

CASE 5701: ARAHO, INC. FOR SALT
WATER DISPOSAL, LEA COUNTY,
NEW MEXICO

CASE NO.

5701

APPLICATION,
TRANSCRIPTS,
SMALL EXHIBITS,
ETC.



OIL CONSERVATION COMMISSION

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



DIRECTOR
JOE D. RAMEY

LAND COMMISSIONER
PHIL R. LUCERO

STATE GEOLOGIST
EMERY C. ARNOLD

Mr. Ken Bateman
White, Koch, Kelly & McCarthy
Attorneys at Law
Post Office Box 787
Santa Fe, New Mexico

Re: CASE NO. 5701
ORDER NO. R-5251

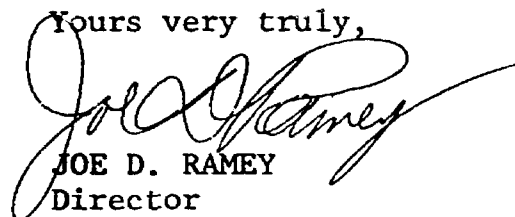
Applicant:

Araho, Inc.

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission 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
Aztec OCC

Other Anton Peterson

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE NO. 5701
Order No. R-5251

APPLICATION OF ARAHO, INC. FOR
SALT WATER DISPOSAL, LEA COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on June 23, 1976, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 3rd day of August, 1976, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Araho, Inc., is the owner and operator of the State SWD Well No. 2, located in Unit F of Section 2, Township 17 South, Range 36 East, NMPM, Lovington Field, Lea County, New Mexico.

(3) That the applicant proposes to utilize said well to dispose of produced salt water into the Abo formation, with injection into the open-hole interval from approximately 8528 feet to 8900 feet.

(4) That the injection should be accomplished through 2 7/8-inch plastic lined tubing installed in a packer set at approximately 8500 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure/vacuum gauge 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 which will limit the wellhead pressure on the injection well to no more than 100 psi.

(6) That the operator should notify the supervisor of the Hobbs district office of the Commission of the date and time of

Case No. 5701
Order No. R-5251

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, Araho, Inc., is hereby authorized to utilize its State SWD Well No. 2, located in Unit F of Section 2, Township 17 South, Range 36 East, NMPM, Lovington Field, Lea County, New Mexico, to dispose of produced salt water into the Abo formation, injection to be accomplished through 2 7/8-inch tubing installed in a packer set at approximately 8500 feet, with injection into the open-hole interval from approximately 8528 feet to 8900 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/vacuum 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 acceptable substitute which will limit the wellhead pressure on the injection well to no more than 100 psi.

(3) That the operator shall notify the supervisor of the Hobbs district office of the Commission 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 Commission'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 Commission Rules and Regulations.

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

-3-

Case No. 5701
Order No. R-5251

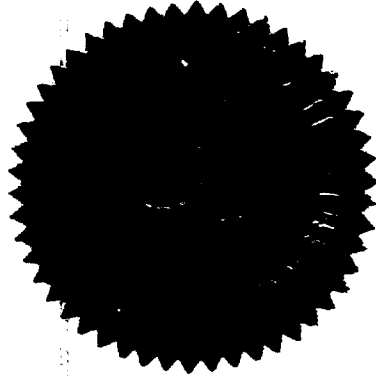
DONE at Santa Fe, New Mexico, on the day and year herein-
above designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

Phil R. Lucero
PHIL R. LUCERO, Chairman

Emery C. Arnold
EMERY C. ARNOLD, Member

Joe D. Ramey
JOE D. RAMEY, Member & Secretary



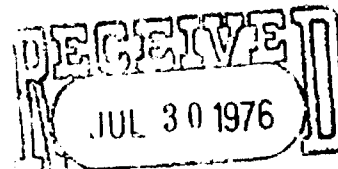
S E A L

dr/

PETROLITE

TRETOLITE DIVISION

369 Marshall Avenue / Saint Louis, Missouri 63119
(314) 961-3500 / TWX 910 760 1660 / Telex 44 2417



OIL CONSERVATION COMM
Santa Fe

July 28, 1976

Mr. Richard L. Stamets
New Mexico Oil Conservation Commission
Box 2088
Santa Fe, New Mexico 87501

Re: Case No. 5701
Salt Water Disposal
Lovington Field
Lee County, New Mexico

Dear Sir:

As per your request, and from the instructions of Mr. Harold Bruno of Araho Inc., please find enclosed the water analysis report from the Farmiss Plant of Lovington field.

We trust the enclosure meets with your approval, we remain,

Sincerely yours,

TRETOLITE DIVISION

Ray C. Shaffner

Ray Shaffner
Analyst

RS/lp

c/c: Mr. Harold Bruno
Box 5456
Midland, Texas 79701

TRETOLITE DIVISION

363 Marshall Avenue / Saint Louis, Missouri 63119
(314) WO 1-3500 / TWX 910-760-1660 / Telex 44-2417

WATER ANALYSIS REPORT

RECEIVED
JUL 30 1976CONSERVATION COMM
Santa FeCOMPANY Araho Inc.ADDRESS Hobbs, N.M.DATE: 7/26/76SOURCE LC St. S.W.D. Farmiss PlantDATE SAMPLED 7/26/76ANALYSIS
NO.11851

Analysis

Mg/L

*Meq/L

1. PH	<u>9.5</u>				
2. H ₂ S (Qualitative)	<u>43.0 ppm</u>				
3. Specific Gravity	<u>1.000</u>				
4. Dissolved Solids		<u>1,454</u>			
5. Suspended Solids					
6. Phenolphthalein Alkalinity (CaCO ₃)					
7. Methyl Orange Alkalinity (CaCO ₃)		<u>670</u>			
8. Bicarbonate (HCO ₃)		<u>817</u>	<u>÷ 61</u>	<u>13.4</u>	HCO ₃
9. Chlorides (Cl)		<u>180</u>	<u>÷ 35.5</u>	<u>5.1</u>	Cl
10. Sulfates (SO ₄)		<u>30</u>	<u>÷ 48</u>	<u>0.6</u>	SO ₄
11. Calcium (Ca)		<u>76</u>	<u>÷ 20</u>	<u>3.8</u>	Ca
12. Magnesium (Mg)		<u>2</u>	<u>÷ 12.2</u>	<u>0.2</u>	Mg
13. Total Hardness (CaCO ₃)		<u>200</u>			
14. Total Iron (Fe)		<u>0</u>			
15. Barium (Qualitative)					
16.					

*Milli equivalents per liter

PROBABLE MINERAL COMPOSITION

<u>3.8</u>	Ca	←	HCO ₃	<u>13.4</u>
<u>0.2</u>	Mg	←	SO ₄	<u>0.6</u>
<u>15.1</u>	Na	←	Cl	<u>5.1</u>

Saturation Values	Distilled Water 20°C
Ca CO ₃	13 Mg/L
Ca SO ₄ • 2H ₂ O	2,090 Mg/L
Mg CO ₃	103 Mg/L

Compound	Equiv. Wt.	X	Meq/L	=	Mg/L
Ca (HCO ₃) ₂	81.04		<u>3.8</u>		<u>308</u>
Ca SO ₄	68.07				
Ca Cl ₂	55.50		<u>0.2</u>		<u>15</u>
Mg (HCO ₃) ₂	73.17				
Mg SO ₄	60.19				
Mg Cl ₂	47.62				
Na HCO ₃	84.00		<u>9.4</u>		<u>790</u>
Na ₂ SO ₄	71.03		<u>0.6</u>		<u>43</u>
Na Cl	58.46		<u>5.1</u>		<u>298</u>

REMARKS Stamets - Bruno - Buckettc/c: Raybon - Roberts - Nix - FileRespectfully submitted
TRETOLITE COMPANYRay Shaffner

TRETOLITE DIVISION

369 Marshall Avenue / Saint Louis, Missouri 63119
(314) WO 1-3500/TWX 910-760-1660/Telex 44-2417

STABILITY INDEX CALCULATIONS (Stiff-Davis Method) CaCO₃ Scaling Tendency

SAMPLE

Sample Test No. #11851

Company Araho Inc. Sample Date _____

Address _____ Submitted by _____

Sample _____ Field _____

$$S. I. = pH - pCa - pAlk - K$$

where S. I. = stability index

pH = pH as measured on fresh sample

pCa = negative logarithm of calcium concentration

pAlk = negative logarithm of total alkalinity

K = constant, depends upon temperature and salt content

$$pH = 9.5 \quad pCa = 2.20 \quad pAlk = 1.85$$

CALCULATION OF IONIC STRENGTH AND K VALUE

$$Na \quad (347) \times (2.2 \times 10^{-5}) = 0.008$$

$$Ca \quad (76) \times (5.0 \times 10^{-5}) = 0.004$$

$$Mg \quad (2) \times (8.2 \times 10^{-5}) = 0.000$$

$$Cl \quad (180) \times (1.4 \times 10^{-5}) = 0.003$$

$$HCO_3 \quad (817) \times (0.8 \times 10^{-5}) = 0.007$$

$$SO_4 \quad (30) \times (2.1 \times 10^{-5}) = 0.001$$

$$TOTAL \ IONIC \ STRENGTH = 0.023$$

$$K = 2.15 \quad @ \quad 60 \quad ^\circ F.$$

$$K = 1.80 \quad @ \quad 100 \quad ^\circ F.$$

$$SI \text{ at } (60)^\circ = (9.50) - (2.20) - (1.85) - (2.15) \text{ or } + 3.30$$

$$SI \text{ at } (100)^\circ = (9.50) - (2.20) - (1.85) - (1.80) \text{ or } + 3.65$$

SI = 0 or water is relatively stable at _____ °F.

