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WWW.HZMUD.COM/25

Customer Information

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

Geologist: Melanie Peterson
Noble Energy Inc.

Mud Logging Details

Logger: Ross Apodaca &
Dan King

Log Interval: 6530' MD to 12063' MD
Start Date: June 20, 2014
Release Date: June 24, 2014

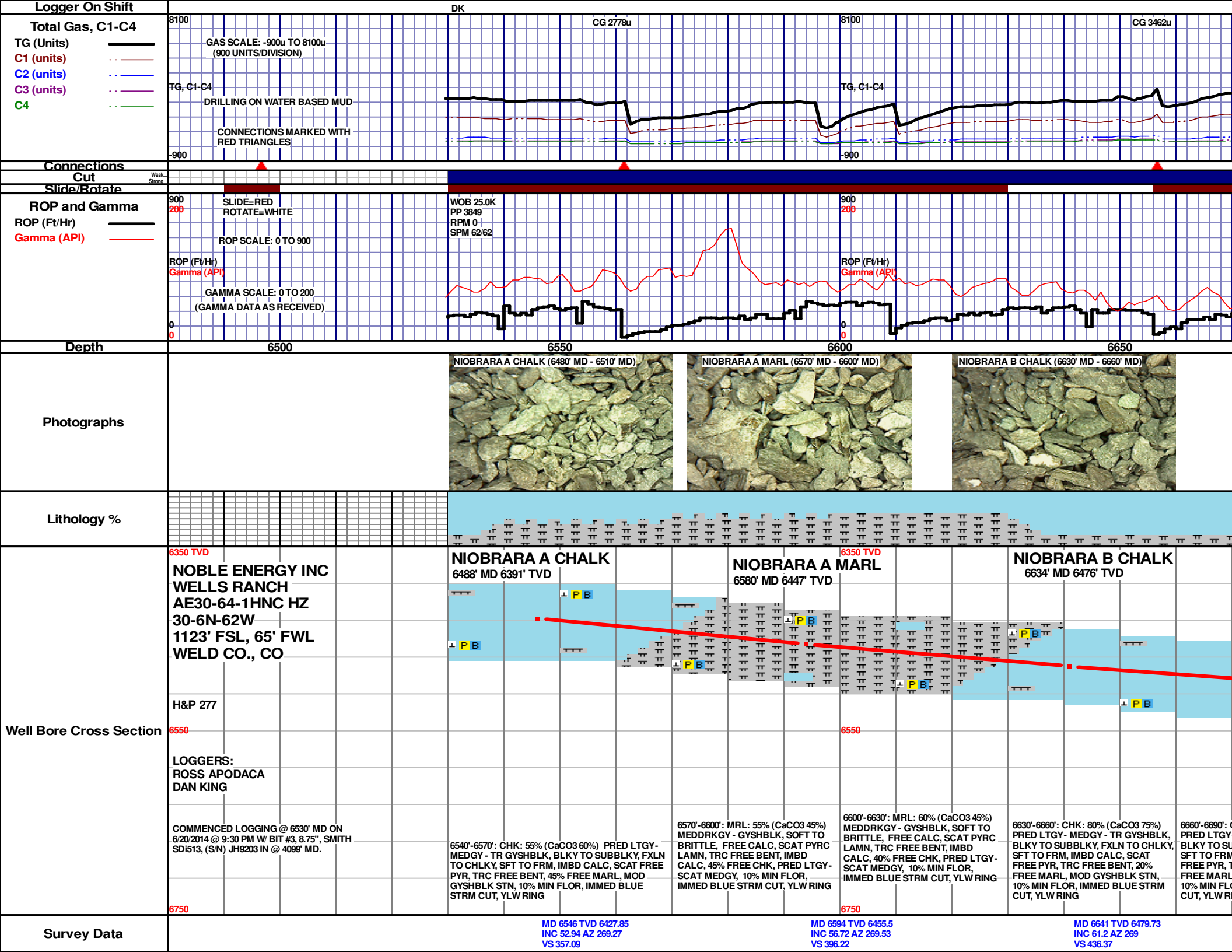
Well Information

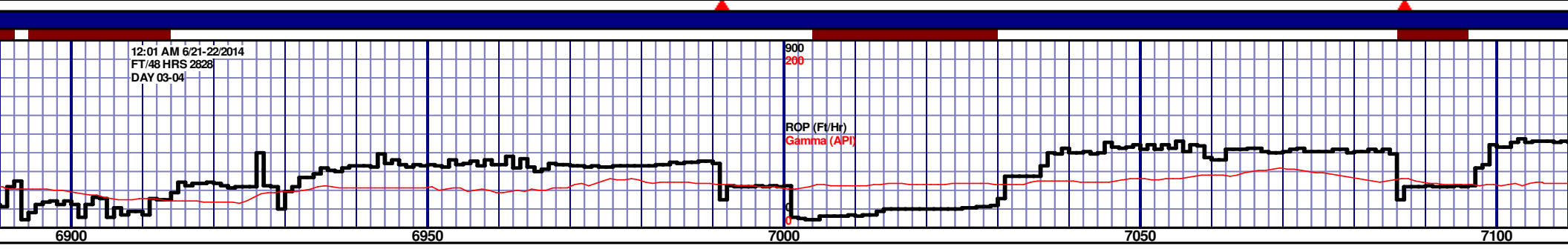
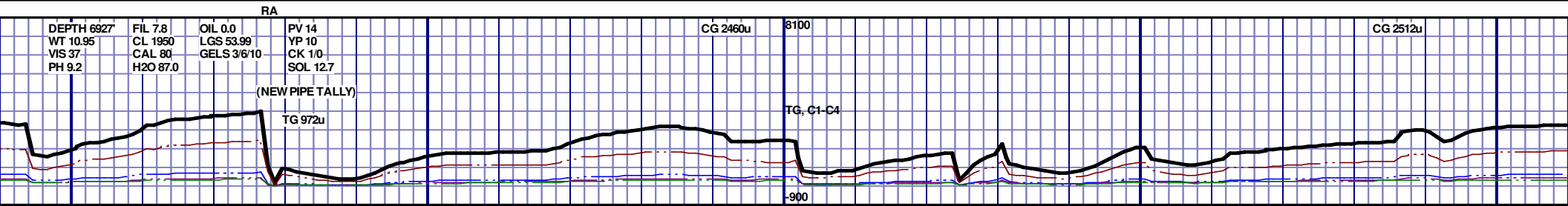
Well Name: Wells Ranch
AE30-64-1HNC HZ

Location: 30-6N-62W
1123' FSL, 65' FWL

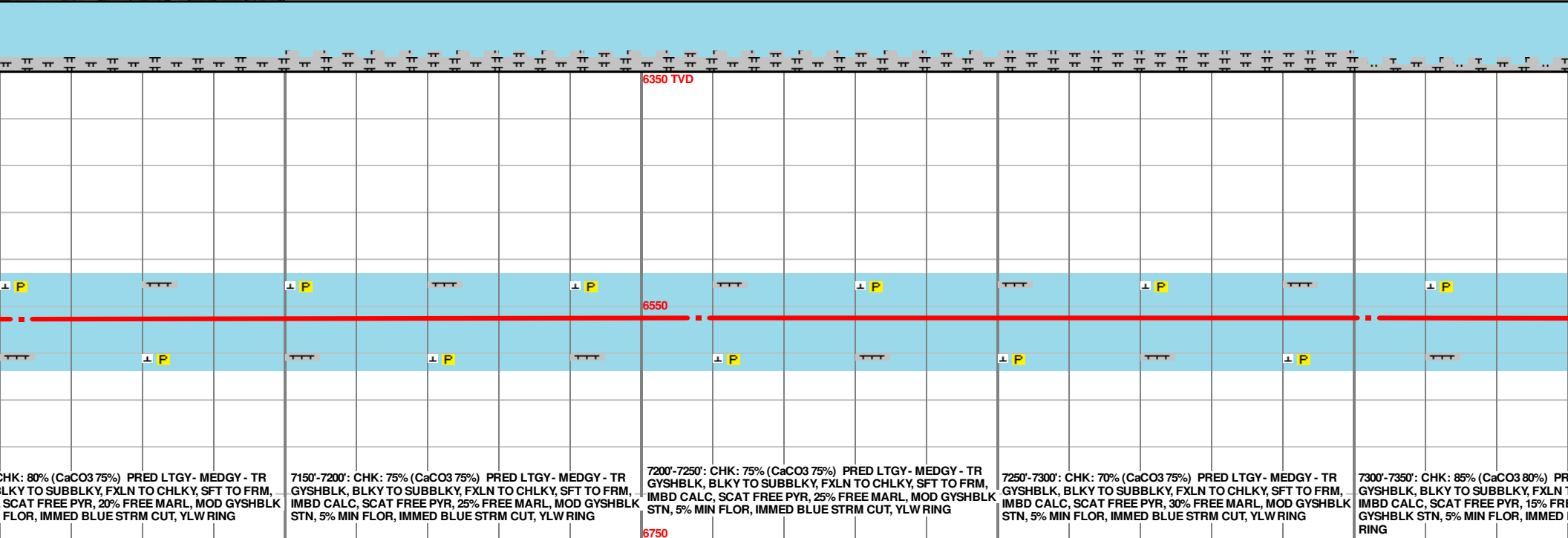
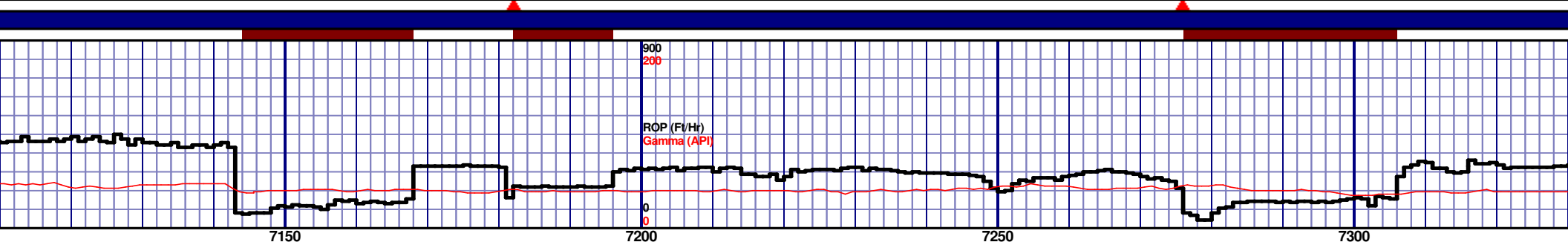
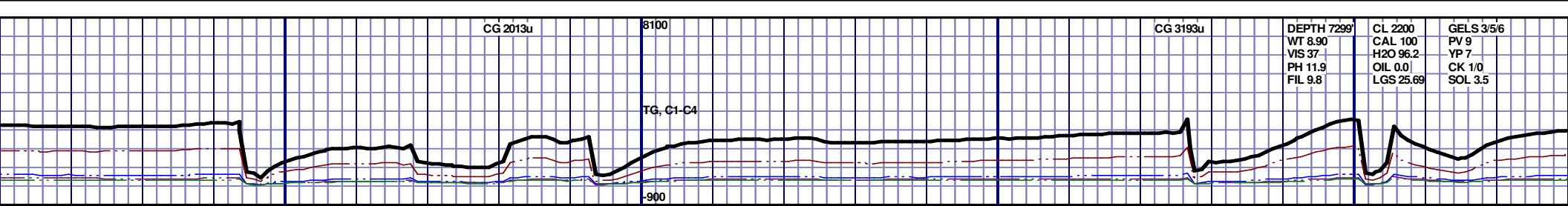
County: Weld
State: Colorado

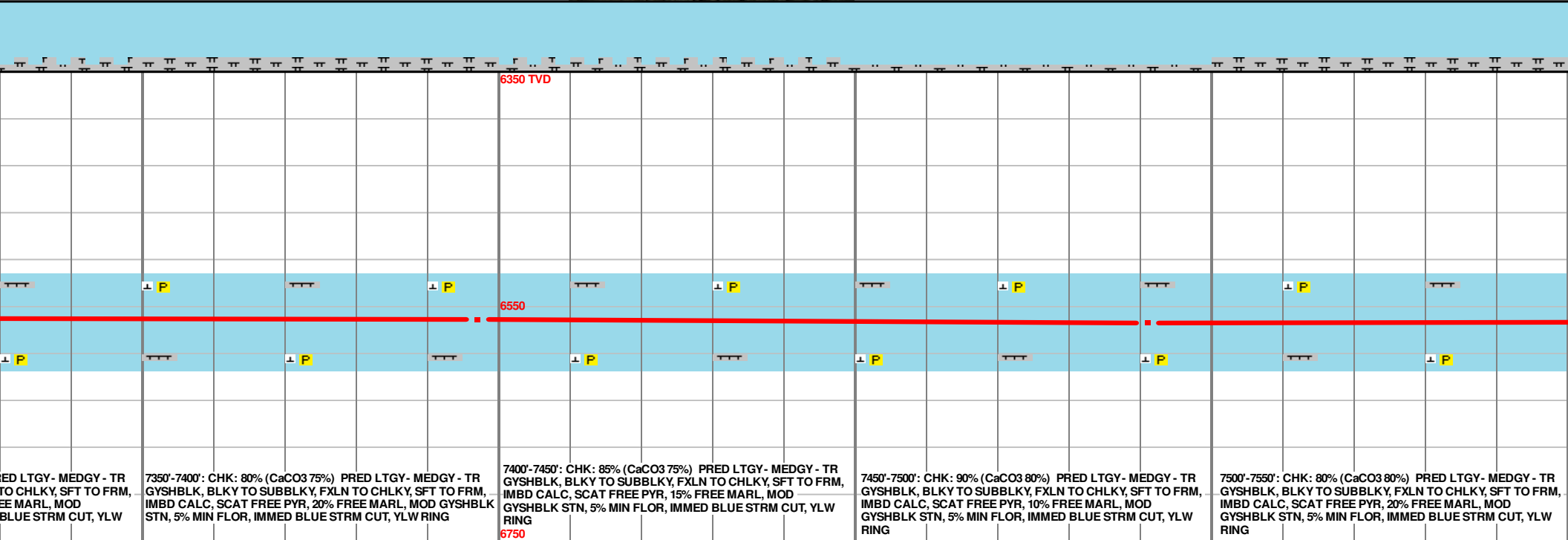
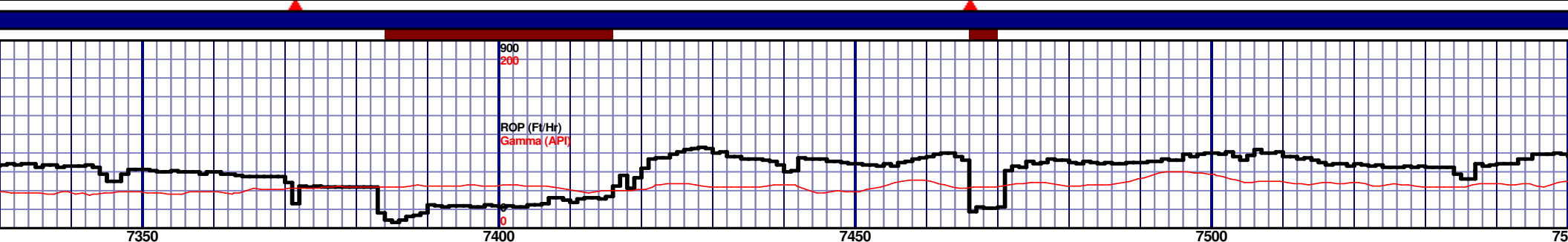
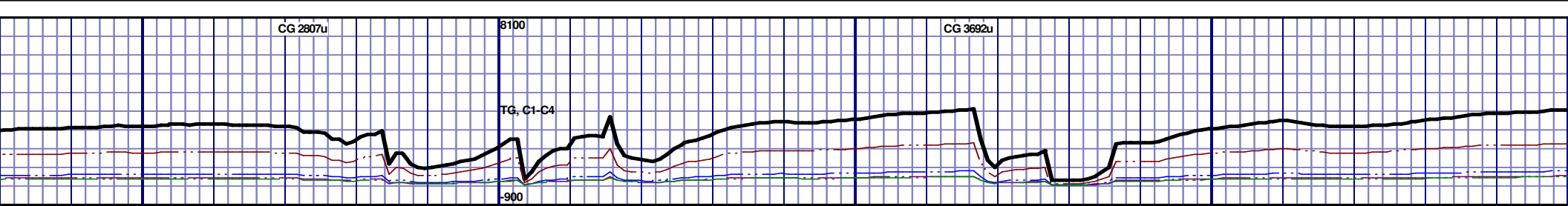
Drilling Rig: H&P 277
Total Depth: 12063' MD
TD Date: June 24, 2014
Formation: Niobrara C Chalk
KB Elevation: 4777'
GR Elevation: 4753'
API Number: 05-123-38691-0000





