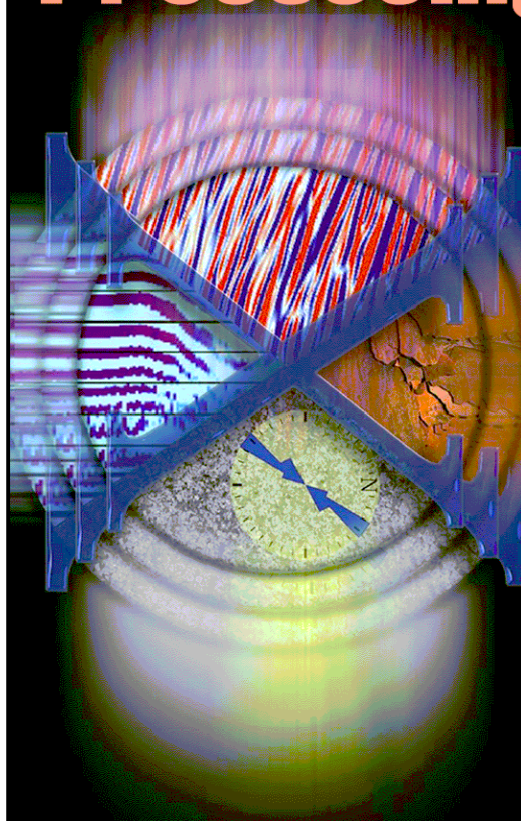


Acoustic Waveform Processing



MULTIPOLE ARRAY ACOUSTILOG SM

COMPANY SIERRA GEOTHERMAL POWER, INC.

WELL ALUM 25-29

FIELD ALUM

COUNTY ESMERALDA STATE NEVADA

LOCATION: 2235.18' FSL & 938.11' FWL

SEC 29 TWP 1N RGE 38.5E

ELEVATIONS:

KB 4919.57 FT DF N/A GL 4903.57 FT

DATE 23-NOV2009 ECC

IN MAKING INTERPRETATIONS OF LOGS OUR EMPLOYEES WILL GIVE 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.

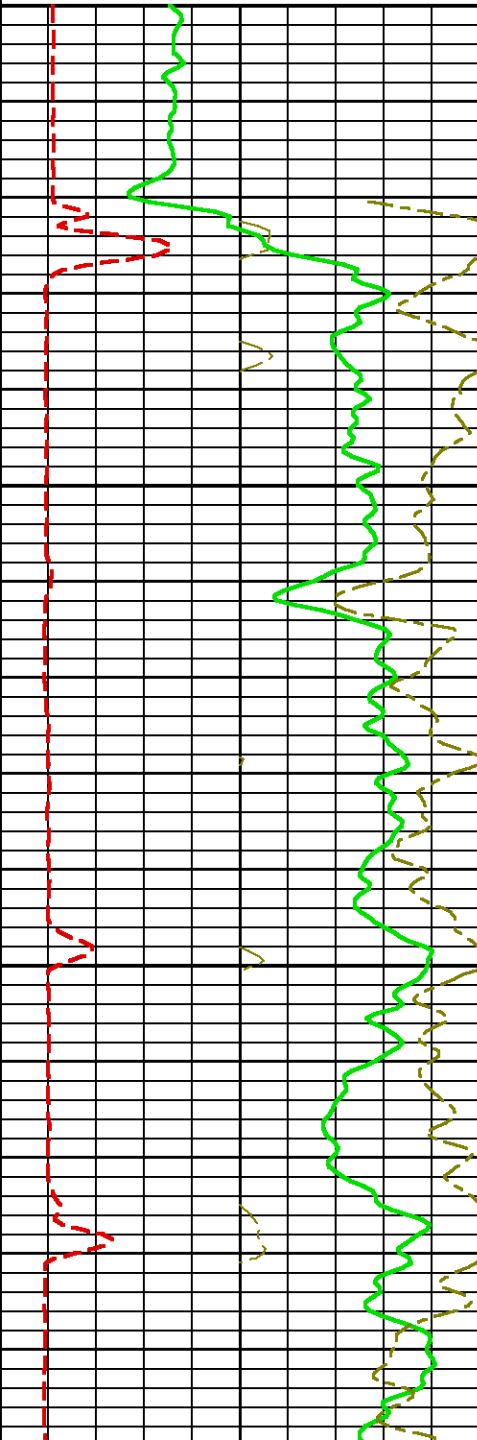
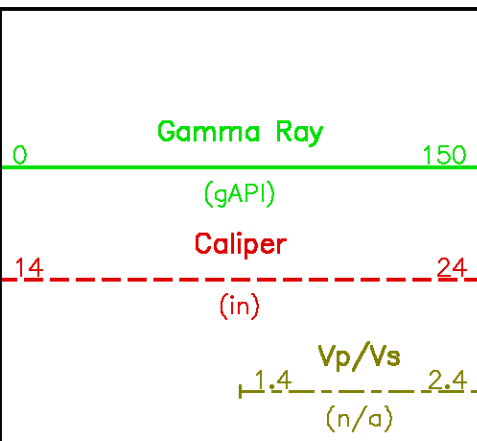
REMARKS

DATA MAY BE UNRELIABLE IN AREAS OF TENSION PULLS & WASHOUT

ANALYST: J. ADREON

COMPRESSIONAL AND SHEAR WAVE SLOWNESS

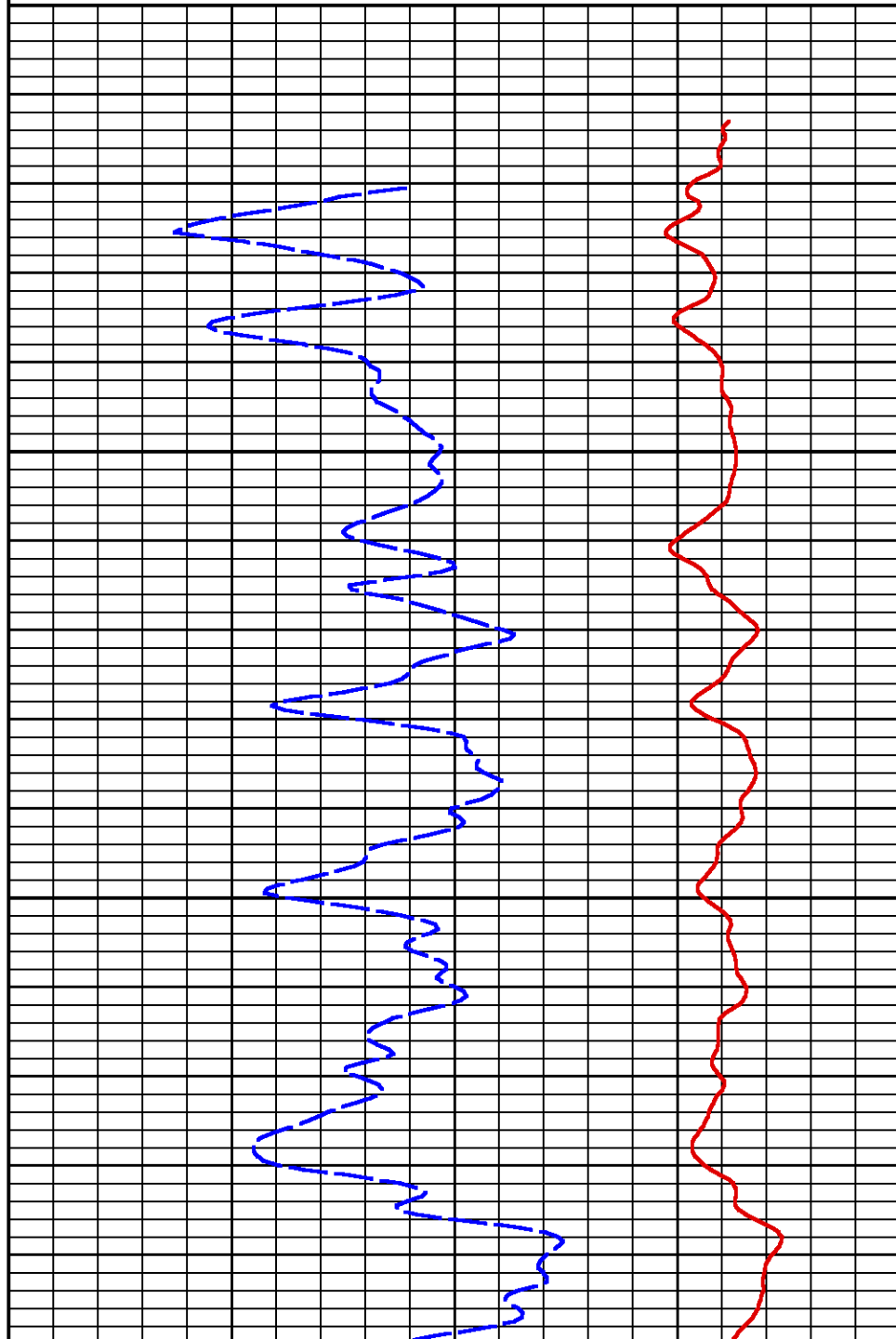
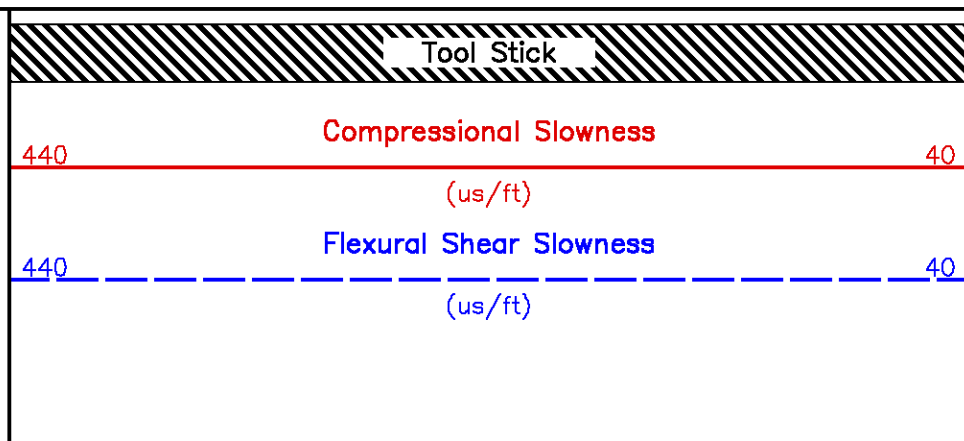
Data File 1 : F1 : sunserv24:/geos/lac/adrejosl/sierra_xmac/xmac.xtf
Created On : Nov 15 12:51:25 2009
Company : SIERRA GEOTHERMAL POWER, INC.
Well : ALUM 25-29
Field : ALUM
File Interval : 472.5 - 2316 Feet
Oct : k771l

