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Customer Information

Operator: Noble Energy Inc
1625 Broadway
Suite 2200
Denver, Colorado 80202

Geologist: Cassidy Miller
Noble Energy Inc.

Mud Logging Details

Logger: Nikki Graber & Peter Brown

Log Interval: 6650' MD to 11155' MD

Start Date: June 29, 2013

Release Date: July 2, 2013

Well Information

Well Name: Wells Ranch USX
AA23-67HN Horizontal

Location: 24-6N-63W
1110' FNL, 220' FWL

County: Weld
State: Colorado

Drilling Rig: H&P 343

Total Depth: 11155' MD

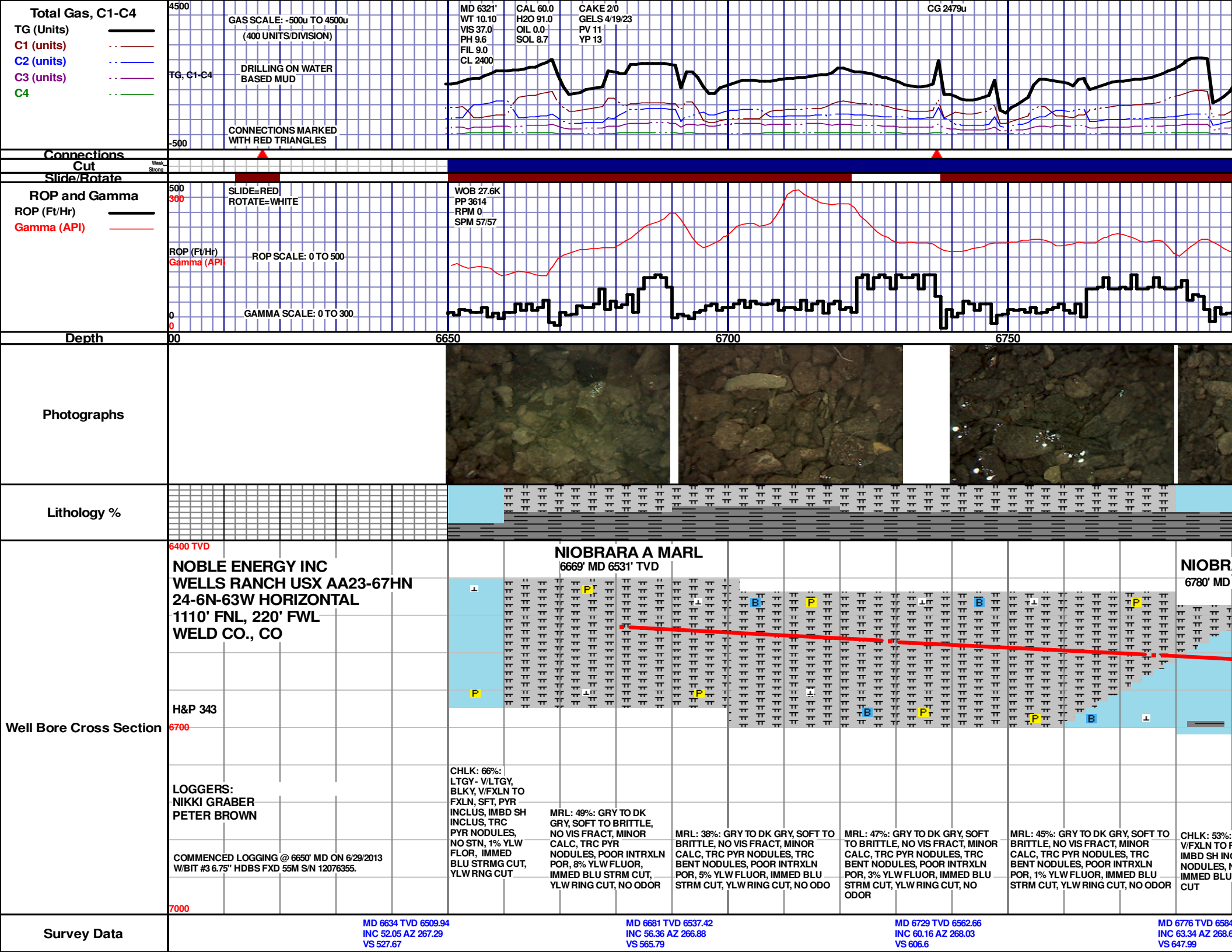
TD Date: July 2, 2013

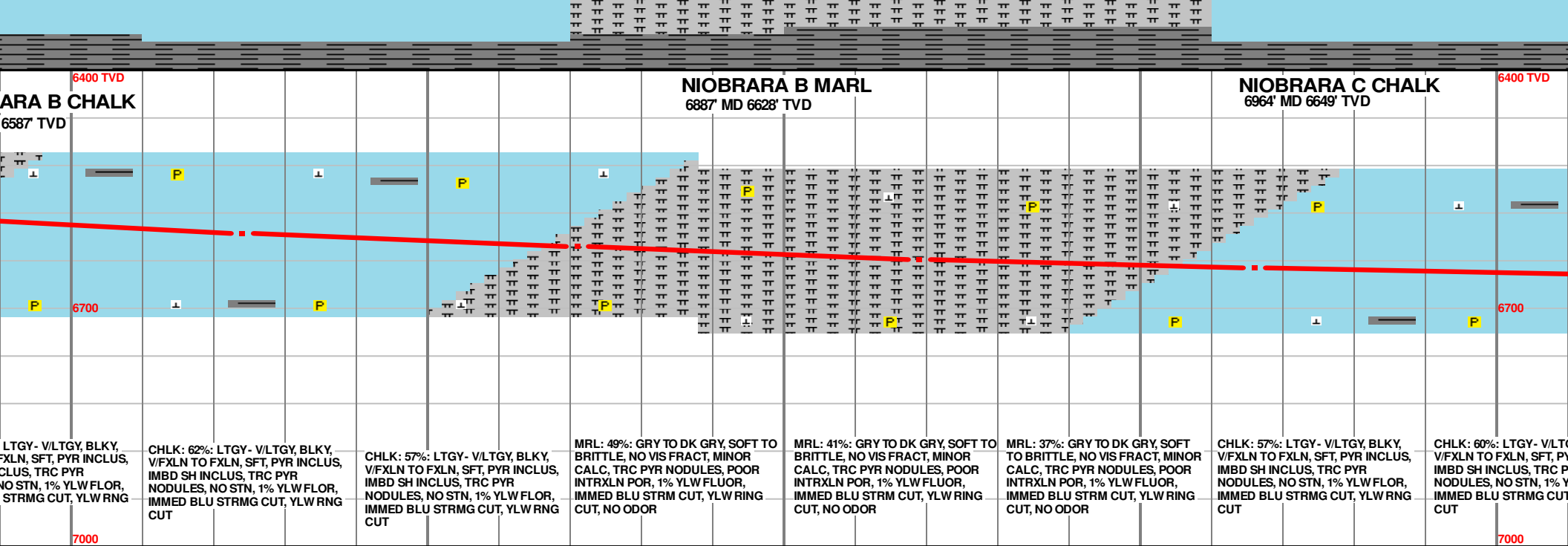
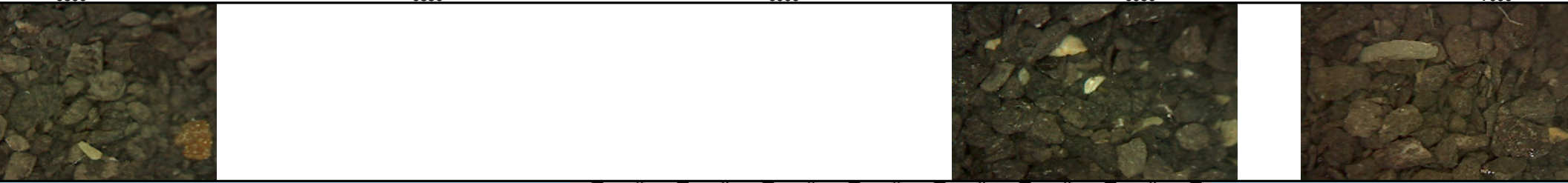
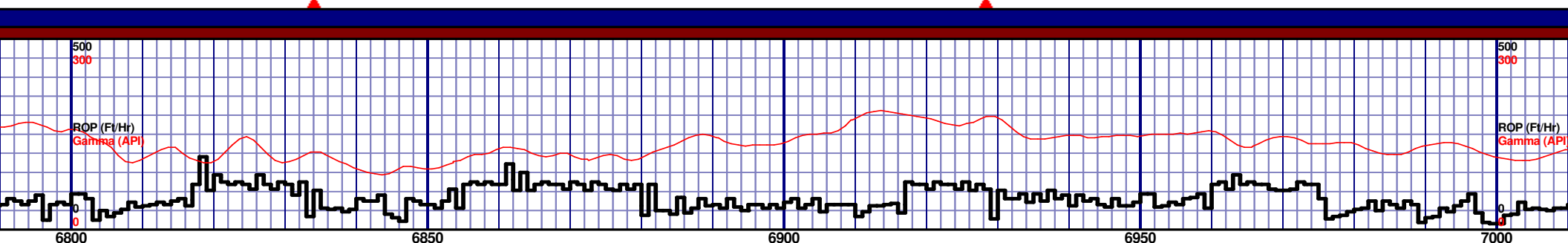
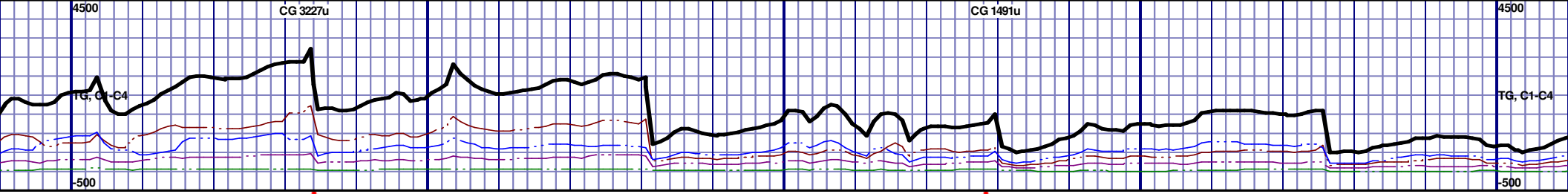
Formation: Niobrara C Chalk

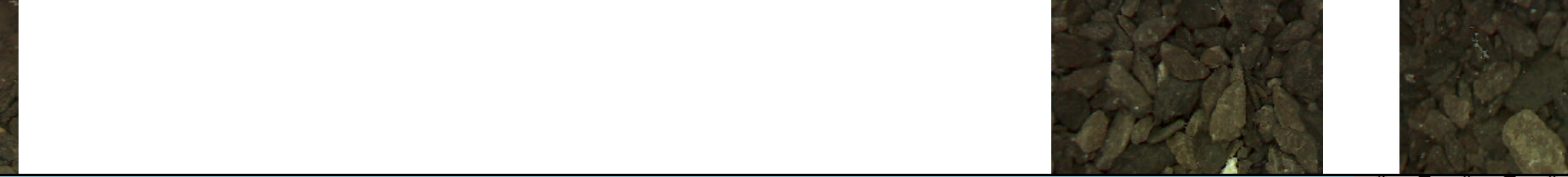
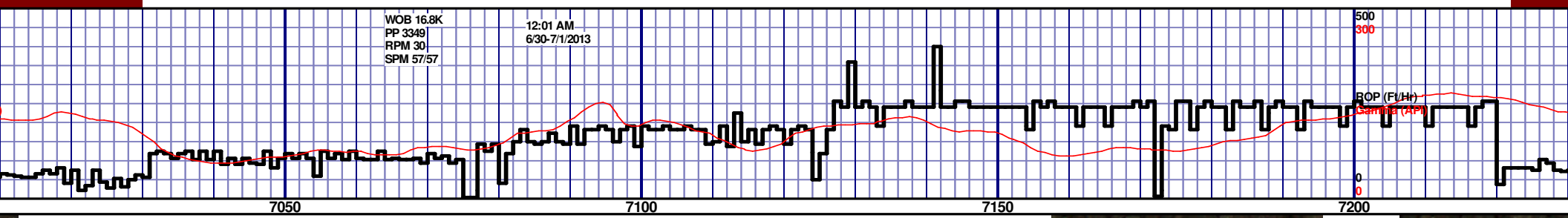
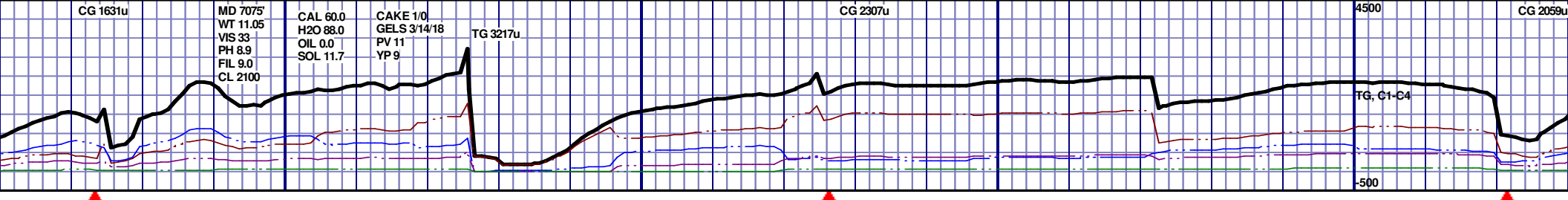
KB Elevation: 4817'

