

SWD-609



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

195 00 23 44 8 52

GOVERNOR

10/18/95

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	<u>X</u> _____
WFX	_____
PMX	_____

Gentlemen:

I have examined the application for the:

<u>Pogo Producing Co</u>	<u>Red Tank 3D State</u>	<u>#3-H</u>	<u>3D-225-330</u>
Operator	Lease & Well No.	Unit	S-T-R

and my recommendations are as follows:

OK

Yours very truly,

Jerry Sexton
Jerry Sexton
Supervisor, District 1

/ed

CHECKLIST for ADMINISTRATIVE INJECTION APPLICATIONS

Operator: POCO PRODUCING CO. Well: RED TANK '30' STATE NO. 3
Contact: TERRY GALT Title: JR. LANDMAN Phone: 915-682-6822
RICHARD WRIGHT
DATE IN 10-11-95 RELEASE DATE 10-25-95 DATE OUT 11-1-95

Proposed Injection Application is for: WATERFLOOD Expansion Initial

Original Order: R- Secondary Recovery Pressure Maintenance

SENSITIVE AREAS

X SALT WATER DISPOSAL X Commercial Well

WJPP Capitan Reef

Data is complete for proposed well(s)? YES Additional Data Req'd NO

AREA of REVIEW WELLS

1 Total # of AOR

1 # of Plugged Wells

YES Tabulation Complete

YES Schematics of P & A's

YES Cement Tops Adequate

NO AOR Repair Required

INJECTION FORMATION

Injection Formation(s) BELL CANYON 4946-63' Compatible Analysis YES

Source of Water or Injectate AREA PRODUCTION

PROOF of NOTICE

YES Copy of Legal Notice

YES Information Printed Correctly

YES Correct Operators

YES Copies of Certified Mail Receipts

Objection Received

Set to Hearing Date

NOTES: * COMMERCIAL - MAY PIPE IN WATER FROM AREA LEASES
IN WHICH POCO HAS AN INTEREST IN THE FUTURE.

APPLICATION QUALIFIES FOR ADMINISTRATIVE APPROVAL? YES

COMMUNICATION WITH CONTACT PERSON:

1st Contact:	<u>Telephoned</u>	<u>Letter</u>	<u>Date</u>	Nature of Discussion <u></u>
2nd Contact:	<u>Telephoned</u>	<u>Letter</u>	<u>Date</u>	Nature of Discussion <u></u>
3rd Contact:	<u>Telephoned</u>	<u>Letter</u>	<u>Date</u>	Nature of Discussion <u></u>

SWD 10-25-95
607

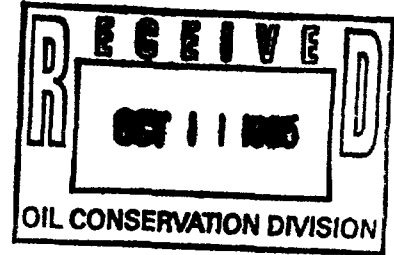


POGO PRODUCING COMPANY

OVERNIGHT MAIL

October 10, 1995

New Mexico Oil Conservation Division
310 Old Santa Fe Trail
Santa Fe, New Mexico 87504
Attention: Mr. David R. Catanach



Re: S.E. Red Tank Prospect NM-607
Lea County, New Mexico
Application for Administrative
Approval to Inject Saltwater
into the Red Tank "30" State #3 Well
located 1980' FNL & 660' FEL
Section 30, T-22-S, R-33-E, N.M.P.M.

Gentlemen:

Pogo hereby respectfully submits two (2) original Applications for Authorization to Inject (Form C-108) pertaining to the captioned well and requests that same be given Administrative Approval.

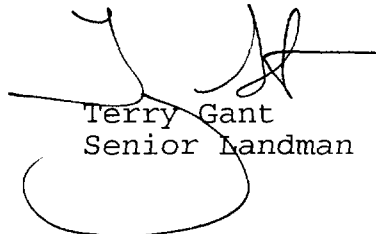
Pursuant thereto, please find enclosed the following:

- (1) Copy of Notification Letter sent to all Offset Leasehold Operators within a one-half (1/2) mile radius of the proposed injection well and to the surface owner upon which such well is located, along with copies of proof of mailing; and
- (2) Proof of Legal Publication.

If you should have any questions regarding the subject Application, please contact the undersigned.

Very truly yours,

POGO PRODUCING COMPANY


Terry Gant
Senior Landman

TG:lf/c:SWD25
Enclosures

cc w/encl.: New Mexico Oil Conservation Division
District I Office
P. O. Box 1980
Hobbs, New Mexico 88240
Attention: Mr. Jerry Sexton



POGO PRODUCING COMPANY

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

September 29, 1995

To: Offset Leasehold Operators and
Surface Owner
(See Attached List)

Re: S.E. Red Tank Prospect NM-607
Lea County, New Mexico
Application for Administrative
Approval to Inject Saltwater
into the Red Tank "30" State #3 Well
located 1980' FNL & 660' FEL
Section 30, T-22-S, R-33-E, N.M.P.M.

Gentlemen:

Pogo Producing Company has applied to the New Mexico Oil Conservation Division for Administrative Approval to inject saltwater into the captioned well.

A copy of the Form C-108 submitted by Pogo to the Division is enclosed.

If you object to and/or request that a hearing be held pertaining to this Application, you must notify the Division within fifteen (15) days from the date of Pogo's Application.

If you have any questions, please contact the undersigned or Mr. Richard L. Wright.

Very truly yours,

POGO PRODUCING COMPANY


Terry Gant
Senior Landman

TG:lf/c:607.571

Enclosure

✓ cc: New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87504-2088
Attention: Mr. David R. Catanach

Attached to Notification Letter dated September 29, 1995
regarding Pogo's Application for Administrative Approval
to Inject Saltwater into the Red Tank "30" State #3 Well

Mitchell Energy Corporation
P. O. Box 4000
The Woodlands, Texas 77837-4000
Attention: Mr. Larry D. Cunningham

Cal-Mon Oil Company
500 West Texas, Suite 1200
Midland, Texas 79701
Attention: Mr. David Overton

C. W. Trainer
8090 E. Kalil Drive
Scottsdale, Arizona 85260

Seaboard Oil Company
P. O. Box 3120
Midland, Texas 79702
Attention: Mr. Mike Fowler

Chevron U.S.A. Inc.
P. O. Box 1150
Midland, Texas 79702
Attention: Mr. Mickey Cohlma

New Mexico State Land Office
P. O. Box 1148
Santa Fe, New Mexico 87504-1148
Attention: Ms. Debbie Padilla

Hanich Brothers Company, Inc.
c/o J. W. Neal
P. O. Box 278
Hobbs, New Mexico 88241-0278

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

- ☐ Addressee's Address
 - ☒ Restricted Delivery
- Consult postmaster for fee.

3. Article Addressed to:
Cal-Mon Oil Company
100 West Texas Suite 1200
Midland, Texas 79701
Attn: Mr. David Overton

4a. Article Number
Z 296 652 441

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
10-2-95

5. Signature (Addressee)
David Overton

8. Addressee's Address (Only if requested and fee is paid)
S. E. Red Tank Prospect

6. Signature (Agent)

PS Form 3811, December 1991 ☆U.S. GPO: 1993-352-714 DOMESTIC RETURN RECEIPT

Thank you for using Return Receipt Service

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
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I also wish to receive the following services (for an extra fee):

- ☐ Addressee's Address
 - ☐ Restricted Delivery
- Consult postmaster for fee.

3. Article Addressed to:
New Mexico State Land Office
P. O. Box 1148
Santa Fe, New Mexico 87504-1148
Attn: Ms. Debbie Padilla

4a. Article Number
Z 296 652 445

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
10-2-95

5. Signature (Addressee)
Debbie Padilla

8. Addressee's Address (Only if requested and fee is paid)
S. E. Red Tank Prospect

6. Signature (Agent)

PS Form 3811, December 1991 ☆U.S. GPO: 1993-352-714 DOMESTIC RETURN RECEIPT

Thank you for using Return Receipt Service

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SENDER:

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I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Mitchell Energy Corporation
P.O. Box 4000
The Woodland, Texas 77387
Attn: Mr. Larry Cunningham

4a. Article Number
Z 296 652 440

4b. Service Type

- ☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

10-3-95

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

S. E. Red Tank Prospect

6. Signature (Agent)

PS Form 3811, December 1991

U.S. GPO: 1993-352-714

DOMESTIC RETURN RECEIPT

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Is your RETURN ADDRESS completed on the reverse side?

