

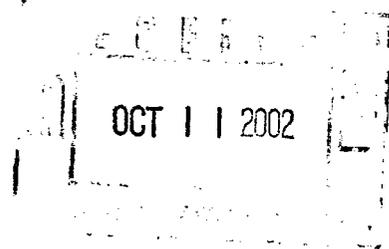
229026310

SWD

10/26/02

**NEELEY CONSULTING SERVICE**

1305 E. 33<sup>rd</sup> Street  
FARMINGTON, NEW MEXICO 87401  
(505) 486-0211



New Mexico Oil Conservation Division  
1220 South Francis Drive  
Santa Fe, New Mexico 87505

Attention: Mr. D. Catanach

October 9, 2002

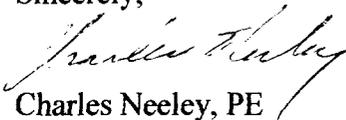
Re: Application for administrative approval - authorization to inject:  
Richardson Operating Company  
Salty Dog SWD No. 3

Dear Mr. Catanach:

Enclosed is an application from Richardson Operating Company for administrative approval to inject into the Salty Dog SWD No. 3. The application and information is arranged in the order specified by form C-108.

If you have any questions or concerns regarding the application, please feel free to contact me at 505-486-0211. Your consideration of this application is greatly appreciated.

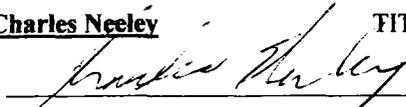
Sincerely,

  
Charles Neeley, PE

**APPLICATION FOR AUTHORIZATION TO INJECT**

- I. PURPOSE: \_\_\_\_\_ Secondary Recovery \_\_\_\_\_ Pressure Maintenance  Disposal \_\_\_\_\_ Storage  
Application qualifies for administrative approval?  Yes \_\_\_\_\_ No
- II. OPERATOR: Richardson Operating Company  
ADDRESS: 3100 LaPlata Highway, Farmington, NM 87401  
CONTACT PARTY: Drew Carnes PHONE: 505-564-3100
- 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. See Appendix A
- 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. See Appendix B
- 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. See Supplemental Data
- VII. Attach data on the proposed operation, including: See Supplemental Data
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 geologic data on the injection zone including appropriate lithologic detail, geologic 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 sources known to be immediately underlying the injection interval. See Supplemental Data
- IX. Describe the proposed stimulation program, if any. See Supplemental Data
- \*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).  
See Supplemental Data
- \*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. There are no water wells of record.
- 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 sources of drinking water. See Supplemental Data
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form. See Appendix D
- 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: Charles Neeley TITLE: Agent

SIGNATURE:  DATE: 10/8/02

- \* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: \_\_\_\_\_

### 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 the 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, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, 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.**

FORM C-108 SUPPLEMENTAL DATA (Continued)

Richardson Operating Company

Salty Dog SWD No. 3

Page 2

4. Produced Fruitland Coal and Pictured Cliffs water with TDS of 20000 ppm to 40000 ppm will be injected into the Morrison - Entrada zone or the alternate Pt Lookout formation in the Salty Dog No.3 well. Representative analyses of produced water from the Basin Fruitland Coal and Pictured Cliffs Formations that is to be disposed are enclosed in Appendix D. Also, enclosed is an analysis of Pt Lookout water, obtained in the area.
5. Chemical analysis of the water in the Morrison – Entrada zone will be submitted after the well is cleaned out and samples can be obtained.

VIII. Gcologic and Lithologic data on the injection zone.

1. The proposed primary zone of injection is in the Morrison, Bluff and Entrada Formation (includes Summerville and Todilto). This zone is to be from 6003' to 7090'. The alternate zone of injection is the Pt Lookout Formation. The alternate zone is estimated to be from 3544' to 3912'. The Salty Dog No.3 (Fruitland No.1) was originally drilled to test the Ismay, Desert Creek, Atah and Barker Creek formations before it was plugged back and tested the Dakota, Pt Lookout, Menefee and Pictured Cliffs formations; later is was to be P&A. Please note that 8 5/8" casing was set at 6003' in the top of the Morrison; 5 1/2" casing was set and cemented at 12,317' in the Pre-Cambrian with top of cement at 9160'; 9000' of 5 1/2" casing was shot off and pulled from the well - leaving the interval 6003' to 9000' as open hole. The Salty Dog No.3 will be reentered and the 8 5/8" casing will be cleaned out to the cement retainer at 5965'. A casing integrity test will be run. The open hole will be cleaned out to enable the setting of a 300' cement plug from 7390' back to 7090' covering the top of the Chinle Formation. A water sample will be taken and analyzed and a step rate test will be performed to determine if the desired rates and injection pressures can be obtained.  
In the event the integrity of the 8 5/8" casing is of question, then 5 1/2" casing would be run and cemented – the Entrada, Bluff and Morrison Formations would remain the primary injection zone - perforating and testing select intervals.  
If for unforeseen reasons, the above cannot be mechanically or economically accomplished, then Richardson Operating Company proposes to use the Pt Lookout Formation (3544' – 3912') as and alternate injection zone. The well would be plugged back as per BLM/NMOCD guidelines, the Pt Lookout re-perforated, tested and completed as the injection zone.

? See 818E?

**RICHARDSON OPERATING COMPANY  
SALTY DOG NO. 3**

---

**APPLICATION FOR AUTHORIZATION TO INJECT**

**LIST OF APPENDIXES**

<b>INJECTION WELL DATA</b>	<b>APPENDIX A</b>
<b>OFFSET WELLS, LEASES &amp; AREA OF REVIEW</b>	<b>APPENDIX B</b>
<b>PRODUCED WATER ANALYSIS</b>	<b>APPENDIX C</b>
<b>PROOF OF NOTIFICATION</b>	<b>APPENDIX D</b>

# APPENDIX A

## INJECTION WELL DATA

The following section contains the NMOCD Injection Well Data Sheets



**INJECTION WELL DATA SHEET**

OPERATOR: Richardson Operating Company

Alternate Zone -- Pt Lookout

WELL NAME & NUMBER: 890' FNL & 790' FEL

WELL LOCATION: 890' FNL & 790' FEL  
FOOTAGE LOCATION

UNIT LETTER: A

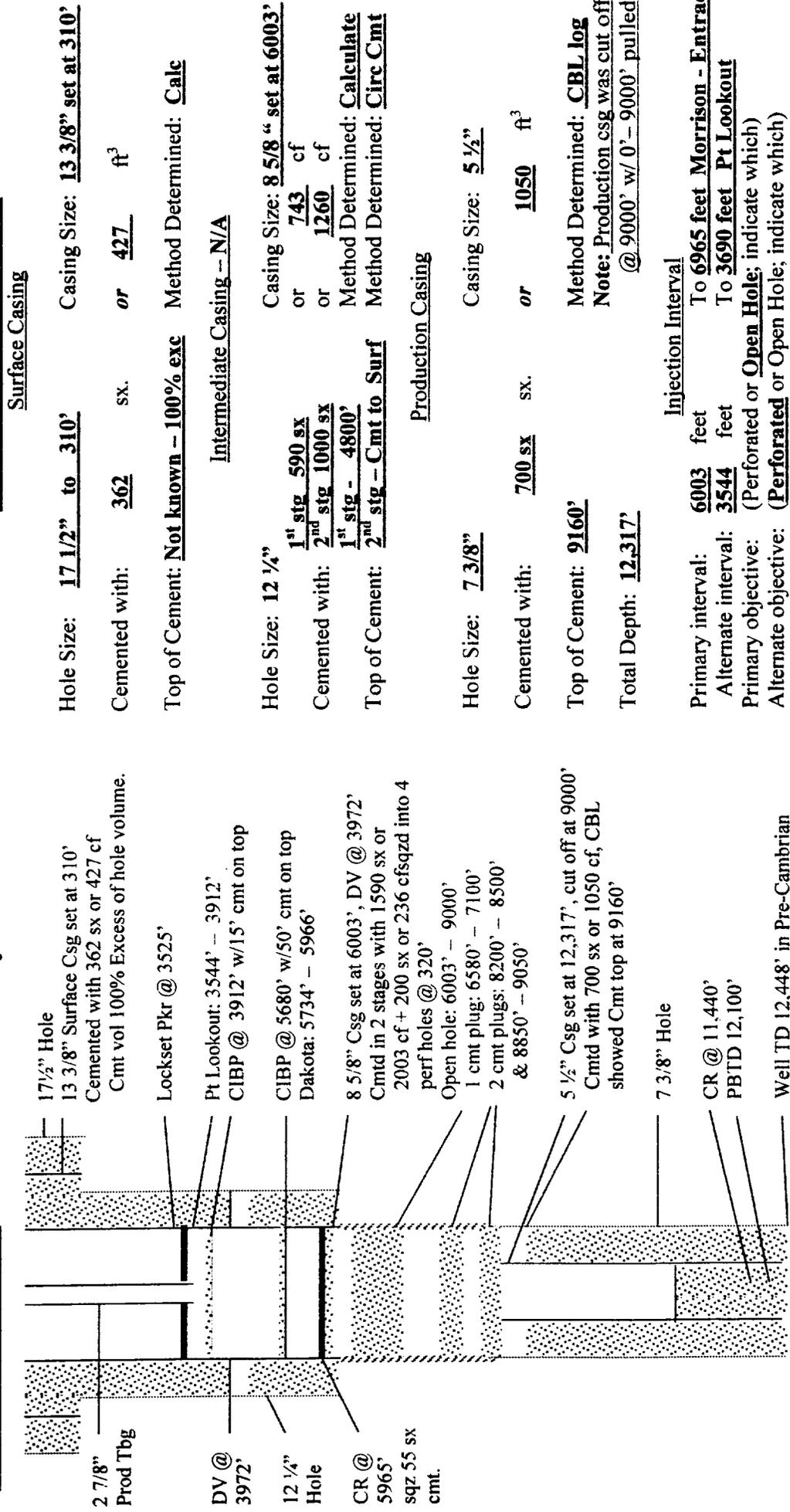
SECTION: 28

TOWNSHIP: 30N

RANGE: 14W

**WELLBORE SCHEMATIC : Alternate: Pt Lookout Injection**

**WELL CONSTRUCTION DATA**



Surface Casing

Hole Size: 17 1/2" to 310' Casing Size: 13 3/8" set at 310'

