



Weatherford®

Surface Logging Systems

Scale 1:240 (5"=100') Imperial
Measured Depth Log

Tooke Rockies, Inc.
(A Weatherford Company)

884 Implement Dr.
Dickinson, ND 58601
701-227-4408

717 West Platte
PO BOX 435
Casper, WY 82601
307-265-2124

Well Name: North Platte Federal K-O-22HNB
Location: NE/NW Sec.22-T5N -R63W
License Number: API 05-123-37700-00(Build/Lateral)
Spud Date: 10/15/2013
Surface Coordinates: 324' FNL & 2561' FEL
Weld, CO.
Bottom Hole: 470' FSL & 2600' FEL
Coordinates: WELD, CO.
Ground Elevation (ft): 4649
Logged Interval (ft): 6000 To: 11045
Formation: NIOBRARA
Type of Drilling Fluid: WATER BASE

Region: DJ BASIN
Drilling Completed: 10/22/2013
K.B. Elevation (ft): 4666
Total Depth (ft): 11045

Printed by HORIZONTAL.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Bonanza Creek Energy Inc.
Address: 410 17th Street, Suite 1500
Denver, CO 80202

GEOLOGIST

Name: Gabriel Genitempo, Michael Even
Company: WEATHERFORD SLS/TOOKE ROCKIES
Address: PO BOX 435
CASPER, WY 82602
307.265.2124

Supervision

Company men: Joe Savage, John Bradley
Geologist: Paul McKay

Other Information

ROCK TYPES

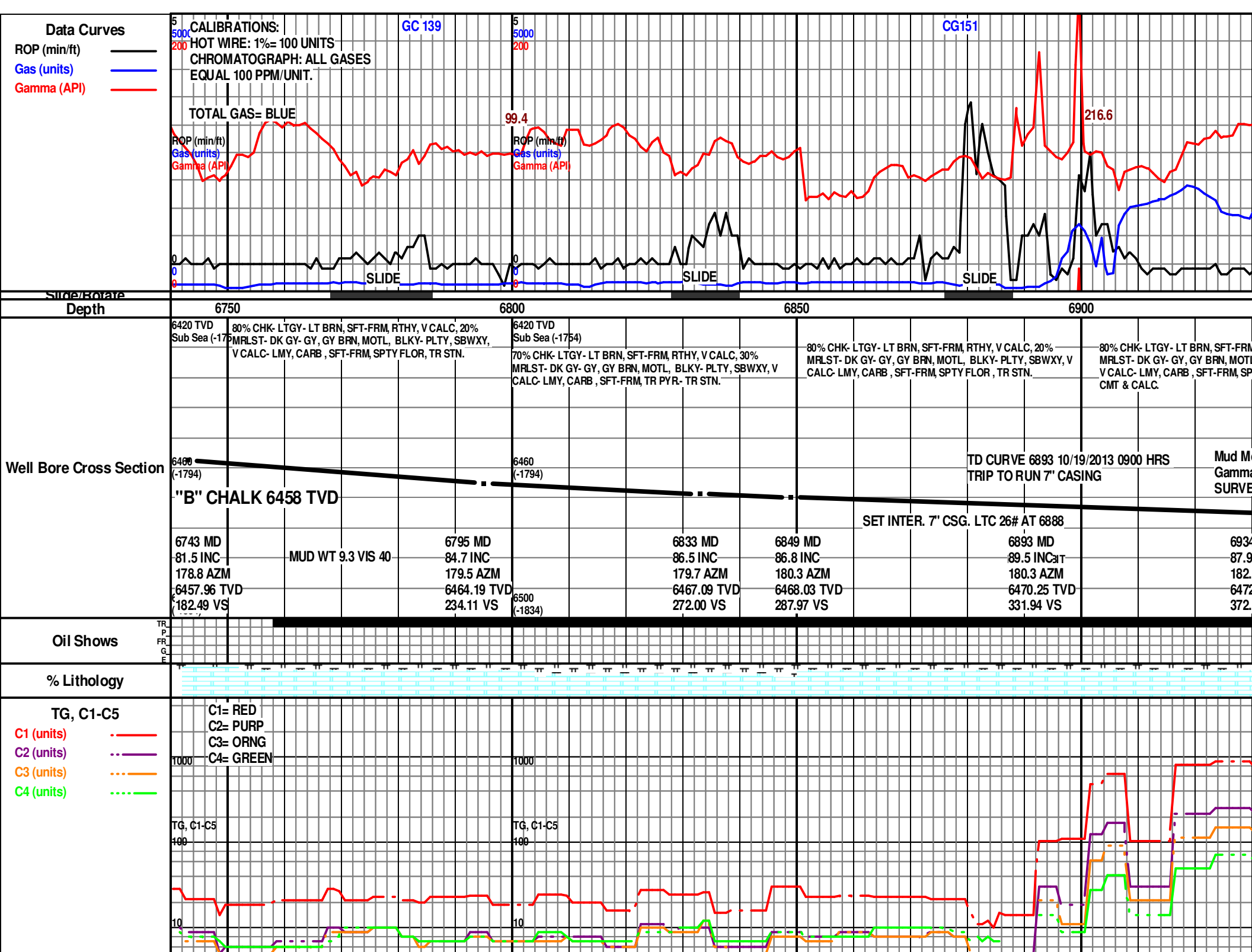
	Anhy		Coal		Lmst		Shcol		Chlk
	Bent		Congl		Meta		Shgy		
	Brec		Dol		Mrlst		Sltst		
	Cht		Gyp		Salt		Ss		
	Clyst		Igne		Shale		Till		

