

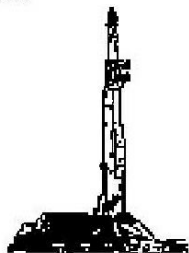
**GOOLSBY BROTHERS**  
and associates, inc.

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: GITTLEIN 3N-28HZ

Location: Section 33 T2N R65W, Weld County, CO.

License Number: API: 05-123-36225-0000 /AFE: 2075258

Spud Date: October 12, 2013

Surface Coordinates: 223 FSL 2113 FWL Sec. 33 T2N R65W

Lat: 40.0883490 Long: -104.6709060

Bottom Hole Coordinates: Proj 2178 FSL 2600 FWL Sec 28 T2N R65W

Lat: 40.108261 Long: -104.669058

Ground Elevation (ft): 4,911

Logged Interval (ft): 6,700 To: 14210'

Formation: Codell

Type of Drilling Fluid: LSND (Polymer-Water)

K.B. Elevation (ft): 4,936

Total Depth (ft): 14210'

Region: Wattenberg

Drilling Completed: October 18, 2013

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

**OPERATOR**

Company: Anadarko Petroleum Corporation

Address: Granite Tower - 1099 18th St, Ste 1800

Denver, CO 80202

CO Geologist, Tom Birmingham.

**GEOLOGIST**

Name: Marek Ciesnik/Tekabe Gedamu

Company: Goolsby Brothers & Assoc. (GBA), Inc. ([www.goolsbybrothers.com](http://www.goolsbybrothers.com))

Address: 575 Union Blvd.

Suite 208,

Lakewood CO. 80228

## E-logs

MWD Gamma:

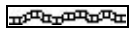
## Casing

9 5/8" Surface Casing (IPSCO 36# J55) set @ 1,341'.  
7" Intermediate Casing (IPSCO 26# P110) set @ 7250'.  
4 1/2" Production Liner set @ 14,196'

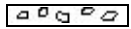
## Comments

- 1) Drilling Contractor: H&P 311  
Pumps 1 & 2: Gardner Denver PZ 11 6" x 11" (.0914 bbl/stk)  
Rig Manager: Jack Truett, James Baggett.  
Drillers: Michael Munroe, Christopher Moore, Kenneth Jones, Christopher Beckstead.
- 2) Company Men: Doug Blair, David Wells
- 3) Mud Company: Halliburton, James Steen
- 4) Directional Drilling: Scientific Drilling  
Directional Drillers: John Noakes, Ian Ensell  
MWD: Joshua Denning, Mohamed Sharkar.
- 5) Gas Equipment: Mudlogging Systems Inc.  
by Terra Services  
Redbox # ML-362

## ROCK TYPES



Bent



Brec



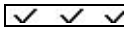
Cht



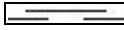
Clyst



Coal



Anhydrite



Shale



Sh (col)



Slty sh



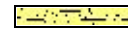
Carb sh



Carb sh\_



Ss



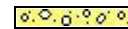
Arg ss



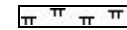
Ss (f gr+)



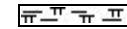
Sltst



Congl



Mrlst



Mrlst/sh (intbdd)



Dol



Lmst



Marly limestone



Arg limestone



Chalk

## ACCESSORIES

### MINERAL

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

Ferrpel  
 Ferr  
 Glau  
 Gyp  
 Hvymin  
 Kaol  
 Marl  
 Minxl  
 Nodule  
 Phos  
 Pyr  
 Salt  
 Sandy

Silt  
 Sil  
 Sulphur  
 Tuff

### FOSSIL

Algae  
 Amph  
 Belm  
 Bioclst  
 Brach  
 Bryozoa  
 Cephal

Coral  
 Crin  
 Echin  
 Fish  
 Foram  
 Fossil  
 Gastro  
 Oolite  
 Ostra  
 Pelec  
 Pellet  
 Pisolite  
 Plant

Strom

### STRINGER

Anhy  
 Arg  
 Bent  
 Coal  
 Dol  
 Ls  
 Chlk  
 Mrst  
 Ss strg  
 Sltst strg

### TEXTURE

Boundst  
 Chalky  
 Cryxln  
 Earthy  
 Finexln  
 Grainst  
 Lithogr  
 Microxln  
 Mudst  
 Packst  
 Wackest

