

CASE 3500: Motion of the OCC to  
permit operators in VACUUM FIELD  
to show cause disposing of pro-  
duced salt water in unlined pits.

CASE No.  
3500

Application,  
TRANSCRIPTS,  
SMALL Exhibits  
ETC.

# Memo

From

J. D. Ramey, Supervisor &  
Oil & Gas Inspector

To Mr. Porter

Attached is a  
copy of a letter  
from Phillips on  
Area B in Vacuum  
SWD. I have  
written Phillips for  
additional information  
as to an estimated

time when disposal  
will commence &  
will forward this on  
to you when I hear  
from Phillips.

JDR

PHILLIPS PETROLEUM COMPANY  
Phillips Building - Room B-2  
Odessa, Texas

July 21, 1966

Vacuum Field, Lea County,  
New Mexico -- Salt Water  
Disposal

File: W3-McC-231-66

New Mexico Oil Conservation Commission  
P. O. Box 1980  
Hobbs, New Mexico

Attention: Mr. J. D. Ramey

Gentlemen:

This letter is written on behalf of the operators in the Vacuum Field to advise you of plans to eliminate surface pit disposal of produced brine in Area "B". Plans for various portions of Area "B" are described as follows:

1. In that portion of Area "B" located in T-17-S, R-34-E (through Section 30), Mobil Oil Corporation operates the majority of the wells which produce significant amounts of water. Mobil is operating a San Andres waterflood in Sections 14 and 23, T-17-S, R-34-E, and uses much of its produced water in the waterflood. Representatives of Mobil have advised that they will make every effort to work with other operators in this area to provide suitable facilities for disposal of produced brine through existing fluid injection projects or by providing separate disposal facilities. Mobil's Bridges-State No. 105, located in Section 26, T-17-S, R-34-E, is a prospective disposal well for this area. On some of the leases in this area which produce small amounts of water, the produced water will probably be collected in a steel tank and trucked to an underground disposal facility.
2. Phillips is working toward formation of a San Andres secondary recovery unit covering portions of Sections 19, 20, 21, 28, 29 and 30, all in T-17-E, R-35-E. There is very little produced water within this proposed unit area and it is planned to construct facilities to handle the produced water after the unit becomes effective. The unit agreements and unit operating agreements for this proposed unit are being prepared in execution form. It is hoped that the unit can become effective by the end of 1966.
3. The operators in the Vacuum Field are proceeding toward design and construction of a jointly owned salt water disposal system. The exact area to be included in the system has not been fully determined, but it may include portions of Section 22 through 35, T-17-S, R-35-E, and portions of Section 2, 3, 4, 5, 6 and 8, T-18-S, R-35-E, and possibly other areas in addition. The area to be covered by the system will be determined by design considerations and by which operators elect to join the system. It is planned to expedite completion of the salt water disposal system by every practical means. You will note that the tentative area listed for the system includes portions of both Area "A" and Area "B".

To: New Mexico Oil Conservation Commission  
File: W3-McC-231-66  
Date: July 21, 1966  
Page: 2

Please inquire if you have additional questions.

Yours very truly,

PHILLIPS PETROLEUM COMPANY

*F. F. Lovering*  
F. F. Lovering  
Manager, Southwestern Region

MHMcC:jd

cc: Vacuum Field Operators  
(List attached)

ADDRESSEE LIST

Mr. G. C. Jamieson  
Continental Oil Company  
P. O. Box 460  
Hobbs, New Mexico

Mr. V. E. Staley  
Pan American Petroleum Corporation  
P. O. Box 68  
Hobbs, New Mexico

Mr. M. C. Sport  
Shell Oil Company  
P. O. Box 1509  
Midland, Texas

Mr. L. H. Byrd  
Humble Oil and Refining Company  
P. O. Box 1600  
Midland, Texas 79701

Mr. R. R. Alworth  
Humble Oil and Refining Company  
P. O. Box 2100  
Hobbs, New Mexico 88240

Mr. E. M. Slocomb  
Forest Oil Corporation  
P. O. Box 4106  
Odessa, Texas

Mr. C. L. Keel  
Cities Service Oil Company  
P. O. Box 69  
Hobbs, New Mexico

Mr. Fred Hughey  
Texas Pacific Oil Company  
P. O. Box 4067  
Midland, Texas

Mr. John H. Swendig  
Amerada Petroleum Corporation  
P. O. Box 668  
Hobbs, New Mexico

Mr. J. C. Gordon, Jr.  
Mobil Oil Company  
P. O. Box 1800  
Hobbs, New Mexico

Mr. R. C. Elmore  
Mobil Oil Company  
P. O. Box 633  
Midland, Texas

Mr. C. P. Shoffstall  
Sohio Petroleum Company  
P. O. Box 3167  
Midland, Texas

Mr. Joe W. Younger  
Marathon Oil Company  
P. O. Box 220  
Hobbs, New Mexico

Mr. E. G. Adamson  
Sinclair Oil and Gas Company  
P. O. Box 1470  
Midland, Texas

Mr. E. W. McCants  
Standard Oil Company of Texas  
3610 Avenue S  
Snyder, Texas

Mr. D. C. Helm  
Standard Oil Company of Texas  
P. O. Box 579  
Hobbs, New Mexico

Mr. William S. Bouldin  
Texaco, Inc.  
P. O. Box 728  
Hobbs, New Mexico

Mr. John B. Ross  
Texaco, Inc.  
P. O. Box 3109  
Midland, Texas

Mr. W. C. Southerland  
Tidewater Oil Company and Getty  
P. O. Box 249  
Hobbs, New Mexico

Mr. H. E. Aab  
Skelly Oil Company  
P. O. Box 730  
Hobbs, New Mexico

Mr. I. G. Myers  
Skelly Oil Company  
P. O. Box 1650  
Tulsa, Oklahoma

Mr. C. D. Borland  
Gulf Oil Corporation  
P. O. Box 670  
Hobbs, New Mexico

Mr. Bob Miller  
Tidewater Oil Company  
P. O. Box 1231  
Midland, Texas

Mr. Harold S. Winston  
Penrose Production Company  
1813 Fair Building  
Fort Worth, Texas

OIL CONSERVATION COMMISSION  
P. O. BOX 2088  
SANTA FE, NEW MEXICO

LEGAL DIVISION  
PHONE 827-2741

December 15, 1966

C  
O  
P  
Y  
  
Mr. R. C. Elmore  
Mobil Oil Company  
P. O. Box 633  
Midland, Texas

Re: Order No. R-3164  
Salt Water Disposal  
Vacuum Field, New Mexico

Dear Mr. Elmore:

In regards to a telephone call from Mr. Gordon of Hobbs, New Mexico, it is not the intention of the Commission to prohibit the surface disposal of salt water in unlined pits in Area B before May 1, 1967. The provision prohibiting the surface disposal of salt water within one mile of Area A is inapplicable when such provision would prohibit surface disposal in Area B before May 1, 1967.

If I can be of further help, please call or write.

Very truly yours,

GEORGE M. HATCH  
Attorney

GME/esr

cc: Mr. Joe Gordon  
Mobil Oil Company  
P. O. Box 2406  
Hobbs, New Mexico

Oil Conservation Commission  
Hobbs, New Mexico



December 14

George:

Joe Gordon with Mobil Oil from Hobbs, New Mexico, called at 2 p.m. this date regarding Order No. R-3164. Mr. Gordon would like for you to write a letter of clarification to Mr. R. C. Elmore with Mobil, Box 633, Midland, Texas. He needs to know the definition of Area A and B in regard to the clause "within one mile thereof". The clarification needed because the question arises that within one mile of Area A also covers this portion of Area B.

Joe Gordon said he understands this alright, but that their attorney in Midland needs a letter of clarification.

GOVERNOR  
JACK M. CAMPBELL  
CHAIRMAN

State of New Mexico  
Oil Conservation Commission



LAND COMMISSIONER  
GUYTON B. HAYS  
MEMBER

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

P. O. BOX 2088  
SANTA FE

December 9, 1966

Mr. Jason Kellahin  
Kellahin & Fox  
Attorneys at Law  
Post Office Box 1769  
Santa Fe, New Mexico

Re: Case No. 3500  
Order No. R-3164  
Applicant:

OIL CONSERVATION COMM.

Dear Sir:

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

Very truly yours,

*A. L. Porter, Jr.*  
A. L. PORTER, Jr.  
Secretary-Director

ir/

Carbon copy of order also sent to:

Hobbs OCC   x  

Artesia OCC       

Aztec OCC       

OTHER Mr. Booker Kelly, J. W. Neal, Dick Morris, Roscoe Elmore

Mr. Joe Gordon

dearnley-meier reporting service, inc.

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PAGE

BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
December 7, 1966

IN THE MATTER OF:

In the matter of the hearing called by  
the Oil Conservation Commission on its  
own motion to permit all operators in  
the Vacuum Field, Lea County, New  
Mexico, to show cause why the disposal  
of produced salt water in unlined pits  
should be permitted in the Vacuum Field.

Case No. 3500

BEFORE:

Elvis A. Utz, Examiner

Transcript of Hearing

MR. UTZ: The hearing will come to order, please. I would like to ask the witnesses and the attorneys this morning to speak plainly and don't hurry, so we can have a good record. The first case on the docket will be Case 3500.

MR. HATCH: Case 3500: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit all operators in the Vacuum Field, Lea County, New Mexico, to show cause why the disposal of produced salt water in unlined pits should be permitted in the Vacuum Field.

If the Commissioner please, George Hatch, appearing on behalf of the Commission. I have one witness, I would like to have him sworn in at this time.

MR. UTZ: We will ask for appearances.

MR. KELLAHIN: Jason Kellahin of Kellahin and Fox, Santa Fe, appearing for Rice Engineering and Operating, Inc., Phillips Petroleum Company and Standard Oil Company of Texas.

MR. KELLY: Booker Kelly of White, Gilbert, Koch and Kelly, appearing on behalf of Sinclair Oil.

MR. UTZ: Are there other appearances?

MR. NEAL: J. W. Neal, Box 272, Hobbs, New Mexico, appearing on behalf of National Potash Company.

MR. UTZ: Any other appearances?

MR. ELMORE: May it please the hearing Examiner, I am Roscoe Elmore with Mobil. We are here, we have a statement

we want to read. I understand we can do so; if it is necessary to make an appearance, we want to do so.

MR. UTZ: That's right, at the conclusion of the testimony. Are there other people who will give testimony other than the Commission?

MR. KELLAHIN: If the Examiner please, Mr. W. G. Abbott of Rice Engineering will have a statement to make which I think it would be better if we put him on the stand and then he would be available for questions.

MR. UTZ: Mr. Abbott and Mr. Ramey stand, please, and be sworn.

(Witnesses sworn)

MR. UTZ: You may proceed.

JOE D. RAMEY, called as a witness, having been first duly sworn on oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. HATCH:

Q Would you state your name and position for the record, please?

A Joe D. Ramey. I am supervisor of District One for the New Mexico Oil Conservation Commission.

Q In your capacity as supervisor of District One for the New Mexico Oil Conservation Commission, is it part of your

duties to make recommendations to the Commission concerning the disposal of produced salt water in your area?

A Yes, sir.

Q Are you familiar with Case 3500 and what it proposes?

A Yes, sir.

(Whereupon, Applicant's Exhibits 1 & 2 marked for identification.)

Q Would you please refer to what has been marked as Exhibits 1 and 2 and explain what those exhibits represent?

A Those exhibits are on the wall, first two; that's Exhibit 1 over there, which depicts the wells and areal extent of the Vacuum Grayburg-San Andres Pool and Exhibit 2 shows the same for the deeper wells in the pool. Also depicted on Exhibit 2 are the circles with the black X's depicting water wells that are located in the area. I think the majority of these are potash company water wells.

Q Those exhibits will show all pools that would be affected by an order if the Commission sees fit to follow your recommendations?

A Yes, sir, I think with the exception that it does not depict the Vacuum Yates Pool. I will mention that later.

Q What pools will be affected by such an order if the Commission sees fit --

A Vacuum-Grayburg, Vacuum-Abo Reef, Vacuum Abo, North, Vacuum-Blinebry, Vacuum Devonian, Mid Vacuum-Devonian, Vacuum Glorieta, Vacuum-Morrow, North, Vacuum-Lower Penn, Vacuum-Upper Penn, Vacuum Wolfcamp, Vacuum-Wolfcamp, East, and Vacuum Yates.

Q Is there any fresh water in this area?

A Yes, sir, this is within the limits of the Lea County fresh water basin which has been described by the State Engineer, this entire area is within that basin.

Q Are there any oil field brines being produced in this area?

A Yes, sir, there are.

Q Do you have any figures for the amount?

A I have a breakdown by pool, if you think it is necessary, or I can give you a total. This is based on September of 1966, a report of water production, which are the latest figures available and the total for that month was 233,497 barrels from the pools that are previously mentioned.

Q Do you have an exhibit that shows how much for each pool?

A Yes, sir, that's Exhibit No. 3.  
(Whereupon, Applicant's Exhibit 3 marked for identification.)

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Q That shows the amount for each pool as well as the total?

A Yes, sir.

MR. UTZ: Why don't you hand me the exhibits?

Q (By Mr. Hatch) How are those brines being disposed of at the present time?

A We have some actual disposal systems which are going into the larger San Andres and I think it is the upper Glorieta and also some is being utilized in secondary recovery projects but the majority is going into open surface pits.

Q Do you have some going into unlined pits?

A Yes, sir.

Q Does that present any hazard to the fresh water supply then in this Vacuum Field area?

(Whereupon, Applicant's Exhibit  
4 marked for identification.)

A Yes, it does. This situation was brought to our attention late last year when Kermac Potash Company had drilled a well in Section 2 of 18, 34. This well is located in the northwest quarter of Section 2. They had drilled this well approximately 1960 and tested the well at the time and it was fresh and when they then, late in 1965 they completed their plant facilities and went back to start producing the well and found it contaminated, so they immediately conducted



a series of drilling test holes, and taking chloride content of the wells, which are depicted here in Exhibit 4, this is the sub-well in the northeast quarter of Section 2. Now, this area depicted here in the north half of Section 2 and they drilled numerous test holes, I don't have the exact number, it is twenty-some holes and they determined from this information, the State Engineer's office constructed this chloride content contour map and anyway, from Kermac's test program out there, they determined that the contamination of this well had come from a surface pit located approximately in the center of the north half of Section 2.

Q Does that exhibit point out any chloride content in any of those test wells or other wells?

A Yes, sir. These small dots are the wells that were drilled by Kermac and these range from the neighborhood of 31 parts per million up to nearly 9200 parts per million.

Q Did you prepare that Exhibit No. 4?

A No, sir, this was prepared by the State Engineer's office from information of Kermac.

Q Mr. Ramey, is there any natural barrier that would prevent penetration of brines into the fresh water if it is disposed of in unlined pits in this area?

A No, not to my knowledge.

Q Has any study been made by the Commission or

Q All right. Has anything been done since that time?

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A Yes. Now, since that time we have two active disposal wells that have been converted. Phillips converted a well in Section 35 to handle the water on their Hale State Lease and Tidewater -- that's in Section 35 of 17,34, which is in Area "A", and Tidewater in Section 7 of 18, 35, converted a well to disposal which handles the water for their 18 well.

Sinclair is probably just about to the point of starting disposal. I imagine they will report this morning for leases in Sections 8 and 17 of 18, 35. Also Texaco had a disposal system in, I don't remember the exact date, but they are handling all of their production, all of their water production, which includes a good number of leases in this area.

MR. PORTER: What company is that?

A Texaco.

Q (By Mr. Hatch) What about area "B"?

A Well, I think the majority of the remainder of produced waters both into Area "A" and "B" will go into a disposal system which Rice Engineering has designed at the request of the operators.

Q You have reported now on some progress that has been made but you still feel that it is necessary that the Commission issue some type of Order?

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A Yes, I think to make sure we give this water sand maximum protection we would need an order of some type to prevent a new operator with new wells, or something that would come into the area and have water, we could request that he dispose of the water but we would have no means of forcing him to dispose of the water.

Q Mr. Ramey, what are your recommendations for the protection of the fresh water in the area of the Vacuum Field?

A Well, I knew that this hearing would be held on December 7th, so I didn't want to conduct a sneak-attack, as happened twenty-five years ago, so I advised the operators by letter on November 15th and at the time I said it would be my recommendation that there be no further open pit disposal after January 1 in Area "A", and after February 1 in Area "B", and this is still my recommendation.

Q Do you have a copy of that letter marked as an exhibit there?

(Whereupon, Applicant's Exhibit 5 marked for identification.)

Q Do you have a copy of that letter marked as an exhibit there?

A Yes, sir.

Q What exhibit number?

A Exhibit Number 5.

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Q Your recommendations then would be to dispose of all produced water regardless of its content?

A Yes, sir. I realize there are wells that make, oh, in the neighborhood of one and two and a half a barrel and such, but we took some samples of this water in March of this year, and for example, the Grayburg water, Grayburg-San Andres water tested out nearly 121,000 parts per million chloride, with a total solid content of approximately 224,000, so in view of the quality of the water, why it wouldn't take too much water of this type percolating into the fresh water sand to contaminate a large volume of fresh water, so I think it is necessary that we just say "no disposal of any produced brine into open pit."

Q Throughout the Vacuum Field Area?

A Yes, sir.

Q Were Exhibits 1, 2, 3 and 5 prepared by you?

A Yes, sir.

Q And Exhibit 4 was prepared by the State Engineer?

A Yes, sir.

MR. HATCH: I would like to move the introduction of Exhibits 1 through 5 at this time.

MR. UTZ: Without objection, Exhibits 1 through 5 will be entered into the record in this case.

(Whereupon, Applicant's Exhibits  
1 through 5 admitted in evidence.)

MR. HATCH: That's all the questions I have.

BY MR. UTZ:

Q You spoke of the Vacuum Field Area, is it your  
intention to describe that area in some manner or just --

A I think we could go by the pools that are listed  
in Exhibit 3, yes, sir.

Q Referring to Exhibit 3, is that the total amount  
of water produced in the Vacuum Field Area from September  
1966?

A Yes, sir.

Q Do you have any idea what percentage of that water  
is now being disposed of?

A I have that figure somewhere in here. I ran this  
out last night, Mr. Utz, and I don't find a September state  
book up here, so I used August figures. In Area "A" the  
total water production was some 119,000 barrels, of which  
33,000 barrels or nearly 34,000 barrels going into disposal  
systems and 85,000 into open pits. Then for the remainder of  
the water produced, there was some 37,000 which is being  
utilized for secondary recovery.

Q 37,000 at 119?

A Of the total, which would be approximately

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230,000 barrels, so of the total out of 230,000 barrels, there was approximately 70,000 which is being disposed of at this time that is not going into open pits.

MR. PORTER: Are you referring only to Area "A" when you talk of the 230,000 barrels?

A No, sir, that's the total field.

MR. PORTER: Includes both?

A In Area "A" I figured out 119,000 barrels of which 34,000 --

Q (By Mr. Utz) That was approximately 60 percent of the produced water that is not being disposed of?

A Yes, sir.

MR. UTZ: Other questions of the witness?

BY MR. KELLAHIN:

Q What water formation are you talking about here?

A This is the Ogallala.

Q Is it present throughout the area?

A Yes, sir.

Q Are there water wells throughout the area?

A Yes, there are less water wells and then there are also wells for other secondary recovery projects which are in the north end of the pool which I do not have those depicted.

Q Do you find any other, contamination other than the one well drilled by Kermac?

A I believe they have a second well which is located in Section 1 of 18, 34, which is now starting to show some contamination.

Q You are familiar with the efforts that have been made already to dispose of salt water?

A Yes, sir.

Q In your opinion, would it be possible to completely dispose of produced water by January 1, in Area "A"?

A In view of everything, I don't think it would be possible. Now, I think if proper action would have been taken when my letter was received by the operators --

Q You mean in November?

A Yes, sir.

