

HALLIBURTON

BOREHOLE COMPENSATED SONIC ARRAY LOG

COMPANY		OXY USA INC	
WELL		HENTSCHEL C-3	
FIELD		MUSTANG EAST	
COUNTY		MORTON	
STATE		KANSAS	
Permanent Datum Log measured from Drilling measured from	GL	Elev. 3511.0 ft	
	KB	D.F. 3524.0 ft	
		G.L. 3511.0 ft	
Date	22-Aug-12		
Run No.	ONE		
Depth - Driller	3935.00 ft		
Depth - Logger	3918.0 ft		
Bottom - Logged Interval	3892		
Top - Logged Interval	1417		
Casing - Driller	8.625 in @ 1419.0 ft		
Casing - Logger	1417.0 ft		
Bit Size	7.875 in		
Type Fluid in Hole	WATER BASED		
Density	8.9 ppq	42.00	s/qt
PH	10.10 pH	13.0	cpm
Source of Sample	FLOWLINE		
Rm @ Meas. Temperature	1.870 ohmm @ 82.00 degF		
Rmf @ Meas. Temperature	1.78 ohmm @ 78.00 degF		
Rmc @ Meas. Temperature	2.200 ohmm @ 78.00 degF		
Source Rmf	MEASURED	MEASURED	
Rm @ BHT	1.30 ohmm @ 121.0 degF		
Time Since Circulation	12.0 hr		
Time on Bottom	22-Aug-12 16:23		
Max. Rec. Temperature	121.0 degF @ 3914.0 ft		
Equipment	10782954 LIBERAL		
Recorded By	SHELDON INGERSOLL		
Witnessed By	A. GARNER		

API No. 15-129-21942
Location (SHL) 2250' FNL & 1450' FEL

Sect. 8 Twp. 33 S Rge. 42 W

Other Services:
DSN/SDL
ACRT
BSAT

Fold here

Service Ticket No.: 9756667						API Serial No.: 15-129-21942						PGM Version: WL INSITE R3.6.0 (Build 3)																	
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE												RESISTIVITY SCALE CHANGES																	
Date		Sample No.										Type Log		Depth		Scale Up Hole		Scale Down Hole											
Depth-Driller																													
Type Fluid in Hole																													
Density		Viscosity																											
Ph		Fluid Loss																											
Source of Sample												RESISTIVITY EQUIPMENT DATA																	
Rm @ Meas. Temp				@				@				Run No.		Tool Type & No.		Pad Type		Tool Pos.		Other									
Rmf @ Meas. Temp.				@				@				ONE		ACRT		N/A		1.5" S.O.											
Rmc @ Meas. Temp.				@				@						I1256_S0784															
Source Rmf		Rmc																											
Rm @ BHT				@				@																					
Rmf @ BHT				@				@																					
Rmc @ BHT				@				@																					
EQUIPMENT DATA																													
GAMMA						ACOUSTIC						DENSITY						NEUTRON											
Run No.		ONE				Run No.		ONE				Run No.		ONE				Run No.		ONE									
Serial No.		10811258				Serial No.		10747683				Serial No.		I066_M85803_P45				Serial No.		10755066									
Model No.		GTET				Model No.		BSAT				Model No.		SDLT				Model No.		DSNT									
Diameter		3.625"				No. of Cent.		2				Diameter		4.5"				Diameter		3.625"									
Detector Model No.		GTET				Spacing		.5				Log Type		GAM-GAM				Log Type		NEU-NEU									
Type		SCINT										Source Type		CS-137				Source Type		AM-241BE									
Length		8"				LSA [Y/N]						Serial No.		5073GW				Serial No.		DSN-436									
Distance to Source		N/A				FWDA [Y/N]						Strength		1.5 CI				Strength		15 CI									
LOGGING DATA																													
GENERAL						GAMMA						ACOUSTIC						DENSITY						NEUTRON					

GENERAL			GAMMA	ACOUSTIC				DENSITY		NEUTRON				
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix
No.	From	To	ft/min	L	R	L	R		L	R		L	R	
ONE	3914	1419	REC	0	150	30	-10	47.6	30	-10	2.71 gm/cc	30	-10	LIME
DIRECTIONAL INFORMATION														
Maximum Deviation @								KOP @						
Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5 INCH CASING.														
SP, GTET, DSNT, SDLT, BSAT, ACRT RAN IN COMBINATION.														
CHLORIDES REPORTED AT 2000 mg/L.														
LCM REPORTED AT 6 lb/bbl.														
POST CALS NOT DONE AT CUSTOMER REQUEST.														
HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.														
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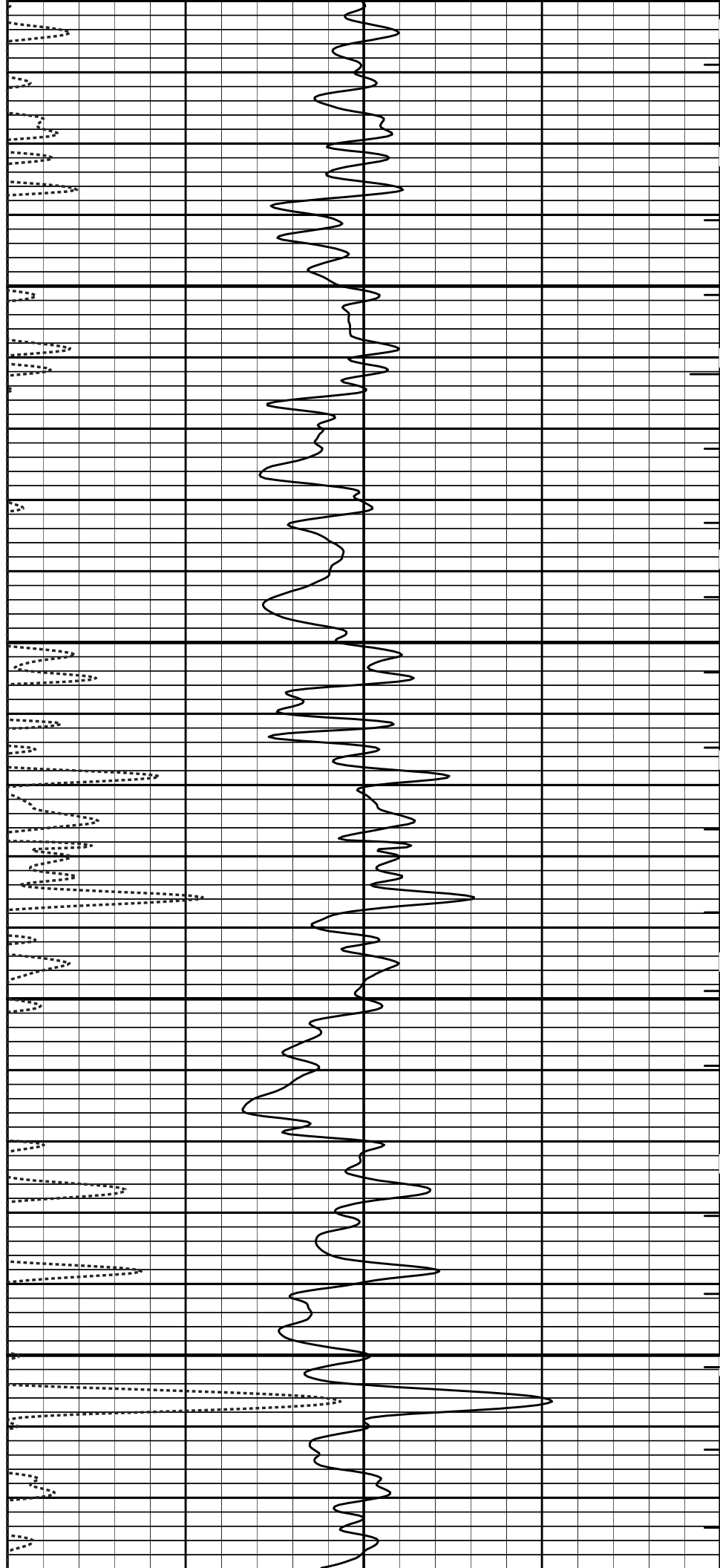
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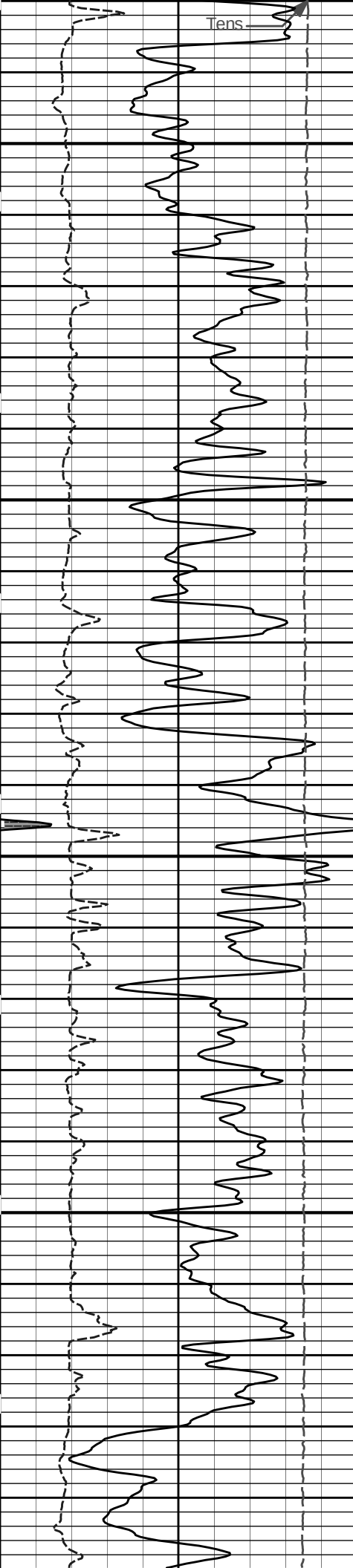
5 INCH MAIN LOG