## OTHER SYMBOLS

### SAMPLE SHOWS

Even  
 Near even  
 Spotted/patchy  
 Very spotty

Questionable  
 Dead

### POROSITY TYPE

Earthy

Fenest  
 Fracture  
 Inter  
 Moldic  
 Organic

Pinpoint  
 Vuggy

### ROUNDING

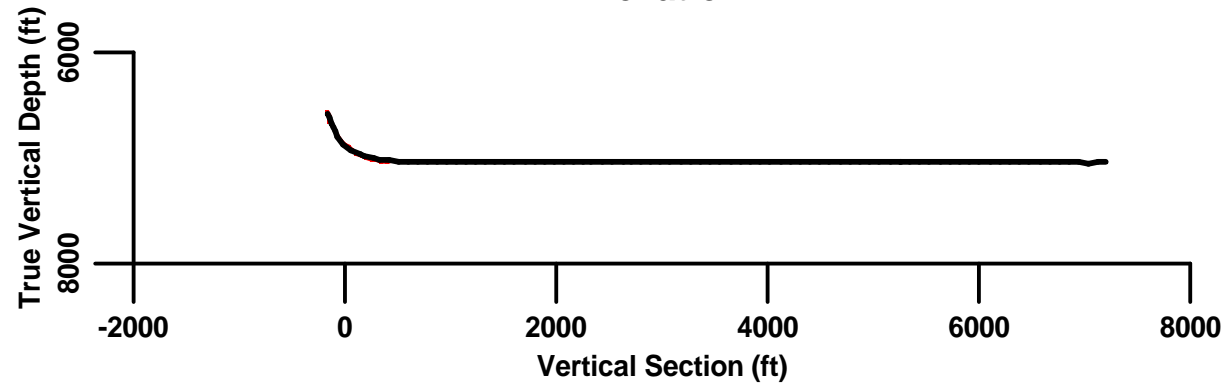
Rounded

Subrnd  
 Subang  
 Angular

### SORTING

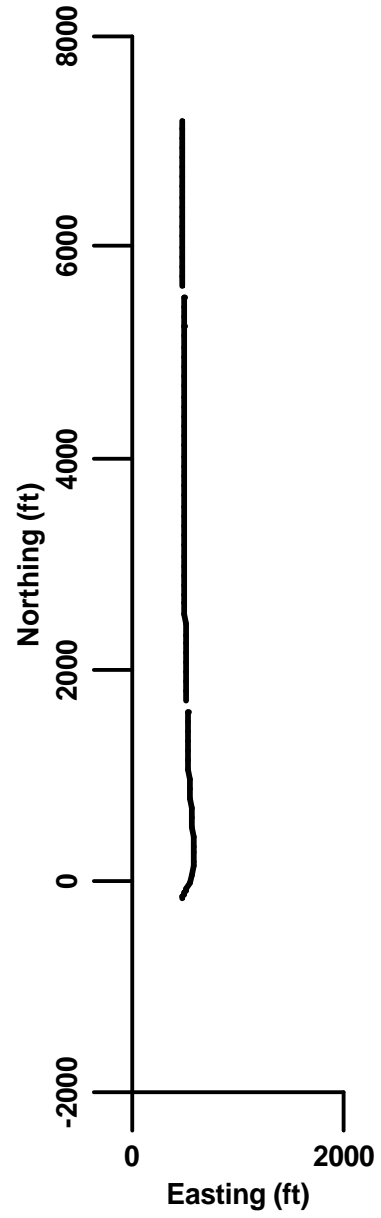
Well  
 Moderate  
 Poor

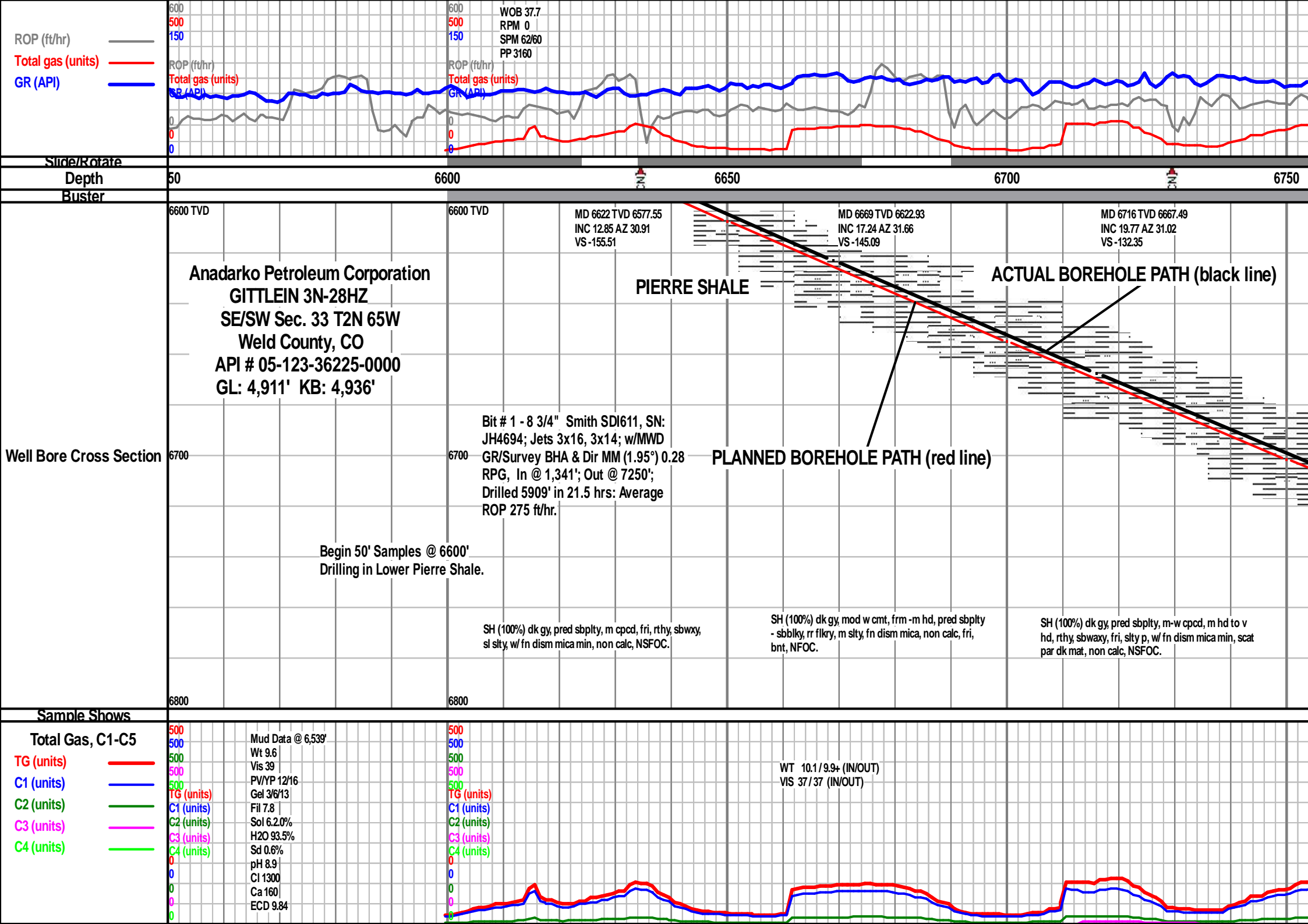
## Elevation

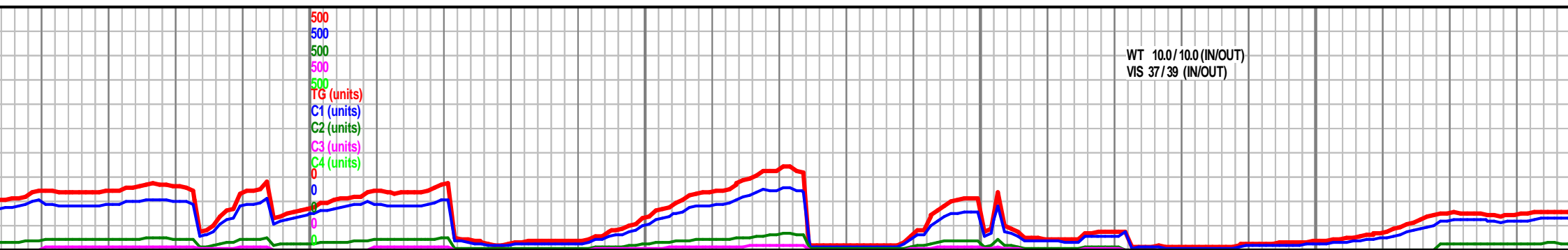
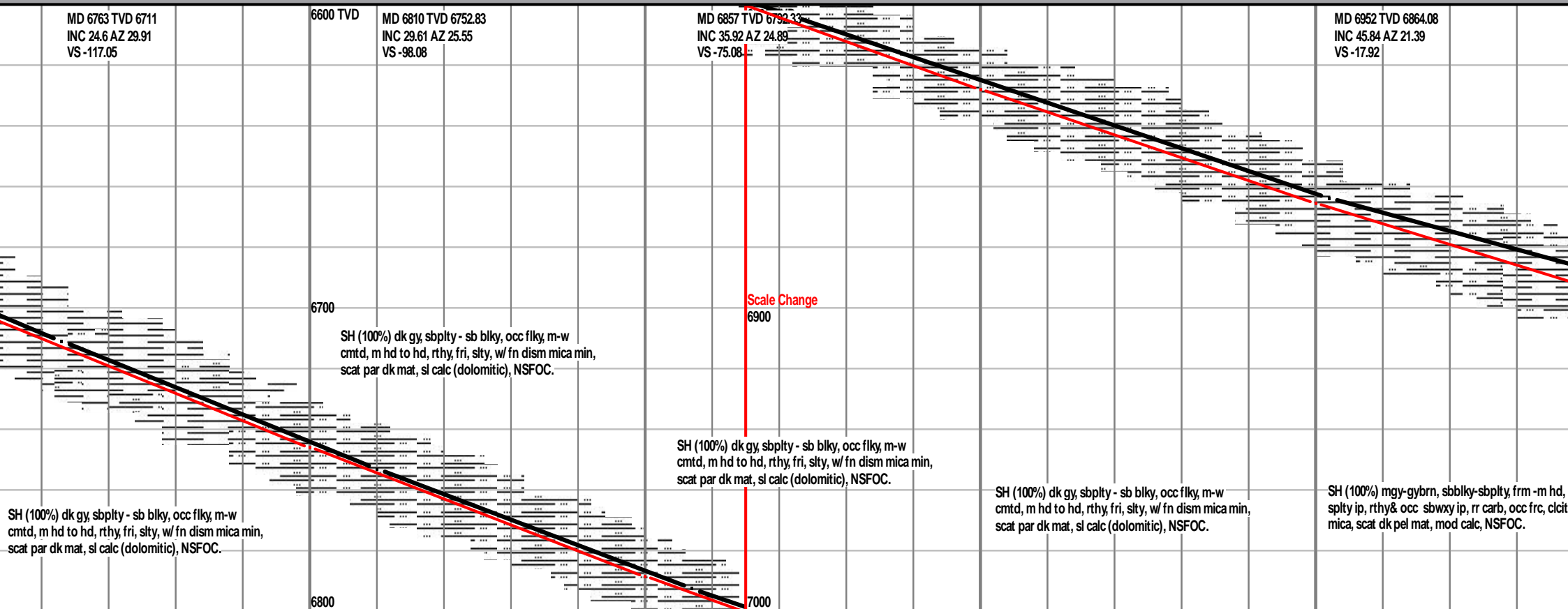
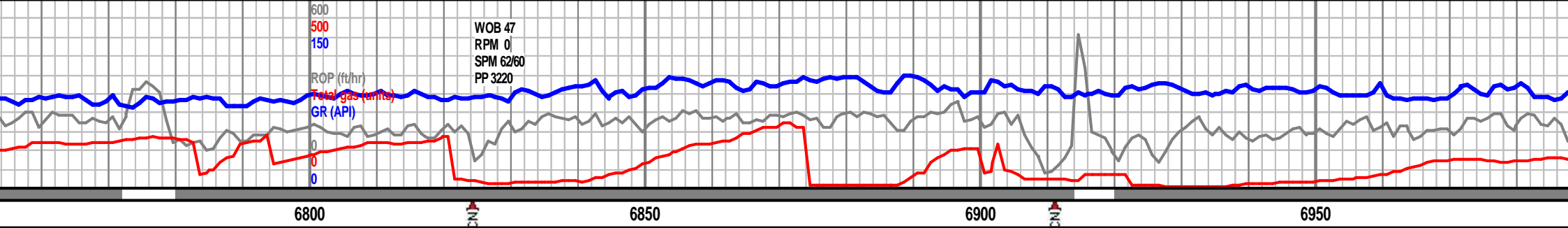


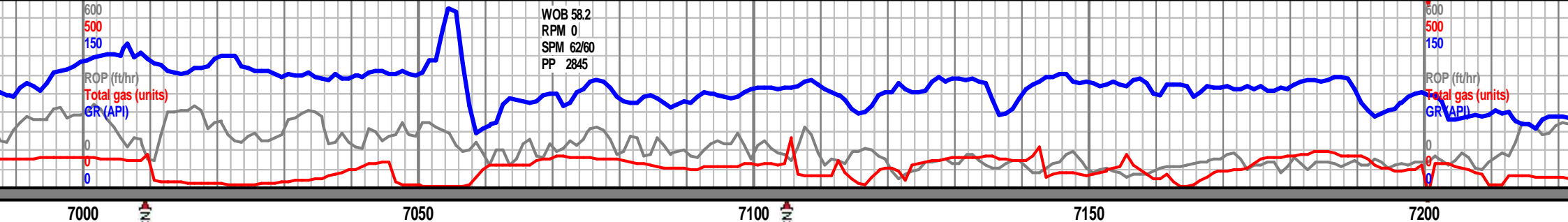


# Plan









6800 TVD MD 7046 TVD 6920.56 INC 60.15 AZ 13.57 VS 53.54

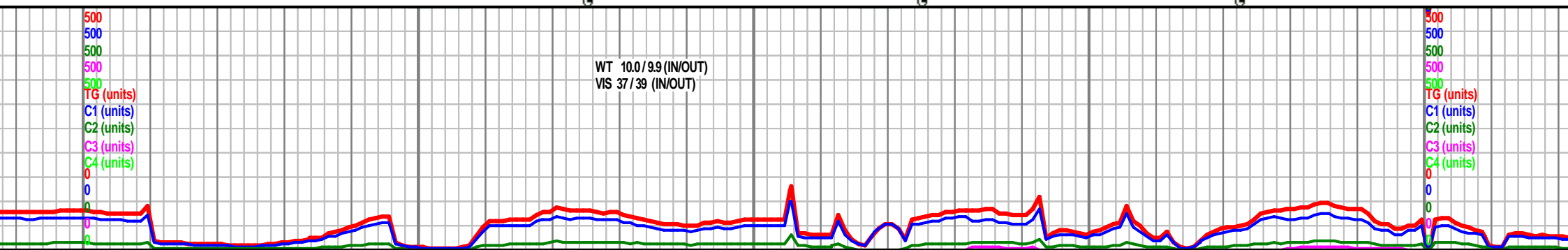
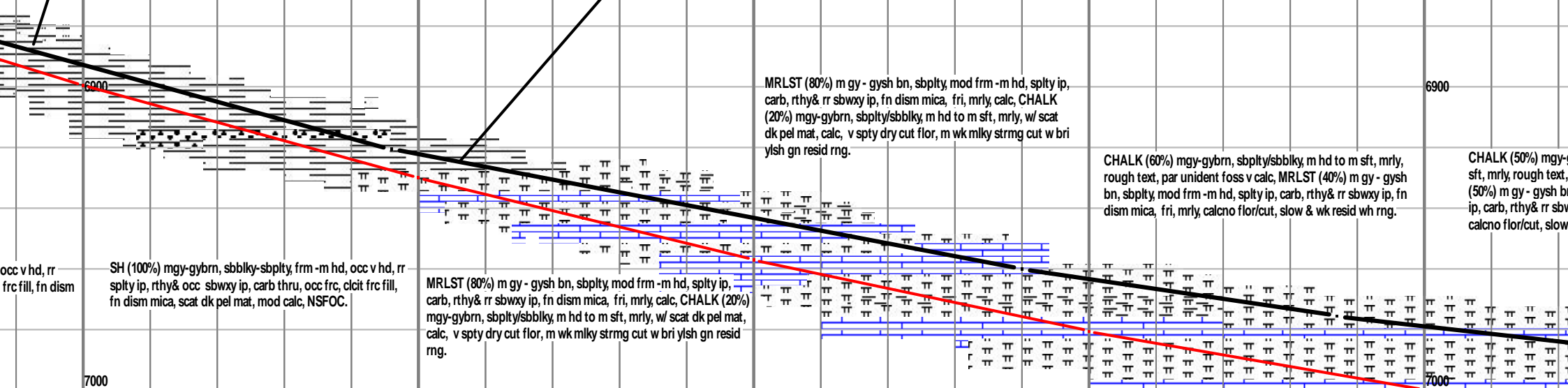
MD 7140 TVD 6960.22 INC 69.9 AZ 9.05 VS 136.99

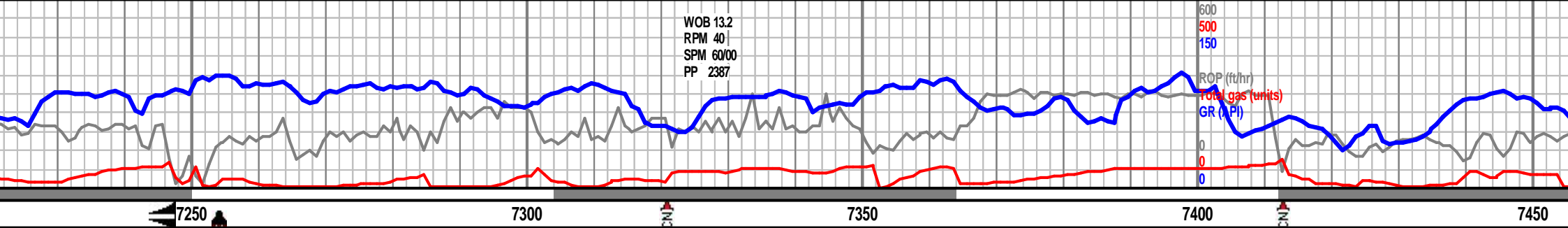
MD 7187 TVD 6975.48 TVD INC 72.27 AZ 1.4 VS 181.23

SHARON SPRINGS TOP  
@ 6994' MD, 6892' TVD, -1956' TVD SS

NIOBRARA "A" TOP  
@ 7057' MD, 6926' TVD, -1990' TVD SS.

Bit # 1: In @ 1,341'; Out @ 7250';  
Drilled 5909' in 21.5 hrs: Average  
ROP 275 ft/hr.





CP AT 7250' REACHED ON 10/14/13 @ 04:15 HRS.  
CONDITION HOLE, TOH, 7" CASING, SET @ 7,250'.

Bit # 2 - 6.125" Varel VM513S, SN:  
4005866; Jets 3x16, 2x14; w/MWD  
GR/Survey BHA & Dir MM (1.5°) 0.28  
RPG., In @ 7,250'; Out @ 14210';  
Drilled 6960' in 32 hrs: Average ROP  
218 ft/hr.

BIT #2 DRILLED 5909' IN 21.5 HR.

gybrn, sbply/sbblky, m hd to m  
par unident foss v calc, MRLST  
n, sbply, mod frm -m hd, splty  
xy ip, fn dism mica, fri, mrlly,  
& wk resid wh rng.

