

STATE OIL & GAS BOARD OF ALABAMA

Tuscaloosa, Alabama

18 September 1964

Testimony and proceedings before the State Oil & Gas Board of Alabama, in the Board Room of the State Oil & Gas Board Building, University Campus, Tuscaloosa, Alabama, pursuant to adjournment, on this the 18th day of September, 1964.

BEFORE:

BOARD MEMBERS

Mr. E. K. Hanby.....Chairman
Mr. Hugh L. Britton.....Associate Member
Mr. C. D. Glaze.....Associate Member

BOARD PERSONNEL

Mr. Philip E. LaMoreaux.....Secretary & Supervisor
Mr. Gene White.....Ass't Supervisor & Chief Petroleum Engineer
Mr. Gus Harris.....Attorney

(Reported by Lou M. Chambers)

A P P E A R A N C E S

NAME	REPRESENTING
1. T. J. Holifield.....	George H. Jett Drilling Co.
Laurel, Mississippi	
2. I. N. Hickox.....	George H. Jett Drilling Co.
Citronelle, Alabama	
3. William S. Boyd, Jr.....	George H. Jett Drilling Co.
Laurel, Mississippi	
4. Walter B. Jones.....	George H. Jett Drilling Co.
University, Alabama	
5. H. M. Townsend.....	Aneora Corporation
Mobile, Alabama	
6. W. E. Tucker.....	State Oil & Gas Board
University, Alabama	
7. E. C. Herbert.....	State Oil & Gas Board
Double Springs, Alabama	
8. Boyd Bailey.....	State Oil & Gas Board
Citronelle, Alabama	
9. R. C. Wood.....	State Oil & Gas Board
Citronelle, Alabama	
10. Mary Claire Ryan.....	State Oil & Gas Board
Tusealoosa, Alabama	

P R O C E E D I N G S

(At 10:00 A.M., 18 September 1964, the regular session of the Board was convened.)

CHMN. HANBY: I believe it's time now to begin the meeting. Let's all stand. Dr. Jones, will you lead us in prayer.

(A prayer was then offered by Dr. Walter B. Jones)

CHMN. HANBY: I'll ask Mr. LaMoreaux if the meeting has been properly advertised.

MR. LaMOREAUX: Mr. Chairman, the meeting has been properly advertised and you may proceed.

CHMN. HANBY: We have in our midst this morning a person who has been with this Board for many, many years, and as I understand it, it's probably the first meeting that she has attended this whole time. I don't know. I was told that this morning. Is that true, Miss Ryan?

MISS RYAN: Yes, this is the first meeting I've ever attended.

CHMN. HANBY: That's in 29 years, 30 years?

MISS RYAN: It was in '46 they were organized.

DR. JONES: They started in '39.

CHMN. HANBY: But you've been with the Geological Survey, I believe, for 30 years?

MISS RYAN: I'm in my 30th year, yes sir.

CHMN. HANBY: And you're right now up for retirement, going to leave us shortly, and I certainly want to speak for the Board and I know every person here to say that we regret that very much. I certainly personally have enjoyed your companionship and your fellowship,

and I appreciate in so many ways the many favors that you extended to me personally, and I know I speak for the Board, and I believe Mr. Britton has a little motion he'd like to make at this time.

MR. BRITTON: Yes, I'd like to make a motion, Mr. Chairman. I make a motion that the Board instruct Mr. Harris to write a resolution expressing the Board's appreciation for Miss Mary Claire's long faithful work with the Geological Survey and Oil and Gas Board, and that it be expressed upon the minutes of the regular meeting and a copy sent to Miss Ryan.

CHMN. HANBY: Do I hear a second?

MR. GLAZE: I second that motion.

CHMN. HANBY: It's been moved and seconded that this resolution be prepared by Mr. Harris, the attorney. All in favor, let it be known by saying "aye" -- any opposed, "no."

(All Board Members voted "aye")

CHMN. HANBY: The "ayes" have it. It is so ordered.

MR. HARRIS: It will be a pleasure and an honor to do that, Mr. Chairman.

MR. BOYD: Mr. Chairman, may I say something in connection with that?

CHMN. HANBY: Yes sir, Mr. Boyd. Will you give your name for the record?

MR. BOYD: Yes sir. My name is William S. Boyd. I've known Miss Mary Claire a long time myself. When I was a student here at the University, I had the pleasure and the privilege of sort of being in

the position to where she could "keep me straight" when I needed to be kept straight, and I remember one time when this Board met over in Montgomery in the Senate Chamber, she almost got to a meeting there at a time when it was happening, and she said this was her first meeting to attend, and she came in just when the meeting was breaking up and it was a very somber occasion, very respectable and dignified, but I felt close enough to Miss Mary Claire that I had to get up and hug her neck in the Senate Chamber, and the Chairman has never forgiven me since that time, but I do know that she has been a faithful servant to the State for many, many years, and is a perfect lady in every respect.

MISS RYAN: Thank you, Bill.

CHMN. HANBY: Is there anyone else who would like to make a remark at this time?

DR. JONES: Well, I certainly want to make one, several of them, I might talk for two or three days. My name is Walter Jones, retired State Geologist. This girl has been in my hair for a lot of years and if it hadn't been for her, I don't believe we would have had this building. She was the one who demanded that the money be saved for it and you save money by not spending it. I've never known anybody that was more honest or conscientious in all of my life than Mary Claire Ryan, and nobody has ever been in my life in all of these years that I think more of or think has rendered a greater service to me personally and to the cause which I have tried to serve over these years. I'm real proud of you, Mary Claire.

MISS RYAN: Thank you, Dr. Jones.

CHMN. HANBY: Is there anyone else?

(No response)

MR. HARRIS: Maybe Miss Ryan would like to...

CHMN. HANBY: Miss Ryan, would you care to say a few words to us?
We'd love to hear from you.

MISS RYAN: Mr. Hanby, I don't think that I can. I have enjoyed the time that I've been with the State and I've enjoyed my association with the Board Members. I've enjoyed my association with you before you became a Board Member when you were so helpful down in the House of Representatives in Montgomery, and a lot of things that we got, I'm sure, we wouldn't have gotten if you hadn't helped us out on it, but I just enjoyed working with the State and trying to do the things that I could see things better. I know people didn't agree with me, but I just decide now that I just want to retire. I'm going to do that on the 30th of September, and I thank you from the bottom of my heart for everything you've said.