Cemented with: 362 sx. or 427 ft<sup>3</sup>

Top of Cement: Not known - 100% exc Method Determined: Calc

Intermediate Casing - N/A

Hole Size: 12 1/4" Casing Size: 8 5/8" set at 6003'

Cemented with: 1<sup>st</sup> stg 590 sx or 743 cf  
2<sup>nd</sup> stg 1000 sx or 1260 cf

Top of Cement: 2<sup>nd</sup> stg - 4800' Method Determined: Calculate

Top of Cement: 2<sup>nd</sup> stg - Cmt to Surf Method Determined: Circ Cmt

Production Casing

Hole Size: 7 3/8" Casing Size: 5 1/2"

Cemented with: 700 sx sx. or 1050 ft<sup>3</sup>

Top of Cement: 9160' Method Determined: CBL log

Total Depth: 12,317' Note: Production csg was cut off @ 9000' w/ 0' - 9000' pulled

Injection Interval

Primary interval: 6003 feet

Alternate interval: 3544 feet

Primary objective: (Perforated or Open Hole; indicate which)

Alternate objective: (Perforated or Open Hole; indicate which)

To 6965 feet Morrison - Entrada

To 3690 feet Pt Lookout

Well TD 12,448' in Pre-Cambrian

**INJECTION WELL DATA SHEET**

Tubing Size: Morrison, Bluff – Entrada: 3 1/2" Alternate: Pt Lookout: 2 7/8" Lining Material: Plastic, if any

Type of Packer: Lockset type

Packer Setting Depth: ~ 5980' Morrison – Entrada ~ 3525' Pt Lookout

Other Type of Tubing/Casing Seal (if applicable): \_\_\_\_\_

Additional Data

1. Is this a new well drilled for injection? \_\_\_\_\_ Yes X No

If no, for what purpose was the well originally drilled? This well was originally drilled as a wildcat: Ismay, Desert Creek, Akah, Barker Creek Test. Tested in the Barker Creek, Dakota, Pt Lookout, Menefee and Pictured Cliffs - none of these zones proving commercial, the well was approved P&A, 1/12/87 by BLM.

2. Name of the Injection Formation: Primary objective: Morrison, Bluff and Entrada  
Alternate objective: Pt Lookout

3. Name of Field or Pool (if applicable): N/A

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used.

<u>Intervals</u>	<u>Formation</u>	<u>Plugging Details</u>
11,511 – 11,519	Barker Creek	
11,515 – 11,539	Barker Creek	
11,543 – 11,548	Barker Creek	
11,557 – 11,559	Barker Creek	
11,570 – 11,572	Barker Creek	
11,579 – 11,584	Barker Creek	
11,620 – 11,632	Barker Creek	
6,003 – 9000'	Open Hole	Set CR at 11,400', pumped 200 sx cement at 3500 psi. 8850' – 9050', 50 sx cmt plug; 8200' – 8500', 80 sx cmt plug; 6800' – 7100', 80 sx cmt plug; 6580' – 6780', 55 sx cmt plug and CR in 8 5/8" csg at 5965' – squeeze 55 sx cmt @ 1300 psi.
	Cutler to	
	Morrison	
5,857 – 5869	Dakota	Set CR at 5,837', pumped 150 sx cement at 3000 psi.
5,893 – 5,913	Dakota	
5,925 – 5,940	Dakota	
5,734 – 5,762	Dakota	Set CIBP at 5700', dumped 2 sx cmt on top of plug
3,554 – 3,560	Pt Lookout	Set CR at 3,520, pumped 150 sx cement at 2000 psi

## INJECTION WELL DATA SHEET

## 4. (Continued)

Intervals	Formation	Plugging Details
3,282 - 3,288	Menefee	Set 35 sx cmt plug: 3,350' - 3,230'
1,144 - 1,160	Pictured Cliffs	Set 30 sx cmt plug: 2,742' - 2,642' and 40 sx cmt plug: 1,210 - 1,072'
240' - 320'	Kirtland	Perf 4 squeeze holes at 320', Set CR at 240' Squeeze 200 sx cmt w/2% CaCl2
Surface - 50'	Kirtland	50' surface plug, 15 sx cmt

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:

Overlying tops for Morrison - Entrada injection zone:

Dakota (5734' - 5966')

Menefee (2774' - 3544') - water, some gas & oil - tested non-commercial

Pictured Cliffs (1122' - 1220')

Basin Fruitland Coal (870' - 1121')

Fruitland Sands (740' - 950')

Underlying tops for Morrison - Entrada injection zone:

Barker Creek (11,358' - 11,989') - water, gas w/some oil - tested non-commercial

Overlying tops for Pt Lookout injection zone

Menefee (2774' - 3544') - water, some gas & oil - tested non-commercial

Pictured Cliffs (1122' - 1220')

Basin Fruitland Coal (870' - 1121')

Fruitland Sands (740' - 950')

Underlying tops for Pt Lookout injection zone

Dakota (5734' - 5966')

Barker Creek (11,358' - 11,989') - water, gas w/some oil - tested non-commercial

# APPENDIX B

MAP – OFFSET WELLS, LEASES & AREA OF REVIEW



# APPENDIX C

## PRODUCED WATER ANALYSIS

The following water analysis are intended to be representative samples of the Basin Fruitland Coal and Pictured Cliffs formation waters that will be disposed.

Company: DUGAN PROD.  
 Field:  
 Well: STELLA NEEDS A COM #1E  
 Depth:  
 Formation: POINT LOOKOUT/MESA VERDE  
 State: N.M.  
 County:

W.C.N.A. Sample No.: S106695  
 Legal Description:  
 Lease or Unit:  
 Water.B/D:  
 Sampling Point: SWAB  
 Sampled By: J. ALEXANDER  
 Date Sampled: 04/24/95

Type of Water(Produced, Supply, ect.):

PROPERTIES

pH:	6.30	Iron, Fe(total):	250
Specific Gravity:	1.050	Sulfide as H2S:	0
Resistivity (ohm-meter):	.13	Total Hardness:	(see below)
Temperature:	78F		

D I S S O L V E D SOLIDS

CATIONS	mg/l	me/l		
Sodium, Na:	20470	: 890	Sample(ml):	1.0 ml of EDTA: 5.20
Calcium, Ca:	2084	: 104	Sample(ml):	1.0 ml of EDTA: .70
Magnesium, Mg:	170	: 14		
Barium, Ba:	N/A	: N/A		
Potassium, K:		:		

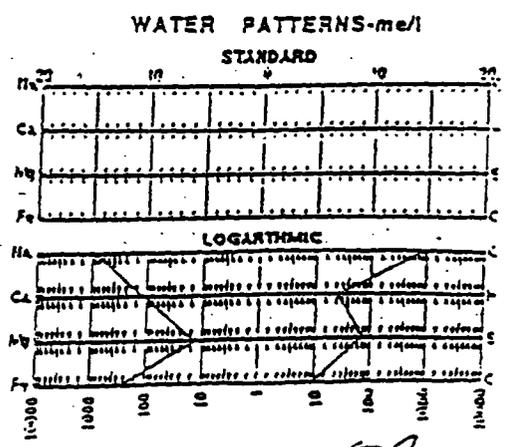
  

ANIONS	mg/l	me/l		
.5000Chloride, Cl:	31905	: 900	Sample(ml):	1.0 ml of AgNO3: 1.80
Sulfate, SO4:	3750	: 78	Sample(ml):	1.0 ml of H2SO4:
Carbonate, CO3:		:	Sample(ml):	1.0 ml of H2SO4: .30
Bicarbonate, HCO3:	1830	: 30		

Total Dissolved Solids (calculated):	60209	Sample(ml):	1.0 ml of EDTA:
Total Hardness:	5900		

REMARKS AND RECOMMENDATIONS:



Analyst: *[Signature]*  
 Date Analyzed: *4/24/95*

**BJ SERVICES COMPANY**

WATER ANALYSIS #FW01W266

FARMINGTON LAB

**GENERAL INFORMATION**

OPERATOR:	RICHARDSON OPERATING	DEPTH:	
WELL:	BUSHMAN FEDERAL 6-1	DATE SAMPLED:	10/19/98
FIELD:	SEC06/T29N/R14W	DATE RECEIVED:	10/20/98
SUBMITTED BY:	BRAD SALZMAN	COUNTY:	SAN JUAN
WORKED BY:	D. SHEPHERD	STATE:	NM
PHONE NUMBER:		FORMATION:	FC/PC

