



FILE NO: \_\_\_\_\_  
 COMPANY: **CHESAPEAKE APPALCHIA, LLC.**  
 WELL: **JAMES MESSENGER WTZ 3H U**  
 FIELD: **WETZEL**  
 COUNTY: **WETZEL** STATE: **WEST VIRGINIA**

API NO: **47-103-02973**  
 LOCATION: STATE TOWNSHIP: PROCTOR QUAD: WILEYVILLE  
 OTHER SERVICES: NONE

Ver. 3.87  
 SCALE: 5"=100'  
 LAT: **39.673693 N** LONG: **80.690861 W**

PERMANENT DATUM: **GL** ELEVATION: **1495 FT**  
 LOG MEASURED FROM: **KB** **22 FT** ABOVE P.D.  
 DRILL. MEAS. FROM: **KB**  
 ELEVATIONS: **KB 1517 FT**  
**DF 1517 FT**  
**GL 1495 FT**

DATE	22-APR-2014	
RUN	TRIP	2 1
SERVICE ORDER	US086077J	
DEPTH DRILLER	2953 FT	
DEPTH LOGGER	2952 FT	
BOTTOM LOGGED INTERVAL	2932 FT	
TOP LOGGED INTERVAL	804 FT	
CASING DRILLER	16 IN @ 806 FT	
CASING LOGGER	804 FT	
BIT SIZE	14.75 IN	
TYPE OF FLUID IN HOLE	KCL 3%	
DENSITY	10.85 LB/G	38 S
PH	FLUID LOSS	9.5 -
SOURCE OF SAMPLE	TOOL MEASURED	
RM AT MEAS. TEMP.	0.071 OHMM @ 75 DEGF	
RMC AT MEAS. TEMP.	0.06 OHMM @ 75 DEGF	
RMC AT MEAS. TEMP.	0.096 OHMM @ 75 DEGF	
SOURCE OF RMC	CALC @	
RM AT BHT	0.053 OHMM @ 103.9 DEGF	
TIME SINCE CIRCULATION	6 HRS	
MAX. RECORDED TEMP.	105.3 DEGF	
EQUIP. NO.	LOCATION	4290 CANTON, OH
RECORDED BY	S. PATEL	
WITNESSED BY	NICK DOWNS	

**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.**

BOREHOLE RECORD		
BIT SIZE	FROM	TO
26 IN	0 FT	130 FT
22 IN	130 FT	822 FT
14.75 IN	806 FT	2953 FT

CASING RECORD				
SIZE	WEIGHT	GRADE	FROM	TO
24 IN	-	-	0 FT	130 FT
16 IN	-	-	0 FT	806 FT
10.75 IN	-	-	0 FT	-

**REMARKS**

RUN 2 TRIP 1: CREW: S. PATEL, R. FLECK, T. WRIGHT  
 RIG: NOMAC 337

OPERATION 1: GR-CN-ZDL-RTEX RAN IN COMBINATION

DENSITY POROSITY (PORZ) = 2.71 G/CC  
 NEUTRON POROSITY (CNC) = LIMESTONE MATRIX  
 COMPENSATED NEUTRON (CNC) IS CALIPER CORRECTED  
 DENSITY CURVE (ZDEN)

(CAL) = SINGLE AXIS CALIPER FROM DENSITY TOOL  
 (CVOL) CEMENT VOLUME CALCULATED FOR 10.75" CASING  
 (BVOL) = TOTAL BOREHOLE VOLUME FROM CALIPER

FLUID LEVEL: 600'

ADDITIONAL CUSTOMER COMMENTS:  
BOREHOLE RUGOSITY AND WASHOUTS WILL EFFECT POROSITY DATA.

**EQUIPMENT DATA**

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
2	1	TTMA	3980XA	10402334	FREE
2	1	TEL/GR	3518FB / EG	10131581 / 10597572	DENCENTRALIZED
2	1	CN	2436XA	10437272	DECENTRALIZED
2	1	ISO	4486XA	10302993	FREE
2	1	ZDL	2223XA	10596514	CALIPER / PAD DEVICE
2	1	KNUCKLE	3930XA	-	STAND-OFF
2	1	RTEX	1241XA	11810138	STAND-OFF
2	1	DAL	1630EA / MA	10399133 / 10393172	STAND-OFF
2	1	ISO	4486XA	11779208	FREE

**MAIN LOG 5"/100FT SCALE**

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

Patches: 5

Plotted: Tue Apr 22 21:06:23 2014

**PARAMETER AND FILTER SUMMARY REPORT**

File: /dat1a/Chesapeake/JAMES\_MESSENGER\_WTZ\_3H\_R2/FOCUS\_TC\_RTEX03.prm  
 LOGGING MODE: DEPTH DIRECTION: UP  
 TOP DEPTH: 712.250 ft BOTTOM DEPTH: 1658.439 ft

**SYMMETRIC FILTER**

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR MED RES	FILTER ( )	medium (1)		TOP	BOTTOM
CALIPER	FILTER ( )	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
TENSION	FILTER ( )	medium (1)		"	"
CN MED RES	FILTER ( )	medium (1)		"	"
CN HIGH RES	FILTER (.h)	light		"	"
ZDL MED RES	FILTER (hrd1*)	medium		"	"
	FILTER (hrd1s*)	medium		"	"
	FILTER (hrd2*)	medium		"	"
	FILTER (hrd2s*)	medium		"	"
	FILTER (soft*)	medium		"	"
ZDL HIGH RES	FILTER (hrd1*)	light		"	"
	FILTER (hrd1s*)	light		"	"
	FILTER (hrd2*)	light		"	"
	FILTER (hrd2s*)	light		"	"
	FILTER (soft*)	light		"	"
RTeX	FILTER ( )	light (2a)		"	"
	FILTER (.i)	light (2a)		"	"

**BOREHOLE & CEMENT**

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	10.750	in	TOP	BOTTOM
	CASING THICKNESS	0.000	in	"	"
BIT SIZE	BIT SIZE	14.750	in	"	"
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (calmu*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		"	"

BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	14.750	in	"	"
	FIXED DIAMETER (mlr1c*)	14.750	in	"	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE	TOOL MEASURED		"	"
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	75.0	degF	"	"
	MUD SAMPLE RES	0.100	ohm.m	"	"
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	103.0	degF	"	"
	at BH REF DEPTH	2600.0	ft	"	"
	with TEMP GRADIENT	1.050	0.01 degF/ft	"	"

### ACCELERATION PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
ACCEL CORR SWITCH	ACCEL DEPTH CORR	CORRECTION ON		TOP	BOTTOM

### CN PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CN MATRIX	2436 MATRIX	LIMESTONE		TOP	BOTTOM
CN BOREHOLE CORRECTION	SALINITY	181000	ppm	"	"
	BOREHOLE CORRECTION	ON		"	"
CN TOOL STANDOFF	ENABLE STANDOFF CORR	OFF		"	"
	STANDOFF AMOUNT	0.00	in	"	"
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		"	"
	BIT SIZE BEHIND CSNG	24.000	in	"	"

### ZDL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
DENSITY POROSITY	Air Filled Borehole	NO		TOP	BOTTOM
	RHOmatrix	2.710	g/cm3	"	"
	RHOfluid	1.000	g/cm3	"	"

### RTeX PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
RTeX ADAPTIVE BOREHOLE CORRECTION	BOREHOLE CORRECTION	ON		TOP	BOTTOM
	Rxo Source	RTEX ESTIMATE		"	"

### CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Apr 22 19:50:47 2014	BIT SIZE
F1:BVOL	Apr 22 19:50:47 2014	BOREHOLE VOLUME
F1:CAL	Apr 22 19:50:47 2014	CALIPER
F1:CNC	Apr 22 19:50:47 2014	BOREHOLE SIZE CORRECTED COMPENSATED NEUTRON POROSITY
F1:CVOL	Apr 22 19:50:47 2014	CEMENT VOLUME
F1:GR	Apr 22 19:50:47 2014	GAMMA RAY
F1:MLR2C	Apr 22 19:50:47 2014	RTEX SHALLOW RESISTIVITY 2, ADAPTIVE BOREHOLE CORRECTION
F1:MLR3C	Apr 22 19:50:47 2014	RTEX MEDIUM RESISTIVITY 3, ADAPTIVE BOREHOLE CORRECTION
F1:MLR4C	Apr 22 19:50:47 2014	RTEX DEEP RESISTIVITY 4, ADAPTIVE BOREHOLE CORRECTION
F1:PE	Apr 22 19:50:47 2014	PHOTO ELECTRIC CROSS-SECTION
F1:PORZ	Apr 22 19:50:47 2014	POROSITY FOR SELECTABLE MATRIX
F1:TEN	Apr 22 19:50:47 2014	DIFFERENTIAL TENSION
F1:ZCOR	Apr 22 19:50:47 2014	DENSITY CORRECTION
F1:ZDEN	Apr 22 19:50:47 2014	FORMATION BULK DENSITY

### CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
BIT	0.00	GR	50.25	MLR4C	20.00	TEN	0.00
CAL	31.25	MLR2C	20.00	PE	31.25	ZCOR	31.25
CNC	42.62	MLR3C	20.00	PORZ	31.25	ZDEN	31.25

**Presentation** : cpu4257:/dat1a/Chesapeake/JAMES\_MESSENGER\_WTZ\_3H\_R2/TC\_MN.fvpdf [5"/100' Scale]  
**Plot Interval** : -32.25 - 3001.5 Feet

**Data File 1** : F1 : cpu4257:/dat1a/Chesapeake/JAMES\_MESSENGER\_WTZ\_3H\_R2/FOCUS\_TC\_RTEX03.xtf  
**Created On** : Apr 22 19:50:47 2014  
**Company** : CHESAPEAKE APPALACHIA, LLC.  
**Well** : JAMEWS MESSENGER WTZ 3H U  
**Field** : WETZEL  
**File** : 03-25-2004.5.F

**GR BACKUP**

**TOOL STICKING**

**OVERBIT**

**GAMMA RAY [gr]**  
 (gAPI)

**CALIPER [cal]**  
 (in)

**BIT SIZE**  
 (in)

**DIFF. TENSION [ten]**  
 (lbf)

FEET

BVOL  
 10  
 100  
 1000

CVOL  
 10  
 100  
 1000

**2FT. Matched Resolution Resistivity**

26 in. DOI [mlr2c]  
 (1)

38 in. DOI [mlr3c]  
 (1)

74 in. DOI [mlr4c]  
 (1)