CHMN. HANBY: Well, we couldn't possibly say enough, Miss Ryan, and I mean that from the bottom of my heart. We will now begin the agenda that we have set for today, beginning with the first item on the agenda:

"Petition by George H. Jett Drilling Company
to make permanent Emergency Order No. E-64-20
which granted approval to George H. Jett Drilling
Company to dually complete the following well:

"No. 1 Board of School Commissioners
of Mobile County
SE/4 NW/4 and the SW/4 NE/4
S16, T1N, R2W

Citronelle Field
Mobile County, Alabama

"in accordance with Order No. 82 as amended by
Order No. 175."

Is there anyone here who represents the petitioner?

MR. HICKOX: Mr. Chairman, my name is I. N. Hickox. I represent
the George H. Jett Drilling Company.

CHMN. HANBY: Do you have any statements to make at this time?

MR. HICKOX: No sir.

CHMN. HANBY: I am pretty sure that this petition is in order,
but we will have a report now from the staff.

MR. LAMOREAUX: Aspects of this petition have been checked in the
field by our agents and the files on the petition in the Oil and Gas
Board office are complete and the staff recommends approval and has a
recommendation to approve the petition under Item 1 here of the agenda.

CHMN. HANBY: Are there any questions by any Board Member?

(No response)

CHMN. HANBY: If not, you've heard the report recommending the
granting of this petition by the staff. What is the pleasure of the
Board?

MR. BRITTON: I make a motion that it be granted, that the peti-
tion be granted.

MR. GLAZE: I second the motion.

CHMN. HANBY: It's been moved and seconded that the petition be
granted. All those in favor, let it be known by saying "aye" --
opposed, "no."

(All Board Members voted "aye")

CHMN. HANBY: The "ayes" have it and the petition is granted.

The next item on the agenda is:

"Petition by George H. Jett Drilling Company
to make permanent Emergency Order No. E-64-22
which granted approval to George H. Jett Drilling
Company to establish the:

"NW/4 of S22, T2N, R3W,
Mobile County, Alabama,
containing 160 acres, being
a governmental quarter section,

"as an oil drilling unit in Mobile County, Alabama;
to approve the location of an oil well in said
unit as being:

"1,015' SNL and 1,465' EWL
of the NW/4 of S22, T2N, R3W,
Mobile County, Alabama."

Is there anyone here representing the petitioner?

MR. HOLIFIELD: My name is T. J. Holifield and I represent the
petitioner, George H. Jett Drilling Company, in this matter.

CHMN. HANBY: Is there anyone here in opposition to this peti-
tion?

(No response)

CHMN. HANBY: Mr. Holifield, do you have any testimony you wish
to offer?

MR. HOLIFIELD: Mr. Chairman, if the Board please, we do not have
any further testimony that we would like to offer at this time. How-
ever, we would like to incorporate into this record by reference all
of the readings, the testimony, exhibits and other related data that
was presented at the August meeting in regard to this matter at this

time.

CHMN. HANBY: Is there any objection to this request?

(No response)

MR. LAMOREAUX: Mr. Chairman, this petition is in order. A field trip has been made by the staff and recommendation is to grant the petition contingent, however, on satisfactory plugging procedures on a well unplugged ~~on the off well~~ in this tract. Now, actually, Mr. Hickox has proposed a plugging procedure and the staff has reviewed that. There were some questions with regard to the plugging procedure. We feel they're going to be resolved between our staff and Mr. Hickox in the only real solution of this matter, ^{and} ~~that~~ the plugging can proceed. We therefore request that the petition be granted contingent on the successful resolution of these questions and the plugging of that well in that tract of land.

CHMN. HANBY: All right. Now, the first point, I believe, is his motion to incorporate the testimony previously introduced in the original hearing on the petition for a temporary order in this matter, which, there being no objections, it will be so incorporated. Now, the only question of granting this petition subject to the proper plugging of this well located...

MR. LAMOREAUX: The Banham (phon.) well in this tract.

CHMN. HANBY: The Banham well in this tract. Do you have anything to say on that, Mr. Holifield?

MR. HOLIFIELD: Mr. Chairman, we have Mr. Hickox here, and the statement by the Supervisor, they have gotten together and made some

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arrangements as to how they will plug and it will be plugged in conformity with the wishes of the Board and the staff.

CHMN. HANBY: Do you have any statement, Mr. Hickox?

MR. HICKOX: No sir. That's correct. We intend to plug the well in the method and on the basis the staff wishes. We have informed the man that owns the well of this procedure, in that direction to accomplish that means.

CHMN. HANBY: We've heard now the statements on the part of the petitioner and the recommendations of the staff that this petition be granted subject to this condition of proper plugging of this well. What is the pleasure of the Board?

MR. BRITTON: Well, I make a motion that Item No. 2 on this agenda be granted with the stipulation that the well, this abandoned well, is to be properly plugged according to the rules and regulations of the State Oil and Gas Board before this well can be drilled. Is that what you want?

CHMN. HANBY: No, that the petition not be made permanent until this has been accomplished, the proper plugging of the well.

MR. BRITTON: Will you make that read like that?

CHMN. HANBY: Do you think you've got that?

MR. BRITTON: I make a motion that the petition not be made permanent until the well has been properly plugged; that the petition be granted subject to that condition.

CHMN. HANBY: Is there a second?

MR. GLAZE: I second it.

CHMN. HANBY: It's been moved and seconded that this petition be granted subject to the condition of the proper plugging of the well to the satisfaction of the staff. All those in favor, let it be known by saying "aye" -- any opposed, "no."

(All Board Members voted "aye")

CHMN. HANBY: The "ayes" have it and the petition is granted with that condition.

MR. HARRIS: Mr. Chairman, does the Board expect to issue an order on this? If it does, the order will have to include that contingency.

CHMN. HANBY: I think that it should.

MR. HARRIS: Will the order have to be retyped? Do you want to have it done?

MR. HOLIFIELD: Yes.

CHMN. HANBY: Yes, I think the order should contain that condition as set out.

MR. HARRIS: Would your secretary rewrite the first page and include that in it?

MR. WHITE: Yes.

MR. HARRIS: Do you want to take it in there?

CHMN. HANBY: The next item on the agenda...

MR. WHITE: We'll handle it later, Gus.

CHMN. HANBY: The next item on the agenda is:

"Report on Salt Water Disposal System,
Citronelle Field, Mobile County, Alabama."

Mr. LaMoreaux...

