CASE 3761: Application of HARLAN PRODUCTION CO. FOR AN UNORTHODOX OIL WELL LOCATION, EDDY COUNTY.

Case Number

3761

Application

Transcripts.

Small Exhibits

ETC.

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 3761
Order No. R-3414

APPLICATION OF HARLAN PRODUCTION
COMPANY FOR AN UNORTHODOX OIL WELL
LOCATION, EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on May 16, 1968, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 20th day of May, 1968, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Harlan Production Company, is the operator of the Harlan Production-Queen Waterflood Project in the Grayburg-Jackson Pool in Sections 16 and 17, Township 17 South, Range 30 East, NMPM, Eddy County, New Mexico.

(3) That the applicant seeks authority to drill its Itz-State Well No. 15, an oil producing well, in said waterflood project at an unorthodox location in the Grayburg-Jackson Pool 1650 feet from the North line and 1325 feet from the West line of Section 16, Township 17 South, Range 30 East, NMPM, Eddy County, New Mexico.

(4) That there is a possibility of oil being swept from the Harlan Production-Queen Waterflood Project Area to adjoining leases to the north.

(5) That waterflood operations are not being conducted on said adjoining leases.

(6) That approval of the proposed location should increase the efficiency of the Harlan Production-Queen Waterflood Project and lessen, to a substantial degree, the aforesaid possible migration of oil from the property operated by the applicant, thereby preventing waste and protecting the correlative rights of the applicant.

(7) That approval of the subject application will afford the applicant the opportunity to produce its just and equitable share of the oil in the pool, and will otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Harlan Production Company, is hereby authorized to drill its Etz-State Well No. 15, an oil producing well, in the Harlan Production-Queen Waterflood Project Area at an unorthodox location in the Grayburg-Jackson Pool 1650 feet from the North line and 1325 feet from the West line of Section 16, Township 17 South, Range 30 East, NMPM, Eddy County, New Mexico.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

DAVID F. CARGO, Chairman

GUYTON B. HAYS, Member

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

esr/

GOVERNOR
DAVID F. CARGO
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

May 20, 1968

Re: Case No. 3761
Order No. R-3414
Applicant:
Harlan Production Company

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

Dear Sir:

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

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Carbon copy of order also sent to:

Hobbs OCC x
Artesia OCC x
Aztec OCC
Other

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 3324
Order No. R-2987

APPLICATION OF NEWMONT OIL COMPANY
FOR AN UNORTHODOX LOCATION, EDDY
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on October 19, 1965, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 27th day of October, 1965, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Newmont Oil Company, is the operator of the West Grayburg Sand Waterflood Project in the Loco Hills Pool, Eddy County, New Mexico.

(3) That the applicant seeks authority to drill an oil producing well in said waterflood project at an unorthodox location in the Loco Hills Pool 990 feet from the South line and 1310 feet from the West line of Section 2, Township 18 South, Range 29 East, NMPM, Eddy County, New Mexico.

(4) That approval of the proposed location should increase the efficiency of the West Grayburg Sand Waterflood Project and

result in greater ultimate recovery of oil, thereby preventing waste.

(5) That approval of the subject application will afford the applicant the opportunity to produce its just and equitable share of the oil in the pool, and will otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Newmont Oil Company, is hereby authorized to drill a producing oil well in the West Grayburg Sand Unit Waterflood Project Area at an unorthodox location in the Loco Hills Pool 990 feet from the South line and 1310 feet from the West line of Section 2, Township 18 South, Range 29 East, NMPM, Eddy County, New Mexico.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

JACK M. CAMPBELL, Chairman

GUYTON B. HAYS, Member

S E A L

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

esr/

Case 3761
Heard 5-16-65
Rec. 5-16-65

1. Grant Harlan Prod. Co. permission to drill a ~~Producing Injection~~ well located 1650/N & 1325/W sec. 16-17S-30E. Chaves N.S.L.. Well shall be cased to the satisfaction of the Artesia District Supervisor.

Thos. A. Dye.

Docket No. 15-68

DOCKET: EXAMINER HEARING - THURSDAY - MAY 16, 1968

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 3760: Application of Union Oil Company of California for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of water produced in the South Vacuum-Devonian Pool into the Devonian formation in the interval from 12,000 feet to 12,180 feet in its John Trigg Lea Federal J Well No. 2 located in Unit P of Section 14, Township 18 South, Range 35 East, Reeves-Devonian Pool, Lea County, New Mexico.

CASE 3761: Application of Harlan Production Company for an unorthodox oil well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill its Etz-State Well No. 15 at an unorthodox location 1650 feet from the North line and 1325 feet from the West line of Section 16, Township 17 South, Range 30 East, Grayburg-Jackson Pool, Eddy County, New Mexico.

CASE 3762: Application of Shannick Oil Company for authority to operate an oil treating plant, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to install a combination chemical and hot-water wash oil treating plant, said plant to be located approximately four miles West of Crossroads, New Mexico, and to purchase, transport, treat, and sell oil, condensate, and sediment oil in connection with the operation of said plant.

CASE 3763: Application of Pan American Petroleum Corporation for salt water disposal, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Dakota formation in the interval from 712 feet to 715 feet in its USG Section 18 Well No. 28, located in Unit O of Section 18, and/or in the interval from 757 feet to 762 feet in its USG Section 19 Well No. 24 located in Unit J of Section 19, both in Township 29 North, Range 16 West, Hogback-Dakota Pool, San Juan County, New Mexico.

CASE 3764: Application of Pan American Petroleum Corporation for lease commingling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle Dakota oil production from its Navajo Tribal USG Section 19 (A) and its Navajo Tribal USG Section 18 (B) leases in Sections 18 and 19 of Township 29 North, Range 16 West, Hogback-Dakota Oil Pool, San Juan County, New Mexico, allocating the production to each lease on the basis of periodic well tests even though there is a difference in over-riding royalty interests between Sections 18 and 19.

CASE 3765: Application of D. J. Simmons for an unorthodox gas well location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of his General Petroleum-Rock Island Well No. 2 at a point 1850 feet from the North line and 810 feet from the West line of Section 24, Township 29 North, Range 9 West, Blanco-Mesaverde Pool, San Juan County, New Mexico, in exception to the pool rules which require locations to be in either the Northeast or Southwest of the Section.

CASE 3766: Application of Tamarack Petroleum Company, Inc., for an amendment to Order No. R-3396, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-3396, which authorized a waterflood project in its South Pearl Queen Unit Area, Pearl Queen Pool, Lea County, New Mexico, to delete the water injection wells previously authorized in Unit B of Section 3, Units G and L of Section 4, Unit I of Section 5, and Unit C of Section 10, and to authorize for water injection its Saunders Federal Well No. 7 in Unit P of Section 5 and its Saunders Federal Well No. 3 in Unit D of Section 10, all in Township 20 South, Range 35 East.