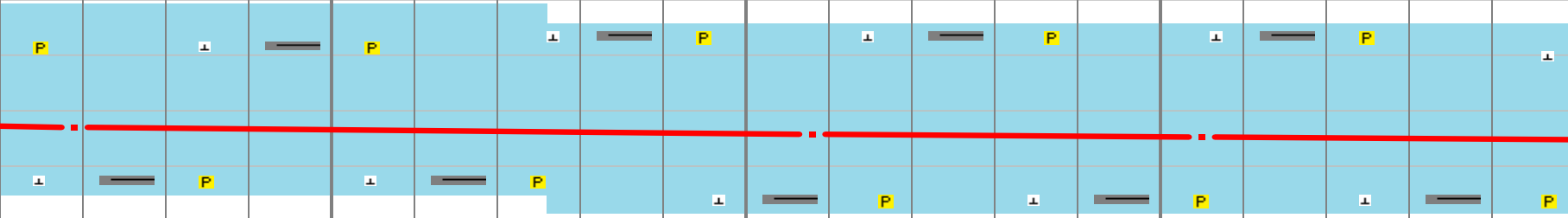

GR Elevation: 4793'

API Number: 05-123-37172-0000





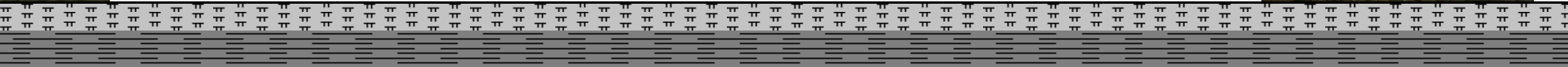
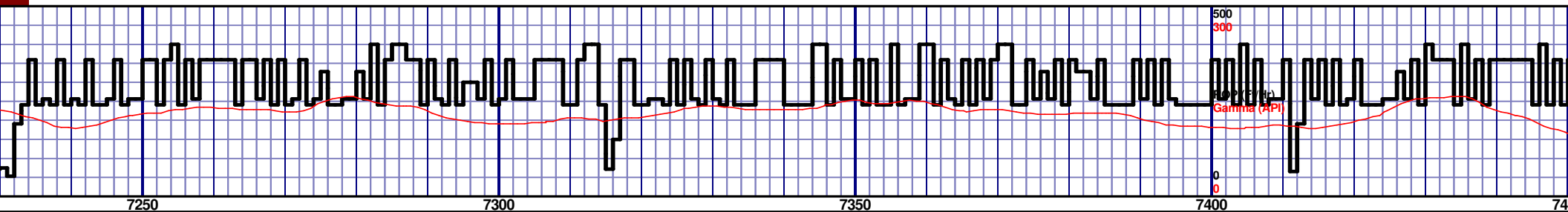


TOOH @ 5:00 PM ON 6/29/2013 @ 7075' MD FOR INTERMEDIATE CASING. TIH @ 8:00 PM ON 6/30/13, RESUMED DRILLING @ 12:15AM ON 7/1/13 W/ BIT 4 6.125" SMITH MDI513 S/N JG6228																								6200 TVD NIOBRARA B MARL 7200' MD 6671' TVD											
																																			
CHLK: 62%: LTGY- V/LTGY, BLKY, V/FXLN TO FXLN, SFT, PYR INCLUS, IMBD SH INCLUS, TRC PYR NODULES, NO STN, 1% YLW FLOR, IMMED BLU STRMG CUT, YLW RNG CUT																								CHLK: 58%: LTGY- V/LTGY, BLKY, V/FXLN TO FXLN, SFT, PYR INCLUS, IMBD SH INCLUS, TRC PYR NODULES, NO STN, 1% YLW FLOR, IMMED BLU STRMG CUT, YLW RNG CUT											
CHLK: 60%: LTGY- V/LTGY, BLKY, V/FXLN TO FXLN, SFT, PYR INCLUS, IMBD SH INCLUS, TRC PYR NODULES, NO STN, 1% YLW FLOR, IMMED BLU STRMG CUT, YLW RNG CUT																								CHLK: 55%: LTGY- V/LTGY, BLKY, V/FXLN TO FXLN, SFT, PYR INCLUS, IMBD SH INCLUS, TRC PYR NODULES, NO STN, 1% YLW FLOR, IMMED BLU STRMG CUT, YLW RNG CUT											
CHLK: 48%: GRY TO DK GRY, SOFT TO MINOR CALC, TRC PYR NODULES, PO YLW FLUOR, IMMED BLU STRM CUT, ODOR																								7000											

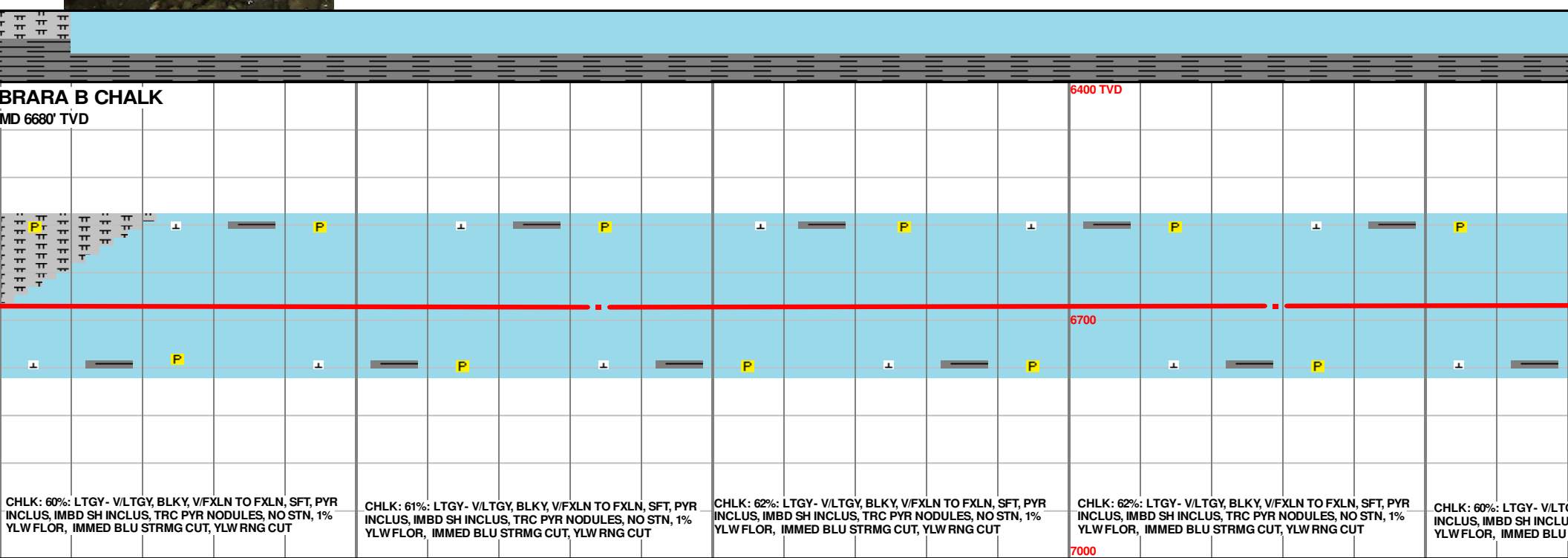
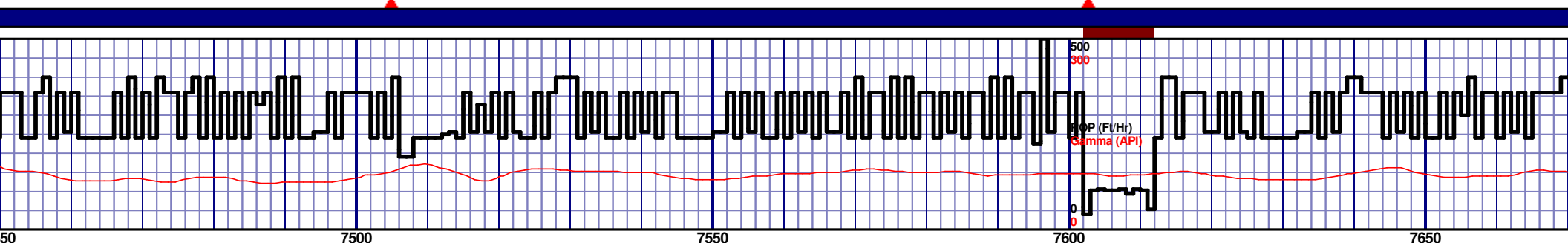
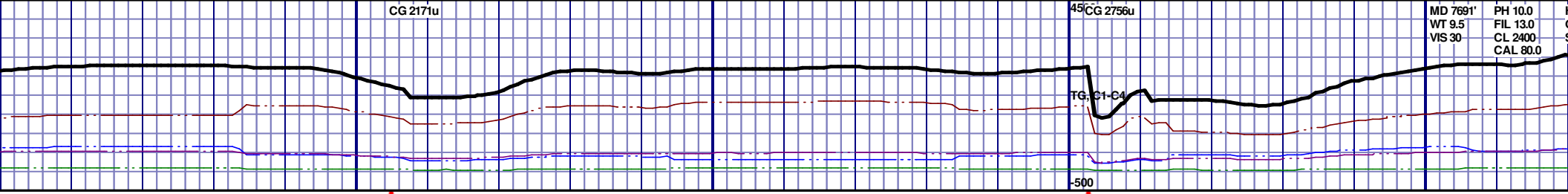
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INC 83.86 AZ 269.32
VS 878.16

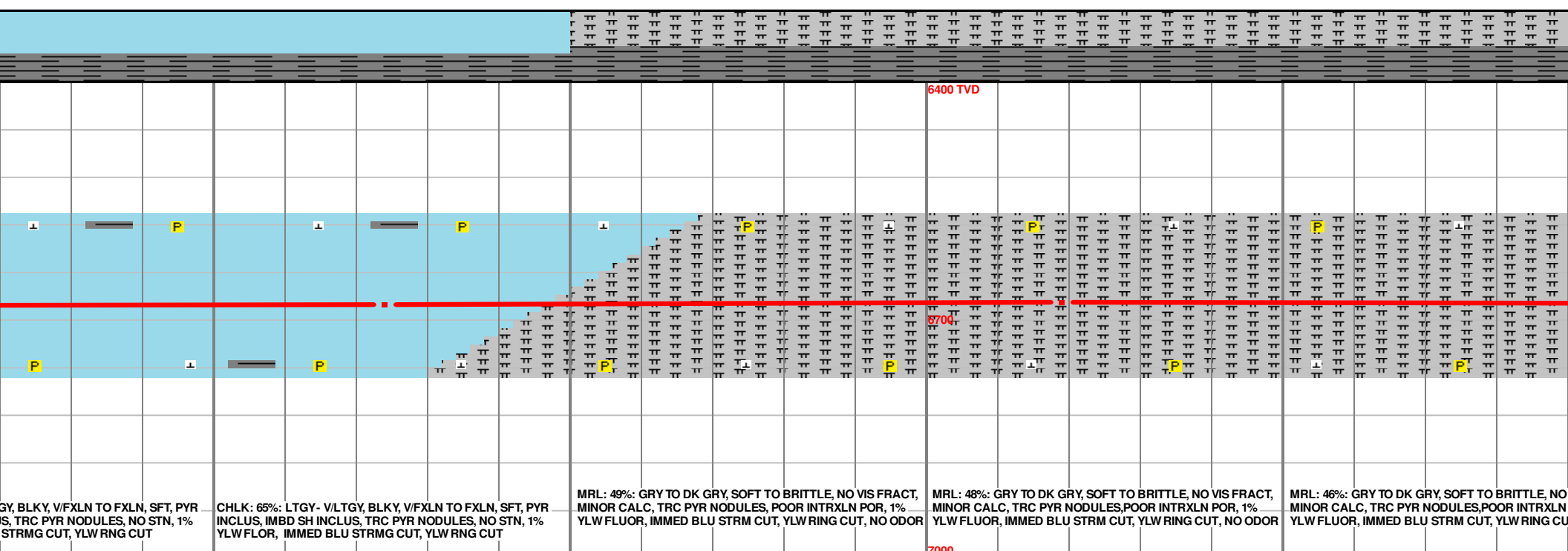
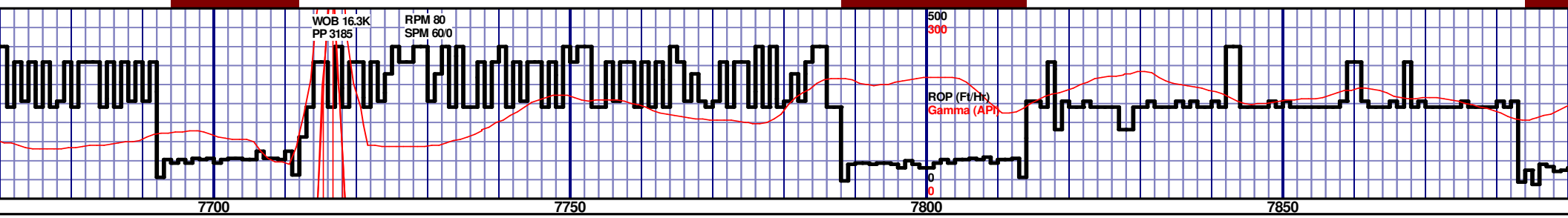
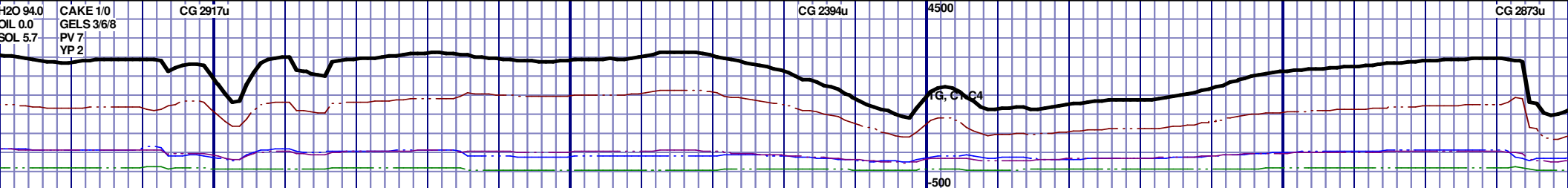
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INC 86.27 AZ 269.47
VS 966.75

