11·16·95
SWD

maralo inc.

November 1, 1995

Engineering Department
New Mexico Energy & Minerals Department
Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

RE: Form C-108 Application of Maralo, Inc. for Salt Water Disposal, Lea County, New Mexico

Attention: David Catanach

Under the provisions of Rule 701 (B), enclosed please find Form C-108 application of Maralo, Inc. for authorization to inject into the November "16" Well #1 located 2240 feet from the South line and 2310 feet from the East line (Unit J) of Section 16, Township 13 South, Range 38 East, NMPM, Lea County, New Mexico.

Sincerely,

Dorothea Owens
Regulatory Analyst

Enclosures

cc: OCD/Hobbs w/attachments and BHC Sonic log

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501

FORM C-108
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ yes ☐ no

II. Operator: **MARALO, INC.**

Aodress: **P. O. BOX 832, MIDLAND, TEXAS 79702**

Contact party: **RICHARD A. GILL, PETROLEUM ENGINEER** Phone: **(915) 684-7441**

III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? ☐ yes ☒ no
If yes, give the Division order number authorizing the project _____.

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

* VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

* X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)

* XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification

I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: **DOROTHEA LOGAN** Title **REGULATORY ANALYST**

Signature: Dorothea Logan Date: **NOVEMBER 1, 1995**

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal. _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate Division district office.

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

(1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

(1) The name, address, phone number, and contact party for the applicant;

(2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;

(3) the formation name and depth with expected maximum injection rates and pressures; and

(4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

C-108

Application For Authorization To Inject
Maralo, Inc
November "16" Well #1
J 16-13S-38E
Lea County, New Mexico

I. The purpose of completing this well is to make a disposal well for produced Wolfcamp water into the Wolfcamp formation.

Maralo, Inc. plans to convert this well to a water disposal well into the Wolfcamp formation.

II. Operator: Maralo, Inc.
P. O. Box 832
Midland, TX 79702
Richard A. Gill (915) 684-7441

III. Well Data : See Attachment A

IV. This is not an expansion of an existing project.

V. See attached map, Attachment B

VI. There are no wells within the area of review.

VII. 1. Proposed average daily injection volume approximately 1800 BWPD.
Maximum Daily injection volume approximately 2000 BWPD.

2. This will be a closed system.

3. Proposed average injection pressure-unknown
Proposed maximum injection pressure--2000 psi.

4. Sources of injected water would be produced water from the Wolfcamp. (Attachment C)

5. See Attachment C.

VIII. The proposed injection interval is the portion of the Wolfcamp Sand formation consisting of porous Dolomite from estimated depths:

10,018 - 10,023'
10,250 - 10,256'
10,264 - 10,268'
10,281 - 10,286'

10,317 - 10,340'
10,350 - 10,372'
10,376 - 10,384'
10,395 - 10,407'
10,438 - 10,448'
10,452 - 10,468'
10,478 - 10,498'
10,504 - 10,508
10,521 - 10,542'
10,549 - 10,556'
10,579 - 10,595'
10,604 - 10,614'

2. Fresh water zones overlie the proposed injection formations at depths of approximately feet. There are no fresh water zones underlying the formation.

IX. The proposed disposal interval may be acidized with 15% HCL acid.

X. Logs are filed at the Hobbs/OCD office with copy of the C-108 application.

XI. The location of fresh water wells and windmills existing within a one mile radius of the subject location are noted on the map. Water Analysis are attached.

XII. Maralo, Inc. has examined geologic and engineering data and has found that there is no evidence of faulting in the proposed interval.

XIII. Proof of Notice

A. Certified letter sent to the Surface Owner. There are no Offset Operators. (Attachment D)

B. Copy of legal advertisement (Attachment E) attached.

XIV. Certification is signed.

MARALO, INC
NOVEMBER "16" #1
J 16-13S-38E

Attachment A
Page 1

III. Well Data

A. 1. Lease Name/Location
November, Well #1
J 16-13S-38E
2240' FSL & 2310' FEL

2. Casing Strings:
Present Well Condition
13-3/8" 54.5# K55 @ 450' w/450 sx (circ)
8-5/8" 24# & 32# S80 @ 46000' w/1950 sx (circ)
5-1/2" 17# K-55 & N-80 @ 12436' w/250 sx TOC @ 10,320' (Temp. Survey)

3. Proposed well condition:
Casing same as above.
5-1/2" cement squeeze from 10,320' to 4300'.
2-7/8" 6.5# K-55 duo-line plastic coated injection tubing @ +/- 9950'

