DOGGR
Received–
OCT 09 2013

Schlumberger

Company: **OXY US LA Basin**

Well: **DOM-002**
Field: **Dominguez**
County: **Los Angeles** State: **California**

ARRAY INDUCTION - HRLA LATEROLOG
DENSITY - NEUTRON - GAMMA RAY
2 IN/100 FT LINEAR

County: Los Angeles
Field: Dominguez
Location: Surface Lambert Coordinates:
Well: DOM-002
Company: OXY US LA Basin

LOCATION

Surface Lambert Coordinates:		Elev.: K.B.	
N: 4 062 757.48		G.L.	168.97 ft
E: 4 214 076.81		D.F.	194.09 ft
Permanent Datum:	Mat	Elev.:	168.97 ft
Log Measured From:	Derrick Floor	25.12 ft	above Perm. Datum
Drilling Measured From:	Derrick Floor		

API Serial No.	Section	Township	Range
037-27148	33	3S	13W

	Run 1	Run 2
Logging Date	5-Mar-2011	4-Apr-2011
Run Number	One	Two
Depth Driller	5710 ft	10000 ft
Schlumberger Depth	5713 ft	9950 ft
Bottom Log Interval	5710 ft	9950 ft
Top Log Interval	2358 ft	3808 ft
Casing Driller Size @ Depth	13.375 in @ 2364 ft	13.375 in @ 2364 ft
Casing Schlumberger	2355 ft	2355 ft
Bit Size	12.250 in	12.250 in
Type Fluid In Hole	Gelite/KCL	Gelite/KCL
MUD Density / Viscosity	10.3 lbm/gal / 56 s	11.5 lbm/gal / 55 s
MUD Fluid Loss / PH	3.5 cm3 / 7.1	3.6 cm3 / 7.2
MUD Source Of Sample	Mudpit	Mudpit
RM @ Measured Temperature	0.211 ohm.m @ 69 degF	0.162 ohm.m @ 60 degF
RMF @ Measured Temperature	0.179 ohm.m @ 58 degF	0.118 ohm.m @ 56 degF
RMC @ Measured Temperature	0.222 ohm.m @ 58 degF	0.333 ohm.m @ 53 degF
Source RMF / RMC	Meas / Meas	Meas / Meas
RM @ MRT / RMF @ MRT	0.102 @ 150 / 0.074 @ 150	0.047 @ 225 / 0.032 @ 225
Maximum Recorded Temperatures	150 degF	225 degF
Circulation Stopped / Time	4-Mar-2011 / 11:30	3-Apr-2011 / 23:30
Logger On Bottom / Time	5-Mar-2011 / 3:57	4-Apr-2011 / 12:44
Unit Number / Location	2220 / Long Beach	3181 / Long Beach
Recorded By	Mark MacGlashan	Mark MacGlashan
Witnessed By	Chris Smart	C. Smart /S. Prior /M. Gaudet

	Run 1	Run 2
Logging Date		
Run Number		
Depth Driller		
Schlumberger Depth		
Bottom Log Interval		
Top Log Interval		
Casing Driller Size @ Depth	@	
Casing Schlumberger		
Bit Size		
Type Fluid In Hole		
MUD Density / Viscosity		
MUD Fluid Loss / PH		
MUD Source Of Sample		
RM @ Measured Temperature	@	
RMF @ Measured Temperature	@	
RMC @ Measured Temperature	@	
Source RMF / RMC		
RM @ MRT / RMF @ MRT	@	@
Maximum Recorded Temperatures		
Circulation Stopped / Time		
Logger On Bottom / Time		
Unit Number / Location		
Recorded By		
Witnessed By		

	Run 3	Run 4
	®	®
	® ® ®	
		®

DISCLAIMER

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OTHER SERVICES1	OTHER SERVICES2
OS1: MDT Samples	OS1: PEX-AIT -DENSITY
OS2:	OS2: NEUTRON
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
SP response and SP scale reversed due to saline mud	Logging tools run combined and conveyed on drillpipe
Three mercury thermometers run , all read 150 degf	Logging recorded in 3 latch segments
16:07 hours since last cirulation	
DSepths correlated to BHI MPR log recorded during drilling	Latches 1 and 2 spliced at 7800 Ft
	latches 2 and 3 spliced at 5950 ft.
	Did not tag TD with logging tools or log into casing due to limitations
	of drillpipe conveyed conveyed loggng operation
	Due to mud ciculation done during drillpipe conveyed logging,
	maximum recorded temperatures are affected and will be less than
	expected static formation temperatures
	Enlarged borehole affects quality of log data, especially below 8050 feet depth
	Difficult logging conditions with drillpipe sometime becoming stuck and
	requiring working to free- density caliper arm appears to have been
	damaged during logging- caliper has been recalibrated but acuracy is affected
	and four arm FMI caliper should be used for hole and cement volume calculation
	Log depths correlated to run one Schlumberger PEX-AIT log recorded
	March 7th 2011

RUN 1		RUN 2	
SERVICE ORDER #:	B1PN-00231	SERVICE ORDER #:	B1PN-00243
PROGRAM VERSION:	19C0-187	PROGRAM VERSION:	19C0-187
FLUID LEVEL:	0 ft	FLUID LEVEL:	0 ft

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1

SURFACE EQUIPMENT

GSR-U/Y
NCT-B
CNB-AB
NCS-VB
WITM (EDTS)-A

DOWNHOLE EQUIPMENT

LEH-QT 49.1
LEH-QT 1029

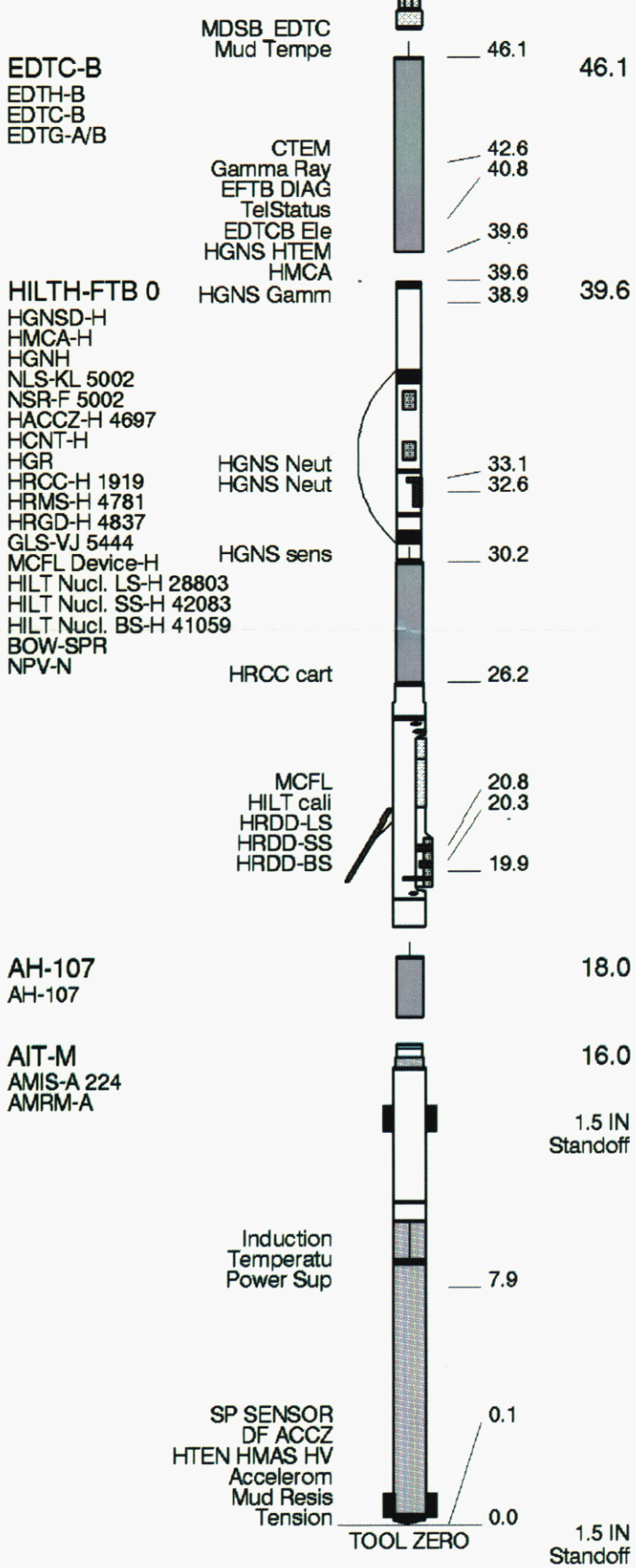
RUN 2

SURFACE EQUIPMENT

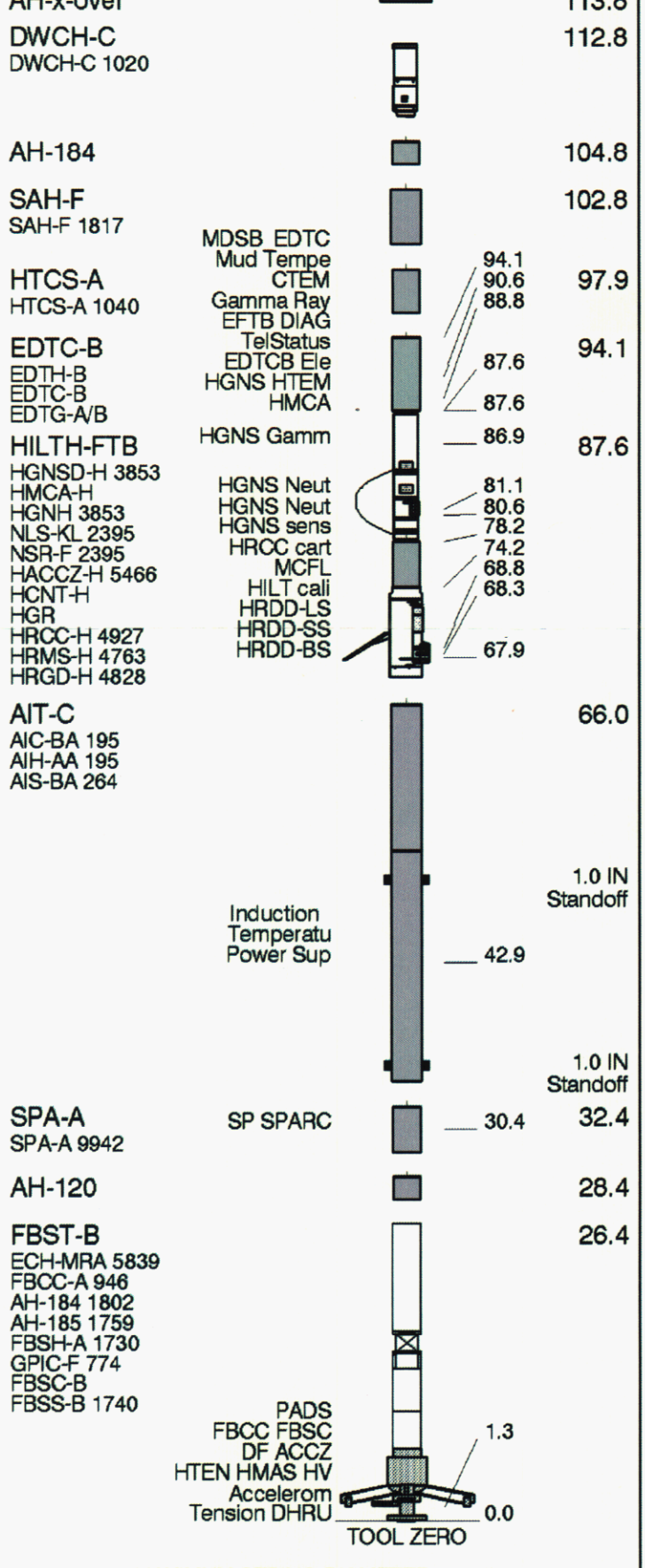
WITM (EDTS)-A
NCS-VB
GSR-U/Y 469
NCT-B
CNB-AB

DOWNHOLE EQUIPMENT

AH-cses 115.8
AH x over 113.8



MAXIMUM STRING DIAMETER 6.88 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET



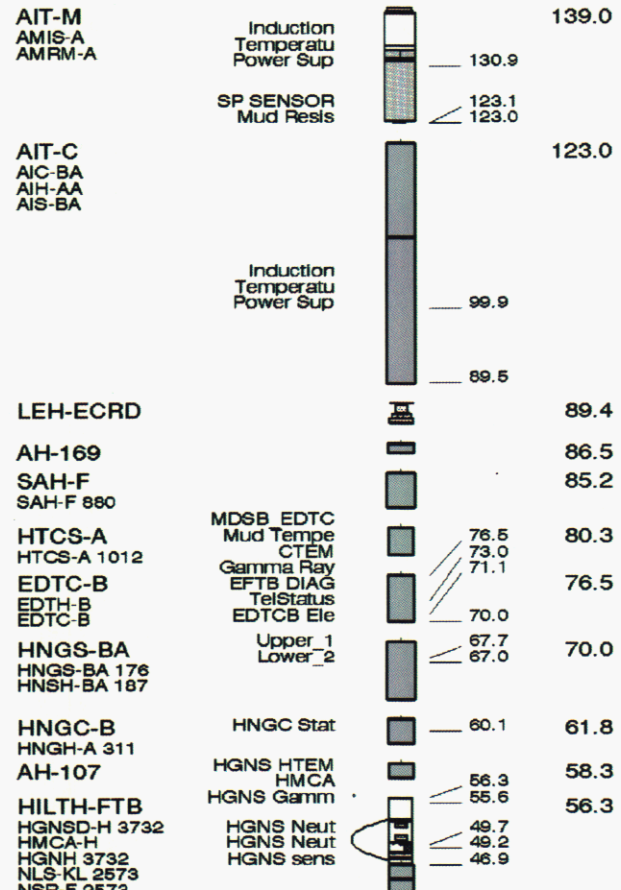
MAXIMUM STRING DIAMETER 6.50 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

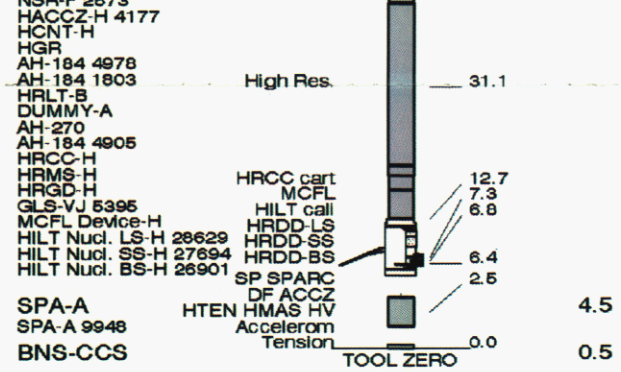
SURFACE EQUIPMENT

WITM (EDTS)-A
GSR-U/Y
NCT-B
CNB-AB

NCS-VB
GSR-U

DOWNHOLE EQUIPMENT





MAXIMUM STRING DIAMETER 4.63 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

Input DLIS Files

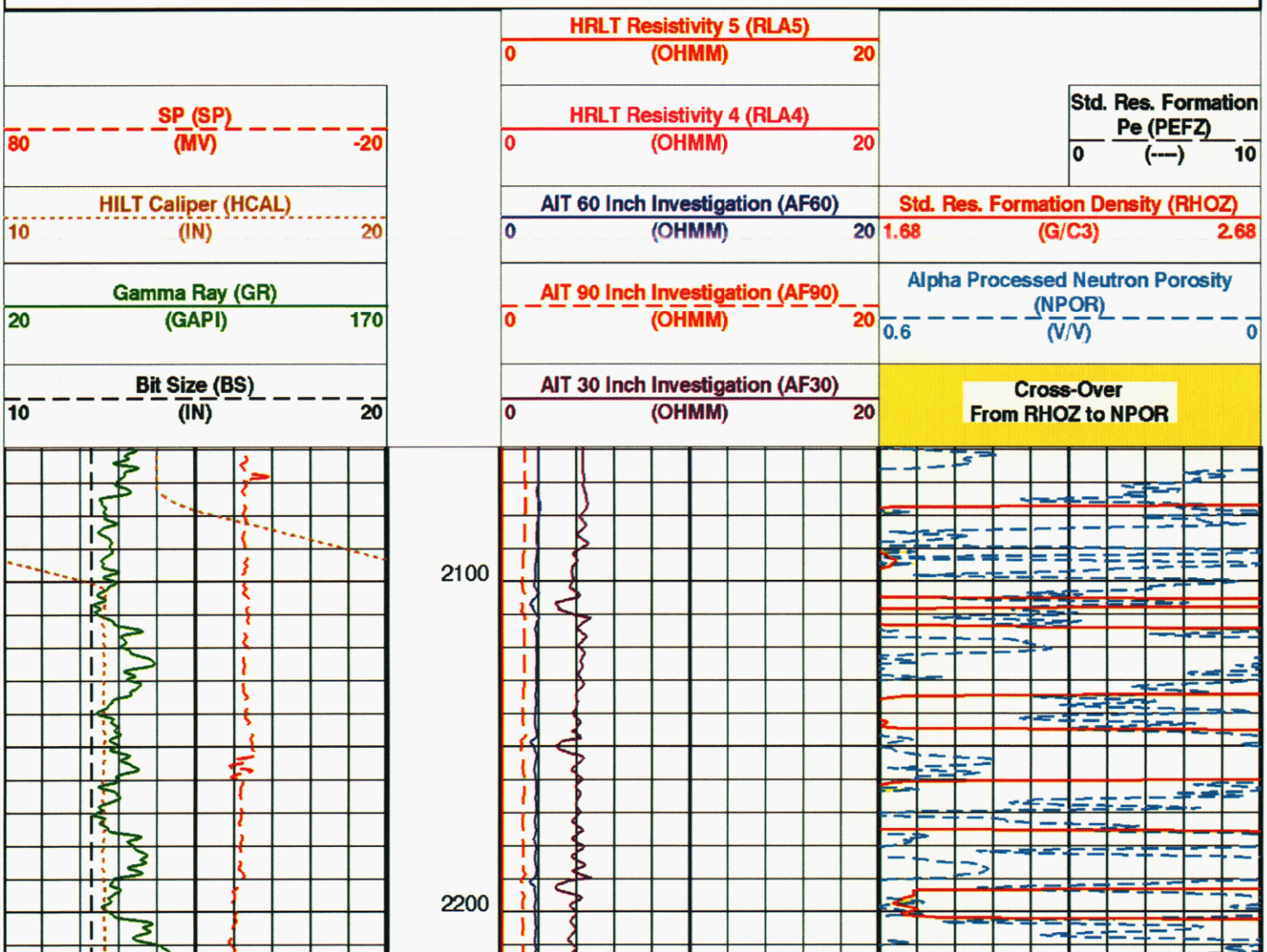
DEFAULT	Splice_TLD_MCFL_CNL_008CUC	FN:1	PRODUCER	28-May-2011 12:27	13212.5 FT	2059.0 FT

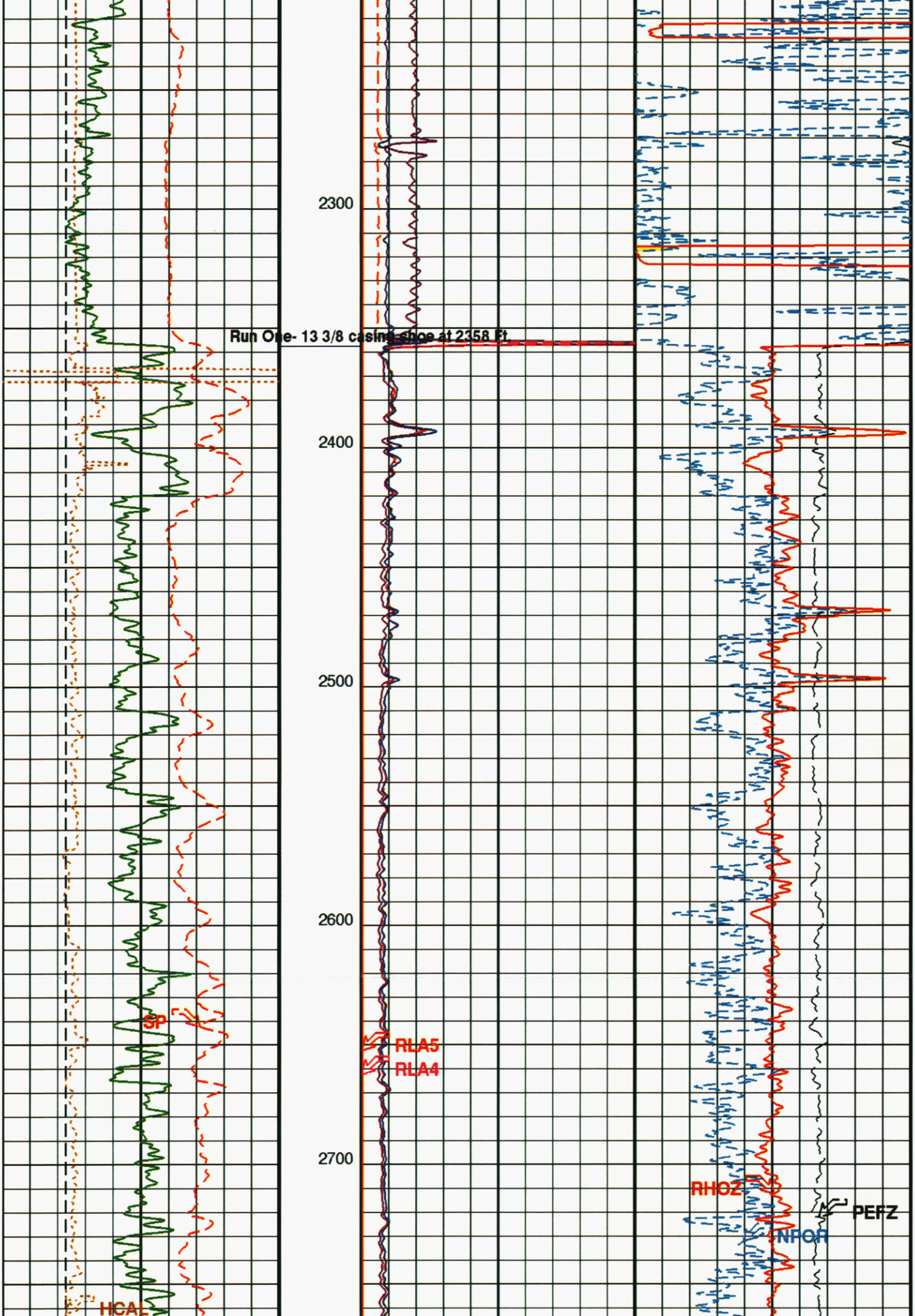
Output DLIS Files

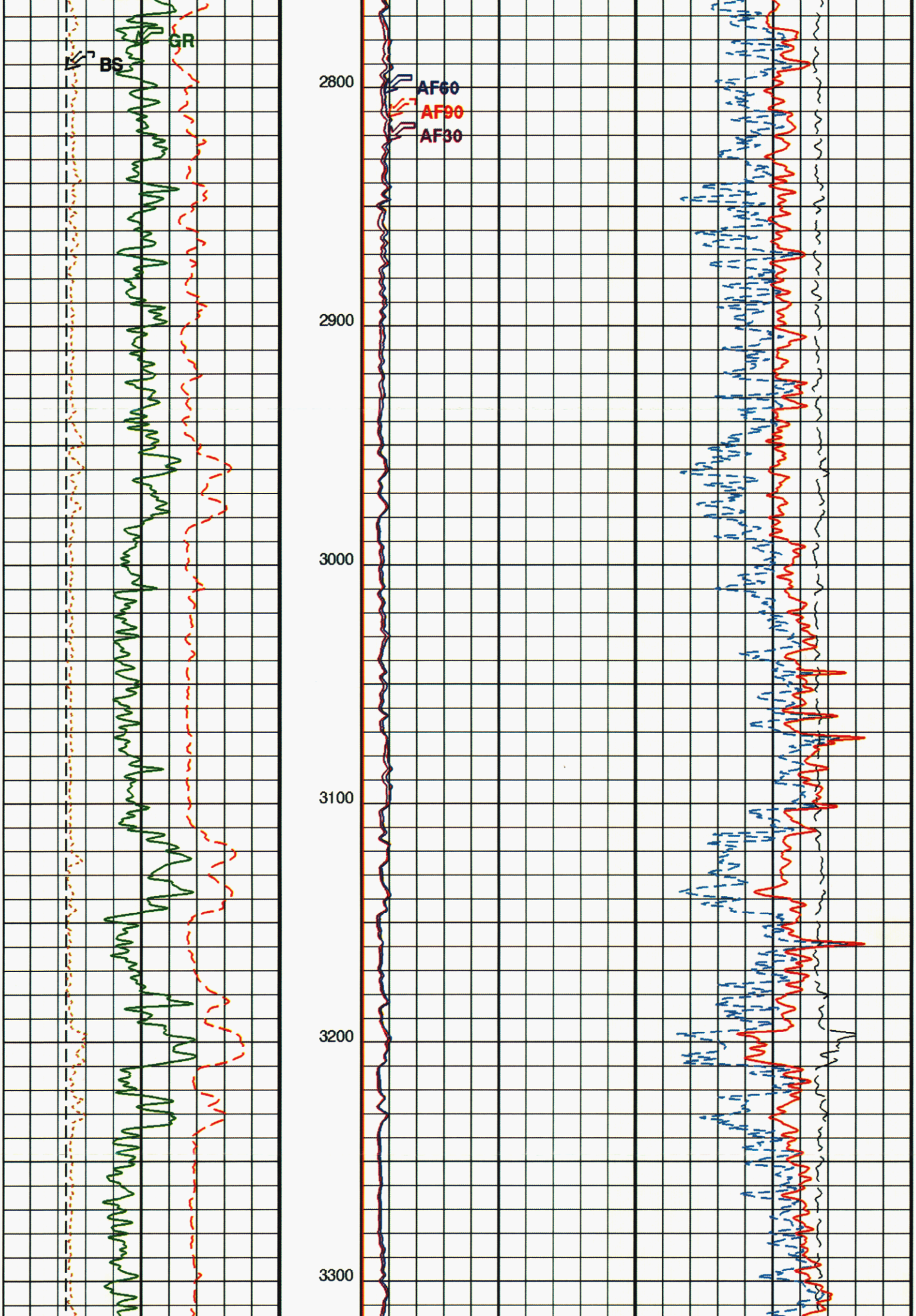
DEFAULT	TLD_MCFL_CNL_NGS_036PUP	FN:28	PRODUCER	09-Jun-2011 03:57	13212.5 FT	2059.2 FT
CUST_DLIS	TLD_MCFL_CNL_NGS_036PUC	FN:29	CUSTOMER	09-Jun-2011 03:57	13212.5 FT	2059.1 FT

