



FILE NO:	COMPANY	LARAMIE ENERGY
	WELL	GUNDERSON 20-04W
API NO:	FIELD	VEGA
05077103370000	COUNTY	MESA
		STATE COLORADO

Ver. 4.06	LOCATION:	OTHER SERVICES
	LAT: 39.266919N, LONG: 107.795317W	NONE
	SEC 29	TWP 9S
		RGE 93W

PERMANENT DATUM	GL	ELEVATION	7488 FT	ELEVATIONS: KB 7174 FT DF 7174 FT GL 7144 FT
LOG MEASURED FROM	KB	30 FT	ABOVE P.D.	
DRILL. MEAS. FROM	KB			

DATE	21-JUN-2017		
RUN	TRIP	1	1
SERVICE ORDER	US124559		
DEPTH DRILLER	7680 FT		
DEPTH LOGGER	7683 FT		
BOTTOM LOGGED INTERVAL	7681 FT		
TOP LOGGED INTERVAL	1554 FT		
CASING DRILLER	8.625 IN @ 1554 FT		
CASING LOGGER	1554 FT		
BIT SIZE	7.875 IN		
TYPE OF FLUID IN HOLE	WBM		
DENSITY	VISCOSITY	9.8 LB/G	71 CP
PH	FLUID LOSS	9.5	NA
SOURCE OF SAMPLE	FLOWLINE		
RM AT MEAS. TEMP.	6.991 OHMM @ 75 DEGF		
RMF AT MEAS. TEMP.	5.2143 OHMM @ 75 DEGF		
RMC AT MEAS. TEMP.	8.738 OHMM @ 75 DEGF		
SOURCE OF RMF	RMC	CALCULATED	
RM AT BHT	3.000 OHMM @ 183.8 DEGF		
TIME SINCE CIRCULATION	7 HRS		
MAX. RECORDED TEMP.	195.7 DEGF		
EQUIP. NO.	LOCATION	HL 6741	WOODWARD
RECORDED BY	S.YASSA		
WITNESSED BY	M.TYLER HALE		

IN MAKING INTERPRETATIONS OF LOGS OUR EMPLOYEES WILL GIVE THE CUSTOMER THE BENEFIT OF THEIR BEST JUDGEMENT. BUT SINCE ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS, WE CANNOT, AND WE DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION. WE SHALL NOT BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COST, DAMAGES, OR EXPENSES WHATSOEVER INCURRED OR SUSTAINED BY THE CUSTOMER RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR EMPLOYEES.

REMARKS
RUN 1 TRIP 1: 1 OPERATION IN WELL HDIL/ZDL/CN/GR RUN IN COMBINATION BVOL & CVOL CALCULATED IN CUBIC FEET CVOL CALCULATED FOR PROPOSED 4.5" CASING CALIPER VERIFIED IN CASING ZDL & CN RUN ON LIMESTONE MATRIX RHO MATRIX: 2.71 G/CC HDIL RUN WITH 1.5" STANDOFFS ABC TO CALCULATED: MUD CONDUCTIVITY WELLBORE RUGOSITY WILL AFFECT THE ACCURACY OF MEASUREMENTS CREW: J.PENA, D.HUTCHISON RIG: H&P 522

EQUIPMENT DATA

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	TTRM	3981XA	Z180388	FREE
1	1	CR	3514XC	12367092	DECENTRALIZED
1	1	GR	1329XA	10269247	DECENTRALIZED
1	1	CN	2446XA	10162846	FREE
1	1	ZDL	2234XA	10047963	PAD DEVICE
1	1	DKJT	3939XA	10217757	FREE
1	1	HDIL	1515EA/1515MA	10059243/10307148	FREE

MAIN PASS

ECLIPS 6.2i ECLIPS General Release Rel 6.2i Wed Jun 12 12:21:40 CDT 2013

Updates: 1 Patches: 9

Plotted: Thu Jun 22 09:54:35 2017

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LAREME_GUNDERSON_20_04W/GSLAMWGI_XCR02.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 1455.500 ft BOTTOM DEPTH: 7585.500 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
Y AXIS CALIPER	FILTER ()	medium (1)		TOP	BOTTOM
TENSION	FILTER ()	medium (1)		"	"
GR	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
	FILTER (.i)	medium (1)		"	"
CN	FILTER ()	medium (1)		"	"
CALIPER	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
	FILTER (.i)	medium (1)		"	"
ZDL MED RES	FILTER (hrd1*)	medium		"	"
	FILTER (hrd1s*)	medium		"	"
	FILTER (hrd2*)	medium		"	"
	FILTER (hrd2s*)	medium		"	"
	FILTER (soft*)	medium		"	"
SP-SPDH	FILTER ()	medium (1)		"	"
	FILTER (.i)	medium (1)		"	"

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	4.500	in	TOP	BOTTOM
	CASING THICKNESS	0.000	in	"	"
BIT SIZE	BIT SIZE	7.875	in	"	"
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	77.0	degF	"	"
	MUD SAMPLE RES	1.000	ohm.m	"	"
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	77.0	degF	"	"
	at BH REF DEPTH	0.0	ft	"	"
	with TEMP GRADIENT	1.200	0.01 degF/ft	"	"
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (zdbh*)	USE CALIPER		"	"
BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	7.875	in	"	"
	FIXED DIAMETER (mbh*)	7.875	in	"	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	TOOL MEASURED		"	"

CN PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
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2446 CN MATRIX	2446 MATRIX	SANDSTONE		TOP	BOTTOM
CN SALINITY CORRECTION	SALINITY	700	ppm	"	"
CN TOOL STANDOFF	ENABLE STANDOFF CORR	OFF		"	"
	STANDOFF AMOUNT	0.00	in	"	"
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		"	"
	BIT SIZE BEHIND CSNG	7.875	in	"	"

ZDL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
MUD DENSITY	MUD DENSITY	9.80	lbm/gal	TOP	BOTTOM
DENSITY POROSITY	RHOmatrix	2.680	g/cm3	"	"
	RHOfluid	1.000	g/cm3	"	"
ZDL	DENX TRACKING	ON		"	"
TRACKING TIME	Logging Spd for Gain	Over 10 ft/min		"	"

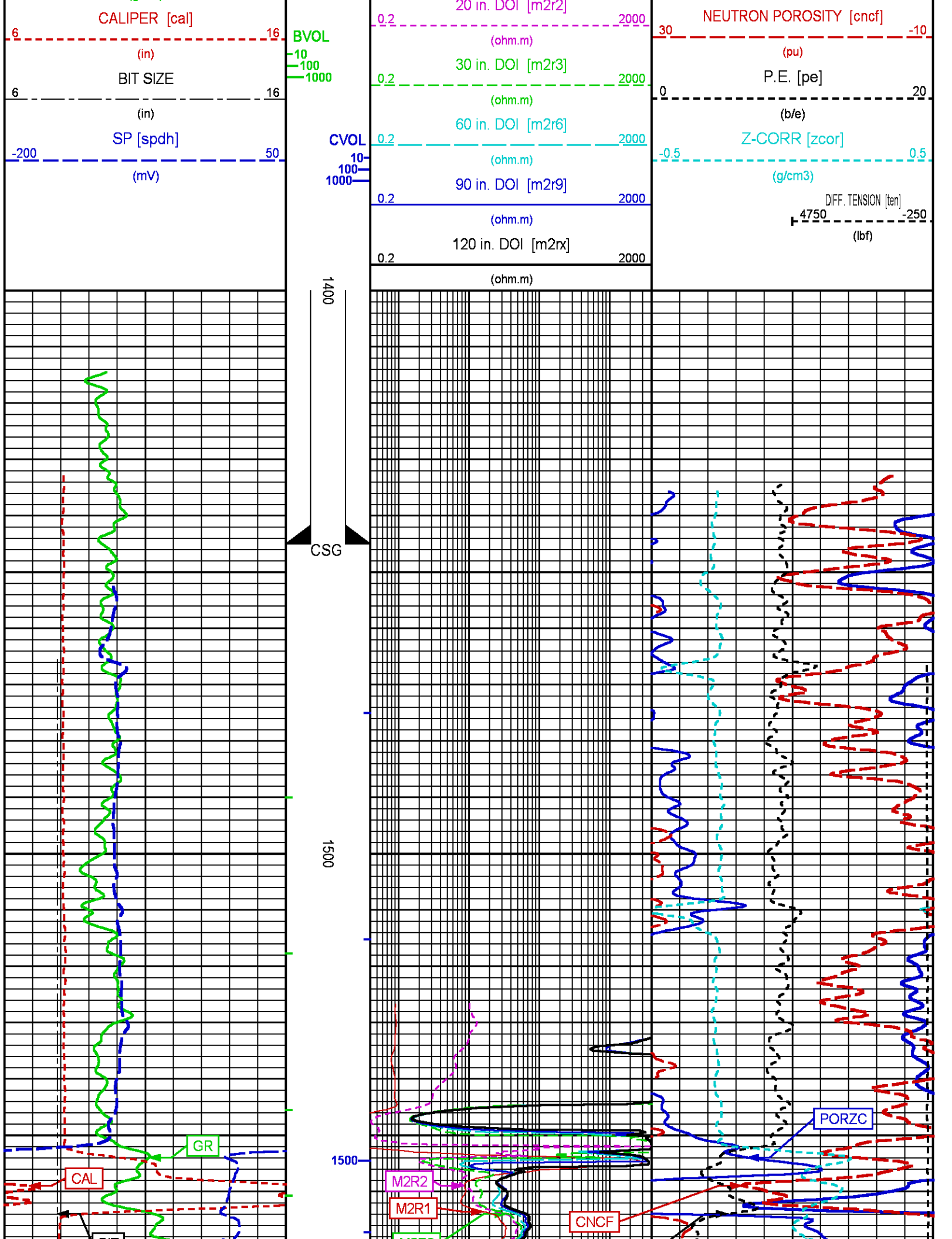
HDIL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
HDIL TEMPERATURE CORRECTION	TEMP CORR SOURCE	USE RXTEMP		TOP	BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		"	"
	ABC to CALCULATE	MUD CONDUCTIVITY		"	"
	STANDOFF	1.50	in	"	"
	TOOL POSITION	ECCENTERED		"	"
	Rmud MULTIPLIER	1.000		"	"

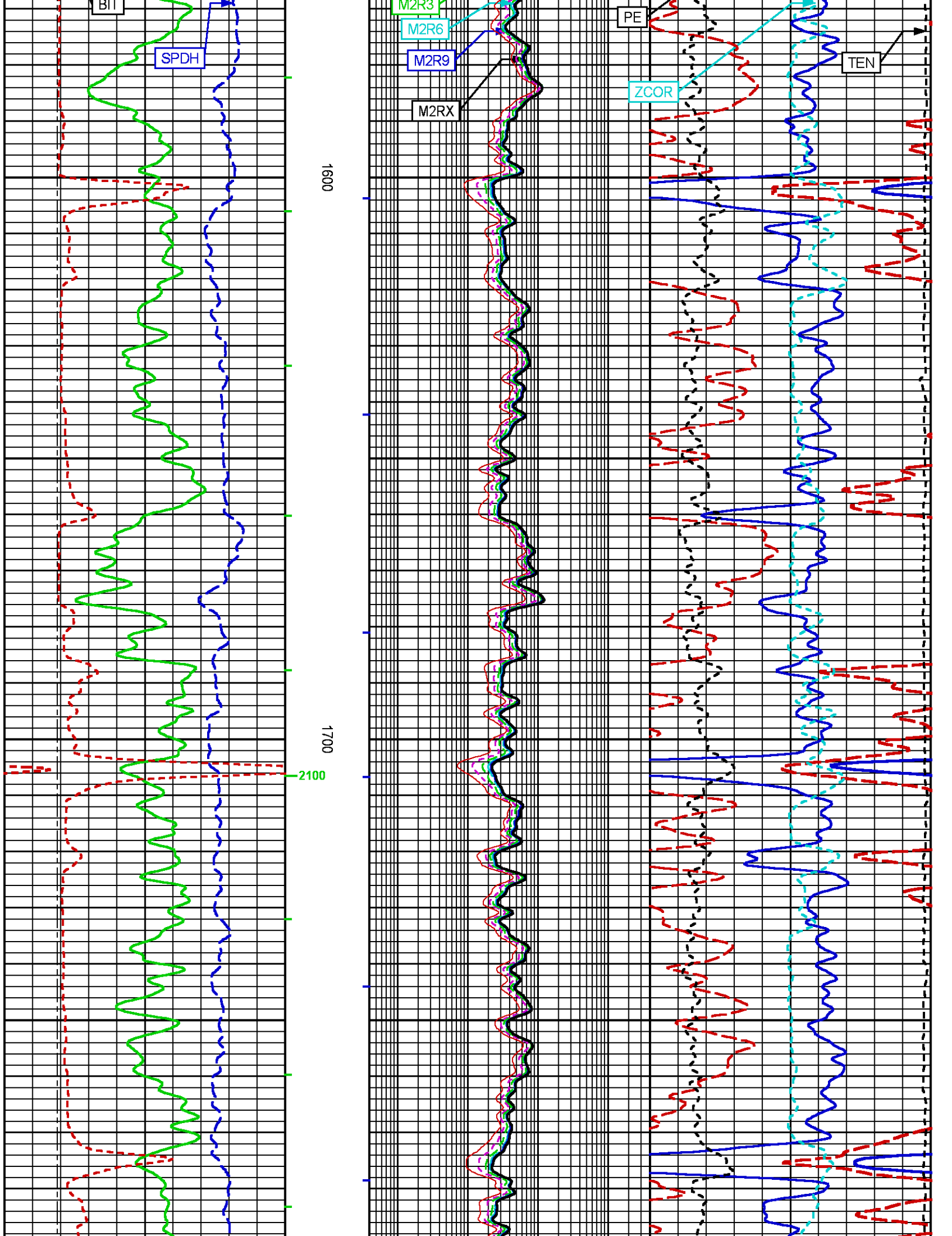
CURVE DESCRIPTION REPORT		
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Jun 22 09:31:35 2017	BIT SIZE
F1:BVOL	Jun 22 09:31:35 2017	BOREHOLE VOLUME
F1:CAL	Jun 22 09:31:35 2017	CALIPER
F1:CNCF	Jun 22 09:31:35 2017	FIELD NORMALIZED COMPENSATED NEUTRON POROSITY
F1:CVOL	Jun 22 09:31:35 2017	CEMENT VOLUME
F1:GR	Jun 22 09:31:35 2017	GAMMA RAY
F1:M2R1	Jun 22 09:31:35 2017	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 10-INCH DOI
F1:M2R2	Jun 22 09:31:35 2017	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 20-INCH DOI
F1:M2R3	Jun 22 09:31:35 2017	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 30-INCH DOI
F1:M2R6	Jun 22 09:31:35 2017	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 60-INCH DOI
F1:M2R9	Jun 22 09:31:35 2017	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 90-INCH DOI
F1:M2RX	Jun 22 09:31:35 2017	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 120-INCH DOI
F1:PE	Jun 22 09:31:35 2017	PHOTO ELECTRIC CROSS-SECTION
F1:PORZC	Jun 22 09:31:35 2017	CORRECTED POROSITY
F1:SPDH	Jun 22 09:31:35 2017	SPONTANEOUS POTENTIAL PROCESSED IN COMMON REMOTE
F1:TEN	Jun 22 09:31:35 2017	DIFFERENTIAL TENSION
F1:ZCOR	Jun 22 09:31:35 2017	DENSITY CORRECTION

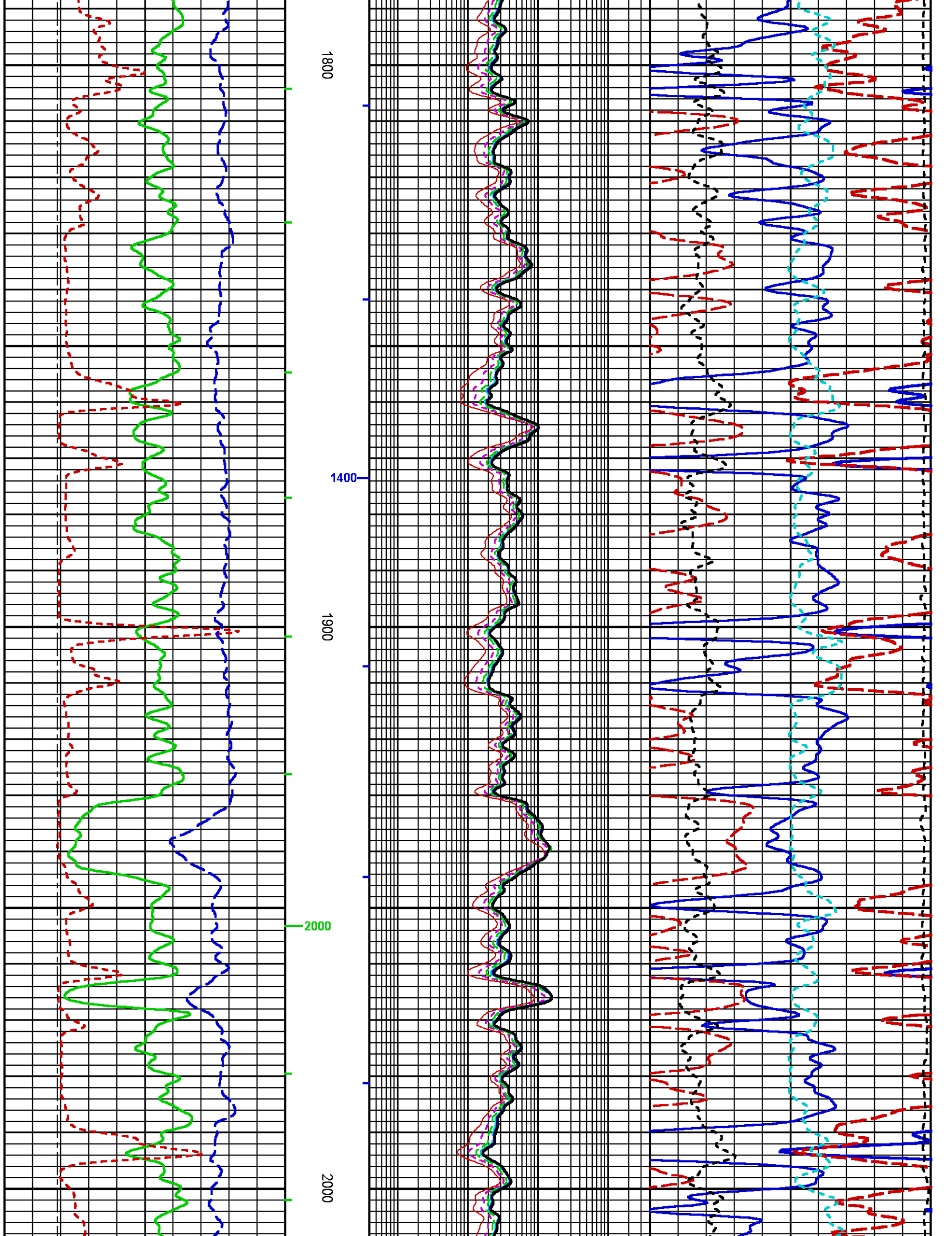
CURVE MEASURE POINT OFFSET							
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
BIT	0.00	M2R1	8.00	M2R9	8.00	SPDH	14.00
CAL	35.00	M2R2	8.00	M2RX	8.00	TEN	0.00
CNCF	45.25	M2R3	8.00	PE	34.25	ZCOR	34.25
GR	52.25	M2R6	8.00	PORZC	34.25		

