

Company: Pronghorn Operating, LLC

Well: Beek #2

Field: Smokey Creek

County: Cheyenne

State: Colorado

RESERVOIR SATURATION TOOL
GAMMA RAY
CASING COLLAR LOG

County: Cheyenne
Field: Smokey Creek
Location: 1908' FNL & 620' FEL
Well: Beek #2
Company: Pronghorn Operating, LLC

LOCATION

1908' FNL & 620' FEL

Elev.: K.B. 4265.00 ft
G.L. 4253.00 ft
D.F.

Permanent Datum: _____
Log Measured From: KELLY BUSHING
Drilling Measured From: KELLY BUSHING

Elev.: 4253.00 ft
12.00 ft above Perm. Datum

API Serial No.
05-017-07756

Section
20

Township
13S

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	3-Oct-2013		
Run Number	1		
Depth Driller	5600 ft		
Schlumberger Depth	5494 ft		
Bottom Log Interval	5486 ft		
Top Log Interval	4100 ft		
Casing Fluid Type	WATER		
Salinity			
Density	8.4 lbm/gal		
Fluid Level	168 ft		
BIT/CASING/TUBING STRING			
Bit Size	7.875 in		
From			
To			
Casing/Tubing Size	5.500 in		
Weight	15.5 lbm/ft		
Grade			
From			
To			
Maximum Recorded Temperatures	168 degF		
Logger On Bottom	3-Oct-2013	13:42	
Unit Number	354	FORT MORGAN	
Recorded By	C MARCH		
Witnessed By	FRANK RABBIO		

Logging Date			
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Fluid Type			
Salinity			
Density			
Fluid Level			
BIT/CASING/TUBING STRING			
Bit Size			
From			
To			
Casing/Tubing Size			
Weight			
Grade			
From			
To			
Maximum Recorded Temperatures			
Logger On Bottom			
Unit Number			
Recorded By			
Witnessed By			

DEPTH SUMMARY LISTING

Date Created: 3-OCT-2013 7:26:31

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:	07-SEP-2013	Length:	17000 FT
Calibrator Serial Number:	1	Calibrator Serial Number:	78135	Conveyance Method: Wireline Rig Type: LAND	
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:	1.00 FT

Depth Control Remarks

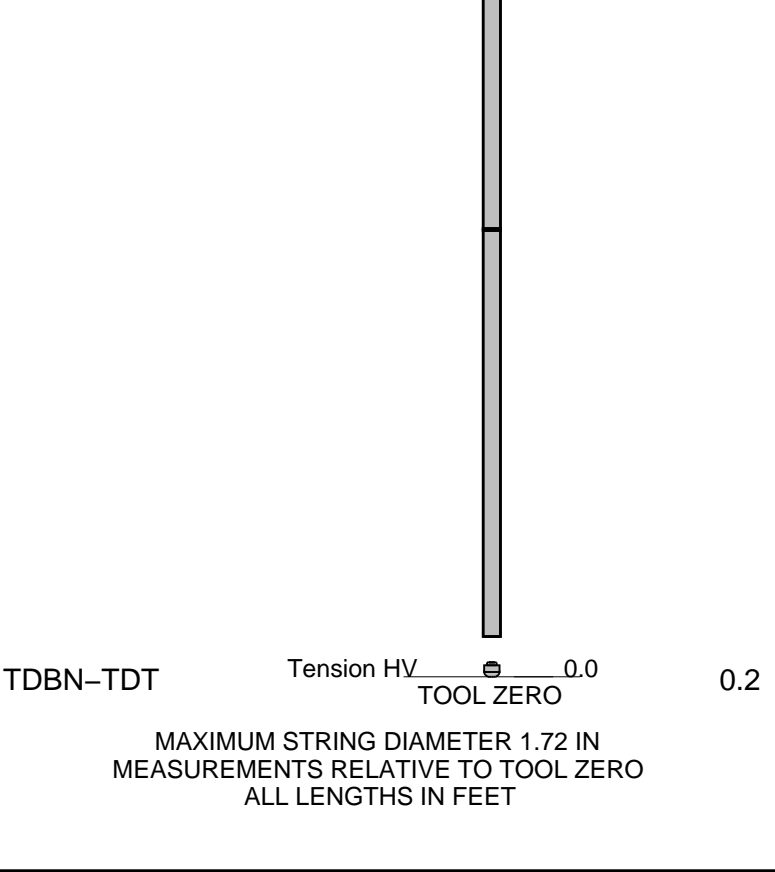
1. IDW WHEELS USED AS PRIMARY DEPTH CONTROL
2. DRUM COUNTER USED FOR SECONDARY DEPTH CONTROL
- 3.
- 4.
- 5.
- 6.

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	OTHER SERVICES2
OS1:	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
NO CORRELATION LOG	
GIVEN OPEN HOLE HEADER FOR INFORMATION	
HEADER IS FROM ALLIED WIRELINE	
RAN IN SIGMA AND CO MODE	

THANK YOU FOR YOUR COOPERATION					
CREW: WILEY					
THANK YOU					
RUN 1			RUN 2		
SERVICE ORDER #:		C170-00121	SERVICE ORDER #:		
PROGRAM VERSION:		19C2-270	PROGRAM VERSION:		
FLUID LEVEL:		168 ft	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	31.7			
PSPT	CTEM	31.5			
		31.5			
PSC-A PSPT-A 1765 PSTC-A PBMS-A 10k_Sapphire_Mano RTD_Thermometer GR CCL PBMS		27.8			
	Well_Temp	24.7			
	Manometer	24.6			
	CCL	23.9			
PBMS PSTC		23.2			
RST-C		23.2			
RSCH-A 292 RSC-E RSS-A 217 RSXH-A 303 RSX-E					
	RSC-A Far	14.1			
	RSC-A PNG				
	RSC-A Nea				
	RSX-A PNG	13.6			