Q Some of them have done it, haven't they?

A I am sure they have, yes, sir.

MR. KELLAHIN: That's all, thank you.

BY MR. KELLY:

Q Is the Devonian and Abo production under both Area "A" and "B"?

A Yes, sir, Mr. Kelly, you have Devonian wells in this area, which is your Vacuum-Devonian pool. Then you have Devonian pools with the Mid-Vacuum Devonian pool, then the Vacuum-Abo Reef are these filled-in dots in this area which extend --



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Q What is the reason for your recommendation to have two time limits in Area "A" and Area "B"?

A This, I think, is our area of immediate concern because your potash company situation as the withdrawals of fresh water from these wells is a tremendous volume. I don't have that figure, I forgot that, but -- and always also the natural migration of the water is in this direction.

Q So your recommendation is not based on the possibility of getting these completions just on your consideration of the necessity, is that right?

A Yes, sir, and we do have, well, particularly in this area we have large volumes of Devonian water which are still going into open pits.

MR. KELLY: That's all.

MR. UTZ: Are there other questions of the witness? Mr. Ramey, when you say open pits, I presume you mean unlined open pits?

A Yes, sir.

MR. NEAL: J. W. Neal of Hobbs, New Mexico, on behalf of National Potash.

BY MR. NEAL:

Q It would be possible in the area, would it not, if immediate action were taken by the various producers immediately to dispose of the water by the 1st of January?

A I think probably, Mr. Neal, that you should direct that question to Mr. Abbott when he testifies. I don't think I can answer that.

Q This question was brought up in April and at that time, at another hearing, and at that time we were asking for immediate action to be taken on behalf of the potash companies. Is that correct?

A Yes, sir.

Q And I appeared at that time and asked you the same question.

A Yes, sir, and you so stated.

Q And I have so stated.

A Yes, sir, you have so stated at various times in meeting with me.

Q What was the date of the first meeting that called the operators' attention to this situation?

A It was in April, I don't have the exact date, April 1966.

MR. PORTER: For the record, there have been no hearings on this area.

A No, sir.

MR. PORTER: These were informal meetings that you were referring to?

A Yes, sir. This was mentioned back in 1957 in the

original salt water disposal orders. The Vacuum Pool, at the time was mentioned as an area to be studied but the water produced at that time did not seem to be critical.

MR. PORTER: At that time you were producing only from the San Andres formation out there?

A Yes, sir.

MR. UTZ: It is your opinion then that this shouldn't come as so much of a shock to the operators in this area?

A No, I don't think so. I have contacted many of them many times to find out what action they are taking. Some were very prompt in working toward the disposal system and some seemed to be doing so reluctantly, but they were working, and then some indicated that they may not be doing anything.

MR. UTZ: Are there other questions? Witness may be excused. You may proceed, Mr. Kellahin.

MR. KELLAHIN: I would like to call as our witness, Mr. W. G. Abbott. Mr. Abbott, you have been sworn, have you not?

MR. ABBOTT: Yes, sir.

\* \* \* \* \*

W. G. ABBOTT, called as a witness, having been first duly sworn on oath, was examined and testified as follows:

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DIRECT EXAMINATION

BY MR. KELLAHIN:

Q What business are you engaged in?

A I am a Division Manager of Rice Engineering and Operating, Inc., of Hobbs, New Mexico.

Q What is the nature of the business of Rice Engineering?

A We are consulting engineers. We do consulting work in forming and designing of construction of salt water disposal systems.

Q Have you personally been actively engaged in that operation, design and operation of salt water disposal systems in Lea County?

A Yes, sir.

Q Have you made any study in the Vacuum Field area?

A Yes, sir, I would like, I have a couple of exhibits here that I would like to put up first. This will be Exhibit

A. I will put it up on the wall.

Q Why don't you stamp it so we can mark it off when we get it on the wall?

(Whereupon, Rice Exhibit A marked for identification.)

A This Exhibit A shows our preliminary design for a joint salt water disposal system in this area. These circles

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here are tank batteries and, of course, the oil wells flow into the tank batteries and the water is picked up at the tank batteries and will flow into our lines to our proposed disposal well G-35 in the southwest quarter of northeast quarter of 17, Section 35, 17, 35.

Now, when we were contacted by Phillips and then the other operators to start work on this design, we sent out a ballot to the parties in the area and the parties returned the ballot with the list of the wells that they wanted included into this system. We then designed the system allocating the various water volumes per day to the wells according to what zone they were completed in.

(Whereupon, Rice Exhibits B, C, and D marked for identification.)

Our Exhibit "B" which I would like to present at this time is an Articles of Agreement which has been sent out to the parties represented on this map for their signature and as soon as the parties representing 80 percent of the wells in this system have signed this agreement, it will be enforced.

Now, this agreement went out to the operators November 9, 1966. At the present time we have one signed agreement back, signed by Humble Oil and Refining.

MR. UTZ: That went out when?

A November 9th. So, on this Articles of Agreement, the Exhibit "A" of this agreement is the same design plat, Exhibit "B" is the cost estimate and Exhibit "C" is the contracting procedure and Exhibit "D" of this agreement is a list of all the leases, parties, and wells that will be committed to this joint vacuum salt water disposal system.

As designed, this will be a complete gravity system. The water will flow from the tank batteries into the lines into the disposal well. We hope to re-complete this disposal well which was formerly the Phillips Santa Fe No. 58 which, by the way, Phillips has already appeared before the Commission and gotten permission to use this well and it will be completed as recommended by the Conservation Commission.

There are 355 wells represented by this system, about sixty-one tank batteries and sixteen parties. One of the parties to the agreement was inadvertently left off somehow. The ballot may have gotten lost in the mail or was not returned. It was Marathon but they have since sent a ballot so we will have to change our design somewhat to bring the Marathon batteries in there.

The water represented by the wells that will be connected to this vacuum SWD system approximates 4000 barrels a day. The ultimate design for the system is 20,000 barrels a day, so we have some room for expansion. The estimated

cost of this system is \$360,000. There is 133,600 feet of line or approximately twenty-five miles of line involved there.

Now, as to the time-table of installing this system, we estimate it will be three months after the Agreement is in force, so it takes time to install it, get the material, the contractors to survey the entire thing, and to purchase the right-of-way. Although most of this is on state land there will be some fee lands that will have to be crossed by the lines.

I believe that covers this Vacuum SWD. I will be glad to answer any questions.

Q (By Mr. Kellahin) Mr. Abbott, as I understand, this will be in operation or at least you will start construction of the plant when 80 percent of the operators have signed up, is that correct?

A Yes, that is the figure that's written in the Agreement.

Q Assuming that you get prompt signatures on the Agreement, how long would it take to get the system installed?

A Approximately three months. Of course, we will make an attempt to plan our work such that the batteries producing the most salt water will be connected first. We will try to plan our work in that manner.

Q You could have it in partial operation in three months?

A Yes, sir.

Q You couldn't meet a deadline of January 1st?

A No, sir.

Q Were Exhibits A and B prepared by you or under your supervision?

A Yes.

MR. KELLAHIN: We will offer Exhibits A and B.

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

(Whereupon Rice Exhibits A and B admitted in evidence.)

MR. KELLAHIN: That's all I have.

BY MR. UTZ:

Q Did I understand you to say that you had designed this system on the basis of your ballots you received from the operators and there was 4000 barrels a day going into this system?

A Yes, sir. That is water presently produced; that is out of the Engineering Committee records.

Q Well, that would be about a hundred twenty thousand barrels a month, would it not?

A Yes, sir.



Q I believe you heard Mr. Ramey's testimony that 70,000 barrels a day was now being disposed of, which would make a total of 190,000 barrels, so you have still got another 40,000 barrels to worry about?

A Yes, I added these figures up that Mr. Ramey presented and it seems to me there will be approximately 1400 barrels a day you contracted for. Now, that may be taken up in other systems. I don't know, I have no knowledge of it.

MR. RAMEY: Mr. Utz, I think the Sinclair system will take a good portion of this.

MR. UTZ: That's a good portion of the 40,000?

A Yes. That won't be all of it.

MR. PORTER: Mr. Abbott, your system is designed to cover areas "A" and "B" portions thereof?

A Yes, sir, portions of them.

Q (By Mr. Utz) As a matter of fact the biggest part of your system designed on Exhibit A is in Area "B", is it not?

A Yes, sir.

Q Can you tell us what is happening down here in Area "A"?

MR. RAMEY: Yes. Let me refer to this exhibit. In this area immediately in here, of course, is Texaco and their water is already going into a disposal system also. They have now formed this unit and they advised me that they

will pick up the water in this unit and put it in their system. Phillips has been disposing of their water in here and there has been some talk that Tidewater will join Phillips. Now, I don't know how the progress is on that so primarily in through here your system is pretty well clear.

MR. UTZ: Is that 18 south and 35 east you don't have much done?

MR. RAMEY: No, sir. the only thing that's been done is this lease of Tidewater's.

MR. NUTTER: According to that Exhibit there, there is numerous wells along these sections on the east end of 17-34, and they are not covered by the Rice system, apparently. Do you know the plans for that area?

MR. RAMEY: Of course, a good portion of this is the Mobil properties, which are under waterflood where they are utilizing the water. A lot of these wells don't report any water and also Phillips in their correspondence indicated that in outlying leases the operators would probably collect the water in steel tanks and then truck it to a disposal system and that was the question I was going to ask Mr. Abbott, if there were provisions for disposal into your system.

MR. ABBOTT: At the present time we have no plans in that we have not received any information from the operators that there is a need for this service.

MR. RAMEY: If they so contact you, can you arrange to take care of waters of this nature?

MR. ABBOTT: Yes, we will bring it up with the Committee of parties to this agreement and plan some work on it.

MR. NUTTER: How many ballots were sent out to how many operators?

A There were a total of sixteen operators. I have a list of them here.

MR. NUTTER: Those were the ones that returned the ballot or were those the ones that were sent ballots?

A Well, I don't know how many were sent out, Mr. Nutter, in that we composed the ballot and they were sent out by Phillips and returned to Phillips and then turned over to us.

MR. NUTTER: A total of sixteen were received back from the operators?

A Yes.

MR. NUTTER: Now, replying to the ballot certainly does not bind the company into going in with Rice on the system?

A No, sir.

MR. NUTTER: It's only the execution of the agreement that would bind the operator?

A That's right.

MR. NUTTER: Now, any operator who did not reply to the ballot or who hasn't made arrangements to come into the system as of yet and isn't included in the agreement, could that operator come in later?

A Yes, sir, it's provided in the agreement that these parties can be brought in and this always happens on a joint system we will have fully developed properties or an operator has wells that when they start producing water will contact us and he will be brought in. There are provisions to bring them into the system.

MR. NUTTER: Now, in designing your disposal project, was it the intent to include all those leases which are currently making water or potentially will make water, except those leases in which independent disposal systems are in operation or the water is being used for secondary recovery?

A That's right.

MR. NUTTER: And by the time these independent systems and the secondary recovery systems are put in operation and by the time Rice's system is put in operation all of the produced water in this pool should be taken care of except the isolated instances Mr. Ramey was talking about where it may be collected in tanks and trucked?

A Yes, sir.

MR. NUTTER: I see, thank you.

MR. UTZ: In your experience in the matter of getting agreements signed do you have any estimate as to how long it might be before you have everybody signed up?

A No, I have no idea. This always takes some time. It's just the way the parties do business. Some operators take longer than others but that is why we wrote that it would be in effect when the parties representing 80 percent of the wells sign up, then the agreement will be in force. That should take care of any of the late parties.

MR. UTZ: Are there other questions of the witness?

MR. RAMEY: Mr. Abbott, I was under the impression or I got from some place that you could put in, some system in, in about thirty days after you had the Articles of Agreement signed and that was the basis of my setting this period. I assumed that if I contacted the operators on November 15th and advised them of our plans that they could perhaps have these Articles of Agreement signed by December 1st and under a crash program you could get this system in, in thirty days.

MR. ABBOTT: I don't think we could, Mr. Ramey, get it in that time. I thought perhaps the date you set there would speed the operation up a little bit but I don't

think we can possibly get it installed by that time.

MR. PORTER: You would be, or would you be disposing of some of the water in thirty days, Mr. Abbott?

A Possibly some of it would be disposed.

MR. UTZ: Some of these wells were shut-in. Do you think maybe that would hurry them up a little?

A I have no idea.

MR. NUTTER: Has it been your experience that there has been a coincidental expeditious handling of the execution of these agreements when a no-pit order is in effect?

A I wouldn't answer that.

MR. UTZ: Are there other questions of witness?

BY MR. NEAL:

Q Mr. Abbott, on your construction of your system in this 11-12 would you propose as soon as the agreements are signed to start that portion of the system first?

A We hadn't planned anything, I mean as far as construction plans. We did look briefly at it, then I believe there is quite a lot of water produced in that area and then the area to the southeast.

Q It is your understanding, is it not, that the various potash companies, the bulk of their water being withdrawn, is in what Mr. Ramey has designated Area "A", which would be the south half of your system?

A Yes, sir.

Q And if there is an emergency could it be possible that this system be constructed immediately?

A Yes, sir.

Q Now, as I understand your testimony, what you are held up on is these companies signing your agreement in order to get started?

A Yes, sir.

Q And as soon as they will sign the agreement you are ready to move in and start remedying your problem?

A Yes, sir.

Q One party has signed, that's Humble?

A Yes, sir.

Q I would like to know if you have received a ballot from Forest Oil?

A No, I have not.

Q How about Tidewater?

A Yes.

Q And Magnolia?

A Mobil, yes, sir.

Q But would it be possible to start your system and that it would not take three months in which to complete in order that water could start being disposed of?

A That's correct.

Q Do you need your agreement signed by the companies?

A Yes.

MR. NEAL: Thank you, sir.

MR. UTZ: Other questions? You may be excused.  
You may offer your statements at this time.

MR. KELLY: Booker Kelly, White, Gilbert, Koch & Kelly, on behalf of Sinclair. Sinclair has been brought out in testimony as actively attempting to cooperate and they have for some time been putting salt water in lined tanks and trucking it away and they are also cooperating with Phillips in the salt water system that has been described and my information is, there is no problem on the agreement but apparently it hasn't actually been signed up yet.

Now, as to our own system, we have gotten the well and it's been approved by the Commission. However, I am informed that Sinclair has not been able to obtain the sub-surface equipment necessary to put the well into operation and this is not scheduled for delivery until after the first of the year and, therefore, this would be for Devonian and Abo construction and so we would need an extension past January 1st, as far as any of that production in Area "A" and I am not sure whether Sinclair has production in Area "A" or "B", I wasn't given that information but they do have some acreage in Area "A" and assuming that since Mr. Ramey says that those



structures underlie both areas, I would ask for an extension, perhaps to dovetail with whatever hopeful extension you will give Phillips' application, so we can get our system in.

Also, certainly, it may be that it will come in before we expected but they did ask for a three-month extension. Whether that much would be necessary, I don't know, when they cannot get the equipment until after the first of the year. Everything else is ready but there is a hold-up on that.

MR. UTZ: Thank you, Mr. Kelly. Other statements?

MR. ELMORE: Roscoe Elmore, on behalf of Mobil Oil Corporation. We don't have any real serious problems in any substantial portion of the field except over in the southeast area where Mr. Abbott's firm is designing the system, I would like to point out that oil companies are, some fast and some slow on moving on these things and we don't feel like we have been on the extreme end of either side of it and I don't know that anyone has.

We do feel that we find ourselves in a posture of proposed date that we can live with. We would like to ask that it be extended for compliance to some time which can be made feasible, possibly three months, as Mr. Abbott suggests, reasonable.

We are concerned also by one other matter which

occurred to me as to whether or not the existence of a pit rather than being filled in is something to be dreaded and covered up or when we are thinking emergency pits. Even any system has necessity for these things, there would be a hole in the ground, there might be, might not be much in them but we are wondering about this necessity from time to time.

In general we are certainly willing to cooperate and to do what we can. We do feel we want to look at this call for expenditure of considerable sum of money and we do think that a little more time is needed.

MR. NUTTER: Has your company executed the agreement that was sent to you by Rice Engineering?

MR. ELMORE: No.

MR. NUTTER: What is the status of the agreement?

MR. ELMORE: We are examining into it.

MR. NUTTER: When did you receive it, do you know?

MR. ELMORE: My understanding was we received it about mid-November. I am not absolutely certain on that. They are looking into it and our principal area in the northeast, beg your pardon, northwest area, as Mr. Ramey pointed out, is secondary recovery and we do have, I guess, some pits, perhaps, used. In an emergency we would request that such an exception be worked out in some way that these things happen, there is no way we can avoid them altogether. We do

have one or two leases in this southeast area that we are interested in the system and we have returned our ballot to Rice indicating our interest.

MR. UTZ: Thank you. Are there other statements?

MR. NEAL: J. W. Neal, representing National Potash Company. If the Examiner please, the National Potash is the owner of water permits located in Sections 11 and 12 of Township 18 South, Range 34 East. We have wells in 11 and 12, also in 7 and 8 of 35, Township 18 South, and when this situation with Kermac first became apparent in the early part of the year and subsequent to that another well has gone out of production due to contamination.

Our wells are located in the south half in the area. Humble, Forest, Tidewater, Texas, Pacific have disposal pits immediately adjacent to our wells. We have been before Mr. Ramey, the State Engineer on numerous occasions and at all times we have been trying to get something moving in order to protect our interests.

Without this fresh water our potash mine cannot operate. We have substantial, several millions of dollars invested in our plant facilities. We also pay a substantial amount of taxes. We feel that the companies have had since April to start moving here and we feel that we are entitled, for our protection and fresh water supply in this entire area,

that immediate action be taken by this Commission to protect it.

Now this signing of agreements and so forth, that can go on and on and on. If it is not brought to a head then we will have to resort to other action in order to protect our interests because we have evidence of some movement into our water area and we have an immediate, and it's very damaging problem, that if something is not done that we will suffer substantial damage.

I think that is also true of other potash companies that have their water rights over in this area and we are asking the Commission to -- we support Mr. Ramey's recommendation very strongly, in order that something will be done because it is a problem and we have to have this fresh water. Thank you, sir.

MR. KELLAHIN: Mr. Utz, on behalf of Standard Oil Company of Texas I would like to state Standard Oil of Texas doesn't feel that their problem is a particularly serious one but they do realize that something must be done and this company is ready to cooperate fully and as expeditiously as possible in disposing of salt water in the area involved here.

We do feel, however, that the proper way to do it is by the installation of comprehensive disposal system such as has been designed by Rice Engineering and it's going to

take a little time to get this system into operation and we ask that any date set by the Commission for the entering of a no-pit order be a realistic one, which will give them an opportunity to get the system into operation.

On behalf of Phillips Petroleum Company I have a statement I would like to read into the record and in that connection, I would like to point out that the Vacuum Field is a very prolific field. As you know, it's been a valuable producer. As Mr. Neal says, they all pay taxes, too, and the problem is a complex one, in that you have secondary recovery projects under way in the area.

You have others that are being proposed, you have pressure maintenance projects coming up, all of which should be taken into consideration in connection with your salt water disposal system for the reason that for the formation of units it is more economic to gather the salt water, as well as the produced water in central tank batteries and a proper system must be designed in order to do this.

"Since the Oil Conservation Commission first requested that the operators in the Vacuum Field begin plans toward discontinuing the use of open pits for produced brine disposal, Phillips Petroleum Company has:

1. Obtained Commission approval to use four different Phillips wells within the field as salt water disposal wells

in the basal San Andres formation, and obtained an exception to Rule 701 permitting the Secretary-Director to approve additional San Andres disposal wells in the Vacuum Field administratively. The Commission approved these requests by Order No. R-3079.

2. Converted Hale No. 11, located in Section 35, T-17-S, R-34-E, to salt water disposal service during the early part of July, 1966. All produced water on the Hale lease has gone into this well since that time, and produced water from certain other Phillips leases has been hauled to this disposal well.

