CASE 6244: TOM L. INGRAM FOR SALT WATER DISPOSAL, LEA COUNTY, NEW MEXICO

CASE NO.

6244

APPLICATION,
TRANSCRIPTS,
SMALL EXHIBITS,

ETC.

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

JERRY APODACA
GOVERNOR

NICK FRANKLIN
SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-2434

June 16, 1978

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

Re: CASE NO. 6244
ORDER NO. R-5748

Applicant:

Tom L. Ingram

Dear Sir:

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

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

Copy of order also sent to:

Hobbs OCC x
Artesia OCC x
Aztec OCC

Other

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 6244
Order No. R-5748

APPLICATION OF TOM L. INGRAM FOR SALT
WATER DISPOSAL, LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on June 7, 1978, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 15th day of June, 1978, the Division Director, 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 Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Tom L. Ingram, is the owner and operator of the State M Well No. 1, located in Unit O of Section 18, Township 17 South, Range 36 East, NMPM, Vacuum-Abo Pool, Lea County, New Mexico.

(3) That the applicant proposes to utilize said well to dispose of produced salt water into the Abo Reef formation, with injection into the perforated interval from approximately 8915 feet to 8982 feet.

(4) That the injection should be accomplished through 2 3/8-inch plastic lined tubing installed in a packer set at approximately 8815 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge or approved leak detection device should be attached to the annulus in order to determine leakage in the casing, tubing, or packer.

(5) That the injection well or system should be equipped with a pop-off valve or other acceptable device which will limit the wellhead pressure on the injection well to no more than 1783 psi.

(6) That the operator should notify the supervisor of the Hobbs district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.

(7) 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.

(8) 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, Tom L. Ingram, is hereby authorized to utilize its State M Well No. 1, located in Unit O of Section 18, Township 17 South, Range 36 East, NMPM, Vacuum-Abo Pool, Lea County, New Mexico, to dispose of produced salt water into the Abo Reef formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 8815 feet, with injection into the perforated interval from approximately 8915 feet to 8982 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 shall be equipped with an approved leak detection device in order to determine leakage in the casing, tubing, or packer.

(2) That the injection well or system shall be equipped with a pop-off valve or other acceptable device which will limit the wellhead pressure on the injection well to no more than 1783 psi.

(3) That the operator shall notify the supervisor of the Hobbs district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.

(4) That the operator shall immediately notify the supervisor of the Division's Hobbs district office of the failure of the tubing, casing, or packer, in said well or the leakage of water from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

(5) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Division Rules and Regulations.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

JOE D. RAMEY
Director

S E A L

fd/

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
State Land Office Building
Santa Fe, New Mexico
7 June, 1978

EXAMINER HEARING

IN THE MATTER OF:

Application of Tom L. Ingram for salt water disposal, Lea County, New Mexico.

CASE 6244

BEFORE: Daniel S. Nutter

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Applicant: W. Thomas Kellahin, Esq.
KELLAHIN & FOX
500 Don Gaspar
Santa Fe, New Mexico 87501

SALLY WALTON BOYD
CERTIFIED SHORTHAND REPORTER
730 Bishop's Lodge Road • Phone (505) 988-3404
Santa Fe, New Mexico 87501

I N D E X

E X H I B I T S

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Santa Fe, New Mexico 87501

E X H I B I T S CONT'D

MR. NUTTER: Call now Case Number 6244, which is in the application of Tom L. Ingram for salt water disposal, Lea County, New Mexico.

MR. KELLAHIN: Tom Kellahin of Kellahin and Fox, appearing on behalf of the Applicant, and I have one witness.

(Witness sworn.)

TOM L. INGRAM

being called as a witness and having been duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Would you please state your name and occupation?

A. Tom L. Ingram, oil and gas producer, in Roswell.

Q. Mr. Ingram, have you previously testified before the Division and had your qualifications as an expert witness accepted and made a matter of record?

A. I have.

MR. KELLAHIN: We tender Mr. Ingram as an expert witness.

MR. NUTTER: Mr. Ingram is qualified.

Q. (Mr. Kellahin continuing.) Would you please

refer to what we've marked as Exhibit Number One, identify it and tell the Examiner what you're trying to accomplish.

A. Exhibit Number One is a lease plat showing the proposed injection well in the center with a red circle and then all of the wells within a radius of two miles.

The San Andres production is shown by a small black dot and those producing from the Abo have a larger concentric circle around.

The field where the injection well is located is the northeast extension of the Vacuum-Abo Reef. The West Lovington-San Andres field is to the north; the Double A, the Emerald, the Upper Double A, and the South Double A are also Abo producers that are around to the east and to the west -- pardon me, to the east and to the south. To the southwest we have the main portion of the Vacuum-Abo Reef, which produces from the San Andres and the Abo.

Q. You disposal well is located in the southeast quarter of Section 18 and circled in red?

A. That's true.

Q. What is the anticipated volume of salt water to be disposed of in that well on a daily basis?

A. The volume from the three producing wells that we have in the field is approximately 150 barrels a day.

Q. Would you identify the three wells which currently produce salt water which you will then dispose of

in the subject well?

A. Okay. I am the operator on all of these wells. The No. 1 State "L", which is located 990 feet from the north and 1890 feet from the west line of Section 19, Township 17 South, Range 36 East. The No. 2 State "L", which is located 2310 feet from the south and 330 feet from the west of the same Section 19. The TP State No. 2, 1980 from the south and 330 from the east of Section 24, Township 17 South, Range 35 East.

Q. I see that the subject well is offset on the west and the east by what appear to be dry hole symbols, is that correct?

A. Yes, that is correct. Those are both shallow -- pardon me, the one of the east is a shallow San Andres well. The one on the west was drilled to the Abo Reef and found it to be non-porous and was plugged and abandoned.

Q. You have diagrammatic sketches of both of those wellbores in subsequent exhibits, do you not?

A. I have one of the Abo well but since the San Andres well did not penetrate the zone that we are anticipating disposing of water into, I did not make one.

Q. All right. What is to be the disposal interval?

A. The disposal interval will be the perforation

from 8915 to 8982.

Q. Is it 8992 or 8982?

A. 8982.

MR. KELLAHIN: We'll correct the Exhibit Number One, if the Examiner please, to indicate that it's 8915 to 8982.

MR. NUTTER: Okay, I think all of the records that we've got on this well to date indicate 92, but that can easily be changed; it's lesser than was advertised.

MR. KELLAHIN: Right.

Q. (Mr. Kellahin continuing.) All right, Mr. Ingram, if you'll refer to Exhibit Number Two and identify it?

A. Exhibit Number 2 is a subsurface contour map on the top of the Abo Reef, and it indicates the injection well up to the northeast, circled in red, and you'll notice a dotted line then going in a west, northwest, direction and then another circle.

The circle with the datum 4906 under it is actually where the bottom of the hole is. This was a directionally drilled hole.

The wells that we propose to take water from are shown as we move down to the southwest, and you will note that the datum for the top of the Abo Reef in the injection well is minus 4906 and the nearest producer to

that is a minus 4839. So the injection well is actually 67 feet lower than the lowest producing well.

Q. Please refer to Exhibit Number 3 and identify it.

A. Exhibit Number Three is a schematic diagram of the well that we are proposing for an injection well, showing all of the casing, the tubing, the top of the cement, the perforations.

Q. The topmost perforation is at 8915?

A. Yes, the topmost perforation is at 8915 and we are showing the plastic-lined tubing and packer to be at 8815, which 100 feet above.

Q. So there should be a correction on the entry that says 2-3/8ths inch tubing set at 8668 feet, you will amend that to provide for 8815?

A. I think I changed it on the exhibit that he has there.

Q. That's fine. Is it your intent to use plastic-lined tubing?

A. Yes.

Q. And what kind of installation will you establish on the surface to monitor the well?

A. We will have a vacuum gauge on the surface inasmuch as the water will be going in on a vacuum; however, should pressure be required, we will install a p

pressure gauge with a limiting switch to make certain that the -- that the surface pressure does not exceed the 1783 psi that we're allowed by our regulations.

Q. And will you fill the annular space between the tubing and the casing?

A. Yes. The annular space will be filled with inert fluid.

Q. Okay. Please refer to Exhibit Number Four and identify it.

A. Exhibit Number Four is just a log of the subject injection well, showing the perforations.

Q. Exhibit Number Five.

A. Exhibit Number Five is an analysis of the water that will be injected into this well, and Exhibit Number 5-A is also the same type of data, and Number 5-B, also.

Q. Would you identify Exhibit Number Six and explain what information it contains?

A. Exhibit Number Six is the schematic of the No. 1 State "L", the one producing well that is within a half a mile of the injection well.

Q. This is the only producing well within a half mile?

A. Yes, that is correct. It shows all of the casing, the cement used, the top of the cement, and the

perforations.

Q. Okay. Exhibit Number Seven, please.

A. Exhibit Number Seven is a schematic of one of the other wells that we'll also be taking water from. It's the No. 2 State Well. And it shows the same type of information.

Q. Exhibit Eight.

A. Exhibit Eight is another one of the wells that we'll be taking water from, the TP State No. 2, showing the same type of information.

Q. Exhibit Number Nine.

A. Exhibit Number Nine is the well that you asked about earlier that's immediately to the west of the injection well and it is showing the casing that was initially installed in the well, the total depth, and where the cement plugs are located and the cement plugs are across the zone that we will be injecting our water into.

Q. Is the well depicted on Exhibit Number Nine entirely cemented through the zone of injection?

A. Yes, the 35 sacks cement plug there at the bottom at 8760 to 8860 is in the zone. This well did not encounter Abo Reef porosity. It was actually a back reef well.

MR. NUTTER: So this well didn't have any production casing run, apparently.

A. No. It didn't have any production casing, didn't have any porosity in it.

Q. Exhibit Number Ten.

A. Exhibit Number Ten is outside the half mile radius, but it -- if you'll look back on Exhibit Number Two, it is one of the highest wells in the field and it is actually located immediately south of the State "L" No. 1 and east of the Featherstone Sun-State No. 1, and it was nonproductive by virtue of not having porosity in the reef there. There appeared to be no porosity along the actual crest of the reef.

Q. While you're looking at Exhibit Number Two, I note that you've identified a water well source southwest of the subject disposal well.

A. Yes, there is a windmill that is located there and the approximate total depth of 75 feet. All fresh water in this area comes from the Ogalalla and it would be above the redbed, so there would be no water below 300 feet.

Q. In your opinion, then, injection into the subject well will not damage or increase the risk of contamination to fresh water sources.

A. Yes, that is correct.

Q. Would you look at Exhibit Number Eleven and identify it?

A. All right. Exhibit Number Eleven is also another dry hole and it is immediately south of the water well that we were just discussing and it is actually the highest well structurally on the top of the Abo Reef, but it also had no porosity in the reef proper.

MR. NUTTER: Do you know what the top of the reef was on that well?

A. Yes, sir, it was minus 4655, and on the other one it's a minus 4748.

MR. NUTTER: That would be the one that's south of the "L" - 1?

A. Yes, uh-huh.

MR. NUTTER: That was minus forty --

A. 748.

MR. NUTTER: Thank you.

Q. Would you identify Exhibit Number Twelve?

A. Exhibit Number Twelve is another well within the two-mile radius that actually penetrated the -- what would be the Abo Reef but it had no Abo Reef in it, either. It's the Featherstone No. 2 Sun-State. It also has plugs set through the equivalent stratigraphic zone.

Q. Exhibit Thirteen?

A. Exhibit Number Thirteen is what has been a producing well and on the subsurface contour map it is marked as a Featherstone Development Corporation; however,

Sun has recently assumed operation of this well. It is no longer producing from the Abo Reef. It has pipe set through it and it's my understanding that they are planning to plug back to some other zone.

Q. Would you identify Exhibit Thirteen - A?

A. Exhibit Thirteen-A --

MR. NUTTER: Mr. -- before you go on, Mr. Ingram --

A. Yes.

MR. NUTTER: -- on this last one, Exhibit Number Thirteen, do you know how much cement was used on that 5-1/2 inch casing and where the top of it is?

A. 750 sacks and the top is, yes, it's marked on the exhibit. It's at 917 feet.

MR. NUTTER: That's on the long string, then?

A. Yes, right.

MR. NUTTER: Okay. Go ahead.

Q. Exhibit Thirteen-A.

A. Exhibit Thirteen-A is an analysis of the water out of the Abo Reef in this particular well, which shows a similarity to the other -- to the water we have in the others.

Q. Exhibit Fourteen.

A. Exhibit Fourteen was our C-108, which was the application to dispose of salt water into the well.

MR. NUTTER: Now, while you're on that, we would want to revise the proposed interval of injection.

A. Right, change --

MR. NUTTER: To read 8915 to 8982, right?

A. Right.

MR. NUTTER: Okay.

MR. KELLAHIN: If the Examiner please, does your exhibit reflect the change in the length of the tubing, the tubing depth?

MR. NUTTER: Yes, it does.

MR. KELLAHIN: All right.

Q. (Mr. Kellahin continuing.) Would you identify Exhibit Fifteen?

A. Exhibit Fifteen is the C-105, which is the well completion log showing all of the casing, the perforations, the tubing, and it has the correct perforations on it, the correct perforated interval.

Q. Would you identify Exhibit Sixteen?

A. Exhibit Sixteen is a letter that we sent to the surface owner and the receipt that he received that letter.

Q. Exhibit Seventeen.

A. Exhibit Seventeen is to the offset operator, Sun, and it shows a receipt and also we have an exhibit --

Q. Nineteen.

A. -- Number Nineteen, which shows that they have no objection to our injecting water.

Q. And finally, Exhibit Eighteen.

A. Exhibit Eighteen is to the New Mexico State Engineer indicating the same information.

There is one -- I see that we have one well on which we do not have a schematic and it's plus or minus a little bit as to whether it's within the half a mile. It is the Huber No. 1 State "B" that is located in Section 18 of 17, 36. It's 1980 from the north and 1980 from the east lines. It was drilled to a total depth of 9004 feet. It had a 25 sack plug set there at 9004 feet. It has a 25 sack plug at 8300 feet. It had a 25 sack plug set at 7000 feet. A 25 sack plug at 6100 feet; a 25 sack plug at 3300 feet, which would be in the base of the 8-5/8ths inch casing, was set at 3310 with 300 sacks. The 13-3/8ths inch casing was set at 370 feet with 200 sacks of cement, which circulated. They also --

MR. NUTTER: You got a little ahead of me, Mr. Ingram.

A. Okay.

MR. NUTTER: The 8-5/8ths was at 3310 with how many sacks?

A. 300.

MR. NUTTER: 300 sacks.

A. Uh-huh.

MR. NUTTER: The 13-3/8ths?

A. At 370.

MR. NUTTER: 370 feet.

A. With 200 sacks.

MR. NUTTER: Circulated.

A. Right, it was circulated. They set a 25-sack plug at 330 feet and then they set a 10-sack plug at the surface.

So while this well also had no porosity in the Abo Reef, it does have cement plugs across the stratigraphic equivalent zones.

Q. Were Exhibits One through Nineteen prepared by you directly, Mr. Ingram, or compiled under your direction and supervision?

A. They were.

Q. In your opinion, Mr. Ingram, will approval of this application be in the best interests of conservation, the prevention of waste, and the protection of correlative rights?

A. Yes, I believe so.

MR. KELLAHIN: We move the introduction of Exhibits One through Nineteen.

MR. NUTTER: Exhibits One through Nineteen will be admitted in evidence.

CROSS EXAMINATION

BY MR. NUTTER:

Q. Now, the well immediately east of the disposal well, Mr. Ingram, on your Exhibit One it looks like it's the SPH No. 1. I think the exhibit also indicates that it had a TD something like 4883, or something, is that correct?

A. Yes, that's correct.

Q. So it's a shallow well.

A. Right, it's a San Andres well.

Q. Uh-huh.

A. It had 8-5/8ths inch casing set at 298 feet with 160 sacks.

Q. And then the rest of the wells that are shown on Exhibit No. 1 in the area are more than a half a mile away or you have covered them with your exhibits there?

A. Yes, that is correct.

Q. Now, you mentioned that the Sun-State had produced. Is it the Featherstone Development Corporation Sun-State No. 1?

Is it producing any more?

A. No.

Q. So the only wells that are producing in here are those three Abo wells you're operating, is that it?

A. Yes, that's correct.

Q. Okay. And you think that this Abo Reef will take the proposed maximum of 300 barrels on a vacuum?

A. Yes, I think so. We noticed that our fluid level was down far enough that it appeared that we would have no difficulty at all putting water into it.

