CASE 3147: Application of NEWMONT for a waterflood expansion, Eddy County, New Mexico.

CASE NO.
314

Application,
Transcripts,
Small Exhibits
ETC.

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

November 24, 1964

EXAMINER HEARING

IN THE MATTER OF:

Application of Newmont Oil Company for a waterflood expansion, Eddy County, New Mexico

Case No. 3147

BEFORE: DANIEL S. NUTTER, EXAMINER

TRANSCRIPT OF HEARING

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
November 24, 1964

EXAMINER HEARING

IN THE MATTER OF:

Application of Newmont Oil Company for a waterflood expansion, Eddy County, New Mexico) CASE NO. 3147

BEFORE: DANIEL S. NUTTER, EXAMINER

TRANSCRIPT OF HEARING

MR. NUTTER: The hearing will come to order. We will call first Case 3147.

MR. DURRETT: Application of Newmont Oil Company for a waterflood expansion, Eddy County, New Mexico.

MR. RUSSELL: John F. Russell, appearing on behalf of Newmont and I have one witness.

(Witness sworn.)

CHARLES SEELY,

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

DIRECT EXAMINATION

BY MR. RUSSELL:

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

A Charles Seely, Houston, I am employed by Newmont Oil Company as chief engineer.

Q And have you previously qualified to give testimony before an examiner?

A I have.

Q Are you familiar with Newmont's application involved in case number 3147?

A Yes.

Q What do you seek by that application?

A We seek to expand its West Square Lake Waterflood Project by conversion of about ten wells.

Q I'll refer you to what has been marked as Exhibit 1 and ask you to explain to the Commission what that shows?

A This shows a map of the Newmont Square Lake Waterflood Project with the present development and flood area and with the area in which we're requesting an expansion to be granted.

Q And the present flood area is outlined in blue and the area to be expanded in red?

A Yes.

Q And proposed injection wells are shown in red?

A That's right.

Q All right. I'll refer you to what's been marked as Exhibit 2 and ask you to explain what that shows?

A This is a map showing a little bit larger area there of the Square Lake field with the different Waterflood projects that are presently established in the field. Over to the right is Newmont's East Square Lake Waterflood Project, the center is the scene of the Waterflood Project. Over to the west is a reasonable outline of Waterflood by Texaco and others.

Q And what is the one shown with the triangle in green?

A These are producers that are completed deeper than the zones that are being water flooded and we are getting the Grayburg-San Andres.

Q And this Exhibit Number 2, does it show all of the producers from within a two mile radius of your proposed injection?

A Yes sir.

Q I'll refer you to what's been marked as Exhibit 3 and ask you to explain what that shows?

A This is just tabular data showing the wells that are to be converted to water injection, the location, completion date, surface producing strings, purported pay, the amount of cement that has to be used, the estimated tops of cement and so forth.

Q And it shows the intervals in which you propose to

inject water, is that correct?

A That's correct.

Q You do not have well logs for any of these wells, do you?

A No.

Q All right. Now, I'll show you Applicant's Exhibit 4 and ask you to explain what it is?

A Just a schematic diagram of all of the wells to be converted to water injection, just giving information in the form of what was presented in the previous exhibit.

Q Now, do those diagrammatic sketches show the manner in which you propose to complete these wells as injection wells?

A That's correct.

Q And other than the various intervals and so forth as shown in each particular well, your completion and testing will be the same?

A Yes.

Q Now, will you explain to the Commission how you propose to complete these wells?

A Well, with the exception of one flood area which will be re-opened or redrilled, all the --

Q That is the Leonard State Number One?

A That's Leonard E. Number One, I believe. All the wells will be converted, cleaned out, pressure tested and if

there are no leaks we will use water from Yucca Water Supply which is fresh water. In case of any leaks that might develop then, of course, there will be injection under the packer.

Q Now, there is some casing in all of these wells, is that correct?

A That's correct, surface casing.

Q And is the casing in each of these set above the zone in which you inject?

A In all cases.

Q Now, in the event you complete these injection wells what tests will be taken to determine whether or not at a later time there might be leaks or lost water?

A Well, we take surface wellhead pressure readings and if there is any abnormal development in the casing, of course, this will be shown by an injection of water and in surface injection pressure.

Q Is there a permanent flange on all of the wells?

A Well, if there is not, a lot of times they will take them around with them to keep them in working order and just put it over.

Q Move from one well to the other?

A Yes.

Q And in your opinion this procedure of completing and daily or weekly or whatever inspections will reflect any

leaks before any damage can be done?

A Right.

Q And, as you said, there is fresh water being injected?

A That's right.

Q What rate of pressure do you anticipate to inject?

A 1900 pounds.

Q Now, I will ask you to refer to Applicant's Exhibit 5 and ask you to explain what that is?

A That is a performance curve of the presently installed waterflood project which gives the daily average water production, the daily average oil and water injection, cumulative water injection, cumulative flood production and cumulative oil production. And, as you see, from the area there, particularly the Kelly, there has been a definite response to the water injection; however, it has been somewhat of a limited response. There was an oil well lot installed in the field back in 1959, in July of '59, and the first substantial response was, oh, about a year and a half later. There have been two or three expansions from that oil well essentially up to the present time. We've injected about 2,600,000 barrels of water into the reservoir through 12 water injection wells and, as you can see from the oil curve these responses were something over 200,000 barrels of oil. As you can see from that oil curve, there has been a significant response but it has been rather low, most of the

wells requiring at least 18 to 24 months before you can fill up enough to get responses and on this basis it's very difficult to keep expanding your project one well at a time and getting responses two years later and then converting the wells at that time.

Q Well, referring to what has been marked as Exhibit 6, what does that show?

A This is the present status of all the wells to be converted. There are some temporary abandoned wells and at present the daily output of the remaining will average about two barrels per well per day.

Q Now, referring you back to your Exhibit 1, does the proposed expansion to the west of your present project, do those injection wells follow the same pattern for the most part?

A That's correct, with the exception that some of the wells will not be converted.

Q Now, what about that one well to the east?

A This is off pattern by one well there.

Q Now, assuming that this waterflood project should not be approved, then what would be your plans for the continued development of the acreage covered by your proposal?

A Well, of course, there are several different things, but there's a real strong possibility that a lot of the wells have been flooded, a good many of them have been plugged in this

area, particularly over in the east but responses have been fairly low, there is about three or four that we have to inject into simutaneously, response is slow and it is of a rather low magnitude.

Q There is oil which may be produced through waterflood secondary recovery, through waterflood?

A That's correct.

Q Then, in your opinion would the granting of this application prevent waste and protect correlative rights?

A That's right.

Q One thing I don't believe I asked, at what rate do you propose to inject the water initially?

A We don't start injecting at a high rate, we usually hold off until we're injecting at a reduced rate for about the first month or so, then after that we will be injecting at the rate, at the pressure of 1800 pounds which up to this point the average injection rate is around 150 barrels per well per day.

Q That's initially or later?

A No, that's later.

Q What do you anticipate your initial injections will be?

A Approximately around two or three hundred barrels per day.

Q But it will decrease over the life of the flood?

A That's correct.

Q Do you have anything further in connection with this application that you would like to advise the examiner on?

A No.

MR. RUSSELL: I have no further questions.

MR. NUTTER: Are there any questions of Mr. Seely?

MR. IRBY: Frank Irby, State Engineer's office.

CROSS-EXAMINATION

BY MR. IRBY:

Q Mr. Seely, you stated that these wells would be equipped with tubing and packer, where is this packer going to be set in the well?

A It will be set right at the -- say, 20 to 50 feet within the casing tubing?

Q Below the top of the cement?

A Oh yes, very definitely.

Q And you said that you are using fresh water. Now, will all injected water be fresh?

A Well, we'll be injecting in this well or others -- have been injecting since July, '59 nothing but fresh water up to this point. Now, I would imagine in the light of the flood that there could be some produced water that would be re-injected and at that time, of course, we would take different steps and it would probably be a separate system as is normally the case.

Q Then, may I infer your answer to mean that you will inject only fresh water until such time as you have adequate produced water to be used in it?

A That's correct.

Q And how will we know when you start using saline water for injection?

A Well, at this time I can see we're only producing less than about, oh, 200 barrels of water per day and the average is probably less than a hundred barrels of produced water per day up to this point and I don't --

MR. RUSSELL: Mr. Seely, if, under this proposed project you decide that it is time to use produced water, will you then notify the Commission of your proposed methods of injection?

THE WITNESS: Yes.

MR. RUSSELL: And the State Engineer?

THE WITNESS: Yes.

Q (By Mr. Irby) In the meantime Mr Seely what disposition are you going to make of the produced water?

A Well, either we'll convert one well or something out there as the salt water disposal or, that's about the only thing we probably can do, I would guess, with pits or something of this nature.

Q Impervious lined pits?

A Yes.

Q What disposition is being made of the limited amount, I believe you said 100 or 200 barrels per day is being produced now?

A I'm not real sure what we are doing at this time.

MR. RUSSELL: Can that information be obtained?

THE WITNESS: Yes, very definitely, and I will supply it to you.

Q (By Mr. Irby) Thank you. Now, in discussing the wells you said all except the Leonard E Number One could be injected in the manner you set, but I don't believe you discussed what you would do with the Leonard E Number One?

A Yes, if we redrill this well, it will be drilled, all the pipe will be perforated and probably injected into each zone number.

Q Will there be tubing and packer used in this?

A Yes.

MR. IRBY: That is all the questions I have.

CROSS-EXAMINATION

BY MR. NUTTER:

Q Mr. Seely, now, I understand that all of these wells are open hole completions at this time? A That is correct.

Q And that one, the Leonard E Number One, you'll drill all the way through and then set a liner or production pipe perforated?

A Yes. Let me go a little bit further, probably this will be done but I meant we would inject probably down the tubing. In other words, we will selectively inject into two or three different zones we have expanded, but the pipe will be pressure tested in the same manner as set forth previously.

Q Now, in your expansion project over here which you have injected water for quite sometime now is selective injection made there or is this in open hole?

A Well, we go back to the most economical. If at all possible we have made it a rule to selectively do this, we have to have saline and cement.

Q Have some of the wells been selectively perforated?

A Yes, we have two or three of the wells that we had to redrill, in this case we've set them, perforated. In one case we have gone in and set a line, in this particular case we have not injected the tubing and the casing.

Q Do you think that maybe this may be attributed to the fact that some of the wells are in open hole without the selective injection?

A Very definitely.

Q So, in all probability, from an economical standpoint, you will try to use the selective methods?

A Any place at all possible.

Q Now, I think I understood you originally to say

that you were going to pressure test this casing up to the maximum expected injection pressure?

A That's correct.

Q Which would be 1800 pounds?

A Yes.

Q Now, I think you said that you'd inject down the tubing and under the packer in the event that it showed a casing failure?

A That's correct.

Q So your formal plan if the casing were damaged is to go down the casing?

A We got to get it down there in the right place so we are going to do this.

Q And you have, I believe, from my own examination of Exhibit Number 3, a minimum of approximately 900 feet of cement above the casing shoe on these wells?

A I'm sure that must be about right. I can look at it and check it. That's right.

Q Now, these cement tops are estimated from the volume of cement used and the size of the hole and the size of the pipe, it's calculated top?

A Yes.

Q And do I understand you correctly that you propose that in the event the Commission should approve the expansion of

this project which was on Number R-1525 which is number 701 and introduce project allowables for waterflood projects that you would come under the allowable provision of 701?

A That's correct.

MR. RUSSELL: I have one other question Mr. Seely.

REDIRECT EXAMINATION

BY MR. RUSSELL:

Q What is the anticipated life of the project?

A Probably 12 to 15 years.

Q Now, these wells that you inject down the casing without tubing, do you have any schedule of tests on these casings subsequent to the initial testing?

A As I mentioned previously, the testing that we do -- I mean, we've operated in several injection wells and we can tell pretty well when a leak or something of this nature develops. This can be done, as I mentioned, the surface injection pressure and also the rate at which you inject, the rate is going to increase and the pressure is going to decrease and as a future means of this we have of course the monthly or daily average for injection for each well and also the injection pressure.

MR. IRBY: Mr. Seely, I don't want to get into a lot of wording, I don't and you don't, and I don't like to receive them, but could you inform me on this particular flood if there is a drop in pressure or an increase in injection at any time

during the life of this flood so that I may be aware of any possibility of leaks?

THE WITNESS: Let me make this clear, that anytime this happens we're immediately going to go in with tubing and packer and test the casing and most likely there will be a leak and in the event there is one then, of course, we are going to inject underneath the packer.

MR. IRBY: You're not willing to advise me when this occurs?

THE WITNESS: Oh yes, if you so request.

MR. IRBY: I so request. This doesn't mean that you give me these monthly reports that you always make.

THE WITNESS: Right.

MR. NUTTER: Any further questions of Mr. Seely?

You may be excused.

MR. RUSSELL: I would offer Applicant's Exhibits 1 through 6 into evidence.

