



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

Well Name: Razor 27L 3401B  
Location: NWSW 27-T10N-R58W Weld County, Colorado  
License Number: 05-123-37730  
Spud Date: 8/25/2013  
Surface Coordinates: Lat.: 40.808894 Long.: -103.857986

Region: Redtail Field  
Drilling Completed:

Bottom Hole Coordinates: Lat.: 40.787967 Long.: -103.859339

Ground Elevation (ft): 4771  
Logged Interval (ft): 5100 To: 12490  
Formation: Pierre, Sharon Springs, Niobrara  
Type of Drilling Fluid: Water Based Mud

K.B. Elevation (ft): 4754  
Total Depth (ft): 12490

Printed by HORIZONTAL.LOG from WellSight Systems 1-800-447-1534 [www.WellSight.com](http://www.WellSight.com)

#### OPERATOR

Company: Whiting Oil & Gas Corp.  
Address: 1700 Broadway Suite 2300  
Denver, CO 80290

#### GEOLOGIST

Name: Mark Denler, Craig Dreiling  
Company: Acme Geologic Consulting  
Address: 108 Berry Street  
Little Rock, AR 72205

## Drilling Company

Cade Drilling, LLC  
Rig 21

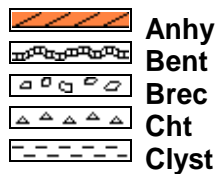
## Gas Detection

Mudlogging Systems, Inc., M Logger, Model TGC, Total Gas and Chromatograph

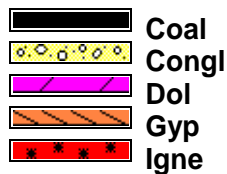
## Comments

Lithologies and tops at drilled depths, not corrected to elogs. Where the well bore gas is 100% methane, the C1 line is moved to 85% for graphical purposes only.

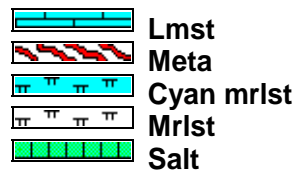
## ROCK TYPES



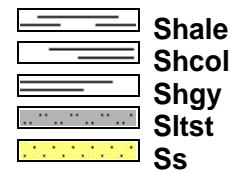
Anhy  
Bent  
Brec  
Cht  
Clyst



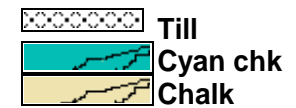
Coal  
Congl  
Dol  
Gyp  
Igne



Lmst  
Meta  
Cyan mrlst  
Mrlst  
Salt

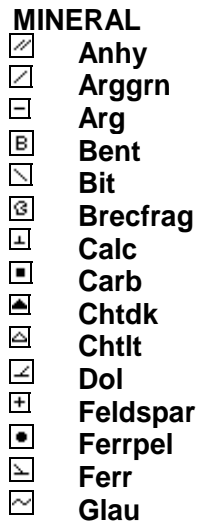


Shale  
Shcol  
Shgy  
Sltst  
Ss



Till  
Cyan chk  
Chalk

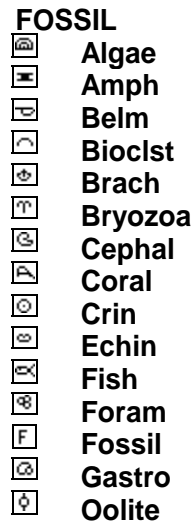
## ACCESSORIES



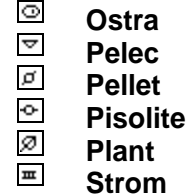
MINERAL  
Anhy  
Arggrn  
Arg  
Bent  
Brecfrag  
Bit  
Calc  
Carb  
Chtdk  
Chtlt  
Dol  
Feldspar  
Ferrpel  
Ferr  
Glau



Gyp  
Hvymin  
Kaol  
Marl  
Minxl  
Nodule  
Phos  
Pyr  
Salt  
Sandy  
Silt  
Sil  
Sulphur  
Tuff



FOSSIL  
Algae  
Amph  
Belm  
Bioclst  
Brach  
Bryozoa  
Cephal  
Coral  
Crin  
Echin  
Fish  
Foram  
Fossil  
Gastro  
Oolite



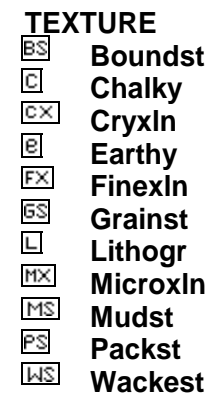
Ostra  
Pelec  
Pellet  
Pisolite  
Plant  
Strom



STRINGER  
Anhy  
Arg  
Bent  
Coal  
Dol  
Gyp  
Ls  
Mrst



Sltstrg  
Ssstrg



TEXTURE  
Boundst  
Chalky  
Cryxln  
Earthy  
Finexln  
Grainst  
Lithogr  
Microxln  
Mudst  
Packst  
Wackest

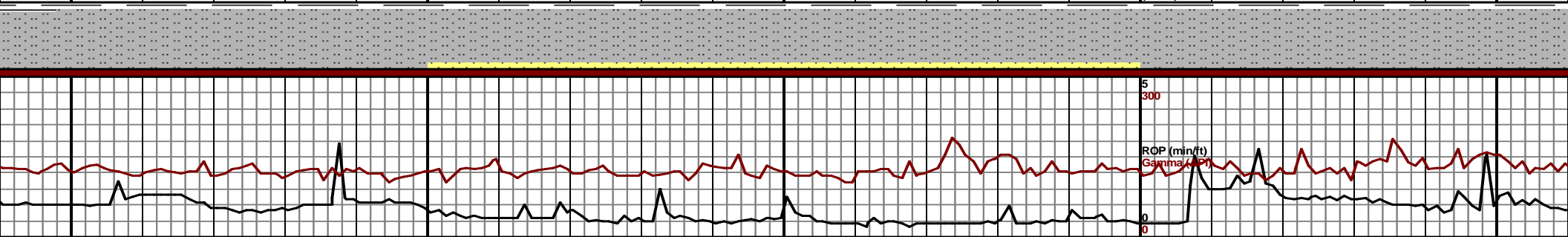
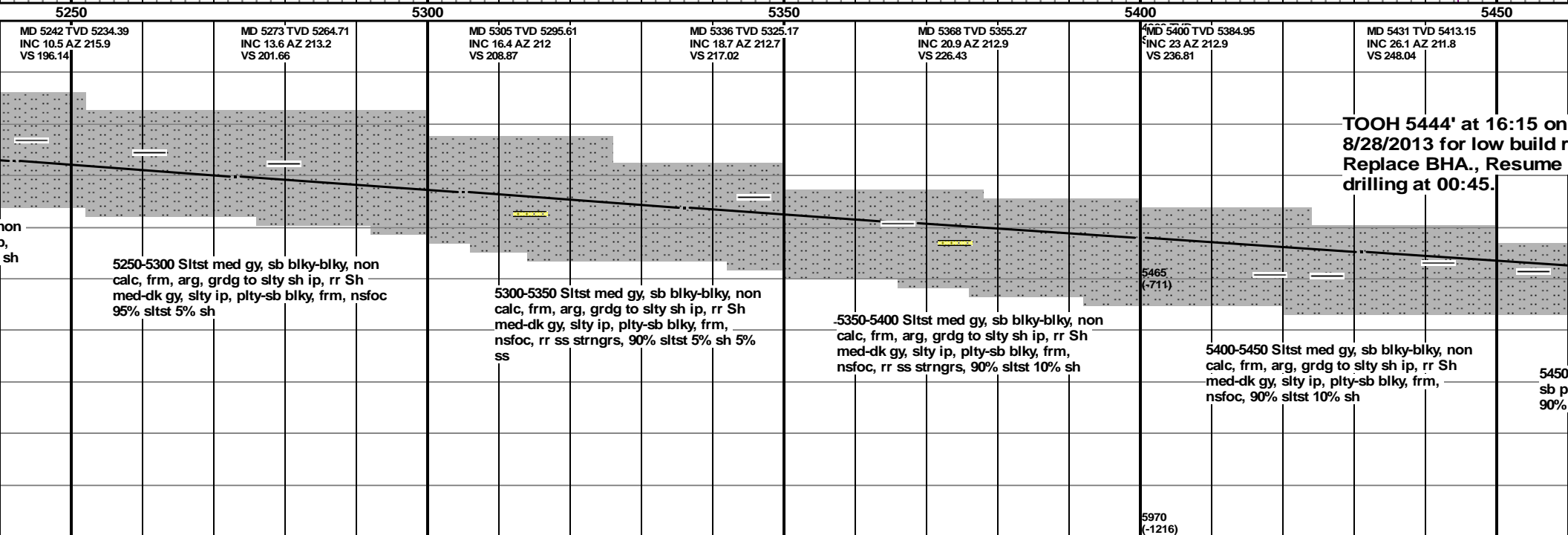
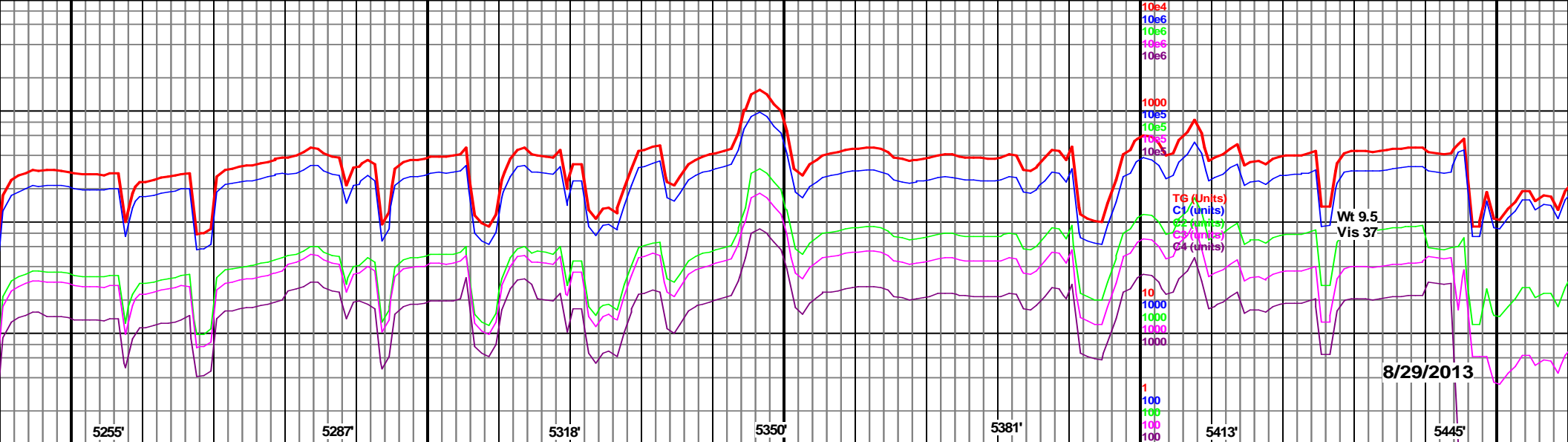
**POROSITY**  
[E] Earthy  
[□] Fenest  
[F] Fracture  
[X] Inter  
[⊗] Moldic  
[⊙] Organic  
[P] Pinpoint

[V] Vuggy  
  
**SORTING**  
[W] Well  
[M] Moderate  
[P] Poor

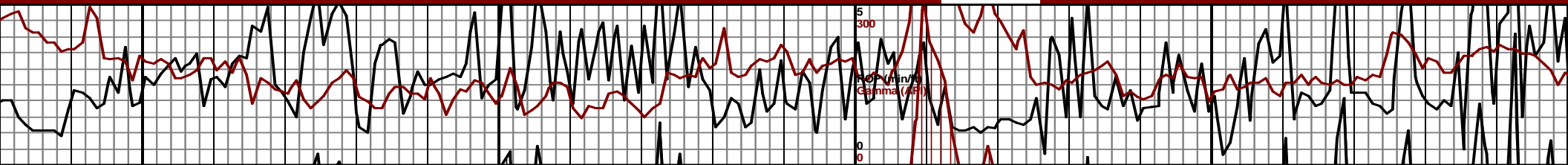
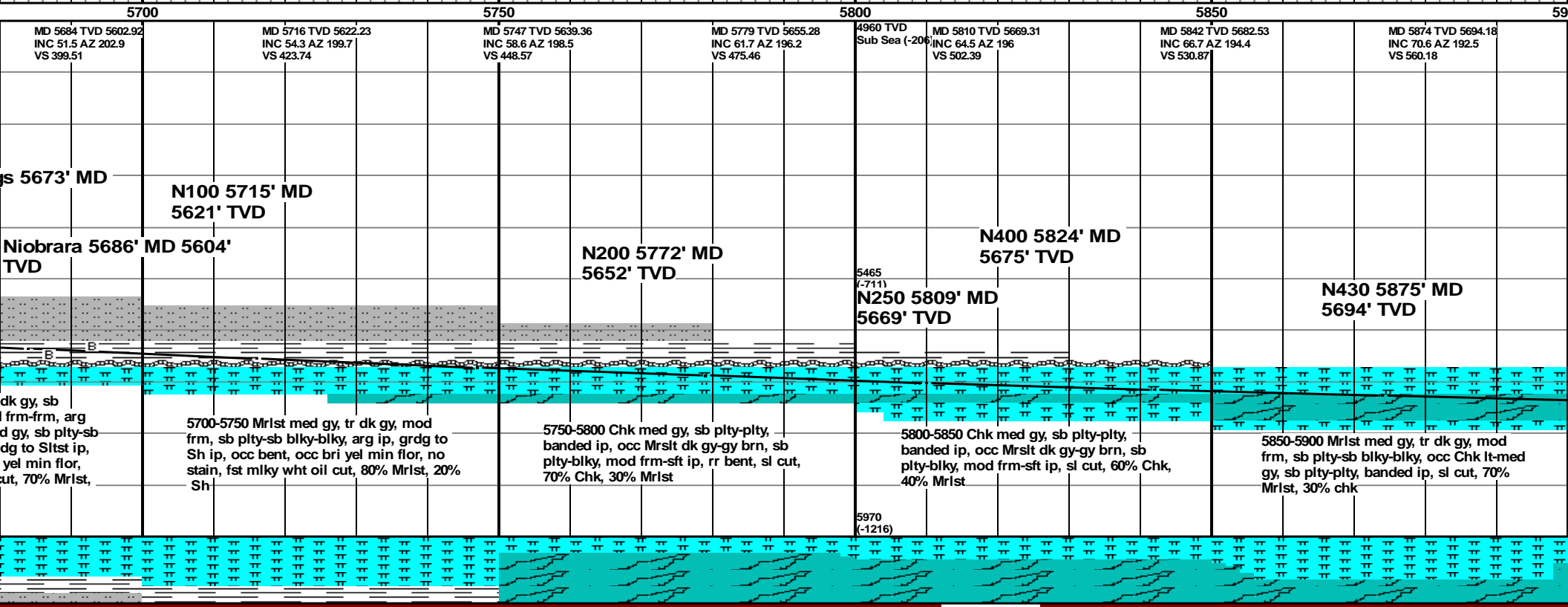
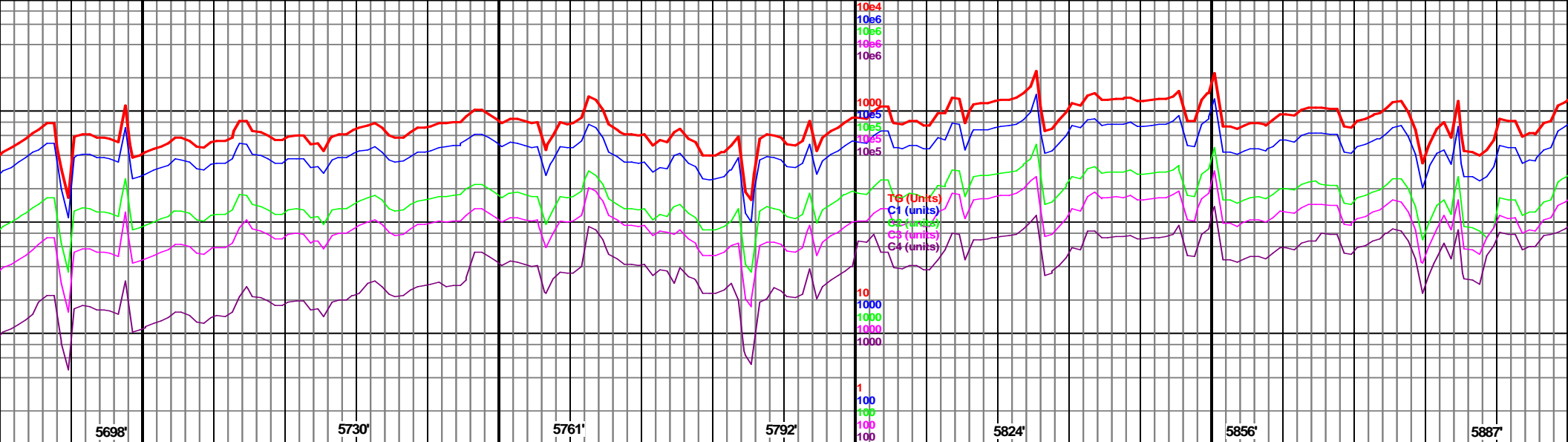
**OTHER SYMBOLS**  
**ROUNDING**  
[R] Rounded  
[r] Subrnd  
[a] Subang  
[A] Angular  
  
