



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

Well Name: Razor 25N-2407  
Well Id: 05-123-42640-00  
Location: Sec 25-T10N-R58W  
License Number: 05-123-42640-00  
Spud Date: 7/15/2016  
Surface Coordinates: Lat.: 40.803414 Long.: -103.815072

Region: Redtail Field  
Drilling Completed: 7/20/2016

**Bottom Hole Coordinates:**

Ground Elevation (ft): 4704  
Logged Interval (ft): 4881 To: 15740  
Formation: Niobrara B Chalk  
Type of Drilling Fluid: Water Based Mud

K.B. Elevation (ft): 4725  
Total Depth (ft): 15740

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: Todd Nakata and Brian Reddick  
Company: Acme Geologic Consulting  
Address: 108 Berry Street  
Little Rock, AR 72205

## Drilling Company

Unit Drilling Company  
Rig 409

## 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  
 Bit  
 Brecfrag  
 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

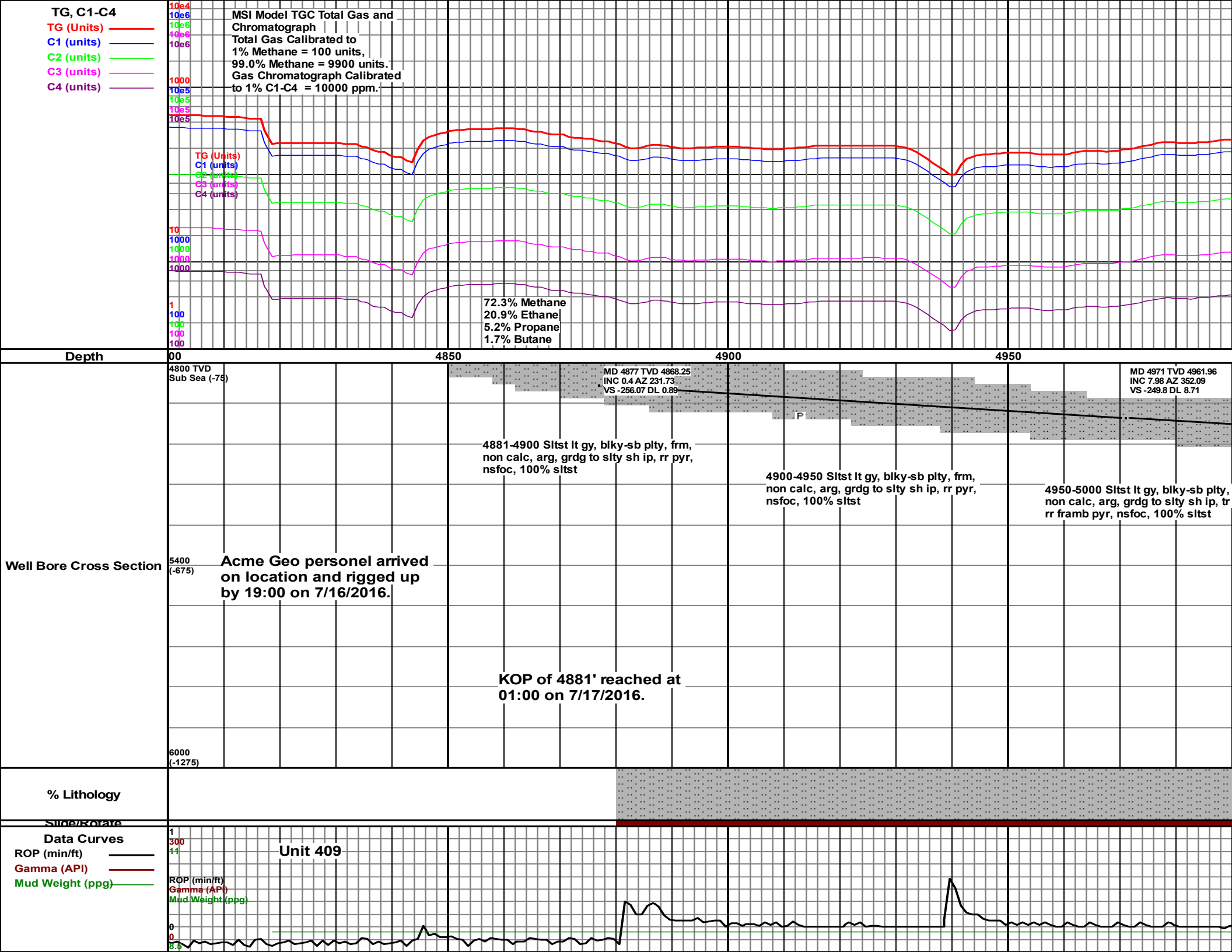
**POROSITY**  
 Earthy  
 Fenest  
 Fracture  
 Inter  
 Moldic  
 Organic  
 Pinpoint

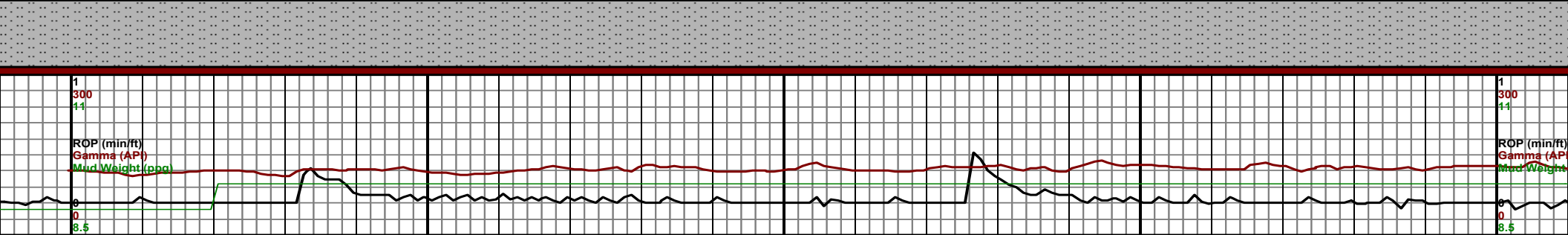
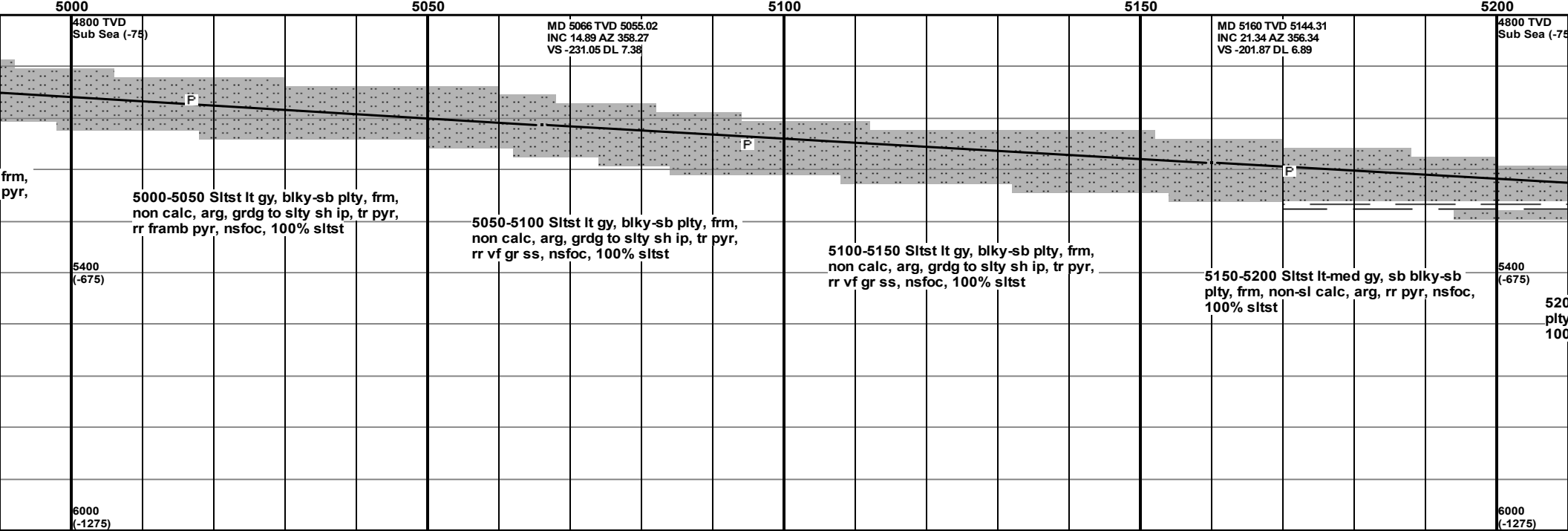
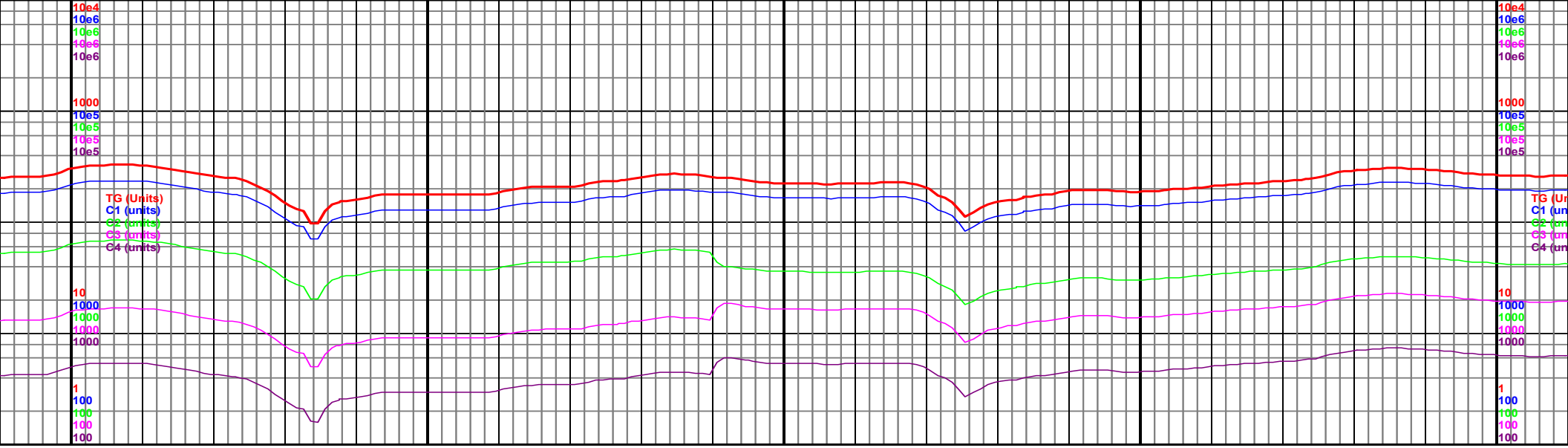
 Vuggy  
  
**SORTING**  
 Well  
 Moderate  
 Poor

**OTHER SYMBOLS**  
  
**ROUNDING**  
 Rounded  
 Subrnd  
 Subang  
 Angular  
  
**OIL SHOW**  
 Even

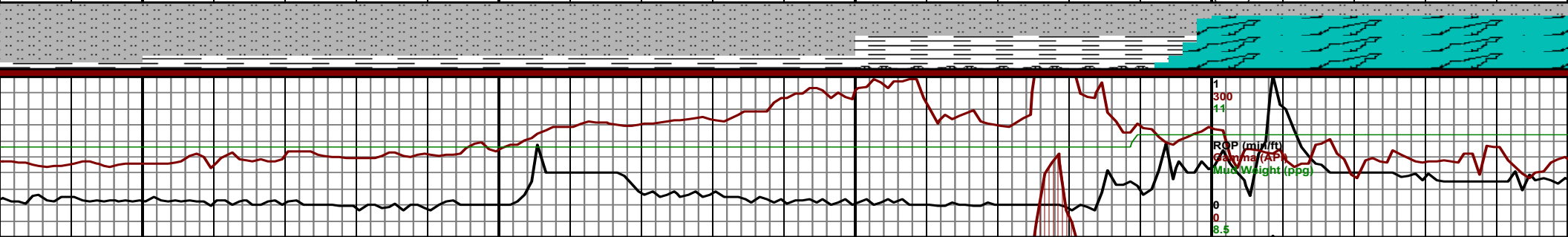
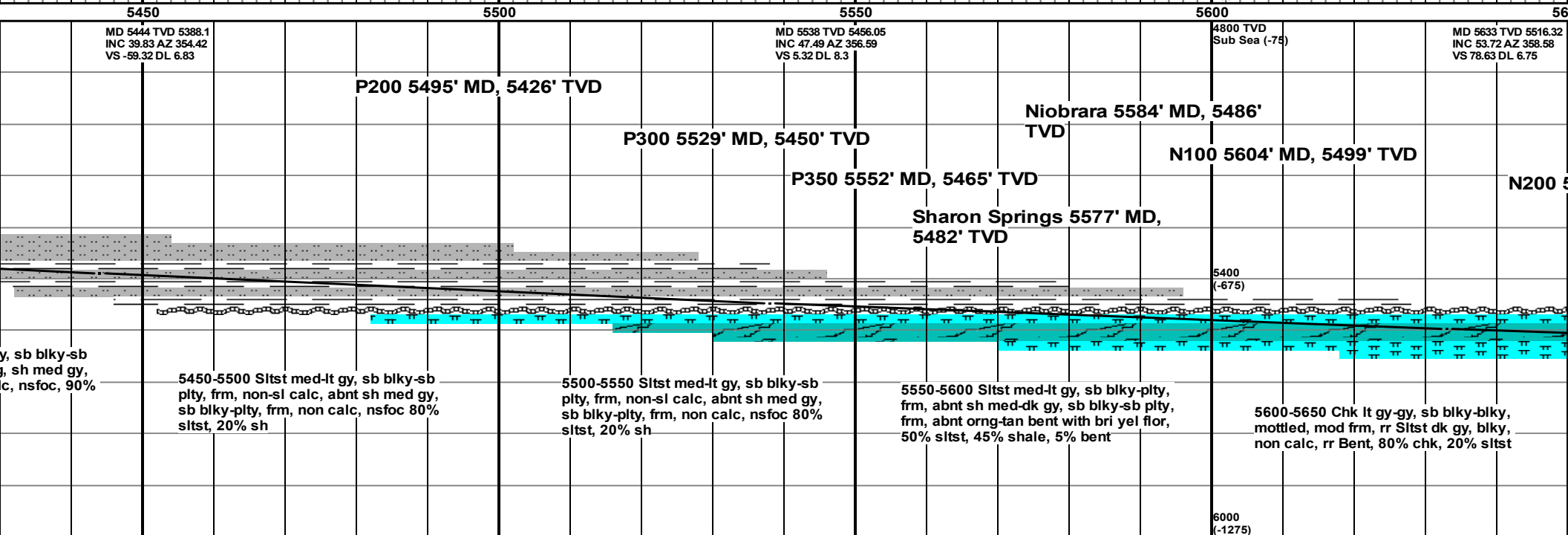
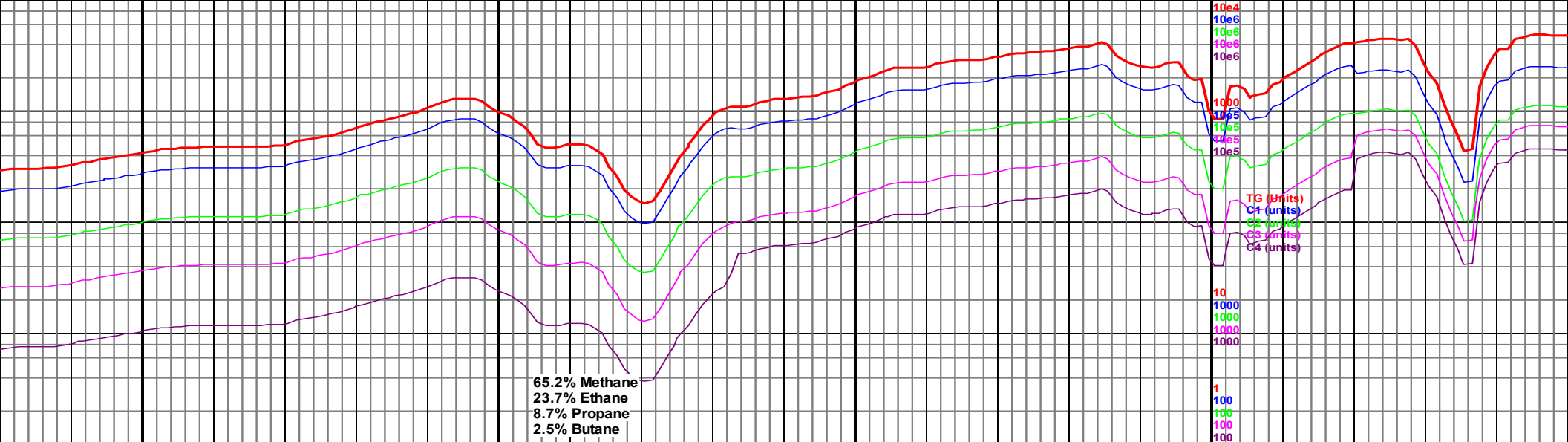
 Spotted  
 Ques  
 Dead  
  
**INTERVAL**  
 Core  
 Dst

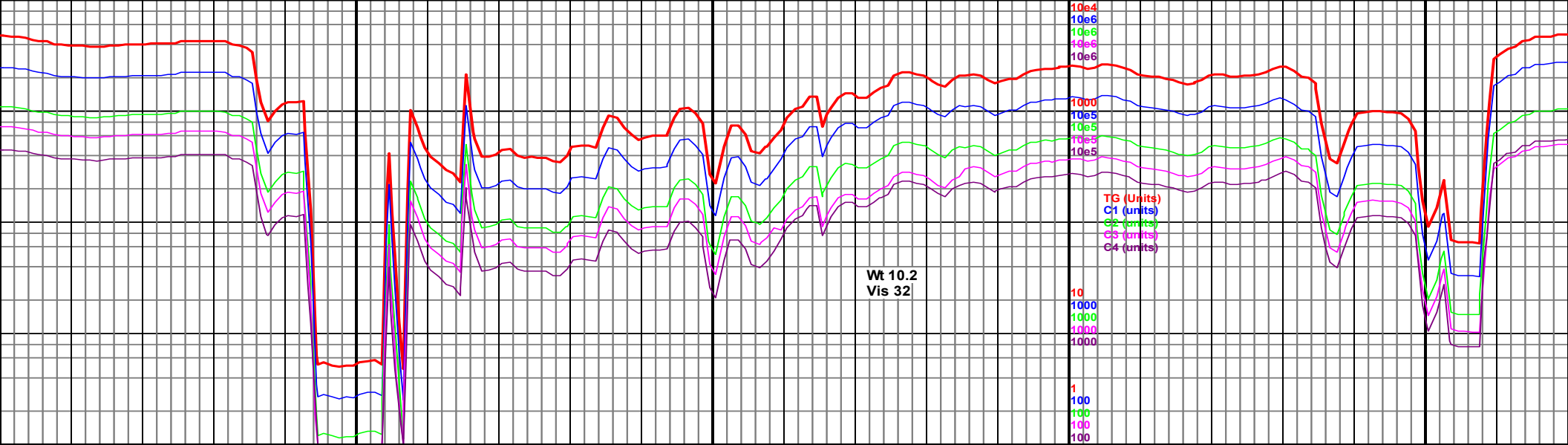
**EVENT**  
 Rft  
 Sidewall



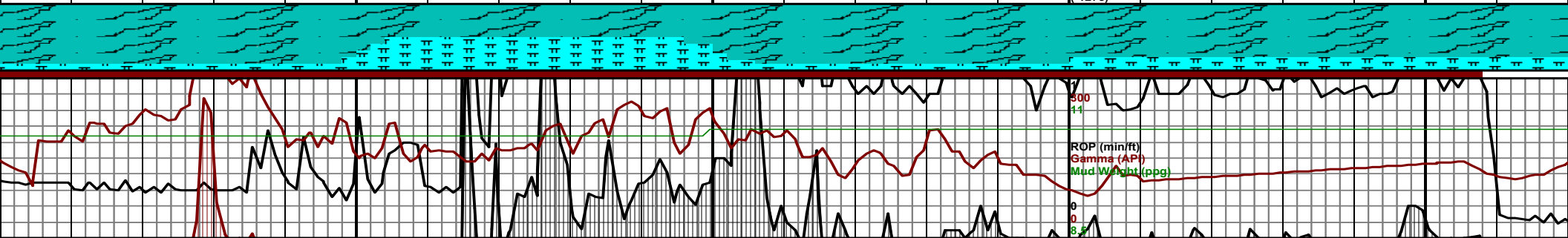




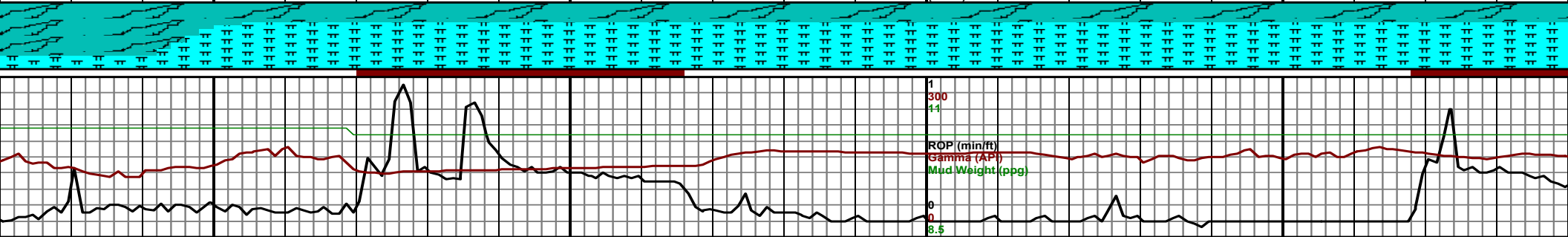
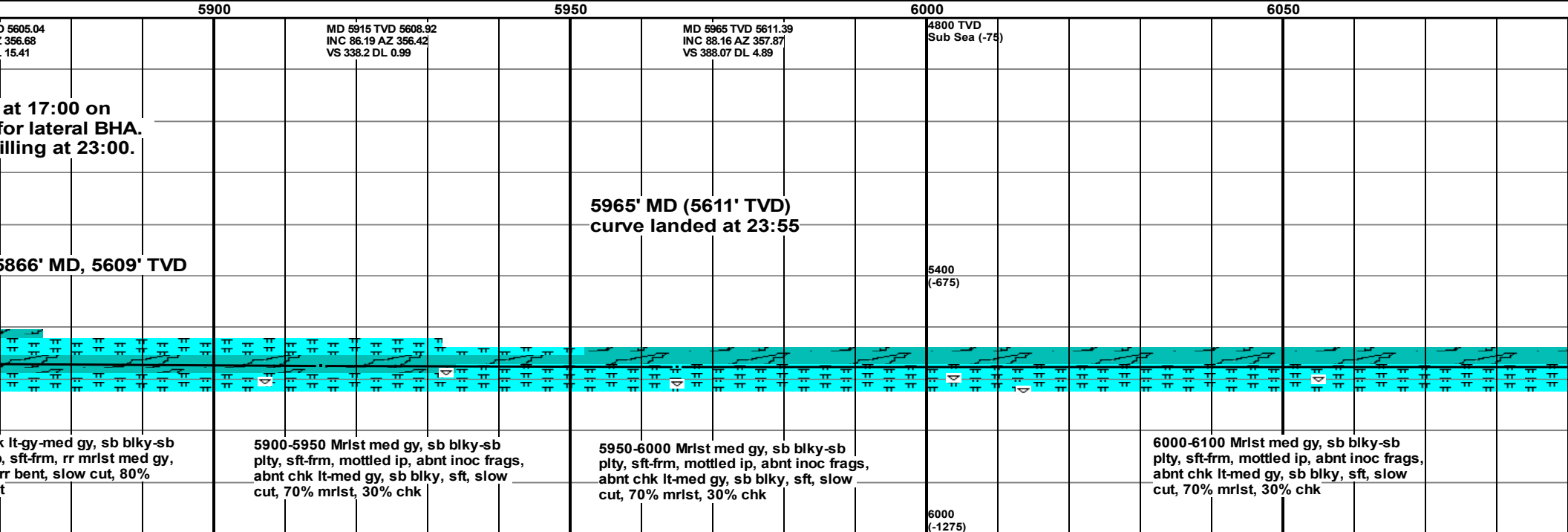
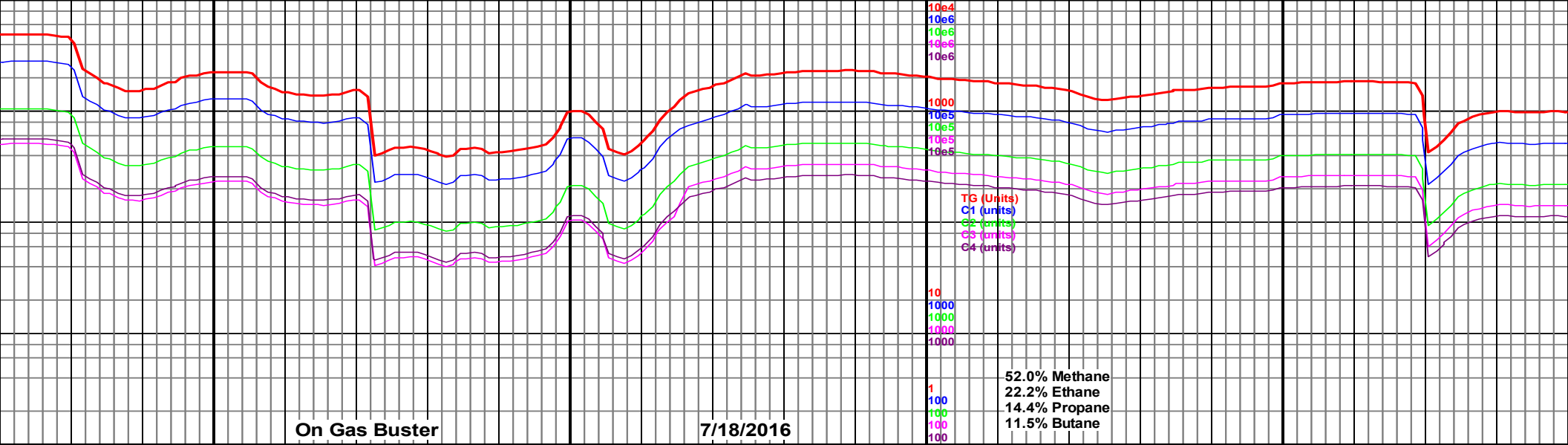


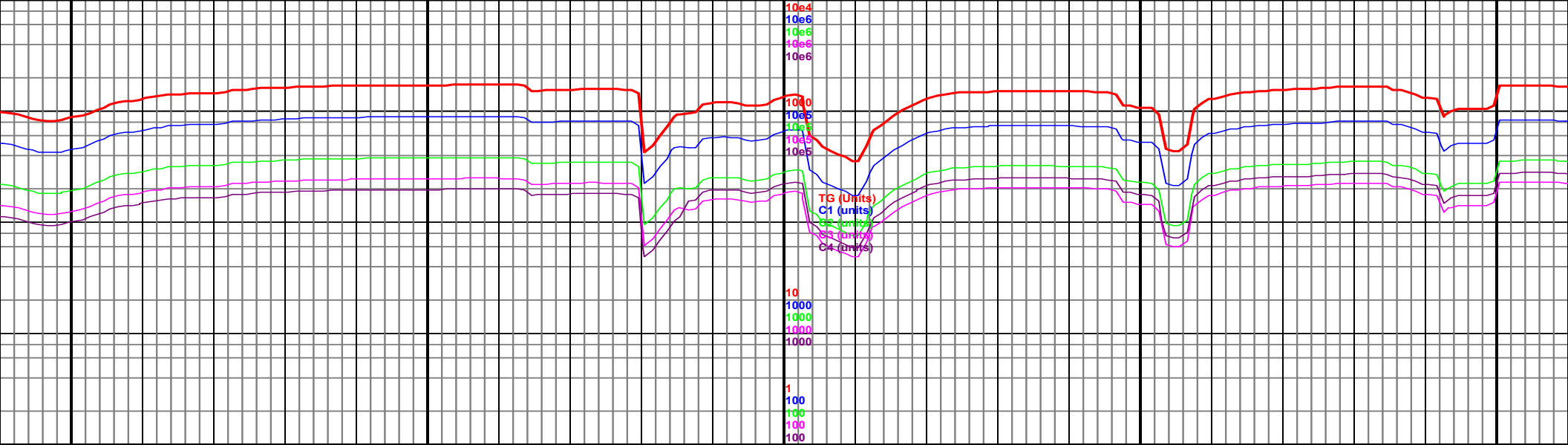


	<p>MD 5702 TVD 5555.63 INC 56.83 AZ 1.72 VS 135.32 DL 5.86</p> <p>TOH 5715' at 06:45 on 7/17/2016 due to build rates. Back to drilling at 13:22.</p>		<p>MD 5797 TVD 5594.71 INC 74.4 AZ 357.62 VS 221.48 DL 18.9</p>	<p>MD 5821 TVD 5600.09 INC 79.7 AZ 356.55 VS 244.83 DL 22.51</p>	<p>MD 5860 TVD INC 85.71 AZ VS 283.43 DL</p> <p>TOH 5858' at 06:45 on 7/17/2016 due to build rates. Back to drilling at 13:22.</p>
<p>5655' MD, 5529' TVD</p> <p>N250 5677' MD, 5542' TVD</p> <p>N400 5689' MD, 5548' TVD</p>	<p>N430 5725' MD, 5567' TVD</p>	<p>N460 5770' MD, 5586' TVD</p>			<p>N490 5821' MD, 5594' TVD</p>
<p>5650-5700 Chk lt gy-gy, sb blkly-sb plty, mottled, mod frm, rr Mrlst med gy, blkly, slty, frm, rr Bent, 90% chk, 10% Mrlst</p>	<p>5700-5750 Chk lt gy-med gy, sb blkly-sb plty, mottled, mod frm, abnt Mrlst dk-med gy, blkly-plty, slty, frm, rr inoc, rr anhy, rr Bent, 50% chk, 50% Mrlst</p>	<p>5750-5800 Chk lt gy-gy, sb blkly-sb plty, mottled, mod frm, rr Mrlst med gy, plty, slty, frm, rr inoc, rr Bent, 90% Chk, 10% Mrlst</p>	<p>5800-5850 Chk lt-gy-med gy, sb blkly-sb plty, mottled ip, sft-frm, rr mrlst med gy, plty, slty, frm, rr bent, slow cut, 80% chk, 20% mrlst</p>		<p>5850-5900 Chk lt-gy-med gy, sb blkly-sb plty, mottled ip, sft-frm, rr mrlst med gy, plty, slty, frm, rr bent, slow cut, 80% chk, 20% mrlst</p>









