

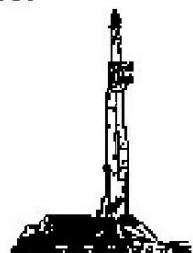
**GOOLSBY BROTHERS**  
and associates, inc.

575 Union Blvd, Suite 208  
Lakewood, CO 80228  
303-945-2860 Office



Geological Wellsite  
Supervision

[www.goolsbybrothers.com](http://www.goolsbybrothers.com)



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

Well Name: SRC AG 5C-31-L  
API: 051234487300  
Location: Section 32, T6N, R66W, Weld County, CO.  
License Number:  
Spud Date: September 25, 2017  
Surface Coordinates: NENE T6N R66W Sec 32; 994' FNL & 558' FEL  
LAT 40.449196 LONG -104.794411  
Bottom Hole Coordinates: SWNW T6N R66W Sec 31, 2,252' FNL & 67' FWL  
Ground Elevation (ft): 4,706' K.B. Elevation (ft): 4,726'  
Logged Interval (ft): 6,800' To: 18,627' Total Depth (ft): 18,627' DMTD  
Formation: Pierre Shales/Sands, Niobrara, Ft. Hays, Codell (Target)  
Type of Drilling Fluid: FW Surface, OBM Curve & Lateral

Region: Wattenberg  
Drilling Completed: September 29, 2017

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

**OPERATOR**

Company: SRC Energy Inc.  
Address: 1675 Broadway, Suite 2600  
Denver, Colorado 80202  
(720) 616-4300

**GEOLOGIST**

Name: Ryan Scribner & Larry Goolsby  
Company: Goolsby Brothers & Assoc. (GBA), Inc. ([www.goolsbybrothers.com](http://www.goolsbybrothers.com))  
Address: 575 Union Blvd. Suite 208,  
Lakewood CO. 80228  
Tel 303-618-7736

## Logs

PULSE MWD GR from 1,781'-18,613'

## Casing

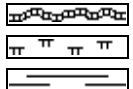
9 5/8" Surface Casing set @ 1,818' MD

5 1/2" Production Casing set @ xx,xxx' MD

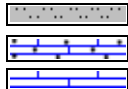
## Comments

- 1) Drilling Contractor: Precision Drilling, Rig #462  
Toolpusher: John Myers, David Gardner
- 2) Company Man: Steve Wilson, Buddy Davis  
Lovell Young, Tony Pershall
- 3) Mud Company : Reliable Drilling Fluid  
Engineer: Henry Yoes
- 4) Directional Drilling: Baker Hughes Directional  
Rotary Steerable BHA  
Driller: Andrew Schreiner, Dustin Tissaw  
MWD: John Moisan
- 5) Gas Equipment: Pason Gas Analyzer (Spectrometer)

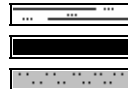
## ROCK TYPES



Bent  
Mrlst  
Shale



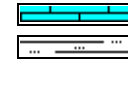
Sltst  
Carb chalk  
Chalk



Sltly sh  
Coal  
Sltst



Arg\_ss  
Ss  
Carb sh



Ls  
Sltly sh

## 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

Chlkstg  
 Anhy  
 Arg  
 Bent  
 Coal  
 Dol  
 Gyp  
 Ls

Mrst  
 Sltstgr  
 Ssstgr

### TEXTURE

Boundst  
 Chalky  
 Cryxln  
 Earthy  
 Finexln  
 Grainst  
 Lithogr  
 Microxln  
 Mudst  
 Packst  
 Wackst

## OTHER SYMBOLS

### POROSITY TYPE

Earthy  
 Fenest  
 Fracture  
 Inter  
 Moldic  
 Organic  
 Pinpoint  
 Vuggy

### SORTING

Well  
 Moderate  
 Poor

### ROUNDING

Rounded  
 Subrnd  
 Subang

Angular

### OIL SHOWS

Even  
 Spotted  
 Ques  
 Dead  
 Vspotty  
 near even

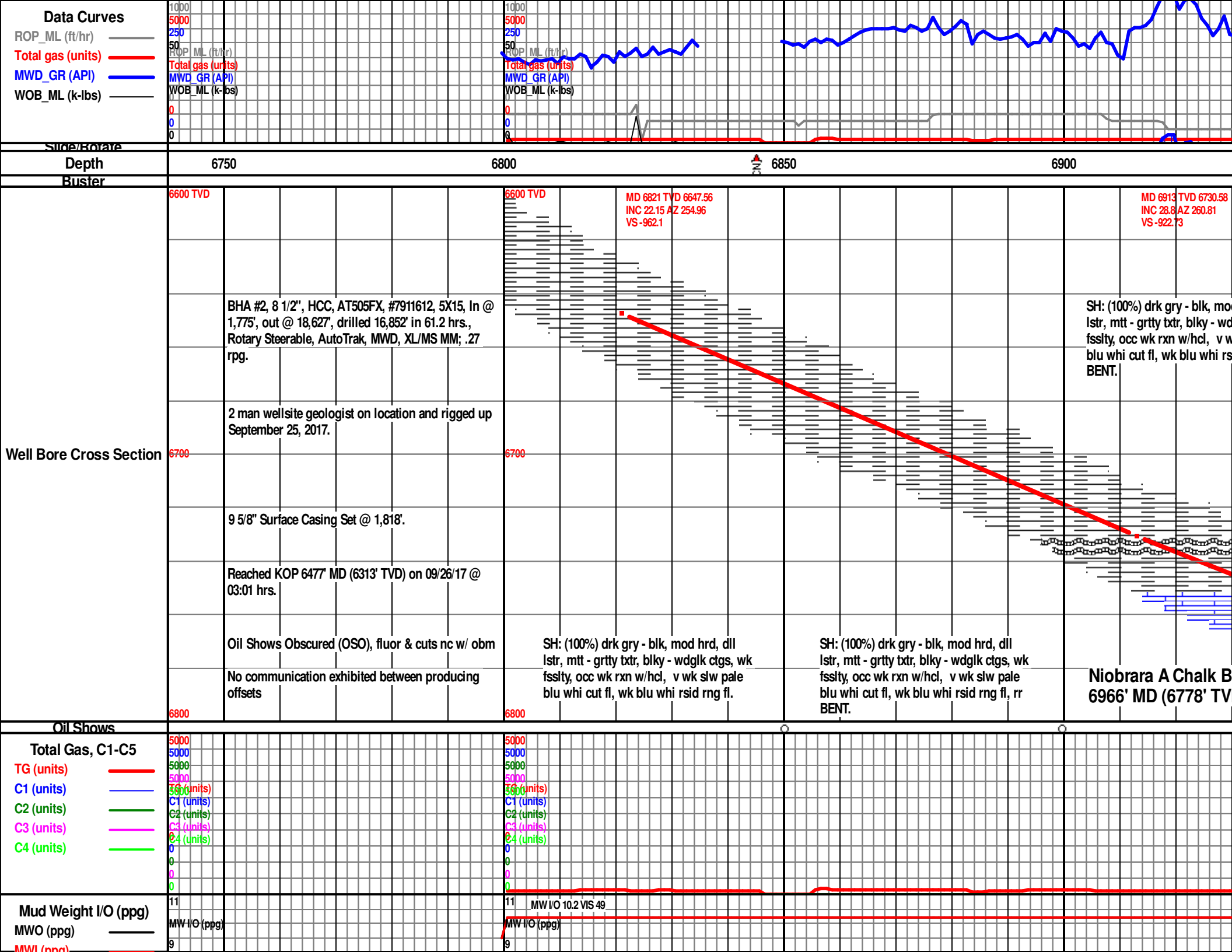
### INTERVALS

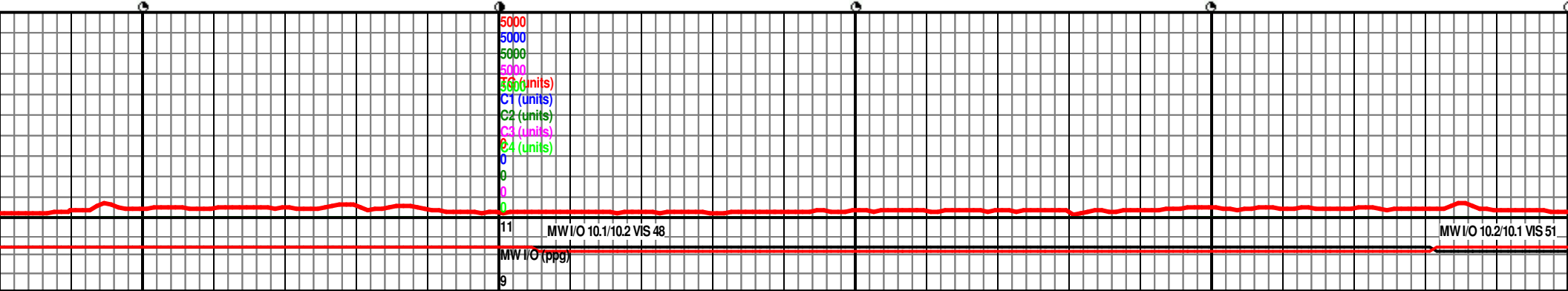
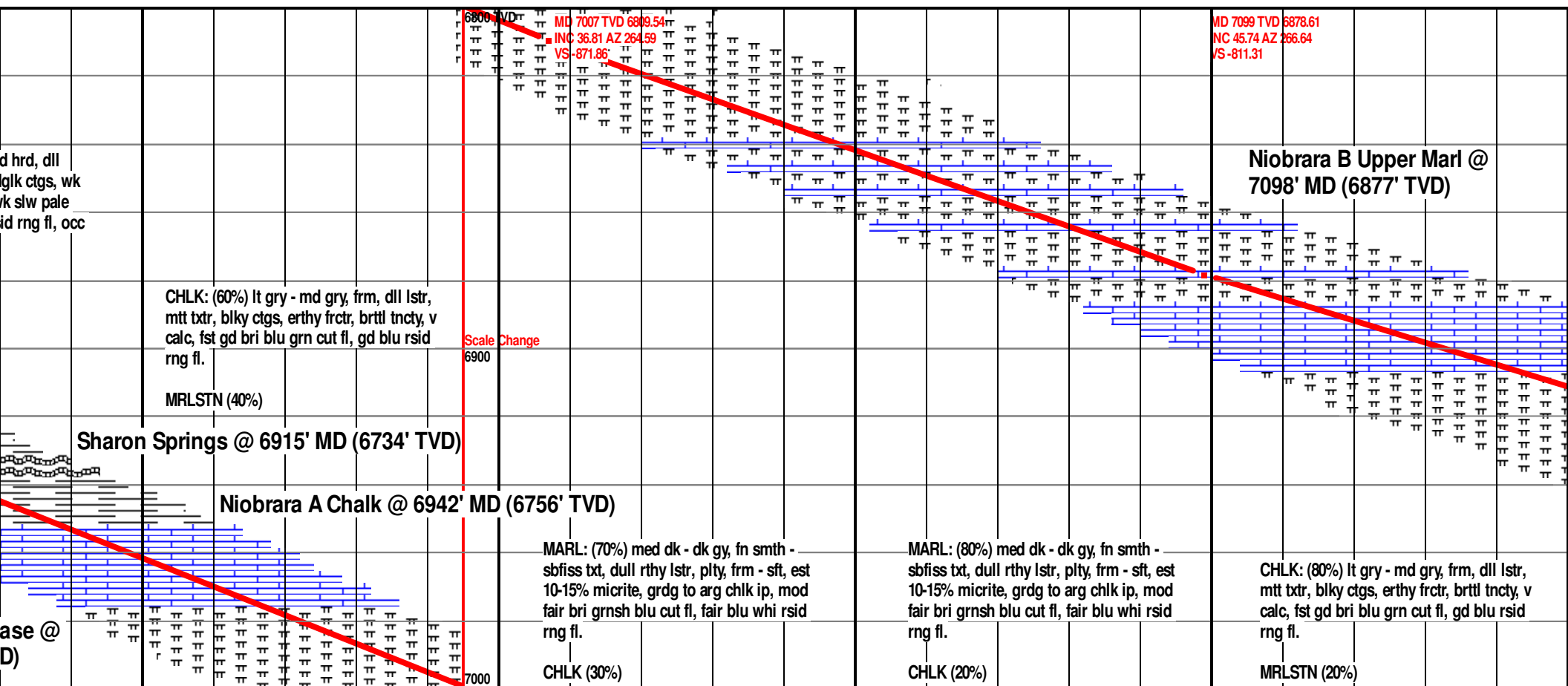
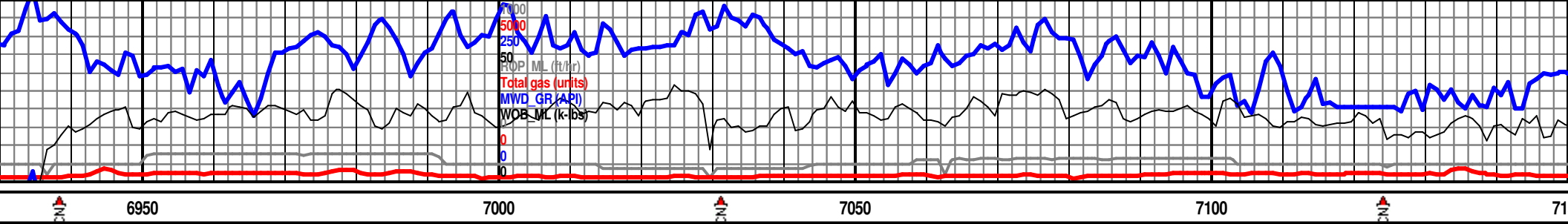
Core  
 Dst

### EVENTS

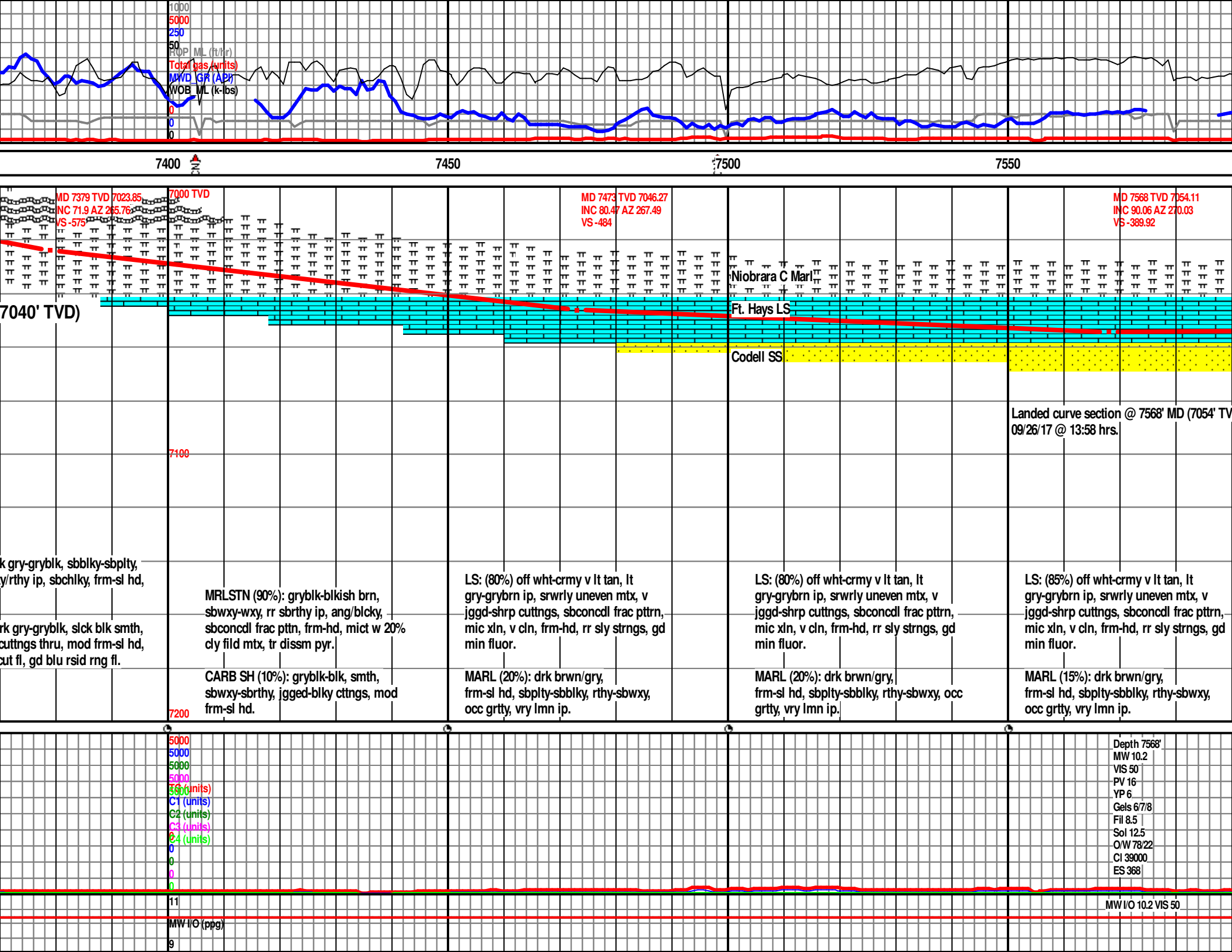
Casing shoe\_hzl  
 Trip\_point\_1  
 Off bottom  
 conn

