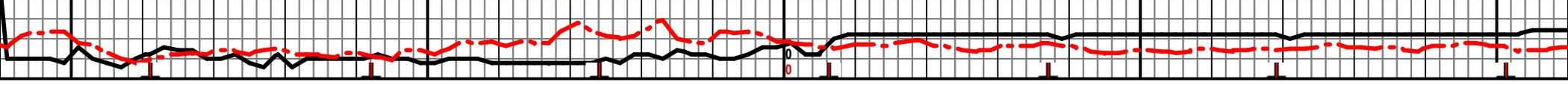


WOB 17.3  
RPM 64  
SPP 1997  
SPM 86

WOB 11.2  
RPM 55  
SPP 2099  
SPM 94

ROP (min/ft)  
Gamma (API)



7700 7750 7800 7850 7900

CG: 1165 UNITS

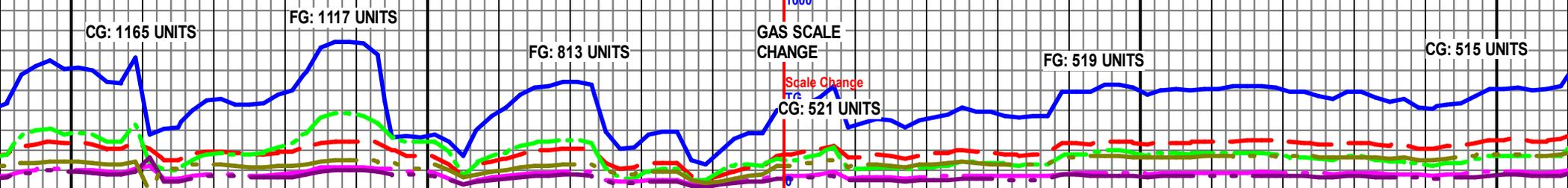
FG: 1117 UNITS

FG: 813 UNITS

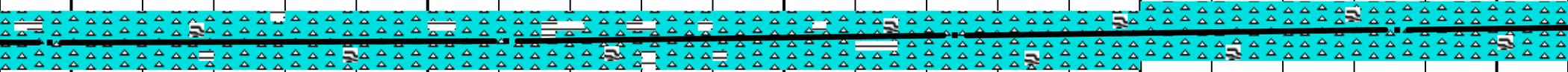
GAS SCALE CHANGE  
CG: 521 UNITS

FG: 519 UNITS

CG: 515 UNITS



3750 TVD



10% SHALE: BRICK RED, PALE RED, BROWN GRAY, PALE GREEN, MODERATELY FIRM, SUBBLOCKY

10% SHALE: BRICK RED, PALE RED, BROWN GRAY, PALE GREEN, MODERATELY FIRM, SUBBLOCKY

3800

90% CHERT: WHITE, TRANSLUCENT, LIGHT TO MEDIUM TAN, ANGULAR TO 20% SHARPLY ANGULAR, 15% SPICULITE, POOR VISIBLE INTERCRYSTALLINE POROSITY, FAIR VUGULAR POROSITY, MEDIUM BROWN OIL STAINS, MODERATE YELLOW GREEN FLUORESCENCE, MODERATE BLUE GREEN MILKY CUT, MODERATE YELLOW WHITE RING

90% CHERT: WHITE, TRANSLUCENT, LIGHT TO MEDIUM TAN, ANGULAR TO 25% SHARPLY ANGULAR, 30% SPICULITE, POOR VISIBLE INTERCRYSTALLINE POROSITY, FAIR VUGULAR POROSITY, MEDIUM BROWN OIL STAINS, MODERATE YELLOW GREEN FLUORESCENCE, MODERATE BLUE GREEN MILKY CUT, BRIGHT YELLOW WHITE RING

90% AN PO FLU

DS: 7697'  
INC: 89.9°  
AZM: 1.2°  
TVD: 3771'  
VS: 4233.72'

DS: 7761'  
INC: 90.6°  
AZM: 0.9°  
TVD: 3770.72'  
VS: 4297.70'

