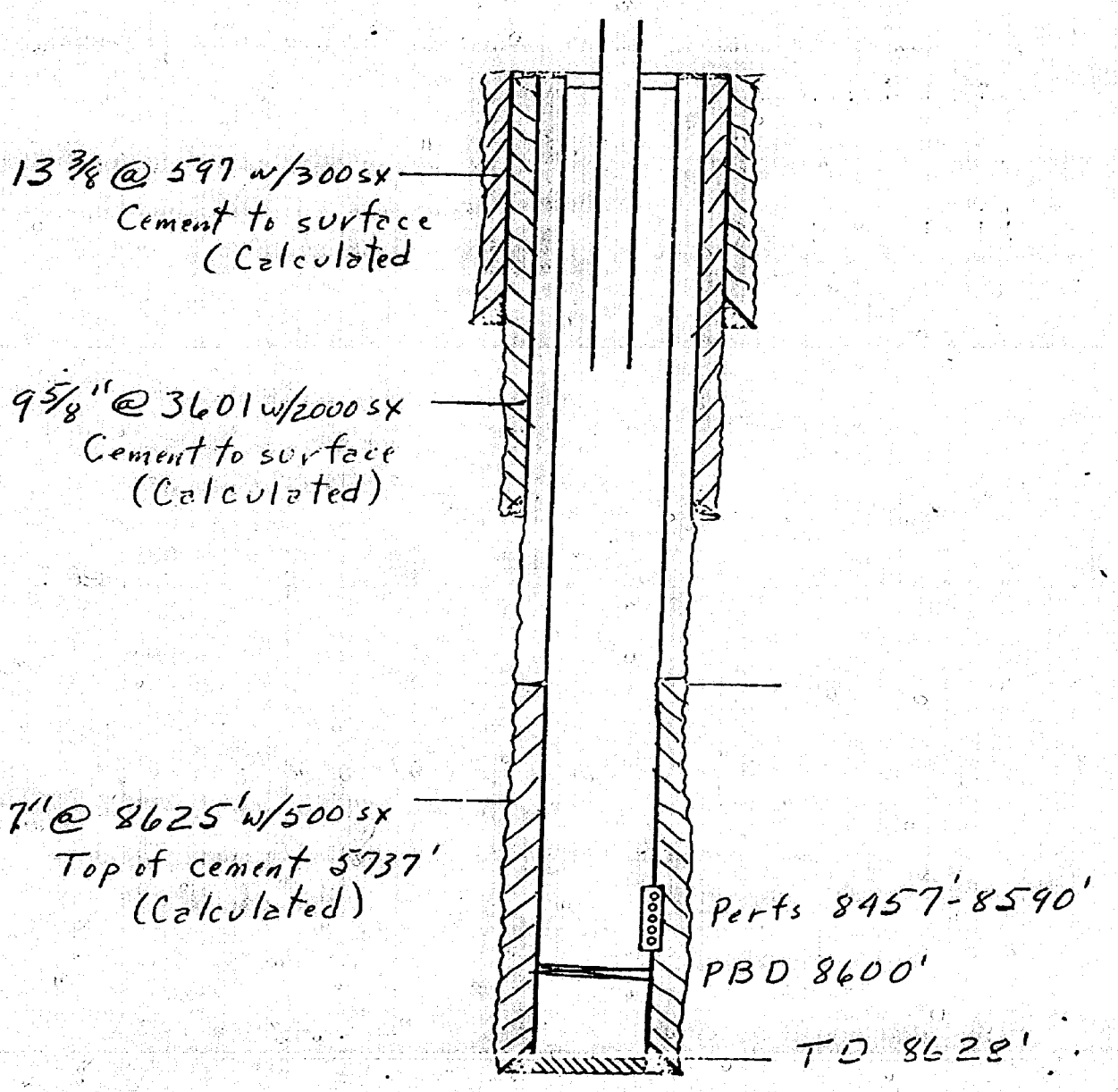
Lea County, New Mexico



R Olsen
Gutman #1-D

LOCATION

Section 29, T-25-S, R-37-E
660' FEL, 1880' FSL
Lea County, New Mexico



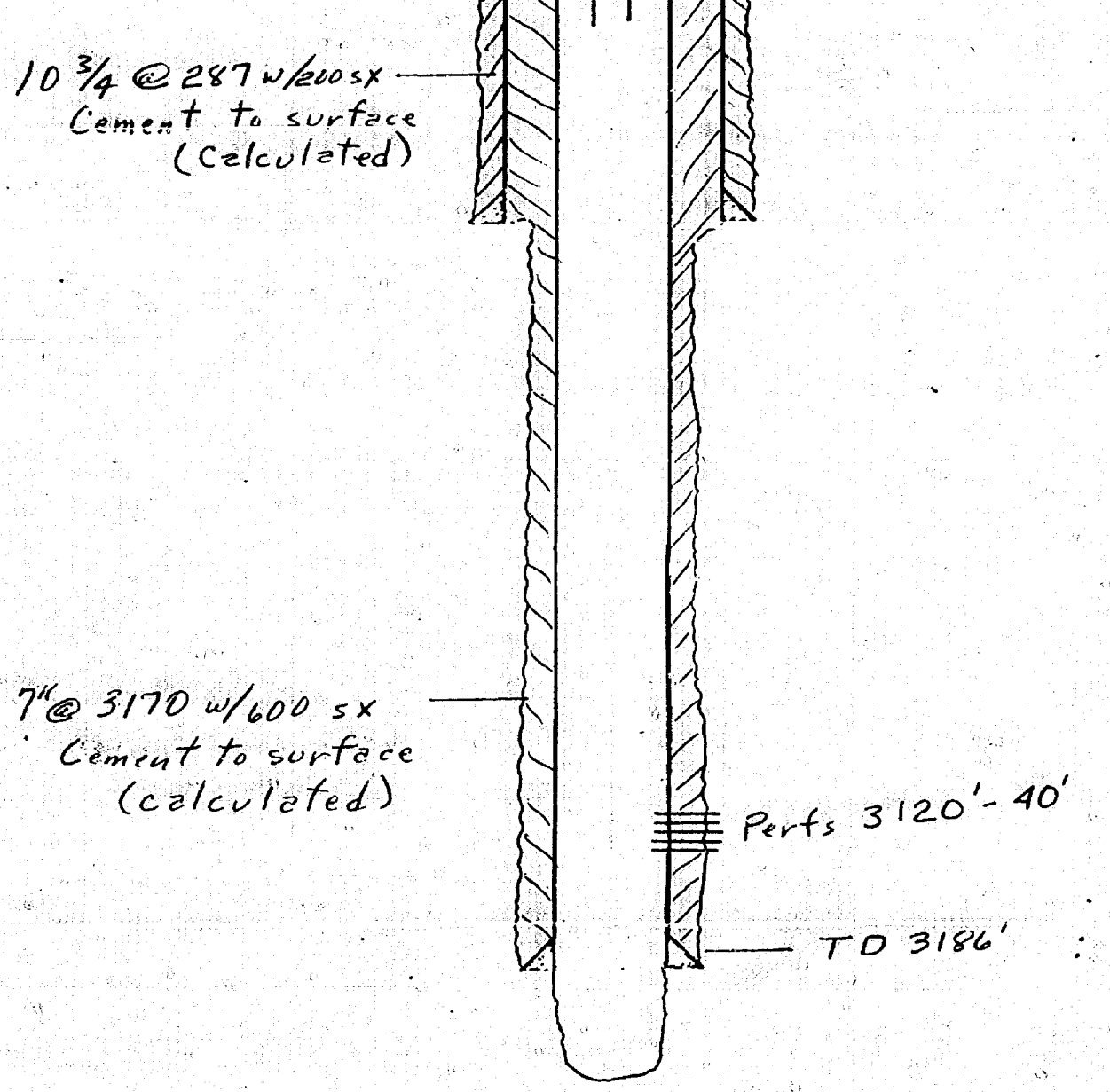
Olsen & Blount
Coll "A" 1

LOCATION

Section 29, T-25-S, R-37-E

1980 FNL, 1980' FEL

Lea County, New Mexico



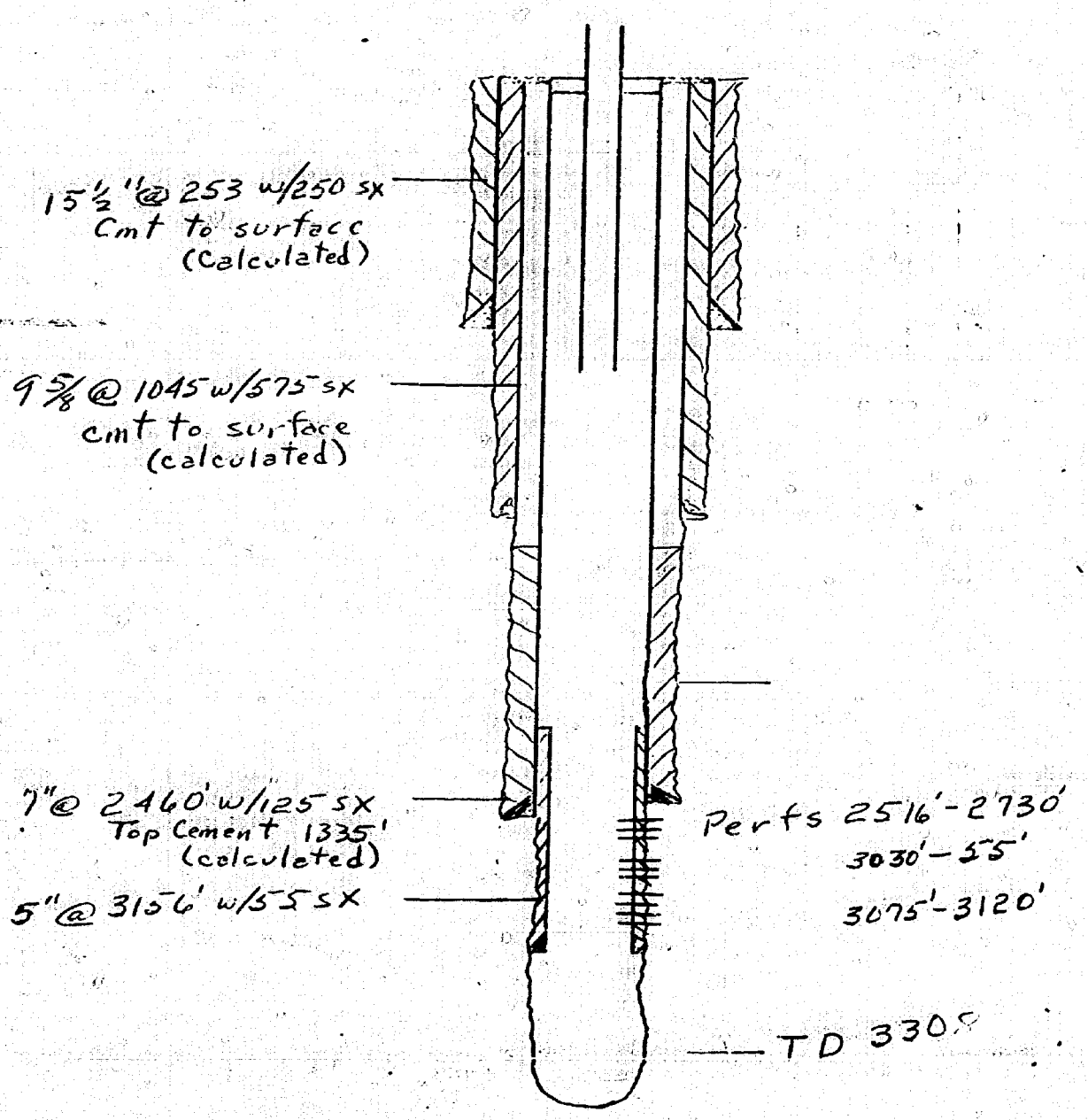
Texaco
Lanchart #1

LOCATION

Section 29, T-25-S, R-37-E

1320' FSL, 1320' FEL

Lea County, New Mexico



ARCO Oil and Gas Company
Permian District
Engineering Section

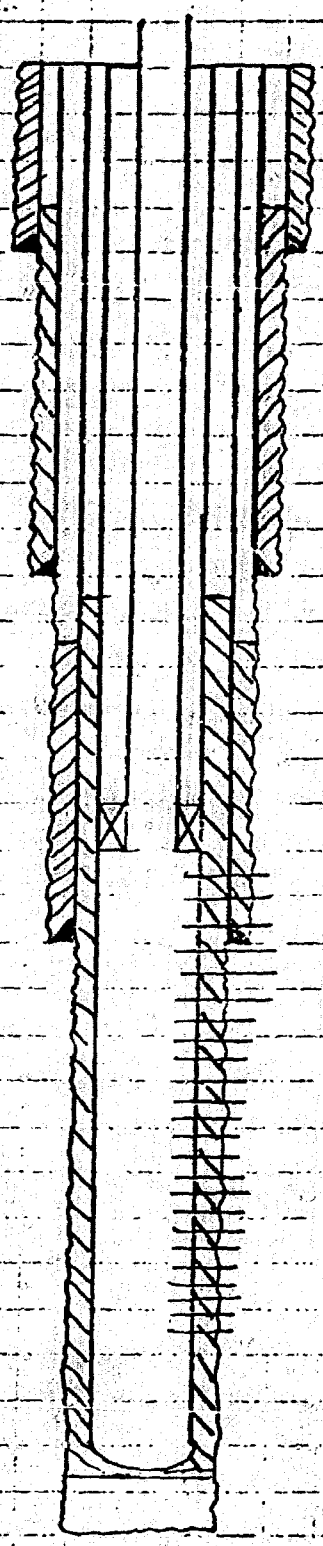
| Subject | ARCO Oil and Gas Company<br>R. S. Crosby "A" No. 2<br>Proposed Salt Water Disposal Well | Page<br>of<br>Pages |
|---|---|---|
| By | Date | |

12-1/2" Csg. @ 251' Cmt w/ 225 sx
Cement to surface

9-5/8" Csg @ 1265' Cmt w/ 400 sx
Top of cement 200' (calculated)

7" Csg @ 3108' Cmt w/ 200 sx
Top of cement 1910' (calculated)

4-1/2" Casing @ 3400' Cmt w/ 200 sx
Top of cement 1400'
(Bond Log)
DV tool @ 2409 w/ 400 sx



2-3/8" tubing with Lok-Set
packer approximately 2950'

Perforations 2996-3186'

TD 3460'

Printed in U.S.A.

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: Allied Chemical Corporation

Lease Name: Crosby Deep  Well No: 1

Location: 330' FSL, 1980' FWL  Pay Zone: Fusselman
Sec: 28  Prod. Interval: 8774'-78'
TD: 10,946'

Lea County, New Mexico

| | | | |
|---|---|---|---|
| Pipe Size: | 13 3/8" | 9 5/8" | 5 1/2" |
| Depth Set: | 502' | 3806' | 10500' |
| Cemented with: | 500sx | 2324sx | 720sx |
| Top of Cement | Surf | Surf | 2400 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

4 & 5

Operator: Anderson Prichar

Lease Name: Lanehart

Location: 1950' FNL 1980' /  Devonian Dry Hole
Sec: 28  7734-50'
9170'

Lea County, New Mexico

| | | | |
|---|---|---|---|
| Pipe Size: | 13 3/8" | 9 5/8" | 5 1/2" |
| Depth Set: | 523' | 3606' | 7917' |
| Cemented with: | 525sx | 3500sx | 175sx |
| Top of Cement | Surf | Surf | 6737 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: Allied Chemical Corporation

Lease Name: Crosby Deep  Well No: 1

Location: 330' FSL, 1980' FWL

Sec: 28

Lea County, New Mexico

Pay Zone: Fusselman
Prod. Interval: 8774'-78'
TD: 10,946'

| Pipe Size: | 13 3/8" | 9 5/8" | 5 1/2" |
|---|---|---|---|
| Depth Set: | 502' | 3806' | 10500' |
| Cemented with: | 500sx | 2324sx | 720sx |
| Top of Cement | Surf | Surf | 2400 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: Anderson Prichard

Lease Name: Lanehart  Well No: 1

Location: 1950' FNL 1980' FEL

Sec: 28

Lea County, New Mexico

Pay Zone: Devonian Dry Hole
Prod. Interval: 7734-50'
TD: 9170'

| Pipe Size: | 13 3/8" | 9 5/8" | 5 1/2" |
|---|---|---|---|
| Depth Set: | 523' | 3606' | 7917' |
| Cemented with: | 525sx | 3500sx | 175sx |
| Top of Cement | Surf | Surf | 6737 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: ARCO Oil and Gas Company

Lease Name: R. S. Crosby "A"

Well No: 2

Location: 2310' FSL 330' FWL

Pay Zone: *7R Queen *Yates 7R
Prod. Interval: 3108-3460' 2528-3069'
TD: 3460'

Sec: 28

Lea County, New Mexico

*4-1/2" full liner set and cemented at 3400' Perf 7R Queen

| Pipe Size: | 13" | 9 5/8" | 7" | 4 1/2" |
|---|---|---|---|---|
| Depth Set: | 251 | 1265' | 3108' | 3400' |
| Cemented with: | 225sx | 400sx | 200sx | 600sx |
| Top of Cement | Surf | 113 | 1910 | 1400 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: ARCO Oil and Gas Company

Lease Name: R. S. Crosby (3)

Well No: 1-B

Location: 330' FSL 2310' FWL

Pay Zone: Yates 7 R
Prod. Interval: 2425'-3118'
TD: 3220'

Sec: 28

Lea County, New Mexico

| Pipe Size: | 13" | 95/8" | 7" |
|---|---|---|---|
| Depth Set: | 256' | 1237' | 3150' |
| Cemented with: | 200sx | 400sx | 180sx |
| Top of Cement | Surf | Surf | 1749 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: Repollo Oil Company

Lease Name: Lanehart

Well No: 1

Location: 990' FNL 990' FWL

Pay Zone: 7 R Queen
Prod. Interval: OH 3130'-3302'
RD: 3302'

Sec: 28

Lea County, New Mexico

| | | | |
|---|---|---|---|
| Pipe Size: | 12 1/2" | 9 5/8" | 7" |
| Depth Set: | 233' | 1168' | 3130' |
| Cemented with: | 225sx | 400sx | 200sx |
| Top of Cement | Surf | Surf | 1745 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: Anderson Prichard

Lease Name: Coll

Well No: 1

Location: 1980' FNL 660' FEL

Pay Zone: Devonian
Prod. Interval: 8555'-8685'
TD: 9365'

Sec: 29

Lea County, New Mexico

| | | | |
|---|---|---|---|
| Pipe Size: | 13 3/8" | 8 5/8" | 5 1/2" |
| Depth Set: | 512' | 3655' | 9208' |
| Cemented With: | 500sx | 3095sx | 800sx |
| Top of Cement | Surf | Surf | 3962 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: ARCO Oil and Gas Company

Lease Name: ARC Federal

Well No: 1

Location: 1980' FSL 1980' FWL

| | Devonian | Yates |
|---|---|---|
| Pay Zone: | | |