6100

MD 6104 TVD 5611.75  
INC 91.54 AZ 359.64  
VS 527.01 DL 2.74

6150

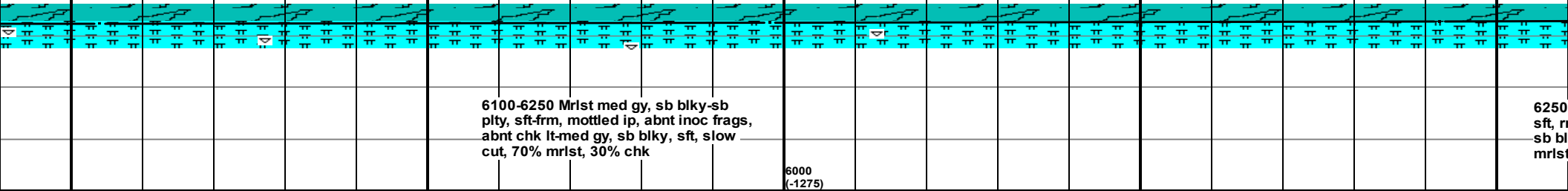
6200

MD 6198 TVD 5609.1  
INC 91.69 AZ 1.26  
VS 620.97 DL 1.73

6250

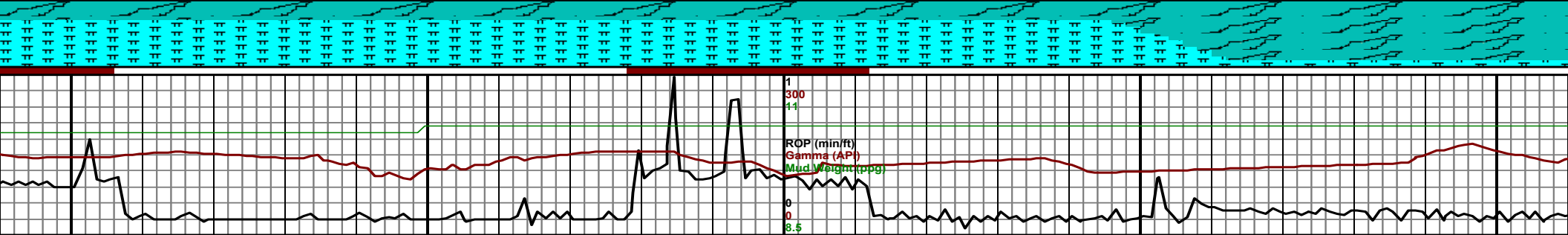
6300

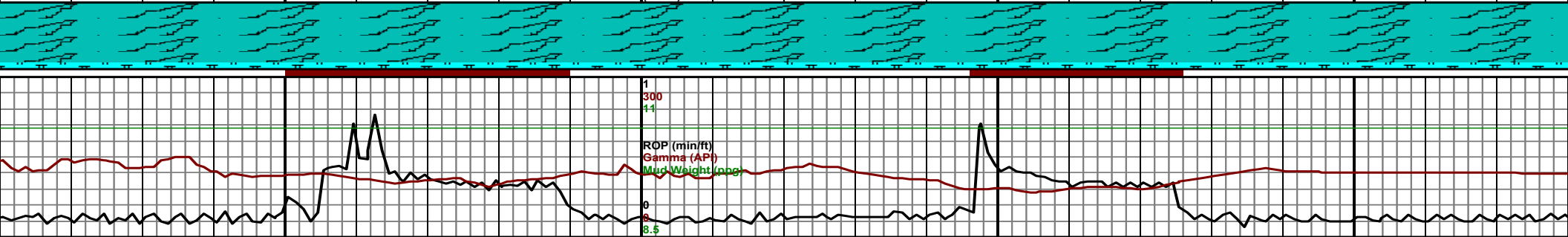
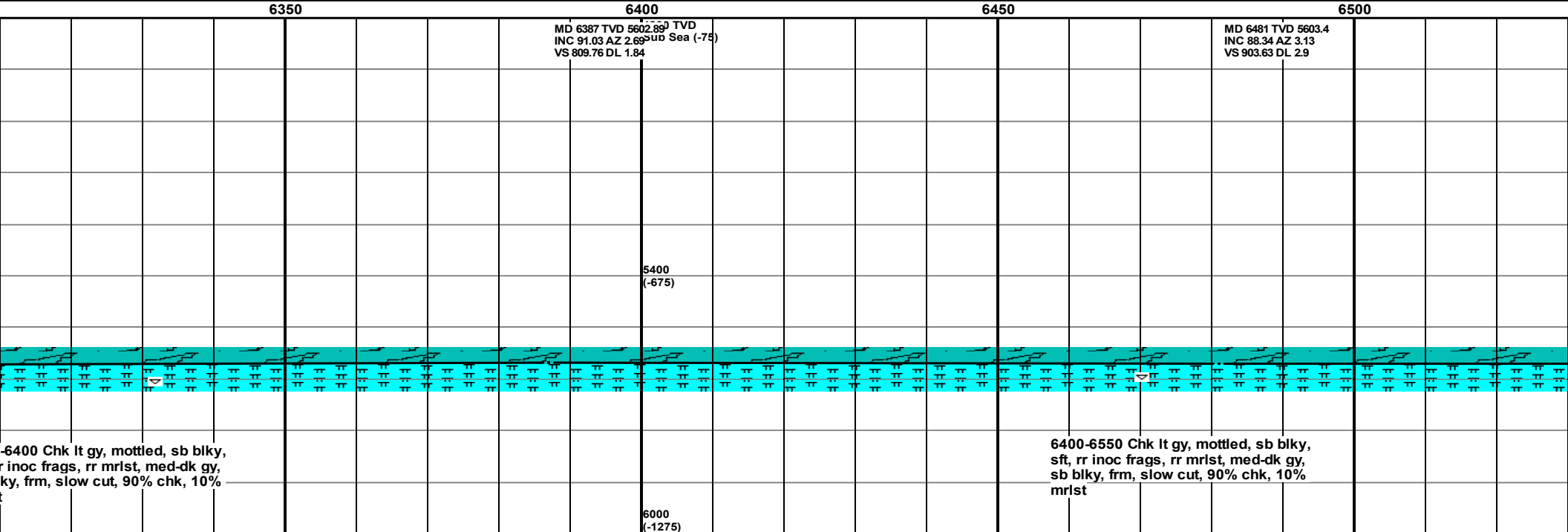
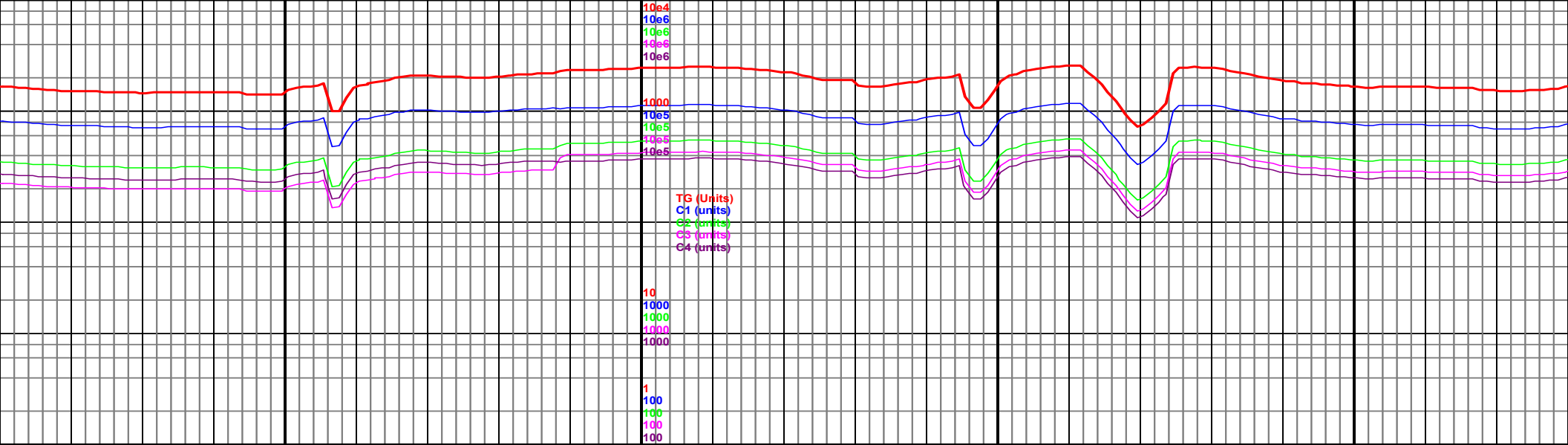
MD 6292 TVD 5605.74  
INC 92.41 AZ 1.61  
VS 714.88 DL 0.85

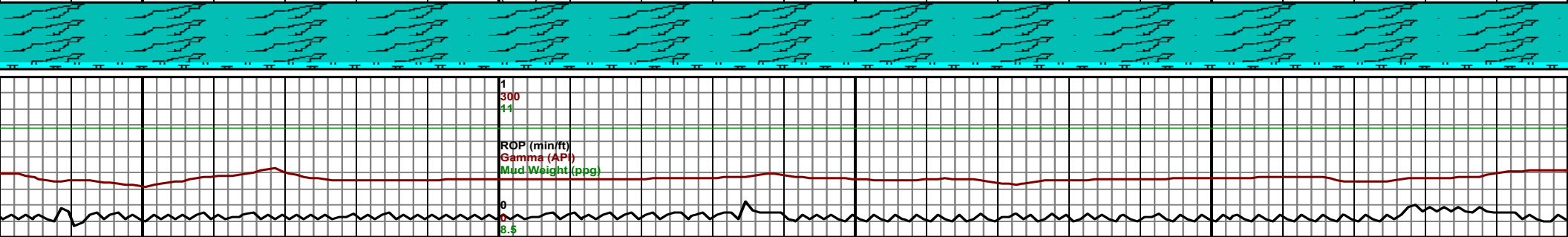
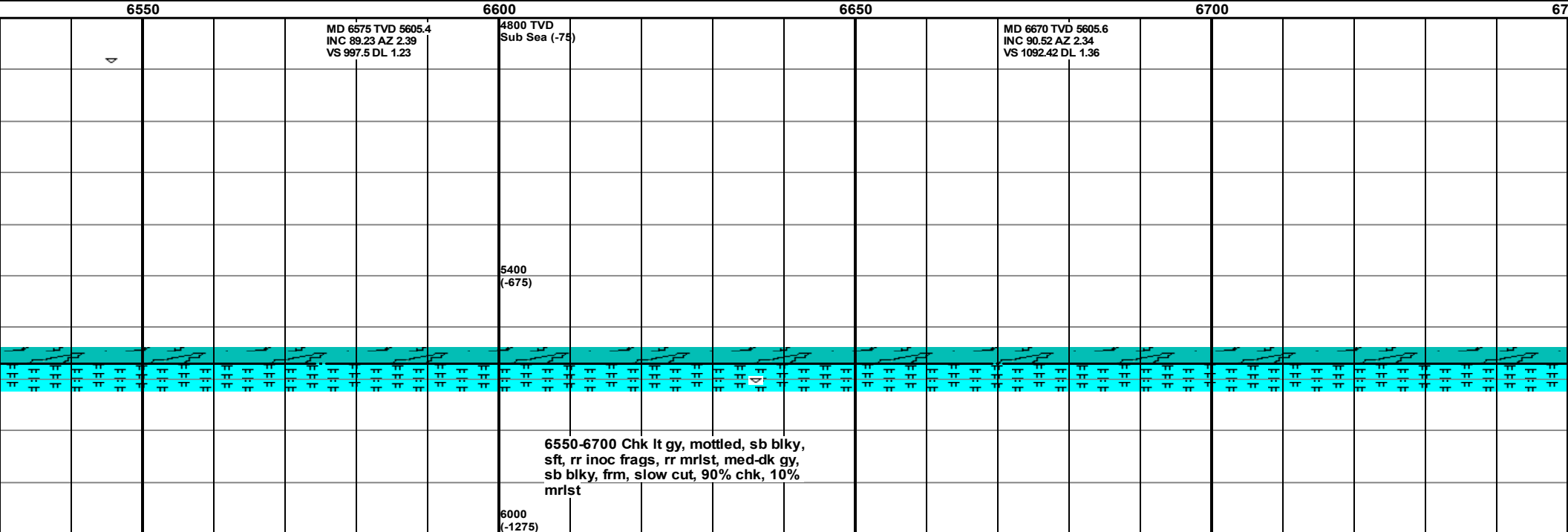
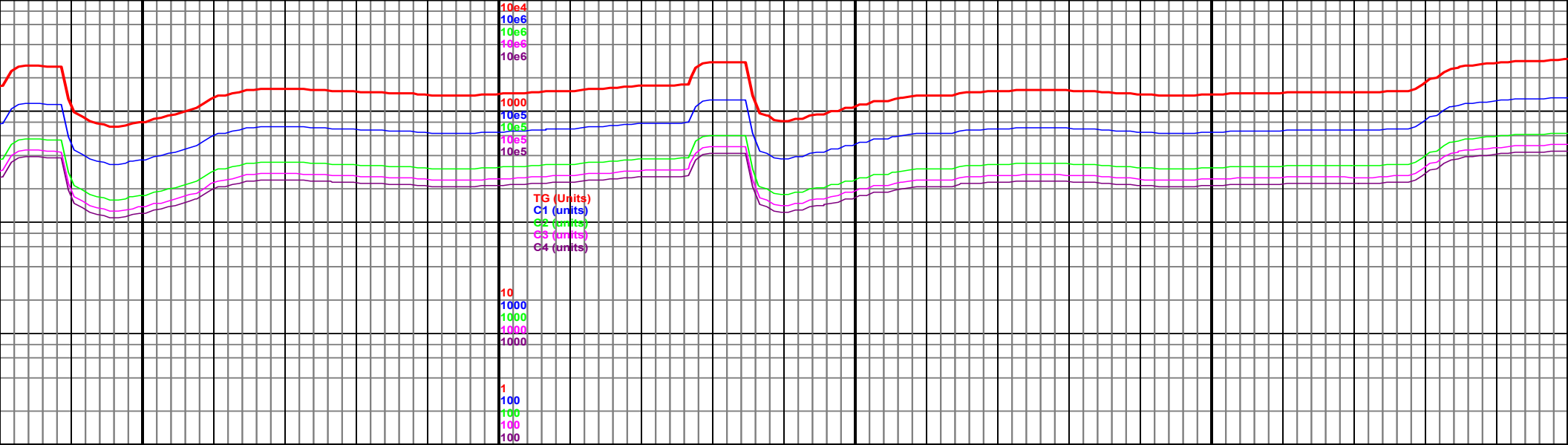


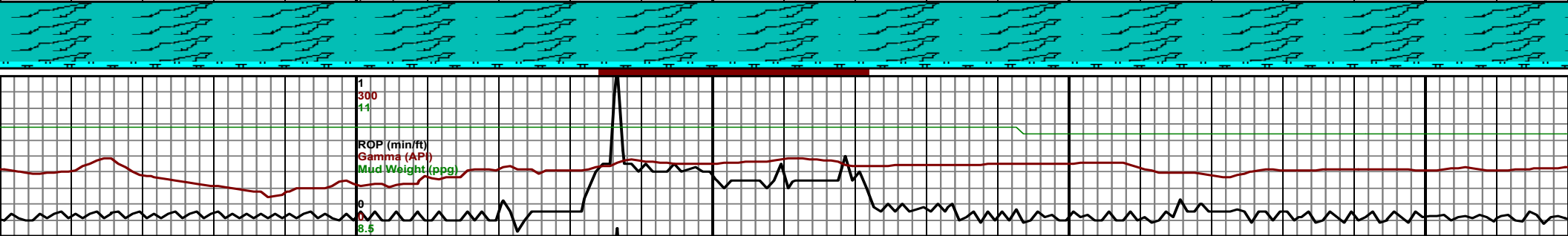
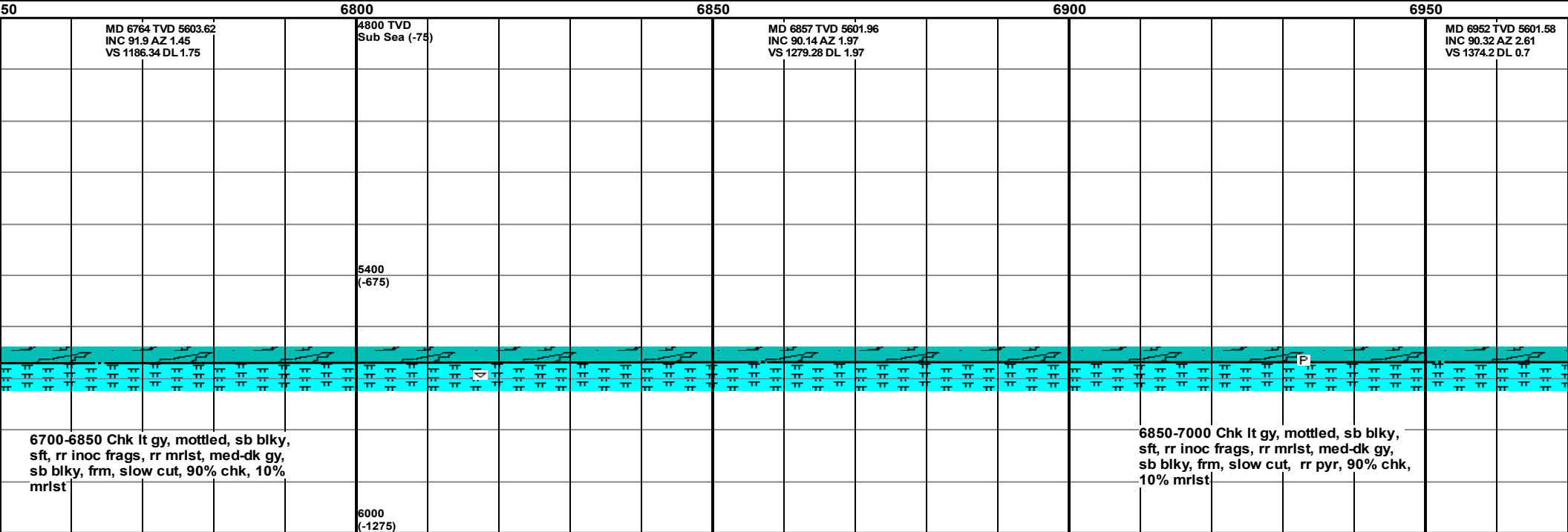
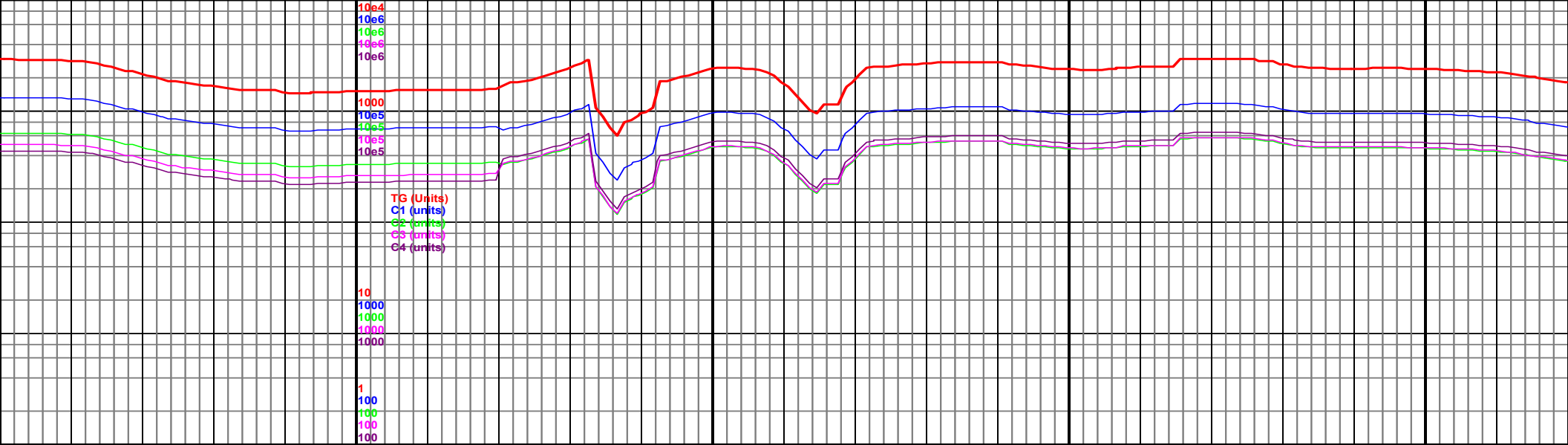
6100-6250 Mrlst med gy, sb blkly-sb  
plty, sft-frm, mottled ip, abnt inoc frags,  
abnt chk lt-med gy, sb blkly, sft, slow  
cut, 70% mrlst, 30% chk

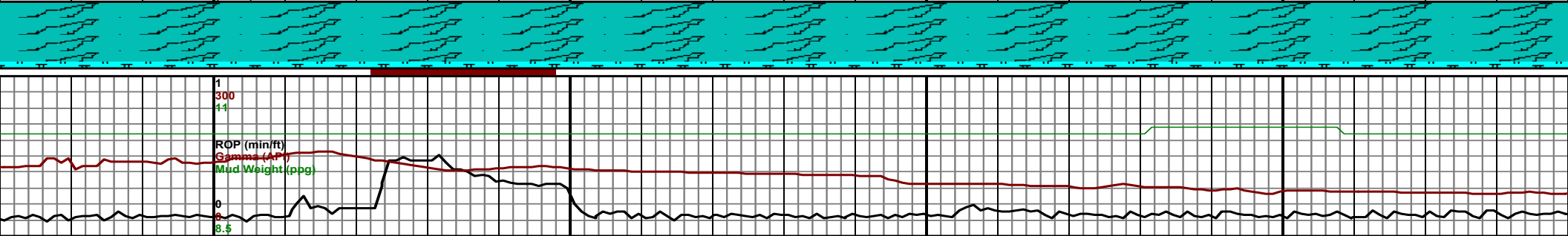
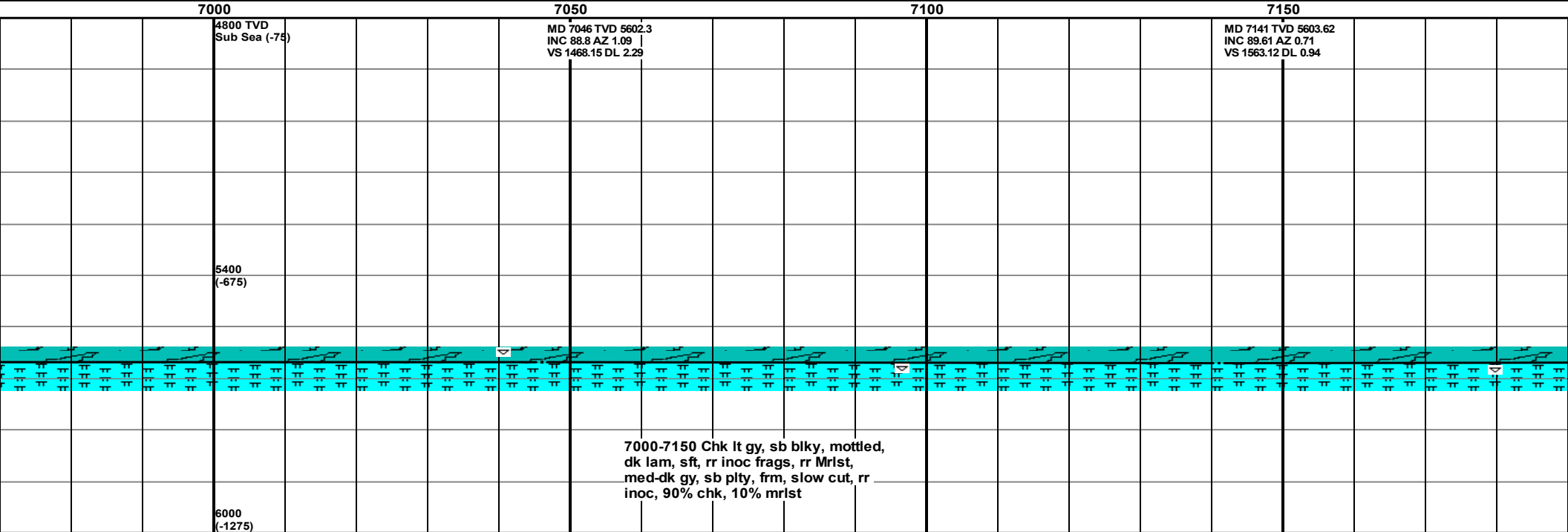
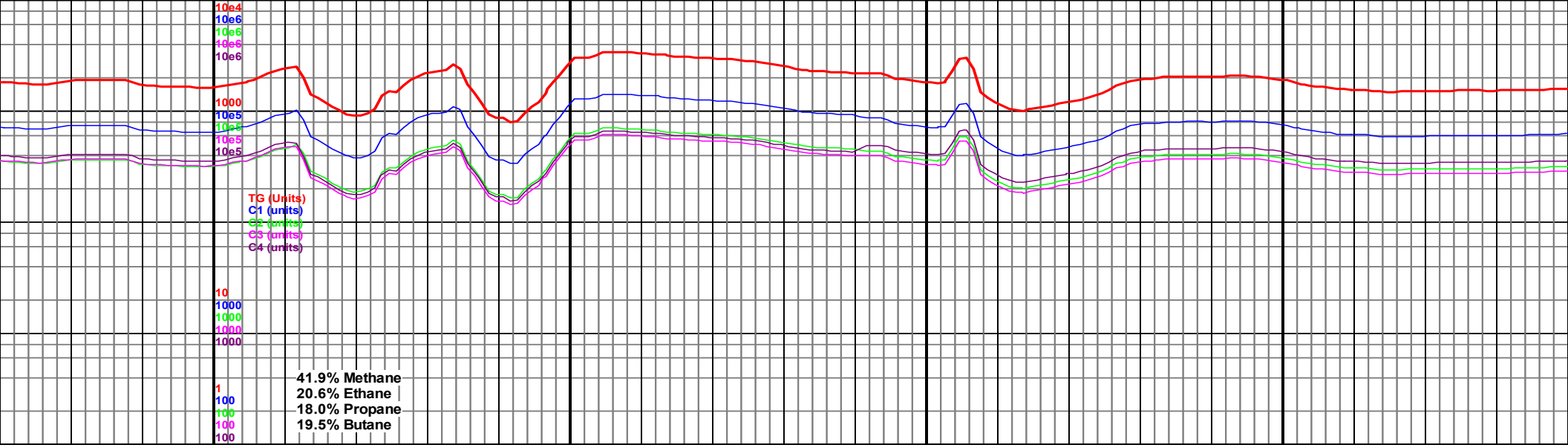
6250  
sft, m  
sb blk  
mrlst

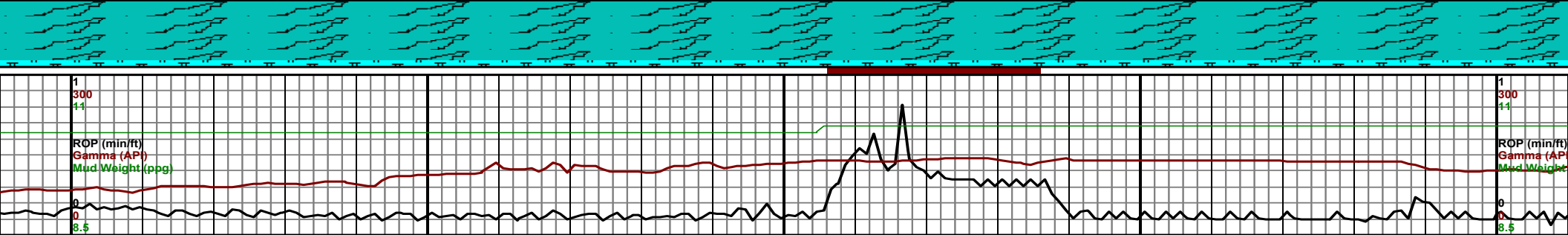
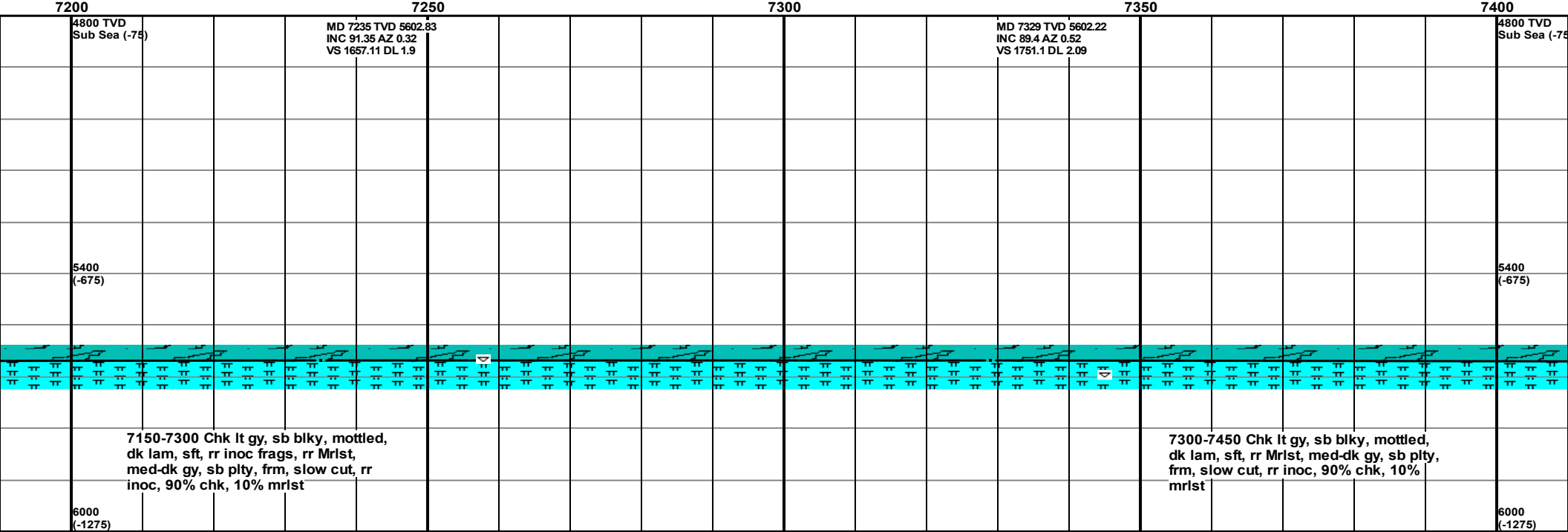
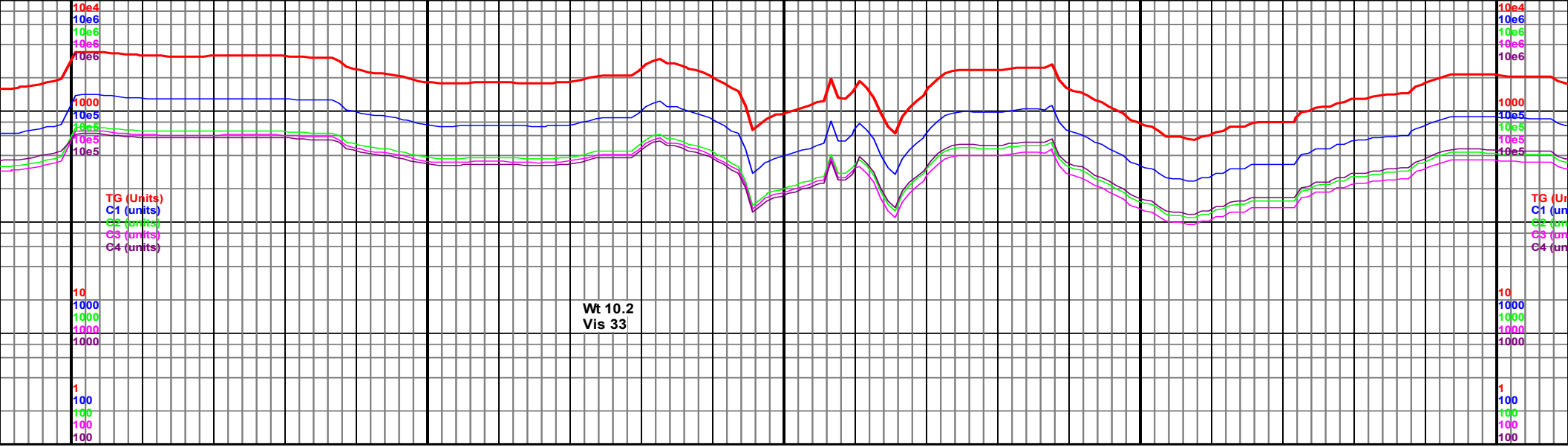


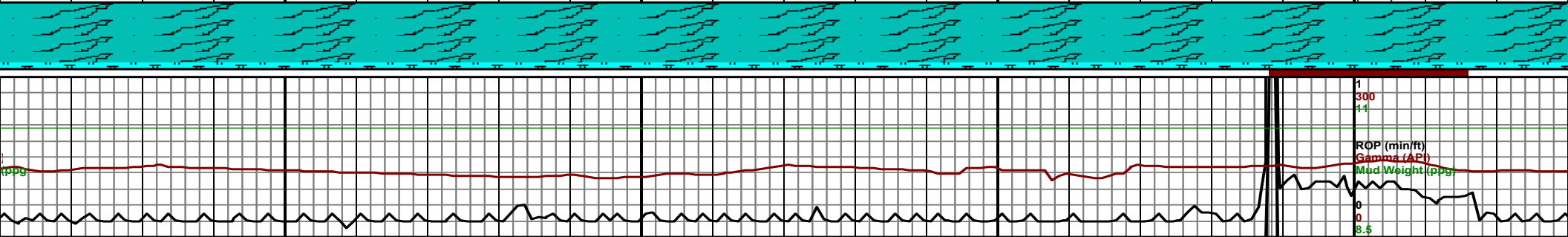
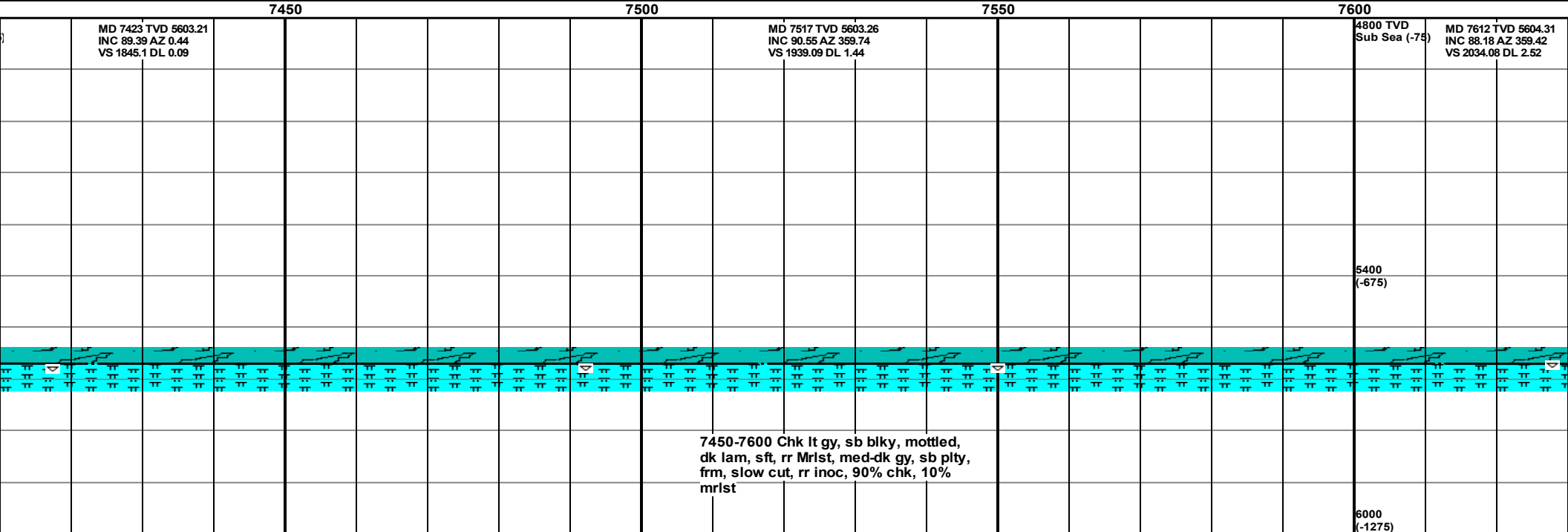
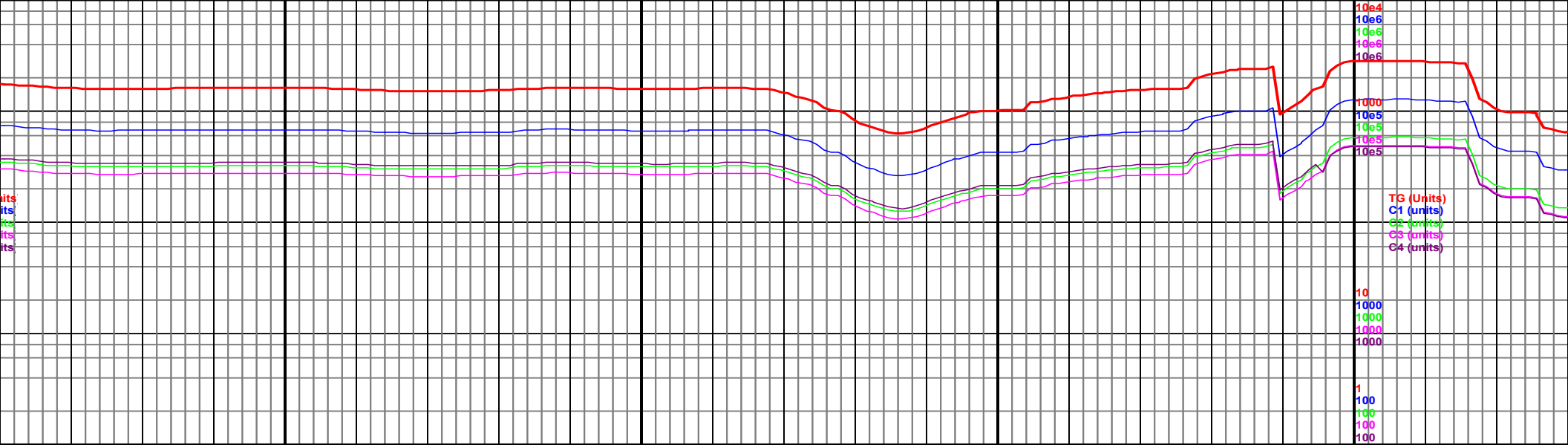