Q. And this tubing will be cemented or plastic lined and the annulus loaded with an inert fluid?

A. Yes.

MR. NUTTER: Are there any further questions of Mr. Ingram?

MR. KELLAHIN: No, sir.

MR. NUTTER: He may be excused. Do you have anything further, Mr. Kellahin?

MR. KELLAHIN: No, sir.

MR. NUTTER: Does anyone have anything to offer in Case Number 6244?

We'll take the case under advisement.

(Hearing concluded.)

SALLY WALTON BOYD
CERTIFIED SHORTHAND REPORTER
730 Bishop's Lodge Road • Phone (505) 988-3404
Santa Fe, New Mexico 87501

REPORTER'S CERTIFICATE

I, SALLY WALTON BOYD, a Court Reporter, DO HEREBY CERTIFY that the foregoing and attached Transcript of Hearing before the Oil Conservation Division was reported by me; that said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability, knowledge, and skill from my notes taken at the time of the hearing.

Sally Walton Boyd CSR
Sally Walton Boyd, C.S.R.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 6254, heard by me on 6/7, 1978.

Examiner
New Mexico Oil Conservation Commission

CASE 6204: (Reopened and Readvertised)

Application of Producing Royalties, Inc., for an exemption from the Natural Gas Pricing Act, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks a determination as to whether the proration unit consisting of the NW/4 of Section 12, Township 29 North, Range 12 West, San Juan County, New Mexico, on which the Carroll-Cornell Well No. 2 is located was producing or capable of producing natural gas prior to January 1, 1975, from the Fulcher Kutz-Pictured Cliffs reservoir; if so, applicant seeks exemption from the Natural Gas Pricing Act for two replacement Pictured Cliffs wells in the same proration unit pursuant to a finding that the wells are justified for reasons other than avoiding the application of the Act.

CASE 6244: Application of Tom L. Ingram for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Abo Reef formation through the perforated interval from 8915 feet to 8992 feet in his State M Well No. 1 located in Unit O of Section 18, Township 17 South, Range 36 East, Vacuum-Abo Pool, Lea County, New Mexico.

CASE 6245: Application of Germany Investment Company for downhole commingling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle Wolfcamp and Canyon production in the wellbore of its USA 9 Well No. 1 located in Unit I of Section 9, Township 20 South, Range 28 East, North Burton Flat Field, Eddy County, New Mexico.

CASE 6246: Application of Exxon Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location for a Silurian test to be drilled 1880 feet from the South line and 825 feet from the West line of Section 30, Township 26 South, Range 26 East, Eddy County, New Mexico, the S/2 of said Section 30 to be dedicated to the well.

CASE 6247: Application of Mobil Oil Corporation for a unit agreement, Lea County, New Mexico, or statutory unitization. Applicant, in the above-styled cause, seeks approval of its North Vacuum Abo East Unit Area, comprising 866 acres, more or less, of State lands in Township 17 South, Range 35 East, Lea County, New Mexico.

In the absence of voluntary unitization, applicant seeks statutory unitization, for the purpose of pressure maintenance, of all mineral interests in the North Vacuum Abo East Unit underlying the following described lands in Township 17 South, Range 35 East, Lea County, New Mexico:

Section 7: S/2
Section 18: N/2, SW/4, and W/2 SE/4

The unitized interval would be from a depth of 4385 feet subsea to 5225 feet subsea in the Mobil State "UU" Com. Well No. 1, located in Unit F of the aforesaid Section 7.

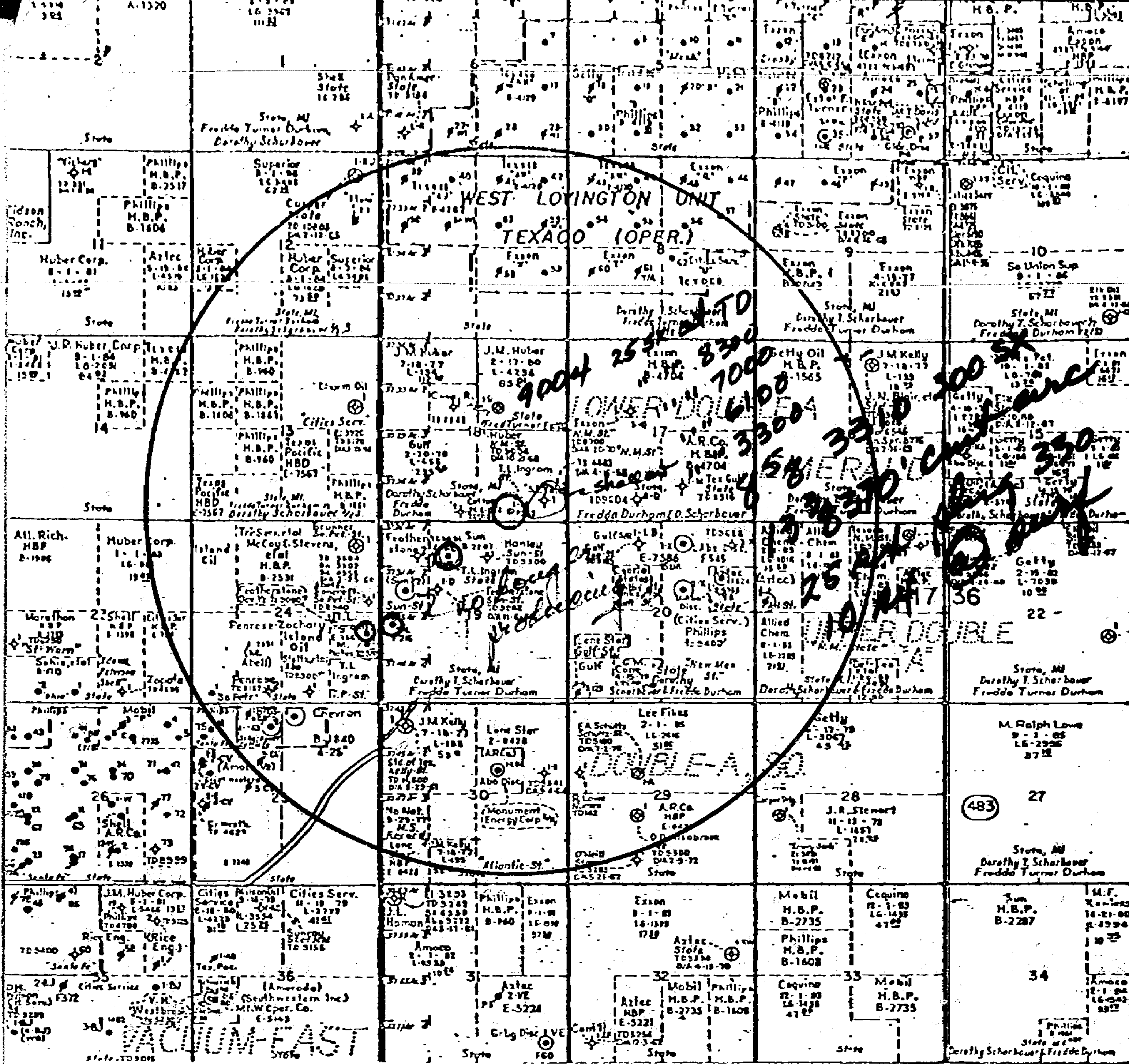
Among the matters to be considered at the hearing will be the necessity of unit operations; the designation of a unit operator; the determination of the horizontal and vertical limits of the unit area; the determination of a fair, reasonable, and equitable allocation of production and costs of production, including capital investment, to each of the various tracts in the unit area; the determination of credits and charges to be made among the various owners in the unit area for their investment in wells and equipment; and such other matters as may be necessary and appropriate for carrying on efficient unit operations, including, but not necessarily limited to, unit voting procedures, selection, removal, or substitution of unit operator, and time of commencement and termination of unit operations.

CASE 6248: Application of Mobil Oil Corporation for a pressure maintenance project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pressure maintenance project in the North Vacuum Abo East Unit Area by the injection of water into the Abo formation through five wells located in Units N and P of Section 7, and Units F, H, and N of Section 18, all in Township 17 South, Range 35 East, North Vacuum Abo Pool, Lea County, New Mexico, and the promulgation of special rules governing said project.

CASE 6249: In the matter of the hearing called by the Oil Conservation Division on its own motion for an order creating, abolishing, and extending certain pools in Chaves, Lea, and Eddy Counties, New Mexico:

(a) CREATE a new pool in Lea County, New Mexico, classified as an oil pool for Mississippian production and designated as the Bar U-Mississippian Pool. The discovery well is Charles F. Harding State "3" Well No. 1 located in Unit G of Section 3, Township 9 South, Range 32 East, NMPM. Said pool would comprise:

TOWNSHIP 9 SOUTH, RANGE 32 EAST, NMPM
Section 3: NE/4



O= Ingram Abo Wells

Plat showing location of proposed disposal well, Tom L. Ingram #1 State"M" ⊙
330'FSL and 1650'FEL Sec.18, T 17 S, R 36 E

Producing formations within two mile radius of disposal well are:
- • San Andres
- ⊙ Abo

Disposal is to be into the Abo Reef formation at a depth of 8915-8992 feet.

Liquid will be salt water produced from:

Tom L. Ingram #1 State "L" 990'FNL and 1890'FWL, Sec.19, T 17 S, R 36 E
Tom L. Ingram #2 State "L" 2310'FSL and 330'FWL, Sec.19, T 17 S, R 36 E
Tom L. Ingram #2 State "TP" 1980'FSL and 330'FEL, Sec.24, T 17 S, R 35 E

Volume will be from 100 to 300 bbls of salt water per day.

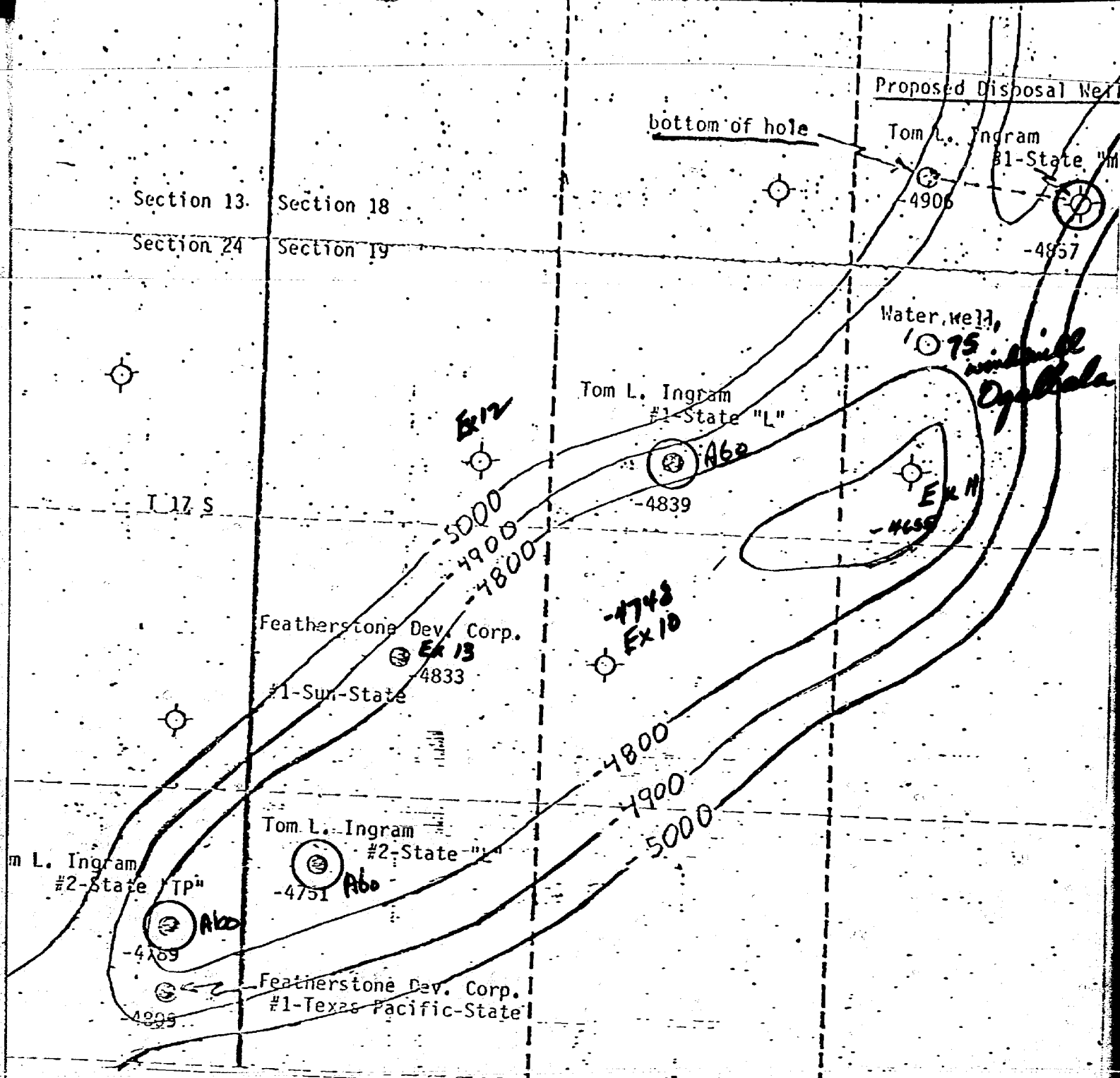
disposal
8915-8982
not
8915-8992

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Ingram EXHIBIT NO. 1
CASE NO. 6244

NMOCC Case 6244
Ingram Exhibit No. 1
June 7, 1978

8915
2
17830

Com.



Structure Contour Map
Vacuum Abo Reef Field
Lea County, New Mexico

Datum, Top of Abo Reef
C.I. 100'
April 1978
Joe Ingram

Disposal Well ◯

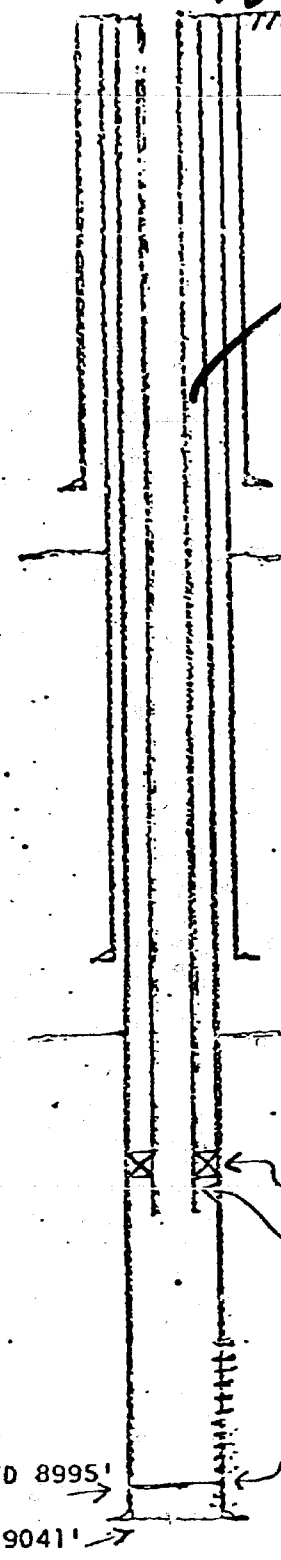
Water Source ◯

NMOCC Case 6244
Ingram Exhibit No. 2
June 7, 1978

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 2
CASE NO.

FIELD	OPERATOR	DATE
Vacuum Abo Reef	Tom L. Ingram	April 10, 1978
LEASE	WELL NO.	LOCATION
State M	1	Unit Letter G Sec. 18 - T17S - R36E

vacuum gage — replace w/ pressure gage w/ limiting switch if pres becomes necessary



Cement Top: Surface (Circulated)

to be filled w/ inert fluid

13-3/8" casing set at 340 ' with 400 sx of Class H +/ cement 2% $CaCl_2$

Hole size 17 "

Cement Top: 2514' (Calculated)

8-5/8" casing set at 3406 ' with 200 sx of Class H +/ cement 2% $CaCl_2$

Hole size 11 "

Cement Top: 7100' (Survey)

Perfs: 8915-8917-8937-8940-8943-8947-8961
8963-8977-8980-8982-(1 shot per foot)
9006 - 2 shots

Baker Model R Single Grip Packer at ~~8930'~~ 8815

2-3/8" Tubing set at ~~8660'~~ 8815 (Cement or Plastic lined)

Baker Model D Bridge Plug with Blank Off at 8995'

PBTD 8995'

TD 9041'

5-1/2 " casing set at 9041 ' with 300 sx of Class C Pozmix + 189# CFR-2 + 8#Salt/sack cement

Total Depth 9041 ' Hole size 7-7/8 "

NMOCC Case 6244
Ingram Exhibit No. 3
June 7, 1978

BEFORE EXAMINER NUTT
OIL CONSERVATION COMMISSIO
EXHIBIT NO. 3
CASE NO.

