

CASE 5465: Application of
PETRO-LEWIS CORP. for a pressure
maintenance project, Sandoval Cty

CASE No.

5465

Application,

Transcripts,

Small Exhibits

ETC.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
April 30, 1975

EXAMINER HEARING

IN THE MATTER OF:

Application of Petro-Lewis Corporation
for a unit agreement, Sandoval County,
New Mexico,

CASE 5464

and

Application of Petro-Lewis Corporation
for a pressure maintenance project,
Sandoval County, New Mexico.

CASE 5465

BEFORE: Richard L. Stamets, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the New Mexico Oil
Conservation Commission:

William F. Carr, Esq.
Legal Counsel for the
Commission
State Land Office Building
Santa Fe, New Mexico

(Appearances continued)

APPEARANCES (Continued):

For the Applicant:

Jason Kellahin, Esq.
KELLAHIN & FOX
500 Don Gaspar
Santa Fe, New Mexico

For Reimer and McKenzie:

George Hunker, Esq.
HUNKER, FEDRIC & HIGGINBOTHAM
Hinkle Building
Roswell, New Mexico

CASES 5464, 5465

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I N D E X

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JOHN SOMERS

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MR. STAMETS: Case 5464.

MR. CARR: Case 5464. Application of Petro-Lewis Corporation for a unit agreement, Sandoval County, New Mexico.

MR. KELLAHIN: If the Examiner please, Jason Kellahin of Kellahin and Fox, appearing for the Applicant. I would suggest that Case 5464 be consolidated for the purposes of the record with Case 5465 which relates to the same matter.

MR. STAMETS: Is there any objection to the consolidation of these cases?

MR. HUNKER: No objection.

MR. STAMETS: Please call Case 5465, and these two cases will be consolidated for purposes of testimony.

MR. CARR: Case 5465. Application of Petro-Lewis Corporation for a pressure maintenance project, Sandoval County, New Mexico.

MR. HUNKER: George Hunker, Hunker, Fedric and Higginbotham, Roswell, New Mexico, appearing on behalf of John K. Reimer and R. E. McKenzie, Jr.

MR. STAMETS: Are there any other appearances in this case? You may proceed, Mr. Kellahin.

(Witnesses sworn.)

SOMERS-DIRECT

JOHN SOMERS

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Will you state your name, please?

A John Somers.

Q By whom are you employed and in what position,
Mr. Somers?

A Petro-Lewis Corporation. I am the Division
Production Superintendent.

Q For the Examiner, would you spell your last name,
please?

A S-O-M-E-R-S.

Q Have you ever testified before the Oil Conservation
Commission or one of its Examiners and made your qualifica-
tions a matter of record?

A Yes, I have.

MR. KELLAHIN: Are the witness' qualifications
acceptable?

MR. STAMETS: They are.

BY MR. KELLAHIN:

Q Mr. Somers, are you familiar with the Applications

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of Petro-Lewis Corporation in Cases 5464 and 5465?

A Yes, I am.

Q Briefly, what is proposed by the Applicant in these two cases?

A Acceptance of the unit agreement to cover the Media Entrada Unit for installation of a pressure maintenance project, and also approval of our proposed plan of injection.

Q Now, the form of unit agreement, is that the instrument that has been marked as Applicant's Exhibit No. 1 in the consolidated cases?

A Yes, it is.

Q Is that the unit agreement in the form that has heretofore been approved by the United States Geological Survey and this Commission?

A Yes, it is.

Q Has it been submitted to the Department of Interior for approval?

A Yes, it has.

Q What is the status of it at the present time?

A It has been given preliminary approval by the Roswell Office of the U.S.G.S. and sent on to their Denver Office for preliminary approval, and we have had indication from the Denver Office that it will receive preliminary

SOMERS-DIRECT

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approval designation this week.

Q Now, what acreage does the unit agreement cover?

A It covers 580 acres of the four drilling proration units which comprise the Media Entrada Pool, which would be the southwest quarter of Section 14, the south half of the northwest quarter of Section 14, the southeast quarter of Section 15 and south half of the northeast quarter of Section 15, the north half of the northeast quarter of the northeast quarter of Section 22 and the north half of the northwest quarter of Section 23, all lying in Township 19 North, Range 3 West.

Q Is all of this acreage Federal acreage?

A Yes, it is.

Q There is no State or fee acreage?

A No.

Q In your opinion, does the unit effectively cover the producing formation of the Media Entrada Pool?

A Yes, it does.

Q As it has been defined by the Commission?

A Yes.

Q At the present time this pool is being operated on 160-acre spacing and proration units, is it not?

A That's correct.

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Q What happens to this in terms of the unit agreement?

A At the request of the U.S.G.S., those communiti-
zation agreements will be dissolved when the unit becomes
effective, so it is basically on a participation --
participation is basically on a tract basis, with the tracts
comprised of the Federal leases within the unit boundary.

Q That is at the direction of the U.S.G.S.?

A Yes.

Q Is that the provision you made?

A Yes.

Q What is the participation factor or formula
based on?

A The formula is based on 50-percent floodable
acre-feet and 25-percent cumulative production to May 31st,
1974, and 25-percent production prior to the installation
of five-volume submersible pumping equipment.

Q In your opinion, would that fairly allocate the
production from the unit among the various interest owners?

A Yes, it would.

Q What percentage of the working-interest owners
have agreed with this?

A 100 percent.

Q And the royalty interest is entirely federal,

SOMERS-DIRECT

is that correct?

A That is correct.

Q The overriding royalties, are there a number of overriding royalties?

A Yes, there are. The overrides average slightly over 16-percent in these leases and 50-percent of the overrides are in agreement with unitization.

Q Subsequent to the preparation of the form of unit agreement, has the Applicant acquired or the associates acquired any of the royalty, overriding royalty interest?

A Yes, we have.

Q What percentage was that?

A It is the percentage which was held by Odds-On (sic) Oil Company, and it varies, as you can see on Exhibit B from 2.7, all the way up to 12.6 percent, so it varies from tract to tract.

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

A Exhibit No. 2 is a plat showing the proposed unit area, the injection wells with red arrows designating the injection wells, the proposed unit boundary, and then a border of two miles around that unit boundary where we have posted all of the wells which have been drilled in

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that area and we have listed all of the lessees within the area. It also shows the producing formation which -- each producing well -- either it has produced from or is presently producing from. In other words, in parenthesis underneath these wells, you will see a JE, which would be Jurassic-Entrada, or a KG, which would be Cretaceous-Gallup or a KM which would be Cretaceous-Mesa Verde. So, basically, it shows that there are three productive horizons in this area. It also shows the ownership and the wells which we intend to use as injection wells, as well as all other producing wells or former producing wells in the area.

Q Is there an error on the Exhibit in regard to the 8 Federal Media?

A There was, but I corrected it. 8 Federal Media, in some of these wells have been shown as abandoned producers. They are actually productive wells. 8 Federal Media is producing from the Menefee and 7 Federal Media is producing from the Gallup.

Q What is the unitized horizon?

A The Entrada, which is the deeper horizon.

Q So, the other wells are not included in the unit?

A No, they aren't.

Q Now, referring to Exhibits Nos. 3, 4, and 5,

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would you identify those exhibits?

A Exhibits 3, 4 and 5 are copies of the electric and porosity logs that have been run on each of the wells which are to be used as injection wells, and these are the Federal Media No. 4, Fluid Power Pump No. 4, and Fluid Power Pump No. 2. In addition to the logs themselves, the top of the Entrada has been marked on each of these logs because it is very difficult, for example, on the induction electric log because of the low resistivity to pick the top of the Entrada. It is relatively easy, however, on the density or sonic logs to determine the top.

Q Now, as I understand, you propose to inject fluid into those three wells?

A That is correct.

Q What fluid would you inject?

A We would be injecting produced Entrada water as well as the water which we intend to get back out of the Gallup. Up until this time and up until the unit is effective, we have been using the Gallup formation for disposal of produced water, and it has pressured this formation up. We intend to relieve the pressure on the Gallup and reinject that water which has been disposed in the Gallup back into the Entrada.