3. Discontinued the use of all open pits on Phillips-operated leases within Area "A" of the Vacuum Field.

4. Worked with other operators in the field toward formation and construction of a jointly-owned salt water disposal system to be constructed and operated by Rice Engineering and Operating, Inc. Tentative plans call for this proposed system to cover portions of Area "A" and Area "B". Rice has completed a preliminary design of the system and has submitted a draft of an operating agreement for the system. The operators in the field will probably approve the construction of this system if sufficient time is permitted, before closing the pits, to finalize design and construction of the system in an orderly manner.

The proposed salt water disposal system is the most

efficient method of permitting all operators in the eastern portion of the field to eliminate open pit disposal; however, sufficient time must be provided to do the job properly. Final design of the system must be made after accurate information is obtained from every operator on the location and maximum future volume of produced water. Some changes will have to be made in the design of the system before it is finally approved by the operators and construction can begin. Several factors contribute to the difficulty in obtaining accurate premises for the final design. Certain operators have requested inclusion in the system since the original design was made. Efforts are in progress toward formation of secondary recovery units in the San Andres, Glorieta, and Abo formations. Progress of the unit effort is at a different stage in each formation. A strong effort is being made to have the application for the proposed Vacuum Abo Unit heard by the Commission in January, 1967, so that the unit can become effective February 1, 1967.

If the Vacuum Abo Unit becomes effective, several present tank battery sites will be eliminated through tank battery consolidation. Hopefully, final design of the disposal system can be completed as soon as the proposed Vacuum Abo Unit is approved by the Commission.

If the Commission sees fit to order the disposal pits

closed, it is recommended that the effective date be no sooner than September 1, 1967. This is considered to be the earliest date that the system could be completed and in operation without incurring extravagant waste. Premature closing of the pits will cause each operator to provide one or more emergency disposal systems on his own. It will be necessary for producing wells with remaining oil or gas reserved to be converted to salt water disposal service, resulting in loss of the remaining reserves."

In view of the testimony that has been presented here today, I would suggest that the Commission, in entering an order in this pool take into consideration the time that will be required to adequately set up a system that will meet future requirements of the Vacuum Field and in that connection you might consider entering an order at the present time which would call for progress reports at intervals to be set by the Commission rather than setting a definite final date which would be binding on the operators, such as January 1st or February 1st as has been suggested and which the evidence I think clearly shows, if it were entered, would make it impossible for the operators to continue producing in the Vacuum Field.

MR. NUTTER: Mr. Kellahin, I get the impression



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from Mr. Abbott that the system has been designed, that after the agreement has been executed by the operators that then he was ready to go into it and to get his firm to start construction. Now, I get the impression from Phillips that there is still much study to be done before they can even execute the agreement.

MR. KELLAHIN: The construction difficulty of the Abo, and Mr. Abbott can correct me, that the present design calls for the size as it exists today and this would substantially change the situation if this Vacuum Abo unit is approved and the engineering that would be utilized in connection with that unit would be changed somewhat. I don't think it's drastic.

MR. NUTTER: We have probably got units that are in the very earliest embryonic stage in the Vacuum Field area and these will be coming up as times goes on and if we delay final ratification of the agreement until the <sup>latest</sup> ~~latter~~ unit is formed <sup>for</sup> ~~or~~ secondary recovery or pressure maintenance it could be a matter of years before we could finally execute the agreement.

MR. KELLAHIN: We are aware of that. The problem is that, if you have a project which you have already designed, as Phillips has the Vacuum Abo, then they contemplate filing this for hearing in January, this could be taken into



consideration in the design of the immediate installation. It probably will anyway, as far as that goes.

MR. NUTTER: If the engineering of the project that's to be revised and the project itself has to be revamped prior to the execution of the agreement, this would mean that no operator could really execute the agreement until after the Abo pressure maintenance agreement has been executed.

MR. KELLAHIN: I don't think that would necessarily follow. I think it could be modified to meet requirements.

MR. NUTTER: What is the status of the agreement as far as Standard Oil is concerned?

MR. KELLAHIN: I don't think they have signed it yet, I don't know. They would have it in Houston.

MR. UTZ: Other statements?

MR. NEAL: I would like to make this comment on behalf of National Potash. That has been our problem in view of Phillips letter since April. We feel that we are entitled to some immediate relief, if the Examiner please.

MR. NUTTER: I would like to point out to the Examiner that we received progress reports at several different occasions since the April meeting in Hobbs. If this is a sample of progress reports, this could go on for

considerable length of time, is my opinion.

MR. UTZ: There were no progress reports?

MR. NUTTER: Well, there were some, and there was pretty good progress for awhile, then it sort of fell into a state of considering the agreements.

MR. UTZ: Other statements?

MR. HATCH: I have some communications I would like to read into the record, please. Letter from Texaco, Inc., dated December 2, 1966, Examiner Hearing - Case 3500:  
"Gentlemen: Texaco Inc. will not be represented at the above subject hearing by a personal appearance but would like to file this letter with the Commission as a part of the hearing record. This is to advise that Texaco Inc. does not operate or use any earthen pits for produced salt water storage or disposal in the area of the Vacuum oil pools in Lea County, New Mexico. Texaco Inc. is anxious to cooperate with the Oil Conservation Commission of New Mexico and any other State regulatory agencies in the conservation of fresh water and the prevention of pollution of fresh water and fresh water sources."

Letter from Duval Corporation dated December 2, 1966 and addressed to Oil Conservation Commission:

"Duval Corporation is greatly concerned about the control of salt water disposal in Lea County. The present



and future protection of fresh water sources is of utmost importance to everyone.

Although I can find no new activity in the area of Duval's water wells, the pits already in existence are a menace because of leaching caused by rainfall.

We would urge you to proceed with the matter of eliminating the disposal of oil field brines in unlined pits in the vacuum field since it does not appear that previously indicated progress has been made.

If, at any time, we may be of help to you in this matter, please feel free to call on us."

Letter from U. S. Borax addressed to the New Mexico Oil Conservation Commission dated November 19, 1966:

"Dear Mr. Ramey: We have received correspondence from Mr. G. L. Jordan, National Potash Company, concerning his recent meeting with you to discuss the progress that has been made in the Vacuum Field salt water disposal plan.

It appears that little has been done to eliminate the surface disposal of oil field brines, although plans have been completed for an approved area-wide system. It also seems that adequate time has elapsed since the April, 1966, meeting of the oil-potash people, at which time it was agreed that the oil companies would submit a joint effort report by May 25, 1966. If a concentrated effort had been made since this April

meeting, surely a suitable disposal system could have been installed before now.

It is of utmost importance to U. S. Borax that the Caprock water is of sufficient quality to meet the requirements of potash ore processing. In this respect also, I would think that it would be equally important to the State of New Mexico as a source of revenue from the potash industry.

U. S. Borax is in complete accord with National Potash Company's views that open pit disposal must be stopped to prevent further contamination of the Caprock water. Further, we must support National Potash to take all possible measures to stop this type of disposal if such methods exist after January 1, 1967. We also support their recommendation that the O. C. C. issue an order forbidding the disposal of brines in open pits in the Vacuum field and that such an order be placed in effect by February 1, 1967."

A letter from International Minerals and Chemical Corporation dated November 14, 1966, addressed to Mr. Joe D. Ramey, Oil Conservation Commission:

"We are quite concerned with the oil companies' practice of disposing of oilfield brines in areas that allow the brine to percolate downward and pollute fresh water zones. Clean water for potash processing is indispensable. We feel that every effort should be made to protect the limited natural

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supply.

It is our understanding that at the present some brine is being disposed of in unlined pits. We hope that in the interest of the potash industry this condition can be stopped."

That's all the communications I have.

MR. UTZ: If there are no further statements, the case will be taken under advisement and we will take a ten-minute recess.

(Recess)

dearnley-meier

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STATE OF NEW MEXICO )  
 ) ss  
COUNTY OF BERNALILLO )

I, KAY EMBREE, Court Reporter, do hereby certify that the foregoing and attached transcript of proceedings before the New Mexico Oil Conservation Commission Examiner at Santa Fe, New Mexico, is a true and correct record to the best of my knowledge, skill and ability.

*Kay Embree*  
Court Reporter

I do hereby certify that the foregoing is a complete record of the proceedings of the Examiner hearing of Case No. 3500, heard by me on 12-7-1966.

*Thurs. M.*  
Examiner  
New Mexico Oil Conservation Commission

NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING

SANTA FE, NEW MEXICO

REGISTER

HEARING DATE DECEMBER 7, 1966 TIME: 9 A.M.

NAME:	REPRESENTING:	LOCATION:
Joe Gordon	Mob. Oil Corp	Hobbs
FRED HUGHES	TEXAS Gulf Oil Co	MIDLAND
<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
R. L. Elmore	Mobil Oil Corp	Midland
Carl E. Harpke	Dom American	T. H. Worth
<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
D. W. DeLong	<i>[Signature]</i>	<i>[Signature]</i>
Baker	auth. oil & gas	SF
Ed T. Cameron	<i>[Signature]</i>	<i>[Signature]</i>
<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
Ron Valiant	GM	Midland
<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
E. H. Lane	<i>[Signature]</i>	Hobbs
William J. Morris	Montgomery, Ward & Co	Santa Fe
James R. ...	<i>[Signature]</i>	Santa Fe



## NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARINGSANTA FE, NEW MEXICOREGISTERHEARING DATE DECEMBER 7, 1966 TIME: 9 A.M.

NAME:	REPRESENTING:	LOCATION:
<i>J. L. Ricks</i>	<i>U.S. Bureau of Land Management</i>	<i>Albuquerque, N.M.</i>
<i>R.H. Blactman</i>	<i>Rockwell International Corp.</i>	<i>Carlsbad, N.M.</i>
<i>G.H. Pate</i>	<i>Source Corporation</i>	<i>Carlsbad, N.M.</i>
<i>Jack Ditton</i>	<i>New Mexico Petroleum Industry</i>	<i>Carlsbad, N.M.</i>
<i>ER Henderson</i>	<i>W.A. Henderson</i>	<i>H. Worth Twp</i>
<i>A.L. Porter</i>	<i>Q.C.</i>	<i>San Juan Co.</i>

BEFORE THE OIL CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING CALLED BY  
THE OIL CONSERVATION COMMISSION ON ITS  
OWN MOTION TO PERMIT ALL OPERATORS IN  
THE VACUUM FIELD, LEA COUNTY, NEW MEXICO,  
TO SHOW CAUSE WHY THE DISPOSAL OF PRO-  
DUCED SALT WATER IN UNLINED PITS SHOULD  
BE PERMITTED IN THE VACUUM FIELD.

CASE No. 3500  
Order No. R-3164

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on December 7, 1966,  
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 9th day of December, 1966, the Commission, a  
quorum being present, having considered the testimony, the record,  
and the recommendations of the Examiner, and being fully advised  
in the premises,

FINDS:

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

(2) That the following areas of the Vacuum Field, Lea County,  
New Mexico, include the Vacuum (Grayburg-San Andres), Vacuum-Abo  
Reaf, North-Abo Vacuum, Vacuum-Blinebry, Vacuum-Devonian, Vacuum-  
Drinkard, Mid Vacuum-Devonian, Vacuum-Glorieta, North Vacuum-  
Morrow, Vacuum-Queen, Vacuum-Lower Pennsylvanian, Vacuum-Upper  
Pennsylvanian, Vacuum-Wolfcamp, East Vacuum-Wolfcamp, and Vacuum-  
Yates Pools and are within the area designated as the Lea County  
Underground Water Basin by the State Engineer of New Mexico:

AREA A

LEA COUNTY, NEW MEXICO  
TOWNSHIP 17 SOUTH, RANGE 33 EAST, NMPM  
Section 36: All

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CASE No. 3500

Order No. R-3164

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM

Sections 31 through 36: All

TOWNSHIP 18 SOUTH, RANGE 34 EAST, NMPM

Sections 1 through 5: All

Section 10: E/2

Sections 11 and 12: All

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM

Section 1: N/2

Section 2: N/2

Sections 3 through 8: All

Section 17: N/2

TOWNSHIP 18 SOUTH, RANGE 36 EAST, NMPM

Section 6: N/2

AREA B

LEA COUNTY, NEW MEXICO

TOWNSHIP 17 SOUTH, RANGE 33 EAST, NMPM

Section 25: All

Section 26: E/2

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM

Sections 1 through 30: All

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM

Section 7: All

Sections 18 through 36: All

TOWNSHIP 17 SOUTH, RANGE 36 EAST, NMPM

Section 19: W/2

Section 36: S/2

(3) That the surface disposal of produced salt water in unlined pits in the above-described areas and pools or within one mile thereof constitutes a hazard to the fresh waters in the Lea County Underground Water Basin and should be prohibited.

(4) That the operators in the Vacuum Field were apprised of the problem of salt water disposal in unlined pits in the subject area at a meeting called by the Oil Conservation Commission at its Hobbs offices on or about April 26, 1966.

(5) That since that date, certain efforts have been made by some of the operators in the Vacuum Field to eliminate the disposal

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CASE No. 3500  
Order No. R-3164

of produced brines in unlined pits in the subject area, including the institution of underground disposal by individual operators, the injection of brines into producing formations for secondary recovery purposes, and the design of a community salt water disposal system by Rice Engineering & Operating, Inc.

(6) That on or about November 9, 1966, the Articles of Agreement for the Vacuum Salt Water Disposal System were sent by Rice Engineering & Operating, Inc., to those operators in the Vacuum Field who have tentatively committed their wells to said system.

(7) That the testimony at the hearing indicates that within 90 days after the execution of the Articles of Agreement by the operators representing 80 percent of the committed wells, the proposed salt water disposal system can be completed and in operation.

(8) That the testimony indicates that the disposal of produced brines in unlined pits in Area A as described in Finding No. 1 constitutes a more immediate threat to the quality of the underlying fresh water supplies.

(9) That the testimony further indicates that the salt water disposal system for Area A can be completed in a shorter period of time than can the remainder of the system.

(10) That the disposal of produced brines in unlined pits in Area A as described in Finding No. 1 should be prohibited after 7:00 o'clock a.m. March 1, 1967.

(11) That the disposal of produced brines in unlined pits in Area B as described in Finding No. 1 should be prohibited after 7:00 o'clock a.m. May 1, 1967.

IT IS THEREFORE ORDERED:

(1) That effective 7:00 o'clock a.m., March 1, 1967, the surface disposal of salt water in unlined pits in the following described area, Vacuum Field, Lea County, New Mexico, or within one mile thereof, is hereby prohibited:

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CASE No. 3500

Order No. R-3164

AREA A

LEA COUNTY, NEW MEXICO

TOWNSHIP 17 SOUTH, RANGE 33 EAST, NMPM

Section 36: All

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM

Sections 31 through 36: All

TOWNSHIP 18 SOUTH, RANGE 34 EAST, NMPM

Sections 1 through 5: All

Section 10: E/2

Sections 11 and 12: All

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM

Section 1: N/2

Section 2: N/2

Sections 3 through 8: All

Section 17: N/2

TOWNSHIP 18 SOUTH, RANGE 36 EAST, NMPM

Section 6: N/2

(2) That effective 7:00 o'clock a.m., May 1, 1967, the surface disposal of salt water in unlined pits in the following area, Vacuum Field, Lea County, New Mexico, or within one mile thereof, is hereby prohibited:

AREA B

LEA COUNTY, NEW MEXICO

TOWNSHIP 17 SOUTH, RANGE 33 EAST, NMPM

Section 25: All

Section 26: E/2

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM

Sections 1 through 30: All

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM

Section 7: All

Sections 18 through 36: All

TOWNSHIP 17 SOUTH, RANGE 36 EAST, NMPM

Section 19: W/2

Section 36: S/2

-5-

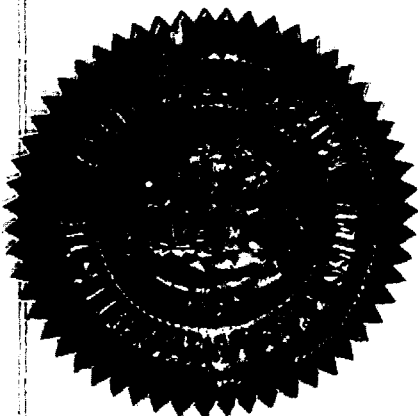
CASE No. 3500  
Order No. R-3164

(3) That effective 7:00 o'clock a.m., May 1, 1967, and subject to the provisions of Order No. 1 and Order No. 2 of this order, the surface disposal of salt water in unlined pits in the following pools as now defined or as hereafter extended, or within one mile thereof, Lea County, New Mexico, is hereby prohibited:

Vacuum (Grayburg-San Andres) Pool  
Vacuum-Abo Reef Pool  
North-Abo Vacuum Pool  
Vacuum-Blinebry Pool  
Vacuum-Devonian Pool  
Mid Vacuum-Devonian Pool  
Vacuum-Drinkard Pool  
Vacuum-Glorieta Pool  
North Vacuum-Morrow Pool  
Vacuum-Queen  
Vacuum-Lower Pennsylvanian Pool  
Vacuum-Upper Pennsylvanian Pool  
Vacuum-Wolfcamp Pool  
East Vacuum-Wolfcamp Pool  
Vacuum-Yates Pool

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

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



STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

*Jack M. Campbell*  
JACK M. CAMPBELL, Chairman

*Guyton B. Hays*  
GUYTON B. HAYS, Member

*A. L. Porter, Jr.*  
A. L. PORTER, Jr., MEMBER & SECRETARY

er/

Case 3500  
Heard 12-7-66  
Rec. 12-7-66

1. Write a no pit order for the vacuum field area.  
Order Area 'A' Exhibit #1, O.C.C. to cease disposing of water in open pits by Feb. 1, 1967, and area 'B' by March 1, 1967.  
The area encompassed by this order shall be the maximum area of the 13 pools listed on exhibit #3, O.C.C.
2. The open pits in Area 'A' should be covered in order to prevent the solids from percolating into the fresh water. This should be done within 30 days after the pits are vacated.
3. Area will ~~marked~~ outlined on Ex #1 O.C.C.

Thall. Hg.

Area A <sup>on pit</sup> Ling <sup>out</sup> <sup>in</sup> <sup>area</sup>  
175-33 E  
Section 36 all

175-34 E  
Sec. 31 thru 36 all

185-34 E -  
Sec. 1 thru 5 all  
Sec. 10 E/2  
Sec. 11 & 12 all.

185-35 E  
Sec. 1 S/2, 2 S/2  
Sec. 3 thru 8 all.  
Sec. 17 N/2  
185-36 E

Area B, Sec. 6 NE/4

175-33 E  
Sec. 25 All  
Sec. 26 E/2

175-34 E  
Sec. 1 thru 36 all.

175-35 E  
Sec. 7 all  
Sec. 8 - W/2  
Sec. 9 thru 36 all.  
Sec.

175-36 E  
Sec. 19 W/2  
Sec. 36 W/2





SINCLAIR OIL & GAS COMPANY

P. O. Box 1470  
MIDLAND, TEXAS 79701  
December 6, 1966

12-10-66

WEST TEXAS REGION

White, Gilbert, Koch and Kelly  
P. O. Box 787  
Santa Fe, New Mexico

Attention: Mr. L. C. White

Dear Sir:

As discussed by us earlier this morning by phone, it seems it would be advantageous for the anticipated Vacuum Field No-Pit order to provide for exceptions to permit the disposal of salt water into unlined surface pits for a short period of time in two emergency situations:

- (1) A well being used for disposal must be shut-in, in order to be re-worked, making it necessary to back-flow the well. Injection into some disposal wells requires fairly high surface pressures and causes the formation being injected into to become pressured up in the vicinity of the well bore to such an extent that when injection is ceased and the well is opened, back-flow of salt water occurs until the pressure is depleted. When some sort of workover operation is necessary on a pressured up injection well, it is preferable to back-flow the well rather than to have to work on the well under pressure which is more difficult and dangerous.
- (2) An injection well is suddenly permanently lost for injection purposes. Should this occur, large quantities of oil production might have to be stopped until provisions for disposing of the associated water production are made.