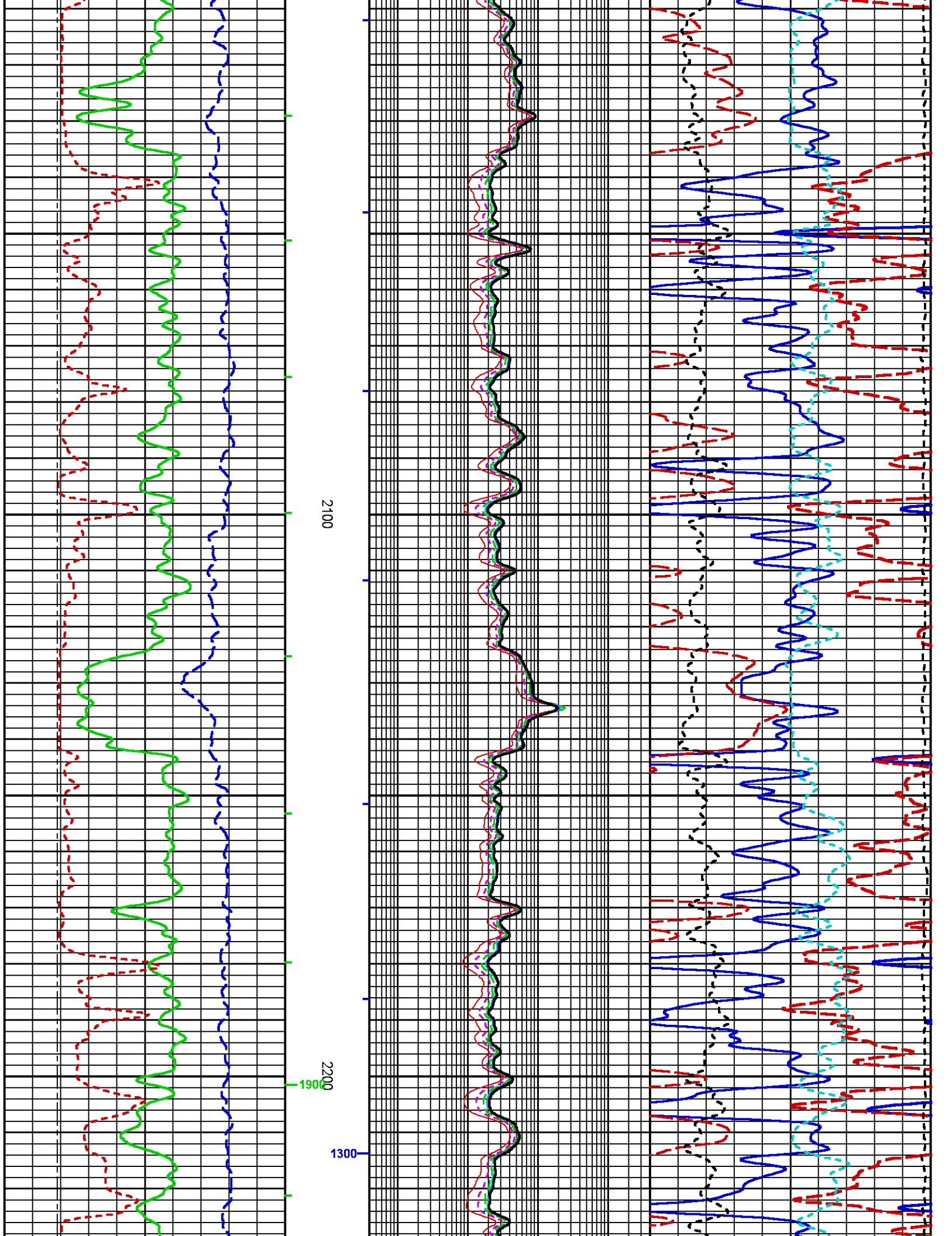
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Plot Interval	: 1400 - 7595.5 Feet
Data File 1	: F1 : cpu100:/dat1a/LAREME_GUNDERSON_20_04W/MSLAM_MAIN_20_04W.xtf
Created On	: Jun 22 09:31:35 2017
Company	: LARAMIE ENERGY
Well	: GUNDERSON 20-04W
Field	: VEGA
File Interval	: 1400 - 7595.5 Feet
OCT	: GSLAMWGI

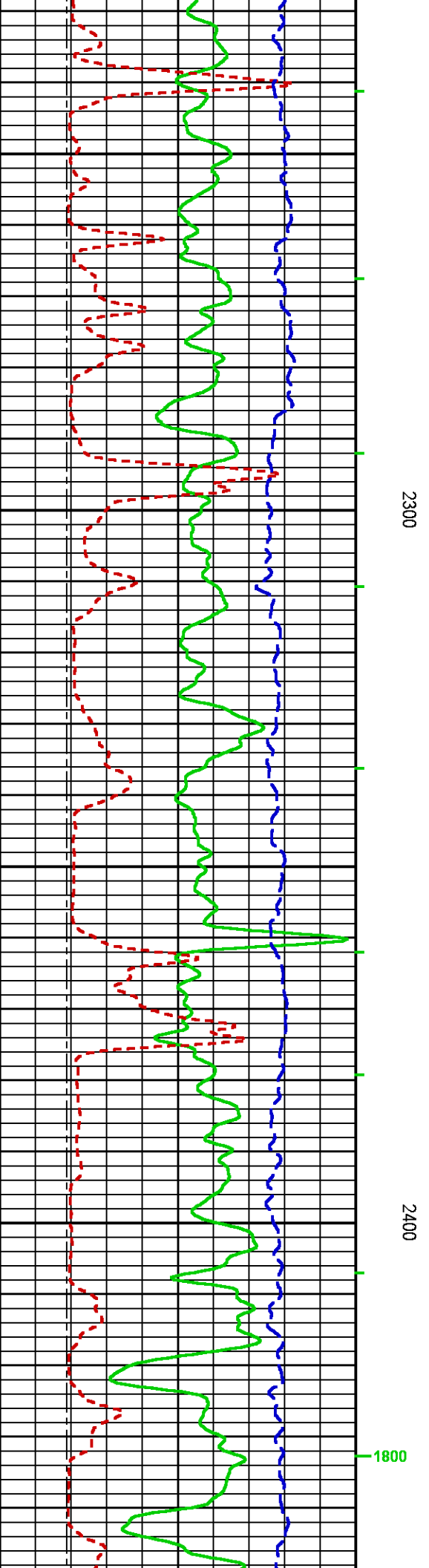
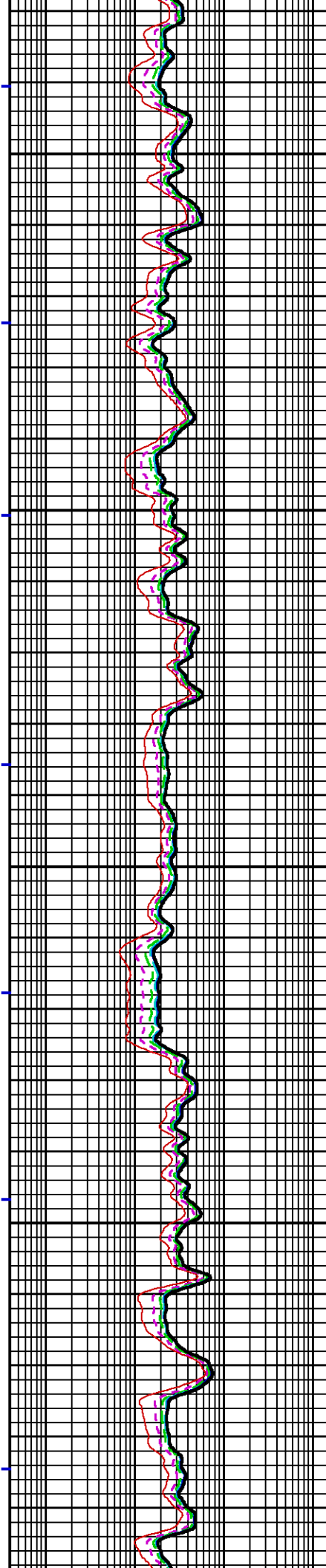
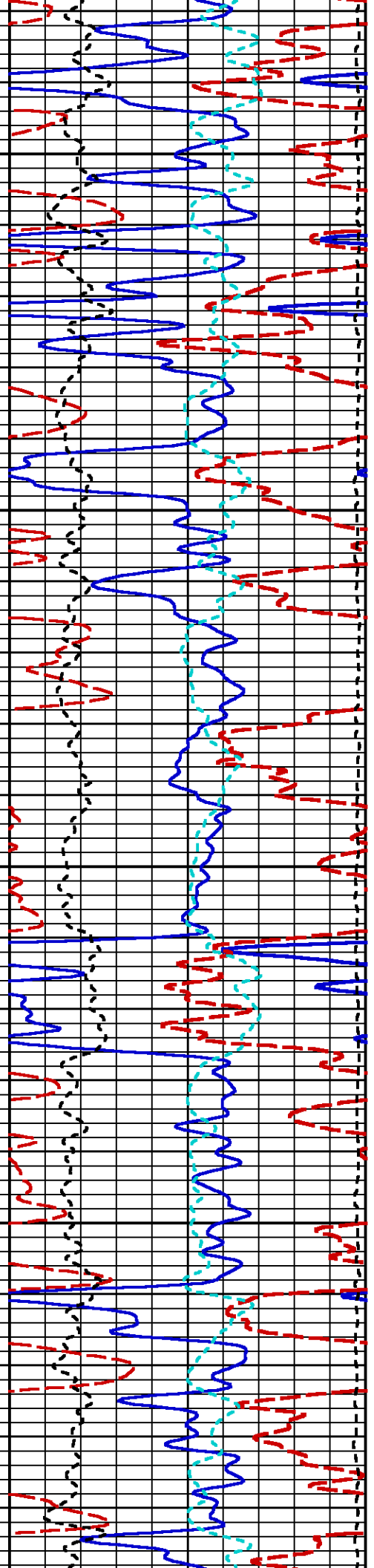
GR BACKUP		FEET	2FT. Matched Resolution Resistivity		TOOL STICKING	
GAMMA RAY [gr]			10 in. DOI [m2r1]		Z-DENSITY POROSITY [porzc]	
0	200		0.2	2000	30	-10
(gAPI)			(ohm.m)		(pu)	