MRLST (70%) m gy - gysh bn, sbply, mod frm -m  
hd, splty ip, carb, rthy& rr sbwxy ip, fn dism mica,  
fri, mrlly, calc, CHALK (30%) mgy-gybrn,  
sbply/sbblky, m hd to m sft, mrlly, rough text, par  
unident foss v calc, no flor/cut, slow & wk resid wh  
rng.

MRLST (80%) m gy - gysh bn, sbply, mod frm -m hd, splty ip, carb, rthy& rr sbwxy ip, fn dism mica,  
fri, mrlly, calc, CHALK (20%) mgy-gybrn, sbply/sbblky, m hd to m sft, mrlly, rough text, par unident  
foss v calc, no flor/cut, slow & wk resid wh rng.

CHALK (80%) mgy-gybrn, sbply/sbblky, m hd to m sft, mrlly, smth  
hd, splty ip, carb, rthy& sbwxy ip, fn dism mica, fri, non calc, nodry

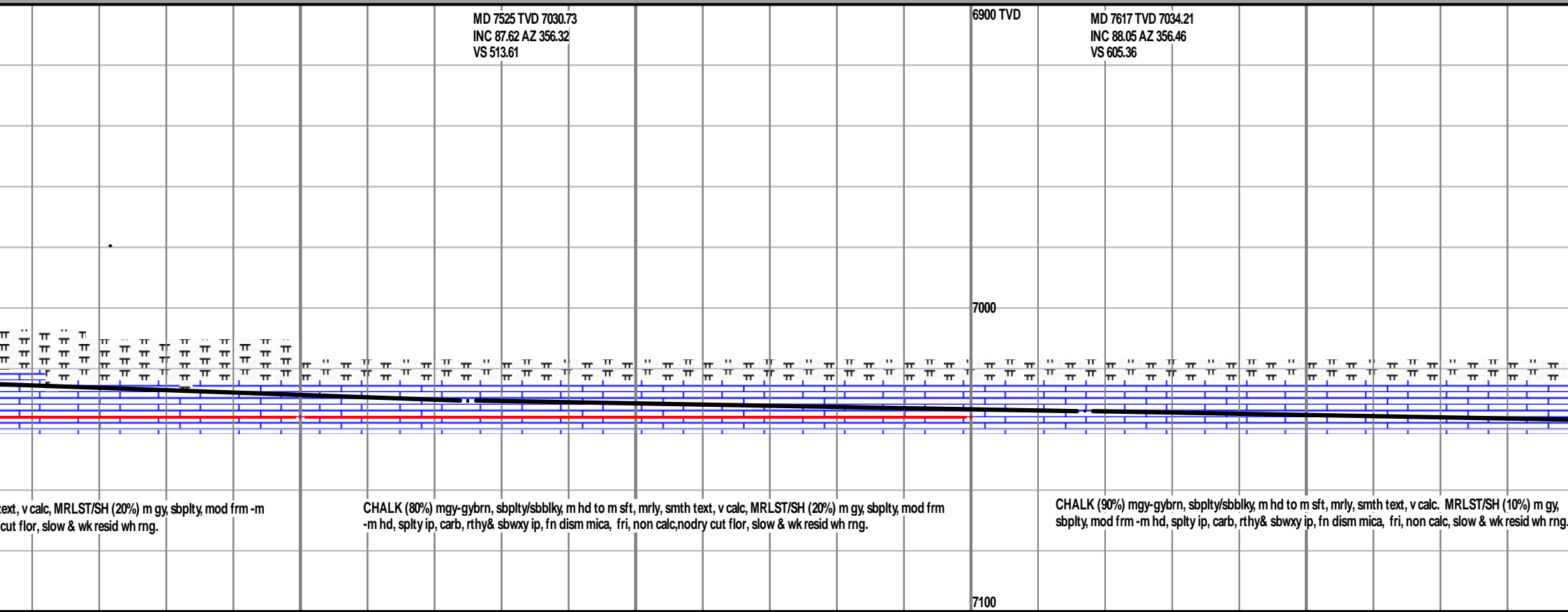
INTERPRETED FAULT # 1  
10' UP THROW

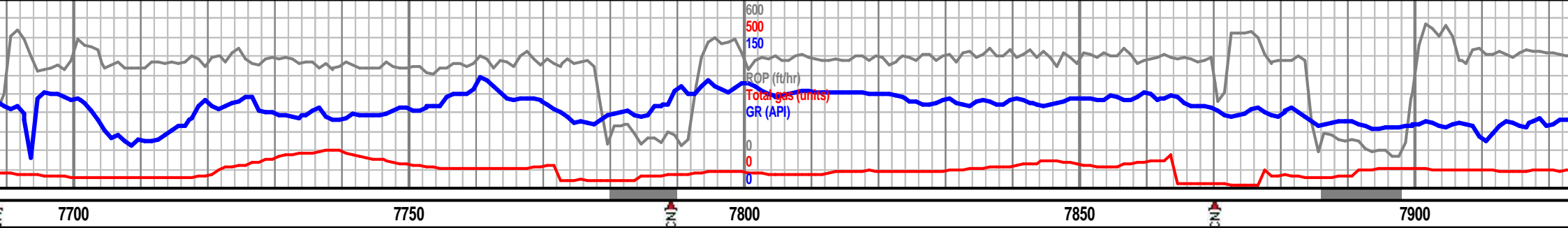
NOBRARA "B" UPPER MARL  
NOBRARA "B" CHALK

WT 9.9+ / 9.9 (IN/OUT)  
VIS 38 / 38 (IN/OUT)

WT 10 / 10 (IN/OUT)  
VIS 36 / 37 (IN/OUT)

TG (units)  
C1 (units)  
C2 (units)  
C3 (units)  
C4 (units)





MD 7709 TVD 7037.5  
INC 87.84 AZ 356.16  
VS 697.11

MD 7800 TVD 7039.94  
INC 89.09 AZ 355.82  
VS 787.85

MD 7891 TVD 7040.37  
INC 90.37 AZ 356.17  
VS 878.62

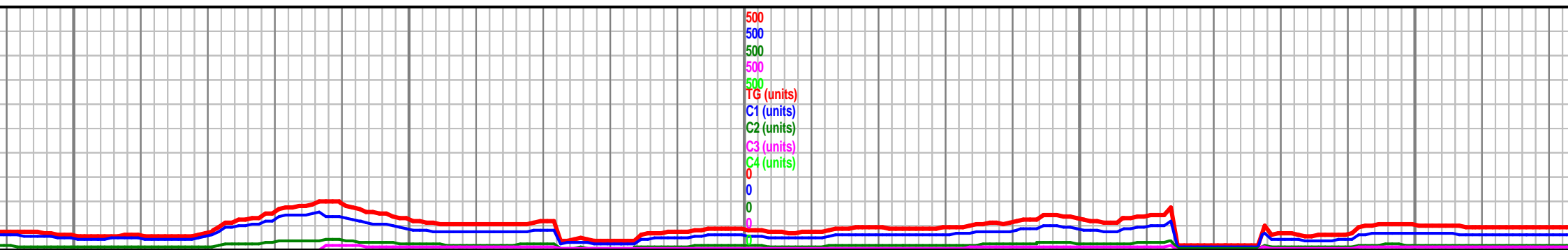
7000

NIobrara "B" Chalk

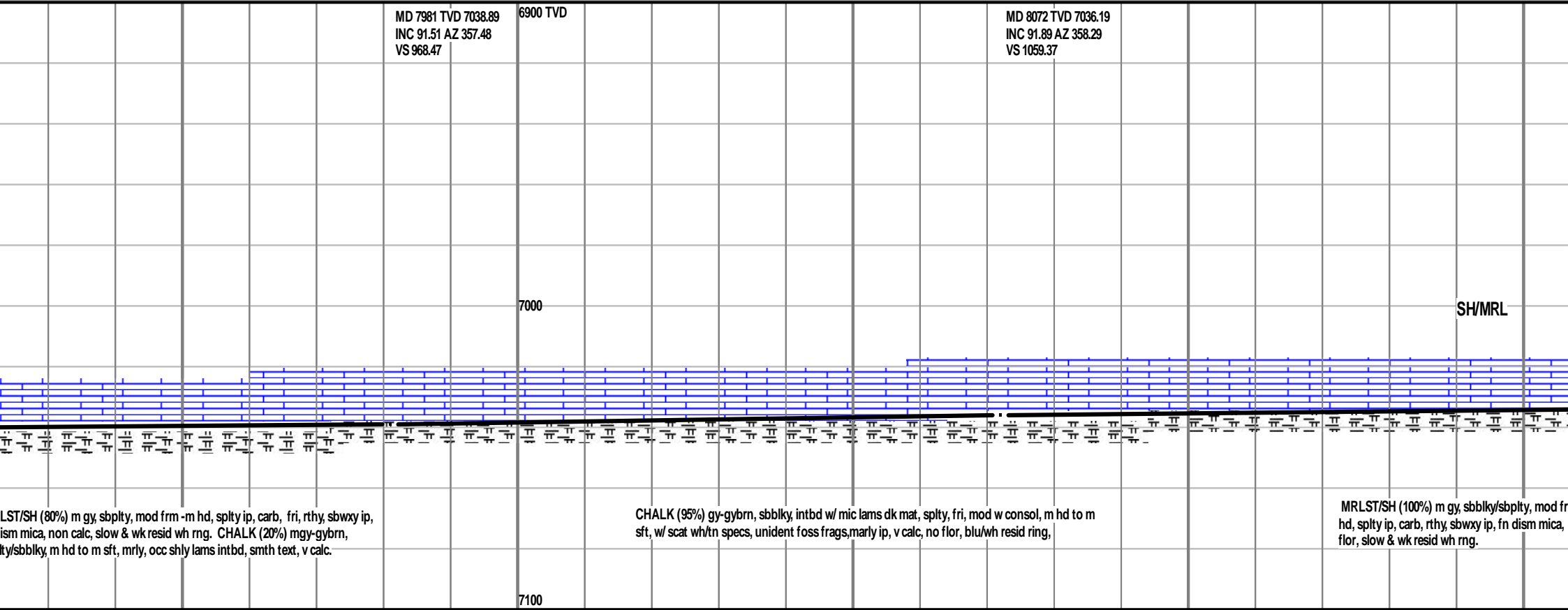
MRLST/SH (90%) m gy, sbpity, mod frm -m hd, spity ip, carb, rthy, sbwxy ip, fn dism mica, fri, non calc, slow & wk resid wh rng. CHALK (10%) mgy-gybrn, sbpity/sbblky, m hd to m sft, mrlly, smth text, v calc.

MRLST/SH (95%) m gy, sbblky/sbpity, mod frm, mod w cpd, m hd, spity ip, carb, rthy, sbwxy ip, fn dism mica, fri, non calc, no vis flor, slow & wk resid wh rng.

