

CASE 5268: Appli. of ANADARKO,
GENERAL AMERICAN & SHENANDOAH
FOR FOUR WATERFLOOD PROJECTS

CASE No.

5268

Application,

Transcripts,

Small Exhibits

ETC.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
July 10, 1974

EXAMINER HEARING

IN THE MATTER OF:)
)
)

Application of Anadarko Production)
Company, General American Oil Company) CASE
of Texas and Shenandoah Oil Corporation) 5268
for four waterflood projects, Eddy)
County, New Mexico.)
)
)

BEFORE: Daniel S. Nutter, Examiner.

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the New Mexico Oil Thomas Derryberry, Esq.
Conservation Commission: Legal Counsel for the Commission
 State Land Office Building
 Santa Fe, New Mexico

For the Applicants: Thomas W. Kellahin, Esq.
 KELLAHIN & FOX
 500 Don Gaspar
 Santa Fe, New Mexico

I N D E X

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DAVID G. KERNAGHAN

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E X H I B I T S

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Admitted

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MR. NUTTER: The Hearing will come to order, please.
We will call the next Case, Number 5268.

MR. DERRYBERRY: Case 5268, application of
Anadarko Production Company, General American Oil Company of
Texas and Shenandoah Oil Corporation for four waterflood
projects, Eddy County, New Mexico.

MR. KELLAHIN: Tom Kellahin of Kellahin and Fox,
appearing on behalf of the Applicants and I have one witness
to be sworn.

(Whereupon, the witness was sworn.)

DANIEL G. KERNAGHAN

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

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

A My name is Dan Kernaghan, I am employed by
Anadarko Production Company as Division Evaluation Engineer.

Q And, you are appearing in this case representing
not only Anadarko Production Company, but General American
Oil Company of Texas and Shenandoah Oil Corporation?

A That is correct.

Q Have you previously testified before this Commission and had your qualifications as an expert made a matter of record?

A Yes, I have.

Q Are you familiar with the facts surrounding this proposed cooperative waterflood project?

A Yes.

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

MR. NUTTER: Yes, they are.

BY MR. KELLAHIN:

Q Mr. Kernaghan, would you please refer to what has been marked as Applicant Exhibit No. 1, identify it and state briefly what the applicants are seeking.

A Okay, this Exhibit 1 is a plat showing the four projects, the total area is outlined in red and colored in yellow, and the four individual projects are shown as Roman numerals one, two, three and four. The plat also shows the surrounding area and the wells in that area. We are asking for permission to initiate waterflood projects using the injection well shown in red on these leases. It will be a cooperative project between Anadarko, General American and Shenandoah. This ties into an existing project

on the north half of Section 15, which is Anadarko's Federal R Lease, expansion of which is anticipated, but can be handled by administrative procedure.

Q This is a lease waterflood as opposed to a waterflood instituted in connection with a unit agreement?

A That is correct. The area to the north was largely developed on this same basis and we are continuing the same pattern as exists in the Square Lake Field.

Q Please refer to what has been marked as Exhibit Number 2 and identify it?

A Exhibit Number 2 is a similar plat showing the proposed injection wells in somewhat more detail, it gives a little clearer picture of the offsetting well.

Q Please refer to Exhibit 3 and summarize for us the production data.

A Okay, Exhibit 3 is production data from inception on all of the wells within the four projects. From the total area we have produced some 360 thousand barrels of oil since 1971 when the first well was completed. This amounts to 16,400 barrels per producing well. The wells are currently producing slightly less than 8 barrels per day per well. These wells are relatively new, they were completed in the Grayburg and/or San Andres using large initial fracture

treatments. The wells came in typically somewhere between 50 and 100 barrels a day and declined very, very rapidly during the first year and are continuing to decline.

Q Please refer to what has been marked as Exhibit 4 and identify it?

A Exhibit 4 is the productive sections of the logs on the injection wells in the area, 10 injection wells. This shows the existing or proposed completion intervals in these wells.

Q Please refer to what has been marked at Exhibit 5 and identify it?

A Exhibit 5 is the diagrammatic sketch of the completion of the 10 enjection wells . We anticipate injecting somewhere around 300 barrels a day of a fresh and/or produced water mixture into these wells at approximately 2,000 pounds surface pressure. We are presently commingling the purchased fresh water and the produced water, but we intend to separate these in the near future. The same plant serving our leases in the Square Lake Field will serve this project.

Q What are your rates, or anticipated rates of injection?

A About 300 barrels a day.

Q Will this be under pressure or gravity?

A No, it will be under pressure.

Q What do you anticipate to be the life of this injection project?

A Approximately 7 years.

Q Please refer to what has been marked as Exhibit 6 and identify it?

A Exhibit 6 is the water contract with Double Eagle for the purchased water, stating that the water will consist exclusively of Ogallala water.

Q Are you aware of what the volume is of produced water now?

A It is somewhere in the neighborhood of several thousand barrels a day, but like I say, the same plant is serving -- the produced water from these leases is commingled with the produced water from our projects to the north and the same plant serves them all, so from the total area it is around several thousand barrels a day, two or three thousand, four thousand, or in that neighborhood. It warrants setting a separate pump for it. These leases themselves make somewhere in the neighborhood of 10 or 15 percent water.

Q Are you requesting administrative procedure whereby you may modify or expand the existing project, including the drilling of additional injection wells and/or producing wells

and the conversion of existing wells to injection, both orthodox locations and unorthodox locations without Notice of Hearing?

A Yes, we are.

Q Will this proposed waterflood project result in the recovery of oil that otherwise would not be recovered?

A Yes, it will.

Q Will the proposed waterflood project adversely affect the correlative rights of others?

A Not to our knowledge, no, it won't.

Q Were Exhibits 1 through 6 and their inclusive parts prepared by you directly or under your direction and supervision?

A Yes, they were.

Q In your opinion, Mr. Kernaghan, has production declined to such a point that you would recommend the instituting of the secondary recovery by waterflood at this point?

A Yes, it has, and we feel that now is the time to institute this waterflood. The indicated permeability of the Grayburg and San Andres through this area is less than that in the older surrounding areas as evidenced by the low productivity and natural completions through here. The

KERNAGHAN-DIRECT
-CROSS

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initial bottom-hole pressures when we started indicated that the area had lost somewhere in the neighborhood of one-third to 40 percent of its original pressure. We feel that this probably contributed to the low primary recovery and that waterflooding will in this case be more beneficial than it would be on wells of similar primary recovery had it encountered an original pressure.

Q In your opinion, then, can these proposed leases be successfully and economically waterflooded?

A Yes, they can.

MR. KELLAHIN: We move the introduction of Applicants' Exhibits 1 through 6.

MR. NUTTER: Applicants' Exhibits 1 through 6 will be admitted into evidence.

(Whereupon, Applicants' Exhibits 1 through 6 were admitted into evidence.)

MR. KELLAHIN: That concludes our direct examination.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Kernaghan, we have four waterflood projects here with three different operators involved, will each operator continue to operate his own leases?

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

A Yes, they will.

Q Now, this is a relatively new area insofar as development is concerned, where was the original development here?

A Anadarko's Well 1"A", Loco Hills Federal 1 "A" in location M of Section 15 --

Q (Interrupting) Section 10, I believe.

A Section 10, I'm sorry, was the first well of the recent development. That well was drilled and completed with a small treatment and was relatively unsuccessful and was re-entered something less than a year later and given a large fracture treatment which proved to be sufficiently successful that it instituted the development of the remainder of that lease and the surrounding leases.

Q Now the development in the Grayburg-Jackson Pool prior to that time was to the southwest, wasn't it?

A Yes, to the south and southwest.

Q Are there waterflood operations being conducted to the south and southwest at the present time?

A Yes, Anadarko had the Grayburg-Jackson unit which flooded the Premier and I believe the Metex zone also.

Q Could you indicate to us where the injection wells are that off set these proposed injection wells?

A That particular project did not off set these proposed injection wells. Windfohr Oil Company's Grayburg-Jackson-San Andres unit off sets Shenandoah's lease, but is flooding the Jackson zone of the San Andres. Now, General American will possibly put some water into the Jackson zone. Our wells don't go that deep. Shenandoah does not intend to at the present time.

Q Then you mentioned a waterflood project in the Square Lake to the north, but there is no direct waterflooding going on off setting this acreage, is there?

A Location "B" of Section 10 is a water injection well.

Q Is that Number 7?

A Yes, our Federal R Number 7. The entire section to the north of that, Section 3 is under flood. Section 2 is Anadarko's Burnham Grayburg-San Andres unit on which water injection started here just a few months ago. In the township to the north, Sections 33, 34, 35, 36, 27, 26, all contain water injection wells, so it is rather complete up through that area, but the nearest injection well in the comparable zone is Well Number 7, is our 7.

Q So as of right now it is not a direct off set to the existing project?

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A That's right, in a correlative zone.

MR. NUTTER: Are there any other questions of Mr. Kernaghan? You may be excused.

Do you have anything further, Mr. Kellahin?

MR. KELLAHIN: No, sir.

MR. NUTTER: Does anyone have anything they wish to offer in Case Number 5268?

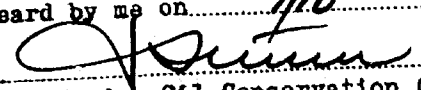
We will take the Case under advisement.

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

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


RICHARD L. NYE, Court Reporter

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 5268, heard by me on 7/10, 1974.


Examiner
New Mexico Oil Conservation Commission

THE NYE REPORTING SERVICE
STATE-WIDE DEPOSITION NOTARIES
225 JOHNSON STREET
SANTA FE, NEW MEXICO 87501
TEL. (505) 982-0376



SHENANDOAH OIL CORPORATION

June 23, 1975

B. J. KELLENBERGER
PRESIDENT

1500 COMMERCE BUILDING
FORT WORTH, TEXAS 76102
817/332-7381
TWX: 910 890 5023

Case # 5268

Oil Conservation Commission
Post Office Box 2088
Santa Fe, New Mexico - 87501

Attention: Mr. J. D. Ramey

Re: Administrative Order No. R-4830
Shenandoah Grayburg-Jackson
Parke Waterflood Project
Eddy County, New Mexico

Dear Sir:

In accordance with Rule 703(a) of the New Mexico Rules and Regulations, this will advise you that water injection was commenced on June 20, 1975 into D. H. Parke "B", Tract "C" Wells No. 6 and No. 7 as authorized under the above captioned Order, Case No. 5268.

Current injection rate into these wells is 300 BWPD with zero wellhead pressure. Injection data will be reported monthly along with the balance of the Parke Waterflood Project authorized under Order R-4133.

Very truly yours,

SHENANDOAH OIL CORPORATION

Donald R. Layton
Donald R. Layton
Manager, Secondary Recovery

DRL:ah

cc: NMOCC - Artesia
USGS - Artesia
Anadarko - Houston, Attn: D.G. Kernaghan
Gen. American - Dallas, Attn: Bill Patterson
C. W. Bellah - Loco Hills, N.M.
Prod. Records - Fort Worth Ofc.



OIL CONSERVATION COMMISSION

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

I. R. TRUJILLO
CHAIRMAN
LAND COMMISSIONER
ALEX J. ARMIJO
MEMBER
STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

July 30, 1974

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

Re: CASE NO. 5268
ORDER NO. R-4830

Applicant:
Anadarko Production, General
American and Shenandoah

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

ALP/ir

Copy of order also sent to:

Hobbs OCC	<u>x</u>
Artesia OCC	<u>x</u>
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. 5268
Order No. R-4830

APPLICATION OF ANADARKO PRODUCTION
COMPANY, GENERAL AMERICAN OIL COMPANY OF
TEXAS AND SHENANDOAH OIL CORPORATION FOR
FOUR WATERFLOOD PROJECTS, EDDY COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on July 10, 1974,
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 30th day of July, 1974, 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 applicants, Anadarko Production Company,
General American Oil Company of Texas and Shenandoah Oil Corpora-
tion, seek authority to institute four waterflood projects in
the Grayburg-Jackson Pool, by the injection of water into the
Grayburg and San Andres formations through injection wells as
follows:

Project No. 1: Anadarko's Loco Hills "A" Federal
lease by the conversion of four wells in Sections 10
and 15 to water injection;

Project No. 2: Anadarko's Loco Hills "B" Federal
lease by the conversion of three wells in Section 9;

Project No. 3: General American Parke "F" lease
by the conversion of one well in Section 10;

Project No. 4: Shenandoah's Parke "B" lease by
the conversion of two wells in Section 15.

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Case No. 5268
Order No. R-4830

(3) That the proposed Project No. 4 is within an area previously approved as a waterflood project, being the Shenandoah Grayburg-Jackson Parke Waterflood Project approved by Order No. R-4133 dated April 19, 1971, and the proposed project should be designated an extension of said project.

(4) That the wells in the project area are in an advanced state of depletion and should properly be classified as "stripper" wells.

(5) That the proposed waterflood projects should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(6) That the operators should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface from injection, production or plugged and abandoned wells.

(7) That the subject application should be approved and the projects should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicants, Anadarko Production Company and General American Oil Company of Texas, are hereby authorized to institute waterflood projects in the Grayburg-Jackson Pool, by the injection of water into the Grayburg-San Andres formation through the following-described wells in Township 17 South, Range 30 East, NMPM, Eddy County, New Mexico:

Project No. 1: Anadarko's Loco Hills "A" Federal lease by the conversion of the following four wells to water injection: Well No. 2 in Unit N of Section 10; Well No. 5 in Unit L of Section 10; Well No. 6 in Unit D of Section 15; Well No. 7 in Unit F of Section 15.

Project No. 2: Anadarko's Loco Hills "B" Federal lease by the conversion of the following three wells in Section 9 to water injection: Well No. 1 in Unit P; Well No. 5 in Unit J; Well No. 7 in Unit N.

Project No. 3: General American's Parke "F" lease by the conversion to water injection of its Well No. 2 in Unit J of Section 10.

(2) That the applicant, Shenandoah Oil Corporation, is hereby authorized to extend its Grayburg-Jackson Parke Waterflood Project in Township 17 South, Range 30 East, Grayburg-Jackson Pool, Eddy County, New Mexico, by the conversion of

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Order No. R-4830

the following two wells in Section 15 to water injection:
Well No. 6 in Unit G; Well No. 7 in Unit A.

(3) That injection into each of said wells shall be through plastic or cement-lined tubing, set in a packer which shall be located as near as practicable to the uppermost perforations, or, in the case of open-hole completions, as near as practicable to the casing-shoe; that the casing-tubing annulus shall be loaded with an inert fluid and equipped with an approved pressure gauge or attention attracting leak detection device.

(4) That the operators shall immediately notify the Supervisor of the Commission's Artesia District Office of the failure of the tubing or packer in any of said injection wells, the leakage of water or oil from around any producing well, or the leakage of water or oil from any plugged and abandoned well within the project area, and shall take such timely steps as may be necessary or required to correct such failure or leakage.

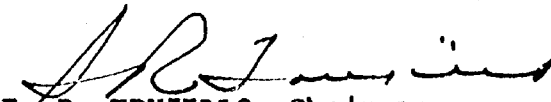
(5) That the three newly authorized subject waterflood projects are hereby designated the Anadarko Grayburg-Jackson Loco Hills "A" Waterflood Project, the Anadarko Grayburg-Jackson Loco Hills "B" Waterflood Project, and the General American Grayburg-Jackson Parke "F" Waterflood Project, respectively, and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(6) That monthly progress reports of the waterflood projects herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.


(7) 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


I. R. TRUJILLO, Chairman

ALEX J. ARMIJO, Member


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

S E A L

dr/

Dockets Nos. 21-74 and 22-74 are tentatively set for hearing on July 24 and August 7. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - JULY 10, 1974

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

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

- ALLOWABLE: (1) Consideration of the allowable production of gas from seventeen prorated pools in Lea, Eddy, Roosevelt, and Chaves Counties, New Mexico, for August, 1974;
- (2) Consideration of the allowable production of gas from five prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico, for August, 1974.

CASE 3608: (Reopened) (Continued from the June 19th Examiner Hearing)

In the matter of Case No. 3608 being reopened pursuant to the provisions of Order No. R-3282, which order established temporary rules for the Carlsbad Permo-Penn Gas Pool, Eddy County, New Mexico, including a provision for 640-acre spacing. All interested parties may appear and show cause why said pool should not be developed on 320-acre spacing units.

CASE 5265: Application of David Fasken for an unorthodox location and a non-standard proration unit, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox gas well location of a well to be drilled to the Morrow formation at a point 1664 feet from the North line and 660 feet from the East line of Section 1, Township 21 South, Range 26 East, Eddy County, New Mexico. Applicant further seeks approval for a 281.3-acre non-standard proration unit for said well comprising all of Lots 1 through 8 of said Section 1.

CASE 5266: Application of David Fasken for an unorthodox location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for an unorthodox gas well location for a well to be drilled to the Morrow formation at a point 1300 feet from the South and West lines of Section 29, Township 20 South, Range 25 East, Cemetery-Morrow Gas Pool, Eddy County, New Mexico, the S/2 of said Section 29 to be dedicated to the well.