MR. LaMOREAUX: Actually, we have written, Mr. Chairman, to

certain of the operators in the field and asked them to present their disposal system proposals before the Board. We felt that it was important that this be done at this time. Therefore, we'd like to call first on Mr. Hickox for his proposal on the salt water disposal well that he has planned.

MR. WHITE: We have a schematic, Mr. Chairman, on this that I think will help you in the better understanding of Mr. Hickox's presentation.

MR. HICKOX: Mr. Chairman, we've been in close contact with the Oil and Gas Board in trying to establish the salt water disposal well. It will be a cooperative well to be used by operators outside the Citronelle and surrounding units. This well is the B-19-4. It's located in Section 19, Township 2 North, Range 2 West. It was formerly a producing well with pipes set through the Rodessa. It is now a temporarily abandoned well. It never made any quantities of production and was not useful for the purpose of producing, so we would like to convert this to a salt water disposal well. Early in the life of the well, it had a leak develop, a casing leak that developed at 2518, and it had multiple squeezes performed at this point, and we had the angular section opened so we had fluids after we squeezed the cement, the cement was squeezed, we had fluids that would travel from the 2518 point up into the surface pipe or up across these water sands and probably as subsequent squeezes developed, then the cement was squeezed down the hole, so we feel like we have a squeeze job across the base of the salt water sands and therefore can isolate these

individual sands in the respective zones. There's a schematic showing the mechanics of what we propose to do. There are several sands from 2000 feet to about 24 feet deep we feel are capable of taking this disposed salt water, as the schematic shows, that generally we think we can isolate, we feel like we can isolate it, this disposed water, prevent it from coming into the sands. We've written letters and have letter agreements in from 79 wells outside the Citronelle Unit. Mr. Jett has just gotten back into the country and I talked to him by phone and he said he would approve it, so we have 82 wells committed to this plan now and are proceeding in setting the sewerage ~~lines~~ and have ordered the injection pump and plan to start the work in converting this well immediately upon approval of the plan by the Oil and Gas Board.

CHMN. HANBY: How many wells will that be that are not in it?

MR. WHITE: Thirty-nine, Mr. Hanby.

MR. HICKOX: Yes sir, I think it'll be thirty-nine.

CHMN. HANBY: Okay, go ahead, Mr. Hickox.

MR. HICKOX: Returning back to the schematic again, it has surface pipe set to 1438, approximately 1438 feet. We feel that the surface pipe covers all of the fresh water sands. We feel like we have four and a half inside the surface pipe isolated against the salt water sands and we propose to set up and plug off the producing zones, set another plug immediately below where we intend to perforate the injection sands and then to perforate the injection sands, set a packer above the injection sands and connect the packer with a string

of tubing and inject down the tubing string. The only contact the salt water will come into will be with the tubing string and below the packer so in case... for corrosion purposes or mechanical difficulties, we only have to remove the tubing string and replace it. Now, probably the injection well will last a considerable length of time, be very useful, and basically that's about it.

MR. WHITE: Mr. Chairman, may I direct a few questions?

CHRM. HANBY: Yes sir.

EXAMINATION OF I. N. HICKOX

Questions by Mr. White:

Q Mr. Hickox, do you plan to run a cement bond log on this particular well?

A Yes.

Q Will you explain to the Board what this bond log does?

A The bond log is a tool for the purpose of determining the bonding of the cement between the cement casing, between the casing and the well bore and the exposed sands. In cases you have sufficient bonding, you can determine the strength of the cement and can actually determine that waters will enter those particular sands without going up or down to the points that you perforate.

Q In your professional opinion, Mr. Hickox, will the successful results of a bond log, that is, a bond log indicating a good cement job, prevent salt water from coming in contact with the surface casing and with the cement behind the surface casing?

A Yes sir.

MR. BRITTON: I'd like to ask Mr. Hickox a question.

Questions by Mr. Britton:

Q Am I right in assuming now that in the statements that you've made, 81 or 82, did you say?

A 82.

Q 82 wells, that the salt water from 82 wells can be pumped into one casing?

A Yes sir, one injection, one disposal well.

Questions by Chmn. Hanby:

Q Actually, it would take the other 39, would it not?

A Yes sir, I believe it would, as far as I can ascertain, the amount of salt water that would be available, we feel like that it would serve all of them.

MR. BRITTON: Does the staff go along with that?

MR. WHITE: The staff has recommendations we'd like to take up later in executive session.

CHMN. HANBY: All right, go ahead, Mr...

MR. LAMOREAUX: Are there other...

A (Hickox) We have these 82 wells committed to this plan and we recommend to the Board that they approve it as presented.

Q (Hanby) Are you going to submit to us a list of those wells?

A Yes sir, I can later. I don't have it with me. I can...

Q Could you call it out now and get it in the record or do you want to submit it? Just call the names of the operators out and the number of the wells.

MR. LaMOREAUX: A supplemental list. In other words, give the operators now and the number of wells and then ask for a list.

Q (Hanby) Yes, can you do that?

A (Hickox) Yes. Dixon Management, two wells, the A-26-3 and the A-26-4. Hickox, 22 wells. George H. Jett Drilling Company, three wells. Citmoco Services, Incorporated, 11 wells. Petrovest Corporation, 11 wells. Petroleum Management, Incorporated, two wells, being C-13-7 and C-13-11. Meason Operating Company, 18 wells. Dugger-Holmes & Associates, six wells. Cocoanut Oil Company, one well. American Exploration & Development Company, six wells.

Q (Britton) Over here, Meason, did you say 18 or 13?

A 18.

Questions by Mr. LaMoreaux:

Q Mr. Hickox, how did you determine the depth of fresh water at this particular site?

A I don't know what the depth of fresh water is at this particular site, but I know that it's above where the bottom of the surface casing is set because the log indicates they have salt water present in all zones below the bottom of the surface pipe.

Q By that you mean the electric log based on interpretation of the potential resistivity as it occurs?

A Yes sir.

Q What do you determine the chloride content to be for the sands in the first sand below the bottom of the 1400 feet depth of casing? Do you know roughly what that would be?

A No sir, I don't. I know that relatively speaking, that this water immediately below the surface pipe doesn't indicate to be as high salinity as the next water you encounter at 1600.

Q How about the water down at the 2000 depth area?

A It's....

Q What would you estimate the chlorides in that area, just general magnitude?

A Well, general magnitude, I would estimate above 120,000 parts per million.

Q So you would estimate the chloride content and water from the sands in the area in which you are proposing to inject water as exceeding 100,000 parts per million chloride?

A Yes, I would.

Q Do you have any drill stem tests of water from any of those horizons?

