

Company: Pronghorn Operating, LLC

Well: Betty #1

Field: Ladder Creek

County: Cheyenne

State: Colorado

RESERVOIR SATURATION TOOL
GAMMA RAY
CASING COLLAR LOG

County: Cheyenne
Field: Ladder Creek
Location: 660' FNL & 660' FWL
Well: Betty #1
Company: Pronghorn Operating, LLC

LOCATION		Elev.:	
660' FNL & 660' FWL		K.B.	4314.00 ft
		G.L.	4302.00 ft
		D.F.	
Permanent Datum:	GROUND LEVEL	Elev.:	4302.00 ft
Log Measured From:	KELLY BUSHING	12.00 ft	above Perm. Datum
Drilling Measured From:	KELLY BUSHING		
API Serial No.	Section 6	Township 15S	Range 44W

PVT DATA		Run 1	Run 2	Run 3
Oil Density				
Water Salinity				
Gas Gravity				
Bo				
Bw				
1/Bg				
Bubble Point Pressure				
Bubble Point Temperature				
Solution GOR				
Maximum Deviation				
CEMENTING DATA				
Primary/Squeeze	Primary			
Casing String No				
Lead Cement Type				
Volume				
Density				
Water Loss				
Additives				
Tail Cement Type				
Volume				
Density				
Water Loss				
Additives				
Expected Cement Top				

Logging Date 23-Oct-2013

Run Number 1

Logging Date

Depth Driller 5481 ft

Depth Driller

Schlumberger Depth 5382 ft

Schlumberger Depth

Bottom Log Interval 5374 ft

Bottom Log Interval

Top Log Interval 4000 ft

Top Log Interval

Casing Fluid Type WATER

Casing Fluid Type

Salinity

Salinity

Density 8.4 lbm/gal

Density

Fluid Level

Fluid Level

BIT/CASING/TUBING STRING

BIT/CASING/TUBING STRING

Bit Size 7.875 in

Bit Size

From

From

To

To

Casing/Tubing Size 5.500 in

Casing/Tubing Size

Weight 15.5 lbm/ft

Weight

Grade

Grade

From

From

To

To

Maximum Recorded Temperatures

Maximum Recorded Temperatures

Logger On Bottom 23-Oct-2013 13:37

Logger On Bottom

Unit Number 354 FORT MORGAN

Unit Number

Recorded By C MARCH

Recorded By

Witnessed By FRANK RABBIO

Witnessed By

DEPTH SUMMARY LISTING

Date Created: 23-OCT-2013 12:27:02

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-B	Type:	CMTD-B/A	Type:	1-25P
Serial Number:	6220	Serial Number:	1163	Serial Number:	354
Calibration Date:	27-MAR-2013	Calibration Date:	15-OCT-2013	Length:	17000 FT
Calibrator Serial Number:	1	Calibrator Serial Number:	78135	<div>Conveyance Method: Wireline</div> <div>Rig Type: LAND</div>	
Calibration Cable Type:	1-25P	Number of Calibration Points:	0		
Wheel Correction 1:	-4				
Wheel Correction 2:	-2				

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	0.00 FT
Rig Up Length At Bottom:	0.00 FT
Rig Up Length Correction:	0.00 FT
Stretch Correction:	
Tool Zero Check At Surface:	


Depth Control Remarks

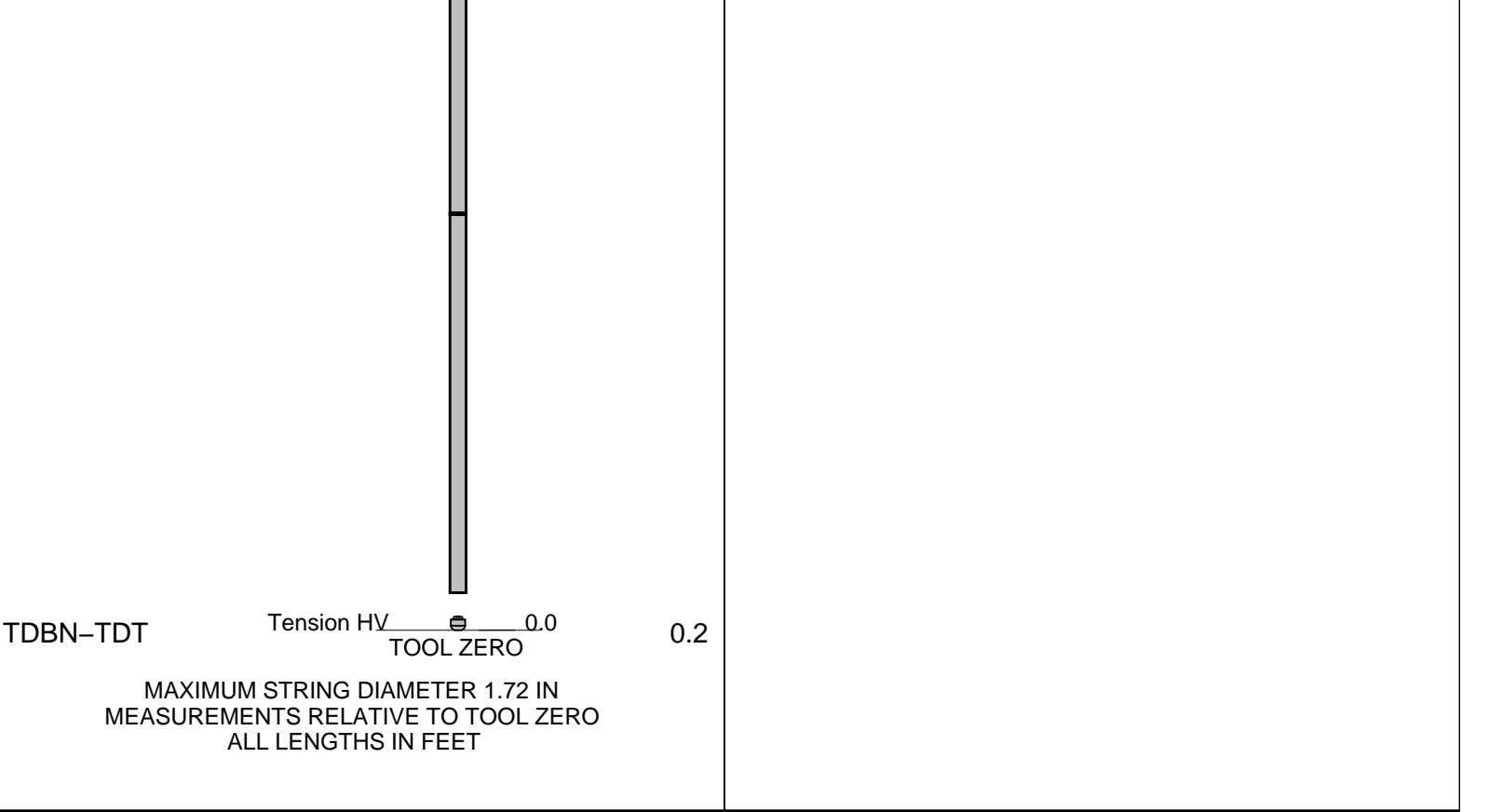
1. IDW WHEELS PRIMARY DEPTH CONTROL
2. DRUM COUNTER USED AS SECONDARY DEPTH CONTROL
- 3.
- 4.
- 5.
- 6.