CASE 5267: Application of Mark Production Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the E/2 of Section 1, Township 18 South, Range 26 East, Atoka-Pennsylvanian Pool, Eddy County, New Mexico, to be dedicated to a well to be drilled at an orthodox location 990 feet from the South and East lines of said Section 1. Also to be considered will

(Case 5267 continued from Page 1)

be the cost of drilling and completing said well and the allocation of such costs, as well as actual operating costs and charges for supervision. Also to be considered is the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 5268: Application of Anadarko Production Company, General American Oil Company of Texas and Shenandoah Oil Corporation for four waterflood projects, Eddy County, New Mexico. Applicants, in the above-styled cause, seek authority to institute four cooperative waterflood projects by the injection of water into the Grayburg-San Andres formation in Township 17 South, Range 30 East, Grayburg-Jackson Pool, Eddy County, New Mexico as follows:

Project No. 1: Anadarko's Loco Hills "A" Federal lease by the conversion of four wells in Sections 10 and 15 to water injection;

Project No. 2: Anadarko's Loco Hills "B" Federal lease by the conversion of three wells in Section 9;

Project No. 3: General American Parke "F" lease by the conversion of one well in Section 10;

Project No. 4: Shenandoah's Parke "B" lease by the conversion of two wells in Section 15.

CASE 5269: Application of Union Oil Company of California for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Estacado Unit Area comprising 1280 acres, more or less, of State and fee lands in Township 14 South, Range 35 East, Lea County, New Mexico.

CASE 5270: Application of Texaco Inc. for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Morrow formation underlying all of Section 33, Township 24 South, Range 26 East, White City-Pennsylvanian Gas Pool, Eddy County, New Mexico, to be dedicated to applicant's White City Com. Well No. 1 in Unit F of said Section 33.

CASE 5271: Application of Merrion & Bayless for compulsory pooling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Dakota formation underlying the W/2 of Section 13, Township 24 North, Range 6 West, Rio Arriba County, New Mexico, to be dedicated to a well to be drilled at a standard location for said unit in Unit F of said Section 13. Also to be considered will be the cost of drilling and completing said well and the allocation of such costs, as well as actual operating costs and charges for supervision. Also to be considered is the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 5272: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Consolidated Oil and Gas, Inc., United States Fidelity & Guaranty Company and all other interested parties to appear and show cause why the Consolidated Oil and Gas, Inc., Price Well No. 1 located in Unit N, Section 15, Township 31 North, Range 13 West, San Juan County, New Mexico, should not be recompleted as a single-zone well or be plugged and abandoned in accordance with a Commission-approved plugging program.

CASE 5273: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Eastern Petroleum Corporation, United States Fidelity and Guaranty Company and all other interested parties to appear and show cause why the following wells should not be abandoned in accordance with a Commission-approved plugging program:

Castillo #1 located in Unit P, Section 35, Township 20 North, Range 7 West, McKinley County, New Mexico;

Chopup #1 located in Unit N, Section 30, Township 19 North, Range 6 West, McKinley County, New Mexico;

Chacra Mesa #1 located in Unit B, Section 14, Township 19 North, Range 7 West, McKinley County, New Mexico;

Blackjack #1 located in Unit P, Section 12, Township 21 North, Range 9 West, San Juan County, New Mexico;

Pornada #1 located in Unit H, Section 27, Township 18 North, Range 7 West, McKinley County, New Mexico.

CASE 4749: (Reopened)

In the matter of Case No. 4749 being reopened pursuant to the provisions of Order No. R-4338-A, which order continued special rules for the Humble City-Strawn Pool, Lea County, New Mexico. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing.

CASE 4946: (Reopened)

In the matter of Case No. 4946 being reopened pursuant to the provisions of Order No. R-4581, which order established temporary rules for the Crosby-Fusselman Associated Pool, Lea County, New Mexico. All interested parties may appear and show cause why said rules should not be rescinded.

CASE 5110: (Continued from January 16, 1974)

In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider the institution of gas prorationing in

(Case 5110 continued from Page 3)

the Washington Ranch-Morrow Gas Pool, Eddy County, New Mexico, to provide for fixing the total allowable natural gas production from said pool to an amount equal to reasonable market demand and to the capacity of the gas transportation facilities. Also to be considered will be the adoption of special rules and regulations for said pool including a provision for allocating the allowable production among the wells in the pool. NOTE: This case will be continued to the first Examiner Hearing in January, 1975.

CASE 5274: Southeastern nomenclature case calling for the creation, abolishment, and extension of certain pools in Lea, Eddy, and Chaves Counties, New Mexico.

(a) Create a new pool in Eddy County, New Mexico, classified as a gas pool for Wolfcamp production and designated as the Black River-Wolfcamp Gas Pool. The discovery well is Amoco Production Company Herren Federal Gas Com Well No. 1 located in Unit K of Section 7, Township 24 South, Range 27 East, NMPM. Said pool would comprise:

TOWNSHIP 24 SOUTH, RANGE 27 EAST, NMPM
Section 7: SW/4

(b) Create a new pool in Lea County, New Mexico, classified as a gas pool for Morrow production and designated as the Cooper-Morrow Gas Pool. The discovery well is the El Paso Natural Gas Company Cooper Federal Well No. 1 located in Unit F of Section 21, Township 24 South, Range 36 East, NMPM. Said pool would comprise:

TOWNSHIP 24 SOUTH, RANGE 36 EAST, NMPM
Section 21: N/2

(c) Create a new pool in Eddy County, New Mexico, classified as a gas pool for Morrow production and designated as the Malaga-Morrow Gas Pool. The discovery well is Phillips Petroleum Company Malaga A Well No. 1 located in Unit L of Section 2, Township 24 South, Range 28 East, NMPM. Said pool would comprise:

TOWNSHIP 24 SOUTH, RANGE 28 EAST, NMPM
Section 2: W/2

(d) Abolish the Bell Lake-Pennsylvanian Gas Pool in Lea County, New Mexico, described as:

TOWNSHIP 23 SOUTH, RANGE 33 EAST, NMPM
Section 36: SE/4

TOWNSHIP 23 SOUTH, RANGE 34 EAST, NMPM
Section 30: All
Section 31: All

(Case 5274 continued from Page 4)

TOWNSHIP 24 SOUTH, RANGE 33 EAST, NMPM
Section 1: NE/4

TOWNSHIP 24 SOUTH, RANGE 34 EAST, NMPM
Section 6: NW/4

(e) Create a new pool in Lea County, New Mexico, classified as a gas pool for Atoka production with a provision for 160-acre spacing units and designated as the Bell Lake-Atoka Gas Pool. The discovery well is the Continental Oil Company Bell Lake Unit Well No. 2 located in Unit N of Section 30, Township 23 South, Range 34 East, NMPM. Said pool would comprise:

TOWNSHIP 23 SOUTH, RANGE 34 EAST, NMPM
Section 30: SW/4

(f) Create a new pool in Lea County, New Mexico, classified as a gas pool for Atoka production and designated as the South Bell Lake-Atoka Gas Pool. The discovery well is the Continental Oil Company Bell Lake Unit 1 Well No. 4 located in Unit F of Section 6, Township 24 South, Range 34 East, NMPM. Said pool would comprise:

TOWNSHIP 24 SOUTH, RANGE 34 EAST, NMPM
Section 6: W/2

(g) Create a new pool in Lea County, New Mexico, classified as a gas pool for Morrow production with a provision for 160-acre spacing units and designated as the South Bell Lake-Morrow Gas Pool. The discovery well is the Continental Oil Company Bell Lake State 3 Well No. 5 located in Unit G of Section 1, Township 24 South, Range 33 East, NMPM. Said pool would comprise:

TOWNSHIP 23 SOUTH, RANGE 33 EAST, NMPM
Section 36: SE/4

TOWNSHIP 23 SOUTH, RANGE 34 EAST, NMPM
Section 31: SW/4

TOWNSHIP 24 SOUTH, RANGE 33 EAST, NMPM
Section 1: NE/4

(h) Extend the North Bagley-Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 12 SOUTH, RANGE 33 EAST, NMPM
Section 6: NE/4

- (i) Extend the Black River-Pennsylvanian Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 24 SOUTH, RANGE 26 EAST, NMPM
Section 12: SW/4

- (j) Extend the Burton Flat-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 20 SOUTH, RANGE 28 EAST, NMPM
Section 27: N/2

- (k) Extend the Cabin Lake-Strawn Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 30 EAST, NMPM
Section 11: W/2 NE/4

- (l) Extend the Cemetary-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 20 SOUTH, RANGE 25 EAST, NMPM
Section 8: All

- (m) Extend the North Dagger Draw-Upper Pennsylvanian Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 25 EAST, NMPM
Section 17: N/2

- (n) Extend the Eagle Creek-San Andres Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 25 EAST, NMPM
Section 13: W/2 SW/4
Section 28: SW/4
Section 29: S/2

- (o) Extend the Hat Mesa-Morrow Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 21 SOUTH, RANGE 32 EAST, NMPM
Section 10: E/2
Section 11: W/2

- (p) Extend the Loco Hills Queen-Grayburg-San Andres Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 29 EAST, NMPM
Section 23: NE/4 NE/4

(q) Extend the Red Lake-Pennsylvanian Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 27 EAST, NMPM
Section 18: N/2

(r) Extend the Rocky Arroyo-Canyon Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 22 EAST, NMPM
Section 4: S/2
Section 5: S/2

(s) Extend the Townsend-Strawn Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 16 SOUTH, RANGE 35 EAST, NMPM
Section 9: N/2 and SE/4

(t) Extend the Twin Lakes-San Andres Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 8 SOUTH, RANGE 28 EAST, NMPM
Section 36: SW/4 SE/4

(u) Extend the North Vacuum-Abo Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
Section 16: SE/4

(v) Extend the Vada-Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 9 SOUTH, RANGE 33 EAST, NMPM
Section 11: NW/4

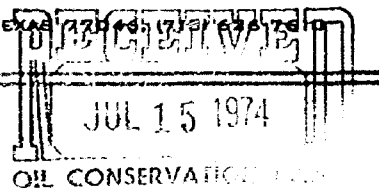
GENERAL OFFICE
P. O. BOX 5317
FORT WORTH, TEXAS 76107



ANADARKO PRODUCTION COMPANY

TWO GREENWAY PLAZA EAST, SUITE 410, HOUSTON, TEXAS 77046

June 17, 1974



Mr. Curtis R. Inman
Box 737
Midland, Texas 79704

Re: Proposed Waiver Letter
Cooperative Waterflood Agreement
Sections 10 and 15
Grayburg-Jackson Field
Eddy County, New Mexico

Dear Mr. Inman:

Enclosed for your information and file is one (1) copy of the Applications by Anadarko, General American, and Shenandoah to the New Mexico Oil Conservation Commission for permission to inject water into the Grayburg and San Andres Formations through various wells as shown on the attached plat.

Please review this application and indicate your approval and waiver of any objections to the proposal by executing two (2) copies of this letter in the space provided below. Upon your execution, one (1) executed copy should be mailed to the New Mexico Oil Conservation Commission, State of New Mexico, Post Office Box 2088, Santa Fe, New Mexico, 87501, and one (1) executed copy should be mailed to the undersigned for our files.

Your cooperation in this matter will be appreciated.

Yours very truly,

D. G. Kernaghan
Division Evaluation Engineer

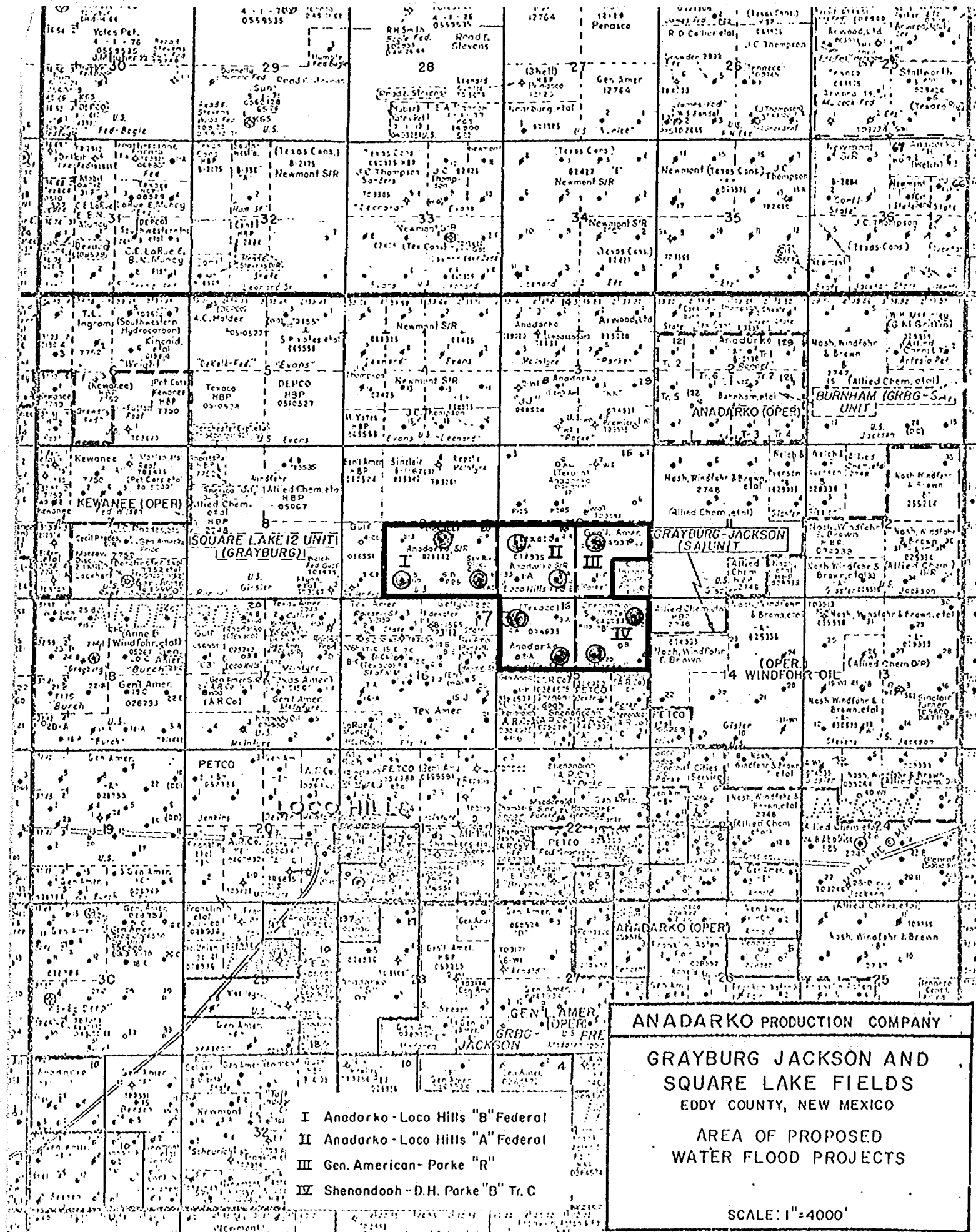
DGK/aw

APPROVED this 9th day of July, 1974

COMPANY: Curtis R. Inman

BY: _____

TITLE: _____

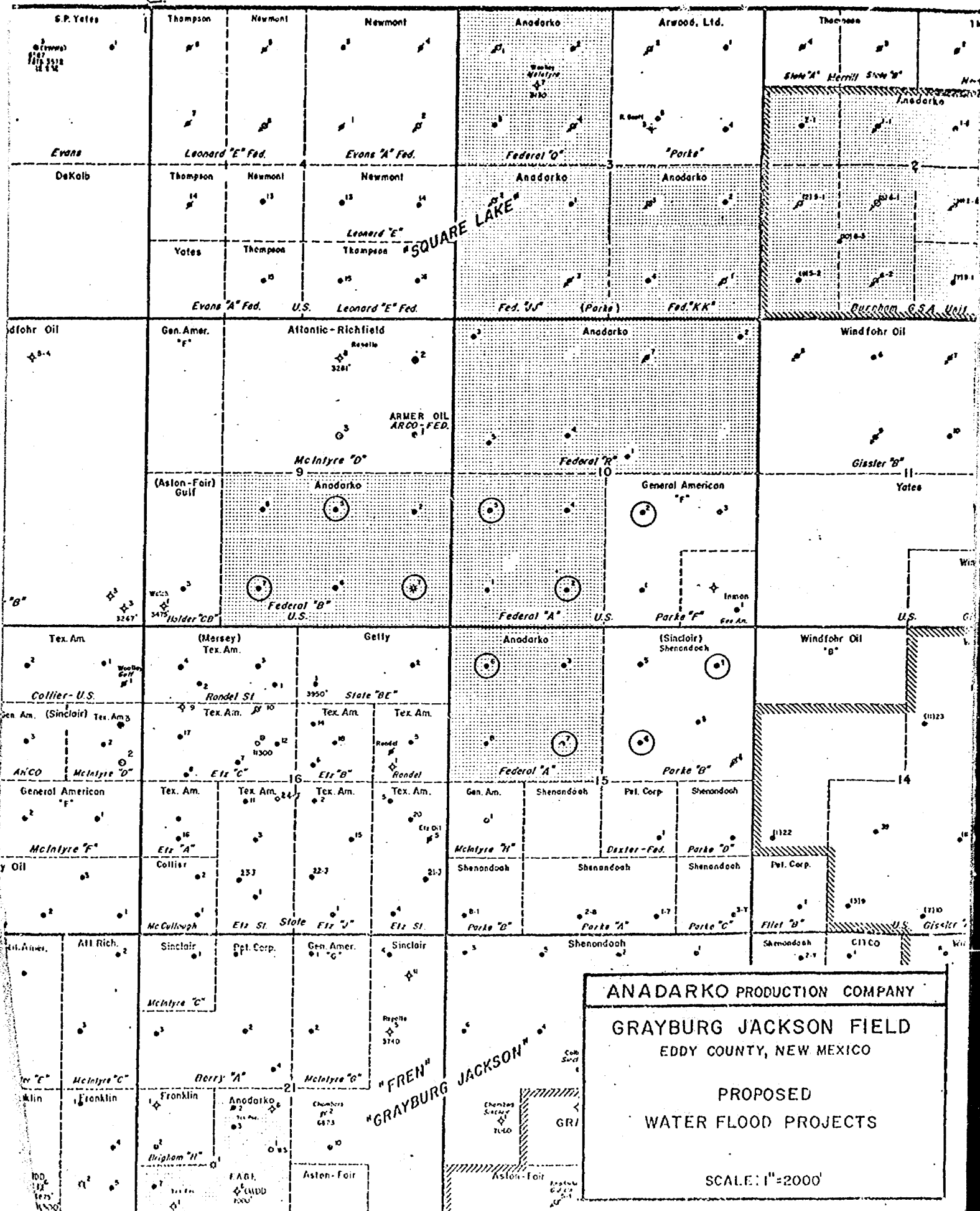


ANADARKO PRODUCTION COMPANY

GRAYBURG JACKSON AND
SQUARE LAKE FIELDS
EDDY COUNTY, NEW MEXICO

AREA OF PROPOSED
WATER FLOOD PROJECTS

SCALE: 1"=4000'