Remarks: Severe scaling tendencies at both 60°F and 100°F

TRETOLITE DIVISION

369 Marshall Avenue / Saint Louis, Missouri 63119
(314) 961-3500 / TWX 910 760 1660 / Telex 44 2117

PLEASE REPLY TO

P. O. Box 6365, Terminal Station
Midland, Texas 79701

Stiff-Davis

The Stiff-Davis calculations which are attached to this water analysis are designed to predict corrosion or scaling tendencies, only in relation to carbon dioxide or calcium carbonate. These calculations do not take into consideration the possible corrosive effects of other dissolved gases such as hydrogen sulfide or dissolved oxygen. Since this water also contains hydrogen sulfide, it may be corrosive due to the effects of this gas, even though the Stiff-Davis calculations do not predict it.

Cement Circulated

13 3/8" csg @ 349'

Cement Circulated

9 7/8" csg @ 3318'

Present log 2 5/8" csg.

Tie-in existing 5 1/2" csg. at 4141 ft
and cement w/ 2005 lbs.

2 7/8" Tubing on
Packer @ 5800'

- 5845 Perforations
- 5968

- 6185
- 6265 Perforations

- 8378 Perforations
- 8480

5 1/2" csg.

Present TO 8528

BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION

CASE NO. 5701

Submitte Applicant

Hearing Date June 23, 1976

Deepen to 8900' - 4 3/4" hole.

DIAGRAMMATIC SKETCH OF WELL

ARALO, INC. STRAB SWD #2

BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION
5101
Application
Hoping Date
JUNE 23, 1976

Application
JUNE 23, 1976

Application
JUNE 23, 1976

Cement Circulated

13 3/8" csg @ 349'

Cement Circulated

9 7/8" csg @ 3318'

Present top 5 1/2" csg.

Tie-in existing 5 1/2" csg. at 4141 ft and cement w/ 2005 lb.

2 7/8" Tubing on Packer @ 5800'

- 5845 Perforations
- 5968
- 6185
- 6265 Perforations
- 8378 Perforations
- 8480

5 1/2" csg. 5' 0" 5' 0"

5 1/2" csg.

Present TO 8528

BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION
EXHIBIT 2
CASE NO. 5701
Submitted Applicant
Hearing Date JUNE 23, 1976

Deepen to 8900' - 4 3/4" hole.

DIAGRAMMATIC SKETCH OF WELL

ARATO, INC. STATE SWD #2

Dockets Nos. 19-76 and 20-76 are tentatively set for hearing on July 7 and July 21, 1976. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - JUNE 23, 1976

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

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

CASE 5689: (Continued from June 9, 1976 Examiner Hearing)

Application of Dalport Oil Corporation for an unorthodox oil well location, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its Jones Federal Well No. 4 to be drilled 990 feet from the South line and 1477 feet from the West line of Section 22, Township 15 South, Range 29 East, South Lucky Lake-Queen Pool, Chaves County, New Mexico.

CASE 4843: (Reopened) (Continued from June 9, 1976 Examiner Hearing)

In the matter of Case 4843 being reopened pursuant to the provisions of Order No. R-4435-A, which order extended the special pool rules for the Southeast Chaves Queen Gas Area, Chaves County, New Mexico, including a provision for 320-acre spacing and proration units for gas wells. All interested parties may appear and show cause why said Order No. R-4435 should not be rescinded.

CASE 5695: Application of Yates Petroleum Corporation for an unorthodox oil well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its J Lazy J Well No. 13, to be drilled as the 5th well on the 40-acre tract, in the center of Unit G, of Section 22, Township 17 South, Range 25 East, Eagle Creek-San Andres Pool, Eddy County, New Mexico.

CASE 5696: Application of Yates Petroleum Corporation for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Eagle Creek-San Andres Pool by the injection of water into the San Andres formation through its J Lazy J Wells Nos. 3, 6, 9, and 11, all located in Unit G of Section 22, Township 17 South, Range 25 East, Eddy County, New Mexico.

CASE 5697: Application of Elk Oil Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Northeast Kernitz Unit Area comprising 3520 acres, more or less, of State land in Township 16 South, Range 34 East, Lea County, New Mexico.

CASE 5698: Application of El Paso Natural Gas Company for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle South Blanco-Pictured Cliffs and Blanco Mesaverde gas production in the wellbore of its San Juan 28-7 Unit Well No. 82 located in Unit A of Section 4, Township 27 North, Range 7 West, Rio Arriba County, New Mexico.

CASE 5699: Application of Dalport Oil Corporation for an exception to the provisions of Order No. R-3221, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks, as an exception to the provisions of Commission Order No. R-3221, permission to dispose of, into earthen pits, produced salt water from its Jones-Federal Well No. 3 located in Unit K of Section 22, Township 15 South, Range 29 East, South Lucky Lake-Queen Pool, Chaves County, New Mexico.

CASE 5700: Application of Morris R. Antweil for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp and Pennsylvanian formations underlying the S/2 of Section 24, Township 20 South, Range 27 East, Eddy County, New Mexico, to be dedicated to a proposed gas well to be drilled at an orthodox location in the S/2 of said Section 24. Also to be considered will be the cost of drilling and completing said well and the allocation of the costs thereof, as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 5701: Application of Arahco, Inc. for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the San Andres, Ato and Paddock formations through the perforated interval from approximately 8245 feet to 8400 feet and the open-hole interval from approximately 8625 feet to 8900 feet in its State SWD Well No. 2, located in Unit F of Section 2, Township 17 South, Range 36 East, Lovington Field, Lea County, New Mexico.

CASE 5702: Application of Cities Service Oil Company for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle Tubb Gas Pool and Drinkard Oil Pool production in the wellbore of its Brunson "B" Well No. 7 located in Unit H of Section 3, Township 22 South, Range 37 East, Lea County, New Mexico.

Araho, Inc.

~~XXXXXX~~ P. O. Box 5456
MIDLAND, TEXAS 79701

684-8488

July 6, 1976

*Sample
Examined*

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

Re: Case No. 5701 Examiners
Hearing, June 23, 1976.

Gentlemen:

Attached is the water analysis you requested on a sample of the effluent water from the Famariss Refinery located near Lovington, New Mexico. This sample was taken in October, 1973. Although, the water should not have changed, we are having another sample analysed and will mail you the results as soon as they are received.

Please advise if additional information is required.

Very truly yours,

ARAHO, INC.

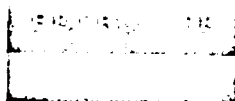
Earl R. Bruno

Earl R. Bruno
Vice-President

ERB/kf

cc: Mr. Ken Bateman,
Santa Fe, New Mexico

Enc.