**POSSIBLE GAS**

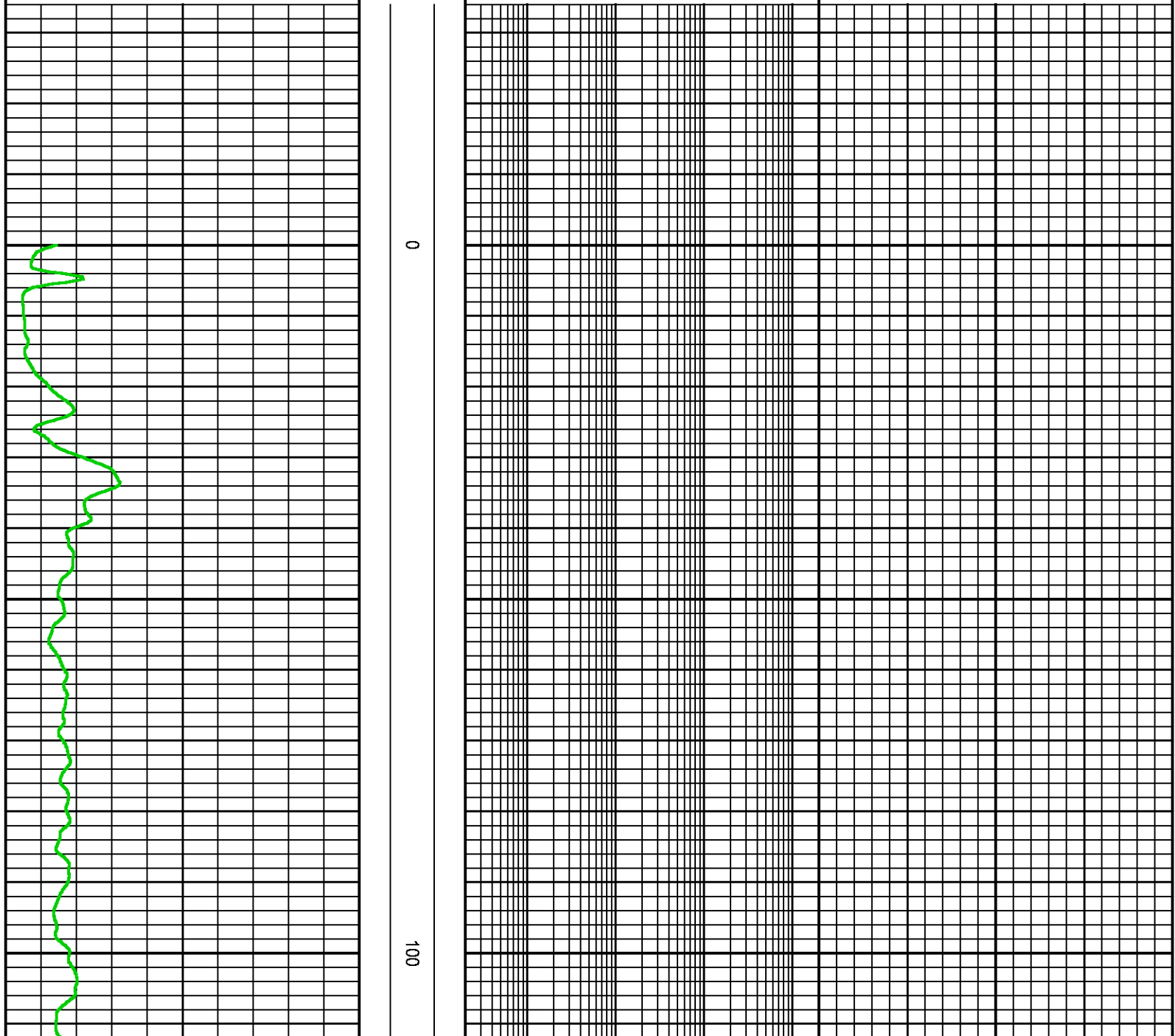
**Z-DENSITY POROSITY [porz]**  
 (pu)

**NEUTRON POROSITY [cnc]**  
 (pu)

**BULK DENSITY [zden]**  
 (g/cm3)

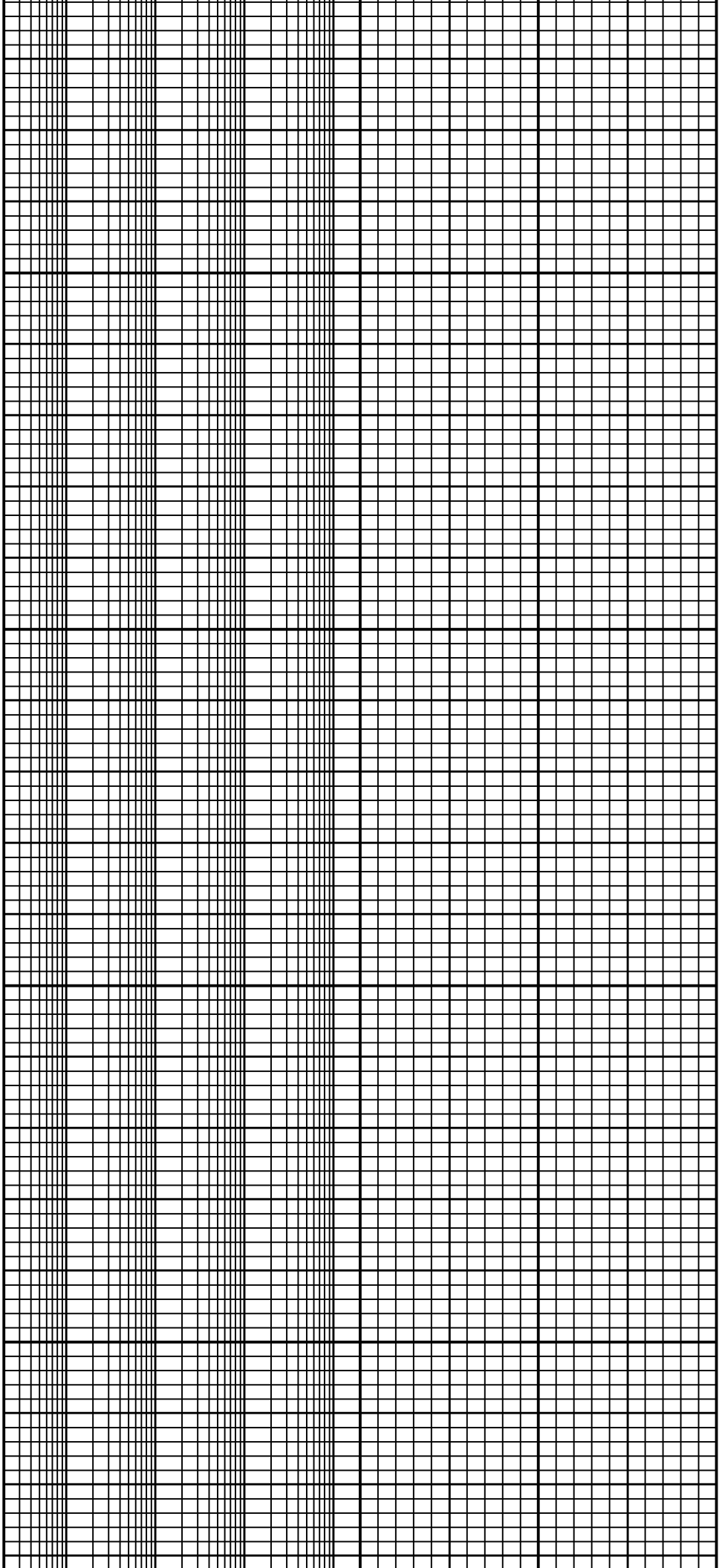
**Z-CORR [zcor]**  
 (g/cm3)

**P.E. [pe]**  
 (b/e)



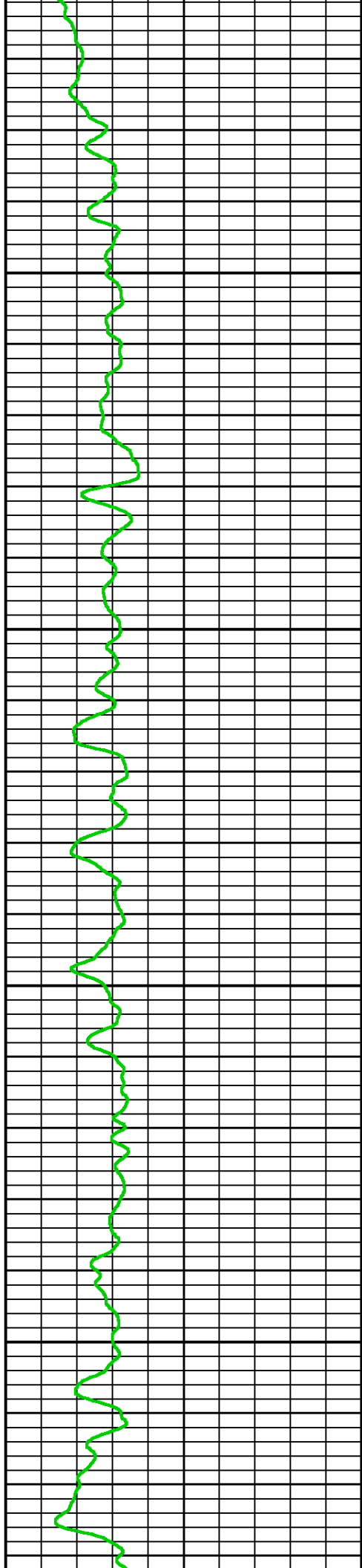
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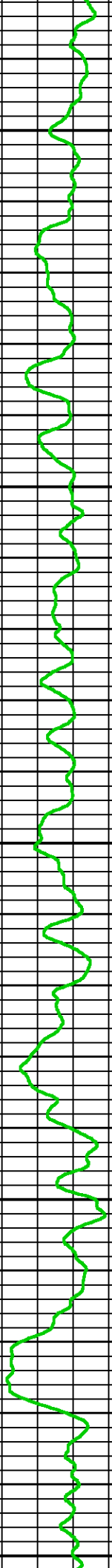
100