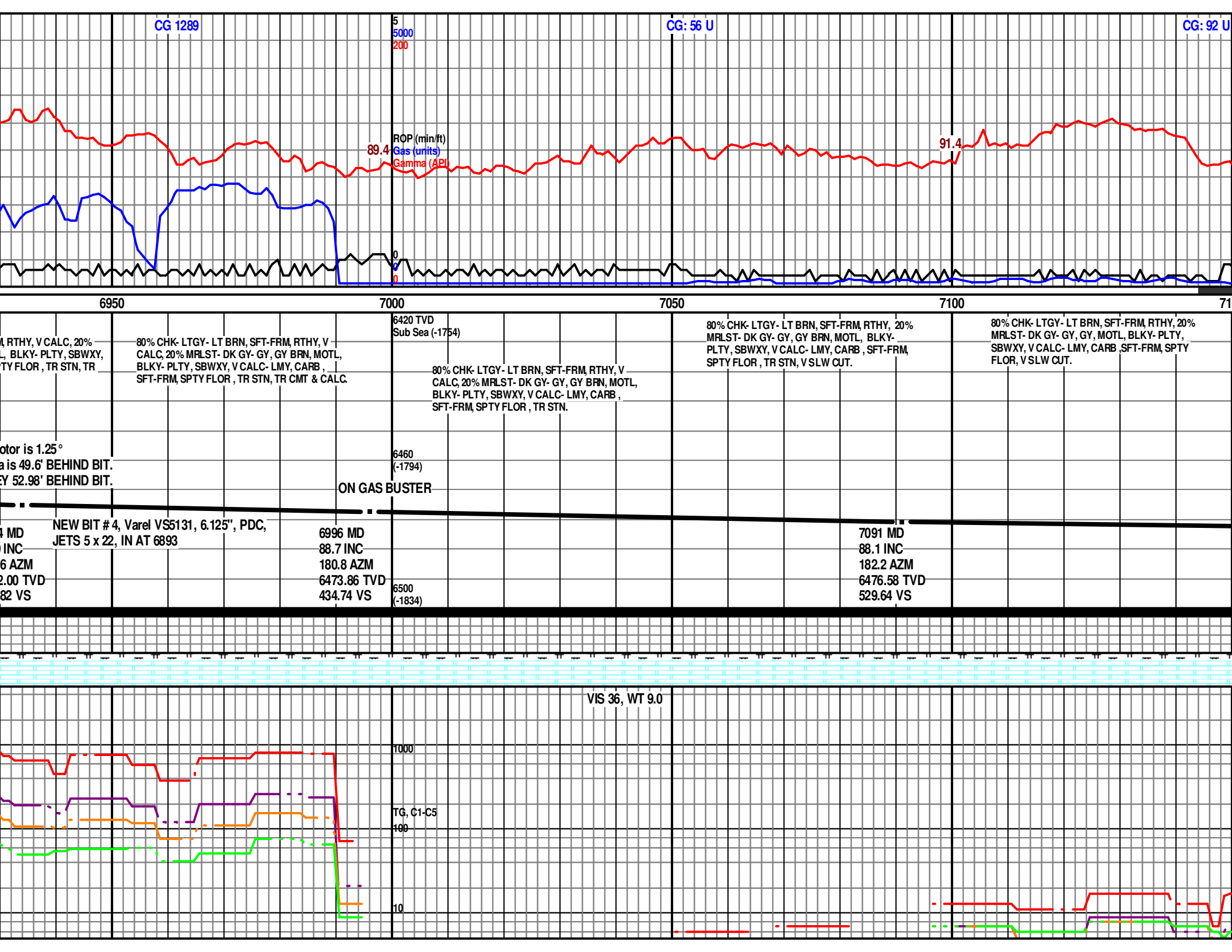
ACCESSORIES

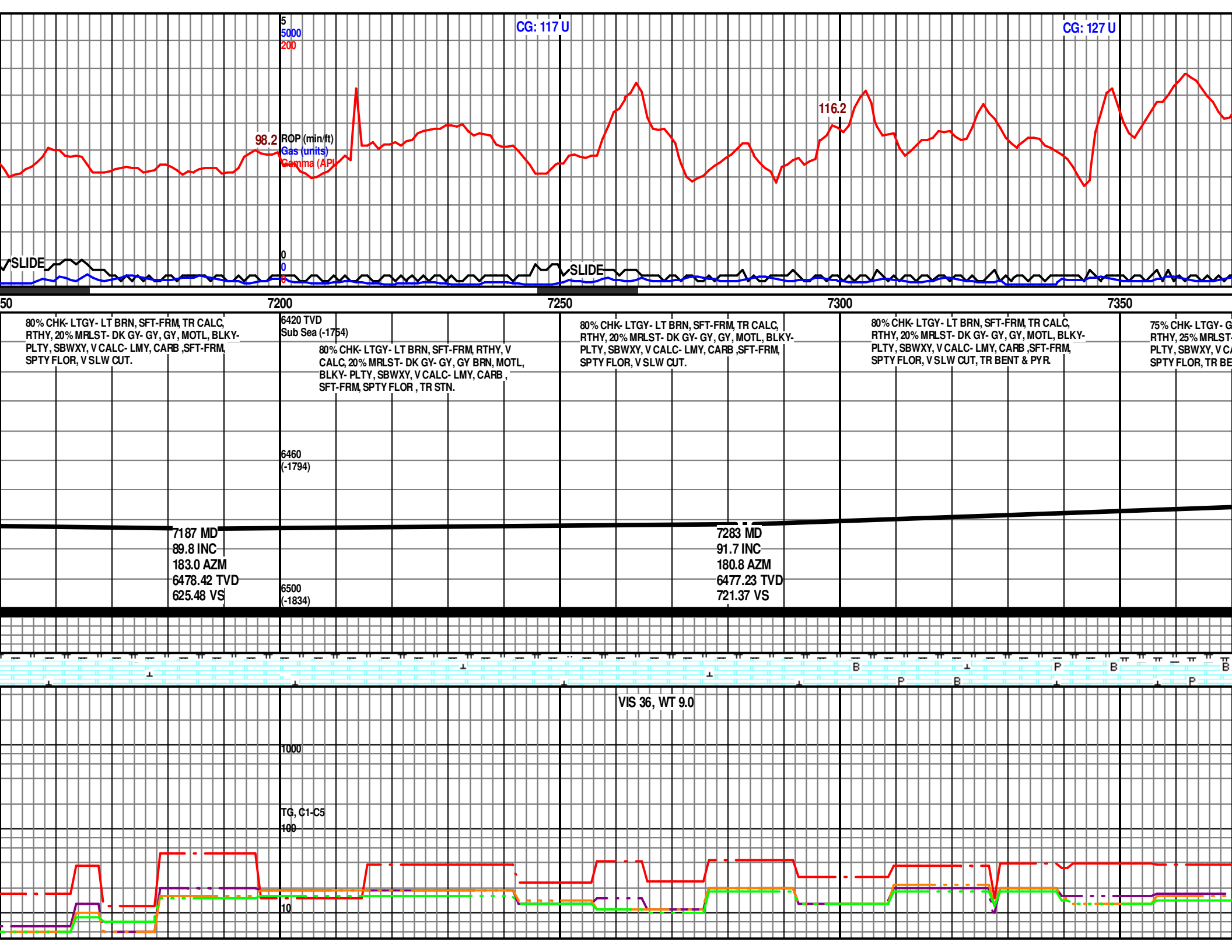
FOSSIL		Ostra		Chtdk		Sandy		Ssstrg
		Algae		Chtlt		Silt		
		Pellet		Dol		Sil		
		Pisolite		Feldspar		Sulphur		
		Plant		Ferrpel		Tuff		
		Strom		Ferr				
				Glau	STRINGER			
	MINERAL			Gyp		Anhy		
		Anhy		Hvymin		Arg		
		Arggrn		Kaol		Bent		
		Arg		Marl		Coal		
		Bent		Minxl		Dol		
		Bit		Nodule		Gyp		
		Brecfrag		Phos		Ls		
		Calc		Pyr		Mrst		
		Carb		Salt		Sltstrg		
							TEXTURE	
								Boundst
								Chalky
								Cryxln
								Earthy
								Finexln
								Grainst
								Lithogr
								Microxln
								Mudst
								Packst
								Wackest

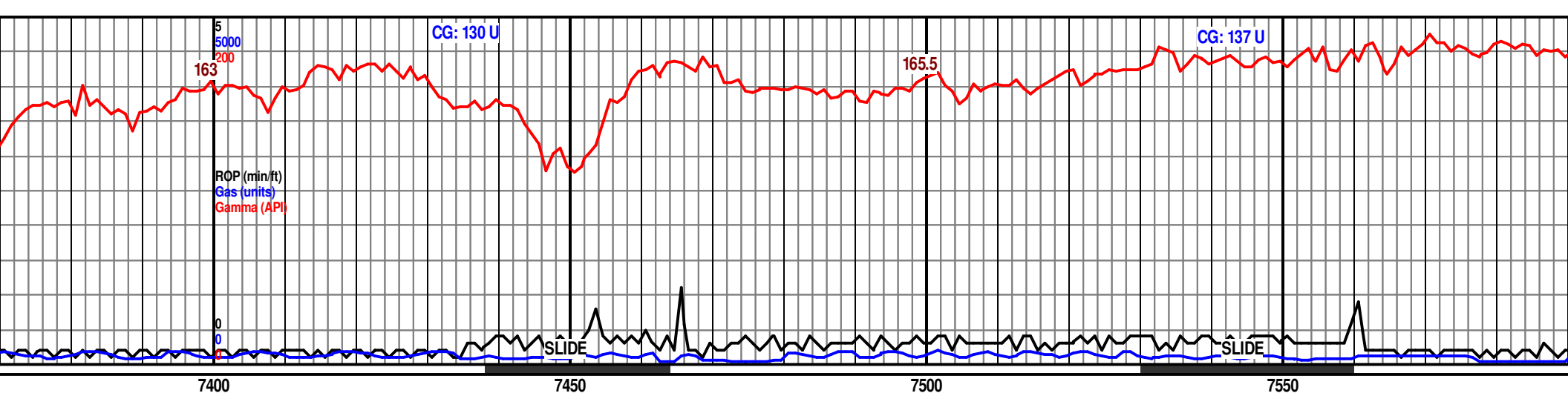
OTHER SYMBOLS

INTERVALS	OIL SHOWS	POROSITY TYPE		Pinpoint		Angular
				Vuggy		
					SORTING	
EVENTS						Well
			ROUNDING			Moderate
				Rounded		Poor
				Subrnd		
				Subang		

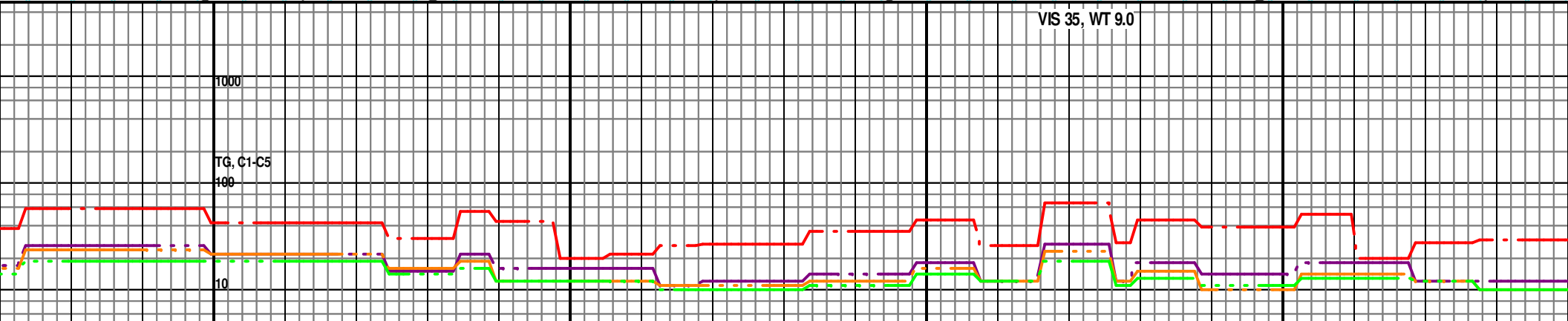
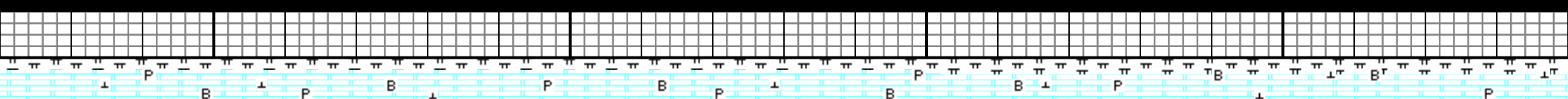


