

PRECISION

Wireline Technologies

SIMULTANEOUS TRIPLE
INDUCTION SFL
GAMMA RAY LOG

PROVINCE	NORTHWEST TERRITORIES
FIELD	ARROWHEAD RIVER
WELL	ANADARKO ARROWHEAD RIVER K-35
COMPANY	ANADARKO CANADA ENERGY
COMPANY	ANADARKO CANADA ENERGY
WELL	ANADARKO ARROWHEAD RIVER K-35
FIELD	ARROWHEAD RIVER
PROVINCE	NORTHWEST TERRITORIES
LSD	Sec. _____ Twp. _____ Rge. _____
Perm. Datum	GROUND LEVEL _____ Elev. 541.17 m
Log measured from	KB _____, 5.33 m above
Permanent Datum	_____
UWI	300K356040122450
Licence	9211-A069
Date	17-FEB-2004
Run No.	ONE
Bot. Driller	2442.7 m
Bot. Logger	2443.0 m
First Reading	2440.9 m
Lost Reading	1552.0 m
Meters Meas.	1788.9 m
CS9. Driller	653.0 m
CS9. Logger	652.0 m
Bit Size	215.9 mm
Fluid Type	INVERT
Dens. Visc.	955 85
PH Fluid Loss	N/A
Sample Source	FLOWLINE
Rm	N/A @ N/A °C
Rmf	N/A @ N/A °C
Rmc	N/A @ N/A °C
Rm @ BHT	N/A @ N/A °C
Max Rec. Temp	92 °C
Spacing	N/A
Operating Time	6.0 HRS
Unit #	379
Location	GRANDE PRAIRIE OH
Recorded By	M. KOSCIUSKO
Witnessed By	H. COMAN

All interpretations of log data are opinions based on inferences from electrical or other measurements. We do not guarantee the accuracy or correctness of any interpretation or recommendation and we shall not be liable or responsible for any loss, cost, damages or expenses incurred or sustained by anyone resulting from any interpretation or recommendation made by any of our employees or agents.

REMARKS Rig: AKITA 37 Service Order # 30015974
Drilling Stopped 05:45/17 Circulation Stopped 11:30/17 Tool on Bottom 22:35/17 BHT 92 °C
- STI-HBC-SPED-CNT-UGR-DAC LOGGED IN COMBINATION
- PRESENTATIONS AND INTERVALS AS PER CUSTOMERS REQUEST.

Prints: 2

CHANGES IN MUD TYPE OR NEW SAMPLE				SCALE CHANGES		
Date	Sample No.			Type Log	Interval	Scale
Depth - Driller						
Type Fluid in Hole						
Dens.	Visc.					
PH	Water Loss					
Source of Sample				EQUIPMENT DATA		
Rm @ Meas. Temp.	@	°C	Run No.	Tool Type	Tool No.	Other
Rmf @ Meas. Temp.	@	°C	ONE			
Rmc @ Meas. Temp.	@	°C		STI-BA	188	38 MM STANDOFFS USED
Source Rmf	Rmc			UGR-JB	187	RA-20S-734
Rm @ BHT	@	°C				
Rmf @ BHT	@	°C				
Rmc @ BHT	@	°C				

REMARKS

MAIN PASS
1:600 SCALE
CONDUCTIVITY PRESENTATION

DEPTH SCALE: 1:600

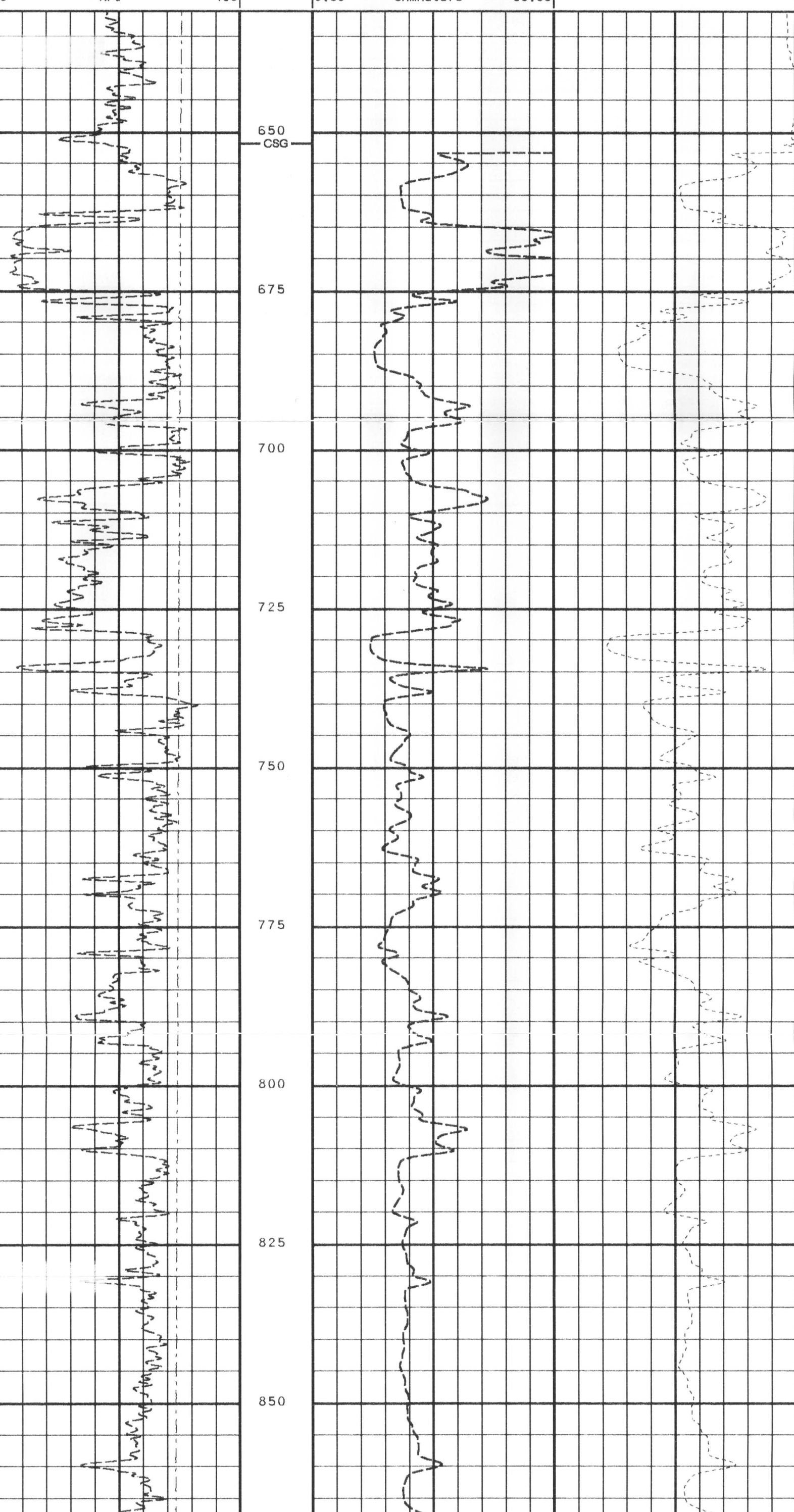
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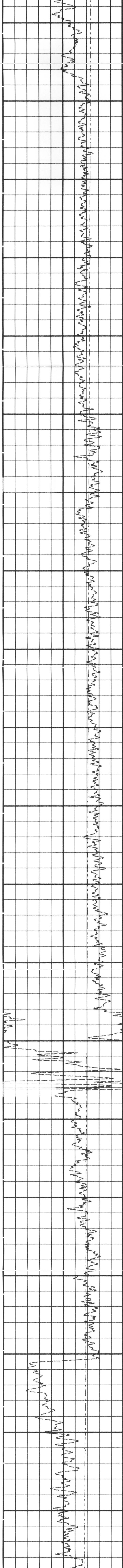
MAIN PASS

30015974 STIMP

FINISH DEPTH: 0.0 Meters DIRECTION: UP DATE: TIME: MODE: TRACE PLAYBACK

Tension (TENS)		40K Deep STI Cond.	
10000	Pounds	1000.0	Milli-Mho/Meter
0	API	0.00	OhmMeters
150		50.00	





875

900

925

950

975

1000

1025

1050

1075

1100

1125

1150

1175

1200

1225

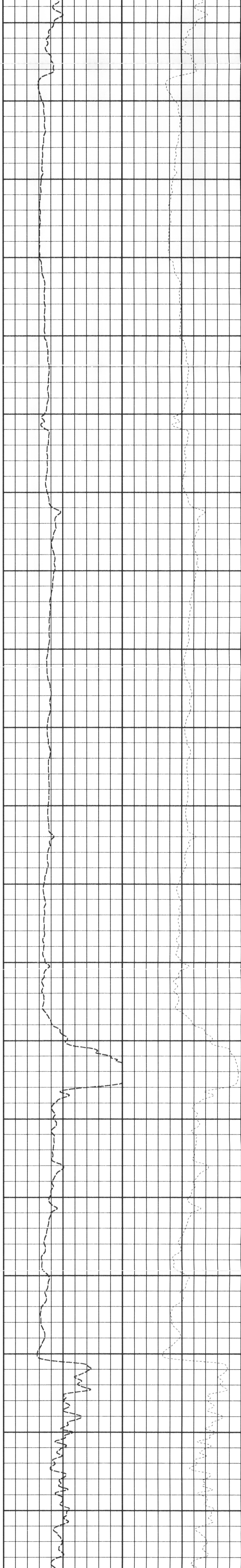
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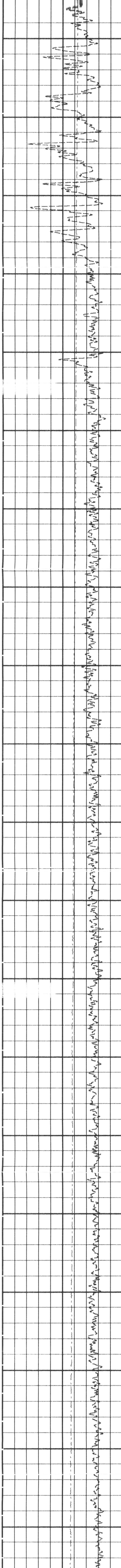
1275