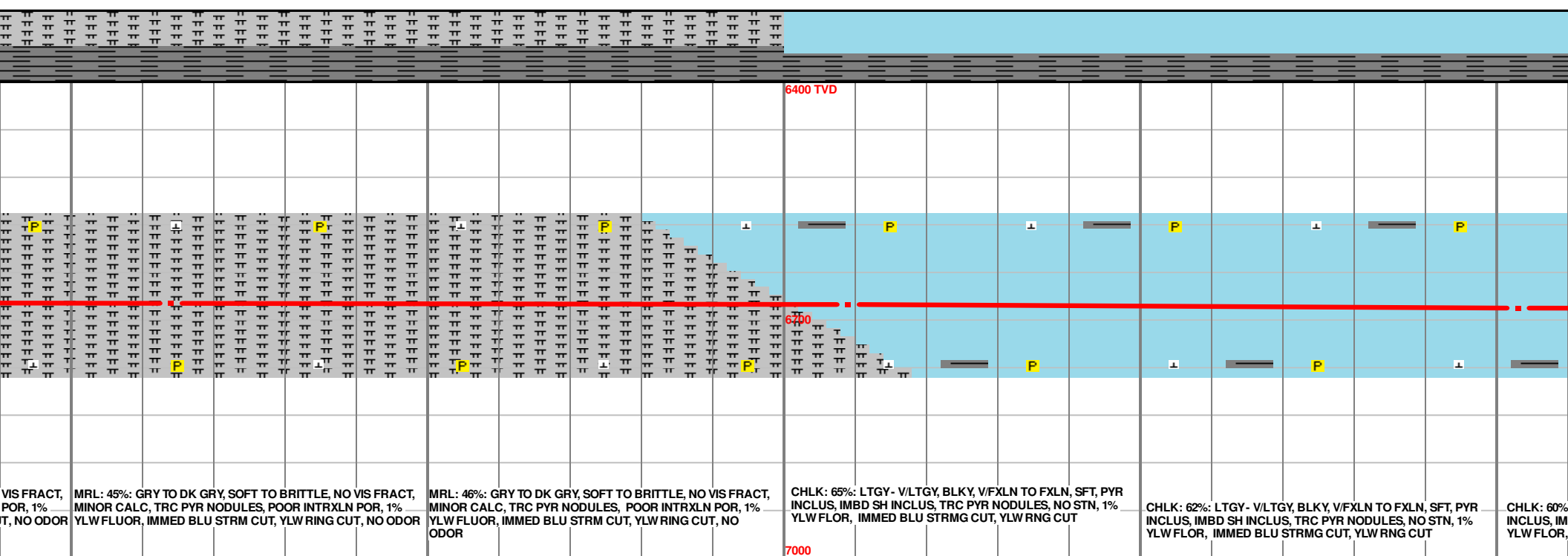
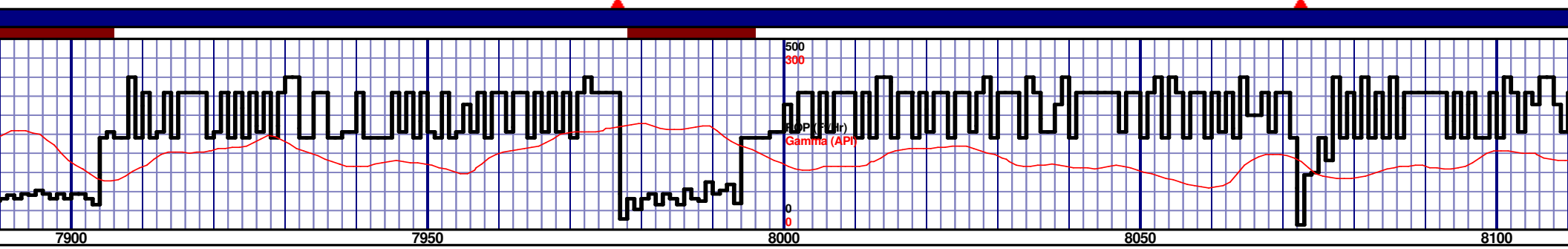
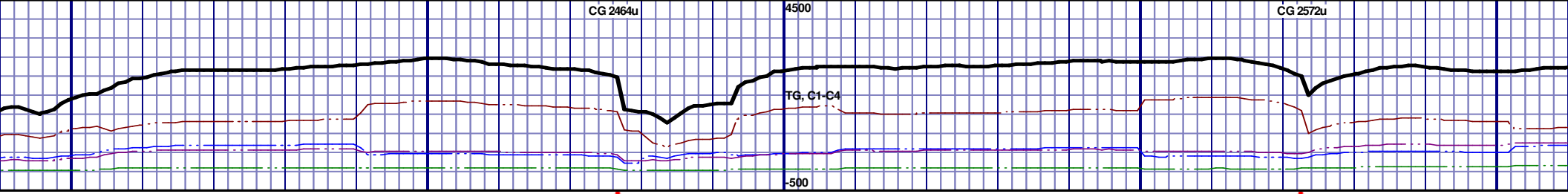
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INC 86.8 AZ 269.66
VS 1013.62

[illegible]

MD 7440 TVD
INC 88.68 AZ
VS 1297.94



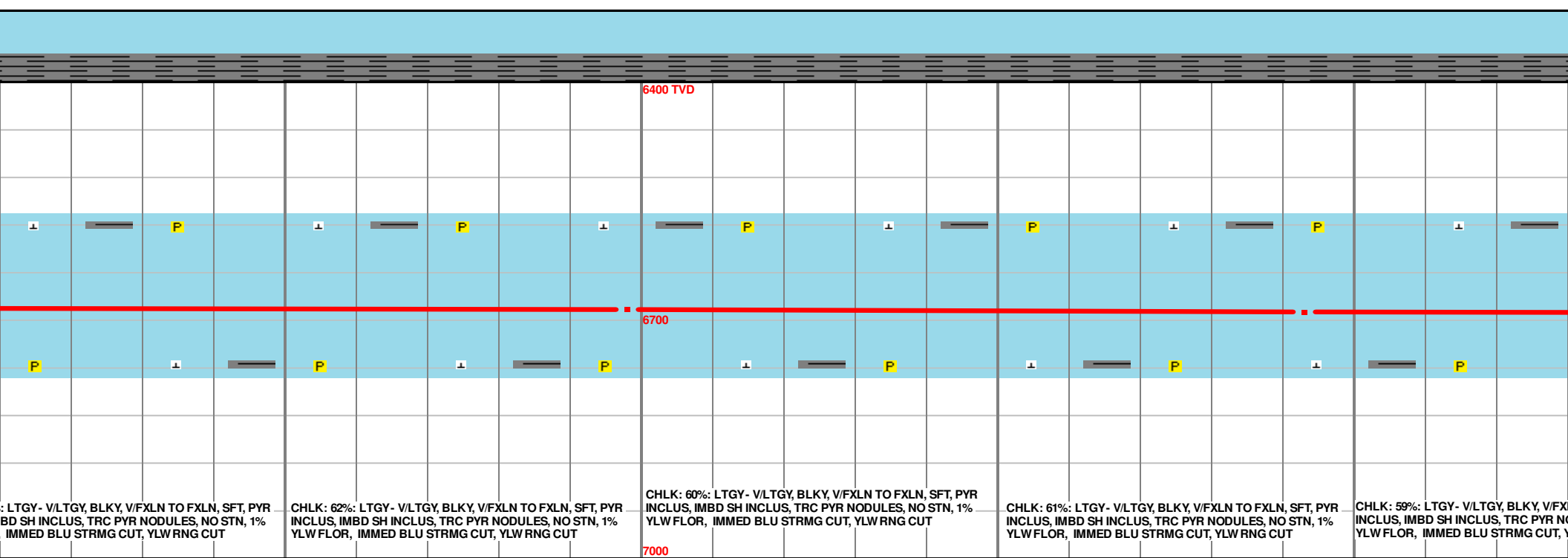
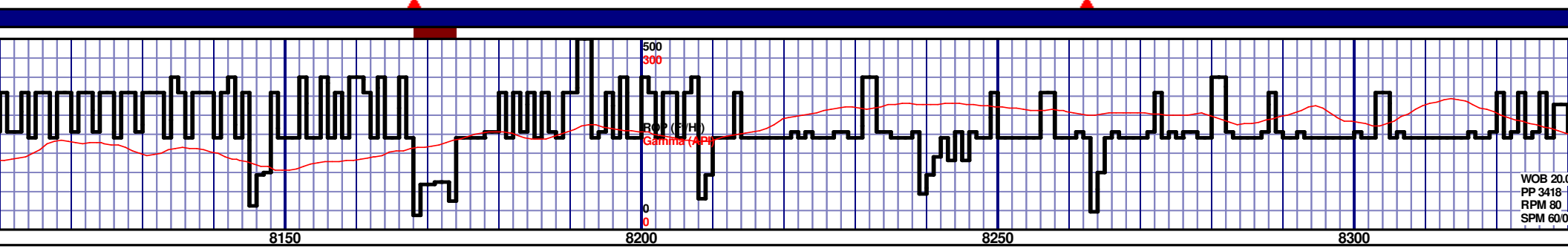
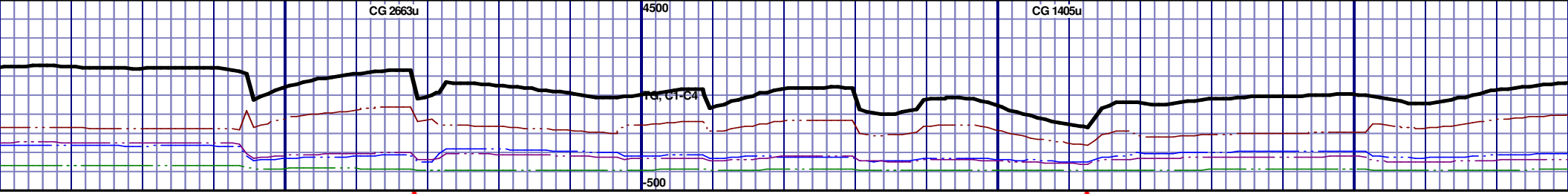


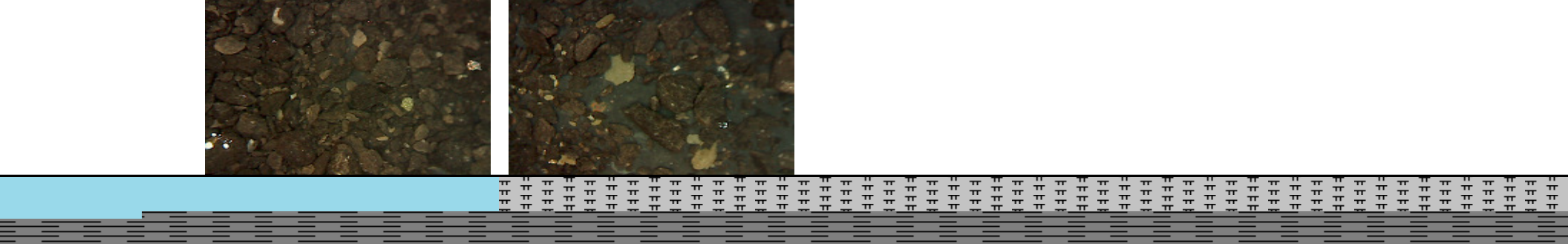
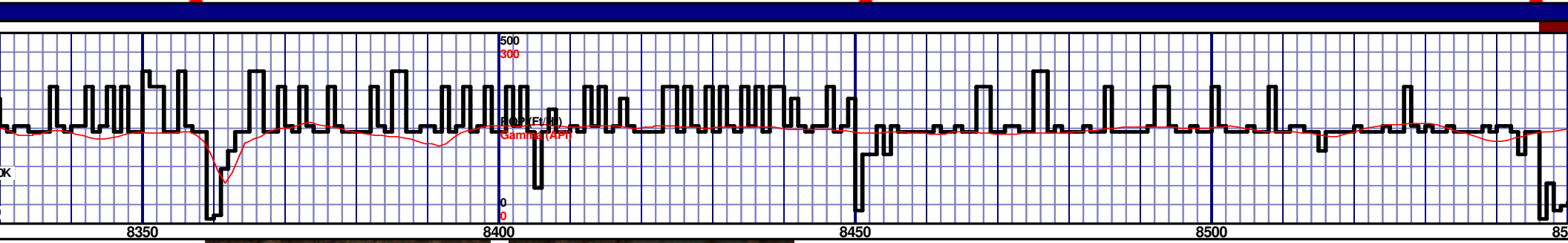
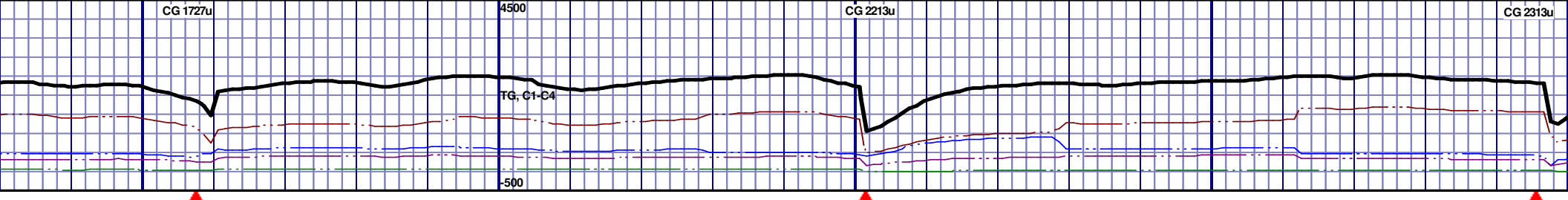


