



**Scale 1:200 Imperial  
Measured Depth Log**

**Well Name:** Benson Farms 11N-19HZ  
**Location:** Weld County, CO.  
**License Number:** 05123393980000  
**Spud Date:** 07/09/14  
**Surface Coordinates:** 2105'FSL & 50'FWL, SEC.24, T3N-R68W  
**Region:** DJ Basin  
**Drilling Completed:** 07/14/14  
**Bottom Hole Coordinates:** 2030'FSL & 2071'FWL, SEC.19, T3N-R68W  
**Ground Elevation (ft):** 4957' **K.B. Elevation (ft):** 4973'  
**Logged Interval (ft):** 7000' **To:** 14306' **Total Depth (ft):** 14306'  
**Formation:** Niobrara B CK  
**Type of Drilling Fluid:** Water Base Mud

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

**OPERATOR**

**Company:** Anadarko Petroleum Corporation  
**Address:** Granite Tower  
1099 18th St., Suite 1800  
Denver, CO 80202

## GEOLOGIST

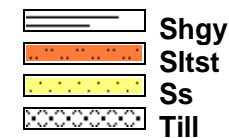
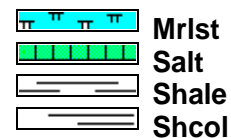
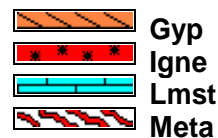
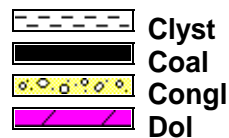
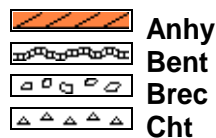
Name: Scott Crozier / Ben Thompson  
Company: Great Divide Consulting, Inc.  
Address: P.O. Box 630263  
Highlands Ranch, CO 80163

## Cores

## DSTs

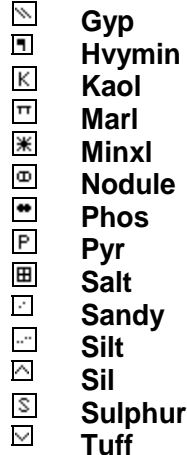
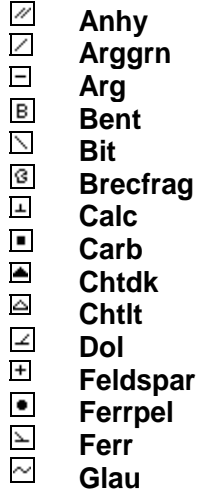
## Comments

## ROCK TYPES

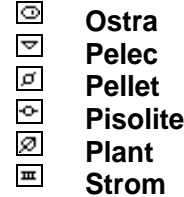
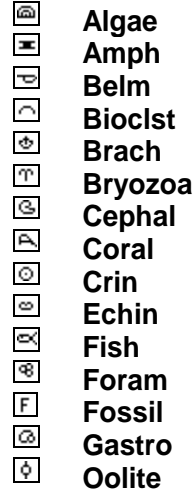


## ACCESSORIES

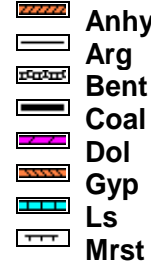
### MINERAL



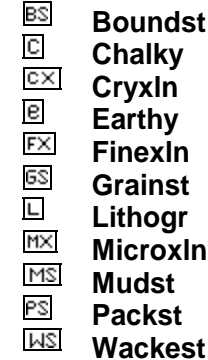
### FOSSIL










### STRINGER



### TEXTURE







**POROSITY**

 Earthy  
 Fenest  
 Fracture  
 Inter  
 Moldic  
 Organic  
 Pinpoint

**Vuggy****SORTING**

 Well  
 Moderate  
 Poor



**OTHER SYMBOLS****ROUNDING**

 Rounded  
 Subrnd  
 Subang  
 Angular

**OIL SHOW**

 Even

**Spotted**

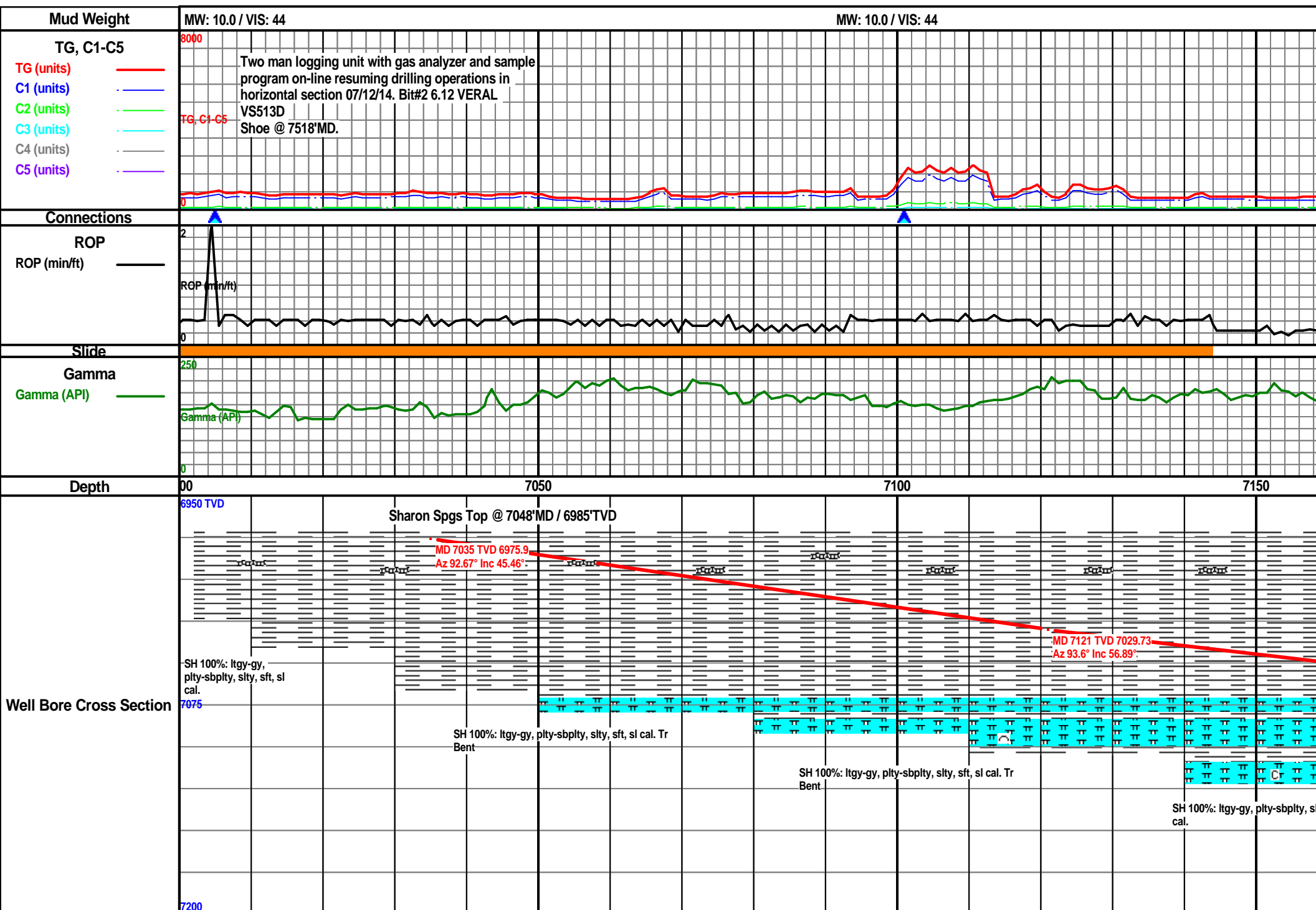
 Ques  
 Dead

**INTERVAL**

 Core  
 Dst

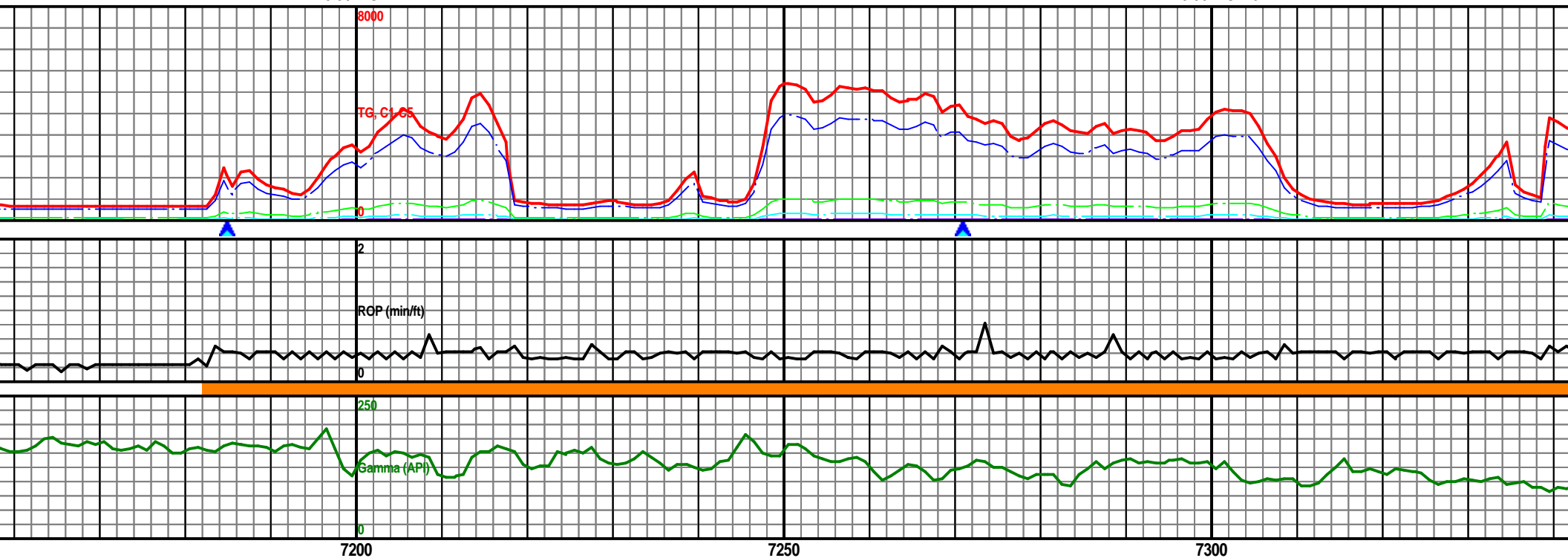
**EVENT**

 Rft  
 Connection



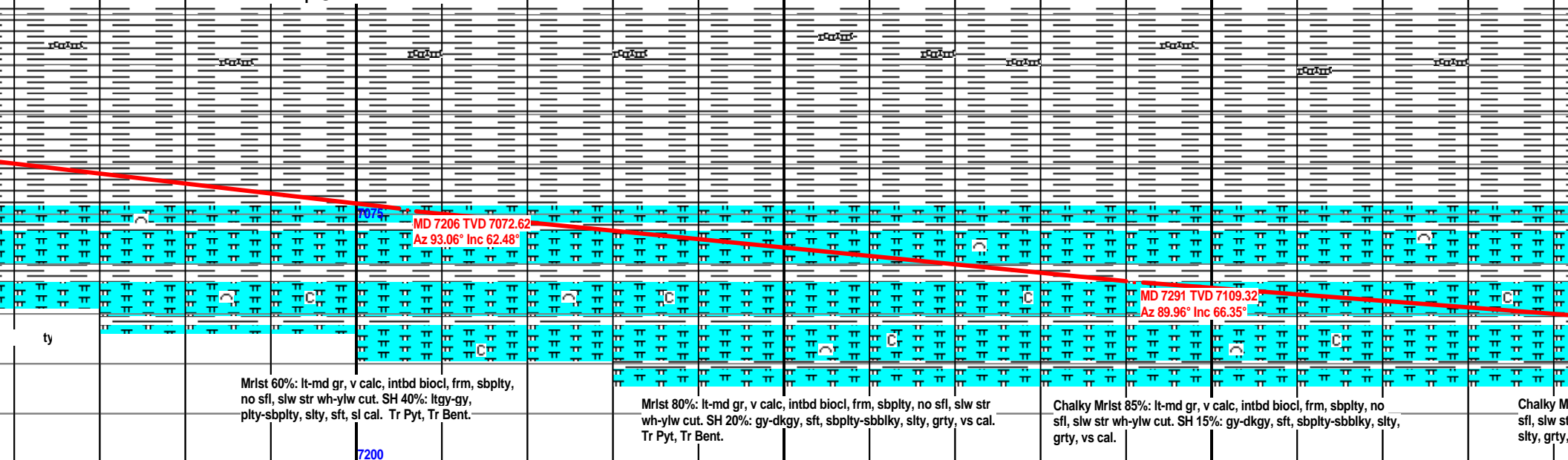
MW: 10.0 / VIS: 41

MW: 10.0 / VIS: 43



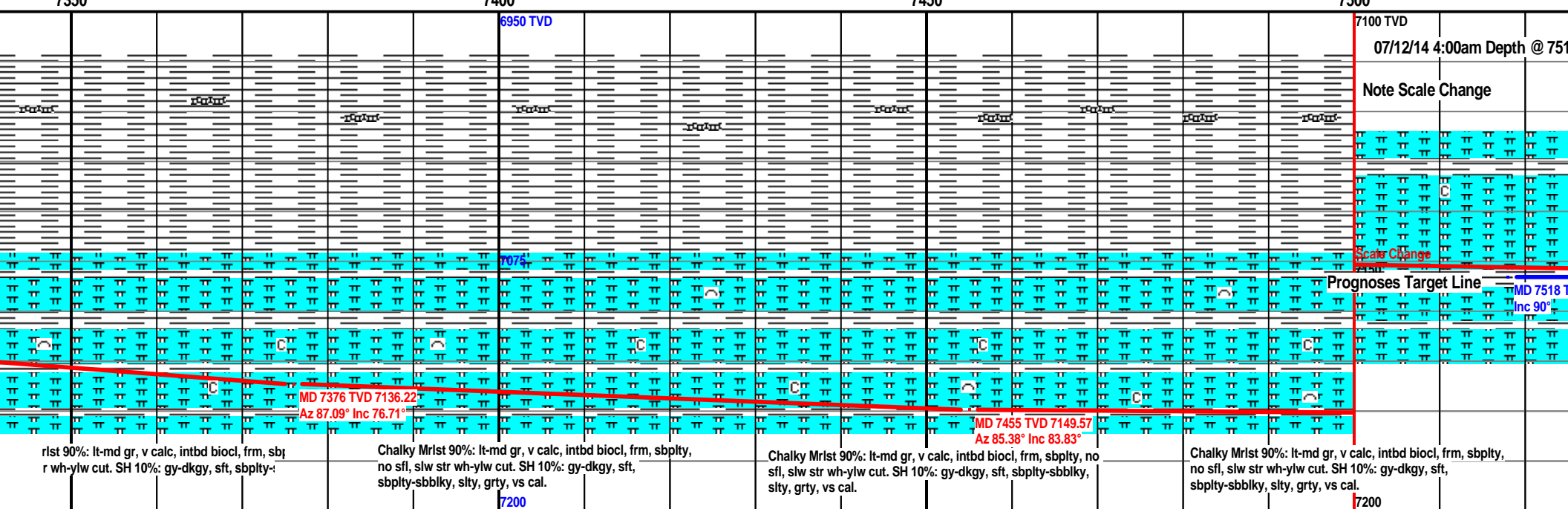
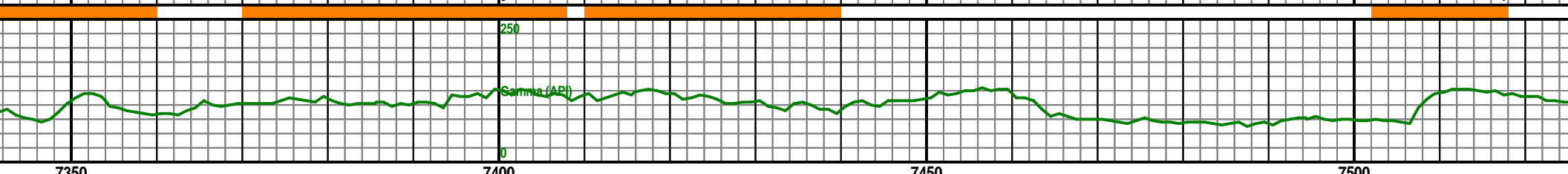
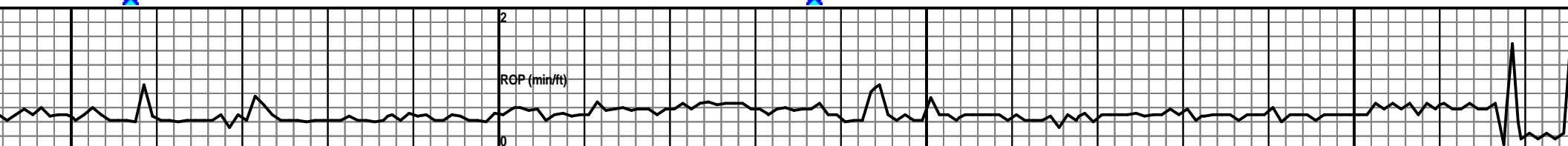
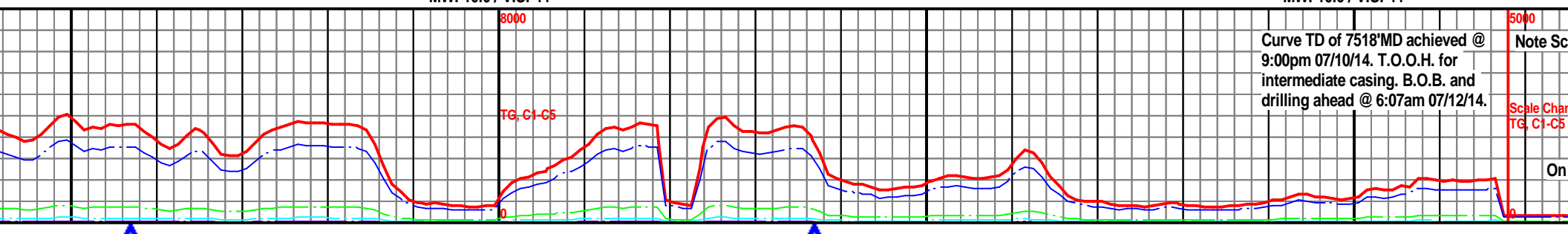
Niobrara A Top @ 7198'MD / 7069'TVD

Niobrara B CK Top @ 7302'MD / 7114'TVD



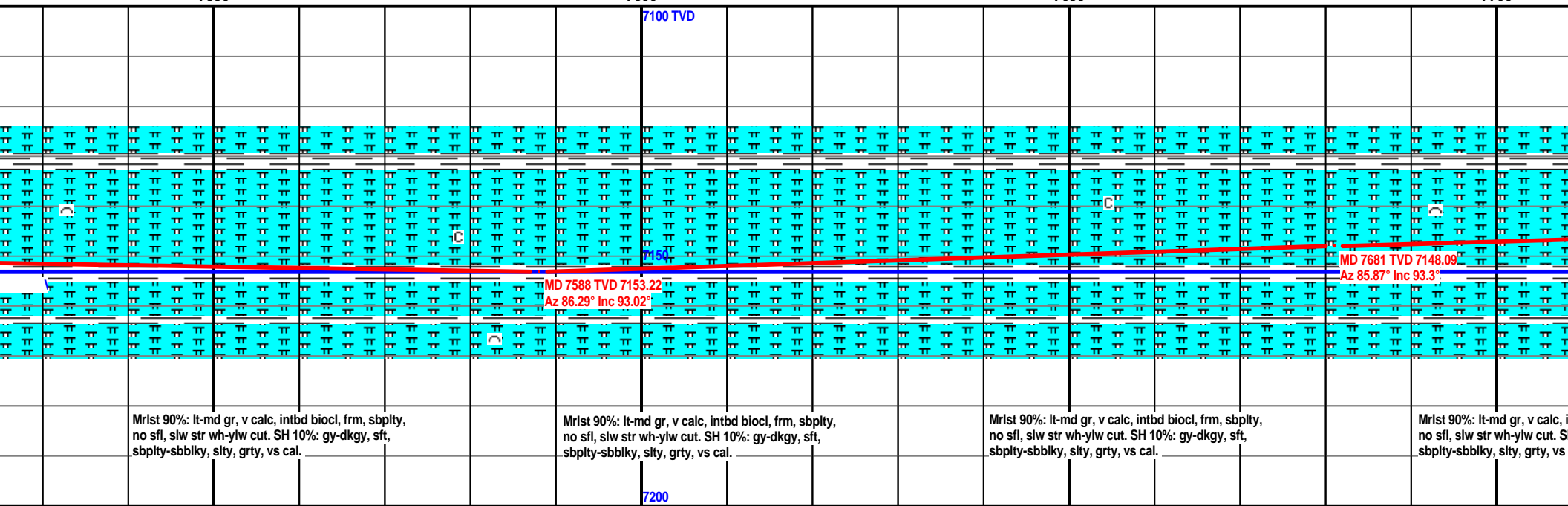
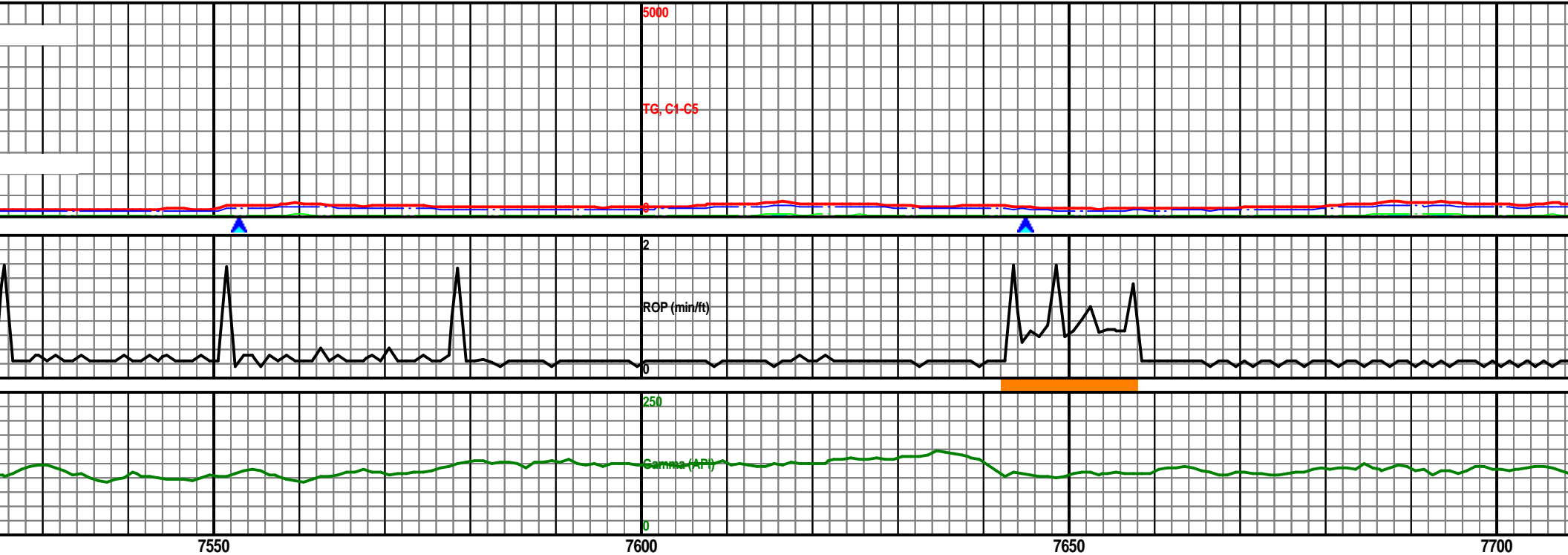
MW: 10.0 / VIS: 44