MAIN PASS SIGMA MODE

MAXIS Field Log

Company: Pronghorn Operating, LLC Well: Beek #2

Input DLIS Files

DEFAULT RST_PSP_015LUP FN:14 PRODUCER 03-Oct-2013 13:52 5499.5 FT 4051.5 FT

Output DLIS Files

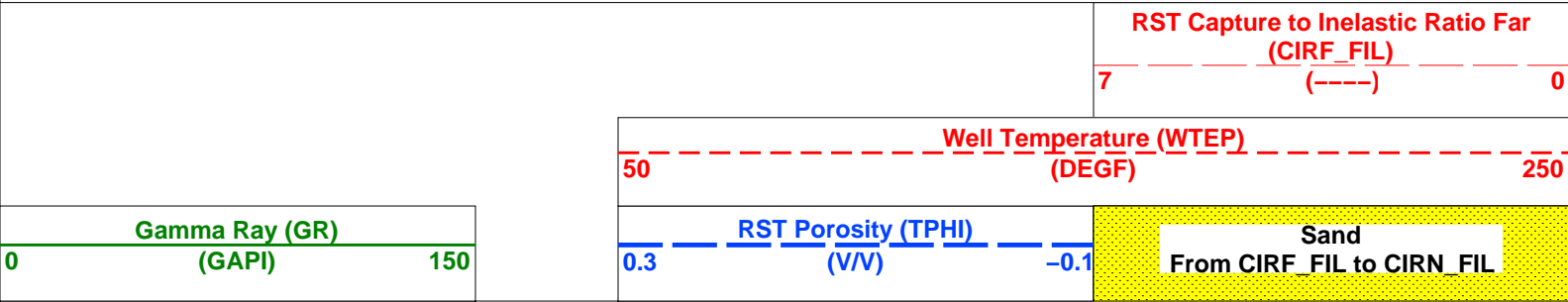
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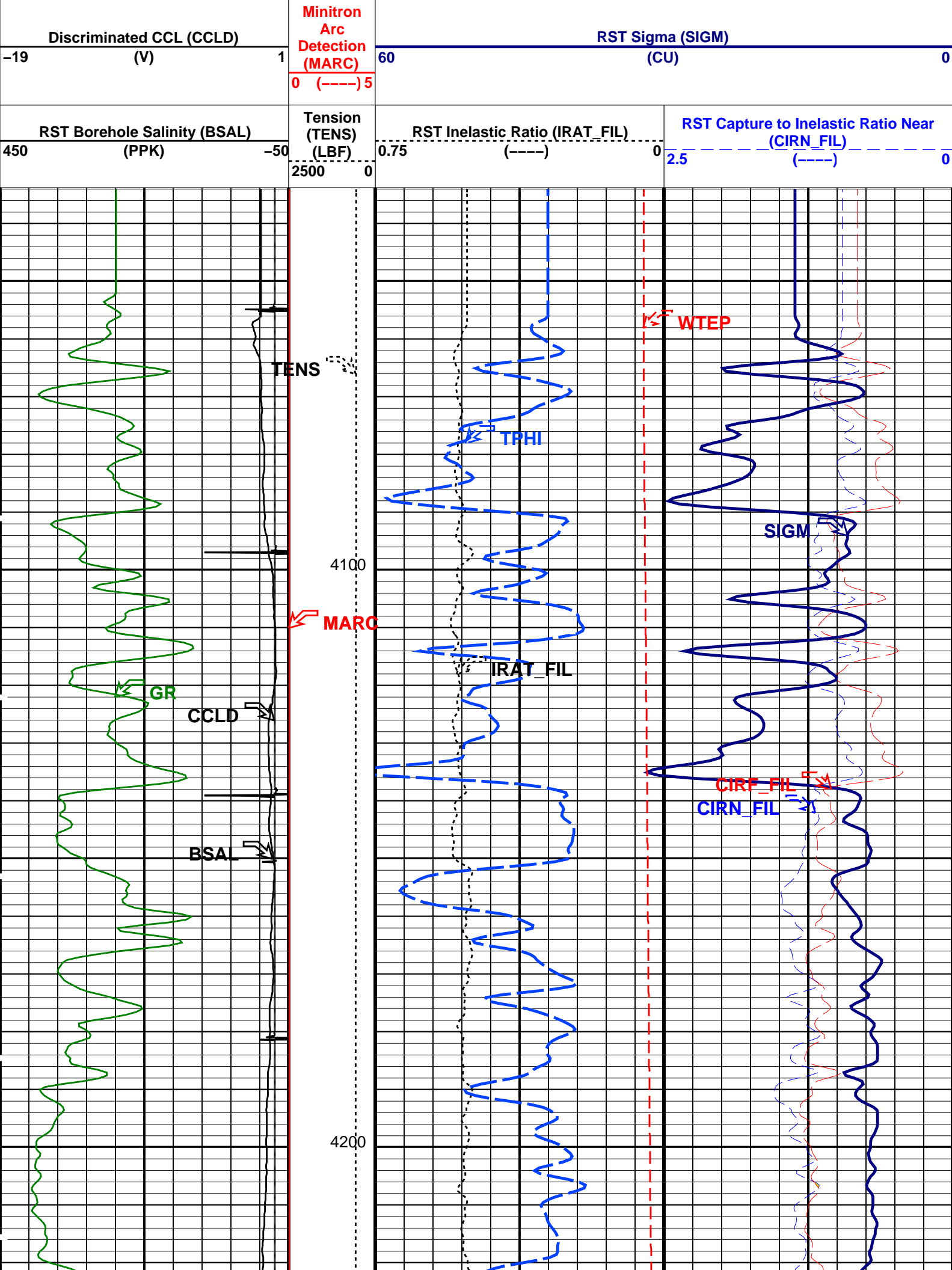
OP System Version: 19C2-270