1500

1600

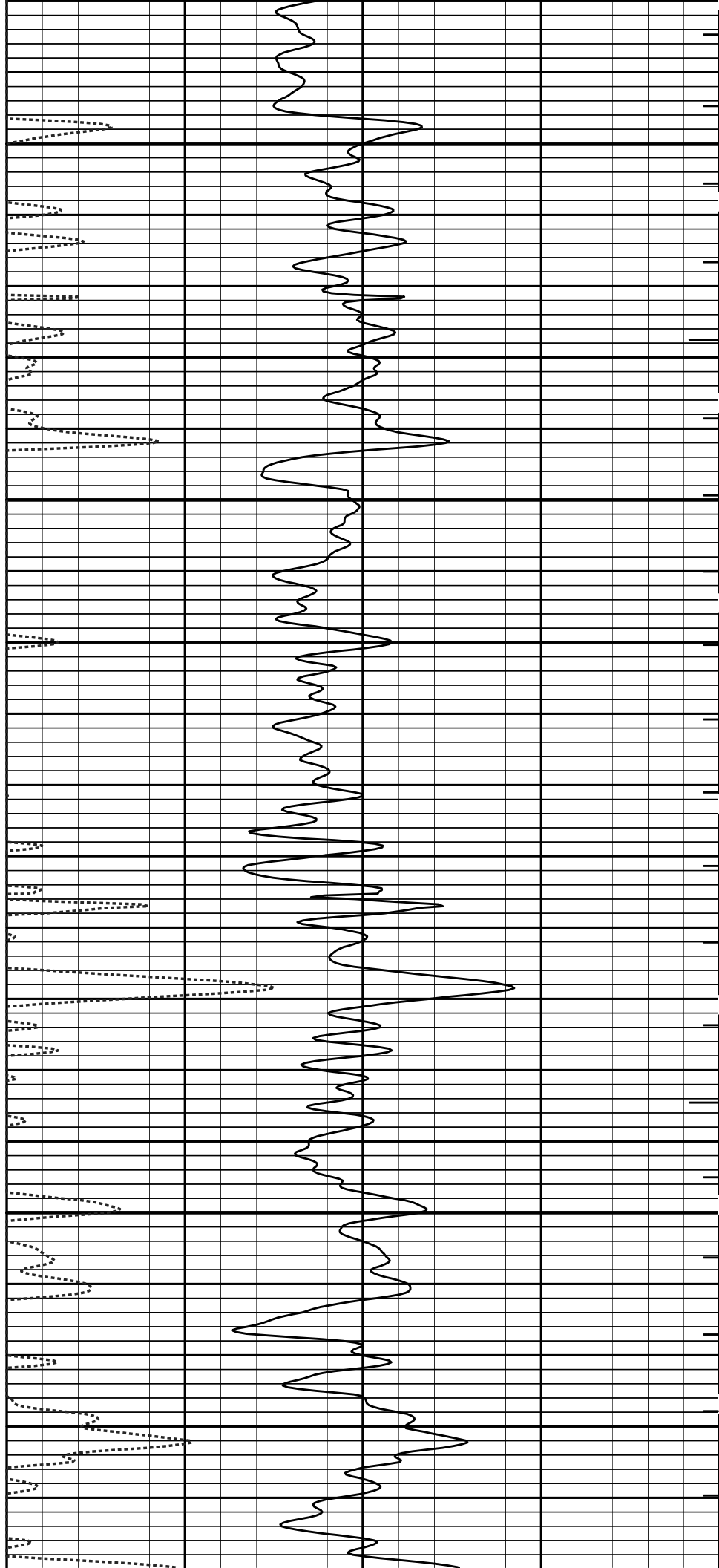


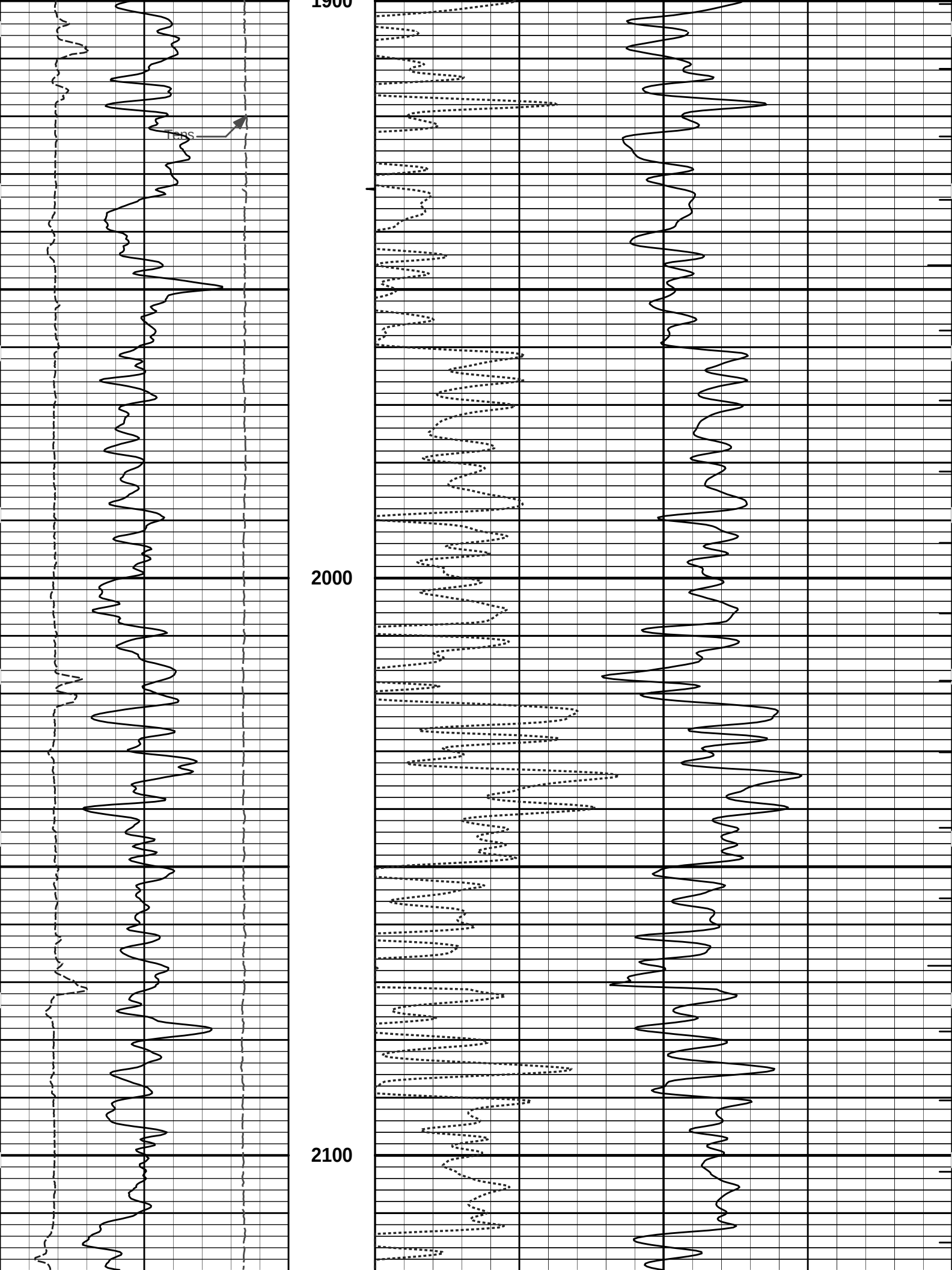


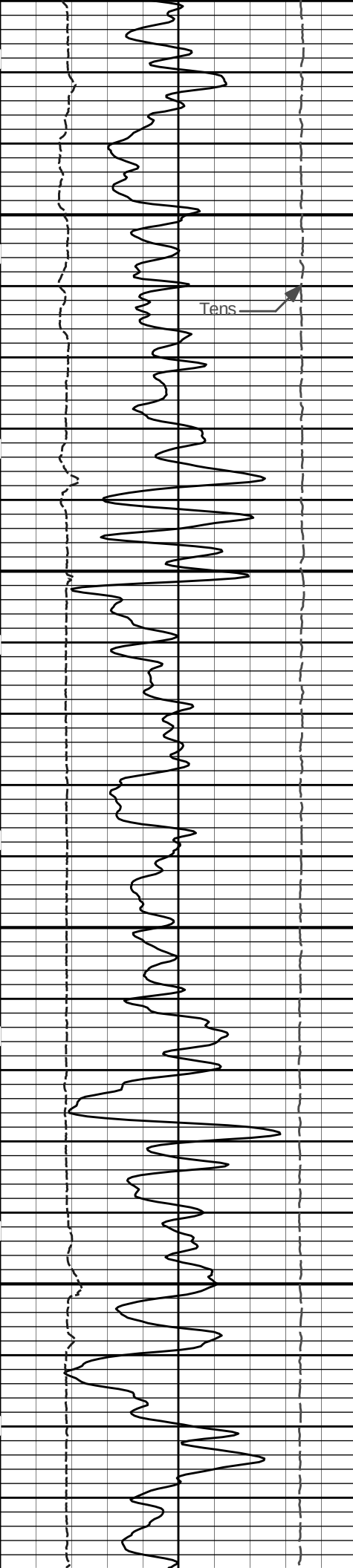
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1800

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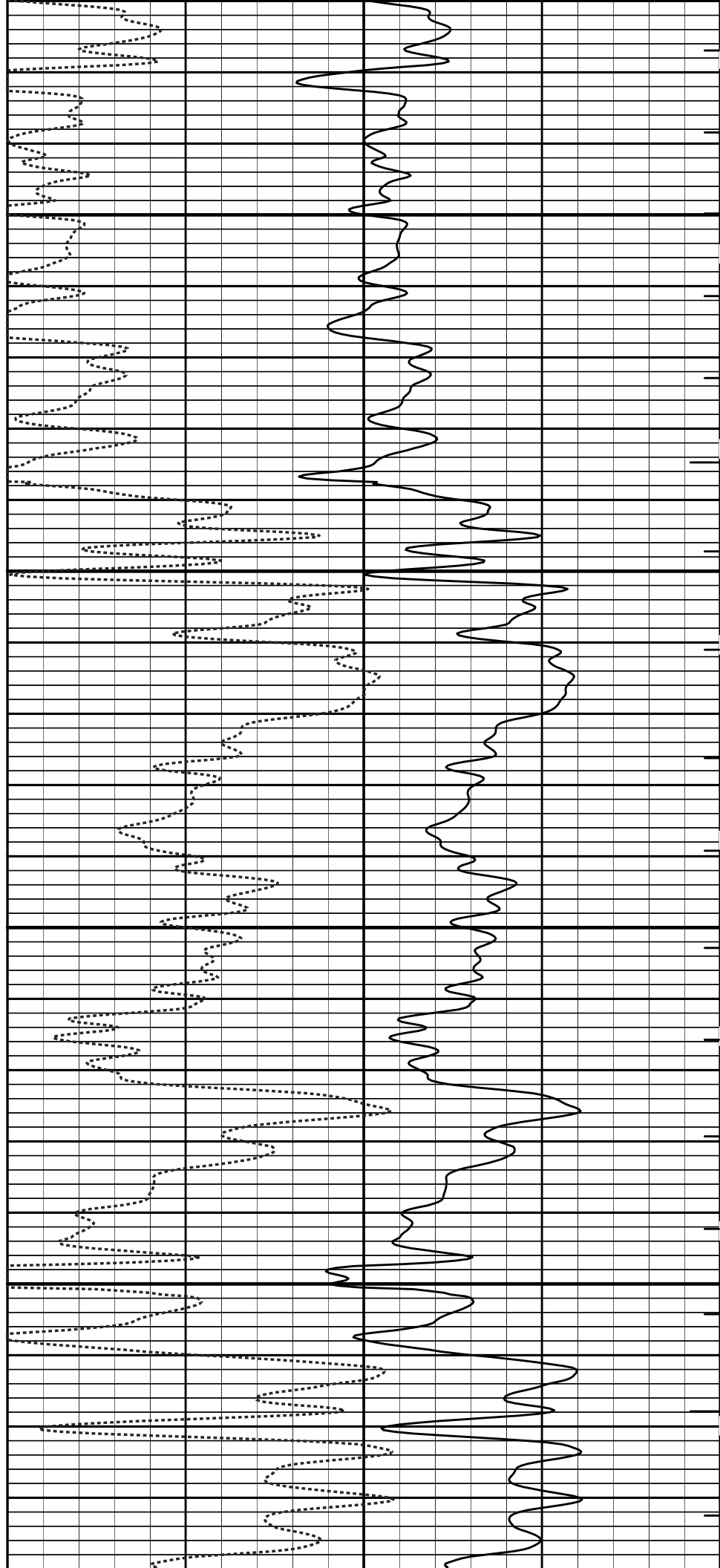


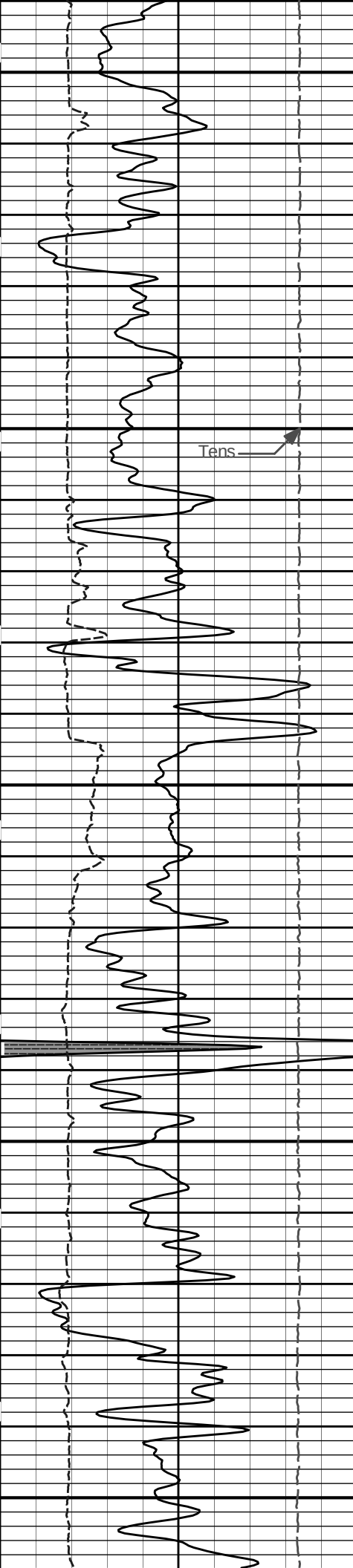




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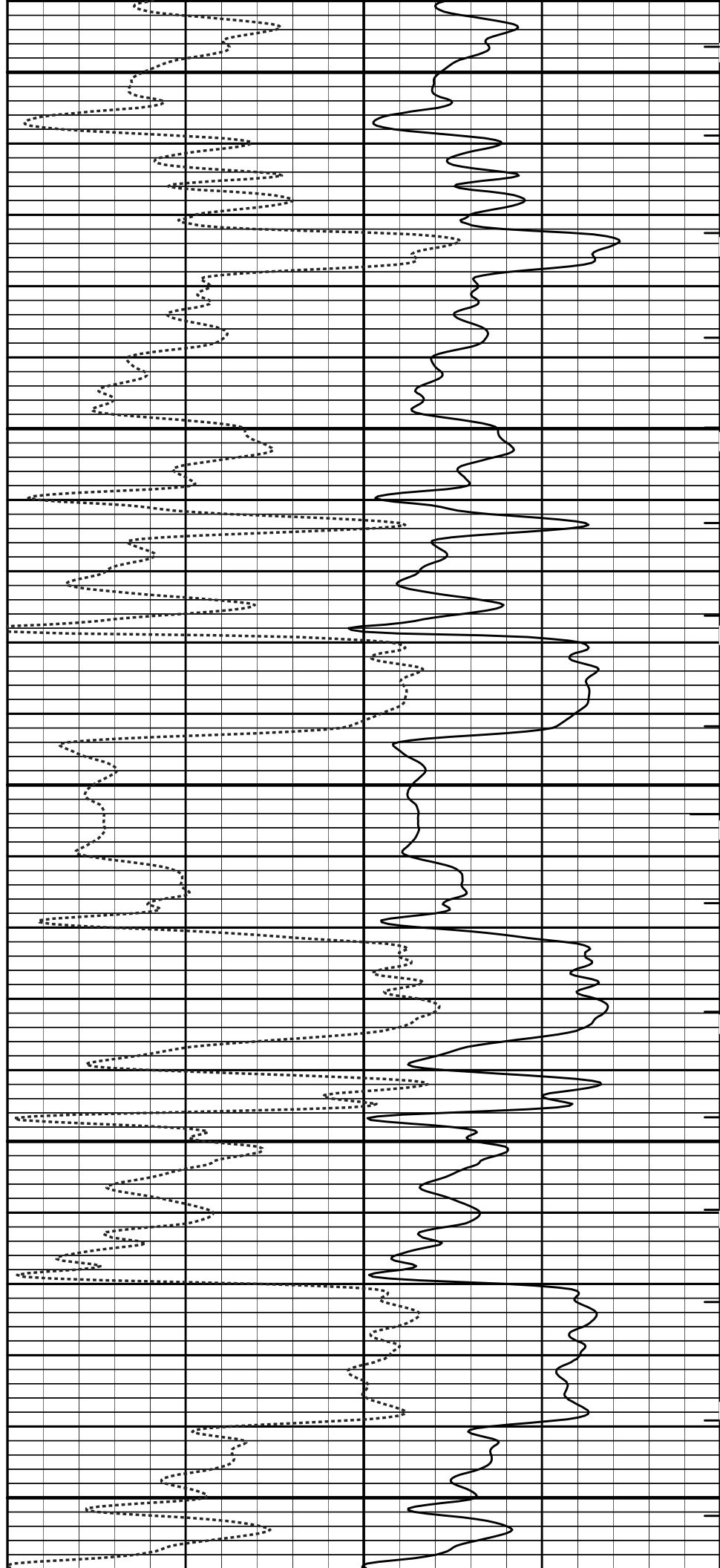
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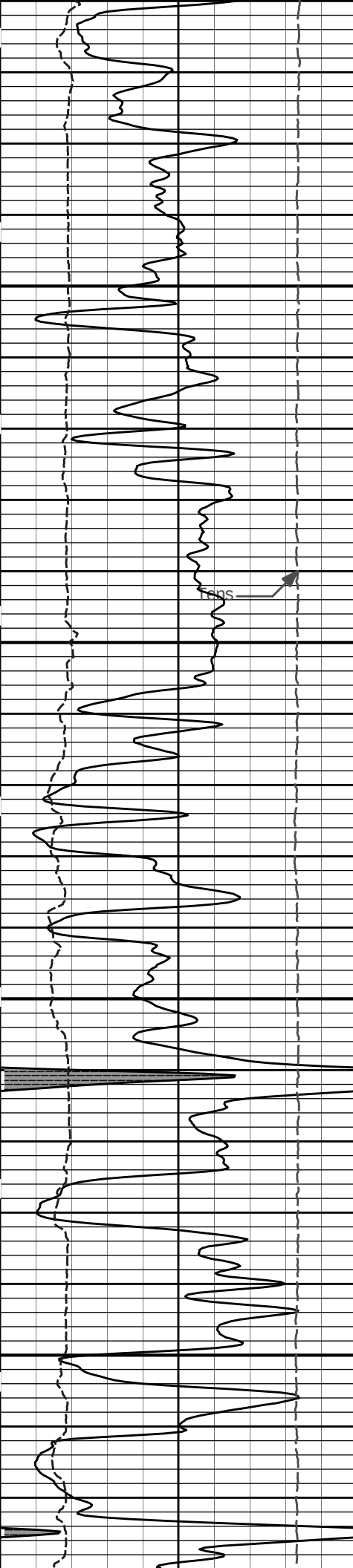




