

GL02700-1

# BOREHOLE COMPENSATED SONIC LOG - GAMMA RAY

Schlumberger

COMPANY ANSCHUTZ CORPORATION  
 WELL FEDERAL 60-13 NO. 1  
 FIELD WILDCAT  
 COUNTY OMYHEE STATE IDAHO  
 LOCATION SE/SW  
 Other Services: IES/DIL-COMP, CNL/FDC  
 Sec. 13 Twp. 5S Rge. 1E  
 Permanent Datum: GL Elev. 2740  
 Log Measured From: KB 11 Ft. Above Perm. Datum  
 Drilling Measured From: KB Elev. 2740 G.L. 2740

Date	6/28/74	8/17/74
Run No.	ONE	
Depth-Driller	4100	190
Depth-Logger	4110	125
Btm. Log Interval	4007	11-22
Top Log Interval	50	4040
Casing-Driller	13-3/8 @ 329	9-5/8 @ 4109
Casing-Logger	330	4108
Bit Size	12-1/4	FCM
Type Fluid in Hole	FGM	
FLUID LEVEL	FULL	
Dens. Visc.	8-9	52
pH Fluid Loss	10.5	11.8 ml
Source of Sample		CLRC
R. @ Meas. Temp.		@ °F
R. @ Meas. Temp.		@ °F
R. @ Meas. Temp.		@ °F
Source Bit		H C
R. @ BHT		@ °F
R. @ BHT		@ °F
R. @ BHT		@ °F
Time Since Circ.	10 HOURS	8/17-0030
Time Since Circ.		8/17-1200
Equip. Location	7650 LCSPR	7710 R.S.
Witnessed By	MULLER	MARKS

Reproduced By  
Electrical Log Services  
Midland, Texas 79701



REFERENCE K 7871J

78 COMPLETION RECORD

SPUD DATE \_\_\_\_\_  
 COMP DATE \_\_\_\_\_  
 DST RECORD \_\_\_\_\_  
 API NO. \_\_\_\_\_  
 CASING RECORD \_\_\_\_\_  
 PERFORATING RECORD \_\_\_\_\_  
 ACID FRAC SHOT \_\_\_\_\_  
 I.P. \_\_\_\_\_  
 GOR GR \_\_\_\_\_  
 T.P. C.P. \_\_\_\_\_  
 REMARKS: \_\_\_\_\_

REPRODUCTION FOR RESALE PROHIBITED

REMARKS S.O. 71016-61287

Changes in Mud Type or Additional Samples	Type Log	Scale Changes
Date   Sample No.   Depth-Driller   Type Fluid in Hole	Depth   POROSITY	Scale Up Hole   Scale Down Hole
	4110	19,000
Dens. Visc.		
pH Fluid Loss		
Source of Sample		
R. @ Meas. Temp.		
R. @ Meas. Temp.		
R. @ Meas. Temp.		
Source Bit		
R. @ BHT		
R. @ BHT		
R. @ BHT		
C.D.		
Equip. Used:	CART. No. 145	
	PANEL No. 367	
	SONDE No. 160	
CALIBRATION:	BACKGND. SOURCE GALV. INCL. SENS. TAP SENS. TAP TIME RECORDING	
	CPS. (FOR CALL) DIVISIONS (FOR CALL) CONST. SPEED (FT/MIN)	
GAMMA RAY:	90 520	0-200 0-200 1
	100 500	
Velocity (feet per second) = 1,000,000 / Interval Transit Time (microseconds per foot)		

GAMMA RAY		DEPTHS		INTERVAL TRANSIT TIME	
API UNITS		MICROSECONDS PER FOOT		MICROSECONDS PER FOOT	
0	200	140	90	40	40
200	400	240	150	140	140
				T <sub>3-R-2-R</sub>	
				SANDSTONE POROSITY-%	



Ref. @ BHT @ °F @ °F @ °F  
 C.D. S.O.  
 Equip. Umdr. CART. No. 145  
 PANEL No. 367  
 SONDE No. 160  
 CALIBRATION: BACKGROUND SOURCE GALV. INCL. SENS. TAP SENS. TAP TIME RECORDING  
 (FOR CAL) DIVISIONS (FOR CAL) (RECORD) CONST. SPEED (FT./MIN.)  
 GAMMA RAY: 90 520 0-200 1  
 100 500

Velocity (feet per second) = Interval Transit Time (microseconds per foot) × 1,000,000