DISCLAIMER

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

OTHER SERVICES1 OS1: NONE OS2: OS3: OS4: OS5:	OTHER SERVICES2 OS1: OS2: OS3: OS4: OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
NO CORRELATION LOG	
RAN IN SIGMA MODE	

CREW: WILEY, LANGFORD					
THANK YOU					
RUN 1			RUN 2		
SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:			SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP
EQUIPMENT DESCRIPTION					
RUN 1			RUN 2		
SURFACE EQUIPMENT					
WITM-A PSC_16MHZ					
DOWNHOLE EQUIPMENT					
MH-22 MH-22			33.3		
AH-38	Detail MT TelStatus CTEM		31.7		
PSPT		31.5	31.5		
PSC-A PSPT-A 1765 PSTC-A PBMS-A 10k_Sapphire_Mano RTD_Thermometer GR CCL PBMS					
	GR	27.8			
	Well_Temp Manometer	24.7 24.6			
	CCL	23.9			
	PBMS PSTC	23.2			
RST-C RSCH-A 292 RSC-E RSS-A 217 RSXH-A 303 RSX-E			23.2		
	RSC-A Far RSC-A PNG RSC-A Nea RSX-A PNG	14.1 13.6			



MAIN PASS

MAXIS Field Log

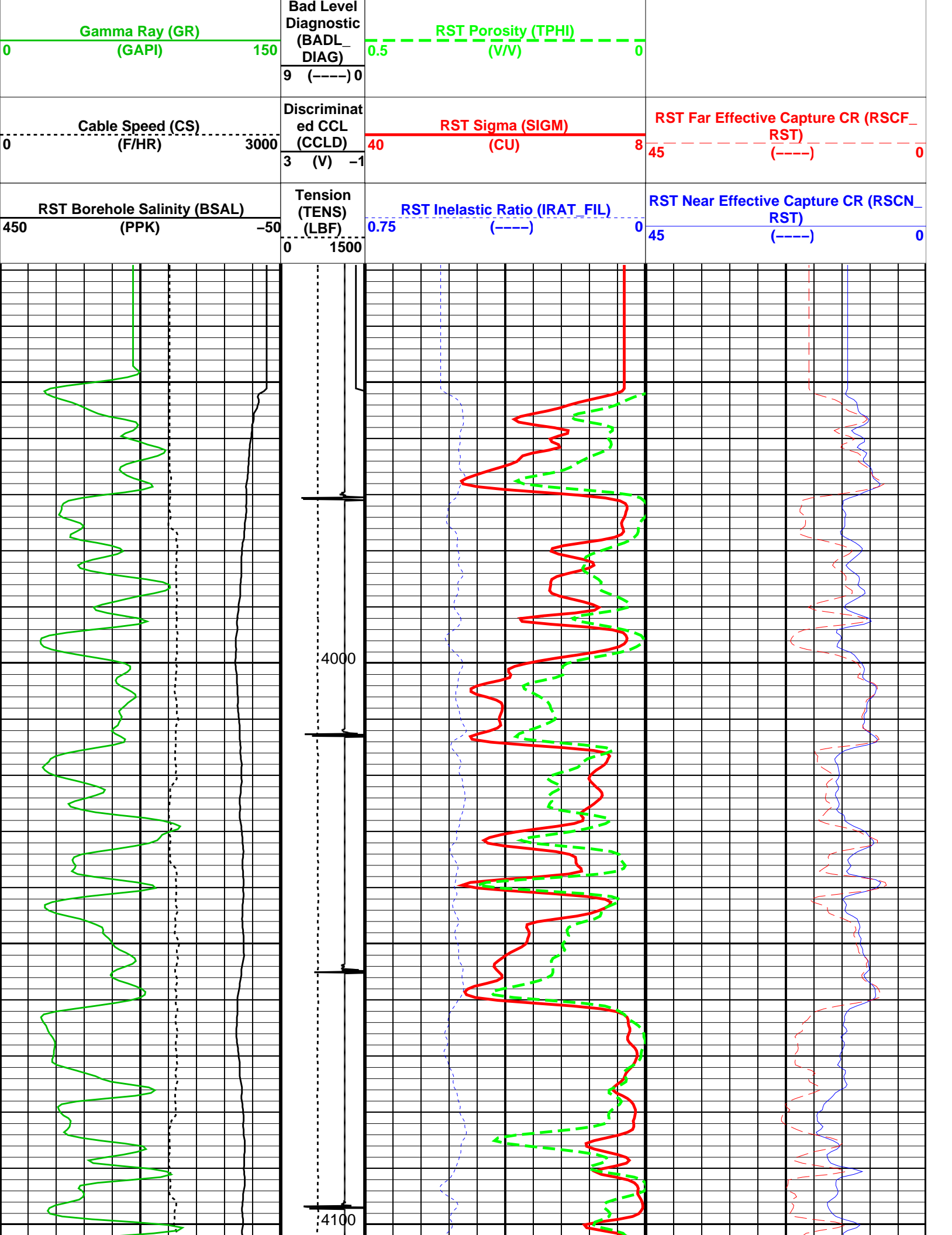
Company: Pronghorn Operating, LLC Well: Betty #1

