SWD 699 2/23/98

RECEIVED
FEB 6 1998
OIL CONSERVATION DIVISION

January 28, 1998

NMOCD
2040 South Pacheco
Santa Fe, New Mexico 87505

Attn : Mr. Ben Stone

RE : Application for Saltwater Disposal Well
Cotton Draw Unit #65
Delaware Formation
1980' FNL & 1980' FEL, Section 2, T-25-S, R-31-E
Eddy County, New Mexico

Dear Mr. Stone,

Texaco Exploration & Production, Inc. respectfully requests administrative approval for the attached C-108 application on its Cotton Draw Unit #65 well for the purpose of disposing of produced fluids in the non-commercial Delaware interval. This work will allow Texaco to eliminate current water disposal costs associated with the subject lease. Conversion of the subject well to SWD will lower the lease's economic limit and allow Texaco to recover additional oil and gas reserves that would otherwise be left in place.

This well is located at Unit Letter G : Section 19, T-23-S, R-30-E. Texaco respectfully requests that this application approved administratively at the earliest possible convenience so that operations can be advanced in a prudent manner. If you have any questions concerning the application, please contact me at (505) 397-0484.

Sincerely,

Jason Wacker

Jason Wacker
Production Engineer
Texaco Exploration & Production, Inc.

JHW/
Attachments
File

FOR INFORMATION ONLY

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT --" for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: K 4562
6. If Indian, Alottee or Tribe Name:
7. If Unit or CA, Agreement Designation:

1. Type of Well: ☐ OIL WELL ☒ GAS WELL ☐ OTHER
8. Well Name and Number: COTTON DRAW UNIT 65
2. Name of Operator: TEXACO EXPLORATION & PRODUCTION INC.
3. Address and Telephone No.: 205 E. Bender, HOBBS, NM 88240 397-0418
9. API Well No.: 30-015-10843
4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
Unit Letter G : 1980 Feet From The NORTH Line and 1980 Feet From The EAST Line Section 2 Township 25S Range 31E
10. Field and Pool, Exploaratory Area: PADUCA MORROW (GAS)
11. County or Parish, State: EDDY , NEW MEXICO

12. Check Appropriate Box(s) To Indicate Nature of Notice, Report, or Other Data

TYPE OF SUBMISSION	TYPE OF ACTION	
☒ Notice of Intent	☐ Abandonment	☐ Change of Plans
☐ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Atlering Casing	☐ Conversion to Injection
	☒ OTHER: CONVERT TO SWD	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log Form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*.

Texaco Exploration & Production, Inc. respectfully requests administrative approval for the attached C-108 application on its Cotton Draw Unit #65 well for the purpose of disposing of produced fluids in the non-commercial Delaware interval. This work will allow Texaco to eliminate current water disposal costs associated with the subject lease. Conversion of the subject well to SWD will lower the lease's economic limit and allow Texaco to recover additional oil and gas reserves that would otherwise be left in place.

Texaco respectfully requests that this application approved administratively at the earliest possible convenience so that operations can be advanced in a prudent manner. If you have any questions concerning the application, please contact Jason Wacker (505) 397-0484.

14. I hereby certify that the foregoing is true and correct.

SIGNATURE _____ TITLE Engr Asst DATE 2/2/98

TYPE OR PRINT NAME Monte C. Duncan

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

DeSoto/Nichols 12-93 ver 1.0

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: Texaco, E & P, Inc.

Address: 205 E. Bender, Hobbs, New Mexico, 88240

Contact party: Jason Wacker Phone: (505) 397-0484

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: Jason Wacker Title Production Engineer

Signature: Jason Wacker Date: 1/28/98

* 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.

New Mexico Oil Conservation Division – Form C-108

I. **Purpose :** Disposal

II. **Operator :** Texaco Exploration & Production, Inc.
Address : 205 E. Bender, Hobbs, New Mexico 88240
Contact Party : Jason Wacker (505) 397-0484

III. **Salt Water Disposal Well Data**
Cotton Draw Unit #65
Unit Letter G, 1980' FNL, 1980' FEL, Section 2, T-25-S, R-31-E
Eddy County, New Mexico
The above mentioned well was originally drilled as a producer and will be converted to a saltwater disposal well. The proposed injection zone is upper Delaware. No oil or gas zones are known to exist above the disposal interval. The Morrow formation (14,787' – 16,515') is the next lower gas zone in the well.

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

V. **Subject Area Maps and Area of Review**
A map of the subject area, Cotton Draw Unit lease, including all wells within a 2 mile radius is attached. Also attached is a map showing the subject well's area of review (or half mile radius circle).

VI. Cotton Draw Unit #84 (currently being drilled) is the only well known to exist within the area of review that penetrates the proposed injection zone. See attached information.

VII. See attached data on proposed operation.

VIII. 500' – 550' Santa Rosa. Underground source of drinking water.
4346' – 5762' (1416' thick) upper Delaware. Proposed injection interval. Deep marine turbidite sandstone. These sands are not drinking water zones and in Texaco's opinion they are non-productive in this area.

IX. Acidize Delaware perfs from 4542' – 4777' (112') with 4500 gal 15%NEFE HCl and 350 ball sealers.
Acidize Delaware perfs from 4954' – 5243' (77') with 3000 gal 15% NEFE HCl and 250 ball sealers.
Acidize Delaware perfs from 5326' – 5350' (80') with 3000 gal 15% NEFE HCl and 250 ball sealers.

X. Appropriate well logs have been filed with the BLM/NMOCD.

XI. Freshwater Wells within the Area of Review

Paduca Delaware Waterflood #2 WSW - Producing, See Water Analysis
Paduca Delaware Waterflood #5 WSW - Shut In
Paduca Delaware Waterflood #6 WSW - Shut In
Paduca Delaware Waterflood #8 WSW - Shut In
Paduca Delaware Waterflood #9 WSW - Producing, See Water Analysis

XII. After examining available geologic and engineering data, Texaco finds no evidence of open faults, or other hydrologic connection, between the disposal zone and any underground source of drinking water.

XIII. "Proof of Notice"

XIV. Certification

III. Well Data

INJECTION WELL DATA SHEET

OPERATOR	LEASE
Texaco Exploration & Production, Inc.	Cotton Draw Unit

WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE
#65	1980' FNL, 1980' FEL,	Section 2,	T-25-S,	R-31-E

Schemntic

See Attached

Tabular Data

Surface Casing

Size 20", 94#, H-40 Comented with 300 sx.

TOC Circ to Surf feet determined by _____

Hole size 36"

Intermediate Casing

Size 13-3/8", 54.5# Cemented with 3500 sx.

TOC Surface feet determined by 500 sx by 1",tag

Hole size 17-1/2"

Long string

Size 8-5/8" Cemented with 3580 sx.

TOC 65' feet determined by TS

Hole size 9-1/2"

Total depth 19,546'

Injection interval

4542 feet to 5714 feet
(perforated or open-hole, indicate which)

perforated

Tubing size 3-1/2" lined with Polyethylene (material) set in a

Arrowset IX (brand and model) packer at 4500 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Delaware

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

3. Is this a new well drilled for injection? /_/ Yes /X/ No

   If no, for what purpose was the well originally drilled? gas producer

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

   Devonian - 75 sx at 8-5/8" casing shoe (16100' - 16370')

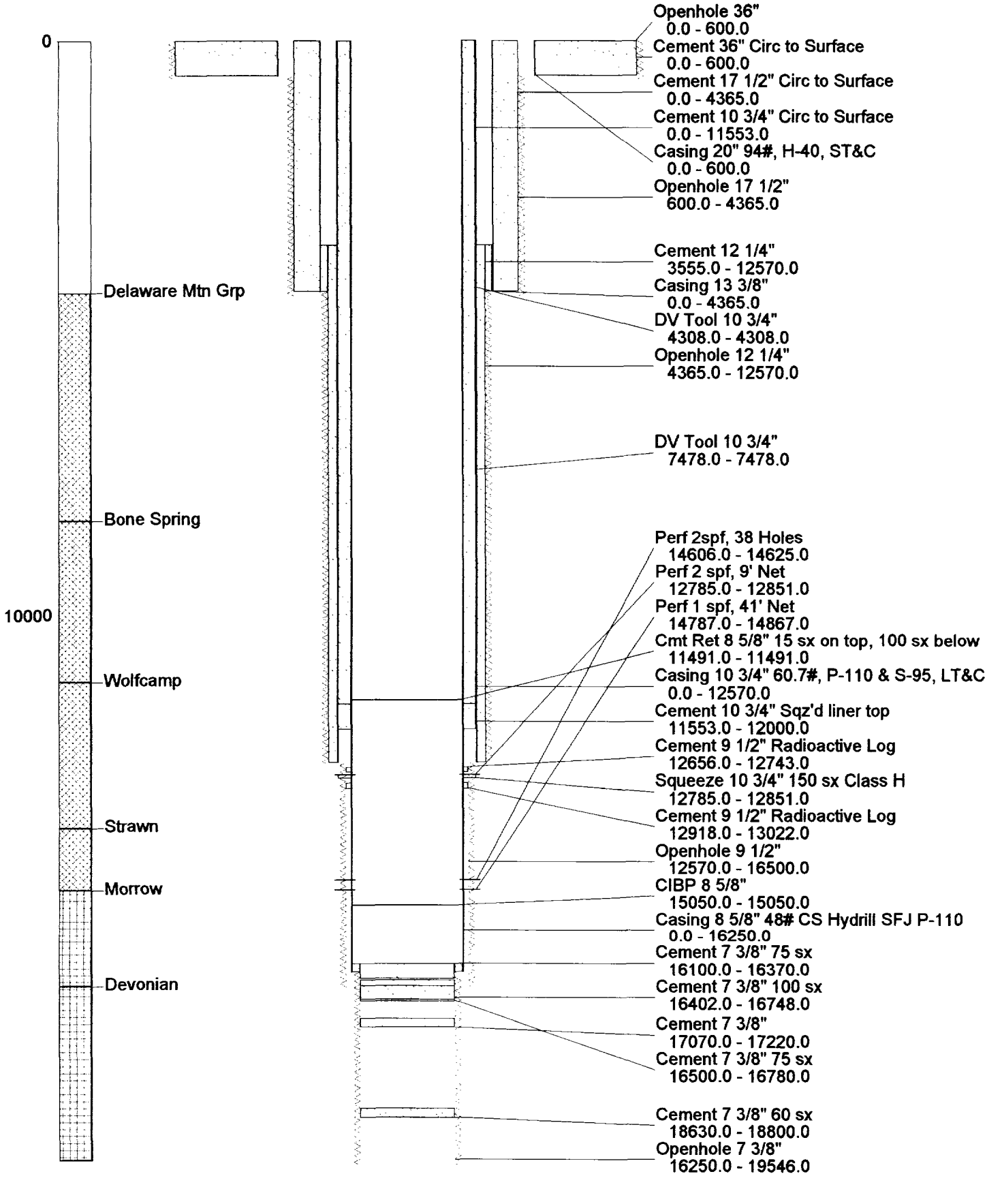
   Morrow - Cement Retainer @ 11491' 100 sx below, 15 sx on top

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.

   Devonian - 16515'

   Morrow - 14787'

CDU #65
Unit Letter G : Sec. 2, T-25-S, R-31-E
Name: 65 ID: 30015108430000 Type: TRMORROW Date: 19980109
KB: 21.0 TD: 19546.0 PBTD: 11450.0 Comp Date: 19670523



COTTON DRAW UNIT NO. 65

Casing Specifications

Surface:

36" hole

20", 94 lb, H40, STC set at 600'

Cement with 1000 sacks TLW & 300 sacks class "C". Cement circulated.

First Intermediate:

17-1/2" hole

13-3/8", 54.50 lb, J55 set at 4365'

Cement with 3500 sacks TLW & 300 sacks class "C". Cement did not circulate. Ran one inch tubing to 365' cement to surface with 500 sacks class "C".

Second Intermediate:

12-1/4" hole

10-3/4", 60.70 lb, P110/S95 set at 12570'
DV tools at 7478' and 4308'

First Stage: Cement with 1150 sacks TLW & 1050 sacks class "C". Open DV at 7448' and could not circulate.

Second Stage: Cement with 1650 sacks TLW. No returns. Top of cement by temperature survey at 6795'.

Third Stage: Cement with 600 sacks TLW. Full to no returns during job. Top of cement by temperature survey at 3555'.

Third Intermediate:

9-1/2" hole

Ran 8-5/8", 48 lb, P110, Hydril SFF liner 16250' to 11553'

Cement shoe with 1050 sacks class "H" & 300 sacks class "H". No returns. Squeeze liner top twice:

1) 500 sacks Trinity Inferno
2) 500 sacks Trinity Inferno

Clean out to liner top and test to 1000 psi - OK.

Ran 8-5/8", 40 lb, P110 tieback from 11553' to surface.

Cement with 1230 sacks class "H". Cement did not circulate. Top of cement at 65'.

Production:

7-1/4" hole

Spot plugs. No casing was run.