**GAMMA RAY**  
 API UNITS  
 0 200 400  
 200 400

**CALIPER**  
 HOLE DIAM. IN INCHES  
 6 16

DEPTHS

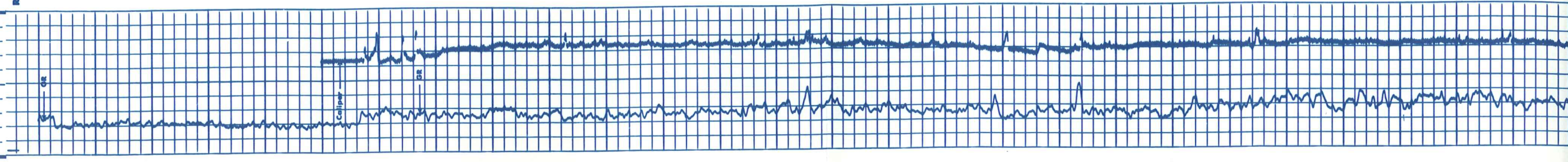
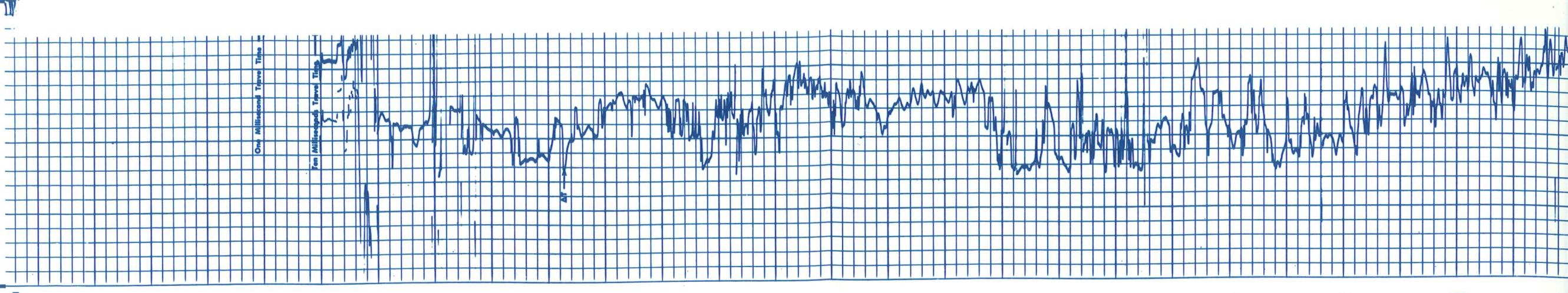
Run 1

0100 0200 0300 0400 0500 0600 0700 0800 0900 1000 1100 1200 1300 1400

INTERVAL TRANSIT TIME  
MICROSECONDS PER FOOT

140 190 240  
 40 90 140  
 $T_{30} = 2.3 \text{ } \mu\text{s/ft}$

SANDSTONE POROSITY—%  
 30 20 10 0 -10  
 $V_{ma} = 19,000$   $V_f = 5,300$



One Millisecond Trace Time

Five Millisecond Trace Time

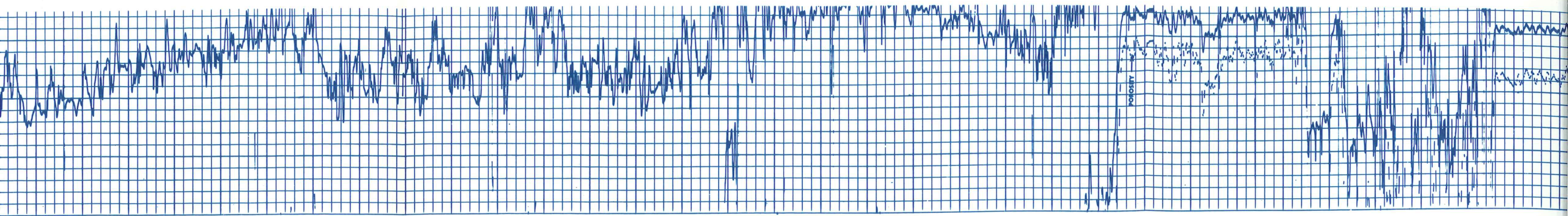
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Caliper

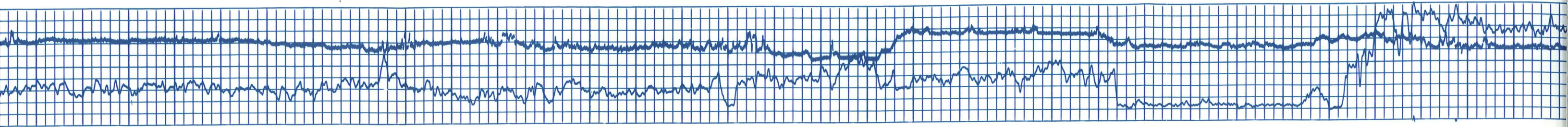
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GR

