Schlumberger

Company: **Esso Australia Pty Ltd.**

Well: **A1**
Field: **Marlin**
Rig: **Crane / Prod 4** Country: **Australia**

Rig: Crane / Prod 4
Field: Marlin
Location: Gippsland
Well: A1
Company: Esso Australia Pty Ltd.

RST Sigma Log
Static Pass

LOCATION

Gippsland		Elev.: K.B.	27.40 m
Basin		G.L.	−59.00 m
Bass Strait		D.F.	27.40 m
Permanent Datum:	M.S.L	Elev.:	27.40 m
Log Measured From:	K.B	−27.40 m	above Perm. Datum
Drilling Measured From:	K.B		

State:	Max. Well Deviation	Longitude	Latitude
Victoria	5.1 deg	148 13'09.18"E	038 13'55.49"S

Logging Date		23−Jun−2009		
Run Number		1		
Depth Driller		1632.2 m		
Schlumberger Depth		1608 m		
Bottom Log Interval		1608 m		
Top Log Interval		1420 m		
Casing Fluid Type		Production fluids		
Salinity				
Density				
Fluid Level		0 m		
BIT/CASING/TUBING STRING				
Bit Size		12.250 in		
From		609.3 m		
To		1632.2 m		
Casing/Tubing Size		9.625 in		
Weight		36 lbm/ft		
Grade		J−55		
From		12.34 m		
To		1632.2 m		
Maximum Recorded Temperatures		170 degF		
Logger On Bottom	Time	24−Jun−2009	21:00	
Unit Number	Location	889	AUSL	
Recorded By		B.Donahoe		
Witnessed By		G. Rimmer		

		Run 1	Run 2	Run
PVT DATA	Oil Density			
	Water Salinity			
	Gas Gravity			
	Bo			
	Bw			
	1/Bg			
	Bubble Point Pressure			
	Bubble Point Temperature			
	Solution GOR			
	Maximum Deviation	5.1 deg		
	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				
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	Time			
Unit Number	Location			
Recorded By				
Witnessed By				

Run 3

Run 4

DEPTH SUMMARY LISTING

Date Created: 24−JUN−2009 4:42:22

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW−EB	Type:	PSDS/OSDS	Type:	2−32ZT
Serial Number:	6373	Serial Number:	325357	Serial Number:	207308
Calibration Date:	2−Dec−2008	Calibration Date:	5−May−2009	Length:	6180 M
Calibrator Serial Number:	30	Calibrator Serial Number:	1174		
Calibration Cable Type:	2−23ZT	Number of Calibration Points:	0	Conveyance Method:	Wireline
Wheel Correction 1:	−1			Rig Type:	Offshore Fixed
Wheel Correction 2:	−2				

Depth Control Parameters

Log Sequence:	Subsequent Log In the Well
Reference Log Name:	Solar Composite log
Reference Log Run Number:	
Reference Log Date:	23−Oct−2007

Depth Control Remarks

1. IDW used as primary depth control.
2. Z−chart used as secondary backup
3. Log Correlated on depth over Zone of interest
4. CMTD Calibration: A=8.95E−6, B=0.8647, C=−82.7
5.
6.

OTHER SERVICES1	OTHER SERVICES2
OS1: None	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
Log correlated to Solar Composite Log.	
Objective: RIH and position RST−A toolstring at 1610m MDKB, correlate ondepth using the	
Solar Compsite Log and allow the tool to stabilise for 15mins. With the well shut in	
complete one pass over the interval 1610m to 1420m MDKB to at 900ft/ hr.	
BHP =2171.55 psi BHT= 174.5 degf	

Tagged HUD @ 1608m MDKB

Schlumberger Crew:
R.Murray, A. McLellan

RUN 1		RUN 2	
SERVICE ORDER #:	AXWT−00098	SERVICE ORDER #:	
PROGRAM VERSION:	16C0−147	PROGRAM VERSION:	
FLUID LEVEL:	0 m	FLUID LEVEL:	

RUN 1 LOGGED INTERVAL	START	STOP	RUN 2 LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1

SURFACE EQUIPMENT

WITM−A
PSC_16MHZ

DOWNHOLE EQUIPMENT

AH−SWBS−B 789 — 13.30
AH−SWBS−B 789

AH−SWBS−B 788 — 12.61
AH−SWBS−B 788

AH−SWBS−B 787 — 11.93
AH−SWBS−B 787

AH−SWBS−B 786 — 11.24
AH−SWBS−B 786

AH−SWBS−B 785 — 10.55
AH−SWBS−B 785

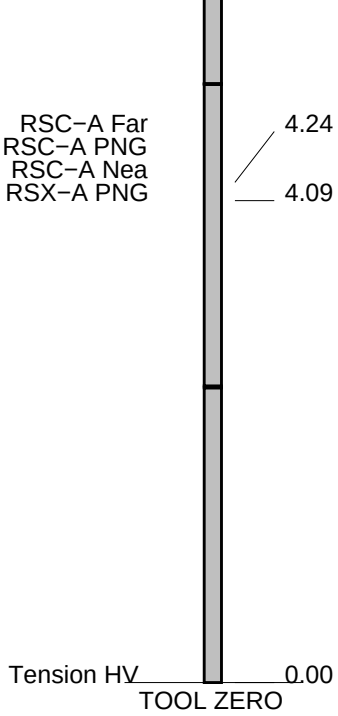
MH−SWHS−A 759 — 9.87
MH−SWHS−A 759
Detail MT
TelStatus
CTEM — 9.54

PSPT−B — 9.54
PSC−A 3918
PSPT−B 3918
PSTC 3918
PBMS−B 3918
CQG_F_Mano 3918
RTD_Thermometer 3918
GR 3918
CCL 3918
PBMS 3918