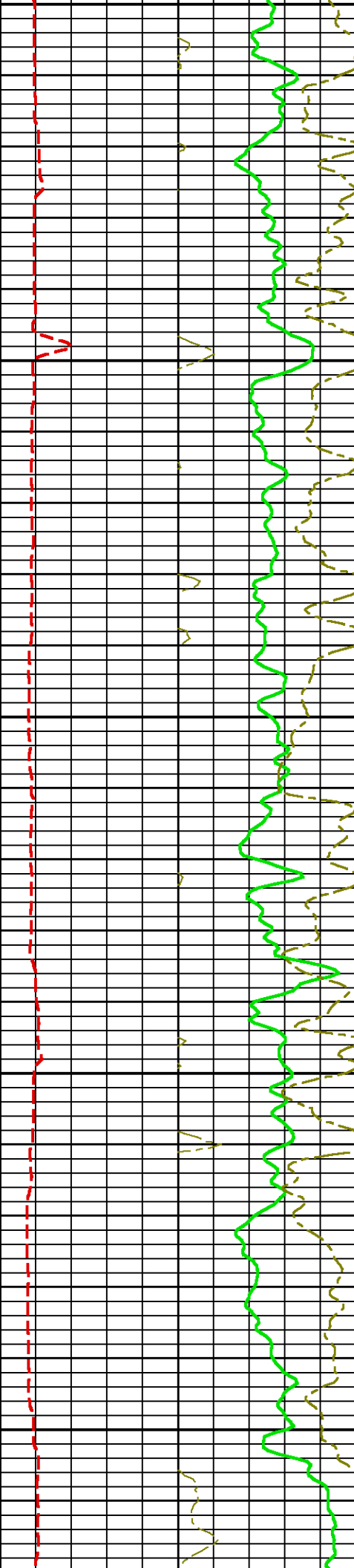


FEET

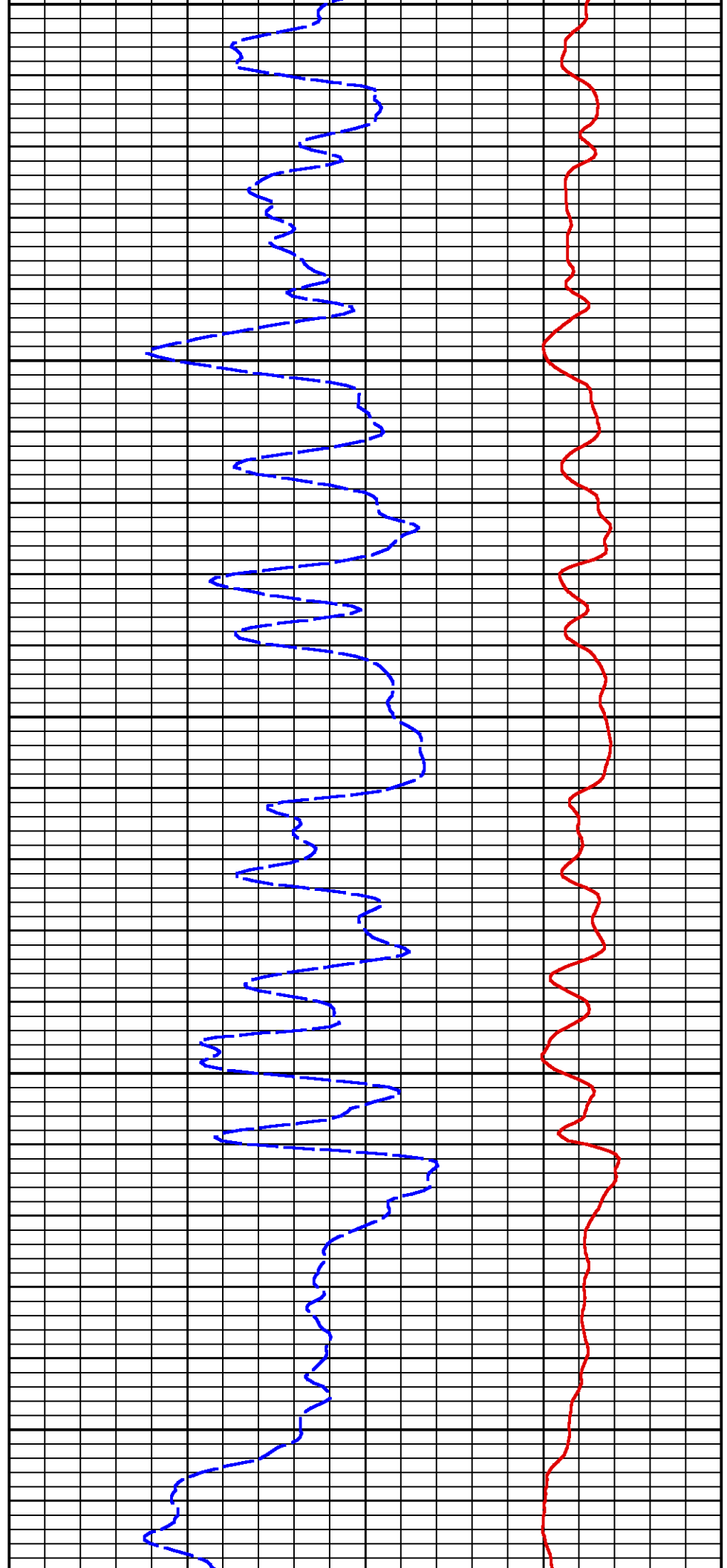
600

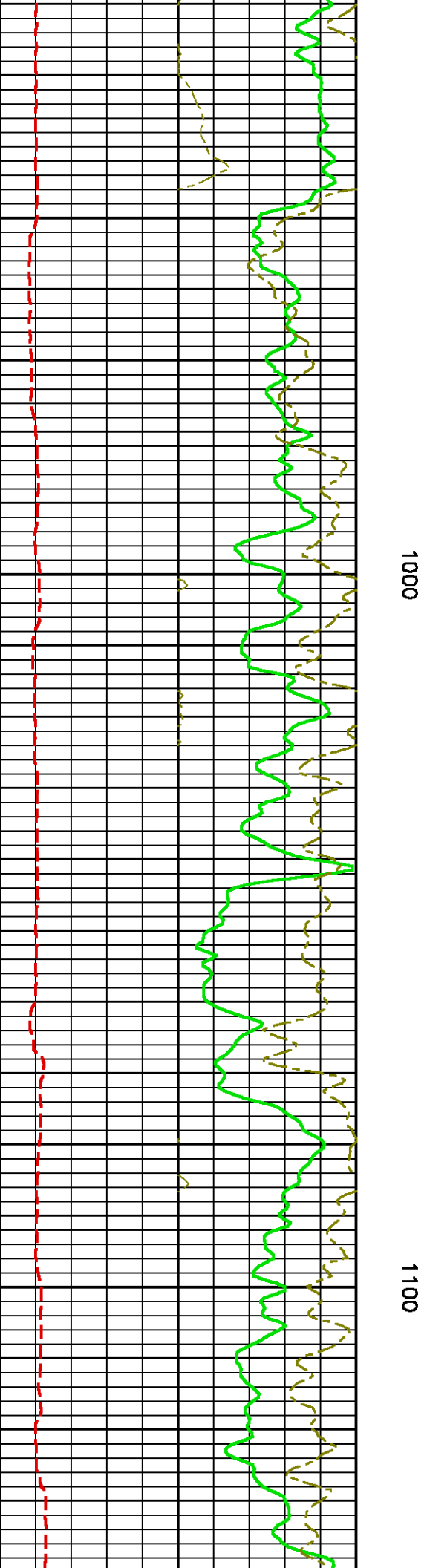
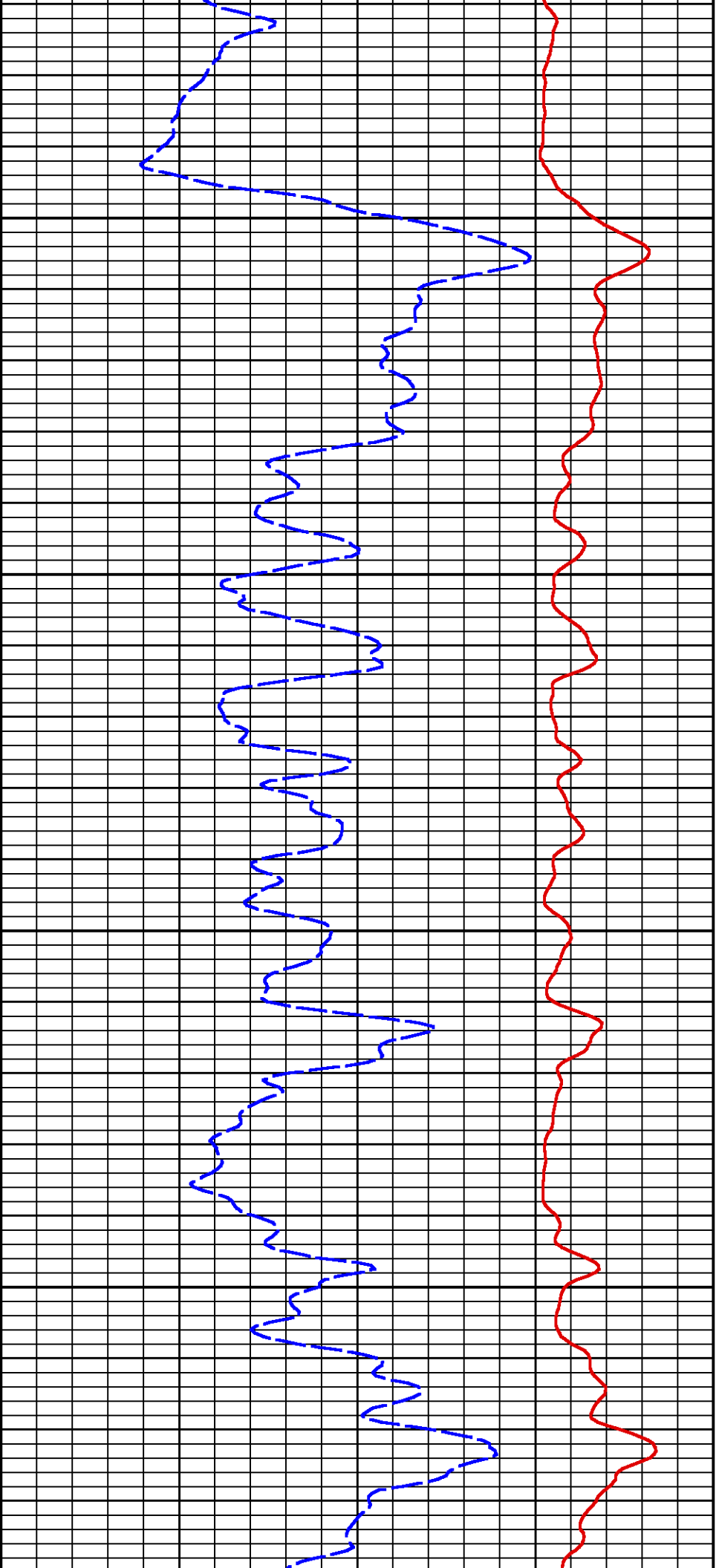
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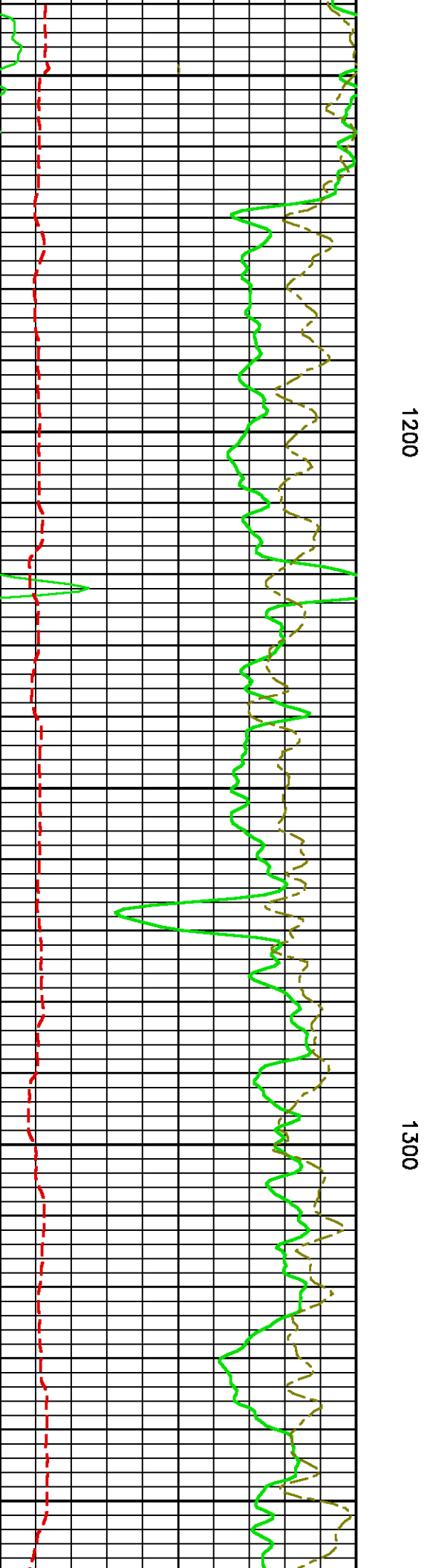
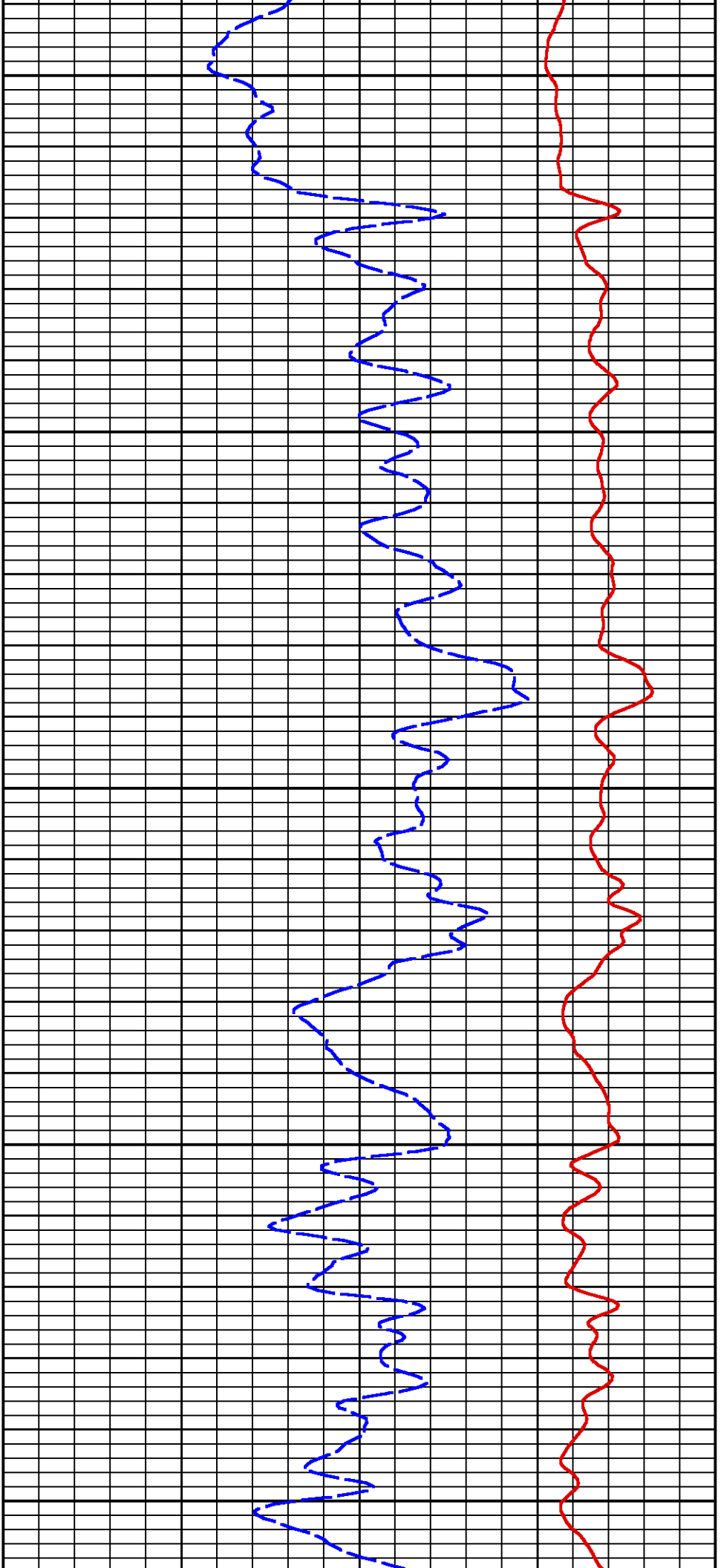


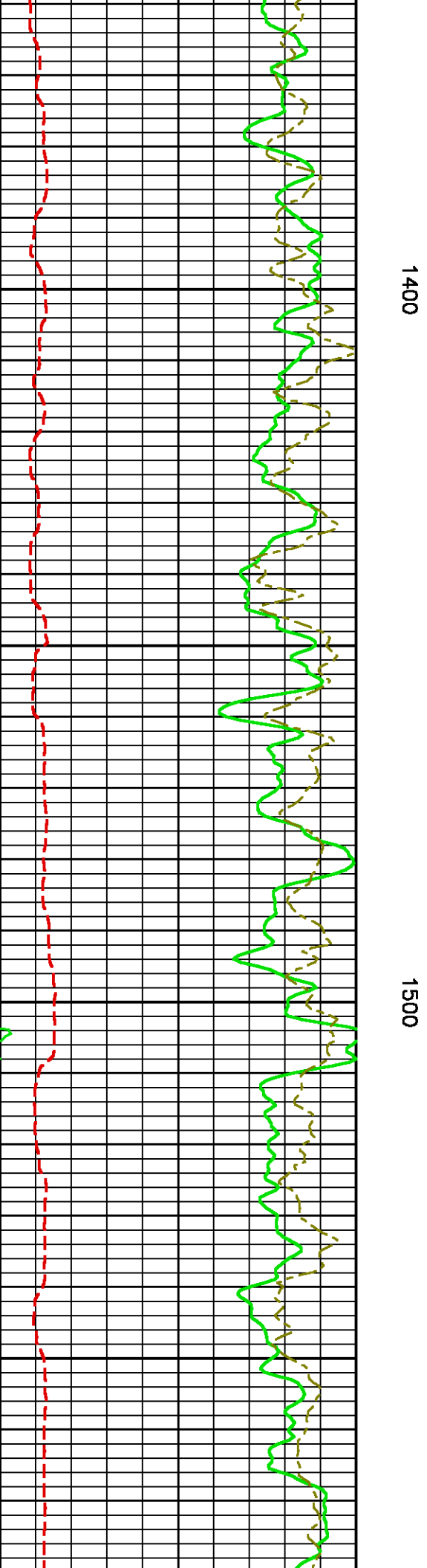
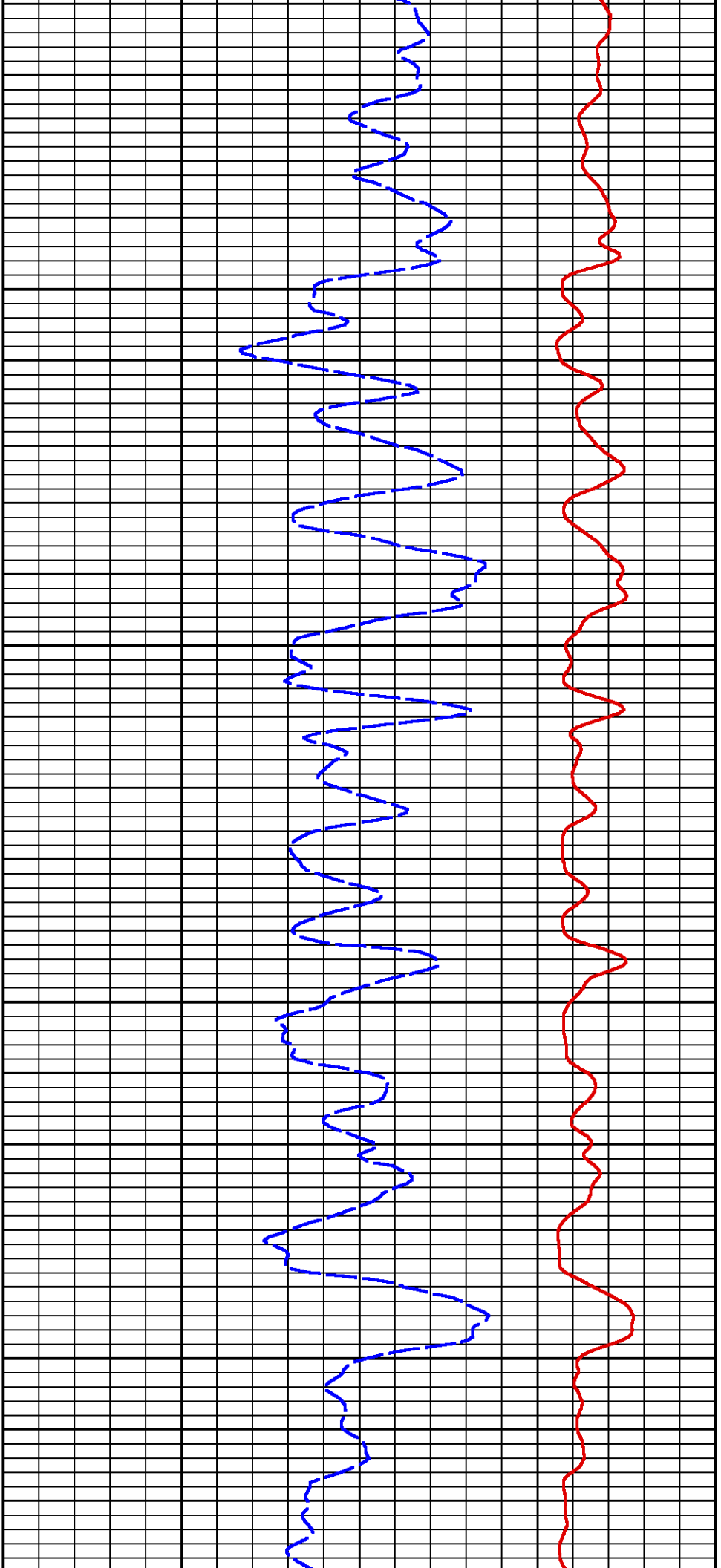


