Scale 1:200 Imperial
Measured Depth Log

Well Name:	**NRC 1N-4HZ**		
Location:	**Weld County, CO.**		
License Number:	**05123389960000**	**Region:**	**DJ Basin**
Spud Date:	**04/10/14**	**Drilling Completed:**	**04/15/14**
Surface Coordinates:	**281'FSL & 663'FEL, SEC.09, T1N-R67W**		
Bottom Hole Coordinates:	**460'FNL & 510'FEL, SEC.04, T1N-R67W**		
Ground Elevation (ft):	**5052'**	**K.B. Elevation (ft):**	**5068'**
Logged Interval (ft):	**7650' To: 17149'**	**Total Depth (ft):**	**17149'**
Formation:	**Niobrara B**		
Type of Drilling Fluid:	**Water Base Mud**		

OPERATOR

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

GEOLOGIST

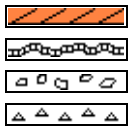
Name: Scott Crozier / Ben Thompson
Company: Great Divide Consulting, Inc.
Address: P.O. Box 630263
Highlands Ranch, CO 80163

Cores

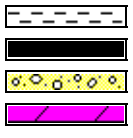
DSTs

Comments

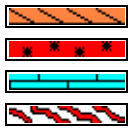
ROCK TYPES



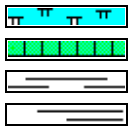
Anhy
Bent
Brec
Cht



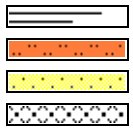
Clyst
Coal
Congl
Dol



Gyp
Igne
Lmst
Meta



Mrlst
Salt
Shale
Shcol



Shgy
Sltst
Ss
Till

ACCESSORIES

MINERAL

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

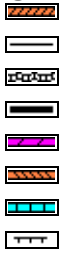
Gyp
Hvymin
Kaol
Marl
Minxl
Nodule
Phos
Pyr
Salt
Sandy
Silt
Sil
Sulphur
Tuff

FOSSIL

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

Ostra
Pelec
Pellet
Pisolite
Plant
Strom

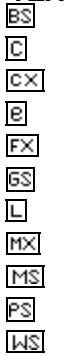
STRINGER



Anhy
Arg
Bent
Coal
Dol
Gyp
Ls
Mrst

Sltstrg
Ssstrg

TEXTURE



Boundst
Chalky
Cryxln
Earthy
Finexln
Grainst
Lithogr
Microxln
Mudst
Packst
Wackest

OTHER SYMBOLS

POROSITY
- Earthy
- Fenest
- Fracture
- Inter
- Moldic
- Organic
- Pinpoint
- Vuggy

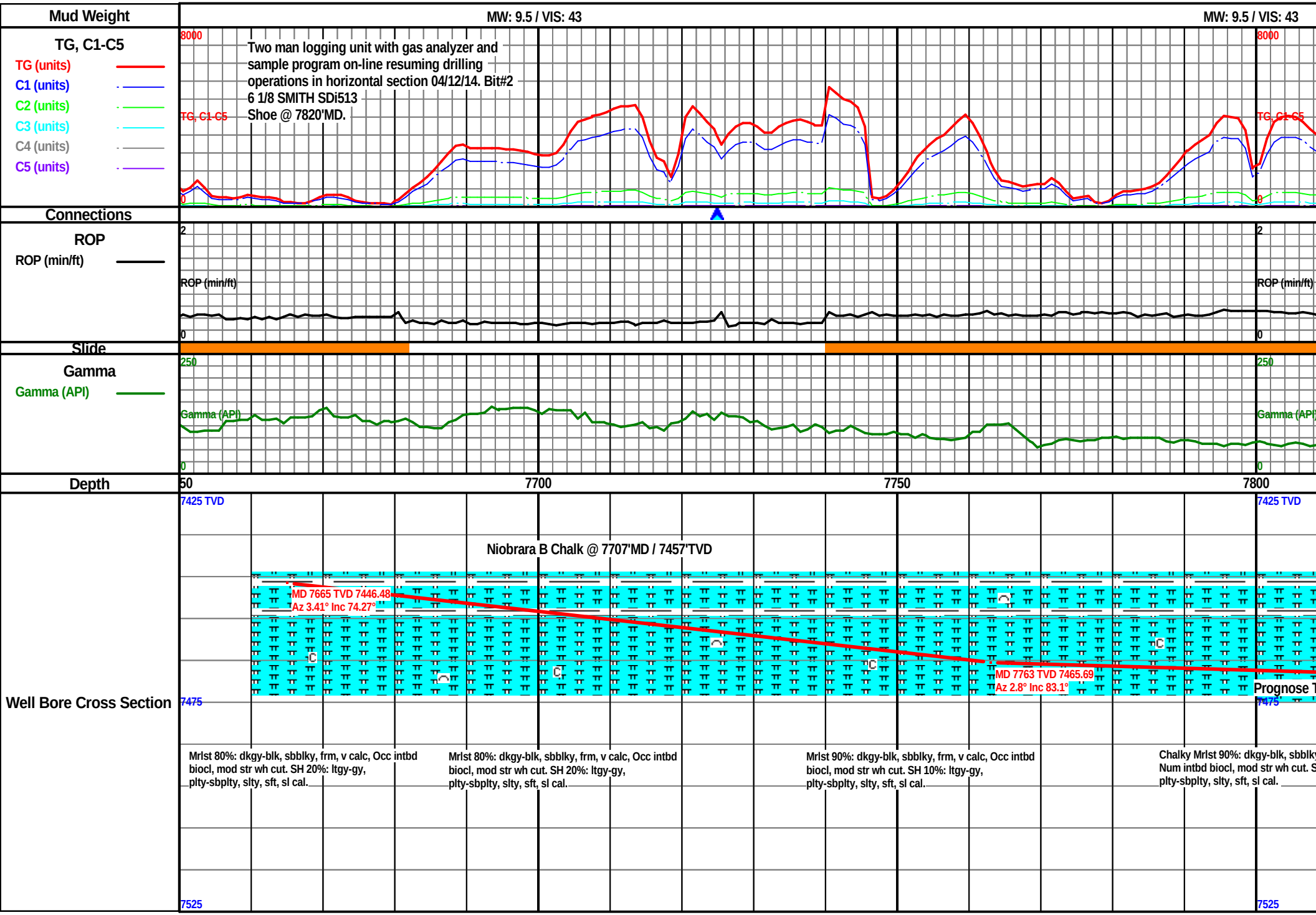
SORTING
- Well
- Moderate
- Poor

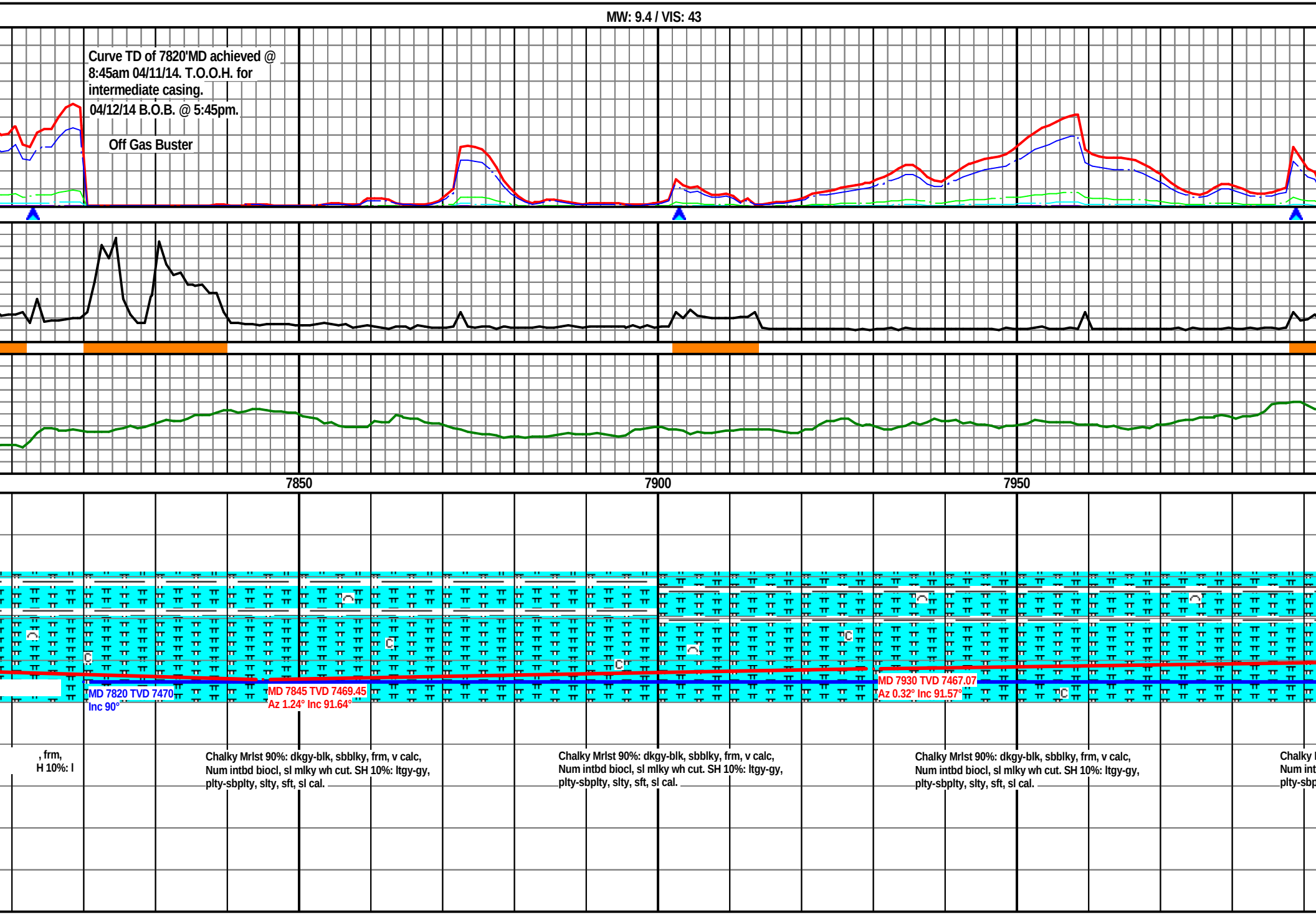
ROUNDING
- Rounded
- Subrnd
- Subang
- Angular

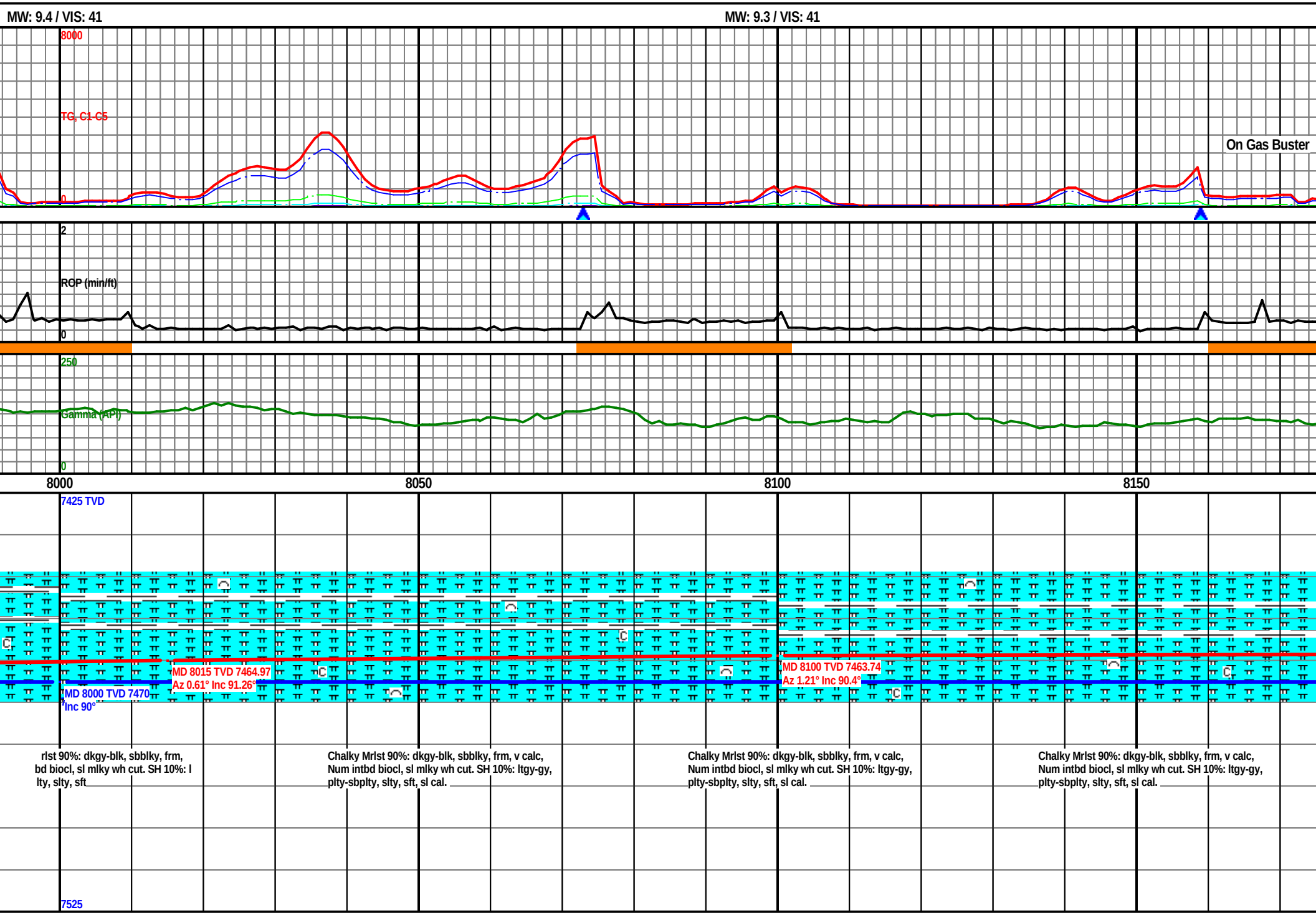
OIL SHOW
- Even
- Spotted
- Ques
- Dead

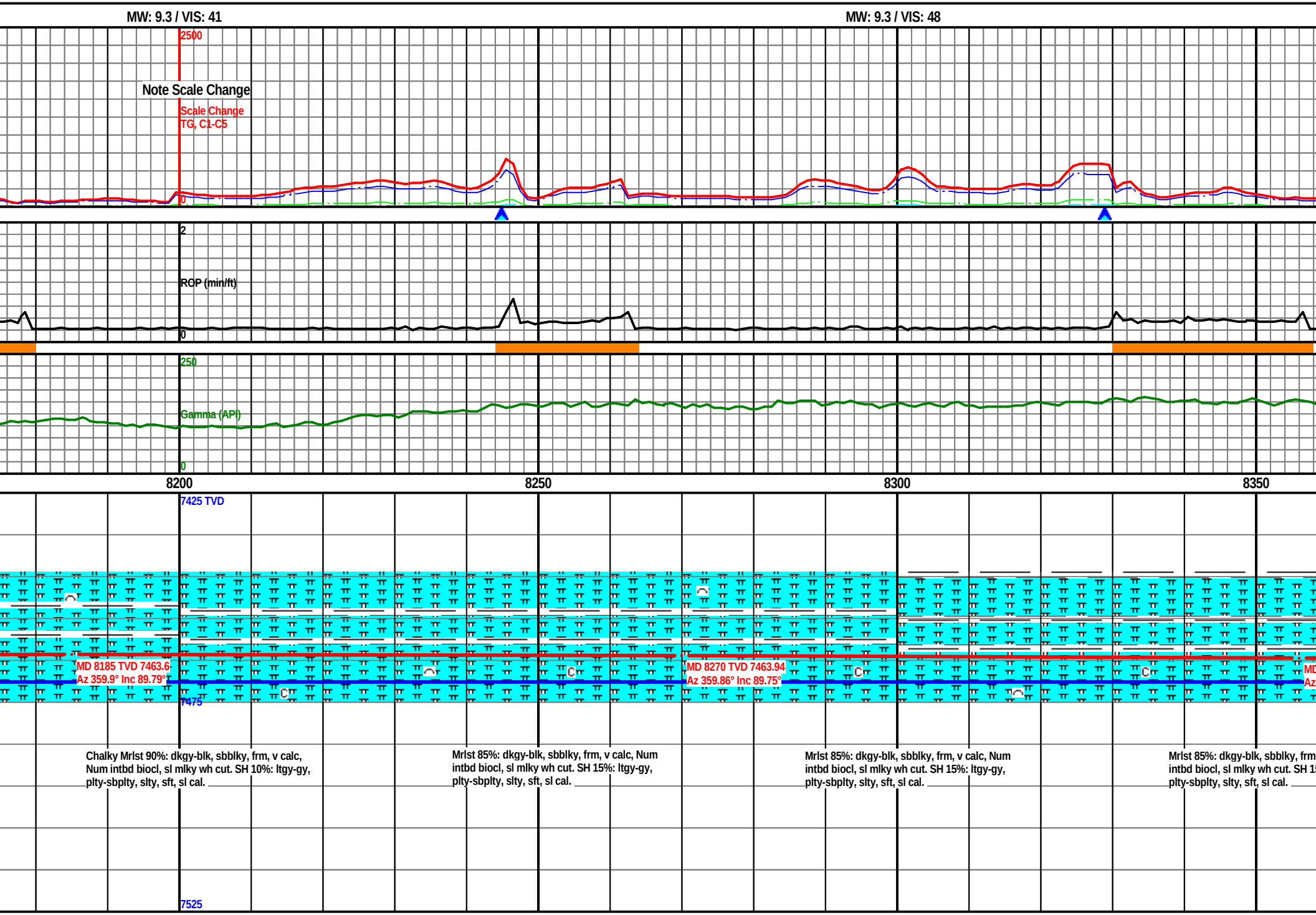
INTERVAL
- Core
- Dst

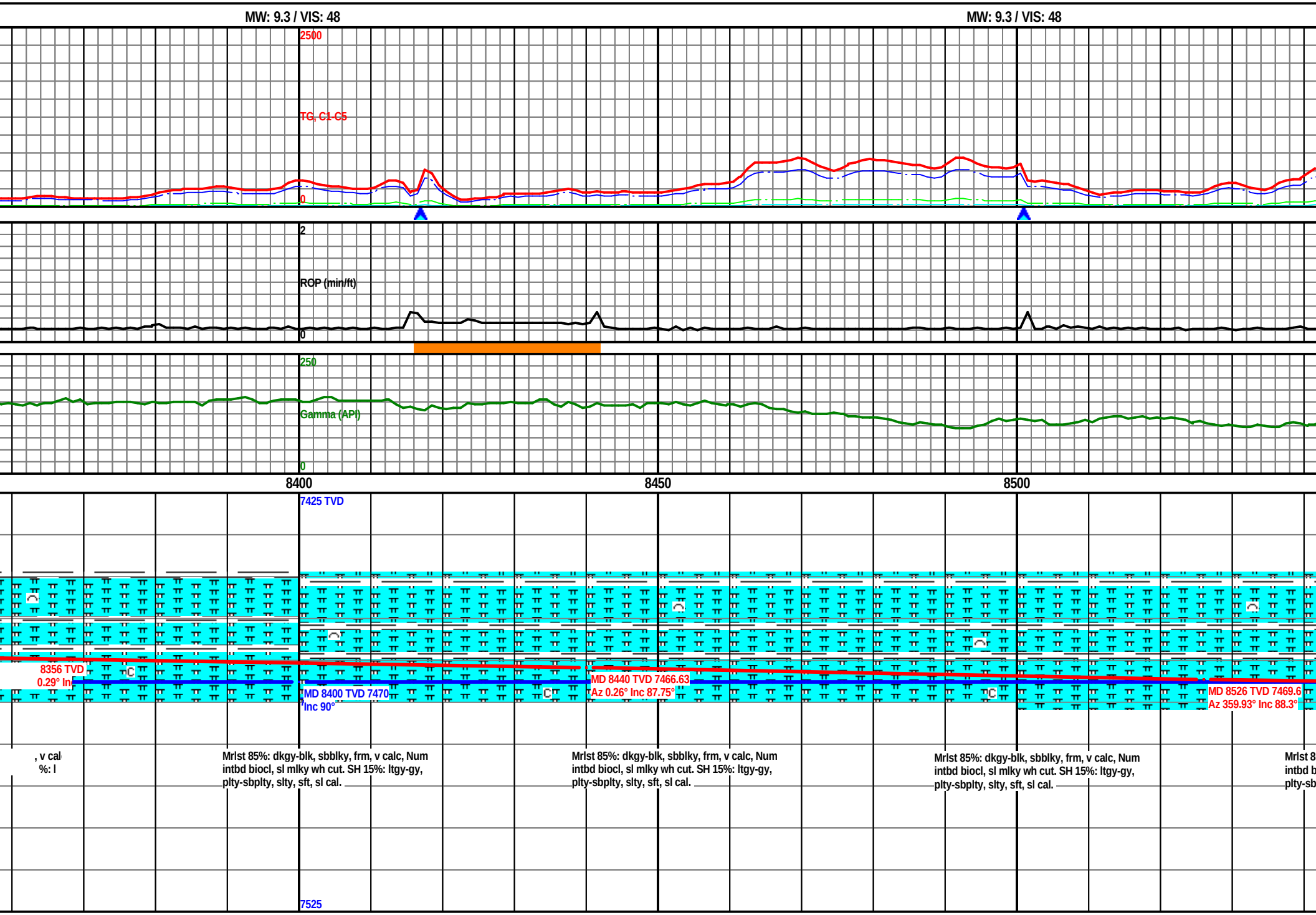
EVENT
- Rft
- Connection

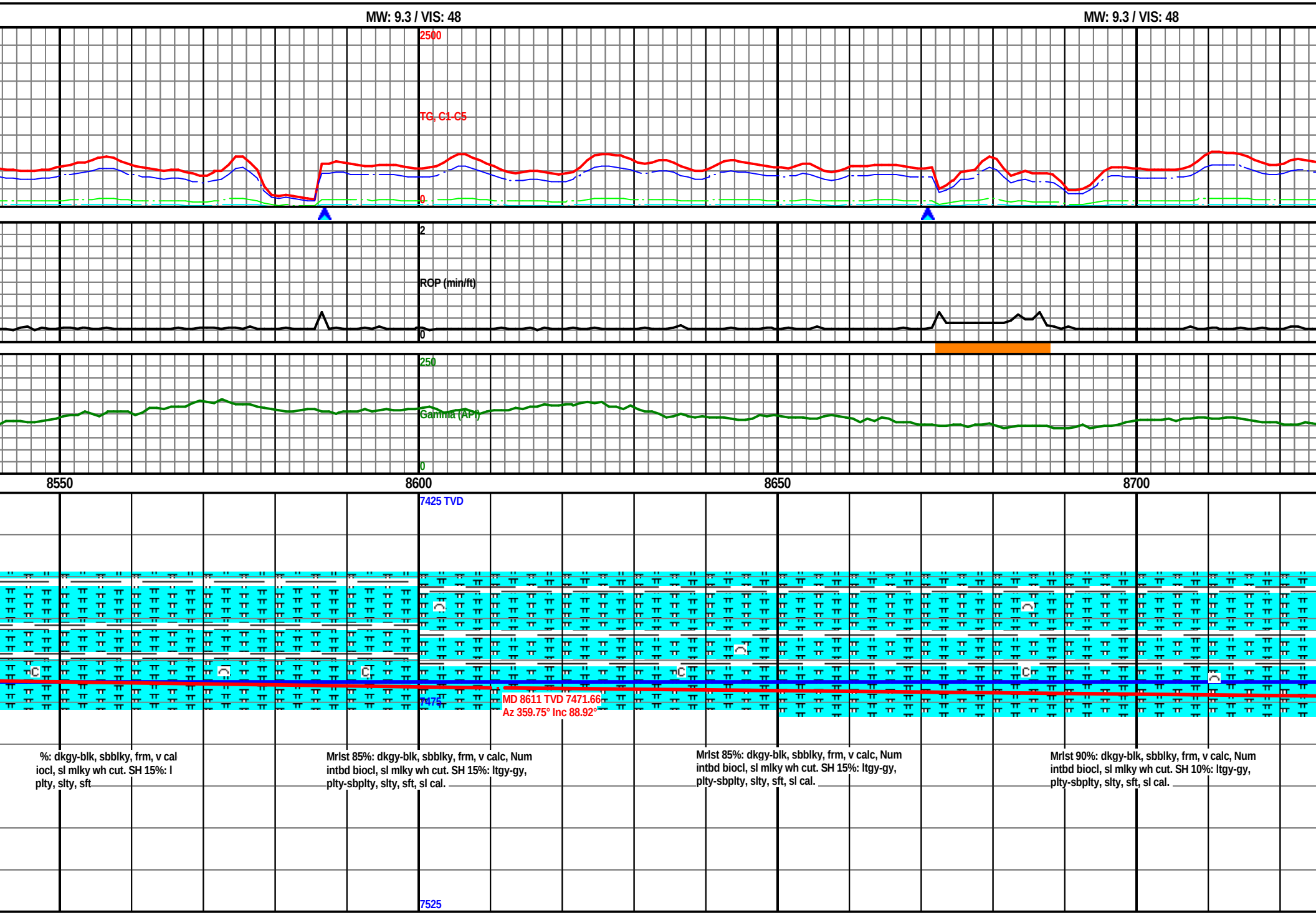

Mud Weight
MW: 9.5 / VIS: 43
MW: 9.5 / VIS: 43
TG, C1-C5
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
C5 (units)
8000
Two man logging unit with gas analyzer and sample program on-line resuming drilling operations in horizontal section 04/12/14. Bit#2 6 1/8 SMITH SDi513 Shoe @ 7820'MD.
TG, C1-C5
0
Connections
ROP
ROP (min/ft)
2
ROP (min/ft)
0
Slide
Gamma
Gamma (API)
250
Gamma (API)
0
Depth
50
7700
7750
7800
Well Bore Cross Section
7425 TVD
Niobrara B Chalk @ 7707'MD / 7457'TVD
MD 7665 TVD 7446.48
Az 3.41° Inc 74.27°
MD 7763 TVD 7465.69
Az 2.8° Inc 83.1°
Prognose T
7475
Mrlst 80%: dkgy-blk, sbblky, frm, v calc, Occ intbd biocl, mod str wh cut. SH 20%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 80%: dkgy-blk, sbblky, frm, v calc, Occ intbd biocl, mod str wh cut. SH 20%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Occ intbd biocl, mod str wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk, sbblky
Num intbd biocl, mod str wh cut. S
plty-sbplty, slty, sft, sl cal.
7525

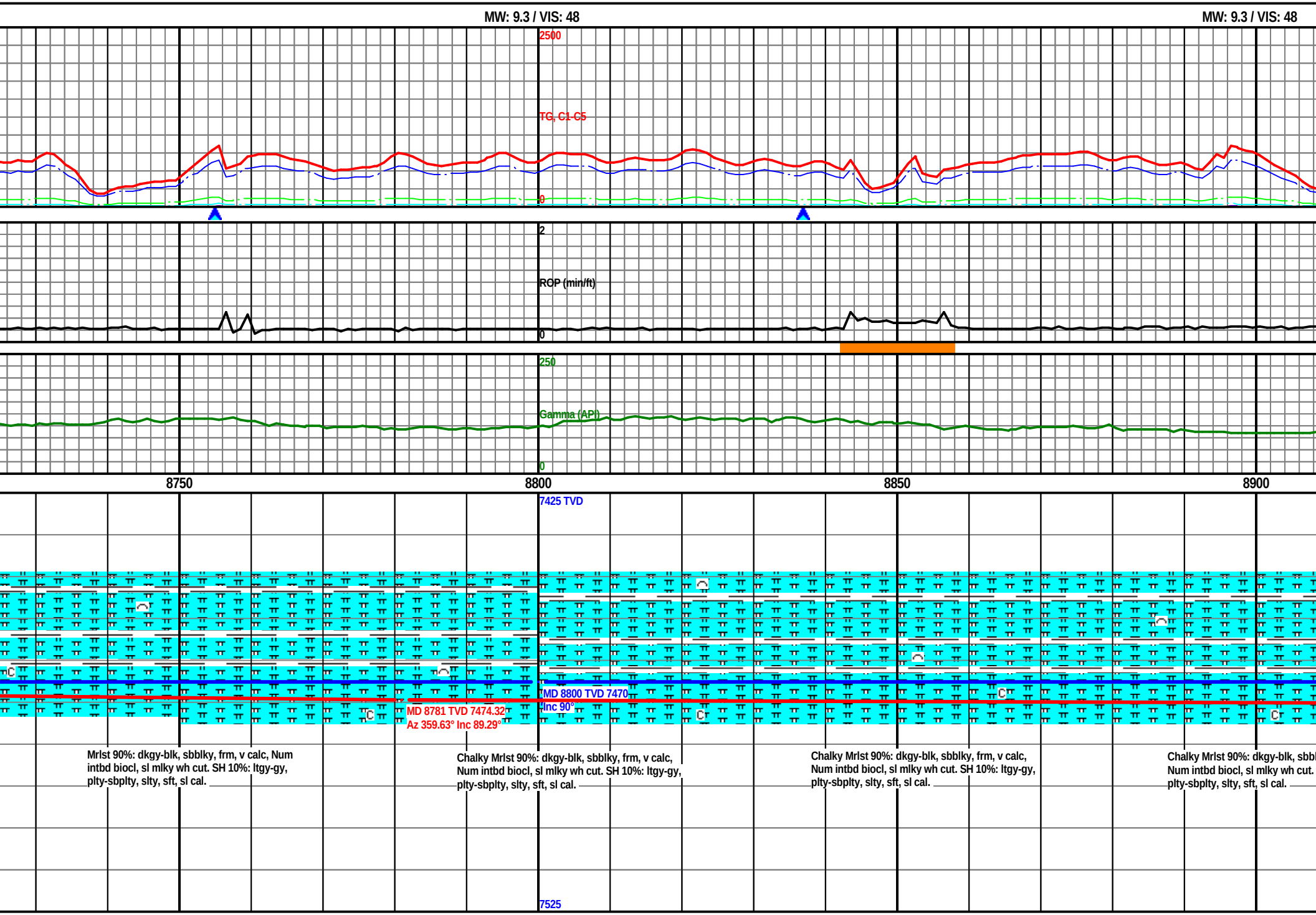

MW: 9.4 / VIS: 43
Curve TD of 7820'MD achieved @ 8:45am 04/11/14. T.O.O.H. for intermediate casing.
04/12/14 B.O.B. @ 5:45pm.
Off Gas Buster
7850
7900
7950
MD 7820 TVD 7470
Inc 90°
MD 7845 TVD 7469.45
Az 1.24° Inc 91.64°
MD 7930 TVD 7467.07
Az 0.32° Inc 91.57°
, frm,
H 10%: l
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.