TRETOLITE DIVISION

369 Marshall Avenue / Saint Louis, Missouri 63119
(314) WO 1-3500/TWX 910-760-1660/Telex 44-2417

EPL file

WATER ANALYSIS REPORT

COMPANY Earl Bruno ADDRESS Midland, Texas DATE 10-15-73
SOURCE Farmariss DATE SAMPLED 10-11-73 ANALYSIS NO. 7321
Analysis Mg/L *Meq/L

1. PH	<u>8.7</u>				
2. H ₂ S (Qualitative)	<u>Neg.</u>				
3. Specific Gravity	<u>1.000</u>				
4. Dissolved Solids		<u>3,190</u>			
5. Suspended Solids					
6. Phenolphthalein Alkalinity (CaCO ₃)		<u>110</u>			
7. Methyl Orange Alkalinity (CaCO ₃)		<u>580</u>			
8. Bicarbonate (HCO ₃)		<u>708</u>	<u>÷61</u>	<u>11.6</u>	HCO ₃
9. Chlorides (Cl)		<u>104</u>	<u>÷35.5</u>	<u>2.9</u>	Cl
10. Sulfates (SO ₄)		<u>1,393</u>	<u>÷48</u>	<u>29</u>	SO ₄
11. Calcium (Ca)		<u>40</u>	<u>÷20</u>	<u>2.0</u>	Ca
12. Magnesium (Mg)		<u>10</u>	<u>÷12.2</u>	<u>0.8</u>	Mg
13. Total Hardness (CaCO ₃)		<u>130</u>			
14. Total Iron (Fe)		<u>3.0 ppm</u>			
15. Barium (Qualitative)		<u>Pos.</u>			
16.					

*Milli equivalents per liter

PROBABLE MINERAL COMPOSITION

<u>2.0</u>	Ca	←	HCO ₃	<u>11.6</u>	Compound	Equiv. Wt.	X	Meq/L	=	Mg/L
<u>0.8</u>	Mg	→	SO ₄	<u>29</u>	Ca (HCO ₃) ₂	81.04		<u>2.0</u>		<u>162</u>
<u>40.7</u>	Na	→	Cl	<u>2.9</u>	Ca SO ₄	68.07				
					Ca Cl ₂	55.50				
					Mg (HCO ₃) ₂	73.17		<u>0.8</u>		<u>59</u>
					Mg SO ₄	60.19				
					Mg Cl ₂	47.62				
					Na HCO ₃	84.00		<u>8.8</u>		<u>739</u>
					Na ₂ SO ₄	71.03		<u>29.0</u>		<u>2,060</u>
					Na Cl	58.46		<u>2.9</u>		<u>170</u>

Saturation Values	Distilled Water 20°C
Ca CO ₃	13 Mg/L
Ca SO ₄ • 2H ₂ O	2,090 Mg/L
Mg CO ₃	103 Mg/L

REMARKS Mr. Bruno
CC: McGracken/Livingston/ file

Respectfully submitted
TRETOLITE COMPANY
Ray Shaffner

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
June 23, 1976

EXAMINER HEARING

IN THE MATTER OF:

Application of Araho, Inc. for salt) CASE
water disposal, Lea County, New Mexico.) 5701

BEFORE: Richard L. Stamets, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

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

For the Applicant: Ken Bateman, Esq.
WHITE, KOCH, KELLY & McCARTHY
Attorneys at Law
220 Otero Street
Santa Fe, New Mexico

For Amoco Production: Antone L. Peterson, III, Esq.
Legal Counsel
Amoco Production Company
P. O. Box 3092
Houston, Texas

ATWOOD, MALONE, MANN & COOTER
Attorneys at Law
P. O. Drawer 700
Roswell, New Mexico

sid morrish reporting service
General Court Reporting Service
825 Calle Mejia, No. 122, Santa Fe, New Mexico 87501
Phone (505) 982-9212

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I N D E X

Page

EARL BRUNO

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 Phone (505) 982-9212

sid morrish reporting service
General Court Reporting Service
 825 Calle Mejia, No. 122, Santa Fe, New Mexico 87501
 Phone (505) 982-9212

1 MR. STAMETS: We will call the next Case 5701.

2 MR. CAMER: Case 5701, application of Araho, Inc. for
 3 salt water disposal, Lea County, New Mexico.

4 MR. STAMETS: I would call for appearances in this
 5 case.

6 MR. PETERSON: Mr. Examiner, Antone Peterson represent-
 7 ing Amoco Production Company. The file should reflect a
 8 letter from local counsel, Atwood, Malone, Mann and Cooter.
 9 If it doesn't I have a copy of that letter.

10 MR. STAMETS: Yes, it does.

11 MR. PETERSON: Amoco may wish to ask a few questions
 12 and perhaps make a short statement.

13 MR. BATEMAN: Mr. Examiner, I'm Ken Bateman of White
 14 Koch, Kelly and McCarthy representing the applicant. I have
 15 one witness and I ask that he be sworn.

16 (THEREUPON, the witness was duly sworn.)

17
 18 EARL BRUNO

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

21
 22 DIRECT EXAMINATION

23 BY MR. BATEMAN:

24 Q Would you state your full name and occupation, please?

25 A Earl Bruno, Petroleum Engineer.

sid morrish reporting service
General Court Reporting Service
825 Calle Mejia, No. 122, Santa Fe, New Mexico 87501
Phone (505) 982-9212

1 Q By whom are you employed?

2 A Araho, Incorporated.

3 Q What is your address?

4 A Post Office Box 5456, Midland, Texas.

5 Q In what capacity are you employed by the applicant?

6 A Vice President and I operate the disposal system.

7 Q Have you previously testified before the Commission?

8 A Yes, sir.

9 Q Did you at that time make your qualifications a
10 matter of record?

11 A Yes, sir.

12 MR. BATEMAN: Is the witness acceptable?

13 MR. STAMETS: Yes, he is.

14 Q (Mr. Bateman continuing.) Mr. Bruno, would you
15 state briefly what Araho seeks in their application?

16 A We would like to reenter the old Marathon State No. 2
17 Well located at Section 2, Township 17 South, Range 36 East
18 and complete it as a water disposal well.

19 Q What is the source of the water that you are
20 seeking to dispose?

21 A It is effluent water from the Famariss Refinery.

22 Q Is that water necessarily salt water?

23 A No, sir, not all of it. Some of it is just water
24 they flush and it has a little caustic in it and some of it
25 has salt and a lot of fresh water and then a lot of it I'm

1 sure is contaminated with refined products.

2 MR. BATEMAN: Mr. Examiner, I would like to point
3 out a discrepancy in the publication of it indicating that we
4 are seeking permission to dispose of produced salt water.

5 MR. STAMETS: Go ahead.

6 Q (Mr. Bateman continuing.) Mr. Bruno, would you refer
7 to what has been marked as Exhibit Number One and locate the
8 well in question?

9 A The well is located sixteen hundred and fifty feet
10 from the north line and twenty-three hundred and ten feet
11 from the west line of Section 2, Township 17 South, Range 36
12 East, Lea County, New Mexico.

13 Q That is marked in green I believe on Exhibit Number
14 One, is it not?

15 A Correct.

16 Q Is there another disposal well in the area?

17 A Yes, sir, the offset well to the north is a Rice
18 Engineering disposal well, disposing of approximately six
19 thousand barrels of produced salt water a day from the
20 production to the east.

21 Q In what interval is the Rice Engineering disposing
22 of water?

23 A From eighty-four, forty to eighty-eight, fifty-eight.

24 Q Is that the Abo formation?

25 A Yes, sir.

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1 Q Do you presently have a water disposal well in the
2 area?

3 A We have a disposal well in Section 1, same township
4 and range and we are disposing in the Fusselman.

5 Q That is indicated on Exhibit One then?

6 A Yes, sir.

7 Q In the penciled circle, is that correct?

8 A Yes, sir.

9 Q What is the status of the well which is the subject
10 of your application?

11 A It is presently plugged and abandoned.

12 Q What is its production history?

13 A It was completed in the Abo and the records show that
14 it produced maybe thirty to sixty days and went to water and
15 the records show that they attempted to squeeze it and weren't
16 able to and plugged back to the Paddock and were not successful
17 there and the well was plugged and abandoned and later
18 reentered and a water disposal well was attempted to be made
19 in the San Andres and they were unsuccessful and the well was
20 replugged.

21 Q Are you having any difficulty with disposal of water
22 in the other well at the moment?

23 A No, sir.

24 Q Then would you proceed with Exhibit Number Two which
25 is a diagrammatic sketch of the well and tell the Commission

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1 how you propose to complete the well?

2 A. We propose to clean out the cement plugs down to a
3 depth of forty-one, forty one which is the top of the five-and-
4 a-half casing and tie back into the five-and-a-half-inch
5 casing and bring it to the surface; clean out the plugs and
6 packers down to a total depth of eighty-five, twenty-eight,
7 drill a four-and-three-quarter-inch hole from eighty-five,
8 twenty-eight to eighty-nine hundred feet and equip the well
9 with two-and-seven-eighths-inch plastic coated tubing and
10 dispose of water in the Lower Abo.