**OIL SHOW**  
[●] Even  
  
[⦿] Spotted  
[○] Ques  
[D] Dead  
  
**INTERVAL**  
[■] Core  
[◼] Dst

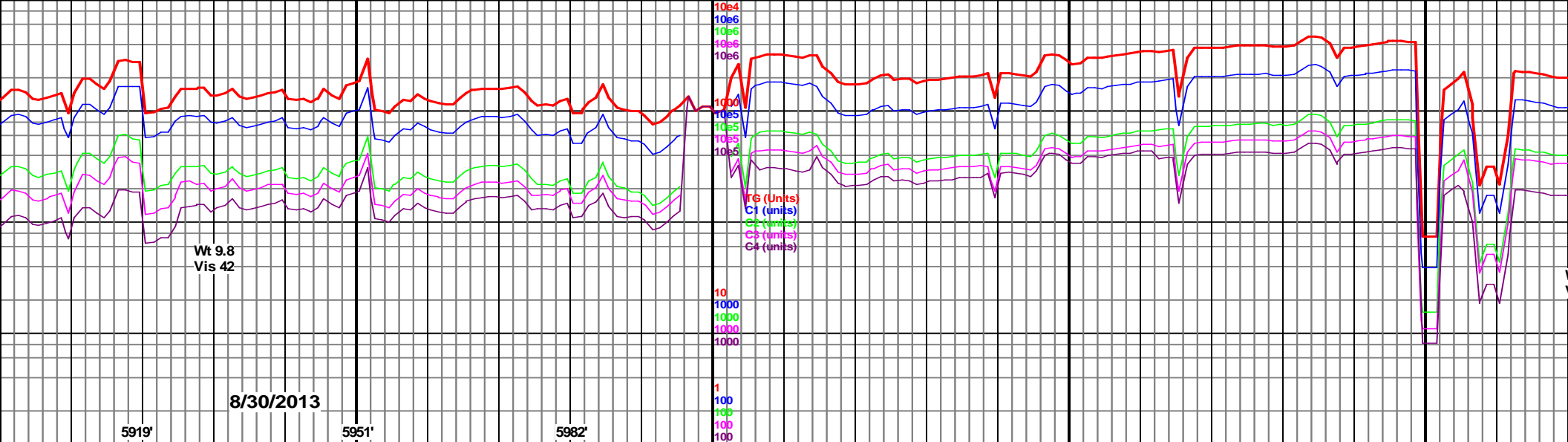
**EVENT**  
[▽] Rft  
[◼] Sidewall



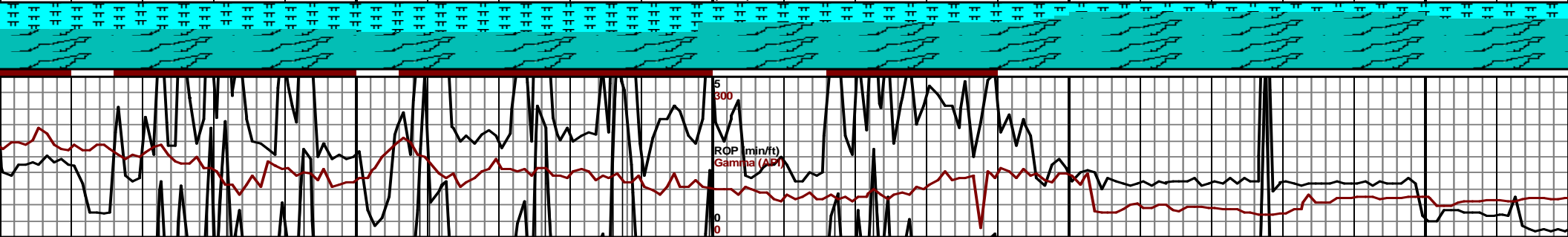




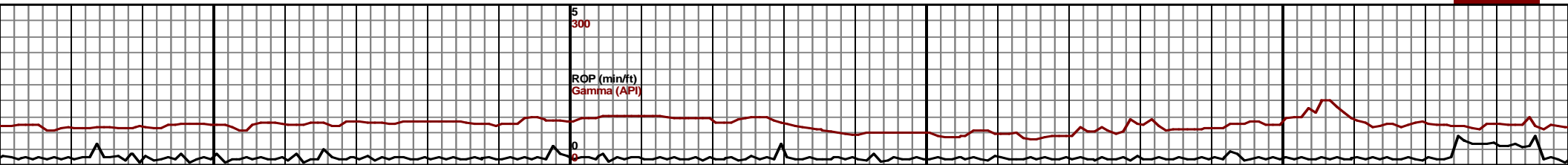
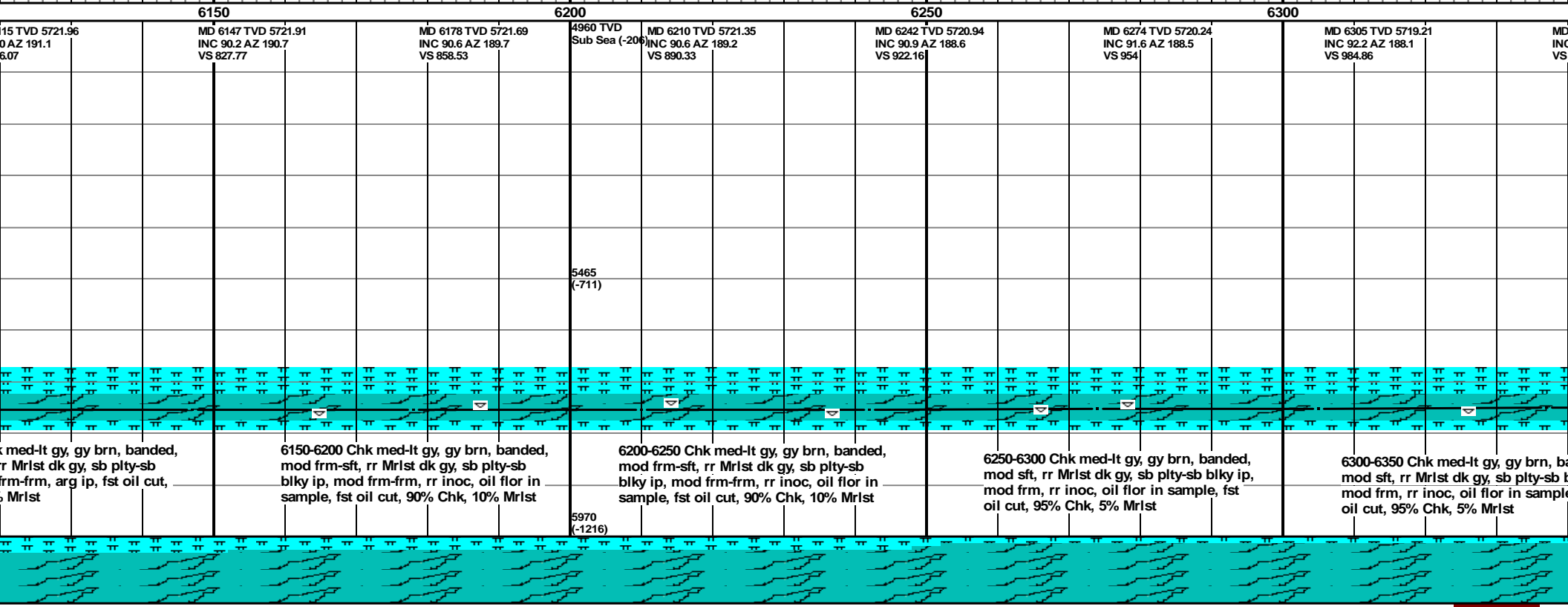
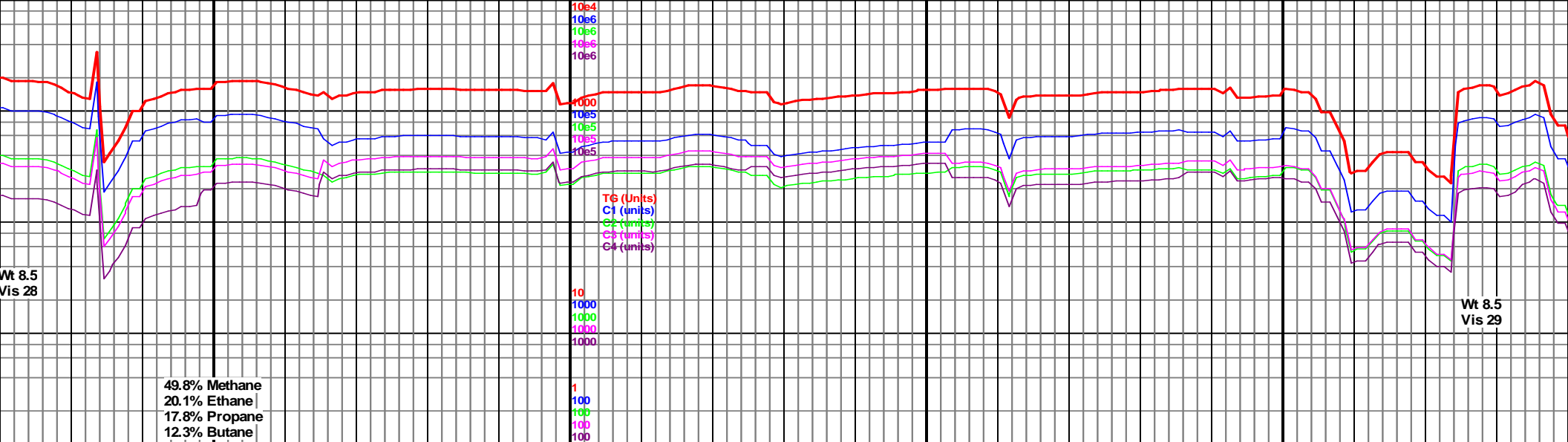


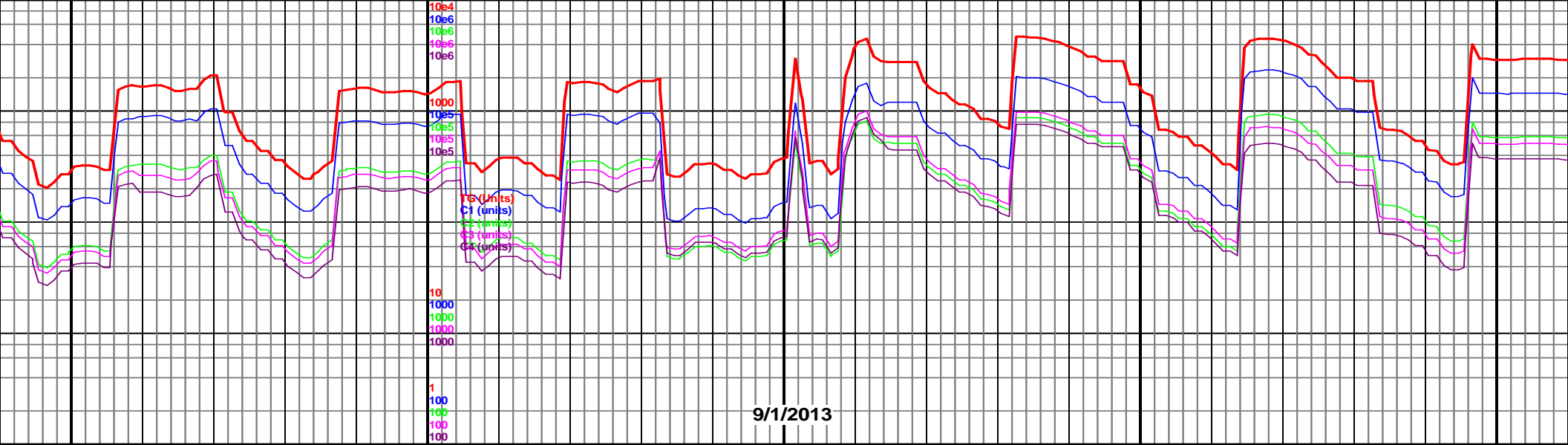


MD 5905 TVD 5703.47 INC 74.5 AZ 190.6 VS 589.42	MD 5937 TVD 5711.02 INC 78.2 AZ 189.5 VS 620.28	MD 5968 TVD 5716.35 INC 82 AZ 188.6 VS 650.65	MD 6000 TVD 5719.86 INC 85.4 AZ 190.2 VS 682.25	MD 6032 TVD 5721.54 INC 88.6 AZ 191.1 VS 713.92	MD 6055 TVD 5721.86 INC 89.8 AZ 191.4 VS 736.69	MD 6100 TVD 5722.10 INC 90.0 AZ 191.5 VS 750.00
N460 5925' MD 5709' TVD			5465 (-711)	Intermediate casing point 6100' MD reached at 10:15 on 8/30/2013 resumed at 19:55 on 8/31/2013		
5900-5950 Chk lt-med gy, sb plty-plty, banded ip, sft-mod frm, g amt Mrlst med-dk gy, tr brn gy, mod frm, sb plty-sb blky, blky, tr dull orng min flor, fst mlky wht oil cut, no stain, 70% Chk, 30% Mrlst			6000-6050 Chk lt gy, occ med gy, sb plty-plty, banded ip, sft, occ Mrlst med-dk gy, brn gy, sb blky-blky, sb plty ip, frm, arg ip, tr inoc, nsf, mod fst mlky wht oil cut, 80% Chk, 20% Mrlst			6100-6150 Chk mod frm-sft, r blky ip, mod 80% Chk, 20%

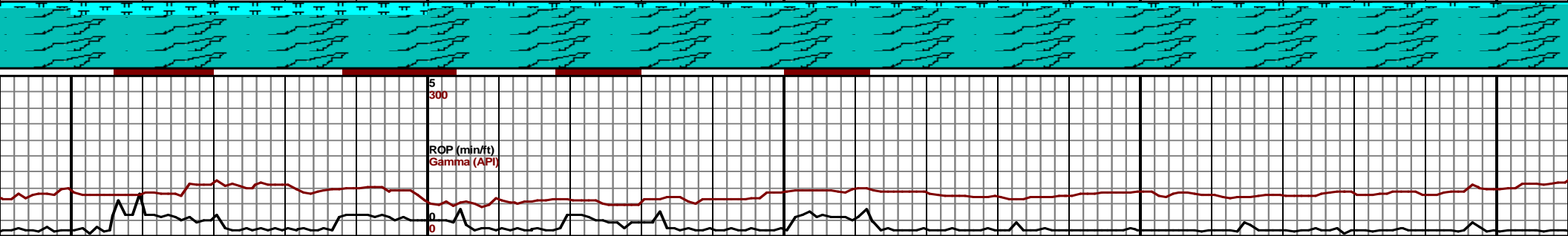


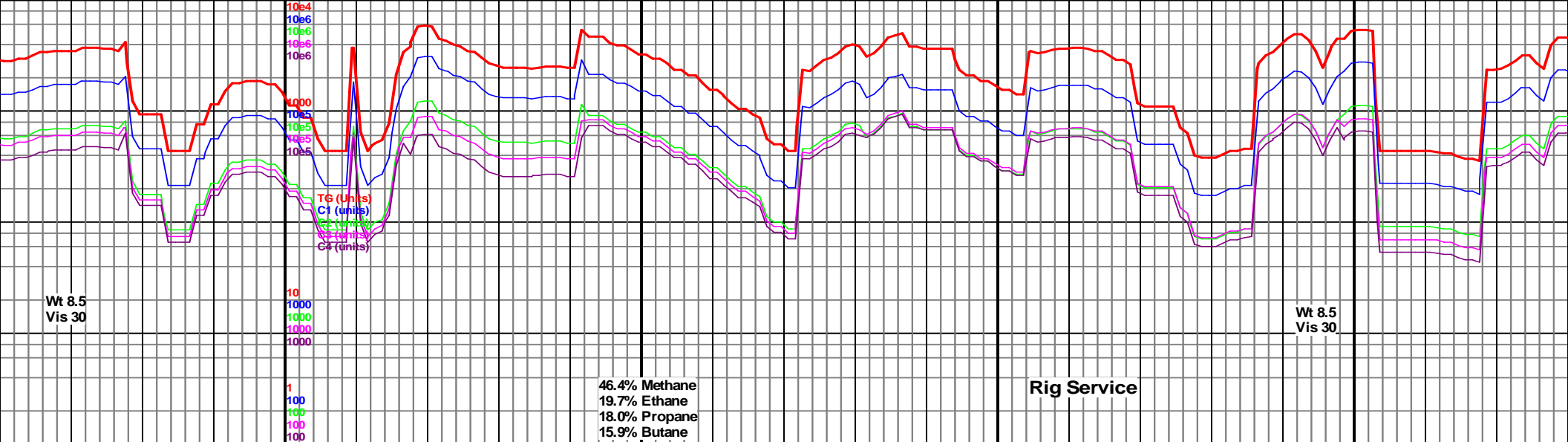




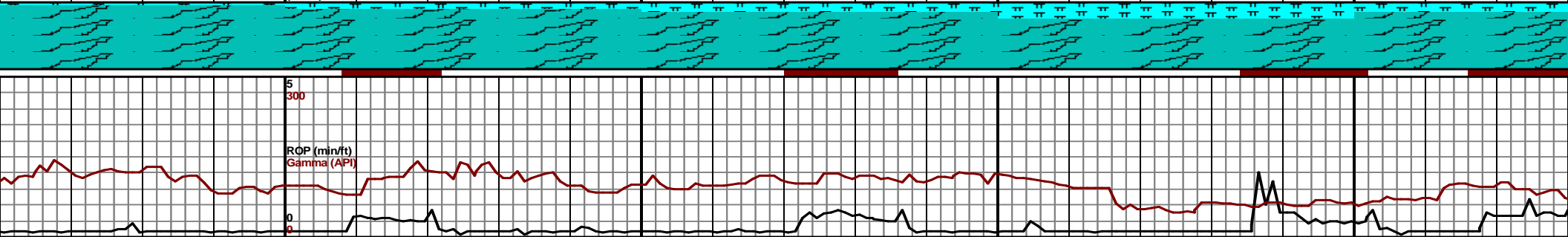


6350	6400	6450	6500	6550
MD 6337 TVD 5718.07 INC 91.9 AZ 188.1 VS 1016.71	MD 6368 TVD 5717.17 INC 91.4 AZ 187.4 VS 1047.59	MD 6400 TVD 5716.42 INC 91.3 AZ 186.7 VS 1079.51	MD 6432 TVD 5715.8 INC 90.9 AZ 184.9 VS 1111.46	MD 6463 TVD 5715.64 INC 89.7 AZ 184.8 VS 1142.45
			MD 6495 TVD 5715.87 INC 89.5 AZ 184.2 VS 1174.44	MD 6527 TVD 5716.09 INC 89.7 AZ 183.7 VS 1206.43
banded, blkly ip, a, fst				
6350-6400 Chk med-lt gy, gy brn, banded, mod sft, tr Mrlst dk gy, sb plty-sb blkly ip, mod frm, rr inoc, fst oil cut, 85% Chk, 15% Mrlst				
6400-6450 Chk med-lt gy, gy brn ip, banded, mod frm-sft, tr Mrlst dk gy, sb plty-blky ip, mod frm-frm ip, tr inoc, nsf, fst mlky wht oil cut, 90% Chk, 10% Mrlst				
6450-6500 Chk med-lt gy, gy brn ip, banded, mod frm-sft, tr Mrlst dk gy, sb plty-blky ip, mod frm-frm ip, rr inoc, tr bent, tr bri yel min flor, fst mlky wht oil cut, 90% Chk, 10% Mrlst				
6500-6550 Chk med-lt gy, gy brn, banded, mod frm-sft, tr Mrlst dk gy, sb plty-blky ip, mod frm-frm ip, rr inoc, rr bent, rr bri yel min flor, fst mlky wht oil cut, 90% Chk, 10% Mrlst				
6550-6600 Chk med-lt gy, gy brn, banded, mod frm-sft, tr Mrlst dk gy, sb plty-blky ip, mod frm-frm ip, rr inoc, rr bent, rr bri yel min flor, fst mlky wht oil cut, 90% Chk, 10% Mrlst				