GR — 8.41
Well_Temp — 7.48
CQG Manom — 7.37
CCL — 7.25
PBMS PSTC — 7.02

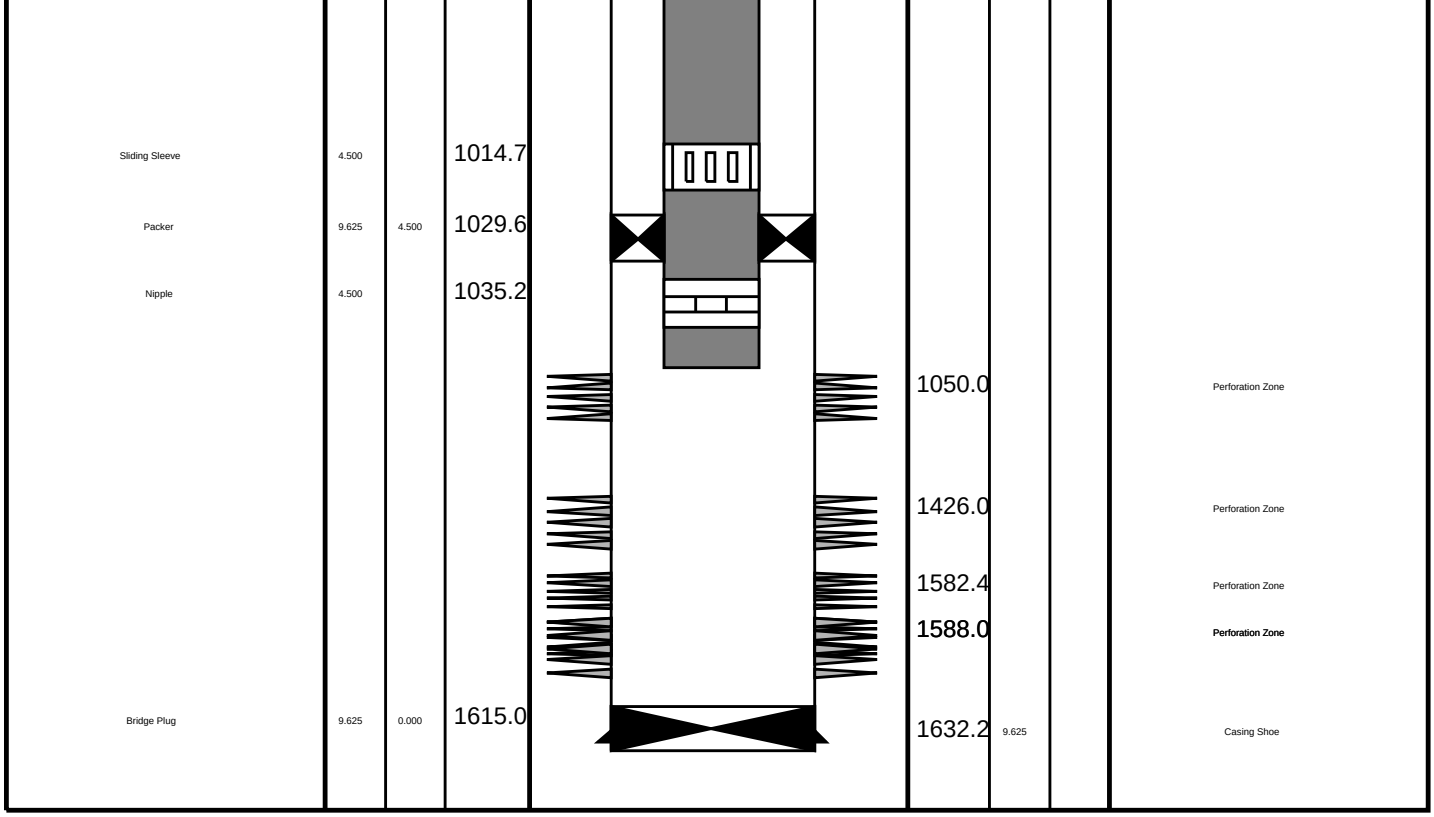
RST−C BLK−1 — 7.02
RSCH−A 471
RSC−C 488
RSS−A 437
RSXH−A 500
RSX−C 490

RUN 2



MAXIMUM STRING DIAMETER 1.72 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

Production String	(in) OD	(in) ID	(m) MD	Well Schematic	(m) MD	(in) OD	(in) ID	Casing String
Tubing	7.000		11.2		12.3	9.625		Casing String
					12.7	13.375		Casing String
SSSV Landing Nipple	7.000		404.1					
					609.3	13.375		Casing Shoe
Tubing	4.500		940.8					



Schlumberger

Job Event Summary

MAXIS Field Log

Schlumberger Job Event Summary

	Time	Elapsed Time	Depth (M)	File
Log Pass (up)	24-Jun-2009 3:21	000:13	1606.0 - 1408.5	RST_PSP_009LUP
Log Pass (up)	24-Jun-2009 3:46	000:42	1609.3 - 1409.1	RST_PSP_010LUP

Schlumberger

RST Sigma Pass

MAXIS Field Log

Company: Esso Australia Pty Ltd. **Well: A1**

Input DLIS Files

DEFAULT	RST_PSP_010LUP	FN:9	PRODUCER	24−Jun−2009 03:46	1609.3 M	1409.1 M

Output DLIS Files

DEFAULT	RST_PSP_012PUP	FN:11	PRODUCER	24−Jun−2009 04:32	1609.3 M	1403.6 M

OP System Version: 16C0−147

MCM

RST−C	SRPC−3777−Q4_2008_OP16	PSPT−B	SRPC−3777−Q4_2008_OP16

PIP SUMMARY

Time Mark Every 60 S

RST Sigma (SIGM) 60 (CU) 0

RST Weighted Inelastic Ratio (WINR_RST) 1.5 (−−−− −0.2

RST Porosity (TPHI) 0.6 (V/V) 0

RST Far Effective Capture CR (RSCF_RST) 45 (−−−− 0

RST Sigma Borehole Fluid (SIBF) 100 (CU) 0

RST Near Effective Capture CR (RSCN_RST) 45 (−−−− 0

Sigma Borehole Far Apparent (SBFA_FIL) 150 (CU) 0

Tension (TENS) 0 (LBF) 3000

RST Capture to Inelastic Ratio Far (CIRF_FIL) 5 (−−−− 0

RST Capture Ratio (TRAT_FIL) 1.5 (−−−− 0.5

Sigma Formation Far Apparent (SFFA_FIL) 60 (CU) 0

RST Capture to Inelastic Ratio Near (CIRN_FIL) 2.5 (−−−− 0

Minitron Arc Detection (MARC) 0 (−−−− 5

RST Sigma Difference (DSIG) −30 (CU) 30

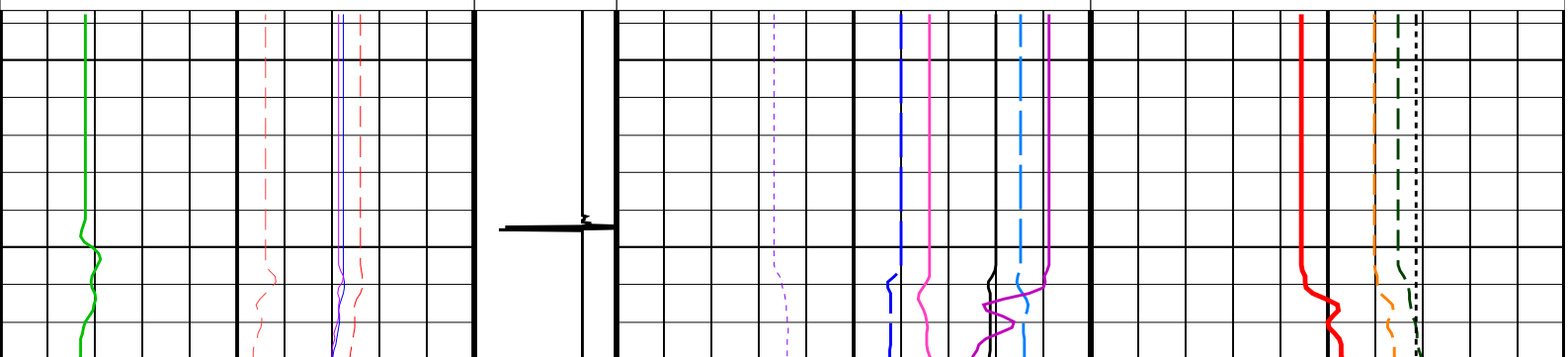
MCS Far Background (filtered) (FBAC) 0 (CPS) 5000