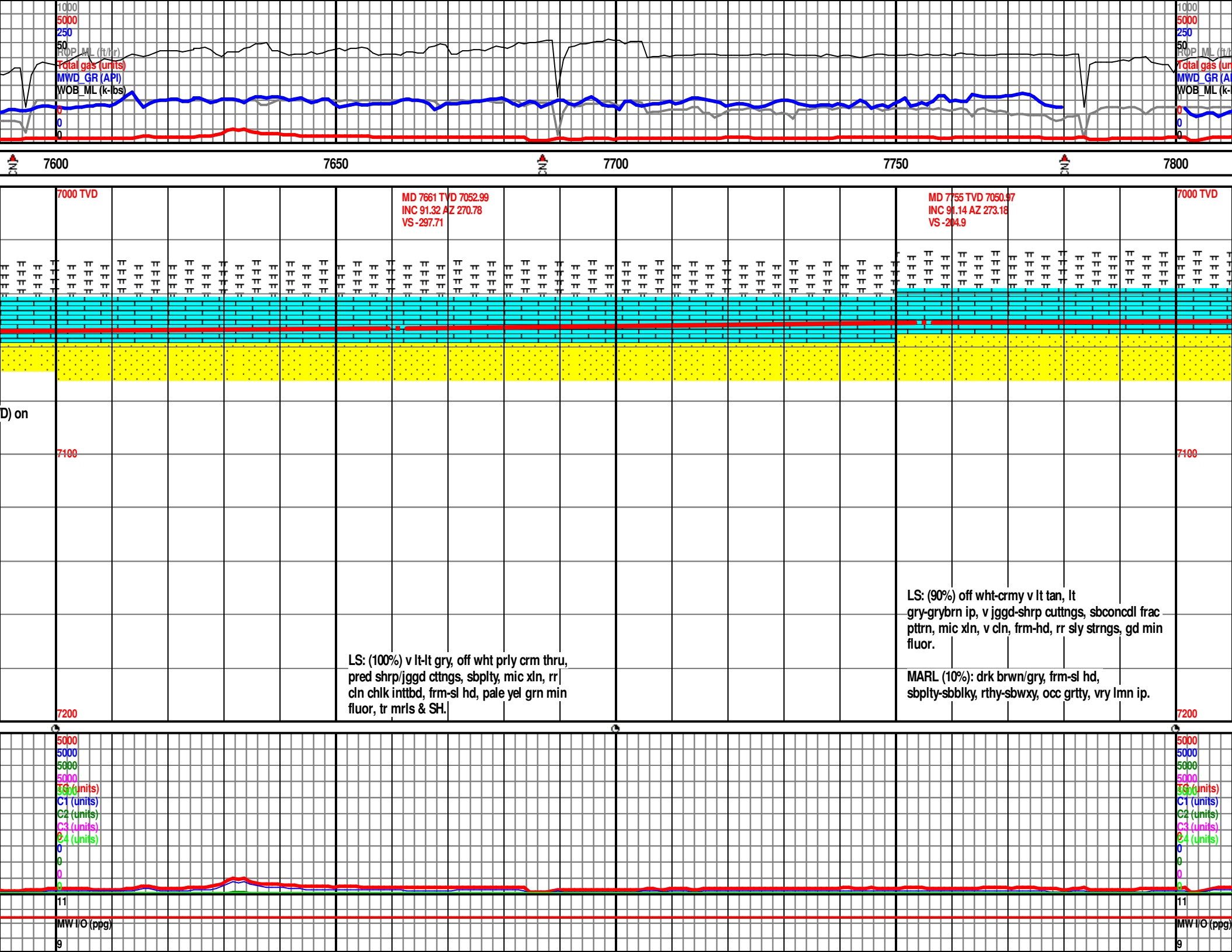
Survey(mwd)  
 Survey(red)  
 bit



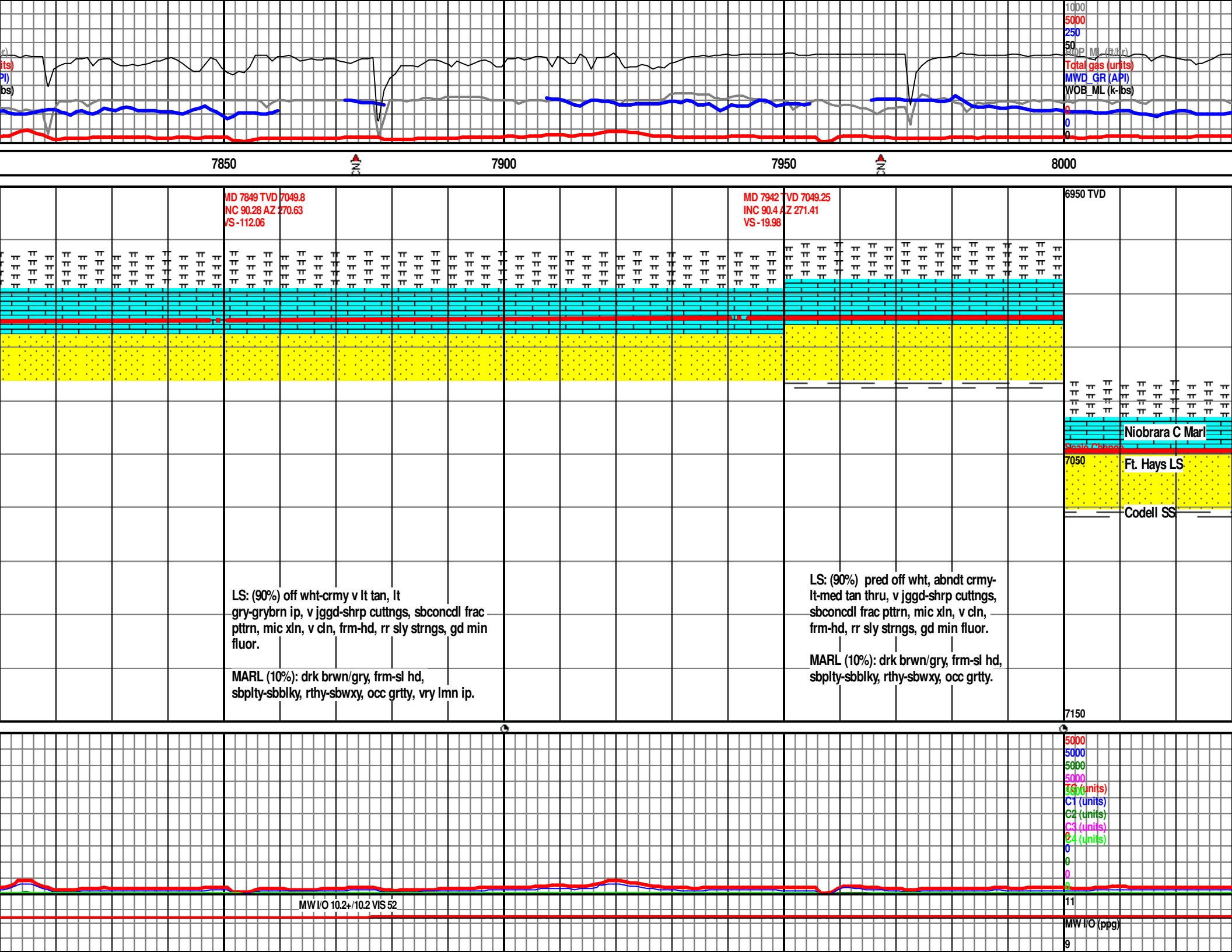


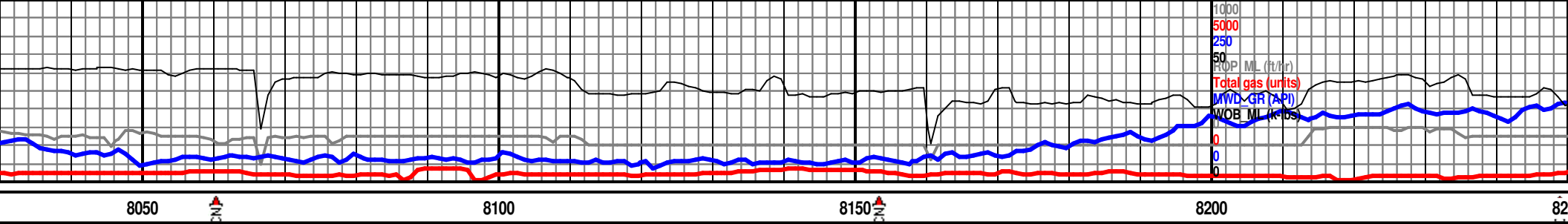










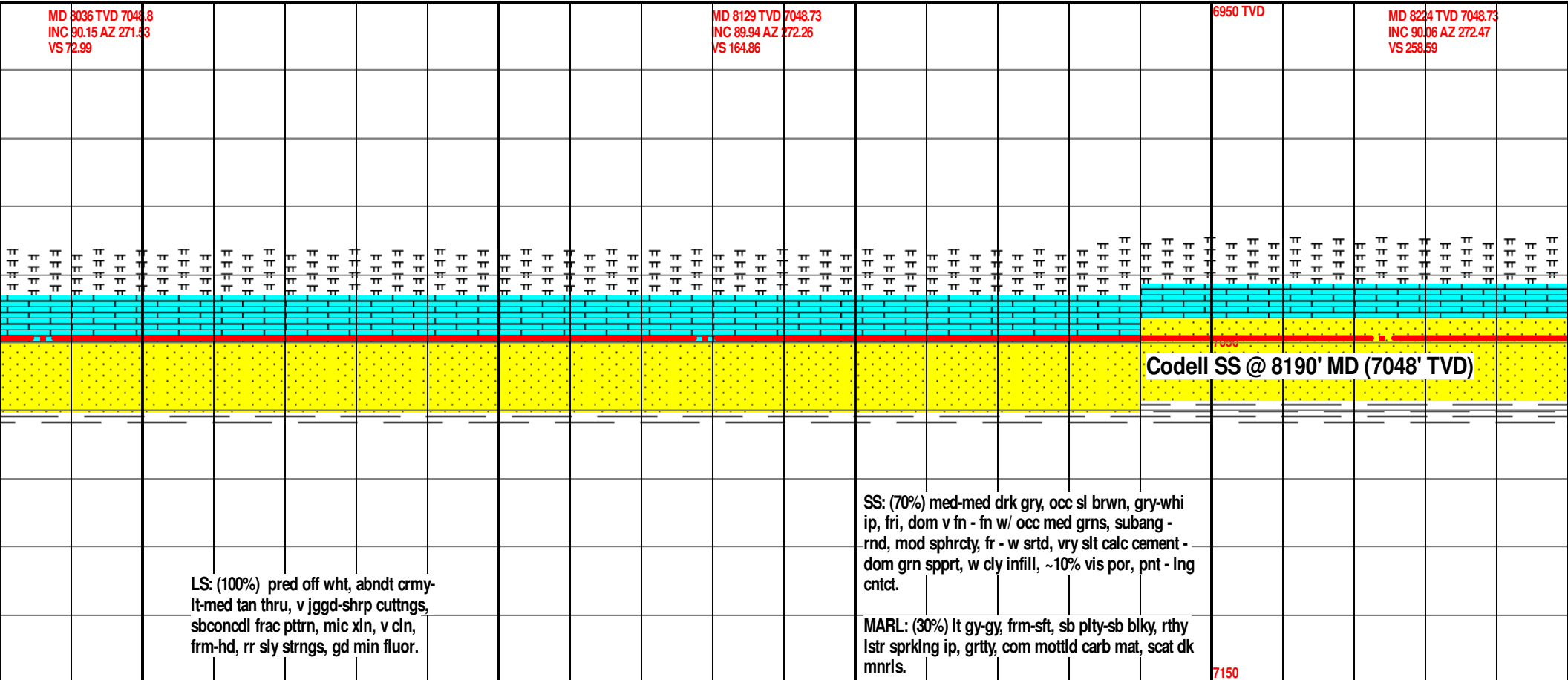


MD 8036 TVD 7048.8  
INC 80.15 AZ 271.53  
VS 72.99

MD 8129 TVD 7048.73  
INC 89.94 AZ 272.26  
VS 164.86

6950 TVD

MD 8224 TVD 7048.73  
INC 90.06 AZ 272.47  
VS 258.59

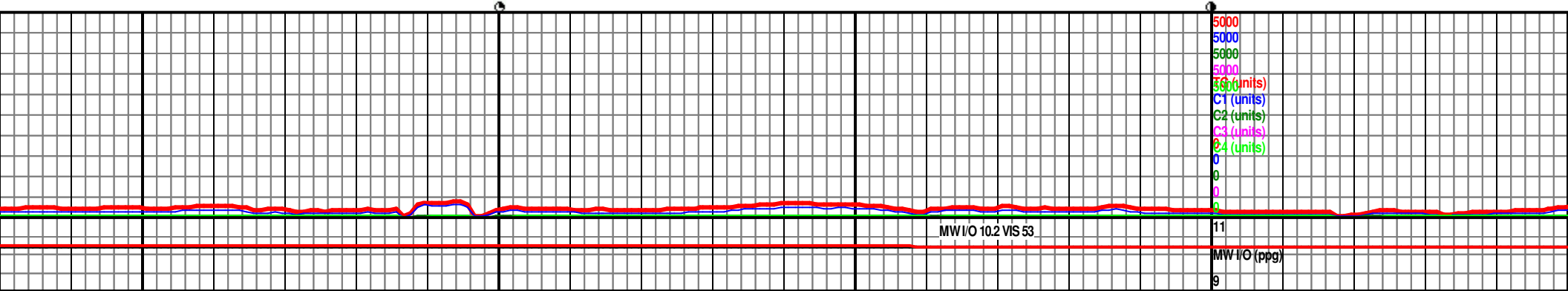


LS: (100%) pred off wht, abndt crmy-lt-med tan thru, v jggd-shrp cuttns, sbconcdl frac ptnr, mic xln, v cln, frm-hd, rr sly strngs, gd min fluor.

SS: (70%) med-med drk gry, occ sl brwn, gry-whi ip, fri, dom v fn - fn w/ occ med grns, subang - rnd, mod sphrcity, fr - w srtd, vry slt calc cement - dom grn spprt, w cly infill, ~10% vis por, pnt - lng cntct.

MARL: (30%) lt gy-gy, frm-sft, sb plty-sb blk, rthy lstr sprkng ip, grtty, com mottld carb mat, scat dk mnrls.

Codell SS @ 8190' MD (7048' TVD)



MW I/O 10.2 VIS 53

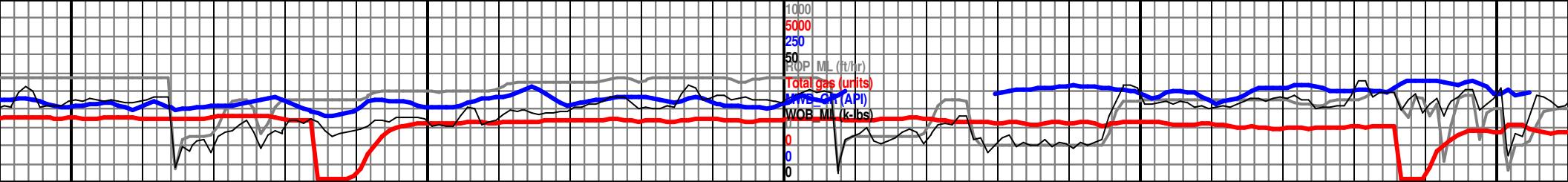
11  
MW I/O (ppg)  
9





MD	3596	TVD	7048.97
INC	90	AZ	270.12
VS	626.88		





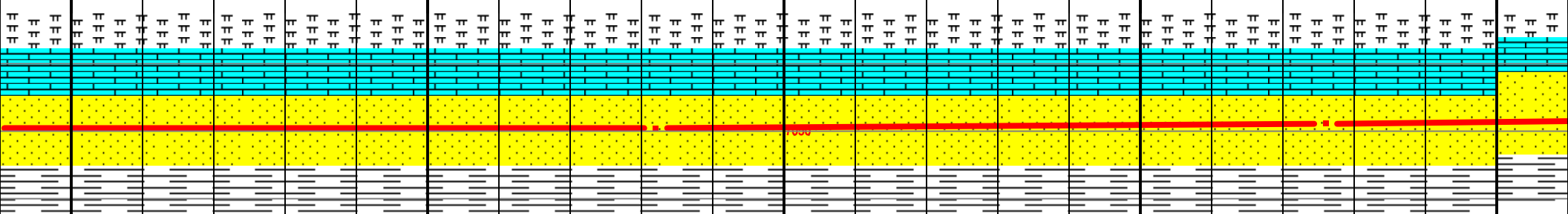
8700 8750 8800 8850 8900

MD 8689 TVD 7049.04  
INC 89.91 AZ 269.5  
VS 719.22

MD 8782 TVD 7049.12  
INC 90 AZ 268.77  
VS 811.68

6950 TVD

MD 8876 TVD 7047.85  
INC 91.54 AZ 268.66  
VS 905.2



wn,  
ed  
v  
ort,  
or,  
nsh  
fl,

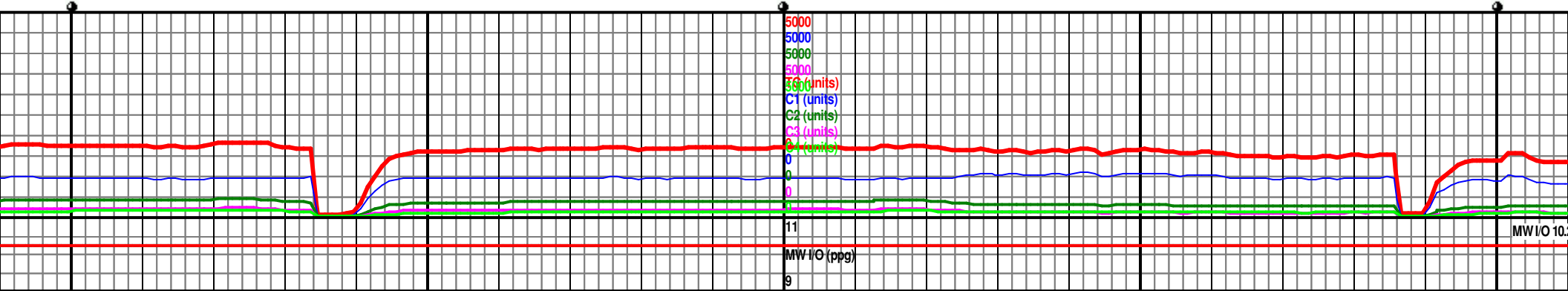
SS: (100%) med-med drk gry, occ sl brwn,  
gry-whi ip, fri, dom v fn - fn w/ occ med  
grns, subang - rnd, mod sphrcty, fr - w  
srted, vry slt calc cement - dom grn spprt,  
w cly infill, ~10% vis por, no intial fluor,  
near even strn, flash v gd - strng bri grnsh  
blu strmg milky cut fl, v gd bri grn rsd fl,  
NO.

SH: (tr).

SS: (100%) med-med drk gry, occ sl brwn,  
gry-whi ip, fri, dom v fn - fn w/ occ med  
grns, subang - rnd, mod sphrcty, fr - w  
srted, vry slt calc cement - dom grn spprt,  
w cly infill, ~10% vis por, no intial fluor,  
near even strn, flash v gd - strng bri grnsh  
blu strmg milky cut fl, v gd bri grn rsd fl,  
NO.

SH: (tr).

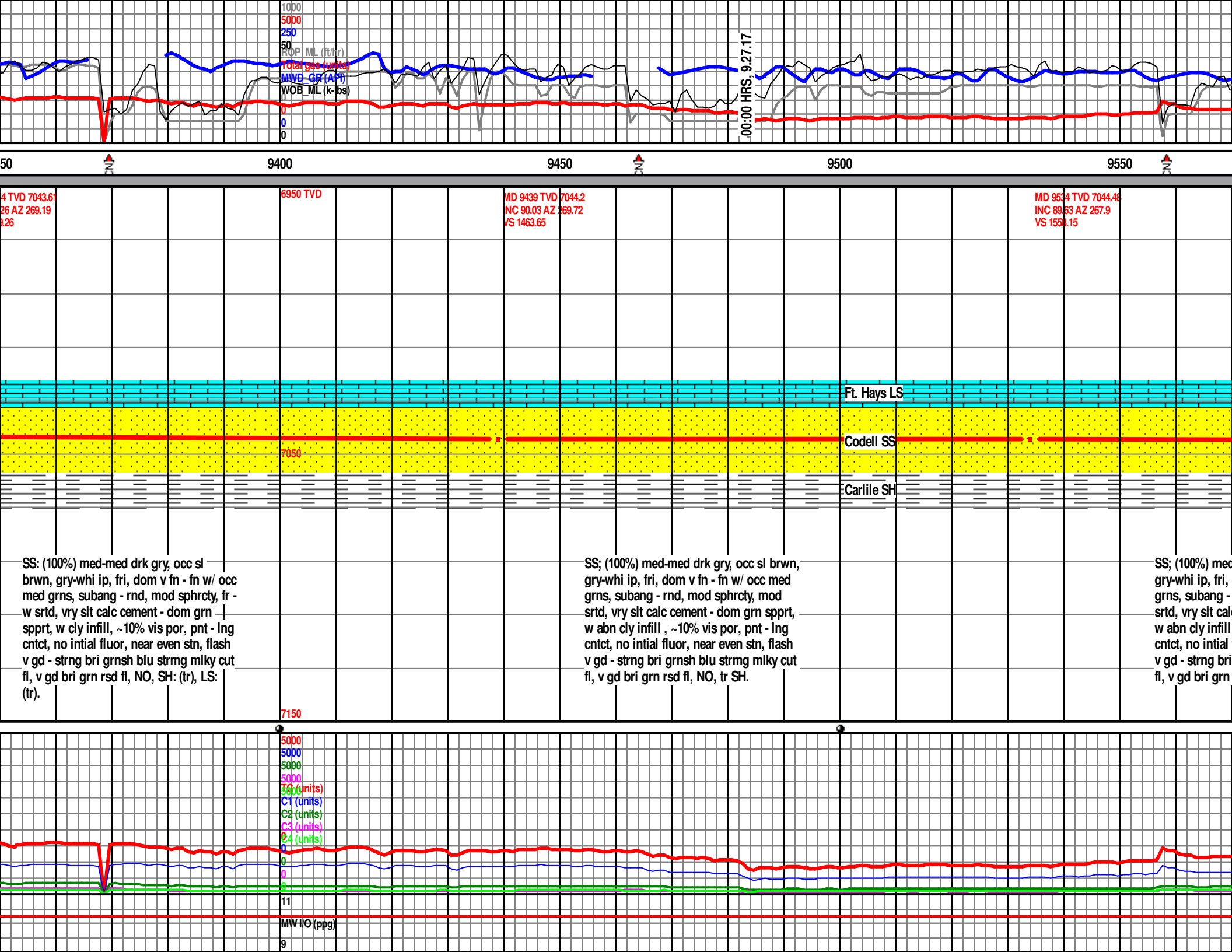
7150



MW I/O 10.

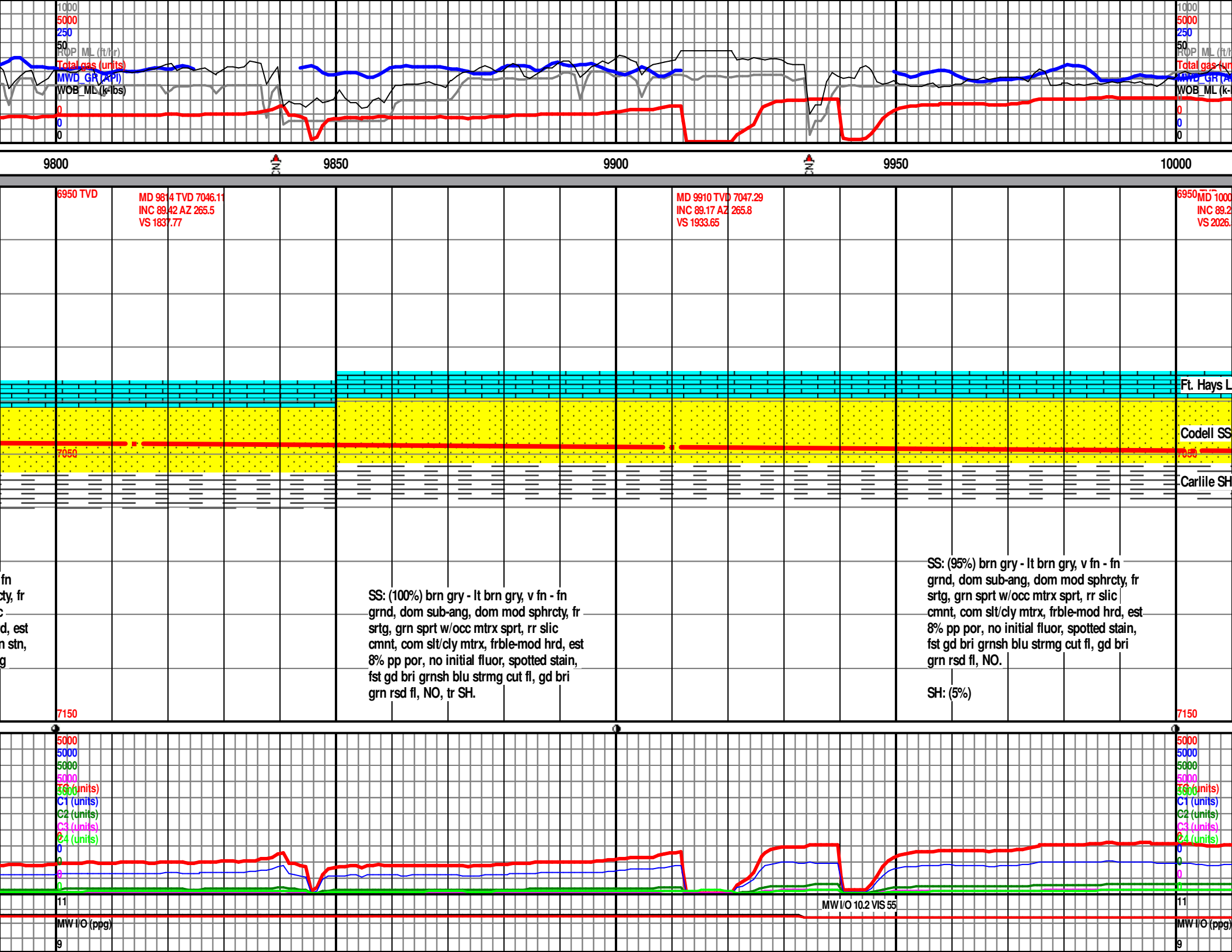


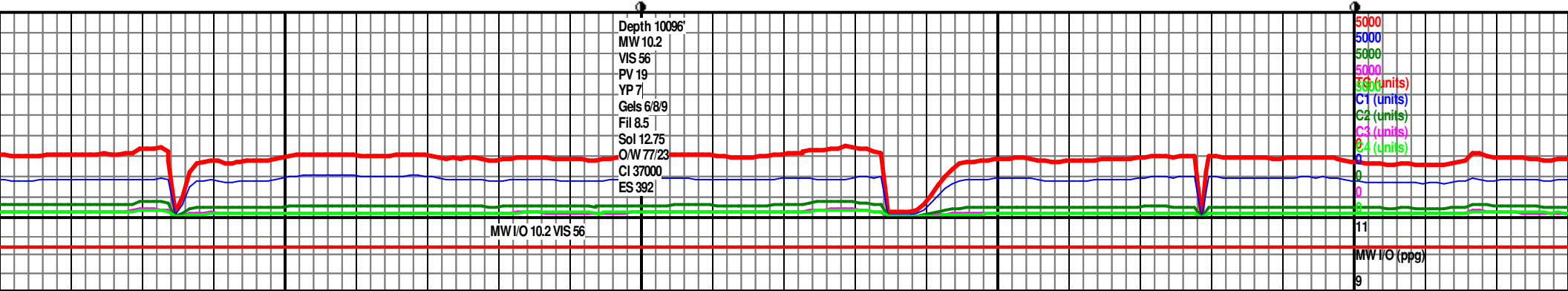
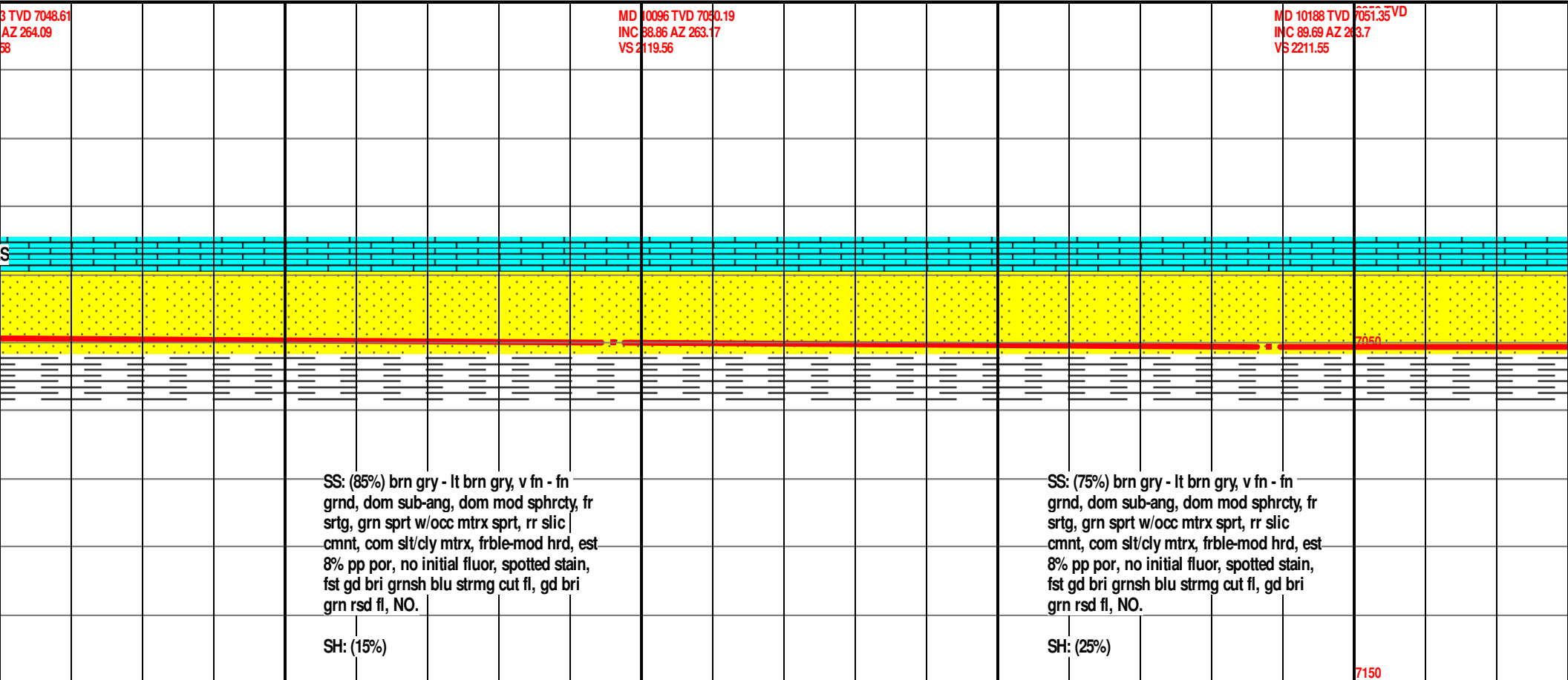
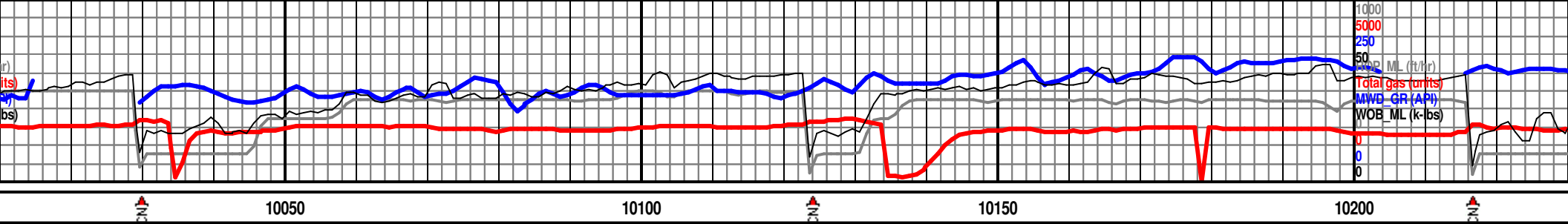


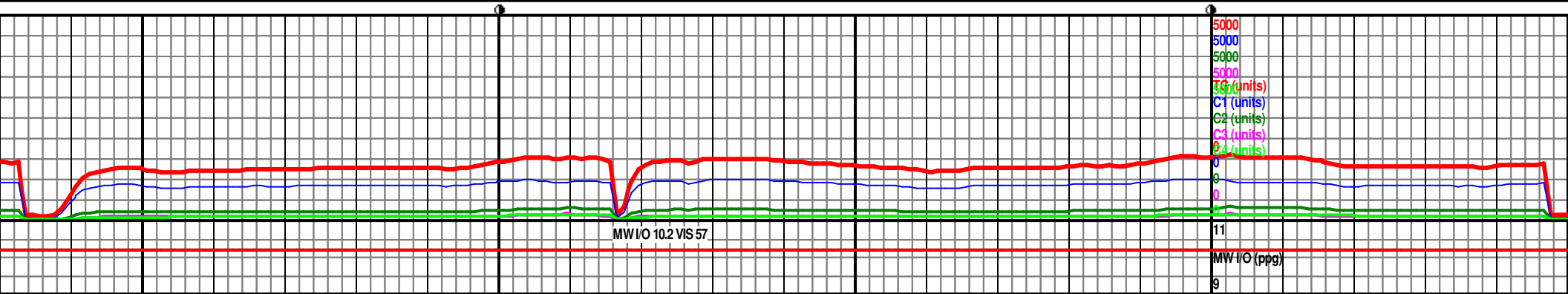
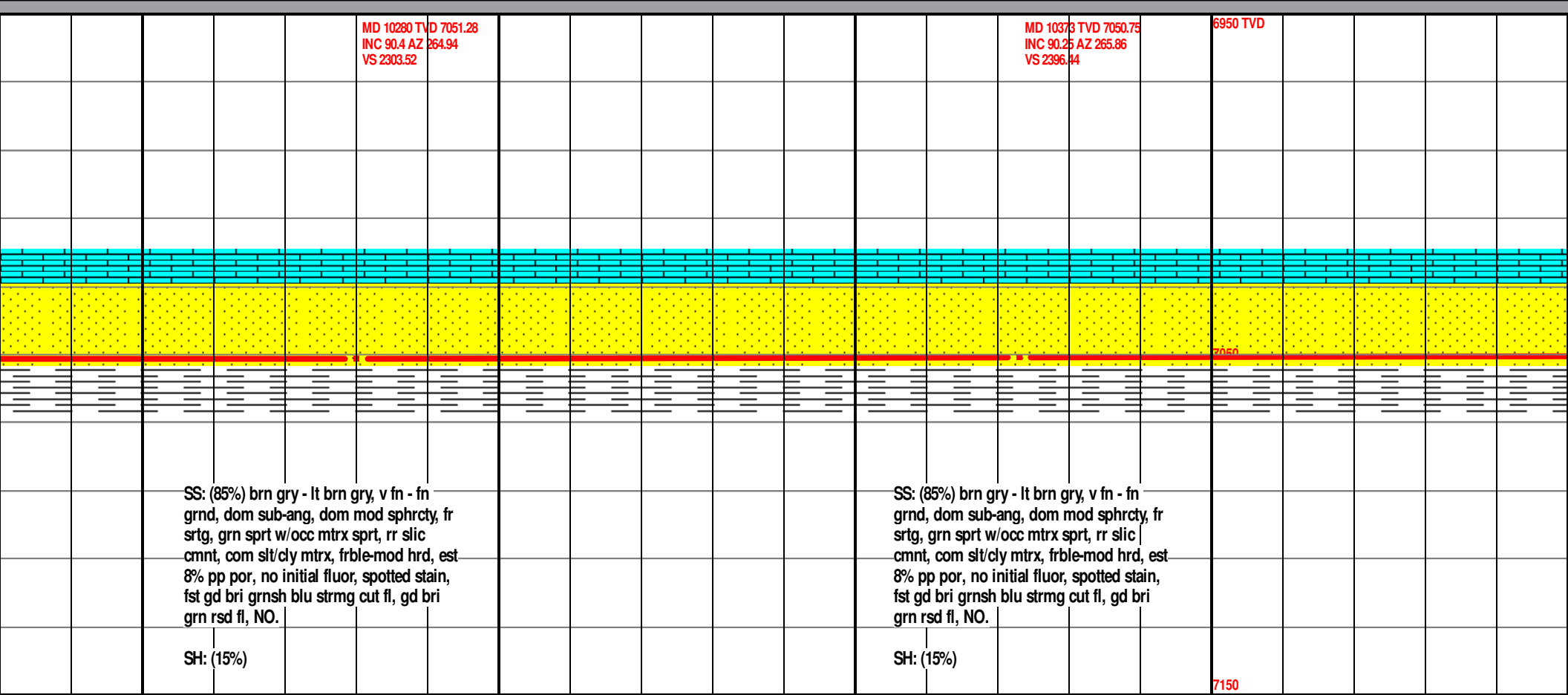
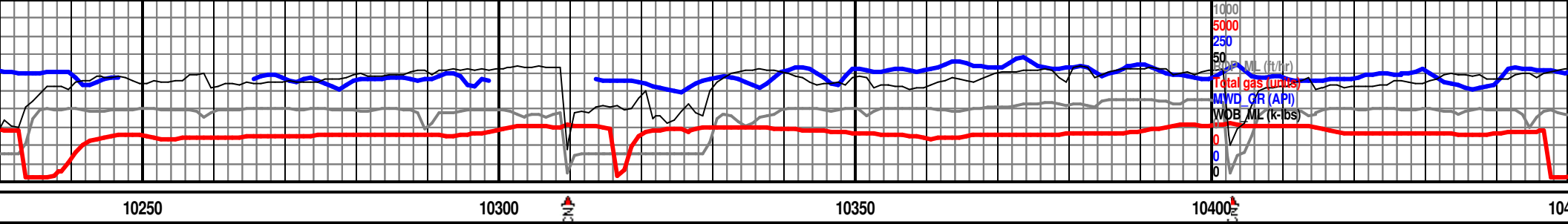