**SAMPLE DESCRIPTION**

SAMPLE FOR ANALYSIS

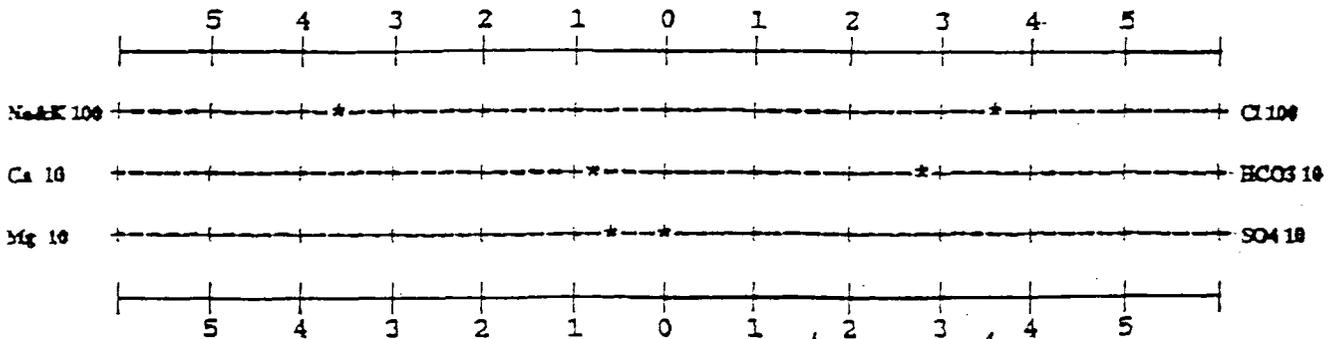
**PHYSICAL AND CHEMICAL DETERMINATIONS**

SPECIFIC GRAVITY:	1.015	@ 74°F	PH:	7.49
RESISTIVITY (MEASURED ):	0.280	ohms @ 76°F		
IRON (FE++) :	0	ppm	SULFATE:	39
CALCIUM:	158	ppm	TOTAL HARDNESS	710
MAGNESIUM:	77	ppm	BICARBONATE:	1,719
CHLORIDE:	12,574	ppm	SODIUM CHLORIDE (Calc)	20,685
SODIUM+POTASS:	8,493	ppm	TOT. DISSOLVED SOLIDS:	23,536
H2S: NO TRACE			POTASSIUM (PPM):	110

**REMARKS**

SAMPLED FROM SEPERATOR

**STIFF TYPE PLOT (IN MEQ/L)**



ANALYST

*D. Shepherd*  
D. SHEPHERD

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## Water Analysis

Client:	Richardson Operating	Project #:	98094-001
Sample ID:	Ropco 9-3 <i>FC/PC</i>	Date Reported:	08-30-02
Laboratory Number:	23689	Date Sampled:	08-29-02
Sample Matrix:	Water	Date Received:	08-29-02
Preservative:	Cool	Date Analyzed:	08-30-02
Condition:	Cool & Intact	Chain of Custody:	10205

Parameter	Analytical Result	Units
Total Dissolved Solids @ 180C	34,600	mg/L

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.  
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **Ropco Wells.**

  
Analyst

  
Review

# ENVIROTECH LABS

**PRACTICAL SOLUTIONS FOR A BETTER TOMORROW**

## Water Analysis

Client:	Richardson Operating	Project #:	98094-001
Sample ID:	Ropco 8-4 <i>PC</i>	Date Reported:	08-30-02
Laboratory Number:	23690	Date Sampled:	08-29-02
Sample Matrix:	Water	Date Received:	08-29-02
Preservative:	Cool	Date Analyzed:	08-30-02
Condition:	Cool & Intact	Chain of Custody:	10205

Parameter	Analytical Result	Units
Total Dissolved Solids @ 180C	31,500	mg/L

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.  
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **Ropco Wells.**

*Christine M. Walters*  
Analyst

*QCG. FOS*  
Review

## APPENDIX D

### PROOF OF NOTIFICATION

The following section contains proof of notification of the surface owner - BLM, proof of notifications of the 6 lease owners within the area of review and an affidavit of newspaper publication of legal notice.

*Land Owner*

**U.S. Postal Service**  
**CERTIFIED MAIL RECEIPT**  
*(Domestic Mail Only; No Insurance Coverage Provided)*

7002 0510 0002 9439 5294

FARMINGTON, NH 87401

Postage	\$ 1.06
Certified Fee	2.30
Return Receipt Fee (Endorsement Required)	1.75
Restricted Delivery Fee (Endorsement Required)	
<b>Total Postage &amp; Fees</b>	<b>\$ 5.11</b>

UNIT ID: 0401  
Postmark Here  
8  
Clerk: KKOC6Y  
10/08/02

Sent To  
Bureau of Land Management  
Street, Apt. No.;  
or PO Box No. 1235 LaPlata Highway  
City, State, ZIP+4 Farmington, NM 87401

**U.S. Postal Service**  
**CERTIFIED MAIL RECEIPT**  
 (Domestic Mail Only; No Insurance Coverage Provided)

7215 6436 9439 5317  
 7002 0510 0002 0150 0750 2002

ARTESIA, NM 88210		
Postage	\$ 1.06	UNIT ID: 0401 Postmark Here 2002 Clerk: KKOC6Y 10/08/02
Certified Fee	2.30	
Return Receipt Fee (Endorsement Required)	1.75	
Restricted Delivery Fee (Endorsement Required)		
<b>Total Postage &amp; Fees</b>	<b>\$ 5.11</b>	

Sent To  
 Myco Industries  
 105 South 4th St  
 Artesia, NM 88210

PS Form 3800, January 2001 See Reverse for Instructions

**U.S. Postal Service**  
**CERTIFIED MAIL RECEIPT**  
 (Domestic Mail Only; No Insurance Coverage Provided)

7002 0510 0002 9439 5270

ARTESIA, NM 88210		
Postage	\$ 1.06	UNIT ID: 0401 Postmark Here 2002 Clerk: KKOC6Y 10/08/02
Certified Fee	2.30	
Return Receipt Fee (Endorsement Required)	1.75	
Restricted Delivery Fee (Endorsement Required)		
<b>Total Postage &amp; Fees</b>	<b>\$ 5.11</b>	

Sent To  
 Yates Drilling Company  
 105 South 4th St  
 Artesia, NM 88210

PS Form 3800, January 2001 See Reverse for Instructions

**U.S. Postal Service**  
**CERTIFIED MAIL RECEIPT**  
 (Domestic Mail Only; No Insurance Coverage Provided)

6925 6436 9439 5287  
 7002 0510 0002 9439 5287

ARTESIA, NM 88210		
Postage	\$ 1.06	UNIT ID: 0401 Postmark Here 2002 Clerk: KKOC6Y 10/08/02
Certified Fee	2.30	
Return Receipt Fee (Endorsement Required)	1.75	
Restricted Delivery Fee (Endorsement Required)		
<b>Total Postage &amp; Fees</b>	<b>\$ 5.11</b>	

Sent To  
 Yates Petroleum Corporation  
 105 South 4th St  
 Artesia, NM 88210

PS Form 3800, January 2001 See Reverse for Instructions

**U.S. Postal Service**  
**CERTIFIED MAIL RECEIPT**  
 (Domestic Mail Only; No Insurance Coverage Provided)

7002 0510 0002 9439 5287

ARTESIA, NM 88210		
Postage	\$ 1.06	UNIT ID: 0401 Postmark Here 2002 Clerk: KKOC6Y 10/08/02
Certified Fee	2.30	
Return Receipt Fee (Endorsement Required)	1.75	
Restricted Delivery Fee (Endorsement Required)		
<b>Total Postage &amp; Fees</b>	<b>\$ 5.11</b>	

Sent To  
 Abo Petroleum Corporation  
 105 South 4th St  
 Artesia, NM 88210

PS Form 3800, January 2001 See Reverse for Instructions

**U.S. Postal Service**  
**CERTIFIED MAIL RECEIPT**  
 (Domestic Mail Only; No Insurance Coverage Provided)

7265 6436 9439 5304  
 7002 0510 0002 9439 5304

HOUSTON, TX 77002		
Postage	\$ 1.06	UNIT ID: 0401 Postmark Here 2002 Clerk: KKOC6Y 10/08/02
Certified Fee	2.30	
Return Receipt Fee (Endorsement Required)	1.75	
Restricted Delivery Fee (Endorsement Required)		
<b>Total Postage &amp; Fees</b>	<b>\$ 5.11</b>	

Sent To  
 BP America Production Company  
 P.O. Box 3092  
 Houston, Texas 77253 - 3092

PS Form 3800, January 2001 See Reverse for Instructions

**U.S. Postal Service**  
**CERTIFIED MAIL RECEIPT**  
 (Domestic Mail Only; No Insurance Coverage Provided)

7002 0510 0002 9439 5304

HOUSTON, TX 77002		
Postage	\$ 1.06	UNIT ID: 0401 Postmark Here 2002 Clerk: KKOC6Y 10/08/02
Certified Fee	2.30	
Return Receipt Fee (Endorsement Required)	1.75	
Restricted Delivery Fee (Endorsement Required)		
<b>Total Postage &amp; Fees</b>	<b>\$ 5.11</b>	

Sent To  
 Calpine Natural Gas Company  
 1000 Louisiana St, Suite 800  
 Houston, Texas 77002

PS Form 3800, January 2001 See Reverse for Instructions

*Intrest Owners*

**AFFIDAVIT OF PUBLICATION**

**Ad No. 46868**

**STATE OF NEW MEXICO  
County of San Juan:**

CONNIE PRUITT, being duly sworn says:  
That she is the Advertising Manager of THE DAILY TIMES, a daily newspaper of general circulation published in English at Farmington, said county and state, and that the hereto attached Legal Notice was published in a regular and entire issue of the said DAILY TIMES, a daily newspaper duly qualified for the purpose within the meeting of Chapter 167 of the 1937 Session Laws of the State of New Mexico for publication on the following day(s):  
Tuesday, October 8, 2002.