1300

1325

1350





1875

1900

1925

1950

1975

2000

2025

2050

2075

2100

2125

2150

2175

2200

2225

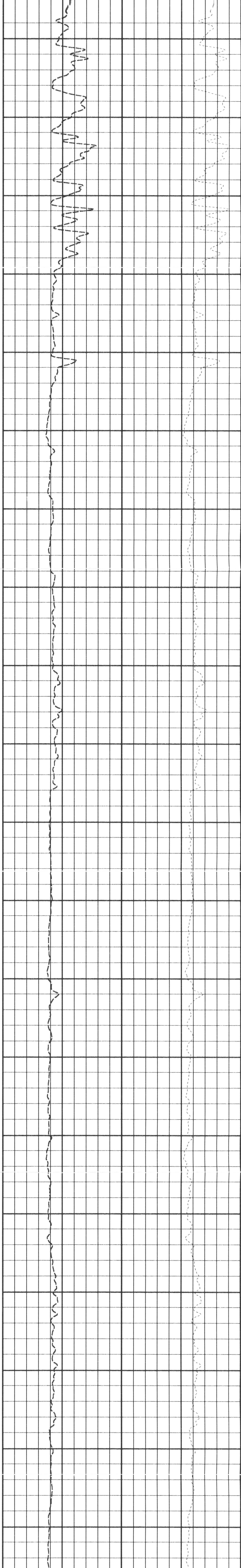
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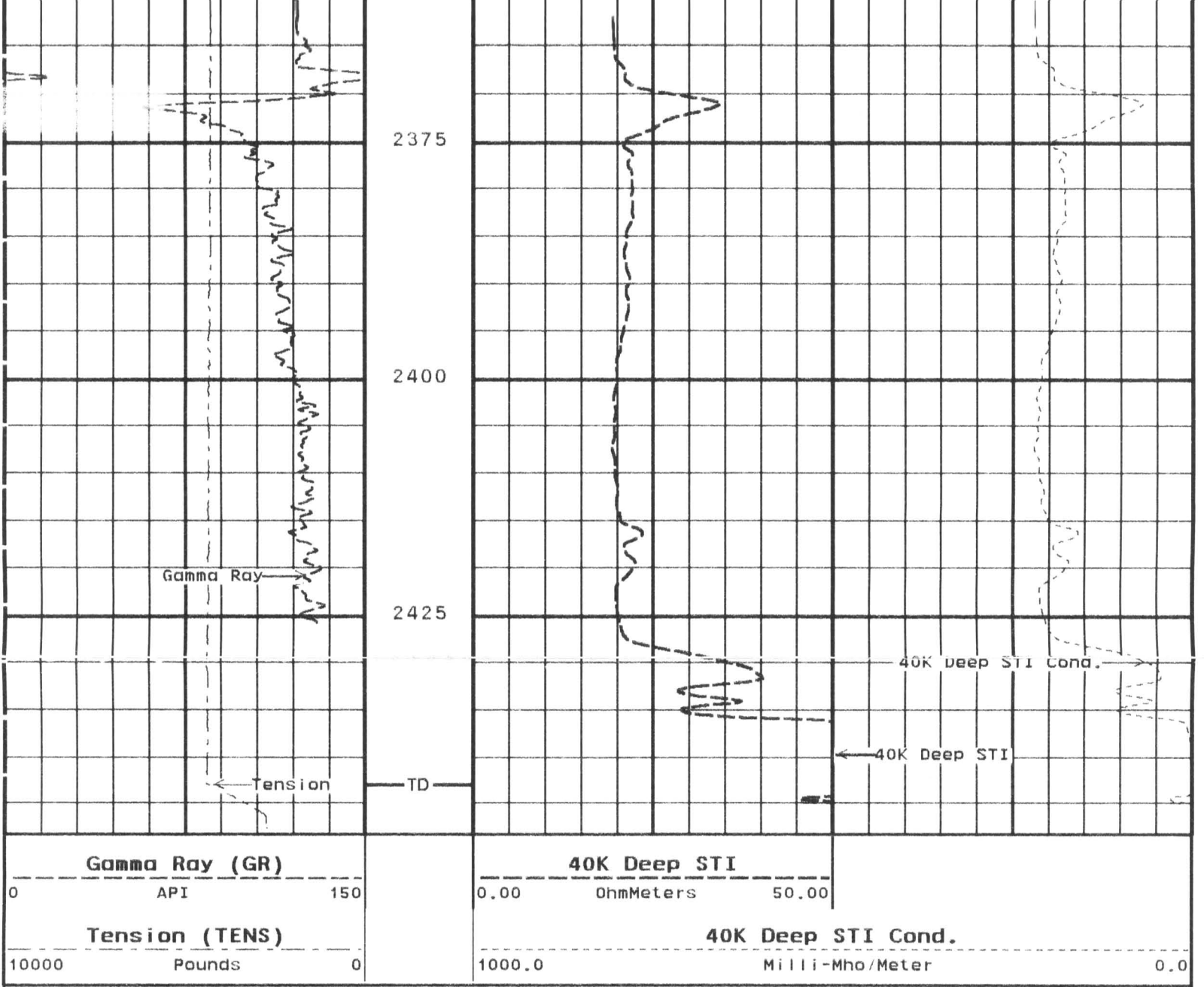
2275

2300

2325

2350





START DEPTH: 2448.2 DIRECTION: UP DATE: 02/18/2004 TIME:00:01 MODE: TRACE PLAYBACK
30015974 STIMP

MAIN PASS

DEPTH SCALE: 1:600 VERSION: 2004.02.11.263

SYSTEM CONSTANTS			
NAME	DESCRIPTION	VALUE	UNITS
TDL	TD-Logger	2443.00	Meters
CSIZ	Casing Size	244.5	Millimeters
CWEI	Casing Weight	59.52	Kilograms/Meter
BS	Bit Size	215.9	Millimeters
BHT	Bottom Hole Temp	92.0	DegreesCentigrade
SFT	Mean Annual Surf Temp	5.0	DegreesCentigrade
SPDD	SP Drift Corr. mV	0	Millivolts
SPBR	SP Bridle Depth Offset	0.00	Meters
SPTL	Log With SP From	STI	
STIB	STI SFL Chassis Return	ON	
STI4	STI 4 Level Average	OFF	
STIS	STI SFL Log Mode On	ON	
SACC	Accumulation Time	100	Seconds
BARI	Barite Correction	OFF	
MW	Mud Weight	955.0	Kilograms/Cu.Meter
MDEN	Matrix Density	2710	Kilograms/Cu.Meter
FD	Fluid Density	1000	Kilograms/Cu.Meter
SPVS	SPeD Valve Status	IN	
NGAI	K Factor-NEU	1.003	
BHS	Open/Cased Hole	Open	
BSAL	Borehole Salinity	0	Parts/Million
FSAL	Formation Salinity	0	Parts/Million
NBCS	Bitsize/Calp Sel-CNT	Caliper	
NTLS	Tool Type-CNT	CNT-S	
TGRD	Temperature Gradient	0.555	DegC/100Meters
NTMS	Temp Source-CNT	Gradient	
NCOT	Constant Temp-CNT	21.0	DegreesCentigrade
NCOR	Cnt Ch Corr Offset	OFF	
OCOR	Cnt Environ.correction	OFF	
SWAN	Sheave Wheel Angle	0.00	Degrees
NCAL	LIS Caliper Name-CNT	X Caliper	
SCAL	Density BH Diam Source	X Caliper	

REMARKS

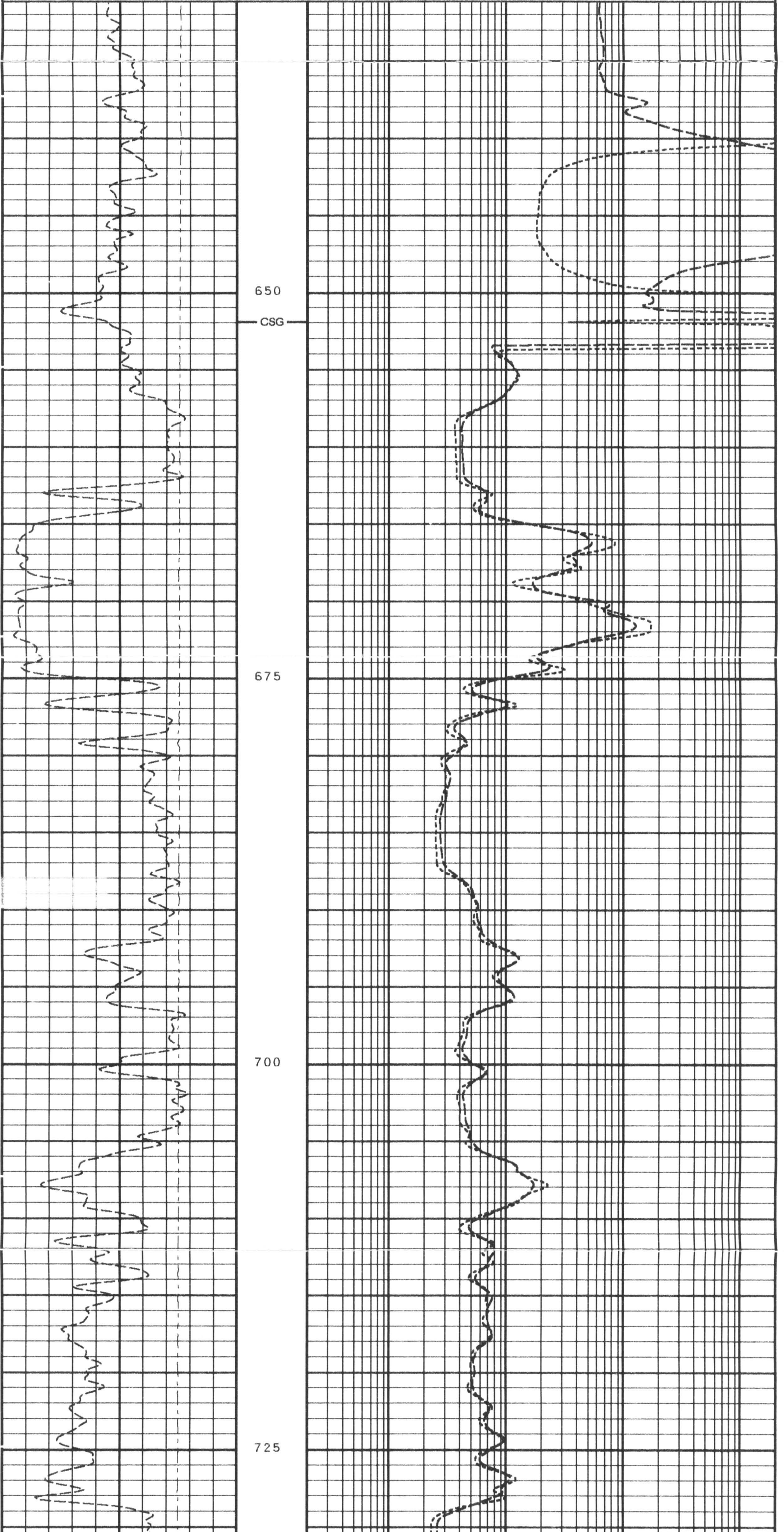
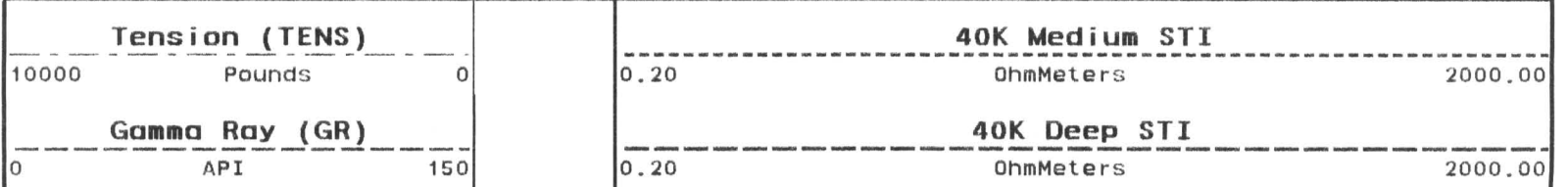
MAIN PASS
1:240 SCALE

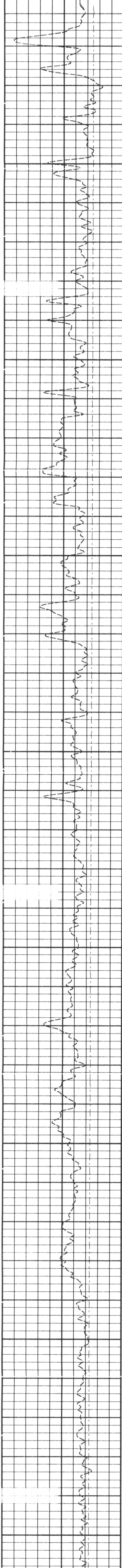
DEPTH SCALE: 1:240 VERSION: 2004.02.11.263

MAIN PASS

30015974 STIMP

FINISH DEPTH: 0.0 Meters DIRECTION: UP DATE: TIME: MODE: TRACE PLAYBACK





750

775

800

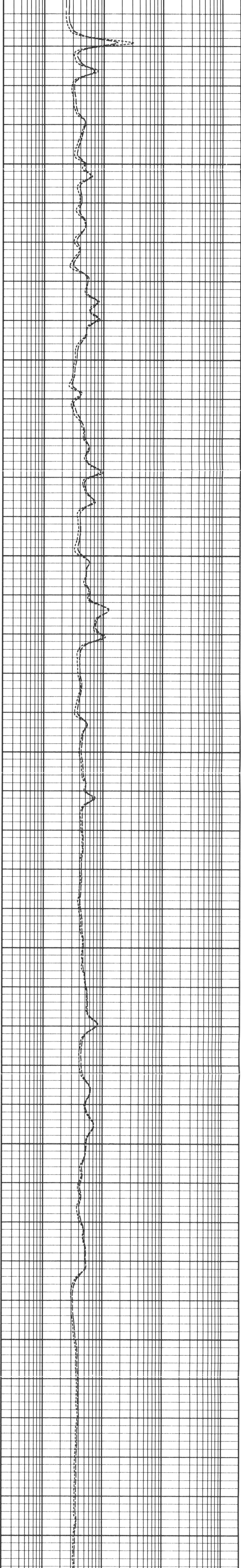
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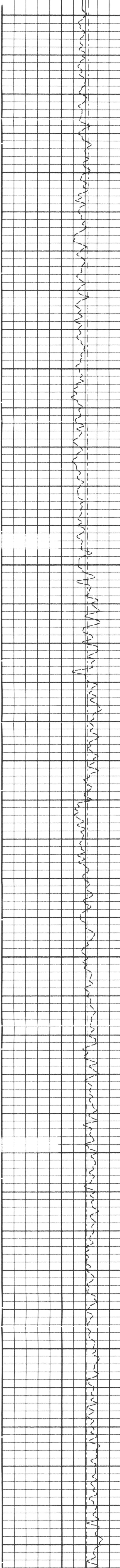
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875