COUNTY LEA
FIELD or LOCATION VACUUM (ABO)
WELL STATE "M" #1
COMPANY TOM L. INGRAM

COMPANY TOM L. INGRAM

WELL STATE "M" #1

FIELD VACUUM (ABO)

COUNTY LEA STATE NEW MEXICO

Location: 1650' FEL & 330' FSL
Sec. 18 Twp. 17-S Rge. 36-E

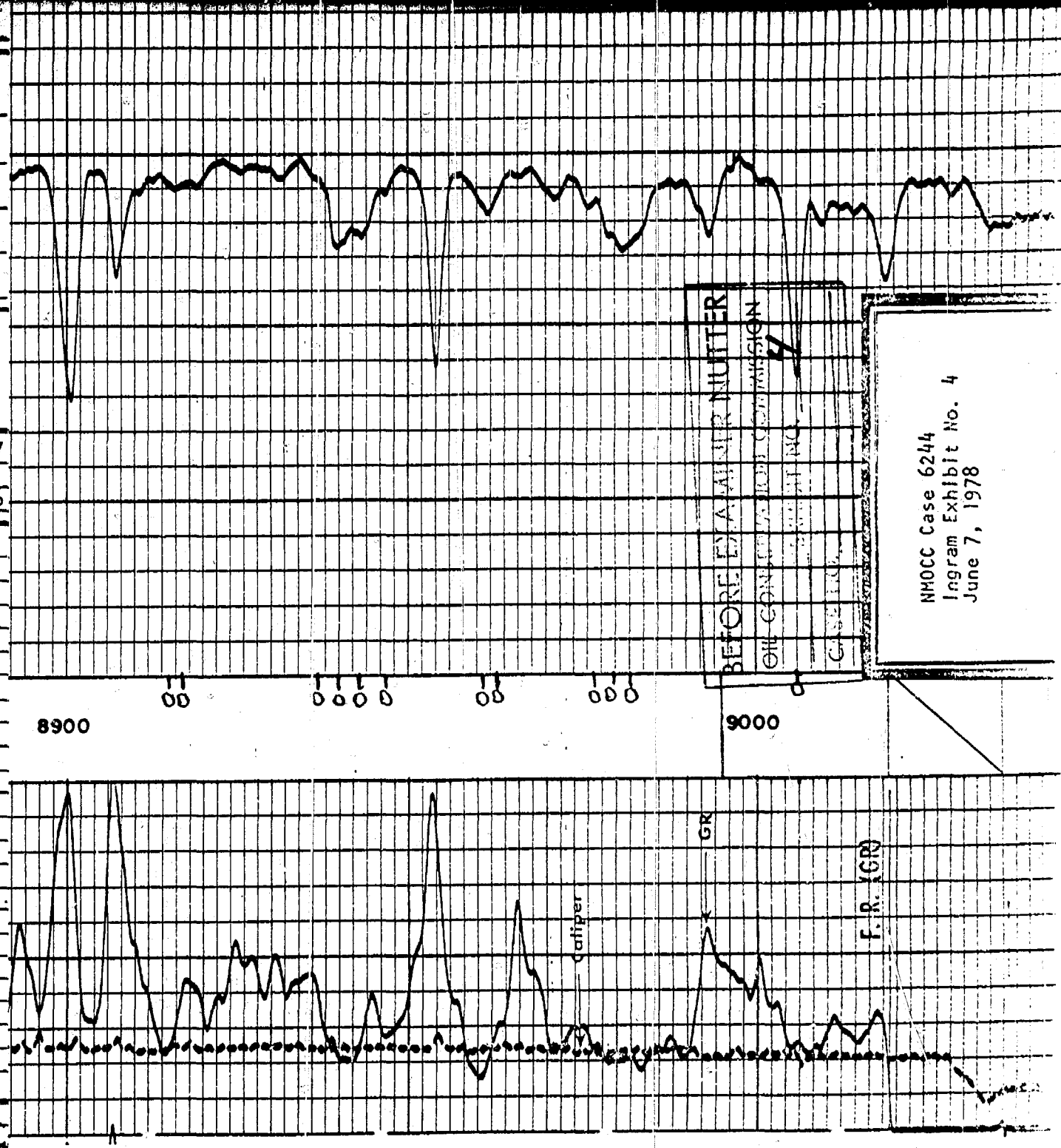
Other Services:
DLL, MLL-ML, MOP

Permanent Datum: G.L. ; Elev.: 3886
Log Measured From K.B., 11 Ft. Above Perm. Datum
Drilling Measured From K.B.

Elev.: K.B. 3897
D.F.
G.L. 3886

Date	6-16-71	8-5-71
Run No.	ONE	TWO
Type Log	EPI THERMAL	EPI-NEUTRON
Depth—Driller	8965	9037
Depth—Logger	8966	9037
Bottom logged interval	8965	9036
Top logged interval	0	7200
Type fluid in hole	SALT MUD	SALT MUD
Salinity, PPM Cl.	46000	130000
Density	9.0	9.5
Level	FULL	FULL
Max rec. temp., deg F.	131	134
Operating rig time	5 HRS	3 HRS
Recorded by	BROWN	OLSON
Witnessed by	INGRAM	INGRAM

RUN	BORE-HOLE RECORD			CASING RECORD			
No.	Bit	From	To	Size	Wgt.	From	To
1	7 7/8	3406	8965	8 5/8	24/32	10	3406
				13 3/8	48	10	350
2	7 7/8	CSG	T.D.	8 5/8			5407



HALLIBURTON DIVISION LABORATORY
HALLIBURTON SERVICES
MIDLAND DIVISION
HOBBS, NEW MEXICO 88240

RECEIVED MAR 29 1978

LABORATORY WATER ANALYSIS

No. W78-317

To Tom L. Ingram
Box 1757
Roswell, New Mexico

Date 3-29-78

Submitted by

Date Rec. 3-29-78

Well No. As Marked Depth Formation

County Field Source

	State "L" #1	State "L" #2	State "M" #1
Resistivity	0.086 @ 74°F.	0.049 @ 74°F.	0.073 @ 74°F.
Specific Gravity	1.x057	1.102	1.068
pH	6.4	6.2	6.5
Calcium (Ca)	5,800	13,750	5,000 *MPL
Magnesium (Mg)	Nil	2,100	960
Chlorides (Cl)	48,500	90,500	58,000
Sulfates (SO_4)	2,950	1,600	3,200
Bicarbonates (HCO_3)	1,020	315	185
Soluble Iron (Fe)	Nil	Nil	Nil

Remarks:

*Milligroms per liter

Respectfully submitted,

Analyst: Brewer

HALLIBURTON COMPANY

By W. L. Brewer
CHEMIST

NOTICE

THIS REPORT IS LIMITED TO THE DESCRIBED SAMPLE TESTED. ANY USER OF THIS REPORT AGREES THAT HALLIBURTON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, WHETHER IT BE TO ACT OR OMISSION, RESULTING FROM SUCH REPORT OR ITS USE.

NMOCC Case 6244
Ingram Exhibit No. 5
June 7, 1978

BEFORE EXAMINER NUTTE
OIL CONSERVATION COMMISSION
EXHIBIT NO. 5
CASE NO.

1942-A

HALLIBURTON DIVISION LABORATORY
HALLIBURTON COMPANY
MIDLAND DIVISION

RECEIVED APR 26 1978

LABORATORY WATER ANALYSIS No. W78-269

To Tom Ingram
Box 1757
Roswell, N. M.

Date 4-25-78

Submitted by

Date Rec. 4-24-78

Well No. TP State #2 Depth 8850' Formation Aba Reef

County Lee Field Vacuum Source

	4-19-78			
Resistivity	.093 @ 72°			
Specific Gravity	*IS			
pH				
Calcium (Ca)				*MPL
Magnesium (Mg)				
Chlorides (Cl)	55,684			
Sulfates (SO_4)				
Bicarbonates (HCO_3)				
Soluble Iron (Fe)				

Remarks: *Insufficient sample.

*Milligrams per liter

Respectfully submitted,

Analyst: McLean - Grissam - Rodgers

HALLIBURTON COMPANY

cc:

By James D. McLean
DIVISION CHEMIST

NOTICE

This report is limited to the described sample tested. Any user of this report agrees that Halliburton shall not be liable for any loss or damage, whether it be to act or omission, resulting from such report or its use.

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

NMOCC Case 6244
Ingram Exhibit No. 5A
June 7, 1978

1542 A

HALLIBURTON DIVISION LABORATORY
HALLIBURTON COMPANY
MIDLAND DIVISION

RECEIVED APR 26 1978

LABORATORY WATER ANALYSIS

No. W78-270

To Tom Ingram

Box 1757

Roswell, N. M.

Date 4-25-78

Submitted by

Date Rec 4-24-78

Well No. Featherstone Sun St Depth

Formation Aba Reef

County Lee Field Vacuum

Source

Resistivity	.121 @ 72°			
Specific Gravity	1.053			
pH	7.0			
Calcium (Ca)	10,197			*MPL
Magnesium (Mg)	Nil			
Chlorides (Cl)	39,774			
Sulfates (SO_4)	2,788			
Bicarbonates (HCO_3)	732			
Soluble Iron (Fe)	Trace			

Remarks:

*Milligrams per liter

Respectfully submitted,

Analyst: McLean - Grissam - Rodgers

cc:

HALLIBURTON COMPANY

By James D. McLean
DIVISION CHEMIST

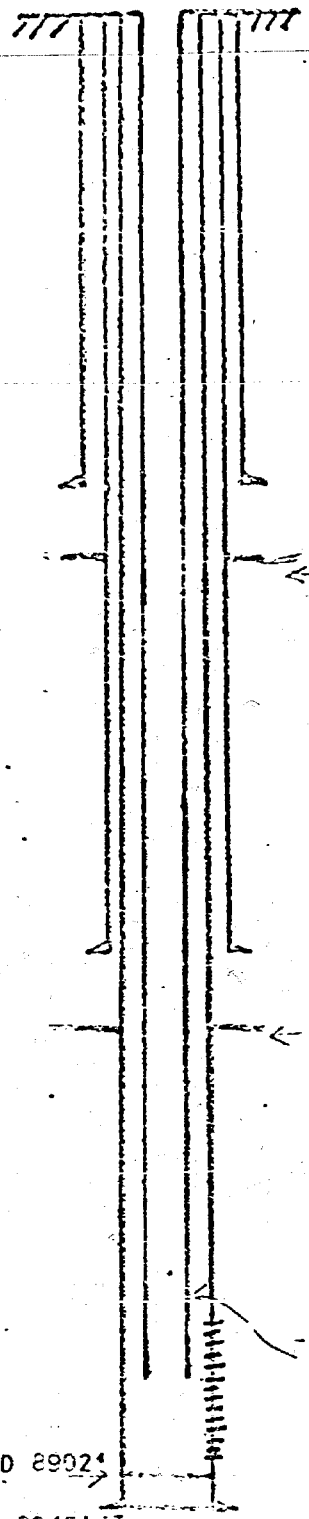
NOTICE

This report is limited to the described sample tested. Any user of this report agrees that Halliburton shall not be liable for any loss or damage, whether it be to act or omission, resulting from such report or its use.

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

NMOCC Case 6244
Ingram Exhibit No. 5B
June 7, 1978

FIELD	OPERATOR	DATE
Vacuum Abo Reef	Tom L. Ingram	May 10, 1976
LEASE	WELL NO.	LOCATION
State L	1	Unit Letter C-Sec. 19 - T17S - R36E



Cement Top: Surface (Circulated)

13-3/8" casing set at 335' with 300 sx of Class C +/ 2% CaCl cement
Hole size 17"

Cement Top: 2408' (Calculated)

8-5/8" casing set at 3300' with 200 sx of Class H +/ 2% CaCl cement
Hole size 11"

Cement Top: 7600' (Survey)

Perfs: 8780' - 8784' - 8787' - 8794' - 8811' - 8830' - 8832'
8849' - 8856' - 8862' - 8876' - 8884' - 8887' - 8893'
(1 shot per foot)

2-3/8" Tubing set at 8830'

PBTD 8902'

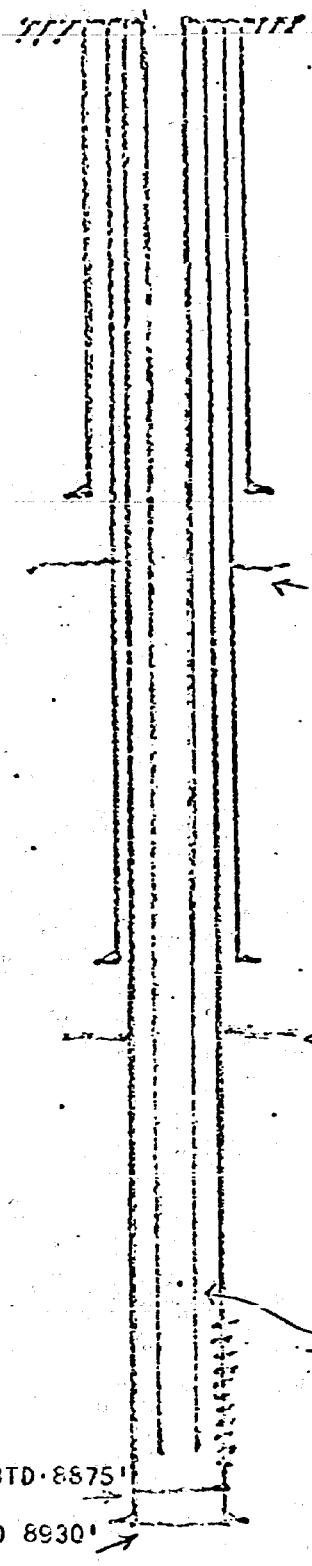
5-1/2" casing set at 8945' with 300 sx of Class C Inferno Pozmix + 3/4 of 1% CFR-2 + 8#/sk salt cement

TD 8945'

Total Depth 8945' Hole size 7-7/8"

FIELD	OPERATOR	DATE
Vacuum Abo Reef	Tom L. Ingram	May 7, 1976

LEASE	WELL NO.	LOCATION
State L	2	Unit Letter L Sec. 19 - T17S - R36E



Cement Top: Surface (Circulated)

13-3/8" casing set at 320' with 300 sx of Class H +/ 2% CaCL cement
Hole size 17"

Cement Top 2308' (Calculated)

8-5/8" casing set at 3200' with 200 sx of Class H +/ 2% CaCl cement
Hole size 11"
Cement Top: 7450' (Survey)

Perfs: 8715-8721-8728-8731-8755-8768
8774-8799-8818-8869-8874
(1 shot per foot)

2-3/8" Tubing set at 8860'

BTD 8875'
D 8930'

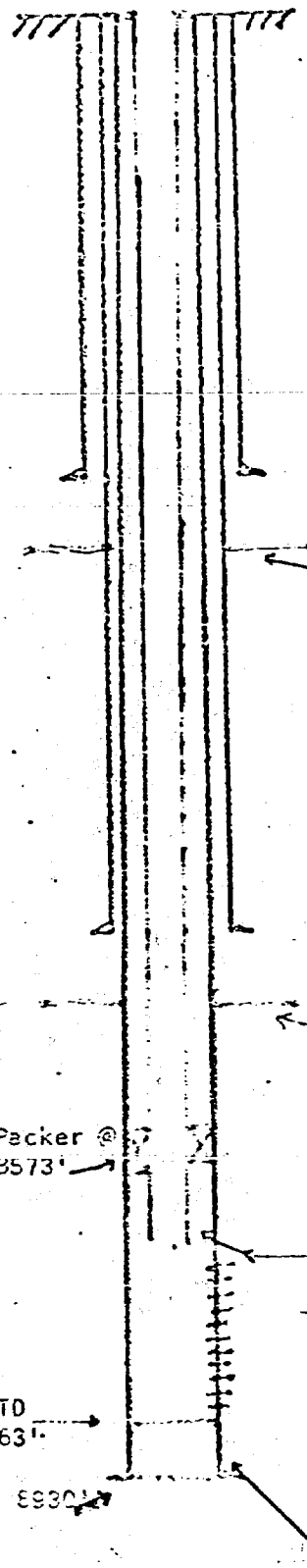
5-1/2" casing set at 8930' with 300 sx of Class C Pozmix 8# salt/sack /& 3/4 of 1% CFR2 cement
Total Depth 8930' Hole size 7-7/8"

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 7
CASE NO.