Injection Tubing

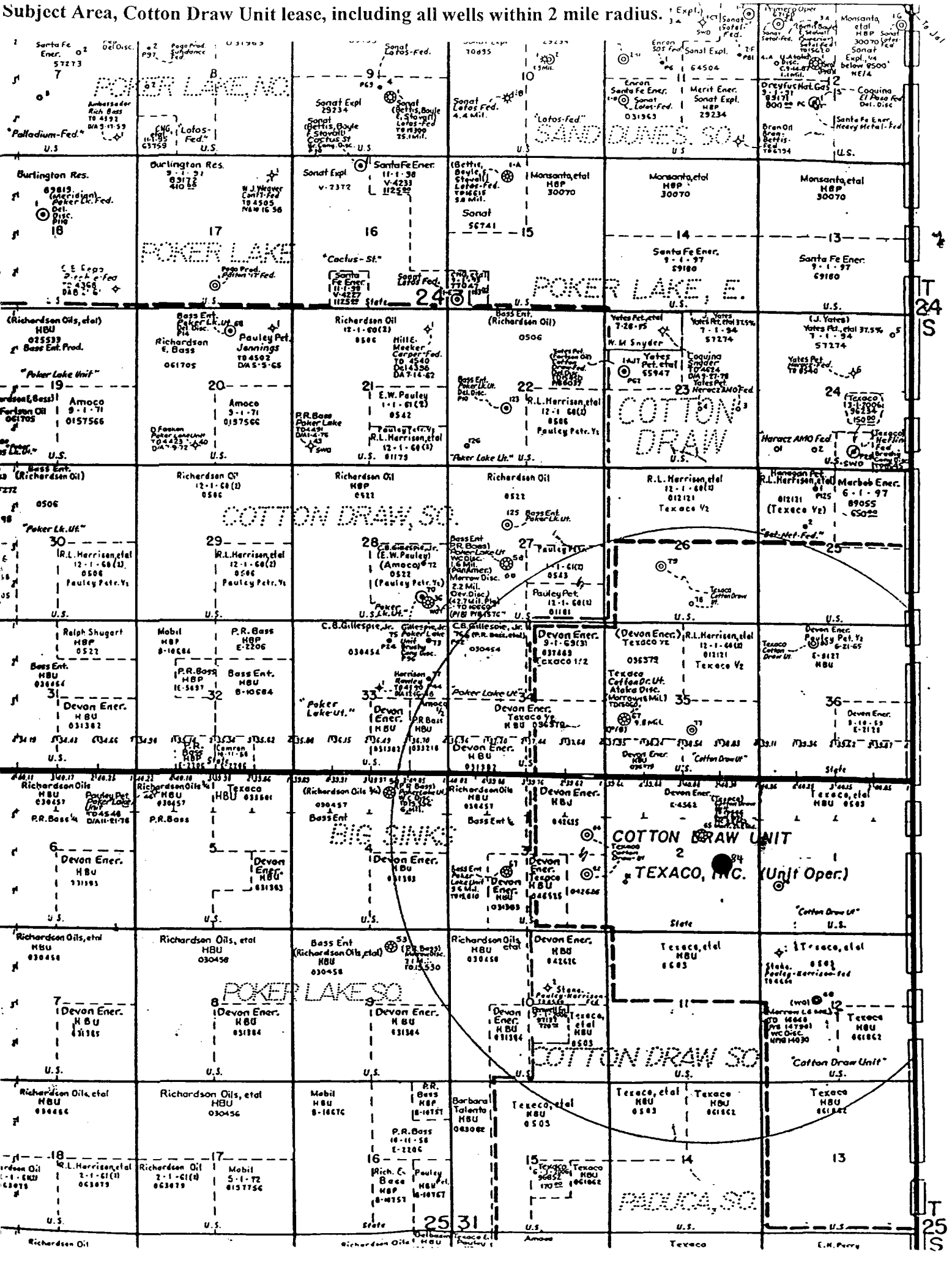
Polyethylene lined 3-1/2" from 0' to 4500'.

Injection Packer

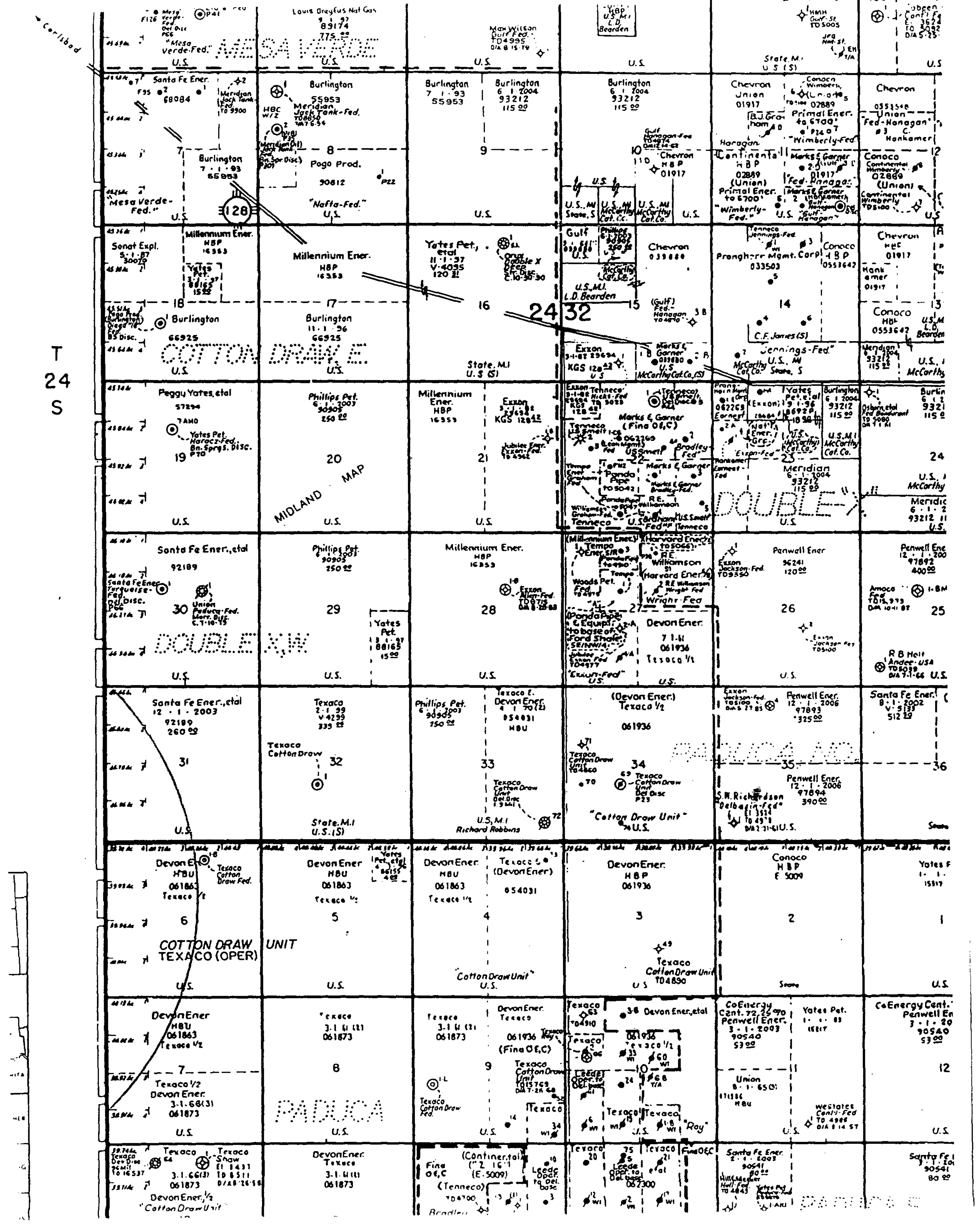
2-7/8" X 8-5/8" Arrowset IX nickel-plated injection packer set at 4500'.

V. Area of Review

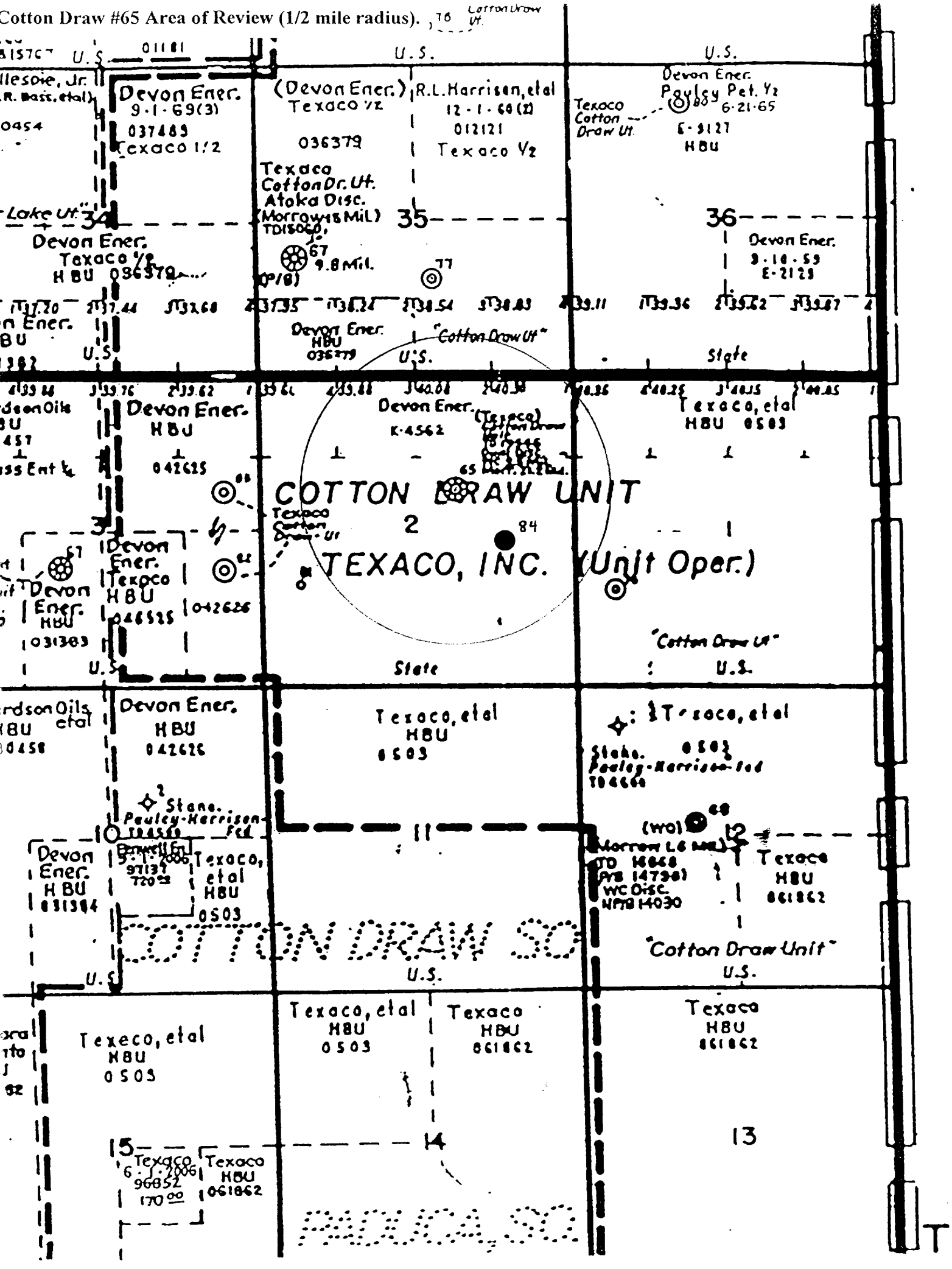
Subject Area, Cotton Draw Unit lease, including all wells within 2 mile radius.



Subject Area, Cotton Draw Unit lease, including all wells within 2 mile radius.



Cotton Draw #65 Area of Review (1/2 mile radius).