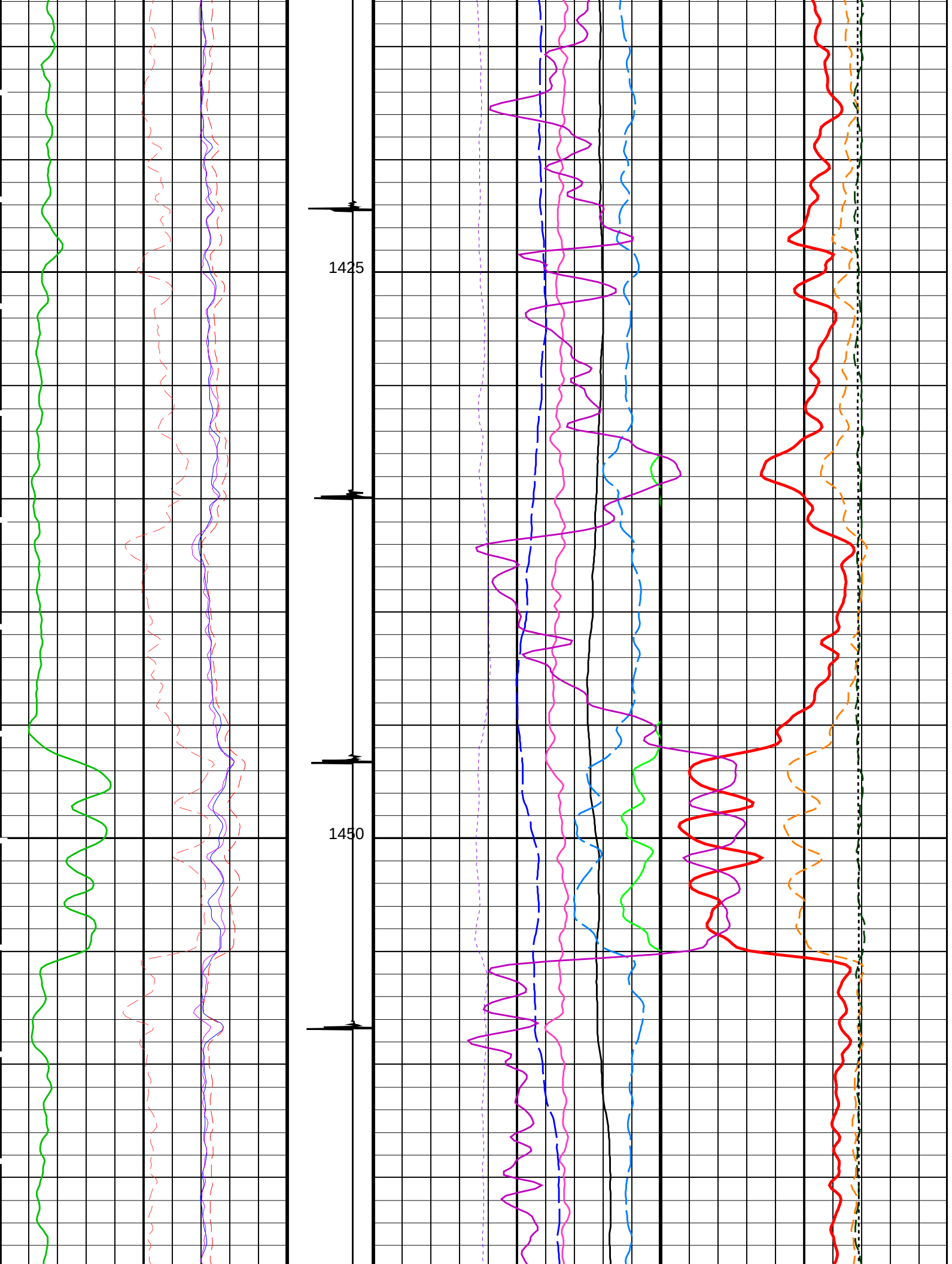
Gamma Ray (GR) 0 (GAPI) 150

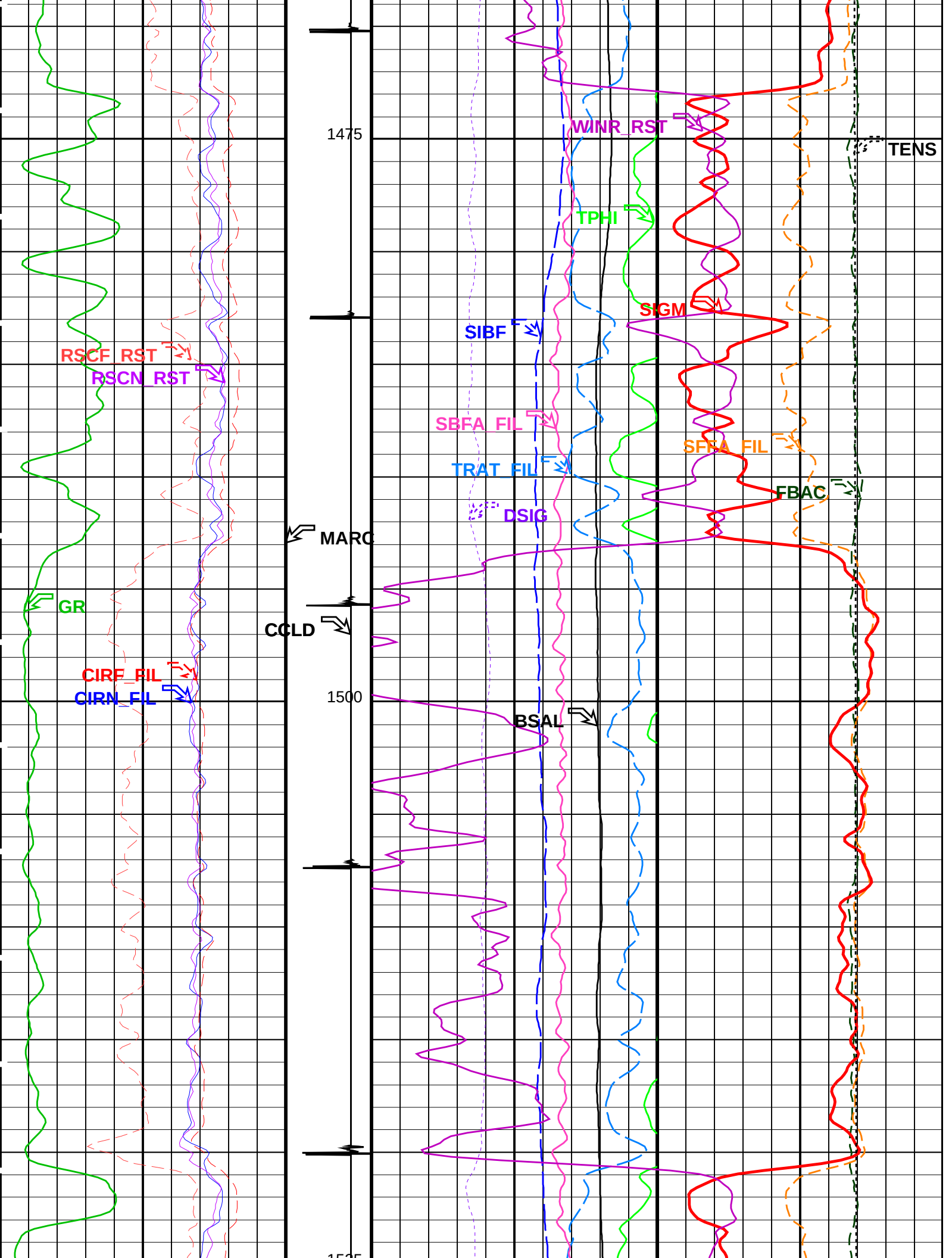