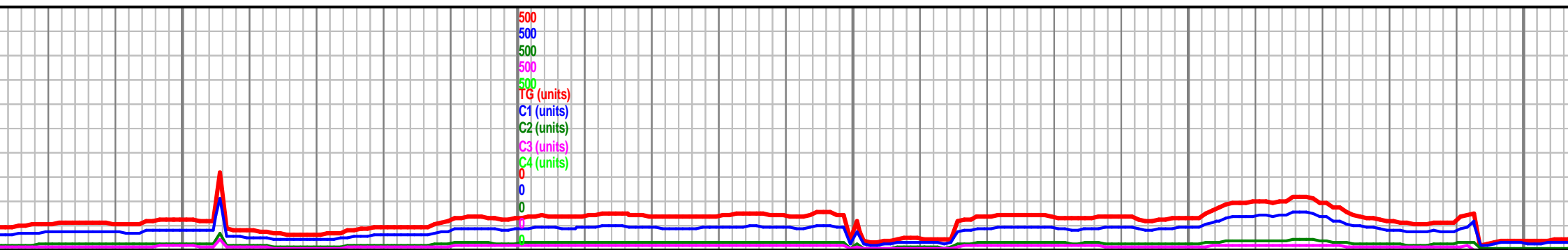
MR  
fn d  
sbpl



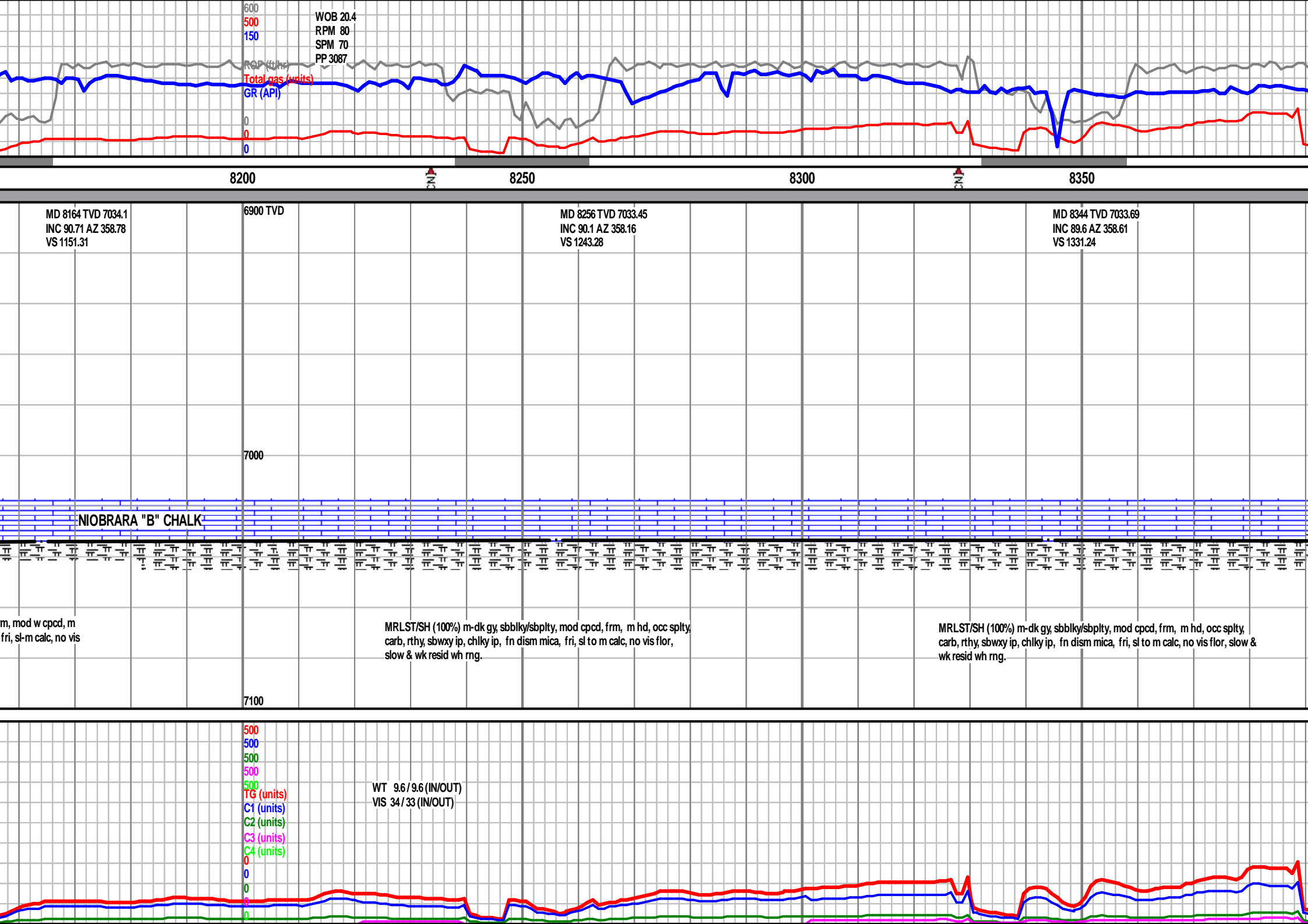
WOB 36.7  
RPM 0  
SPM 70  
PP 2647

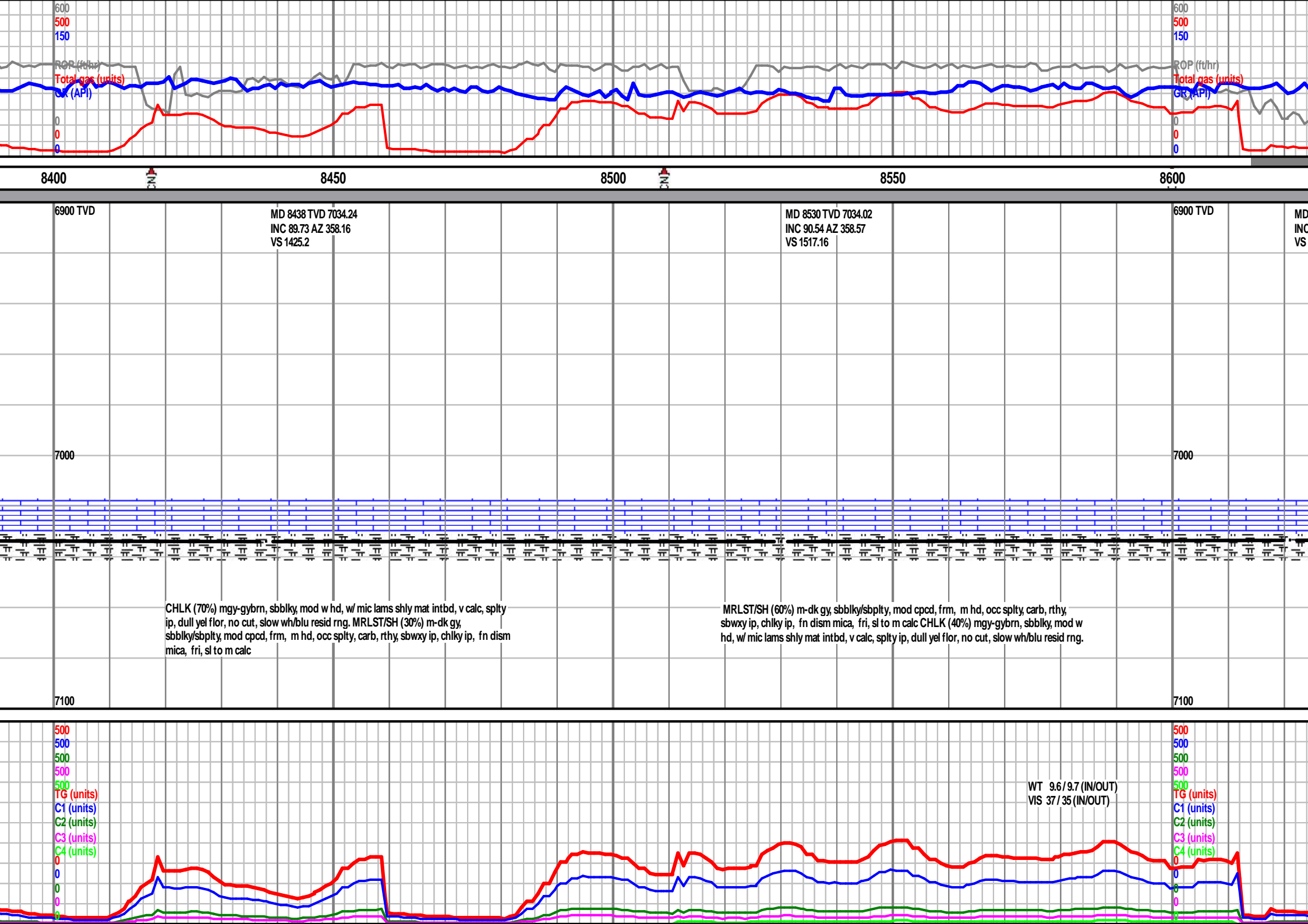


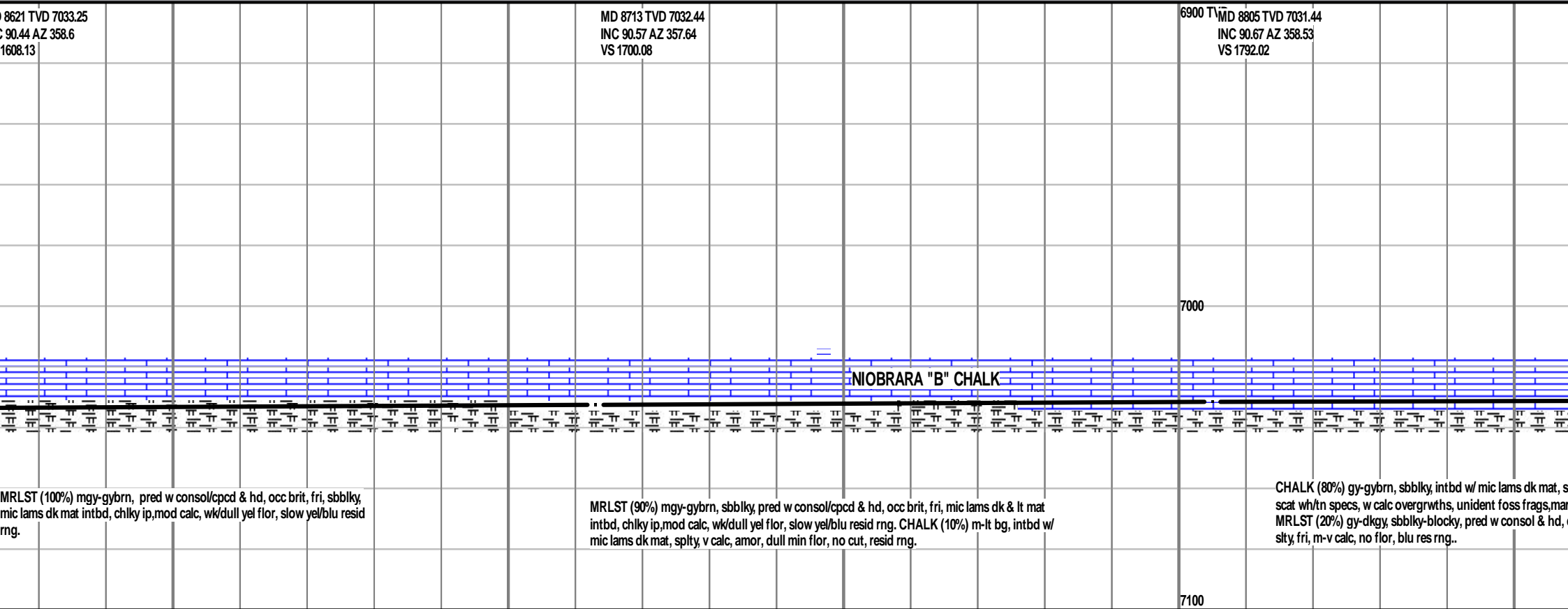
MRLST/SH (100%) m gy, sbblky/sbply, mod fr  
hd, splty ip, carb, rthy, sbwxy ip, fn dism mica,  
flor, slow & wk resid wh rng.