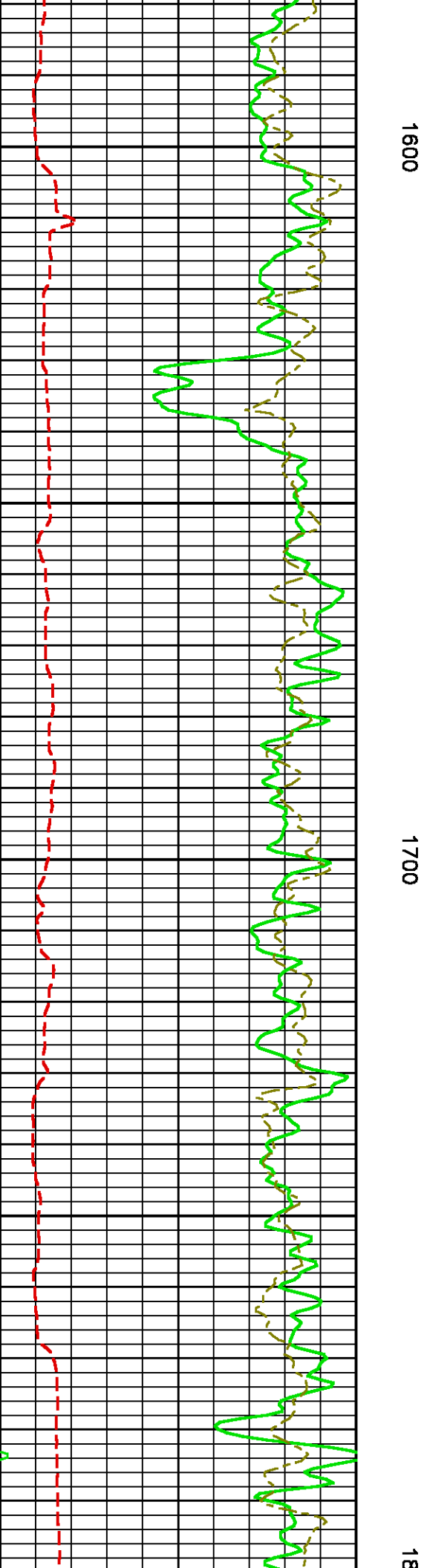
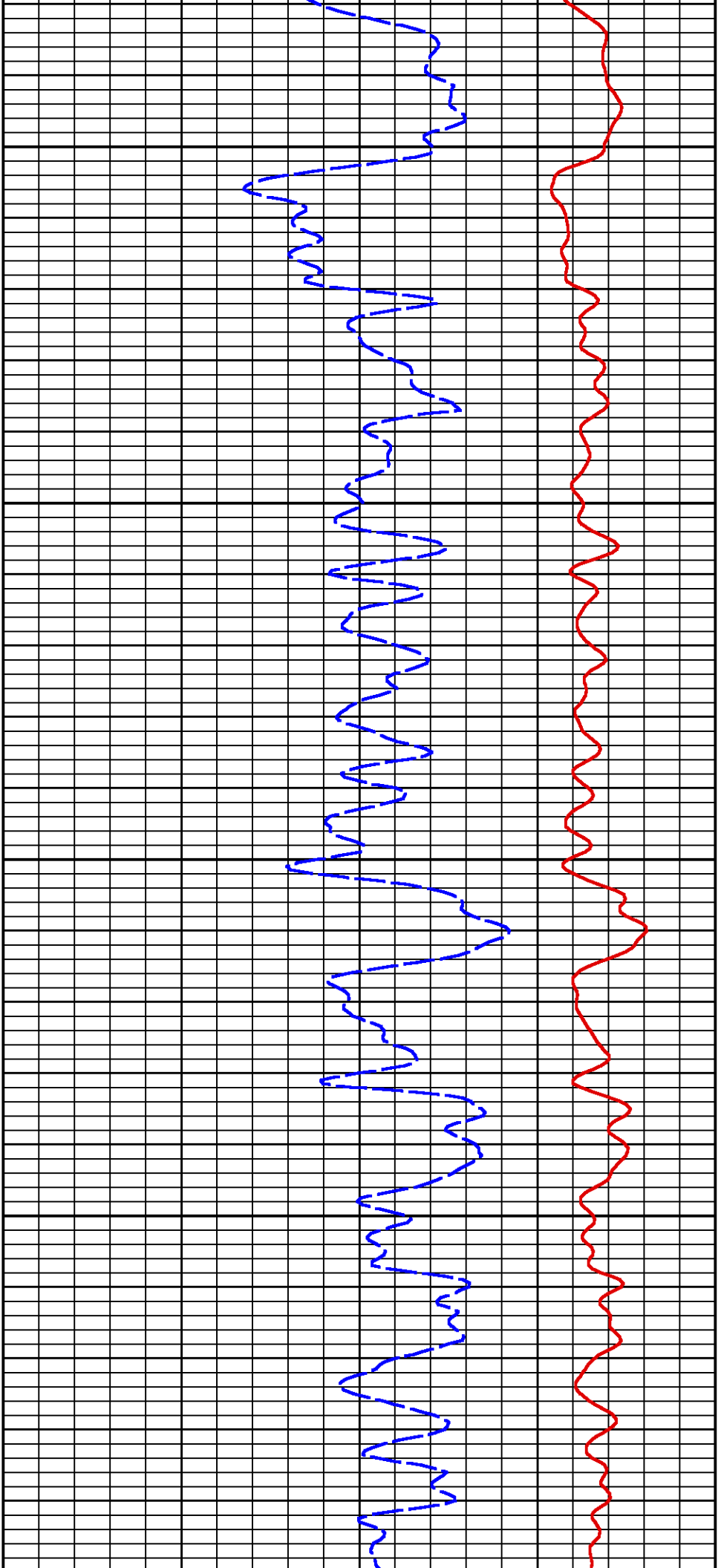
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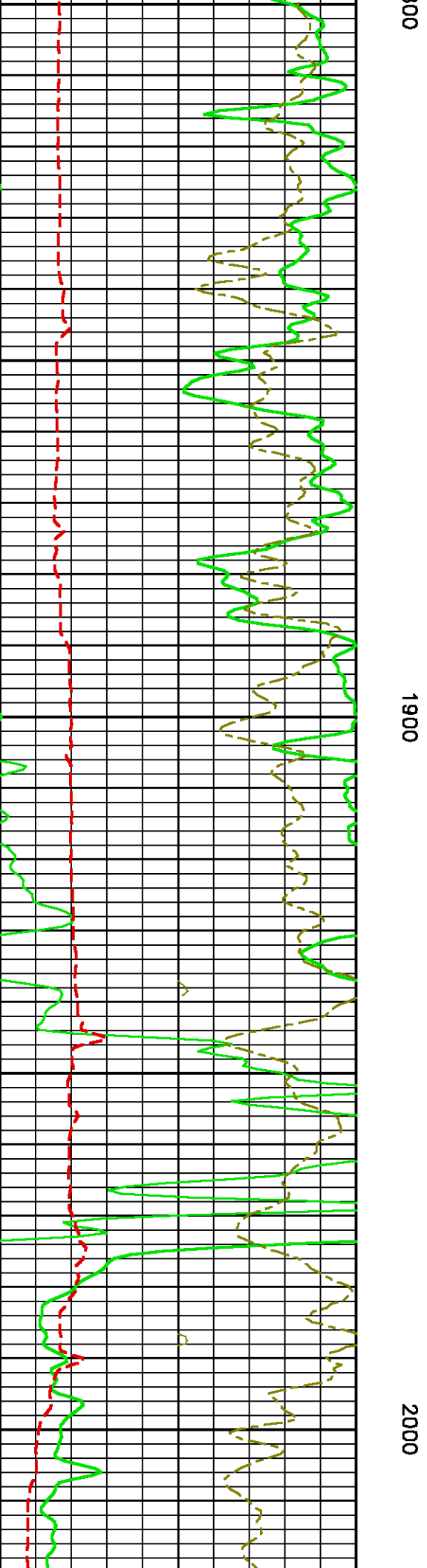
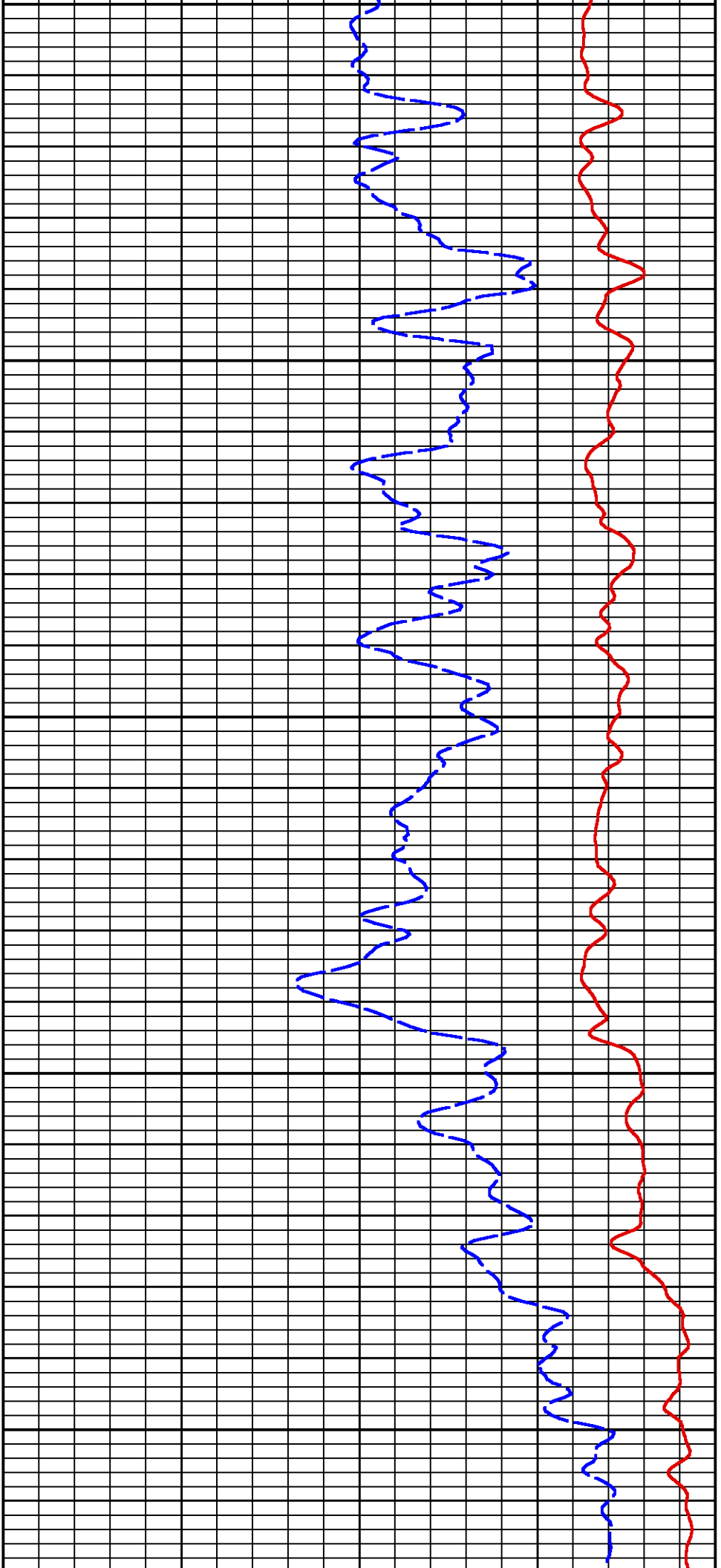