ANADARKO PRODUCTION COMPANY
PRODUCTION DATA

APC - Loco Hills A Federal 1
Grayburg Jackson Field - Eddy County, New Mexico

	Oil Production Bbls.	Gas Production MCF	Salt Water Production Bbls.
<u>1971</u>			
Jan.			
Feb.			
Mar.			
Apr.			
May			
June			
July			
Aug.	151		900
Sept.	562		4,466
Oct.	1,423		994
Nov.	1,177		208
Dec.	1,656		47
Total	4,969		6,615
<u>1972</u>			
Jan.	1,204		
Feb.	1,053		
Mar.	1,784		
Apr.	2,225		
May	2,443	8,018	
June	2,355	7,729	
July	1,075	3,515	
Aug.	438	2,590	
Sept.	325	1,071	
Oct.	336	957	31
Nov.	218	635	29
Dec.	294	444	31
Total	13,750	24,959	91
<u>1973</u>			
Jan.	228	372	
Feb.	212	462	
Mar.	154	299	
Apr.	119	250	
May	122	290	
June	119	230	
July	112	257	
Aug.	126	247	
Sept.	127	308	
Oct.	119	264	15
Nov.	120	229	30
Dec.	130	320	31
Total	1,688	3,528	76
<u>1974</u>			
Jan.	106	299	31
Feb.	62	172	28
Mar.	62	214	31
Apr.	59	193	30

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 3
CASE NO. 5268

ANADARKO PRODUCTION COMPANY
PRODUCTION DATA

APC - Loco Hills A Federal 2
Grayburg Jackson Field - Eddy County, New Mexico

	Oil Production Bbls.	Gas Production MCF	Salt Water Production Bbls.
<u>1971</u>			
Jan.			
Feb.			
Mar.			
Apr.			
May			
June			
July			
Aug.			
Sept.			
Oct.			
Nov.			
Dec.	788		385
Total	788		385
<u>1972</u>			
Jan.	2,238		1,055
Feb.	1,664		1,945
Mar.	2,447		
Apr.	2,228		
May	2,441	8,011	
June	2,355	7,732	
July	1,692	5,532	
Aug.	983	4,079	
Sept.	1,016	3,473	
Oct.	833	3,104	
Nov.	736	2,060	
Dec.	440	2,051	
Total	19,073	36,042	3,000
<u>1973</u>			
Jan.	463	2,231	
Feb.	318	1,850	
Mar.	286	1,481	
Apr.	253	1,420	
May	260	1,655	
June	252	1,314	
July	208	1,290	
Aug.	277	1,470	
Sept.	250	1,643	
Oct.	266	1,596	
Nov.	252	1,298	
Dec.	182	1,208	
Total	3,267	18,456	
<u>1974</u>			
Jan.	170	1,291	
Feb.	149	1,110	
Mar.	142	1,318	
Apr.	129	1,131	

ANADARKO PRODUCTION COMPANY
PRODUCTION DATA

APC - Loco Hills A Federal 3
Grayburg Jackson Field - Eddy County, New Mexico

	Oil Production <u>Bbls.</u>	Gas Production <u>MCF</u>	Salt Water Production <u>Bbls.</u>
<u>1972</u>			
Jan.			
Feb.			
Mar.	1,263		
Apr.	2,200		
May	2,441	8,011	
June	2,355	7,732	
July	1,964	6,425	
Aug.	1,260	4,737	
Sept.	1,386	4,606	
Oct.	701	4,116	
Nov.	597	2,732	
Dec.	531	2,695	
Total	14,698	41,054	
<u>1973</u>			
Jan.	526	2,789	
Feb.	454	2,774	
Mar.	494	2,685	
Apr.	409	2,410	
May	428	2,861	
June	481	2,272	
July	228	1,279	
Aug.	211	1,013	
Sept.	203	1,207	
Oct.	139	754	
Nov.	120	559	
Dec.	219	1,316	
Total	3,912	21,919	
<u>1974</u>			
Jan.	164	1,127	
Feb.	155	1,044	
Mar.	152	1,275	
Apr.	144	1,141	

ANADARKO PRODUCTION COMPANY
PRODUCTION DATA

APC - Loco Hills A Federal 4
Grayburg Jackson Field - Eddy County, New Mexico

	Oil Production Bbls.	Gas Production MCF	Salt Water Production Bbls.
<u>1972</u>			
Jan.			
Feb.			
Mar.	631		
Apr.	2,233		
May	2,441	7,980	
June	2,355	7,698	
July	1,866	6,074	
Aug.	1,403	4,479	
Sept.	1,222	4,396	
Oct.	911	3,929	
Nov.	451	2,608	
Dec.	614	2,505	
Total	14,127	39,669	
<u>1973</u>			
Jan.	542	2,231	
Feb.	421	2,004	
Mar.	328	1,389	
Apr.	238	1,093	
May	245	1,276	
June	269	1,013	
July	363	1,627	
Aug.	198	759	
Sept.	200	950	
Oct.	283	1,228	
Nov.	231	861	
Dec.	195	937	
Total	3,513	15,368	
<u>1974</u>			
Jan.	164	902	
Feb.	114	615	
Mar.	123	827	
Apr.	122	775	

ANADARKO PRODUCTION COMPANY
PRODUCTION DATA

APC - Loco Hills A Federal 5
Grayburg Jackson Field - Eddy County, New Mexico

	Oil Production <u>Bbls.</u>	Gas Production <u>MCF</u>	Salt Water Production <u>Bbls.</u>
<u>1972</u>			
Jan.			
Feb.			
Mar.			
Apr.			
May	2,127	6,147	
June	2,355	6,806	
July	2,048	5,896	
Aug.	2,383	4,349	
Sept.	1,235	3,843	
Oct.	1,130	3,435	
Nov.	991	2,280	
Dec.	1,144	2,196	
Total	13,413	34,952	
<u>1973</u>			
Jan.	1,209	2,417	
Feb.	617	1,387	
Mar.	967	1,934	
Apr.	756	1,639	
May	741	1,822	
June	522	1,447	
July	437	1,439	
Aug.	474	1,336	
Sept.	557	1,944	
Oct.	468	1,492	
Nov.	334	915	
Dec.	385	1,360	
Total	7,467	19,132	
<u>1974</u>			
Jan.	317	1,282	
Feb.	299	1,185	
Mar.	377	1,861	
Apr.	252	1,175	

ANADARKO PRODUCTION COMPANY
PRODUCTION DATA

APC - Loco Hills A Federal 6
Grayburg Jackson Field - Eddy County, New Mexico

	Oil Production Bbls.	Gas Production MCF	Salt Water Production Bbls.
<u>1972</u>			
Jan.			
Feb.			
Mar.			
Apr.	154		
May	2,441	7,535	
June	2,355	7,271	
July	1,935	5,918	
Aug.	1,679	4,364	
Sept.	1,328	4,032	
Oct.	1,185	3,604	
Nov.	760	2,392	
Dec.	787	2,362	
Total	12,624	37,478	
<u>1973</u>			
Jan.	811	2,417	
Feb.	544	1,830	
Mar.	846	2,560	
Apr.	619	2,030	
May	581	2,162	
June	437	1,717	
July	371	1,733	
Aug.	434	1,734	
Sept.	388	1,920	
Oct.	366	1,654	
Nov.	347	1,347	
Dec.	334	1,673	
Total	6,078	22,797	
<u>1974</u>			
Jan.	287	1,645	
Feb.	252	1,416	
Mar.	321	2,248	
Apr.	324	2,143	

ANADARKO PRODUCTION COMPANY
PRODUCTION DATA

APC - Loco Hills A Federal 7
Grayburg Jackson Field - Eddy County, New Mexico

	Oil Production Bbls.	Gas Production MCF	Salt Water Production Bbls.
<u>1972</u>			
Jan.			
Feb.			
Mar.			
Apr.			
May	1,657	3,274	
June	2,355	4,653	
July	1,982	3,901	
Aug.	1,422	2,876	
Sept.	1,163	3,743	
Oct.	1,129	3,345	
Nov.	770	2,220	
Dec.	697	2,204	
Total	11,175	26,216	
<u>1973</u>			
Jan.	680	2,233	
Feb.	683	2,620	
Mar.	733	2,502	
Apr.	666	2,464	
May	521	2,188	
June	384	1,738	
July	308	1,659	
Aug.	628	2,895	
Sept.	360	2,057	
Oct.	310	1,618	
Nov.	426	1,910	
Dec.	331	1,913	
Total	6,030	25,797	
<u>1974</u>			
Jan.	316	2,090	
Feb.	246	1,595	
Mar.	222	1,792	
Apr.	215	1,639	

ANADARKO PRODUCTION COMPANY
PRODUCTION DATA

APC - Loco Hills A Federal 8
Grayburg Jackson Field - Eddy County, New Mexico

	Oil Production	Gas Production	Salt Water Production
	<u>Bbls.</u>	<u>MCF</u>	<u>Bbls.</u>
<u>1972</u>			
Jan.			
Feb.			
Mar.			
Apr.			
May	1,262	2,817	
June	2,355	5,257	
July	2,186	4,859	
Aug.	2,426	3,589	
Sept.	1,443	4,421	
Oct.	1,557	3,951	
Nov.	945	2,623	
Dec.	861	2,523	
Total	13,035	30,040	
<u>1973</u>			
Jan.	1,329	3,905	
Feb.	721	2,466	
Mar.	709	2,158	
Apr.	626	2,066	
May	505	1,892	
June	518	1,505	
July	144	498	
Aug.	399	1,181	
Sept.	306	1,122	
Oct.	283	948	
Nov.	303	872	
Dec.	345	1,280	
Total	6,188	19,893	
<u>1974</u>			
Jan.	332	1,410	
Feb.	355	1,478	
Mar.	218	1,131	
Apr.	218	1,068	

ANADARKO PRODUCTION COMPANY
PRODUCTION DATA

APC - Loco Hills B Federal 1
Grayburg Jackson Field - Eddy County, New Mexico

	Oil Production Bbls.	Gas Production MCF	Salt Water Production Bbls.
<u>1972</u>			
Jan.			
Feb.			
Mar.			
Apr.			
May			
June			
July	312	1,529	
Aug.	590	1,515	
Sept.	1,026	1,677	
Oct.	944	1,234	
Nov.	294	632	
Dec.			
Total	3,166	6,587	
<u>1973</u>			
Jan.	746	1,008	
Feb.	526	738	
Mar.	538	1,089	
Apr.	473	1,341	
May	559	1,146	
June	386	1,259	
July	442	1,534	
Aug.	397	1,218	
Sept.	258	634	
Oct.	163	501	15
Nov.	114	413	16
Dec.	113	214	31
Total	4,715	11,095	62
<u>1974</u>			
Jan.	165	229	31
Feb.	168	211	28
Mar.	180	180	31
Apr.	179	252	30

ANADARKO PRODUCTION COMPANY
PRODUCTION DATA

APC - Loco Hills B Federal 2
Grayburg Jackson Field - Eddy County, New Mexico

	Oil Production Bbls.	Gas Production MCF	Salt Water Production Bbls.
<u>1972</u>			
Jan.			
Feb.			
Mar.			
Apr.			
May			
June	2,370	4,011	
July	1,892	3,065	
Aug.	1,773	4,450	
Sept.	1,390	1,393	
Oct.	1,123	1,025	
Nov.	933	525	
Dec.	831	1,039	
Total	10,312	15,508	
<u>1973</u>			
Jan.	660	825	
Feb.	616	843	
Mar.	585	1,154	
Apr.	206	569	
May	450	486	
June	461	534	
July	565	696	
Aug.	429	467	
Sept.	222	194	
Oct.	193	211	60
Nov.	211	273	56
Dec.	195	132	124
Total	4,793	6,384	240
<u>1974</u>			
Jan.	266	132	124
Feb.	243	110	66
Mar.	312	112	62
Apr.	284	143	60

ANADARKO PRODUCTION COMPANY
PRODUCTION DATA

APC - Loco Hills B Federal 5
Grayburg Jackson Field - Eddy County, New Mexico

	Oil Production	Gas Production	Salt Water Production
	<u>Bbls.</u>	<u>MCF</u>	<u>Bbls.</u>
<u>1972</u>			
Jan.			
Feb.			
Mar.			
Apr.			
May			
June			
July	1,804	3,861	
Aug.	1,972	3,895	
Sept.	1,262	1,669	
Oct.	929	1,228	
Nov.	702	629	
Dec.	916	1,186	
Total	7,585	12,468	
<u>1973</u>			
Jan.	707	912	
Feb.	607	843	
Mar.	526	1,054	
Apr.	464	1,303	
May	440	1,114	
June	378	1,224	
July	356	1,226	
Aug.	373	1,136	
Sept.	239	583	
Oct.	188	574	30
Nov.	129	465	22
Dec.	158	298	62
Total	4,565	10,732	114
<u>1974</u>			
Jan.	192	266	14
Feb.	193	242	
Mar.	268	268	
Apr.	227	319	

ANADARKO PRODUCTION COMPANY
PRODUCTION DATA

APC - Loco Hills B Federal 6
Grayburg Jackson Field - Eddy County, New Mexico

	Oil Production Bbls.	Gas Production MCF	Salt Water Production Bbls.
<u>1972</u>			
Jan.			
Feb.			
Mar.			
Apr.			
May			
June			
July	992	4,117	
Aug.	1,644	4,595	
Sept.	1,245	3,195	
Oct.	1,023	2,351	
Nov.	751	1,204	
Dec.	854	1,533	
Total	6,509	16,995	
<u>1973</u>			
Jan.	771	1,388	
Feb.	633	1,212	
Mar.	625	1,475	
Apr.	574	1,899	
May	599	1,623	
June	430	1,783	
July	418	1,843	
Aug.	411	1,602	
Sept.	320	998	
Oct.	280	1,091	75
Nov.	317	1,459	70
Dec.	228	548	155
Total	5,606	16,921	300
<u>1974</u>			
Jan.	240	424	60
Feb.	224	359	112
Mar.	269	344	124
Apr.	266	478	120

ANADARKO PRODUCTION COMPANY
PRODUCTION DATA

APC - Loco Hills B Federal 7
Grayburg Jackson Field - Eddy County, New Mexico

	Oil Production Bbls.	Gas Production MCF	Salt Water Production Bbls.
<u>1972</u>			
Jan.			
Feb.			
Mar.			
Apr.			
May			
June			
July	569	1,502	
Aug.	2,547	3,310	
Sept.	1,544	2,519	
Oct.	1,708	1,853	
Nov.	1,258	949	
Dec.	1,057	1,187	
Total	8,683	11,320	
<u>1973</u>			
Jan.	1,017	1,139	
Feb.	894	1,054	
Mar.	705	1,199	
Apr.	631	1,504	
May	542	1,286	
June	435	1,413	
July	414	1,431	
Aug.	381	1,164	
Sept.	634	1,550	
Oct.	750	2,294	348
Nov.	510	1,843	448
Dec.	576	1,088	470
Total	7,489	16,965	1,266
<u>1974</u>			
Jan.	391	545	282
Feb.	478	604	336
Mar.	442	446	372
Apr.	406	576	360

ANADARKO PRODUCTION COMPANY
PRODUCTION DATA

APC - Loco Hills B Federal 8
Grayburg Jackson Field - Eddy County, New Mexico

	Oil Production	Gas Production	Salt Water Production
	Bbls.	MCF	Bbls.
<u>1973</u>			
Jan.	272	367	
Feb.	403	580	
Mar.	453	940	
Apr.	238	693	
May	241	593	
June	187	652	
July	183	679	
Aug.	200	656	
Sept.	268	703	
Oct.	253	830	84
Nov.	178	690	84
Dec.	282	571	195
Total	3,158	7,954	363
<u>1974</u>			
Jan.	308	459	75
Feb.	263	355	50
Mar.	328	353	62
Apr.	292	442	60

PRODUCTION DATA

General American - Parke F 1
Grayburg Jackson Field - Eddy County, New Mexico

	Oil Production	Gas Production	Salt Water Production
	<u>Bbls.</u>	<u>MCF</u>	<u>Bbls.</u>
<u>1972</u>			
Jan.			
Feb.			
Mar.			
Apr.	1,508		380
May	647		40
June	649		55
July	875		35
Aug.	2,480	6,291	155
Sept.	2,400	8,190	150
Oct.	2,022	7,316	93
Nov.	1,790	6,659	30
Dec.	1,704	6,606	31
Total	14,075	35,062	969
<u>1973</u>			
Jan.	1,399	5,421	31
Feb.	1,004	4,011	28
Mar.	1,086	4,354	31
Apr.	843	3,760	30
May	947	4,108	31
June	875	3,831	30
July	677	3,300	31
August	615	2,907	31
Sept.	556	2,551	30
Oct.	550	2,369	31
Nov.	547	2,120	30
Dec.	515	2,039	31
Total	9,614	40,771	365
<u>1974</u>			
Jan.	674	2,601	31
Feb.	578	2,282	28
Mar.	531	2,128	31
Apr.	561	2,200	30