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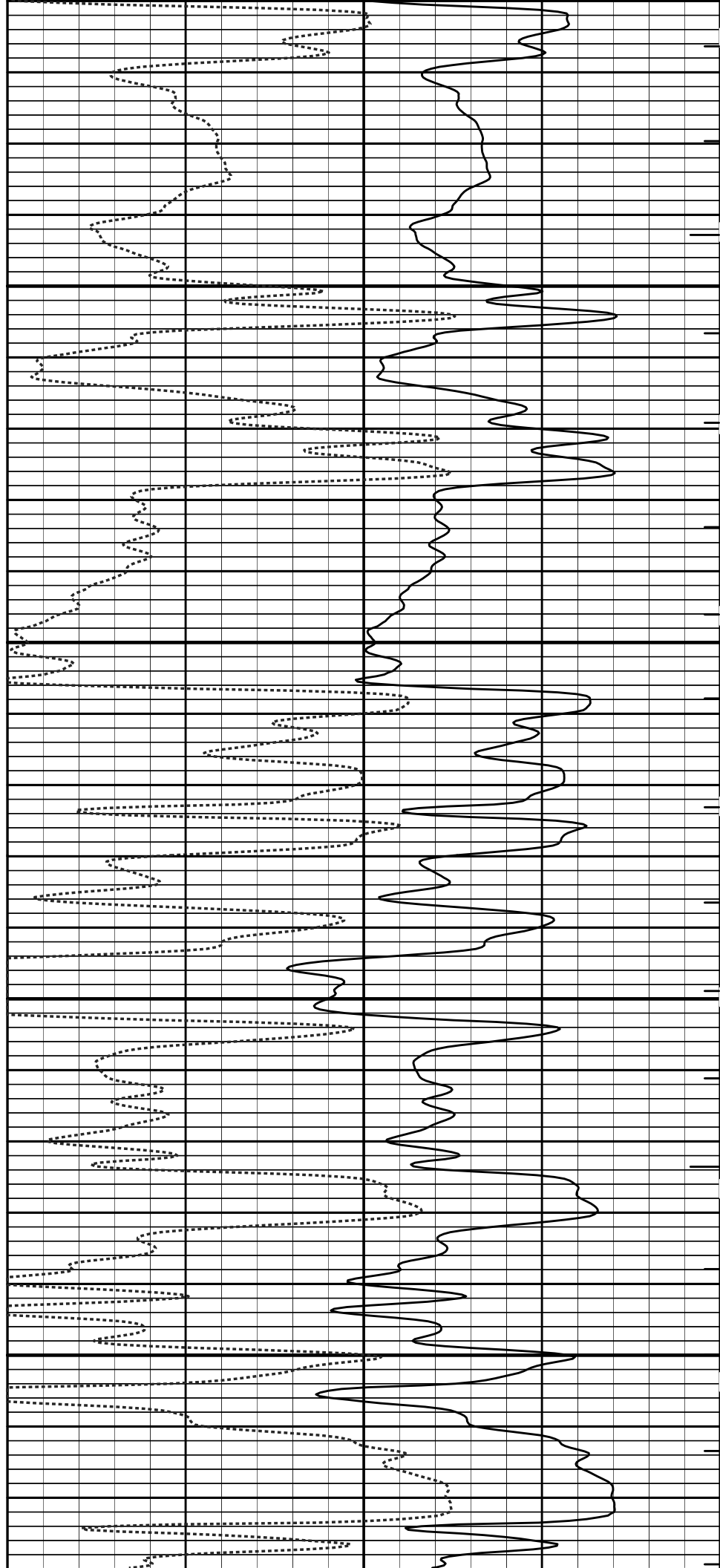
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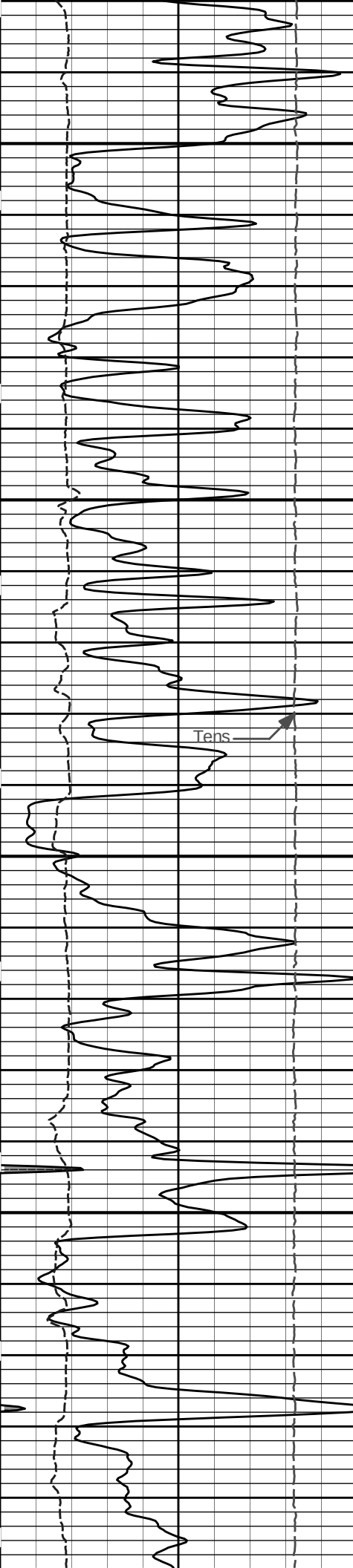




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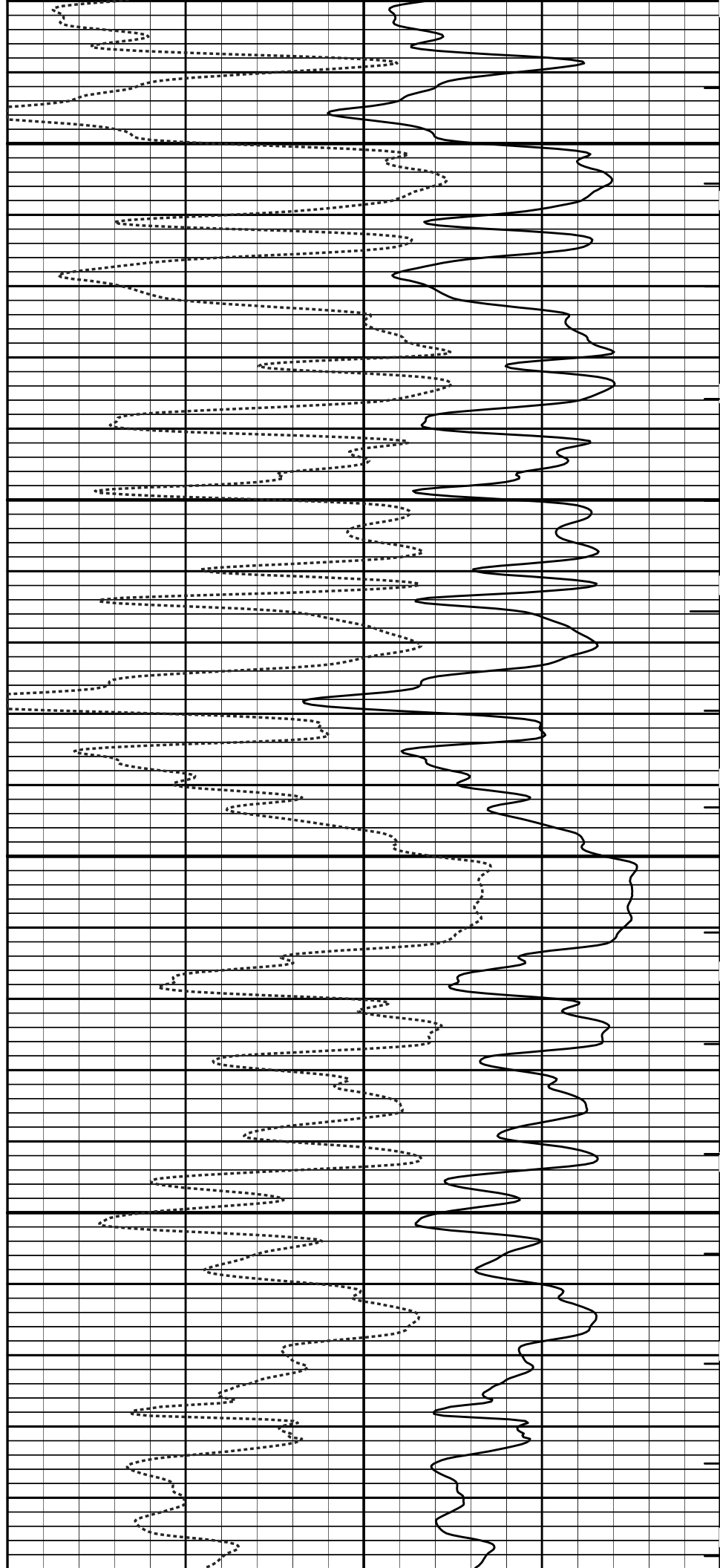