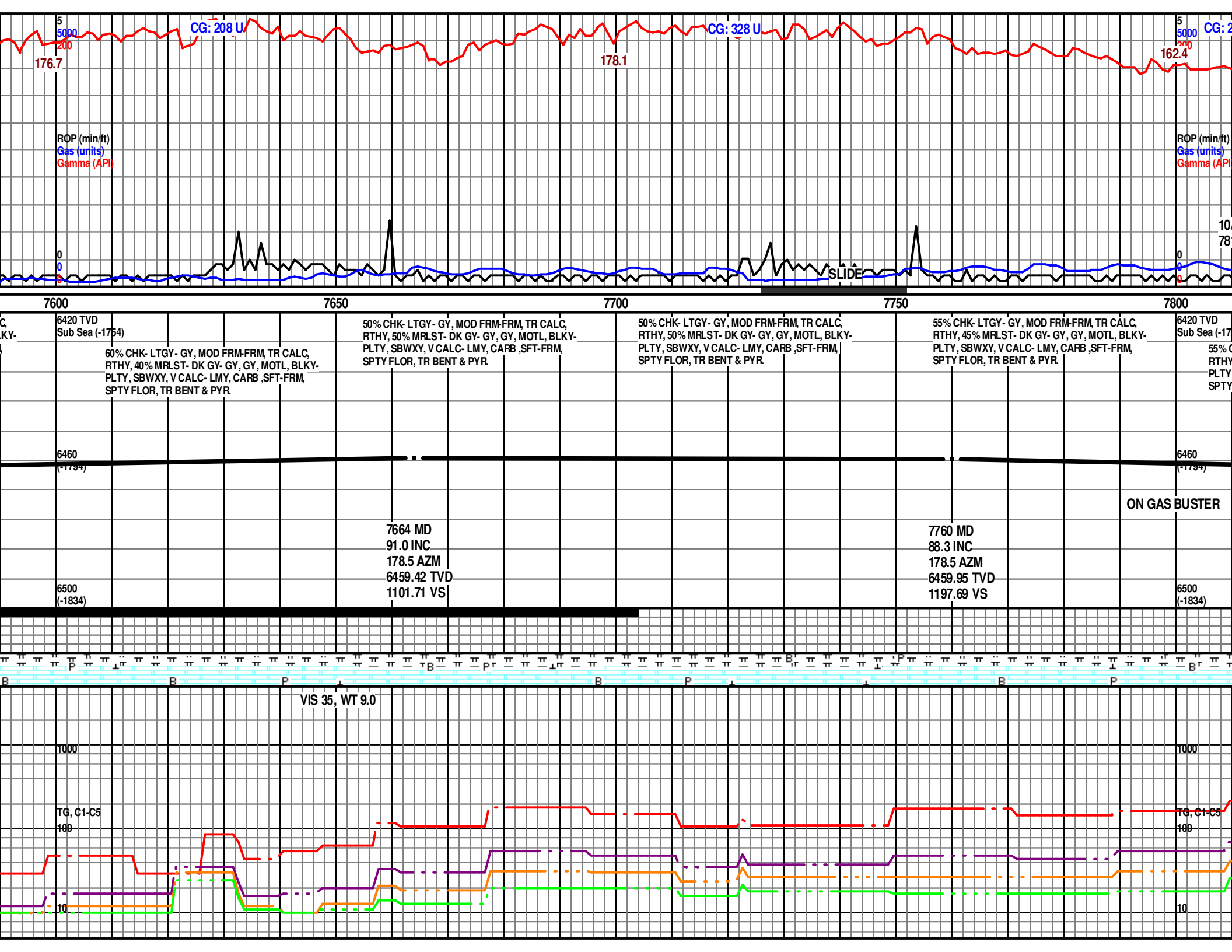






<p>Y, MOD FRM-FRM, TR CALC, DK GY- GY, GY, MOTL, BLKY- ALC- LMY, CARB, SFT-FRM, NT & PYR.</p>	<p>6420 TVD Sub Sea (-1754)</p> <p>75% CHK- LTGY- LT BRN, SFT-FRM, TR CALC, RTHY, 25% MRLST- DK GY- GY, GY, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, SPTY FLOR, V SLW CUT.</p> <p>6460 (-1794)</p> <p>6500 (-1834)</p>	<p>70% CHK- LTGY- GY, MOD FRM-FRM, TR CALC, RTHY, 30% MRLST- DK GY- GY, GY, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, SPTY FLOR, TR BENT & PYR.</p> <p>7473 MD 93.6 INC 181.7 AZM 6466.31 TVD 910.89 VS</p>	<p>60% CHK- LTGY- GY, MOD FRM-FRM, TR CALC, RTHY, 40% MRLST- DK GY- GY, GY, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, SPTY FLOR, TR BENT & PYR.</p> <p>ON GAS BUSTER</p>	<p>60% CHK- LTGY- GY, MOD FRM-FRM, TR CALC, RTHY, 40% MRLST- DK GY- GY, GY, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, SPTY FLOR, TR BENT & PYR.</p> <p>7568 MD 91.9 INC 179.8 AZM 6461.74 TVD 1005.75 VS</p>
---	--	--	---	---





80 U

CG: 448 U

CG: 224 U

21/13
19' MD

ROP (min/ft)
Gas (units)
Gamma (API)

7850

7900

7950

8000

54)
CHK- LTGY- GY, MOD FRM-FRM, TR CALC,
45% MRLST- DK GY- GY, GY, MOTL, BLKY- PLTY,
SBWXY, V CALC- LMY, CARB, SFT-FRM,
FLOR, TR BENT & PYR.

55% CHK- LTGY- GY, SFT-FRM, TR CALC, RTHY,
45% MRLST- DK GY- GY, GY, MOTL, BLKY- PLTY,
SBWXY, V CALC- LMY, CARB, SFT-FRM, SP, TR
BENT & PYR.

60% CHK- LTGY- GY, SFT-FRM, TR CALC, RTHY,
40% MRLST- DK GY- GY, GY, MOTL, BLKY- PLTY,
SBWXY, V CALC- LMY, CARB, SFT-FRM, SP, TR
BENT & PYR.

60% CHK- LTGY- GY, SFT-FRM, TR CALC, RTHY,
40% MRLST- DK GY- GY, GY, MOTL, BLKY- PLTY,
SBWXY, V CALC- LMY, CARB, SFT-FRM, SP, TR
BENT & PYR.

6420 TVD
Sub Sea (-1754)
60% CHK- LTGY- GY, SFT-FRM,
40% MRLST- DK GY- GY, GY, M
SBWXY, V CALC- LMY, CARB, S
BENT & PYR.

7856 MD
88.6 INC
177.7 AZM
6462.34 TVD
1293.63 VS

7951 MD
88.6 INC
178.0 AZM
6464.75 TVD
1388.56 VS

6500
(-1834)

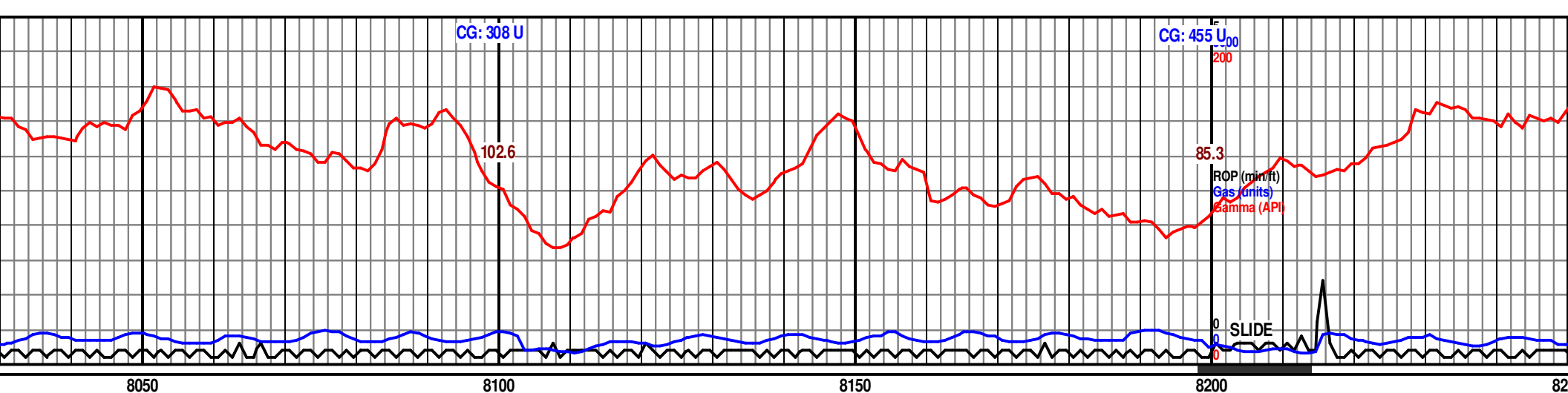
VIS 35, WT 8.9

1000

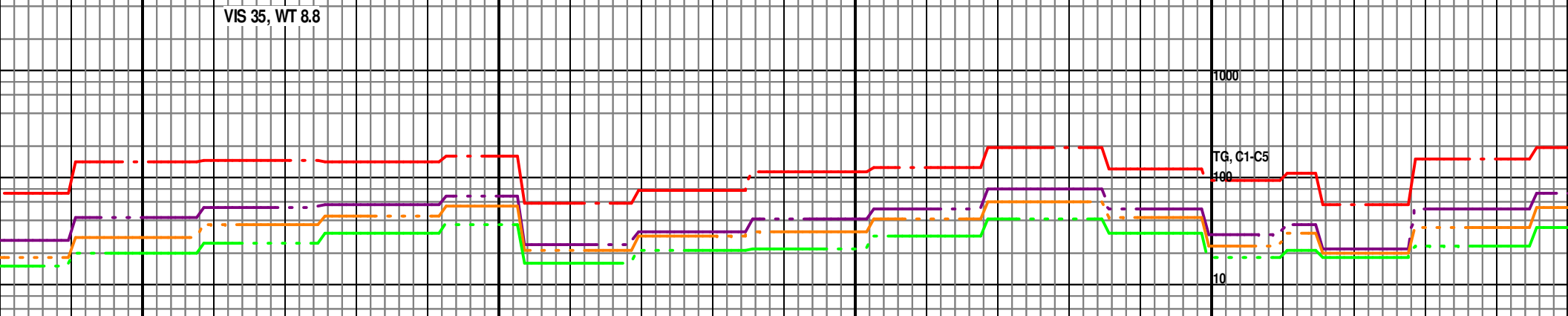
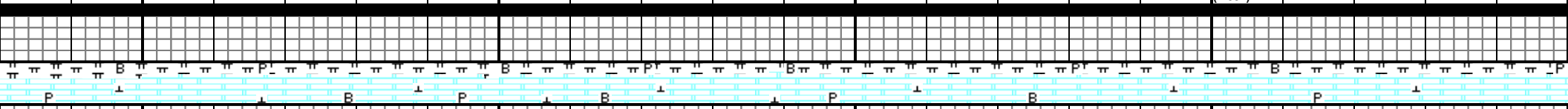
TG, C1-C5