MW: 10.0 / VIS: 44

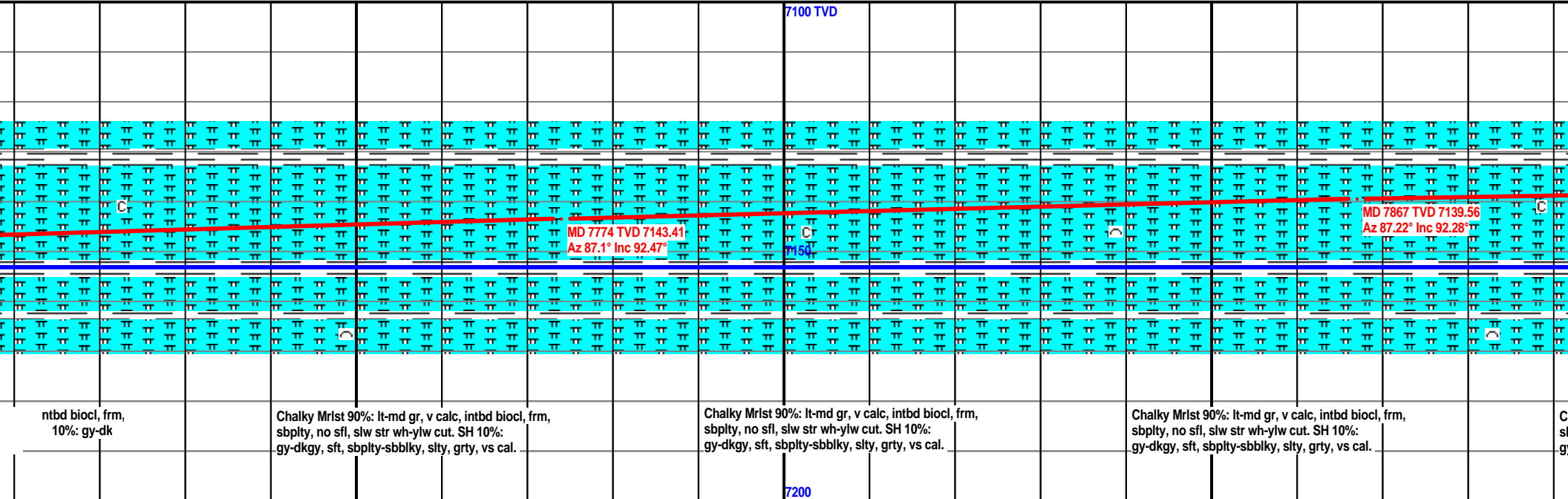
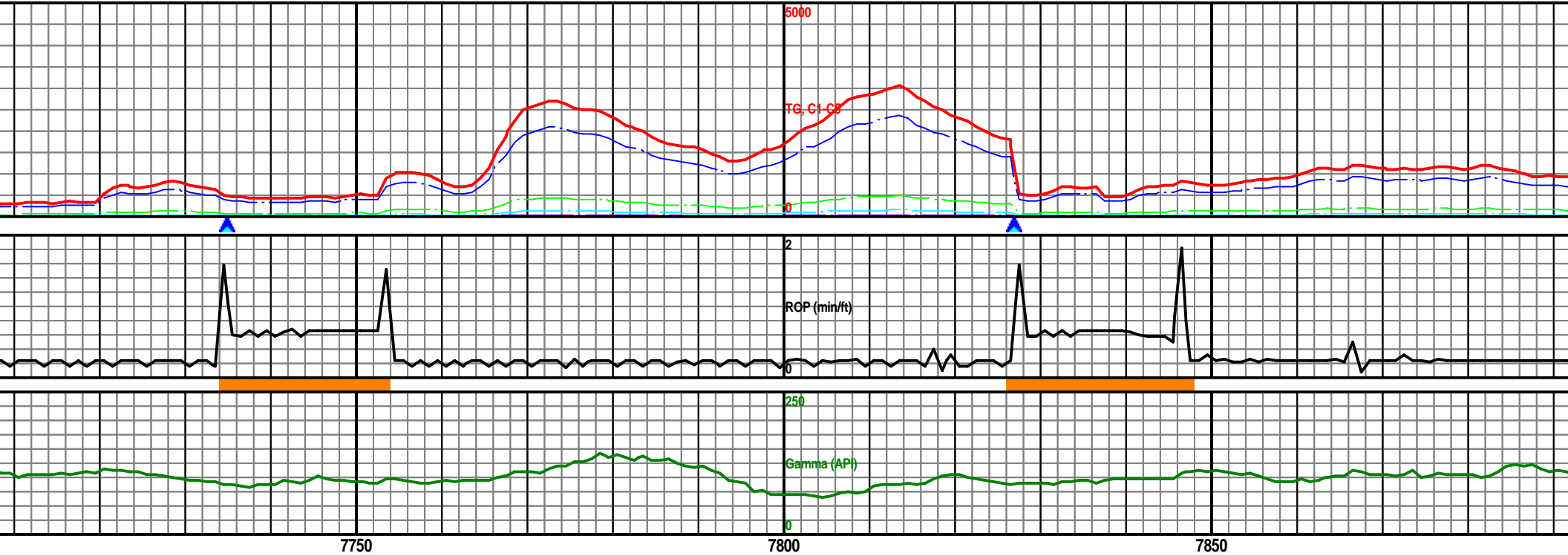


MW: 9.4 / VIS: 39

MW: 9.4 / VIS: 43

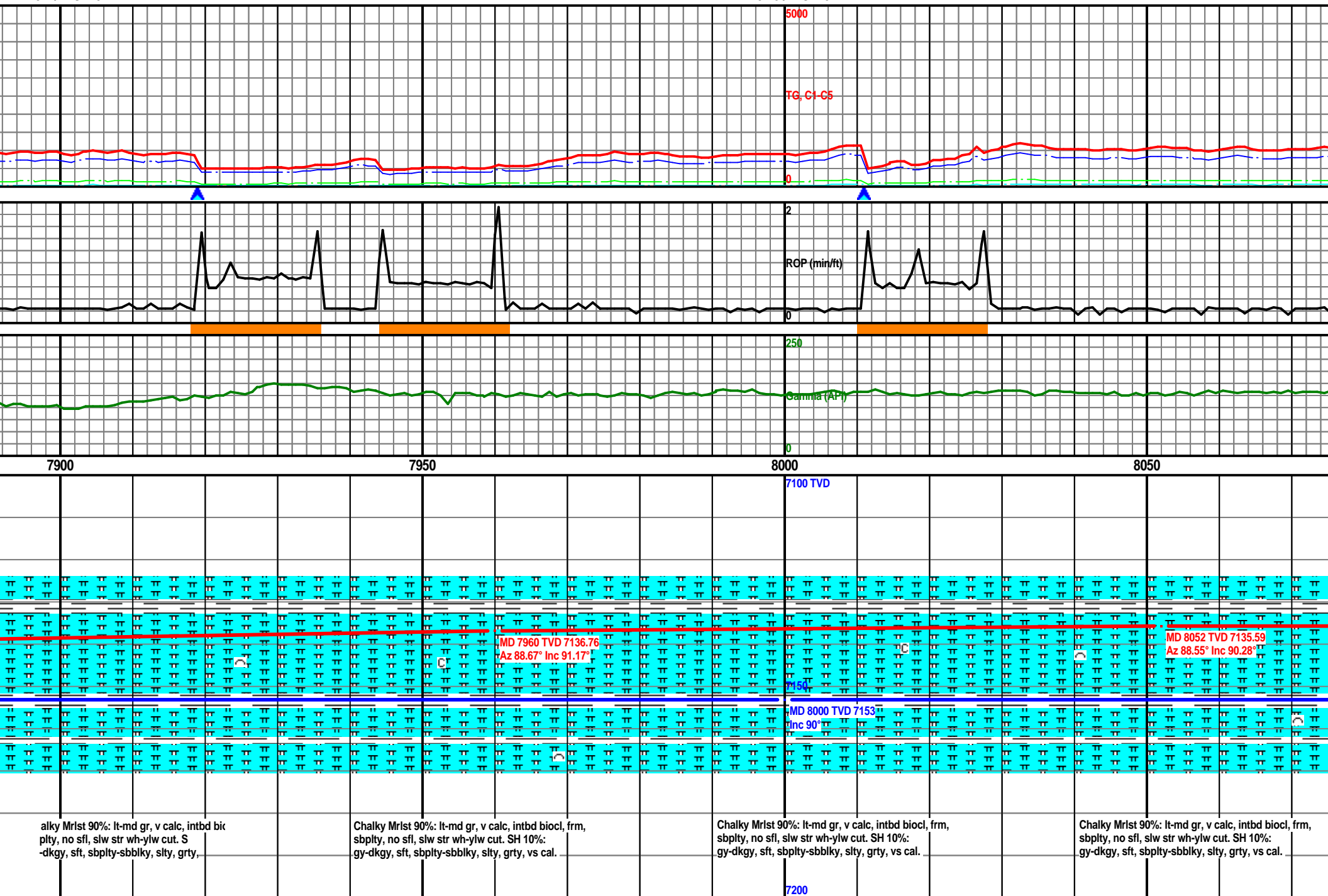


MW: 9.4 / VIS: 42



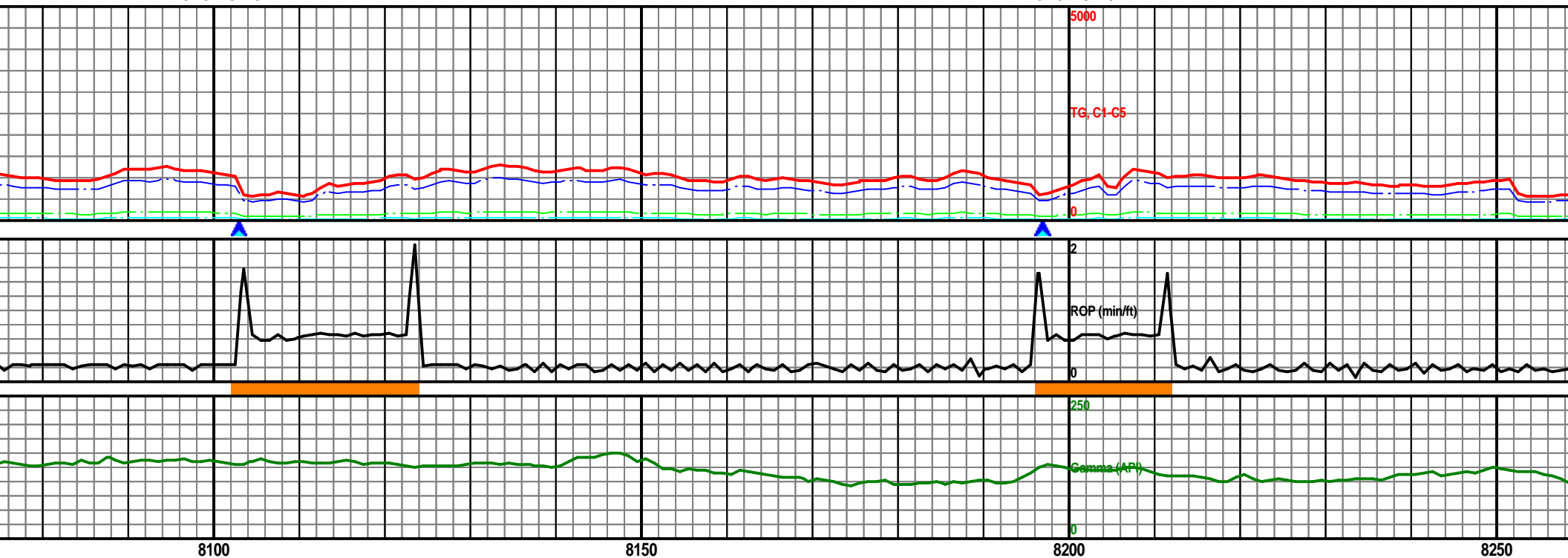


MW: 9.25 / VIS: 40



MW: 9.2 / VIS: 40

MW: 9.2 / VIS: 40

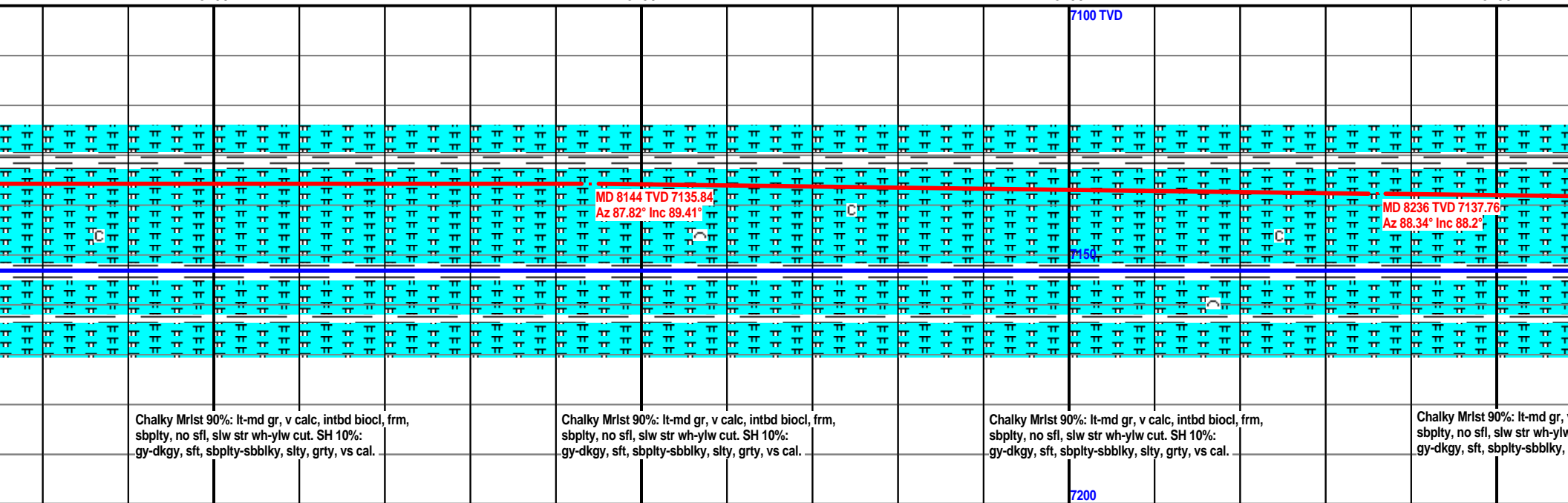


8100

8150

8200

8250



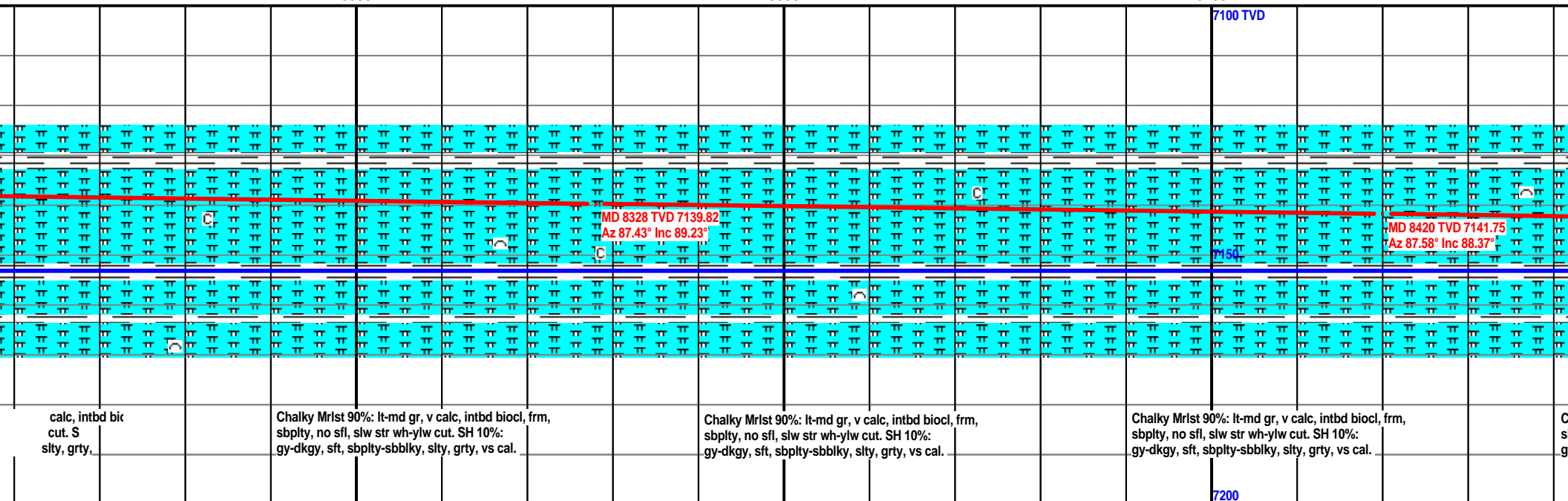
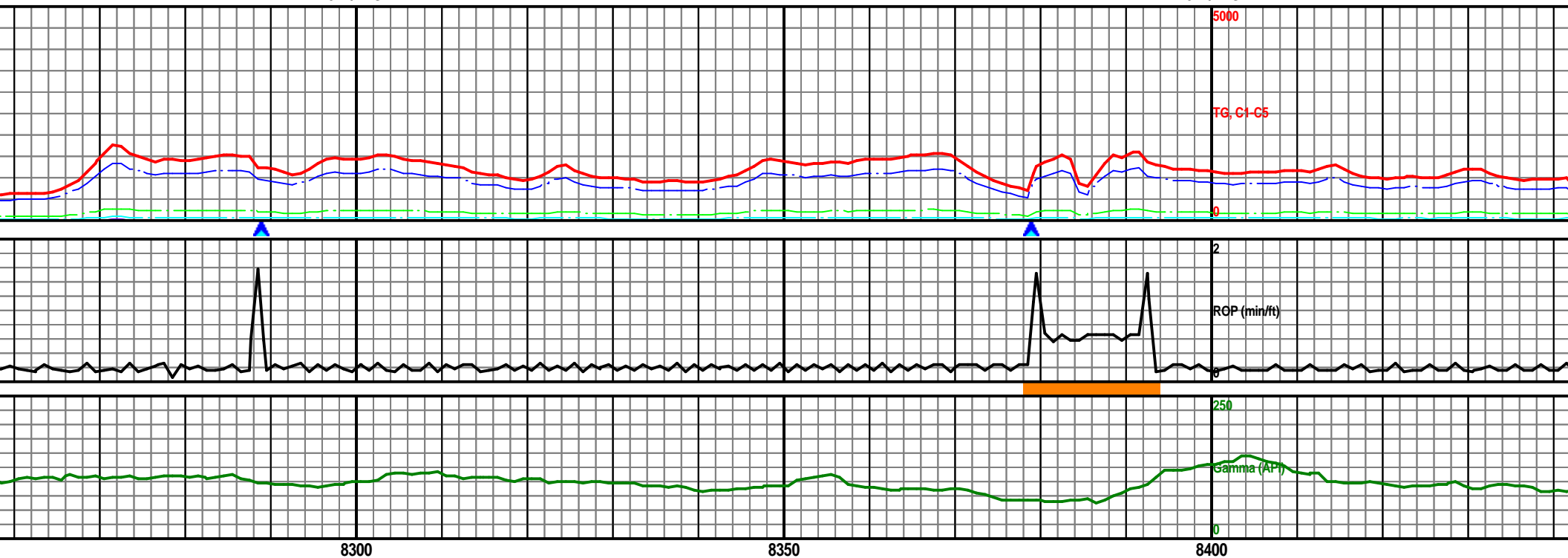
7100 TVD

MD 8144 TVD 7135.84'  
Az 87.82° Inc 89.41'MD 8236 TVD 7137.76'  
Az 88.34° Inc 88.2°Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-yiw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbbiky, slty, grty, vs cal.Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-yiw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbbiky, slty, grty, vs cal.Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-yiw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbbiky, slty, grty, vs cal.Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-yiw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbbiky, slty, grty, vs cal.