PRODUCTION DATA

General American - Parke F 2
Grayburg Jackson Field - Eddy County, New Mexico

	<u>Oil Production</u> Bbls.	<u>Gas Production</u> MCF	<u>Salt Water Production</u> Bbls.
<u>1972</u>			
Jan.			
Feb.			
Mar.			
Apr.	1,033		
May	648		390
June	1,003		40
July	877		85
Aug.	1,859	4,716	35
Sept.	1,350	4,607	155
Oct.	1,027	3,716	150
Nov.	758	2,820	62
Dec.	652	2,527	30
Total	9,207	18,386	31
			978
<u>1973</u>			
Jan.	684	2,650	31
Feb.	502	2,005	28
Mar.	588	2,357	31
Apr.	392	1,748	30
May	440	1,909	31
June	407	1,782	30
July	311	1,515	31
Aug.	283	1,338	31
Sept.	256	1,175	30
Oct.	253	1,090	31
Nov.	251	973	30
Dec.	236	934	31
Total	4,603	19,476	365
<u>1974</u>			
Jan.	208	803	31
Feb.	178	703	28
Mar.	163	653	31
Apr.	172	674	30

PRODUCTION DATA

General American - Parke F 3
Grayburg Jackson Field - Eddy County, New Mexico

	Oil Production Bbls.	Gas Production MCF	Salt Water Production Bbls.
<u>1972</u>			
Jan.			
Feb.			
Mar.			
Apr.			
May			
June	1,238		840
July	2,393		620
Aug.	2,263	5,741	155
Sept.	1,560	5,323	150
Oct.	1,120	4,052	62
Nov.	880	3,274	30
Dec.	612	2,373	31
Total	10,066	20,763	1,888
<u>1973</u>			
Jan.	622	2,410	31
Feb.	474	1,895	28
Mar.	311	1,247	31
Apr.	271	1,209	30
May	304	1,319	31
June	281	1,230	30
July	309	1,506	31
Aug.	281	1,328	31
Sept.	254	1,165	30
Oct.	252	1,085	31
Nov.	250	968	30
Dec.	236	935	31
Total	3,845	16,297	365
<u>1974</u>			
Jan.	285	1,100	31
Feb.	244	963	28
Mar.	224	898	31
Apr.	236	925	30

PRODUCTION DATA

Shenandoah - D. H. Parke B Tract C 4
Grayburg Jackson Field - Eddy County, New Mexico

	Oil Production Bbls.	Gas Production MCF	Salt Water Production Bbls.
<u>1971</u>			
Jan.			
Feb.	3		
Mar.	9		
Apr.	4		
May	10		
June	3		
July			
Aug.			
Sept.			
Oct.			
Nov.			
Dec.			
Total	29		

PRODUCTION DATA

Shenandoah - D. H. Parke B Tract C 5
Grayburg Jackson Field - Eddy County, New Mexico

	Oil Production Bbls.	Gas Production MCF	Salt Water Production Bbls.
<u>1972</u>			
Jan.			
Feb.	3,664		30
Mar.	4,660	10,096	30
Apr.	4,557	10,400	31
May	3,698	10,109	30
June	3,256	10,115	75
July	2,996	8,636	80
Aug.	1,555	8,029	185
Sept.	1,019	6,715	190
Oct.	977	5,393	
Nov.	869	4,947	
Dec.	867	4,958	
Total	28,118	79,398	651
<u>1973</u>			
Jan.	663	4,933	
Feb.	473	4,206	
Mar.	525	4,343	
Apr.	463	4,203	
May	473	4,284	
June	415	3,337	
July	414	4,050	
Aug.	392	3,584	
Sept.	214	2,974	
Oct.	188	2,923	
Nov.	208	2,657	
Dec.	217	2,282	
Total	4,645	43,776	
<u>1974</u>			
Jan.	216	2,344	
Feb.	200	548	
Mar.	186	563	
Apr.	178	492	

PRODUCTION DATA

Shenandoah - D. H. Parke B Tract C 6
Grayburg Jackson Field - Eddy County, New Mexico

	Oil Production Bbls.	Gas Production MCF	Salt Water Production Bbls.
<u>1972</u>			
Jan.			
Feb.			
Mar.	2,087	2,729	30
Apr.	2,106	3,658	30
May	1,247	3,367	31
June	805	3,372	30
July	633	2,834	31
Aug.	444	2,227	40
Sept.	470	1,085	45
Oct.	428	841	620
Nov.	320	608	605
Dec.	236	619	490
Total	8,776	21,340	1,952
<u>1973</u>			
Jan.	247	595	527
Feb.	165	540	476
Mar.	184	677	558
Apr.	146	537	540
May	150	618	558
June	145	479	510
July	138	564	496
Aug.	131	499	403
Sept.	180	414	390
Oct.	188	407	372
Nov.	197	370	360
Dec.	186	318	372
Total	2,057	6,018	5,562
<u>1974</u>			
Jan.	185	326	310
Feb.	167	460	280
Mar.	186	563	310
Apr.	148	409	300

PRODUCTION DATA

Shenandoah - D. H. Parke B Tract C 7
Grayburg Jackson Field - Eddy County, New Mexico

	Oil Production Bbls.	Gas Production MCF	Salt Water Production Bbls.
<u>1972</u>			
Jan.			
Feb.			
Mar.	1,287	818	30
Apr.	2,055	2,013	30
May	1,197	1,723	31
June	755	1,728	90
July	583	1,484	85
Aug.	603	877	109
Sept.	530	750	119
Oct.	488	630	
Nov.	380	397	
Dec.	551	408	
Total	8,429	10,828	494
<u>1973</u>			
Jan.	464	384	31
Feb.	438	308	
Mar.	463	445	
Apr.	416	305	
May	398	385	
June	358	319	
July	351	359	
Aug.	333	318	
Sept.	416	263	
Oct.	366	259	
Nov.	362	235	
Dec.	340	202	
Total	4,705	3,782	31
<u>1974</u>			
Jan.	341	208	
Feb.	317	872	
Mar.	300	909	
Apr.	270	741	

PRODUCTION DATA

Shenandoah - D. H. Parke B Tract C 8
Grayburg Jackson Field - Eddy County, New Mexico

	<u>Oil Production</u> <u>Bbls.</u>	<u>Gas Production</u> <u>MCF</u>	<u>Salt Water Production</u> <u>Bbls.</u>
<u>1972</u>			
Jan.			
Feb.			
Mar.			
Apr.			
May	698	697	30
June	655	702	45
July	570	540	49
Aug.	572	251	205
Sept.	529	180	200
Oct.	487	140	
Nov.	380	120	
Dec.	555	131	
Total	4,446	2,761	529
<u>1973</u>			
Jan.	495	107	31
Feb.	474	86	
Mar.	463	226	
Apr.	416	87	
May	399	167	
June	355	130	
July	351	153	
Aug.	333	136	
Sept.	315	113	
Oct.	304	111	
Nov.	329	101	
Dec.	315	86	
Total	4,549	1,503	31
<u>1974</u>			
Jan.	313	89	
Feb.	280	768	
Mar.	306	927	
Apr.	298	830	



COMPLETION
DENSITY LOG

COMPANY Anadarko
Production Company
WELL Loco Hills
Federal # 2 - 10
FIELD Grayburg-Jackson
County Eddy State N. M.

COMPANY ANADARKO PRODUCTION COMPANY

WELL LOCO HILLS FEDERAL "A" # 2 - 10

FIELD GRAYBURG - JACKSON

COUNTY EDDY STATE NEW MEXICO

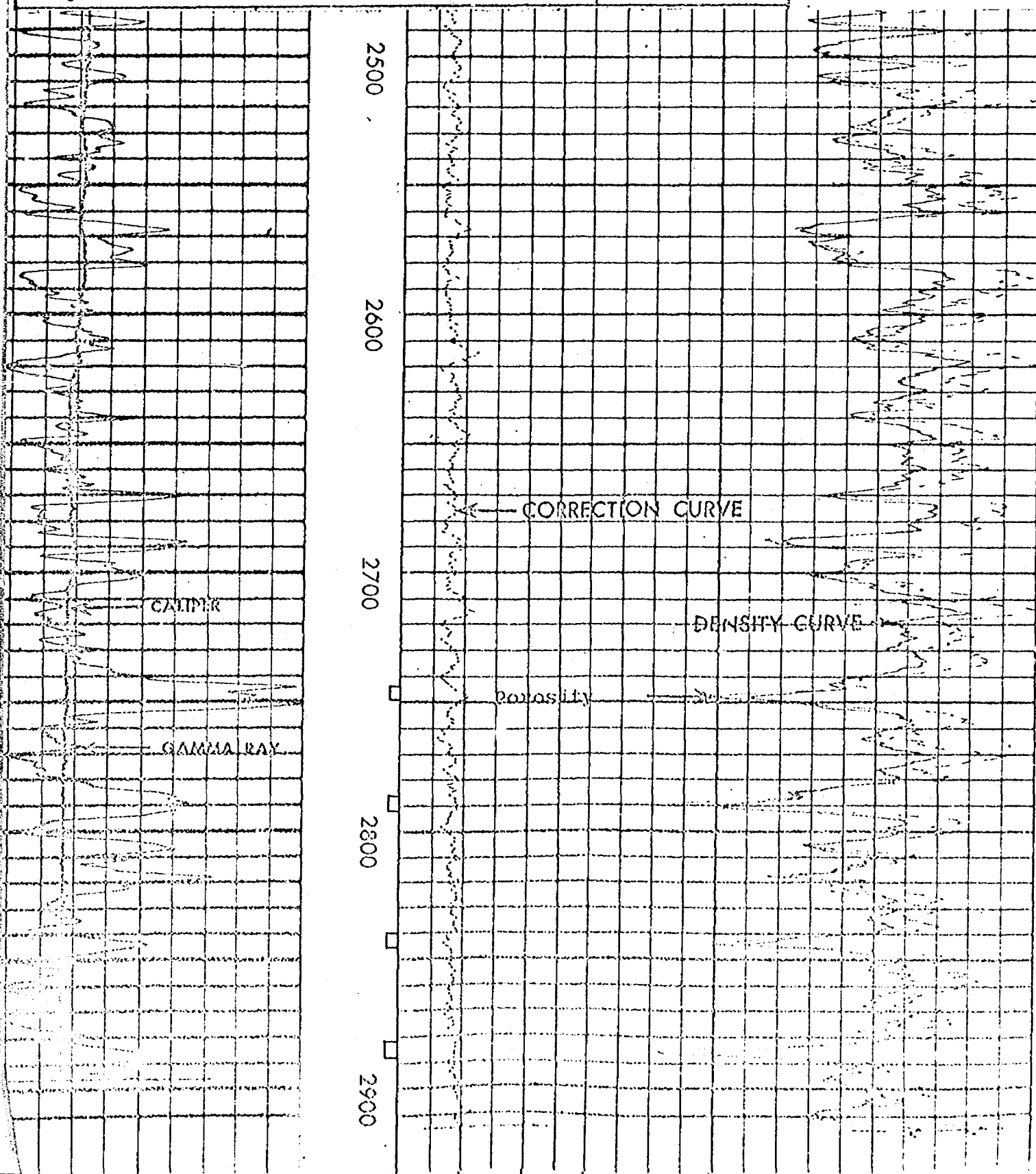
Location 660' FSL & 1980' FWL

Other Services:

Sec. 10 Twp 17-S Rge 30-E

Permanent Datum Ground Level Elev. 3697'
Log Measured from 0 Ft. Above Perm. Datum
Drilling Measured From Ground Level

Elev.: K.B.
D.F.
G.L. 3697'

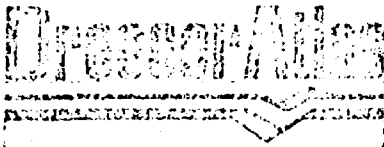


BEFORE EXAMINER NUTTER

OIL CONSERVATION COMMISSION

EXHIBIT NO. 4

CASE NO. 5268



COMPENSATED

Densilog

FILE NO.

COMPANY HUADAKO PRODUCTIONS COMPANY

WELL 140 HILLS FEDERAL A #5-10

FIELD GRAYBARS THICKNESS

COUNTY EDOY STATE NEW MEXICO

LOCATION:

1485' FOL & 565' FOL

Other Services

SEC 17 TWP 17-2 RGE 30-E

Permanent Datum S.L.

Elev. 3571

Elevations:

Log Measured from G.L.

0 Ft. Above Permanent Datum

KB

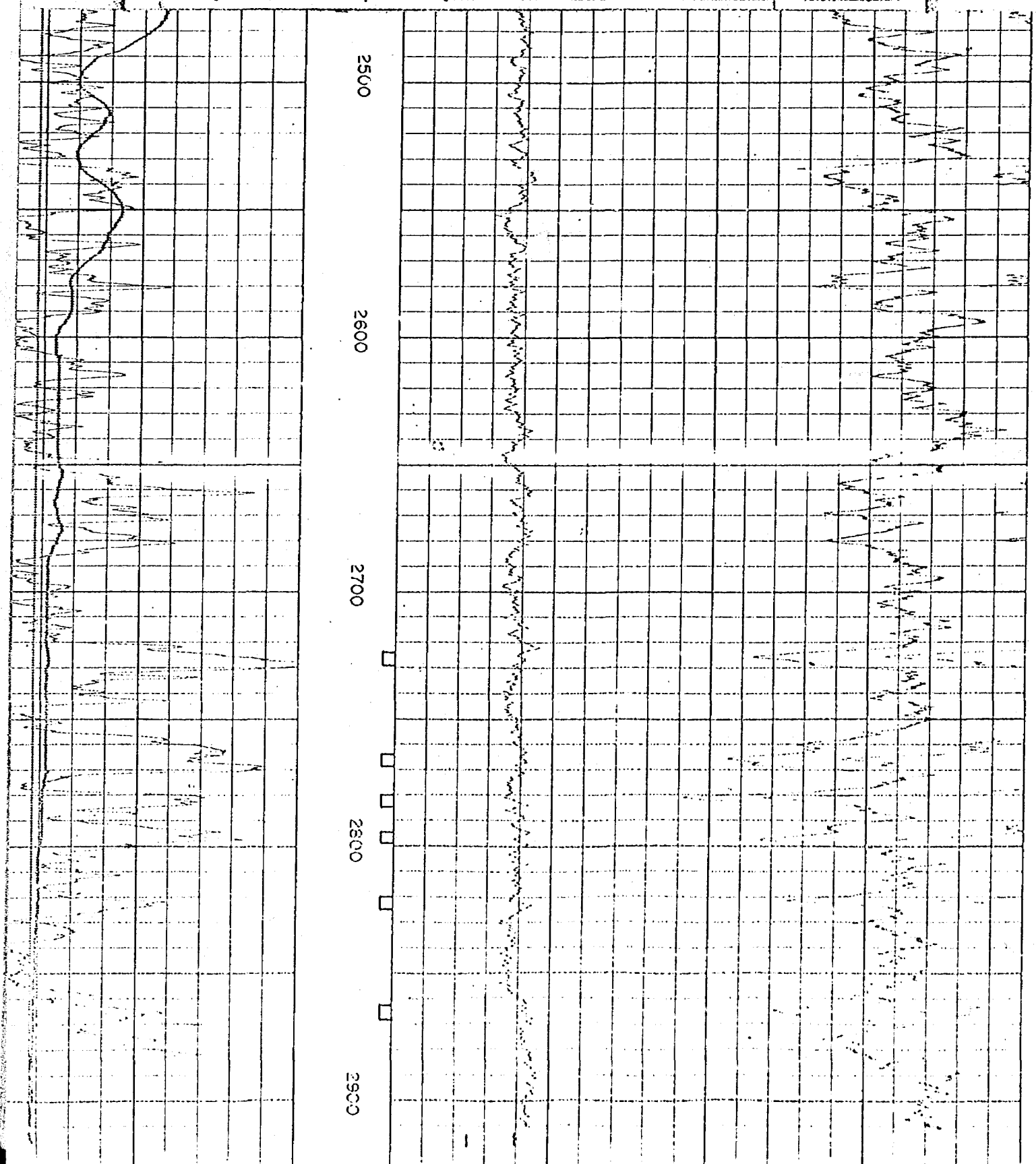
2108

Drilling Measured from K.G.

12' ABOVE G.L. &

DF

GL 3071





COMPENSATED

Densilog

FILE NO.