DS: 7824'  
INC: 91.0°  
AZM: 0.8°  
TVD: 3769.84'  
VS: 4360.68'

DS: 7886'  
INC: 91.1°  
AZM: 0.3°  
TVD: 3768.71'  
VS: 4422.66'

7,894'  
WT 8.70  
FV 27  
PV 3  
YP 2  
FIL 99.0  
SOL 2.6  
pH 8.6  
Cl 3.5K

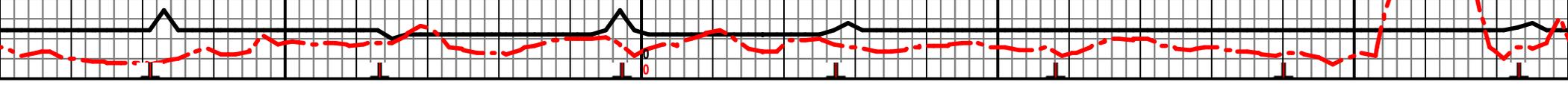


3850

WOB 6.1  
RPM 90  
SPP 2054  
SPM 94

WOB 8.8  
RPM 91  
SPP 2078  
SPM 94

ROP (min/ft)  
Gamma (API)



7950

8000

8050

8100

FG: 715 UNITS  
CG: 775 UNITS

PASON DOWN

CG: 771 UNITS

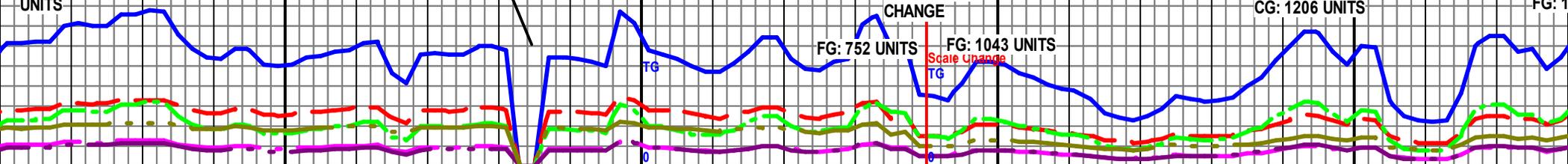
FG: 752 UNITS

GAS SCALE CHANGE

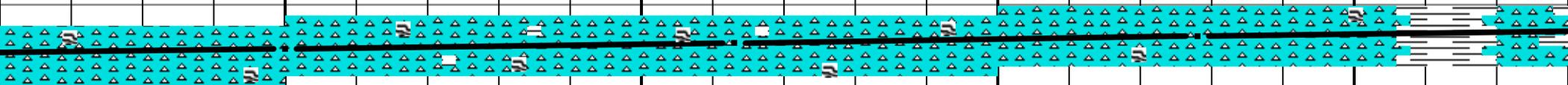
FG: 1043 UNITS

CG: 1206 UNITS

FG: 1



3750 TVD



10% SHALE: BRICK RED, PALE RED, BROWN GRAY, PALE GREEN, MODERATELY FIRM, SUBBLOCKY

10% SHALE: BRICK RED, PALE RED, BROWN GRAY, PALE GREEN, MODERATELY FIRM, SUBBLOCKY

10% SHALE: BRICK RED, PALE RED, BROWN GRAY, PALE GREEN, MODERATELY FIRM, SUBBLOCKY

90% CHERT: WHITE, TRANSLUCENT, LIGHT TO MEDIUM TAN, ANGULAR TO 25% SHARPLY ANGULAR, 25% SPICULITE, POOR VISIBLE INTERCRYSTALLINE POROSITY, FAIR VUGULAR POROSITY, INCREASE MEDIUM BROWN OIL STAINS, MODERATE YELLOW GREEN FLUORESCENCE, MODERATE BLUE GREEN MILKY CUT, BRIGHT YELLOW WHITE RING

90% CHERT: WHITE, TRANSLUCENT, LIGHT TO MEDIUM TAN, ANGULAR TO 25% SHARPLY ANGULAR, 25% SPICULITE, POOR VISIBLE INTERCRYSTALLINE POROSITY, FAIR VUGULAR POROSITY, MEDIUM BROWN OIL STAINS, MODERATE YELLOW GREEN FLUORESCENCE, MODERATE BLUE GREEN MILKY CUT, BRIGHT YELLOW WHITE RING