SENDER:

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I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Chevron U.S. A. Inc.
P. O. Box 1150
Midland, Texas 79702
Attn: Mr. Mickey Cohlmia

4a. Article Number
Z 296 652 444

4b. Service Type

- ☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

OCT - 2 1995

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

S. E. Red Tank Prospect

6. Signature (Agent)

PS Form 3811, December 1991

U.S. GPO: 1993-352-714

DOMESTIC RETURN RECEIPT

Thank you for using Return Receipt Service.

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SENDER:

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- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

- ☐ Addressee's Address
- ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
C. W. Trainer
8090 E. Kalil Drive
Scottsdale, Arizona 85260

4a. Article Number
Z 296 652 442

4b. Service Type

☐ Registered	☐ Insured
☒ Certified	☐ COD
☐ Express Mail	☐ Return Receipt for Merchandise

7. Date of Delivery
10-2-98

8. Addressee's Address (Only if requested and fee is paid)
S. E. Red Tank Prospect

5. Signature (Addressee)
C. W. Trainer

6. Signature (Agent)

PS Form 3811, December 1991 *U.S. GPO: 1993-352-714

DOMESTIC RETURN RECEIPT

Thank you for using Return Receipt Service.

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
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I also wish to receive the following services (for an extra fee):

- ☐ Addressee's Address
- ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Seaboard Oil Company
P. O. Box 3120
Midland, Texas 79702
Attn: Mr. Mike Fowler

4a. Article Number
Z 296 652 443

4b. Service Type

☐ Registered	☐ Insured
☒ Certified	☐ COD
☐ Express Mail	☐ Return Receipt for Merchandise

7. Date of Delivery
OCT - 2 1995

8. Addressee's Address (Only if requested and fee is paid)
S. E. Red Tank Prospect

5. Signature (Addressee)
M. Boecker

6. Signature (Agent)

PS Form 3811, December 1991 *U.S. GPO: 1993-352-714

DOMESTIC RETURN RECEIPT

Thank you for using Return Receipt Service.

Is your RETURN ADDRESS completed on the reverse side?

SENDER: • Complete items 1 and/or 2 for additional services. • Complete items 3, and 4a & b. • Print your name and address on the reverse of this form so that we can return this card to you. • Attach this form to the front of the mailpiece, or on the back if space does not permit. • Write "Return Receipt Requested" on the mailpiece below the article number. • The Return Receipt will show to whom the article was delivered and the date delivered.		I also wish to receive the following services (for an extra fee): 1. ☐ Addressee's Address 2. ☐ Restricted Delivery Consult postmaster for fee.	
3. Article Addressed to: <i>Hanich Brothers Company, Inc.</i> <i>c/o J. N. Deal</i> <i>P.O. Box 278</i> <i>Hobbs, N.M. 88241-0278</i>		4a. Article Number <i>7 296 652455</i>	
		4b. Service Type ☐ Registered ☐ Insured ☒ Certified ☐ COD ☐ Express Mail ☐ Return Receipt for Merchandise	
5. Signature (Addressee) <i>10-4-95</i> <i>[Signature]</i>		7. Date of Delivery	
6. Signature (Agent) <i>[Signature]</i>		8. Addressee's Address (Only if requested and fee is paid) <i>Application</i> <i>S.E. Red Tank NM607</i>	

Thank you for using Return Receipt Service.

Affidavit of Publication

STATE OF NEW MEXICO)
) ss.
COUNTY OF LEA)

Joyce Clemens being first duly sworn on oath deposes and says that he is Adv. Director of THE LOVINGTON DAILY LEADER, a daily newspaper of general paid circulation published in the English language at Lovington, Lea County, New Mexico; that said newspaper has been so published in such county continuously and uninterruptedly for a period in excess of Twenty-six (26) consecutive weeks next prior to the first publication of the notice hereto attached as hereinafter shown; and that said newspaper is in all things duly qualified to publish legal notices within the meaning of Chapter 167 of the 1937 Session Laws of the State of New Mexico.

That the notice which is hereto attached, entitled
Application For Authorization To Inject Saltwater

and numbered in the

County of New Mexico, was published in a regular and
entire issue of THE LOVINGTON DAILY LEADER and
not in any supplement thereof, ~~the year 1880~~
~~the year 1880~~
same day of the week, for one (1) day

consecutive weeks, beginning with the issue of

October 1 19 95

and ending with the issue of

October 1 19 95

And that the cost of publishing said notice is the
sum of \$ 19.10

which ~~sum~~ has been (Paid), (~~XXXXXX~~) (Assessed) as Court Costs

Subscribed and sworn to before me this 2nd
day of October 1995

Jean Senier
Notary Public, Lea County, New Mexico

My Commission Expires Sept. 28, 1998

**LEGAL NOTICE
PUBLIC NOTICE**

Application for Authorization to Inject Saltwater

Pogo Producing Company, P.O. Box 10340, Midland, Texas 79702-7340 (Contact - Richard L. Wright at 915/682-6822) has applied to the New Mexico Oil Conservation Division for Administrative Approval for Authorization to inject saltwater into its Red Tank "30" State #3 Well, located 1980' FNL and 660' FEL of Section 30, T-22-S, R-33-E, N.M.P.M., Lea County, New Mexico. The purpose of such well will be to dispose of saltwater produced from Pogo's nearby wells. The injection interval will be in the Delaware (Bell Canyon) formation between 4,946' - 4,963' beneath the surface, with an expected maximum injection rate of approximately 3,000 BOWPD with an expected maximum injection pressure of approximately 990 psi. Any interested parties must file objections or requests for a hearing with the New Mexico Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico 87504-2088 within fifteen (15) days from the date of Pogo's Application. Published in the Lovington Daily Leader October 1, 1995.

APPLICATION FOR AUTHORIZATION TO INJECT

Pogo Producing Company
Red Tank "30" State No. 3

- I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ yes ☐ no
- II. Operator: POGO PRODUCING COMPANY
Address: P. O. Box 10340, Midland, Texas 79702
Contact party: RICHARD L. WRIGHT Phone: 915/ 682-6822
- 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: Bill F. Halapeska Title Agent
Signature: *Bill Halapeska* Date: 09/22/95
- 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.

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.

3. 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.

IV. 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.

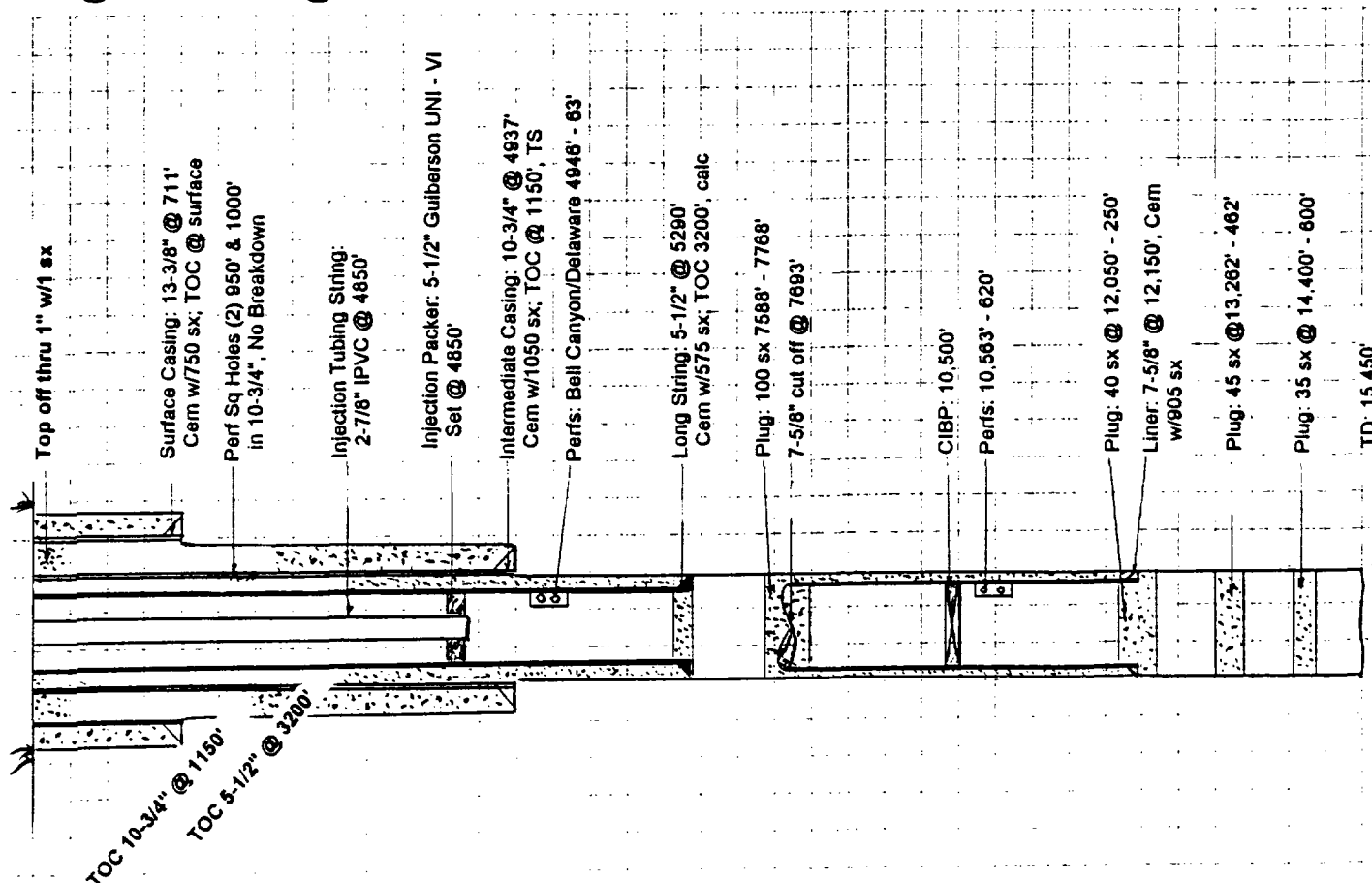
NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

