



7136 South Yale Avenue, Suite 414

Tulsa, Oklahoma 74136-6378

phone 918.925.9739

fax 866.534.4559

WWW.HZMUD.COM

Customer Information

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

Geologist: Teresa Malesardi
Noble Energy Inc.

Mud Logging Details

Logger: Scott Haney &
Ben Rogers
Log Interval: 5910' MD to 10640' MD
Start Date: July 31, 2015
Release Date: August 3, 2015

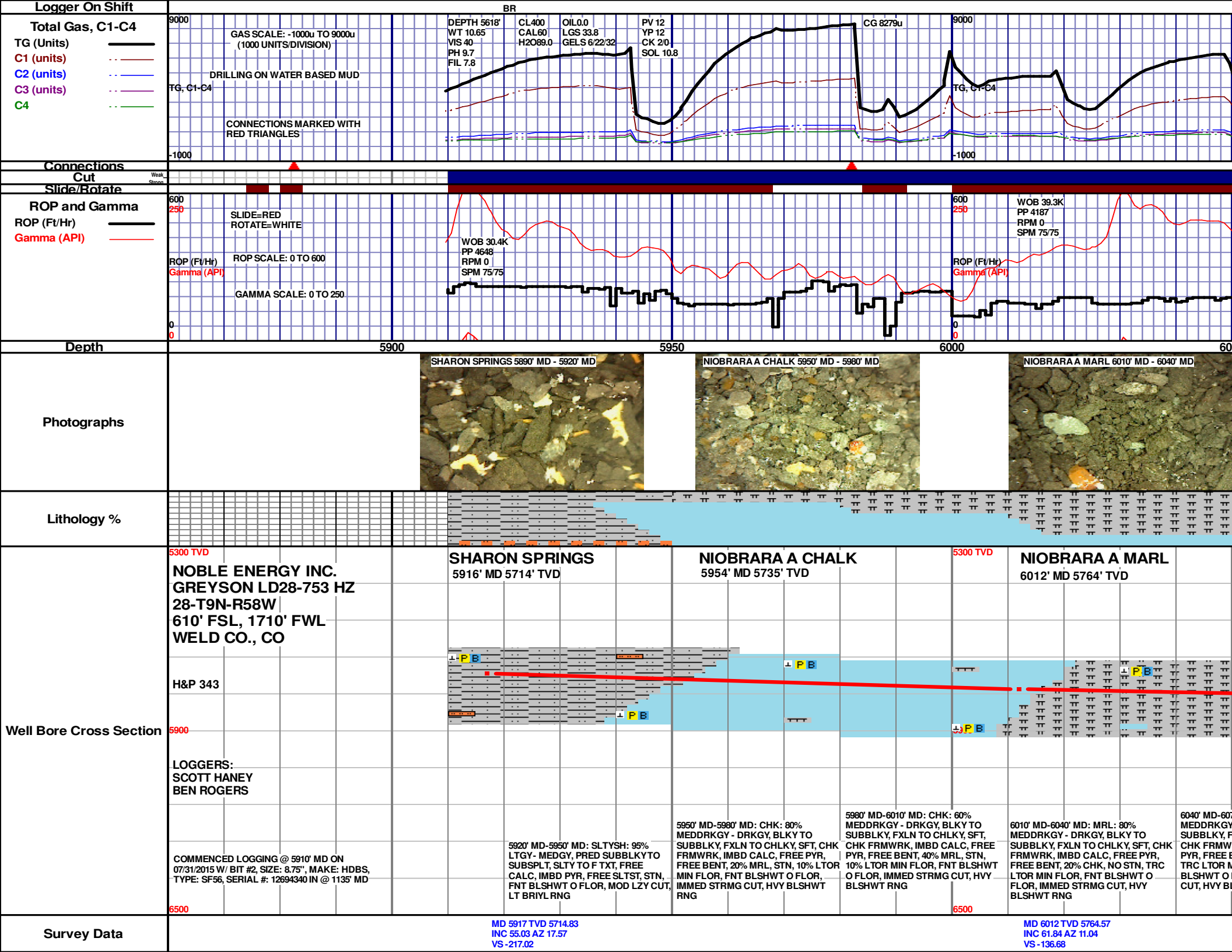
Well Information

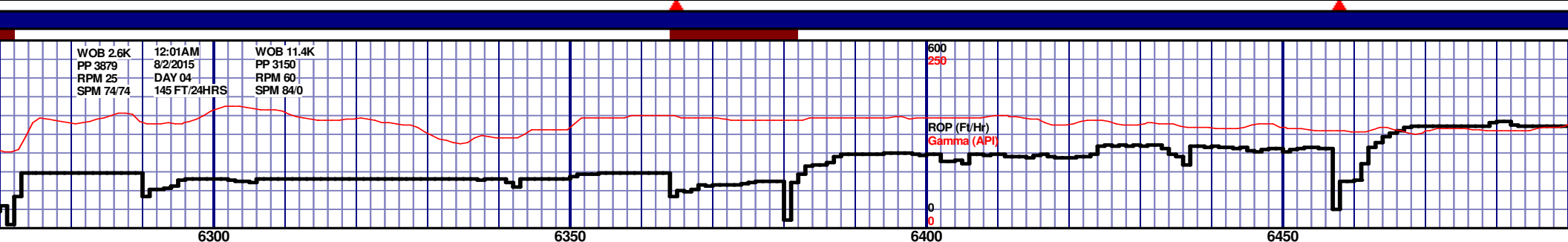
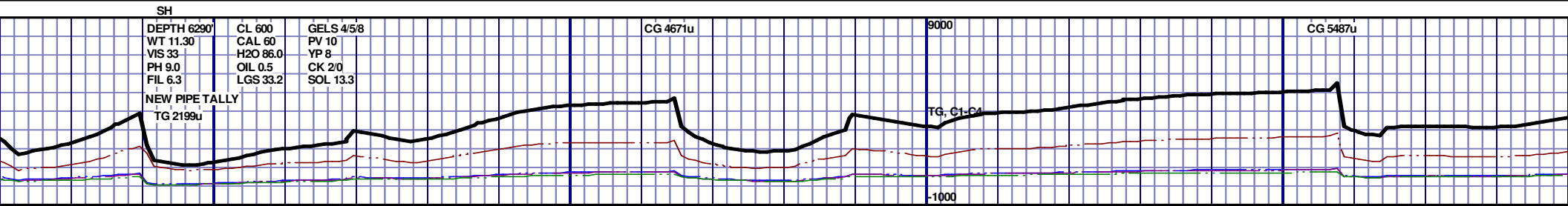
Well Name: Greyson LD28-753 HZ