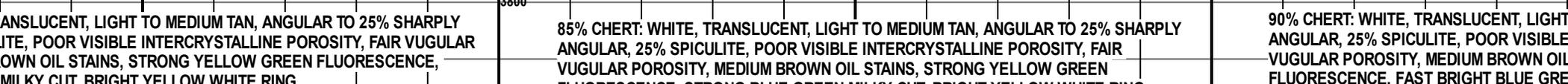
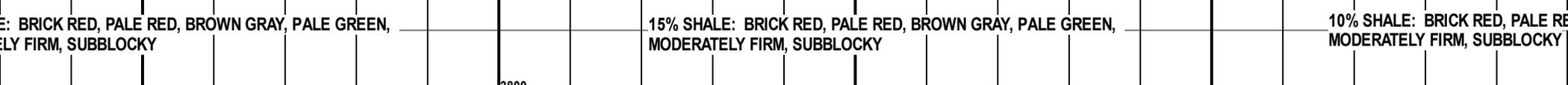
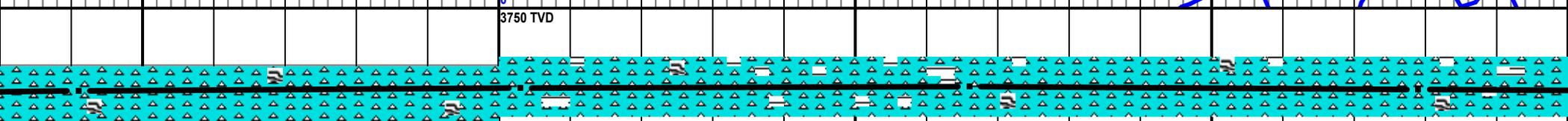
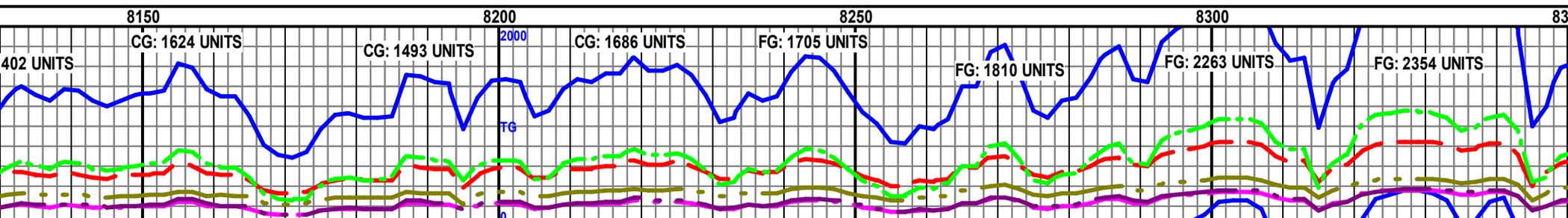
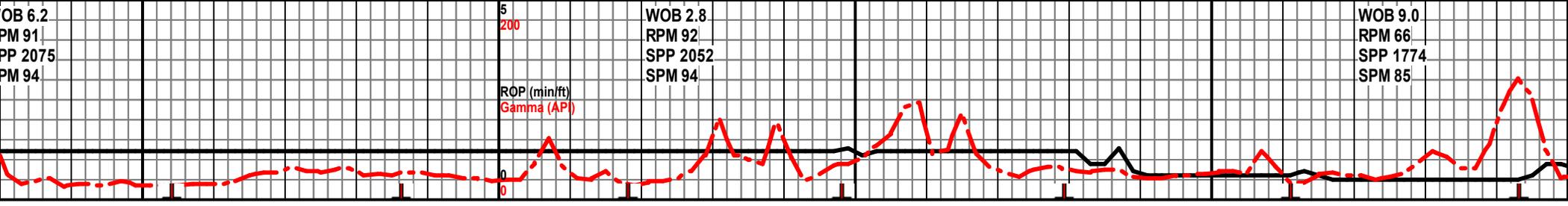
90% CHERT: WHITE, TRANSLUCENT, LIGHT TO MEDIUM TAN, ANGULAR TO 25% SHARPLY ANGULAR, 25% SPICULITE, POOR VISIBLE INTERCRYSTALLINE POROSITY, FAIR VUGULAR POROSITY, MEDIUM BROWN OIL STAINS, MODERATE YELLOW GREEN FLUORESCENCE, MODERATE BLUE GREEN MILKY CUT, BRIGHT YELLOW WHITE RING