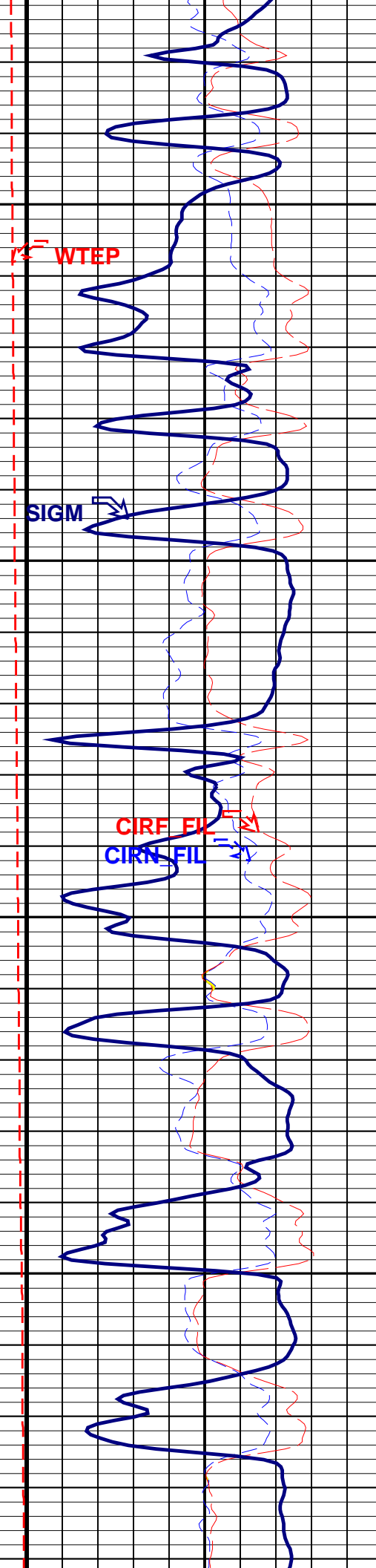
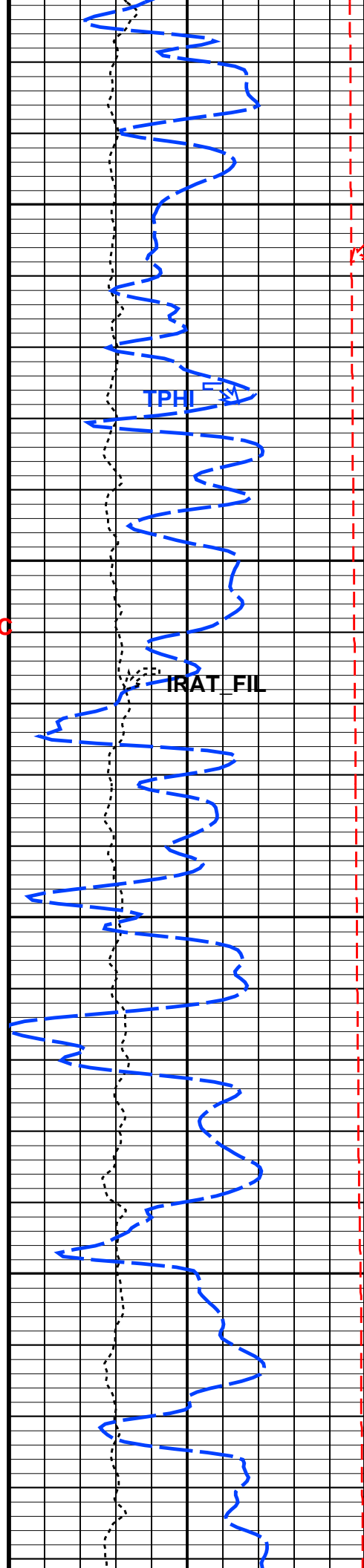
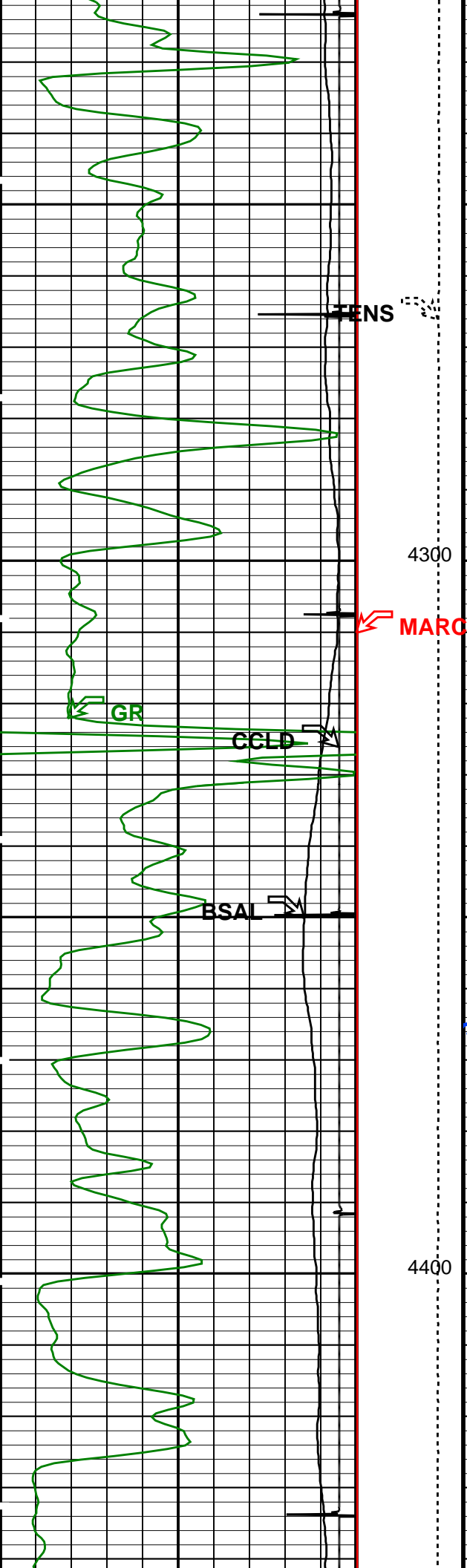
RST-C 19C2-270 PSPT 19C2-270