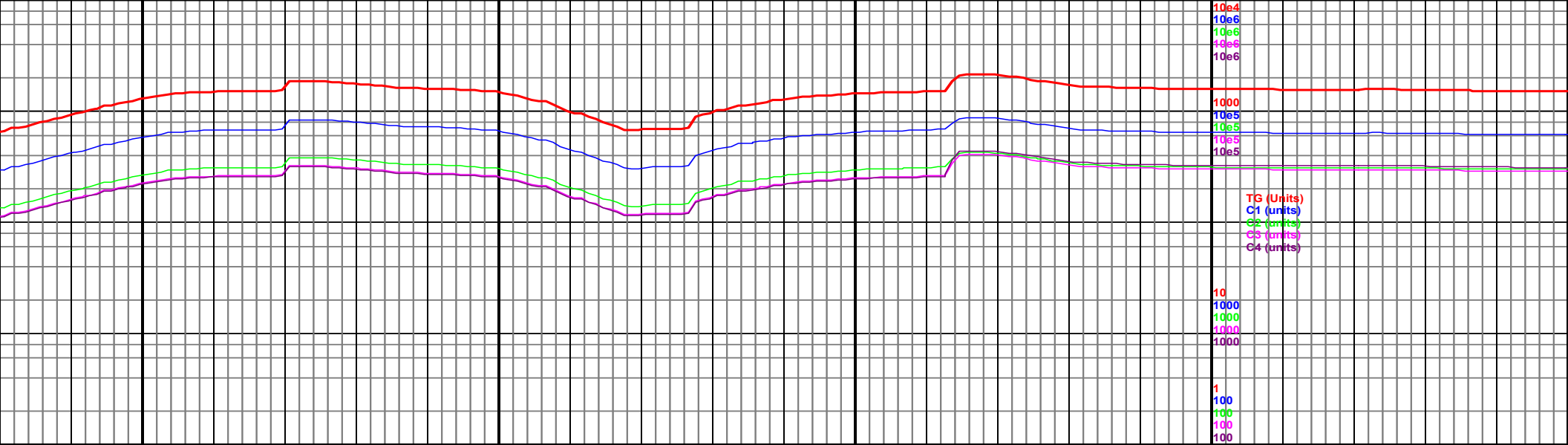












7650

7700

7750

7800

7850

MD 7706 TVD 5606.91  
INC 88.65 AZ 359.25  
VS 2128.04 DL 0.53

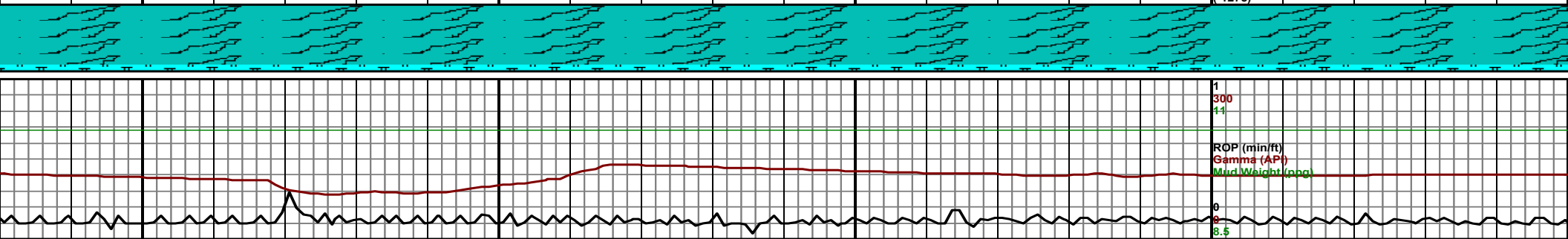
MD 7800 TVD 5607.96  
INC 90.07 AZ 358.97  
VS 2222.02 DL 1.54

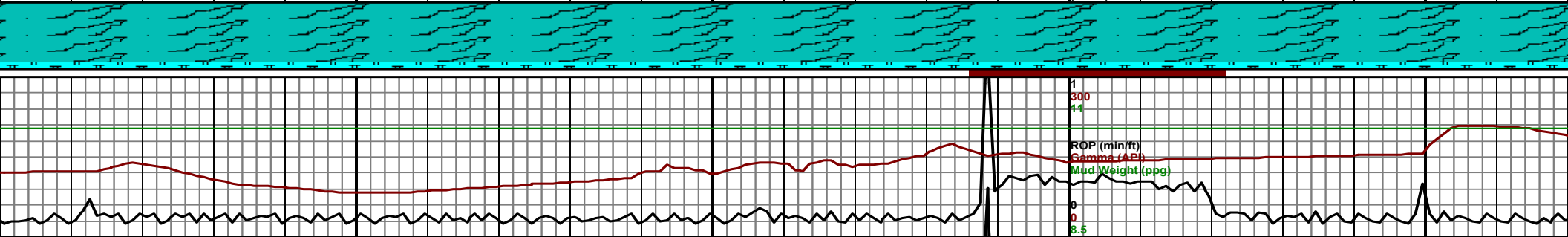
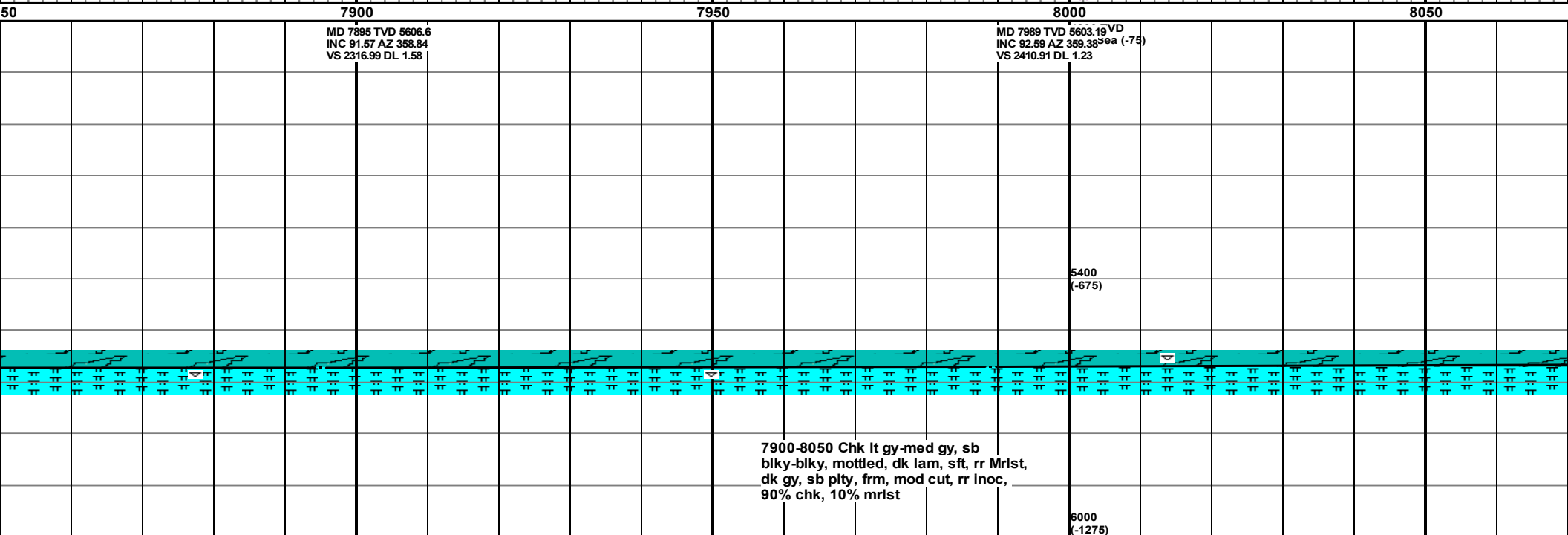
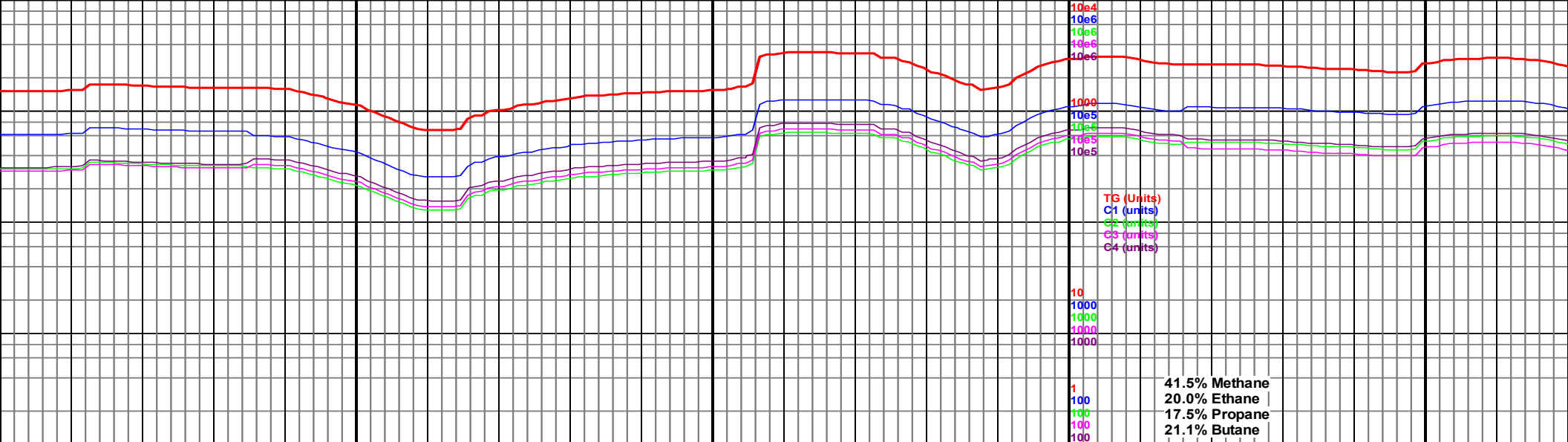
7600-7750 Chk lt gy-gy, sb blkyl-biky,  
mottled, dk lam, sft, rr Mrlst, dk gy, sb  
ply, frm, slow cut, rr inoc, 90% chk,  
10% mrlst

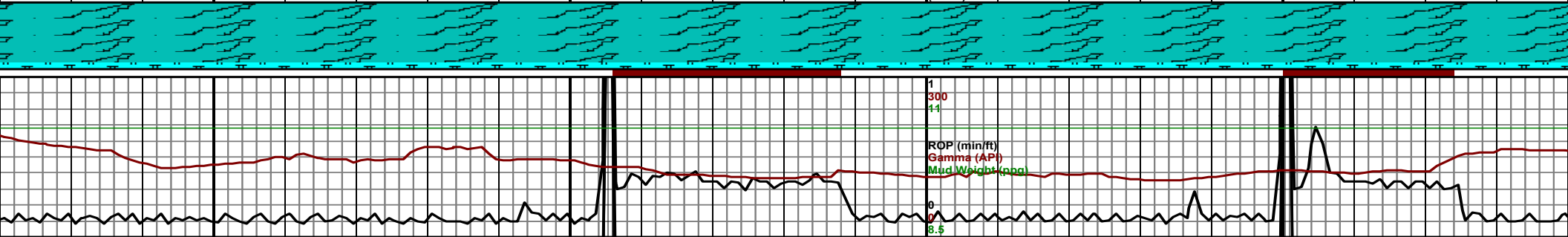
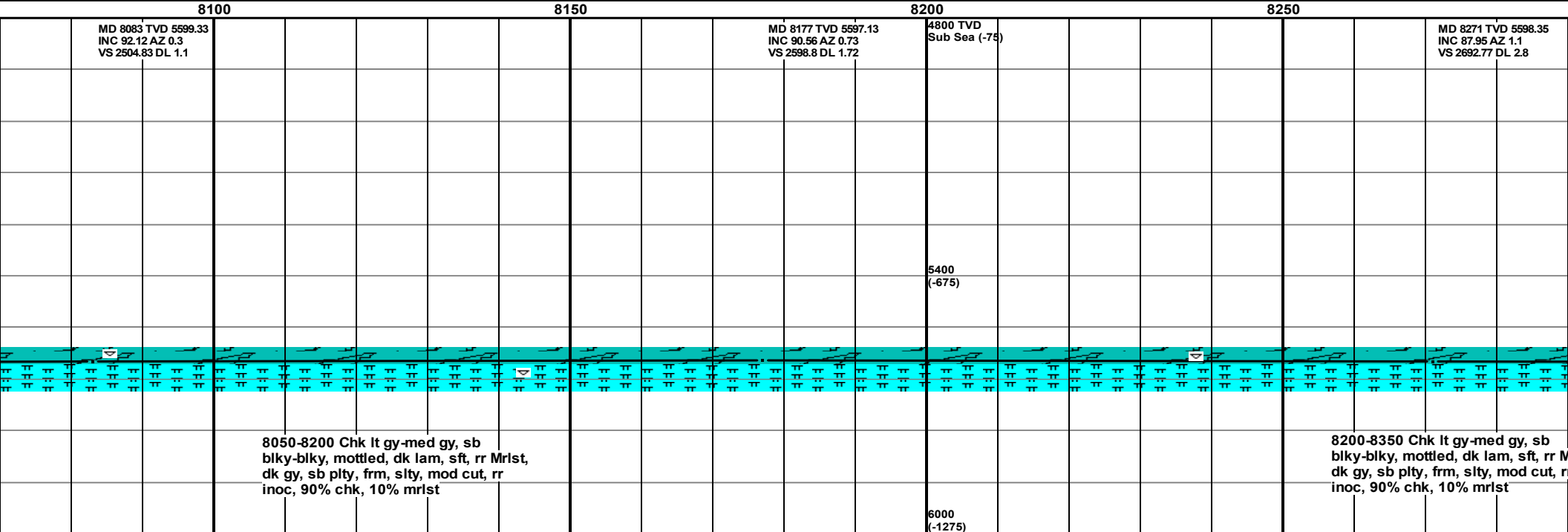
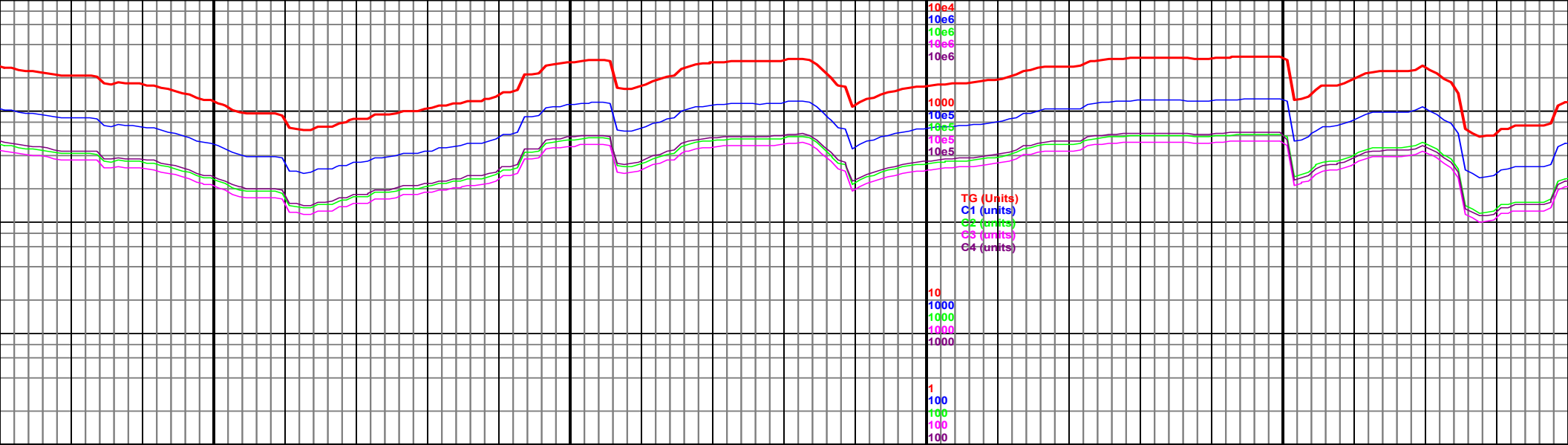
7750-7900 Chk lt gy-gy, sb blkyl-biky,  
mottled, dk lam, sft, rr Mrlst, dk gy, sb  
ply, frm, slow cut, rr inoc, 90% chk,  
10% mrlst

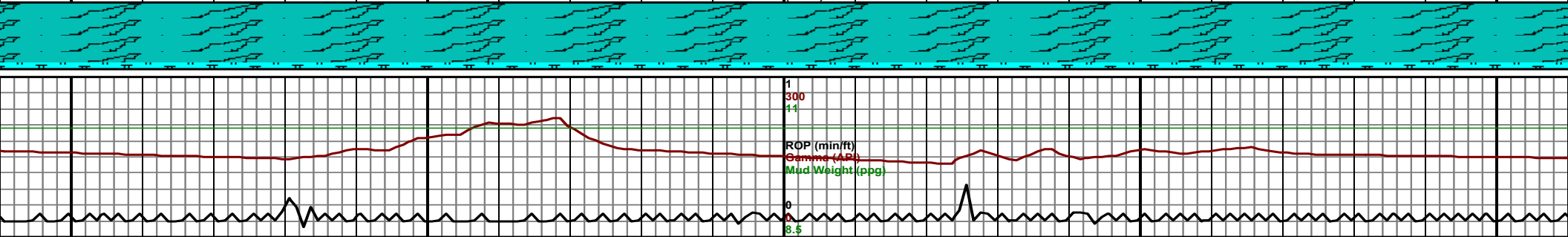
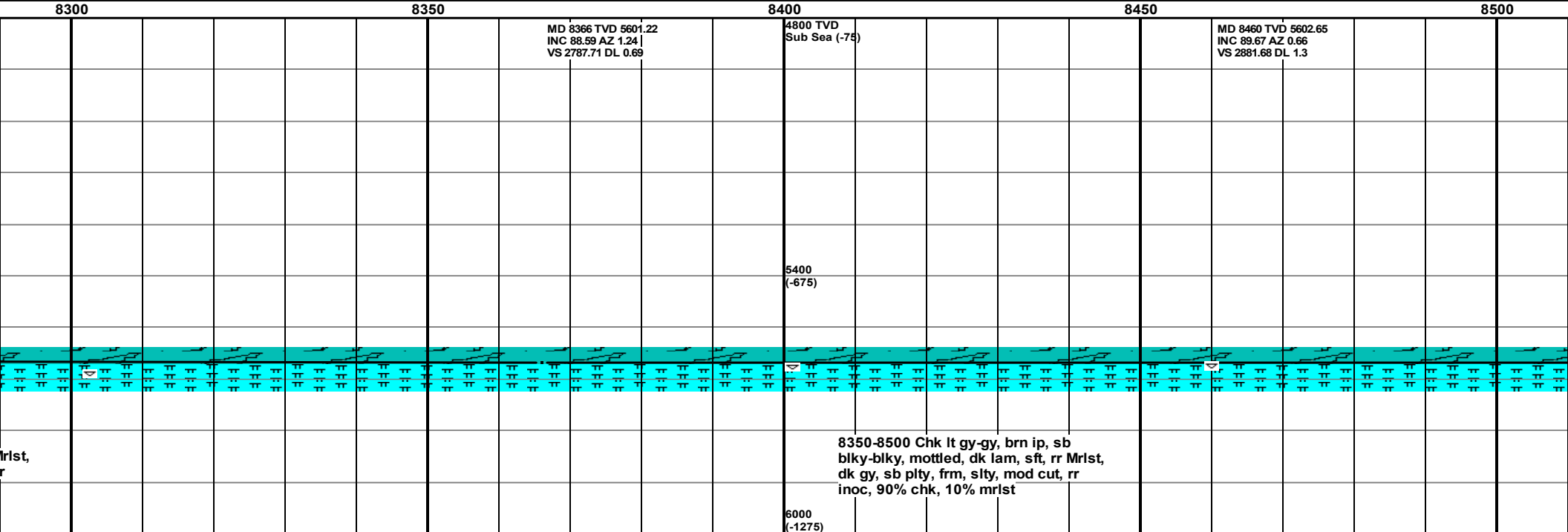
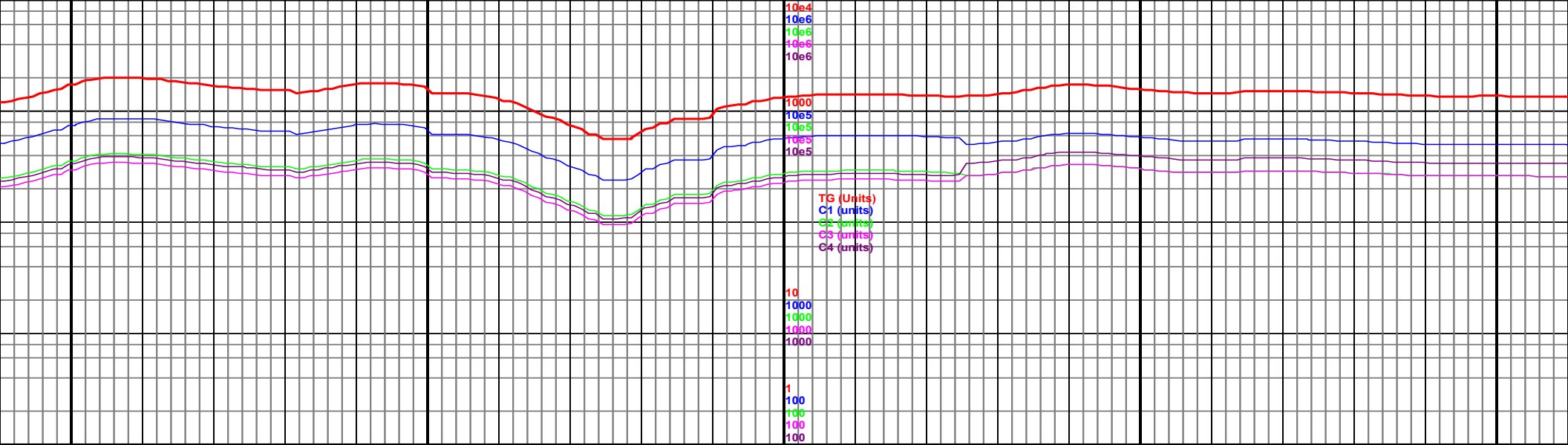
5400  
(-675)

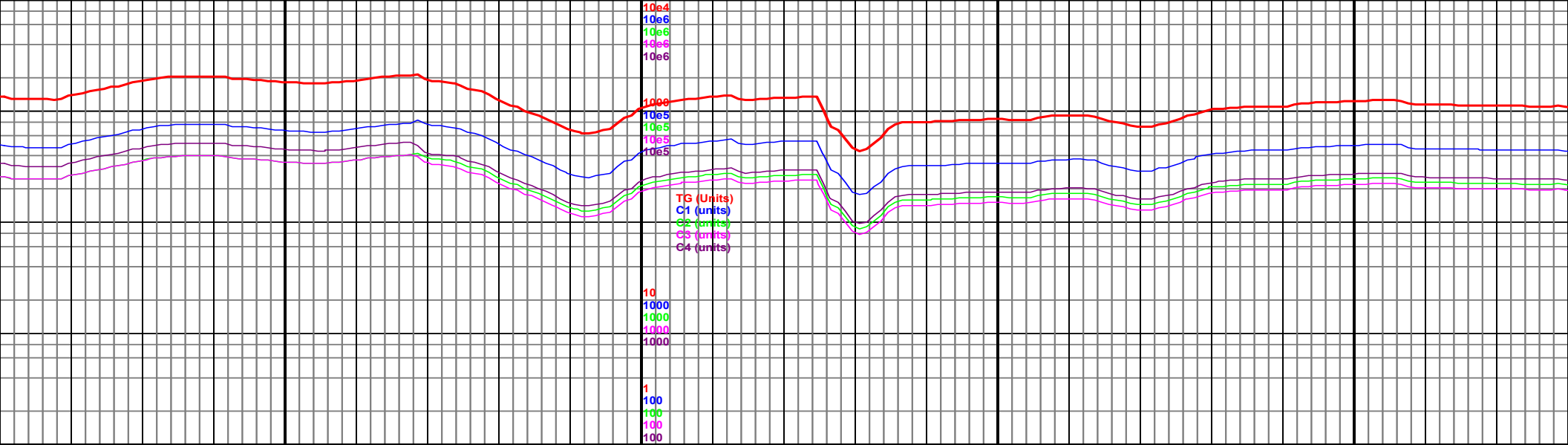
6000  
(-1275)











8550

MD 8554 TVD 5601.94  
INC 91.19 AZ 359.64  
VS 2975.67 DL 1.95

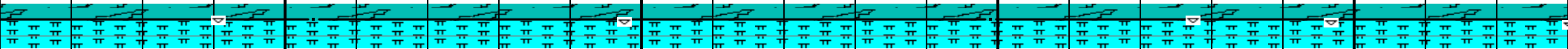
8600

4800 TVD  
Sub Sea (-75)

8650

MD 8649 TVD 5601.14  
INC 89.78 AZ 359.77  
VS 3070.67 DL 1.49

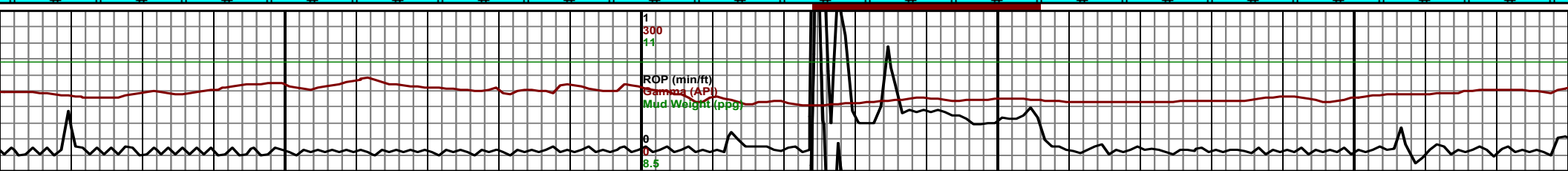
8700

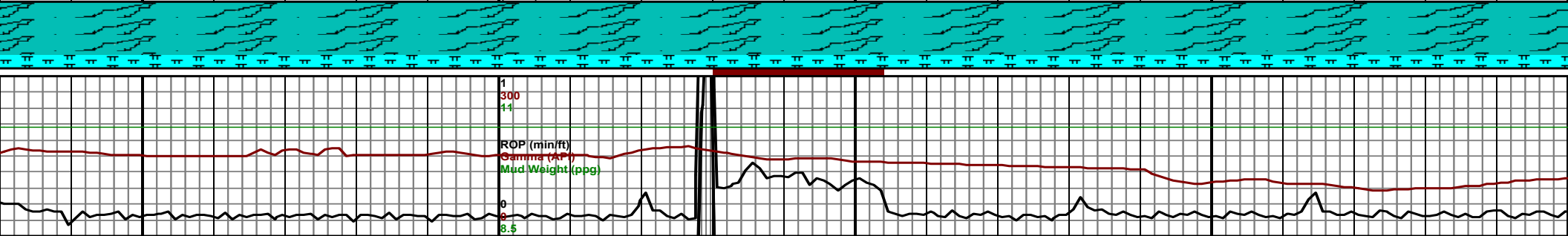
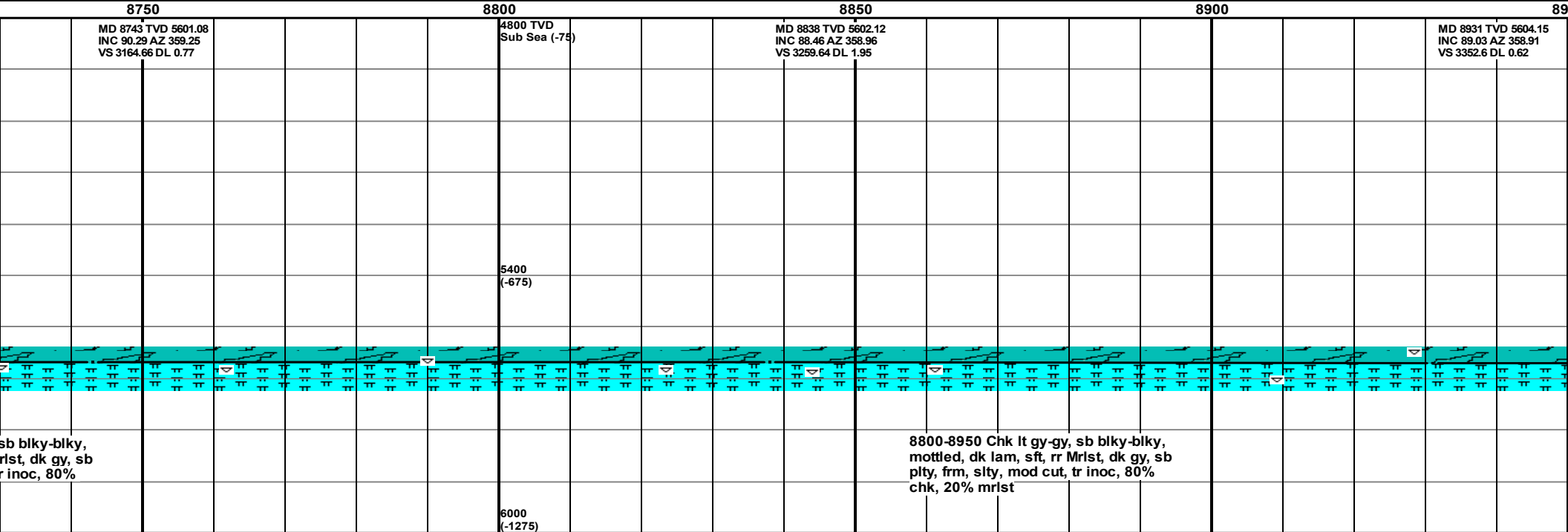
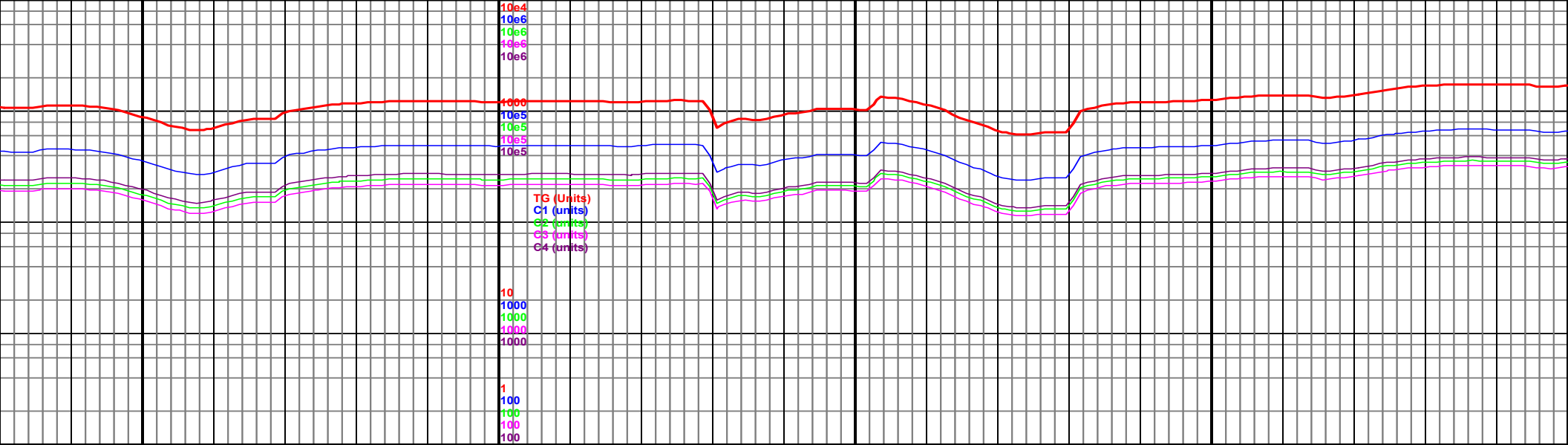


