

Case Number

4308

Application  
Transcripts.

Small Exhibits

ETC.

dearnley-meier operating services inc.

SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

1120 SIMMS BLDG. • P. O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO

BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
February 25, 1970

EXAMINER HEARING

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IN THE MATTER OF: )

Application of Bill J. Graham for ) Case No. 4308  
salt water disposal, Lea County, )  
New Mexico. )  
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BEFORE: Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING



MR. UTZ: Case 4308.

MR. HATCH: Case 4308. Application of Bill J. Graham for salt water disposal, Lea County, New Mexico.

MR. GRAHAM: I am Bill J. Graham. What do you need to know?

MR. UTZ: First, we need to swear you in.

(Witness sworn).

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

MR. UTZ: Are there other appearances in this case? Mr. Graham, you can have a seat there at the head of the table and let's see.

BILL J. GRAHAM

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

DIRECT EXAMINATION

BY MR. UTZ:

Q You are for a salt water disposal well in your U. S. Smelting Federal Number 5; is that correct?

A Yes, sir.

Q What we need to know is how you intend to complete this well and what your chances are of contaminating other wells producing oil here.

A The well was drilled by Tenneco and I purchased the lease from Tenneco.

MR. HATCH: Mr. Graham, do you have just one copy of each of these exhibits?

THE WITNESS: I sent a copy with my application, one copy.

MR. HATCH: Do you want to mark this?

MR. UTZ: There has been no changes on them?

THE WITNESS: No.

MR. UTZ: You have only one structure sketch and your diagrammatic; is that right?

THE WITNESS: Yes, sir.

MR. UTZ: Is that the two exhibits you want to mark?

THE WITNESS: Yes, sir.

MR. UTZ: Mark them Exhibits 1 and 2.

MR. HATCH: Do you want the structure as Number 1? Are you going to talk about your structure first or your well completion?

THE WITNESS: The well completion.

MR. HATCH: Let's mark that Number 1.

THE WITNESS: The well was drilled to a total depth of 4996 and five and a half-inch casing was set at

that depth and cemented with 150 sacks of latex. A log was not run to determine the top of the cement, but the calculated top is at 3500 feet from the surface.

The well was then sand drilled at a depth of 4913 feet and completed as a producer and it was produced by a gas lift for about three years and it's production was 25 barrels of water and 1 barrel of oil a day when it was shut in.

What I propose to do is run 4870 feet of two-inch tubing, which will be plastic coated, and run no packer, fill the annulus with fresh water with potassium bichromate in it for corrosion preventative and inject salt water from my U. S. Smelting and Bradley Leases.

I have put water in this well. At the present time it takes water on a vacuum, so I don't know what pressure to anticipate in the future. The reason I don't wish to put a packer in it is that the Delaware in this area does make some sand and I feel like it would be an advantage to have the tubing where I could circulate out any sand that might build up and plug the perforations.

Structure-wise, this well is low on the structure and there is actually about 3 feet of oil column; so, I believe that the water will be injected into the aquifer and no

damage will be sustained in any offset wells by putting water in this particular well.

Q (By Mr. Utz) Does that conclude your statement?

A That's it.

Q This is the well shown on your Exhibit Number 1 in unit "P" of Section 22; is that correct?

A Yes, sir.

Q The contour that well is on would be 1310; is that correct?

A Right.

Q Minus 1310? You show a oil-water contact at, let's say, approximately 1350-55, something like that.

A Yes. That's where you got definite oil-water contact there. This well in Section 23 which is not named on here, minus 1313 --

Q Yes.

A -- has been abandoned due to water production.

Q It's watered out completely?

A Yes.

Q No oil at all?

A No.

Q Would it be your interpretation then that the water-oil contact has moved up to minus 1313 or is that

well coned?

A I think it's moved up.

Q So, it's your contention, then, that your perforations in the well shown on Exhibit -- better make that Exhibit Number 2, hadn't we, which is the diagrammatic sketch of the completion.