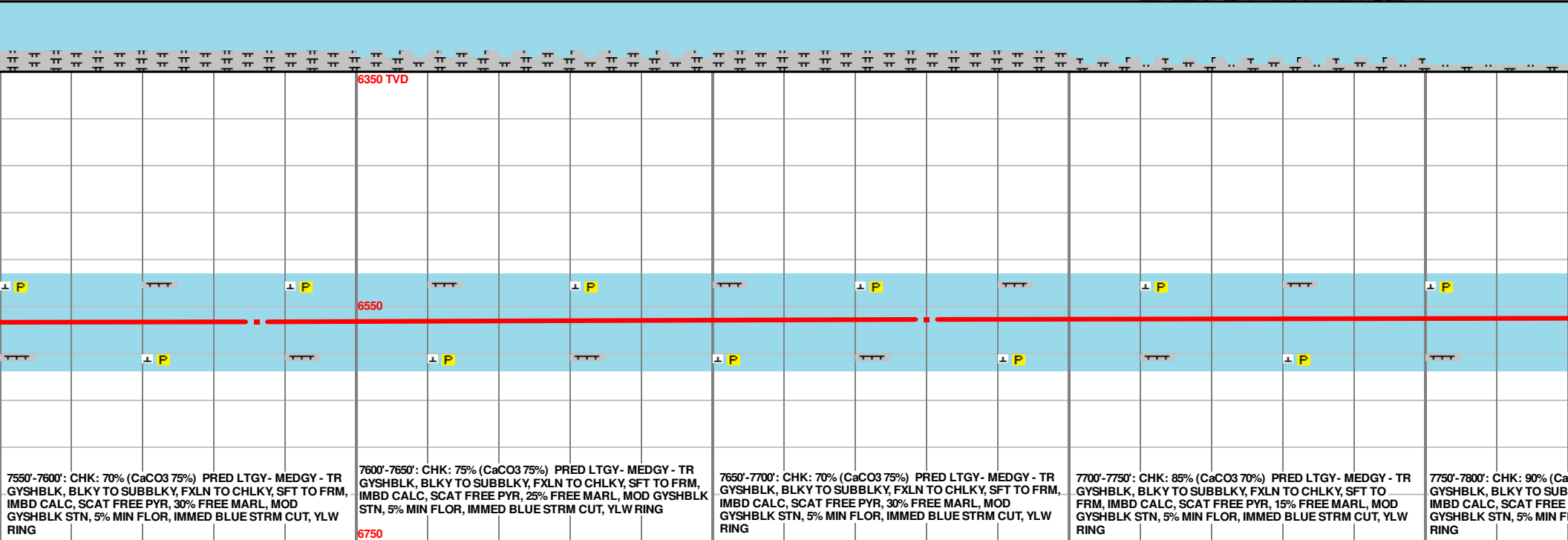
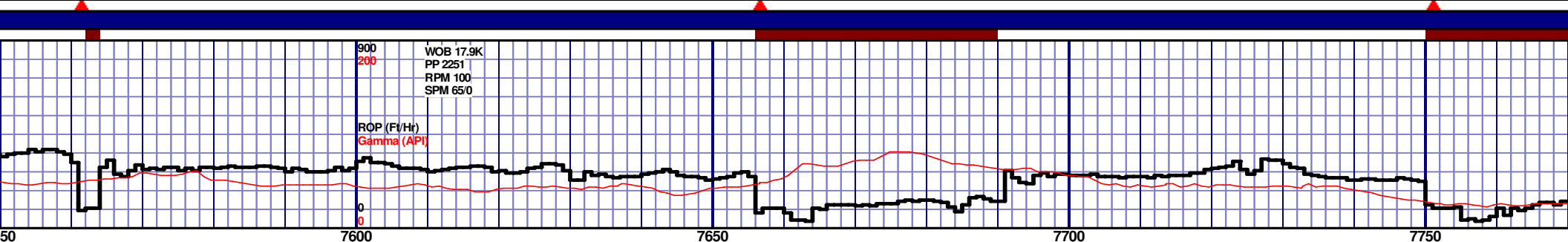
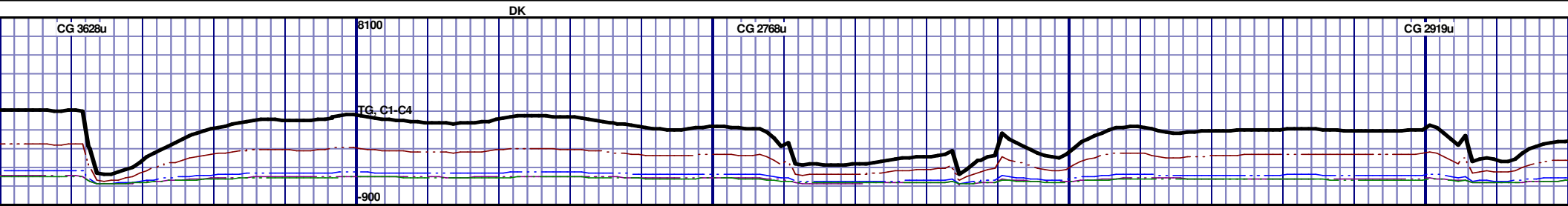
TOOH @ 12:00 AM ON 6/21/14 @ 6927' MD FOR INTERMEDIATE CASING. TIH @ 6:00AM ON 6/22/2014. RESUMED DRILLING @ 11:00AM ON 6/22/2014 W/ BIT #4, 6.125", SMITH MDI513, (S/N) JH9851 IN @ 6927' MD.										6350 TVD																																																	
SWITCHING TO 50' SAMPLE INTERVAL																																																											
										6550																																																	
6900'-6927': CHK: 90% (CaCO3 75%) PRED LTGY - MEDGY - TR GYSHBLK, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT TO FRM, IMBD CALC, SCAT FREE PYR, TRC FREE BENT, 10% FREE MARL, MOD GYSHBLK STN, 10% MIN FLOR, IMMED BLUE STRM CUT, YLW RING										6927'-6950': CHK: 75% (CaCO3 70%) PRED LTGY - MEDGY - TR GYSHBLK, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT TO FRM, IMBD CALC, SCAT FREE PYR, FREE BENT, 25% FREE MARL, MOD GYSHBLK STN, 10% MIN FLOR, IMMED BLUE STRM CUT, YLW RING										6950'-7000': CHK: 75% (CaCO3 70%) PRED LTGY - MEDGY - TR GYSHBLK, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT TO FRM, IMBD CALC, SCAT FREE PYR, FREE BENT, 25% FREE MARL, MOD GYSHBLK STN, 10% MIN FLOR, IMMED BLUE STRM CUT, YLW RING										7000'-7050': CHK: 70% (CaCO3 70%) PRED LTGY - MEDGY - TR GYSHBLK, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT TO FRM, IMBD CALC, SCAT FREE PYR, 30% FREE MARL, MOD GYSHBLK STN, 5% MIN FLOR, IMMED BLUE STRM CUT, YLW RING										7050'-7100': CHK: 85% (CaCO3 75%) PRED LTGY - MEDGY - TR GYSHBLK, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT TO FRM, IMBD CALC, SCAT FREE PYR, 15% FREE MARL, MOD GYSHBLK STN, 5% MIN FLOR, IMMED BLUE STRM CUT, YLW RING										7100'-7150': CHK: 85% (CaCO3 75%) PRED LTGY - MEDGY - TR GYSHBLK, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT TO FRM, IMBD CALC, SCAT FREE PYR, 15% FREE MARL, MOD GYSHBLK STN, 5% MIN FLOR, IMMED BLUE STRM CUT, YLW RING									
MD 6924 TVD 6558.51 INC 87.81 AZ 274.64 VS 704.67																				MD 7018 TVD 6561.19 INC 88.93 AZ 265.7 VS 798.38																																							





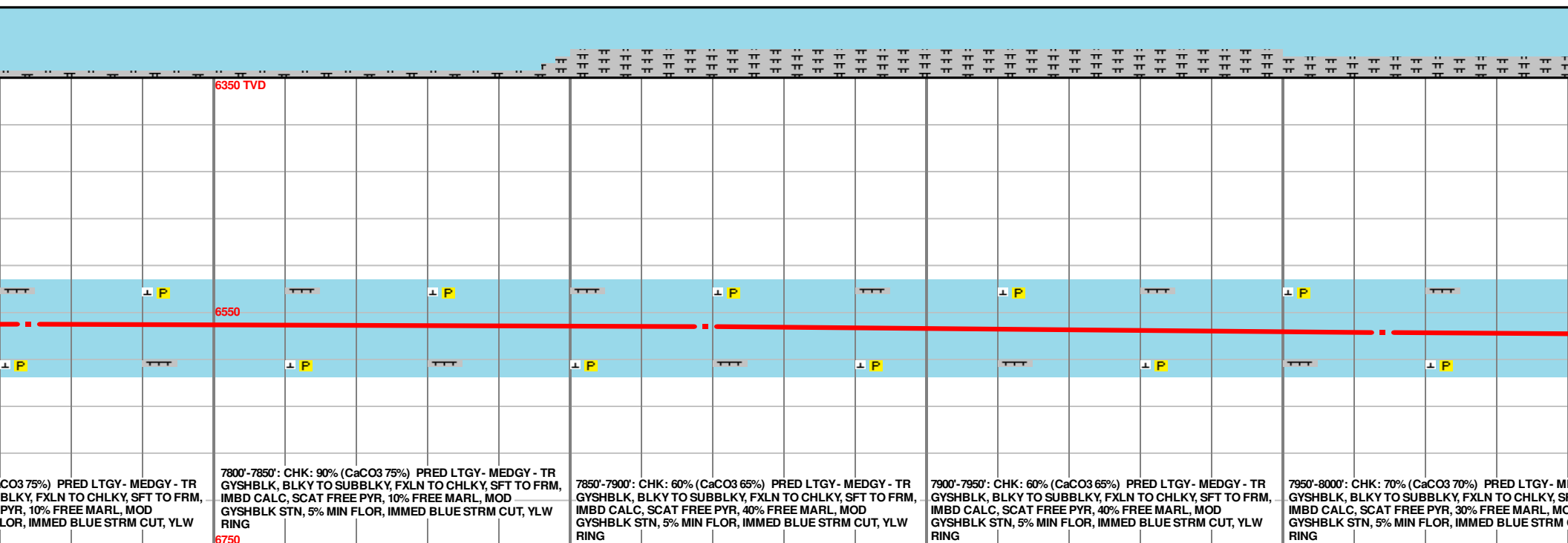
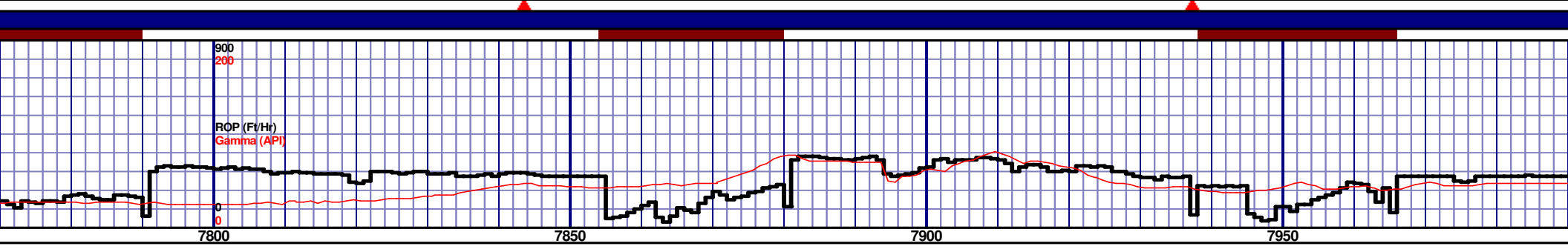
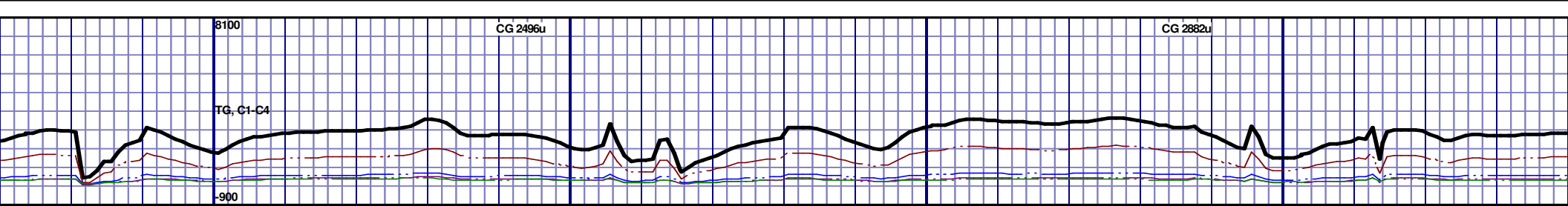
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INC 88.91 AZ 268.37
VS 1174.16