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.

FORM C-108

ITEM 111-A

INJECTION WELL DATA SHEET



TABULAR DATA

(1). LEASE: Red Tank "30" State WELL # 3
 LOCATION: Sec. 30 TWP 22S Range 33E
 County Lea County
 Footage 1980' FNL & 660' FEL

(2). CASING STRINGS:

Surface Casing

Size 13-3/8" Depth 711' Cemented w/ 750 sx.
 TOC surface Determined by circ 30 sx
 Hole size 17-1/2"

Intermediate Casing

Size 10-3/4" Depth 4937' Cemented w/ 1050 sx.
 TOC 1150' Determined by Temp Survey
 Hole size 12-1/4"

Note: spotted 1 bbl cement @ surface thru 1"
 Long String

Size 5-1/2" Depth 5290' Cemented w/ 575 sx.
 TOC 3200' Determined by calculated
 Hole size 9-1/2"

Injection interval, from 4946' to 4963 Ft.

(3). INJECTION TUBING STRING:

Size 2-7/8 in., coated/lined with PVC
 Setting depth 4850 Ft.

(4) INJECTION PACKER:

Size 5-1/2 in.; Make/Model Guiberson UNI-VI
 Setting depth 4850 Ft.

ITEM 111-B

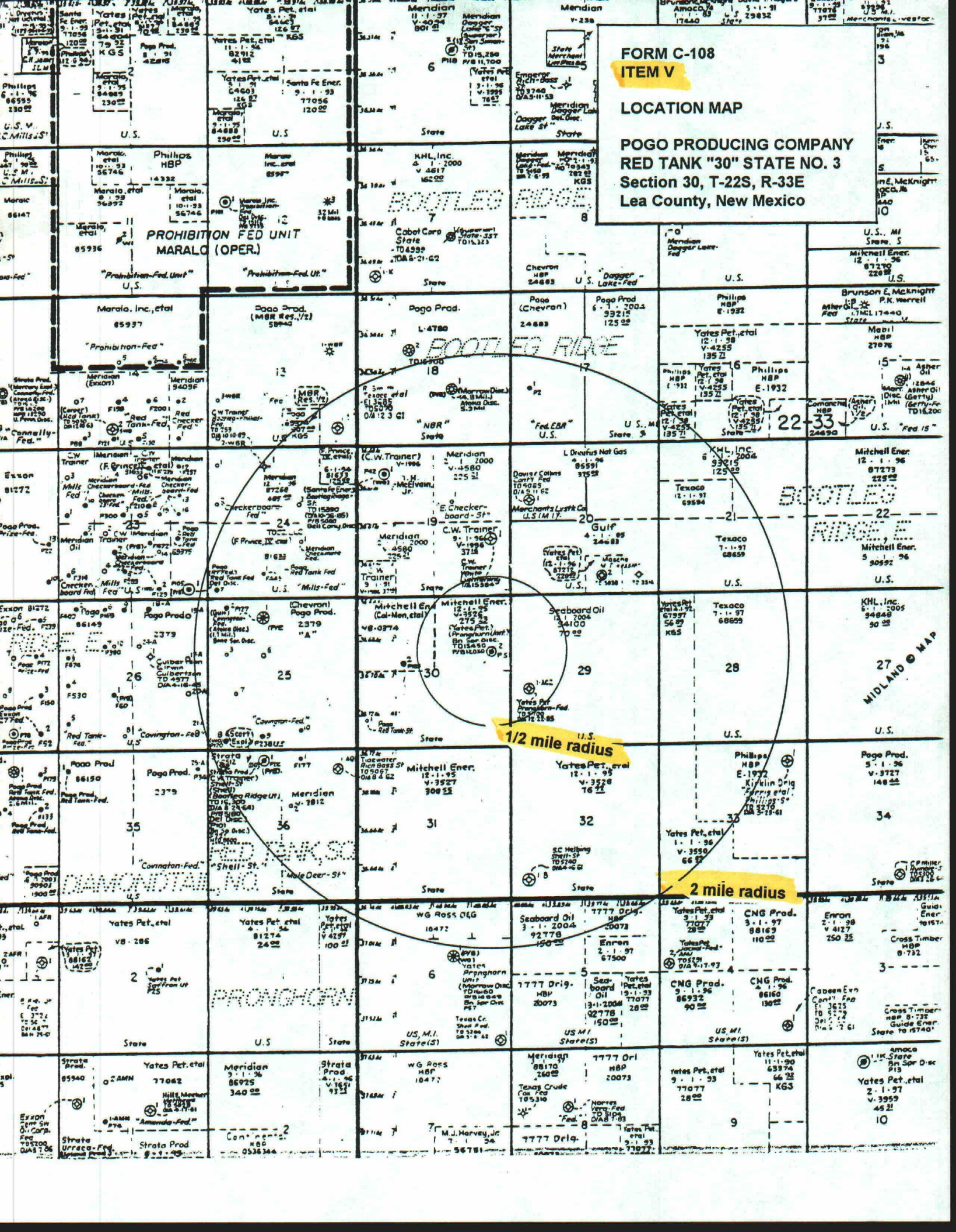
INJECTION WELL DATA

- (1). Injection formation: Delaware (Bell Canyon)
Field/Pool: Red Tank West
- (2). Injection interval; From 4946 Ft. to 4963 Ft.
Perforated XX Open Hole
- (3). Original purpose well drilled -- Morrow test @ 15,000'+
- (4). Other perforated intervals; XX Yes No
Squeezed with sx., or isolated by PB with CIBP and multiple
cement plugs perforations @10,563' - 10,620'
- (5). Oil or gas productive zone(s):
Next higher: none
Next lower: Lower Cherry Canyon, 6500'+

FORM C-108
ITEM V

LOCATION MAP

POGO PRODUCING COMPANY
RED TANK "30" STATE NO. 3
Section 30, T-22S, R-33E
Lea County, New Mexico



ITEM V1

WELL DATA - AREA OF REVIEW

(1). Location: 1980' FSL & 660' FWL, Sec 29, T-22S, R-33E, Lea County
Operator: Yates Petroleum Lease: Pronghorn Federal ACZ Well # 1
Well type: Oil Gas DSA XX Total depth 5700 ft.
Date drilled: 12/22/85
Completion Data: ran 1 DST, Delaware Sand, 4890' - 4990'; ran 20" @ 40';
10-3/4" @ 550' with 550 sx; D & A

Plugged XX Date: 12/22/85 (Schematic attached)

(). Location: _____
Operator: _____ Lease: _____ Well # _____
Well Type: Oil _____ Gas _____ DSA _____ Total Depth: _____ ft.
Date Drilled: _____
Completion Data: _____

Plugged _____ Date _____ (Schematic attached)