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Q Referring to what has been marked as Exhibit No.5, would you identify that exhibit?

A That is an exhibit which shows the diagram of each of the wells to be used for injection, the casing, tubing and cementing information on those wells. It also shows that the base of each of those wells, the zone that we are going to be injecting into, the top of that zone, the fluid that we will be injecting, and the anticipated injection rate and pressure.

Q Do you anticipate that you will have any pressure initially?

A No, we don't expect any pressure initially because of the very high porosity and permeability of the formation and the relatively low pressure in the formation. The present reservoir pressure is approximately 1700 PSI. The hydrostatic head would be more than sufficient to inject into the formation.

Q Now, you will be injecting through tubing and under the packer. Will the annulus be filled with inert fluid?

A Yes, it will. It will be filled with an inhibited fluid to prevent any corrosion and we will also be installing pressure gages to check annulus pressure to

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make sure that no leaks occur, or if leaks do occur, that we can correct any such problem.

Q You say it shows on your diagrammatic sketch the cementing information. Does it show the cement tops?

A No, it doesn't. There was no temperature log or other cement top available on the well records that we have, so we have taken the information as to the hole size, casing size and casing weight and the volume of cement which is shown on the diagrams and calculated the fill-up. The fill-up indicates that they apparently were trying to fill this up over the Gallup formation, so we have cement clear back to anywhere from 2700 feet to 3600 feet.

Q Will the cement top be above the packer you propose to set?

A Yes, it will.

Q Are you going to use the internally coated tubing?

A Yes, we will.

Q Will the proposed completion as you propose to make it prevent any contamination of any producing zones or fresh-water zones that might exist in --

A (Interrupting) Yes, it will.

Q Refer to Exhibit No. 7 and identify that exhibit, please?

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A This is a water analysis which we had run last summer on the produced Entrada water within the Media Dome area itself. It shows that the chlorides are very low, but this is relatively fresh water.

Q In spite of that, you do propose to use an internally-coated tubing in the well?

A That is correct.

Q In your opinion, will the formation of this unit and the proposed pressure maintenance project as you have proposed it result in the recover of oil that not otherwise would be recovered?

A Yes, it will.

Q Do you know what amount?

A Our engineering study indicated that we will recover over 600,000 barrels of additional oil by this pressure maintenance project.

Q You will be injecting relatively high volumes of water, will you not?

A Yes, we will.

Q Just briefly, would you review the testimony in regard to the necessity for producing the reservoir at high rates?

A We have found, with the installation of submersible

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pumping equipment that with increased rates of production, we are going to achieve higher recoveries from the Entrada, and I have found from our plots of water cut versus cumulative production that we will substantially increase the ultimate recovery of oil from the reservoir.

Q Has this manner of producing this reservoir caused any changes in the fluid level or pressures within the various wells?

A Yes, it has. It has caused drawdown and this is the reason for our desire to reinject the produced Entrada water back into the formation.

Q In order to do this, it is necessary to unitize the entire pool. is it not?

A That is correct.

Q In your opinion, will the reinjection of water equalize the pressure throughout the pool?

A It should.

Q Would that make for better production from the pool?

A Yes.

Q And a greater ultimate recovery?

A Yes, it should.

Q Were Exhibits 4 through 7 prepared by you or

SOMERS--DIRECT

under your supervision?

A Yes, they were.

Q And Exhibit No. 1 is the form of unit agreement of what is proposed?

A Yes.

MR. KELLAHIN: At this time I would like to offer into evidence Exhibits 1 through 7.

MR. STAMETS: Without objection, they will be admitted into evidence.

(Whereupon, Applicant's Exhibits Nos. 1 through 7 were marked for identification, offered and admitted into evidence.)

MR. KELLAHIN: That is all we have.

MR. STAMETS: Are there questions of this witness?

CROSS EXAMINATION

BY MR. HUNKER:

Q Does Petro-Lewis intend to abandon the 160-acre spacing units that were established by the O.C.C. earlier in connection with this pool?

A As we said, the U.S.G.S. has requested that the 160-acre communitization units be dissolved. That is, those which were established within the proposed unit boundary. So, those four will be dissolved.

SOMERS-CROSS

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Q In connection with the unit, a provision is made in the agreement for the expansion of the unit under certain circumstances, and the circumstances are not delineated. Can you tell the Examiner under what circumstances the unit might be expanded?

A At this point in time, we have no plans or anticipation of expansion of this unit, and it is difficult to conceive that it would be expanded. It is just a standard provision in the Federal form.

Q There is also a provision in the unit for a gas injection. Is this also a provision that is more or less standard in this type of thing?

A Yes, it is another provision within the standard Federal form.

Q Are you aware at this time that there could be any other working interest owners other than the two that are named in the unit agreement at this time? In other words, do you anticipate that the Fluid Power Pump Company might dispose of its interest so that there would be other working interest owners?

A Not to our knowledge.

MR. HUNKER: I have no further questions,
Mr. Examiner.

SOMERS-CROSS

CROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Somers, do you have any estimate of the daily volume you will be getting out of the Gallup?

A No, we really don't. We haven't had an opportunity to backflow the Gallup to determine what volume would be anticipated. We have injected almost 2 million barrels of water into the Gallup.

Q Would the operator report any leaks from or around the injection wells or producing wells or plugged and abandoned wells to the Commission?

A Yes.

Q If there would be no surface pressure, how will you use a gage to detect any leak in the injection tubing?

A Well, we would be putting a pressure gage on the annulus and would assume it would pressure-up. Again, that may not be the case. That is a very good point. It is a very good point.

Q Perhaps the wording should be an acceptable leak-detection device.

A Yes.

Q Do you anticipate that the injection of this additional fluid would cause any of the wells to exceed the

SOMERS-CROSS

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productive limits set out in the pool rules for this Media
Entrada Pool?

A No.

Q So, the allowable will not be any problem?

A No, it should not be.

Q So, any report that you would file relative to
this project would not have to set out any allocation
formula for transferring allowables between wells or
nothing like this?

A No, it shouldn't.

MR. STAMETS: The witness may be excused. Is
there anything further in this case?

(Witness dismissed.)

MR. HUNKER: I have nothing.

MR. STAMETS: If there is nothing further, 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.

COURT REPORTER

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 5465 heard by me on 4-30-75, 1975.
Richard L. Nye, Examiner
New Mexico Oil Conservation Commission

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



OIL CONSERVATION COMMISSION

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

May 22, 1975

I. R. TRUJILLO
CHAIRMAN

LAND COMMISSIONER
PHIL R. LUCERO
MEMBER

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

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

Re: CASE NO. 5465
ORDER NO. R-5017

Applicant:

Petro-Lewis Corporation

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 x
Artesia OCC
Aztec OCC x

Other Mr. George Hunker

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. 5465
Order No. R-5017

APPLICATION OF PETRO-LEWIS
CORPORATION FOR A PRESSURE
MAINTENANCE PROJECT, SANDOVAL
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 30, 1975, at Santa Fe, New Mexico, before Examiner, Richard L. Stamets.

NOW, on this 22nd day of May, 1975, 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, Petro-Lewis Corporation, seeks authority to institute a pressure maintenance project on its Media Entrada Unit, Media-Entrada Pool, by the injection of water into the Entrada formation through three injection wells in Sections 14 and 15, Township 19 North, Range 3 West, NMPM, Sandoval County, New Mexico.

(3) That the wells in the project area are experiencing a decline in reservoir pressure.

(4) That the proposed pressure maintenance project should result in the recovery of a greater volume of oil from the reservoir than would otherwise be recovered, thereby preventing waste.

(5) That the applicant does not seek authority for allowable credit or transfer nor special well allowables within the project.

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Case No. 5465
Order No. R-5017

(6) That the operator 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 project 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 applicant, Petro-Lewis Corporation, is hereby authorized to institute a pressure maintenance project on its Media Entrada Unit, Media-Entrada Pool, by the injection of water into the Entrada formation through the following-described wells in Township 19 North, Range 3 West, NMPM, Sandoval County, New Mexico:

<u>WELL NAME</u>	<u>NO.</u>	<u>UNIT LETTER</u>	<u>SECTION</u>
Media Entrada Unit	1	H	15
Media Entrada Unit	5	O	15
Media Entrada Unit	8	N	14

(2) That injection into each of said wells shall be through internally coated tubing, set in a packer which shall be located as near as practicable to the uppermost perforation; that the casing-tubing annulus of each injection well shall be loaded with an inert fluid and equipped with an approved attention-attracting leak detection device.