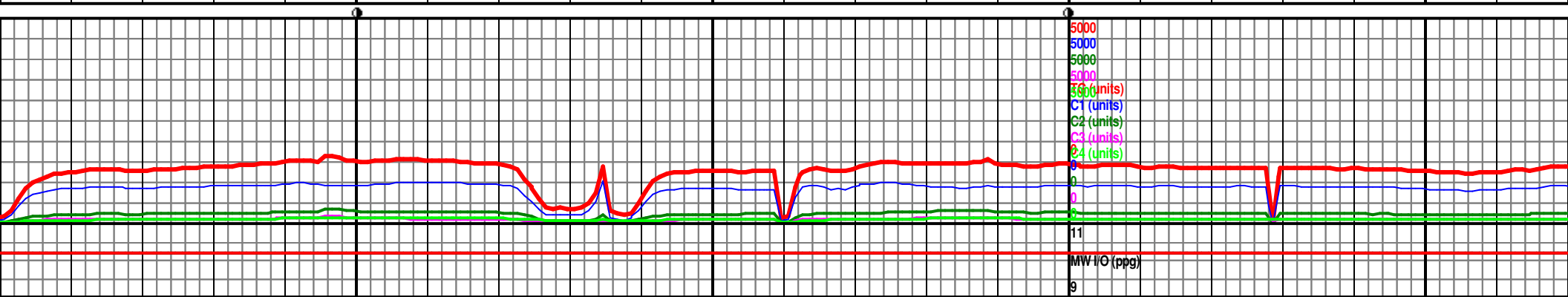
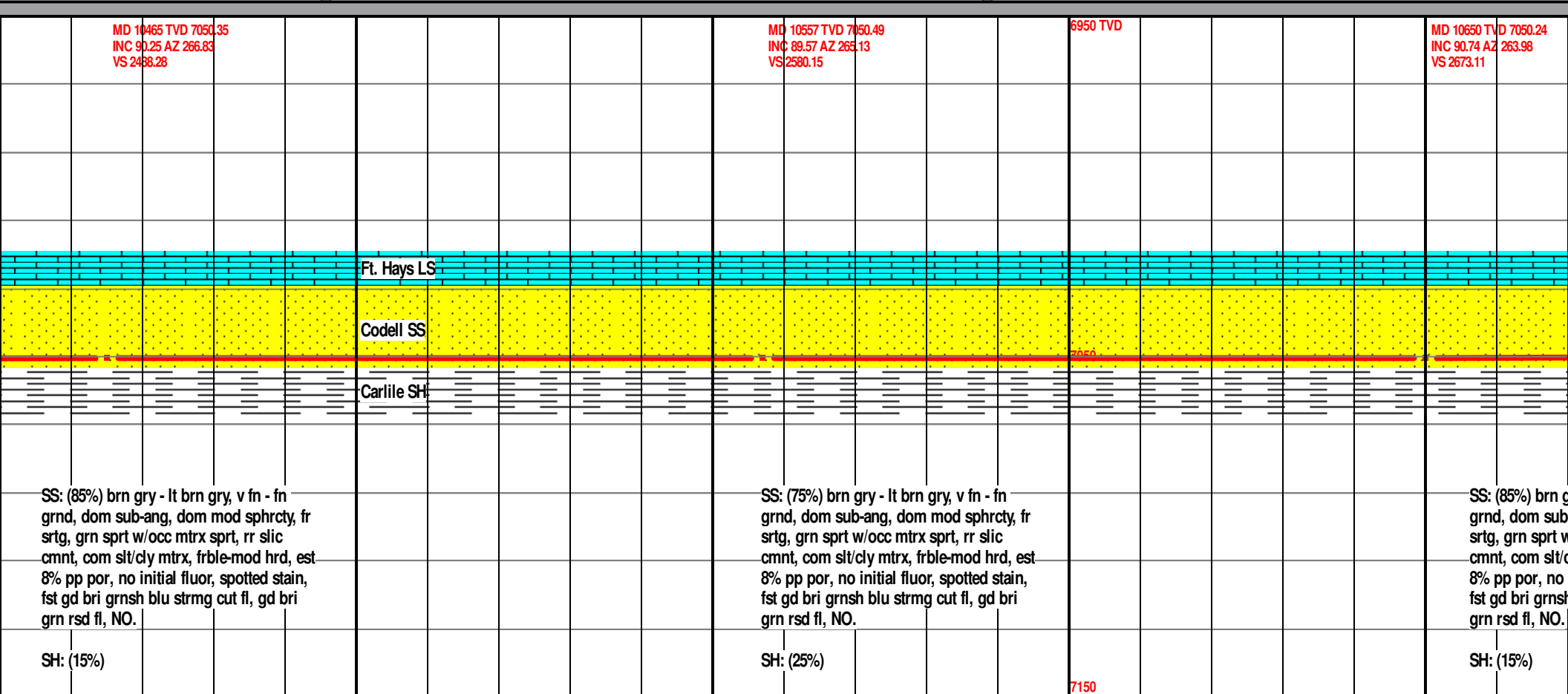


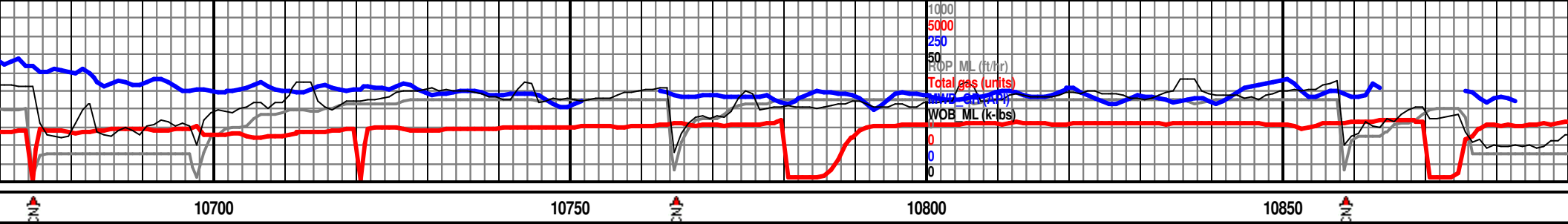








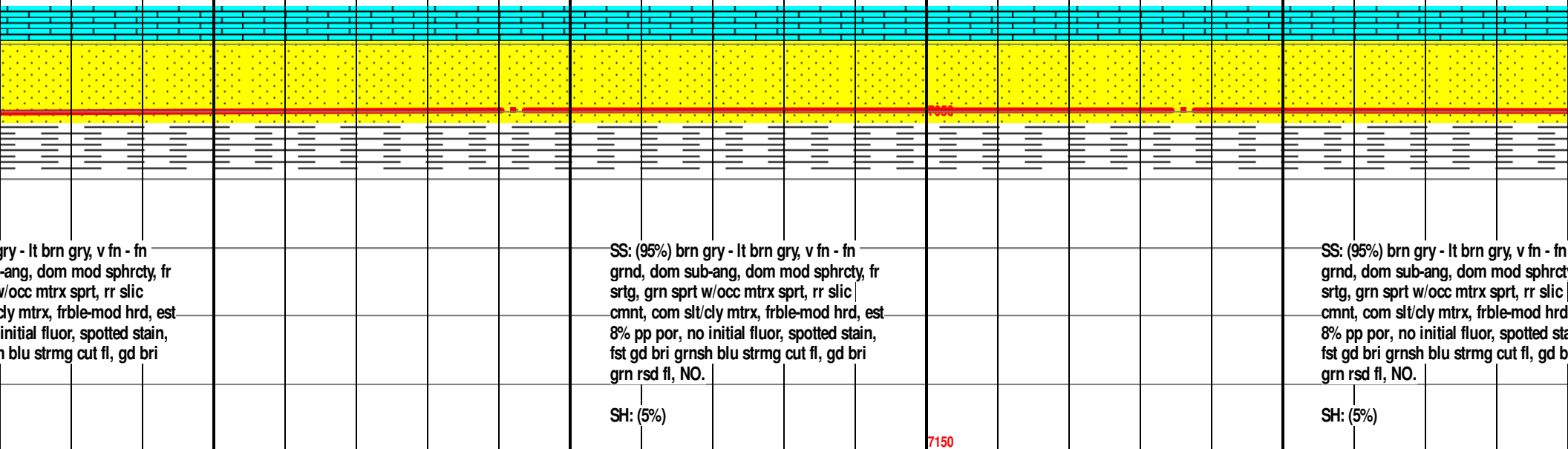




MD 10742 TVD 7049.67  
INC 89.97 AZ 263.66  
VS 2765.09

6950 TVD

MD 10836 TVD 7049.47  
INC 80.28 AZ 263.19  
VS 2859.09



gry - lt brn gry, v fn - fn  
-ang, dom mod sphrcty, fr  
w/occ mtrx sprt, rr slic  
cly mtrx, frble-mod hrd, est  
initial fluor, spotted stain,  
h blu strmg cut fl, gd bri

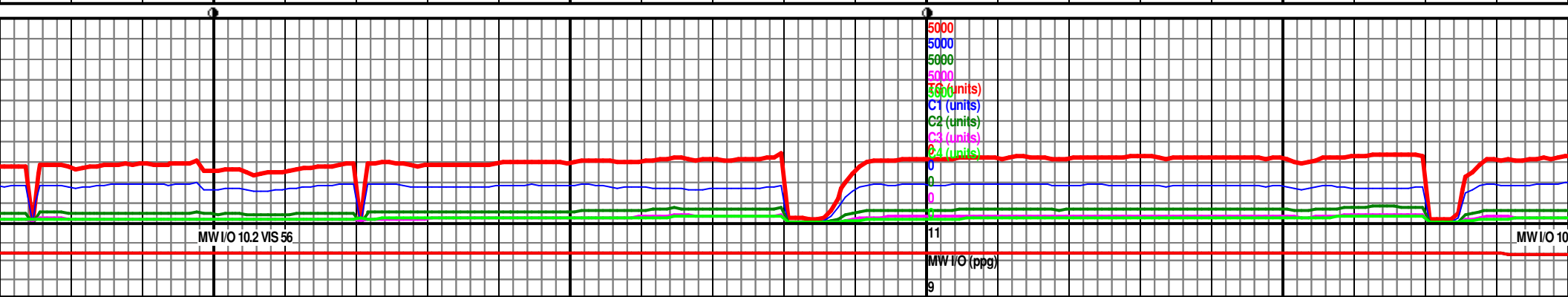
SS: (95%) brn gry - lt brn gry, v fn - fn  
grnd, dom sub-ang, dom mod sphrcty, fr  
srtg, grn sprt w/occ mtrx sprt, rr slic  
cmnt, com slt/cly mtrx, frble-mod hrd, est  
8% pp por, no initial fluor, spotted stain,  
fst gd bri grnsh blu strmg cut fl, gd bri  
grn rsd fl, NO.

SH: (5%)

SS: (95%) brn gry - lt brn gry, v fn - fn  
grnd, dom sub-ang, dom mod sphrcty, fr  
srtg, grn sprt w/occ mtrx sprt, rr slic  
cmnt, com slt/cly mtrx, frble-mod hrd  
8% pp por, no initial fluor, spotted sta  
fst gd bri grnsh blu strmg cut fl, gd b  
grn rsd fl, NO.

SH: (5%)

7150



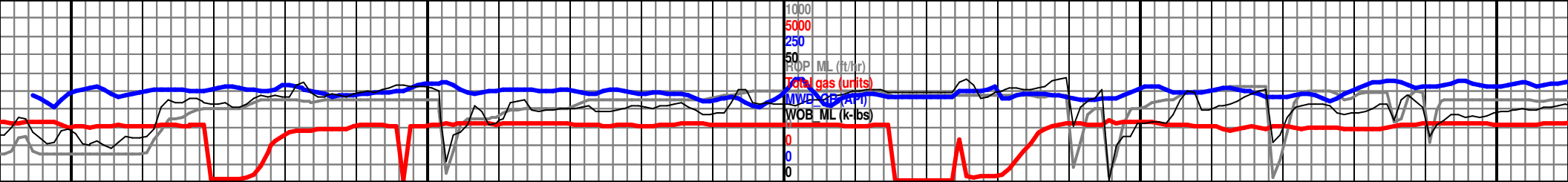
MW I/O 10.2 VIS 56

11

MW I/O (ppg)

9

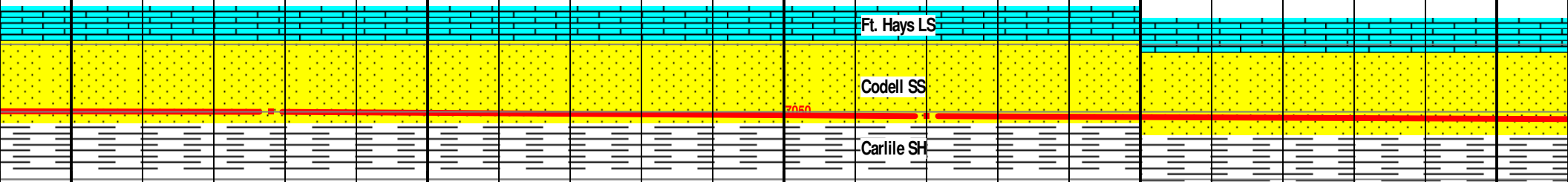
MW I/O 10.2



MD 10928 TVD 7049.91  
INC 89.17 AZ 263.7  
VS 2951.08

6950 TVD

MD 11020 TVD 7051.19  
INC 89.23 AZ 263.92  
VS 3043.07

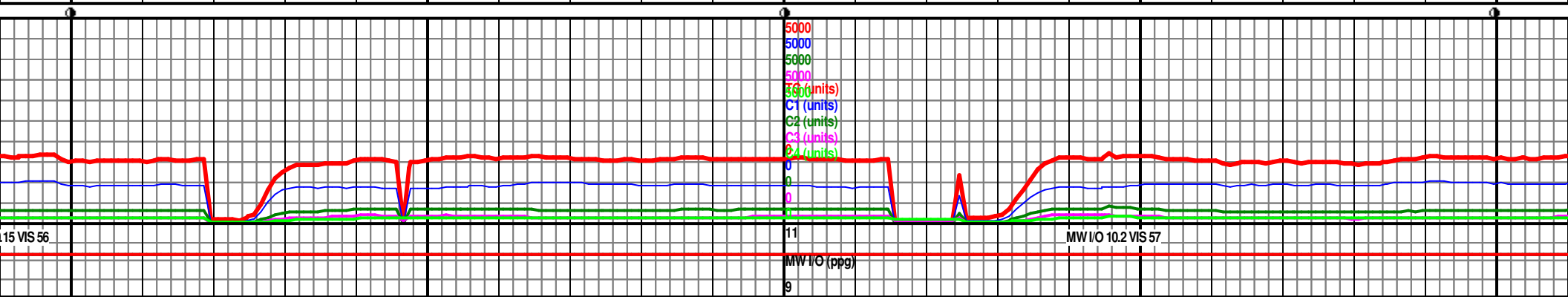


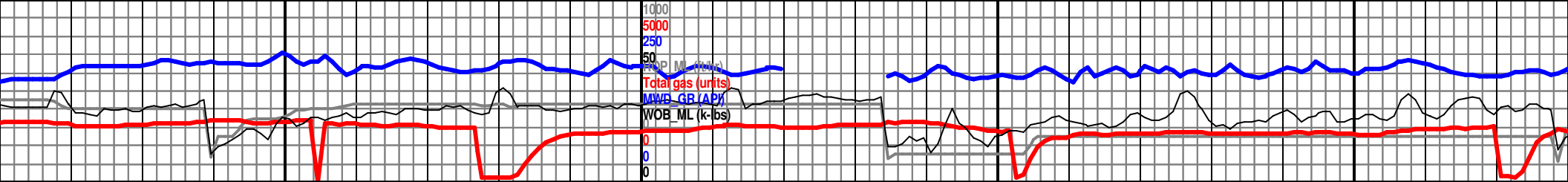
SS: (95%) brn gry - lt brn gry, v fn - fn  
grnd, dom sub-ang, dom mod sphrcty, fr  
srtg, grn sprt w/occ mtrx sprt, rr slic  
cmnt, com slt/cly mtrx, frble-mod hrd, est  
8% pp por, no initial fluor, spotted stain,  
fst gd bri grnsh blu strmg cut fl, gd bri  
grn rsd fl, NO.

SH: (5%)

SS: (95%) brn gry - lt brn gry, v fn - fn  
grnd, dom sub-ang, dom mod sphrcty, fr  
srtg, grn sprt w/occ mtrx sprt, rr slic  
cmnt, com slt/cly mtrx, frble-mod hrd, est  
8% pp por, no initial fluor, spotted stain,  
fst gd bri grnsh blu strmg cut fl, gd bri  
grn rsd fl, NO.

SH: (5%)

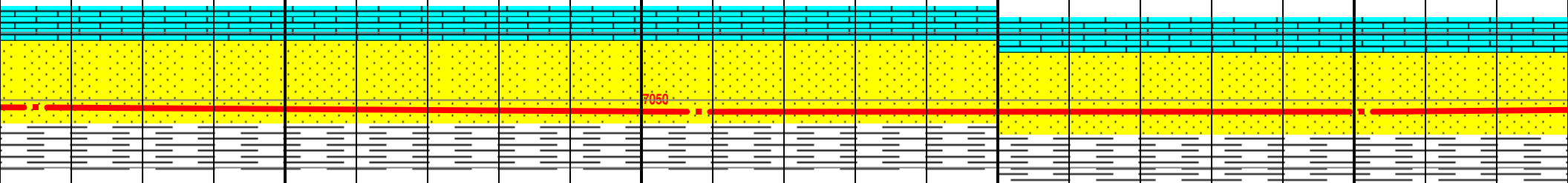




MD 11115 TVD 7052.37  
INC 89.35 AZ 264.6  
VS 3188.03

6950 TVD MD 11208 TVD 7053.47  
INC 89.29 AZ 264.64  
VS 3230.99

MD 11301 TVD 7053.25  
INC 90.99 AZ 266.24  
VS 3323.9

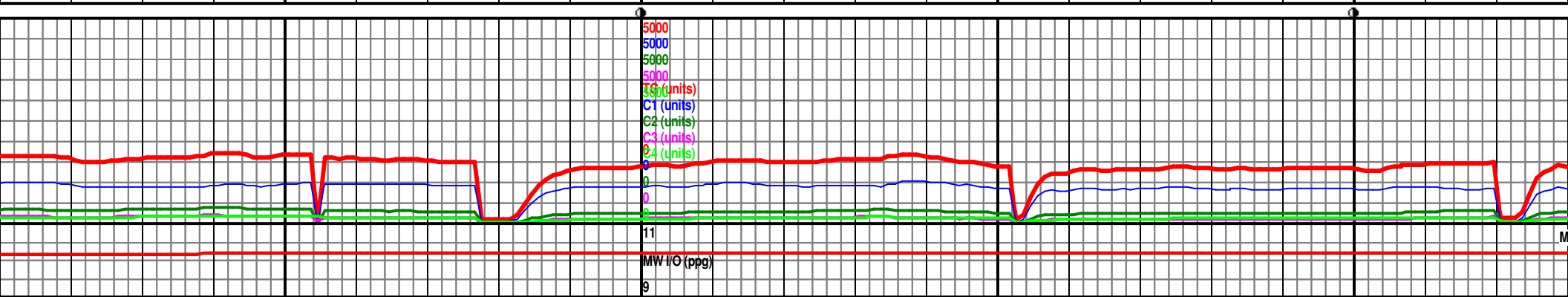


SS: (90%) brn gry - lt brn gry, v fn - fn  
grnd, dom sub-ang, dom mod sphrcty, fr  
srtg, grn sprt w/occ mtrx sprt, rr slic  
cmnt, com slt/cly mtrx, frble-mod hrd, est  
8% pp por, no initial fluor, spotted stain,  
fst gd bri grnsh blu strmg cut fl, gd bri  
grn rsd fl, NO.

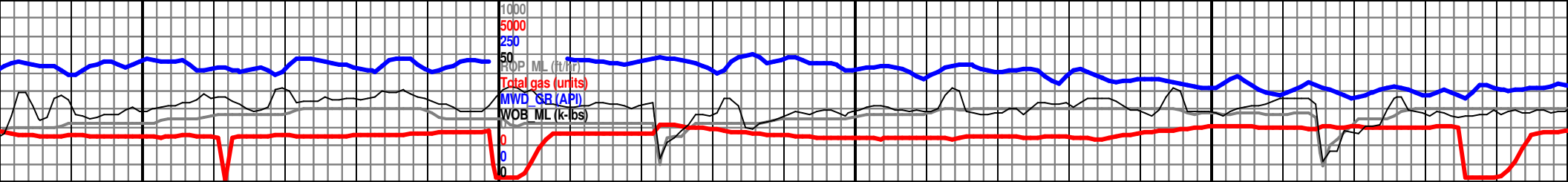
SH: (10%)

SS: (95%) brn gry - lt brn gry, v fn - fn  
grnd, dom sub-ang, dom mod sphrcty, fr  
srtg, grn sprt w/occ mtrx sprt, rr slic  
cmnt, com slt/cly mtrx, frble-mod hrd, est  
8% pp por, no initial fluor, spotted stain,  
fst gd bri grnsh blu strmg cut fl, gd bri  
grn rsd fl, NO.