A There are some drill stem tests available. I don't have the data with me.

MR. LAMOREAUX: I would be willing to accept Mr. Hickox's general statements on the quality of water from the sands, but I would like to request the Board to arrange for a submittal of drill stem test information on chlorides for these sands that we're going to dispose or that it is proposed that we dispose salt water into.

CHMN. HANBY: Can you furnish that information, Mr. Hickox?

MR. HICKOX: Yes sir. Would it be satisfactory with the Board if we had drill stem tests from zones other than that are in this well?

What I mean, the same zones but another location.

MR. LaMOREAUX: If they are close by, it'll be perfectly all right, yes.

MR. WHITE: You can correlate those to your...

MR. LaMOREAUX: If they're correlative by the electric log, they will be most satisfactory.

MR. HICKOX: Actually, we hate to, unless it was absolutely necessary, to take a drill stem test on these proposed injection wells and this particular well for the purpose of it may inhibit the injectivity of the well. We may drag...

MR. LaMOREAUX: It's perfectly understandable. I think if you can show us or supply to us some drill stem tests from horizons correlative with those in this well, the proposed disposal well, that that will be satisfactory.

MR. HICKOX: All right, sir.

Questions by Mr. White:

Q Mr. Hickox, does your company plan to make use of any surface storage pits adjacent to this disposal well?

A No sir.

Q Would you explain to the Board what provisions you've made for temporary storage of salt water at the site?

A We've purchased a 750-barrel, galvanized steel storage tank for the purpose.

MR. HARRIS: Mr. Chairman, could I ask a question?

CHMN. HANBY: Yes, Mr. Harris.

Questions by Mr. Harris:

Q Mr. Hickox, do you have a verbal or written authority from these other operators that they will go along with this plan?

A Yes sir, all except Mr. Jett. As I explained, Mr. Jett has been out of the country. I called him on the phone and he said that most definitely he would sign the agreement.

Q You will furnish the Board with a copy of that?

A Yes sir.

MR. HARRIS: I think we should have that in the files.

CHMN. HANBY: All right.

MR. HICKOX: I'll get you to run one off.

MR. WHITE: I'll be happy to.

CHMN. HANBY: Any other questions at this point?

MR. LAMOREAUX: I have no further questions.

CHMN. HANBY: You may proceed, Mr. Hickox.

MR. HICKOX: Mr. Chairman, that's my presentation.

MR. WHITE: Mr. Chairman, I do have one question I'd like to ask.

CHMN. HANBY: All right, Gene.

Questions by Mr. White:

Q I'll ask you this relative only to your operations, your field operations, Mr. Hickox. What plans do you have for separate temporary storage of water at the tank battery or separator site? I can't ask you this for the other companies, but I would like to ask you relative to your own company.

A We have already installed and prepared for use steel storage tanks.

Q Then you do not plan to use any type of pits adjacent to the storage tanks or separators?

A No.

MR. WHITE: Thank you.

CHMN. HANBY: Let me get one point clear in my mind.

Questions by Chmn. Hanby:

Q You still hold yourself out as willing and able to take care of the remaining 39 wells which have signed up to go into this project?

A Yes sir, barring any foreseeable difficulties. I feel like that we have ample injectivity in this proposed well to take care of at least 1,000 barrels per day on the present proposal.

CHMN. HANBY: All right. Any other questions?

MR. WHITE: No sir.

CHMN. HANBY: Thank you very much, Mr. Hickox, and we will consider this matter and let you hear from us later on in the day.

MR. HICKOX: All right, sir.

CHMN. HANBY: Mr. Townsend, I notice you're here with Ancora. Do you have a report to make by Ancora in this matter?

MR. TOWNSEND: Yes sir. My name is H. M. Townsend.

CHMN. HANBY: Just one minute. We did not swear in Mr. Hickox a minute ago, and I think quite a bit of his statement was in the nature of testimony. Mr. Hickox, would you agree that if you'll be sworn in at this time, that all the testimony you previously have given be considered under oath?

MR. HICKOX: Yes sir.

(Mr. Hickox was then duly sworn)

CHMN. HANBY: Let the record show that Mr. Hickox was sworn in by the Chairman. Mr. Townsend, if you don't mind, I'll let you be sworn in.

(Mr. Townsend was then duly sworn)

CHMN. HANBY: Let the record show that Mr. Townsend was sworn in by the Chairman.

EXAMINATION OF H. M. TOWNSEND

Questions by Chmn. Hanby:

Q All right, Mr. Townsend.

A My name is H. M. Townsend. I represent Ancora Corporation. Ancora Corporation has been elected at this time to participate in the disposal well with Mr. Hickox. We feel that our salt water disposal is a temporary situation since we do plan to use our salt water mixed with fresh water on our secondary recovery program, which, as I understand it, is that it should be in operation the first of the year. In fact, as I understand it, we are finishing our engineering studies and I think probably in the next 30 or 60 days, we will request a hearing through the Board to present to them our secondary recovery program. So in view of the situation, I would like to request that we will be able to dig a sufficiently large pit and line it with a proper liner for the temporary storage of our salt water. Now, we plan to dig a pit about roughly 100 by 150 feet, 6 feet deep. That pit will roughly hold 17,000 to 18,000

barrels of water. The type of liner that I'm using is presently in use in the Pollard Field by Pan Am, for one, in their salt water disposal pits. It's a polyethylene liner, 20 mil thickness, and it's made by Dow Chemical Company. This is a sample of it. It's been prefabricated. It'll come to me in one piece. It'll be already set up and ready to be lined, and I think that perhaps it's also a liner that's been approved by the Department of Interior for lining irrigating ditches, and as I said, it is in use by Pan American Petroleum at the Pollard Field for a salt water pit.

(Members of the Board and staff examined the sample)

CHMN. HANBY: Do you have any questions?

MR. WHITE: Yes sir.

Questions by Mr. White:

Q Mr. Townsend, what is Ancora Corporation's present daily production of salt water?

A Approximately 100 barrels.

Q In other words, this pit will suffice for storage of your salt water for 17 days?

A 3,000 barrels a month. I would not...

Q Did you say that the proposed pit would hold approximately 1700 barrels?

MR. LaMOREAUX: 17,000.

Q I beg your pardon.

A I plan to dig a pit of sufficient volume to take care of all of our needs until such time as we can put it in the ground in the

secondary recovery program.

Q Mr. Townsend, you stated that you represented the Ancora Corporation. Do you represent any other firms?