MD 7914 TVD 6678.26
INC 88.92 AZ 267.5
VS 1771.19

MD 8009 TVD 6681.05
INC 87.72 AZ 267.16
VS 1866.14

MD 8103
INC 88.1
VS 1960.1

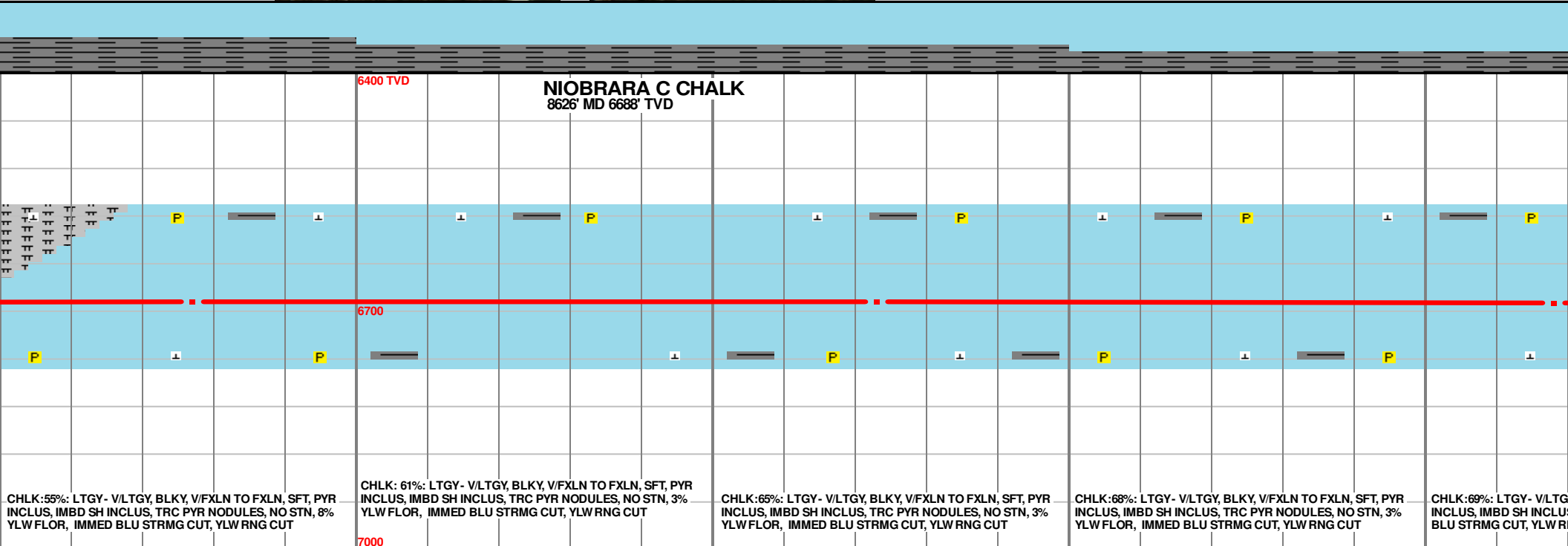
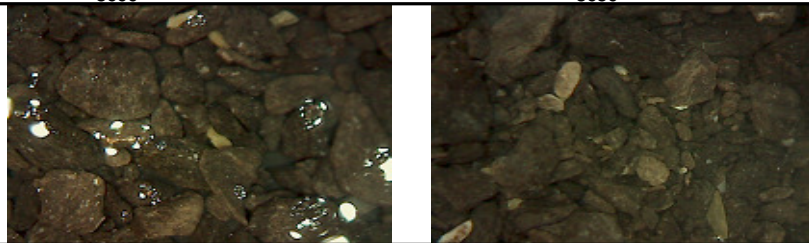
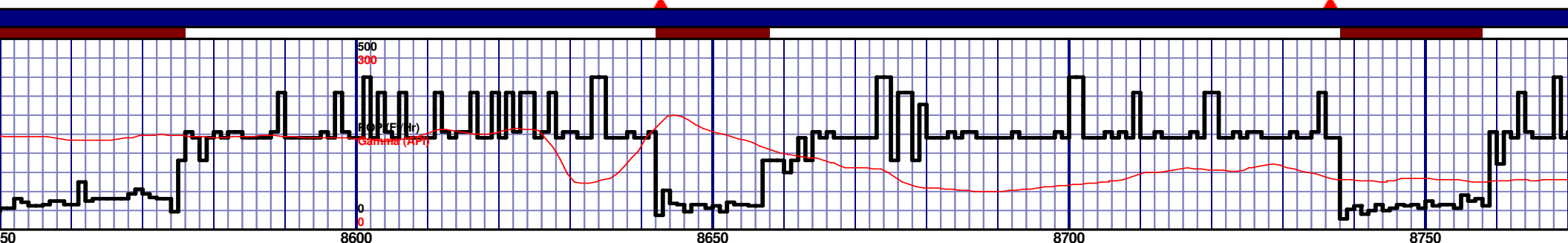
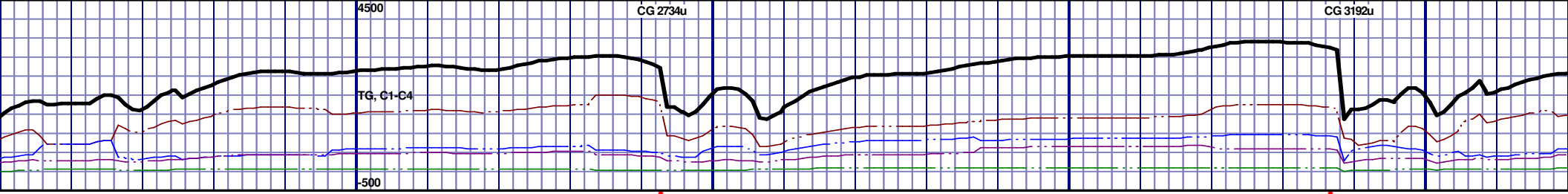




					6400 TVD																								
					NIOBRARA B MARL																								
					8400' MD 6690' TVD																								
LN TO FXLN, SFT, PYR					P					P					P					P					P				
NODULES, NO STN, 5%					P					P					P					P					P				
YLWRNG CUT					P					P					P					P					P				
CHLK: 52%: LTGY- V/LTGY, BLKY, V/FXLN TO FXLN, SFT, PYR					P					P					P					P					P				
INCLUS, IMBD SH INCLUS, TRC PYR NODULES, NO STN, 5%					P					P					P					P					P				
YLW FLOR, IMMED BLU STRMG CUT, YLW RNG CUT					P					P					P					P					P				
MRL: 48%: GRY TO DK GRY, SOFT TO BRITTLE, NO VIS FRACT,					P					P					P					P					P				
MINOR CALC, TRC PYR NODULES, POOR INTRXLN POR, 15%					P					P					P					P					P				
YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO ODOR					P					P					P					P					P				
MRL: 47%: GRY TO DK GRY, SOFT TO BRITTLE, NO VIS FRACT,					P					P					P					P					P				
MINOR CALC, TRC PYR NODULES, POOR INTRXLN POR, 15%					P					P					P					P					P				
YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO					P					P					P					P					P				
ODOR					P					P					P					P					P				
MRL: 46%: GRY TO DK GRY, SOFT TO BRITTLE, NO VIS FRACT,					P					P					P					P					P				
MINOR CALC, TRC PYR NODULES, POOR INTRXLN POR, 20%					P					P					P					P					P				
YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO ODOR					P					P					P					P					P				

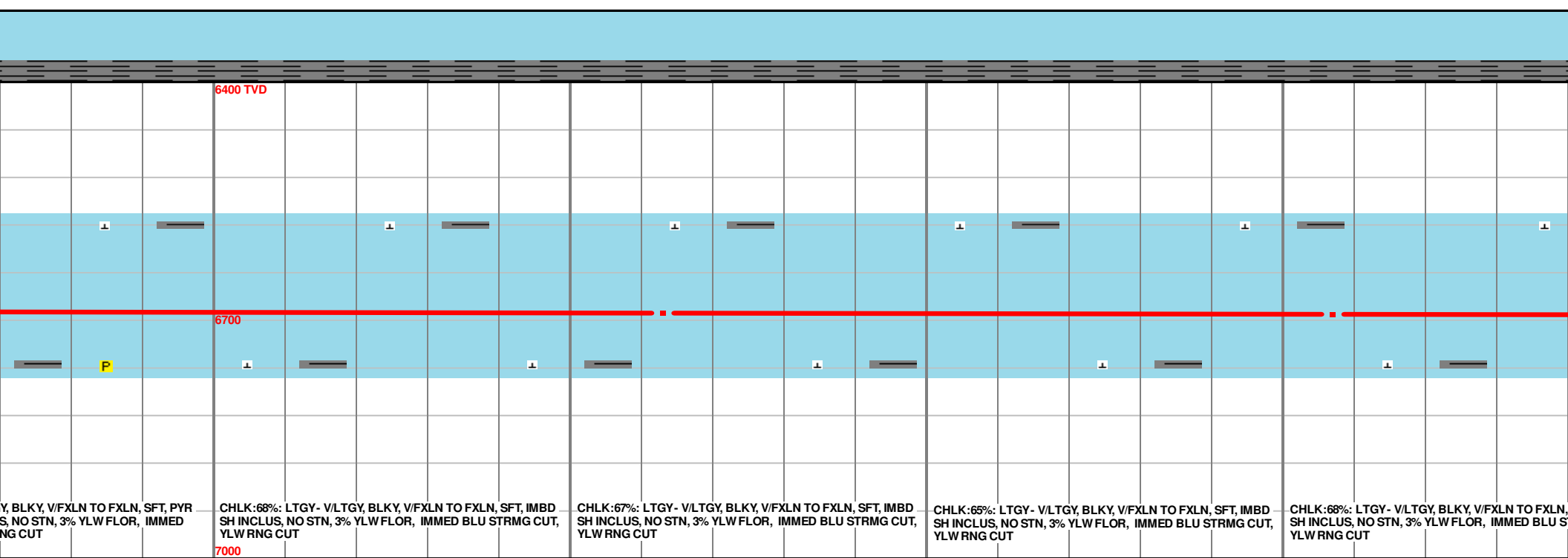
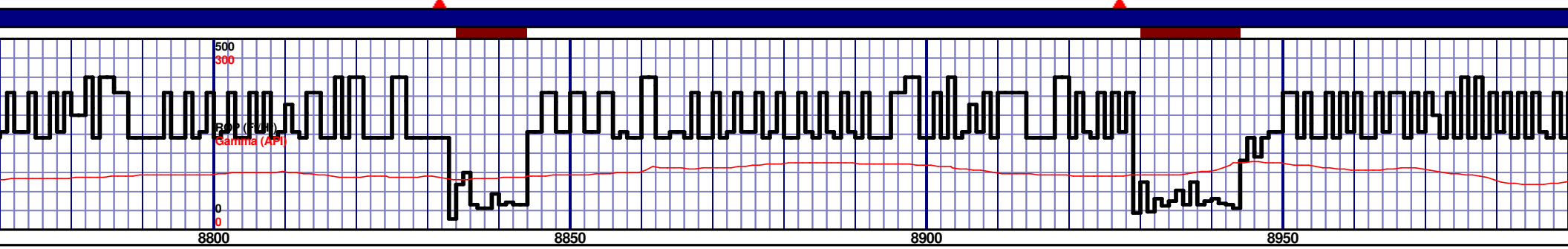
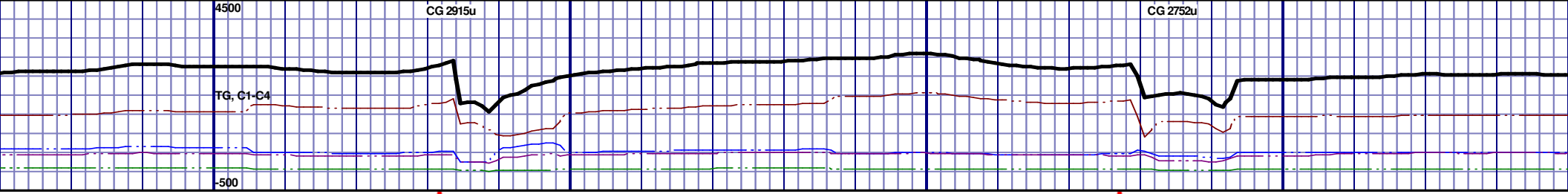
MD 8388 TVD 6690.47
INC 89.57 AZ 269.51
VS 2244.8