11 Q Will that be taken on a vacuum?

12 A. The offset well is on a vacuum so we expect this
13 to be a vacuum.

14 Q What volume of water will you attempt to dispose of
15 in this well?

16 A. Six to eight thousand barrels a day.

17 Q I believe you testified that the Rice Engineering
18 well was taking six thousand a day, is that correct?

19 A. Yes, sir.

20 Q Now, the five-and-a-half-inch casing that you are
21 going to replace into the well will be cemented, is that
22 correct?

23 A. Yes, sir.

24 Q And at what point do you anticipate placing a
25 packer?

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1 A. We will set a packer at eighty-five hundred feet.

2 Q. And how will you determine whether or not there is
3 any communication of fluids up the hole?

4 A. We will test the five-and-a-half-inch casing seat
5 at eighty-five, twenty-eight and pressure test to determine
6 if there is any water coming around the shoe.

7 Q. What about in the tubing annulus?

8 A. Well, if there is communications around the shoe
9 we will get circulation out the annulus between the tubing
10 and the five-and-a-half.

11 Q. Will you also load the tubing annulus with inert
12 fluid?

13 A. Yes.

14 Q. And will there be a pressure gauge on that?

15 A. Yes.

16 Q. How often will that be checked?

17 A. We can check it daily.

18 Q. Is there any other fresh water in the area?

19 A. Yes, sir, the Ogallala produces, I don't know at what
20 depth but I guess approximately two hundred feet and it is
21 protected in this well by two strings of casing cemented to
22 the surface.

23 Q. All right, now, you have also prepared and we have
24 presented to the Commission as Exhibit Number Three, a log
25 of the well, is that correct?

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1 A. Yes, sir.

2 Q And what does that log disclose concerning the
 3 existing perforations?

4 A It shows the porosity in the perforations in the
 5 Abo from eighty-three, seventy-eight to eighty-four, eighty
 6 but it doesn't show any porosity in the Paddock and the
 7 porosity log was not run on the San Andres.

8 Q Now, if the water is being taken by the well on a
 9 vacuum, where do you believe the water is going to go?

10 A In the open-hole section in the Lower Abo from
 11 eighty-five, twenty-eight to eighty-nine hundred feet.

12 Q Do you expect any of the water to go into the
 13 Abo, Paddock or San Andres perforations?

14 A No, mechanically it won't be able to because we
 15 will have that sealed off with a packer.

16 Q That is at eighty-five hundred feet, is that
 17 correct?

18 A Yes.

19 Q In your opinion if the Commission approves your
 20 application will the completion of the well as you have
 21 testified protect correlative rights and prevent waste?

22 A Yes, sir.

23 Q Were Exhibits One through Three prepared by you
 24 or under your direction?

25 A Yes, sir.

1 MR. BATEMAN: We offer Exhibits One through Three
2 and that completes our testimony.

3 MR. STAMETS: These exhibits will be admitted.

4 (THEREUPON, Applicant's Exhibits One through
5 Three were admitted into evidence.)
6

7 CROSS EXAMINATION

8 BY MR. STAMETS:

9 Q Mr. Bruno, I would like to get to the perforations
10 here now that are shown on Exhibit Two, from fifty-eight,
11 forty-five to eighty-four, eighty. It is my understanding
12 that you will either squeeze these perforations or
13 insure that they are otherwise adequately sealed before
14 starting to inject into this well?

15 A Yes, sir.

16 Q And that the packer will be placed below the lower-
17 most perforations?

18 A Yes, sir.

19 Q Now, as far as the perforations are concerned,
20 would it be agreeable to abide by the decision of the District
21 Supervisor in this matter whether or not these must be
22 squeezed by cement or some other acceptable manner of
23 sealing them off?

24 A Yes, sir.

25 Q The tubing that is to be used in this well, is it to

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1 be plastic coated or internally coated?

2 A. Plastic coated.

3 Q. And then the annular space between the tubing and the
 4 five-and-a-half-inch casing will be loaded and gauged with a
 5 gauge which would show either positive or negative pressure?

6 A. Yes, sir.

7 Q. Do you have a water analysis on the water to be
 8 disposed of?

9 A. I don't have it with me. I have one available,
 10 though.

11 Q. Is it a complete analysis that shows the hydrocarbons
 12 as well as the normal water analyses?

13 A. No, sir, it would just be one that I had run for
 14 corrosion purposes by Tretolite.

15 Q. Under the circumstances I believe a complete water
 16 analyses, including hydrocarbons and organics, would be called
 17 for in this case and the Examiner requests that the same be
 18 submitted at some date before an order will be issued.

19 A. By that do you mean the percentage of hydrocarbons
 20 in the water?

21 Q. What is in the water in the nature of hydrocarbons,
 22 organics, anything that would not be a normal water
 23 constituent in the area of magnesium, salts, calcium carbonate,
 24 this type of thing.

25 MR. STAMETS: We will take a short recess.

1 (THEREUPON, the hearing was in recess.)

2 MR. STAMETS: The hearing will come back to order.

3 Mr. Bateman, the application for salt water disposal
4 appears to be broad enough and we don't propose to readvertise
5 this case.

6 MR. BATEMAN: Thank you.

7 MR. STAMETS: Are there any other questions of the
8 witness?

9 MR. PETERSON: Yes, Mr. Examiner, I might ask a
10 short question.

11
12 CROSS EXAMINATION

13 BY MR. PETERSON:

14 Q Mr. Bruno, you have testified that you would
15 anticipate a zero surface pressure since the Rice well to the
16 north is injecting on a zero surface pressure?

17 A Yes.

18 Q And you would be amenable if the Commission order
19 reflects a zero surface pressure, that would fall in line
20 with your expectation and that would be all right with you?

21 A Eventually we would expect the well -- the well
22 wouldn't stay on vacuum forever, you don't know how many
23 millions of barrels or how long a time but eventually you would
24 have to dispose of water under pressure. I don't know when
25 that would be.

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1 Q At that time would you come back to the Commission,
2 assuming the Commission order reflects a zero surface pressure,
3 come back to the Commission and alter the order?

4 A Would we do that, sir. Yes, we will.

5 MR. PETERSON: Amoco has no further questions. I
6 would like to say that Amoco does not object to this injection
7 well, assuming that the surface pressure is zero, the
8 injection pressure, and that adequate assurances, which I
9 think they have been given, there will be no communication
10 between these perforations in this well in the Upper Abo and
11 Amoco's offsetting Abo production.

12 MR. STAMETS: Along these lines, let me ask a
13 question to the representative of Amoco and the applicant in
14 this case.

15 Recent orders on injection wells have limited
16 the pressure at the surface to such a degree that the pressure
17 at the bottom hole will be no more than seven-tenths of a
18 pound per foot of depth. Would there be any objection to an
19 order issued in this case which would limit the surface
20 pressures to that point?

21 MR. PETERSON: Could I have a moment for consultation,
22 please?

23 MR. STAMETS: Certainly.

24 MR. BRUNO: Seven-tenths of a pound per foot?

25 MR. STAMETS: Yes, we are off the record.

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1 (THEREUPON, a discussion was held
2 off the record.)

3 MR. STAMETS: Back on the record.

4 If Amoco has any information that they could submit
5 to the Commission which we could utilize in determining an
6 appropriate surface pressure limitation or any recommendation
7 which Amoco might have, we will allow ten days.

8 MR. PETERSON: Amoco will be glad to furnish
9 fracture data.

10 MR. STAMETS: And, of course, the same would apply
11 to the applicant in this case.

12 Is there anything further?

13 MR. BATEMAN: Nothing further.

14 MR. STAMETS: The witness may be excused.

15 (THEREUPON, the witness was excused.)

16 MR. STAMETS: If there is nothing further the
17 case will be taken under advisement and the hearing will be
18 adjourned.

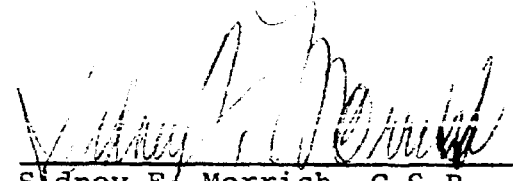
19 (THEREUPON, the hearing was adjourned.)
20
21
22
23
24
25

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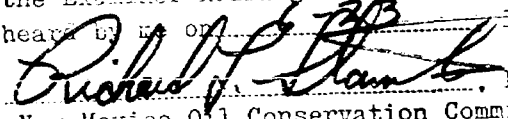
REPORTER'S CERTIFICATE

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


Sidney F. Morrish, C.S.R.