900

925





950

975

1000

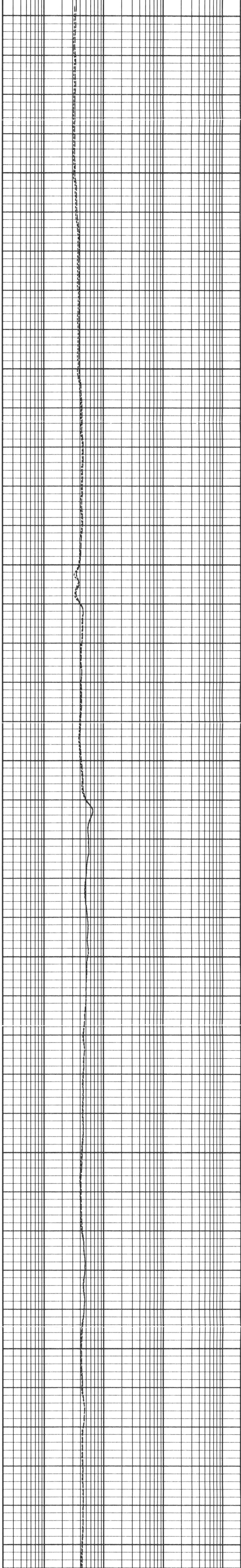
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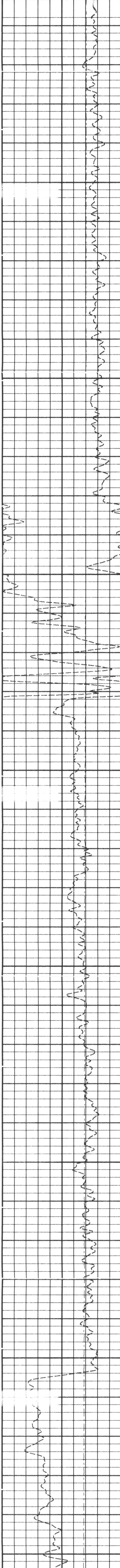
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1075

1100

1125





1150

1175

1200

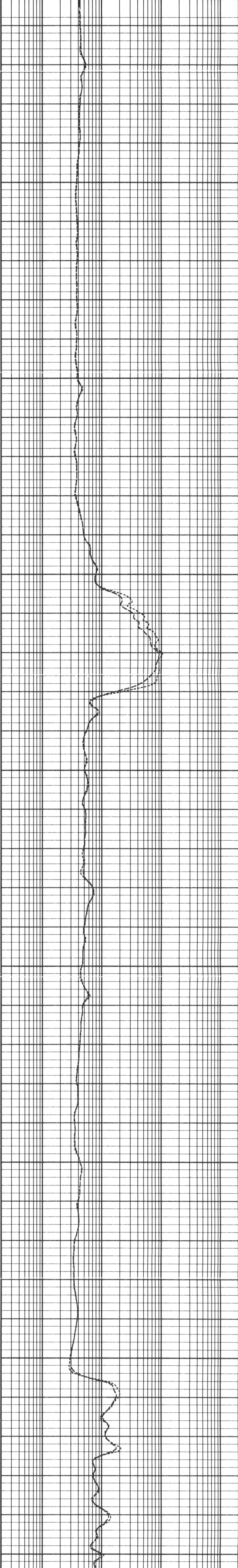
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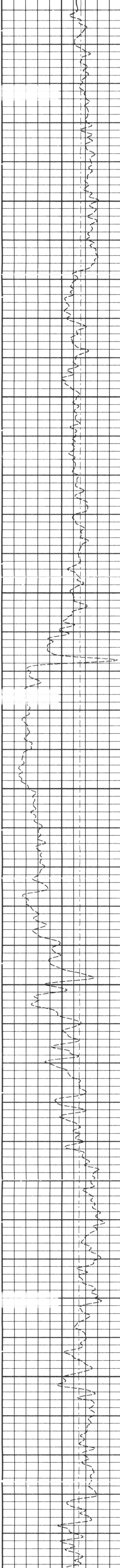
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1275

1300

1325





1550

1575

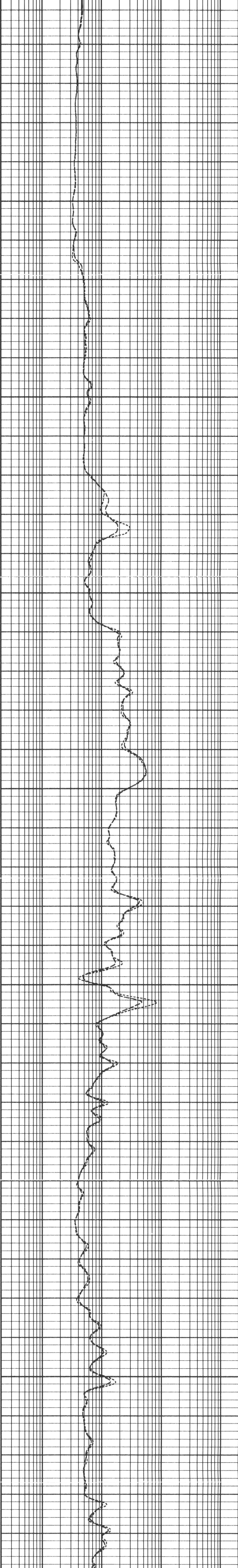
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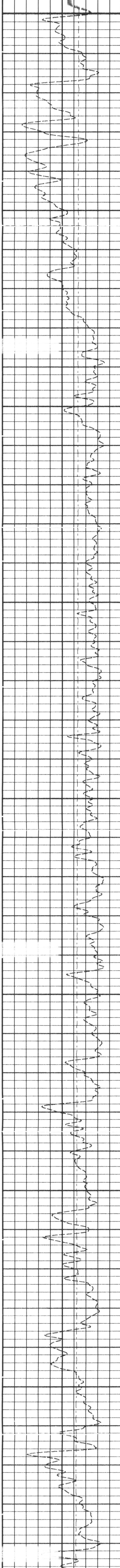
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1650

1675

1700





1725

1750

1775

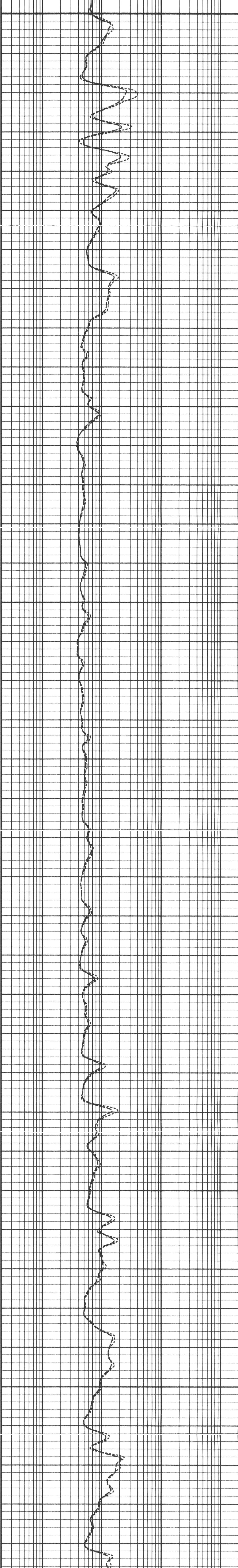
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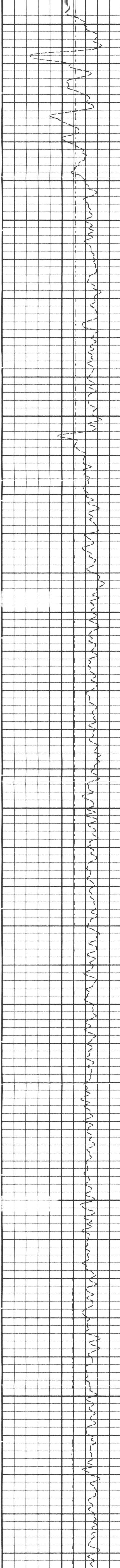
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1850

1875

1900





1925

1950

1975

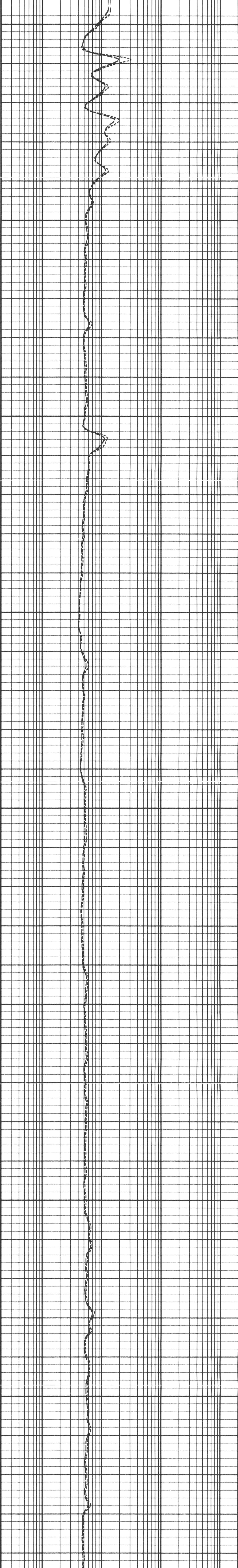
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2025