Location: 28-T9N-R58W
610' FSL 1710' FWL

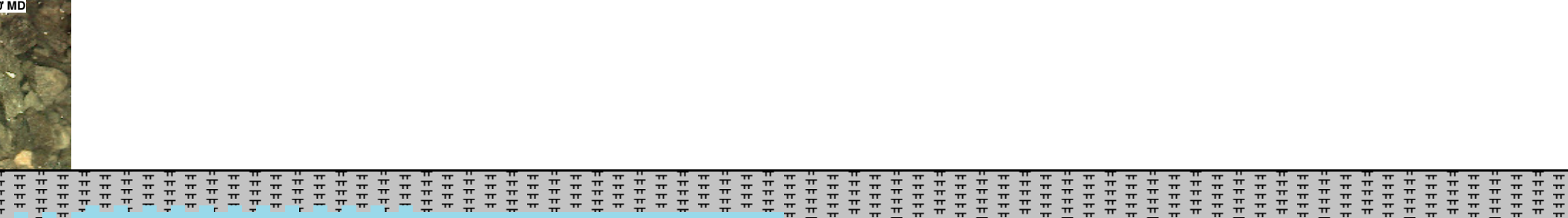
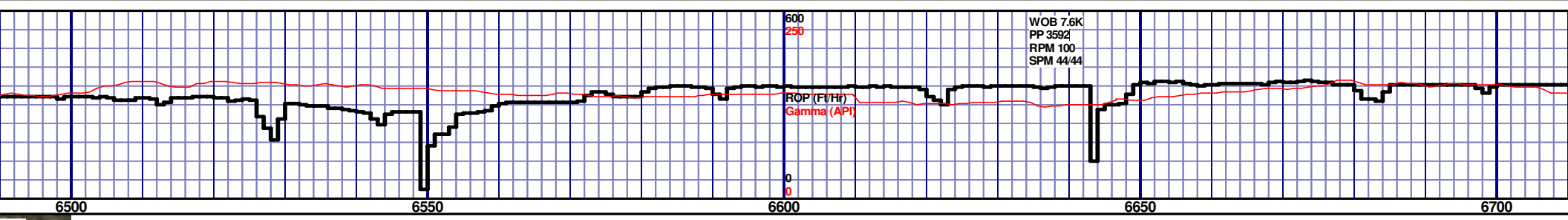
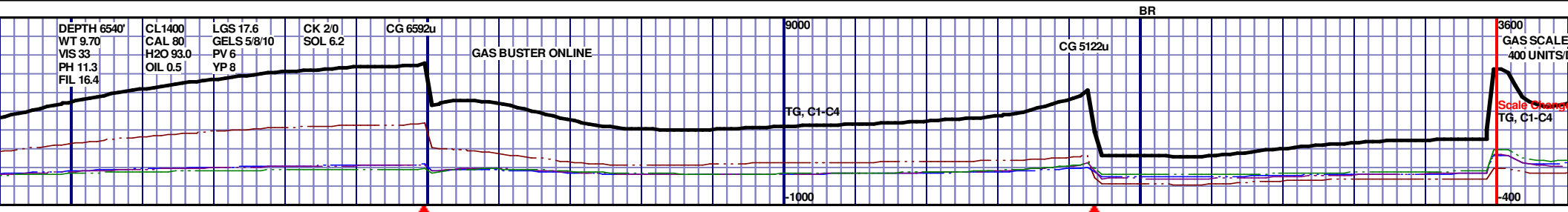
County: Weld
State: Colorado

Drilling Rig: H&P 343
Total Depth: 10640' MD
TD Date: August 3, 2015
Formation: Niobrara A Marl
KB Elevation: 4877'
GR Elevation: 4853'
API Number: 05-123-41586-0000

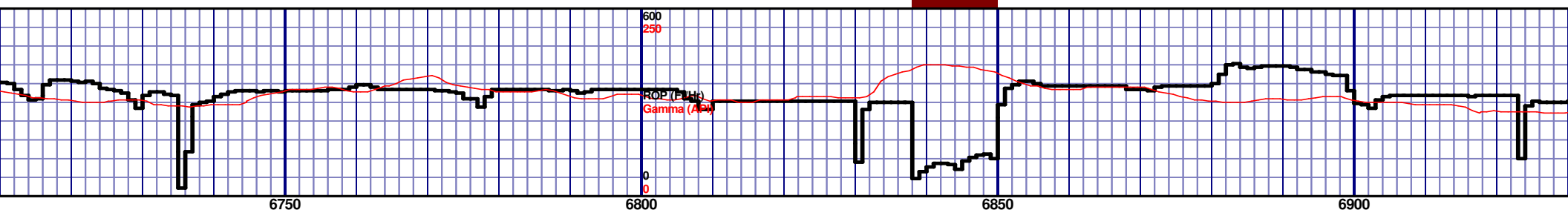
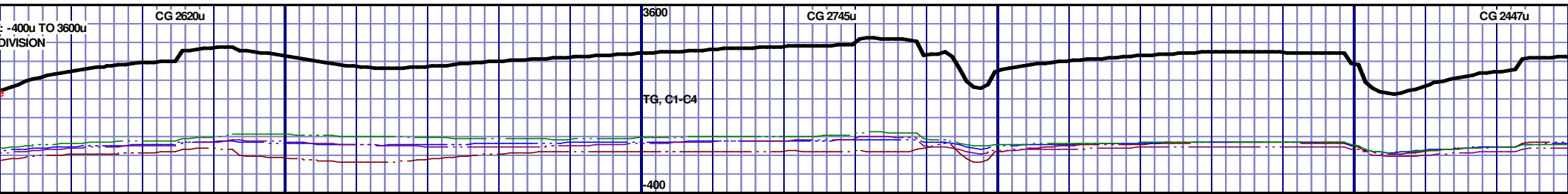




70% MOTT WHITE - KY TO SUBBLKY, FXLN WRK, IMBD CALC, TR R FREE BENT, 30% MRL, FNT BLSHWT O FLOR, BLSHWT RNG	6290' MD-6350' MD: CHK: 80% MOTT WHITE - MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC FREE PYR, TR FREE BENT, 20% MRL, STN, TR LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	6350' MD-6400' MD: CHK: 60% MOTT WHITE - MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC FREE PYR, TR FREE BENT, 40% MRL, STN, TR LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	6400' MD-6450' MD: MRL: 60% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 40% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	6450' MD-6500' MD: MRL: 65% MEDDRKGY - DRKGY SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 35% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG
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5300 TVD					5900					6500				
6500' MD-6550' MD: MRL: 55% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 45% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG					6550' MD-6600' MD: MRL: 60% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 40% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG					6600' MD-6650' MD: MRL: 70% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 30% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG				
6650' MD-6700' MD: MRL: 70% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 30% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG					6700' MD-6750' MD: MRL: 70% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 30% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									