SH: (5%)

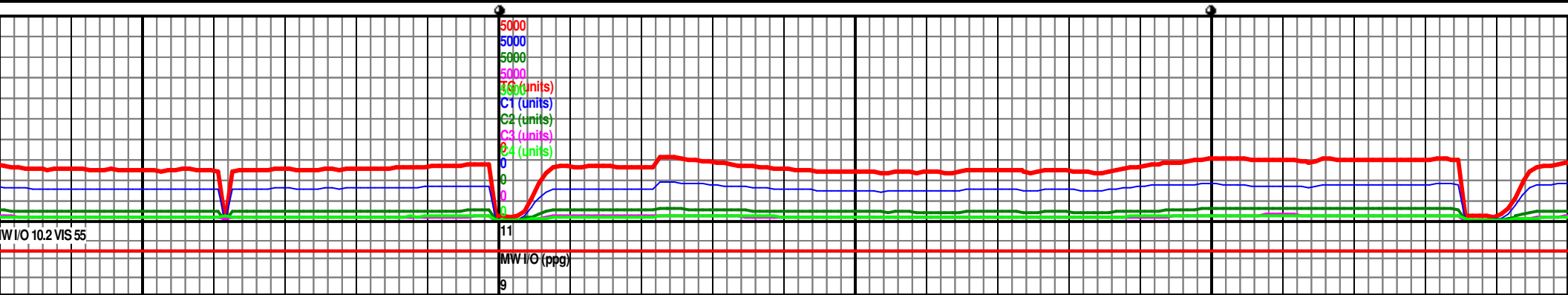
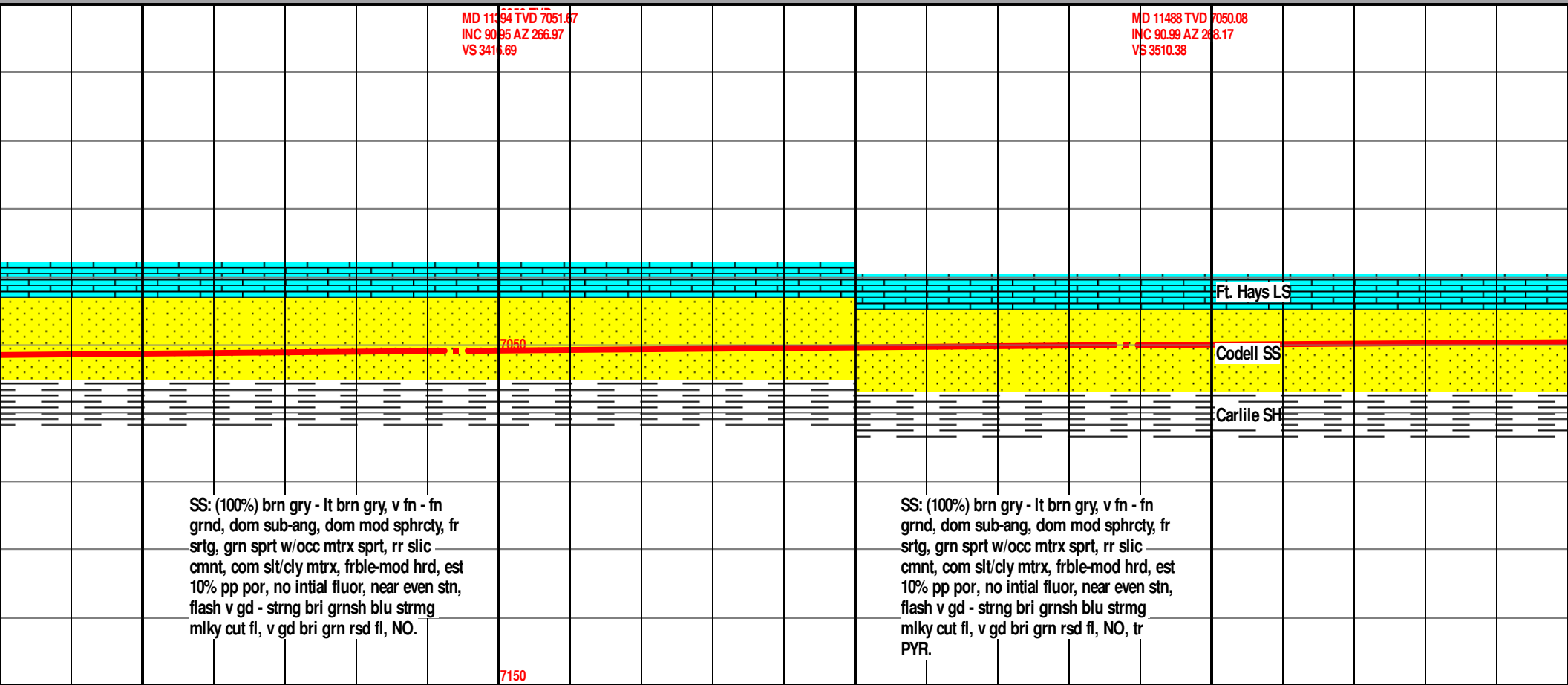




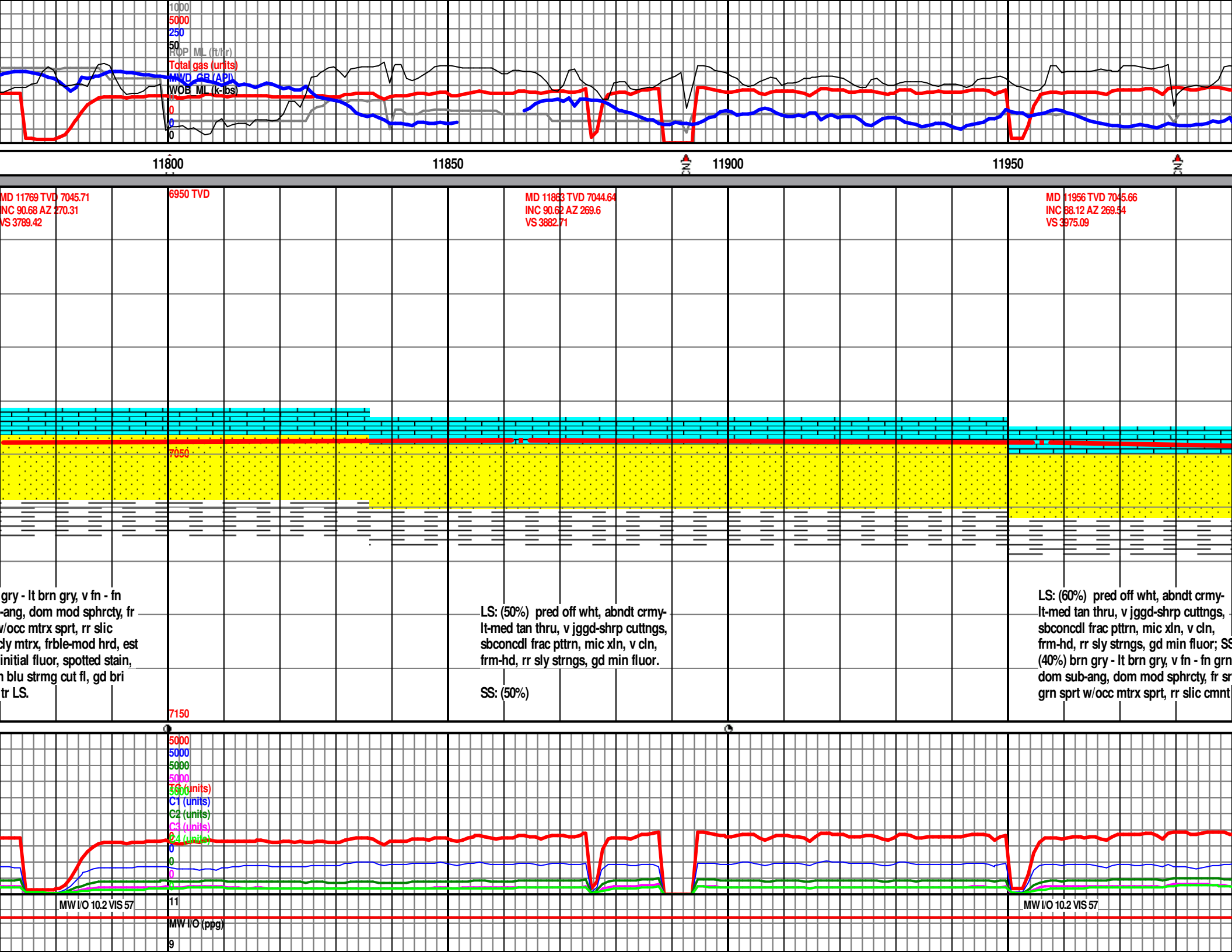


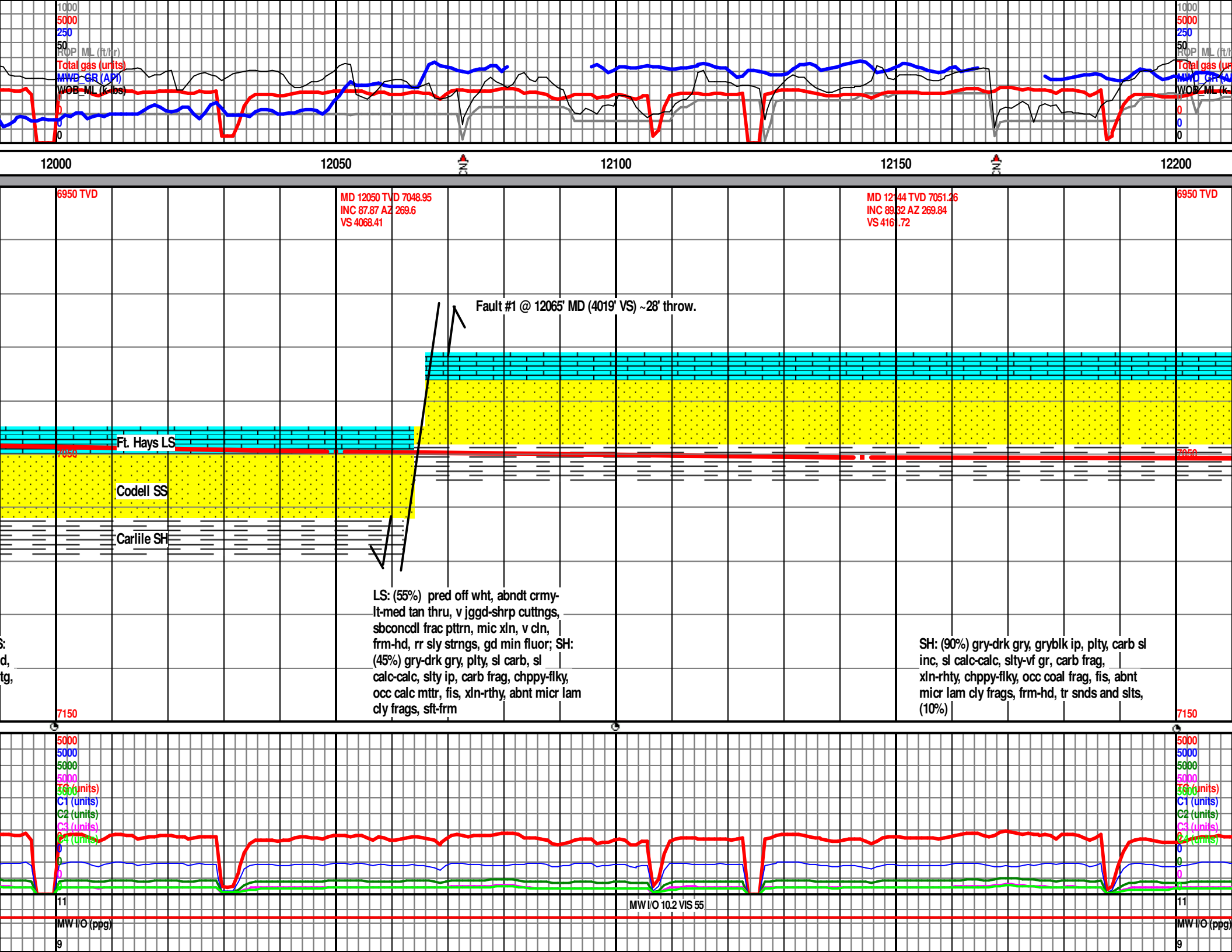
MD 11394 TVD 7051.67  
INC 90.95 AZ 266.97  
VS 3416.69

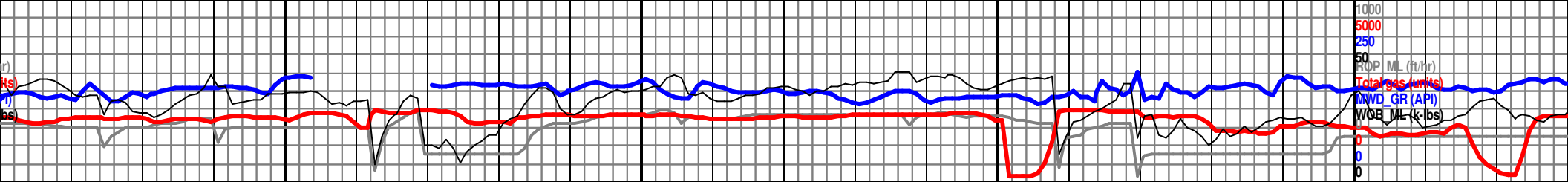
MD 11488 TVD 7050.08  
INC 90.99 AZ 268.17  
VS 3510.38







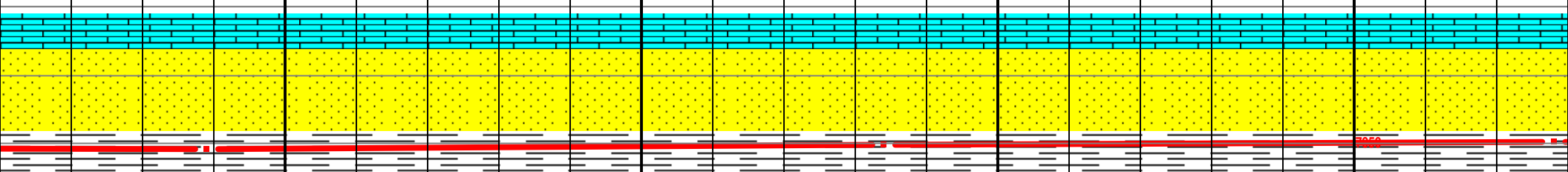




MD 12239 TVD 7051.56  
INC 90.31 AZ 271.43  
VS 4255.87

MD 12334 TVD 7050.64  
INC 90.8 AZ 272.26  
VS 4349.73

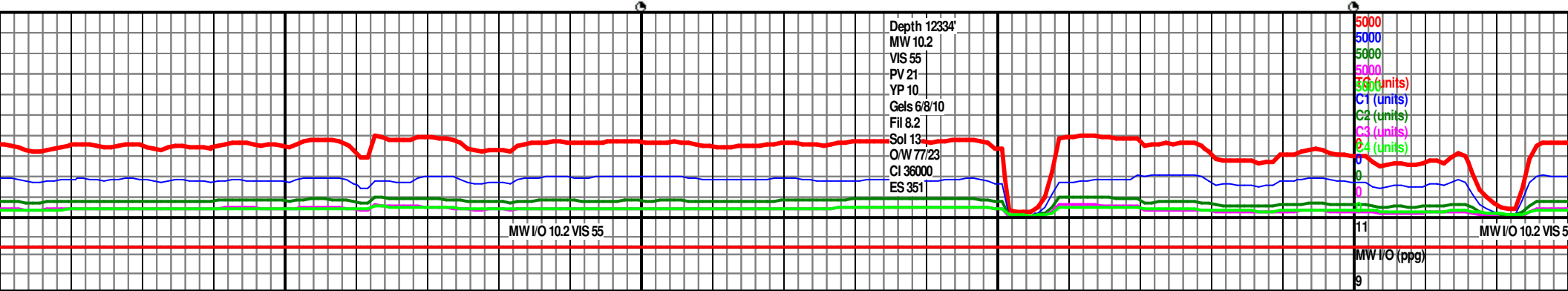
6950 TVD

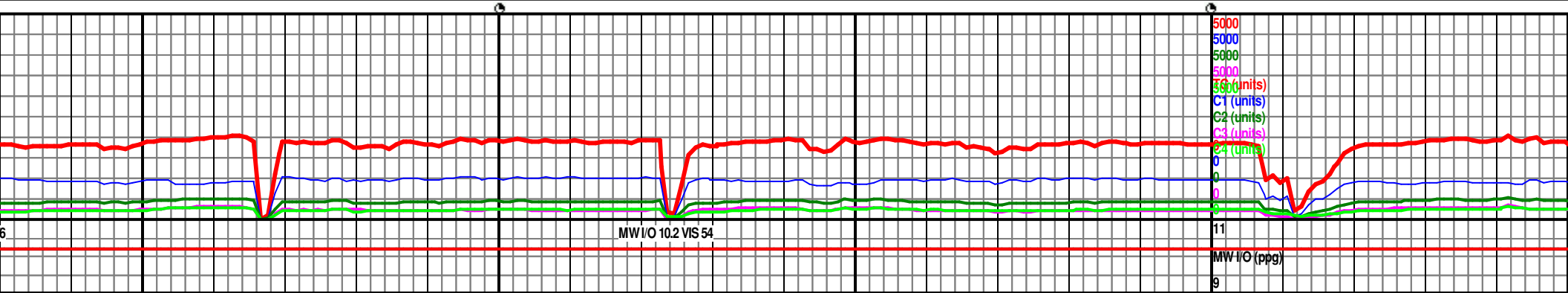
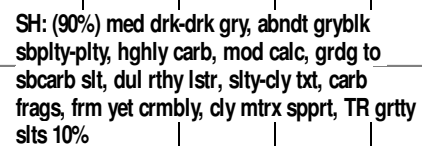
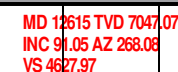


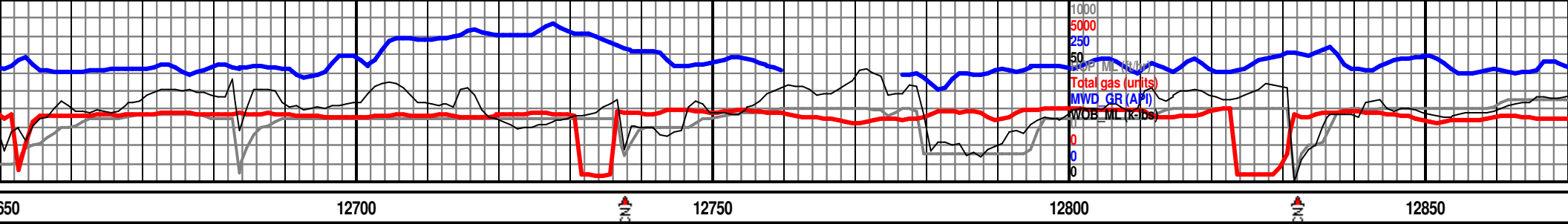
SH: (100%) blk-drk gry, sbply-sbblky, ca  
calc, occ slt, carb frag, bcming clayey, ch  
occ wht mnrl frag, fis, xln-rthy, abnt micr  
lam frags, sft-frn; OBM contam.

SH: (100%) blk-drk gry, sbply-sbblky, ca  
calc, occ slt, carb frag, clayey, ch occ wht  
mnrl frag, fis, xln-rthy, abnt micr lam  
frags, sft-frn; OBM contam.

7150

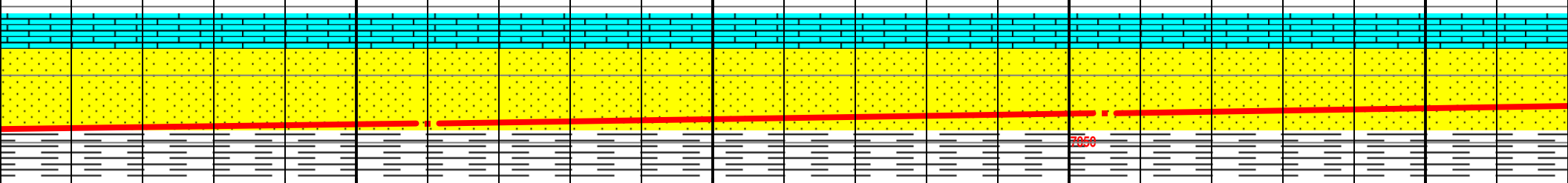






MD 12710 TVD 7044.61  
INC 91.91 AZ 265.09  
VS 4722.74

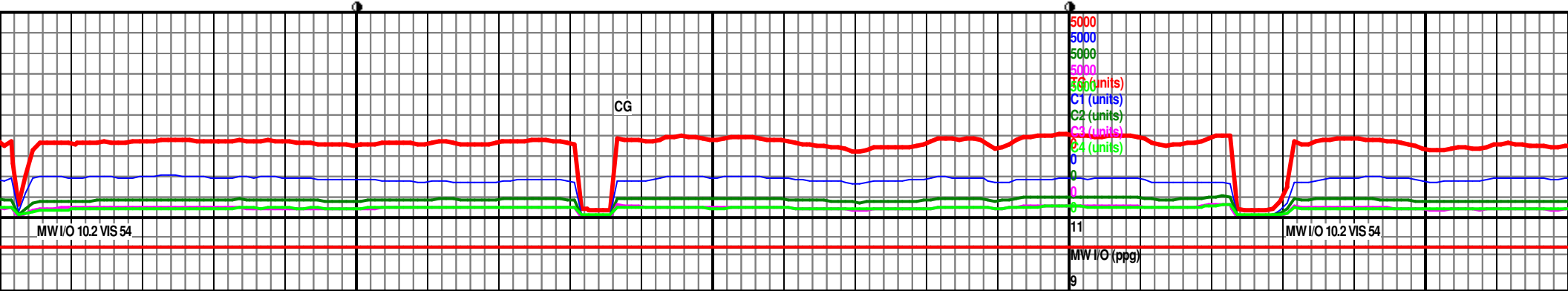
MD 12805 TVD 7041.45  
INC 91.91 AZ 263.61  
VS 4817.66



ARG SS: (100%) lt gry-med drk brn, tan  
brn ip, med-f grn, v slt occ lrg grns, pred  
sbrnd, w srted, w cons, rr sil cmt, arg w/  
est 30% cly & slt mtz, v arg, est 10% pp  
por, rr dissem pry, v drty, hvy cly fil

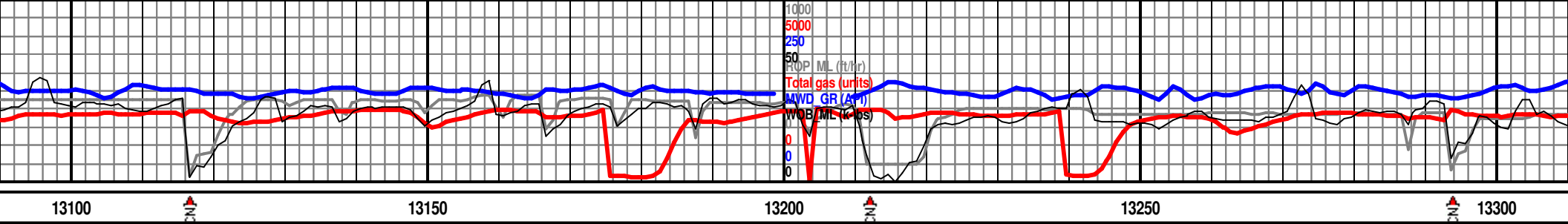
SS: lt med-med brnish gry-lt gryish  
wht, U/L vf grn, abndt f grns thru,  
sbrng-sbrnd, mod-pr srted, pr-med  
cmt, fri ip, 50% calc cmt, 50% cly  
cmt, v drty snd, est 10% vis por

SS: (95%) v lt-lt m  
f grn thru, sbrnd-  
srted, pred cons, c  
35% cly fild mtz,  
~11% vis intr, grn







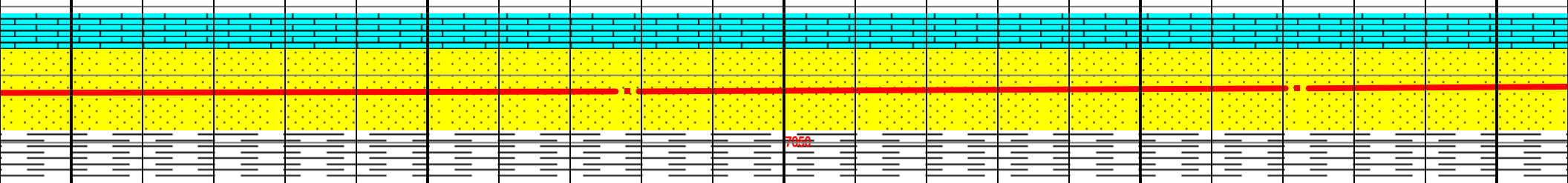


MD 13086 TVD 7035.14  
INC 90.15 AZ 264.41  
VS 5098.53

MD 13178 TVD 7034.77  
INC 90.31 AZ 266.78  
VS 5190.43

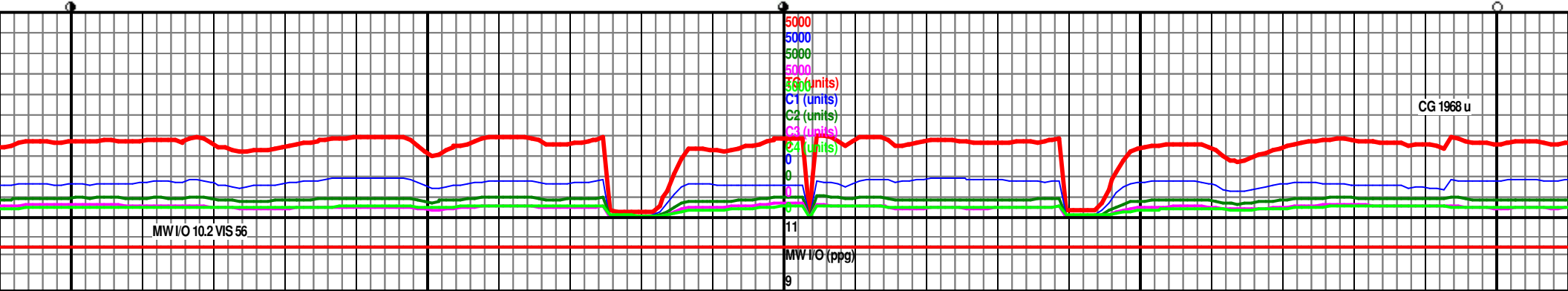
6950 TVD

MD 13272 TVD 7033.91  
INC 90.74 AZ 268.06  
VS 5284.14



SS: med-drk med brnsh, occ drk gryish red, U/L vf  
grn, abndt f grns thru, sbang-sbrnd, mod-pr srted,  
mod-w cmt, pred con, rr fri ip, 50% calc cmt, 50%  
cly cmt, v drty snd, est 10% vis por, wk sppty ini  
fluor, near even stn, v strng strmg cuts, pale  
grnish yel res rng

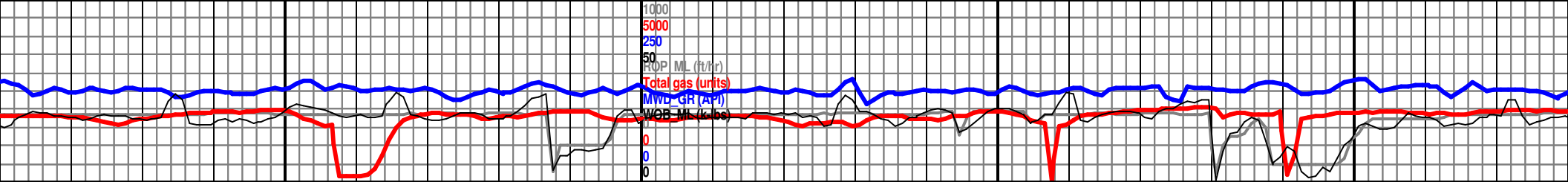
SS: (98%) lt med-med drk gry brn, L vf - L fn, occ  
lrg L f grn thru, sbrnd-rnd, pr-mod srted, pred  
cons, v uni w/o change due to ctggs bed, 40% cly  
fldd mtz, v arg qtz aren, 9% est vis por, infrd frac  
perm, wk sppty ini fluor, near even stn, v strng  
strmg cuts, pale grnish yel res rng, OBM contam



MW I/O 10.2 VIS 56

MW I/O (ppg)