A Not at this time. We do operate for H. S. Moss. They do not have a real critical water program or they do not have a real critical water production, and it is possible that they will elect to go with Mr. Hickox's program and it may be possible that they would... we could put a very small amount of water in our pit.

Questions by Chas. Hanby:

Q How many wells do they have now?

A Just five.

Questions by Mr. LaMoreaux:

Q How much water are they producing on a daily basis?

A I really don't know the exact figure, Mr. LaMoreaux. It's a very small amount and it's carried in the power oil tank and we probably will empty those power oil tanks maybe once or twice a month, which would be normal procedure to change over to fresh water. I might add that Ancora Corporation at the present time has storage tanks for each battery to take care of the water coming off the heater treater and power oil tank.

Questions by Mr. White:

Q Mr. Townsend, did you state or would you state how long it would require you to have this pit lined and in operation from this date?

A We have tentatively gone ahead and ordered the liner and it would

be a minimum of about two weeks for that liner to reach Citronelle. It has to go through two companies before we get it. One of them makes the liner and then another company in Nebraska fabricates it.

Q And have you made provision for the storage of salt water in this interim period?

A We have a sufficient amount of storage in our batteries to take care of the salt water during the interim time.

MR. HARRIS: Could I ask a question, Mr. Chairman.

CHMN. HANBY: Yes, go ahead, Mr. Harris.

Questions by Mr. Harris:

Q Mr. Townsend, in the event your secondary recovery program does not begin at the first of the year, have you made any proposal, any preparations for that continuous... I mean, how long will that pit last in the event you do not...

A Well, the pit will last indefinitely as a pit as long as the liner isn't destroyed. Of course, it will reach its capacity for fluid, and in the event that our program wouldn't begin as soon as we expected, we would certainly have to make some other provision. We could make some provision to take... to get some water in the ground, I don't know, but I might say this, we certainly don't intend to indiscriminately put salt water any place. We recognize the fact that many, many oil fields in the United States and various programs for salt water, we know what salt water can do, and we intend to take care of the salt water.

Questions by Chmn. Hanby:

- Q Now, you said, I believe, that it would be a minimum of two weeks before you could receive this covering that you're going to use. What would be the minimum period it would take you to complete the pit so that you could receive water?
- A If the Board approves this program, I could begin the pit Monday. It would take about two days, not over three days, to dig the pit. Then it would be just a matter of getting the liner there, and I believe it can be installed in a day.

Questions by Mr. White:

- Q Who will make this installation?
- A The Dowell people will help us. We're going to make it, but we'll have a Dowell engineer to show us how and help us put it in.

Questions by Mr. LaMoreaux:

- Q I notice that the description there states that the Department of Interior recommends this for irrigation ditches. Of course, the size of the ditch and the volume of water involved would be considerably different than for storage of brines and the volume that we're talking about. Can you give us an example of this being used and approved for use as far as oil field brines are concerned in large quantities?
- A Yes. It's being used in the Pollard Field by Pan Am.
- Q How about the volume?
- A I don't know, Mr. LaMoreaux, what the size of the pit is and the volume being used.

Q How about Mississippi or adjacent states?

A I don't know that description on that. It's probably a year or two old. There have been a lot of changes, I'm sure, in the new brochure to be put out. They say it's a minimum of 30 days delivery but we called up and they said it would be two weeks.

MR. HARRIS: You said that would be seamless, it would be solid?

MR. TOWNSEND: It won't be seamless but it will be prefabricated. The seams will be put together at the factory. That can come in a size of 22,000 square feet, I believe, prefabricated. If it's anything larger than that, it'll come in that size and the rest of it will have to be fabricated. That will allow an overlap of the side walls over the back side of the walls. We'll anchor it with tubing and cover it with dirt.

MR. LaMOREAUX: The pit that's used in Pollard is about the size of this end of the room and it stores brine for a two-well battery on a temporary basis. I was trying to get some idea here of the approval of use of this type of thing for larger storage, if we could find out some experience and use of it.

MR. TOWNSEND: I might be able to find out through Dow Chemical. I don't know. As I see it, of course, you put the water in it and it isn't going to go in the pit under any pressure or velocity. It's just a matter of...

MR. LaMOREAUX: It's just a matter of the volume stored. Have you contacted Dowell and discussed this matter as to size of pit and volume

of storage and do they feel like the liner will sufficiently hold?

MR. TOWNSEND: They do, yes sir. I'll try next week, I'll be glad to talk to them at greater length to see what they do have, see what the results are.

MR. LaMOREAUX: Now, this polyethylene is substantially thicker than any we have seen used in temporary storage. Some of the other oil producing areas use it and the thinner polyethylene has not been satisfactory. It's possible that for temporary storage such as this, this thicker polyethylene in one sheet could do the job.

Questions by Chmn. Hanby:

Q Do y'all already have the land that will be required to put your pit on?

A Yes sir. We have two or three locations. We're going to pick the one that has the most play in it. We feel that the size of the pit would stand up...

Questions by Mr. LaMoreaux:

Q You would then propose to absolutely contain the brine stored and on completion of your injection system, plan to dispose of the brine that you have stored?

A That would probably more than likely... I can't give you the answer to that, other than say that we would dispose of it, because we have three or four plans, and I am not actively engaged in the

secondary water program. That's being all conducted by Core Laboratories, Incorporated, but I do know that they have taken... that I submitted a proposal to my management on secondary recovery with a modified nine-spot plan, and that is one of the plans that is being considered for the injection of water. I don't know at this time just how much water we are going to inject per well per day or what pressures, but if we assume that we would inject 1,000 barrels of water at the ratio of one barrel of salt water to ten barrels of fresh water, a mixture which is compatible and should not hurt your oil-bearing sands, we could get rid of all of our producing waters if we put... have two or three or four or five injection wells in there in the volume.

Questions by Mr. Harris:

Q Would there be any way that such a pit constructed... would there be any way to determine if a leak developed?

A Oh, yes. I think in time that would show on the outside. I'm not worried about this leaking. The only thing -- what would cause it if somebody went in and stuck a stick through it or tore it or something of that nature, because it will be well supported. There won't be any place that will be hanging under any pressure for the volume of water, due to volume of water.

CHMN. HANBY: Any other questions?

MR. LaMOREAUX: I have no further questions.

MR. WHITE: No.

CHMN. HANBY: Would you leave that with us?

MR. TOWNSEND: I can leave it with you temporarily. It doesn't belong to me. It belongs to the Dow...