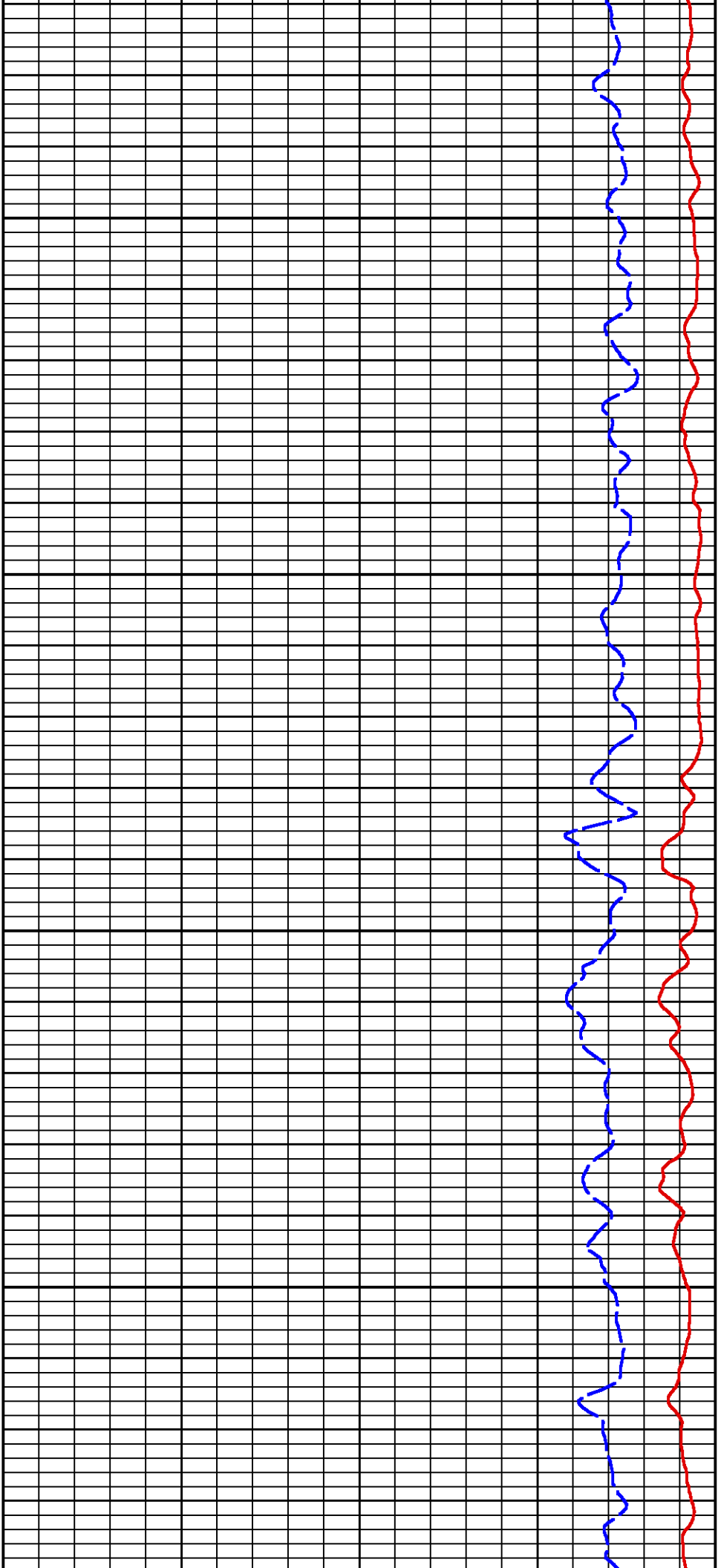






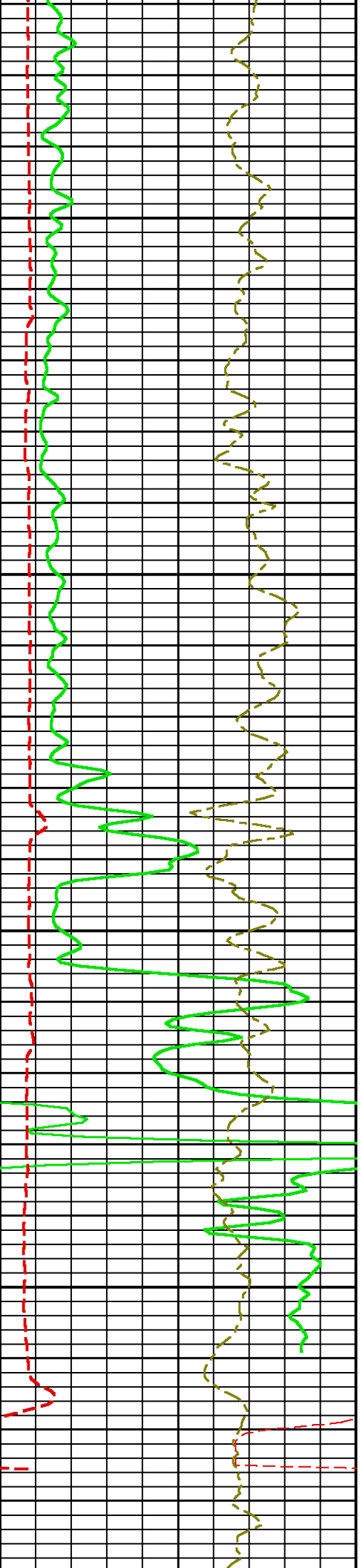


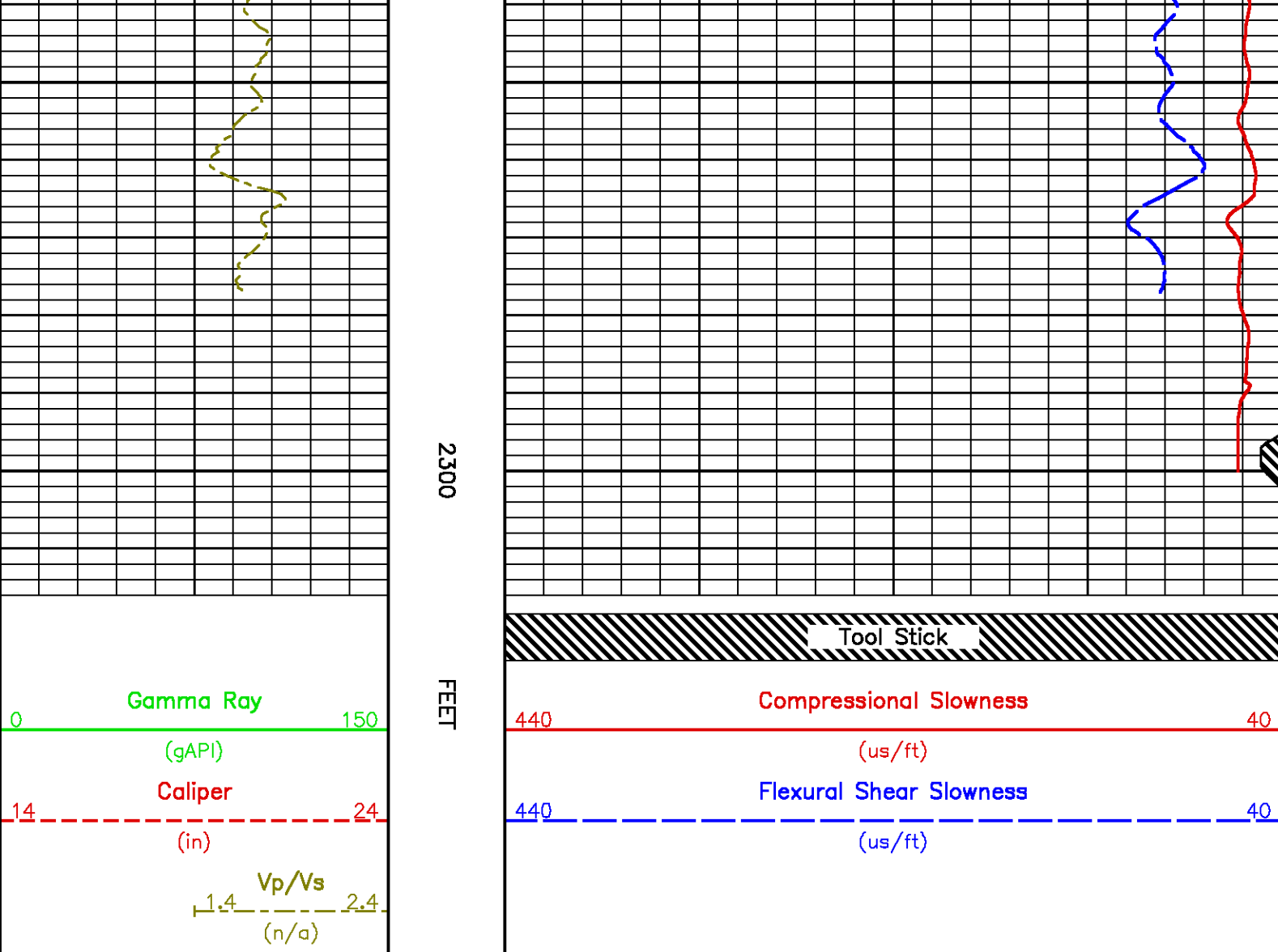




2100

2200

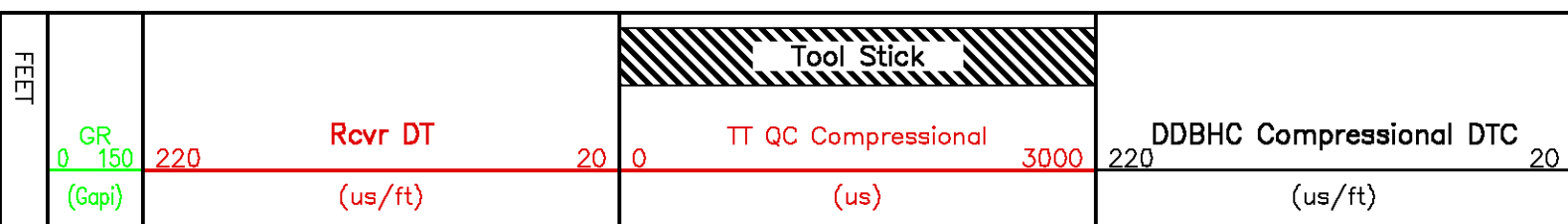




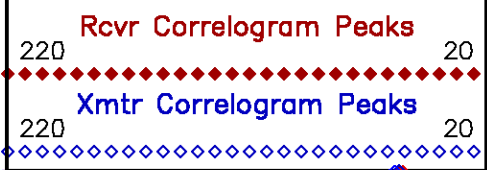
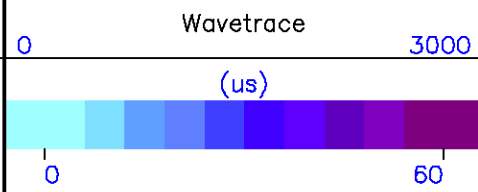
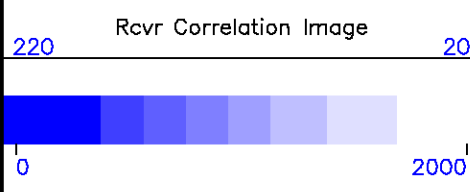
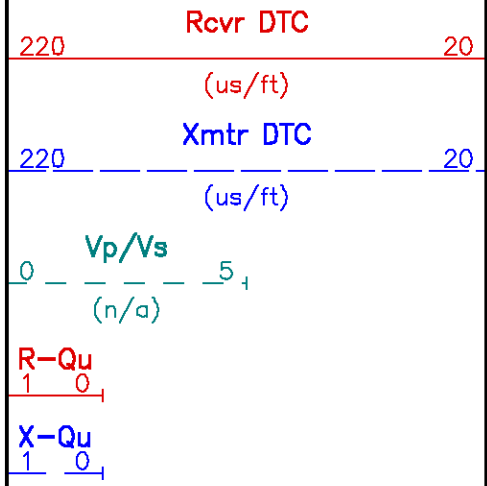
MONOPOLE QC PLOT

Project : /geos/lac/adrejosl/sierra_xmac
 User : adrejosl
 Presentation : sunserv24:/geos/lac/adrejosl/sierra_xmac/monoli.pdf [5"/100' Scale]
 Plot Interval : 550 - 2316 Feet

Data File 1 : F1 : sunserv24:/geos/lac/adrejosl/sierra_xmac/xmac.xtf
 Created On : Nov 15 12:51:25 2009
 Company : SIERRA GEOTHERMAL POWER, INC.
 Well : ALUM 25-29
 Field : ALUM
 File Interval : 472.5 - 2316 Feet
 Oct : k7711



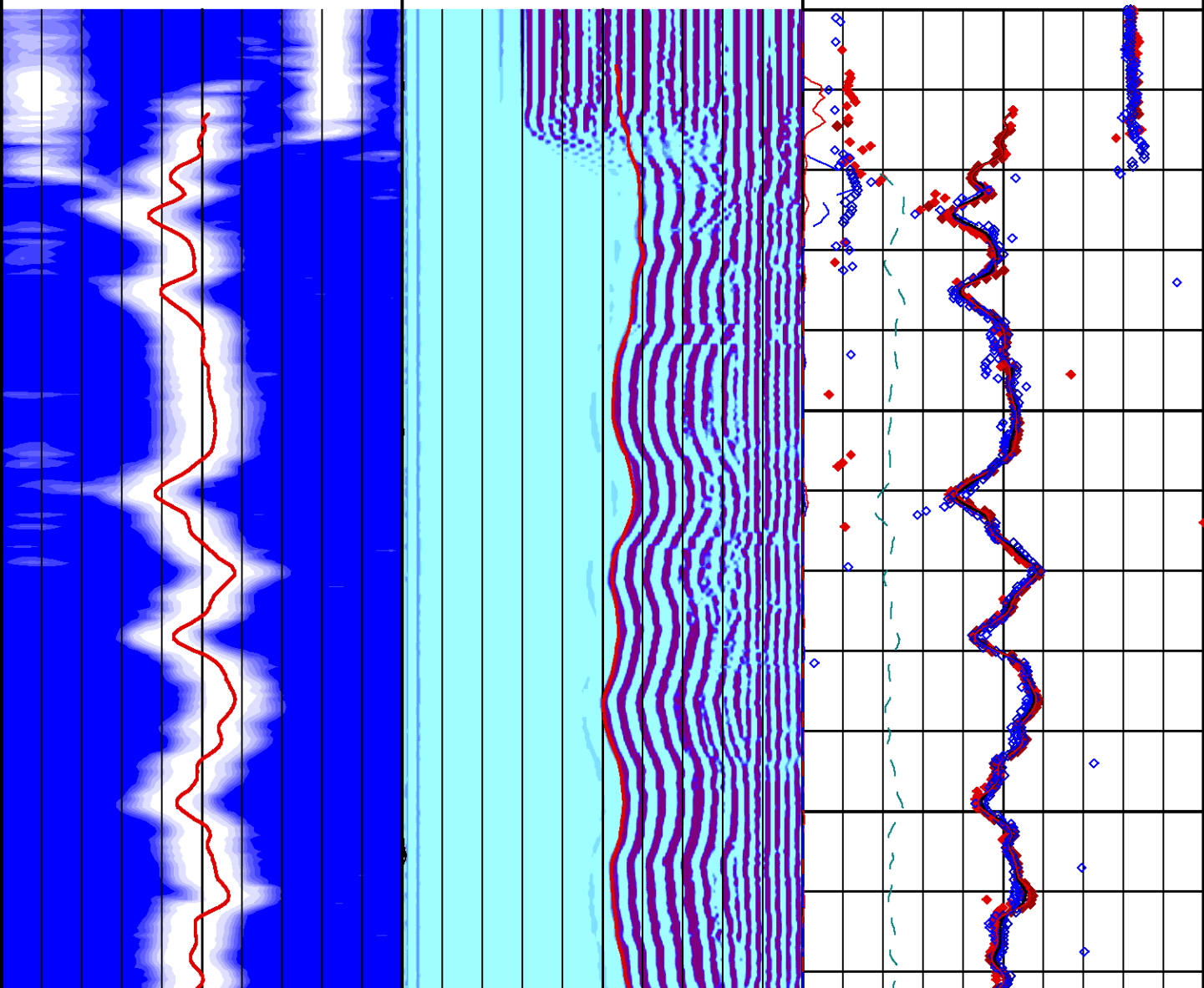
CAL
14 24
(in)