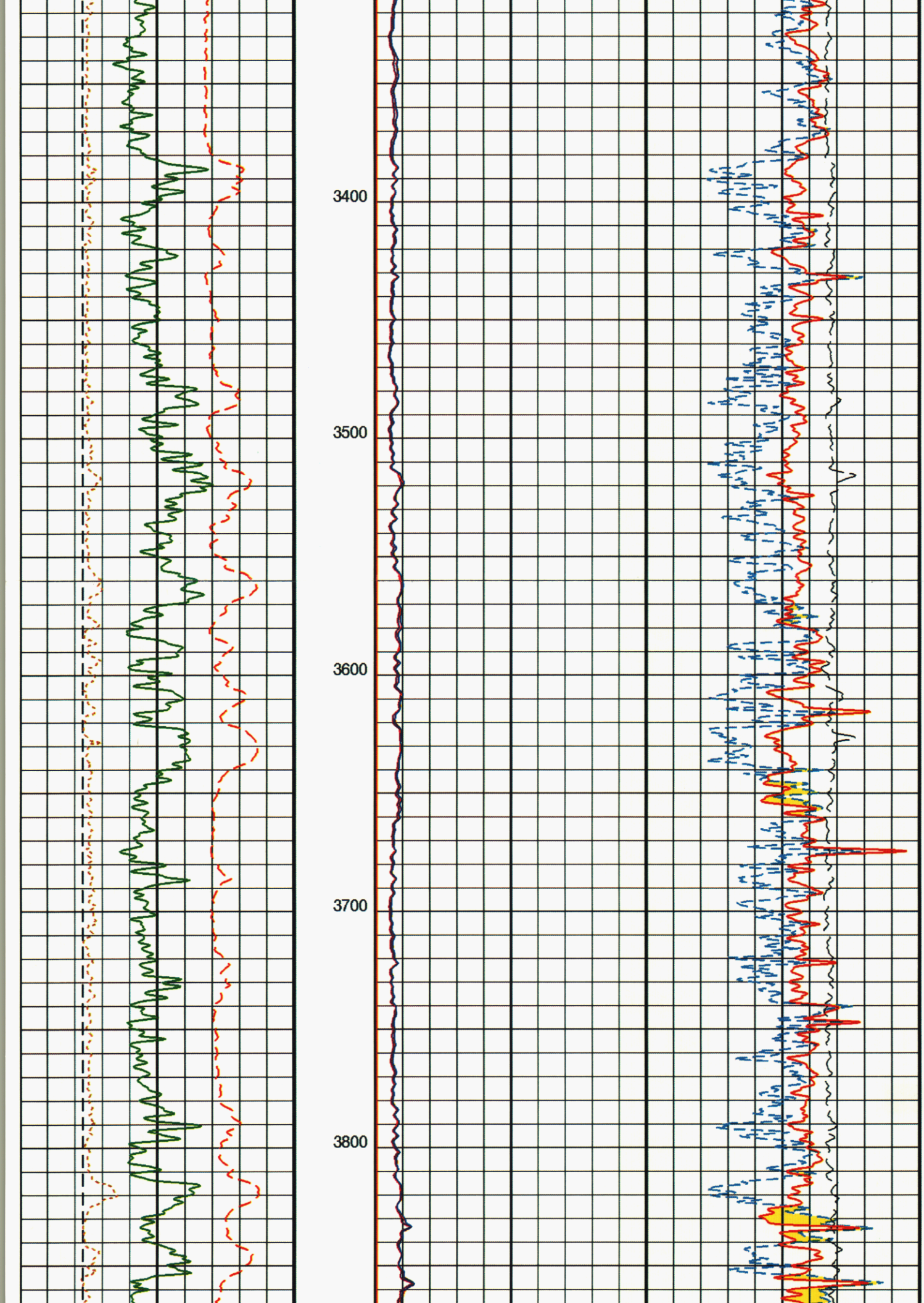
OP System Version: 18C0-147

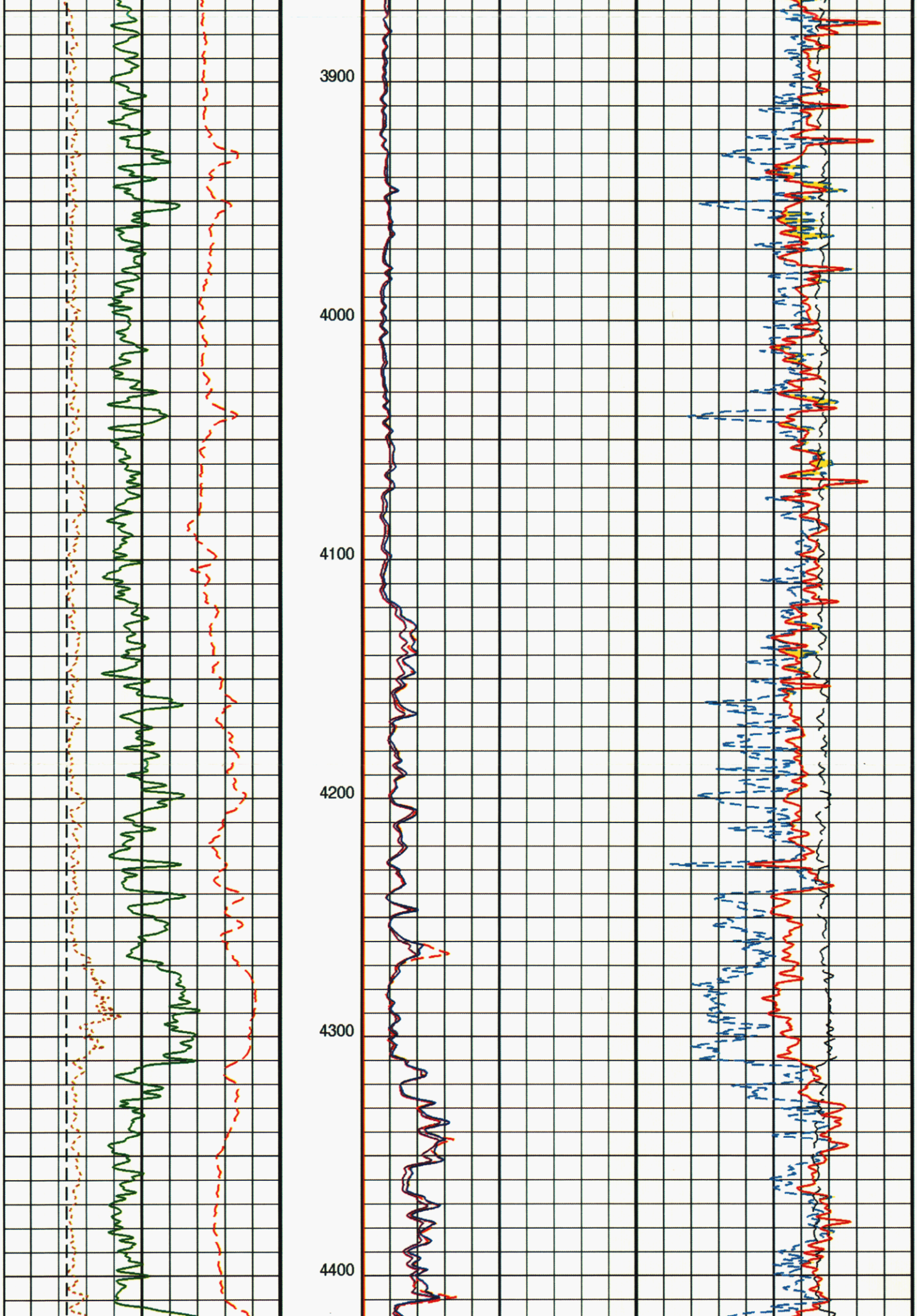
SPA-A	18C0-147	HILTH-FTB	18C0-147
HNGC-B	18C0-147	HNGS-BA	18C0-147
EDTC-B	18C0-147	AIT-C	18C0-147
AIT-M	18C0-147		