MD 7491 TVD 6563.55
INC 88.55 AZ 268.11
VS 1267.74



MD 7586 TVD 6563.44
INC 91.58 AZ 269.43
VS 1362.4

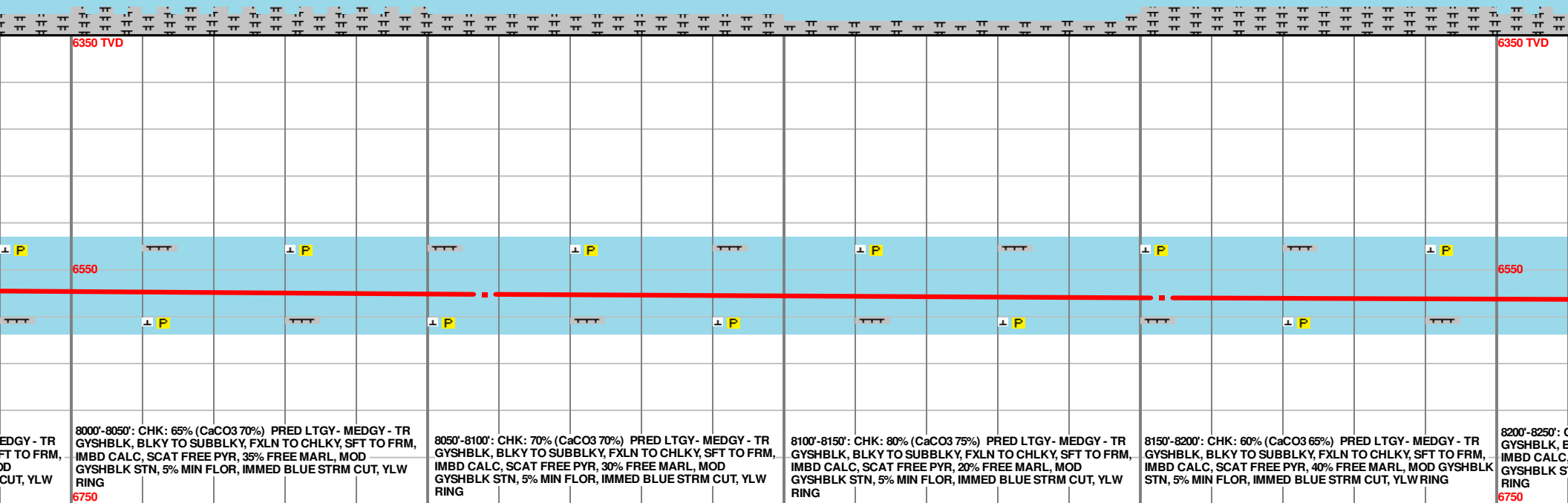
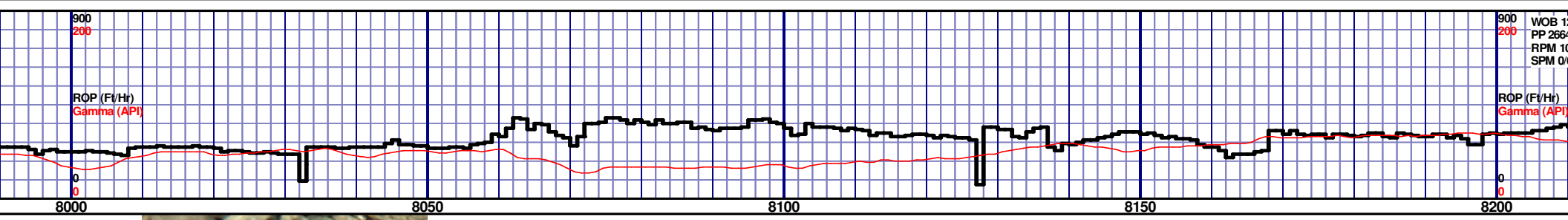
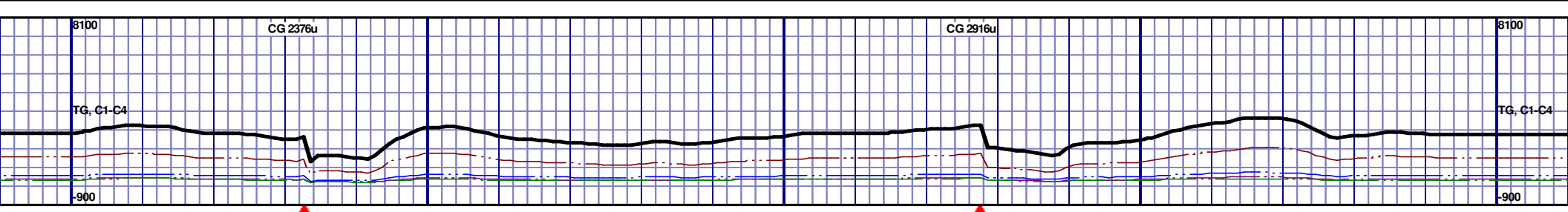
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INC 91.22 AZ 267.74
VS 1456.03



MD 7774 TVD 6560.48
INC 89.59 AZ 266.59
VS 1549.44

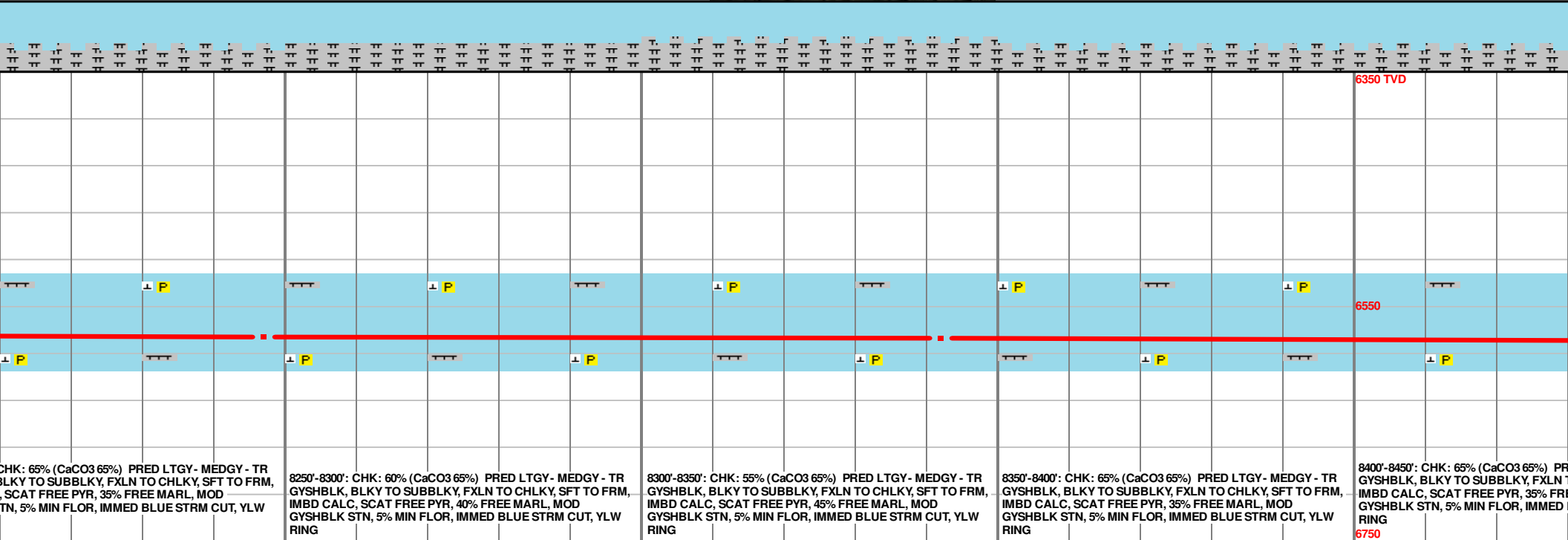
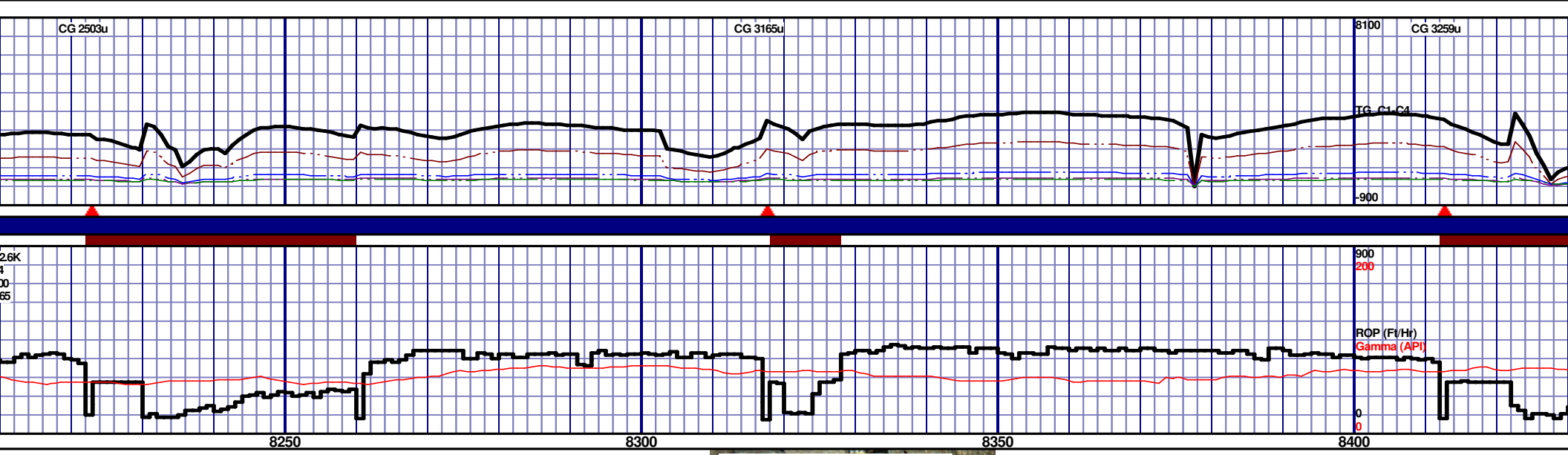
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INC 88.23 AZ 265.63
VS 1643.63

MD 7964 TVD 6566.67
INC 86.49 AZ 266.39
VS 1737.71



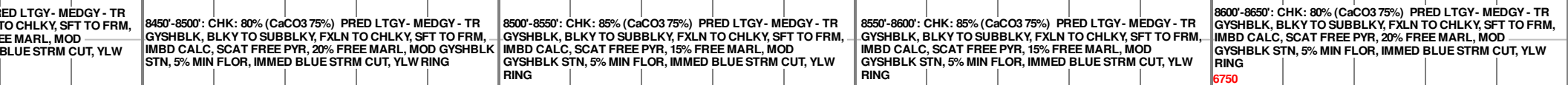
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INC 87.64 AZ 267.07
VS 1830.93

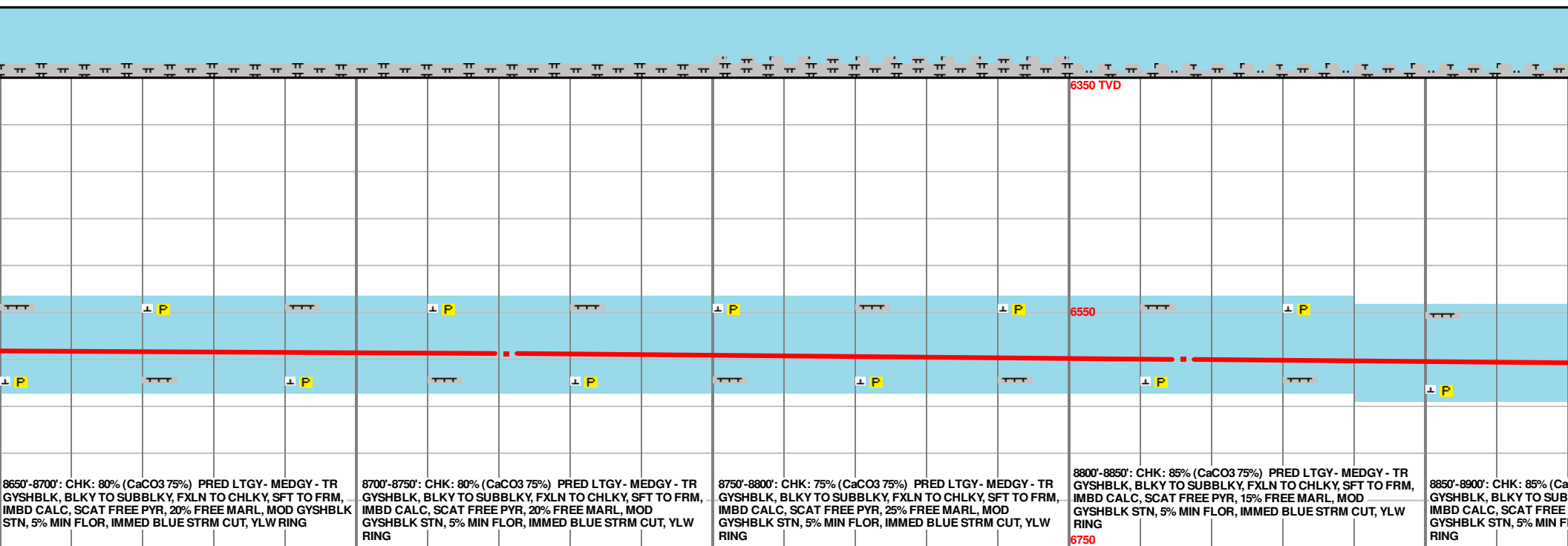
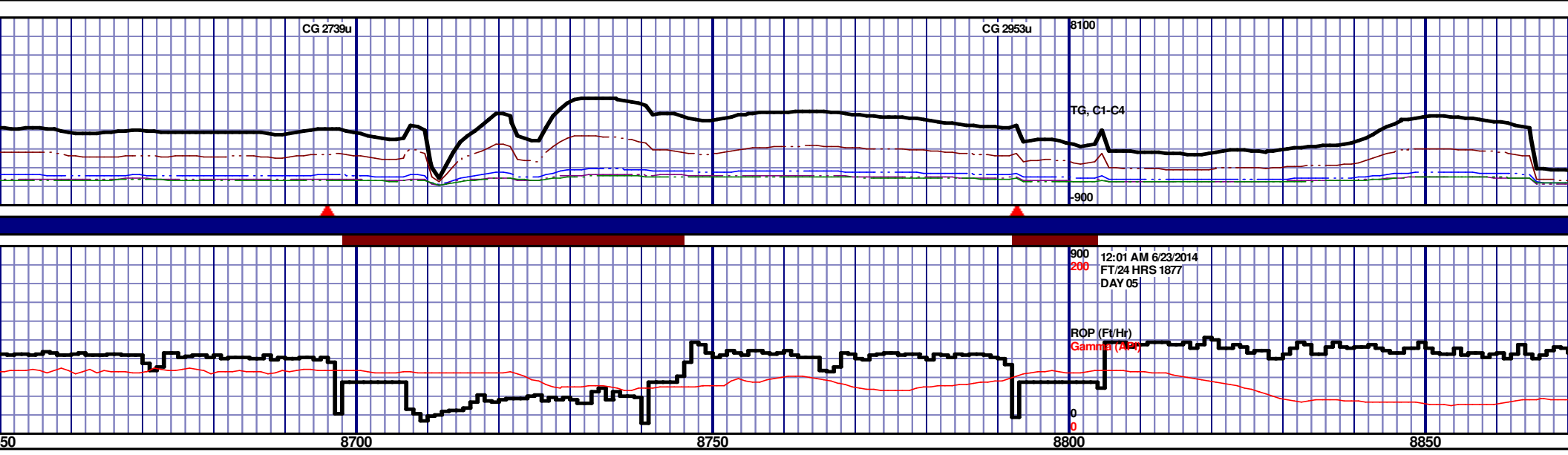
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INC 88.92 AZ 266.49
VS 1925.23