MR. NUTTER: Applicant's Exhibits 1 through 6 are admitted into evidence.

(Whereupon, Applicant's Exhibits 1 through 6 entered in evidence.)

MR. RUSSELL: Nothing further.

MR. NUTTER: Does anyone have anything further in Case Number 3147? We will take the case under advisement.

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

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

John Orfanides
COURT REPORTER

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3147, heard by me on 11/24, 1964.

....., Examiner
New Mexico Oil Conservation Commission

I N D E X

E X H I B I T S

NUMBER	MARKED FOR IDENTIFICATION	OFFERED	ADMITTED
Exhibit 1	3	16	16
Exhibit 2	4	16	16
Exhibit 3	4	16	16
Exhibit 4	5	16	16
Exhibit 5	7	16	16
Exhibit 6	8	16	16

NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING

SANTA FE, NEW MEXICO

REGISTER

HEARING DATE NOVEMBER 24, 1964 TIME: 9 A.M.

NAME:	REPRESENTING:	LOCATION:
George H. Hunker Jr.	J. Schuman & Saul Yager	Roswell, N. M.
Marshall Smith	Stateline Reporting	Santa Fe
	California Oil Co.	Midland, Tex
E. KIRK NEWMAN	Newmont Oil Co.	Houston, Tex
Charlie Seely	Sunset Int'l	Midland, Tex
Lee Parks		
R T Wright	El Paso Natural Gas	Jal, N.M.
L E Mabe	"	"
Frank E. Ivey	State Engr	Santa Fe
L. S. Mueninink	Southern Union Prod.	Dallas, Tex
Donald E Pray	J Schuman & Saul Yager	Tulsa Okla
D R Murphey Jr	Pure Oil Co	Midland Tex
Richard L. Morris	Seth, Montgomery, Federici	Hinkle Law Firm Santa Fe
	" " "	
Jon Newmark	So. Union Gas	Dallas, Texas
G. K. O'Brien	J. L. Hamon	Midland, Texas
Wm. Parsons	Perry Bass	" "
W. A. Shaw	Jake L. Hamon	" "
Thomas D. Hinkle	J. E. Hanson	Roswell
John D Russell	Newmont Oil	"

NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING

SANTA FE, NEW MEXICO

REGISTER

HEARING DATE NOVEMBER 24, 1964 TIME: 9 A.M.

NAME:	REPRESENTING:	LOCATION:
Jason Kellahin	Kellahin & Fox	Santa Fe
V. T. Lyon	Continental Oil Co	Hobbs
R. D. Riley	"	"
A. L. Porter, Jr.	O C C	Santa Fe
GEORGE E. FISH	THE PURE OIL CO.	MIDLAND, TEX.
CARL L. WHIGHAM	TEXACO	MIDLAND TEX
L C. White	Same	S.F.

NEW MEXICO OIL CONSERVATION COMMISSION

Examiner Hearing

Santa Fe, NEW MEXICO

REGISTER

HEARING DATE NOVEMBER 24, 1964 TIME: 9 A.M.

NAME:	REPRESENTING:	LOCATION:

Docket No. 32-64

DOCKET: EXAMINER HEARING - TUESDAY - NOVEMBER 24, 1964

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 3147: Application of Newmont Oil Company for a waterflood expansion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand its West Square Lake Waterflood Project by the injection of water into the Grayburg and San Andres formation through 10 wells in Sections 32, 33, and 35, Township 16 South, Range 30 East, and Section 4, Township 17 South, Range 30 East, Eddy County, New Mexico.

CASE 3148: Application of Newmont Oil Company for a waterflood buffer zone, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks establishment of the NW/4 SE/4 of Section 28, the W/2 SW/4 of Section 33, and the SE/4 NW/4 and SE/4 NE/4 of Section 34, all in Township 16 South, Range 31 East, as a buffer zone adjacent to its Square Lake Waterflood Project, Eddy County, New Mexico.

CASE 3149: Application of Newmont Oil Company for amendment of Order No. R-2178-B, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an amendment of Order No. R-2178-B to include the S/2 SE/4 of Section 11, Township 18 South, Range 29 East, in Stage I of the Loco Hills Sand Unit Waterflood Project, to approve two Stage I water injection wells in said Section 11, and to include the NE/4 NE/4 of Section 15, Township 18 South, Range 29 East, in Stage III of the waterflood project.

CASE 3150: Application of California Oil Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Bogle Flats Unit Area comprising 11,091 acres, more or less, of State and Federal lands in Township 22 South, Range 23 East, Eddy County, New Mexico.

CASE 3151: Application of Jake L. Hamon for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its State E-8321 Well No. 1 located in Unit L of Section 4, Township 21 South, Range 35 East, Lea County, New Mexico, to produce oil from the Wolfcamp and Strawn formations through parallel strings of tubing.

CASE 3152: Application of Jake L. Hamon for the creation of a new oil pool and for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new oil pool for Wolfcamp production for its State E-8321 Well No. 1 located in Unit L of Section 4, Township 21 South, Range 35 East, Lea County, New Mexico, and for the promulgation of special rules for said pool, including a provision for 80-acre spacing and fixed well locations.

CASE 3153: Application of Jake L. Hamon for the creation of a new oil pool and for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new oil pool for Strawn production for its State E-8321 Well No. 1 located in Unit L of Section 4, Township 21 South, Range 35 East, Lea County, New Mexico, and for the promulgation of special rules for said pool, including a provision for 80-acre spacing and fixed well locations.

CASE 3154: Application of Atlantic Refining Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Culwin Queen Unit Area comprising 820 acres, more or less, of State and Federal lands in Townships 18 and 19 South, Ranges 30 and 31 East, Eddy County, New Mexico.

CASE 3155: Application of Atlantic Refining Company for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Shugart Pool in its Culwin Queen Unit Area by the injection of water into the Queen formation through six injection wells in Section 36, Township 18 South, Range 30 East, Section 31, Township 18 South, Range 31 East, Section 1, Township 19 South, Range 30 East, and Section 6, Township 19 South, Range 31 East, Eddy County, New Mexico.

CASE 3156: Application of Continental Oil Company for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the Cass Pool, Lea County, New Mexico, including a provision for 80-acre spacing and the transfer of allowables.

CASE 3157: Application of The Pure Oil Company for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to complete its Red Hills Unit Well No. 1 located 330 feet from the South line and 2310 feet from the East line of Section 32, Township 25 South, Range 33 East, Lea County, New Mexico, as a dual completion (conventional) to produce gas from the Wolfcamp and Pennsylvanian formations through parallel strings of tubing.

CASE 3158: Application of The Pure Oil Company for the creation of a new gas pool and for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Wolfcamp gas pool for its Red Hills Unit Well No. 1 located 330 feet from the South line and 2310 feet from the East line of Section 32, Township 25 South, Range 33 East, Lea County, New Mexico, and the promulgation of special pool rules including a provision for 640 acre spacing.

CASE 3159: Application of The Pure Oil Company for the creation of a new gas pool and for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Pennsylvanian gas pool for its Red Hills Unit Well No. 1, located 330 feet from the South line and 2310 feet from the East line of Section 32, Township 25 South, Range 33 East, Lea County, New Mexico, and the promulgation of special pool rules including a provision for 640-acre spacing.

CASE 3160: Application of Texaco Inc. for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (tubingless) of its State of New Mexico "R" (NCT-4) Well No. 1 located in Unit C of Section 7, Township 18 South, Range 35 East, Lea County, New Mexico, to produce oil from the Vacuum-San Andres and Vacuum-Abo Reef Pools through parallel strings of 2-7/8 inch casing cemented in a common well bore.

CASE 3161: In the matter of the hearing called by the Oil Conservation Commission upon its own motion to permit Southern Union Production Company and all other interested parties to show cause why the Robert Mims-State Well No. 1 located in Unit M of Section 16, Township 29 North, Range 9 West, San Juan County, New Mexico, should not be properly repaired or plugged in accordance with a Commission approved plugging program.

CASE 3162: Application of Continental Oil Company for a waterflood expansion and an administrative procedure, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to convert to water injection its General American Green "B" Wells Nos. 4 and 7, located in Unit H of Section 7 and Unit L of Section 5, respectively, Cave Pool Waterflood Project, Township 17 South, Range 29 East, Eddy County, New Mexico. Applicant further seeks an administrative procedure in exception to Rule 701 whereby additional wells in said project could be converted to water injection prior to receiving response from flooding operations.

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date 11/25/64

CASE 3147 Hearing Date 9am 11/24/64 DSN @ SF

My recommendations for an order in the above numbered cases are as follows:

Enter an order authorizing the expansion of Nearmont Oil Co waterflood proj in W Square Lake Pool by the conversion to wtr inj of the following wells:

Lease	Well No.	Unit	Sec	T	R
Leonard E	1	P	33	16	30
" "	3	J	"	"	"
" "	8	F	4	17	"
" "	13	J	"	"	"
" "	16	P	"	"	"
Evans A	2	H	"	"	"
" "	15	N	"	"	"
" B	8	L	33	16	"
Leonard St	1	P	32	"	"
Geo. Et3 "A"	5	O	35	"	"

Provide that the entire project, both as originally authorized and subsequently expanded, shall be subject to Rule 701-E excluding that portion of said Rule relating to the determination of project area & the assignment of project allowables

STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

S. E. REYNOLDS
STATE ENGINEER

November 10, 1964

ADDRESS CORRESPONDENCE TO:
STATE CAPITOL
SANTA FE, N. M.
87501

Mr. A. L. Porter, Jr.
Secretary-Director
Oil Conservation Commission
Santa Fe, N. M.

Dear Mr. Porter:

Reference is made to the application of Newmont Oil Company submitted by John F. Russell on November 2, 1964 which seeks approval to convert the following wells to water injection in the West Square Lake Waterflood Project:

Leonard "E" Well No. 1	SE¼SE¼ Sec. 33, T. 16 S., R. 30 E.
Leonard "E" Well No. 3	NW¼SE¼ Sec. 33, T. 16 S., R. 30 E.
Leonard "E" Well No. 8	SE¼NW¼ Sec. 4, T. 17 S., R. 30 E.
Leonard "E" Well No. 13	NW¼SE¼ Sec. 4, T. 17 S., R. 30 E.
Leonard "E" Well No. 16	SE¼SE¼ Sec. 4, T. 17 S., R. 30 E.
Evans "A" Well No. 2	SE¼NW¼ Sec. 4, T. 17 S., R. 30 E.
Evans "A" Well No. 15	SE¼SW¼ Sec. 4, T. 17 S., R. 30 E.
Evans "B" Well No. 8	NW¼SW¼ Sec. 33, T. 16 S., R. 30 E.
Leonard State Well No. 1	SE¼SE¼ Sec. 32, T. 16 S., R. 30 E.
George Etz "A" Well No. 5	SW¼SE¼ Sec. 35, T. 16 S., R. 30 E.

It is noted that seven of these wells are 22 years old and the three remaining wells are 18 years old and that the Leonard No. 1 was plugged and abandoned in 1950 after completion in 1942.

It is further noted that all cement tops are estimated and that no statement is made as to whether injection will be down internally plastic-coated tubing under packer. Very little information as to the proposed completion of these wells

for injection purposes is given. However, this office offers no objection to the granting of the application, provided injection is down internally plastic-coated tubing under a packer or adequate tests are made of the casing prior to injection and at frequent intervals thereafter, and further provided that the replacement or re-entry of the Leonard E No. 1 is constructed in a manner equal to or better than the above limitations.

Yours truly,

S. E. Reynolds
State Engineer

By: Frank E. Irby
Frank E. Irby
Chief
Water Rights Div.

FEI/ma
cc-J. F. Russell
F. H. Hennighausen

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. 3147
Order No. R-2823

APPLICATION OF NEWMONT OIL COMPANY
FOR EXPANSION OF A WATERFLOOD PROJ-
ECT, EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on November 24, 1964, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 7th day of December, 1964, 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, seeks permission to expand its West Square Lake Waterflood Project by the injection of water into the Grayburg and San Andres formations through ten injection wells in Sections 32, 33, and 35, Township 16 South, Range 30 East, and Section 4, Township 17 South, Range 30 East, NMPM, Eddy County, New Mexico.

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

(4) That expansion of the proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(5) That although capacity allowables have previously been authorized for the subject waterflood project as an exception to Rule 701 of the Commission Rules and Regulations, the necessity for this exception no longer exists.