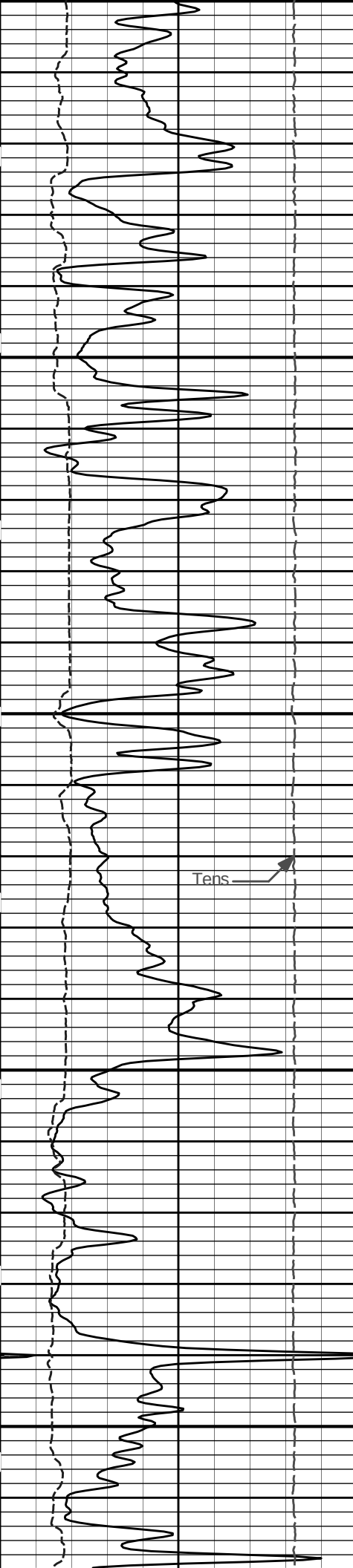


2800

2900

3000

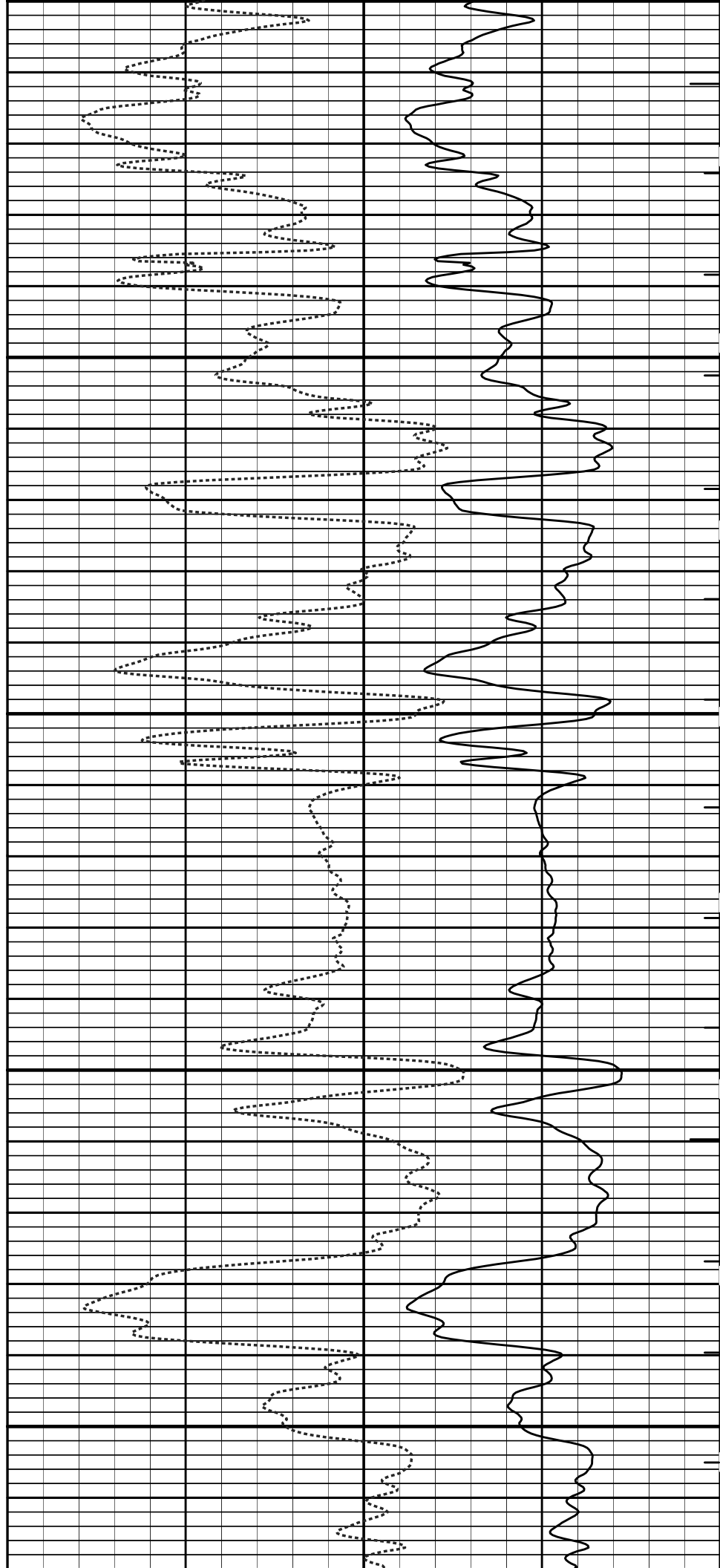


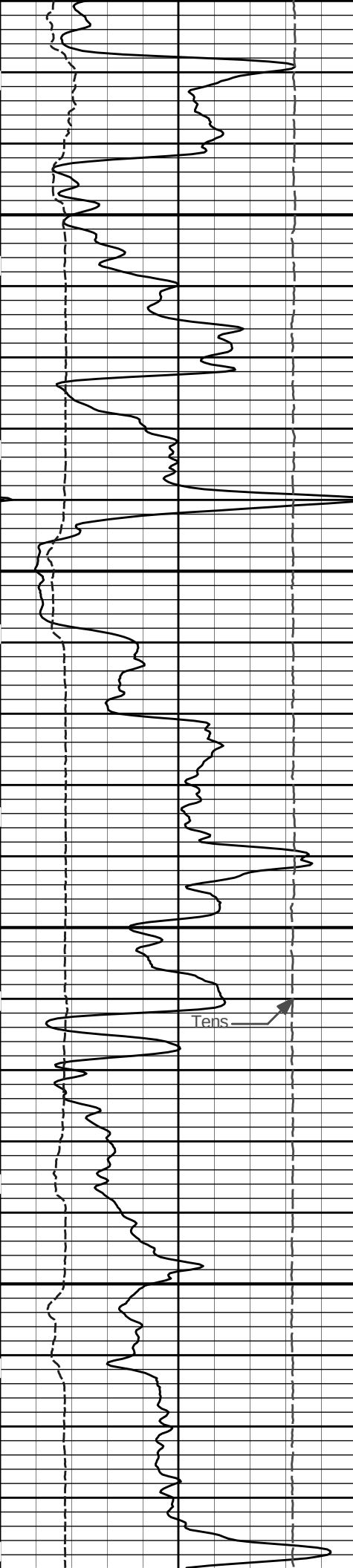


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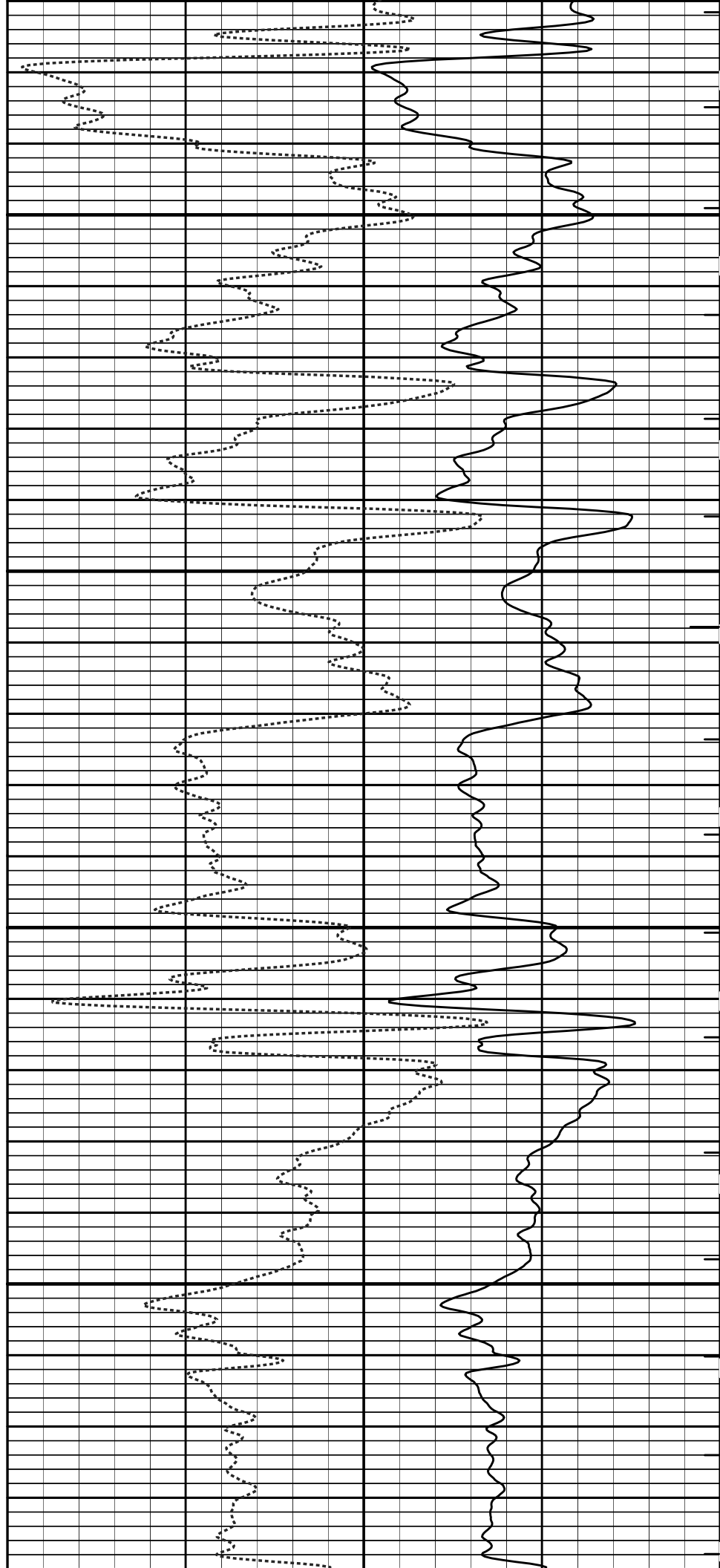
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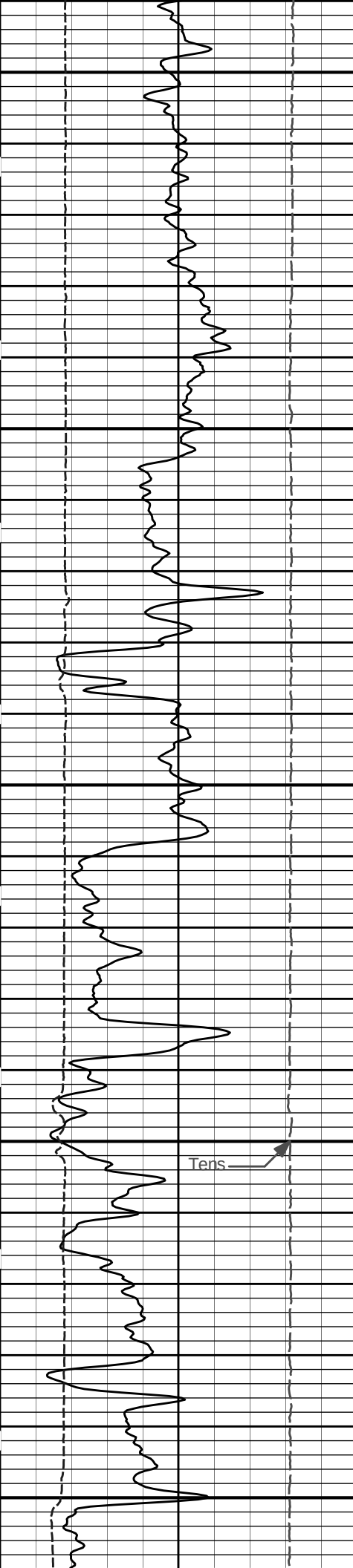




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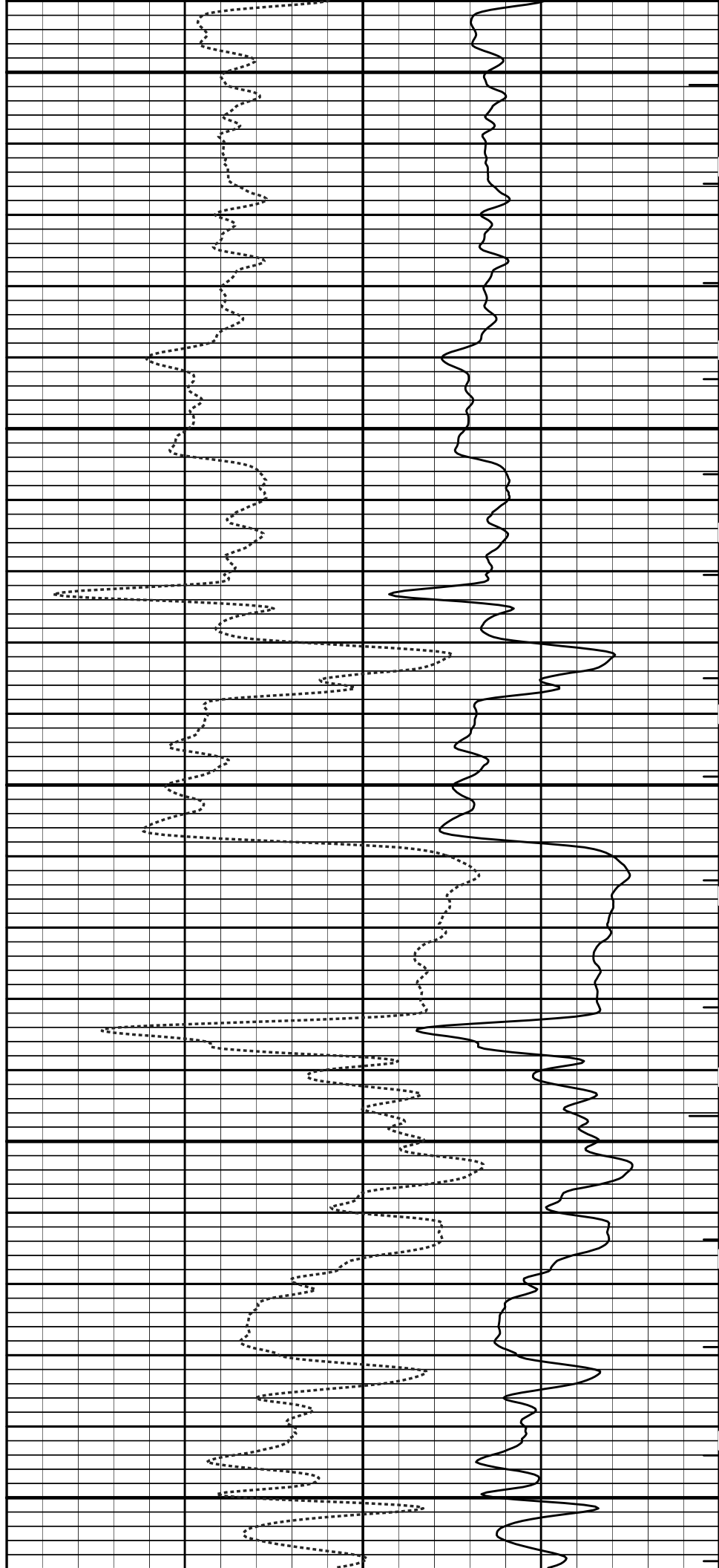
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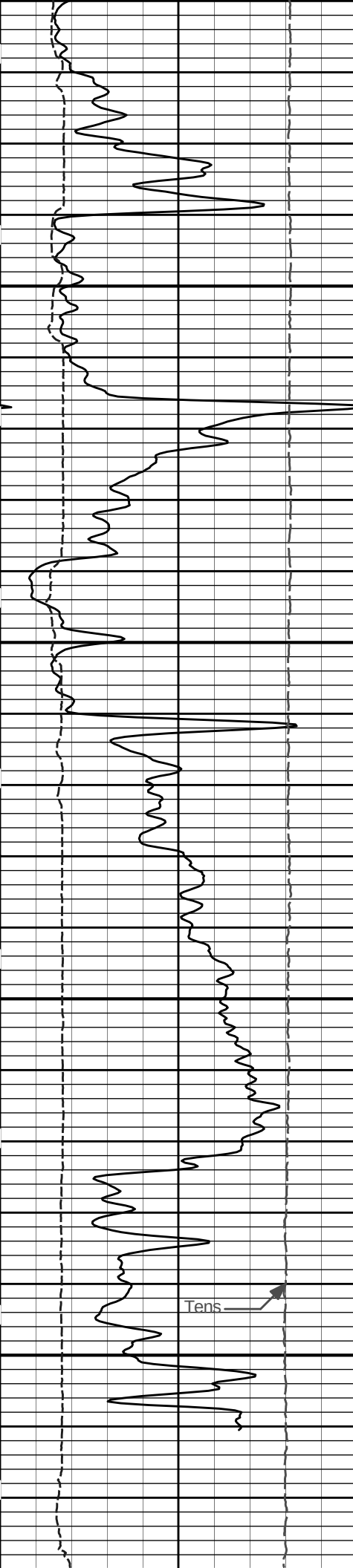