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Phone (505) 982-9212

I do hereby certify that the foregoing is
a complete record of the proceedings
the Examiner hearing of Case No. 5701
heard by me on 12/3/76

New Mexico Oil Conservation Commission



Amoco Production Company

500 Jefferson Building
P.O. Box 2002
Houston, Texas 77001

T. Don Stacy
District Engineering
Manager

July 1, 1976

File: DRC-986.51NM-2687

Re: Case 5701
Salt Water Disposal Well
Lovington Field
Lea County, New Mexico

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

Attention: Richard L. Stamets

Gentlemen:

The amended application of Araho, Inc. for approval to dispose of produced water in its State SWD Well No. 2, located in Unit F of Section 2, Township 17 South, Range 36 East, Lovington Field, Lea County, New Mexico, was heard before Examiner Richard L. Stamets on June 23, 1976. Amoco Production Company had no objection to the application as amended provided that the resultant order limit surface injection pressure to 0 psig. Inasmuch as the Commission ordinarily allows a bottom-hole injection pressure having a 0.7 psi/ft gradient, Amoco was given the opportunity to supply the Commission with parting pressure data for off-setting Lovington-Abo Pool producing wells.

The attached tabulation reflects all well stimulations performed on Amoco's Lovington-Abo Pool completions in which the instantaneous shut-in pressures (ISIP) were recorded in our files. All of the stimulations were acid treatments. It is apparent that in most of the stimulations performed, the formation parted due to the fluid column weight alone.

On the basis of evidence discussed above, we respectfully urge the Commission to limit the surface injection pressure

New Mexico Oil Conservation Commission
July 1, 1976
Page 2

in Case 5701 to 0 psig. This would prevent interference with Amoco's offsetting Abo production that could shorten well lives and reduce oil recovery.

Yours very truly,

A handwritten signature in cursive script, appearing to read "Dan Stacey".

Attachment

cc: Araho, Inc. w/attachment
P. O. Box 5456
Midland, TX 79701

JCH:as

WELL STIMULATIONS
AMOCO'S STATE "E" TRACT 18
LOVINGTON-ABO POOL
LEA COUNTY, NEW MEXICO

Well No.	Date	Interval		ISIP
15	5/70	8290-8297'	Acidize with 500 gal 15% LSTNE	Vacuum
	2/74	8384-8438'	Acidize with 5000 gal 20% LSTNE	Vacuum
		8231-8244'	Acidize with 2000 gal 20% LSTNE	Vacuum
	4/75	8107-8188'	Acidize with 2000 gal 15% clean flow acid	Vacuum
16	1/64	8291-8301'	Acidize with 500 gal LSTNE	Vacuum
		8346-8356'	Acidize with 500 gal LSTNE	Vacuum
	7/64	8230-40', 50-57'	Acidize with 500 gal 15% regular acid	450 psi
	6/70	8230-40', 50-57'	Acidize with 500 gal 15% LSTNE	400 psi
	4/72	8230-40', 50-57'	Acidize with 1500 gal 15% acid	2350 psi
	9/72	8291-8302'	Acidize with 1000 gal 15% NE	Vacuum
	10/72	8370-8380'	Acidize with 500 gal NE	Vacuum
17	1/74	8375-8432'	Acidize with 5000 gal 20% chemically retarded acid	Vacuum
18	3/64	8241-8262'	Acidize with 500 gal 15% LSTNE	2100 psi
	8/73	8241-8392'	Acidize with 5000 gal 15% SRA-1 x 1000 gal SAF Mark II	2000 psi
19	8/72	8340-8350'	Acidize with 750 gal 15% NE	Vacuum
20	4/64	8272-8288'	Acidize with 500 gal 15% LSTNE	1000 psi
	5/68	8384-8400'	Acidize with 500 gal 15% LSTNE	Vacuum
		8338-8348'	Acidize with 500 gal 15% LSTNE	Vacuum
	9/71	8230-34', 40-44', 56-62'	Acidize with 500 gal 15% LSTNE	Vacuum
	5/73	8274-82', 92-99'	Acidize with 2000 gal 20% HCl-NE	Vacuum
	8/74	8338-8348'	Acidize with 500 gal 20% HCl	Vacuum
22	10/71	8292-8316'	Acidize with 1000 gal 15% CRA x 500 gal diverter	2600 psi
23	4/73	8234-8268'	Acidize with 1500 gal 15% LSTNE	Vacuum

*Melba
Unit this well
approved P&A*



**Marathon
Oil Company**

Houston Division
Production Operations US & Canada

PO Box 552
Midland Texas 79701
Telephone 915/682 1626

June 7, 1976

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

Attention: Mr. Joe D. Ramey, Secretary-Director

Gentlemen:

Enclosed herewith is Notice of Transfer of Well whereby Marathon Oil Company has transferred all of its interest in the Marathon State B-4286-A Well No. 2 to Araho, Inc., effective June 7, 1976.

Yours very truly,

MARATHON OIL COMPANY

A. W. Hanley
A. W. Hanley
District Landman

xc: Araho, Inc.

Case 5701

*Araho application to utilize this well
for SWD*

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

Attention: Secretary-Director

Re: Notice of Transfer of Well

Gentlemen:

You are hereby notified that, effective June 7, 1976, 1976, Marathon Oil Company (Transferor), has transferred all of their interest in the following well in the State of New Mexico to Araho, Inc. (Transferee):

<u>Well Name</u>	<u>Location</u>
Marathon State B-4286A	Approximately 2310 feet from the west line and 1,650 feet from the north line of Section 2, Township 17 South, Range 36 East, Lea County, New Mexico

Pursuant to Rule 101(c) of the Commission's General Rules, please approve this transfer and release Transferor of the plugging responsibility for the well listed above.

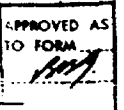
MARATHON OIL COMPANY

By

C. L. Roberts

C. L. Roberts

Onshore Division Operations Manager



Pursuant to Rule 101(b) of the Commission's General Rules, the undersigned Transferee hereby accepts the above described transfer and accepts all responsibility for the transferred well under Transferee's blanket bond (No. A-E-71198-76) on file with the Commission or submitted herewith.

ARAO, INC.

By

Earl R. Bruno

Earl R. Bruno

Vice President

NEW MEXICO OIL CONSERVATION COMMISSION

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

OPERATOR Araho, Inc.		ADDRESS P. O. Box 5456, Midland, Texas 79701	
LEASE NAME State SWD	WELL NO. 2	FIELD Dry Hole	COUNTY Lea
LOCATION UNIT LETTER F ; WELL IS LOCATED 2310 FEET FROM THE West LINE AND 1650 FEET FROM THE North LINE, SECTION 2 TOWNSHIP 17S RANGE 36E NMPM.			
CASING AND TUBING DATA			
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT
SURFACE CASING	13 3/8	349'	450
INTERMEDIATE	9 5/8	3318'	1750
LONG STRING	5 1/2	8528'	1400
TUBING	2 7/8	5800'	3000
NAME OF PROPOSED INJECTION FORMATION San Andres, ABO, Paddock		NAME, MODEL AND DEPTH OF TUBING PACKER Baker Model "V" 5800	
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? Tubing		PERFORATIONS OR OPEN HOLES? Both	
IS THIS A NEW WELL, DRILLED FOR DISPOSAL? oil well		PROPOSED INTERVAL(S) OF INJECTION Perf 5845; 8480; 8528; 8900 Openhole	
IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? deepened from 8528'		HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE? ABO producer-deepen from 8528-8900	
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH			
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA 200'		DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA None	
ANTICIPATED DAILY INJECTION VOLUME (BBLs.) 7000		MINIMUM 5000	
MAXIMUM 9000		OPEN OR CLOSED TYPE SYSTEM Closed	
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 -		IS INJECTION TO BE BY GRAVITY OR PRESSURE? Gravity	
WATER TO BE DISPOSED OF Yes		NATURAL WATER IN DISPOSAL ZONE Yes	
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND) City of Lovington		APPROX. PRESSURE (PSI) 20" Vac.	
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF MILE OF THIS INJECTION WELL			
Note: The 5 1/2" casing liner or tie in string and the 2 7/8" tubing to be run after approval of this application.			
Skelly Oil Company, 2nd Floor, Wall Towers West, Midland, Texas			
Note: Rice Engineering has a SWD well 1/4 mile north of this well, disposing in approximately the same interval.			
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?		EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL	
Yes		Yes	
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)		ELECTRICAL LOG	
Yes		Yes	
		DIAGRAMMATIC SKETCH OF WELL	
		Yes	

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

Caro R. Bruno
(Signature)

Vice-President
(Title)

June 7, 1976
(Date)

NOTE: Should waivers from 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.