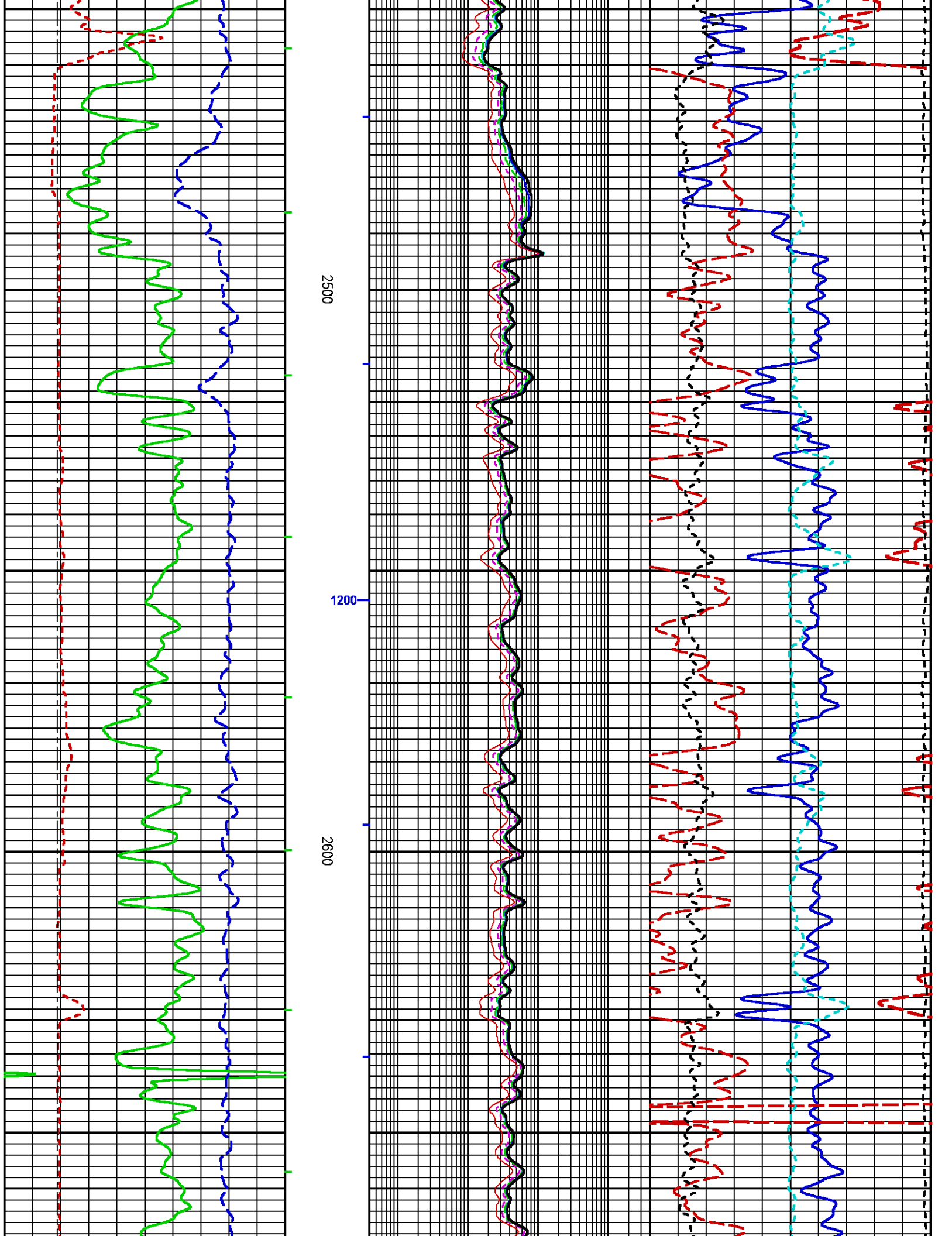


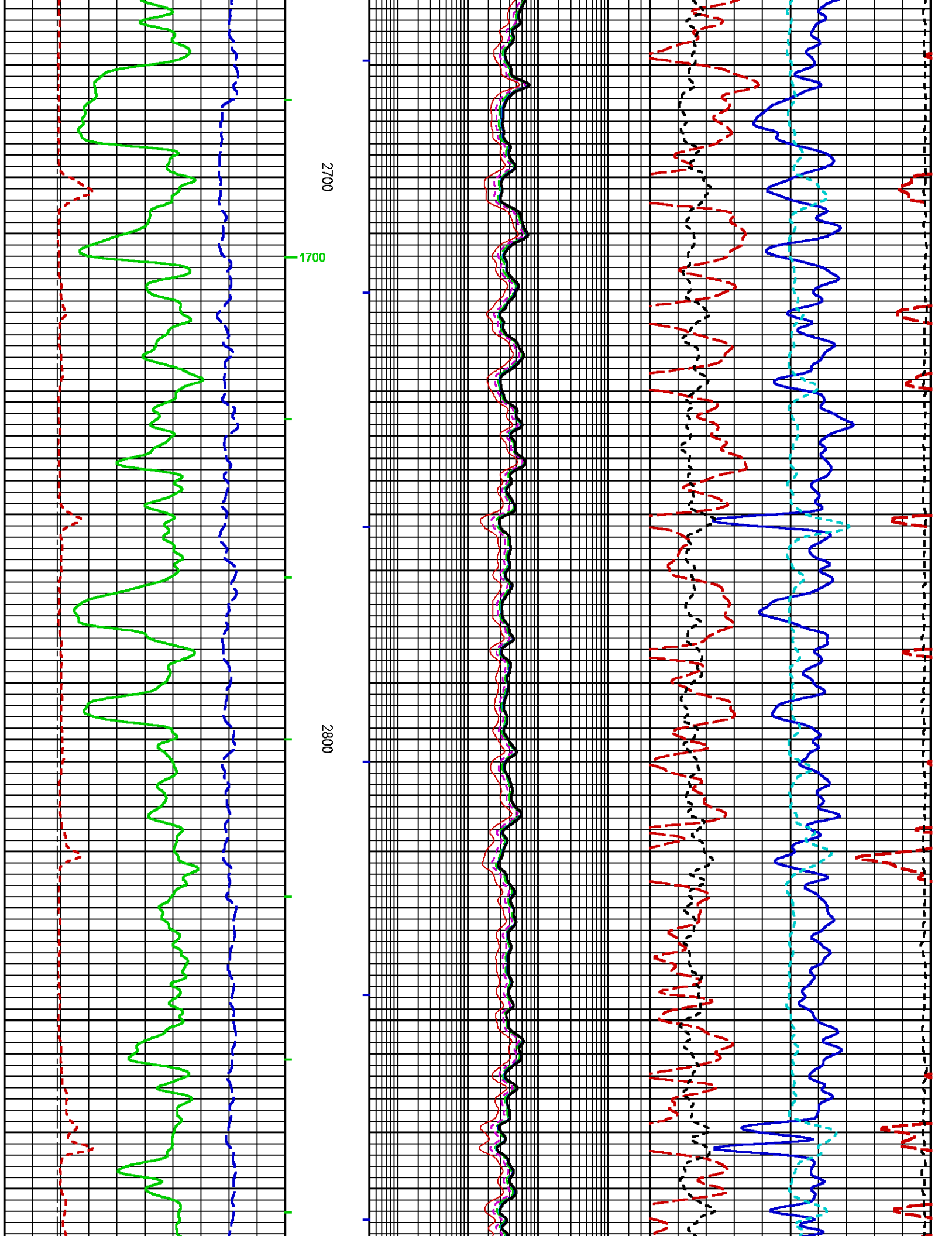


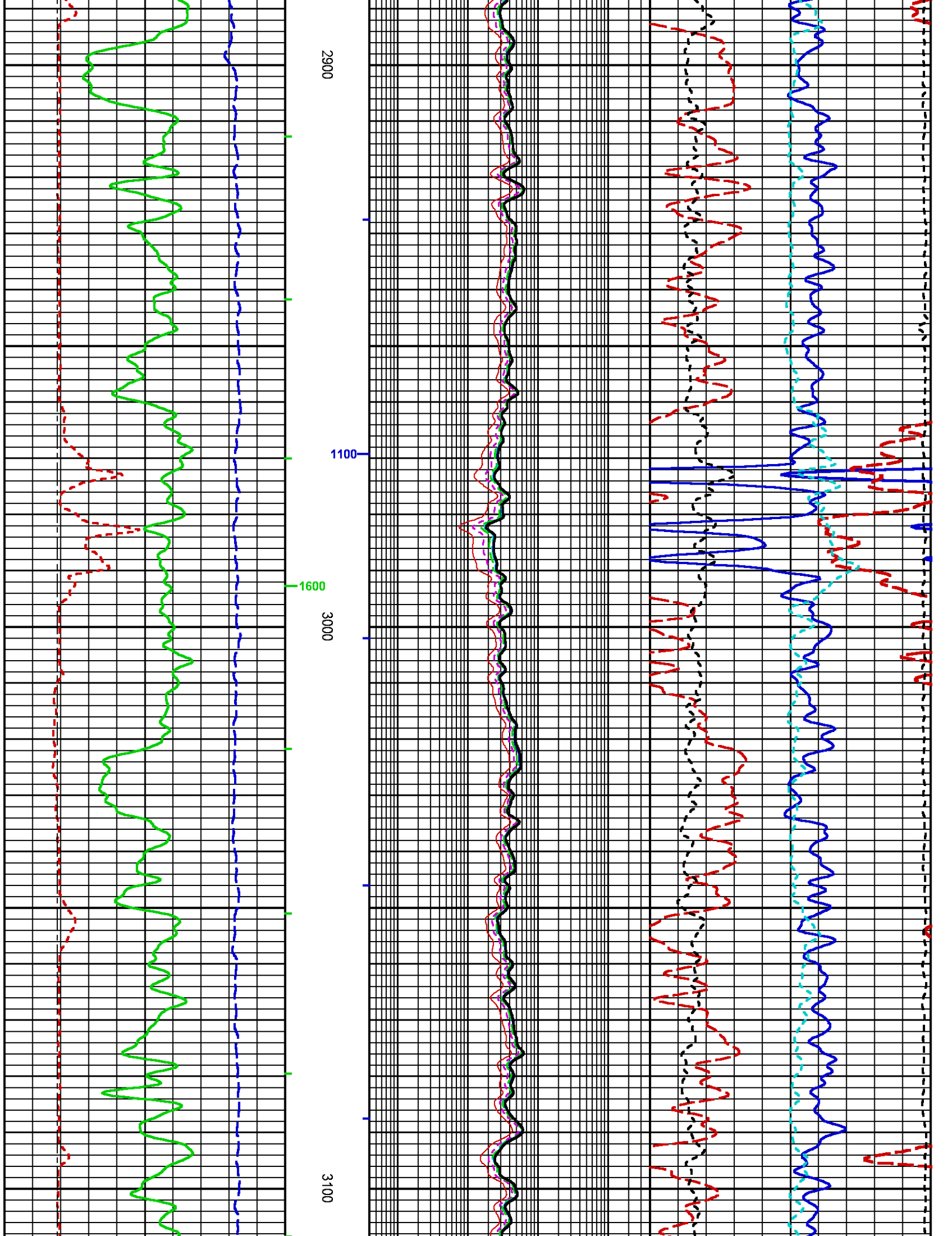


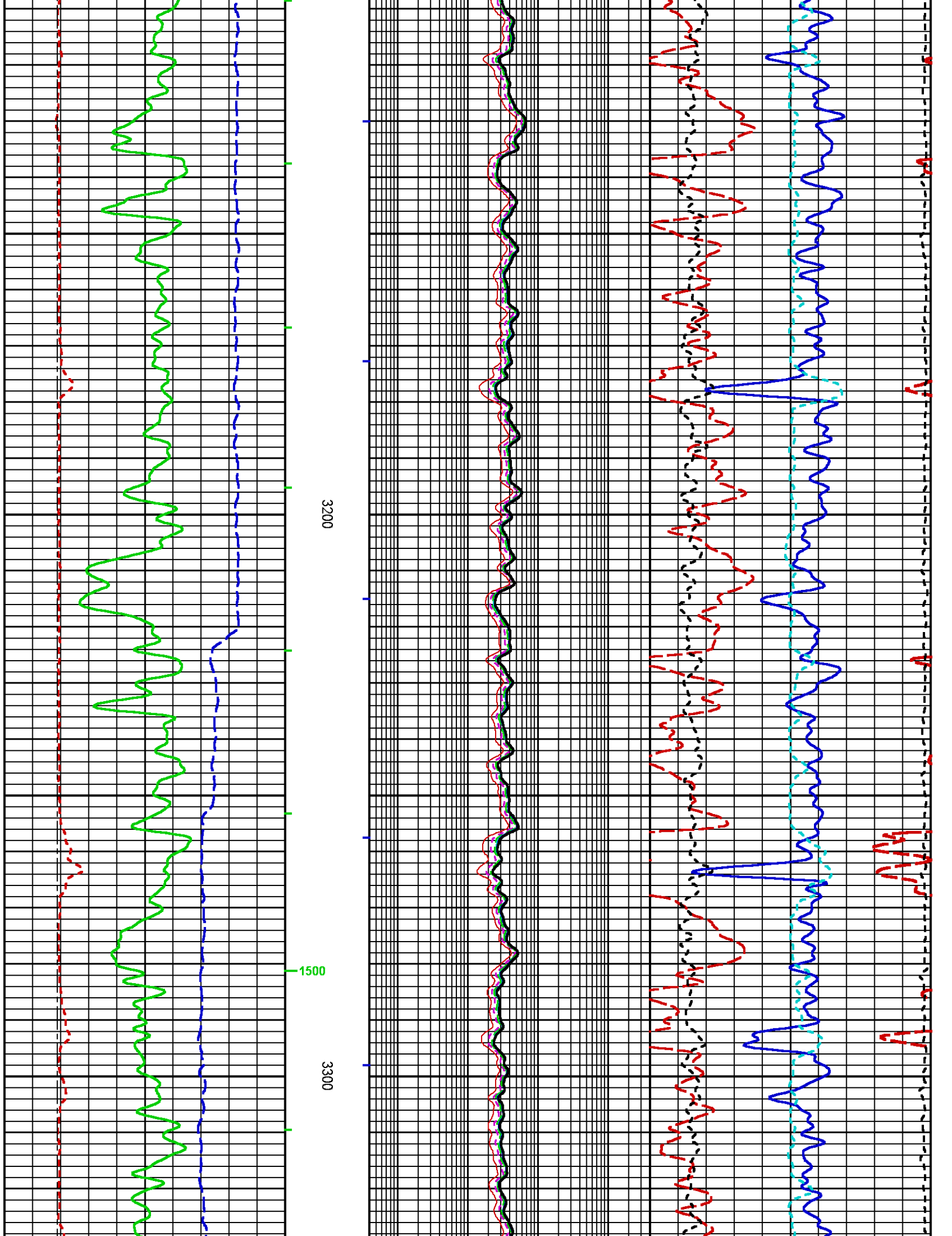


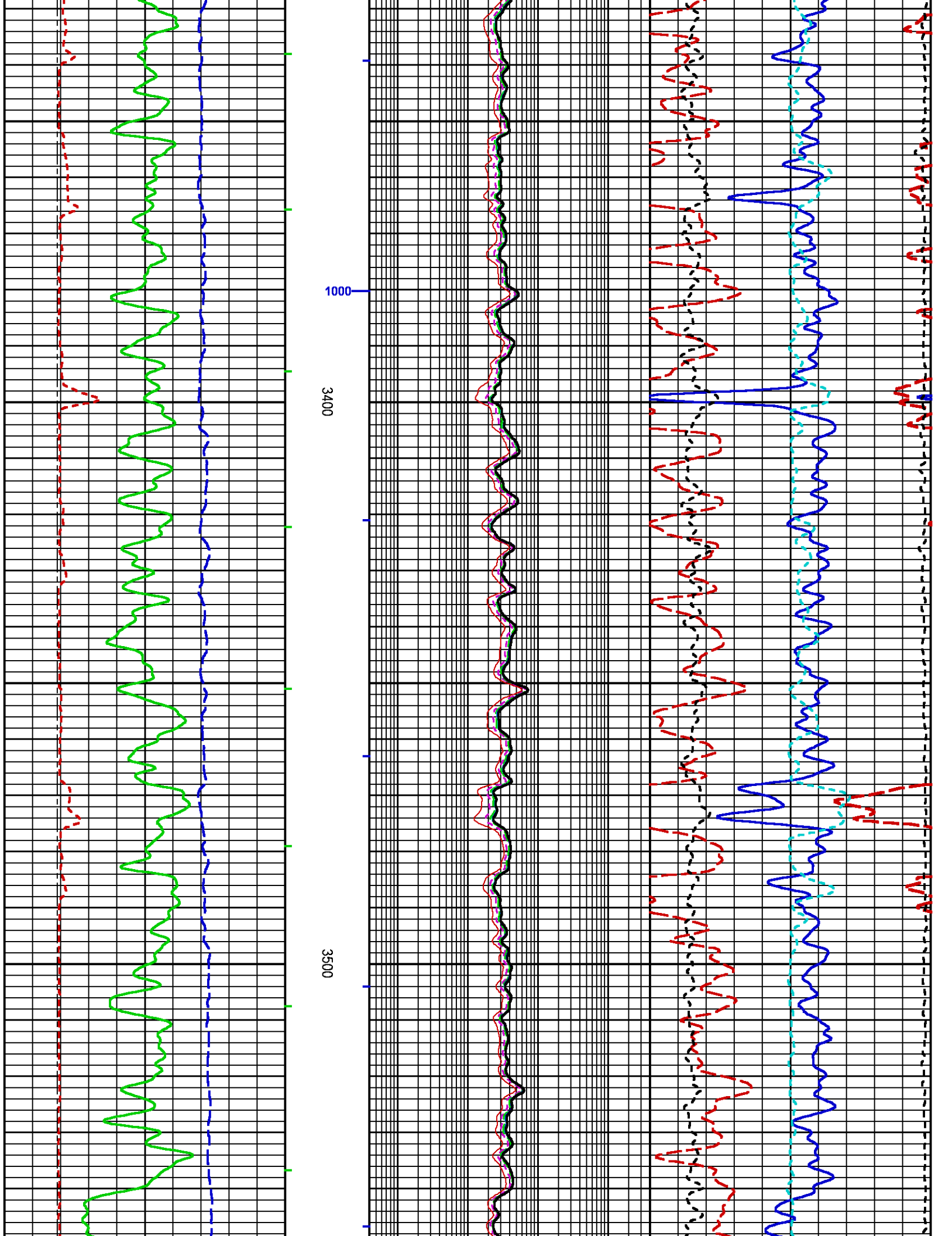


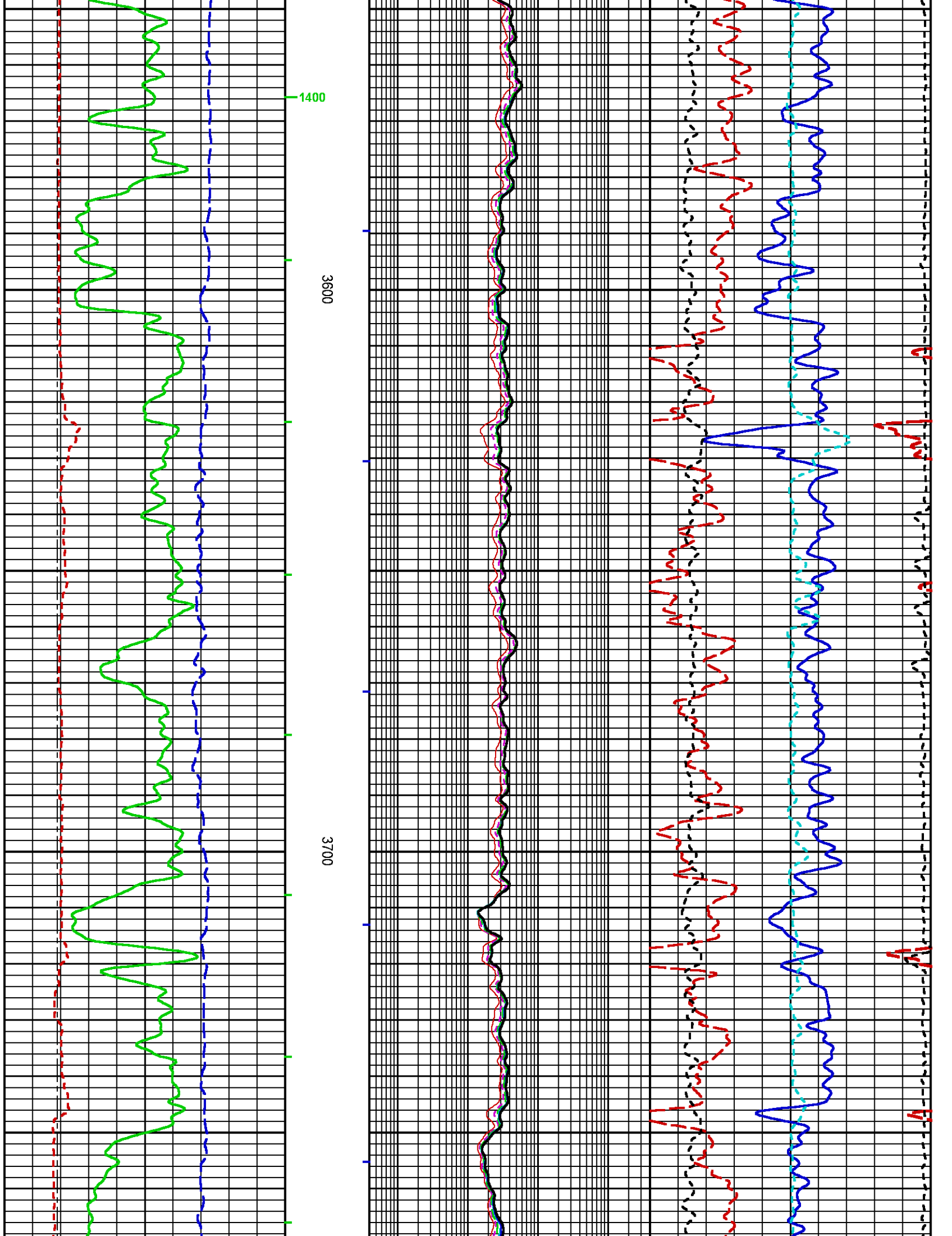


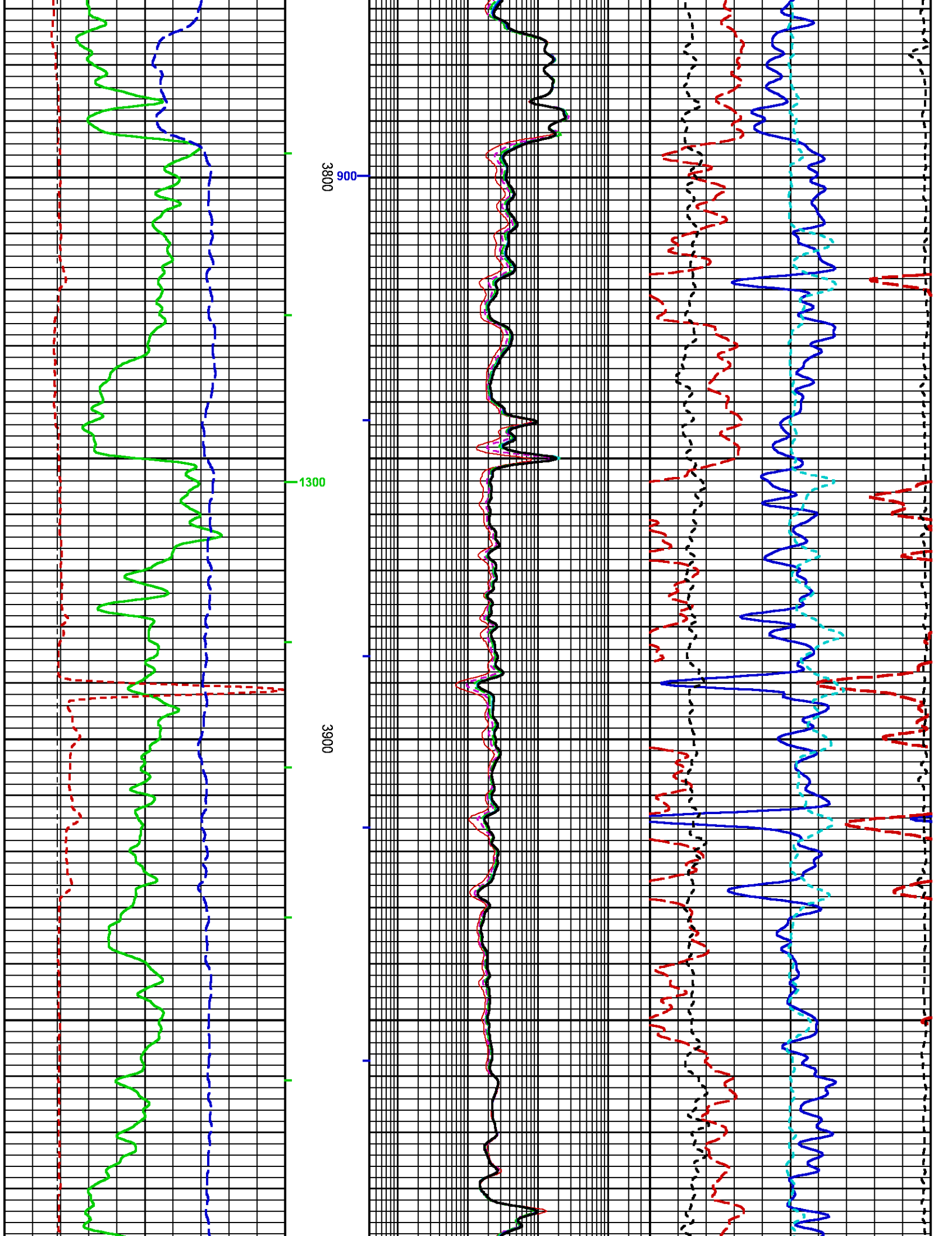