We realize that providing for such exceptions in a blanket type order may be very difficult but would appreciate your discussing these problems informally with whoever you may wish, and taking any action you deem appropriate.

Yours very truly,

*Douglas W. Cunningham*

Douglas W. Cunningham

DWC/ar

cc: H. N. Burton

*Core file*

TEXACO  
INC.

PETROLEUM PRODUCTS



DOMESTIC PRODUCING DEPARTMENT

MIDLAND DIVISION

W. C. LENZ, ASSISTANT DIVISION MANAGER

December 2, 1966

P. O. BOX 8109

MIDLAND, TEXAS

EXAMINER HEARING - CASE 3500 - 12/9/66  
SALT WATER DISPOSAL PITS  
VACUUM OIL POOL  
LEA COUNTY, NEW MEXICO

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

Attn: Mr. A. L. Porter, Jr.

Gentlemen:

Texaco Inc. will not be represented at the above subject hearing by a personal appearance but would like to file this letter with the Commission as a part of the hearing record. This is to advise that Texaco Inc. does not operate or use any earthen pits for produced salt water storage or disposal in the area of the Vacuum oil pools in Lea County, New Mexico. Texaco Inc. is anxious to cooperate with the Oil Conservation Commission of New Mexico and any other State regulatory agencies in the conservation of fresh water and the prevention of pollution of fresh water and fresh water sources.

Yours very truly,

CLW:jl

cc: Mr. S. E. Reynolds  
State Engineer  
State Capitol  
Santa Fe, New Mexico

*Save file*



POST OFFICE BOX 511 CARLSBAD NEW MEXICO 88220

DEC 4 1966

December 2, 1966

*Shs*

Mr. Porter, Director  
Oil Conservation Commission  
State Capitol Building  
Santa Fe, New Mexico

Dear Mr. Porter:

Duval Corporation is greatly concerned about the control of salt water disposal in Lea County. The present and future protection of fresh water sources is of utmost importance to everyone.

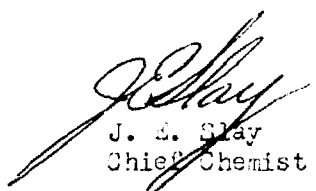
Although I can find no new activity in the area of Duval's water wells, the pits already in existence are a menace because of leaching caused by rainfall.

We would urge you to proceed with the matter of eliminating the disposal of oil field brines in unlined pits in the vacuum field since it does not appear that previously indicated progress has been made.

If, at any time, we may be of help to you in this matter, please feel free to call on us.

Very truly yours,

DUVAL CORPORATION

  
J. E. Slay  
Chief Chemist

JES:jrp

*JMA*

MANUFACTURING DEPARTMENT

HOBBS OFFICE O. C. C.

Nov 23 11 40 AM '66

USBORAX

November 19, 1966

New Mexico Oil Conservation Commission  
Hobbs, New Mexico

Attention: Mr. Joe A. Ramey

Dear Mr. Ramey:

We have received correspondence from Mr. G. L. Jordan, National Potash Company, concerning his recent meeting with you to discuss the progress that has been made in the Vacuum Field salt water disposal plan.

It appears that little has been done to eliminate the surface disposal of oil field brines, although plans have been completed for an approved area-wide system. It also seems that adequate time has elapsed since the April, 1966, meeting of the oil-potash people, at which time it was agreed that the oil companies would submit a joint effort report by May 25, 1966. If a concentrated effort had been made since this April meeting, surely a suitable disposal system could have been installed before now.

It is of utmost importance to U. S. Borax that the Caprock water is of sufficient quality to meet the requirements of potash ore processing. In this respect also, I would think that it would be equally important to the State of New Mexico as a source of revenue from the potash industry.

U. S. Borax is in complete accord with National Potash Company's views that open pit disposal must be stopped to prevent further contamination of the Caprock water. Further, we must support National Potash to take all possible measures to stop this type disposal if such methods exist after January 1, 1967. We also support their recommendation that the O.C.C. issue an order forbidding the disposal of brines in open pits in the Vacuum field and that such an order be placed in effect by February 1, 1967.

Very truly yours,

*J. S. Wright*

J. S. Wright  
Resident Manager

JSW/pm

cc: G. L. Jordan-NPC

UNITED STATES BORAX & CHEMICAL CORPORATION • 101 NORTH HALAGUENO STREET • CARLSBAD, NEW MEXICO 88220 • (505) TU 5-3151  
MAIL ADDRESS: P. O. BOX 271, CARLSBAD, NEW MEXICO 88220

AGRICULTURAL CHEMICALS DIVISION

HOBBS OFFICE O. C. C.  
Nov 15 11 31 AM '66



*SWA*

INTERNATIONAL MINERALS & CHEMICAL CORPORATION

P. O. Box 71 • Carlsbad, New Mexico

November 14, 1966

Mr. Joe D. Ramey  
Oil Conservation Commission  
1000 West Broadway  
Hobbs, New Mexico

Dear Mr. Ramey:

We are quite concerned with the oil companies' practice of disposing of oilfield brines in areas that allow the brine to percolate downward and pollute fresh water zones. Clean water for potash processing is indispensable. We feel that every effort should be made to protect the limited natural supply.

It is our understanding that at the present some brine is being disposed of in unlined pits. We hope that in the interest of the potash industry this condition can be stopped.

Very truly yours,

*S. A. White*

S. A. White  
General Manager

SAW:b

DOCKET: EXAMINER HEARING - WEDNESDAY - DECEMBER 7, 1966

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

The following cases will be heard before Elvis A. Utz, Examiner, or Daniel S. Nutter, Alternate Examiner:

← CASE 3500: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit all operators in the Vacuum Field, Lea County, New Mexico, to show cause why the disposal of produced salt water in unlined pits should be permitted in the Vacuum Field.

CASE 3501: In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider amending Commission Order No. R-1670, as amended, which governs all prorated gas pools in San Juan, Rio Arriba, Sandoval, Lea, Eddy, and Roosevelt Counties, New Mexico. The Commission will consider amending said order to provide a system for the approval of a non-standard gas proration unit without a hearing or without notification to offset operators provided said non-standard units result from a deviation in the United States Public Lands Survey and provided the size of the unit is within from 75 percent to 125 percent of a standard unit size in its respective pool.

CASE 3351: (Reopened)  
In the matter of Case No. 3351 being reopened pursuant to the provisions of Order No. R-3022, which order established 640-acre spacing units for the Dos Hermanos-Morrow Gas Pool, Eddy County, New Mexico, for a period of one year. All interested parties may appear and show cause why said pool should not be developed on 320-acre spacing units.

CASE 3348: (Reopened)  
In the matter of Case No. 3348 being reopened pursuant to the provisions of Order No. R-3019, which order established 80-acre spacing units for the South Prairie-San Andres Pool, Roosevelt County, New Mexico, for a period of one year. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing units.

PRODUCED WATER - VACUUM AREA - SEPTEMBER, 1966

VACUUM GRAYBURG-SAN ANDRES	66,764
VACUUM ABO REEF	36,170
VACUUM ABO NORTH	3,751
VACUUM BLINEBRY	3,688
VACUUM DEVONIAN	5,842
MID-VACUUM DEVONIAN	54,544
VACUUM GLORIETA	57,216
VACUUM MORROW NORTH	N.R.
VACUUM LOWER PENN	N.R.
VACUUM UPPER PENN	566
VACUUM WOLFCAMP	1,015
VACUUM WOLFCAMP EAST	3,800
VACUUM YATES	141
	<hr/>
	233,497

BEFORE EXAMINER UTZ  
OIL CONSERVATION COMMISSION  
OCC EXHIBIT NO. 3  
CASE NO. 3500

Exhibit  
#3

GOVERNOR  
JACK M. CAMPBELL  
CHAIRMAN

State of New Mexico  
Oil Conservation Commission



LAND COMMISSIONER  
GUYTON B. HAYS  
MEMBER

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

P. O. BOX 1980  
HOBBS

November 15, 1966

To: All Operators in the Vacuum Field Area

Gentlemen:

The Commission will advertise a "Show Cause" Hearing for a No Pit Order in the Vacuum Field in the very near future. In line with this, it will be my recommendation that there be no further open pit disposal in Area A after January 1, 1967 and no open pit disposal in Area B after February 1, 1967.

Some operators have disposal systems in operation in Area A at this present time, and I am aware of the field-wide progress toward a system to be operated by Rice Engineering. However, I feel it is necessary to have this type of order to insure that no further waters be placed in open pits.

You may feel that the time element involved is too short, but you have been aware of the problem for approximately seven months and if you act rapidly, the field-wide system can be installed by this date.

Yours very truly,

OIL CONSERVATION COMMISSION

Joe D. Ramey  
Supervisor, District 1

JDR/mc

BEFORE EXAMINER UTZ	
OIL CONSERVATION COMMISSION	
QCC	EXHIBIT NO. 5
CASE NO.	3500

Exhibit #5



RICE Engineering & Operating, Inc.

Post Office Box 1142

Telephone EXpress 3-9174

HOBBS, NEW MEXICO

November 9, 1966

To: All Parties in the Vacuum Salt Water Disposal System

Re: Articles of Agreement

Gentlemen:

Attached are the Articles of Agreement, dated November 9, 1966, covering the Vacuum Salt Water Disposal System, Lea County, New Mexico.

This agreement was authorized to be submitted at the July 12, 1966 meeting of the operators' committee.

Exhibit "A" of the agreement shows a plat of the proposed system with line lengths and sizes as indicated. The design of the System was based on the following future estimates of produced water:

<u>Zone</u>	<u>Water B/D</u>
Yates	10
Grayburg	10
San Andres	10
Glorieta	100
Bone Springs	50
Abo	100
Wolfcamp	10
Devonian	500

Exhibit "B" shows the cost figures for the proposed system: \$360,240 or \$1185 per connected well. The system is designed to handle the water from 304 wells which are listed on Exhibit "D". The proposed disposal well, SWD G-35 (Phillips Santa Fe Well No. 58) should have the capacity to handle the present produced water. This well will be purchased from Phillips.

As shown in Article XIX on page 13, this Agreement will become effective when parties representing 80% of the committed wells listed in Exhibit "D" execute the instrument.

Yours very truly,

RICE ENGINEERING & OPERATING, INC.

*W. G. Abbott*

W. G. Abbott  
Division Manager

WGA/jp  
Attachment

VACUUM  
SALT WATER DISPOSAL SYSTEM  
ARTICLES OF AGREEMENT

BEFORE EXAMINER UTZ  
OIL CONSERVATION COMMISSION  
*Rice Engr.* EXHIBIT NO. B  
CASE NO. 3500

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VACUUM SALT WATER DISPOSAL SYSTEM  
ARTICLES OF AGREEMENT

THIS AGREEMENT, dated this 5 day of NOV 1966, entered into by and between Rice Engineering & Operating, Inc., hereinafter designated as "Operator", and Amerada Petroleum Corporation, Cities Service Oil Company, Continental Oil Company, Humble Oil & Refining Company, Mobil Oil Corporation, Pan American Petroleum Corporation, Penrose Production Company, Phillips Petroleum Company, Shell Oil Company, Sinclair Oil & Gas Company, Skelly Oil Company, Sohio Petroleum Company, Standard Oil Company of Texas, Texas Pacific Oil Company and Tidewater Oil Company, hereinafter jointly referred to as "Parties".

WHEREAS, it is the desire of the Parties hereto to unify their efforts in an attempt to control the disposition of the water produced from the wells owned by the Parties hereto and committed to System under this agreement, and

WHEREAS, the Purpose of this agreement is to prescribe the manner in which a unified disposal system, to dispose of the water so produced by the parties hereto, is to be constructed, operated and maintained, as well as to set out the duties and obligations of the parties hereto and the Operator hereunder.

NOW THEREFORE, each of the parties hereto, excluding Operator, represents that such party is the owner of the well or wells such party has listed on EXHIBIT "D", or that it has the authority to commit and bind the owner or owners of any wells so listed to each and all of the obligations of this agreement, as provided in Section XXXIV, Paragraph 1 hereof. In consideration for the mutual benefits to be derived herefrom and the promises and allegations herein set forth, it is agreed, by the parties hereto and by the Operator hereunder, as follows:

I.

DEFINITIONS

As used in this agreement, the following words and terms shall have the meanings here ascribed to them:

1. "Party" --shall refer to and mean any Company, Partnership, Corporation or Individual executing this agreement, a counterpart thereof, or a Ratification thereof except Rice Engineering & Operating, Inc. or any subsequent Operator who does not own committed producing wells.
2. PARTIES --shall refer to and mean any combination of two (2) or more companies, etc., heretofore defined as "Party".
3. OPERATOR --shall refer to and mean Rice Engineering & Operating, Inc., as well as any subsequent Company, Partnership, Corporation or Individual who assumes the duties of Operator under the terms of this agreement.
4. SYSTEM --shall mean and refer to the water gathering system, accumulation tanks, disposal wells, and all other equipment, facilities and properties owned by the parties hereto and operated under the terms of this agreement.
5. COMMITTED PRODUCING WELL --shall refer to and mean either of the following:
  - a. Any well producing oil and/or gas, not plugged or temporarily abandoned, which

is committed to the System, and is within the subject area.

- b. All wells connected to a tank battery which is connected to the System.
- 6. COMMITTEE --shall refer to and mean that certain body which is composed of representatives of the Parties and Operator as provided for in Paragraph 1, Section II, of this agreement.
- 7. MEMBER OR MEMBER OF THE COMMITTEE --shall refer to and mean the representative of a party who serves on the "Committee" and who has a vote as a party hereunder.
- 8. WEIGHTED VOTE --shall refer to and mean a vote which has the weight and effect that the undivided interest of the party in the total investment cost account (as defined in Paragraph 1 of Section X hereof) bears to such total investment cost account.
- 9. SUBJECT AREA --as used herein shall refer to and mean the total area comprising the leasehold estates owned by the parties hereto, upon which is located one or more wells which have been committed to the System and which have been described on the "Exhibit D" and "Exhibit A", attached hereto, as may be revised from time to time in accordance with the terms of this agreement.

## II.

### OPERATING COMMITTEE

- 1. The Operating Committee, hereinafter referred to as "Committee", shall be made up of one (1) representative of each party and one (1) representative of the Operator.

The representatives of the parties shall sometimes hereinafter be referred to as "members" or "Members of the Committee" and when so referred to shall exclude the Operator or his representative serving on this committee.

- 2. The Chairman of the Committee shall be the representative of the Operator.

## III.

### DUTIES AND VOTING PROCEDURE OF OPERATING COMMITTEE

- 1. The Committee shall govern the operation of the System, and shall have general supervision, except as herein limited, over the construction, maintenance and operation of the System and over all other matters affecting the same.

- 2. There shall not be less than one regular annual meeting of the Committee, the first of which shall be called by the Chairman of the Committee; thereafter the committee shall provide for regular meetings. Special meetings of the committee may be called by the Chairman or by one-third (1/3) in number of the parties.

- 3. Only the representatives of the parties shall have a vote in the determination of any issue requiring the vote of the committee, and it is understood that Operator shall at no time vote on any matter upon which the committee is required to vote under the terms of this agreement, provided however that in the event any of the parties succeed to the duties of Operator hereunder and is required to be Chairman of this Committee, such party shall not be deprived of its vote as a party to the Committee, but shall only be entitled to one vote as a party and not as Chairman or Operator.

4. Except as may be otherwise specifically provided herein, no action shall be taken by the Committee at any time except on the affirmative vote of the Members of the Committee as follows:

- A. During such time as the Committee shall consist of two (2) members the unanimous vote of the members of said Committee shall be required to authorize action.
- B. When, as and if said Committee shall consist of three (3) members, then a majority weighted vote of the members of said Committee shall be required.
- C. When, as and if the Committee shall consist of four (4) or more members, then the majority weighted vote of the Committee and the affirmative vote of at least one-third (1/3) in number of the members of the Committee shall be required for affirmative action.

5. The Committee may provide procedure for the submission of any question to representatives of the parties hereto and their voting thereon by mail, telegraph or telephone confirmed by written letter or telegram. Provision shall be made for the recording of the results of any such vote, and for advising the parties of such results.

#### IV.

##### APPOINTMENT, RESIGNATION OR REMOVAL OF OPERATOR

1. The parties hereby agree and affirm the selection of Rice Engineering & Operating, Inc. as Operator hereunder.
2. The Operator may withdraw as Operator and be removed of all duties as such by giving 30 days written notice to the Committee of its intentions to withdraw. The Committee shall then select another Operator by its vote in the manner provided for under Paragraph 4 of Section III of this agreement; provided, however, that if a new Operator is not so selected by the Committee within this 30 day period, or when the Committee so desires, it can require the Operator to continue to serve as Operator and discharge its duties in that capacity under this agreement until a successor Operator is selected and begins to function, but the present Operator shall not be obligated to continue the performance of its duties for more than 120 days after notice has been given to the Committee as hereinabove provided for.
3. Operator may be removed from its position and duties as Operator by the Committee by its vote in the manner provided for under Paragraph 4 of Section III of this agreement, and in the event of such removal, the Committee shall then select another Operator by its vote in the manner provided for under Paragraph 4 of Section III of this agreement.
4. The Operator so retiring or removed by the Committee hereunder shall be obligated to deliver to the successor operator named by the Committee, all records and information in its possession necessary to the discharge, by the new Operator, of its duties and obligations.

#### V.

##### TITLE TO PROPERTY OWNED BY SYSTEM

1. All rights-of-way, disposal wells and other equipment and easements necessary for the installation and for the removal of any and all parts of the system and all license and permits required

by law shall be acquired in the name of the Operator as trustee for the benefit of the parties.

2. All rights, title and interest and all rights-of-way, easements, license, disposal wells, other equipment and permits acquired by Operator in connection with the operation performed and to be performed under the terms of this agreement shall automatically vest in and pass to the successor to Operator in the event Operator resigns, is discharged or for any other reason ceases to perform its duties under this agreement and in such event, Operator shall execute and deliver to the successor Operator such documents and other evidence of title as may be reasonably appropriate to recognize such transfer of ownership.

#### VI.

##### ADMISSION OF NEW PARTIES

Owners or lease operators other than the parties hereto may become parties hereto by agreeing in writing to be bound by each and all of the terms, provisions and conditions of this agreement and any amendments thereto, if such joinder is approved by the Committee, in accordance with the voting procedure set forth in Section III hereof.

#### VII.

##### COMMITMENT OF ADDITIONAL WELLS

1. The commitment of any additional wells to the system subsequent to the effective date of this agreement shall require approval of the Committee in accordance with the voting procedure set forth in Section III hereof, except for the commitment of wells under the provisions of Paragraph 2 of this section and wells committed to the system as of the effective date of this agreement.

2. Any of the parties completing a new well or recompleting or restoring to production a temporarily abandoned well subsequent to the effective date of this agreement shall commit such well to the system, if such well is connected to a tank battery which is connected to the system, provided that the Committee may prevent the commitment of any well to the system if the effect of such addition is to overload the system.

3. The commitment of any well to the system shall be subject to the provisions of Section VIII hereto with respect to investment cost.

#### VIII.

##### INITIAL INVESTMENT COSTS OF THE SYSTEM

1. It is understood that the estimated initial cost of the system as set forth in "EXHIBIT B" is an estimate only and that the actual initial cost of the System shall be prorated among the parties in the proportion that the number of committed producing wells of each of the parties hereto bears to the total number of committed producing wells of the parties as of the effective date of this agreement.

2. For purposes of this agreement the following shall apply with respect to committed producing wells:

- (a). A well completed in two or more zones shall be considered as a separate well in each zone in which it is completed.
- (b). All committed producing wells shall be listed on "EXHIBIT D".