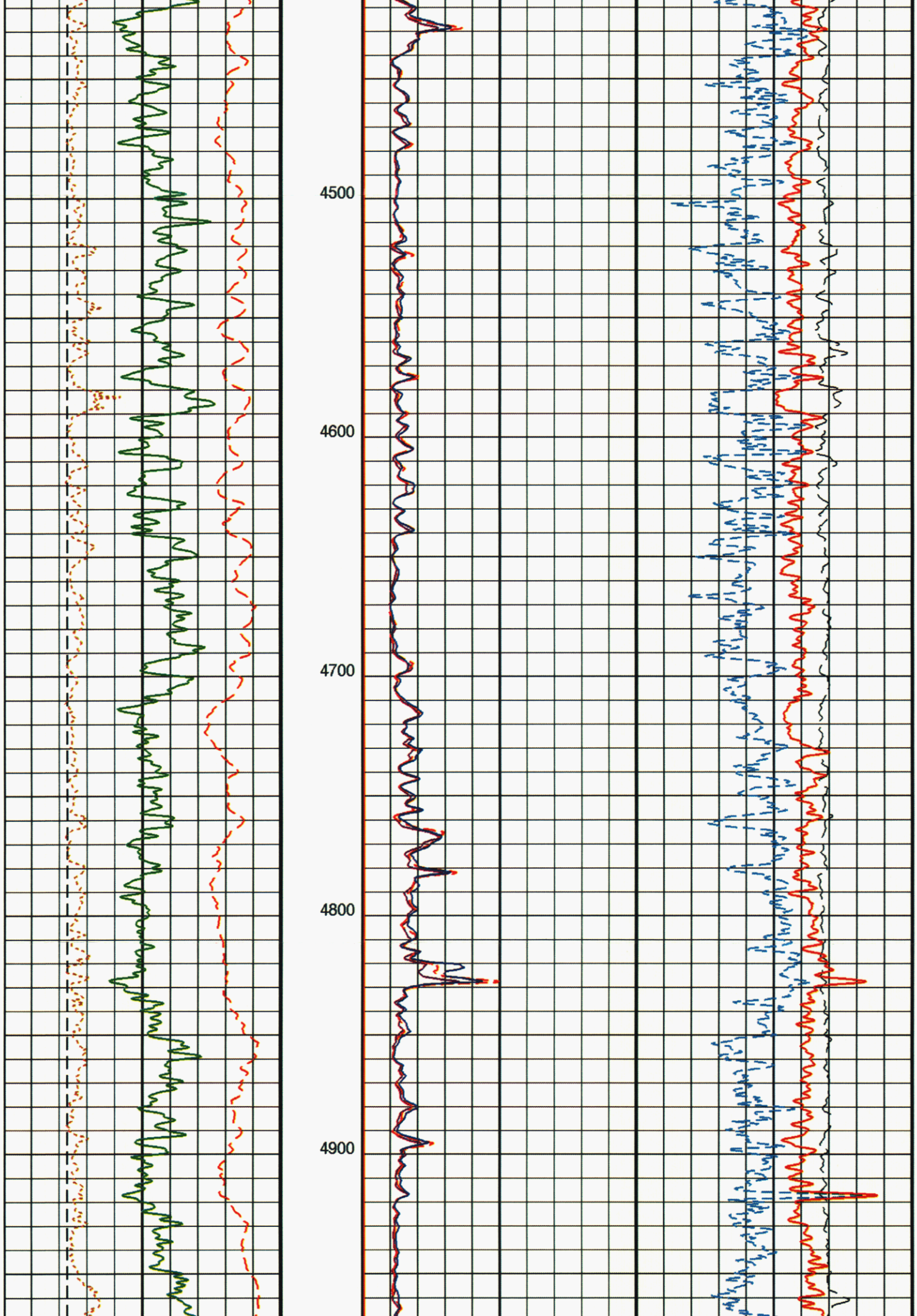


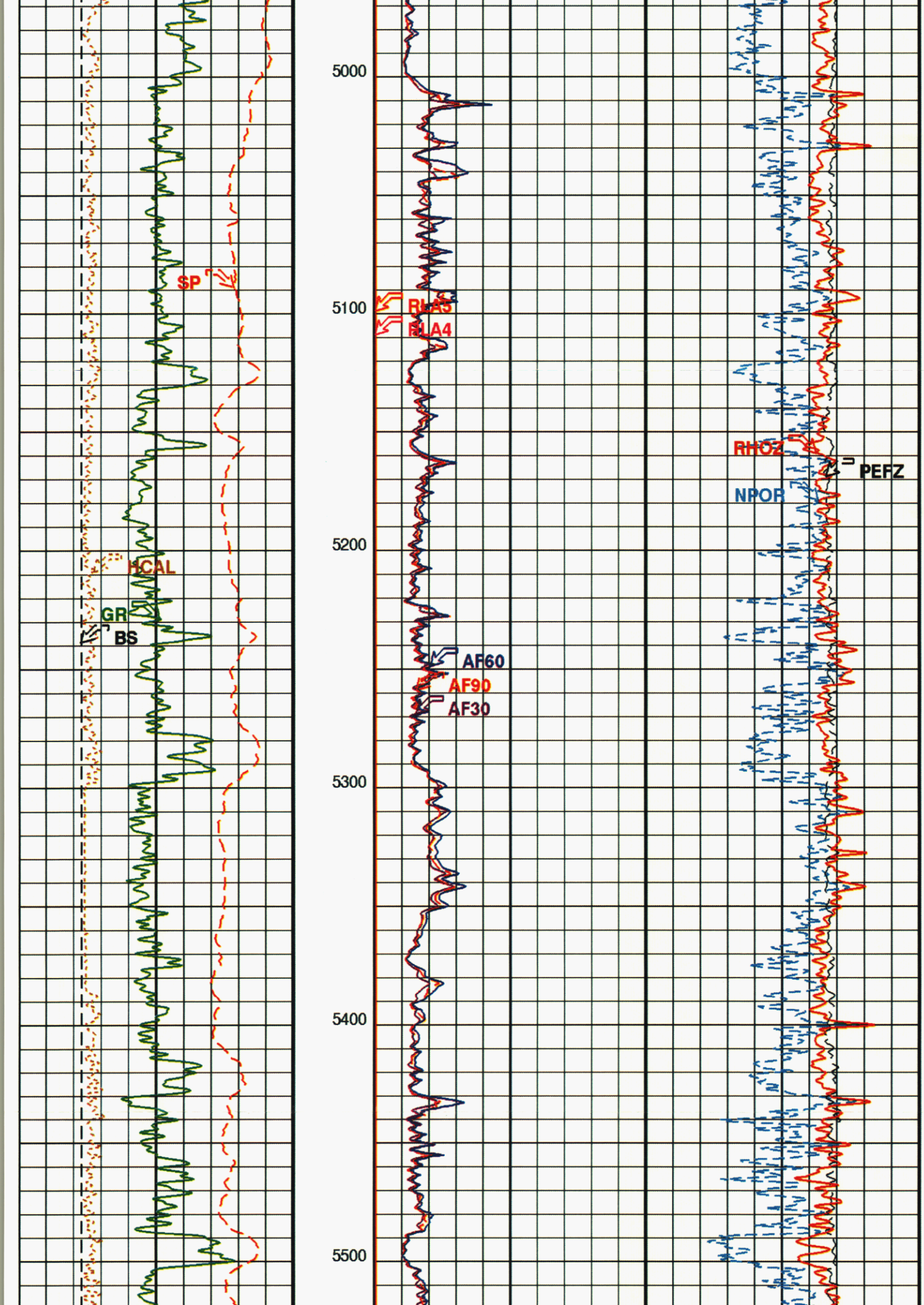

2300
Run One- 13 3/8 casing shoe at 2358 Ft.
2400
2500
2600
SP
RLA5
RLA4
2700
RHOZ
PEFZ
NPOR
HCAL

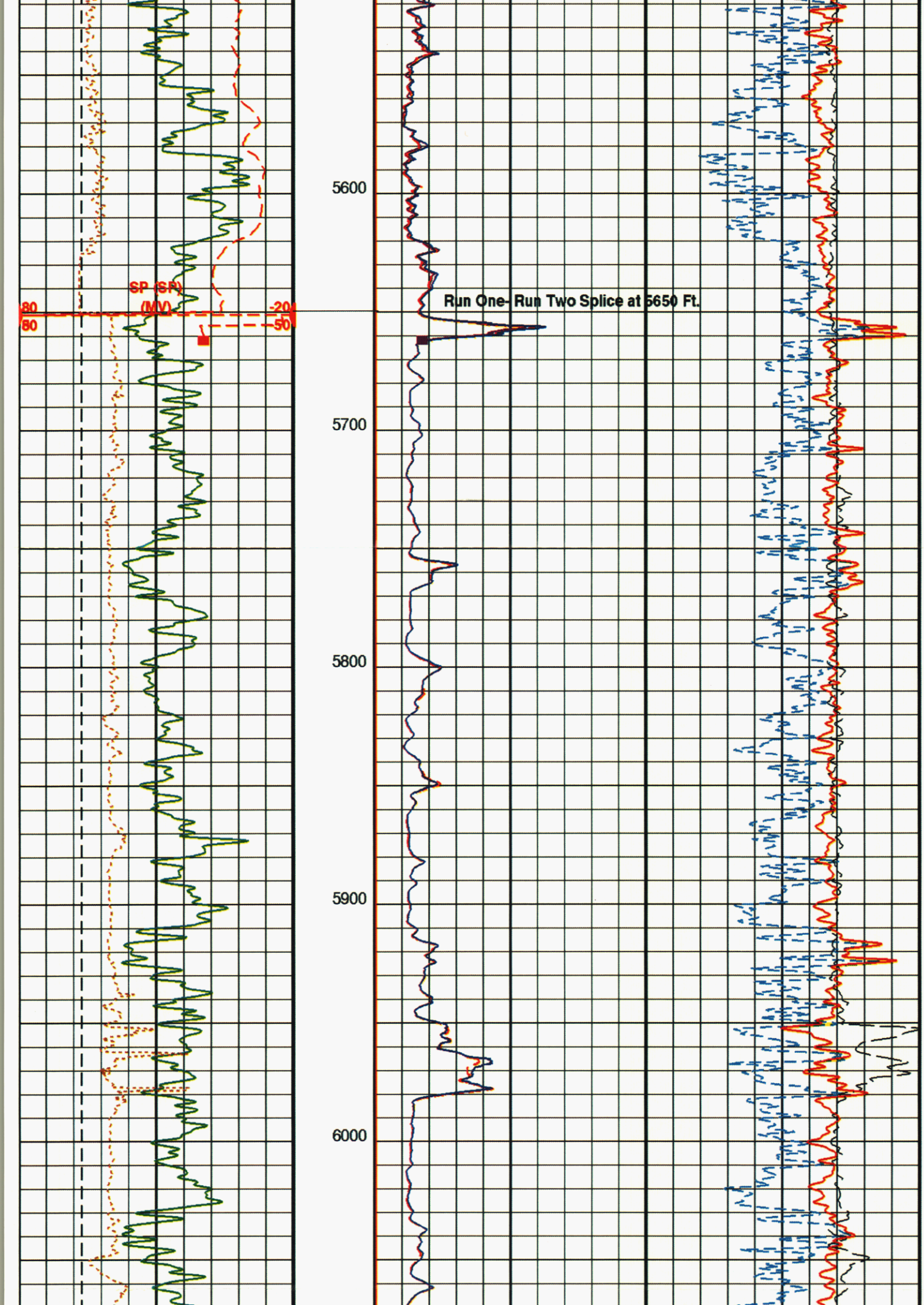

GR
BS
2800
AF60
AF90
AF30
2900
3000
3100
3200
3300

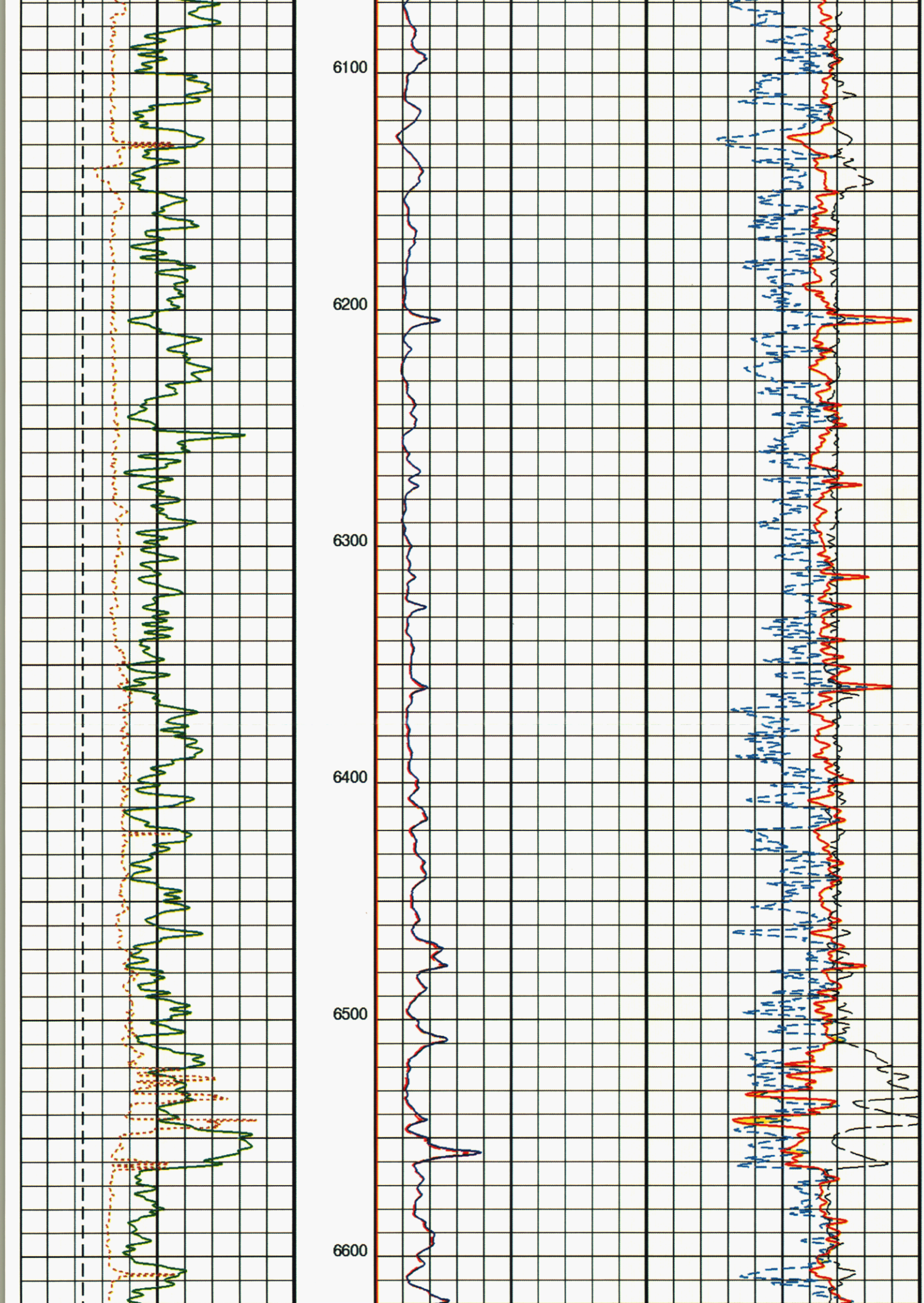

3400
3500
3600
3700
3800

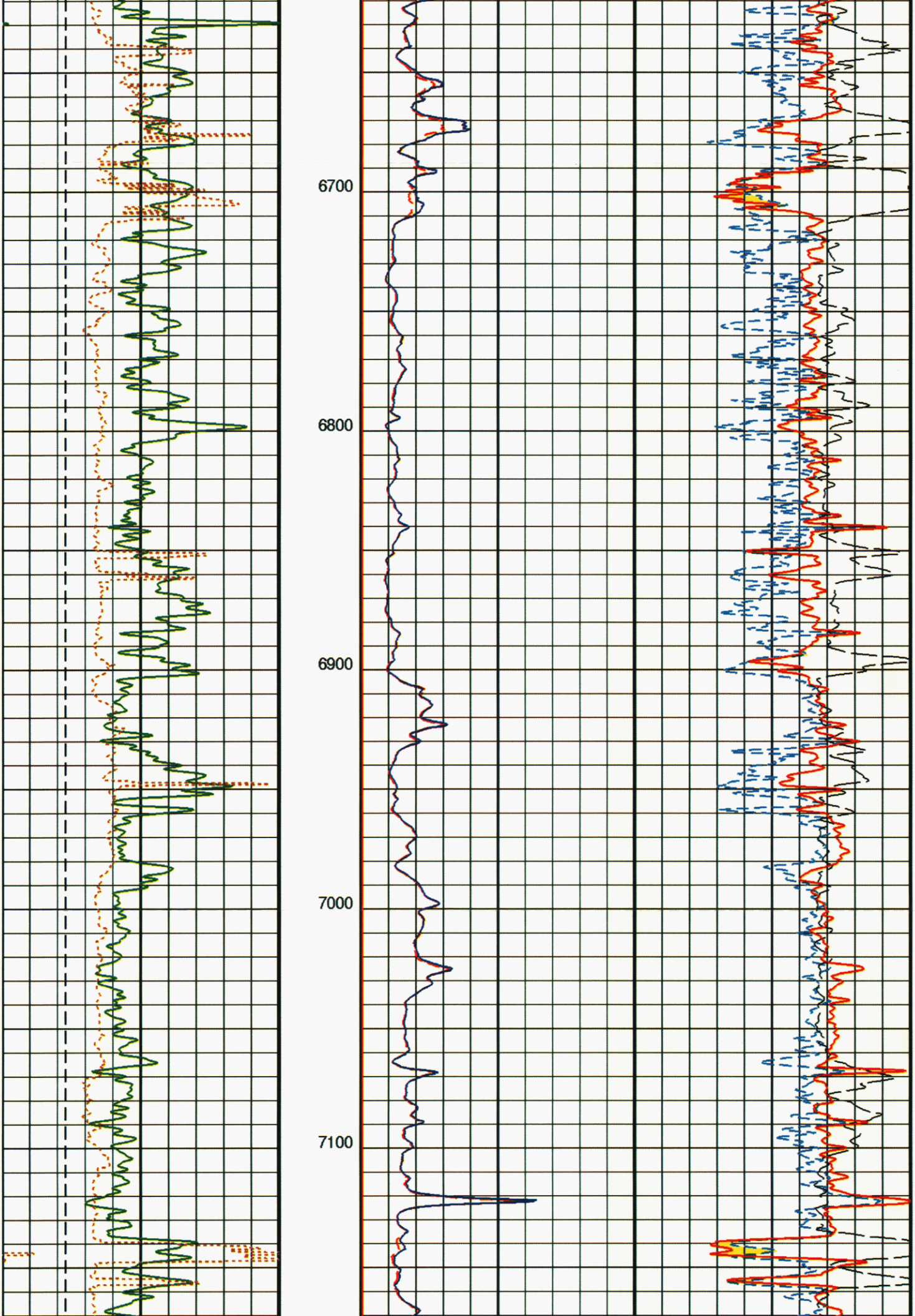