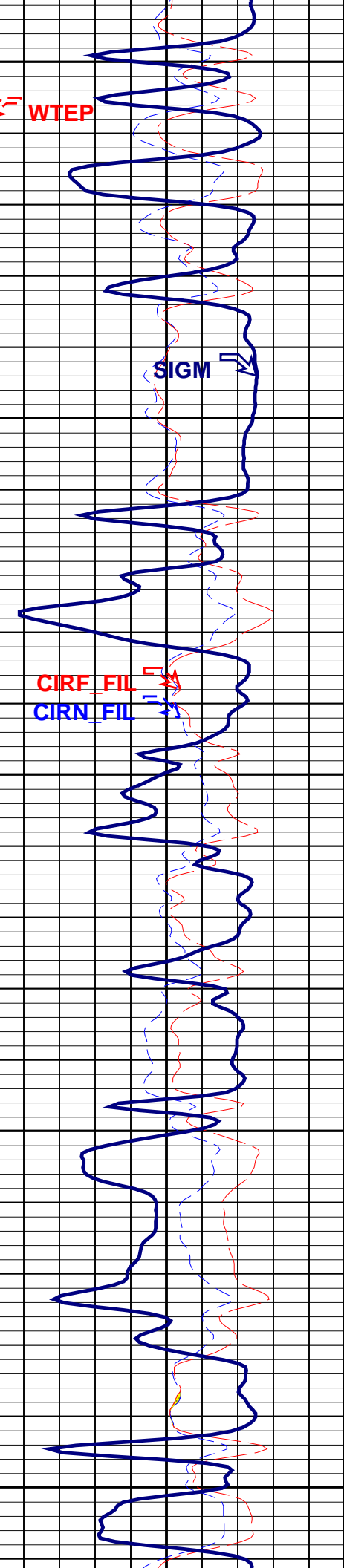
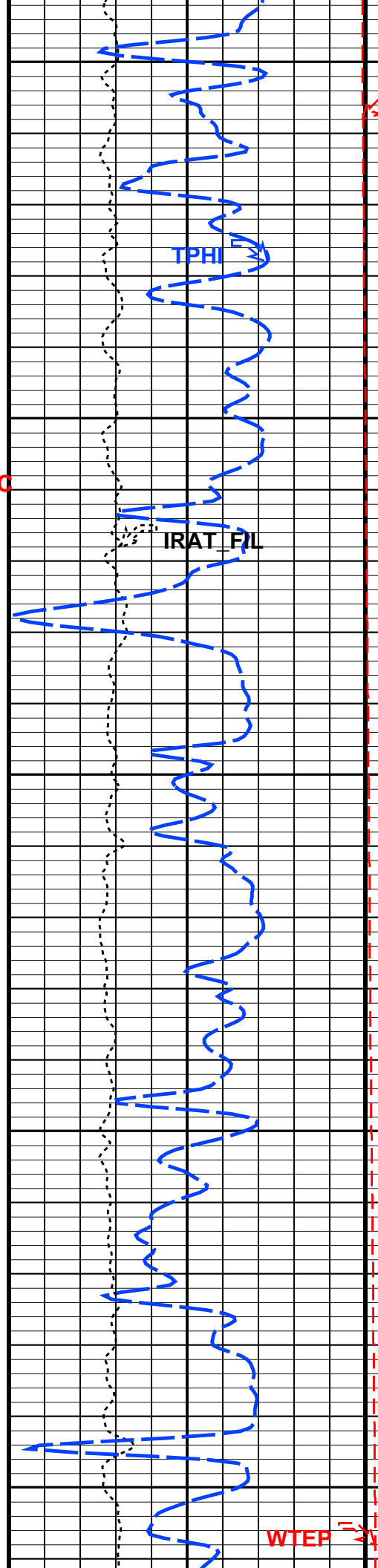
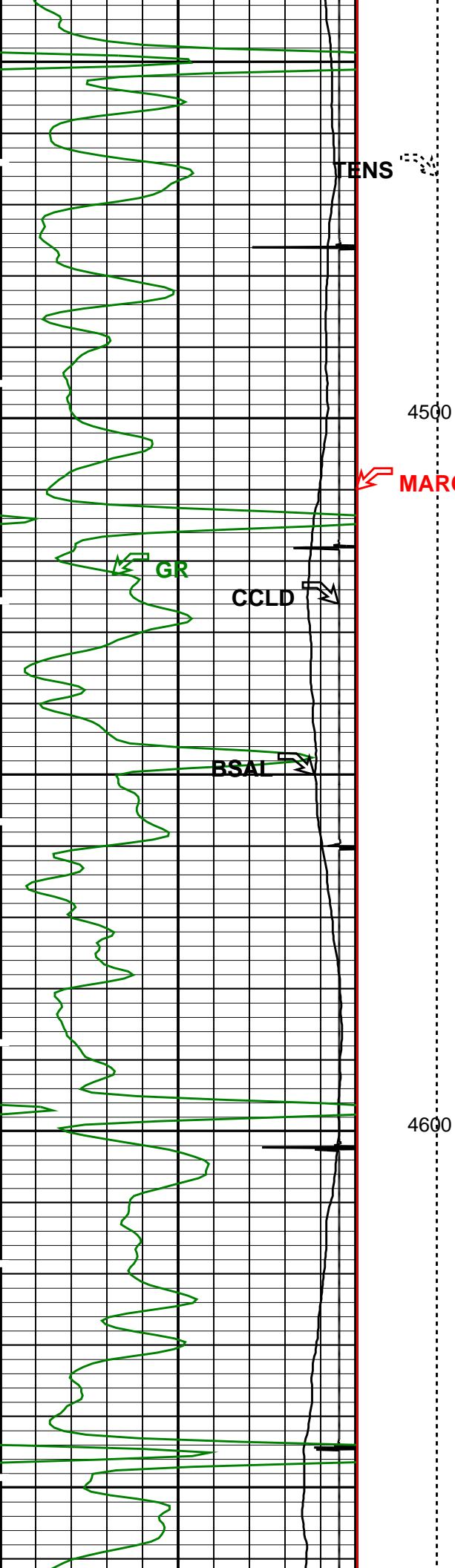
PIP SUMMARY