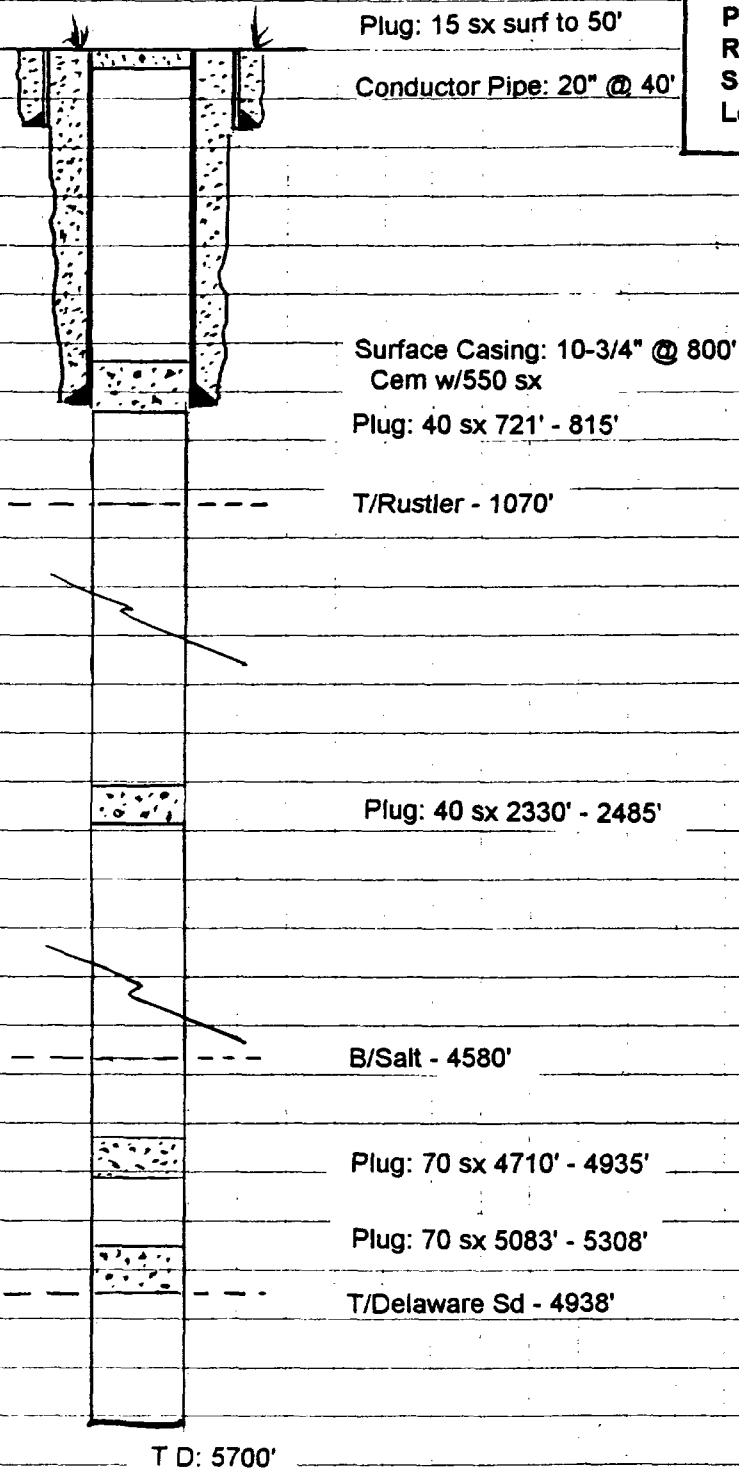
(). Location: _____
Operator: _____ Lease: _____ Well # _____
Well Type ; Oil _____ Gas _____ DSA _____ Total Depth: _____ ft.
Date Drilled: _____
Completion Data: _____

Plugged _____ Date _____ (Schematic attached)

FORM C-108
ITEM VI

PLUGGING DIAGRAM
Yates Pet. - No. 1 Pronghorn "ACZ" Fed.

POGO PRODUCING COMPANY
RED TANK "30" STATE NO. 3
Section 30, T-22S, R-33E
Lea County, New Mexico



OPERATIONAL DATA

(1). Average expected injection rate: 1000 BWPD; maximum anticipated rate: 3000 BWPD

(2). Closed system

(3). Estimated average injection pressure: 750 psi.

Estimated maximum pressure: 990 psi.

(4). Source of injection water: Bone Spring and Lower Delaware Sand production
from nearby Pogo operated wells

Analysis of waters attached. EXHIBITS I & II

(5). Analysis of injection zone water attached.

Data source: EXHIBIT III; test of injection zone water from subject well

during Mitchell Energy Corp. test 2/26/93

GEOLOGICAL DATA

INJECTION ZONE

Lithological description: sandstone, lt gray, fine to v fine gr,
poorly consol, silty, poor calc cement

Geological name: Delaware, Bell Canyon

Zone thickness: 17 ft.; Depth: 4946 ft.

FRESH WATER SOURCES

Geological name: Santa Rosa

Depth to bottom of zone: +/-650 ft.

ITEM IX

STIMULATION PROGRAM (~~Proposed~~ ^{XXXXXXXXXX}) PERFORMED

ACIDIZE:

Volume: 1500 gal Type acid: 15% NEFE HCl

Rate: 4.5 BPM; Misc. Ball Sealers

FRACTURE:

Fluid volume: 26,000 gal.; Type: XLGW

Prop type: 12/20 sand Volume (#): 79,800

Rate: 12 BPM; Conductor: 2-7/8 in.

Misc. _____

LOGGING PROGRAM

Copy of DLL/MSFL log included in attachments

FRESH WATER ANALYSIS

Date sampled:

HYDROLOGY

COMMERCIAL INTENTION

Initially, only water from Pogo operated wells will be disposed of in subject well (system). Eventually, Pogo could take water from other leases in the area operated by someone else, but in which Pogo has a working interest. Only piped water will be taken into this system.

EXHIBIT I

Endura Products

P.O. Box 3394 Midland, Texas
Phone (915) 684-4233 * Fax (915)

WATER ANALYSIS

FORM C-108
ITEM VII(4)

**ANALYSIS - BONE SPRING
PRODUCED WATER**

**POGO PRODUCING COMPANY
RED TANK "30" STATE NO. 3
Section 30, T-22S, R-33E
Lea County, New Mexico**

Date 8/22/95 ~~Name~~ Rep **TERRY SOLANSKY**
Sampling Point/Date **WELL HEAD - 8/21/95**
Company **POGO PRODUCING**
Field **Lease RED TANK "30"**

Code **W-0262**
State **NEW MEXICO**
County **EDDY**
Well **STATE #1**

DISSOLVED SOLIDS

<u>CATIONS</u>	mg/l	me/l
Sodium, Na ⁺ (Calc.)	73,692	3,204
Total Hardness as Ca ⁺⁺	6,120	0
Calcium, Ca ⁺⁺	5,680	284
Magnesium, Mg ⁺⁺	268	22
Barium, Ba ⁺⁺	0	0
Iron (Total) Fe ⁺⁺⁺	185	10

ANIONS

Chlorides, Cl ⁻	122,500	3,451
Sulfate, SO ₄ ⁻	2,375	49
Carbonate, CO ₃ ⁻	0	0
Bicarbonate, HCO ₃ ⁻	1,244	20
Sulfide, S ⁻	0	0
Total Dissolved Solids (Calc.)	205,944	

OTHER PROPERTIES

pH ⁻	6.260
Specific Gravity, 60°/60 F	1.112
TURBIDITY	>500

SCALING INDICIES

<u>TEMP, F</u>	<u>CA CO₃</u>	<u>CASO₄*2H₂O</u>	<u>CA SO₄</u>	<u>BA SO₄</u>
80	0.9815	0.1097	-0.1791	-29.3701
120	1.3955	0.1015	-0.0069	-29.5509
160	2.0301	0.0799	0.1541	-29.7755

EXHIBIT II

Nutro Products Cor

P.O. Box 21187 Houston, Texas 772
Phone (713) 675-3421 * Fax (713) 675

FORM C-108
ITEM VII(4)

ANALYSIS - LOWER DELAWARE
PRODUCED WATER

POGO PRODUCING COMPANY
RED TANK "30" STATE NO. 3
Section 30, T-22S, R-33E
Lea County, New Mexico

WATER ANALYSIS

Date 06/08/95 Nutro Rep TERRY SOLANSKY

Sampling Point

Company POGO PRODUCING

Field

Lease COVINGTON "A"

County

Well 9

DISSOLVED SOLIDS

<u>CATIONS</u>	mg/l	me/l
Sodium, Na ⁺ (Calc.)	82,156	3,572
Total Hardness as Ca ⁺⁺	26,560	0
Calcium, Ca ⁺⁺	20,960	1,048
Magnesium, Mg ⁺⁺	3,415	285
Barium, Ba ⁺⁺	2	0
Iron (Total) Fe ⁺⁺⁺	30	2

ANIONS

Chlorides, Cl ⁻	174,000	4,901
Sulfate, SO ₄ ⁻	225	5
Carbonate, CO ₃ ⁻	0	0
Bicarbonate, HCO ₃ ⁻	49	1
Sulfide, S ⁻	0	0
Total Dissolved Solids (Calc.)	280,837	

OTHER PROPERTIES

pH [*]	5.200
Specific Gravity, 60°/60 F	1.179
TURBIDITY	>500

Remarks SAMPLE TAKEN ON 05/02/95

SCALING INDICIES

<u>TEMP, F</u>	<u>CA CO₃</u>	<u>CASO₄*2H₂O</u>	<u>CA SO₄</u>	<u>BA SO₄</u>
80	0.1101	-0.1998	-0.5770	0.0270
120	0.6873	-0.2122	-0.4089	-0.1128
160	1.5588	-0.2267	-0.2508	-0.3171

EXHIBIT III

FORM C-108
ITEM VII(5)ANALYSIS - INJECTION ZONE
PRODUCED WATERPOGO PRODUCING COMPANY
RED TANK "30" STATE NO. 3
Section 30, T-22S, R-33E
Lea County, New Mexico

MARTIN WATER LABORATORIES, INC.