MD 8247 TVD 6575.87
INC 89.2 AZ 268.93
VS 2018.73

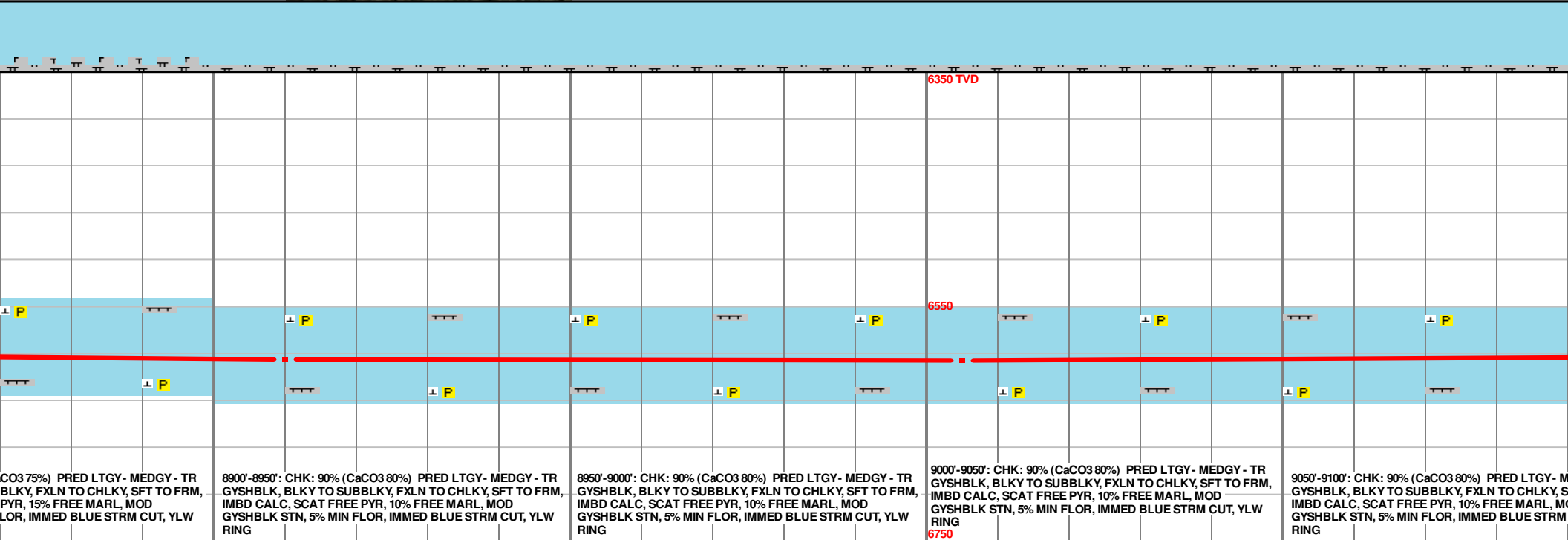
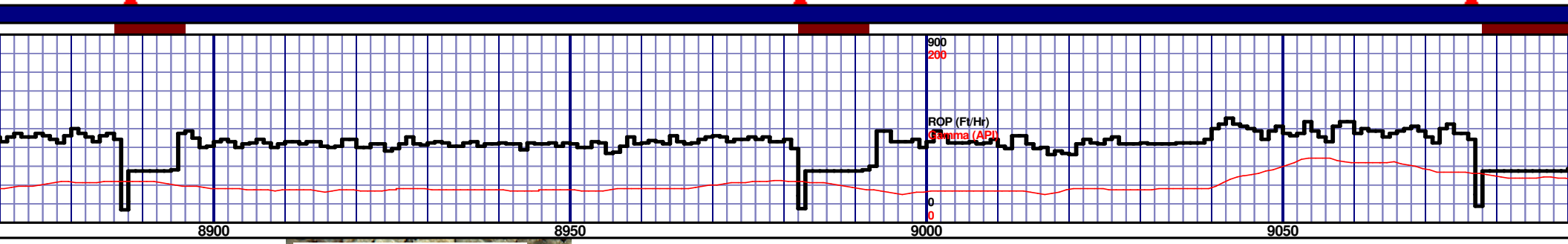
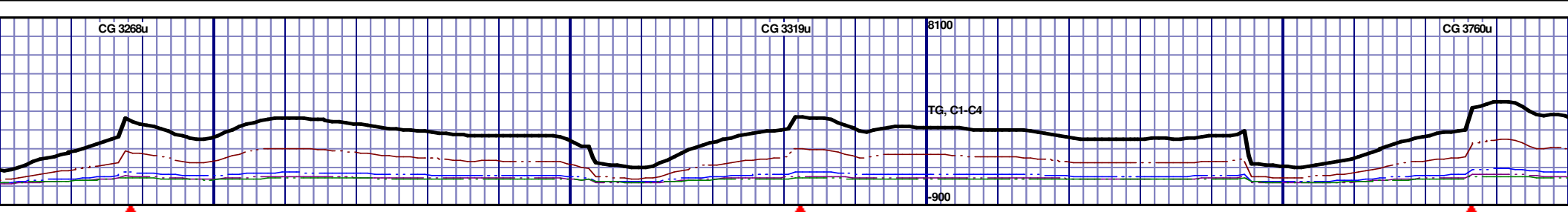
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VS 2113.45





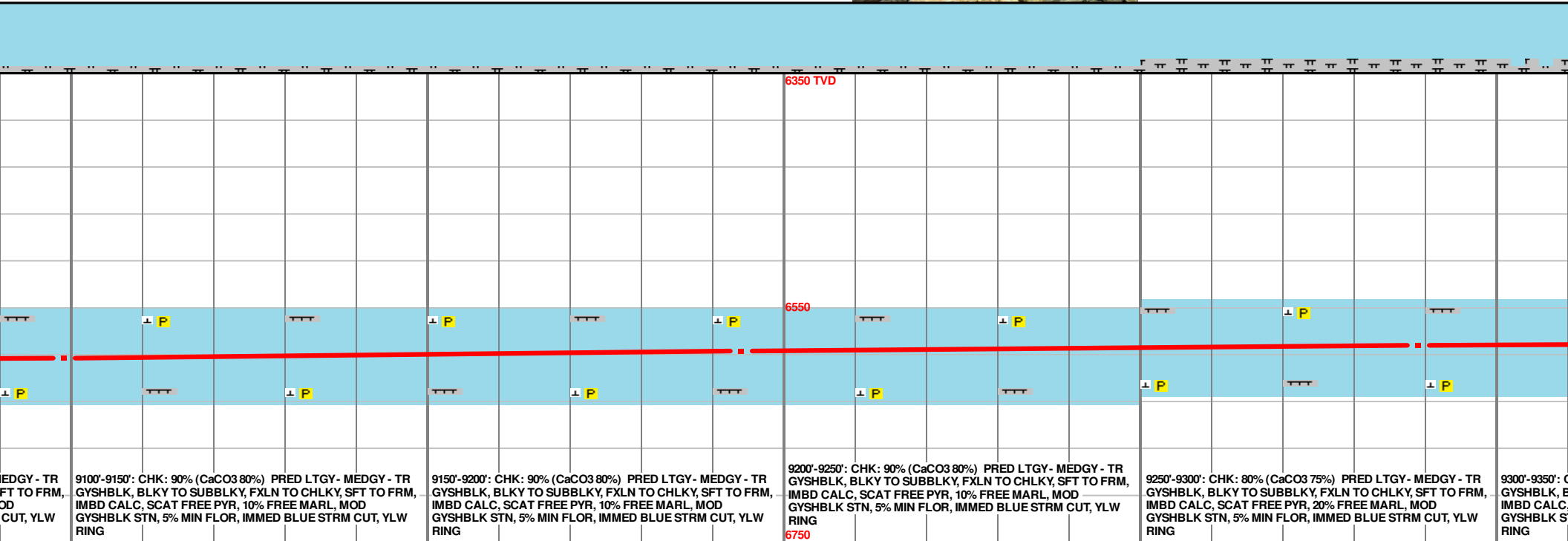
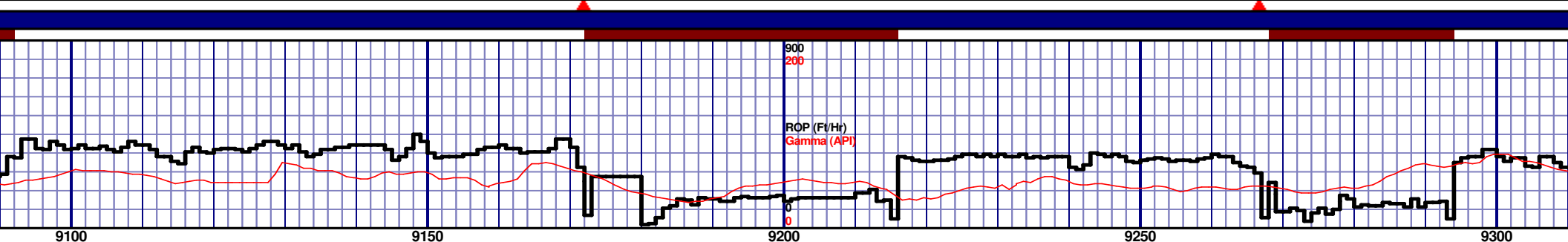
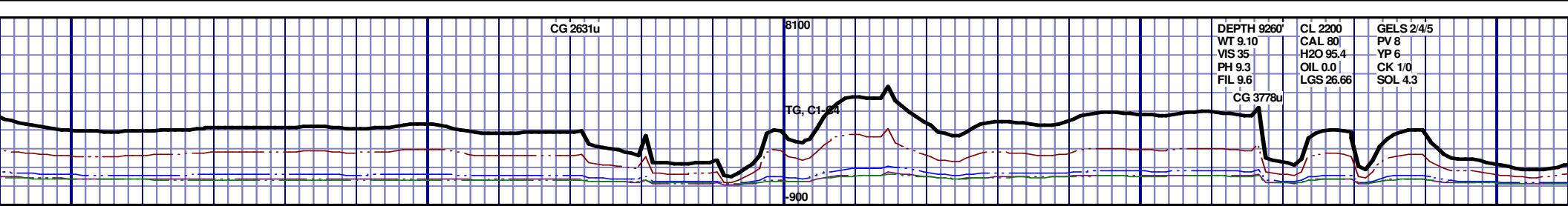
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INC 86.89 AZ 266.94
VS 2490.64

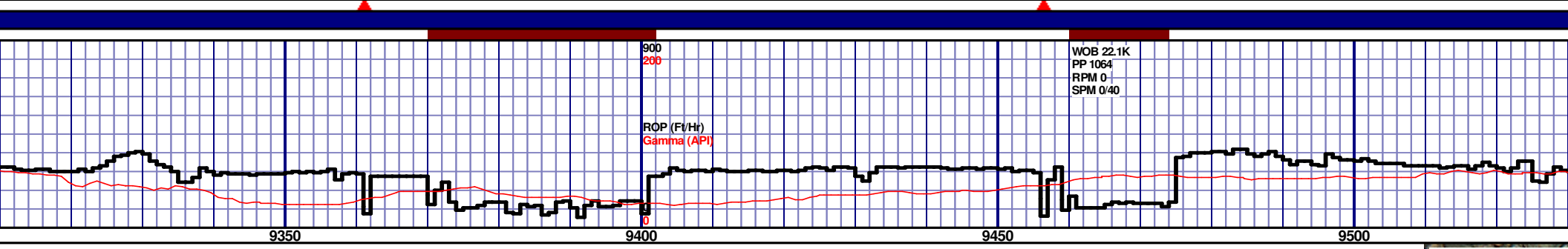
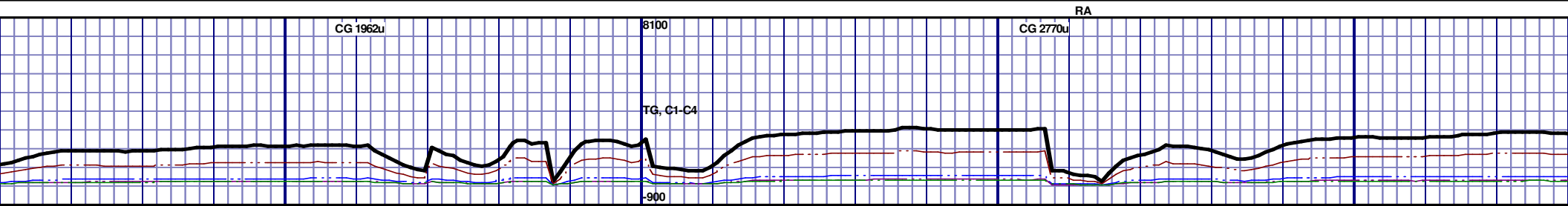
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INC 86.67 AZ 267.43
VS 2584.92