| Prod. Interval | 8270-390' | 2302-429' |
| TD: | 10,830' | |

Sec: 28

Lea County, New Mexico

| | | | |
|---|---|---|---|
| Pipe Size: | 13 3/8" | 9 5/8" | 5 1/2" |
| Depth Set: | 368' | 3605' | 8498' |
| Cemented with: | 300sx | 4350sx | 800sx |
| Top of Cement | Surf | Surf | 2532 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: Burleson & Huff

Lease Name: Saunders Estate

Well No: 1

Location: 1980' FNL 660'FWL

| | |
|---|---|
| Pay Zone: | Yates |
| Prod. Interval: | 2263'-2463' |
| TD: | 2463' |

Sec: 28

Lea County, New Mexico

| | | |
|---|---|---|
| Pipe Size: | 9 5/8" | 7" |
| Depth Set: | 293' | 2263' |
| Cemented with: | 200sx | 500sx |
| Top of Cement | Surf | Surf |

(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: Burleson and Huff

Lease Name: Saunders Estate — Well No: 2

Location: 1650' FNL 1650' FWL

Sec: 28

Lea County, New Mexico

| | Devonian | Abo | Langlie Mattix |
|---|---|---|---|
| Pay Zone: | | | |
| Prod. Interval: | 8434-8597 | 6982-7019 | 2916-2993 |
| TD: | 8600' | | |

Temporarily Abandoned

| | | | |
|---|---|---|---|
| Pipe Size: | 13 3/8" | 9 5/8" | 7" |
| Depth Set: | 918' | 3650' | 8600' |
| Cemented with: | 1000sx | 4920sx | 400sx |
| Top of Cement | Surf | Surf | 3112 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: Burleson and Huff

Lease Name: Saunders Estate — Well No: 3

Location: 660' FNL 660' FWL

Sec: 28

Lea County, New Mexico

| | Queen |
|---|---|
| Pay Zone: | |
| Prod. Interval: | 3037-3132' |
| TD: | 3400' |

| | | |
|---|---|---|
| Pipe Size: | 8 5/8" | 4 1/2" |
| Depth Set: | 928' | 3400' |
| Cemented with: | 525sx | 500sx |
| Top of Cement | Surf | 831 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: Greathouse and Lovelady

Lease Name: Crosby US  Well No: 1

Location: 660' FS 1980' FWL  Pay Zone: Devonian

Sec: 28  Prod. Interval: 8066'-8160'

Lea County, New Mexico  TD: 8160'

| Pipe Size: | 12 3/4" | 8 5/8" | 5 1/2" |
|---|---|---|---|
| Depth Set: | 518' | 3604' | 8066' |
| Cemented with: | 600sx | 370sx | 475sx |
| Top of Cement | Surf | 1017 | 1416 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: Jal Oil Company

Lease Name: Repollo  Well No: 2

Location: 660' FN 1980' FWL

Sec: 28

Lea County, New Mexico

Pipe Size: Abandoned Location

Depth Set:

Cemented with:

Top of Cement
(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: Burleson and Huff

Lease Name: Coll "A" Well No: 2

Location: 1980' FNL 330' FEL Pay Zone: Yates 7 R

Sec: 29 Prod. Interval: 2999'-3129'

TD: 3330'

Lea County, New Mexico

| | | |
|---|---|---|
| Pipe Size: | 8 5/8" | 4 1/2" |
| Depth Set: | 940 | 3330' |
| Cemented with: | 500sx | 300sx |
| Top of Cement | Surf | 1800 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: Burleson and Huff

Lease Name: Gutman Well No: 1

Location: 1980' FSL 660' FEL Pay Zone: 7R Queen Yates

Sec: 29 Prod. Interval: 3130'-3270' 2532'-2552'

TD: 3270'

Lea County, New Mexico

| | | |
|---|---|---|
| Pipe Size: | 9 5/8" | 7" |
| Depth Set: | 297' | 3130' |
| Cemented with: | 200sx | 500sx |
| Top of Cement | Surf | Surf |

(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: Jal Oil Company

Lease Name: Coll

Well No: 1

Location: 660' FNL 660' FEL

Sec: 29

Lea County, New Mexico

| | |
|---|---|
| Pay Zone: | Langlie Mattix |
| Prod. Interval: | 2540'-2700' |
| TD: | 3936' |

Dry and abandoned (not plugged)

| | | |
|---|---|---|
| Pipe Size: | 10 3/4" | 7" |
| Depth Set: | 278' | 3135' |
| Cemented with: | 200sx | 400sx |
| Top of Cement | Surf | Surf |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: Olsen

Lease Name: Gutman

Well No: 2

Location: 2310' FSL 1650'FEL

Sec: 29

Lea County, New Mexico

| | |
|---|---|
| Pay Zone: | Langlie Mattix |
| Prod. Interval: | 3139'-3157' |
| TD: | 3297' |

| | | |
|---|---|---|
| Pipe Size: | 8 5/8" | 5 1/2" |
| Depth Set: | 280' | 3282' |
| Cemented with: | 150sx | 400sx |
| Top of Cement | Surf | Surf |

(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: Olsen

Lease Name: Gutman

Well No: 1-D

Location: 1880' FSL 660' FEL

Pay Zone: Devonian
Prod. Interval: 8457'-8590'
TD: 8628'

Sec: 29

Lea County, New Mexico

| | | | |
|---|---|---|---|
| Pipe Size: | 13 3/8" | 9 5/8" | 7" |
| Depth Set: | 597' | 3601' | 8625' |
| Cemented with: | 300sx | 2000sx | 500sx |
| Top of Cement | Surf | Surf | 5737 |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator: Olsen and Blount

Lease Name: Coll "A"

Well No: 1

Location: 1980' FNL 1980' FEL

Pay zone: 7 Rivers Queen
Prod. Interval: 3120'-3186'
TD: 3186'

Sec: 29

Lea County, New Mexico

| | | |
|---|---|---|
| Pipe Size: | 10 3/4" | 7" |
| Depth Set: | 287' | 3170' |
| Cemented with: | 200sx | 600sx |
| Top of Cement | Surf | Surf |

(Cement Tops Calculated unless temperature surveys or bond logs available).