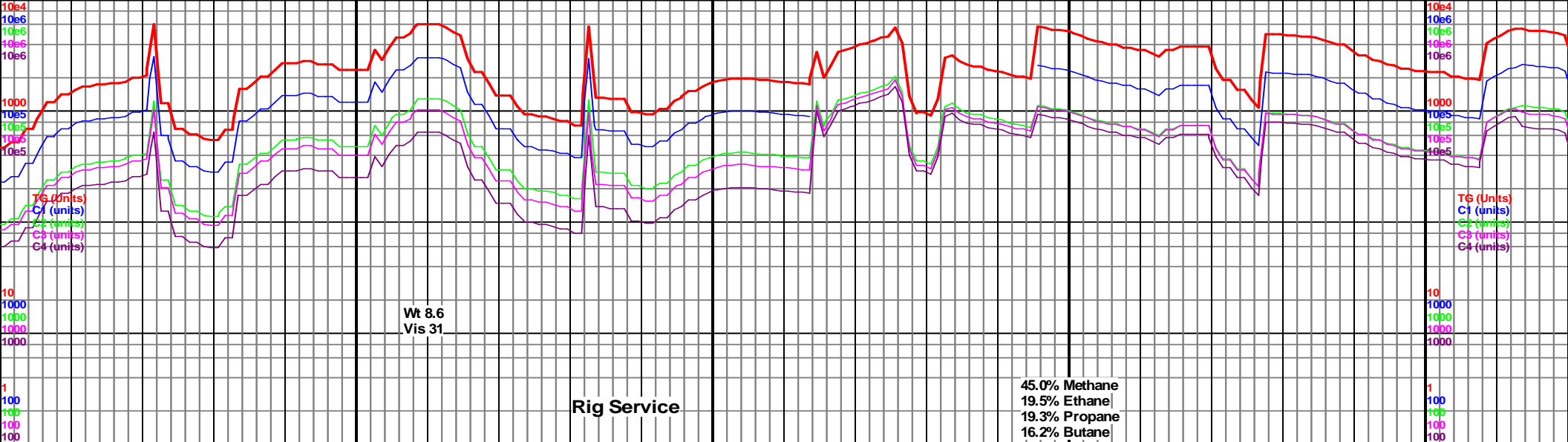




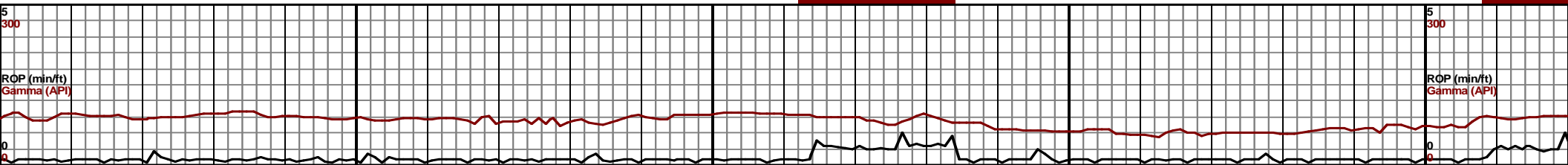
6600		6650		6700		6750	
D 6558 TVD 5716.06 INC 90.4 AZ 183.7 S 1237.43	MD 6591 TVD 5715.63 INC 91.1 AZ 183.5 <sup>ea</sup> (-206) VS 1270.42	MD 6622 TVD 5715.2 INC 90.5 AZ 183 VS 1301.42	MD 6654 TVD 5714.83 INC 90.8 AZ 183 VS 1333.42	MD 6686 TVD 5714.42 INC 90.7 AZ 182.8 VS 1365.42	MD 6717 TVD 5714.01 INC 90.8 AZ 182.5 VS 1396.41	MD 6749 TVD 5713.45 INC 91.2 AZ 183 VS 1428.41	
5465 (-711)							
550-6600 Chk predy, med gy, lt gy- n, banded, mod frm-sft, tr Mrlst dk gy, plty-blky ip, mod frm-frm ip, rr inoc, bent, rr bri yel min flor, fst milky wht cut, 95% Chk, 5% Mrlst		6600-6650 Chk med-lt gy, gy brn, banded ip, mod frm-sft, tr Mrlst dk gy, sb plty-blky ip, mod frm-frm ip, rr inoc, fst milky wht oil cut, 90% Chk, 10% Mrlst		6650-6700 Chk med-lt gy, gy brn, banded ip, mod frm-sft, tr Mrlst dk gy, sb plty-blky ip, mod frm-frm ip, rr inoc, fst milky wht oil cut, 85% Chk, 15% Mrlst		6700-6750 Chk predy gy brn, med-lt gy, banded, mod frm-sft, tr Mrlst dk gy, sb plty-blky ip, mod frm-frm ip, rr inoc, rr bent, occ cement in spl, fst milky wht oil cut, 80% Chk, 20% Mrlst	
5970 (-1216)							

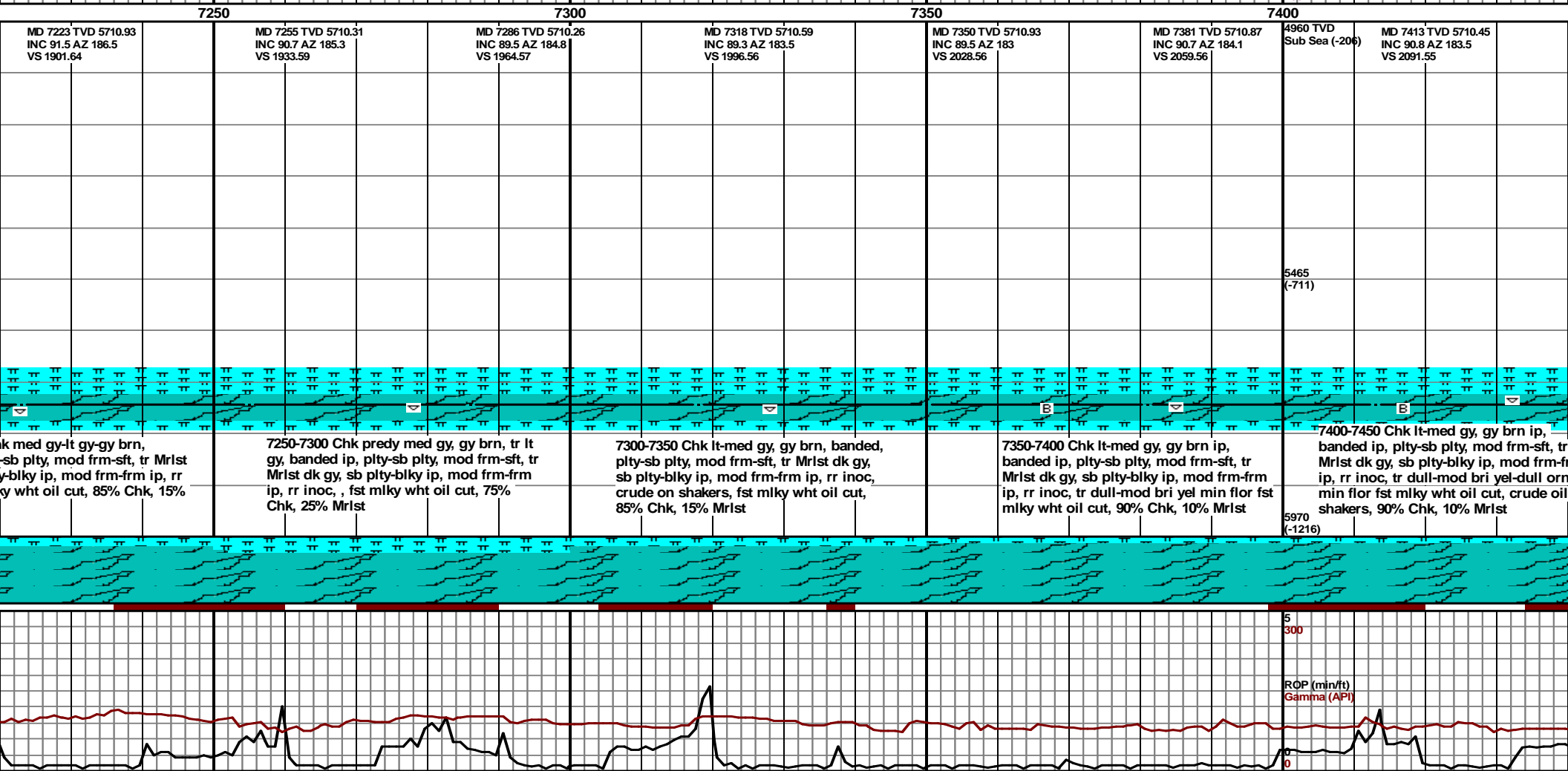


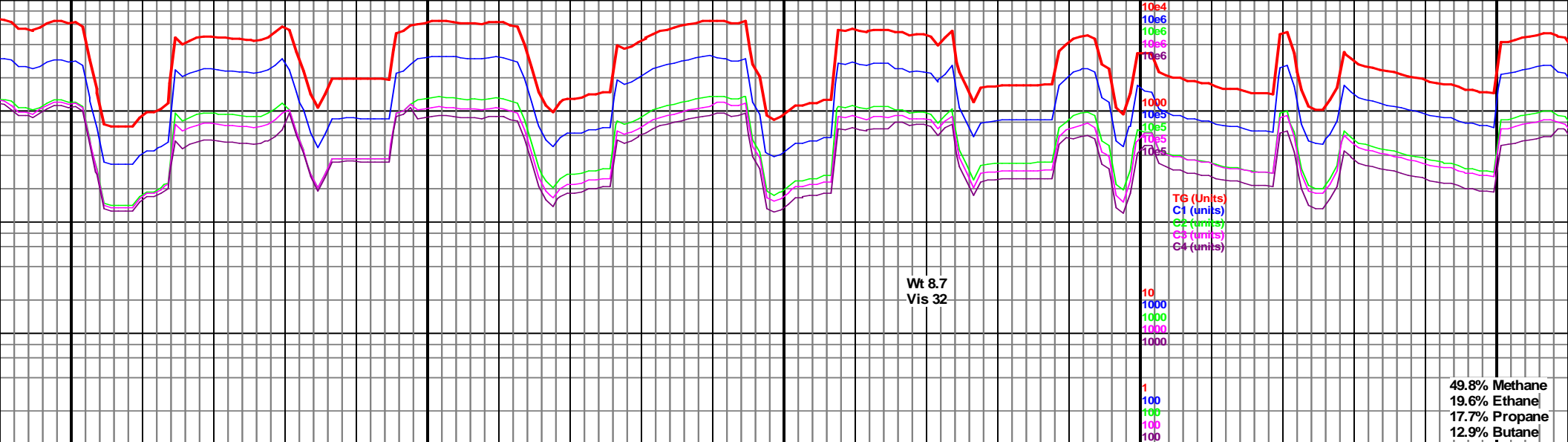


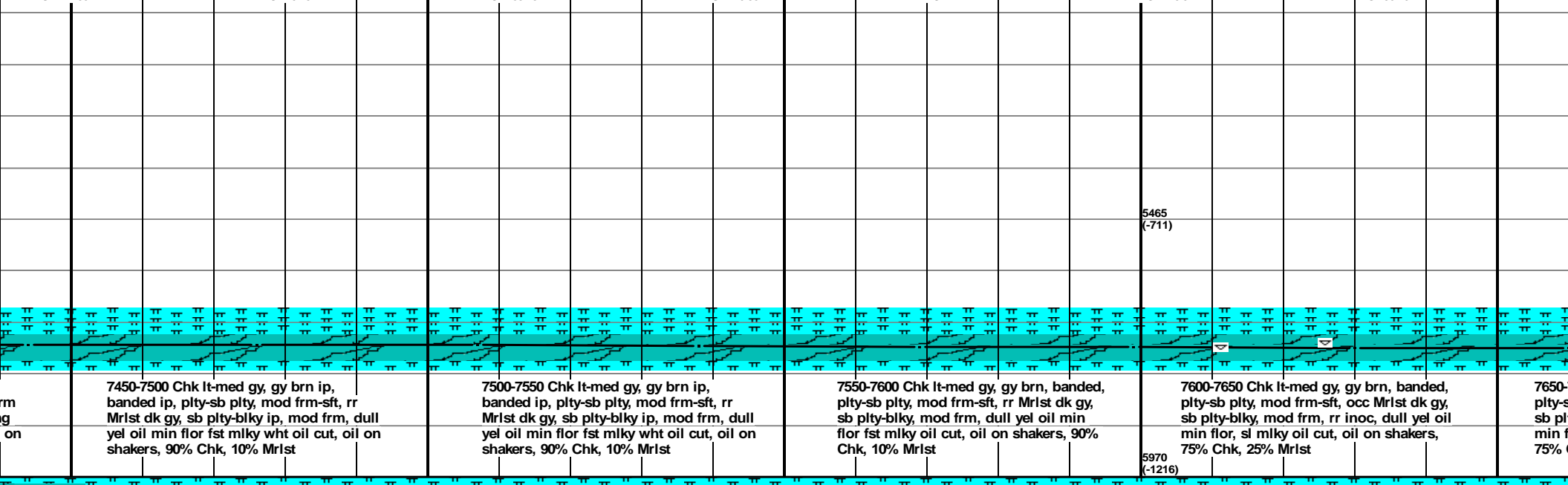


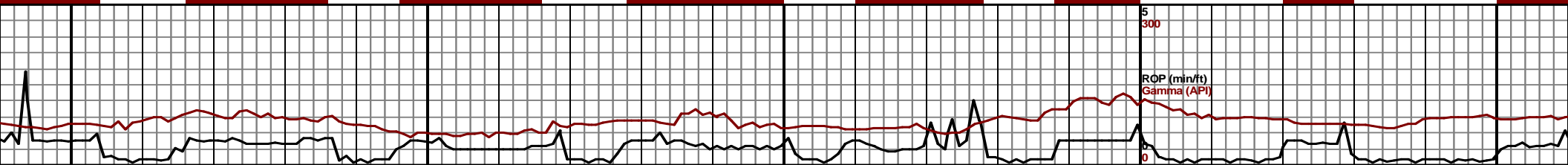
7050		7100		7150		7200	
MD 7002 TVD 5711.93 Sub INC 90.7 AZ 187.7 VS 1681.14	MD 7033 TVD 5711.74 INC 90 AZ 187 VS 1712.05	MD 7065 TVD 5711.65 INC 90.3 AZ 186.9 VS 1743.98	MD 7096 TVD 5711.44 INC 90.5 AZ 186.5 VS 1774.91	MD 7128 TVD 5711.49 INC 89.3 AZ 186.3 VS 1806.86	MD 7159 TVD 5711.76 INC 89.7 AZ 187 VS 1837.79	MD 7191 TVD 5711.6 <sup>D</sup> INC 90.9 AZ 187.2 <sup>ea</sup> (-206) VS 1869.71	
7000-7050 Chk med gy-lt gy, occ gy brn, banded ip, plty-blky-sb plty, mod frm-sft, occ Mrlst dk gy, sb plty-blky ip, mod frm-frm ip, rr inoc, fst mlky wht oil cut, 70% Chk, 30% Mrlst		7050-7100 Chk med gy-lt gy- gy brn, banded ip, plty-blky-sb plty, mod frm-sft, occ Mrlst dk gy, sb plty-blky ip, mod frm-frm ip, rr inoc, occ oil flor, tr min flor, fst mlky wht oil cut, 75% Chk, 25% Mrlst		7100-7150 Chk med gy-lt gy- gy brn, banded, mrlly ip, plty-blky-sb plty, mod frm-sft, tr Mrlst dk gy, sb plty-blky ip, mod frm-frm ip, rr inoc, tr dull orng min flor, fst mlky wht oil cut, 75% Chk, 25% Mrlst		7150-7200 Chk predy lt gy, med gy-gy brn, banded ip, plty-blky-sb plty, mod frm-sft, tr Mrlst dk gy, sb plty-blky ip, mod frm-frm ip, rr inoc, tr bri-dull yel min flor, fst mlky wht oil cut, 80% Chk, 20% Mrlst	
5970 (-1216)		5970 (-1216)		5970 (-1216)		5970 (-1216)	