7200

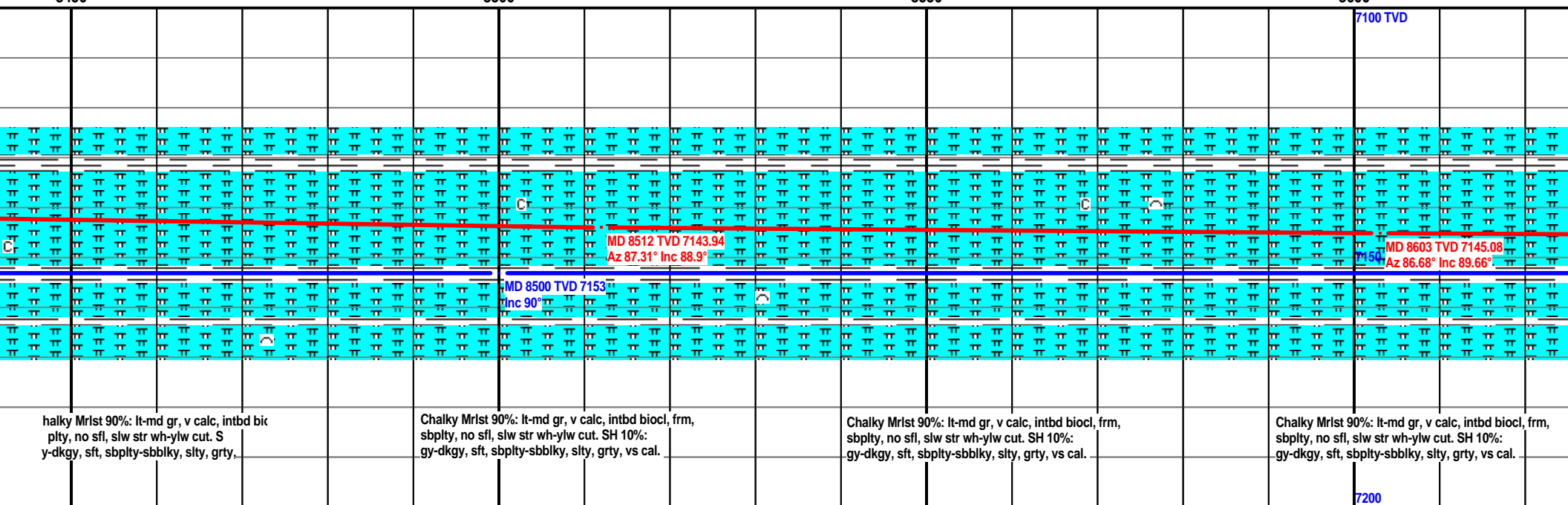
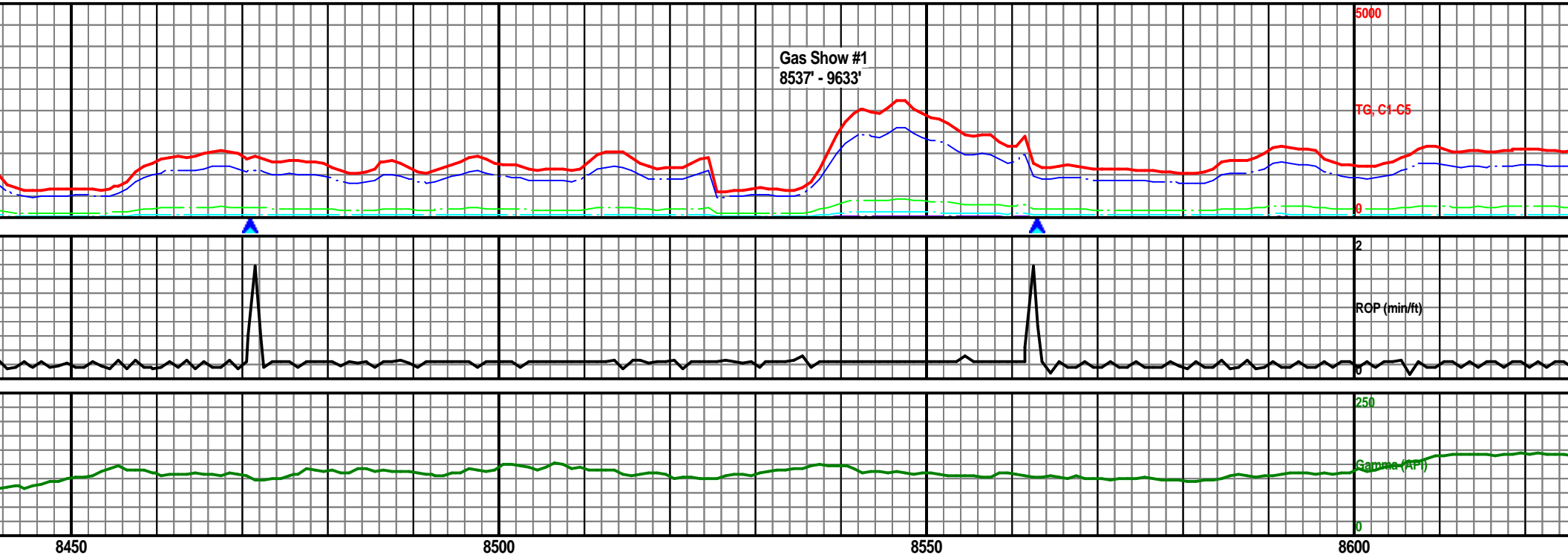
MW: 9.2 / VIS: 42

MW: 9.2 / VIS: 42



MW: 9.2 / VIS: 42

MW: 9.2 / VIS: 42



Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-yiw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbbiky, slty, grty, vs cal.

Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-yiw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbbiky, slty, grty, vs cal.

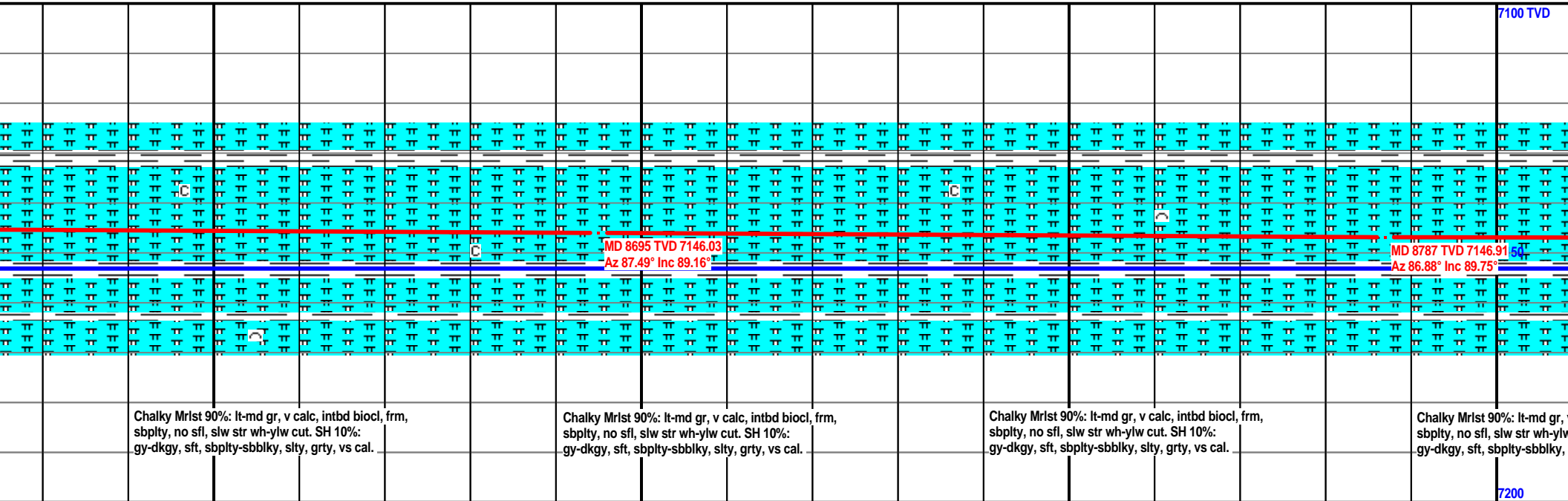
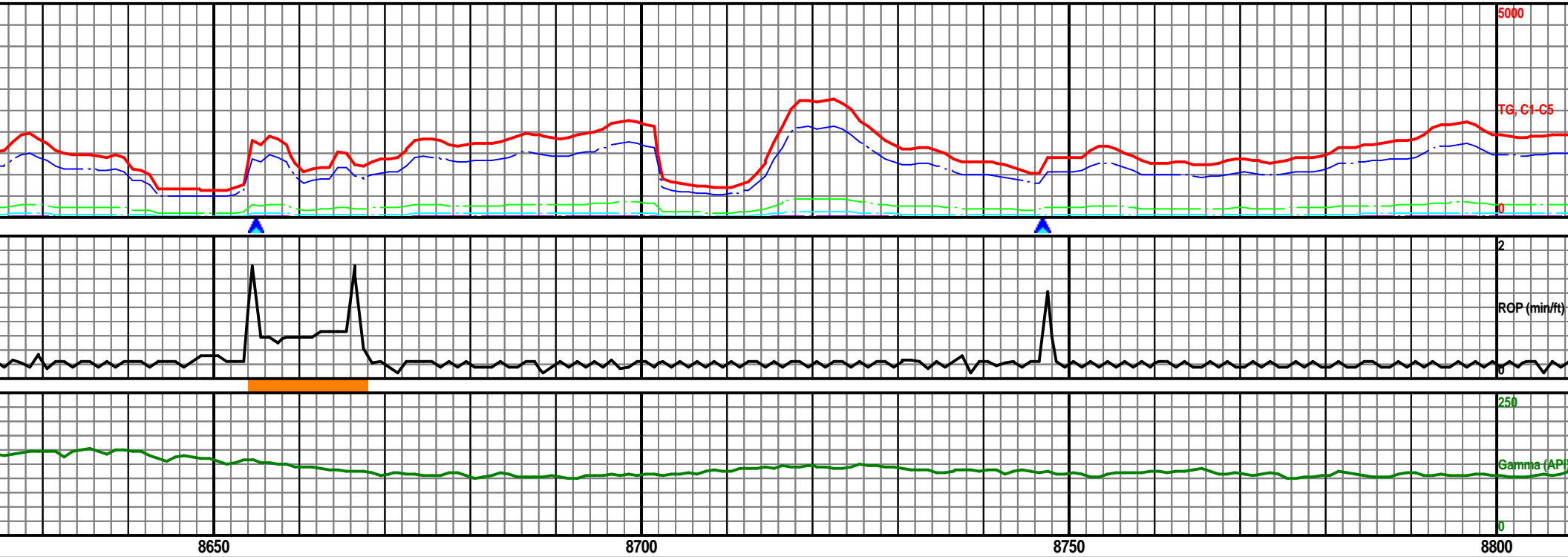
Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-yiw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbbiky, slty, grty, vs cal.

Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-yiw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbbiky, slty, grty, vs cal.

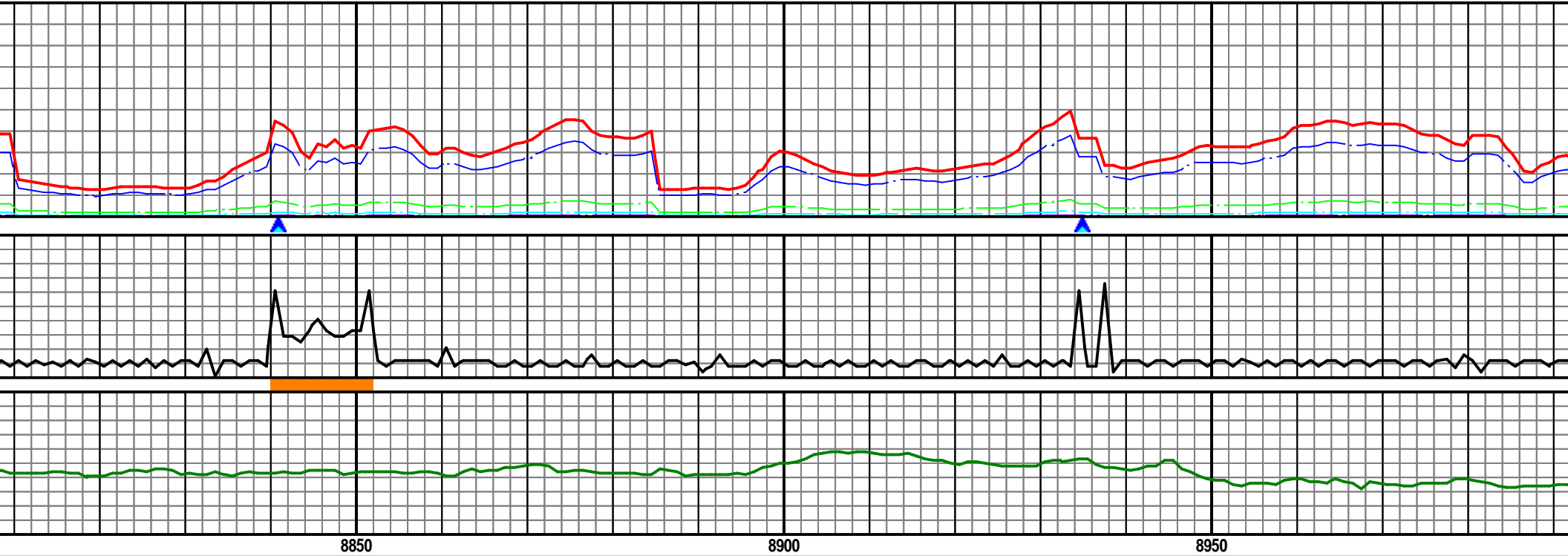
7200

MW: 9.2 / VIS: 45

MW: 9.2 / VIS: 45



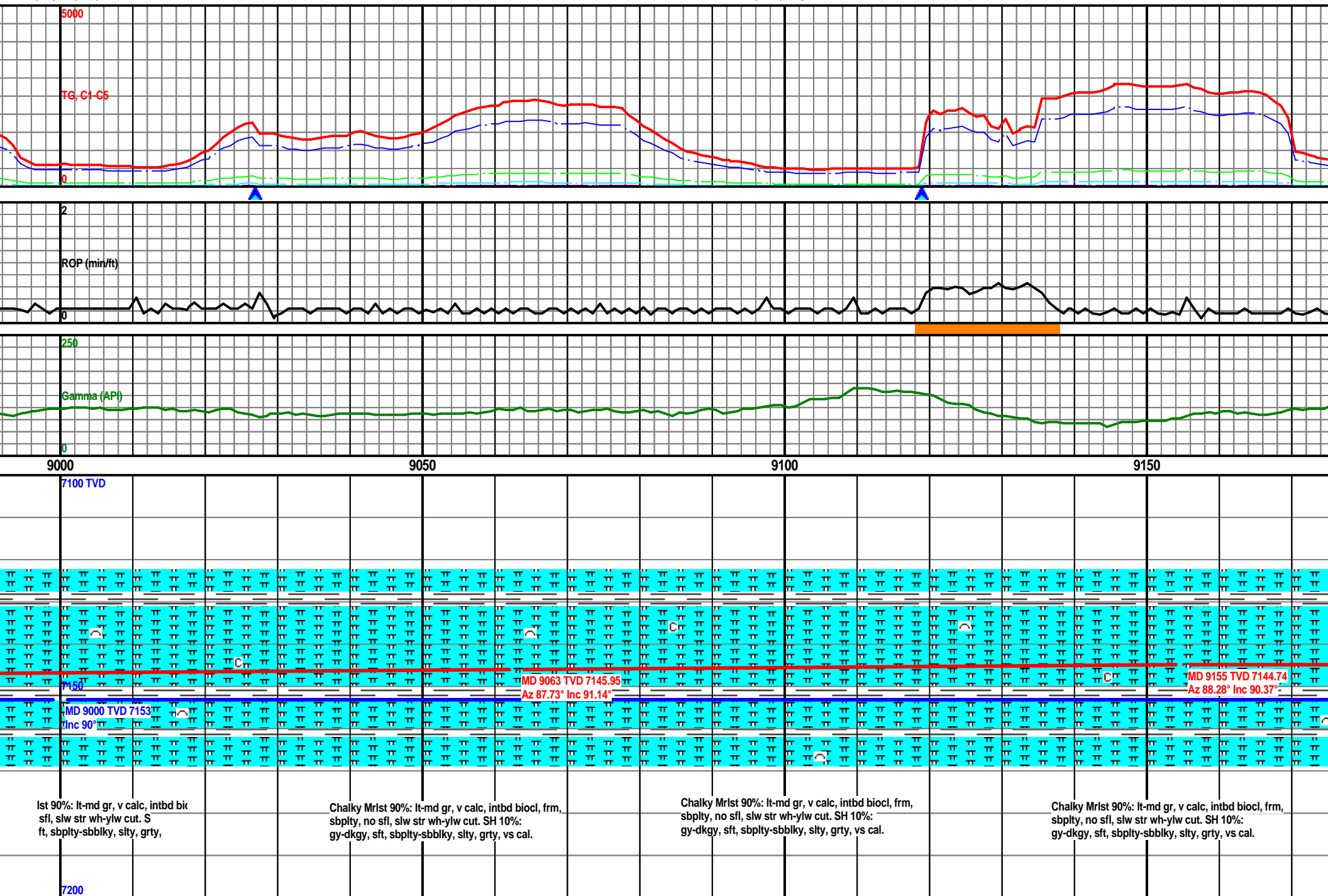
MW: 9.1 / VIS: 43



MD 8879 TVD 7147.16 Az 88.16° Inc 89.94°																														MD 8971 TVD 7147.04 Az 87.65° Inc 90.21°																																																																																																																							
calc, intbd bic cut. S silty, grty,																														Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm, sbplty, no sfl, slw str wh-yiw cut. SH 10%: gy-dkgy, sft, sbplty-sbbiky, slty, grty, vs cal.																														Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm, sbplty, no sfl, slw str wh-yiw cut. SH 10%: gy-dkgy, sft, sbplty-sbbiky, slty, grty, vs cal.																														Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm, sbplty, no sfl, slw str wh-yiw cut. SH 10%: gy-dkgy, sft, sbplty-sbbiky, slty, grty, vs cal.																														Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm, sbplty, no sfl, slw str wh-yiw cut. SH 10%: gy-dkgy, sft, sbplty-sbbiky, slty, grty, vs cal.																													

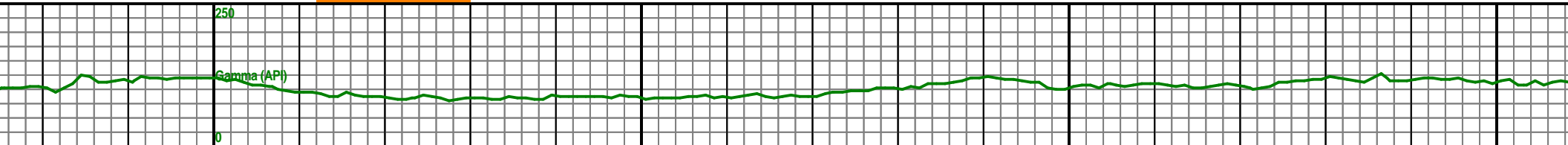
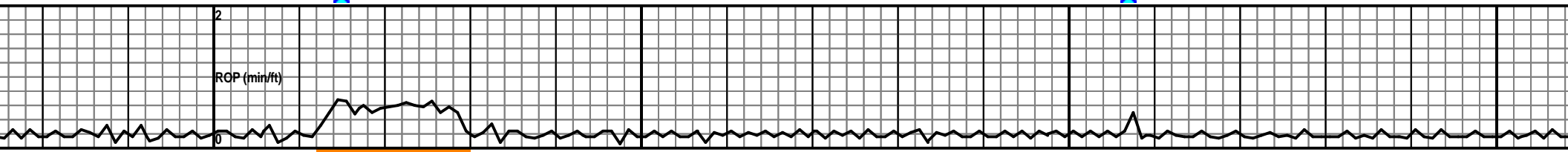
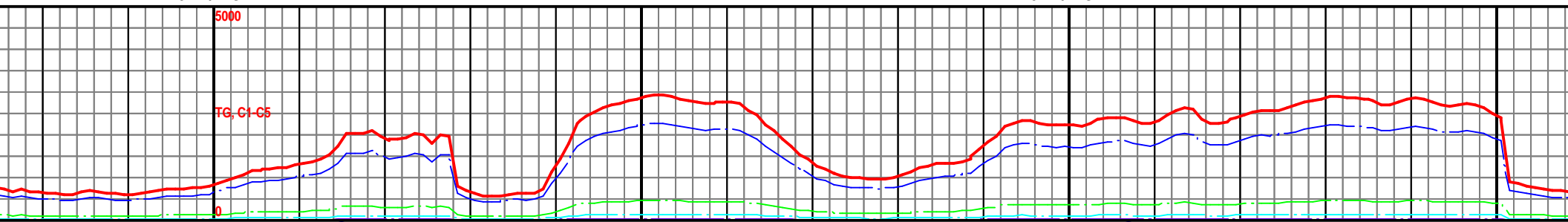
MW: 9.1 / VIS: 45

MW: 9.1+ / VIS: 47



MW: 9.1+ / VIS: 47

MW: 9.1+ / VIS: 47



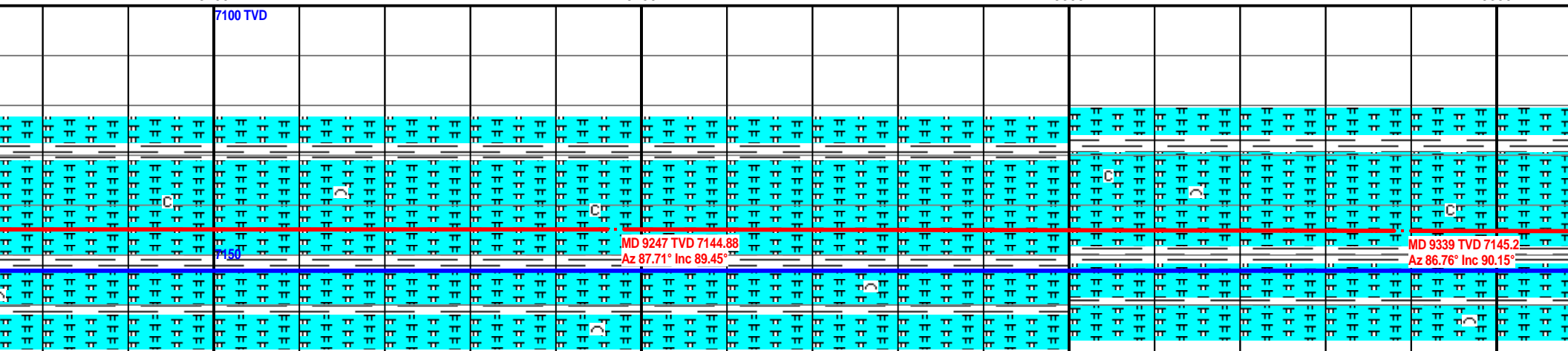
9200

9250

9300

9350

7100 TVD



Chalky Mrist 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbbkly, slty, grty, vs cal.

Chalky Mrist 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbbkly, slty, grty, vs cal.

Chalky Mrist 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbbkly, slty, grty, vs cal.