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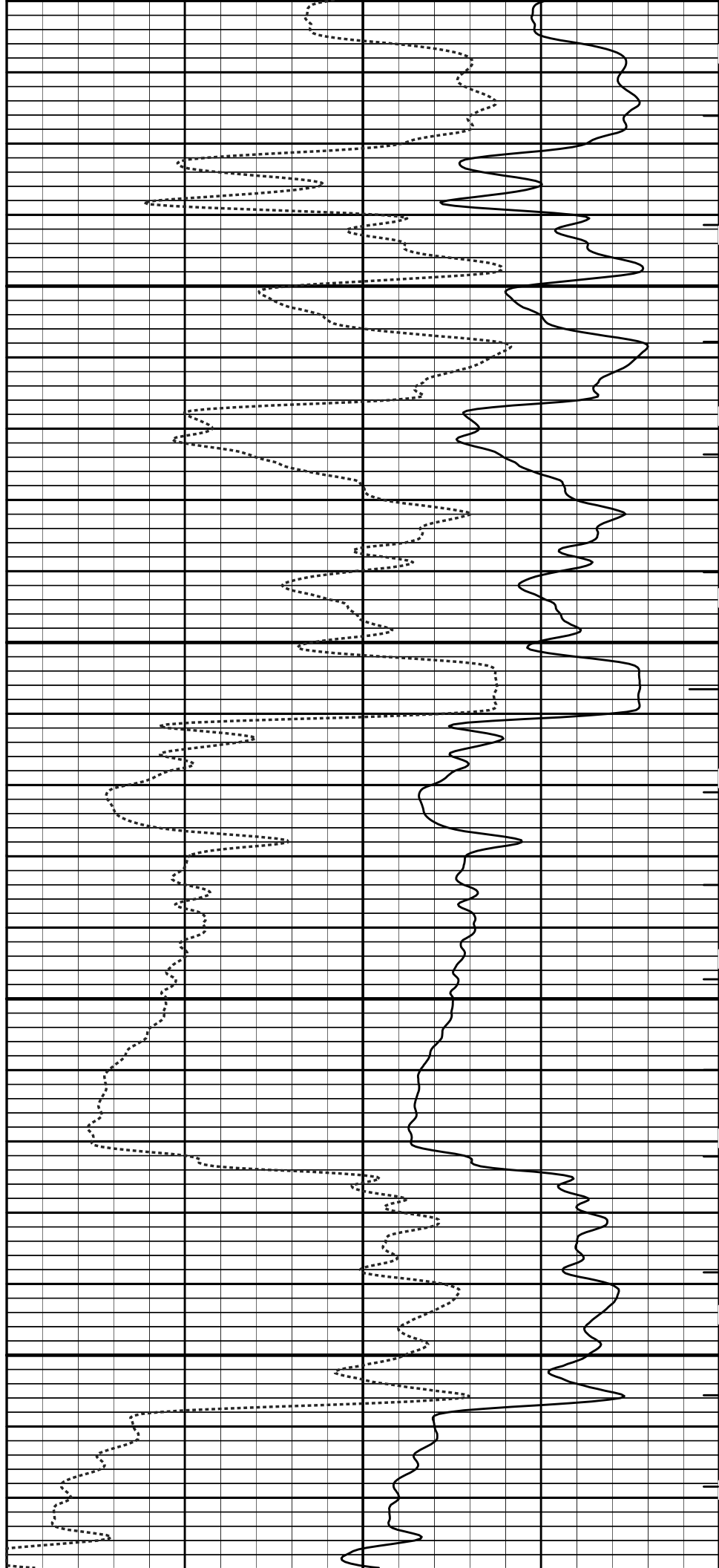
3600





3700

3800





15K	Tens	0	1 : 240		ITTT
	pounds		ft		
0	Gamma API	150	Tension Pull	140	Delta-T
	api		10 0		40
6	Caliper	16			microsec per ft
	inches		Tension Pull	30	Acou Porosity
					-10
					percent
	SHALE				

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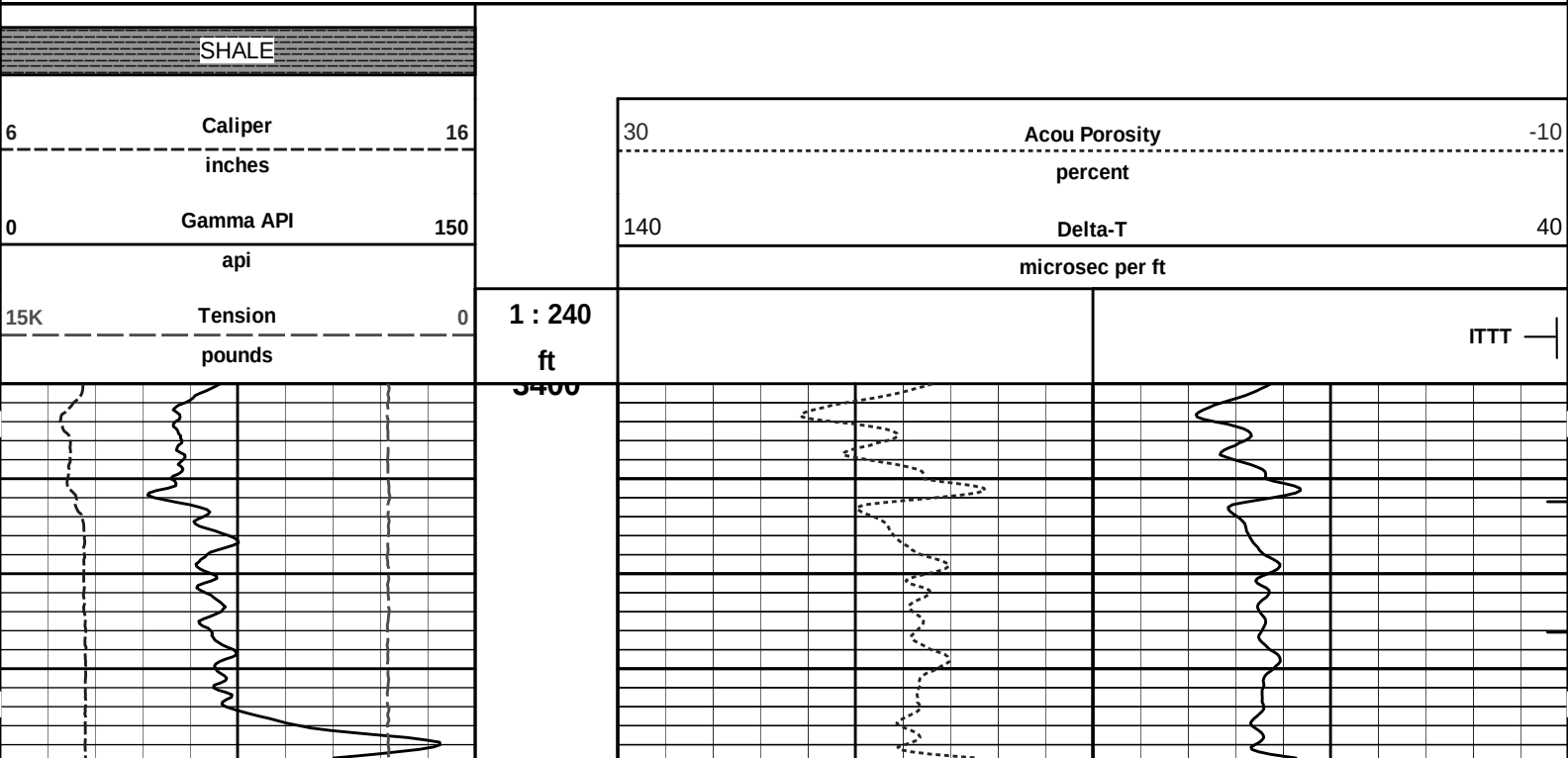
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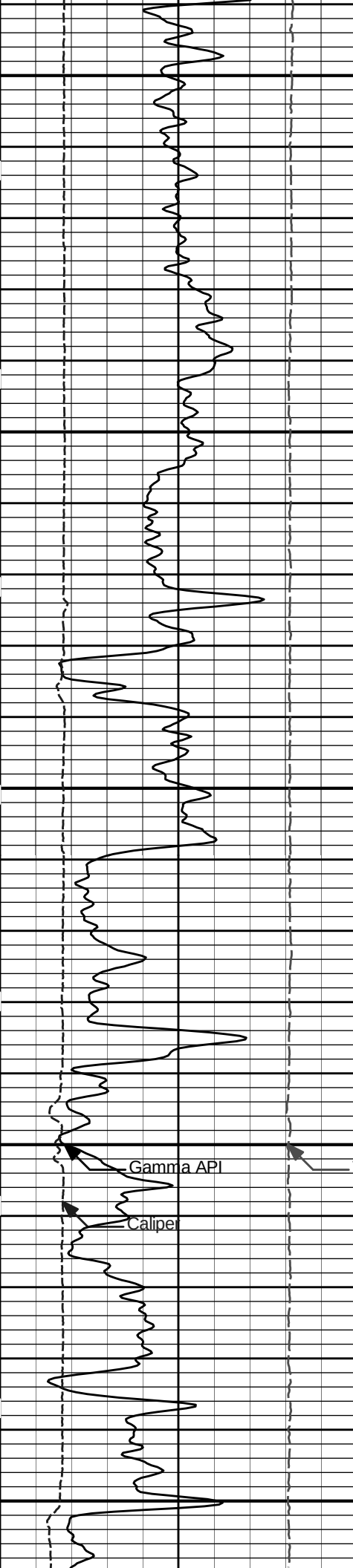
5 INCH MAIN LOG

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Plot Time: 22-Aug-12 18:37:17
Plot Range: 3400 ft to 3922.92 ft
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Plot File: \\BSAT\BSAT_5_REP_LIB