COMPANY ANADARKO PRODUCTION COMPANY

WELL LOCO HILLS FEDERAL "A" NO. 6-15

FIELD GRAYBURG JACKSON

COUNTY EDDY STATE NEW MEXICO

LOCATION:

660' FNL & 660' FWL

Other Services

SEC 15 TWP 17-S RGE 30-E

Permanent Datum GROUND LEVEL Elev. 3692

Log Measured from G. L. 0 Ft. Above Permanent Datum

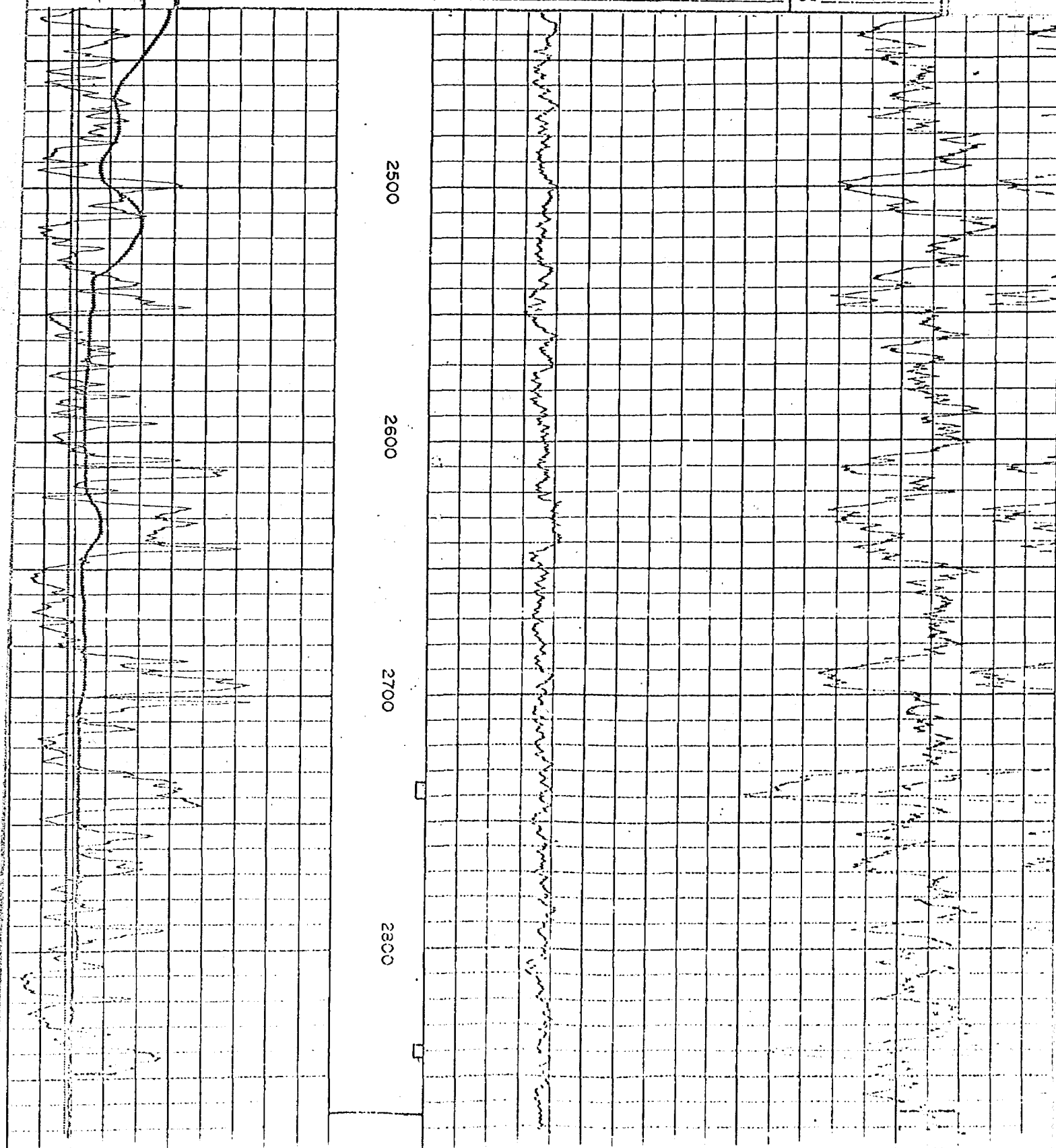
Drilling Measured from K. B. 12' ABOVE G. L.

Elevations:

KB 3704

DF

GL 3692

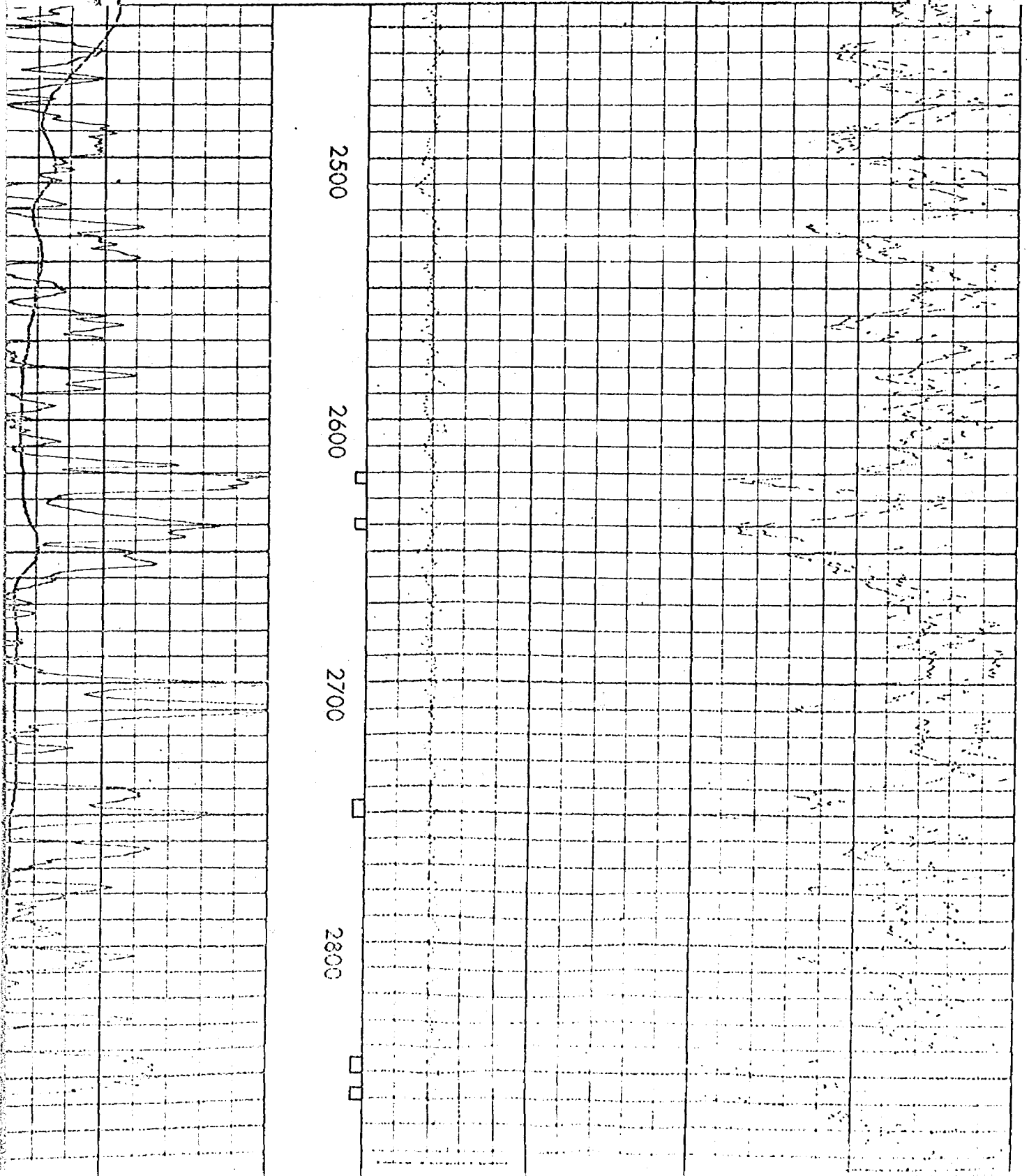




(COMPLETION)

DECEMBER 1966

COMPANY <u>Anadarko</u> Petroleum Company WELL <u>Loco Hills Federal</u> FIELD <u>"A"</u> County <u>Grayburg-Jackson</u> County <u>Eddy</u> State <u>N.M.</u>	COMPANY <u>ANADARKO PRODUCTION COMPANY</u>	
	WELL <u>LOCO HILLS FEDERAL "A" # 7 - 15</u>	
	FIELD <u>GRAYBURG - JACKSON</u>	
	COUNTY <u>EDDY</u> STATE <u>NEW MEXICO</u>	
	Location <u>1980' FNL & 1980' FWL</u>	
Sec. <u>15</u> Twp. <u>17-S</u> Rge. <u>30-E</u>		Other Services:
Permanent Datum <u>Ground Level</u> Elev. <u>3697'</u>		Elev.: K.B. <u>3709'</u>
Log Measured from <u>0</u> Ft. Above Perm. Datum		D.F. <u></u>
Drilling Measured From <u>Ground Level</u>		G.I. <u>3697'</u>



Derrick

FILE NO.

COMPANY ANADARKO PRODUCTION COMPANY

WELL LOCO HILLS FEDERAL "B" WELL 1-9

FIELD GRAYBURG JACKSON

COUNTY EDDY STATE NEW MEXICO

LOCATION:

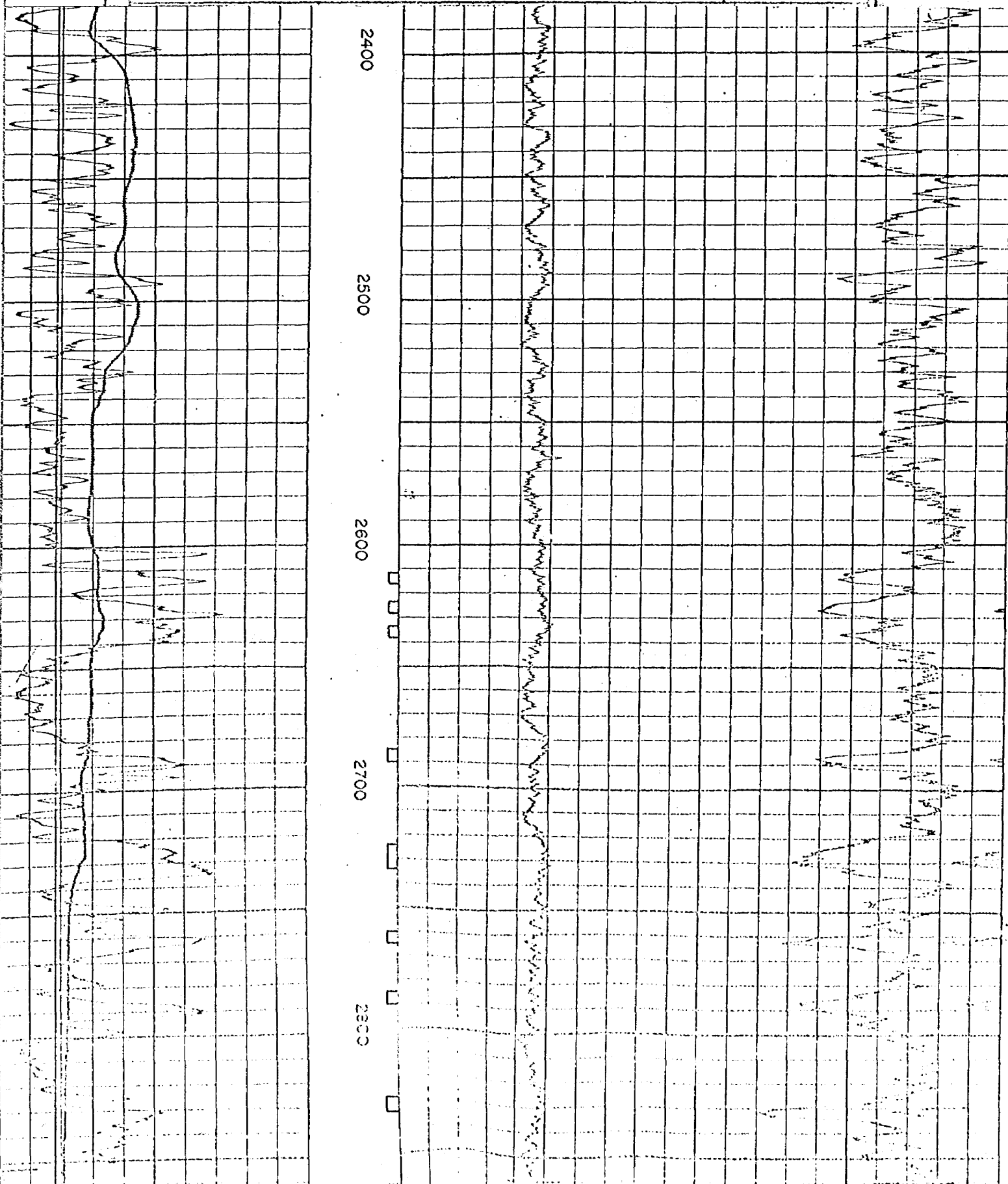
Other Services

660' FSL & 660' FEL

SEC 9 TWP 17-S RGE 30-E

Permanent Datum G.L. Elev. 3685'
Log Measured from G.L. 0 Ft. Above Permanent Datum
Drilling Measured from K.B.

Elevations:
KB 3695'
DF
GL 3685'



Densilog

FILE NO.

COMPANY ANADARKO PRODUCTION COMPANY

WELL LOCO HILLS FEDERAL "B" 5-9

FIELD GRAYBURG JACKSON

COUNTY EDDY STATE NEW MEXICO

LOCATION:

Other Services

1980' FSL & 1980' FEL

SEC 9 TWP 17-S RGE 30-E

Permanent Datum G.L. Elev. 3685'

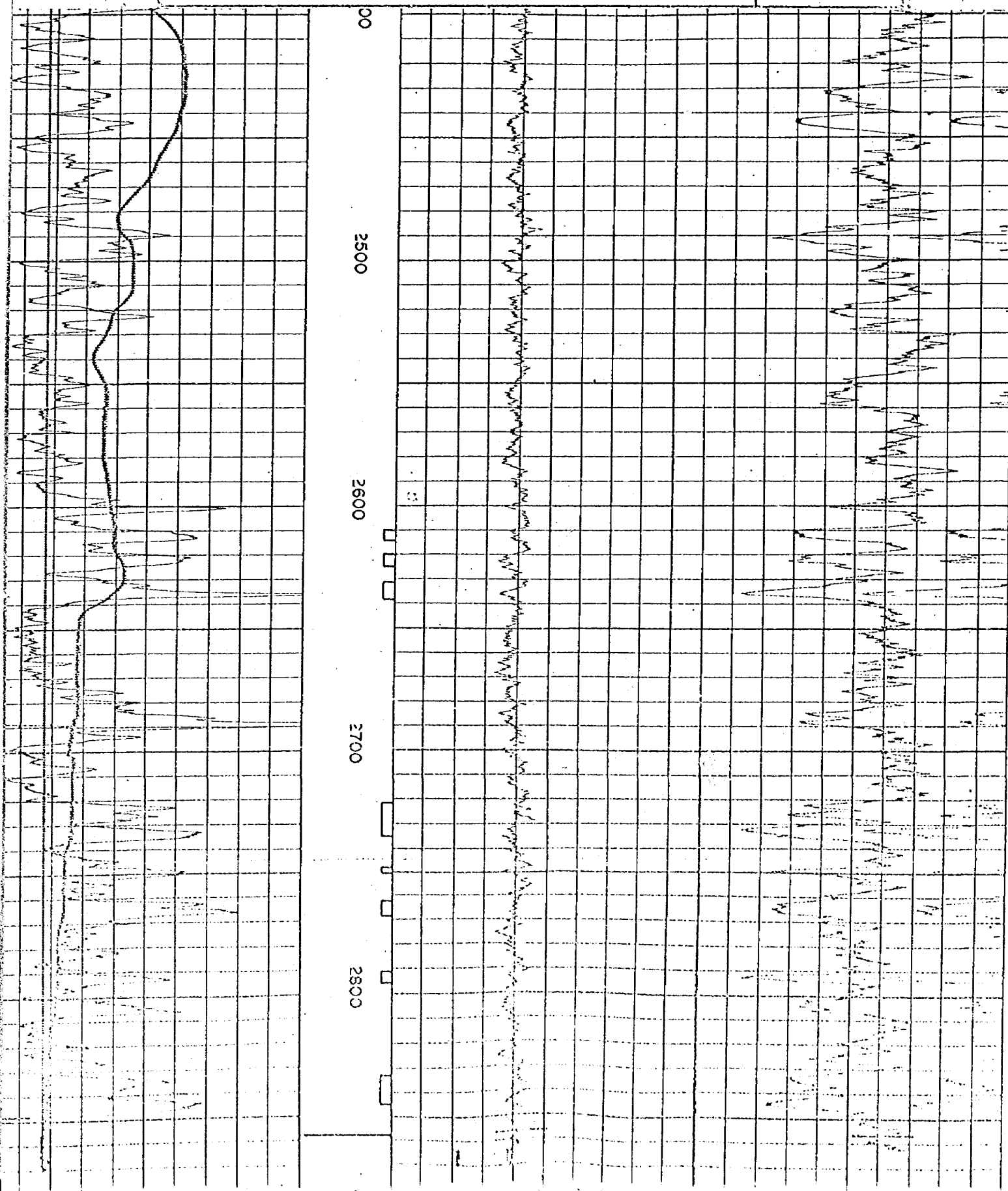
Log Measured from G.L. 0 Ft. Above Permanent Datum

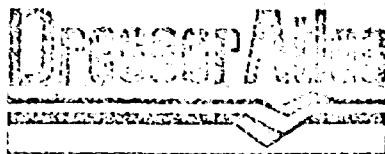
Drilling Measured from K.B. 11' ABOVE G.L.

Elevations:
KB 3696

DF -

GL 3685'





COMPENSATED

Densilog

FILE NO.