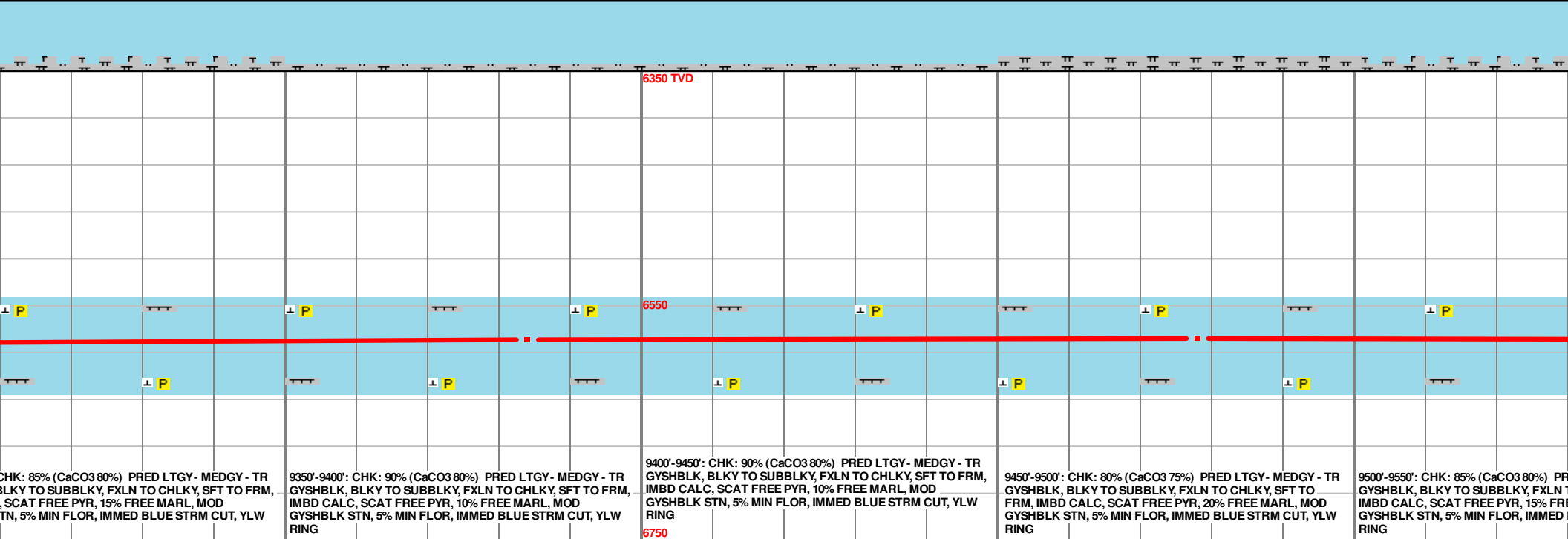
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INC 88.02 AZ 267.39
VS 2678.28

MD 9005 TVD 6596.29
INC 90.18 AZ 267.14
VS 2772.7



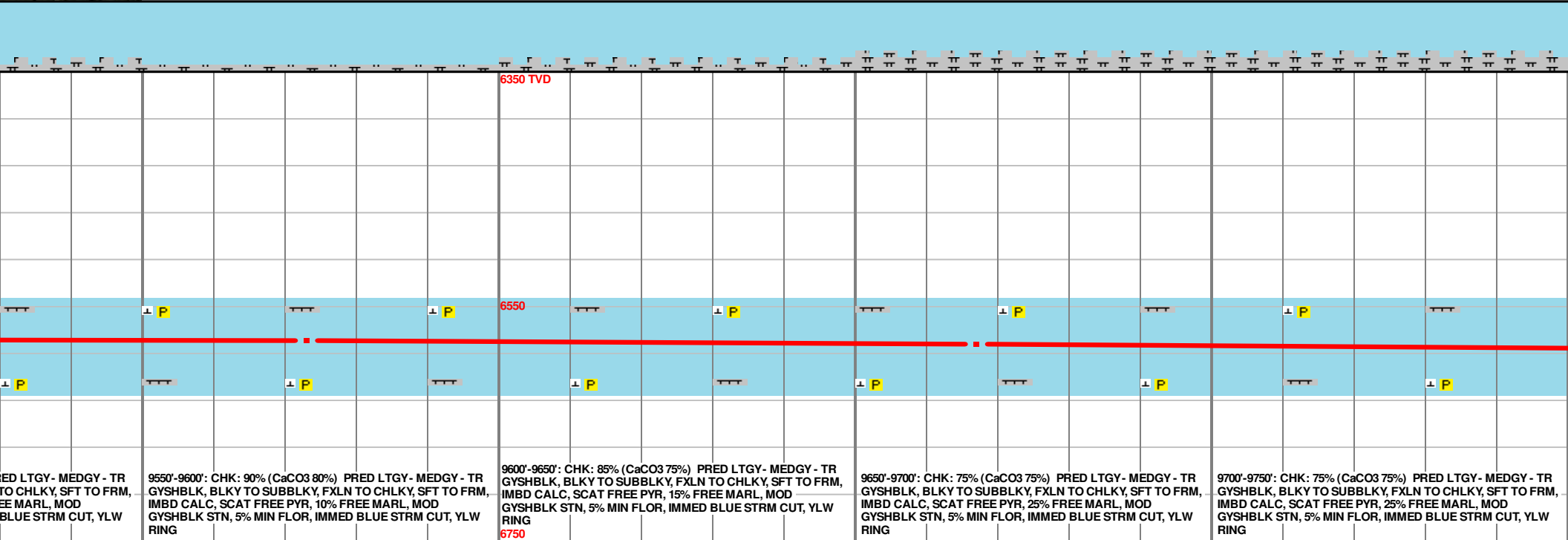
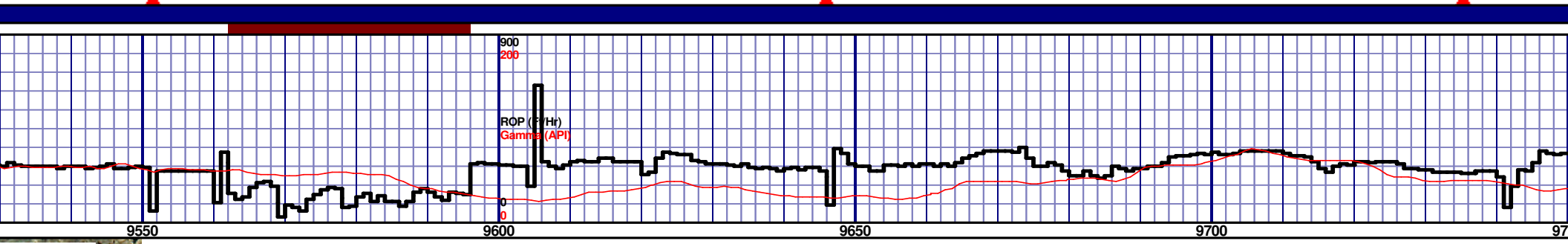
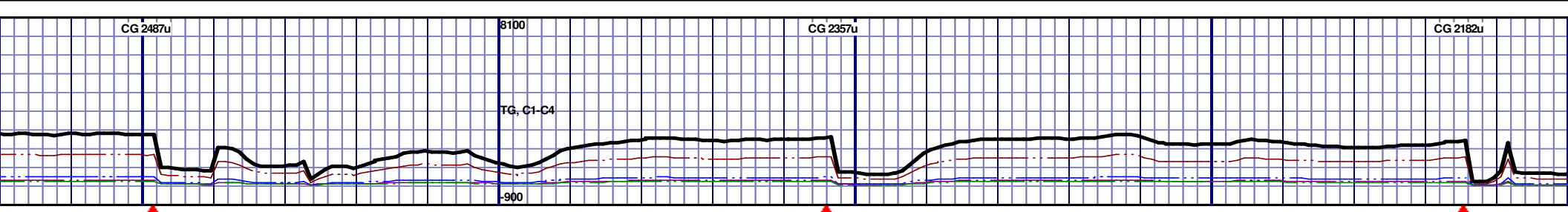


NIOBRARA C CHALK (95



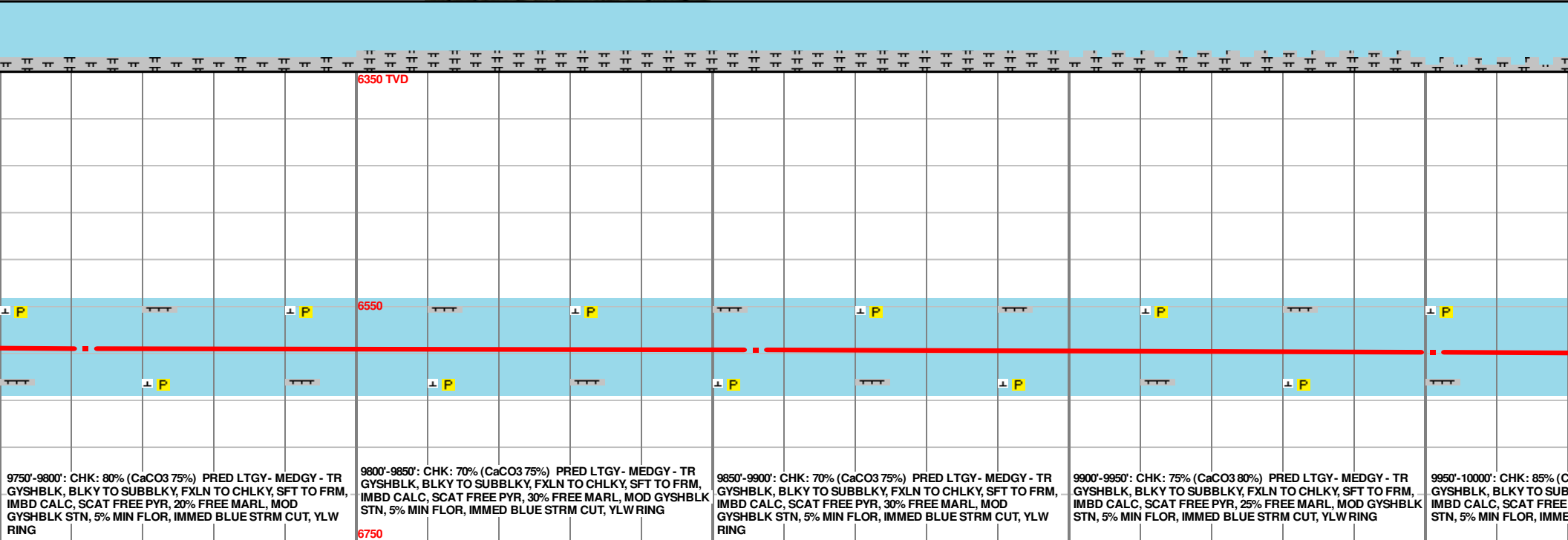
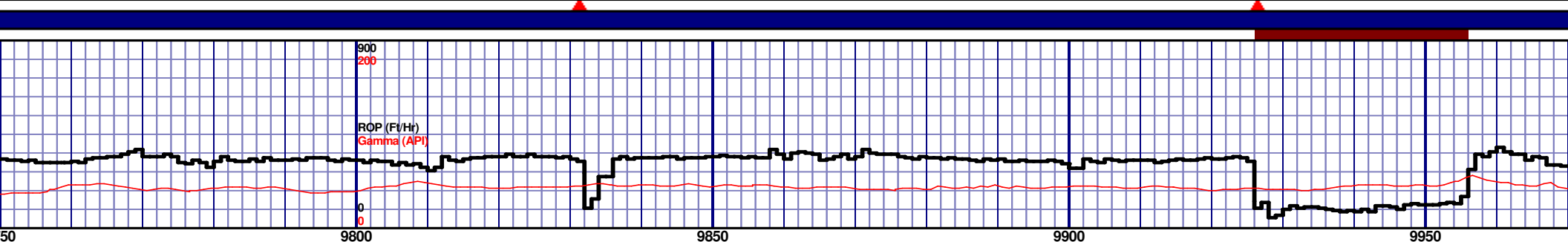
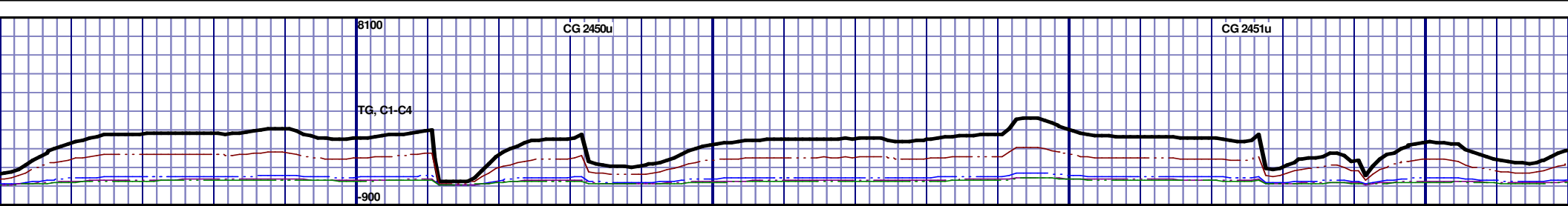
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VS 3149.43

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INC 90.92 AZ 271.12
VS 3243.26