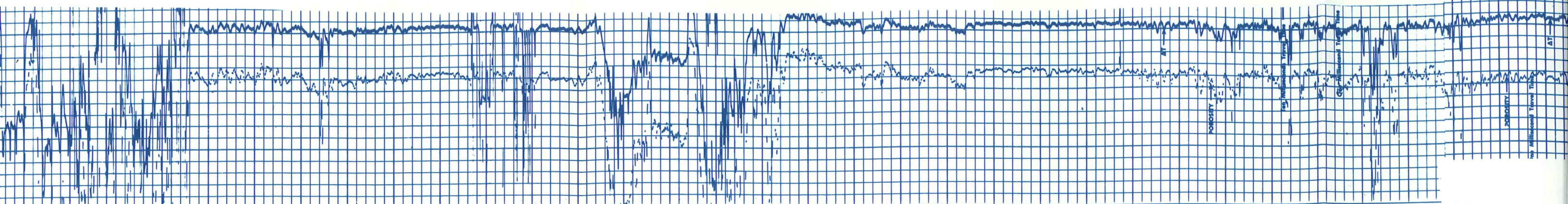




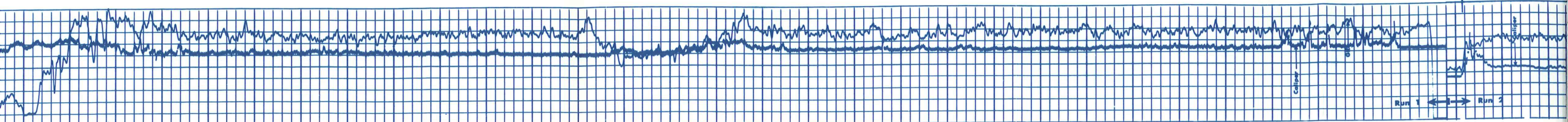
1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500 2600 2700 2800



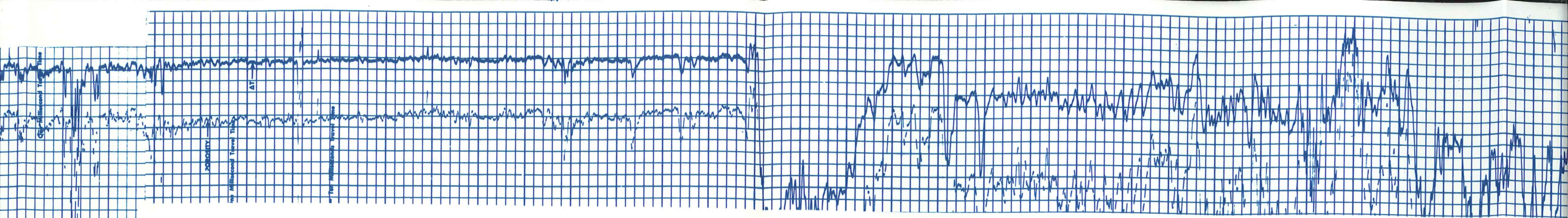




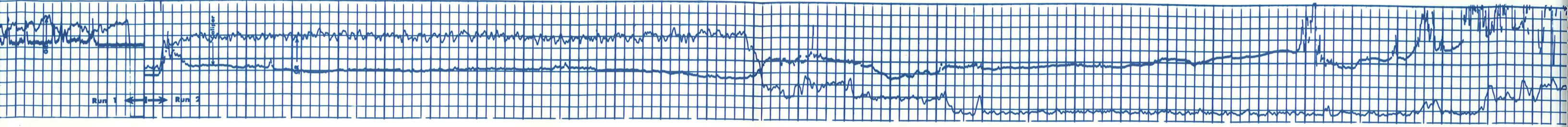
2600 2700 2800 2900 3000 3100 3200 3300 3400 3500 3600 3700 3800 3900 4000 Run 1 4100 Run 2 4200