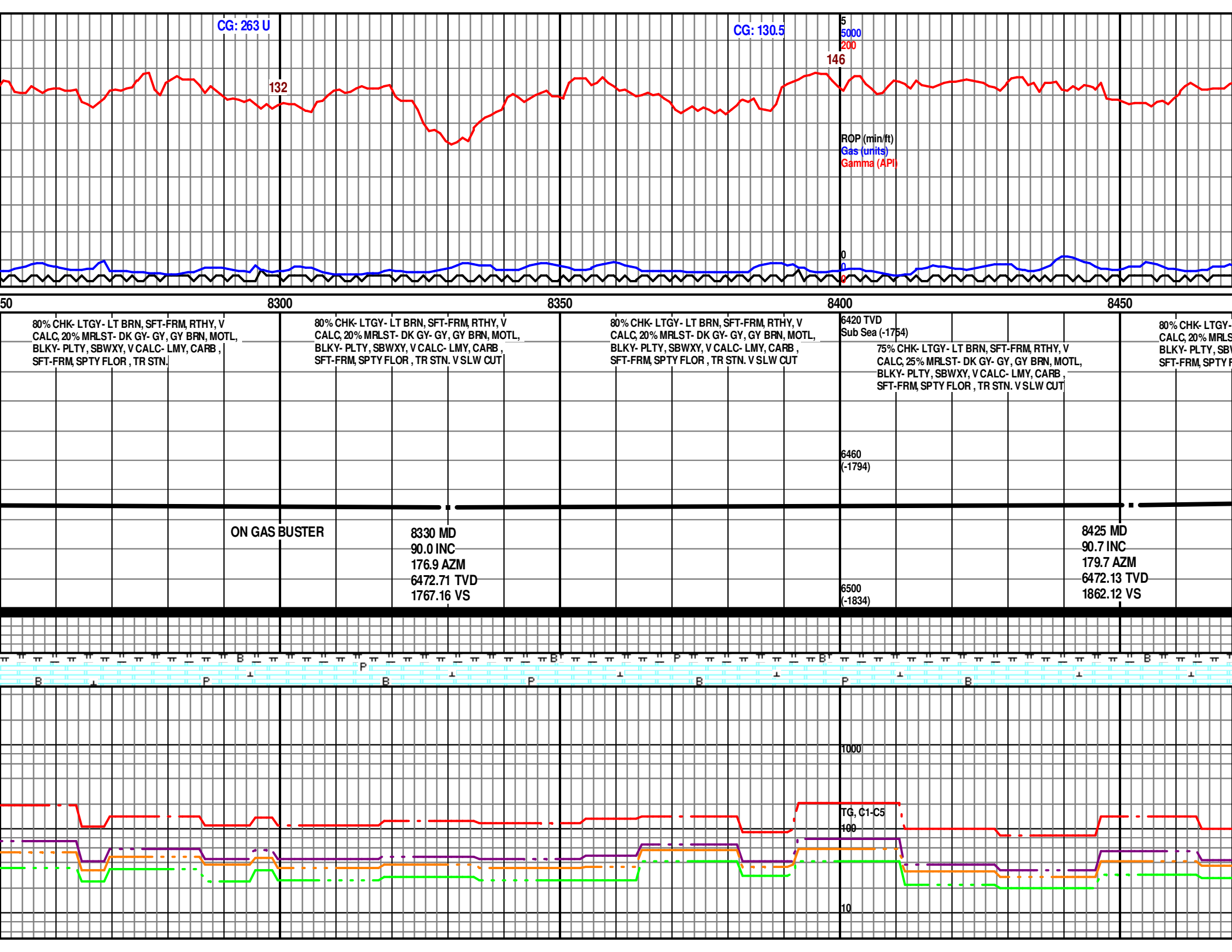
100

10



TR CALC, RTHY, OTL, BLKY- PLTY, FT-FRM, SP, TR	65% CHK- LTGY- GY, SFT-FRM, TR CALC, RTHY, 35% MRLST- DK GY- GY, GY, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, SP, TR BENT & PYR.	70% CHK- LTGY- LT BRN, SFT-FRM, TR CALC, RTHY, 30% MRLST- DK GY- GY, GY, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, SPTY FLOR, V SLW CUT.	75% CHK- LTGY- LT BRN, SFT-FRM, TR CALC, RTHY, 25% MRLST- DK GY- GY, GY, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, SPTY FLOR, V SLW CUT.	6420 TVD Sub Sea (-1754) 70% CHK- LTGY- LT BRN, SFT-FRM, RTHY, V CALC, 30% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, SP TY FLOR, TR STN.
8043 MD 88.4 INC 177.1 AZM 6466.93 TVD 1480.48 VS		8138 MD 88.1 INC 177.1 AZM 6469.99 TVD 1575.35 VS		8234 MD 89.4 INC 177.2 AZM 6472.14 TVD 1671.24 VS

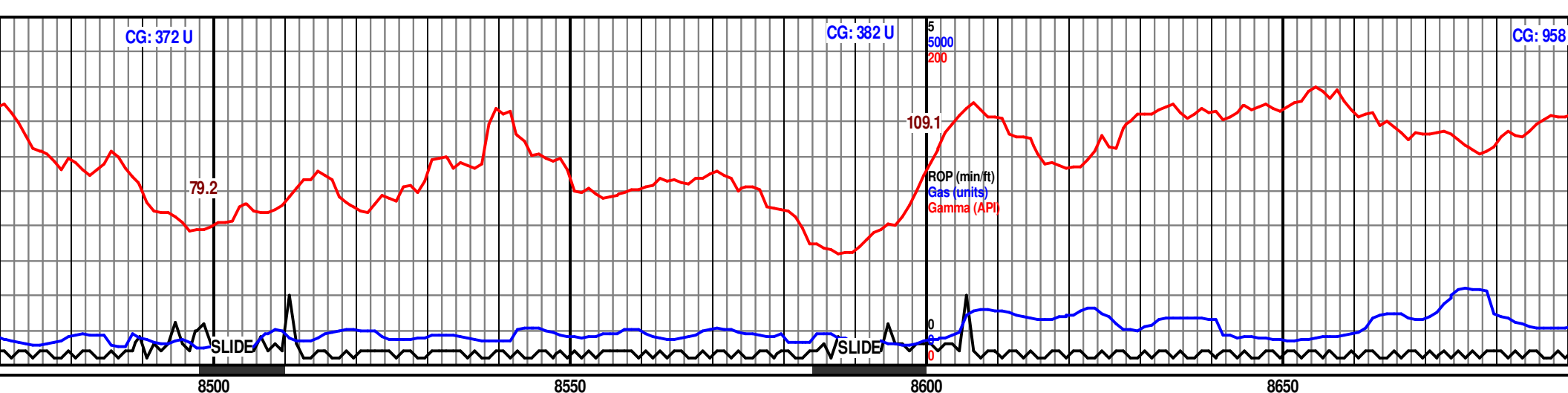




CG: 372 U

CG: 382 U

CG: 958

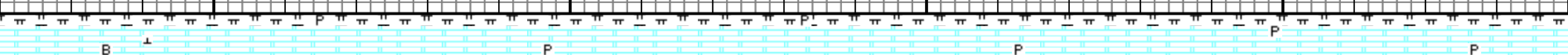


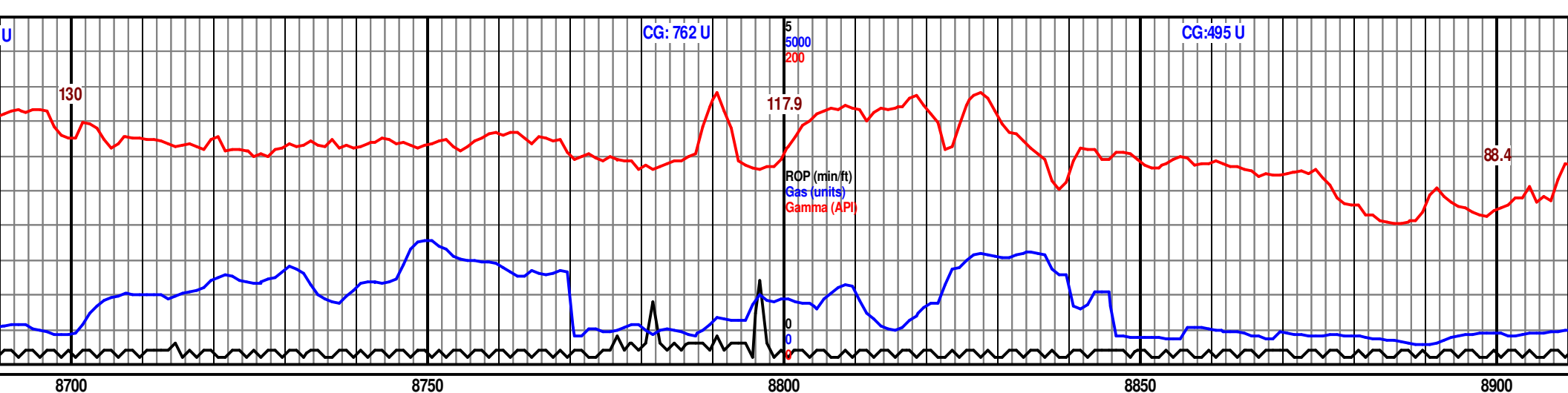
8500	8550	8600	8650
LT BRN, SFT-FRM, RTHY, V ST- DK GY- GY, GY BRN, MOTL, WXY, V CALC- LMY, CARB, FLOR, TR STN. V SLW CUT	80% CHK- LTGY- LT BRN, SFT-FRM, RTHY, V CALC, 20% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, SPTY FLOR, TR STN. V SLW CUT	75% CHK- LTGY- LT BRN, SFT-FRM, RTHY, V CALC, 25% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, SPTY FLOR, TR STN. V SLW CUT	6420 TVD Sub Sea (-1754) 75% CHK- LTGY- LT BRN, SFT-FRM, RTHY, V CALC, 25% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, SPTY FLOR, TR STN. V SLW CUT

8522 MD
91.1 INC
179.5 AZM
6470.61 TVD
1959.11 VS

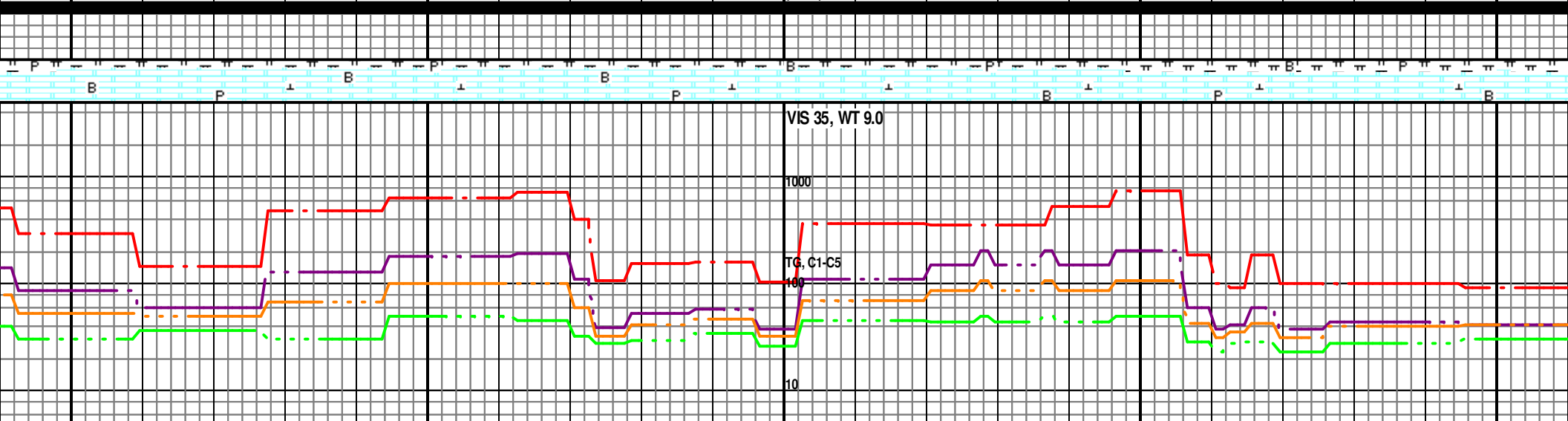
8617 MD
90.2 INC
179.6 AZM
6469.58 TVD
2054.11 VS