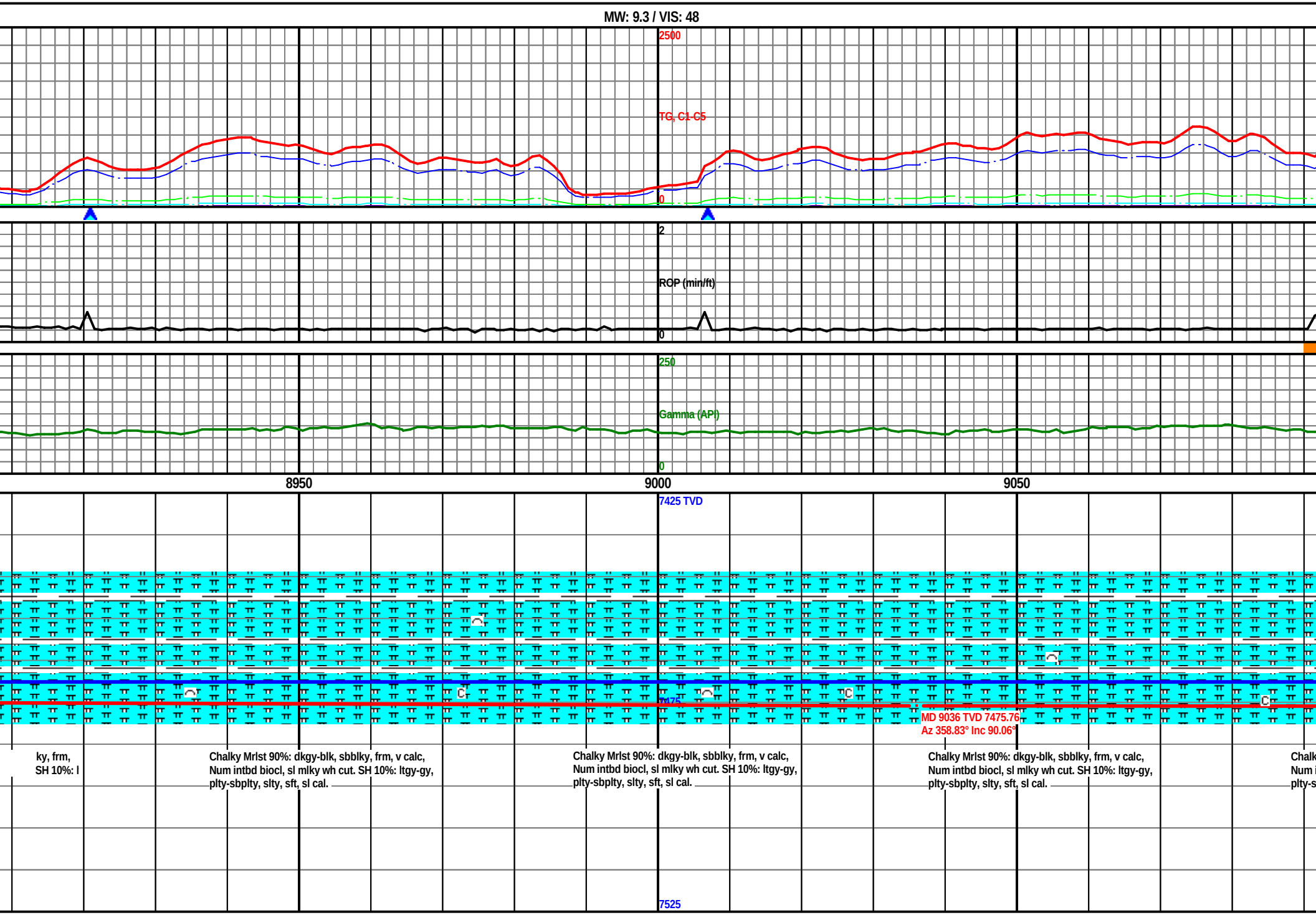

MW: 9.4 / VIS: 41
MW: 9.3 / VIS: 41
8000
TG, C1-C5
0
On Gas Buster
2
ROP (min/ft)
0
250
Gamma (API)
0
8000
8050
8100
8150
7425 TVD
MD 8015 TVD 7464.97
Az 0.61° Inc 91.26°
MD 8000 TVD 7470
Inc 90°
MD 8100 TVD 7463.74
Az 1.21° Inc 90.4°
rlst 90%: dkgy-blk, sbblky, frm, bd biocl, sl mlky wh cut. SH 10%: l lty, slty, sft
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
7525

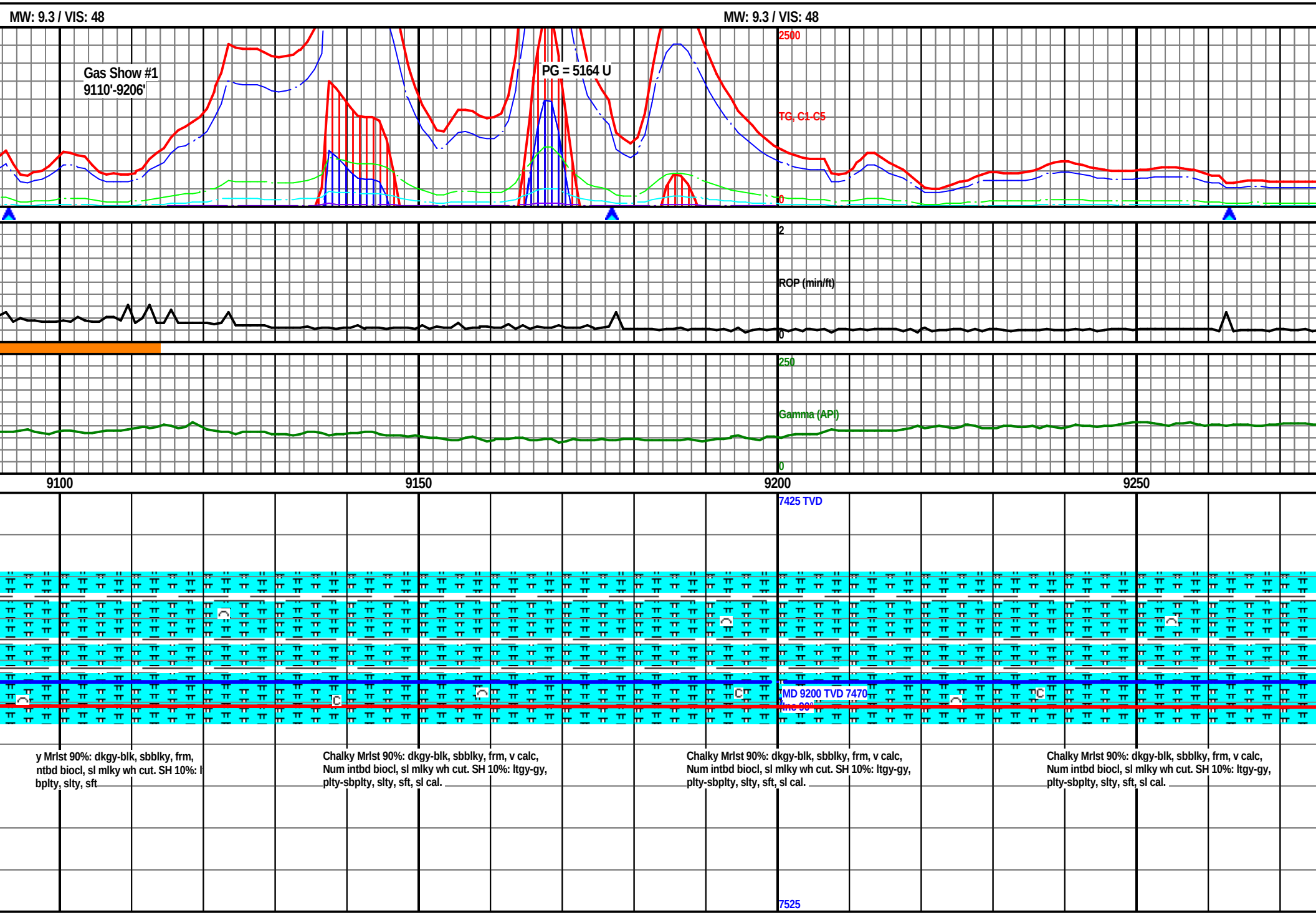

MW: 9.3 / VIS: 41
MW: 9.3 / VIS: 48
2500
Note Scale Change
Scale Change
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
8200
8250
8300
8350
7425 TVD
MD 8185 TVD 7463.6
Az 359.9° Inc 89.79°
MD 8270 TVD 7463.94
Az 359.86° Inc 89.75°
7475
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 85%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 15%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 85%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 15%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 85%: dkgy-blk, sbblky, frm
intbd biocl, sl mlky wh cut. SH 1
plty-sbplty, slty, sft, sl cal.
7525

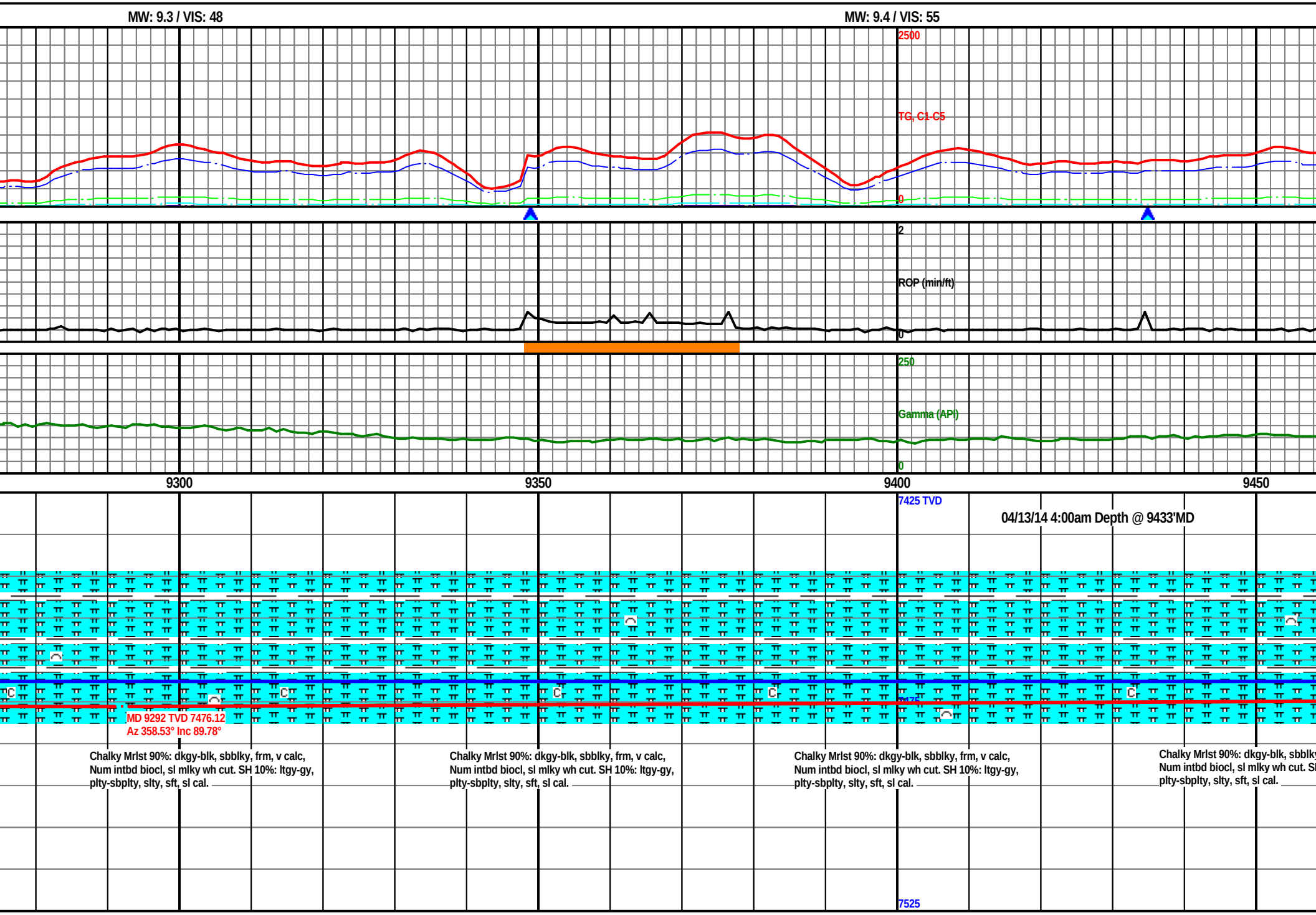

MW: 9.3 / VIS: 48
MW: 9.3 / VIS: 48
2500
TG, C1 C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
8400
8450
8500
7425 TVD
8356 TVD
0.29° In
MD 8400 TVD 7470
Inc 90°
MD 8440 TVD 7466.63
Az 0.26° Inc 87.75°
MD 8526 TVD 7469.6
Az 359.93° Inc 88.3°
, v cal
%: l
Mrlst 85%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 15%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 85%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 15%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 85%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 15%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 8
intbd b
plty-sb
7525

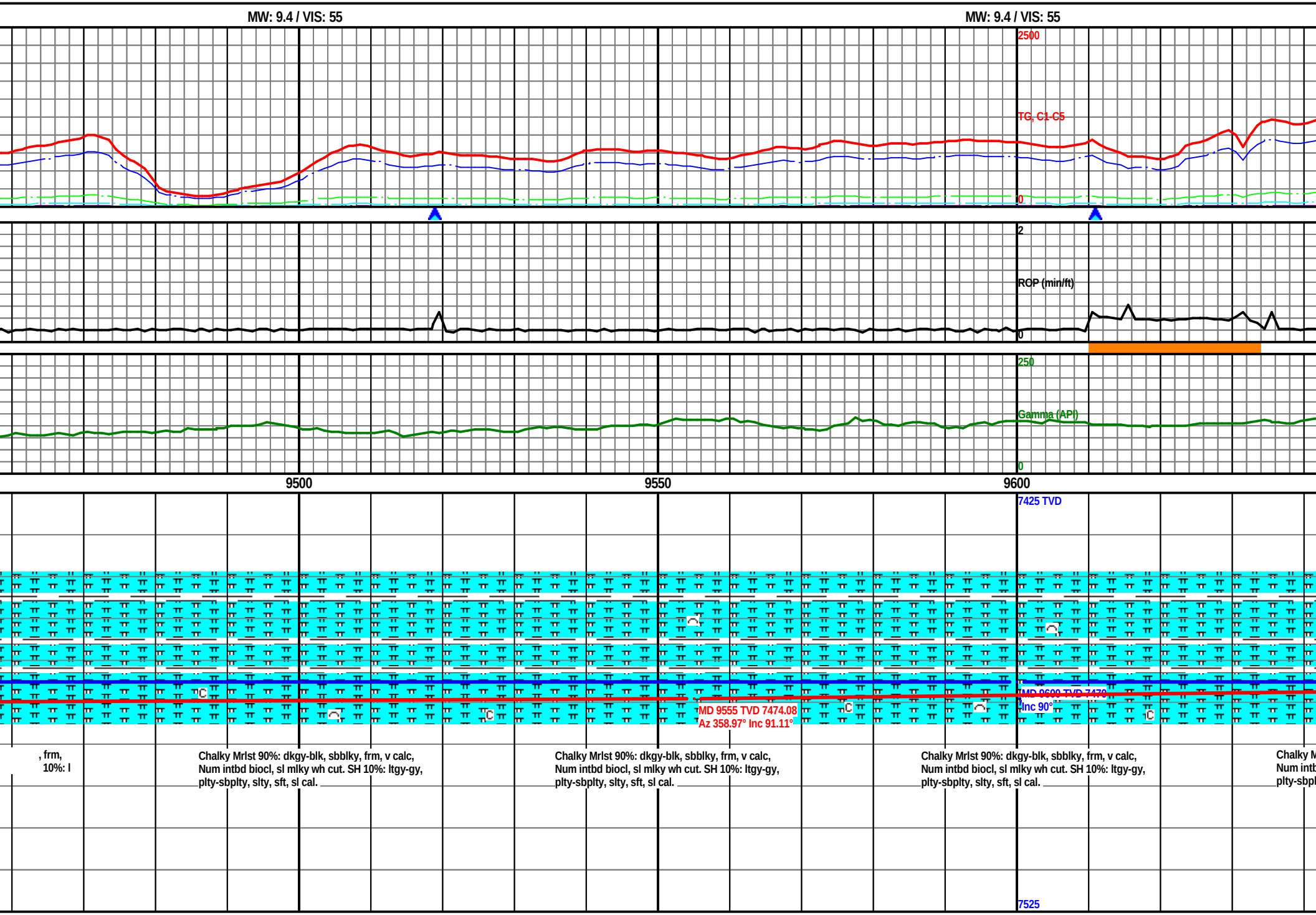

MW: 9.3 / VIS: 48
MW: 9.3 / VIS: 48
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
8550
8600
8650
8700
7425 TVD
MD 8611 TVD 7471.66
Az 359.75° Inc 88.92°
7475
7525
%: dkgy-blk, sbblky, frm, v cal iocl, sl mlky wh cut. SH 15%: l plty, slty, sft
Mrlst 85%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 15%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 85%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 15%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.

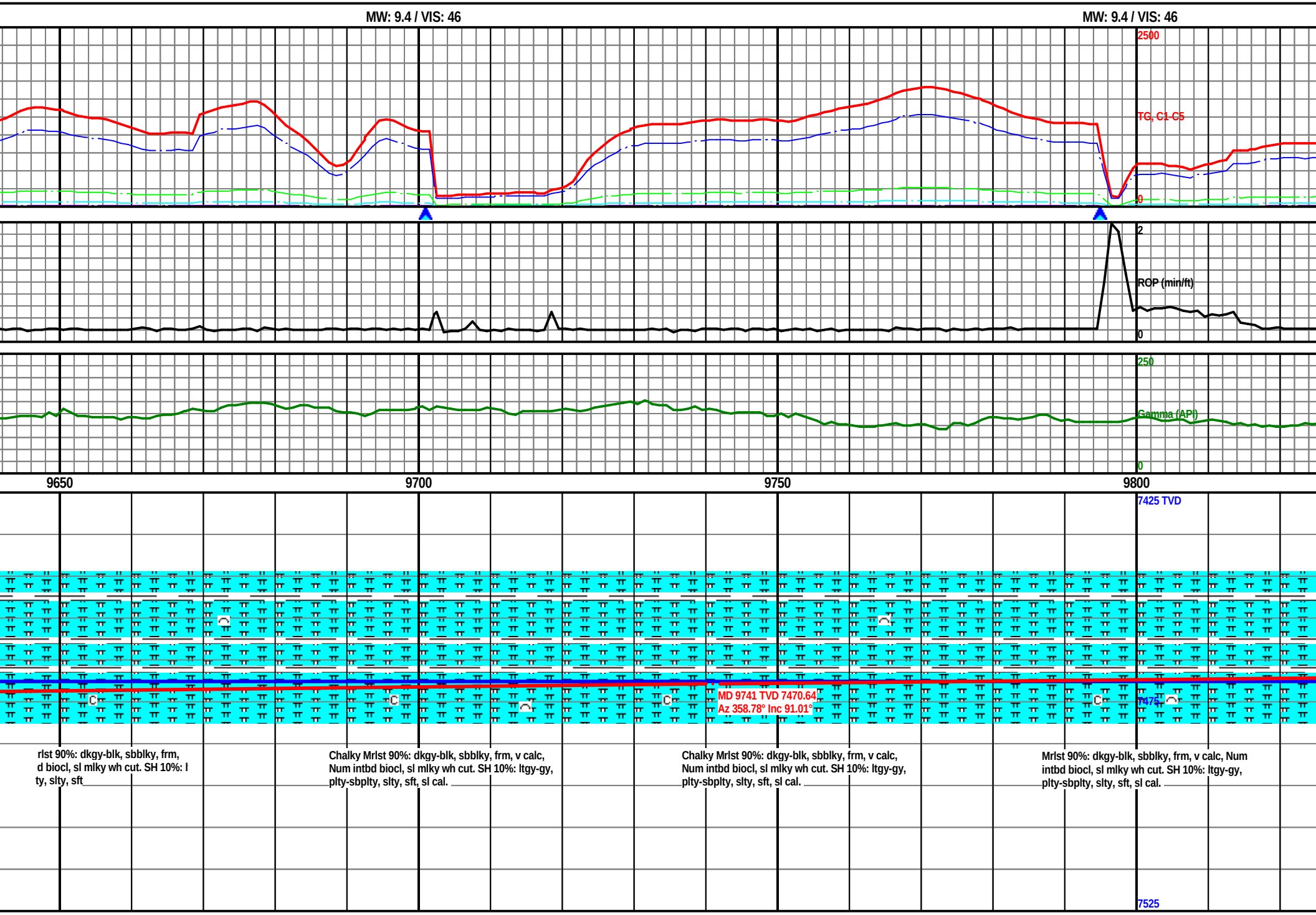

MW: 9.3 / VIS: 48
MW: 9.3 / VIS: 48
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
8750
8800
8850
8900
7425 TVD
MD 8800 TVD 7470
Inc 90°
MD 8781 TVD 7474.32
Az 359.63° Inc 89.29°
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk, sbbl
Num intbd biocl, sl mlky wh cut.
plty-sbplty, slty, sft, sl cal.
7525

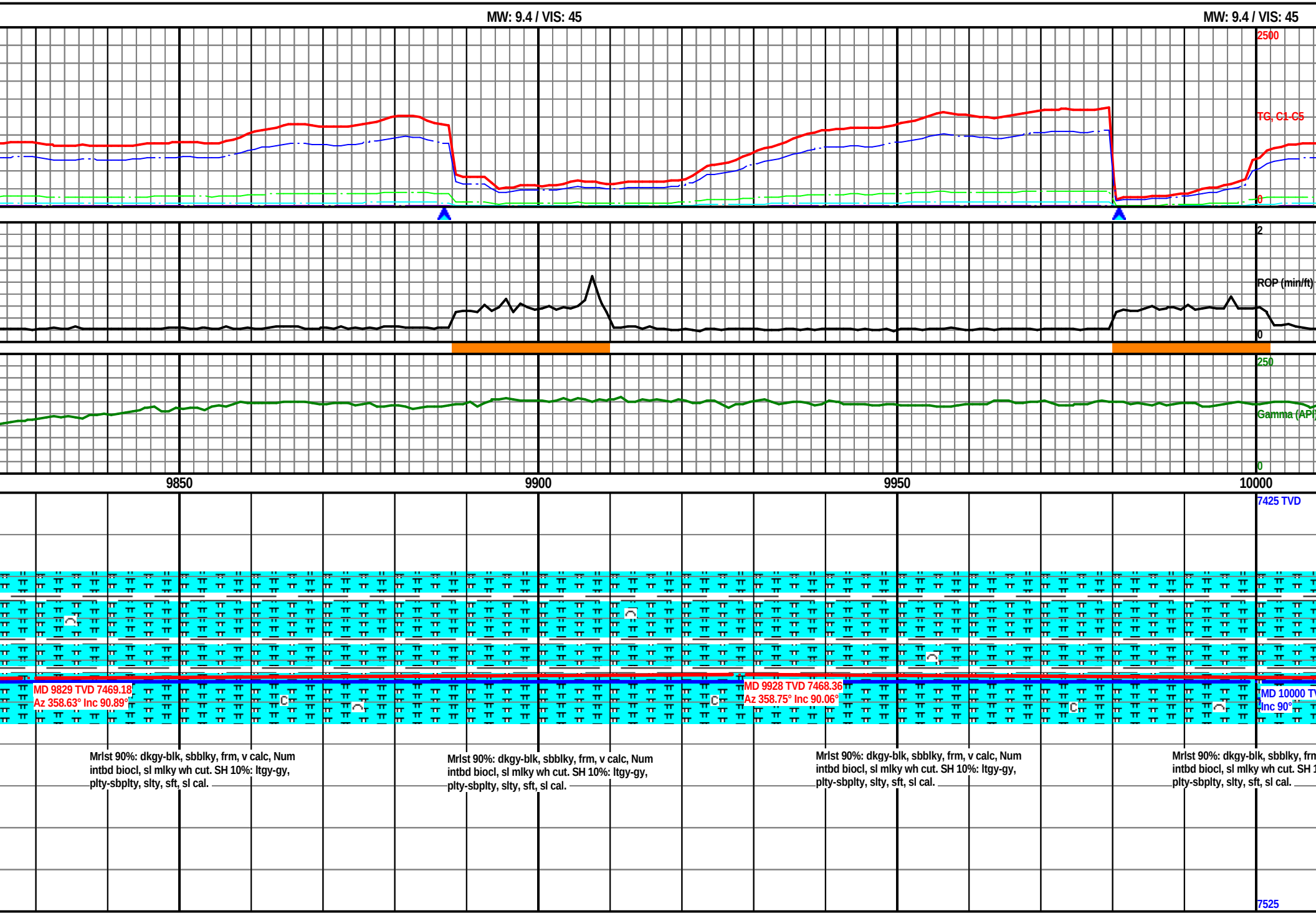

MW: 9.3 / VIS: 48
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
8950
9000
9050
7425 TVD
7475
7525
MD 9036 TVD 7475.76
Az 358.83° Inc 90.06°
ky, frm,
SH 10%: l
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc,
Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc,
Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc,
Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
Chalk
Num i
plty-s