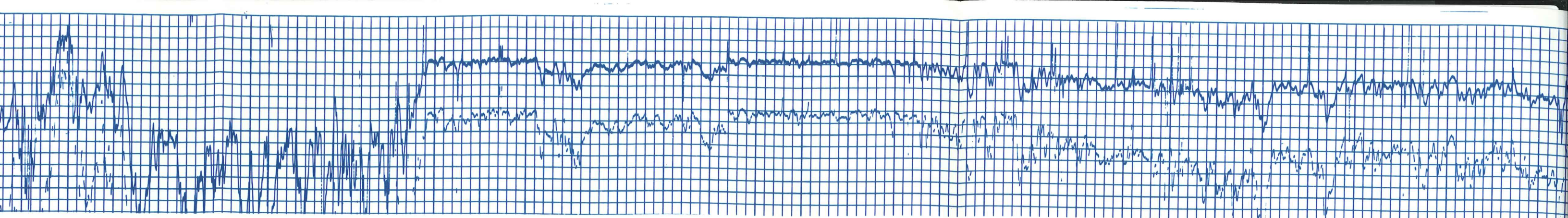




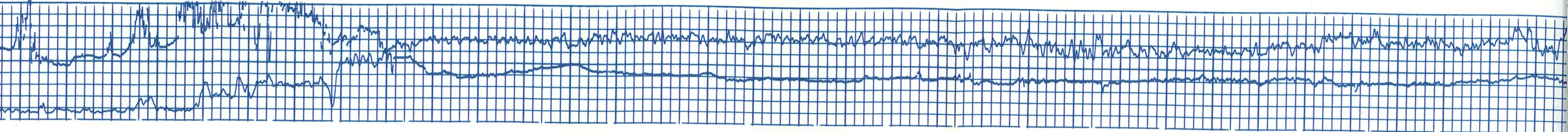
4000      Run 1      4200      4300      4400      4500      4600      4700      4800      4900      5000      5100      5200      5300      5400      5500      5600







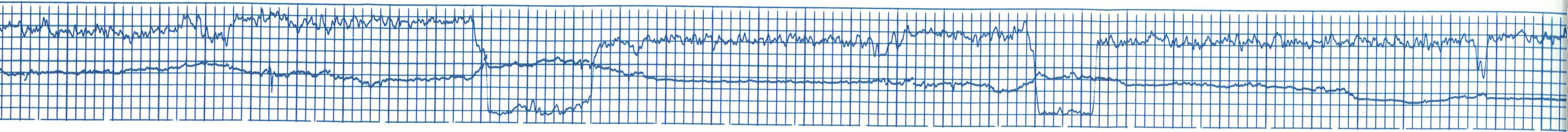
5400 5500 5600 5700 5800 5900 6000 6100 6200 6300 6400 6500 6600 6700 6800 6900 7000



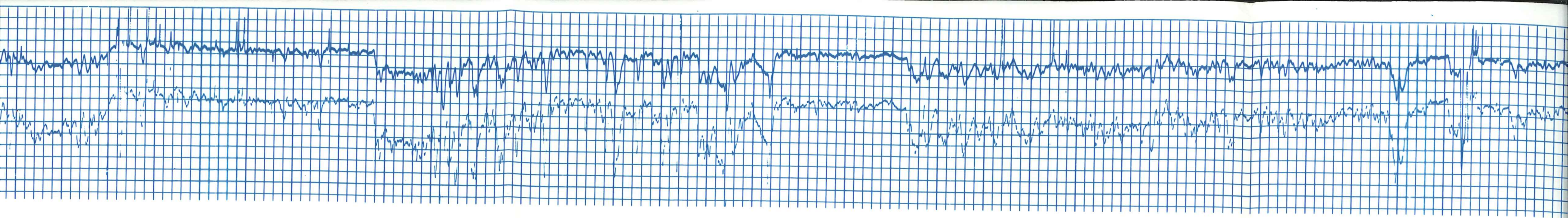




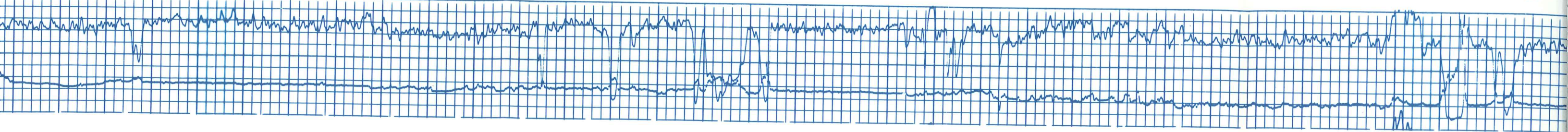
6800 6900 7000 7100 7200 7300 7400 7500 7600 7700 7800 7900 8000 8100 8200 8300 8400