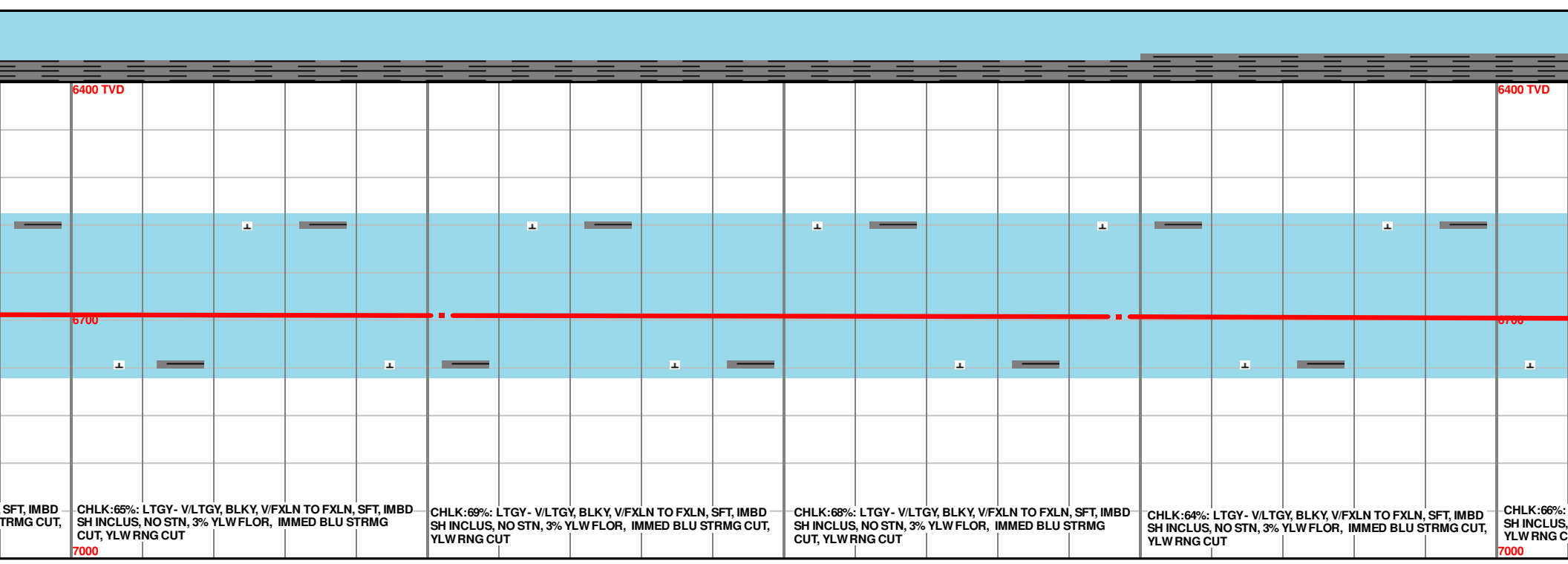
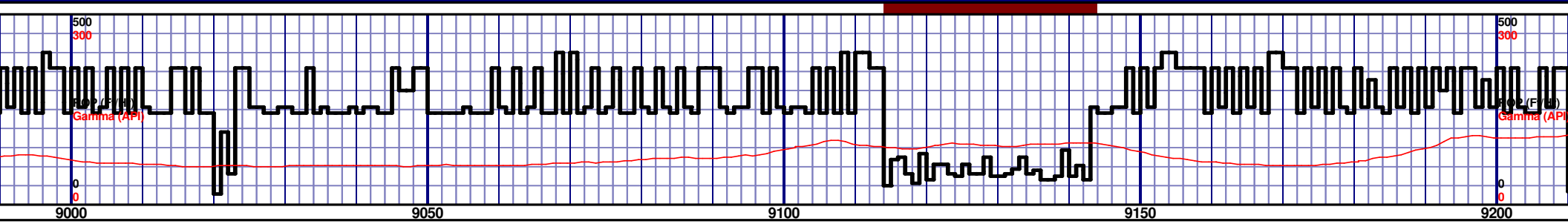
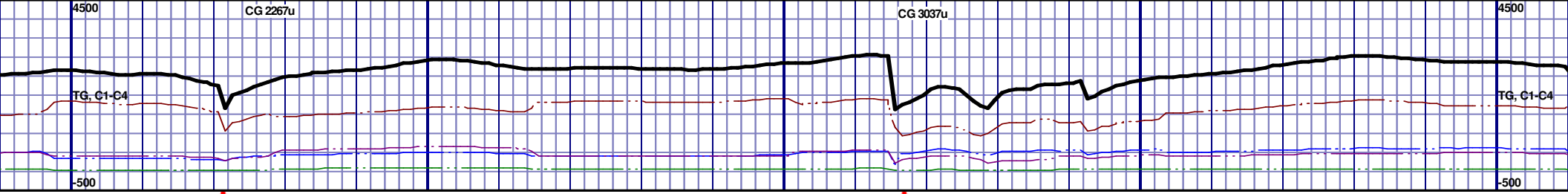
MD 8483 TVD 6689.52
INC 91.57 AZ 271.36
VS 2339.62



MD 8577 TVD 6688.28
INC 89.94 AZ 268.99
VS 2433.46

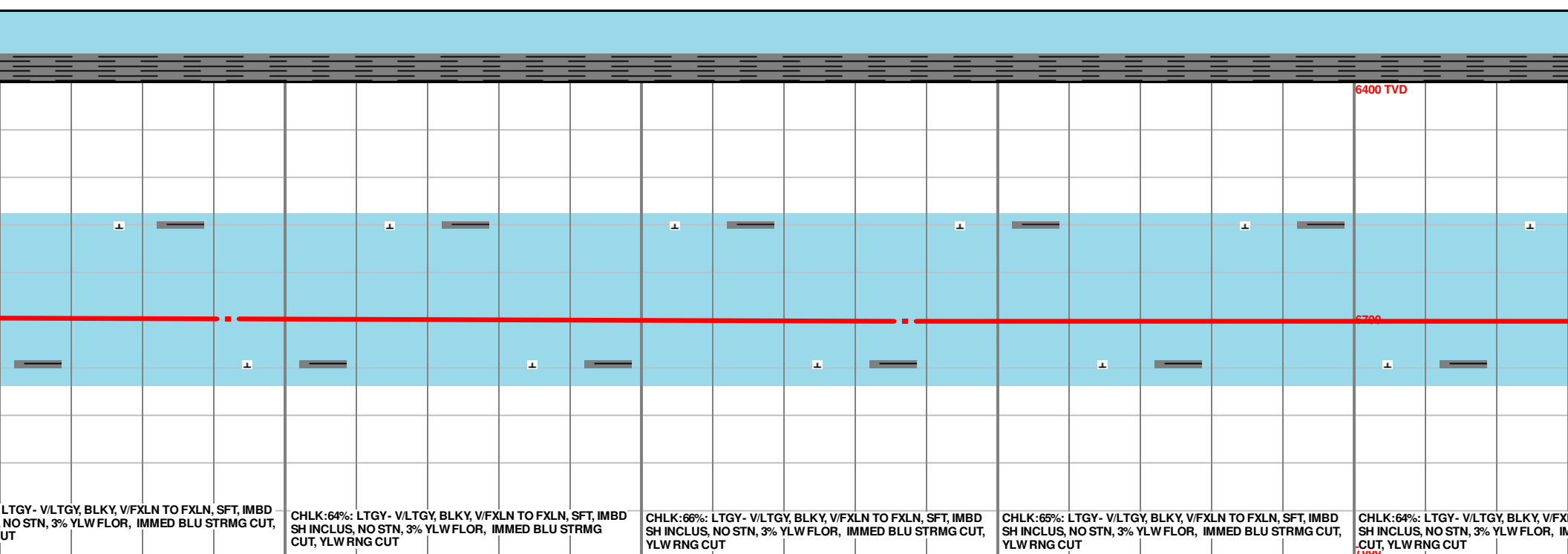
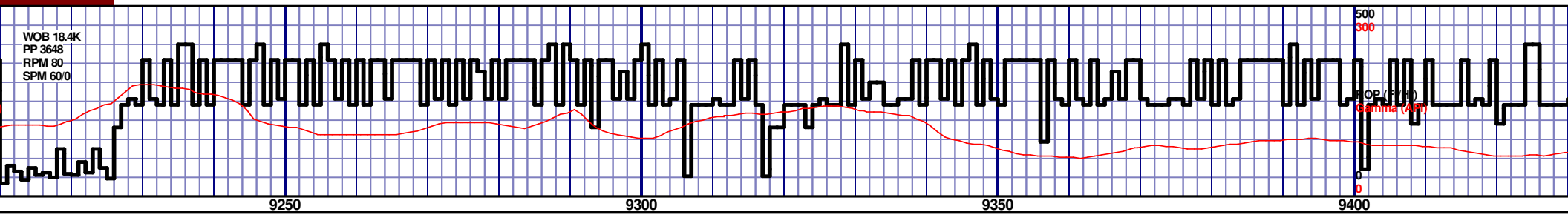
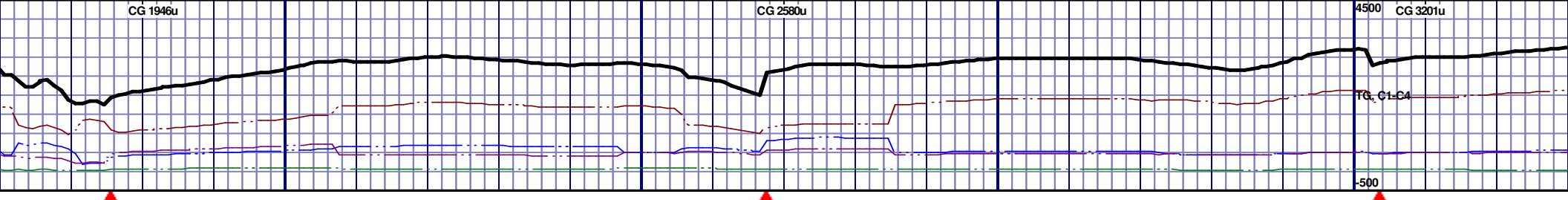
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INC 90.31 AZ 268.22
VS 2529.42





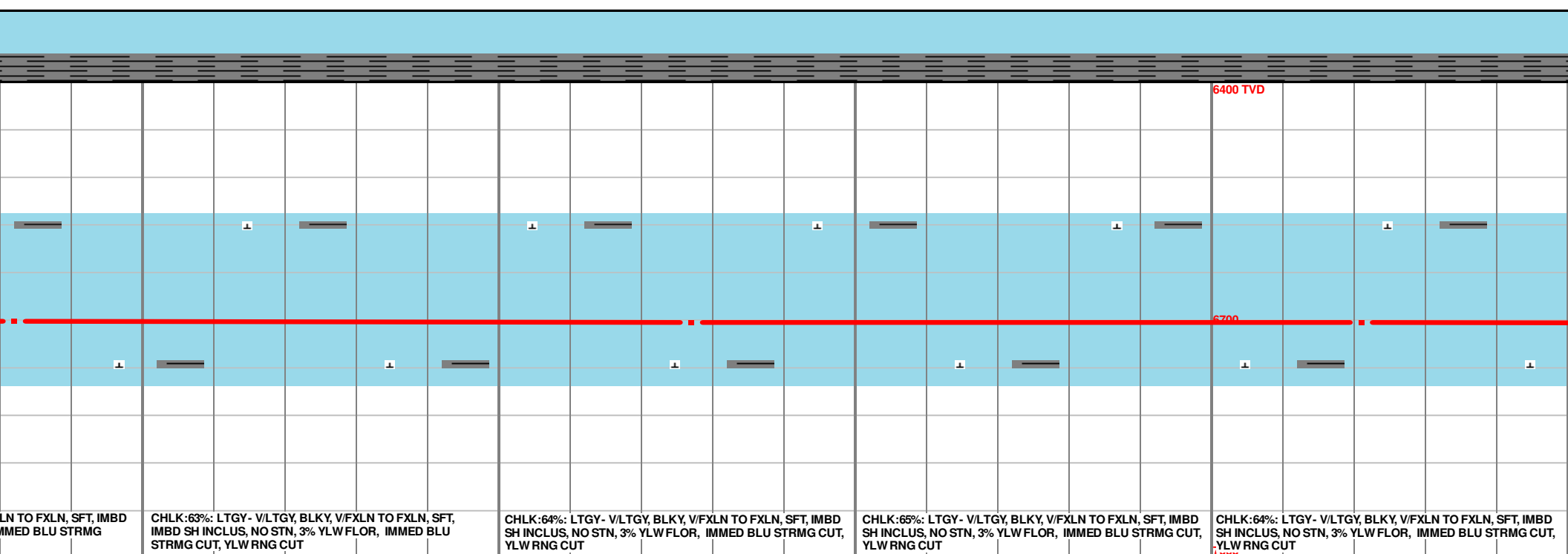
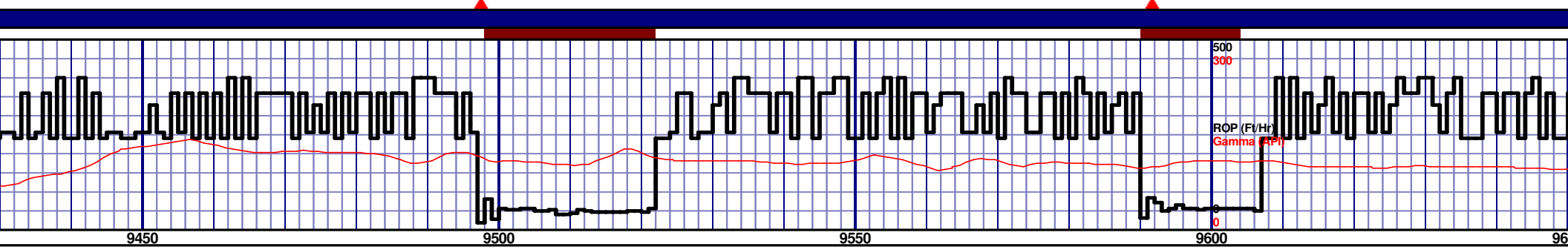
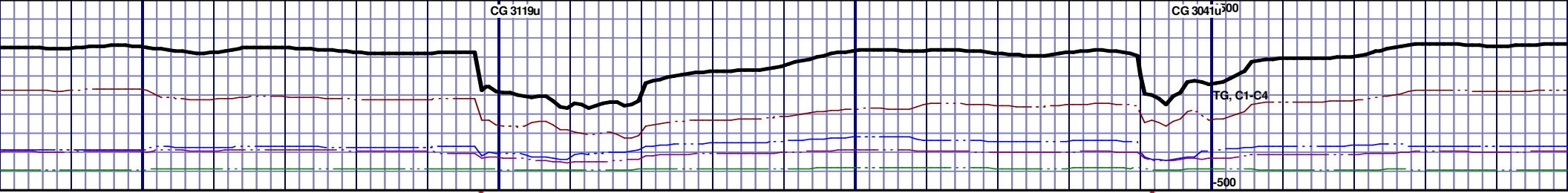
MD 9052 TVD 6694.29
INC 90.31 AZ 269.46
VS 2908.19