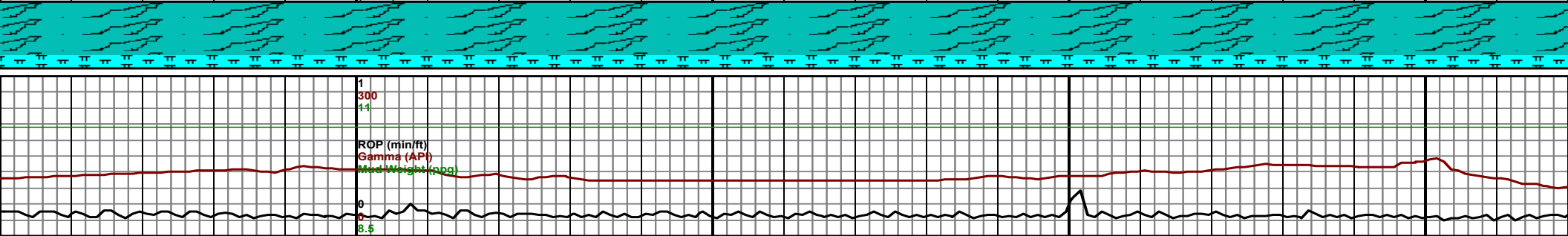
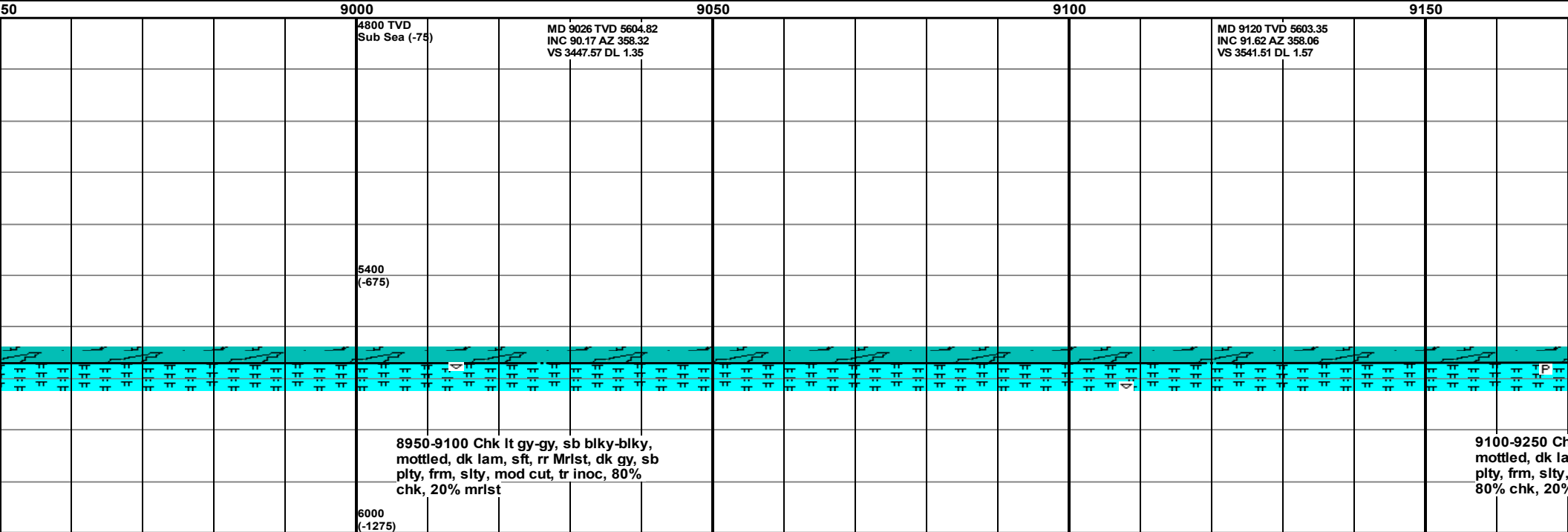
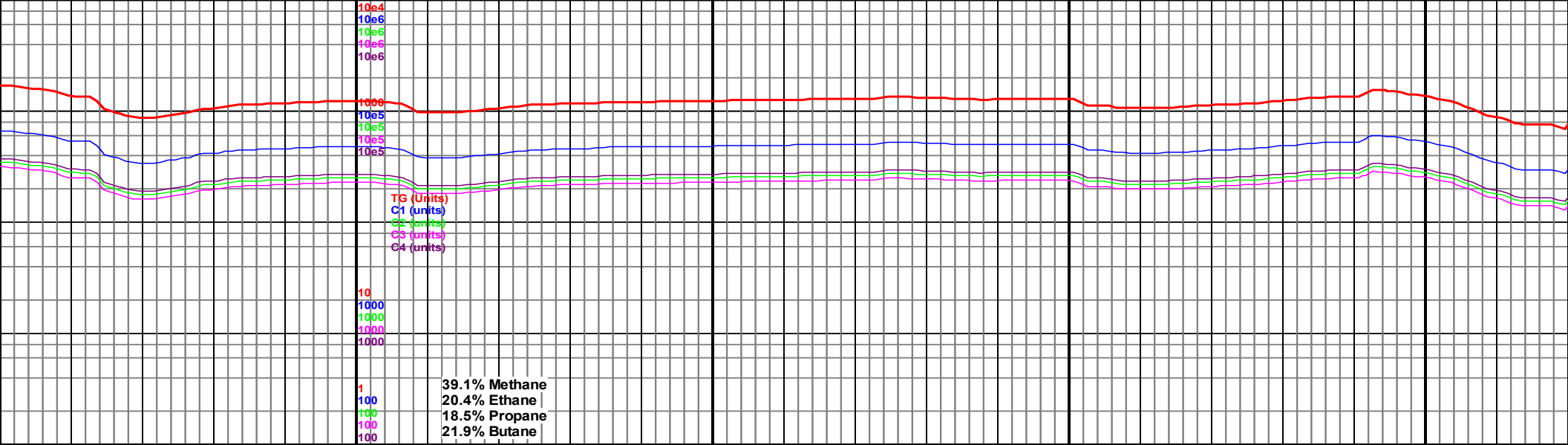
8500-8650 Chk lt gy-gy, sb blkyl-blky,  
mottled, dk lam, sft, rr Mrst, dk gy, sb  
ply, frm, slty, mod cut, rr inoc, 90%  
chk, 10% mrst

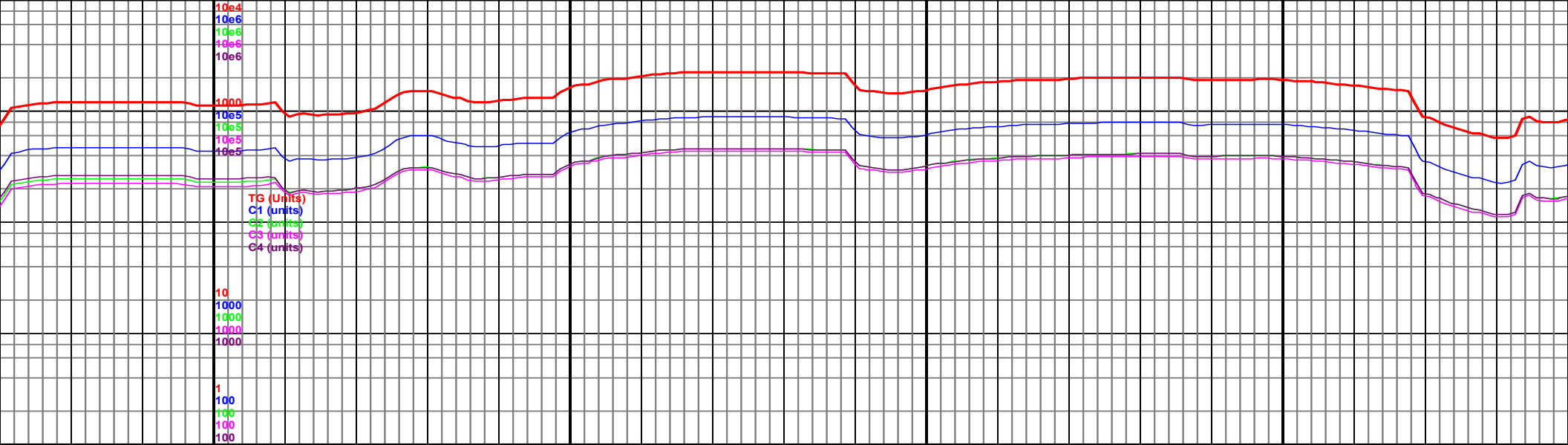
8650-8800 Chk lt gy-gy, s  
mottled, dk lam, sft, rr M  
ply, frm, slty, mod cut, t  
chk, 20% mrst

6000  
(-1275)









9200

9250

9300

9350

4800 TVD  
Sub Sea (-75)

MD 9215 TVD 5601.77  
INC 90.29 AZ 358.48  
VS 3636.45 DL 1.47

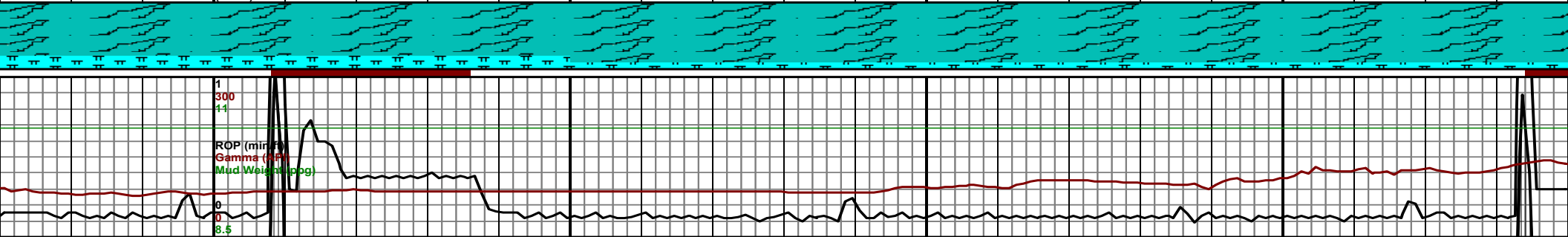
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INC 91.66 AZ 358.99  
VS 3730.41 DL 1.56

5400  
(-675)

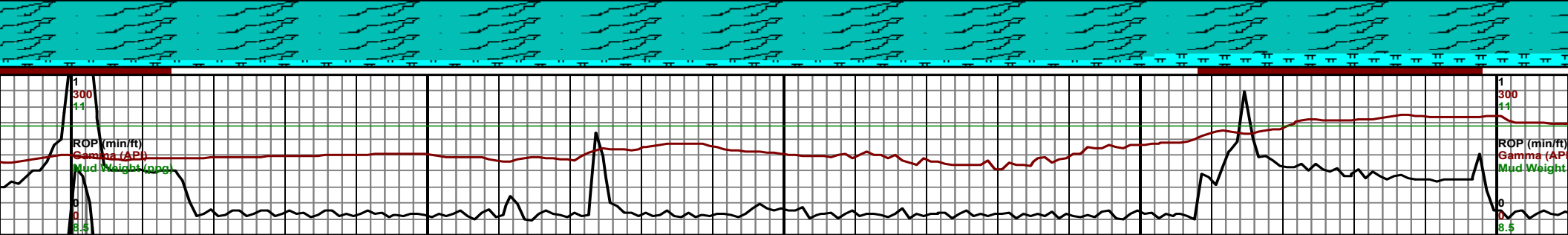
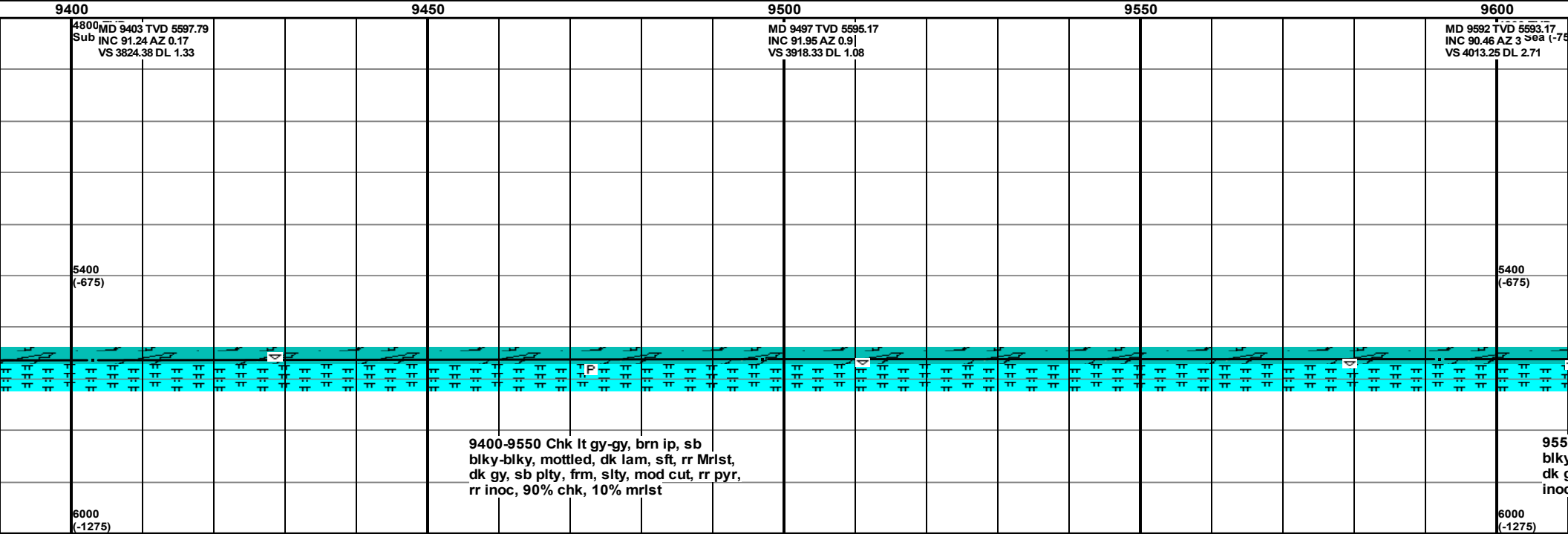
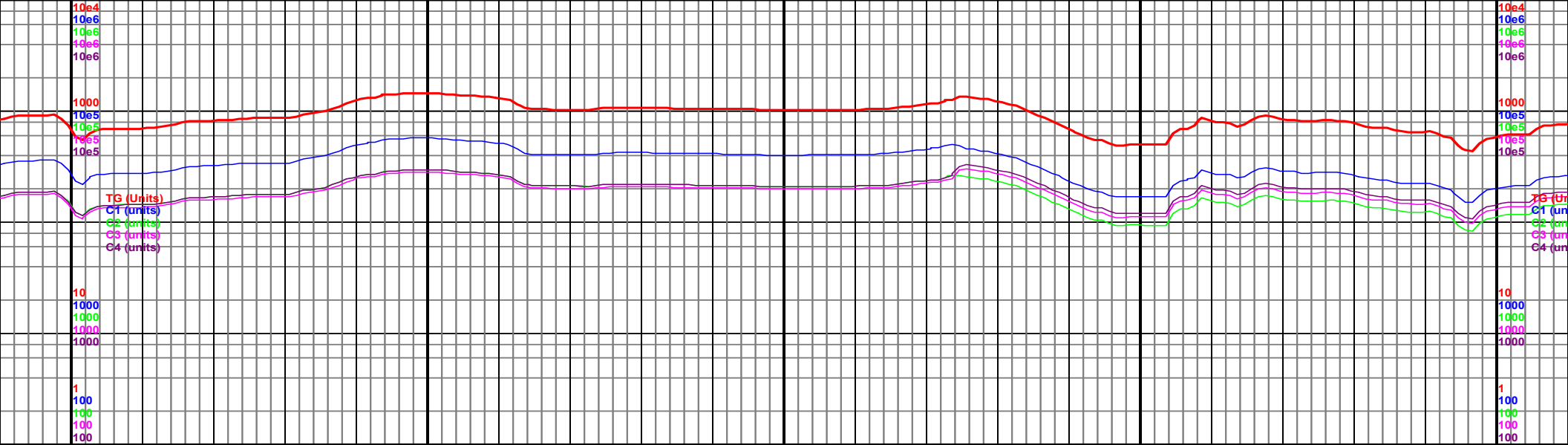
chk lt gy-gy, sb blk-blky,  
m, sft, rr Mrlst, dk gy, sb  
mod cut, rr inoc, rr pyr,  
% mrlst

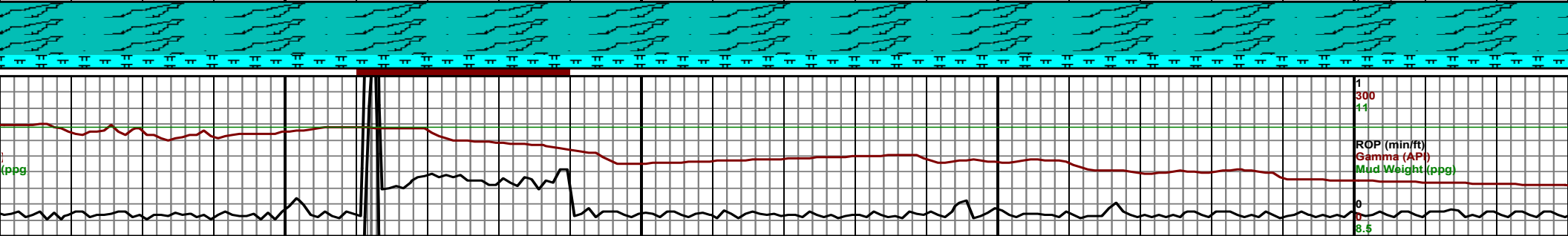
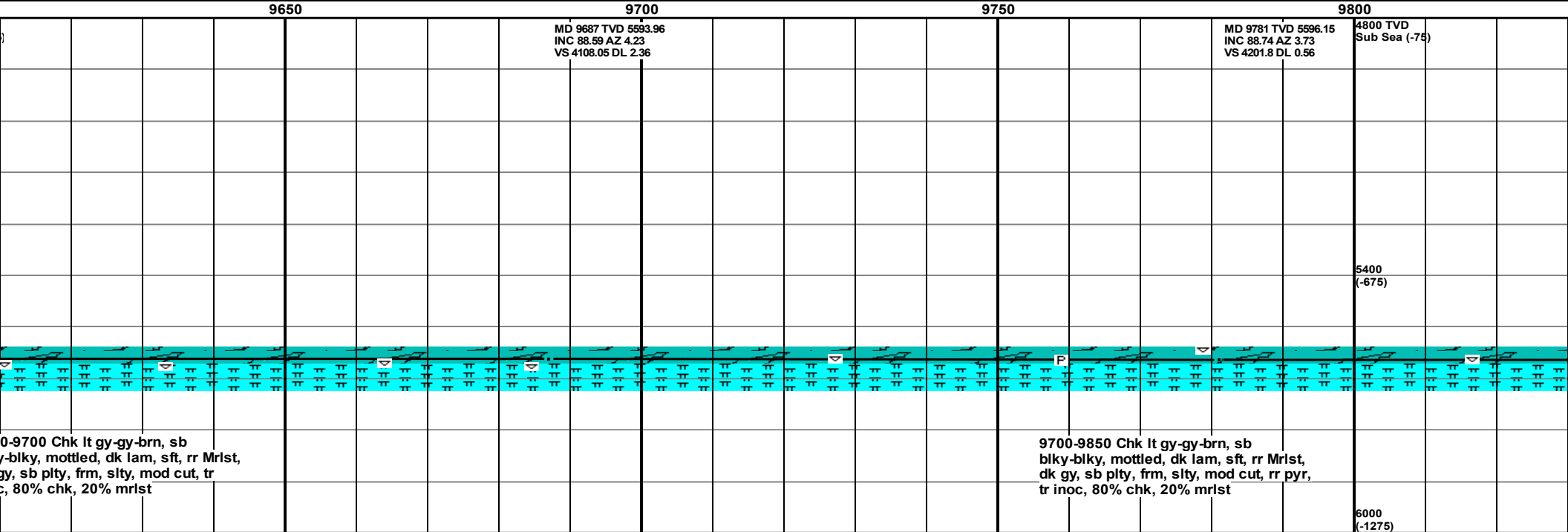
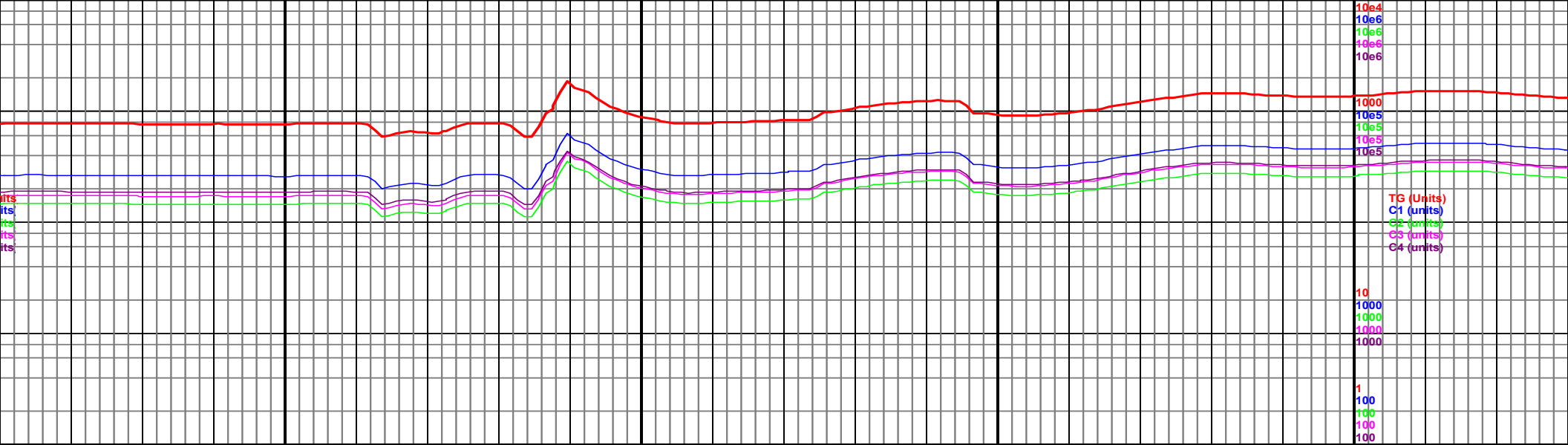
9250-9400 Chk lt gy-gy, brn ip, sb  
blk-blky, mottled, dk lam, sft, rr Mrlst,  
dk gy, sb plty, frm, slty, mod cut, rr  
inoc, 90% chk, 10% mrlst

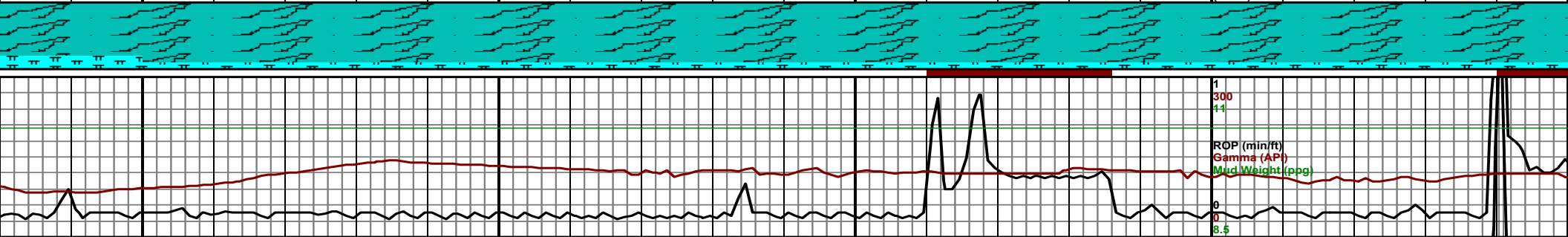
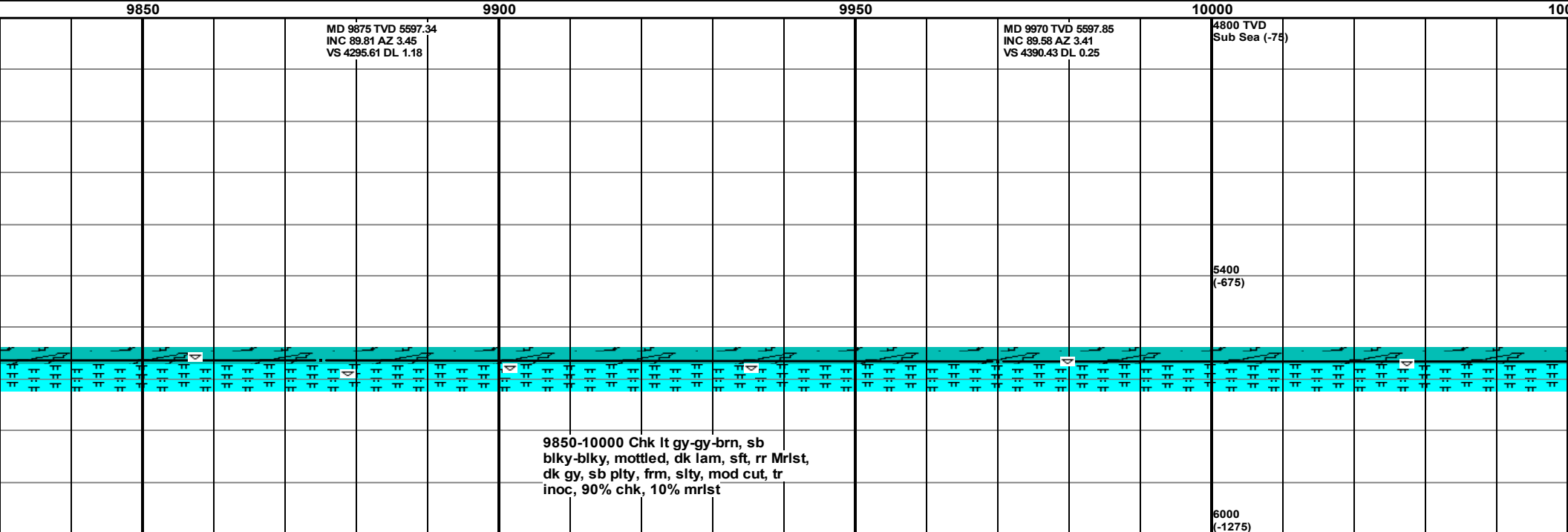
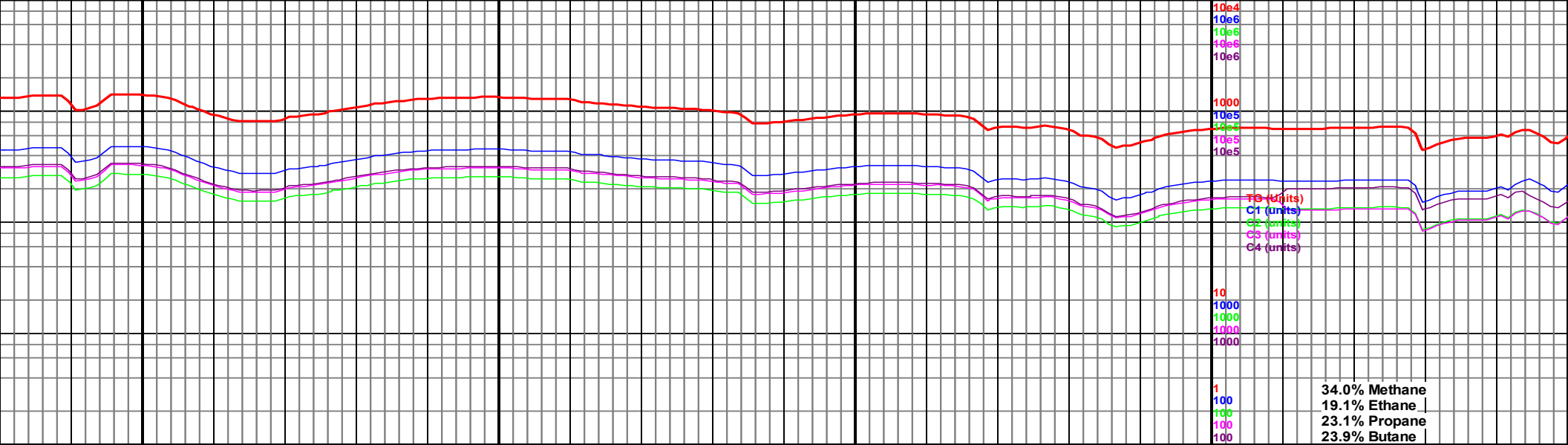
6000  
(-1275)

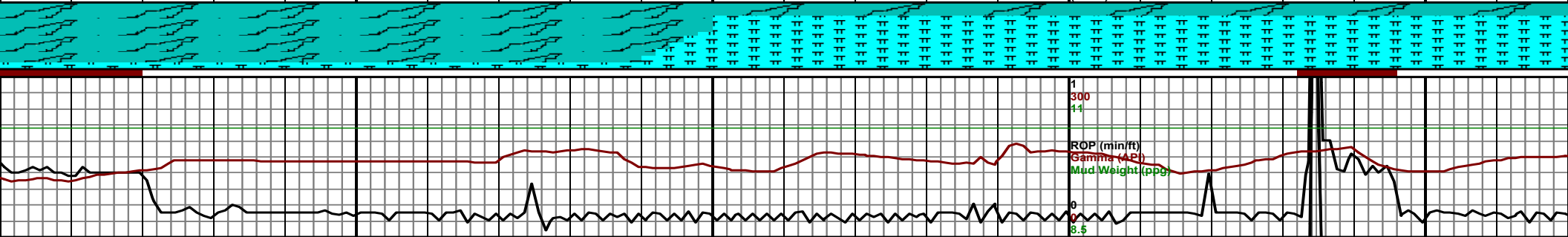
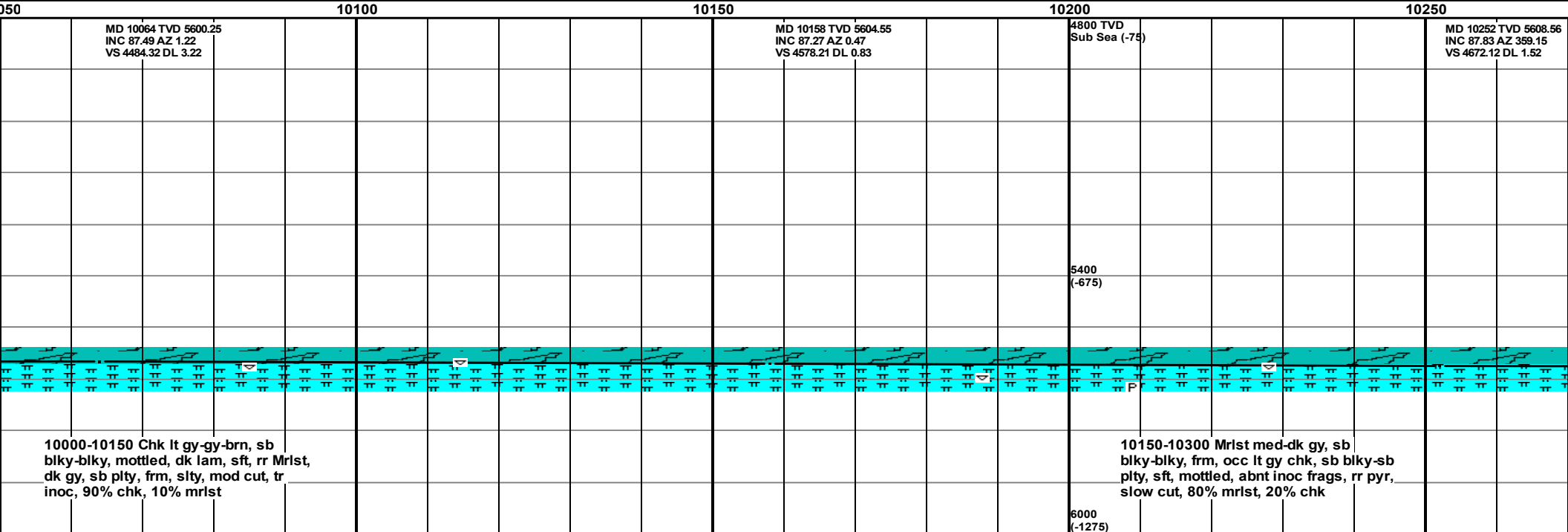
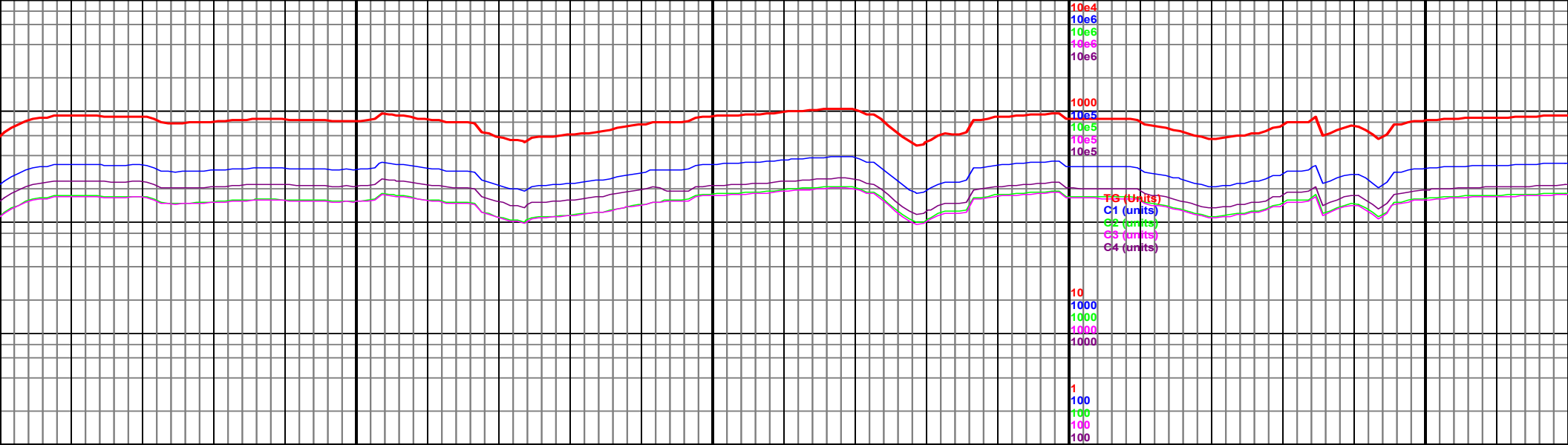