(6) That the subject application should be approved and that the applicant's West Square Lake Waterflood Project should hereafter be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Newmont Oil Company, is hereby authorized to expand its West Square Lake Waterflood Project by the injection of water into the Grayburg and San Andres formations through the following-described wells:

EDDY COUNTY, NEW MEXICO

LEASE	WELL NO.	UNIT	SECTION	TOWNSHIP	RANGE
Leonard State	1	P	32	16 South	30 East
Leonard E	1	P	33	16 South	30 East
Leonard E	3	J	33	16 South	30 East
Evans B	8	L	33	16 South	30 East
Geo. Etz "A"	5	O	35	16 South	30 East
Leonard E	8	F	4	17 South	30 East
Leonard E	13	J	4	17 South	30 East
Leonard E	16	P	4	17 South	30 East
Evans A	2	H	4	17 South	30 East
Evans A	15	N	4	17 South	30 East

(2) That the West Square Lake Waterflood Project shall hereafter be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(3) That monthly progress reports of the expanded waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1119 of the Commission Rules and Regulations.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

Jack M Campbell

JACK M. CAMPBELL, Chairman

E. S. Walker

E. S. WALKER, Member

A. L. Porter, Jr.

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

S E A L

esr/

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

December 7, 1964

COPY

Mr. John Russell
Attorney at Law
Post Office Drawer 640
Roswell, New Mexico

Dear Sir:

Enclosed herewith is Commission Order No. R-2823, entered in Case No. 3147, approving the expansion of Newmont Oil Company's West Square Lake Waterflood Project.

As discussed at the hearing, injection is to be through casing, after the casing in all of the ten authorized injection wells has been pressure-tested to the maximum expected injection pressure of 1800 psi and the results of such tests furnished to the Commission and to the State Engineer Office at Santa Fe. In the event casing failure is detected in any well, injection shall be permitted in said well only through tubing and packer. As further agreed to at the hearing, the Commission and the State Engineer Office in Santa Fe are to be notified in the event of any significant decrease in injection pressure in any well or decrease in injection pressure in any well or any significant increase in injection volumes; also when produced water is first recycled for injection purposes.

As to allowable, our calculations indicate that when all of the authorized injection wells have been placed on active injection and when all of the proposed producing wells are put on production, the maximum allowable which this project will be eligible to receive under the provisions of Rule 701-E-3 is 2394 barrels per day, providing the various individual leases in the project area are covered by some agreement for consolidation of allowable approved by the royalty owners.

Please report any error in this calculated maximum allowable immediately both to the Santa Fe office of the Commission and the appropriate district proration office.

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

Mr. John Russell
Attorney at Law
Post Office Drawer 640
Roswell, New Mexico

C
O
P
Y

In order that the allowable assigned to the project may be kept current, and in order that the operator may fully benefit from the allowable provisions of Rule 701, it behooves him to promptly notify both of the aforementioned Commission offices by letter of any change in the status of wells in the project area, i.e., when active injection commences, when additional injection or producing wells are drilled, when additional wells are acquired through purchase or unitization, when wells have received a response to water injection, etc.

Your cooperation in keeping the Commission so informed as to the status of the project and the wells therein will be appreciated.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/DSN/ir

cc: Mr. Frank Irby
State Engineer Office
Santa Fe, New Mexico

Oil Conservation Commission:
Hobbs and Artesia, New Mexico

LAW OFFICES OF
JOHN F. RUSSELL
SUITE 1010 SECURITY NATIONAL BANK BUILDING
P O DRAWER 640
ROSWELL, NEW MEXICO 88201

TELEPHONE 622-4641
AREA CODE 505

November 2, 1964

dsc 3147

Oil Conservation Commission
Box 2088
Santa Fe, New Mexico 87501

Gentlemen:

I transmit herewith an application of Newmont Oil Company with the request that it be set down at the examiner hearing scheduled for November 24.

A copy of this application and exhibits have been forwarded to Frank Irby at the office of the State Engineer.

Very truly yours,

John F. Russell

JFR:np

Enclosures

cc: Mr. Frank Irby - w/encls.

BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF NEWMONT OIL COMPANY FOR AN ORDER EXPANDING ITS WEST SQUARE LAKE WATER-FLOOD PROJECT BY INCLUDING THEREIN THE SE¼ AND S½NE¼ OF SECTION 32, THE W½, SE¼, N½NE¼, SW¼NE¼ OF SECTION 33, AND THE S½SW¼, SE¼, NE¼SW¼ OF SECTION 35, ALL IN TOWNSHIP 16 SOUTH, RANGE 30 EAST; AND THE N½, SE¼, NW¼SW¼ AND E½SW¼ OF SECTION 4, TOWNSHIP 17 SOUTH, RANGE 30 EAST, EDDY COUNTY, NEW MEXICO.	)	No. 3147

APPLICATION

COMES NOW Applicant, Newmont Oil Company, through its attorney, John F. Russell, and states:

1. Applicant is the operator of its West Square Lake Waterflood Project in Eddy County, New Mexico, which project area is shown on Exhibit 1 which is attached hereto and made a part hereof.

2. Applicant is the operator of the oil and gas leases covering the following described lands which are adjacent to said waterflood project as shown on Exhibit 1:

Township 16 South, Range 30 East
Eddy County, New Mexico

Section 32: SE¼, S½NE¼
Section 33: W½, SE¼, N½NE¼, SW¼NE¼
Section 35: S½SW¼, SE¼, NE¼SW¼

Township 17 South, Range 30 East
Eddy County, New Mexico

Section 4: N½, SE¼, NW¼SW¼, E½SW¼

3. Applicant seeks to convert the following described wells to water injection wells for the purpose of injecting water

into the Grayburg and San Andres formations at intervals from 2730 feet to 3146 feet, said intervals being more specifically shown on Exhibit 3 attached hereto and made a part hereof:

Leonard "E" Well No. 1	SE¼SE¼ Sec. 33, T16S R30E
Leonard "E" Well No. 3	NW¼SE¼ Sec. 33, T16S R30E
Leonard "E" Well No. 8	SE¼NW¼ Sec. 4, T17S R30E
Leonard "E" Well No. 13	NW¼SE¼ Sec. 4, T17S R30E
Leonard "E" Well No. 16	SE¼SE¼ Sec. 4, T17S R30E
Evans "A" Well No. 2	SE¼NW¼ Sec. 4, T17S R30E
Evans "A" Well No. 15	SE¼SW¼ Sec. 4, T17S R30E
Evans "B" Well No. 8	NW¼SW¼ Sec. 33, T16S R30E
Leonard State Well No. 1	SE¼SE¼ Sec. 32, T16S R30E
George Etz "A" Well No. 5	SW¼SE¼ Sec. 35, T16S R30E

4. Attached hereto, marked Exhibit 2, and made a part hereof is a plat showing the proposed injection wells and all wells and lessees within a radius of two miles thereof.

5. Attached hereto, marked Exhibit 4, and made a part hereof are diagrammatic sketches of the proposed completion of said injection wells.

6. Attached hereto, marked Exhibit 5, and made a part hereof is a graph showing the waterflood performance in Applicant's West Square Lake Waterflood Project.

7. The source of water for injection purposes will be the Yucca Water Company.

8. It is anticipated that water will initially be injected at an estimated rate of 300 barrels per well per day at an injection pressure of 1800 psi, which volume will decrease to approximately 150 barrels per well per day over the life of the flood.

WHEREFORE, Applicant requests the Commission to set this matter down for hearing before its Examiner, publish notice as required by law and, after hearing, issue its order authorizing the

expansion of Applicant's West Square Lake Waterflood Project as requested by this Application, and that allowables be established in accordance with Rule 701.

Respectfully submitted,

NEWMONT OIL COMPANY

By John F. Russell

P. O. Drawer 640
Roswell, New Mexico

Attorney for Applicant

DATED: October 30, 1964

EXHIBIT 2

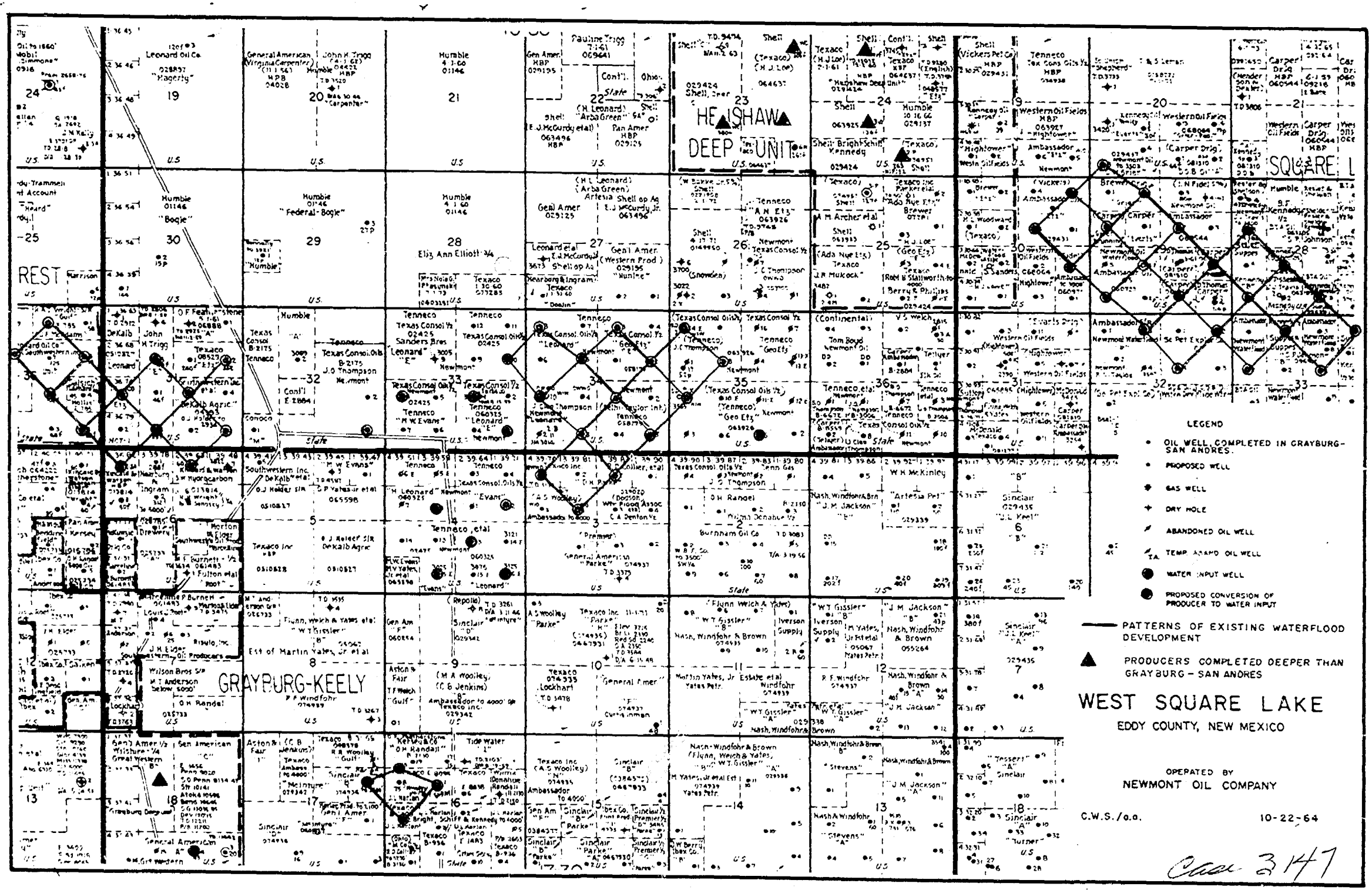

HEALSHAW DEEP UNIT
GRAYBURG-KEELY
SQUARE L
REST
LEGEND
OIL WELL COMPLETED IN GRAYBURG-SAN ANDRES.
PROPOSED WELL
GAS WELL
DRY HOLE
ABANDONED OIL WELL
TEMP. ABAND OIL WELL
WATER INPUT WELL
PROPOSED CONVERSION OF PRODUCER TO WATER INPUT
PATTERNS OF EXISTING WATERFLOOD DEVELOPMENT
PRODUCERS COMPLETED DEEPER THAN GRAYBURG - SAN ANDRES
WEST SQUARE LAKE
EDDY COUNTY, NEW MEXICO
OPERATED BY
NEWMONT OIL COMPANY
C.W.S./a.a.
10-22-64
Case 3147

EXHIBIT 3

WELL RECORD SUMMARY OF PROPOSED WATER INJECTION WELLS
NEWMONT OIL COMPANY'S WEST SQUARE LAKE WATERFLOOD PROJECT
SQUARE LAKE FIELD, EDDY COUNTY, NEW MEXICO

LEASE	WELL NUMBER	LOCATION	ELEVATION	COMPLETION DATE	SURFACE CASING SIZE	SURFACE CASING DEPTH	SURFACE CASING SACKS CEMENT USED	SURFACE CASING EST. TOP OF CEMENT	TOP OF SALT
LEONARD "E"	1*	SE/4 SE/4 SEC. 33 T16S R30E	3727'	3-28-42	8-5/8"	493'	50	181'	493'
LEONARD "E"	3	NW/4 SE/4 SEC. 33 T16S R30E	3724'	4-14-42	8-1/4"	574'	50	330'	574'
LEONARD "E"	8	SE/4 NW/4 SEC. 4 T17S R30E	3720'	11-4-42	8-5/8"	514'	50	270'	517'
LEONARD "E"	13	NW/4 SE/4 SEC. 4 T17S R30E	3715'	1-27-46	10-3/4"	501'.7"	50	260'	565'
LEONARD "E"	16	SE/4 SE/4 SEC. 4 T17S R30E	3704'	5-12-46	8-5/8"	490'	50	250'	465'
EVANS "A"	2	SE/4 NE/4 SEC. 4 T17S R30E	3715'	2-7-42	8-1/4"	505'	50	260'	495'
EVANS "A"	15	SE/4 SW/4 SEC. 4 T17S R30E	3740'	7-28-46	8-5/8"	585'	50	240'	475'
EVANS "B"	8	NW/4 SW/4 SEC. 33 T16S R30E	3729'	8-14-42	8-5/8"	840'	50	600'	644'
LEONARD STATE	1	SE/4 SE/4 SEC. 32 T16S R30E	3724'	6-7-42	10-3/4"	480'	50	240'	630'
GEORGE ETZ "A"	5	SW/4 SE/4 SEC. 35 T16S R30E	3752'	5-29-42	8-1/4"	591'	50	350'	561'

* NOTE: This well was plugged and abandoned on 12-19-50; 1767' of 5-1/2" casing was pulled. The well will either be re-entered or the location will be re-drilled.