CG 1968 u



13350

13400

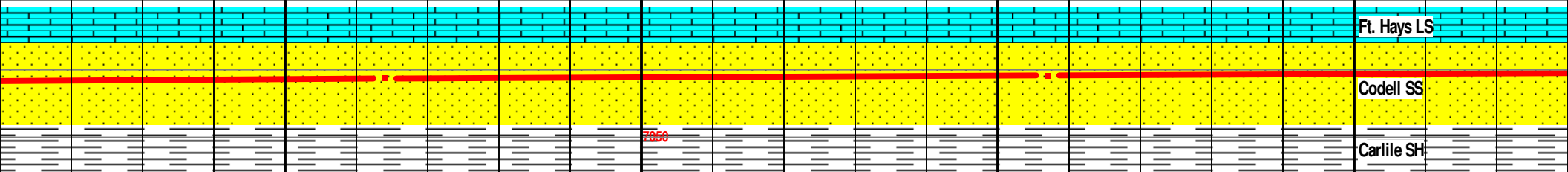
13450

13500

MD 13364 TVD 7032.77  
INC 90.68 AZ 267.18  
VS 5375.83

6950 TVD

MD 13457 TVD 7031.74  
INC 90.59 AZ 268.75  
VS 5468.65



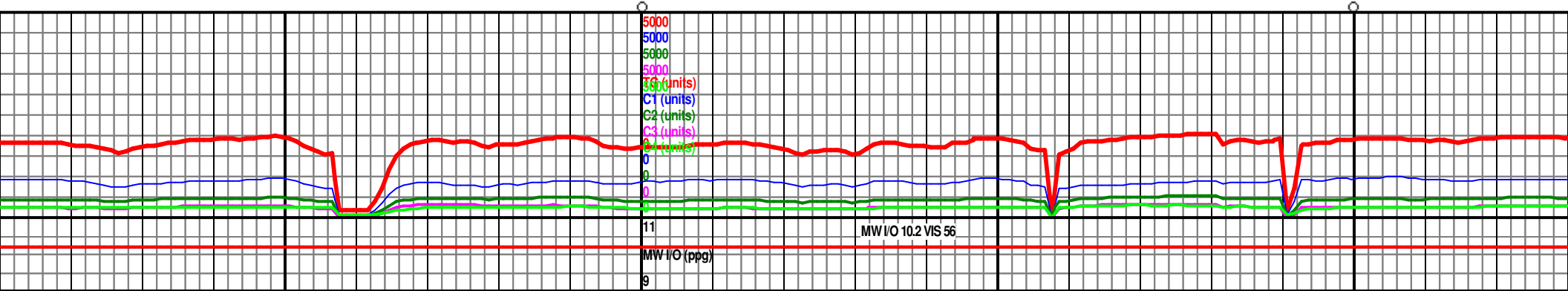
Ft. Hays LS

Codell SS

Carlile SH

SS: (95%) lt med-med drk gry brn, L vf - L fn, occ  
lgr L f grn thru, sbrnd-rnd, pr-mod srted, pred cons,  
v uni w/o change due to ctggs bed, 40% cly fldd mtz,  
v arg qtz aren, 9% est vis por, infrd frac perm, wk  
sppty ini fluor, near even stn, v strng strmg cuts,  
pale grnish yel res rng, OBM contam

SS: (100%) lt med-med gry, L vf - L fn, occ lgr  
L f grn thru, sbrnd-rnd, mod-w sphrcty,  
pr-mod srted, pred cons, occ uncon s fri grns  
thru, 35% cly fldd mtz, v arg qtz aren, pr vis  
perm, ~11% vis intr, grnldr por, tr LS, OBM  
contam



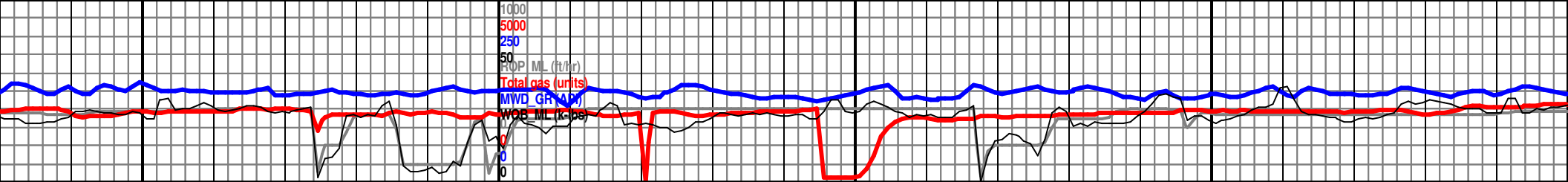
7150

11

MW I/O 10.2 VIS 56

MW I/O (ppg)

9



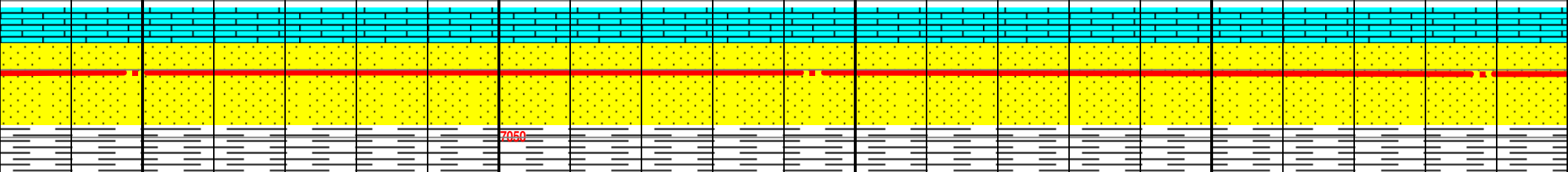
13550 13600 13650 13700 13750

MD 13549 TVD 7031.19  
INC 90.09 AZ 264.18  
VS 5560.59

6950 TVD

MD 13644 TVD 7031.22  
INC 89.88 AZ 264.99  
VS 5655.55

MD 13738 TVD  
INC 89.97 AZ 264.99  
VS 5749.44

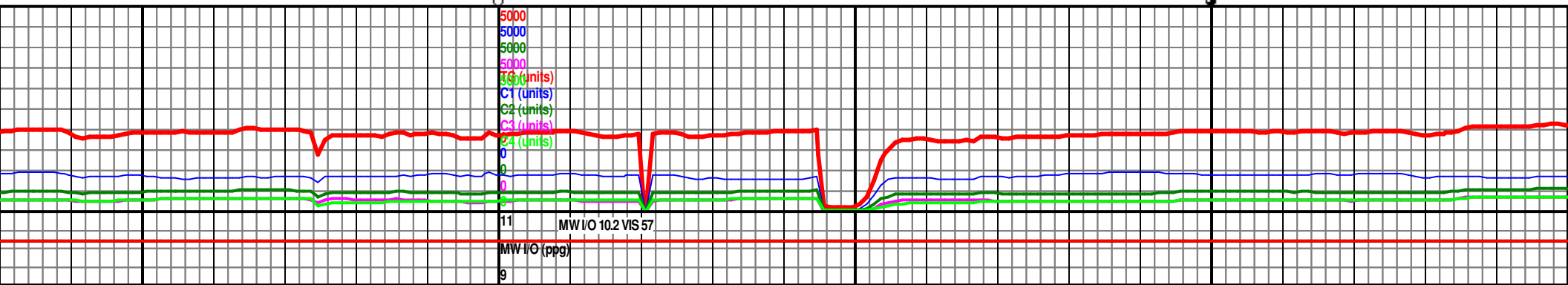


7050

SS: (98%) lt-lt med gry, L vf - L fn, occ lgr L f grn thru, sbrnd-rnd, mod-w sphrcty, pr-mod srted, pred cons, occ uncons fri grns thru, 35% cly fldd mtx, v arg qtz aren, pr vis perm, ~11% vis intr, grnulr por, tr LS, OBM contam

SS: (100%) lt-med brnish gry, occ drk gryish red, U/L vf grn, abndt f grns thru, sbang-sbrnd, mod-pr srted, mod-w cmt, pred con, rr fri ip, 40% calc cmt, 60% cly cmt, v drty snd, est 10% vis por, wk sppty ini fluor, near even stn, v strng strrng cuts, pale grnish yel res rng

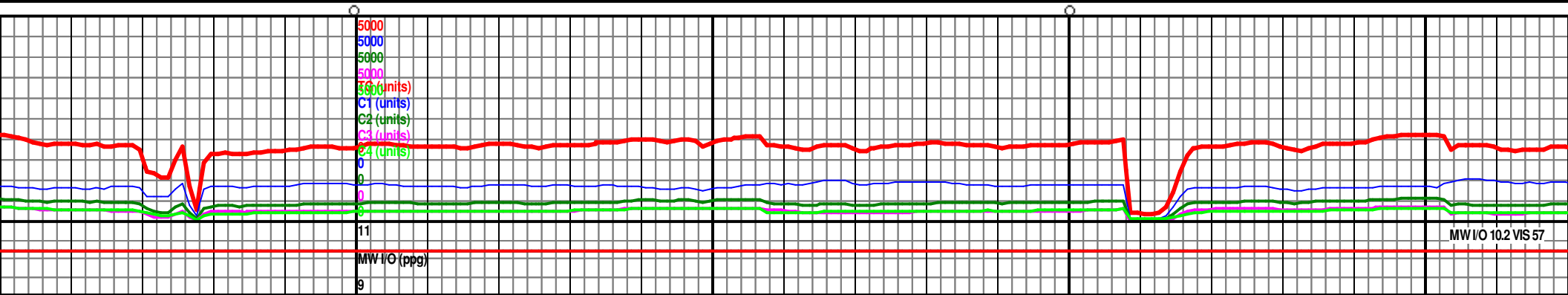
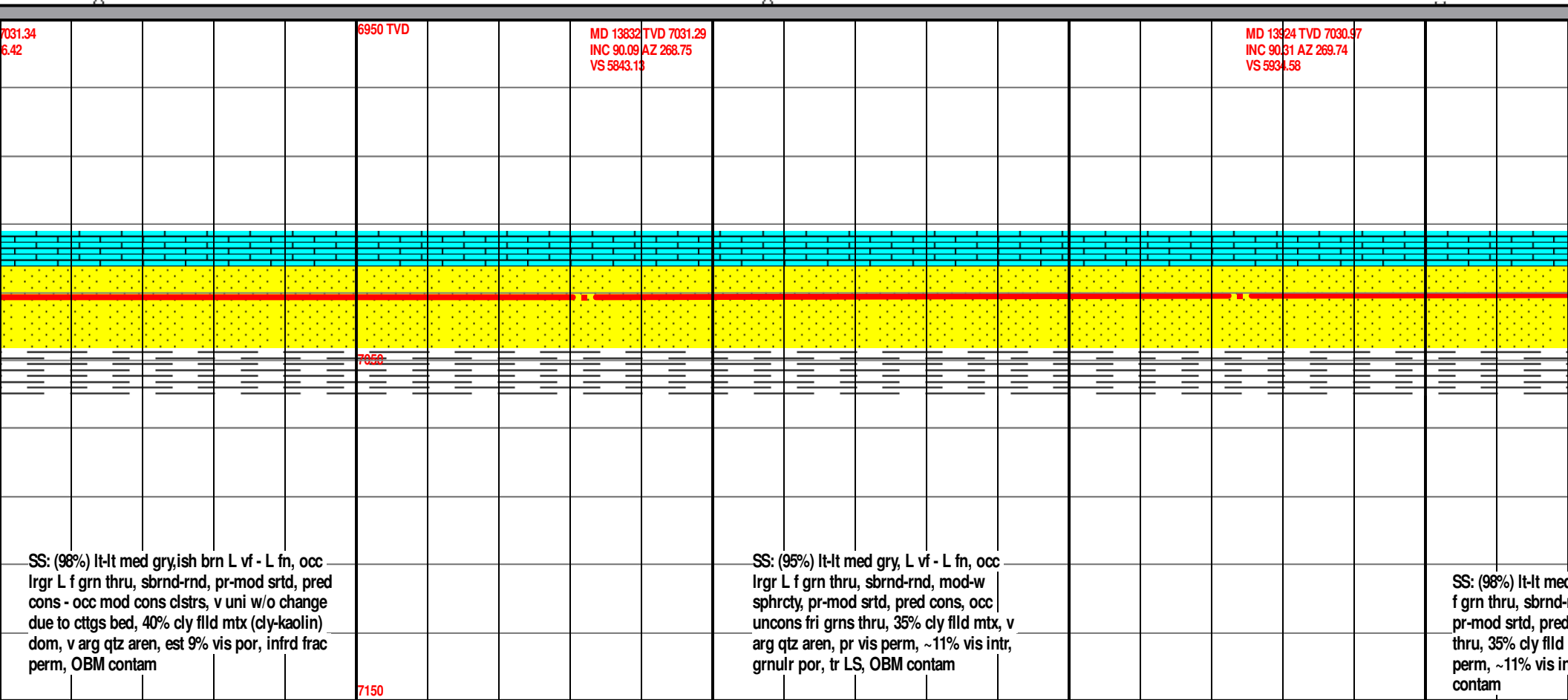
7150

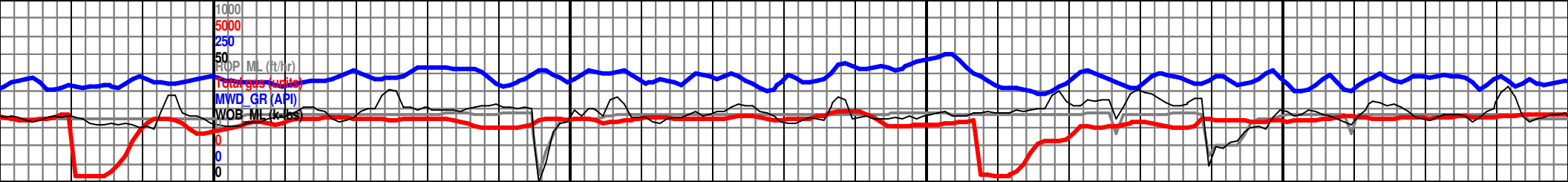


11 MW I/O 10.2 VIS 57

MW I/O (ppg)

9





14000 14050 14100 14150

6950 TVD

MD 14017 TVD 7030.42  
INC 90.37 AZ 270.13  
VS 6026.89

MD 14110 TVD 7029.54  
INC 90.71 AZ 269.91  
VS 6119.18

Ft. Hays LS

Codell SS

7050

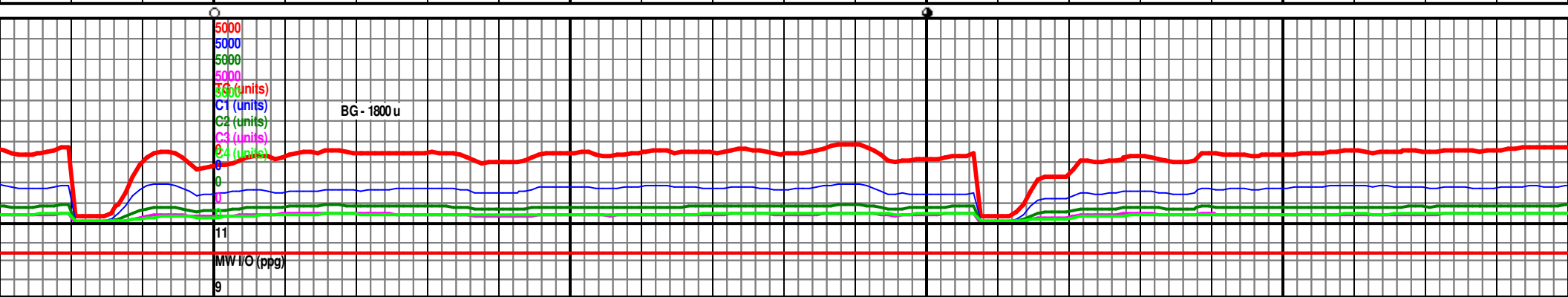
Carlile SH

d gry, L vf - L fn, occ lgr L  
rnd, mod-w sphrcty, |  
cons, occ uncons fri grns  
mtx, v arg qtz aren, pr vis  
ntr, grnult por, tr LS, OBM

SS: (100%) lt-med brnish gry, occ drk gryish red,  
U/L vf grn, abndt f grns thru, sbang-sbrnd, mod-pr  
srted, mod-w cmt, pred con, rr fri ip, 40% calc cmt,  
60% cly cmt, v drty snd, est 10% vis por, wk sptty  
ini fluor, near even stn, v strng strmg cuts, pale  
grnish yel res rng.

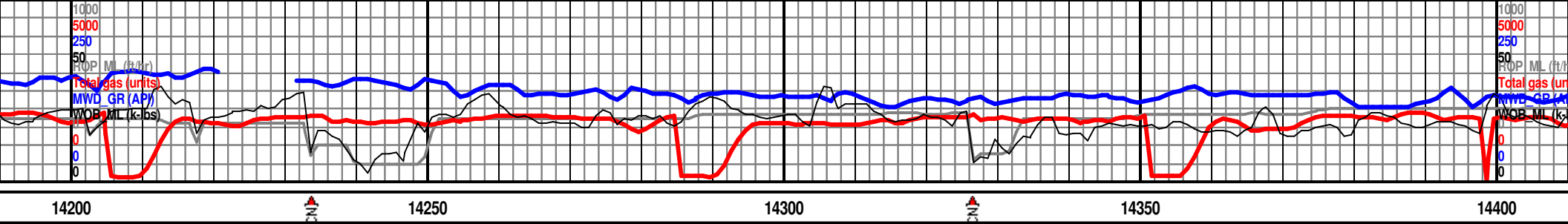
SS: (100%) lt-med brnish gry, occ drk  
gryish red, U/L vf grn, abndt f grns thru  
sbang-sbrnd, mod-pr srted, mod-w cmt  
pred con, rr fri ip, 40% calc cmt, 60%  
cmt, v drty snd, est 10% vis por, wk s  
ini fluor, near even stn, v strng strmg  
cuts, pale grnish yel res rng.

7150



MW I/O (ppg)

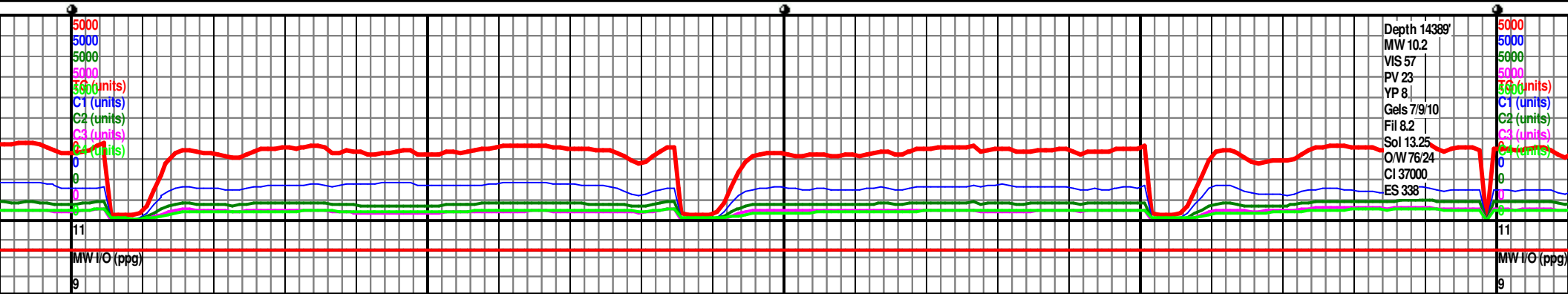
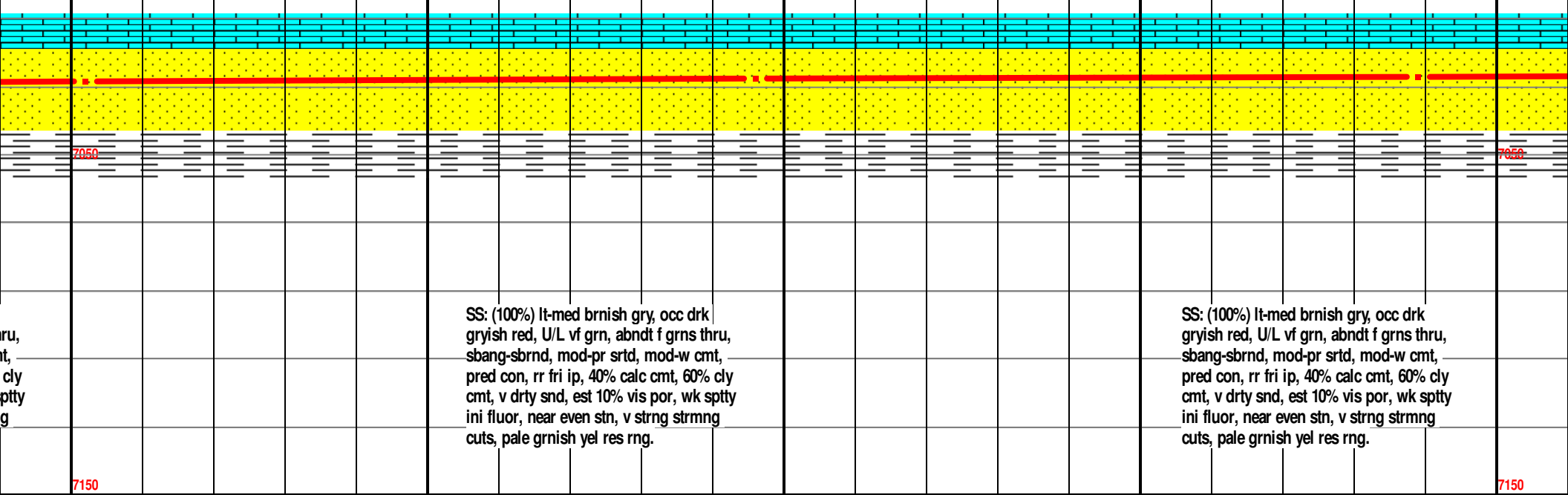
9

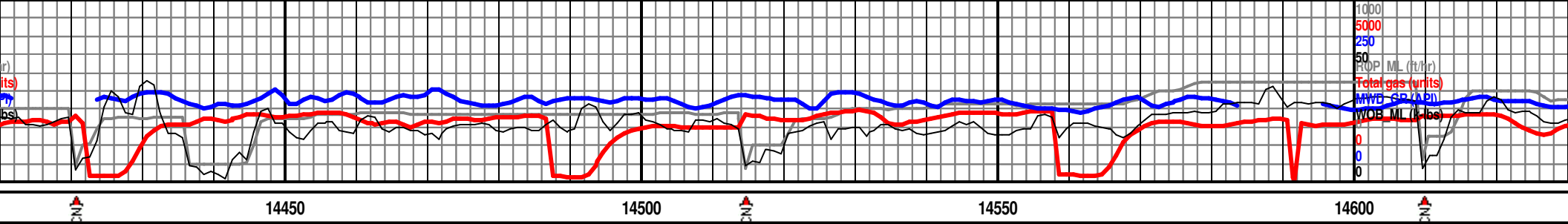


MD 14202 TVD 7028.51  
INC 90.58 AZ 270.32  
VS 6210.46

MD 14296 TVD 7027.68  
INC 90.43 AZ 270.21  
VS 6303.7

MD 14389 TVD 7026.95  
INC 90.46 AZ 268.39  
VS 6396.12

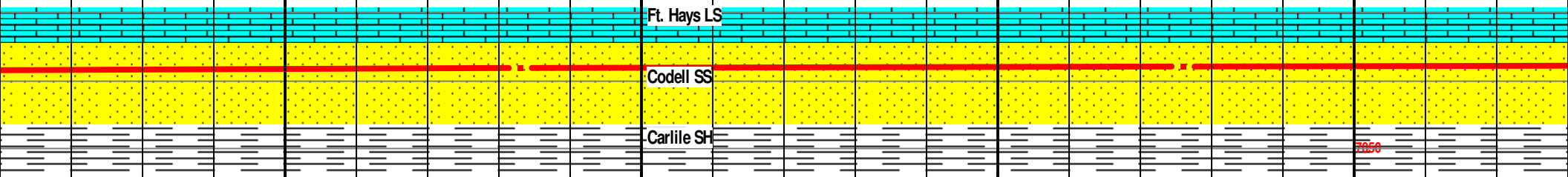




MD 14483 TVD 7026.45  
INC 90.15 AZ 268.47  
VS 6489.69

MD 14576 TVD 7026.01  
INC 90.4 AZ 268.4  
VS 6582.27

6950 TVD



Ft. Hays LS

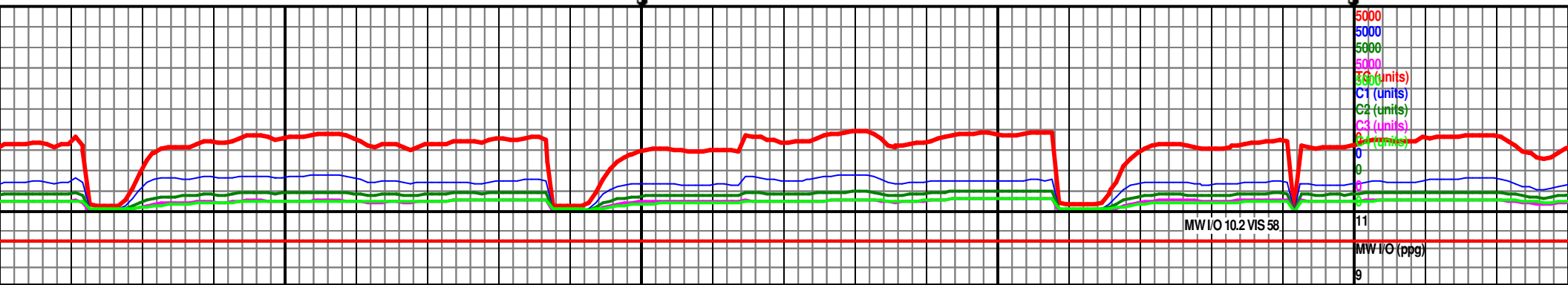
Codell SS

Carlile SH

SS: (100%) lt-med brnsh gry, occ drk gryish red, U/L vf grn, abndt f grns thru, sbang-sbrnd, mod-pr srted, mod-w cmt, pred con, rr fri ip, 40% calc cmt, 60% cly cmt, v drty snd, est 10% vis por, wk sptty ini fluor, near even stn, v strng strmgng cuts, pale grnsh yel res rng.

SS: (100%) lt-med brnsh gry, occ drk gryish red, U/L vf grn, abndt f grns thru, sbang-sbrnd, mod-pr srted, mod-w cmt, pred con, rr fri ip, 40% calc cmt, 60% cly cmt, v drty snd, est 10% vis por, wk sptty ini fluor, near even stn, v strng strmgng cuts, pale grnsh yel res rng.