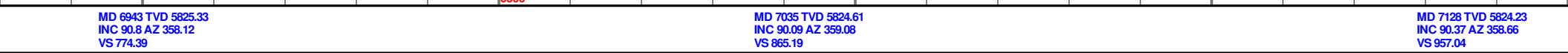
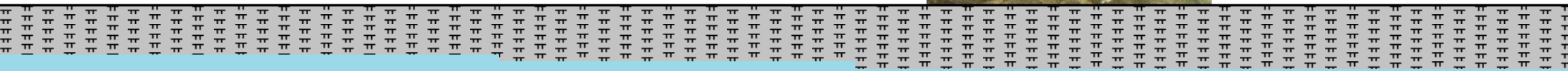
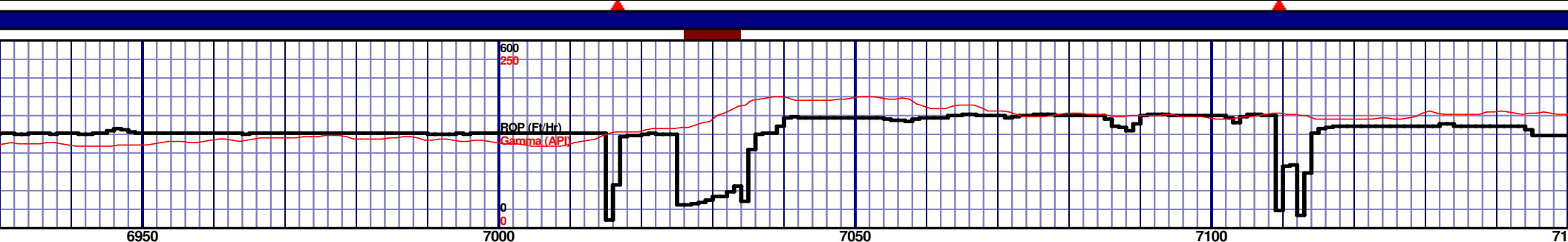


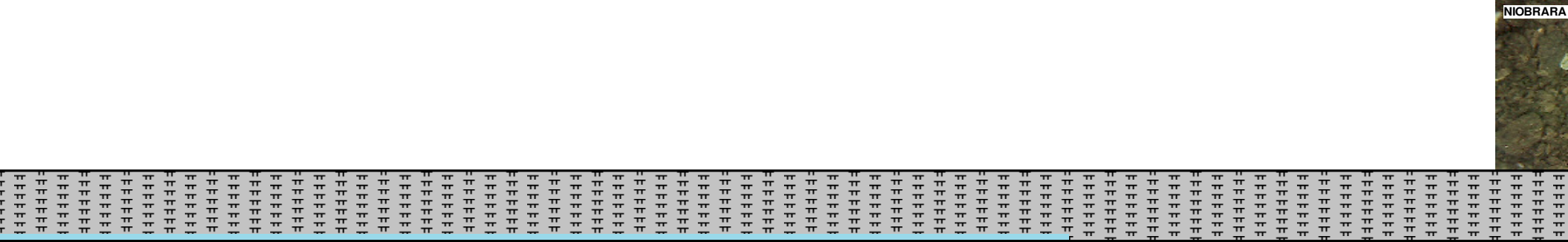
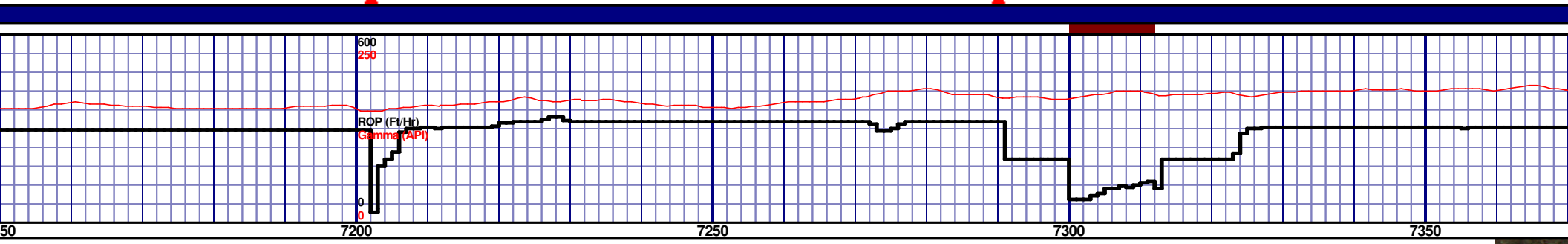
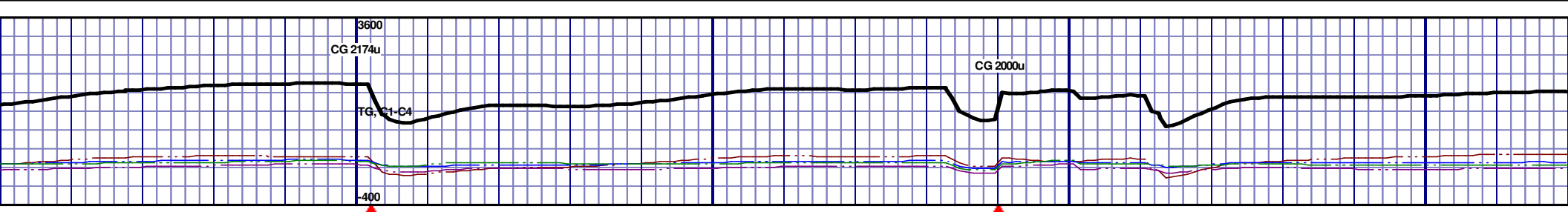
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<p>50' MD: MRL: 70% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 30% CHK, STN, NO MIN FLOR, FNT FLOR, IMMED STRMG CUT, HVY BLSHWT RNG</p>	<p>6750' MD-6800' MD: MRL: 80% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 20% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG</p>	<p>6800' MD-6850' MD: MRL: 80% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 20% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG</p>	<p>6850' MD-6900' MD: MRL: 70% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 30% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG</p>	<p>6900' MD-6950' MD: MRL: 70% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 30% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG</p>
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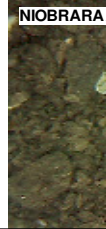
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INC 91.26 AZ 357.87
VS 593.12

MD 6850 TVD 5825.01
INC 90.31 AZ 358.05
VS 682.68



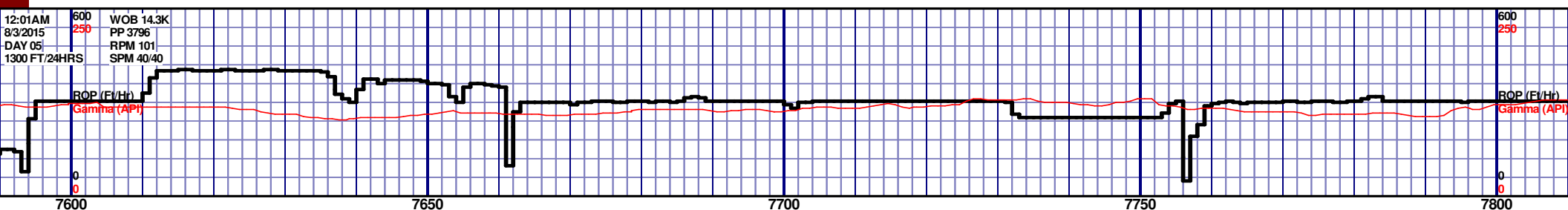


5300 TVD																			
5900																			
6500																			
7200' MD - 7250' MD: MRL: 90% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 10% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG																			
7250' MD - 7300' MD: MRL: 90% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 10% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG																			
7300' MD - 7350' MD: MRL: 100% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, TR CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG																			
7350' MD - 7400' MD: MRL: 100% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, TR CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG																			