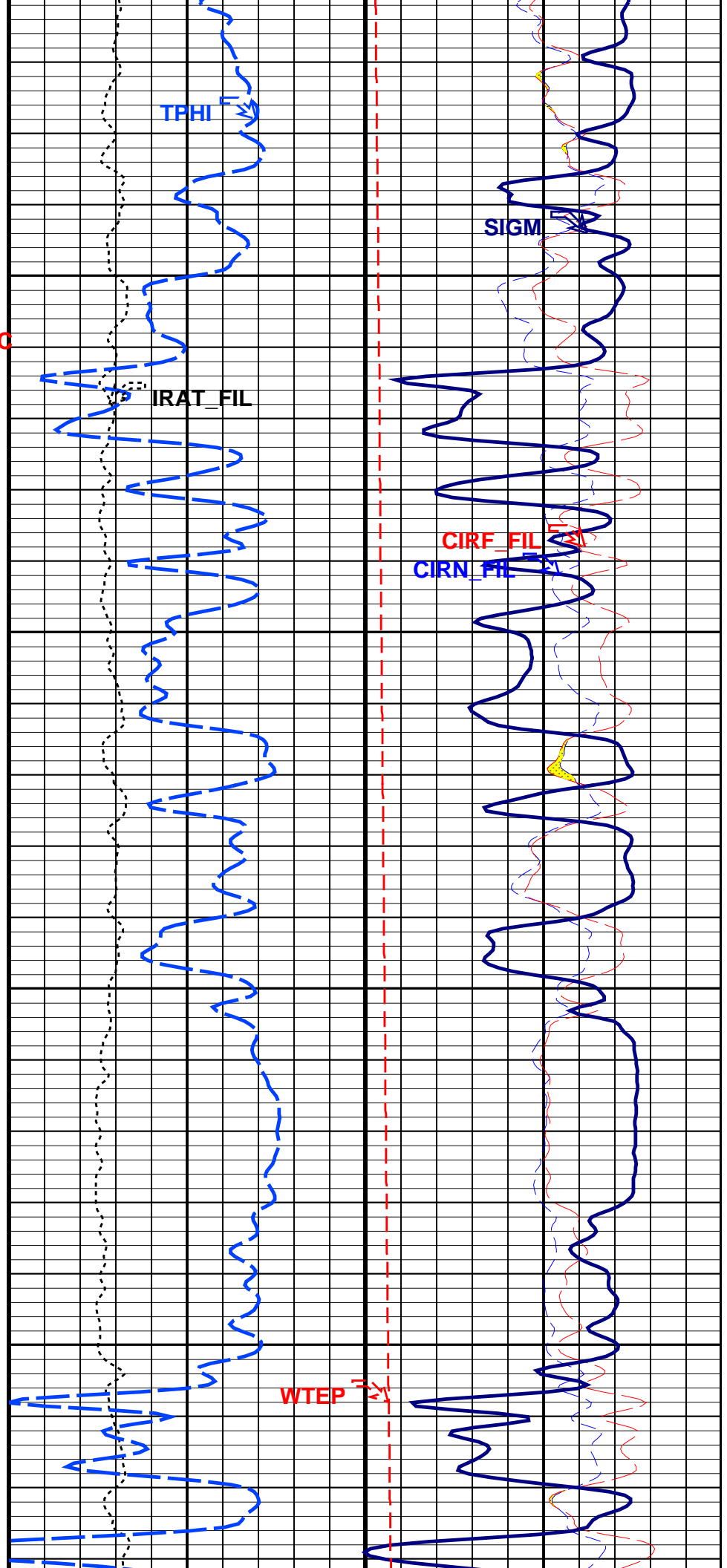
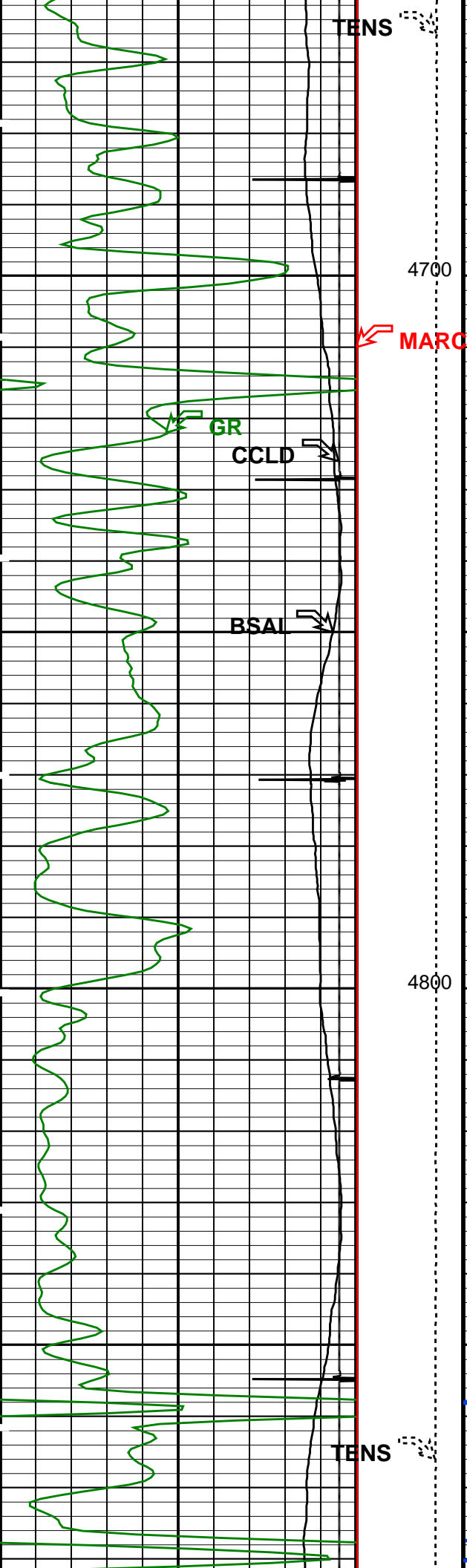
Time Mark Every 60 S