7150



MW I/O 10.2 VIS 58

11

MW I/O (ppg)

9

MD 14670 TV	D 7025.53
INC 90.18 AZ	267.58
VS 6675.91	

MD 14765	TVD 7025.18
INC 90.25	AZ 267.57
VS 6770.6	

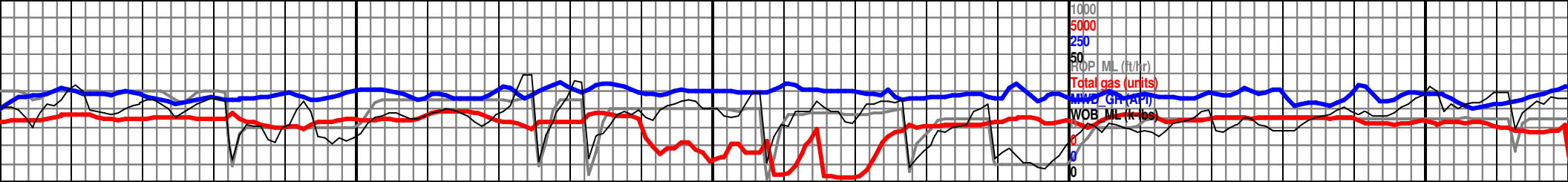
6950 TVD

SS: med-drk med brnsh, occ drk gryish red, U/L vf grn, abndt f grns thru, sbang-sbrnd, mod-pr srted, mod-w cmt, pred con, rr fri ip, 50% calc cmt, 50% cly cmt, v drty sdn, est 10% vis prng, wk spty ini fluor, near end sten, v strng strmg cuts, pale grnsh yel res rng.

SS: med-drk med brnish, occ drk gryish red, U/L vf grn, abndt f grns thru, sbang-sbrnd, mod-pr srted, mod-w cmt, pred con, rr fri ip, 50% calc cmt, 50% cly cmt, v drty sdn, est 10% vis prg, wk spty inl fluor, near even stn, v strng strmgng cuts, pale grnish yel res rng.

7150





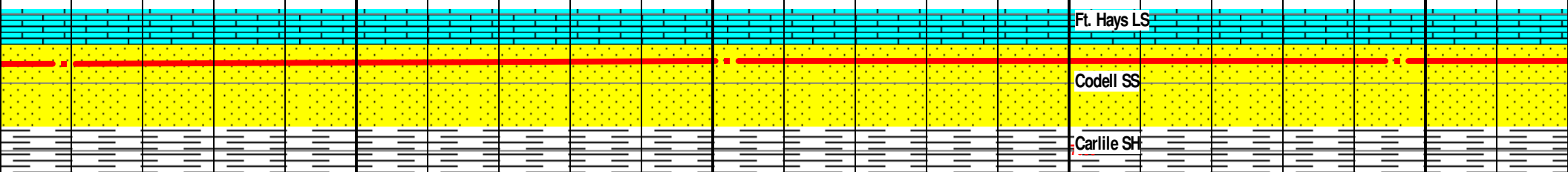
14850 14900 14950 15000 15050

MD 14859 TVD 7024.59  
INC 90.46 AZ 266.88  
VS 6864.34

MD 14952 TVD 7023.9  
INC 90.4 AZ 265.78  
VS 6957.17

6950 TVD

MD 15046 TVD 7023.69  
INC 89.85 AZ 266.15  
VS 7051.05



Ft. Hays LS

Codell SS

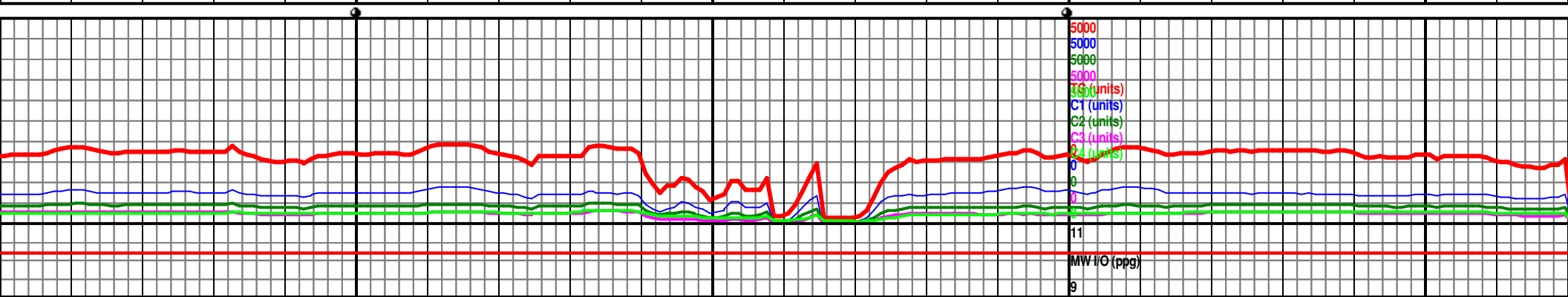
Carlile SH

SS: med-drk med brnsh, occ drk gryish red, U/L vf grn, abndt f grns thru, sbang-sbrnd, mod-pr srt, mod-w cmt, pred con, rr fri ip, 50% calc cmt, 50% cly cmt, v drty snd, est 10% vis por, wk sptty ini fluor, near even stn, v strng strmg cuts, pale grnsh yel res rng.

SS: (100%) lt-med brnsh gry, occ drk gryish red, U/L vf grn, abndt f grns thru, sbang-sbrnd, mod-pr srt, mod-w cmt, pred con, rr fri ip, 40% calc cmt, 60% cly cmt, v drty snd, est 10% vis por, wk sptty ini fluor, near even stn, v strng strmg cuts, pale grnsh yel res rng.

SS: (100%) lt-med gryish red, U/L vf sbang-sbrnd, mod-pr srt, mod-w cmt, pred con, rr fri ip, 40% calc cmt, 60% cly cmt, v drty snd, est 10% vis por, wk sptty ini fluor, near even stn, v strng strmg cuts, pale grnsh yel res rng.

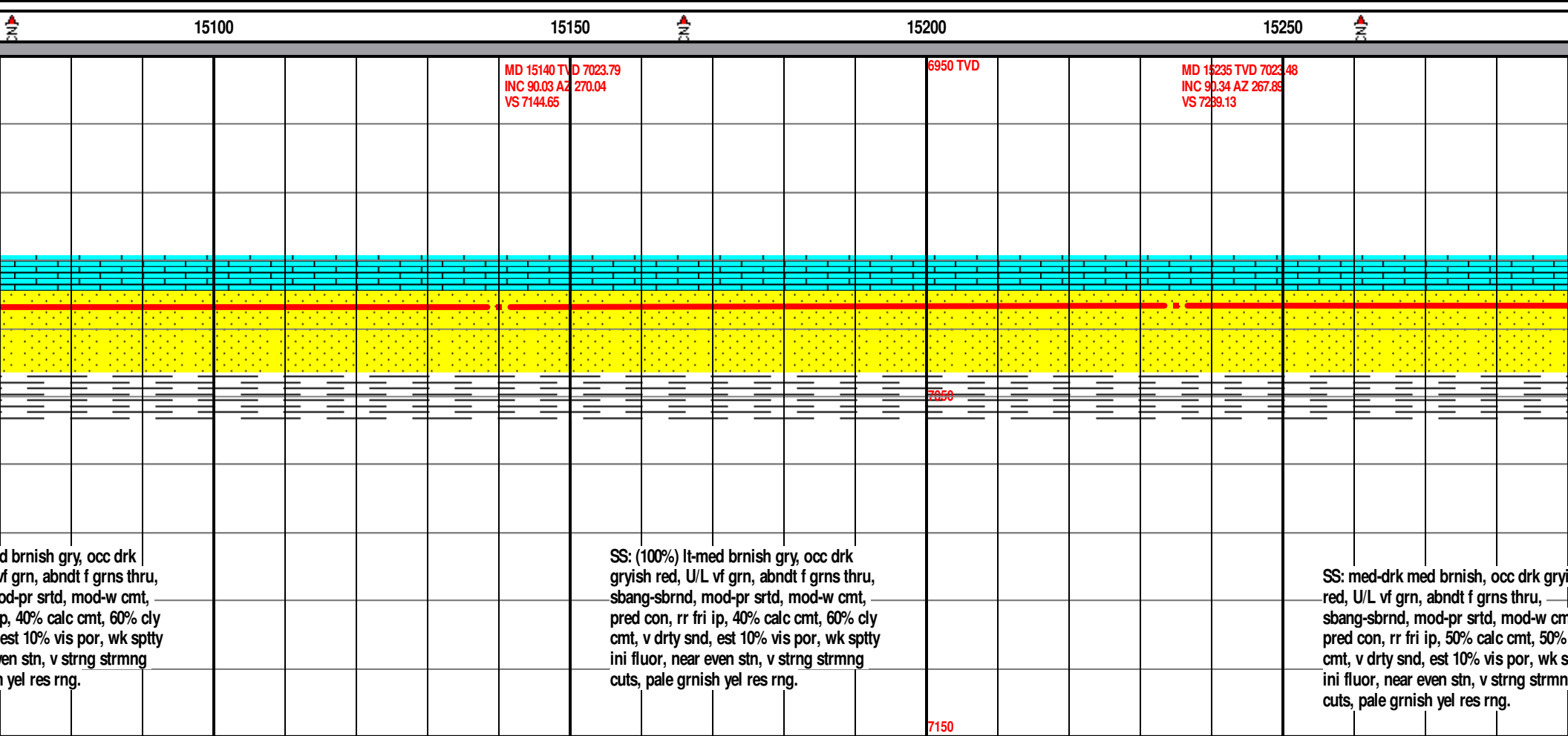
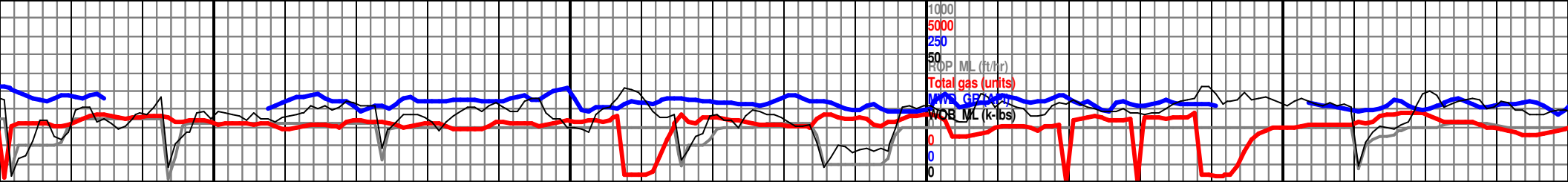
7150



5000  
5000  
5000  
5000  
5000  
C1 (units)  
C2 (units)  
C3 (units)  
C4 (units)

MW I/O (ppg)

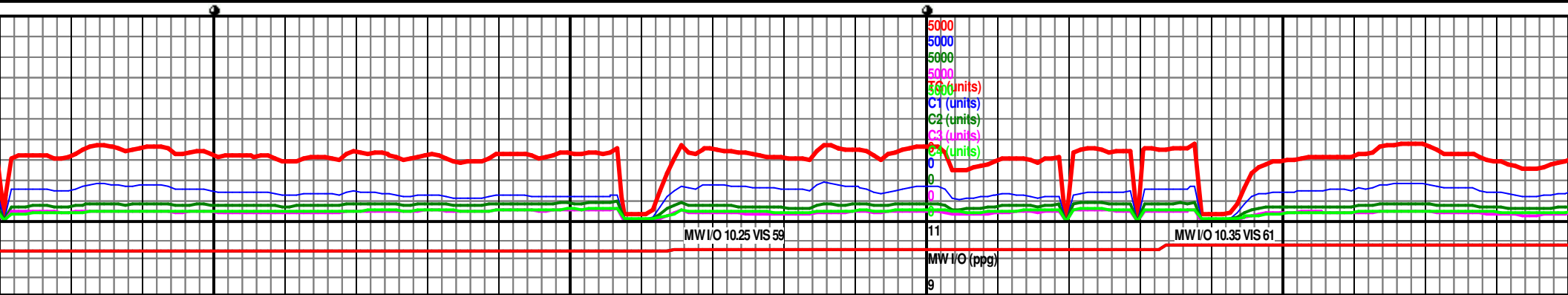
9

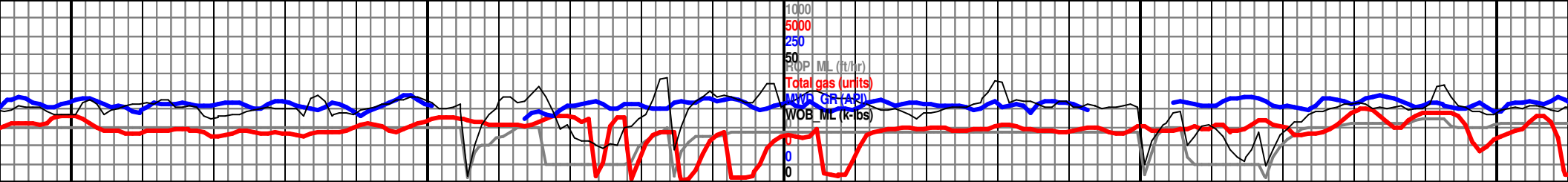


d brnsh gry, occ drk  
f grn, abndt f grns thru,  
mod-pr srted, mod-w cmt,  
p, 40% calc cmt, 60% cly  
est 10% vis por, wk sptty  
en stn, v strng strmgng  
yel res rng.

SS: (100%) lt-med brnsh gry, occ drk  
grysh red, U/L vf grn, abndt f grns thru,  
sbang-sbrnd, mod-pr srted, mod-w cmt,  
pred con, rr fri ip, 40% calc cmt, 60% cly  
cmt, v drty snd, est 10% vis por, wk sptty  
ini fluor, near even stn, v strng strmgng  
cuts, pale grnsh yel res rng.

SS: med-drk med brnsh, occ drk grysh  
red, U/L vf grn, abndt f grns thru,  
sbang-sbrnd, mod-pr srted, mod-w cmt,  
pred con, rr fri ip, 50% calc cmt, 50%  
cmt, v drty snd, est 10% vis por, wk s  
ini fluor, near even stn, v strng strmgng  
cuts, pale grnsh yel res rng.





15300

15350

15400

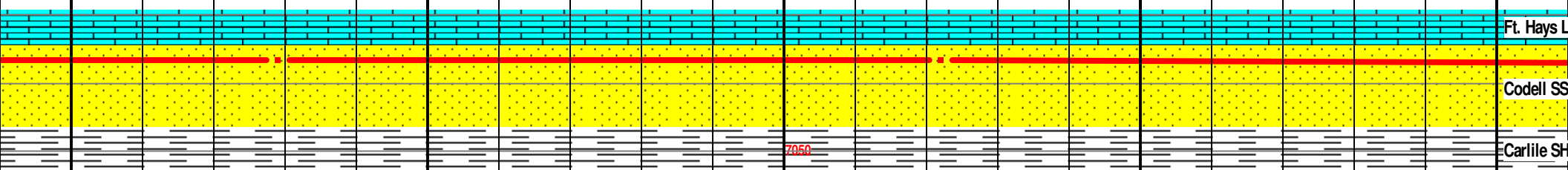
15450

15500

MD 15329 TVD 7023.08  
INC 90.15 AZ 266.4  
VS 7332.87

6950 TVD

MD 15422 TVD 7023.46  
INC 89.38 AZ 264.32  
VS 7425.79



Ft. Hays L

Codell SS

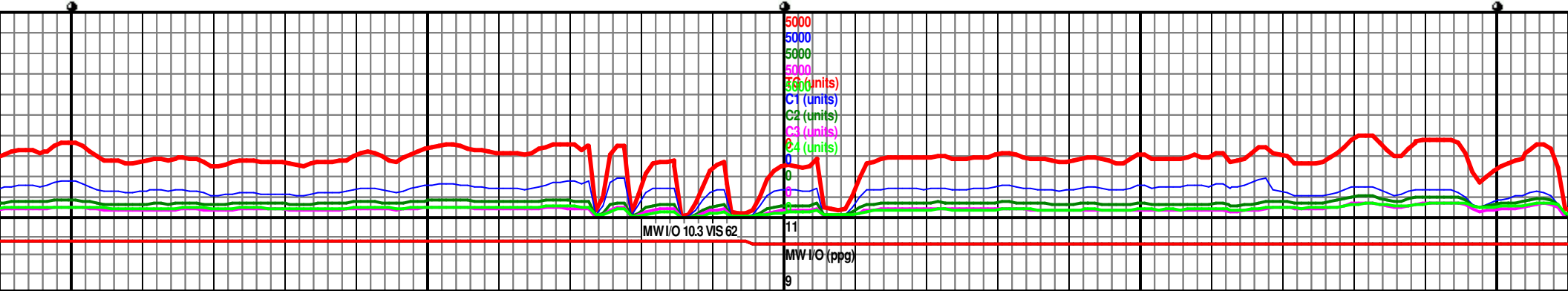
Carlile SH

SS: med-drk med brnsh, occ drk gryish  
red, U/L vf grn, abndt f grns thru,  
sbang-sbrnd, mod-pr srted, mod-w cmt,  
pred con, rr fri ip, 50% calc cmt, 50% cly  
cmt, v drty snd, est 10% vis por, wk sptty  
ini fluor, near even stn, v strng strmg  
cuts, pale grnish yel res rng.

SS: med-drk med brnsh, occ drk gryish  
red, U/L vf grn, abndt f grns thru,  
sbang-sbrnd, mod-pr srted, mod-w cmt,  
pred con, rr fri ip, 50% calc cmt, 50% cly  
cmt, v drty snd, est 10% vis por, wk sptty  
ini fluor, near even stn, v strng strmg  
cuts, pale grnish yel res rng, tr BENT.

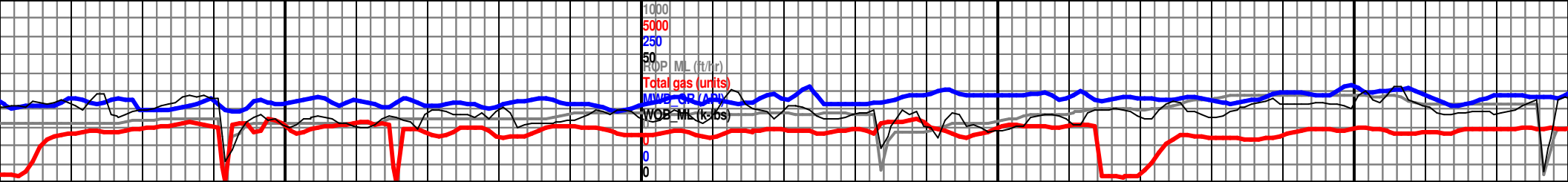
7150

ish  
nt,  
cly  
ptty  
g



MW/I/O 10.3 VIS 62

11  
MW/I/O (ppg)

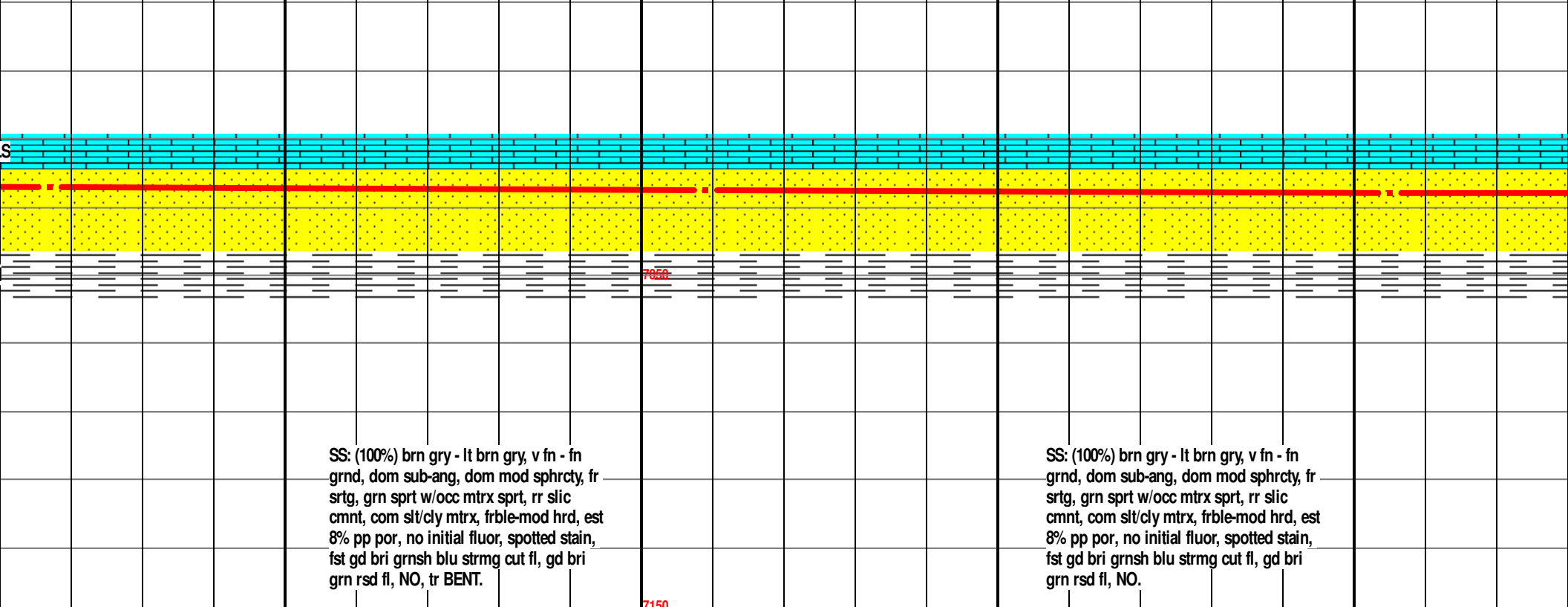


15550 15600 15650 15700

MD 15517 TVD 7024.31  
INC 89.6 AZ 265.23  
VS 7520.73

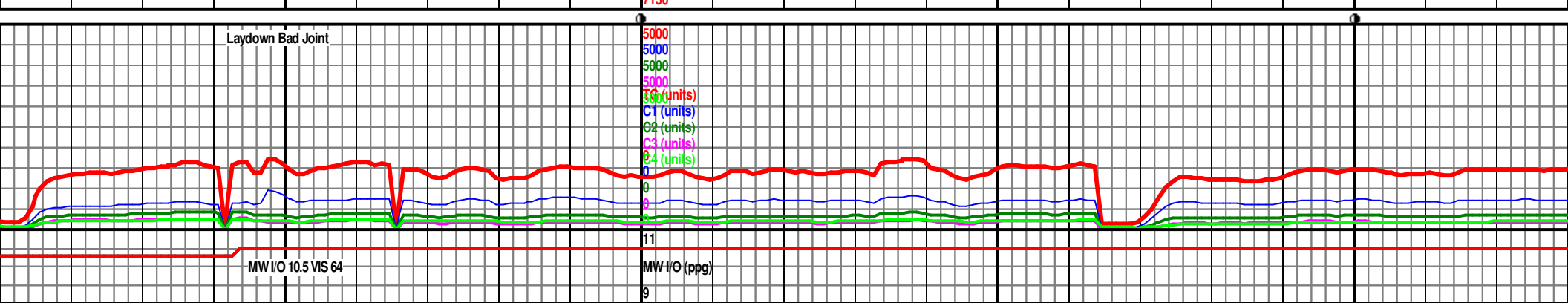
6950 TVD MD 15609 TVD 7025  
INC 89.54 AZ 266.55  
VS 7612.61

MD 15705 TVD 7025.67  
INC 89.66 AZ 267.55  
VS 7708.36



SS: (100%) brn gry - lt brn gry, v fn - fn  
grnd, dom sub-ang, dom mod sphrcty, fr  
srtg, grn sprt w/occ mtrx sprt, rr slic  
cmnt, com slt/cly mtrx, frble-mod hrd, est  
8% pp por, no initial fluor, spotted stain,  
fst gd bri grnsh blu strmg cut fl, gd bri  
grn rsd fl, NO, tr BENT.

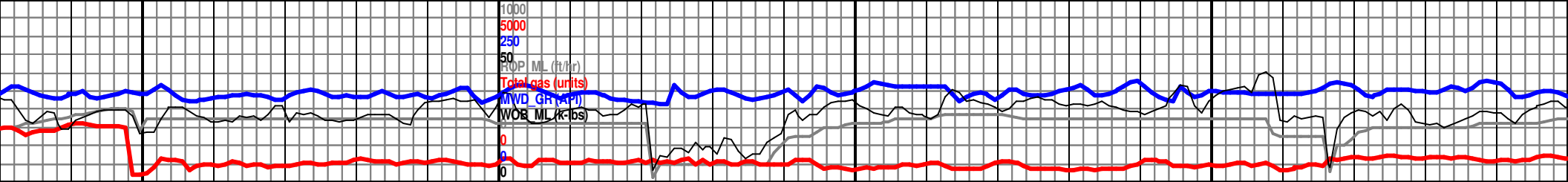
SS: (100%) brn gry - lt brn gry, v fn - fn  
grnd, dom sub-ang, dom mod sphrcty, fr  
srtg, grn sprt w/occ mtrx sprt, rr slic  
cmnt, com slt/cly mtrx, frble-mod hrd, est  
8% pp por, no initial fluor, spotted stain,  
fst gd bri grnsh blu strmg cut fl, gd bri  
grn rsd fl, NO.