Discriminated CCL (CCLD) 3 (V) −1

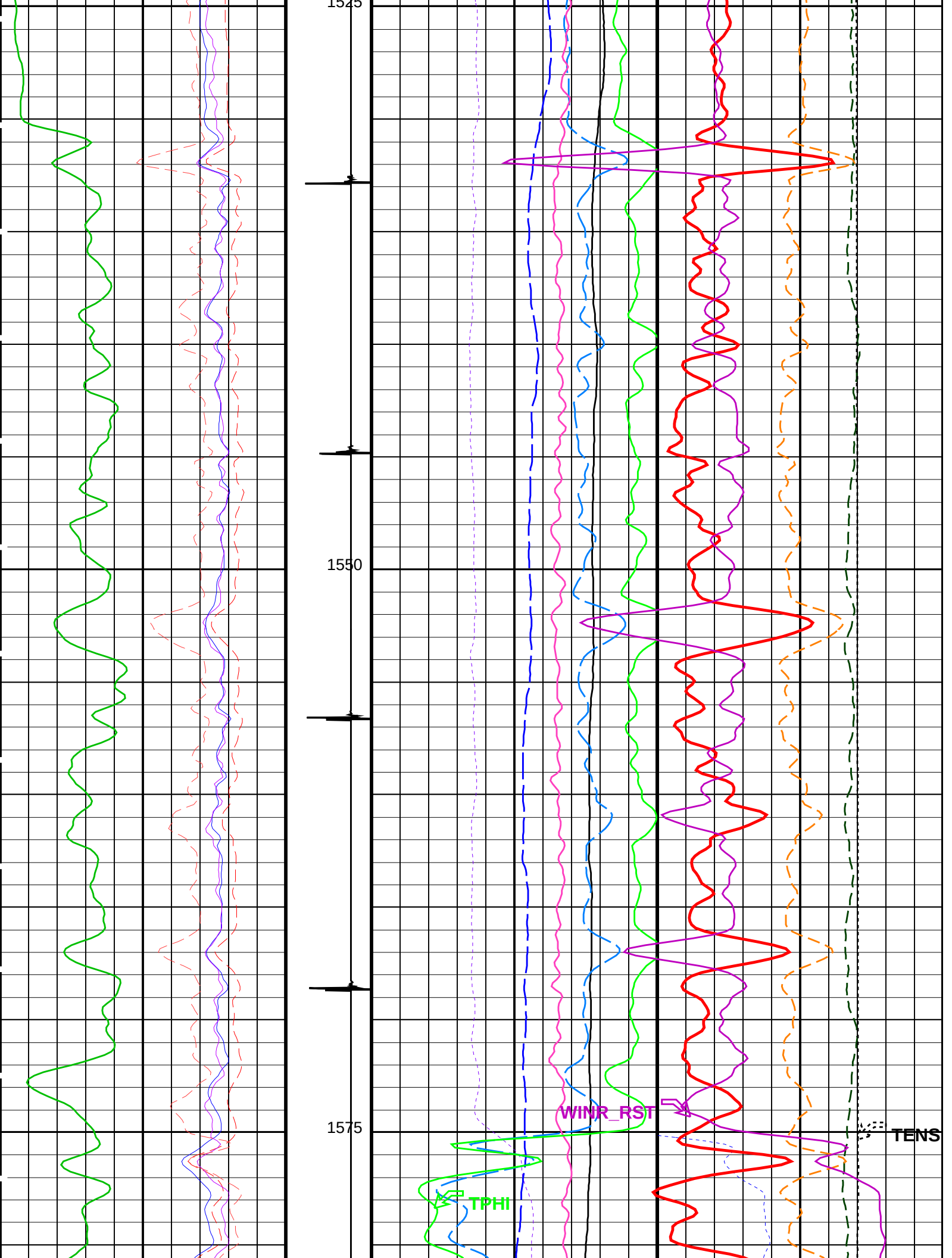
RST Borehole Salinity (BSAL) 450 (PPK) −50