Case 3147

WELL RECORD SUMMARY OF
PROPOSED WATER INJECTION WELLS
WEST SQUARE LAKE WATERFLOOD PROJECT

LEASE	WELL NUMBER	PRODUCTION CASING SIZE	DEPTH	SACKS CEMENT USED	EST. TOP OF CEMENT	REPORTED PAY INTERVALS	TOTAL DEPTH
LEONARD "E"	1	5-1/2"	2816'	100	1767'	2902-07', 2941-50', 3063-3146'	3146'
LEONARD "E"	3	5-1/2"	2771'	100	1700'	2862-70', 2911-31'	3000'
LEONARD "E"	8	5-1/2"	2750'	100	1670'	2920-40'	2953'
LEONARD "E"	13	7"	2750'	100	2150'	2920-30', 3026-60'	3153'
LEONARD "E"	16	5-1/2"	2750'	100	1670'	2830-38', 2900-10', 3035-65'	3125'
EVANS "A"	2	5-1/2"	2750'	100	1670'	2825-37', 2925-41'	2966'
EVANS "A"	15	5-1/2"	2700'	100	1620'	2730-55', 2755-75', 2775-2825'	2825'
EVANS "B"	8	5-1/2"	2712'	100	1632'	2808-18', 2852-62'	2881'
LEONARD STATE	1	7" 5-1/2"	2162' 2650' (565')	50 40	1862' 2085'	279[illegible]-2802'	2883'
GEORGE ETZ "A"	5	5-1/2"	2896'	100	1826'	2973-77', 3010-21'	3051'

CWS:ajg
October 29, 1964

EXHIBIT 4

Case 3147

NEWMONT OIL COMPANY

PROPOSED WATER INJECTION WELL

SCHEMATIC COMPLETION DIAGRAM

Field Square Lake County Eddy Lease Leonard "E" Well No. 1

Location SE/4 SE/4, Sec. 33 T16S R30E Comp. Date 3-28-42

10 Sack Cement Plug Set at Surface

Elevation 3727 Feet

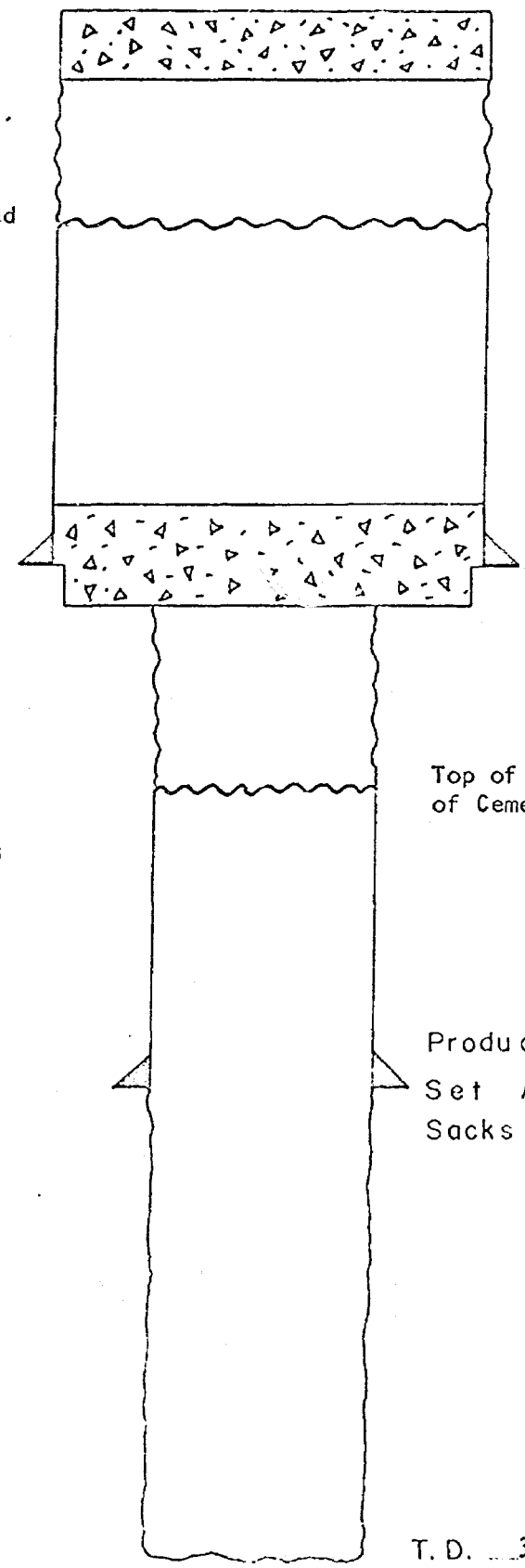
Top of 8-5/8" and Estimated Top of Cement 181 Feet

Top Of Salt 493 Feet

Surface Casing 8-5/8"

Set At 493 Feet With 50 Sacks Cement.

10 Sack Cement Plug Set At Top of Salt



Top of 5-1/2" and Estimated Top of Cement 1767 Feet

Reported Pay Intervals

Production Casing 5-1/2"

Set At 2816 Feet With 100 Sacks Cement.

2902 - 2907'

2941 - 2950'

3063 - 3146'

T. D. 3146

NOTE: This well was plugged and abandoned on December 19, 1950 by Texas Consolidated Oils.

NEWMONT OIL COMPANY

PROPOSED WATER INJECTION WELL

SCHEMATIC COMPLETION DIAGRAM

Field Square Lake County Eddy Lease Leonard "E" Well No. 3

Location NW/4 SE/4, Sec. 33 T16S R30E Comp. Date 4-14-42

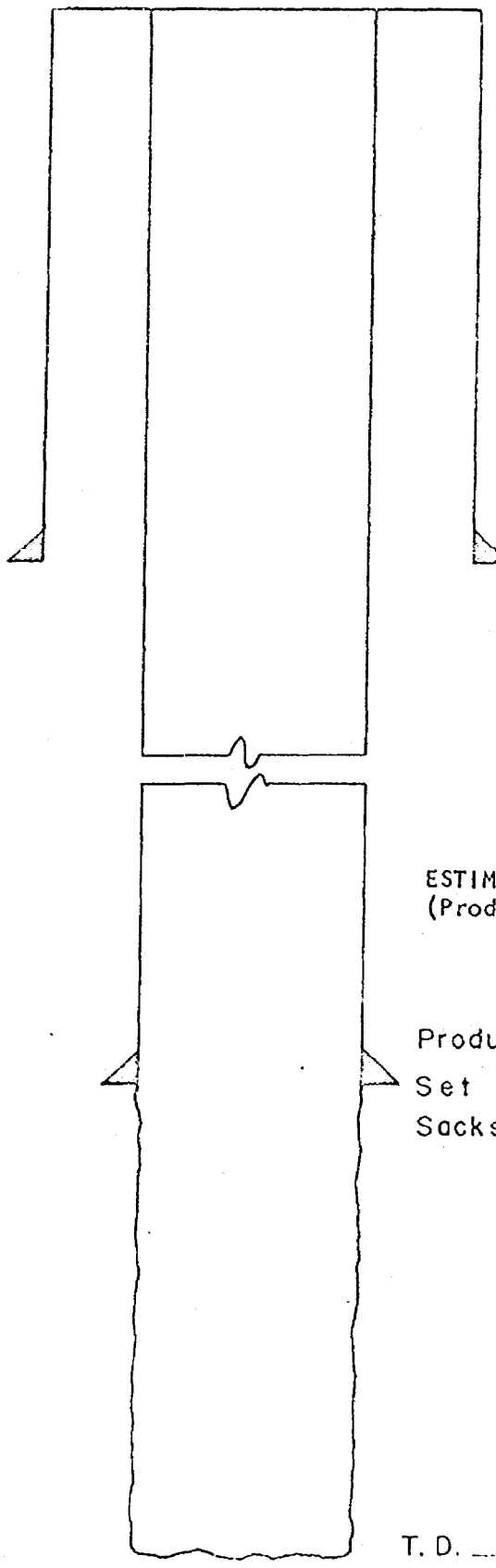
Elevation 3724 Feet

ESTIMATED TOP OF CEMENT 330 FEET (Surface Casing)

Top Of Salt 574 Feet

Surface Casing 8-1/4"

Set At 574 Feet With 50 Sacks Cement.



Reported Pay Intervals

2862 - 2870'

2911 - 2931'

ESTIMATED TOP OF CEMENT 1700 FEET (Production Casing)

Production Casing 5-1/2"

Set At 2771 Feet With 100 Sacks Cement.

T. D. 3000

Case 3147

NEWMONT OIL COMPANY

PROPOSED WATER INJECTION WELL

SCHEMATIC COMPLETION DIAGRAM

Field Square Lake County Eddy Lease Leonard "E" Well No. 8

Location SE/4 NW/4, Sec. 4 T17S R30E Comp. Date 11-4-42

Elevation 3720 Feet

ESTIMATED TOP OF CEMENT
270 FEET
(Surface Casing)

Top Of Salt 517 Feet

Surface Casing 8-5/8"
Set At 514 Feet
With 50 Sacks Cement.

Reported Pay Intervals

ESTIMATED TOP OF CEMENT 1670 FEET
(Production Casing)

Production Casing 5-1/2"
Set At 2750 Feet With 100
Sacks Cement.

2920- 2940'

T. D. 2953

Case 3147

NEWMONT OIL COMPANY

PROPOSED WATER INJECTION WELL

SCHEMATIC COMPLETION DIAGRAM

Field Square Lake County Eddy Lease Leonard "E" Well No. 13

Location NW/4 SE/4, Sec. 4 T17S R30E Comp. Date 1-27-46

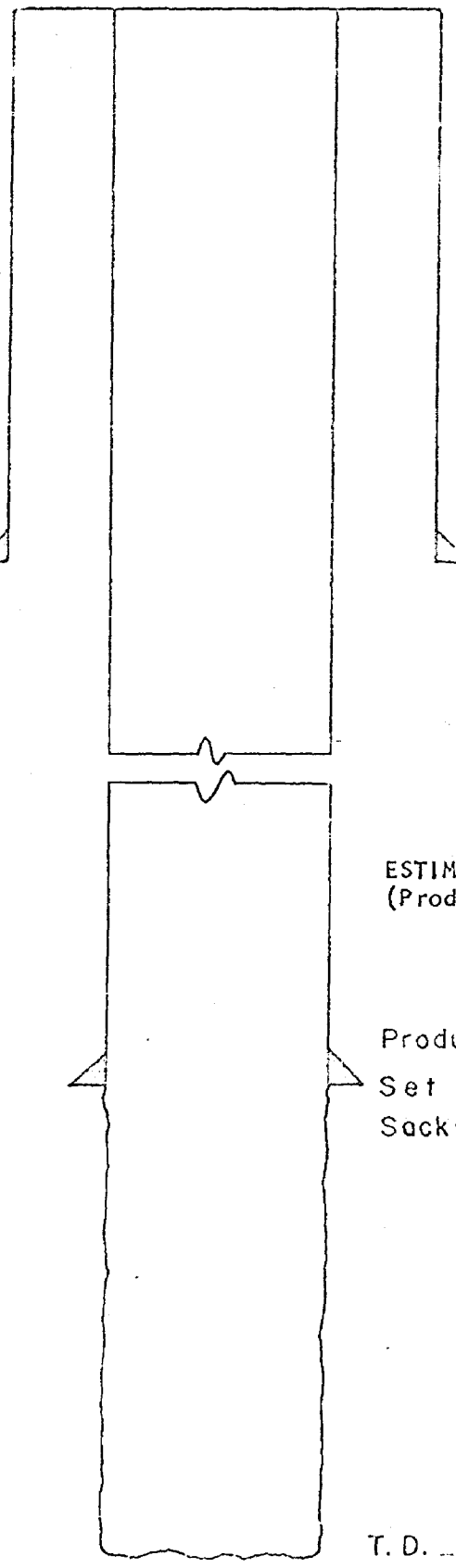
Elevation 3715 Feet

ESTIMATED TOP OF CEMENT 260 FEET (Surface Casing)

Top Of Salt 565 Feet

Surface Casing 10-3/4"

Set At 501 Feet With 50 Sacks Cement.