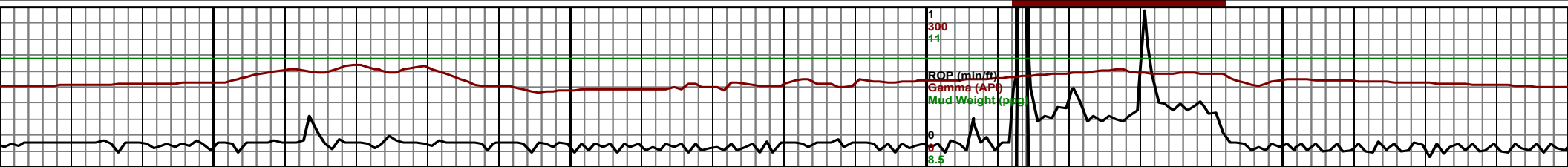
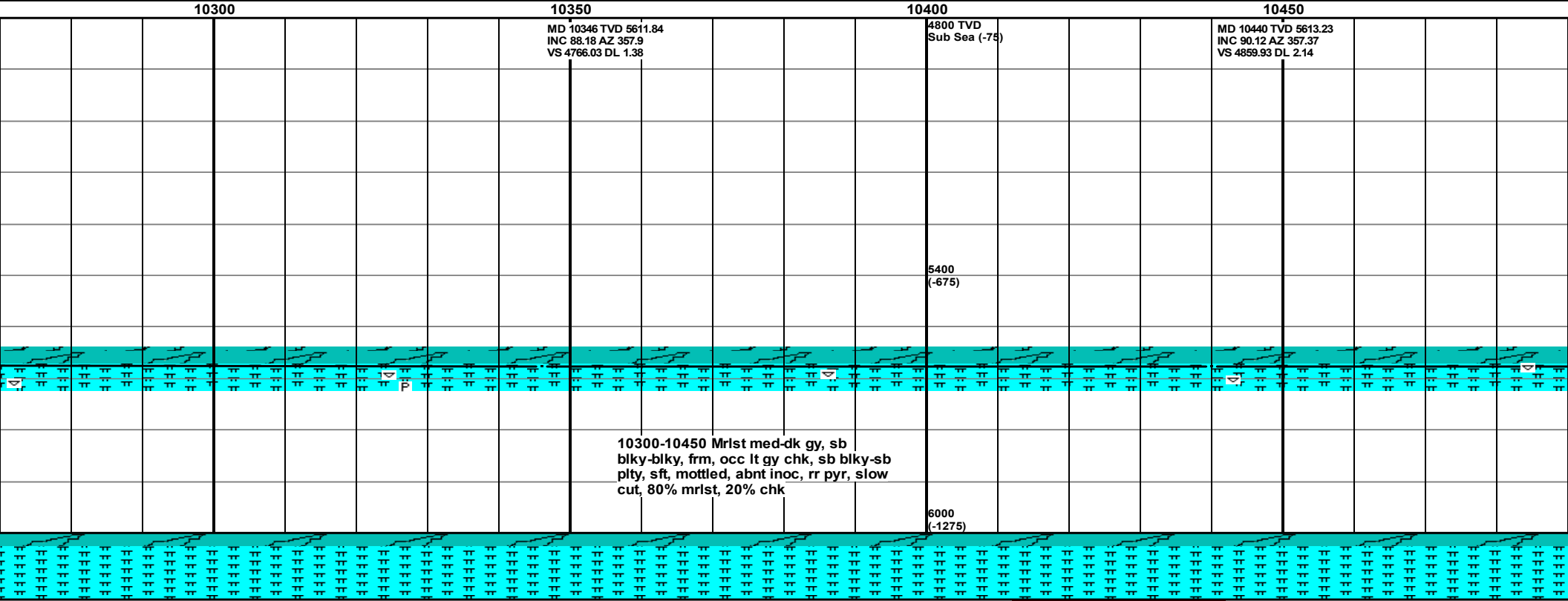
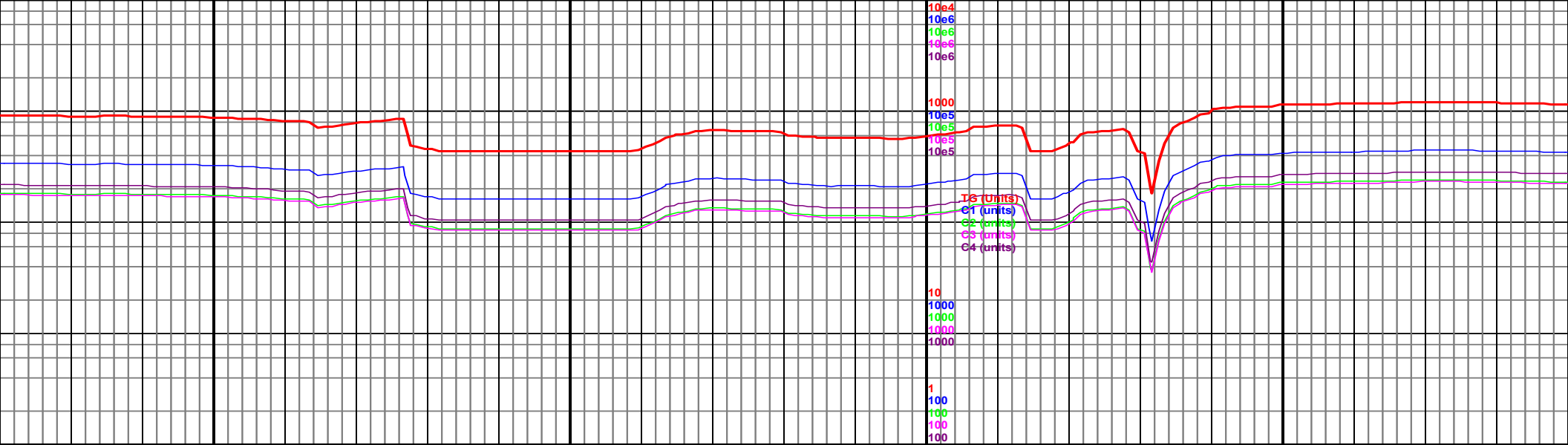


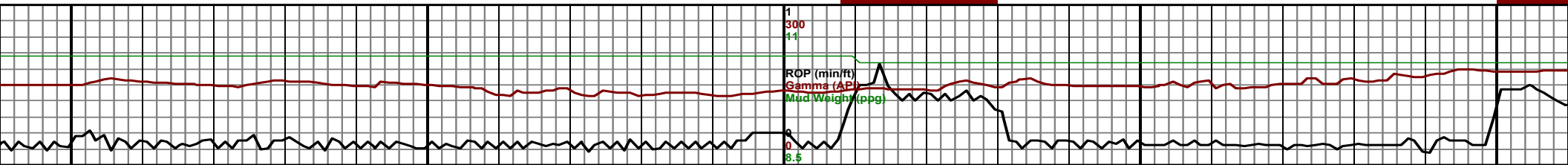
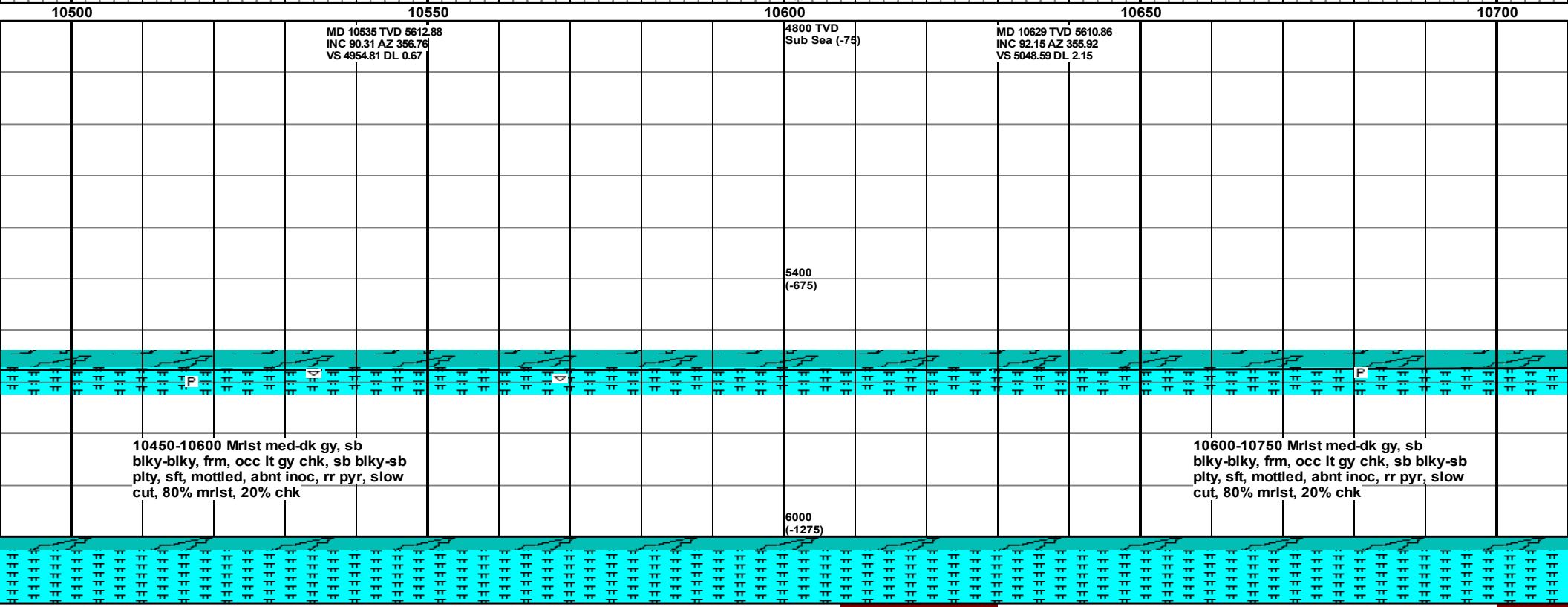
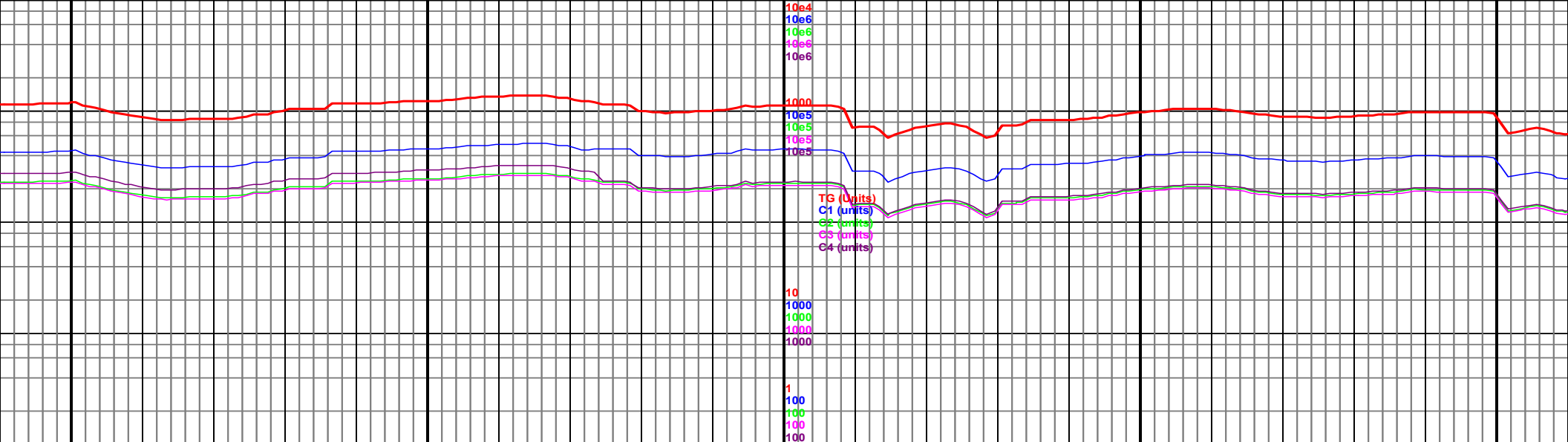


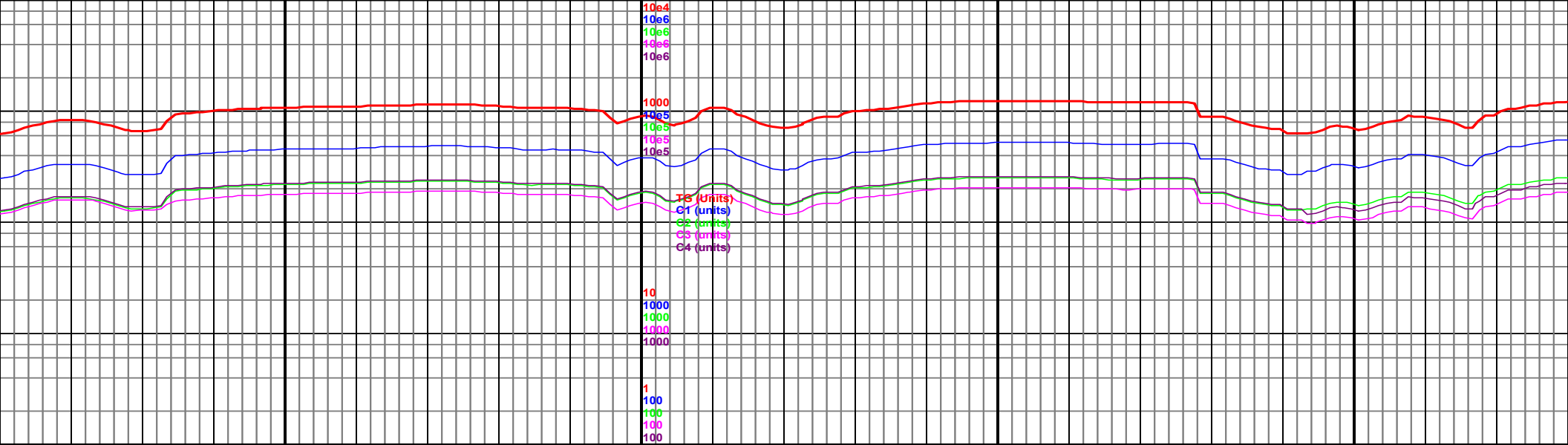












MD 10724 TVD 5606.9  
INC 92.62 AZ 357.75  
VS 5143.36 DL 1.99

4800 TVD  
Sub Sea (-75)

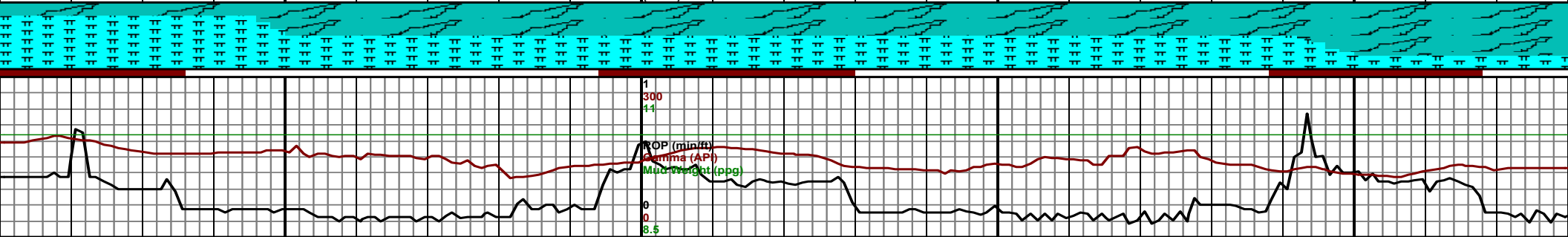
MD 10818 TVD 5602.75  
INC 92.45 AZ 0.13  
VS 5237.24 DL 2.54

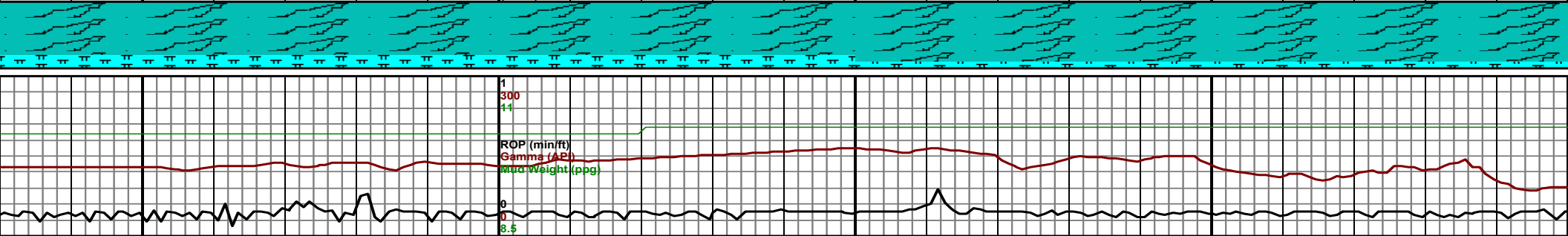
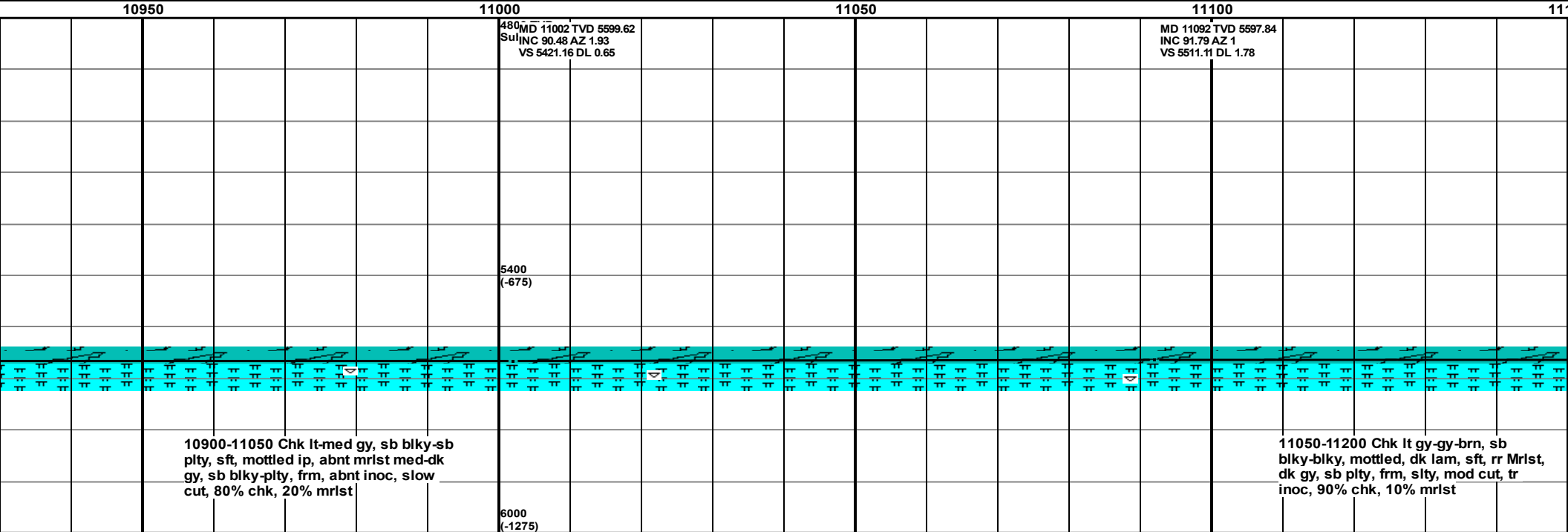
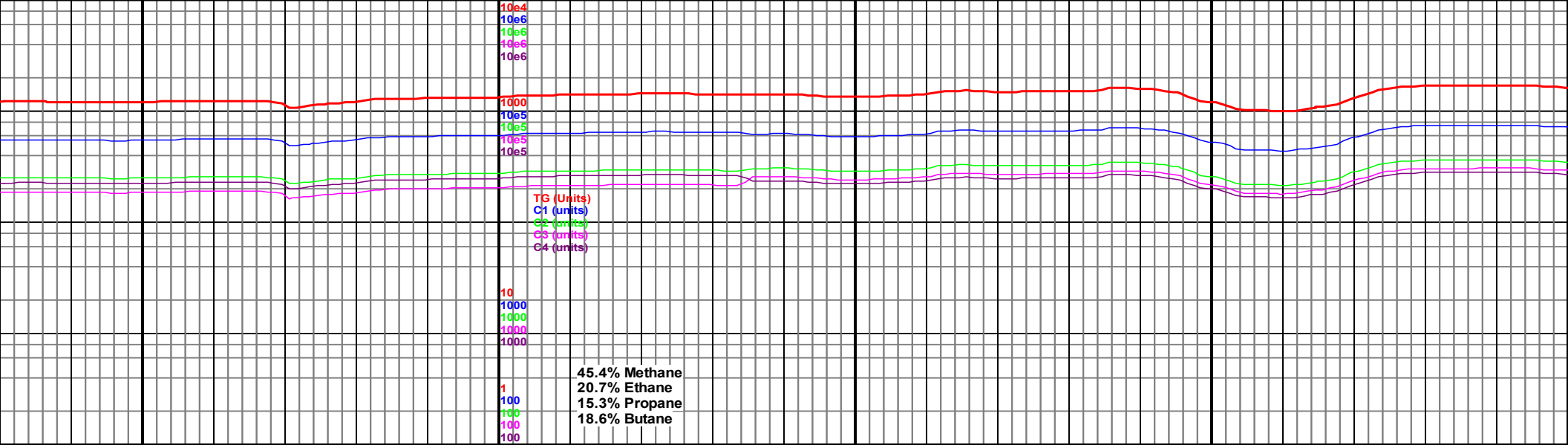
MD 10910 TVD 5600.39  
INC 90.48 AZ 1.33  
VS 5329.2 DL 2.51

5400  
(-675)

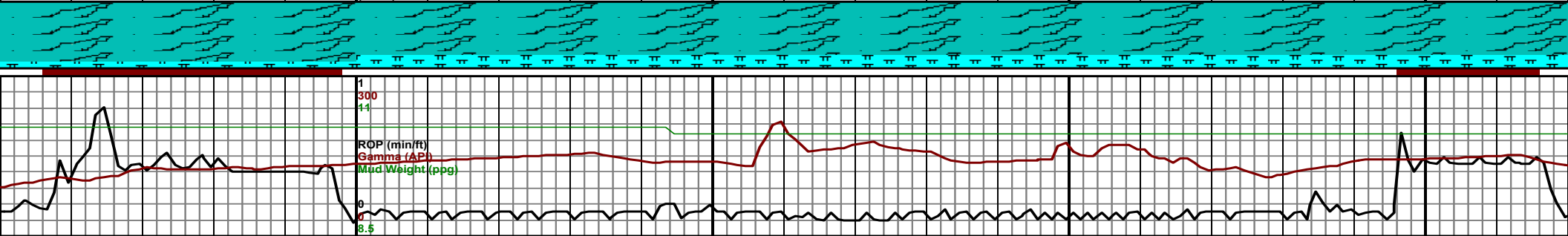
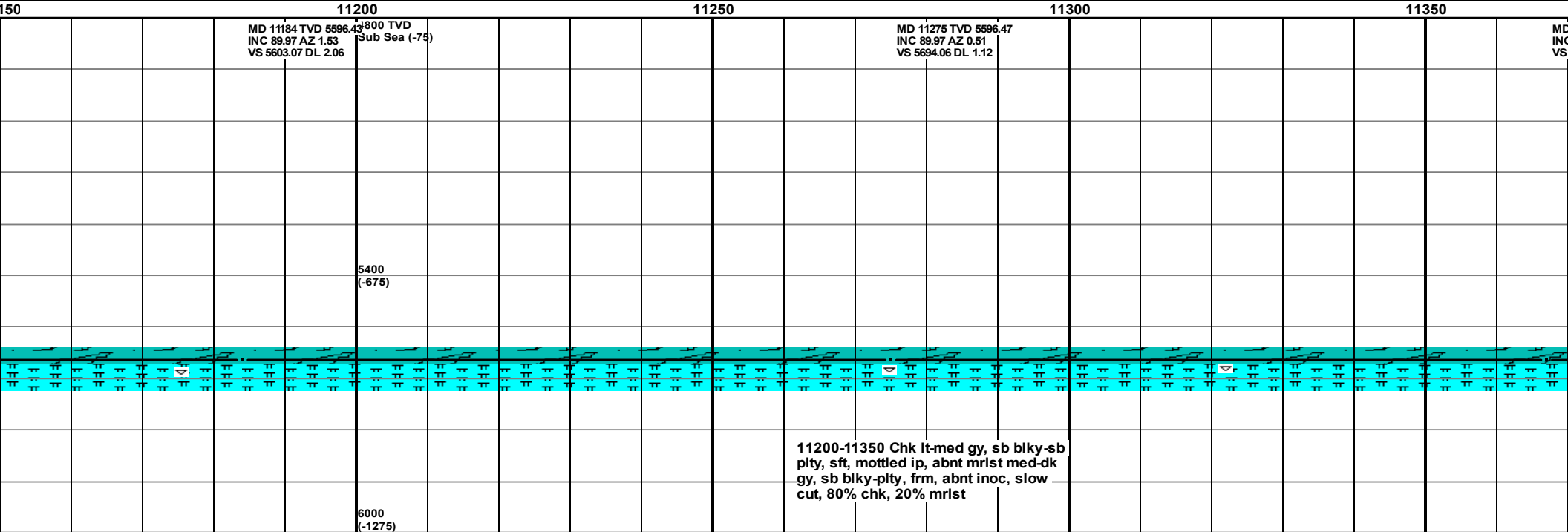
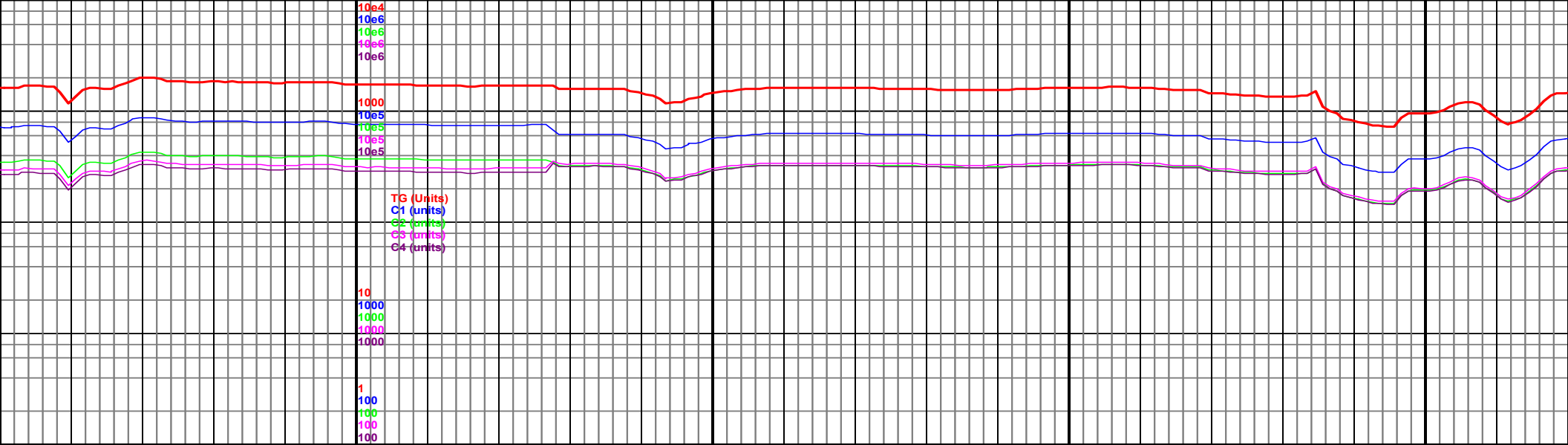
10750-10900 Mrlst med-dk gy, sb  
blky-blky, frm, abnt lt gy-med gy chk,  
sb blky-sb plty, sft, mottled ip, abnt  
inoc, slow cut, 60% mrlst, 40% chk

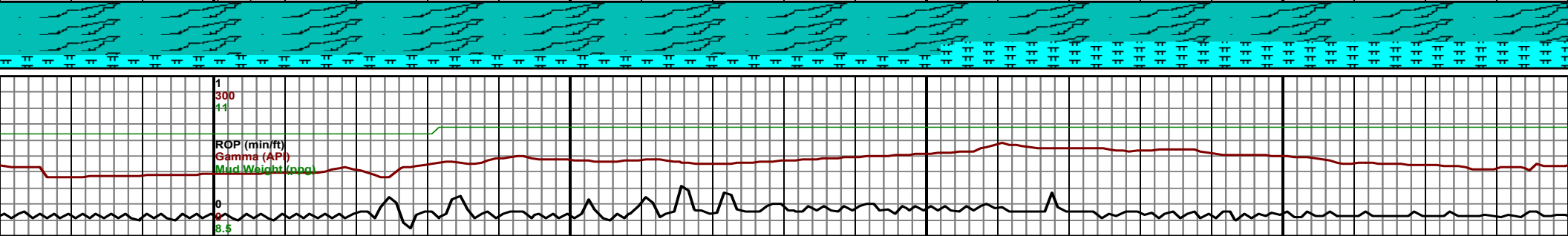
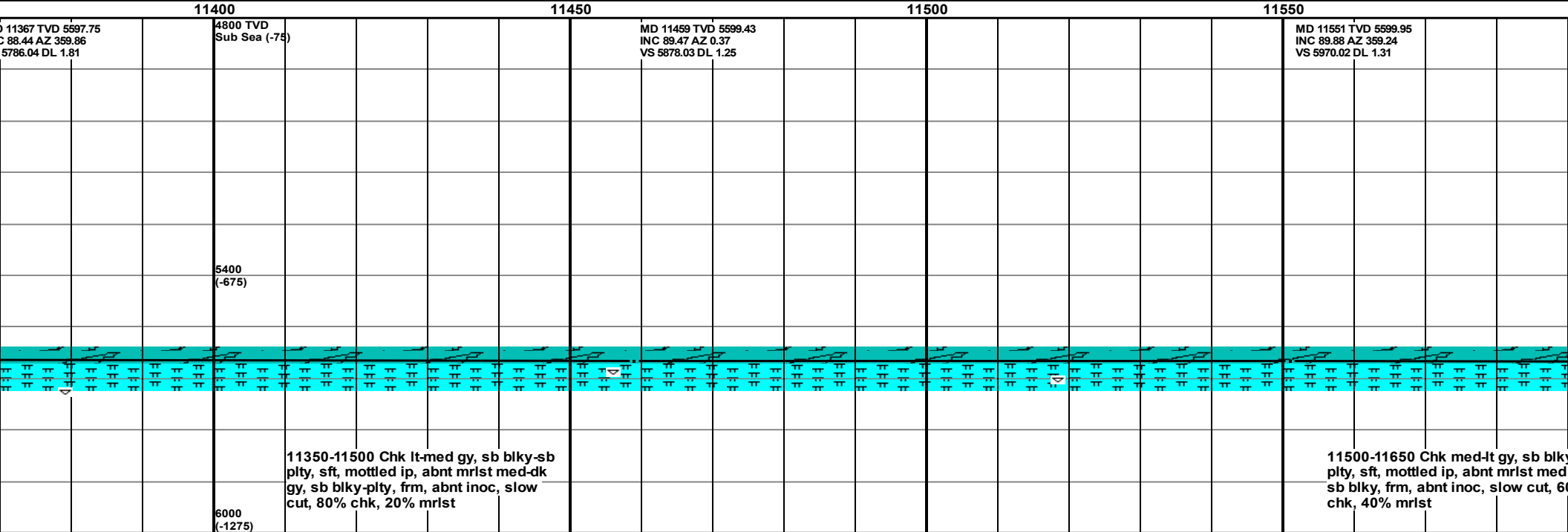
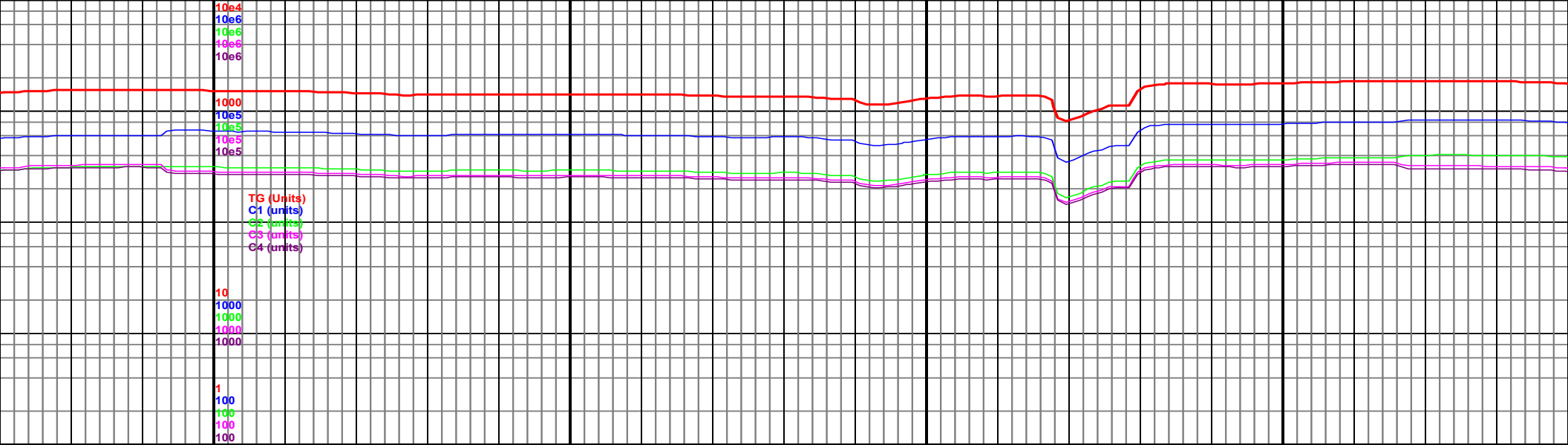
6000  
(-1275)