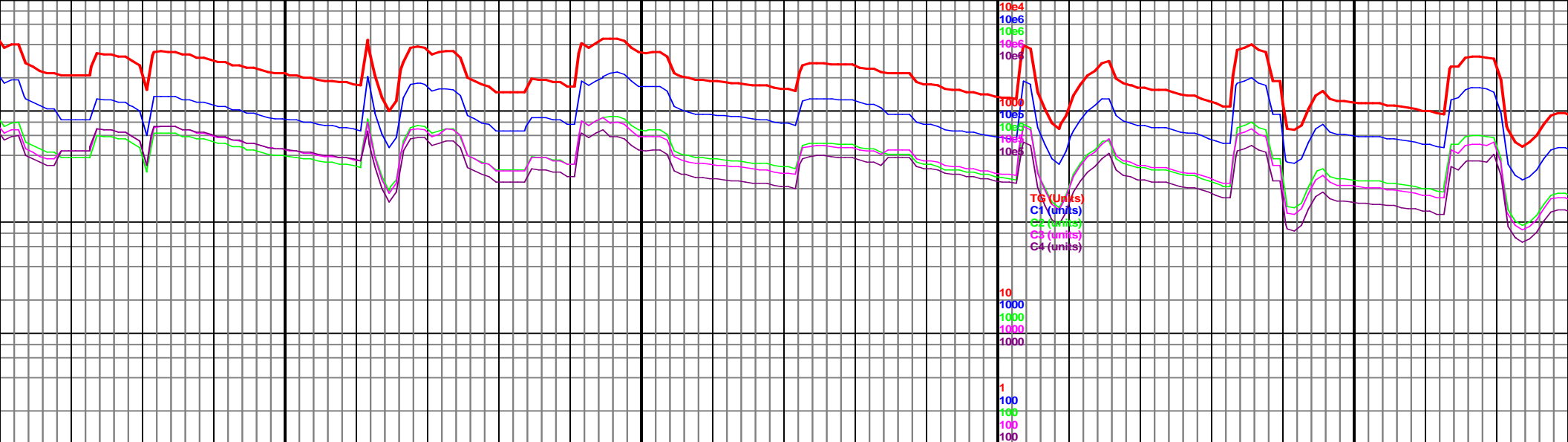






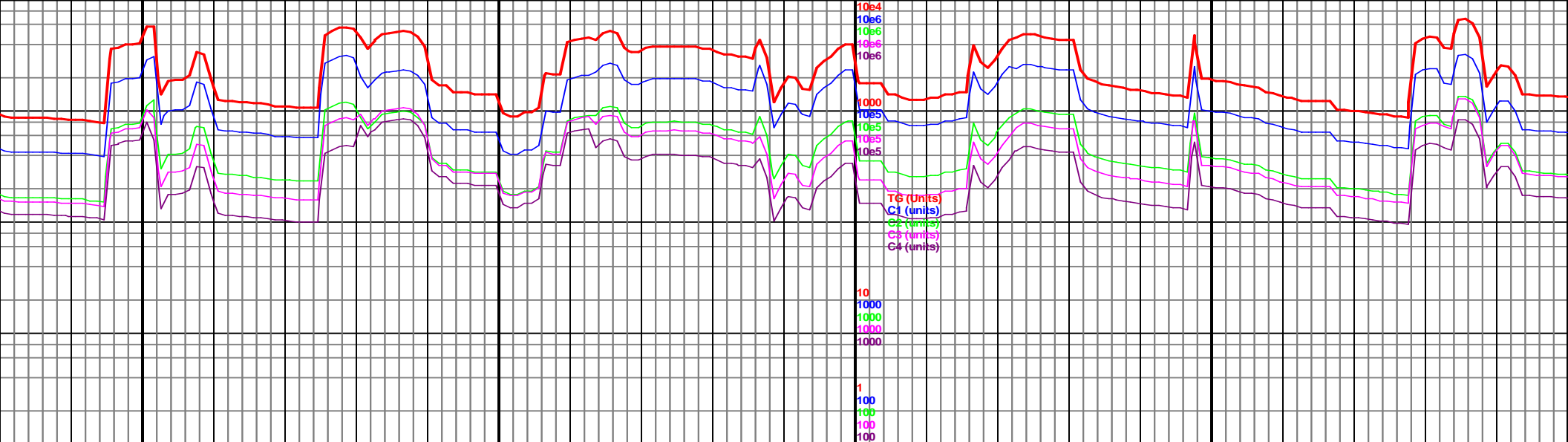
7450		7500		7550		7600		7650					
MD 7444 TVD 5710.24 INC 90 AZ 182.5 VS 2122.55		MD 7476 TVD 5710.52 INC 89 AZ 181.2 VS 2154.54		MD 7507 TVD 5711.33 INC 88 AZ 179.5 VS 2185.49		MD 7538 TVD 5712.65 INC 87.1 AZ 178.1 VS 2216.38		MD 7569 TVD 5714.33 INC 86.7 AZ 176.3 VS 2247.17		MD 7599 TVD 5716.01 INC 86.9 AZ 175.8 VS 2276.9		MD 7630 TVD 5717.44 INC 87.8 AZ 175.6 VS 2307.61	
													
7450-7500 Chk lt-med gy, gy brn ip, banded ip, plty-sb plty, mod frm-sft, rr Mrlst dk gy, sb plty-blky ip, mod frm, dull yel oil min flor fst mlky wht oil cut, oil on shakers, 90% Chk, 10% Mrlst		7500-7550 Chk lt-med gy, gy brn ip, banded ip, plty-sb plty, mod frm-sft, rr Mrlst dk gy, sb plty-blky ip, mod frm, dull yel oil min flor fst mlky wht oil cut, oil on shakers, 90% Chk, 10% Mrlst		7550-7600 Chk lt-med gy, gy brn, banded, plty-sb plty, mod frm-sft, rr Mrlst dk gy, sb plty-blky, mod frm, dull yel oil min flor fst mlky oil cut, oil on shakers, 90% Chk, 10% Mrlst		7600-7650 Chk lt-med gy, gy brn, banded, plty-sb plty, mod frm-sft, occ Mrlst dk gy, sb plty-blky, mod frm, rr inoc, dull yel oil min flor, sl mlky oil cut, oil on shakers, 75% Chk, 25% Mrlst		7650-7700 Chk lt-med gy, gy brn, banded, plty-sb plty, mod frm-sft, occ Mrlst dk gy, sb plty-blky, mod frm, rr inoc, dull yel oil min flor, sl mlky oil cut, oil on shakers, 75% Chk, 25% Mrlst					



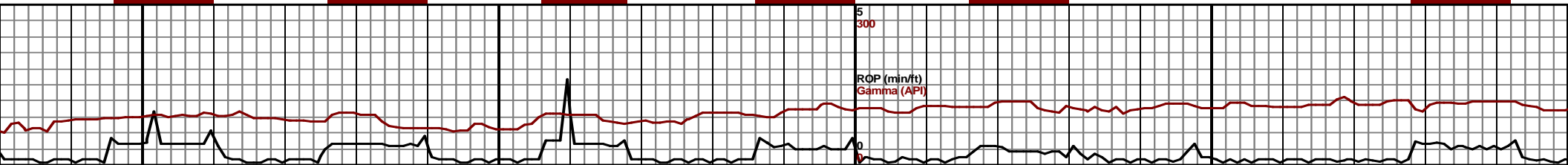
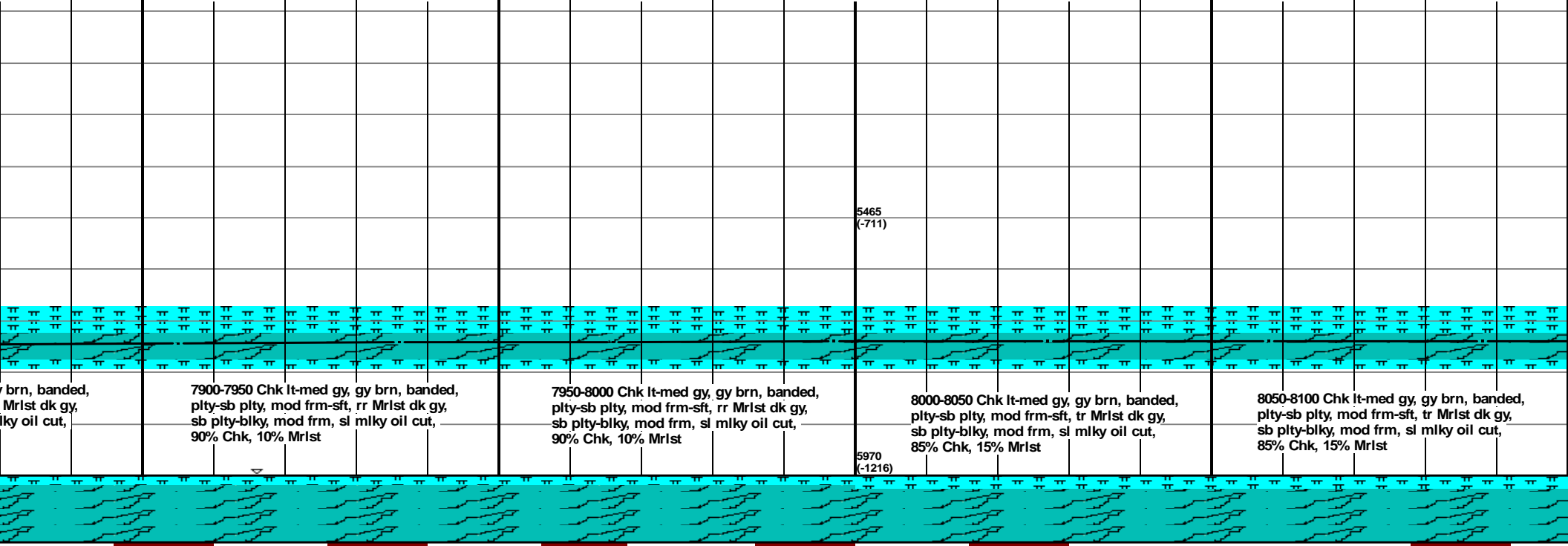


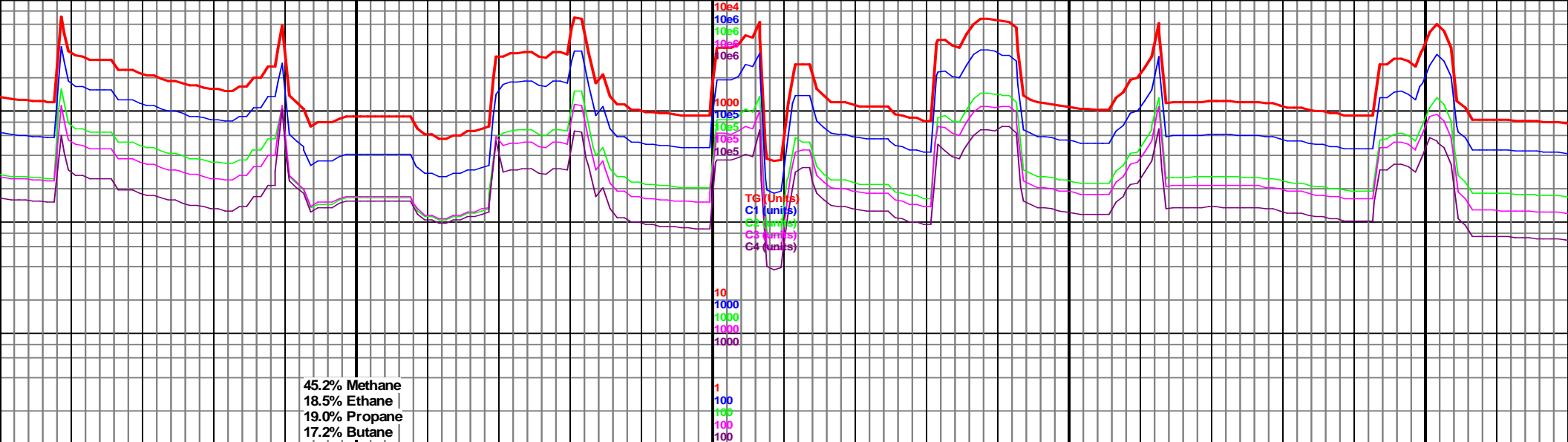
7700				7750				7800				7850															
MD 7660 TVD 5718.38 INC 88.6 AZ 174.6 VS 2337.31				MD 7691 TVD 5719 INC 89.1 AZ 173.9 VS 2367.94				MD 7721 TVD 5719.19 INC 90.2 AZ 173.9 VS 2397.56				MD 7752 TVD 5718.83 INC 91.1 AZ 173.3 VS 2428.13				MD 7783 TVD 5718 INC 92 AZ 173.3 VS 2458.67		4960 TVD Sub Sea (-206)		MD 7814 TVD 5716.67 INC 92.9 AZ 173.9 VS 2489.22				MD 7845 TVD 5715.02 INC 93.2 AZ 174.6 VS 2519.82		MD 7876 TVD 5714.83 INC 93.5 AZ 174.6 VS 2549.83	



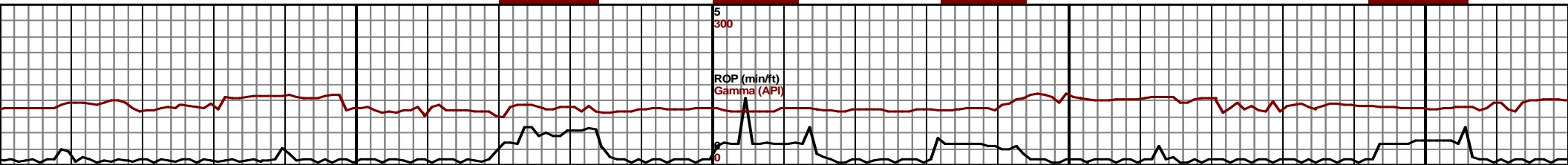


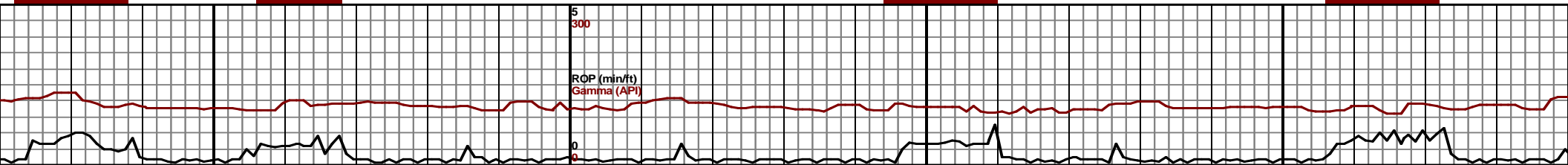
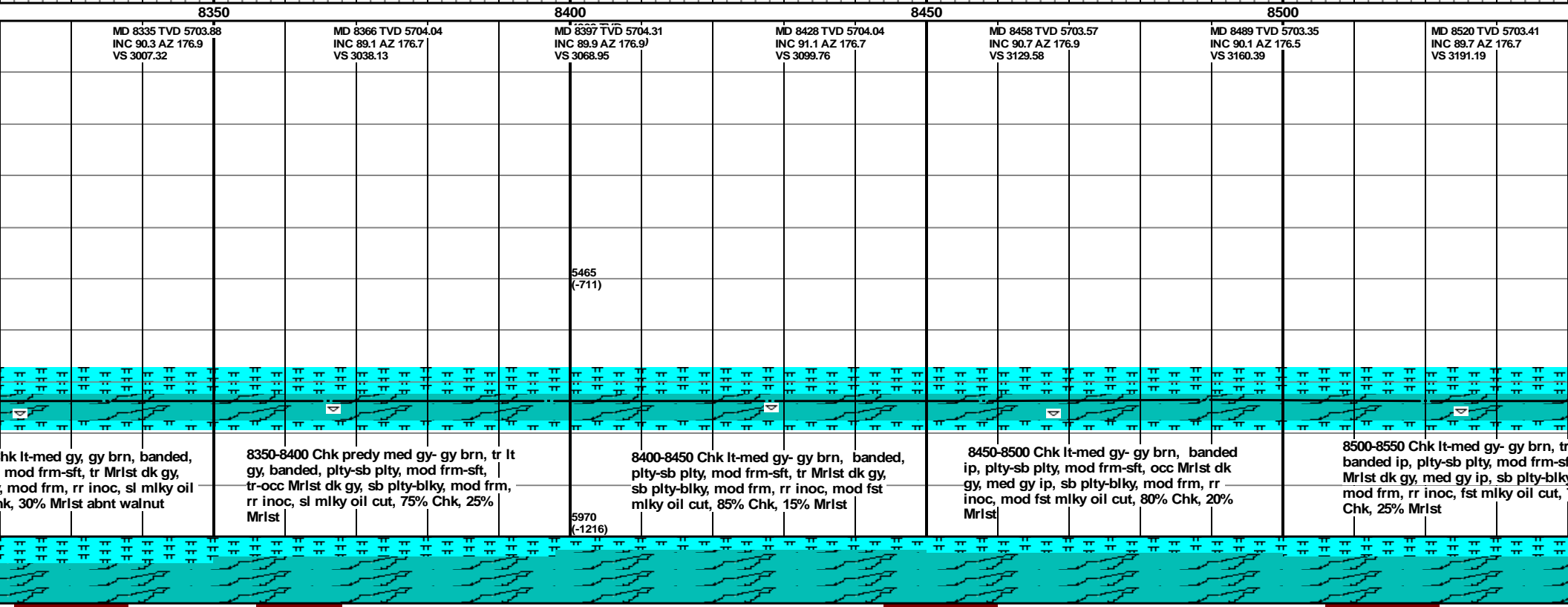
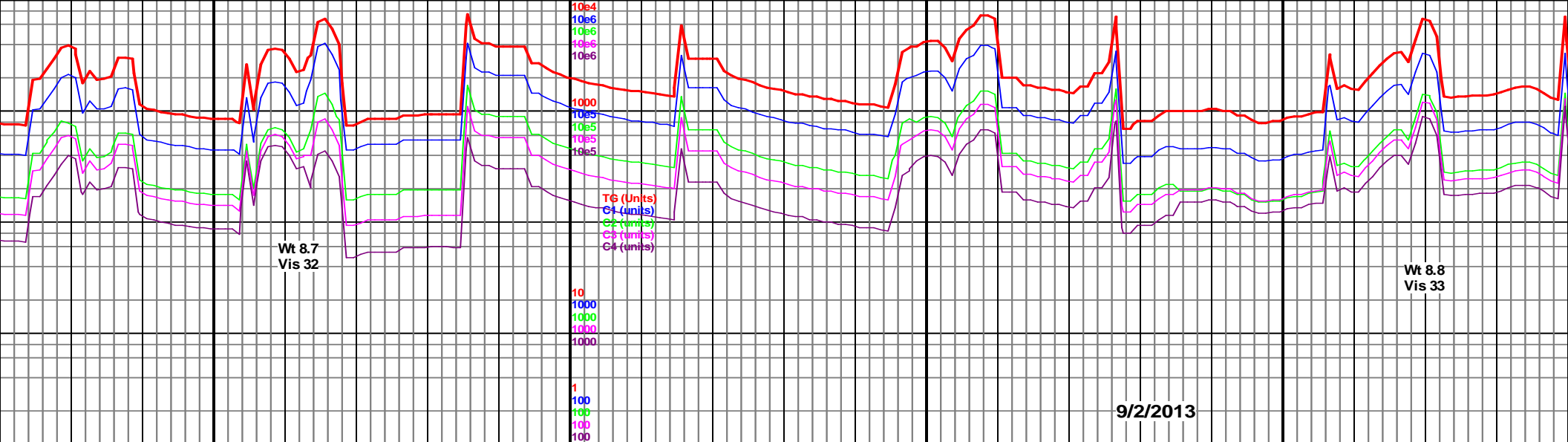
MD 7905 TVD 5713.24 INC 3.6 AZ 175.6 VS 49.48	MD 7905 TVD 5711.38 INC 93.5 AZ 176.3 VS 2579.19	MD 7936 TVD 5709.63 INC 93 AZ 177.4 VS 2609.96	MD 7966 TVD 5708.21 INC 92.4 AZ 177.6 VS 2639.78	MD 7997 TVD 5707.13 INC 91.6 AZ 177.9 VS 2670.63	MD 8027 TVD 5706.45 INC 91 AZ 177.7 VS 2700.5	MD 8058 TVD 5705.99 INC 90.7 AZ 177.6 VS 2731.36	MD 8088 TVD 5705.99 INC 90 AZ 177.7 VS 2761.22
---	--	--	--	--	---	--	--