MD 9147 TVD 6695.16
INC 88.64 AZ 269.74
VS 3003.08



MD 9242 TVD 6698.25
INC 87.62 AZ 268.78
VS 3097.95

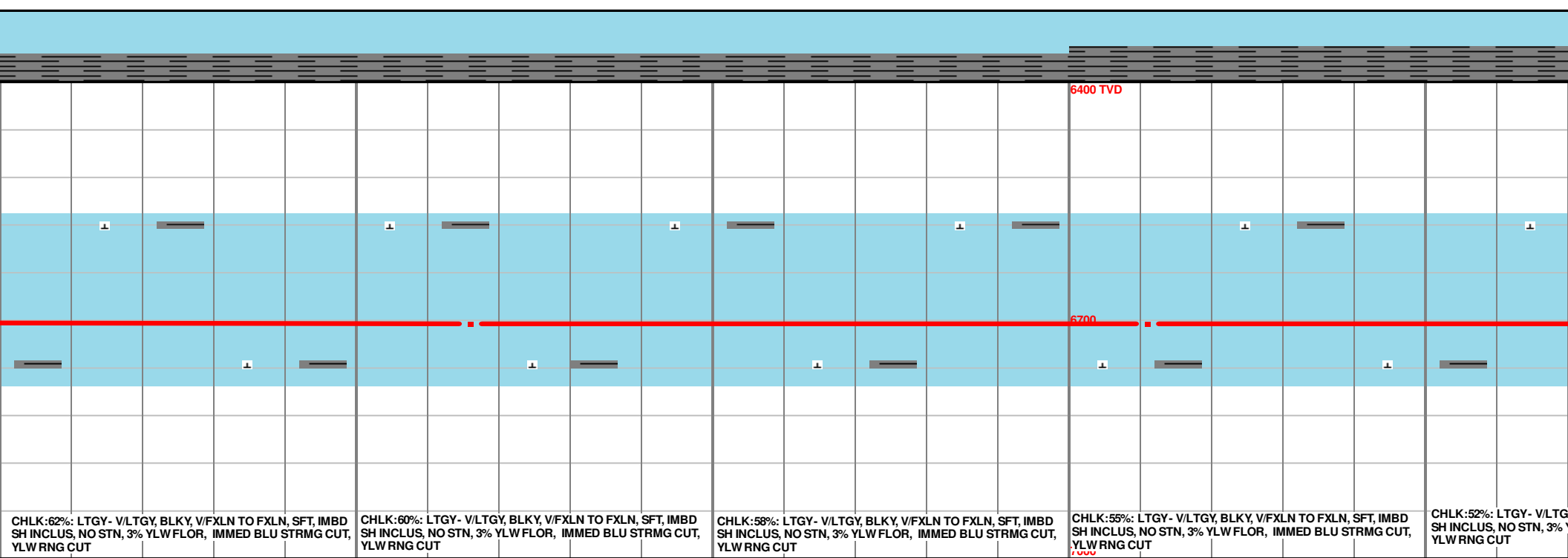
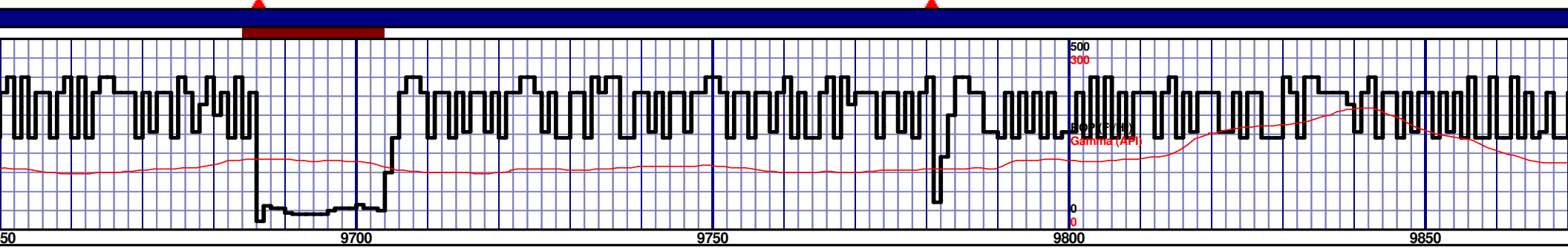
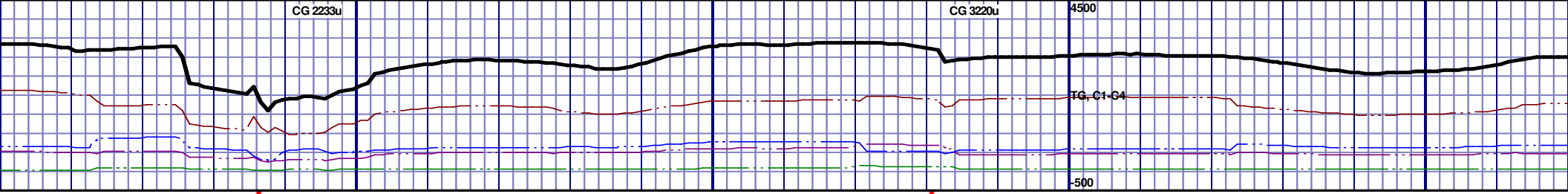
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INC 88.74 AZ 269.43
VS 3192.84



MD 9432 TVD 6702.06
INC 90.31 AZ 269.76
VS 3267.74

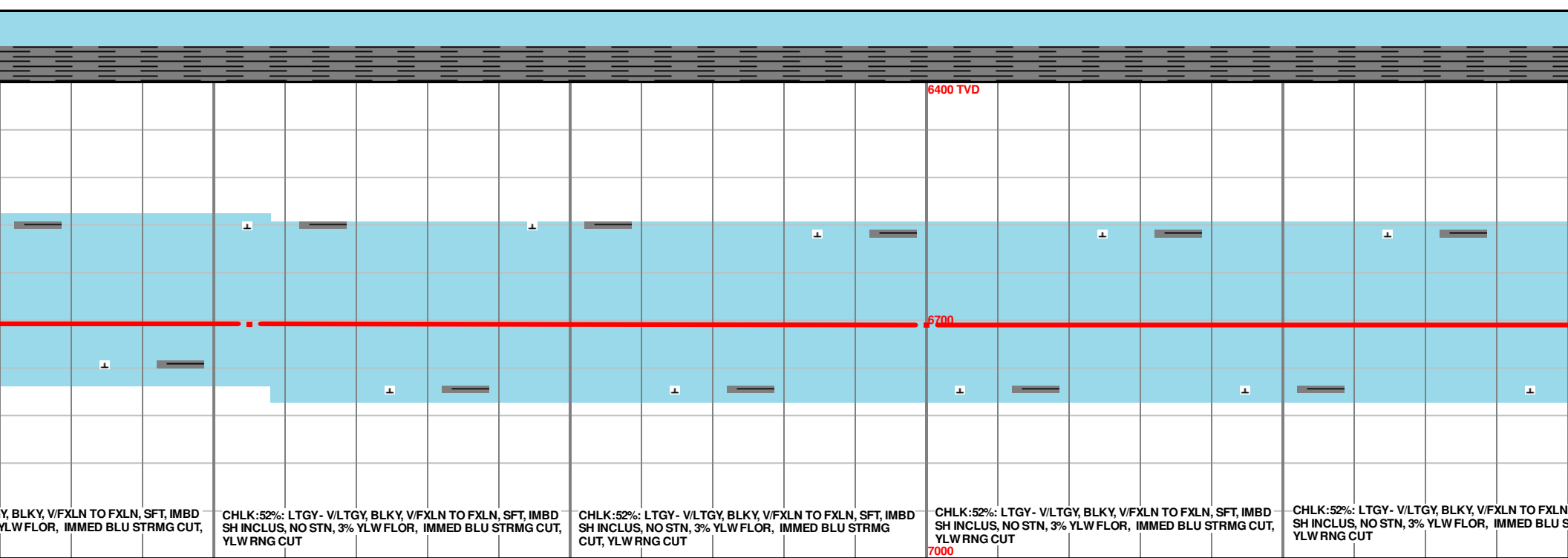
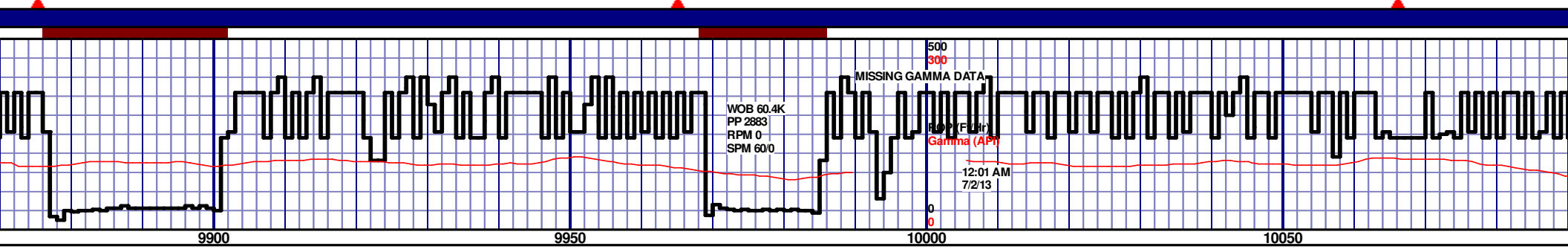
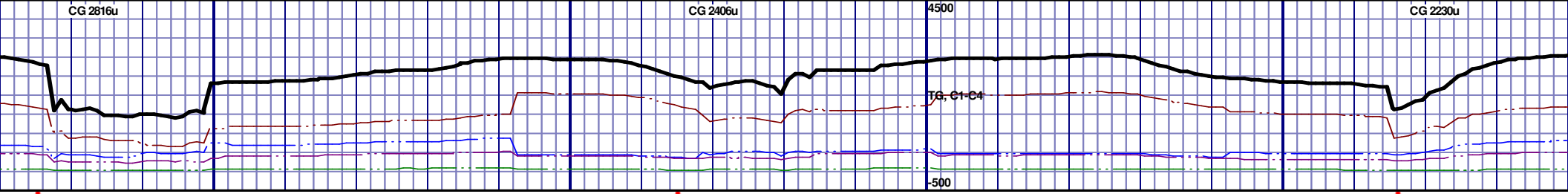
MD 9527 TVD 6702.52
INC 89.14 AZ 269.1
VS 3382.65