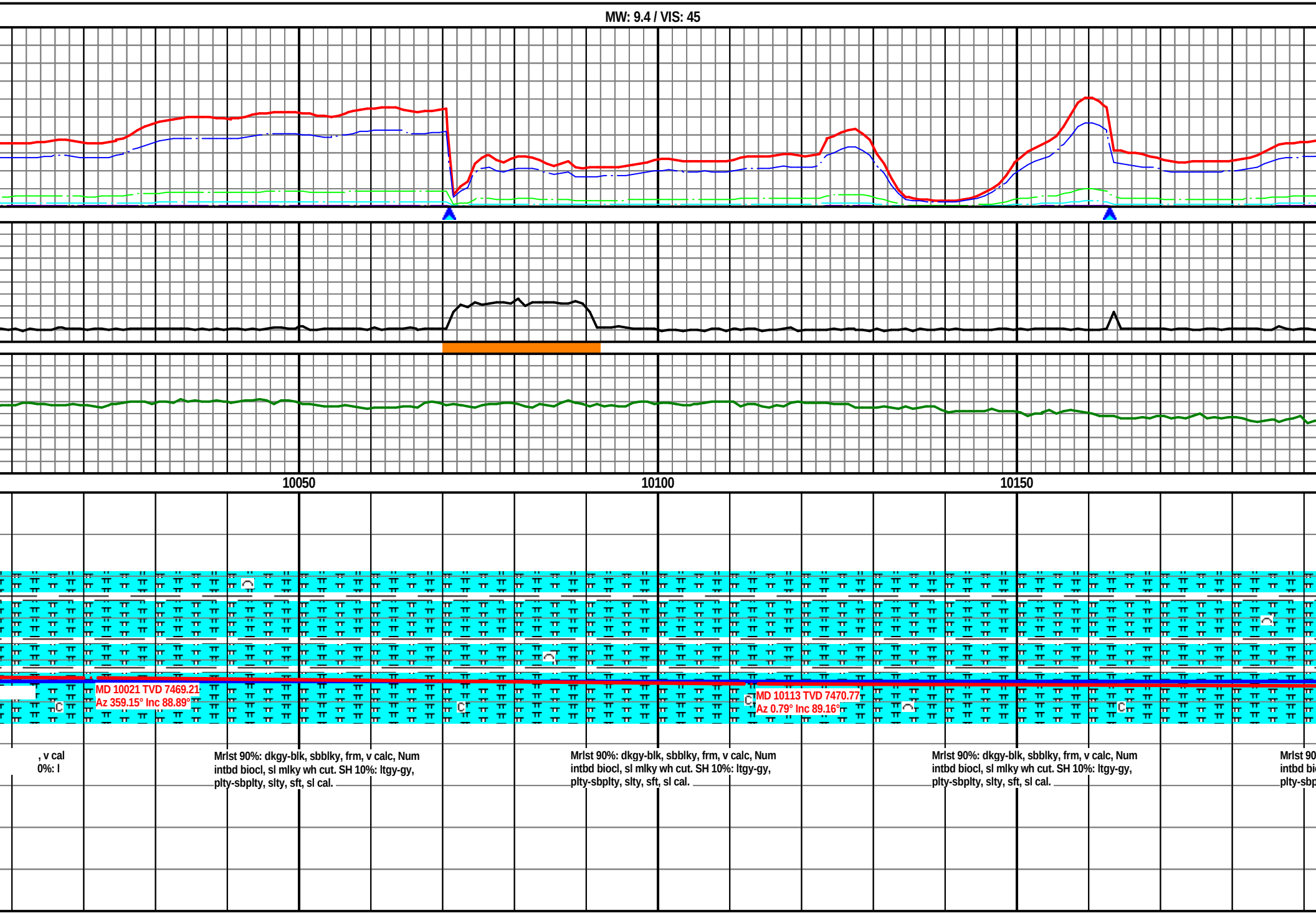

MW: 9.3 / VIS: 48
MW: 9.3 / VIS: 48
Gas Show #1
9110'-9206'
PG = 5164 U
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
9100
9150
9200
9250
7425 TVD
MD 9200 TVD 7470
7525
y Mrlst 90%: dkgy-blk, sbblky, frm,
ntbd biocl, sl mlky wh cut. SH 10%:
bplty, slty, sft
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc,
Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc,
Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc,
Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.

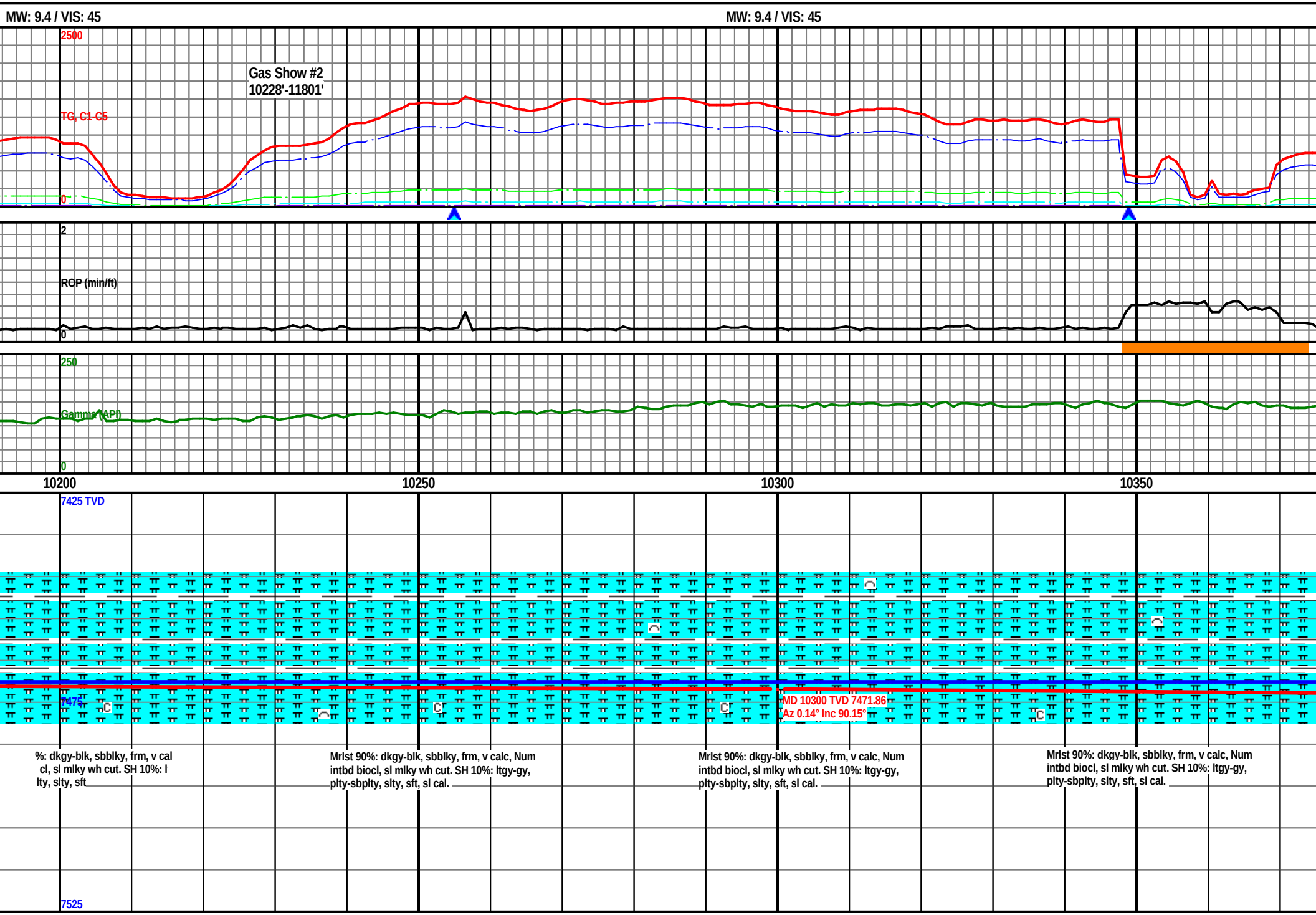

MW: 9.3 / VIS: 48
MW: 9.4 / VIS: 55
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
9300
9350
9400
9450
7425 TVD
04/13/14 4:00am Depth @ 9433'MD
MD 9292 TVD 7476.12
Az 358.53° Inc 89.78°
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk, sbblky
Num intbd biocl, sl mlky wh cut. SH
plty-sbplty, slty, sft, sl cal.
7525

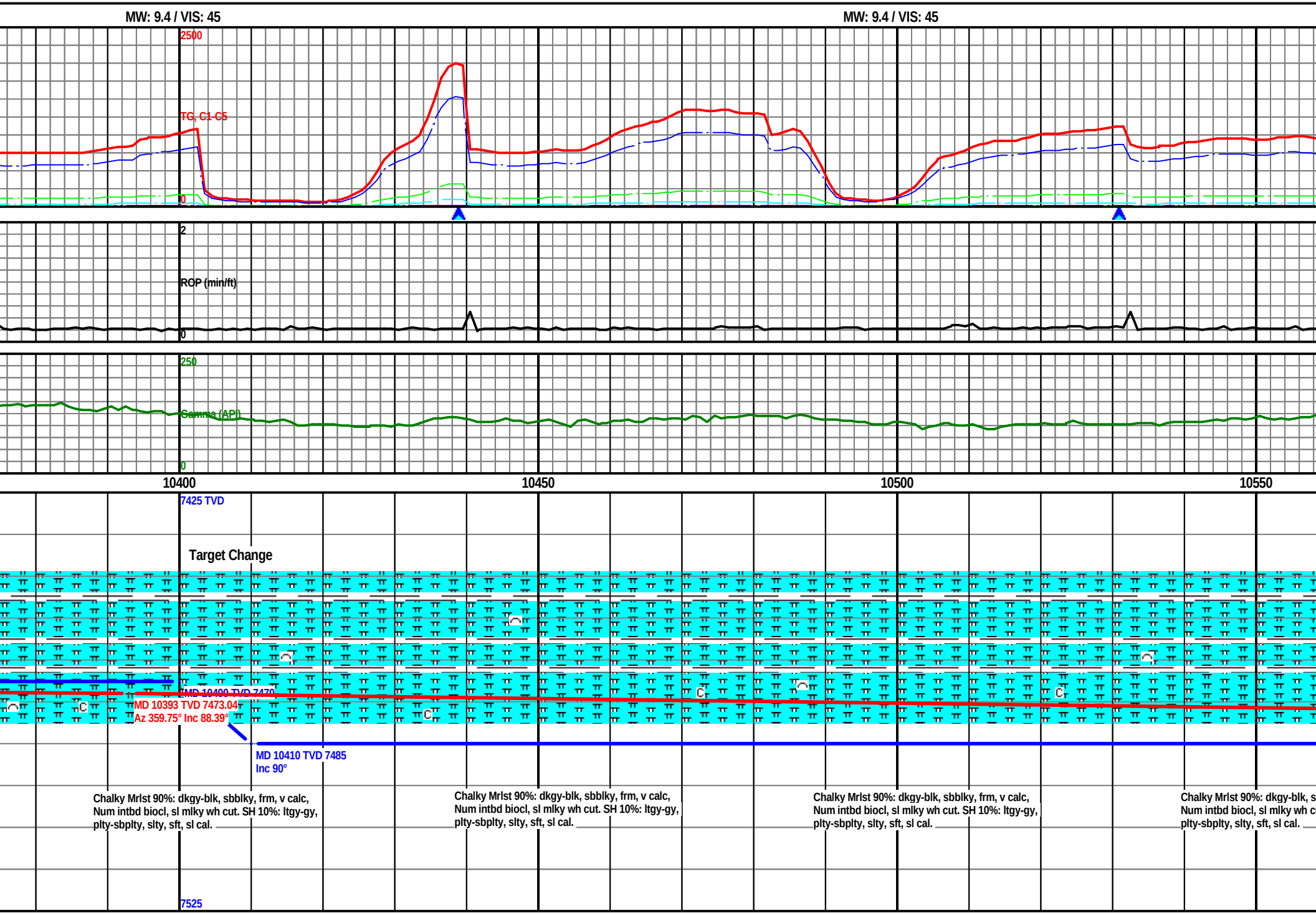

MW: 9.4 / VIS: 55
MW: 9.4 / VIS: 55
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
9500
9550
9600
7425 TVD
MD 9555 TVD 7474.08
Az 358.97° Inc 91.11°
MD 9600 TVD 7476
Inc 90°
7525
, frm,
10%: l
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc,
Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc,
Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc,
Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
Chalky M
Num intb
plty-sbpl

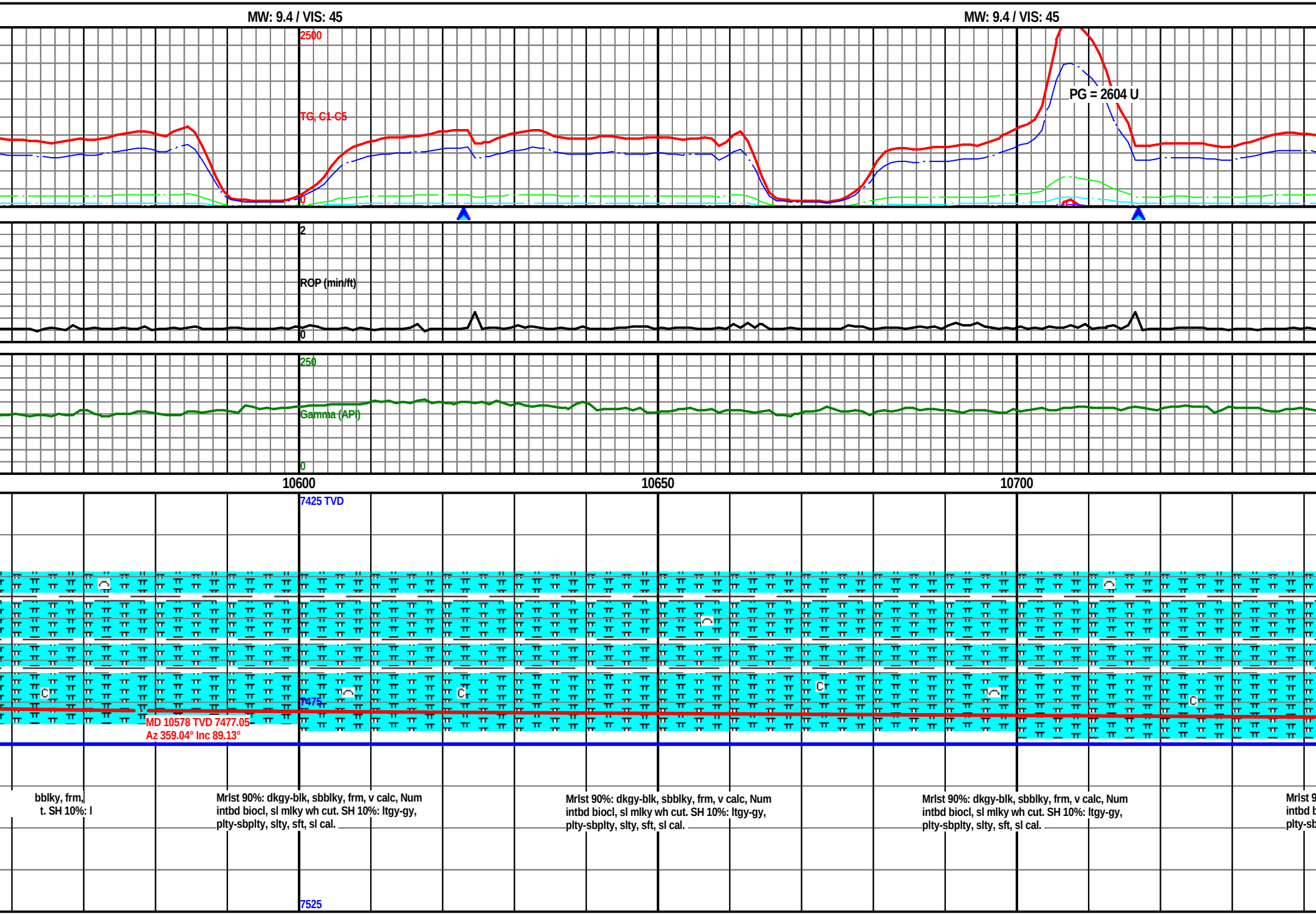

MW: 9.4 / VIS: 46
MW: 9.4 / VIS: 46
2500
TG, C1 C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
9650
9700
9750
9800
7425 TVD
MD 9741 TVD 7470.64
Az 358.78° Inc 91.01°
7475
7525
rlst 90%: dkgy-blk, sbblky, frm,
d biocl, sl mlky wh cut. SH 10%: l
ty, slty, sft
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc,
Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc,
Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.

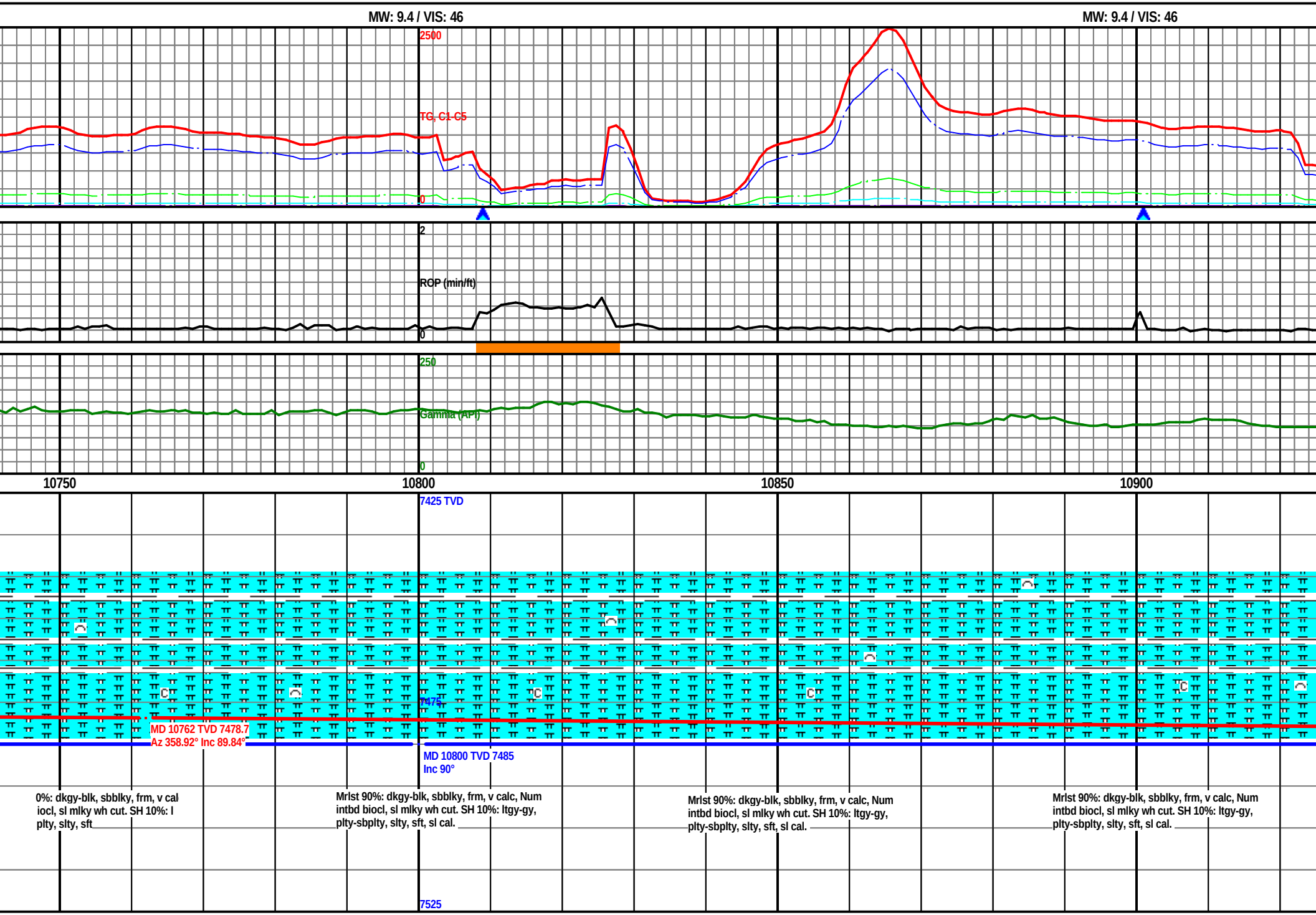

MW: 9.4 / VIS: 45
MW: 9.4 / VIS: 45
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
9850
9900
9950
10000
7425 TVD
MD 9829 TVD 7469.18
Az 358.63° Inc 90.89°
MD 9928 TVD 7468.36
Az 358.75° Inc 90.06°
MD 10000 TV
Inc 90°
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm intbd biocl, sl mlky wh cut. SH plty-sbplty, slty, sft, sl cal.
7525

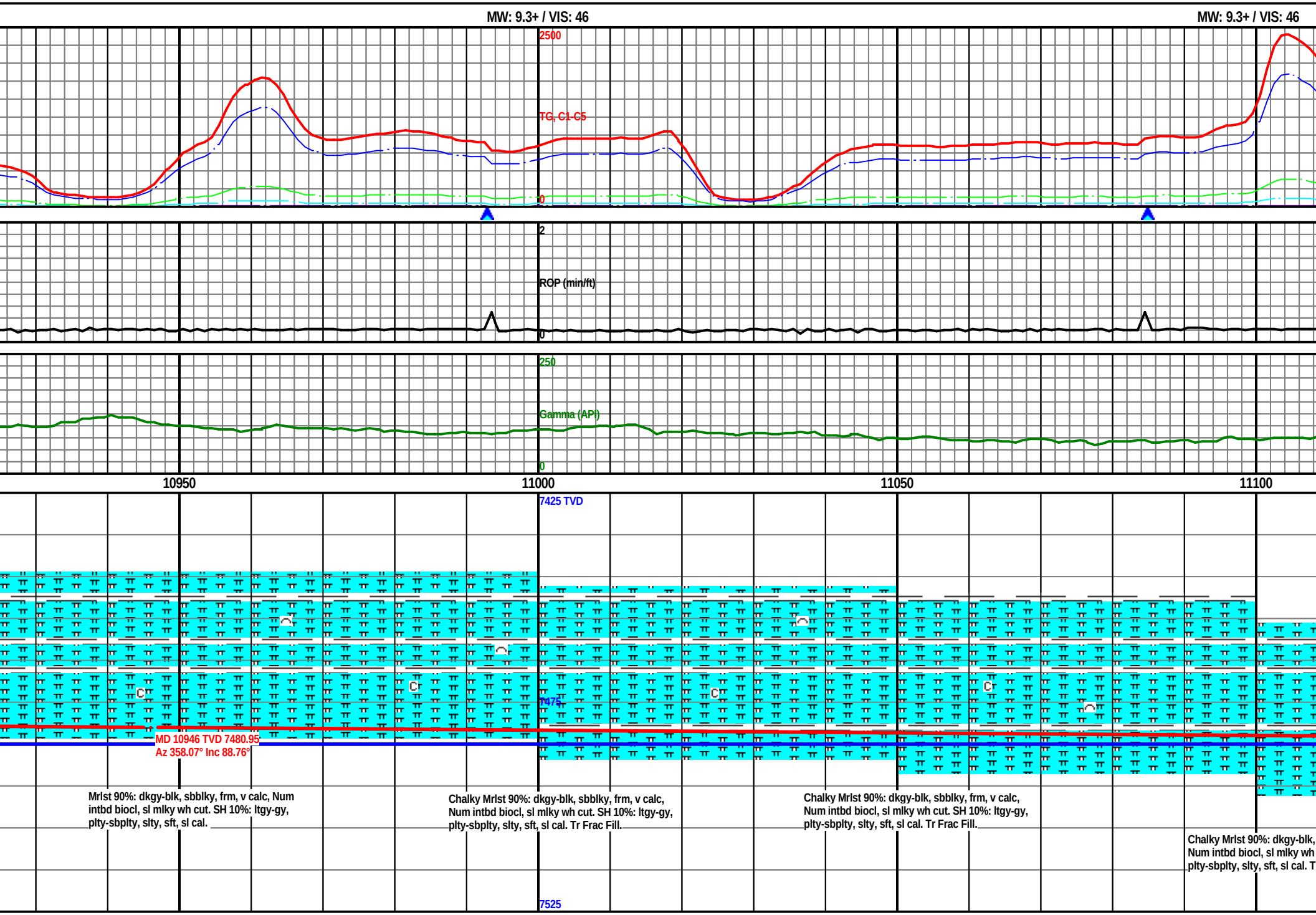

MW: 9.4 / VIS: 45
10050
10100
10150
MD 10021 TVD 7469.21
Az 359.15° Inc 88.89°
MD 10113 TVD 7470.77
Az 0.79° Inc 89.16°
, v cal
0%: l
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 90
intbd bi
plty-sbp

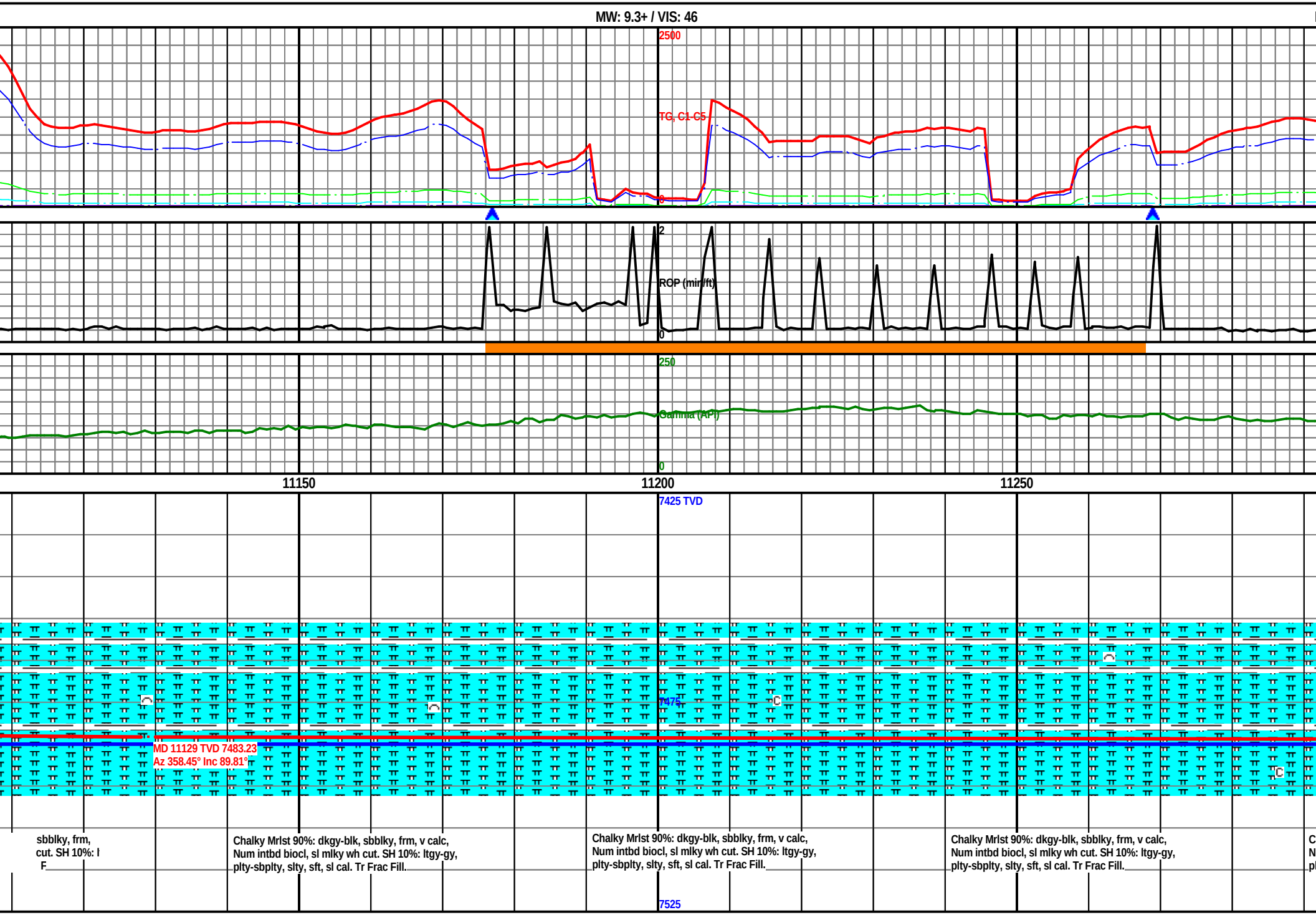

MW: 9.4 / VIS: 45
MW: 9.4 / VIS: 45
2500
Gas Show #2
10228'-11801'
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
10200
10250
10300
10350
7425 TVD
7475
MD 10300 TVD 7471.86
Az 0.14° Inc 90.15°
7525
%: dkgy-blk, sbblky, frm, v cal
cl, sl mlky wh cut. SH 10%: l
lty, slty, sft
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.