MD 7221 TVD 5823.23
INC 90.86 AZ 358.29
VS 1048.78

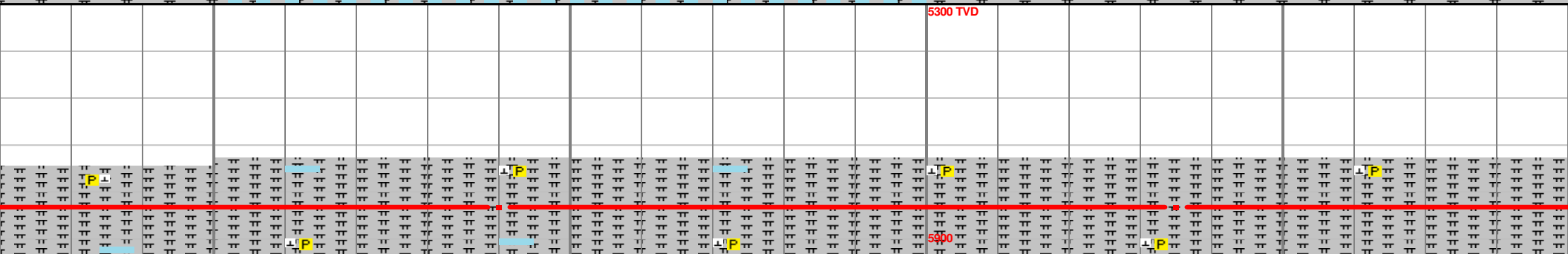
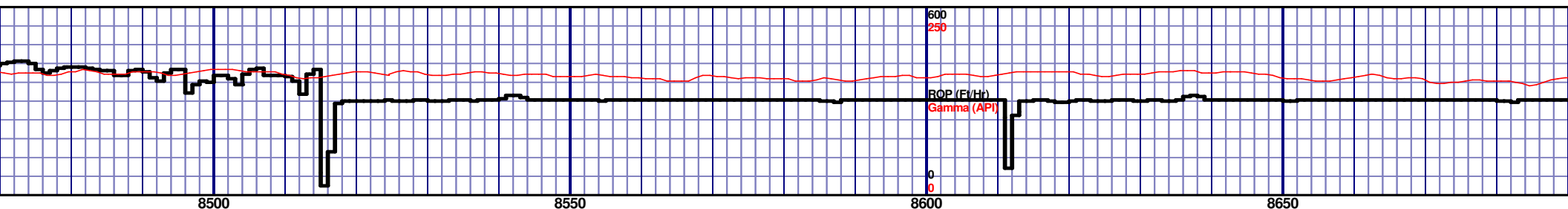
MD 7314 TVD 5822.56
INC 89.97 AZ 358.74
VS 1140.54



<p>7600' MD - 7650' MD: MRL: 100% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, TR CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG</p>	<p>7650' MD - 7700' MD: MRL: 70% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 30% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG</p>	<p>7700' MD - 7750' MD: MRL: 70% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 30% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG</p>	<p>7750' MD - 7800' MD: MRL: 70% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 30% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG</p>	<p>7800' MD - 7850' MD: MRL: 70% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 30% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG</p>
5300 TVD	5300 TVD	5300 TVD	5300 TVD	5300 TVD