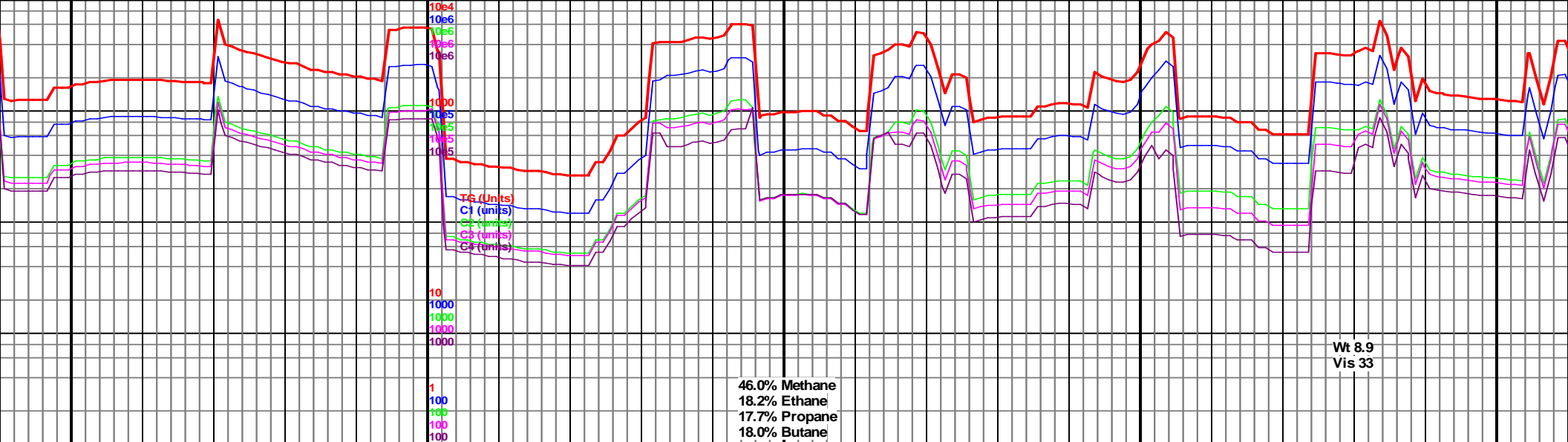




800		8150		8200		8250		8300	
MD 8119 TVD 5705.59 INC 90.8 AZ 178.3 VS 2792.1		MD 8150 TVD 5704.94 INC 91.6 AZ 178.4 VS 2822.99		MD 8181 TVD 5704.24 INC 91 AZ 178.8 VS 2853.89		MD 8212 TVD 5703.97 INC 90 AZ 179 VS 2884.8		MD 8242 TVD 5704.23 INC 89 AZ 178.3 VS 2914.71	
				4960 TVD Sub Sea (-206)				MD 8273 TVD 5704.53 INC 89.9 AZ 177.9 VS 2945.6	
				5465 (-711)					
8100-8150 Chk lt-med gy, gy brn, banded, plty-sb plty, mod frm-sft, tr Mrlst dk gy, sb plty-blky, mod frm, sl milky oil cut, 85% Chk, 15% Mrlst		8150-8200 Chk lt-med gy, gy brn, banded, plty-sb plty, mod frm-sft, tr Mrlst dk gy, sb plty-blky, mod frm, rr inoc, sl milky oil cut, 75% Chk, 25% Mrlst		8200-8250 Chk lt-med gy, gy brn, banded, plty-sb plty, mod frm-sft, tr Mrlst dk gy, sb plty-blky, mod frm, rr inoc, sl milky oil cut, 75% Chk, 25% Mrlst		8250-8300 Chk lt-med gy, gy brn, banded, plty-sb plty, mod frm-sft, tr Mrlst dk gy, sb plty-blky, mod frm, rr inoc, sl milky oil cut, 70% Chk, 30% Mrlst		8300-8350 Chk lt-med gy, gy brn, banded, plty-sb plty, mod frm-sft, tr Mrlst dk gy, sb plty-blky, mod frm, rr inoc, sl milky oil cut, 70% Chk, 30% Mrlst	
				5970 (-1216)					

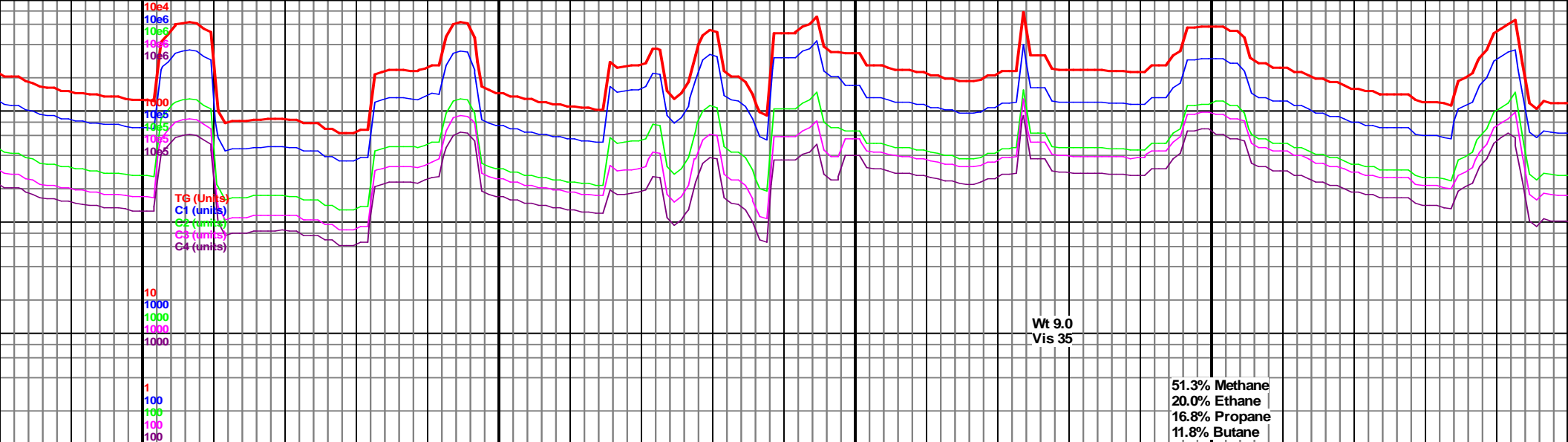




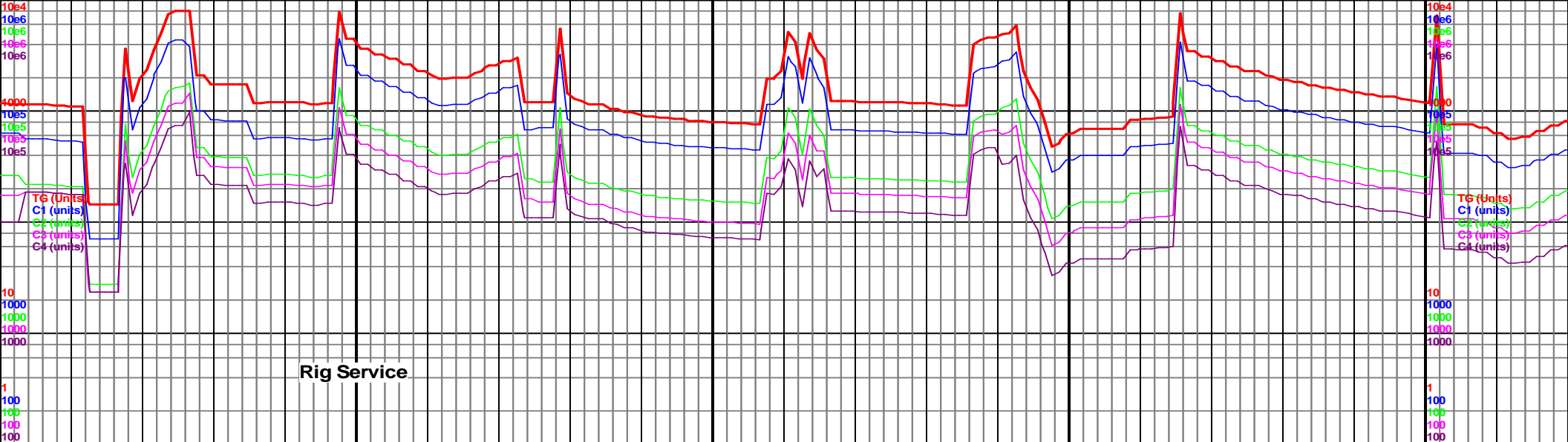


8550		8600		8650		8700		8750	
MD 8551 TVD 5703.41 INC 90.3 AZ 177 VS 3222.01		MD 8582 TVD 5703.08 INC 90.9 AZ 176.9 VS 3252.83		MD 8612 TVD 5702.45 INC 91.5 AZ 176.5 VS 3282.64		MD 8643 TVD 5701.7 INC 91.3 AZ 177 VS 3313.44		MD 8673 TVD 5701.1 INC 91 AZ 177.7 VS 3343.29	

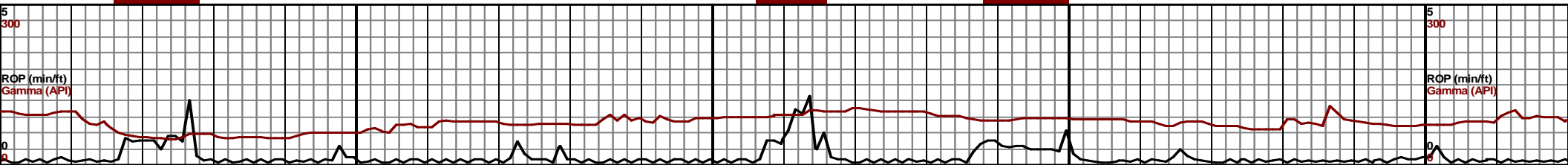


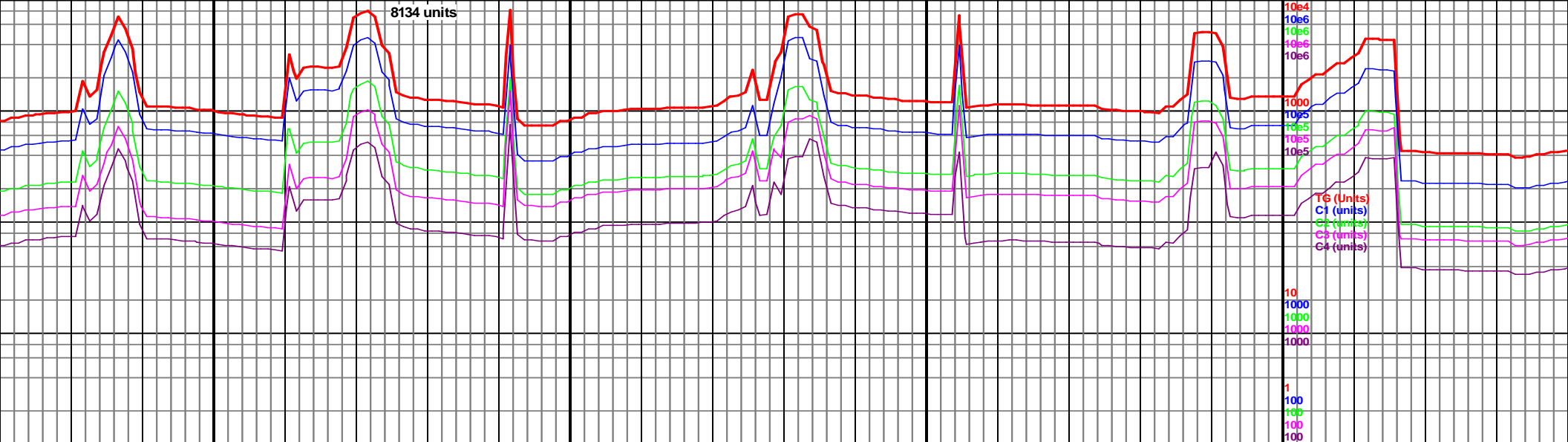


9000				9050				9100				9150				9200																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
MD 8982 TVD 5699.63 INC 90.2 AZ 180.9 VS 3651.61				4960 TVD Sub Sea (-206)				MD 9013 TVD 5699.66 INC 89.7 AZ 181.1 VS 3682.59								MD 9044 TVD 5700.06 INC 88.8 AZ 180.9 VS 3713.57								MD 9074 TVD 5700.95 INC 87.8 AZ 180.7 VS 3743.53								MD 9105 TVD 5702.12 INC 87.9 AZ 180.9 VS 3774.49								MD 9136 TVD 5703.14 INC 88.3 AZ 180.5 VS 3805.44								MD 9167 TVD 5703.87 INC 89 AZ 180.5 VS 3836.4								MD 9197 TVD 5704.92 INC 90.2 AZ 181.2 VS 3867.51																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							



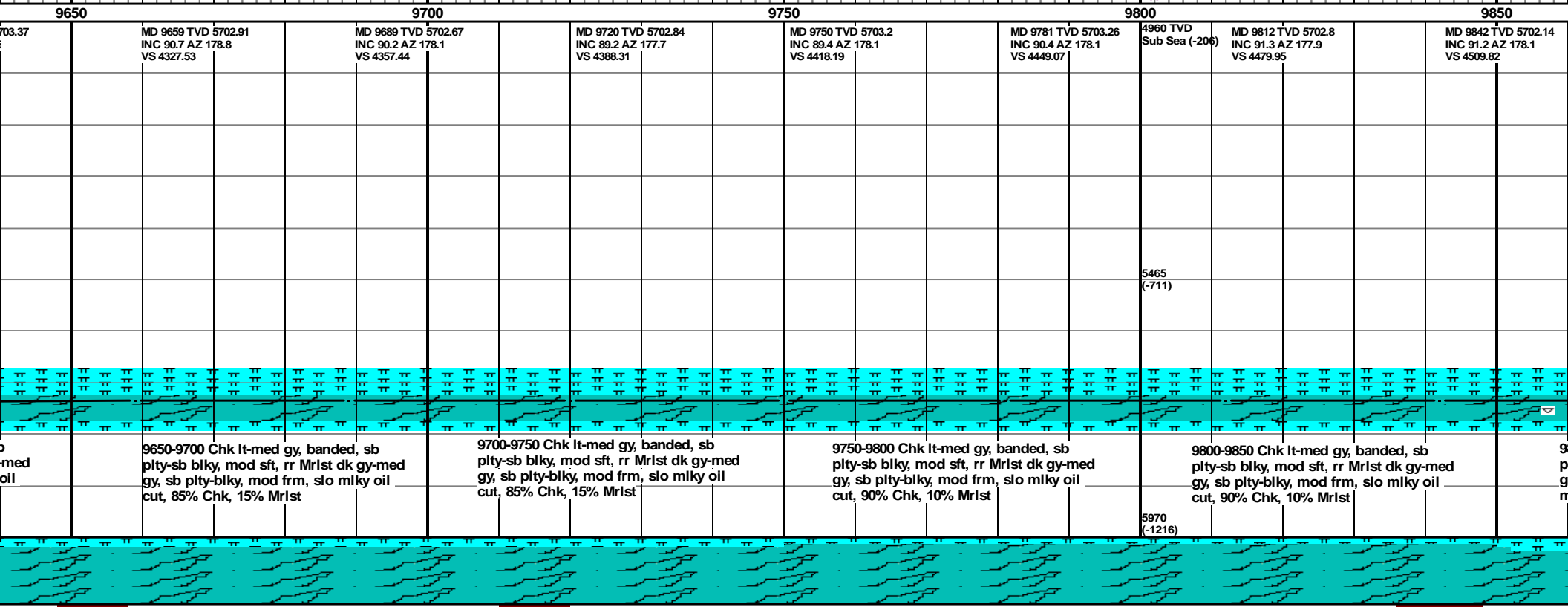
9197 TVD 5704.55 INC 88.4 AZ 180.2 VS 3866.36		MD 9228 TVD 5705.42 INC 88.4 AZ 180.4 VS 3897.32		MD 9258 TVD 5706.26 INC 88.4 AZ 180.7 VS 3927.28		MD 9289 TVD 5706.99 INC 88.9 AZ 180.5 VS 3958.24		MD 9320 TVD 5707.39 INC 89.6 AZ 180.7 VS 3989.21		MD 9351 TVD 5707.64 INC 89.5 AZ 179.8 VS 4020.17		MD 9382 TVD 5707.69 INC 90.3 AZ 180.2 VS 4051.12		4960 TVD Sub Sea (-206)		MD 9413 INC 91 A VS 4082	
5465 (-711)														5465 (-711)			
9200-9250 Chk lt-med gy-gy brn, banded ip, plty-sb plty, blk y ip, mod frm-sft, tr Mrlst dk gy, med gy ip, sb plty-blky, mod frm, rr inoc, oil on shakers, slo sl milky oil cut, 85% Chk, 15% Mrlst		9250-9300 Chk lt-med gy-gy brn, banded, sb plty-sb blk y, mod sft, rr Mrlst dk gy-med gy, sb plty-blky, mod frm, oil on shakers, slo milky oil cut, 85% Chk, 15% Mrlst		9300-9350 Chk lt-med gy-gy brn, banded, sb plty-sb blk y, mod sft, rr Mrlst dk gy-med gy, sb plty-blky, mod frm, rr inoc, slo milky oil cut, 75% Chk, 25% Mrlst		9350-9400 Chk lt-med gy-gy brn, banded, sb plty-sb blk y, mod sft, rr Mrlst dk gy-med gy, sb plty-blky, mod frm, rr inoc, slo milky oil cut, 90% Chk, 10% Mrlst		9400-9450 Chk lt-med gy-gy brn, banded, sb plty-sb blk y, mod sft, rr Mrlst dk gy-med gy, sb plty-blky, mod frm, rr inoc, slo milky oil cut, 95% Chk, 5% Mrlst						5970 (-1216)			