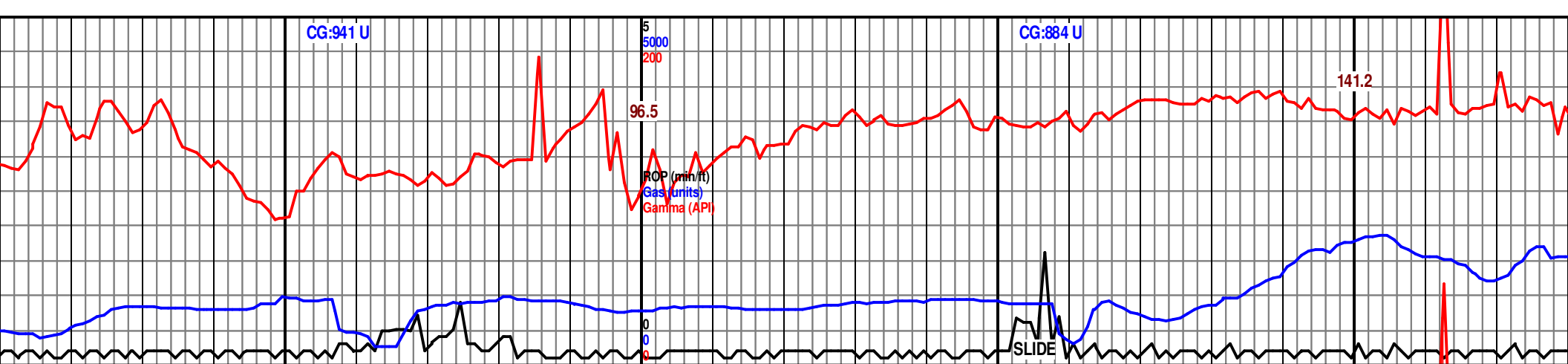
ON G



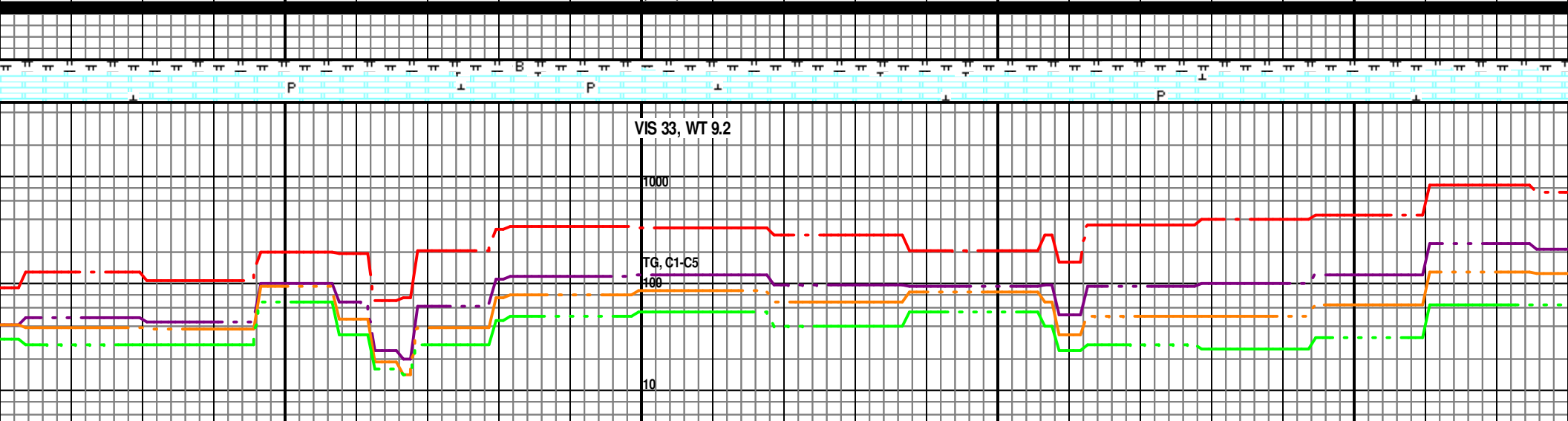


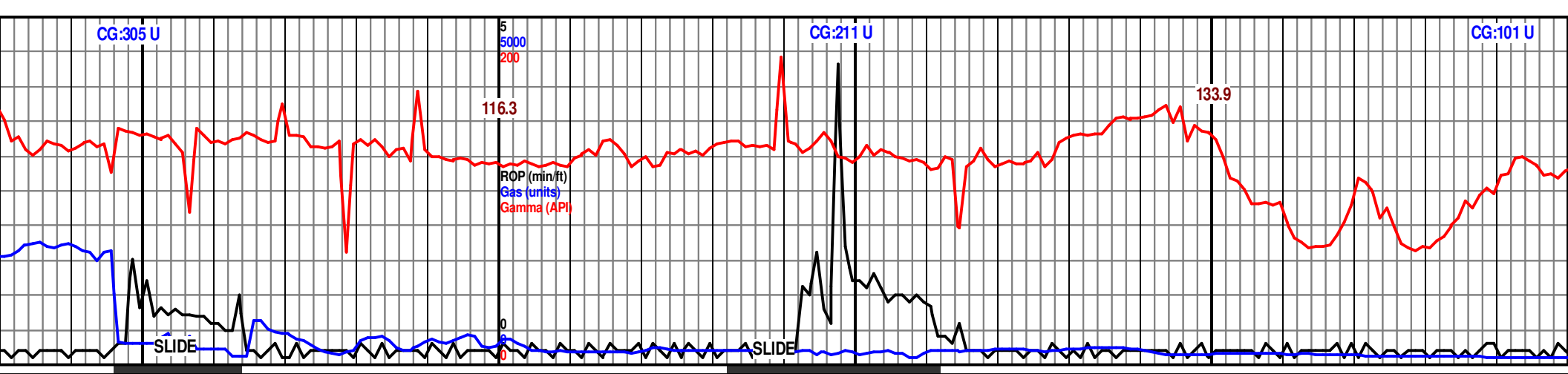
8700					8750					8800					8850					8900				
80% CHK- LTGY- LT BRN, SFT-FRM, RTHY, V CALC, 20% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, SPTY FLOR, TR STN. V SLW CUT					80% CHK- LTGY- LT BRN, SFT-FRM, RTHY, V CALC, 20% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, SPTY FLOR, TR STN. V SLW CUT					6420 TVD Sub Sea (-1754) 75% CHK- LTGY- LT BRN, SFT-FRM, RTHY, V CALC, 25% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, SPTY FLOR, TR STN. V SLW CUT					75% CHK- LTGY- LT BRN, SFT-FRM, RTHY, V CALC, 25% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, SPTY FLOR, TR STN. V SLW CUT					75% CHK- L MRLST- DK V CALC- L SLW CUT				
										6460 (-1794)														
GAS BUSTER																								
8712 MD 91.3 INC 178.4 AZM 6468.34 TVD 2149.09 VS										8805 MD 90.1 INC 180.7 AZM 6467.17 TVD 2242.08 VS										8901 MD 91.5 INC 181.4 AZM 6465.81 TVD 2338.03 VS				
										6500 (-1834)														



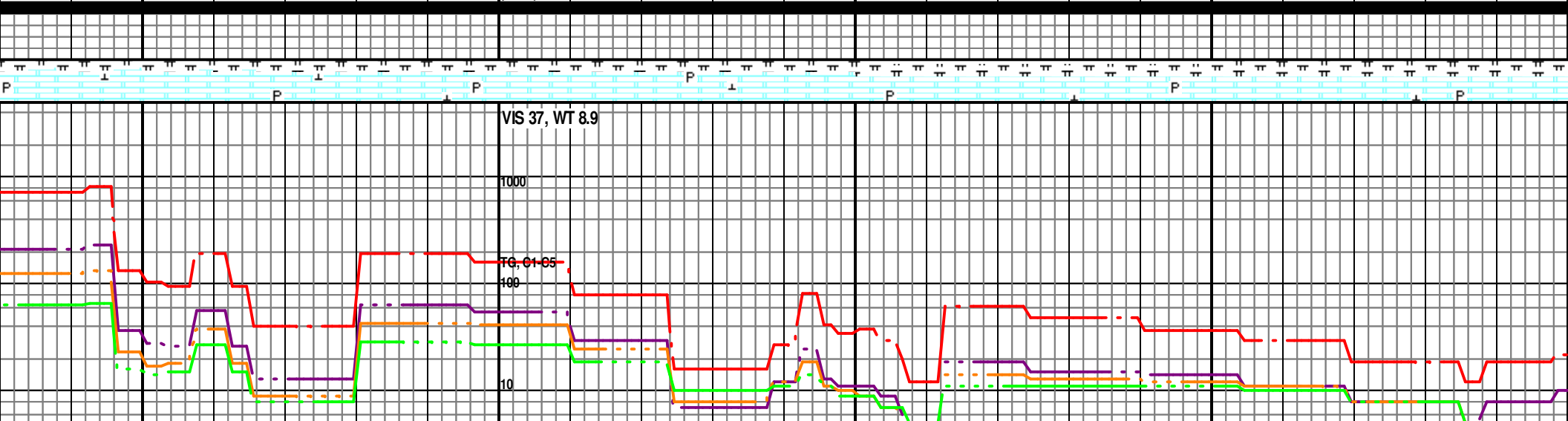


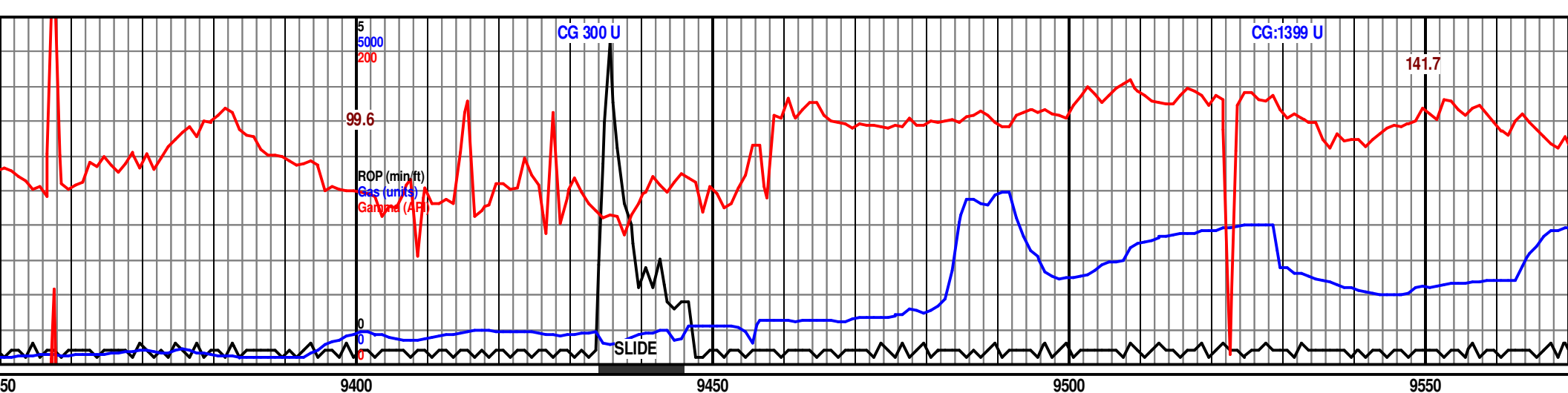
8950				9000				9050				9100			
70% CHK- LTGY- LT BRN, SFT-FRM, RTHY, V CALC, 25% GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, VY, CARB, SFT-FRM, SPTY FLOR, TR STN. V				70% CHK- LTGY- LT BRN, SFT-FRM, RTHY, V CALC, 30% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, SPTY FLOR, TR STN. V SLW CUT				70% CHK- LTGY- LT BRN, SFT-FRM, RTHY, V CALC, 30% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, SPTY FLOR, TR STN. RESID CUT				75% CHK- LTGY- LT BRN, SFT-FRM, RTHY, V CALC, 30% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, SPTY FLOR, TR STN. RESID CUT			
				6420 TVD Sub Sea (-1754)				6460 (-1794)							
				70% CHK- LTGY- LT BRN, SFT-FRM, RTHY, V CALC, 30% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, SPTY FLOR, TR STN. V SLW CUT				STUCK AT 9058 WORKED PIPE FREE/ TRIPPED OUT 4 STANDS REAMED HOLE.							
								OFF GAS BUSTER							
				8997 MD 90.0 INC 179.4 AZM 6464.56 TVD 2434.00 VS								9092 MD 91.2 INC 181.5 AZM 6463.61 TVD 2528.98 VS			