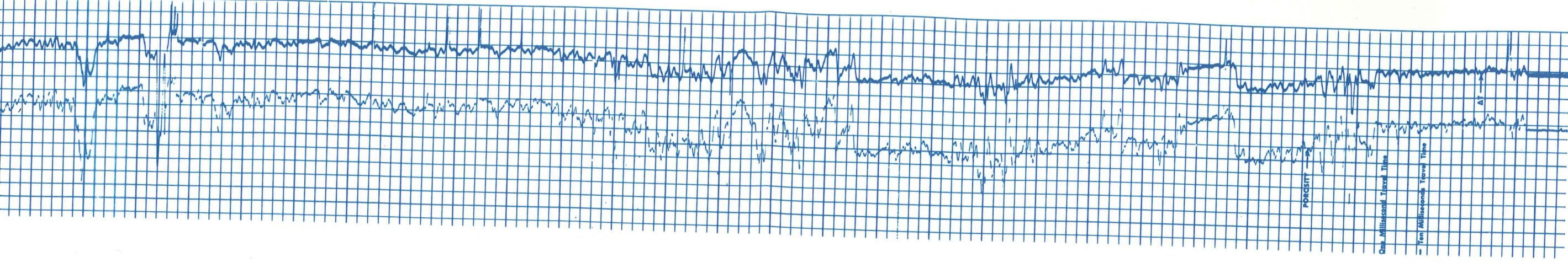
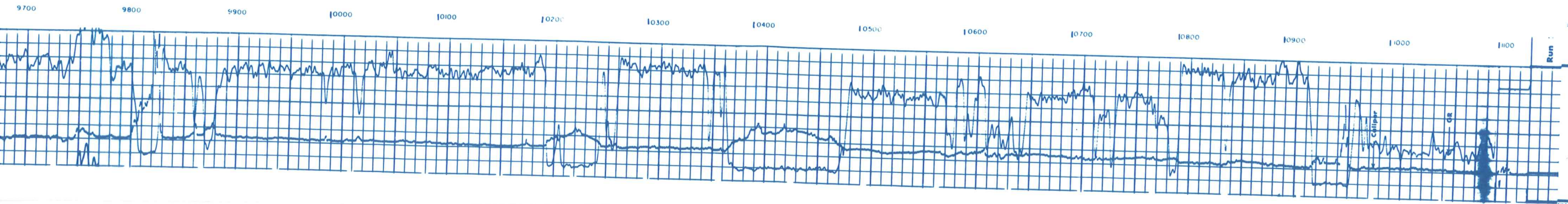




9300 8400 8500 8600 8700 8800 8900 9000 9100 9200 9300 9400 9500 9600 9700 9800 9900







CALIPER HOLE DIA. IN INCHES		SANDSTONE POROSITY - %	
0	200	0	10
200	400	20	30
GAMMA RAY API UNITS		Interval Trans Time MICROSECONDS PER FOOT	
0		140	
200		240	
400		190	
600		140	

DEPTHS		DETAIL LOG	
0		5" = 100'	
200		INTERVAL TRANSIT TIME MICROSECONDS PER FOOT	
400		INTERVAL TRANSIT TIME MICROSECONDS PER FOOT	
600		INTERVAL TRANSIT TIME MICROSECONDS PER FOOT	

Sandstone Porosity - %  
 $V_{ma} = 19.500$      $V_f = 5.300$   
 $T_{1-2} = r_1 - r_2$

CALIPER  
 HOLE DIA. IN INCHES  
 0 200 400 600

DEPTHS  
 0 200 400 600

5" = 100'









4400

4500

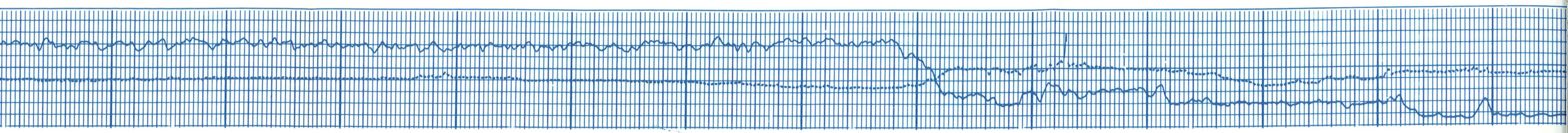
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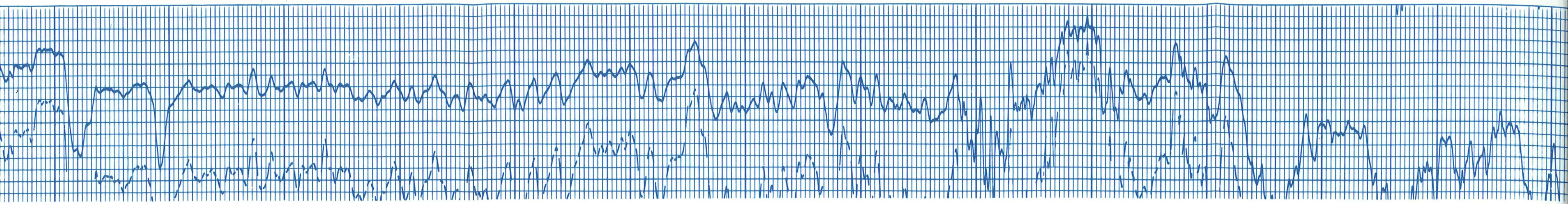
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4900

5000







5000

5100

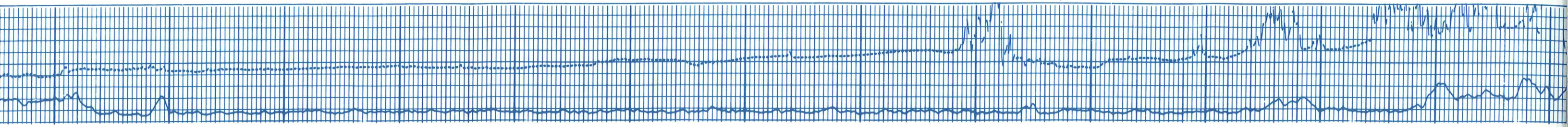
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5300