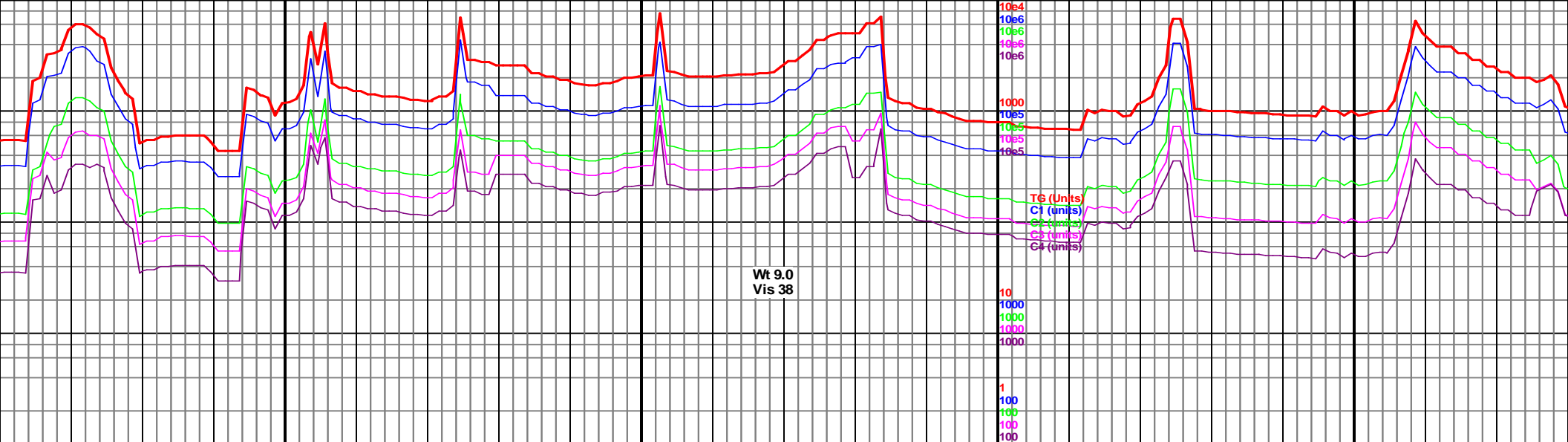




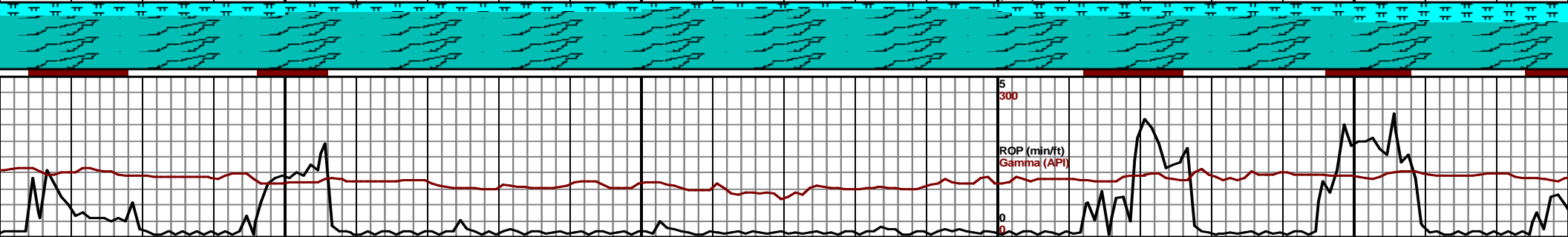
9450			9500			9550			9600		
TVD 5707.34 Z 180.5 09			MD 9444 TVD 5706.66 INC 91.5 AZ 180 VS 4113.04			MD 9475 TVD 5705.99 INC 91 AZ 179.5 VS 4143.98			MD 9505 TVD 5705.44 INC 91.1 AZ 179.1 VS 4173.92		
						MD 9536 TVD 5704.95 INC 90.7 AZ 178.8 VS 4204.83			MD 9566 TVD 5704.48 INC 91.1 AZ 179.1 VS 4234.75		
									MD 9597 TVD 5703.91 INC 91 AZ 179.3 <sup>(*)</sup> VS 4265.68		
									MD 9628 TVD 5703.44 INC 91 AZ 179.5 VS 4296.61		

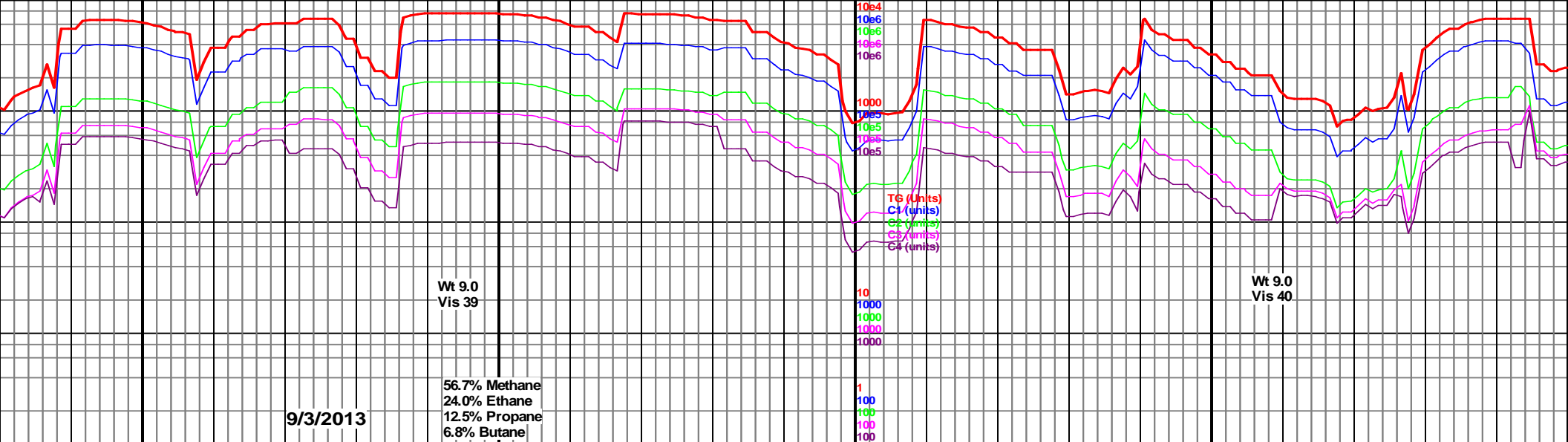




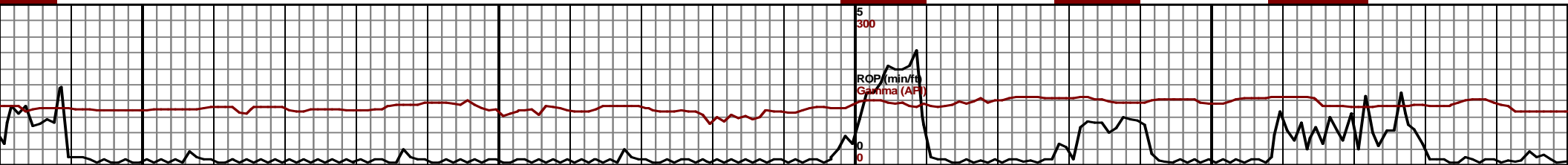


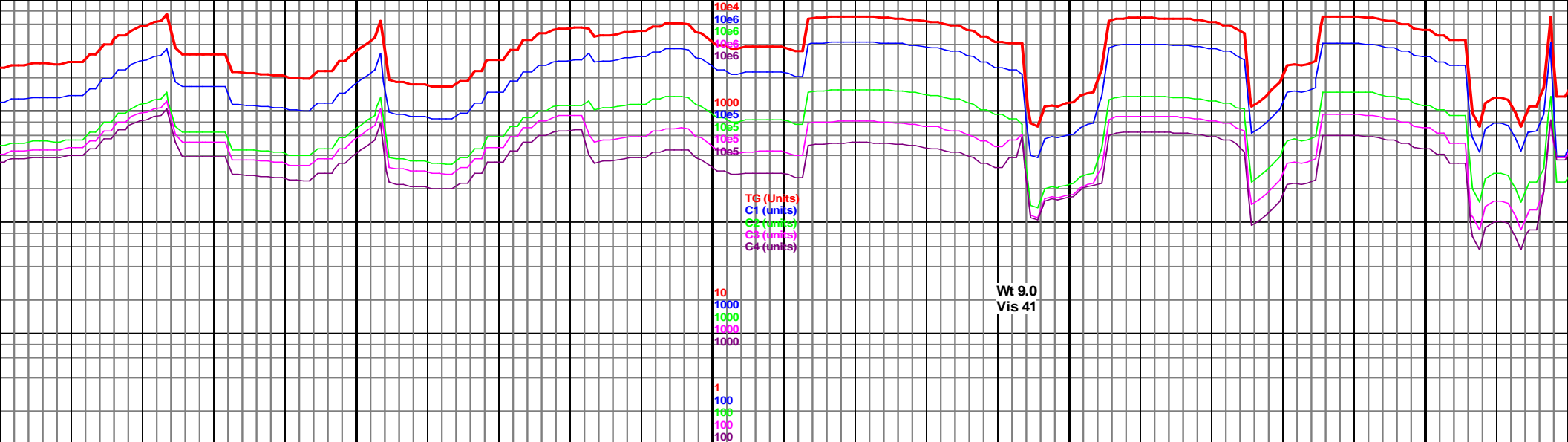
MD 9873 TVD 5701.85 INC 89.9 AZ 177.9 VS 4540.7			MD 9904 TVD 5702.09 INC 89.2 AZ 178.3 VS 4571.58			MD 9935 TVD 5702.52 INC 89.2 AZ 178.3 VS 4602.47			MD 9966 TVD 5702.68 INC 90.2 AZ 178.8 VS 4633.38			MD 9997 TVD 5702.39 INC 90.9 AZ 179.9 VS 4664.29			MD 10028 TVD 5701.93 INC 90.8 AZ 178.8 VS 4695.21			MD 10059 TVD 5701.79 INC 89.7 AZ 179.1 VS 4726.13		
850-9900 Chk lt-med gy, banded, sb pty-sb blk, mod sft, rr Mrlst dk gy-med gy, sb pty-blky, mod frm, rr inoc, slo mlky oil cut, 80% Chk, 20% Mrlst			9900-9950 Chk lt-med gy, banded, sb pty-sb blk, mod sft, rr Mrlst dk gy-med gy, sb pty-blky, mod frm, rr inoc, slo mlky oil cut, 85% Chk, 15% Mrlst			9950-10000 Chk lt-med gy, banded, sb pty-sb blk, mod sft, rr Mrlst dk gy-med gy, sb pty-blky, mod frm, slo mlky oil cut, 90% Chk, 10% Mrlst			10000-10050 Chk lt-med gy, banded, sb pty-sb blk, mod sft, rr Mrlst dk gy-med gy, sb pty-blky, mod frm, rr inoc, fst mlky oil cut, 80% Chk, 20% Mrlst			10050-10100 Chk predy n lt gy, banded, sb pty-sb occ-tr Mrlst dk gy-med g mod frm-frm, rr inoc, fs 70% Chk, 30% Mrlst								



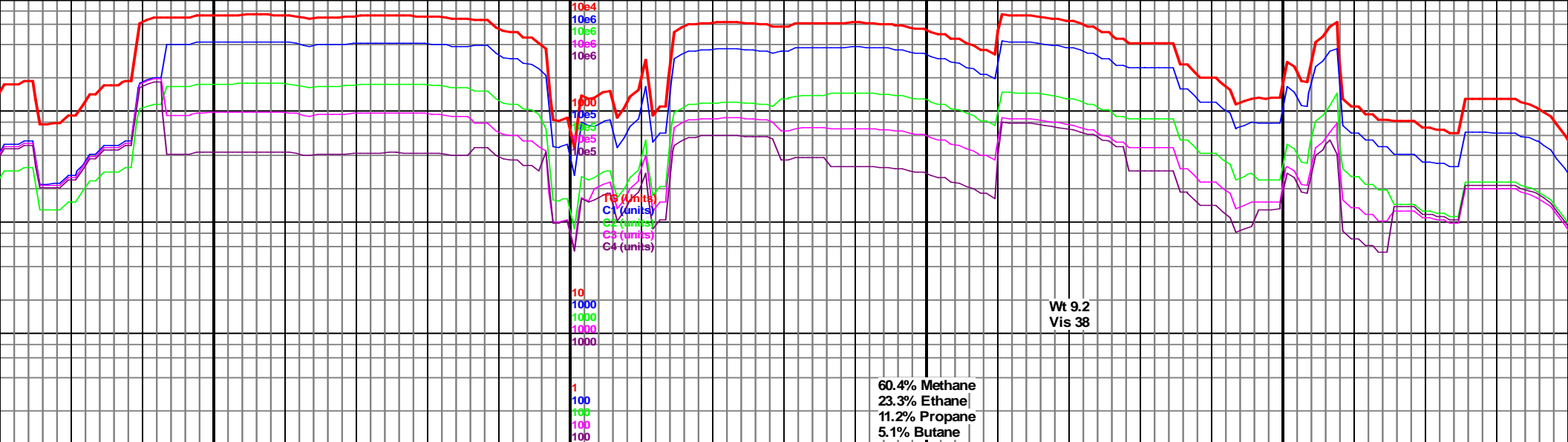


10100	10150	10200	10250	10300
MD 10089 TVD 5702.05 INC 89.3 AZ 179.8 VS 4756.07	MD 10120 TVD 5702.19 INC 90.2 AZ 181.1 VS 4787.04	MD 10151 TVD 5701.92 INC 90.8 AZ 180.5 VS 4818.01	MD 10181 TVD 5701.45 INC 91 AZ 180.7 VS 4847.98	MD 10212 TVD 5700.88 INC 91.1 AZ 181.1 VS 4878.95
MD 10243 TVD 5700.61 INC 89.9 AZ 180.9 VS 4909.93	MD 10273 TVD 5701.03 INC 88.5 AZ 180.7 VS 4939.9			
5465 (-711)				
5970 (-1216)				
med gy-gy brn, tr blky, mod sft, gy, sb plty-blky, t mlky oil cut,	10100-10150 Chk lt-med gy-gy brn, banded ip, sb plty-sb blky, mod sft, occ-tr Mrlist dk gy-med gy, sb plty-blky, mod frm-frm, rr inoc, fst mlky oil cut, 85% Chk, 15% Mrlist	10150-10200 Chk lt-med gy-gy brn, banded ip, sb plty-sb blky, mod sft, occ Mrlist dk gy-med gy, sb plty-blky, mod frm-frm, rr inoc, rr pyr, fst mlky oil cut, 80% Chk, 20% Mrlist	10200-10250 Chk med gy-gy brn, tr lt gy, banded ip, sb plty-sb blky, mod sft, mrlly ip, occ Mrlist dk gy-med gy, sb plty-blky, mod frm-frm, rr inoc, fst mlky oil cut, 75% Chk, 25% Mrlist	10250-10300 Chk lt-med gy-gy brn, banded ip, sb plty-sb blky, mod sft, mrlly ip, occ Mrlist dk gy-med gy, sb plty-blky, mod frm-frm, tr inoc, fst mlky oil cut, 80% Chk, 20% Mrlist

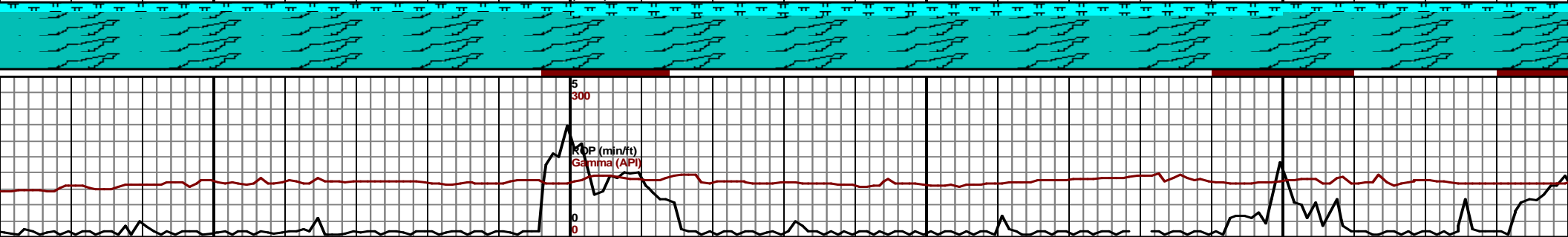


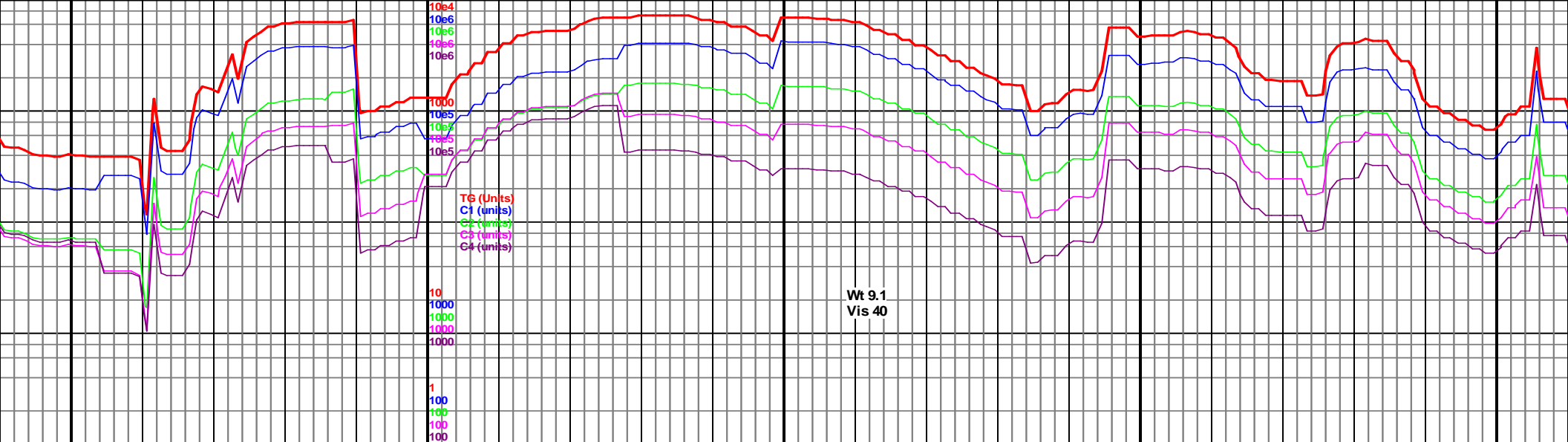


300		10350		10400		10450		10500	
MD 10304 TVD 5701.84 INC 88.5 AZ 181.1 VS 4970.87		MD 10334 TVD 5702.49 INC 89 AZ 180.4 VS 5000.84		MD 10365 TVD 5702.95 INC 89.3 AZ 180.7 VS 5031.81		MD 10396 TVD 5702.93 INC 90.8 AZ 181.2 VS 5062.78		MD 10427 TVD 5702.33 INC 91.4 AZ 180.7 VS 5093.76	