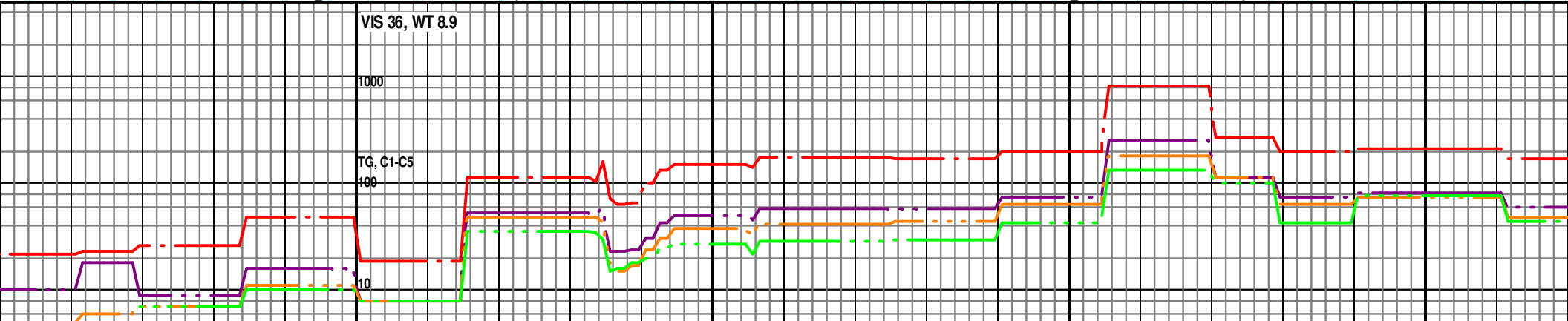
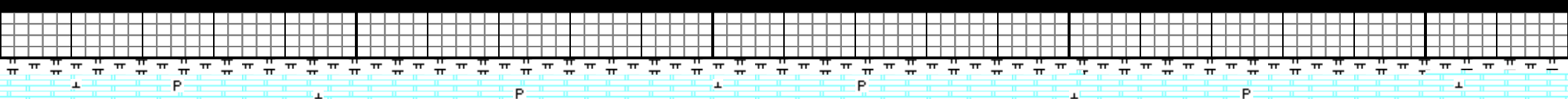


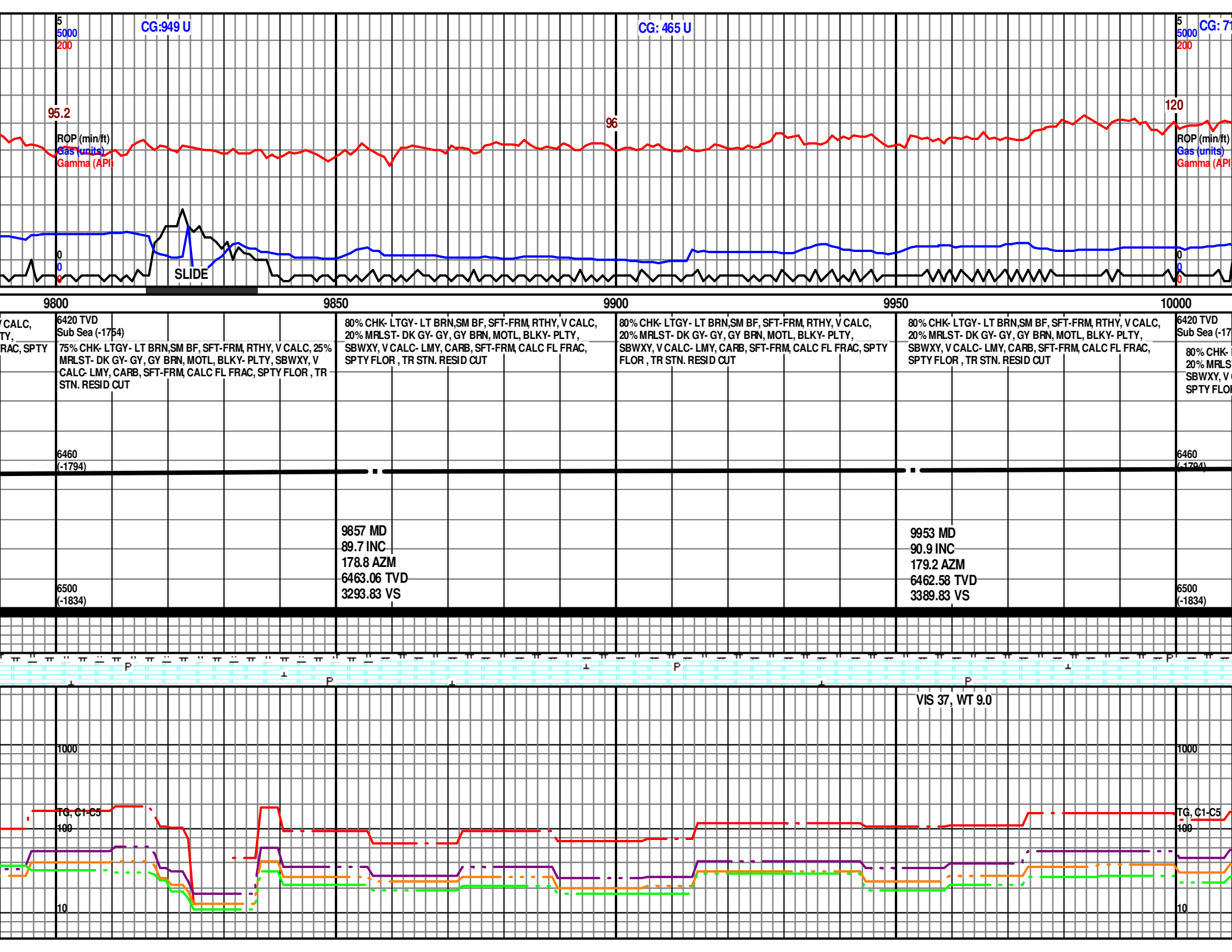
THY, V CALC, 25% BLKY- PLTY, SBWXY, V LOR , TR STN. RESID	75% CHK- LTGY- LT BRN, SFT-FRM, RTHY, V CALC, 25% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB , SFT-FRM, SPTY FLOR , TR STN. RESID CUT	6420 TVD Sub Sea (-1754) 75% CHK- LTGY- LT BRN, SFT-FRM, RTHY, V CALC, 25% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB , SFT-FRM, SPTY FLOR , TR STN. RESID CUT	6460 (-1704)	70% CHK- LTGY- LT BRN, SFT-FRM, RTHY, V CALC, 30% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, SPTY FLOR , TR STN. RESID CUT	70% CHK- LTGY- LT BRN, SFT-FRM, RTHY, V CALC, 30% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, SPTY FLOR , TR STN. RESID CUT
ON GAS BUSTER		9188 MD 90.8 INC 181.3 AZM 6461.97 TVD 2624.91 VS	6500 (-1834)	9283 MD 89.4 INC 178.8 AZM 6461.86 TVD 2719.90 VS	





70% CHK- LTGY- LT BRN,SM BF, SFT-FRM, RTHY, V CALC, 30% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, SPTY FLOR , TR STN. RESID CUT	6420 TVD Sub Sea (-1754) 70% CHK- LTGY- LT BRN,SM BF, SFT-FRM, RTHY, V CALC, 30% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, SPTY FLOR , TR STN. RESID CUT	70% CHK- LTGY- LT BRN,SM BF, SFT-FRM, RTHY, V CALC, 30% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, SPTY FLOR , TR STN. RESID CUT	70% CHK- LTGY- LT BRN,SM BF, SFT-FRM, RTHY, V CALC, 30% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, SPTY FLOR , TR STN. RESID CUT	75% CHK- LTGY- LT BRN,SM BF, SFT-FRM, RTHY, V CALC, 25% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, SPTY FLOR , TR STN. RESID CUT
	6460 (-1794)			
9379 MD 89.7 INC 180.1 AZM 6462.64 TVD 2815.89 VS	6500 (-1834)	9474 MD 89.2 INC 179.5 AZM 6463.56 TVD 2910.88 VS		9570 MD 89.4 INC 179.1 AZM 6464.16 TVD 3006.89 VS