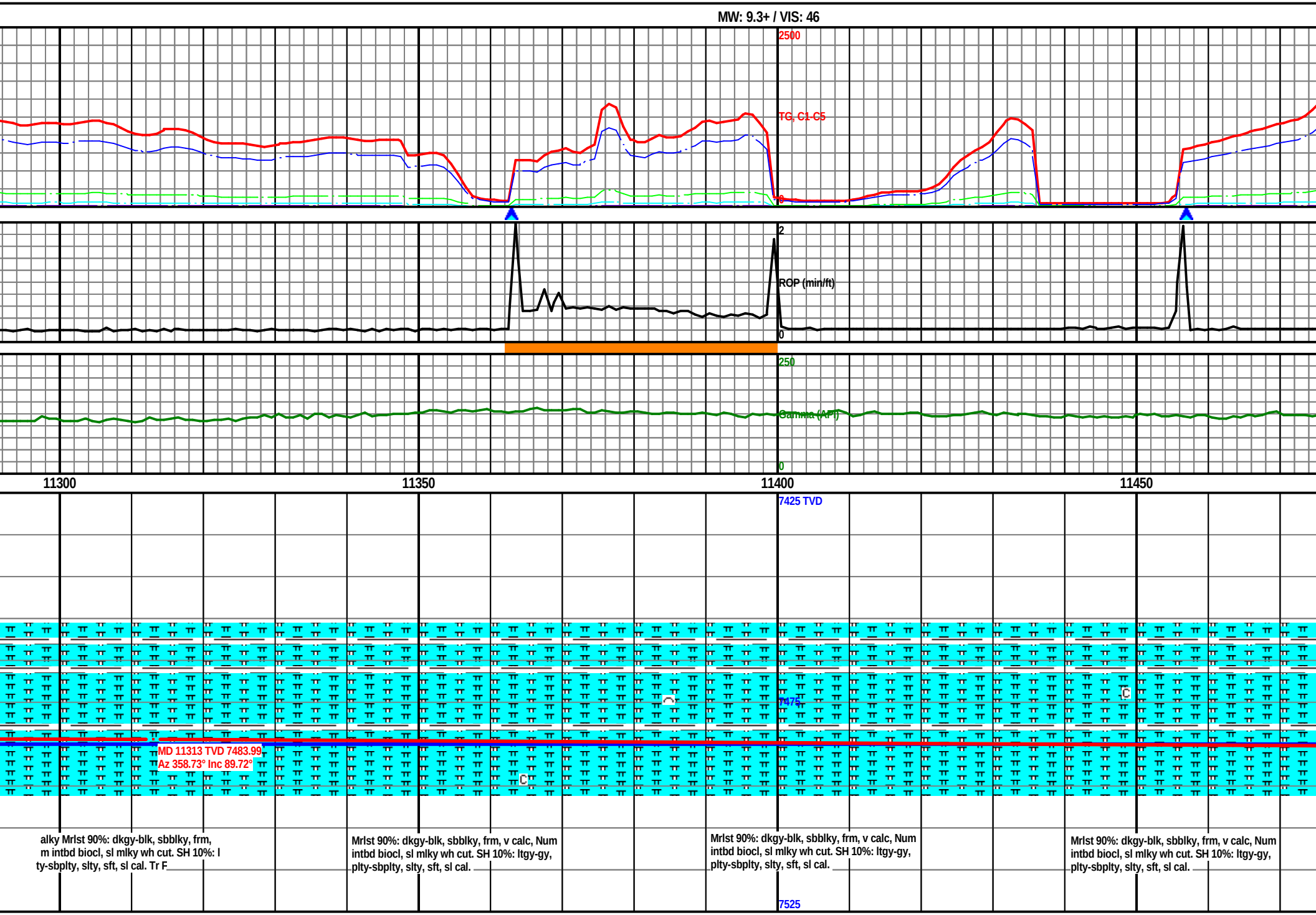

MW: 9.4 / VIS: 45
MW: 9.4 / VIS: 45
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
10400
10450
10500
10550
7425 TVD
Target Change
MD 10400 TVD 7470
MD 10393 TVD 7473.04
Az 359.75° Inc 88.39°
MD 10410 TVD 7485
Inc 90°
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk, s
Num intbd biocl, sl mlky wh c
plty-sbplty, slty, sft, sl cal.
7525

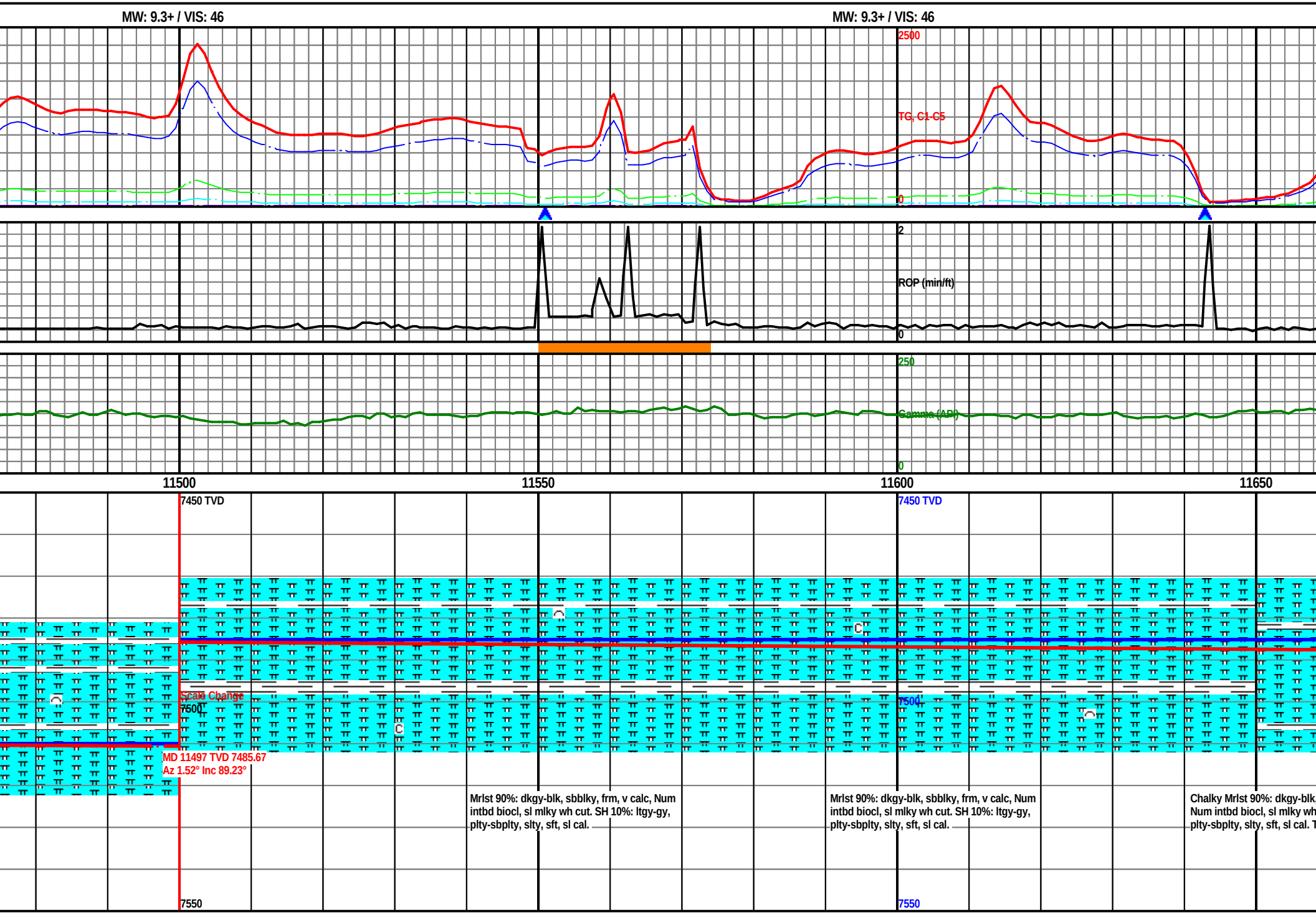

MW: 9.4 / VIS: 45
MW: 9.4 / VIS: 45
2500
TG, C1 C5
PG = 2604 U
0
2
ROP (min/ft)
0
250
Gamma (API)
0
10600
10650
10700
7425 TVD
7475
MD 10578 TVD 7477.05
Az 359.04° Inc 89.13°
7525
bblky, frm,
t. SH 10%: l
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.

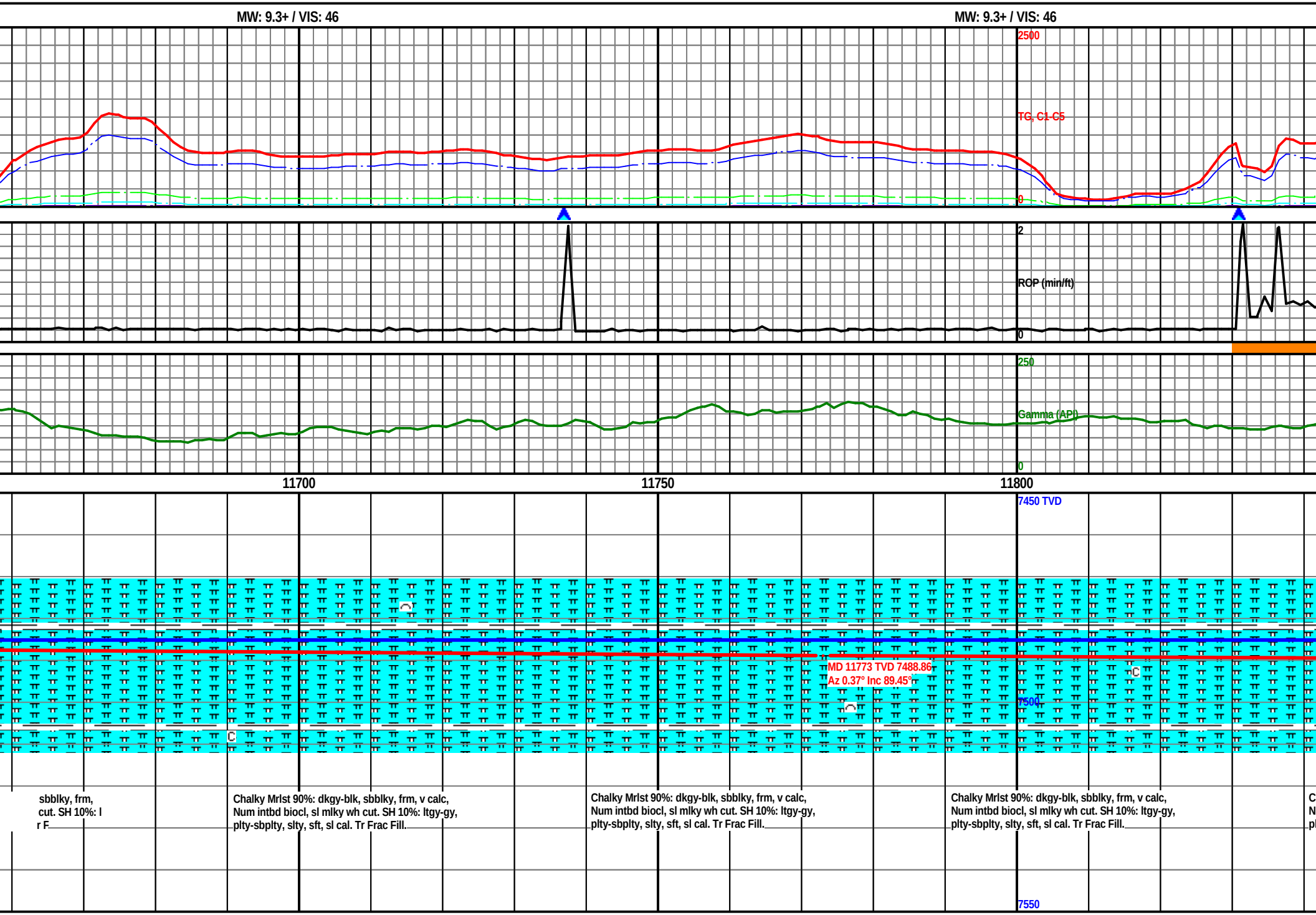

MW: 9.4 / VIS: 46
MW: 9.4 / VIS: 46
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
10750
10800
10850
10900
7425 TVD
7475
MD 10762 TVD 7478.7
Az 358.92° Inc 89.84°
MD 10800 TVD 7485
Inc 90°
7525
0%: dkgy-blk, sbblky, frm, v cal
iocl, sl mlky wh cut. SH 10%: l
plty, slty, sft
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.

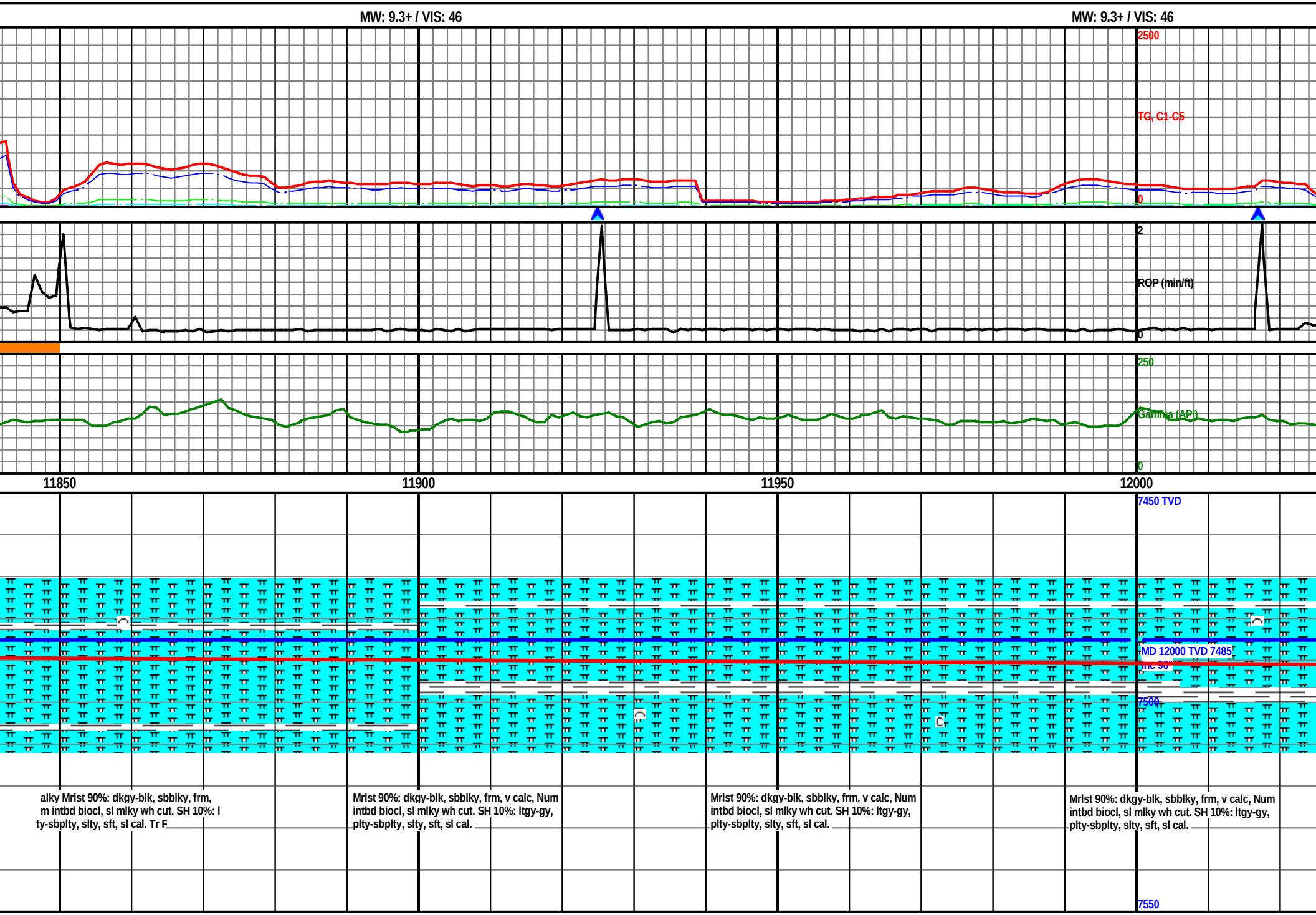

MW: 9.3+ / VIS: 46
MW: 9.3+ / VIS: 46
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
10950
11000
11050
11100
7425 TVD
7475
7525
MD 10946 TVD 7480.95
Az 358.07° Inc 88.76°
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Chalky Mrlst 90%: dkgy-blk, Num intbd biocl, sl mlky wh plty-sbplty, slty, sft, sl cal. T

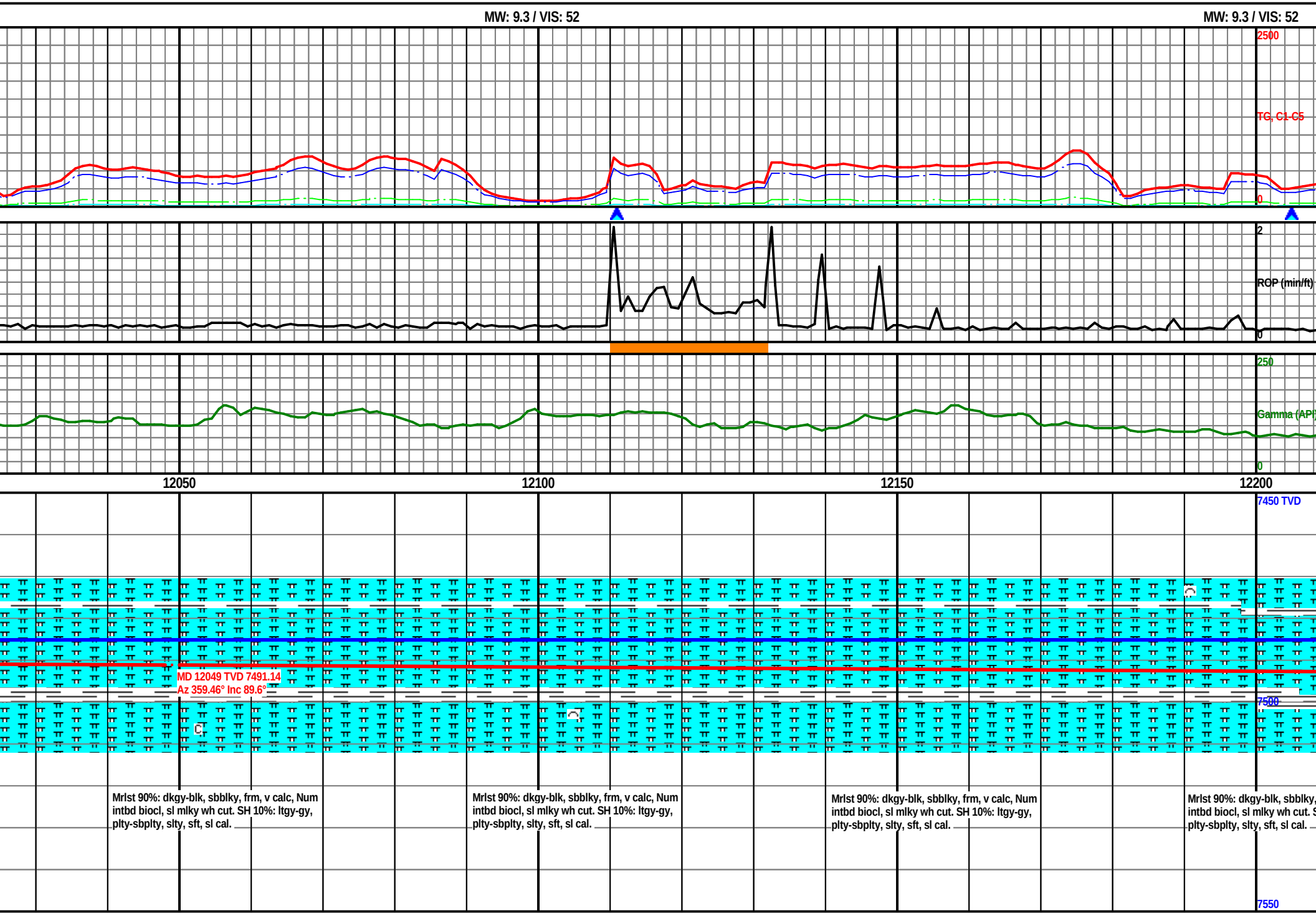

MW: 9.3+ / VIS: 46
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
11150
11200
11250
7425 TVD
7475
7525
MD 11129 TVD 7483.23
Az 358.45° Inc 89.81°
sbblky, frm,
cut. SH 10%: l
F
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc,
Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc,
Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc,
Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal. Tr Frac Fill.

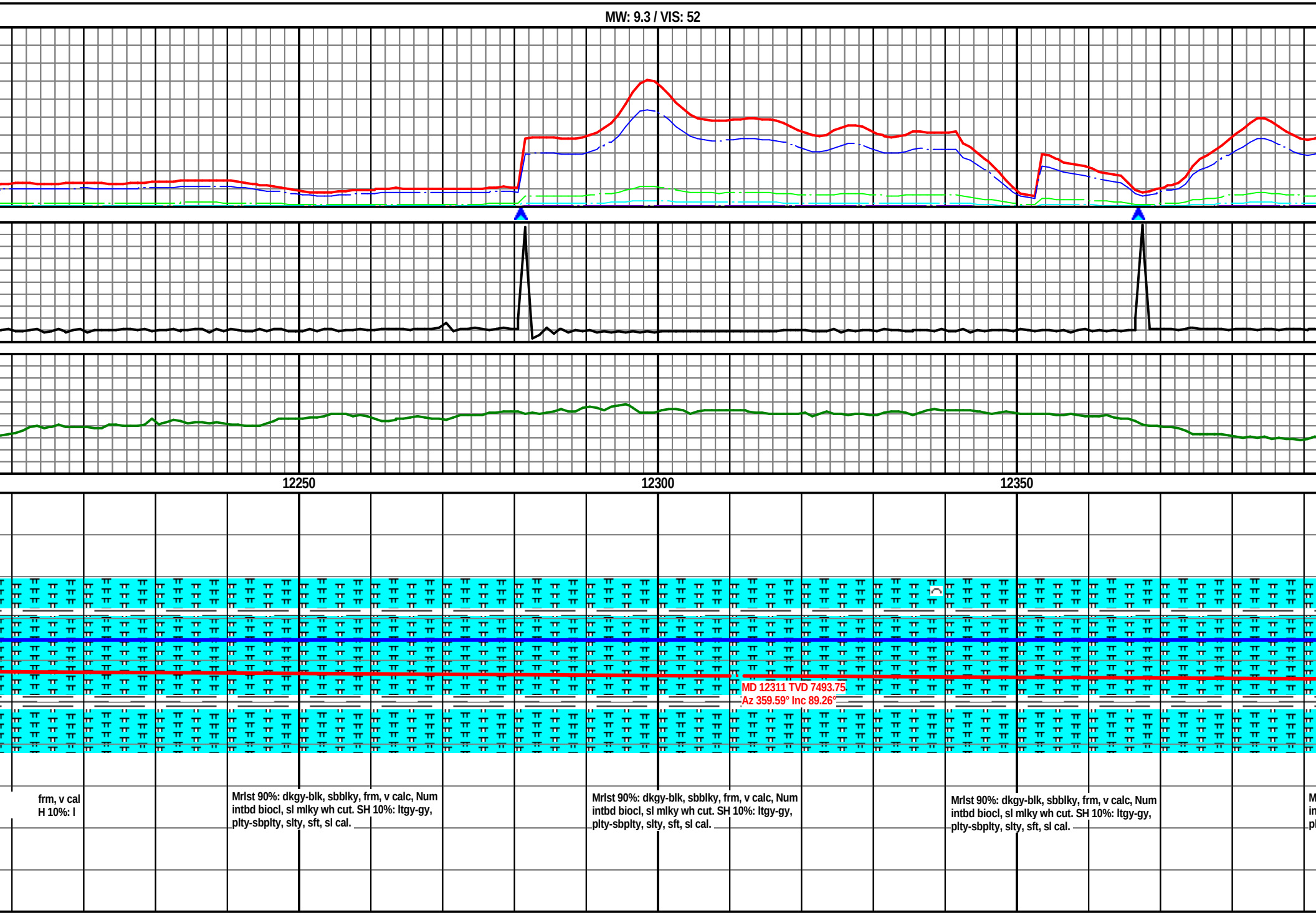

MW: 9.3+ / VIS: 46
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
11300
11350
11400
11450
7425 TVD
7475
7525
MD 11313 TVD 7483.99
Az 358.73° Inc 89.72°
alky Mrlst 90%: dkgy-blk, sbblky, frm,
m intbd biocl, sl mlky wh cut. SH 10%: l
ty-sbplty, slty, sft, sl cal. Tr F
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.