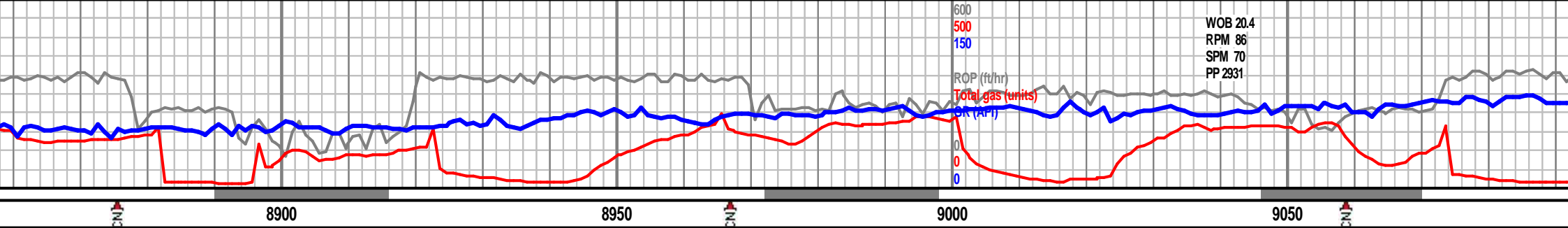








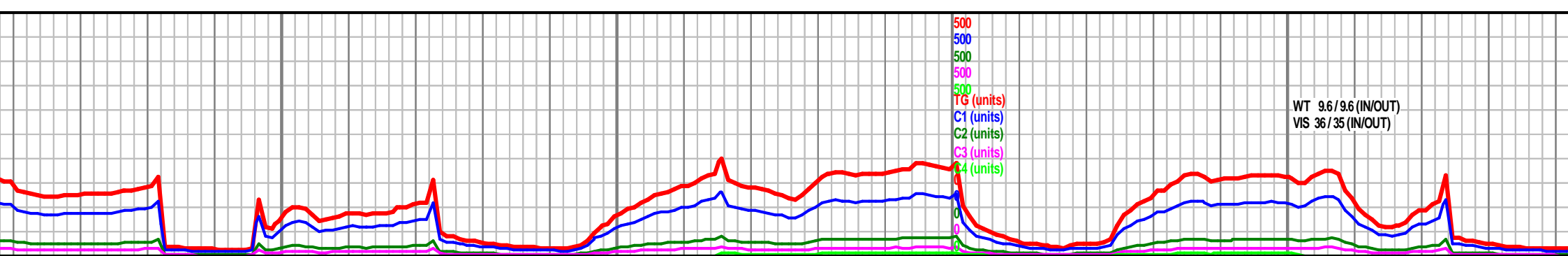
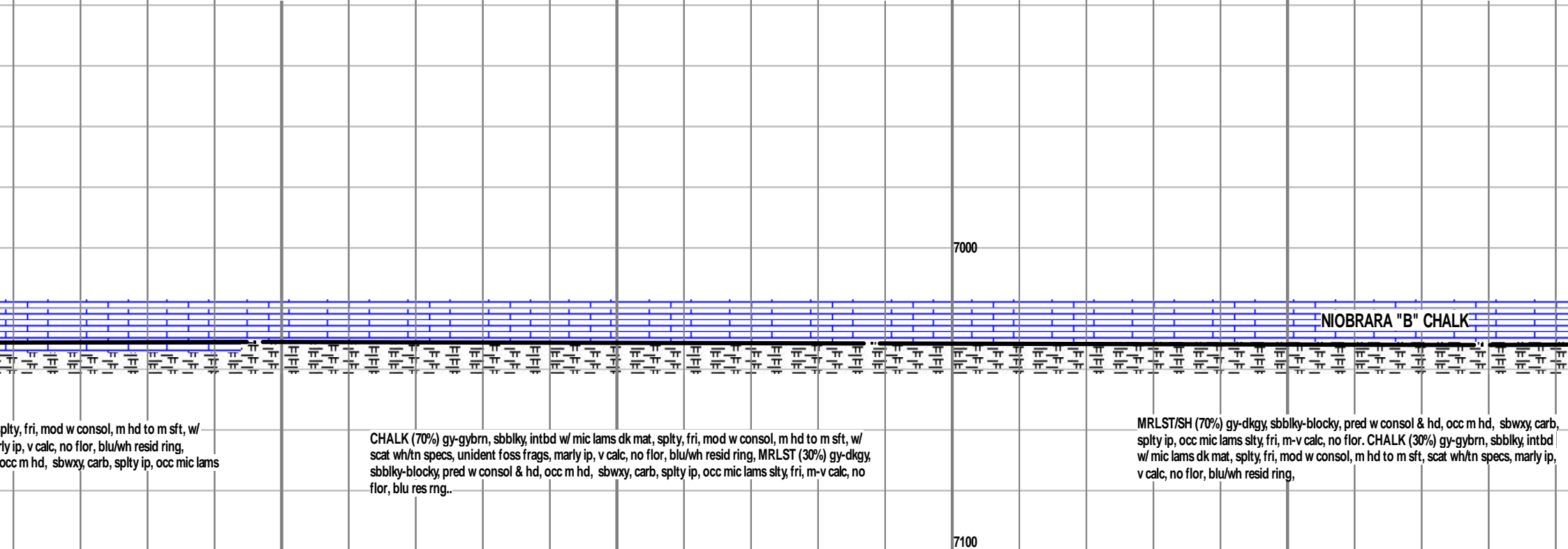


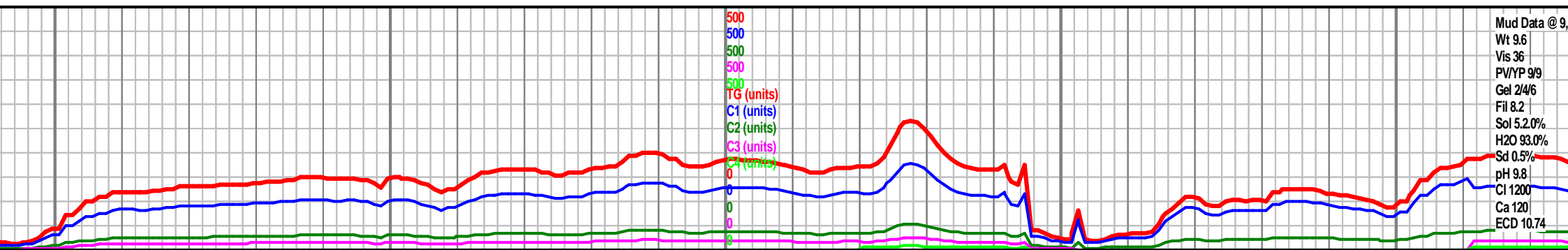
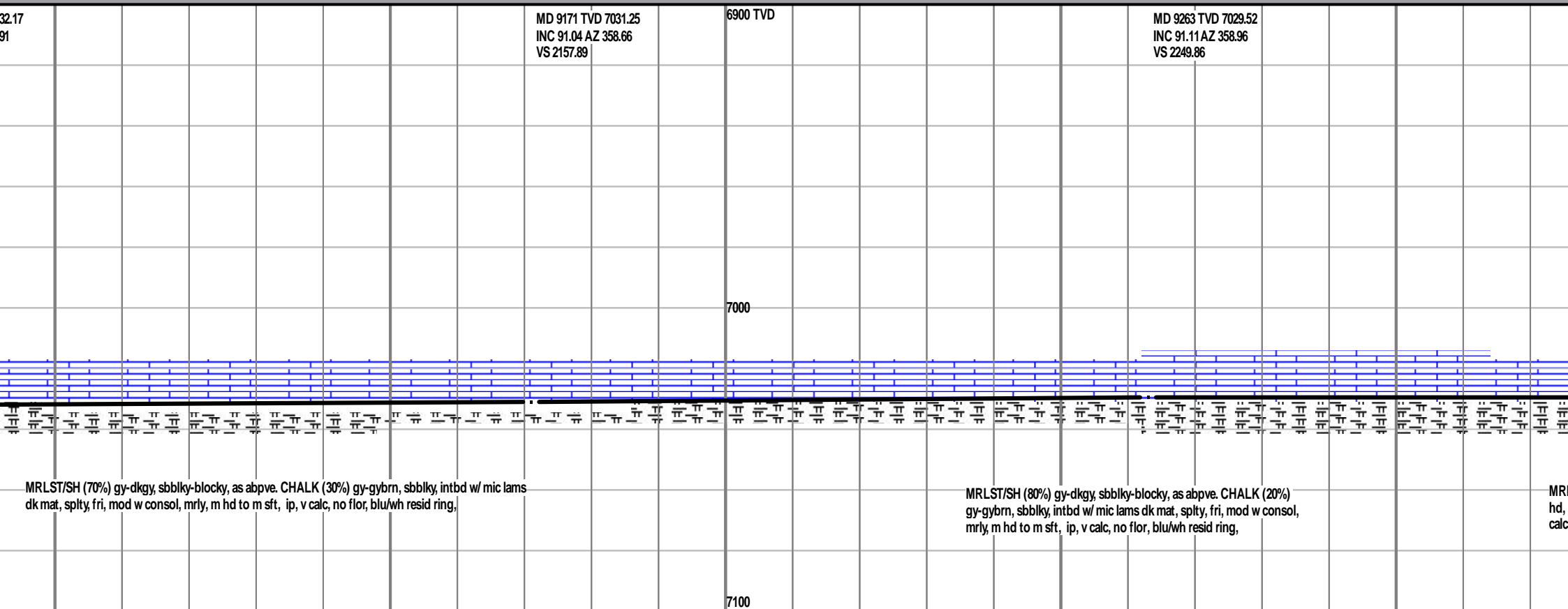
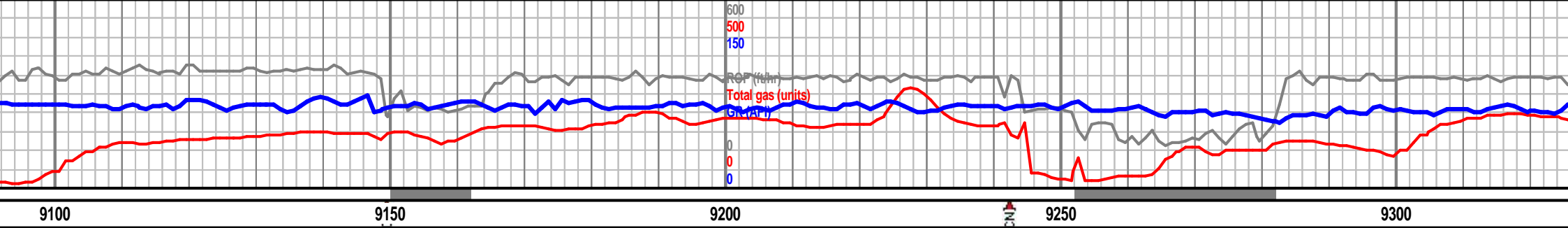