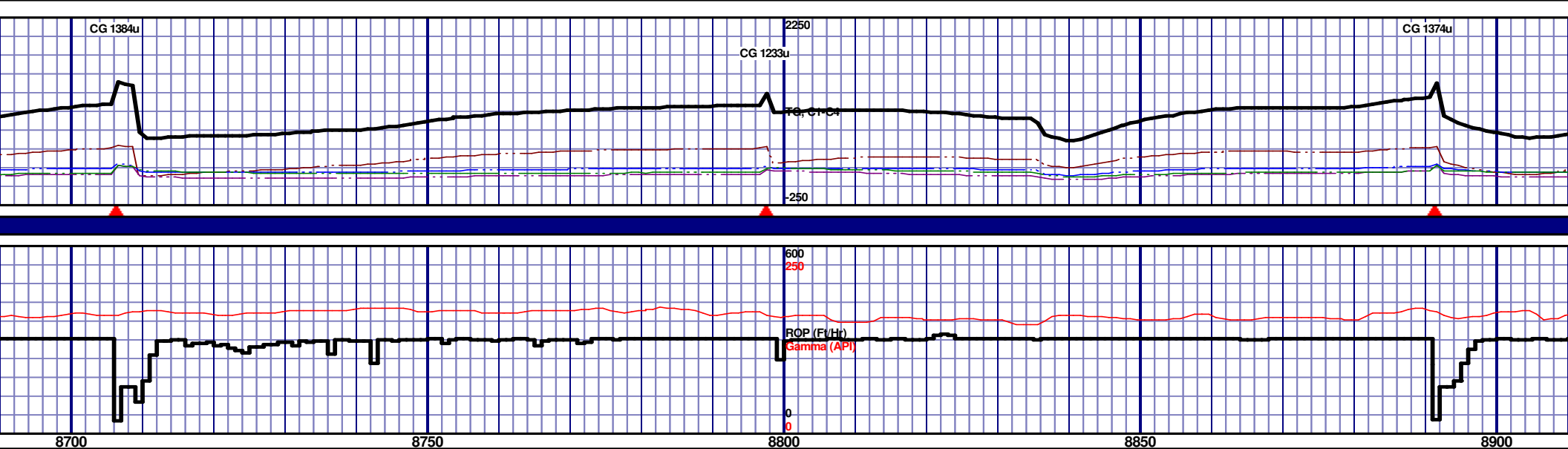


850' MD: MRL: 80% MEDDRKGY - DRKGY, BLKY TO FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, ALC, FREE PYR, 20% CHK, STN, NO MIN FLOR, FNT FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	7850' MD - 7900' MD: MRL: 80% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 20% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	7900' MD - 7950' MD: MRL: 90% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 10% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	7950' MD - 8000' MD: MRL: 100% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, TR CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	8000' MD - 8050' MD: MRL: 100% MEDD TO SUBBLKY, FXLN TO CHLKY, SFT, C CALC, TR FREE CALC, FREE PYR, TR FLOR, FNT BLSHWT O FLOR, IMMED S BLSHWT RNG
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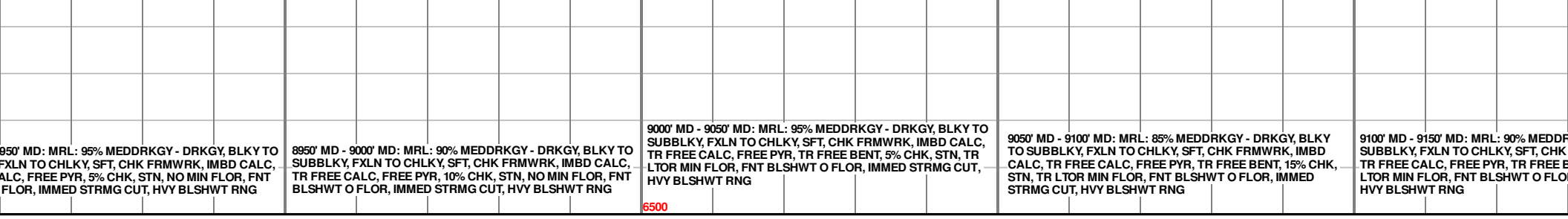
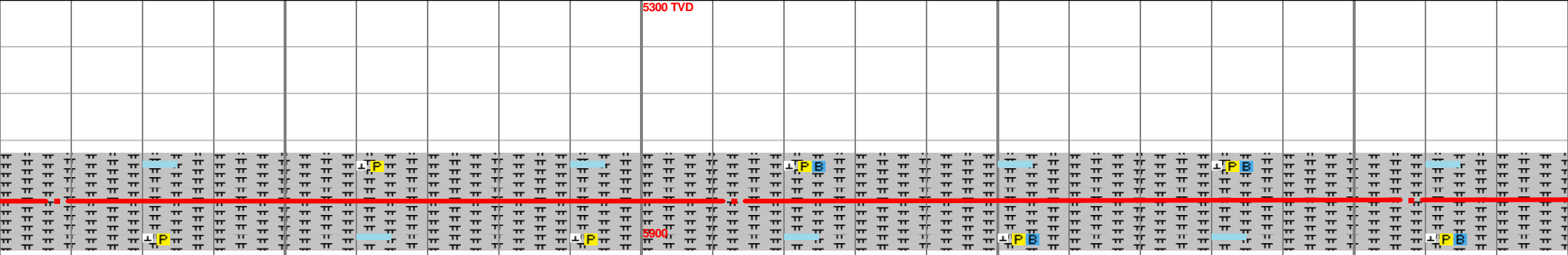
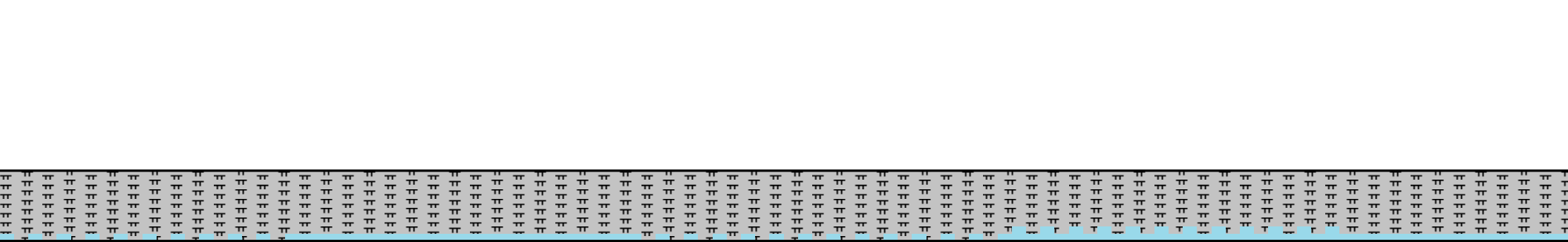
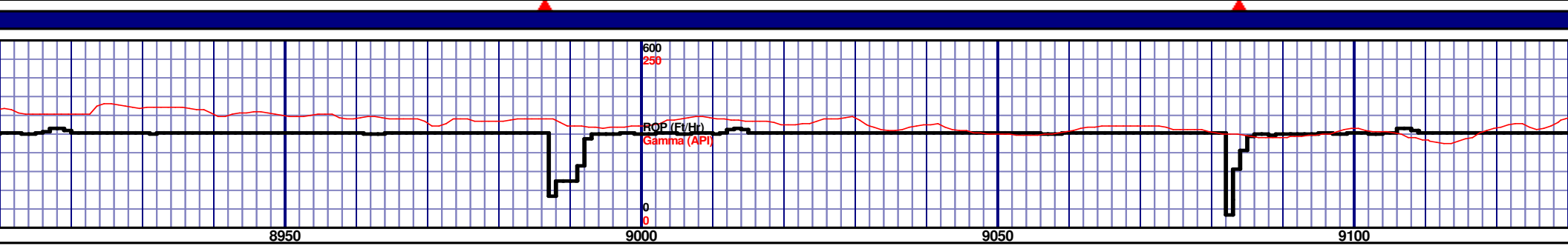
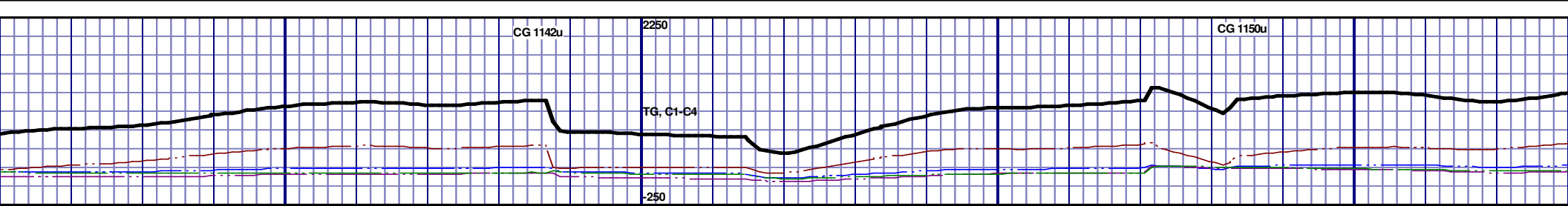
8650' MD - 8700' MD: MRL: 100% MEDDRKGY - DRK
TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK
CALC, TR FREE CALC, FREE PYR, TR CHK, STN, NO
FLOR, FNT BLSHW O FLOR, IMMED STRMG CUT, I
BLSHW RNG