CASE 3767: Application of Mobil Oil Corporation for lease commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle Grayburg-San Andres production from its Bridges State Wells Nos. 8 and 53 located in Units J and H, respectively, of Section 23, with Grayburg-Jackson production from its Bridges State Lease comprising the W/2 of Section 24, all in Township 17South, Range 34 East, Vacuum Grayburg-San Andres Pool, Lea County, New Mexico, allocating the production on the basis of periodic well tests, even though there is a

difference in over-riding royalty interest between Sections 23 and 24.

CASE 3768: Application of Mobil Oil Corporation for a triple completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the triple completion (conventional) of its Bridges State Well No. 126 located in Unit J of Section 11, Township 17 South, Range 34 East, Lea County, New Mexico, in such a manner as to produce oil from the Abo, Upper Pennsylvanian, and Morrow formations, Vacuum Field, through parallel strings of tubing.

BEFORE THE

OIL CONSERVATION COMMISSION OF NEW MEXICO

APPLICATION OF HARLAN PRODUCTION COMPANY FOR APPROVAL OF AN UNORTHODOX WELL LOCATION, GRAYBURG-JACKSON POOL, EDDY COUNTY, NEW MEXICO

Case 3761

A P P L I C A T I O N

Comes now HARLAN PRODUCTION COMPANY and applies to the Oil Conservation Commission of New Mexico for approval of an unorthodox well location for the production of oil from the Queen formation, Grayburg-Jackson Pool, Eddy County, New Mexico, and in support thereof would show the Commission:

1. Applicant is the operator of a waterflood project in the Grayburg-Jackson Pool, Eddy County, New Mexico, approved by the Oil Conservation Commission of New Mexico by its Order No. R-2635.

2. Substantial response has been received to the water injection program instituted in said waterflood project.

3. In order to protect the waterflood project on applicant's Etz-State Lease, applicant proposes to drill a well located 1650 feet from the North line and ~~1320~~ 1325 feet from the West line of Section 16, Township 17 South, Range 30 East, N.M.P.M., Eddy County, New Mexico.

4. The proposed location is necessary to prevent the migration of oil off of applicant's lease as a result of the waterflood project. Reservoir conditions do not allow the efficient movement of water from line injection wells to other producing wells in the project, and applicant has been unable to unitize or share operating costs with the offset operator.

DOCKET MAILED

Date 5/2/68

5. Attached hereto and made a part of this application is a plat showing wells in the waterflood project, offsetting lease ownership, and the proposed well location.

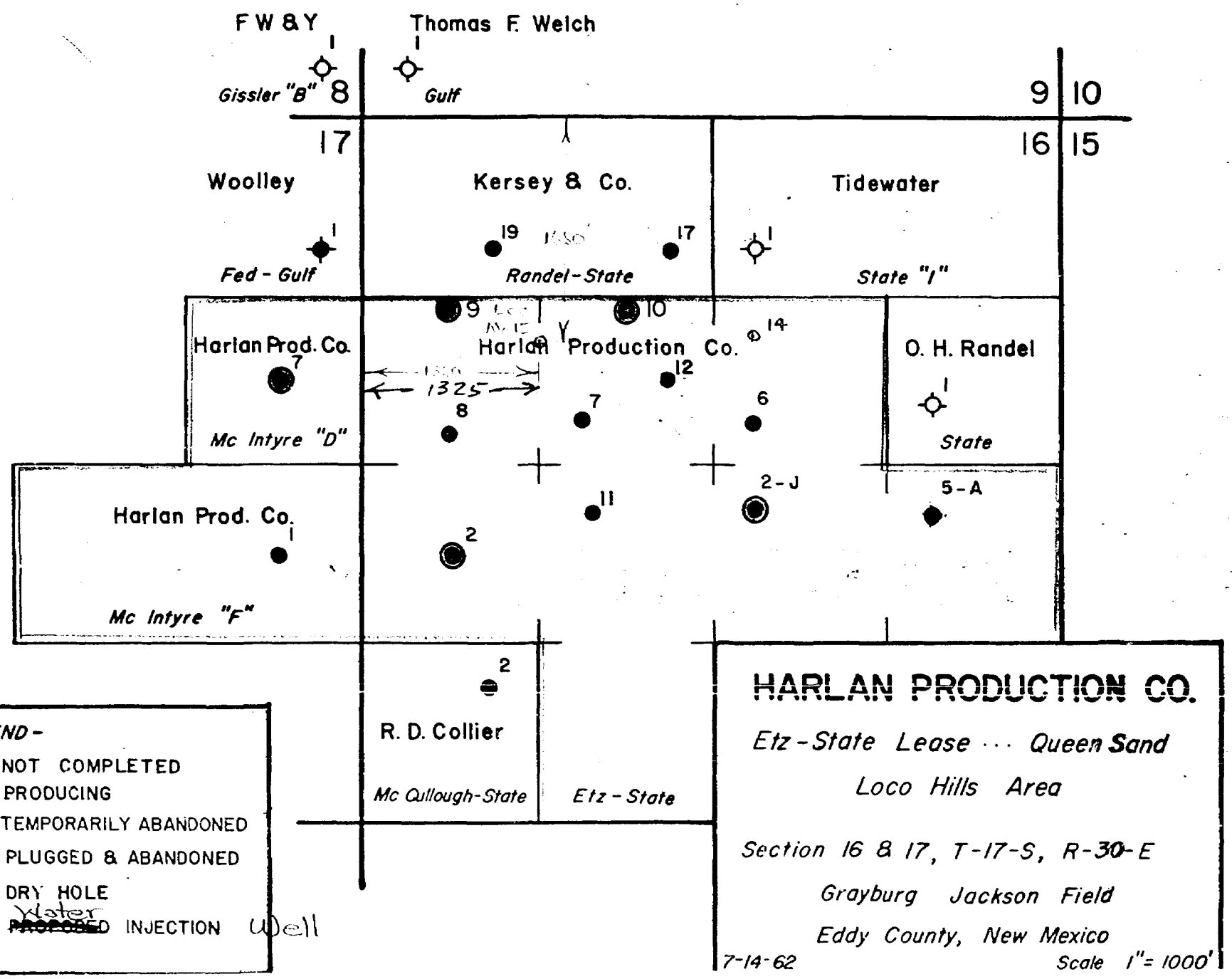
WHEREFORE, applicant prays that this application be set for hearing before the Commission's duly appointed examiner, and that after notice and hearing as provided by law, the Commission enter its order approving the proposed, unorthodox well location.

Respectfully submitted,

HARLAN PRODUCTION COMPANY

BY: Jason W. Kellahin
Kellahin & Fox
P.O. Box 1769
Santa Fe, New Mexico

ATTORNEYS FOR APPLICANT


F W & Y
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Gissler "B" 8
Thomas F. Welch
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Gulf
9
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Woolley
Kersey & Co.
Tidewater
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Randel - State
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Harlan Production Co.
14
O. H. Randel
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Harlan Prod. Co.
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Mc Intyre "F"
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R. D. Collier
Mc Cullough-State
Etz - State
LEGEND -
NOT COMPLETED
PRODUCING
TEMPORARILY ABANDONED
PLUGGED & ABANDONED
DRY HOLE
PROPOSED INJECTION Water Well
HARLAN PRODUCTION CO.
Etz - State Lease ... Queen Sand
Loco Hills Area
Section 16 & 17, T-17-S, R-30-E
Grayburg Jackson Field
Eddy County, New Mexico
7-14-62
Scale 1" = 1000'

Case 3761

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
May 16, 1968
EXAMINER HEARING

IN THE MATTER OF:

Application of Harlan Production Company for an unorthodox oil well location, Eddy County. New Mexico.