3900
4000
4100
4200
4300
4400

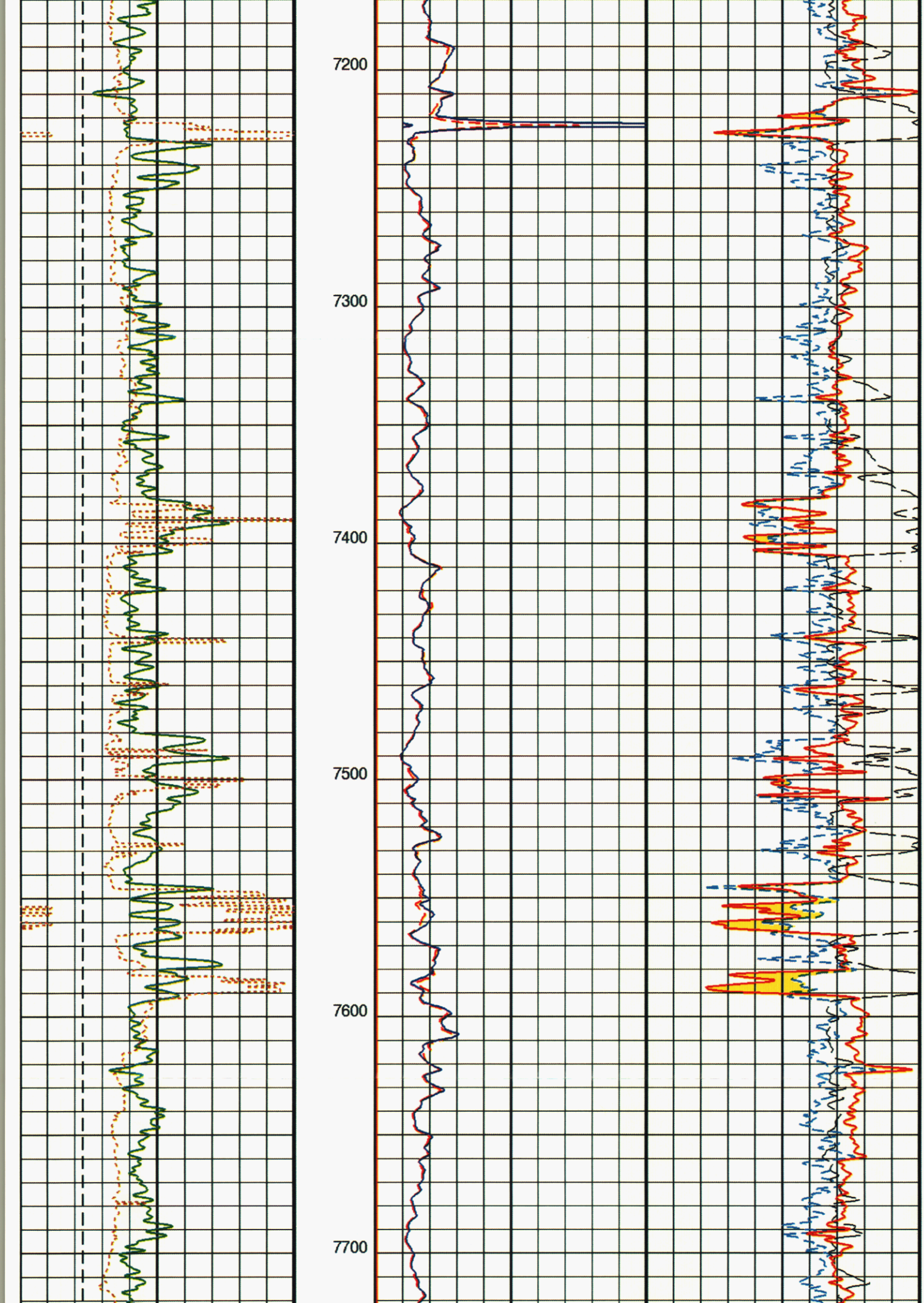

4500
4600
4700
4800
4900

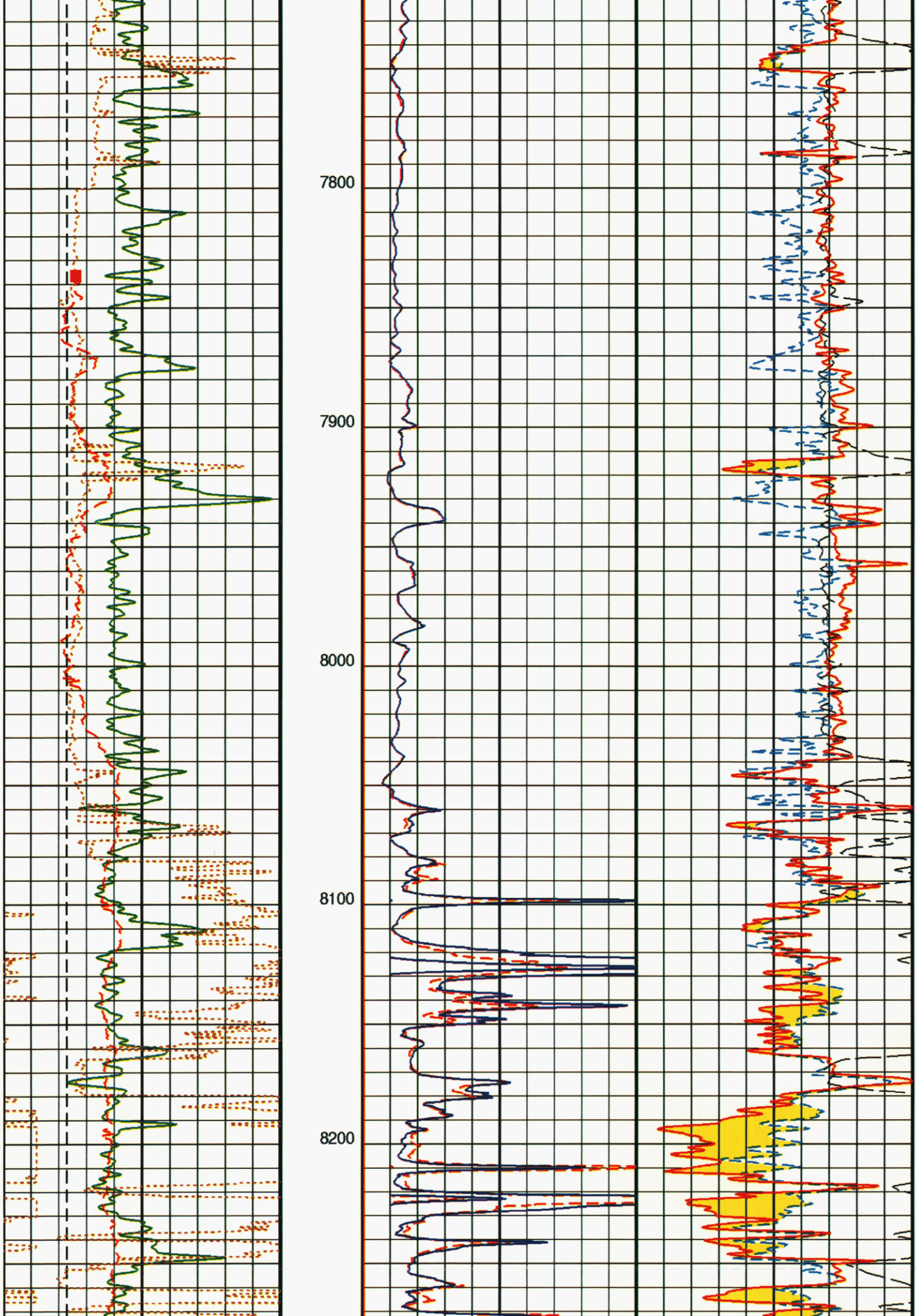

SP
HCAL
GR
BS
5000
5100
RLA5
RLA4
5200
AF60
AF90
AF30
5300
5400
5500
RHOZ
PEFZ
NPOR

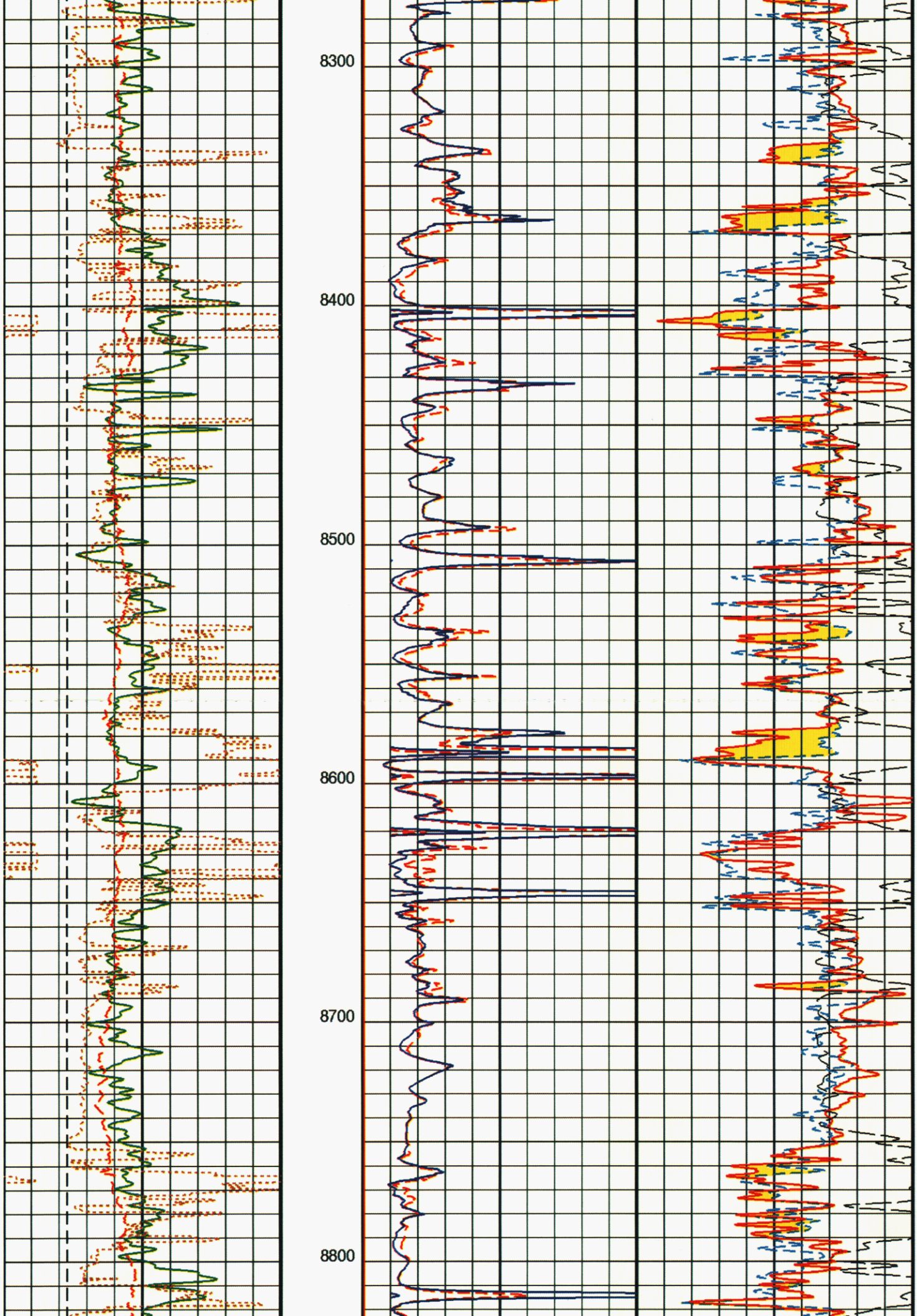

SP (SP)
(MV)
80
80
-20
-50
5600
5700
5800
5900
6000
Run One- Run Two Splice at 5650 Ft.