P.O. Box 1488 Phone 843-3234 or 563-1040
Monahans, Texas 79758

RESULT OF WATER ANALYSES

709 W. Indiana Phone 683-4531
Midland, Texas 79701TO: Mr. Dan Tuffly
400 West Illinois, Suite 1000
Midland, TX 79701LABORATORY NO. 3938
SAMPLE RECEIVED 3-3-93
RESULTS REPORTED 3-4-93

API WATER ANALYSIS REPORT FORM

Company Mitchell Energy Corporation			Sample No.	Date Sampled 2/26/93
Field Bootleg Ridge	Legal Description		County or Parish Lea	State NM
Lease or Unit Big Horn "30" State	Well #1	Depth 4946-4963	Formation Delaware	Water, B/D
Type of Water (Produced, Supply, etc.) Produced		Sampling Point		Sampled By

DISSOLVED SOLIDS

CATIONS

	mg/l	me/l
Sodium, Na (calc.)	61,383	2,668.8
Calcium, Ca	20,000	1,000.0
Magnesium, Mg	2,795	230.0
Barium, Ba	0	0.0

ANIONS

Chloride, Cl	137,777	3,885.3
Sulfate, SO ₄	566	11.8
Carbonate, CO ₃	0	0.0
Bicarbonate, HCO ₃	105	1.7

Total Dissolved Solids (calc.)

222,625

Iron, Fe (total) 18.0

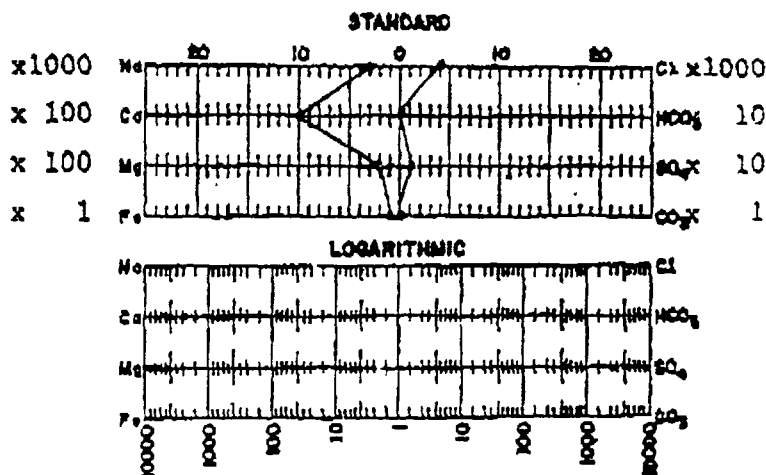
0.7

Sulfide, as H₂S 0.0

OTHER PROPERTIES

pH 5.91
Specific Gravity, 60/60 F. 1.1481
Resistivity (ohm-meters) 77° F. 0.053
Total Hardness, as CaCO₃ 61,500

WATER PATTERNS - me/l



REMARKS & RECOMMENDATIONS: The above results show this water to have a slightly lower level of sodium chloride than our predominant records in the area and also the water from Comanche State "17" #2. However, the characteristics are still those expected from natural Delaware; therefore, it is indicated to be all, or essentially all, natural Delaware.

FORM C-108
ITEM XI

ANALYSIS - SANTA ROSA WATER

POGO PRODUCING COMPANY
RED TANK "30" STATE NO. 3
Section 30, T-22S, R-33E
Lea County, New Mexico

EXHIBIT 4

ical analyses of water from test hole H-5
anta Rosa Sandstone, sample taken 5/24/78

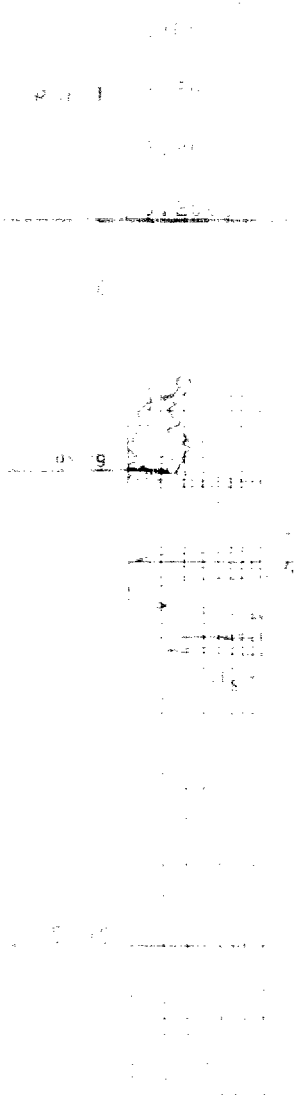
Alkalinity Field (mg/l as HCO ₃)	200
Bicarbonate FET-FLD (mg/l as HCO ₃)	240
Nitrogen, NO ₂ + NO ₃ Dissolved (mg/l as N)	0.36
Hardness (mg/l as CaCO ₃)	150
Hardness, noncarbonate(mg/l as CaCO ₃)	150
Calcium Dissolved (mg/l as Ca)	56
Magnesium, Dissolved (mg/l as MG)	51
Sodium, Dissolved (mg/l as Na)	280
Potassium, Dissolved (mg/l as K)	25
Chloride, Dissolved (mg/s as CL)	120
Sulfate, Dissolved (mg/l as SO ₄)	530
Fluoride, Dissolved (mg/l as F)	1.2
Silica, Dissolved (mg/l as SiO ₂)	11.0
Boron, Dissolved (ug/l as B)	890
Solids Residue at 105 Deg C, Dissolved (mg/l)	1200