(3) That the operator shall immediately notify the supervisor of the Commission's Aztec 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.

(4) That the subject project is hereby designated the Petro-Lewis Media Entrada Unit Pressure Maintenance Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

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

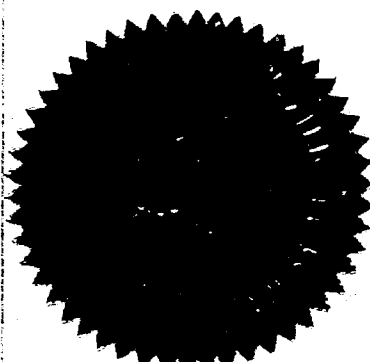
(6) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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Case No. 5465
Order No. R-5017

DONE at Santa Fe, New Mexico, on the day and year herein-
above designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION



I. R. Trujillo
I. R. TRUJILLO, Chairman

Phil R. Lucero
PHIL R. LUCERO, Member

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

S E A L

dr/

DRUGS AND DRUGS

COMPANY WILEY & FLUID POWER
PUMP COMPANY

COMPANY <u>DON C. WILEY & FLUID POWER PUMP COMPANY</u>	
WELL <u>FEDERAL MEDIA #4</u>	
FIELD <u>MEDIA</u>	
COUNTY <u>SANDOVAL</u> STATE <u>NEW MEXICO</u>	
LOCATION <u>990' FSL 1650' FWL</u>	Other Services:
Sec. <u>14</u> Twp. <u>19N</u> Rge. <u>3W</u>	FDC-GR

Other Services:

Permanent Datum: SL, Elev. 6870
 Log Measured From KB, 12 Ft. Above Perm. Datum
 Drilling Measured From KB

Elev.: K.B. 68882
D.F. 68881
G.L. 6870

Date	5-28-69
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Run No.	ONE
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Depth—Driller	5344
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Depth—Logger

Bim. Log Interval

100 log interval	213
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Casing—Driller	8 5/8" 214
Casing—Logger	210

Cashlog=logger	213
Biz Sign	7 7/8

Type Fluid in Hol

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Dens.	Visc.	9.0	19.0
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pH	Fluid loss	13	8.9
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Source of Sample	Flow Line
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100	100

R ₇ @ Meas. Temp.	1	52@	50
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R _m @ Meas. Temp.	1 37@ 60
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R_{MS} @ Meas. Temp.	-	@	-
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1.2	1.2	1.2	1.2
1.3	1.3	1.3	1.3
1.4	1.4	1.4	1.4
1.5	1.5	1.5	1.5
1.6	1.6	1.6	1.6
1.7	1.7	1.7	1.7
1.8	1.8	1.8	1.8
1.9	1.9	1.9	1.9
2.0	2.0	2.0	2.0
2.1	2.1	2.1	2.1
2.2	2.2	2.2	2.2
2.3	2.3	2.3	2.3
2.4	2.4	2.4	2.4
2.5	2.5	2.5	2.5
2.6	2.6	2.6	2.6
2.7	2.7	2.7	2.7
2.8	2.8	2.8	2.8
2.9	2.9	2.9	2.9
3.0	3.0	3.0	3.0
3.1	3.1	3.1	3.1
3.2	3.2	3.2	3.2
3.3	3.3	3.3	3.3
3.4	3.4	3.4	3.4
3.5	3.5	3.5	3.5
3.6	3.6	3.6	3.6
3.7	3.7	3.7	3.7
3.8	3.8	3.8	3.8
3.9	3.9	3.9	3.9
4.0	4.0	4.0	4.0
4.1	4.1	4.1	4.1
4.2	4.2	4.2	4.2
4.3	4.3	4.3	4.3
4.4	4.4	4.4	4.4
4.5	4.5	4.5	4.5
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4.7	4.7	4.7	4.7
4.8	4.8	4.8	4.8
4.9	4.9	4.9	4.9
5.0	5.0	5.0	5.0
5.1	5.1	5.1	5.1
5.2	5.2	5.2	5.2
5.3	5.3	5.3	5.3
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5.5	5.5	5.5	5.5
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5.7	5.7	5.7	5.7
5.8	5.8	5.8	5.8
5.9	5.9	5.9	5.9
6.0	6.0	6.0	6.0
6.1	6.1	6.1	6.1
6.2	6.2	6.2	6.2
6.3	6.3	6.3	6.3
6.4	6.4	6.4	6.4
6.5	6.5	6.5	6.5
6.6	6.6	6.6	6.6
6.7	6.7	6.7	6.7
6.8	6.8	6.8	6.8
6.9	6.9	6.9	6.9
7.0	7.0	7.0	7.0
7.1	7.1	7.1	7.1
7.2	7.2	7.2	7.2
7.3	7.3	7.3	7.3
7.4	7.4	7.4	7.4
7.5	7.5	7.5	7.5
7.6	7.6	7.6	7.6
7.7	7.7	7.7	7.7
7.8	7.8	7.8	7.8
7.9	7.9	7.9	7.9
8.0	8.0	8.0	8.0
8.1	8.1	8.1	8.1
8.2	8.2	8.2	8.2
8.3	8.3	8.3	8.3
8.4	8.4	8.4	8.4
8.5	8.5	8.5	8.5
8.6	8.6	8.6	8.6
8.7	8.7	8.7	8.7
8.8	8.8	8.8	8.8
8.9	8.9	8.9	8.9
9.0	9.0	9.0	9.0
9.1	9.1	9.1	9.1
9.2	9.2	9.2	9.2
9.3	9.3	9.3	9.3
9.4	9.4	9.4	9.4
9.5	9.5	9.5	9.5
9.6	9.6	9.6	9.6
9.7	9.7	9.7	9.7
9.8	9.8	9.8	9.8
9.9	9.9	9.9	9.9
10.0	10.0	10.0	10.0