4. Propose to use Baker nickel-plated Loc-Set packer set at +/- 9950'.

B. 1. Injection Formation: Wolfcamp Dolomite

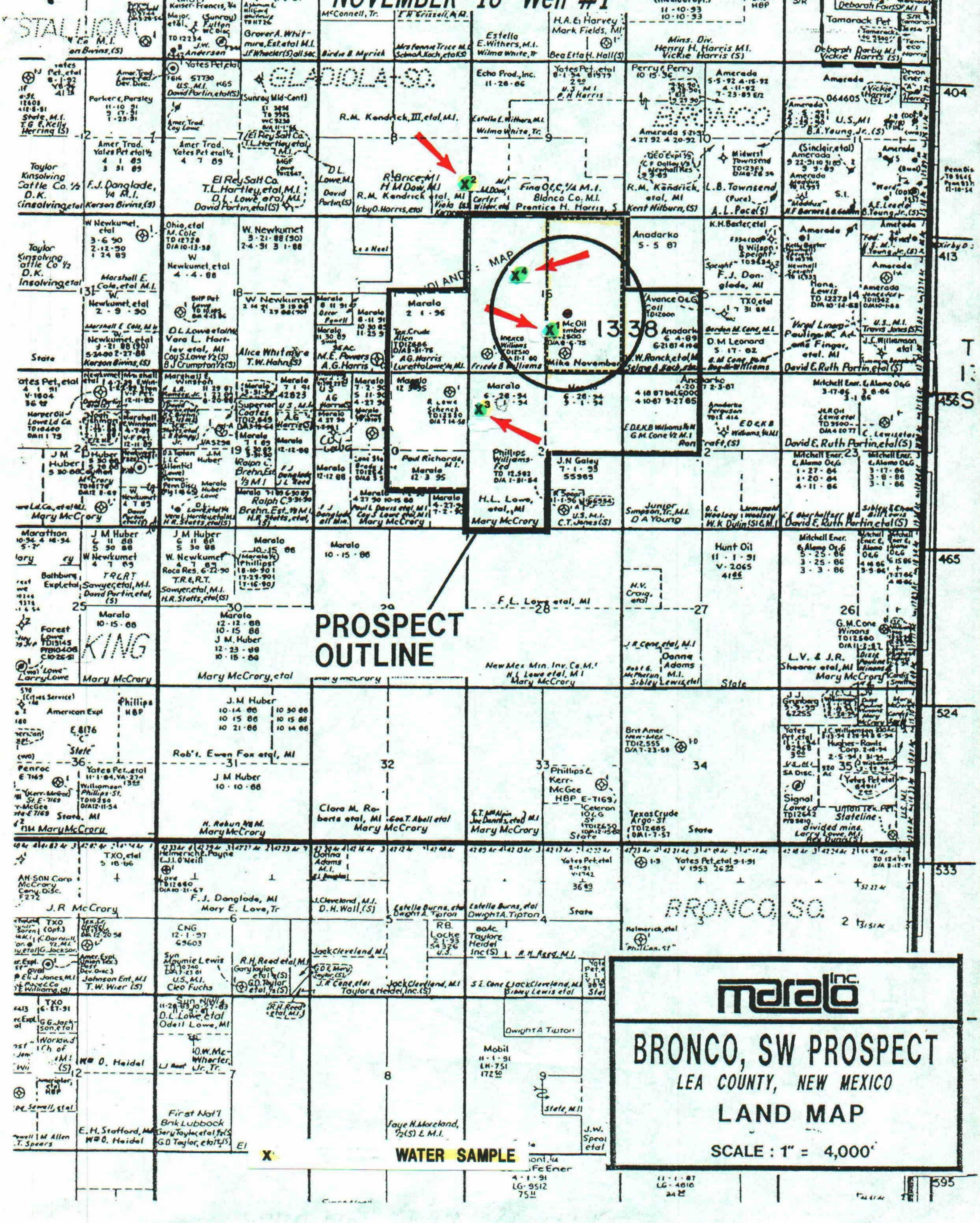
2. Injection Interval will be through perforations at approximately 10018 - 10614'.

3. Well was original drilled as a Wildcat (Devonian Sand) oil well. Tests proved well to be non-commercial. Well will be Wolfcamp Dolomite Water disposal well (10018 - 10614') when work is completed.

4. Additional Perforations: None

5. There are no higher or lower oil or gas zones within the area of interest.

ATTACHMENT "B"
NOVEMBER "16" Well #1



P. O. BOX 1468
MONAHANS, TEXAS 79756
PH. 943-3234 OR 563 1040

Martin Water Laboratories, Inc.