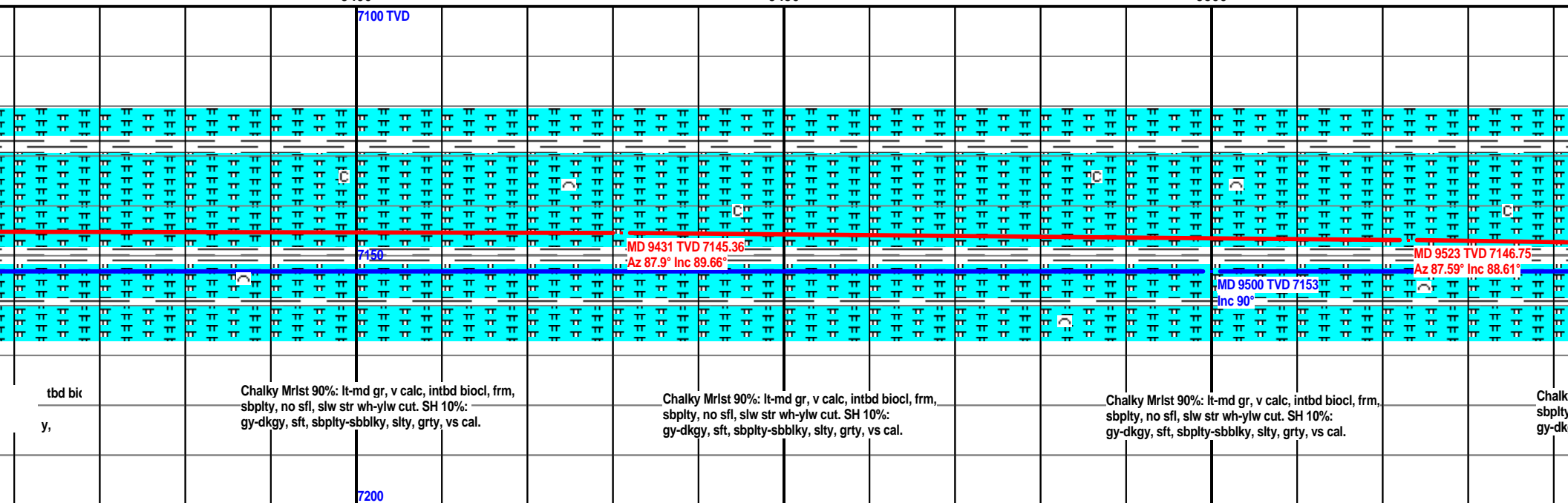
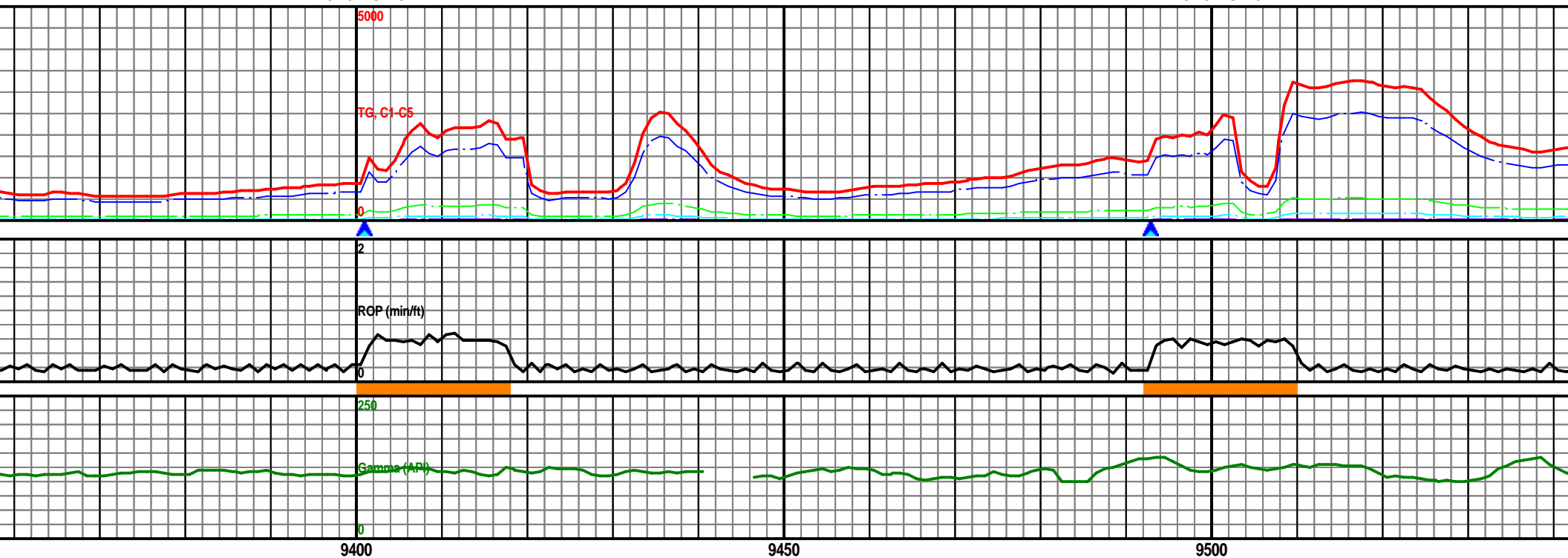
Chalky Mrist 90%: lt-md gr, v calc, i  
sbplty, no sfl, slw str wh-ylw cut. SH  
gy-dkgy, sft, sbplty-sbbkly, slty, grty

7200



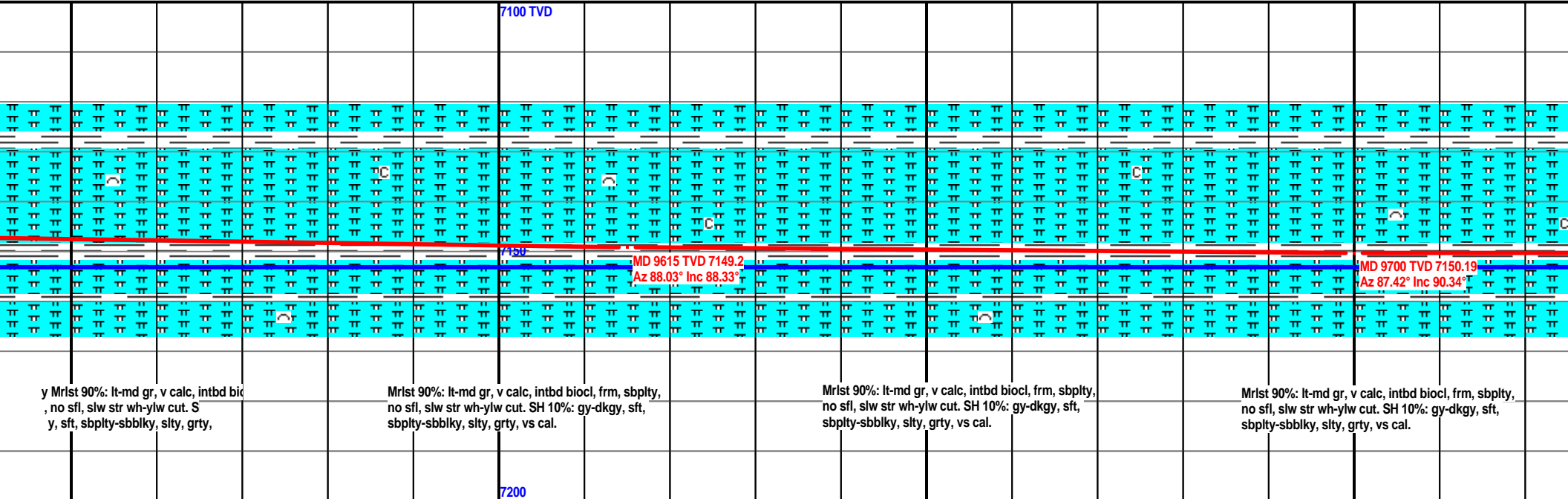
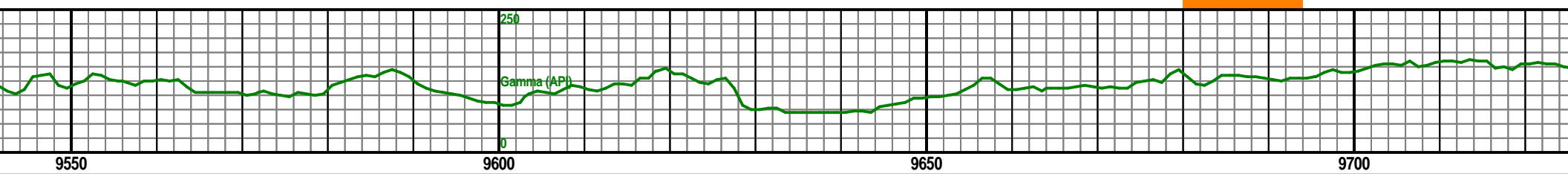
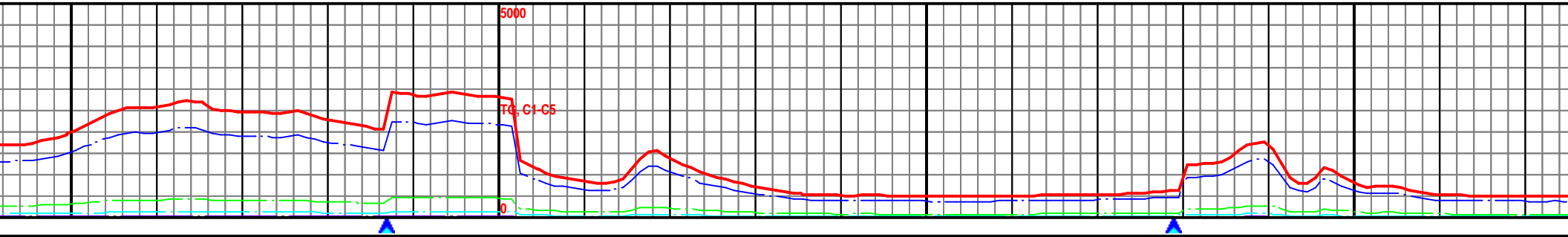
MW: 9.2 / VIS: 46

MW: 9.2 / VIS: 46



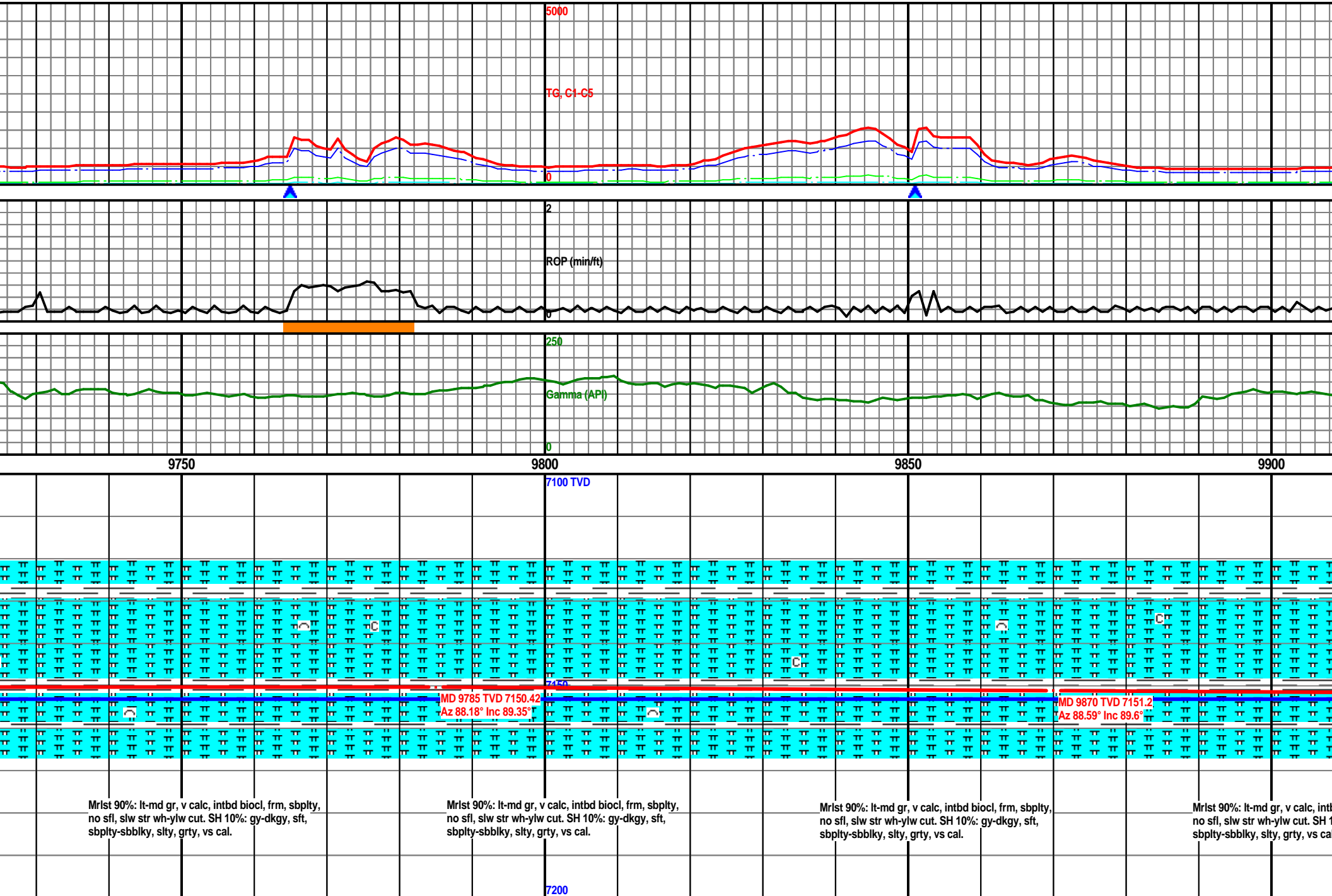
MW: 9.2 / VIS: 48

MW: 9.2 / VIS: 48



MW: 9.2 / VIS: 48

MW: 9.2 / VIS: 48



MW: 9.2 / VIS: 47

Gas SH  
10093'

5000

TG, C1-C5

0

2

RGP (min/ft)

0

250

Gamma (API)

0

9950

10000

10050

7100 TVD

Fault - from Nio B to Nio C

7150

MD 9955 TVD 7151.9  
Az 87.52° Inc 89.45°

MD 10000 TVD 7153  
Inc 90°

MD 10040 TVD 7152.33  
Az 87.29° Inc 89.97°

d biocl, frm,  
0%: gy-dk

Mrlst 90%: lt-md gr, v calc, intbd biocl, frm, sbpity,  
no sfl, slw str wh-yiw cut. SH 10%: gy-dkgy, sft,  
sbpity-sbbiky, slty, grty, vs cal.

Mrlst 90%: lt-md gr, v calc, intbd biocl, frm, sbpity,  
no sfl, slw str wh-yiw cut. SH 10%: gy-dkgy, sft,  
sbpity-sbbiky, slty, grty, vs cal.

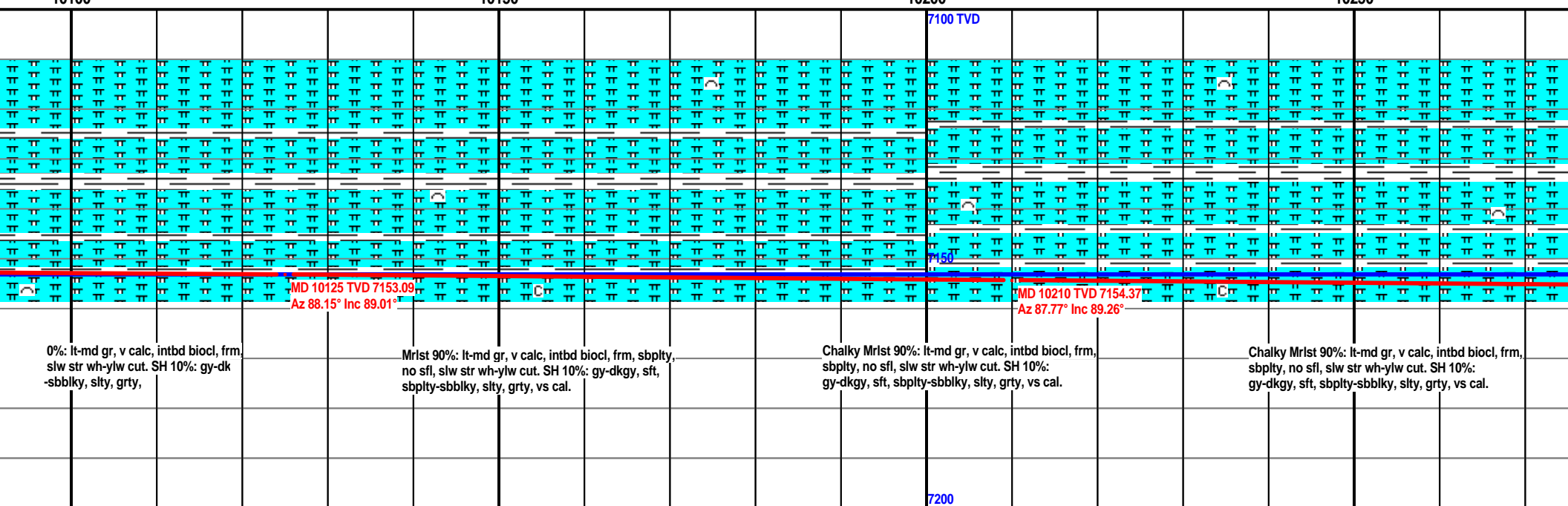
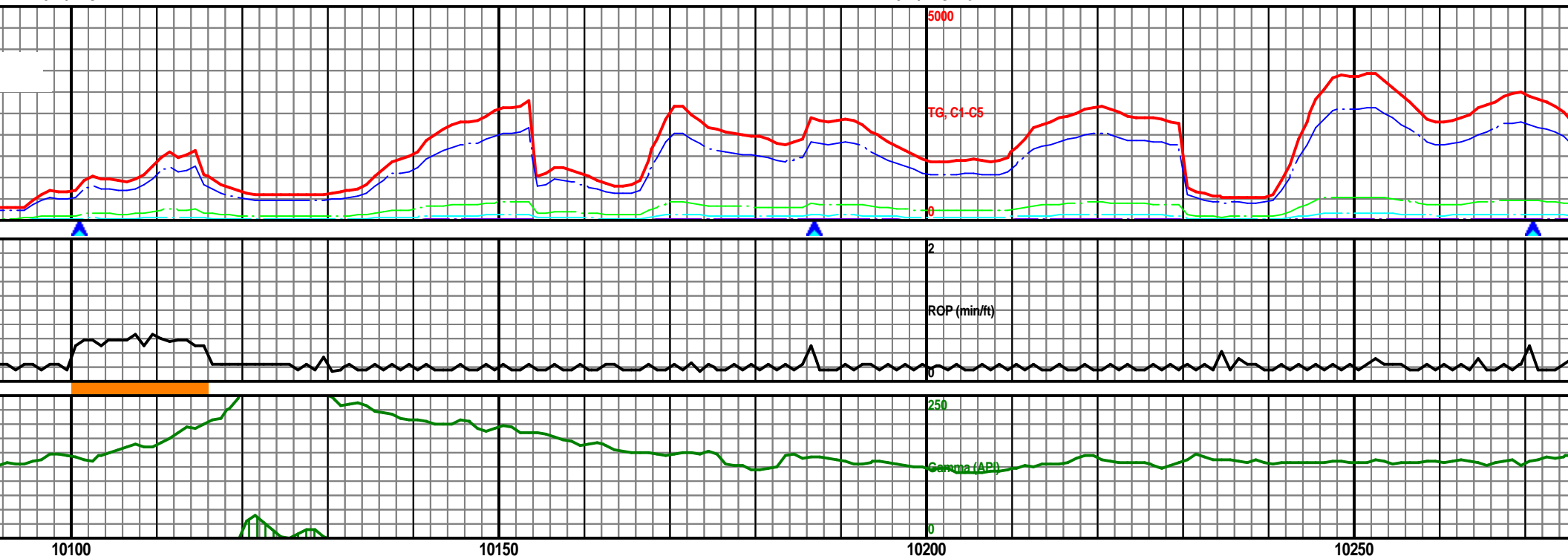
Mrlst 90%: lt-md gr, v calc, intbd biocl, frm, sbpity,  
no sfl, slw str wh-yiw cut. SH 10%: gy-dkgy, sft,  
sbpity-sbbiky, slty, grty, vs cal.

Mrlst  
no sfl  
sbpity

7200

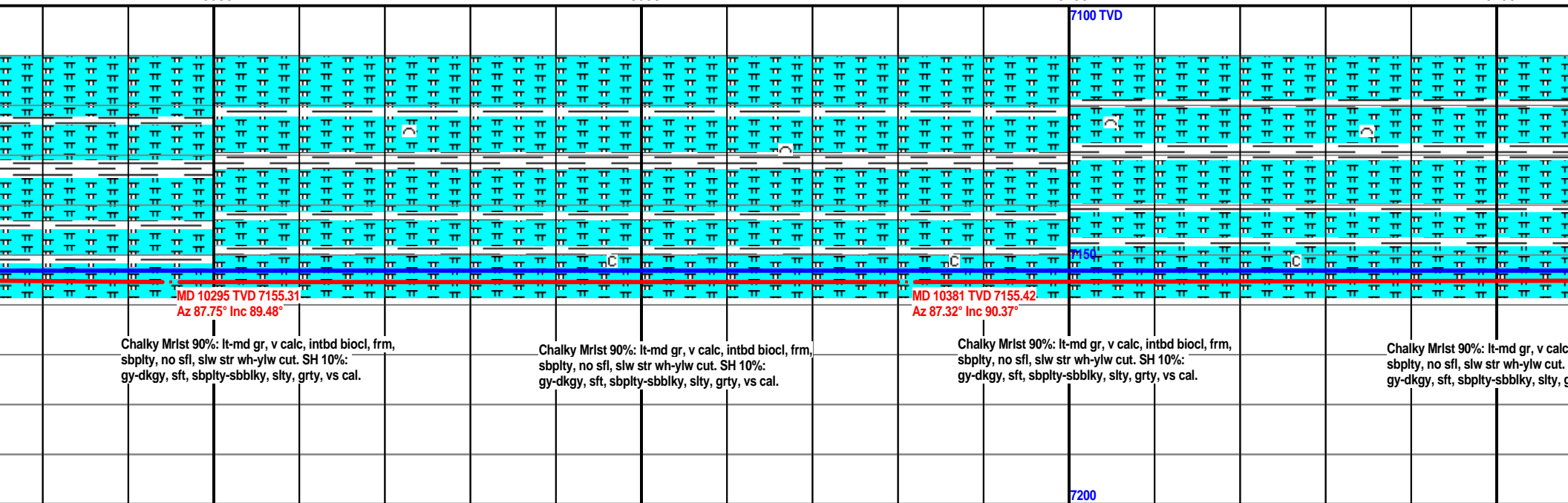
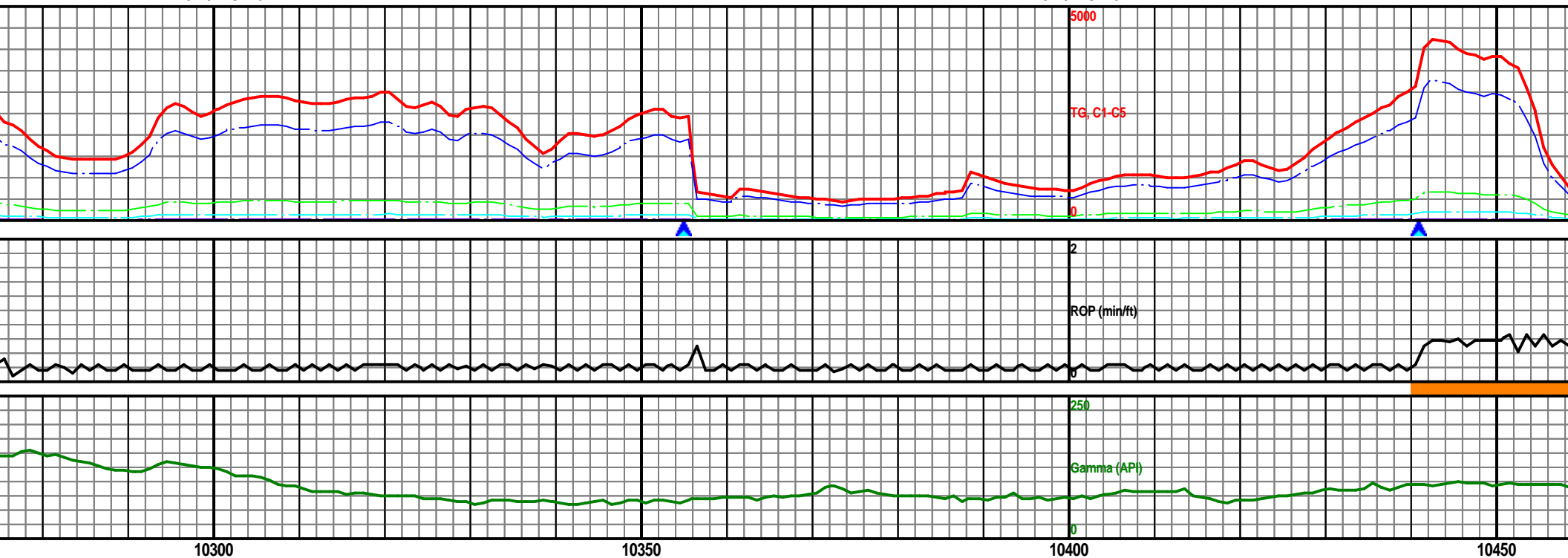
MW: 9.2 / VIS: 47