3. If any well is added to the list on "EXHIBIT D" as a committed producing well as of a date subsequent to the effective date hereof, the owner or operator thereof shall so notify the Operator within fifteen (15) days after the Committee has approved the commitment of such well to the System or within fifteen (15) days after such well is completed or recompleted or restored to production if the approval of the commitment of such well by the Committee is not required under this agreement, and the Operator shall bill such owner or operator for an amount equal to that proportion of the total investment costs which have been incurred as of the first day of the calendar month next following the calendar month in which such well is added or to be added to the System that the well so added or to be added to the System bears to the total number of committed producing wells as of the effective date hereof plus all producing wells subsequently committed to the System, without adjustment for the disconnection of any well. The amount for which an owner or operator is to be billed under this Paragraph shall never be less than the actual cost to the System of adding such well to the System.

4. If any committed producing well is plugged or temporarily abandoned, for which a pro rata investment cost payment has been made, the same shall no longer be deemed a committed producing well. For each well thus no longer committed the party hereto which owned or operated the same shall, subject to Section VII hereof, thereafter be entitled to commit to the System one additional well thereafter completed or thereafter recompleted or restored to production without paying any pro rata investment for the well so added. A party adding a well without paying any pro rata investment cost, under this Paragraph, shall nevertheless pay the actual cost to the System of adding such well to the System.

#### IX.

##### FUTURE INVESTMENT COSTS

1. All future investment costs shall be apportioned among the parties in the ratio that the number of committed producing wells owned or operated by each party as of the first day of the month following the date of approval by the Committee of such expenditure bears to the total number of such committed producing wells then owned or operated by the parties hereto.

#### X.

##### TOTAL INVESTMENT COSTS

1. The Operator shall keep a "total investment cost account" consisting of all sums received from the parties for the construction of the System and the making of any and all additions thereto, less all refunds resulting from sales described in Paragraph 3 of this section. This account shall represent the total investment cost of the System, and each party shall have an undivided interest in the System and in such account, in the proportion that it has contributed thereto, less any credits received by any such party. The Operator shall furnish to each of the parties hereto a statement showing the current status of the total investment cost account each time there is a change in the ownership of the System and in such account.

2. Upon the payment of any investment cost under the provisions of Paragraph 3 of Section VIII, the amount to be paid shall be paid to the Operator and said amount shall be distributed by the Operator to the parties in the proportion that such parties have contributed to the "total investment cost account" prior to the inclusion of such investment less prior credits received by them.

3. When any part of the System is discontinued and sold in accordance with Section XI hereof, the proceeds from such sale or sales, less the cost and expense of retirement, shall be ratably disbursed to the parties in the proportion that their net contributions to the "total investment cost account" bears to the "total investment cost account".

4. In making disbursement of any funds of investment cost account, the Operator may deduct from the portion of any party any and all amounts due and owing under this agreement to the Operator from such party.

#### XI.

##### DISCONTINUANCE OF PART OF SYSTEM

When, in the opinion of the Committee, any part of the System should be discontinued the Committee may direct the Operator to sell that part of the System for the best price obtainable therefor, and the proceeds from such sale or sales shall be accounted for in accordance with Paragraph 3, Section X hereof, provided however that no tank battery shall be disconnected from the System without the consent of the operator of the wells producing into the battery, unless the operator of the wells is in default under this agreement, and, within thirty (30) days after receipt from Operator of written notice of such default, shall fail to commence to remedy such default, or thereafter shall fail to prosecute with reasonable diligence measures reasonably calculated to remedy such default in accordance with Paragraph 3 of Section XXII hereof.

#### XII.

##### EMPLOYEES

All employees and contractors used in operations hereunder shall be the employees and contractors of Operator and not the employees or contractors of the parties. The number of employees, the selection of such employees, the hours of labor and the compensation of service to be paid any and all employees in connection with operations hereunder shall be determined by Operator.

#### XIII.

##### LIMITATION OF EXPENDITURES

Operator may from time to time make capital expenditures for additions and betterments to the System provided, that except as specified in Paragraph 10 of Section XV hereof, and except in the cost of adding wells under the provisions of Section VII hereof, no single capital expenditure so made shall exceed the sum of \$2,500.00 without prior approval by the committee. Operator, in the operation of the System shall make no single expenditure in excess of \$2,500.00 without prior approval of the Committee, except in cases of recognized emergencies.

#### XIV.

##### ACQUISITION OF PROPERTY AND COST THEREOF

1. The Operator, subject to the provisions of Section V hereof, shall acquire any and all right-of-way, easements, licenses and permits, disposal wells and any other equipment necessary for the installation and removal of any and all parts of the System; provided, however, that each of the parties hereto do hereby grant unto Operator all necessary rights-of-way, easements, licenses and permits to the extent of each such party's right to do so.

2. Subject to the other provisions of this agreement, all reasonable cost and expense incurred in such acquisition shall be charged to the parties as initial cost of the System and shall be paid by the parties as provided for the payment of initial cost under the terms of Paragraph 1 of Section VIII hereof.

XV.

CONSTRUCTION AND OPERATION OF SYSTEM

1. The Operator, under the direction of the Committee, shall operate the System for the benefit of the parties.

Operator shall be in direct charge over and have direct supervision of the actual construction and operation of the System.

2. The Committee, as provided in Paragraph 1, of Section III hereof, shall have general supervision over the construction, maintenance and operation of the System.

3. The details of design and specifications of the System are to be approved by the Committee, which shall also award the contract or contracts for the construction of the System or approve the construction of the System by the Operator.

4. The parties agree that they will each dispose of water produced by them from committed producing wells in the subject area through the facilities of the System, subject, however, to the limitations hereinafter set out, and that they may equip each lease owned by them with such storage facilities as are reasonably necessary for water produced thereon; provided, however, that if a party should need and elect to utilize the entire output of water produced from one or more of its producing wells in the subject area, such party shall be entitled to do so upon giving thirty (30) days written notice to the Operator, and such party shall currently therewith be relieved of such current maintenance and operational charges as would normally be assessed such producing wells; but such party and such well or wells shall not be exempted from allocation of charges for investment expenditures as they are currently assessed, except in the event of withdrawal from System or assignment of interests, as provided in Section XXIII and XXIV hereof.

5. Each party hereto may at its own individual cost and expense and in a manner approved by the Committee provide storage facilities, when required, for water produced from its wells listed in "EXHIBIT D". The lease storage facilities of each of the parties for purposes hereof shall be deemed to terminate at the valve connection to the System.

6. The Operator, at the expense of all the parties, shall lay a line terminating at a valve up to the present lease battery or batteries of each party located within the subject area, and each party shall, at its own risk, cost and expense, connect its battery or batteries to said line.

7. The parties agree that they will each take reasonable precautions on their respective leases to guard against the escape of water either by seepage through pipe lines or otherwise, and that only water reasonably free from solid matter, basic sediment and oil shall be delivered to the System. The parties further agree that the Operator or its inspector or other proper officials may at all times have access to their leases to inspect the condition of such leases as to the control of water. Each party will at its sole cost and expense conform to any reasonable request of Operator or its inspector for correction of objectionable conditions regarding the delivery of water to the System. If such corrective request of Operator or its inspector is not complied with within a reasonable time by the party, the Operator shall give such party notice of his intention

to disconnect the party's lease, upon which the objectionable features are located, from the System. If such party denies that such objectionable features exist and there is a dispute between such party and the Operator as to whether or not such objectionable conditions exist, the Operator shall call a special meeting of the Committee to settle such dispute. The Committee shall, by its vote, determine whether or not such objectionable conditions exist on said lease. If it is determined by the Committee that such objectionable conditions do exist, the Operator then shall have the right to disconnect such lease from the System until such time as the objectionable condition has been remedied by the party.

8. It is agreed that Operator will accept from the parties and dispose of all of the water produced by them and delivered to the System up to the actual capacity of the System.

9. In the event that the water so produced and tendered by the parties to the Operator at any time overloads the facilities of the System, the Operator shall prorate the volume of water that the system is capable of handling equally among the connected producing wells and each party will then have the right to dispose of at each single connection that daily volume of water determined by multiplying the amount of water allocated to each well times the number of producing wells served by that connection. If any party at any connection does not use its respective share of the allocated System capacity, the excess not utilized by that party at that connection will be re-allocated equally among the remaining connected producing wells. Operator shall be under no obligation at any time to dispose of any water produced by the parties in excess of the amount allocated by the Operator until such time as facilities to handle additional water are installed.

10. Notwithstanding any other provision of this agreement to the contrary, it is agreed that each of the parties shall have the right to dispose of, in the System, all of the water produced by them and that if the System now or hereafter is incapable of disposing of such volume of water, it shall be enlarged, as the need arises, to the capacity necessary to dispose of such amount of water, the cost of such enlargement to be borne by and appropriated among the parties as an investment expense, as provided in Section IX hereof.

#### XVI.

##### PAYMENT OF COST, EXPENSES AND CHARGES

Except where herein specifically provided, the Operator shall pay and discharge all cost, expense and charges, and bill the parties with their proportionate share of such cost in accordance with the provisions of Exhibit "C". The operating costs shall be apportioned among and paid by the parties in the ratio that the number of committed producing wells owned or operated by each party and connected to the System on the first day of the month for which billing is rendered, bears to the total number of committed producing wells owned or operated by the parties and connected to the System on such date. A connected well is defined as any well producing into a tank battery which is connected to the System.

#### XVII.

##### INSURANCE

1. The Operator shall at all times carry for the protection of the parties hereto the following insurance:

- (a) Workmen's Compensation insurance, including employer's liability in compliance with the workmen's compensation laws of the State of New Mexico, with a limit of not less than

\$100,000.00; such insurance to include an endorsement waiving all rights of subrogation against the parties to this agreement;

- (b) Comprehensive general liability insurance, excluding products, in amounts of \$300,000.00 for injuries to any one person, \$500,000.00 for injuries in any one accident, and for property damage in the amounts of \$100,000.00 for each accident and \$250,000.00 aggregate;
- (c) Automobile public liability and property damage insurance on automotive equipment owned, rented or used by the System in amounts of \$300,000.00 for injuries to any one person, \$300,000.00 for injuries in any one accident and \$10,000.00 for property damage, except that if automotive equipment used is owned exclusively by the Operator, no charge will be made to the joint account for premiums for this coverage, except as provided in Section II, Paragraph 5, of the Accounting Procedure attached hereto.

Such Comprehensive General Liability Insurance and Automobile Public Liability and property damage insurance as provided for in Subsections "b" and "c" immediately above, shall be written and endorsed so as to designate all parties to this agreement as insured parties, and shall acknowledge that the coverage provided therein shall be Primary as to all parties, and that any insurance carried by the parties to this agreement, for their own benefit, shall be secondary in nature of liability to the policies acquired hereunder by Operator. Each policy shall also contain a so called "Cross Liability Endorsement" providing that if any employee of Operator should assert a claim against any of the parties hereto as a third party defendant, the parties hereto will be entitled to protection by the policies acquired hereunder by the Operator. The Operator shall not carry for the benefit of the parties hereto fire, tornado or other insurance on the property owned by the System. Operator upon obtaining any of the above mentioned policies shall furnish each party with a certificate of insurance.

2. The Operator shall require all its contractors or subcontractors to carry for the protection of the parties hereto insurance of such kinds and in such amounts as in the opinion of Operator shall be adequate, except that such insurance shall never provide for less than the following coverage:

- (a) Workmen's Compensation insurance, including employer's liability in compliance with the Workmen's Compensation laws of the State of New Mexico with a limit of not less than \$25,000.00.
- (b) Comprehensive general liability insurance, excluding products, in amounts of \$100,000.00 for injuries to any one person, \$300,000.00 for injuries in any one accident, and for property damage in the amounts of

\$100,000 for each accident and  
\$100,000 aggregate.

- (c) Automobile public liability and property damage insurance, in amounts of \$100,000 for injuries to any one person, \$300,000 for injuries in any one accident and \$10,000 for property damages.

#### XVIII.

#### LEGAL COMMITTEE, CLAIMS FOR DAMAGES SETTLEMENT AND PAYMENT OF CLAIMS, APPORTIONMENT OF COST OF SETTLEMENT

##### A.. LEGAL COMMITTEE

1. The Committee shall appoint a Legal Committee to consist of not less than two attorneys, however, any party has a right to have a representative on said committee if it so desires, provided however, that no party shall be entitled to have more than one representative on said Legal Committee. The Legal Committee shall have control of litigation resulting from the construction and operation of the System, and shall have power and authority with the consent and approval of the Committee, to employ attorneys or otherwise provide for the defense of any suit or suits resulting from the construction and operations of the System. No compensation shall be paid or obligation incurred to any attorney in the regular employment of any of the parties or Operator except the actual and necessary expense of any such attorney incurred in connection with any such litigation when such services are rendered at the request and with the approval of the Legal Committee or except as provided in Sub Paragraph A of Paragraph 8 of Section II of Exhibit "C". Any party shall have the right to be represented by individual counsel at his own expense.

##### B. HANDLING OF SUMMONS AND CLAIMS RECEIVED BY PARTIES

1. Upon receipt by any party hereto of service of any summons in any action for damages resulting from the construction or operation of the System, the party receiving such notice or summons shall immediately forward the same to the Operator who shall promptly forward any such summons to the Legal Committee.

2. Upon receipt by any party of a claim for damage resulting from the construction or operation of the System, the party receiving such claim or notice of such claim shall immediately forward the same to the Operator who shall take one of the following appropriate actions:

- (a) If the claim or liability for the claim is covered by one or more of the insurance policies carried by Operator under the terms of this agreement, Operator shall handle the same in accordance with Subsection "C" of this section.
- (b) If the claim is not covered by one or more of the insurance policies carried by Operator under the terms of this agreement, and the claim can be settled or paid, and the sum expended will not exceed \$1,000.00, Operator shall handle it as provided in Subsection "D" of this section.
- (c) If the claim, or the settlement thereof will exceed the sum of one-thousand dollars, Operator shall promptly give

notice of such claim to the Committee or Legal Committee as provided in Subsection "E" of this section and the Committee or Legal Committee shall handle the same according to the terms of this section.

C. CLAIMS ASSERTED AGAINST SYSTEM, OPERATOR, OR PARTIES AND COVERED BY INSURANCE

All claims for damages asserted against Operator, or against the Operator as agent or trustee for the System, or upon any party, which are covered by one or more of the insurance policies held by Operator for the benefit of the parties, shall be turned over by Operator to the insurance carrier in the manner provided in said insurance policy.

D. SETTLEMENT OF SMALL CLAIMS NOT COVERED BY INSURANCE

1. Operator shall immediately arrange for an investigation of any claim for damages resulting from the construction and operation of the System, and after investigation of any such claim Operator shall have the power and authority to expend a sum not to exceed one-thousand (\$1,000.00) in the settlement of any such claim, provided such settlement is final and conclusive.

2. Operator, in connection with the settlement of small claims as provided for under Paragraph 1 immediately preceding, shall have the right to employ outside legal counsel for the purpose of securing legal advice. Any reasonable attorney's fee paid by Operator for the advice of such outside counsel shall be accounted for under the provisions of Exhibit "C" hereof as a direct charge and the same shall be paid for by the parties according to the terms of said exhibit.

3. Upon the settlement of any claims under the authority of Paragraph 1 hereof, Operator shall advise the Committee of the settlement of said claim, by the submission to the Committee of a report consisting of the claim asserted, the facts found in the investigation caused to be made by Operator, advice of attorney if one was consulted, and the terms of the settlement if one was made.

E. SETTLEMENT OF CLAIMS EXCEEDING \$1,000.00 AND WHICH ARE NOT OTHERWISE COVERED BY INSURANCE

1. Settlement of any claims for damages requiring the payment of more than one-thousand dollars, if suit has not been filed thereon, shall be made by Operator only after the approval of the Committee has been obtained. The Committee shall approve the settlement of any claim for damages, if suit has not been filed thereon, only upon its affirmative vote in accordance with Paragraph 4, Section III hereof.

2. Settlement of any claims for damages, upon which suit has been filed thereon, shall be made by Operator only after approval of the Legal Committee has been obtained. The Legal Committee shall approve the settlement of any claim for damages upon which a suit is filed and pending only upon the majority vote of the members of the Legal Committee.

F. SETTLEMENT OF CLAIMS - GENERAL

1. All payments in settlement of claims or litigation authorized under the terms of this agreement shall be paid by the Operator for the benefit of the parties.

2. Operator shall, promptly after making any settlement of claims or litigation, as was authorized under the terms hereof, which was approved by the Legal Committee of Committee, furnish each of the parties with a statement of the amount paid in settlement of any such claim or claims, and showing their respective pro rata shares thereof (as provided for under Paragraph 1 of Subsection H hereof) and the parties agree that they will reimburse the Operator for such amount or amounts so paid on their respective behalf, within thirty (30) days after the receipt of such statement, and if not paid within said thirty (30) day period, the same shall draw interest at the rate of six percent annum until paid.

#### G. INDEMNITY PROVISIONS

1. It is recognized that the Operator may be subjected to certain claims of, or liability to, third persons in its individual capacity, which claims are in fact the results of its activities as Operator of the System. The parties hereby indemnify and agree to hold harmless Operator against any claims of or liability to any third person resulting from any act or omission of Operator or its employees in acting upon instructions of the Committee or in otherwise carrying out the provisions of this agreement, excepting any loss, damage, claim or liability resulting from the gross negligence or willful misconduct of Operator or its employees. It is agreed that any such claim of or liability to any third person hereunder shall be subject to handling and control by the respective Committees in the same manner as provided in this section.

2. Each party, in the proportions as set out in Paragraph 1 of Subsection "H" of this section, indemnifies and agrees to hold each other party harmless of and from any claim of or liability to any third party asserted upon the grounds that operations under this agreement have resulted in or will result in any loss or damage to such third person, it being the intention of the parties that any claim or liability to any third person asserted upon the grounds that operations under this agreement have resulted in or will result in any loss or damage to such third person shall be borne by all parties in the proportions set out in Paragraph 1 of Subsection "H" of this section.

#### H. APPORTIONMENT OF COST INCURRED IN SETTLEMENT OF CLAIMS

1. When the settlement of any litigation or claim is made in accordance with this Section, the cost of such settlement shall be apportioned among and paid by the parties, in the proportion that the greatest number of committed producing wells owned or operated by each party bears to the greatest number of committed producing wells owned or operated by all the parties during any part of the two year period immediately prior to the assertion of any claims, or the filing of any suit for the satisfaction of any claim; provided that if a claim is asserted prior to two years after the effective date hereof, only committed producing wells owned or operated subsequent to the effective date hereof shall be considered in determining said proportion.

2. No cost or expense incident to an appeal shall be paid on behalf of the parties hereto, unless the appeal is approved by the Committee.

#### I. CLAIMS ASSERTED AGAINST OPERATOR AND PARTIES IN THEIR INDIVIDUAL CAPACITY

A claim asserted against Operator or any party or parties, not arising from any of the operations of the System, shall not be within the jurisdiction of the Committee, Legal Committee or Operator.



XIX.

EFFECTIVE DATE OF AGREEMENT

This agreement will not become effective and binding upon any party until it, or a counterpart thereof, has been duly executed by the Operator and all of the Parties listed in the first unnumbered Paragraph on Page 1 hereof, representing 80 percent of the wells listed in Exhibit "D" attached hereto.

XX.

DISCONTINUANCE OF ENTIRE SYSTEM  
(TERM OF AGREEMENT)

This agreement, once it has become effective in accordance with Section XIX, shall continue in force and effect for any and all purposes herein provided until it is determined by three-fourths (3/4) of the "weighted vote" of the Committee that the maintenance and operation of the System shall be discontinued.

XXI.