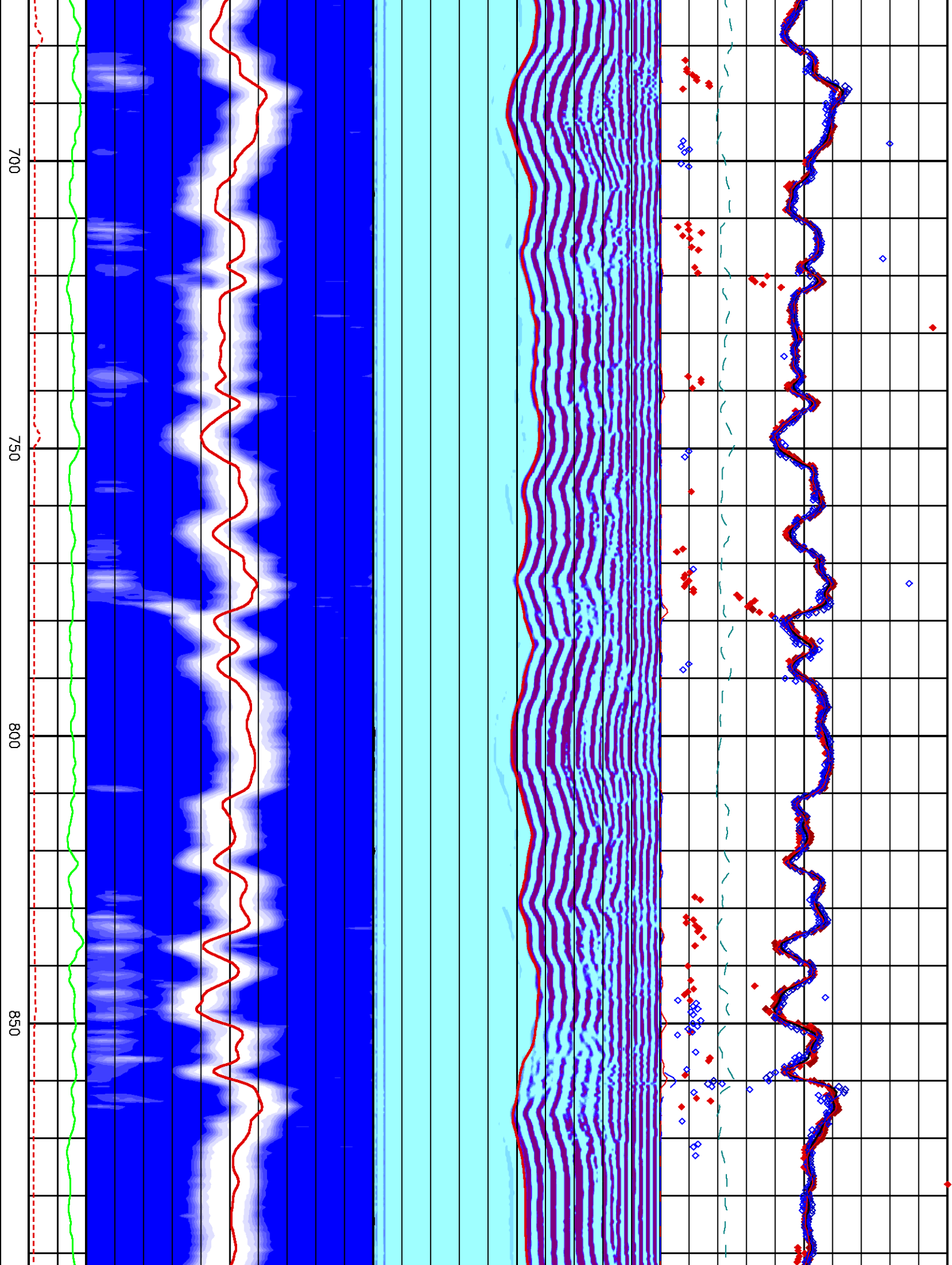


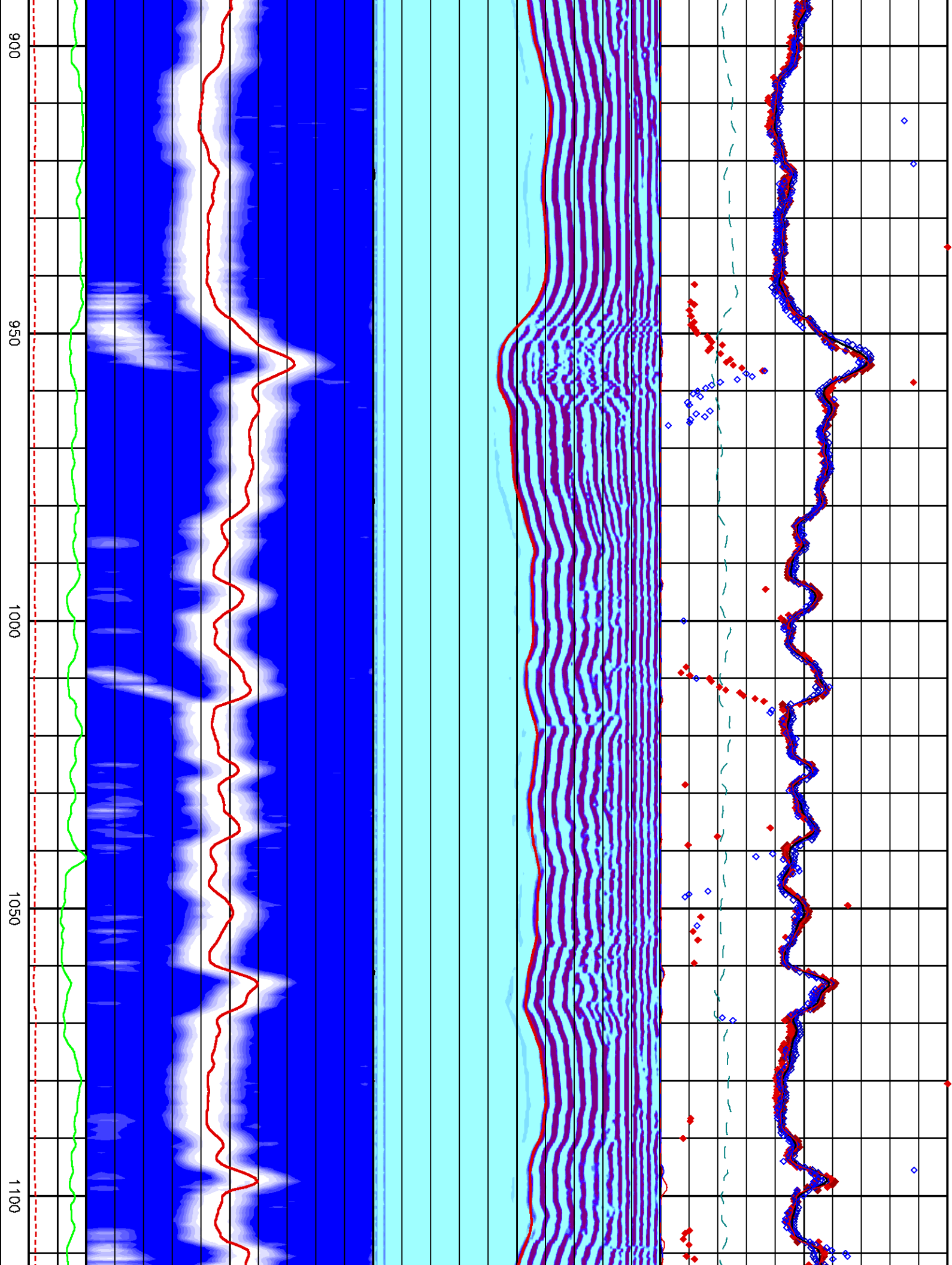
550

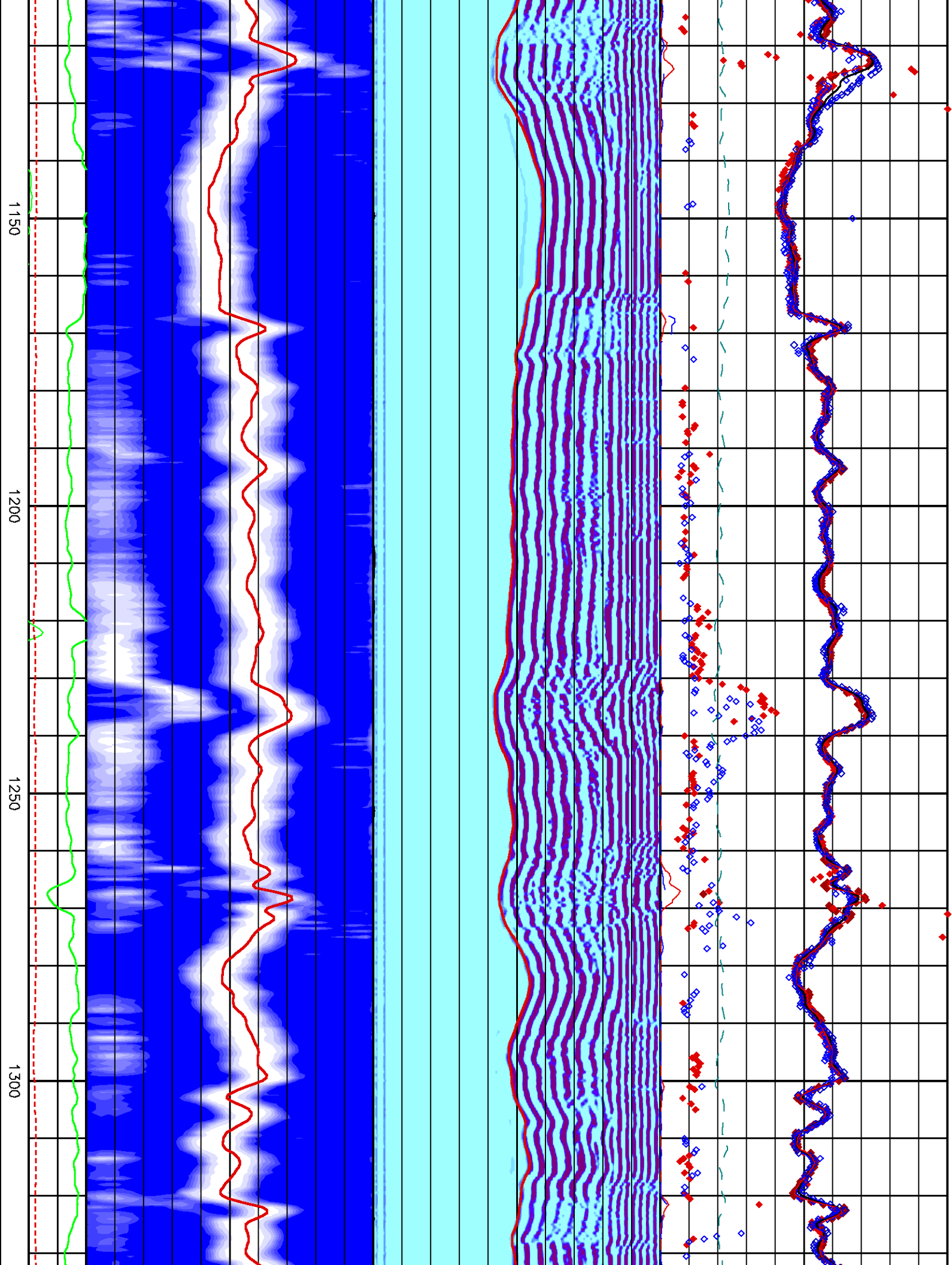
600

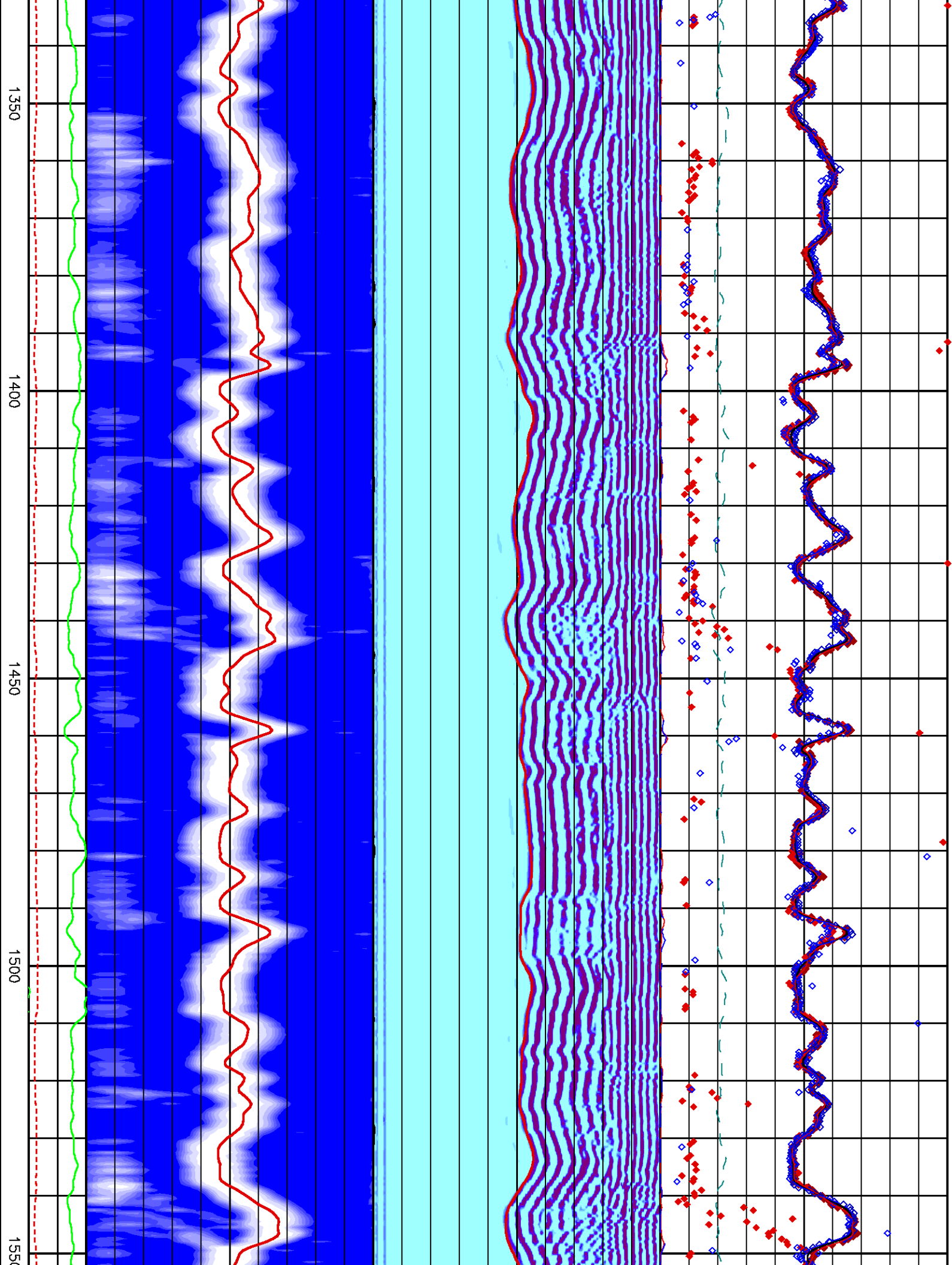
650

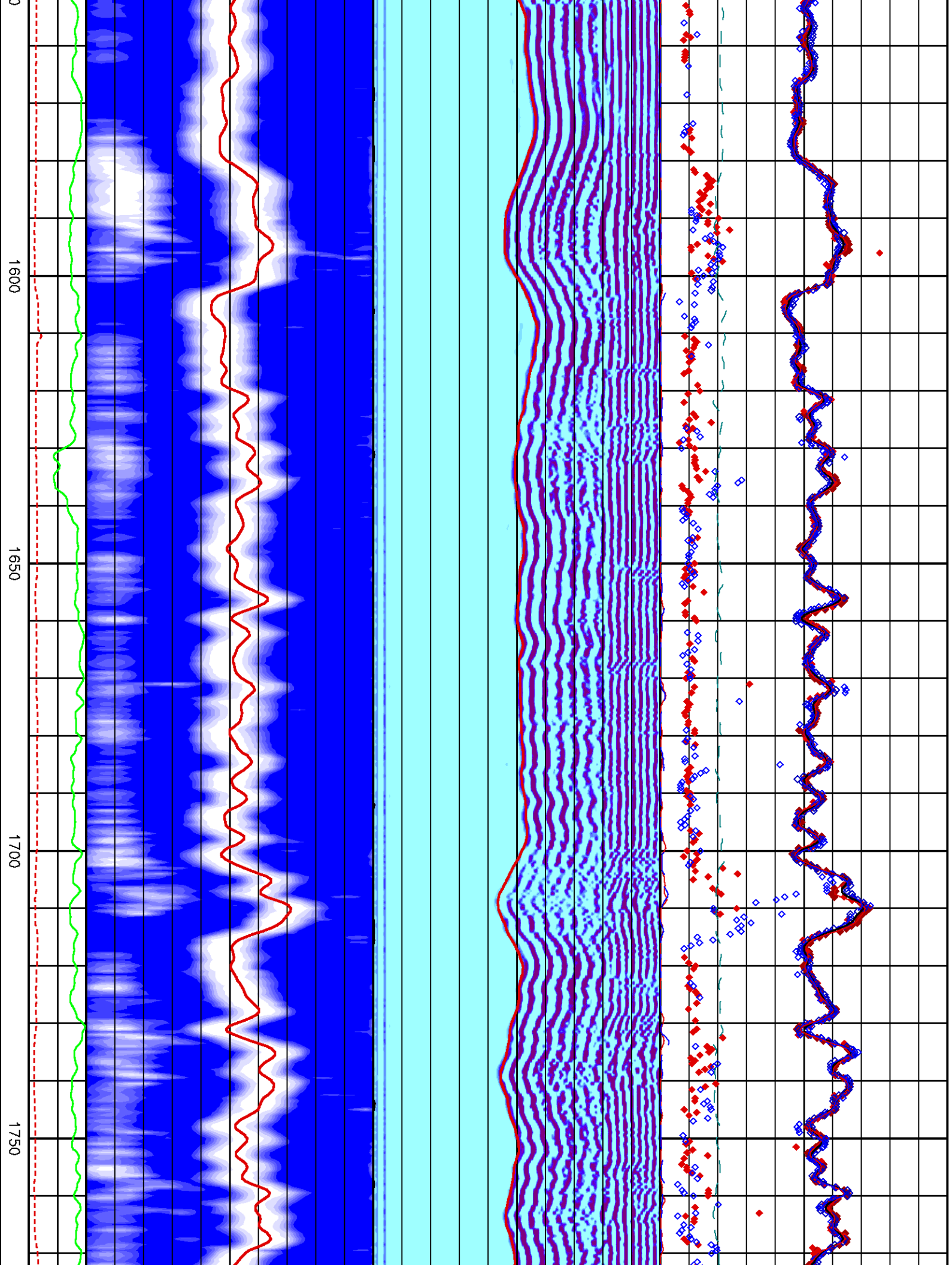


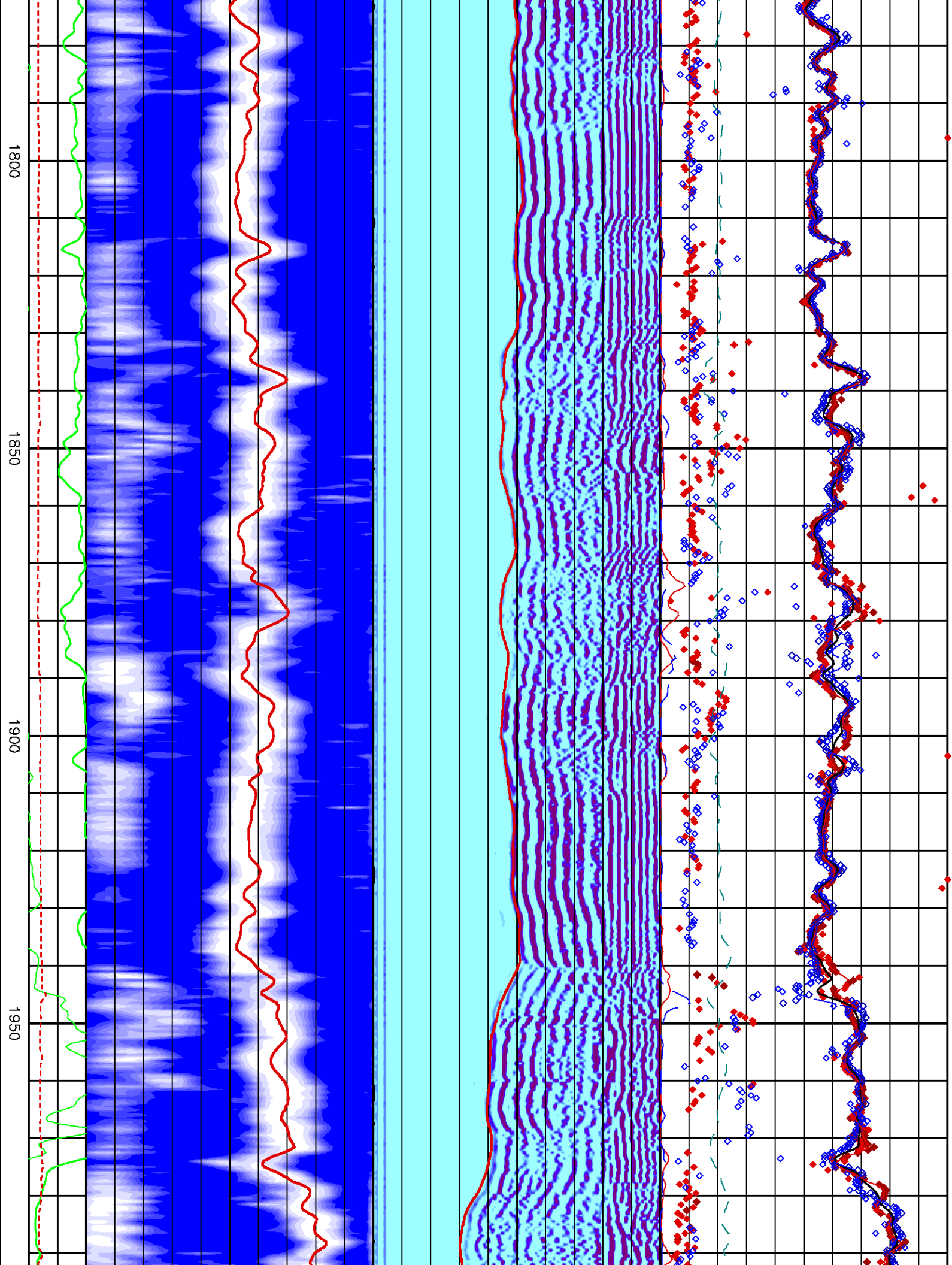


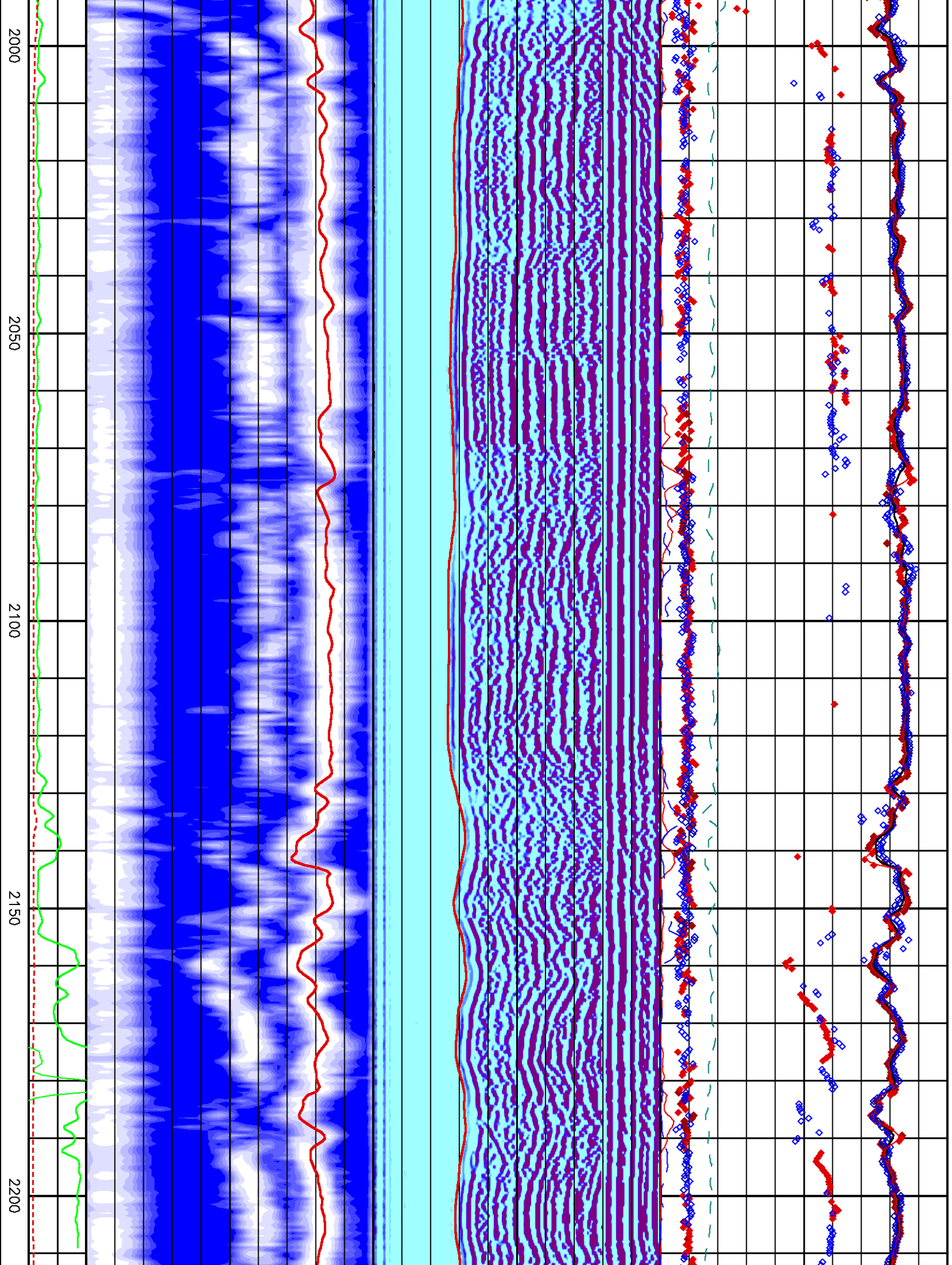


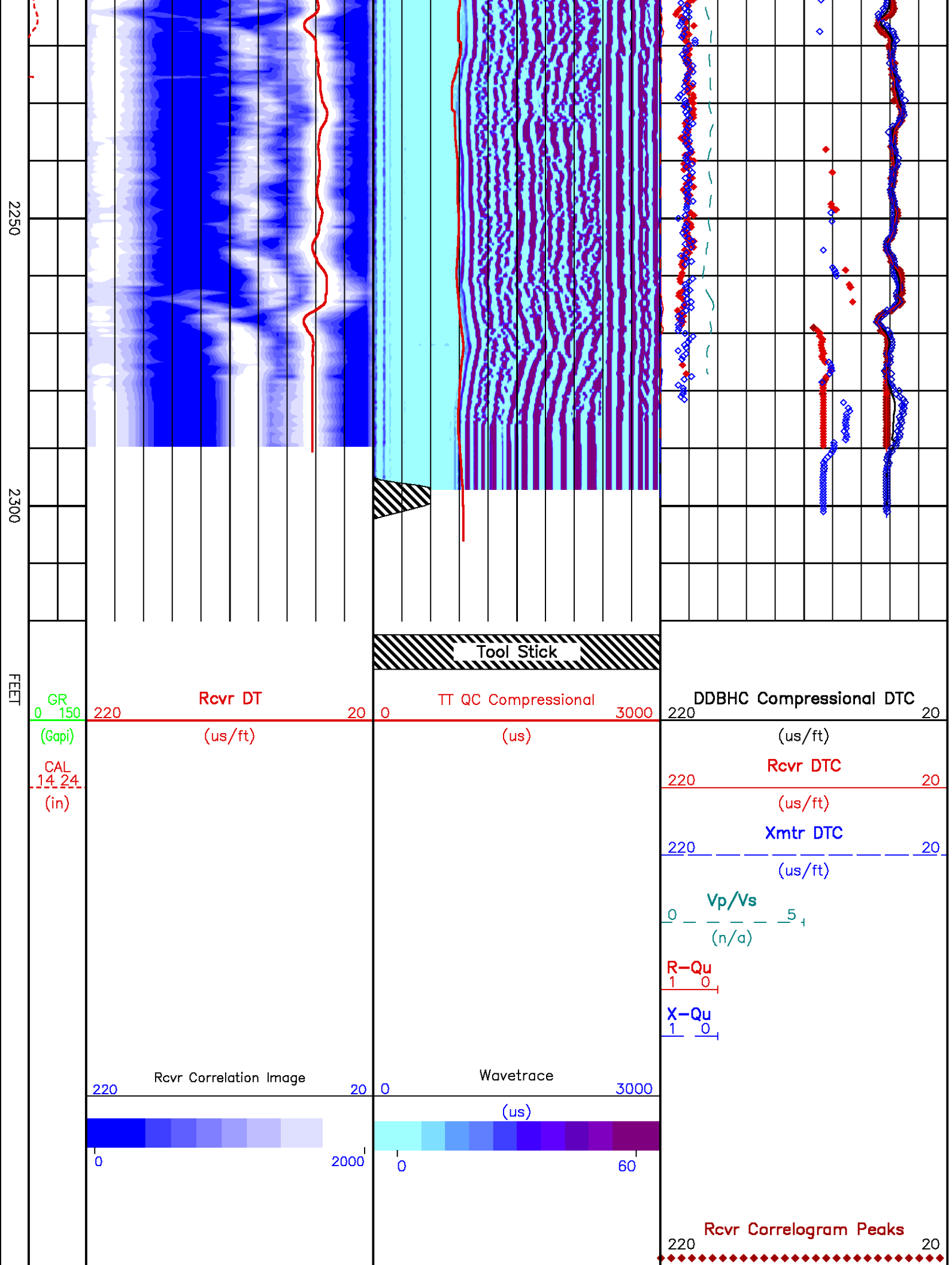












DIPOLE QC PLOT

Project