MR. TUCKER: We have a sample.

CHMN. HANBY: Just exactly like that?

MR. TUCKER: Yes sir.

CHMN. HANBY: Mr. Townsend, do you have anything further to say?

MR. TOWNSEND: No sir, I don't believe I have.

CHMN. HANBY: Does anyone in the audience have a statement?

(No response)

CHMN. HANBY: Dr. Jones?

DR. JONES: I've fooled around a whole lot with storage of water in open pits and it seems to me that in a thing as serious as salt water upon the surface that Ancora or anybody else might consider the use at completion of the pits, before the polyethylene goes down, putting one pound of Bentonite (phon.) per square foot underneath the surface of this thing. Bentonite is, as you know, has the capacity of expanding. It makes a sort of a jelly so that if any defect ever occurred in the polyethylene cover, the Bentonite would pick the thing up, become a jelly, and would become entirely impervious. It's not very expensive to use and it is very effective. I know of one pit with about 30 acre feet of water in it, fresh water, that was built on Black Warrior terrier (phon.) sand and that until a few years ago, at least after ten years of use, it never leaked a single drop of water out of it, so it is a fact and that's just a suggestion that it might be used in a thing of that sort. I've known of acids being used in pits like

that that have met the demands of the Health Department, and when you can meet the demands of the Health Department, you're really on top of the totem pole, and it's just a suggestion that might work out.

MR. TOWNSEND: Well, actually, Dr. Jones, we've already taken that into consideration. We're planning more than likely to use a reserve pit which has mud from the drilling.

DR. JONES: Yes, the same effect.

MR. TOWNSEND: So you have a sealed bottom anyway. It would just be a matter then of moving walls around to get the size pit we want.

CHMN. HANBY: Any other question?

(No response)

CHMN. HANBY: Thank you, Mr. Townsend. We will take the matter up and let you hear from us. The next item on the agenda is "The approval of minutes of the August 21, 1964 meeting." Does the staff have any statement on the minutes?

MR. WHITE: Mr. Chairman, I've read approximately half way through the minutes. They apparently are in very good order. They were taken by Mr. Dummit, as you recall, and they apparently are in very good order, as far as I've read them.

CHMN. HANBY: I've read through them. I didn't find any objections to them. What is the pleasure of the Board on the adoption of the minutes?

MR. GLAZE: I wasn't here.

MR. BRITTON: I move that they be adopted.

CHMN. HANBY: It's been moved and I second it that we adopt or

rather approve the minutes of the August 21, 1964 meeting. All those in favor, let it be known by saying "aye" — opposed, "no."

(All Board Members voted "aye")

CHMN. HANBY: The "ayes" have it. It is so ordered. The next item is "Open Session," at which time we'd like to hear from anyone here that would have any statements to make to the Board. We really started off, more or less, in an open session.

(No response)

CHMN. HANBY: I don't hear anyone with any suggestions for this open session, so then we'll adjourn the meeting at this time, temporarily, for an executive session. We'll come back in our regular session meeting later on in the day.

(At 11:10 A.M., 18 September 1964, the regular session of the Board was adjourned.)

(At 2:50 P.M., 18 September 1964, the regular session of the Board was reconvened.)

CHMN. HANBY: We will call, now, the regular meeting of the Board back in session. The first item that we continued until later on in the day on the agenda was the matter of the report on salt water disposal system, Citronelle Field, Mobile County, Alabama, and the Board heard the testimony and report, first, of Mr. I. N. Hickox, relative to what he had accomplished on the problem of salt water disposal, and the Board has given his proposal due consideration and discussion and at this time I move that the proposal submitted to the State Oil and Gas Board by I. N. Hickox, Petroleum Consultant, and which has been joined in by himself and the following operators:

Meason Operating Company

Citmoco Services, Inc.

Petrovest Corporation

George H. Jett Drilling Company

Dixon Management

American Exploration & Development Corporation

Dugger-Holmes & Associates

Petroleum Management, Inc.

Cocoanut Oil Company, Inc.

for the disposal of salt water from certain oil wells being produced by the above operators in the Citronelle Field, Mobile County, Alabama, be and the same is hereby approved and accepted by said Board upon the condition that the operation of said salt water disposal system begin on or before October 1, 1964. Now, do I hear a second to that motion?

MR. GLAZE: I second that motion.

CHMN. HANBY: It has been moved and seconded that this proposal be accepted. Those in favor, let it be known by saying "aye" -- any opposed, "no."

(All Board Members voted "aye")

CHMN. HANBY: The "ayes" have it and the motion carries. Now, relative to the testimony and report of Mr. Townsend, representing Ancora Corporation, and the Allen Guiberson Company, who did not submit a proposal, and the H. S. Moss Company, who also did not submit a proposal, at this time we would like to have a report and

statement from Mr. LaMoreaux, the State Oil and Gas Supervisor.

MR. LaMOREAUX: Mr. Chairman, to date the staff has not received a proposal of any type to dispose of the brine from the production of oil at Citronelle by H. S. Moss or Allen Guiberson. Therefore, we would recommend that action, appropriate action, be taken to insure the proper disposal of brine from these operations by the Board. Now, with respect to the proposal by Mr. H. M. Townsend of Ancora, we would have the following recommendations and statements. Actually, I think there are two aspects of this particular proposal that should be considered. One relates to the timing for receipt and review of proposals. The other relates to the specific proposal made for the disposal of brine by the Ancora Corporation. With regard to the first aspect of this, I would like to read from the minutes of the meeting of the State Oil and Gas Board of Alabama of November 15, 1963. At this meeting, on page 29, Mr. Hanby made the motion as follows:

"I make a motion that the use of pits in the Citronelle Field for the reception of salt water be discontinued within six months from the date of this meeting, and the Oil and Gas Supervisor is directed to notify all operators within such field of this fact."

Mr. Britton said:

"I second the motion."

Chairman Boney said:

"You've heard the motion and the second. All in favor, let it be known by saying 'aye' - any opposed, 'no.'"

It was noted in these minutes that:

"(All Board Members voted 'aye' and the motion carried unanimously.)"

I was instructed then, as Supervisor, to forward the following letter on November 22, 1963, addressed to all pertinent officials in the Citronelle Field:

"Gentlemen:

"Recent studies of hydrologic conditions in and around oil field areas have proven conclusively that the use of unlined porous and pervious pits for the reception of salt water is a definite and major contributing factor to the pollution of fresh-water aquifers outcropping in oil field areas.