MR. HATCH: You have to change the other one.

MR. UTZ: Well, they were both ones.

MR. HATCH: Oh. I think he called this Number 1 a minute ago.

Q (By Mr. Utz) Which do you desire to have Number 1?

A It doesn't make me any difference.

Q Now, I started to ask you a question about perforations and I realized that you don't have on your diagrammatic sketch the interval of perforations.

Do you have that interval?

A It was perforated with a sand drill tool at 4913 feet, which theoretically you would have one hole.

Q How big a hole?

A Probably one-inch in diameter.

Q Now, then, it's your contention that injection through this perforation at 4913 will inject water into

the water table?

A Yes.

Q And will not harm any production?

A No.

Q Might even serve possibly as somewhat of a water drive?

A It possibly. When this well was temporarily abandoned, when they quit producing it before I purchased the lease, the latest test was one barrel of oil and 25 barrels of water.

Q Now, how old is the production string in this five and a half-inch?

A It was run in 1962. To my knowledge, there have been no problems with anybody developing leaks in the casing in this area.

Q Have you tested this casing under any pressure?

A No, sir.

Q Do you intend to?

A Yes, sir.

Q What --

A Well, I intended to test the casing when I started getting pressure or should -- will the Commission advise I run a packer in and test the casing?



Q Usually on old wells, sometime we require that the casing be tested to something like 2,000 pounds, particularly if you don't use a packer.

A I could very well use a packer. What I mentioned was, it would be more practical for me, if I ever developed any sand down there, open my perforations to be able to let the tubing down and wash that sand out.

Q We have had completions, Mr. Graham, very similar to what you propose here; but, we do, we usually require that the casing be tested, particularly if it's old casing. Would you do that?

A I just soon use a packer. Would that solve the same --

Q You mean, set a packer on the bottom of your tubing?

A Yes. I would have to test the casing anyway.

Q If you loaded the annulus, that would protect any zones that might have leaks in it in your casing above the packer?

A Right.

Q That's all we are after.

A Okay. Why don't I change my program, then, to set a packer?

Q Where do you estimate you are going to set the packer?

A I might as well set it around 4800 feet.

Q You would still load the annulus with inert fresh water?

A Right.

Q Now, you are going to put a valve and a gauge at the top --

A Right.

Q -- on the annulus? Now, where's this water coming from that you want to inject?

A Where is it coming from?

Q Yes.

A It will be coming from the Bill J. Graham U. S. Smelting Lease and the Bill J. Graham Bradley Lease, which are all in Section 22.

Actually, this is one federal lease and it was split into 80-acre checkerboard and I purchased the property from Charles Breed and from Tenneco.

Q So, you own the whole section now?

A Right.

Q So, the injection water will be coming from all the producing wells in Section 22; is that correct?

A Right.

Q How brackish is this water; do you know?

A How brackish?

Q Yes.

A It's almost saturated with salt.

Q It's a high chloride content, then?

A Yes, sir. I haven't checked the resistivity or the amount of salt in it, but it's almost saturated.

MR. UTZ: Any further questions of the witness?

Do you need anything more?

MR. HATCH: No.

MR. UTZ: The witness may be excused.

(Witness excused).

MR. UTZ: The case will be taken under advisement.

Any statements?