Source: R _{mi}	R _{ms}	M	-
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0780128	0780128
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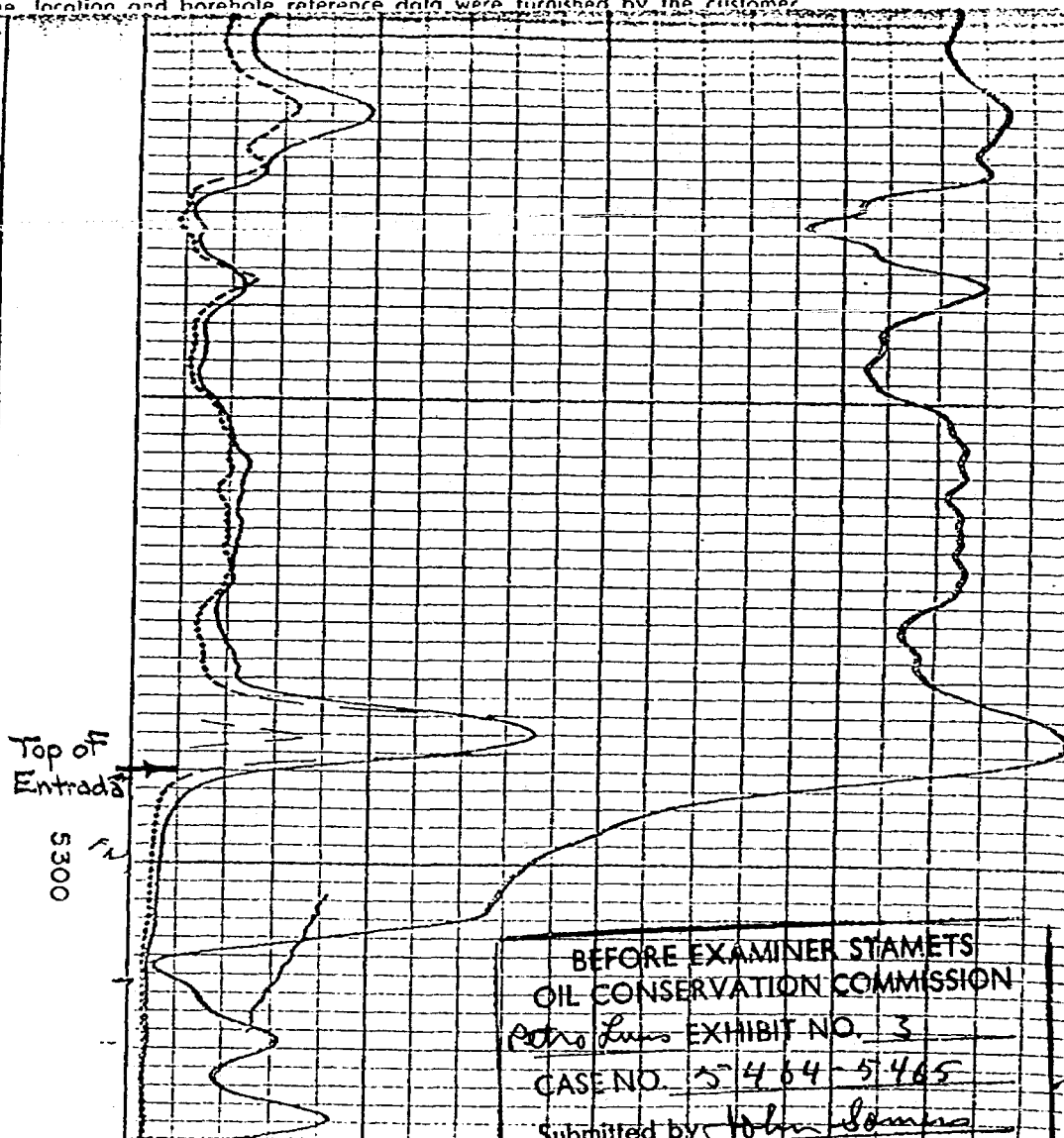
Time since Circ.	2 HOURS
Max Pac Temp	100

Max Rec. Temp.	128
Location	NEAS EAND

45242	1 FAKK
WE110310	

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The well name, location, and borehole reference data were furnished by the customer.



BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION

Petro Lums EXHIBIT NO. 3

CASE NO. 5464-5465

Submitted by John James

Hearing Date: 4-30-75

SCHLUMBERGER

FORMATION DENSITY LOG

Geophysical Logging

FIELD or LOCATION MEDIA
WELL FEDERAL MEDIA #4

COMPANY WILEY & FLUID
POWER PUMP COMPANY

COMPANY DON C. WILEY & FLUID POWER PUMP COMPANY

WELL FEDERAL MEDIA #4

FIELD MEDIA

COUNTY SANDOVAL STATE NEW MEXICO

Location: 990' FSL 1650' FWL

Sec. 14 Twp. 19N Rge. 3W

Other Services:

IES

Permanent Datum: GL
Log Measured From KB, 12 Ft. Above Perm. Datum
Logging Measured From KB

Elev.: K.B. 6882
D.F. 6981
G.L. 6870

Site 5-25-69

Run No. ONE

Re Log FBC

Depth—Driller 5344

Depth—Logger 5344

Bottom logged interval 5343

Depth logged interval 1500

Depth fluid in hole FGM

Salinity, PPM Cl. 2400

Density 9.0

Level FULL

Ex rec. temp. deg F. 128

Logging rig time 3 HOURS

Recorded by WELLS & LEBACK

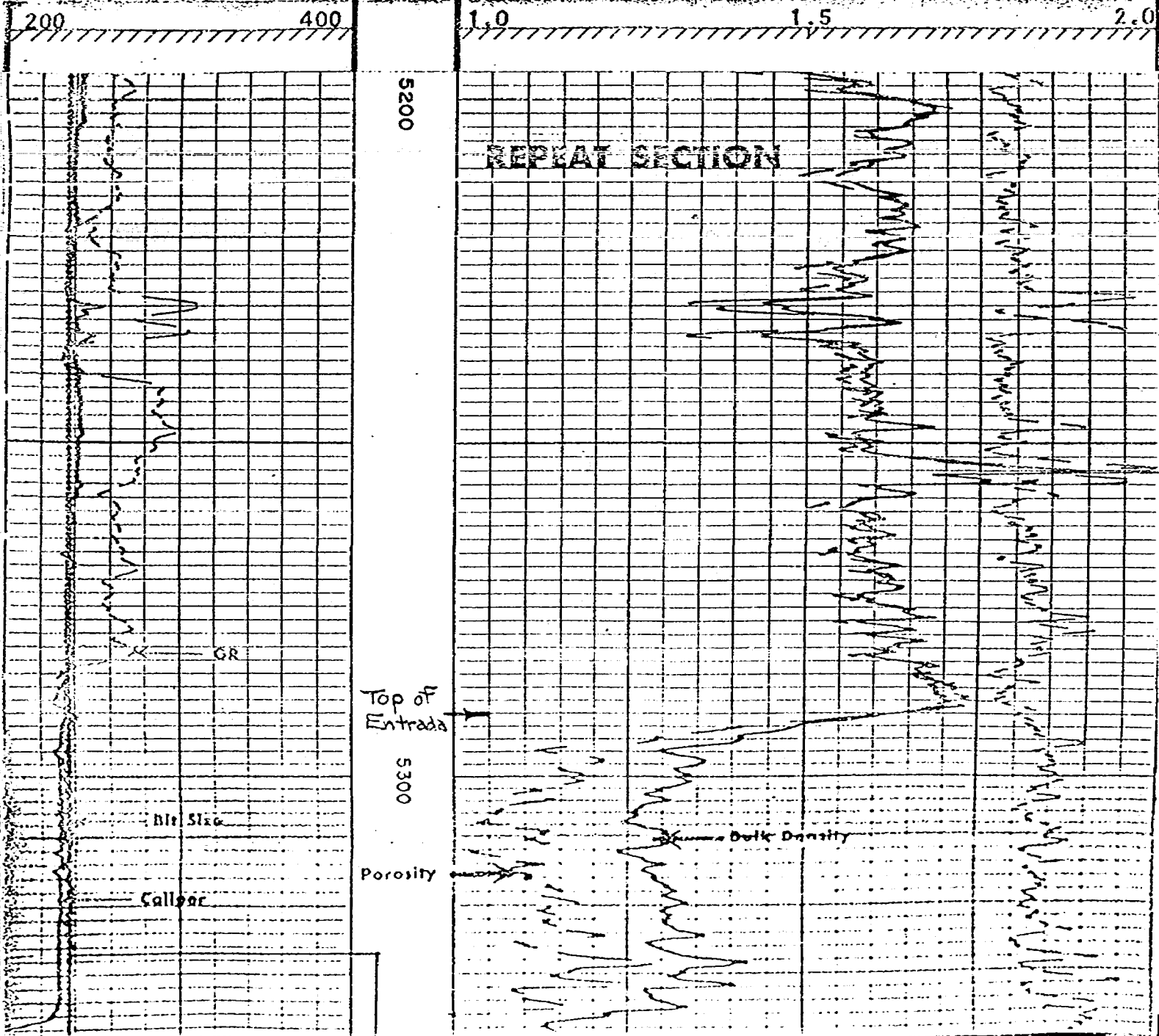
Witnessed by MR. REESE

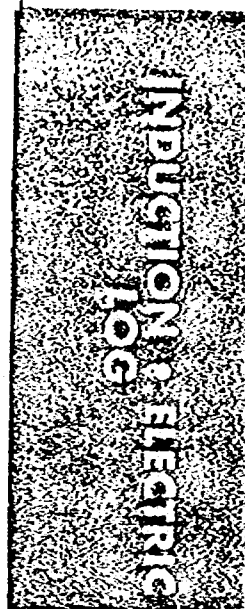
BORE-HOLE RECORD

CASING RECORD

UN	Bo	Bit	From	To	Size	Wgt.	From	To
1	7	7/8	212	5334	8 5/8	24	SURF.	212

The well name, location and borehole reference data were furnished by the customer.