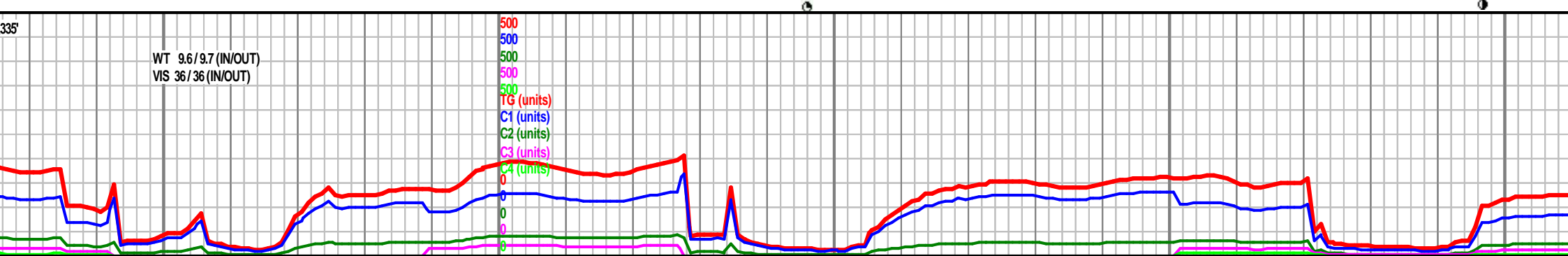
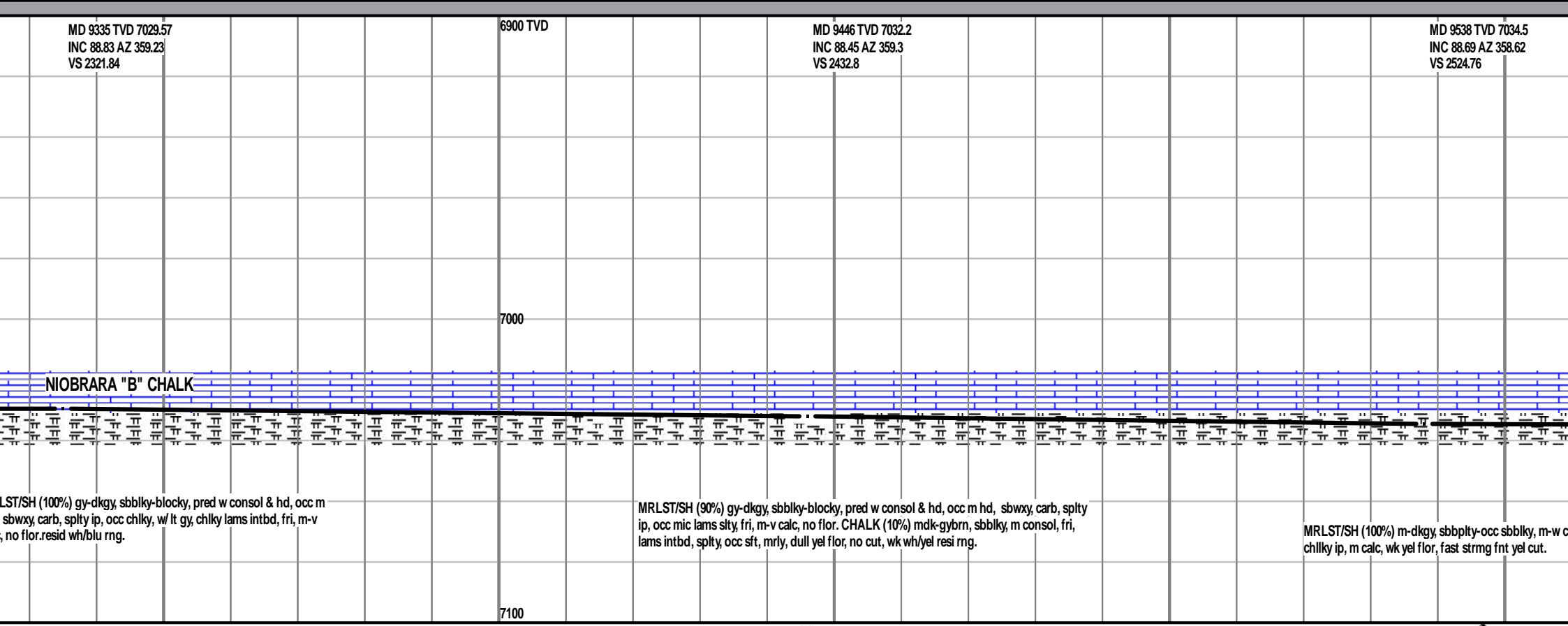
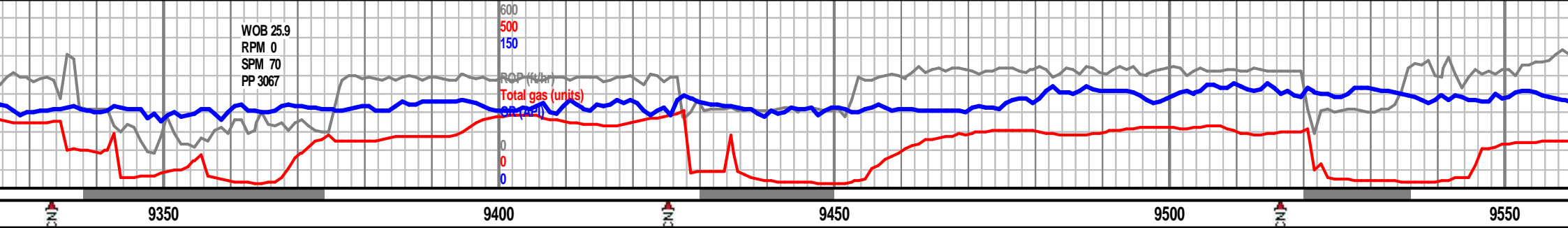
MD 8896 TVD 7031.01  
INC 89.87 AZ 358.03  
VS 1882.98

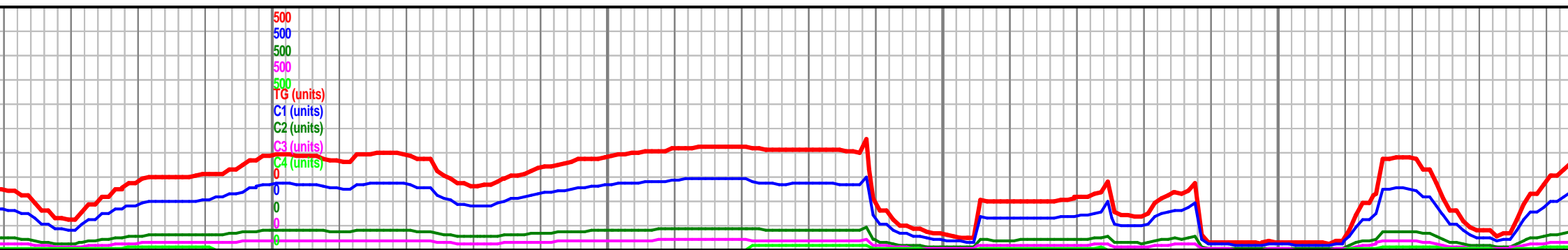
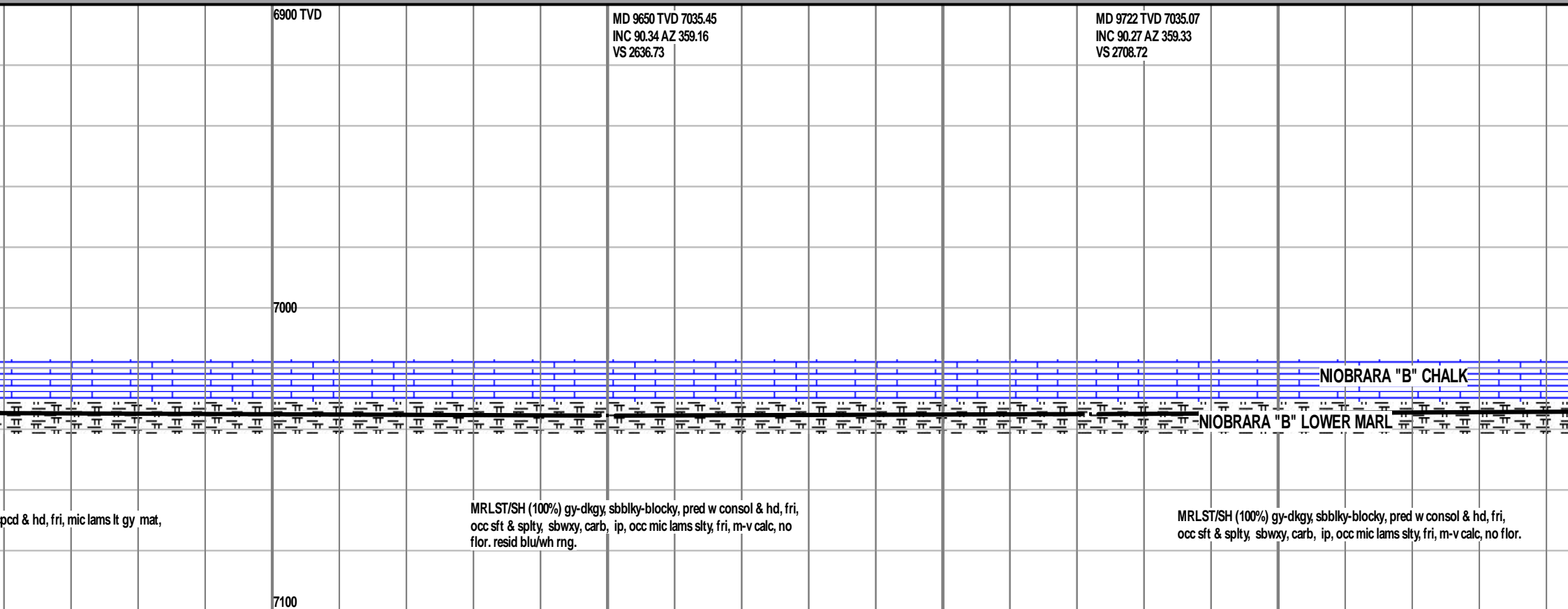
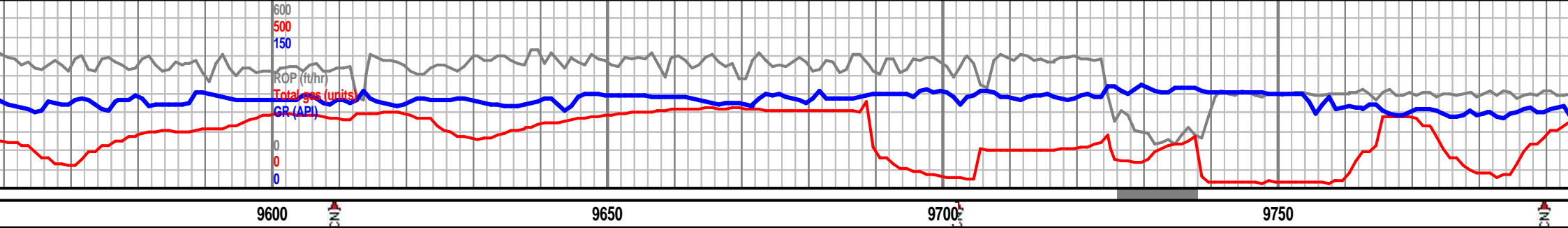
MD 8988 TVD 7031.69 TVD  
INC 89.29 AZ 358.87  
VS 1974.94

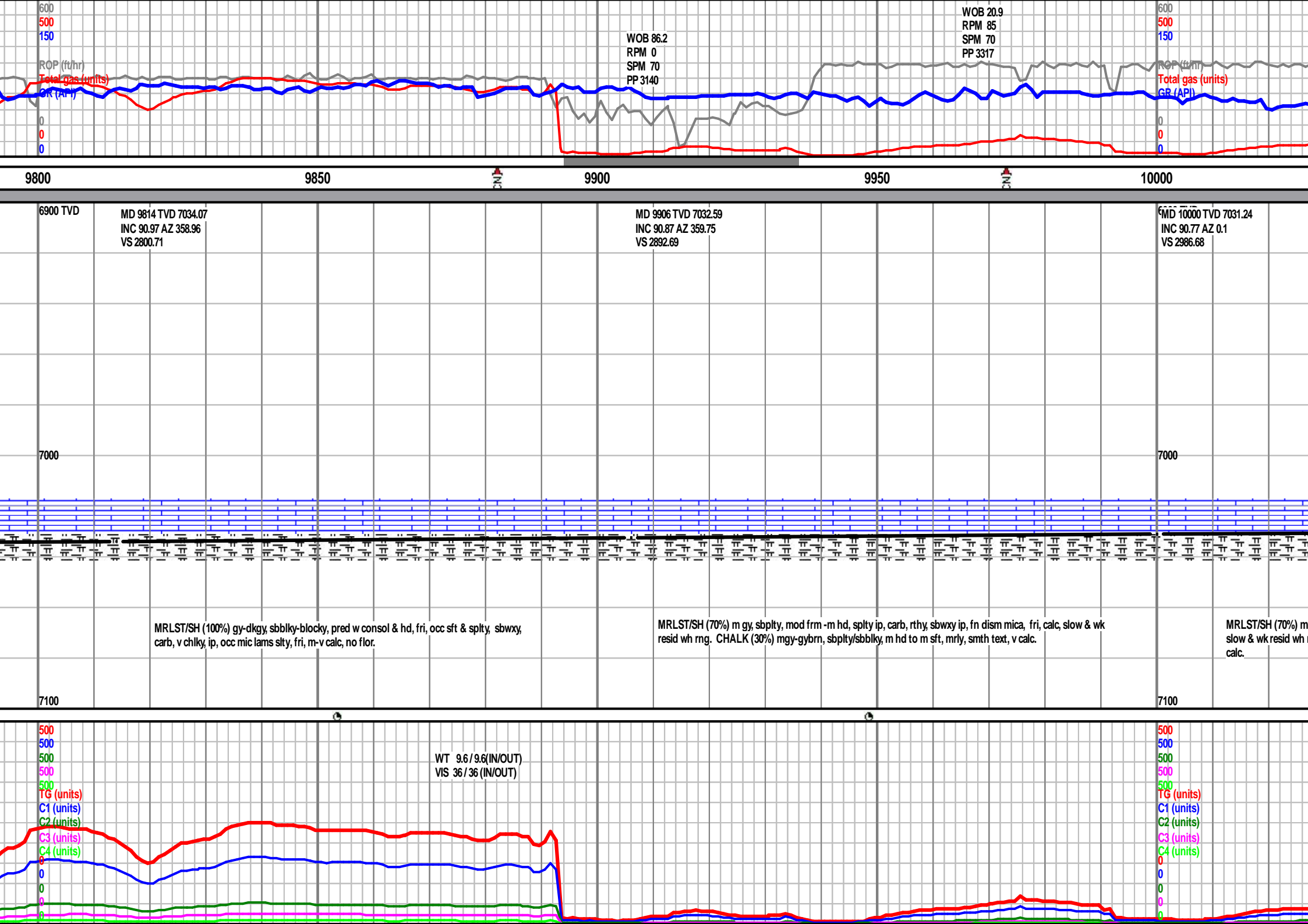
MD 9079 TVD 7031.69 TVD  
INC 90.1 AZ 358.87  
VS 2065.92