NEW MEXICO OIL CONSERVATION COMMISSION

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

OPERATOR Araho, Inc.		ADDRESS P. O. Box 5456, Midland, Texas 79701	
LEASE NAME State SWD	WELL NO. 2	FIELD Dry Hole	COUNTY Lea
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CASING AND TUBING DATA			
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT
SURFACE CASING	13 3/8	349'	450
INTERMEDIATE	9 5/8	3318'	1750
LONG STRING	5 1/2	8528'	1400
TUBING	2 7/8	5800'	3000
NAME OF PROPOSED INJECTION FORMATION San Andres, ABO, Paddock		NAME, MODEL AND DEPTH OF TUBING PACKER Baker Model "V" 5800	
TOP OF FORMATION 8300'		BOTTOM OF FORMATION 8900'	
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? Tubing		PERFORATIONS OR OPEN HOLES Both	
IS THIS A NEW WELL DRILLED FOR DISPOSAL? oil well		PROPOSED INTERVAL(S) OF INJECTION Perf 5845; 8480; 8528; 8900 Openhole	
IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? deepened from 8528'		HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE? ABO producer-deepen from 8528-8900' Yes	
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH			
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA 200'		DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA None	
ANTICIPATED DAILY INJECTION VOLUME (BBL'S.) 7000		MINIMUM 5000	
MAXIMUM 9000		OPEN OR CLOSED TYPE SYSTEM Closed	
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 -		IS INJECTION TO BE BY GRAVITY OR PRESSURE? Gravity	
WATER TO BE DISPOSED OF Yes		NATURAL WATER IN DISPOSAL ZONE Yes	
ARE WATER ANALYSES ATTACHED? Yes		APPROX. PRESSURE (PSI) 20" Vac.	
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND) City of Lovington			
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL Note: The 5 1/2" casing liner or tie in string and the 2 7/8" tubing to be run after approval of this application.			
Skelly Oil Company, 2nd Floor, Wall Towers West, Midland, Texas			
Note: Rice Engineering has a SWD well 1/4 mile north of this well, disposing in approximately the same interval.			
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?		SURFACE OWNER Yes	
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)		EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL Yes	
PLAT OF AREA Yes		ELECTRICAL LOG Yes	
		DIAGRAMMATIC SKETCH OF WELL Yes	

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

Carl R. Bruno
(Signature)Vice-President
(Title)June 7, 1976
(Date)

NOTE: Should waivers from 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.

NEW MEXICO OIL CONSERVATION COMMISSION

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

OPERATOR Araho, Inc.		ADDRESS P. O. Box 5456, Midland, Texas 79701	
LEASE NAME State SWD	WELL NO. 2	FIELD Dry Hole	COUNTY Lea
LOCATION UNIT LETTER F ; WELL IS LOCATED 2310 FEET FROM THE West LINE AND 1650 FEET FROM THE North LINE, SECTION 2 TOWNSHIP 17S RANGE 36E NMPM.			
CASING AND TUBING DATA			
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT
SURFACE CASING	13 3/8	349'	450
INTERMEDIATE	9 5/8	3318'	1750
LONG STRING	5 1/2	8528'	1400
TUBING	2 7/8	5800'	NAME, MODEL AND DEPTH OF TUBING PACKER Baker Model "V" 5800
NAME OF PROPOSED INJECTION FORMATION San Andres, ABO, Paddock		TOP OF FORMATION 8300'	BOTTOM OF FORMATION 8900'
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? Tubing		PERFORATIONS OR OPEN HOLES? Both	PROPOSED INTERVAL(S) OF INJECTION Perf 5845; 8480; 8528; 8900 Openhole
IS THIS A NEW WELL DRILLED FOR DISPOSAL? oil well		IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? ABO producer-deepen from 8528-8900'	
deepened from 8528'		HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE? Yes	
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH			
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA 200'		DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA None	
ANTICIPATED DAILY INJECTION VOLUME (BBL'S.) 7000		MINIMUM 5000	MAXIMUM 9000
OPEN OR CLOSED TYPE SYSTEM Closed		IS INJECTION TO BE BY GRAVITY OR PRESSURE? 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 - Yes		APPROX. PRESSURE (PSI) 20" Vac.	
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND) City of Lovington			
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL Note: The 5 1/2" casing liner or tie in string and the 2 7/8" tubing to be run after approval of this application. Skelly Oil Company, 2nd Floor, Wall Towers West, Midland, Texas Note: Rice Engineering has a SWD well 1/4 mile north of this well, disposing in approximately the same interval.			
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?		SURFACE OWNER Yes	
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)?		EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL Yes	
PLAT OF AREA Yes		ELECTRICAL LOG Yes	
		DIAGRAMMATIC SKETCH OF WELL Yes	

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

Carl R. Brune
(Signature)Vice-President
(Title)June 7, 1976
(Date)

NOTE: Should waivers from 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.

ATWOOD, MALONE, MANN & COOTER
LAWYERS

JEFF D. ATWOOD (1883-1960)
ROSS L. MALONE (1910-1974)

P. O. DRAWER 700
SECURITY NATIONAL BANK BUILDING
ROSWELL, NEW MEXICO 88201
(505) 622-6221

CHARLES F. MALONE
RUSSELL D. MANN
PAUL A. COOTER
BOB F. TURNER
ROBERT A. JOHNSON
JOHN W. BASSETT
ROBERT E. SABIN
RUFUS E. THOMPSON
RALPH D. SHAMAS

June 18, 1976


Mr. Joe Ramey
Director
Oil Conservation Commission
State Land Office Building
Santa Fe, New Mexico 87501

Re: Examination hearing June 23, 1976

Dear Mr. Ramey:

Please find our enclosed Entry of Appearance in
case No. 5701. Thank you and with regards, I am,

Very truly yours,


Charles F. Malone

CFM:skw
enclosure
cc/w encl.: Mr. Guy Buell

BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION)	
)	
OF ARAHO, INC. FOR SALT WATER)	
)	
DISPOSAL, STATE SWB WELL NO. 2,)	No. 5701
)	
LOVINGTON FIELD, LEA COUNTY,)	
)	
NEW MEXICO)	

ENTRY OF APPEARANCE

The undersigned hereby enter their appearance in this matter with Antone Peterson of Houston, Texas on behalf of Amoco Production Company.

ATWOOD, MALONE, MANN & COOTER

By 
Post Office Drawer 700
Roswell, New Mexico 88201

NEW MEXICO OIL CONSERVATION COMMISSION

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

OPERATOR Araho, Inc.		ADDRESS P. O. Box 5456, Midland, Texas 79701			
LEASE NAME State SWD		WELL NO. 2	FIELD Dry Hole		COUNTY Lea
LOCATION UNIT LETTER F ; WELL IS LOCATED 2310 FEET FROM THE West LINE AND 1650 FEET FROM THE North LINE, SECTION 2 TOWNSHIP 17S RANGE 36E NMPH.					
CASING AND TUBING DATA					
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING	13 3/8	349'	450	Circulated	Visual
INTERMEDIATE	9 5/8	3318'	1750	Circulated	Visual
LONG STRING	5 1/2	8528'	1400	3000	Temp. Survey
TUBING	2 7/8	6300'	NAME, MODEL AND DEPTH OF TUBING PACER Baker Model "V" 5800		
NAME OF PROPOSED INJECTION FORMATION San Andres, ABO, Paddock			TOP OF FORMATION 8300'		BOTTOM OF FORMATION 8900'
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? Tubing		PERFORATIONS OR OPEN HOLES Both	PROPOSED INTERVAL(S) OF INJECTION Perf 5845, 8480, 8528, 8900 Openhole		
IS THIS A NEW WELL DRILLED FOR DISPOSAL? Old well		IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? ABO producer - Deepen from 8528-8900'		HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE? Yes	
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH					
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA 200'		DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA None		DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA None	
ANTICIPATED DAILY INJECTION VOLUME (BBLs.) 7000	MINIMUM 5000	MAXIMUM 9000	OPEN OR CLOSED TYPE SYSTEM Closed	IS INJECTION TO BE BY GRAVITY OR PRESSURE? Gravity	APPROX. PRESSURE (PSI) 20" Vac.
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 Yes	NATURAL WATER IN DISPOSAL ZONE Yes	ARE WATER ANALYSES ATTACHED? Yes
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND) City of Lovington					
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL Note: The 5 1/2" casing liner or tie in string and the 2 7/8" tubing to be run after approval of this application.					
Skelly Oil Company, 2nd Floor, Wall Towers West, Midland, Texas					
Note: Rice Engineering has a SWD well 1/4 mile north of this well, disposing in approximately the same interval.					
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?		SURFACE OWNER Yes		EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL Yes	
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)		PLAT OF AREA Yes		ELECTRICAL LOG Yes	
				DIAGRAMMATIC SKETCH OF WELL Yes	

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

Earl R. Bruno
(Signature)

Vice President
(Title)

May 11, 1976
(Date)

NOTE: Should waivers from 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.