User

Presentation

Plot Interval

Data File 1

Created On

Company

Well

Field

File Interval

Oct

: /geos/lac/adrejosl/sierra_xmac

: adrejosl

: sunserv24:/geos/lac/adrejosl/sierra_xmac/dipoll.pdf [5"/100' Scale]

: 570 - 2316 Feet

: F1 : sunserv24:/geos/lac/adrejosl/sierra_xmac/xmac.xtf

: Nov 15 12:51:25 2009

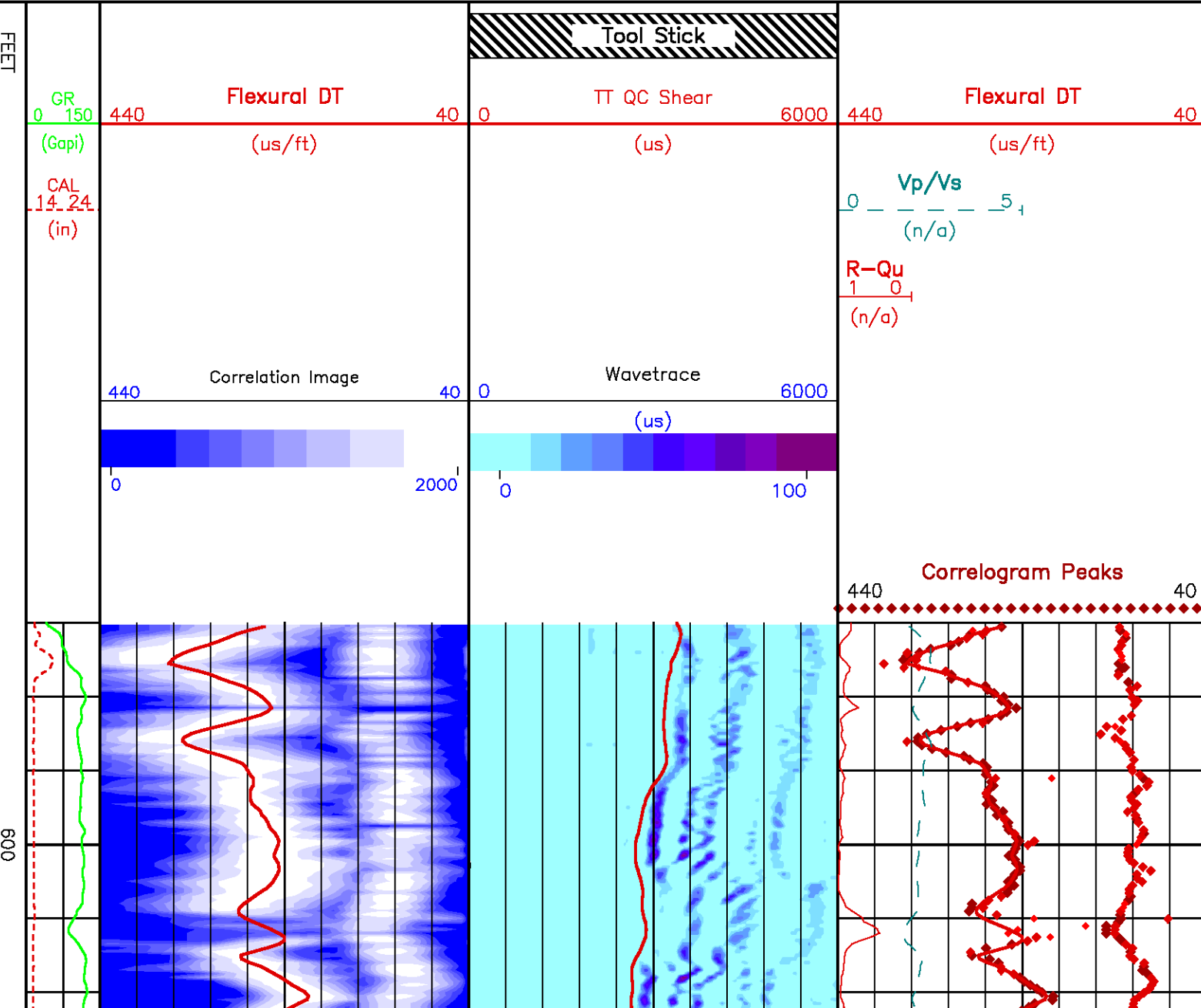
: SIERRA GEOTHERMAL POWER, INC.