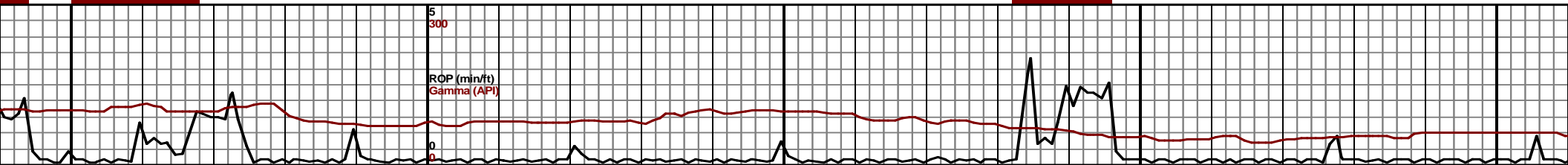


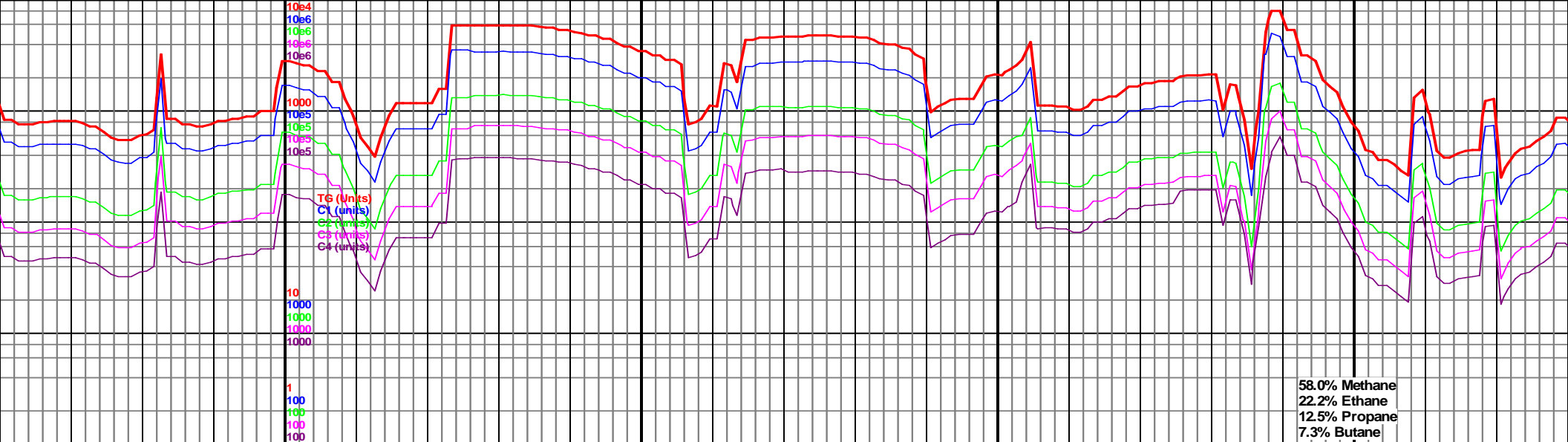
10550		10600		10650		10700								
MD 10519 TVD 5701.21 INC 89.6 AZ 180.7 VS 5185.67		MD 10550 TVD 5701.37 INC 89.8 AZ 180.4 VS 5216.64		MD 10580 TVD 5701.5 INC 89.7 AZ 179.8 VS 5246.6	4960 TVD Sub Sea (-206)	MD 10611 TVD 5701.77 INC 89.3 AZ 179.1 VS 5277.54		MD 10642 TVD 5702.04 INC 89.7 AZ 179.1 VS 5308.47		MD 10673 TVD 5701.93 INC 90.7 AZ 179.1 VS 5339.39		MD 10704 TVD 5701.61 INC 90.5 AZ 179 VS 5370.31		MD 10719 TVD 5701.61 INC 89.9 AZ 179 VS 5400.31
					5465 (-711)									
						</								



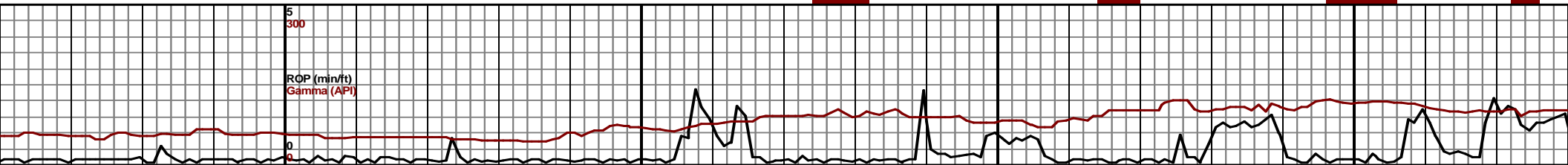


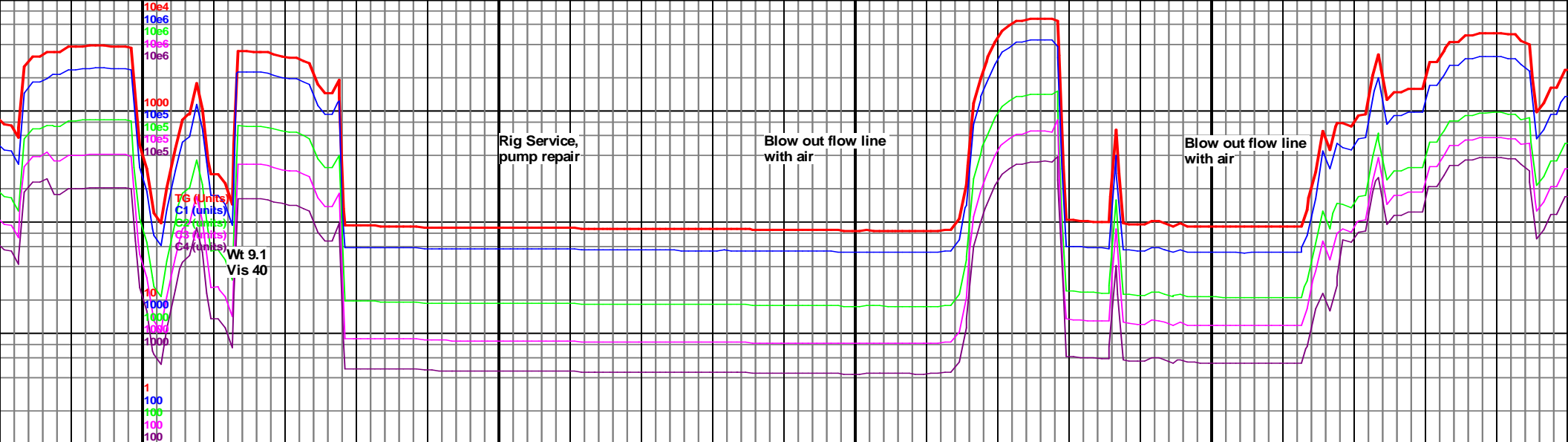
10750	10800	10850	10900	10950
MD 10765 TVD 5702.34 INC 88.2 AZ 178.8 VS 5431.15	MD 10796 TVD 5703.28 INC 88.3 AZ 179.2 VS 5462.05	MD 10827 TVD 5704.02 INC 89 AZ 179 VS 5492.97	MD 10889 TVD 5705.23 INC 88.7 AZ 178.8 VS 5554.77	MD 10919 TVD 5705.86 INC 88.9 AZ 178.6 VS 5584.68
10750-10800 Chk predy med gy-gy brn, tr lt gy, banded, sb plty-sb blk, mod sft, mrlly ip, occ Mrlst dk gy-med gy, sb plty-blky, mod frm-frm, slty tex, rr inoc, mod fst sl mlky oil cut, 75% Chk, 25% Mrlst	10800-10850 Chk med gy-lt gy brn, banded, sb plty-sb blk, mod sft, occ Mrlst dk gy-med gy, sb plty-blky, mod frm-frm, rr inoc, mod fst sl mlky oil cut, 80% Chk, 20% Mrlst	10850-10900 Chk med gy-lt gy brn, banded, sb plty-sb blk, mod sft, rr Mrlst dk gy-med gy, sb plty-blky, mod frm-frm, sl mlky oil cut, 90% Chk, 10% Mrlst	10900-10950 Chk med gy-lt gy brn, banded, sb plty-sb blk, mod sft, rr Mrlst dk gy-med gy, sb plty-blky, mod frm-frm, sl mlky oil cut, 90% Chk, 10% Mrlst	10950-11000 Chk med gy-lt gy brn, banded, sb plty-sb blk, mod sft, rr Mrlst dk gy-med gy, sb plty-blky, mod frm-frm, sl mlky oil cut, 90% Chk, 10% Mrlst





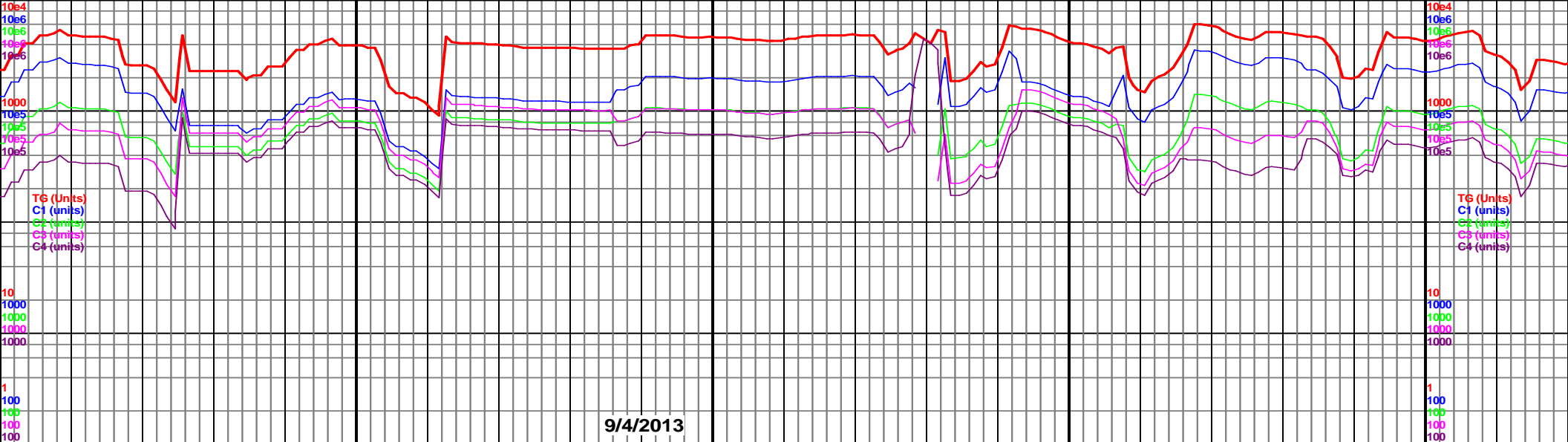
11000			11050			11100			11150		
D 5706.32 178.6	MD 10981 TVD 5706.59 INC 89.6 AZ 178.6 VS 5646.49	4960 TVD Sub Sea (-206)	MD 11011 TVD 5706.7 INC 90 AZ 178.1 VS 5676.39	MD 11042 TVD 5706.56 INC 90.5 AZ 178.1 VS 5707.27	MD 11073 TVD 5706.13 INC 91.1 AZ 178.1 VS 5738.15	MD 11104 TVD 5705.51 INC 91.2 AZ 177.7 VS 5769.02	MD 11135 TVD 5704.88 INC 91.1 AZ 177.9 VS 5799.88	MD 11166 TVD 5704.88 INC 90 AZ 177.7 VS 5830.75			
5465 (-711)											
11000-11050 Chk med gy-lt gy brn, banded, sb plty-sb blk, mod sft, rr Mrlst dk gy-med gy, sb plty-blky, mod frm-frm, rr inoc, sl mlky oil cut, 90% Chk, 10% Mrlst			11050-11100 Chk med gy-lt gy brn, banded, sb plty-sb blk, mod sft, rr Mrlst dk gy-med gy, sb plty-blky, mod frm-frm, rr inoc, sl mlky oil cut, 85% Chk, 15% Mrlst			11100-11150 Chk med gy-lt gy brn, banded, sb plty-sb blk, mod sft, rr Mrlst dk gy-med gy, sb plty-blky, mod frm-frm, rr inoc, sl mlky oil cut, 85% Chk, 15% Mrlst			11150-11200 Chk med gy-lt gy brn, banded, sb plty-sb blk, mod sft, rr Mrlst dk gy-med gy, sb plty-blky, mod frm-frm, rr inoc, sl mlky oil cut, 85% Chk, 15% Mrlst		
5970 (-1216)											

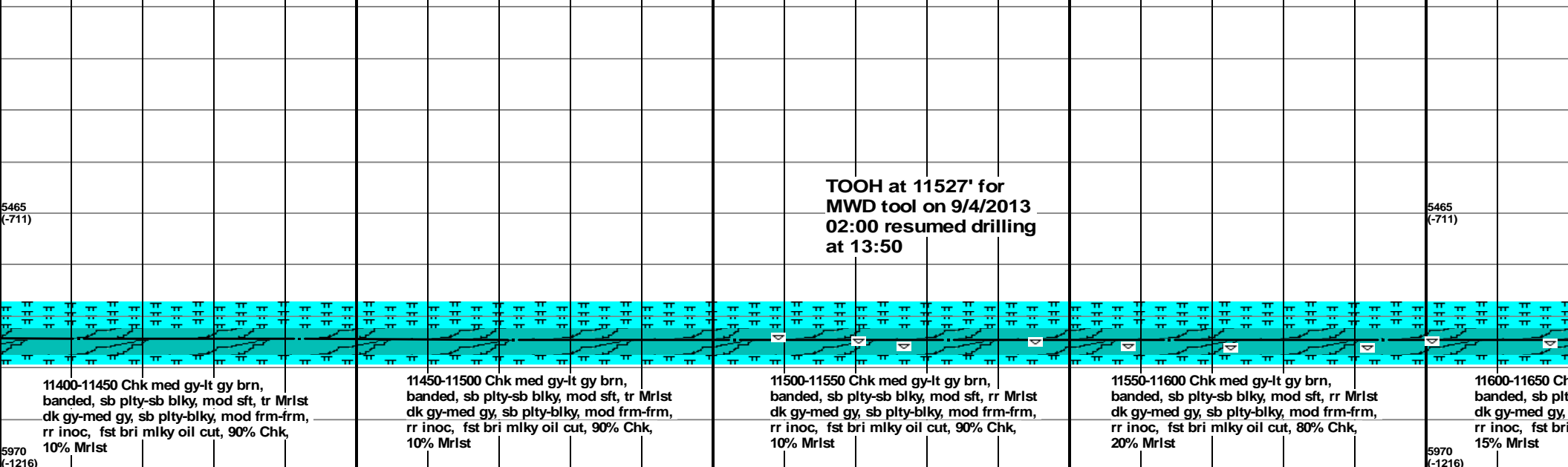


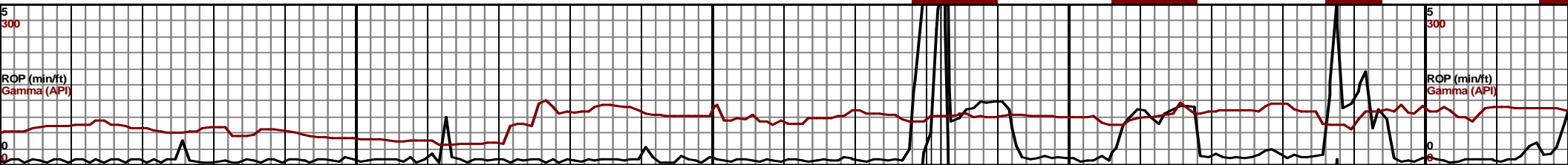


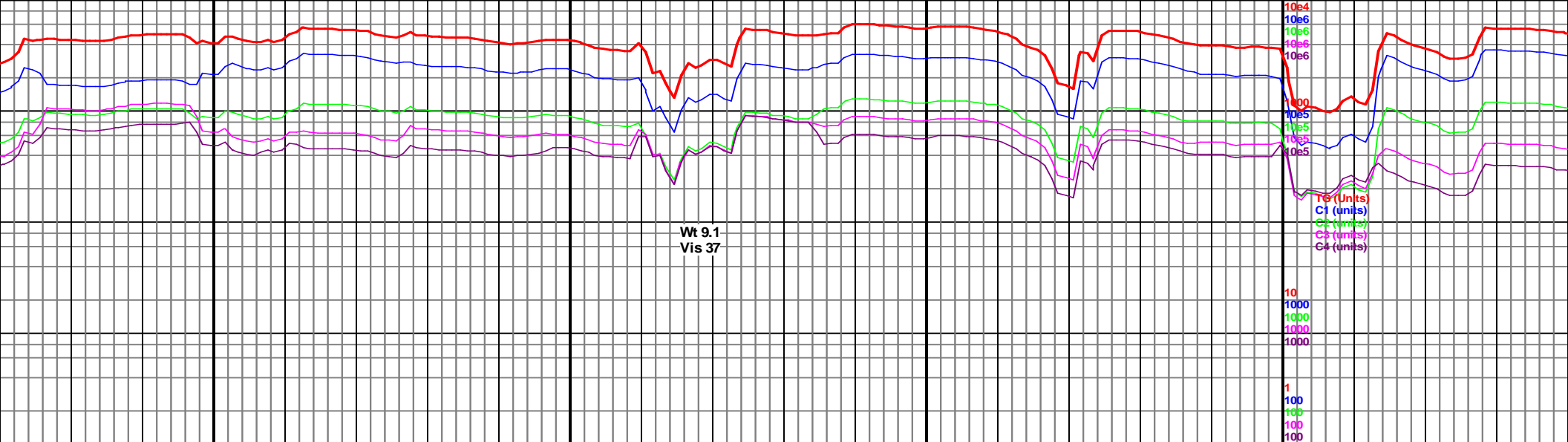
11200				11250				11300				11350				11400					
4.59	MD 11197 TVD 5704.91 INC 88.8 AZ 177.9 VS 5861.62			MD 11228 TVD 5705.65 INC 88.5 AZ 178.4 VS 5892.5			MD 11259 TVD 5706.6 INC 88 AZ 179 VS 5923.39			MD 11289 TVD 5707.54 INC 88.4 AZ 178.6 VS 5953.3			MD 11319 TVD 5708.3 INC 88.7 AZ 178.4 VS 5983.19			MD 11350 TVD 5709.03 INC 88.6 AZ 178.6 VS 6014.09			MD 11380 TVD 5709.87 INC 88.2 AZ 179.3 VS 6044		