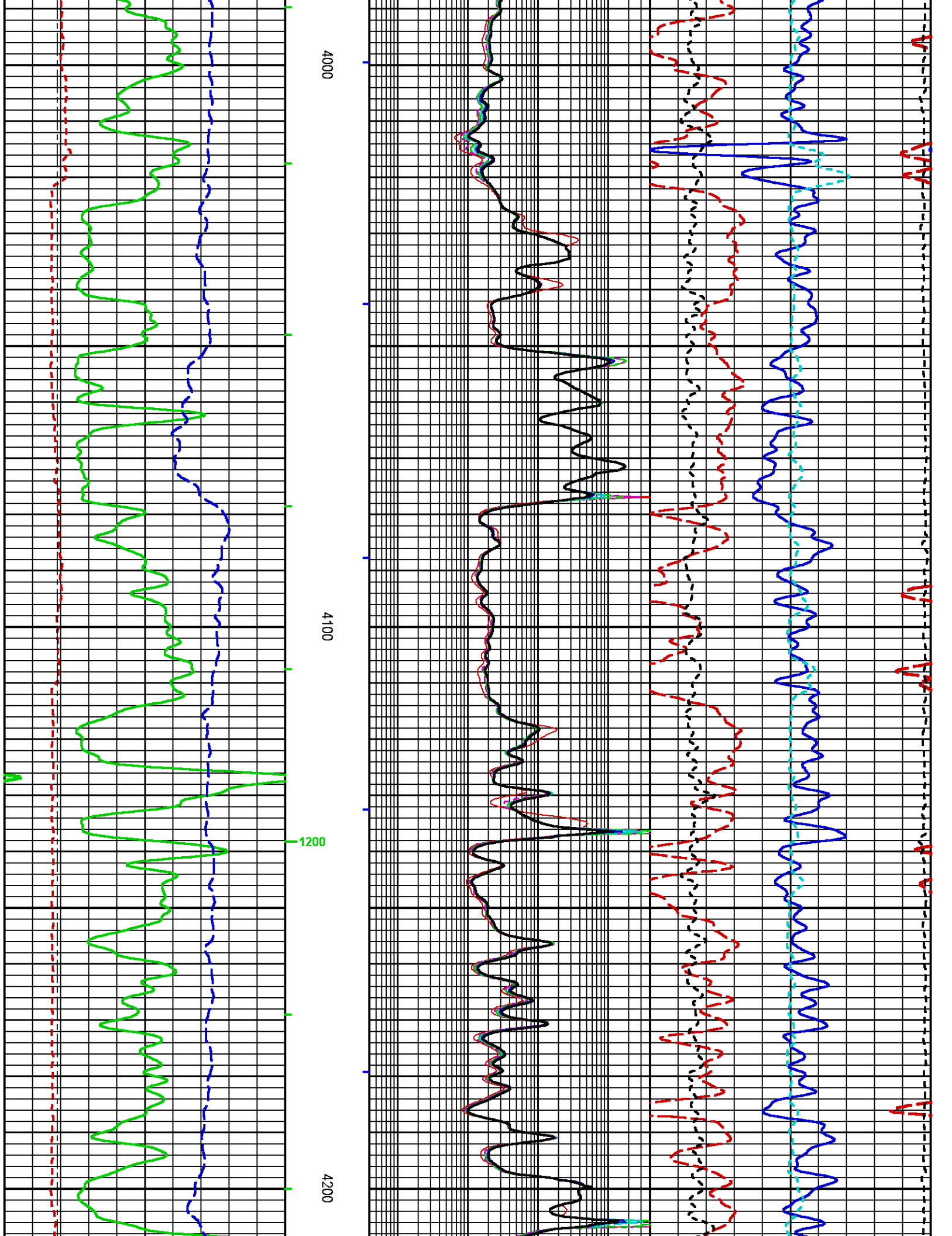


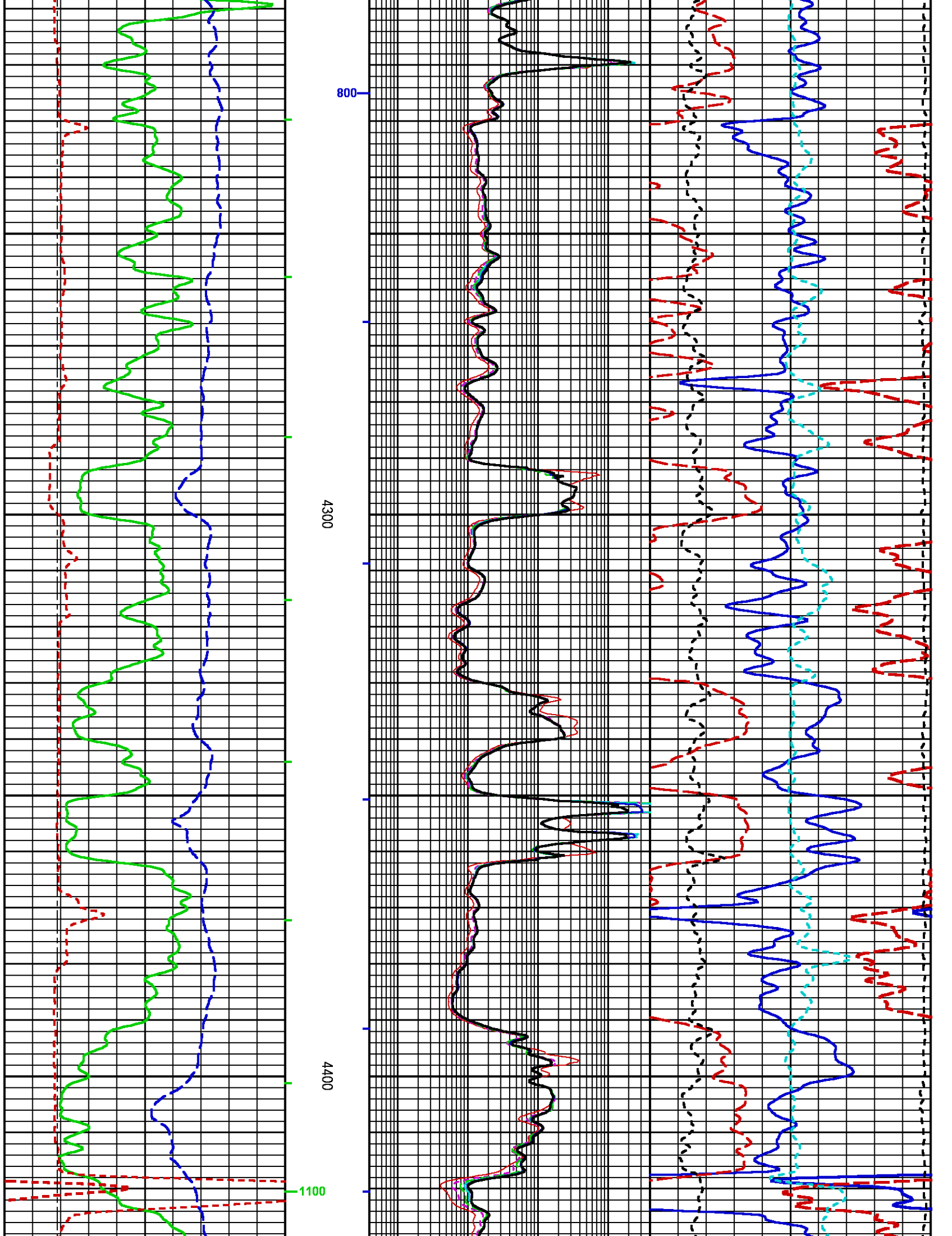


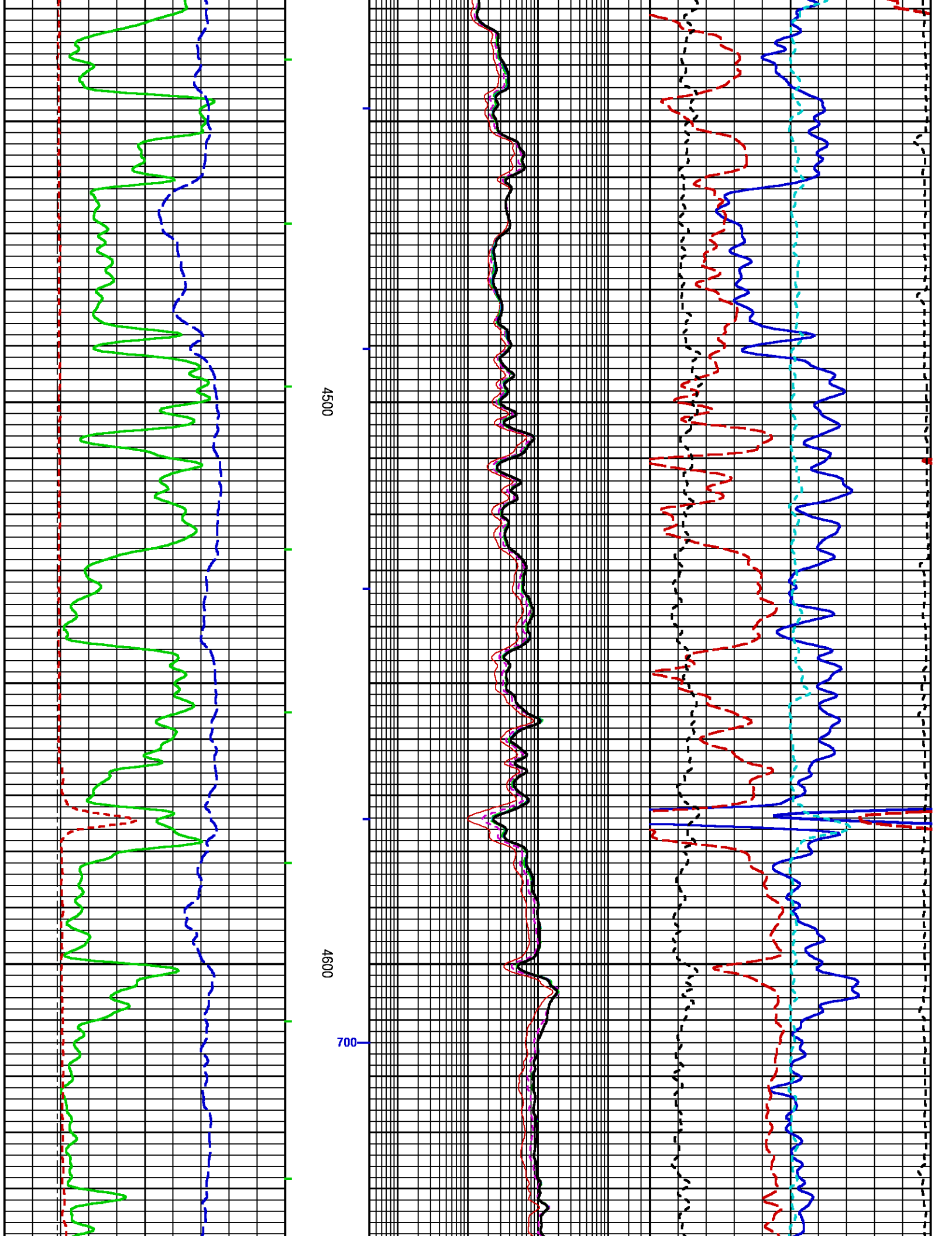


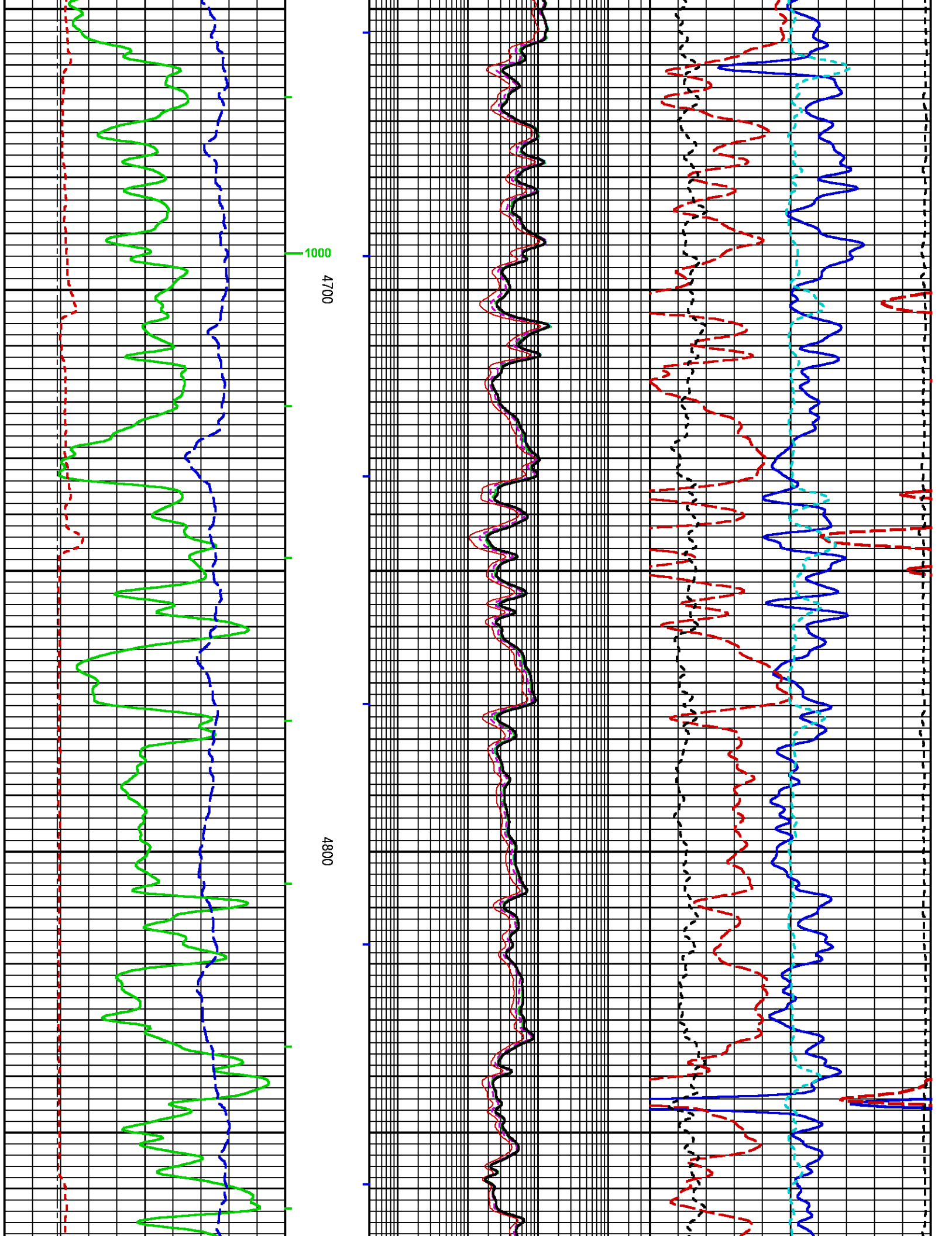


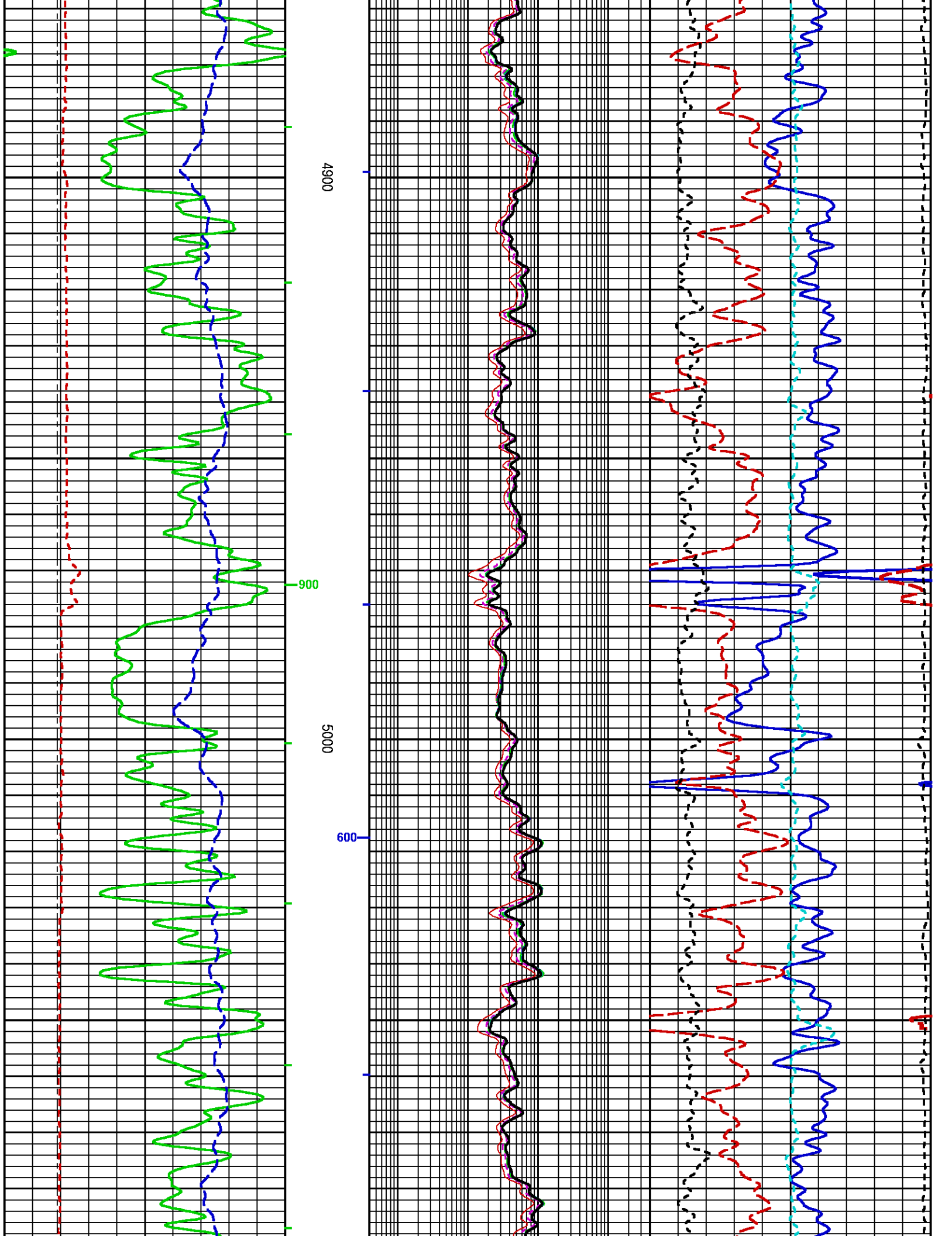


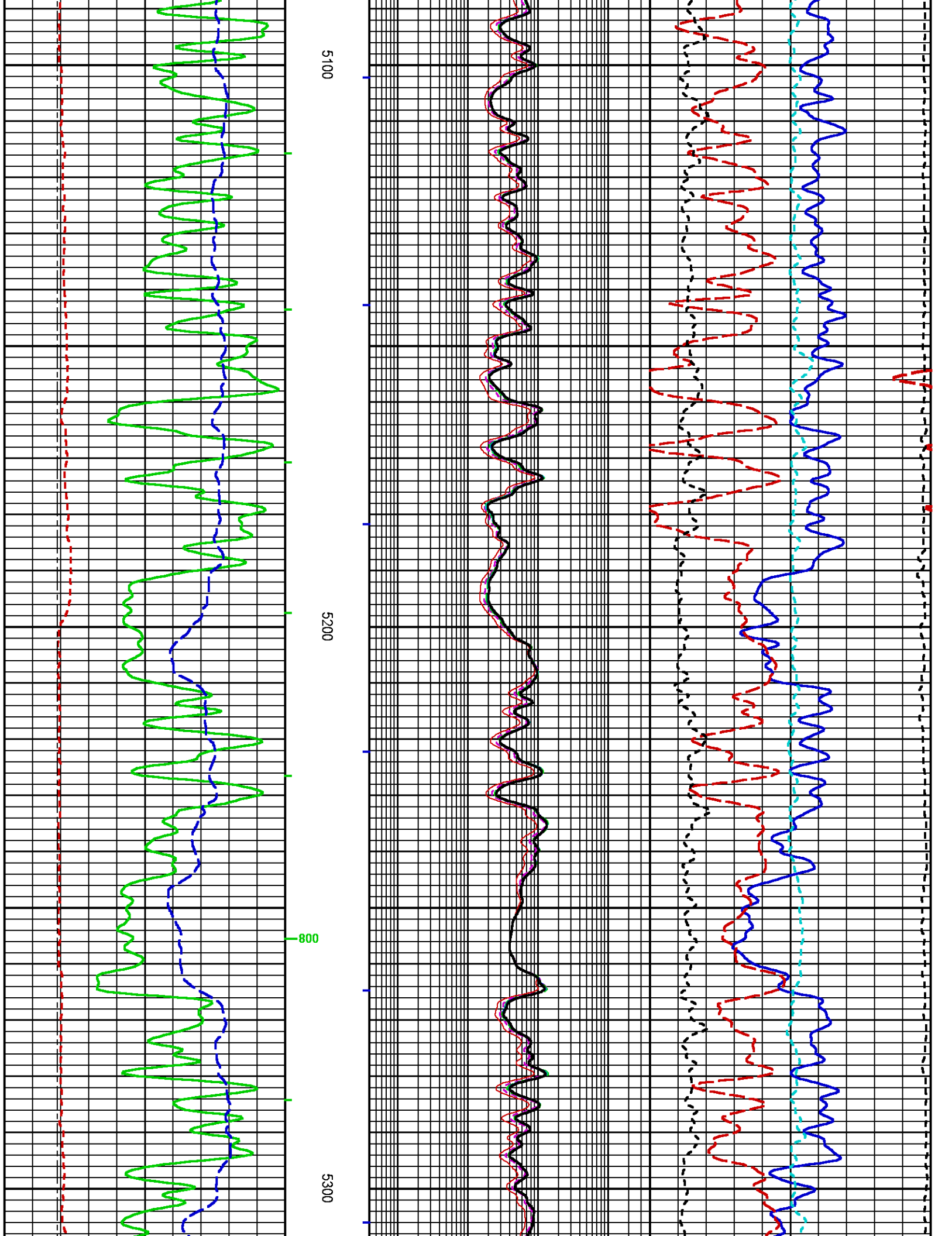


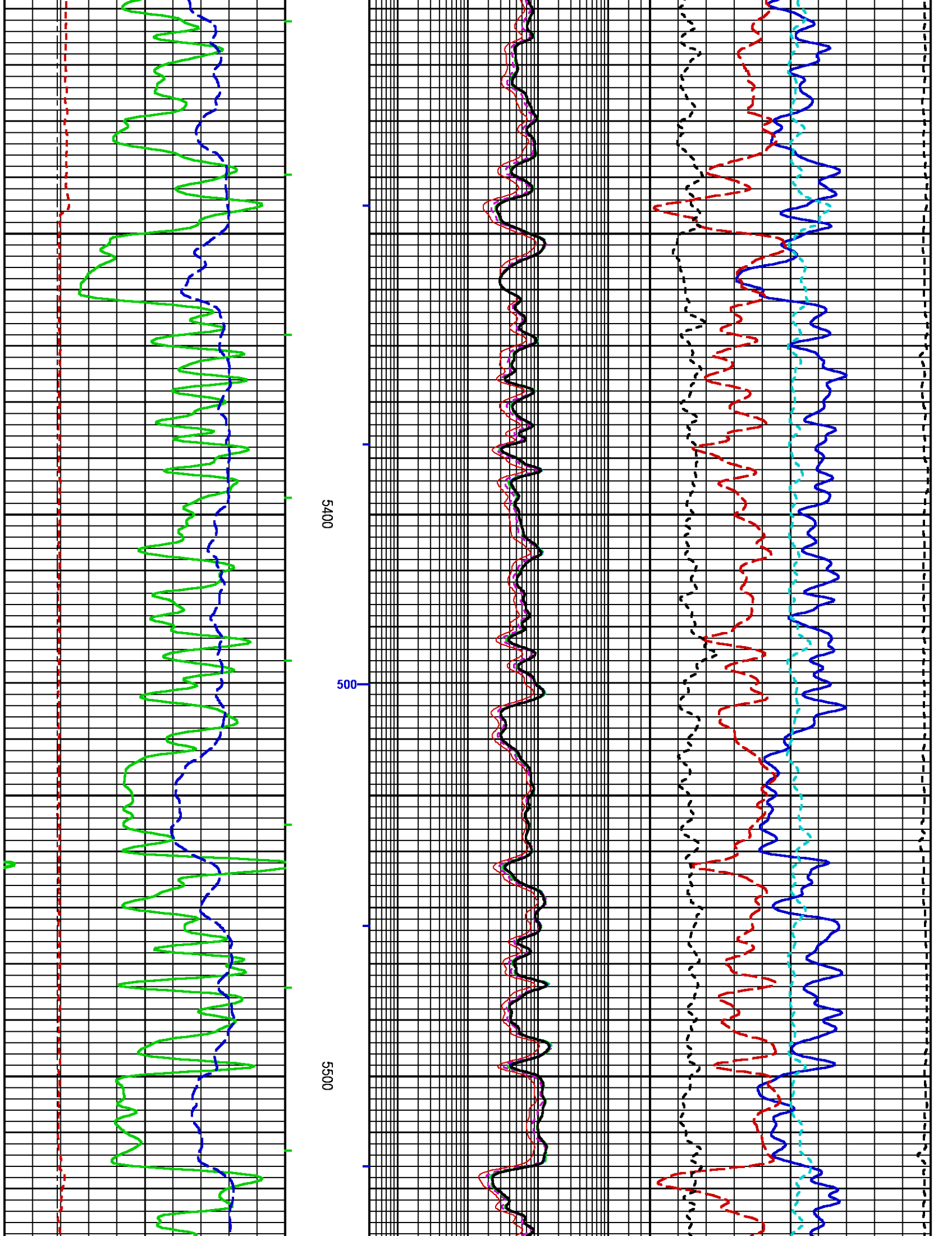