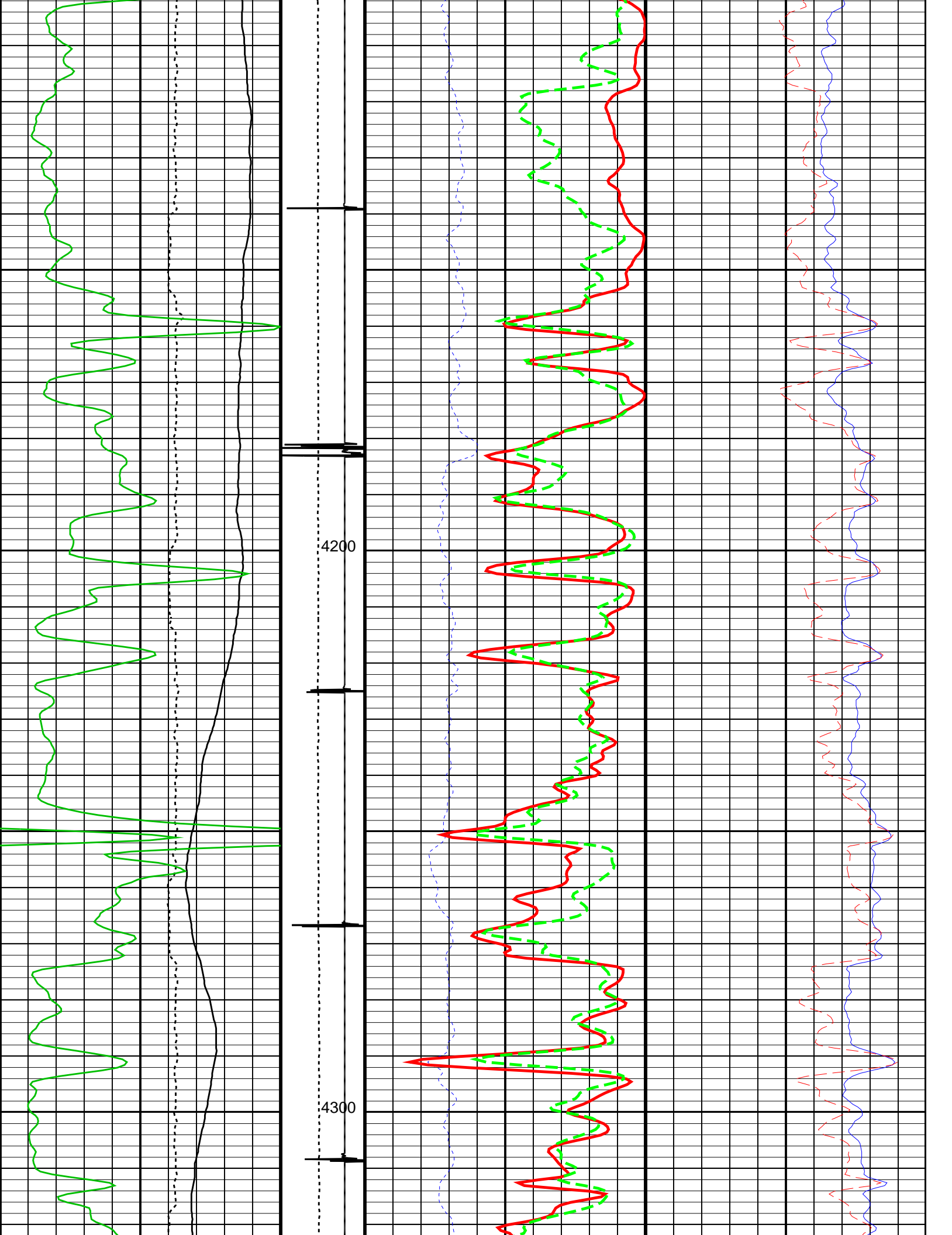
Input DLIS Files						
DEFAULT	RST_PSP_006LUP	FN:5	PRODUCER	23-Oct-2013 13:17	5385.0 FT	3945.5 FT
Output DLIS Files						
DEFAULT	RST_PSP_013PUP	FN:12	PRODUCER	23-Oct-2013 14:45	5386.0 FT	3928.5 FT

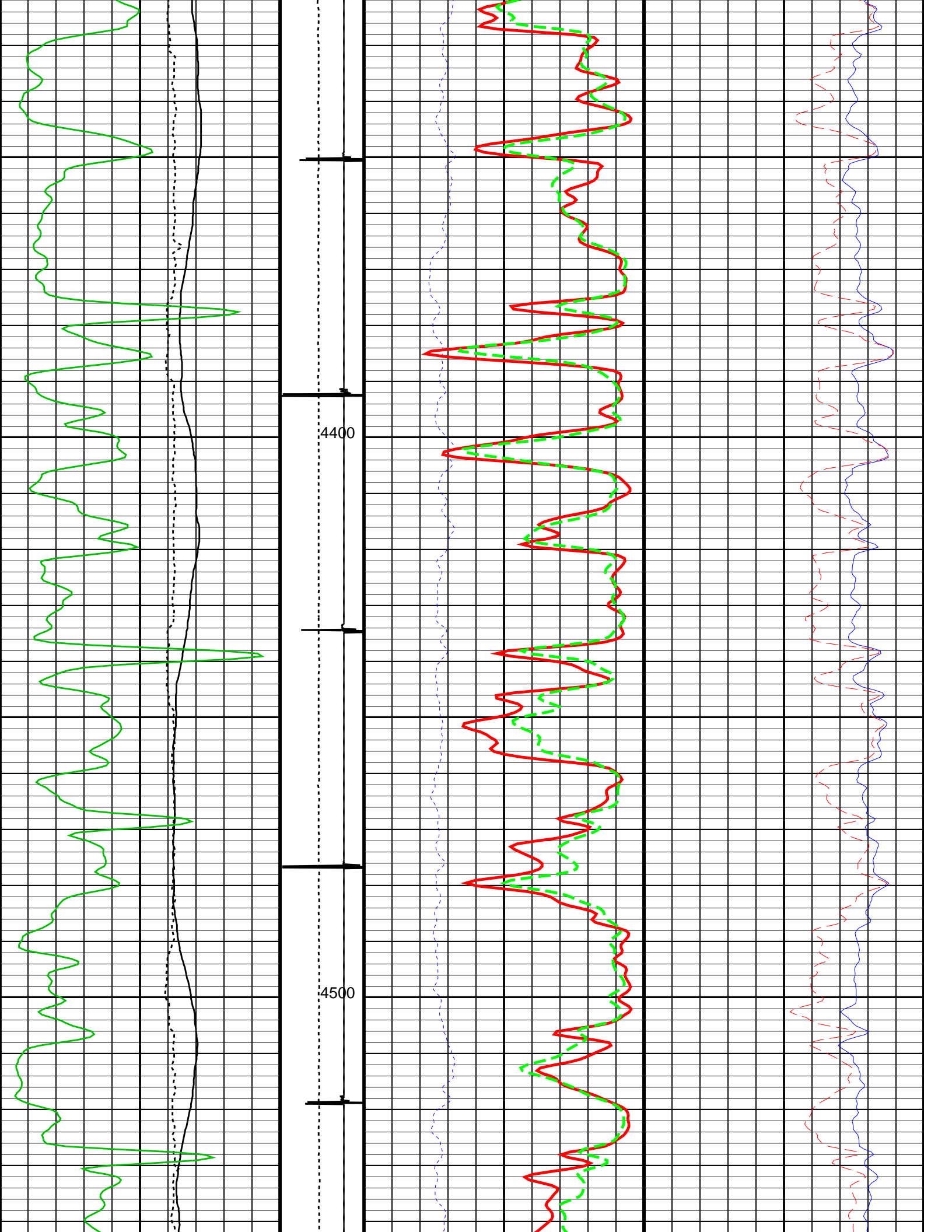
OP System Version: 19C2-270			
RST-C	19C2-270	PSPT	19C2-270