MW: 9.2 / VIS: 48



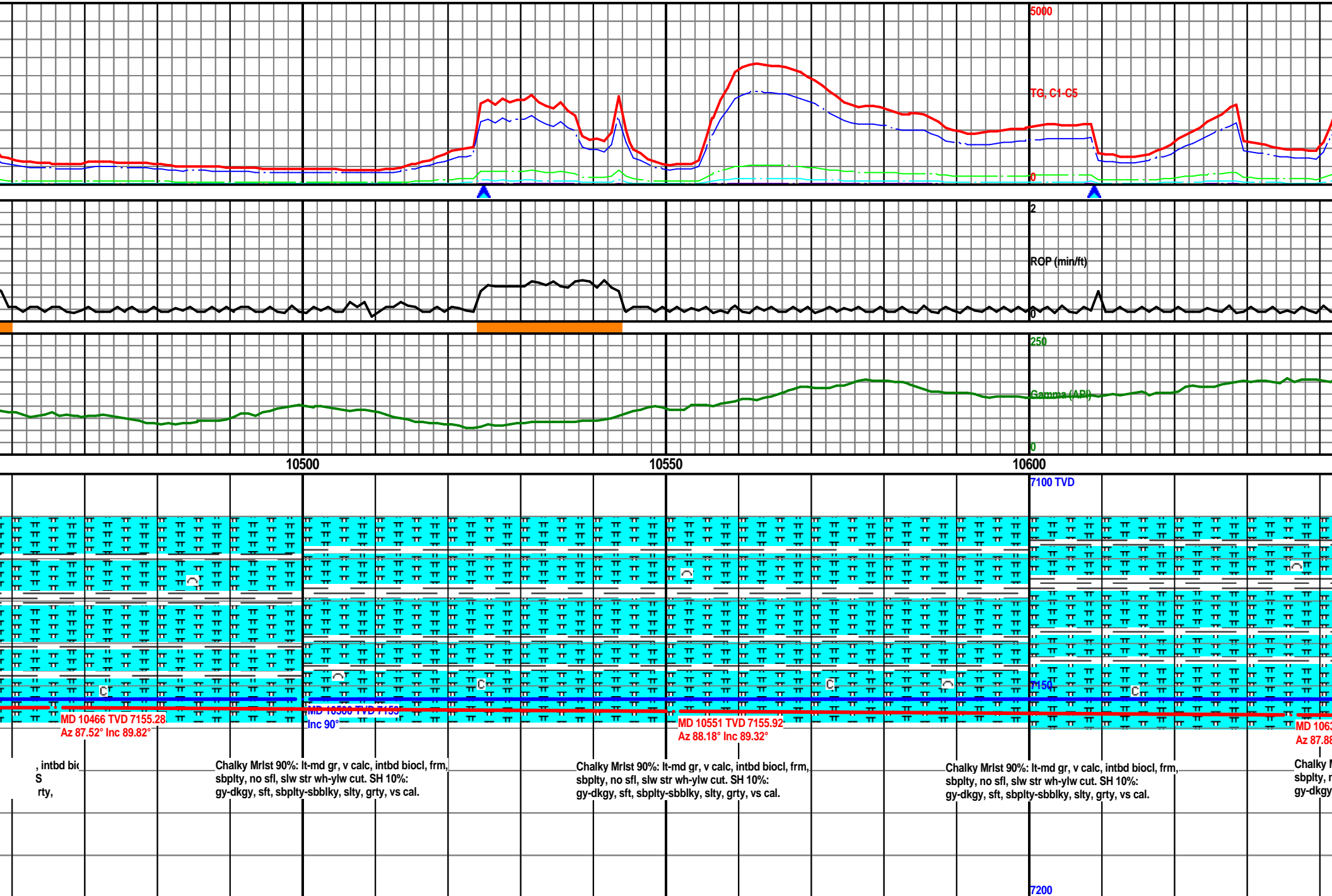
MW: 9.2 / VIS: 48

MW: 9.2 / VIS: 49



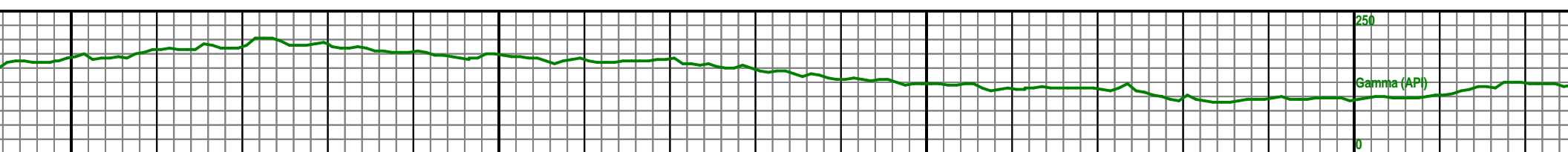
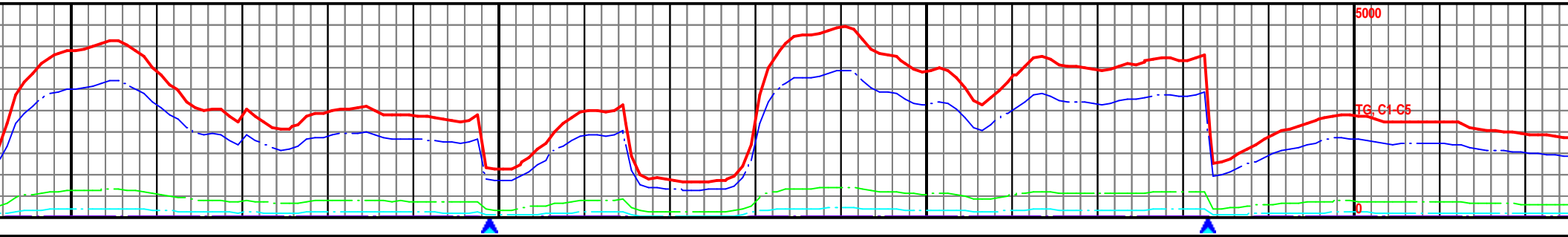
MW: 9.2 / VIS: 49

MW: 9.1 / VIS: 46



MW: 9.2 / VIS: 47

MW: 9.2 / VIS: 47

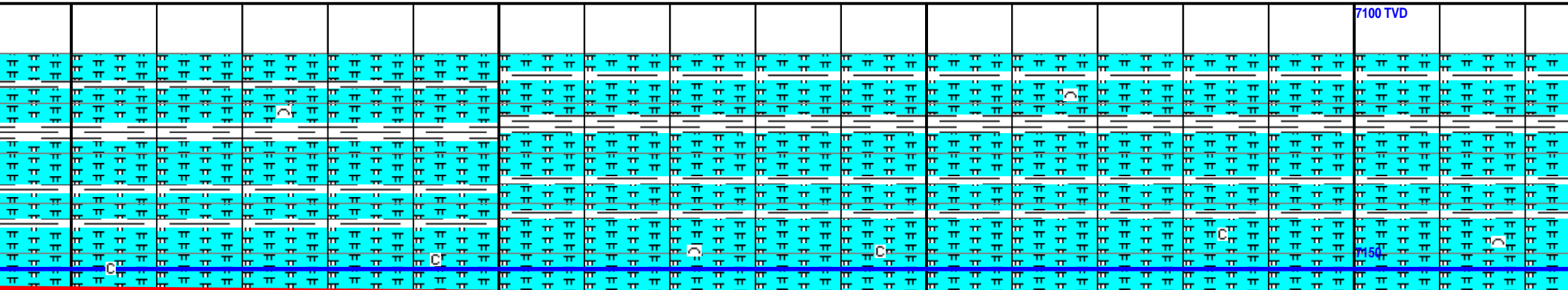


10650

10700

10750

10800

6 TVD  
° In

rlst 90%: lt-md gr, v calc, intbd bic  
o sfl, slw str wh-ylw cut. S  
, sft, sbpity-sbblky, slty, grty,

Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbpity, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbpity-sbblky, slty, grty, vs cal.

MD 10721 TVD 7157.87  
Az 87.78° Inc 89.26°

Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbpity, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbpity-sbblky, slty, grty, vs cal.

Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbpity, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbpity-sbblky, slty, grty, vs cal.

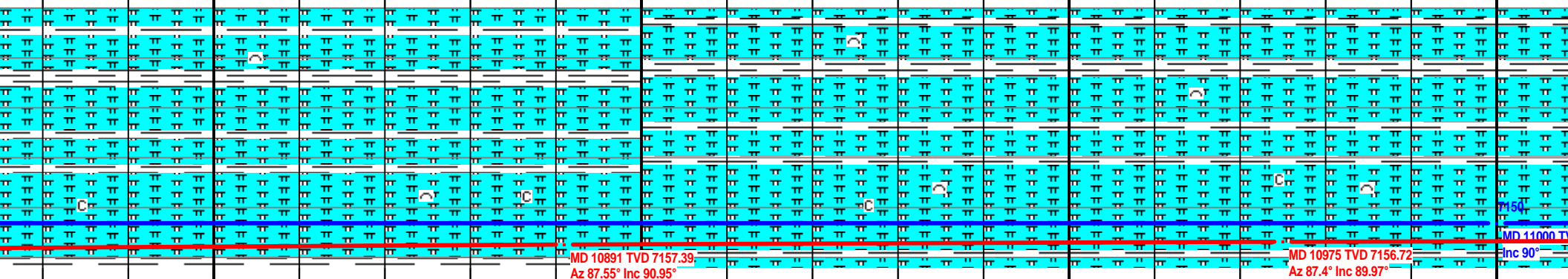
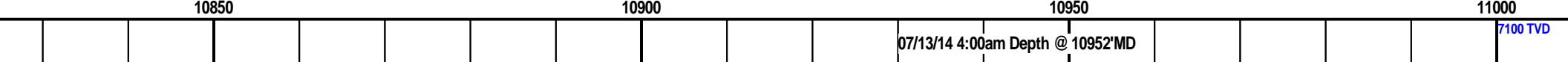
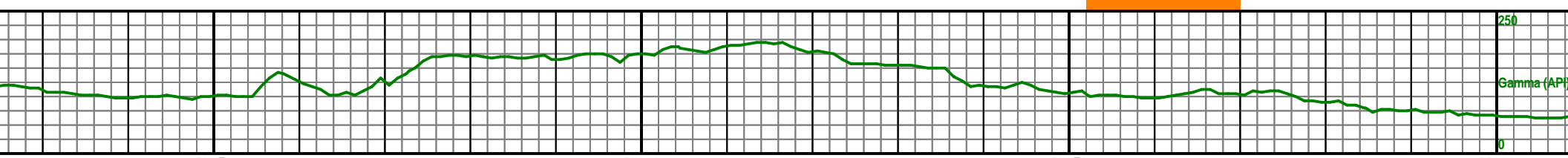
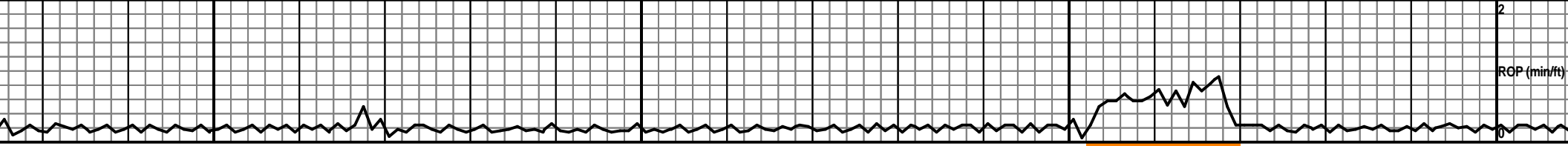
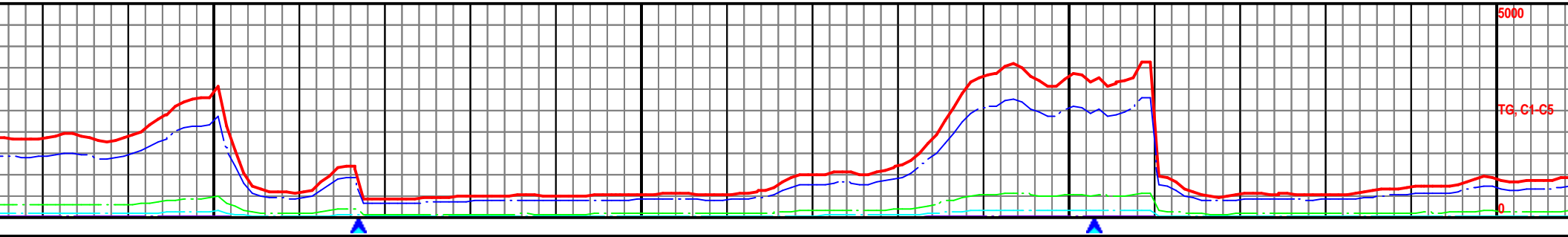
MD 10806 TVD 7158.26  
Az 87.61° Inc 90.22°

7200



MW: 9.2 / VIS: 47

MW: 9.2 / VIS: 47



Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbbkly, slty, grty, vs cal.

Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbbkly, slty, grty, vs cal. Tr  
Bent.

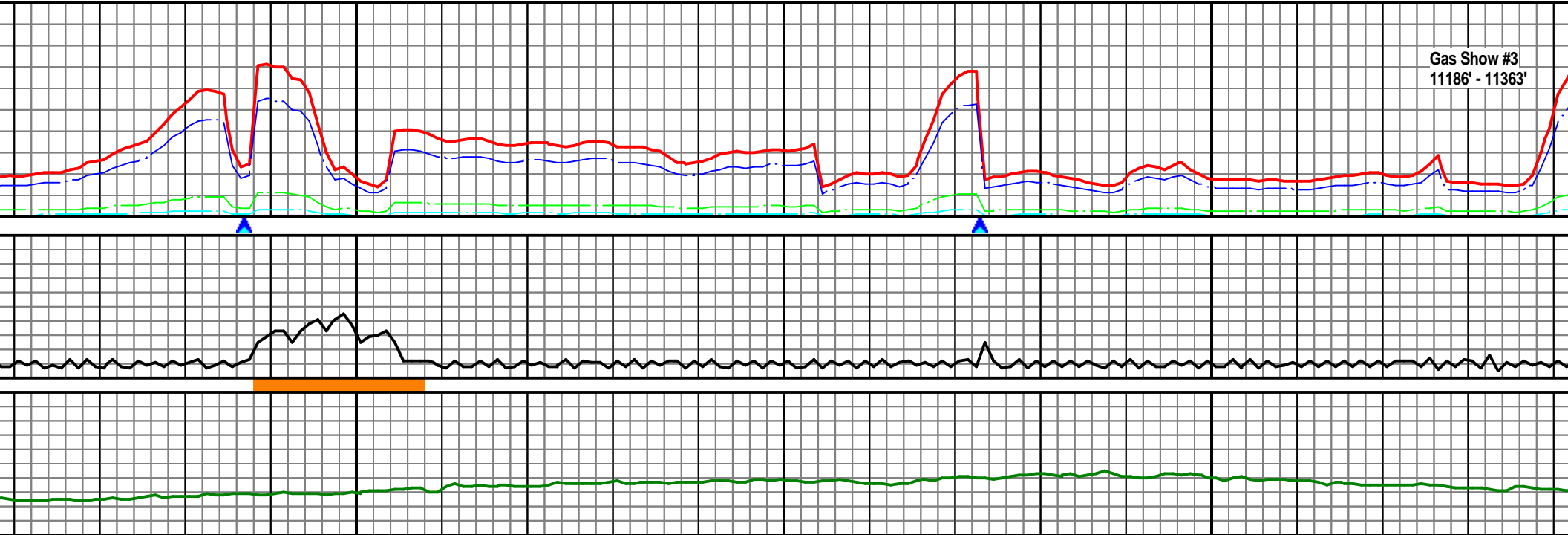
Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbbkly, slty, grty, vs cal. Tr  
Bent.

Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbbkly, slty, grty, vs cal.

7200

MW: 9.2 / VIS: 47

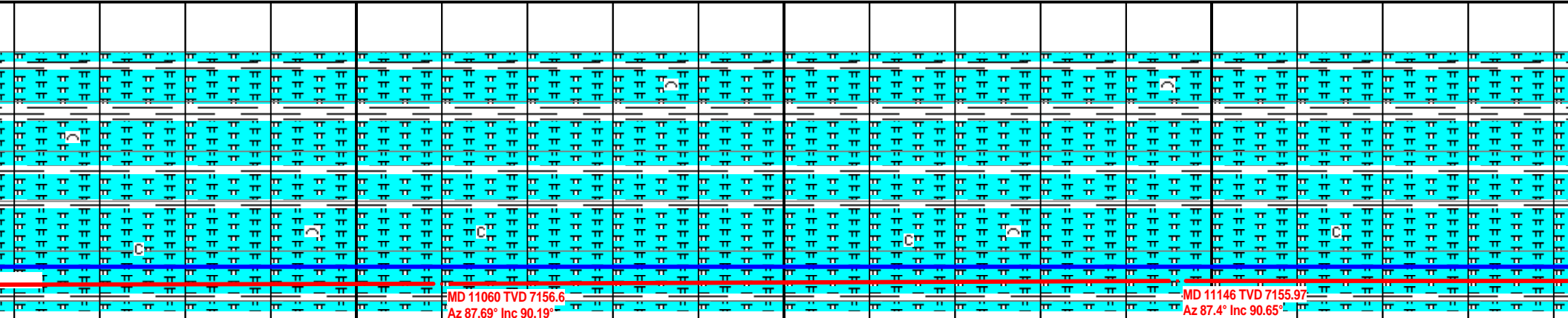
Gas Show #3  
11186' - 11363'



11050

11100

11150



MD 11060 TVD 7156.6  
Az 87.69° Inc 90.19°

MD 11146 TVD 7155.97  
Az 87.4° Inc 90.65°

c, intbd bi  
. S  
grty

Chalky Mrst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbply, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbply-sbbiky, slty, grty, vs cal.

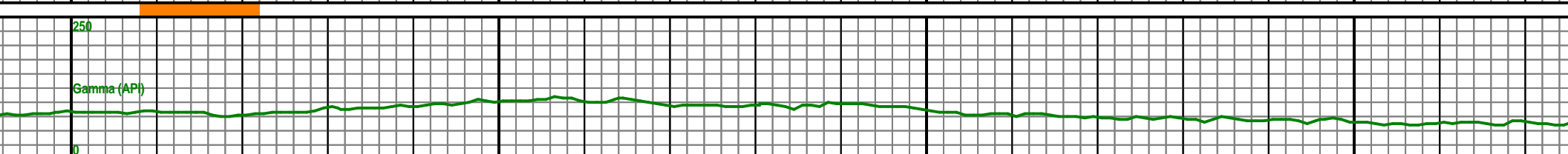
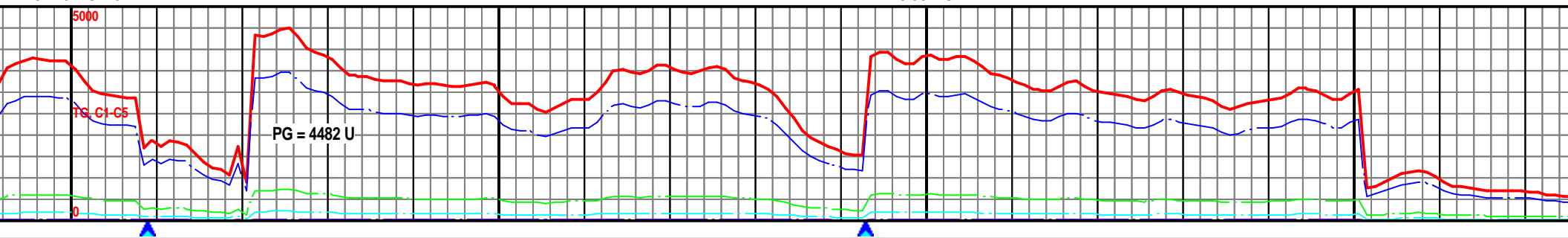
Chalky Mrst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbply, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbply-sbbiky, slty, grty, vs cal.

Chalky Mrst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbply, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbply-sbbiky, slty, grty, vs cal.

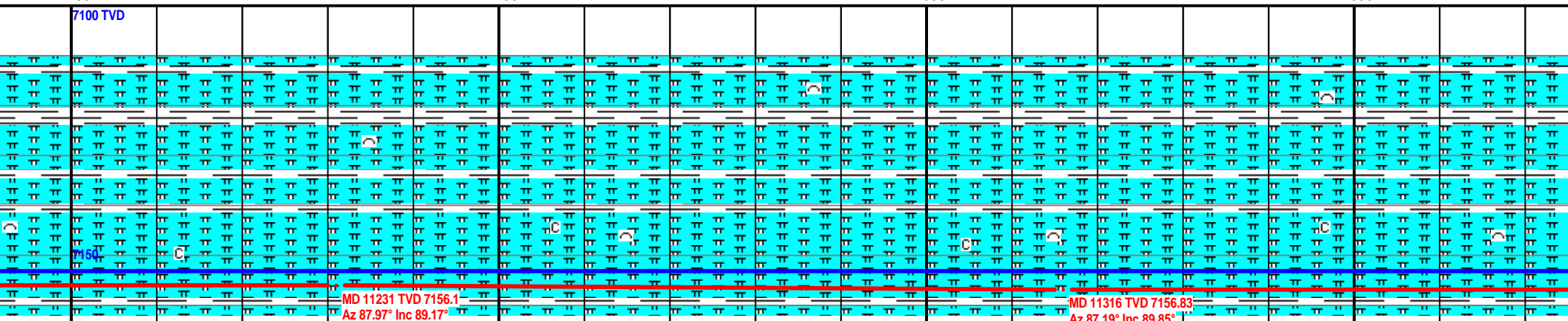
Chalk  
sbply  
gy-dk

MW: 9.2+ / VIS: 46

MW: 9.3 / VIS: 47



11200 11250 11300 11350



y Mrlst 90%: lt-md gr, v calc, intbd biol, frm,  
sbplty, no sfl, slw str wh-ylw cut. S  
gy, sft, sbplty-sbblky, slty, grty

Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbblky, slty, grty, vs cal.