Reported Pay Intervals

ESTIMATED TOP OF CEMENT 2150 FEET (Production Casing)

Production Casing 7"

Set At 2750 Feet With 100 Sacks Cement.

2920 - 2930'

3026 - 3060'

T. D. 3153

Case 3147

NEWMONT OIL COMPANY

PROPOSED WATER INJECTION WELL

SCHEMATIC COMPLETION DIAGRAM

Field Square Lake County Eddy Lease Leonard "E" Well No. 16

Location SE/4 SE/4, Sec. 4 T17S R30E Comp. Date 5-12-46

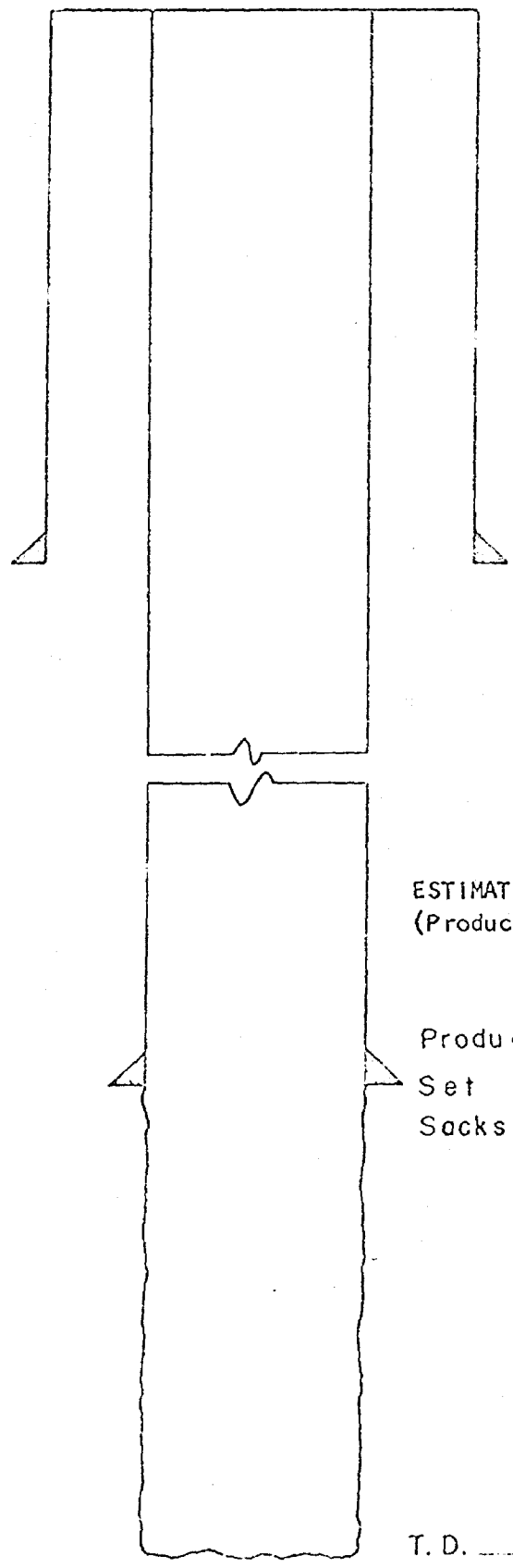
Elevation 3704 Feet

ESTIMATED TOP OF CEMENT 250 FEET (Surface Casing)

Top Of Salt 465 Feet

Surface Casing 8-5/8"

Set At 490 Feet With 50 Sacks Cement.



Reported Pay Intervals

2830 - 2838'

2900 - 2910'

3035 - 3065'

ESTIMATED TOP OF CEMENT 1670 FEET (Production Casing)

Production Casing 5-1/2"

Set At 2750 Feet With 100 Sacks Cement.

T. D. 3125

Case 3147

NEWMONT OIL COMPANY

PROPOSED WATER INJECTION WELL

SCHEMATIC COMPLETION DIAGRAM

Field Square Lake County Eddy Lease Evans "A" Well No. 2

Location SE/4 NE/4, Sec. 4 T17S R30E Comp. Date 2-7-42

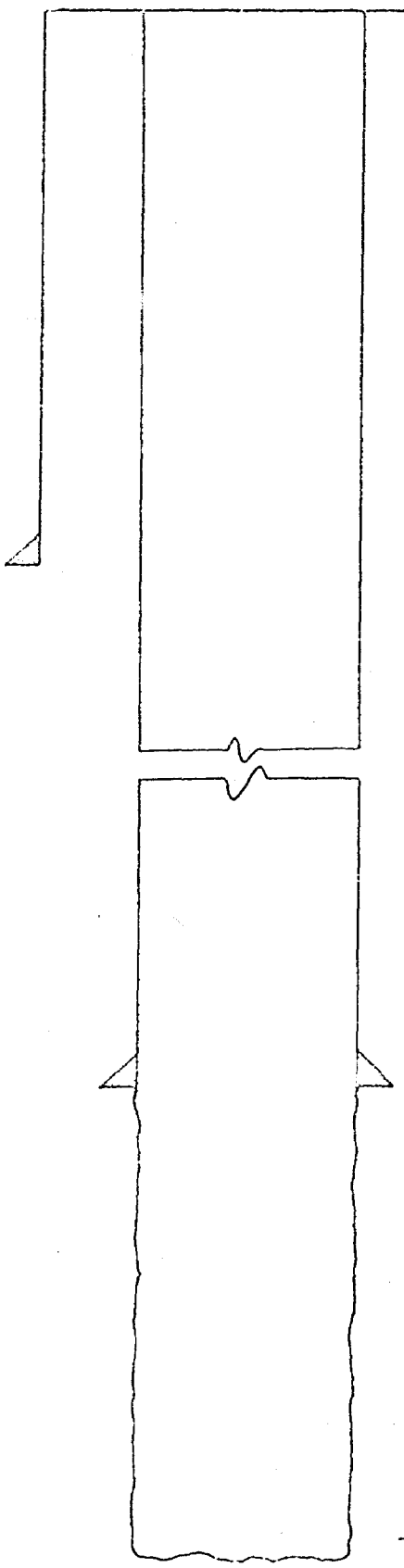
Elevation 3715 Feet

ESTIMATED TOP OF CEMENT 260 FEET (Surface Casing)

Top Of Salt 495 Feet

Surface Casing 8-1/4"

Set At 505 Feet With 50 Sacks Cement.



Reported Pay Intervals

ESTIMATED TOP OF CEMENT 1670 FEET (Production Casing)

Production Casing 5-1/2"

Set At 2750 Feet With 100 Sacks Cement.

2825 - 2837'

2925 - 2941'

T. D. 2966

Case 3147

NEWMONT OIL COMPANY

PROPOSED WATER INJECTION WELL

SCHEMATIC COMPLETION DIAGRAM

Field Square Lake County Eddy Lease Evans "A" Well No. 15

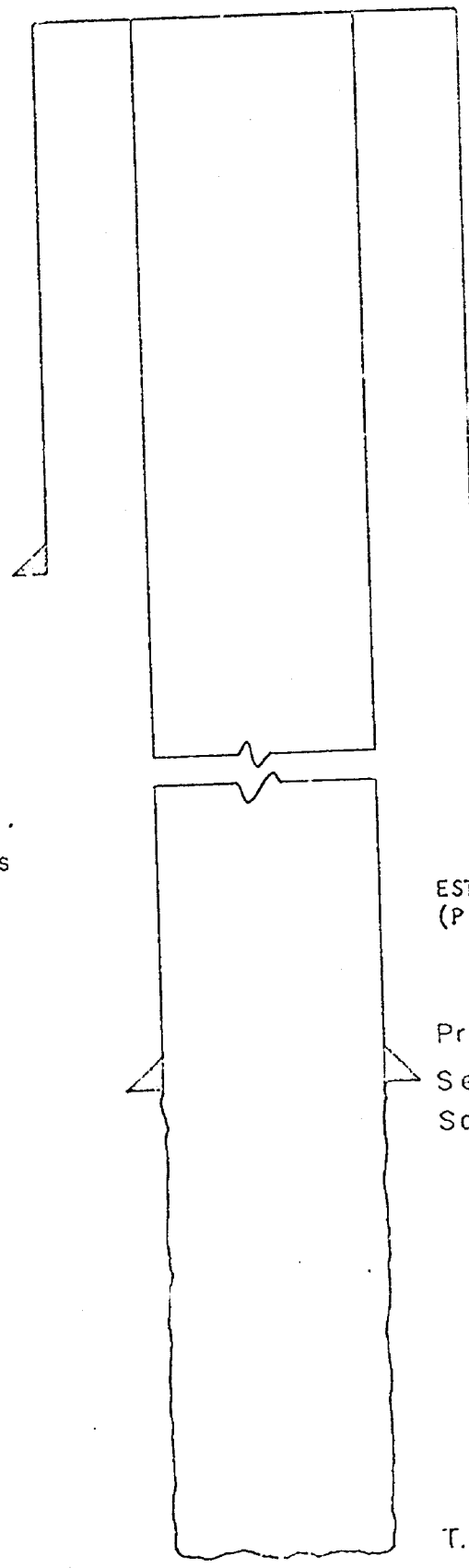
Location SE/4 SW/4, Sec. 4 T17S R30E Comp. Date 7-28-46

Elevation 3740 Feet

ESTIMATED TOP OF CEMENT 240 FEET
(Surface Casing)

Top Of Salt 475 Feet

Surface Casing 8-5/8"
Set At 585 Feet
With 50 Sacks Cement.



Reported Pay Intervals

2730 - 2755'

2755 - 2775'

2775 - 2825'

ESTIMATED TOP OF CEMENT 1620 FEET
(Production Casing)

Production Casing 5-1/2"
Set At 2700 Feet With 100
Sacks Cement.

T. D. 2825

Gw 3147

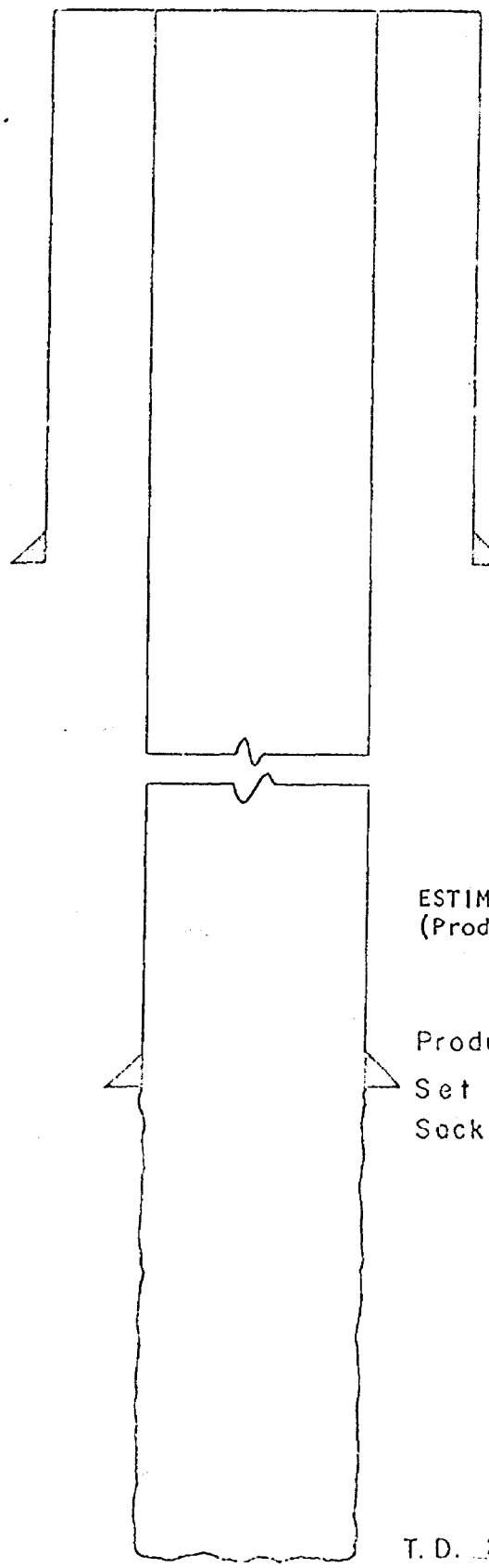
NEWMONT OIL COMPANY

PROPOSED WATER INJECTION WELL

SCHEMATIC COMPLETION DIAGRAM

Field Square Lake County Eddy Lease Evans "B" Well No. 8

Location NW/4 SW/4, Sec. 33 T16S R30E Comp. Date 8-14-42



Elevation 3729 Feet

ESTIMATED TOP OF CEMENT 600 FEET (Surface Casing)

Top Of Salt 644 Feet

Surface Casing 8-5/8"

Set At 840 Feet With 50 Sacks Cement.