NMOCC Case 6244
Ingram Exhibit No. 7
June 7, 1978

FIELD	OPERATOR	DATE
Vacuum Abo Reef	Tom L. Ingram	May 7, 1976

LEASE	WELL NO.	LOCATION
TP State	2	Unit Letter I -Sec. 24 - T17S-R35E



Cement Top Surface (Circulated)

13-3/8" casing set at 325 ' with 300 sx of Class H + 2% CaCl cement

Hole size 20 "

Cement Top 2432' Calculated

8-5/8" casing set at 3308 ' with 200 sx of Class H +/ 2% CaCl cement

Hole size 11 "

Cement Top 7500' (Survey)

Packer: Baker Model "R"

Perfs: 8741' - 8744' - 8751' - 8759' - 8765' - 8785' - 8791' - 8808' - 8815' - 8819' - 8840' (1 shot per foot)

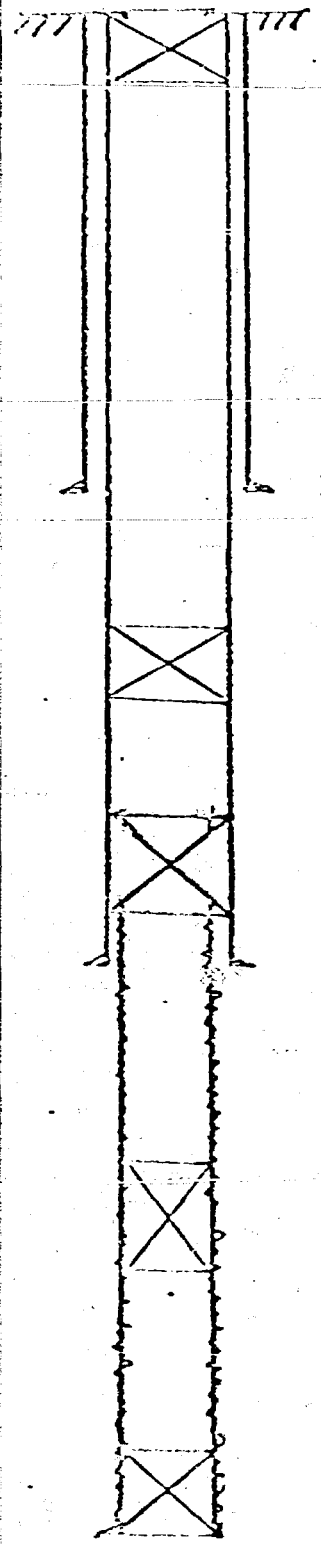
2-3/8" Tubing set at 8663'

5-1/2" casing set at 8930 ' with 300 sx of Class C-Incor Pozmix & 3/4 of 1% /CFR-2 + 240# Salt cement

Total Depth 8930 ' Hole size 7-7/8 "

Plug 8898'

FIELD Vacuum Abo Reef	OPERATOR Cotton Petr. Corp.	DATE 2/7/77
LEASE State L656	WELL NO. 1	LOCATION N, Sec. 18, T 17 S, R 36 E



10 sx. Class "C" Neat Cement Plug at surface

Hole loaded with 9.3# mud

13 3/8" casing set at 380 ' with 425 sx Circulated

35 sx. Class "C" Neat Cement 1700-1800'

35 sx. Class "C" Neat Cement 3343-3443'

8 5/8" casing set at 3393 ' with 550 sx Circulated

35 sx. Class "C" Neat Cement 6080-6180'

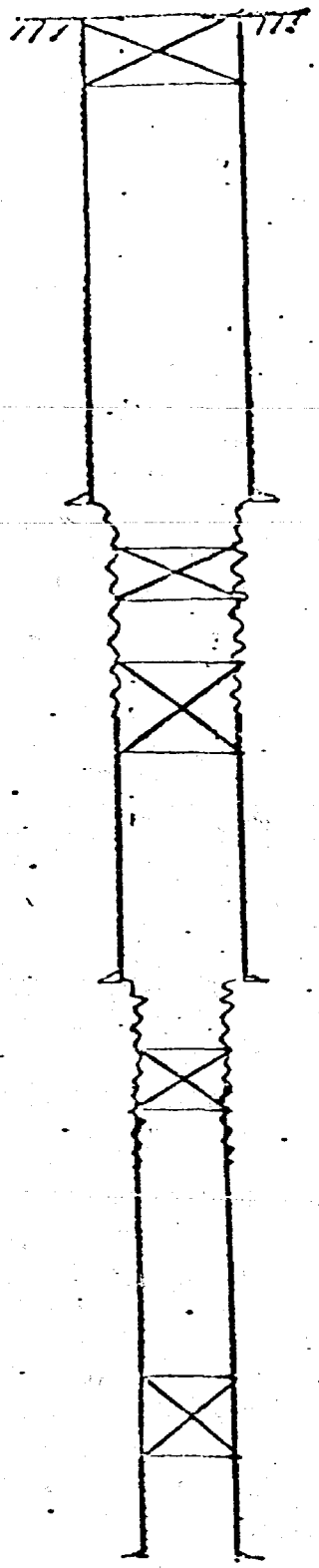
35 sx. Class "C" Neat Cement 8760-8860'

Total Depth 9155 '

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 9
CASE No.

NMOCC Case 6244
Ingram Exhibit No. 9
June 7, 1978

FIELD	OPERATOR	DATE
Vacuum-Abo	Sun Oil Company	11/6/64
LEASE	WELL NO.	LOCATION
State of New Mexico "D"	1	Unit Letter F, Sec. 19, T17S, R36E



Spotted 25 sx plug in top of 13-3/8" casing

13-3/8" casing set at 360 ' with 200 sx

Spotted 25 sx plug 1663 - 1700'

Spotted 46 sx plug 2580 - 2680'
Top of 8-5/8" stub 2620'

8-5/8 " casing set at 3195 ' with 200 sx

Spotted 35 sx plug 3145 - 3300'

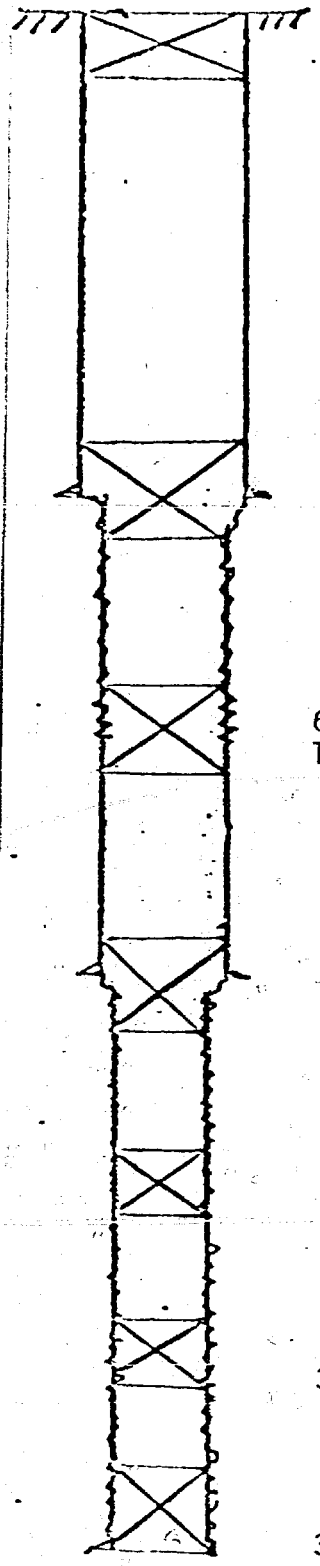
Top of 4-1/2" stub 3287'

Spotted 25 sx plug 8082 - 8750'

4-1/2 " casing set at 8898 ' with 950 sx

Total Depth 9082 '

FIELD	OPERATOR	DATE
Vacuum Abo Reef	Hanley Company	7/6/72
LEASE	**WELL NO**	**LOCATION**
Sun State	1	Unit Letter B - Sec. 19 T17S, R36E



10 sx Class H 0 - 25'

65 sx Class H 300 - 400'
11-3/4 casing set at 345 ' with 350 sx

65 sx Class H 1350 - 1450'
Top of 8-5/8" casing stub 1400'

35 sx Class H 3200 - 3300'
8-5/8" casing set at 3248 ' with 250 sx

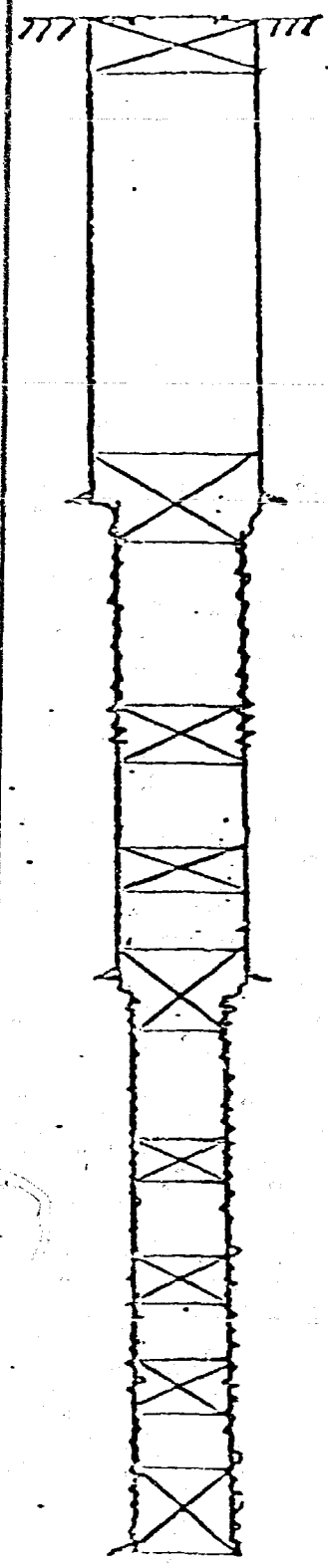
35 sx Class H 6190 - 6290'

35 sx Class H 8620 - 8720'

35 sx Class H 9200 - 9300'
Total Depth 9300 '

FIELD	OPERATOR	DATE
Vacuum Abo Reef	Featherstone Dev. Corp.	6/6/60

LEASE	WELL NO.	LOCATION
Sun State	2	Unit Letter D, Sec. 19, T17S, R36E



10 sx Halliburton 50-50 Pozmix @ surface

25 sx Halliburton 50-50 Pozmix @ 325'
13-3/8" casing set at 325 ' with 250 sx

25 sx Halliburton 50-50 Pozmix @ 1600'
Top of 8-5/8" casing stub 1600'

25 sx Halliburton 50-50 Pozmix @ 1790'

25 sx Halliburton 50-50 Pozmix @ 3232'
8-5/8" casing set at 3232 ' with 200 sx

25 sx Halliburton 50-50 Pozmix @ 4575'

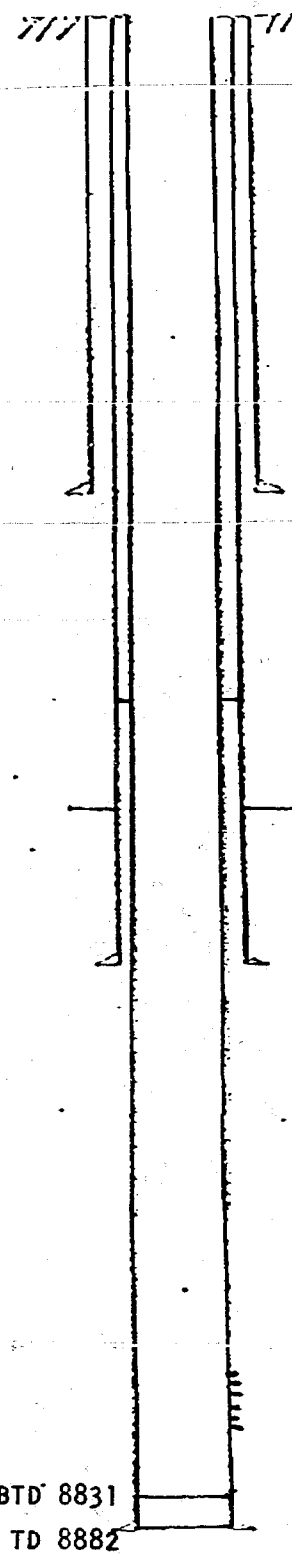
25 sx Halliburton 50-50 Pozmix @ 6225'

25 sx Halliburton 50-50 Pozmix @ 7000'

25 sx Halliburton 50-50 pozmix @ 8891'
Total Depth 8891 '

FIELD: Vacuum Abo Reef | OPERATOR: Sun Production Co. | DATE: 11-29-77

LEASE: Sun State | WELL NO.: 1 | WELL LOCATION: Unit Letter E - Sec. 19 - T17S - R36E



Cement Top: Surface (Circulated)

13-3/8" casing set at 355' with 250 sx of _____ cement
Hole size 17½"

Cement Top: 917' (long string)

Cement Top: 2301'

8-5/8" casing set at 3292' with 200 sx of _____ cement
Hole size 11"

Perfs:
8743, 48, 57, 64, 77, 82, 87, 90, 97, 98
8800, 04, 11, 13, 22, 26

5½" casing set at 8882' with 750 sx of _____ cement
Total Depth 8882' Hole size 7-7/8"

Top of cmt 919'

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 13
CASE NO.

NMOCC Case 6244
Ingram Exhibit No. 13
June 7, 1978

TRETOLITE DIVISION
369 Marshall Avenue / Saint Louis, Missouri 63119
(314) WO 1-3500/TWX 910-760-1670/Telex 44-2417

WATER ANALYSIS REPORT

COMPANY Sun Oil Co. ADDRESS Hobbs, N.M. DATE: 10-26-77

SOURCE Sun St. #1 Abo field DATE SAMPLED 10-13-77 ANALYSIS NO. 14993

Analysis	Mg/l		*Meq/l	
1. pH 7.2				
2. H_2S (Qualitative) Pos.				
3. Specific Gravity 1.050				
4. Dissolved Solids	67,615			
5. Suspended Solids				
6. Phenolphtholein Alkalinity ($CaCO_3$)				
7. Methyl Orange Alkalinity ($CaCO_3$)	700			
8. Bicarbonate (HCO_3)	HCO_3 854	÷61	14	HCO_3
9. Chlorides (Cl)	Cl 36,000	÷35.5	1,014	Cl
10. Sulfates (SO_4)	SO_4 2,400	÷48	120	SO_4
11. Calcium (Ca)	Ca 3,600	÷20	180	Ca
12. Magnesium (Mg)	Mg 972	÷12.2	80	Mg
13. Total Hardness ($CaCO_3$)	13,000			
14. Total Iron (Fe)	5.0			
15. Barium (Qualitative)				
16. Strontium				

*Milli equivalents per liter

PROBABLE MINERAL COMPOSITION

180	Ca ← HCO_3	14
80	Mg → SO_4	120
888	Na → Cl	1,014

Saturation Values Distilled Water 20°C

$CaCO_3$ 13 Mg/l

$CaSO_4 \cdot 2H_2O$ 2,090 Mg/l

$MgCO_3$ 103 Mg/l

Compound	Equiv. Wt.	X	Meq/l	=	Mg/l
$Ca(HCO_3)_2$	81.04		14		1,134
$CaSO_4$	68.07		120		8,172
$CaCl_2$	55.50		46		2,553
$Mg(HCO_3)_2$	73.17				
$MgSO_4$	60.19				
$MgCl_2$	47.62		80		3,808
$NaHCO_3$	84.00				
Na_2SO_4	71.03				
NaCl	58.46		888		51,948

REMARKS Brandes - Dawson

Elliott - Roberts - Gray - file

Respectfully submitted
TRETOLITE COMPANY

Ray Shaffner

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 13A
CASE NO.