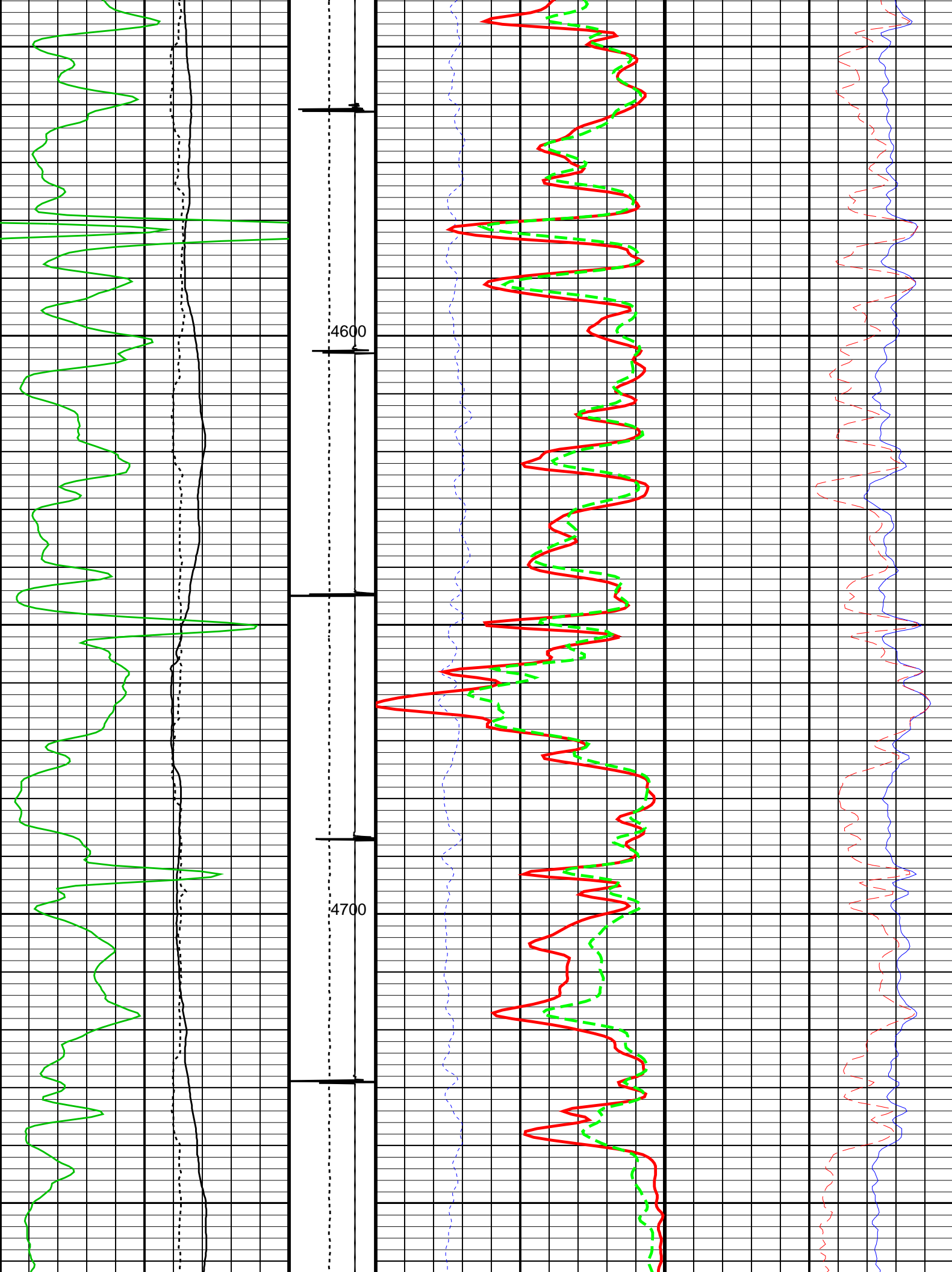
Changed Parameter Summary			
DLIS Name	New Value	Previous Value	Depth & Time
MATR	LIMESTONE DOLOMITE	DOLOMITE LIMESTONE	5273.0 14:45:49 4095.5 14:46:26