MD 9621 TVD 6703.63
INC 89.51 AZ 267.55
VS 3476.61



MD 9716 TVD 6704.91
INC 88.95 AZ 267.25
VS 3571.6

MD 9811 TVD 6704.68
INC 91.33 AZ 268.39
VS 3666.58



Y, BLKY, V/FXLN TO FXLN, SFT, IMBD
SH INCLUS, NO STN, 3% YLW FLOR, IMMED BLU STRMG CUT,
YLW RNG CUT

CHLK:52%: LTGY- V/LTGY, BLKY, V/FXLN TO FXLN, SFT, IMBD
SH INCLUS, NO STN, 3% YLW FLOR, IMMED BLU STRMG CUT,
YLW RNG CUT

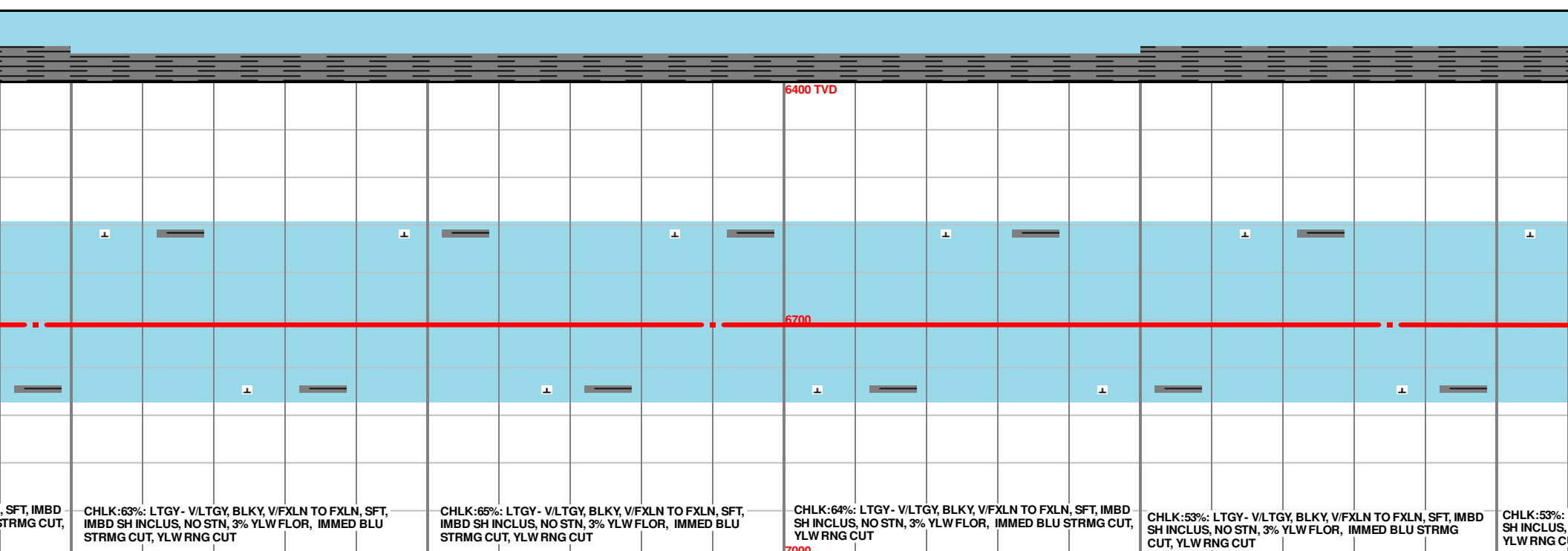
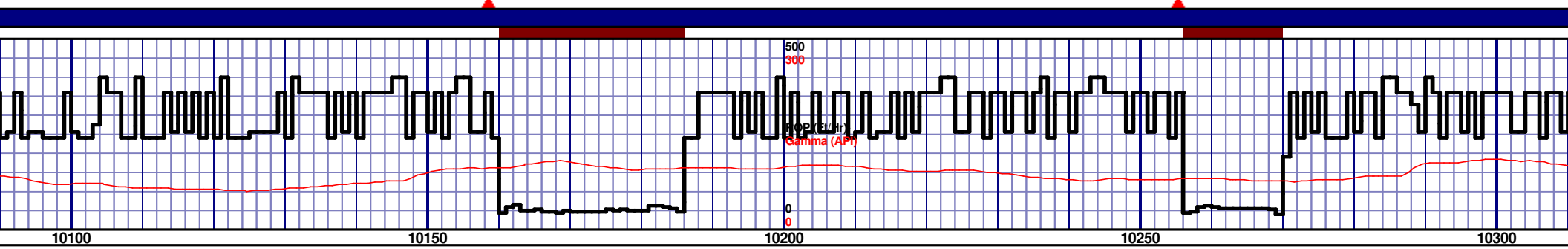
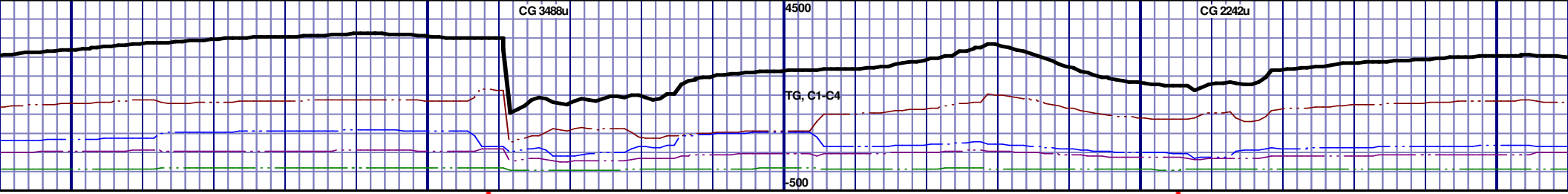
CHLK:52%: LTGY- V/LTGY, BLKY, V/FXLN TO FXLN, SFT, IMBD
SH INCLUS, NO STN, 3% YLW FLOR, IMMED BLU STRMG
CUT, YLW RNG CUT

CHLK:52%: LTGY- V/LTGY, BLKY, V/FXLN TO FXLN, SFT, IMBD
SH INCLUS, NO STN, 3% YLW FLOR, IMMED BLU STRMG CUT,
YLW RNG CUT

CHLK:52%: LTGY- V/LTGY, BLKY, V/FXLN TO FXLN
SH INCLUS, NO STN, 3% YLW FLOR, IMMED BLU S
YLW RNG CUT

MD 9905 TVD 6703.99
INC 89.51 AZ 268.1
VS 3760.55

MD 10000 TVD 6705.35
INC 88.86 AZ 268.25
VS 3855.52

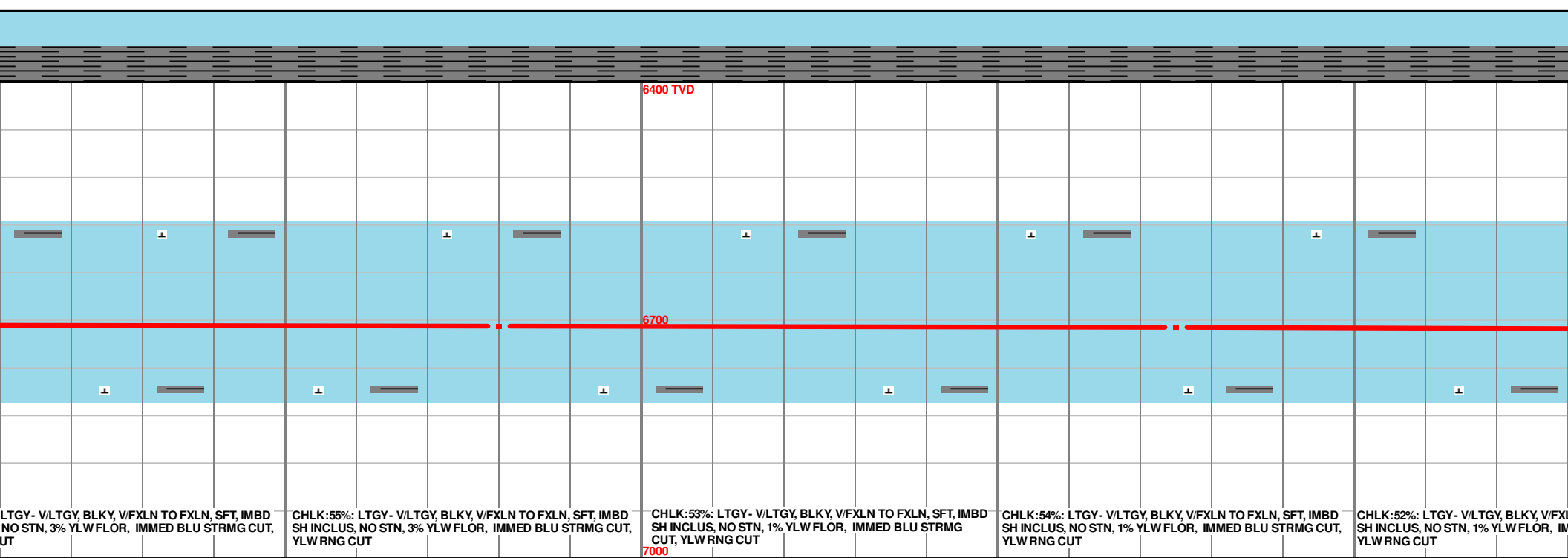
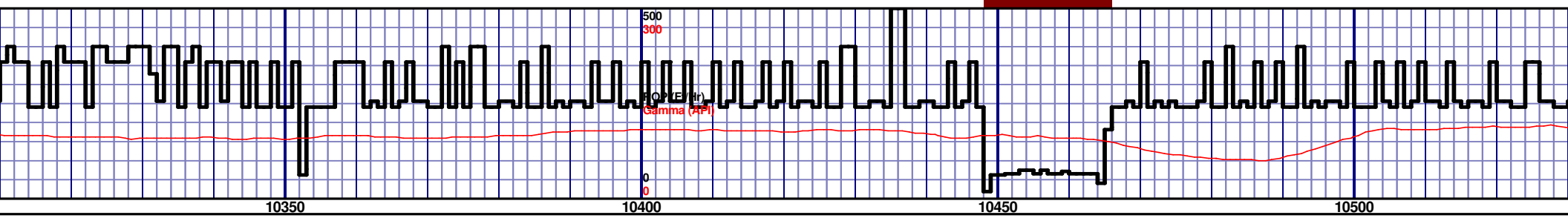
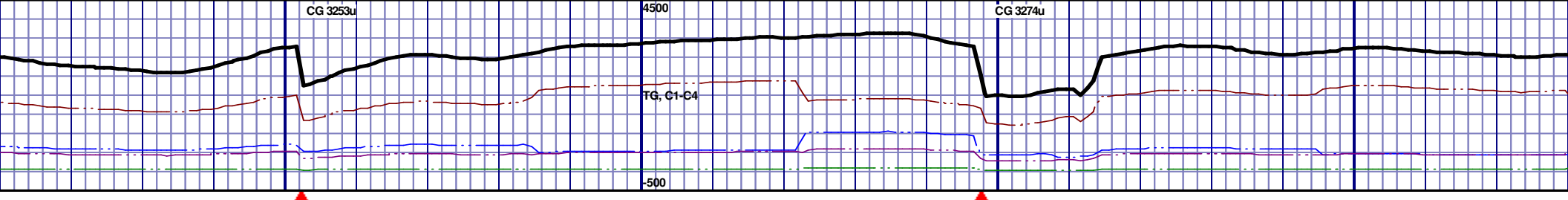


SFT, IMBD STRMG CUT,	CHLK:63%: LTGY - V/LTGY, BLKY, V/FXLN TO FXLN, SFT, IMBD SH INCLUS, NO STN, 3% YLW FLOR, IMMED BLU STRMG CUT, YLW RNG CUT	CHLK:65%: LTGY - V/LTGY, BLKY, V/FXLN TO FXLN, SFT, IMBD SH INCLUS, NO STN, 3% YLW FLOR, IMMED BLU STRMG CUT, YLW RNG CUT	CHLK:64%: LTGY - V/LTGY, BLKY, V/FXLN TO FXLN, SFT, IMBD SH INCLUS, NO STN, 3% YLW FLOR, IMMED BLU STRMG CUT, YLW RNG CUT	CHLK:53%: LTGY - V/LTGY, BLKY, V/FXLN TO FXLN, SFT, IMBD SH INCLUS, NO STN, 3% YLW FLOR, IMMED BLU STRMG CUT, YLW RNG CUT	CHLK:53%: SH INCLUS, YLW RNG C
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MD 10095 TVD 6705.73
INC 90.68 AZ 268.11
VS 3950.5