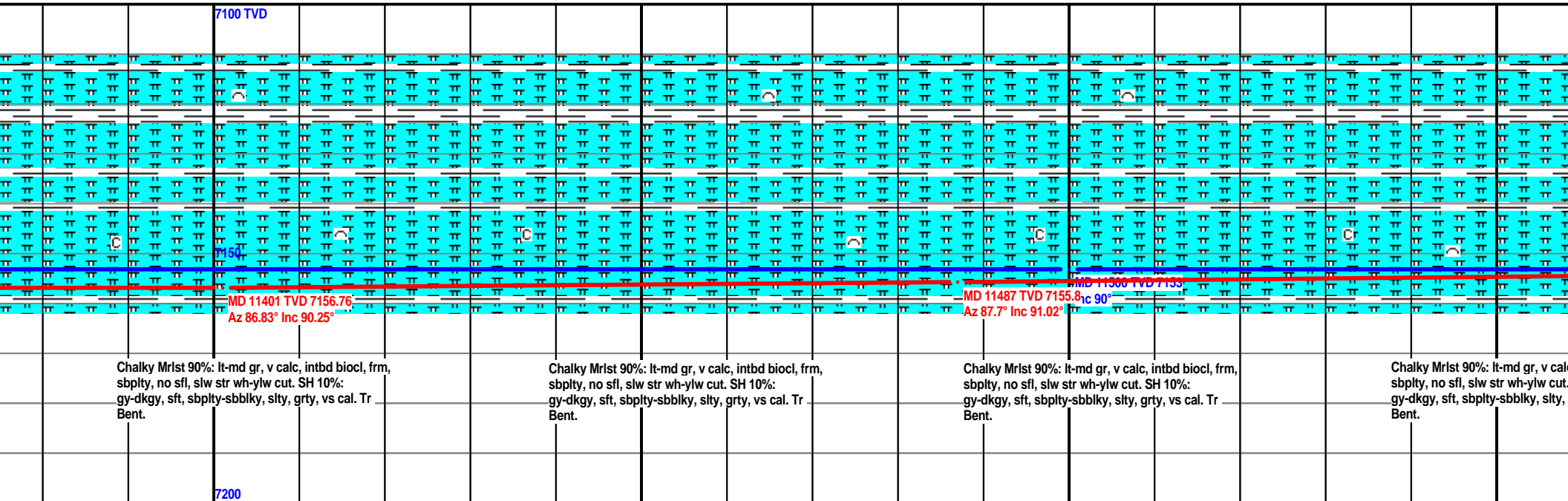
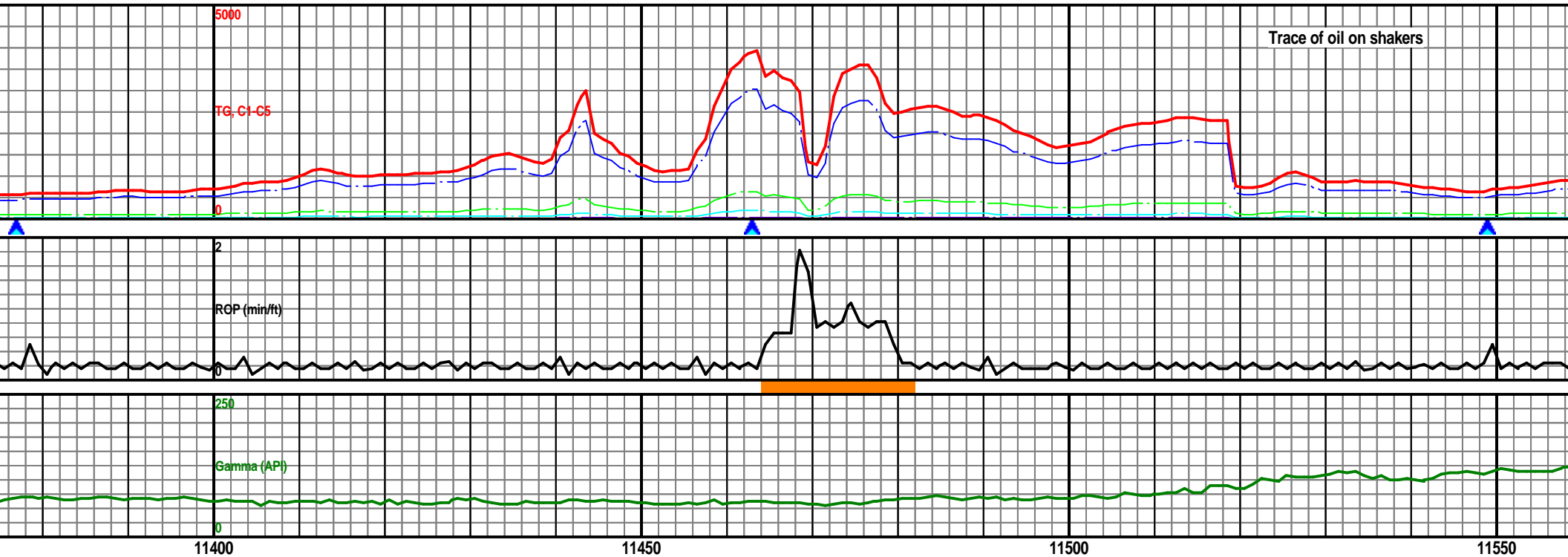
Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbblky, slty, grty, vs cal.

Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbblky, slty, grty, vs cal.

7200

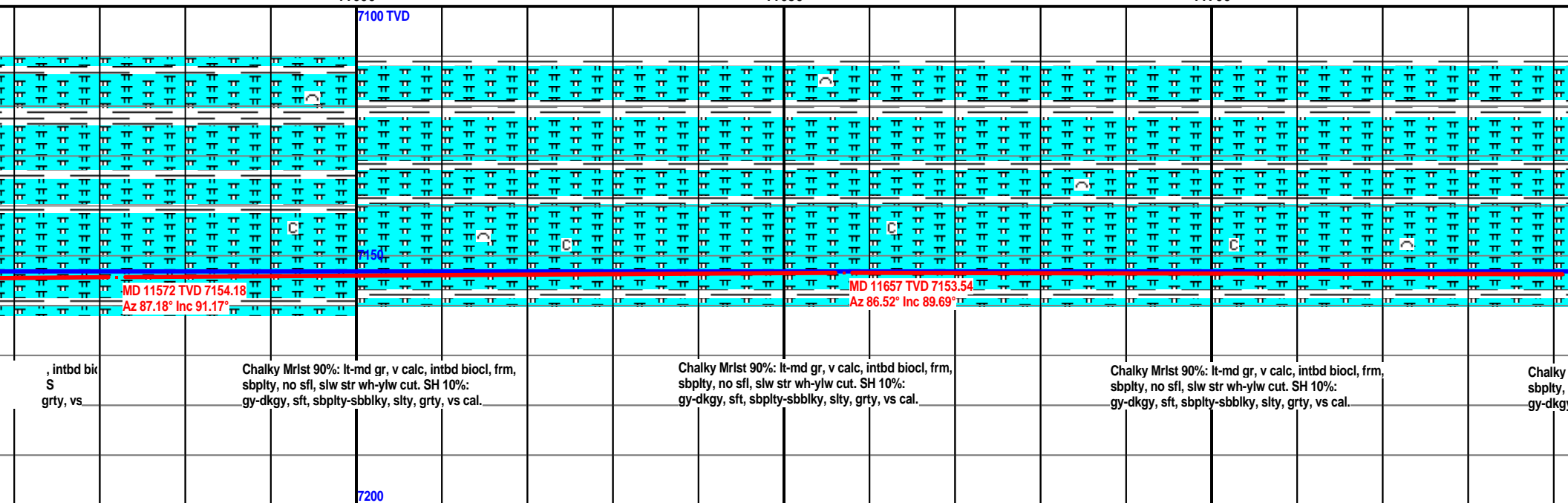
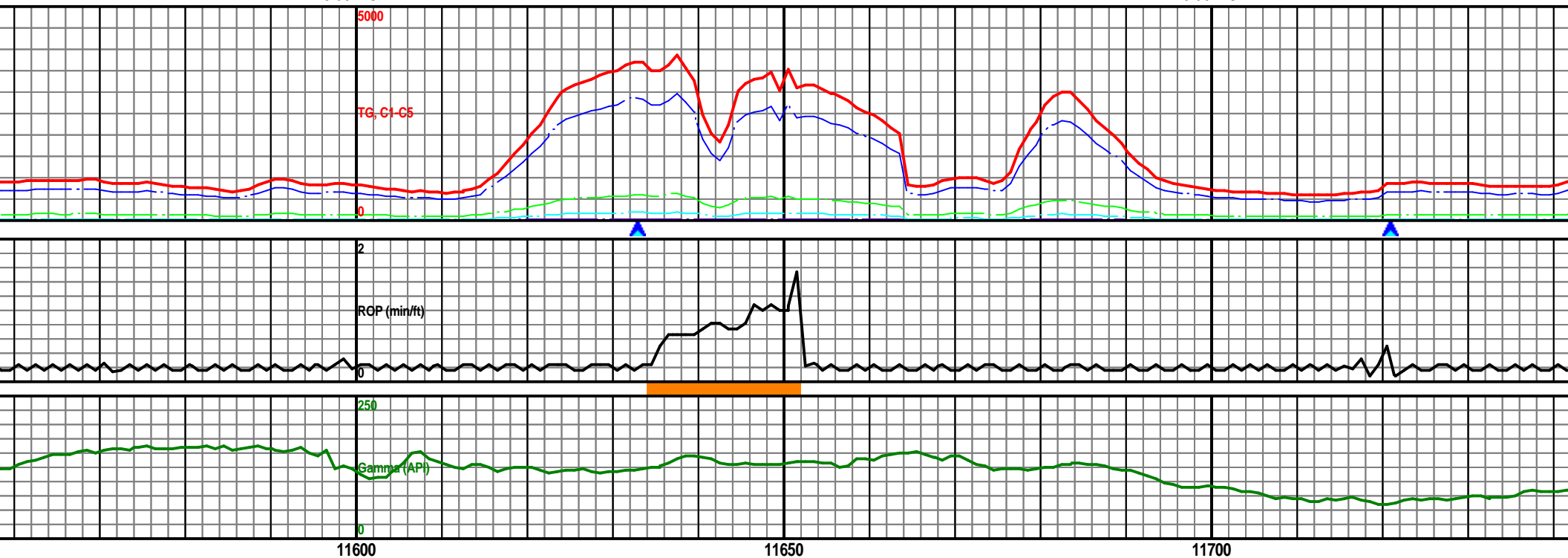
MW: 9.3 / VIS: 47

MW: 9.3 / VIS: 47



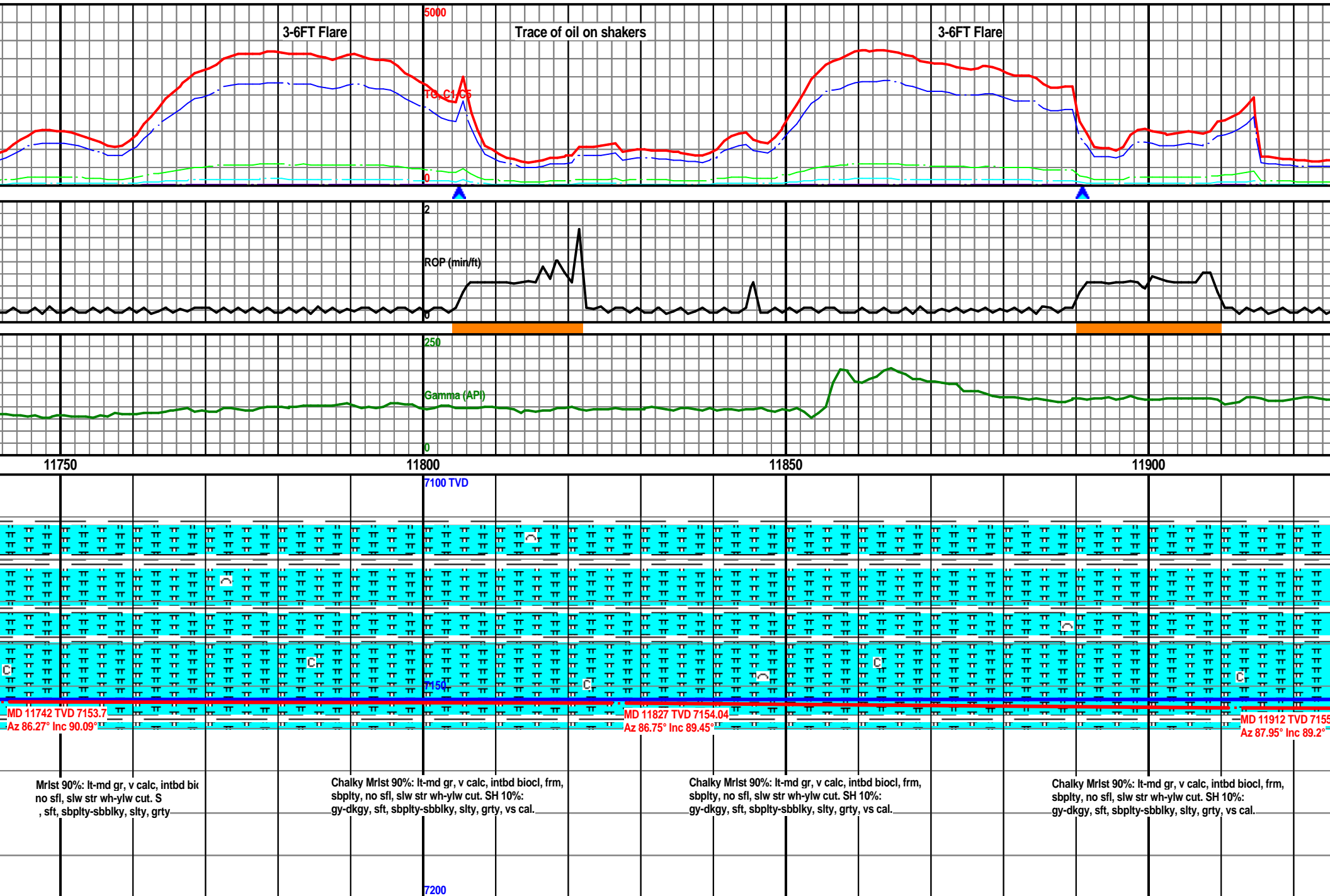
MW: 9.3 / VIS: 47

MW: 9.3 / VIS: 47



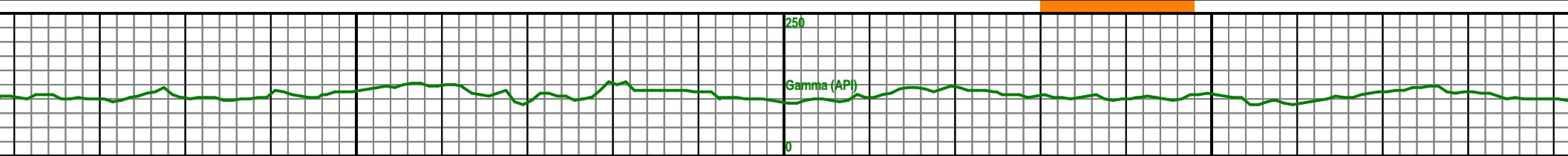
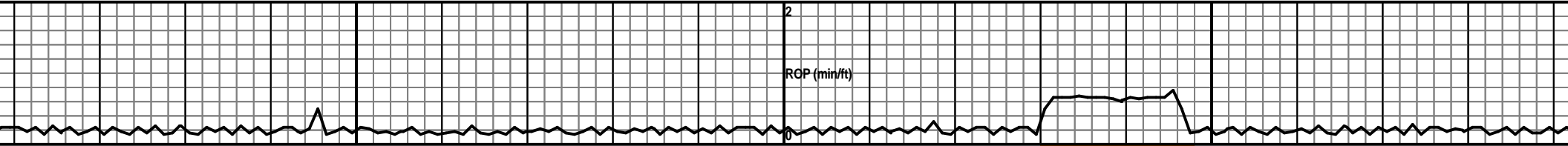
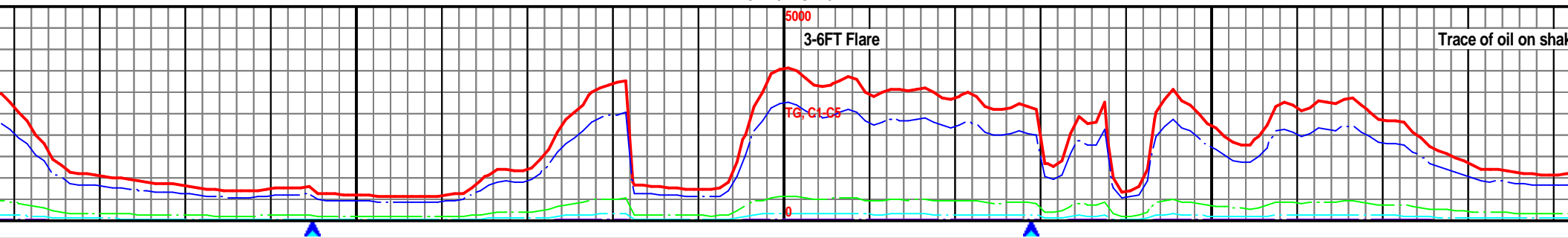
MW: 9.3 / VIS: 47

MW: 9.2+ / VIS: 45





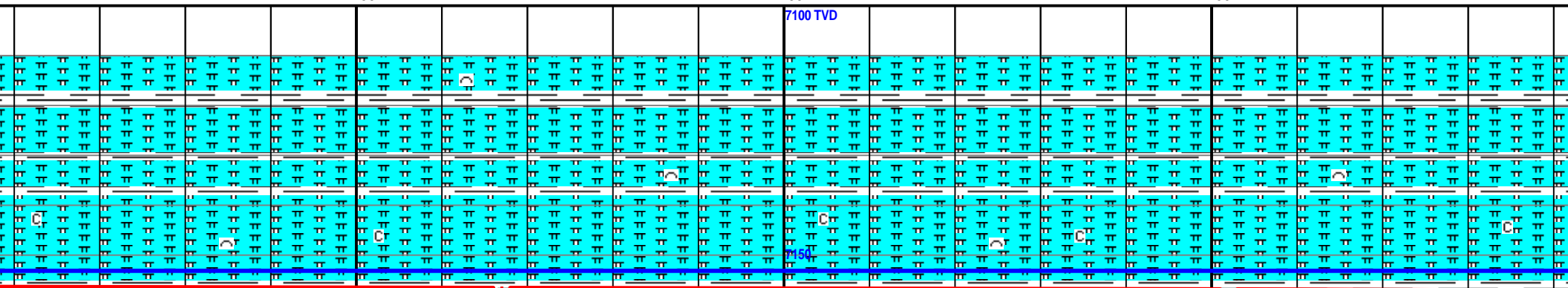
MW: 9.1+ / VIS: 45



12150

12200

12250



MD 12167 TVD 7156.62  
Az 88.02° Inc 90.06°

MD 12252 TVD 7156.87  
Az 88.38° Inc 89.6°

, intbd bik  
S  
grty

Chalky Mrst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbply, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbply-sbbiky, slty, grty, vs cal.

Chalky Mrst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbply, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbply-sbbiky, slty, grty, vs cal.

Chalky Mrst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbply, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbply-sbbiky, slty, grty, vs cal.