And the cost of the publication is \$39.21.

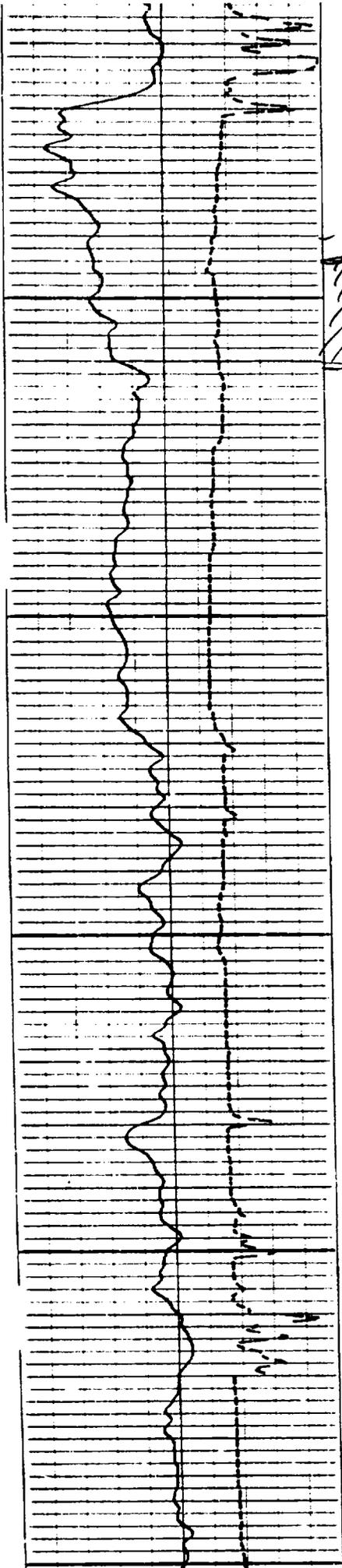
Connie Pruitt

ON 10-8-02 CONNIE PRUITT appeared before me, whom I know personally to be the person who signed the above document.

Sunny Beck  
My Commission Expires April 2, 2004.

**COPY OF PUBLICATION**

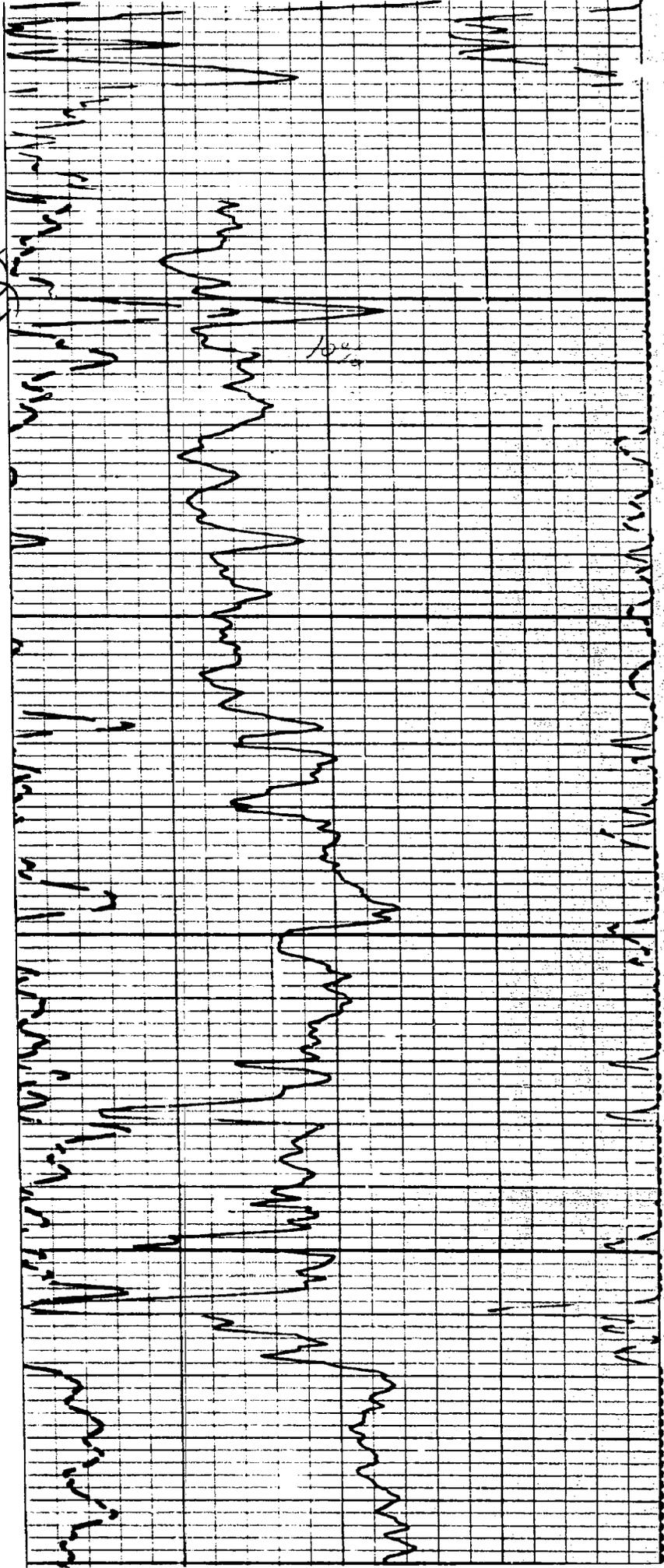
918 Legals  
**LEGAL NOTICE**  
Richardson Operating Company proposes to re-enter and convert the Fruitland No. 1 from P&A status into a produced water disposal well, Salty Dog No. 3. The well is located: 890' FNL & 790' FEL, Sec 28, T30N, R14W, San Juan County, NM. Pictured Cliffs and Basin Fruitland Coal produced water is to be disposed of into the Morrison, Bluff and Estrada Formations (includes Stammerville and Todito Formations): 6003-6965' at a maximum rate of 6000 bwpd and a maximum pressure of 2000 psi.  
As an alternate disposal objective to those formations listed above, if needed, Richardson Operating Company proposes to use the Pt-LOOKOUT Formation in the Salty Dog No. 3 well. Produced water from the formations listed above would be disposed of into the Pt-LOOKOUT Formation: 3944-3912' at a maximum rate of 2000 bwpd and a maximum pressure of 1200 psi.  
Questions concerning this proposal can be sent to Drew Carnes, Richardson Operating Company, 3100 LaPlata Highway, Farmington, NM 87401 (505) 564-3100.  
Interested parties should file comments or objections and requests for hearing with the New Mexico Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, NM 87505, within 15 days.  
Legal No. 46868, published in The Daily Times, Farmington, New Mexico, Tuesday, October 8, 2002.