DS: 7950'  
INC: 90.8°  
AZM: 0.1°  
TVD: 3767.85'  
VS: 4486.65'

DS: 8013'  
INC: 90.9°  
AZM: 0.4°  
TVD: 3766.71'  
VS: 4549.63'

DS: 8078'  
INC: 91.2°  
AZM: 0.2°  
TVD: 3765.52'  
VS: 4614.62'



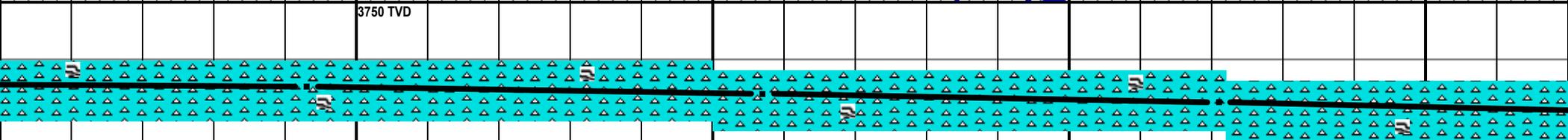
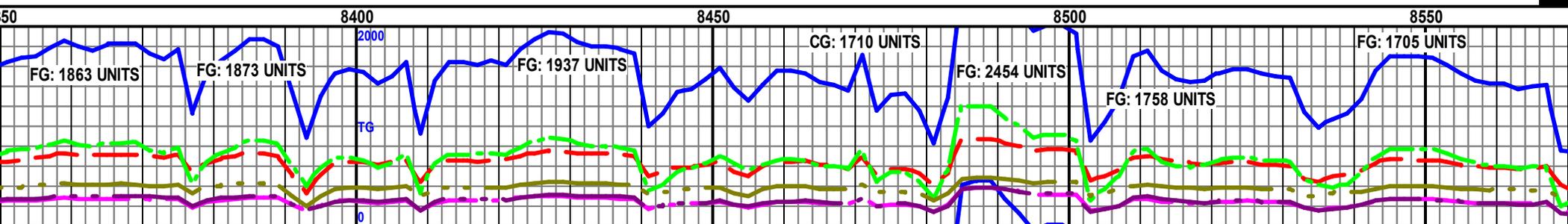
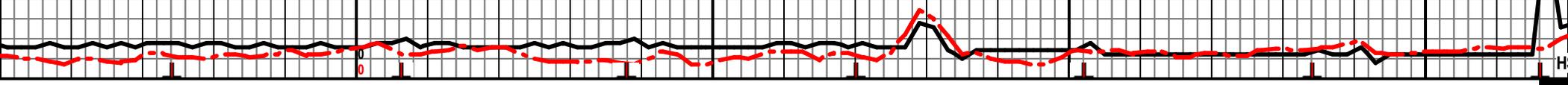


DS: 8141' INC: 90.6° AZM: 0.2° TVD: 3764.53' VS: 4677.61'	DS: 8203' INC: 90.5° AZM: 0.9° TVD: 3763.94' VS: 4739.60'	DS: 8266' INC: 1.1° AZM: 89.8° TVD: 3763.77' VS: 4802.58'	DS: 8329' INC: 89.5° AZM: 1.3° TVD: 3764.16' VS: 4865.55'
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WOB 5.9  
 RPM 65  
 SPP 1761  
 SPM 85  
 9/17/14