VI. Well Data Within Area of Review

ANTICIPATED DRILLING PROGRAM

Date 8/18/97 Est. No. 676015

Field Paduca

Lease Cotton Draw Unit Well No. 84

Surface Location 2615' FSL and 1160' FEL of Section 2, T25S/R31E

Bottom Hole Location 2500' FSL and 1300' FEL of Section 2, T25S/R31E

Approved Total Depth	Estimated Cost				Dev.
17,000' TVD	4,350,000	Dry Hole Cost	150 Days Drill	[X] Single	Res. [ ]
17,000' MD	505,000	Completion Cost	30 Days Compl.	[ ] Dual	OSWC [ ]
3,455' GL ELEV	4,855,000	Total	180 Days Total	50 % Tx. Int.	RWC [ ]

OBJECTIVE FORMATIONS

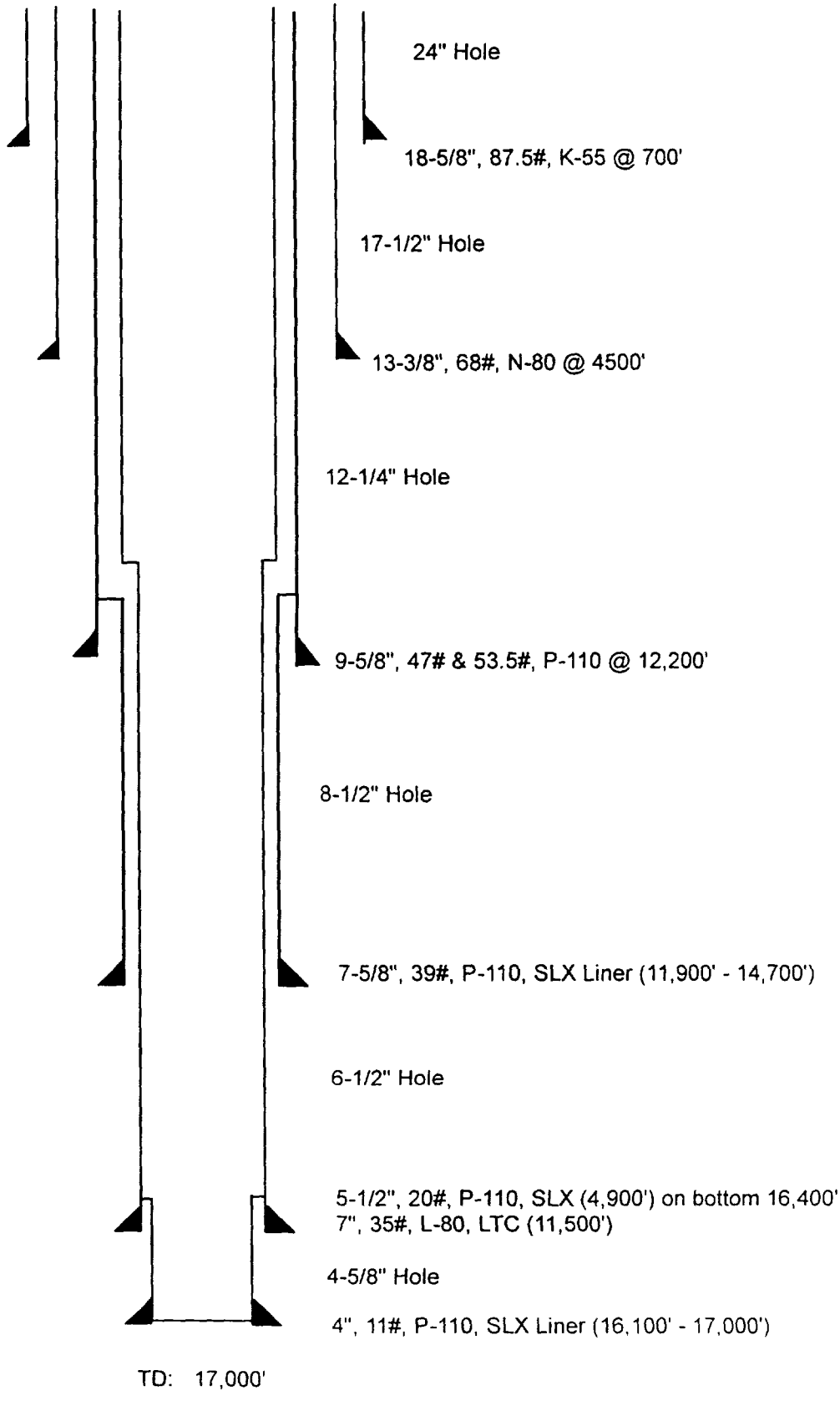
Sand Name	Depth (TVD) Expected	Press Grad. (psi/ft)	BHP	P.P.	Gauge	Kick	Equiv. Mud Wt.	Antcpd. Prod.	Antcpd. SITP
Lamar Lime	4,350'								
Brushy Canyon Sand	6,970'	0.25	X				4.8		
Bone Spring Sand	8,300'								
Wolfcamp Lime Marker	12,000'	0.77				X	14.8	Gas	8300
Strawn Lime	13,600'								
Morrow Sand	14,800'								
Mississippian Lime	15,960'								
Devonian Dolomite	16,400'	0.43	X				8.3	Gas	5200

CASING AND CEMENTING DATA

SIZE Hole	SIZE Csg.	Depth		Sacks	Wt. (PPG)	Instructions
24	18-5/8"	700'	--Surface	1000	14.2	See Detail
			x	350	14.8	
17-1/2	13-3/8"	4,500'		3000	12.8	
			Intermediate x	250	15.6	
12-1/4	9-5/8"	12,200'		1200/250	14.2/15.6	
			x Intermediate x	2000/250	14.2/15.6	
8-1/2"	7-5/8"	11,900'		300 Squeeze		
		14,700'	Drilling Liner x	700 Tack	16.4	
6-1/2"	7"	0- 11,500'	Production			
	5-1/2"	16,400'	Casing	500	16.4	
4-5/8"	4"	16,100'-17,000'	Production Liner	200	16.4	

Prepared by: M. R. Marquez 8-19-97 Approved by: CPB 8/19/97

Cotton Draw Unit No. 84
Eddy County, New Mexico
Proposed Wellbore



VII. Data on Proposed Operation

Cotton Draw Unit #65
Unit Letter G : 1980' FNL & 1980' FEL, Sec. 2, T-25-S, R-31-E
Eddy County, New Mexico

Conversion to SWD

Well Data

Tubing:	None	Casing:	8-5/8" 48# CS Hydrill @ 16,250'		
TD:	19,546'	PBTD:	11,450'	Elevation:	3455' GR, 21' KB

Field: Paduca (Gas) Perforations: None Open

Procedure

1. Remove flow tree and send to Steve Ashby (915) 688-4416.
2. TIH with 7-7/8" bit and casing scraper on 2-7/8" workstring to 6000'. Pressure test casing to 500 psig for 30 min. TOH with bit and scraper.
3. Perforate the following intervals with Schlumberger 4.5 HSD gun, 51J UJ HMX charges, 2 spf, and 72 deg phasing (269') : Bell Canyon 4542' – 4574', 4681' – 4707', 4723' – 4777', 4954' – 4966', 4983' – 5016' and 5210' – 5243'; Cherry Canyon 5326' – 5350', 5413' – 5441', 5465' – 5481', and 5702' – 5714'.
4. TIH with 8-5/8" treating packer on 2-7/8" workstring. Set packer at +/- 5275'. Watch for pressure on backside.
5. Acidize Cherry Canyon perfs from 5326' – 5714' (80') with 3000 gal 15% NEFE HCl at 4-5 bpm using 250 ball sealers. Flush to top perf with 2% KCl water. TOH.
6. TIH with packer, RBP, and 6' ball catcher sub. Set RBP @ +/- 5275'. Set packer @ +/- 4900'. Acidize Bell Canyon perfs from 4954' – 5243' (77') with 3000 gal 15% NEFE HCl at 4-5 bpm using 200 ball sealers. Flush to top perf with 2% KCl water.
7. Set RBP @ +/- 4850'. Set packer @ +/- 4500'. Acidize Bell Canyon perfs from 4542' – 4777' (112') with 4500 gal 15% NEFE HCl at 4-5 bpm using 350 ball sealers. Flush to top perf with 2% KCl water. Shut in 1 hour. Swab back load for remainder of day. TOH with treating packer and 2-7/8" workstring.
8. TIH with retrieving tool on 2-7/8" workstring and reverse balls. Latch on to RBP, release, and TOH. TIH with treating packer on 2-7/8" workstring. Knock balls off entire perforated interval. Set packer above top perf. Swab back load for remainder of day. TOH.
9. TIH with 3-1/2" polyethylene lined injection tubing and nickel-plated injection packer and set at +/- 4500'. Install hanger adapter, injection valves, and 2" metering equipment. Run step rate test and shut in until closed injection system and permits are completed. At 0.2 psi/ft limit, max initial injection pressure will be 900 psig. Average injection pressure will be 800 psig. Maximum injection rate will be 3300 BWIPD. Average injection rate will be 1100 BWIPD.

VIII. Geological Data

I

Unichem International

707 North Leech P.O.Box 1499

Hobbs, New Mexico 88240

Company : Texaco
Date : 05-22-1997
Location: CDU IPD (on 05-24-199`` - Delaware Interval - (Cotton Draw Unit - Padura Delaware Waterflood)

	Sample 1
Specific Gravity:	1.136
Total Dissolved Solids:	190052
pH:	6.50
IONIC STRENGTH:	3.840

		me/liter	mg/liter
CATIONS:			
Calcium	(Ca+2)	920	18400
Magnesium	(Mg+2)	120	1460
Sodium	(Na+1)	2280	52300
Iron (total)	(Fe+2)	0.029	0.800
Barium	(Ba+2)	0.048	3.30
Manganese	(Mn+2)	0.653	18.0
ANIONS:			
Bicarbonate	(HCO3-1)	8.80	537
Carbonate	(CO3-2)	0	0
Hydroxide	(OH-1)	0	0
Sulfate	(SO4-2)	6.95	334
Chloride	(Cl-1)	3300	117000
DISSOLVED GASES			
Carbon Dioxide	(CO2)		50.0
Hydrogen Sulfide	(H2S)		136

SCALING INDEX (positive value indicates scale)

Temperature		Calcium Carbonate	Calcium Sulfate
86[F	30[C	1.5	-5.8
104[F	40[C	2.1	-5.7
122[F	50[C	2.4	-5.7
140[F	60[C	2.8	-5.7
168[F	76[C	3.3	-6.0
176[F	80[C	3.5	-6.0

Comments:
cc: Isaac Huskey
Jay Brown

I

X. Well Logs

PAN GEO ATLAS CORP.

PGAC

Gamma Gamma Density Log Compensated

FILE NO.

COMPANY TEXACO INC

WELL COTTON DRAW UNIT NO. 65

FIELD WILDCAT

COUNTY EDDY STATE NEW MEXICO

LOCATION: 1980 FNL 1980 FEL

SEC 2 TWP 25-S RGE 31-E

Other Services
BHC A/G/C
MS LL MLL
G/N N APL
CDM C/B

Permanent Datum G.L. Ele. 3455

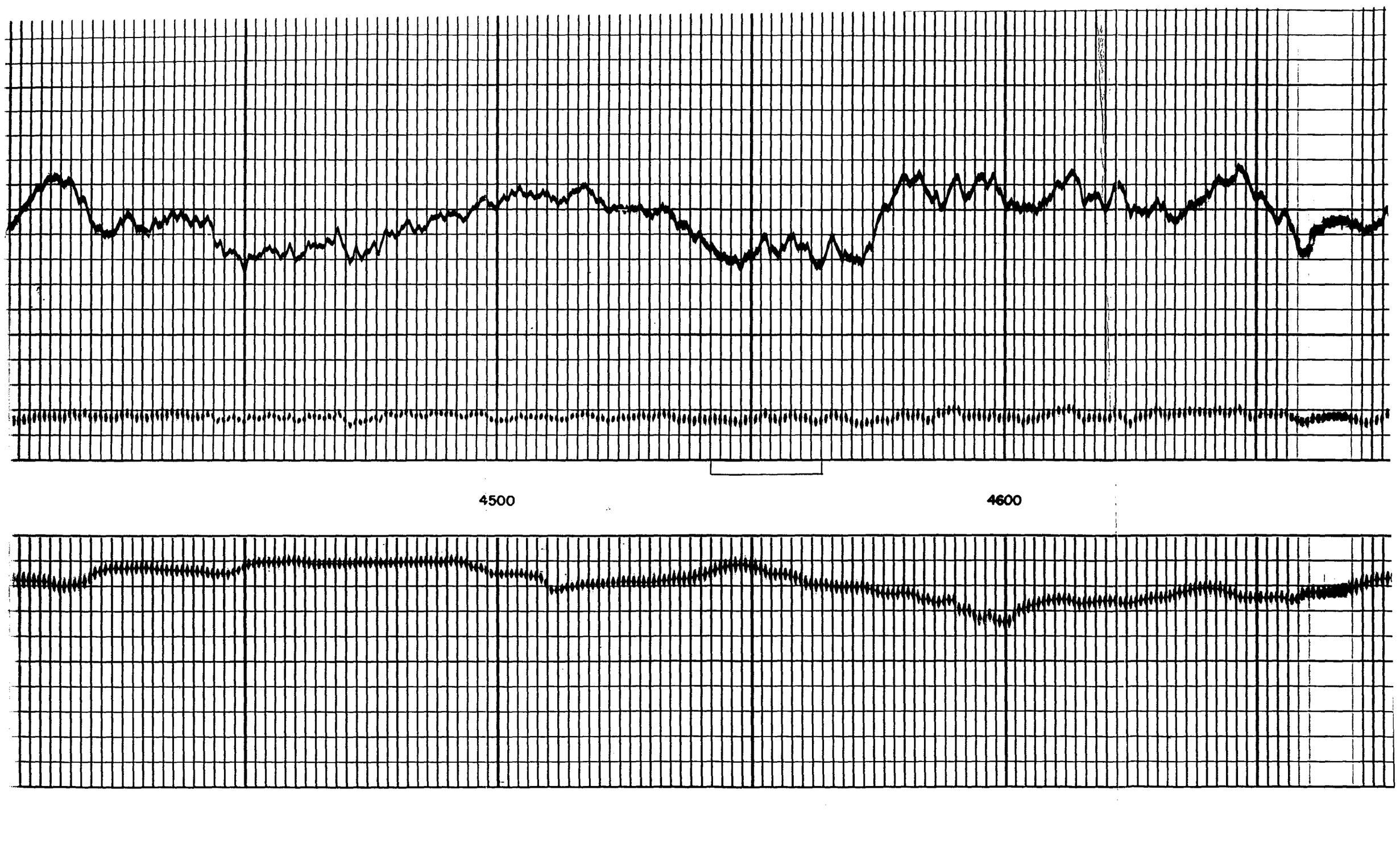
Log Measured from K.B. 21 Ft. Above Permanent Datum

Drilling Measured from K.B.