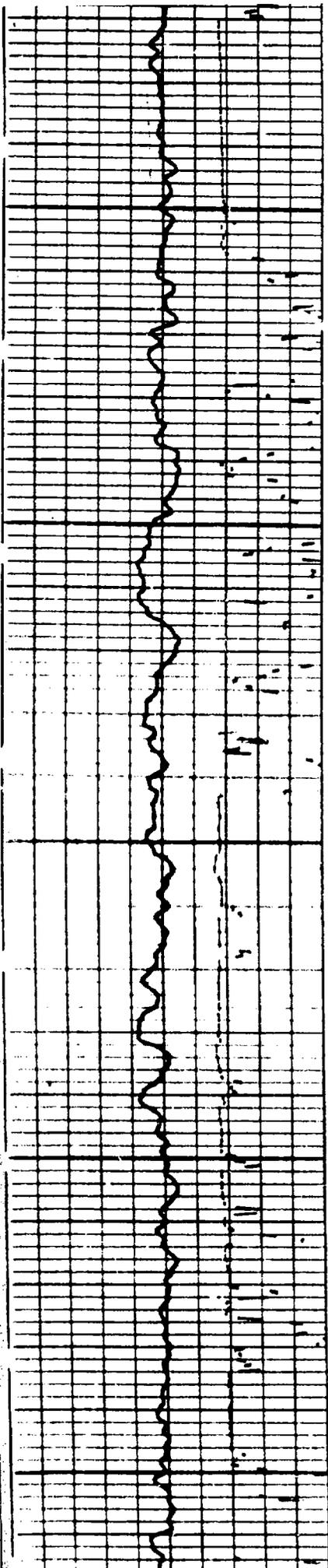
TIGHT  
50 mg  
G2

1200

1300

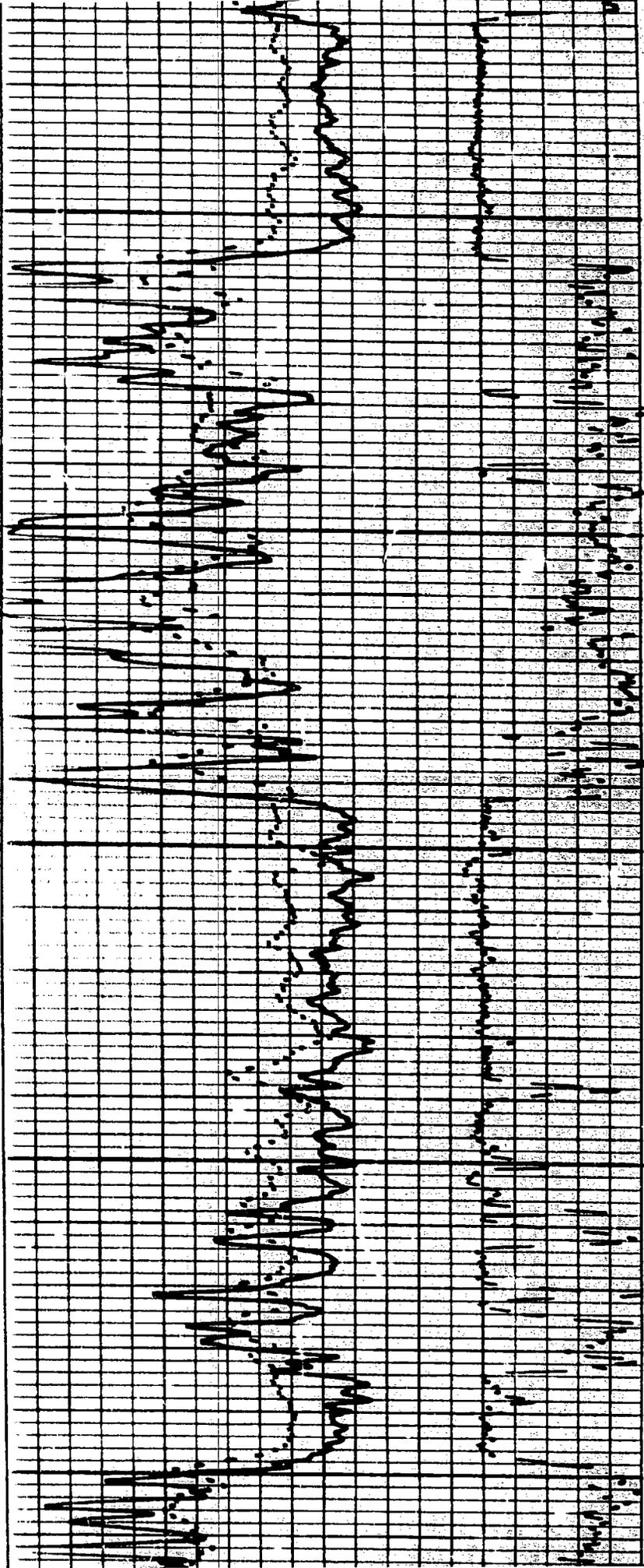


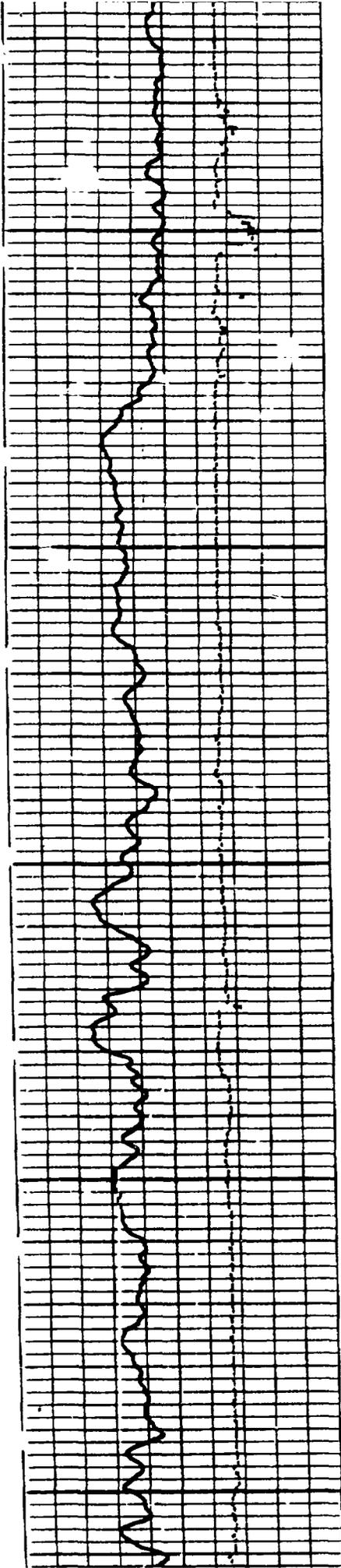
100



1400

1500

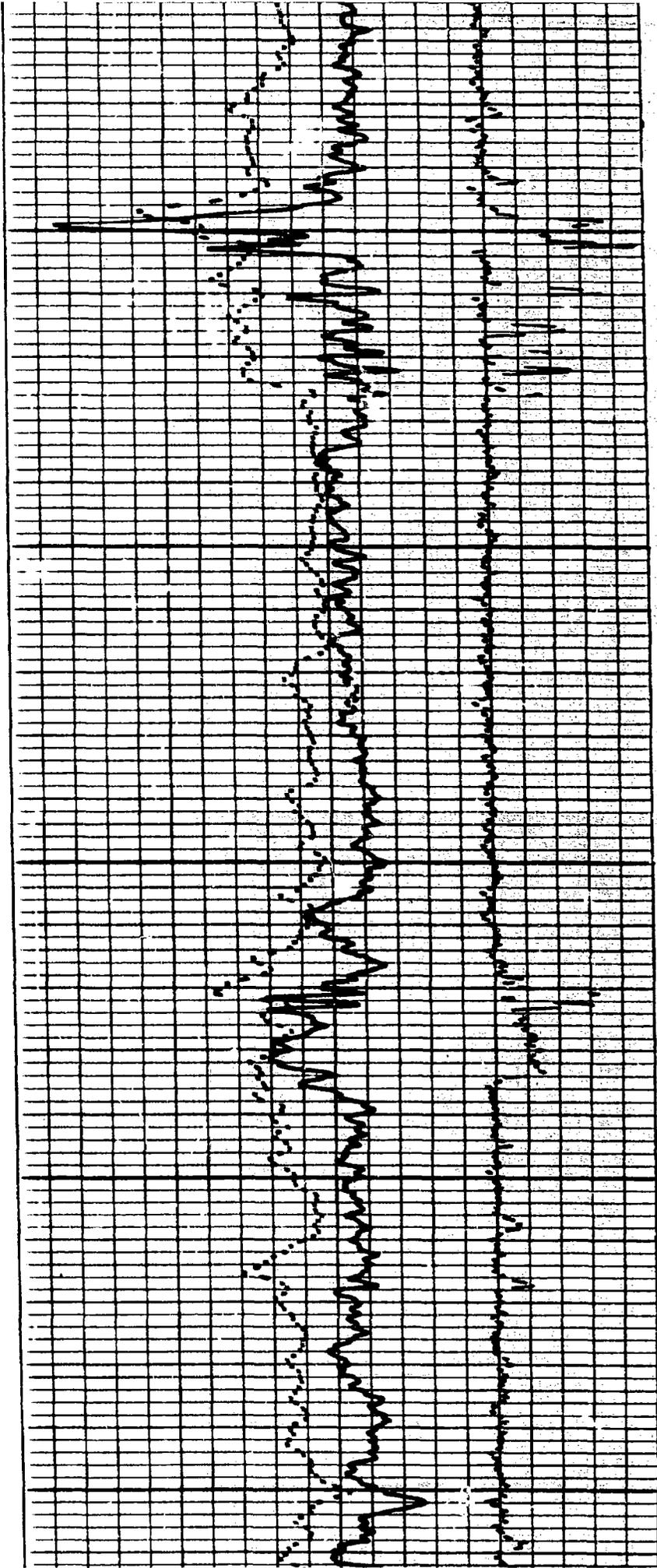