COMPANY ANADARKO PRODUCTION COMPANY

WELL LOCO HILLS FEDERAL "B" NO. 7-9

FIELD GRAYBURG JACKSON

COUNTY EDDY STATE NEW MEXICO

LOCATION:

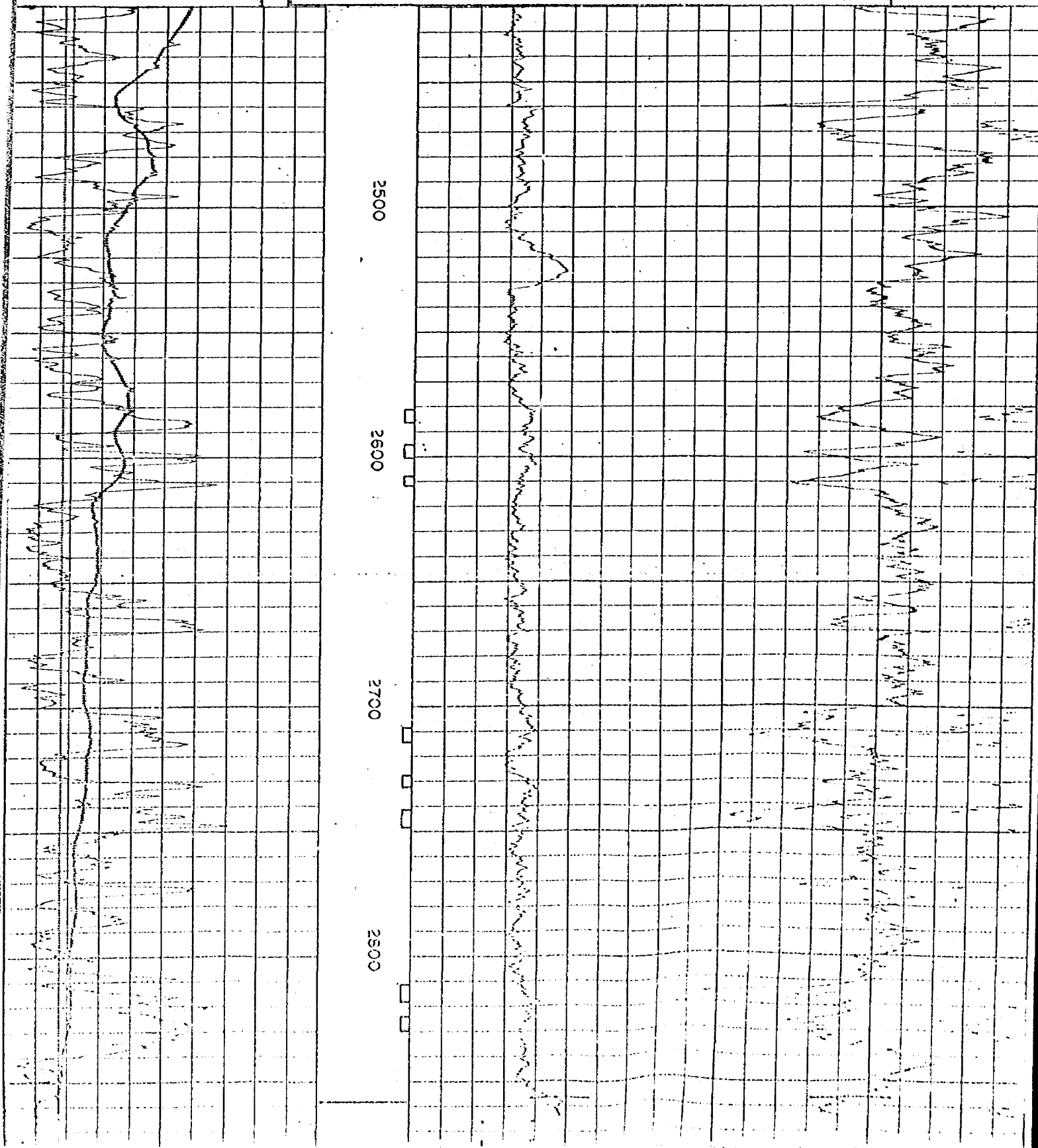
660' FSL & 1980' FWL

Other Services

SEC 9 TWP 17-S RGE 30-E

Permanent Datum G.L. Elev. 3692'
Log Measured from G.L. 0 Ft. Above Permanent Datum
Drilling Measured from K.B. 11' ABOVE G.L.

Elevations:
KB 3703'
DF
GL 3692'



LOCO HILLS "A" FEDERAL WELL NO. 2
 660' FSL & 1980 FWL Sec. 10 T17S-R 30E
 ELEV. 3697 GL.

BEFORE EXAMINER NUTTER
 OIL CONSERVATION COMMISSION
 EXHIBIT NO. 5
 CASE NO. 5268

Water injection down tubing
 @ rate of 300 BPD fresh-
 produced water mixture with
 2000 PSI surface pressure.

Loco Hills Sand

Middle Metex

Lower Metex

Upper Premier

Lower Premier

Pressure Monitor

8 5/8" OD surface casing
 set @ 434' with 200 socks

2 3/8" OD tubing internally plastic
 coated set on tension packer
 @ approx. 2650'

5 1/2" OD casing set @ 2916'
 cemented with 250 socks.

2745-49

2786-91

2840-44

2882-87

T.D. 2917 G.L.

ANADARKO PRODUCTION COMPANY

GRAYBURG JACKSON FIELD
 EDDY COUNTY, NEW MEXICO

DIAGRAMMATIC SKETCH
 OF

WATER INJECTION WELL COMPLETION
 LOCO HILLS FEDERAL "A"
 WATER FLOOD PROJECT

1-1-11

LOCO HILLS "A" FEDERAL WELL NO. 5

1980' FSL & 660' FWL · Sec. 10 T17S-R30E

ELEV. 3697 GL.

○ Pressure Monitor

8 5/8" OD surface casing
set @ 510' with 150 sacks

2 3/8" OD tubing internally plastic
coated set on tension packer
@ approx 2600'

5 1/2" OD casing set @ 2890'
cemented with 450 sacks.

Water injection down tubing
@ rate of 300 BPD fresh-
produced water mixture with
2000 PSI surface pressure.

Loco Hills Sand

Middle Metex

Lower Metex

Upper Premier

Lower Premier

2724-28

2764-68; 80-84; 95-98

2820-24

2863-68

T.D. 2893 G.L.

ANADARKO PRODUCTION COMPANY

GRAYBURG JACKSON FIELD

EDDY COUNTY, NEW MEXICO

DIAGRAMMATIC SKETCH

OF

WATER INJECTION WELL COMPLETION

LOCO HILLS FEDERAL "A"

WATER FLOOD PROJECT

Feb 1968

LOCO HILLS "A" FEDERAL WELL NO. 6

660' FN 8 WL

Sec. 15 T17S-R30E

ELEV. 3692 G.L.

Pressure Monitor

8 5/8" OD surface casing
set @ 459' with 150 socks

2 3/8" OD tubing internally plastic
coated set on tension packer
@ approx 2600

5 1/2" OD casing set @ 2863'
cemented with 450 socks.

Water injection down tubing
@ rate of 300 BPD fresh
produced water mixture with
2000 PSI surface pressure.

Loco Hills Sand

Middle Melex

Lower Melex

Upper Premier

Lower Premier

2735-41

2838-43

T.D. 2865' G.L.

ANADARKO PRODUCTION COMPANY

GRAYBURG JACKSON FIELD

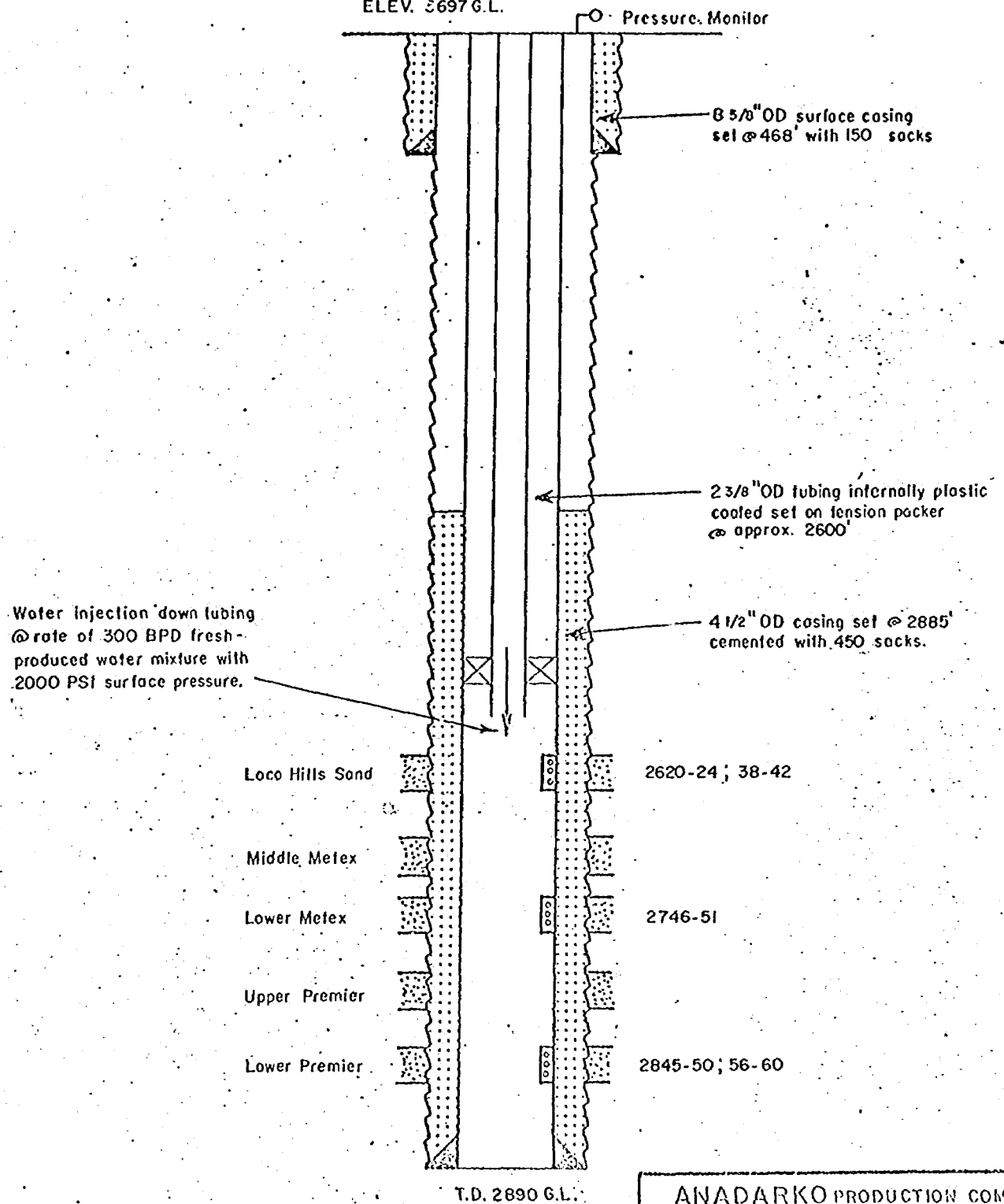
EDDY COUNTY, NEW MEXICO

DIAGRAMMATIC SKETCH
OF

WATER INJECTION WELL COMPLETION
LOCO HILLS FEDERAL "A"
WATER FLOOD PROJECT

LOCO HILLS "A" FEDERAL WELL NO. 7

1980 FNL & 1980 FWL Sec. 15 T17S-R30E
ELEV. 2697 G.L.



ANADARKO PRODUCTION COMPANY

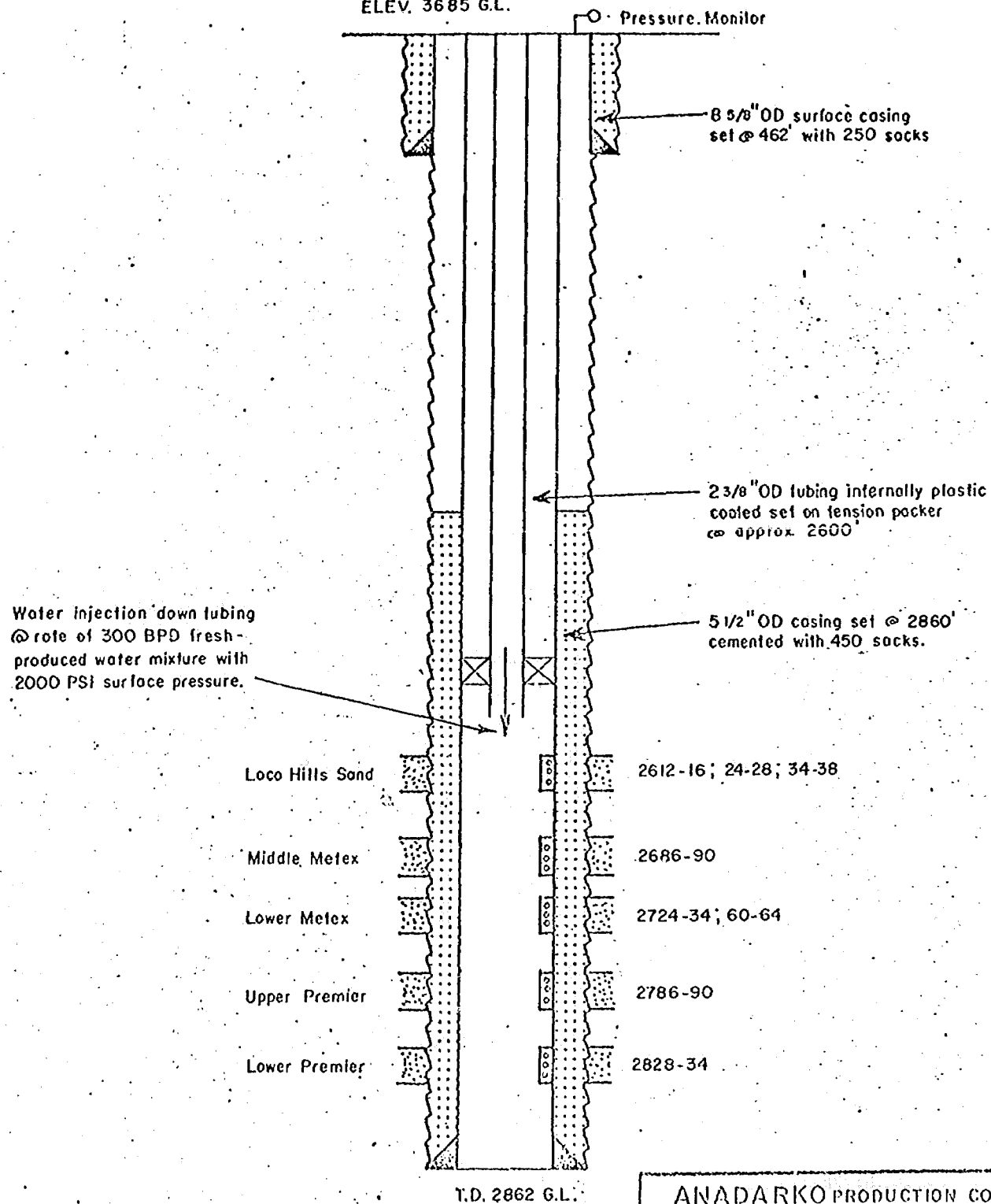
GRAYBURG JACKSON FIELD
EDDY COUNTY, NEW MEXICO

DIAGRAMMATIC SKETCH
OF

WATER INJECTION WELL COMPLETION
LOCO HILLS FEDERAL "A"
WATER FLOOD PROJECT

0-0000

LOCO HILLS "B" FEDERAL WELL NO. 1
660' FS & EL Sec. 9 T17S-R30E
ELEV. 3685 G.L.



ANADARKO PRODUCTION COMPANY

GRAYBURG JACKSON FIELD
EDDY COUNTY, NEW MEXICO

DIAGRAMMATIC SKETCH
OF

WATER INJECTION WELL COMPLETION
LOCO HILLS FEDERAL "B"
WATER FLOOD PROJECT

LOCO HILLS "B" FEDERAL WELL NO. 5

1980 FS 8 EL

Sec. 9 T17S-R30E

ELEV. 3685 G.L.

Pressure Monitor

Water Injection down tubing
@ rate of 300 BPD fresh-
produced water mixture with
2000 PSI surface pressure.

8 5/8" OD surface casing
set @ 489 with 150 socks

2 3/8" OD tubing internally plastic
coated set on tension packer
@ approx 2600'

5 1/2" OD casing set @ 2868'
cemented with 450 socks.

Loco Hills Sand

2610-14; 20-24; 32-38

Middle Metex

Lower Metex

2722-36; 48-50; 63-68

Upper Premier

2791-95

Lower Premier

2832-46

T.D. 2869 G.L.