Laydown Bad Joint

MW I/O 10.5 VS 64

MW I/O (ppg)



15750

15800

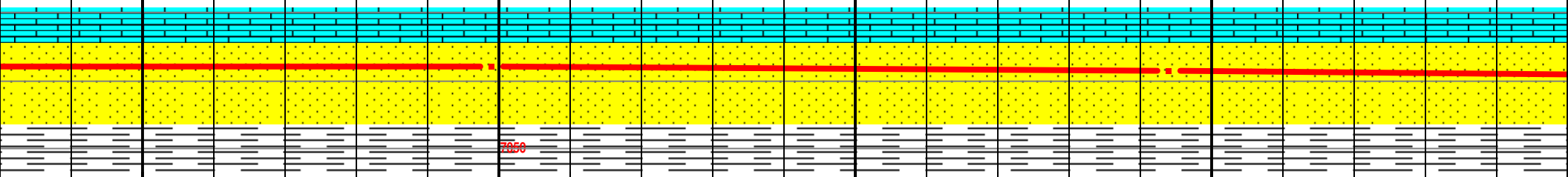
15850

15900

15950

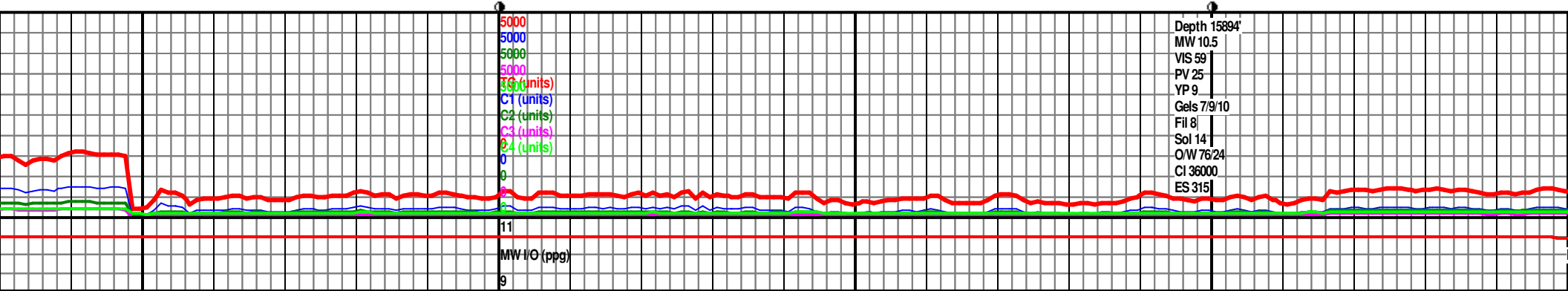
MD 15799 TVD 7026.05  
INC 89.88 AZ 268.94  
VS 7801.96

MD 15894 TVD 7026.99  
INC 88.88 AZ 269.37  
VS 7896.4



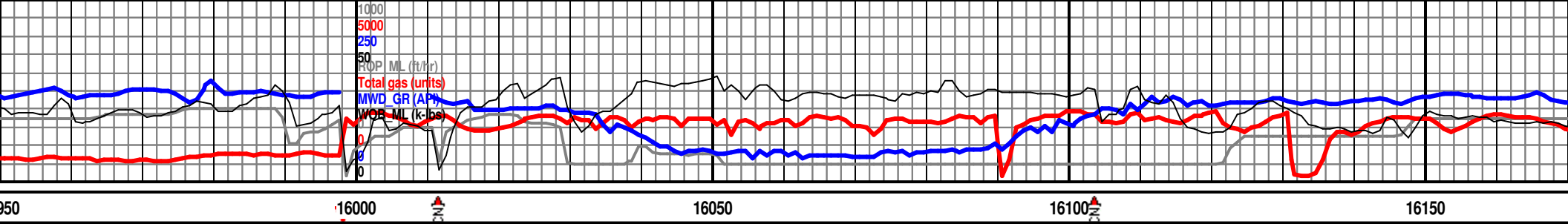
SS: (100%) brn gry - lt brn gry, v fn - fn  
grnd, dom sub-ang, dom mod sphrcty, fr  
srtg, grn sprt w/occ mtrx sprt, rr slic  
cmnt, com slt/cly mtrx, frble-mod hrd, est  
8% pp por, no initial fluor, spotted stain,  
fst gd bri grnsh blu strmg cut fl, gd bri  
grn rsd fl, NO.

SS: (100%) brn gry - lt brn gry, v fn - fn  
grnd, dom sub-ang, dom mod sphrcty, fr  
srtg, grn sprt w/occ mtrx sprt, rr slic  
cmnt, com slt/cly mtrx, frble-mod hrd, est  
8% pp por, no initial fluor, spotted stain,  
fst gd bri grnsh blu strmg cut fl, gd bri  
grn rsd fl, NO, tr PYR.



Depth 15894'  
MW 10.5  
VIS 59  
PV 25  
YP 9  
Gels 7/9/10  
Fil 8  
Sol 14  
O/W 76/24  
CI 36000  
ES 315

11  
MW I/O (ppg)  
9



MD 15986 TVD 7033.95  
INC 88.58 AZ 268.44  
VS 7987.88

MD 16078 TVD 7031.15  
INC 88.68 AZ 268.67  
VS 8079.41

Fault #2 @ 16040' MD (7986' VS) ~16' throw.

Ft. Hays LS

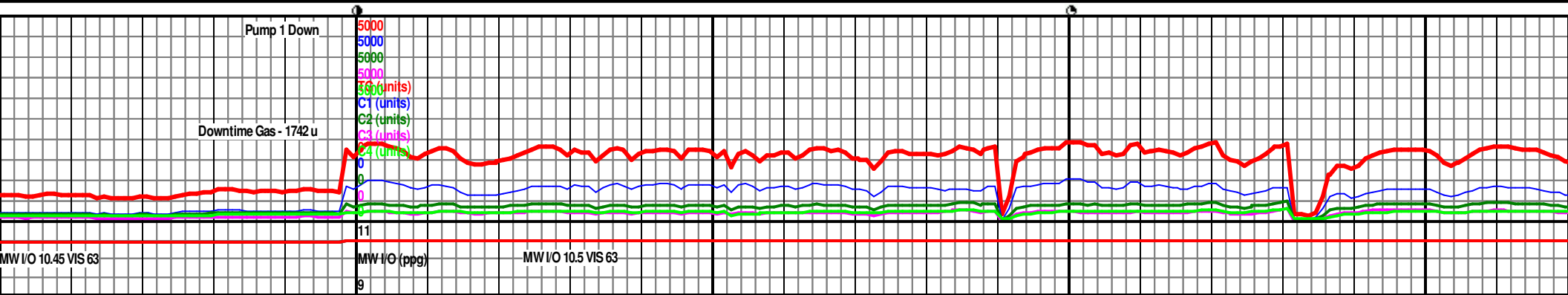
Codell SS

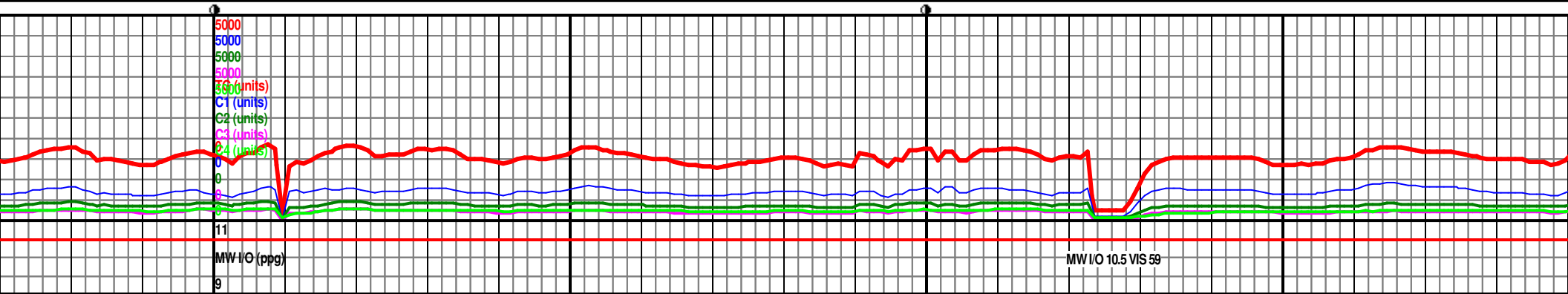
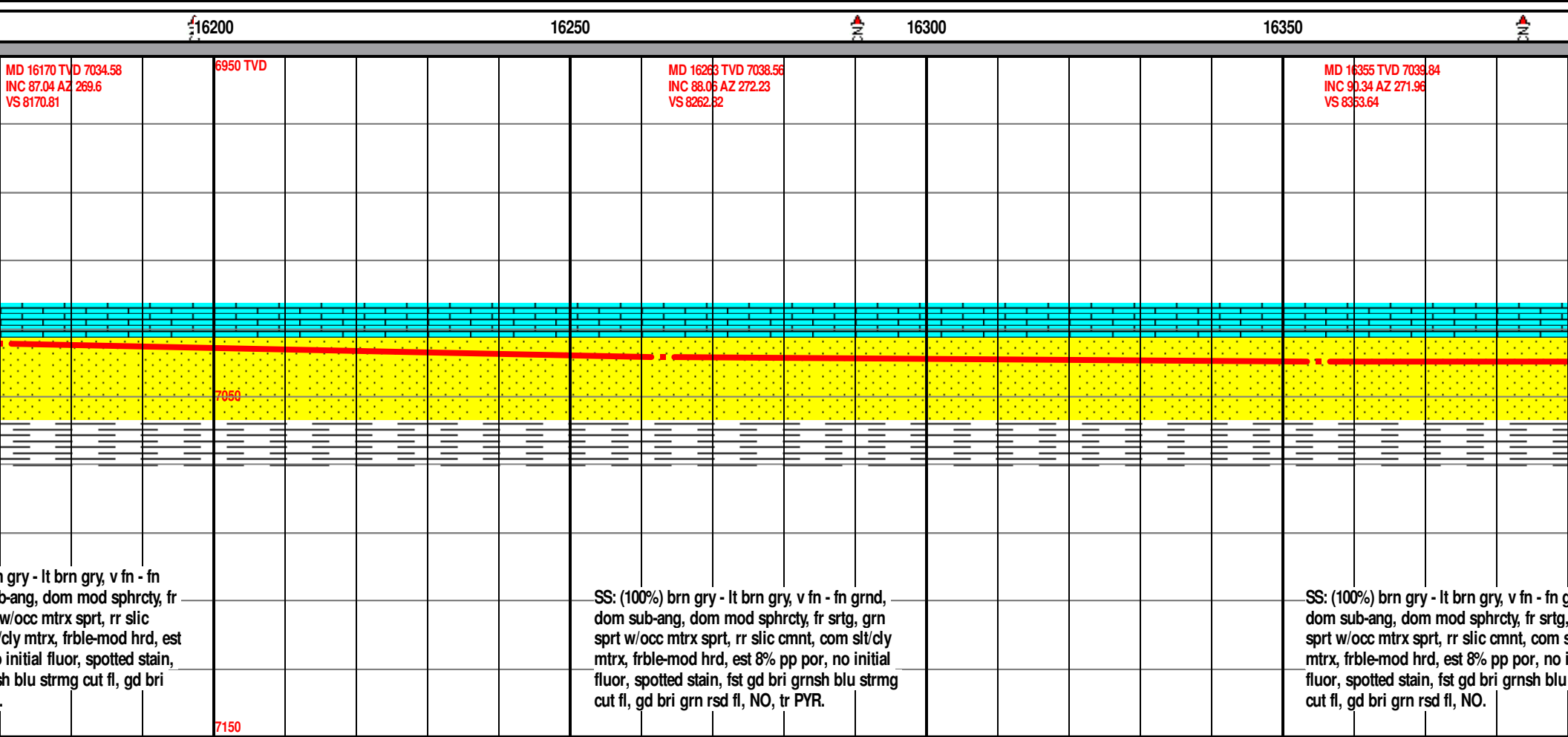
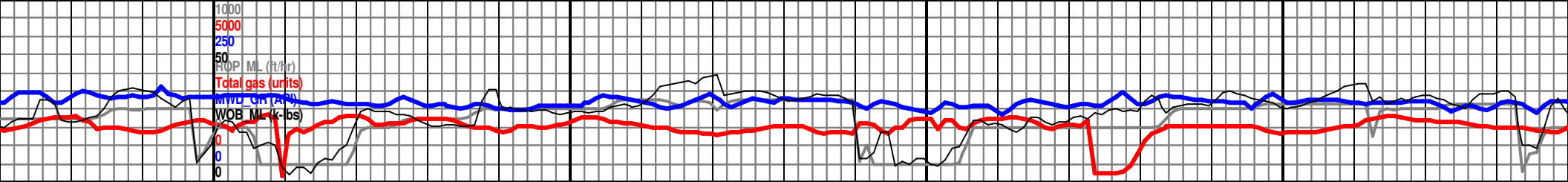
Carlile SH

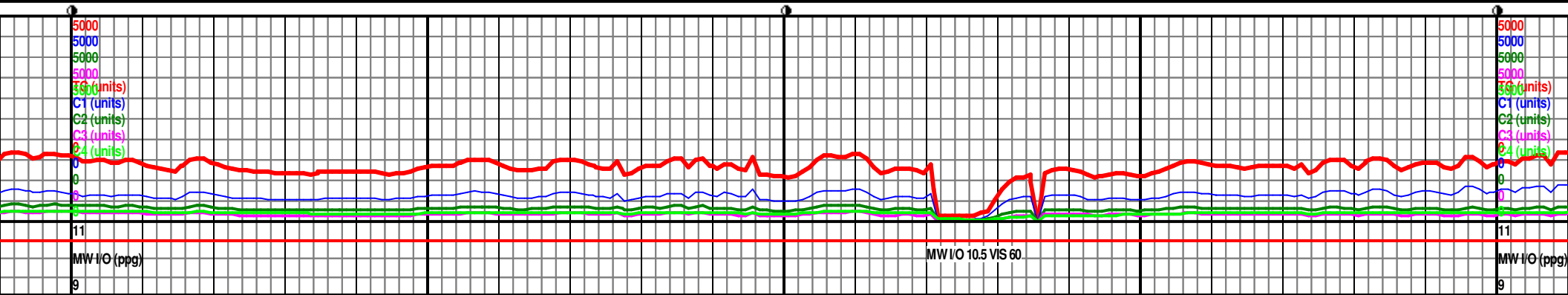
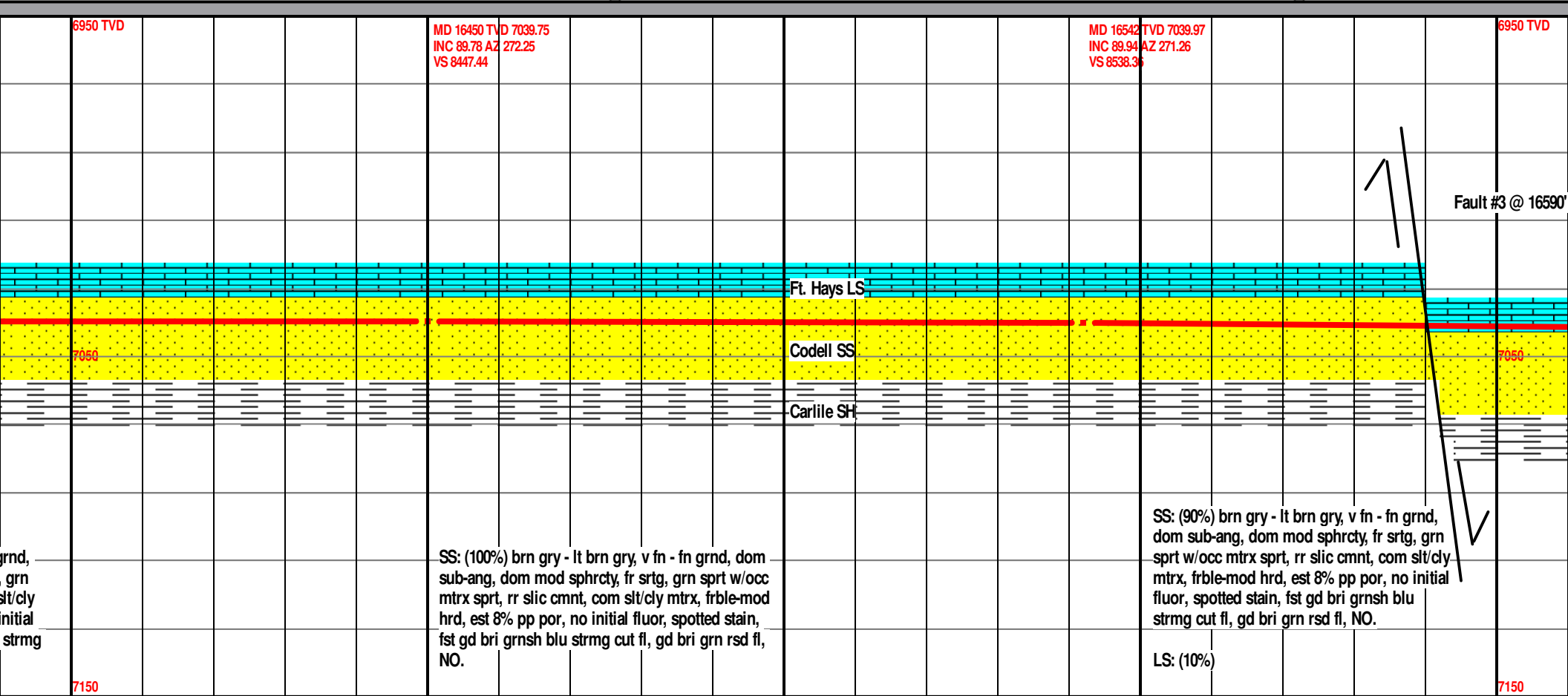
SS: (100%) brn gry - lt brn gry, v fn - fn grnd, dom sub-ang, dom mod sphrcty, fr srtg, grn spt w/occ mtrx spt, rr slic cmnt, com slt/cly mtrx, frble-mod hrd, est 8% pp por, no initial fluor, spotted stain, fst gd bri grnsh blu strmg cut fl, gd bri grn rsd fl, NO.

LS: (90%) off wht-crmy v lt tan, lt gry-grybrn ip, v jggd-shrp cutngs, sbconcdl frac pttm, mic xln, v cln, frm-hd, rr sly strngs, gd min fluor; SS (10%): brn gry - lt brn gry, v fn - fn grnd, dom sub-ang, dom mod sphrcty

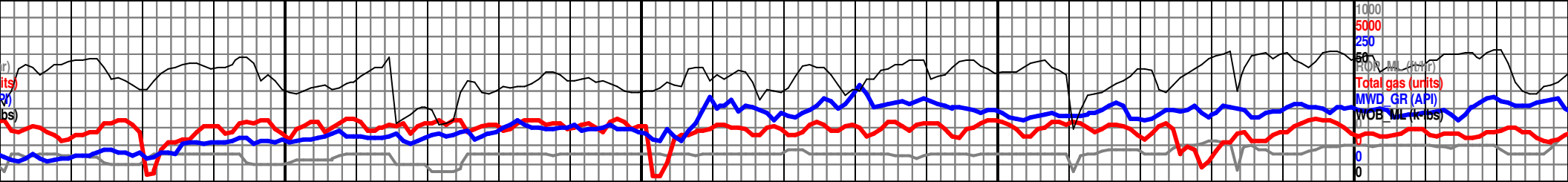
SS: (100%) brn gry - lt brn gry, v fn - fn grnd, dom sub-ang, dom mod sphrcty, fr srtg, grn spt w/occ mtrx spt, rr slic cmnt, com slt/cly mtrx, frble-mod hrd, est 8% pp por, no initial fluor, spotted stain, fst gd bri grnsh blu strmg cut fl, gd bri grn rsd fl, NO.











16650

16700

16750

16800

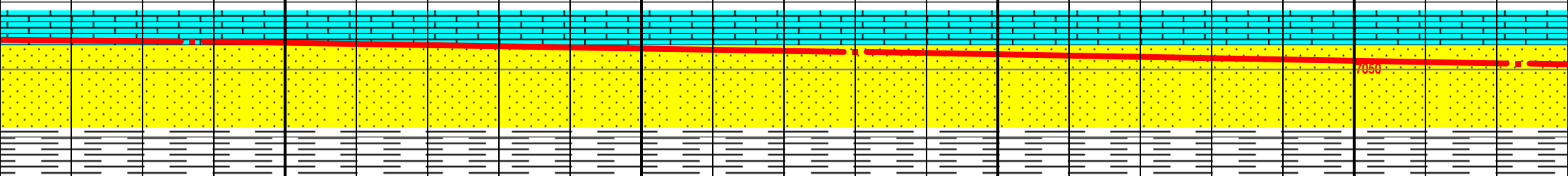
MD 16637 TVD 7041.6  
INC 88.09 AZ 268.68  
VS 8632.62

MD 16730 TVD 7044.78  
INC 88 AZ 267.51  
VS 8725.2

6950 TVD

MD 1682  
INC 87.9  
VS 8817.2

MD (7040' VS) ~21' throw.



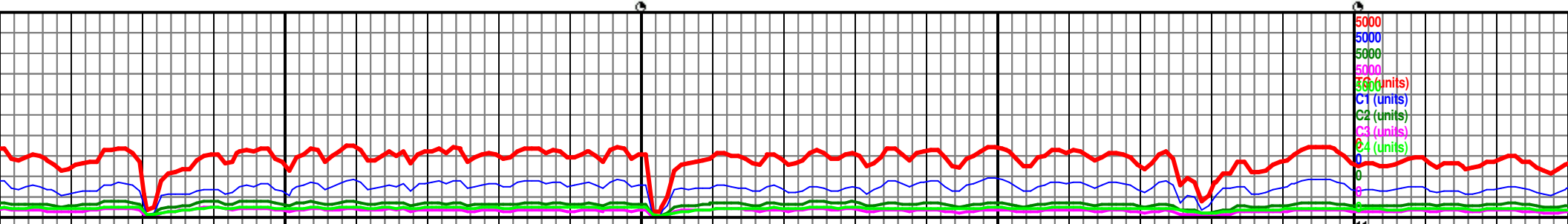
LS: (95%) off wht-crmy v lt tan, lt  
gry-grybrn thru, v jggd-shrp cutngs,  
sbconcdl frac pptrn, mic xln, v cln, frm-hd, rr  
sly strngs, gd min fluor; SS (5%): brn gry - lt  
brn gry, v fn - fn grnd, dom sub-ang, dom  
mod sphrcty.

SS: (5%)

LS: (65%) off wht-crmy v lt tan, lt  
gry-grybrn thru, v jggd-shrp cutngs,  
sbconcdl frac pptrn, mic xln, v cln, frm-hd, rr  
sly strngs, gd min fluor; SS (5%): brn gry - lt  
brn gry, v fn - fn grnd, dom sub-ang, dom  
mod sphrcty.

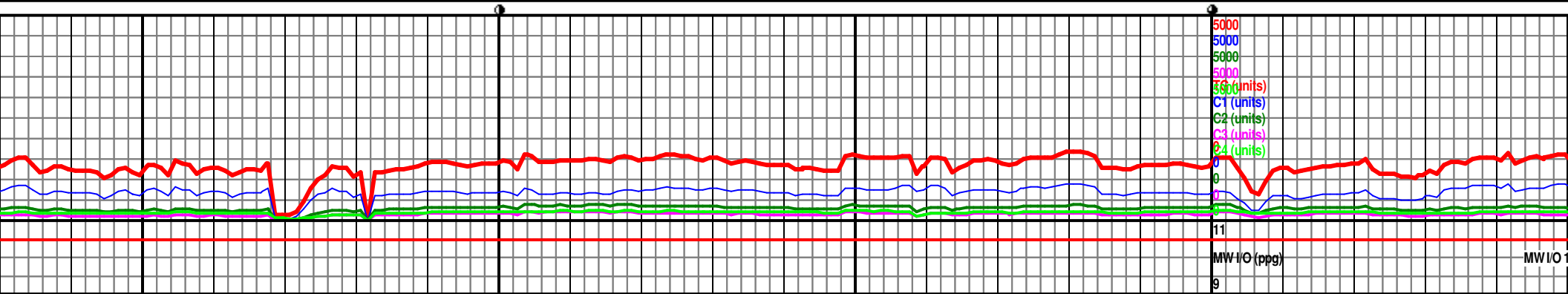
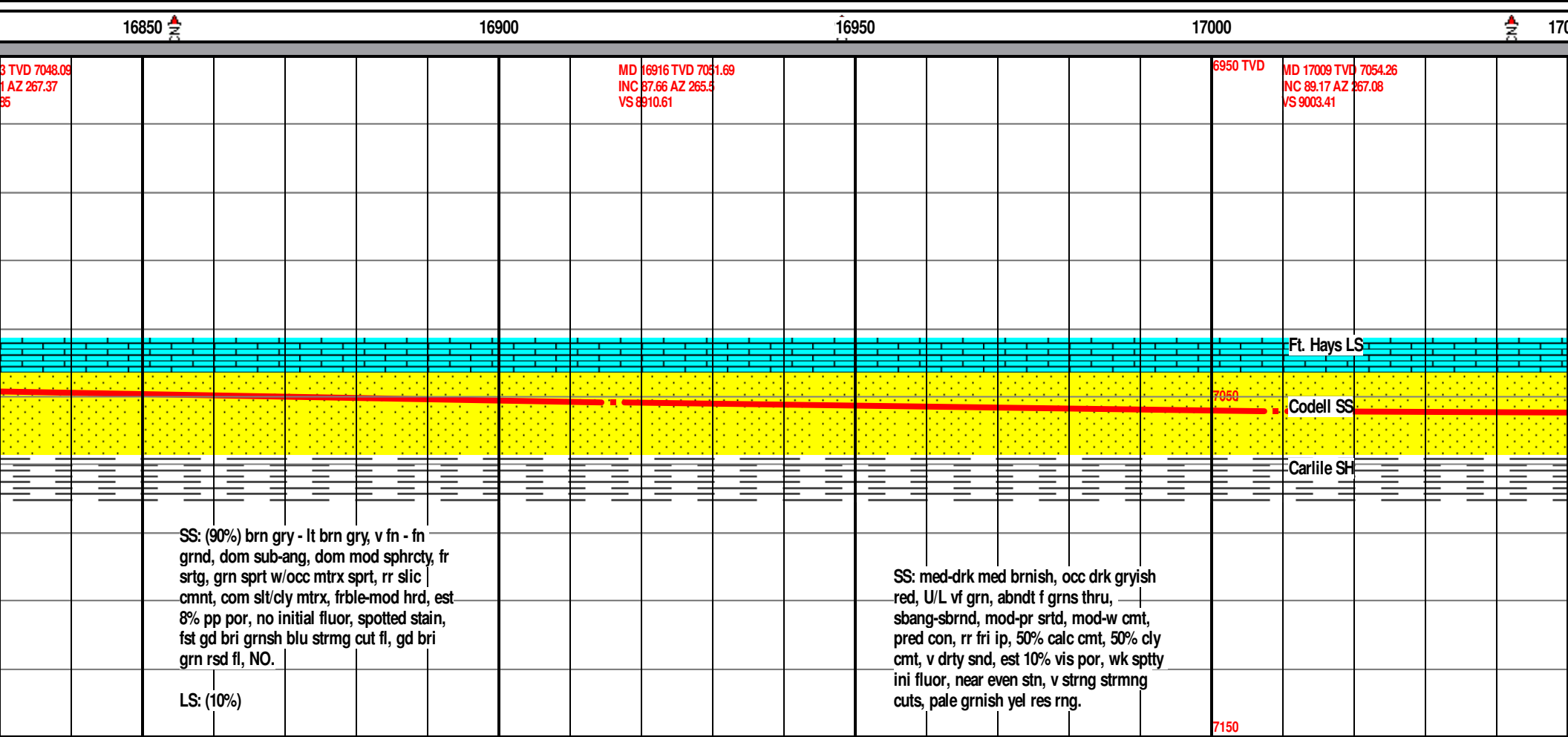
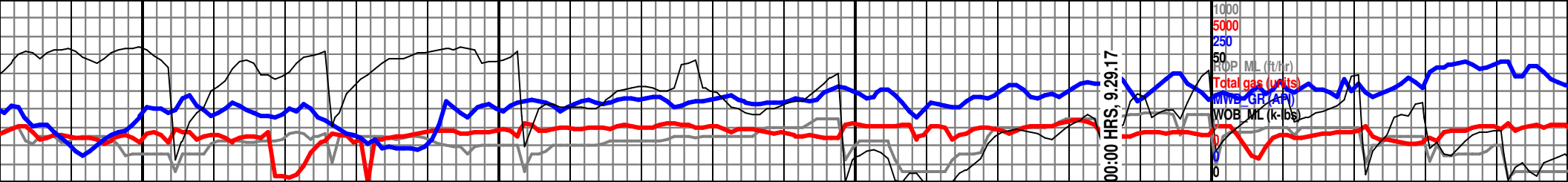
SS: (35%)