NMOCC Case 6244
Ingram Exhibit No. 13A
June 7, 1978

Form C-108
Revised 1-1-65

NEW MEXICO OIL CONSERVATION COMMISSION

APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

OPERATOR	ADDRESS
TOM L. INGRAM	P. O. Box 1757, Roswell, NM 88201

LEASE NAME	WELL NO.	FIELD	COUNTY
State M	1	Vacuum Abo Reef	Lea

LOCATION: UNIT LETTER 0 ; WELL IS LOCATED 330 FEET FROM THE South LINE AND 1650 FEET FROM THE East LINE, SECTION 18 TOWNSHIP 17S RANGE 36E NMPM.

CASING AND TUBING DATA

NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING	13-3/8	340	400	Surface	Circulated
INTERMEDIATE	8-5/8	3406	200	2514	Calculated
LONG STRING	5-1/2	9041	300	7100	Survey
TUBING	2-3/8	8815 ~~8668~~	NAME, MODEL AND DEPTH OF TUBING PACKER: Baker Model R Single Grip @ 8815 ~~8637~~		

NAME OF PROPOSED INJECTION FORMATION	TOP OF FORMATION	BOTTOM OF FORMATION
ABO REEF	8461	9041

IS INJECTION THROUGH TUBING, CASING, OR ANNULUS?	PERFORATIONS OR OPEN HOLE?	PROPOSED INTERVAL(S) OF INJECTION
Tubing	Perforations	~~8915-8992~~ 8915-8982

IS THIS A NEW WELL DRILLED FOR DISPOSAL?	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED?	HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE?
No	As producing oil well	Yes

LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH: 9006/Baker Model DBP with blank off @ 8995'

DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA	DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA	DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA
190' (top of Red Beds)*	6208	9122

ANTICIPATED DAILY INJECTION VOLUME (BBLS.) MINIMUM	MAXIMUM	OPEN OR CLOSED TYPE SYSTEM	IS INJECTION TO BE BY GRAVITY OR PRESSURE?	APPROX. PRESSURE (PSI)
100	350	Open	Gravity	

ANSWER YES OR NO WHETHER THE FOLLOWING WATERS ARE MINERALIZED TO SUCH A DEGREE AS TO BE UNFIT FOR DOMESTIC, STOCK, IRRIGATION, OR OTHER GENERAL USE —	WATER TO BE DISPOSED OF	NATURAL WATER IN DISPOSAL ZONE	ARE WATER ANALYSES ATTACHED?
	Yes	Yes	Yes

NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND): Clarence Scharbauer, Jr., P. O. Box 538, Midland TX 79701

LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (½) MILE OF THIS INJECTION WELL: Sun Production Company, 12850 Hillcrest Road, Dallas, TX 75230

* Depth of water well in this area 75'.

HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?	SURFACE OWNER	EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL	THE NEW MEXICO STATE ENGINEER
	Yes	Yes	Yes
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)	PLAT OF AREA	ELECTRICAL LOG	DIAGRAMMATIC SKETCH OF WELL
	Yes	Yes	Yes

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

Josh L Ingram — Engineer — 4/13/78
(Signature) (Title) (Date)

NOTE: Should waivers from the State Engineer, the surface owner, and all operators within one-half mile of the proposed injection well, not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 15-day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received, the application will be set for hearing, if the applicant so requests. SEE RULE 701.

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 14
CASE NO.

NMOCC Case 6244
Ingram Exhibit No. 14
June 7, 1978

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LAND OFFICE		
OPERATOR		

Form C-105
Revised 1-1-65

NEW MEXICO OIL CONSERVATION COMMISSION
WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5a. Indicate Type of Lease: State [X] Fee [ ]

5. State Oil & Gas Lease No.: L-134

1a. TYPE OF WELL: Oil Well [ ] Gas Well [ ] Dry [ ] Other: Retain for disposal well

b. TYPE OF COMPLETION: New Well [ ] Work Over [X] Deepen [ ] Plug Back [ ] Diff. Resvr. [ ] Other

7. Unit Agreement Name:

8. Farm or Lease Name: State M

2. Name of Operator: TOM L INGRAM

9. Well No.: 1

3. Address of Operator: P. O. Box 1757, Roswell, NM 88201

10. Field and Pool, or Wildcat: Vacuum ABO Reef

4. Location of Well: UNIT LETTER O LOCATED 330 FEET FROM THE South LINE AND 1650 FEET FROM THE East LINE OF SEC. 18 TWP. 17S RGE. 36E NMPM

12. County: Lea

15. Date Spudded	16. Date T.D. Reached	17. Date Compl. (Ready to Prod.)	18. Elevations (DF, RKB, RT, GR, etc.)	19. Elev. Cashinghead
5/21/71	8/4/71	TA 3/30/78	3886 GR	

20. Total Depth	21. Plug Back T.D.	22. If Multiple Compl., How Many	23. Intervals Drilled By	Rotary Tools	Cable Tools
9041'	8995'		→	0-TD	

24. Producing Interval(s), of this completion — Top, Bottom, Name: 8915-8982 ABO Reef

25. Was Directional Survey Made: Yes

26. Type Electric and Other Logs Run: Laterolog, Microlaterolog, Sidewall Neutron Porosity

27. Was Well Cored: Yes

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8	48	340	17"	400 sxs	Circulated
8-5/8	24-32	3406	11"	200 sxs	0
5-1/2	15½-17	9041	7-7/8"	300 sxs	0

29. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN

30. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2-3/8	~~8668~~ 8915	~~8637~~ 8815

31. Perforation Record (Interval, size and number)

9006' - 2 shots
8915', 17, 37, 40, 43, 47, 61, 63, 77, 80, 82 - one shot per foot

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
8915-8982	A/500 gal Spearhead
8995	A/5000 gal DS 30
9006	Baker Model DBP

33. PRODUCTION

Date First Production	Production Method (Flowing, gas lift, pumping — Size and type pump)	Well Status (Prod. or Shut-in)
		SI

Date of Test	Hours Tested	Choke Size	Prod'n. For Test Period →	Oil — Bbl.	Gas — MCF	Water — Bbl.	Gas — Oil Ratio

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate →	Oil — Bbl.	Gas — MCF	Water — Bbl.	Oil Gravity — API (Corr.)

34. Disposition of Gas (Sold, used for fuel, vented, etc.)

Test Witnessed By

35. List of Attachments

36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.

SIGNED Joseph L. Ingram TITLE Engineer DATE 4/10/78

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 15
CASE NO.

NMOCC Case 6244
Ingram Exhibit No. 15
June 7, 1978

This form is to be filed with the appropriate District Office of the Commission not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radioactivity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 30 through 34 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1105.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico				Northwestern New Mexico			
T. Anhy	1830	T. Canyon		T. Ojo Alamo		T. Penn. "B"	
T. Salt		T. Strawn		T. Kirtland-Fruitland		T. Penn. "C"	
B. Salt		T. Atoka		T. Pictured Cliffs		T. Penn. "D"	
T. Yates	3069	T. Miss		T. Cliff House		T. Leadville	
T. 7 Rivers		T. Devonian		T. Menefee		T. Madison	
T. Queen		T. Silurian		T. Point Lookout		T. Elbert	
T. Grayburg		T. Montoya		T. Mancos		T. McCracken	
T. San Andres	4639	T. Simpson		T. Gallup		T. Ignacio Qtzte	
T. Glorieta	6293	T. McKee		Base Greenhorn		T. Granite	
T. Paddock		T. Ellenburger		T. Dakota		T.	
T. Blinebry		T. Gr. Wash		T. Morrison		T.	
T. Tubb		T. Granite		T. Todilto		T.	
T. Drinkard		T. Delaware Sand		T. Entrada		T.	
T. Abo	8910	T. Bone Springs		T. Wingate		T.	
T. Wolfcamp		T.		T. Chinle		T.	
T. Penn.		T.		T. Permian		T.	
T. Cisco (Bough C)		T.		T. Penn. "A"		T.	

OIL OR GAS SANDS OR ZONES

No. 1, from 8915 to 8982 No. 4, from ..... to .....

No. 2, from ..... to ..... No. 5, from ..... to .....

No. 3, from ..... to ..... No. 6, from ..... to .....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from ..... to ..... feet.

No. 2, from ..... to ..... feet.

No. 3, from ..... to ..... feet.

No. 4, from ..... to ..... feet.

FORMATION RECORD (Attach additional sheets if necessary)

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation
0	190	190	Surface sands & Caliche				
190	1830	1640	Red beds				
1830	1880	50	Anhydrite				
1880	3069	1189	Salt & Anhydrite				
3069	4639	1570	Sand, Anhydrite, Shale				
4639	6293	1654	Dolomite				
6293	8260	1967	Sand & Dolomite				
8260	9041	781	Shale & Limestone				

TOM L. INGRAM
100 SOUTH KENTUCKY AVENUE
ROSWELL, NEW MEXICO 88201

April 13, 1978

To: Surface Owner

Re: Salt Water Disposal
Tom L. Ingram
#1 State "M"
Vacuum ABO Reef Field
Lea County, NM

Gentlemen:

Tom L. Ingram is asking the Commission to approve the application to convert one well to water injection in the Vacuum ABO Reef Field. This well is Tom L. Ingram, #1 State "M". Injection will be into the ABO Reef formation at a depth of 8915 feet to 8982 feet.

A copy of the application is attached. Tom L. Ingram would appreciate your waiver of objection to this application. Three copies of a waiver letter are attached. Please sign, send one copy to the Commission, and return one copy to Tom L. Ingram.

Yours very truly,

TOM L. INGRAM

Joseph T. Ingram
Engineer

JTI/mpc

PS Form 3811, Mar. 1976 — RETURN RECEIPT, REGISTERED, INSURED AND CERTIFIED MAIL

SENDER: Complete items 1, 2, and 3. Add your address in the "RETURN TO" space on reverse.

1. The following service is requested (check one).
- [x] Show to whom and date delivered..... 15¢
- [ ] Show to whom, date, & address of delivery.. 35¢
- [ ] RESTRICTED DELIVERY.
Show to whom and date delivered..... 65¢
- [ ] RESTRICTED DELIVERY.
Show to whom, date, and address of delivery..$5¢

2. ARTICLE ADDRESSED TO:
Mr. Clarence Scharbauer, Jr.
P. O. Box 538 / 47 /
Midland, TX 79701

3. ARTICLE DESCRIPTION:
REGISTERED NO. 157402 CERTIFIED NO. INSURED NO.

(Always obtain signature of addressee or agent)
I have received the article described above.
SIGNATURE [ ] Addressee [ ] Authorized agent
DATE OF DELIVERY

5. ADDRESS (Complete only if requested)

6. UNABLE TO DELIVER BECAUSE:
CLERK'S INITIALS

POSTMARK

P.S. Form 3811, Mar. 1976 ☆ GPO: 1976 O-203-465

Postage

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 16
CASE NO.

NMOCC Case 6244
Ingram Exhibit No. 16
June 7, 1978

TOM L. INGRAM
100 SOUTH KENTUCKY AVENUE
ROSWELL, NEW MEXICO 88201

April 13, 1978

To: Offset Operator

Re: Salt Water Disposal
Tom L. Ingram
#1 State "M"
Vacuum ABO Reef Field
Lea County, NM

Gentlemen:

Tom L. Ingram is asking the Commission to approve the application to convert one well to water injection in the Vacuum ABO Reef Field. This well is Tom L. Ingram, #1 State "M". Injection will be into the ABO Reef formation at a depth of 8915 feet to 8982 feet.

A copy of the application is attached. Tom L. Ingram would appreciate your waiver of objection to this application. Three copies of a waiver letter are attached. Please sign, send one copy to the Commission, and return one copy to Tom L. Ingram.

Yours very truly,

TOM L. INGRAM

Joseph T. Ingram
Engineer

JTI/mpc

PS Form 3811, Mar. 1976 — RETURN RECEIPT, REGISTERED, INSURED AND CERTIFIED MAIL

SENDER: Complete items 1, 2, and 3. Add your address in the "RETURN TO" space on reverse.

1. The following service is requested (check one).
- [x] Show to whom and date delivered..... 15¢
- [ ] Show to whom, date, & address of delivery.. 35¢
- [ ] RESTRICTED DELIVERY. Show to whom and date delivered..... 65¢
- [ ] RESTRICTED DELIVERY. Show to whom, date, and address of delivery 85¢

2. ARTICLE ADDRESSED TO:
Sun Production Company
12850 Hillcrest Road
Dallas, TX 75230

3. ARTICLE DESCRIPTION:
REGISTERED NO. | CERTIFIED NO. | INSURED NO.
, | 157403 |
(Always obtain signature of addressee or agent)

I have received the article described above.
SIGNATURE [x] Addressee [ ] Authorized agent

4. DATE OF DELIVERY — POSTMARK

5. ADDRESS (Complete only if requested)

6. UNABLE TO DELIVER BECAUSE: — CLERK'S INITIALS

17

6244

NMOCC Case 6244
Ingram Exhibit No. 17
June 7, 1978

April 13, 1978

New Mexico State Engineer
State Capitol
Santa Fe, New Mexico 87501

Re: Salt Water Disposal
Tom L. Ingram
#1 State "M"
Vacuum ABO Reef Field
Lea County, NM

Gentlemen:

Enclosed you will find copies of the application for salt water disposal for the above captioned item. The original application with list of attachments were sent to the NMOCC in Santa Fe, New Mexico.

Yours very truly,

TOM L. INGRAM

Joseph T. Ingram
Engineer

PS Form 3811, Mar. 1975 RETURN RECEIPT, REGISTERED, INSURED AND CERTIFIED MAIL

SENDER: Complete items 1, 2, and 3. Add your address in the "RETURN TO" space on reverse.

1. The following service is requested (check one).
- [X] Show to whom and date delivered..... 15¢
- [ ] Show to whom, date, & address of delivery.. 35¢
- [ ] RESTRICTED DELIVERY. Show to whom and date delivered..... 65¢
- [ ] RESTRICTED DELIVERY. Show to whom, date, and address of delivery 85¢

2. ARTICLE ADDRESSED TO:
New Mexico State Engineer
State Capitol
Santa Fe, NM 87501

3. ARTICLE DESCRIPTION:
REGISTERED NO. | CERTIFIED NO. 157401 | INSURED NO.

(Always obtain signature of addressee or agent)
I have received the article described above.
SIGNATURE [ ] Addressee [ ] Authorized agent

4. DATE OF DELIVERY POSTMARK

5. ADDRESS (Complete only if requested)

6. UNABLE TO DELIVER BECAUSE: CLERK'S INITIALS

No. 157401

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 18
CASE NO. 6244

NMOCC Case 6244
Ingram Exhibit No. 18
June 7, 1978

TOM L. INGRAM
100 SOUTH KENTUCKY AVENUE
ROSWELL, NEW MEXICO 88201

April 13, 1978

New Mexico Oil Conservation Commission
P. O. Box 2088
Sata Fe, NM 87501

Gentlemen:

As an offset operator, SUN OIL COMPANY hereby waives any objection to the conversion and injection of water into Tom L. Ingram #1 State "M" in the Vacuum ABO Reef Formation as requested in their application for Salt Water Disposal dated April 13, 1978.

For Sun Oil Company

By J. J. Power

Date April 21, 1978

NMOCC Case 6244
Ingram Exhibit No. 19
June 7, 1978

Set for 6/7
hearing.

confirmation
letter requested
5/10/79 - cu

Xerox copy of
memo 3-77

Form C-108
Revised 1-1-65

NEW MEXICO OIL CONSERVATION COMMISSION

APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

OPERATOR	ADDRESS
TOM L. INGRAM	P. O. Box 1757, Roswell, NM 88201

LEASE NAME	WELL NO.	FIELD	COUNTY
State M	1	Vacuum Abo Reef	Lea

LOCATION

UNIT LETTER 0 ; WELL IS LOCATED 330 FEET FROM THE South LINE AND 1650 FEET FROM THE East LINE, SECTION 18 TOWNSHIP 17S RANGE 36E NMPM.