ANADARKO PRODUCTION COMPANY

GRAYBURG JACKSON FIELD

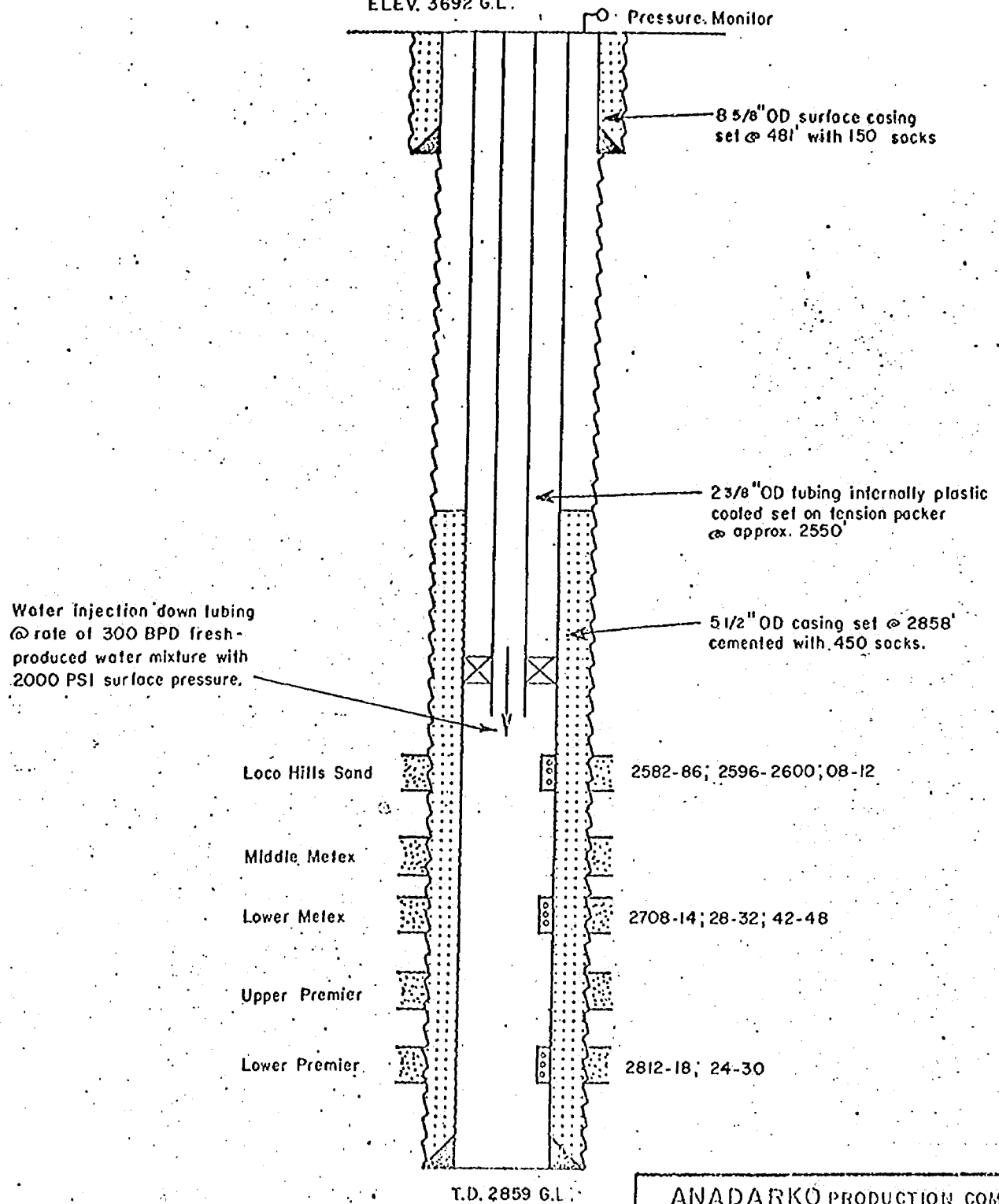
EDDY COUNTY, NEW MEXICO

DIAGRAMMATIC SKETCH
OF

WATER INJECTION WELL COMPLETION
LOCO HILLS FEDERAL "B"
WATER FLOOD PROJECT

Exhibit --

LOCO HILLS "B" FEDERAL WELL NO. 7
660' FSL & 1980 FWL Sec. 9 T17S-R30E
ELEV. 3692 G.L.



ANADARKO PRODUCTION COMPANY

GRAYBURG JACKSON FIELD
EDDY COUNTY, NEW MEXICO

DIAGRAMMATIC SKETCH
OF

WATER INJECTION WELL COMPLETION
LOCO HILLS FEDERAL "B"
WATER FLOOD PROJECT

FIGURE 1

GENERAL INFORMATION COMPANY OF TEXAS
 OPERATING DIVISION
 OPERATING DIVISION

Well No.: PARKE "F" #2
 1980' feet from South line and
 1980' feet from East line of
 Section 10 TWP 17-S R. 30-E
 N.M.P.M. Eddy County, New Mexico

TUBING (DUO-LINED)
 Depth Set: 3200'
 Size, Wt. & Type: 2" 4.7#

PACKER
 Make & Type: Johnston - Tension
 Depth Set: 2650'

Packer @ 2650'

Loco Hill	2718'-2722'
	2741'-2744'
Metex	2832'-2838'
Premier Sd.	2930'-2934'
Lovington Sd.	3082'-3089'
San Andres	3218'-3220'
	3296'-3300'

SUPPLY & CASING
 Depth Set: 429' KB
 Hole Size: 12"
 Casing Size & Wt.: 8-5/8" 20#
 Sacks Cement: 100
 Top of Cement:

8-5/8" @ 429'

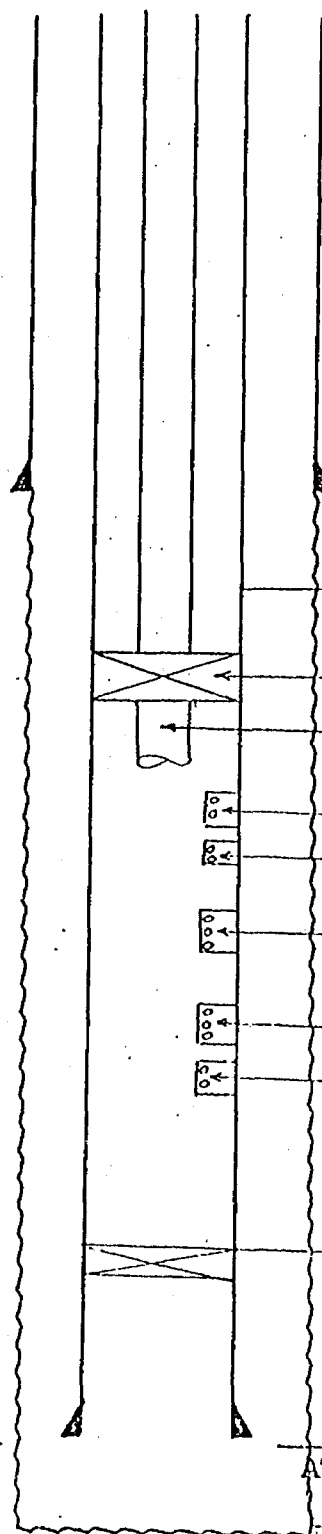
PRODUCT & CASING
 Depth Set: 3436' KB
 Hole Size: 7-7/8"
 Casing Size & Wt.: 4-1/2" 9.5#
 Sacks Cement: 450
 Top of Cement: 1600' est.

OPEN HOLE
 Size: NONE
 Total Depth:
 Pay Zone:

4-1/2" @ 3436'

Annulus will be filled with inhibited fluid.

KB Elev. _____
 DF Elev. _____
 GL Elev. 3705
 * Datum



8 5/8" O.D., 20# WT, V-55 GRADE, LANDED
 AT 422, CMT'D. WITH 200 SX.

1529 CALCULATED CEMENT TOP

2630 5 1/2" TENSION PACKER

2631 2 3/8" OD PLASTIC COATED TUBING

PERFORATIONS:

2646-52 } LOCO HILLS (GRAYBURG) SAND
 2670-76 }

2773-81 METEX (GRAYBURG) SAND

2873-81 } PREMIER (GRAYBURG) SAND
 2885-90 }

3010 PBTD

5 1/2" O.D., 19# WT, V-55 GRADE, LANDED
 AT 3952, CMT'D. WITH 400 SX.

3959 T.D.

PBTD 3010

TD 3959

WELL NAME & NO. PARKE "B" Tr "C" Well #6

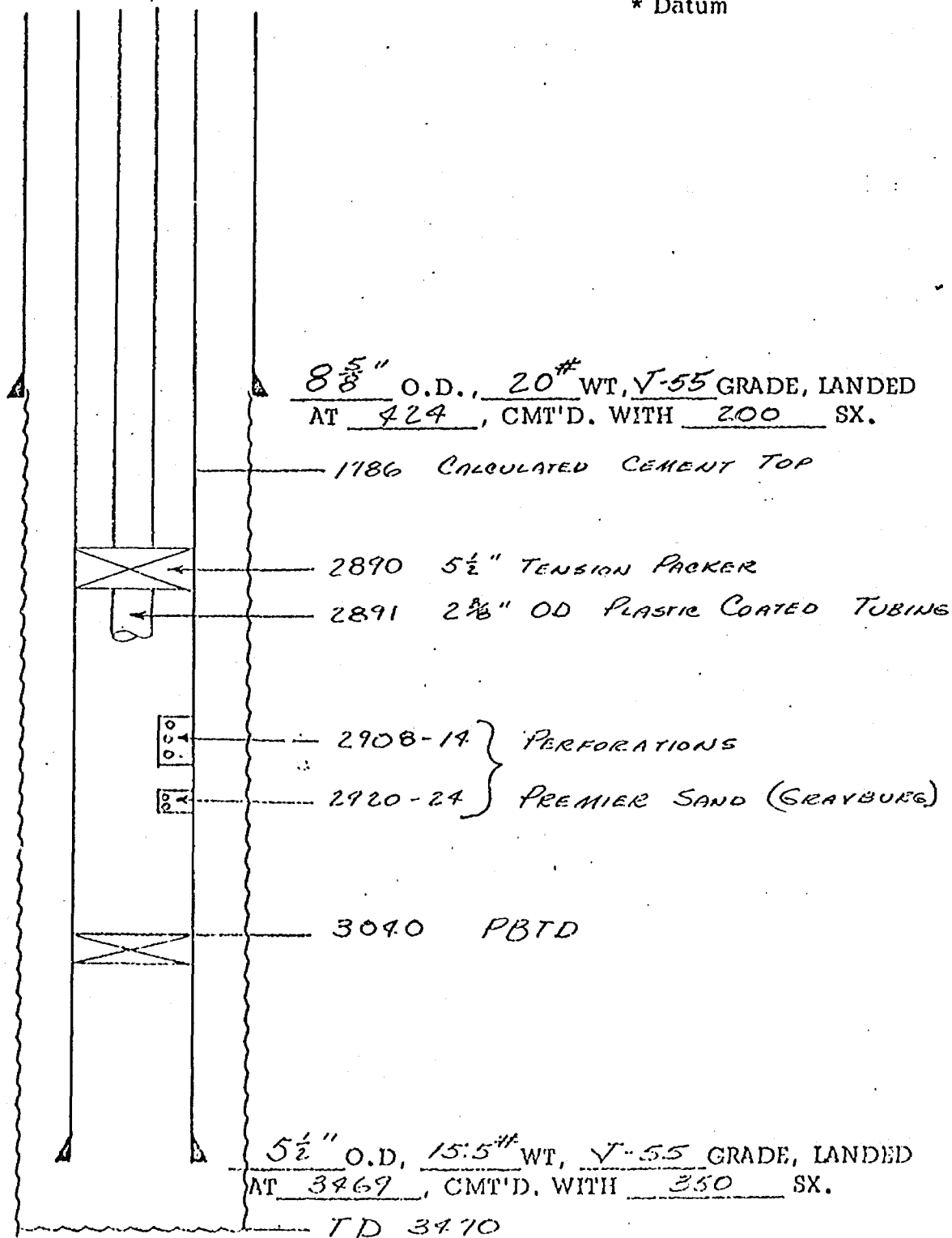
FIELD GRAYBURG JACKSON

COUNTY EDDY STATE New Mexico

LOCATION 1980' FNL & 1980' FEL

SEC. 15, T 11 S, R 30 E

KB Elev. _____
DF Elev. _____
GL Elev. 3714
* Datum



PBTD 3040
TD 3470

WELL NAME & NO. PARK "B" TR. "C" Uric #1
FIELD GRAYBURG JACKSON
COUNTY EDDY STATE New Mexico
LOCATION 660' FAL. & 660' FEL
SEC. 15, T17S, R30E

WATER CONTRACT

This agreement made and entered into as of the 15th day of April, 1970, by and between DOUBLE EAGLE CORPORATION OF NEW MEXICO (N.S.L.), hereinafter referred to as "Seller", and ANADARKO PRODUCTION COMPANY, hereinafter referred to as "Buyer",

W I T N E S S E T H :

WHEREAS, Buyer desires to purchase water from Seller to use and to make available under injection pressure to others for use in waterflood and other recovery operations on Sections 1, 2, 3, 10 and 11, Township 17 South, Range 30 East, in Eddy County, New Mexico (all of such operations being deemed to be operations of Buyer for purposes of this contract); and

WHEREAS, Seller has available and desires to sell such water to Buyer for such purposes, subject to and upon terms and conditions hereinafter set forth:

NOW, THEREFORE, in consideration of the premises and the mutual covenants and obligations herein set out, it is agreed by and between Seller and Buyer as follows:

ARTICLE I.

Section 1. Buyer agrees that for a period of five (5) years from date hereof, and for as long thereafter as Buyer may elect, Buyer will purchase from Seller all water required by Buyer for the operations above described. Seller agrees to sell and deliver to Buyer such water as Buyer's needs require, said water to be supplied from Seller's water leases and water rights situated in Lea and Eddy Counties, New Mexico, and to consist exclusively of Ogallala water unless otherwise agreed upon by both Buyer and Seller.

Section 2. The quantity of water herein contracted to be purchased by Buyer shall be delivered by Seller in such quantities as may from time to time be requested by Buyer.

Section 3. Buyer is aware of the costs and expenses incurred and to be incurred by Seller in securing a sufficient supply of water for Buyer's needs and transporting the same to the delivery point, and in consideration of such

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. <u>6</u>
CASE NO. <u>5268</u>

costs and expense Buyer agrees to purchase exclusively from Seller all water required by Buyer for its operations during the term of this contract, provided Seller is not in default of the terms of this contract.

ARTICLE II.

Price

During the term of this contract Buyer agrees to pay to Seller for all water delivered to Buyer under the terms of this agreement the sum of \$0.0185 per barrel of water delivered (a barrel being defined as 42 U. S. Gallons), such payments to be made on a monthly basis.

ARTICLE III.

Delivery Point

Delivery of water to Buyer by Seller shall be at the following location:

Buyer's plant to be located on the Southwest Quarter of Section 2, Township 17 South, Range 30 East, Eddy County, New Mexico.

Title to such water shall pass from Seller to Buyer at the delivery point.

ARTICLE IV.

Delivery Obligations

Section 1. Seller hereby agrees to construct the necessary facilities to provide water as herein contemplated at the delivery point on or before thirty (30) days from the date of this agreement.

Section 2. Buyer agrees to notify Seller immediately if sufficient water to meet its requirements is not being supplied and Seller agrees that upon receipt of such notice it will promptly remedy such condition.

ARTICLE V.

Metering

Seller shall install at its sole cost and expense a valve and totalizing meter at the delivery point where water covered by this agreement is delivered

into Buyer's system to measure the water so delivered. Buyer may, at its option and expense, install and maintain a check meter or meters downstream from Seller's meter. Buyer shall have the right to inspect Seller's meter in the presence of Seller's representatives. If the accuracy of Seller's meter is questioned, the metering instruments shall be tested and properly adjusted upon the demand of Buyer or Seller, but the measurement shall not be considered inaccurate for accounting purposes unless it is in error by more than five percent (5%). Should any test show an error in excess of five percent (5%) correction shall be made for volumes delivered for one-half of the period elapsed since the last test; but in no event shall the correction be applied for a period in excess of thirty (30) days. In the event any test demanded by Buyer shows an error of more than five percent (5%), the cost of such test shall be borne by the Seller; however, if any error is less than five percent (5%), such cost shall be borne by the Buyer.

ARTICLE VI.

Laws, Regulations and Force Majeure

Section 1. This agreement shall be subject to all valid and applicable laws, orders, rules and regulations of any duly constituted governmental authority.

Section 2. Except for Buyer's obligations to make payments for water delivered hereunder, neither party hereto shall be liable for any failure to perform the terms of this agreement when such failure is due to "force majeure" as hereinafter defined, provided that the party claiming "force majeure" which results in a substantial failure of performance shall give the other prompt written notice thereof. The term "force majeure" as employed in this agreement shall mean acts of God, strikes, lockouts or industrial disturbances, civil disturbances, arrests and restraint from rulers and people, interruptions by government or court orders, present and future valid orders of any regulatory body having jurisdiction, acts of the public enemy, wars, riots, blockades,

insurrections, inability to secure right-of-way, inability to secure labor or materials, including inability to secure materials as a result of allocations promulgated by authorized governmental agencies, epidemics, landslides, lightning, earthquakes, fires, storms, floods, washouts, explosions, breakage or accident to machinery or lines of pipe, freezing of wells or pipe lines, partial or entire failure of water supply, or any other cause, whether of the kind herein enumerated or otherwise, not reasonably within the control of the party claiming "force majeure". Nothing herein contained, however, shall be construed to require either party to settle a labor dispute against its will.

ARTICLE VII.

Use of Water

The water furnished by Seller to Buyer shall be used only for water-flooding and operations conducted on the property above described by Buyer or other operators who contract with Buyer for water to be supplied under injection pressure. Jm
gdl

ARTICLE VIII.

Notices

All notices permitted or required to be given under the provisions hereof shall be sent by certified or registered mail, or by Western Union telegram prepaid, addressed to the parties hereto as follows:

Anadarko Production Company
3109 Winthrop Avenue
Fort Worth, Texas 76107

Double Eagle Corporation of New Mexico (N.S.L.)
Post Office Box 2239
Tulsa, Oklahoma 74101

ARTICLE IX.

Miscellaneous

Section 1. Buyer agrees to pay to Seller all sums due for water delivered under this contract to Buyer within twenty (20) days after receipt of Seller's invoice. If payment is not made within thirty (30) days after receipt of Seller's invoice the unpaid balance shall bear interest at the rate

of seven percent (7%) per annum from due date until paid and Seller shall have the right to suspend the delivery of any further water to Buyer until paid in full without liability of any kind.

Section 2. Seller reserves the right to suspend service temporarily to make necessary repairs or improvements to its water system; provided, however, Seller shall notify Buyer of any such interruptions and shall prosecute the work with due diligence and with the least possible delay in service.

Section 3. Buyer agrees to install a throttling valve between Buyer's tank and Seller's meter to prevent damage to Seller's meter.

Section 4. This agreement may be assigned by either party hereto; provided, however, that no assignment or transfer shall relieve either party of its obligations hereunder unless the prior consent of the other party is obtained in writing.