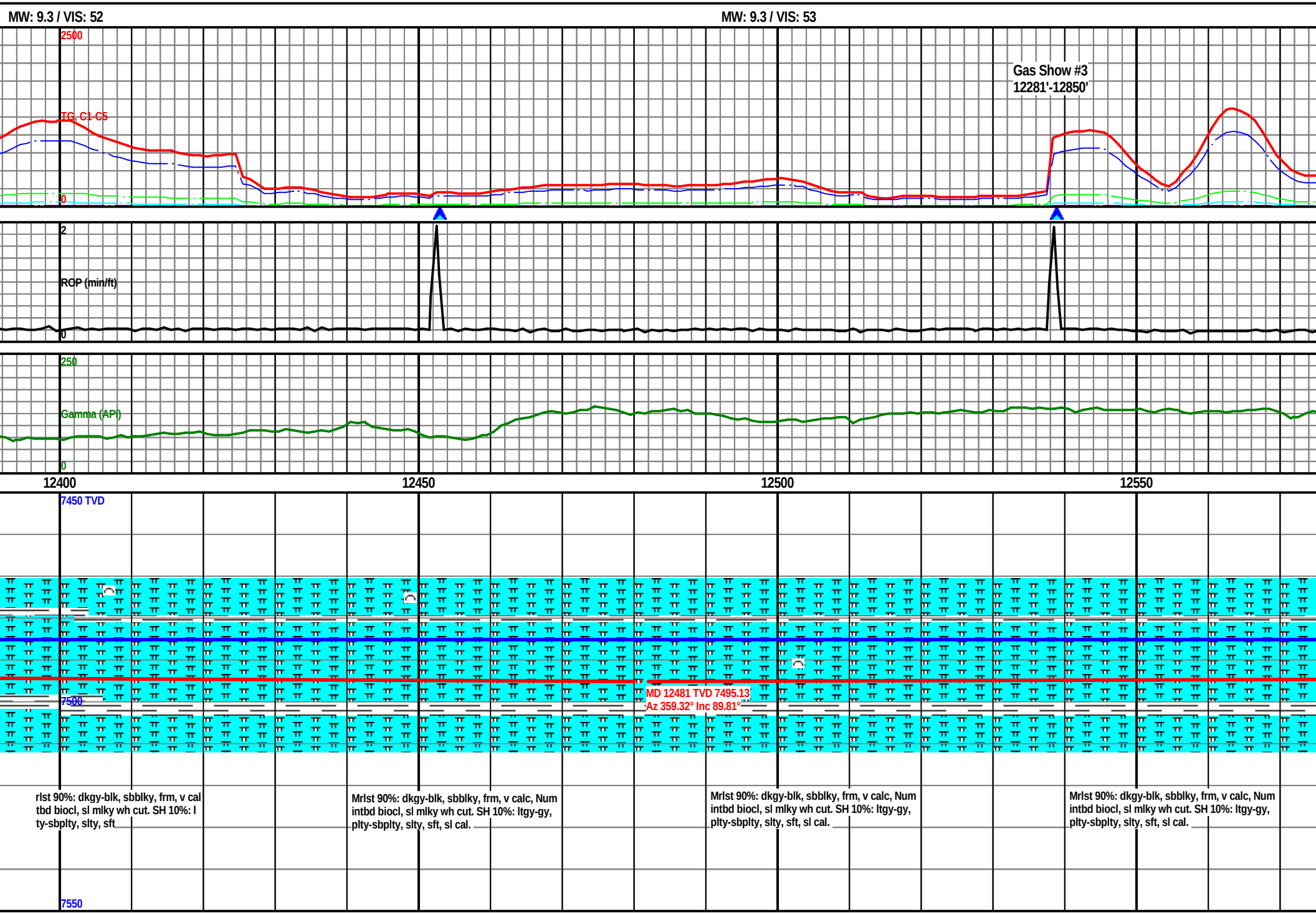

MW: 9.3+ / VIS: 46
MW: 9.3+ / VIS: 46
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
11500
11550
11600
11650
7450 TVD
7450 TVD
Scale Change
7500
7500
MD 11497 TVD 7485.67
Az 1.52° Inc 89.23°
7550
7550
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk
Num intbd biocl, sl mlky wh
plty-sbplty, slty, sft, sl cal. T

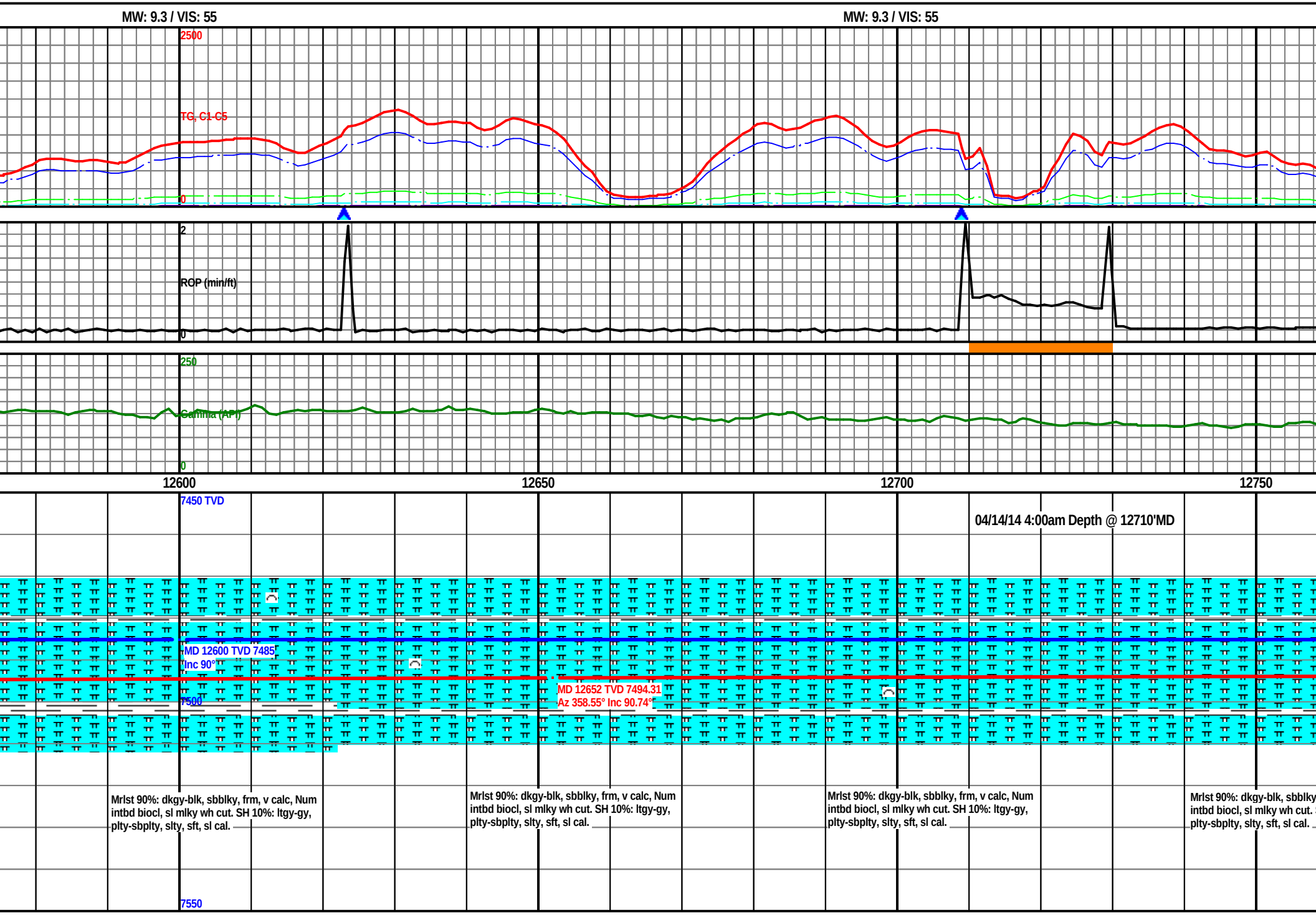

MW: 9.3+ / VIS: 46
MW: 9.3+ / VIS: 46
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
11700
11750
11800
7450 TVD
MD 11773 TVD 7488.86
Az 0.37° Inc 89.45°
7500
7550
sbblky, frm,
cut. SH 10%: l
r F
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc,
Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc,
Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc,
Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal. Tr Frac Fill.

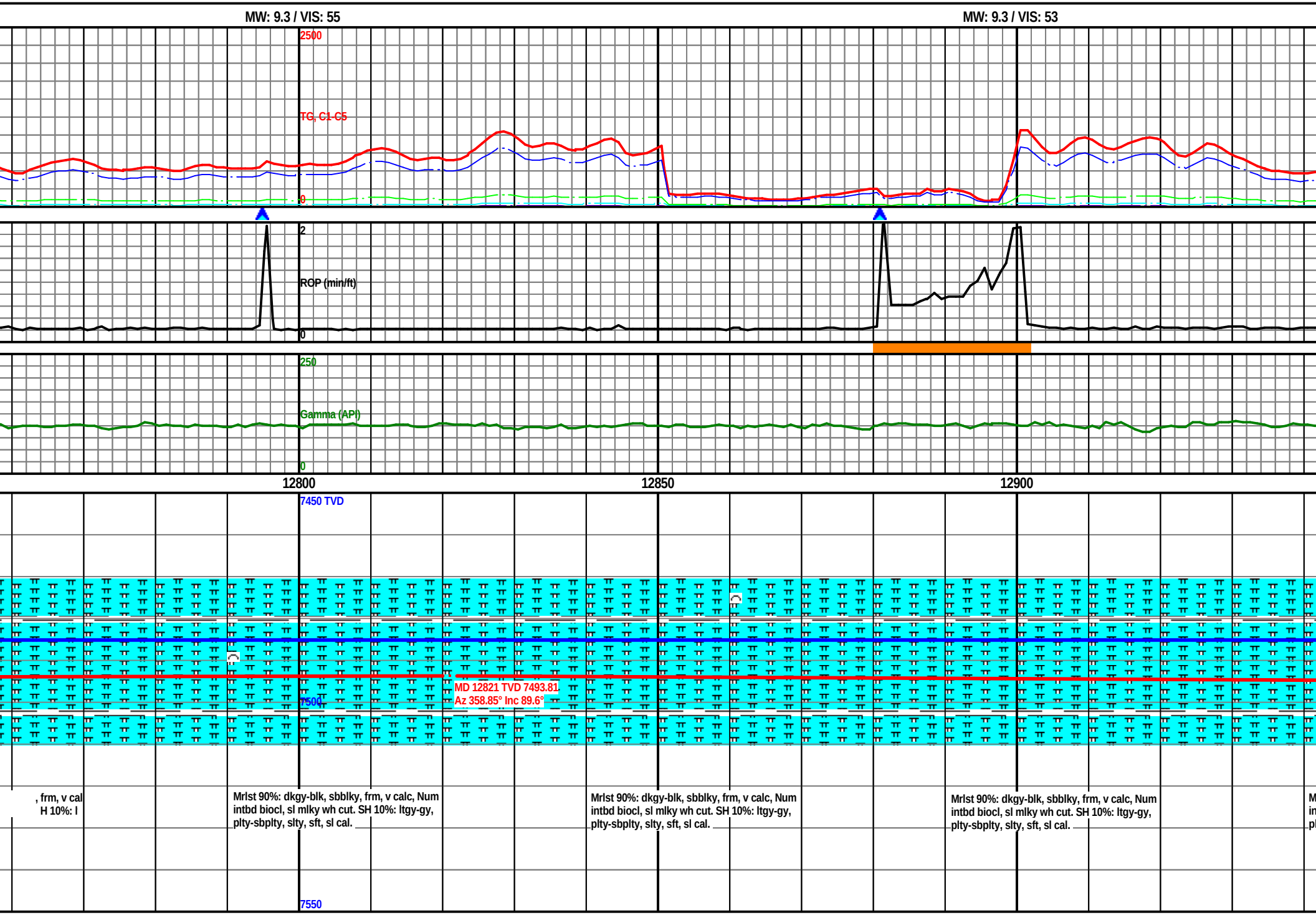

MW: 9.3+ / VIS: 46
MW: 9.3+ / VIS: 46
2500
TG, C1 C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
11850
11900
11950
12000
7450 TVD
MD 12000 TVD 7485
7500
7550
alky Mrlst 90%: dkgy-blk, sbblky, frm,
m intbd biocl, sl mlky wh cut. SH 10%: l
ty-sbplty, slty, sft, sl cal. Tr F
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.

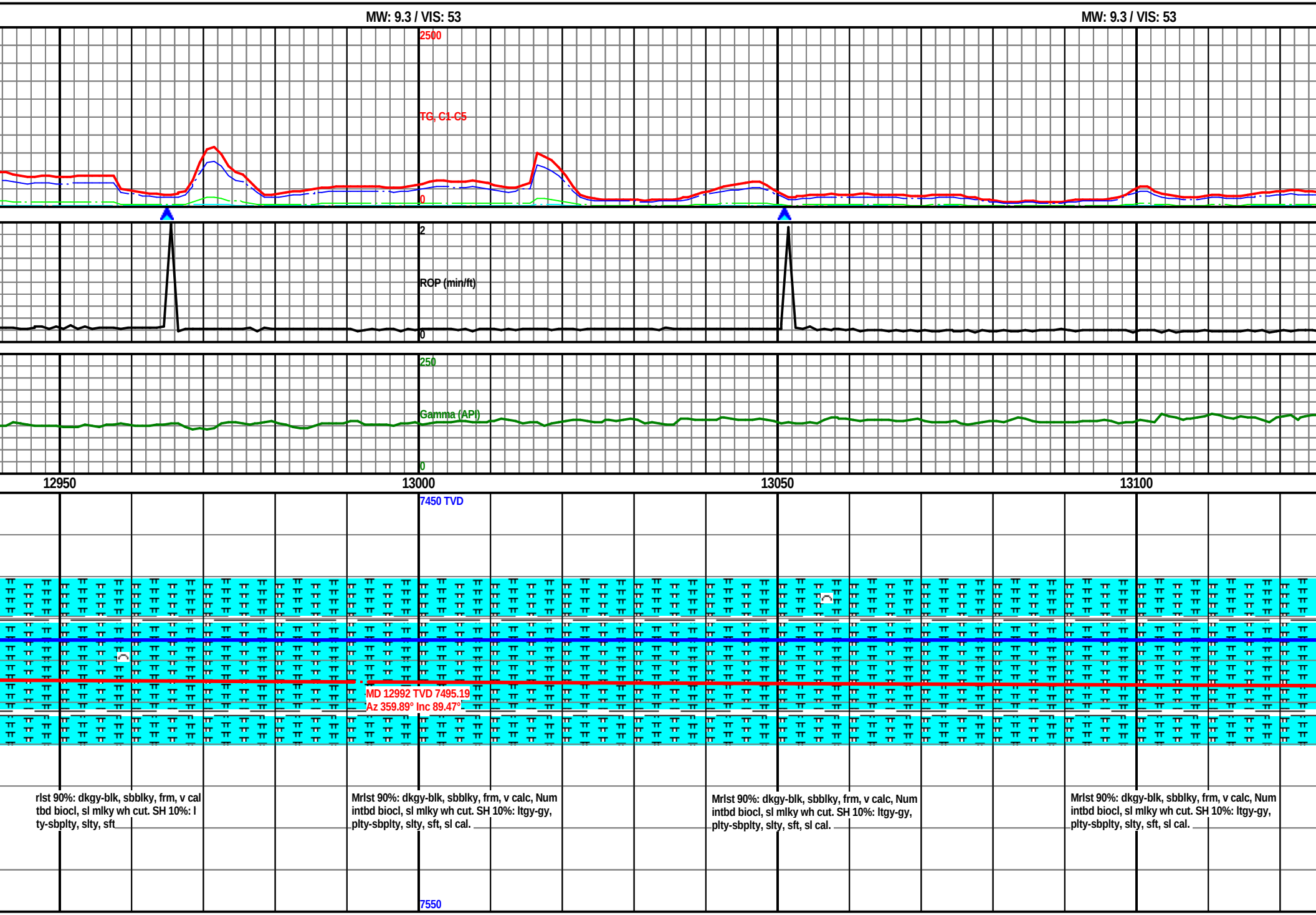

MW: 9.3 / VIS: 52
MW: 9.3 / VIS: 52
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
12050
12100
12150
12200
7450 TVD
MD 12049 TVD 7491.14
Az 359.46° Inc 89.6°
7500
7550
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, intbd biocl, sl mlky wh cut. plty-sbplty, slty, sft, sl cal.

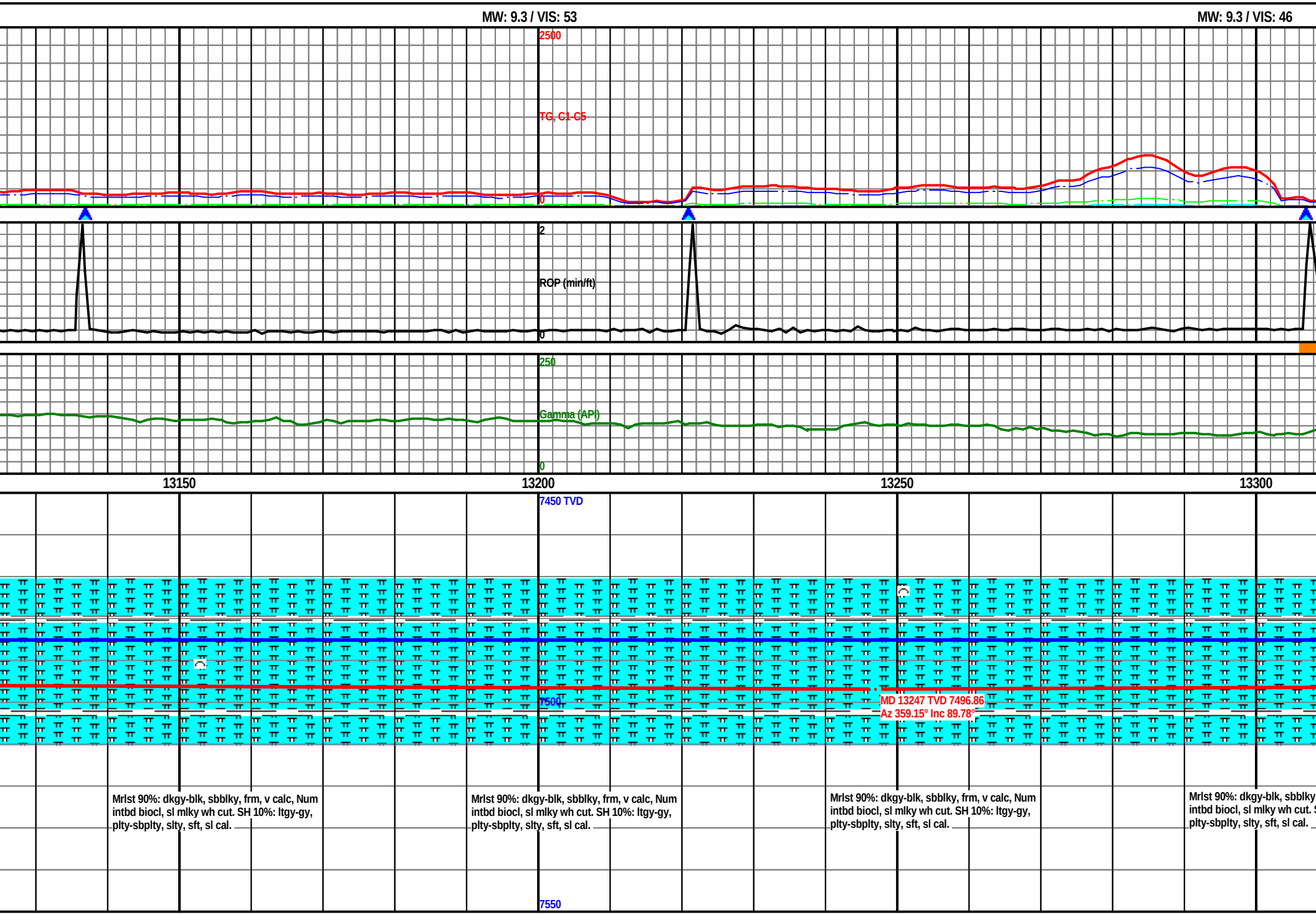

MW: 9.3 / VIS: 52
12250
12300
12350
MD 12311 TVD 7493.75
Az 359.59° Inc 89.26°
frm, v cal
H 10%: l
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.

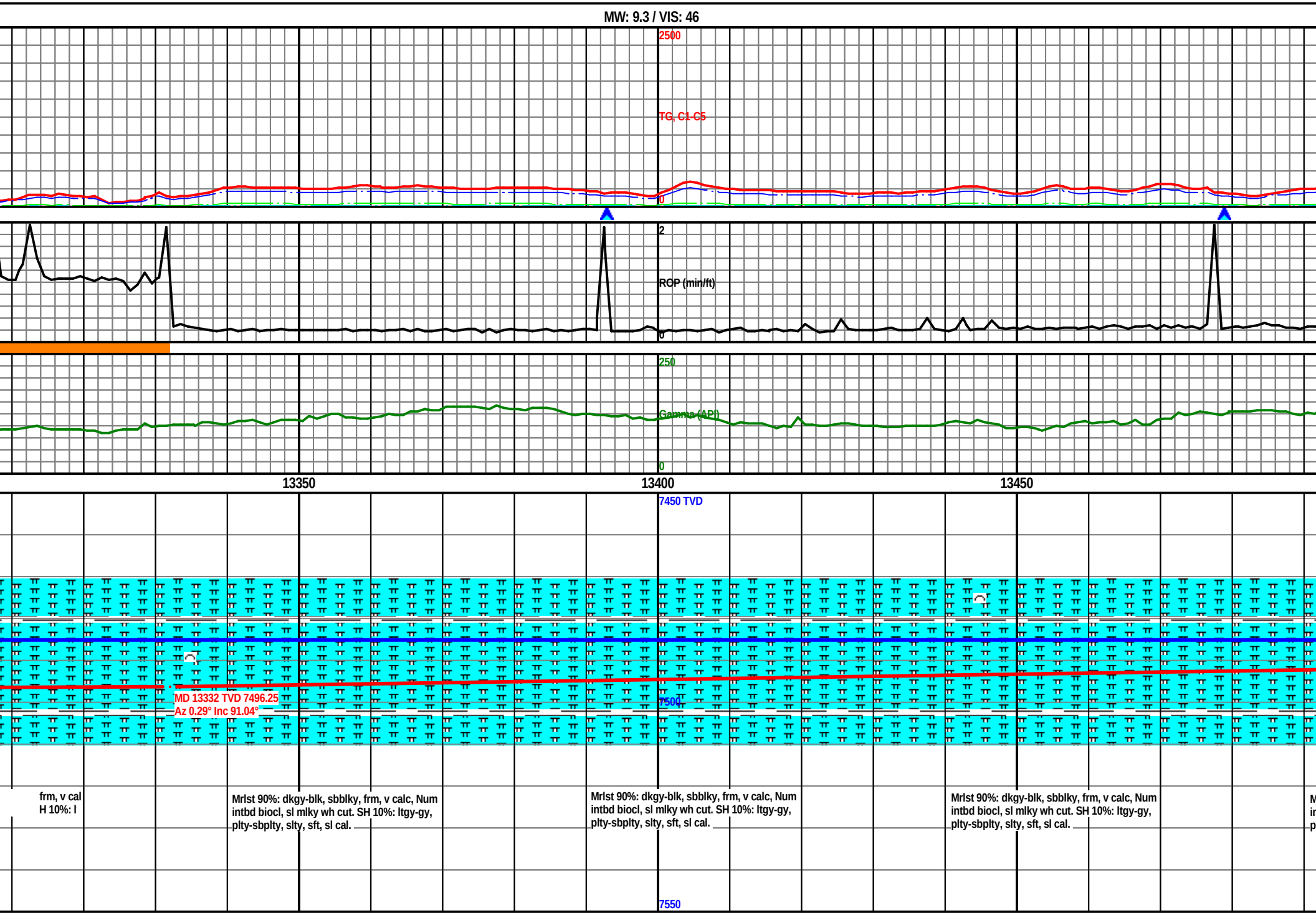

MW: 9.3 / VIS: 52
MW: 9.3 / VIS: 53
2500
TG, C1-C5
0
Gas Show #3
12281'-12850'
2
ROP (min/ft)
0
250
Gamma (API)
0
12400
12450
12500
12550
7450 TVD
7500
7550
MD 12481 TVD 7495.13
Az 359.32° Inc 89.81°
rlst 90%: dkgy-blk, sbblky, frm, v cal
tbd biocl, sl mlky wh cut. SH 10%: l
ty-sbplty, slty, sft
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.

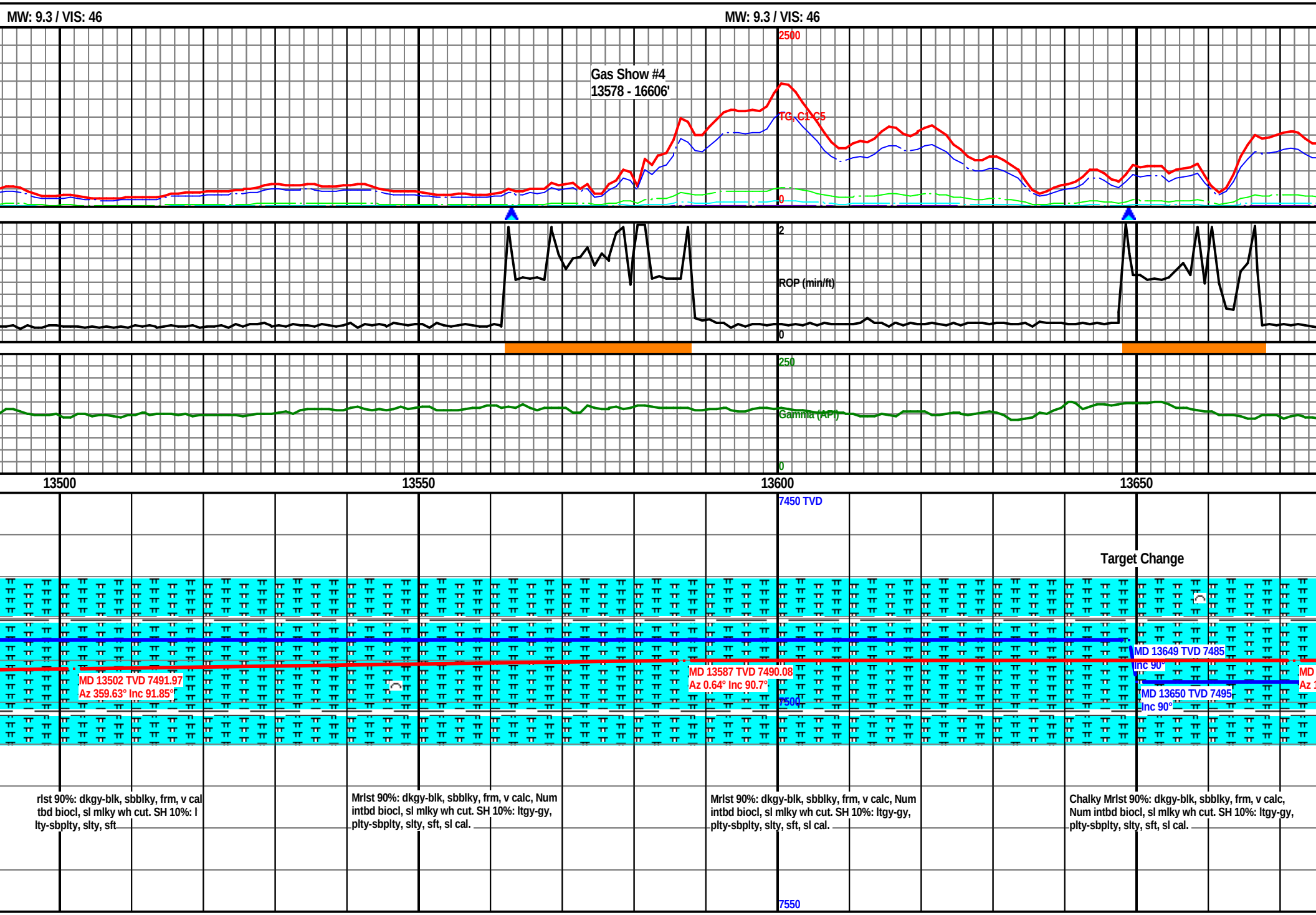

MW: 9.3 / VIS: 55
MW: 9.3 / VIS: 55
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
12600
12650
12700
12750
7450 TVD
04/14/14 4:00am Depth @ 12710'MD
MD 12600 TVD 7485
Inc 90°
MD 12652 TVD 7494.31
Az 358.55° Inc 90.74°
7500
7550
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky
intbd biocl, sl mlky wh cut.
plty-sbplty, slty, sft, sl cal.