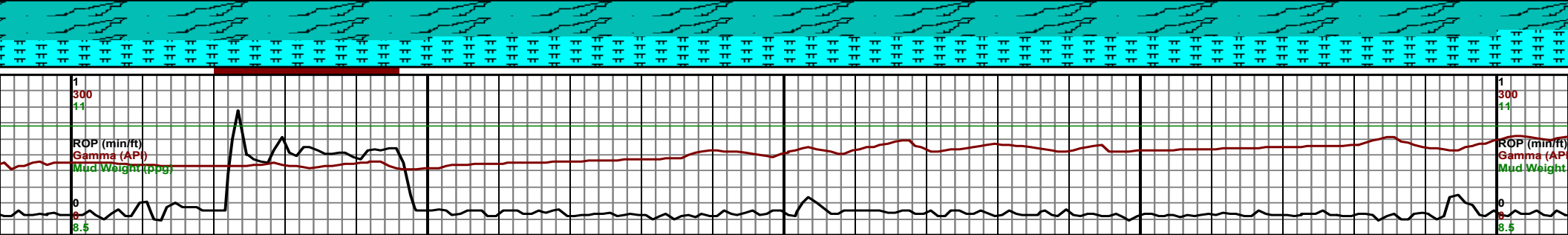
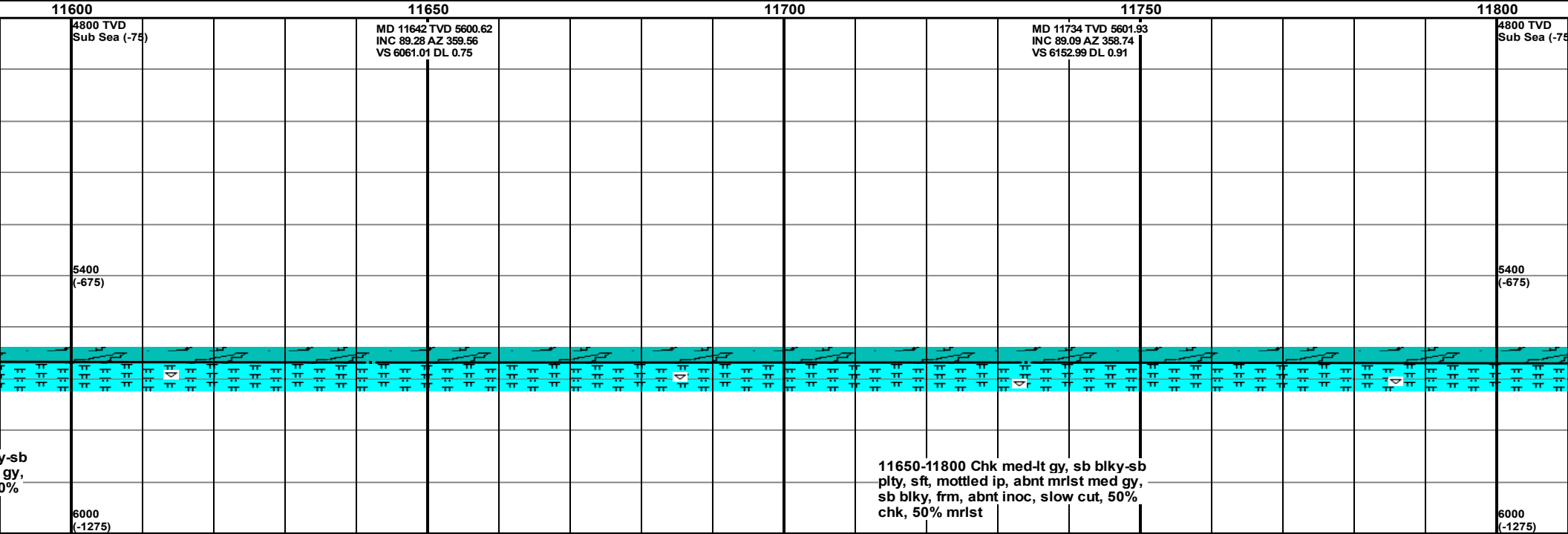
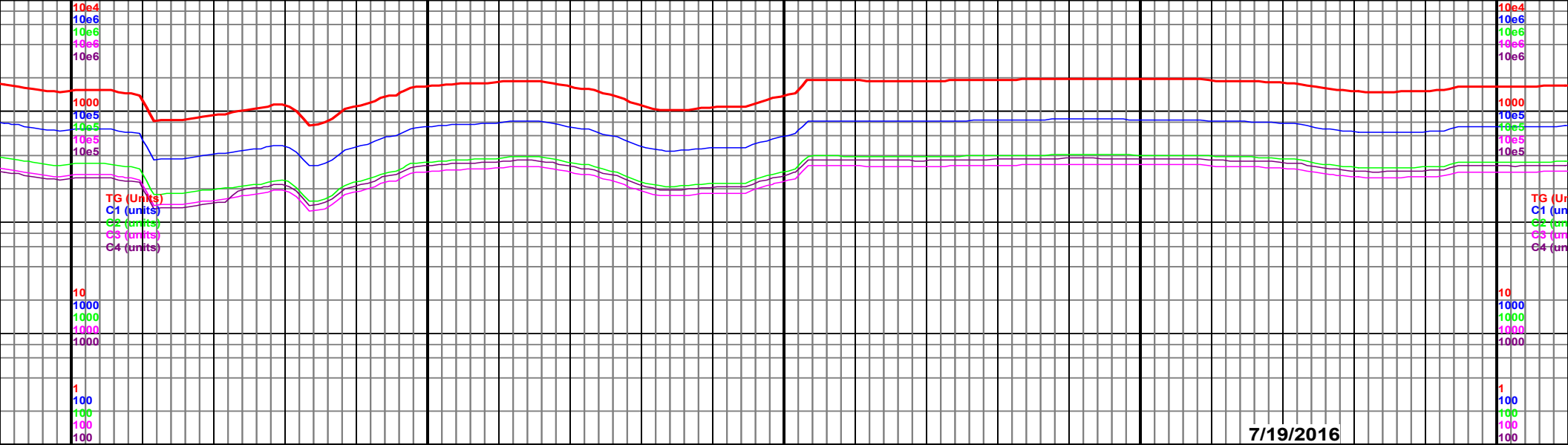


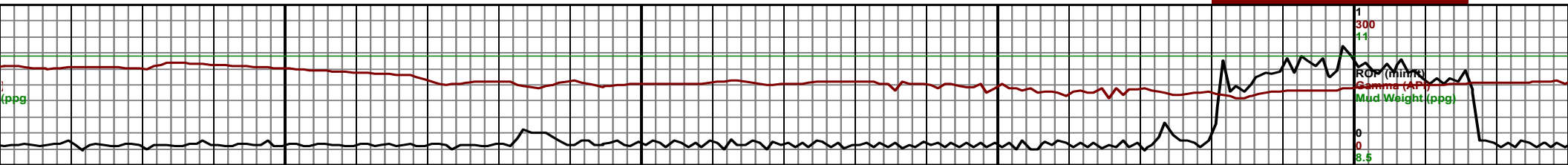
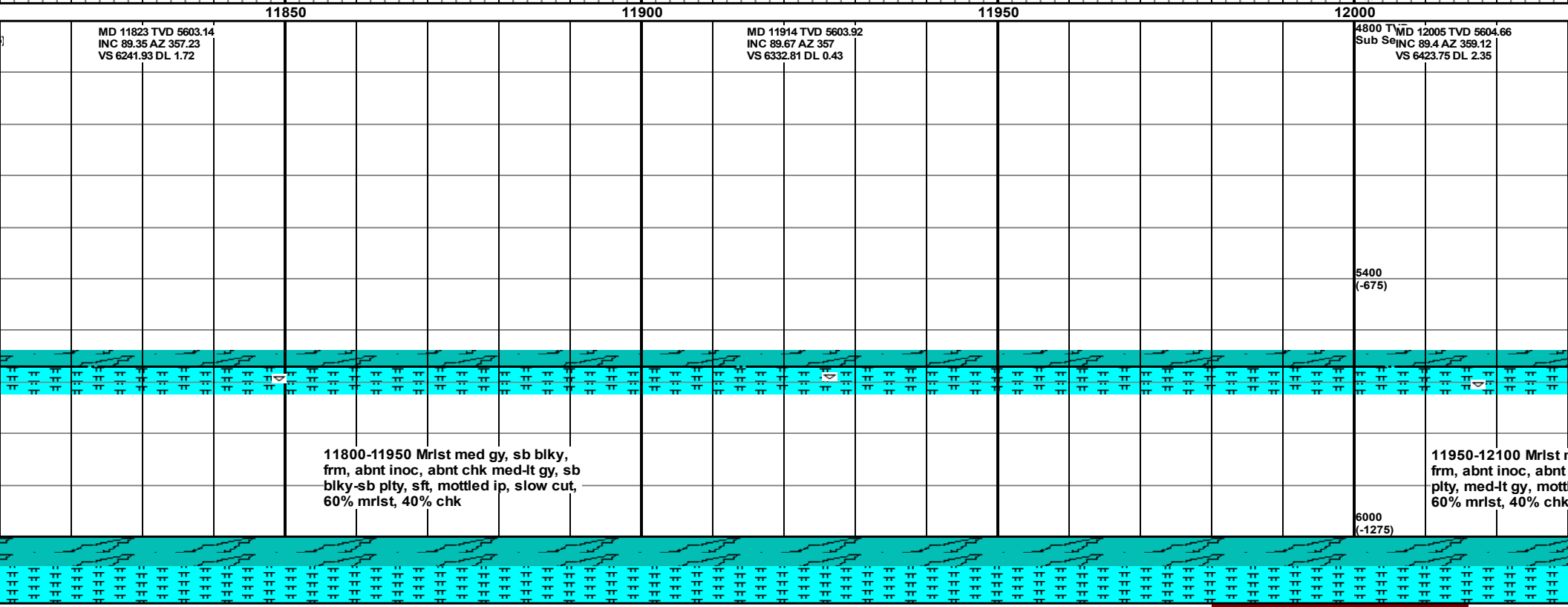
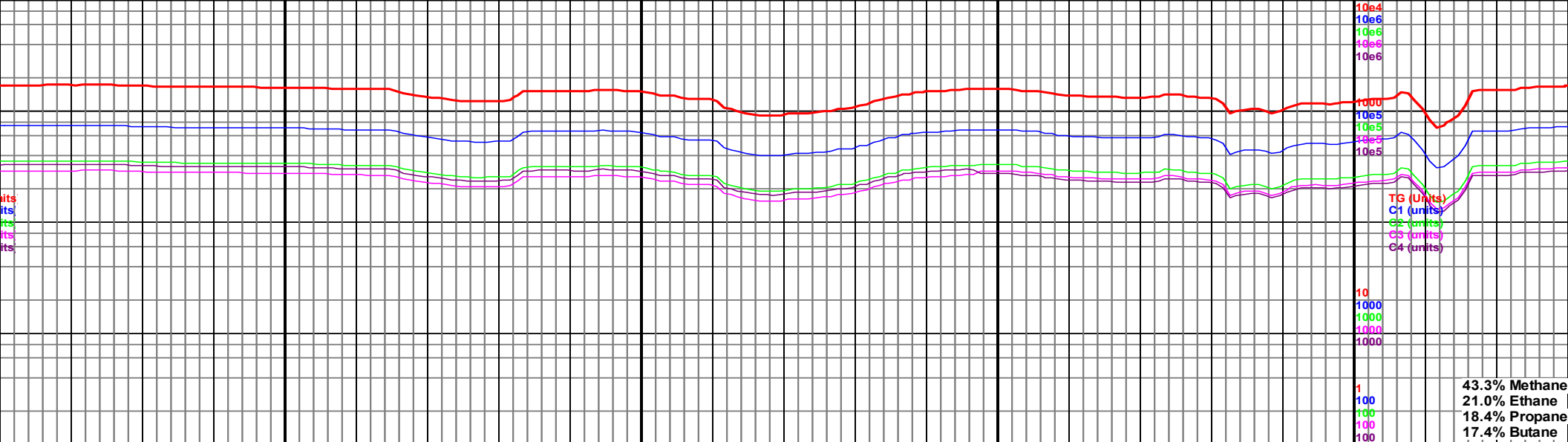


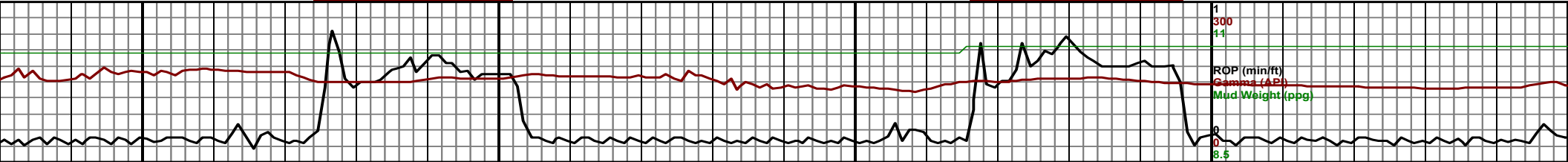
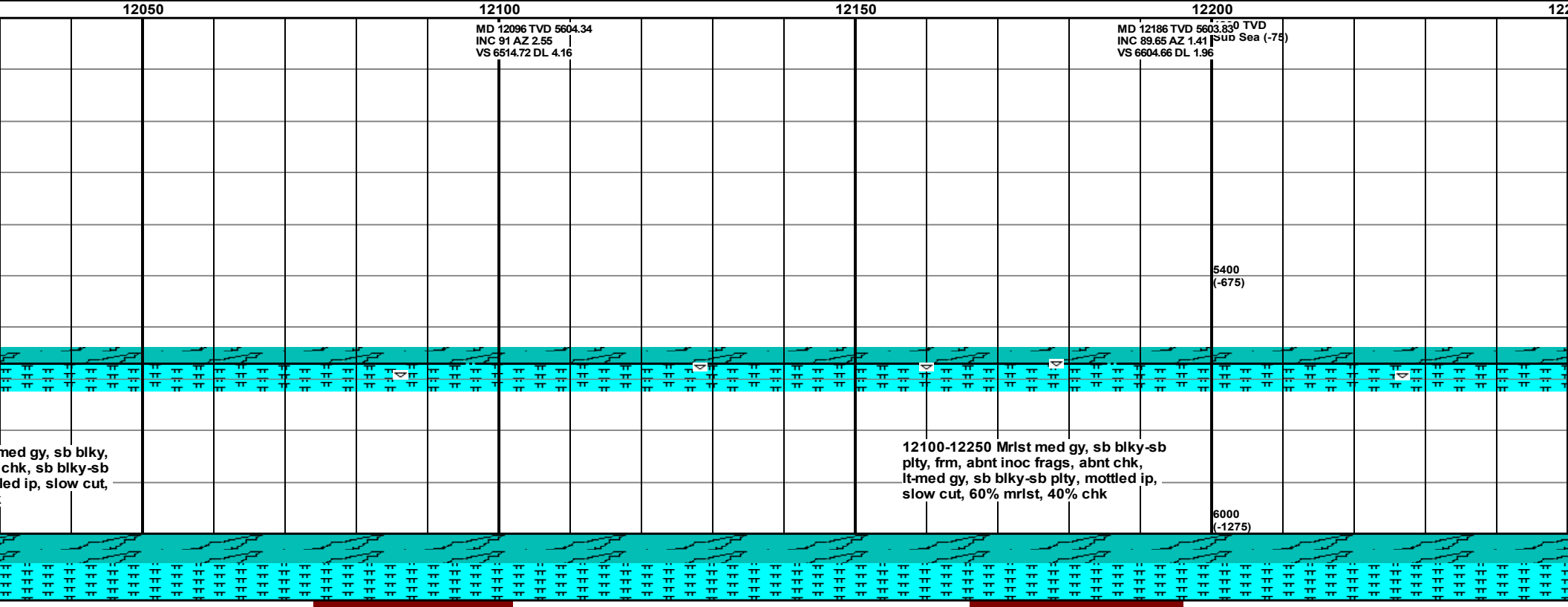
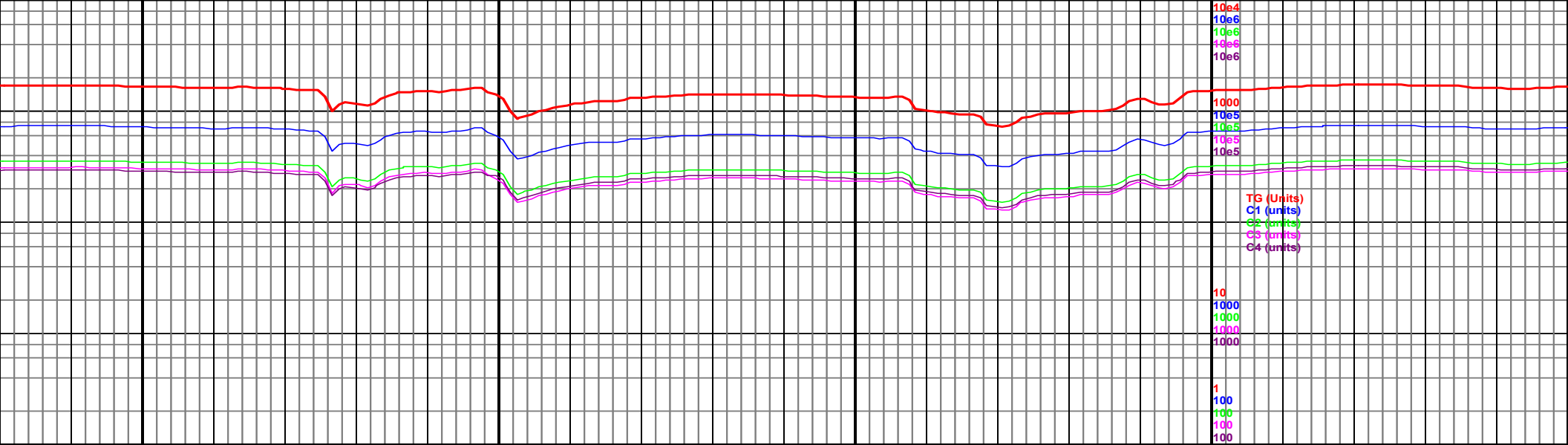


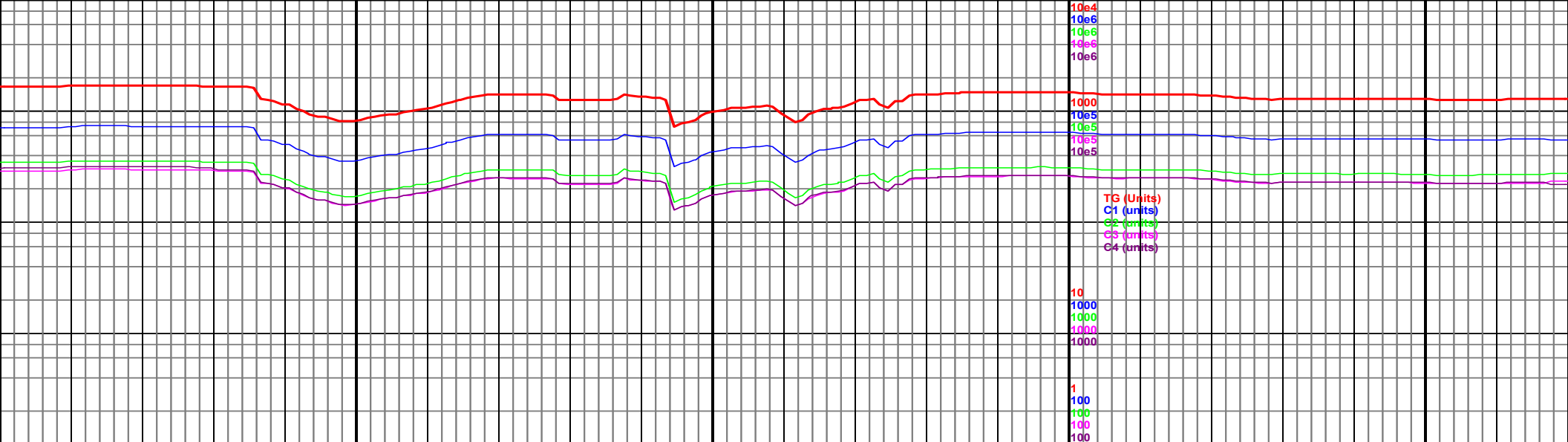




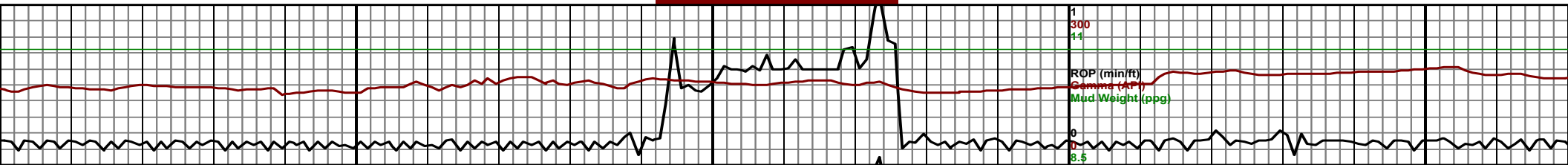


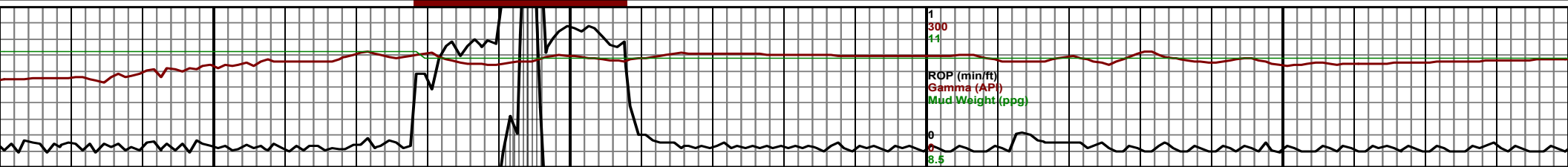
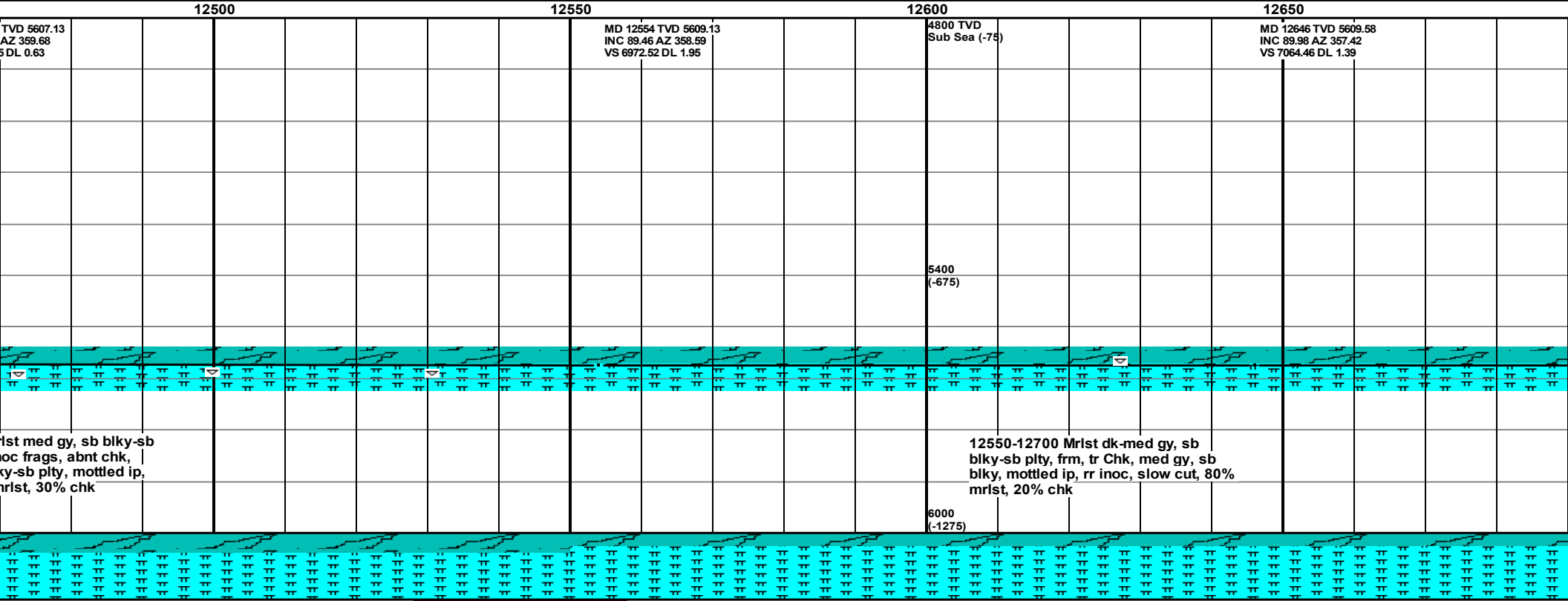
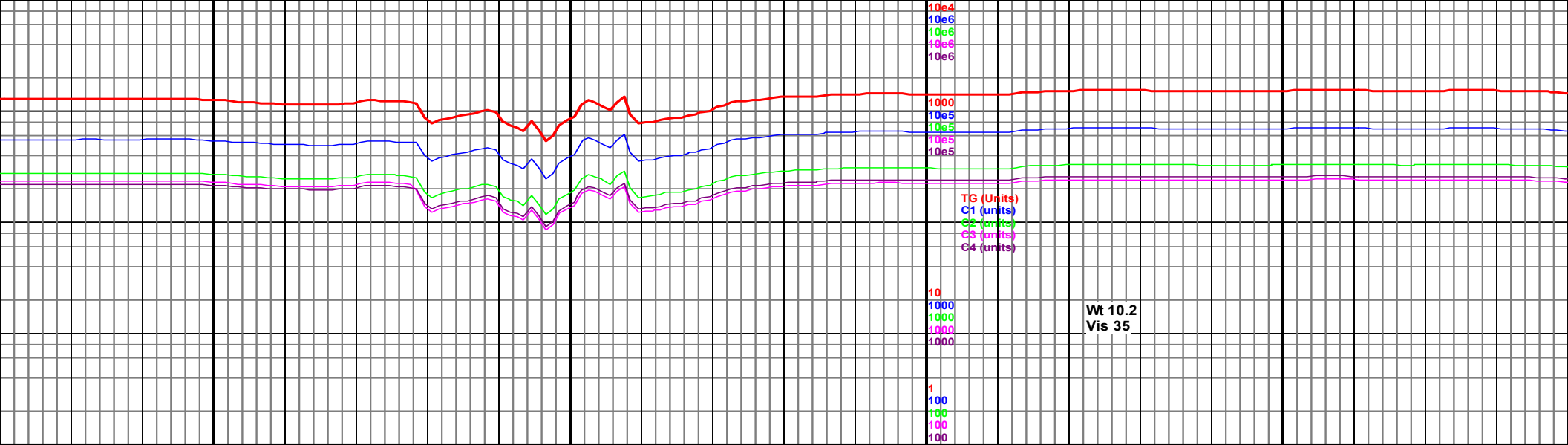


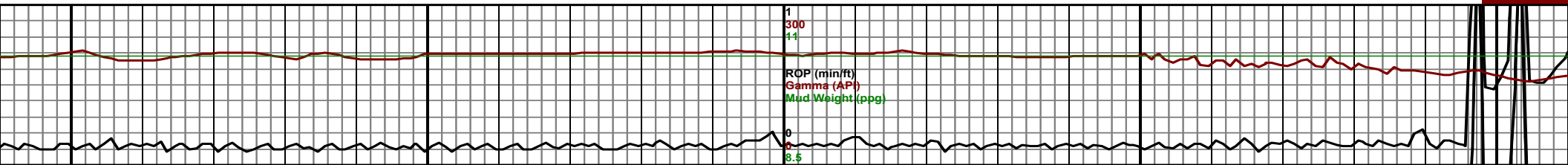
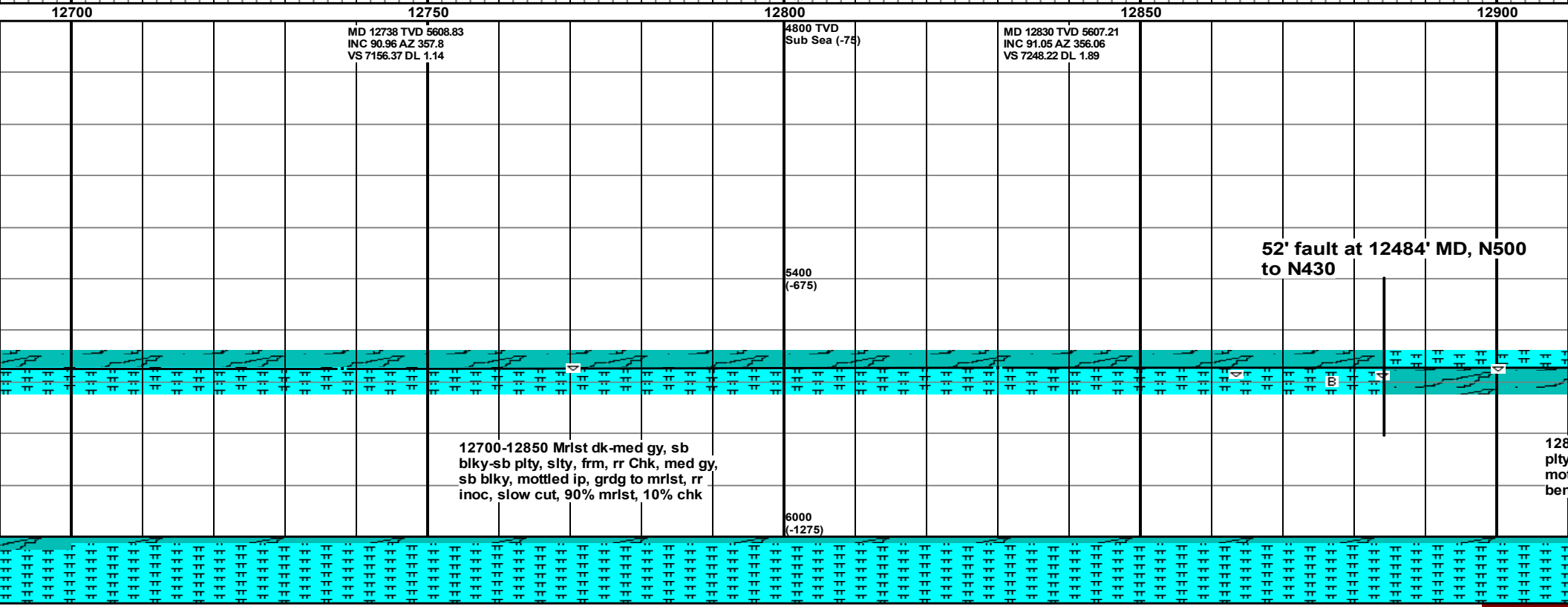
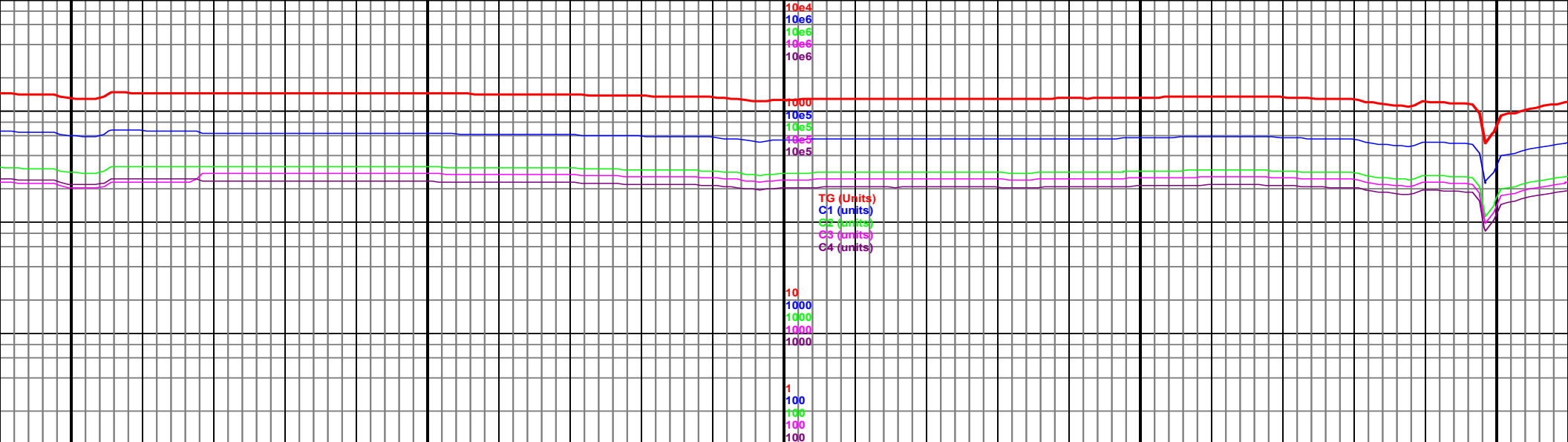