CASING AND TUBING DATA

NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING	13-3/8	340	400	Surface	Circulated
INTERMEDIATE	8-5/8	3406	200	2514	Calculated
LONG STRING	5-1/2	9041	300	7100	Survey
TUBING	2-3/8	8668	NAME, MODEL AND DEPTH OF TUBING PACKER: Baker Model R Single Grip @ 8637'		

NAME OF PROPOSED INJECTION FORMATION	TOP OF FORMATION	BOTTOM OF FORMATION
ABO REEF	8461	9041

IS INJECTION THROUGH TUBING, CASING, OR ANNULUS?	PERFORATIONS OR OPEN HOLE?	PROPOSED INTERVAL(S) OF INJECTION
Tubing	Perforations	8915-8992

IS THIS A NEW WELL DRILLED FOR DISPOSAL?	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED?	HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE?
No	As producing oil well	Yes

LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH

9006/Baker Model DBP with blank off @ 8995'

DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA	DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA	DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA
190' (top of Red Beds)*	6208	9122

ANTICIPATED DAILY INJECTION VOLUME (BBLS.)	MINIMUM	MAXIMUM	OPEN OR CLOSED TYPE SYSTEM	IS INJECTION TO BE BY GRAVITY OR PRESSURE?	APPROX. PRESSURE (PSI)
	100	350	Open	Gravity	

ANSWER YES OR NO WHETHER THE FOLLOWING WATERS ARE MINERALIZED TO SUCH A DEGREE AS TO BE UNFIT FOR DOMESTIC, STOCK, IRRIGATION, OR OTHER GENERAL USE —	WATER TO BE DISPOSED OF	NATURAL WATER IN DISPOSAL ZONE	ARE WATER ANALYSES ATTACHED?
	Yes	Yes	Yes

NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND)

Clarence Scharbauer, Jr., P. O. Box 538, Midland TX 79701

LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (½) MILE OF THIS INJECTION WELL

Sun Production Company, 12850 Hillcrest Road, Dallas, TX 75230

* Depth of water well in this area 75'.

HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?	SURFACE OWNER	EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL	THE NEW MEXICO STATE ENGINEER
	Yes	Yes	Yes
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)	PLAT OF AREA	ELECTRICAL LOG	DIAGRAMMATIC SKETCH OF WELL
	Yes	Yes	Yes

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

Joseph T. Ingram — (Signature) | Engineer — (Title) | 4/13/78 — (Date)

NOTE: Should waivers from the State Engineer, the surface owner, and all operators within one-half mile of the proposed injection well not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 15-day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received, the application will be set for hearing, if the applicant so requests. SEE RULE 701.

1342-A

HALLIBURTON DIVISION LABORATORY
HALLIBURTON SERVICES
MIDLAND DIVISION
HOBBS, NEW MEXICO 88240

RECEIVED MAR 29 1978

LABORATORY WATER ANALYSIS

No. W78-317

To Tom L. Ingram
Box 1757
Roswell, New Mexico

Date 3-29-78

Submitted by _____ Date Rec. 3-29-78

Well No. As Marked Depth _____ Formation ADO Reef

County _____ Field _____ Source _____

	State "L" #1	State "L" #2	State "M" #1	
Resistivity	0.086 @ 74°F.	0.049 @ 74°F.	0.073 @ 74°F.	
Specific Gravity	1.057	1.102	1.068	
pH	6.4	6.2	6.5	
Calcium (Ca)	5,800	13,750	5,000	*MPL
Magnesium (Mg)	Nil	2,100	960	
Chlorides (Cl)	48,500	90,500	58,000	
Sulfates (SO_4)	2,950	1,600	3,200	
Bicarbonates (HCO_3)	1,020	315	185	
Soluble Iron (Fe)	Nil	Nil	Nil	

Remarks:

*Milligrams per liter

Respectfully submitted,

Analyst: Brewer

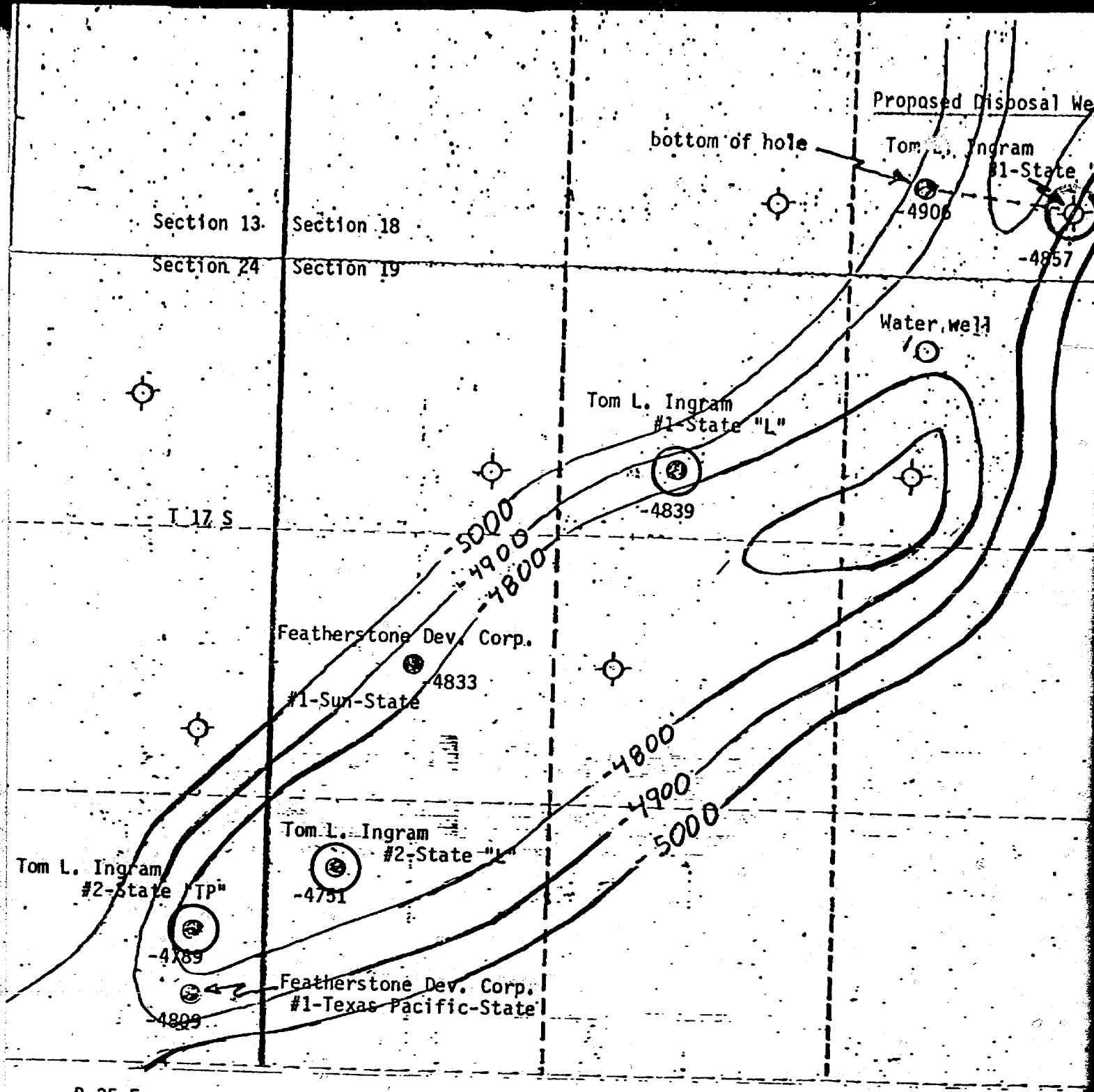
cc:

HALLIBURTON COMPANY

By W. L. Brewer
CHEMIST

NOTICE

THIS REPORT IS LIMITED TO THE DESCRIBED SAMPLE TESTED. ANY USER OF THIS REPORT AGREES THAT HALLIBURTON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, WHETHER IT BE TO ACT OR OMISSION, RESULTING FROM SUCH REPORT OR ITS USE.



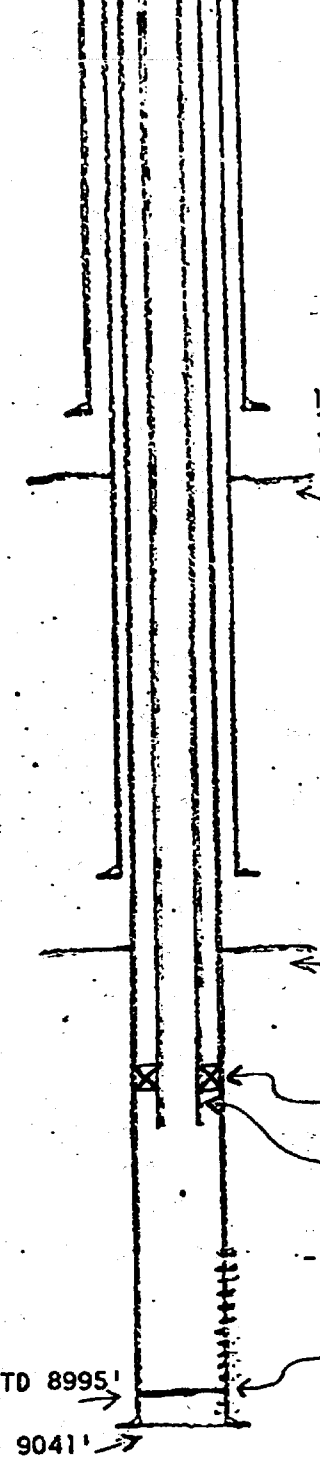
Structure Contour Map
Vacuum Abo Reef Field
Lea County, New Mexico

Datum, Top of Abo Reef
C.I. 100'
April 1978
Joe Ingram

Disposal Well

Water Source

FIELD	OPERATOR	DATE
Vacuum Abo Reef	Tom L. Ingram	April 10, 1978
LEASE	**WELL NO**	**LOCATION**
State M	1	Unit Letter O Sec. 18 - T17S - R36E



Cement Top: Surface (Circulated)

13-3/8" casing set at 340 ' with 400 sx of Class H +/ 2% $CaCl_2$ cement

Hole size 17 "

Cement Top: 2514' (Calculated)

8-5/8" casing set at 3406 ' with 200 sx of Class H +/ 2% $CaCl_2$ cement

Hole size 11 "

Cement Top: 7100' (Survey)

Perfs: 8915-8917-8937-8940-8943-8947-8961
8963-8977-8980-8982-(1 shot per foot)
9006 - 2 shots

Baker Model R Single Grip Packer at 8637'

2-3/8" Tubing set at 8668' (Cement or Plastic lined)

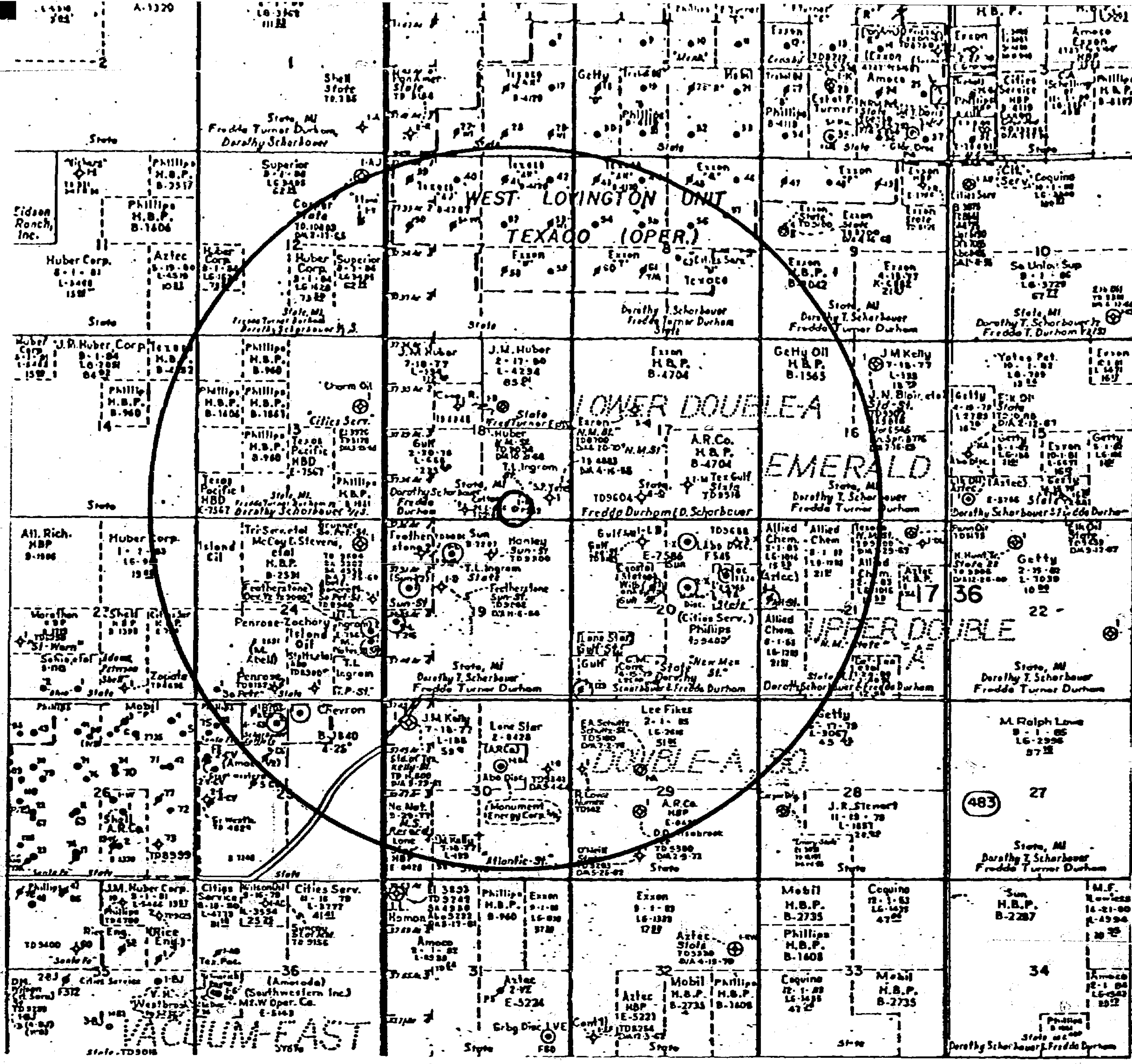
Baker Model D Bridge Plug with Blank Off at 8995'

PBTD 8995'

TD 9041'

5-1/2" casing set at 9041 ' with 300 sx of Class C Pozmix + 189# CFR-2 + 8#Salt/sack cement

Total Depth 9041 ' Hole size 7-7/8 "



Plat showing location of proposed disposal well, Tom L. Ingram #1 State "M" ⊙
330'FSL and 1650'FEL Sec.18, T 17 S, R 36 E

Producing formations within two mile radius of disposal well are:

- • San Andres
- ⊙ Abo

Disposal is to be into the Abo Reef formation at a depth of 8915-8992 feet.

Liquid will be salt water produced from:

Tom L. Ingram #1 State "L" 990'FNL and 1890'FWL, Sec.19, T 17 S, R 36 E
Tom L. Ingram #2 State "L" 2310'FSL and 330'FWL, Sec.19, T 17 S, R 36 E
Tom L. Ingram #2 State "TP" 1980'FSL and 330'FEL, Sec.24, T 17 S, R 35 E

Volume will be from 100 to 300 bbls of salt water per day.