Case 3761

BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

MR. UTZ: Case 3761.

MR. HATCH: Case 3761. Application of Harlan Production Company for an unorthodox oil well location, Eddy County, New Mexico.

MR. KELLAHIN: If the Examiner please, Jason Kellahin, Kellahin & Fox, Santa Fe, appearing for the Applicant. I have one witness I would like to have sworn.

(Witness sworn)

MR. UTZ: Other appearances? You may proceed.

JOHN L. HARLAN

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Will you state your name, please?

A John L. Harlan.

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

A In oil production.

Q Where are you located?

A My office is in Monohans, Texas.

Q Mr. Harlan, have you ever testified before the Oil Conservation Commission of New Mexico?

A No, sir.

Q Are you connected with Harlan Production Company?

A Yes, sir, I'm the owner.

Q You're the owner?

A Yes, sir.

Q Is that a corporation?

A No, sir.

Q It's an individual operation?

A Yes, sir.

Q Now, in connection with your ownership of Harlan Production Company, have you had any experience in the operation of waterfloods?

A Yes, sir.

Q Where did you have that experience?

A In Texas principally.

Q Could you be specific on some of the projects you have operated?

A Well, in Ward County, it would be the North Ward-Estes Field and in the South Ward Field in Ward County, then the Apco Field in Pecos County and one other --

Q Did you have this experience over a period of years?

A Yes, sir, since 1952 I put in the first waterflood and started --

Q Now, in connection with the application before the Commission, are you operator of the waterflood project on the Etz Lease?

A Yes, sir.

MR. KELLAHIN: Are the witness's qualifications acceptable?

MR. UTZ: Yes, sir, they are.

Q Briefly, what does Harlan Production Company propose in the application in Case 3761?

A They propose to drill a producing well 330 feet south of the north line of our lease or 1,650 feet south of the north line of Section 16 and which would be approximately equidistant between our No. 9 and No. 10 injection wells which is shown on the plat, Exhibit 2.

(Whereupon, Applicant's Exhibits 1 through 16 marked for identification)

Q Now, the case was advertised for a location 1,650 feet from the north line and 1,325 feet from the west line, is that satisfactory to you?

A Yes, sir.

Q Referring to what has been marked as Exhibit No. 1, will you identify that exhibit, please?

A It's a map of the general area of the Grayburg-

Jackson Field near Loco Hills, New Mexico.

Q Does that show the subject land and the offsetting ownership?

A Yes, sir.

Q Is that a current map showing the present ownership?

A Yes, sir.

Q Now, referring to what has been marked as Exhibit No. 2, would you identify that exhibit?

A This is a map of the waterflood area, an enlarged map, showing the waterflood area of the Queen Sand, which is the only thing that we are flooding at this time.

Q When you say, "waterflood area," this area has not been unitized, has it, Mr. Harlan?

A No, sir, it has not. We attempted to unitize it back in 1964 but were unable to get cooperation from the various offset operators and we then bought the McIntyre D Well from Sinclair and we bought the McIntyre F Well from General American Oil Company but were unable to buy the Kersey and Company Well or the Getty Oil Company Well.

Q In addition to that, you do not own or operate the R.D. Collier Well, do you?

A No, sir.

Q And the O.H. Randall well or that dry hole is not within the area operated --

A No, sir, it was a plugged and abandoned well at the time it was drilled.

Q Now, what is the reason, Mr. Harlan, for the location as proposed by you?

A Well, we are unable to keep the bottom hole pressure in the area low enough to keep the oil from migrating across lease lines.

Q When was this waterflood project commenced?

A I have forgotten the exact month, but it was in 1964.

Q Have you had a substantial response to the flood?

A Yes, sir, we have recovered 87,235 barrels through the month of April on our lease.

Q Is it your opinion that oil is or will migrate off your lease to the Kersey lease?

A Yes, sir, as well as the Getty Oil Company lease.

Q Has there been a response shown on the wells located on those two leases?

A Yes, sir, the Kersey and Getty Wells were making approximately --

Q That's on an exhibit to be presented later, is it not?

A Yes.

Q Well, we will just wait until we come to it then. There has been a substantial response there also?

A Six or eight times what they originally made.

Q Now, the Exhibit No. 2 shows the well location as being 1,320 feet; you propose to move that to 1,325 feet, is that correct?

A Yes, sir.

Q And the exhibit should be corrected to show that?

A Yes.

Q Now, referring to what has been marked as Exhibit No. 3, would you identify that exhibit?

A Well, this is a log of the Queen Sand formation, it's a typical log of the area and it happens to be a log of the Getty Oil Company well as shown on Exhibit 2.

Q On the line just above 2,100 feet you have marked an area in yellow. What is the significance of that?

A That is the Queen Sand Formation.

Q That is the formation presently being flooded?

A Yes, sir.

Q Now, referring to the group of exhibits Numbers

4 through 9, would you go through those exhibits and discuss them?

A Exhibit No. 4 shows the production history of the McIntyre F Well which we acquired from from Sinclair Oil Company prior to the initiating the waterflood and we did begin to get response in November of '65 and did come on up in production reasonably well and is now showing more and more water but it's been a satisfactory well. Exhibit No. 5 shows the Etz State Well of Harlan Production Company and this was an abandoned well that we reentered and recompleted in the Queen Sand Formation and we didn't vigorously try to produce it. It wasn't too good a well at the time, waiting on some flood response. We have lately cleaned it out to bottom again and it's currently making about five barrels of oil a day.

Q It was not producing through January and February, March and April, is that correct?

A No, sir.

Q But it's now being produced?

A Yes, sir.

Q Exhibit No. 6.

MR. UTZ: Let me see, where is that well located, is the main portion --

A It's on the east side of the lease just directly south of the O.H. Randall dry hole.

MR. UTZ: Okay.

Q (By Mr. Kellahin) Now, would you discuss Exhibit No. 6?

A Exhibit No. 6 shows our Etz-State producing well and this is a well that has been a better than average well in the producing area and it is now showing more and more water which is completely normal. It produced 57,000 barrels on primary production and it's now produced 31,055 barrels at this point during the flood, apparently producing about 20 barrels a day.

Q Exhibit No. 7.

A Exhibit No. 7 shows our Etz-State No. 7 well and it produced 38,000 or 39,000 barrels of primary oil and it's produced approximately 19,000 barrels on secondary and the well has been being worked over the last few months. The casing was set high in this well and we have attempted to put a liner in it to shut off some of the open hole and it was unsuccessful and we are not able to set this liner so we could hydraulically fracture this well and it has been put back on production as making about five to seven barrels a day, about where it was before the attempted

workover. We may at a later date want to convert that well to an injection well but that will be applied for later if we do.