200

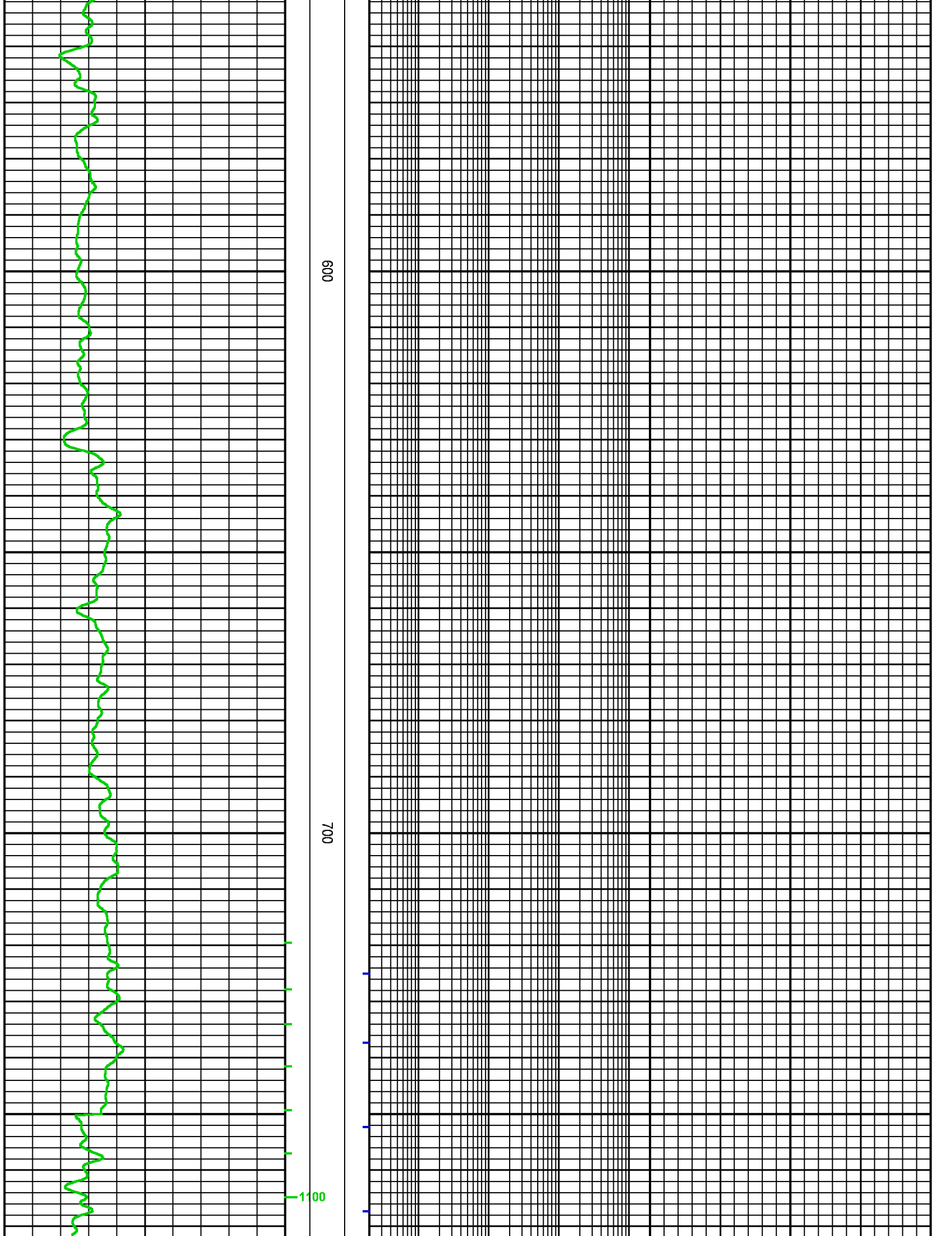
300

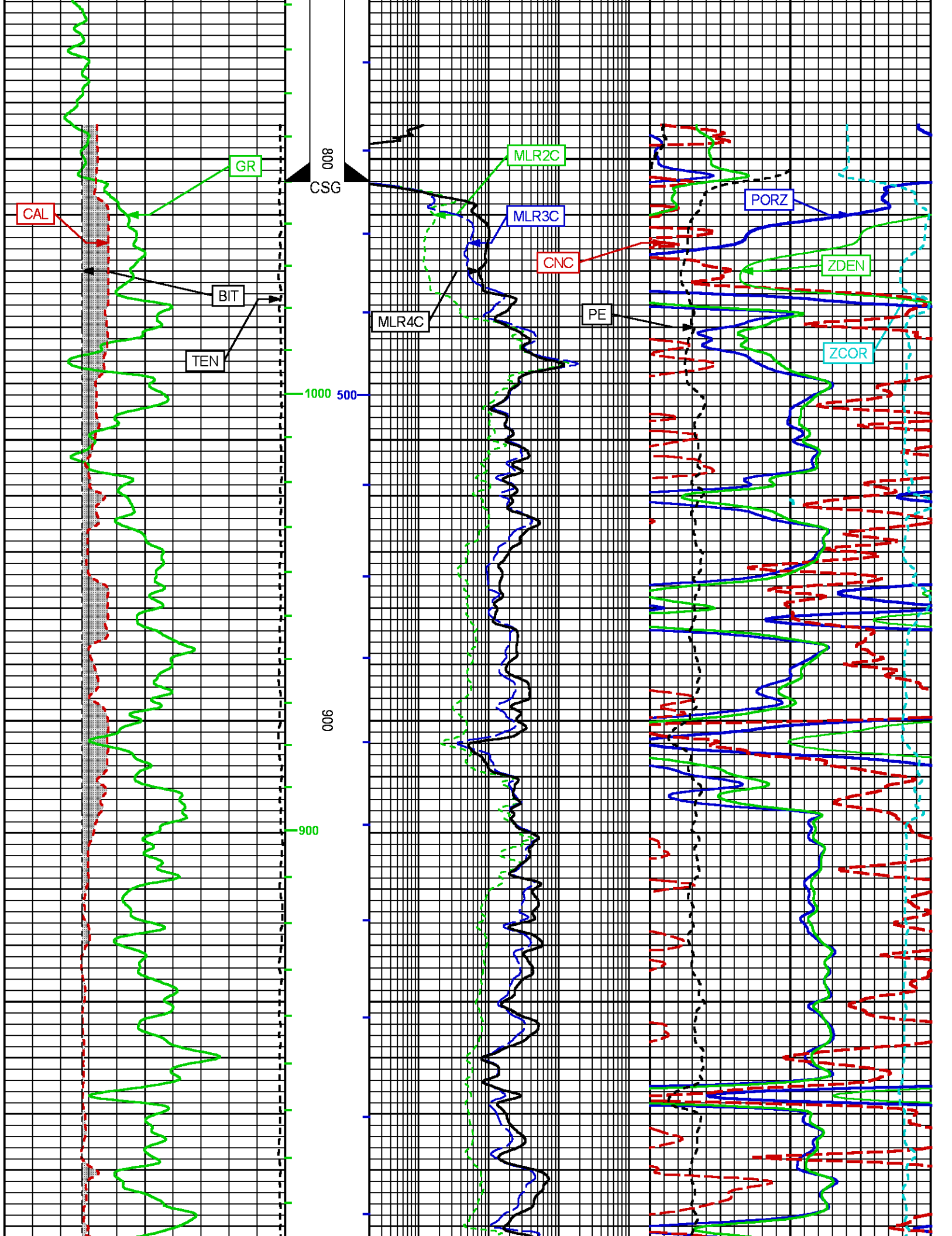




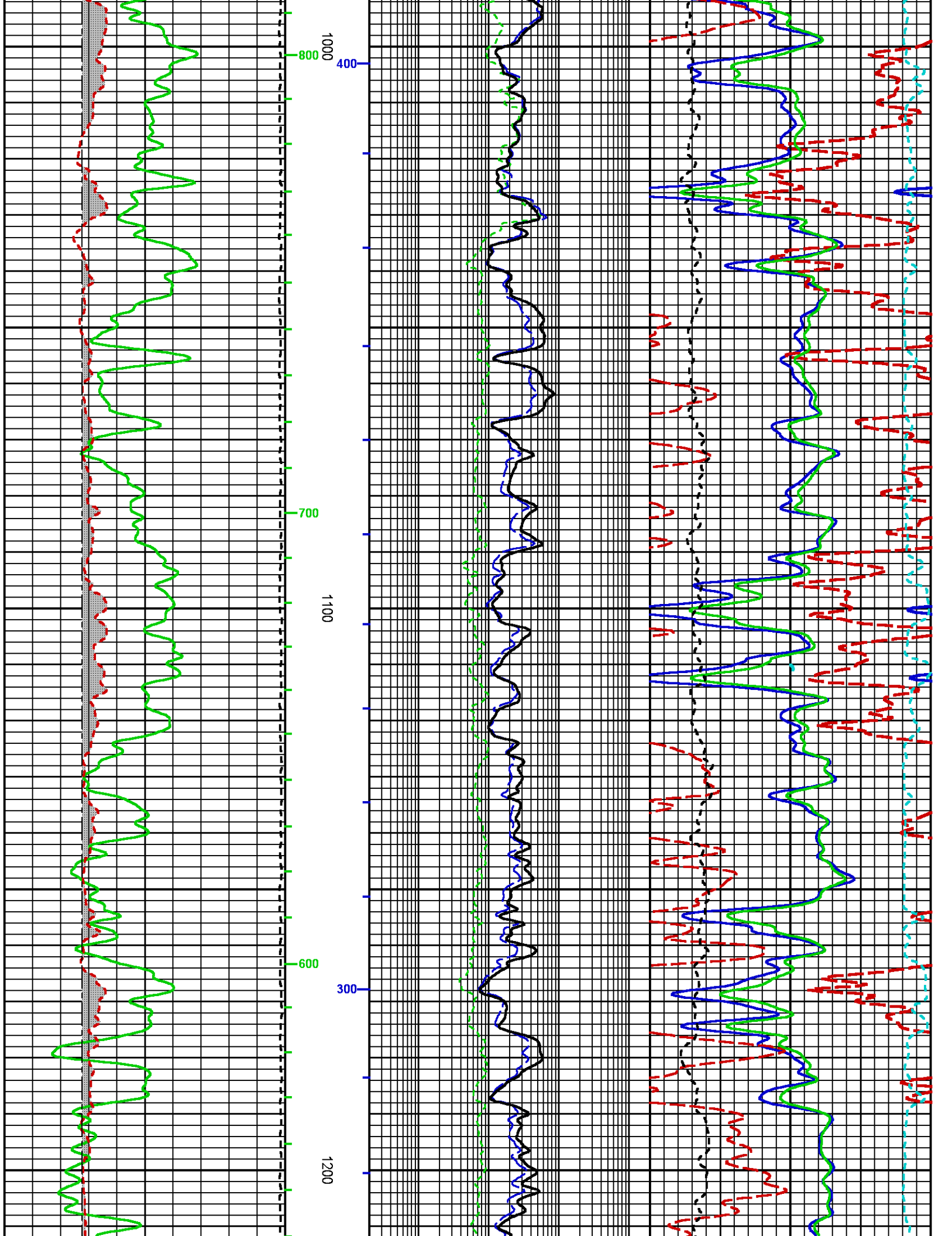
400

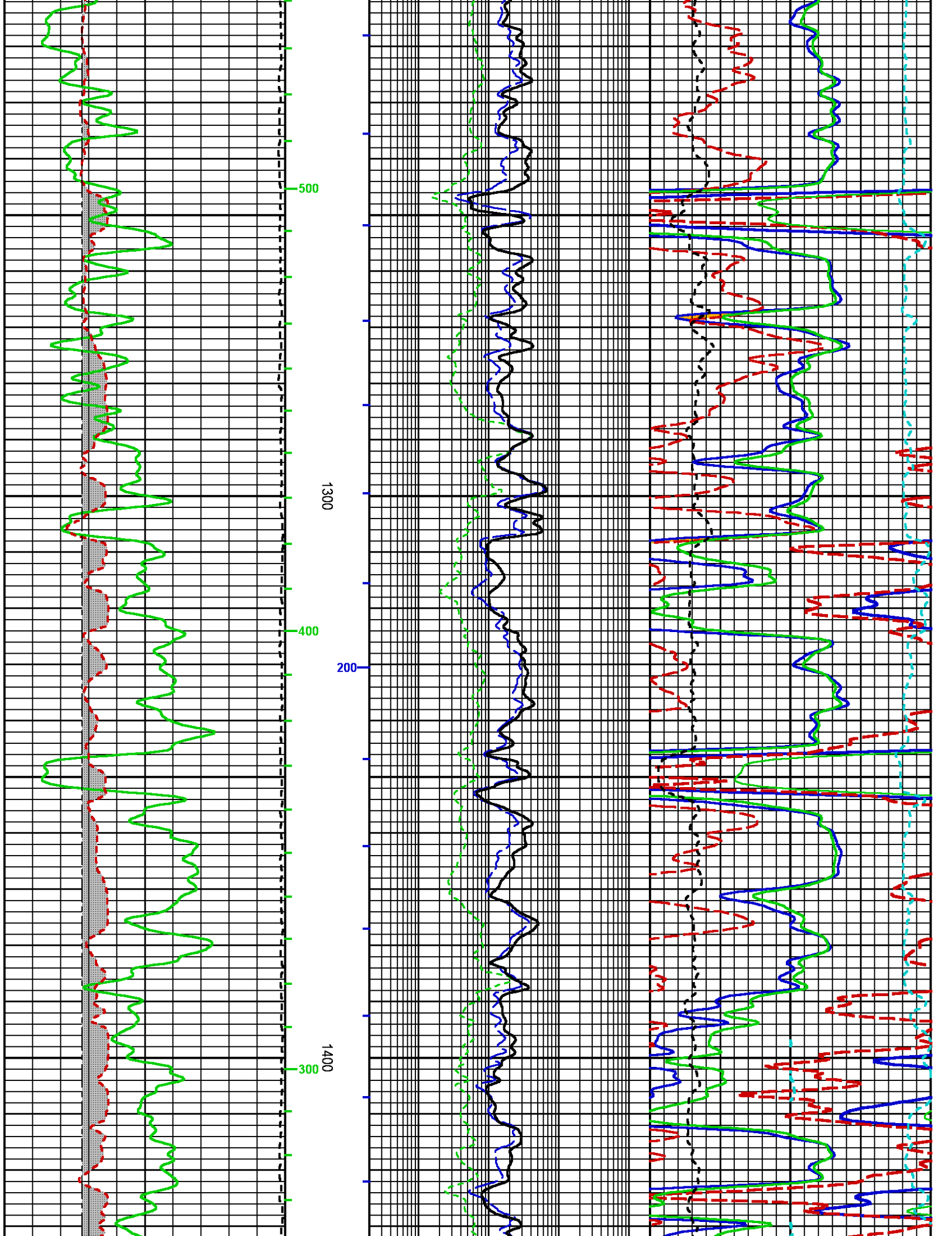
500

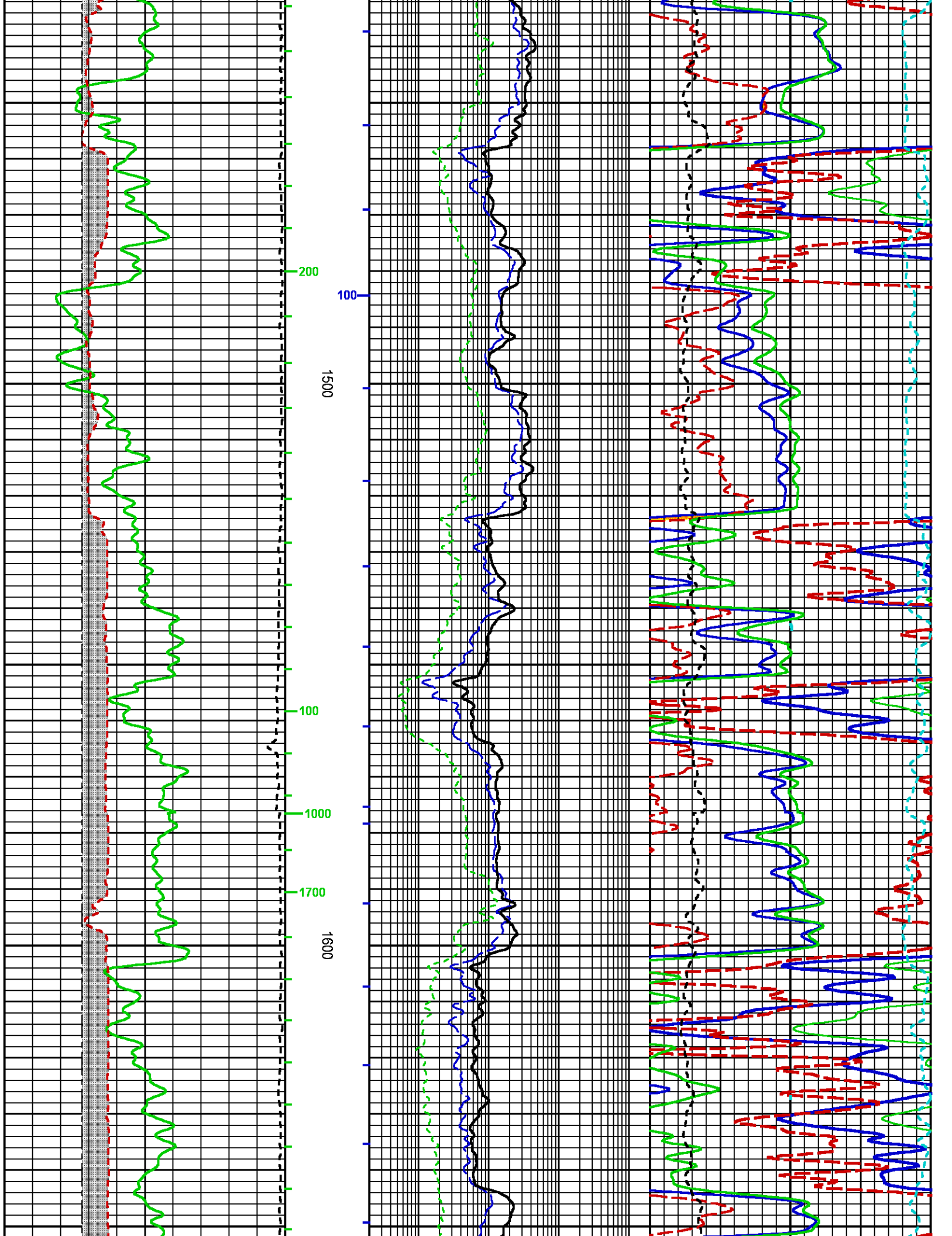


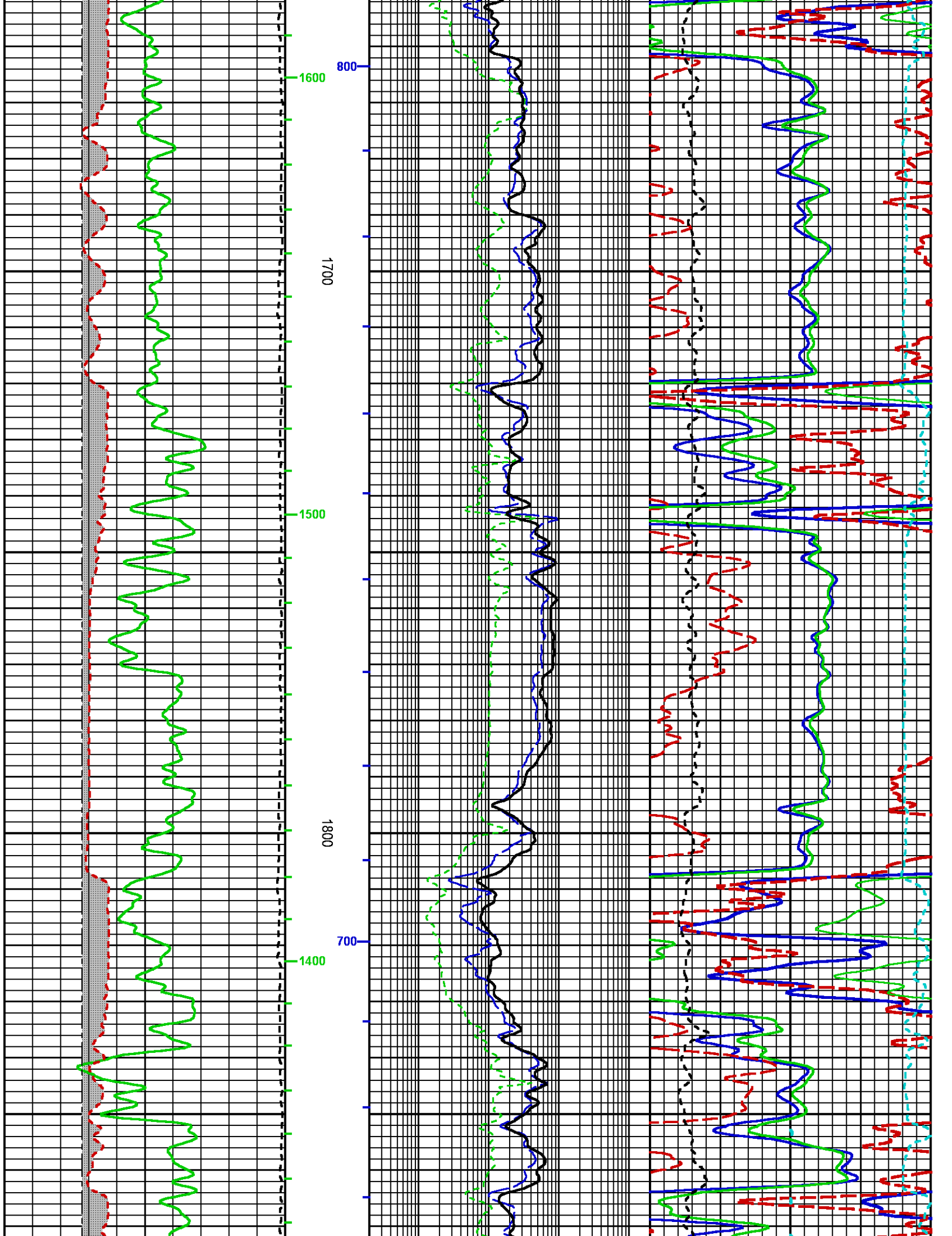


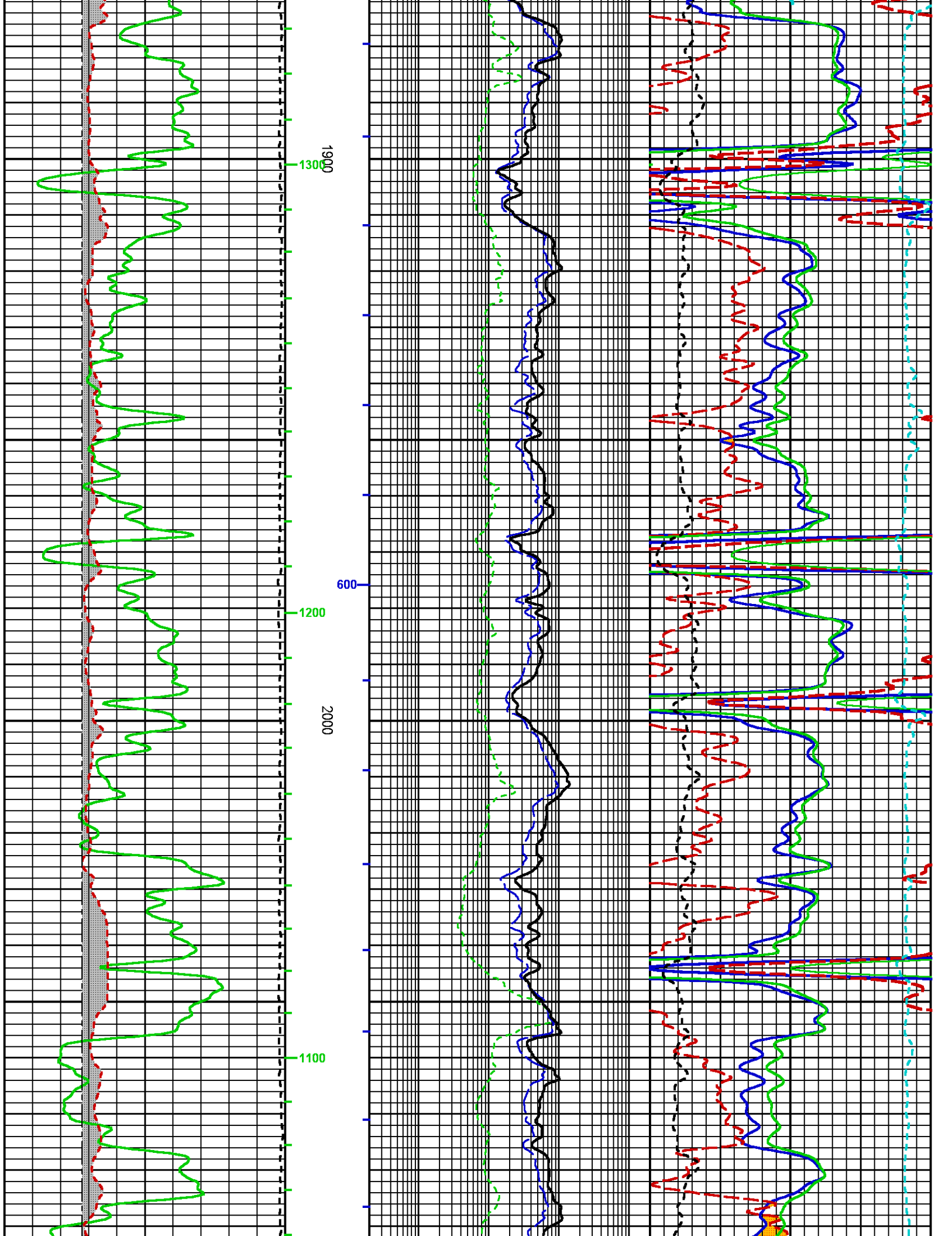




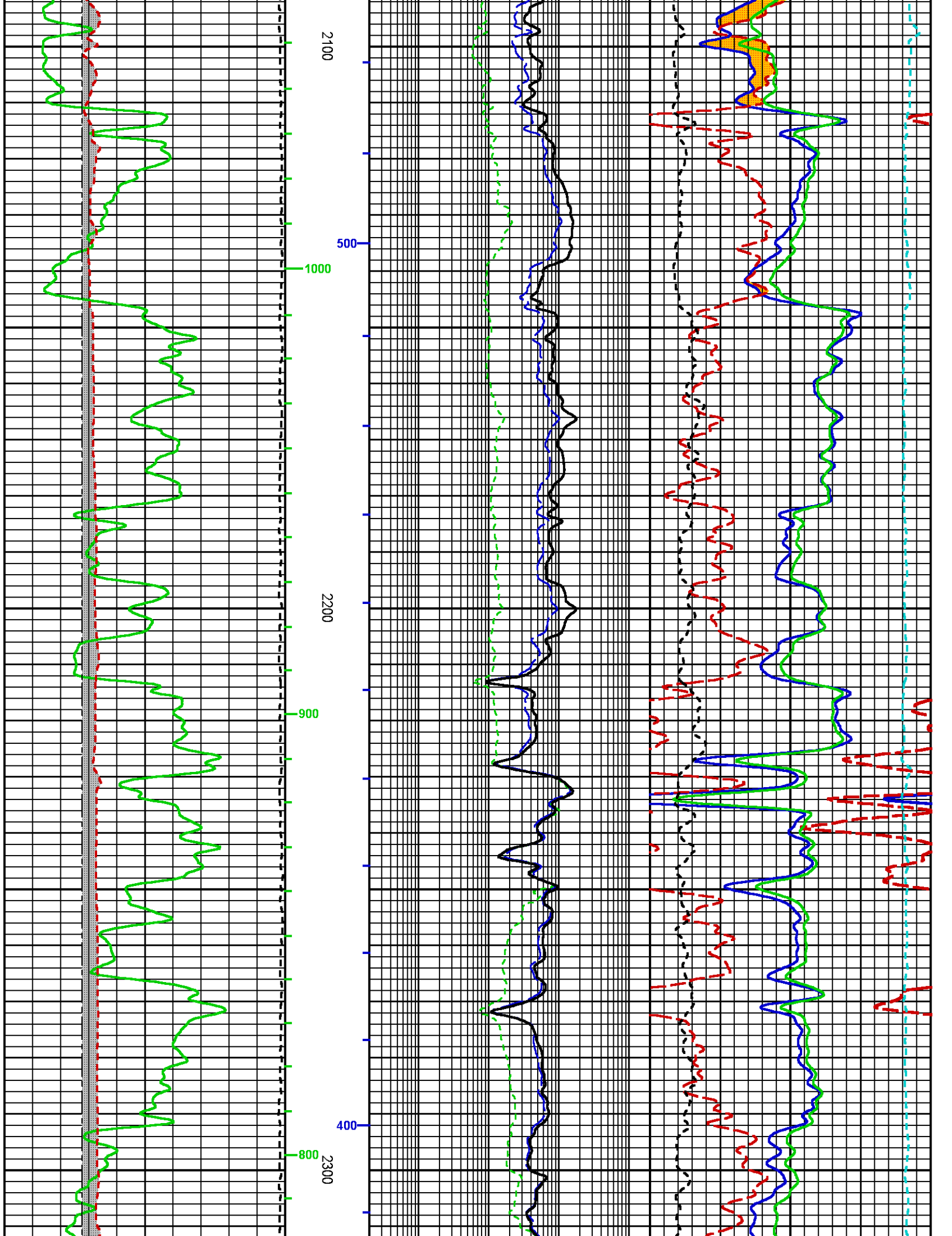


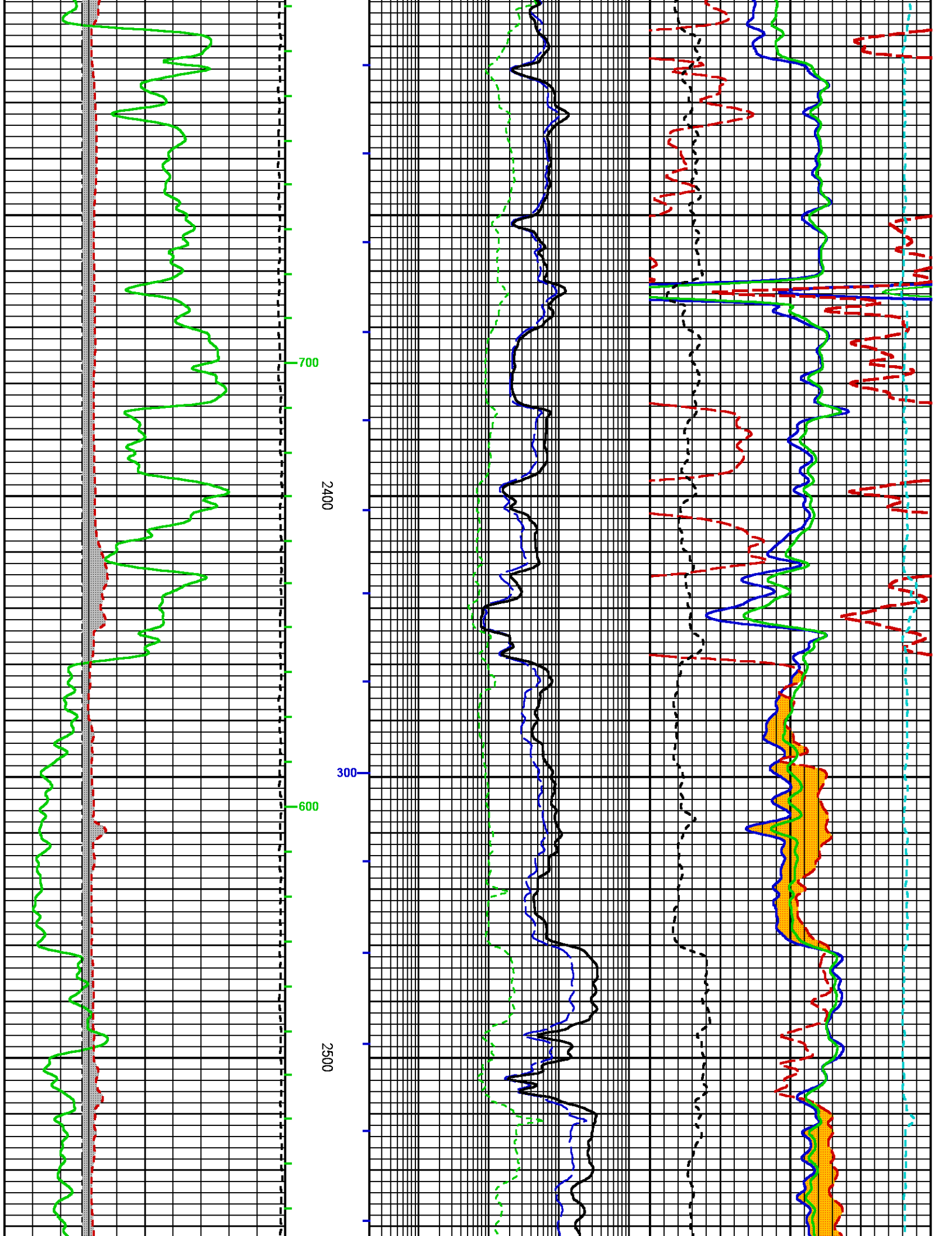


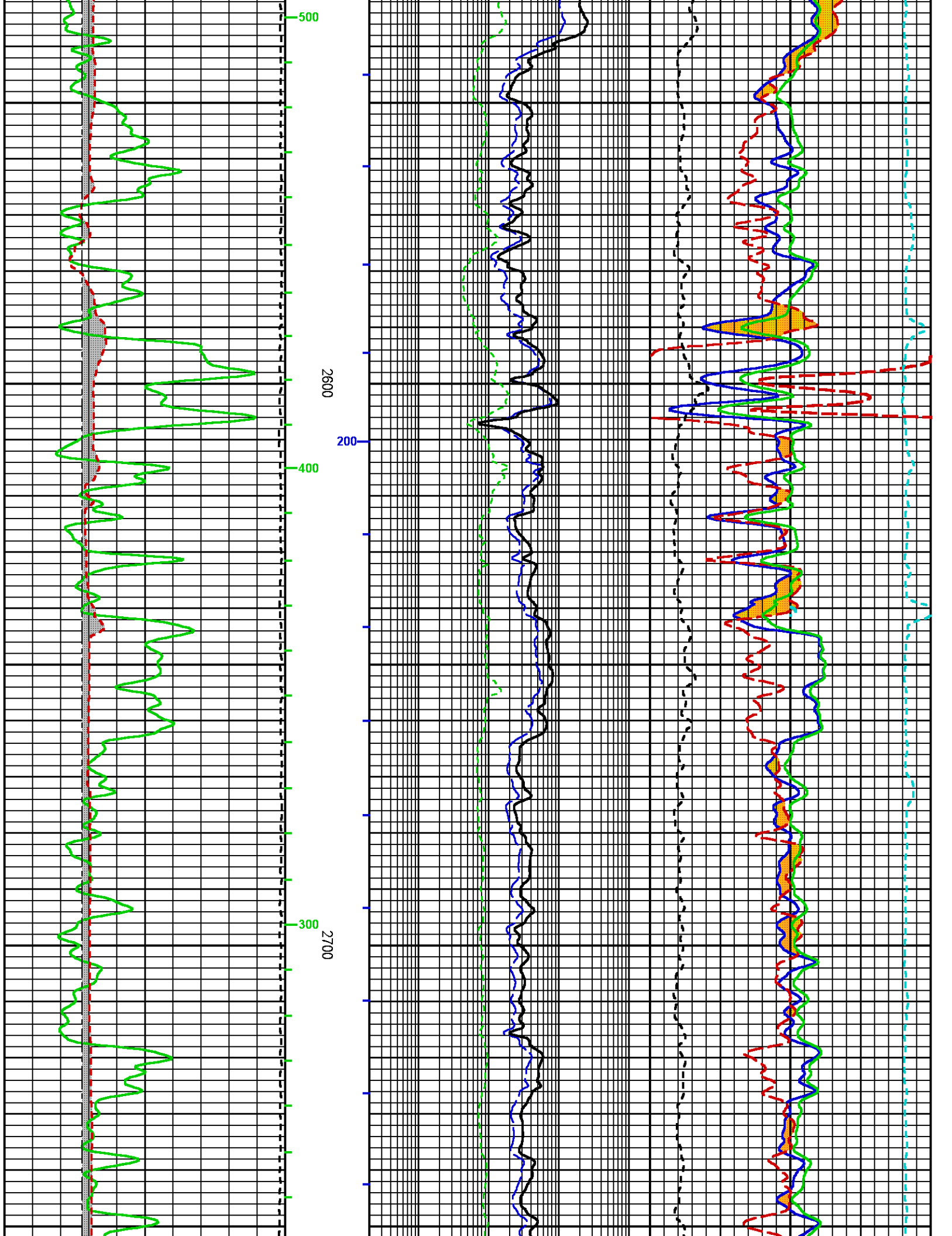




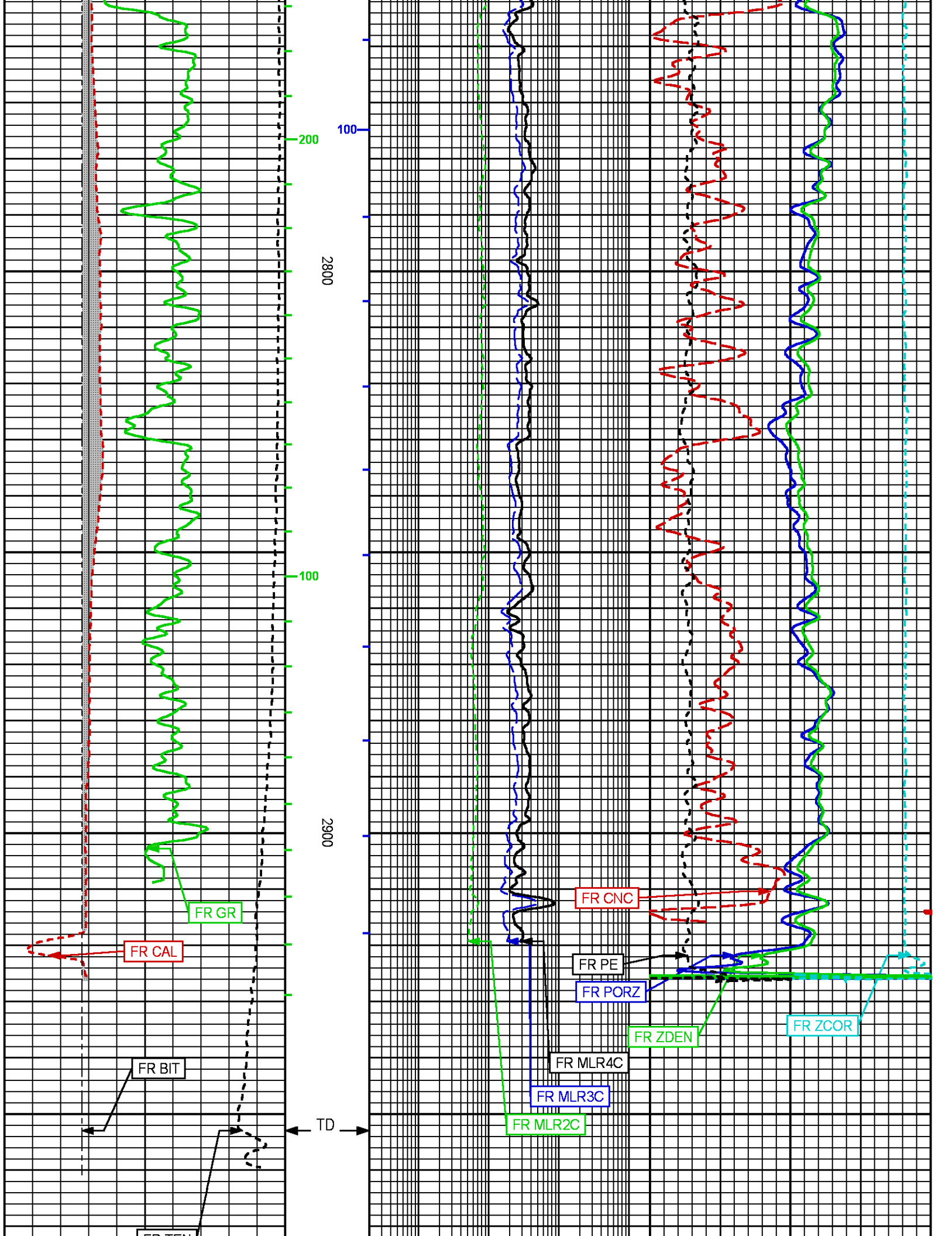


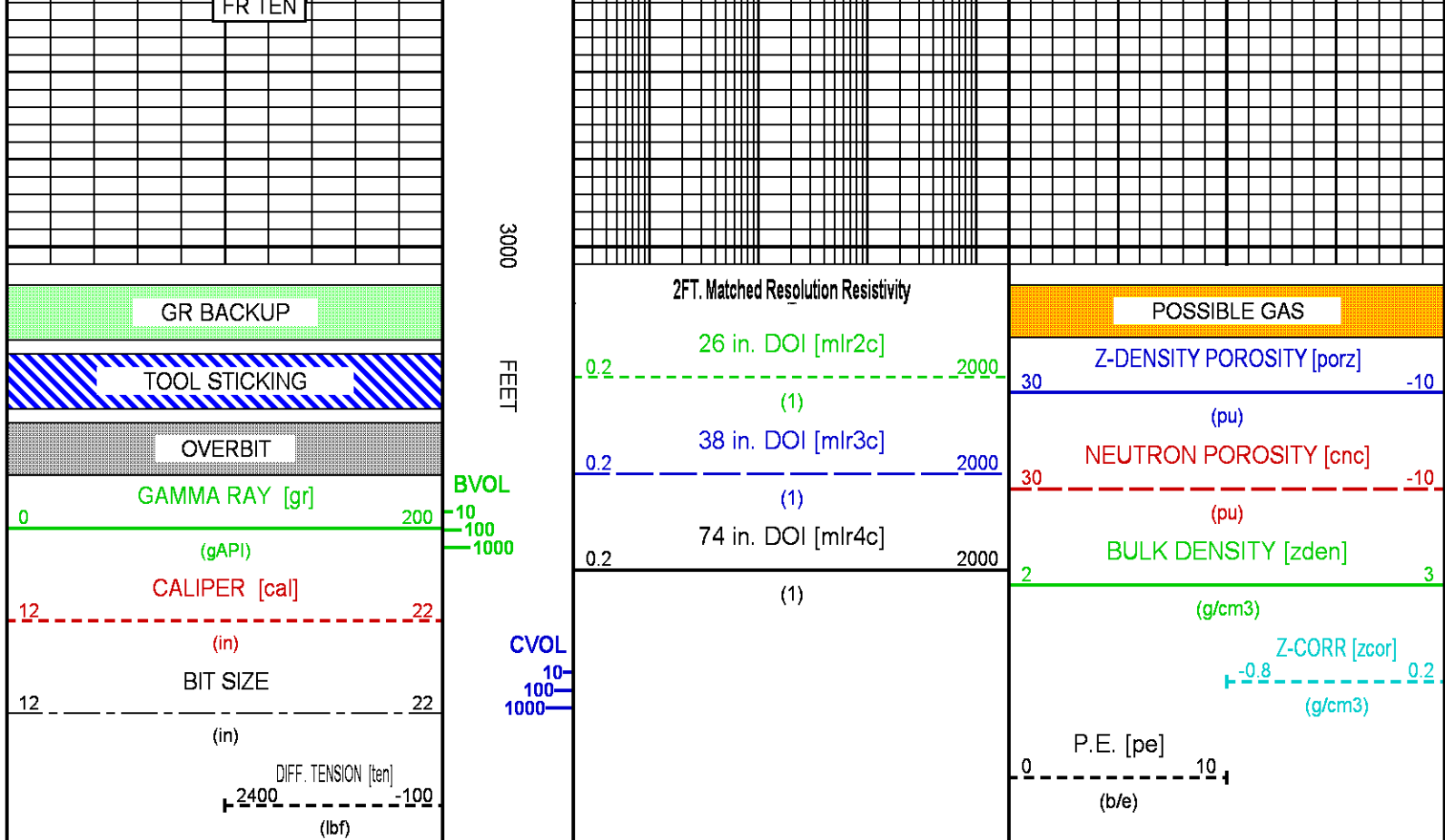












## REPEAT LOG

ECLIPS 6.2i ECLIPS General Release Rel 6.2i Wed Jun 12 12:21:40 CDT 2013  
Patches: 5

Plotted: Tue Apr 22 21:07:00 2014

### PARAMETER AND FILTER SUMMARY REPORT

File: /dat1a/Chesapeake/JAMES\_MESSENGER\_WTZ\_3H\_R2/FOCUS\_TC\_RTEX01.prm  
LOGGING MODE: DEPTH      DIRECTION: UP  
TOP DEPTH: 2673.764 ft      BOTTOM DEPTH: 2963.388 ft

#### SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
GR MED RES	FILTER ()	medium (1)		TOP      BOTTOM
CALIPER	FILTER ()	medium (1)		"      "
	FILTER (.h)	medium (1)		"      "
	FILTER ()	medium (1)		"      "
TENSION	FILTER ()	medium (1)		"      "
CN MED RES	FILTER ()	medium (1)		"      "
CN HIGH RES	FILTER (.h)	light		"      "
ZDL MED RES	FILTER (hrd1*)	medium		"      "
	FILTER (hrd1s*)	medium		"      "
	FILTER (hrd2*)	medium		"      "
	FILTER (hrd2s*)	medium		"      "
	FILTER (soft*)	medium		"      "
ZDL HIGH RES	FILTER (hrd1*)	light		"      "
	FILTER (hrd1s*)	light		"      "
	FILTER (hrd2*)	light		"      "
	FILTER (hrd2s*)	light		"      "

	FILTER (hrd2s*)	light	"	"
	FILTER (soft*)	light	"	"
RTeX	FILTER ()	light (2a)	"	"
	FILTER (.i)	light (2a)	"	"

### BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	10.750	in	TOP	BOTTOM
	CASING THICKNESS	0.000	in	"	"
BIT SIZE	BIT SIZE	14.750	in	"	"
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (calmu*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		"	"
BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	14.750	in	"	"
	FIXED DIAMETER (mlr1c*)	14.750	in	"	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE	TOOL MEASURED		"	"
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	"	"

### ACCELERATION PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
ACCEL CORR SWITCH	ACCEL DEPTH CORR	CORRECTION ON		TOP	BOTTOM

### CN PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CN MATRIX	2436 MATRIX	LIMESTONE		TOP	BOTTOM
CN BOREHOLE CORRECTION	SALINITY	181000	ppm	"	"
	BOREHOLE CORRECTION	ON		"	"
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)	
DENSITY POROSITY	Air Filled Borehole	NO		TOP	BOTTOM
	RHOmatrix	2.710	g/cm3	"	"
	RHOfluid	1.000	g/cm3	"	"

### RTeX PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
RTeX ADAPTIVE BOREHOLE CORRECTION	BOREHOLE CORRECTION	ON		TOP	BOTTOM