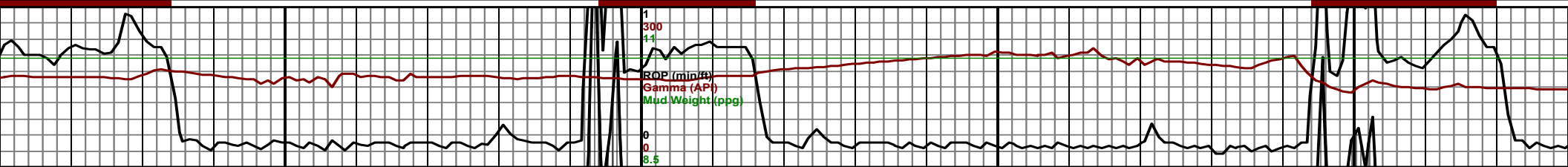
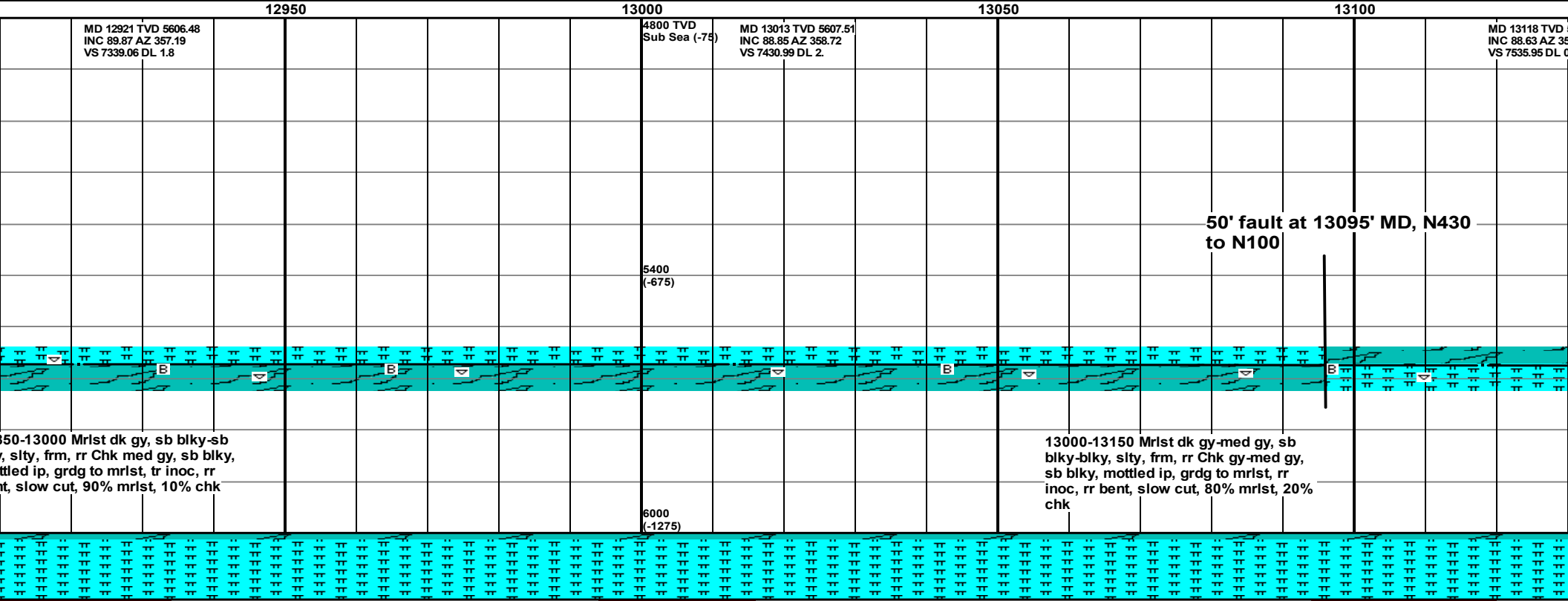
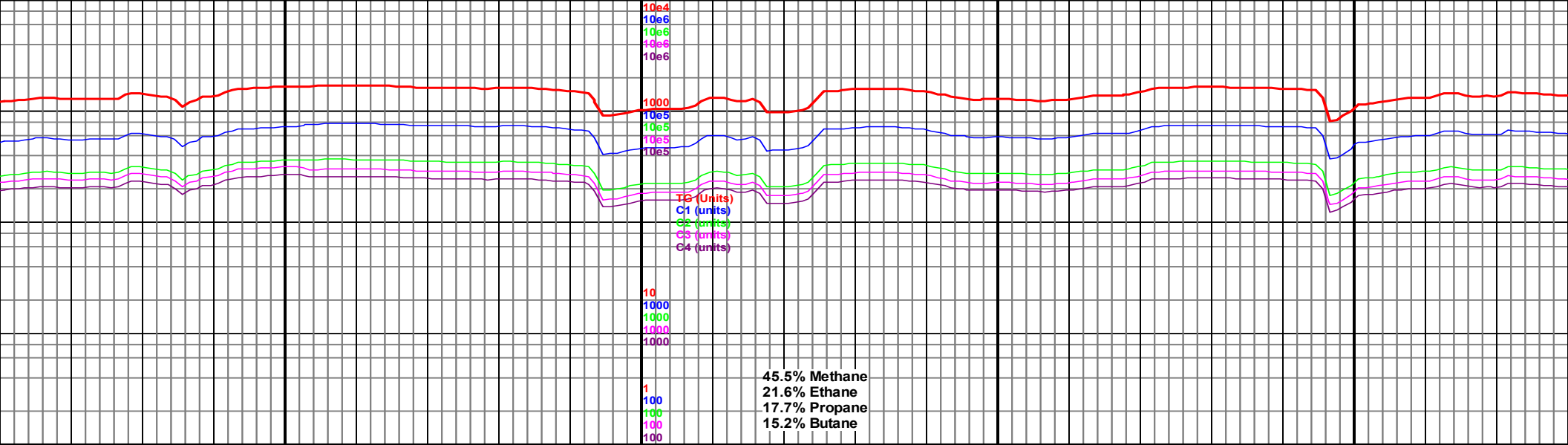
MD 12278 TVD 5603.39 INC 90.9 AZ 1.64 VS 6696.63 DL 1.38	MD 12370 TVD 5604.11 INC 88.2 AZ 0.24 VS 6788.6 DL 3.31	4800 TVD Sub Sea (-75)	MD 12462 INC 88.04 VS 6880.5
		5400 (-675)	
	12250-12400 Mrlst med gy, sb blk-y-sb plty, frm, abnt inoc frags, abnt chk, lt-med gy, sb blk-y-sb plty, mottled ip, slow cut, 60% mrlst, 40% chk		12400-12550 Mr plty, frm, abnt in lt-med gy, sb blk slow cut, 70% m
		6000 (-1275)	

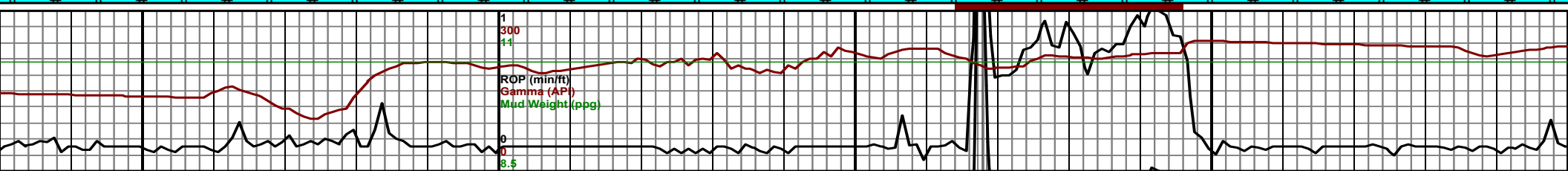
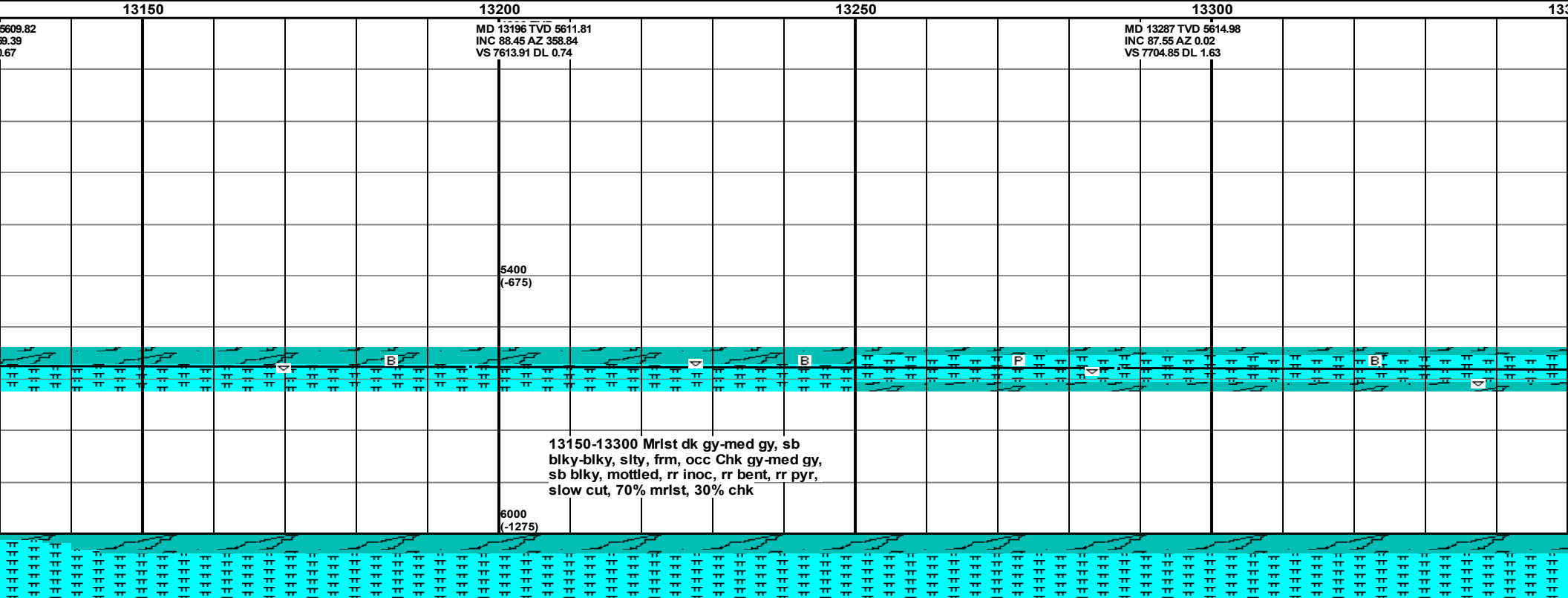
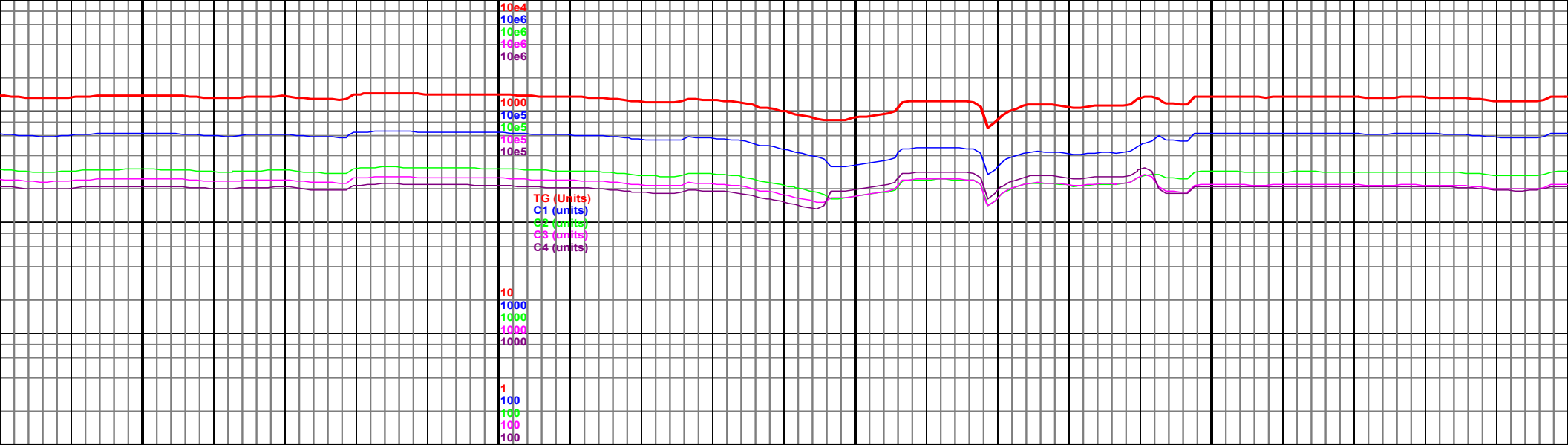




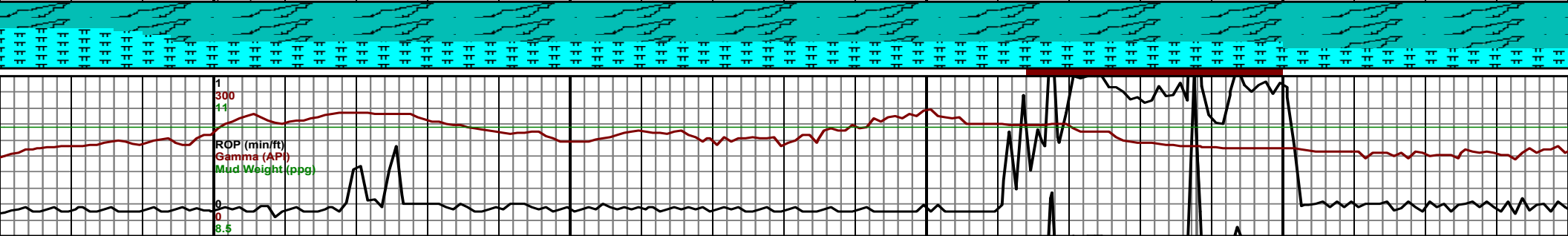
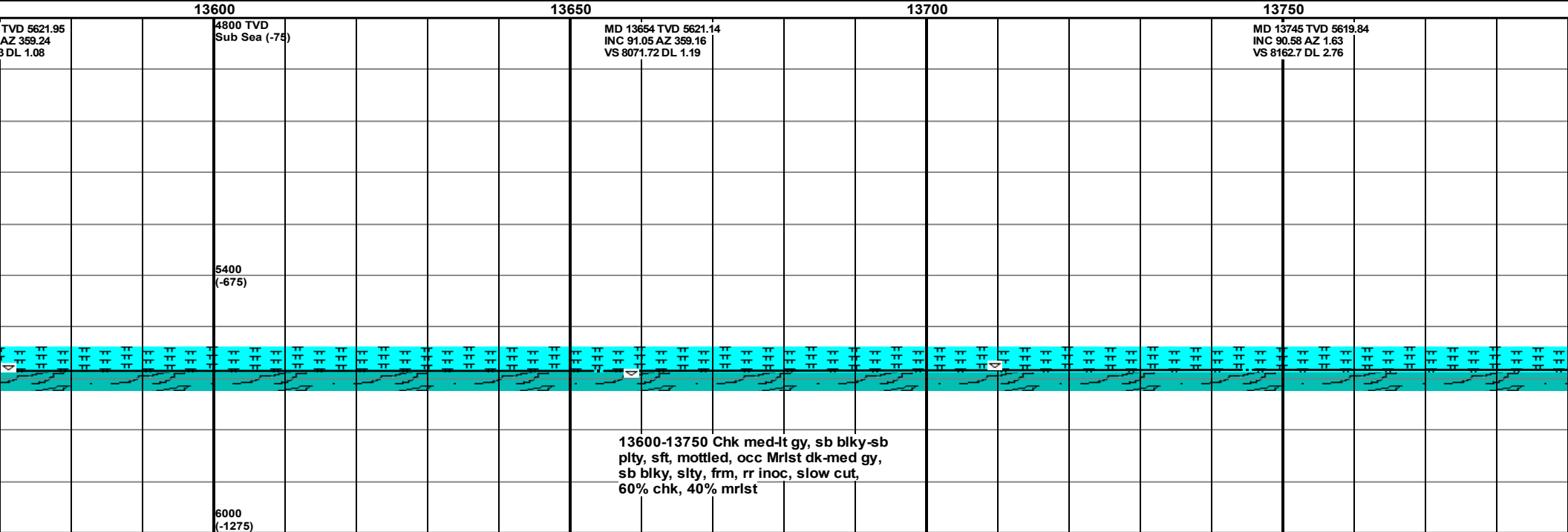
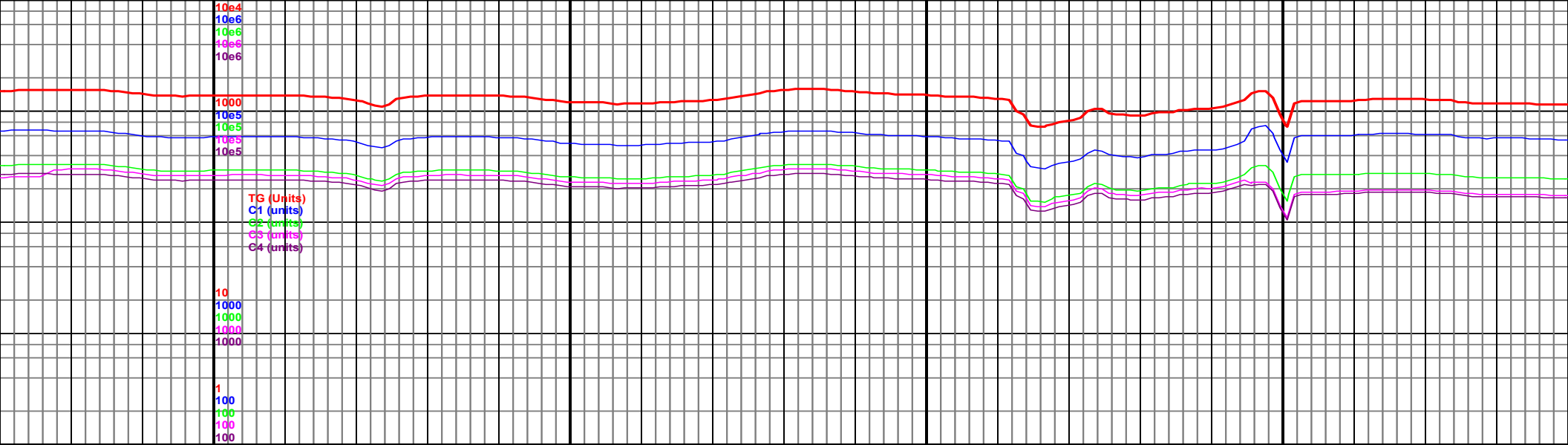


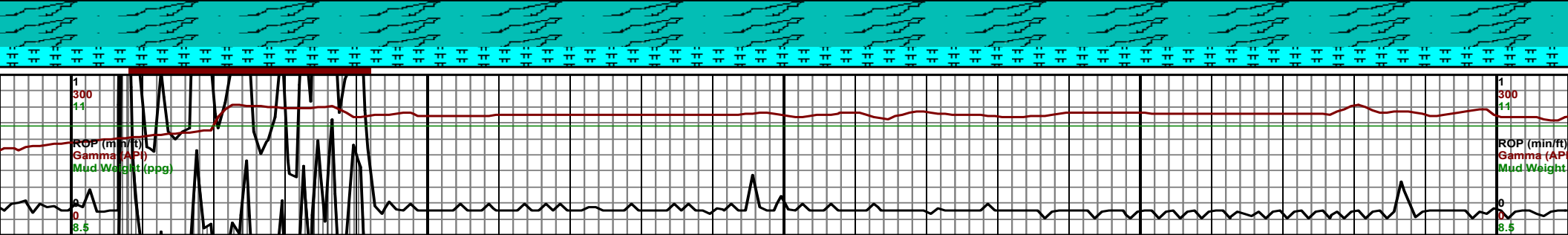
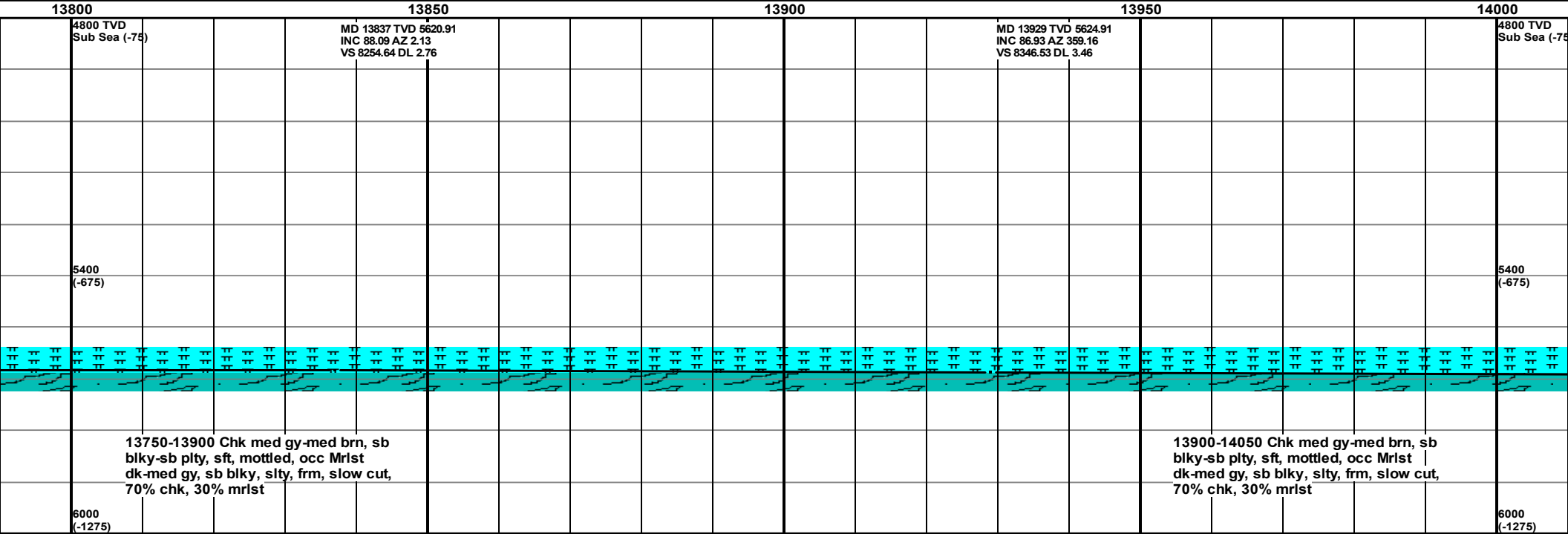
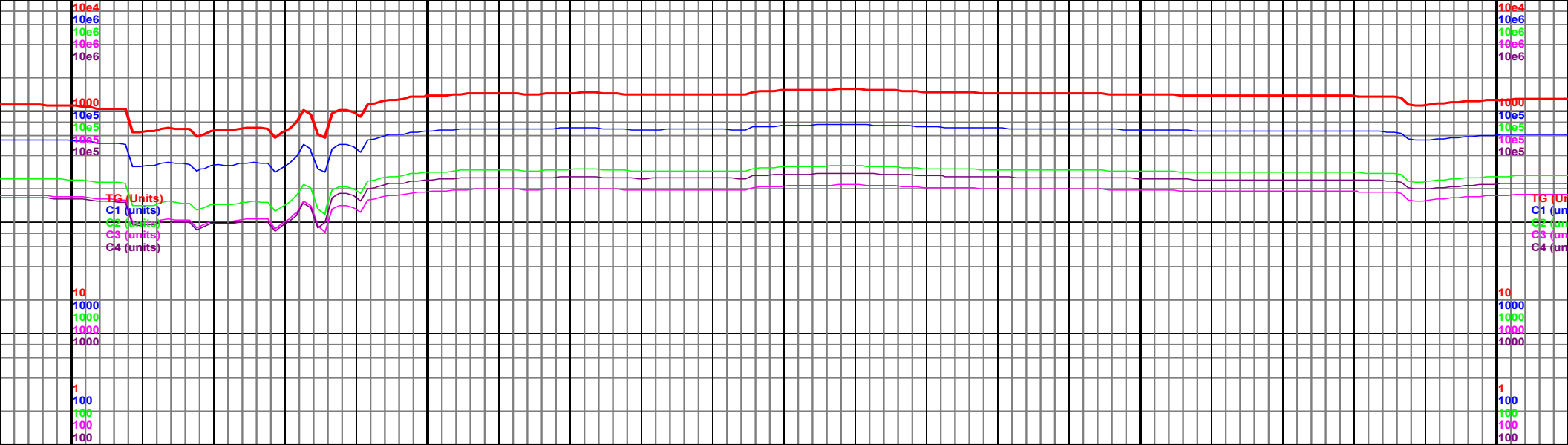




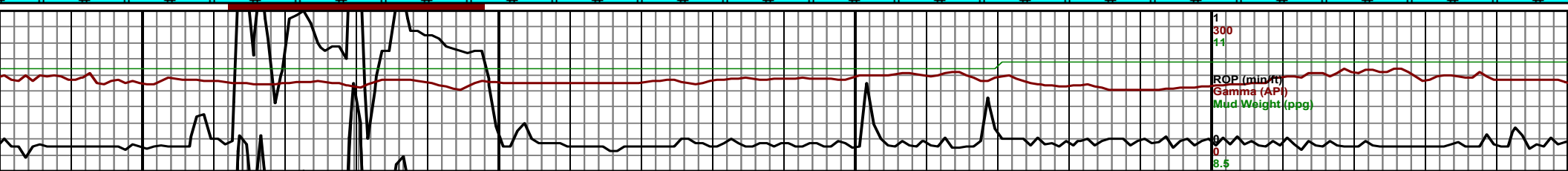
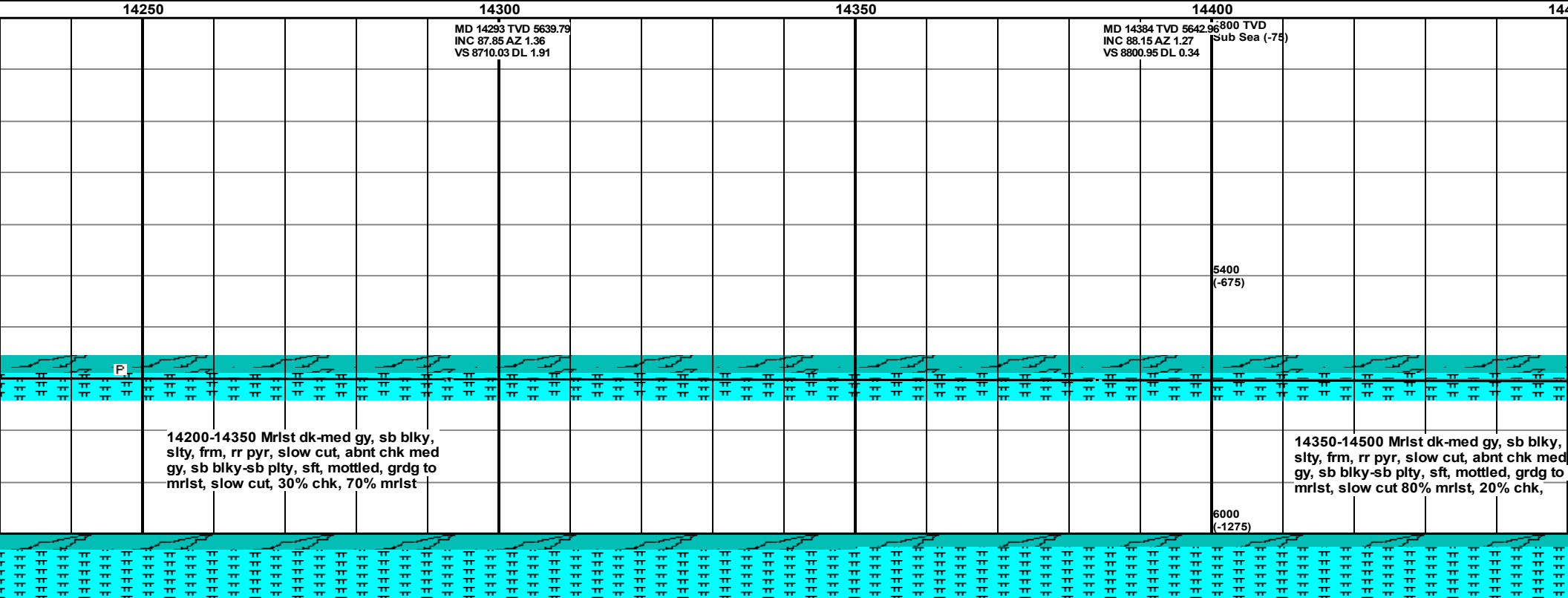
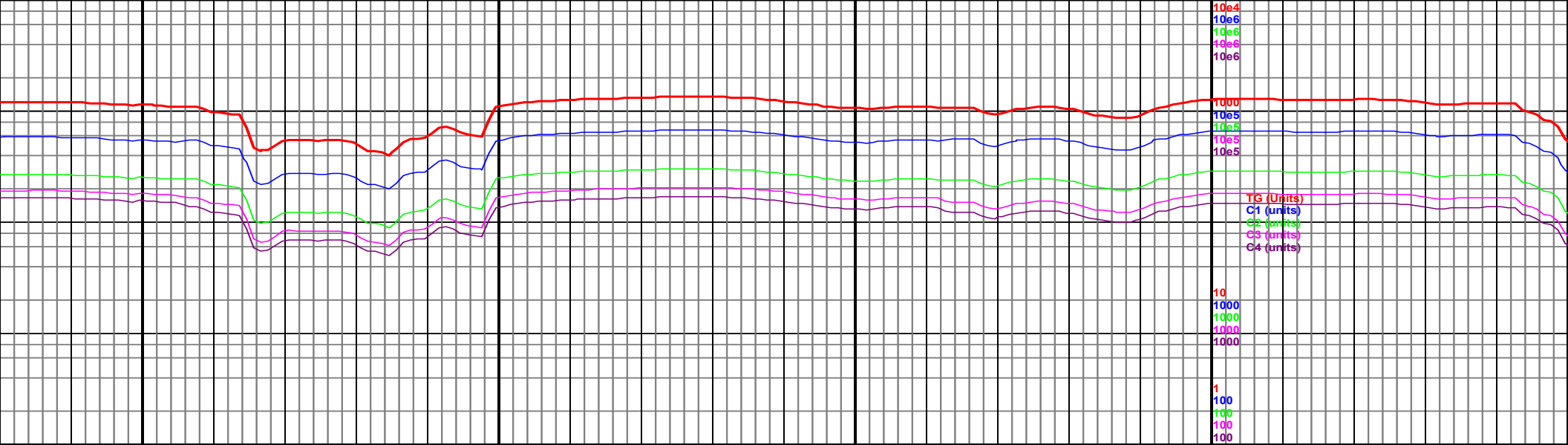