Reported Pay Intervals

2808 - 2818'

2852 - 2862'

ESTIMATED TOP OF CEMENT 1632 FEET (Production Casing)

Production Casing 5-1/2"

Set At 2712 Feet With 100 Sacks Cement.

T. D. 2881

Case 3147

NEWMONT OIL COMPANY

PROPOSED WATER INJECTION WELL

SCHEMATIC COMPLETION DIAGRAM

Field Square Lake County Eddy Lease Leonard State Well No. 1

Location SE/4 SE/4, Sec. 32 T16S R30E Comp. Date 6-7-42

Elevation 3724 Feet

ESTIMATED TOP OF CEMENT
240 FEET
(Surface Casing)

Top Of Salt 630 Feet

Surface Casing 10-3/4"
Set At 480 Feet
With 50 Sacks Cement.

Reported Pay Intervals

2797 - 2802'

ESTIMATED TOP OF CEMENT 1862 / 2085 FEET
(Production Casing)

Production Casing 7" / 5-1/2"
Set At 2162 / 2650 (565') Feet With 50 / 40
Sacks Cement.

T. D. 2883

Case 3147

NEWMONT OIL COMPANY

PROPOSED WATER INJECTION WELL

SCHEMATIC COMPLETION DIAGRAM

Field Square Lake County Eddy Lease George Etz "A" Well No. 5

Location SW/4 SE/4, Sec. 35 T16S R30E Comp. Date 5-29-42

Elevation 3752 Feet

ESTIMATED TOP OF CEMENT 350 FEET
(Surface Casing)

Top Of Salt 561 Feet

Surface Casing 8-1/4"
Set At 591 Feet
With 50 Sacks Cement.

Reported Pay Intervals

2973 - 2977'

3010 - 3021'

ESTIMATED TOP OF CEMENT 1826 FEET
(Production Casing)

Production Casing 5-1/2"
Set At 2896 Feet With 100
Sacks Cement.

T. D. 3051

Case 3147

injection is to be through casing, ~~or~~ casing in ten
(4) As discussed at the hearing, all of the authorized
injection wells ~~are to be~~ has been pressure-tested to
the maximum expected injection pressure of
1800 psi and the results of such tests fur-
nished to the Commission and to the State
Engineer Office at Santa Fe. In the event
casing ~~station~~ failure is detected in any well,
injection shall be permitted in said well only
through tubing and packer. As further
agreed to at the hearing, the Commission and
the State Engineer Office in Santa Fe are to
be notified in the event of any significant
decrease in injection pressure in any well or
any significant increase in injection volumes; also
when produced water is first recycled for
injection ~~be~~ purposes.

'RNOR
L. MECHEM
CHAIRMAN

State of New Mexico
Oil Conservation Commission

LAND COMMISSIONER
E. S. JOHNNY WALKER
MEMBER

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

P. O. BOX 2088
SANTA FE
87501

Mr. John Russell
Attorney at Law
Post Office Drawer 640
Roswell, New Mexico

_____, 19___

and when all of the proposed producing wells are put on production,

~~Gentlemen:~~

Enclosed herewith is Commission Order No. R-2823, entered in Case No. 3147, approving the expansion of Newmont Oil Company's West Square Lake Water Flood Project.

As to allowable, indicate that when ~~According to~~ our calculations, when all of the authorized injection wells have been placed on active injection, the maximum allowable which this project will be eligible to receive under the provisions of Rule 701-E-3 is ~~2344~~ 2394 barrels per day, providing the various individual leases in the project area are covered by some agreement for consolidation of allowable approved by the royalty owners.

Please report any error in this calculated maximum allowable immediately, both to the Santa Fe office of the Commission and the appropriate District proration office.

In order that the allowable assigned to the project may be kept current, and in order that the operator may fully benefit from the allowable provisions of Rule 701, it behooves him to promptly notify both of the aforementioned Commission offices by letter of any change in the status of wells in the project area, i.e., when active injection commences, when additional injection or producing wells are drilled, when additional wells are acquired through purchase or unitization, when wells have received a response to water injection, etc.

Your cooperation in keeping the Commission so informed as to the status of the project and the wells therein will be appreciated.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

cc: Mr. Frank Irby
OCC - Hobbs and Artesia

EXHIBIT 2

COMPLETION DATA

TRACT 30, WELL NOS. 1 AND 2
WEST LOCO HILLS GRAYBURG NO. 4 SAND UNIT
EDDY COUNTY, NEW MEXICO

Well Number	30-1	30-2
Location	SW/4 SE/4, Sec. 11 T18S R29E	SE/4 SE/4, Sec. 11 T18S R29E
Elevation	3513.5'	3519'
Completion Date	6-25-64	7-14-64
Surface Casing:		
Size	7"	7"
Depth	483'	474'
Sacks Cement Used	50	50
Estimated Top of Cement	183'	174'
Top of Salt	478'	469'
Production Casing:		
Size	4-1/2"	4-1/2"
Depth	2589'	2632'
Sacks Cement Used	50	50
Estimated Top of Cement	2110'	2152'
Reported Pay Intervals	2599 - 2624'	2647 - 2655'
Total Depth	2655'	2676'

RRP:ajg
October 29, 1964

EXHIBIT 2

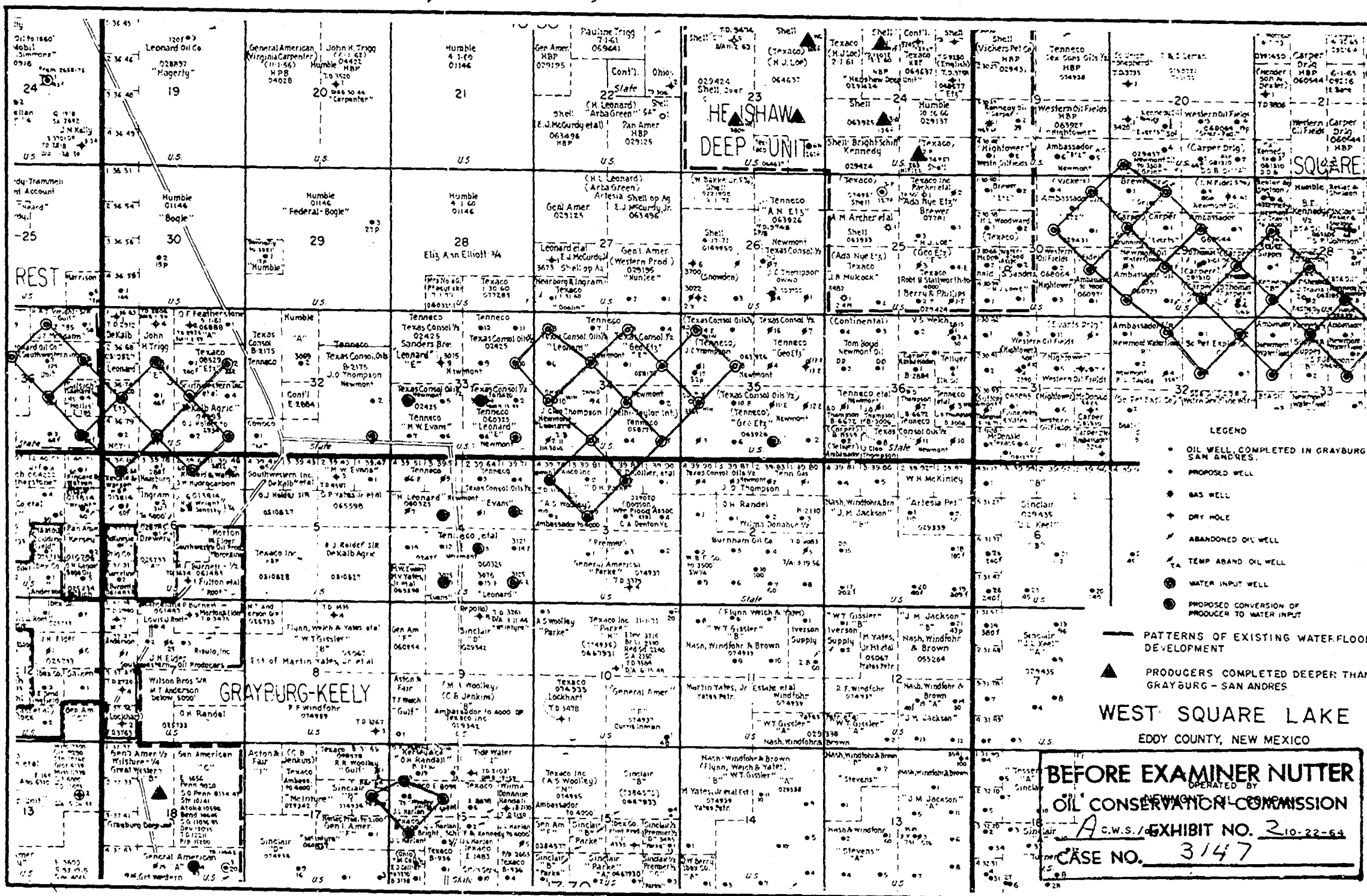
COMPLETION DATA

TRACT 30, WELL NOS. 1 AND 2
WEST LOCO HILLS GRAYBURG NO. 4 SAND UNIT
EDDY COUNTY, NEW MEXICO

Well Number	30-1	30-2
Location	SW/4 SE/4, Sec. 11 T18S R29E	SE/4 SE/4, Sec. 11 T18S R29E
Elevation	3513.5'	3519'
Completion Date	6-25-64	7-14-64
Surface Casing:		
Size	7"	7"
Depth	483'	474'
Sacks Cement Used	50	50
Estimated Top of Cement	183'	174'
Top of Salt	478'	469'
Production Casing:		
Size	4-1/2"	4-1/2"
Depth	2589'	2632'
Sacks Cement Used	50	50
Estimated Top of Cement	2110'	2152'
Reported Pay Intervals	2599 - 2624'	2647 - 2655'
Total Depth	2655'	2676'

RRP:ajg
October 29, 1964

EXHIBIT 2


HEADSHAW DEEP UNIT
GRAYBURG-KEELY
WEST SQUARE LAKE
EDDY COUNTY, NEW MEXICO
LEGEND
OIL WELL, COMPLETED IN GRAYBURG SAN ANDRES.
PROPOSED WELL
GAS WELL
DRY HOLE
ABANDONED OIL WELL
TEMP ABAND OIL WELL
WATER INPUT WELL
PROPOSED CONVERSION OF PRODUCER TO WATER INPUT
PATTERNS OF EXISTING WATERFLOOD DEVELOPMENT
PRODUCERS COMPLETED DEEPER THAN GRAYBURG - SAN ANDRES
BEFORE EXAMINER NUTTER
OPERATED BY
OIL CONSERVATION COMMISSION
EXHIBIT NO. 2
CASE NO. 3147

JOHN W. WEST ENGINEERING COMPANY
412 NORTH DAL PASO, HOBBS, NEW MEXICO

TELEPHONES 3-3942
3-6770

BOTTOM HOLE PRESSURE SURVEY REPORT

OPERATOR JAKE L. HAMON
LEASE STATE "E" 8321
WELL NO. 1
FIELD Strawn
DATE 11-6-64 TIME 2:30 P.M.