Elevations
K.B. 3476
D.F. 3475
G.L. 3455

Date	7-21-66	9-13-66	10-26-66
Run No.	ONE	TWO	THREE
Type Log	GGD/C	GGD/C	GGD/C
Depth-Driller	4360	12570	14038
Depth-Logger	4260	12576	14040
Bottom Logged Interval	4258	12574	14037
Top Logged Interval	604	4359	12569 (5 1/2% OIL)
Type Fluid in Hole	BRINE	SALT GEL	XP-20-SPERSENE
Salinity Ppm Cl.	*	-	4600
Density Lb./Gal.	10.1	9.3	15.3
Level	FULL	FULL	FULL
Max. Rec. Temp. Deg. F	105	167	180
Opr. Rig Time	3 HRS.	7 HRS.	2:30
Recorded By	CANFIELD-ZOELLER	DAY	ROSS
Witnessed By	MR. SCHLARB	HUNTER-WOJCKI	MR. SCHLARB

Run No.	Bore Hole Record			Casing Record			
	Bit	From	To	Size	Wgt.	From	To
	17 1/2	600	4360	20	*	SURF	600
	12 1/4	4365	12570	13 3/4	*	SURF	4365
	9 1/2	12570	14038	10 3/4	*	SURF	12570
	9 1/2	12570	16262	10 3/4	*	SURF	12570
	7 3/8	16256	19546	8 5/8		SURF	16256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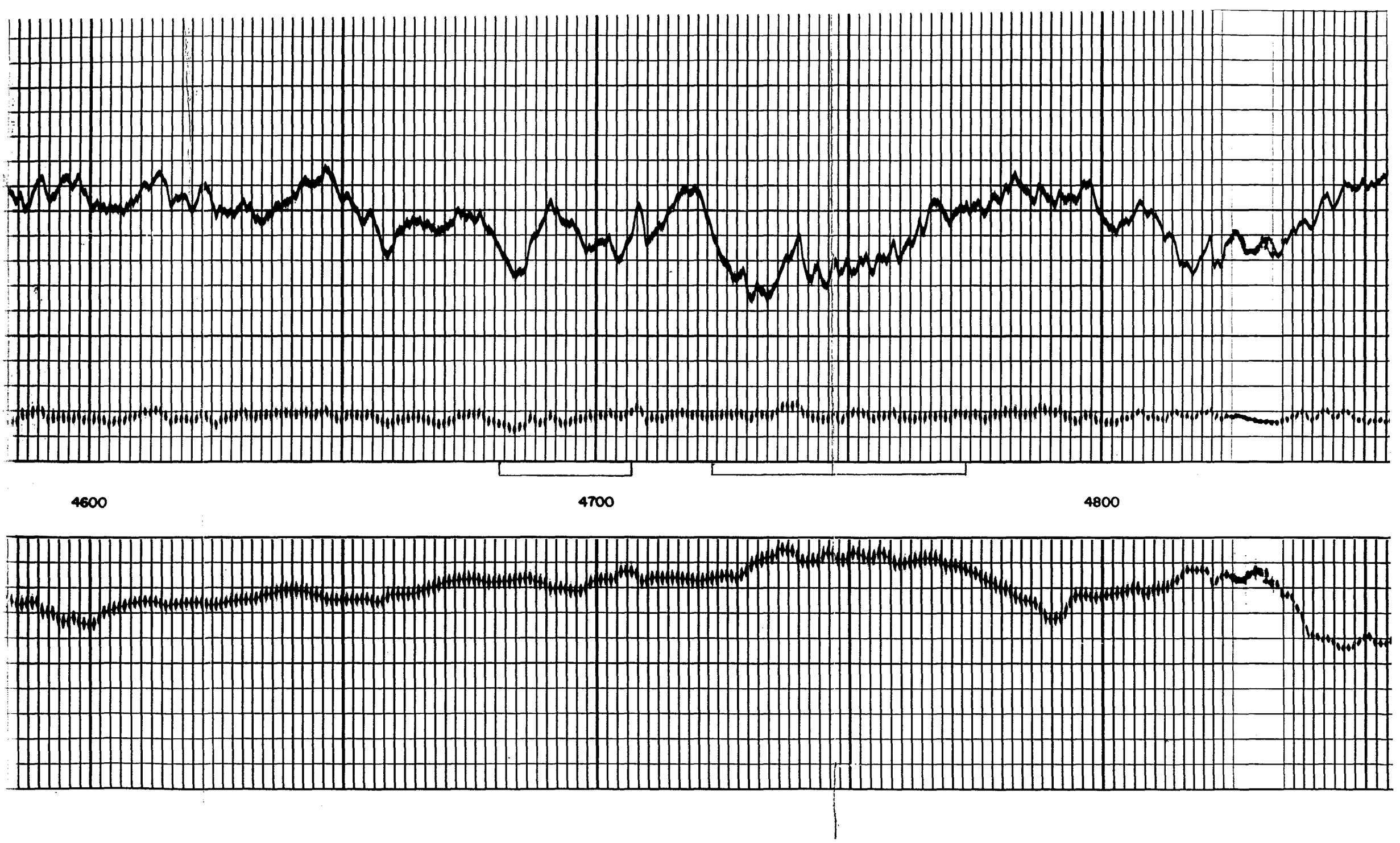
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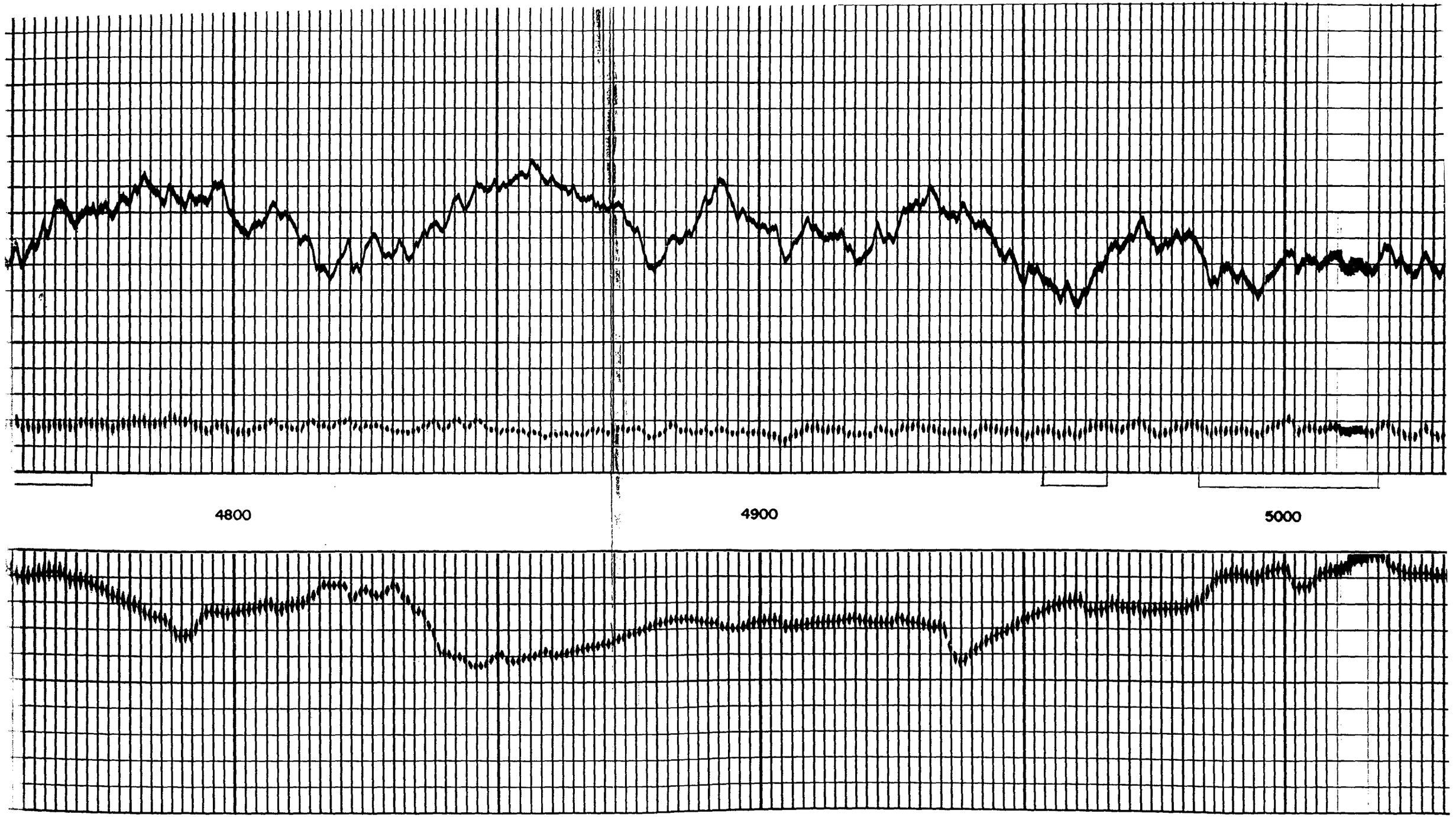
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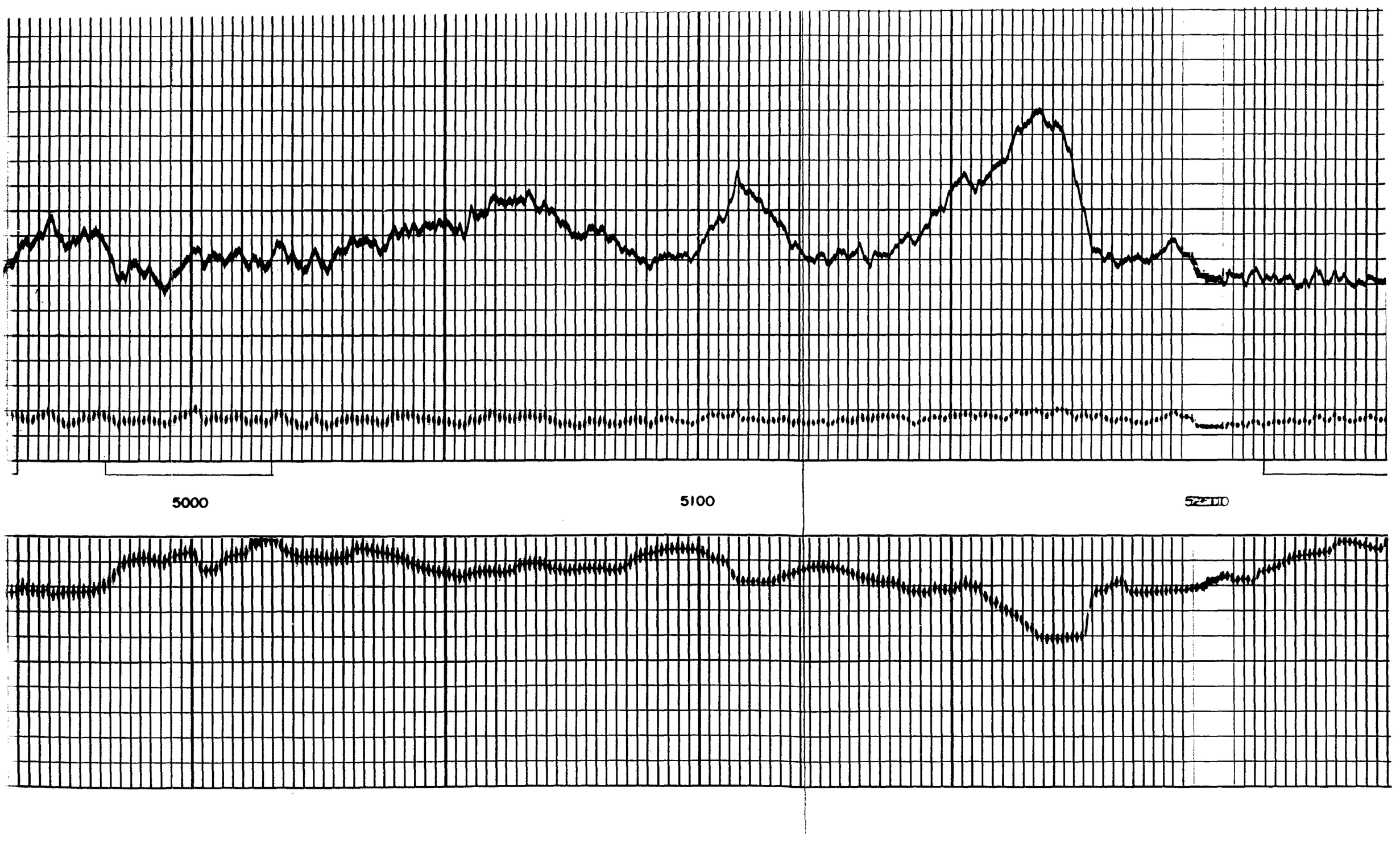
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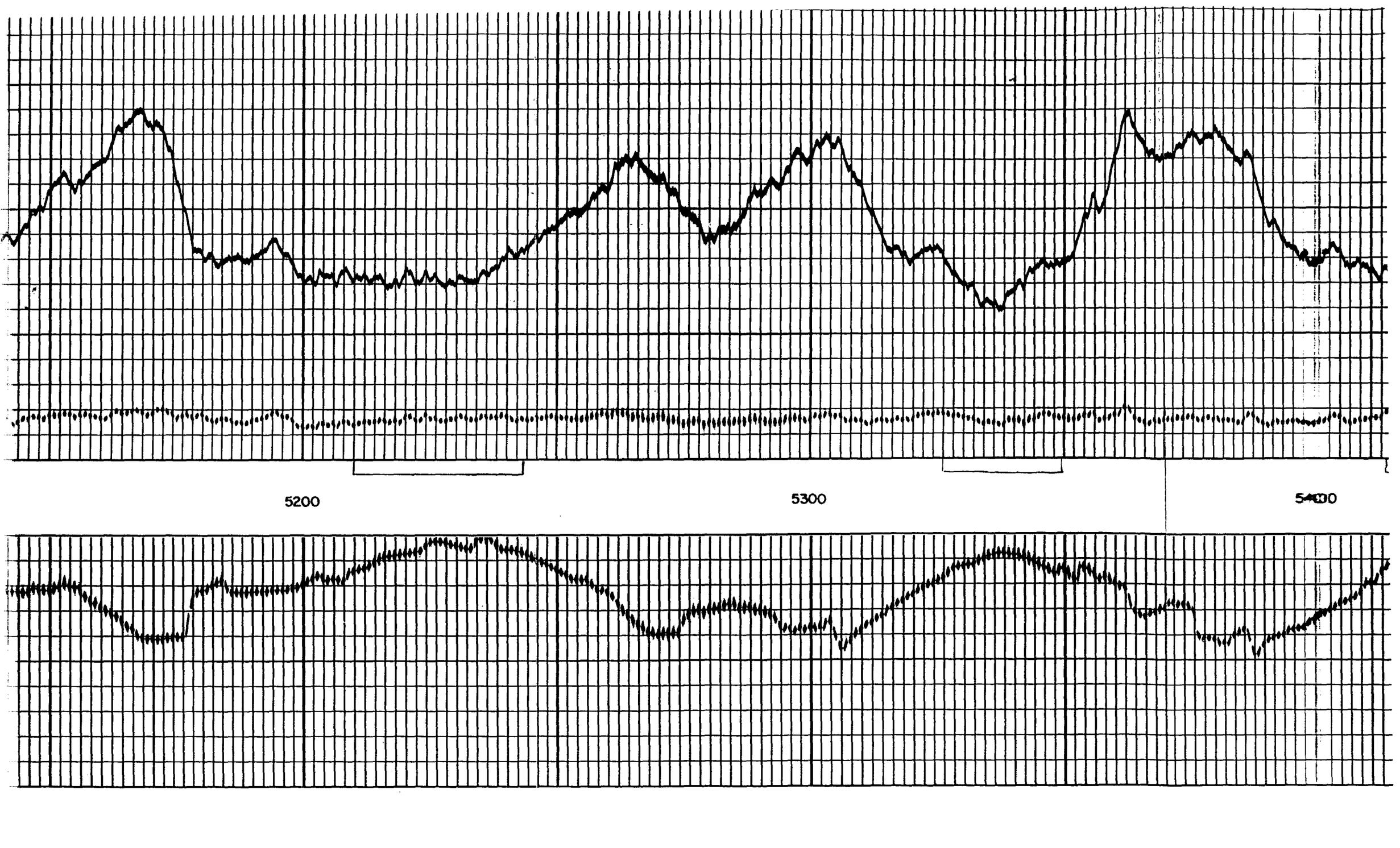
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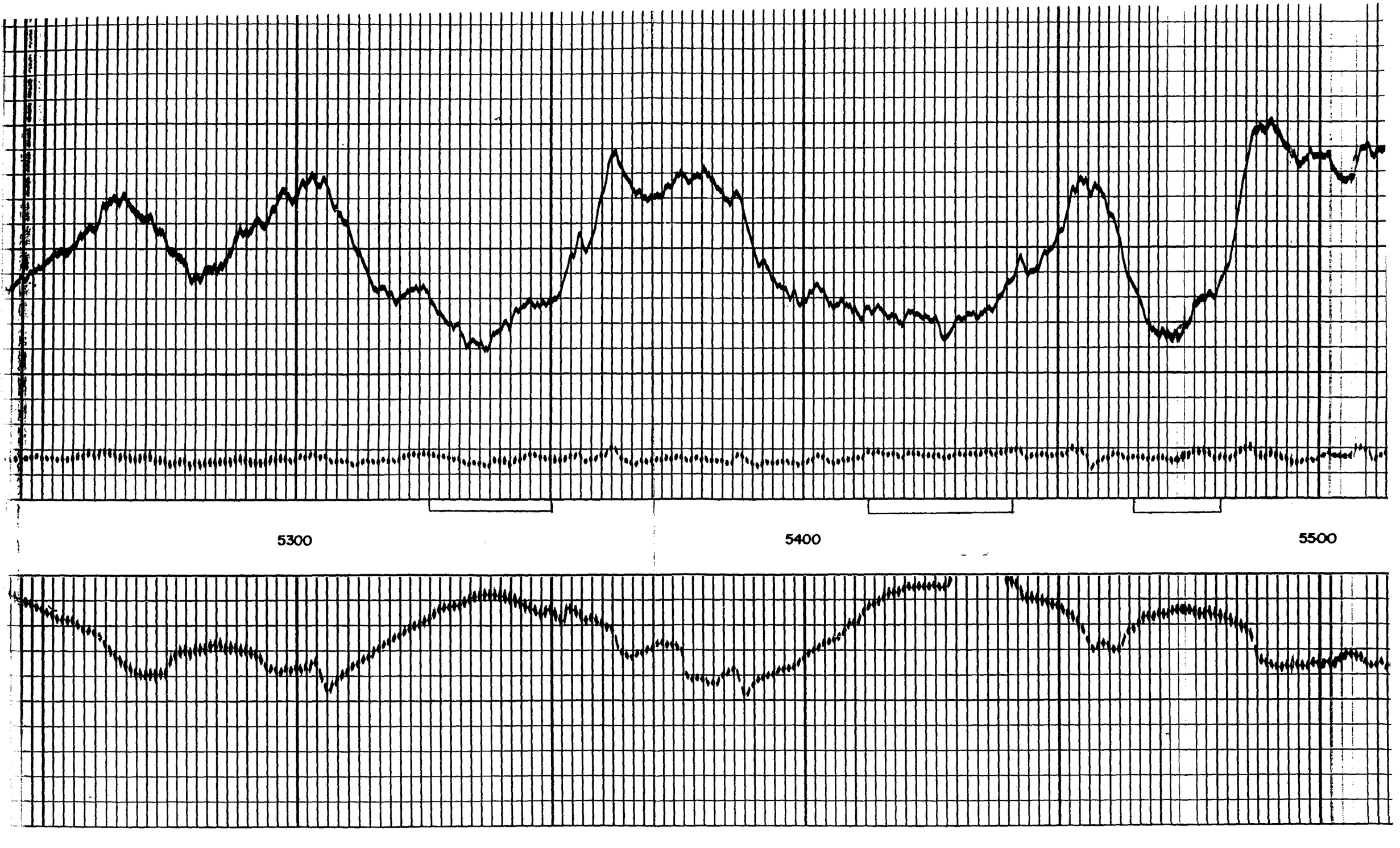
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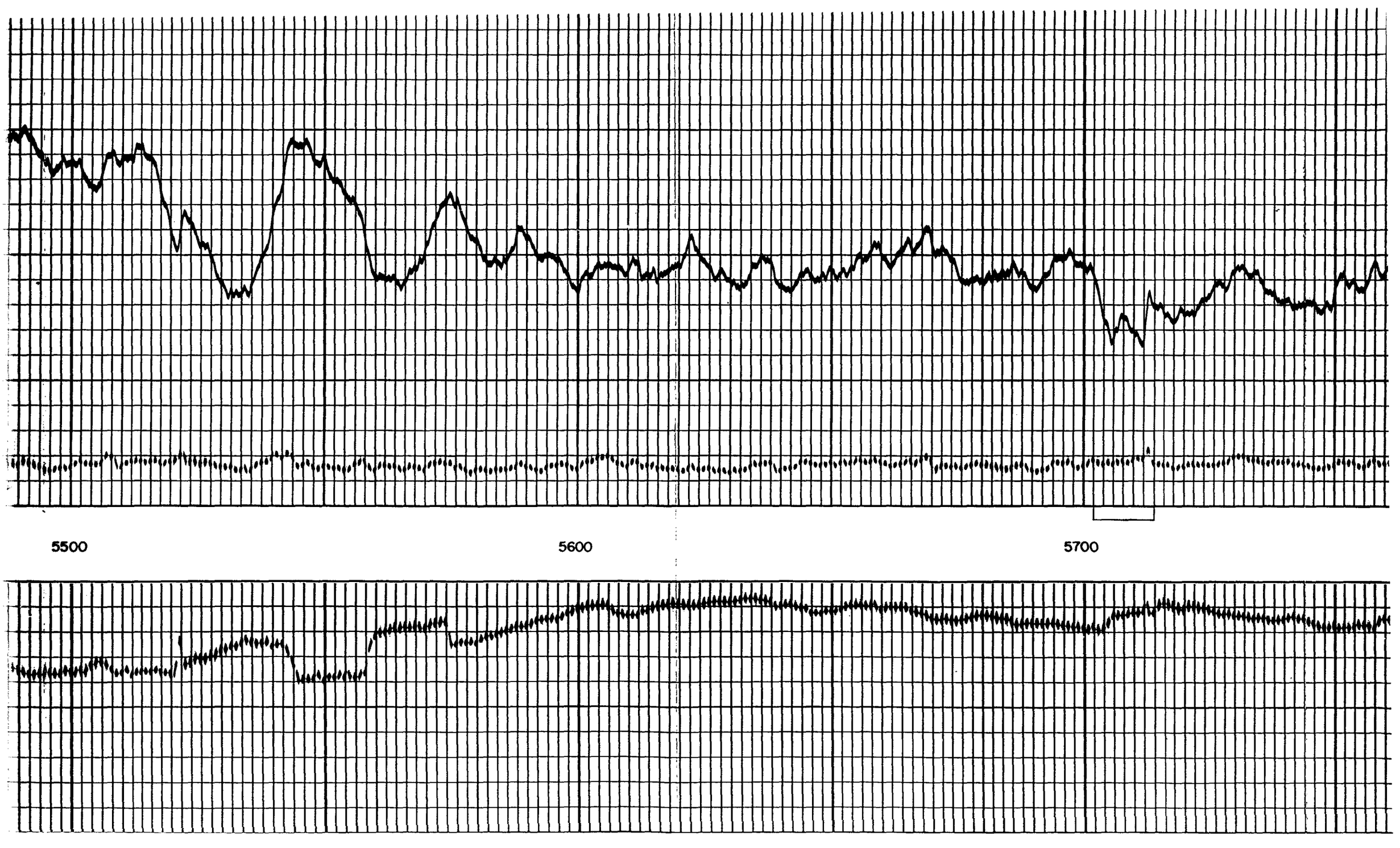
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PAN GEO ATLAS CORP.

PGAC *Acoustic-Gamma Ray Log*
BOREHOLE Compensated

FILE NO.

FIELD PRINT 2

COMPANY TEXACO INCORPORATED
WELL COTTON DRAW UNIT No. 65
FIELD WILDCAT
COUNTY Eddy STATE NEW MEXICO
LOCATION: 1980' FNL & 1980' FEL
SEC 2 TWP 25-S RGE 31-E

Other Services
LL3
GGD

Permanent Datum GROUND LEVEL Elev. 3455.0'
Log Measured from K.B. 21.0 Ft. Above Permanent Datum
Drilling Measured from K.B.