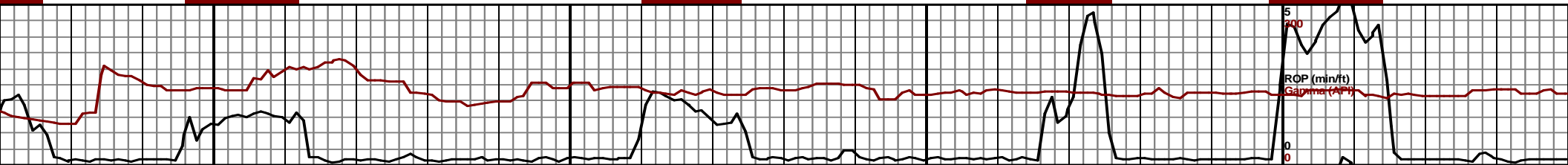


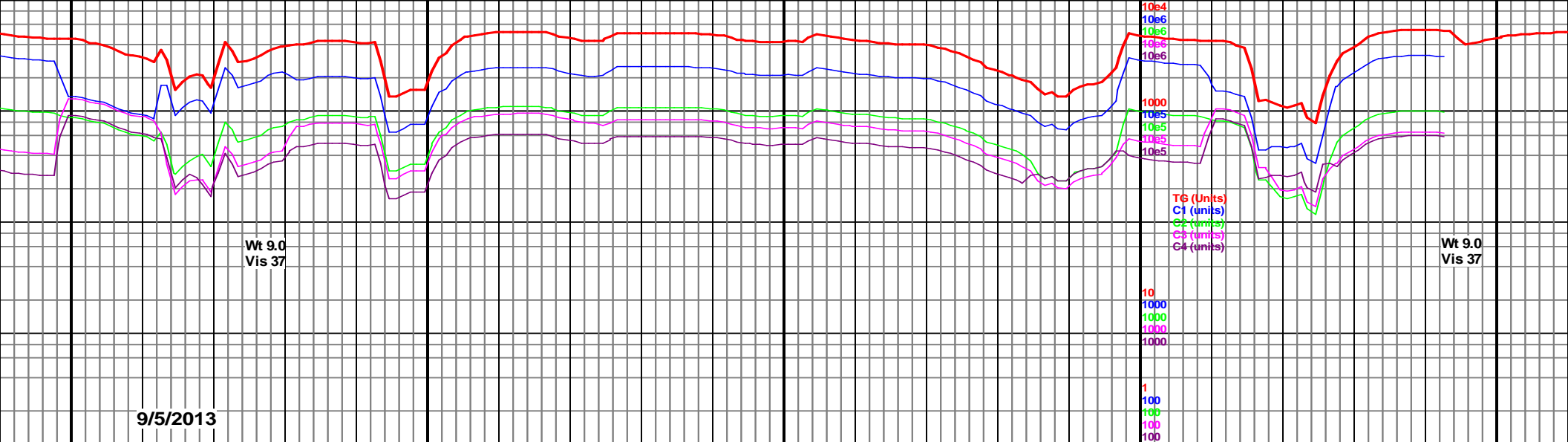
11400				11450				11500				11550				11600															
4960 TVD Sub Sea (-206)		MD 11411 TVD 5710.92 INC 87.9 AZ 179.5 VS 6074.92		MD 11442 TVD 5711.98 INC 88.2 AZ 179.3 VS 6105.84		MD 11472 TVD 5712.81 INC 88.6 AZ 178.8 VS 6135.75		MD 11503 TVD 5713.46 INC 89 AZ 178.3 VS 6166.65		MD 11533 TVD 5713.86 INC 89.5 AZ 178.4 VS 6196.55				MD 11564 TVD 5713.88 INC 90.4 AZ 179 VS 6227.46		MD 11594 TVD 5713.52 INC 91 AZ 179 <sup>a</sup> (-206) VS 6257.38															
																															
																TOOH at 11527' for MWD tool on 9/4/2013 02:00 resumed drilling at 13:50															
11400-11450 Chk med gy-lt gy brn, banded, sb plty-sb blk, mod sft, tr Mrlst dk gy-med gy, sb plty-blky, mod frm-frm, rr inoc, fst bri mlky oil cut, 90% Chk, 10% Mrlst				11450-11500 Chk med gy-lt gy brn, banded, sb plty-sb blk, mod sft, tr Mrlst dk gy-med gy, sb plty-blky, mod frm-frm, rr inoc, fst bri mlky oil cut, 90% Chk, 10% Mrlst				11500-11550 Chk med gy-lt gy brn, banded, sb plty-sb blk, mod sft, rr Mrlst dk gy-med gy, sb plty-blky, mod frm-frm, rr inoc, fst bri mlky oil cut, 90% Chk, 10% Mrlst				11550-11600 Chk med gy-lt gy brn, banded, sb plty-sb blk, mod sft, rr Mrlst dk gy-med gy, sb plty-blky, mod frm-frm, rr inoc, fst bri mlky oil cut, 80% Chk, 20% Mrlst				11600-11650 Chk med gy-lt gy brn, banded, sb plty-sb blk, mod sft, rr Mrlst dk gy-med gy, sb plty-blky, mod frm-frm, rr inoc, fst bri mlky oil cut, 80% Chk, 15% Mrlst															
5970 (-1216)																5970 (-1216)															



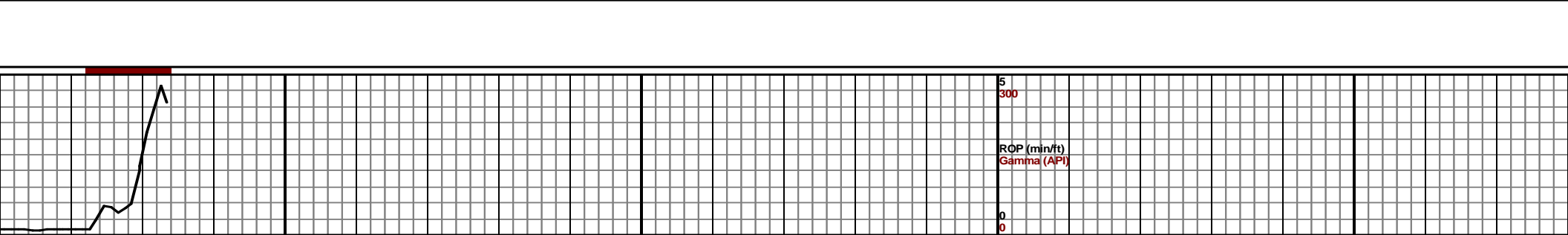
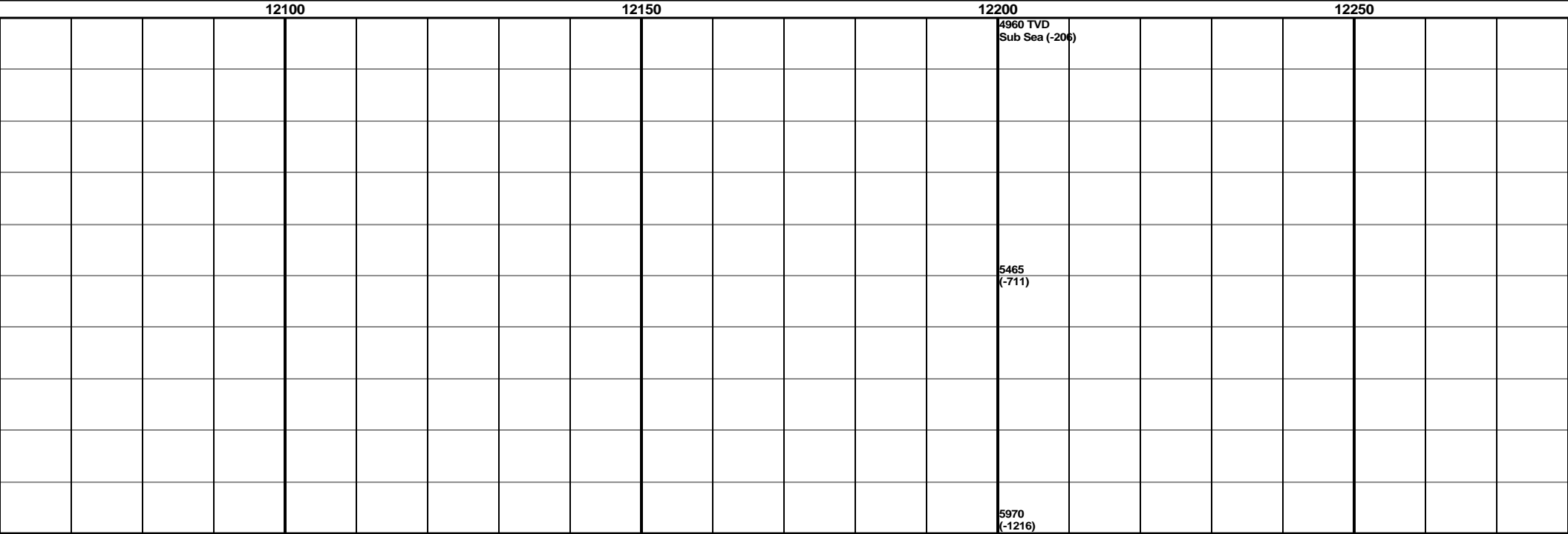
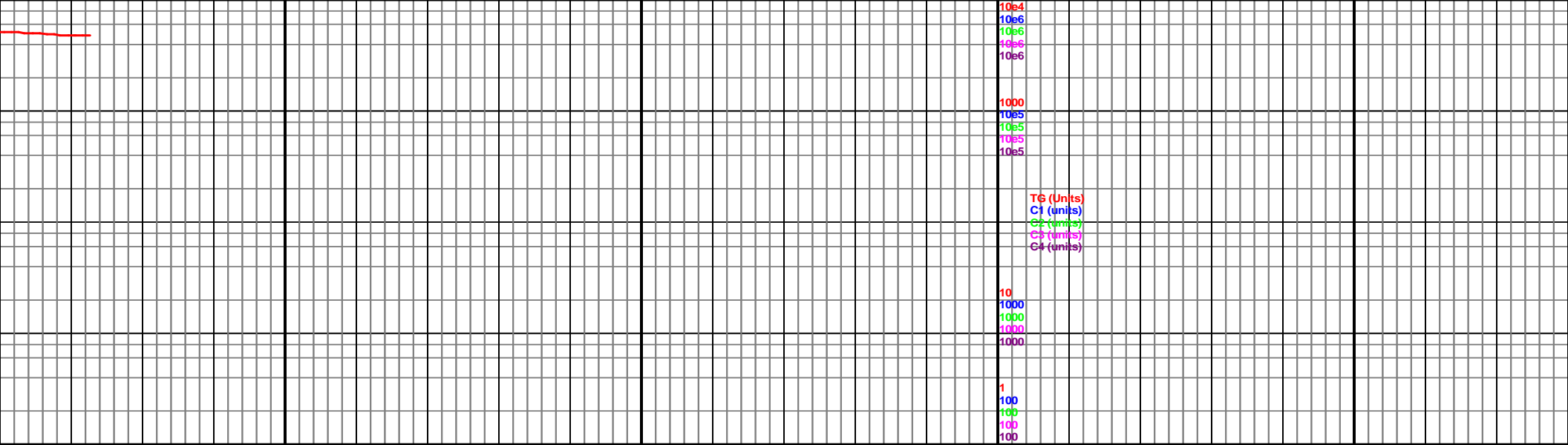


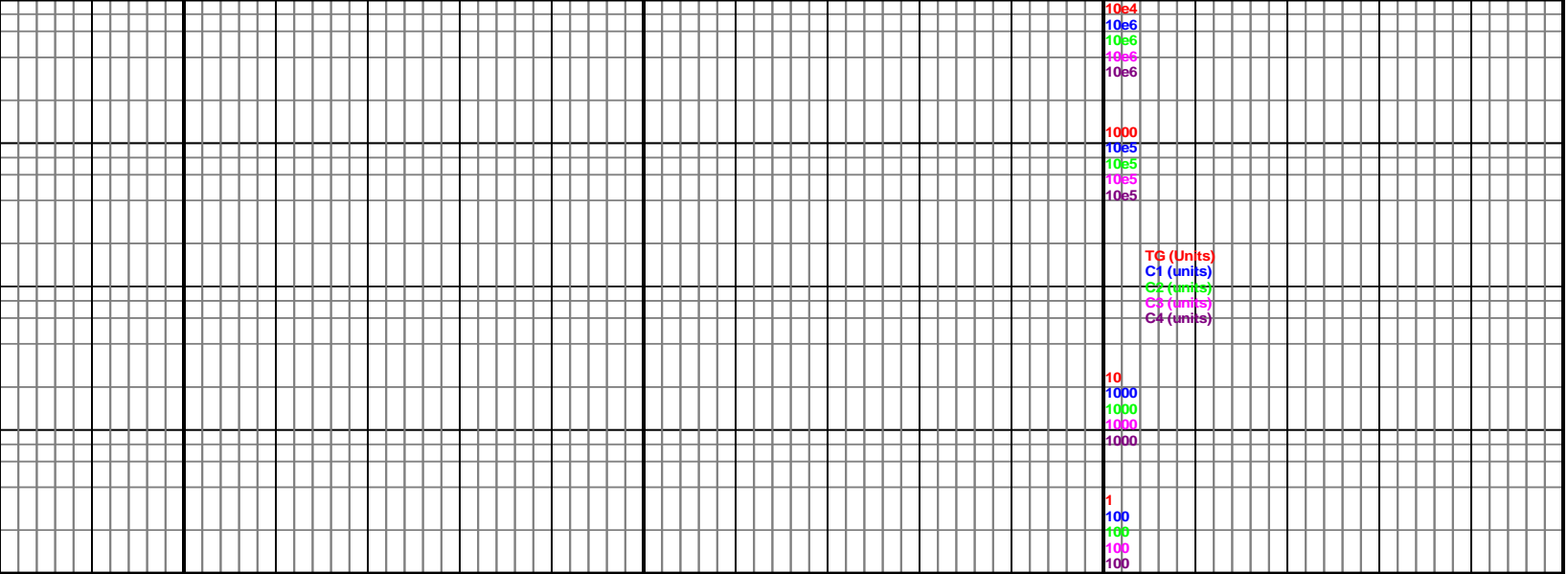
11650		11700		11750		11800	
MD 11625 TVD 5712.79 INC 91.7 AZ 179 VS 6288.29	MD 11656 TVD 5712 INC 91.2 AZ 179.5 VS 6319.21	MD 11686 TVD 5711.32 INC 91.4 AZ 179.8 VS 6349.15	MD 11717 TVD 5710.62 INC 91.2 AZ 180.4 VS 6380.1	MD 11748 TVD 5709.94 INC 91.3 AZ 180.7 VS 6411.07	MD 11779 TVD 5709.08 INC 91.9 AZ 181.1 VS 6442.03	4960 TVD Sub Sea (-206) 5465 (-711)	MD 11810 TVD 5708.24 INC 91.2 AZ 181.4 VS 6473.01
Chk med gy-lt gy brn, y-sb blk, mod sft, rr Mrlst sb plty-blky, mod frm-frm, mlky oil cut, 85% Chk,		11650-11700 Chk med gy-lt gy brn, banded, sb plty-sb blk, mod sft, occ Mrlst dk gy-med gy, sb plty-blky, mod frm-frm, fst bri mlky oil cut, 70% Chk, 30% Mrlst		11700-11750 Chk med gy-lt gy brn, banded, sb plty-sb blk, mod sft, abnt Mrlst dk gy-med gy, sb plty-blky, mod frm-frm, sl mlky oil cut, 50% Chk, 50% Mrlst		11750-11800 Mrlst med-dk gy, mod frm-frm, sb plty-sb blk-blky, occ Chk lt-med gy, sb plty-plty, banded ip, sl cut, 70% Mrlst, 30% chk	
						11800-11850 Mrlst med-dk gy, mod frm-frm, sb plty-sb blk-blky, slty tex occ-abnt Chk lt-med gy, sb plty-plty, banded ip, fst bri wht mlky oil cut, 6 Mrlst, 40% chk	





11850				11900				11950				12000				12050											
MD 11841 TVD 5707.72 INC 90.7 AZ 181.6 VS 6503.99				MD 11871 TVD 5707.3 INC 90.9 AZ 181.9 VS 6533.98				MD 11902 TVD 5706.84 INC 90.8 AZ 181.8 VS 6564.97				MD 11933 TVD 5706.22 INC 91.5 AZ 181.6 VS 6595.95				MD 11963 TVD 5705.33 INC 91.9 AZ 181.4 VS 6625.93				MD 11994 TVD 5704.49 INC 91.2 AZ 181.9 <sup>2up</sup> VS 6656.91				MD 12025 TVD 5704.17 INC 90 AZ 182.3 VS 6687.9			





12300						12350						12400						12450					
												4960 TVD Sub Sea (-206)											
												5465 (-711)											
												5970 (-1216)											