2050

2075

2100



2125

2150

2175

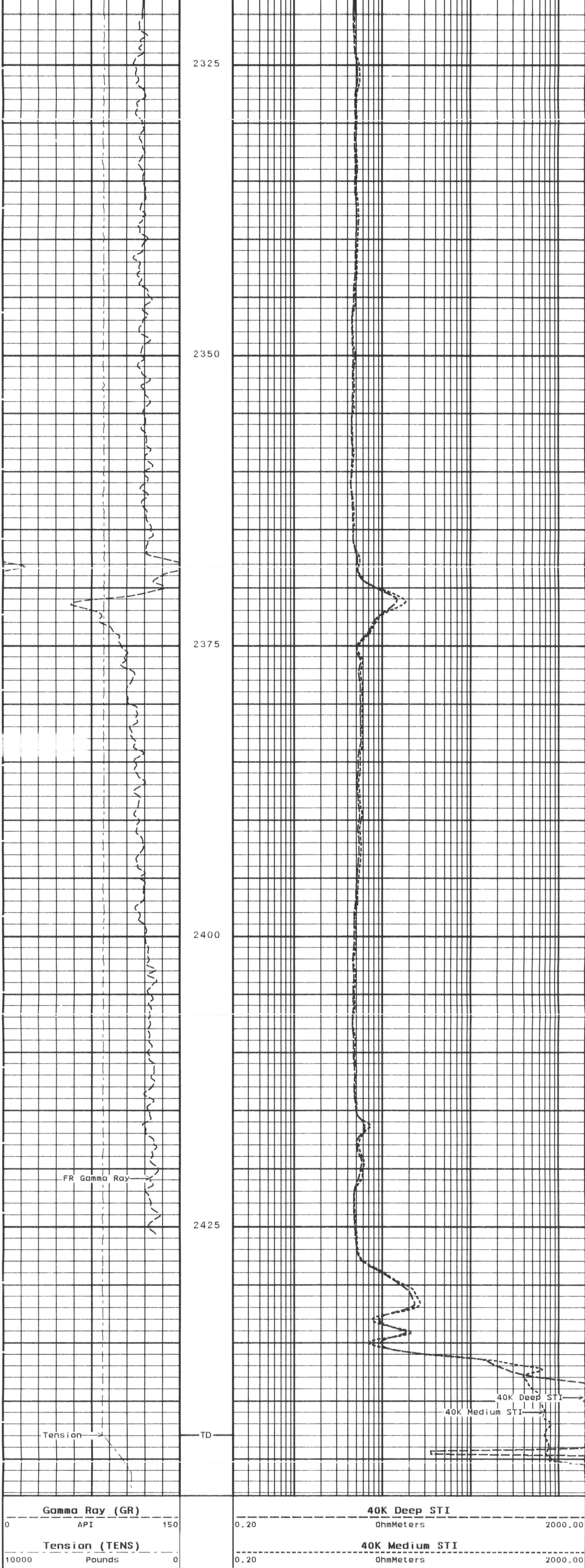
2200

2225

2250

2275

2300



START DEPTH: 2448.2 DIRECTION: UP DATE: 02/17/2004 TIME: 23:25 MODE: TRACE PLAYBACK
30015974 STIMP

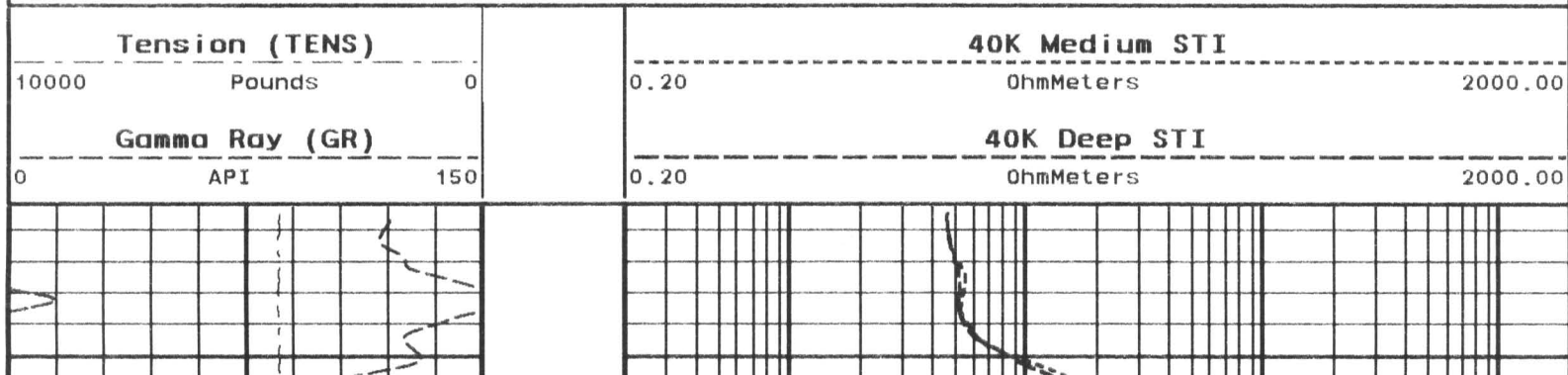
MAIN PASS
DEPTH SCALE: 1:240 VERSION: 2004.02.11.263

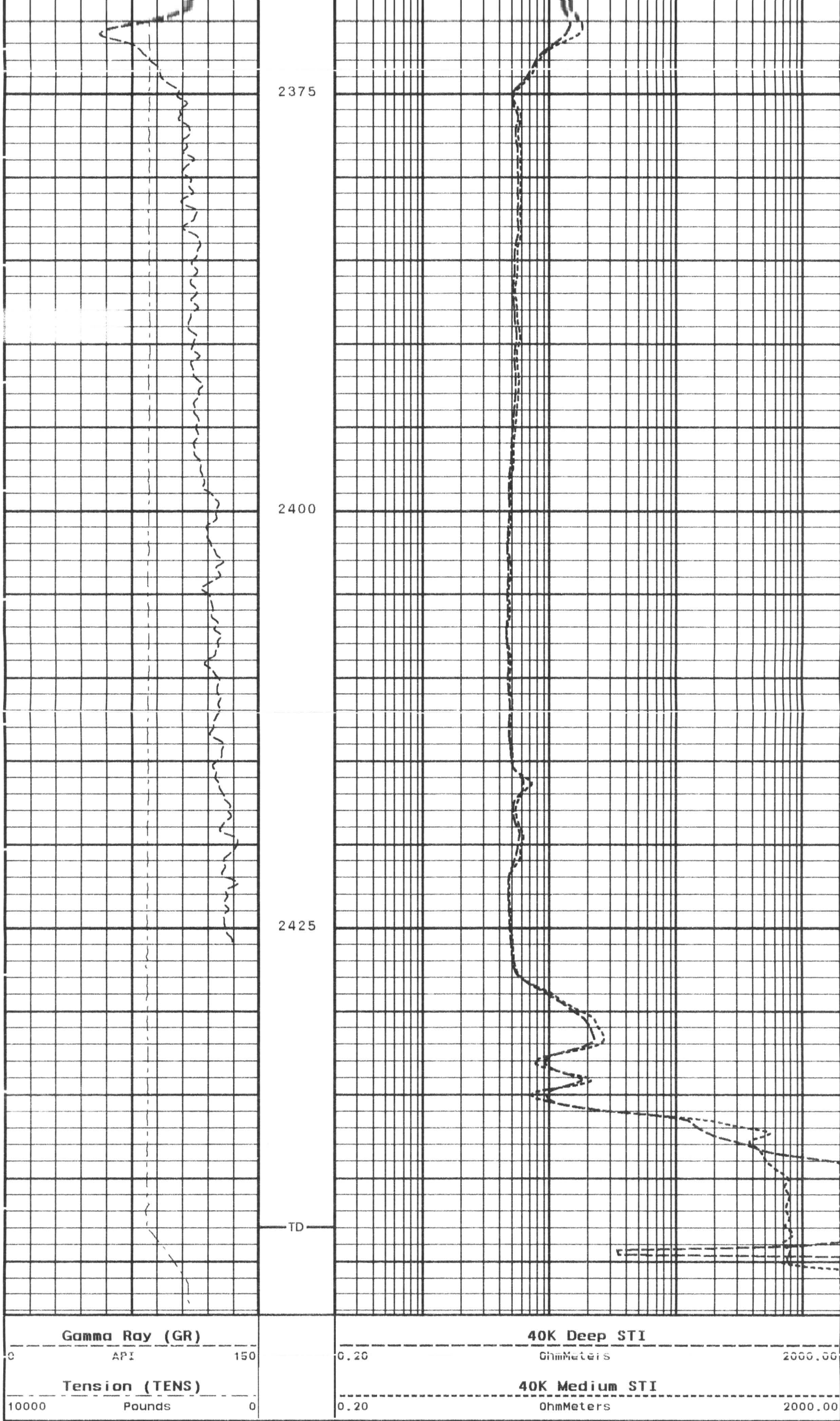
SYSTEM CONSTANTS				
NAME	DESCRIPTION	VALUE	UNITS	
TDL	TD-Logger	2443.00	Meters	
CSIZ	Casing Size	244.5	Millimeters	
CWEI	Casing Weight	59.52	Kilograms/Meter	
BS	Bit Size	215.9	Millimeters	
BHT	Bottom Hole Temp	92.0	DegreesCentigrade	
SFT	Mean Annual Surf Temp	5.0	DegreesCentigrade	
SPDD	SP Drift Corr. mV	0	Millivolts	
SPBR	SP Bridle Depth Offset	0.00	Meters	
SPTL	Log With SP From	STI		
STIB	STI SFL Chassis Return	ON		
STI4	STI 4 Level Average	OFF		
STIS	STI SFL Log Mode On	ON		
SACC	Accumulation Time	100	Seconds	
BARI	Barite Correction	OFF		
MM	Mud Weight	955.0	Kilograms/Cu.Meter	
MDEN	Matrix Density	2710	Kilograms/Cu.Meter	
FD	Fluid Density	1000	Kilograms/Cu.Meter	
SPVS	SPed Valve Status	IN		
NGAI	K Factor-NEU	1.003		
BHS	Open/Cased Hole	Open		
BSAL	Borehole Salinity	0	Parts/Million	
FSAL	Formation Salinity	0	Parts/Million	
NBCS	Bitsize/Calp Sel-CNT	Caliper		
NTLS	Tool Type-CNT	CNT-S		
TGRD	Temperature Gradient	0.555	DegC/100Meters	
NTMS	Temp Source-CNT	Gradient		
NCOT	Constant Temp-CNT	21.0	DegreesCentigrade	
NCOR	Cnt Ch Corr Offset	OFF		
OCOR	Cnt Environ.correction	OFF		
SWAN	Sheave Wheel Angle	0.00	Degrees	
NCAL	LIS Caliper Name-CNT	X Caliper		
SCAL	Density BH Diam Source	X Caliper		

REMARKS
REPEAT PASS
1:240 SCALE

DEPTH SCALE: 1:240 VERSION: 2004.02.11.263
REPEAT PASS

30015974 STIRP
FINISH DEPTH: 0.0 Meters DIRECTION: UP DATE: TIME: MODE: TRACE PLAYBACK





START DEPTH: 2448.2 DIRECTION: UP DATE: 02/17/2004 TIME: 23:09 MODE: TRACE PLAYBACK
30015974 STIRP

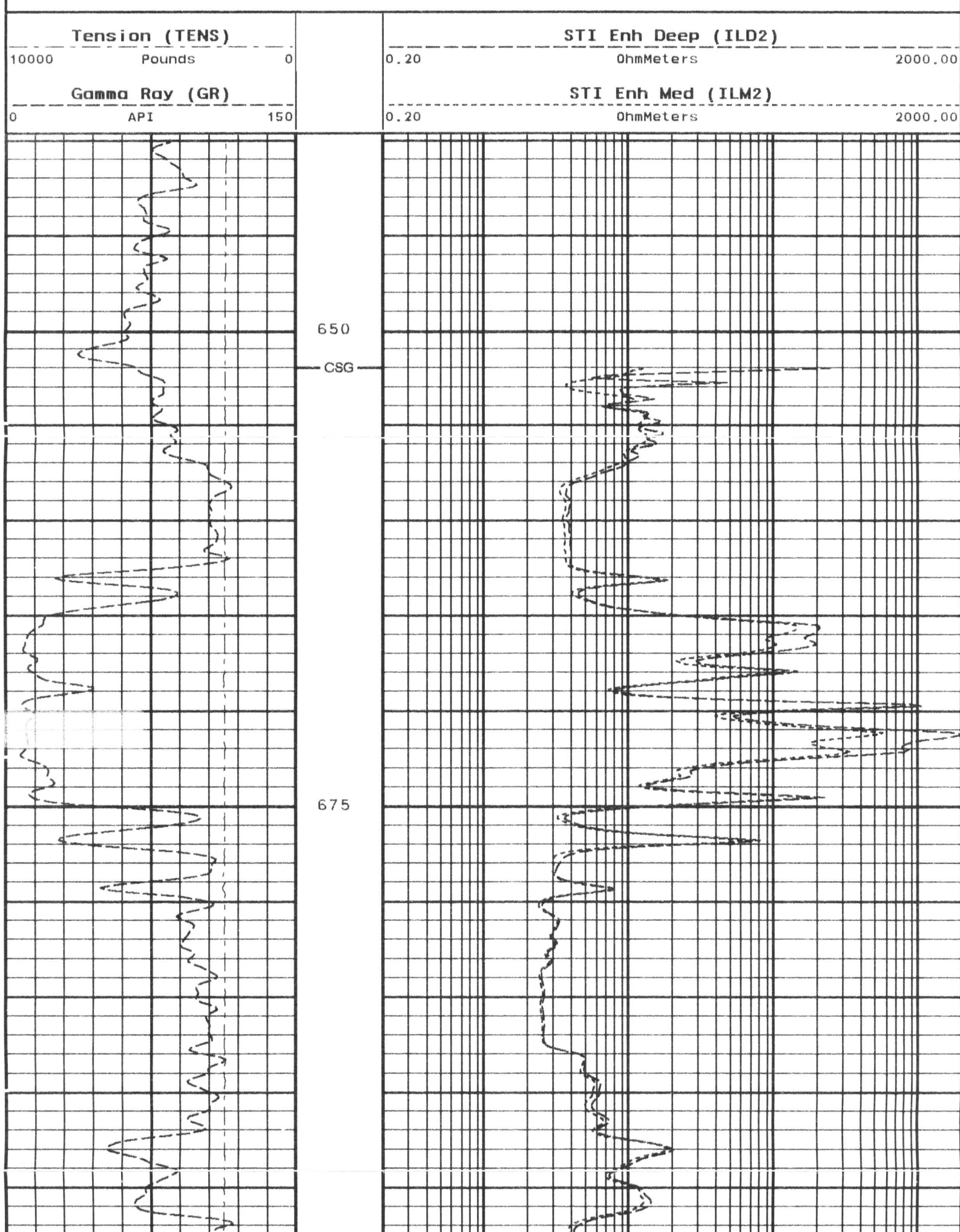
REPEAT PASS
DEPTH SCALE: 1:240 VERSION: 2004.02.11.263