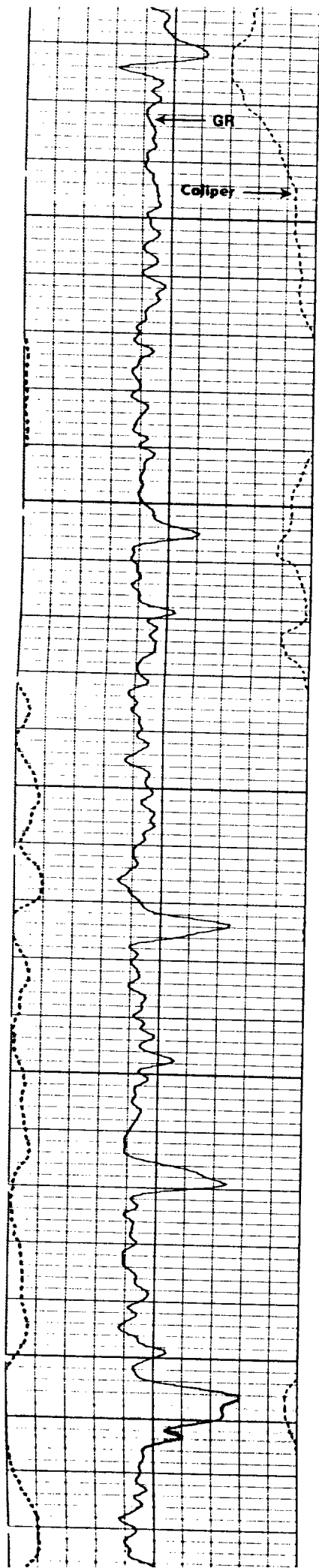
Schlumberger

SIMULTANEOUS
DUAL LATEROLOG
MICRO-STL

DATE: 10/1/68
WELL: 10-10-68
LOG NO: 10-10-68
LOG TYPE: DUAL LATEROLOG
LOG SCALE: MICRO-STL

10-10-68

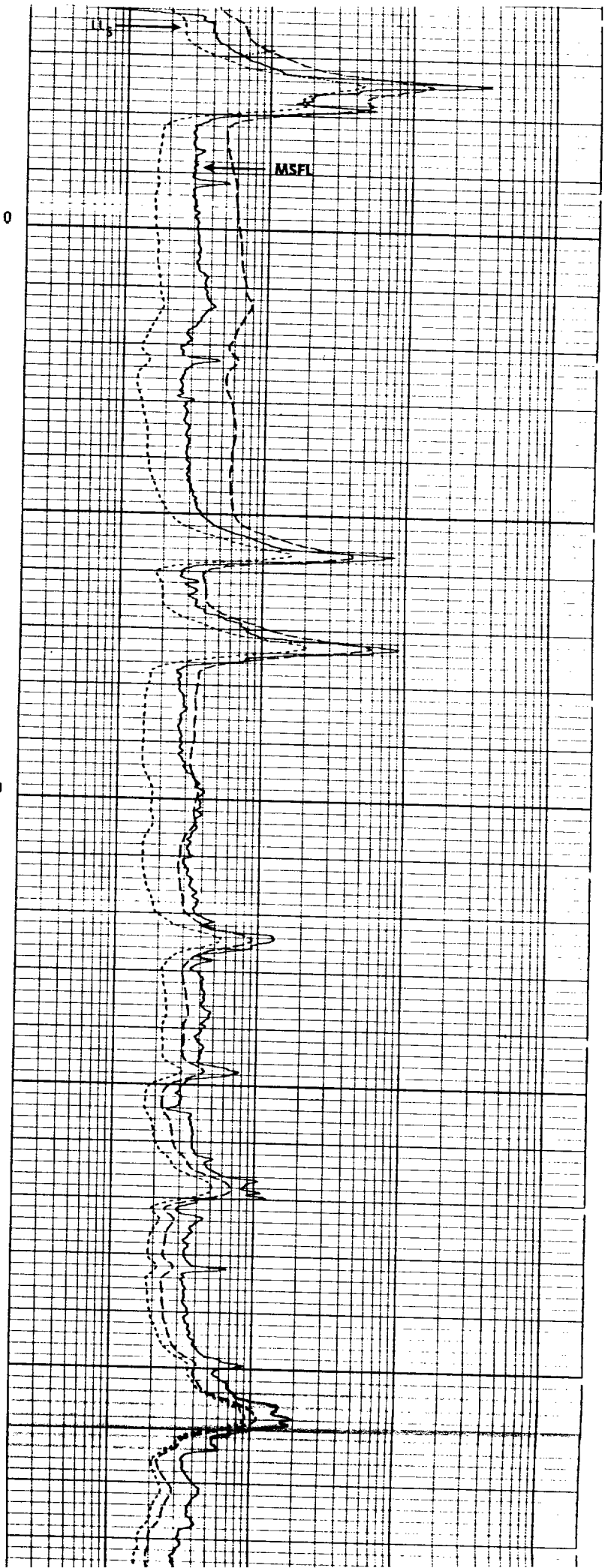


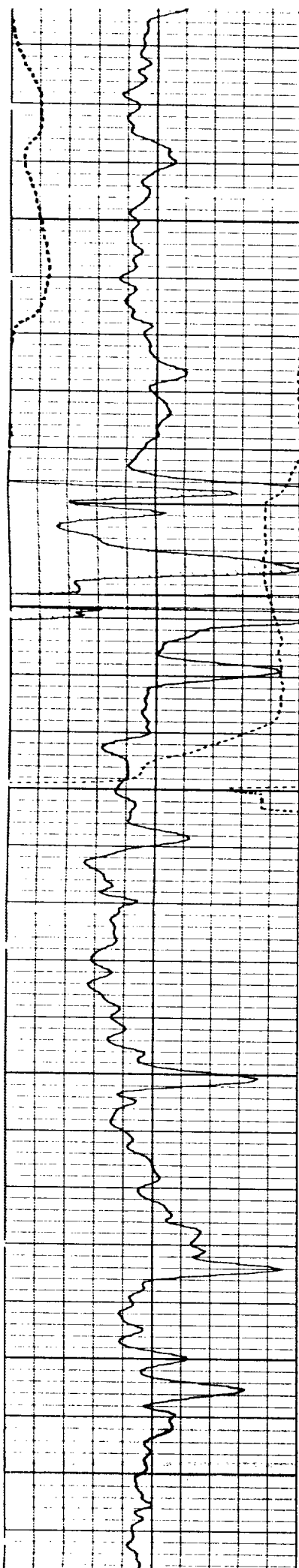


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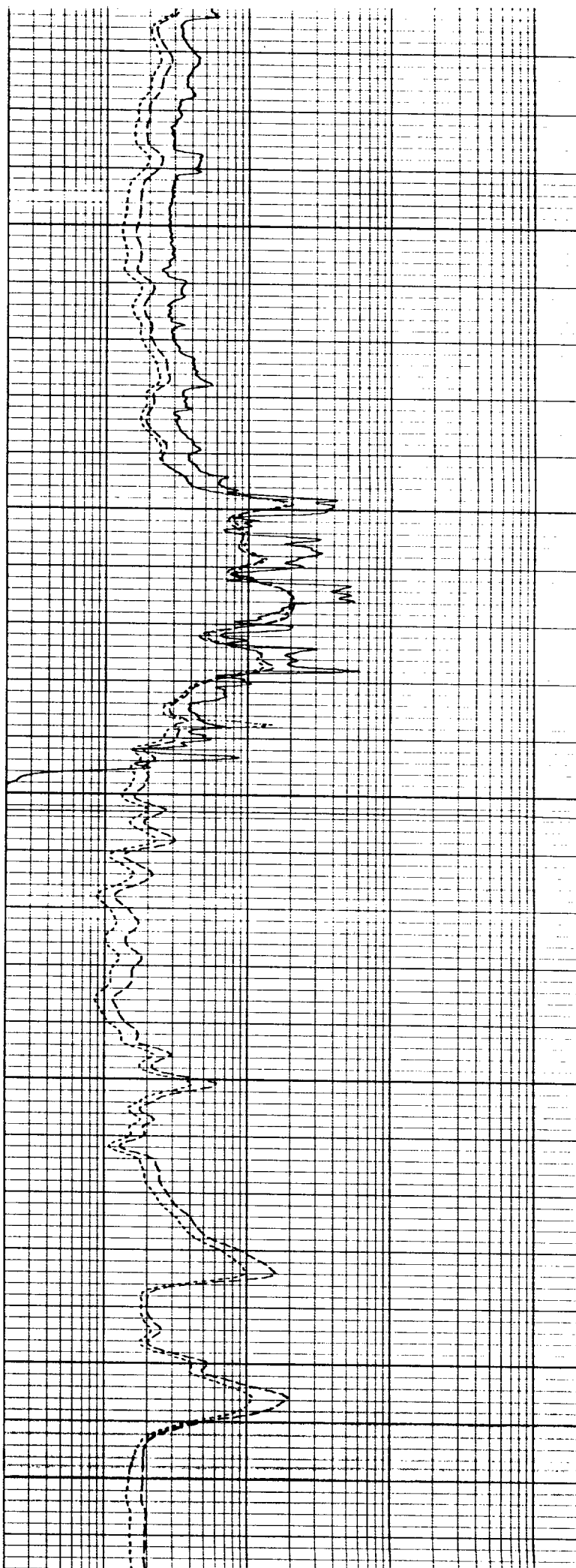
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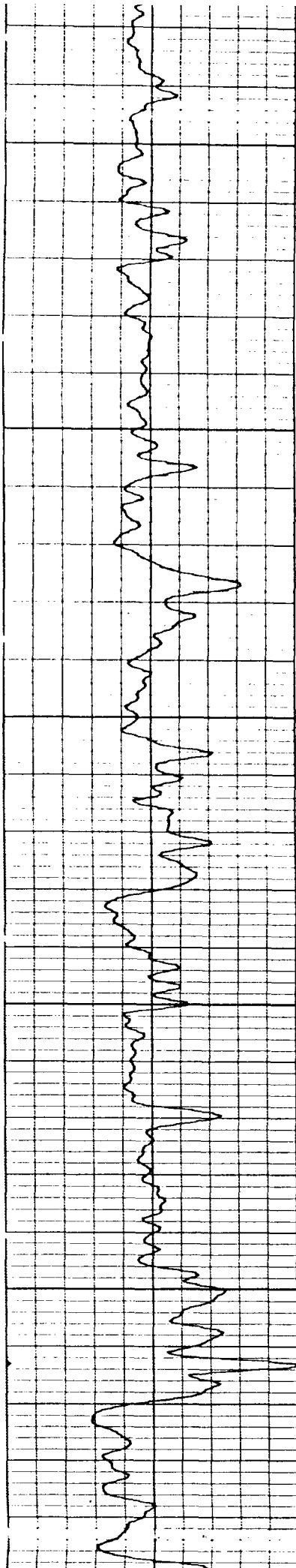