Elevations:
KB 3476.0'
DF 3475.0'
GL 3455.0'

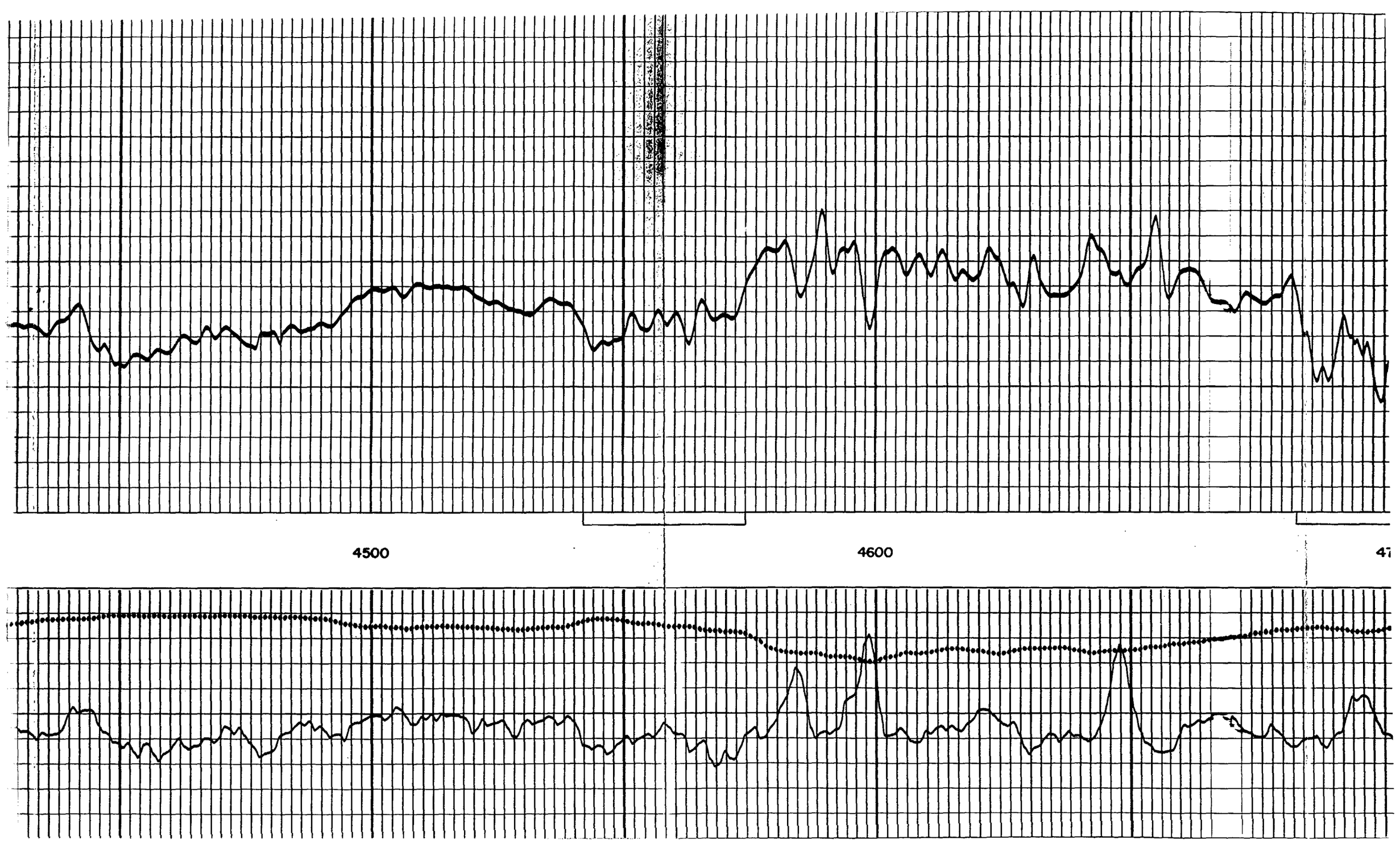
Date	9-13-66
Run No.	TWO
Total Depth Driller	12,570'
Total Depth PGAC	12,576'
Bottom Logged Interval	12,571'
Casing Driller	4365
Casing PGAC	4358'
Footage Logged	8213'
Mud Type	SALT GEL
Density Visc.	9.1 31
Max. Temp. (F)	
Rec. To Rec. Spacing	2.0'
Trans. To Rec. Spcg.	3.0'
Logging Instrument	121-3385-136
Equip. No.	ES121-ODESSA
Recorded By	M. ORY
Witnessed By	MR. HUNTER & WOJCIK

BORE HOLE RECORD

Bit Size	From	To
17 1/2"	600'	4365'
12 1/4"	4365'	12,570'