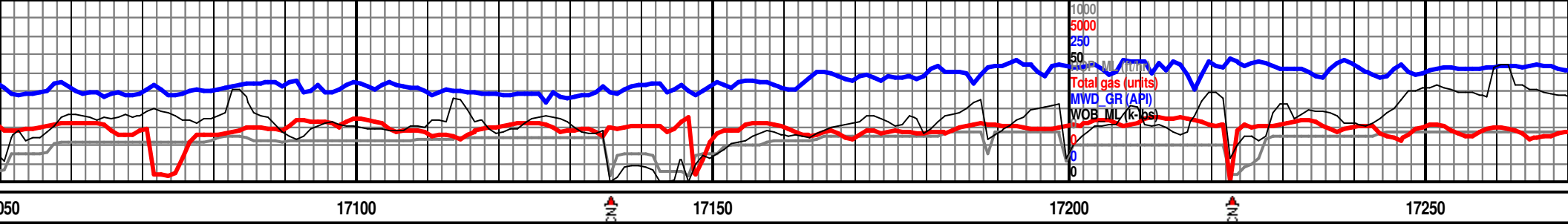
7150



MWI/O 10.5 VIS 60

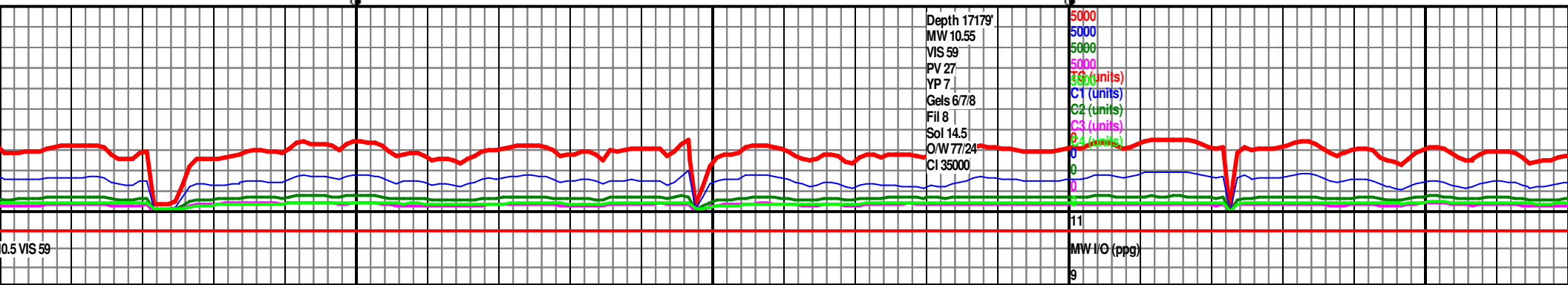
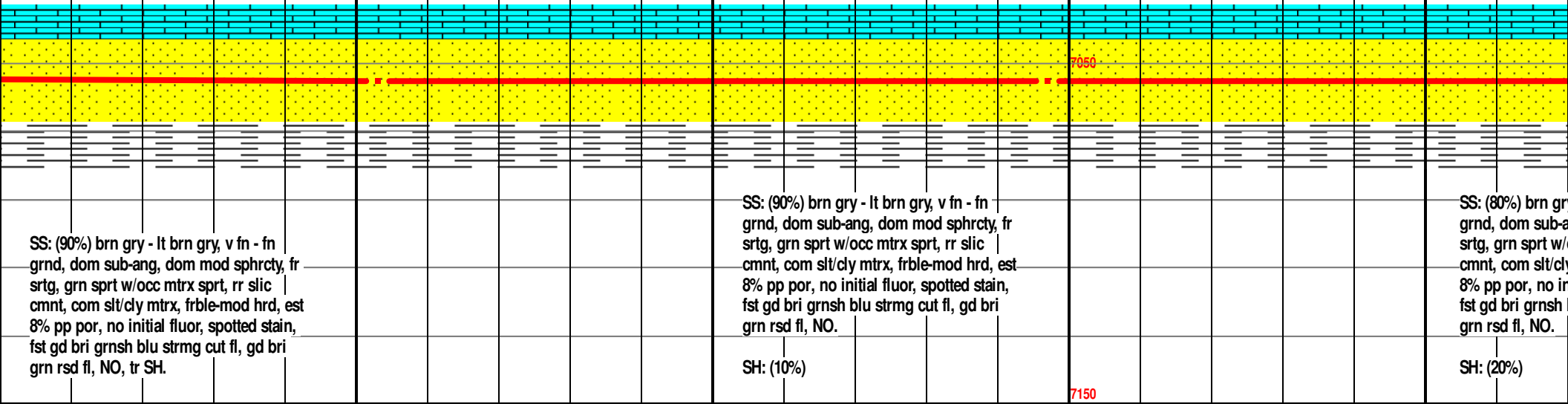
MWI/O (ppg)

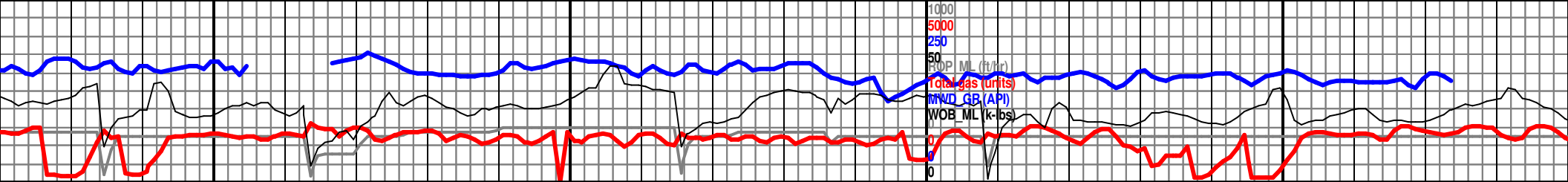




MD 17103 TVD 7055.09  
INC 89.82 AZ 270.99  
VS 9096.86

MD 17197 TVD 7055.29  
INC 89.94 AZ 269.55  
VS 9190.1

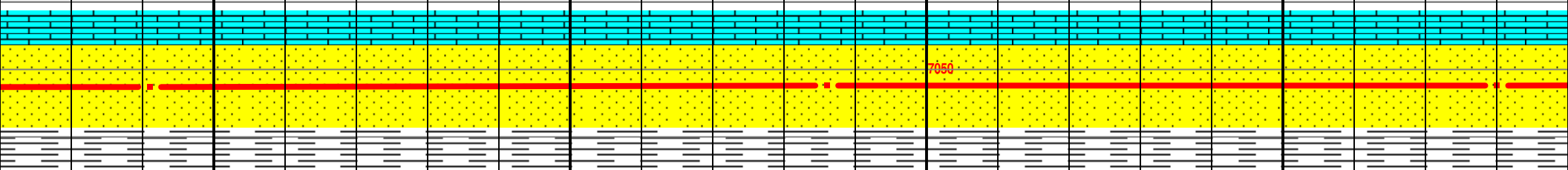




MD 17291 TVD 7055.19  
INC 90.18 AZ 268.3  
VS 9283.59

MD 17386 TVD 7054.78  
INC 80.31 AZ 267.7  
VS 9378.26

MD 17480 TVD 7054.78  
INC 90.26 AZ 268.3  
VS 9471.83



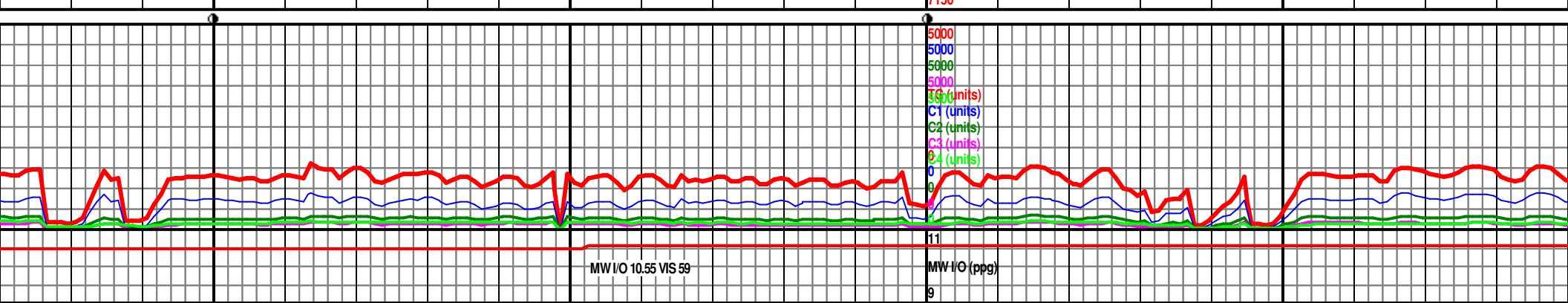
SS: (80%) brn gry - lt brn gry, v fn - fn  
grnd, dom mod sphrcty, fr  
occ mtrx sprt, rr slic  
y mtrx, frble-mod hrd, est  
initial fluor, spotted stain,  
blu strmg cut fl, gd bri

SS: (80%) brn gry - lt brn gry, v fn - fn  
grnd, dom sub-ang, dom mod sphrcty, fr  
srtg, grn sprt w/occ mtrx sprt, rr slic  
cmnt, com slt/cly mtrx, frble-mod hrd, est  
8% pp por, no initial fluor, spotted stain,  
fst gd bri grnsh blu strmg cut fl, gd bri  
grn rsd fl, NO.

SH: (20%)

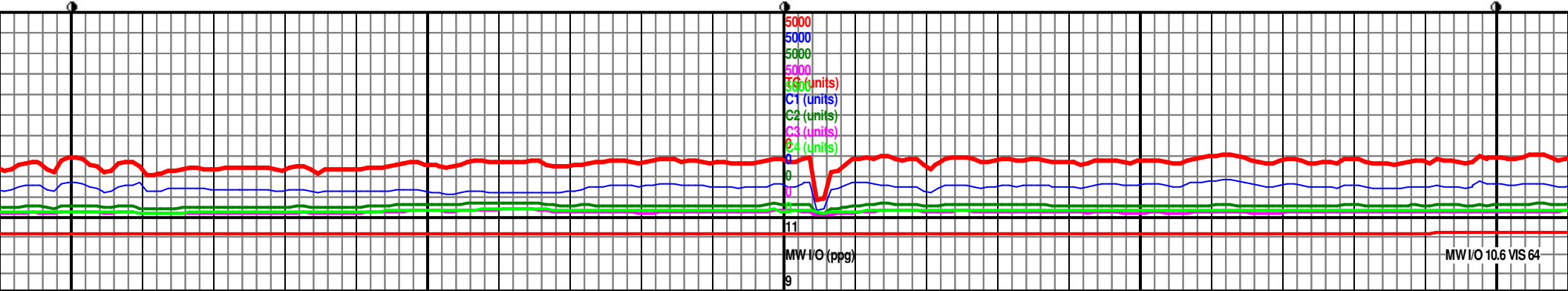
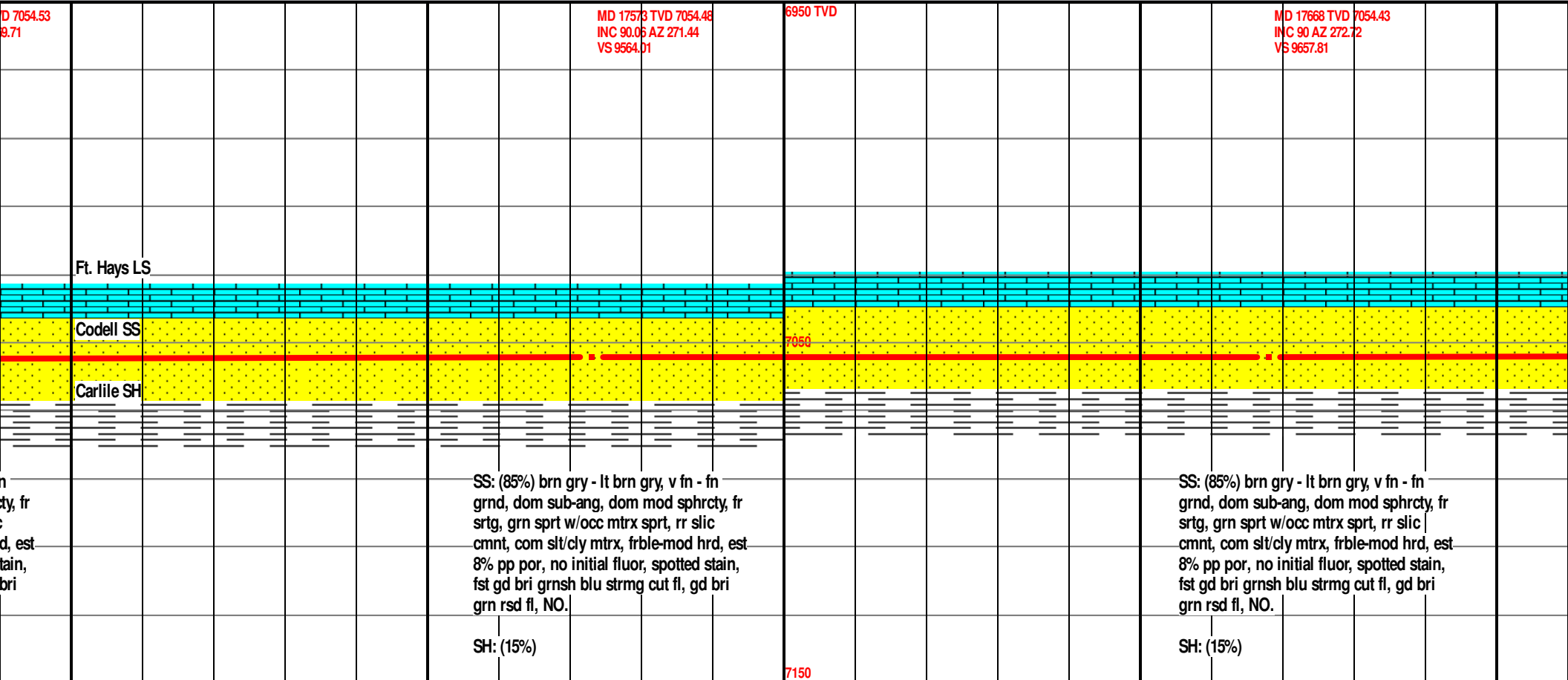
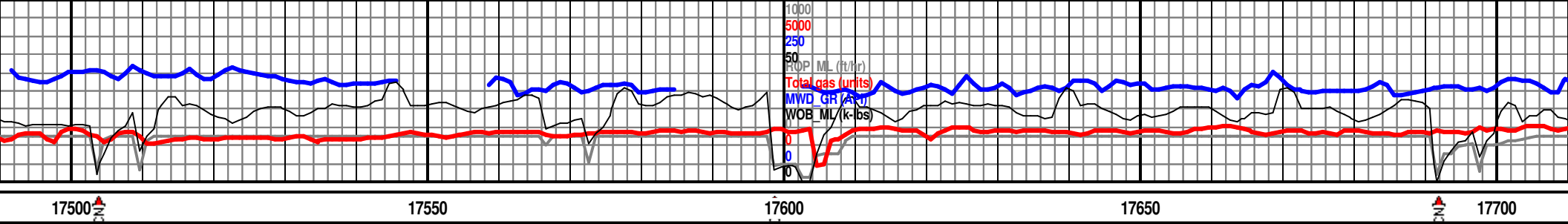
SS: (80%) brn gry - lt brn gry, v fn - fn  
grnd, dom sub-ang, dom mod sphrcty, fr  
srtg, grn sprt w/occ mtrx sprt, rr slic  
cmnt, com slt/cly mtrx, frble-mod hrd, est  
8% pp por, no initial fluor, spotted stain,  
fst gd bri grnsh blu strmg cut fl, gd bri  
grn rsd fl, NO.

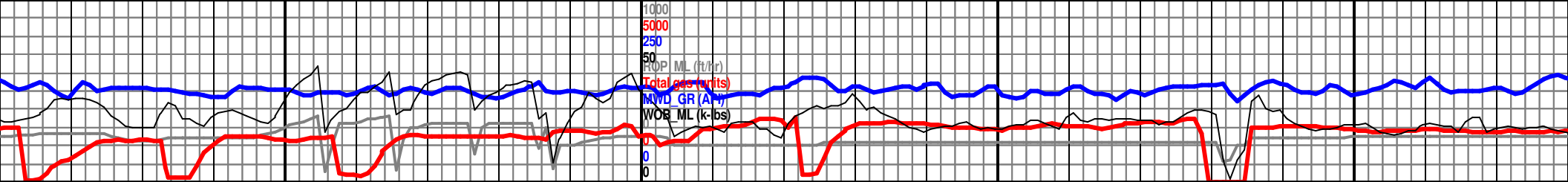
SH: (20%)



MW I/O 10.55 VIS 59

MW I/O (ppg)





17750

17800

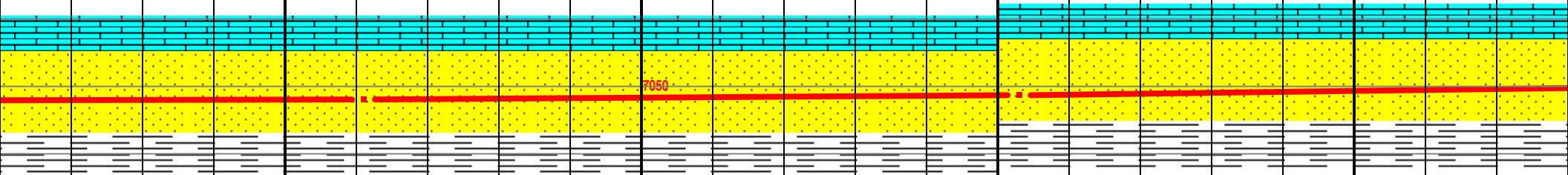
17850

17900

MD 17761 TVD 7054.06  
INC 90.46 AZ 270.54  
VS 9749.74

6950 TVD

MD 17853 TVD 7052.43  
INC 91.57 AZ 266.56  
VS 9841.27

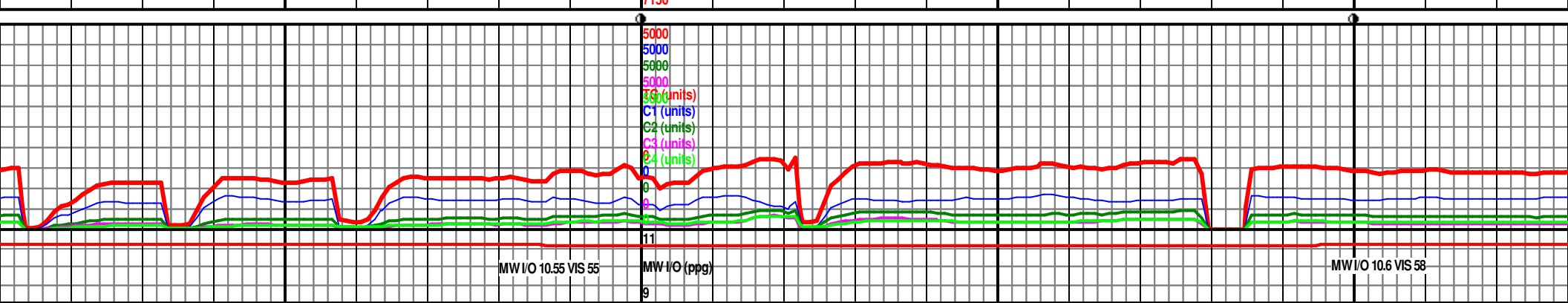


SS: (85%) brn gry - lt brn gry, v fn - fn  
grnd, dom sub-ang, dom mod sphrcty, fr  
srtg, grn sprt w/occ mtrx sprt, rr slic  
cmnt, com slt/cly mtrx, frble-mod hrd, est  
8% pp por, no initial fluor, spotted stain,  
fst gd bri grnsh blu strmg cut fl, gd bri  
grn rsd fl, NO.

SH: (15%)

SS: (90%) brn gry - lt brn gry, v fn - fn  
grnd, dom sub-ang, dom mod sphrcty, fr  
srtg, grn sprt w/occ mtrx sprt, rr slic  
cmnt, com slt/cly mtrx, frble-mod hrd, est  
8% pp por, no initial fluor, spotted stain,  
fst gd bri grnsh blu strmg cut fl, gd bri  
grn rsd fl, NO.

SH: (10%)



MW I/O 10.55 VIS 55

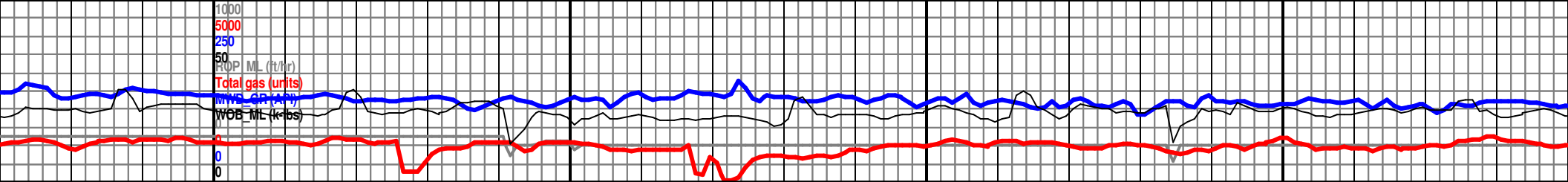
MW I/O (ppg)

MW I/O 10.6 VIS 58



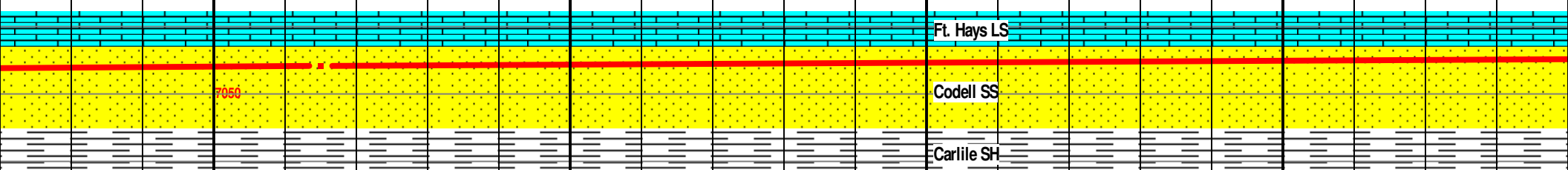






18400 18450 18500 18550

6950 TVD  
MD 18415 TVD 7041.9  
INC 90.55 AZ 269.6  
VS 10400.54

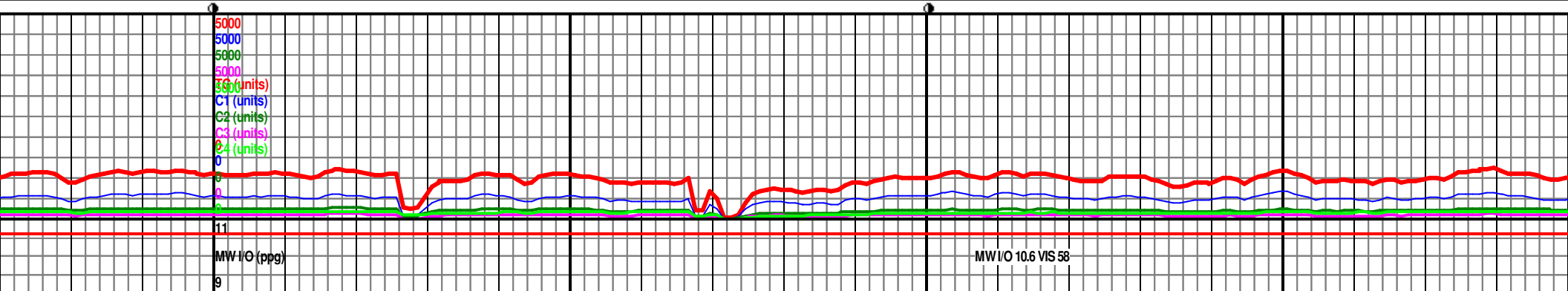


gry - lt brn gry, v fn - fn  
-ang, dom mod sphrcty, fr  
/occ mtrx sprt, rr slic  
dy mtrx, frble-mod hrd, est  
initial fluor, spotted stain,  
blu strmg cut fl, gd bri

SS: (100%) brn gry - lt brn gry, v fn - fn grnd,  
dom sub-ang, dom mod sphrcty, fr srtg, grn  
sprt w/occ mtrx sprt, rr slic cmnt, com slt/clt  
mtrx, frble-mod hrd, est 8% pp por, no initial  
fluor, spotted stain, fst gd bri grnsh blu strmg  
cut fl, gd bri grn rsd fl, NO.

SS: (100%) brn gry - lt brn gry, v fn - fn grnd,  
dom sub-ang, dom mod sphrcty, fr srtg, grn  
sprt w/occ mtrx sprt, rr slic cmnt, com slt/clt  
mtrx, frble-mod hrd, est 8% pp por, no initial  
fluor, spotted stain, fst gd bri grnsh blu strmg  
cut fl, gd bri grn rsd fl, NO.

7150



MW I/O (ppg)

MW I/O 10.6 VIS 58



7150