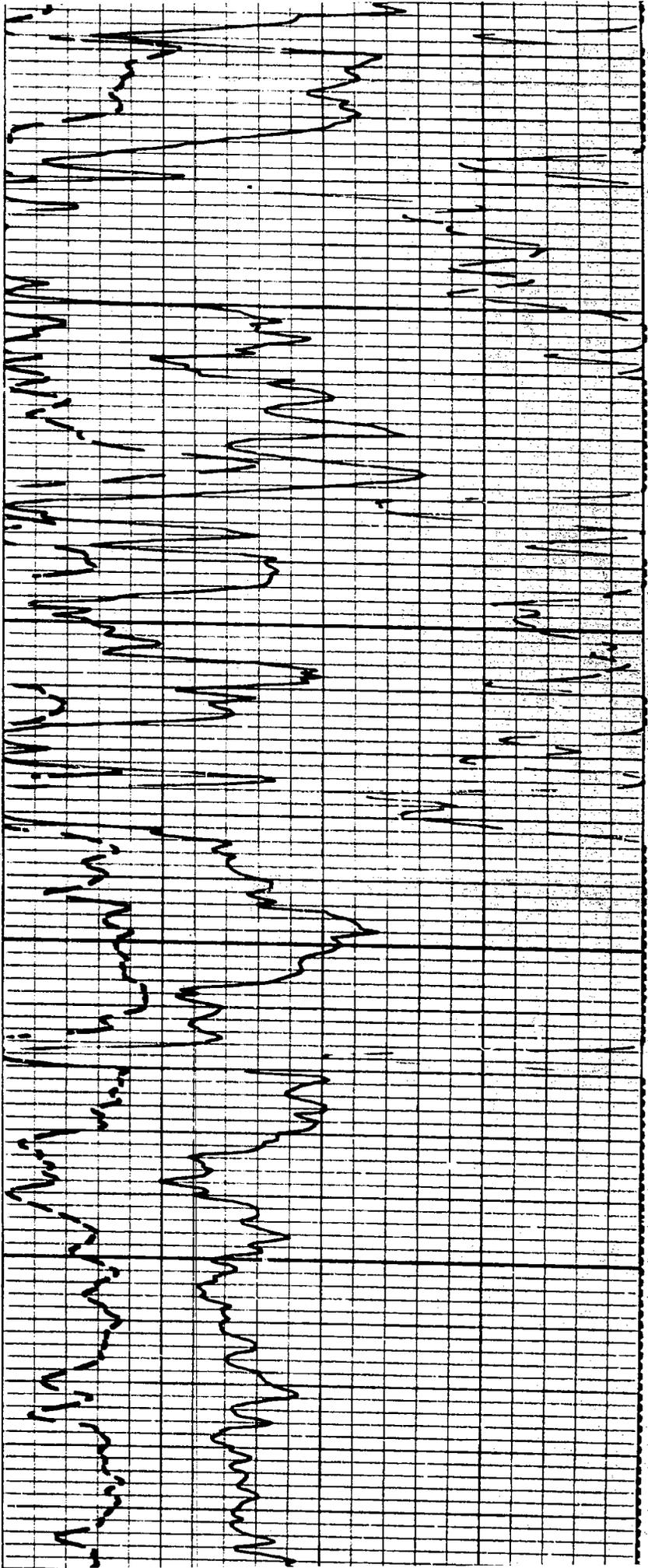


2100

2200

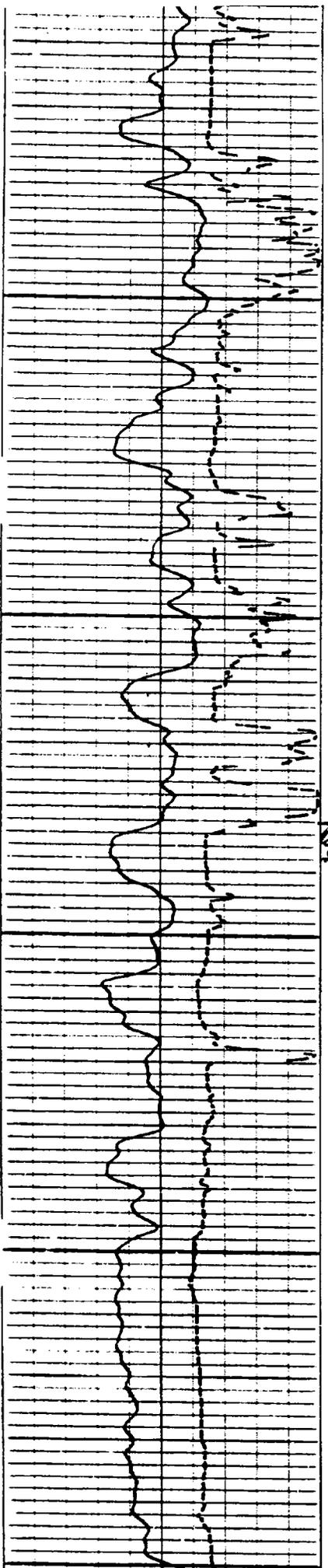
2300



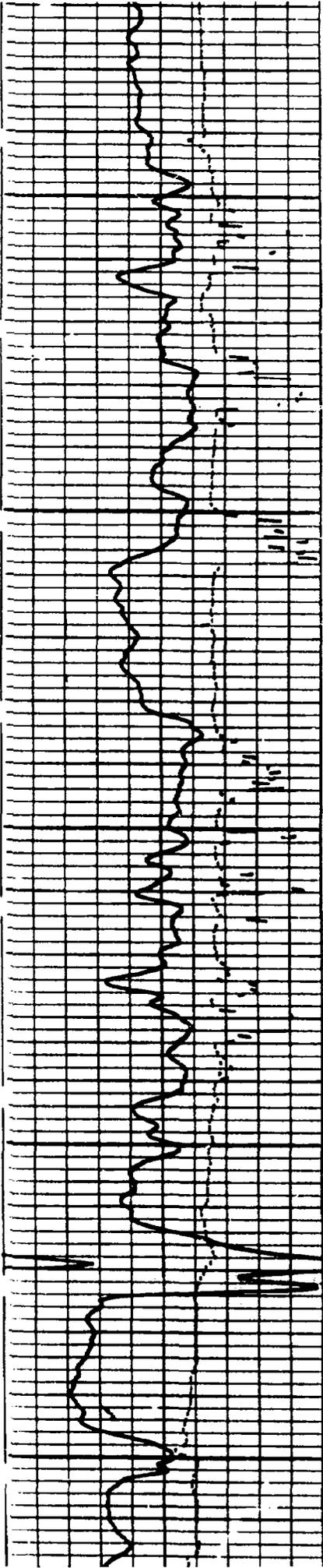


3200

Flow  
3300



34

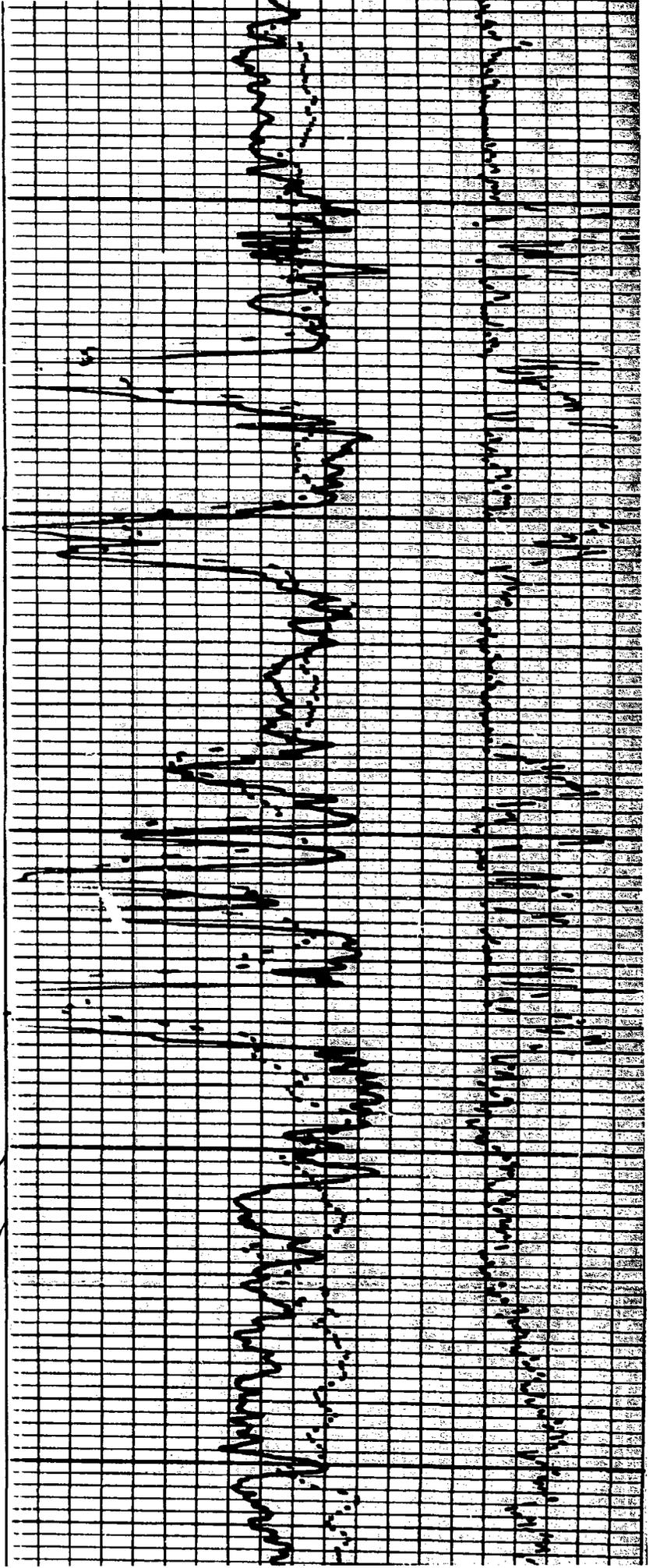


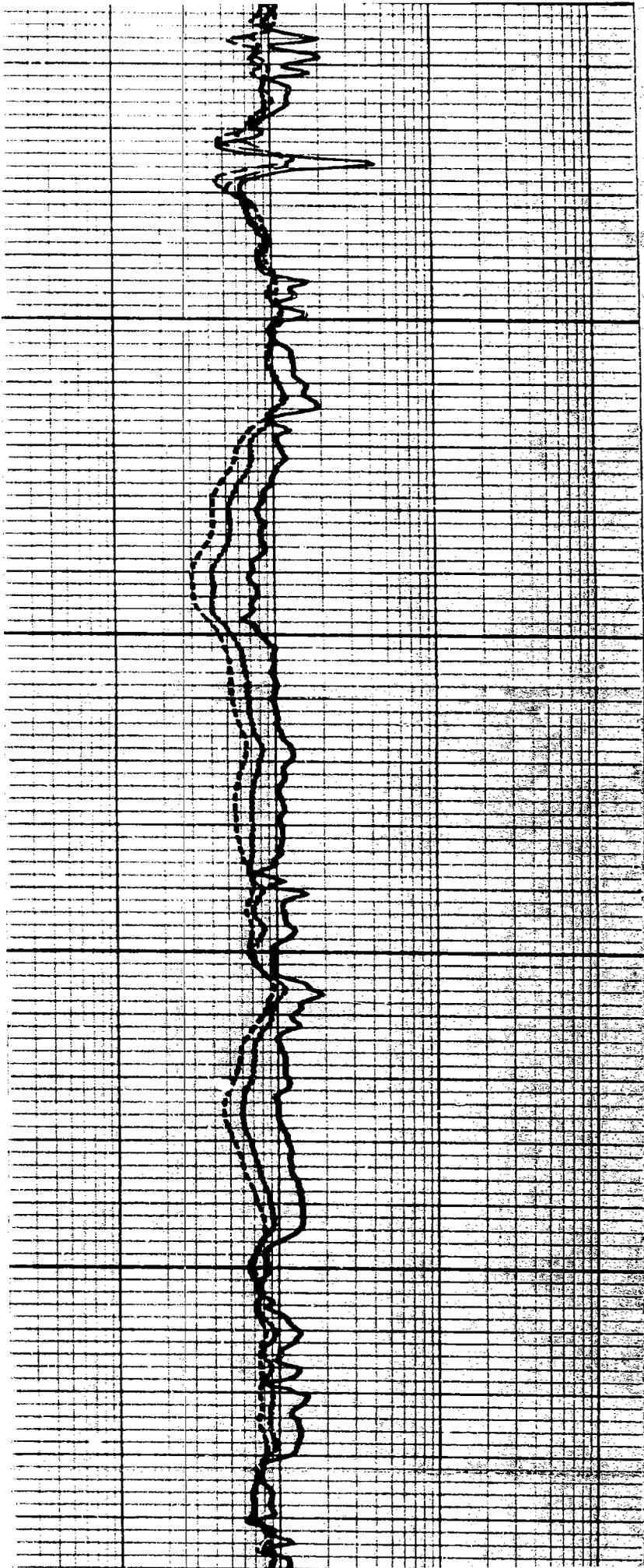