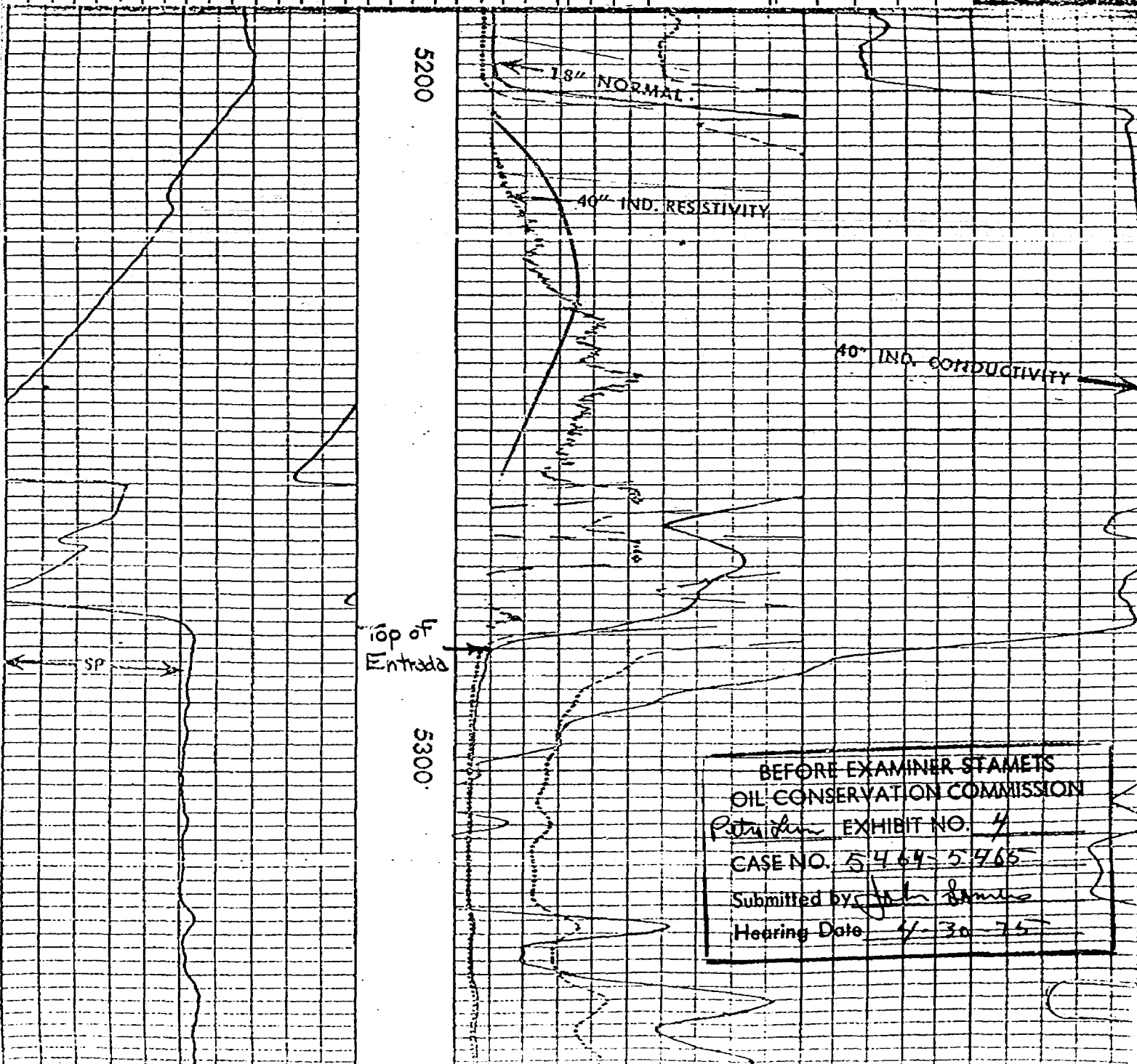


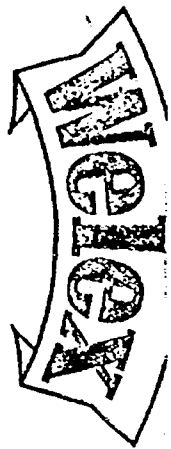


COMPANY		FLUID POWER PUMP COMPANY	
WELL		N. M. 12012 FLUID POWER # 4	
FIELD		MEDIA	
COUNTY	SANDOVAL	STATE	NEW MEXICO
Location	990' SOUTH 13L 1650' EAST FEL		
Sec.	15	Twp	19N Rge 3W
		DENSITY	

Elev.: K.B. 6847.5
D.F. 6846.1
G.L. 6834.1

Core	3-19-72			
Run No.	ONE			
Depth-Driller	5380'			
Depth-Well	5375'			
Time Log Inter.	5369'			
Top Log Inter.	235'			
Casing-Driller	223' @		@	@
Casing-Well	235'			
Bit Size	8-3/4"			
Type Fluid in Hole	MUD			
Dens. Visc.	9.8 146	1	1	1
pH Fluid Loss	11 18.4 ml	1	1	1
Source of Sample	CIRC.			
R _{min} @ Meas. Temp.	.90 @ 100°F	@	°F	@ °F
R _{int} @ Meas. Temp.	.94 @ 58°F	@	°F	@ °F
R _{max} @ Meas. Temp.	1.5 @ 58°F	@	°F	@ °F
Source R _{int} R _{max}	FILTER PRESS	1	1	1
R _{min} @ BHT	.70 @ 135°F	@	°F	@ °F
Time Since Circ.	NONE			
Max. Rec. Temp.	135°F @ BHT	°F @	°F @	°F @
Equip. Location	77571 FARMINGTON 1			
Recorded By	B. WINTERS			
Witnessed By	MR. REECE & MR. JONES			





DENSITY LOG

COMPANY FLUID POWER
PUMP COMPANY
WELL N.M. 12012 FLUID
POWER # 4
FIELD MEDIA
County SANDOVAL State N. MEX

COMPANY FLUID POWER PUMP COMPANY
WELL N.M. 12012 FLUID POWER # 4
FIELD MEDIA
COUNTY SANDOVAL STATE NEW MEXICO
Location 990' SOUTH
1650' EAST
Sec. 15 Twp 19N Rge 3W
Other Services:
INDUCTION
ELECTRIC

Permanent Datum GROUND LEVEL Elev. 6834'
Log Measured From D.F. Ft. Above Perm. Datum
Drilling Measured From KELLY BUSHING

Elev. K.B. 6847.5
D.F. 6845
G.L. 6834

Date	3-19-72
Run No.	ONE
Depth-Driller	5380'
Depth-Welex	5375'
Brm. Log Inter.	5374'
Top log Inter.	1700'
Casing-Driller	223' @
Casing-Welex	235'
Bit Size	8-3/4"
Type Fluid in Hole	DRILLING
Dens. Visc.	9.8 146
pH Fluid Loss	11 18.4 ml
Source of Sample	CTRC
R ₁₀₀ @ Meas. Temp.	9 @ 100°F
R ₁₀₀ @ Meas. Temp.	94 @ 58°F
R ₁₀₀ @ Meas. Temp.	1.5 @ 58°F
Source R ₁₀₀ R ₁₀₀	FILTER PRESS
R ₁₀₀ @ BHT	70 @ 135°F
Time Since Circ.	NONE
Max. Rec. Temp.	135°F @ BHT
Equip. Location	7757 I FARMINGTON
Recorded By	B. NINTERS
Witnessed By	MR RENCE & MR JONES

5200

5300

40
100
1000

Schulmberger

COUNTY SANDOVAL, N.M.
FIELD or LOCATION WILDCAT
WELL N.M. 043286 FLUID
POWER PUMP CO. #2
COMPANY FLUID POWER PUMP

COMPANY FLUID POWER PUMP COMPANY
WELL N.M. 043286 FLUID POWER PUMP CO. # 2
FIELD WILDCAT
COUNTY SANDOVAL STATE NEW MEXICO
LOCATION 2310' FNL-330' FEL
Sec. 15 Twp. 19 N Rge. 3 W
Other Services:
FDC-GR

Permanent Datum: G.L. Elev. 6781
Log Measured From K.B. 14 Ft. Above Perm. Datum
Drilling Measured From K.B. Elev.: K.B. 6795
D.F. 6794
G.L. 6781

Date	12-13-71
Run No.	ONE
Depth—Driller	5300
Depth—Logger	5307
Bim. Log Interval	5306
Top Log Interval	211
Casing—Driller 10 3/4@	196
Casing—Logger	211
Bit Size	8 3/4
Type Fluid in Hole	MAGCOBAR
Dens. Visc.	8.8 65
pH Fluid Loss	9.0 10 ml
Source of Sample	FLOWLINE
R _m @ Meas. Temp.	2.19@70 °F
R _{at} @ Meas. Temp.	1.21@76 °F
R _{ac} @ Meas. Temp.	1.19@76 °F
Source: R _{at} R _{ac}	PRESS CHART
R _m @ BHT	1.18@131 °F
Time Since Circ.	3 HOURS
Max. Rec. Temp.	131 °F
Equip. Location	5616 FARM
Recorded By	PEARSON
Witnessed By	MR. REESE

FOLD HERE R The well name, location and borehole reference data were furnished by the customer.