MD 9573 TVD 6578.57
INC 87.88 AZ 268.1
VS 3338.01

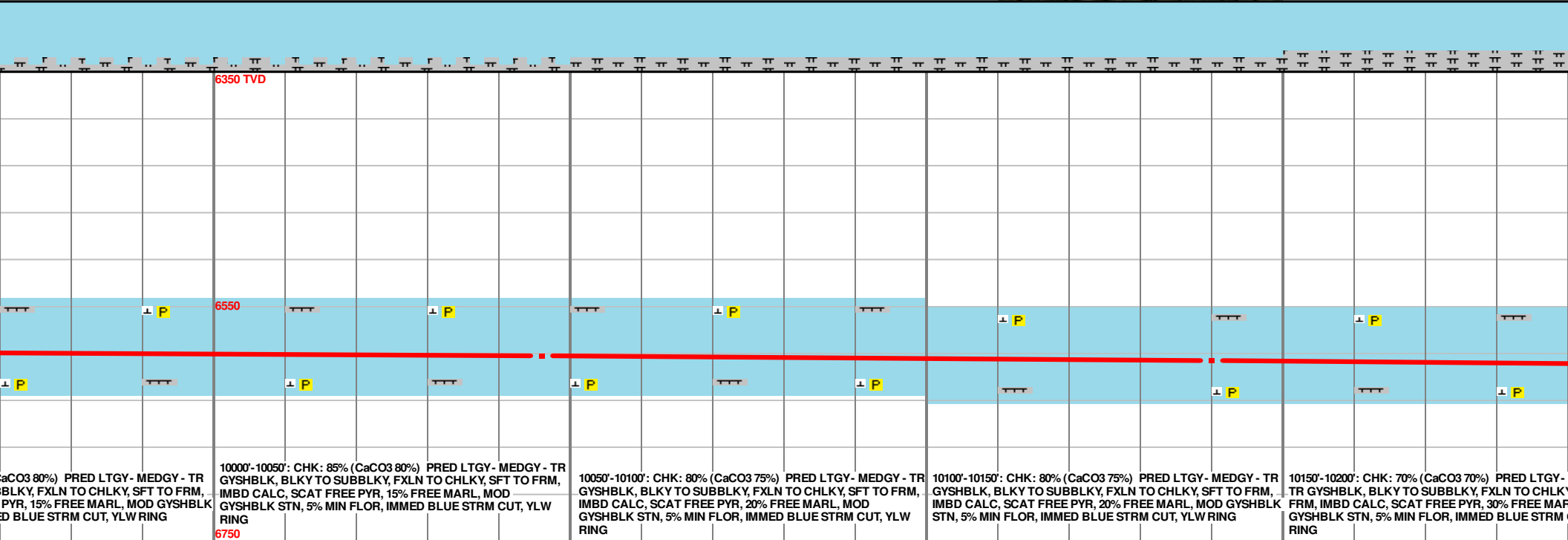
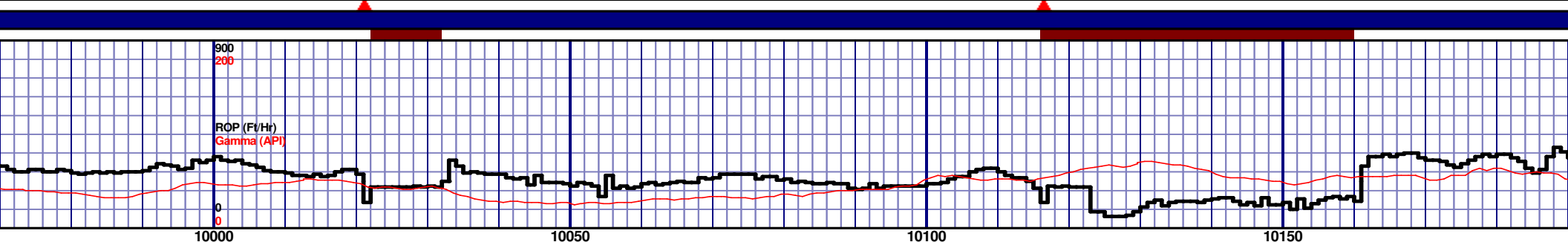
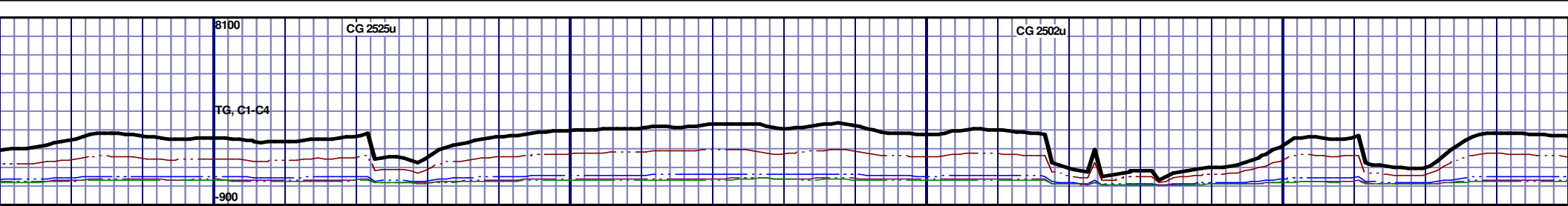
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INC 87.51 AZ 267.2
VS 3431.44



MD 9762 TVD 6585.83
INC 88.29 AZ 266.66
VS 3525.75

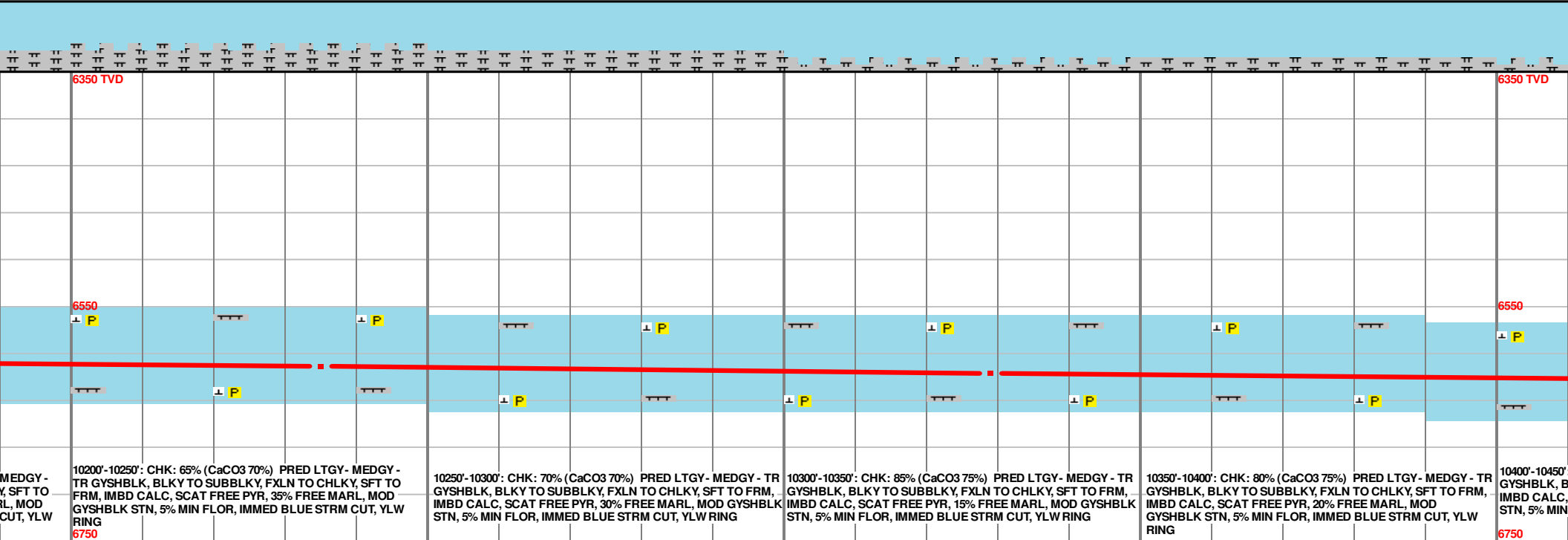
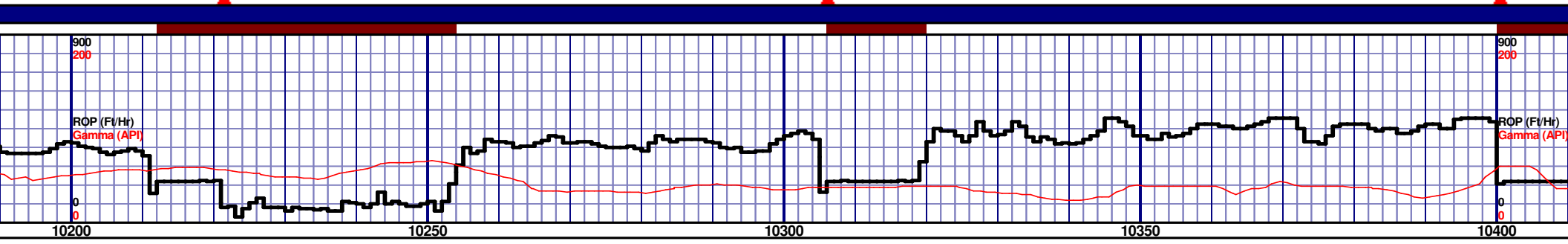
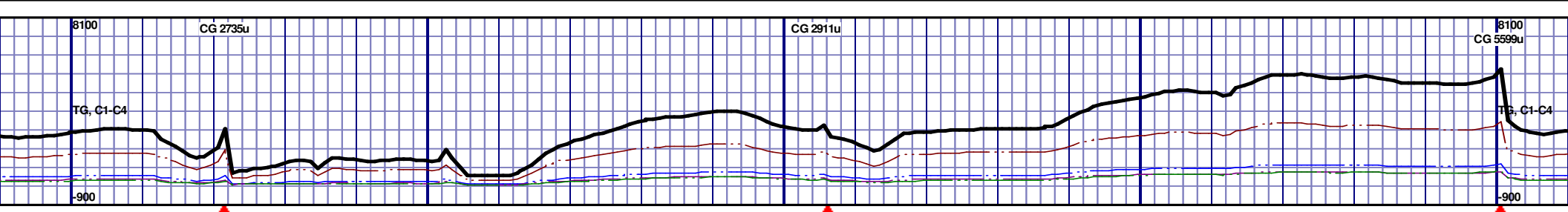
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INC 90.38 AZ 267.28
VS 3619.13

MD 9951 TVD 6588.64
INC 87.55 AZ 264.92
VS 3713.31



MD 10046 TVD 6592.25
INC 88.1 AZ 263.41
VS 3806.97

MD 10140 TVD 6595.67
INC 87.73 AZ 266.56
VS 3899.86



MEDGY - TR GYSHBLK, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT TO FRM, IMBD CALC, SCAT FREE PYR, 35% FREE MARL, MOD GYSHBLK STN, 5% MIN FLOR, IMMED BLUE STRM CUT, YLW RING

10200'-10250': CHK: 65% (CaCO3 70%) PRED LTGY - MEDGY - TR GYSHBLK, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT TO FRM, IMBD CALC, SCAT FREE PYR, 35% FREE MARL, MOD GYSHBLK STN, 5% MIN FLOR, IMMED BLUE STRM CUT, YLW RING

10250'-10300': CHK: 70% (CaCO3 70%) PRED LTGY - MEDGY - TR GYSHBLK, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT TO FRM, IMBD CALC, SCAT FREE PYR, 30% FREE MARL, MOD GYSHBLK STN, 5% MIN FLOR, IMMED BLUE STRM CUT, YLW RING

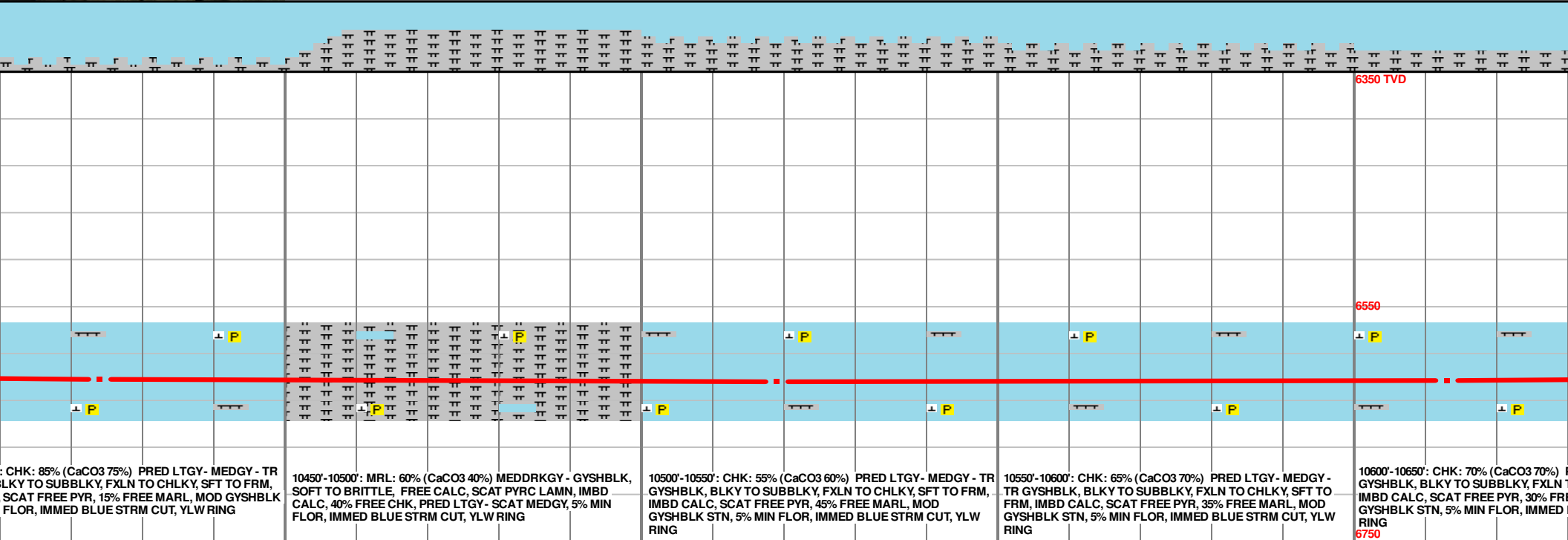
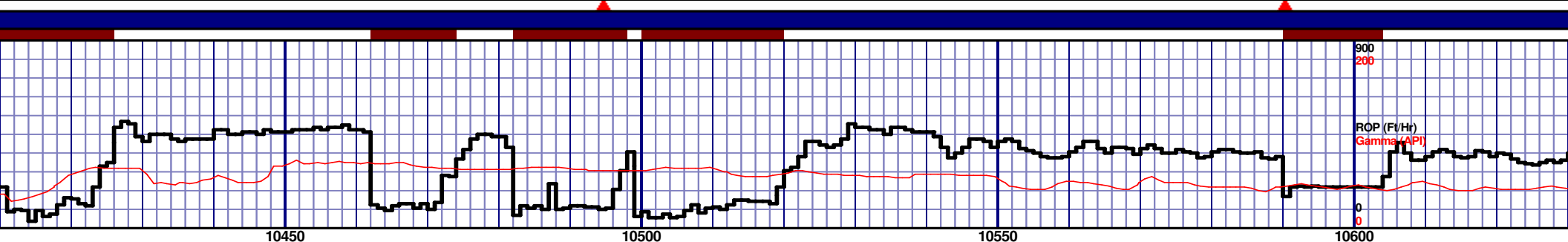
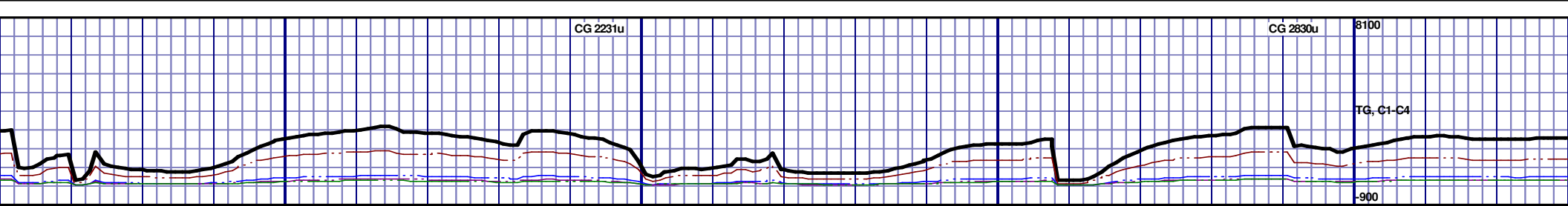
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10350'-10400': CHK: 80% (CaCO3 75%) PRED LTGY - MEDGY - TR GYSHBLK, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT TO FRM, IMBD CALC, SCAT FREE PYR, 20% FREE MARL, MOD GYSHBLK STN, 5% MIN FLOR, IMMED BLUE STRM CUT, YLW RING