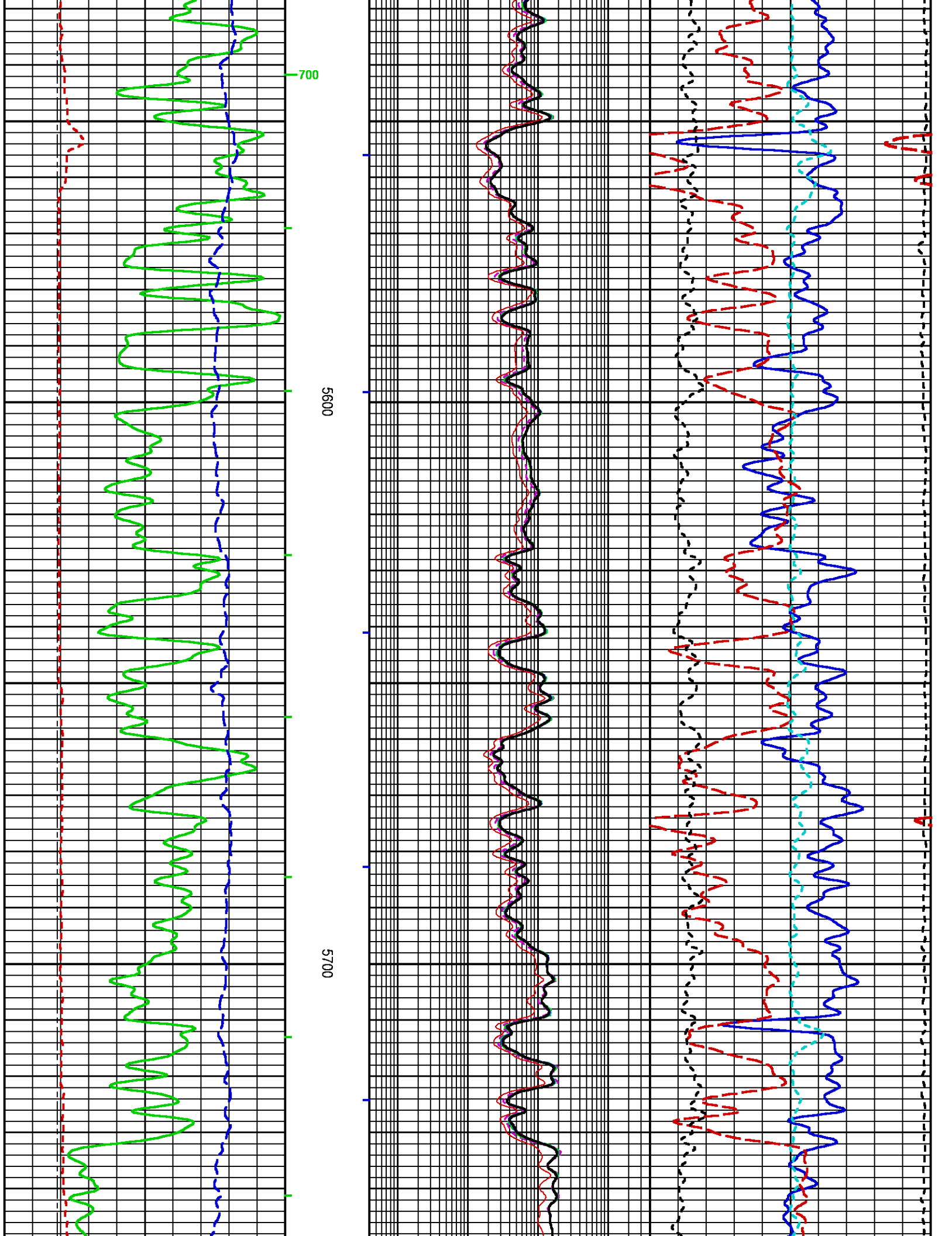


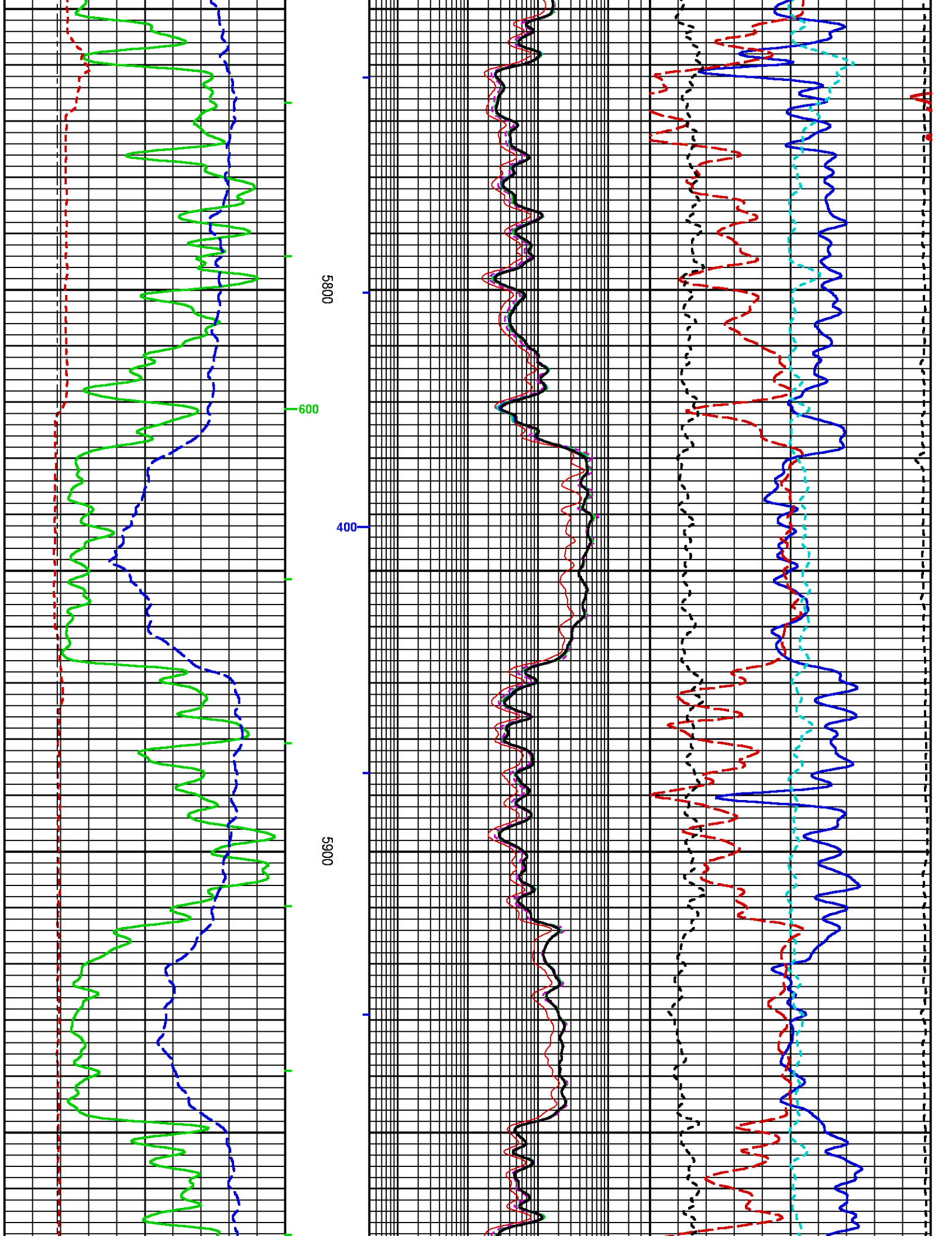


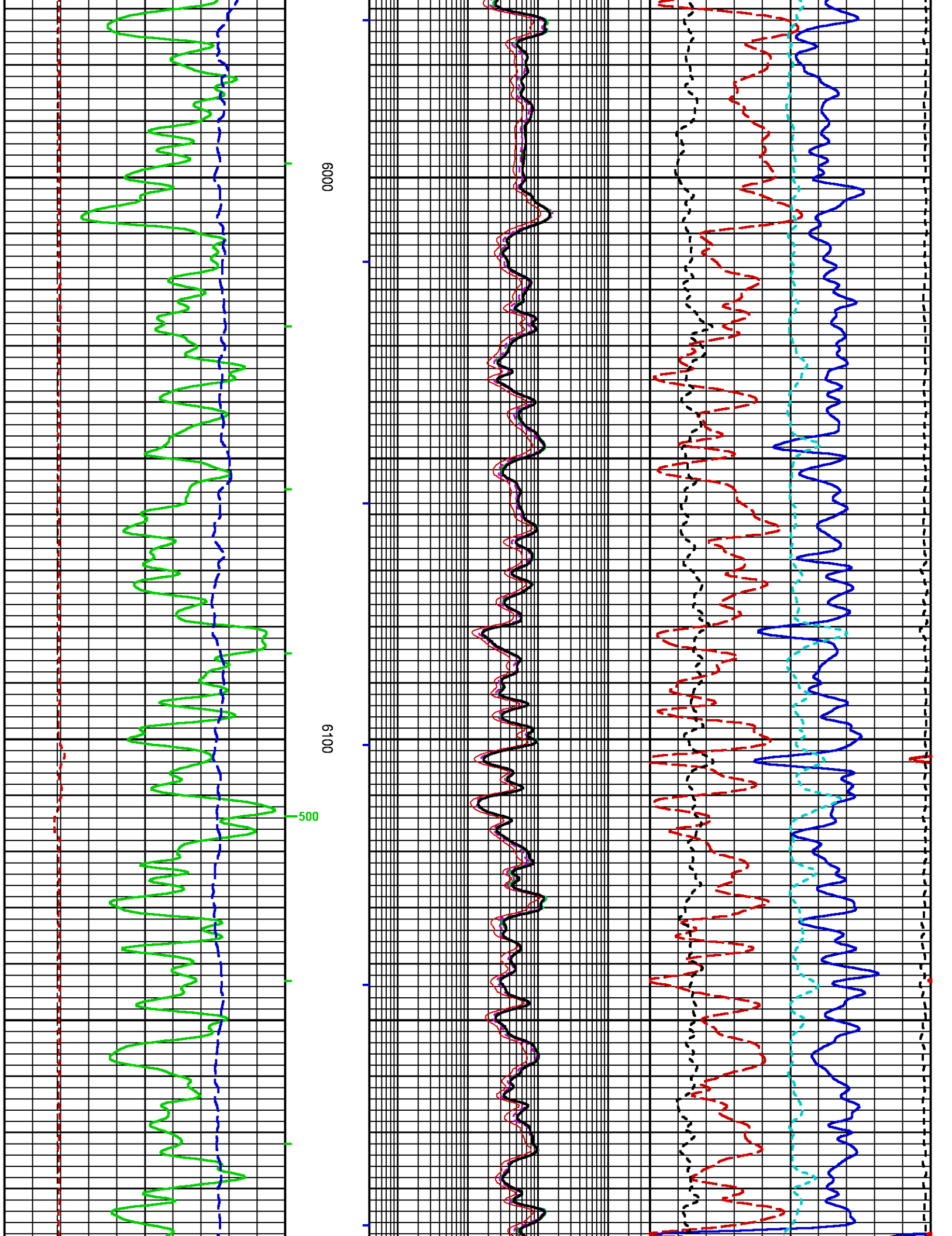


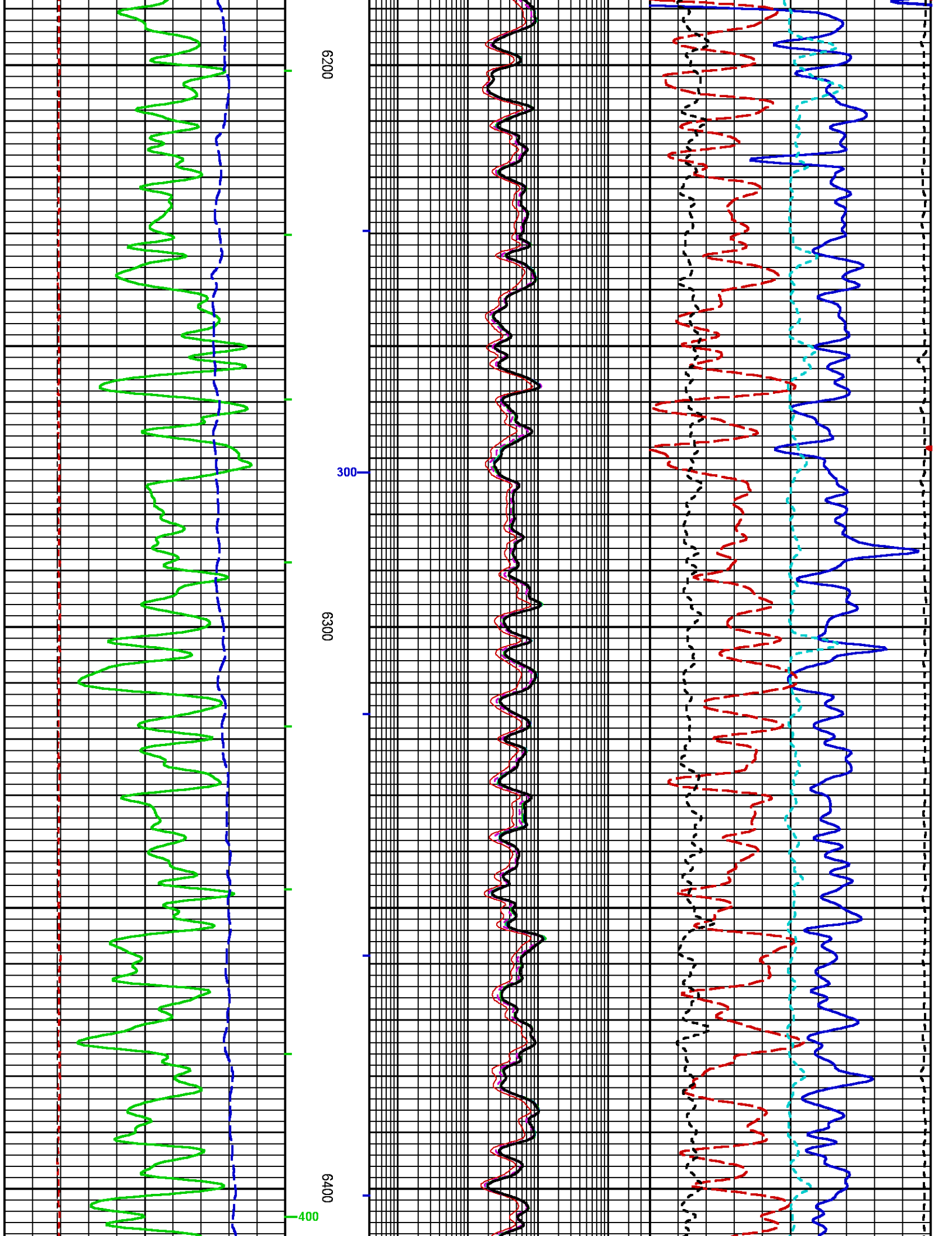


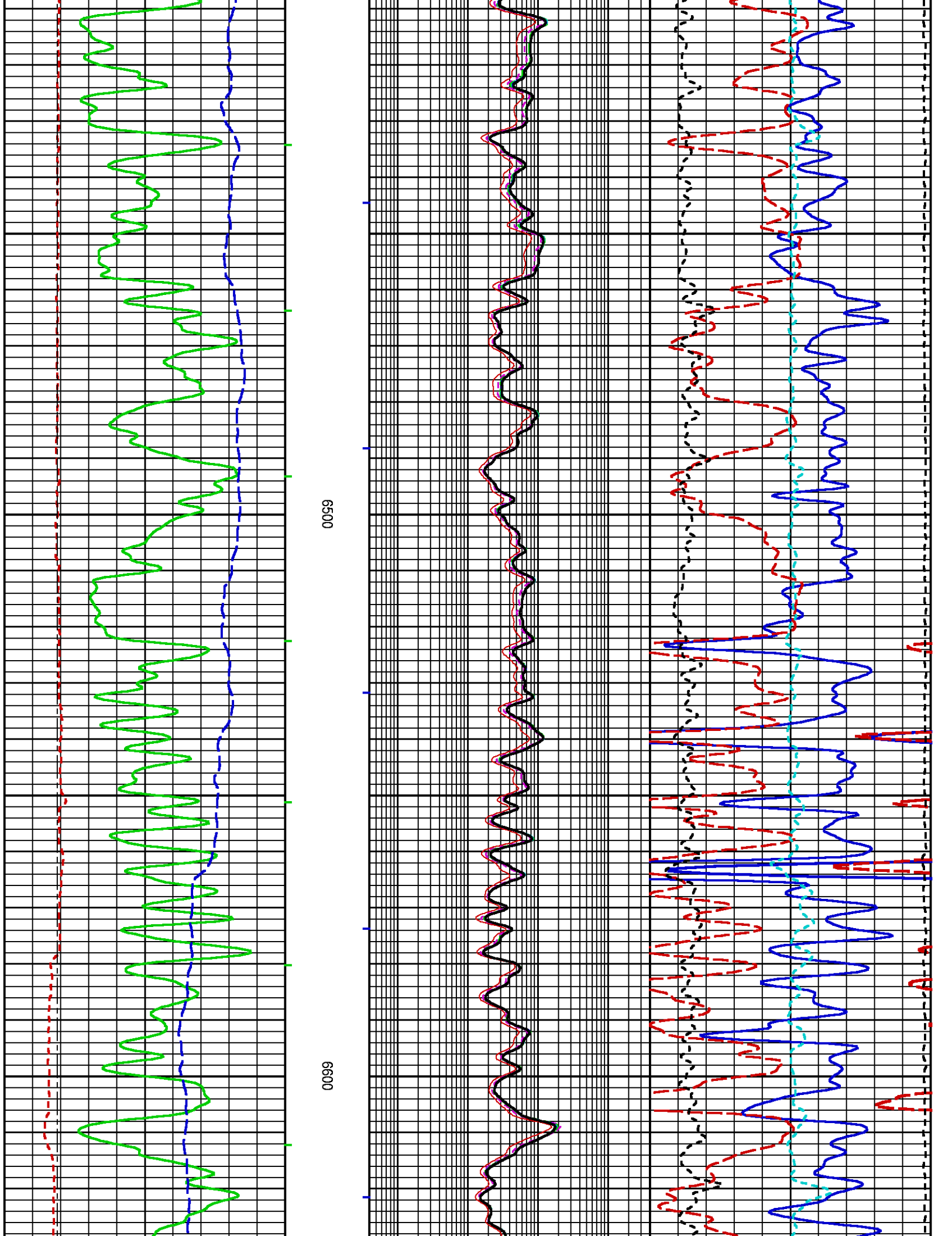


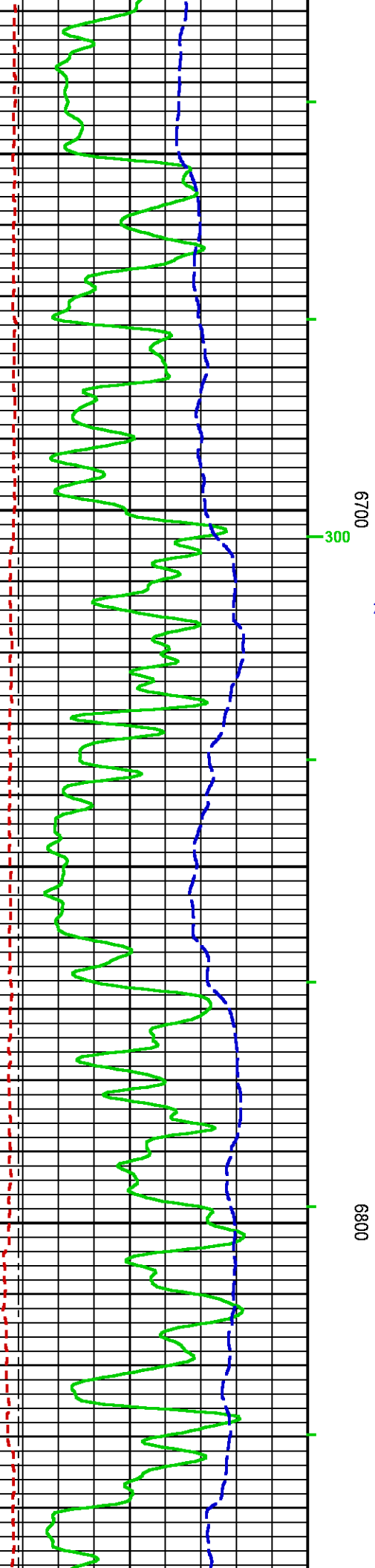
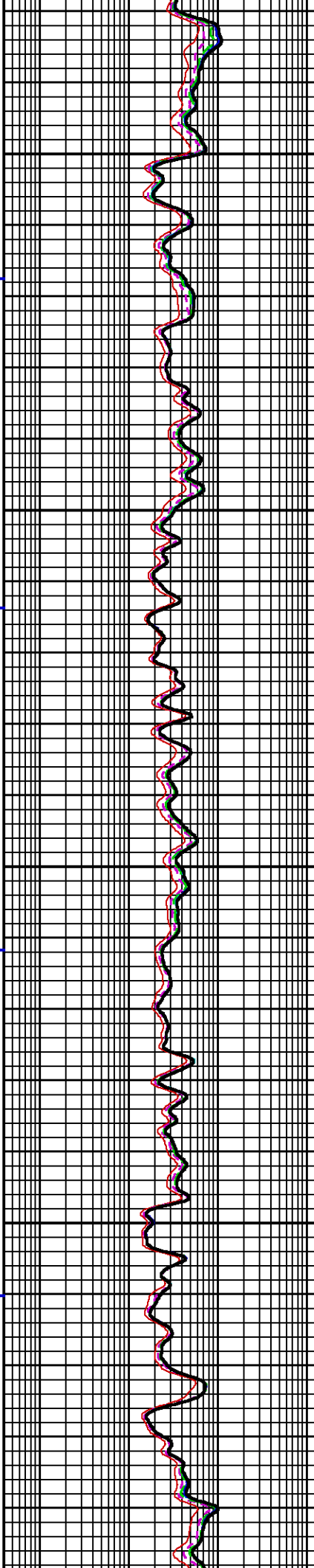
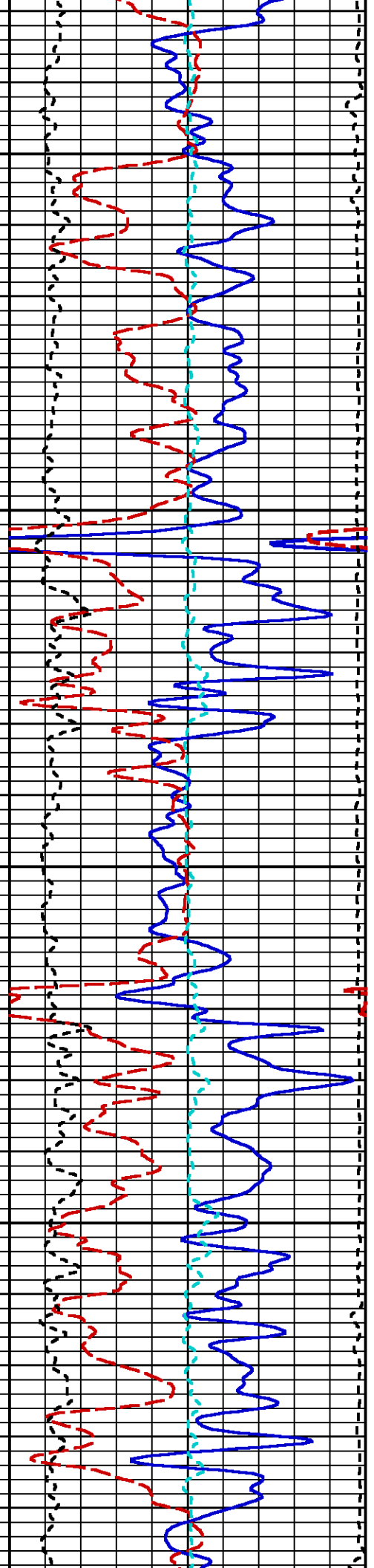