5200 4% trade
FOL

5300

BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION
EXHIBIT NO. 5
CASE NO. 5464-5465
Submitted by John Jones
Hearing Date 4-30-75

FORMATION DENSITY LOG

COMPANY	FLUID POWER PUMP COMPANY
WELL	N.M. 043286 FLUID POWER PUMP CO. #2
FIELD	WILDCAT
COUNTY	SANDOVAL STATE NEW MEXICO
Location:	23101 FNL - 3301 FEL
Sec. 15	Twp. 19N Rge. 3W
Other Services:	IES

Sec. 15 Twp. 19N Rge. 3W

Location: 2310'FNL - 330'FEL

Other Services:

153

Percent Datum: G.I.; Elev.: 6781
Measured From K.B., 14 Ft. Above Perm. Datum
ing Measured From K.B.
Elev.: K.B. 6795
D.F. 6794
G.I. 6781

12-13-71

Log	FDC-GR
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h-logger	5308
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logged interval	1500
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linity, PPM Cl.	12700
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	0.9
FILE	

rac. temp., deg F.	131
aging time	2 Hrs

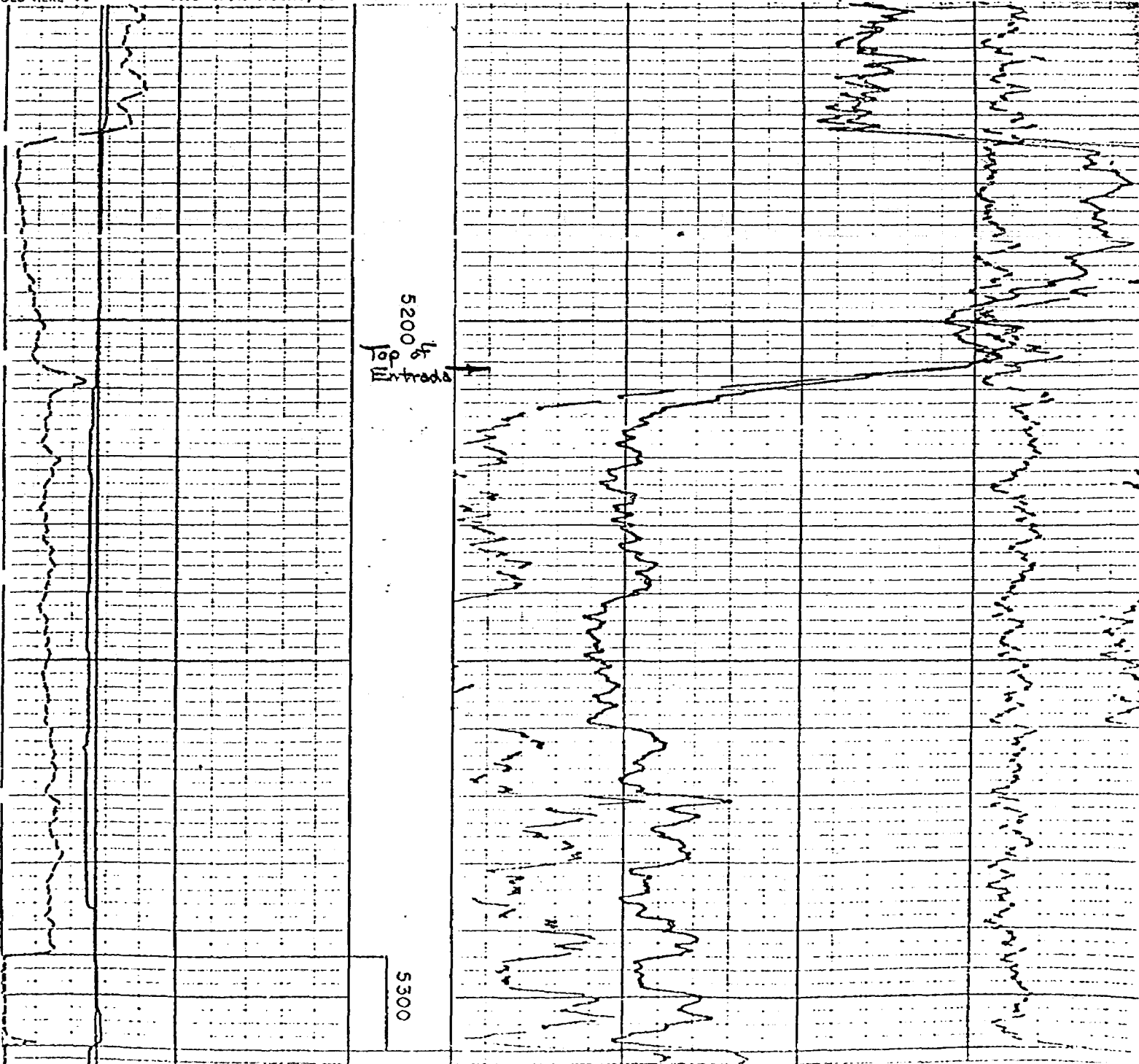
aged by	PEARSON
aged by	NO DEFER

BORE-HOLE RECORD	CASING RECORD
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112	1/4	SURE.	196	10 3/4	32	SURE.	196
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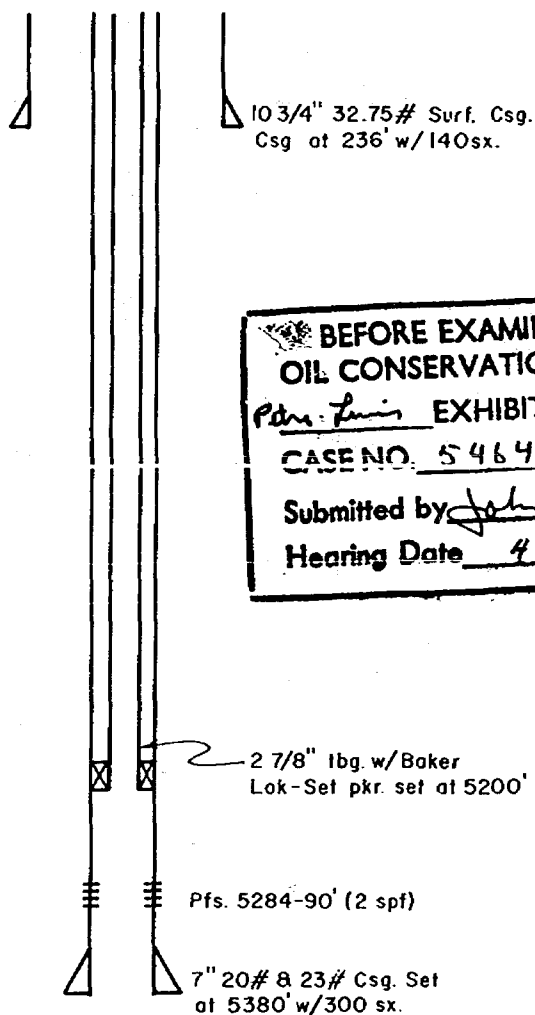
8 3/4	196	5300
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The well name, location and borehole reference data were furnished by the customer.