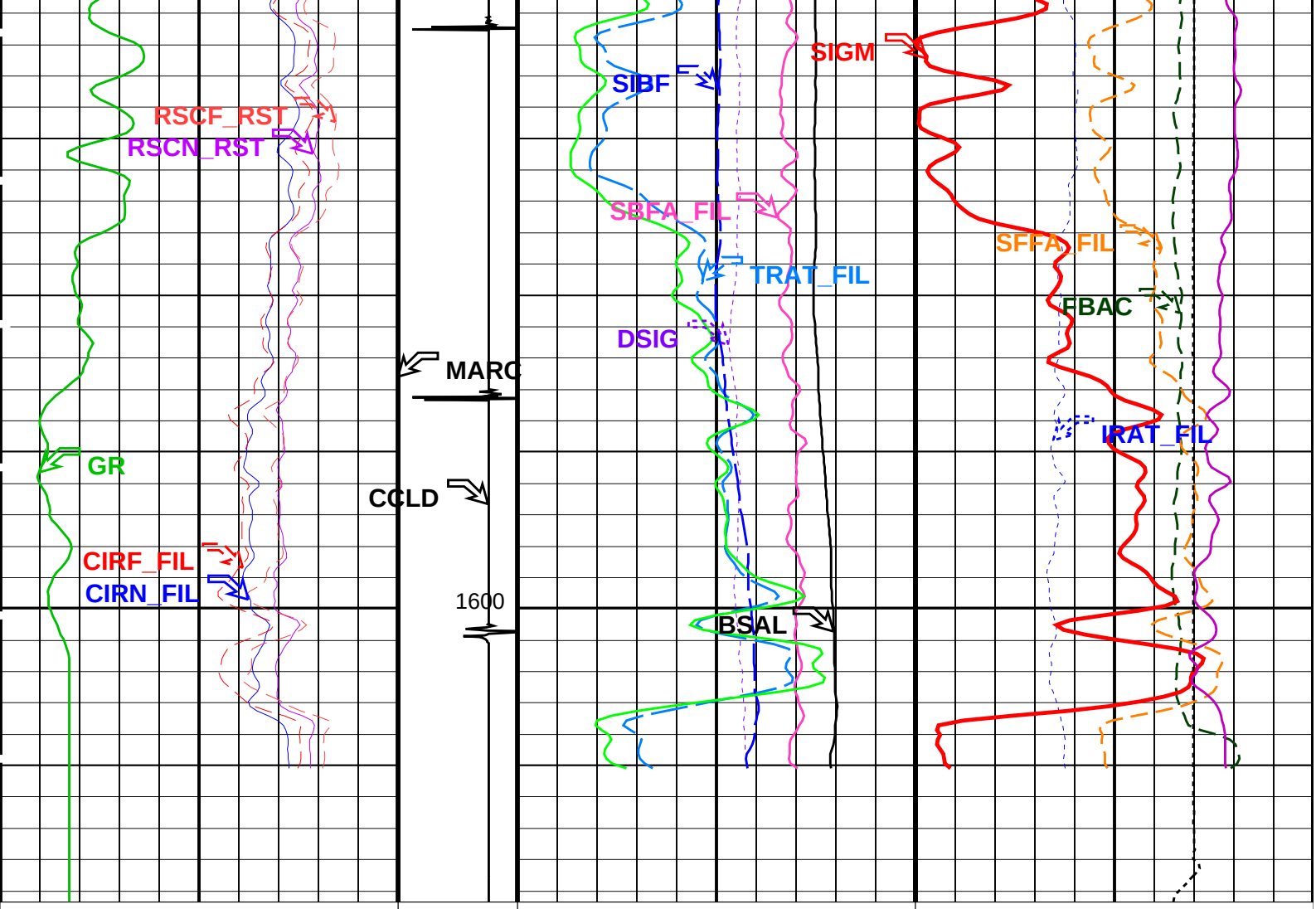
RST Inelastic Ratio (IRAT_FIL) 0.75 (−−−− 0




1425
1450


1475
1500
WINR_RST
TENS
TPHI
SIGM
SIBF
RSCF_RST
RSCN_RST
SBFA_FIL
SFFA_FIL
TRAT_FIL
FBAC
DSIG
MARC
GR
CCLD
CIRF_FIL
CIRN_FIL
BSAL


1545
1550
1575
WINR_RST
TENS
TPHI



Gamma Ray (GR)
0 (GAPI) 150

Discriminated CCL (CCLD)
3 (V) −1

RST Borehole Salinity (BSAL)
450 (PPK) −50

RST Inelastic Ratio (IRAT_FIL)
0.75 (---- 0

RST Capture to Inelastic Ratio Near (CIRN_FIL)
2.5 (---- 0

Minitron Arc Detection (MARC)
0 (---- 5

RST Sigma Difference (DSIG)
−30 (CU) 30

MCS Far Background (filtered) (FBAC)
0 (CPS) 5000

RST Capture to Inelastic Ratio Far (CIRF_FIL)
5 (---- 0

RST Capture Ratio (TRAT_FIL)
1.5 (---- 0.5

Sigma Formation Far Apparent (SFFA_FIL)
60 (CU) 0

RST Near Effective Capture CR (RSCN_RST)
45 (---- 0

Sigma Borehole Far Apparent (SBFA_FIL)
150 (CU) 0

Tension (TENS)
0 (LBF) 3000

RST Far Effective Capture CR (RSCF_RST)
45 (---- 0

RST Sigma Borehole Fluid (SIBF)
100 (CU) 0

RST Porosity (TPHI)
0.6 (V/V) 0

RST Weighted Inelastic Ratio (WINR_RST)
1.5 (---- −0.2

RST Sigma (SIGM)
60 (CU) 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	SANDSTONE	
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−B: Production Services Logging Platform		
BHS	Borehole Status	CASED	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
	System and Miscellaneous		
BS	Bit Size	12.250	IN
BSAL	Borehole Salinity	−50000.00	PPM
CSIZ	Current Casing Size	9.625	IN
CWEI	Casing Weight	36.00	LB/F
DO	Depth Offset for Playback	0.0	M
PP	Playback Processing	NORMAL	

Format: RST_SIG_ANSW **Vertical Scale: 1:200** **Graphics File Created: 24−Jun−2009 04:32**