ARCO R. S. Crosby "A" No. 2
Wells Within One-Half Mile Radius
(All located in T-25-S R-37-E, Lea County, N.M.)

Operator: Texaco

Lease Name: Lanehart

Well No: 1

Location: 1320' FSL 1320' FEL

Pay zone: Yates 7R
Prod. Interval: 2516'-3110'
TD: 3308'

Sec: 29

Lea County, New Mexico

| | | | | |
|---|---|---|---|---|
| Pipe Size: | 15 1/2" | 9 5/8" | 7" | 5" |
| Depth Set: | 253' | 1045' | 2460' | 3156' |
| Cemented with: | 250sx | 575sx | 125sx | 55sx |
| Top of Cement | Surf | Surf | 1335 | (Liner) |

(Cement Tops Calculated unless temperature surveys or bond logs available).

Operator:

Lease Name:

Well No:

Location:

Sec:

Lea County, New Mexico

Pipe Size:

Depth Set:

Cemented with:

Top of Cement
(Cement Tops Calculated unless temperature surveys or bond logs available).

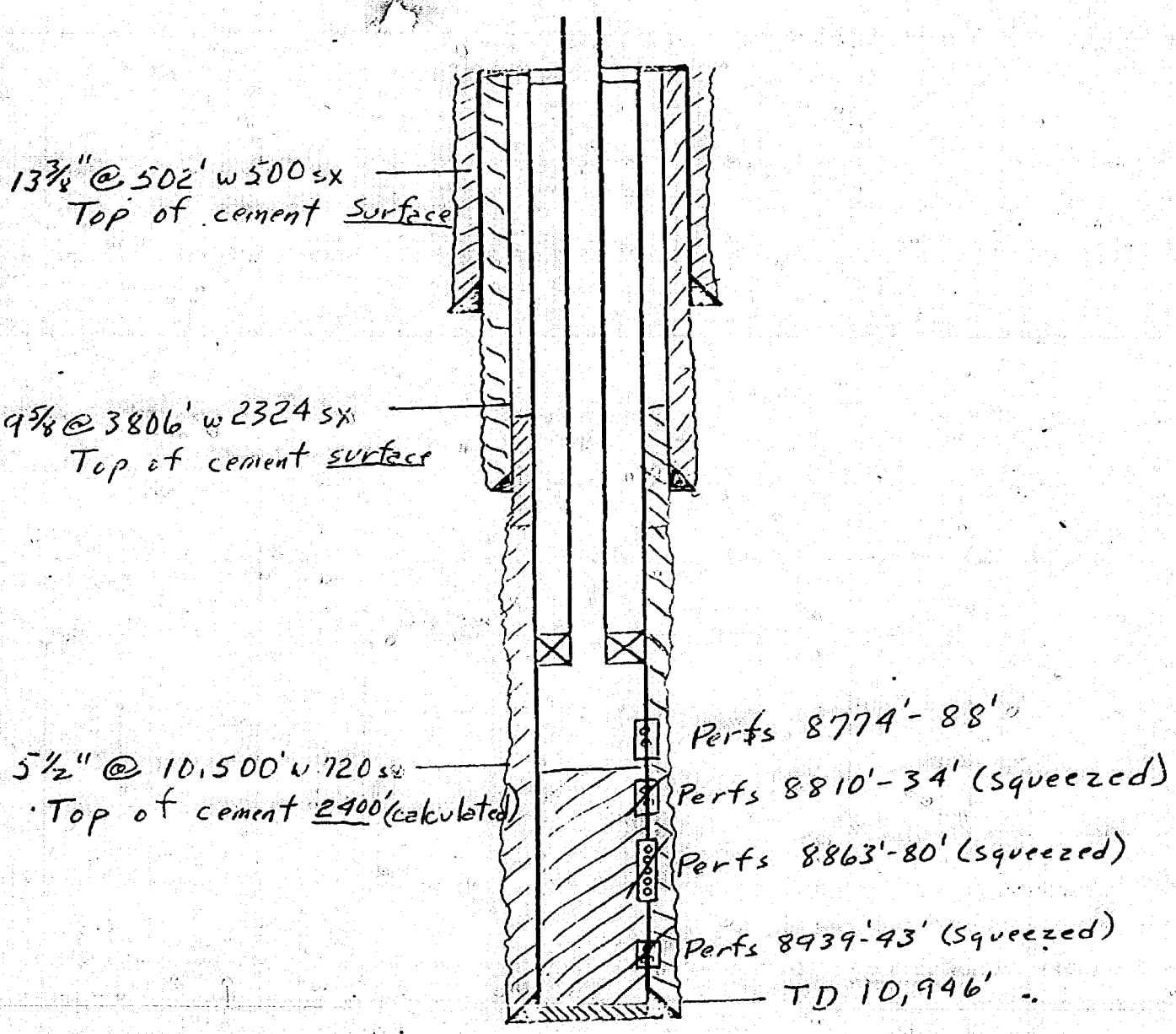
Allied Chemical
Crosby Deep #1

LOCATION

Section 28, T-25-S, R-37-E

330' FSL, 1980' FWL

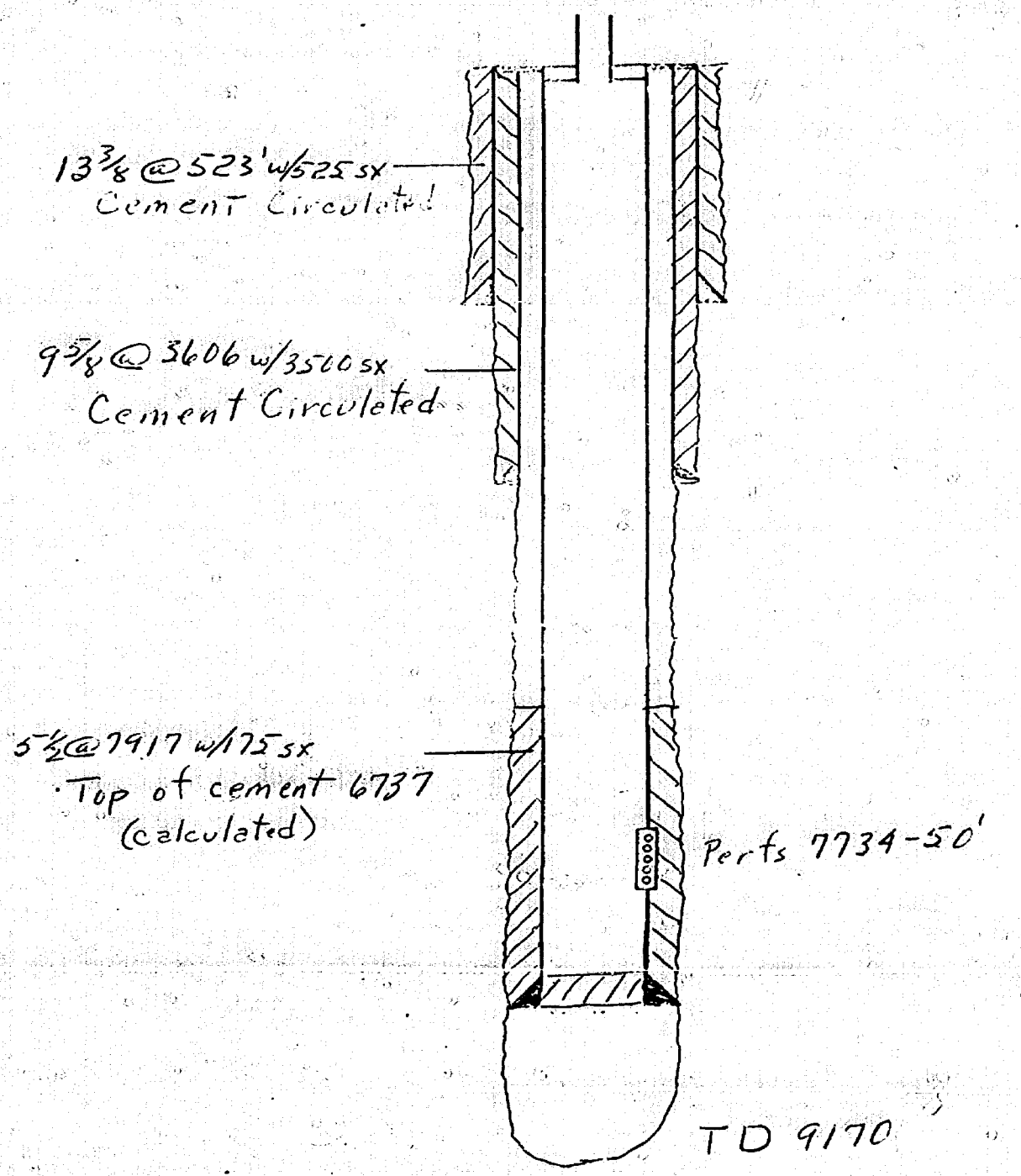
Lea County, New Mexico



Anderson Prichard
Clyde Lanehart #1
Dry & Abandoned
4-17-55

LOCATION

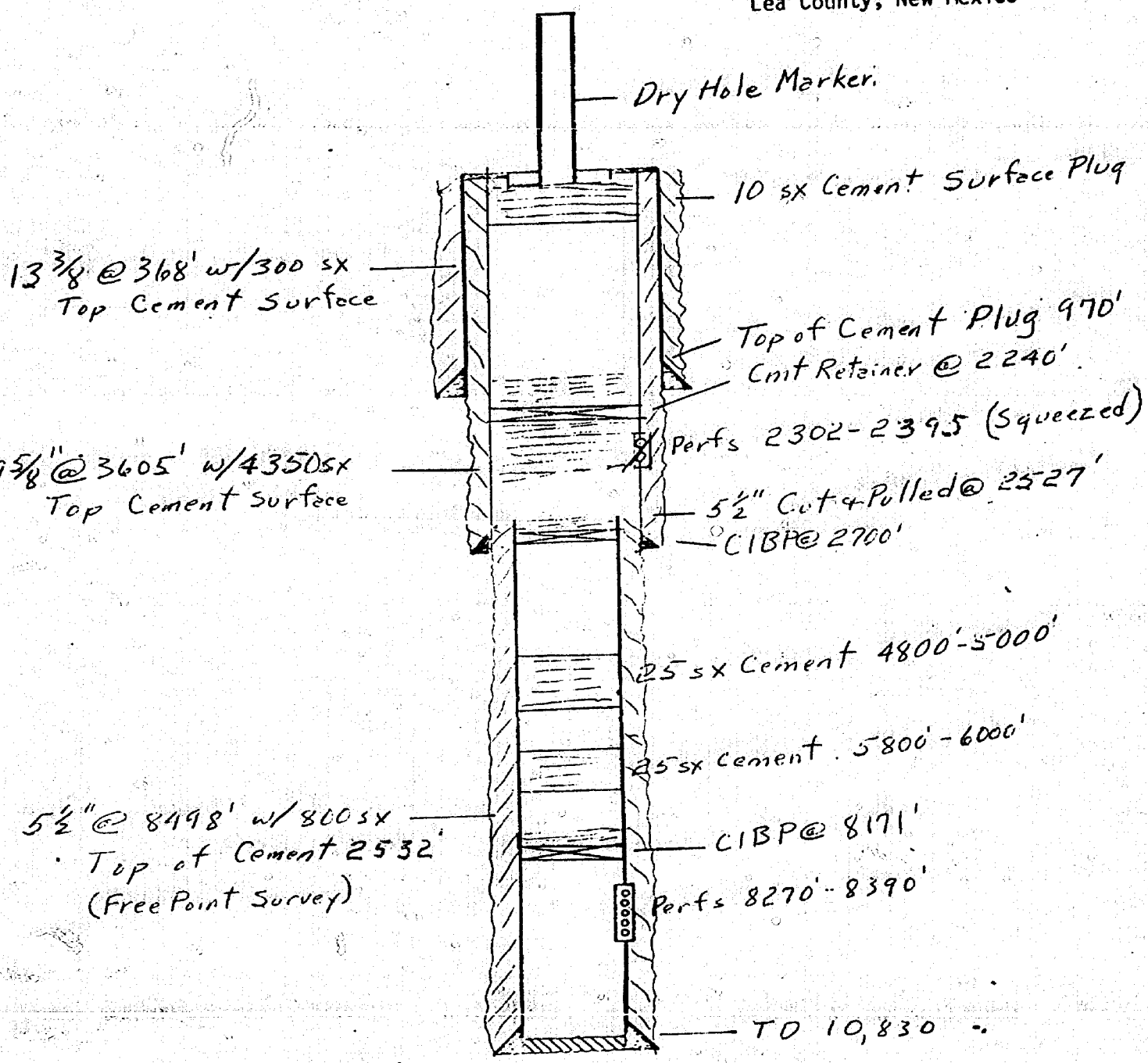
Section 28, T-25-S, R-32-E
1950' FNL, 1980' FEL
Lea County, New Mexico