MD 10190 TVD 6705.43
INC 89.69 AZ 269.64
VS 4045.44

MD 10285 TVD 6706.45
INC 89.08 AZ 269.96
VS 4140.33



LTGY - V/LTGY, BLKY, V/FXLN TO FXLN, SFT, IMBD
NO STN, 3% YLW FLOR, IMMED BLU STRMG CUT,
UT

CHLK:55%: LTGY - V/LTGY, BLKY, V/FXLN TO FXLN, SFT, IMBD
SH INCLUS, NO STN, 3% YLW FLOR, IMMED BLU STRMG CUT,
YLWRNG CUT

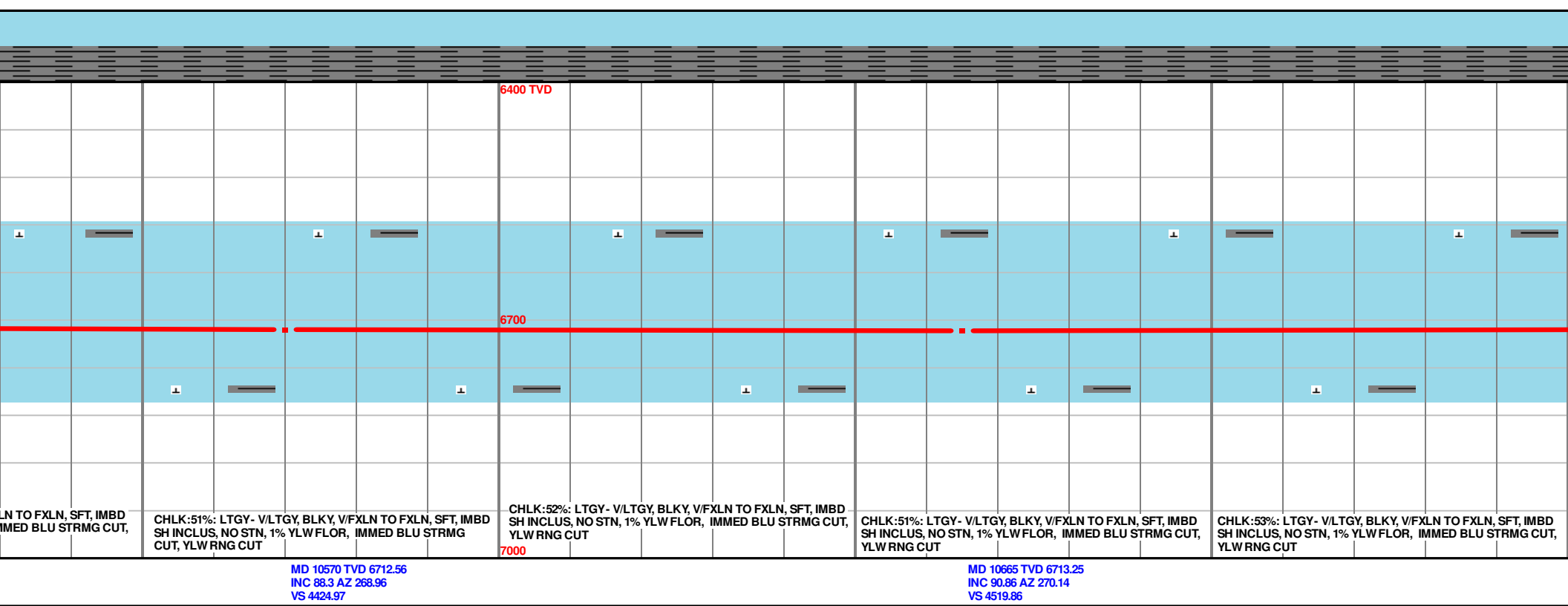
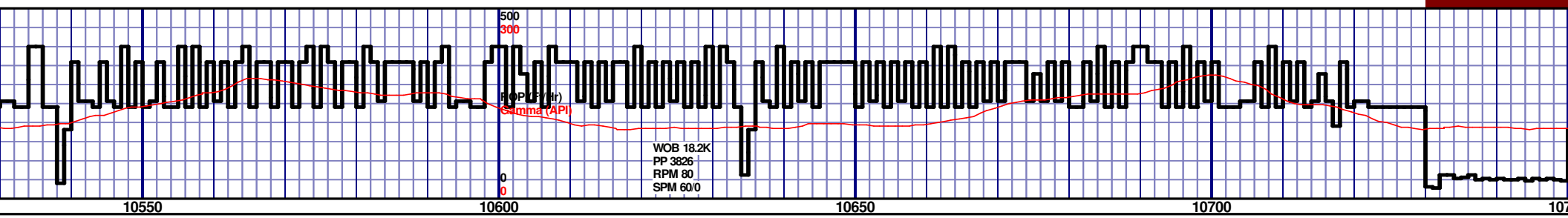
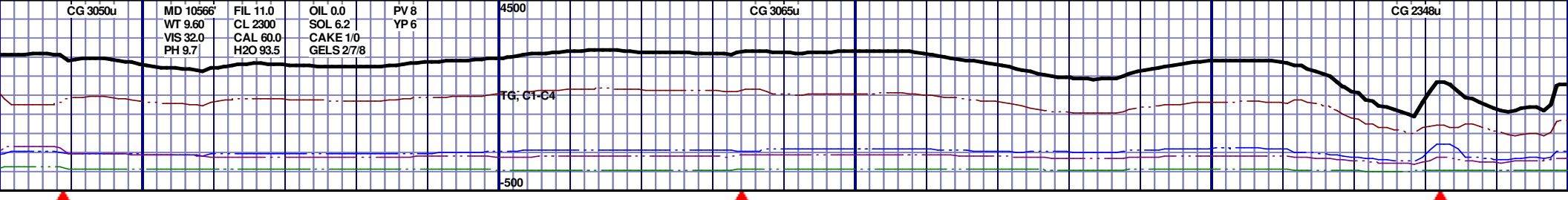
CHLK:53%: LTGY - V/LTGY, BLKY, V/FXLN TO FXLN, SFT, IMBD
SH INCLUS, NO STN, 1% YLW FLOR, IMMED BLU STRMG
CUT, YLWRNG CUT

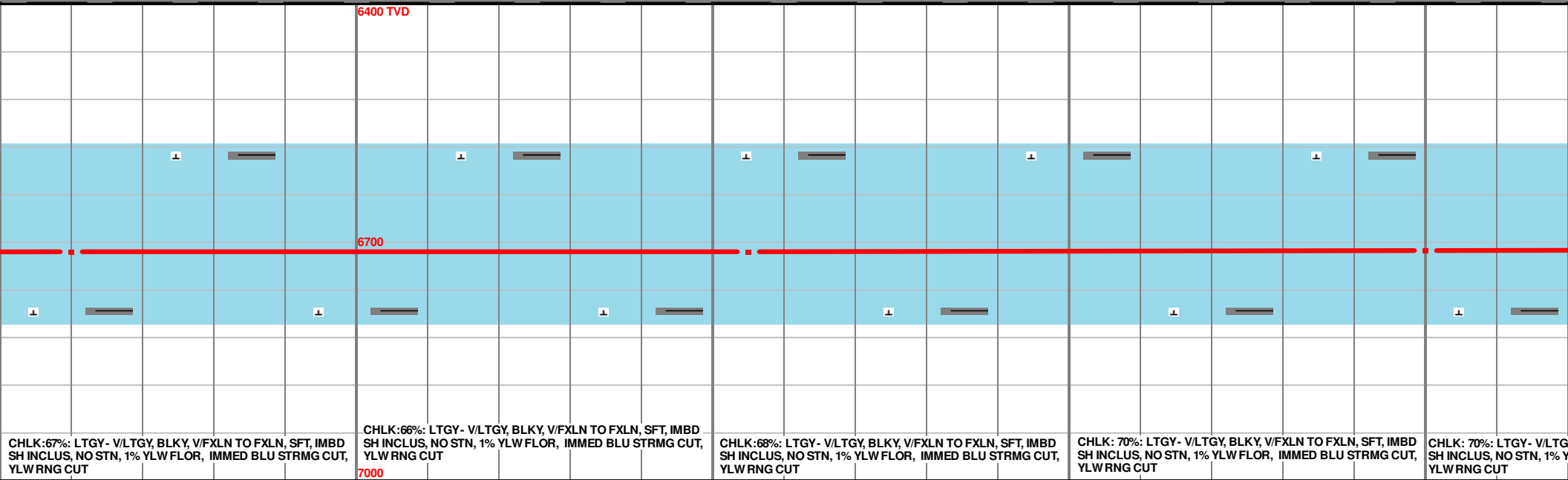
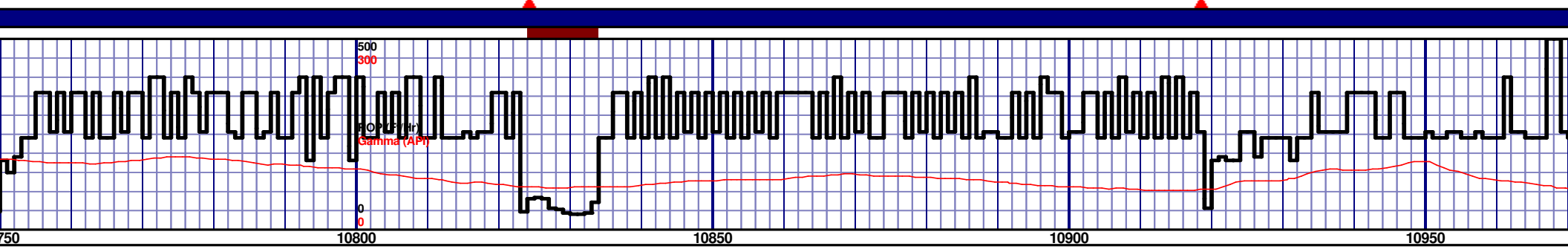
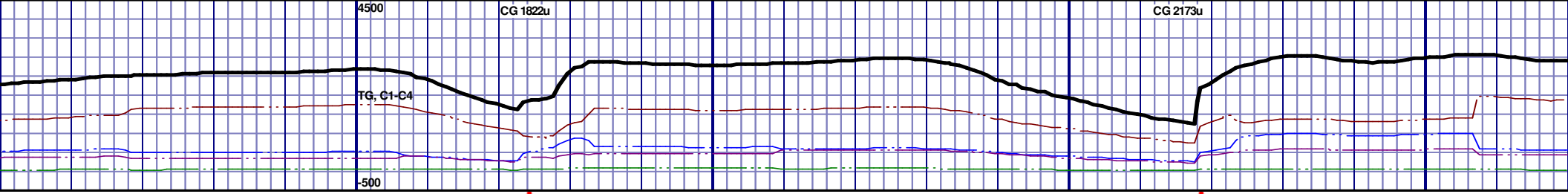
CHLK:54%: LTGY - V/LTGY, BLKY, V/FXLN TO FXLN, SFT, IMBD
SH INCLUS, NO STN, 1% YLW FLOR, IMMED BLU STRMG CUT,
YLWRNG CUT

CHLK:52%: LTGY - V/LTGY, BLKY, V/FXLN TO FXLN, SFT, IMBD
SH INCLUS, NO STN, 1% YLW FLOR, IMMED BLU STRMG CUT,
YLWRNG CUT

MD 10380 TVD 6707.16
INC 90.06 AZ 270.17
VS 4235.19

MD 10475 TVD 6709.13
INC 87.56 AZ 268.48
VS 4330.08

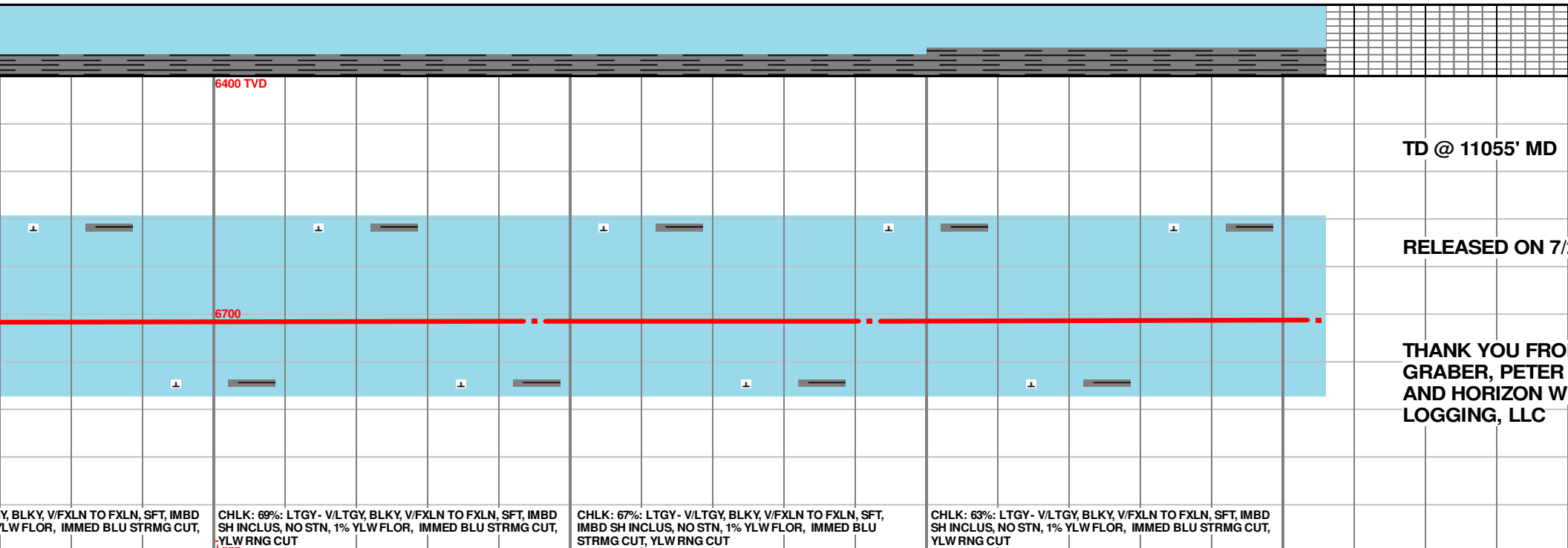
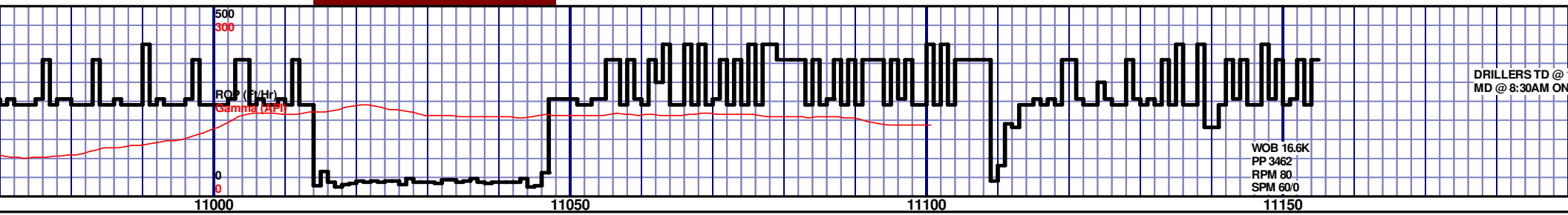
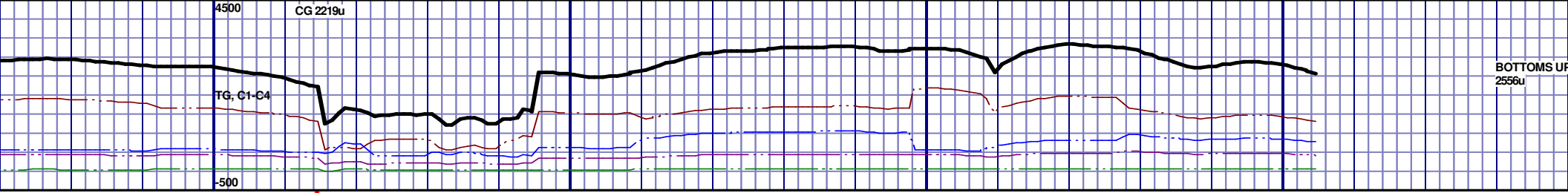




MD 10760 TVD 6712.12
INC 90.49 AZ 269.67
VS 4614.74

MD 10855 TVD 6711.9
INC 89.78 AZ 268.44
VS 4709.67

MD 10950 TVD 6710.85
INC 91.48 AZ 268.76
VS 4804.63



MD 11045 TVD 6709.14
INC 90.59 AZ 267.99
VS 4899.58

MD 11092 TVD 6708.44
INC 91.11 AZ 267.82
VS 4946.57

PTB: MD 11155 TVD 6707.22
INC 91.11 AZ 267.82
VS 5009.55