Q Now, turning to Exhibit No. 8, would you discuss that one?

A Exhibit No. 8 shows the production history of Etz-State No. 8 Well which is on the eastern side of the lease and this well made 56,000 barrels of primary oil and has produced 14,000 barrels on secondary and this well has been hydraulically fractured in the last 30 days and is now making about 30 barrels of oil per day.

Q Exhibit No. 9.

A Exhibit No. 9 shows production history of Etz-State No. 11 Well which is a newly completed well after the waterflood was started and so has no primary history. It has produced 11,655 barrels under secondary.

Q That is all of the producing wells on your waterflood project, is it not?

A Yes, sir.

Q The productive history would indicate that the flood has passed its peak, would it not?

A Yes, sir, except for some workovers which we think has brought it back to its peak at this time.

Q Now, you are producing large volumes of water. What are you doing with the water?

A We are reinjecting it into the Queen Sand Formation, it's part of the injection.

Q What volumes of water are you presently injecting?

A Approximately a thousand barrels a day.

Q Now, turning to what has been marked as Exhibit No. 10, Mr. Harlan, would you identify that exhibit, please?

A This is a production history of Kersey and Company's Randall-State No. 17. It had produced approximately 29,000 barrels of primary oil and has produced 12,000 barrels of secondary oil. In the months of January and February the well rapidly increased in oil production.

Q Of what year?

A '68 and we started on a program of trying to reduce bottom hole pressure in our leased area by hydraulic fracturing and by drilling Well No. 12 and 14 and are making application for the Well No. 15 to further reduce the bottom hole pressure within our area. This well had gotten up to where it was making slightly over 20 barrels a day and at one point the Kersey well was only making, prior

to the flood, not more than three or four barrels a day and we felt that oil was migrating off of our leased area where we flooded across the lease lines.

Q Now, turning to Exhibit No. 11, what does that show?

A This is Kersey and Company's Randall State No. 19 Well, the adjoining well in Unit D and this well has had approximately the same response from the flood. It had made 28,000 barrels of primary oil and it's made 12,000 secondary oil.

Q Actually, the response came much earlier on that well than it did on the No. 17 well, did it not? It appears that the well had a response sometime in 1967?

A Yes, sir, it appears that it was a little bit better well.

Q Now, do you feel that that response is due solely to the injection program being carried on by Harlan Production Company?

A Yes, sir.

Q Is there any offsetting waterflood that could have any effect on the Kersey and Company wells?

A No, sir.

Q Other than yours?

A No, sir, there is no waterflood within several miles of this formation.

Q Now, turning to the group of exhibits 12 through 16, would you just go through those and discuss each one of them, please?

A These exhibits are showing the injection that's been injected into the various injection wells in the waterflood area. Exhibit 12 is the injection history of McIntyre D No. 7 which is a Federal lease; it is an injection well and this well, we have put 344,000 barrels of water in and the pressure we are currently putting in about 150 barrels a day at 100 pounds pressure. Pressure is a little low in this well; it's abnormally low. Exhibit No. 13 shows the Etz-State No. 2 and this well we have injected 168,000 barrels of water and are currently injecting about 150 barrels a day at 1,450 pounds pressure or thereabouts. Exhibit No. 14 shows the injection history of Etz-State No. 2 in Unit J and there's been 105,000 barrels of water injected into this well; it's reasonably close to our producing well No. 6 and injection has been at a reduced rate. This well has about 90 barrels a day of water injected into it and its average pressure is 550 pounds.

Exhibit No. 15 shows the injection history of Etz State

No. 9 which is the line well drilled 10 feet or the lease line offsetting Kersey and Company's producing lease. This well has had 139,875 barrels injected and we are currently injecting 110 barrels a day at 1,490 pounds. The Etz-State -- Exhibit 16 shows Etz-State No. 10 which is also drilled within 10 feet of the Kersey and Company's line and it has had 336,000 barrels of water injected and it's currently having about 200 barrels of water per day injected at 1,150 pounds pressure and this injection has been reduced from 10,000 barrels a month to 6,000 in the last few months due to the Kersey's wells rapidly increasing in production and as well as the Getty Oil Company well. That well was fractured with 500 barrels of oil initially and they only recovered about 230 barrels of oil that they fractured with and was abandoned and in February the well was found to be flowing from a casing and I'm sure, due to our injection and Getty Oil Company has since put the well on the pump and it's making about 17 barrels of oil per day.

Q Now, all of the wells in your project are on the pump, are they not?

A Yes.

Q Is there any other way you can control the migration of oil off your lease than drilling this well?

A No, sir, we think this is the best way to do it. We have drilled line wells, two lines wells, and may have to drill another one at a later date, but we feel like we have to to keep the formation at a reduced pressure within our lease area to keep the oil from migrating off of it.

Q And that can only be done by producing oil?

A Yes.

Q Are you familiar with the -- pardon me, go ahead.

A That is about it. We thought it would be easily done by drilling a producing well more or less in between our two injection wells that are drilled on the line.

Q Now, are you familiar with the provisions of New Mexico Oil Conservation Commission Rule 701 in regard to the assignment of allowables for waterflood projects?

A Yes, sir.

Q You understand that a well located 1,320 feet from the west and 1,650 feet from the north line of the section will put your well in the same unit with your producing wells 7 and 12?

A Yes.

Q Will that have any effect on your ability to produce the allowable?

A Not at this point because Wells 7 and 12's

combined production is well below the allowable anyway, so I think it will give us some room for production within this 40-acre tract.

Q Were Exhibits 1 through 16 prepared by you or under your supervision?

A Yes, sir.

MR. KELLAHIN: At this time I would like to offer in evidence Exhibits 1 through 16.

MR. UTZ: Without objection, Exhibits 1 through 16 will be entered into the record of this case.

MR. KELLAHIN: That's all I have on Direct Examination, Mr. Utz.

CROSS EXAMINATION

By Mr. Utz:

Q Mr. Harlan, is No. 14 a producing well?

A Yes, sir, it has just been completed. We have not filed even a potential test on it at this time. It was drilled as well as -- along the same program to reduce our bottom hole pressure within our producing area. It appears to be approximately a 50-barrel a day oil well.

Q The Getty State I lease, has that been the subject of a previous hearing here?

A Has it been the subject of a previous hearing?

Q Do you know?

A Well, they didn't object to our waterflood application in the beginning back in 1964. We attempted to get their cooperation at that time.

Q But they have not joined?

A No, sir, they gave us a waiver at the time of the original application.

Q That was a similar situation involving the Getty lease. I can't recall just what it was. I thought it might be this one, but anyway it seems to be real nice of you to help old Paul out here. He's got a 17-barrel well now.

A Yes, I guess he needs it.

Q With reference to your Exhibit No. 11 I notice March and April production on the Kersey Randall State 19 was estimated. What was the reason for that?