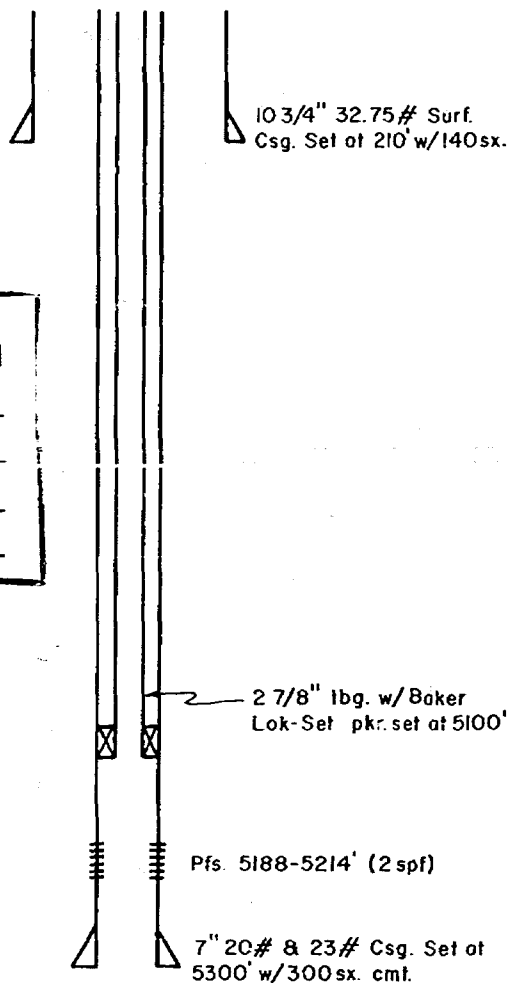


**INJECTION WELL DIAGRAMS
MEDIA ENTRADA UNIT
Sandoval County, New Mexico**

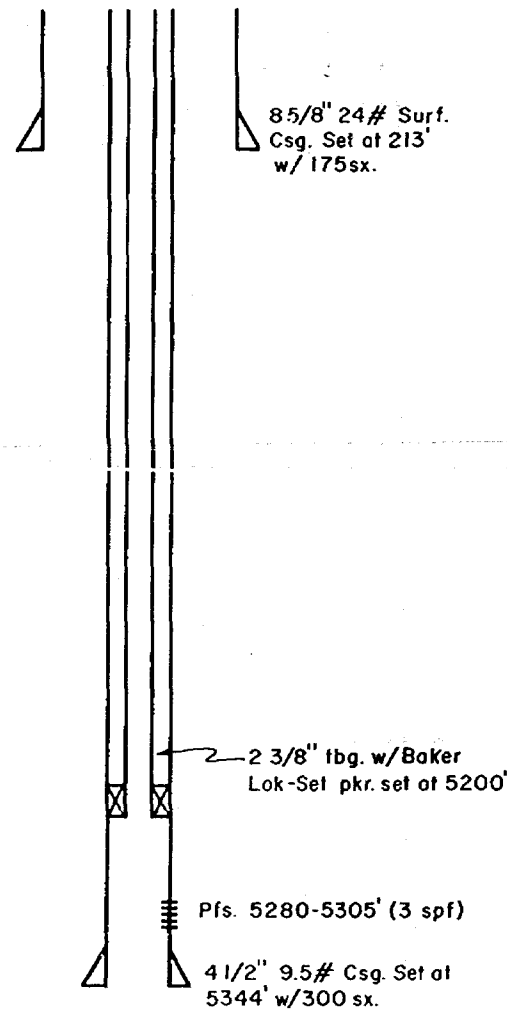
Fluid Power Pump No. 4 **015**
MEU Well No. 5I



Fluid Power Pump No. 2 **H15**
MEU Well No. 1I



Federal Medio No. 4 **N-14**
MEU Well No. 8I



**BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION**
Pdr. Luis EXHIBIT NO. 6
CASE NO. 5464-5465
Submitted by John Gomez
Hearing Date 4-30-75

Zone of injection: Entrada
Top of Zone: 5282'
Injection Fluid: Produced Entrada Water
Anticipated
Injection Rate: 5000 BWP
Surf. Inj. Press: 0 psi

Entrada
5192'
PEW
2500 BWP
0 psi

Entrada
5290'
PEW
5000 BWP
0 psi

J. Somers
Media Dome
well file



CORE LABORATORIES, INC.
 Petroleum Reservoir Engineering
 DALLAS, TEXAS
 WATER ANALYSIS

File RP-4-WA-298

Company Petro-Lewis Well Name Unspecified Sample No. Single
 Formation * Depth * Sampled From *
 Location 2310'FWL & 1650'FWL Field Media Dome County Sanduval State N. Mex.
 Date Sampled * Date Analyzed 7-31-74 Engineer Hoeft

* Information not supplied

Total Dissolved Solids 17793 mg/L Calc

Sp. Gr. 1.013 @ 74°F.

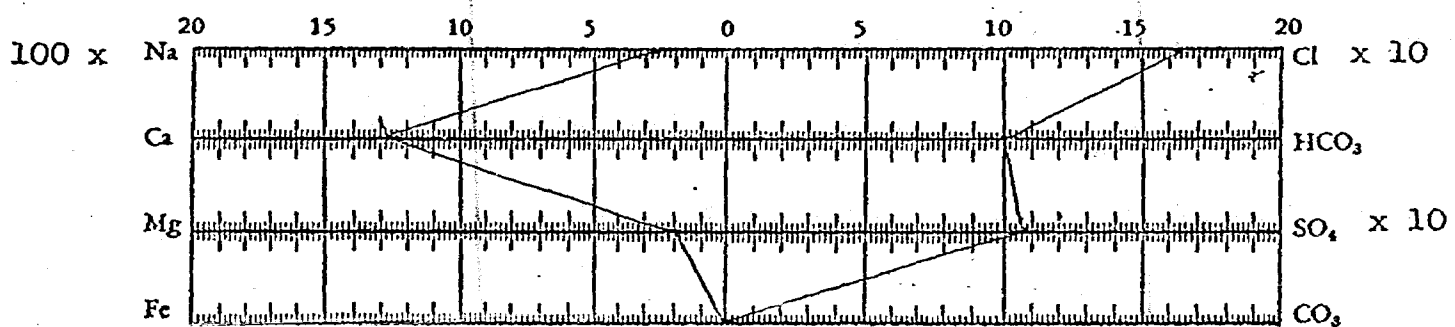
Resistivity 0.50 ohm-meters @ 74°F. Meas

Hydrogen Sulfide Absent

pH 8.0

Constituents	meq/L	mg/L
Sodium	<u>263.3</u>	<u>6053</u>
Calcium	<u>12.8</u>	<u>257</u>
Magnesium	<u>2.0</u>	<u>24</u>
Iron	<u>0.1</u>	<u>3</u>
Barium	<u>NIL</u>	<u>NIL</u>

Constituents	meq/L	mg/L
Chloride	<u>162.0</u>	<u>5743</u>
Bicarbonate	<u>10.0</u>	<u>610</u>
Sulfate	<u>106.2</u>	<u>5103</u>
Carbonate	<u>NIL</u>	<u>NIL</u>
Hydroxide	<u>NIL</u>	<u>NIL</u>



Scale: meq/L

All analyses except iron determination performed on a filtered sample.

BEFORE EXAMINER STAMETS
 OIL CONSERVATION COMMISSION
Petro-Lewis EXHIBIT NO. 7
 CASE NO. 5464-5465
 Submitted by John Somers
 Hearing Date 4-30-75

CASE 5464: Application of Petro-Lewis Corporation for a unit agreement, Sandoval County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Media Entrada Unit Area covering 580 acres of Federal lands, Media-Entrada Oil Pool, Township 19 North, Range 3 West, Sandoval County, New Mexico.