CASING RECORD

Csg. Size	Csg. Wt.	From	To
20"	✱	Surface	600'
13 3/4"	✱	Surface	4365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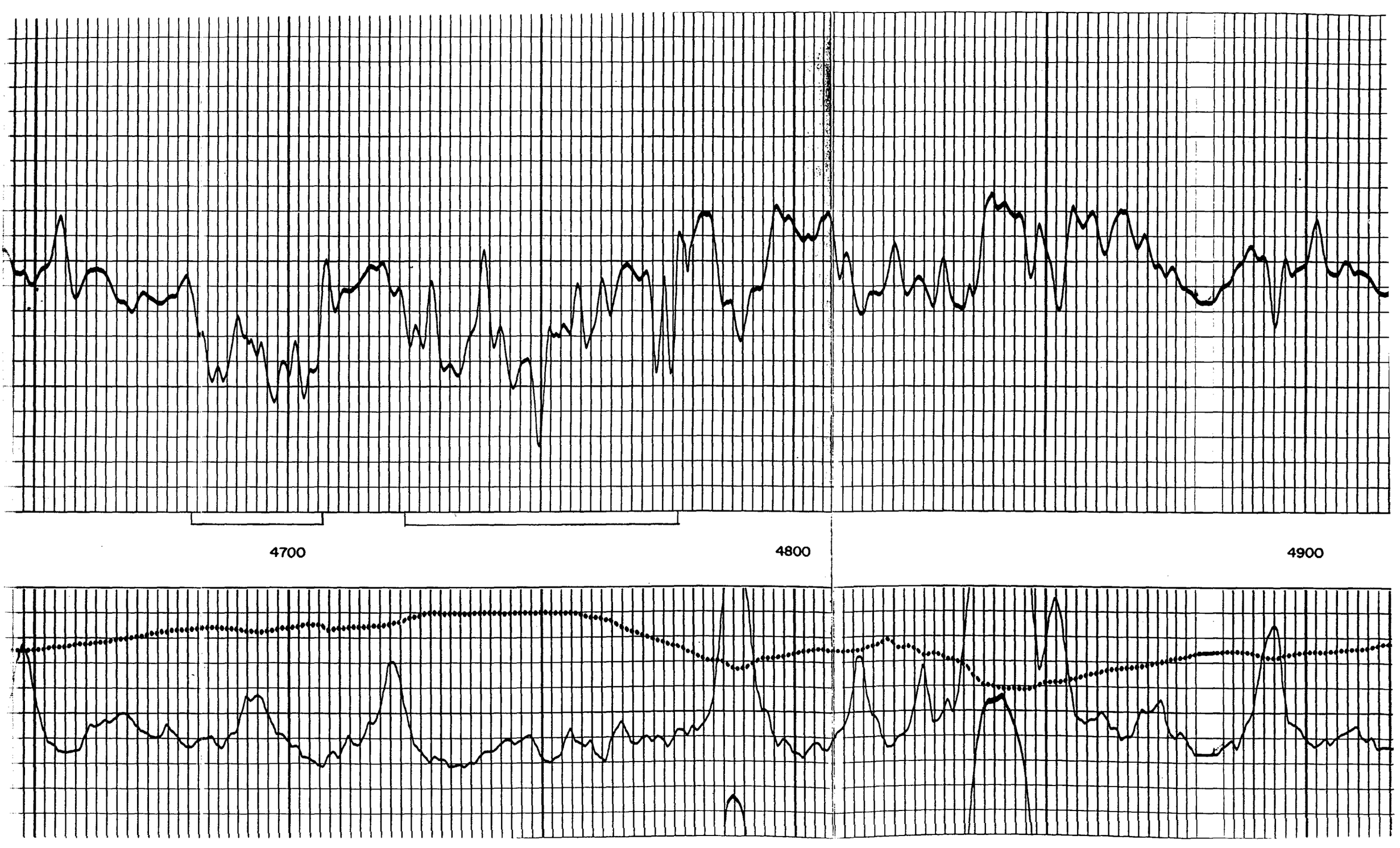
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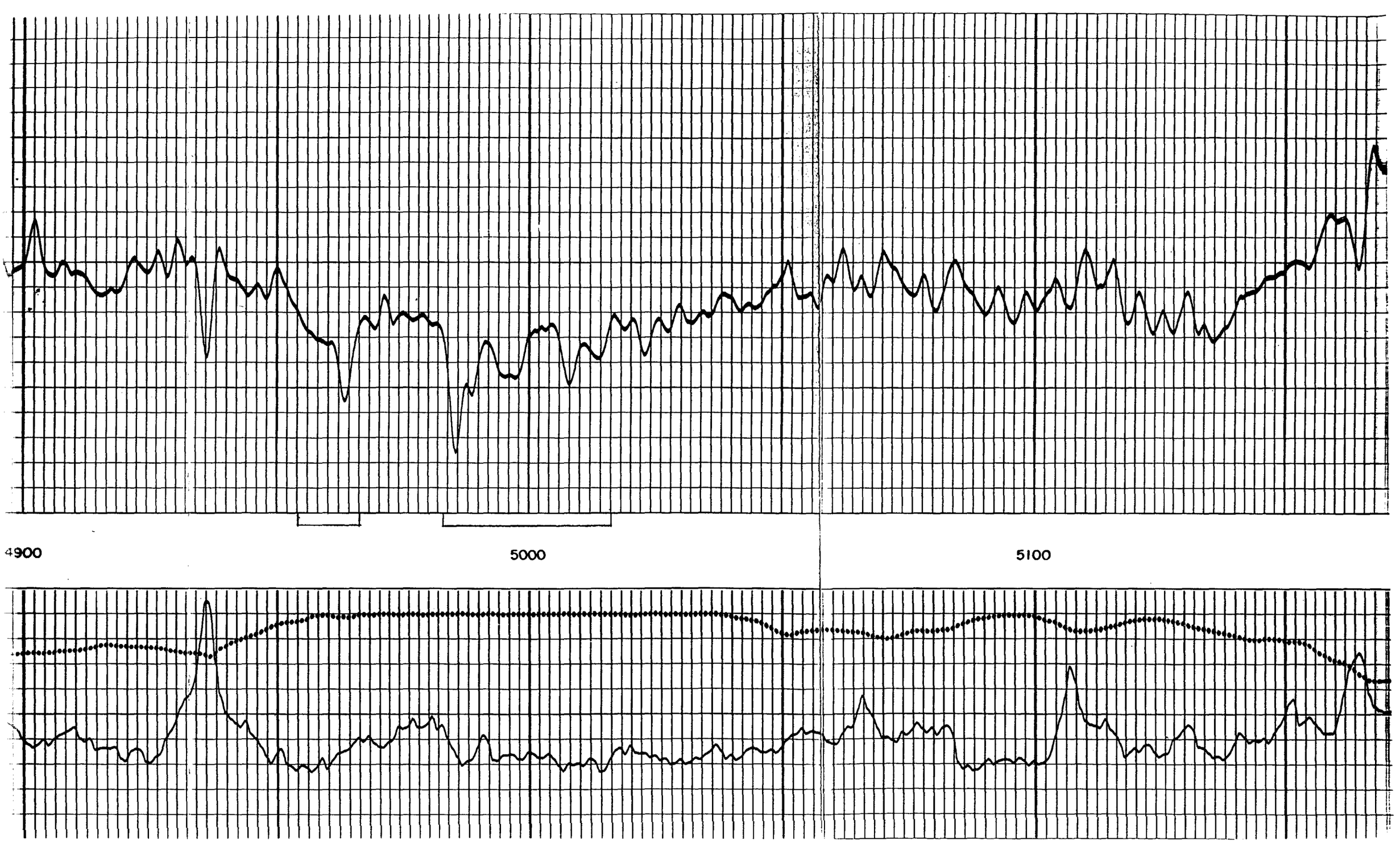
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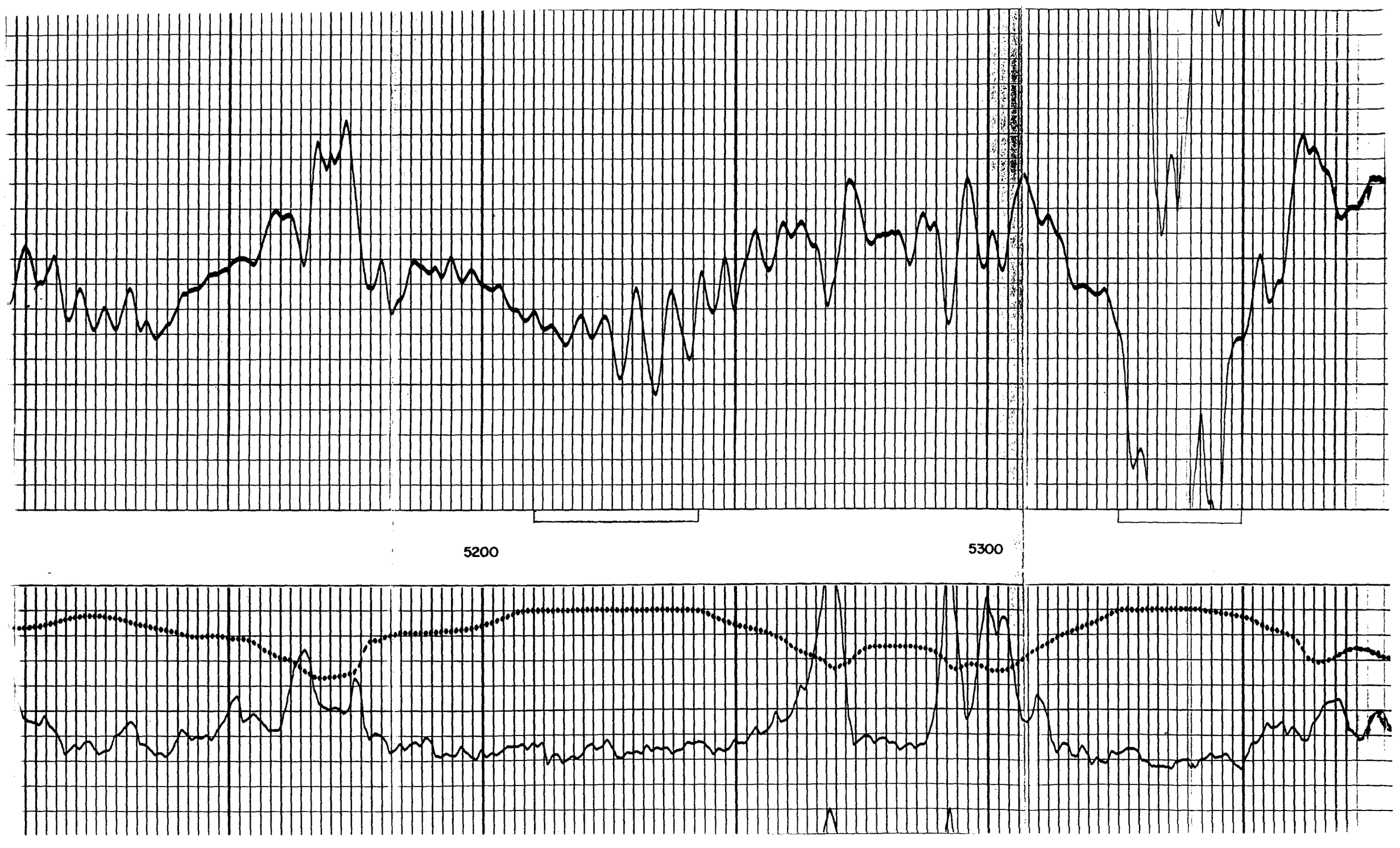