ARCO Oil & Gas Co.
ARC Federal #1
Status - Abd

LOCATION

Section 28, T-25, R-37-E
1980' FSL, 1980' FWL
Lea County, New Mexico



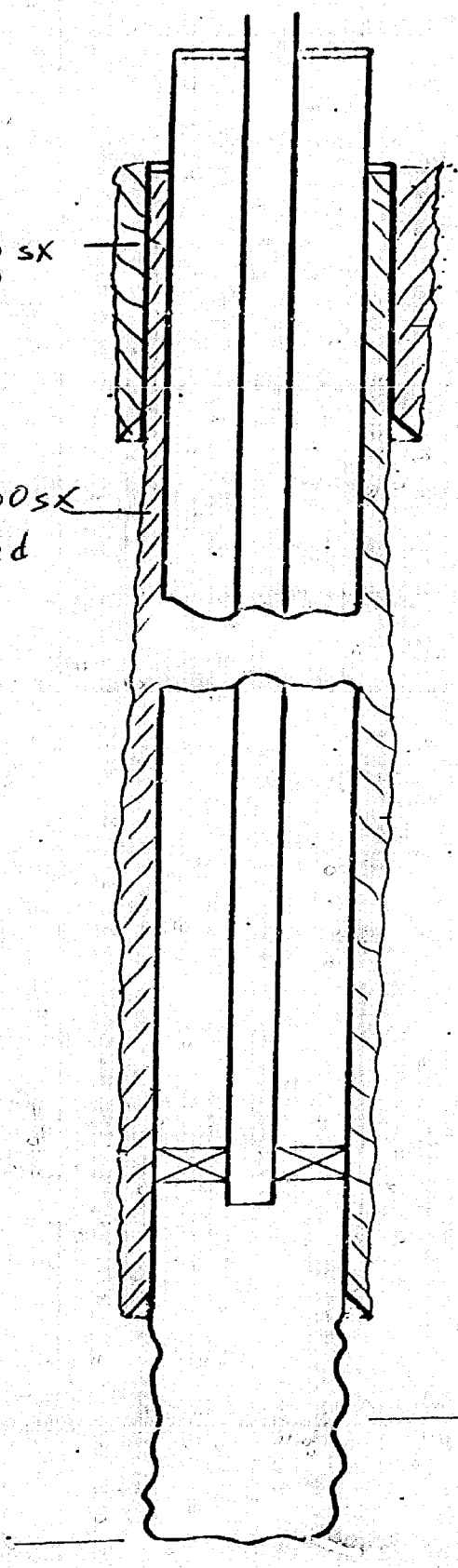
Burleson & Huff
Saunders Estate #1

LOCATION

Section 28, T-25-S, R-37-E

1980 FNL, 660' FWL

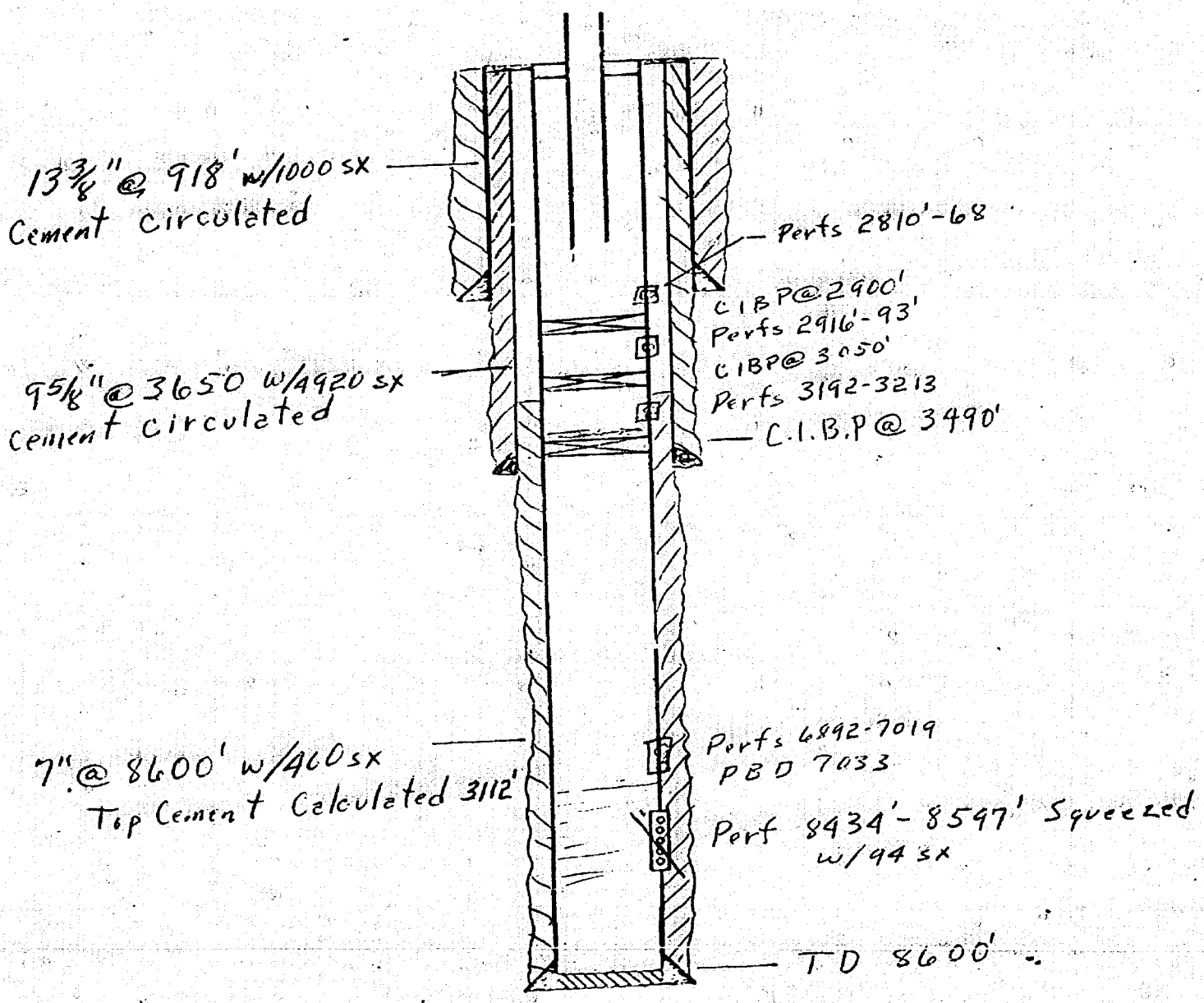
Lea County, New Mexico



Burleson + Huff
Saunders #2
Status - TA

LOCATION

Section 28, T-25S, R-37-E
1650' FNL, 1650' FWL
Lea County, New Mexico



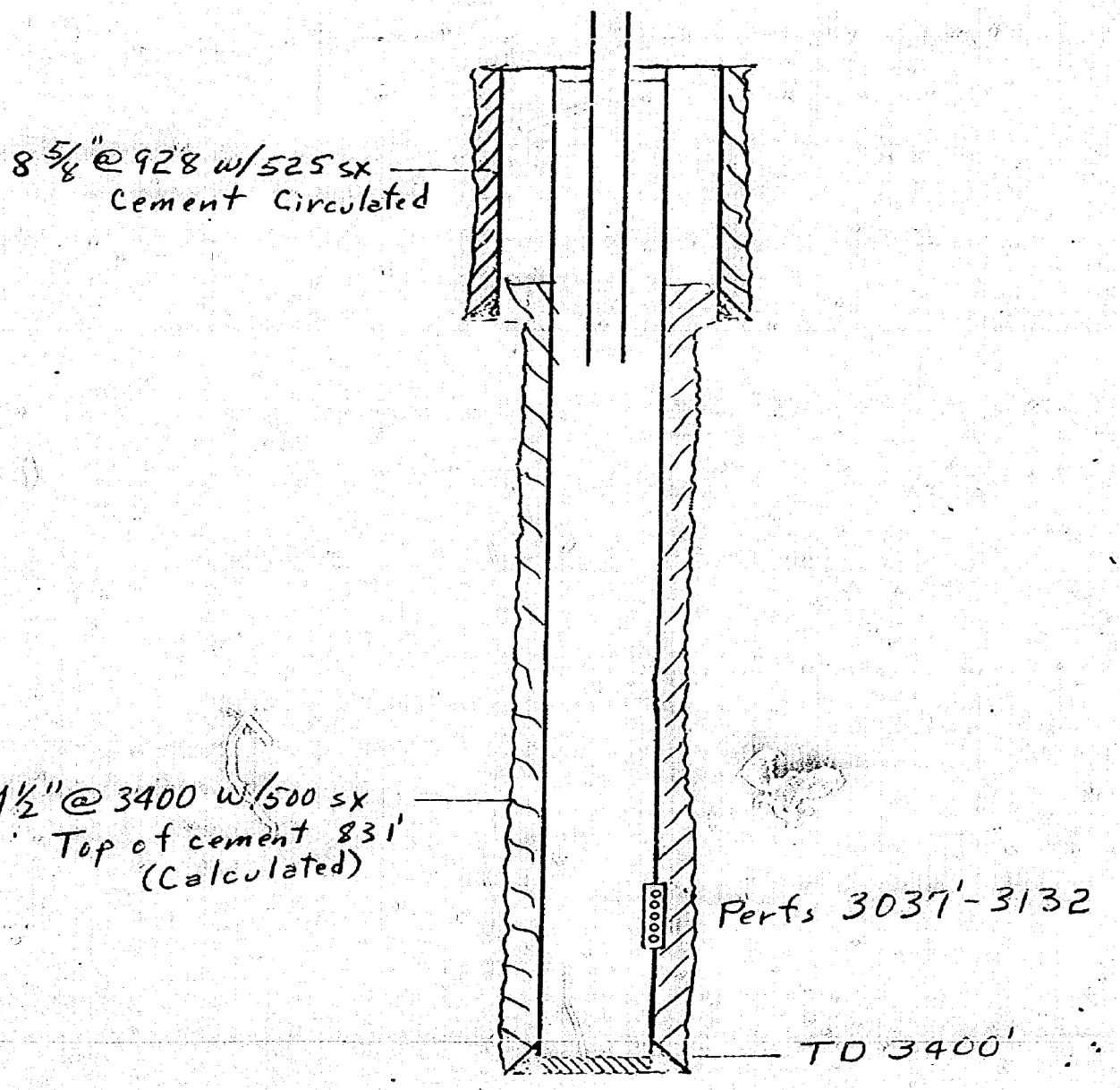
Burleson & Huff
Saunders Est. #3

LOCATION

Section 28, T-25-S, R-37-E

660' FNL, 1650' FWL

Lea County, New Mexico



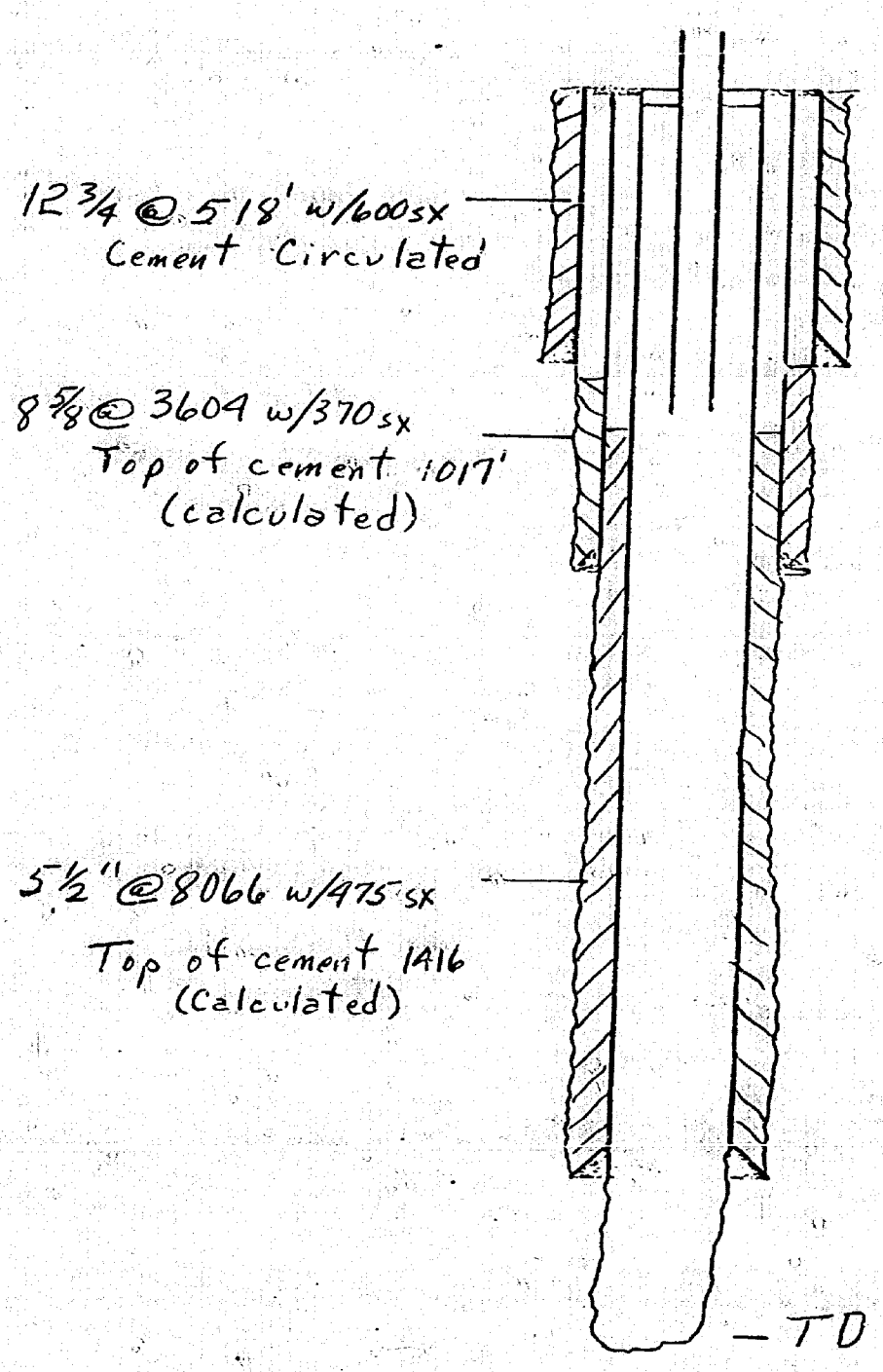
Greathouse & Lovelady
U.S. Crosby #1

LOCATION

Section 28, T-25-S, R-37-E

660' FSL, 1980' FWL

Lea County, New Mexico



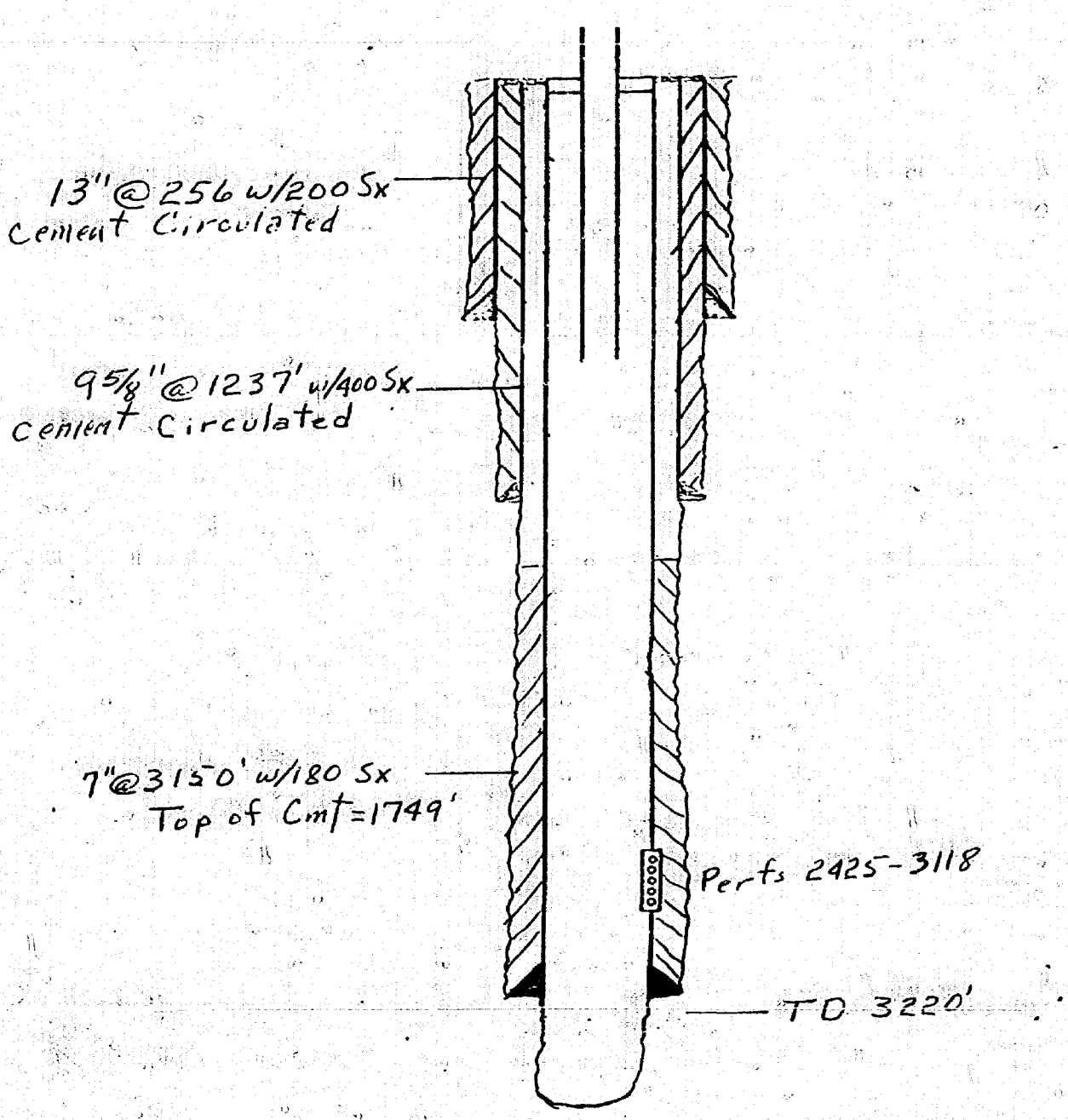
ARCO Oil & Gas Co.
R.S. Crosby (3) 1B

LOCATION

Section 28, T-25-S, R-37-E

330' FSL, 2310' FEL

Lea County, New Mexico



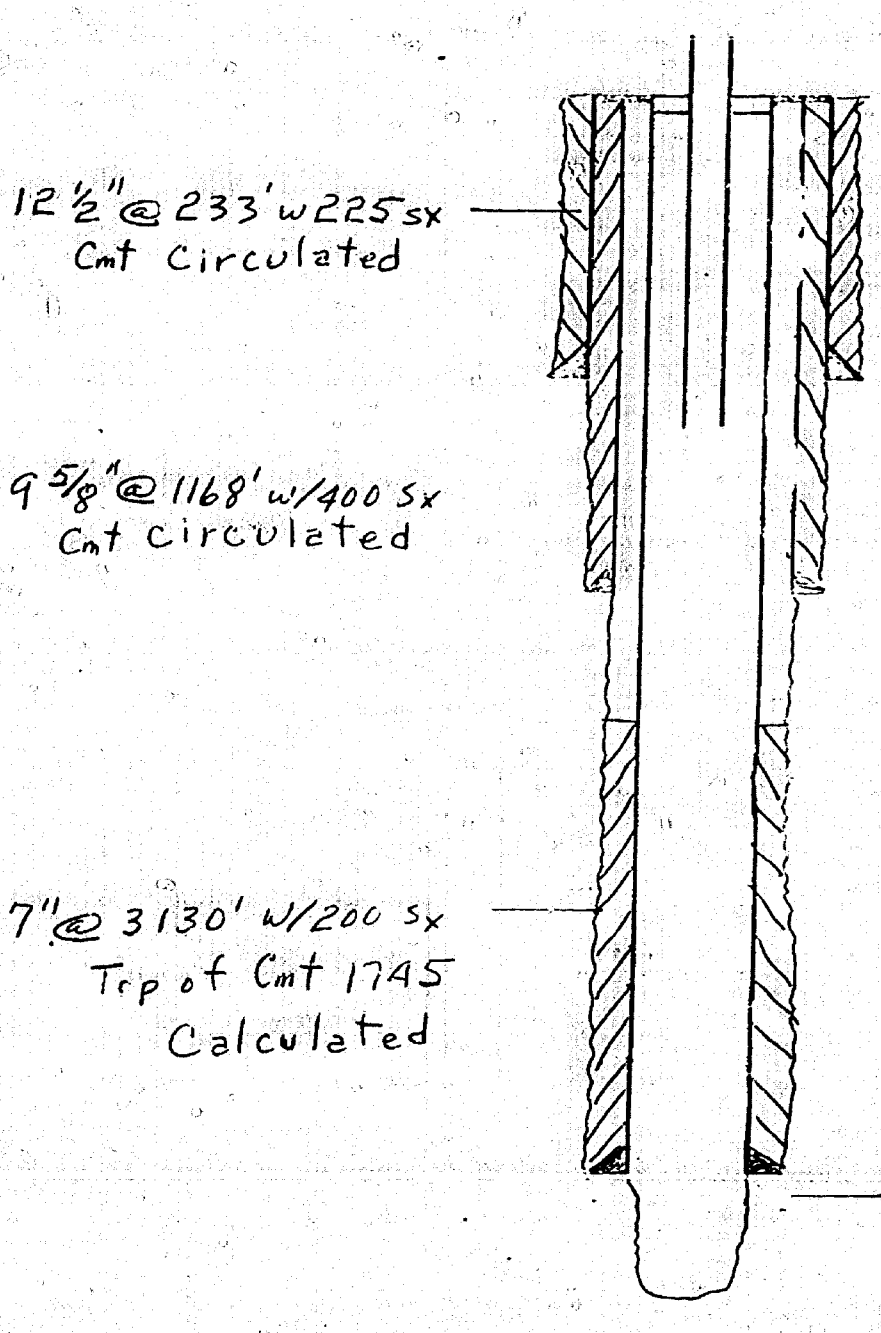
Repollo
T. J. Lanehart #1

LOCATION

Section 28, T-25-S, R-37-E

990' FNL, 990' FWL

Lea County, New Mexico



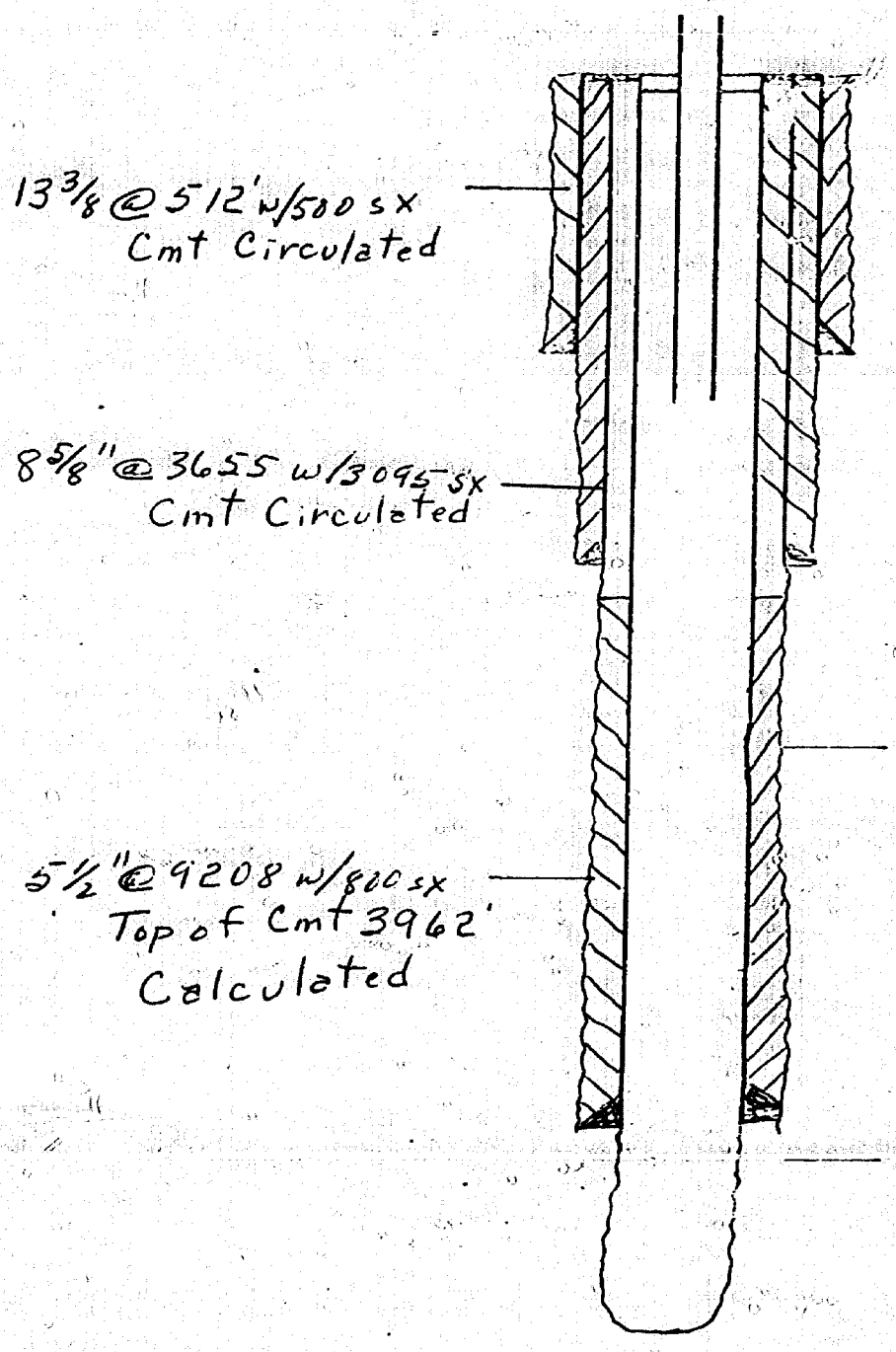
Anderson Prichard
Coll #1

LOCATION