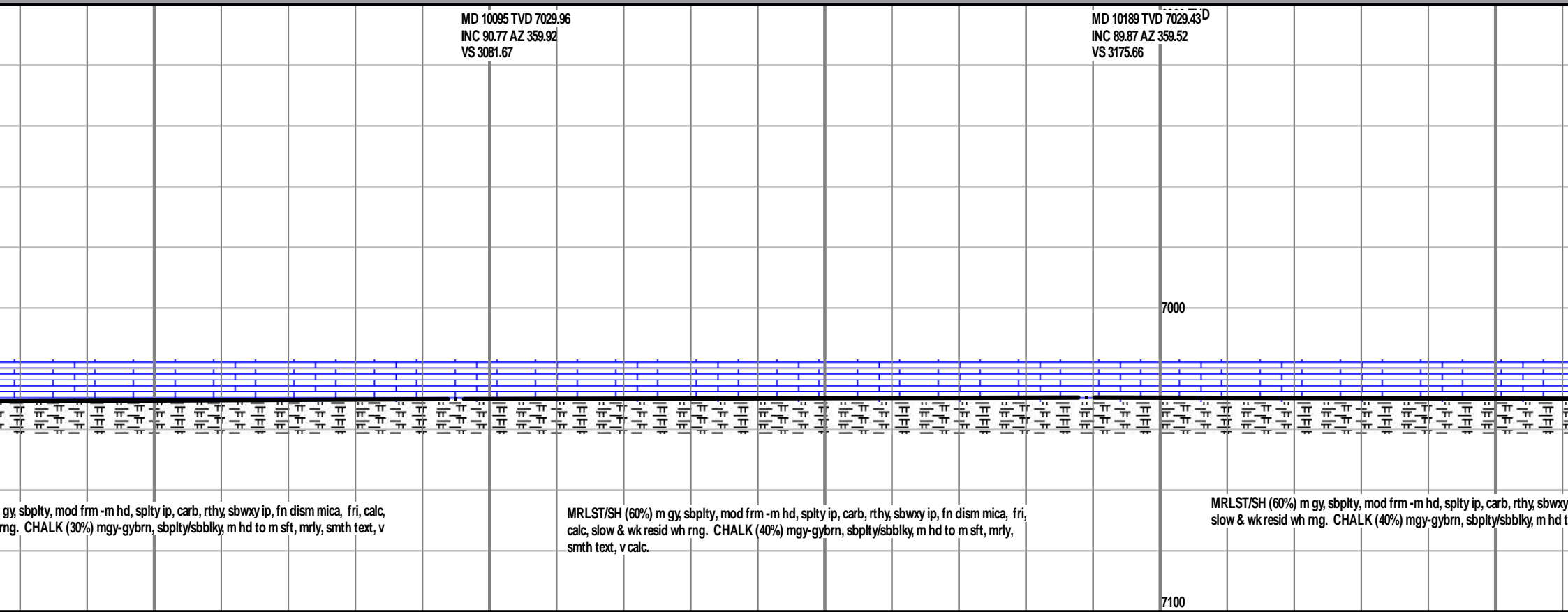


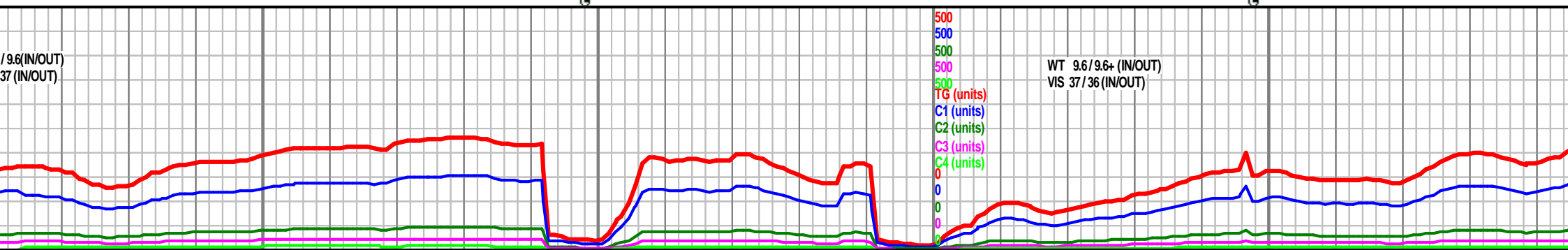
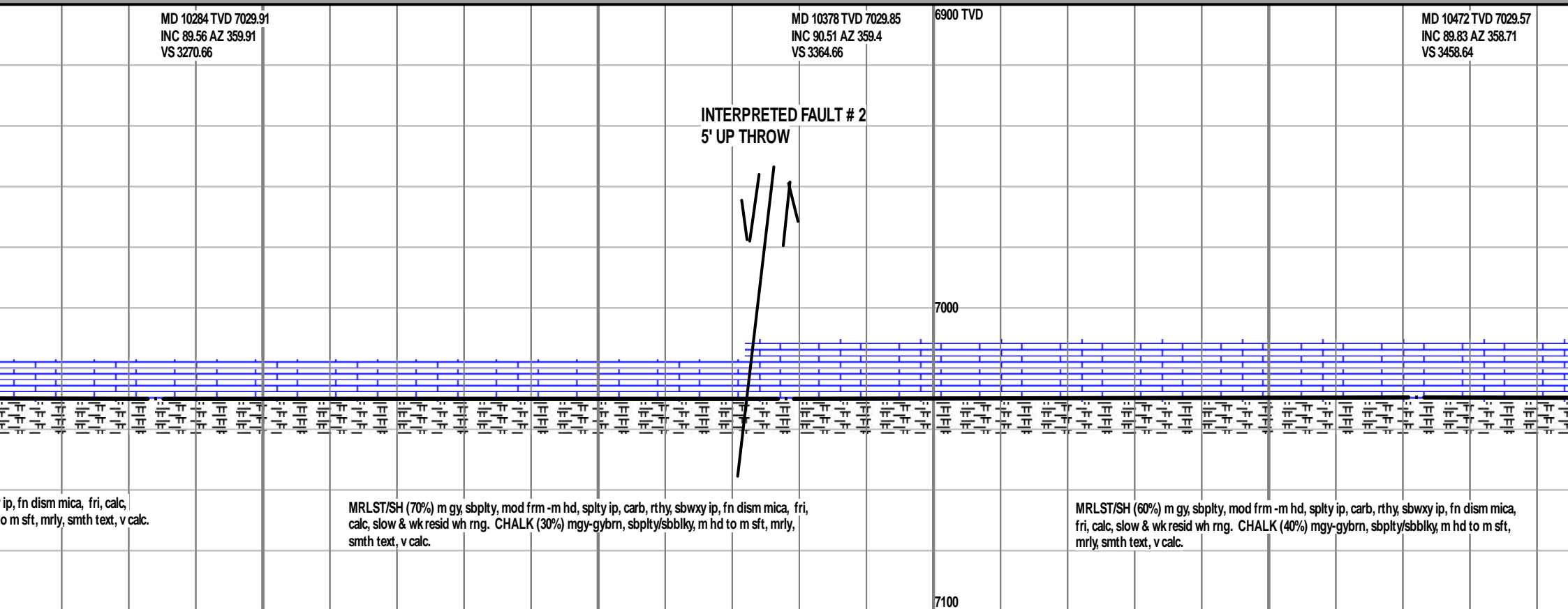
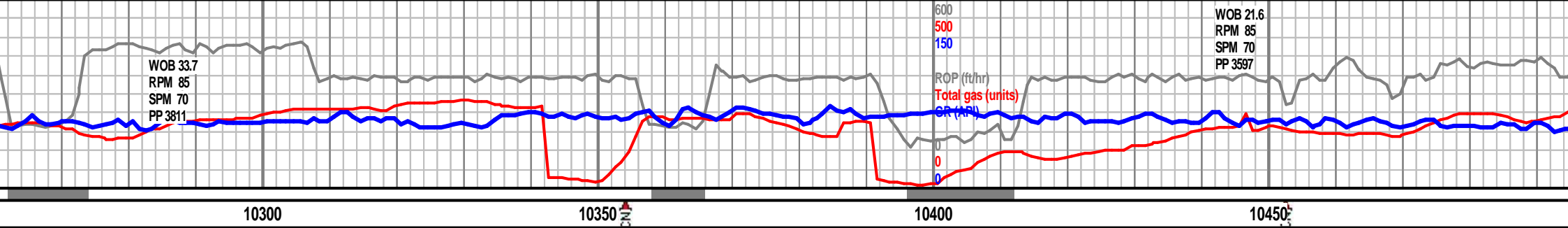