NEW MEXICO OIL CONSERVATION COMMISSION
APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

OPERATOR Araho, Inc.		ADDRESS P. O. Box 5456, Midland, Texas 79701			
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CASING AND TUBING DATA					
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING	13 3/8	349'	450	Circulated	Visual
INTERMEDIATE	9 5/8	3318'	1750	Circulated	Visual
LONG STRING	5 1/2	8528'	1400	3000	Temp. Survey
TUBING	2 7/8	6300'	NAME, MODEL AND DEPTH OF TUBING PACKER Baker Model "V" 5800		
NAME OF PROPOSED INJECTION FORMATION San Andres, ABO, Paddock			TOP OF FORMATION 8300'	BOTTOM OF FORMATION 8900'	
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS?		PERFORATIONS OR OPEN HOLES?	PROPOSED INTERVAL(S) OF INJECTION		
Tubing		Both	Perf 5845, 8480, 8528, 8900 Openhole		
IS THIS A NEW WELL DRILLED FOR DISPOSAL? Old well		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?	
deepened from 8528'		ABO producer - Deepen from 8528-		8900' Yes	
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH					
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA 200'		DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA None		DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA None	
ANTICIPATED DAILY INJECTION VOLUME (BBLS.)	MINIMUM	MAXIMUM	OPEN OR CLOSED TYPE SYSTEM	IS INJECTION TO BE BY GRAVITY OR PRESSURE?	APPROX. PRESSURE (PSI)
7000	5000	9000	Closed	Gravity	20" Vac.
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) City of Lovington					
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL Note: The 5 1/2" casing liner or tie in string and the 2 7/8" tubing to be run after approval of this application.					
Skelly Oil Company, 2nd Floor, Wall Towers West, Midland, Texas					
Note: Rice Engineering has a SWD well 1/4 mile north of this well, disposing in approximately the same interval.					
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?		SURFACE OWNER		EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL	
		Yes		Yes	
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)		PLAY OF AREA		ELECTRICAL LOG	
		Yes		Yes	
				DIAGRAMMATIC SKETCH OF WELL Yes	

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

Earl R. Bruno
(Signature)**Vice President**
(Title)**May 11, 1976**
(Date)

NOTE: Should waivers from 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.

Set for hearing - this is for disp. into SA, Paddock
\$ Abo formations and there is production in
all 3 within 2 miles. Case 5704

OPERATOR Araho, Inc.		ADDRESS P. O. Box 5456, Midland, Texas 79701			
LEASE NAME State SWD		WELL NO. 2	FIELD Dry Hole		COUNTY Lea
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TUBING	2 7/8	6300'	NAME, MODEL AND DEPTH OF TUBING PACKER Baker Model "V" 5800		
NAME OF PROPOSED INJECTION FORMATION San Andres, ABO, Paddock			TOP OF FORMATION 8300'	BOTTOM OF FORMATION 8900'	
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? Tubing			PERFORATIONS OR OPEN HOLES? Both	PROPOSED INTERVAL(S) OF INJECTION Perf 5845, 8480, 8528, 8900 Openhole	
IS THIS A NEW WELL DRILLED FOR DISPOSAL? Old well		IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL DRILLED? ABO producer - Deepen from 8528-8900'		HAS THIS WELL BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE? Yes	
DEPTH OF BOTTOM OF DEEPEST 200'		DEPTH OF BOTTOM OF NEXT HIGHER None		DEPTH OF TOP OF NEXT LOWER None	
ANTICIPATED DAILY INJECTION VOLUME (BBL/DAY) 7000	MINIMUM 5000	MAXIMUM 9000	OPEN OR CLOSED TYPE SYSTEM Closed	IS INJECTION TO BE BY GRAVITY OR PRESSURE? Gravity	APPROX. PRESSURE (PSI) 20" Vac.
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 - Yes			WATER TO BE DISPOSED OF Yes	NATURAL WATER IN DISPOSAL ZONE Yes	ARE WATER ANALYSES ATTACHED? Yes
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND) City of Lovington					
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL Note: The 5 1/2" casing liner or tie in string and the 2 7/8" tubing to be run after approval of this application.					
Skelly Oil Company, 2nd Floor, Wall Towers West, Midland, Texas					
Note: Rice Engineering has a SWD well 1/4 mile north of this well, disposing in approximately the same interval.					
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?		SURFACE OWNER Yes		EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL Yes	
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)		PLAT OF AREA Yes		ELECTRICAL LOG Yes	
				DIAGRAMMATIC SKETCH OF WELL Yes	

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

Earl R. Bruno
(Signature)

Vice President
(Title)

May 11, 1976
(Date)

NOTE: Should waivers from 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.

(Core 5701)

Cement Circulated

13 3/8" csg @ 349'

Cement Circulated

9 7/8" csg @ 3318'

Present top of 5 1/2" csg.

Tie-in existing 5 1/2" csg. at 4141 ft.
and cement @ 2005Kb.

2 7/8" tubing on
rock @ 5000'

5845 Perforations
5968

6185
6265 Perforations

8378 Perforations
8480

Present TO 8528

Perforations 5845 to
8480

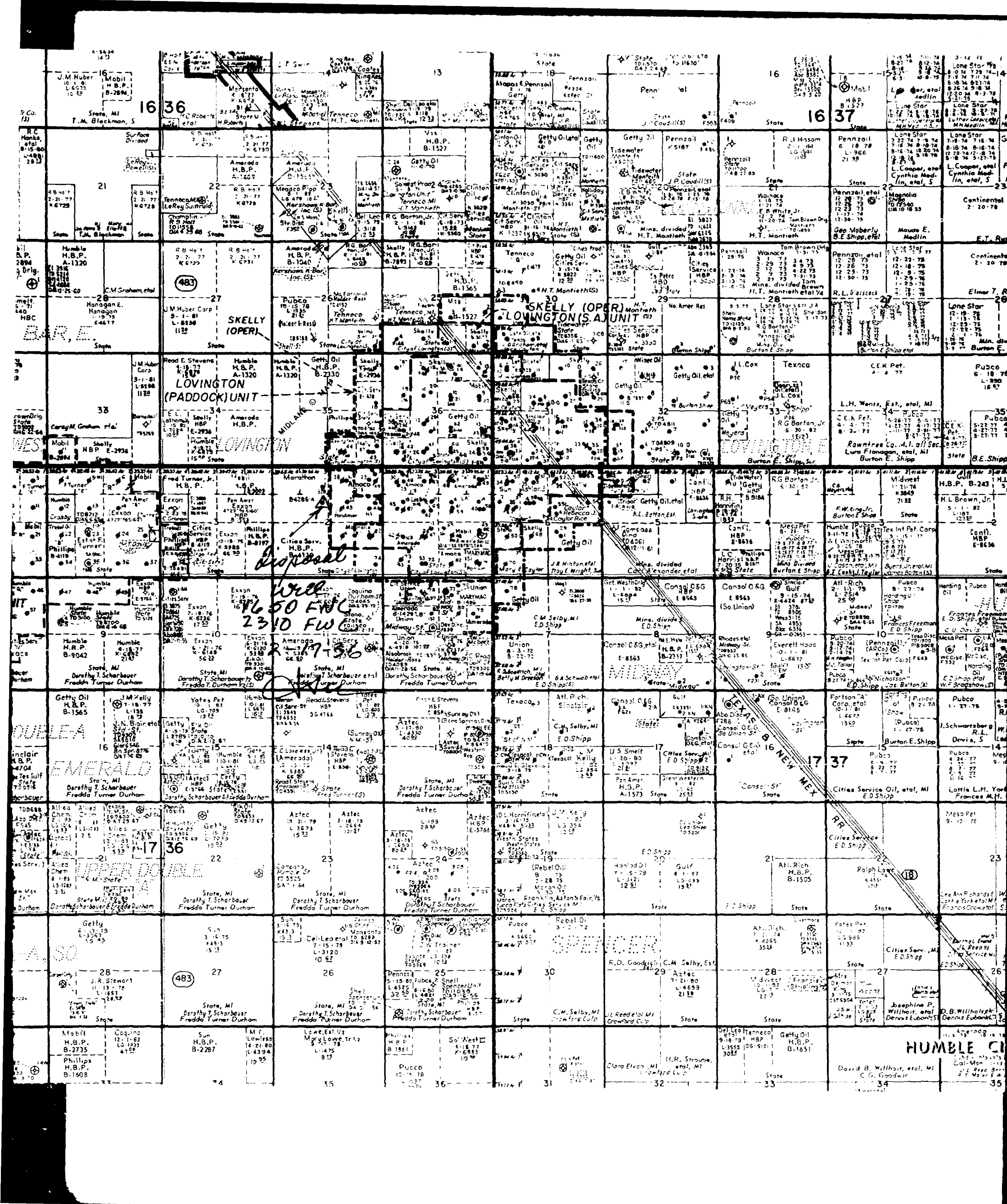
Open hole
8528 to
8900

5 1/2" csg.