"The production of salt water in the Citronelle Field has now reached such proportions that the further use of unlined surface pits constitutes a very definite and ever-increasing pollution problem. Pollution of fresh-water aquifers, resulting from the use of surface pits for the reception of salt water, is an insidious one, and the subsurface movement of the pollutant is so gradual that many years may pass before any pollution shows up in downdip fresh-water aquifers. However, once an aquifer is polluted by salt water, this aquifer is destroyed as a fresh-water aquifer for many years.

"In view of the conclusive evidence that the use of unlined surface pits for the reception of salt water constitutes a definite pollution problem, the State Oil and Gas Board has ordered the use of such pits in the Citronelle Field to be discontinued..."

CHMN. HANBY: Let me stop you at this point. I did not swear you in at the time that you began your testimony and I would like to do that at this time, if you don't mind, and the testimony that you have given will apply... your oath will apply to that testimony.

(Mr. LaMoreaux was then duly sworn)

CHMN. HANBY: Let the record show that he was sworn in by the Chairman.

MR. LaMOREAUX: The letter continued as follows:

"We know [and this is addressed to each company] that your Company is as anxious as we are to prevent the pollution of fresh-water resources and it is therefore imperative that the use of unlined surface pits for the reception of salt water in the Citronelle Field be ceased within six (6) months from the date of this letter. Please submit your plans to implement this program as quickly as possible. This Office, the Water Resources Division of the Alabama Geological Survey, and the United States Water, Ground Water, and Quality of Water Branches, will be most pleased to render you every possible assistance in this project.

"Your full cooperation in this endeavor will be appreciated.

"Sincerely yours,

"Philip E. LaMoreaux
State Geologist and
Oil and Gas Supervisor"

At the end of the six months period, at a hearing of the Board in Mobile on May 22, it ~~was the week of May 22, but I believe it was May 22,~~ we met again and heard additional evidence from the operators working on the problem of salt water disposal. At that time, they presented evidence to the Board that this was a complex problem, both technically and economically, and requested the Board to extend for sixty (60) days the action with regard to disposal of brine in the Citronelle Field. The Board then instructed me to send another letter to the companies and operators, and on May 27 the following letter was forwarded:

Handwritten:
1-27-65

"Gentlemen:

"On November 22, 1963, the State Oil and Gas Board ordered the use of unlined surface pits in the Citronelle Field to be ceased within six (6) months. This six-month period expired on May 22, 1964.

"As many of the properties in the Citronelle Field have changed hands in this interim period and a new Unit has been formed in the Field, representatives of several companies appeared at the May 15..."

Mr. Chairman, may we correct that meeting date to May 15 that I mentioned in the earlier testimony?

CHMN. HANBY: Yes, make that correction.

MR. LaMOREAUX: All right.

"...representatives of several companies appeared at the May 15, 1964 meeting of the State Oil and Gas Board in Mobile, Alabama, and requested a 60-day extension to the surface pit order. The State Oil and Gas Board approved this extension and plans for the proper implementation of the original order should be submitted as quickly as possible so that the order may be totally implemented by July 22, 1964.

"Sincerely yours,

"Philip E. LaMoreaux
State Geologist and
Oil and Gas Supervisor"

The Board met again in August, on the 21st, 1964, and reviewed the proposals for proper disposal of brine at Citronelle. Again, the operators and representatives of the companies involved requested an extension of the Board regarding this matter, regarding action on this matter. The Board instructed me then to issue another letter as follows. This letter was forwarded September 4, 1964:

"Gentlemen:

"We are in receipt of Mr. I. N. Hickox's report on the proposed disposal of produced brine into Well B-19-4. It is encouraging to note the progress and cooperative attitude existing between the various operators involved.

"At the August 21, 1964 State Oil and Gas Board meeting, this matter was thoroughly discussed. For the benefit of those not present, we would like to reiterate several points that the Board made specifically clear:

- "1. The Board feels that it has been lenient in giving the operators at Citronelle six months to prepare plans and install a disposal system. This willingness to cooperate has been further expressed by the granting of three extensions of 30 days each. It is the consensus of the Board that another extension will not be justifiable after expiration of the present time limit on September 20, 1964.
- "2. The Board also expressed its concern regarding the manner in which brine will be stored during the interim between production and subsurface disposal. Several operators in the field have lined their waste pits with thin polyethylene or polyvinyl plastic sheets. Field inspection has revealed that the physical and chemical deterioration of this material has resulted in totally inadequate pits for intermediate storage. To date the only pit that has met the requirements of the Board is the one installed by the Unit Manager adjacent to the A-25-5 disposal well. Therefore, it is suggested that you inspect the pit at A-25-5 and either plan on using similar materials and construction, coated tanks where small volumes are involved, or some other acceptable means of storage. It is recommended that prior approval of the Board and staff is obtained before needless expenditures on inadequate installations are made.

"Again, we would like to compliment you on your co-operation and attitude toward the solution of this problem. You may count on our assistance to help you in any way to totally implement a successful program by September 20, 1964.

"Sincerely yours,

"Philip E. LaMoreaux
State Geologist and
Oil and Gas Supervisor"

This brings us to the present meeting. During the past month, the staff has continued its close cooperation with operators planning salt water disposal systems in the Citronelle Field, making every effort to work out satisfactory means of brine disposal prior to the present meeting and deadline for completion of brine disposal systems. On September 4, we received a letter from Mr. H. M. Townsend of Ancora Corporation regarding the use of an oil well, B-32-13, for the disposal of brine. This proposal was studied by our staff prior to its detailed presentation at this meeting. Mr. Townsend's proposal today, September 18, is to use a heavy polyethylene sheet, 20 mil thickness, to cover a pit 100 x 150 x 6 feet deep. This has taken us by surprise, and in view of this short time to study the proposal, we have the following comments;

1. From experience, we know that pit storage at Citronelle, because of the geology and hydrology of the area, in the past has been unsatisfactory and it creates serious pollution hazards. As Mr. Townsend pointed out in his testimony, the polyethylene can be punctured quite easily.

2. Experience shows that as a pit approaches filling, an unusually heavy rainfall will cause surface runoff from the pit thereby causing a surface contamination problem.

3. No positive statement has been presented regarding future disposal of the brine that will be placed in this proposed pit.

4. We lack positive knowledge as to actual safety in the use of the proposed polyethylene for a storage pit of this size and volume.