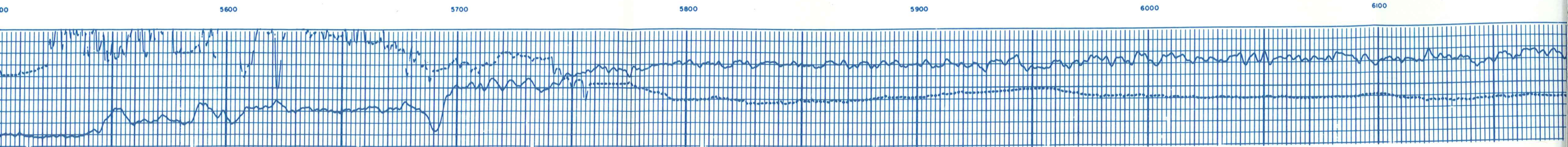
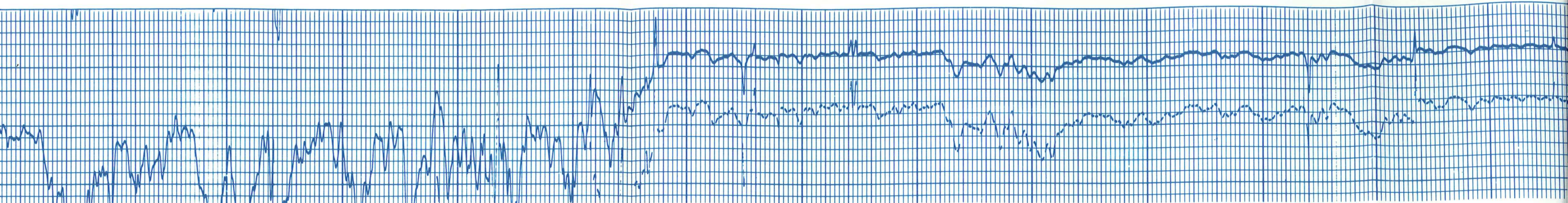
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5500

5600







5600

5700

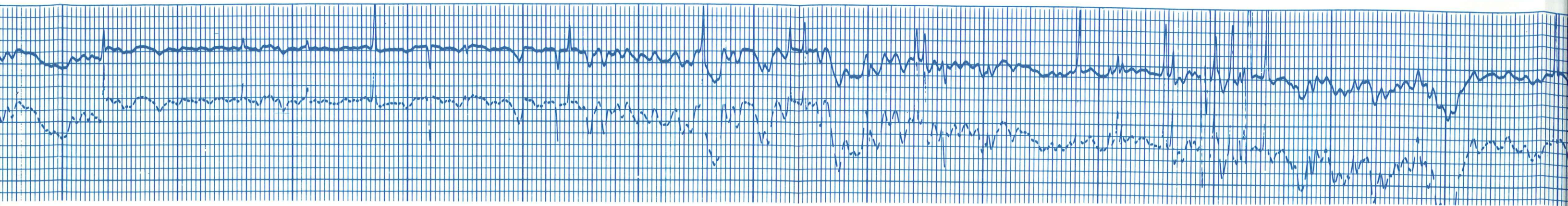
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5900

6000

6100





6100

6200

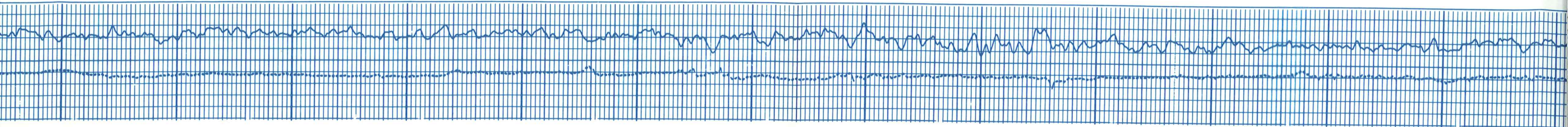
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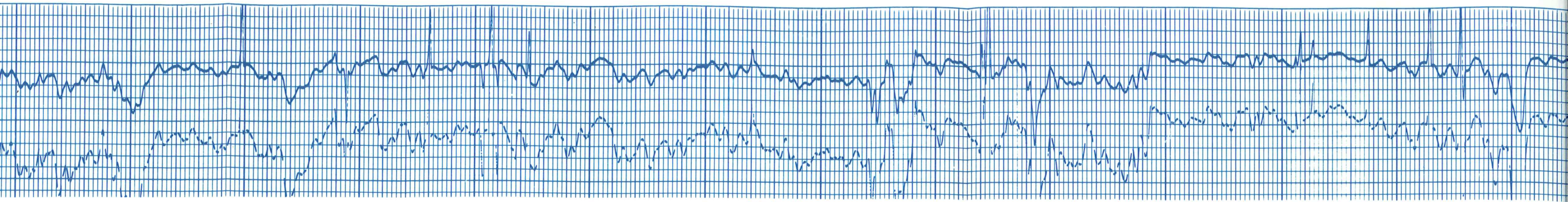
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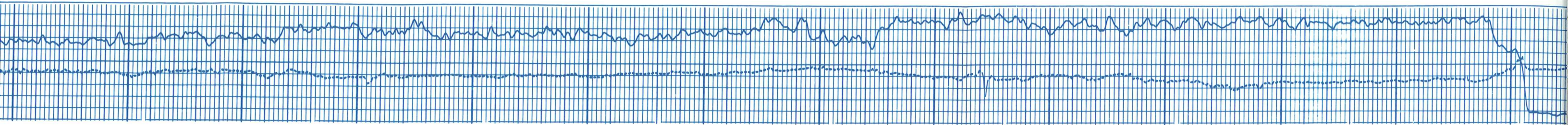
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7000