REPEAT SECTION





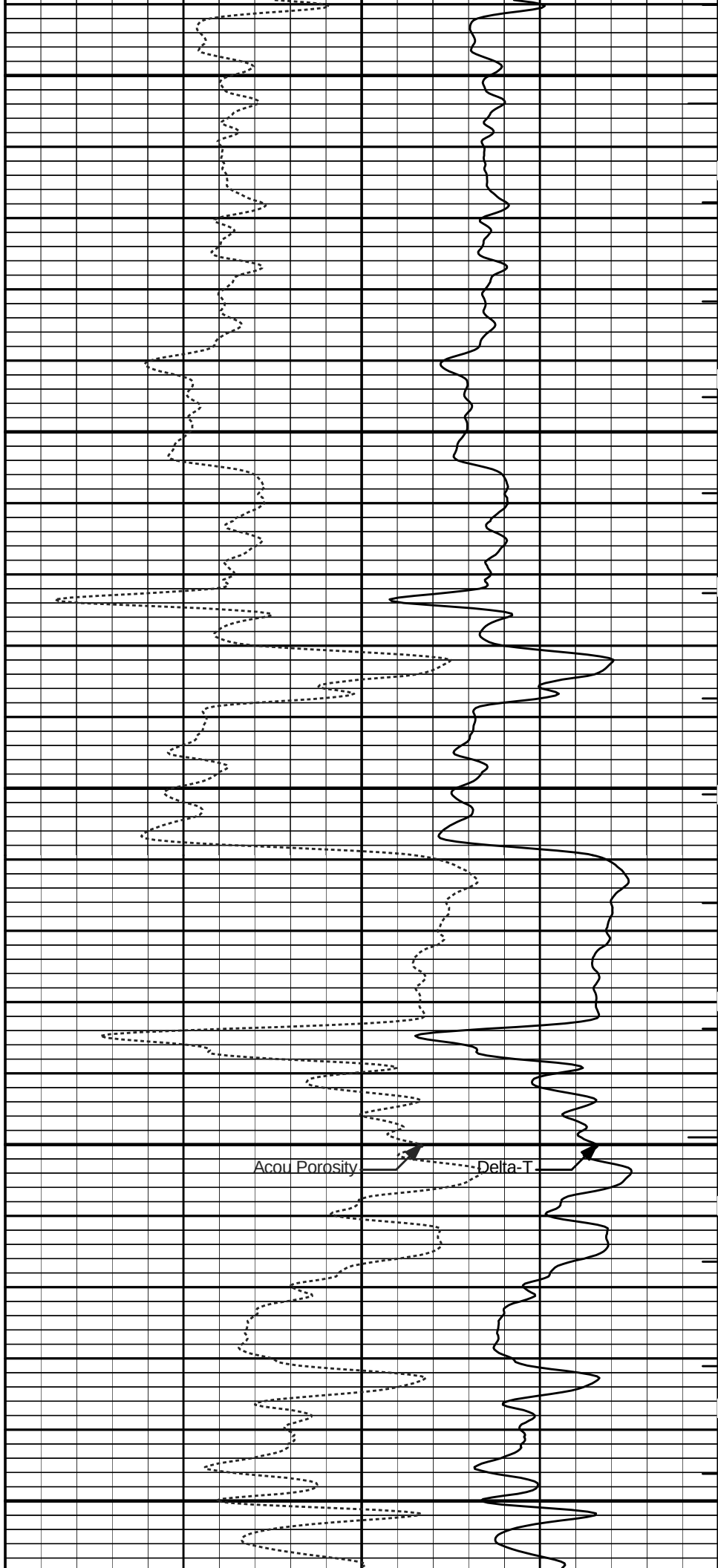
3500

3600

Gamma API

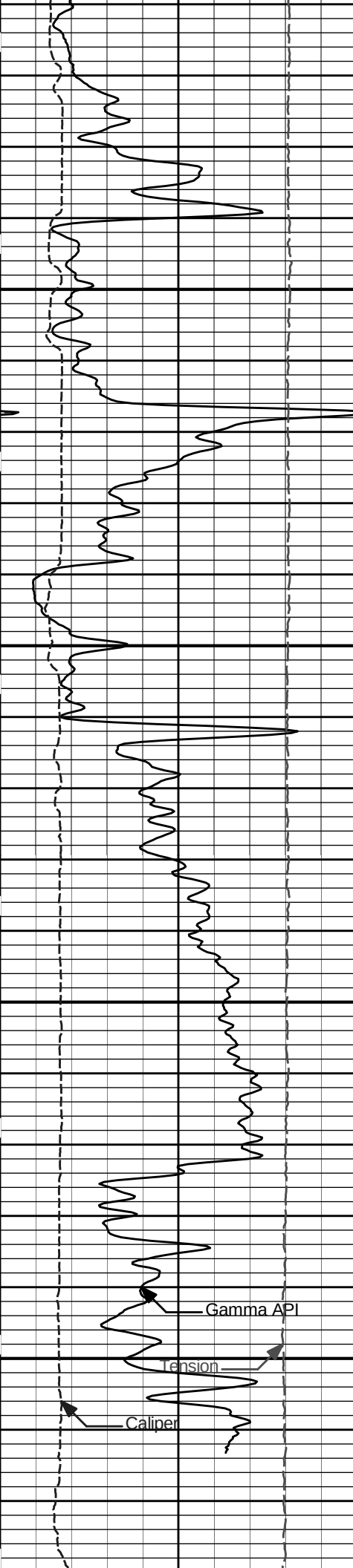
Caliper

Tension



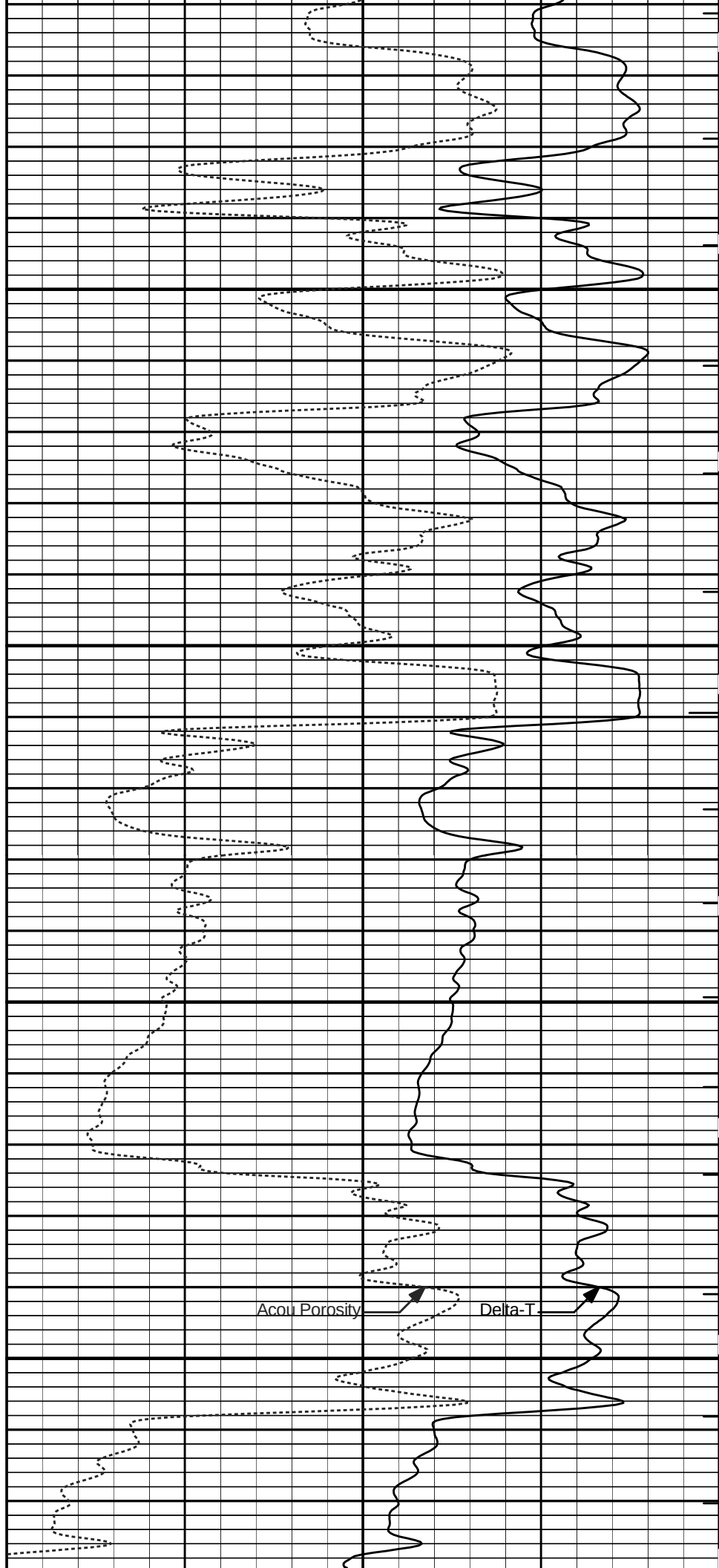
Acou Porosity

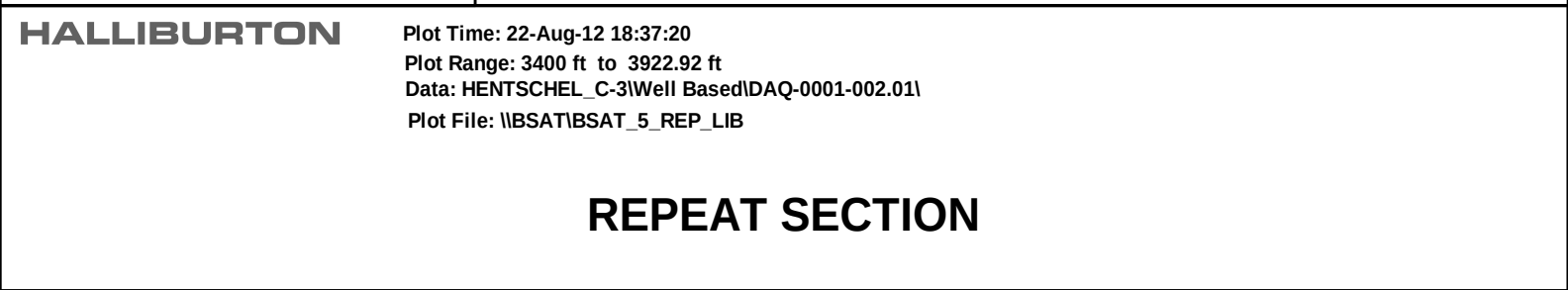
Delta-T



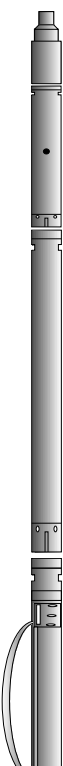
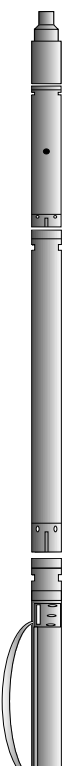
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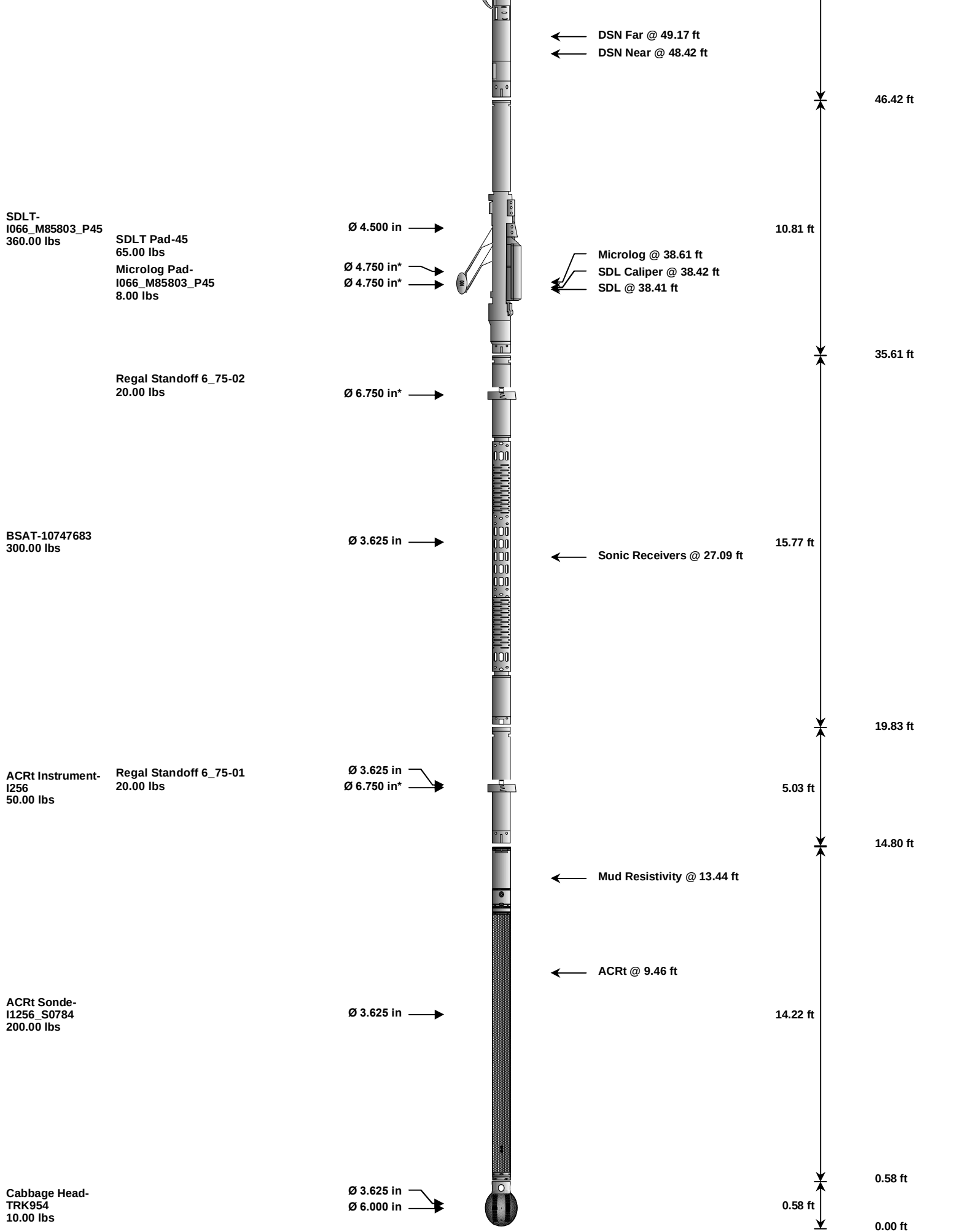
3800





TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length	
Cable Head- PROT01 30.00 lbs		Ø 3.625 in →			1.92 ft	70.28 ft	
SP Sub-11441709 60.00 lbs		Ø 3.625 in →		← SP @ 66.59 ft	3.74 ft	68.36 ft	
							64.63 ft
GTET-10811258 165.00 lbs		Ø 3.625 in →			8.52 ft		
				← GammaRay @ 58.56 ft			56.11 ft
DSN Decentralizer- 10755066 6.60 lbs		Ø 5.000 in* →					
DSNT-10755066 174.00 lbs		Ø 3.625 in →			9.69 ft		