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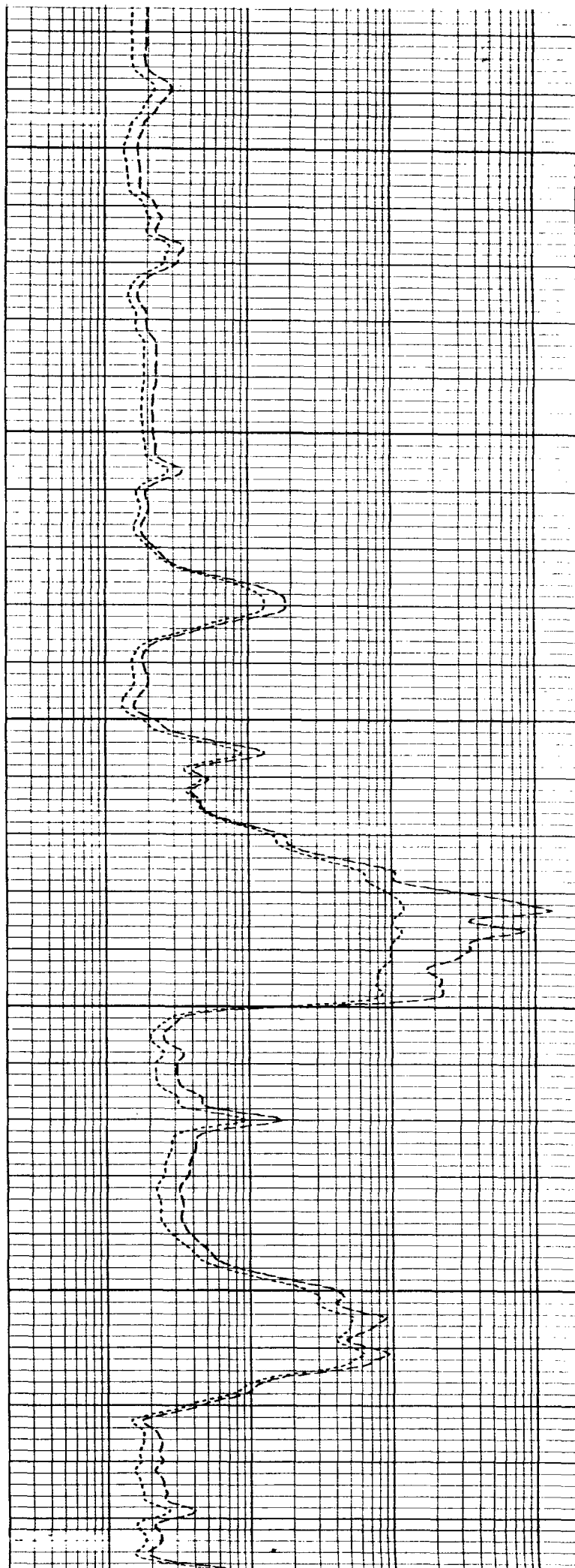
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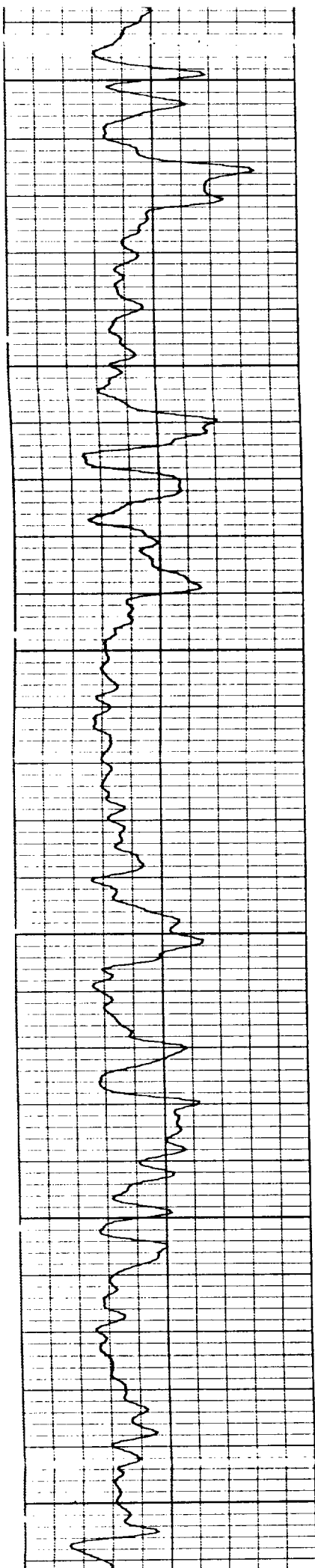


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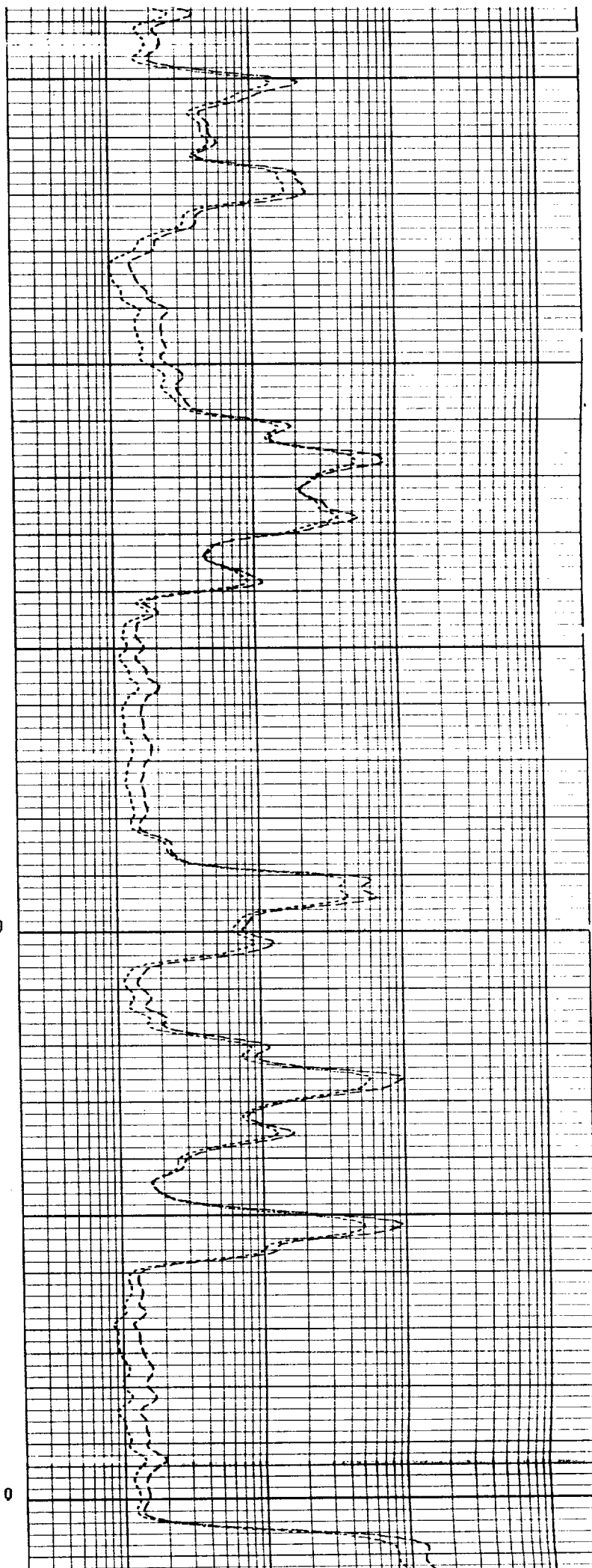
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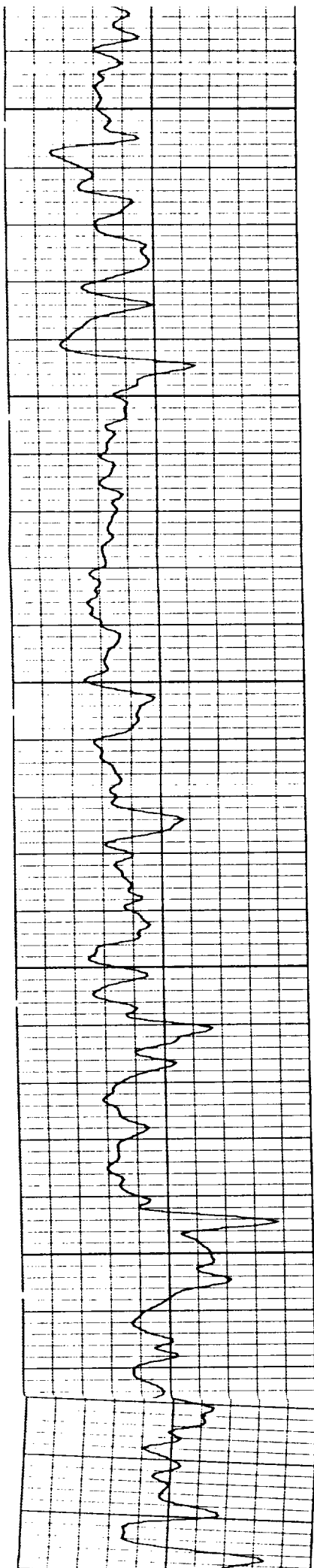