5. With regard to similar storage in the Pollard Field, Pan American uses polyethylene in an emergency pit 50 x 50 x 6. No brine is permanently stored in this pit and the only time it is in use is on emergency occasions of breakdown of the brine disposal system; and last,

6. We do not consider this an adequate proposal as a disposal system as requested by the Board on November 15, 1963, but rather a temporary storage facility.

Therefore, the technical staff concludes that the proposal by Mr. Townsend for Ancora for brine disposal in the Citronelle Field is not adequate and does not meet the Board's requirements for proper disposal of brine, and that is our recommendation, Mr. Chairman, on this particular proposal.

CHMN. HANBY: Gentlemen, you've heard the statements and the report of the State Oil and Gas Supervisor. What is the pleasure of the Board relative to the proposal submitted by Mr. Townsend of Ancora Corporation?

MR. BRITTON: Mr. Chairman, I move that the proposal submitted

to the State Oil and Gas Board at its regular meeting on September 18, 1964, by Ancora Corporation through Mr. H. M. Townsend for the reception of salt water in an open pit be and the same is hereby rejected and denied, that Ancora Corporation is hereby ordered by the said Board to begin disposal of salt water from its wells in the Citronelle Field, Mobile County, Alabama, in a manner satisfactory to the said Board on or before the hour of 7:00 A.M., October 1, 1964, and the Oil and Gas Supervisor be directed to withdraw from Ancora Corporation the Certificate of Compliance and Authorization to transport oil upon the failure or refusal of Ancora Corporation to comply with this order, and such withdrawal to continue until such time as a satisfactory salt water disposal system shall be approved by the Board.

CHMN. HANBY: You've heard the motion. Is there a second?

MR. GLAZE: Yes sir. I second the motion.

CHMN. HANBY: It has been moved and seconded that this motion be adapted. All those in favor, let it be known by saying "aye" -- opposed, "no."

(All Board Members voted "aye")

CHMN. HANBY: The "ayes" have it and the motion carries. Now, relative to the question of H. S. Moss Company, we have heard the statements of the State Oil and Gas Supervisor to the effect that they have submitted no plan whatsoever for the disposal...

MR. GLAZE: Mr. Chairman, I have a motion here.

CHMN. HANBY: ...disposal of salt water.

MR. GLAZE: Excuse me.

CHMN. HANBY: What is the pleasure of the Board?

MR. GLAZE: Because of the failure of the H. S. Moss Company to submit to the State Oil and Gas Board an acceptable plan for the disposal of salt water produced from the Citronelle Field, Mobile County, Alabama, or to join any other or other operators in the Citronelle Field in an acceptable method of disposal of said salt water, I move that the H. S. Moss Company be ordered by the State Oil and Gas Board to begin the disposal of salt water productions from its wells in the Citronelle Field, Mobile County, Alabama, in a manner satisfactory to the State Oil and Gas Board on or before the hour of 7:00 A.M., October 1, 1964, and the State Oil and Gas Supervisor be directed to withdraw from the H. S. Moss Company the Certificate of Compliance and Authorization to transport oil from their lease in the Citronelle Field upon the failure or refusal of the H. S. Moss Company to comply with this order, and such withdrawal to continue until such time as a satisfactory salt water disposal system has been approved by the Board.

CHMN. HANBY: You've heard the motion. Is there a second?

MR. BRITTON: I second that motion.

CHMN. HANBY: It's been moved and seconded that this motion carry. Those in favor, let it be known by saying "aye" — opposed, "no."

(All Board Members voted "aye")

CHMN. HANBY: The "ayes" have it and the motion carries. Now, the next question has to do with Allen Guiberson Company, who has also

failed to submit to the State Oil and Gas Board any plans for the disposal of salt water produced in the Citronelle Field. I would like to state that because of the failure of Allen Guiberson Company to submit to the State Oil and Gas Board an acceptable plan for the disposal of salt water produced from the Citronelle Field, Mobile County, Alabama, or to join any other or other operators in the Citronelle Field in an acceptable method of disposal of said salt water, I move that the Allen Guiberson Company be ordered by the State Oil and Gas Board to begin the disposal of salt water productions from its well in the Citronelle Field, Mobile County, Alabama, in a manner satisfactory to the State Oil and Gas Board on or before the hour of 7:00 A.M., October 1, 1964, and the State Oil and Gas Supervisor be directed to withdraw from the Allen Guiberson Company, the Certificate of Compliance and Authorization to transport oil from their lease in the Citronelle Field upon the failure or refusal of the Allen Guiberson Company to comply with this order, and such withdrawal to continue until such time as a satisfactory salt water disposal system has been approved by the Board. Do I hear a second to that motion?

MR. BRITTON: I second that motion.

CHMN. HANBY: It's been moved and seconded that this motion carry. All those in favor, let it be known by saying "aye" -- any opposed, "no."

(All Board Members voted "aye")

CHMN. HANBY: The "ayes" have it and the motion carries. I would

like to state at this time to Mr. Hickox that the Board appreciates very much the efforts that you have made in helping us to solve this problem at Citronelle and we realize that there has been... it has been a very difficult job for you to do and we compliment you very much on what you have done.

MR. HICKOX: Thank you, Mr. Chairman.

CHMN. HANBY: And I might further say that the Board is very anxious and is willing to help in any way it can any operator in the field to dispose of this salt water, but it is something that has to be done and the Board has to use what authority and what power it has to see that it is done properly and that is the only purpose that the Board has in requiring that proper methods for the disposal of the salt water be accomplished not later than 7:00 A.M. October 1, 1964, and we trust that we will have the full cooperation of not only the operators but the royalty owners in Citronelle and all the people who are concerned with it. Is there any other business to come before this meeting?

(No response)

CHMN. HANBY: I believe it would be in order that the Supervisor notify in writing each of the parties who are concerned with the orders that we have directed be given, be made at this time, and if there are no objections, I will so instruct the Supervisor to notify in writing all of the people who are directly concerned with these orders. Is there any other business to come before the meeting?

(No response)

CHMN. HANBY: The record might show that we have met all day today and it's quarter after 3:00, and if there are no objections, we will stand adjourned.

(Whereupon, at 3:15 P.M., 18 September 1964, the regular session of the Board was adjourned.)

* * *

I HEREBY CERTIFY that the foregoing transcript
is a true and accurate excerpt of the proceedings
of the Regular Session of the State Oil and Gas
Board of Alabama on 18 September 1964 in Tuscaloosa,
Alabama, to the best of my knowledge and belief.

Lou M. Chambers
LOU M. CHAMBERS
Hearings Reporter
State of Alabama