COUNTY LEA
FIELD or LOCATION VACUUM (ABO)
WELL STATE "M" #1
COMPANY TOM L. INGRAM

COMPANY TOM L. INGRAM

WELL STATE "M" #1

FIELD VACUUM (ABO)

COUNTY LEA STATE NEW MEXICO

Location: 1650' FEL & 330' FSL

Sec. 18 Twp. 17-S Rge. 36-E

Other Services: DLL, MLL-ML, MCP

Permanent Datum: G.L. ; Elev.: 3886

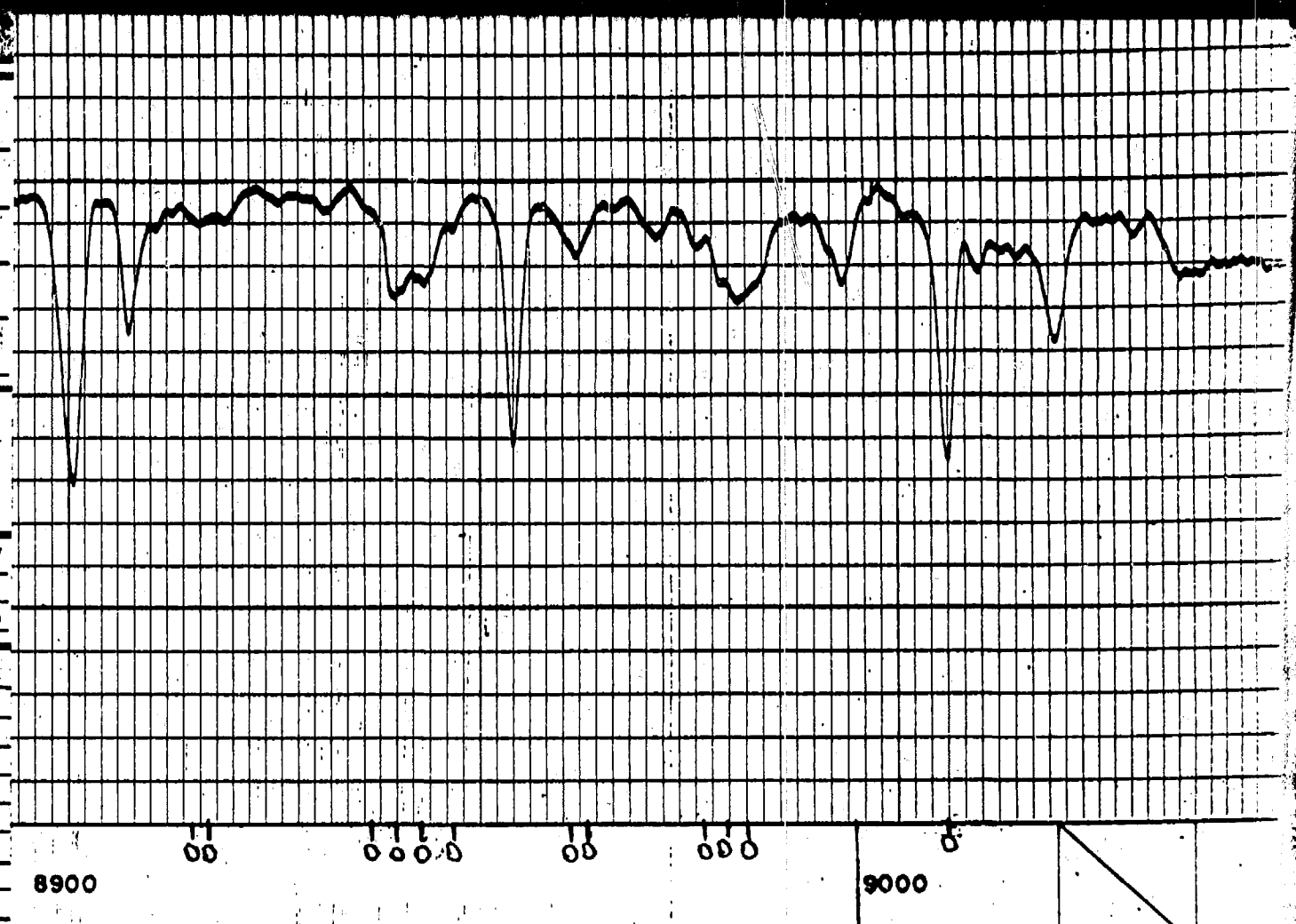
Log Measured From K.B. , 11 Ft. Above Perm. Datum

Drilling Measured From K.B.

Elev.: K.B. 3897
D.F.
G.L. 3886

Date	6-16-71	8-5-71	
Run No.	ONE	TWO	
Type Log	EPI THERMAL	EPI-NEUTRON	
Depth—Driller	8965	9037	
Depth—Logger	8966	9037	
Bottom logged interval	8965	9036	
Top logged interval	0	7200	
Type fluid in hole	SALT MUD	SALT MUD	
Salinity, PPM Cl.	46000	130000	
Density	9.0	9.5	
Level	FULL	FULL	
Max rec. temp., deg F.	131	134	
Operating rig time	5 HRS	3 HRS	
Recorded by	BROWN	OLSON	
Witnessed by	INGRAM	INGRAM	

RUN No.	BORE-HOLE RECORD Bit	From	To	CASING RECORD Size	Wgt.	From	To
1	7 7/8	3406	8965	8 5/8	24/32	10	3406
				13 3/8	48	10	350
2	7 7/8	CSG	T.D.	8 5/8			5407



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LAND OFFICE		
OPERATOR		

Form C-105
Revised 11-1-58

NEW MEXICO OIL CONSERVATION COMMISSION
WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5a. Indicate Type of Lease: State [X] Fee [ ]

5. State Oil & Gas Lease No.: L-134

7. Unit Agreement Name:

8. Farm or Lease Name: State M

9. Well No.: 1

10. Field and Pool, or Wildcat: Vacuum ABO Reef

10. TYPE OF WELL — OIL WELL [ ] GAS WELL [ ] DRY [ ] OTHER Retain for disposal well

b. TYPE OF COMPLETION — NEW WELL [ ] WORK OVER [X] DEEPEN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] OTHER

2. Name of Operator: TOM L INGRAM

3. Address of Operator: P. O. Box 1757, Roswell, NM 88201

4. Location of Well: UNIT LETTER O LOCATED 330 FEET FROM THE South LINE AND 1650 FEET FROM THE East LINE OF SEC. 18 TWP. 17S RGE. 36E NMPM

12. County: Lea

15. Date Spudded	16. Date T.D. Reached	17. Date Compl. (Ready to Prod.)	18. Elevations (DF, RKB, RT, GR, etc.)	19. Elev. Cashinghead
5/21/71	8/4/71	TA 3/30/78	3886 GR	

20. Total Depth	21. Plug Back T.D.	22. If Multiple Compl., How Many	23. Intervals Drilled By	Rotary Tools	Cable Tools
9041'	8995'		→	0-TD	

24. Producing Interval(s), of this completion — Top, Bottom, Name: 8915-8982 ABO Reef

25. Was Directional Survey Made: Yes

26. Type Electric and Other Logs Run: Laterolog, Microlaterolog, Sidewall Neutron Porosity

27. Was Well Cored: Yes

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8	48	340	17"	400 sxs	Circulated
8-5/8	24-32	3406	11"	200 sxs	0
5-1/2	15½-17	9041	7-7/8"	300 sxs	0

29. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN

30. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2-3/8	8668	8637

31. Perforation Record (Interval, size and number)

9006' - 2 shots
8915', 17, 37, 40, 43, 47, 61, 63, 77, 80, 82 - one shot per foot

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
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8995	A/5000 gal DS 30
9006	Baker Model DBP

33. PRODUCTION

Date First Production	Production Method (Flowing, gas lift, pumping — Size and type pump)	Well Status (Prod. or Shut-in)
		SI

Date of Test	Hours Tested	Choke Size	Prod'n. For Test Period →	Oil — Bbl.	Gas — MCF	Water — Bbl.	Gas—Oil Ratio

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate →	Oil — Bbl.	Gas — MCF	Water — Bbl.	Oil Gravity — API (Corr.)

34. Disposition of Gas (Sold, used for fuel, vented, etc.)

Test Witnessed By

35. List of Attachments

36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.

SIGNED Joseph T. Ingram TITLE Engineer DATE 4/10/78

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Commission not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 30 through 34 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1109.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico				Northwestern New Mexico			
T. Anhy	1830	T. Canyon		T. Ojo Alamo		T. Penn. "B"	
T. Salt		T. Strawn		T. Kirtland-Fruitland		T. Penn. "C"	
B. Salt		T. Atoka		T. Pictured Cliffs		T. Penn. "D"	
T. Yates	3069	T. Miss		T. Cliff House		T. Leadville	
T. 7 Rivers		T. Devonian		T. Menefee		T. Madison	
T. Queen		T. Silurian		T. Point Lookout		T. Elbert	
T. Grayburg		T. Montoya		T. Mancos		T. McCracken	
T. San Andres	4639	T. Simpson		T. Gallup		T. Ignacio Qtzte	
T. Glorieta	6293	T. McKee		Base Greenhorn		T. Granite	
T. Paddock		T. Ellenburger		T. Dakota		T.	
T. Blinebry		T. Gr. Wash		T. Morrison		T.	
T. Tubb		T. Granite		T. Todilto		T.	
T. Drinkard		T. Delaware Sand		T. Entrada		T.	
T. Abo	8910	T. Bone Springs		T. Wingate		T.	
T. Wolfcamp		T.		T. Chinle		T.	
T. Penn.		T.		T. Permian		T.	
T. Cisco (Bough C)		T.		T. Penn. "A"		T.	

OIL OR GAS SANDS OR ZONES

No. 1, from 8915 to 8982 No. 4, from ..... to .....

No. 2, from ..... to ..... No. 5, from ..... to .....

No. 3, from ..... to ..... No. 6, from ..... to .....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from ..... to ..... feet. .....

No. 2, from ..... to ..... feet. .....

No. 3, from ..... to ..... feet. .....

No. 4, from ..... to ..... feet. .....

FORMATION RECORD (Attach additional sheets if necessary)

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation
0	190	190	Surface sands & Caliche				
190	1830	1640	Red beds				
1830	1880	50	Anhydrite				
1880	3069	1189	Salt & Anhydrite				
3069	4639	1570	Sand, Anhydrite, Shale				
4639	6293	1654	Dolomite				
6293	8260	1967	Sand & Dolomite				
8260	9041	781	Shale & Limestone				

APR 7 1978

OIL CONSERVATION COMM.
HOBBS, N. M.

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Form C-105
Revised 11-X

NEW MEXICO OIL CONSERVATION COMMISSION

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5a. Indicate Type of Lease: State [X] Fee [ ]

5. State Oil & Gas Lease No.: L-134

1a. TYPE OF WELL: OIL WELL [ ] GAS WELL [ ] DRY [ ] OTHER Retain for disposal well

b. TYPE OF COMPLETION: NEW WELL [ ] WORK OVER [X] DEEPEN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] OTHER

7. Unit Agreement Name:

8. Farm or Lease Name: State M

2. Name of Operator: TOM L INGRAM

9. Well No.: 1

3. Address of Operator: P. O. Box 1757, Roswell, NM 88201

10. Field and Pool, or Wildcat: Vacuum ABO Reef

4. Location of Well: UNIT LETTER 0 LOCATED 330 FEET FROM THE South LINE AND 1650 FEET FROM THE East LINE OF SEC. 18 TWP. 17S RGE. 36E NMPM

12. County: Lea

15. Date Spudded	16. Date T.D. Reached	17. Date Compl. (Ready to Prod.)	18. Elevations (DF, RKB, RT, GR, etc.)	19. Elev. Cashinghead
5/21/71	8/4/71	TA 3/30/78	3886 GR	

20. Total Depth	21. Plug Back T.D.	22. If Multiple Compl., How Many	23. Intervals Drilled By	Rotary Tools	Cable Tools
9041'	8995'		→	0-TD	

24. Producing Interval(s), of this completion — Top, Bottom, Name: 8915-8982 ABO Reef

25. Was Directional Survey Made: Yes

26. Type Electric and Other Logs Run: Laterolog, Microlaterolog, Sidewall Neutron Porosity

27. Was Well Cored: Yes

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8	48	340	17"	400 sxs	Circulated
8-5/8	24-32	3406	11"	200 sxs	0
5-1/2	15½-17	9041	7-7/8"	300 sxs	0

29. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN

30. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2-3/8	8668	8637

31. Perforation Record (Interval, size and number)

9006' - 2 shots
8915', 17, 37, 40, 43, 47, 61, 63, 77, 80, 82 - one shot per foot

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
8915-8982	A/500 gal Spearhead
8995	A/5000 gal DS 30
9006	Baker Model DBP

33. PRODUCTION

Date First Production	Production Method (Flowing, gas lift, pumping — Size and type pump)	Well Status (Prod. or Shut-in)
		SI

Date of Test	Hours Tested	Choke Size	Prod'n. For Test Period →	Oil — Bbl.	Gas — MCF	Water — Bbl.	Gas — Oil Ratio

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate →	Oil — Bbl.	Gas — MCF	Water — Bbl.	Oil Gravity — API (Corr.)

34. Disposition of Gas (Sold, used for fuel, vented, etc.)

Test Witnessed By

35. List of Attachments

36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.

SIGNED Joseph T. Ingram TITLE Engineer DATE 4/10/78

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Commission not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radioactivity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 30 through 34 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1105.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico				Northwestern New Mexico			
T. Anhy	1830	T. Canyon		T. Ojo Alamo		T. Penn. "B"	
T. Salt		T. Strawn		T. Kirtland-Fruitland		T. Penn. "C"	
B. Salt		T. Atoka		T. Pictured Cliffs		T. Penn. "D"	
T. Yates	3069	T. Miss		T. Cliff House		T. Leadville	
T. 7 Rivers		T. Devonian		T. Menefee		T. Madison	
T. Queen		T. Silurian		T. Point Lookout		T. Elbert	
T. Grayburg		T. Montoya		T. Mancos		T. McCracken	
T. San Andres	4639	T. Simpson		T. Gallup		T. Ignacio Qtzte	
T. Glorieta	6293	T. McKee		Base Greenhorn		T. Granite	
T. Paddock		T. Ellenburger		T. Dakota		T.	
T. Blinebry		T. Gr. Wash		T. Morrison		T.	
T. Tubb		T. Granite		T. Todilto		T.	
T. Drinkard		T. Delaware Sand		T. Entrada		T.	
T. Abo	8910	T. Bone Springs		T. Wingate		T.	
T. Wolfcamp		T.		T. Chinle		T.	
T. Penn.		T.		T. Permian		T.	
T. Cisco (Bough C)		T.		T. Penn. "A"		T.	

OIL OR GAS SANDS OR ZONES

No. 1, from 8915 to 8982 No. 4, from ..... to .....

No. 2, from ..... to ..... No. 5, from ..... to .....

No. 3, from ..... to ..... No. 6, from ..... to .....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from ..... to ..... feet. .....

No. 2, from ..... to ..... feet. .....

No. 3, from ..... to ..... feet. .....

No. 4, from ..... to ..... feet. .....

FORMATION RECORD (Attach additional sheets if necessary)

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation
0	190	190	Surface sands & Caliche				
190	1830	1640	Red beds				
1830	1880	50	Anhydrite				
1880	3069	1189	Salt & Anhydrite				
3069	4639	1570	Sand, Anhydrite, Shale				
4639	6293	1654	Dolomite				
6293	8260	1967	Sand & Dolomite				
8260	9041	781	Shale & Limestone				

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Form C-105
Revised 1-1-65

NEW MEXICO OIL CONSERVATION COMMISSION
WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5a. Indicate Type of Lease: State [X] Fee [ ]

5. State Oil & Gas Lease No.: L-134

1a. TYPE OF WELL: OIL WELL [ ] GAS WELL [ ] DRY [ ] OTHER Retain for disposal well

b. TYPE OF COMPLETION: NEW WELL [ ] WORK OVER [X] DEEPEN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] OTHER

7. Unit Agreement Name:

8. Farm or Lease Name: State M

2. Name of Operator: TOM L INGRAM

9. Well No.: 1

3. Address of Operator: P. O. Box 1757, Roswell, NM 88201

10. Field and Pool, or Wildcat: Vacuum ABO Reef

4. Location of Well: UNIT LETTER 0 LOCATED 330 FEET FROM THE South LINE AND 1650 FEET FROM THE East LINE OF SEC. 18 TWP. 17S RGE. 36E NMPM

12. County: Lea

15. Date Spudded	16. Date T.D. Reached	17. Date Compl. (Ready to Prod.)	18. Elevations (DF, RKB, RT, GR, etc.)	19. Elev. Cashinghead
5/21/71	8/4/71	TA 3/30/78	3886 GR	

20. Total Depth	21. Plug Back T.D.	22. If Multiple Compl., How Many	23. Intervals Drilled By →	Rotary Tools	Cable Tools
9041'	8995'			0-TD	

24. Producing Interval(s), of this completion — Top, Bottom, Name: 8915-8982 ABO Reef

25. Was Directional Survey Made: Yes

26. Type Electric and Other Logs Run: Laterolog, Microlaterolog, Sidewall Neutron Porosity

27. Was Well Cored: Yes

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8	48	340	17"	400 sxs	Circulated
8-5/8	24-32	3406	11"	200 sxs	0
5-1/2	15½-17	9041	7-7/8"	300 sxs	0

29. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN

30. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2-3/8	8668	8637

31. Perforation Record (Interval, size and number)

9006' - 2 shots
8915', 17, 37, 40, 43, 47, 61, 63, 77, 80, 82 - one shot per foot

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
8915-8982	A/500 gal Spearhead
8995	A/5000 gal DS 30
9006	Baker Model DBP

33. PRODUCTION

Date First Production	Production Method (Flowing, gas lift, pumping — Size and type pump)	Well Status (Prod. or Shut-in)
		SI

Date of Test	Hours Tested	Choke Size	Prod'n. For Test Period →	Oil — Bbl.	Gas — MCF	Water — Bbl.	Gas — Oil Ratio

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate →	Oil — Bbl.	Gas — MCF	Water — Bbl.	Oil Gravity — API (Corr.)