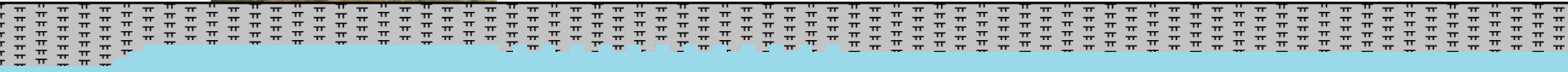
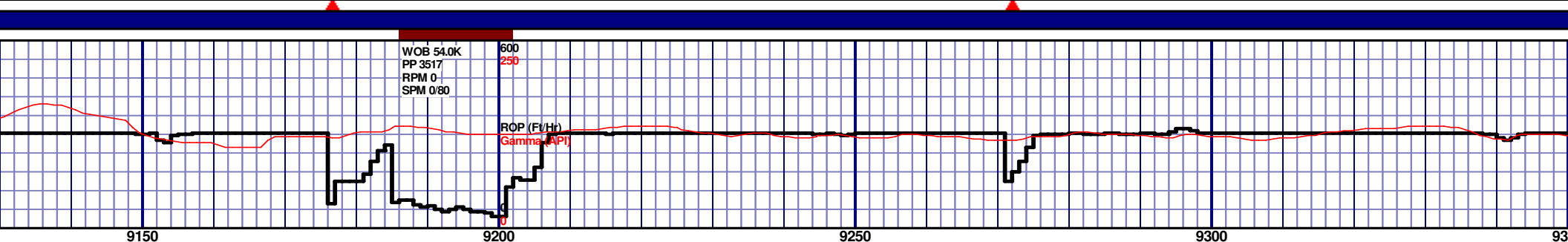
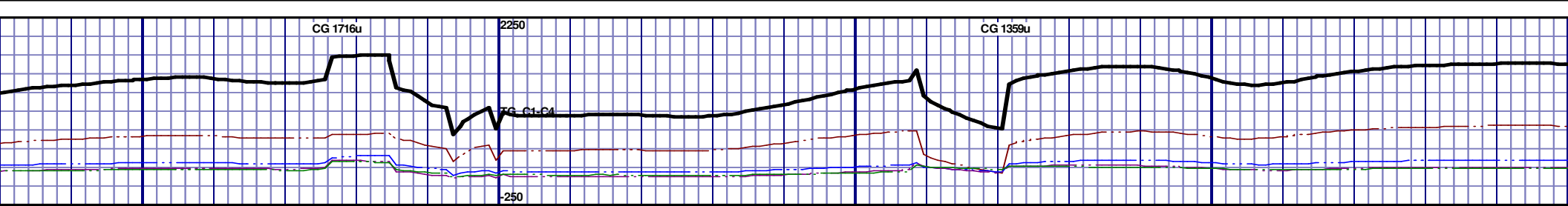
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INC 90.03 AZ 359.47
VS 2449.26

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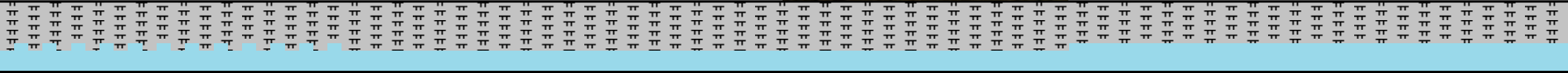
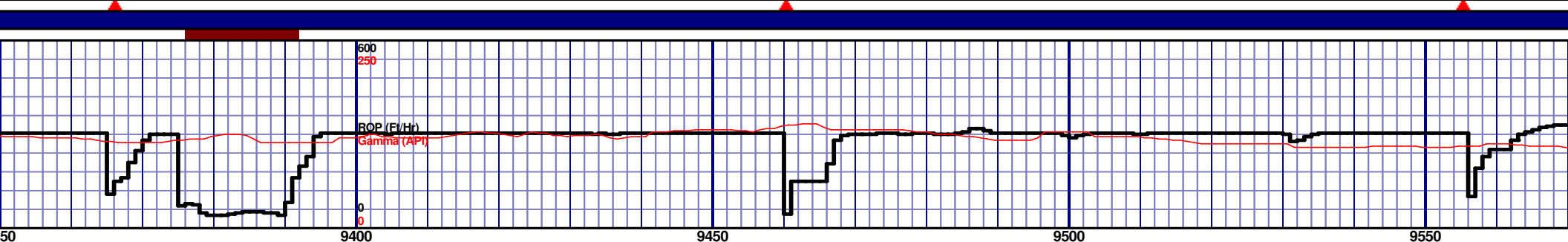
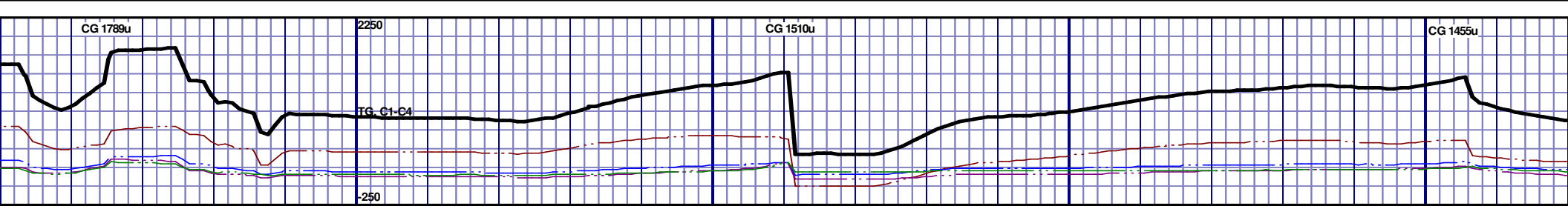
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VS 2542.17