10400'-10450': GYSHBLK, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT TO FRM, IMBD CALC, SCAT FREE PYR, 20% FREE MARL, MOD GYSHBLK STN, 5% MIN FLOR, IMMED BLUE STRM CUT, YLW RING

MD 10235 TVD 6600.68
INC 86.22 AZ 268.96
VS 3994.24

MD 10329 TVD 6606.94
INC 86.14 AZ 269.46
VS 4087.77



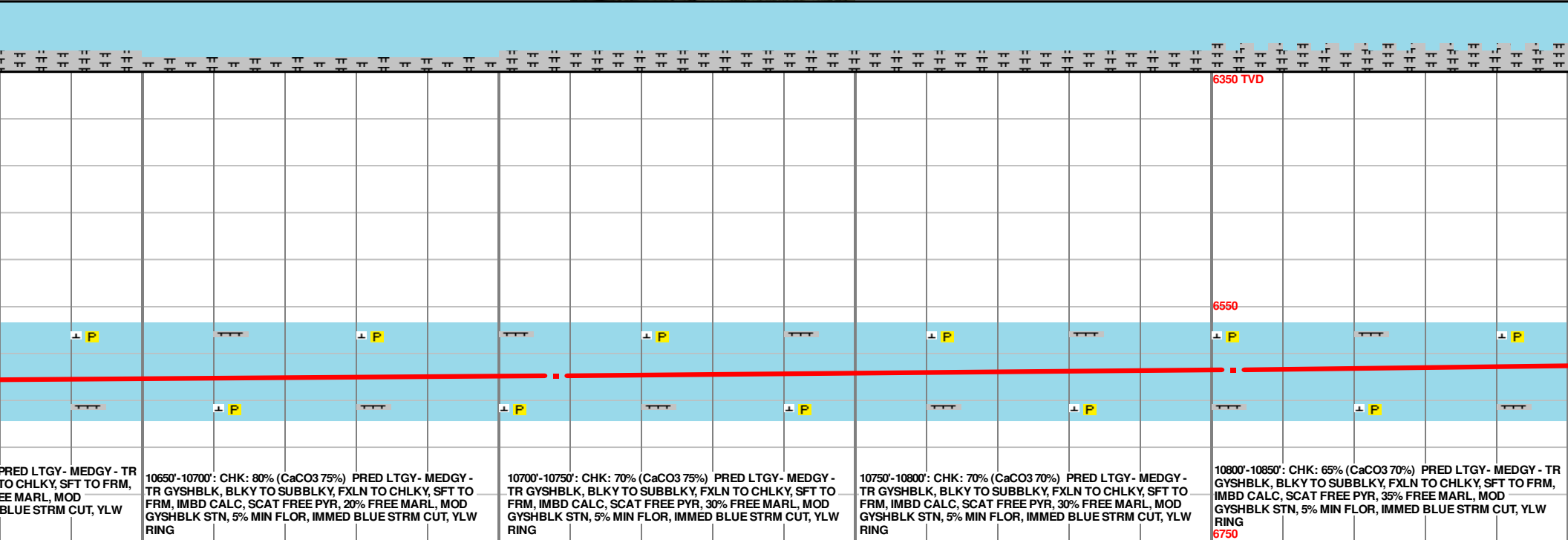
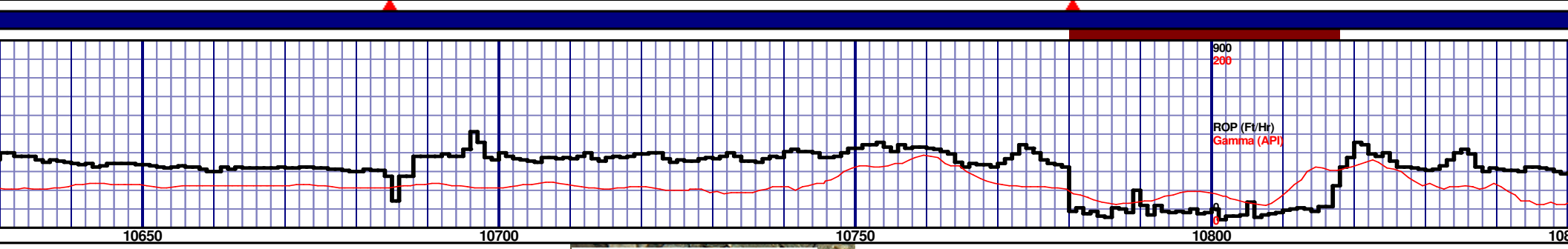
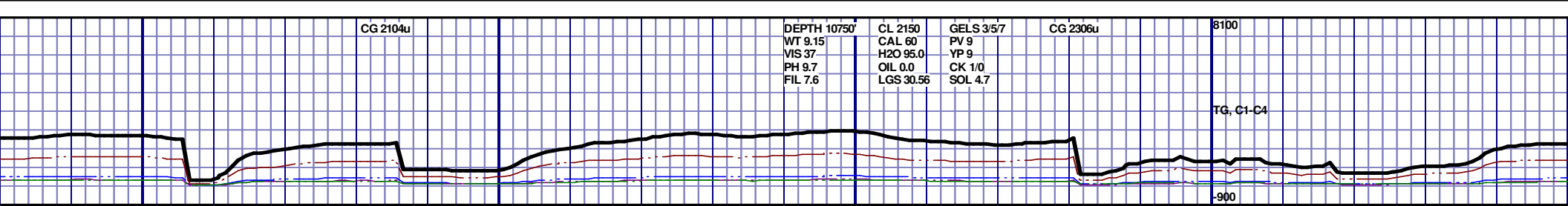
CHK: 85% (CaCO₃ 75%) PRED LTGY - MEDGY - TR
GYSHBLK, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT TO FRM,
SCAT FREE PYR, 15% FREE MARL, MOD GYSHBLK
FLOR, IMMED BLUE STRM CUT, YLW RING

10450'-10500': MRL: 60% (CaCO₃ 40%) MEDDRKGY - GYSHBLK,
SOFT TO BRITTLE, FREE CALC, SCAT PYRC LAMN, IMBD
CALC, 40% FREE CHK, PRED LTGY - SCAT MEDGY, 5% MIN
FLOR, IMMED BLUE STRM CUT, YLW RING

10500'-10550': CHK: 55% (CaCO₃ 60%) PRED LTGY - MEDGY - TR
GYSHBLK, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT TO FRM,
IMBD CALC, SCAT FREE PYR, 45% FREE MARL, MOD
GYSHBLK STN, 5% MIN FLOR, IMMED BLUE STRM CUT, YLW
RING

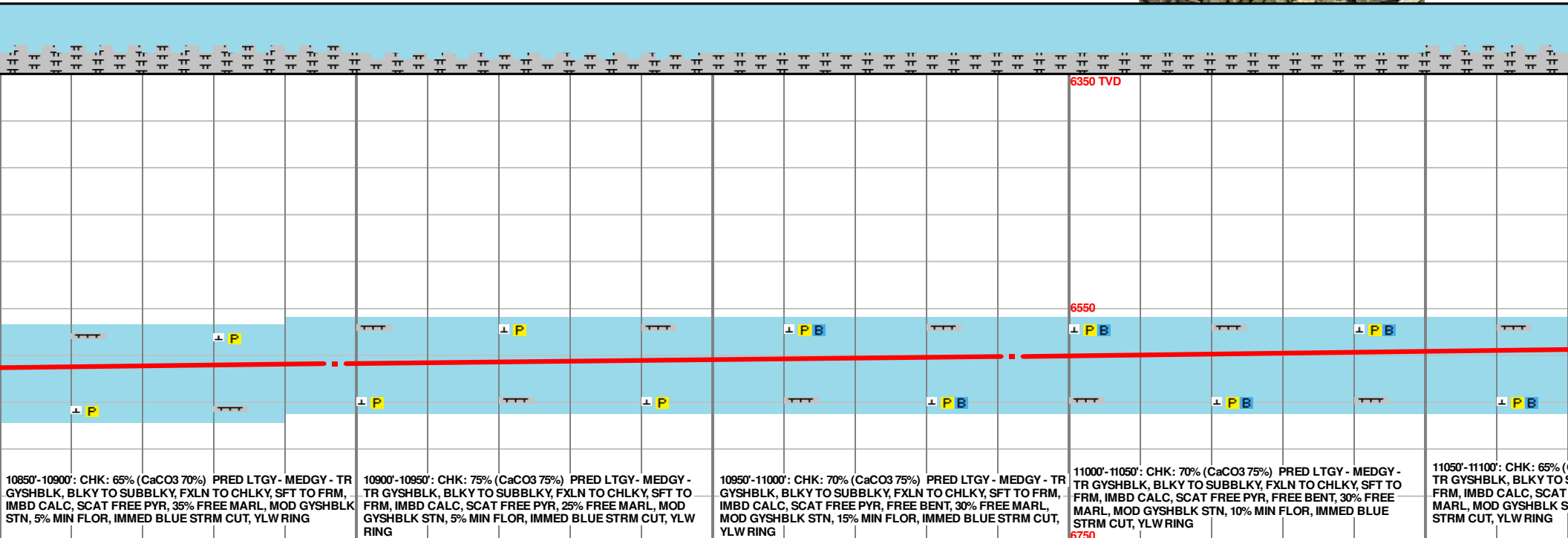
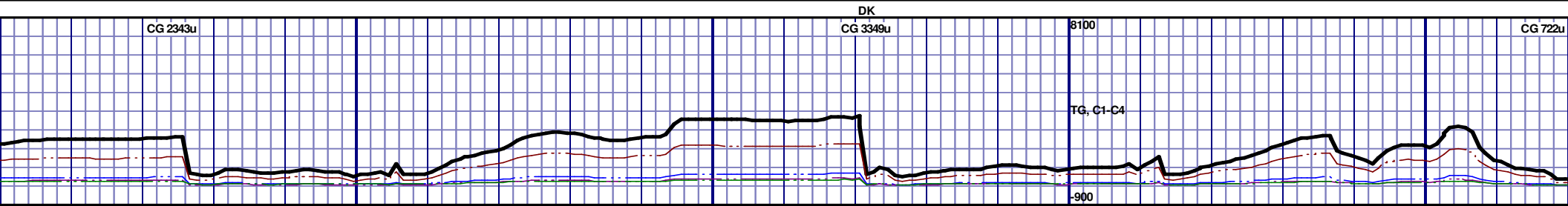
10550'-10600': CHK: 65% (CaCO₃ 70%) PRED LTGY - MEDGY -
TR GYSHBLK, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT TO
FRM, IMBD CALC, SCAT FREE PYR, 35% FREE MARL, MOD
GYSHBLK STN, 5% MIN FLOR, IMMED BLUE STRM CUT, YLW
RING

10600'-10650': CHK: 70% (CaCO₃ 70%) PRED LTGY - MEDGY -
TR GYSHBLK, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT TO
FRM, IMBD CALC, SCAT FREE PYR, 30% FREE MARL, MOD
GYSHBLK STN, 5% MIN FLOR, IMMED BLUE STRM CUT, YLW
RING