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
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CH	Standard OH Cable Head	PROT01	30.00	1.92	68.36	300.00
SP	SP Sub	11441709	60.00	3.74	64.63	300.00
GTET	Gamma Telemetry Tool	10811258	165.00	8.52	56.11	60.00
DSNT	Dual Spaced Neutron	10755066	174.00	9.69	46.42	60.00
DCNT	DSN Decentralizer	10755066	6.60	5.13	*	49.75
SDLT	Spectral Density Tool	I066_M85803_P45	360.00	10.81	35.61	60.00
MICP	Microlog Pad	I066_M85803_P45	8.00	1.00	*	38.11
SDLP	Density Insite Pad	45	65.00	2.55	*	37.82
BSAT	Borehole Sonic Array Tool	10747683	300.00	15.77	19.83	60.00
RSOF	Regal Standoff 6.75in	02	20.00	0.52	*	33.69
ACRt	Array Compensated True Resistivity Instrument Section	I256	50.00	5.03	14.80	300.00
RSOF	Regal Standoff 6.75in	01	20.00	0.52	*	17.02
ACRt	Array Compensated True Resistivity Sonde Section	I1256_S0784	200.00	14.22	0.58	300.00
CBHD	Cabbage Head	TRK954	10.00	0.58	0.00	300.00
Total			1,468.60	70.28		
* Not included in Total Length and Length Accumulation.						
Data: HENTSCHEL_C-3\0001 SP-GTET-DSNT-SDLT-BSAT-ACRT-CH\IDLE					Date: 22-Aug-12 15:33:54	

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CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION				
Tool Name:	GTET - 10811258		Reference Calibration Date:	29-Jun-12 10:47:38
Engineer:	C. HAVERKAMP		Calibration Date:	11-Aug-12 06:02:48
Software Version:	WL INSITE R3.6.0 (Build 3)		Calibration Version:	1
Calibrator Source S/N: TB-185				
Calibrator API Reference:228.00 api				
Equivalent Calibrator API Reference:232.0 api				
	Measurement	Measured	Calibrated	Units
	Background	33.3	33.0	api
	Background + Calibrator	267.7	265.0	api
	Calibrator	234.4	232.0	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION				
Tool Name:	GTET - 10811258		Reference Calibration Date:	11-Aug-12 06:02:48
Engineer:	SHELDON INGERSOLL		Calibration Date:	22-Aug-12 15:07:15
Software Version:	WL INSITE R3.6.0 (Build 3)		Calibration Version:	1
Calibrator Source S/N: TB-185				
Calibrator API Reference:228.00 api				
Equivalent Calibrator API Reference:232.0 api				
	Field Verification	Shop	Field	Units
	Background	33.0	25.8	api
	Background + Calibrator	265.0	258.3	api
	Calibrator	232.0	232.5	api
	Shop	Field	Difference	Tolerance
	232.0	232.5	-0.5	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION				
Tool Name:	DSNT - 10755066		Reference Calibration Date:	25-Jul-12 12:25:59
Engineer:	THOMAS HYDE		Calibration Date:	25-Jul-12 12:41:38
Software Version:	WL INSITE R3.6.0 (Build 3)		Calibration Version:	1

Logging Source S/N: DSN-436
Tank Serial Number: 105060
Reference value assigned to Tank: 51.680
Snow Block S/N: TRK_10782954
Calibration Tank Water Temperature: 85 degF
Min. Tool Housing Outside Diameter: 3.620 in

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.938	0.943	0.900 - 1.100

WATER TANK SUMMARY (Horizontal Water Tank)				
Measurement	Current Reading (Previous Coef.)	Calibrated (New Coef.)	Change	Control Limit On Change
Porosity (decip):	0.2092	0.2107	0.0015	+/- 0.0020
Calibrated Ratio:	9.67	9.72	0.050	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decip):	0.0645	0.02000 - 0.09000

PASS/FAIL SUMMARY	
Background Check:	Passed
Gain-Range Check:	Passed
Snow-Block Check:	Passed

DUAL SPACED NEUTRON FIELD CALIBRATION			
Tool Name:	DSNT - 10755066	Reference Calibration Date:	25-Jul-12 12:41:38
Engineer:	SHELDON INGERSOLL	Calibration Date:	22-Aug-12 15:15:00
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

Logging Source S/N: DSN-436
Snow Block S/N: TRK_10782954

NEUTRON FIELD-CHECK SUMMARY				
	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decip):	0.0645	0.0663	0.0018	+/- 0.0150

PASS/FAIL SUMMARY	
Block Change Check:	Passed
Snow Block Stat Check:	Passed
Temperature Check:	Passed

DENSITY CALIPER SHOP CALIBRATION			
Tool Name:	SDLT - I066_M85803_P45	Reference Calibration Date:	28-Jul-12 20:05:58
Engineer:	C. HAVERKAMP	Calibration Date:	28-Jul-12 20:22:18
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1
Host Tool Name:	DSNT - 10755066		

CALIBRATION COEFFICIENTS			
Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-5255.25	-5222.66	-7000.00 - -1000.00
Pad Gain	0.0003793	0.0003763	0.000200 - 0.000600

Pad Gain	0.0003793	0.0003763	0.000200 - 0.000000
Arm Offset	-1825.48	-2303.24	-5000.00 - 3000.00
Arm Gain	0.0005413	0.0005791	0.000300 - 0.000700
Arm Power	-0.000006383	-0.000008766	-0.000010000 - 0.000010000

The ring diameter is computed from: DIAMETER = PAD EXTENSION + ARM EXTENSION + TOOL DIAMETER

Tool Diameter: 4.50 in

CALIBRATION RINGS				
Measurement	Current Reading (Previous Coeff.)	Calibrated (New Coeff.)	Change	Control Limit On New Value
PAD EXTENSION:				
Small Ring (in)	2.00	2.00	0.00	+/- 0.20
Medium Ring (in)	3.77	3.75	-0.02	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.62	6.50	-0.12	+/- 0.20
Medium Ring (in)	8.29	8.25	-0.04	+/- 0.20
Large Ring (in)	15.14	15.00	-0.14	+/- 0.20

PASS/FAIL SUMMARY	
Calibration-Coefficients Range Check:	Passed
Ring-Measurement Check:	Passed
PASS/FAIL SUMMARY	
Calibration-Coefficients Range Check:	Passed

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name:	SDLT Pad - 45	Reference Calibration Date:	29-Jun-12 11:17:55
Engineer:	C. HAVERKAMP	Calibration Date:	05-Aug-12 09:06:17
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

Logging Source S/N: 5073GW

Aluminum Block S/N: 63061	Density: 2.591g/cc	Pe: 3.170
Magnesium Block S/N: 63393	Density: 1.690g/cc	Pe: 2.594

DENSITY CALIBRATION SUMMARY			
Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	0.9811	0.9522	0.90 - 1.10
Near Dens Gain	0.9831	0.9524	0.90 - 1.10
Near Peak Gain	0.9806	0.9418	0.90 - 1.10
Near Lith Gain	0.9781	0.9284	0.90 - 1.10
Far Bar Gain	0.9863	0.9872	0.90 - 1.10
Far Dens Gain	0.9793	0.9793	0.90 - 1.10
Far Peak Gain	0.9722	0.9732	0.90 - 1.10
Far Lith Gain	0.9481	0.9473	0.90 - 1.10
Near Bar Offset	0.4083	0.6663	NONE
Near Dens Offset	0.3635	0.6290	NONE
Near Peak Offset	0.3620	0.6787	NONE
Near Lith Offset	0.3425	0.7501	NONE
Far Bar Offset	0.2498	0.2408	NONE
Far Dens Offset	0.2849	0.2903	NONE
Far Peak Offset	0.3024	0.3017	NONE
Far Lith Offset	0.4066	0.4262	NONE
Near Bar Background	994.27	991.23	700 - 1450
Near Dens Background	330.82	328.82	230 - 480
Near Peak Background	143.88	143.64	100 - 210
Near Lith Background	170.05	170.00	105 - 200

Near Lith Background	176.25	176.36	125 - 260
Far Bar Background	509.49	505.01	450 - 900
Far Dens Background	197.73	197.12	175 - 345
Far Peak Background	78.43	78.32	70 - 140
Far Lith Background	81.21	81.23	75 - 145

CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.700	1.690	-0.010	+/- 0.015
Pe	2.511	2.558	0.047	+/- 0.150
ALUMINUM				
Density (g/cc)	2.592	2.591	-0.001	+/- 0.01500
Pe	3.148	3.133	-0.015	+/- 0.150

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0005	+/- 0.0110	-0.0014	+/- 0.0140
Magnesium Block	-0.0006	+/- 0.0110	-0.0012	+/- 0.0140
Aluminum Block	0.0005	+/- 0.0110	0.0008	+/- 0.0140
Resolution	9.88	6.00 - 11.50	9.09	6.00 - 11.50
Internal Verifier(B+D+P+L)	1640	1200 - 2700	862	800 - 1700

PASS/FAIL SUMMARY	
Background Quality Check:	Passed
Background Range Check:	Passed
Background Resolution Check:	Passed
Background Verification Check:	Passed
Magnesium Quality Check:	Passed
Aluminum Quality Check:	Passed
Gains Check:	Passed
Changes in Calibration Blocks:	Passed

SPECTRAL DENSITY FIELD CHECK			
Tool Name:	SDLT Pad - 45	Reference Calibration Date:	05-Aug-12 09:06:17
Engineer:	SHELDON INGERSOLL	Calibration Date:	22-Aug-12 15:06:31
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

Pad Temperature: 92.5 degF

DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1640.053	1637.685	-2.368	16.273
Far (B+D+P+L) cps	861.681	871.111	9.430	16.070
Near Resolution	9.88	10.02	0.140	0.50
Far Resolution	9.09	9.88	0.790	1.00

PASS/FAIL SUMMARY	
Bkg Quality Check:	Passed
Bkg Resolution Check:	Passed

MICRO LOG SHOP CALIBRATION

Tool Name:	Microlog Pad - I066_M85803_P45	Reference Calibration Date:	28-Jul-12 20:13:27
Engineer:	C. HAVERKAMP	Calibration Date:	06-Aug-12 16:56:57
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1
Host Tool Name:	DSNT - 10755066		

CALIBRATION COEFFICIENT SUMMARY

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Measured	Calibrated	Measured	Calibrated	
Tool Zero	-0.07	-0.10	-0.01	-0.00	ohmm
Calibration Point #1	0.03	0.00	-0.01	0.00	ohmm
Calibration Point #2	20.05	20.00	20.05	20.00	ohmm
Internal Reference	19.98	19.93	20.06	20.01	ohmm

Measurement	Micro Log Normal Tool Value	Micro Log Lateral Tool Value	Units
Tool Zero	0.92	0.19	V
Calibration Point #1	28.11	0.63	V
Calibration Point #2	5348.31	6937.82	V
Internal Reference	5329.49	6940.80	V

MICRO LOG FIELD CHECK

Tool Name:	Microlog Pad - I066_M85803_P45	Reference Calibration Date:	06-Aug-12 16:56:57
Engineer:	SHELDON INGERSOLL	Calibration Date:	22-Aug-12 15:08:48
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Shop	Field	Shop	Field	
Tool Zero	-0.10	-0.11	-0.00	0.01	ohmm
Internal Reference	19.93	19.83	20.01	19.90	ohmm

Summary				
Signal	Shop	Field	Difference	Tolerance
Microlog Normal	19.93	19.83	0.10	+/- 0.80
Microlog Lateral	20.01	19.90	0.11	+/- 0.80

SDLT CALIPER FIELD CALIBRATION

Tool Name:	SDLT - I066_M85803_P45	Reference Calibration Date:	28-Jul-12 20:22:18
Engineer:	SHELDON INGERSOLL	Calibration Date:	22-Aug-12 15:19:10
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

MEASURED CALIPER VALUES

Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.67	-0.08	+/- 0.10
Ring Diameter	8.25	8.13	-0.12	+/- 0.15

PASS/FAIL SUMMARY

Pad Extension Check:	Passed
Diameter Check:	Passed

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name:	ACRt Sonde - I1256_S0784	Reference Calibration Date:	11-Jul-12 09:38:13
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Engineer:		J. BOLLUM		Calibration Date:		18-Aug-12 11:56:49			
Software Version:		WL INSITE R3.6.0 (Build 3)				Calibration Version:		1	
Host Tool Name:		ACRt Instrument - I256							
TYPICAL GAIN RANGE									
Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.01	1.05	0.95	1.01	1.05	0.95	0.99	1.05
A2 (50")	0.95	1.01	1.05	0.95	1.01	1.05	0.95	1.00	1.05
A3 (29")	0.95	1.00	1.05	0.95	1.00	1.05	0.95	0.99	1.05
A4 (17")	0.95	1.02	1.05	0.95	1.01	1.05	0.95	1.01	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.01	1.05	0.95	1.00	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.99	1.05	0.95	0.98	1.05
TYPICAL SONDE OFFSET RANGE									
Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	-5	-0.52	2	-6	-3.86	-2	-8	-4.83	-2
A2 (50")	-7	-1.82	0	-7	-3.65	0	-7	-4.36	0
A3 (29")	-27	-16.08	-9	-9	-4.66	-3	-7	-3.36	-1
A4 (17")	-180	-98.38	-60	-45	-32.76	-15	-39	-26.74	-13
A5 (10")	N/A	N/A	N/A	-150	-98.00	-50	-80	-49.23	-10
A6 (6")	N/A	N/A	N/A	175	296.60	525	90	157.59	270
TRANSMITTER CURRENT GAIN						R-MUD VERIFICATION			
Signal	Lower	R		Upper		Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
12K		0.6	0.87	1.3		Mud Cell	0.95	1.00	1.05
36K		1.0	1.20	2.0					
72K		1.0	1.55	2.0					
PASS/FAIL SUMMARY									
GAIN RANGE CHK						PASS			
SONDE OFFSET RANGE CHK						PASS			
Tx CURRENT GAIN						PASS			
Rmud VERIFICATION						PASS			
TOOL OK TO LOG									
CALIBRATION SUMMARY									
Sensor	Shop	Field	Post	Difference	Tolerance	Units			
GTET-10811258									
Gamma Ray Calibrator	232.0	232.5	-----	-0.5	+/- 9.00	api			
DSNT-10755066									
Snow-Block Porosity	0.0645	0.0663	-----	-0.0018	+/- 0.0150	decp			
SDLT-I066_M85803_P45									
Pad Extension	3.75	3.67	-----	0.08	+/-0.10	in			
Ring Diameter	8.25	8.13	-----	0.12	+/-0.15	in			
SDLT Pad-45									
Near(B+D+P+L)	1640.053	1637.685	-----	2.368	+/-16.273	cps			
Far(B+D+P+L)	861.681	871.111	-----	-9.430	+/-16.070	cps			
Microlog Pad-I066_M85803_P45									
Microlog Normal	19.93	19.83	-----	0.10	+/-0.80	ohmm			