MD 8824 TVD 5817.96
INC 89.97 AZ 358.43
VS 2635.94





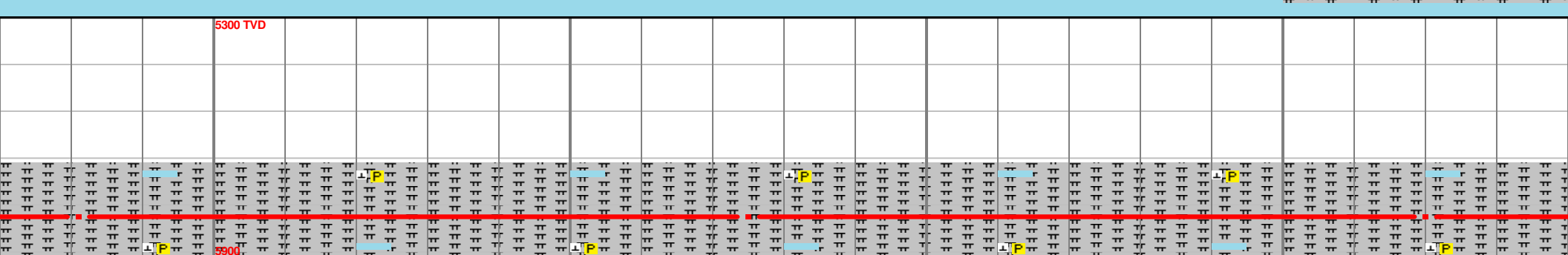
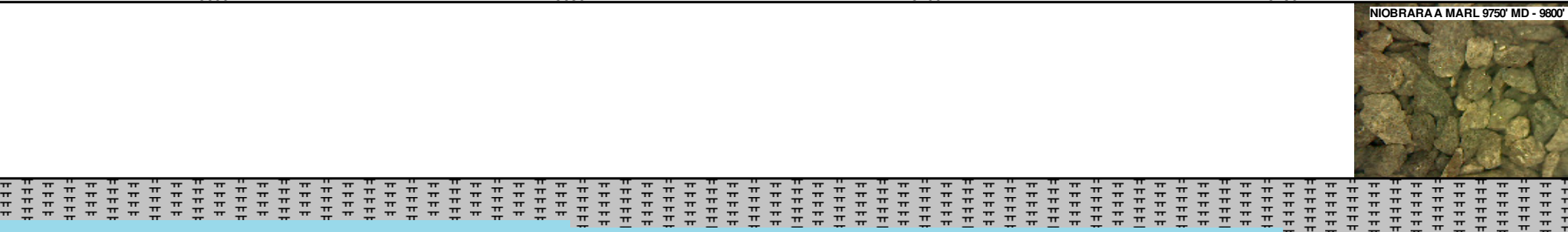
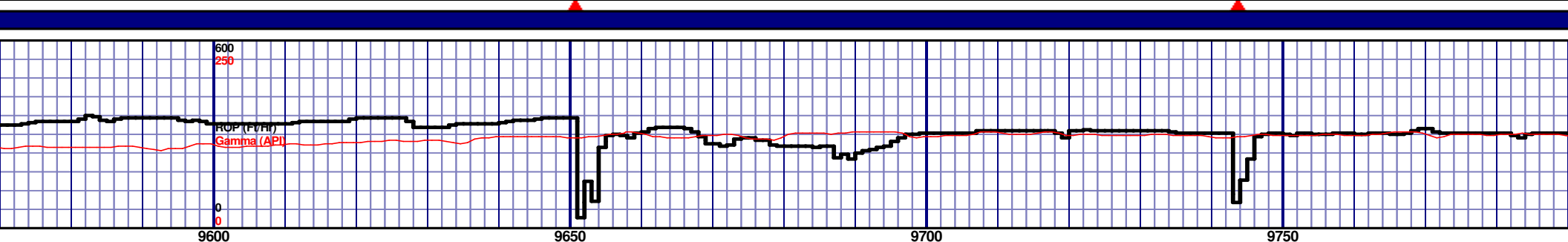
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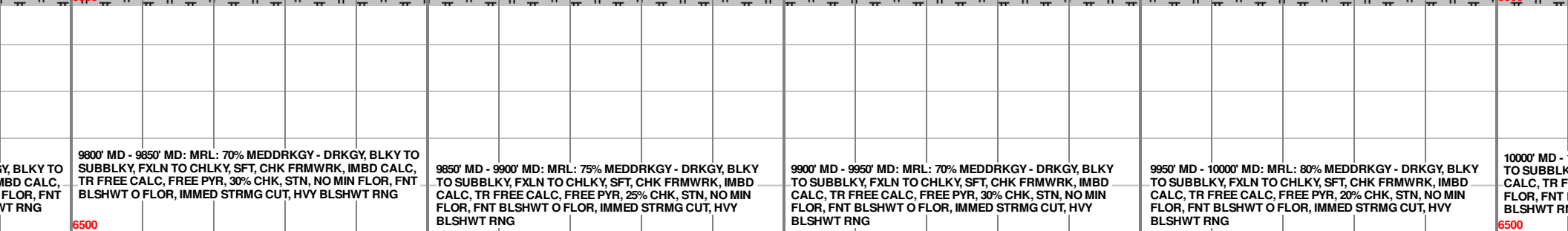
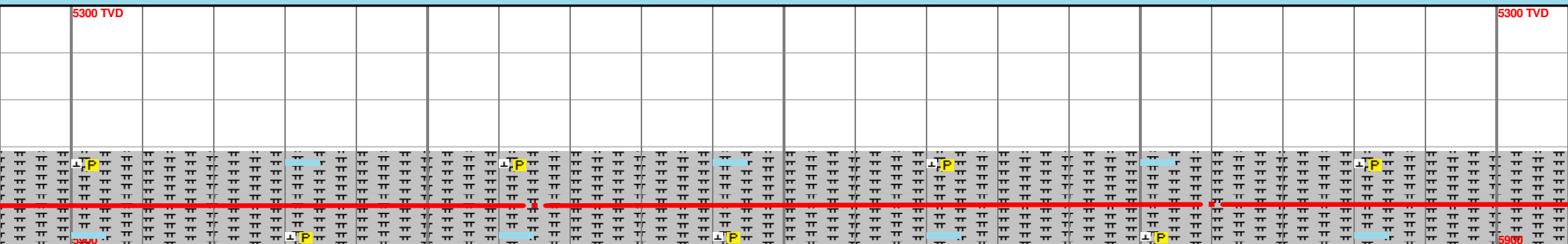
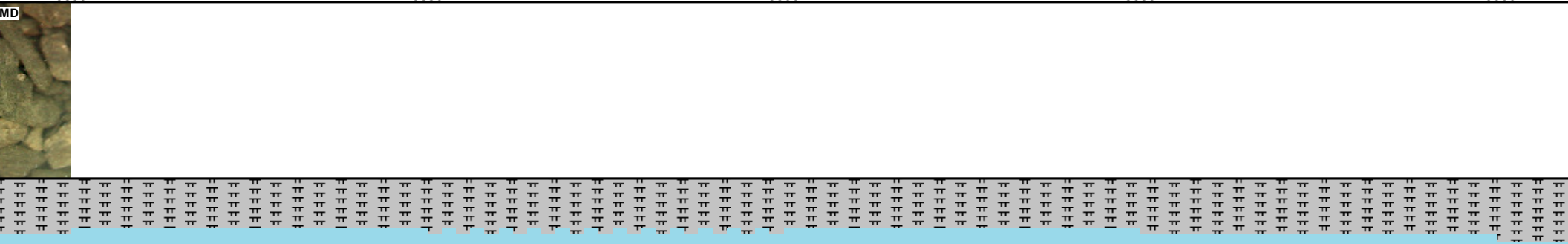
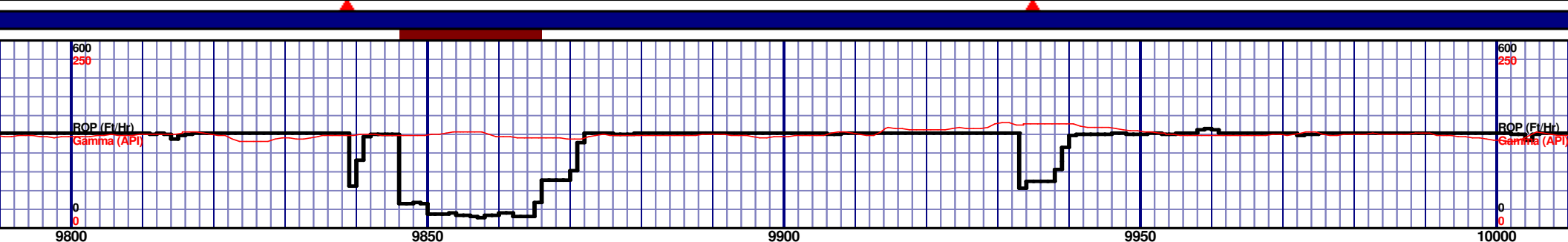
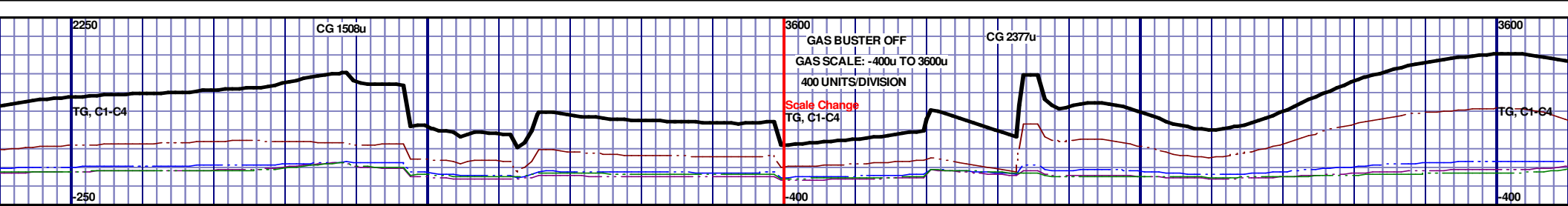