I N D E X

<u>WITNESS</u>	<u>PAGE</u>
BILL J. GRAHAM	
Direct Examination by Mr. Utz	2

E X H I B I T S

Applicant's 1 & 2	2
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STATE OF NEW MEXICO   )  
                                   ) ss  
 COUNTY OF BERNALILLO )

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

Glenda Burks  
 Notary Public

My Commission Expires:

March 12, 1973

I do hereby certify that the foregoing is a complete record of the proceedings in the Bernalillo hearing of Case No. 4306, heard by me on Dec 25, 1970.  
Glenda Burks, Reporter  
 New Mexico Oil Conservation Commission



## OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

P. O. BOX 2088 - SANTA FE

87801

GOVERNOR  
DAVID F. CARGO  
CHAIRMAN

LAND COMMISSIONER  
ALEX J. ARMIJO  
MEMBER

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

March 2, 1970

Mr. Bill J. Graham  
202 West Building  
Post Office Box 5321  
Midland, Texas 79701

Re: Case No. 4308  
Order No. R-3927  
Applicant:  
Bill J. Graham

Dear Sir:

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

Very truly yours,

A. L. PORTER, Jr.  
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC x

Artesia OCC           

Aztec OCC           

Other Bureau of Land Management

State Engineer Office

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. 4308  
Order No. R-3927

APPLICATION OF BILL J. GRAHAM  
FOR SALT WATER DISPOSAL, LEA  
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on February 25, 1970, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 2nd day of March, 1970, 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, Bill J. Graham, is the owner and operator of the U. S. Smelting Federal Well No. 5, located in Unit P of Section 22, Township 24 South, Range 32 East, NMPM, Double X-Delaware Pool, Lea County, New Mexico.

(3) That the applicant proposes to utilize said well to dispose of produced salt water into the Delaware formation, with injection through perforations at approximately 4913 feet.

(4) That the injection should be accomplished through 2-inch plastic-lined tubing installed in a packer set at approximately 4800 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge should be attached to the annulus at the surface in order to determine leakage in the casing, tubing, or packer.

-2-

CASE No. 4308  
Order No. R-3927

(5) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Bill J. Graham, is hereby authorized to utilize his U. S. Smelting Federal Well No. 5, located in Unit P of Section 22, Township 24 South, Range 32 East, NMPM, Double X-Delaware Pool, Lea County, New Mexico, to dispose of produced salt water into the Delaware formation, injection to be accomplished through 2-inch tubing installed in a packer set at approximately 4800 feet, with injection through perforations at approximately 4913 feet;

PROVIDED HOWEVER, that the tubing shall be plastic-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus at the surface in order to determine leakage in the casing, tubing, or packer.

(2) That the applicant shall submit monthly reports of his disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

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

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

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

  
DAVID F. CARGO, Chairman

ALEX J. ARMISTO, Member

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

esr/



Case. 4308

Heard 2-25-70

Rec. 2-26-70

Grant Bill J. Graham permission  
to convert his N. S. Smelting Dist.  
P-22-24-72 - ~~to~~ X-Delaware.  
to an SWP well in the Delaware  
Sand. Injection to be at 4913 then  
a Sand drill hole (perf.)

Packer to be set at 4500' + Annulus  
filled w/ inert water w/ gage  
at surface.

2" S.W.E. tubing to be internally  
plastic coated.

Sheddy

DOCKET: EXAMINER HEARING - WEDNESDAY - FEBRUARY 25, 1970

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 4296: (Continued from the January 21, 1970 Examiner Hearing)  
Application of S. P. Yates for a pressure maintenance project expansion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand the S. P. Yates West McMillan Anderson Pressure Maintenance Project, authorized by Order No. R-3852, by the injection of water into the Queen formation through one additional well, the Anderson Well No. 3 located 2310 feet from the East line and 990 feet from the South line of Section 11, Township 20 South, Range 26 East, West McMillan-Seven Rivers-Queen Pool, Eddy County, New Mexico.

CASE 4308: Application of Bill J. Graham for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Delaware formation in the perforated interval from 4913 feet to 4961 feet in his U. S. Smelting Federal Well No. 5 located in Unit P of Section 22, Township 24 South, Range 32 East, Double X-Delaware Pool, Lea County, New Mexico.