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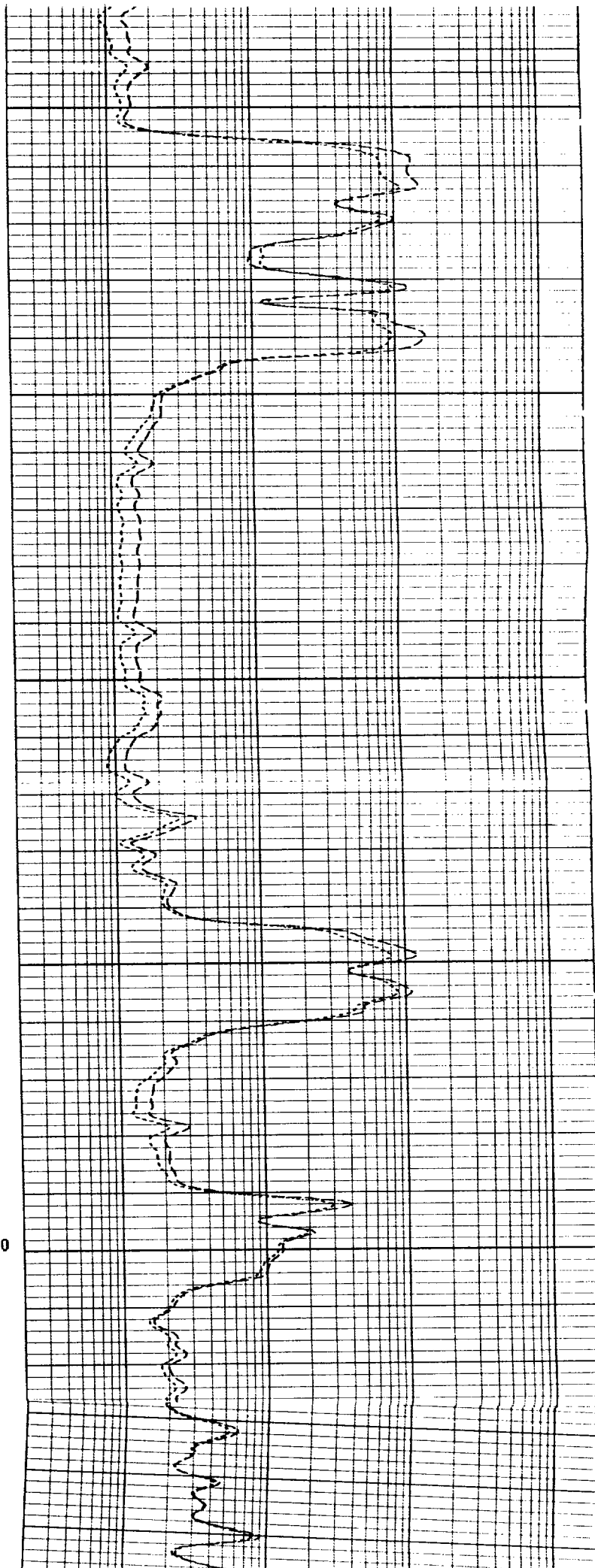
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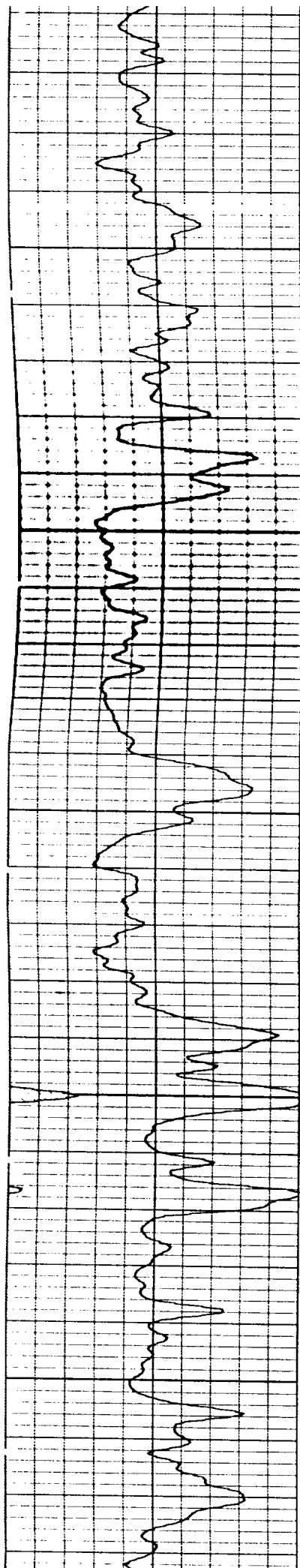


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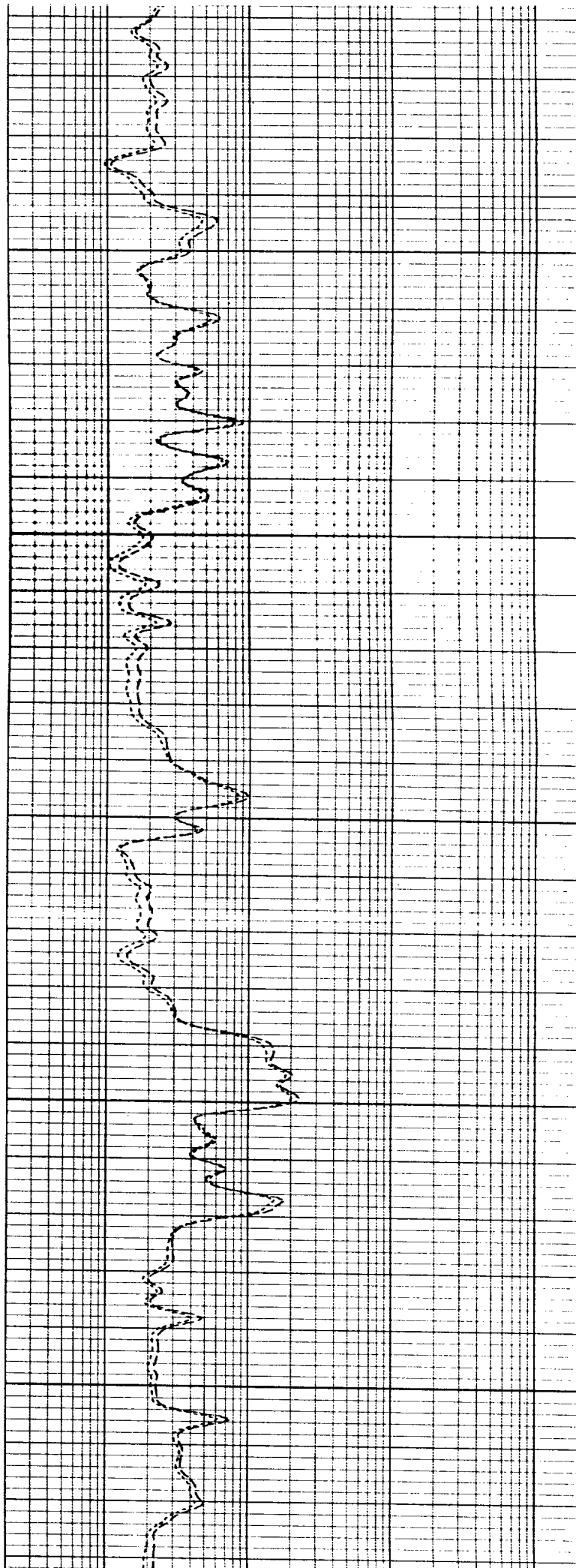
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6300



6400