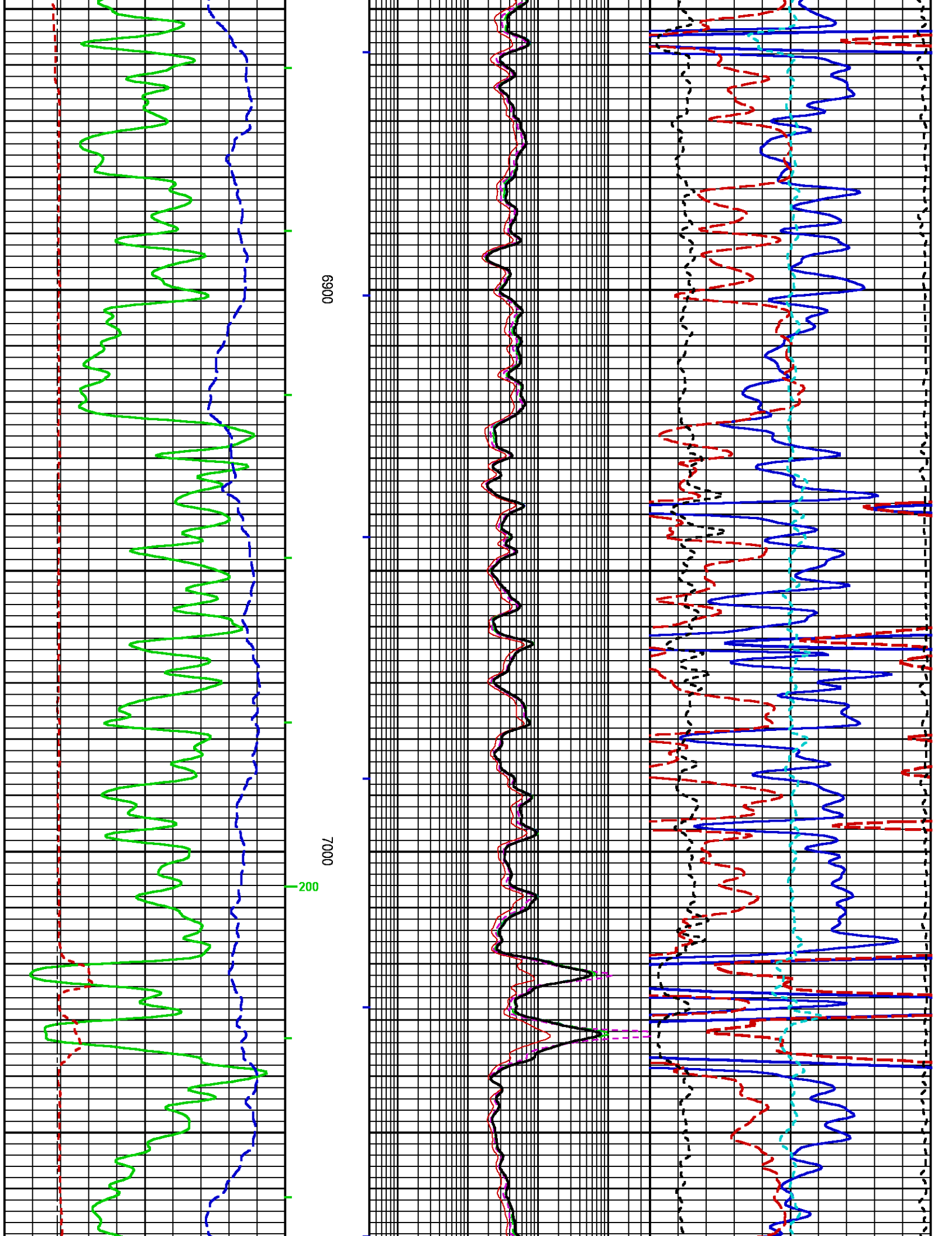


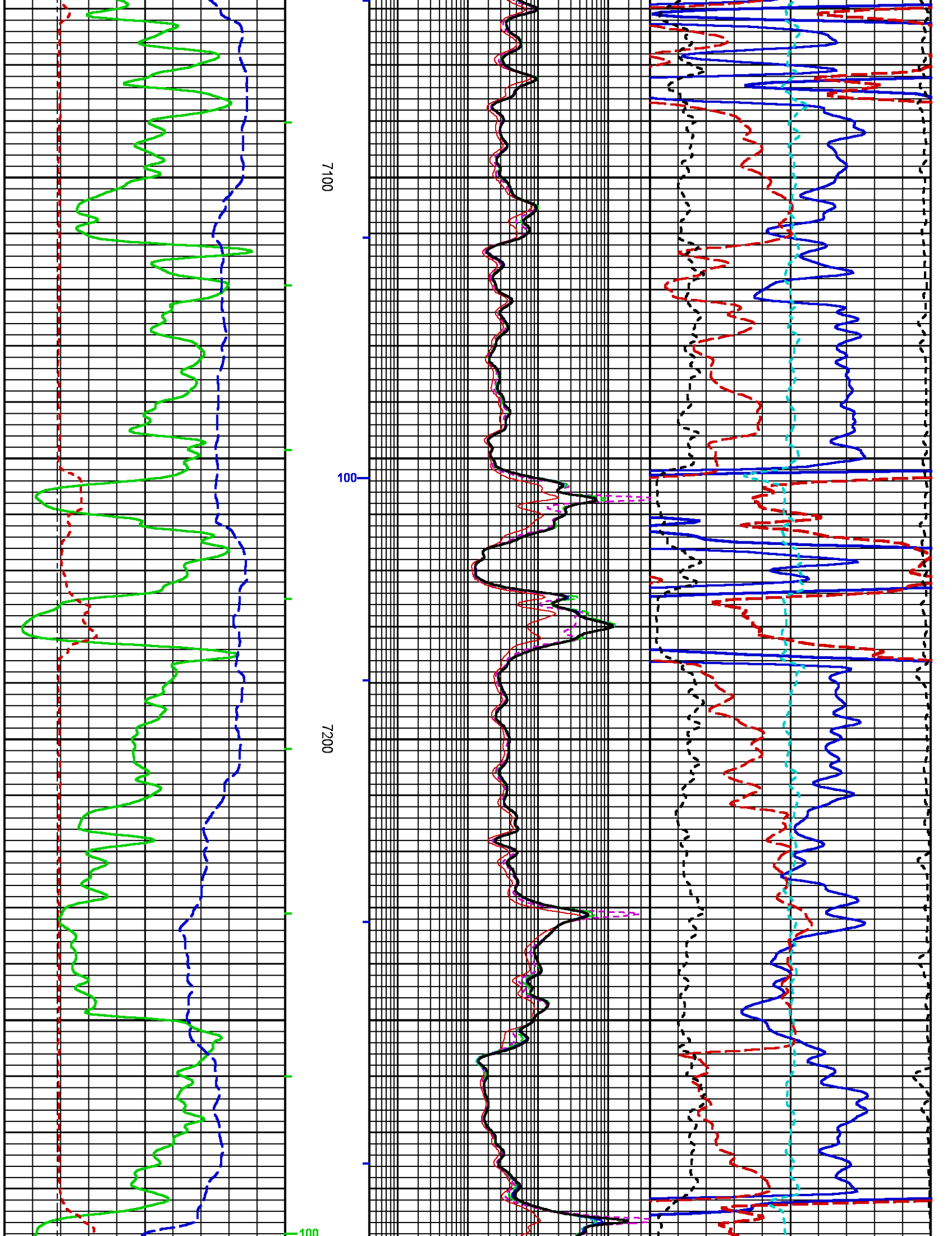


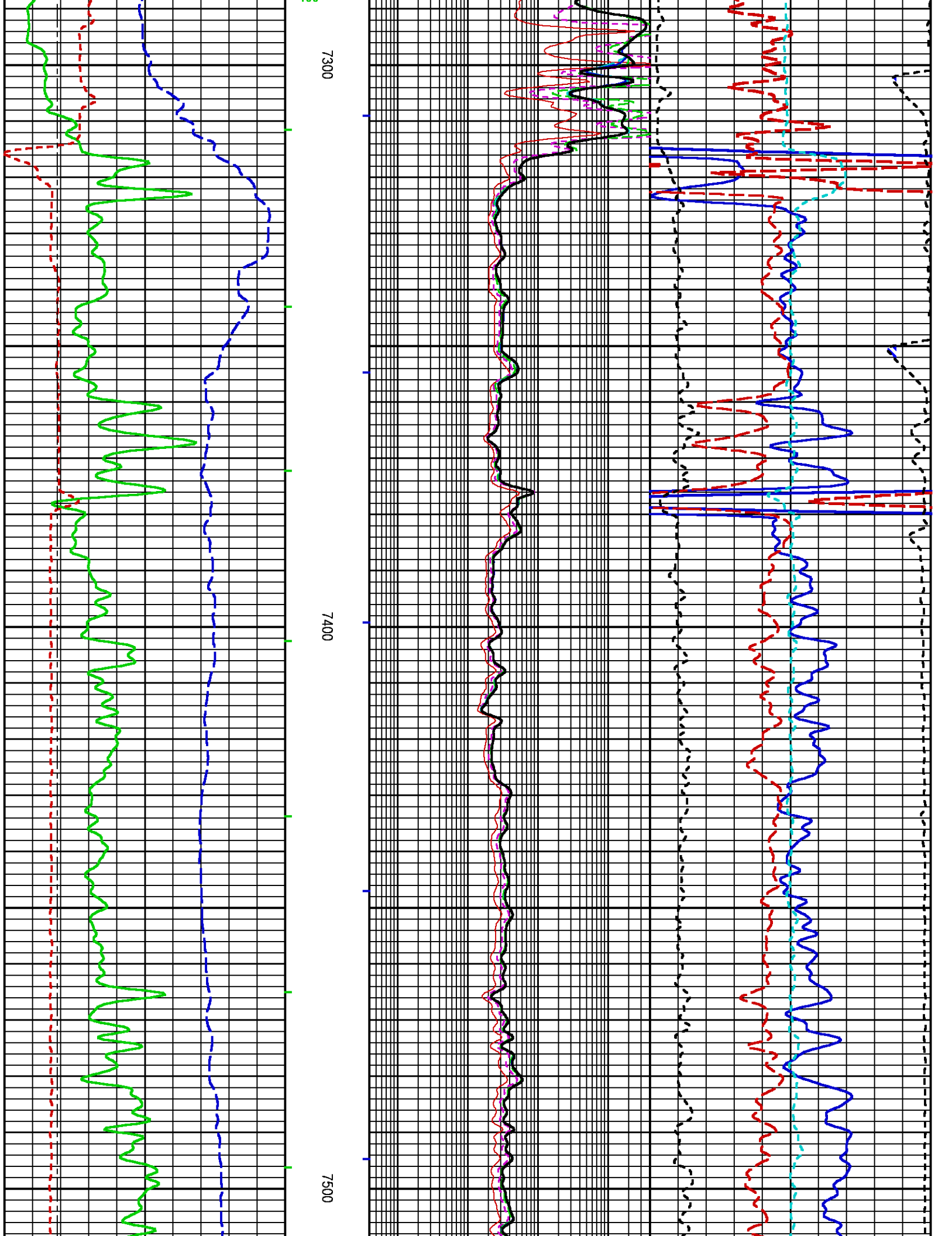


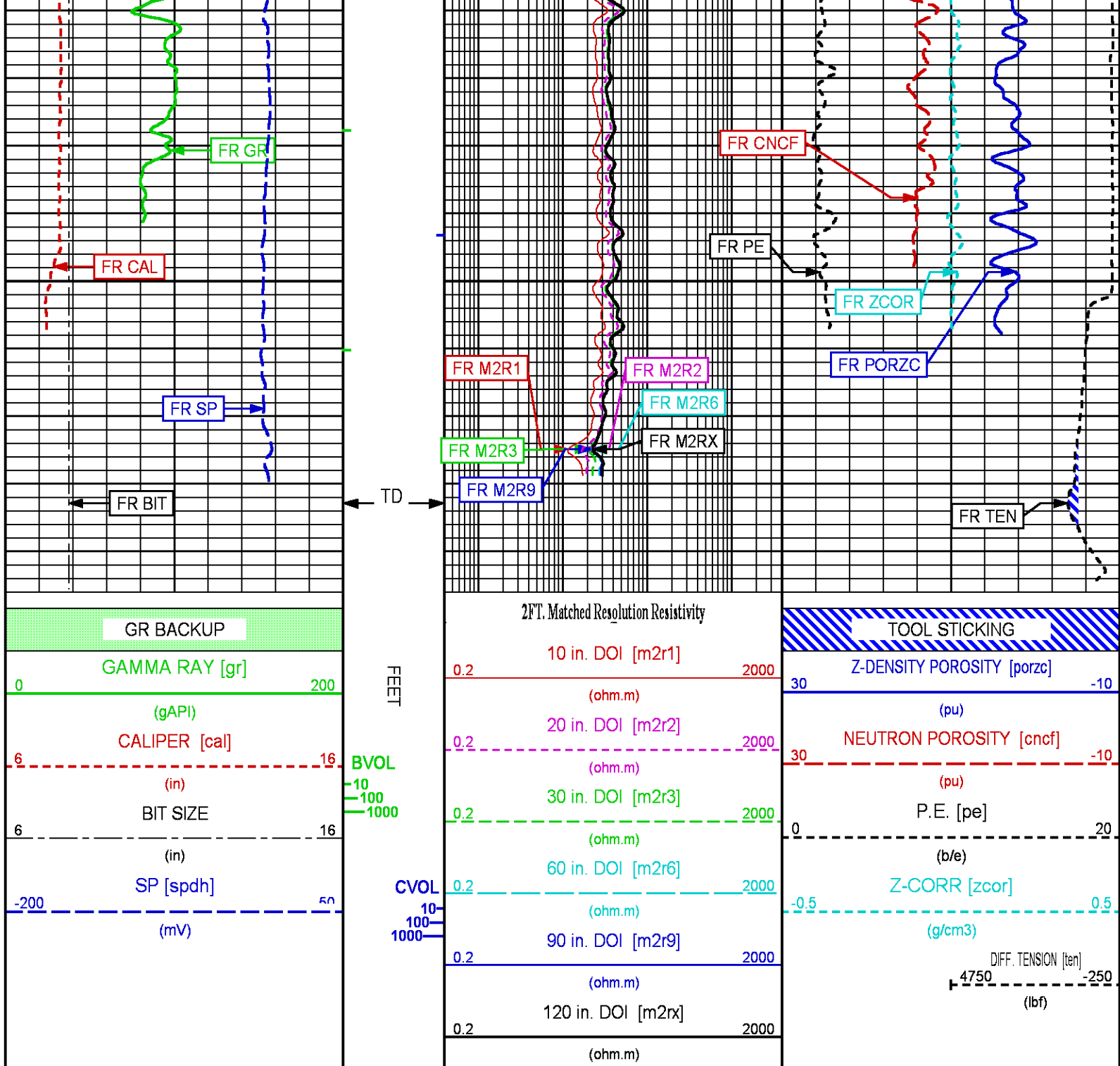












REPEAT PASS

ECLIPS 6.2i ECLIPS General Release Rel 6.2i Wed Jun 12 12:21:40 CDT 2013
Updates: 1 Patches: 9