7100

7200

7300







7300

7400

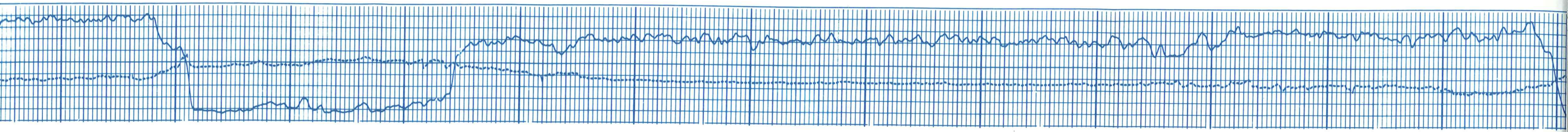
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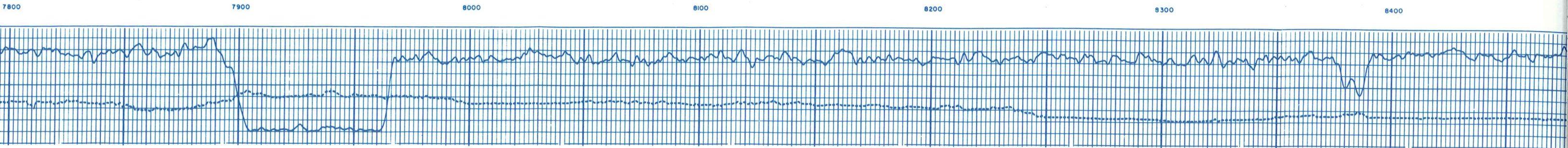
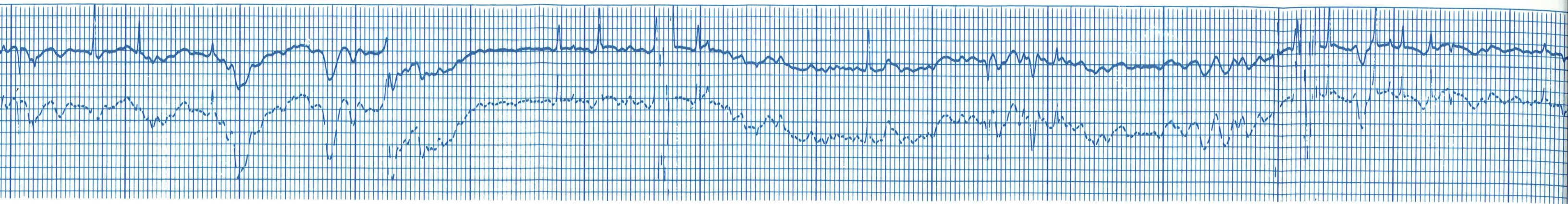
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7800

7900







7800

7900

8000

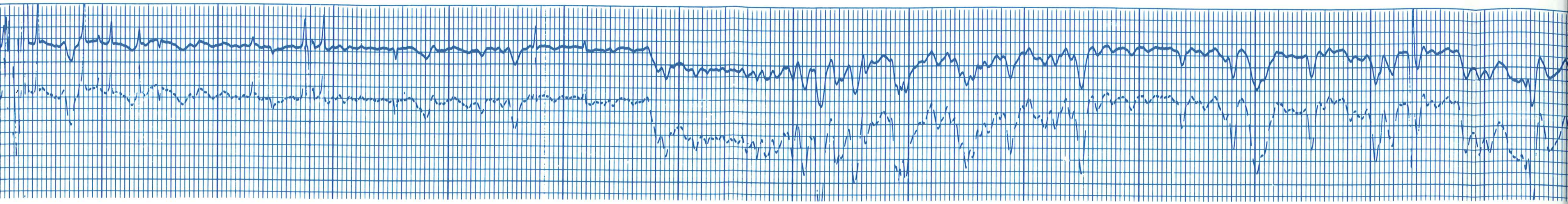
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8200