A They hadn't reported it to the Commission at that time, I don't believe. My engineer called the Commission in Artesia and was not able to get --

Q About what time was this?

A About two weeks ago. We feel sure that these production figures are correct because his tank battery is actually located on our lease because of pipeline

facilities and we take the water that he produces and we inject it.

Q Is this well still producing at this time?

A Yes, sir.

MR. UTZ: Are there other questions of the witness? Witness may be excused.

(Witness excused)

MR. UTZ: Statements? Case will be taken under advisement.

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

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

Witness my Hand and Seal this 24th day of May, 1968.

Kay Embree
NOTARY PUBLIC

My Commission Expires:

November 19, 1971

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3761, heard by me on May 16, 1968.

Thomas L. Kerr, Jr.
New Mexico Oil Conservation Commission

EXHIBIT # 1
Map of part of Grayburg Jackson Pool, Eddy County, showing Harlan Production Company, flood.

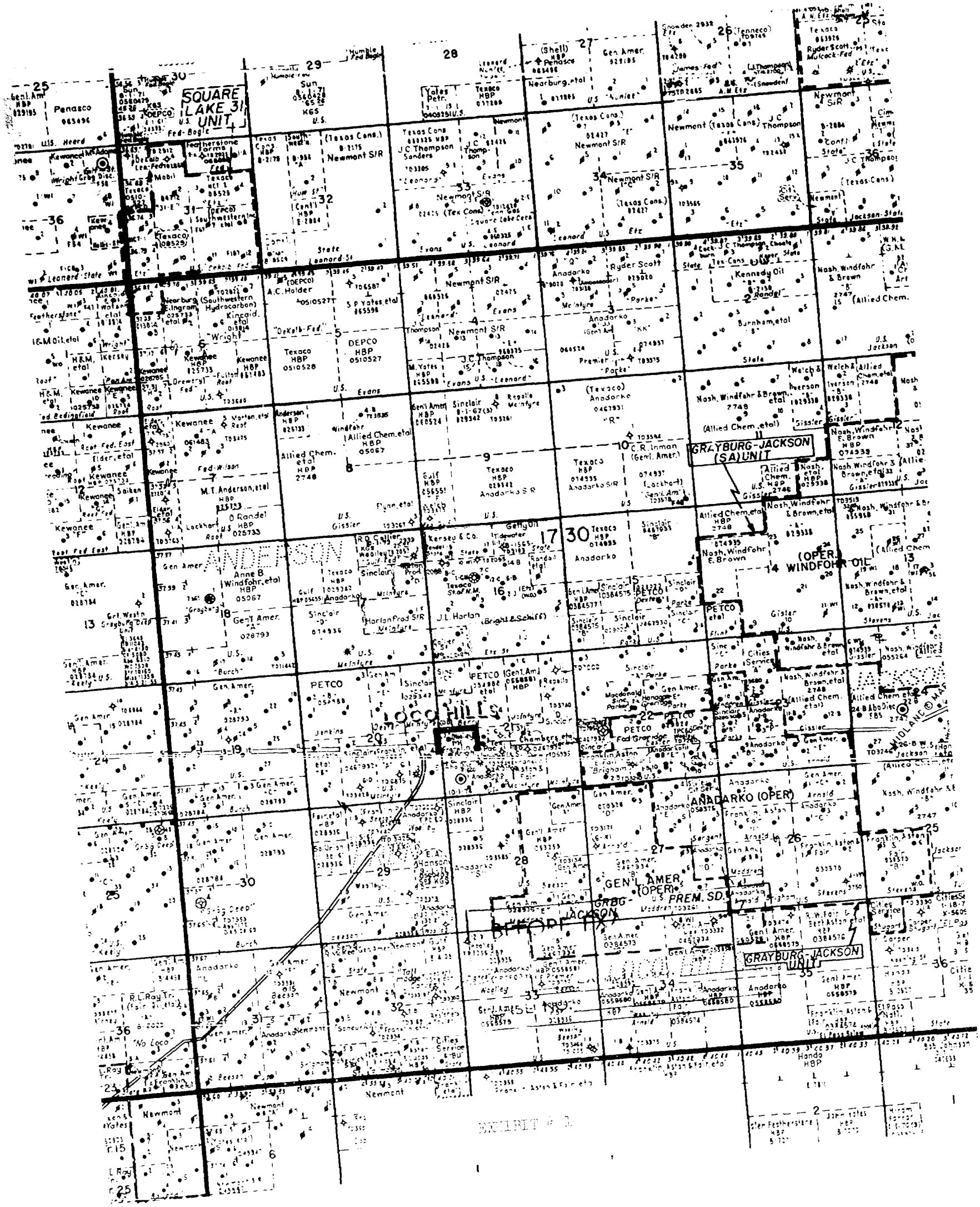
EXHIBIT # 2
Plat showing producing and injection wells of the Queen Sand under flood, also the proposed un-orthodox location , Etz C State, No. 15

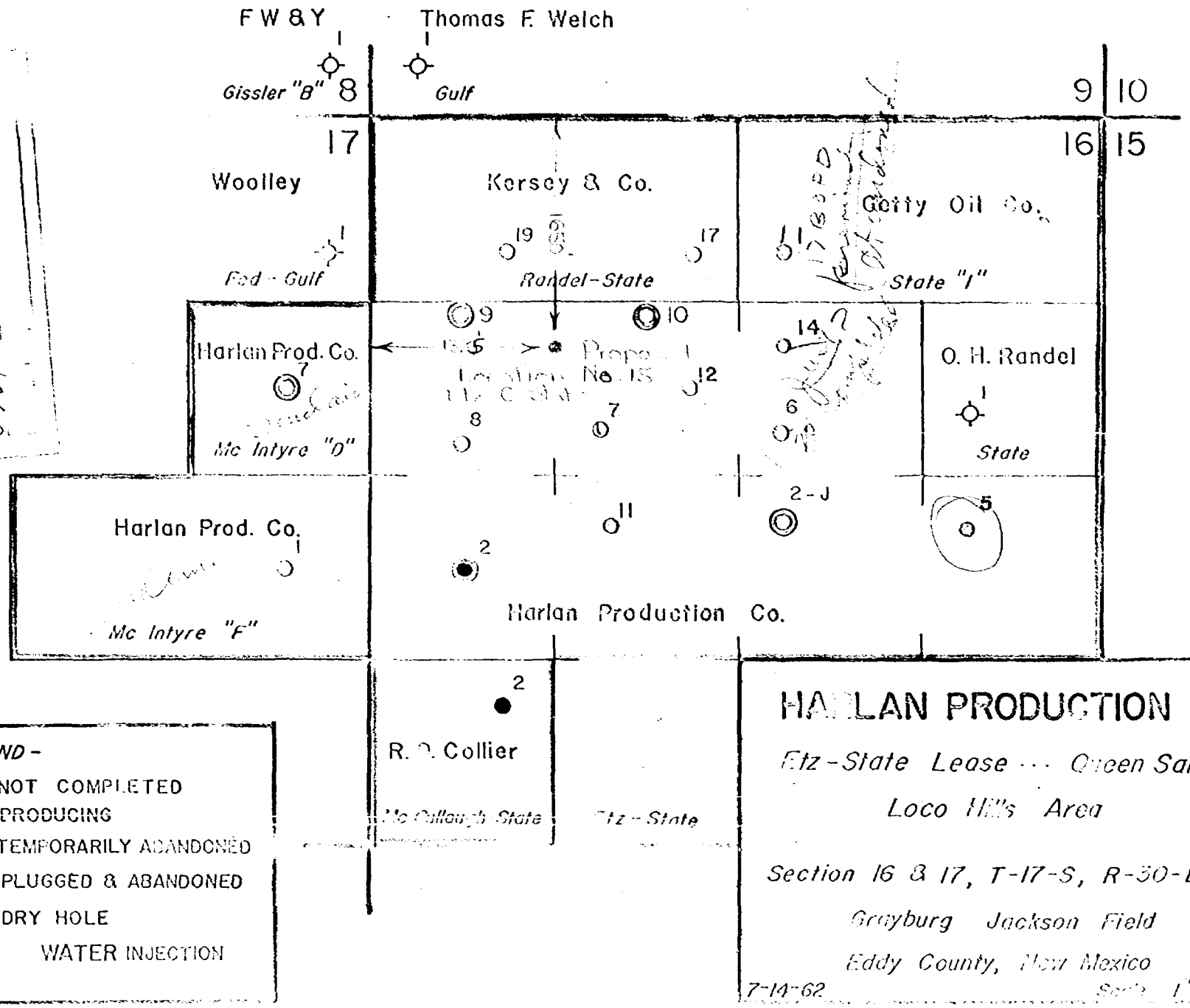
EXHIBIT # 3
Typical log of area showing Queen Sand.