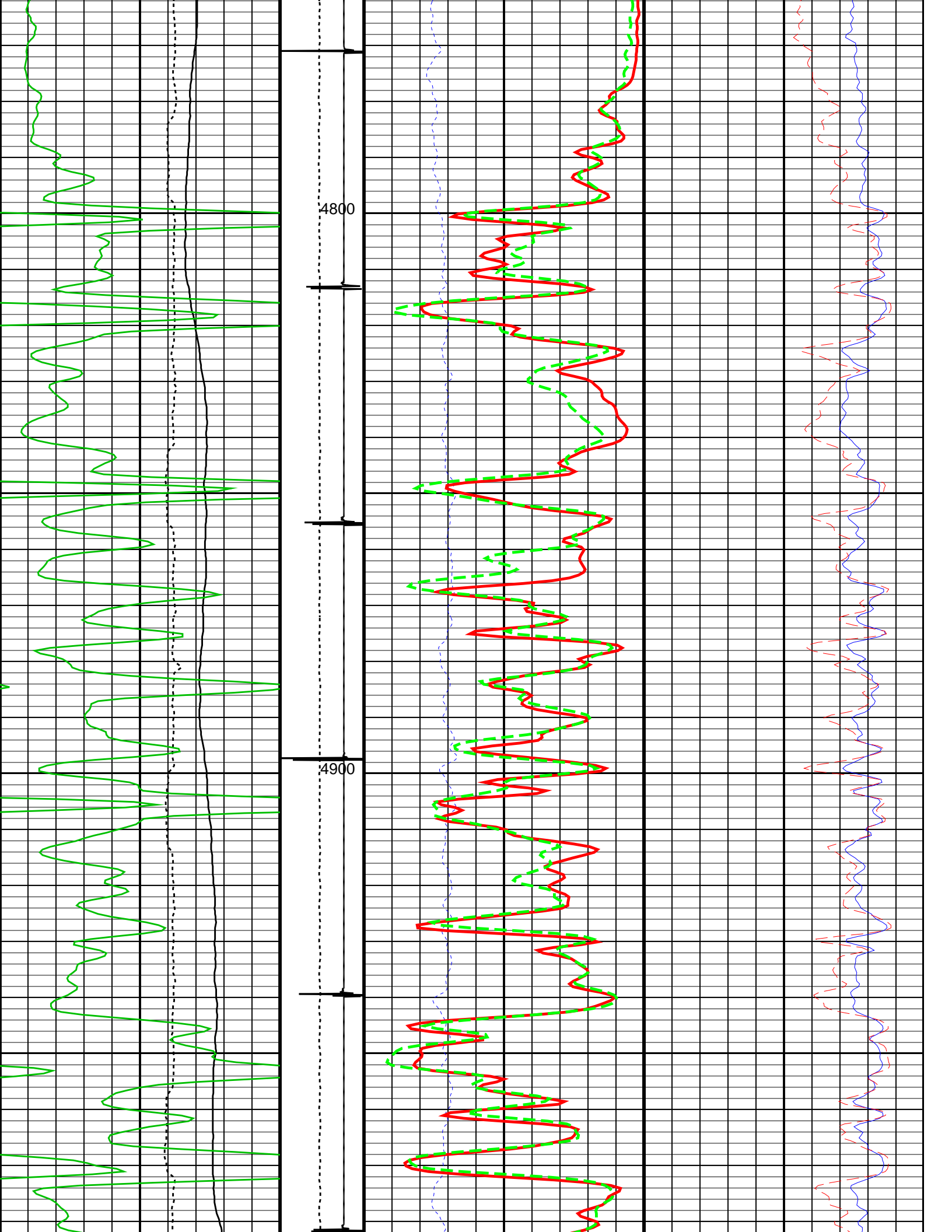
	Minitron Arc Detection (MARC)	ROCK MATRIX DOLOMITE TD-5310 LIMESTONE 5310-4100
	0 (----) 5	