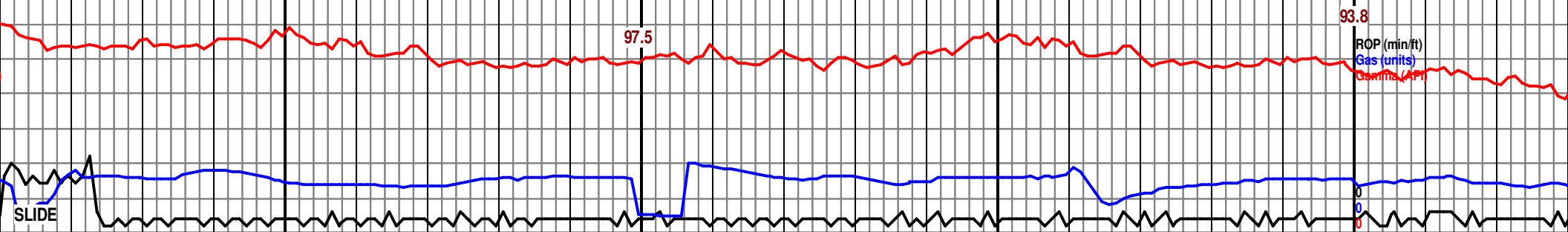




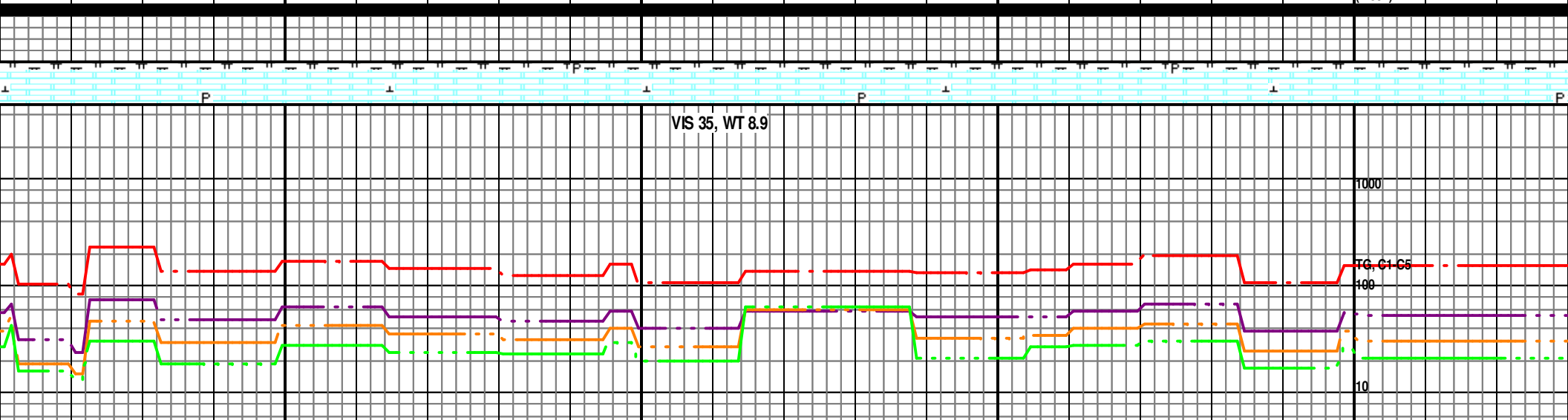
17 U

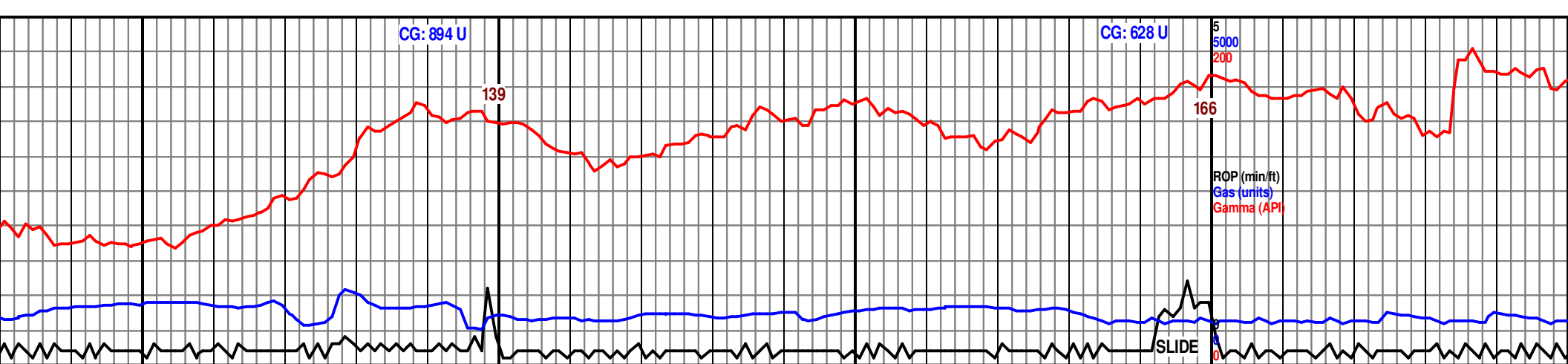
CG: 689 U

CG: 777 U

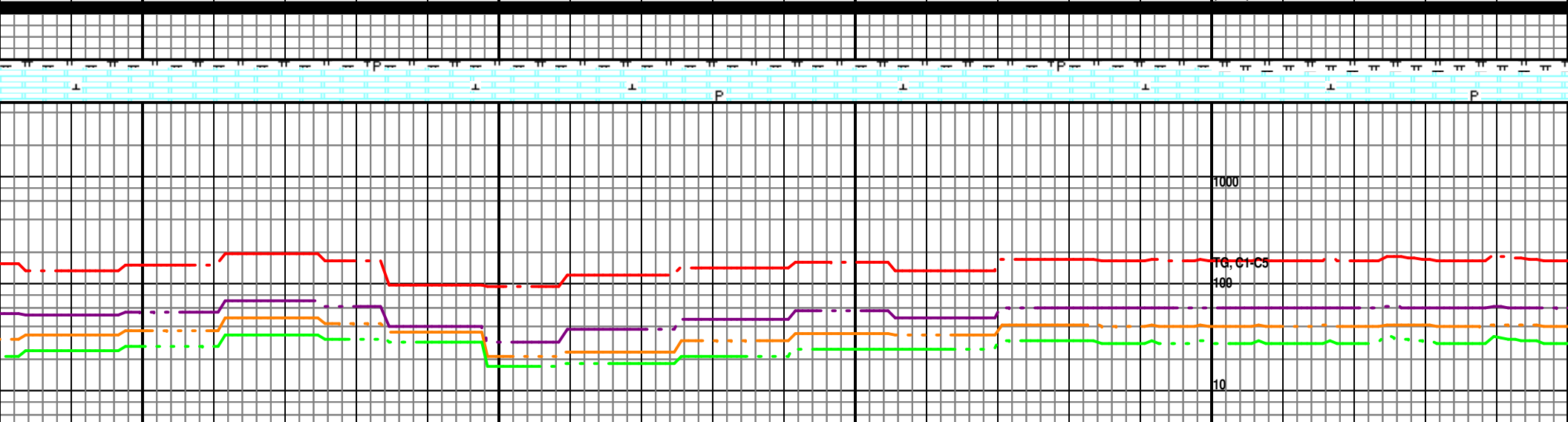
5
5000
200

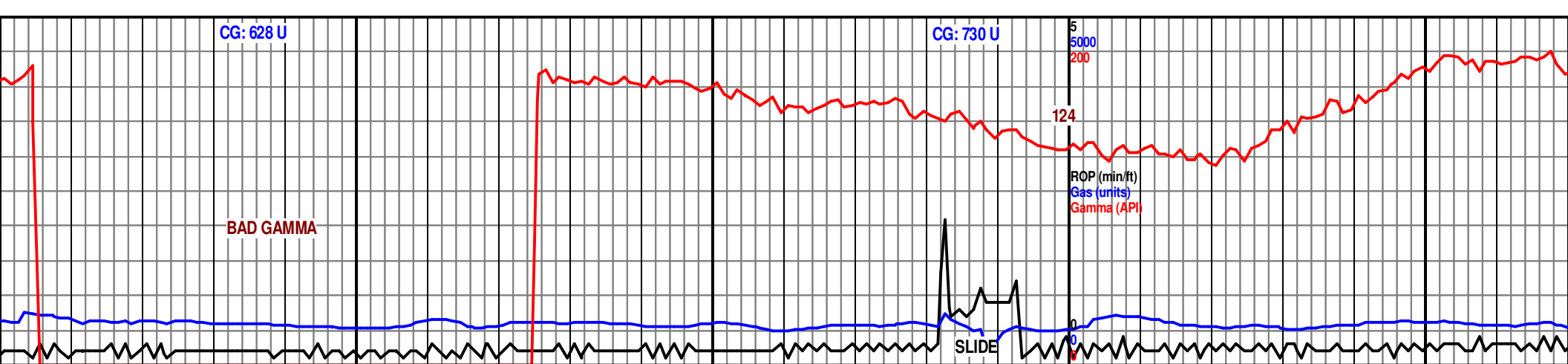
54)	75% CHK- LTGY- LT BRN,SM BF, SFT-FRM, RTHY, V CALC, 25% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, CALC FL FRAC, SPTY FLOR, TR STN. RESID CUT	75% CHK- LTGY- LT BRN,SM BF, SFT-FRM, RTHY, V CALC, 25% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, CALC FL FRAC, SPTY FLOR, TR STN. RESID CUT	80% CHK- LTGY- LT BRN,SM BF, SFT-FRM, RTHY, V CALC, 20% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, CALC FL FRAC, SPTY FLOR, TR STN. RESID CUT	6420 TVD Sub Sea (-1754) 80% CHK- LTGY- LT BRN,SM BF, CALC, 20% MRLST- DK GY- GY, BLKY- PLTY, SBWXY, V CALC- L CALC FL FRAC, SPTY FLOR, TR
LTGY- LT BRN,SM BF, SFT-FRM, RTHY, V CALC, T- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, CALC- LMY, CARB, SFT-FRM, CALC FL FRAC, R, TR STN. RESID CUT				
			ON GAS BUSTER	
				6460 (-1794)
10049 MD 89.5 INC 178.7 AZM 6462.27 TVD 3485.82 VS		10143 MD 90.0 INC 180.5 AZM 6462.71 TVD 3579.81 VS		6500 (-1834)