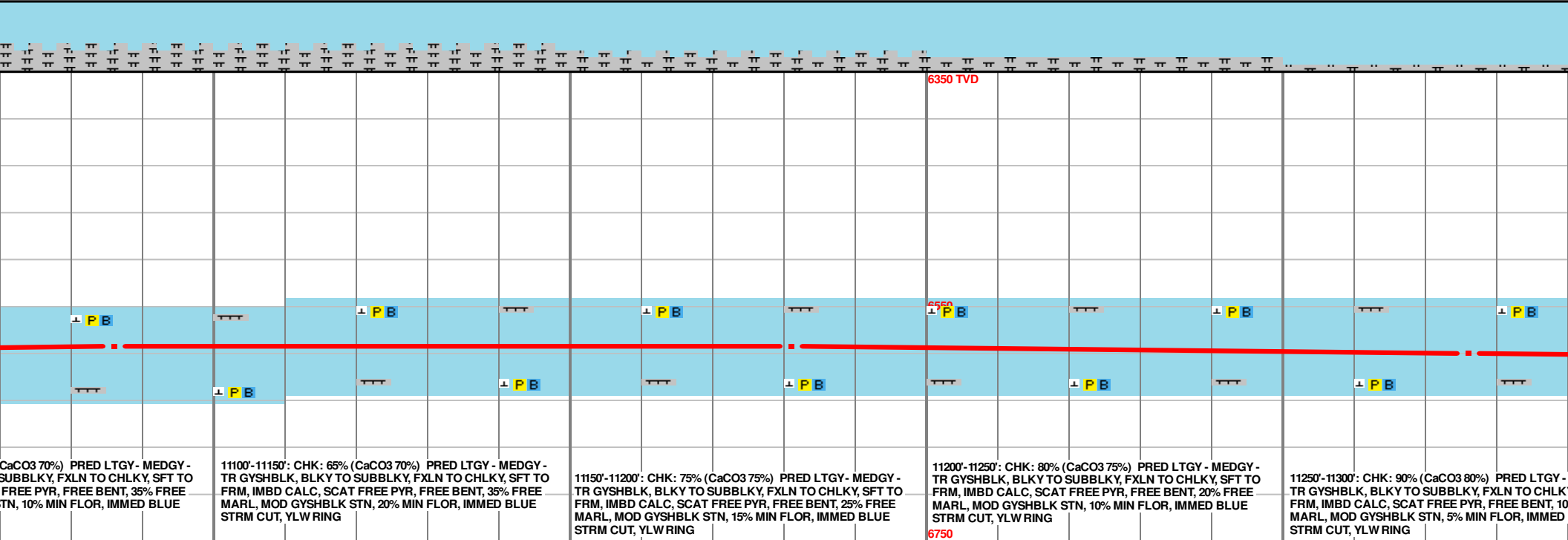
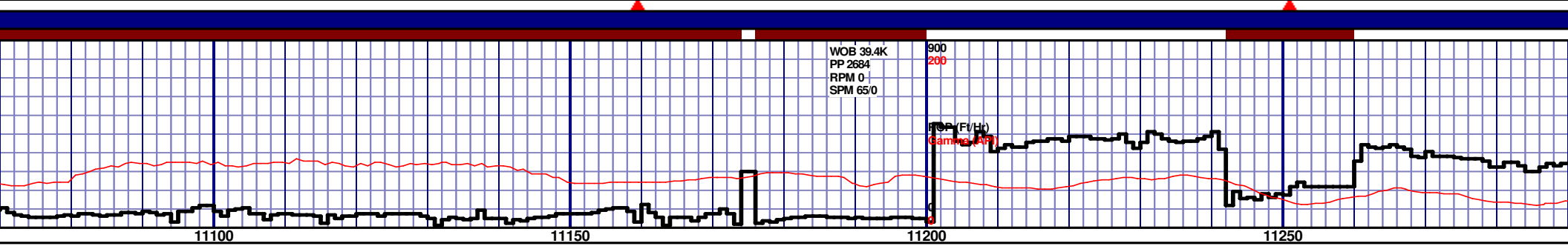
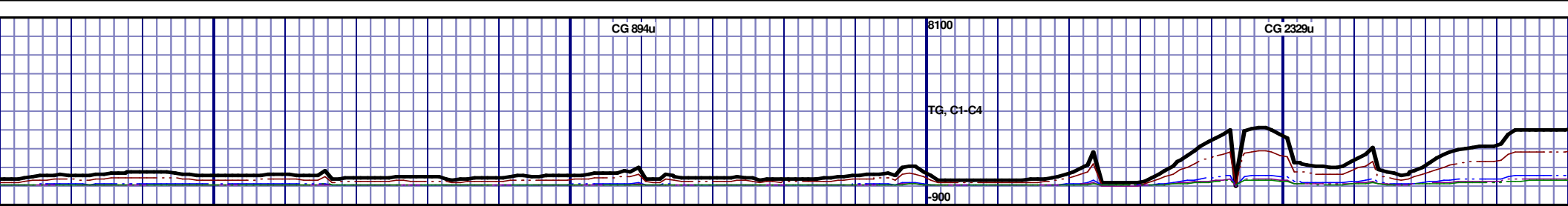
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INC 92.86 AZ 266.92
VS 4465.05

MD 10803 TVD 6603.6
INC 93.63 AZ 267.02
VS 4559.28



MD 10897 TVD 6597.4
INC 93.93 AZ 267.84
VS 4652.55

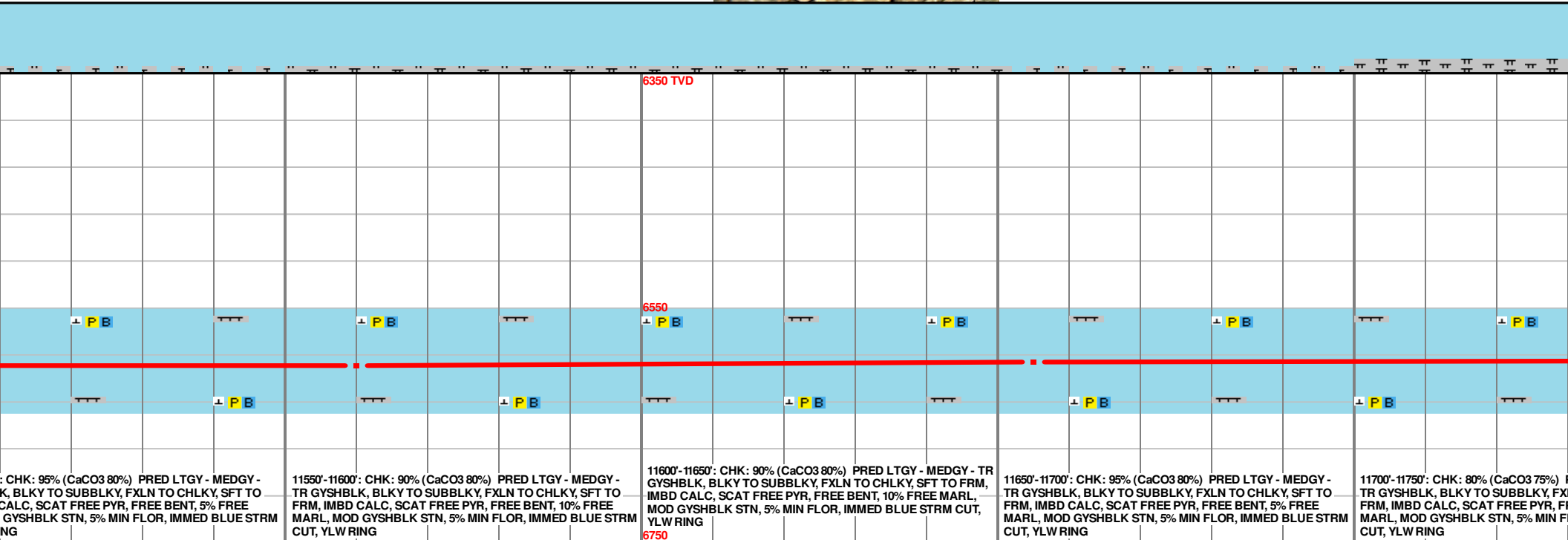
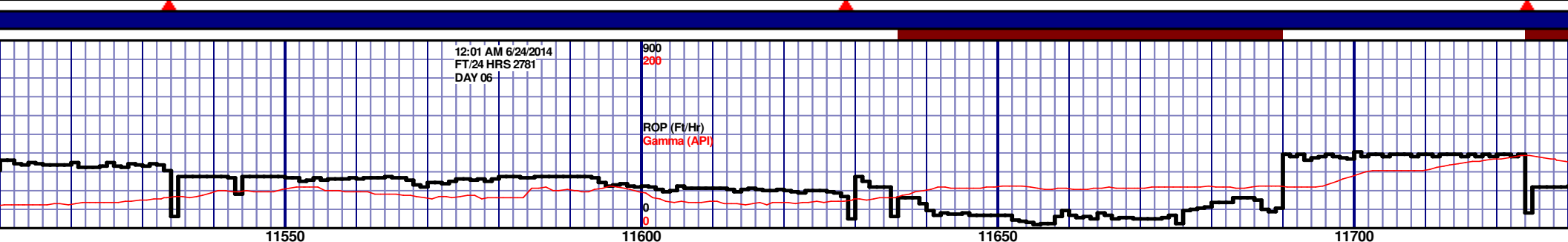
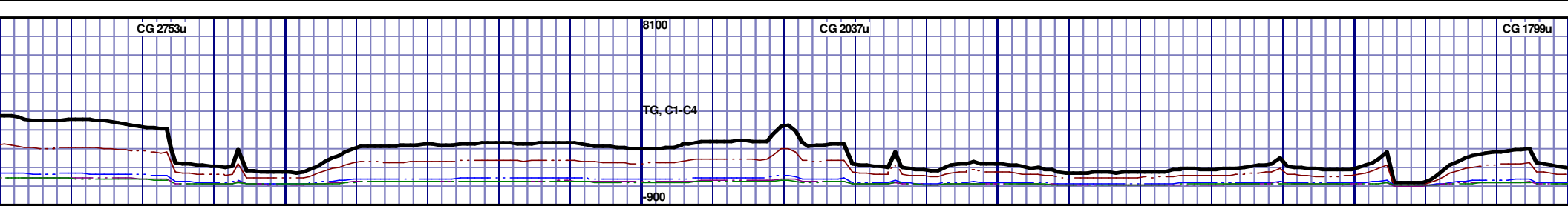
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INC 94.33 AZ 267.49
VS 4746.81



MD 11086 TVD 6584.31
INC 93.3 AZ 268.9
VS 4840.19

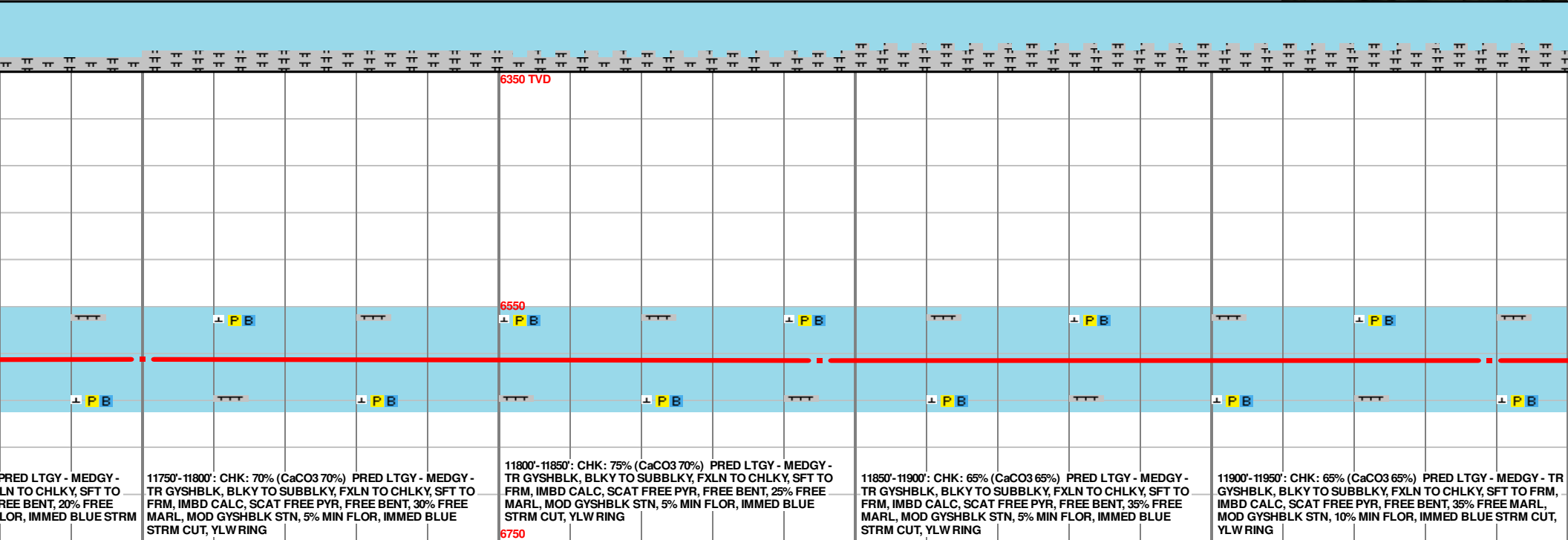
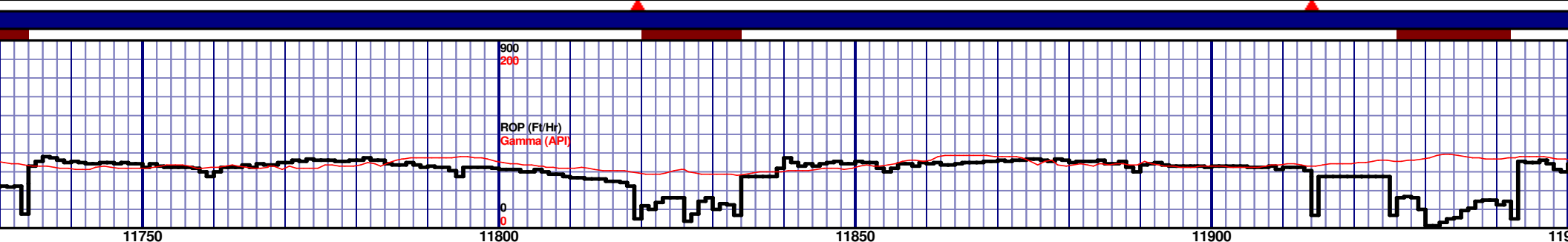
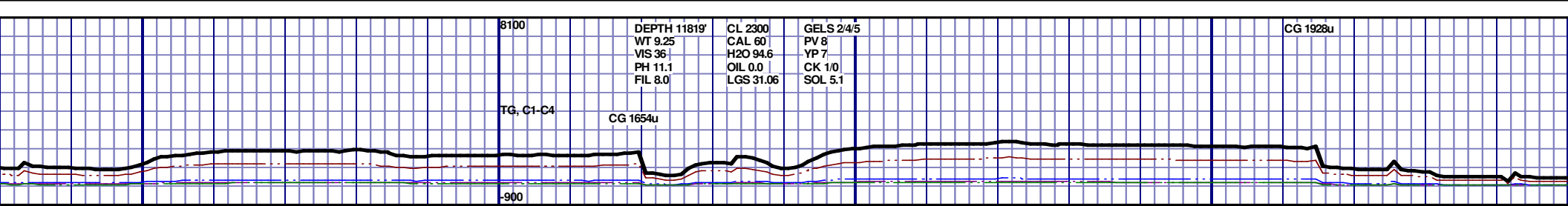
MD 11181 TVD 6584.33
INC 86.67 AZ 269.6
VS 4934.88

MD 11276 TVD 6584.35
INC 86.28 AZ 269.8
VS 5029.49



MD 11560 TVD 6598.7
INC 91.59 AZ 270.4
VS 5312.65

MD 11655 TVD 6596.37
INC 91.23 AZ 269.11
VS 5407.42



MD 11750 TVD 6595.27
INC 90.09 AZ 268.18
VS 5502.06

MD 11845 TVD 6595.74
INC 89.35 AZ 267.44
VS 5596.59

MD 11939 TVD
INC 89.8 AZ 26
VS 5590.14