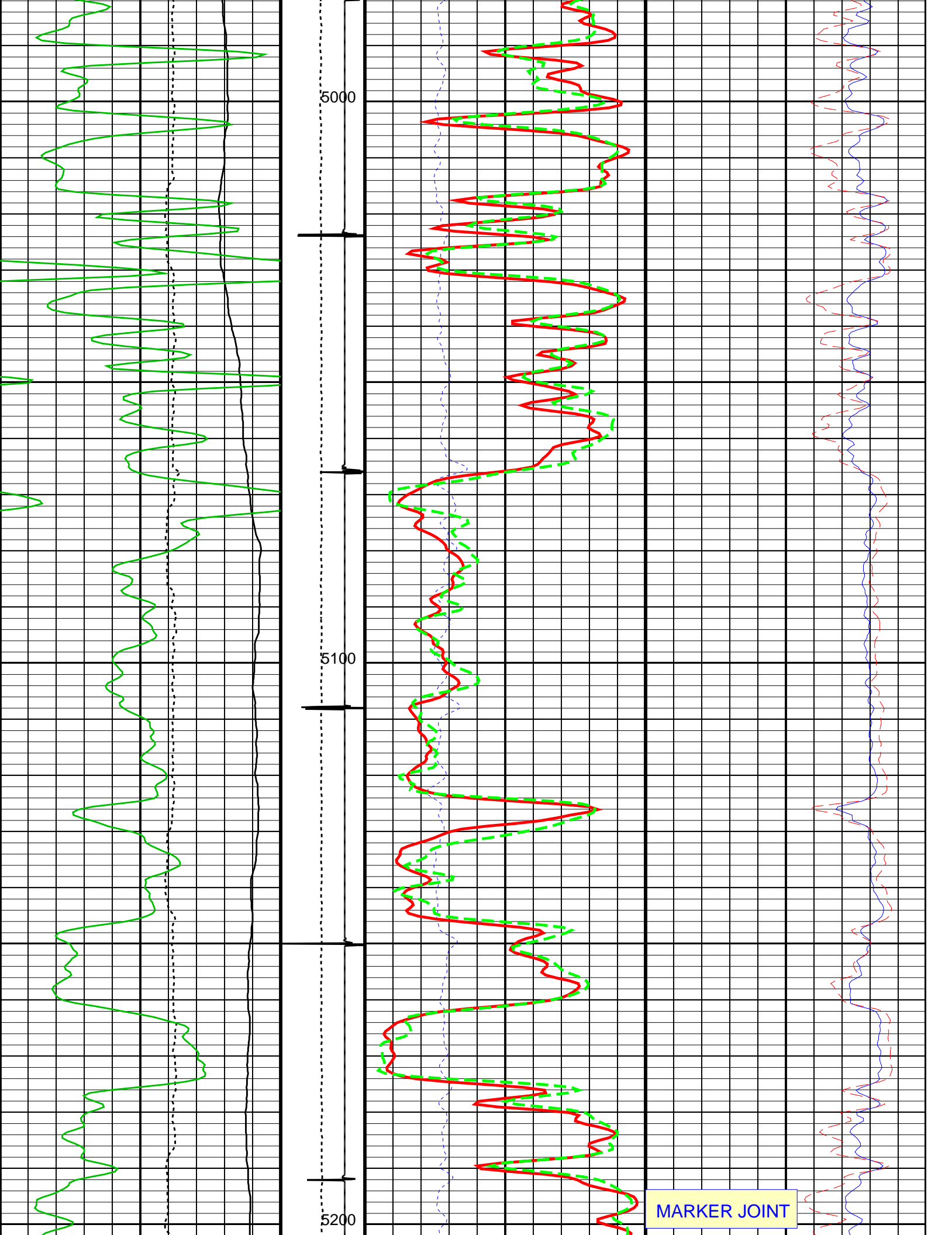


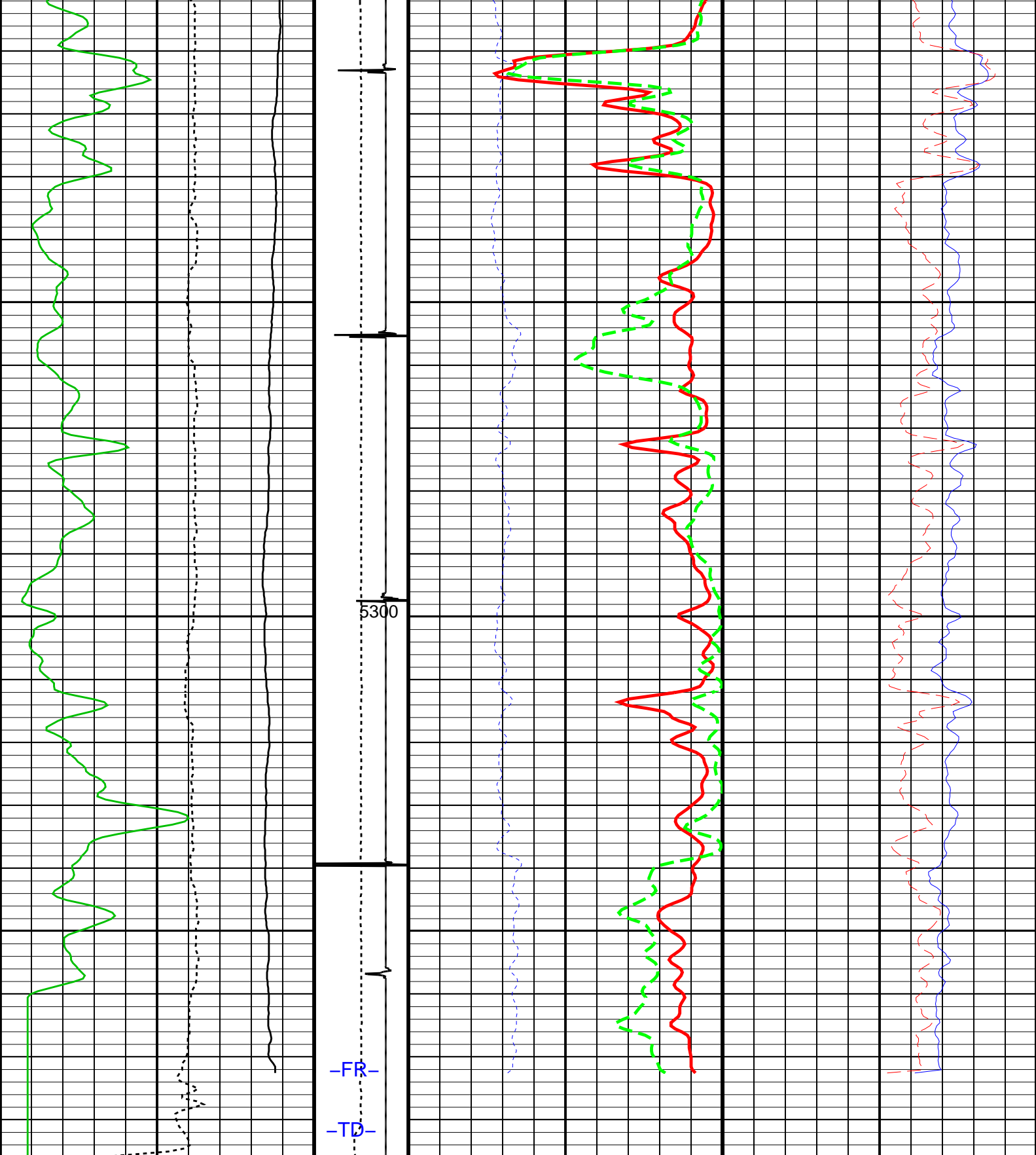












RST Borehole Salinity (BSAL) (PPK)	Tension (TENS) (LBF)	RST Inelastic Ratio (IRAT_FIL) (----)	RST Near Effective Capture CR (RSCN_RST) (----)
450 -50	0 1500	0.75 0	45 0
Cable Speed (CS) (F/HR)	Discriminat ed CCL (CCLD) (V)	RST Sigma (SIGM) (CU)	RST Far Effective Capture CR (RSCF_RST) (----)
0 3000	3 -1	40 8	45 0
Gamma Ray (GR)	Bad Level Diagnostic	RST Density (TDU)	