Plotted: Thu Jun 22 09:54:56 2017

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/l/AREME GUNDERSON 20 04W/GSI AMWGI XCR03.prm

SYMMETRIC FILTER					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
Y AXIS CALIPER TENSION GR	FILTER ()	medium (1)		TOP	BOTTOM
	FILTER ()	medium (1)		"	"
	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
	FILTER (.i)	medium (1)		"	"
CN CALIPER	FILTER ()	medium (1)		"	"
	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
	FILTER (.i)	medium (1)		"	"
ZDL MED RES	FILTER (hrd1*)	medium		"	"
	FILTER (hrd1s*)	medium		"	"
	FILTER (hrd2*)	medium		"	"
	FILTER (hrd2s*)	medium		"	"
	FILTER (soft*)	medium		"	"
SP-SPDH	FILTER ()	medium (1)		"	"
	FILTER (.i)	medium (1)		"	"

BOREHOLE & CEMENT					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	4.500	in	TOP	BOTTOM
	CASING THICKNESS	0.000	in	"	"
BIT SIZE	BIT SIZE	7.875	in	"	"
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	77.0	degF	"	"
	MUD SAMPLE RES	1.000	ohm.m	"	"
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	77.0	degF	"	"
	at BH REF DEPTH	0.0	ft	"	"
	with TEMP GRADIENT	1.200	0.01 degF/ft	"	"
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (zdbh*)	USE CALIPER		"	"
BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	7.875	in	"	"
	FIXED DIAMETER (mbh*)	7.875	in	"	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	TOOL MEASURED		"	"

CN PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
2446 CN MATRIX	2446 MATRIX	SANDSTONE		TOP	BOTTOM
CN SALINITY CORRECTION	SALINITY	700	ppm	"	"
CN TOOL STANDOFF	ENABLE STANDOFF CORR	OFF		"	"
	STANDOFF AMOUNT	0.00	in	"	"
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		"	"
	BIT SIZE BEHIND CSNG	7.875	in	"	"

ZDL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
MUD DENSITY	MUD DENSITY	9.80	lbm/gal	TOP	BOTTOM
DENSITY POROSITY	RHOmatrix	2.680	g/cm3	"	"
	RHOfluid	1.000	g/cm3	"	"
ZDL	DENX TRACKING	ON		"	"
TRACKING TIME	Logging Spd for Gain	Over 10 ft/min		"	"

HDIL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
HDIL TEMPERATURE CORRECTION	TEMP CORR SOURCE	USE RXTEMP		TOP	BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		"	"
	ABC to CALCULATE	MUD CONDUCTIVITY		"	"
	STANDOFF	1.50	in	"	"
	TOOL POSITION	ECCENTERED		"	"
	Rmud MULTIPLIER	1.000		"	"
HDIL DIFF TEN LIMIT	DIFF TENSION LIMIT	500		"	"

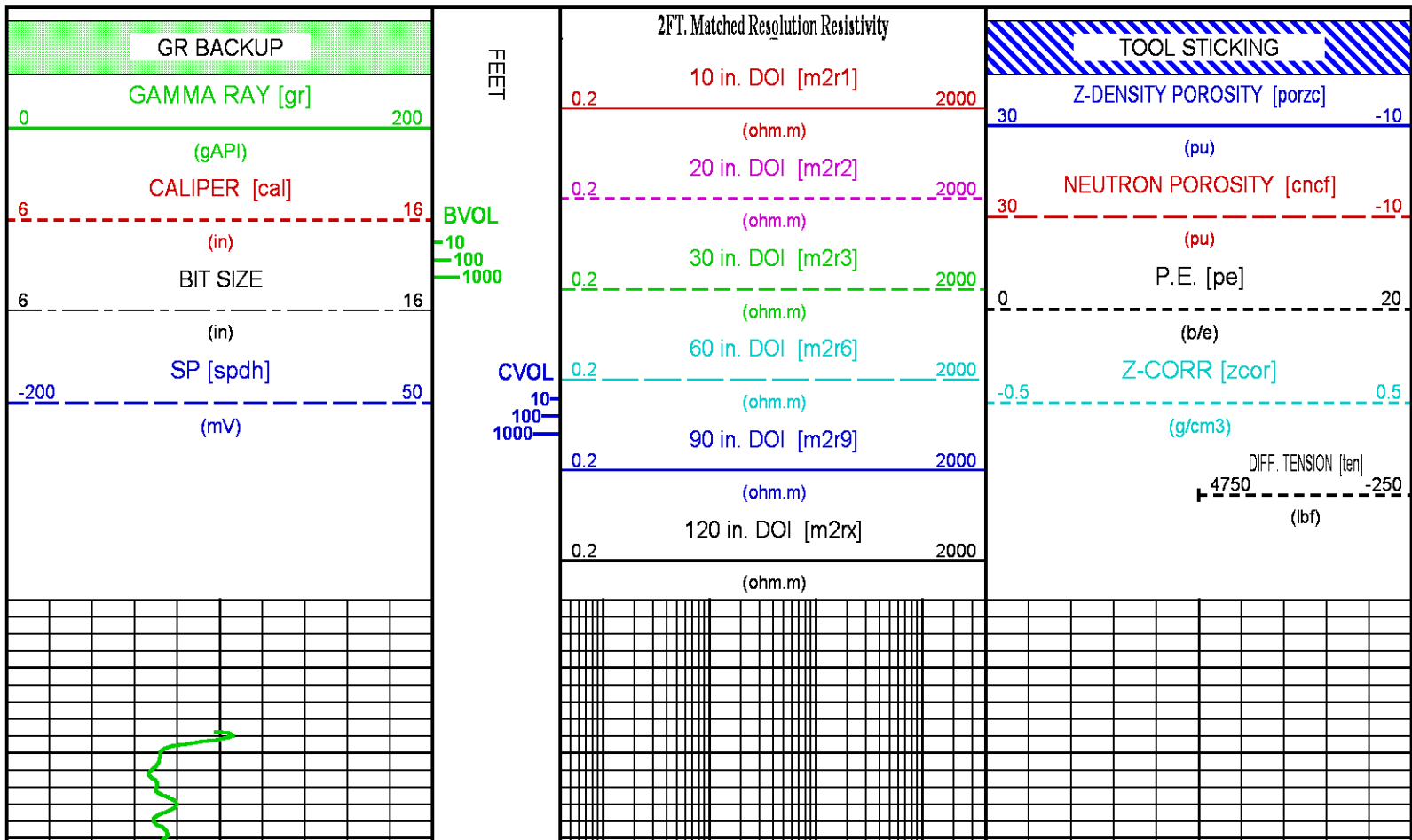
CURVE DESCRIPTION REPORT

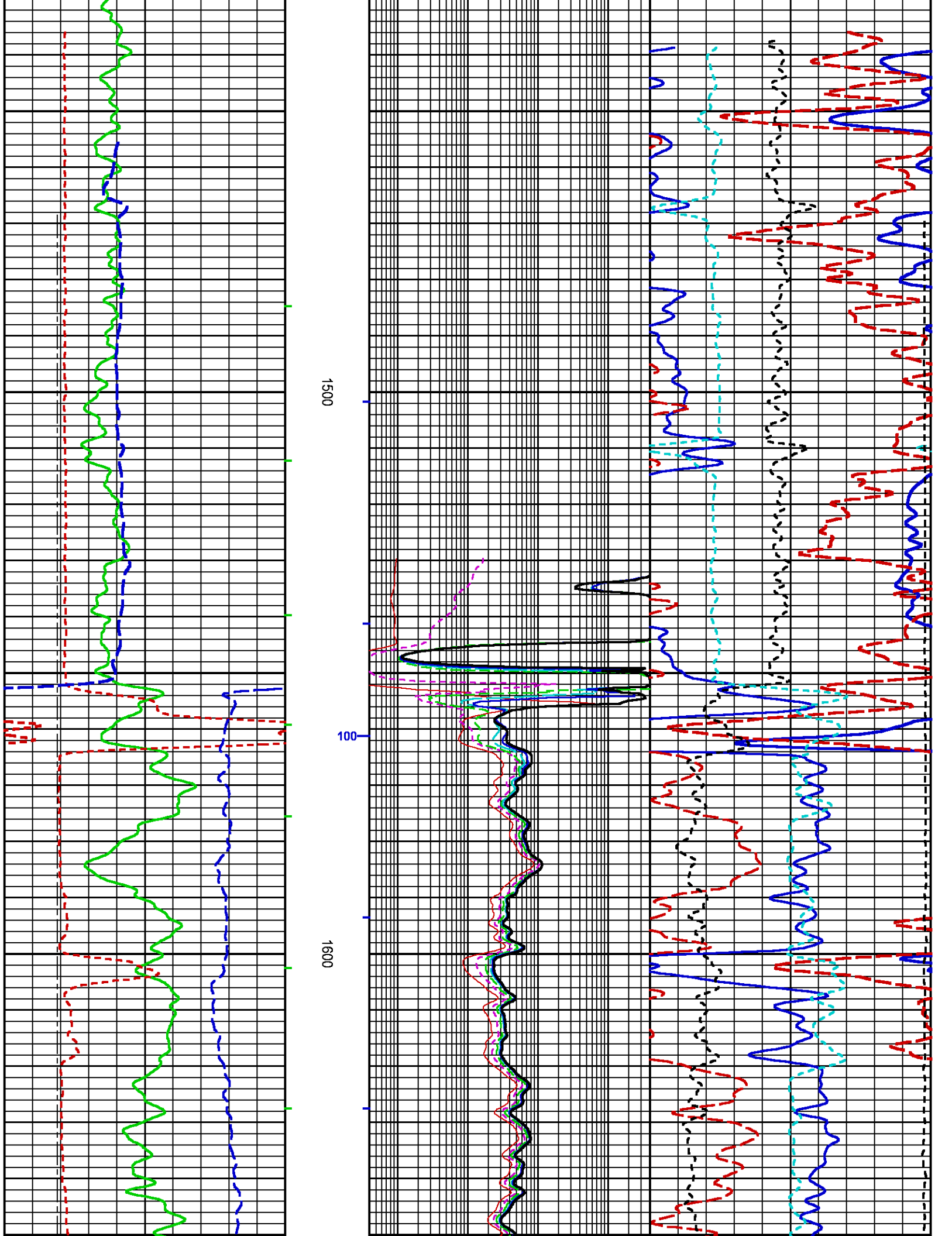
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Jun 22 09:40:24 2017	BIT SIZE
F1:BVOL	Jun 22 09:40:24 2017	BOREHOLE VOLUME
F1:CAL	Jun 22 09:40:24 2017	CALIPER
F1:CNCF	Jun 22 09:40:24 2017	FIELD NORMALIZED COMPENSATED NEUTRON POROSITY
F1:CVOL	Jun 22 09:40:24 2017	CEMENT VOLUME
F1:GR	Jun 22 09:40:24 2017	GAMMA RAY
F1:M2R1	Jun 22 09:40:24 2017	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 10-INCH DOI
F1:M2R2	Jun 22 09:40:24 2017	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 20-INCH DOI
F1:M2R3	Jun 22 09:40:24 2017	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 30-INCH DOI
F1:M2R6	Jun 22 09:40:24 2017	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 60-INCH DOI
F1:M2R9	Jun 22 09:40:24 2017	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 90-INCH DOI
F1:M2RX	Jun 22 09:40:24 2017	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 120-INCH DOI
F1:PE	Jun 22 09:40:24 2017	PHOTO ELECTRIC CROSS-SECTION
F1:PORZC	Jun 22 09:40:24 2017	CORRECTED POROSITY
F1:QHDL	Jun 22 09:40:24 2017	QUALITY FOR DIFFERENTIAL TENSION PULLS FOR HDIL
F1:SPDH	Jun 22 09:40:24 2017	SPONTANEOUS POTENTIAL PROCESSED IN COMMON REMOTE
F1:TEN	Jun 22 09:40:24 2017	DIFFERENTIAL TENSION
F1:ZCOR	Jun 22 09:40:24 2017	DENSITY CORRECTION

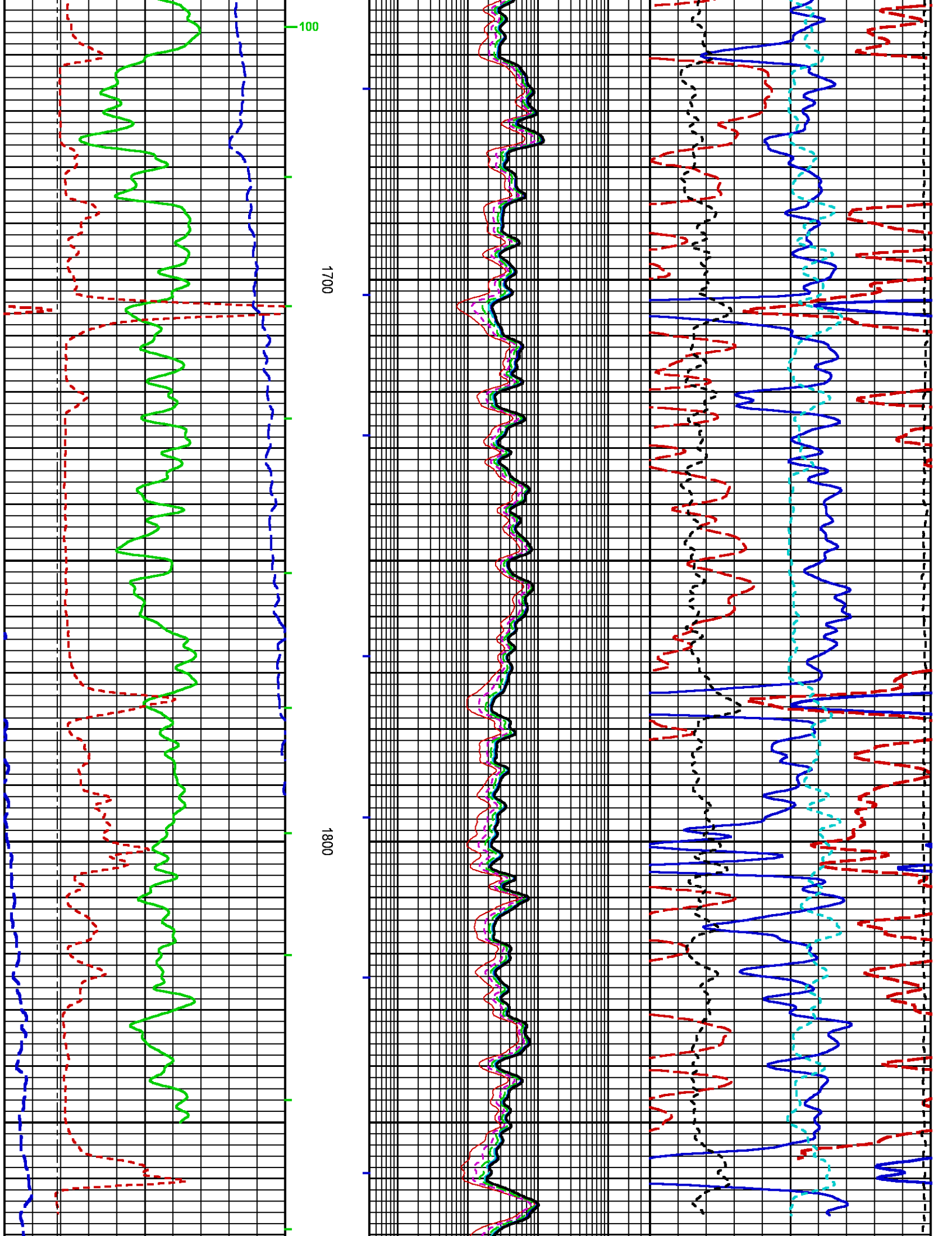
CURVE MEASURE POINT OFFSET

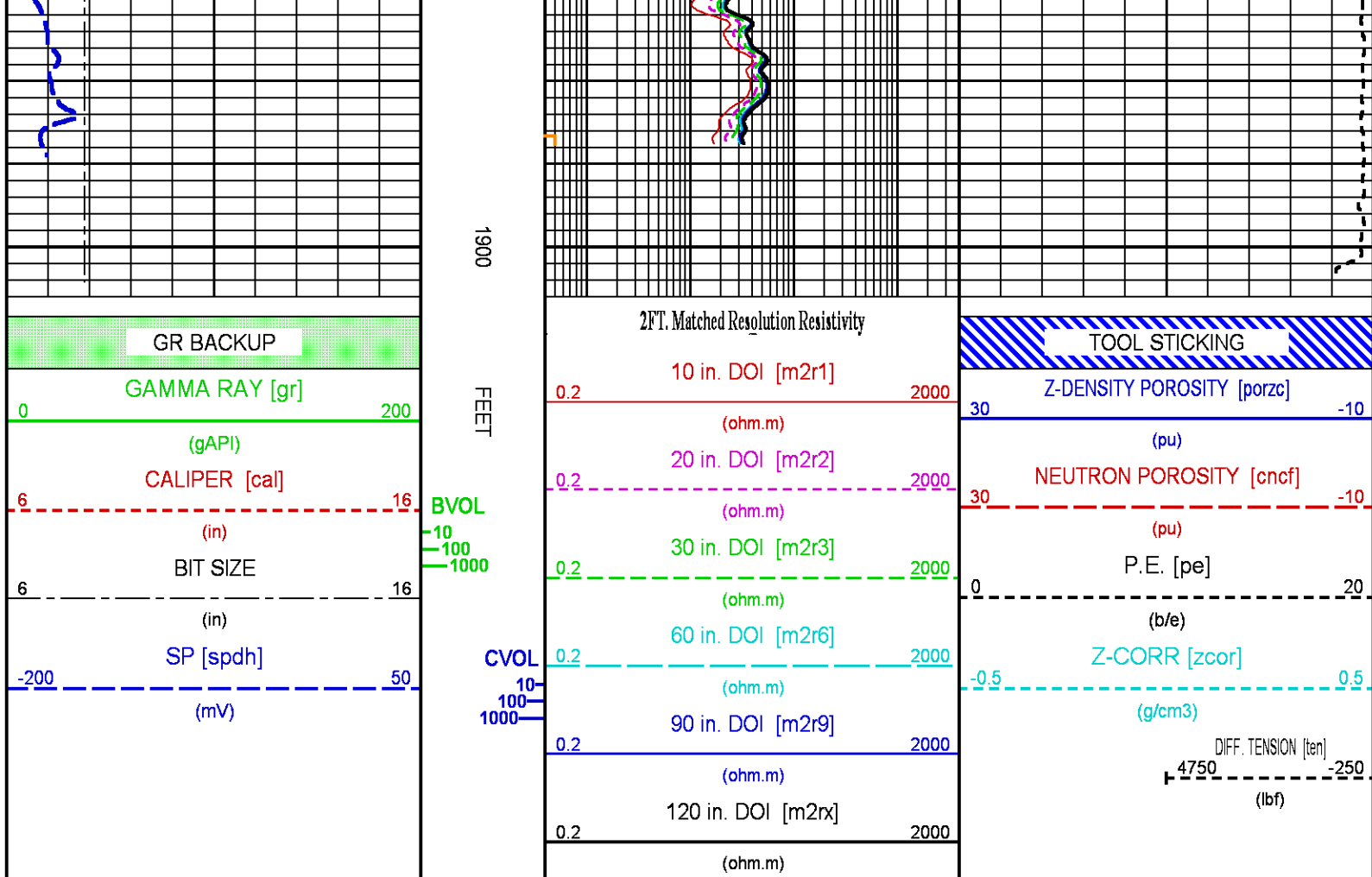
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
BIT	0.00	M2R1	8.00	M2R9	8.00	QHDL	12.00
CAL	35.00	M2R2	8.00	M2RX	8.00	SPDH	14.00
CNCF	45.25	M2R3	8.00	PE	34.25	TEN	0.00
GR	52.25	M2R6	8.00	PORZC	34.25	ZCOR	34.25