STATUS shut-in TEST DEPTH 10,440
TIME S.I. LAST TEST DATE initial
CAS. PRES. BHP LAST TEST
TUB. PRES. 1566 BHP CHANGE
ELEV. 3628 FLUID TOP
DATUM -6940 WATER TOP
TEMP RUN BY M.C.T.
CLOCK NO. 18971 GAUGE NO. 12434
ELEMENT NO. 16531-N

DEPTH	PRESSURE	GRADIENT
000	1566	
2000	1674	.054
4000	1781	.054
6000	1889	.054
8000	2019	.065
10000	2145	.063
10440	2177	.073
10568*	2186*	.073

* ~~Pressure Corrected To Datum~~

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

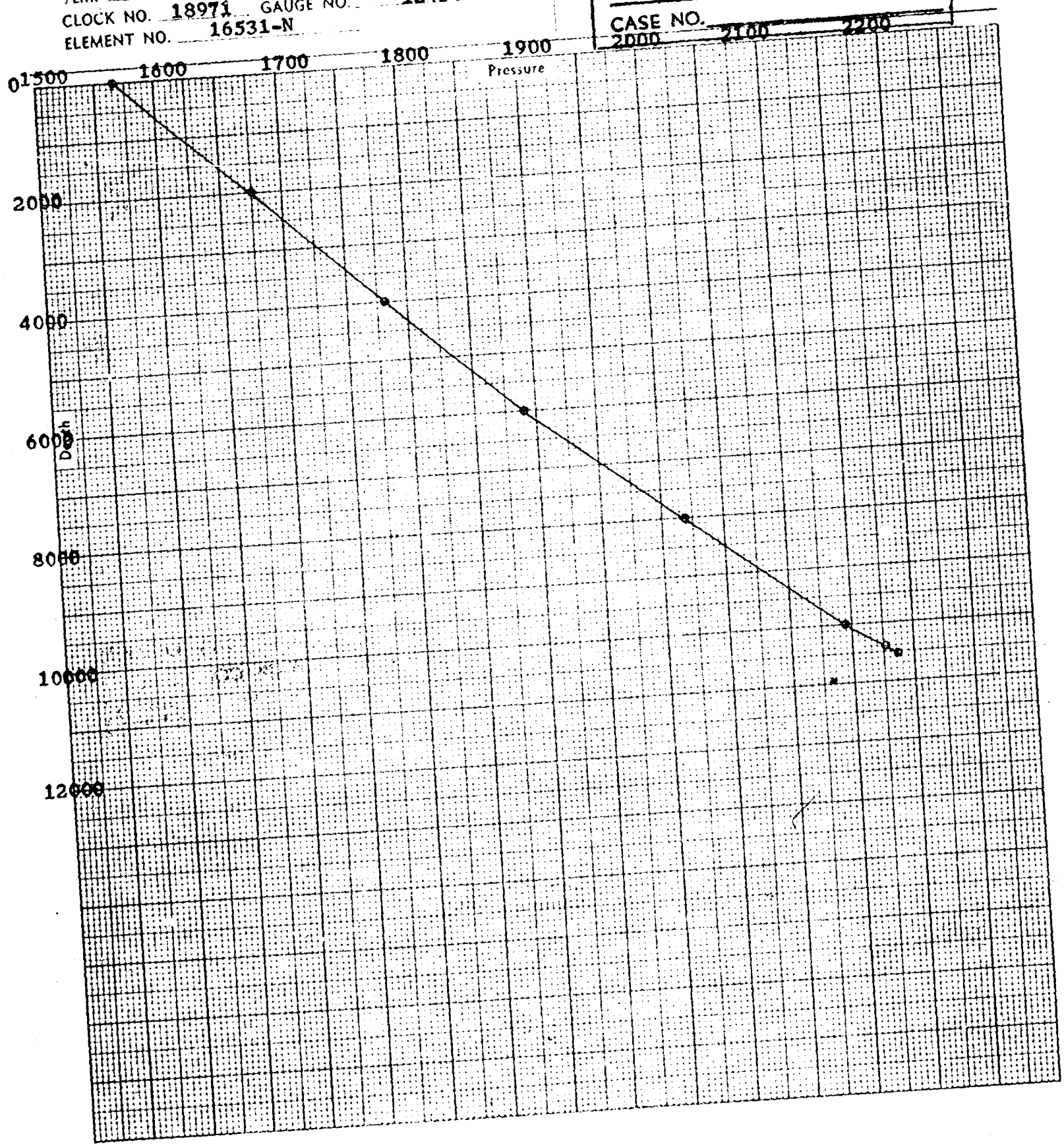


EXHIBIT 3

NEWMONT OIL COMPANY

PROPOSED WATER INJECTION WELL

SCHEMATIC COMPLETION DIAGRAM

Field Loco Hills County Eddy Lease West Loco Hills Ut. Well No. 30-1

Location SW/4 SE/4, Sec. 11 T18S R29E Comp. Date 6-25-64

Elevation 3513.5 Feet

ESTIMATED TOP OF CEMENT 183 FEET
(Surface Casing)

Top Of Salt 478 Feet

Surface Casing 7"
Set At 483 Feet
With 50 Sacks' Cement.

Reported Pay Intervals

ESTIMATED TOP OF CEMENT 2110 FEET
(Production Casing)

Production Casing 4-1/2"
Set At 2589 Feet With 50
Sacks Cement.

2599 - 2624'

T. D. 2655

NEWMONT OIL COMPANY

PROPOSED WATER INJECTION WELL

SCHEMATIC COMPLETION DIAGRAM

Field Loco Hills County Eddy Lease West Loco Hills Ut. Well No. 30-2

Location SE/4 SE/4, Sec. 11 T18S R29E Comp. Date 7-14-64

Elevation 3519 Feet

ESTIMATED TOP OF CEMENT 174 FEET
(Surface Casing)

Top Of Salt 469 Feet

Surface Casing 7"

Set At 474 Feet
With 50 Sacks Cement.

Reported Pay Intervals

ESTIMATED TOP OF CEMENT 2152 FEET
(Production Casing)

Production Casing 4-1/2"

Set At 2632 Feet With 50
Sacks Cement.

2647 - 2655'

T. D. 2676

EXHIBIT 3

EXHIBIT 3

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
A EXHIBIT NO. 3
CASE NO. 3147

WELL RECORD SUMMARY OF PROPOSED WATER INJECTION WELLS
NEWMONT OIL COMPANY'S WEST SQUARE LAKE WATERFLOOD PROJECT
SQUARE LAKE FIELD, EDDY COUNTY, NEW MEXICO

LEASE	WELL NUMBER	LOCATION	ELEVATION	COMPLETION DATE	SURFACE CASING				TOP OF SALT
					SIZE	DEPTH	SACKS CEMENT USED	EST. TOP OF CEMENT	
LEONARD "E"	1*	SE/4 SE/4 SEC. 33 T16S R30E	3727'	3-28-42	8-5/8"	493'	50	181'	493'
LEONARD "E"	3	NW/4 SE/4 SEC. 33 T16S R30E	3724'	4-14-42	8-1/4"	574'	50	330'	574'
LEONARD "E"	8	SE/4 NW/4 SEC. 4 T17S R30E	3720'	11-4-42	8-5/8"	514'	50	270'	517'
LEONARD "E"	13	NW/4 SE/4 SEC. 4 T17S R30E	3715'	1-27-46	10-3/4"	501'.7"	50	260'	565'
LEONARD "E"	16	SE/4 SE/4 SEC. 4 T17S R30E	3704'	5-12-46	8-5/8"	490'	50	250'	465'
EVANS "A"	2	SE/4 NE/4 SEC. 4 T17S R30E	3715'	2-7-42	8-1/4"	505'	50	260'	495'
EVANS "A"	15	SE/4 SW/4 SEC. 4 T17S R30E	3740'	7-28-46	8-5/8"	585'	50	240'	475'
EVANS "B"	8	NW/4 SW/4 SEC. 33 T16S R30E	3729'	8-14-42	8-5/8"	840'	50	600'	644'
LEONARD STATE	1	SE/4 SE/4 SEC. 32 T16S R30E	3724'	6-7-42	10-3/4"	480'	50	240'	630'
GEORGE ETZ "A"	5	SW/4 SE/4 SEC. 35 T16S R30E	3752'	5-29-42	8-1/4"	591'	50	350'	561'

* NOTE: This well was plugged and abandoned on 12-19-50; 1767' of 5-1/2" casing was pulled. The well will either be re-entered or the location will be re-drilled.

WELL RECORD SUMMARY OF
PROPOSED WATER INJECTION WELLS
WEST SQUARE LAKE WATERFLOOD PROJECT

LEASE	WELL NUMBER	PRODUCTION CASING SIZE	DEPTH	SACKS CEMENT USED	EST. TOP OF CEMENT	REPORTED PAY INTERVALS	TOTAL DEPTH
LEONARD "E"	1	5-1/2"	2816'	100	1767'	2902-07', 2941-50', 3063-3146'	3146'
LEONARD "E"	3	5-1/2"	2771'	100	1700'	2862-70', 2911-31'	3000'
LEONARD "E"	8	5-1/2"	2750'	100	1670'	2920-40'	2953'
LEONARD "E"	13	7"	2750'	100	2150'	2920-30', 3026-60'	3153'
LEONARD "E"	16	5-1/2"	2750'	100	1670'	2830-38', 2900-10', 3035-65'	3125'
EVANS "A"	2	5-1/2"	2750'	100	1670'	2825-37', 2925-41'	2966'
EVANS "A"	15	5-1/2"	2700'	100	1620'	2730-55', 2755-75', 2775-2825'	2825'
EVANS "B"	8	5-1/2"	2712'	100	1632'	2808-18', 2852-62'	2881'
LEONARD STATE	1	7" 5-1/2"	2162' 2650' (565')	50 40	1862' 2085'	2797-2802'	2883'
GEORGE ETZ "A"	5	5-1/2"	2896'	100	1826'	2973-77', 3010-21'	3051'

CWS:ajg
October 29, 1964

EXHIBIT 4

NEWMONT OIL COMPANY

PROPOSED WATER INJECTION WELL

SCHEMATIC COMPLETION DIAGRAM

Field Square Lake County Eddy Lease Leonard "E" Well No. 1

Location SE/4 SE/4, Sec. 33 T16S R30E Comp. Date 3-28-42

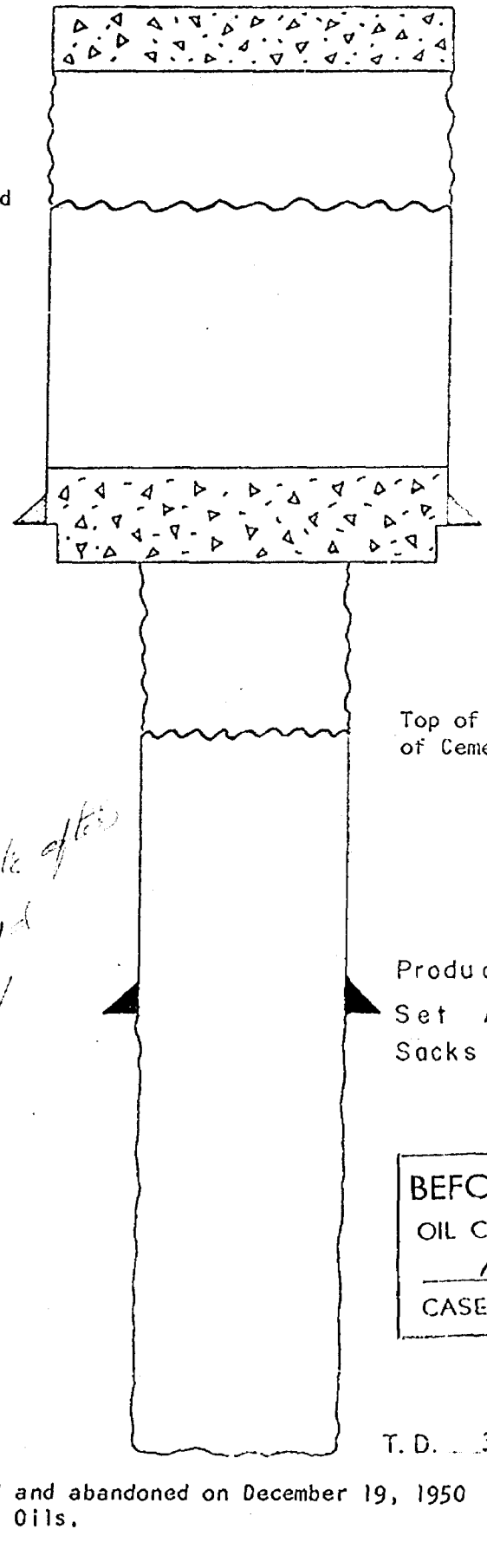
10 Sack Cement Plug
Set at Surface

Elevation 3727 Feet

Top of 8-5/8" and Estimated
Top of Cement 181 Feet

Top Of Salt 493 Feet

10 Sack Cement Plug Set
At Top of Salt



Surface Casing 8-5/8"
Set At 493 Feet
With 50 Sacks Cement.

Top of 5-1/2" and Estimated Top
of Cement 1767 Feet

Reported Pay Intervals

inj 0/1800 psi
150 b/w/d
final inj rate after
200-300 b/w/d
inj rate

2902 - 2907'

2941 - 2950'

3063 - 3146'

Production Casing 5-1/2"
Set At 2816 Feet With 100
Sacks Cement.

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
A EXHIBIT NO. 4
CASE NO. 3147

T. D. 3146

NOTE: This well was plugged and abandoned on December 19, 1950
by Texas Consolidated Oils.