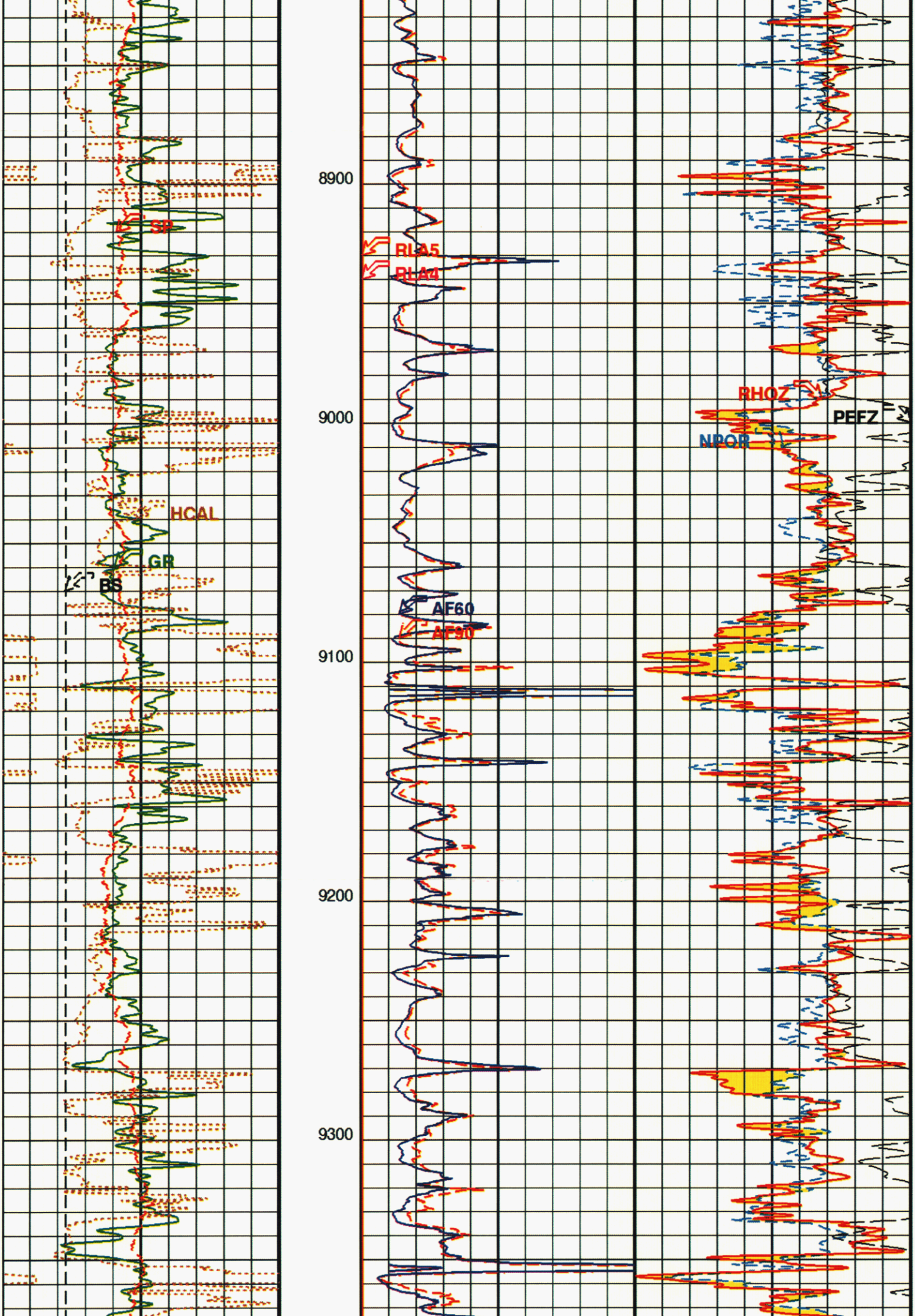

6100
6200
6300
6400
6500
6600

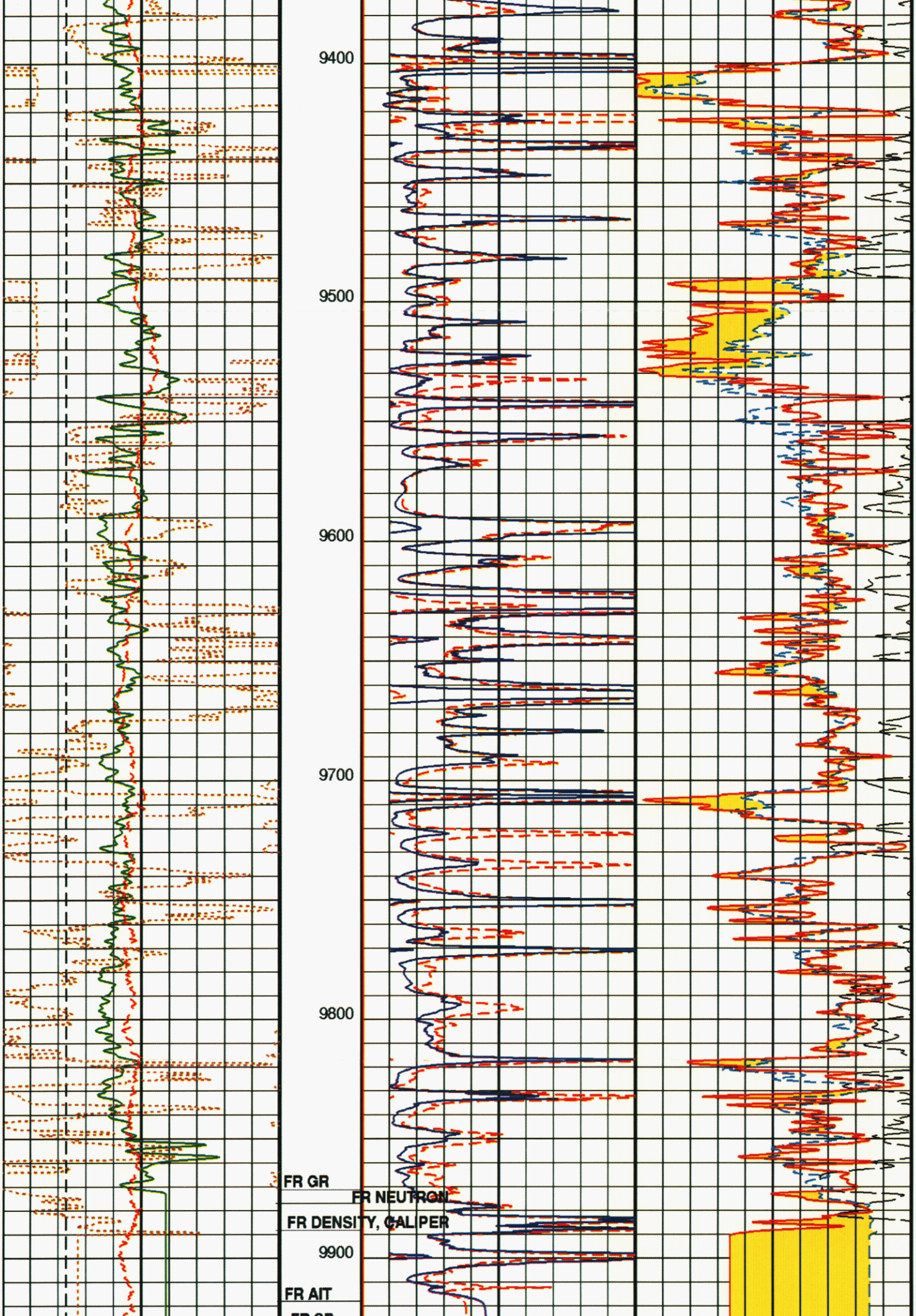

6700
6800
6900
7000
7100

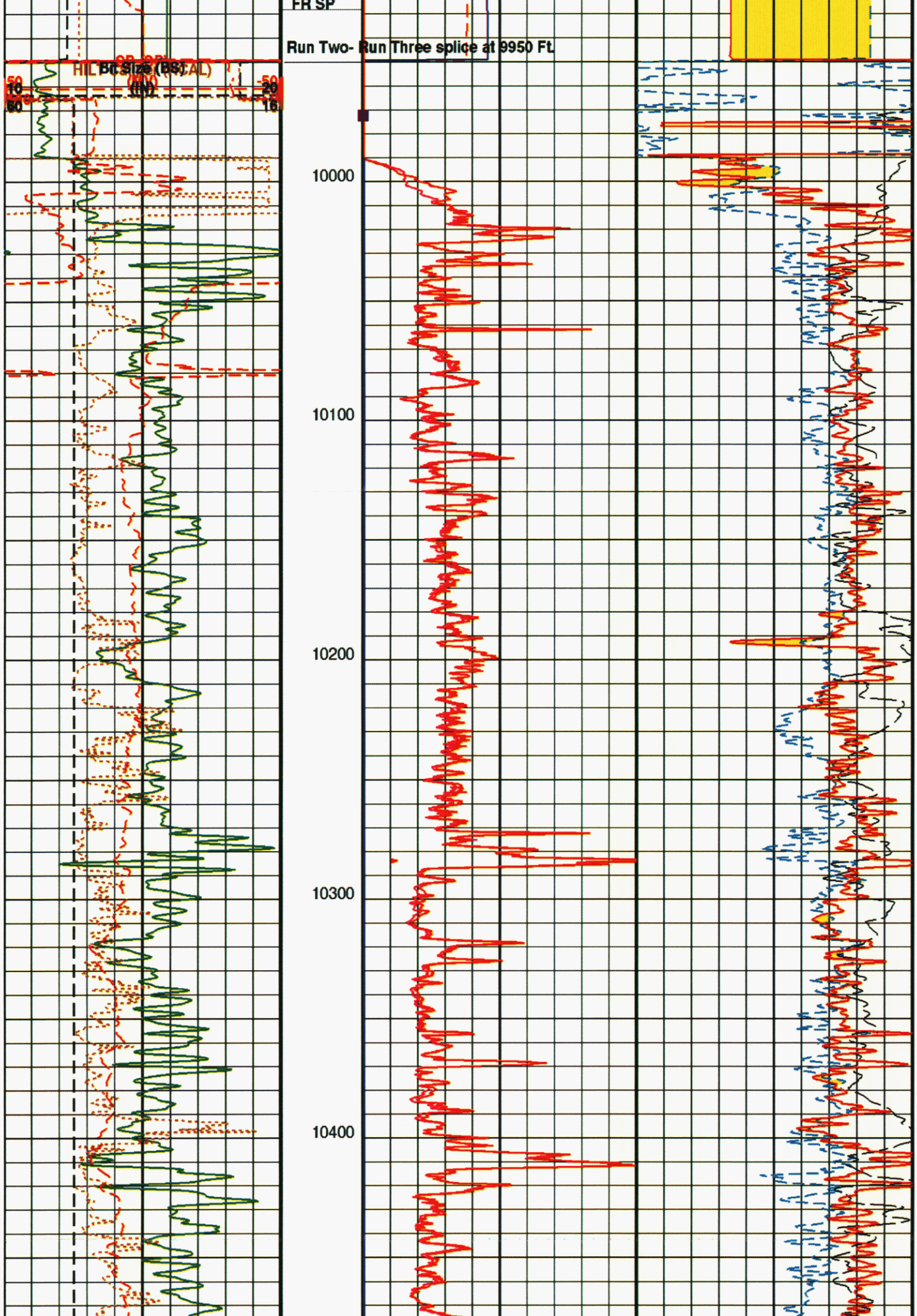

7200
7300
7400
7500
7600
7700

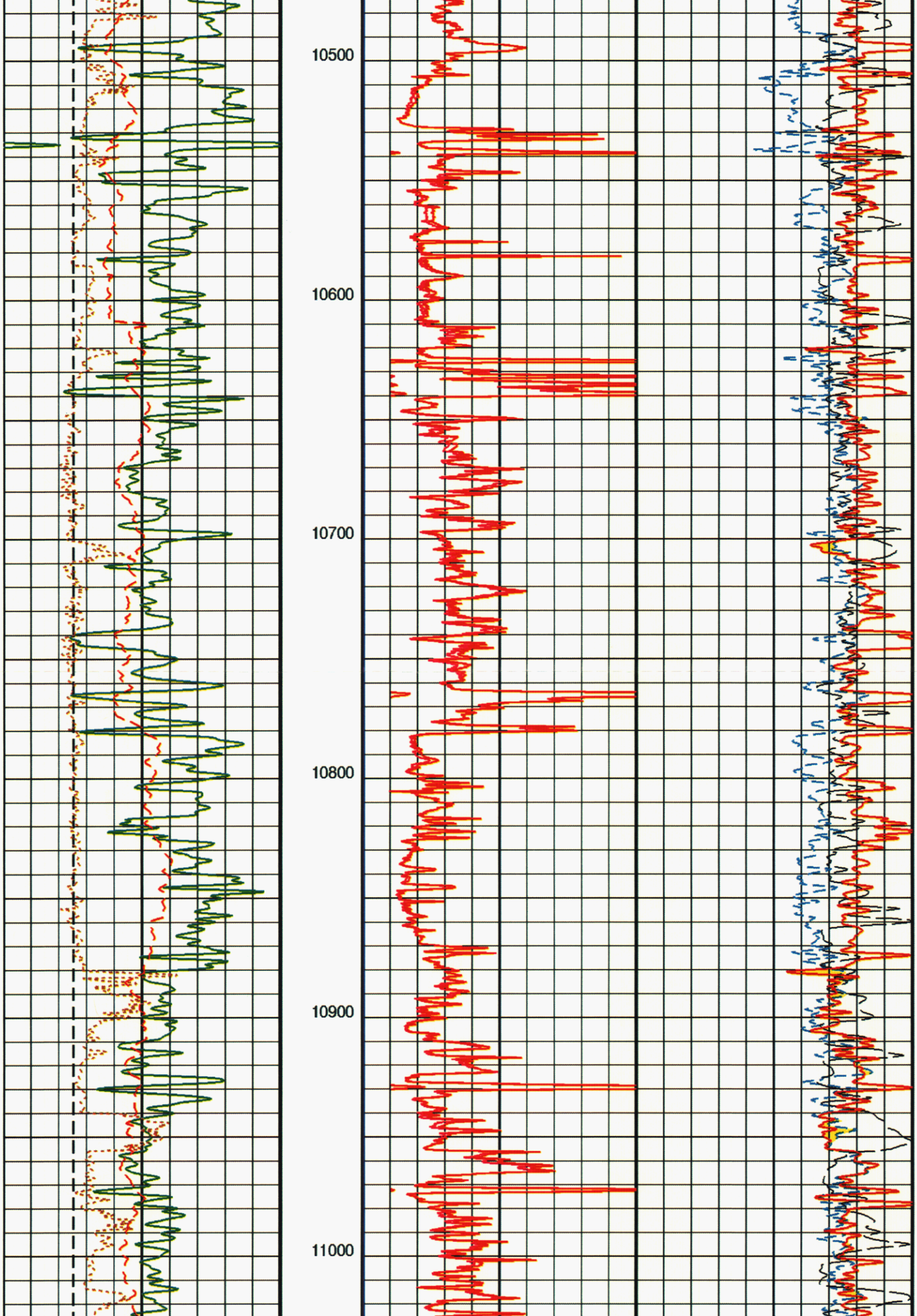

7800
7900
8000
8100
8200

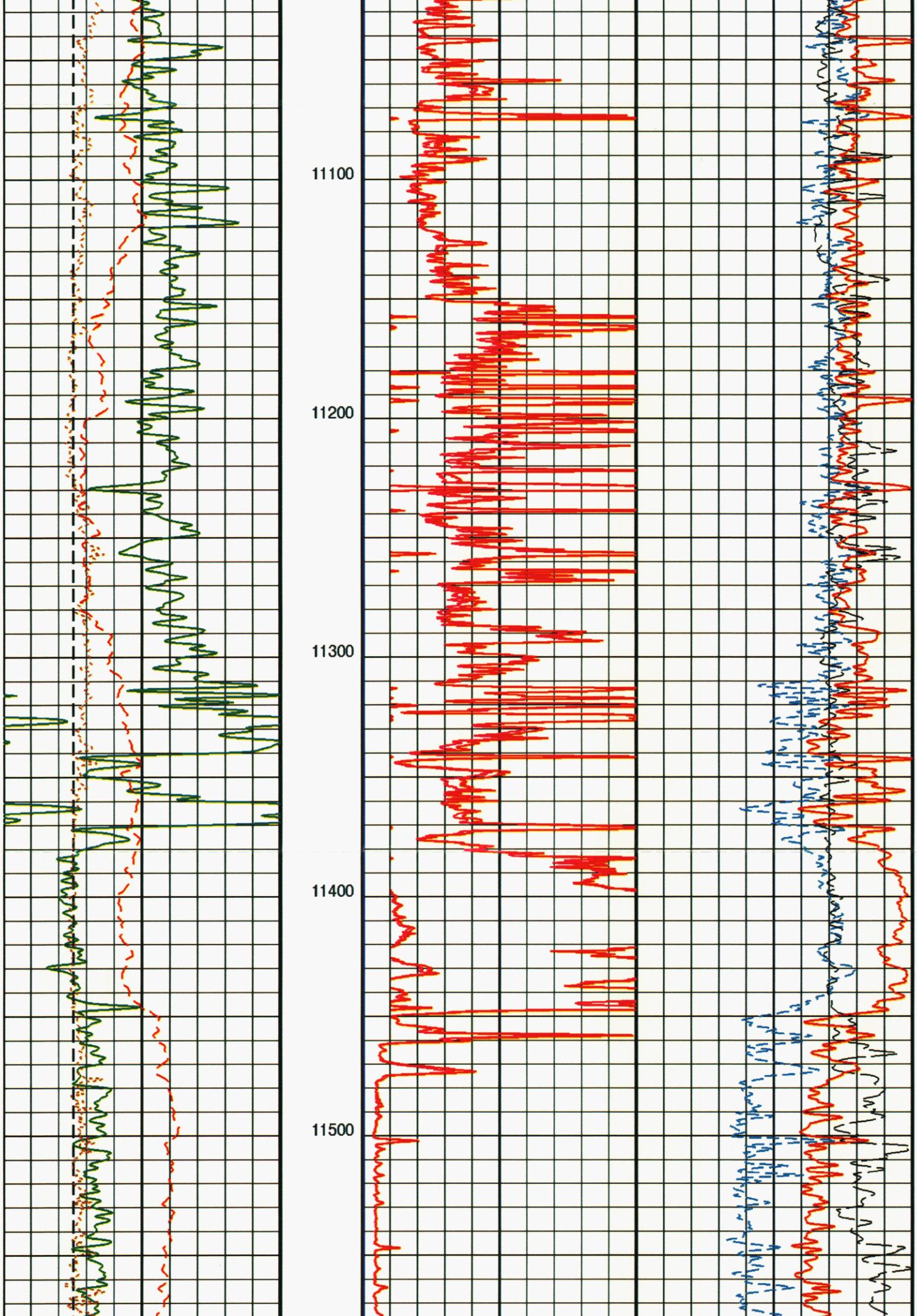

8300
8400
8500
8600
8700
8800

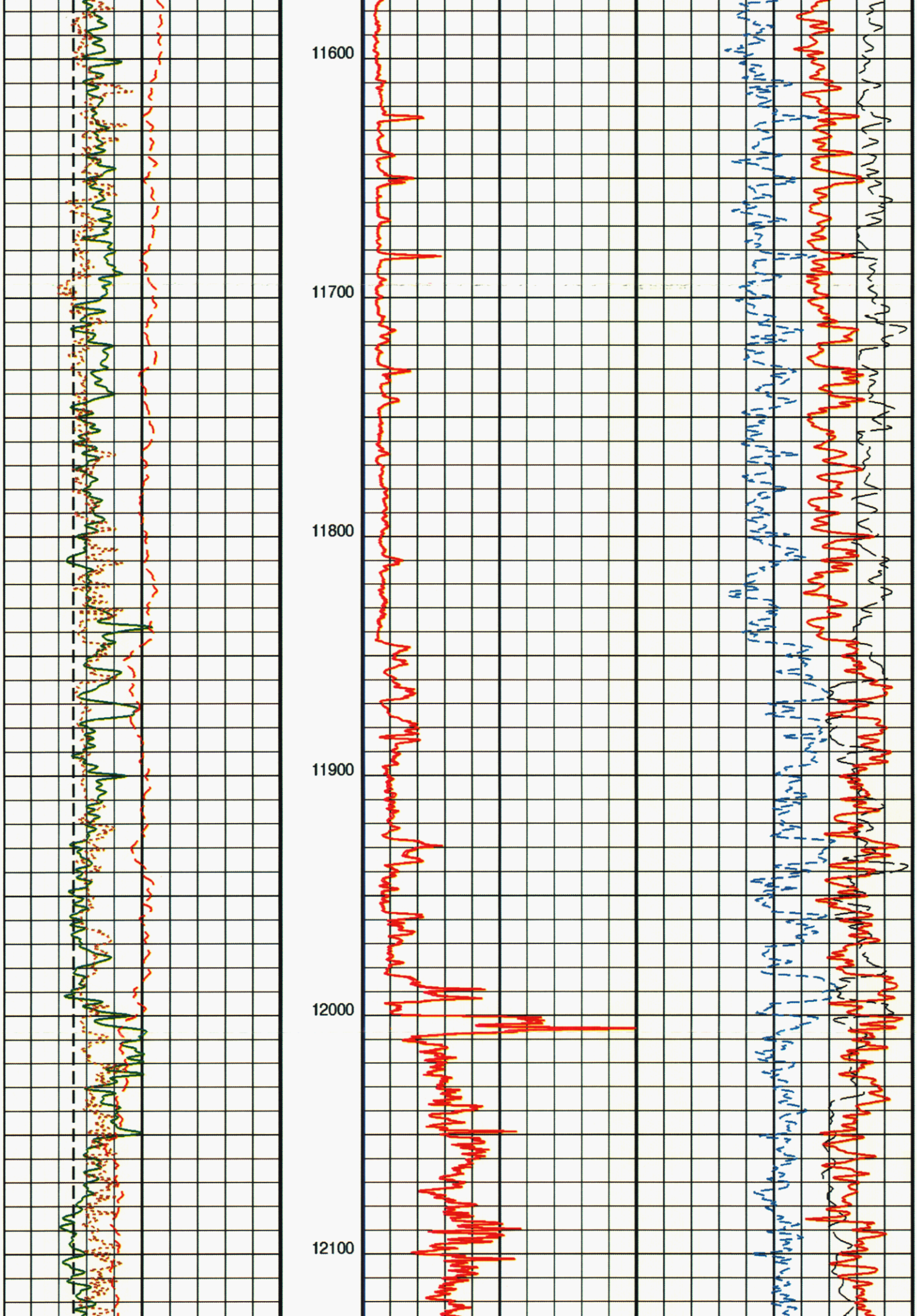

SP
HCAL
GR
BS
8900
9000
9100
9200
9300
RLA5
RLA4
AF60
AF90
RHOZ
PEFZ
NPOR

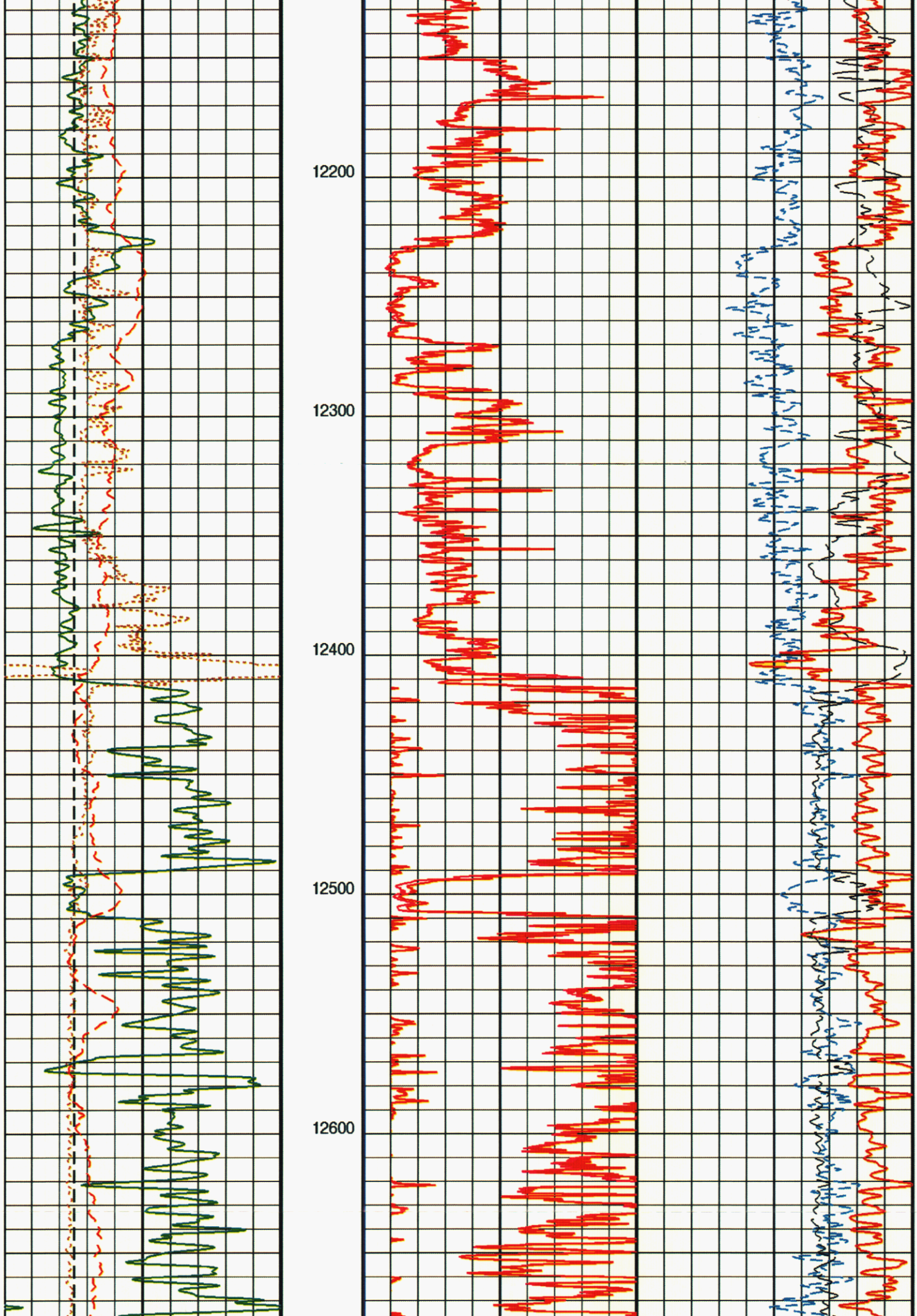

9400
9500
9600
9700
9800
FR GR
FR NEUTRON
FR DENSITY, CALIPER
9900
FR AIT

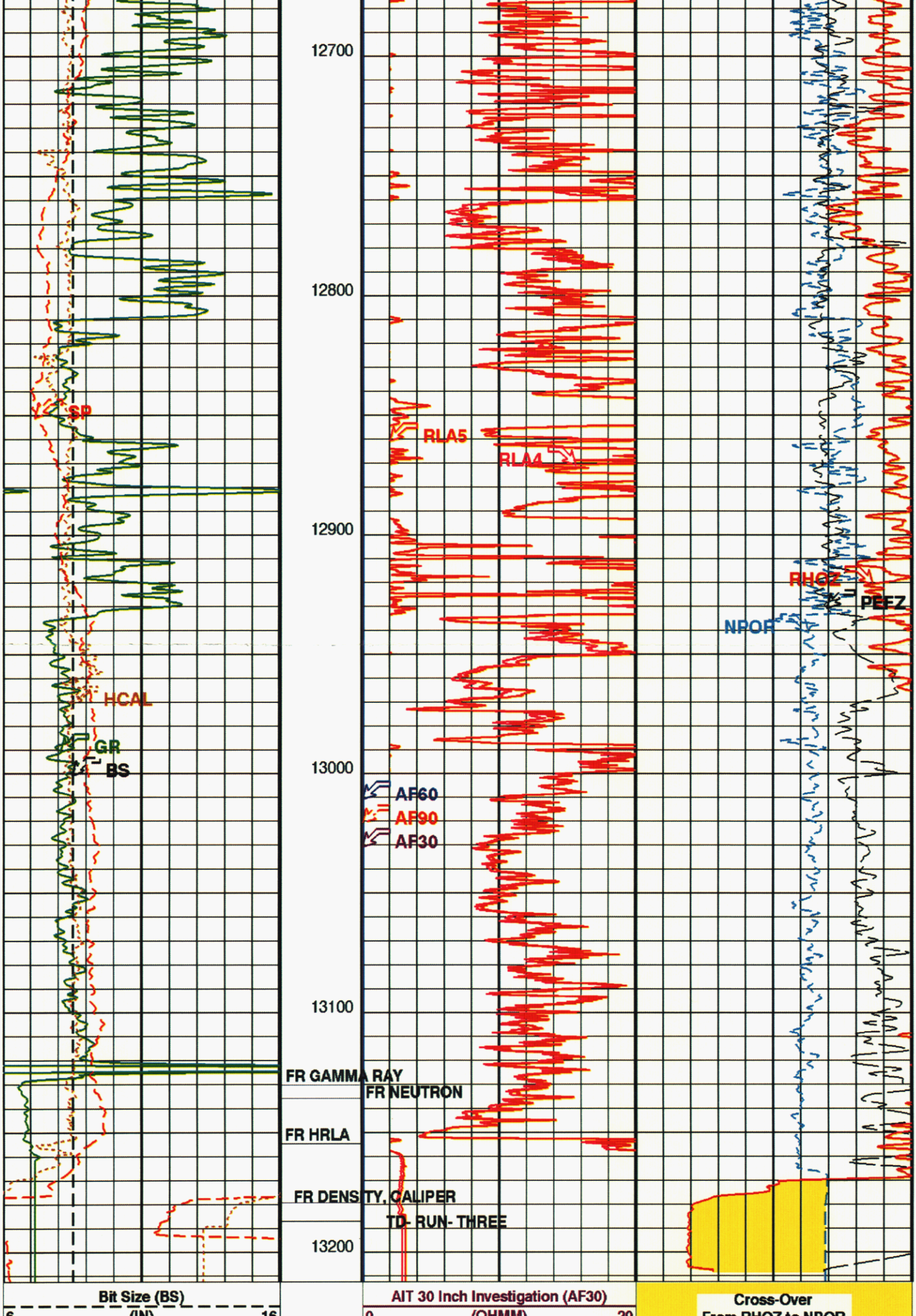

FR SP
Run Two- Run Three splice at 9950 Ft
Bit Size (BS) (IN)
CAL
10
60
50
20
16
10000
10100
10200
10300
10400


10500
10600
10700
10800
10900
11000


11100
11200
11300
11400
11500


11600
11700
11800
11900
12000
12100


12200
12300
12400
12500
12600


12700
12800
12900
13000
13100
13200
SP
HCAL
GR
BS
RLA5
RLA4
AF60
AF90
AF30
RHOZ
PEFZ
NPOR
FR GAMMA RAY
FR NEUTRON
FR HRLA
FR DENSITY, CALIPER
TD- RUN- THREE
Bit Size (BS)
(IN)
AIT 30 Inch Investigation (AF30)
(OHMM)
Cross-Over
From RHOZ to NPOR

6 (IN) 16	0 (OHMM) 20	From RHOZ to NPOR
Gamma Ray (GR) 20 (GAPI) 170	AIT 90 Inch Investigation (AF90) 0 (OHMM) 20	Alpha Processed Neutron Porosity (NPOR) 0.6 (V/V) 0
HILT Caliper (HCAL) 6 (IN) 16	AIT 60 Inch Investigation (AF60) 0 (OHMM) 20	Std. Res. Formation Density (RHOZ) 1.68 (G/C3) 2.68
SP (SP) 100 (MV) 0	HRLT Resistivity 4 (RLA4) 0 (OHMM) 20	Std. Res. Formation Pe (PEFZ) 0 (---) 10
	HRLT Resistivity 5 (RLA5) 0 (OHMM) 20	

Parameters

DLIS Name	Description	Value	
SPA-A: SP ADAPTOR			
SPNV	SP Next Value	0	MV
HILTH-FTB: High resolution Integrated Logging Tool-DTS			
BHFL	Borehole Fluid Type	WATER	
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCLF	Germany Coal-like Formation Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HSCO	Hole Size Correction Option	YES	
KFAC_HRLT	HRLT K Factor Option	SONDE	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	BARI	
MWCO	Mud Weight Correction Option	NO	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	BARITE	