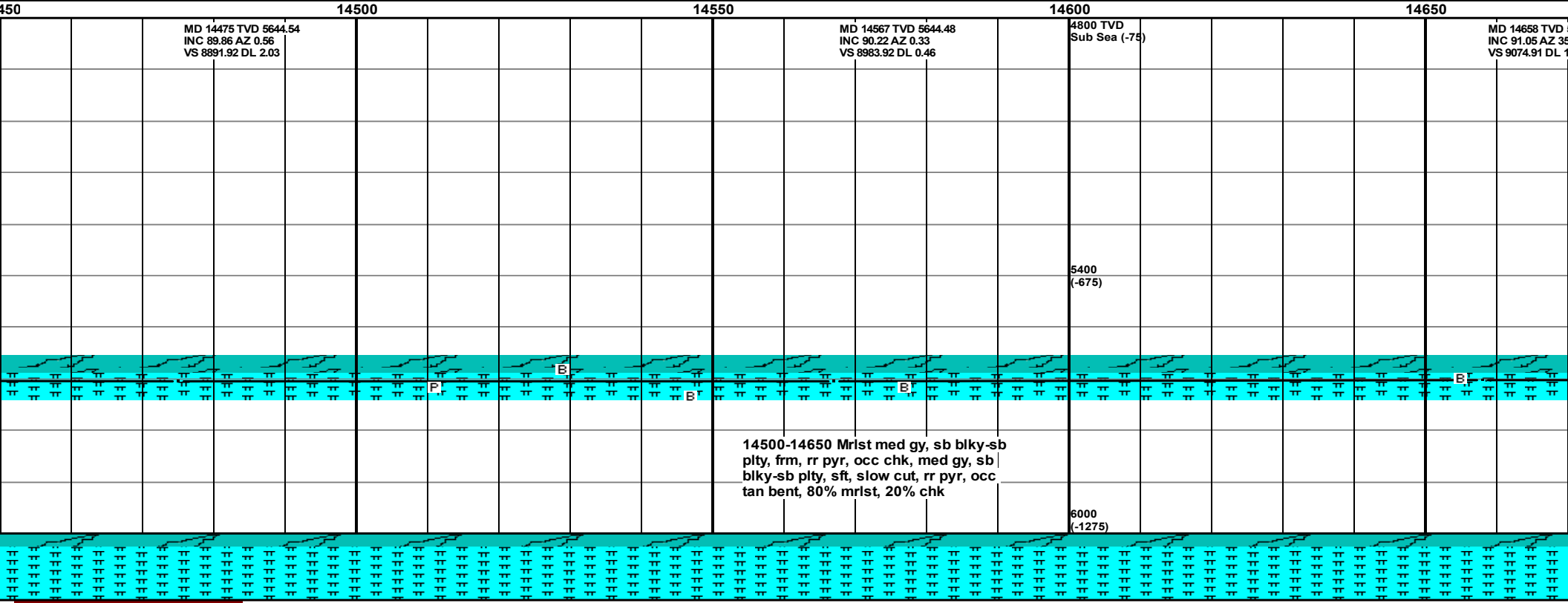




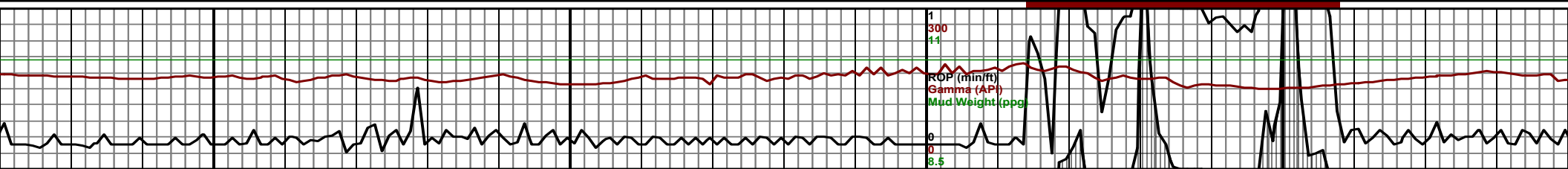
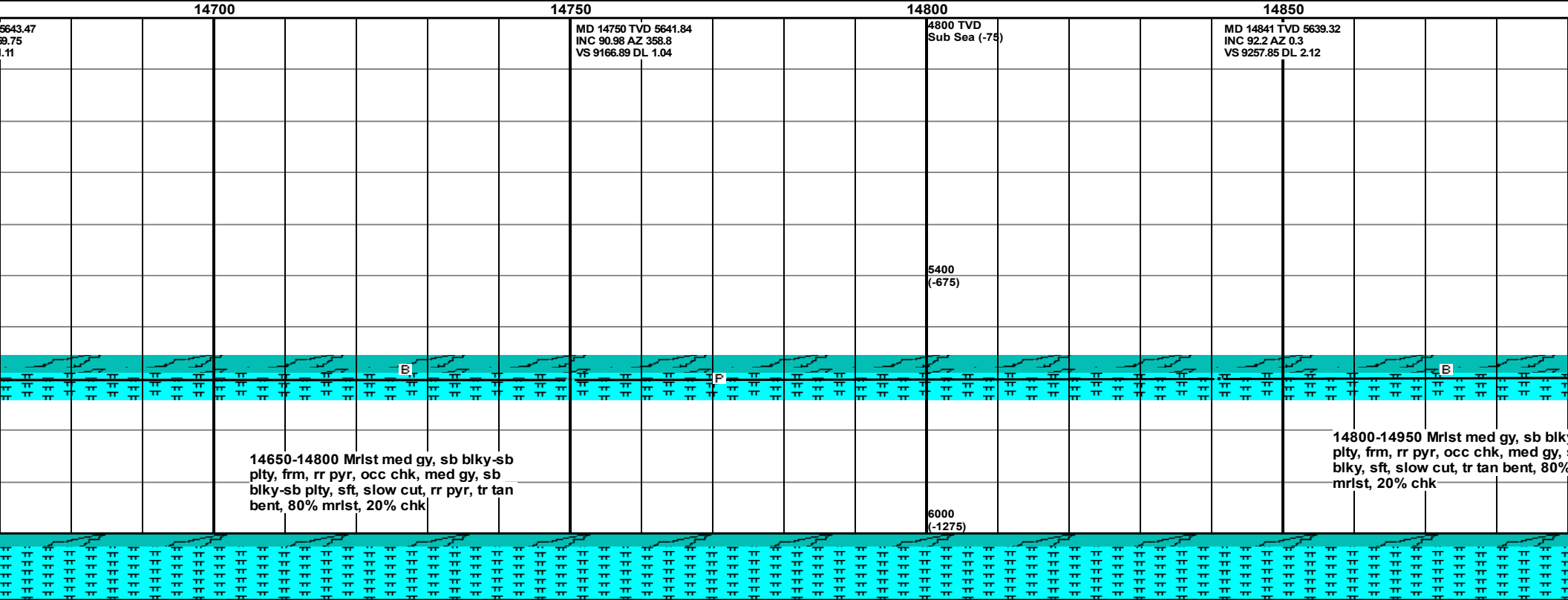
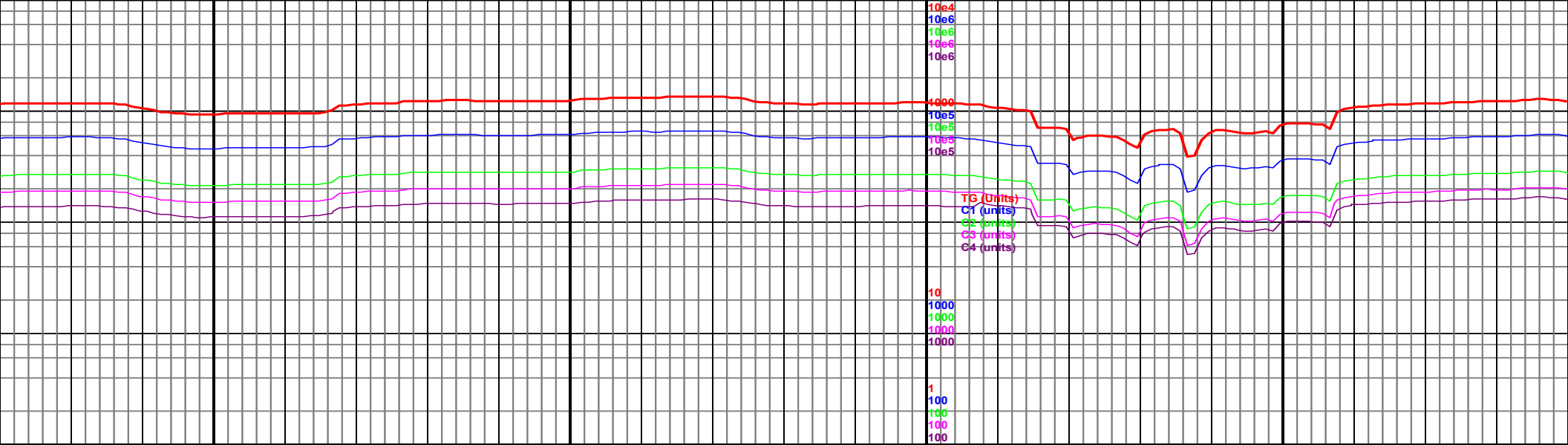


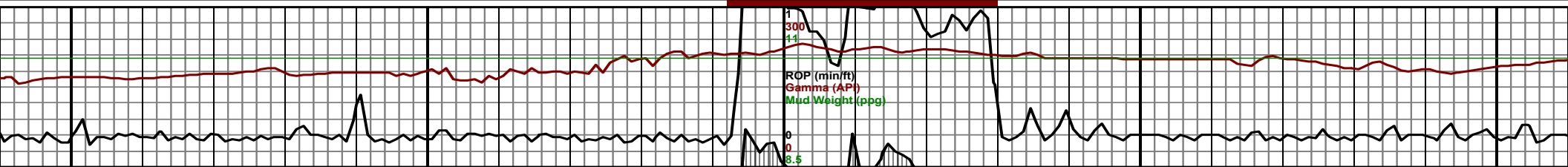
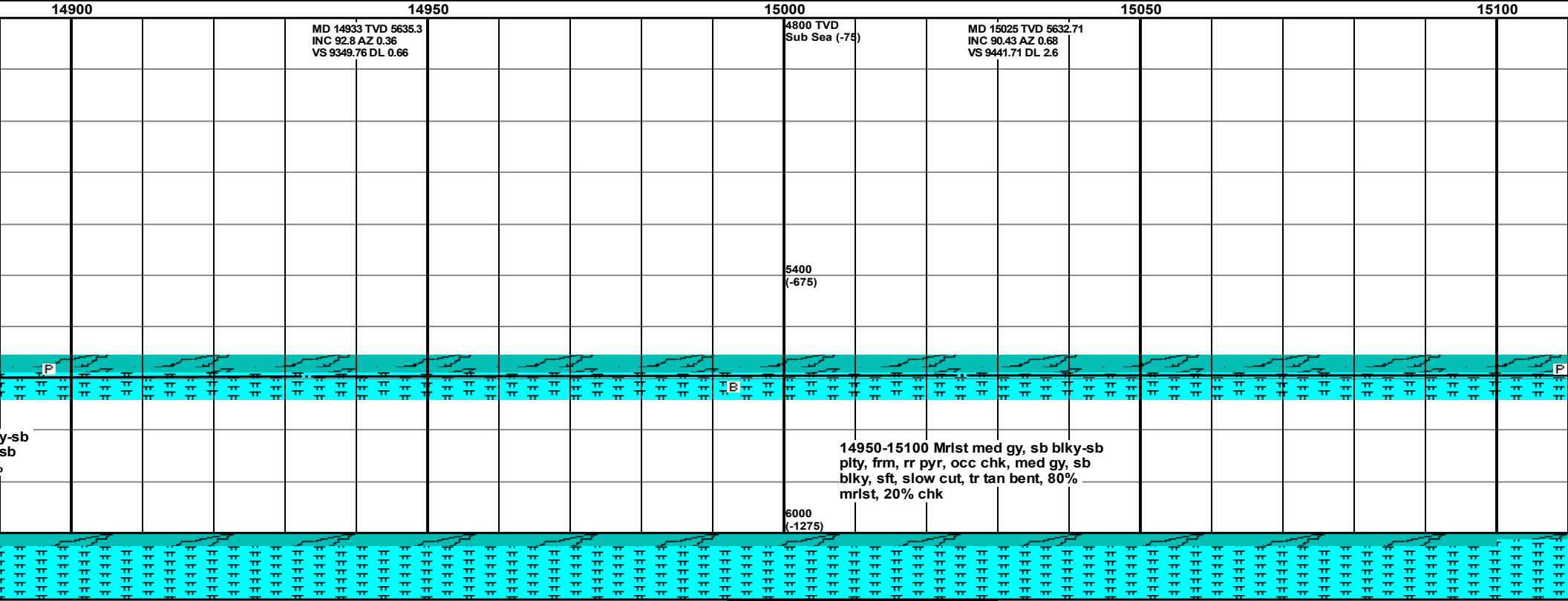
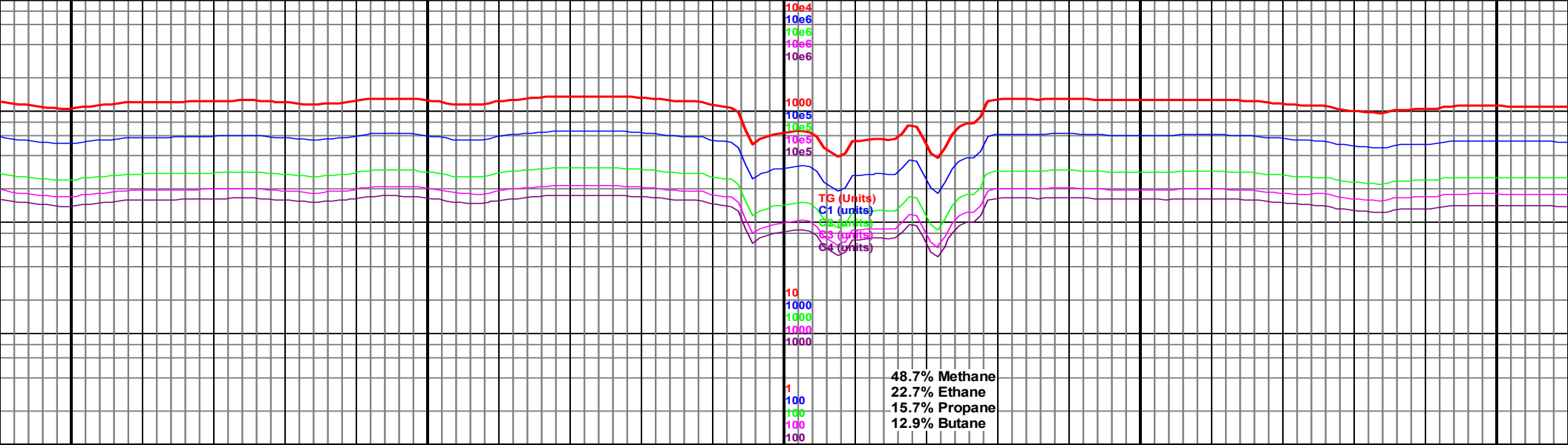


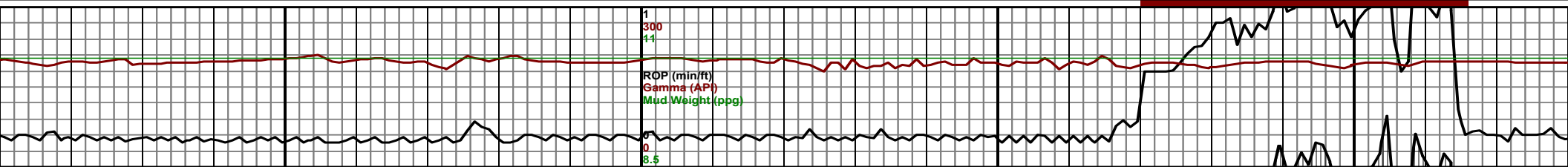
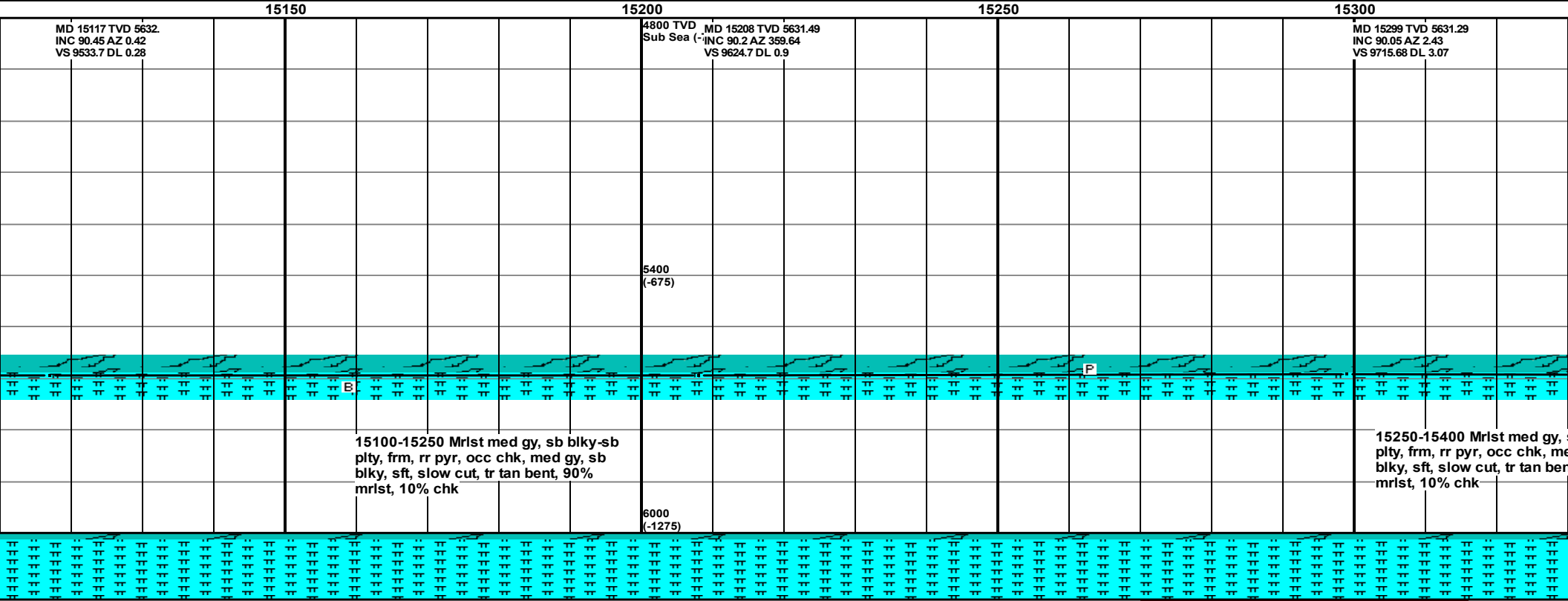
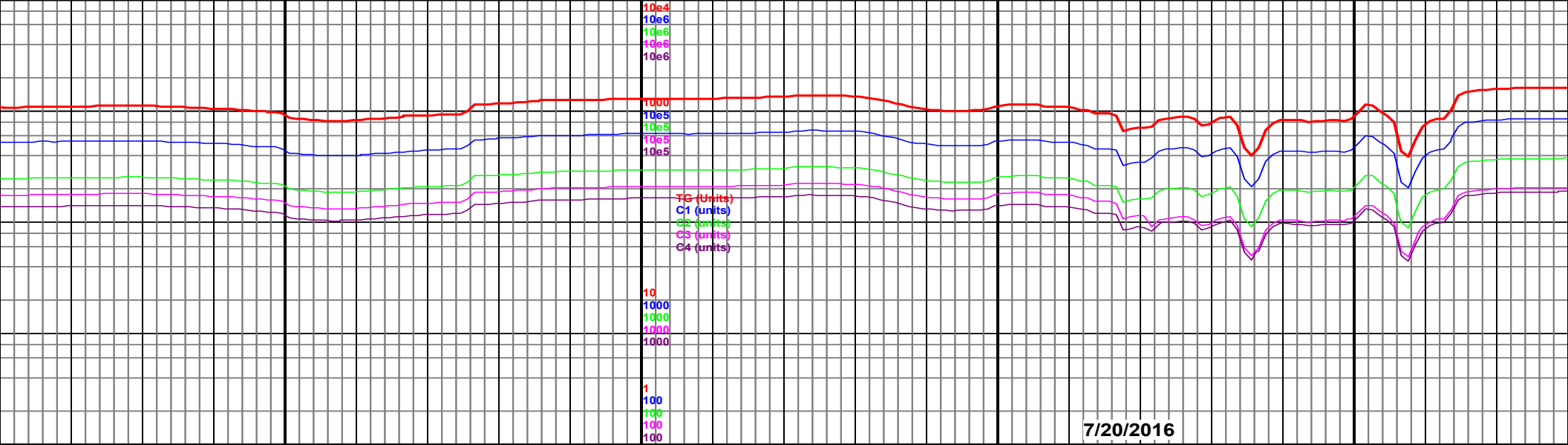


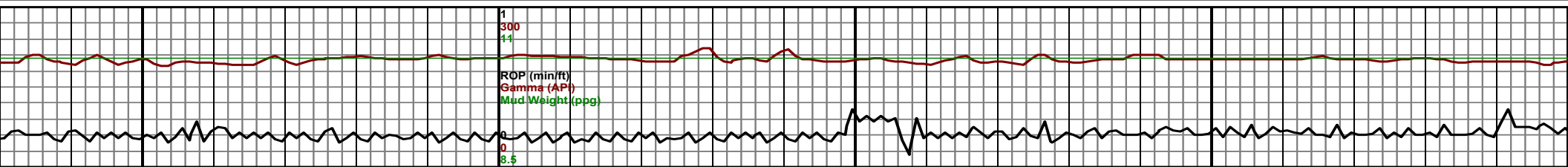
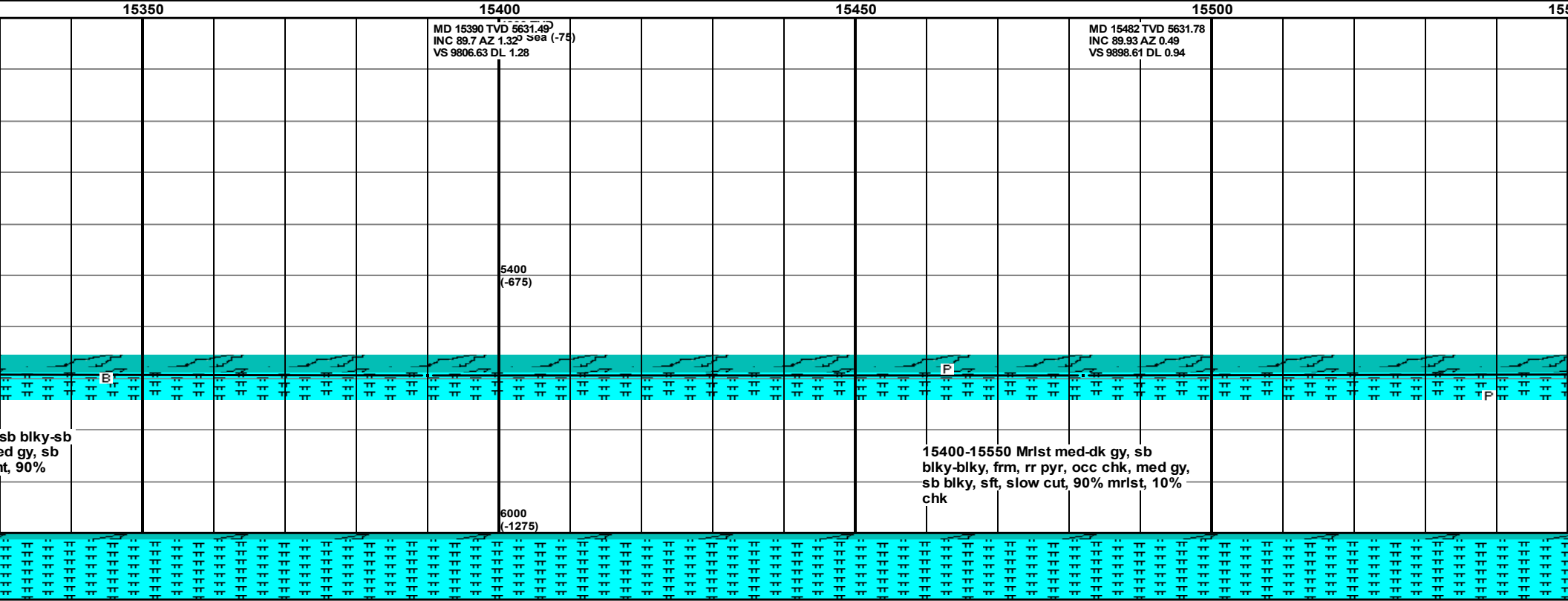
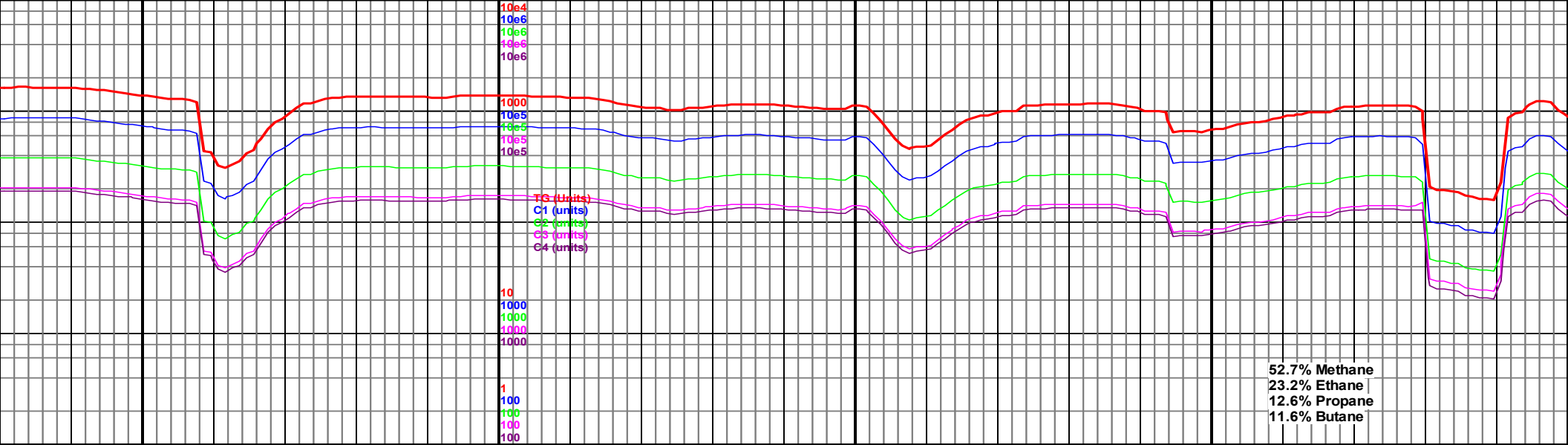


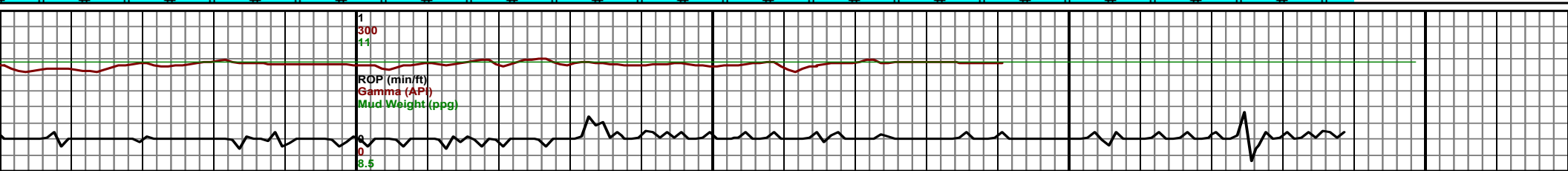
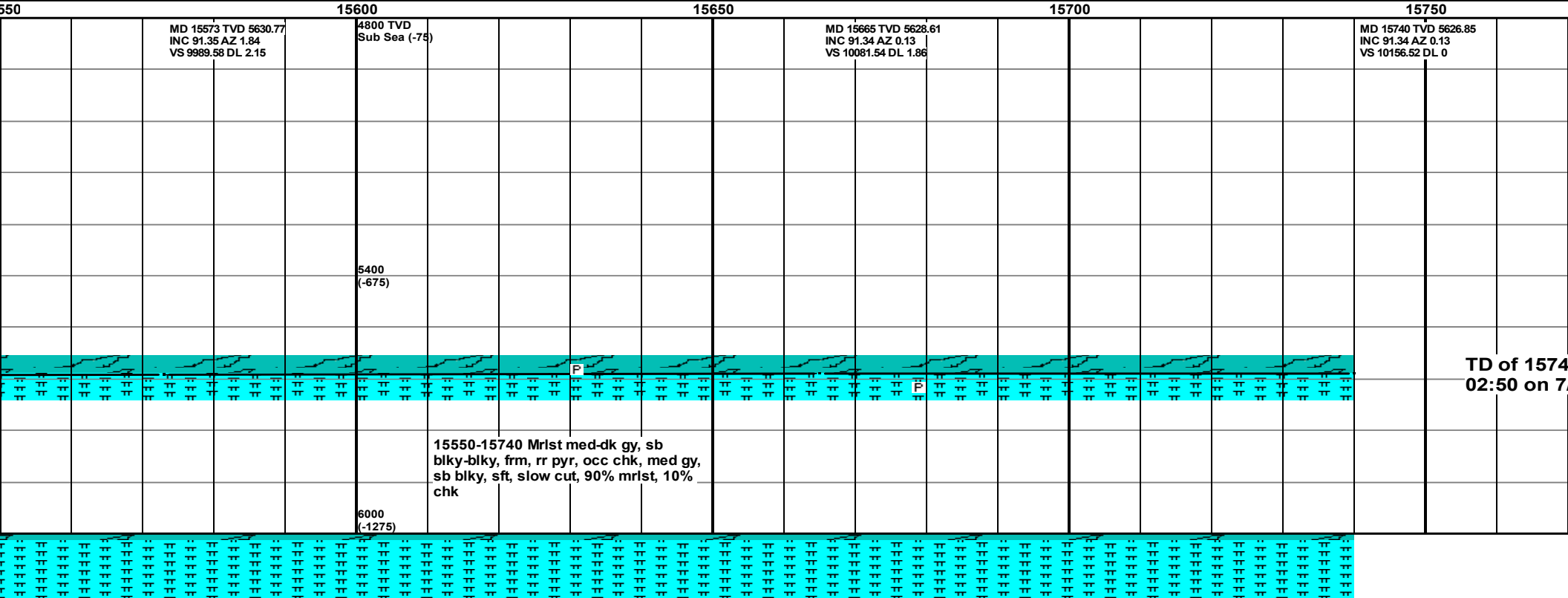
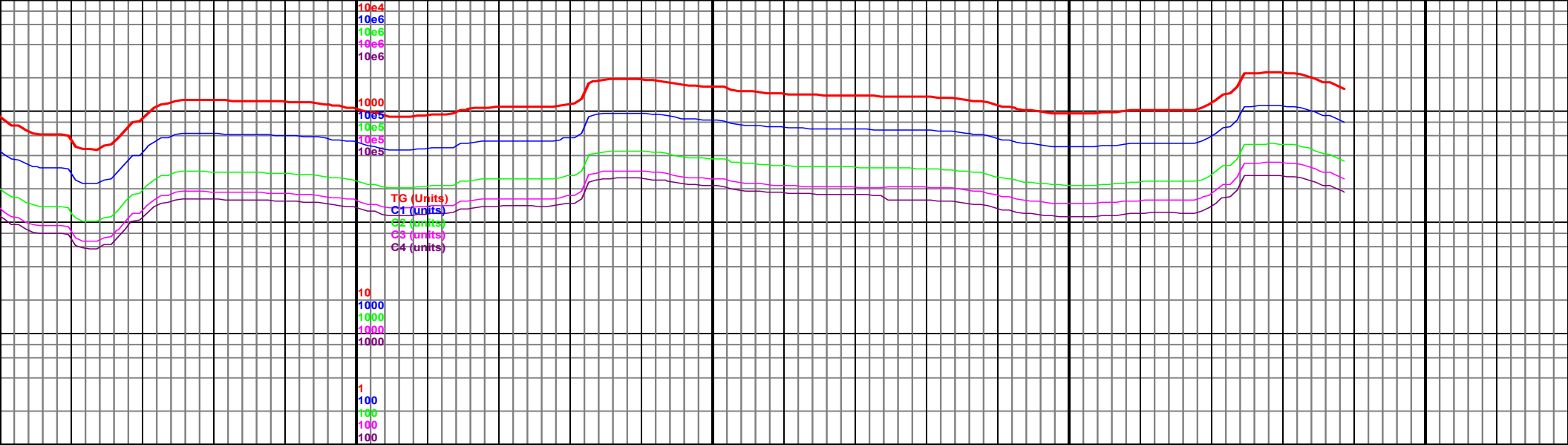












A blank sheet of graph paper with a grid pattern. The grid consists of small squares formed by thin gray lines. There are 20 columns and 20 rows of squares. A thicker vertical line runs down the left side, creating a margin. A thicker horizontal line runs across the middle, dividing the page into two equal halves.

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[illegible]

0' reached at  
/20/2016

[illegible]