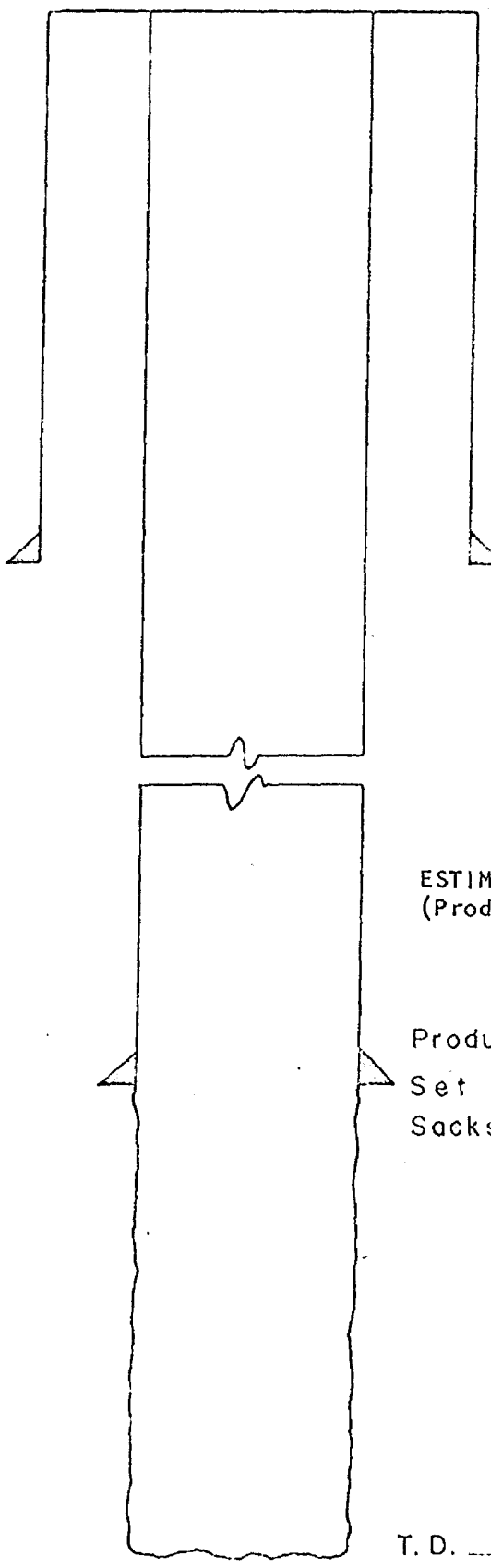
NEWMONT OIL COMPANY

PROPOSED WATER INJECTION WELL

SCHEMATIC COMPLETION DIAGRAM

Field Square Lake County Eddy Lease Leonard "E" Well No. 3

Location NW/4 SE/4, Sec. 33 T16S R30E Comp. Date 4-14-42



Elevation 3724 Feet

ESTIMATED TOP OF CEMENT 330 FEET (Surface Casing)

Top Of Salt 574 Feet

Surface Casing 8-1/4"

Set At 574 Feet With 50 Sacks Cement.

Reported Pay Intervals

2862 - 2870'

2911 - 2931'

ESTIMATED TOP OF CEMENT 1700 FEET (Production Casing)

Production Casing 5-1/2"

Set At 2771 Feet With 100 Sacks Cement.

T. D. 3000

NEWMONT OIL COMPANY

PROPOSED WATER INJECTION WELL

SCHEMATIC COMPLETION DIAGRAM

Field Square Lake County Eddy Lease Leonard "E" Well No. 8

Location SE/4 NW/4, Sec. 4 T17S R30E Comp. Date 11-4-42

Elevation 3720 Feet

ESTIMATED TOP OF CEMENT
270 FEET
(Surface Casing)

Top Of Salt 517 Feet

Surface Casing 8-5/8"
Set At 514 Feet
With 50 Sacks Cement.

Reported Pay Intervals

ESTIMATED TOP OF CEMENT 1670 FEET
(Production Casing)

Production Casing 5-1/2"
Set At 2750 Feet With 100
Sacks Cement.

2920- 2940'

T. D. 2953

NEWMONT OIL COMPANY

PROPOSED WATER INJECTION WELL

SCHEMATIC COMPLETION DIAGRAM

Field Square Lake County Eddy Lease Leonard "E" Well No. 13

Location NW/4 SE/4, Sec. 4 T17S R30E Comp. Date 1-27-46

Elevation 3715 Feet

ESTIMATED TOP OF CEMENT 260 FEET (Surface Casing)

Top Of Salt 565 Feet

Surface Casing 10-3/4"

Set At 501 Feet With 50 Sacks Cement.

Reported Pay Intervals

ESTIMATED TOP OF CEMENT 2150 FEET (Production Casing)

Production Casing 7"

Set At 2750 Feet With 100 Sacks Cement.

2920 - 2930'

3026 - 3060'

T. D. 3153

NEWMONT OIL COMPANY

PROPOSED WATER INJECTION WELL

SCHEMATIC COMPLETION DIAGRAM

Field Square Lake County Eddy Lease Leonard "E" Well No. 16

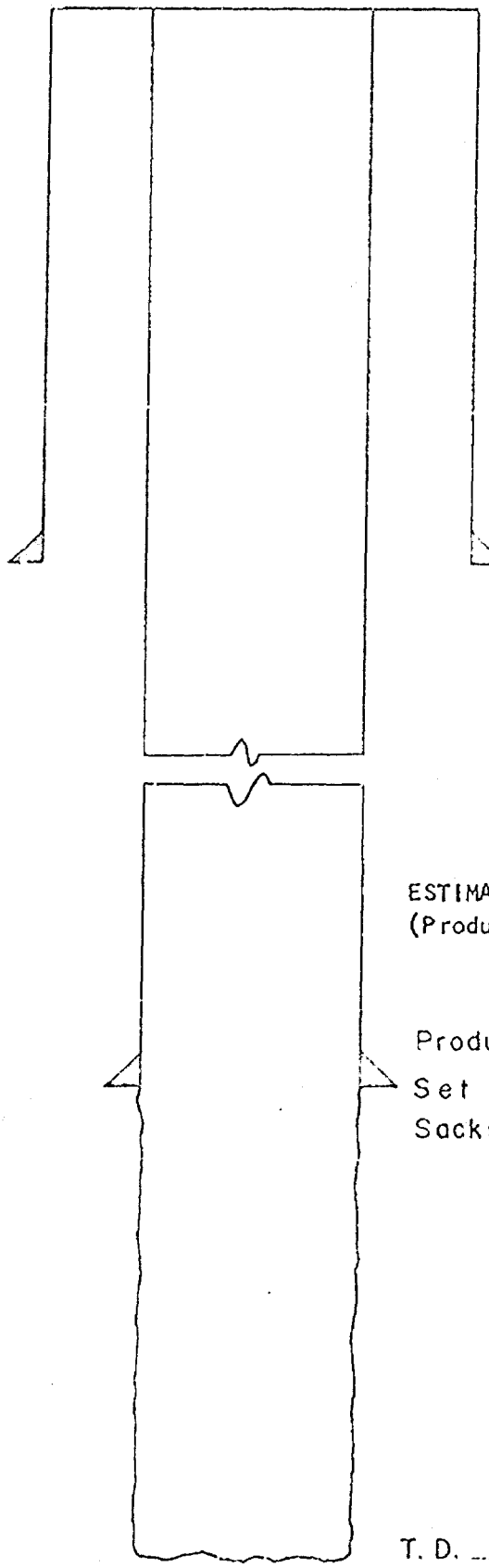
Location SE/4 SE/4, Sec. 4 T17S R30E Comp. Date 5-12-46

Elevation 3704 Feet

ESTIMATED TOP OF CEMENT 250 FEET
(Surface Casing)

Top Of Salt 465 Feet

Surface Casing 8-5/8"
Set At 490 Feet
With 50 Sacks Cement.



Reported Pay Intervals

2830 - 2838'

2900 - 2910'

3035 - 3065'

ESTIMATED TOP OF CEMENT 1670 FEET
(Production Casing)

Production Casing 5-1/2"
Set At 2750 Feet With 100
Sacks Cement.

T. D. 3125

NEWMONT OIL COMPANY

PROPOSED WATER INJECTION WELL

SCHEMATIC COMPLETION DIAGRAM

Field Square Lake County Eddy Lease Evans "A" Well No. 2

Location SE/4 NE/4, Sec. 4 T17S R30E Comp. Date 2-7-42

Elevation 3715 Feet

ESTIMATED TOP OF CEMENT 260 FEET
(Surface Casing)

Top Of Salt 495 Feet

Surface Casing 8-1/4"
Set At 505 Feet
With 50 Sacks Cement.

Reported Pay Intervals

ESTIMATED TOP OF CEMENT 1670 FEET
(Production Casing)

Production Casing 5-1/2"
Set At 2750 Feet With 100
Sacks Cement.

2825 - 2837'

2925 - 2941'

T. D. 2966

NEWMONT OIL COMPANY

PROPOSED WATER INJECTION WELL

SCHEMATIC COMPLETION DIAGRAM

Field Square Lake County Eddy Lease Evans "A" Well No. 15

Location SE/4 SW/4, Sec. 4 T17S R30E Comp. Date 7-28-46

Elevation 3740 Feet

ESTIMATED TOP OF CEMENT 240 FEET
(Surface Casing)

Top Of Salt 475 Feet

Surface Casing 8-5/8"
Set At 585 Feet
With 50 Sacks Cement.

Reported Pay Intervals

2730 - 2755'

2755 - 2775'

2775 - 2825'

ESTIMATED TOP OF CEMENT 1620 FEET
(Production Casing)

Production Casing 5-1/2"
Set At 2700 Feet With 100
Sacks Cement.

T. D. 2825

NEWMONT OIL COMPANY

PROPOSED WATER INJECTION WELL

SCHEMATIC COMPLETION DIAGRAM

Field Square Lake County Eddy Lease Evans "B" Well No. 8

Location NW/4 SW/4, Sec. 33 T16S R30E Comp. Date 8-14-42

Elevation 3729 Feet

ESTIMATED TOP OF CEMENT 600 FEET
(Surface Casing)

Top Of Salt 644 Feet

Surface Casing 8-5/8"
Set At 840 Feet
With 50 Sacks Cement.

Reported Pay Intervals

2808 - 2818'

2852 - 2862'

ESTIMATED TOP OF CEMENT 1632 FEET
(Production Casing)

Production Casing 5-1/2"
Set At 2712 Feet With 100
Sacks Cement.

T. D. 2881

NEWMONT OIL COMPANY

PROPOSED WATER INJECTION WELL

SCHEMATIC COMPLETION DIAGRAM

Field Square Lake County Eddy Lease Leonard State Well No. 1

Location SE/4 SE/4, Sec. 32 T16S R30E Comp. Date 6-7-42

Elevation 3724 Feet

ESTIMATED TOP OF CEMENT 240 FEET (Surface Casing)

Top Of Salt 630 Feet

Surface Casing 10-3/4"
Set At 480 Feet
With 50 Sacks Cement.

Reported Pay Intervals

2797 - 2802'

ESTIMATED TOP OF CEMENT 1862 / 2085 FEET (Production Casing)

Production Casing 7" / 5-1/2"
Set At 2162 / 2650 (5651) Feet With 50 / 40 Sacks Cement.

T. D. 2883

NEWMONT OIL COMPANY

PROPOSED WATER INJECTION WELL

SCHEMATIC COMPLETION DIAGRAM

Field Square Lake County Eddy Lease Leonard State Well No. 1

Location SE/4 SE/4, Sec. 32 T16S R30E Comp. Date 6-7-42

Elevation 3724 Feet

ESTIMATED TOP OF CEMENT 240 FEET (Surface Casing)

Top Of Salt 630 Feet

Surface Casing 10-3/4"
Set At 480 Feet
With 50 Sacks Cement.

Reported Pay Intervals

ESTIMATED TOP OF CEMENT 1862 / 2085 FEET (Production Casing)

Production Casing 7" / 5-1/2"
Set At 2162 / 2650 (565') Feet, With 50 / 40 Sacks Cement.

2797 - 2802'

T. D. 2883

NEWMONT OIL COMPANY

PROPOSED WATER INJECTION WELL

SCHEMATIC COMPLETION DIAGRAM

Field Square Lake County Eddy Lease George Etz "A" Well No. 5

Location SW/4 SE/4, Sec. 35 T16S R30E Comp. Date 5-29-42

Elevation 3752 Feet

ESTIMATED TOP OF CEMENT 350 FEET (Surface Casing)

Top Of Salt 561 Feet

Surface Casing 8-1/4"

Set At 591 Feet With 50 Sacks Cement.

Reported Pay Intervals

2973 - 2977'

3010 - 3021'

ESTIMATED TOP OF CEMENT 1826 FEET (Production Casing)

Production Casing 5-1/2"

Set At 2896 Feet With 100 Sacks Cement.

T. D. 3051

PRESENT STATUS OF
WELLS TO BE CONVERTED

West Square Lake Waterflood Project
Eddy County, New Mexico

WELL	DAILY AVG. PROD., BBLS./DAY
LEONARD "E" No. 1	Plugged & Abandoned
LEONARD "E" No. 3	1.0
LEONARD "E" No. 8	Temporarily Abandoned
LEONARD "E" No. 13	2.0
LEONARD "E" No. 16	3.0
EVANS "A" No. 2	Temporarily Abandoned
EVANS "A" No. 15	5.0
EVANS "B" No. 8	2.0
LEONARD STATE No. 1	1.0
GEORGE ETZ "A" No. 5	1.0

CWS:ajg
October 30, 1964

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
A EXHIBIT NO. 6
CASE NO. 3147