8300

8400





8400

8500

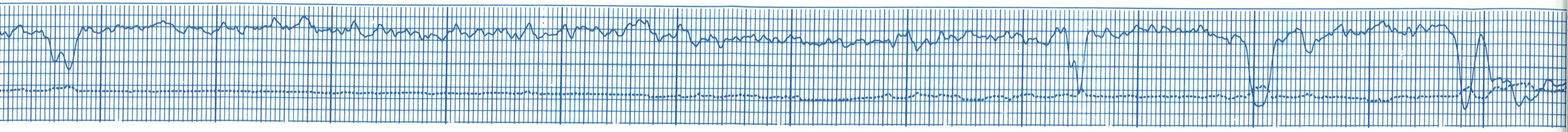
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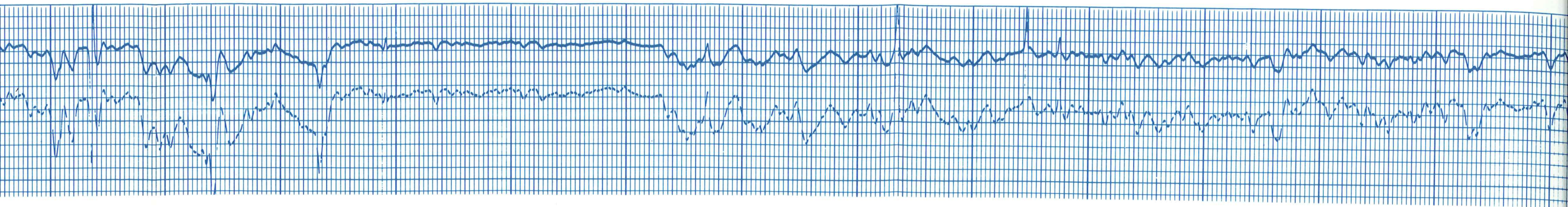
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8900

9000







9000

9100

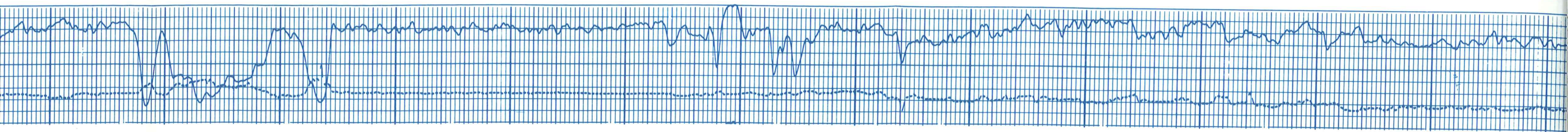
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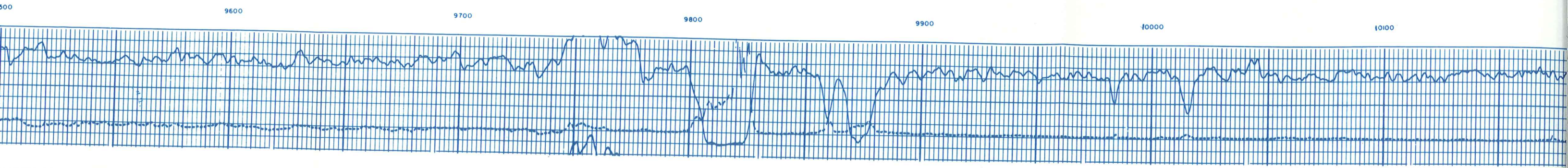
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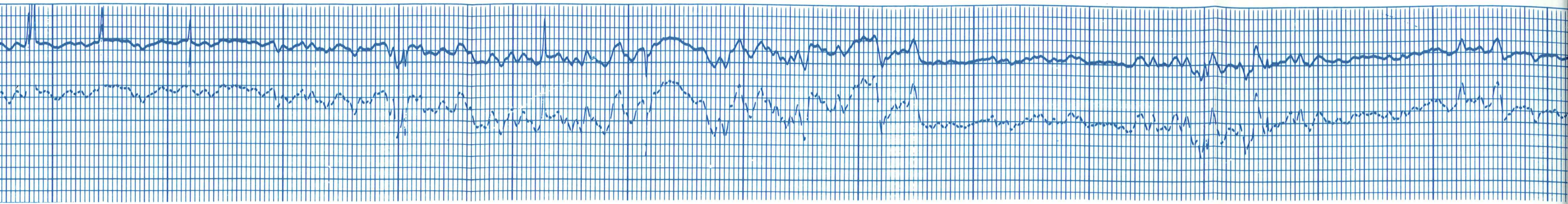
9600











10100

10200

10300

10400

10500

10600

10700