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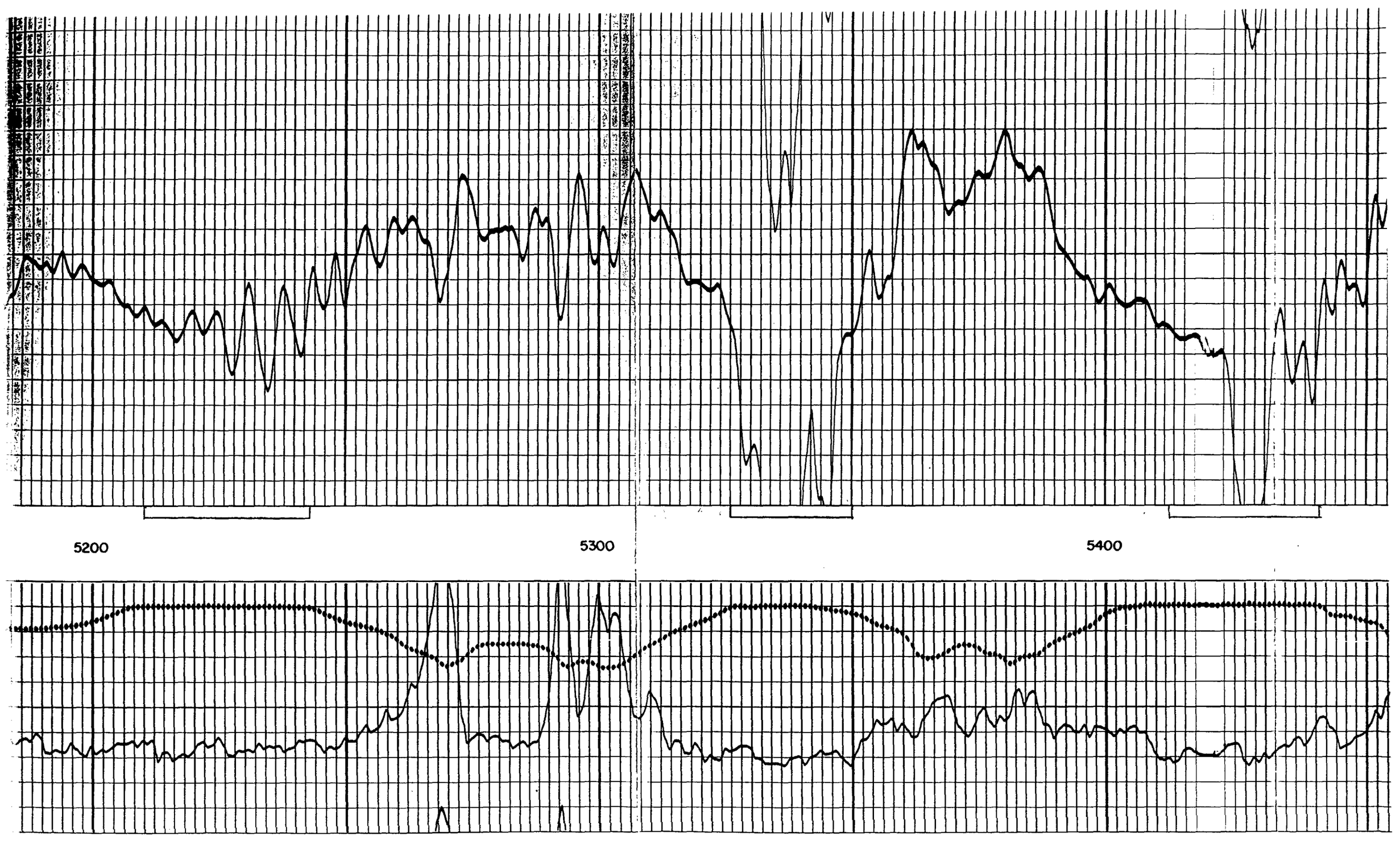
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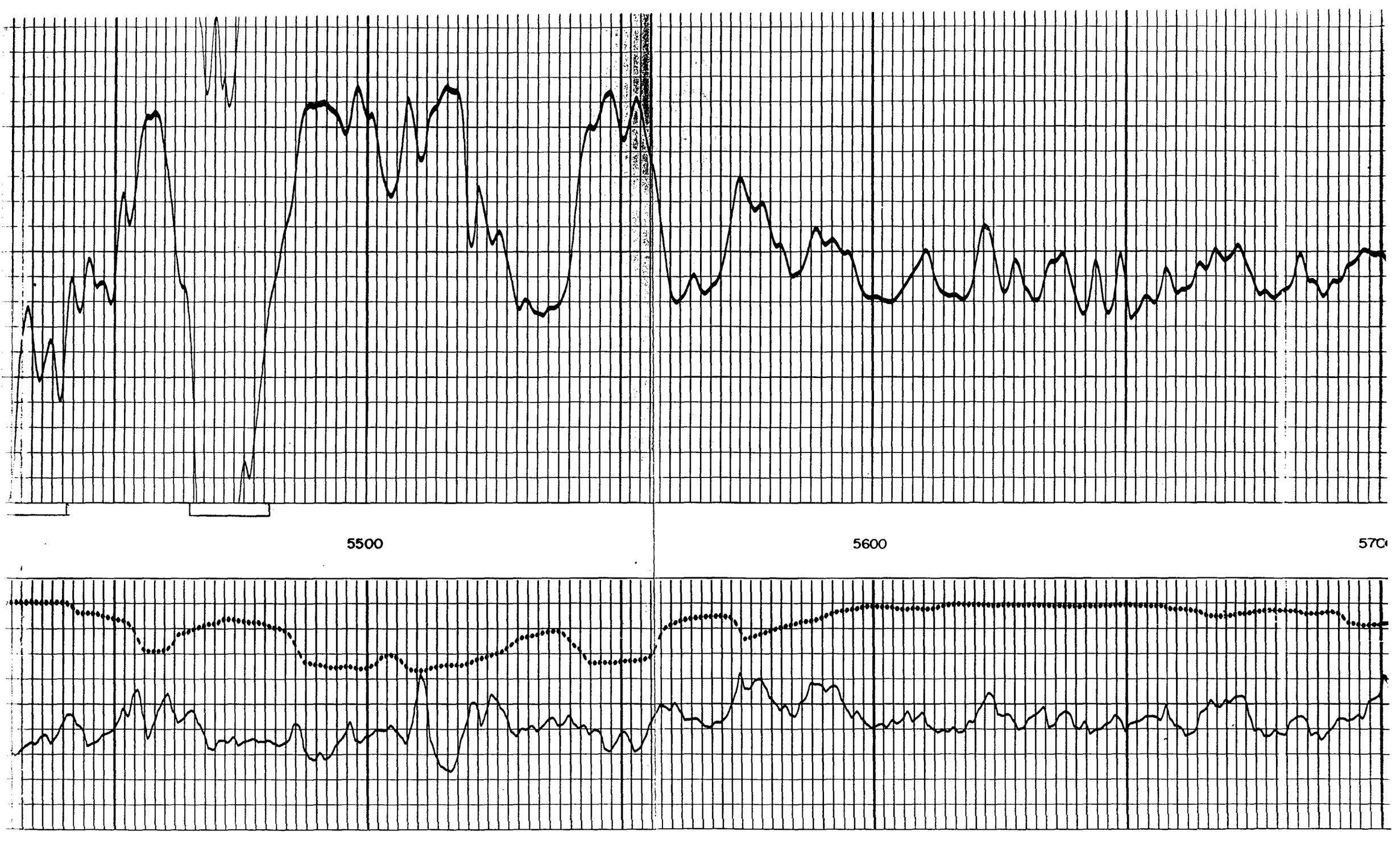
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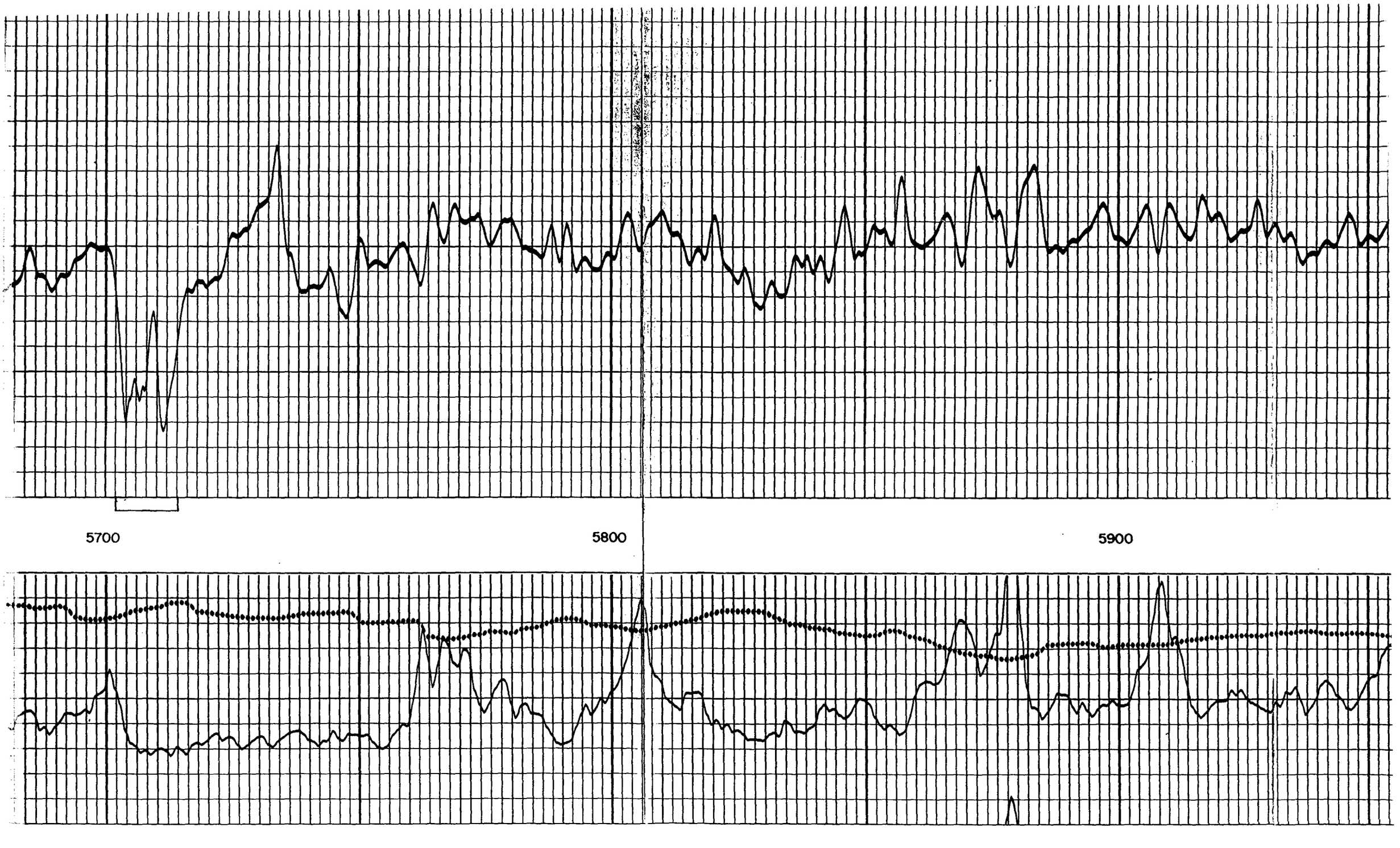
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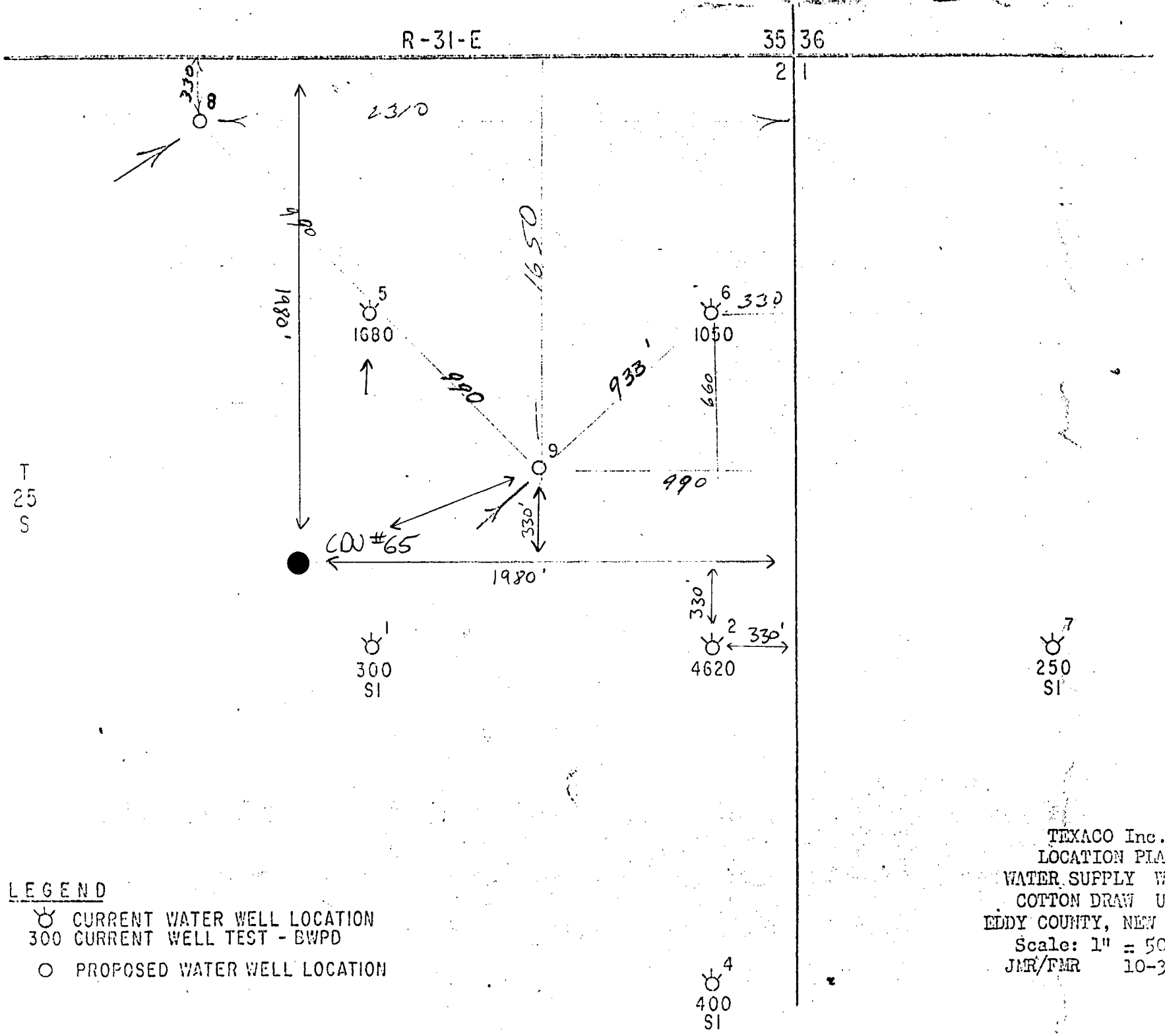
XI. Water Analysis of Fresh Water Wells Within 1 Mile