3400

3600

3800

Much  
Some  
Water  
Flow

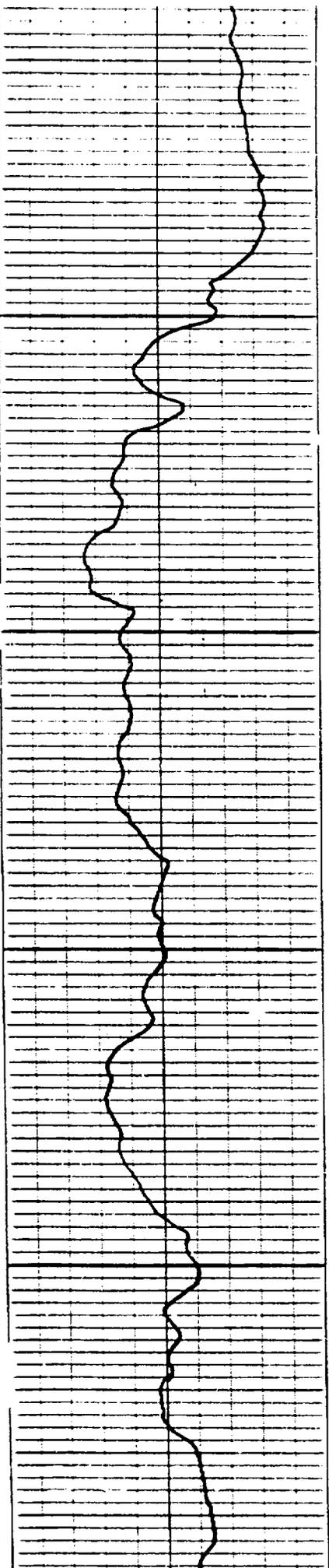


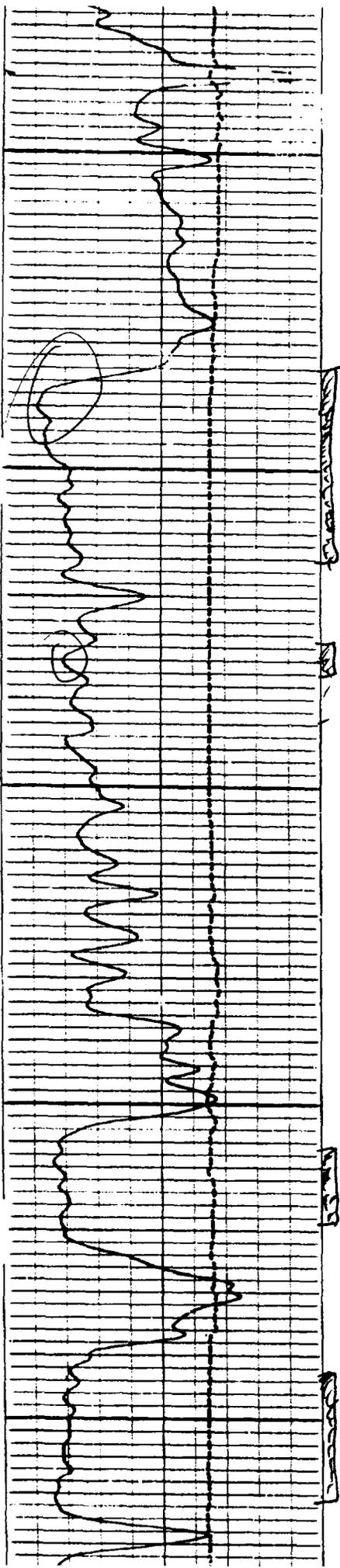


10

3600

3700





5700

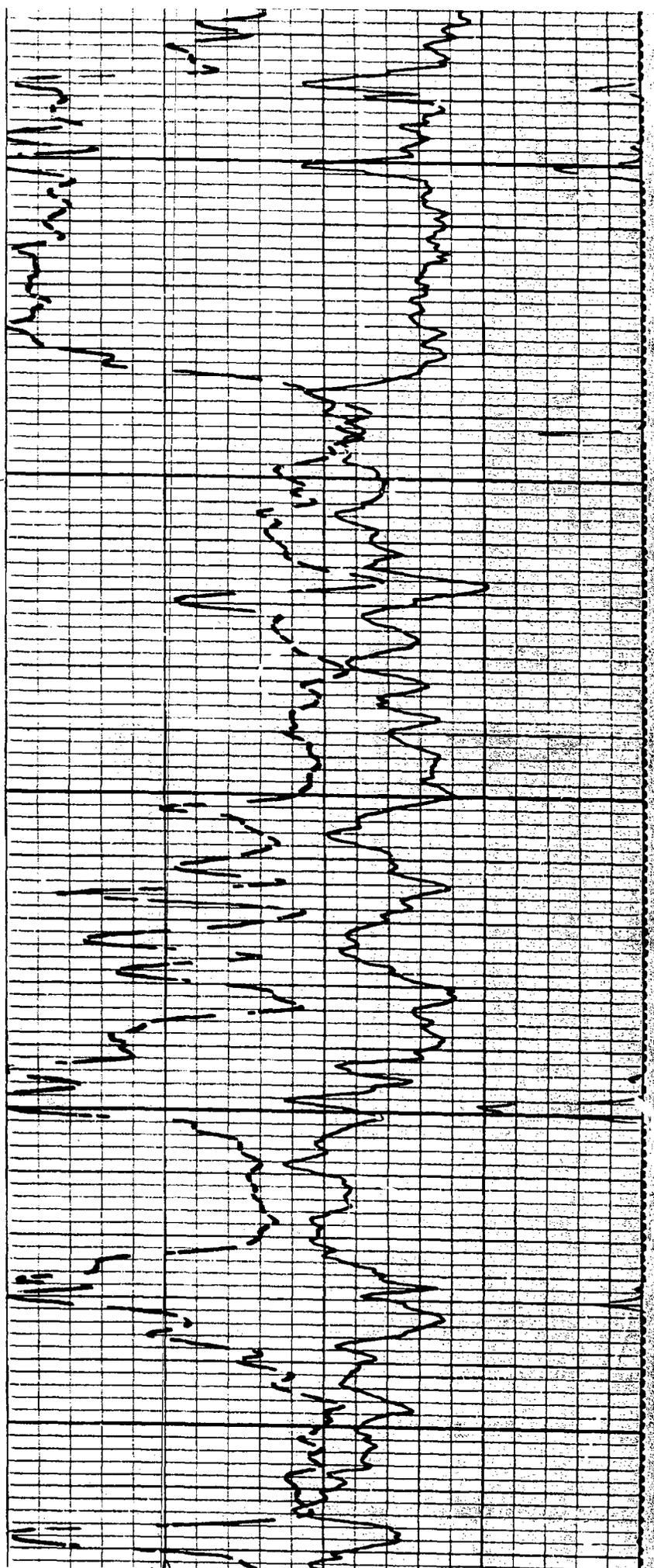
K2

5800

K2

5900