EXHIBIT # 4, through # 9
Production History of Harlan operated producing wells.

EXHIBIT # 10, and # 11
Production History of offset operator, Kersey and Company's wells.

EXHIBIT # 12 through # 16
Injection History of input wells.


SQUARE LAKE 31 UNIT
ANDERSON
LOCO HILLS
GRAYBURG-JACKSON (SA) UNIT
GRAYBURG-JACKSON UNIT
ANADARKO (OPER)
GEN'L AMER (OPER)
PREM. SD.
GRBG-JACKSON
(OPER.) WINDFOHR OIL
MIDLAND MAP
EXHIBIT # 3



LEGEND -

- O NOT COMPLETED
- ◔ PRODUCING
- ◎ TEMPORARILY ABANDONED
- -◇- PLUGGED & ABANDONED
- -◇- DRY HOLE
- ◎ WATER INJECTION

HARLAN PRODUCTION CO.

Etz - State Lease ··· Queen Sand

Loco Hills Area

Section 16 & 17, T-17-S, R-30-E

Grayburg Jackson Field

Eddy County, New Mexico

7-14-62 Scale 1" = 1000'

EXHIBIT # 2

PRODUCTION HISTORY

HARLAN PRODUCTION COMPANY, MCINTYRE "F", NO.1, UNIT I, 17-17-30

	BARRELS PRODUCTION OIL	WATER
Cumulative to July 1964	32,256	
Start Flood		
1964		
July	30	
Aug.	27	
Sept.	15	
Oct.	31	
Nov.	26	
Dec.	31	
1965		
Jan	27	
Feb	23	
Mar.	29	
April	18	
May	31	
June	30	
July	31	
Aug.	34	
Sept.	0	
Oct.	35	
Nov.	76	
Dec.	98	
1966		
Jan.	132	
Feb	123	
Mar.	197	
April	310	
May	432	
June	552	
July	532	
Aug.	687	
Sept.	684	
Oct.	679	
Nov.	637	
Dec.	646	
1967		
Jan.	512	134
Feb.	439	112
Mar.	372	124
April	461	180
May	426	155
June	358	180
July	385	310
Aug.	393	310
Sept	333	270
Oct.	330	310
Nov.	304	330
Dec.	279	403
1968		
Jan.	257	403
Feb	212	348
Mar	181	300
April	196	360
Cumulative Flood recovery to May 1, 1968	11,641	4,229

EXHIBIT NO. 4

PRODUCTION HISTORY

HARLAN PRODUCTION COMPANY ETZ STATE NO. 5, UNIT I 16-17-30

	BARRELS PRODUCTION OIL	WATER
Cumulative to July 1964	17,153	
1964		
July		
Aug.		
Sept.		
Oct.		
Nov.		
Dec.		
1965		
Jan.		
Feb.		
March		
April		
May		
June		
July		
Aug.		
Sept.		
Oct.		
Nov.		
Dec.		
1966		
Jan.		
Feb.		
March		
April		
May		
June		
July		
Aug.		
Sept.	Re-enter & complete abandoned well	
	50	
Oct.	45	
Nov.	38	
Dec.		

	BARRELS PRODUCTION OIL	WATER
1967		
Jan.	26	
Feb	18	
March	20	
April	12	
May	10	
June	15	
July	15	
Aug.	17	
Sept.	20	
Oct.	18	
Nov.	5	
Dec.	6	
1968		
Jan.	0	
Feb.	0	
Mar	0	
April	0	

Cumulative Flood recovery to May 1, 1968 315

EXHIBIT NO. 5

PRODUCTION HISTORY

HARLAN PRODUCTION COMPANY ETZ B STATE NO. 6, UNIT G, 16-17-30

	BARRELS PRODUCTION OIL	WATER
Cumulative to July 1964	57,425	
Start Flood		
1964		
July		
Aug.	110	
Sept.	100	
Oct.	101	
Nov.	100	
Dec.	100	
	106	
1965		
Jan.		
Feb.	72	
Mar.	120	
April	124	
May	141	
June	237	
July	268	
Aug.	300	
Sept.	333	
Oct.	263	
Nov.	286	
Dec.	684	
	1,178	
1966		
Jan.		
Feb.	592	434
March	228	280
April	217	620
May	150	360
June	111	310
July	198	450
Aug.	241	310
Sept.	446	558
Oct.	520	870
Nov.	805	1085
Dec.	1,039	1050
	1,605	620
1967		
Jan.		
Feb.	1,803	775
Mar.	1,456	700
April	1,575	775
May	1,237	1,260
June	1,208	1,240
July	1,408	1,710
Aug.	1,457	1,891
Sept	1,450	2,201
Oct.	1,233	2,640
Nov.	1,275	2,666
Dec.	1,284	2,580
	1,271	2,666
1968		
Jan.		
Feb.	1,200	2,650
Mar.	986	2,784
April	837	2,976
	600	2,400
Cumulative Flood recovery to May 1, 1966	31,055	38,861