DISBURSEMENT OF PROPERTY OF SYSTEM AFTER  
TERMINATION OF AGREEMENT

Upon such discontinuance of the System as provided above, the property shall be sold, under the direction of the Committee, for the best price obtainable therefor, and the proceeds from such sale or sales, less the cost and expense of retirement, and all unused sums, in all accounts, in the hands of the Operator shall be ratably disbursed to each of the parties in the proportion that their individual interest in total investment cost account bears to the total investment cost account; PROVIDED, that there may be deducted from the proportion of any party, any and all accounts due and owing to the Operator under this agreement.

XXII.

OPERATOR'S LIEN AND REMEDIES AGAINST  
DEFAULTING PARTY

1. The Operator shall have a lien, on the interest of each defaulting party or parties in the System, and on the proceeds from the sale of the oil and gas produced from any producing wells, to secure the payment of the pro rata cost and expense of each defaulting party for the cost of construction, extension, maintenance and operation of the System, and on account of the settlement of any claims or damages by the Operator as hereinabove provided, and said lien may be foreclosed as provided by law at any time.

2. In the event of the neglect or failure of any party to pay his or its proportionate part of the cost of the construction or extension of the System, monthly operating costs and claims or judgments, paid by the Operator, as herein authorized within thirty (30) days after rendition of statement therefor by the Operator, the other parties hereto agree to contribute and pay to the Operator such proportionate part of the costs and expenses of any such defaulting party on the same basis as if said defaulting party had not been a party at the time such expenditures were made. Parties so contributing to the Operator such unpaid costs and expenses of any such defaulting party shall be reimbursed by the Operator the amount or amounts so contributed by any such party upon the payment to and receipt by the Operator of any past due amount or amounts owed by any such defaulting party.

3. In the event of the failure of any party to pay the proportionate part of the cost of the construction or extension of the System, monthly operating costs and claims or judgments paid by the Operator, as herein authorized, and chargeable to him or it as owner or operator of any lease or leases within the subject area, within thirty (30) days after rendition of statement therefor by the Operator, the Operator shall immediately report such failure to the Committee, and the Committee may direct the Operator to discontinue the disposal of water through the System from the lease or leases of such party so in default, and to disconnect such lease or leases from the System, and to leave such lease or leases so disconnected until such party shall make payment of said account in full or has made arrangements satisfactory to the Committee for payment thereof. PROVIDED, HOWEVER, that the Operator shall not discontinue the disposal of water through the System, or disconnect any such lease or leases of such defaulting party from the System until the expiration of thirty (30) days after notice in writing from the Operator to such defaulting party of the action taken by the Committee, and give such defaulting party an opportunity within such thirty (30) day period to make payment of all sums due, or make arrangements satisfactory to the Committee for payment thereof. Any cost and expense incurred by the Operator in the disconnecting or reconnecting of the System from any lease or leases of such defaulting party shall be borne by such defaulting party, and paid as a part of the amount due from such defaulting party.

4. Any action taken by the Committee, as provided in Paragraph 3 hereof, shall be taken by the Committee without considering the weight or vote of such defaulting party or parties, and the defaulting party or parties shall not be entitled to participate in any such action.

#### XXIII.

##### WITHDRAWING PARTY

Any party may withdraw from this agreement by giving the Operator thirty (30) days written notice of his or its intention to withdraw, and by executing and delivering to the other parties hereto, an assignment of all his or its rights, title and interest to and under this agreement and in and to the System, and any and all rights and easements in connection therewith, and in and to the investment account hereinabove referred to, if any. Such withdrawing party shall not, however, be relieved from his or its obligations and liability under the terms and conditions of this agreement, accruing prior to the effective date of such withdrawal, except for future investment costs assessed by the Committee within thirty-five (35) days prior to said effective withdrawal date. Such withdrawing party shall forfeit his or its undivided interest in the total investment cost account, as of said date, and thereafter shall be entitled to no credits or payments, of any nature whatsoever, from the Operator in its capacity as such.

#### XXIV.

##### TRANSFER OF A PARTY'S INTEREST

Any party selling, assigning or otherwise conveying his or its leasehold estate, or estates, upon which are located committed producing wells, or any interest therein, whereby such party ceases to be the operator of any such lease or leases or interest therein, shall have the right to transfer and assign his or its interest in the System, upon the assignee agreeing to assume obligations in proportion to the interest which is assigned to such assignee; and any such purchaser or assignee shall then have an undivided interest in the total investment cost account in the proportion that the assigning party, on account of the interest so sold, assigned or transferred has contributed thereto, less credits received.

XXV.

ADVANCEMENT OF COST

The Operator, at its election, may require the parties to advance their respective proportions of the estimated initial investment costs, estimated future investment costs and estimated operating costs as approved and authorized by the Committee according to the following condition: On or before the 10th day of each calendar month the Operator may submit a statement of such estimated expenditures for the succeeding calendar month, to all parties. Within thirty (30) days thereafter, each of the parties shall pay to the Operator such party's proportionate part of such estimate. Should any party fail or refuse to pay his or its part of such estimate, same shall bear interest at the rate of six percent per annum from the date same became payable, as above provided, until paid. Should any party or parties fail to pay his, its, or their proportionate part of such advance estimate within the thirty (30) days provided, the Operator shall have the right, at its option, at any time thereafter, such default continuing, to foreclose the lien provided for in this agreement, upon the respective interests of such party or parties. Adjustments between advances on estimates and actual cost of each party shall be made by the Operator at the close of each calendar month and the accounts of the parties adjusted accordingly.

XXVI.

MONTHLY REPORTS BY PARTIES

Each of the parties, shall on or before the tenth (10th) day of each calendar month, prepare and furnish the Operator with a written statement showing the number of its committed producing wells on the first (1st) day of such calendar month, which statement shall be the basis for billing the parties for their proportionate part of all costs and expenses incurred during such month. For purposes of this provision, a well or wells added to the System under the terms of Section VII hereof, shall be deemed to have been added, as of the first (1st) day of the month during which the well or wells are connected to the System.

XXVII.

RELATIONSHIP OF PARTIES

The rights, duties, obligations and liabilities of the parties hereto shall be several and not joint or collective, it being the express purpose and intention of the parties hereto that their ownership in the System, covered hereby, shall be as tenants in common; and nothing herein contained shall ever be construed as creating a partnership of any kind, joint venture, an association or a trust or as imposing upon any or all of the parties hereto any partnership duty, obligation or liability. Each party hereto shall be individually responsible only for its obligations, as set out in this agreement, and shall be liable only for its proportionate share of the cost, expense and liabilities as herein stipulated.

XXVIII.

PROVISION CONCERNING TAXATION

While it is provided herein, that the rights and liabilities of the parties hereunder are several and not joint or collective, and that this agreement, and the operations hereunder, shall not constitute a partnership, if for Federal tax purposes this agreement, the relationship established thereby and the operations hereunder are regarded as a partnership, then each of the parties hereto, hereby

elects, not to be treated as a partnership, and hereby elects that it, and the operations covered by this agreement, be excluded from the application of Subchapter K of Chapter A of the Internal Revenue Code of 1954, or such portion or portions thereof as the Secretary of the Treasury of the United States or his delegate shall permit by election, to be excluded therefrom, insofar as all or any portion of said Subchapter K may be applicable to the parties hereto, in respect of the operations covered by this Agreement. Each party hereto agrees to execute such additional or further evidence of said election as may be required by or under said Subchapter K. Each party hereto further agrees not to give any notices or take any other action inconsistent with the election made hereby.

XXIX.

OPERATOR'S BUDGET

Before, or as soon as practical, after the effective date hereof, Operator shall prepare a budget of estimated costs and expenses for the remainder of the calendar year; and on or before the first day of each October thereafter, shall prepare a budget of estimated costs and expenses for the ensuing year. Such budgets shall set forth the estimated costs and expenses by quarterly periods. Unless otherwise specified in the budget, it shall be presumed, for the purposes of any advance billings, that the estimated costs and expenses for each month of a quarterly period shall be one-third (1/3) of the estimate for the quarterly period. Budgets so prepared, shall be estimates only, and shall be subject to adjustment and correction by the Committee and Operator from time to time whenever it shall appear that any adjustment or correction is proper. A copy of each such budget and adjusted budget shall be promptly furnished each party.

XXX.

REVISIONS OF EXHIBITS

When and if, and from time to time, as additional producing wells are committed to the System, "EXHIBIT D" hereto shall be revised by Operator, and if the addition of such wells changes the boundary of the "Subject Area", Operator shall revise the "EXHIBIT A" hereto to conform to the new boundary encompassing the "Subject Area". Operator shall furnish a copy of such revised Exhibits to each of the parties hereto. It is agreed that a revised "EXHIBIT A" or "EXHIBIT D" which has been revised under the terms of this section, shall have the force and effect of amending the original exhibits.

XXXI.

TAXES

Operator shall render, for ad valorem tax purposes, all physical property constituting the System or used in connection therewith, or such part thereof, as may be subject to ad valorem taxation under existing laws, or which may be made subject to taxation under future laws; and shall pay, for the benefit of the joint account, all such ad valorem taxes, at the time and in the manner required by law, which may be assessed upon or against all or any portion, of such rights and interests and the physical property located thereon or used in connection therewith. Operator shall bill each party for its proportionate share of such tax payments, as provided by the Accounting Procedure attached hereto, which payments shall be deemed to be operating expenses.

XXXII.

AUDIT BY PARTIES

1. The Committee shall have the right to order an audit of Operator's accounts and records relating to accounting hereunder, such audit to be at the joint expense of the parties and deemed an operating expense.
2. The Committee shall appoint an Audit Committee to consist of not less than two representatives, however, any party has a right to have a representative on said Committee if it so desires, provided however, that no party shall be entitled to have more than one representative on said Audit Committee.
3. In the event an audit is had of Operator's books and records as provided for in Paragraph 1 hereof, and there arises a dispute between Operator and members of the audit committee as to whether or not any charge made by Operator hereunder is a proper charge to the System, the Audit Committee shall not be the final judge of such dispute, but Operator, if it so desires may submit the dispute to the Committee for settlement. The Committee, after hearing evidence from the Audit Committee and from the Operator, shall be the final judge as to whether or not such charge was properly made by Operator.

XXXIII.

FORCE MAJEURE

In the event that any party hereto is rendered unable, wholly or in part, by force majeure to carry out its obligations under this agreement, other than the obligation to make payment of amounts due hereunder, upon such party's giving notice and reasonably full particulars of such force majeure in writing, or by telegraph, to the other parties hereto, within a reasonable time after the occurrence of the cause relied upon, the obligations of the party giving said notice, so far as they are affected by such force majeure, shall be suspended during the continuance of any inability so caused, but for no longer period; and the cause of the force majeure as far as possible shall be remedied with all reasonable dispatch. The term "force majeure" as employed herein shall mean an act of God, strike, lockout or other industrial disturbance, act of the public enemy, war, blockade, riot, lightning, fire, storm, flood, explosion, governmental restraint, and any other cause, whether of the kind herein enumerated or otherwise, not reasonably within the control of the party claiming suspension. The above requirement, that any force majeure shall be remedied with all reasonable dispatch, shall not require the settlement of strikes, lockouts or other labor difficulty by acceding to the demands of opponents therein, when such course is inadvisable in the discretion of the party having the difficulty.

XXXIV.

MISCELLANEOUS PROVISIONS

1. In the event any leasehold estate upon which is located a committed producing well is owned in whole or in part by one party, and such lease is operated by another party, such lease shall be considered, for the purpose of this agreement, as the lease of only the one of such parties as may be agreed upon between them, and the wells thereon shall, for all purposes hereof, be considered as the well of only the one of such parties as may be so designated in writing by them to the Operator.
2. This agreement including the map entitled "EXHIBIT A", the preliminary estimate for the construction of the System, entitled

"EXHIBIT B", the Accounting Procedure entitled "EXHIBIT C", the list of wells committed hereto (and showing the location of such wells) entitled "EXHIBIT D", all of which are attached hereto and hereby made a part hereof, contain all of the terms, conditions and provisions as agreed to by and between the Parties and Operator as is indicated by the acceptance and execution of this agreement or any ratification thereof by each of the parties hereto and Operator. In the event of conflict between the provisions of this agreement and any Exhibit, the provisions of this agreement shall control.

3. Counterparts of this agreement or ratifications thereof may be executed by one or more parties, with the same force and effect as if all parties had joined in the execution of the same instrument.

4. The terms, conditions, and provisions hereof shall be covenants running with the land and leasehold estates subject hereto, and shall enure to the benefit of and be binding upon the parties hereto and their respective successors and assigns.

IN WITNESS WHEREOF, the parties hereto and Operator agree that this agreement will become effective and binding only after it (or a counterpart or counterparts) has been executed as more fully provided in Section XIX hereof.

ATTEST:

AMERADA PETROLEUM CORPORATION

\_\_\_\_\_

By \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

ATTEST:

CITIES SERVICE OIL COMPANY

\_\_\_\_\_

By \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

ATTEST:

CONTINENTAL OIL COMPANY

\_\_\_\_\_

By \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

ATTEST:

HUMBLE OIL & REFINING COMPANY

\_\_\_\_\_

By \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

ATTEST:

MOBIL OIL CORPORATION

\_\_\_\_\_

By \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

ATTEST:

PAN AMERICAN PETROLEUM CORPORATION

\_\_\_\_\_

By \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

ATTEST:

PENROSE PRODUCTION COMPANY

\_\_\_\_\_

By \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

ATTEST:

\_\_\_\_\_

PHILLIPS PETROLEUM COMPANY

By \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

ATTEST:

\_\_\_\_\_

SHELL OIL COMPANY

By \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

ATTEST:

\_\_\_\_\_

SINCLAIR OIL & GAS COMPANY

By \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

ATTEST:

\_\_\_\_\_

SKELLY OIL COMPANY

By \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

ATTEST:

\_\_\_\_\_

SOHIO PETROLEUM COMPANY

By \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

ATTEST:

\_\_\_\_\_

STANDARD OIL COMPANY OF TEXAS

By \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

ATTEST:

\_\_\_\_\_

TEXAS PACIFIC OIL COMPANY

By \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

ATTEST:

\_\_\_\_\_

TIDEWATER OIL COMPANY

By \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

ATTEST:

\_\_\_\_\_

RICE ENGINEERING & OPERATING, INC.

By \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

STATE OF  
COUNTY OF

BEFORE ME, the undersigned authority, a Notary Public in and for said County and State, on this day personally appeared \_\_\_\_\_, \_\_\_\_\_ of Amerada Petroleum Corporation, known to me to be the person whose name is subscribed to the foregoing instrument, who acknowledged to me that he executed the same as the act and deed of the said Amerada Petroleum Corporation, for the purposes and considerations and in the capacity therein expressed.

Given under my hand and seal of office this \_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

My Commission Expires:

\_\_\_\_\_  
Notary Public in and for \_\_\_\_\_  
County, \_\_\_\_\_

STATE OF  
COUNTY OF

BEFORE ME, the undersigned authority, a Notary Public in and for said County and State, on this day personally appeared \_\_\_\_\_, \_\_\_\_\_ of Cities Service Oil Company, known to me to be the person whose name is subscribed to the foregoing instrument, who acknowledged to me that he executed the same as the act and deed of the said Cities Service Oil Company, for the purposes and considerations and in the capacity therein expressed.

Given under my hand and seal of office this \_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

My Commission Expires:

\_\_\_\_\_  
Notary Public in and for \_\_\_\_\_  
County, \_\_\_\_\_

STATE OF  
COUNTY OF

BEFORE ME, the undersigned authority, a Notary Public in and for said County and State, on this day personally appeared \_\_\_\_\_, \_\_\_\_\_ of Continental Oil Company, known to me to be the person whose name is subscribed to the foregoing instrument, who acknowledged to me that he executed the same as the act and deed of the said Continental Oil Company, for the purposes and considerations and in the capacity therein expressed.

Given under my hand and seal of office this \_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

My Commission Expires:

\_\_\_\_\_  
Notary Public in and for \_\_\_\_\_  
County, \_\_\_\_\_

STATE OF  
COUNTY OF

BEFORE ME, the undersigned authority, a Notary Public in and for said County and State, on this day personally appeared \_\_\_\_\_, \_\_\_\_\_ of Humble Oil & Refining Company, known to me to be the person whose name is subscribed to the foregoing instrument, who acknowledged to me that he executed the same as the act and deed of the said Humble Oil & Refining Company, for the purposes and considerations and in the capacity therein expressed.

Given under my hand and seal of office this \_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

My Commission Expires:

\_\_\_\_\_  
Notary Public in and for \_\_\_\_\_  
County, \_\_\_\_\_



STATE OF  
COUNTY OF

BEFORE ME, the undersigned authority, a Notary Public in and for said County and State, on this day personally appeared \_\_\_\_\_, \_\_\_\_\_ of Mobil Oil Corporation, known to me to be the person whose name is subscribed to the foregoing instrument, who acknowledged to me that he executed the same as the act and deed of the said Mobil Oil Corporation, for the purposes and considerations and in the capacity therein expressed.

Given under my hand and seal of office this \_\_\_\_ day of \_\_\_\_\_, 19\_\_.

My Commission Expires:

\_\_\_\_\_  
Notary Public in and for \_\_\_\_\_  
County, \_\_\_\_\_

STATE OF  
COUNTY OF

BEFORE ME, the undersigned authority, a Notary Public in and for said County and State, on this day personally appeared \_\_\_\_\_, \_\_\_\_\_ of Pan American Petroleum Corporation, known to me to be the person whose name is subscribed to the foregoing instrument, who acknowledged to me that he executed the same as the act and deed of the said Pan American Petroleum Corporation, for the purposes and considerations and in the capacity therein expressed.

Given under my hand and seal of office this \_\_\_\_ day of \_\_\_\_\_, 19\_\_.

My Commission Expires:

\_\_\_\_\_  
Notary Public in and for \_\_\_\_\_  
County, \_\_\_\_\_

STATE OF  
COUNTY OF

BEFORE ME, the undersigned authority, a Notary Public in and for said County and State, on this day personally appeared \_\_\_\_\_, \_\_\_\_\_ of Penrose Production Company, known to me to be the person whose name is subscribed to the foregoing instrument, who acknowledged to me that he executed the same as the act and deed of the said Penrose Production Company, for the purposes and considerations and in the capacity therein expressed.

Given under my hand and seal of office this \_\_\_\_ day of \_\_\_\_\_, 19\_\_.

My Commission Expires:

\_\_\_\_\_  
Notary Public in and for \_\_\_\_\_  
County, \_\_\_\_\_

STATE OF  
COUNTY OF

BEFORE ME, the undersigned authority, a Notary Public in and for said County and State, on this day personally appeared \_\_\_\_\_, \_\_\_\_\_ of Phillips Petroleum Company, known to me to be the person whose name is subscribed to the foregoing instrument, who acknowledged to me that he executed the same as the act and deed of the said Phillips Petroleum Company, for the purposes and considerations and in the capacity therein expressed.

Given under my hand and seal of office this \_\_\_\_ day of \_\_\_\_\_, 19\_\_.

My Commission Expires:

\_\_\_\_\_  
Notary Public in and for \_\_\_\_\_  
County, \_\_\_\_\_

STATE OF  
COUNTY OF

BEFORE ME, the undersigned authority, a Notary Public in and for said County and State, on this day personally appeared \_\_\_\_\_, \_\_\_\_\_ of Shell Oil Company, known to me to be the person whose name is subscribed to the foregoing instrument, who acknowledged to me that he executed the same as the act and deed of the said Shell Oil Company, for the purposes and considerations and in the capacity therein expressed.

Given under my hand and seal of office this \_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

My Commission Expires:

\_\_\_\_\_  
Notary Public in and for \_\_\_\_\_  
County, \_\_\_\_\_

STATE OF  
COUNTY OF

BEFORE ME, the undersigned authority, a Notary Public in and for said County and State, on this day personally appeared \_\_\_\_\_, \_\_\_\_\_ of Sinclair Oil & Gas Company, known to me to be the person whose name is subscribed to the foregoing instrument, who acknowledged to me that he executed the same as the act and deed of the said Sinclair Oil & Gas Company, for the purposes and considerations and in the capacity therein expressed.