CASE 4309: Application of Mobil Oil Corporation for an amendment of Order No. R-3824, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-3824 to permit the drilling of its Humphrey Queen Unit Well No. 13, a water injection well in its Langlie Mattix Humphrey Waterflood Project, at a non-standard location 1500 feet from the South line and 1220 feet from the East line of Section 4, Township 25 South, Range 37 East, Lea County, New Mexico, in lieu of the location authorized in said Order No. R-3824.

CASE 4310: Application of Klabzuba, Munson and Seaman for an unorthodox oil well location, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a wildcat oil well to the Devonian formation at an unorthodox location 700 feet from the East line and 2500 feet from the South line of Section 13, Township 10 South, Range 27 East, Chaves County, New Mexico.

CASE 4311: Application of C. E. Long for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order force-pooling all mineral interests from the surface down to the base of the Seven Rivers formation underlying the S/2 of the NE/4 of Section 31, Township 21 South, Range 36 East, Lea County, New Mexico, to form two 40-acre proration units for Jalmat, Eumont, or South Eunice Oil production to be dedicated to a well to be re-entered in Unit H and a well to be re-entered or to be drilled at a standard location in Unit G of said Section 31 and/or to form an 80-acre non-standard gas proration unit in the event gas production is encountered in the Jalmat or Eumont Gas Pools. Also to be considered will be the costs of drilling said well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well.

CASE 4312: Application of U. S. Potash & Chemical Company, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-111-A to include the following-described lands in the Potash-Oil Area defined by said order:

EDDY COUNTY, NEW MEXICO

Township 23 South, Range 31 East,  
Sections 19, 20, 27, 28, 29 and 30: All

CASE 4313: Application of Atlantic Richfield Company for a non-standard gas proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the establishment of 160-acre non-standard gas proration unit comprising the N/2 S/2 of Section 36, Township 21 South, Range 37 East, Blinebry Gas Pool, Lea County, New Mexico, to be dedicated to its State 367 Wells Nos. 2 and 3 located, respectively, in Units L and K of said Section 36. Applicant further seeks authority to produce the allowable assigned to said unit from either of the aforesaid wells in any proportion.

CASE 4314: Application of Coastal States Gas Producing Company for pool redelineation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the redelineation of certain pool boundaries to include the deletion of the W/2 and SE/4 of Section 21, Township 13 South, Range 33 East, Lea County, New Mexico, from the Lazy J-Pennsylvanian Pool and the extension of the North Baum Upper Pennsylvanian Pool to include said deleted acreage.

CASE 4315:

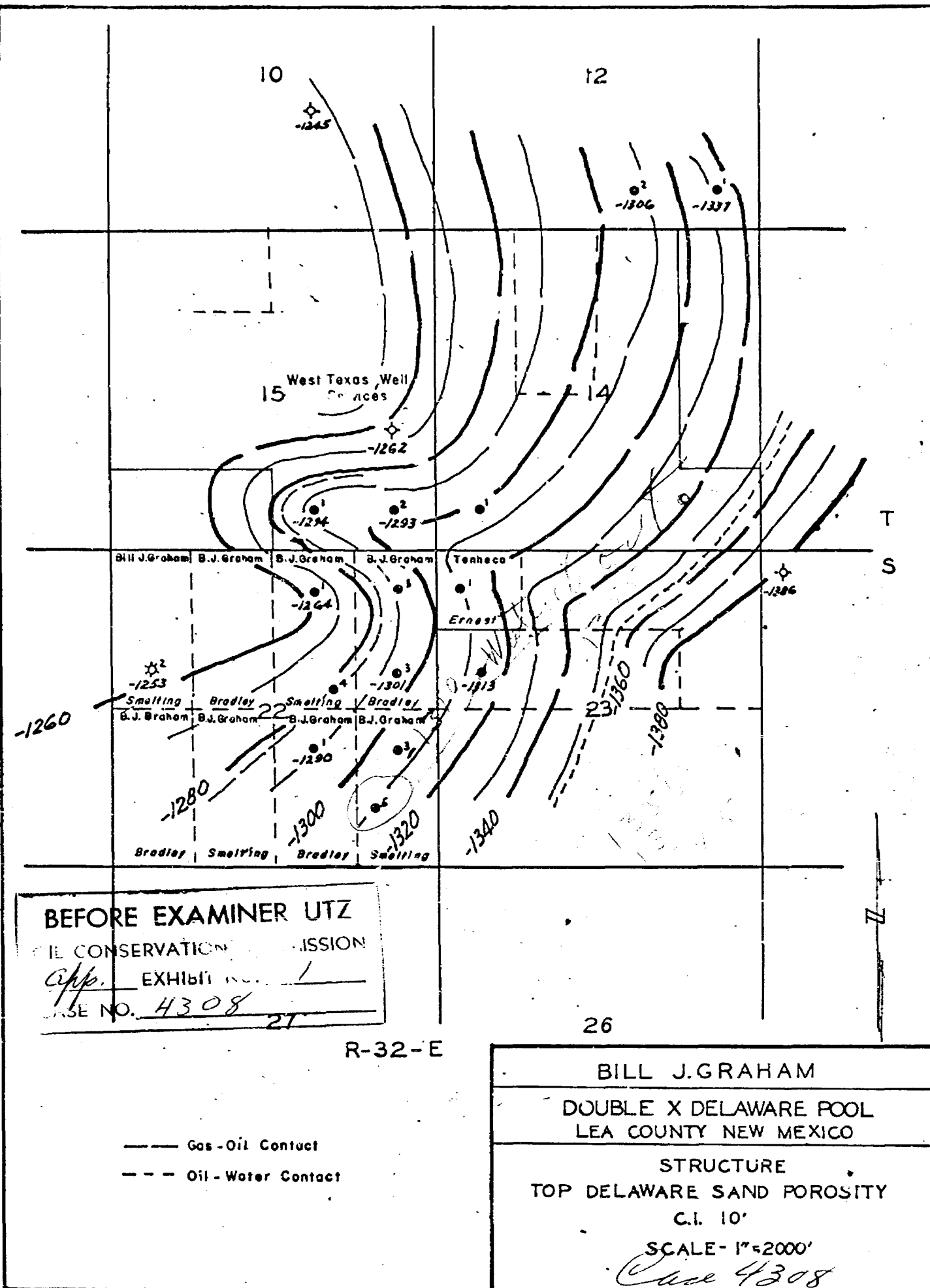
Application of Pan American Petroleum Corporation for pool consolidation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the consolidation of the Fowler-Lower Paddock and Fowler-Blinebry Pools, Lea County, New Mexico, into one pool. Applicant further requests that the consolidated pool be governed by rules presently applicable to the Fowler-Blinebry Pool.

CASE 4316:

Application of Pan American Petroleum Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 104 C 11 to permit the drilling of a well at an unorthodox gas well location 330 feet from the North and East lines of Section 11, Township 23 South, Range 26 East, South Carlsbad-Strawn, Atoka, and-Morrow Gas Pools, Eddy County, New Mexico. The N/2 of said Section 11 to be dedicated to the well.

CASE 4317:

Application of Union Oil Company of California for the creation of a new gas pool and special pool rules, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new San Andres gas pool for its Federal "18" Well No. 2 located 660 feet from the South and East lines of Section 18, Township 8 South, Range 38 East, Roosevelt County, New Mexico, and for the promulgation of special rules therefor, including provisions for 160-acre spacing units and a casing program.



346' - 8 5/8" casing  
32# - H-225 sx -  
circulated

Valve & Gauge

Valve & Gauge

5 1/2" casing - 14# J-55  
Set at 4994'

*Comp. 19.62*

Annulus filled with treated  
water to prevent corrosion.