EXHIBIT NO. 6

PRODUCTION HISTORY

HARLAN PRODUCTION COMPANY ETZ STATE NO. 7, UNIT F, 16-17-30

	BARRELS PRODUCTION OIL	WATER
Cumulative to July 1964	38,986	
Start Flood		
1964		
July	50	
Aug.	41	
Sept.	44	
Oct.	38	
Nov.	41	
Dec.	50	
1965		
Jan.	35	
Feb.	38	
Mar.	76	
April	73	
May	75	
June	48	
July	60	
Aug.	158	
Sept.	290	
Oct.	431	
Nov.	560	
Dec.	587	
1966		
Jan.	620	
Feb.	560	
Mar.	544	
April	695	
May	837	
June	830	
July	840	
Aug.	837	
Sept	810	
Oct.	1,023	
Nov.	960	
Dec.	930	
1967		
Jan.	896	0
Feb	764	0
March	931	79
April	900	120
May	650	310
June	310	310
July	321	372
Aug.	315	496
Sept.	360	390
Oct.	279	372
Nov	240	360
Dec.	258	372
1968		
Jan.	217	369
Feb.	118	174
Mar.	0	180
April	0	230
Cumulative Flood recovery to May, 1, 1968	18,740	4,134

EXHIBIT NO. 7

PRODUCTION HISTORY

HARLAN PRODUCTION COMPANY ETZ C STATE NO. 8, UNIT E, 16-17-30

	BARRELS PRODUCTION OIL	WATER
Cumulative to July 1964	56,102	
Start Flood		
1964		
July	15	
Aug.	8	
Sept	0	
Oct.	31	
Nov.	32	
Dec.	31	
1965		
Jan.	46	
Feb.	53	
Mar.	75	
April	100	
May	124	
June	71	
July	200	
Aug.	404	
Sept	443	
Oct.	341	62
Nov.	522	60
Dec.	508	62
1966		
Jan.	523	62
Feb.	455	56
Mar.	453	60
April	510	60
May	494	496
June	408	540
July	476	620
Aug.	453	775
Sept	442	900
Oct.	431	992
Nov.	346	990
Dec.	379	1023
1967		
Jan.	384	1,147
Feb.	324	1,036
Mar.	337	1,240
April	312	1,050
May	236	930
June	260	1,035
July	309	1,426
Aug.	306	1,550
Sept	333	1,350
Oct.	343	1,457
Nov.	357	1,350
Dec.	396	1,395
1968		
Jan.	395	1,612
Feb.	354	1,537
Mar	274	1,380
April	535	1,950
Cumulative Flood recovery to May 1, 1968	13,829	28,203

EXHIBIT NO. 8

PRODUCTION HISTORY

HARLAN PRODUCTION COMPANY ETZ STATE NO. 11, UNIT K, 16-17-30

	BARRELS PRODUCTION OIL	WATER
1965		
Jan.		
Feb.		
March		
April		
May		
June		
July		
Aug.		
Sept		
Oct.		
Nov.	New well completed	
Dec.	4, 1965	888
1966		
Jan		
Feb	713	
March	644	
April	642	
May	740	
June	707	
July	720	
Aug.	775	60
Sept.	640	62
Oct.	600	62
Nov.	572	60
Dec.	480	62
	465	60
		124
1967		
Jan.	392	124
Feb.	259	224
March	258	186
April	239	210
May	221	217
June	300	180
July	176	372
Aug.	176	186
Sept	165	180
Oct.	160	124
Nov.	140	180
Dec.	117	186
1968		
Jan.	116	180
Feb.	107	174
March	132	186
April	111	180
Cumulative Flood recovery to May 1, 1968	11,655	3,579

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. _____
CASE NO. _____

EXHIBIT NO 9

PRODUCTION HISTORY

KERSEY & COMPANY, RANDEL STATE NO. 17, UNIT "C", 16-17-30

	Barrels Production OIL	WATER
Cumulative to July 1964	28,989	
1964		
July	211	
Aug.	233	
Sept.	227	
Oct.	230	
Nov.	277	
Dec.	289	
1965		
Jan.	393	
Feb.	231	
Mar.	64	
Apr.	102	
May.	117	
June.	76	
July	69	
Aug.	242	
Sept.	250	
Oct.	155	
Nov.	106	
Dec.	88	
1966		
Jan.	133	-0-
Feb.	124	-0-
Mar.	97	100
Apr.	120	100
May	112	200
June	96	300
July	163	500
Aug.	138	600
Sept.	168	700
Oct.	187	950
Nov.	193	1000
Dec.	217	1200
1967		
Jan.	185	1643
Feb.	387	1400
Mar.	405	1550
Apr.	421	1596
May	419	1530
June	407	1645
July	402	2325
Aug.	549	2576
Sept.	330	2235
Oct.	576	2248
Nov.	354	2175
Dec.	522	2278
1968		
Jan.	520	2279
Feb.	618	1842
Mar.	450	1234
Apr.	380	1500
CUMULATIVE FLOOD RECOVERY TO May 1, 1968	12,033	35,903

EXHIBIT NO. 10

PRODUCTION HISTORY

KERSEY & COMPANY, RANDEL STATE NO. 19, UNIT "D", 16-17-30

	BARRELS PRODUCTION OIL	WATER
Cumulative to July 1964	28,292	
1964		
July	211	
Aug.	233	
Sept.	227	
Oct.	230	
Nov.	277	
Dec.	288	
1965		
Jan.	393	
Feb.	230	
Mar.	64	
Apr.	102	
May	118	
June	76	
July	69	
Aug.	242	
Sept.	250	
Oct.	155	
Nov.	106	
Dec.	87	
1966		
Jan.	133	-0-
Feb.	124	-0-
Mar.	96	100
Apr.	121	100
May	112	200
June	95	300
July	163	500
Aug.	139	600
Sept.	168	700
Oct.	187	950
Nov.	193	1000
Dec.	217	1200
1967		
Jan.	185	1643
Feb.	386	1400
Mar.	406	1550
Apr.	421	1597
May	418	1530
June	408	1845
July	402	2325
Aug.	549	2573
Sept.	329	2235
Oct.	575	2247
Nov.	353	2175
Dec.	522	2279
1968		
Jan.	519	2278
Feb.	618	1841
Mar.	450 *	1234
Apr.	380 *	1500
CUMULATIVE FLOOD RECOVERY TO May, 1, 1968	12,033	35,902

(*) Estimated

EXHIBIT NO. 11

WATER INJECTION HISTORY

HARLAN PRODUCTION COMPANY MCINTYRE "D" NO. 7, UNIT H, 17-17-30

	BARRELS - WATER INJECTED	AVERAGE INJECTION PRESSURE
1964		
July	9,892	VAC
Aug.	5,964	"
Sept	7,224	"
Oct.	8,422	"
Nov.	6,385	"
Dec.	5,144	"
1965		
Jan.	4,760	VAC
Feb.	4,371	"
March	4,888	"
April	4,944	"
May	4,962	"
June	11,584	"
July	11,233	"
Aug.	11,725	"
Sept	8,778	"
Oct.	1,872	"
Nov.	3,412	"
Dec.	7,796	"
1966		
Jan.	11,726	VAC
Feb	12,462	150
March	12,391	150
April	10,766	160
May	11,852	100
June	9,702	150
July	8,882	150
Aug.	9,310	150
Sept.	8,160	150
Oct.	7,955	150
Nov.	7,895	150
Dec.	8,846	150
1967		
Jan.	8,281	VAC
Feb.	8,362	"
March	5,334	"
April	4,674	"
May	5,898	"
June	3,186	"
July	7,216	"
Aug.	7,507	"
Sept	6,864	"
Oct.	7,084	"
Nov.	6,566	"
Dec.	7,266	50
1968		
Jan.	6,879	100
Feb	5,608	100
March	5,624	100
April	4,994	100