CASE 5465: Application of Petro-Lewis Corporation for a pressure maintenance project, Sandoval County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pressure maintenance project in its Media Entrada Unit Area by the injection of water into three wells, being the Fluid Power Pump Wells Nos. 4 and 2 located, respectively, 990 feet from the South line and 1650 feet from the East line, of Section 15, and the Federal Media Well No. 4 located 990 feet from the South line and 1650 feet from the West line of Section 14, all in Township 19 North, Range 3 West, Media-Entrada Oil Pool, Sandoval County, New Mexico.

CASE 5466: Application of Mark Production Company for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for an unorthodox gas well location 1650 feet from the South line and 1980 feet from the West line of Section 1, Township 18 South, Range 26 East, Atoka-Pennsylvanian Gas Pool, Eddy County, New Mexico, the W/2 of said Section 1 to be dedicated to the well.

CASE 5467: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Colfax Carbon Dioxide Corporation, F. E. Sauble, American Surety Company of New York, and all other interested parties to appear and show cause why the Tex-Mex Cattle Co. Well No. 1 located in Unit D of Section 2, Township 26 North, Range 24 East, Colfax County, New Mexico, should not be plugged and abandoned in accordance with a Commission-approved plugging program.

CASE 5468: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Kenneth M. Hankins, Great American Insurance Company, and all other interested parties to appear and show cause why the Virginia Branch Well No. 1 located in Unit D of Section 9, Township 10 North, Range 25 East, Guadalupe County, New Mexico, should not be plugged and abandoned in accordance with a Commission-approved plugging program.

Docket No. 10-75

Dockets Nos. 11-75 and 12-75 are tentatively set for hearing on May 14 and May 28, 1975. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - APRIL 30, 1975

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

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

CASE 5459: Application of McClellan Oil Corporation for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the East Henshaw Unit Area covering 1262 acres, more or less, of State and Federal lands in Township 16 South, Range 30 East, Eddy County, New Mexico.

CASE 5460: Application of McClellan Oil Corporation for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in its East Henshaw Unit Area by the injection of water into the Grayburg formation through eight wells located in Sections 1 and 2, Township 16 South, Range 30 East, West Henshaw-Grayburg Pool, Eddy County, New Mexico.

CASE 5461: Application of General American Oil Company for pool extension, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the extension of the vertical limits of the Grayburg-Jackson (Queen-Grayburg-San Andres) Pool, Eddy County, New Mexico, to include the Seven Rivers formation excepting, however, that area of said Grayburg-Jackson Pool overlain by the Fren-Seven Rivers Pool.

CASE 5462: Application of General American Oil Company for an unorthodox location and administrative procedure, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for an unorthodox oil well location 825 feet from the North line and 1295 feet from the West line of Section 13, Township 16 South, Range 29 East, East High Lonesome Penrose Unit, High Lonesome Pool, Eddy County, New Mexico. Applicant further seeks the establishment of an administrative procedure whereby additional unorthodox producing and injection well locations could be approved for said unit area without hearing.

CASE 5463: Application of J. Gregory Merrion for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle undesignated Mesaverde and Devils Fork-Gallup production in the wellbore of his Edna Well No. 4 located in Unit H of Section 7, Township 24 North, Range 6 West, Rio Arriba County, New Mexico.

County _____ Pool _____

NEW MEXICO PRINCIPAL MERIDIAN

TOWNSHIP _____ RANGE _____

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

Handwritten annotations on the grid:

- Section 15: circled 'X' with "EP2" above it
- Section 16: circled 'X' with "EP4" below it
- Section 14: circled 'X' with "FM4" to its right

BEFORE THE
OIL CONSERVATION COMMISSION OF NEW MEXICO

Case 5465
IN THE MATTER OF THE APPLICATION
OF PETRO-LEWIS CORPORATION FOR
APPROVAL OF A PRESSURE MAINTENANCE
PROJECT, SANDOVAL COUNTY, NEW MEXICO

APPLICATION

Comes now Petro-Lewis Corporation and applies to the
Oil Conservation Commission of New Mexico for approval of
a pressure maintenance project, and the injection of water
into the Media-Entrada Oil Pool, Sandoval County, New Mexico,
and in support thereof would show the Commission:

1. Applicant is the operator of all producing wells
in the Media-Entrada Oil Pool, Sandoval County, New Mexico,
and has proposed a unit agreement for the operation of
said pool, for the purpose of instituting a pressure
maintenance project.
2. Applicant proposes to inject water into the following
wells for the purposes of pressure maintenance:
 - Fluid Power Pump No. 4
990 feet from the South line, 1650 feet from the East
line, Section 15, Township 19 North, Range 3 West
 - Fluid Power Pump No. 2
330 feet from the East line, 2310 feet from the North
line, Section 15, Township 19 North, Range 3 West
 - Federal Media No. 4 *West*
990 feet from the South line, 1650 feet from the ~~North~~
line, Section 14, Township 19 North, Range 3 West.
3. Applicant proposed to reinject produced water from
the Media Entrada Pool, and to inject water from this pool
which has heretofore been disposed of in the Gallup formation,

DOCKET MAILED

Date *4-18-75*

producing this water from the disposal wells, Federal
Media Nos. 3 and 5.

4. Approximately 4,000 barrels of water per well per day will be injected through the proposed injection wells. No surface pressure is anticipated on the injection wells.

5. The approval of this pressure maintenance project and the injection wells as proposed is in the interest of conservation, will result in the production of oil that would not otherwise be recovered, will prevent waste, and the correlative rights of the owners within the pool will be protected.

WHEREFORE applicant prays that this application be set for hearing before the Commission's duly appointed examiner, and that after notice and hearing as required by law the Commission approve the injection wells and pressure maintenance program as requested.

Respectfully submitted,

PETRO-LEWIS CORPORATION

By Jason W. Kellahin
KELLAHIN & FOX
P. O. Box 1769
Santa Fe, New Mexico 87501

ATTORNEYS FOR APPLICANT

ROUGH

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. 5465

Order No. R- 5017

APPLICATION OF Petro-Lewis Corporation
Pressure Maintenance
FOR A ~~WATERFLOOD~~ PROJECT, Sandoval
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 30,
19 75, at Santa Fe, New Mexico, before Examiner, RLS

NOW, on this May day of 1975, 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, Petro-Lewis Corporation,
seeks authority to institute a pressure maintenance ~~waterflood~~ project on its
Media Entrada Unit, Media-Entrada
Pool, by the injection of water into the Entrada
formation through three injection wells in Sections 14 and 15,
Township 19 North, Range 3 West, NMPM, Sandoval
County, New Mexico.

(3) That the wells in the project area ~~are in an advanced~~
are experiencing a decline in reservoir pressure.
~~state of depletion and should properly be classified as~~
"stripper" wells.

(4) That the proposed pressure maintenance ~~waterflood~~ project should result
in the recovery of a greater volume of oil from the reservoir than would
~~otherwise unrecoverable oil~~, thereby preventing
waste.

otherwise unrecoverable,

(5) That the applicant ^{does not} seek ~~an~~ authority for allowable credit or transfer nor special well allowables within the project.

-2-
Case NO. _____
Order No. R- _____

(6) That the operator 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 project 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 applicant, Petro-Lewis Corporation, is hereby authorized to institute a ^{pressure maintenance} waterflood project on its Media Entrada Unit ~~lease~~, Media - Entrada Pool, by the injection of water into the Entrada formation through the following-described wells in Township 19 North, Range 3 West, NMPM, Sandoval County, New Mexico:

Well Name	No.	Unit Letter	Section
Media Entrada Unit	1	H	15
Media Entrada Unit	5	O	15
Media Entrada Unit	8	N	14

(2) That injection into each of said wells shall be through internally coated tubing, set in a packer which shall be located as near as practicable to the uppermost perforation; that the casing-tubing annulus of each injection well shall be loaded with an inert fluid and equipped with an approved ~~pressure~~ ~~gauge~~ or attention-attracting leak detection device.

(3) That the operator shall immediately notify the supervisor of the Commission's Aztec 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.

-3-

Case NO. _____

Order No. R _____

(4) That the subject ~~waterflood~~ project is hereby designated the *Petro-Lewis Media Extra Unit Pressure Maintenance* ~~waterflood~~ Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

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

(6) 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.