MicroLog Normal	20.01	19.90	-----	0.11	+/-0.80	ohmm
ACRt Sonde-I1256_S0784						
Mud Cell	1.00	-----	-----	0.00	-----	ohm-m
Data: HENTSCHEL_C-310001 SP-GTET-DSNT-SDLT-BSAT-ACRT-CH1003 22-Aug-12 16:23 Up @3920.3f						
Date: 22-Aug-12 18:01:25						

HALLIBURTON

PARAMETERS REPORT

Depth (ft))	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	7.875	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	8.900	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	SHARED	BSAL	Borehole salinity	2000.00	ppm
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
	SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
	SHARED	RMUD	Mud Resistivity	2.000	ohmm
	SHARED	TRM	Temperature of Mud	75.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	5.500	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	3935.00	ft
	SHARED	BHT	Bottom Hole Temperature	118.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	NONE	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
	SHARED	TEMM	Temperature Master Tool	NONE	
	SHARED	BHSM	Borehole Size Master Tool	NONE	
	Rwa / CrossPlot	XPOK	Process Crossplot?	Yes	
	Rwa / CrossPlot	FCHO	Select Source of F	Automatic	
	Rwa / CrossPlot	AFAC	Archie A factor	0.6200	
	Rwa / CrossPlot	MFAC	Archie M factor	2.1500	
	Rwa / CrossPlot	RMFR	Rmf Reference	0.10	ohmm
	Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF
	Rwa / CrossPlot	RWA	Resistivity of Formation Water	0.05	ohmm
	Rwa / CrossPlot	ADP	Use Air Porosity to calculate CrossplotPhi	No	
	GTET	GROK	Process Gamma Ray?	Yes	
	GTET	GRSO	Gamma Tool Standoff	0.000	in
	GTET	GEOK	Process Gamma Ray EVR?	No	
	GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
	DSNT	DNOK	Process DSN?	Yes	
	DSNT	DEOK	Process DSN EVR?	No	
	DSNT	NLIT	Neutron Lithology	Limestone	
	DSNT	DNSO	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.250	in
	DSNT	DNTP	Temperature Correction Type	None	
	DSNT	DPRS	DSN Pressure Correction Type	None	
	DSNT	SHCO	View More Correction Options	No	

	DSNT	UTVD	Use TVD for Gradient Corrections?	No	
	DSNT	LHWT	Logging Horizontal Water Tank?	No	
	SDLT	CLOK	Process Caliper Outputs?	Yes	
	SDLT Pad	DNOK	Process Density?	Yes	
	SDLT Pad	DNOK	Process Density EVR?	No	
	SDLT Pad	CB	Logging Calibration Blocks?	No	
	SDLT Pad	SPVT	SDLT Pad Temperature Valid?	Yes	
	SDLT Pad	DTWN	Disable temperature warning	No	
	SDLT Pad	DMA	Formation Density Matrix	2.710	g/cc
	SDLT Pad	DFL	Formation Density Fluid	1.000	g/cc
	Microlog Pad	MLOK	Process MicroLog Outputs?	Yes	
	BSAT	MBOK	Compute BCAS Results?	Yes	
	BSAT	FLLO	Frequency Filter Low Pass Value?	5000	Hz
	BSAT	FLHI	Frequency Filter High Pass Value?	27000	Hz
	BSAT	DTFL	Delta -T Fluid	189.00	uspf
	BSAT	DTMT	Delta -T Matrix Type	User define	
	BSAT	DTMA	Delta -T Matrix	47.60	uspf
	BSAT	DTSH	Delta -T Shale	100.00	uspf
	BSAT	SPEQ	Acoustic Porosity Equation	Wylie	
	ACRt Sonde	RTOK	Process ACRt?	Yes	
	ACRt Sonde	MNSO	Minimum Tool Standoff	1.50	in
	ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Up	
	ACRt Sonde	TPOS	Tool Position	Free Hanging	
	ACRt Sonde	RMOP	Rmud Source	Mud Cell	
	ACRt Sonde	RMIN	Minimum Resistivity for MAP	0.20	ohmm
	ACRt Sonde	RMIN	Maximum Resistivity for MAP	200.00	ohmm
	ACRt Sonde	THQY	Threshold Quality	0.50	
	ACRt Sonde	MRFX	Fixed mud resistivity	2000	ohmm
BOTTOM					
Data: HENTSCHEL_C-3I0001 SP-GTET-DSNT-SDLT-BSAT-ACRT-CHI003 22-Aug-12 16:23 Up @3920.3f				Date: 22-Aug-12 18:02:45	

HALLIBURTON					
INPUTS, DELAYS AND FILTERS TABLE					
Mnemonic		Input Description	Delay (ft)	Filter Type	Filter Length (ft)
Depth Panel					
TENS	Tension		0.00	NO	
SP Sub					
PLTC	Plot Control Mask		66.58	NO	
SP	Spontaneous Potential		66.58	BLK	1.250
SPR	Raw Spontaneous Potential		66.58	NO	
SPO	Spontaneous Potential Offset		66.58	NO	
GTET					
TPUL	Tension Pull		58.56	NO	
GR	Natural Gamma Ray API		58.56	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API		58.56	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution		58.56	W	1.416 , 0.750
ACCZ	Accelerometer Z		0.00	BLK	0.083
DEVI	Inclination		0.00	NO	
DSNT					

DSN1				
TPUL	Tension Pull	48.32	NO	
RNDS	Near Detector Telemetry Counts	48.42	BLK	1.417
RFDS	Far Detector Telemetry Counts	49.17	TRI	0.583
DNTT	DSN Tool Temperature	48.42	NO	
DSNS	DSN Tool Status	48.32	NO	
ERND	Near Detector Telemetry Counts EVR	48.42	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	49.17	BLK	0.000
ENTM	DSN Tool Temperature EVR	48.42	NO	
SDLT				
TPUL	Tension Pull	38.42	NO	
PCAL	Pad Caliper	38.42	TRI	0.250
ACAL	Arm Caliper	38.42	TRI	0.250
BSAT				
TPUL	Tension Pull	27.09	NO	
STAT	Status	27.09	NO	
DLYT	Delay Time	27.09	NO	
SI	Sample Interval	27.09	NO	
TXRX	Raw Telemetry 10 Receivers	27.09	NO	
FRMC	Tool Frame Count	27.09	NO	
GMOD	Gain processing mode	19.83	NO	
ACRt Sonde				
TPUL	Tension Pull	2.97	NO	
F1R1	ACRT 12KHz - 80in R value	9.22	BLK	0.000
F1X1	ACRT 12KHz - 80in X value	9.22	BLK	0.000
F1R2	ACRT 12KHz - 50in R value	6.72	BLK	0.000
F1X2	ACRT 12KHz - 50in X value	6.72	BLK	0.000
F1R3	ACRT 12KHz - 29in R value	5.22	BLK	0.000
F1X3	ACRT 12KHz - 29in X value	5.22	BLK	0.000
F1R4	ACRT 12KHz - 17in R value	4.22	BLK	0.000
F1X4	ACRT 12KHz - 17in X value	4.22	BLK	0.000
F1R5	ACRT 12KHz - 10in R value	3.72	BLK	0.000
F1X5	ACRT 12KHz - 10in X value	3.72	BLK	0.000
F1R6	ACRT 12KHz - 6in R value	3.47	BLK	0.000
F1X6	ACRT 12KHz - 6in X value	3.47	BLK	0.000
F2R1	ACRT 36KHz - 80in R value	9.22	BLK	0.000
F2X1	ACRT 36KHz - 80in X value	9.22	BLK	0.000
F2R2	ACRT 36KHz - 50in R value	6.72	BLK	0.000
F2X2	ACRT 36KHz - 50in X value	6.72	BLK	0.000
F2R3	ACRT 36KHz - 29in R value	5.22	BLK	0.000
F2X3	ACRT 36KHz - 29in X value	5.22	BLK	0.000
F2R4	ACRT 36KHz - 17in R value	4.22	BLK	0.000
F2X4	ACRT 36KHz - 17in X value	4.22	BLK	0.000
F2R5	ACRT 36KHz - 10in R value	3.72	BLK	0.000
F2X5	ACRT 36KHz - 10in X value	3.72	BLK	0.000
F2R6	ACRT 36KHz - 6in R value	3.47	BLK	0.000
F2X6	ACRT 36KHz - 6in X value	3.47	BLK	0.000
F3R1	ACRT 72KHz - 80in R value	9.22	BLK	0.000
F3X1	ACRT 72KHz - 80in X value	9.22	BLK	0.000
F3R2	ACRT 72KHz - 50in R value	6.72	BLK	0.000
F3X2	ACRT 72KHz - 50in X value	6.72	BLK	0.000
F3R3	ACRT 72KHz - 29in R value	5.22	BLK	0.000
F3X3	ACRT 72KHz - 29in X value	5.22	BLK	0.000
F3R4	ACRT 72KHz - 17in R value	4.22	BLK	0.000

F3X4	ACRT 72KHz - 17in X value	4.22	BLK	0.000
F3X4	ACRT 72KHz - 17in X value	4.22	BLK	0.000
F3R5	ACRT 72KHz - 10in R value	3.72	BLK	0.000
F3X5	ACRT 72KHz - 10in X value	3.72	BLK	0.000
F3R6	ACRT 72KHz - 6in R value	3.47	BLK	0.000
F3X6	ACRT 72KHz - 6in X value	3.47	BLK	0.000
RMUD	Mud Resistivity	12.76	BLK	0.000
F1RT	Transmitter Reference 12 KHz Real Signal	2.97	BLK	0.000
F1XT	Transmitter Reference 12 KHz Imaginary Signal	2.97	BLK	0.000
F2RT	Transmitter Reference 36 KHz Real Signal	2.97	BLK	0.000
F2XT	Transmitter Reference 36 KHz Imaginary Signal	2.97	BLK	0.000
F3RT	Transmitter Reference 72 KHz Real Signal	2.97	BLK	0.000
F3XT	Transmitter Reference 72 KHz Imaginary Signal	2.97	BLK	0.000
TFPU	Upper Feedpipe Temperature Calculated	2.97	BLK	0.000
TFPL	Lower Feedpipe Temperature Calculated	2.97	BLK	0.000
ITMP	Instrument Temperature	2.97	BLK	0.000
TCVA	Temperature Correction Values Loop Off	2.97	NO	
TIDV	Instrument Temperature Derivative	2.97	NO	
TUDV	Upper Temperature Derivative	2.97	NO	
TLDV	Lower Temperature Derivative	2.97	NO	
TRBD	Receiver Board Temperature	2.97	NO	
SDLT Pad				
TPUL	Tension Pull	38.41	NO	
NAB	Near Above	38.24	BLK	0.920
NHI	Near Cesium High	38.24	BLK	0.920
NLO	Near Cesium Low	38.24	BLK	0.920
NVA	Near Valley	38.24	BLK	0.920
NBA	Near Barite	38.24	BLK	0.920
NDE	Near Density	38.24	BLK	0.920
NPK	Near Peak	38.24	BLK	0.920
NLI	Near Lithology	38.24	BLK	0.920
NBAU	Near Barite Unfiltered	38.24	BLK	0.250
NLIU	Near Lithology Unfiltered	38.24	BLK	0.250
FAB	Far Above	38.58	BLK	0.250
FHI	Far Cesium High	38.58	BLK	0.250
FLO	Far Cesium Low	38.58	BLK	0.250
FVA	Far Valley	38.58	BLK	0.250
FBA	Far Barite	38.58	BLK	0.250
FDE	Far Density	38.58	BLK	0.250
FPK	Far Peak	38.58	BLK	0.250
FLI	Far Lithology	38.58	BLK	0.250
PTMP	Pad Temperature	38.42	BLK	0.920
NHV	Near Detector High Voltage	37.81	NO	
FHV	Far Detector High Voltage	37.81	NO	
ITMP	Instrument Temperature	37.81	NO	
DDHV	Detector High Voltage	37.81	NO	
Microlog Pad				
TPUL	Tension Pull	38.60	NO	
MINV	Microlog Lateral	38.60	BLK	0.750
MNOR	Microlog Normal	38.60	BLK	0.750
Data: HENTSCHEL_C-3\0001 SP-GTET-DSNT-SDLT-BSAT-ACRT-CHIDLE			Date: 22-Aug-12 18:22:03	