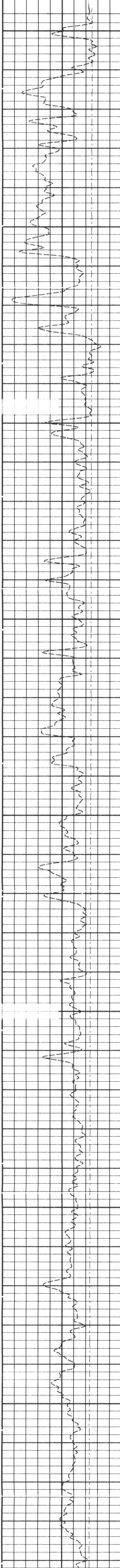
SYSTEM CONSTANTS			
NAME	DESCRIPTION	VALUE	UNITS
TDL	TD-Logger	2443.00	Meters
CSIZ	Casing Size	244.5	Millimeters
CWEI	Casing Weight	59.52	Kilograms/Meter
BS	Bit Size	215.9	Millimeters
BHT	Bottom Hole Temp	92.0	DegreesCentigrade
SFT	Mean Annual Surf Temp	5.0	DegreesCentigrade
SPDD	SP Drift Corr. mV	0	Millivolts
SPBR	SP Bridle Depth Offset	0.00	Meters
SPTL	Log With SP From	STI	
STIB	STI SFL Chassis Return	ON	
STI4	STI 4 Level Average	OFF	
STIS	STI SFL Log Mode On	ON	
SACC	Accumulation Time	100	Seconds
BARI	Barite Correction	OFF	
MM	Mud Weight	955.0	Kilograms/Cu.Meter
MDEN	Matrix Density	2710	Kilograms/Cu.Meter
FD	Fluid Density	1000	Kilograms/Cu.Meter
SPVS	SPed Valve Status	OUT	
NGAI	K Factor-NEU	1.003	
BHS	Open/Cased Hole	Open	
BSAL	Borehole Salinity	0	Parts/Million
FSAL	Formation Salinity	0	Parts/Million
NBCS	Bitsize/Calp Sel-CNT	Caliper	
NTLS	Tool Type-CNT	CNT-S	
TGRD	Temperature Gradient	0.555	DegC/100Meters
NTMS	Temp Source-CNT	Gradient	
NCOT	Constant Temp-CNT	21.0	DegreesCentigrade
OCOR	Cnt Ch Corr Offset	OFF	
OCOR	Cnt Environ.correction	OFF	
SMAN	Sheave Wheel Angle	0.00	Degrees
NCAL	LIS Caliper Name-CNT	X Caliper	
SCAL	Density BH Dia Source	X Caliper	

REMARKS
INDUCTION ENHANCEMENT
1:240 SCALE

DEPTH SCALE: 1:240 VERSION: 2004.02.11.263
ENHANCED PASS

30015974 STIMP_enh
FINISH DEPTH: 0.0 Meters DIRECTION: UP DATE: TIME: MODE: TRACE PLAYBACK





700

725

750

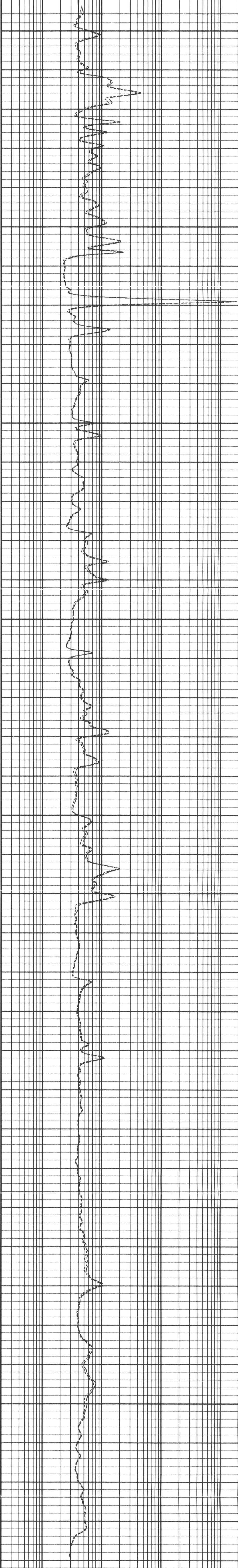
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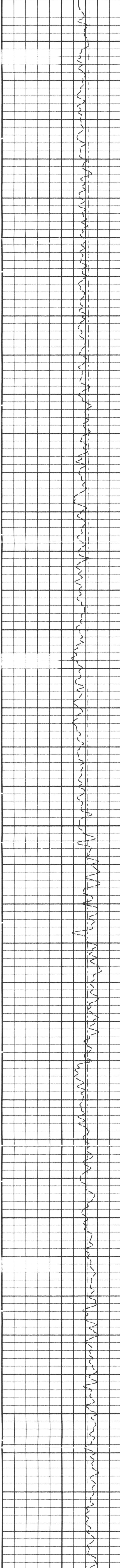
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825

850

875





900

925

950

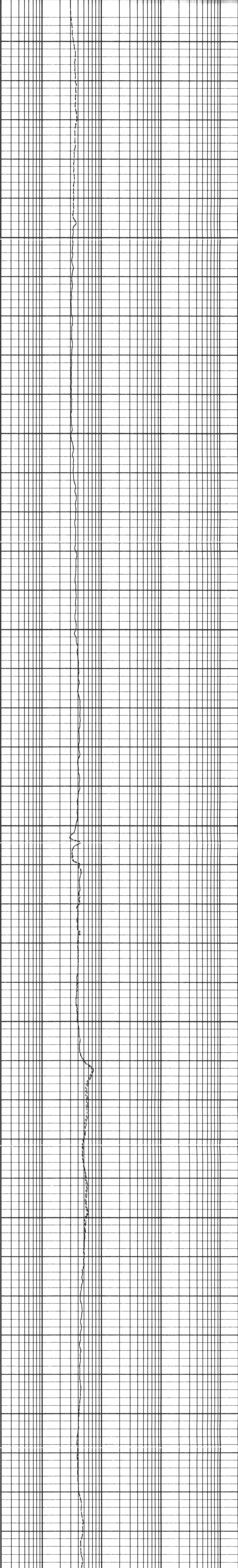
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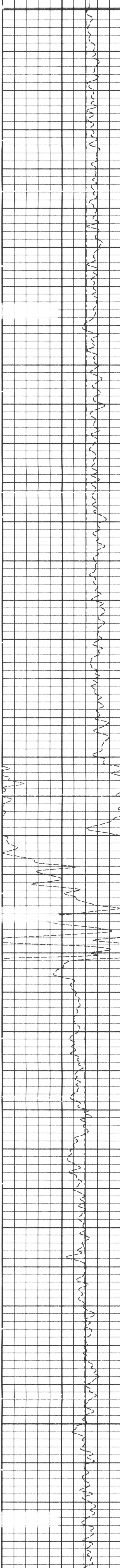
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1025

1050

1075





1100

1125

1150

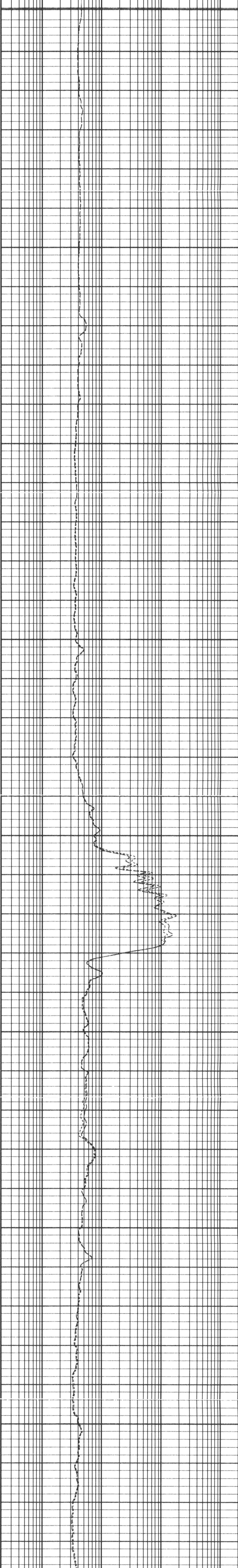
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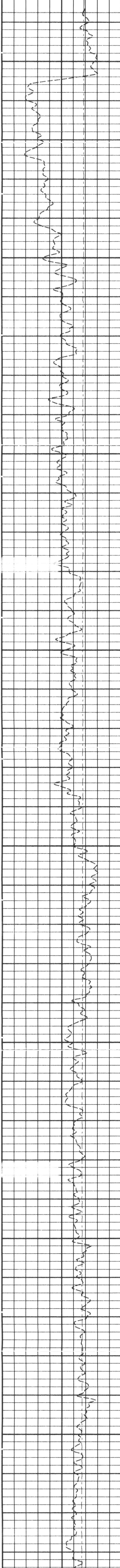
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1225

1250

1275





1300

1325

1350

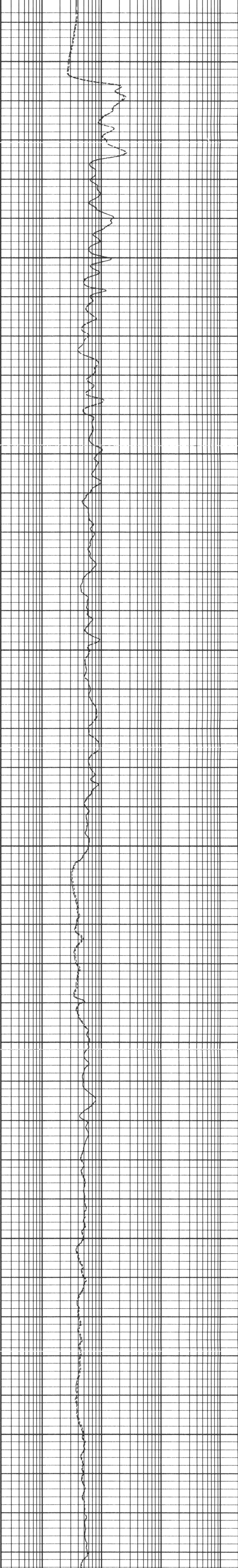
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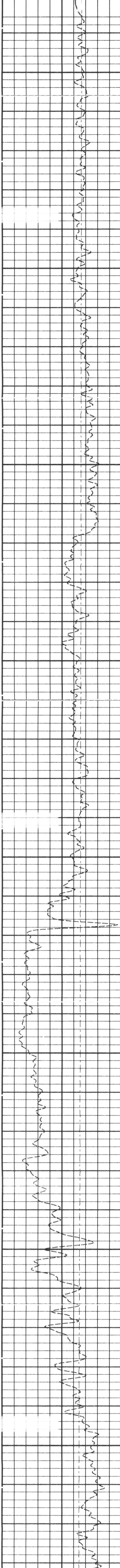
1400