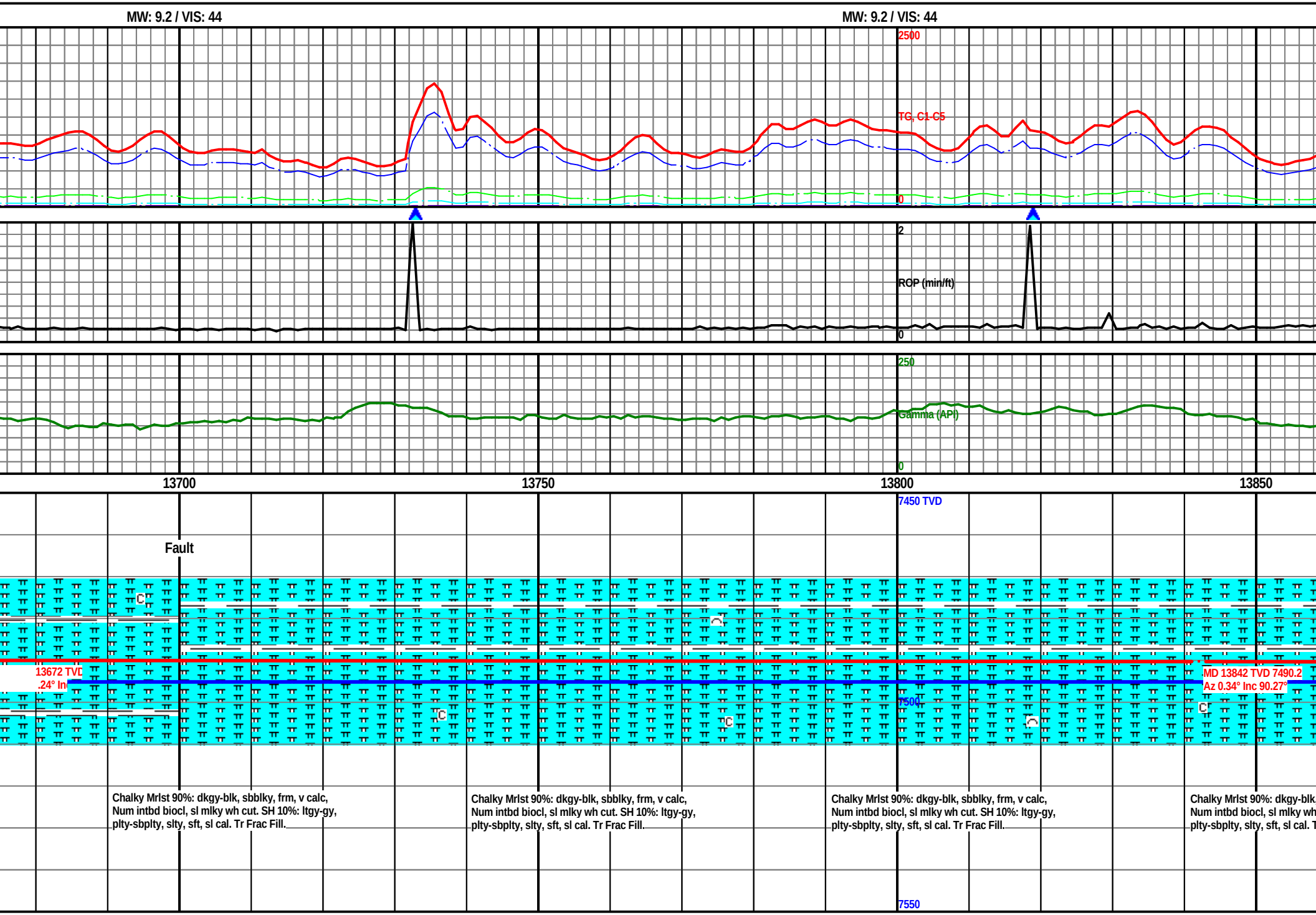

MW: 9.3 / VIS: 55
MW: 9.3 / VIS: 53
2500
TG, C1 C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
12800
12850
12900
7450 TVD
MD 12821 TVD 7493.81
Az 358.85° Inc 89.6°
7500
7550
, frm, v cal
H 10%: l
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.

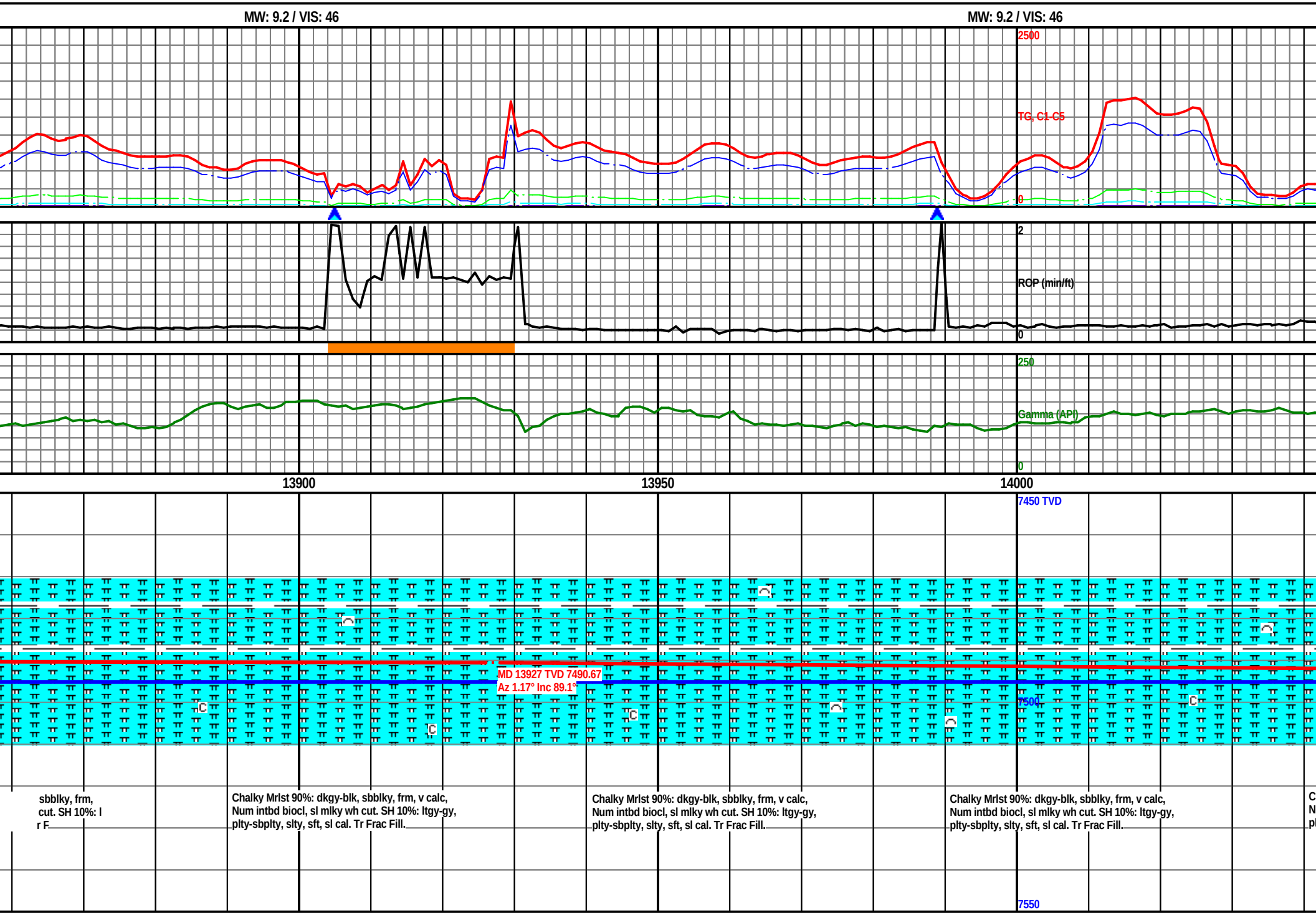

MW: 9.3 / VIS: 53
MW: 9.3 / VIS: 53
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
12950
13000
13050
13100
7450 TVD
MD 12992 TVD 7495.19
Az 359.89° Inc 89.47°
rlst 90%: dkgy-blk, sbblky, frm, v cal
tbd biocl, sl mlky wh cut. SH 10%: l
ty-sbplty, slty, sft
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
7550

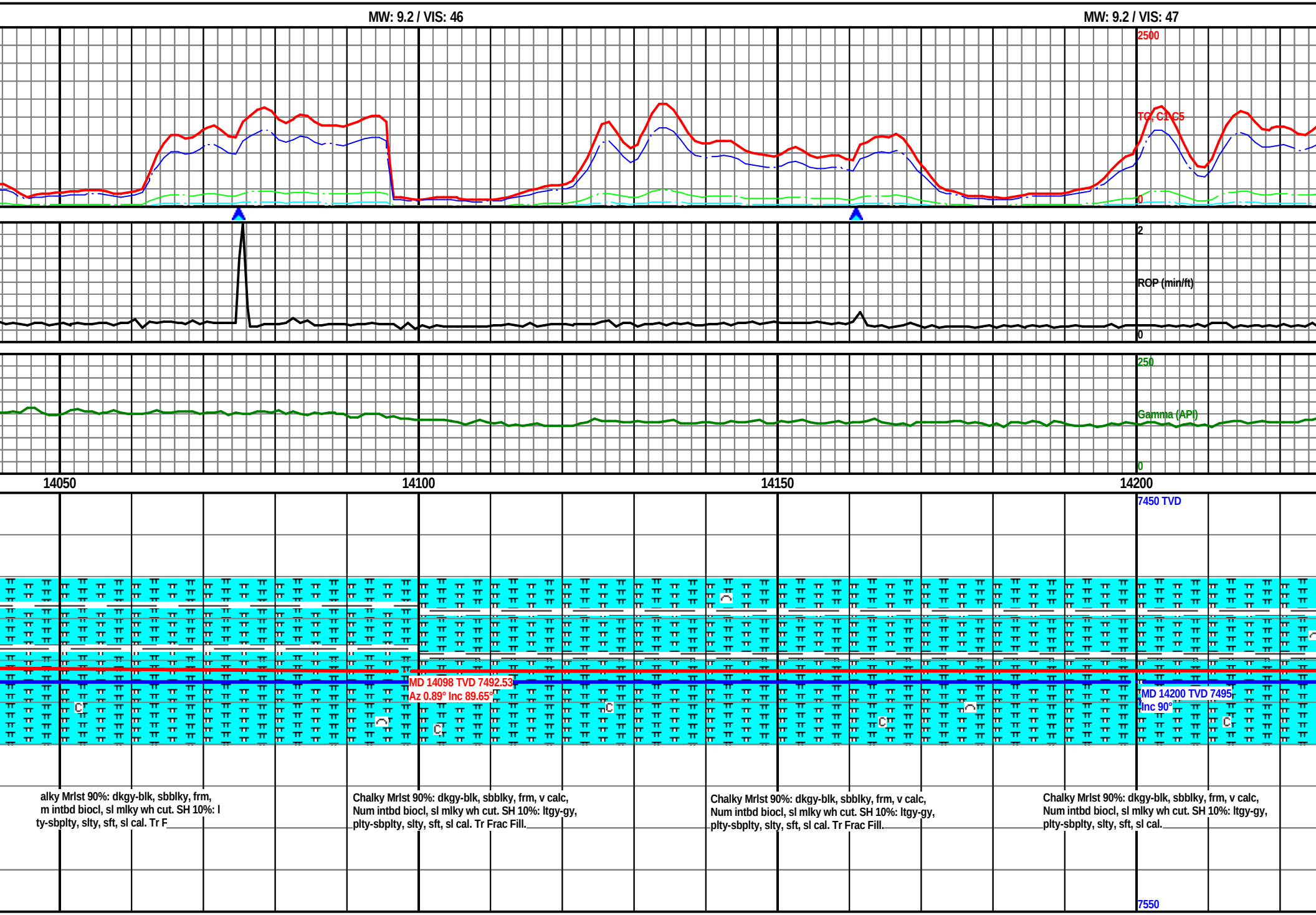

MW: 9.3 / VIS: 53
MW: 9.3 / VIS: 46
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
13150
13200
13250
13300
7450 TVD
7500
7550
MD 13247 TVD 7496.86
Az 359.15° Inc 89.78°
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky
intbd biocl, sl mlky wh cut.
plty-sbplty, slty, sft, sl cal.

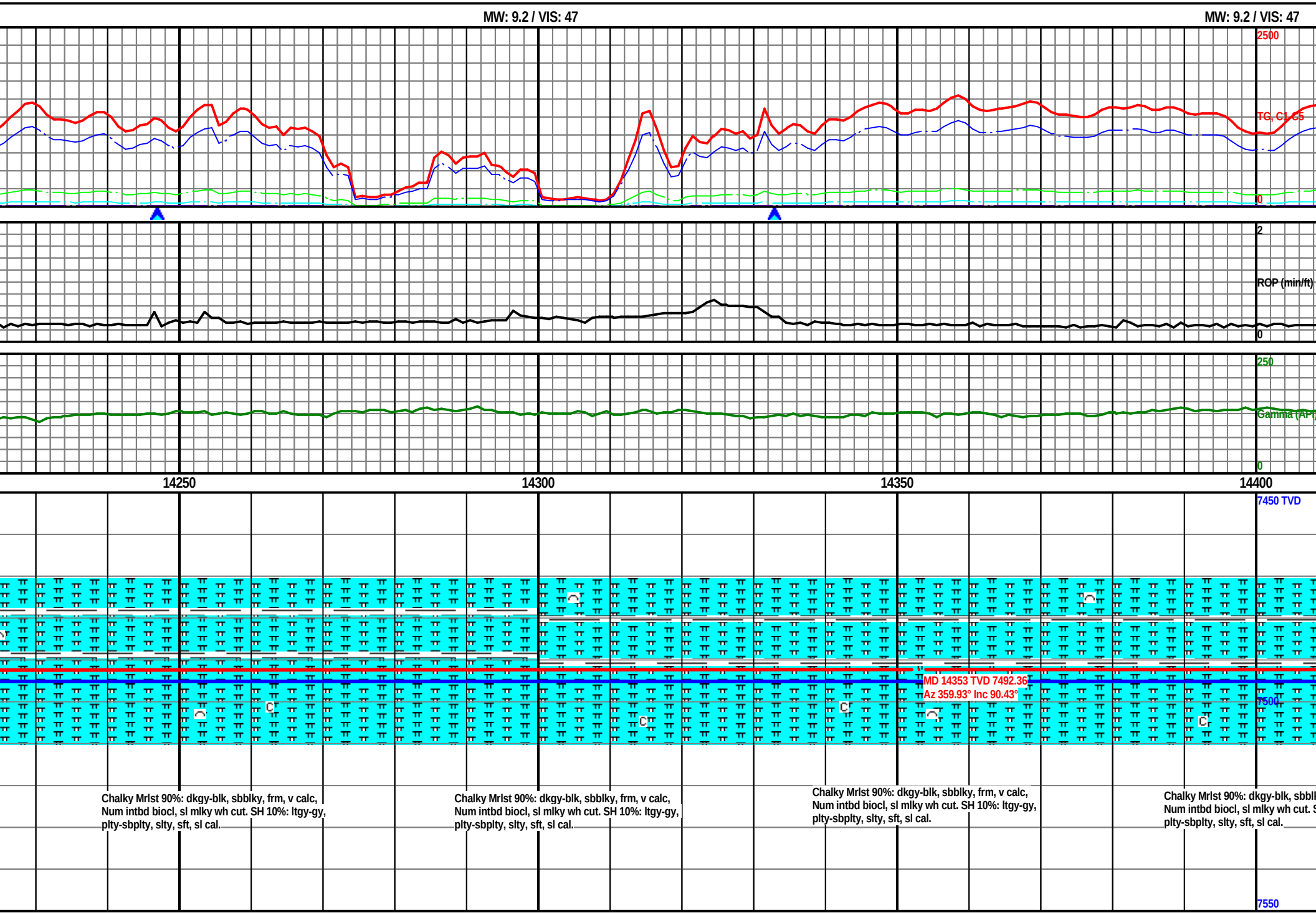

MW: 9.3 / VIS: 46
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
13350
13400
13450
7450 TVD
MD 13332 TVD 7496.25
Az 0.29° Inc 91.04°
7500
7550
frm, v cal
H 10%: l
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.

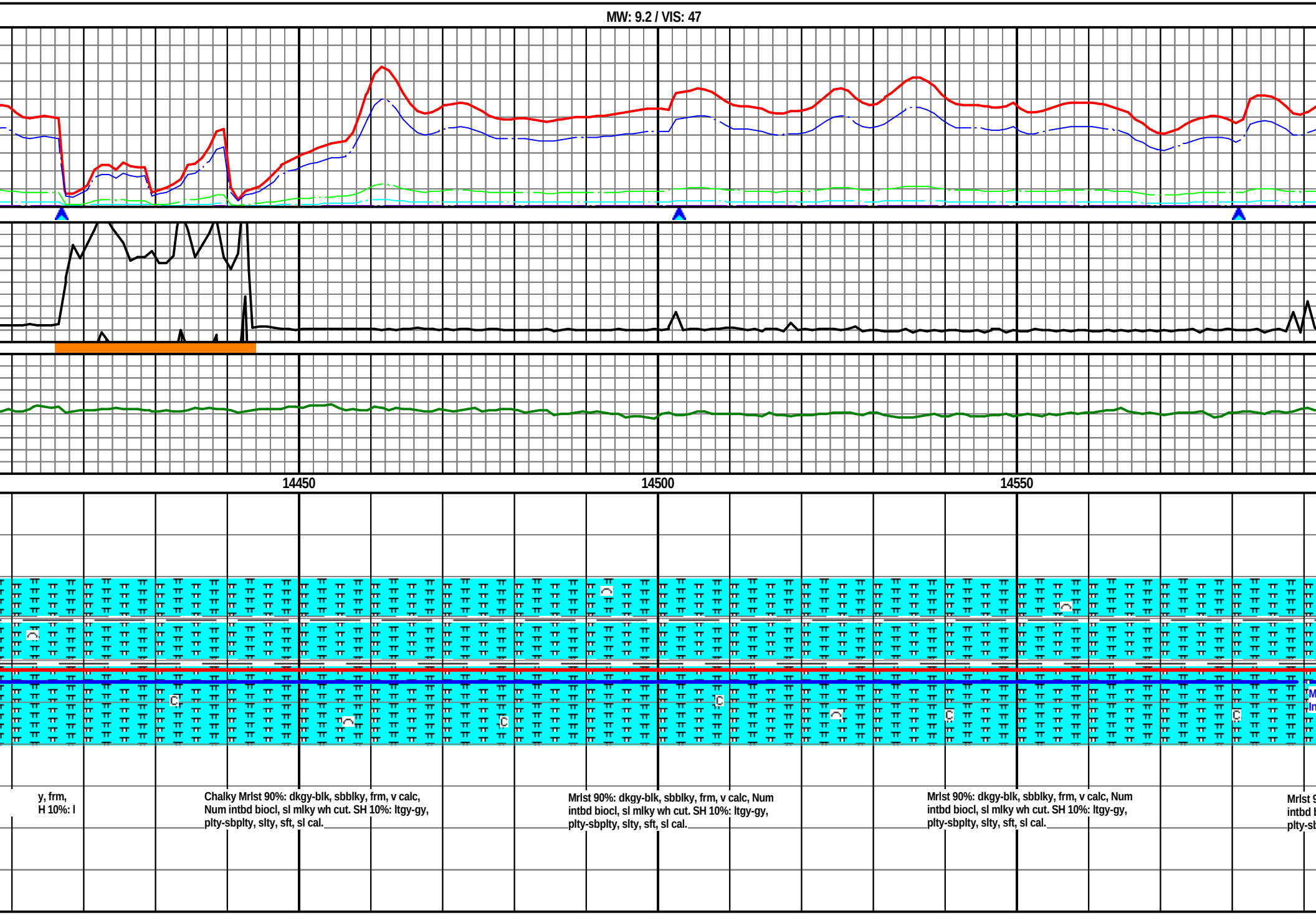

MW: 9.3 / VIS: 46
MW: 9.3 / VIS: 46
Gas Show #4
13578 - 16606'
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
13500
13550
13600
13650
7450 TVD
Target Change
MD 13502 TVD 7491.97
Az 359.63° Inc 91.85°
MD 13587 TVD 7490.08
Az 0.64° Inc 90.7°
MD 13649 TVD 7485
Inc 90°
MD 13650 TVD 7495
Inc 90°
7500
7550
rlst 90%: dkgy-blk, sbblky, frm, v cal
tbd biocl, sl mlky wh cut. SH 10%: l
lty-sbplty, slty, sft
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc,
Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.

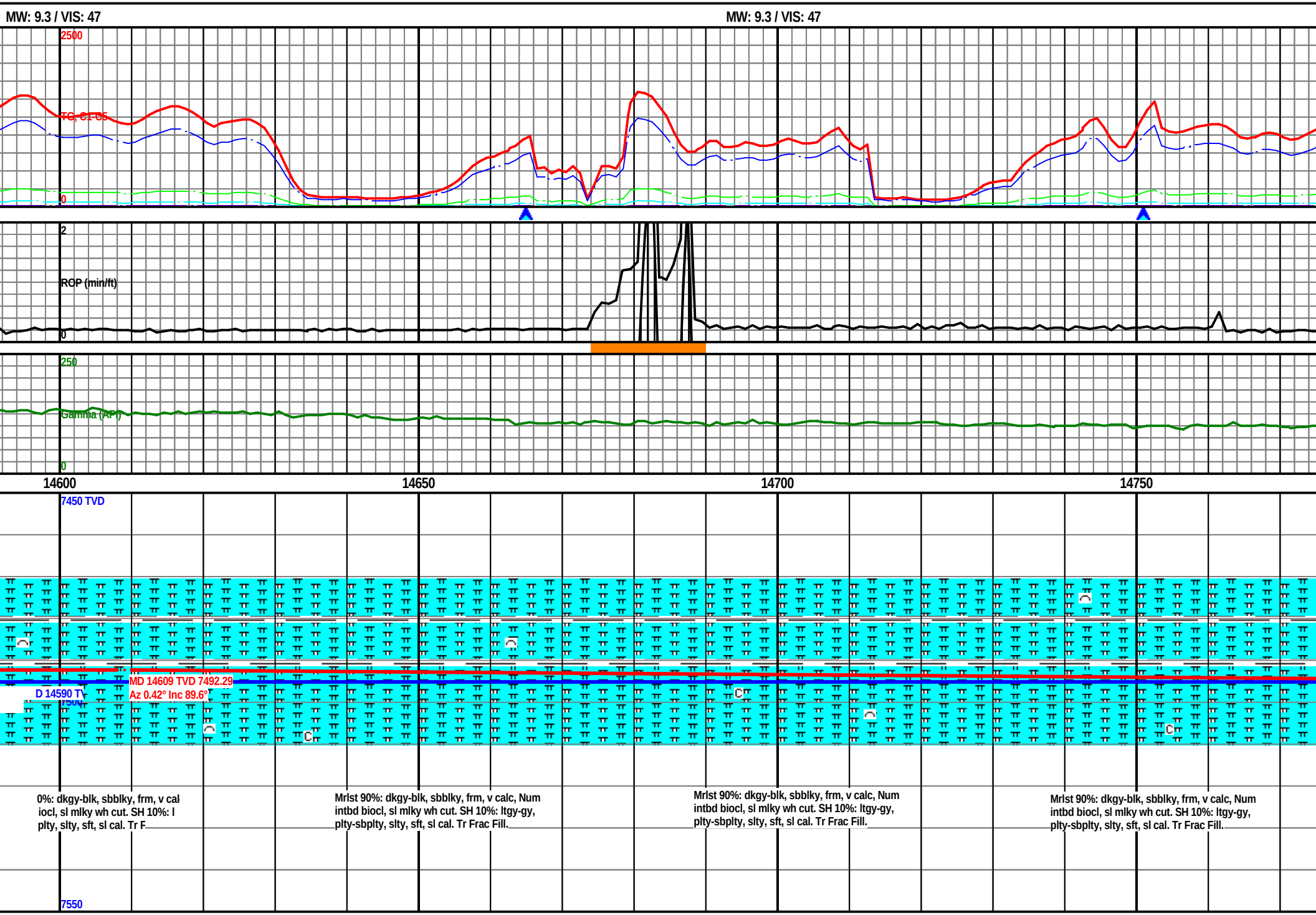

MW: 9.2 / VIS: 44
MW: 9.2 / VIS: 44
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
13700
13750
13800
13850
7450 TVD
Fault
13672 TVD
.24° In
MD 13842 TVD 7490.2
Az 0.34° Inc 90.27°
7500
7550
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Chalky Mrlst 90%: dkgy-blk
Num intbd biocl, sl mlky wh
plty-sbplty, slty, sft, sl cal. T

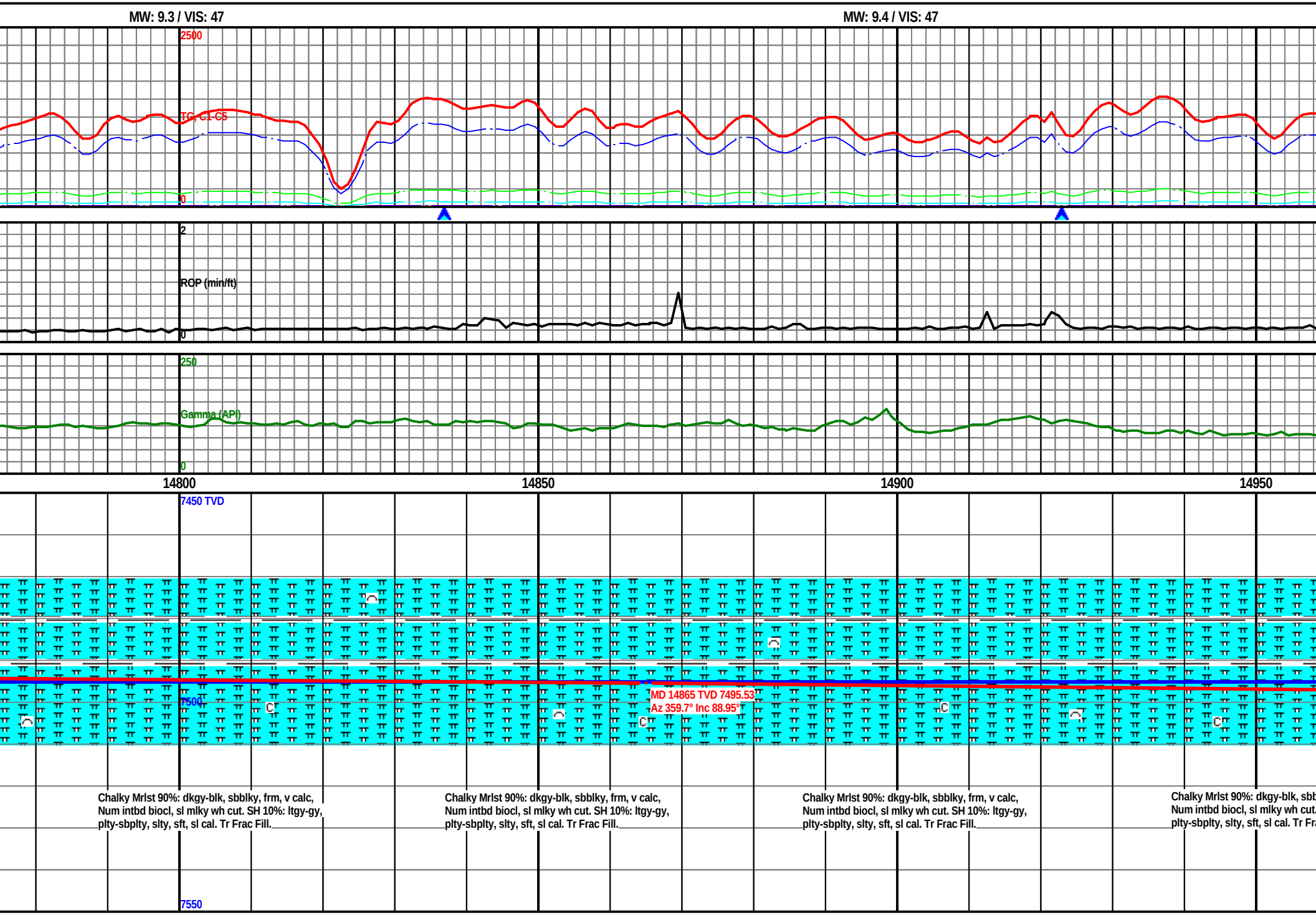

MW: 9.2 / VIS: 46
MW: 9.2 / VIS: 46
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
13900
13950
14000
7450 TVD
MD 13927 TVD 7490.67
Az 1.17° Inc 89.1°
7500
7550
sbblky, frm,
cut. SH 10%: l
r F
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc,
Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc,
Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc,
Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal. Tr Frac Fill.