709 W. INDIANA
MIDLAND, TEXAS 79701
PHONE 683-4521

RESULT OF WATER ANALYSES

LABORATORY NO. 1095182
SAMPLE RECEIVED 10-27-95
RESULTS REPORTED 10-31-95

TO: Mr. Bill Hunt
P. O. Box 832, Midland, TX 79702

COMPANY Maralo, Inc. LEASE November 16 #1
FIELD OR POOL
SECTION ___ BLOCK ___ SURVEY ___ COUNTY Lea STATE NM
SOURCE OF SAMPLE AND DATE TAKEN:

X1 NO. 1 Raw water - taken from section 16 windmill well. 10-25-95
X2 NO. 2 Raw water - taken from Harris Orchard water well. 10-25-95
X3 NO. 3 Raw water - taken from North Townsand windmill well. 10-25-95
X4 NO. 4 Raw water - taken from R. N. Williams house windmill well (section 16). 10-25-95

REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0021	1.0020	1.0018	1.0014
pH When Sampled				
pH When Received	6.92	6.68	6.95	6.92
Bicarbonate as HCO_3	220	271	259	259
Supersaturation as $CaCO_3$				
Undersaturation as $CaCO_3$				
Total Hardness as $CaCO_3$	480	616	292	252
Calcium as Ca	146	178	84	82
Magnesium as Mg	28	42	20	12
Sodium and/or Potassium	53	86	101	67
Sulfate as SO_4	202	288	169	123
Chloride as Cl	145	200	88	41
Iron as Fe	0.04	0.04	0.16	0.08
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	793	1,065	721	584
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen				
Hydrogen Sulfide	0.0	0.0	0.0	0.0
Resistivity, ohms/m at 77° F.	8.96	6.69	11.08	14.86
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Nitrate, as N	4.8	8.2	3.5	1.8

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks: The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

Form No. 3

By Waylan C. Martin, M.A.

ATTACHMENT "C"

P. O. BOX 1468
MONAHANS, TEXAS 79756
PH. 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

709 W. INDIANA
MIDLAND, TEXAS 79701
PHONE 683-4521

RESULT OF WATER ANALYSES

TO: Mr. Bill Hunt
P. O. Box 832, Midland, TX 79702-0832

LABORATORY NO. 995170
SAMPLE RECEIVED 9-28-95
RESULTS REPORTED 9-29-95

COMPANY Maralo, Inc. LEASE Lowe "20" #1
FIELD OR POOL Wildcat
SECTION ____ BLOCK ____ SURVEY ____ COUNTY Lea STATE NM
SOURCE OF SAMPLE AND DATE TAKEN:
NO. 1 Produced water - taken from heater-treater. 9-28-95
NO. 2
NO. 3
NO. 4
REMARKS: Wolfcamp

CHEMICAL AND PHYSICAL PROPERTIES

	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0297			
pH When Sampled				
pH When Received	7.98			
Bicarbonate as HCO_3	1,635			
Supersaturation as $CaCO_3$				
Undersaturation as $CaCO_3$				
Total Hardness as $CaCO_3$	3,700			
Calcium as Ca	1,060			
Magnesium as Mg	255			
Sodium and/or Potassium	11,484			
Sulfate as SO_4	3,165			
Chloride as Cl	17,045			
Iron as Fe	0.04			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	34,644			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen,				
Hydrogen Sulfide	413			
Resistivity, ohms/m at 77° F.	0.240			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks: These results show no significant change in the basic characteristics of the water from this well as compared to the water recovered 8-22-95 and reported on laboratory #895175. Therefore, the water continues to have characteristics that do not correlate with our records of natural Wolfcamp water in this area.

Form No. 3

By Waylan C. Martin, M.A.

ATTACHMENT "D"

NOVEMBER "16" WELL #1

OFFSET OPERATORS:

THERE ARE NOT OFFSET OPERATORS

SURFACE OWNER:

FREDERICK D. NOVEMBER
81 SALEM ROAD
EAST HILLS, NEW YORK 11577

(copy of certified letter attached)

November 1, 1995

CERTIFIED MAIL - RETURN RECEIPT

Mr. Frederick D. November
81 Salem Road
East Hills, New York 11577

Dear Sir:

In accordance with Item XIV (Proof of Notice) on the enclosed Form C-108 (New Mexico OCD Application for Authority to Inject), Maralo Inc. hereby furnishes notice to the surface owner of the November "16" lease, Well #1 located 2240 feet from the South line and 2310 feet from the East line (Unit J) of Section 16, Township 13 South, Range 32 East, NMPM, Lea County, New Mexico.

Should you have any questions, please feel free to contact me at (915) 684-7441.