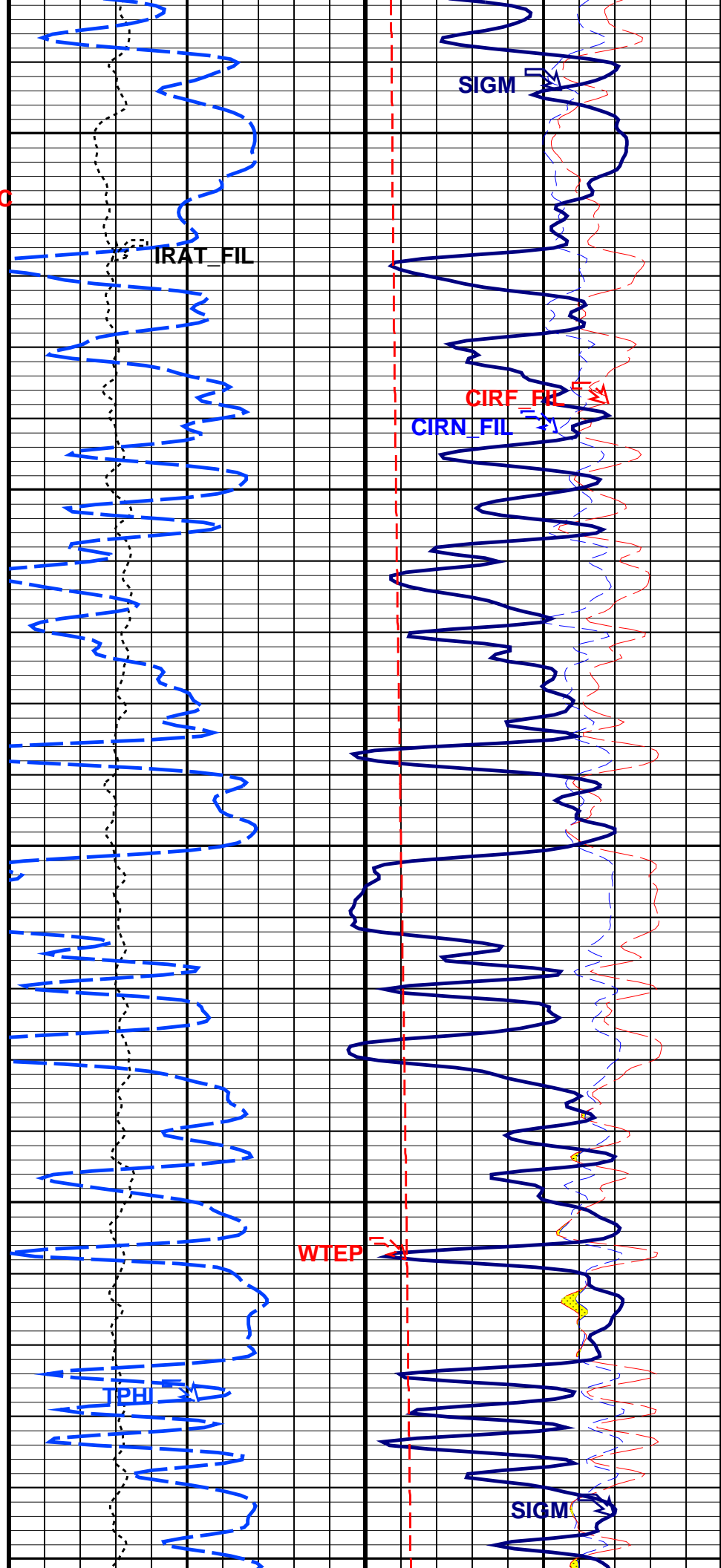
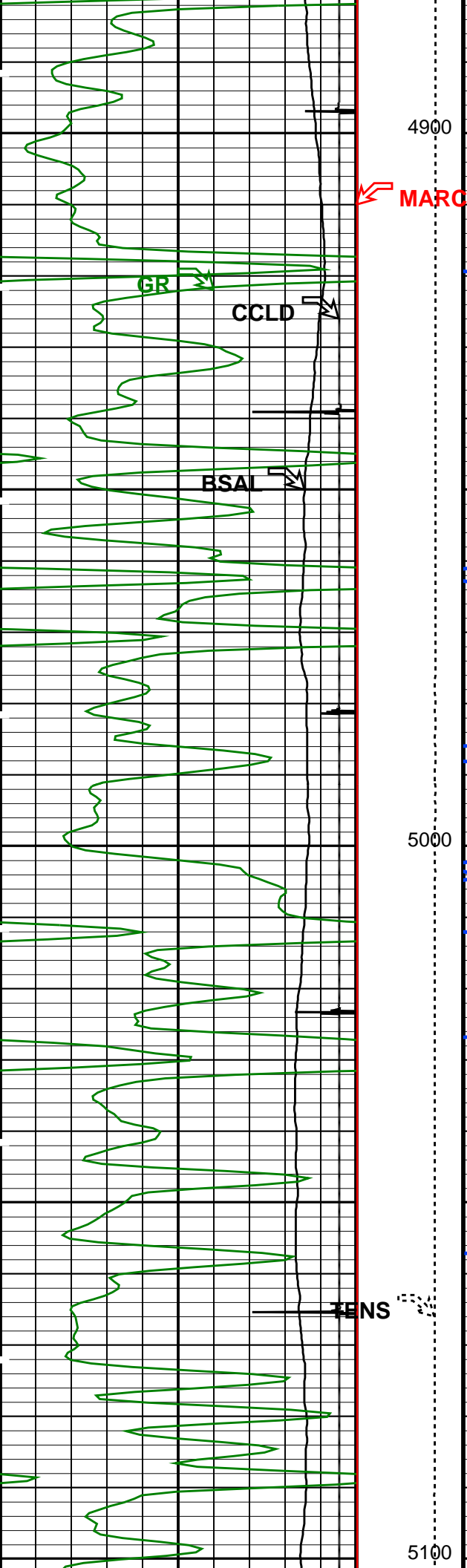