2" EUE plastic coated tubing  
set at 4870'

Cement - 150 sx pozmix  
2% gel 50 sx reg latex  
calculated top 3500'

**BEFORE EXAMINER UTZ**

OIL CONSERVATION COMMISSION

app. EXHIBIT NO. 2  
CASE NO. 4308

Plug back - 4961'

Perf. sand drill 4913'

*Case 4308*

DIAGRAMATIC SKETCH - WATER DISPOSAL

202 WEST BUILDING  
P. O. BOX 5321

**BILL J. GRAHAM**  
CONSULTING PETROLEUM ENGINEER - OIL OPERATOR

MUTUAL 4-6872  
AREA CODE 915

MIDLAND, TEXAS  
79701

January 22, 1970

000  
JAN 23 AM 8 30

Case 4308

Oil Conservation Commission  
State of New Mexico  
Santa Fe, New Mexico 87501

Gentlemen:

I wish to request permission to convert the Bill J. Graham U. S. Smelting Federal Well #5 to a Salt Water Disposal Well. This well is located in Unit P, Section 22, T-24-S, R-32-E, Lea County.

I propose to inject salt water in the Delaware formation at a depth of 4913 feet through perforations. This same zone is being produced in offset wells.

This well is located in the Double X Delaware Field.

Attached are copies of a map of the area showing the structure on top of the Delaware formation, a sonic log of the well and a diagrammatic sketch of the proposed well equipment.

I wish to use plastic coated tubing with no packer. The annulus will be filled with treated fluid to prevent corrosion of the well tubing and casing.

Very truly yours,

*Bill J. Graham*  
Bill J. Graham

BJG/fs

Enclosures 3

DOCKET MAILED

Date 2-13-70

DRAFT

GMH/esr

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. 4308

Order No. R- 3927

APPLICATION OF BILL J. GRAHAM  
FOR SALT WATER DISPOSAL, LEA  
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on February 25, 1967,  
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this        day of March, 1967, 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, Bill J. Graham,  
is the owner and operator of the U. S. Smelting Federal Well No. 5,  
located in Unit P of Section 22, Township 24 South, Range  
32 East, NMPM, Double X-Delaware Pool, Lea  
County, New Mexico.

(3) That the applicant proposes to utilize said well to  
dispose of produced salt water into the Delaware  
~~with injection through perforations at 4913 feet, approximately 4913 feet~~  
formation, ~~with injection into the~~ perforated interval  
~~from approximately 4913 feet to 4961 feet.~~

(4) That the injection should be accomplished through  
2-inch plastic-lined tubing installed in a packer set at



approximately 4800 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge should be attached to the annulus ~~or the annulus left open~~ at the surface in order to determine leakage in the casing, tubing, or packer.

(5) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Bill J. Graham,  
is hereby authorized to utilize <sup>his</sup> ~~its~~ U. S. Smelting Federal Well No. 5,  
located in Unit P of Section 22, Township 24 South, Range  
32 East, NMPM, Double X-Delaware Pool, Lea  
County, New Mexico, to dispose of produced salt water into the  
Delaware formation, injection to be accomplished through  
2-inch tubing installed in a packer set at approximately  
4800 feet, with injection <sup>through perforations at</sup> ~~into the~~ perforated ~~interval~~  
~~from~~ approximately 4913 feet, to ~~4963~~ ~~feet~~.

PROVIDED HOWEVER, that the tubing shall be plastic-lined;  
that the casing-tubing annulus shall be filled with an inert  
fluid; and that a pressure gauge shall be attached to the annulus  
~~or the annulus left open~~ at the surface in order to determine  
leakage in the casing, tubing, or packer.

(2) That the applicant shall submit monthly reports of <sup>his</sup> ~~its~~  
disposal operations in accordance with Rules 704 and 1120 of the  
Commission Rules and Regulations.

(3) 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.

CASE 4309: Application of MOBIL  
OIL CORP. FOR AN AMENDMENT OF  
ORDER NO. R-3824, LEA COUNTY.