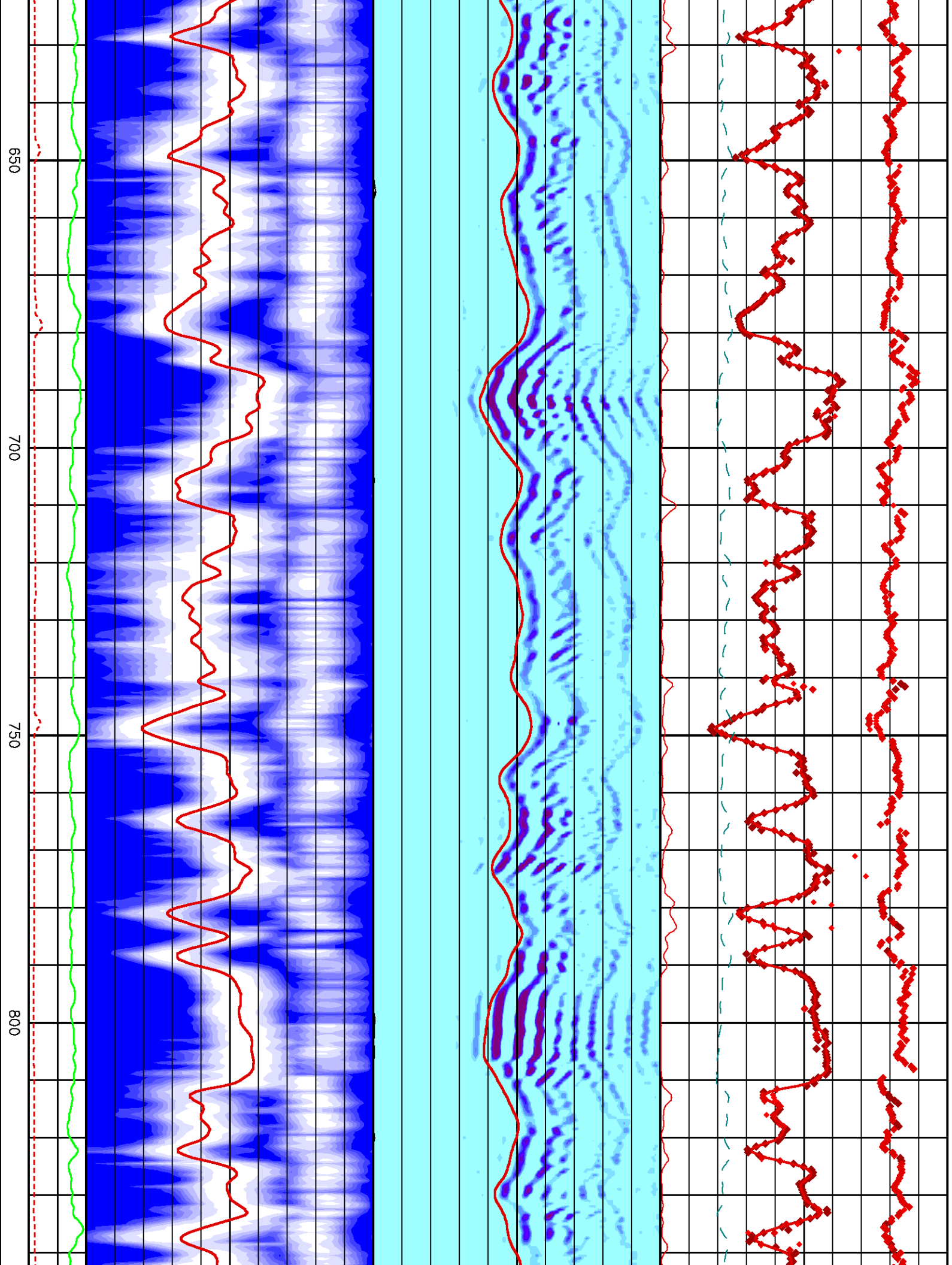
: ALUM 25-29

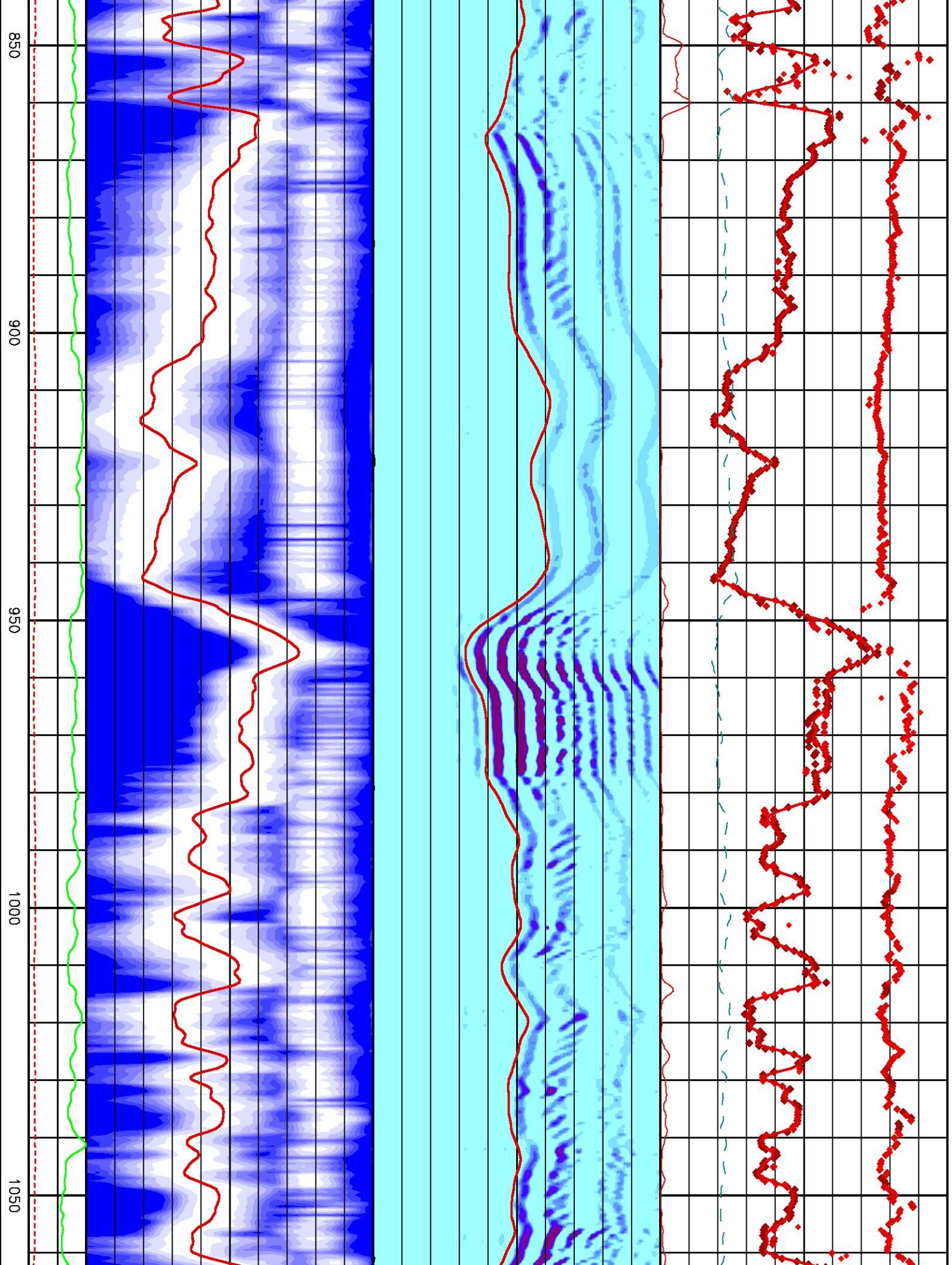
: ALUM

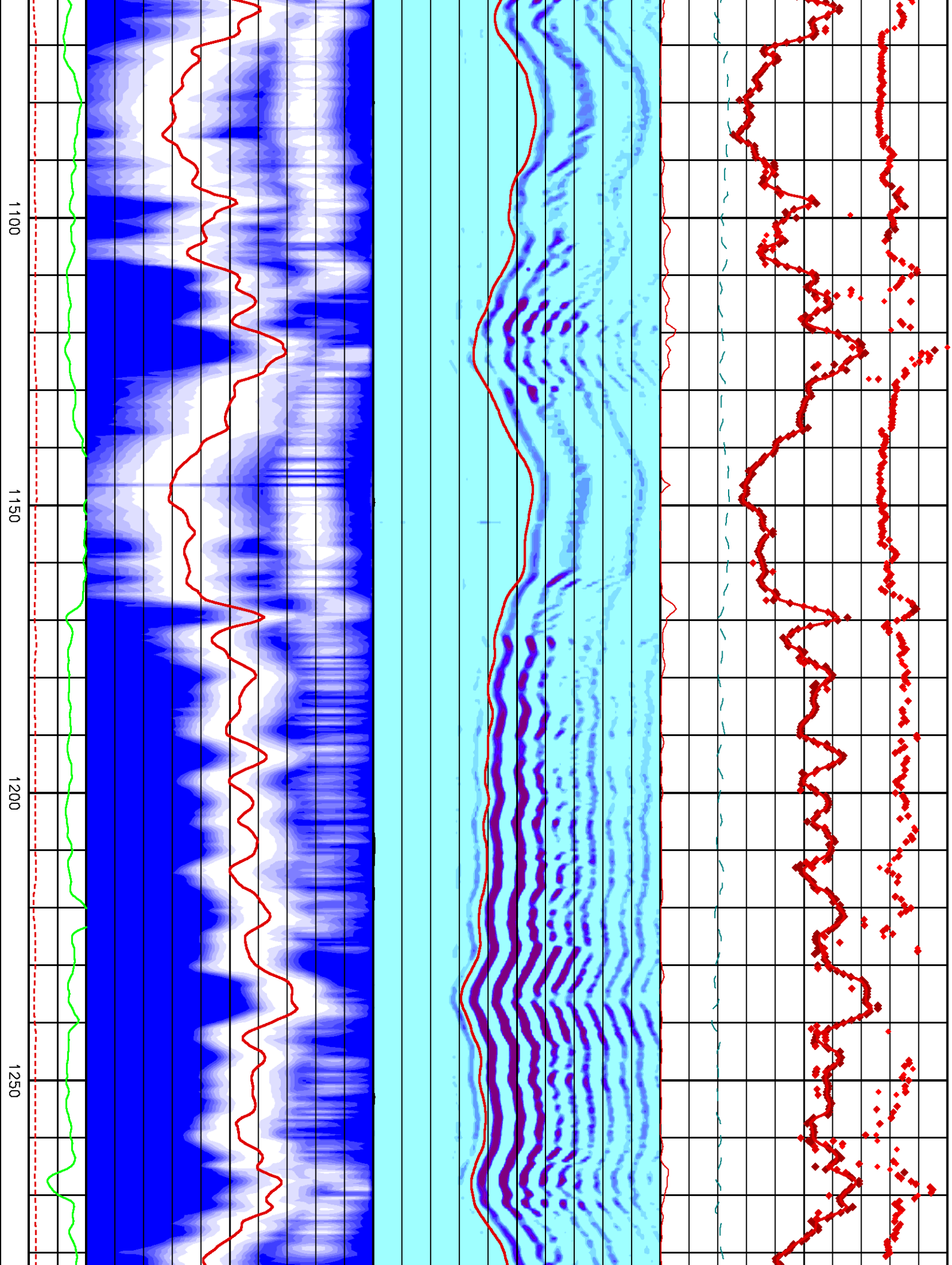
: 472.5 - 2316 Feet

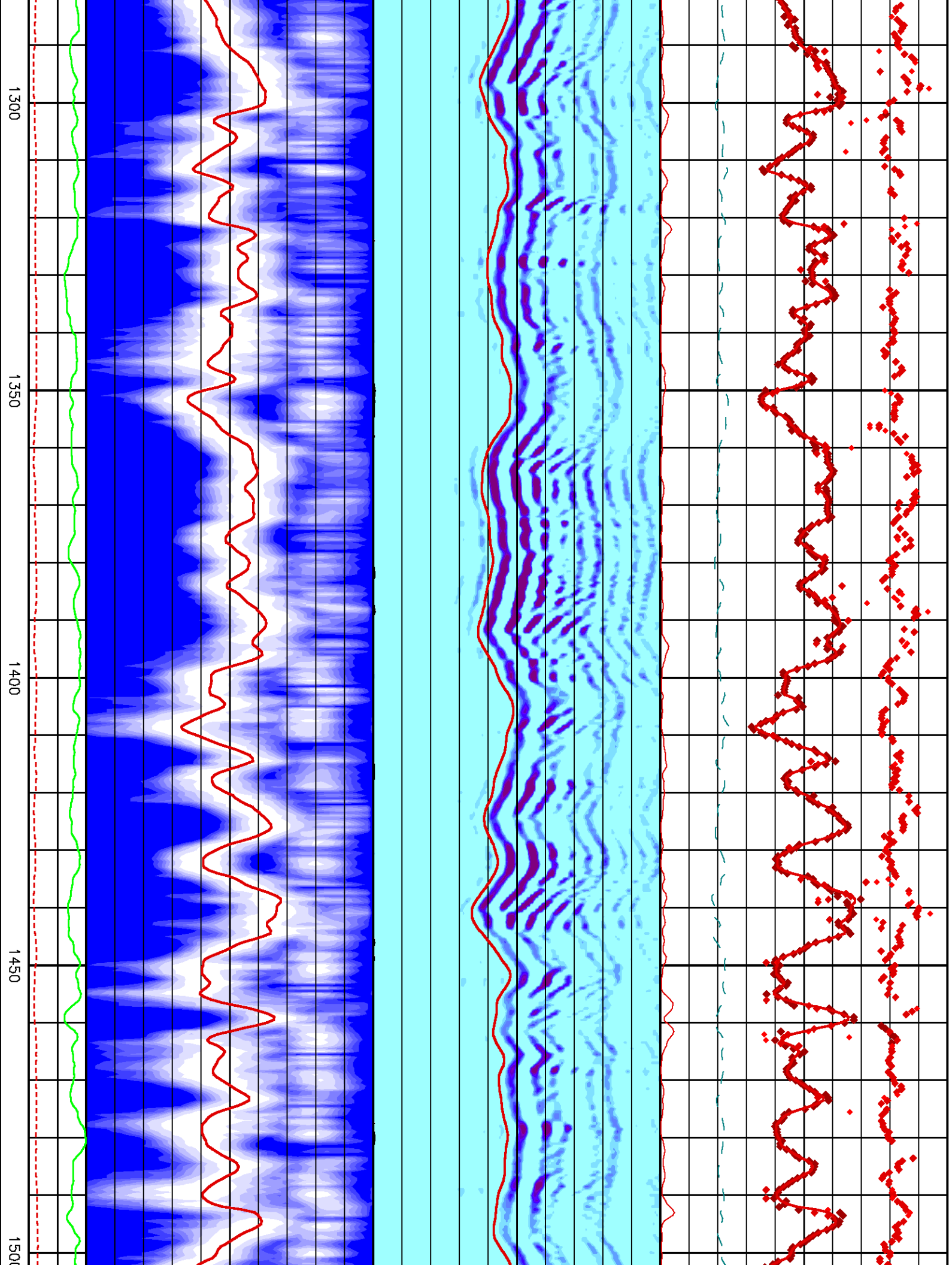
: k7711

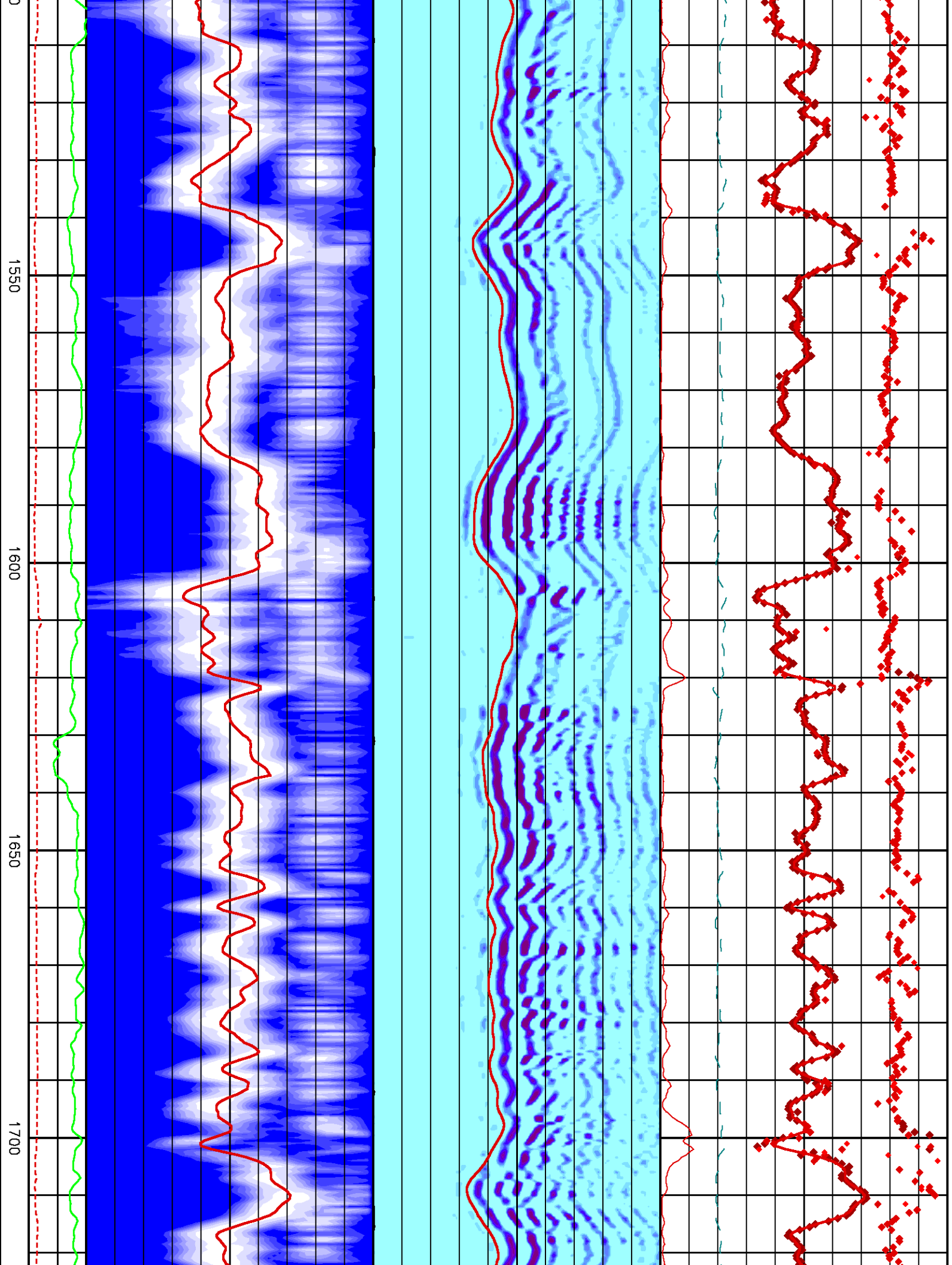


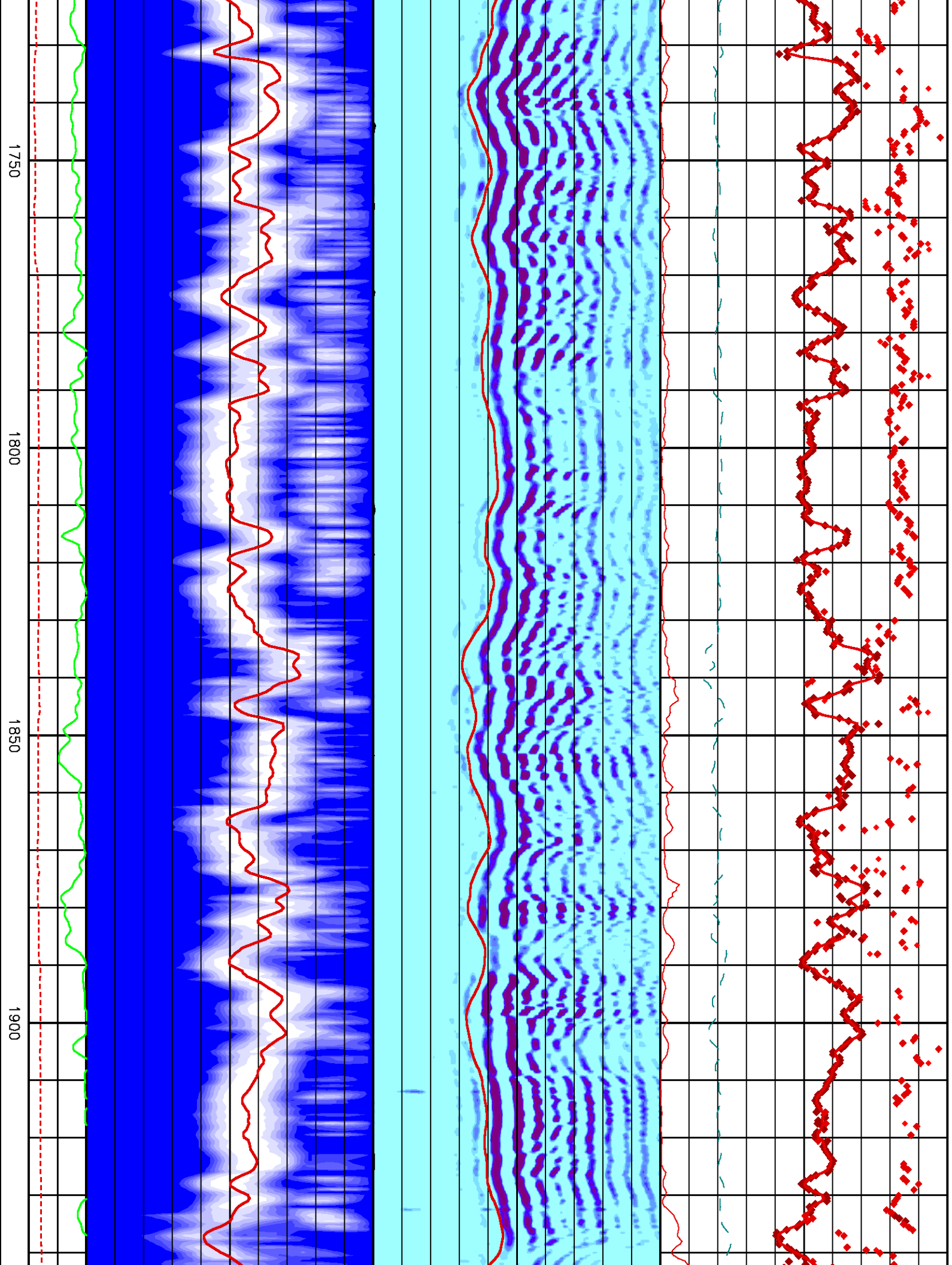


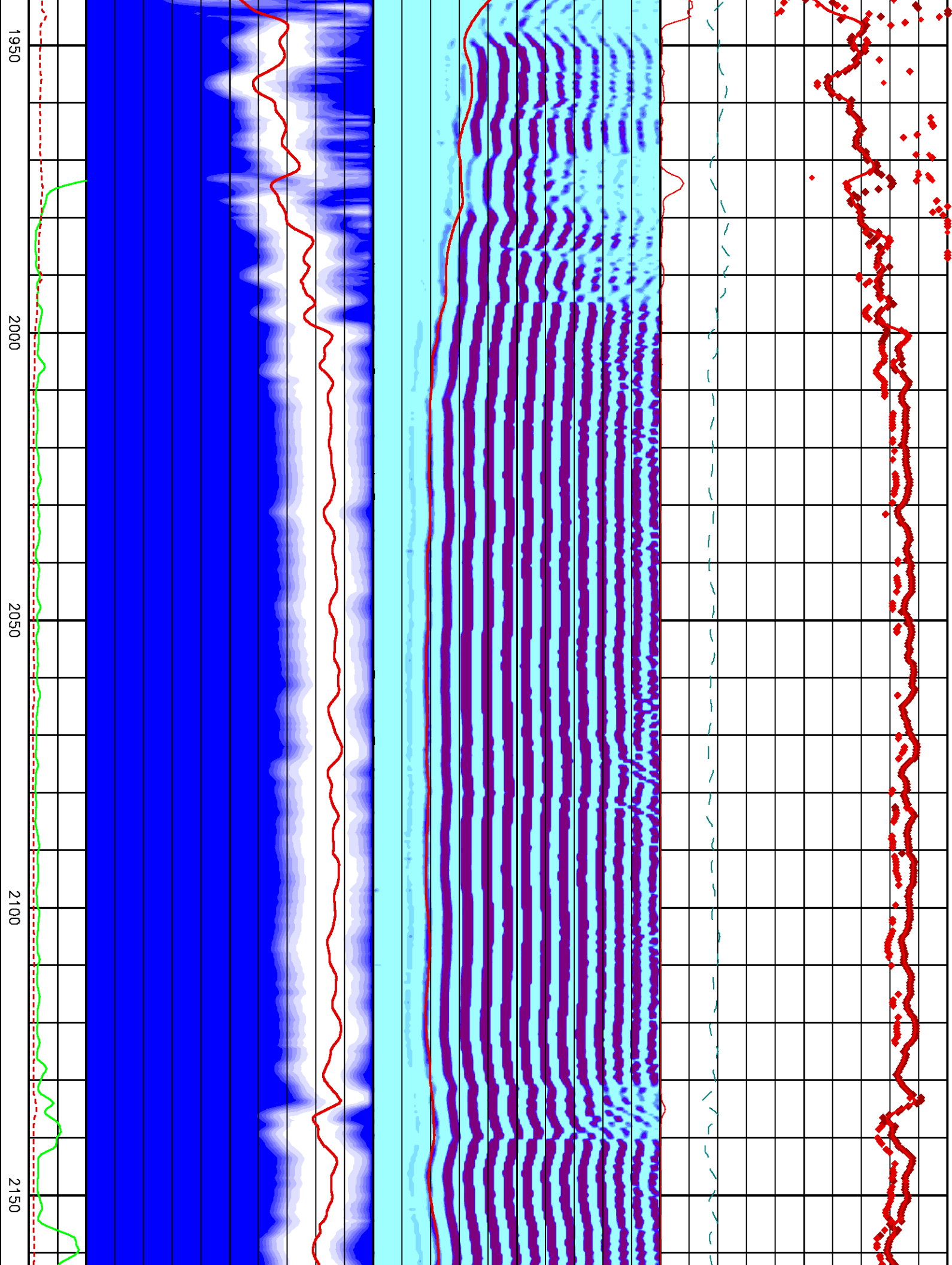


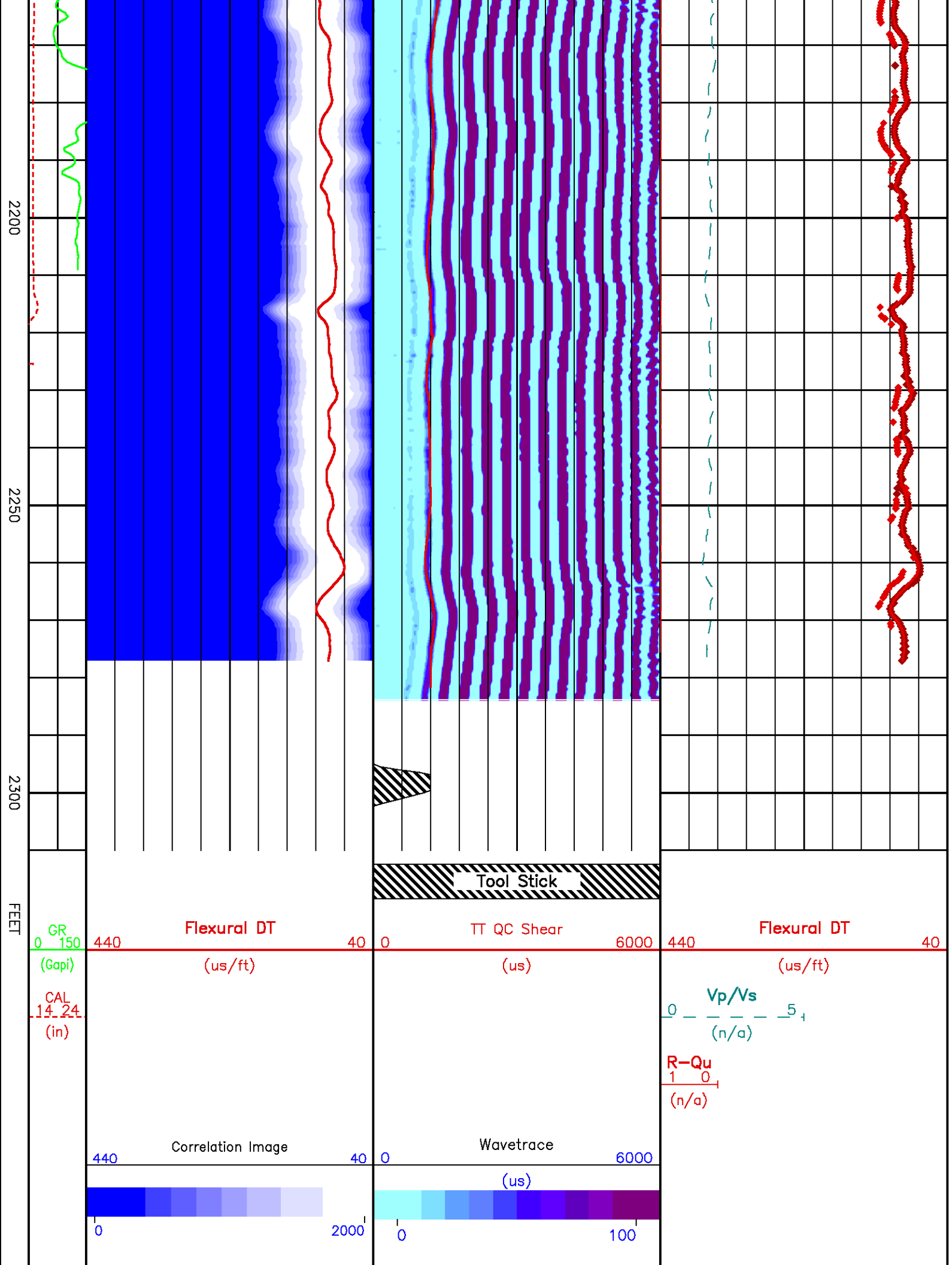












PARAMETER SECTION

Source File: /geos/lac/adrejosl/sierra_xmac/waveavan.monor.lnp

! time: Mon Nov 23 12:42:32 2009
!
! Input/Output curves
!
FILE = '/geos/lac/adrejosl/sierra_xmac/xmac.xtf',
FILEOUT = '/geos/lac/adrejosl/sierra_xmac/xmac.xtf',
!
! OWRITE=1: Overwrite, OWRITE=2: Recreate
!
OWRITE = 2,
!
TRWAV < TFWV01 ,
TRSTRT < TFST01 ,
TRGAIN < TFGN01 ,
CORCMB > Corcmbr,
TTOUT > TTCR,
DTOUT > DTCR,
SQINT > QCR,
CORPKS > Corpksr,
TRWAVF > Tfwv01f,
!
! Tool information(TRSP, TRID, RRSP unit: FEET; DEPREF unit: depth unit; RxDia, TxDia unit: INCHES
!
TOOLNAME = 'XMAC-ELITE-Monopole',
SERIES = '1678',
NUMRCVRS = 8,
TRSP = -12,
TRID = 1,
RRSP = 0.5,
DEPREF = 6,
RxDia = 2.66,
TxDia = 2.75,
!
! zone #1
!
480,2308,
!
! WHATFILT=0:FFT, WHATFILT=1:FIR, WHATFILT=2:NONE
!
WHATFILT = 1,
!
!
! FREQUENCY RANGE
!
LOWF = 5186,
HIGHF = 19552,
!
!
! COARRAY = 0: Receiver array, COARRAY = 1: Transmitter array
!
COARRAY =0,
!
!
! CMETHOD = 0: Nroot, CMETHOD = 1: Semb
!
CMETHOD = 0,
!
NTH = 4,
CWBEGIN = 400,
CWEND = 2800,
CWLENGTH = 400,
CWSTEP = 200.

```

! T4FLR = 0,
! BTLCUT = 0,
! DTMIN = 20,
! DTMAX = 220,
! DTSTEP = 5,
!
! DTUNIT = 0: us/ft, DTUNIT = 1: us/m
!
! DTUNIT = 0,
!
! RCVRS = /1,2,3,4,5,6,7,8,/,
! TAPER = /16,35,155,235,/,
! PSRATIO = /1.6,1.8,/,
! EOZ
! END

```

Source File: /geos/lac/adrejosl/sierra_xmac/waveavan.dipo.inp