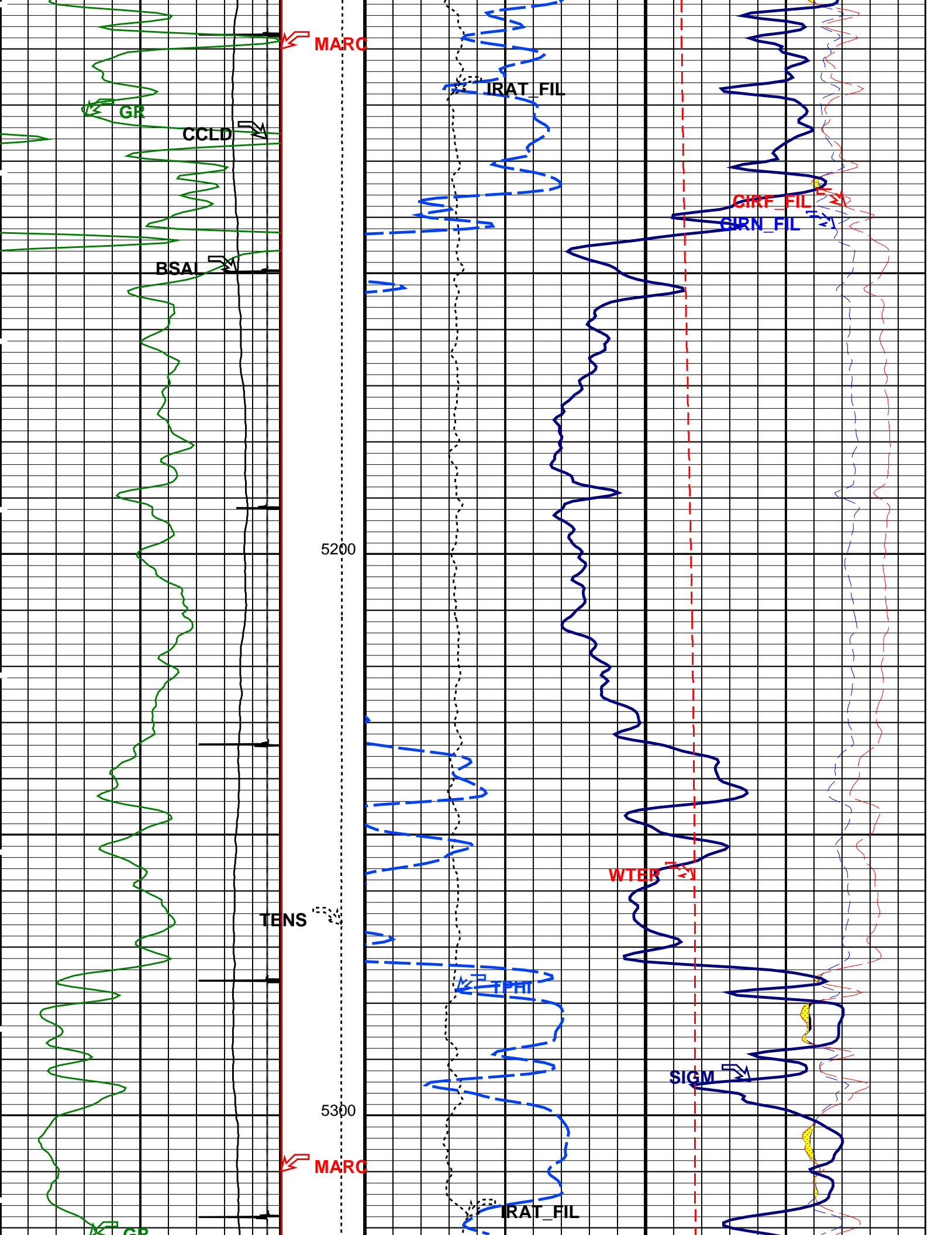


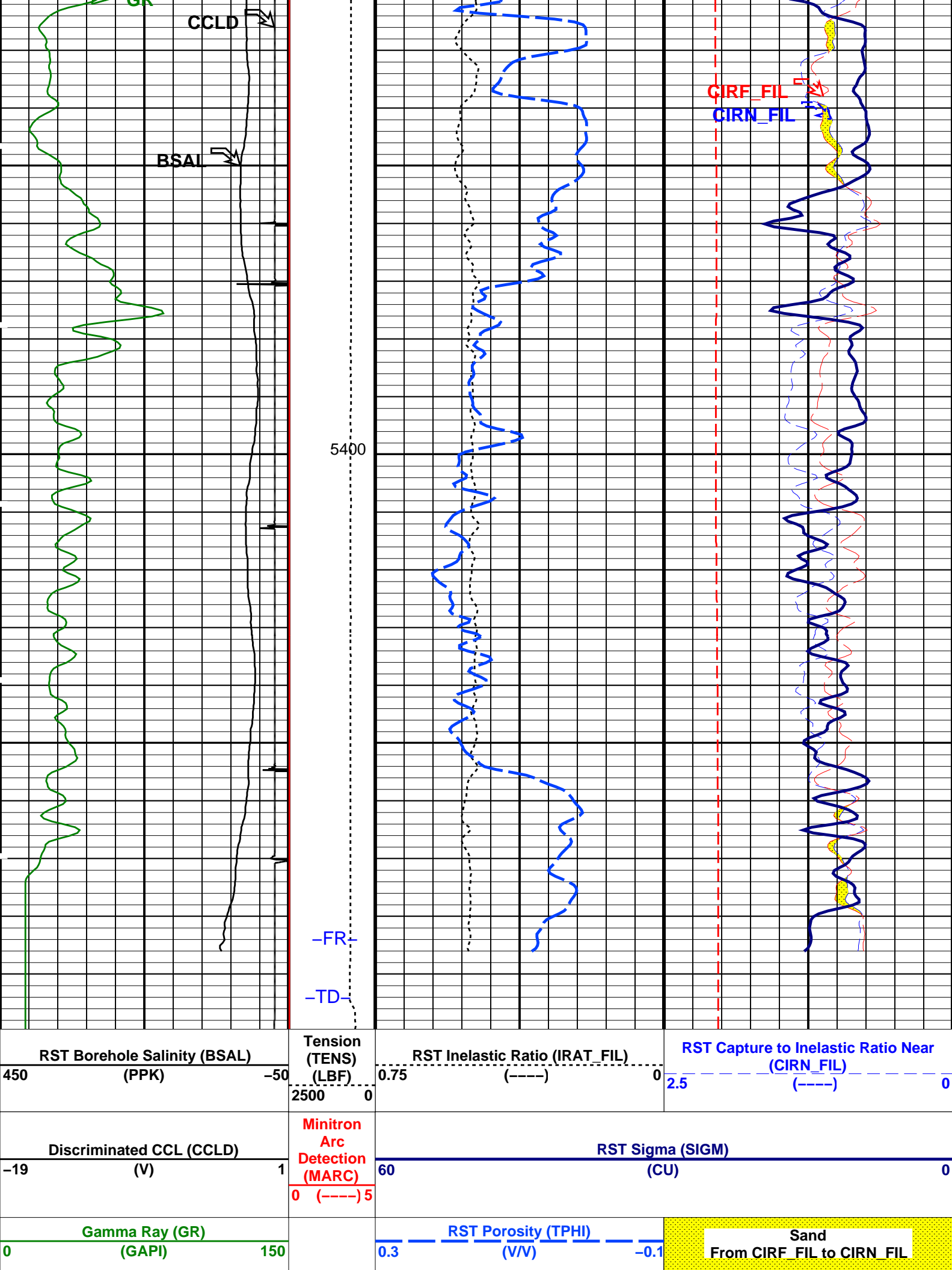













		Well Temperature (WTEP) (DEGF)		250			
50							
				RST Capture to Inelastic Ratio Far (CIRF_FIL)			
				7 (----) 0			
PIP SUMMARY							
Time Mark Every 60 S							
Parameters							
DLIS Name		Description		Value			
RST-C: Reservoir Saturation Pro Tool C							
AIRB		RST Air Borehole		No			
BHS		Borehole 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		LIMESTONE			
NORM_IRAT_RST		RST Normalized Inelastic Ratio		0.48			
NORM_SIGM_RST		RST Normalized Sigma		30	CU		
RGAI		Near/Far Gain Calibration Ratio		1			
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		LIMESTONE			
System and Miscellaneous							
BS		Bit Size		7.875	IN		
BSAL		Borehole Salinity		-50000.00	PPM		
CSIZ		Current Casing Size		5.500	IN		
DO		Depth Offset for Playback		0.0	FT		
PP		Playback Processing		NORMAL			
Format: RST_SIG_ANSW		Vertical Scale: 5" per 100'		Graphics File Created: 03-Oct-2013 14:55			
OP System Version: 19C2-270							
RST-C	19C2-270	PSPT	19C2-270				
Input DLIS Files							
DEFAULT	RST_PSP_015LUP	FN:14	PRODUCER	03-Oct-2013 13:52	5499.5 FT 4051.5 FT		
Output DLIS Files							
DEFAULT	RST_PSP_018PUP	FN:17	PRODUCER	03-Oct-2013 14:55			
<div><div></div><div>REPEAT PASS SIGMA MODE</div></div>							
MAXIS Field Log							
Company: Pronghorn Operating, LLC							
Well: Beek #2							
Input DLIS Files							
DEFAULT	RST_PSP_012LUP	FN:11	PRODUCER	03-Oct-2013 13:27	5497.0 FT 5249.5 FT		
Output DLIS Files							
DEFAULT	RST_PSP_020PUP	FN:19	PRODUCER	03-Oct-2013 15:00	5497.0 FT 5231.5 FT		