NPRM	HRDD Processing Mode	StdRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
HNGS-BA: Hostile Natural Gamma Ray Sonde			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
EDTC-B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	BARI	

MWCO	Mud Weight Correction Option	NO	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
AIT-C: Array Induction Tool - C			
ABHM	Array Induction Borehole Correction Mode	0_ComputeMudResistivity	
ABHV	Array Induction Borehole Correction Code Version Number	0	
ABLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
ABLV	Array Induction Basic Logs Code Version Number	0	
ACDE	Array Induction Casing Detection Enable	No	
ACEN	Array Induction Tool Centering Flag (in Borehole)	Centered	
AETP	Array Induction Enable Sonde Error Temp&Pres Corr	Yes	
AFRSV	Array Induction Response Set Version for Four ft Resolution	No version available	
AIGS	Array Induction Select Akima Interpolation Gating	On	
AMRF	Array Induction Mud Resistivity Factor	1	
AORSV	Array Induction Response Set Version for One ft Resolution	No version available	
ARFV	Array Induction Radial Profiling Code Version Number	0	
ARPV	Array Induction Radial Parametrization Code Version Number	0	
ASTA	Array Induction Tool Standoff	0	IN
ATRSV	Array Induction Response Set Version for Two ft Resolution	No version available	
ATSE	Array Induction Temperature Selection (Sonde Error Correction)	Internal	
AULV	Array Induction User Level Control	Normal	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
AIT-M: Array Induction Tool - M			
ABHM	Array Induction Borehole Correction Mode	1_ComputeElectricalDiameter	
ABHV	Array Induction Borehole Correction Code Version Number	0	
ABLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
ABLV	Array Induction Basic Logs Code Version Number	0	
ACDE	Array Induction Casing Detection Enable	No	
ACEN	Array Induction Tool Centering Flag (in Borehole)	Centered	
ACSED	Array Induction Casing Shoe Estimated Depth	-50000	FT
AETP	Array Induction Enable Sonde Error Temp&Pres Corr	Yes	