Sincerely,

Dorothea Logan

Dorothea Logan
Regulatory Analyst

Enclosure

cc: Oil Conservaton Division
Santa Fe, New Mexico

ATTACHMENT "E"

AFFIDAVIT OF PUBLICATION

State of New Mexico,
County of Lea.

I, Kathi Bearden

General Manager

of the Hobbs Daily News-Sun, a daily newspaper published at Hobbs, New Mexico, do solemnly swear that the clipping attached hereto was published once a week in the regular and entire issue of said paper, and not a supplement thereof for a period.

of _____

1 weeks.

Beginning with the issue dated

October 15, 1995

and ending with the issue dated

October 15 1995

Kathi Bearden
General Manager

Sworn and subscribed to before

me this 19th day of

October 1995

Marilyn K. Hoffman
Notary Public.

My Commission expires
March 24, 1998
(Seal)

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937, and payment of fees for said publication has been made.

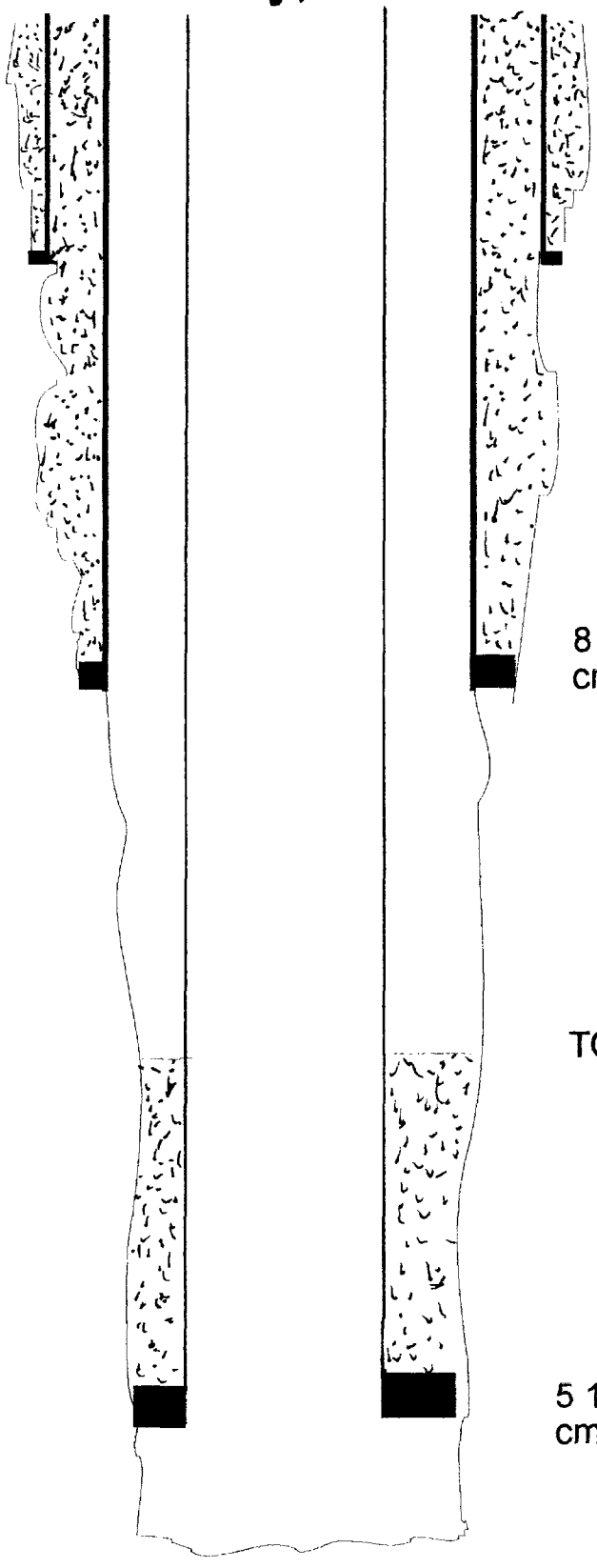
LEGAL NOTICE
OCTOBER 15,1995

Maralo, Inc., P.O. Box 832, Midland, Texas 79702, is filing Form C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division seeking administrative approval for an injection well. The proposed well, the November "16", Well #1 is located 2240' FSL and 2310' FEL, Section 16, Township 13 South, Range 38 East, Lea County, New Mexico, will be used for saltwater disposal. Disposal waters from the Wolfcamp Sand will be re-injected into the Wolfcamp Sand at a depth of 10,018 - 10,614 feet with a maximum pressure of 2000 psi and a maximum rate of 2000 BWPD.

All interested parties opposing the aforementioned must file objections or requests for a hearing with the Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico, 87504, within 15 days. Additional information can be obtained by contacting R.A. Lowery at (915) 684-7441.