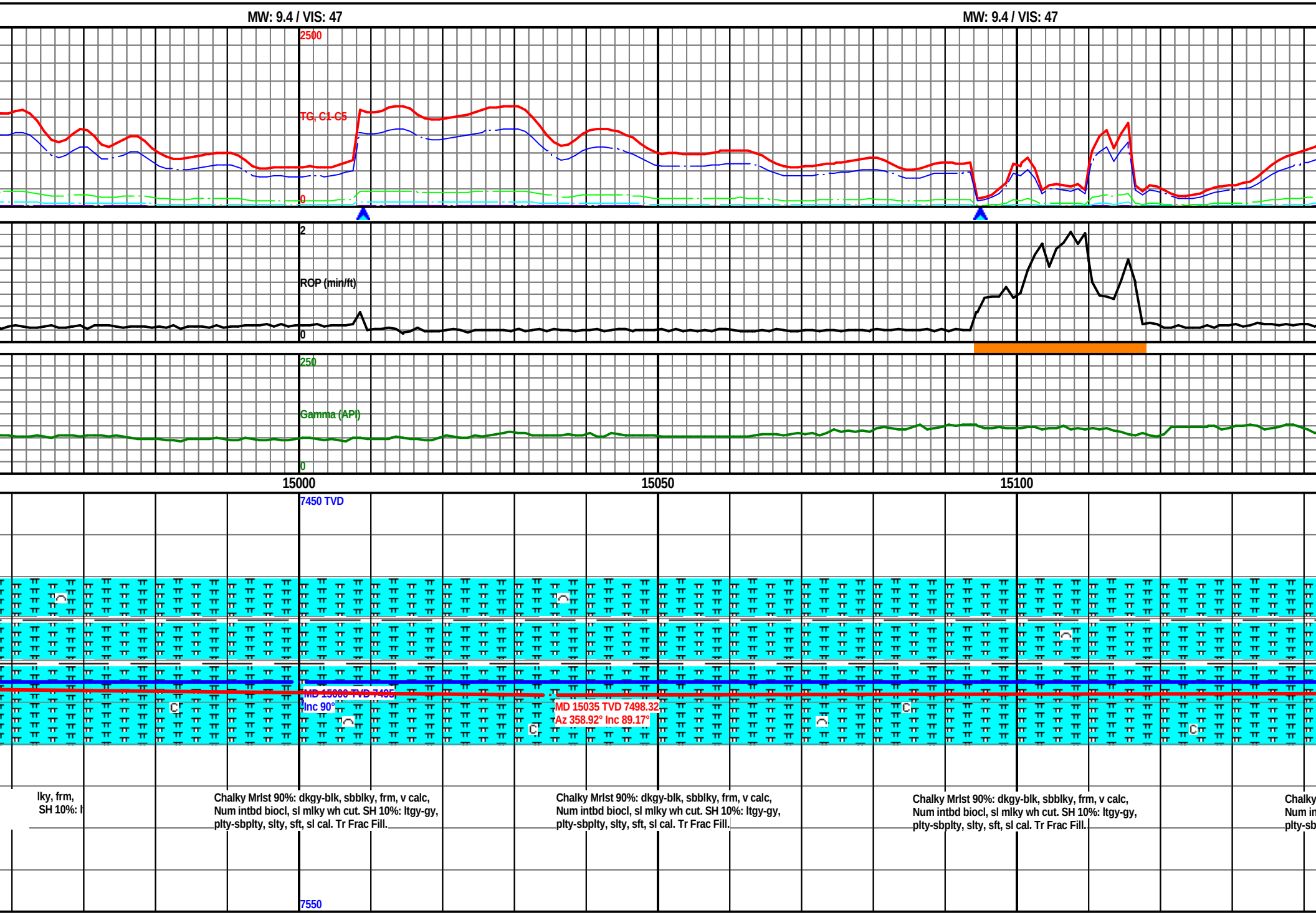

MW: 9.2 / VIS: 46
MW: 9.2 / VIS: 47
2500
TG, C1/C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
14050
14100
14150
14200
7450 TVD
MD 14098 TVD 7492.53
Az 0.89° Inc 89.65°
MD 14200 TVD 7495
Inc 90°
7550
alky Mrlst 90%: dkgy-blk, sbblky, frm,
m intbd biocl, sl mlky wh cut. SH 10%: l
ty-sbplty, slty, sft, sl cal. Tr F
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc,
Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc,
Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc,
Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.

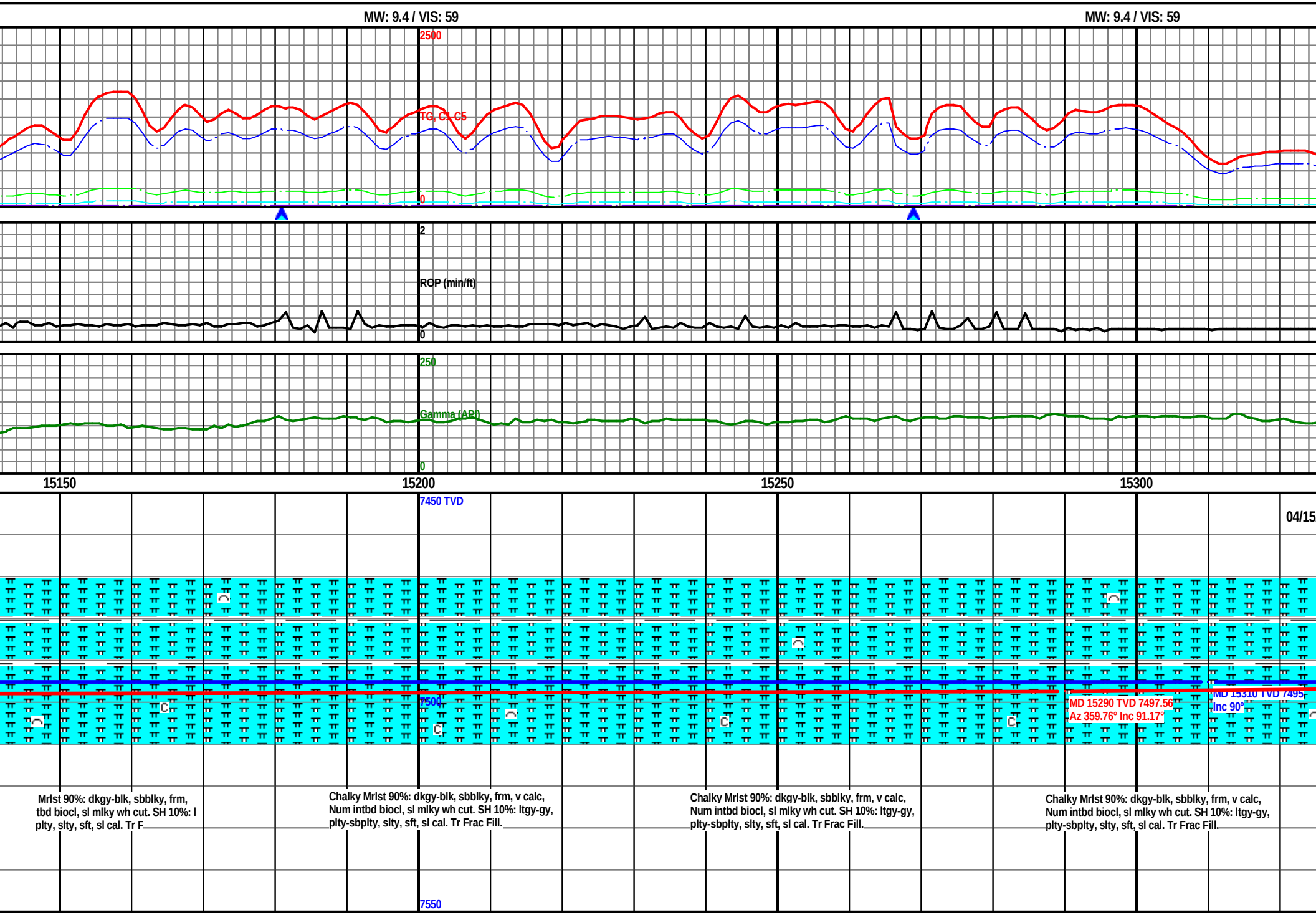

MW: 9.2 / VIS: 47
MW: 9.2 / VIS: 47
2500
TG, C1, C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
14250
14300
14350
14400
7450 TVD
MD 14353 TVD 7492.36
Az 359.93° Inc 90.43°
7500
7550
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal.
Chalky Mrlst 90%: dkgy-blk, sbbl
Num intbd biocl, sl mlky wh cut.
plty-sbplty, slty, sft, sl cal.

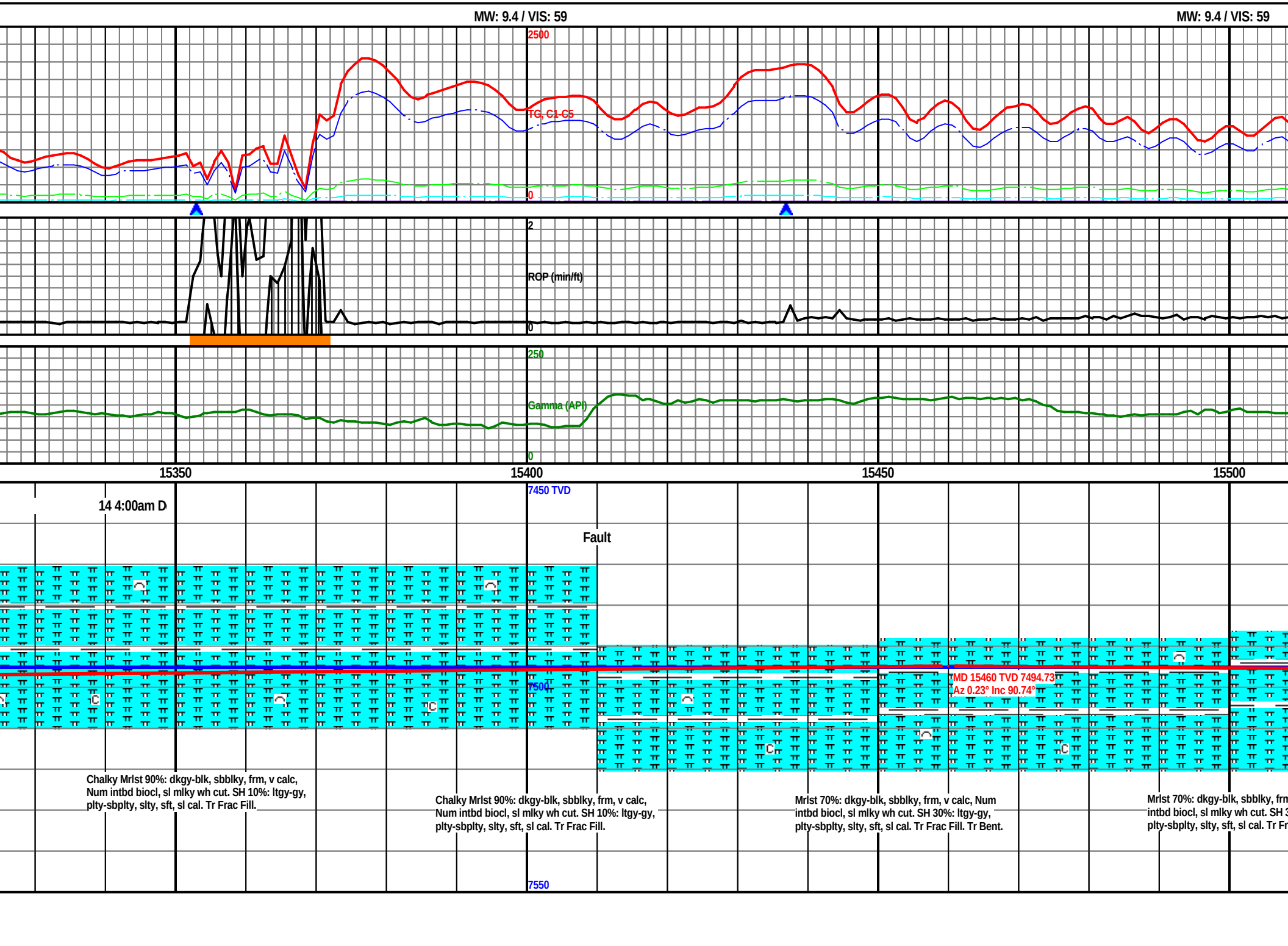

MW: 9.2 / VIS: 47
14450
14500
14550
y, frm,
H 10%: l
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc,
Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy,
plty-sbplty, slty, sft, sl cal.

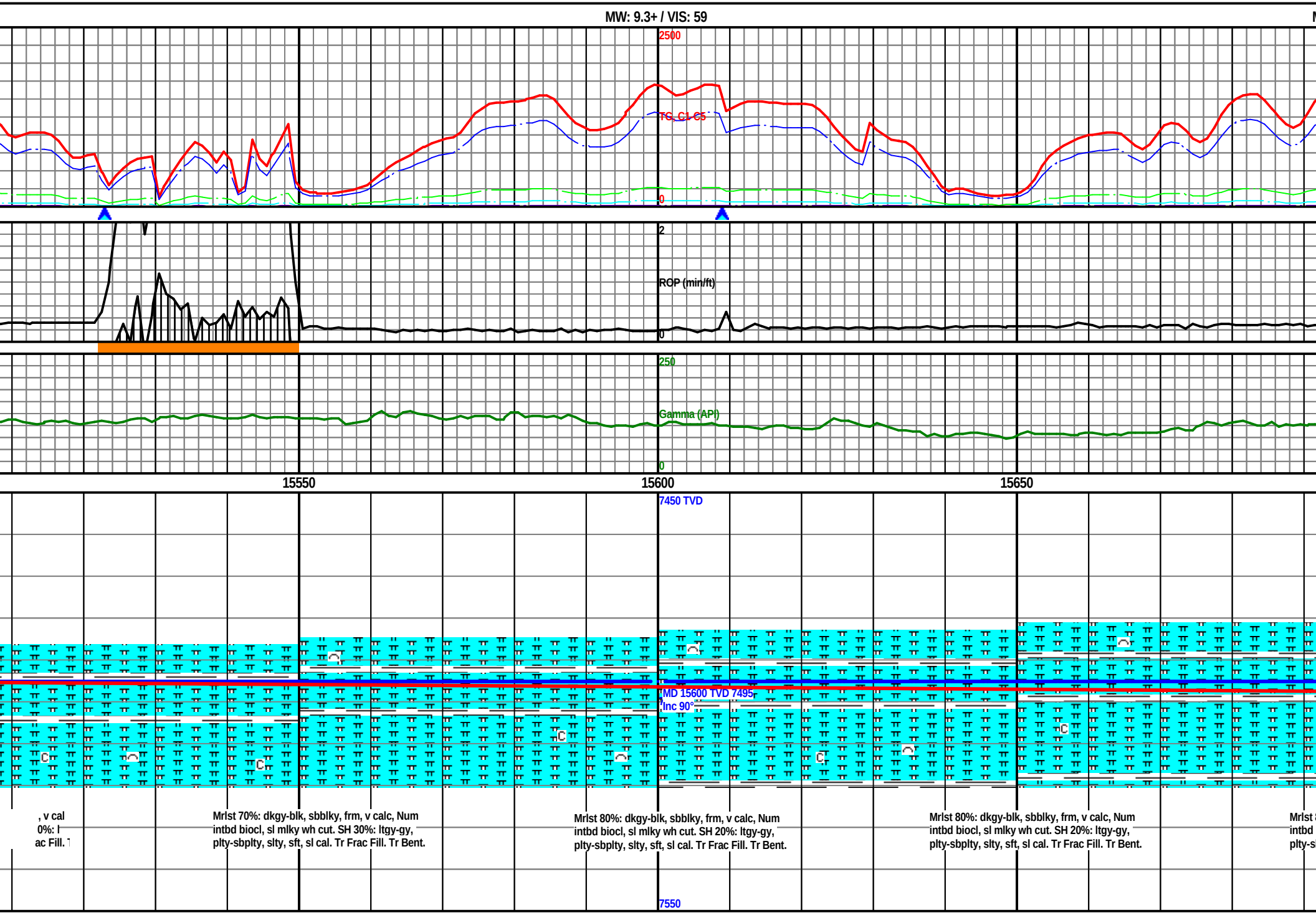

MW: 9.3 / VIS: 47
MW: 9.3 / VIS: 47
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
14600
14650
14700
14750
7450 TVD
MD 14609 TVD 7492.29
Az 0.42° Inc 89.6°
D 14590 TV
7500
7550
0%: dkgy-blk, sbblky, frm, v cal iocl, sl mlky wh cut. SH 10%: l plty, slty, sft, sl cal. Tr F
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill.

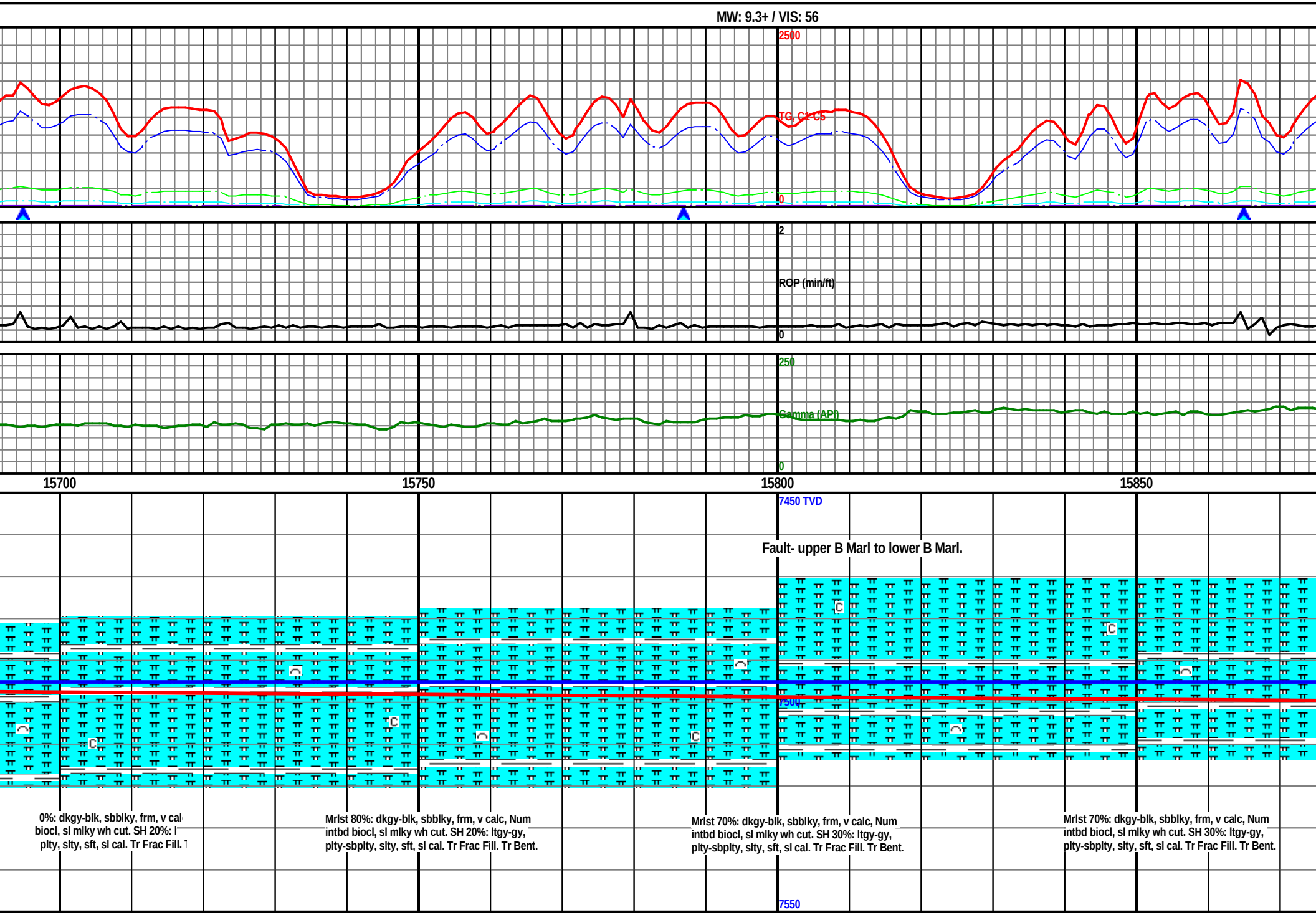

MW: 9.3 / VIS: 47
MW: 9.4 / VIS: 47
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
14800
14850
14900
14950
7450 TVD
7500
7550
MD 14865 TVD 7495.53
Az 359.7° Inc 88.95°
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Chalky Mrlst 90%: dkgy-blk, sbb
Num intbd biocl, sl mlky wh cut.
plty-sbplty, slty, sft, sl cal. Tr Fra

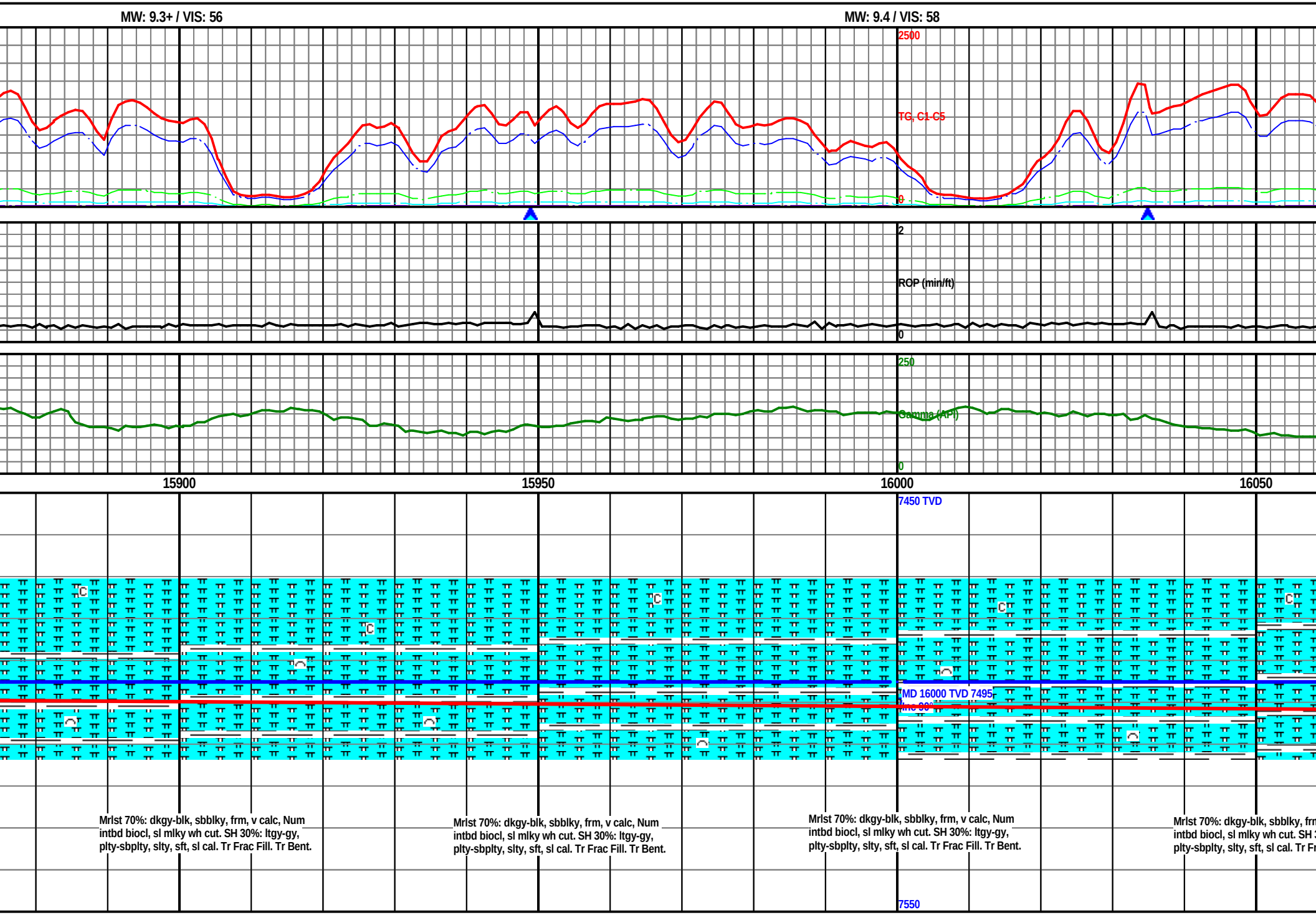

MW: 9.4 / VIS: 47
MW: 9.4 / VIS: 47
2500
TG, C1 C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
15000
15050
15100
7450 TVD
MD 15000 TVD 7495
Inc 90°
MD 15035 TVD 7498.32
Az 358.92° Inc 89.17°
lky, frm,
SH 10%: l
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Chalky
Num in
plty-sb
7550

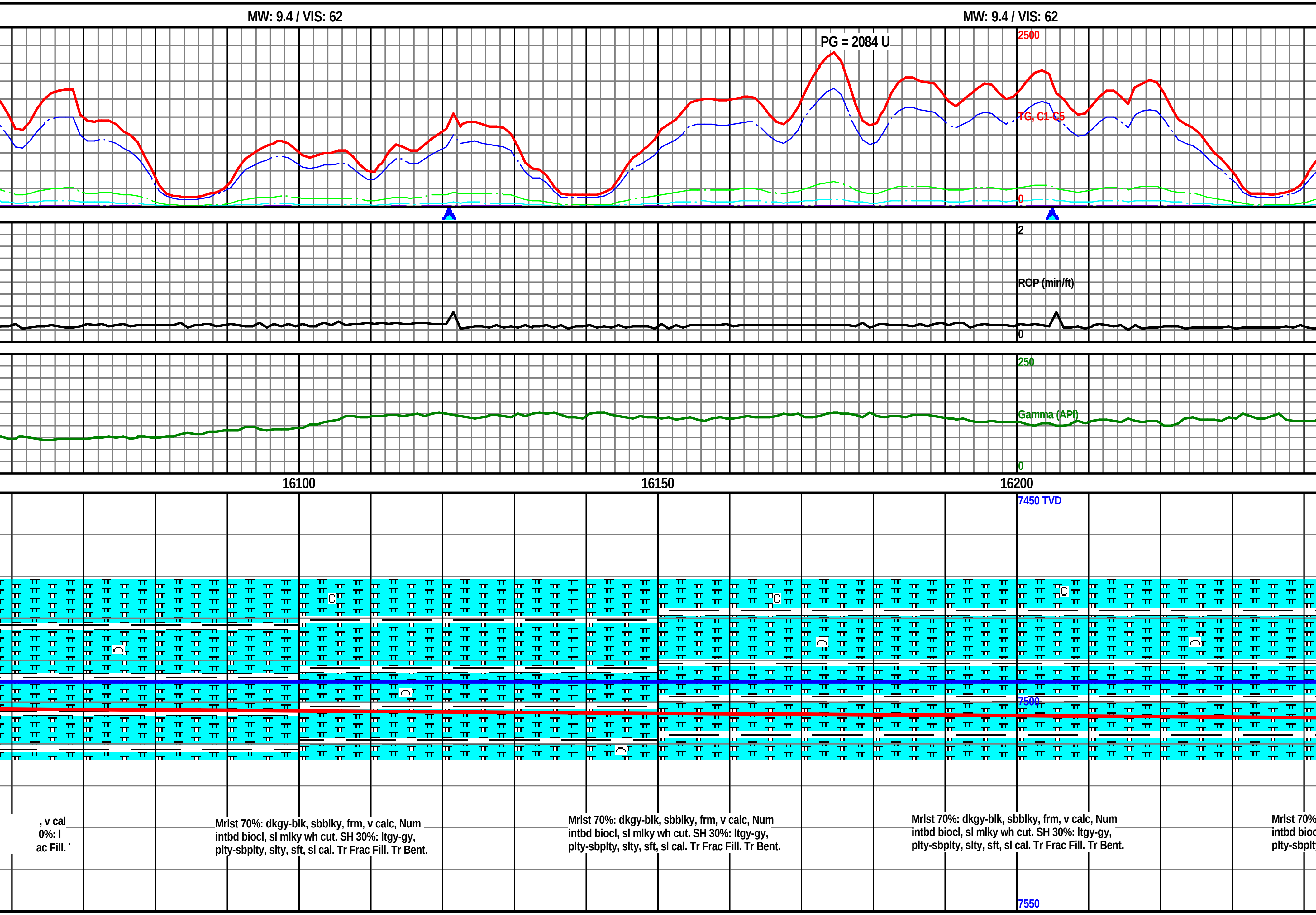

MW: 9.4 / VIS: 59
MW: 9.4 / VIS: 59
2500
TG, C1, C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
15150
15200
15250
15300
7450 TVD
04/15
7500
MD 15290 TVD 7497.56
Az 359.76° Inc 91.17°
MD 15310 TVD 7495
Inc 90°
7550
Mrlst 90%: dkgy-blk, sbblky, frm, tbd biocl, sl mlky wh cut. SH 10%: l plty, slty, sft, sl cal. Tr F
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill.