AFRSV	Array Induction Response Set Version for Four ft Resolution	No version available	
AIGS	Array Induction Select Akima Interpolation Gating	On	
AMRF	Array Induction Mud Resistivity Factor	1	
AORSV	Array Induction Response Set Version for One ft Resolution	No version available	
ARFV	Array Induction Radial Profiling Code Version Number	0	
ARPV	Array Induction Radial Parametrization Code Version Number	0	
ASTA	Array Induction Tool Standoff	0.25	IN
ATRSV	Array Induction Response Set Version for Two ft Resolution	No version available	
ATSE	Array Induction Temperature Selection(Sonde Error Correction)	Internal	
AULV	Array Induction User Level Control	Normal	
AZRSV	Array Induction Response Set Version for Z Resolution	No version available	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
SPNV	SP Next Value	0	MV
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
STI: Stuck Tool Indicator			

	STI: Stuck Tool Indicator		
TDL	Total Depth - Logger	13187.00	FT
	System and Miscellaneous		
BS	Bit Size	8.500	IN
BSAL	Borehole Salinity	41800.00	PPM
CSIZ	Current Casing Size	9.625	IN
CWEI	Casing Weight	56.00	LB/F
DFD	Drilling Fluid Density	13.20	LB/G
DO	Depth Offset for Playback	0.0	FT
FLEV	Fluid Level	-50000.00	FT
MST	Mud Sample Temperature	73.00	DEGF
PP	Playback Processing	OFF	
RMFS	Resistivity of Mud Filtrate Sample	0.1078	OHMM
TD	Total Depth	13190	FT

Format: PEX_2IN_LIN Vertical Scale: 2" per 100' Graphics File Created: 09-Jun-2011 03:57

OP System Version: 18C0-147

SPA-A	18C0-147	HILTH-FTB	18C0-147
HNGC-B	18C0-147	HNGS-BA	18C0-147
EDTC-B	18C0-147	AIT-C	18C0-147
AIT-M	18C0-147		

Input DLIS Files

DEFAULT	Splice_TLD_MCFL_CNL_008CUC	FN:1	PRODUCER	28-May-2011 12:27	13212.5 FT	2059.0 FT

Output DLIS Files

DEFAULT	TLD_MCFL_CNL_NGS_036PUP	FN:28	PRODUCER	09-Jun-2011 03:57
CUST_DLIS	TLD_MCFL_CNL_NGS_036PUC	FN:29	CUSTOMER	09-Jun-2011 03:57

Company: OXY US LA Basin

Schlumberger

Well: DOM-002
Field: Dominguez
County: Los Angeles
State: California

ARRAY INDUCTION - HRLA LATEROLOG
DENSITY - NEUTRON - GAMMA RAY
2 IN/100 FT LINEAR