WOB 8.2  
 RPM 56  
 SPP 1725  
 SPM 85



...ED, BROWN GRAY, PALE GREEN,  
 ... TO MEDIUM TAN, ANGULAR TO 25% SHARPLY  
 INTERCRYSTALLINE POROSITY, FAIR  
 STAINS, STRONG YELLOW GREEN  
 EN MILKY CUT, BRIGHT YELLOW WHITE

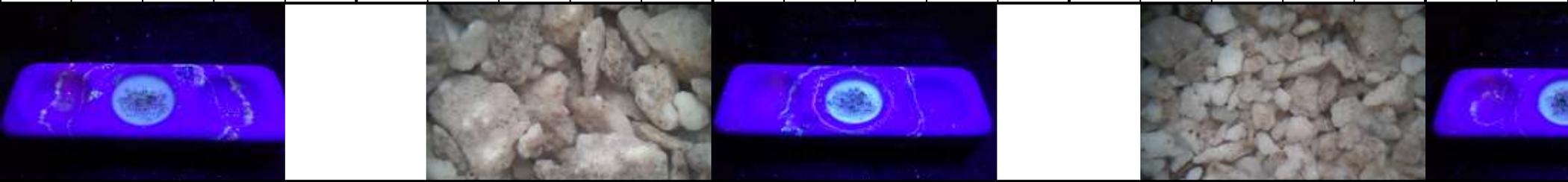
CHERT: WHITE, TRANSLUCENT, LIGHT TO MEDIUM TAN, ANGULAR TO 25% SHARPLY  
 ANGULAR, 25% SPICULITE, POOR VISIBLE INTERCRYSTALLINE POROSITY, FAIR  
 VUGULAR POROSITY, MEDIUM BROWN OIL STAINS, STRONG YELLOW GREEN  
 FLUORESCENCE, FAST BRIGHT BLUE GREEN MILKY CUT, BRIGHT YELLOW WHITE  
 RINGS

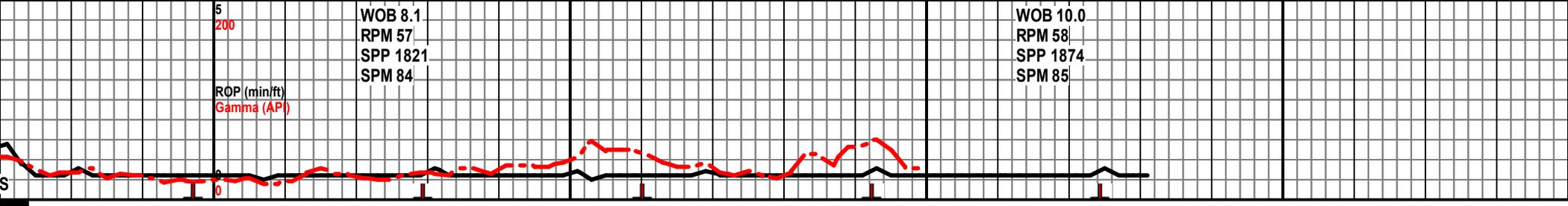
CHERT: WHITE, TRANSLUCENT, LIGHT TO MEDIUM TAN, ANG  
 SHARPLY ANGULAR, 25% SPICULITE, POOR VISIBLE INTERC  
 POROSITY, FAIR TO GOOD VUGULAR POROSITY, ABUNDANT  
 STAINS, STRONG YELLOW GREEN FLUORESCENCE, FAST E  
 MILKY CUT, BRIGHT YELLOW WHITE RINGS

DS: 8393'  
 INC: 89.3°  
 AZM: 1.4°  
 TVD: 3764.83'  
 VS: 4929.52'

DS: 8457'  
 INC: 88.8°  
 AZM: 1.8°  
 TVD: 3765.89'  
 VS: 4993.47'

DS: 8521'  
 INC: 88.2°  
 AZM: 2.0°  
 TVD: 3767.56'  
 VS: 5057.40'