	Rxo Source	RTEX ESTIMATE		"	"

### CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Apr 22 18:50:28 2014	BIT SIZE
F1:BVOL	Apr 22 18:50:28 2014	BOREHOLE VOLUME
F1:CAL	Apr 22 18:50:28 2014	CALIPER
F1:CNC	Apr 22 18:50:28 2014	BOREHOLE SIZE CORRECTED COMPENSATED NEUTRON POROSITY
F1:CVOL	Apr 22 18:50:28 2014	CEMENT VOLUME
F1:GR	Apr 22 18:50:28 2014	GAMMA RAY
F1:MLR2C	Apr 22 18:50:28 2014	RTEX SHALLOW RESISTIVITY 2, ADAPTIVE BOREHOLE CORRECTION
F1:MLR3C	Apr 22 18:50:28 2014	RTEX MEDIUM RESISTIVITY 3, ADAPTIVE BOREHOLE CORRECTION
F1:MLR4C	Apr 22 18:50:28 2014	RTEX DEEP RESISTIVITY 4, ADAPTIVE BOREHOLE CORRECTION
F1:PE	Apr 22 18:50:28 2014	PHOTO ELECTRIC CROSS-SECTION
F1:PORZ	Apr 22 18:50:28 2014	POROSITY FOR SELECTABLE MATRIX
F1:TEN	Apr 22 18:50:28 2014	DIFFERENTIAL TENSION
F1:ZCOR	Apr 22 18:50:28 2014	DENSITY CORRECTION
F1:ZDEN	Apr 22 18:50:28 2014	FORMATION BULK DENSITY