1425

1450

1475





1500

1525

1550

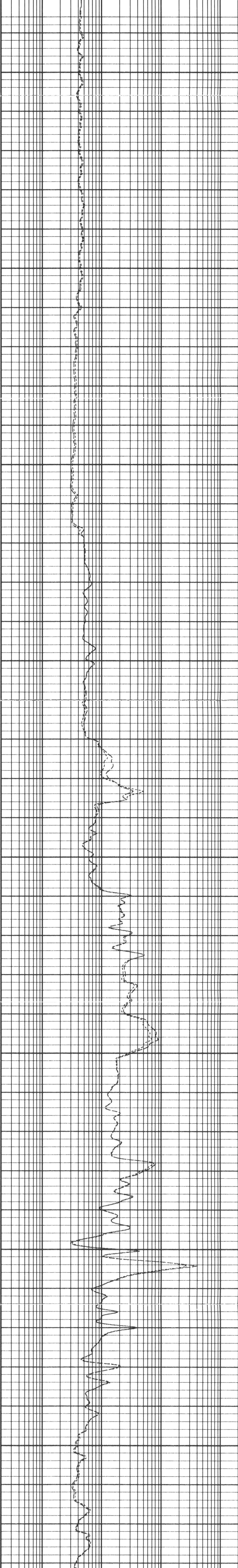
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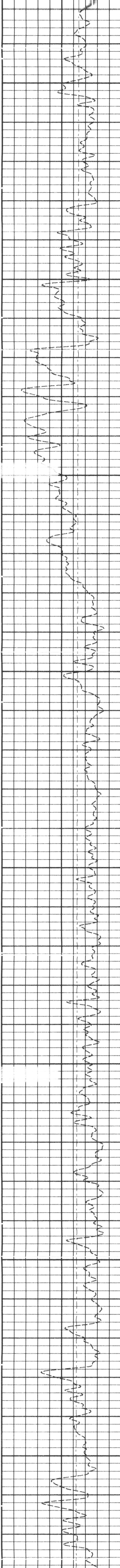
1600

1625

1650

1675





1700

1725

1750

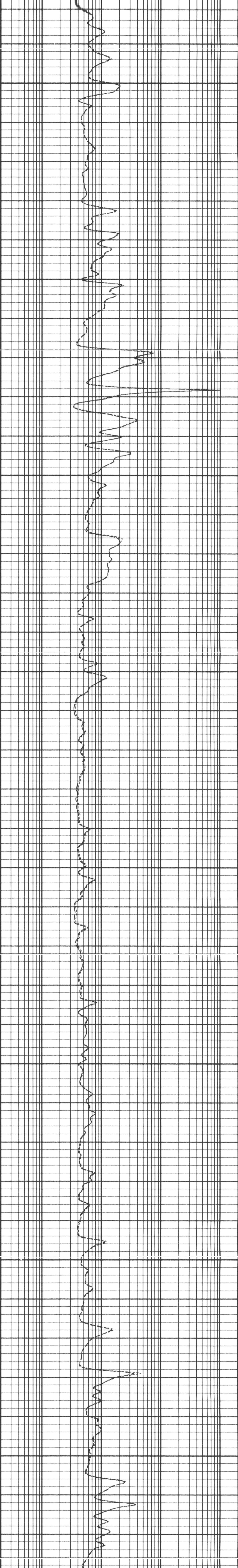
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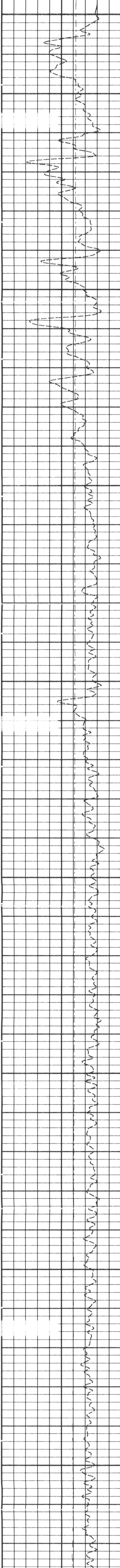
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1825

1850

1875





1900

1925

1950

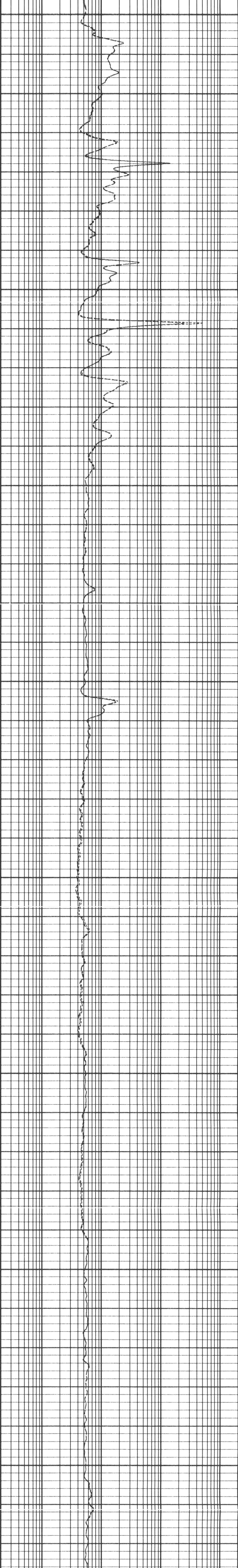
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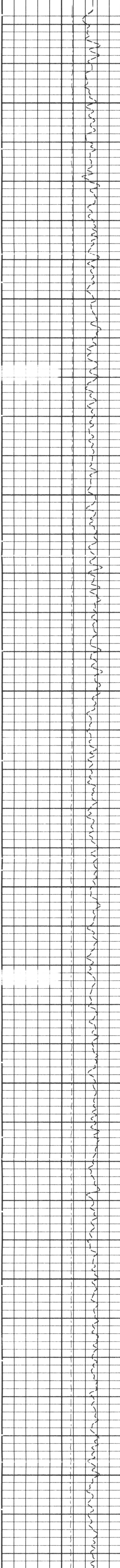
2000

2025

2050

2075





2100

2125

2150

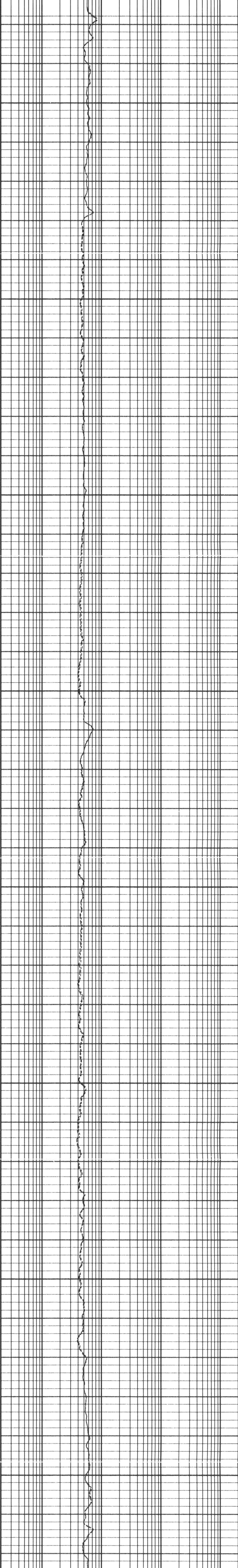
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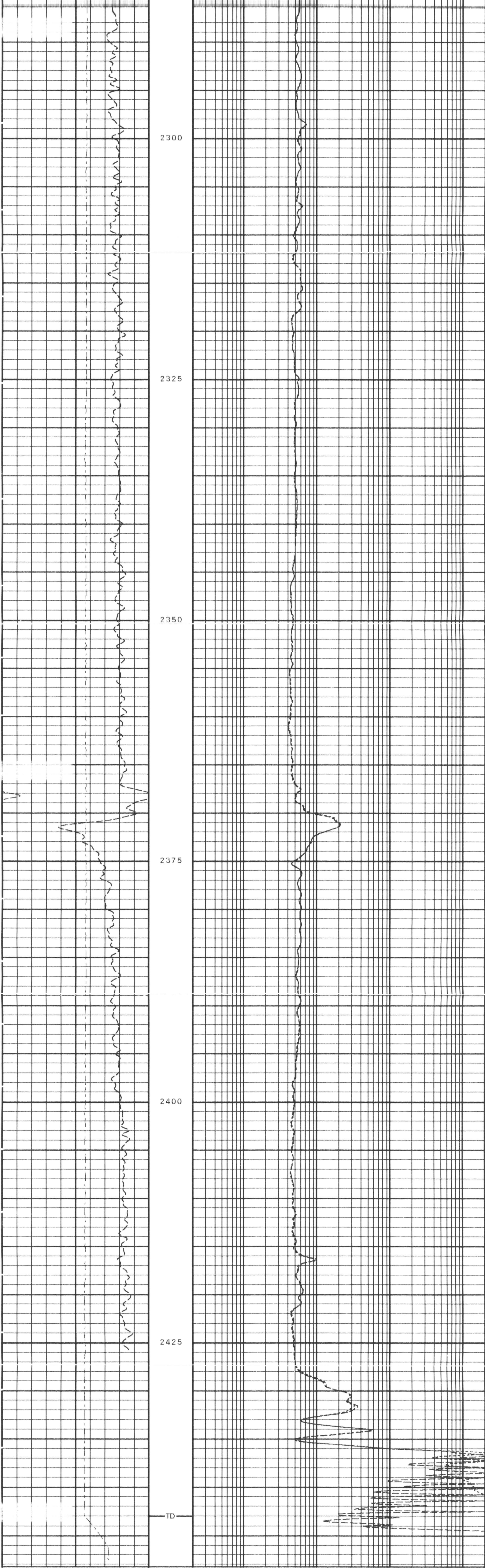
2200

2225

2250

2275





Gamma Ray (GR)		STI Enh Med (ILM2)	
0	API	0.20	OhmMeters
150		2000.00	
Tension (TENS)		STI Enh Deep (ILD2)	
10000	Pounds	0.20	OhmMeters
0		2000.00	

START DEPTH: 2448.2 DIRECTION: UP DATE: 02/18/2004 TIME:00:49 MODE: TRACE PLAYBACK
30015974 STIMP_enh

ENHANCED PASS

DEPTH SCALE: 1:240

VERSION: 2004.02.11.263

SYSTEM CONSTANTS			
NAME	DESCRIPTION	VALUE	UNITS
TDL	TD-Logger	2443.00	Meters
CSIZ	Casing Size	244.5	Millimeters
CWEI	Casing Weight	59.52	Kilograms/Meter
BS	Bit Size	215.9	Millimeters
BHT	Bottom Hole Temp	92.0	DegreesCentigrade
SFT	Mean Annual Surf Temp	5.0	DegreesCentigrade
SPDD	SP Drift Corr. mV	0	Millivolts
SPBR	SP Bridle Depth Offset	0.00	Meters
SPTL	Log With SP From	STI	
STIB	STI SFL Chassis Return	ON	
STI4	STI 4 Level Average	OFF	
STIS	STI SFL Log Mode On	ON	
SACC	Accumulation Time	100	Seconds
BARI	Barite Correction	OFF	
NM	Mud Weight	955.0	Kilograms/Cu.Meter
NDEN	Matrix Density	2710	Kilograms/Cu.Meter
FD	Fluid Density	1000	Kilograms/Cu.Meter
SPVS	SPed Valve Status	IN	
NGAI	K Factor-NEU	1.003	
BHS	Open/Cased Hole	Open	
BSAL	Borehole Salinity	0	Parts/Million
FSAL	Formation Salinity	0	Parts/Million
NBCS	Bitsize/Calp Sel-CNT	Caliper	
NTLS	Tool Type-CNT	CNT-S	
TGRD	Temperature Gradient	0.555	DegC/100Meters
NTMS	Temp Source-CNT	Gradient	
NCOT	Constant Temp-CNT	21.0	DegreesCentigrade

NCOR	Cnt Ch Corr Offset	OFF
OCOR	Cnt Environ.correction	OFF
SWAN	Sheave Wheel Angle	0.00 Degrees
NCAL	LIS Caliper Name-CNT	X Caliper
SCAL	Density BH Diam Source	X Caliper