34. Disposition of Gas (Sold, used for fuel, vented, etc.)

Test Witnessed By

35. List of Attachments

36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.

SIGNED Joseph L. Ingram TITLE Engineer DATE 4/10/78

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Commission not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 30 through 34 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1105.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico				Northwestern New Mexico			
T. Anhy	1830	T. Canyon		T. Ojo Alamo		T. Penn. "B"	
T. Salt		T. Strawn		T. Kirtland-Fruitland		T. Penn. "C"	
B. Salt		T. Atoka		T. Pictured Cliffs		T. Penn. "D"	
T. Yates	3069	T. Miss		T. Cliff House		T. Leadville	
T. 7 Rivers		T. Devonian		T. Menefee		T. Madison	
T. Queen		T. Silurian		T. Point Lookout		T. Elbert	
T. Grayburg		T. Montoya		T. Mancos		T. McCracken	
T. San Andres	4639	T. Simpson		T. Gallup		T. Ignacio Qtzte	
T. Glorieta	6293	T. McKee		Base Greenhorn		T. Granite	
T. Paddock		T. Ellenburger		T. Dakota		T.	
T. Blinebry		T. Gr. Wash		T. Morrison		T.	
T. Tubb		T. Granite		T. Todilto		T.	
T. Drinkard		T. Delaware Sand		T. Entrada		T.	
T. Abo	8910	T. Bone Springs		T. Wingate		T.	
T. Wolfcamp		T.		T. Chinle		T.	
T. Penn.		T.		T. Permian		T.	
T. Cisco (Bough C)		T.		T. Penn. "A"		T.	

OIL OR GAS SANDS OR ZONES

No. 1, from 8915 to 8982 — No. 4, from ..... to .....

No. 2, from ..... to ..... — No. 5, from ..... to .....

No. 3, from ..... to ..... — No. 6, from ..... to .....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from ..... to ..... feet. .....

No. 2, from ..... to ..... feet. .....

No. 3, from ..... to ..... feet. .....

No. 4, from ..... to ..... feet. .....

FORMATION RECORD (Attach additional sheets if necessary)

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation
0	190	190	Surface sands & Caliche				
190	1830	1640	Red beds				
1830	1880	50	Anhydrite				
1880	3069	1189	Salt & Anhydrite				
3069	4639	1570	Sand, Anhydrite, Shale				
4639	6293	1654	Dolomite				
6293	8260	1967	Sand & Dolomite				
8260	9041	781	Shale & Limestone				

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Form C-105
Revised 11-1-58

NEW MEXICO OIL CONSERVATION COMMISSION
WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5a. Indicate Type of Lease: State [X] Fee [ ]

5. State Oil & Gas Lease No.: L-134

1a. TYPE OF WELL: OIL WELL [ ] GAS WELL [ ] DRY [ ] OTHER Retain for disposal well

b. TYPE OF COMPLETION: NEW WELL [ ] WORK OVER [X] DEEPEN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] OTHER

7. Unit Agreement Name:

8. Farm or Lease Name: State M

2. Name of Operator: TOM L INGRAM

9. Well No.: 1

3. Address of Operator: P. O. Box 1757, Roswell, NM 88201

10. Field and Pool, or Wildcat: Vacuum ABO Reef

4. Location of Well: UNIT LETTER O LOCATED 330 FEET FROM THE South LINE AND 1650 FEET FROM THE East LINE OF SEC. 18 TWP. 17S RGE. 36E NMPM

12. County: Lea

15. Date Spudded	16. Date T.D. Reached	17. Date Compl. (Ready to Prod.)	18. Elevations (DF, RKB, RT, GR, etc.)	19. Elev. Cashinghead
5/21/71	8/4/71	TA 3/30/78	3886 GR	

20. Total Depth	21. Plug Back T.D.	22. If Multiple Compl., How Many	23. Intervals Drilled By →	Rotary Tools	Cable Tools
9041'	8995'			0-TD	

24. Producing Interval(s), of this completion — Top, Bottom, Name: 8915-8982 ABO Reef

25. Was Directional Survey Made: Yes

26. Type Electric and Other Logs Run: Laterolog, Microlaterolog, Sidewall Neutron Porosity

27. Was Well Cored: Yes

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8	48	340	17"	400 sxs	Circulated
8-5/8	24-32	3406	11"	200 sxs	0
5-1/2	15½-17	9041	7-7/8"	300 sxs	0

29. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN

30. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2-3/8	8668	8637

31. Perforation Record (Interval, size and number)

9006' - 2 shots
8915', 17, 37, 40, 43, 47, 61, 63, 77, 80, 82 - one shot per foot

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
8915-8982	A/500 gal Spearhead
8995	A/5000 gal DS 30
9006	Baker Model DBP

33. PRODUCTION

Date First Production	Production Method (Flowing, gas lift, pumping — Size and type pump)	Well Status (Prod. or Shut-in)
		SI

Date of Test	Hours Tested	Choke Size	Prod'n. For Test Period →	Oil — Bbl.	Gas — MCF	Water — Bbl.	Gas — Oil Ratio

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate →	Oil — Bbl.	Gas — MCF	Water — Bbl.	Oil Gravity — API (Corr.)

34. Disposition of Gas (Sold, used for fuel, vented, etc.)

Test Witnessed By

35. List of Attachments

36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.

SIGNED Joseph L Ingram TITLE Engineer DATE 4/10/78

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Commission not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill-stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 30 through 34 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1105.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico				Northwestern New Mexico			
T. Anhy	1830	T. Canyon		T. Ojo Alamo		T. Penn. "B"	
T. Salt		T. Strawn		T. Kirtland-Fruitland		T. Penn. "C"	
B. Salt		T. Atoka		T. Pictured Cliffs		T. Penn. "D"	
T. Yates	3069	T. Miss		T. Cliff House		T. Leadville	
T. 7 Rivers		T. Devonian		T. Menefee		T. Madison	
T. Queen		T. Silurian		T. Point Lookout		T. Elbert	
T. Grayburg		T. Montoya		T. Mancos		T. McCracken	
T. San Andres	4639	T. Simpson		T. Gallup		T. Ignacio Qtzte	
T. Glorieta	6293	T. McKee		Base Greenhorn		T. Granite	
T. Paddock		T. Ellenburger		T. Dakota		T.	
T. Blinebry		T. Gr. Wash		T. Morrison		T.	
T. Tubb		T. Granite		T. Todilto		T.	
T. Drinkard		T. Delaware Sand		T. Entrada		T.	
T. Abo	8910	T. Bone Springs		T. Wingate		T.	
T. Wolfcamp		T.		T. Chinle		T.	
T. Penn.		T.		T. Permian		T.	
T. Cisco (Bough C)		T.		T. Penn. "A"		T.	

OIL OR GAS SANDS OR ZONES

No. 1, from 8915 to 8982 No. 4, from ..... to .....

No. 2, from ..... to ..... No. 5, from ..... to .....

No. 3, from ..... to ..... No. 6, from ..... to .....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from ..... to ..... feet. .....

No. 2, from ..... to ..... feet. .....

No. 3, from ..... to ..... feet. .....

No. 4, from ..... to ..... feet. .....

FORMATION RECORD (Attach additional sheets if necessary)

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation
0	190	190	Surface sands & Caliche				
190	1830	1640	Red beds				
1830	1880	50	Anhydrite				
1880	3069	1189	Salt & Anhydrite				
3069	4639	1570	Sand, Anhydrite, Shale				
4639	6293	1654	Dolomite				
6293	8260	1967	Sand & Dolomite				
8260	9041	781	Shale & Limestone				

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Form C-105
Revised 11-1-58

NEW MEXICO OIL CONSERVATION COMMISSION
WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5a. Indicate Type of Lease: State [X] Fee [ ]

5. State Oil & Gas Lease No.: L-134

1a. TYPE OF WELL: OIL WELL [ ] GAS WELL [ ] DRY [ ] OTHER Retain for disposal well

b. TYPE OF COMPLETION: NEW WELL [ ] WORK OVER [X] DEEPEN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] OTHER

7. Unit Agreement Name:

8. Farm or Lease Name: State M

2. Name of Operator: TOM L INGRAM

9. Well No.: 1

3. Address of Operator: P. O. Box 1757, Roswell, NM 88201

10. Field and Pool, or Wildcat: Vacuum ABO Reef

4. Location of Well: UNIT LETTER 0 LOCATED 330 FEET FROM THE South LINE AND 1650 FEET FROM THE East LINE OF SEC. 18 TWP. 17S RGE. 36E NMPM

12. County: Lea

15. Date Spudded	16. Date T.D. Reached	17. Date Compl. (Ready to Prod.)	18. Elevations (DF, RKB, RT, GR, etc.)	19. Elev. Cashinghead
5/21/71	8/4/71	TA 3/30/78	3886 GR	

20. Total Depth	21. Plug Back T.D.	22. If Multiple Compl., How Many	23. Intervals Drilled By	Rotary Tools	Cable Tools
9041'	8995'		→	0-TD	

24. Producing Interval(s), of this completion — Top, Bottom, Name: 8915-8982 ABO Reef

25. Was Directional Survey Made: Yes

26. Type Electric and Other Logs Run: Laterolog, Microlaterolog, Sidewall Neutron Porosity

27. Was Well Cored: Yes

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8	48	340	17"	400 sxs	Circulated
8-5/8	24-32	3406	11"	200 sxs	0
5-1/2	15½-17	9041	7-7/8"	300 sxs	0

29. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN

30. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2-3/8	8668	8637

31. Perforation Record (Interval, size and number)
9006' - 2 shots
8915', 17, 37, 40, 43, 47, 61, 63, 77, 80, 82 - one shot per foot

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
8915-8982	A/500 gal Spearhead
8995	A/5000 gal DS 30
9006	Baker Model DBP

33. PRODUCTION

Date First Production	Production Method (Flowing, gas lift, pumping — Size and type pump)	Well Status (Prod. or Shut-in)
		SI

Date of Test	Hours Tested	Choke Size	Prod'n. For Test Period →	Oil — Bbl.	Gas — MCF	Water — Bbl.	Gas — Oil Ratio

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate →	Oil — Bbl.	Gas — MCF	Water — Bbl.	Oil Gravity — API (Corr.)

34. Disposition of Gas (Sold, used for fuel, vented, etc.)

Test Witnessed By

35. List of Attachments

36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.

SIGNED Joseph L. Ingram TITLE Engineer DATE 4/10/78

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Commission not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radioactivity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 30 through 34 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1105.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico				Northwestern New Mexico			
T. Anhy	1830	T. Canyon		T. Ojo Alamo		T. Penn. "B"	
T. Salt		T. Strawn		T. Kirtland-Fruitland		T. Penn. "C"	
B. Salt		T. Atoka		T. Pictured Cliffs		T. Penn. "D"	
T. Yates	3069	T. Miss		T. Cliff House		T. Leadville	
T. 7 Rivers		T. Devonian		T. Menefee		T. Madison	
T. Queen		T. Silurian		T. Point Lookout		T. Elbert	
T. Grayburg		T. Montoya		T. Mancos		T. McCracken	
T. San Andres	4639	T. Simpson		T. Gallup		T. Ignacio Qtzte	
T. Glorieta	6293	T. McKee		Base Greenhorn		T. Granite	
T. Paddock		T. Ellenburger		T. Dakota		T.	
T. Blinebry		T. Gr. Wash		T. Morrison		T.	
T. Tubb		T. Granite		T. Todilto		T.	
T. Drinkard		T. Delaware Sand		T. Entrada		T.	
T. Abo	8910	T. Bone Springs		T. Wingate		T.	
T. Wolfcamp		T.		T. Chinle		T.	
T. Penn.		T.		T. Permian		T.	
T Cisco (Bough C)		T.		T. Penn. "A"		T.	

OIL OR GAS SANDS OR ZONES

No. 1, from 8915 to 8982 No. 4, from ..... to .....

No. 2, from ..... to ..... No. 5, from ..... to .....

No. 3, from ..... to ..... No. 6, from ..... to .....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from ..... to ..... feet. .....

No. 2, from ..... to ..... feet. .....

No. 3, from ..... to ..... feet. .....

No. 4, from ..... to ..... feet. .....

FORMATION RECORD (Attach additional sheets if necessary)

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation
0	190	190	Surface sands & Caliche				
190	1830	1640	Red beds				
1830	1880	50	Anhydrite				
1880	3069	1189	Salt & Anhydrite				
3069	4639	1570	Sand, Anhydrite, Shale				
4639	6293	1654	Dolomite				
6293	8260	1967	Sand & Dolomite				
8260	9041	781	Shale & Limestone				

RECEIVED
APR 17 1978
OIL CONSERVATION COMM.
HOBBS, N. M.

TOM L. INGRAM
100 SOUTH KENTUCKY AVENUE
ROSWELL, NEW MEXICO 88201

April 13, 1978

New Mexico Oil Conservation Commission
P. O. Box 2088
Sata Fe, NM 87501

Gentlemen:

As an offset operator, SUN OIL COMPANY hereby waives any objection to the conversion and injection of water into Tom L. Ingram #1 State "M" in the Vacuum ABO Reef Formation as requested in their application for Salt Water Disposal dated April 13, 1978.

For _____

By J. L. Power

Date April 21, 1978

OIL CONSERVATION COMMISSION
Hobbs DISTRICT

OIL CONSERVATION COMMISSION
BOX 2088
SANTA FE, NEW MEXICO

DATE April 18, 1978

RE: Proposed MC _____
Proposed DHC _____
Proposed NSL _____
Proposed SWD X
Proposed WFX _____
Proposed PMX _____

Gentlemen:

I have examined the application dated _____

for the Tom L. Ingram State M #1-O 18-17-36
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

O.K.----J.S.

Yours very truly,

Jerry Sexton

ROUGH

dr/

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

CASE NO. 6244

Order No. R- 5748

APPLICATION OF TOM L. INGRAM FOR SALT WATER DISPOSAL, LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on June 7, 1978, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter

NOW, on this _____ day of June, 1978, the Division Director, having considered the testimony, the record, and the recomendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Tom L. Ingram, is the owner and operator of the State M Well No. 1, located in Unit O of Section 18, Township 17 South, Range 36 East, NMPM, Vacuum-Abo Pool, Lea County, New Mexico.

(3) That the applicant proposes to utilize said well to dispose of produced salt water into the Abo Reef formation, with injection into the perforated ~~xxxxxxx~~ interval from approximately 8915 feet to ~~8980~~ 8982 feet.

(4) That the injection should be accomplished through 2 3/8 -inch plastic lined tubing installed in a packer set at approximately 8815 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge or approved leak detection device should be attached to the annulus in order

to determine leakage in the casing, tubing, or packer.

(5) That the injection well or system should be equipped with a pop-off valve or acceptable ~~substitute~~ other device which will limit the wellhead pressure on the injection well to no more than ~~700~~ 1783 psi.

(6) That the operator should notify the supervisor of the Hobbs district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.

(7) 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.

(8) 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, Tom L. Ingram, is hereby authorized to utilize its State M Well No. 1, located in Unit O of Section 18, Township 17 South, Range 36 East, NMPM, Vacuum-Abo Pool, Lea County, New Mexico, to dispose of produced salt water into the Abo Reef formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 8815 feet, with injection into the perforated interval from approximately 8915 feet to ~~8992~~ 8982 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 shall be equipped with an approved leak detection device in order to determine leakage in the casing, tubing, or packer.

(2) That the injection well or system shall be equipped with a pop-off valve or other acceptable device which will limit the wellhead pressure on the injection well to no more than 1783 psi.

(3) That the operator shall notify the supervisor of the Hobbs district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.

(4) That the operator shall immediately notify the supervisor of the Division's Hobbs district office of the failure of the tubing, casing, or packer, in said well or the leakage of water from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

(5) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Division Rules and Regulations.

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

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