K2



77 15925-5940 K2

Casing

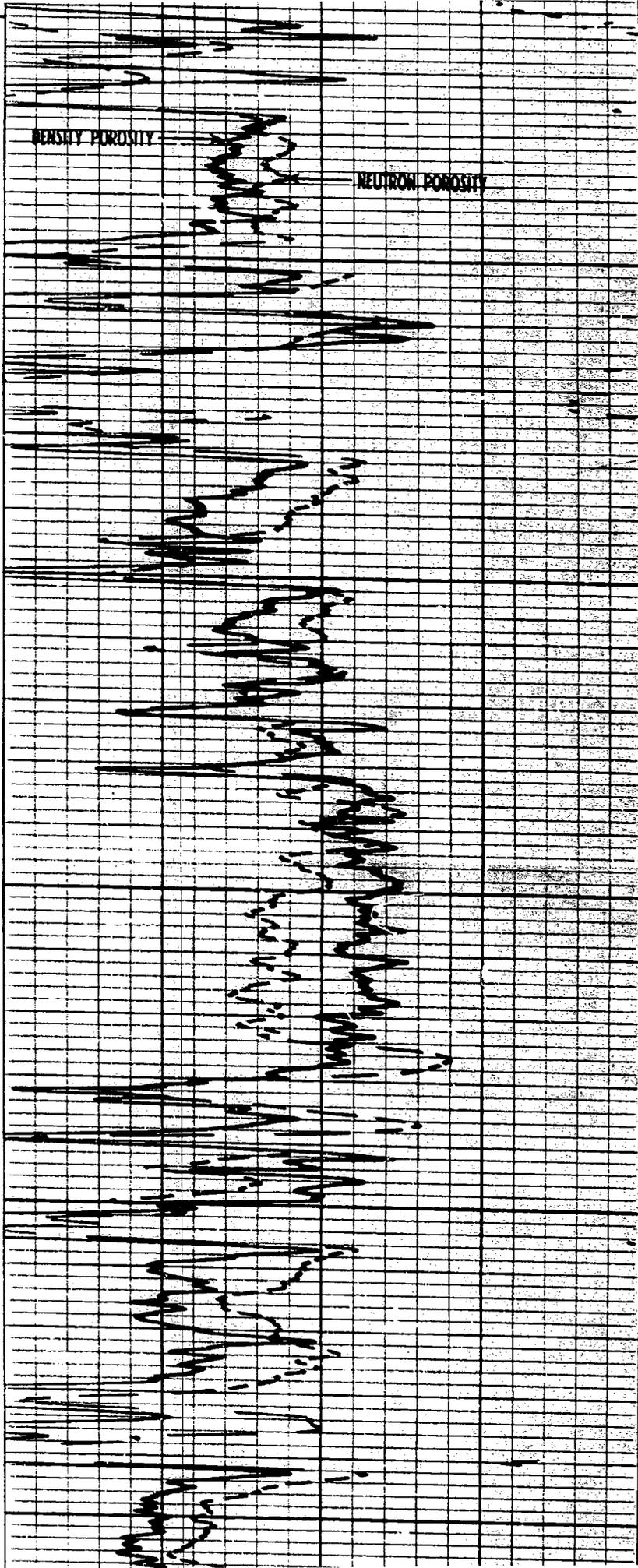
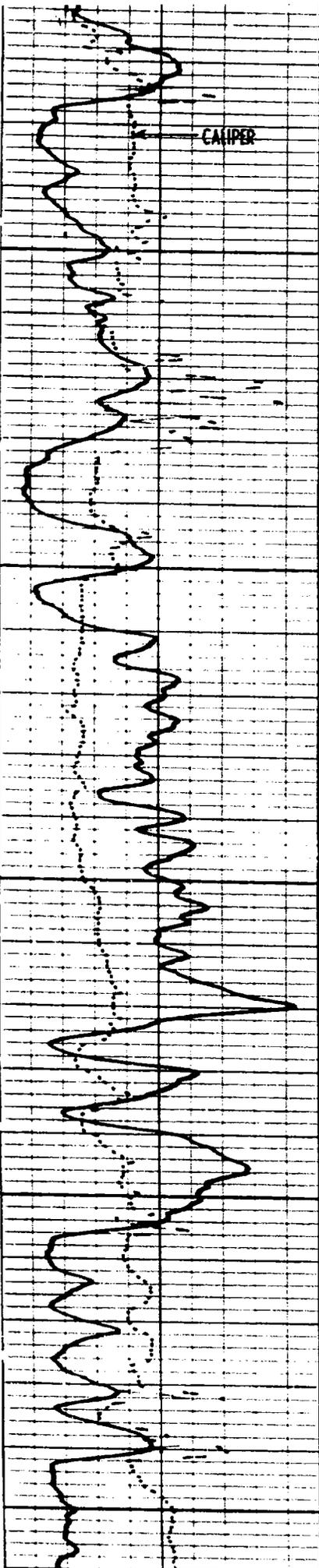
CALIPER

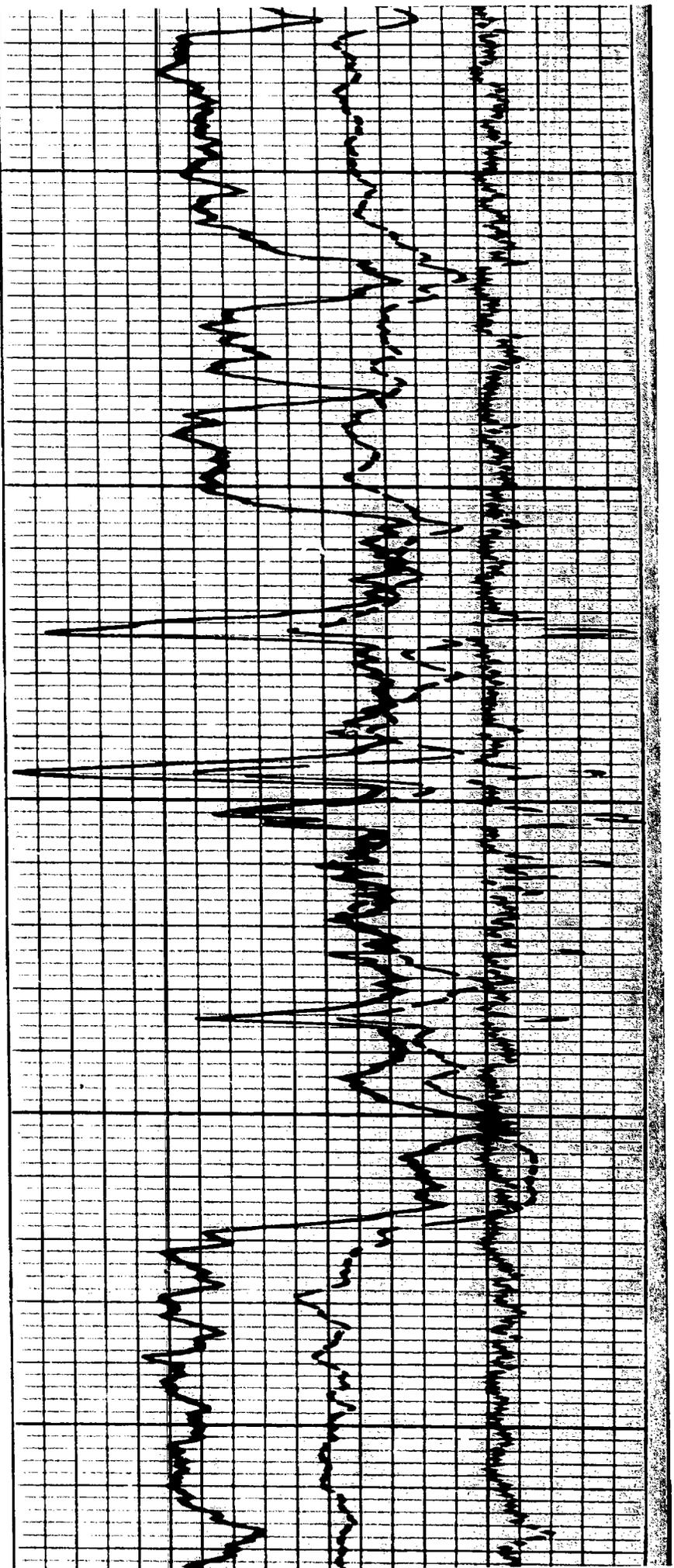
DENSITY POROSITY

NEUTRON POROSITY

6100

6200





6800

6900

7000