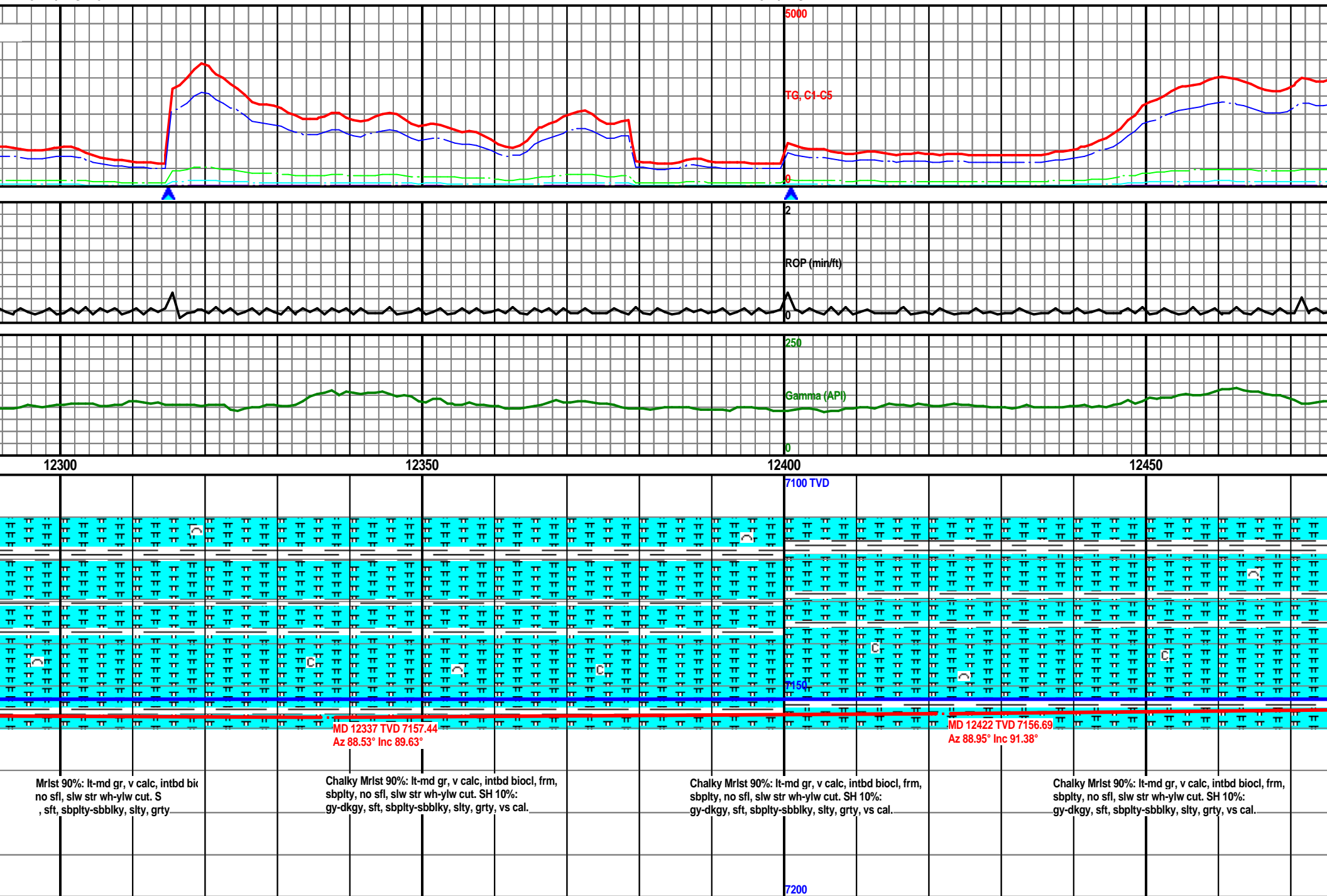
Chalky  
sbply,  
gy-dkgy

7200



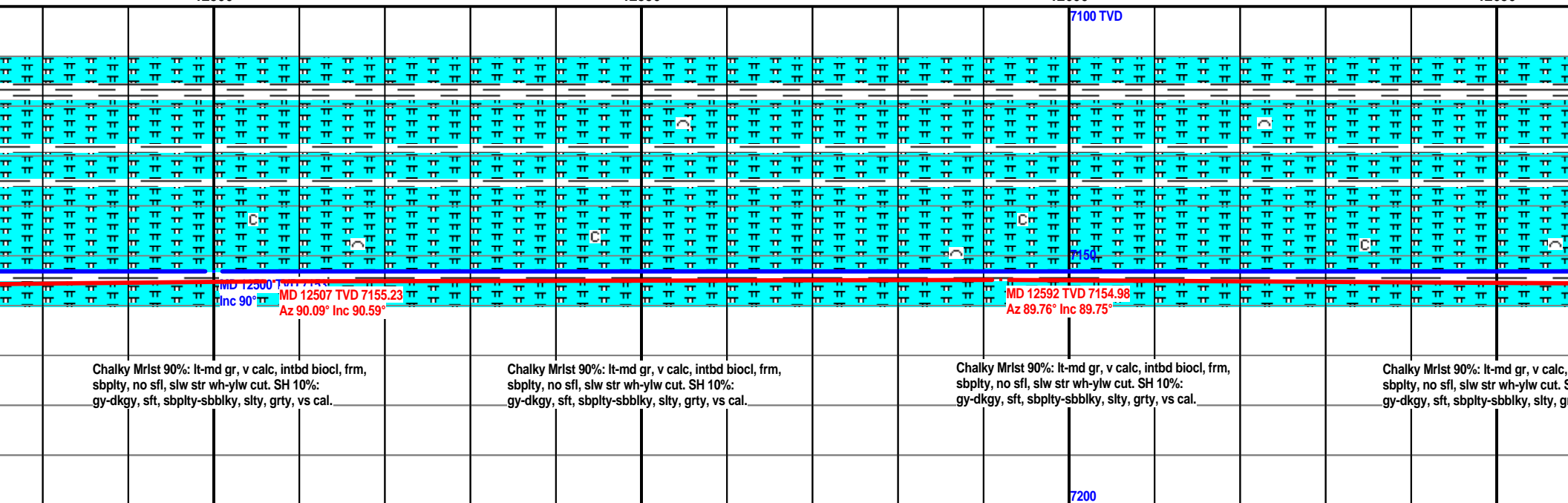
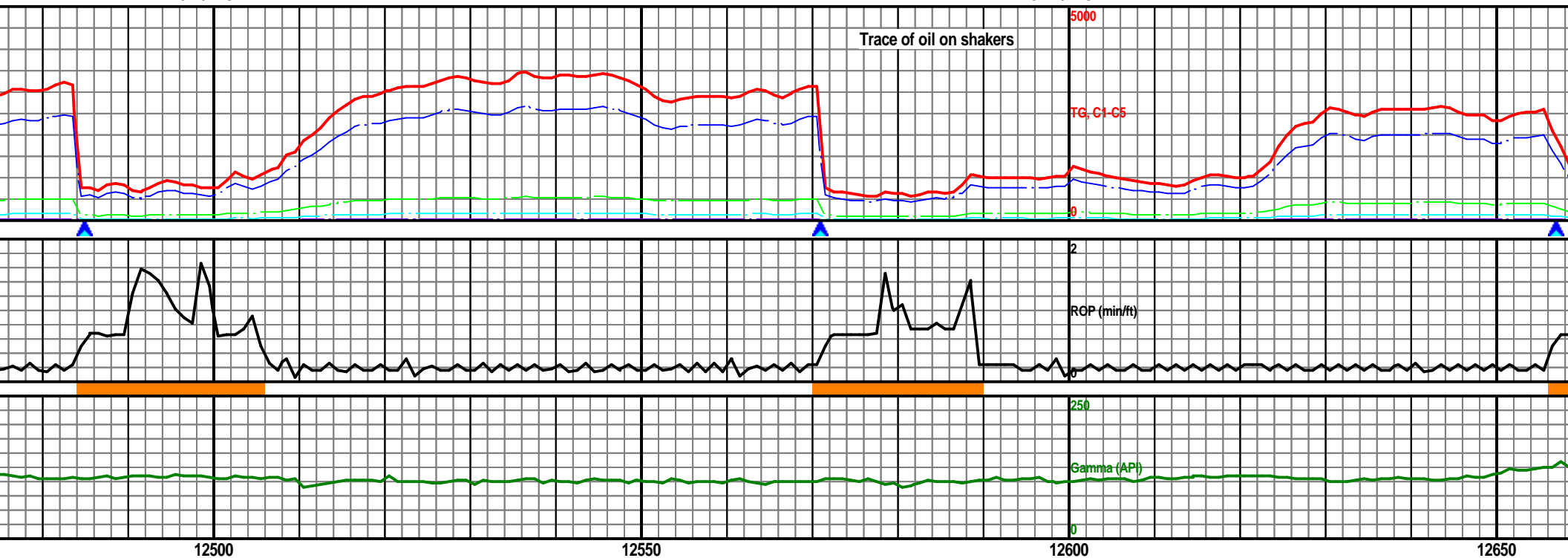
MW: 9.1+ / VIS: 45

MW: 9.1 / VIS: 42



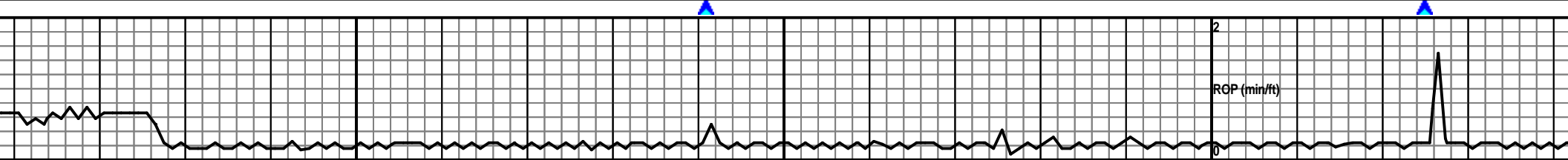
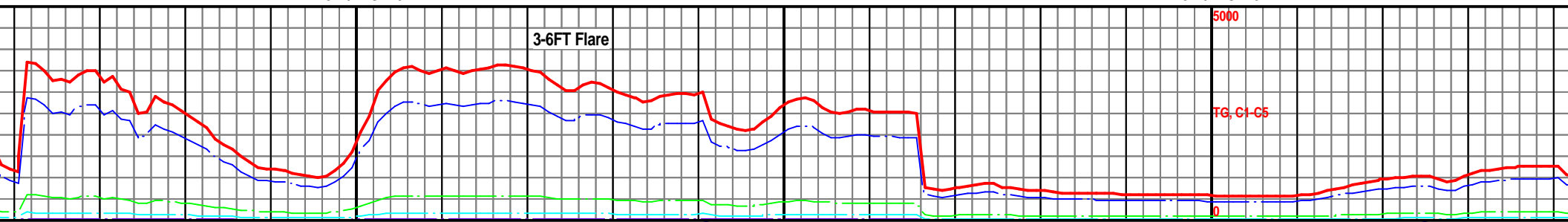
MW: 9.1 / VIS: 42

MW: 9.1+ / VIS: 44



MW: 9.1 / VIS: 40

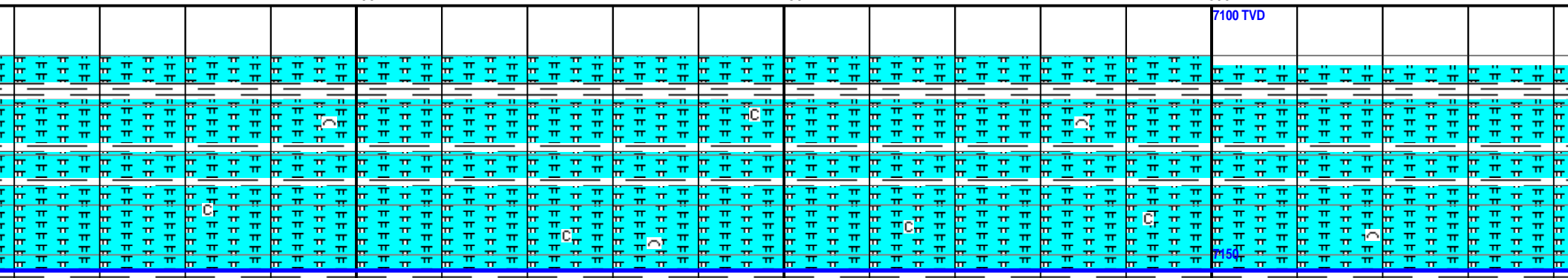
MW: 9.1 / VIS: 40



12700

12750

12800



MD 12677 TVD 7155.77  
Az 90.23° Inc 89.19°

MD 12763 TVD 7156.65  
Az 90.22° Inc 89.63°

intbd bic  
ty

Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbbiky, slty, grty, vs cal.

Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbbiky, slty, grty, vs cal.

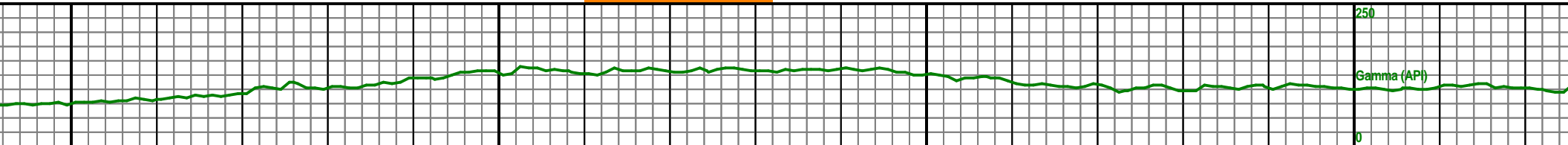
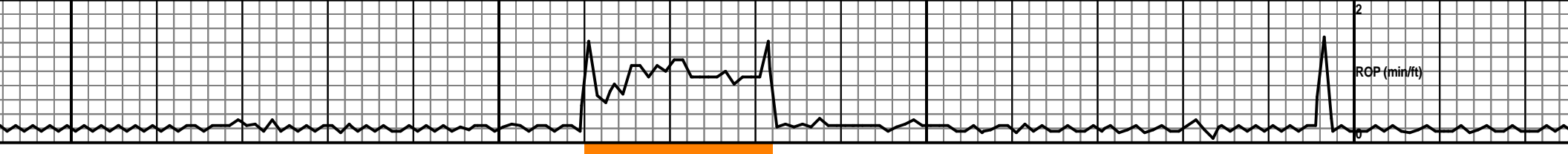
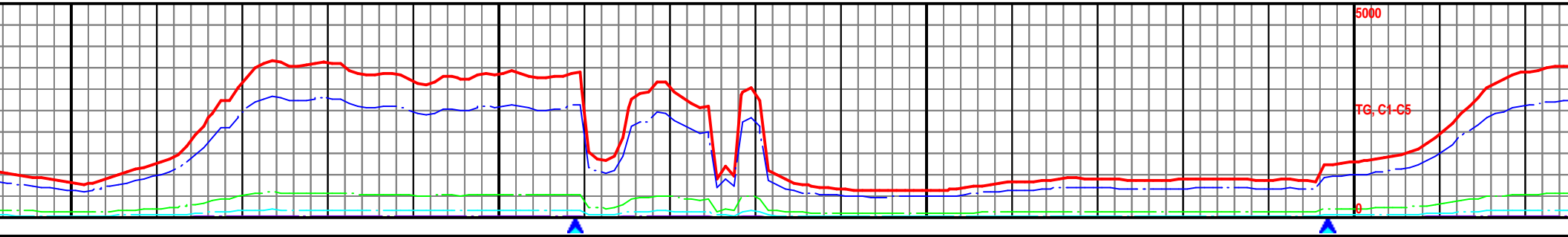
Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbbiky, slty, grty, vs cal.

C  
s  
g

7200

MW: 9.1 / VIS: 40

MW: 9.1 / VIS: 40

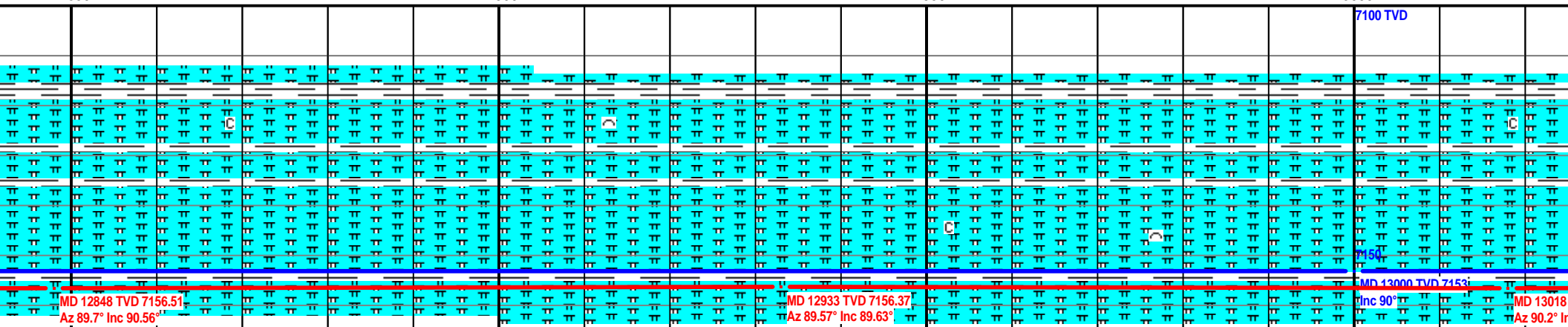


12850

12900

12950

13000



chalky Mrlst 90%: lt-md gr, v calc, intbd bic  
plty, no sfl, slw str wh-ylw cut. S  
y-dkgy, sft, sbplty-sbbkly, slty, grty

Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbbkly, slty, grty, vs cal.

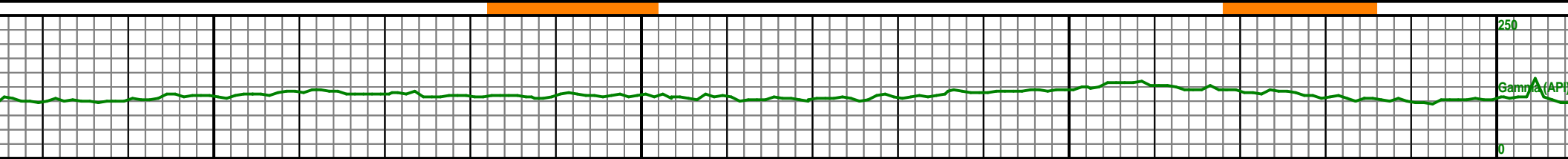
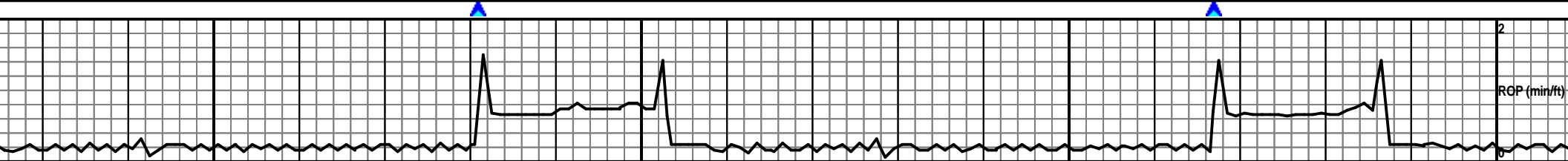
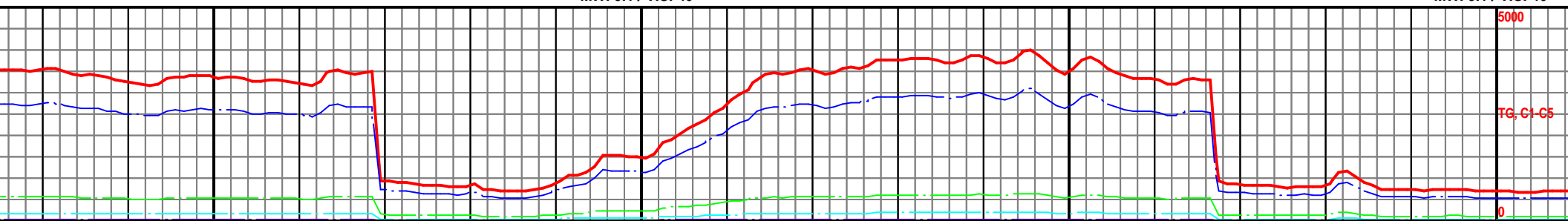
Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbbkly, slty, grty, vs cal.

Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbbkly, slty, grty, vs cal.

7200

MW: 9.1 / VIS: 40

MW: 9.1 / VIS: 46

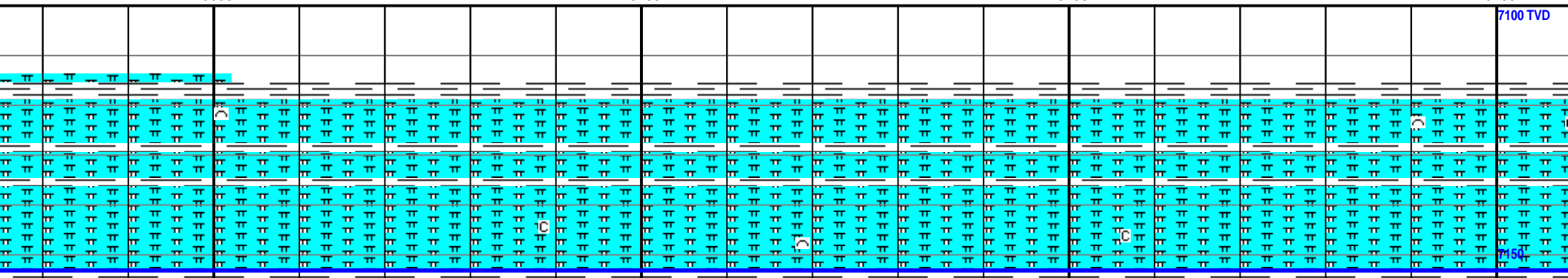


13050

13100

13150

13200



TVD

MD 13103 TVD 7156.41  
Az 91.3° Inc 89.88°MD 13188 TVD 7156.7  
Az 91.98° Inc 89.72°

Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbblky, slty, grty, vs cal.

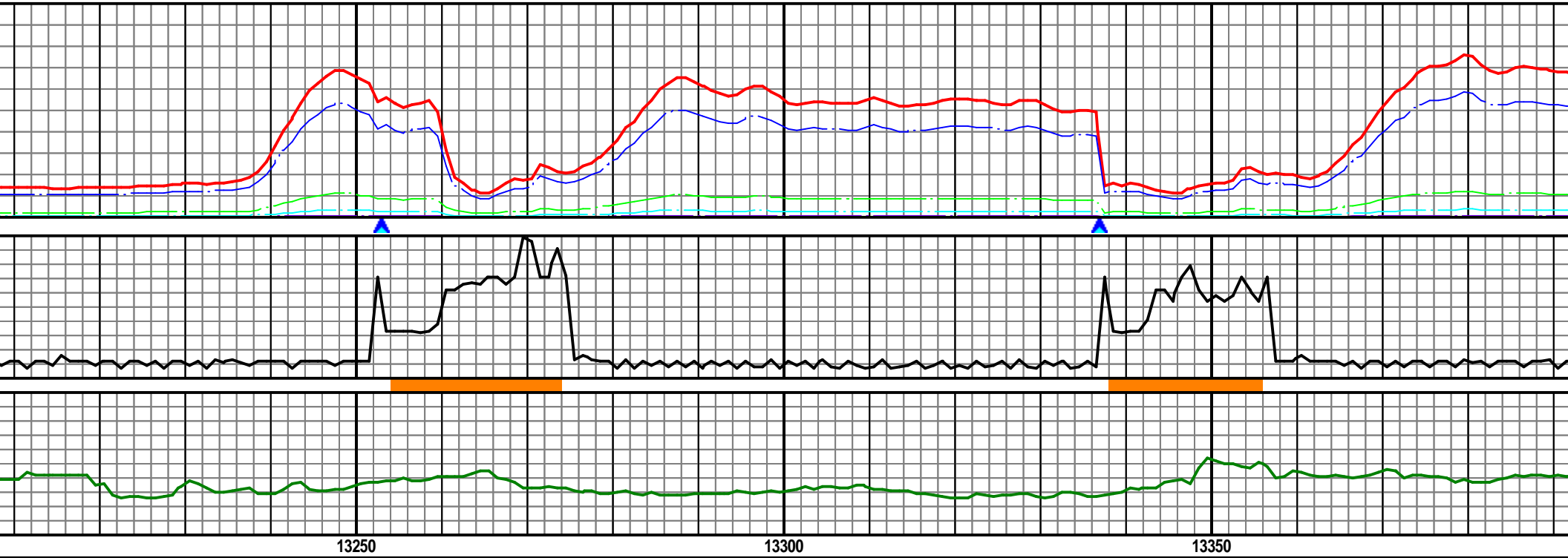
Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbblky, slty, grty, vs cal.

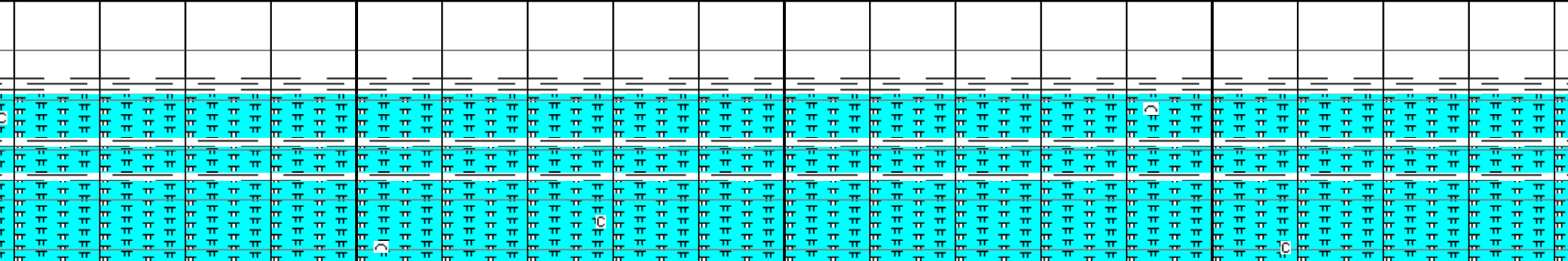
Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbblky, slty, grty, vs cal.