This agreement is binding upon the parties hereto, their personal representatives, successors and assigns.

IN WITNESS WHEREOF, this instrument is executed as of the day and year first above written.

DOUBLE EAGLE CORPORATION OF
NEW MEXICO (NSL)

By: J. D. Kenworthy SELLER

ANADARKO PRODUCTION COMPANY

By: James A. Baker BUYER

JASON W. KELLAHIN
ROBERT E. FOX
W. THOMAS KELLAHIN

KELLAHIN AND FOX
ATTORNEYS AT LAW
500 DON GASPAR AVENUE
POST OFFICE BOX 1769
SANTA FE, NEW MEXICO 87501

TELEPHONE 982-4315
AREA CODE 505

Case 5268

Received 6/14
sh

June 13, 1974

Oil Conservation Commission
State of New Mexico
P.O. Box 2088
Santa Fe, New Mexico 87501

Re: Anadarko Production Company
Waterflood Grayburg-Jackson,
Eddy County, New Mexico

Gentlemen:

Please find enclosed applications for a cooperative waterflood project for Anadarko Production Company, Shenandoah Oil Corporation and General American Oil Company of Texas. The enclosed plat shows the relationship of each.

We anticipate consolidating all three cases for purposes of the hearing.

I would appreciate you setting this matter for hearing before an examiner on July 10, 1974.

Very truly yours,

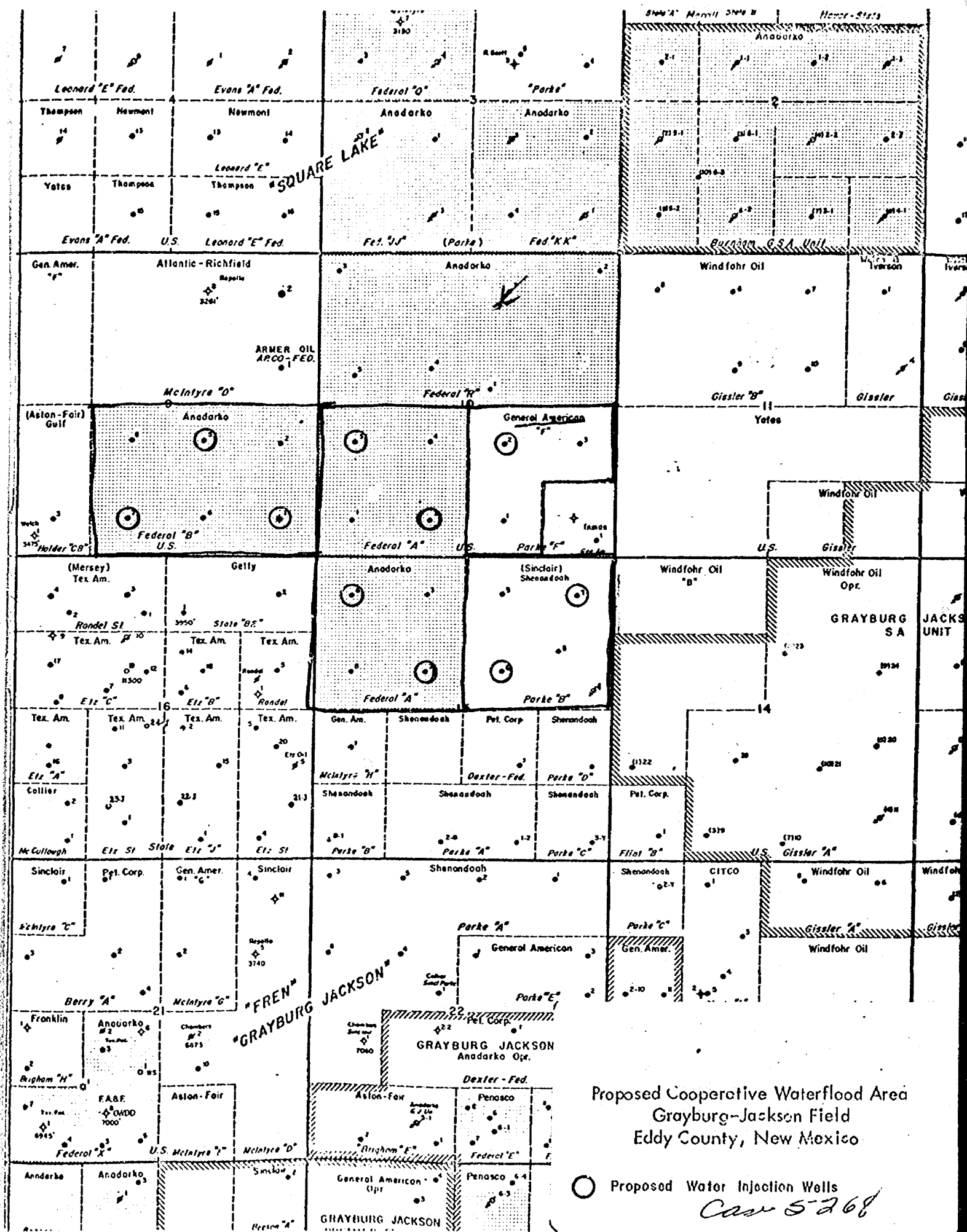
W. T. Kellahin
W. Thomas Kellahin

WTK:dl

cc: Mr. Dan Kernaghan
Anadarko Production Company

BUCKET MAILED

Date 6-21-74



BEFORE THE OIL CONSERVATION COMMISSION
OF
THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION
OF GENERAL AMERICAN OIL COMPANY
OF TEXAS FOR AUTHORITY TO INSTALL
AND OPERATE A WATERFLOOD PROJECT
IN THE GRAYBURG-JACKSON POOL, EDDY
COUNTY, NEW MEXICO

Case 5268

A P P L I C A T I O N

COMES NOW GENERAL AMERICAN OIL COMPANY OF TEXAS
and applies to the Oil Conservation Commission of
New Mexico for authority to install and operate two
waterflood projects in the Grayburg-Jackson Pool, Eddy
County, New Mexico, for approval of administrative
procedures for the expansion or modification of said
waterflood project and in support thereof would show:

1. That the applicant seeks permission to in-
stitute a waterflood project in the Grayburg-Jackson
Pool, Eddy County, New Mexico in cooperation with
similar waterflood projects by Shenandoah Oil Corp-
oration and with Anadarko Production Company for the
injection of water into the Grayburg and San Andres
formations.

2. Applicant is the operator of its Parke "F"
Lease embracing lands described as the SW/4 SE/4
and the N/2 SE/4 of Section 10, Township 17 South,
Range 30 East, N.M.P.M., Eddy County, New Mexico.

3. Applicant proposes to convert to water in-
jection its Parke "F" well #2 located in Unit J of
Section 10, T.17S., R.30E., N.M.P.M.

4. That applicant proposes to inject commercial
water at the rate of 300 barrels of water per well
per day.

5. That the wells in the project area are in an

advanced stage of depletion.

6. That the proposed waterflood project will result in the recovery of otherwise unrecoverable oil, thereby preventing waste and the granting of this application will not impair the correlative rights of others.

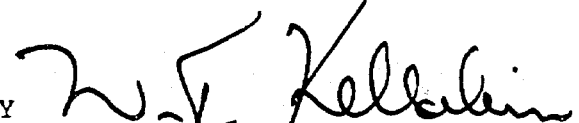
7. Applicant further requests that administrative procedures be authorized whereby modification or expansion of the project including the drilling of additional injection wells and/or producing wells, and the conversion of existing wells to injection at both orthodox and unorthodox wells locations may be approved without further notice and hearing.

WHEREFORE, applicant respectfully requests that this matter be set for hearing before the Commission's duly appointed examiner and that after notice and hearing as required by law, the Commission enter its order approving the application as prayed for.

RESPECTFULLY SUBMITTED

GENERAL AMERICAN OIL COMPANY OF TEXAS

BY



KELLAM & FOX
P.O. Box 1769
Santa Fe, New Mexico 87501
Attorneys for Applicant

BEFORE THE OIL CONSERVATION COMMISSION
OF
THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION
OF ANADARKO PRODUCTION COMPANY FOR
AUTHORITY TO INSTALL AND OPERATE
TWO WATERFLOOD PROJECTS IN THE
GRAYBURG-JACKSON POOL, EDDY COUNTY,
NEW MEXICO

Case 5268

*Received
6/14
[initials]*

A P P L I C A T I O N

COMES NOW ANADARKO PRODUCTION COMPANY and applies to the Oil Conservation Commission of New Mexico for authority to install and operate two waterflood projects in the Grayburg-Jackson Pool, Eddy County, New Mexico, for approval of administrative procedures for the expansion or modification of said waterflood projects and in support thereof would show:

1. That the applicant seeks permission to institute two waterflood projects in the Grayburg-Jackson Pool, Eddy County, New Mexico in cooperation with similar waterflood projects by General American Oil Company of Texas and with Shenandoah Oil Corporation for the injection of water into the Grayburg-San Andres formations.

2. Applicant in the operator of and proposes to institute a waterflood project for the following tracts:

(a) Anadarko's Loco Hills "A" Federal Lease consisting of the SW/4 of Section 10 and the NW/4 of Section 15, Township 17 South, Range 30 East, N.M.P.M. Eddy County, New Mexico and proposes to convert to water injection the following wells:

Loco Hills "A" Federal Well #2 in Unit N of Section 10
Loco Hills "A" Federal Well #5 in Unit L of Section 10
Loco Hills "A" Federal Well #6 in Unit G of Section 15
Loco Hills "A" Federal Well #7 in Unit F of Section 15

(b) Anadarko's Loco Hills "B" Federal Lease consisting of the SE/4 and the E/2 SW/4 of Section 9, Township 17 South, Range 30 East, N.M.P.M., Eddy County, New Mexico and proposes to convert to water injection the following wells:

Loco Hills "B" Federal Well #1 located in Unit P of Section 9

Loco Hills "B" Federal Well #5 located in Unit J of Section 9

Loco Hills "B" Federal Well #7 located in Unit N of Section 9

4. That applicant proposes to inject commercial water at the rate of 300 barrels of water per well per day.

5. That the wells in the project area are in an advanced stage depletion.

6. That the proposed waterflood project will result in the recovery of otherwise unrecoverable oil, thereby preventing waste and the granting of this application will not impair the correlative rights of others.

7. Applicant further requests that administrative procedures be authorized whereby modification or expansion of the project including the drilling of additional injection wells and/or producing wells, and the conversion of existing wells to injection at both orthodox and unorthodox wells locations may be approved without further notice and hearing.

WHEREFORE, applicant respectfully requests that this matter be set for hearing before the Commission's duly appointed examiner and that after notice and hearing as required by law, the Commission enter its

order approving the application as prayed for.

RESPECTFULLY SUBMITTED

ANADARKO PRODUCTION COMPANY

BY

W. F. Kellahin

KELLAHIN & FOX

P.O. Box 1769

Santa Fe, New Mexico

Attorneys for applicant

BEFORE THE OIL CONSERVATION COMMISSION
OF
THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION
OF SHENANDOAH OIL CORPORATION FOR
AUTHORITY TO INSTALL AND OPERATE
A WATERFLOOD PROJECT IN THE GRAYBURG-
JACKSON POOL, EDDY COUNTY, NEW MEXICO

Case 5-268

A P P L I C A T I O N

COMES NOW SHENANDOAH OIL CORPORATION and applies to the Oil Conservation Commission of New Mexico for authority to install and operate a waterflood project in the Grayburg-Jackson Pool, Eddy County, New Mexico, for approval of administrative procedures for the expansion or modification of said waterflood project and in support thereof would show:

1. That the applicant seeks permission to institute a waterflood project in the Grayburg-Jackson Pool, Eddy County, New Mexico in cooperation with similar waterflood projects by Anadarko Production Company and with General American Oil Company of Texas for the injection of water into the Grayburg and San Andres Formations.

2. Applicant is the operator of its D.H. Parke "B" Tract C Lease embracing lands described as the NE/4 of Section 15, Township 17 South, Range 30 East, N.M.P.M., Eddy County, New Mexico.

3. Applicant proposes to convert to water injection its following wells:

D.H. Parke "B" Well #6 in Unit G of Section 15

D.H. Parke "B" Well #7 in Unit A of Section 15

4. That applicant proposes to inject commercial water at the rate of 300 barrels of water per well per day.

5. That the wells in the project area are in an

advanced stage of depletion.

6. That the proposed waterflood project will result in the recovery of otherwise unrecoverable oil, thereby preventing waste and the granting of this application will not impair the correlative rights of others.

7. Applicant further requests that administrative procedures be authorized whereby modification or expansion of the project including the drilling of additional injection wells and/or producing wells, and the conversion of existing wells to injection at both orthodox and unorthodox wells locations may be approved without further notice and hearing.

WHEREFORE, applicant respectfully requests that this matter be set for hearing before the Commission's duly appointed examiner and that after notice and hearing as required by law, the Commission enter its order approving the application as prayed for.

RESPECTFULLY SUBMITTED

SHENANDOAH OIL CORPORATION

BY

W. V. Kelbaker

KEILAMIN & FOX

P.O. Box 1769

Santa Fe, New Mexico 87501

Attorneys for Applicant

DRAFT

dr/

(RS)

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. 5268

Order No. R-4830

APPLICATION OF ANADARKO PRODUCTION COMPANY,
GENERAL AMERICAN OIL COMPANY OF TEXAS AND
SHENANDOAH OIL CORPORATION FOR FOUR
WATERFLOOD PROJECTS, EDDY COUNTY, NEW
MEXICO.

ORDER OF THE COMMISSION

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on July 10, 1944,
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this day of July, 1944, 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 applicants, Anadarko Production Company, General
American Oil Company of Texas and Shenandoah Oil Corporation, :
seek authority to institute four waterflood projects in the
Grayburg-Jackson
Pool, by the injection of water into the Grayburg ^{and} San Andres
formation through ~~four~~ injection wells as follows:

Project No. 1: Anadarko's Loco Hills "A" Federal lease
by the conversion of four wells in Sections 10 and 15 to
water injection;

Project No. 2: Anadarko's Loco Hills "B" Federal lease by the conversion of three wells in Section 9;

Project No. 3: General American Parke "F" lease by the conversion of one well in Section 10;

Project No. 4: Shenandoah's Parke "B" lease by the conversion of two wells in Section 15.

(4) That the wells in the project area are in an advanced state of depletion and should properly be classified as "stripper" wells.

(5) That the proposed waterflood projects should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(6) That the operators should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface from injection, production or plugged and abandoned wells.

(7) That the subject application should be approved and the projects should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicants, Anadarko Production Company ^{and} General American Oil Company of Texas, ~~and Shenandoah Oil Corporation~~, are hereby authorized to institute waterflood projects in the Grayburg-Jackson Pool, by the injection of water into the Grayburg-San Andres formation through the following-described wells in Township 17 South, Range 30 East, NMPM, Eddy County, New Mexico:

(3) That the proposed Project No. 4 is within an area previously approved ~~to~~ as a water flood project, being the Shenandoah Grayburg-Jackson Parke Waterflood Project approved by Order No R-4133 dated April 19, 1971, and the proposed project should be designated an extension of said project.

Project No. 1: Anadarko's Loco Hills "A" Federal lease by the conversion of the following four wells to water injection: Well No. 2 in Unit N of Section 10; Well No. 5 in Unit L of Section 10; Well No. 6 in Unit **D** of Section 15; Well No. 7 in Unit F of Section 15. **D**

Project No. 2: Anadarko's Loco Hills "B" Federal lease by the conversion of the following three wells in Section 9 to water injection: Well No. 1 in Unit P; Well No. 5 in Unit J; Well No. 7 in Unit N.

Project No. 3: General American's Parke "F" lease by the conversion to water injection of its Well No. 2 in Unit J of Section 10.

(2) That the applicant, *Shenandoah Oil Corporation, is hereby authorized to extend its Grayburg-Jackson*
~~Project No. 1: Anadarko's Loco Hills "A" Federal lease by the~~
conversion of the following two wells in Section 15 to water injection: Well No. 6 in Unit G; Well No. 7 in Unit A. *Parke Waterflood Project in Section Township 17 South, Range 30 East, Grayburg-Jackson Pool, Elbert County, New Mexico, by the*

(3) That injection into each of said wells shall be through plastic or cement-lined tubing, set in a packer which shall be located as near as practicable to the uppermost perforations, or, in the case of open-hole completions, as near as practicable to the casing-shoe; that the casing-tubing annulus shall be loaded with an inert fluid and equipped with an approved pressure gauge or attention attracting leak detection device.

(4) That the operators shall immediately notify the Supervisor of the Commission's Artesia District Office of the failure of the tubing or packer in any of said injection wells, the leakage of water or oil from around any producing well, or the leakage of water or oil from any plugged and abandoned well within the project area, and shall take such timely steps as may be necessary or required to correct such failure or leakage.

(5) That the *three newly authorized*
Grayburg-Jackson
Anadarko Loco Hills "A" ~~Federal Lease~~ Waterflood Project, **A**

-4-

Case No. 5268

Order No. R-

Grayburg-Jackson
the Anadarko Loco Hills "B" ~~General Lease~~ Waterflood Project, ^{and} the
[^] *Grayburg-Jackson* General American Parks "F" ~~Lease~~ Waterflood Project, ^{respectively,} and the
~~Shenandoah Parks "A" Lease~~ *Grayburg-Jackson* Waterflood Project, ^{respectively,} and shall be
governed by the provisions of Rules 701, 702, and 703 of the
Commission Rules and Regulations.

(4) That monthly progress reports of the waterflood projects
herein authorized shall be submitted to the Commission in accordance
with Rules 704 and 1120 of the Commission Rules and Regulations.

(5) 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.