OP System Version: 16C0−147

MCM

RST−C	**SRPC−3777−Q4_2008_OP16**	**PSPT−B**	**SRPC−3777−Q4_2008_OP16**

Input DLIS Files

DEFAULT	**RST_PSP_010LUP**	**FN:9**	**PRODUCER**	**24−Jun−2009 03:46**	**1609.3 M**	**1409.1 M**

Output DLIS Files

DEFAULT	**RST_PSP_012PUP**	**FN:11**	**PRODUCER**	**24−Jun−2009 04:32**

Schlumberger

GR Background Pass

MAXIS Field Log

Company: Esso Australia Pty Ltd. **Well: A1**

Input DLIS Files

DEFAULT	**RST_PSP_009LUP**	**FN:8**	**PRODUCER**	**24−Jun−2009 03:21**	**1606.0 M**	**1408.5 M**

Output DLIS Files

DEFAULT	**RST_PSP_014PUP**	**FN:13**	**PRODUCER**	**24−Jun−2009 04:38**	**1609.5 M**	**1406.5 M**

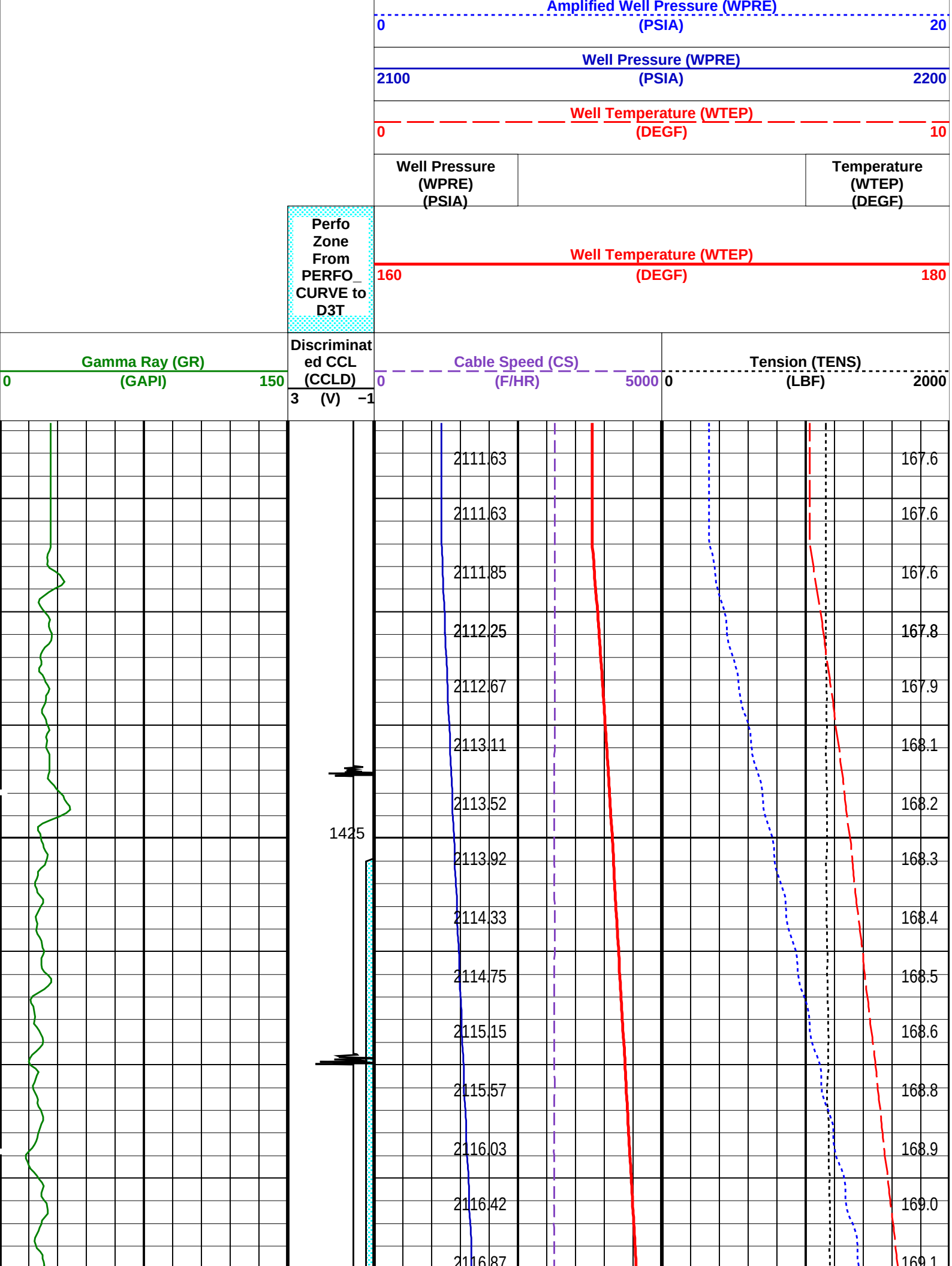
OP System Version: 16C0−147

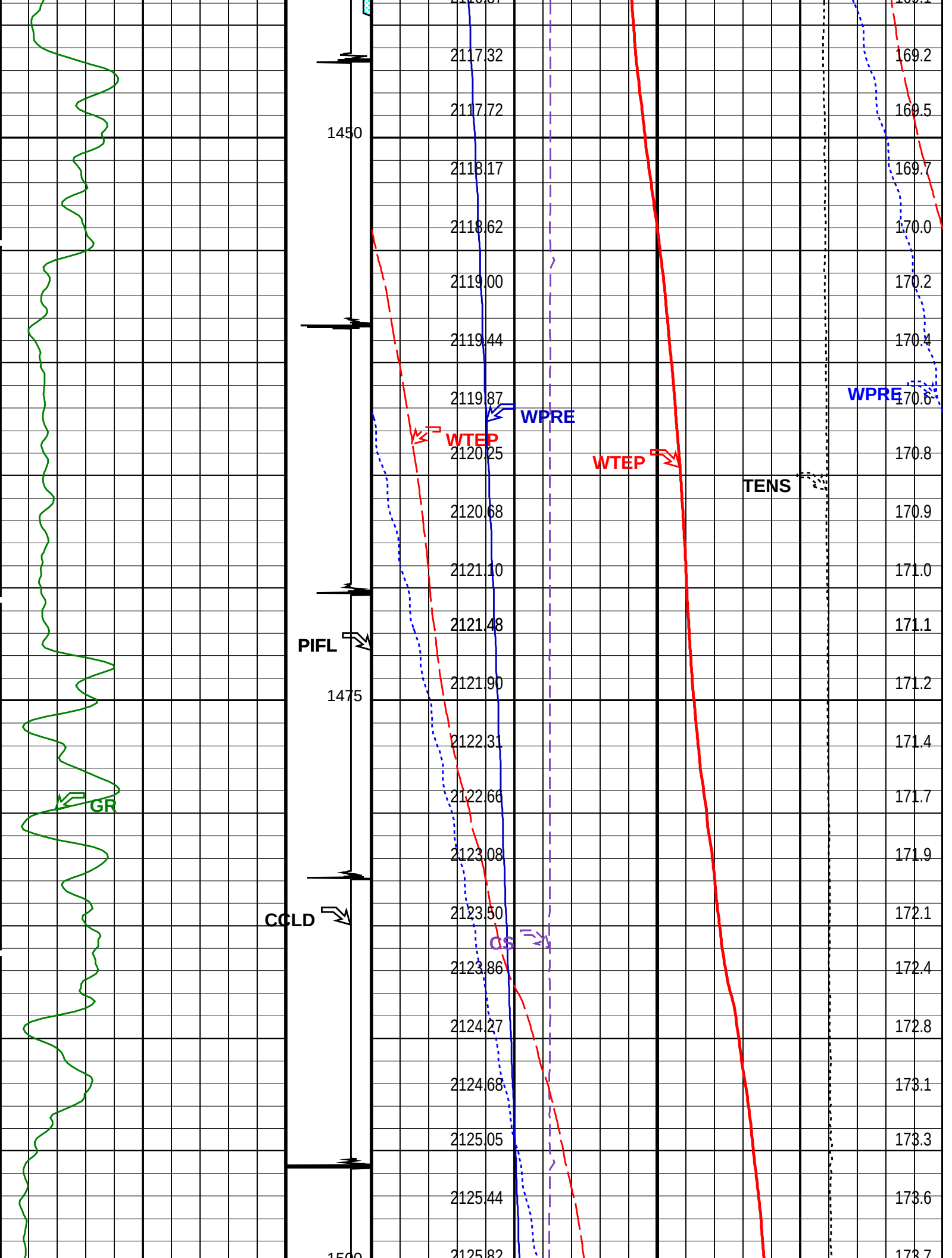
MCM

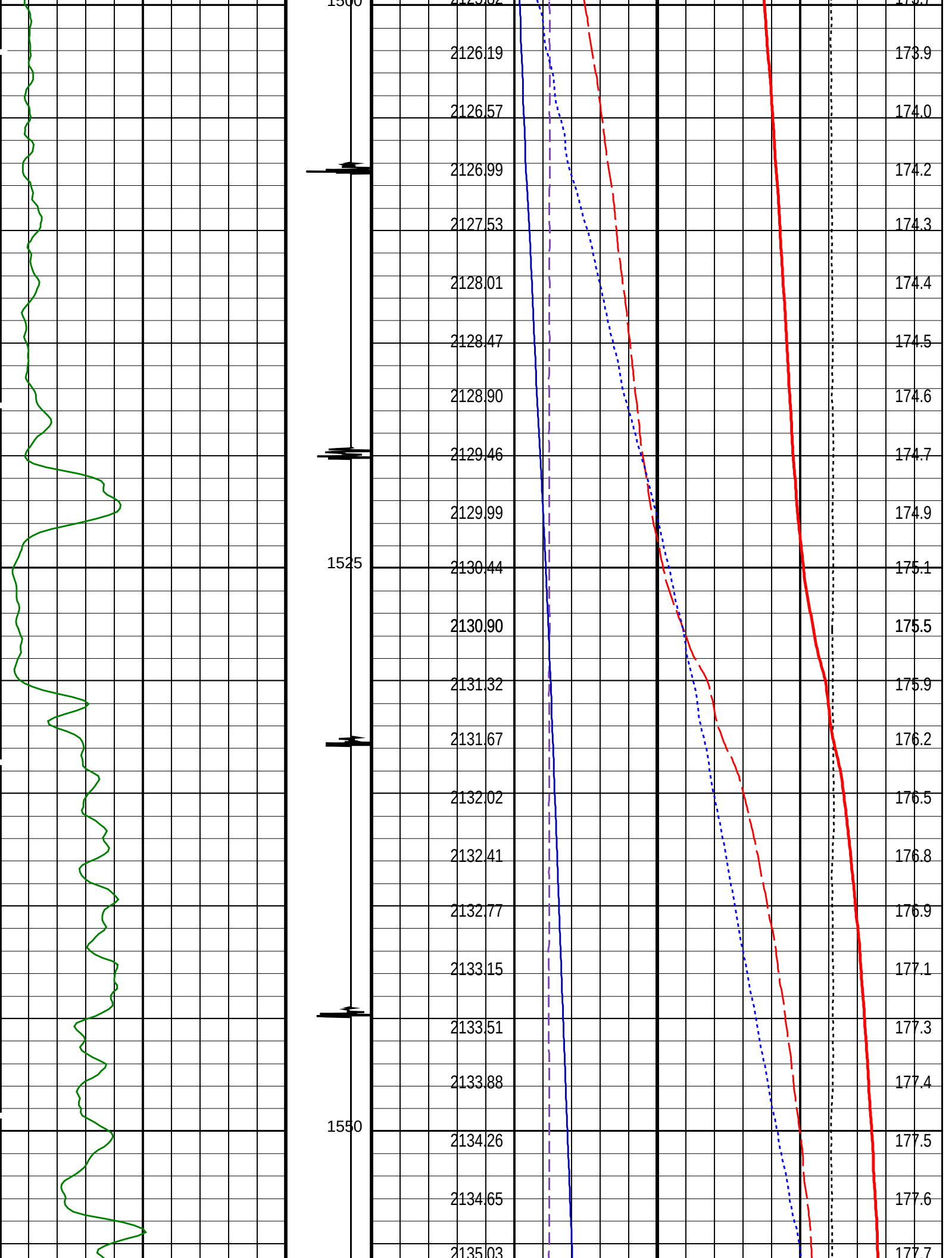
RST−C	**SRPC−3777−Q4_2008_OP16**	**PSPT−B**	**SRPC−3777−Q4_2008_OP16**

PIP SUMMARY

Time Mark Every 60 S


Amplified Well Pressure (WPRE)