Chalky Mrlst 90%: lt-md gr,  
sbplty, no sfl, slw str wh-ylw  
gy-dkgy, sft, sbplty-sbblky,

7200

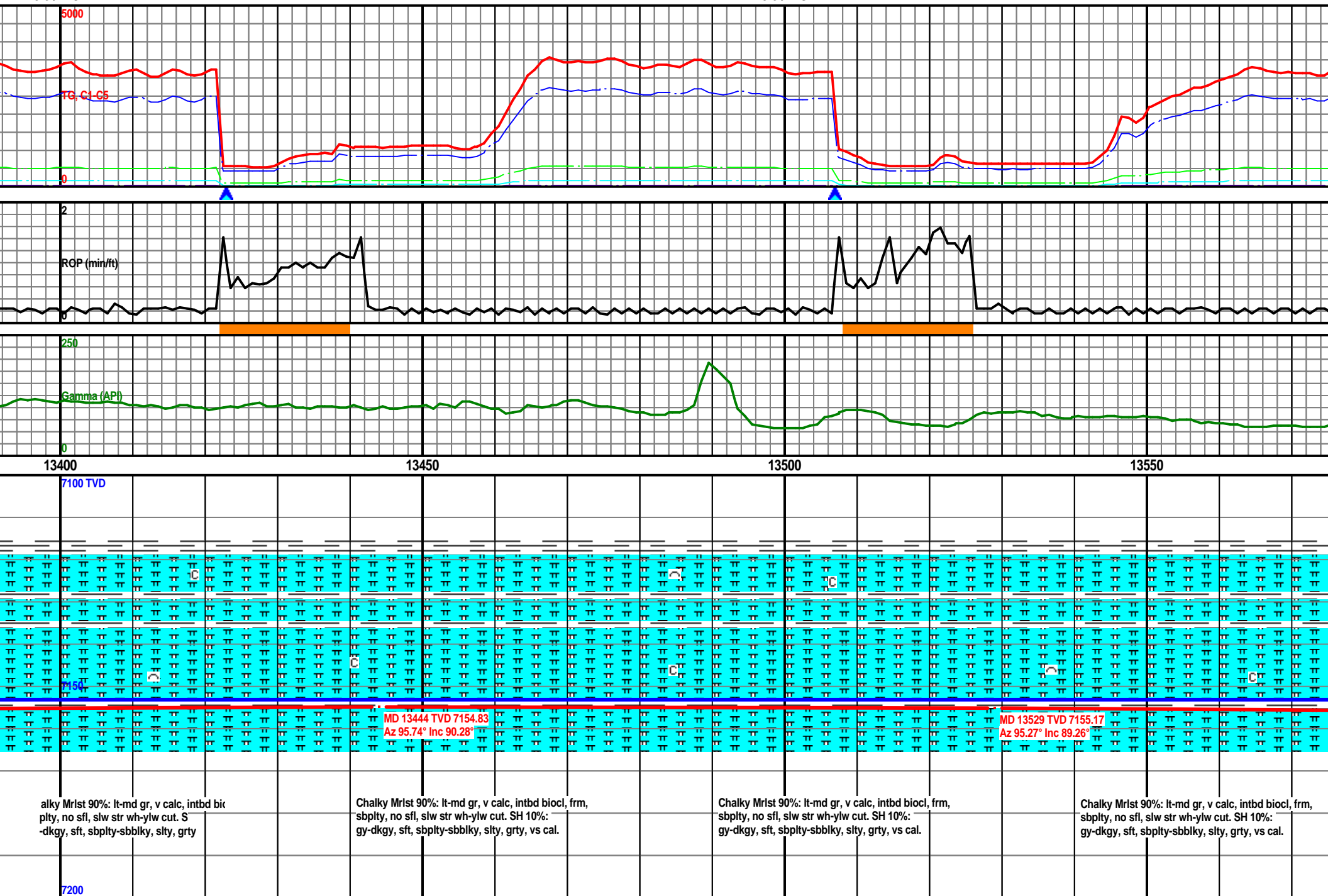
MW: 9.2 / VIS: 46



																													
v calc, intbd bic cut. S silty, grty										Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm, sbplty, no sfl, slw str wh-yiw cut. SH 10%: gy-dkgy, sft, sbplty-sbbiky, slty, grty, vs cal.										Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm, sbplty, no sfl, slw str wh-yiw cut. SH 10%: gy-dkgy, sft, sbplty-sbbiky, slty, grty, vs cal.									

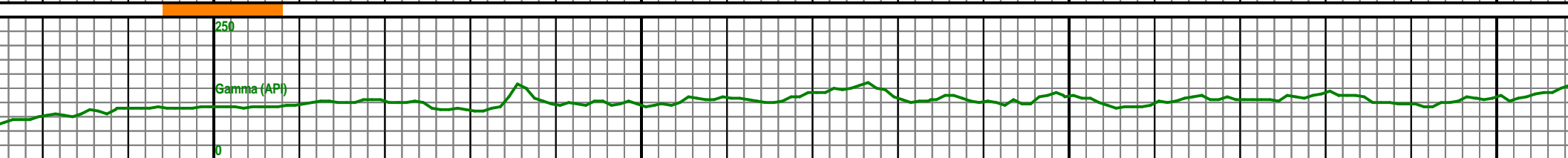
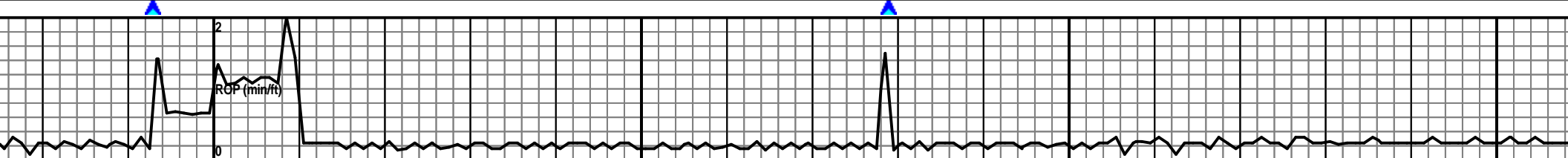
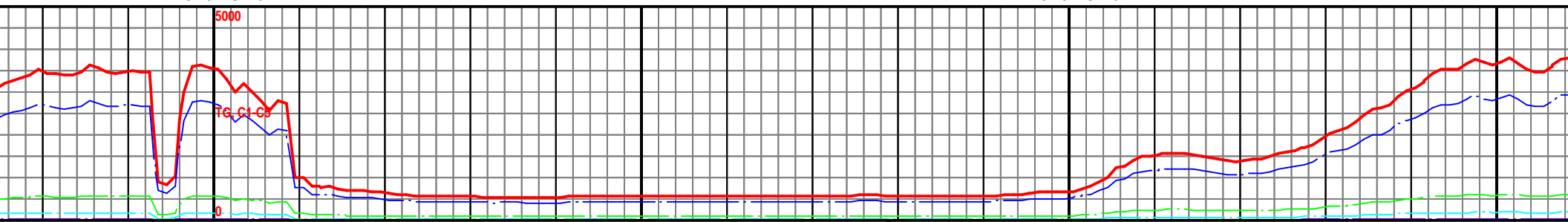
MW: 9.3 / VIS: 47

MW: 9.3 / VIS: 47



MW: 9.4 / VIS: 46

MW: 9.4 / VIS: 46



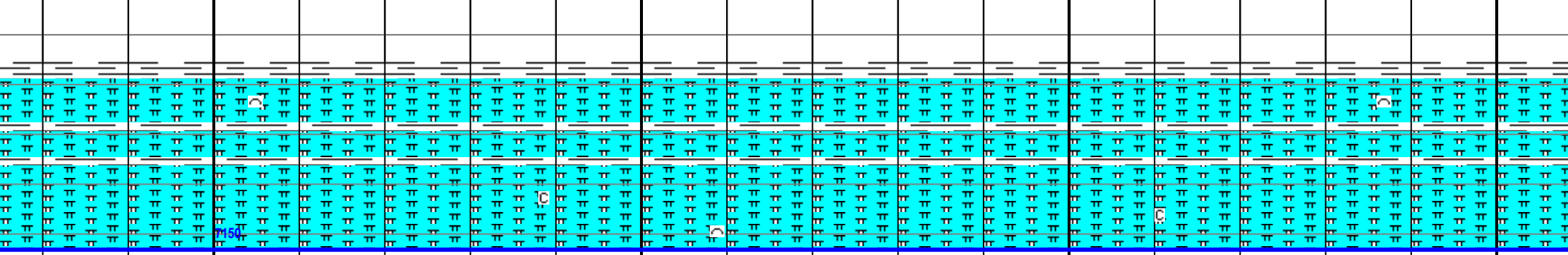
13600

13650

13700

13750

7100 TVD



MD 13614 TVD 7155.97  
Az 93.94° Inc 89.66°

MD 13699 TVD 7156.04  
Az 93.92° Inc 90.25°

Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbblky, slty, grty, vs cal.

Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbblky, slty, grty, vs cal.

Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbblky, slty, grty, vs cal.

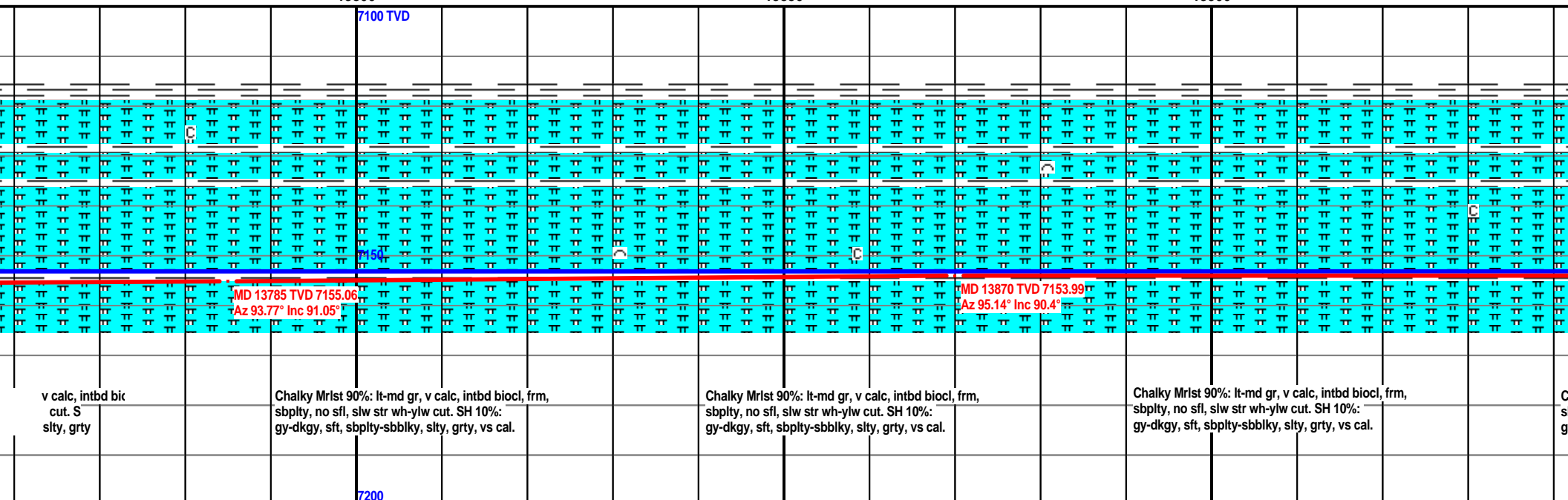
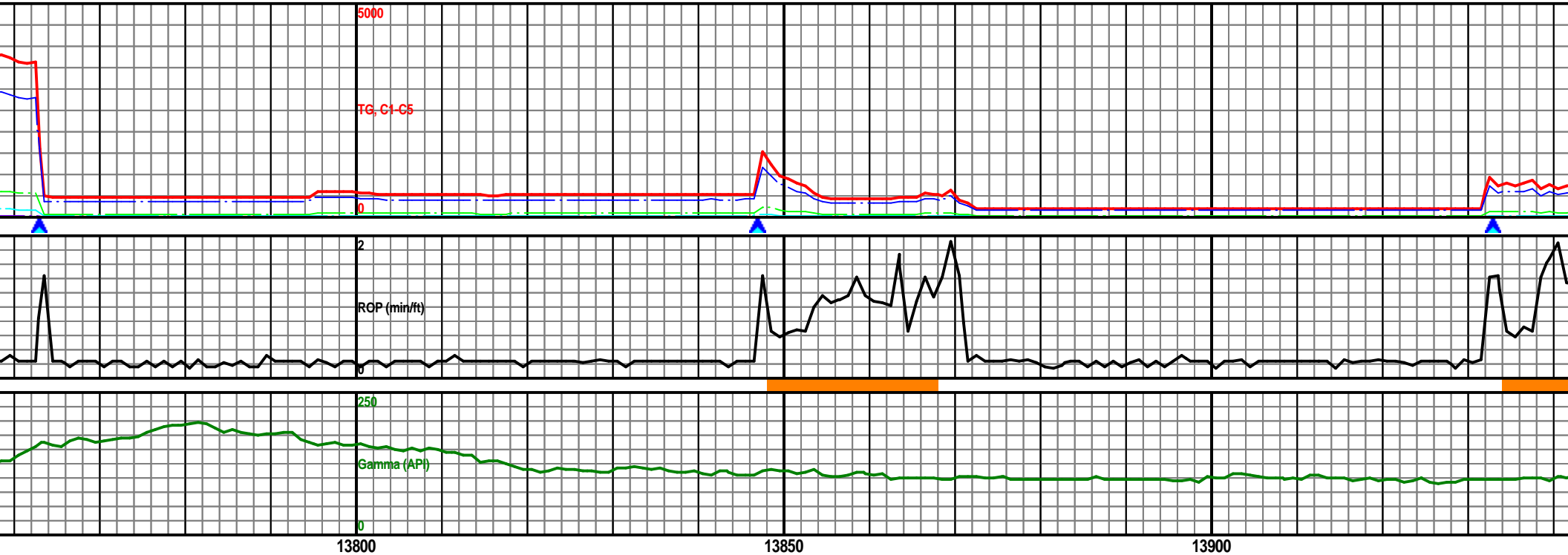
Chalky Mrlst 90%: lt-md gr,  
sbplty, no sfl, slw str wh-ylw  
gy-dkgy, sft, sbplty-sbblky,

7200



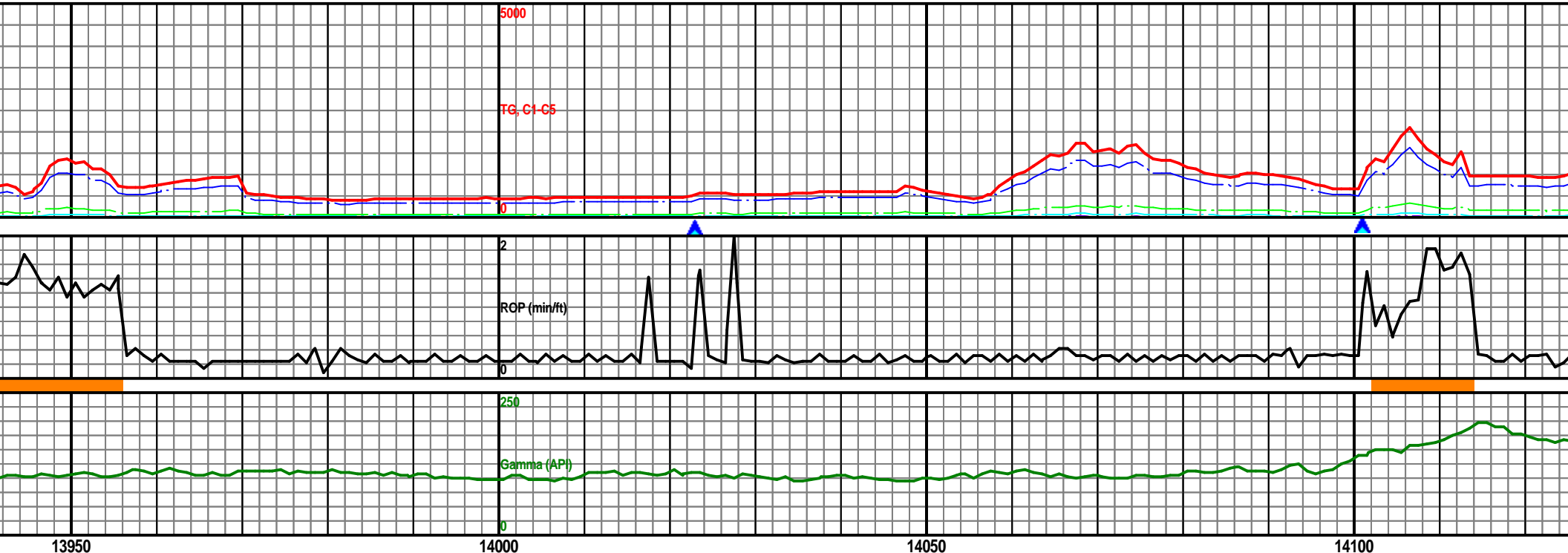
MW: 9.4 / VIS: 46

MW: 9.4 / VIS: 46



MW: 9.7 / VIS: 46

MW: 9.7 / VIS: 46



4:00AM 7/14/14 Depth @ 13853' MD

7100 TVD

7150

MD 14000 TVD 7153

MD 14040 TVD 7154.1

chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
plty, no sfl, slw str wh-ylw cut. S  
y-dkgy, sft, sbplty-sbblky, slty, grty

Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbblky, slty, grty, vs cal.

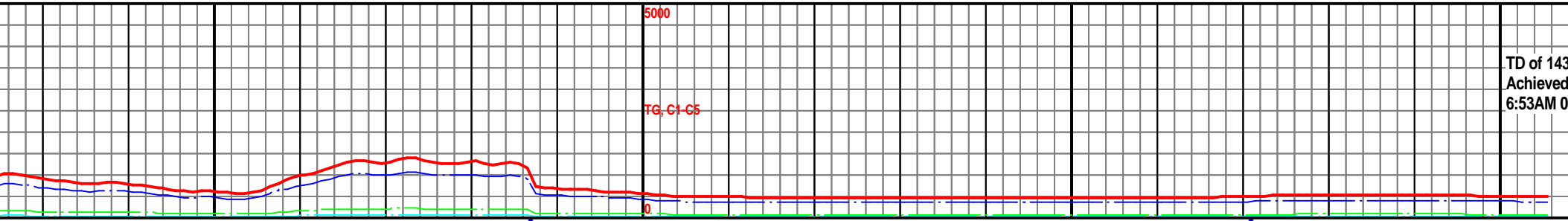
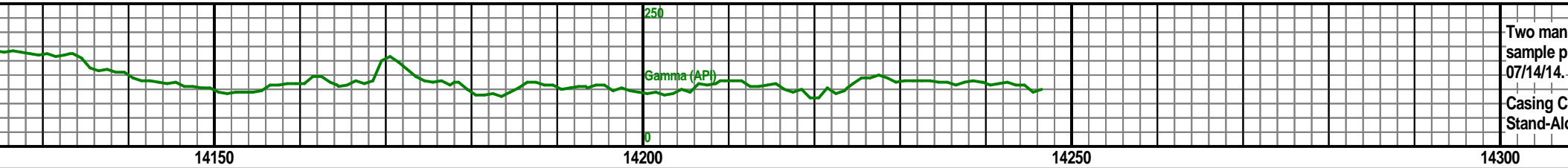
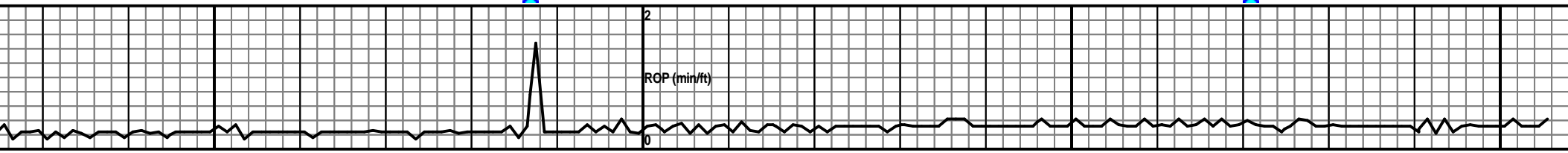
Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbblky, slty, grty, vs cal.

Chalky Mrlst 90%: lt-md gr, v calc, intbd biocl, frm,  
sbplty, no sfl, slw str wh-ylw cut. SH 10%:  
gy-dkgy, sft, sbplty-sbblky, slty, grty, vs cal.

7200

MW: 9.6 / VIS: 50

MW: 9.7 / VIS: 45

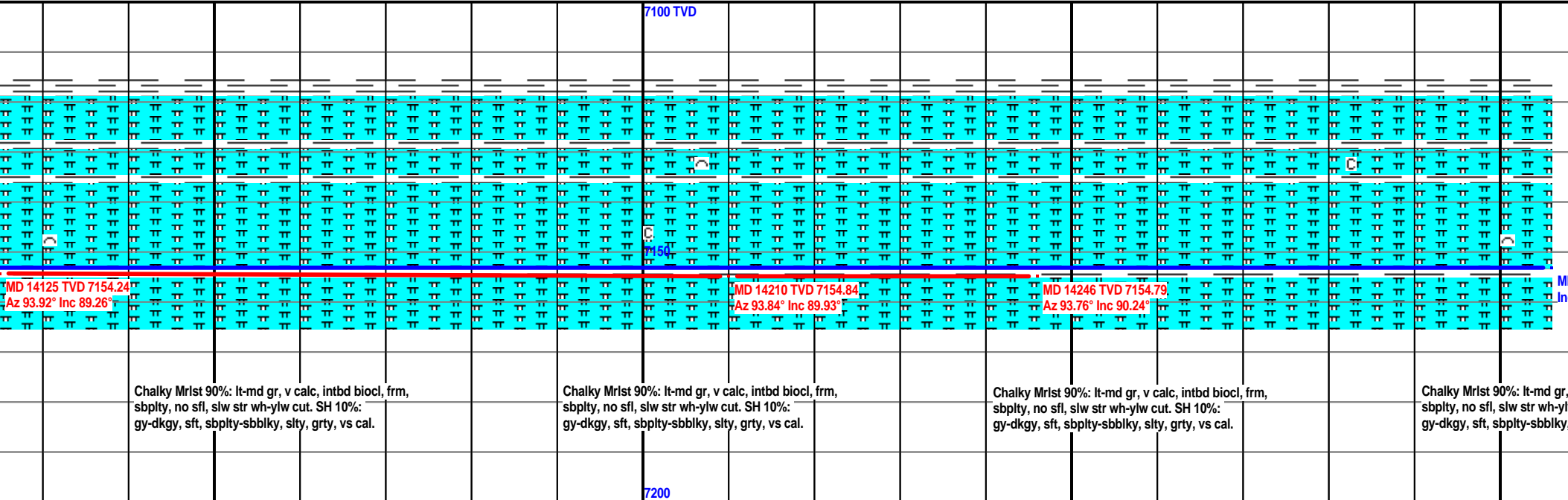
TD of 1430  
Achieved  
6:53AM 07/14/14.Two man  
sample pr  
07/14/14.Casing Co  
Stand-Alo

14150

14200

14250

14300



[illegible]