Given under my hand and seal of office this \_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

My Commission Expires:

\_\_\_\_\_  
Notary Public in and for \_\_\_\_\_  
County, \_\_\_\_\_

STATE OF  
COUNTY OF

BEFORE ME, the undersigned authority, a Notary Public in and for said County and State, on this day personally appeared \_\_\_\_\_, \_\_\_\_\_ of Skelly Oil Company, known to me to be the person whose name is subscribed to the foregoing instrument, who acknowledged to me that he executed the same as the act and deed of the said Skelly Oil Company, for the purposes and considerations and in the capacity therein expressed.

Given under my hand and seal of office this \_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

My Commission Expires:

\_\_\_\_\_  
Notary Public in and for \_\_\_\_\_  
County, \_\_\_\_\_

STATE OF  
COUNTY OF

BEFORE ME, the undersigned authority, a Notary Public in and for said County and State, on this day personally appeared \_\_\_\_\_, \_\_\_\_\_ of Sohio Petroleum Company, known to me to be the person whose name is subscribed to the foregoing instrument, who acknowledged to me that he executed the same as the act and deed of the said Sohio Petroleum Company, for the purposes and considerations and in the capacity therein expressed.

Given under my hand and seal of office this \_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

My Commission Expires:

\_\_\_\_\_  
Notary Public in and for \_\_\_\_\_  
County, \_\_\_\_\_

STATE OF  
COUNTY OF

BEFORE ME, the undersigned authority, a Notary Public in and for said County and State, on this day personally appeared \_\_\_\_\_, \_\_\_\_\_ of Standard Oil Company of Texas, known to me to be the person whose name is subscribed to the foregoing instrument, who acknowledged to me that he executed the same as the act and deed of the said Standard Oil Company of Texas, for the purposes and considerations and in the capacity therein expressed.

Given under my hand and seal of office this \_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

My Commission Expires:

Notary Public in and for \_\_\_\_\_  
County, \_\_\_\_\_

STATE OF  
COUNTY OF

BEFORE ME, the undersigned authority, a Notary Public in and for said County and State, on this day personally appeared \_\_\_\_\_, \_\_\_\_\_ of Texas Pacific Oil Company, known to me to be the person whose name is subscribed to the foregoing instrument, who acknowledged to me that he executed the same as the act and deed of the said Texas Pacific Oil Company, for the purposes and considerations and in the capacity therein expressed.

Given under my hand and seal of office this \_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

My Commission Expires:

Notary Public in and for \_\_\_\_\_  
County, \_\_\_\_\_

STATE OF  
COUNTY OF

BEFORE ME, the undersigned authority, a Notary Public in and for said County and State, on this day personally appeared \_\_\_\_\_, \_\_\_\_\_ of Tidewater Oil Company, known to me to be the person whose name is subscribed to the foregoing instrument, who acknowledged to me that he executed the same as the act and deed of the said Tidewater Oil Company, for the purposes and considerations and in the capacity therein expressed.

Given under my hand and seal of office this \_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

My Commission Expires:

Notary Public in and for \_\_\_\_\_  
County, \_\_\_\_\_

STATE OF  
COUNTY OF

BEFORE ME, the undersigned authority, a Notary Public in and for said County and State, on this day personally appeared \_\_\_\_\_, \_\_\_\_\_ of Rice Engineering & Operating, Inc., known to me to be the person whose name is subscribed to the foregoing instrument, who acknowledged to me that he executed the same as the act and deed of the said Rice Engineering & Operating, Inc., for the purposes and considerations and in the capacity therein expressed.

Given under my hand and seal of office this \_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

My Commission Expires:

Notary Public in and for \_\_\_\_\_  
County, \_\_\_\_\_

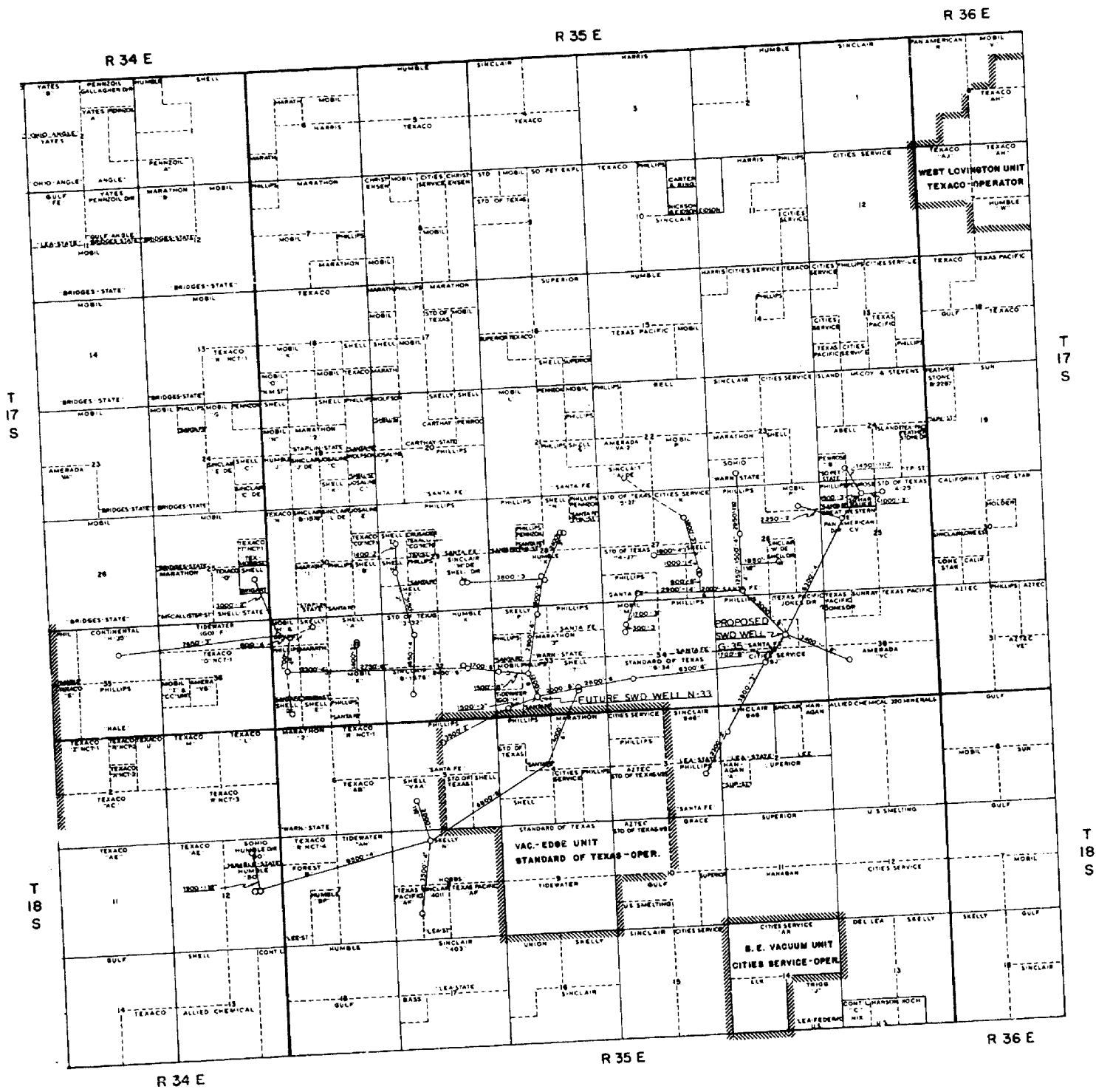


EXHIBIT "A"

DATE	AMOUNT	TO WHOM	REMARKS	BY WHOM
			VACUUM S.W.D. SYSTEM	
			LEA COUNTY NEW MEXICO	
			ENGINEERING & OPERATING INC.	
			1000 N. 10TH ST.	

# EXHIBIT B

ATTACHED TO AND MADE A PART OF ARTICLES OF AGREEMENT  
IN THE VACUUM SALT WATER DISPOSAL SYSTEM

## ESTIMATED COST OF THE VACUUM SALT WATER DISPOSAL SYSTEM

<u>ITEM</u>				<u>ESTIMATED COST</u>
Disposal well				\$ 34,990
Terminal facilities				13,652
Lines:				
<u>Material</u>	<u>Size</u>	<u>Quantity</u>	<u>Unit Price Pipe in Place</u>	<u>Extension</u>
PVC Plastic	1½"	10,150'	\$0.60	6,090
Epoxy-Glass	2"	17,700'	1.05	18,585
Epoxy-Glass	3"	28,150'	1.49	41,944
Asbestos-cement	4"	34,000'	1.83	62,220
Asbestos-cement	6"	39,200'	2.31	90,552
Asbestos-cement	8"	4,400'	3.00	13,200
Valves, fittings, conduit, box lumber and miscellaneous material				24,424
Contract labor and surveying				10,558
Right-of-way and damages, engineering, design, bill of materials, material procurement, supervision of installation, placing in operation and sales tax				<u>44,025</u>
TOTAL				\$360,240

"EXHIBIT C"

ATTACHED TO AND MADE A PART OF ARTICLES OF AGREEMENT  
IN THE VACUUM SALT WATER DISPOSAL SYSTEM

ACCOUNTING PROCEDURE

1. GENERAL PROVISIONS

1. DEFINITIONS

"Joint Property" and "subject area" as herein used shall be construed to mean the System covered by the agreement to which this "Accounting Procedure" is attached.

"Operator" as herein used shall be construed to mean the party designated to conduct the development and operation of the subject area for the joint account of the parties hereto.

"Non-Operator" as herein used shall be construed to mean any one or more of the non-operating parties.

2. STATEMENTS AND BILLINGS

Operator shall bill Non-Operator on or before the last day of each month for its proportionate share of costs and expenditures during the preceding month. Such bills will be accompanied by statements in detail of all charges and credits to the joint account.

3. PAYMENTS BY NON-OPERATOR

Each party shall pay its proportions of all such bills within fifteen (15) days after receipt thereof. If payment is not made within such time, the unpaid balance shall bear interest at the rate of six percent (6%) per annum until paid.

4. ADJUSTMENTS

Payment of any such bills shall not prejudice the right of Non-Operator to protest or question the correctness thereof. Subject to the exception noted in Paragraph 5 of this Section I, all statements rendered to Non-Operator by Operator during any calendar year shall conclusively be presumed to be true and correct after twenty-four (24) months following the end of any such calendar year, unless within the said twenty-four (24) month period Non-Operator takes written exception thereto and makes claim on Operator for adjustment. Failure on the part of Non-Operator to make claim on Operator for adjustment within such period shall establish the correctness thereof and preclude the filing of exceptions thereto or making of claims for adjustments thereon. The provisions of this paragraph shall not prevent adjustments resulting from physical inventory of property as provided for in Section VI, Inventories, hereof.

5. AUDITS

A Non-Operator, upon notice in writing to Operator and all other Non-Operators shall have the right to audit Operator's accounts and records relating to the accounting hereunder for any calendar year within the twenty-four (24) month period following the end of such calendar year, provided, however, that Non-Operator must take

written exception to and make claim upon the Operator for all discrepancies disclosed by said audit within said twenty-four (24) month period. Where there are two or more Non-Operators, the Non-Operators shall make every reasonable effort to conduct joint or simultaneous audits in a manner which will result in a minimum of inconvenience to the Operator.

## II. DEVELOPMENT AND OPERATING CHARGES

Subject to limitations hereinafter prescribed, Operator shall charge the joint account with the following items:

### 1. RENTALS AND ROYALTIES

Deleted

### 2. LABOR

A. Salaries and wages of Operator's employees directly engaged on the joint property in the maintenance and operation thereof or the drilling or conversion of any disposal well (but not those engaged in the construction thereof), including salaries or wages paid to geologists and other employees who are temporarily assigned to and directly employed on the System.

B. Operator's cost of holiday, vacation, sickness and disability benefits, and other customary allowances applicable to the salaries and wages chargeable under Subparagraph 2 A and Paragraph 11 of this Section II. Costs under this Subparagraph 2 B may be charged on a "when and as paid basis" or by "percentage assessment" on the amount of salaries and wages chargeable under Subparagraph 2 A and Paragraph 11 of this Section II. If percentage assessment is used, the rate shall be based on the Operator's cost experience.

C. Costs of expenditures or contributions made pursuant to assessments imposed by governmental authority which are applicable to Operator's labor cost of salaries and wages as provided under Subparagraphs 2 A, 2 B and Paragraph 11 of this Section II.

### 3. EMPLOYEE BENEFITS

Operator's current cost of established plans for employees' group life insurance, hospitalization, pension, retirement, stock purchase, thrift, bonus and other benefit plans of a like nature, applicable to Operator's labor cost, provided that the total of such charges shall not exceed ten percent (10%) of Operator's labor costs as provided in Subparagraph A and B of Paragraph 2 of this Section II and in Paragraph 11 of this Section II.

### 4. MATERIAL

Material, equipment and supplies purchased or furnished by Operator for use of the joint property. So far as it is reasonably practical and consistent with efficient and economical operation, only such material shall be purchased for or transferred to the joint property as may be required for immediate use; and the accumulation of surplus stocks shall be avoided.

## 5. TRANSPORTATION

Transportation of employees, equipment, material and supplies necessary for the development, maintenance, and operation of the joint property of the System, subject to the following limitations:

A. If material is moved to the joint property from vendor's or from the Operator's warehouse or other properties, no charge shall be made to the joint account for a distance greater than the distance from the nearest reliable supply store or railway receiving point where such material is available, except by special agreement with Non-Operator.

B. If surplus material is moved to Operator's warehouse or other storage point, no charge shall be made to the joint account for a distance greater than the distance from the nearest reliable supply store or railway receiving point, except by special agreement with Non-Operator. No charge shall be made to the joint account for moving material to other properties belonging to Operator, except by special agreement with Non-Operator.

## 6. SERVICE

### A. Outside Services:

The cost of contract services and utilities procured from outside sources.

### B. Use of Operator's Equipment and Facilities:

Use of and service by Operator's exclusively owned equipment and facilities as provided in Paragraph 5 of Section III entitled "Operator's Exclusively Owned Facilities".

## 7. DAMAGES AND LOSSES TO JOINT PROPERTY AND EQUIPMENT

All costs or expenses necessary to replace or repair damages or losses incurred by fire, flood, storm, theft, accident or any other cause not controllable by Operator through the exercise of reasonable diligence. Operator shall furnish Non-Operator written notice of damages or losses incurred as soon as practicable after report of the same has been received by Operator.

## 8. LITIGATION EXPENSE

All costs and expenses of litigation, or legal services otherwise necessary or expedient for the protection of the joint interest, including attorneys' fees and expenses as hereinafter provided, together with all judgments obtained against the parties or any of them on account of the joint operations under this agreement, and actual expenses incurred by any party or parties hereto in securing evidence for the purpose of defending against any action or claim prosecuted or urged against the joint account or the subject matter of this agreement.

A. If the Legal Committee, in compliance with the terms of the Articles of Agreement, so provides, actions or claims affecting the joint interest hereunder may be handled by the legal staff of one or more of the parties hereto; and a charge commensurate with cost of providing and furnishing such services rendered may be made against the joint account; but no such charge shall be made until approved by the Legal Committee.



B. Except as otherwise provided for in the Articles of Agreement, fees and expenses of outside attorneys shall not be charged to the joint account unless such fees and expenses have been authorized by the Committee or Legal Committee.

9. TAXES

All taxes of every kind and nature assessed or levied upon or in connection with the properties which are the subject of this agreement, the production therefrom or the operation thereof, and which taxes have been paid by the Operator for the benefit of the parties hereto.

10. INSURANCE AND CLAIMS

A. Premiums paid for insurance required to be carried for the benefit of the joint account, together with all expenditures incurred and paid in settlement of any and all losses, claims, damages, judgments and other expenses, including legal services, not recovered from insurance carrier.

B. If no insurance is required to be carried, all actual expenditures incurred and paid by Operator in settlement of any and all losses, claims, damages, judgments, and any other expenses, including legal services shall be charged to the joint account.

11. OVERHEAD

A. OPERATOR'S GREAT BEND, KANSAS OFFICE

In lieu of any charges for any part of the compensation and expenses of the staff of Operator located at Operator's principal business office in Great Bend, Kansas, together with the costs of operating and maintaining such office, but not in lieu of the cost and expense of acquiring leases, rights-of-way, or the cost and expense of surveying as provided for in Paragraphs 14 and 15 of this section or any other expenses of the Operator incurred in the construction and operation of the System, the Operator shall have the right to charge against the joint account the following overhead charge

1. Water Disposal Wells: At the rate of Six Hundred Dollars per month per well during the time a water disposal well is being drilled, equipped, and completed (including the acquisition and installation of equipment) or a previously drilled well is being converted for use as a water disposal well, beginning on the date that the drilling or conversion operations are commenced, and terminating when said well has been completed and equipped, to and including the well head connection, as a water disposal well or plugged, except that no charge shall be made during the suspension of drilling, conversion, equipping, or completion operations for fifteen (15) or more consecutive days. This overhead rate per well shall also apply after the completion of any disposal well to any work thereon requiring the use of drilling tools. All assessments for overhead herein shall be apportioned to the parties hereto on the same basis as the costs of the work covered hereby are assessed.

2. During Construction Period 7% of the gross debits of the direct costs of the construction of the System (excluding, however, the cost of acquiring any producing or non-producing well or wells for the purpose of converting into a water input disposal well and also excluding any costs incurred in connection with the drilling or conversion of, or work requiring the use of drilling tools on, any disposal well for which a flat monthly rate of overhead is charged in the preceding paragraph), and shall be apportioned to the parties in the same manner as other construction costs.

3. During Operating Period: In addition to the direct expense incident to the operation of the System, there shall be assessed, each month, by Operator, a charge for overhead of 5% of the gross debits of the total monthly operating costs, (excluding, however, any costs incurred on any disposal well in connection with work requiring the use of drilling tools for which a flat monthly rate of overhead is charged in Paragraph A hereof), but in any event said monthly assessment shall not be less than \$150/per disposal well per month, and shall be apportioned to the parties in the same manner as other operating costs.

B. OPERATOR'S HOBBS, NEW MEXICO OFFICE

The cost of operation of the Operator's Hobbs, New Mexico office including, but not limited to, the compensation and expenses of the staff of this office, together with the costs of operating and maintaining such office, shall be divided pro rata between the various systems handled out of this office according to the amount of personnel time allocated to each system. During the construction period of the System the portion of the Hobbs office cost allocated to the construction share of the System, except for lease and right-of-way acquisition and surveying as provided for in Section II, Paragraphs 14 and 15 hereof, will not be charged to the System but will be considered to be covered under the overhead provisions of Section II, Paragraph 11, Subparagraph "A (1)" and "A (2)" above. The portion of the Hobbs office cost allocated to operating the System will be charged as a direct cost and will not be covered under the overhead provisions of Section II, Paragraph 11, Subparagraph "A (3)" above which is intended for the Great Bend, Kansas, office only.

12. ADMINISTRATIVE OVERHEAD

Deleted

13. OPERATOR'S FULLY OWNED WAREHOUSE OPERATING AND MAINTENANCE EXPENSE

None

14. LEASE AND RIGHTS-OF-WAY ACQUISITION:

The cost of acquiring leases and rights-of-way is not covered by the overhead provisions of Section II, Paragraph 11, and the Operator will make direct charges of these expenses which may include a portion of the compensation and expenses of the staff of the Operator located in the principal business office in Great Bend, Kansas, as well as a portion of the compensation and expenses of the staff of the Operator located in the Hobbs, New Mexico office.

15. SURVEYING

The cost of surveying is not covered by the overhead provisions of Section II, Paragraph 11 and the Operator will make a direct charge for surveying.

16. OTHER EXPENDITURES

Any expenditure, other than expenditures, which are covered and dealt with by the foregoing provisions of this Section II, incurred by the Operator for the necessary and proper development, maintenance and operation of the joint property.