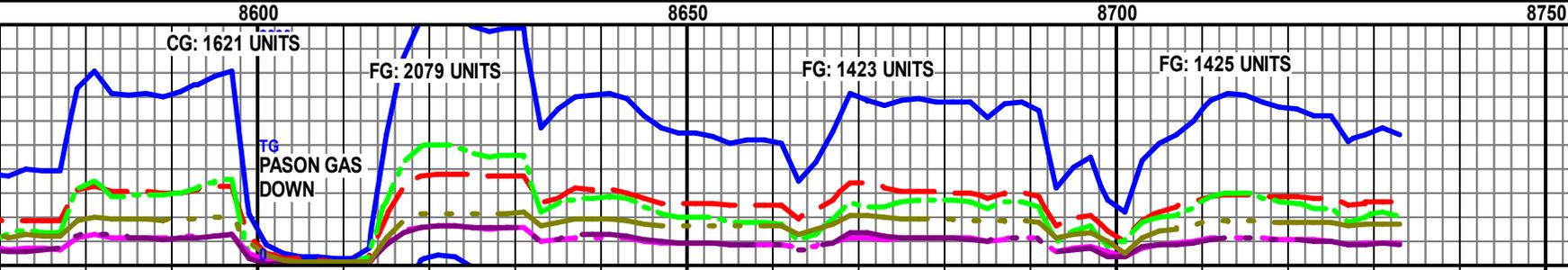




ROP (min/ft)  
Gamma (API)

WOB 8.1  
RPM 57  
SPP 1821  
SPM 84

WOB 10.0  
RPM 58  
SPP 1874  
SPM 85



CG: 1621 UNITS

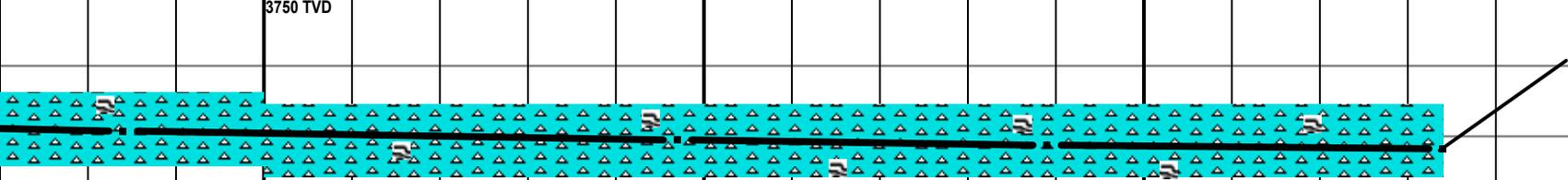
FG: 2079 UNITS

FG: 1423 UNITS

FG: 1425 UNITS

PASON GAS  
DOWN

3750 TVD



PROJECTION TO BIT:  
MD: 8,734'  
INC: 89.2°  
AZM: 2.1°  
TVD: 3,771.84'  
VS: 5,270.20'

ULAR TO 25%  
CRYSTALLINE  
MEDIUM BROWN OIL  
BRIGHT BLUE GREEN

CHERT: WHITE, TRANSLUCENT, LIGHT TO MEDIUM TAN, ANGULAR TO 25% SHARPLY  
ANGULAR, 25% SPICULITE, POOR VISIBLE INTERCRYSTALLINE POROSITY, FAIR TO GOOD  
VUGULAR POROSITY, ABUNDANT MEDIUM BROWN OIL STAINS, STRONG YELLOW GREEN  
FLUORESCENCE, FAST BRIGHT BLUE GREEN MILKY CUT, BRIGHT YELLOW WHITE RINGS

TD: 8,734' ON  
SEPTEMBER 17,  
2014 AT 0530  
HOURS

BOTTOM HOLE LOCATION:  
259' FNL & 653' FEL, SEC. 7,  
T24S-R9W, RENO COUNTY,  
KANSAS

DS: 8584'  
INC: 88.6°  
AZM: 1.9°  
TVD: 3769.32'  
VS: 5120.33'

DS: 8647'  
INC: 89.1°  
AZM: 1.3°  
TVD: 3770.59'  
VS: 5183.28'

DS: 8689'  
INC: 89.2°  
AZM: 2.1°  
TVD: 3771.21'  
VS: 5225.24'