Presentation	: cpu100:/dat1a/LAREME_GUNDERSON_20_04W/MSLM_GUNDERSON_20_04W_RPT_OH-5.fvpdf [5"/100' Scale]
Plot Interval	: 1403 - 1904.25 Feet
Data File 1	: F1 : cpu100:/dat1a/LAREME_GUNDERSON_20_04W/MSLAM_REPT_20_04W.xtf
Created On	: Jun 22 09:40:24 2017
Company	: LARAMIE ENERGY
Well	: GUNDERSON 20-04W
Field	: VEGA
File Interval	: 1403 - 1904.25 Feet
OCT	: GSLAMWGI









CALIBRATION / VERIFICATION SUMMARY						
Source File: /data1/at/AREME_GUNDERSON_20_04/WIGSLAMWGL_XC1p1						
CHTEN PRIMARY CALIBRATION SUMMARY						
TOOL #: 3981XA180388		DATE/TIME PERFORMED: Thu Jun 22 01:11:23 2017				
UNIT #: 3880TA HL6670						
	Signal Low (raw)	Signal High (raw)	Scale Mult	Scale Add	Engr Low (lb)	Engr High (lb)
CHT	2050.00	2135.80	16.08	-32972.01	0.00	1380.00
GR PRIMARY CALIBRATION SUMMARY						
TOOL #: 1329XA10269247		DATE/TIME PERFORMED: Sat Jun 3 01:02:30 2017				
UNIT #: 3882TD HL6728		CALB JIG #: 4702NK DA_527				
	BACKGROUND (cts/s)	CALBTR ON (cts/s)	GR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBTR ON (gAPI)
GR	200.67	1090.22	889.6	0.169	33.84	183.84
GR PRIMARY VERIFICATION SUMMARY						
TOOL #: 1329XA10269247		DATE/TIME PERFORMED: Sat Jun 3 01:09:16 2017				
UNIT #: 3882TD HL6728		VERI JIG #: 4702NK DA_527				
	BACKGROUND (cts/s)	CALBTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBTR ON (gAPI)	DIFF. (gAPI)
GR	197.89	1078.60	0.169	33.37	181.88	148.51
CN PRIMARY CALIBRATION SUMMARY						
TOOL #: 3446XA10663846		DATE/TIME PERFORMED: Fri Jun 3 23:55:43 2017				

TOOL #:	2446XA10162846	DATE/TIME PERFORMED:	Fri Jun 2 23:36:47 2017			
UNIT #:	3882TD HL6728	CALIBRATOR #:	2437XB 120052	SOURCE #:	4717XS N _945	
MEASURED CPS	DEADTM CPS	CORR	DTC SSNLSN	NOMINAL SSNLSN	CORRECTION FACTOR	POROSITY (pu)
LSN	606.60	615.56				
SSN	1593.64	1646.11				
RATIO		2.67416	2.75100	1.02874	0.99300	1.01000
CN						21.358

CN PRIMARY VERIFICATION SUMMARY

TOOL #:	2446XA10162846	DATE/TIME PERFORMED:	Sat Jun 3 00:05:48 2017			
UNIT #:	3882TD HL6728	ICE BLOCK #:	4717ND 6036NN			
MEASURED CPS	DEADTM CPS	CORR	DTC SSNLSN	CORRECTION FACTOR	DTC CORR SSNLSN	POROSITY (pu)
LSN	1952.56	2048.61				
SSN	4556.41	5013.35				
RATIO		2.44719	1.02874	2.51873		
CN						18.111

CAL PRIMARY CALIBRATION SUMMARY

TOOL #:	2234XA10047963	DATE/TIME PERFORMED:	Fri Jun 2 22:18:30 2017			
UNIT #:	3882TD HL6728					
SMALL RING	LARGE RING	MULT	ADD	SMALL RING (in)	LARGE RING (in)	
CALIPER	1240.4	2120.0	0.00810	-2.17258	7.875	15.000

CAL BEFORE LOG VERIFICATION SUMMARY

TOOL #:	2234XA10047963	DATE/TIME PERFORMED:	Thu Jun 22 04:45:01 2017	DAYS SINCE CAL:	19
UNIT #:	3880TA HL6670				
I.D.	MULT	ADD	I.D. (in)		
CALIPER	1365.6	0.00810	-2.96473	8.097	

CAL AFTER LOG VERIFICATION SUMMARY

TOOL #:	2234XA10047963	DATE/TIME PERFORMED:	Thu Jun 22 04:45:27 2017	DAYS SINCE CAL:	19	
UNIT #:	3880TA HL6670					
I.D.	MULT	ADD	I.D. (in)			
CALIPER	1366.8	0.00810	-2.96473	8.107	1.889	0.899

ZDL PRIMARY CALIBRATION SUMMARY

TOOL:	2234XA10047963	DATE/TIME PERFORMED:	Fri Jun 2 23:01:32 2017			
UNIT:	3882TD HL6728	CALB BLKS:	2225XA B94287	CS SRC:	4703NT 2497GW	
SS CS PK (Channel)	LS CS PK (Channel)	SS_BKGD (cps)	LS BKGD (cps)			
225.5	225.9	1136.8	1468.9			
220.0	210.0	220.0	210.0			
cc (cps)	ic (cps)	SHR	DEN (g/cm3)	GORR (g/cm3)	DF (b/e)	
MG (LO PE)	12587.7	6314.5	0.638	1.700	0.003	2.160
AL	7341.2	640.4		2.698	-0.010	
AL + SHIM	10034.0	1101.8		2.619	0.158	
MG + SHIM (HI PE)	5974.1	2920.1	0.255			8.500
RATIO AL + SHIM/AL	1.37	1.72	0.210	0.210		
RATIO MG/AL	1.71	9.86	1.400	1.700	9.400	10.200

ZDL BEFORE LOG VERIFICATION SUMMARY

TOOL #:	2234XA10047963	DATE/TIME PERFORMED:	Thu Jun 22 01:04:26 2017	DAYS SINCE CAL:	19
UNIT #:	3880TA HL6670				
TOTAL (cps)	CSPK (Channel)	HV (V)			
LS	1474.2	226.4	1246.1		

SS

1139.0	226.5	1236.0
1076.0	1236.0	226.0
226.0	270.0	1100.0
1000.0	1000.0	

LV

PAD CURRENT

(V)

(mA)

5.0	77.9
4.8	80.0
	100.0

ZDL AFTER LOG VERIFICATION SUMMARY

TOOL # 2234XA10047963

DATE/TIME PERFORMED: Thu Jun 22 05:24:54 2017

DAYS SINCE CAL 19

UNIT # 3880TA HL6670

	TOTAL	CSPK	HV	
	(cps)	(Channel)	(V)	
LS	1482.9	224.4	1252.0	
	1360.0	1960.0	220.0	270.0
	1000.0	1000.0		
SS	1125.7	224.7	1240.0	
	1076.0	1236.0	226.0	270.0
	1000.0	1000.0		

LV

PAD CURRENT

(V)

(mA)

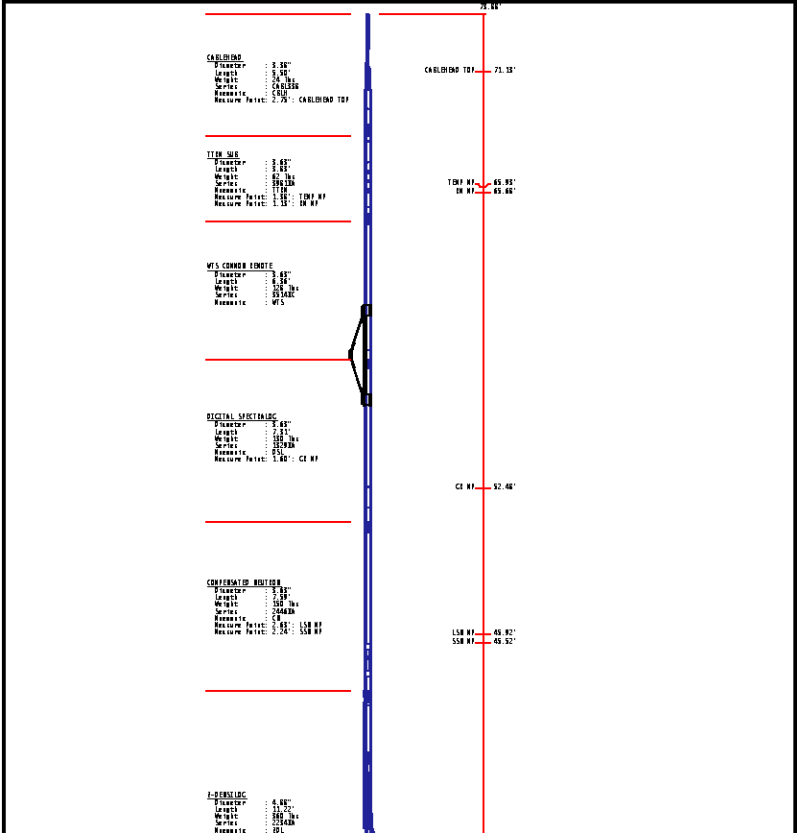
5.0	77.6
4.8	80.0
	100.0

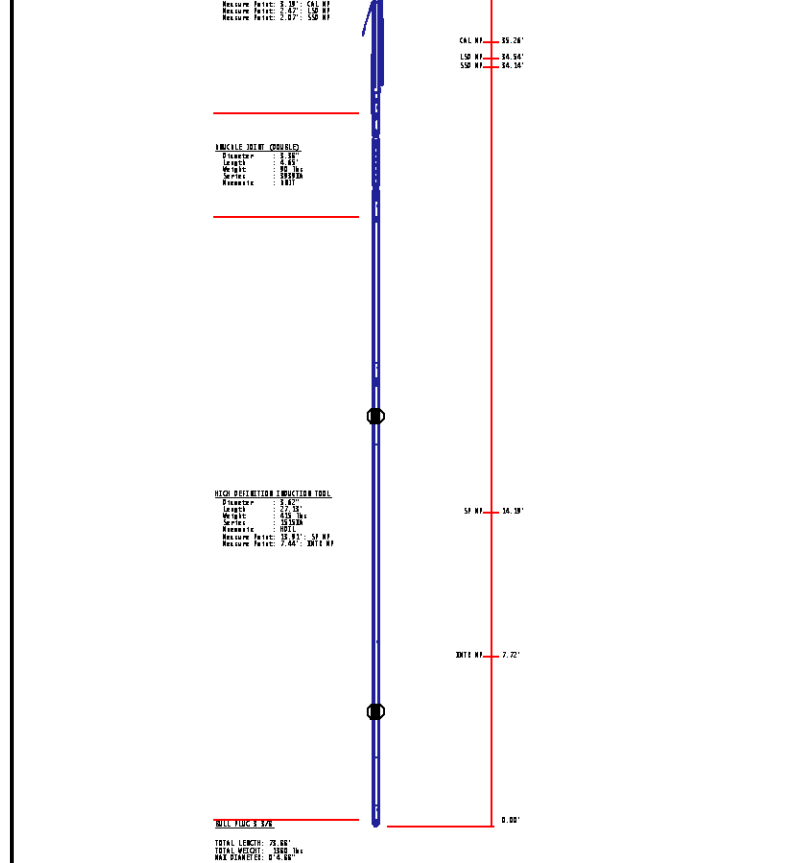
HDIL PRIMARY CALIBRATION SUMMARY								
TOOL #:	1515MA10307148	DATE/TIME PERFORMED: Tue Nov 1 11:30:49 2016						
UNIT #: 3882TD HL6741			GRCOND ID & DATE: 37 083096					
ZERO DATA(mv)	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 R	-0.011	-0.003	0.000	0.005	0.006	0.009	0.007	0.002
Coil 0 Q	-0.001	0.001	-0.010	-0.006	-0.001	-0.001	0.002	0.006
Coil 1 R	-0.004	0.001	0.002	0.008	0.011	0.015	0.013	0.005
Coil 1 Q	-0.007	-0.012	-0.011	-0.009	-0.005	-0.003	0.006	0.007
Coil 2 R	-0.008	-0.005	-0.002	0.006	0.011	0.007	0.007	0.009
Coil 2 Q	-0.015	-0.018	-0.015	-0.010	-0.009	-0.004	-0.000	-0.001
Coil 3 R	-0.009	-0.009	0.005	0.010	0.012	0.004	0.003	0.006
Coil 3 Q	-0.010	-0.015	-0.007	-0.006	-0.002	0.001	0.002	0.001
Coil 4 R	-0.010	-0.002	-0.004	0.001	0.001	0.006	0.011	0.005
Coil 4 Q	-0.011	-0.005	-0.010	-0.012	-0.009	-0.004	-0.001	0.007
Coil 5 R	-0.029	-0.014	0.017	0.007	0.018	0.003	-0.013	-0.005
Coil 5 Q	-0.010	-0.016	-0.015	-0.007	0.012	0.013	0.003	0.002
Coil 6 R	-0.006	-0.045	0.014	-0.018	0.013	0.038	0.033	0.028
Coil 6 Q	0.006	-0.016	-0.013	-0.040	-0.060	-0.055	-0.024	0.025
ELEC. GAINS	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 M	126.36	125.10	122.58	119.14	114.58	109.05	102.45	94.73
Coil 0 P	7.642	24.016	40.095	56.096	72.147	88.137	104.170	120.003
Coil 1 M	221.77	219.78	215.81	210.52	203.42	194.98	184.77	173.02
Coil 1 P	7.246	22.816	38.096	53.278	68.485	83.627	98.808	113.843
Coil 2 M	442.78	438.91	431.16	421.20	408.11	393.06	375.48	355.68
Coil 2 P	7.050	22.175	36.962	51.627	66.208	80.700	95.211	109.584
Coil 3 M	723.13	716.39	703.11	685.48	661.97	634.16	600.58	562.39
Coil 3 P	7.526	23.620	39.410	55.115	70.807	86.454	102.152	117.691
Coil 4 M	1130.6	1119.3	1096.1	1064.8	1023.0	973.0	912.6	844.0
Coil 4 P	7.965	24.919	41.598	58.178	74.790	91.329	107.878	124.175
Coil 5 M	2286.2	2264.1	2220.5	2162.5	2086.1	1996.1	1888.6	1765.9
Coil 5 P	7.882	24.708	41.227	57.635	74.025	90.351	106.749	122.990
Coil 6 M	6073.6	6043.0	5981.2	5895.9	5768.8	5593.4	5352.7	5048.4
Coil 6 P	7.372	23.459	39.337	55.290	71.522	87.982	104.768	121.599
AM Factor	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 R	501	-51	-106	-121	-129	-134	-138	-142
Coil 0 Q	570	241	119	55	12	-23	-55	-83
Coil 1 R	586	88	24	2	-9	-15	-19	-22
Coil 1 Q	991	413	260	187	144	114	93	76
Coil 2 R	186.5	27.7	7.9	1.5	-1.4	-3.1	-4.6	-5.2
Coil 2 Q	438.0	174.2	110.4	82.4	66.7	57.0	50.7	45.9


	-200.0	-100.0	0.0	100.0	200.0	300.0	400.0	500.0	600.0	700.0	800.0	900.0	1000.0
Coil 3 R	45.9	6.4	1.2	-0.3	-1.2	-1.9	-2.5	-2.4					
Coil 3 Q	56.7	28.1	21.4	19.4	18.9	19.4	20.0	20.5					
Coil 4 R	10.72	0.64	-0.72	-1.10	-1.33	-1.64	-1.54	-1.55					
Coil 4 Q	14.28	9.76	9.88	11.15	12.85	14.85	16.87	18.94					
Coil 5 R	0.48	-0.92	-1.25	-1.30	-1.33	-1.33	-1.44	-1.39					
Coil 5 Q	8.39	6.20	7.37	8.94	10.99	13.00	15.00	17.19					
Coil 6 R	-3.10	-1.52	-1.36	-1.24	-1.17	-1.12	-1.15	-1.14					
Coil 6 Q	2.90	3.40	5.29	7.32	9.28	11.49	13.47	15.75					
MM Factor	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz					
Coil 0 M	1.016	1.011	1.006	1.005	1.003	1.002	1.001	1.001					
Coil 0 P	0.232	0.394	0.436	0.398	0.362	0.276	0.247	0.136					
Coil 1 M	1.007	1.004	0.998	0.997	0.994	0.993	0.992	0.992					
Coil 1 P	0.187	0.388	0.471	0.437	0.439	0.344	0.307	0.210					
Coil 2 M	1.009	1.007	1.006	1.005	1.004	1.004	1.003	1.003					
Coil 2 P	0.034	0.046	0.065	0.086	0.117	0.048	0.090	0.037					
Coil 3 M	1.018	1.018	1.017	1.017	1.015	1.016	1.016	1.018					
Coil 3 P	0.032	0.037	0.065	0.083	0.078	0.009	0.024	0.047					
Coil 4 M	1.042	1.042	1.041	1.041	1.039	1.040	1.038	1.038					
Coil 4 P	0.018	0.065	0.086	0.104	0.143	0.097	0.152	0.002					
Coil 5 M	1.036	1.036	1.036	1.035	1.033	1.036	1.033	1.034					
Coil 5 P	0.015	-0.018	0.058	0.057	0.068	-0.047	0.083	-0.043					
Coil 6 M	1.042	1.044	1.042	1.041	1.040	1.048	1.047	1.048					
Coil 6 P	0.008	0.100	0.043	0.081	0.003	-0.122	-0.030	-0.264					
PARMS	TCID 0	TCID 1	Cal Temp (degF)	T Factor									
ID#s	1.277	0.880	75.6	1.04									

INSTRUMENT CONFIGURATION

Source File: Atat1at.AREME_GUNDERSON_20_04VIMS.LAM_XC-ldg





	COMPANY <u>LARAMIE ENERGY</u>		FILE NO: _____
	WELL <u>GUNDERSON 20-04W</u>		API NO: _____
	FIELD <u>VEGA</u>	STATE <u>COLORADO</u>	<u>05077103370000</u>
	COUNTY <u>MESA</u>		
LOCATION: LAT: 39.266919N, LONG: 107.795317W		ELEVATIONS: KB 7174 FT DF 7174 FT GL 7144 FT	
SEC <u>29</u> TWP <u>9S</u> RGE <u>93W</u>		DATE <u>21-JUN-2017</u>	