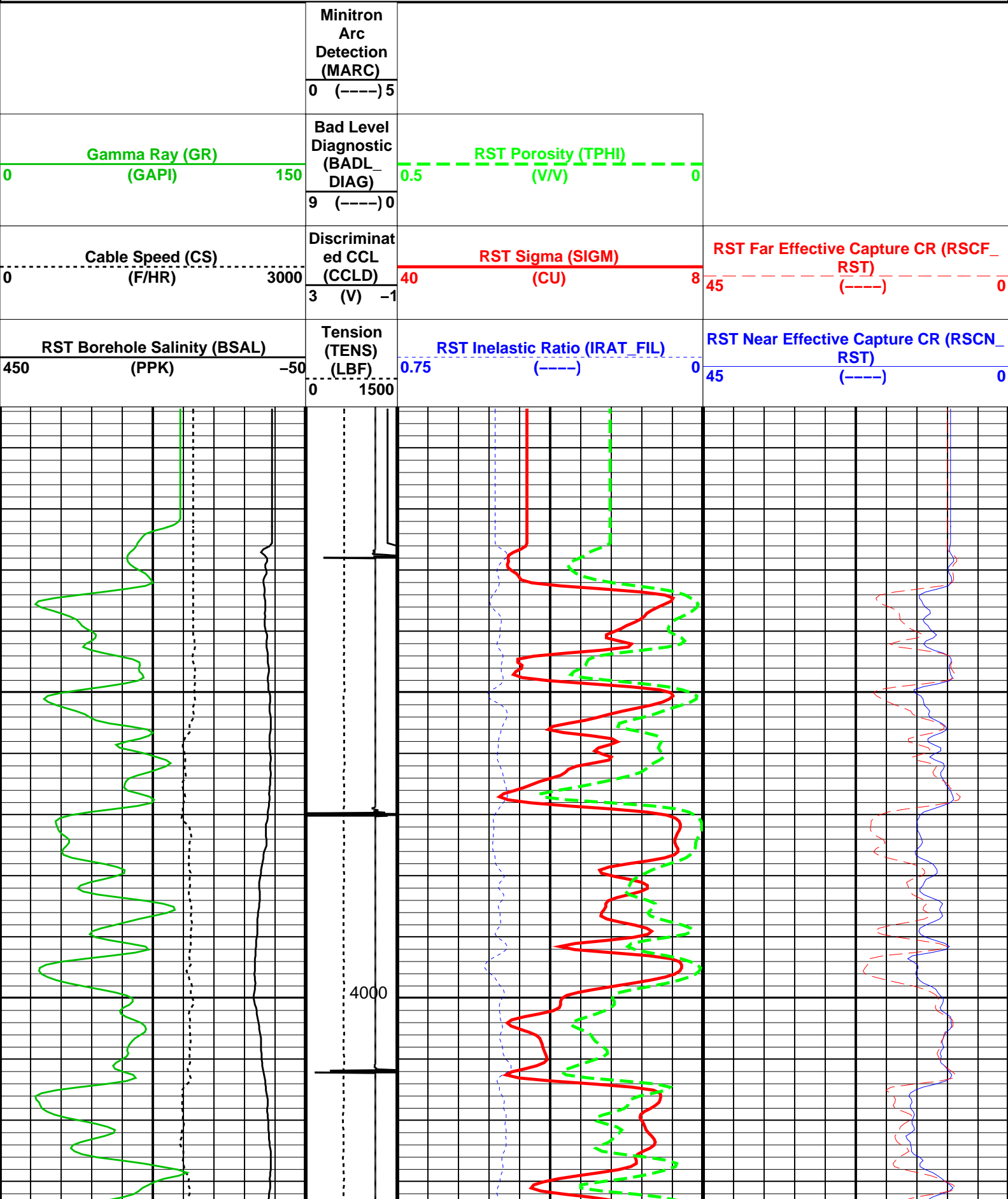
OP System Version: 19C2-270

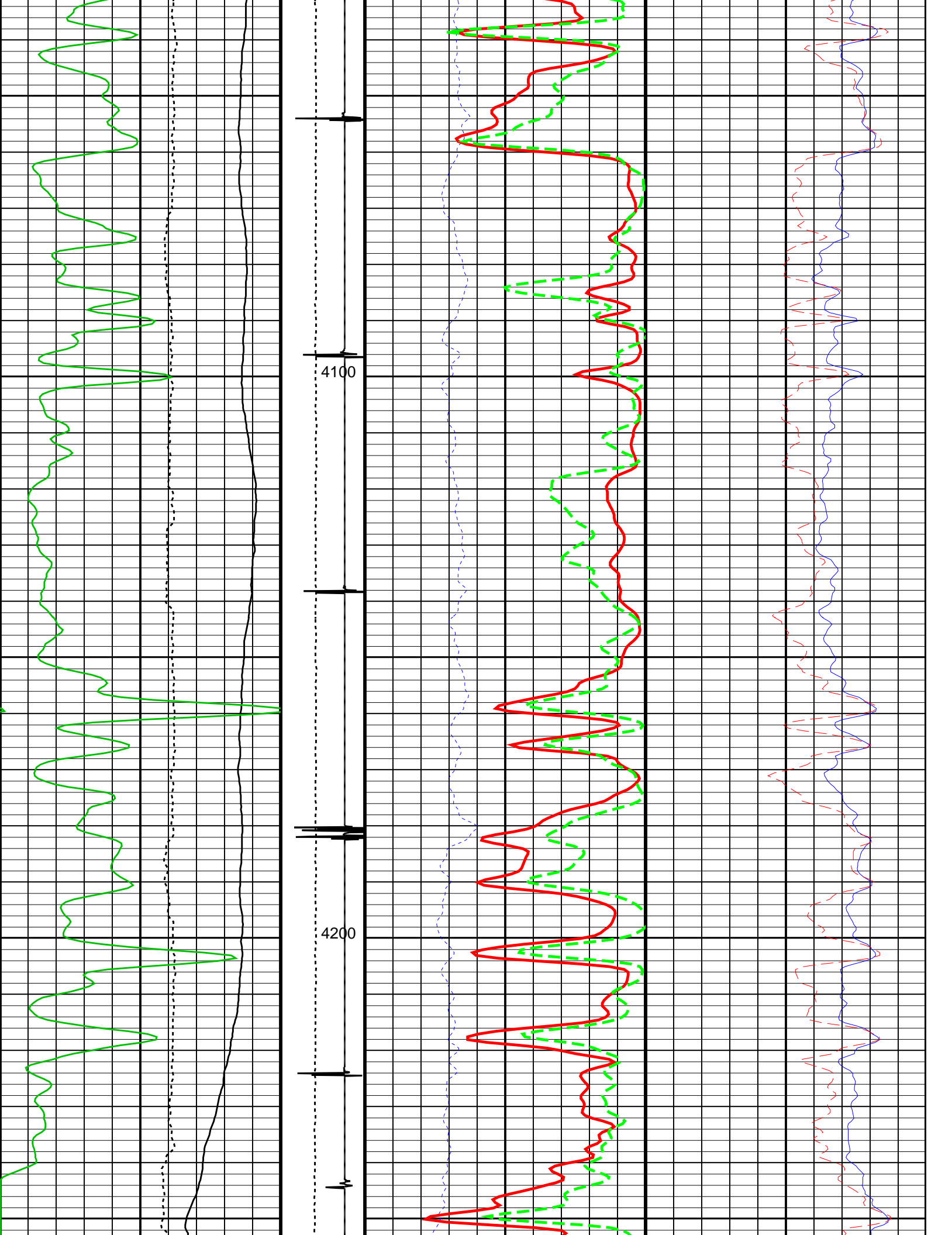
RST-C

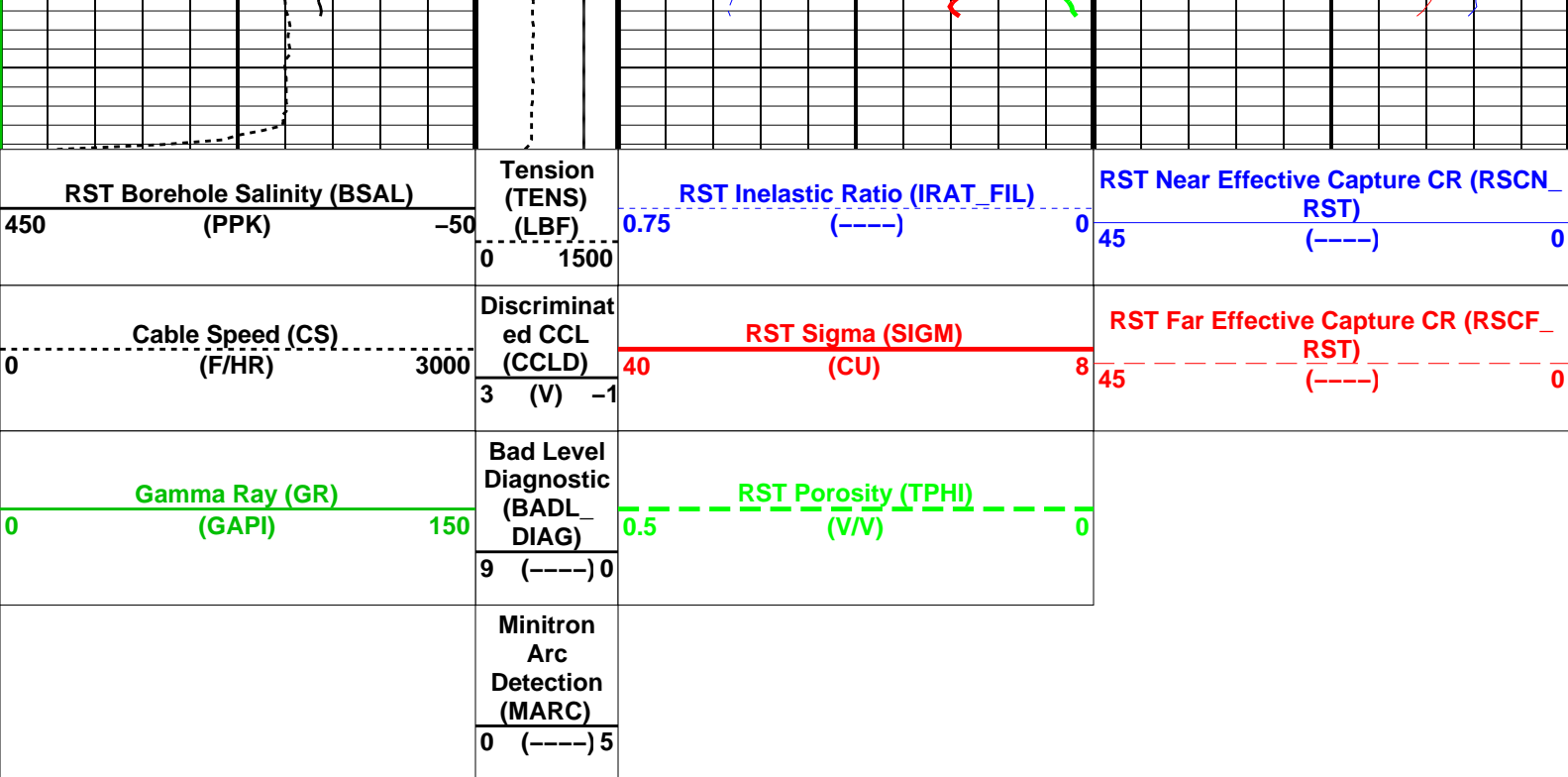
19C2-270

PSPT

19C2-270







Parameters		
DLIS Name	Description	Value
RST-C: Reservoir Saturation Pro Tool C		
AIRB	RST Air Borehole	No
BHS	Borehole Status	CASED
BSALOPT	RST Borehole Salinity Option	Unknown
BSFL	RST Borehole Salinity Filter Length	51
DFPC	RST Depth Filter Processing Constant	One
DFPC_TDTL	RST Depth Filter Processing Constant (TDT-like)	Two
MATR	Rock Matrix for Neutron Porosity Corrections	DOLOMITE
NORM_IRAT_RST	RST Normalized Inelastic Ratio	0.48
NORM_SIGM_RST	RST Normalized Sigma	30
RGAI	Near/Far Gain Calibration Ratio	1
TIER_IC	RST IC Acquisition Mode	0_CO_Yield_and_Spectrolith
TIER_SIGM	RST Sigma Acquisition Mode	0_RST_Sigma
PSPT: Production Services Logging Platform		
BHS	Borehole Status	CASED
MATR	Rock Matrix for Neutron Porosity Corrections	DOLOMITE
System and Miscellaneous		
BS	Bit Size	7.875 IN
BSAL	Borehole Salinity	-50000.00 PPM
CSIZ	Current Casing Size	5.500 IN
CWEI	Casing Weight	15.50 LB/F
DO	Depth Offset for Playback	2.5 FT
PP	Playback Processing	NORMAL

Format: RST_SIG_ANSW Vertical Scale: 5" per 100' Graphics File Created: 23-Oct-2013 14:22

OP System Version: 19C2-270			
RST-C	19C2-270	PSPT	19C2-270

Input DLIS Files						
DEFAULT	RST_PSP_004LUP	FN:3	PRODUCER	23-Oct-2013 12:53	4266.0 FT	3918.5 FT
Output DLIS Files						
DEFAULT	RST_PSP_008PUP	FN:7	PRODUCER	23-Oct-2013 14:22		

Well: **Betty #1**
Field: **Ladder Creek**
County: **Cheyenne**
State: **Colorado**

RESERVOIR SATURATION TOOL
GAMMA RAY
CASING COLLAR LOG