9350' MD - 9400' MD: MRL: 65% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 35% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	9400' MD - 9450' MD: MRL: 70% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 30% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	9450' MD - 9500' MD: MRL: 70% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 30% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	9500' MD - 9550' MD: MRL: 60% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 40% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	9550' MD - 9600' MD: MRL: 60% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 40% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG
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MD 9391 TVD 5808.7
INC 89.35 AZ 358.8
VS 3194.83

MD 9486 TVD 5809.75
INC 89.38 AZ 358.7
VS 3288.62

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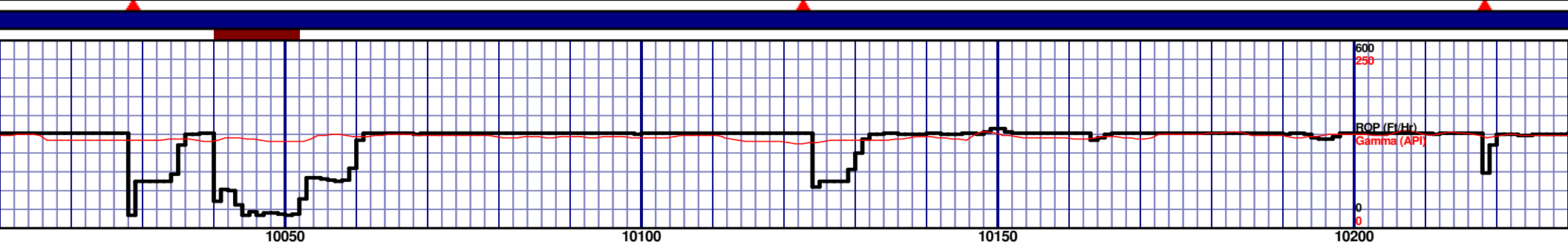
9800' MD - 9850' MD: MRL: 70% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 30% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG

9850' MD - 9900' MD: MRL: 75% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 25% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG

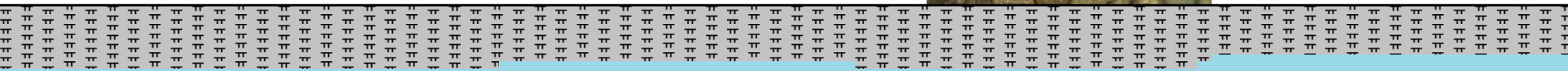
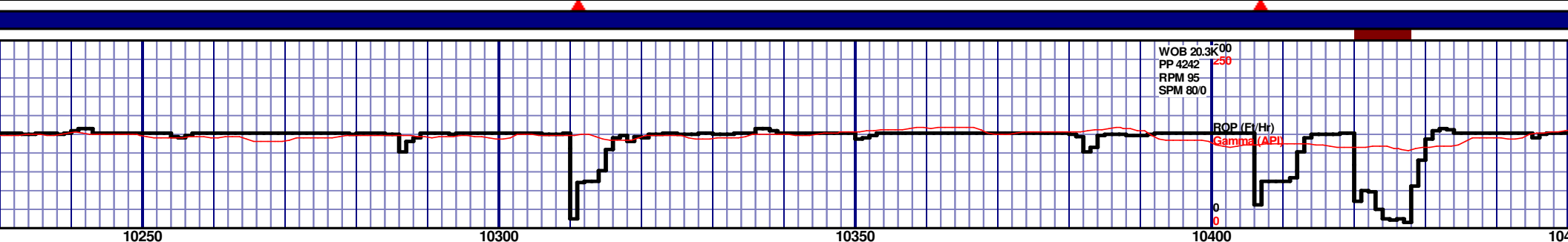
9900' MD - 9950' MD: MRL: 70% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 30% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG

9950' MD - 10000' MD: MRL: 80% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 20% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG

10000' MD - TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 20% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG

[illegible]

MD 10148 TVD 5808.02
INC 89.75 AZ 358.29
VS 3941.56



MD 10243 TVD 5807.82 INC 90.49 AZ 358.01 VS 4035.19	MD 10338 TVD 5806.8 INC 90.74 AZ 357.33 VS 4128.68	MD 10432 TVD 5805.1 INC 91.33 AZ 357.5 VS 4221.1
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RELEASED ON

10450' MD - 10500' MD: MRL: 80% MEDDRKGY - DRKGY, BLKY
TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD
CALC, TR FREE CALC, FREE PYR, 20% CHK, STN, NO MIN
FLOR, FNT BLSHW O FLOR, IMMED STRMG CUT, HVY
BLSHW RNG

10500' MD - 10550' MD: MRL: 80% MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC, FREE PYR, 20% CHK, STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVB BLSHWT RNG

10550' MD - 10600' MD: MRL: 100% MEDDRKGY - DRKGY, BLKY
TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD
CALC, TR FREE CALC, FREE PYR, STN, NO MIN FLOR, FNT
BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG

10600' MD - 10640' MD: MRL: 90% MEDDRKGY -
DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY,
SFT, CHK FRMWRK, IMBD CALC, TR FREE CALC,
FREE PYR, 10% CHK, STN, NO MIN FLOR, FNT
BLSHWT O FLOR, IMMED STRMG CUT, HVY
BLSHWT RNG

MD 10527 TVD 5802.5
INC 91.82 AZ 357.49
VS 4314.51

MD 10571 TVD 5801.05
INC 91.94 AZ 357.1
VS 4357.73

PTB MD 10640 TVD 5798.76
INC 91.94 AZ 357.1
VS 4425.46

1906u

8:00 PM ON 8/3/2015 @

[illegible]

FROM SCOTT
ROGERS AND
ALL LOGGING,