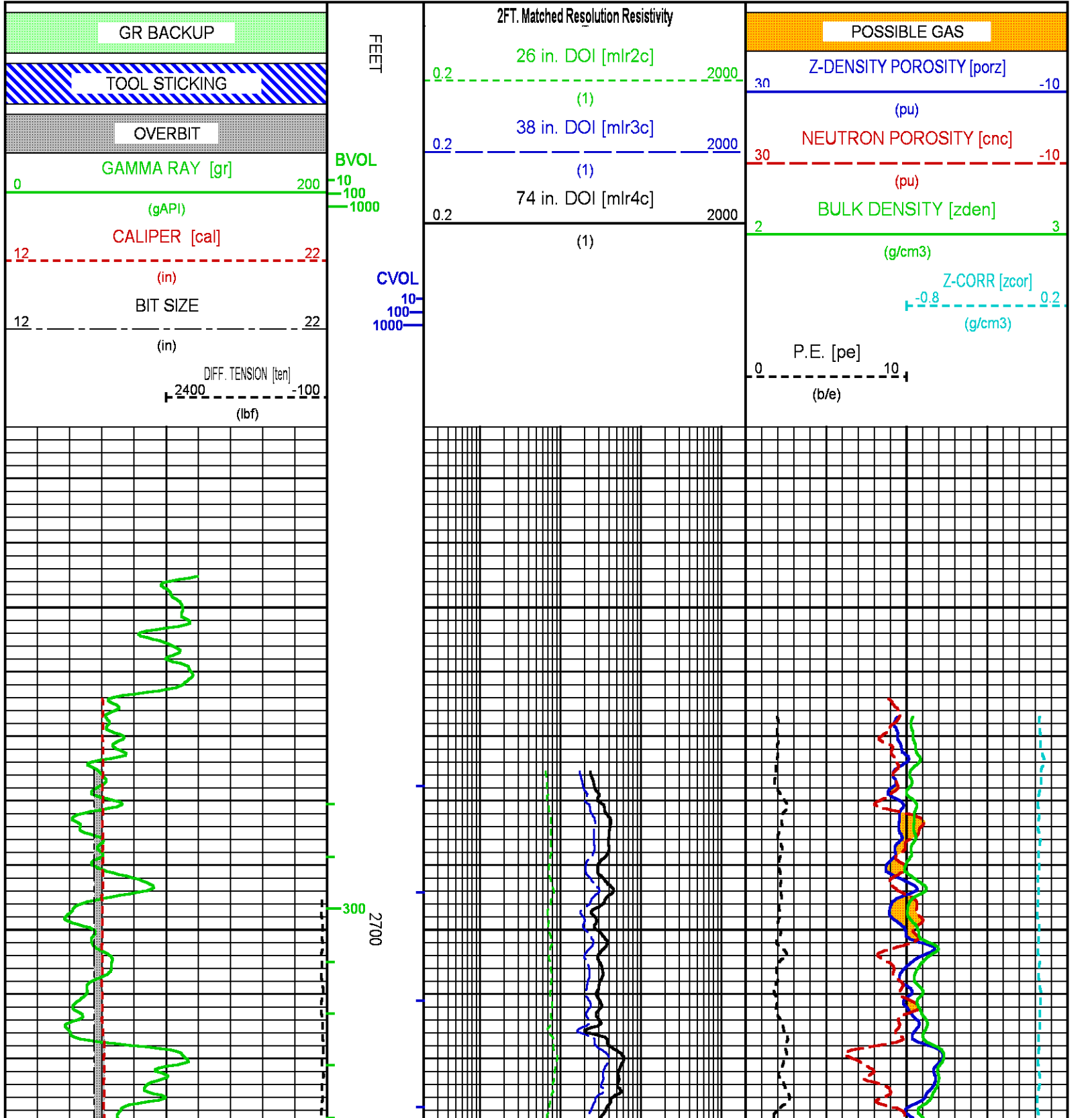
### CURVE MEASURE POINT OFFSET

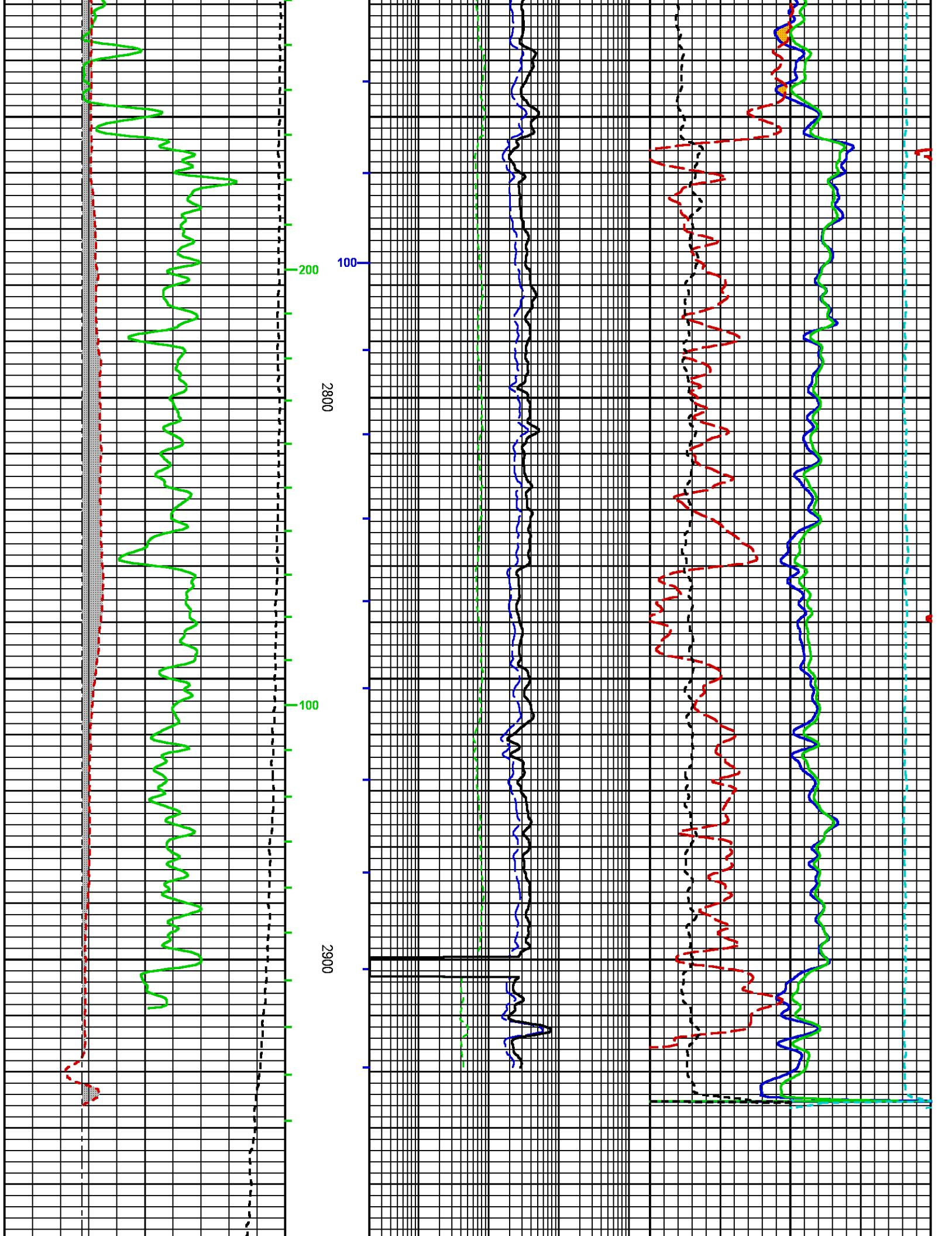
CURVE	OFFSET (#)	CURVE	OFFSET (#)	CURVE	OFFSET (#)	CURVE	OFFSET (#)
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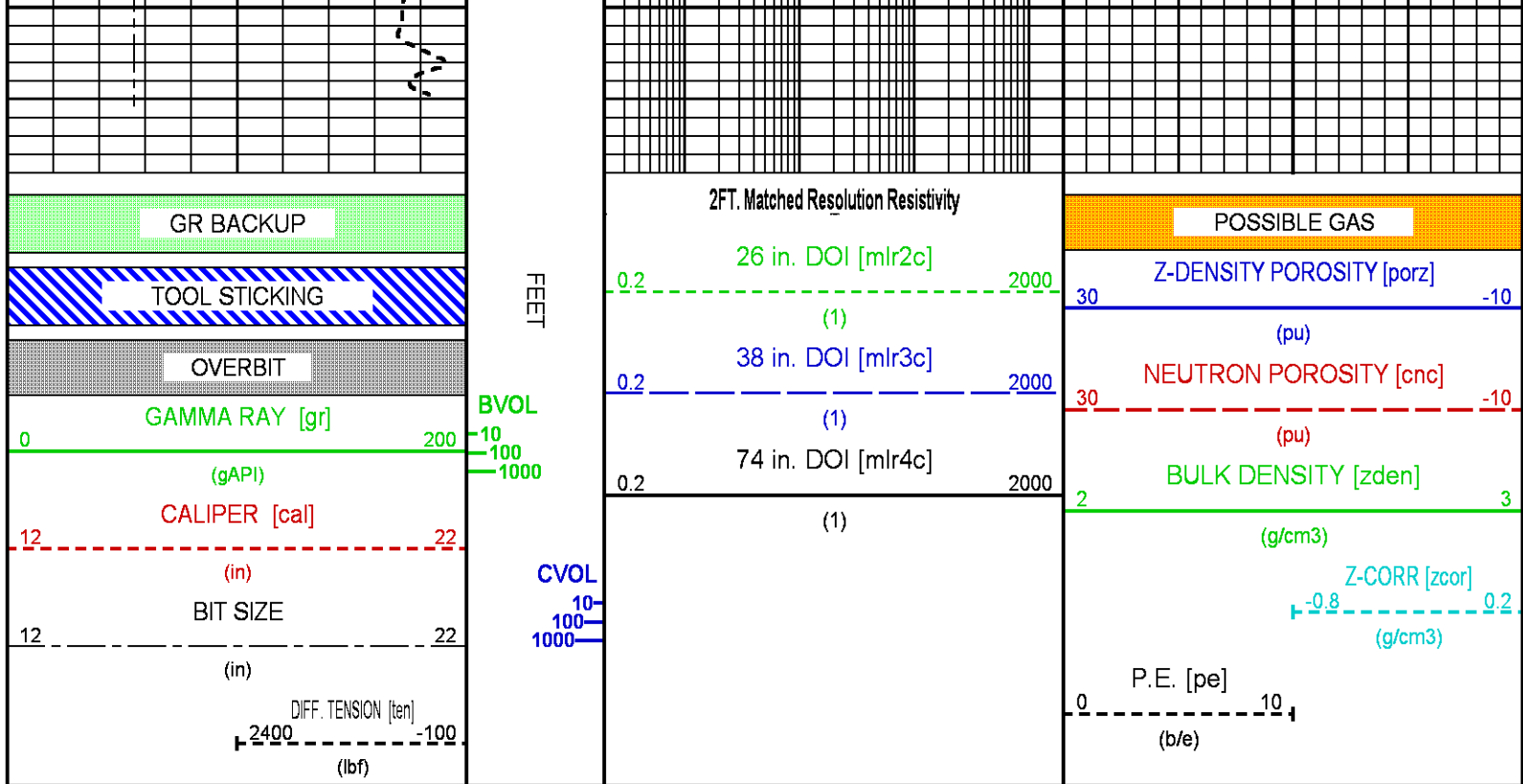
BIT	0.00	GR	50.25	MLR4C	20.00	TEN	0.00
CAL	31.25	MLR2C	20.00	PE	31.25	ZCOR	31.25
CNC	42.62	MLR3C	20.00	PORZ	31.25	ZDEN	31.25

**Presentation** : cpu4257:/dat1a/Chesapeake/JAMES\_MESSENGER\_WTZ\_3H\_R2/TC\_RPT.fvpdf [5"/100' Scale]  
**Plot Interval** : 2623.5 - 2966.75 Feet

**Data File 1** : F1 : cpu4257:/dat1a/Chesapeake/JAMES\_MESSENGER\_WTZ\_3H\_R2/FOCUS\_TC\_RTEX01.xtf  
**Created On** : Apr 22 18:50:28 2014  
**Company** : CHESAPEAKE APPALACHIA, LLC.  
**Well** : JAMEWS MESSENGER WTZ 3H U  
**Field** : WETZEL  
**File Interval** : 2623.5 - 2966.75 Feet  
**OCT** : FOCUS\_TC







## CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/Chesapeake/JAMES\_MESSENGER\_WTZ\_3H\_R2/FOCUS\_TC\_RTEX.tp1

### GR PRIMARY CALIBRATION SUMMARY

Tool #: 3518EG 10597572

DATE/TIME PERFORMED: Tue Mar 18 13:04:09 2014

Unit #: 3885TD Z4257

Jig Series: 4702NK V1-499-N

Background	Calibrator ON	Jig Value (gAPI)	Mult	Background (gAPI)	Calibrator ON (gAPI)
122.65	798.66	185	0.274 <small>0.230    0.280</small>	33.56	218.56

### GR PRIMARY VERIFICATION SUMMARY

NOT DONE

### GR BEFORE LOG VERIFICATION SUMMARY

TOOL #: 3518EG 10597572

DATE/TIME PERFORMED: Tue Apr 22 18:28:24 2014

DAYS SINCE CAL: 35

UNIT #: 3885TD Z4257

Jig: INTRNL N/A

Counts	TEMP (degF)	HV (V)
976.67	93.49	1363.96
929.00 1027.00	536.00	1237.00 1512.00