Cumulative to May 1, 1968 344,597

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. _____
CASE NO. _____

EXHIBIT NO. 12

WATER INJECTION HISTORY

HARLAN PRODUCTION COMPANY ETZ A STATE NO. 2, UNIT L, 16-17-30

	BARRELS WATER INJECTED	AVERAGE INJECTION PRESSURE
1964		
July	9,407	950
Aug.	4,200	1,100
Sept	5,077	1,250
Oct.	4,379	1,200
Nov.	3,748	1,100
Dec.	3,425	1,000
1965		
Jan.	3,530	1,000
Feb.	3,172	1,000
March	3,411	1,025
April	3,245	1,025
May	3,061	900
June	3,212	1,100
July	3,854	1,200
Aug.	3,291	1,250
Sept	4,104	1,250
Oct.	3,760	1,275
Nov.	3,422	1,275
Dec.	3,336	1,275
1966		
Jan.	3,377	1,200
Feb.	2,918	1,150
March	3,582	1,275
April	3,671	1,400
May	3,753	1,400
June	3,667	1,450
July	3,779	1,450
Aug.	3,722	1,450
Sept.	3,550	1,500
Oct.	3,377	1,500
Nov.	3,107	1,335
Dec.	3,407	1,275
1967		
Jan.	3,298	1,275
Feb	2,895	1,250
March	3,096	1,325
April	3,192	1,340
May	3,280	1,370
June	3,469	1,440
July	3,793	1,500
Aug.	3,599	1,510
Sept.	3,299	1,515
Oct.	3,398	1,485
Nov.	3,247	1,435
Dec.	3,312	1,440
1968		
Jan.	3,122	1,475
Feb.	3,266	1,525
March	3,300	1,490
April	4,774	1,492

Cumulative to
May 1, 1968
167,844

EXHIBIT NO. 13

WATER INJECTION HISTORY

HARLAN PRODUCTION COMPANY ETZ J STATE NO. 2 UNIT J, 16-17-30

	BARRELS - WATER INJECTED	AVERAGE INJECTION PRESSURE
1964		
July		
Aug.		
Sept.		
Oct.		
Nov.		
Dec.		
1965		
Jan.		
Feb		
March		
April		
May		
June		
July		
Aug.		
Sept	8,906	150
Oct.	12,913	150
Nov.	8,880	150
Dec.	6,925	VAC
1966		
Jan.	5,474	VAC
Feb.	2,529	"
March	4,734	"
April	0	"
May	0	"
June	1,325	"
July	0	"
Aug.	5,170	"
Sept	4,190	125
Oct.	4,431	140
Nov.	2,850	140
Dec.	2,077	200
1967		
Jan.	2,082	270
Feb	1,708	245
March	1,393	245
April	2,122	290
May	1,648	220
June	2,174	272
July	2,077	328
Aug.	2,317	512
Sept.	2,156	497
Oct.	1,928	498
Nov.	2,396	586
Dec.	2,408	570
1968		
Jan.	2.137	505
Feb.	2,511	510
March	2,809	538
April	2,809	555
Cumulative to May 1, 1968	105,079	

EXHIBIT NO. 14

WATER INJECTION HISTORY

HARLAN PRODUCTION COMPANY ETZ C STATE NO. 9, UNIT E, 16-17-30

	BARRELS WATER INJECTED	AVERAGE INJECTION PRESSURE
1964		
July	4,393	1,025
Aug.	3,408	1,250
Sept	1,595	1,250
Oct.	1,851	1,200
Nov.	3,289	1,100
Dec.	4,573	1,000
1965		
Jan.	4,748	1,000
Feb.	3,917	1,000
March	3,936	1,025
April	3,376	1,025
May	1,578	900
June	2,417	1,100
July	4,151	1,200
Aug.	3,042	1,250
Sept	3,590	1,250
Oct.	2,809	1,275
Nov.	2,547	1,275
Dec.	2,355	1,275
1966		
Jan.	1,717	1,200
Feb.	744	1,150
March	1,678	1,275
April	2,588	1,400
May	2,682	1,400
June	2,712	1,450
July	2,908	1,450
Aug.	2,917	1,450
Sept.	2,945	1,500
Oct.	2,857	1,500
Nov.	2,425	1,335
Dec.	2,206	1,275
1967		
Jan.	1,984	1,275
Feb.	2,053	1,250
March	2,404	1,325
April	2,288	1,340
May	2,208	1,370
June	3,413	1,440
July	5,121	1,500
Aug.	5,175	1,510
Sept	4,597	1,515
Oct.	4,390	1,485
Nov.	3,796	1,435
Dec.	3,457	1,440
1968		
Jan.	3,218	1,475
Feb.	3,056	1,525
March	3,434	1,490
April	3,291	1,492
Cumulative to May 1, 1968	139,875	

EXHIBIT NO. 15

WATER INJECTION HISTORY

HARLAN PRODUCTION COMPANY ETZ C STATE NO. 10, UNIT F, 16-17-30

	BARRELS - WATER INJECTED	AVERAGE INJECTION PRESSURE
1964		
July	4,288	1,025
Aug.	4,816	1,250
Sept	6,590	1,250
Oct.	5,715	1,200
Nov.	5,447	1,100
Dec.	4,196	1,000
1965		
Jan.	4,857	1,000
Feb.	4,356	1,000
March	4,958	1,025
April	4,266	1,025
May	2,655	900
June	3,492	1,100
July	5,162	1,200
Aug.	5,170	1,250
Sept.	7,599	1,250
Oct.	7,672	1,275
Nov.	8,802	1,275
Dec.	8,535	1,275
1966		
Jan.	10,079	1,200
Feb.	8,670	1,150
March	10,450	1,275
April	10,355	1,400
May	10,325	1,400
June	9,803	1,450
July	9,689	1,450
Aug.	9,961	1,450
Sept.	9,845	1,500
Oct.	9,430	1,500
Nov.	8,073	1,335
Dec.	9,908	1,275
1967		
Jan.	7,234	1,275
Feb.	6,707	1,250
March	8,449	1,325
April	11,229	1,340
May	3,437	1,370
June	7,560	1,440
July	8,946	1,500
Aug.	8,637	1,510
Sept.	8,175	1,515
Oct.	8,494	1,485
Nov.	9,034	1,435
Dec.	10,100	1,440
1968		
Jan	8,933	1,475
Feb.	4,760	1,170
March	3,599	1,005
April	6,105	1,162

Cumulative to May 1, 1968 336,563

EXHIBIT NO. 16