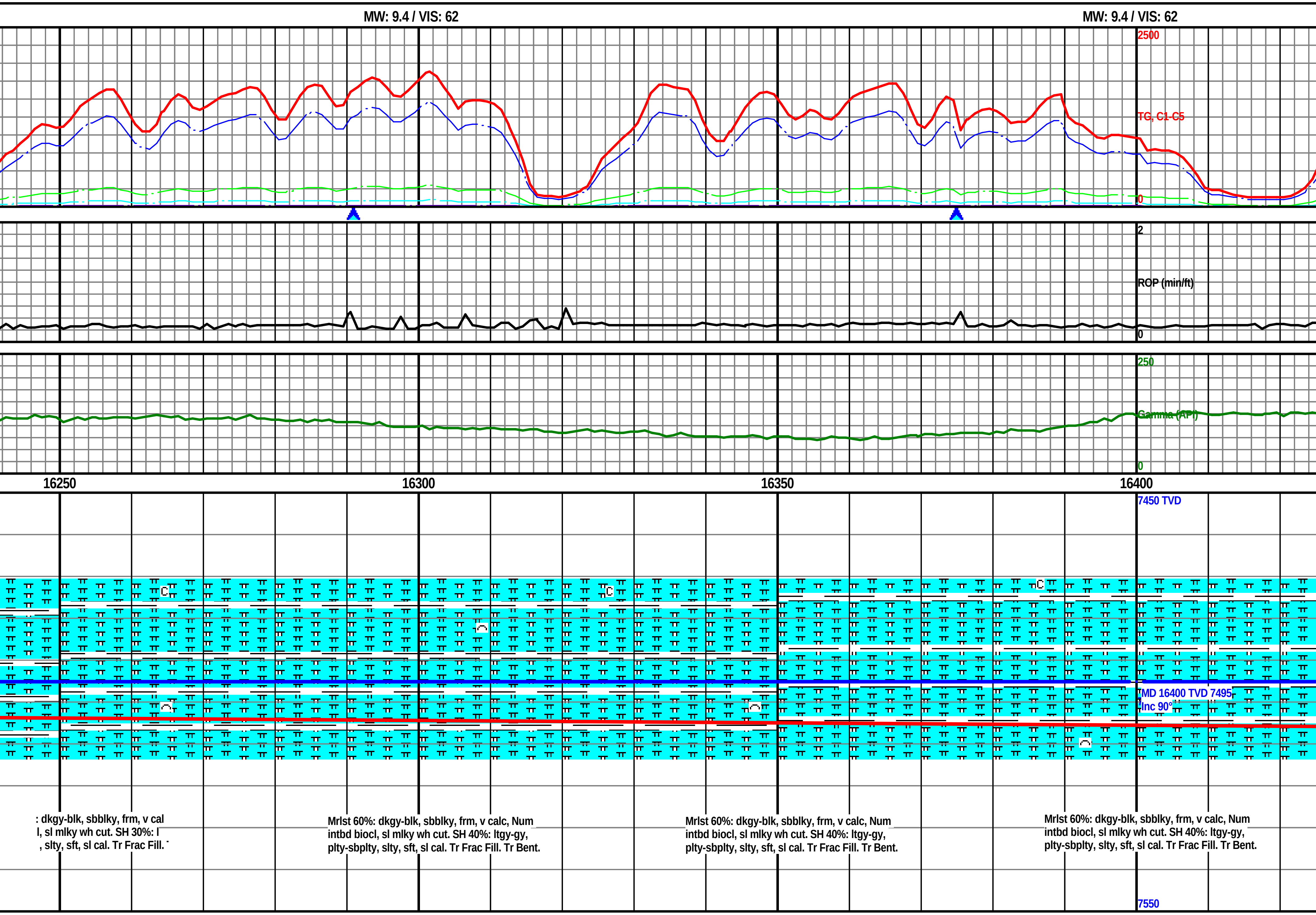

MW: 9.4 / VIS: 59
MW: 9.4 / VIS: 59
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
15350
15400
15450
15500
14 4:00am D
7450 TVD
Fault
7500
MD 15460 TVD 7494.73
Az 0.23° Inc 90.74°
7550
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Chalky Mrlst 90%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 10%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Mrlst 70%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 30%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill. Tr Bent.
Mrlst 70%: dkgy-blk, sbblky, frm
intbd biocl, sl mlky wh cut. SH
plty-sbplty, slty, sft, sl cal. Tr Fr

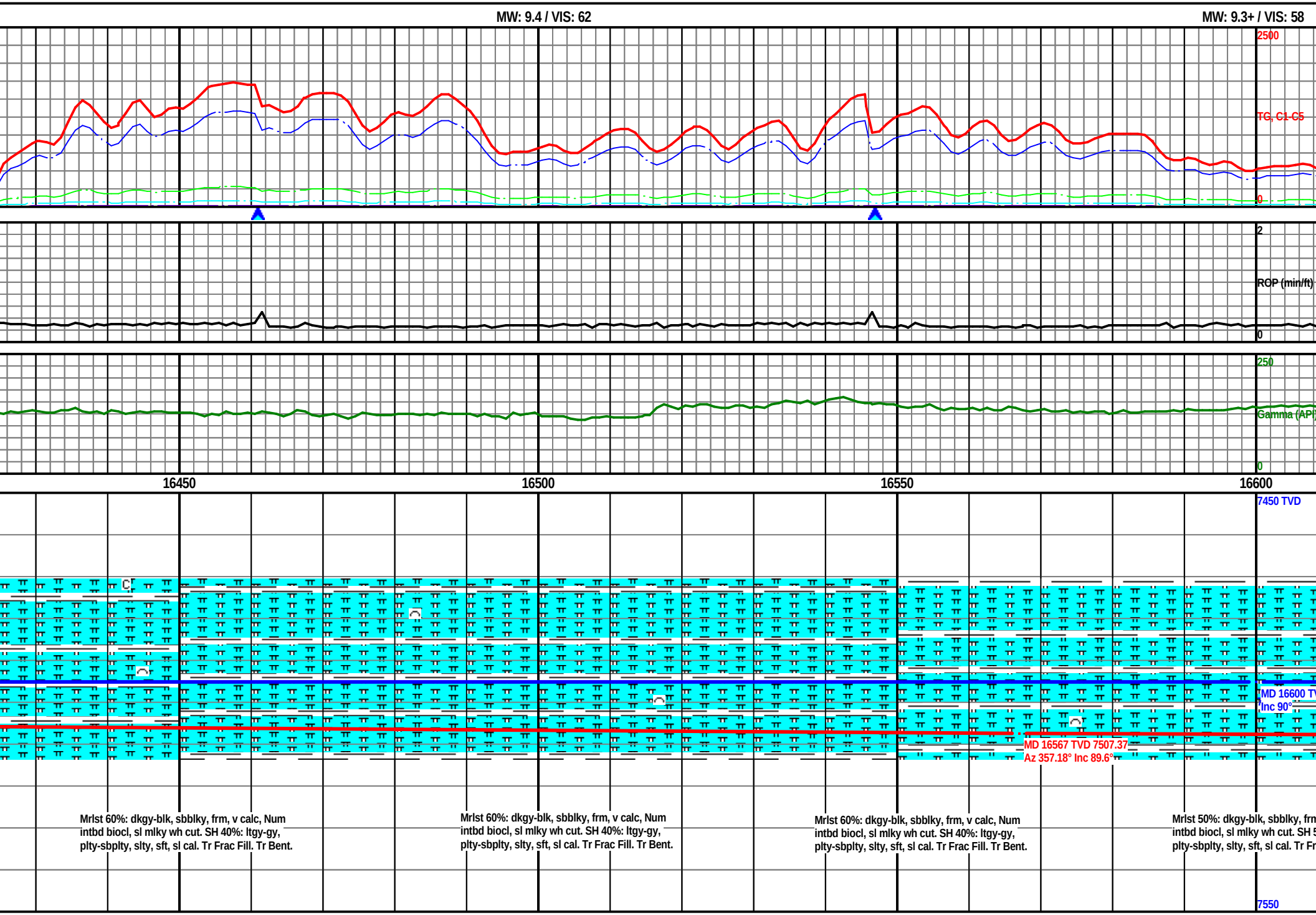

MW: 9.3+ / VIS: 59
2500
TG_C1_C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
15550
15600
15650
7450 TVD
MD 15600 TVD 7495
Inc 90°
7550
, v cal
0%: l
ac Fill.
Mrlst 70%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 30%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill. Tr Bent.
Mrlst 80%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 20%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill. Tr Bent.
Mrlst 80%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 20%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill. Tr Bent.

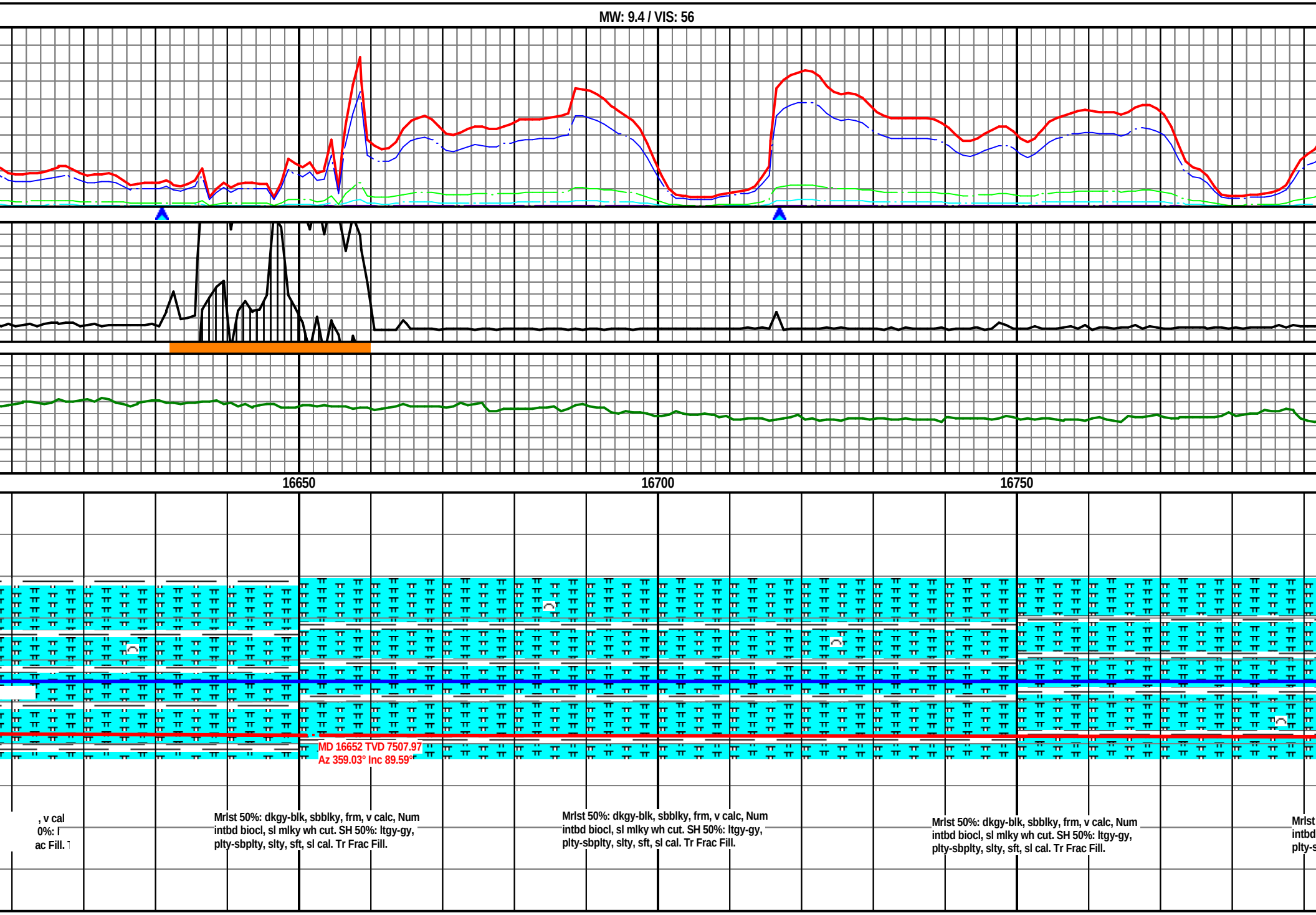

MW: 9.3+ / VIS: 56
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
15700
15750
15800
15850
7450 TVD
Fault- upper B Marl to lower B Marl.
7500
7550
0%: dkgy-blk, sbblky, frm, v cal
biocl, sl mlky wh cut. SH 20%: l
plty, slty, sft, sl cal. Tr Frac Fill.
Mrlst 80%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 20%: ltgy-gy,
plty-sbplty, slty, sft, sl cal. Tr Frac Fill. Tr Bent.
Mrlst 70%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 30%: ltgy-gy,
plty-sbplty, slty, sft, sl cal. Tr Frac Fill. Tr Bent.
Mrlst 70%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 30%: ltgy-gy,
plty-sbplty, slty, sft, sl cal. Tr Frac Fill. Tr Bent.

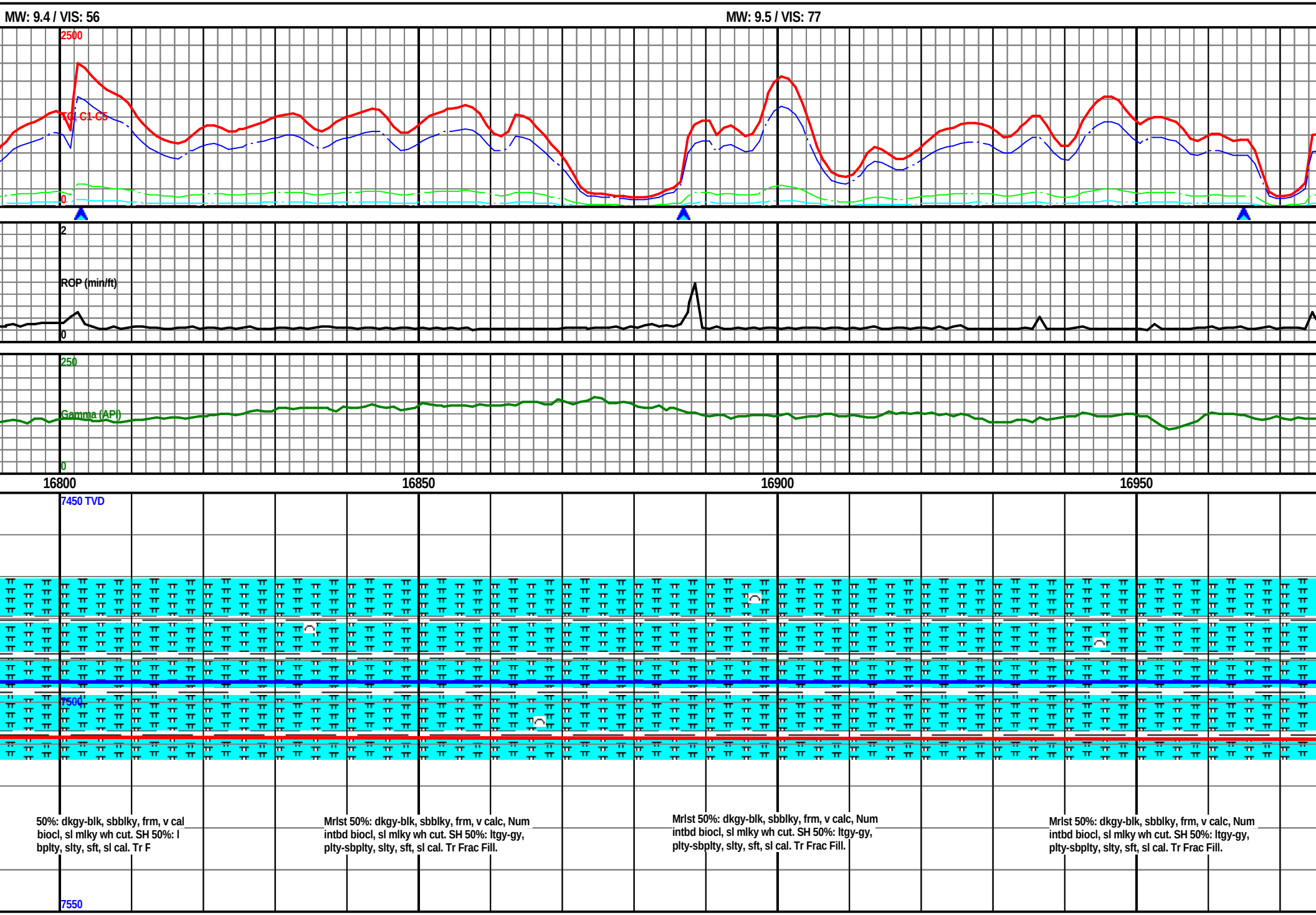

MW: 9.3+ / VIS: 56
MW: 9.4 / VIS: 58
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
15900
15950
16000
16050
7450 TVD
MD 16000 TVD 7495
Inc 90°
7550
Mrlst 70%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 30%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill. Tr Bent.
Mrlst 70%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 30%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill. Tr Bent.
Mrlst 70%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 30%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill. Tr Bent.
Mrlst 70%: dkgy-blk, sbblky, frm
intbd biocl, sl mlky wh cut. SH
plty-sbplty, slty, sft, sl cal. Tr Fr

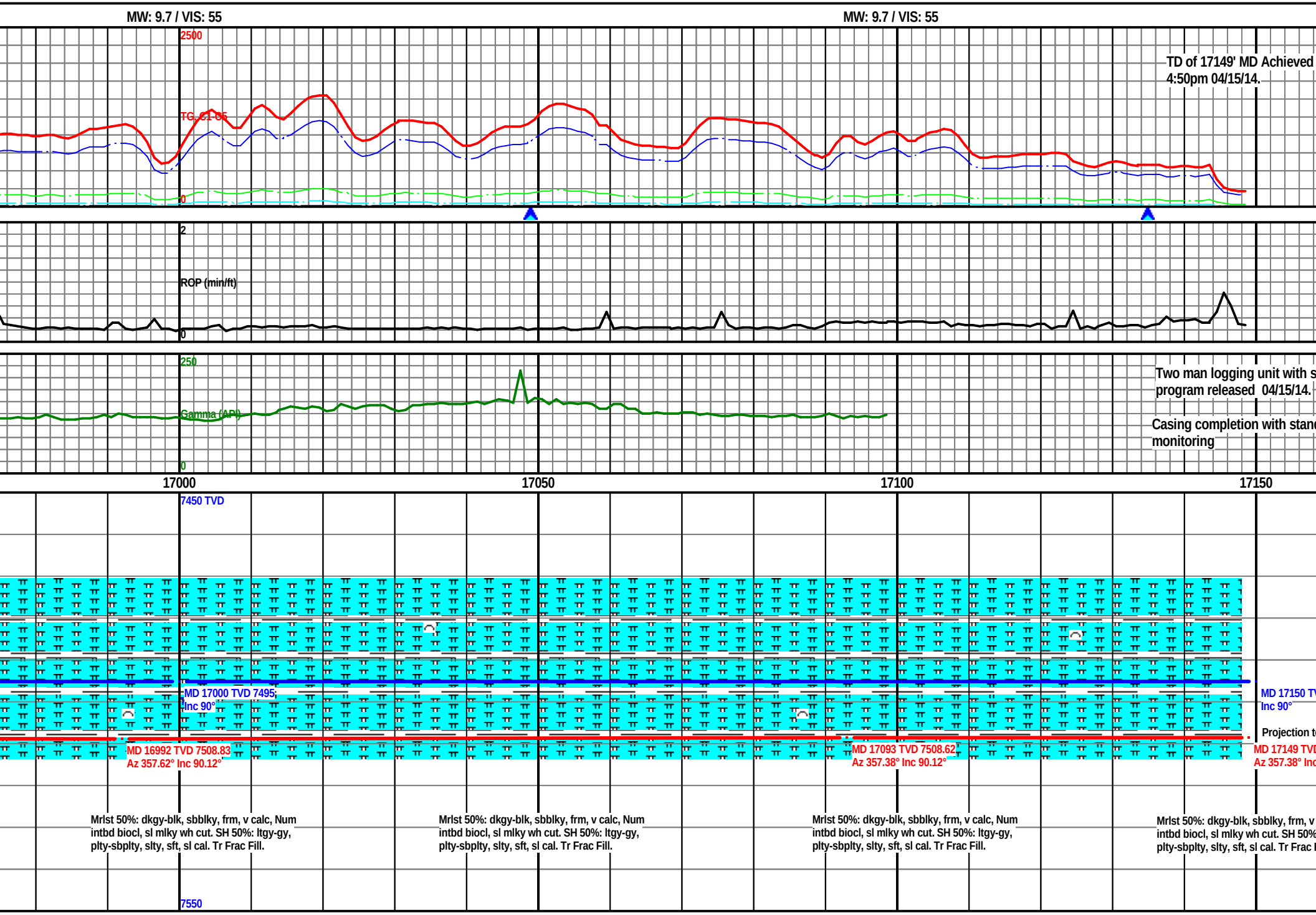

MW: 9.4 / VIS: 62
MW: 9.4 / VIS: 62
PG = 2084 U
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
16100
16150
16200
7450 TVD
7500
7550
, v cal
0%: l
ac Fill.
Mrlst 70%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 30%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill. Tr Bent.
Mrlst 70%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 30%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill. Tr Bent.
Mrlst 70%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 30%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill. Tr Bent.
Mrlst 70%
intbd bioc
plty-sbplt


MW: 9.4 / VIS: 62
MW: 9.4 / VIS: 62
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
16250
16300
16350
16400
7450 TVD
MD 16400 TVD 7495
Inc 90°
7550
: dkgy-blk, sbblky, frm, v cal
l, sl mlky wh cut. SH 30%: l
, slty, sft, sl cal. Tr Frac Fill.
Mrlst 60%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 40%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill. Tr Bent.
Mrlst 60%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 40%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill. Tr Bent.
Mrlst 60%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 40%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill. Tr Bent.


MW: 9.4 / VIS: 62
MW: 9.3+ / VIS: 58
2500
TG, C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
16450
16500
16550
16600
7450 TVD
MD 16600 TV
Inc 90°
MD 16567 TVD 7507.37
Az 357.18° Inc 89.6°
7550
Mrlst 60%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 40%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill. Tr Bent.
Mrlst 60%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 40%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill. Tr Bent.
Mrlst 60%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 40%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill. Tr Bent.
Mrlst 50%: dkgy-blk, sbblky, frm
intbd biocl, sl mlky wh cut. SH 5
plty-sbplty, slty, sft, sl cal. Tr Fr


MW: 9.4 / VIS: 56
16650
16700
16750
MD 16652 TVD 7507.97
Az 359.03° Inc 89.59°
, v cal
0%: l
ac Fill.
Mrlst 50%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 50%: ltgy-gy,
plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Mrlst 50%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 50%: ltgy-gy,
plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Mrlst 50%: dkgy-blk, sbblky, frm, v calc, Num
intbd biocl, sl mlky wh cut. SH 50%: ltgy-gy,
plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Mrlst
intbd
plty-s


MW: 9.4 / VIS: 56
MW: 9.5 / VIS: 77
2500
TG1 C1-C5
0
2
ROP (min/ft)
0
250
Gamma (API)
0
16800
16850
16900
16950
7450 TVD
7500
7550
50%: dkgy-blk, sbblky, frm, v cal biocl, sl mlky wh cut. SH 50%: l bplty, slty, sft, sl cal. Tr F
Mrlst 50%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 50%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Mrlst 50%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 50%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Mrlst 50%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 50%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill.


MW: 9.7 / VIS: 55
MW: 9.7 / VIS: 55
2500
TG, C1 C5
0
TD of 17149' MD Achieved
4:50pm 04/15/14.
2
ROP (min/ft)
0
250
Gamma (API)
0
Two man logging unit with s
program released 04/15/14.
Casing completion with stand
monitoring
17000
17050
17100
17150
7450 TVD
MD 17000 TVD 7495
Inc 90°
MD 16992 TVD 7508.83
Az 357.62° Inc 90.12°
MD 17093 TVD 7508.62
Az 357.38° Inc 90.12°
MD 17150 TV
Inc 90°
Projection t
MD 17149 TVD
Az 357.38° Inc
Mrlst 50%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 50%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Mrlst 50%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 50%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Mrlst 50%: dkgy-blk, sbblky, frm, v calc, Num intbd biocl, sl mlky wh cut. SH 50%: ltgy-gy, plty-sbplty, slty, sft, sl cal. Tr Frac Fill.
Mrlst 50%: dkgy-blk, sbblky, frm, v
intbd biocl, sl mlky wh cut. SH 50%
plty-sbplty, slty, sft, sl cal. Tr Frac
7550