Deepen to 8900' - 4 3/4" hole

DIAGRAMMATIC SKETCH OF WELL

ARATO, INC. STATE SWD #2



Cement Circulated

13 3/8" csg @ 349'

Cement Circulated

9 7/8" csg @ 3318'

Present top 7 5/8" csg

Tie-in existing 5 1/2" csg at 4141 ft
and cement w/ 2005 lb.

2 7/8" Tubing on
Packer @ 5800'

- 5845 Perforations
- 5968 Perforations

- 6185
- 6265 Perforations

- 8378 Perforations
- 8480 Perforations

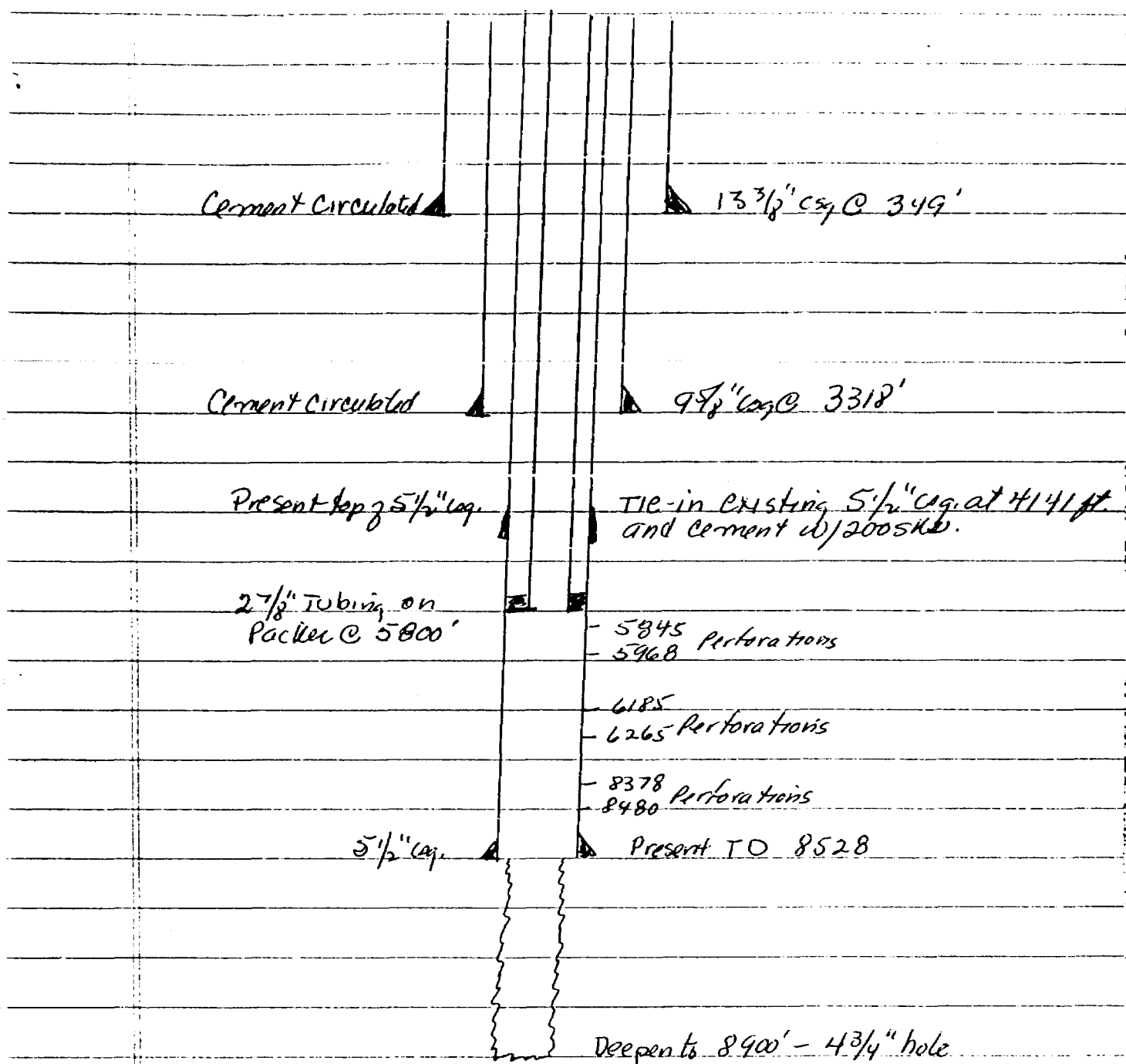
5 1/2" csg

Present TO 8528

Deepen to 8900' - 4 3/4" hole

DIAGRAMMATIC SKETCH OF WELL

ARATO, INC. STATE SUD #2



DIAGRAMMATIC SKETCH OF WELL

ARATO, INC. STATE SUD #2

OIL CONSERVATION COMMISSION
Hobbs DISTRICT

OIL CONSERVATION COMMISSION
BOX 2088
SANTA FE, NEW MEXICO

DATE May 18, 1976

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

Gentlemen:

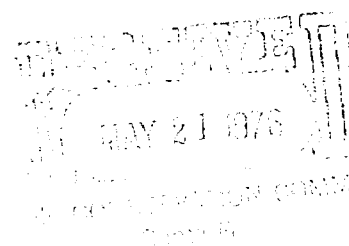
I have examined the application dated _____
for the Araho, Inc. State SWD #2-F 2-17-36
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

O.K.---J.S.

Yours very truly,

Jerry L. Linton



DRAFT

dr/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

(W)
IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE NO. 5701

APPLICATION OF ARAHO, INC. FOR
SALT WATER DISPOSAL, LEA COUNTY,
NEW MEXICO.

Order No. R-~~5251~~ 5251

[Signature]
ORDER OF THE COMMISSION *[Signature]*

[Signature]
BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on June 23,
9⁷⁶, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this August day of Aug, 1976, the Commission,
a quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

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

(2) That the applicant, Araho, Inc., is the owner and operator
of the State SWD Well No. 2, located in Unit F of Section 2,
Township 17 South, Range 36 East, NMPM, Lovington Field, Lea County,
New Mexico.

(3) That the applicant proposes to utilize said well to dispose of produced salt water into the ~~San Andres, Abo and Paddock~~ ^{Abo} formations, with injection into the ~~perforated interval from approximately 5845 feet to 8480 feet and the open-hole interval from approximately 8528 feet to 8900 feet.~~

(4) That the injection should be accomplished through 2 7/8-inch plastic lined tubing installed in a packer set at approximately 8500 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a ~~pressure~~ ^{pressure/vacuum} 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 which will limit the wellhead pressure on the injection well to no more than~~ ^{it should be equipped with a pop-off valve or acceptable substitute which will limit the wellhead pressure on the injection well to no more than} 100 psi.

50K with 100 psi

(6) That the operator should notify the supervisor of the Hobbs district office of the Commission 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, Araho, Inc., is hereby authorized to utilize its State SWD Well No. 2, located in Unit F of Section 2, Township 17 South, Range 36 East, NMPM, Lovington Field, Lea County, New Mexico, to dispose of produced salt water into the ~~San Andres, Abo and Paddock~~ formations, injection to be accomplished through 2 7/8-inch tubing installed in a packer set at approximately 8500 feet, with injection ~~through the 1740~~ ^{perforated interval from approximately 5845 feet to 8480 feet and}

the open-hole interval from approximately 3528 feet to 8900 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/vacuum} ~~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 OK
W¹ V^h
100 psi* } (2) ~~That the injection well or system shall be equipped with a shut-off valve or acceptable substitute which will limit the wellhead pressure on the injection well to no more than 700 psi.~~ 100

(3) That the operator shall notify the supervisor of the Hobbs district office of the Commission 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 Commission'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 Commission Rules and Regulations.

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

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