0
(PSIA)
20
Well Pressure (WPRE)
2100
(PSIA)
2200
Well Temperature (WTEP)
0
(DEGF)
10
Well Pressure (WPRE) (PSIA)
Temperature (WTEP) (DEGF)
Perfo Zone From PERFO_ CURVE to D3T
Well Temperature (WTEP)
160
(DEGF)
180
Gamma Ray (GR)
0
(GAPI)
150
Discriminated CCL (CCLD)
3
(V)
−1
Cable Speed (CS)
0
(F/HR)
5000
Tension (TENS)
0
(LBF)
2000
2111.63
2111.63
2111.85
2112.25
2112.67
2113.11
2113.52
2113.92
2114.33
2114.75
2115.15
2115.57
2116.03
2116.42
2116.87
167.6
167.6
167.6
167.8
167.9
168.1
168.2
168.3
168.4
168.5
168.6
168.8
168.9
169.0
169.1
1425


2117.32
2117.72
1450
2118.17
2118.62
2119.00
2119.44
2119.87
2120.25
2120.68
2121.10
2121.48
2121.90
1475
2122.31
2122.66
2123.08
2123.50
2123.86
2124.27
2124.68
2125.05
2125.44
2125.82
169.2
169.5
169.7
170.0
170.2
170.4
170.6
170.8
170.9
171.0
171.1
171.2
171.4
171.7
171.9
172.1
172.4
172.8
173.1
173.3
173.6
173.7
WPRE
WTEP
WTEP
WPRE
TENS
PIFL
GR
CCLD
CS