Section 29, T-25-S, R-37-E

1980' FNL, 660' FEL

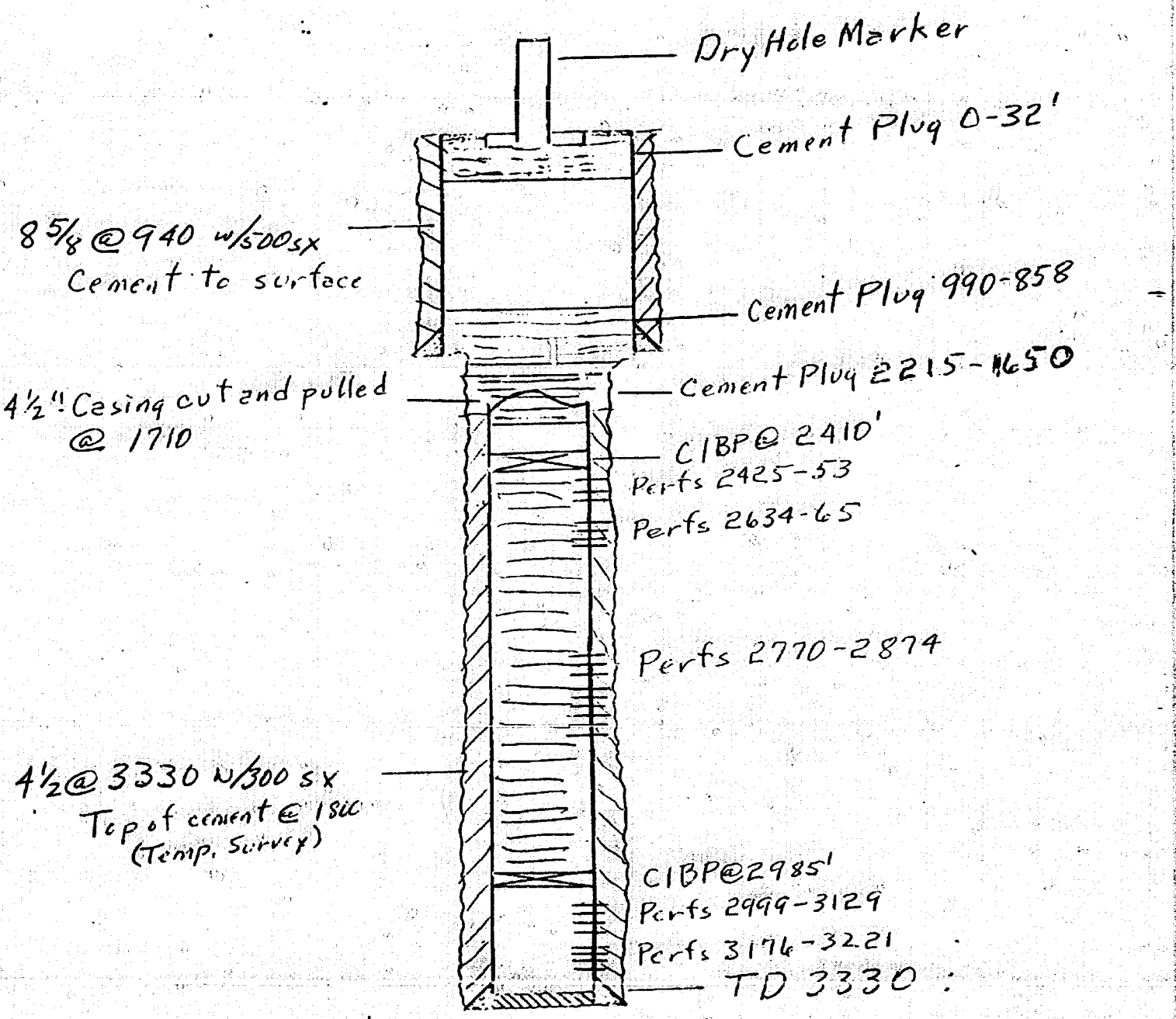
Lea County, New Mexico



Burleson & Huff
Coll A-2
Dry & Abandoned
8-27-79

LOCATION

Section 29, T-25-S, R-37-E
1980' FNL, 330' FEL
Lea County, New Mexico



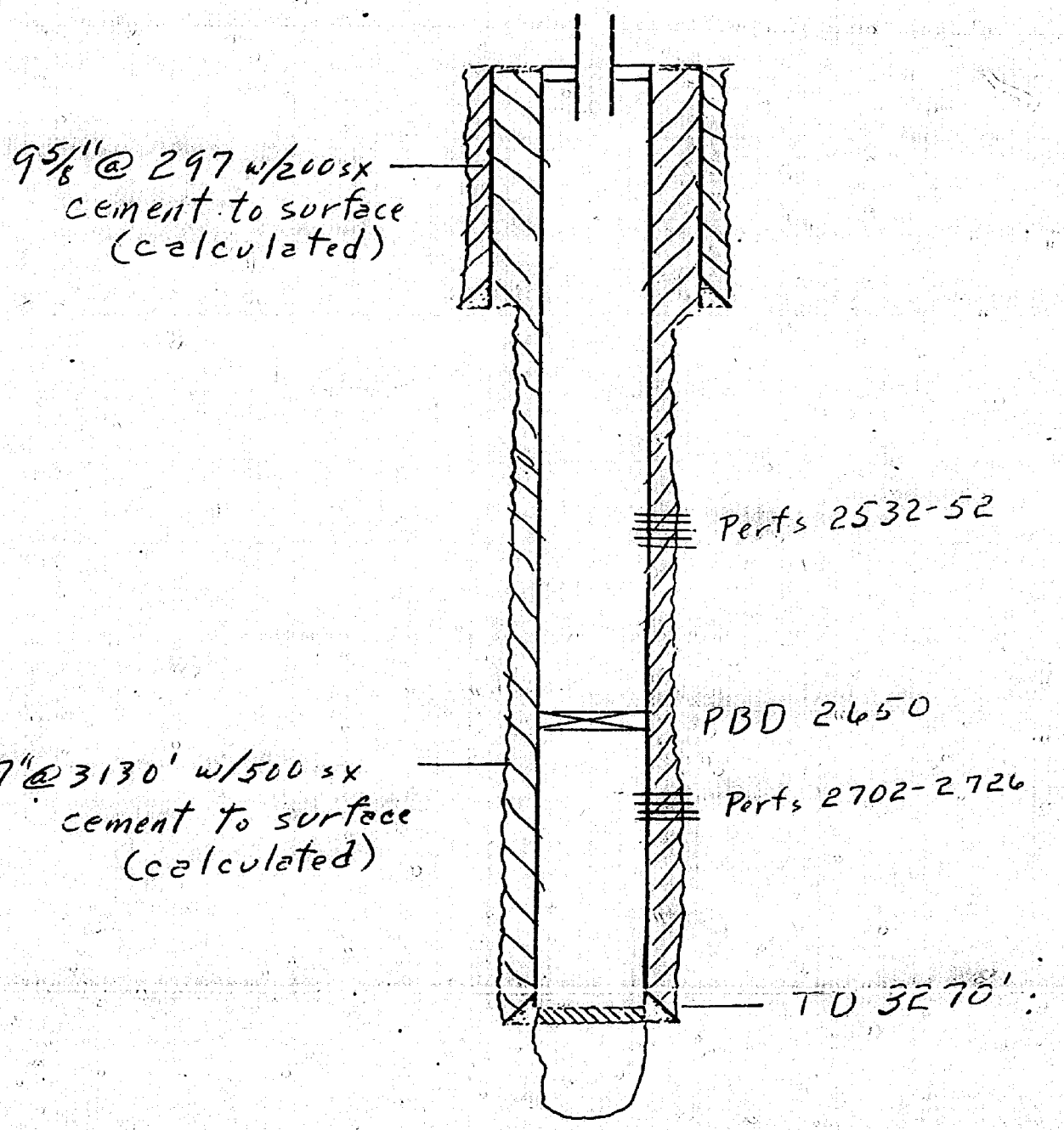
Burleson + Huff
Gutman #1

LOCATION

Section 29, T-25-S, R-37-E

1980' FSL, 660' FEL

Lea County, New Mexico



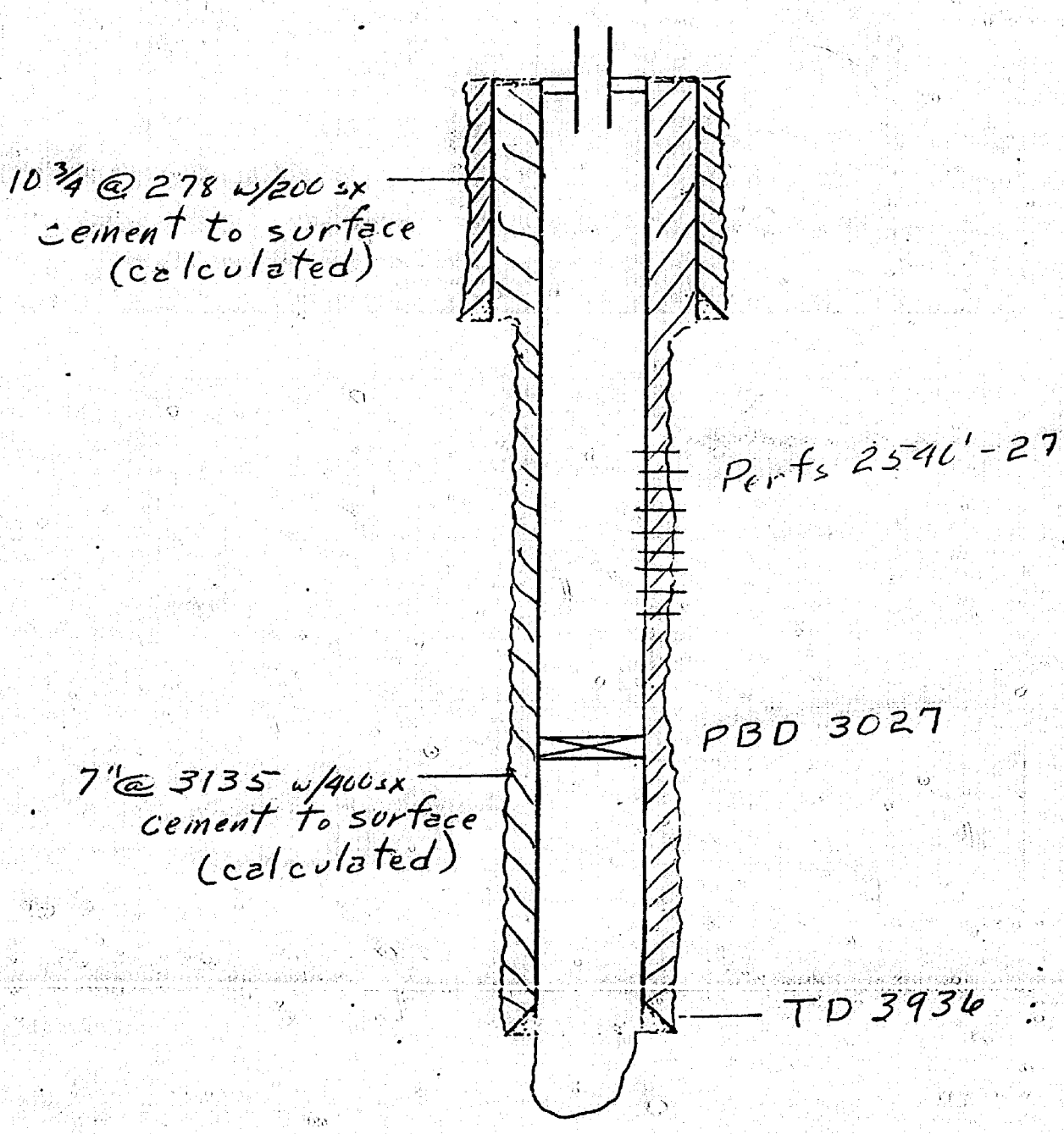
Jal Oil Co.
Coll #1
P&A 8-30-60

LOCATION

Section 29, T-25-S, R-37-E

660' FNL, 660' FEL

Lea County, New Mexico



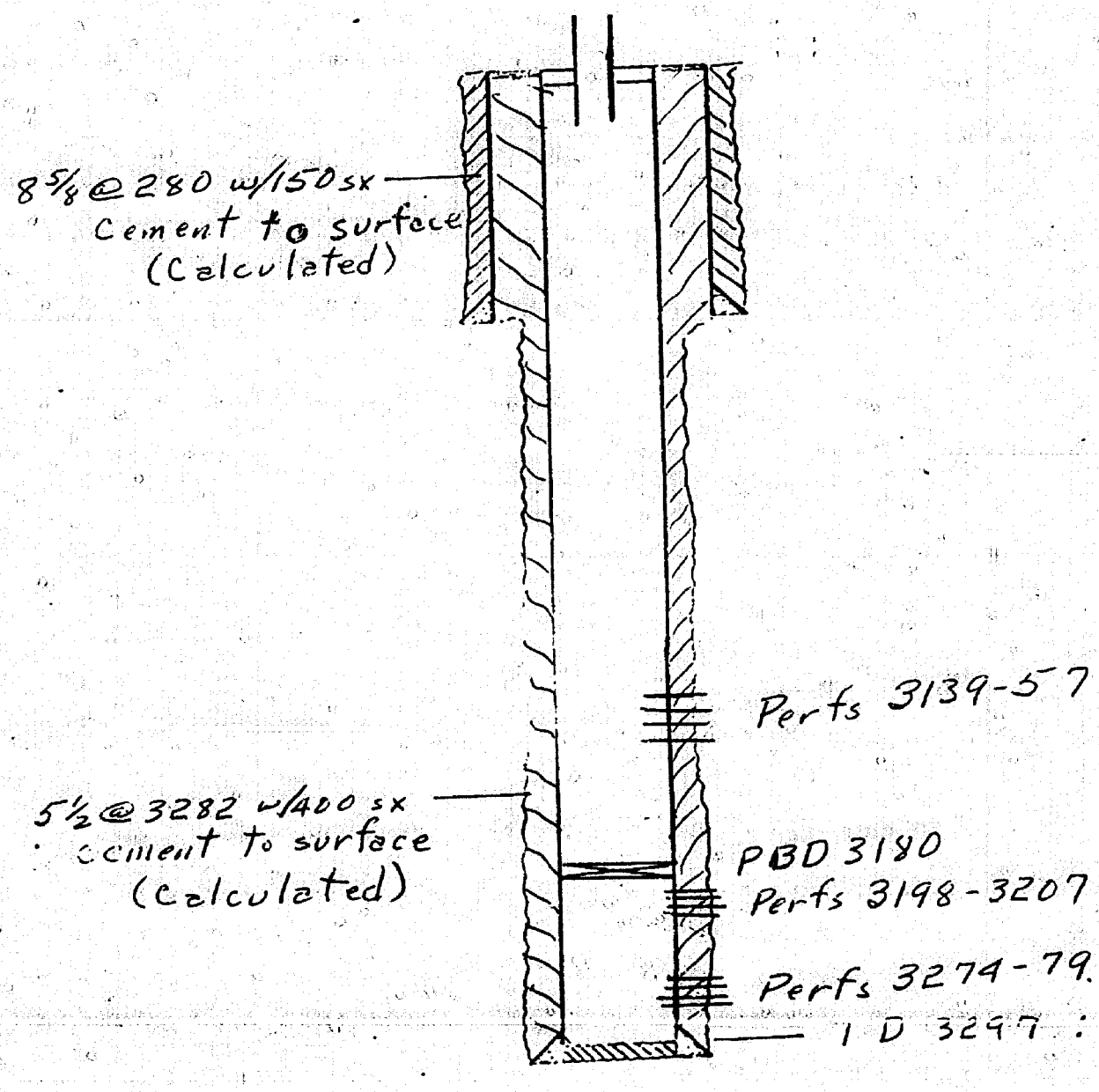
R. Olsen
Gutman #2

LOCATION

Section 29, T-25-S, R-37-E

2310' FSL, 1650' FEL

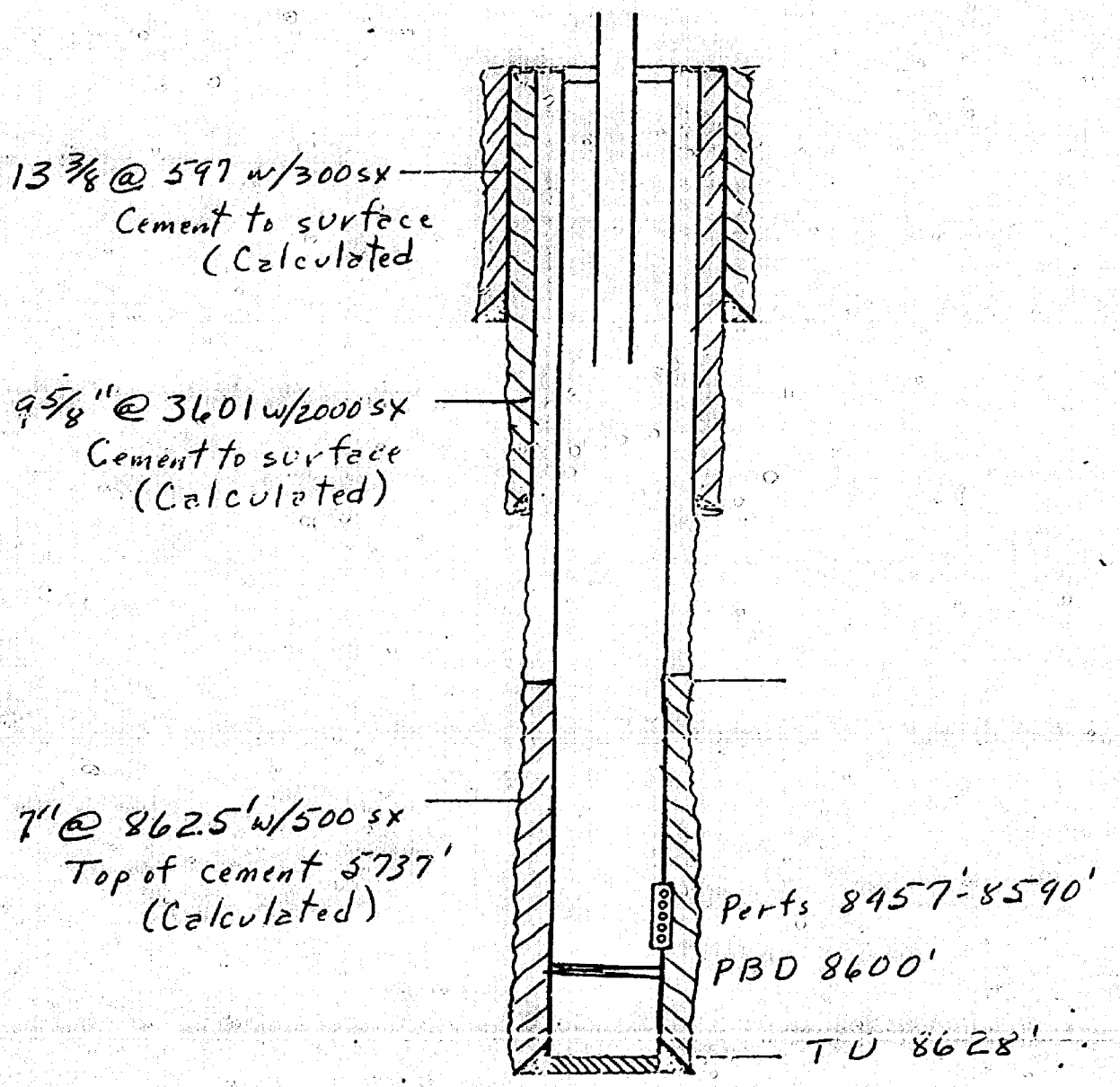
Lea County, New Mexico



R Olsen
Gutman #1-D

LOCATION

Section 29, T-25-S, R-37-E
660' FEL, 1880' FSL
Lea County, New Mexico



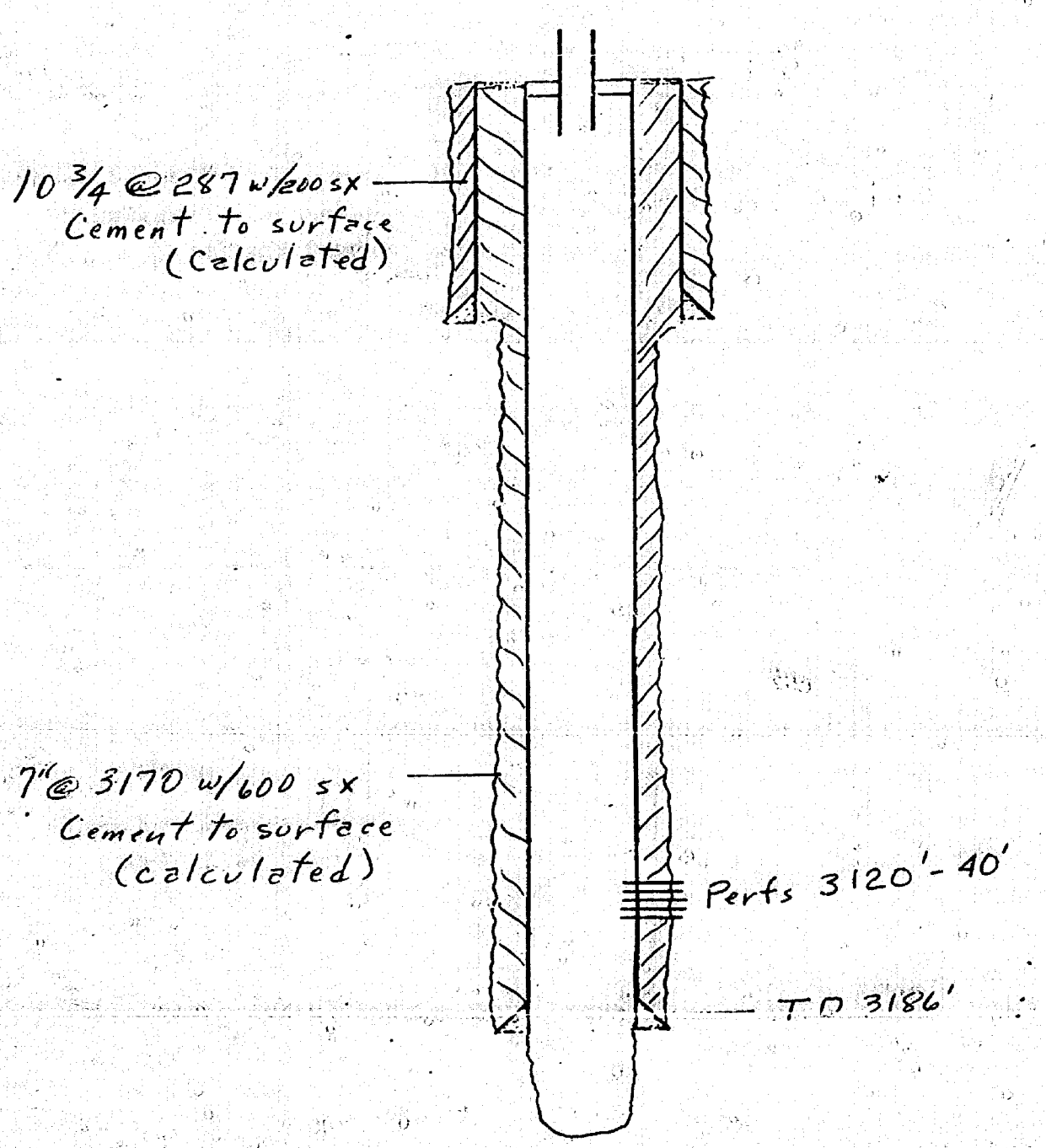
Olsen & Blount
Coll "A" 1

LOCATION

Section 29, T-25-S, R-37-E

1980' FNL, 1980' FEL

Lea County, New Mexico



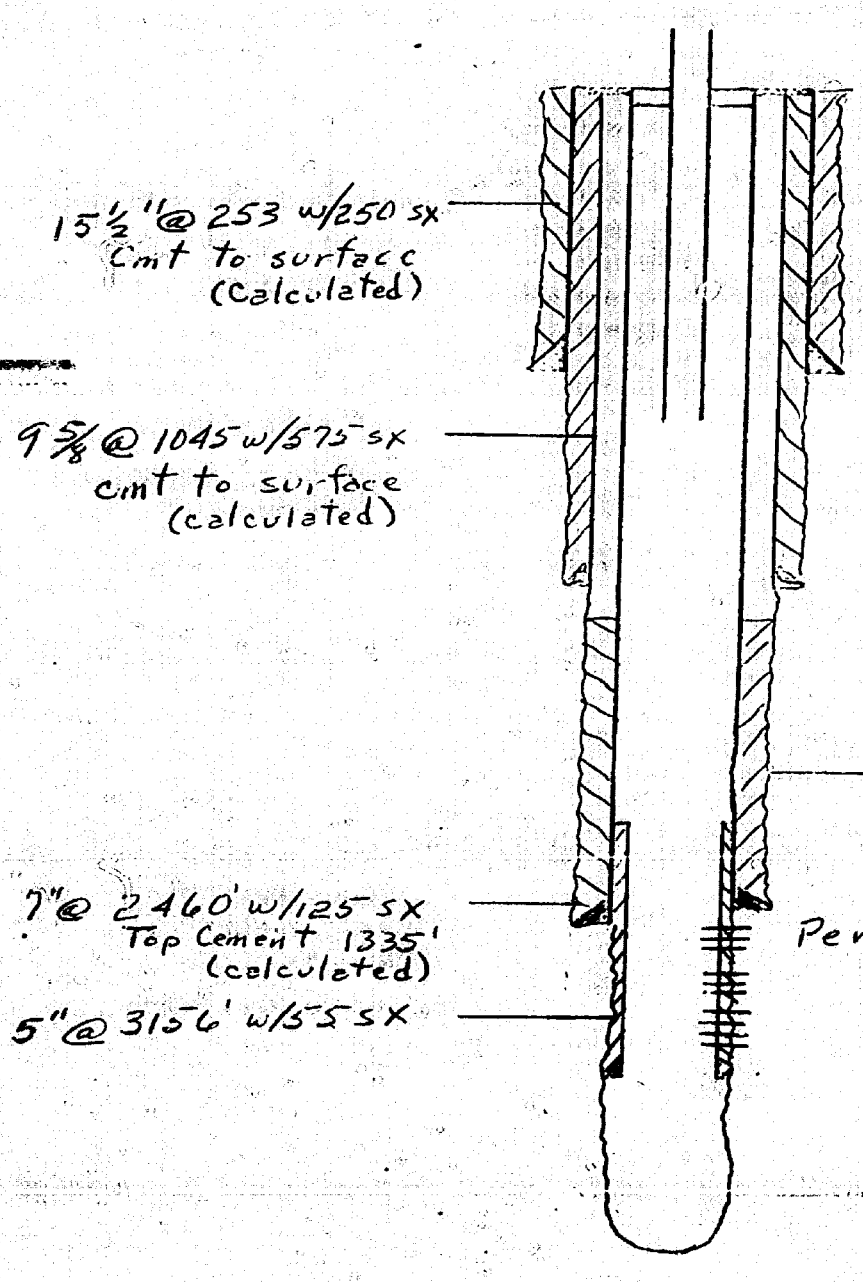
Texaco
Lanchart #1

LOCATION

Section 29, T-25-S, R-37-E

1320' FSL, 1320' FEL

Lea County, New Mexico



ROUGH

dr/