REMARKS

CASING CHECK
1:240 SCALE

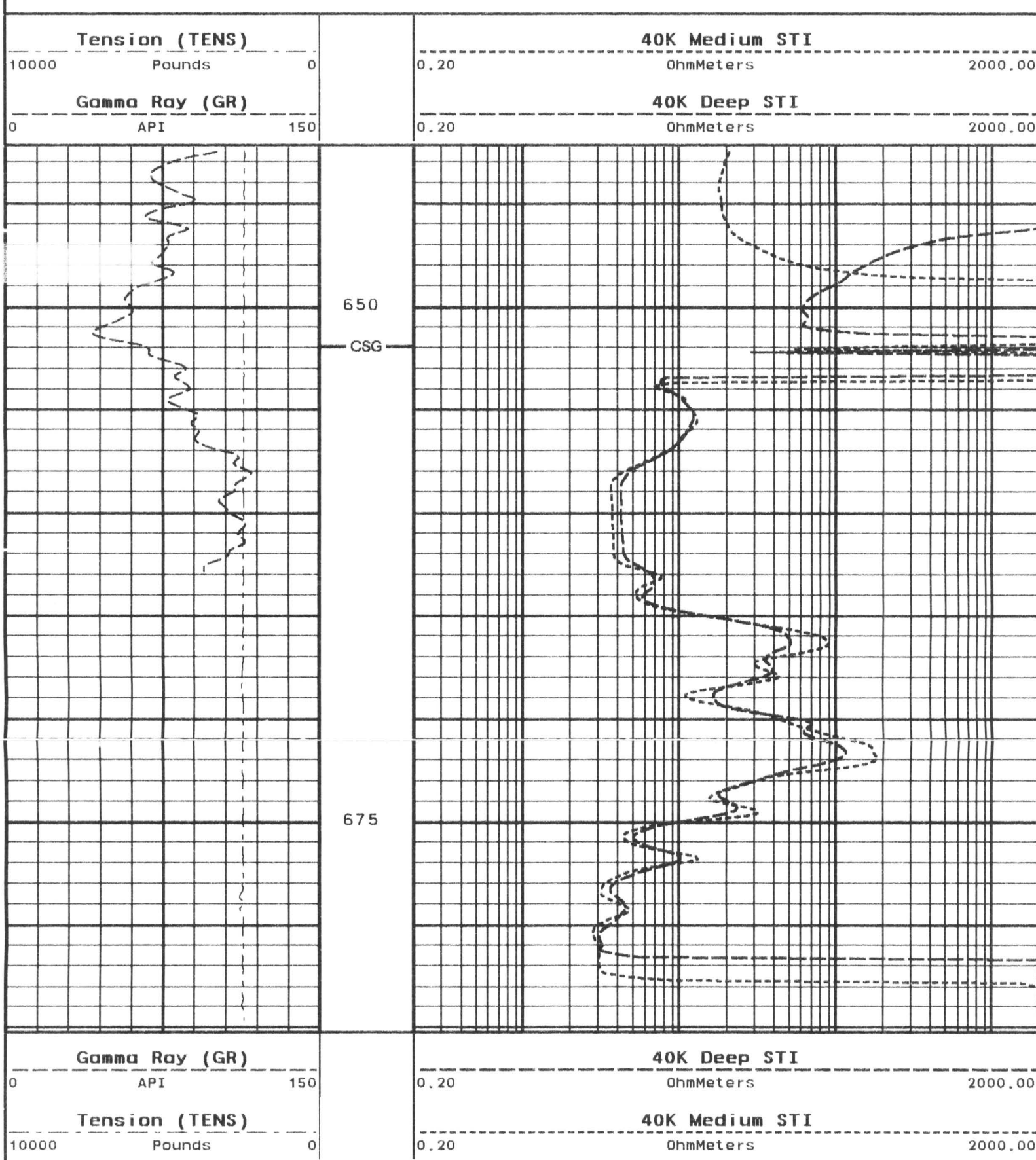
DEPTH SCALE: 1:240

VERSION: 2004.02.11.263

CASINGCHECK

30015974 CASINGCHECKB

FINISH DEPTH: 0.0 Meters DIRECTION: UP DATE: TIME: MODE: TRACE PLAYBACK



START DEPTH: 685.2 DIRECTION: UP DATE: 02/17/2004 TIME:22:07 MODE: TRACE PLAYBACK

30015974 CASINGCHECKB

CASINGCHECK

DEPTH SCALE: 1:240

VERSION: 2004.02.11.263

SYSTEM CONSTANTS

NAME	DESCRIPTION	VALUE	UNITS
TDL	TD-Logger	2443.00	Meters
CSIZ	Casing Size	244.5	Millimeters
CMEI	Casing Weight	59.52	Kilograms/Meter
BS	Bit Size	215.9	Millimeters
BHT	Bottom Hole Temp	92.0	DegreesCentigrade
SFT	Mean Annual Surf Temp	5.0	DegreesCentigrade
SPDD	SP Drift Corr. mV	0	Millivolts
SPBR	SP Bridle Depth Offset	0.00	Meters
SPTL	Log With SP From	STI	
STIB	STI SFL Chassis Return	ON	
STI4	STI 4 Level Average	OFF	
STIS	STI SFL Log Mode On	ON	
SACC	Accumulation Time	100	Seconds
BARI	Barite Correction	OFF	
MM	Mud Weight	955.0	Kilograms/Cu.Meter
MDEN	Matrix Density	2710	Kilograms/Cu.Meter
FD	Fluid Density	1000	Kilograms/Cu.Meter
SPVS	SPed Valve Status	IN	
NGAI	K Factor-NEU	1.003	
BHS	Open/Cased Hole	Open	
BSAL	Borehole Salinity	0	Parts/Million
FSAL	Formation Salinity	0	Parts/Million
NBCS	Bitsize/Calp Sel-CNT	Caliper	
NTLS	Tool Type-CNT	CNT-S	
TGRD	Temperature Gradient	0.555	DegC/100Meters
NTMS	Temp Source-CNT	Gradient	
NCOT	Constant Temp-CNT	21.0	DegreesCentigrade
NCOR	Cnt Ch Corr Offset	OFF	
OCOR	Cnt Environ.correction	OFF	
SWAN	Sheave Wheel Angle	0.00	Degrees
NCAL	LIS Caliper Name-CNT	X Caliper	
SCAL	Density BH Diam Source	X Caliper	

02/16/04 23:43 0.0 M Ver 40211263 Job 30015974

Gamma Ray Before Survey Calibration

Tool Type: UGR-JA Serial No: ugrj187
Calibrator No: RA-20S-734

Background	Calibrator	Standard	Units
109.4	612.7	140.0	API
Delta Counts Per Sec: 503.3		CPS/API = 3.595	

02/05/04 11:22 0.0 M Ver 40130250S Job shop

SIMULTANEOUS TRIPLE INDUCTION SHOP CALIBRATION

TOOL TYPE: STI-AC SONDE SERIAL NO: STSB188
ELECTRONICS SERIAL NO: STCB188

LOOP CALIBRATION: Gain and Phase Error of Internal Reference

	10KHz		20KHz		40KHz	
	DEEP	MEDIUM	DEEP	MEDIUM	DEEP	MEDIUM
Gain:	1.071	1.056	1.062	1.043	1.047	1.024
Upper Limit:	1.100	1.100	1.100	1.100	1.100	1.100
Lower Limit:	0.900	0.900	0.900	0.900	0.900	0.900
Phase Error(degrees):	1.78	0.75	2.73	1.67	2.21	1.70
Upper Limit:	10.00	10.00	10.00	10.00	10.00	10.00
Lower Limit:	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

SONDE ERROR:

	10KHz		20KHz		40KHz	
	R	X	R	X	R	X
Deep:	7.1	38.1	3.5	14.9	2.7	-1.7
Upper Limit:	20.0	100.0	20.0	100.0	20.0	100.0
Lower Limit:	-20.0	-100.0	-20.0	-100.0	-20.0	-100.0
Medium:	-11.4	-45.6	-2.8	-42.6	0.4	-58.9
Upper Limit:	20.0	150.0	20.0	150.0	20.0	150.0
Lower Limit:	-20.0	-150.0	-20.0	-150.0	-20.0	-150.0

SHOP ELECTRONICS CALIBRATION:

	10KHz		20KHz		40KHz	
	R	X	R	X	R	X
Zero Error(mho/m):	-4.0	12.4	-0.2	9.3	0.0	9.8
Upper Limit:	100.0	100.0	100.0	100.0	100.0	100.0
Lower Limit:	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0
Gain:	0.994	0.987	1.002	0.982	1.006	0.998
Upper Limit:	1.100	1.100	1.100	1.100	1.100	1.100
Lower Limit:	0.900	0.900	0.900	0.900	0.900	0.900
Phase Error(degrees):	-1.31	-0.39	0.46	-0.72	2.14	-0.46
Upper Limit:	10.00	10.00	10.00	10.00	10.00	10.00
Lower Limit:	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00
Zero Error(mho/m):	-3.9	12.6	0.1	9.6	2.0	10.0
Upper Limit:	100.0	100.0	100.0	100.0	100.0	100.0
Lower Limit:	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0
Gain:	0.994	0.987	1.002	0.982	1.001	0.998
Upper Limit:	1.100	1.100	1.100	1.100	1.100	1.100
Lower Limit:	0.900	0.900	0.900	0.900	0.900	0.900
Phase Error(degrees):	-1.31	-0.40	-0.12	-0.72	1.13	-0.47
Upper Limit:	10.00	10.00	10.00	10.00	10.00	10.00
Lower Limit:	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

SFL CALIBRATIONS:

	OFFSET	MIN	MAX	UNITS	GAIN	MIN	MAX
Voltage:	-2.4	-100.0	100.0	uV	1.011	0.800	1.200
Current:	-0.4	-25.0	25.0	uA	1.009	0.800	1.200

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SIMULTANEOUS TRIPLE INDUCTION BEFORE SURVEY CALIBRATION

TOOL TYPE: STI-AC SONDE SERIAL NO: STSB188
ELECTRONICS SERIAL NO: STCB188

	10KHz		20KHz		40KHz	
	R	X	R	X	R	X
Zero Error(mho/m):	14.0	14.4	3.1	11.8	2.3	8.6
Upper Limit:	100.0	100.0	100.0	100.0	100.0	100.0
Lower Limit:	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0

Gain:	0.994	0.990	1.002	0.985	1.006	1.000	
Upper Limit:	1.100	1.100	1.100	1.100	1.100	1.100	
Lower Limit:	0.900	0.900	0.900	0.900	0.900	0.900	
Phase Error(degrees):	-1.39	-0.63	0.08	-0.87	1.47	-0.72	
Upper Limit:	10.00	10.00	10.00	10.00	10.00	10.00	
Lower Limit:	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	
MEDIUM							
Zero Error(mho/m):	15.6	17.9	3.5	11.6	3.1	8.6	
Upper Limit:	100.0	100.0	100.0	100.0	100.0	100.0	
Lower Limit:	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0	
Gain:	0.994	0.988	1.002	0.985	1.002	1.001	
Upper Limit:	1.100	1.100	1.100	1.100	1.100	1.100	
Lower Limit:	0.900	0.900	0.900	0.900	0.900	0.900	
Phase Error(degrees):	-1.38	-0.66	-0.49	-0.87	0.52	-0.73	
Upper Limit:	10.00	10.00	10.00	10.00	10.00	10.00	
Lower Limit:	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	
SFL CALIBRATIONS:							
	OFFSET	MIN	MAX	UNITS	GAIN	MIN	MAX
Voltage:	-2.3	-100.0	100.0	uV	1.014	0.800	1.200
Current:	-0.5	-25.0	25.0	uA	1.011	0.800	1.200