### III. BASIS OF CHARGES TO JOINT ACCOUNT

#### 1. PURCHASES

Material and equipment purchased and service procured shall be charged at price paid by Operator after deduction of all discounts actually received.

#### 2. MATERIAL FURNISHED BY OPERATOR

Material required for operations shall be purchased for direct charge to joint account whenever practicable, except that Operator may furnish such material from Operator's stocks under the following conditions:

##### A. New Material (Condition "A")

- (1) New material transferred from Operator's warehouse or other properties shall be priced f.o.b. the nearest reputable supply store or railway receiving point, where such material is available, at current replacement cost of the same kind of material. This will include material such as tanks, pumping units, sucker rods, engines, and other major equipment. Tubular goods, two-inch (2") and over, shall be priced on a carload basis effective at date of transfer and f.o.b. railway receiving point nearest the joint account operation, regardless of quantity transferred.
- (2) Other material shall be priced on basis of a reputable supply company's preferential price list effective at date of transfer and f.o.b. the store or railway receiving point nearest the joint account operation where such material is available.
- (3) Cash discount shall not be allowed.

##### B. Used Material (Condition "B" and "C")

- (1) Material which is in sound and serviceable condition and is suitable for reuse without reconditioning shall be classed as Condition "B" and priced at seventy-five percent (75%) of new price.
- (2) Material which cannot be classified as Condition "B" but which
  - (a) After reconditioning will be further serviceable for original function as good secondhand material (Condition "B"), or
  - (b) Is serviceable for original function but substantially not suitable for reconditioning, shall be classed as Condition "C" and priced at fifty percent (50%) of new price.
- (3) Material which cannot be classified as Condition "B" or Condition "C" shall be priced at a value commensurate with its use.
- (4) Tanks, buildings, and other equipment involving erection costs shall be charged at applicable percentage of knocked-down new price.

### 3. PREMIUM PRICES

Whenever materials and equipment are not readily obtainable at the customary supply point and at prices specified in Paragraphs 1 and 2 of this Section III because of national emergencies, strikes or other unusual causes over which the Operator has no control, the Operator may charge the joint account for the required materials on the basis of the Operator's direct cost and expense incurred in procuring such materials, in making it suitable for use, and in moving it to the location, provided, however, that notice in writing is furnished to Non-Operator of the proposed charge prior to billing the Non-Operator for the material and/or equipment acquired pursuant to this provision, whereupon Non-Operator shall have the right, by so electing and notifying Operator within 10 days after receiving notice from the Operator, to furnish in kind, or in tonnage as the parties may agree, at the location, nearest railway receiving point, or Operator's storage point within a comparable distance, all or part of his share of material and/or equipment suitable for use and acceptable to the Operator. Transportation costs on any such material furnished by Non-Operator, at any point other than at the location, shall be borne by such Non-Operator. If, pursuant to the provisions of this paragraph, any Non-Operator furnishes material and/or equipment in kind, the Operator shall make appropriate credits therefor to the account of said Non-Operator.

### 4. WARRANTY OF MATERIAL FURNISHED BY OPERATOR

Operator does not warrant the material furnished beyond or back of the dealer's or manufacturer's guaranty; and in case of defective material, credit shall not be passed until adjustment has been received by Operator from the manufacturers or their agents.

### 5. OPERATOR'S EXCLUSIVELY OWNED FACILITIES

The following rates shall apply to service rendered to the joint account by facilities owned exclusively by Operator:

A. Water, fuel, power, compressor, and other auxiliary services at rates commensurate with cost of providing and furnishing such service to the joint account but not exceeding rates currently prevailing in the field where the joint property is located.

B. Automotive equipment at rates commensurate with cost of ownership and operation. Such rates should generally be in line with the schedule of rates adopted by the Petroleum Motor Transport Association, or some other recognized organization, as recommended uniform charges against joint account operations and revised from time to time. Automotive rates shall include cost of oil, gas, repairs, insurance, and other operating expenses and depreciation; and charges shall be based on use in actual service on, or in connection with, the joint account operations. Truck and tractor rates may include wages and expenses of driver.

C. A fair rate shall be charged for the use of drilling and cleaning out tools and any other items of Operator's fully owned machinery or equipment which shall be ample to cover maintenance, repairs, depreciation, and the service furnished the joint property; provided that such charges shall not exceed those currently prevailing in the field where the joint property is located. Pulling units shall be charged at hourly rates commensurate with the cost of ownership and operation which shall include repairs and maintenance, operating supplies, insurance,

depreciation, and taxes. Pulling unit rates may include wages and expenses of the Operator.

D. A fair rate shall be charged for laboratory services performed by Operator for the benefit of the joint account, such as gas, water, core, and any other analysis and tests; provided such charges shall not exceed those currently prevailing if performed by outside service laboratories.

E. A fair rate may be charged against the joint account for surveying actually performed by the Operator for the benefit of the joint account, however, any charges so made shall not exceed the prevailing rate in the area normally charged by Surveyors for like or similar surveying work.

F. Whenever requested, Operator shall inform Non-Operator in advance of the rates it proposes to charge.

G. Rates shall be revised and adjusted from time to time when found to be either excessive or insufficient.

#### IV. DISPOSAL OF LEASE EQUIPMENT AND MATERIAL

The Operator shall be under no obligation to purchase interest of Non-Operator in surplus new or secondhand material. The disposition of major items of surplus material such as derricks, tanks, engines, pumping units, and tubular goods, shall be subject to mutual determination by the parties hereto; provided Operator shall have the right to dispose of normal accumulations of junk and scrap material either by transfer or sale from the joint property.

##### 1. MATERIAL PURCHASED BY THE OPERATOR OR NON-OPERATOR

Material purchased by either the Operator or Non-Operator shall be credited by the Operator to the joint account for the month in which the material is removed by the purchaser.

##### 2. DIVISION IN KIND

Division of material in kind, if made between Operator and Non-Operator, shall be in proportion to their respective interests in such material. Each party will thereupon be charged individually with the value of the material received or receivable by each party, and corresponding credits will be made by the Operator to the joint account. Such credits shall appear in the monthly statement of operations.

##### 3. SALES TO OUTSIDERS

Sales to outsiders of material from the joint property shall be credited by Operator to the joint account at the net amount collected by Operator from vendee. Any claims by vendee for defective material or otherwise shall be charged back to the joint account if and when paid by Operator.

#### V. BASIS OF PRICING MATERIAL TRANSFERRED FROM JOINT ACCOUNT

Material purchased by either Operator or Non-Operator or divided in kind, unless otherwise agreed, shall be valued on the following basis:

1. New price as used in the following paragraphs shall have the same meaning and application as that used above in Section III, "Basis of Charges to Joint Account".

2. NEW MATERIAL

New material (Condition "A"), being new material procured for the joint account but never used thereon, at one hundred percent (100%) of current new price (plus sales tax if any).

3. GOOD USED MATERIAL

Good used material (Condition "B"), being used material in sound and serviceable condition, suitable for reuse without reconditioning:

A. At seventy-five percent (75%) of current new price if material was charged to joint account as new, or

B. At sixty-five percent (65%) of current new price if material was originally charged to the joint property as secondhand at seventy-five percent (75%) of new price.

4. OTHER USED MATERIAL

Used material (Condition "C"), at fifty percent (50%) of current new price, being used material which:

A. After reconditioning will be further serviceable for original function as good secondhand material (Condition "B"), or

B. Is serviceable for original function but substantially not suitable for reconditioning.

5. BAD-ORDER MATERIAL

Material and equipment (Condition "D"), which is no longer usable for its original purpose without excessive repair cost but is further usable for some other purpose, shall be priced on a basis comparable with that of items normally used for that purpose.

6. JUNK

Junk (Condition "E"), being obsolete and scrap material, at prevailing prices.

7. TEMPORARILY USED MATERIAL

When the use of material is temporary and its service to the joint account does not justify the reduction in price as provided in Paragraph 3B, above, such material shall be priced on a basis that will leave a net charge to the joint account consistent with the value of the service rendered.

VI. INVENTORIES

1. PERIODIC INVENTORIES, NOTICE AND REPRESENTATION

At reasonable intervals, inventories shall be taken by Operator of the joint account material, which shall include all such material as is ordinarily considered controllable by operators of oil and gas properties. Written notice of intention to take inventory shall be given by Operator at least thirty (30) days before any inventory is to begin so that Non-Operator may be represented when any inventory is taken.

Failure of Non-Operator to be represented at an inventory shall bind Non-Operator to accept the inventory taken by Operator, who shall in that event furnish Non-Operator with a copy thereof.

2. RECONCILIATION AND ADJUSTMENT OF INVENTORIES

Reconciliation of inventory with charges to the joint account shall be made by each party at interest, and a list of overages and shortages shall be jointly determined by Operator and Non-Operator.

Inventory adjustments shall be made by Operator with the joint account for overages and shortages, but Operator shall be held accountable to Non-Operator only for shortages due to lack of reasonable diligence.

3. SPECIAL INVENTORIES

Special inventories may be taken, at the expense of the purchaser, whenever there is any sale or change of interest in the joint property; and it shall be the duty of the party selling to notify all other parties hereto as quickly as possible after the transfer of interest takes place. In such cases, both the seller and the purchaser shall be represented and shall be governed by the inventory so taken.

## EXHIBIT D

ATTACHED TO AND MADE A PART OF ARTICLES OF AGREEMENT  
FOR THE VACUUM SALT WATER DISPOSAL SYSTEMLIST OF COMMITTED WELLS  
FOR  
VACUUM SALT WATER DISPOSAL SYSTEM

<u>PARTY</u>	<u>NAME OF LEASE</u>	<u>LEASE DESCRIPTION</u>	<u>WELL NUMBERS</u>
Amerada Petroleum Corporation	State "VC"	S/2 Sec. 36, T17S, R35E	1A
Cities Service	State "K"	NE/4 Sec. 27, T17S, R35E	1SA, 2SA, 3SA, 4SA, 5GL, 6GL, 7GL & 8GL
"	State "BJ"	S/2 Sec. 35, T17S, R35E	1A, 2A & 3A
Continental Oil Company	State "H-35"	NE/4, E/2 NW/4, Sec. 35, T17S, R34E	1G, 2G, 3G, 4G, 5G, 6G, 7A, 8GL, 9A, 10GL & 12GL
Humble Oil & Refining Co.	State "K"	S/2 Sec. 28, E/2 Sec. 32, T17S, R35E	1SA, 2SA, 3SA, 4SA, 5SA, 6SA, 7SA, 8SA, 9SA, 10SA, 11SA, 12SA, 13SA, 14SA, 15SA, 16SA, 17GL, 18GL, 19GL, 20GL, 21GL, 22GL, 23GL, 24GL, 25GL, 26GL, 27GL, 28GL, 29GL, 30GL, 31GL & 32GL
"	State "BO"	E/2 Sec. 12, T18S, R34E	1A, 2A, 3A, 4A, 5A, 6A, 7A & 8A
"	State "BP"	E/2 SW/4, Sec. 7, T18S, R35E	1A & 2A
Mobil Oil Corporation	State "H"	NW/4 NW/4 Sec. 31, T17S, R35E	2GL
"	State "M"	NW/4 Sec. 34, T17S, R35E	1SA, 2SA, 3SA, 4SA, 5Y, 7Y, 8Y, 13GL, 14GL & 15GL
"	State "O"	NW/4 SW/4 Sec. 33, T17S, R35E	1SA
"	State "P"	SE/4 Sec. 22, N/2 NE/4 Sec. 26, T17S, R35E	5A & 6A



<u>PARTY</u>	<u>NAME OF LEASE</u>	<u>LEASE DESCRIPTION</u>	<u>WELL NUMBERS</u>
Mobil Oil Corp. Contd.	State "DD" Unit	N/2 NW/4 Sec. 31, T17S, R35E	1A
Pan American Petroleum Corp.	State "CV"	SW/4, S/2 NW/4 Sec. 25, T17S, R35E	1A, 2A, 4A & 5A
Penrose Production Company	Southern Petr- oleum State "B"	SW/4 SW/4 Sec. 24, T17S, R35E	1SA
"	Scharbauer	NE/4 NW/4 Sec. 25 T17S, R35E	2A
Phillips Petroleum Company	Santa Fe	NW/4 NW/4 Sec. 25, T17S, R35E	48SA & 75A
"	Santa Fe	W/2, S/2 NE/4, E/2 SE/4 Sec. 26, T17S, R35E	11SA, 17SA, 22SA, 23SA, 30SA, 31SA, 34SA, 41SA, 42SA, 43SA, 66A, 67A, 69A, 70A, 71A, 72A, 74A, 76A, 77SA, 79A, 89GL, 94GL & 110GL
"	Santa Fe	S/2 SW/4 Sec. 27, T17S, R35E	7SA, 20SA, 80A, 80GL & 90GL
"	Santa Fe	NW/4, NE/4 NE/4 Sec. 28, T17S, R35E	104GL, 105GL, 107GL & 108GL
"	Santa Fe	NE/4, NE/4 SW/4, N/2 NW/4 Sec. 29, T17S, R35E	103GL, 106GL & 109GL
"	Santa Fe	W/2 SE/4 Sec. 30, T17S, R35E	100GL & 101GL
"	Santa Fe	SW/4 NW/4, NW/4 SW/4, SW/4 SE/4 Sec. 31, T17S, R35E	87A, 87GL, 88GL & 102GL
"	Santa Fe	N/2 NE/4, E/2 SW/4, SW/4 NW/4 Sec. 33, T17S, R35E	21SA, 28SA, 29SA, 32SA, 35SA, 91GL, 92GL, 95GL, 96GL & 97Y
"	Santa Fe	NE/4 Sec. 34, T17S, R35E	18SA, 24SA, 27SA, 44SA, 61A, 64A, 65A, 68A & 113Y
"	Santa Fe	NW/4, SW/4 NE/4 Sec. 35, T17S, R35E	40SA, 78A & 85A
"	Santa Fe	SE/4 Sec. 3, T18S, R35E	114A & 116A
"	Santa Fe	N/2 NW/4, SE/4 NW/4 Sec. 4, T18S, R35E	39SA & 46SA

<u>PARTY</u>	<u>NAME OF LEASE</u>	<u>LEASE DESCRIPTION</u>	<u>WELL NUMBERS</u>
Phillips Petroleum Company Contd.	Santa Fe	N/2 Sec. 5, T18S, R35E	3SA, 8SA, 33SA, 36SA, 38SA, 45SA, 93SA, 98GL, 99GL, 111SA & 112GL
Shell Oil Company	State "A"	NE/4 Sec. 31, T17S, R35E	5GL, 6GL, 7GL & 8GL
"	State "B"	E/2 SE/4 Sec. 30, T17S, R35E	3GL & 4GL
"	State "D"	SW/4 SW/4 Sec. 31, T17S, R35E	1SA & 2GL
"	State "E"	SE/4 SW/4 Sec. 31, T17S, R35E	1SA & 2GL
"	State "F"	S/2 SW/4 Sec. 29, T17S, R35E	3GL & 4GL
"	State "H"	NW/4 SW/4 Sec. 29, T17S, R35E	1SA & 2GL
"	State "I"	SW/4 NW/4 Sec. 29, T17S, R35E	2GL
"	State "M"	SE/4 Sec. 29, T17S, R35E	1GL, 2GL, 3GL & 4GL
"	State "N"	W/2 NE/4, SE/4 NE/4 Sec. 28, T17S, R35E	1SA, 2SA, 3SA, 4GL, 5GL & 6GL
"	State "T"	SE/4 Sec. 33, T17S, R35E	1SA, 2SA, 3SA, 4SA, 9GL & 10GL
"	State "V"	E/2 SE/4 Sec. 27, T17S, R35E	1SA, 2SA, 5GL, 5Y & 6GL
"	State "W"	W/2 SE/4 Sec. 26, T17S, R35E	1A & 2A
"	State "VAA"	SW/4 Sec. 5, T18S, R35E	5SA
"	Swigart	NE/4 SE/4 Sec. 25, T17S, R34E	1SA & 2GL
Sinclair Oil & Gas Company	Lea 946 State	NW/4 Sec. 2, NE/4 Sec. 3, T18S, R35E	1BS, 2BS & 3BS
"	State "A"DE	S/2 SW/4 Sec. 22, T17S, R35E	1SA & 2SA
"	State "B-1576"	SW/4 Sec. 32, T17S, R35E	1SA, 2SA, 3SA, 4SA, 5GL, 6GL, 7GL & 8GL
"	State "M"DE	SE/4 Sec. 29, T17S, R35E	1SA, 2SA, 3SA & 4SA
"	State "W"DE	W/2 SE/4 Sec. 26, T17S, R35E	1SA

<u>PARTY</u>	<u>NAME OF LEASE</u>	<u>LEASE DESCRIPTION</u>	<u>WELL NUMBERS</u>
Skelly Oil Company	Hobbs "N"	N/2 Sec. 8, T18S, R35E	1A, 2A, 3A & 4A
"	State "J"	NE/4 NW/4 Sec. 31, T17S, R35E	1SA & 2GL
"	State "P"	N/2 NW/4 Sec. 33, T17S, R35E	1SA, 2SA, 3GL & 4GL
Sohio Petroleum Company	Humble State	N/2 NE/4 Sec. 12, T18S, R34E	1SA & 2SA
"	Warn State	S/2 SW/4 Sec. 23, T17S, R35E	1SA & 2SA
Standard Oil Company of Texas	State "3-32"	NW/4 Sec. 32, T17S, R35E	1SA, 2SA, 3SA, 4SA, 5GL, 6GL, 7GL & 8GL
"	State "4-25"	E/2 Sec. 25, T17S, R35E	1A
"	State "4-27"	N/2 SW/4, W/2 SE/4, Sec. 27, T17S, R35E	1SA, 2SA, 3SA, 4SA, 5GL, 6Y, 7GL, 8A, 9LT-A, 9UT-GL & 10GL
"	State "5-27"	NW/4 Sec. 27, T17S, R35E	1SA, 2SA, 3SA, 4SA, 5GL, 6GL, 7GL & 8GL
"	State "6-34"	S/2 Sec. 34, T17S, R35E	1SA, 2SA, 3SA, 5A, 6A, 7A, 8A, 9A, 10SA, 11GL & 12SA
"	Vac Edge Unit	W/2 Sec. 3, All of Sec. 4, E/2 Sec. 5, All of Sec. 9 & NW/4 Sec. 10, T18S, R35E	1G-GL, 2A, 2G-GL, 3A, 4A, 5A, 6A, 7A, 8A, 9A, 10A, 11A, 12A, 13A, 14A, 15A, 16A, 17A, 18A & 19A
Texas Pacific Oil Company	State "AF"	SE/4, W/2 SW/4 Sec. 8, T18S, R35E	1A, 1D, 2A & 3WC
Tidewater Oil Company	(GO) State "H"	SW/4 SW/4 Sec. 33, T17S, R35E	2A & 3GL

Key

A - Abo  
BS - Bone Springs

D - Devonian  
G - Grayburg  
GL - Glorieta

SA - San Andres  
WC - Wolfcamp  
Y - Yates

Name		Name		Name	
Address	Ph.	Address	Ph.	Address	Ph.
Remarks:		Remarks:		Remarks:	

6	5	4	3	2	1	6	5	4	3	2	1	6	5	4	3	2	1
7	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12
13	14	15	16	17	18	13	14	15	16	17	18	13	14	15	16	17	18
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31	32	33	34	35	36	31	32	33	34	35	36	31	32	33	34	35	36
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13	14	15	16	17	18	13	14	15	16	17	18	13	14	15	16	17	18
19	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	24
25	26	27	28	29	30	25	26	27	28	29	30	25	26	27	28	29	30
31	32	33	34	35	36	31	32	33	34	35	36	31	32	33	34	35	36

T	R	State or County	T	R	State or County	T	R	State or County
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