Maralo, Inc.
November "16" #1
Wildcat (Devonian)
Lea County, New Mexico

CURRENT



13 3/8" csg @ 450'
cmt w/ 450 sx

8 5/8" csg @ 4,600'
cmt w/ 1950 sx

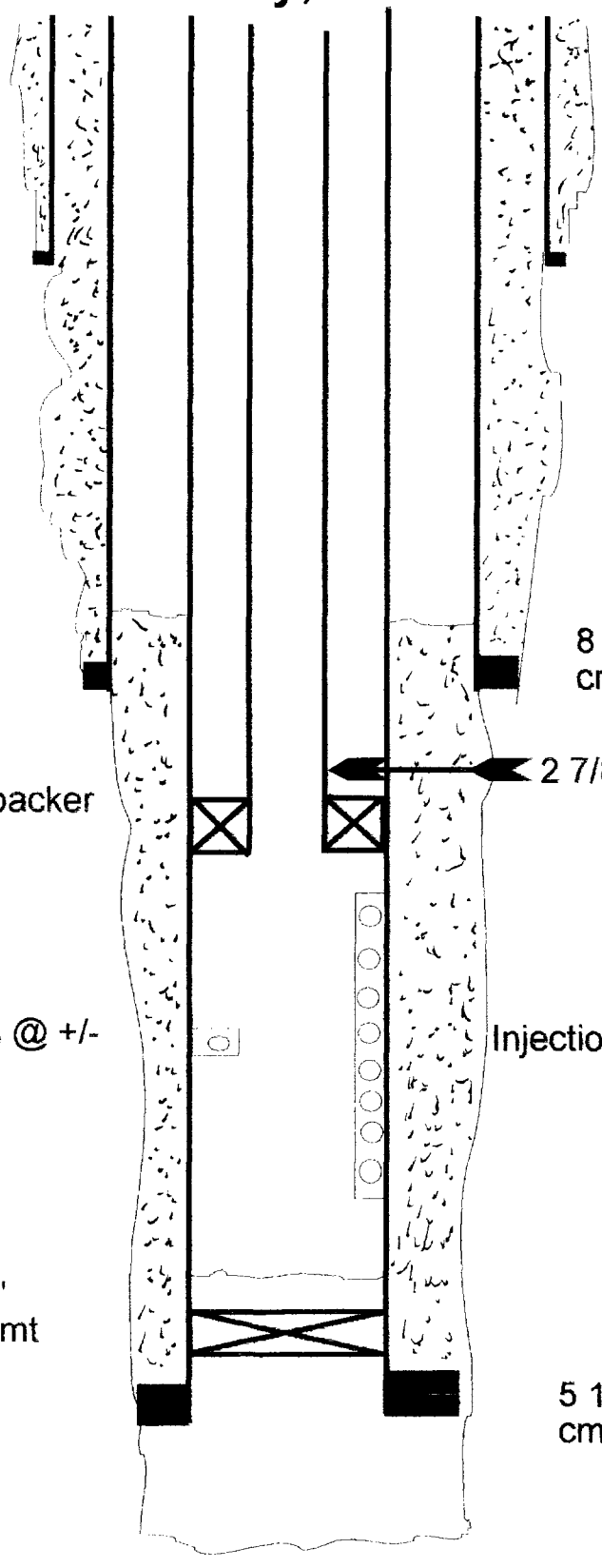
TOC - 10,320'

5 1/2" csg @ 12,469'
cmt w/ 250 sx

TD - 12,537'

Maralo, Inc.
November "16" #1
Wildcat (Devonian)
Lea County, New Mexico

PROPOSED



13 3/8" csg @ 450'
cmt w/ 450 sx

TOC @ 4,300'

8 5/8" csg @ 4,600'
cmt w/ 1950 sx

2 7/8" fiberglass-lined injection tbg

Nickle-plated injection packer
@ +/- 9,950'

Squeeze holes @ +/-
10,320'

Injection Perforations 10,018-10,614'

CIBP @ 12,400'
capped w/ 35' cmt

5 1/2" csg @ 12,469'
cmt w/ 250 sx

TD - 12,537'

SWD-614

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

'95 NOV 6 AM 8 52

11/3/95

GOVERNOR

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88241-1980
(505) 393-6161

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

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

Gentlemen:

I have examined the application for the:

Marala Inc | November 16 | #1 J | 16-13s-38e
Operator | Lease & Well No. | Unit | S-T-R

and my recommendations are as follows:

OK

Yours very truly,

Jerry Sexton
Supervisor, District 1

/ed