02/18/04

01:24

0.0 M

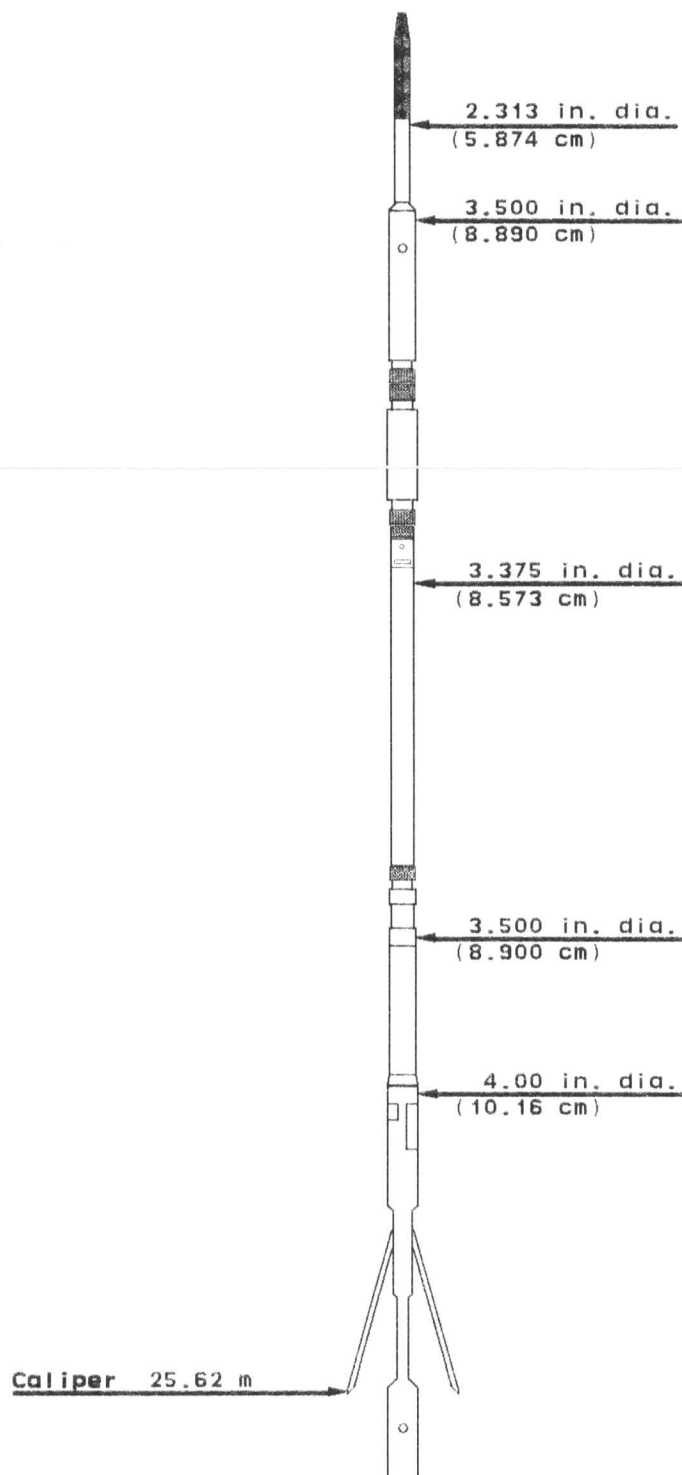
Ver 40211263

Job 30015974

SIMULTANEOUS TRIPLE INDUCTION AFTER SURVEY CALIBRATION							
TOOL TYPE:	STI-AC		SONDE SERIAL NO:		STSB188		
			ELECTRONICS SERIAL NO:		STCB188		
	10KHz		20KHz		40KHz		
	R	X	R	X	R	X	
			DEEP				
Zero Error(mho/m):	10.7	19.8	1.2	17.2	3.9	10.9	
Upper Limit:	100.0	100.0	100.0	100.0	100.0	100.0	
Lower Limit:	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0	
Gain:	0.992	0.973	0.998	0.971	1.001	0.988	
Upper Limit:	1.100	1.100	1.100	1.100	1.100	1.100	
Lower Limit:	0.900	0.900	0.900	0.900	0.900	0.900	
Phase Error(degrees):	-1.36	-0.08	0.36	-0.42	2.24	-0.21	
Upper Limit:	10.00	10.00	10.00	10.00	10.00	10.00	
Lower Limit:	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	
			MEDIUM				
Zero Error(mho/m):	11.0	20.2	1.3	17.6	1.6	11.2	
Upper Limit:	100.0	100.0	100.0	100.0	100.0	100.0	
Lower Limit:	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0	
Gain:	0.993	0.973	1.000	0.971	1.000	0.988	
Upper Limit:	1.100	1.100	1.100	1.100	1.100	1.100	
Lower Limit:	0.900	0.900	0.900	0.900	0.900	0.900	
Phase Error(degrees):	-1.35	-0.09	-0.39	-0.42	0.80	-0.12	
Upper Limit:	10.00	10.00	10.00	10.00	10.00	10.00	
Lower Limit:	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	
SFL CALIBRATIONS:							
	OFFSET	MIN	MAX	UNITS	GAIN	MIN	MAX
Voltage:	-2.0	-100.0	100.0	uV	1.024	0.800	1.200
Current:	-0.4	-25.0	25.0	uA	1.021	0.800	1.200

TVD CALCULATION SUMMARY						
=====						
CALCULATION METHOD : Minimum Curvature				VERSION : 1.0		
TVD DATA FILE : /u/os9-port/cs400/8000/30015974/SURVEY.tvdb						
COMPANY : ANADARKO CANADA ENERGY			DRILLED DEPTH :	2395.57 m		
WELL : ANADARKO ARROWHEAD RIVER K-35			TRUE VERTICAL DEPTH :	2393.71 m		
LOCATION : 300K356040122450			BOTTOM HOLE DISPLACEMENT :	N 3.22 m	E 1.38 m	
DATE : FEBRUARY 17, 2004			TARGET DISPLACEMENT :	N 0.00 m	E 0.00 m	
STATION NUMBER	MEASURED DEPTH (M)	INCLINATION ANGLE (DD)	AZIMUTH (DD)	VERTICAL DEPTH (M)	NORTH +ve (M)	EAST +ve (M)
TIE	0.00	0.00	0.00	0.00	0.00	0.00
1	661.33	0.90	150.00	661.30	-4.50	2.60
2	690.31	0.90	143.40	690.28	-4.88	2.85
3	719.26	0.50	89.20	719.23	-5.06	3.11
4	748.23	0.70	89.20	748.20	-5.05	3.41
5	777.15	0.80	60.00	777.11	-4.95	3.76
6	806.06	0.90	38.20	806.02	-4.67	4.08
7	834.97	1.20	42.00	834.93	-4.27	4.42
8	863.90	1.30	33.40	863.85	-3.77	4.80
9	892.83	1.30	33.20	892.77	-3.22	5.17
10	921.75	1.40	29.90	921.68	-2.64	5.52
11	950.68	1.80	26.20	950.60	-1.93	5.90
12	979.72	1.90	21.30	979.63	-1.07	6.27
13	1008.69	1.60	19.00	1008.58	-0.24	6.58
14	1037.63	2.00	17.90	1037.51	0.62	6.87
15	1066.57	2.00	31.10	1066.43	1.54	7.28
16	1095.48	2.10	19.90	1095.32	2.47	7.72
17	1124.43	2.00	27.60	1124.25	3.41	8.14
18	1153.33	2.10	17.20	1153.14	4.37	8.53
19	1182.23	1.70	18.30	1182.02	5.28	8.82
20	1211.19	1.70	14.80	1210.97	6.10	9.06
21	1240.09	1.90	19.40	1239.85	6.97	9.33
22	1269.00	2.00	14.00	1268.75	7.91	9.61
23	1297.94	2.20	5.30	1297.67	8.95	9.79
24	1326.91	1.90	358.60	1326.62	9.99	9.83
25	1355.82	1.90	3.40	1355.51	10.94	9.84
26	1384.75	1.90	2.10	1384.43	11.90	9.89
27	1413.94	2.00	3.50	1413.60	12.89	9.94
28	1443.16	1.80	353.00	1442.80	13.86	9.91
29	1472.23	1.70	359.10	1471.86	14.74	9.85
30	1501.50	1.60	358.50	1501.12	15.59	9.83
31	1530.61	2.20	4.00	1530.21	16.55	9.86
32	1559.71	2.20	2.20	1559.29	17.67	9.92
33	1588.84	2.00	1.10	1588.40	18.73	9.95
34	1618.05	2.20	8.20	1617.59	19.80	10.04
35	1647.20	2.10	1.60	1646.72	20.88	10.14
36	1676.32	2.10	358.60	1675.82	21.95	10.14
37	1705.50	2.10	359.90	1704.98	23.02	10.13
38	1734.56	2.00	356.20	1734.02	24.06	10.09
39	1763.59	2.00	357.10	1763.04	25.07	10.03
40	1792.73	1.90	352.90	1792.16	26.06	9.95
41	1821.88	1.80	348.90	1821.29	26.99	9.80
42	1850.91	1.80	0.20	1850.31	27.89	9.71
43	1879.86	1.90	354.70	1879.24	28.82	9.67
44	1909.00	1.70	350.40	1908.37	29.73	9.55
45	1938.96	1.40	359.40	1938.32	30.53	9.48
46	1968.05	0.70	5.90	1967.40	31.07	9.49
47	1997.22	0.50	329.10	1996.57	31.35	9.44
48	2026.32	2.00	187.80	2025.67	30.96	9.31
49	2055.40	3.10	191.80	2054.72	29.68	9.08
50	2084.47	5.40	195.20	2083.71	27.60	8.56
51	2113.55	4.50	194.60	2112.68	25.17	7.91
52	2142.65	5.50	190.10	2141.67	22.69	7.38
53	2171.85	5.70	198.60	2170.73	19.94	6.67
54	2200.96	5.40	200.70	2199.70	17.29	5.73
55	2230.08	4.90	201.40	2228.70	14.85	4.79
56	2259.33	5.00	197.70	2257.84	12.47	3.95
57	2288.59	5.30	200.80	2286.99	9.99	3.08
58	2317.87	4.60	205.30	2316.16	7.67	2.10
59	2347.04	4.10	183.30	2345.24	5.57	1.54
60	2376.23	2.70	180.60	2374.38	3.84	1.47
61	2395.57	1.10	206.20	2393.71	3.22	1.38

O.H. Adaptor Head	
Weight	18.0 kg
Length	0.74 m
Max. Diameter	8.9 cm
Total Stack Weight	759.0 kg in air
Total Stack Length	30.87 m
Crossover	
Weight	6.8 kg
Length	0.27 m
Wireline Communications Cartridge	
Weight	53.6 kg
Length	2.31 m
Max. Diameter	8.6 cm
2-Arm Caliper	
Weight	79.4 kg
Length	2.40 m
Max. Diameter	10.2 cm



SPeD 400 Electronics

Weight 56.7 kg
Length 2.92 m
Max. Diameter 8.6 cm

Universal GR

Weight 37.3 kg
Length 1.40 m
Max. Diameter 8.6 cm

Mandrel Neutron

Weight 45.4 kg
Length 2.07 m
Max. Diameter 8.6 cm

Offset Joint

Weight 3.0 kg
Length 0.36 m
Max. Diameter 8.6 cm

SPeD 400 Pad Section

Weight 141.5 kg
Length 3.38 m
Max. Diameter 11.4 cm

Borehole Compensated Sonic

Weight 104.0 kg
Length 4.67 m
Max. Diameter 8.6 cm

Centralizer

Weight 30.9 kg
Length 1.39 m
Max. Diameter 8.9 cm

Simultaneous Triple Induction

Weight 176.9 kg
Length 8.75 m
Max. Diameter 10.2 cm

Stand - Off

Weight 5.5 kg
Length 0.20 m

GR 21.83 m

LS cps

PHIN 19.50 m

SS cps

Caliper 15.67 m

TOP RX 12.47 m

Delta T 12.16 m

BOT RX 11.87 m

ILD 3.28 m

SFL 2.65 m

SP 2.41 m

ILM 2.10 m

3.375 in. dia.
(8.573 cm)

3.375 in. dia.
(8.573 cm)

3.375 in. dia.
(8.573 cm)

3.375 in. dia.
(8.573 cm)

3.67 in. dia.
(9.32 cm)

4.19 in. dia.
(10.64 cm)

LS cps/PE

PHID 15.69 m

SS cps/PE

3.375 in. dia.
(8.573 cm)

3.500 in. dia.
(8.890 cm)

4.00 in. dia.
(10.16 cm)

3.375 in. dia.
(8.573 cm)

4.00 in. dia.
(10.16 cm)

COMPANY ANADARKO CANADA ENERGY

WELL ANADARKO ARROWHEAD RIVER K-35

FIELD ARROWHEAD RIVER PROVINCE N.W.T.

PRECISION

Wireline Technologies