```

! time: Mon Nov 23 15:15:24 2009
!
! Input/Output curves
!
! FILE = '/geos/lac/adrejosl/sierra_xmac/xmac.xtf',
! FILEOUT = '/geos/lac/adrejosl/sierra_xmac/xmac.xtf',
!
! OWRITE=1: Overwrite, OWRITE=2: Recreate
!
! OWRITE = 2,
!
! TRWAV < TXXWV01 ,
! TRSTRT < TXXST01 ,
! TRGAIN < TXXGN01 ,
! CORCMB > Corcmb,
! TTOUT > TTsr,
! DTOUT > DTs,
! SQINT > Qs,
! CORPKS > Corpks,
! TRWAVF > Txxwv01f,
!
! Tool information( TRSP, TRID, RRSP unit: FEET; DEPREF unit: depth unit; RxDia, TxDia unit: INCHES
!
! TOOLNAME = 'XMAC-ELITE-X_Dipole',
! SERIES = '1678',
! NUMRCVRS = 8,
! TRSP = -10.25,
! TRID = 3,
! RRSP = 0.5,
! DEPREF = 5.125,
! RxDia = 2.66,
! TxDia = 2.45,
!
! zone #1
!
! 570,1643,
!
! WHATFILT=0:FFT, WHATFILT=1:FIR, WHATFILT=2:NONE
!
! WHATFILT = 1,
!
! FREQUENCY RANGE
!
! LOWF = 500,
! HIGHF = 2600,
!
! COARRAY = 0: Receiver array, COARRAY = 1: Transmitter array
!
! COARRAY = 0,
!
! CMETHOD = 0: Nroot, CMETHOD = 1: Semb
!
! CMETHOD = 0,
!
! NTH = 4,
! CWBEGIN = 200,
! CWEND = 5800,
! CWLENGTH = 1400,
! CWSTEP = 200

```



```

T4FLR = 0,
BTLCUT = 0,
DTMIN = 40,
DTMAX = 440,
DTSTEP = 8,
!
! DTUNIT = 0: us/ft, DTUNIT = 1: us/m
!
DTUNIT = 0,

RCVRS = /1,2,3,4,5,6,7,8,/,
TAPER = /33,154,345,441,/,
PSRATIO = /1.6,1.8,/,
EOZ
!
! zone #2
!
1643,2284,
HIGHF = 2700,

CWEND = 4400,
TAPER = /33,71,240,428,/,
EOZ
END

```

 BAKER HUGHES	COMPANY <u>SIERRA GEOTHERMAL POWER, INC.</u> WELL <u>ALUM 25-29</u> FIELD <u>ALUM</u> COUNTY <u>ESMERALDA</u> STATE <u>NEVADA</u>		FILE NO: _____ API NO: <u>27-009-90074</u>
	LOCATION: <u>2235.18' FSL & 938.11' FWL</u> SEC <u>29</u> TWP <u>1N</u> RGE <u>38.5E</u>	ELEVATIONS: KB <u>4919.57 FT</u> DF <u>N/A</u> GL <u>4903.57 FT</u> DATE <u>23-NOV2009</u>	