### CN PRIMARY CALIBRATION SUMMARY

TOOL #: 2436XA 10437272      DATE/TIME PERFORMED: Wed Mar 19 14:06:19 2014

UNIT #: 3885TD Z4257      CALIBRATOR #: 2437XB 114695      SOURCE #: 4718XA SN-994

SSN DT CPS	LSN DT CPS	SSN/LSN	MCF	CNRATIO	CN PU
4928.89	869.65	5.66767	1.01223	5.73700	25.241
			0.95000 1.05000		

### CN BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2436XA 10437272      DATE/TIME PERFORMED: Tue Apr 22 18:28:11 2014      DAYS SINCE CAL: 34

UNIT #: 3885TD Z4257      CALIBRATOR #: INTRNL N/A

SSN DT CPS	LSN DT CPS	SSN/LSN	TEMP (degF)	HV (V)	LV (V)
991.41	993.42	0.99797	81.1	1405.4	4.642
		0.95000 1.05000	280.4	1250.0 1450.0	4.300 5.000

### CAL PRIMARY CALIBRATION SUMMARY

TOOL #: 2223XA 402529      DATE/TIME PERFORMED: Sat Apr 12 11:42:42 2014

UNIT #: 3885TD Z4257

	SIZE (in)	VALUE	MULTIPLIER	ADD
SMALL RING (Arm)	4.000	568.0		
LARGE RING (Arm)	14.000	3681.6	0.00321	2.17575
PAD CLOSED		2116.0	0.00250	-5.29000

### CAL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2223XA 402529      DATE/TIME PERFORMED: Tue Apr 22 18:27:44 2014      DAYS SINCE CAL: 10

UNIT #: 3885TD Z4257

	VALUE	MULTIPLIER	ADD	SIZE (in)
ARM	3620.0	0.00321	2.17575	13.8
PAD	2576.0	0.00250	-5.29000	1.1

	ACTUAL (in)	MEASURED (in)
DIAMETER (arm+pad)	15.250	15.2
		14.9 15.6

### CAL AFTER LOG VERIFICATION SUMMARY

TOOL #: 2223XA 402529      DATE/TIME PERFORMED: Tue Apr 22 20:14:10 2014      DAYS SINCE CAL: 10

UNIT #: 3885TD Z4257

	VALUE	MULTIPLIER	ADD	SIZE (in)
ARM	3652.0	0.00321	2.17575	13.9
PAD	2572.0	0.00250	-5.29000	1.1

	ACTUAL (in)	MEASURED (in)
DIAMETER (arm+pad)	15.250	15.1
		14.9 15.6

### ZDL PRIMARY CALIBRATION SUMMARY

TOOL: 2223XA 402529      DATE/TIME PERFORMED: Sat Apr 12 12:15:06 2014

UNIT: 3885TD Z4257      CALB BLKS: 2225XA 094304\_FL      CS SRC: 4705XA 16108B      PAD TYPE: PADTYP 7.5" PAD

SS CS PK (Channel)	LS CS PK (Channel)	SS_BKGD (cps)	LS BKGD (cps)
224.7	224.5	970.7	1415.7
220.0 230.0	220.0 230.0		

	SS (cps)	LS (cps)	SHR	DEN (g/cm3)	CORR (g/cm3)	PE (b/e)
MG (LO PE)	32499.6	11425.2	0.741	1.681	0.001	1.930
			0.720 0.890			
AL	20225.3	1293.1		2.662	-0.021	
AL + SHIM	26676.2	2228.9		2.557	0.098	

MG - SUM (LO PE) 12244.6      LS - SUM (LO PE) 5542.6      SHR - 0.733      DEN - 2.738



MG + SHIM (HI PE)

16244.0	5543.9	0.296	0.380
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8.700

RATIO AL + SHIM/AL

1.32	1.72
1.30 1.40	1.60 1.80

RATIO MG/AL

1.61	8.84
1.58 1.70	8.55 9.55

## ZDL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2223XA 402529

DATE/TIME PERFORMED: Tue Apr 22 18:24:55 2014

DAYS SINCE CAL: 10

UNIT #: 3885TD Z4257

	TOTAL (cps)	CSPK (Channel)	HV (V)
LS	3342.1 3332.1 3352.1	226.0 220.0 230.0	1467.0 1250.0 1550.0
SS	22354.8 22344.8 22364.8	224.2 220.0 230.0	1425.3 1250.0 1550.0
	LV (V)	PAD CURRENT (mA)	
	5.0 4.8 5.2	81.6 50.0 120.0	

## RTEX\_RES PRIMARY CALIBRATION SUMMARY

TOOL #: 1241XA 11810138

DATE/TIME PERFORMED: Tue Apr 22 18:46:27 2014

UNIT #: 3885TD Z4257

CAL FACTORS	F1	F2	F3	F4
MI0L Real	10.95 10.57 11.23	10.94 10.57 11.23	10.95 10.57 11.23	10.95 10.57 11.23
MI0L Quad	-0.00 -0.19 0.19	-0.00 -0.19 0.19	-0.00 -0.19 0.19	-0.01 -0.19 0.19
AI0L Real	13.8 -200.0 200.0	1.8 -200.0 200.0	5.2 -200.0 200.0	-41.2 -200.0 200.0
AI0L Quad	-6.2 -200.0 200.0	0.4 -200.0 200.0	7.6 -200.0 200.0	8.7 -200.0 200.0
MI0M Real	100.4 97.0 103.0	100.4 97.0 103.0	100.4 97.0 103.0	100.4 97.0 103.0
MI0M Quad	0.301 -1.750 1.750	0.558 -1.750 1.750	0.470 -1.750 1.750	0.008 -1.750 1.750
AI0M Real	15.1 -200.0 200.0	-29.2 -200.0 200.0	-8.4 -200.0 200.0	2.6 -200.0 200.0
AI0M Quad	11.4 -200.0 200.0	-13.2 -200.0 200.0	15.2 -200.0 200.0	-1.7 -200.0 200.0
MI0H Real	3982 3857 4095	3981 3857 4095	3982 3857 4095	3983 3857 4095
MI0H Quad	-7.70	-14.95	-12.74	-5.83

	-69.40	69.40	-69.40	69.40	-69.40	69.40	-69.40	69.40
AI0H Real	-82		27		139		-127	
	-2000	2000	-2000	2000	-2000	2000	-2000	2000
AI0H Quad	136		-38		14		-80	
	-2000	2000	-2000	2000	-2000	2000	-2000	2000
MVML Real	1.000		1.000		1.000		1.000	
	0.999	1.001	0.999	1.001	0.999	1.001	0.999	1.001
MVML Quad	0.000		0.000		0.000		0.000	
	-0.001	0.001	-0.001	0.001	-0.001	0.001	-0.001	0.001
AVML Real	-19.5		-7.6		-10.5		-7.3	
	-200.0	200.0	-200.0	200.0	-200.0	200.0	-200.0	200.0
AVML Quad	-14.0		-6.0		1.4		6.3	
	-200.0	200.0	-200.0	200.0	-200.0	200.0	-200.0	200.0

## INSTRUMENT CONFIGURATION

Source File: /dat1a/Chesapeake/JAMES\_MESSENGER\_WTZ\_3H\_R2/FOCUS\_TC\_RTEX~tdg

### FOCUS CABLEHEAD

Diameter : 3.12"  
 Length : 3.17'  
 Weight : 15 lbs  
 Series : CABL318  
 Mnemonic : CBLH

### FOCUS TEN/TEMP/MUD RES/ACCEL

Diameter : 3.13"  
 Length : 4.31'  
 Weight : 61 lbs  
 Series : 3980XA  
 Mnemonic : TTMA

### FOCUS TELEMETRY (POWER SECTION)

Diameter : 3.13"  
 Length : 3.71'  
 Weight : 48 lbs  
 Series : 3518FB  
 Mnemonic : TMGR

### FOCUS EB/EG TELEMETRY GAMMA RAY

Diameter : 3.12"  
 Length : 5.83'  
 Weight : 63 lbs  
 Series : 3518EG



63.20'

GR MP 50.41'

Mnemonic : GR  
Measure Point: 4.24': GR MP

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**FOCUS COMPENSATED NEUTRON**

Diameter : 3.13"  
Length : 4.81'  
Weight : 65 lbs  
Series : 2436XA  
Mnemonic : CN  
Measure Point: 1.92': LSN MP  
Measure Point: 1.46': SSN MP

LSN MP — 43.28'  
SSN MP — 42.82'

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**FOCUS SHORT ISOLATION SUB, FULL F/T**

Diameter : 3.13"  
Length : 2.00'  
Weight : 10 lbs  
Series : 4486XA  
Mnemonic : ISSB

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**FOCUS Z-DENSILOG**

Diameter : 3.75"  
Length : 9.58'  
Weight : 200 lbs  
Series : 2223XA  
Mnemonic : ZDL  
Measure Point: 4.33': CR1 MP  
Measure Point: 1.69': LSD / CR2 MP  
Measure Point: 1.29': SSD MP

CR1 MP — 34.11'

LSD / CR2 MP — 31.47'  
SSD MP — 31.07'

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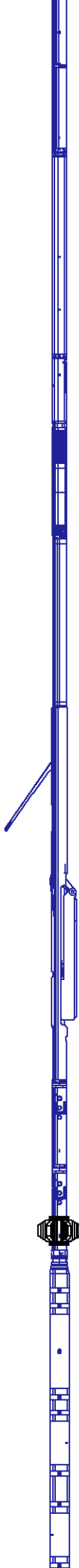
**FOCUS KNUCKLE JOINT**

Diameter : 3.13"  
Length : 1.50'  
Weight : 30 lbs  
Series : 3930XA

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**FOCUS KNUCKLE JOINT**

Diameter : 3.13"  
Length : 1.50'  
Weight : 30 lbs  
Series : 3930XA



**FOCUS RT EXPLORER**

Diameter : 4.00"  
 Length : 13.47'  
 Weight : 210 lbs  
 Series : 1241XA  
 Mnemonic : RTEX  
 Measure Point: 6.86': RTEX mp

RTEX mp — 20.17'

**FOCUS ACOUSTIC ELECTRONICS**

Diameter : 3.13"  
 Length : 3.00'  
 Weight : 35 lbs  
 Series : 1630EA  
 Mnemonic : AC

T MP — 9.83'

**FOCUS ACOUSTIC MANDREL**

Diameter : 3.13"  
 Length : 8.08'  
 Weight : 95 lbs  
 Series : 1630MA  
 Mnemonic : AC  
 Measure Point: 7.61': T MP  
 Measure Point: 4.61': R0 MP  
 Measure Point: 2.61': R1 MP  
 Measure Point: 2.11': R2 MP  
 Measure Point: 1.61': R3 MP  
 Measure Point: 1.11': R4 MP

R0 MP — 6.83'

R1 MP — 4.83'

R2 MP — 4.33'

R3 MP — 3.83'

R4 MP — 3.33'

**FOCUS SHORT ISOLATION SUB, FULL F/T**

Diameter : 3.13"  
 Length : 2.00'  
 Weight : 10 lbs  
 Series : 4486XA  
 Mnemonic : ISSB

**BULL PLUG 3 1/8**

0.00'

TOTAL LENGTH: 63.20'  
 TOTAL WEIGHT: 878 lbs  
 MAX DIAMETER: 0'4.00'



**COMPANY** CHESAPEAKE APPALCHIA, LLC.  
**WELL** JAMES MESSENGER WTZ 3H U  
**FIELD** WETZEL  
**COUNTY** WETZEL **STATE** WEST VIRGINIA

**FILE NO:** \_\_\_\_\_  
**API NO:** 47-103-02973

**LOCATION:** \_\_\_\_\_

**ELEVATIONS:** \_\_\_\_\_

**SCALE:** 5"/100'



STATE TOWNSHIP: PROCTOR  
QUAD: WILEYVILLE

KB 1517 FT  
DF 1517 FT  
GL 1495 FT

LAT 39.673693 N LONG 80.690861 W

DATE 22-APR-2014