OP System Version: 19C2-270

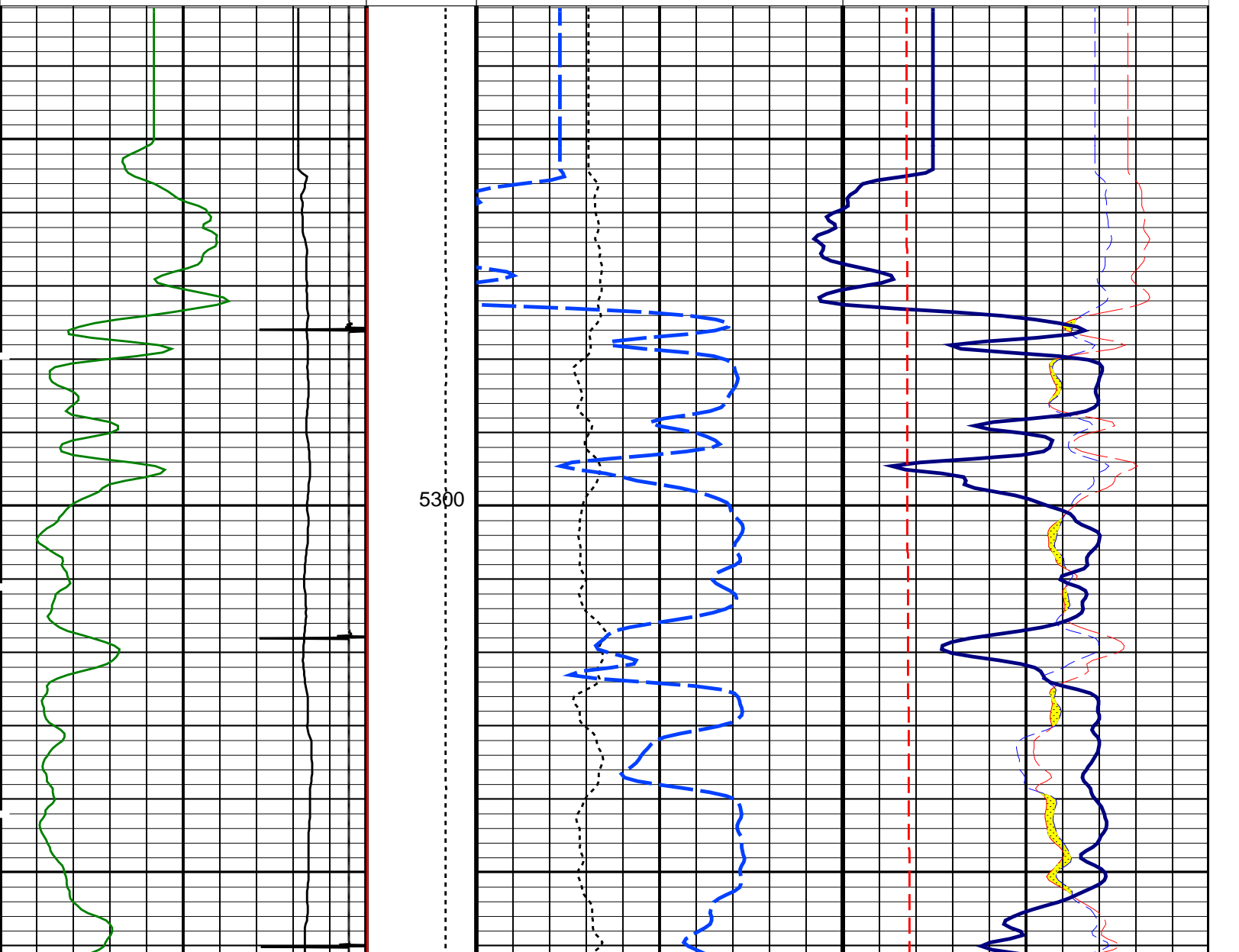
RST-C19C2-270

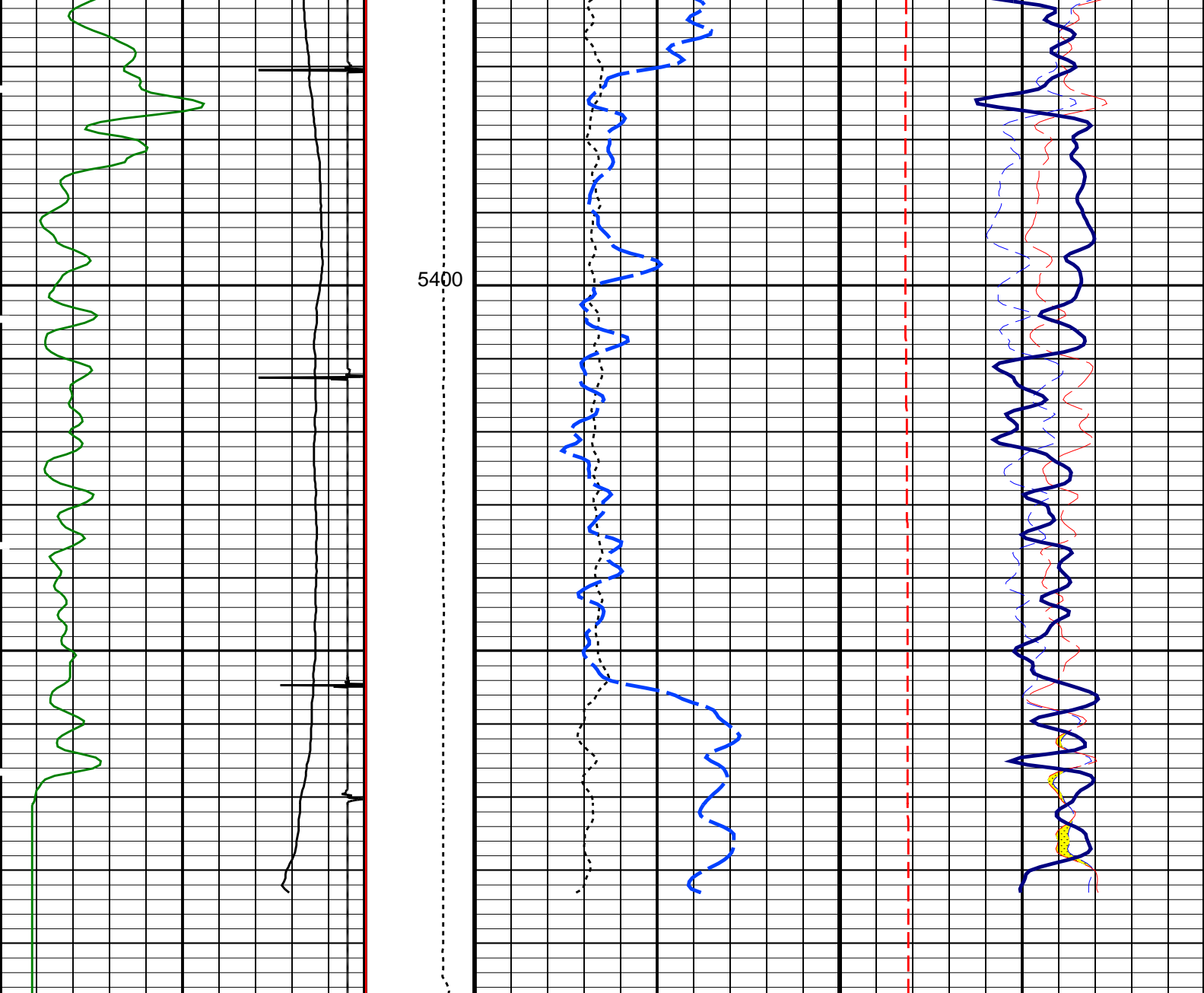
PSPT19C2-270

PIP SUMMARY

Time Mark Every 60 S

		RST Capture to Inelastic Ratio Far (CIRF_FIL) 7 (----) 0	
		Well Temperature (WTEP) (DEGF) 50 250	
Gamma Ray (GR) (GAPI) 0 150		RST Porosity (TPHI) (V/V) 0.3 -0.1	Sand From CIRF_FIL to CIRN_FIL
Discriminated CCL (CCLD) (V) -19 1		RST Sigma (SIGM) (CU) 60 0	
		Minitron Arc Detection (MARC) 0 (----) 5	
RST Borehole Salinity (BSAL) (PPK) 450 -50		RST Inelastic Ratio (IRAT_FIL) (----) 0.75 0	RST Capture to Inelastic Ratio Near (CIRN_FIL) (----) 2.5 0
Tension (TENS) (LBF) 2500 0			





RST Borehole Salinity (BSAL)		Tension (TENS) (LBF)	RST Inelastic Ratio (IRAT_FIL)		RST Capture to Inelastic Ratio Near (CIRN_FIL)	
450 (PPK)	-50		0.75 (----	0	2.5 (----	0
Discriminated CCL (CCLD)		Minitron Arc Detection (MARC)	RST Sigma (SIGM)			
-19 (V)	1		60 (CU)	0		
Gamma Ray (GR)			RST Porosity (TPHI)		Sand From CIRF_FIL to CIRN_FIL	
0 (GAPI)	150	0.3 (V/V)	-0.1			
			Well Temperature (WTEP) (DEGF)			
			50	250		
			RST Capture to Inelastic Ratio Far (CIRF_FIL)			
			7 (----) 0			

PIP SUMMARY

Time Mark Every 60 S

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	LIMESTONE	
NORM_IRAT_RST	RST Normalized Inelastic Ratio	0.48	
NORM_SIGM_RST	RST Normalized Sigma	30	CU
RGAI	Near/Far Gain Calibration Ratio	1	
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	LIMESTONE	
System and Miscellaneous			
BS	Bit Size	7.875	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	5.500	IN
DO	Depth Offset for Playback	0.0	FT
PP	Playback Processing	NORMAL	

Format: RST_SIG_ANSW Vertical Scale: 5" per 100' Graphics File Created: 03-Oct-2013 15:00

OP System Version: 19C2-270

RST-C	19C2-270	PSPT	19C2-270			
Input DLIS Files						
DEFAULT	RST_PSP_012LUP	FN:11	PRODUCER	03-Oct-2013 13:27	5497.0 FT	5249.5 FT
Output DLIS Files						
DEFAULT	RST_PSP_020PUP	FN:19	PRODUCER	03-Oct-2013 15:00		

Company: **Pronghorn Operating, LLC**

Schlumberger

Well: **Beek #2**

Field: **Smokey Creek**

County: **Cheyenne**

State: **Colorado**

RESERVOIR SATURATION TOOL
GAMMA RAY
CASING COLLAR LOG