1500
2126.19
173.9
2126.57
174.0
2126.99
174.2
2127.53
174.3
2128.01
174.4
2128.47
174.5
2128.90
174.6
2129.46
174.7
2129.99
174.9
1525
2130.44
175.1
2130.90
175.5
2131.32
175.9
2131.67
176.2
2132.02
176.5
2132.41
176.8
2132.77
176.9
2133.15
177.1
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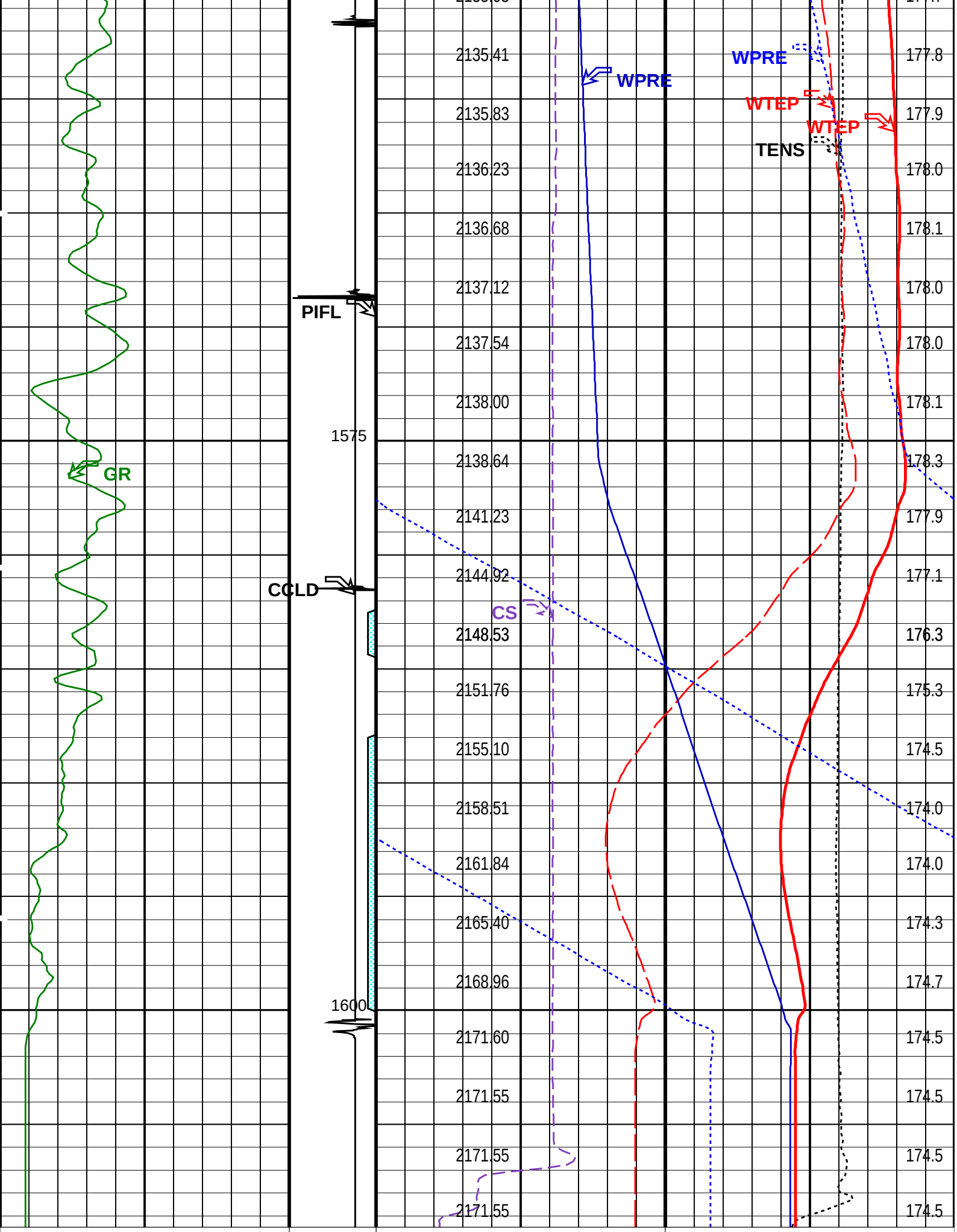
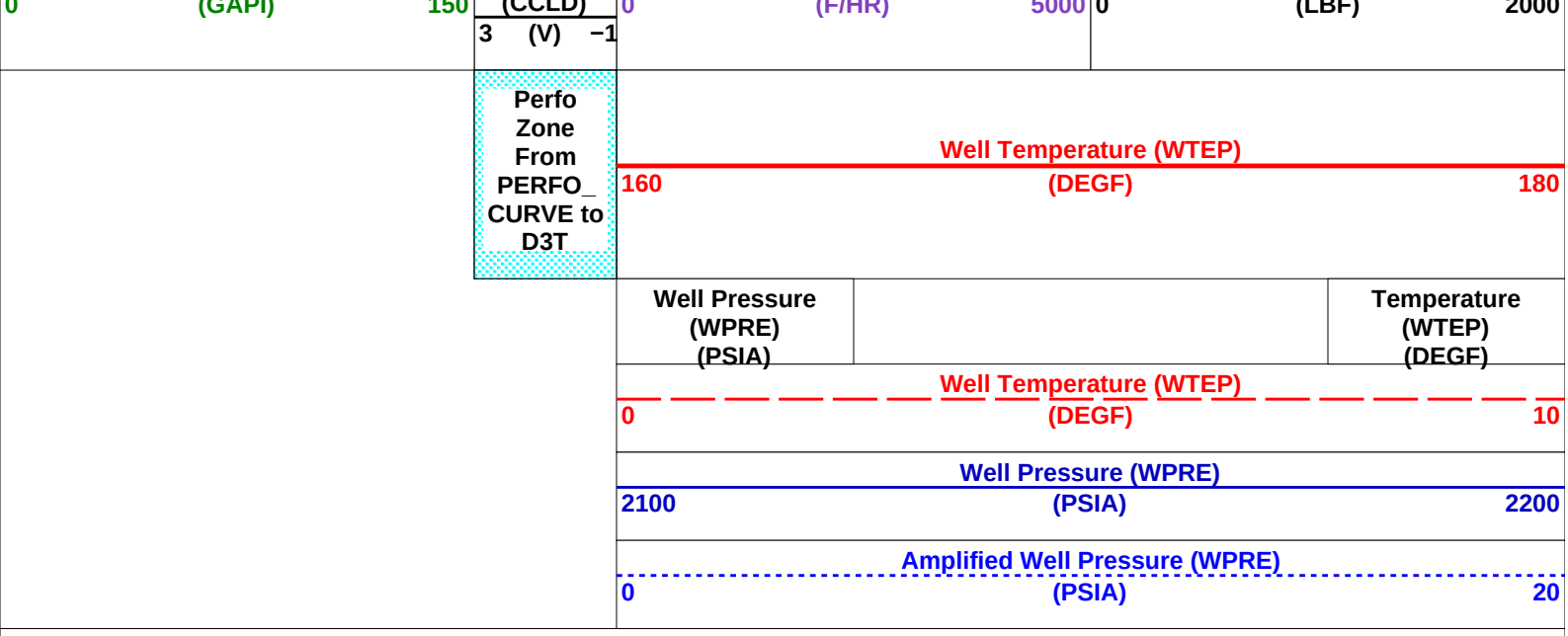
2133.88
177.4
1550
2134.26
177.5
2134.65
177.6
2135.03
177.7


2135.41
2135.83
2136.23
2136.68
2137.12
2137.54
2138.00
1575
2138.64
2141.23
2144.92
2148.53
2151.76
2155.10
2158.51
2161.84
2165.40
2168.96
1600
2171.60
2171.55
2171.55
2171.55
177.8
177.9
178.0
178.1
178.0
178.0
178.1
178.3
177.9
177.1
176.3
175.3
174.5
174.0
174.0
174.3
174.7
174.5
174.5
174.5
174.5
WPRE
WPRE
WTEP
WTEP
TENS
PIFL
GR
CCLD
CS
Gamma Ray (GR)
Discriminated CCL (CCLD)
Cable Speed (CS)
Tension (TENS)



PIP SUMMARY

Time Mark Every 60 S

Format: PSP_1_1 Vertical Scale: 1:200 Graphics File Created: 24−Jun−2009 04:38

OP System Version: 16C0−147

MCM

RST−C	SRPC−3777−Q4_2008_OP16	PSPT−B	SRPC−3777−Q4_2008_OP16

Parameters

DLIS Name	Description	Value
	System and Miscellaneous	
DO	Depth Offset for Playback	3.5 M
PP	Playback Processing	NORMAL

Input DLIS Files

DEFAULT	RST_PSP_009LUP	FN:8	PRODUCER	24−Jun−2009 03:21	1606.0 M	1408.5 M

Output DLIS Files

DEFAULT	RST_PSP_014PUP	FN:13	PRODUCER	24−Jun−2009 04:38

Company: **Esso Australia Pty Ltd.**

Schlumberger

Well: **A1**
Field: **Marlin**
Rig: **Crane / Prod 4**
Country: **Australia**

RST Sigma Log
Static Pass