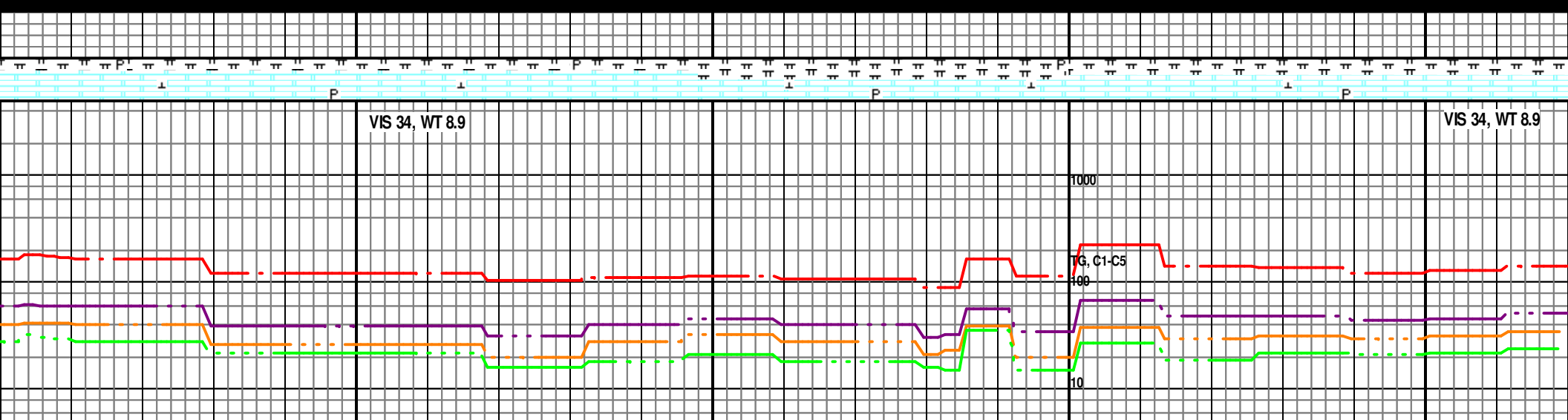


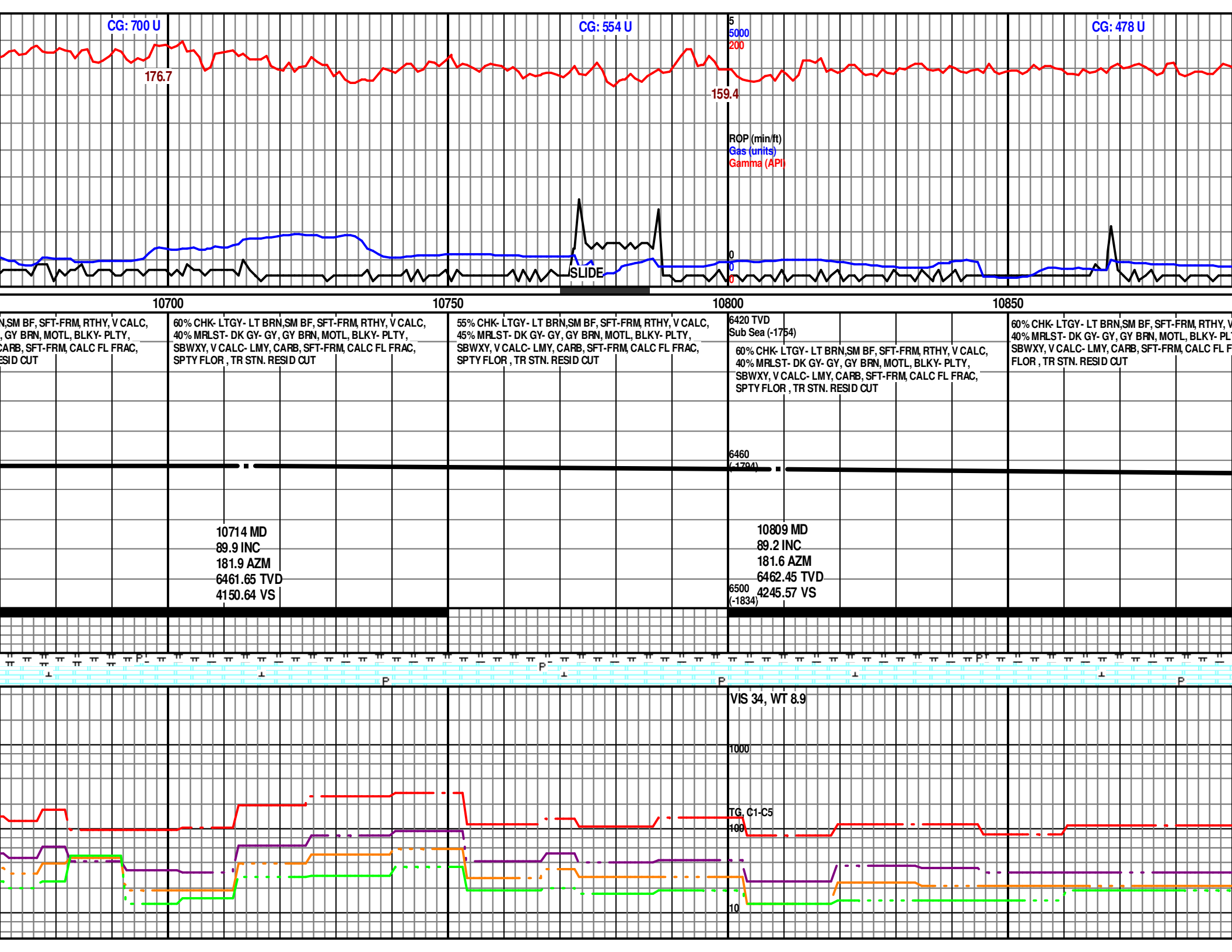
10250	10300	10350	10400	10450
SFT-FRM, RTHY, V GY BRN, MOTL, LMY, CARB, SFT-FRM, STN. RESID CUT	80% CHK- LTGY- LT BRN,SM BF, SFT-FRM, RTHY, V CALC, 20% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, CALC FL FRAC, SPTY FLOR, TR STN. RESID CUT	75% CHK- LTGY- LT BRN,SM BF, SFT-FRM, RTHY, V CALC, 25% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, CALC FL FRAC, SPTY FLOR, TR STN. RESID CUT	75% CHK- LTGY- LT BRN,SM BF, SFT-FRM, RTHY, V CALC, 25% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, CALC FL FRAC, SPTY FLOR, TR STN. RESID CUT	6420 TVD Sub Sea (-1754) 70% CHK- LTGY- LT BRN,SM BF, SFT-FRM, RTHY, V CALC, 30% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, CALC FL FRAC, SPTY FLOR, TR STN. RESID CUT
10237 MD 89.9 INC 179.0 AZM 6462.84 TVD 3673.81 VS		10332 MD 90.4 INC 180.8 AZM 6462.64 TVD 3768.80 VS		10428 MD 90.0 INC 181.3 AZM 6462.33 TVD 3864.77 VS

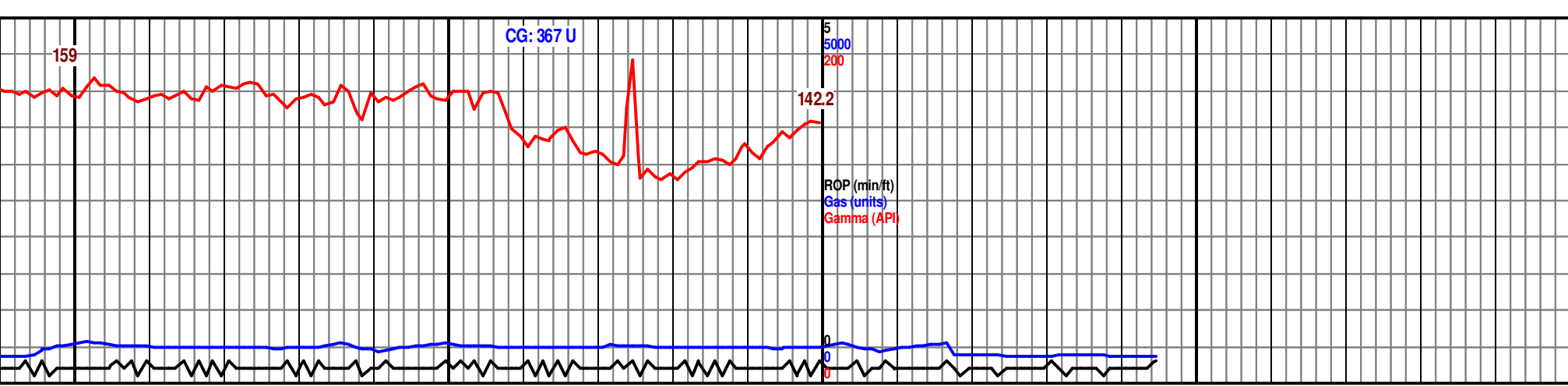




1050	10500	10550	10600	10650
70% CHK- LTGY- LT BRN, SM BF, SFT-FRM, RTHY, V CALC, 30% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, CALC FL FRAC, SPTY FLOR, TR STN. RESID CUT	65% CHK- LTGY- LT BRN, SM BF, SFT-FRM, RTHY, V CALC, 35% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, CALC FL FRAC, SPTY FLOR, TR STN. RESID CUT	60% CHK- LTGY- LT BRN, SM BF, SFT-FRM, RTHY, V CALC, 40% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, CALC FL FRAC, SPTY FLOR, TR STN. RESID CUT	6420 TVD Sub Sea (-1754) 65% CHK- LTGY- LT BRN, SM BF, SFT-FRM, RTHY, V CALC, 35% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, CALC FL FRAC, SPTY FLOR, TR STN. RESID CUT	60% CHK- LTGY- LT BRN, SM BF, SFT-FRM, RTHY, V CALC, 40% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, CALC FL FRAC, SPTY FLOR, TR STN. RESID CUT
			6460 (-1704)	
			6500 (-1834)	
	10522 MD 90.5 INC 180.9 AZM 6461.95 TVD 3958.73 VS		10618 MD 90.0 INC 181.0 AZM 6461.55 TVD 4054.70 VS	







10900			10950			11000			11050			11100
CALC, TY, RAC, SPTY			60% CHK- LTGY- LT BRN, SM BF, SFT-FRM, RTHY, V CALC, 40% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, CALC FL FRAC, SPTY FLOR, TR STN. RESID CUT			60% CHK- LTGY- LT BRN, SM BF, SFT-FRM, RTHY, V CALC, 40% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, CALC FL FRAC, SPTY FLOR, TR STN. RESID CUT			6420 TVD Sub Sea (-1754) 60% CHK- LTGY- LT BRN, SM BF, SFT-FRM, RTHY, V CALC, 40% MRLST- DK GY- GY, GY BRN, MOTL, BLKY- PLTY, SBWXY, V CALC- LMY, CARB, SFT-FRM, CALC FL FRAC, SPTY FLOR, TR STN. RESID CUT			
10905 MD 89.5 INC 180.6 AZM 6463.60 TVD 4341.52 VS						10989 MD 89.2 INC 181.5 AZM 6464.56 TVD 4425.48 VS			11045 MD 89.22 INC 181.53 AZM 6465.67 TVD 4481.46 VS			
						6460 (-1794)						
						6500 (-1834)						
									TD 11045 'MD, 6464' TVD @ 01:30 HR on 10/22/13			
									PROJ. TO BIT			