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

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

CASE NO. 7294

Order No. R- 6770

APPLICATION OF ARCO OIL AND GAS
COMPANY FOR SALT WATER DISPOSAL,
LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on July 15 19 81, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this ____ day of ~~July~~ September, 1981, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, ARCO Oil and Gas Company, is the owner and operator of the R. S. Crosby "A" Well No. 2, located in Unit L of Section 28, Township 25 South, Range 37 East, NMPM, Langlie Mattix Pool, Lea County, New Mexico.

(3) That the applicant proposes to utilize said well to dispose of produced salt water into the Seven Rivers-Queen formation, with injection into the perforated interval from approximately 2996 feet to 3186 feet.

(4) ~~The~~ An offset operator, Lewis B. Burleson, appeared at the hearing and objected to the disposal of salt water into the subject well on the grounds that it would adversely affect certain of his offsetting productive wells.

(5) That the proposed injection well is located approximately 1047 feet northwest of Burleson's Gutman Well No. 1 in Unit I of Section 29, and 2333 feet south-southwest of Burleson's Saunders Estate Well No. 3 in Unit D of Section 28, both in Township 25 South, Range 37 East, NMPM.

(6) That said Gutman Well No. 1 is presently producing Jalmat gas from the Yates formation through perforations from 2532 feet to 2552 feet, but has remaining reserves of Langlie Mattix oil and gas in the interval from 3130 feet to 3268 feet.

(7) That said Saunders Estate Well No. 3 is presently producing as a gas well in the Langlie Mattix through perforations from 3037 feet to 3132 feet.

(8) That the Langlie Mattix ~~zones~~ oil zone in said Gutman Well No. 1, where remaining recoverable Langlie Mattix reserves are believed to exist, and the Langlie Mattix gas zone in said Saunders Estate Well, where No. 3 is completed, are the equivalent zones to the proposed disposal zone in applicant's R. S. Crosley "A" Well No. 2.

(9) That said Gutman Well No. 1 is located downstructure from the proposed disposal well and the said Saunders Estate Well No. 3 is structurally about even with the proposed disposal well.

(10) That the applicant proposes to dispose of approximately 500 barrels of water per day in the Seven Rivers-Queen formation in the proposed disposal well.

(11) That the Seven Rivers-Queen formation has a relatively high permeability.

(12) That considering the permeability of the formation, the proximity of the Burleson wells, and the structural relationship of the Burleson wells to the disposal well, there would exist a strong possibility of disposal waters migrating to the aforesaid Burleson wells, and watering out the existing and potential productivity thereof, thus causing waste.

(13) That such watering out of existing and potential reserves of oil and gas belonging to Burleson would adversely affect his correlative rights.

(14) That in the interest of protecting correlative rights and preventing waste, the application should be denied.

IT IS THEREFORE ORDERED:

(1) That the application of ARCO Oil and Gas Company for authority to dispose of produced salt water in its R. S. Crosby "A" Well No. 2, located in Unit L of Section 28, Township 25 South, Range 37 East, NMPM, Lea County, New Mexico, is hereby denied.

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

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