LEGEND

☼ CURRENT WATER WELL LOCATION
300 CURRENT WELL TEST - BWPD

○ PROPOSED WATER WELL LOCATION

TEXACO Inc.
LOCATION PLAT
WATER SUPPLY WELLS
COTTON DRAW UNIT
EDDY COUNTY, NEW MEXICO
Scale: 1" = 500'
JMR/FMR 10-3-73

UNICHEM

A DMsion of BJ Services Company

Lab Test No : 18191

Texaco

Sample Date : 1/28/98
Lab Date In : 1/30/98
Lab Date Out : 2/3/98

Water Analysis

Listed below please find water analysis report from : Cotton Draw #2

Specific Gravity :	1.006
Total Dissolved Solids :	8855
pH :	
Conductivity (µmhos):	
Ionic Strength :	0.175

Cations:		mg/l
Calcium	(Ca++):	170
Magnesium	(Mg++):	134
Sodium	(Na+):	2901
Iron	(Fe++):	0.00
Dissolved Iron	(Fe++):	
Barium	(Ba++):	
Strontium	(Sr):	
Manganese	(Mn++):	0.04
Resistivity :		
Anions:		
Bicarbonate	(HCO3-):	
Carbonate	(CO3--):	
Hydroxide	(OH-):	0
Sulfate	(SO4--):	1850
Chloride	(Cl-):	3800

Gases:		ppm		
Carbon Dioxide	(CO2):		Oxygen	(O2):
Hydrogen Sulfide	(H2S):			

Scale Index (positive value indicates scale tendency) a blank indicates some tests were not run

Temperature		CaCO3 SI	CaSO4 SI
86F	30.0C		
104F	40.0C		
122F	50.0C		
140F	60.0C		
168F	70.0C		
176F	80.0C		

Comments :

If you have any questions or require further information, please contact us.
Sincerely,

Laboratory Technician

cc: Jerry White
Jay Brown

P.O. Box 61627, Midland, TX 79711 • 4312 S. County Rd. 1298, Midland, TX 79765
Office: (915) 563-0241 • Fax: (915) 563-0243

UNICHEM

A Division of BJ Services Company

Lab Test No : 18192

Texaco

Sample Date : 1/28/98
Lab Date In : 1/30/98
Lab Date Out : 2/3/98

Water Analysis

Listed below please find water analysis report from : Cotton Draw #9

Specific Gravity :	1.006
Total Dissolved Solids :	8858
pH :	
Conductivity (µmhos):	
Ionic Strength :	0.176

Cations:		mg/l
Calcium	(Ca++):	174
Magnesium	(Mg++):	139
Sodium	(Na+):	2884
Iron	(Fe++):	0.03
Dissolved Iron	(Fe++):	
Barium	(Ba++):	
Strontium	(Sr):	
Manganese	(Mn++):	0.04
Resistivity :		
Anions:		
Bicarbonate	(HCO3-):	
Carbonate	(CO3--):	
Hydroxide	(OH-):	0
Sulfate	(SO4--):	1900
Chloride	(Cl-):	3760

Gases:		ppm		
Carbon Dioxide	(CO2):		Oxygen	(O2):
Hydrogen Sulfide	(H2S):			

Scale Index (positive value indicates scale tendency) a blank indicates some tests were not run

Temperature		CaCO3 SI	CaSO4 SI
86F	30.0C		
104F	40.0C		
122F	50.0C		
140F	60.0C		
168F	70.0C		
176F	80.0C		

Comments :

If you have any questions or require further information, please contact us.

Sincerely,

Laboratory Technician

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Office: (915) 563-0241 • Fax: (915) 563-0243

XIII. Proof of Notice

Affidavit of Publication

№ 18235

State of New Mexico,
County of Eddy, ss.

Amy McKay,
being first duly sworn, on oath says:

That she is Business Manager of the Carlsbad Current-Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the state wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

January 27, 1998
_____, 19____
_____, 19____
_____, 19____
_____, 19____
_____, 19____

That the cost of publication is $ 34.46, and that payment thereof has been made and will be assessed as court costs.

Amy McKay

Subscribed and sworn to before me this 29th day of January, 1998

Donna Crump

My commission expires 8/1/98
Notary Public

January 27, 1998

Notice is hereby given of the application of Texaco Exploration & Production, Inc., (Attention: Tim G. Miller, Operating Unit Manager, P.O. Box 730, Hobbs, New Mexico, 88240, Telephone (505) 393-7191), to the New Mexico Oil Conservation Commission, Energy and Minerals Department, for approval of the following well(s) to be utilized as a salt water disposal well for the purpose of disposing of produced fluids.

Texaco E&P, Inc. plans to recomplete the subject well as a salt water disposal well in the Delaware formation in the following well:

Lease/Unit Name: Cotton Draw Unit

Well Numbers and Location(s): #65 - Unit Letter G, 1980' FNL & 1980' FEL, Section 2, T-25-S, R-31-E, Eddy County, New Mexico.

The disposal formation will be the Delaware at a depth from 4542 feet to 5350 feet below the surface of the earth. Expected maximum injection rate is 3300 barrels of water per day and expected maximum injection pressure is 900 pounds per square inch. Injection will be through plastic lined tubing, below a packer at approximately 4500 feet. The system will be closed. This work is part of an ongoing development project. Interested parties must file objections or requests for hearing with the New Mexico Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico, 87501, within fifteen (15) days of this publication.

AFFIDAVIT OF PUBLICATION

State of New Mexico,
County of Lea.

I, KATHI BEARDEN

Publisher

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

January 22 1998

and ending with the issue dated

January 22 1998

Kathi Bearden

Publisher

Sworn and subscribed to before me this 22nd day of January 1998

Jodi Henson

Notary Public.

My Commission expires
October 18, 2000
(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
January 22, 1998

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#15677

01101308000 01516564

Texaco Inc.
205 E. Bender
a/c# 386561
Hobbs, NM 88240

CHECKLIST for ADMINISTRATIVE INJECTION APPLICATIONS

Operator: TEXACO EXP, INC. Well: COTTON DRAW No. 65

Contact: JASON WACKER Title: PE Phone: 505-397-0484

DATE IN 2-6-98 RELEASE DATE 2-23-98 DATE OUT 3-11-98

Proposed Injection Application is for: ___ **WATERFLOOD** ___ Expansion ___ Initial

Original Order: R-_____ ___ Secondary Recovery ___ Pressure Maintenance

SENSITIVE AREAS X **SALT WATER DISPOSAL** ___ Commercial Well

___ WIPP ___ Capitan Reef

Data is complete for proposed well(s)? YES Additional Data Req'd _____

AREA of REVIEW WELLS

1 Total # of AOR

YES Tabulation Complete

YES Cement Tops Adequate

___ # of Plugged Wells

___ Schematics of P & A's

___ AOR Repair Required

INJECTION FORMATION

Injection Formation(s) DELAWARE (CH. CAN/BELL CAN) Compatible Analysis YES

Source of Water or Injectate AREA PRODUCTION (DELAWARE)

PROOF of NOTICE

✓ Copy of Legal Notice ✓ Information Printed Correctly

✓ Correct Operators ✓ Copies of Certified Mail Receipts

NO Objection Received ___ Set to Hearing _____ Date

NOTES: APPRV'D INJECTIVITY TEST 2-20 THRU 3-12

APPLICATION QUALIFIES FOR ADMINISTRATIVE APPROVAL? YES

COMMUNICATION WITH CONTACT PERSON:

1st Contact:	X Telephoned	___ Letter 3-10-98 Date	Nature of Discussion	INJ TEST UP ON 3-12
2nd Contact:	X Telephoned	___ Letter 3-11-98 Date	Nature of Discussion	VERBAL APP'L
3rd Contact:	___ Telephoned	___ Letter _____ Date	Nature of Discussion	_____