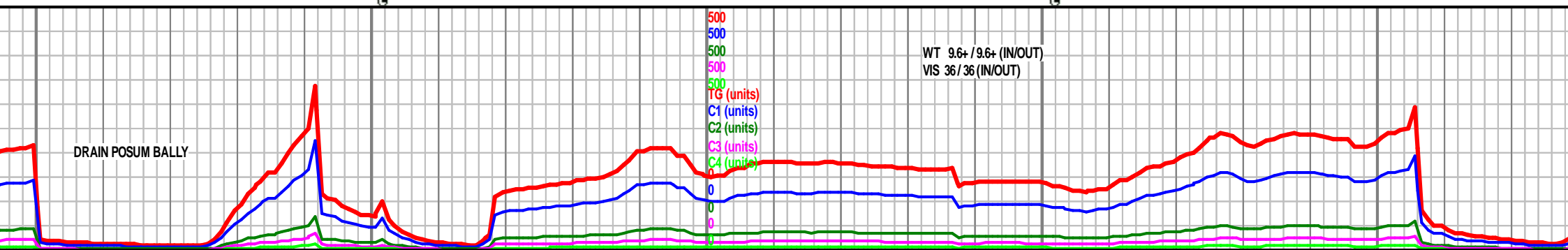
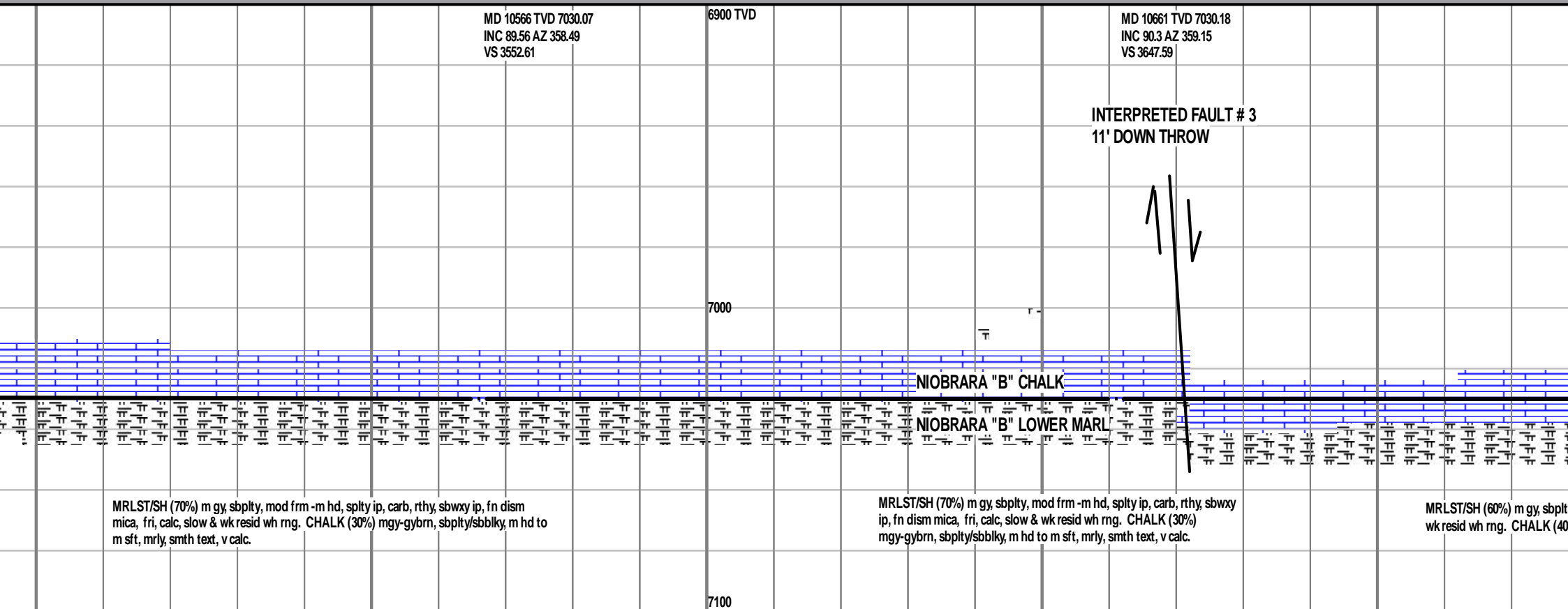
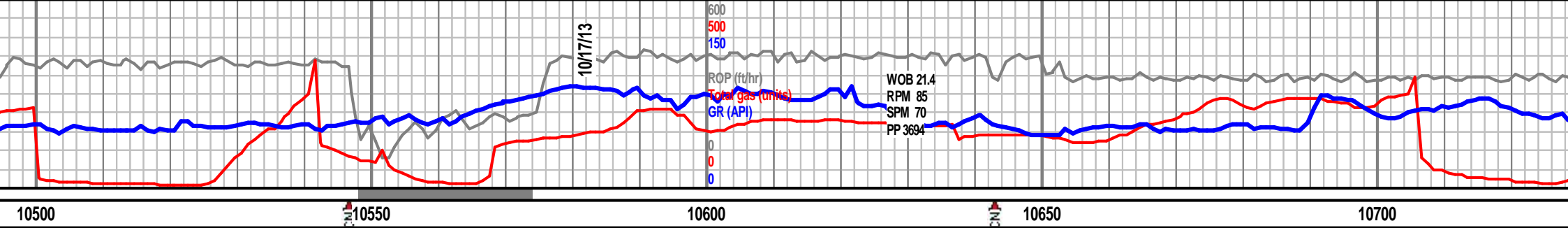


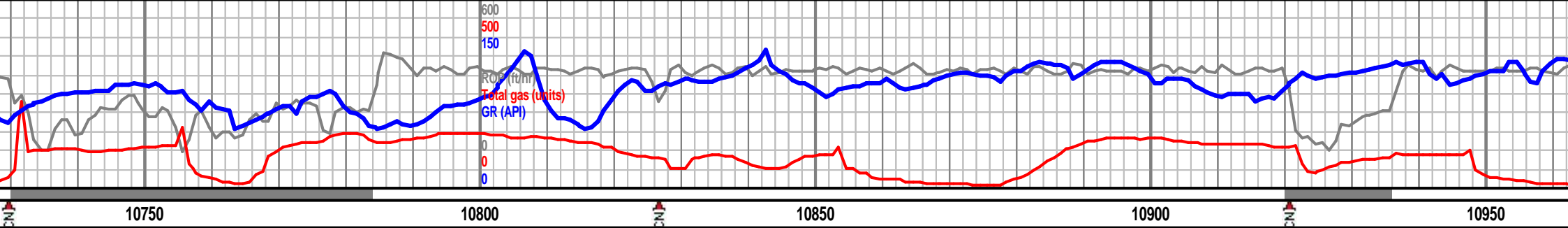












MD 10755 TVD 7030.04  
INC 89.87 AZ 359.42  
VS 3741.59

6900 TVD

MD 10850 TVD 7031.08  
INC 88.89 AZ 1.02  
VS 3836.58

MD 10944 TVD 7032.62  
INC 89.23 AZ 0.28  
VS 3930.56

REPAIR!!!

7000

NIO B LOWER SHALE

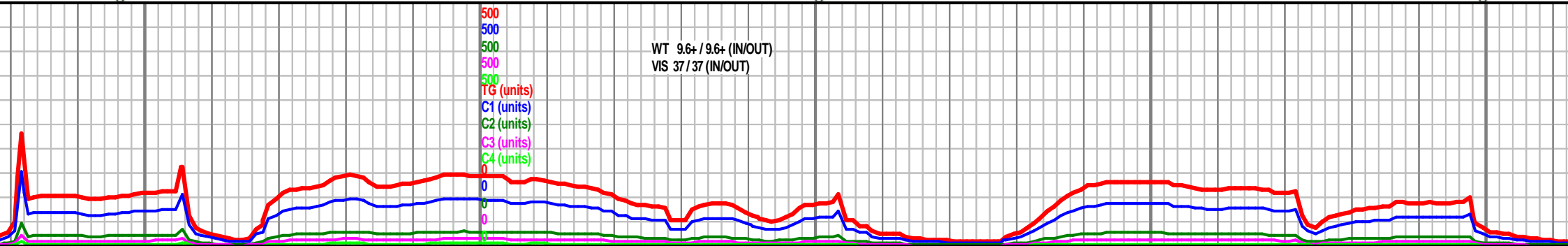
y, mod frm -m hd, splty ip, carb, rthy, sbwxy ip, fn dism mica, fri, calc, slow &  
(%) mgy-gybrn, sbply/sbblky, m hd to m sft, mrlly, smth text, v calc.

SH (80%) m gy, sbply, mod frm -m hd, splty ip, carb, rthy, sbwxy ip, fn dism mica, fri,  
calc, mrlly, slow & wk resid wh rng. CHALK (20%) mgy-gybrn, sbply/sbblky, m hd to m  
sft, mrlly, smth text, v calc.

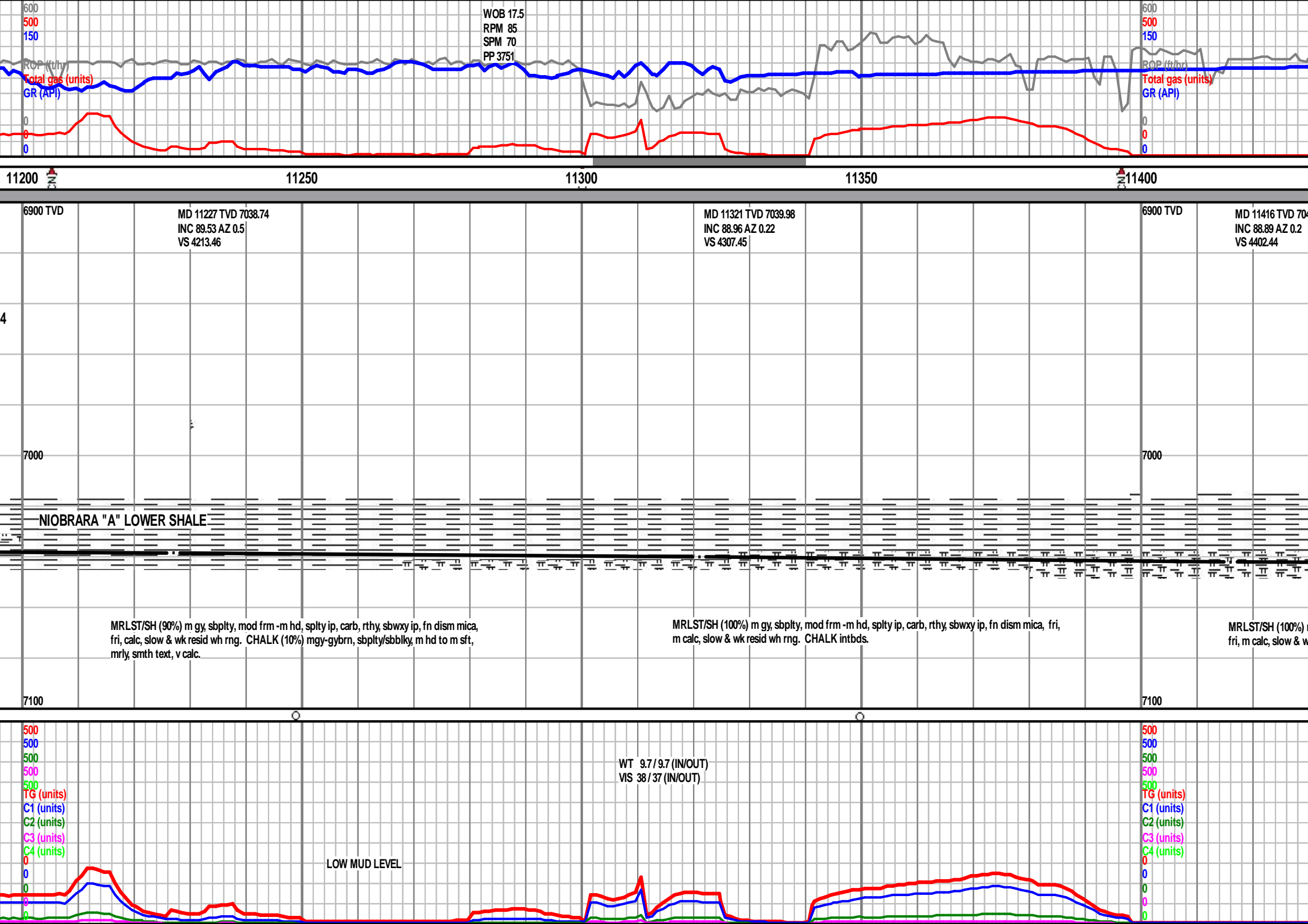
SH (80%) m gy, sbply, mod frm -m hd, splty ip, carb, rthy, sbwxy ip, fn dism mica, fri,  
calc, mrlly, slow & wk resid wh rng. CHALK (20%) mgy-gybrn, sbply/sbblky, m hd to m  
sft, mrlly, smth text, v calc.

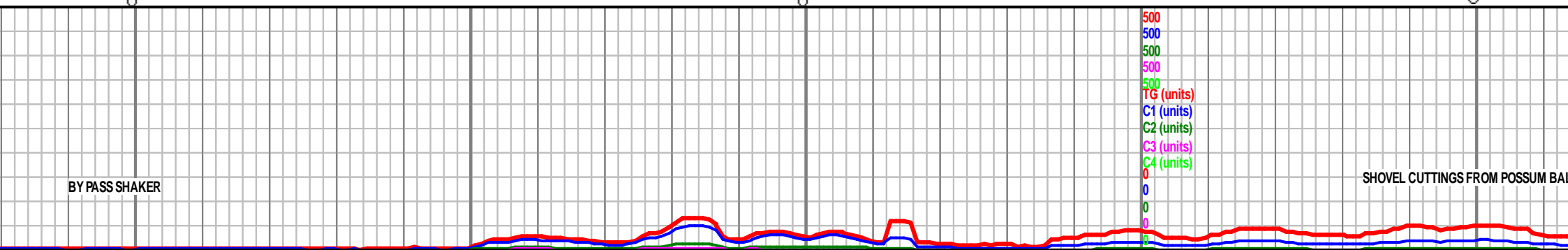
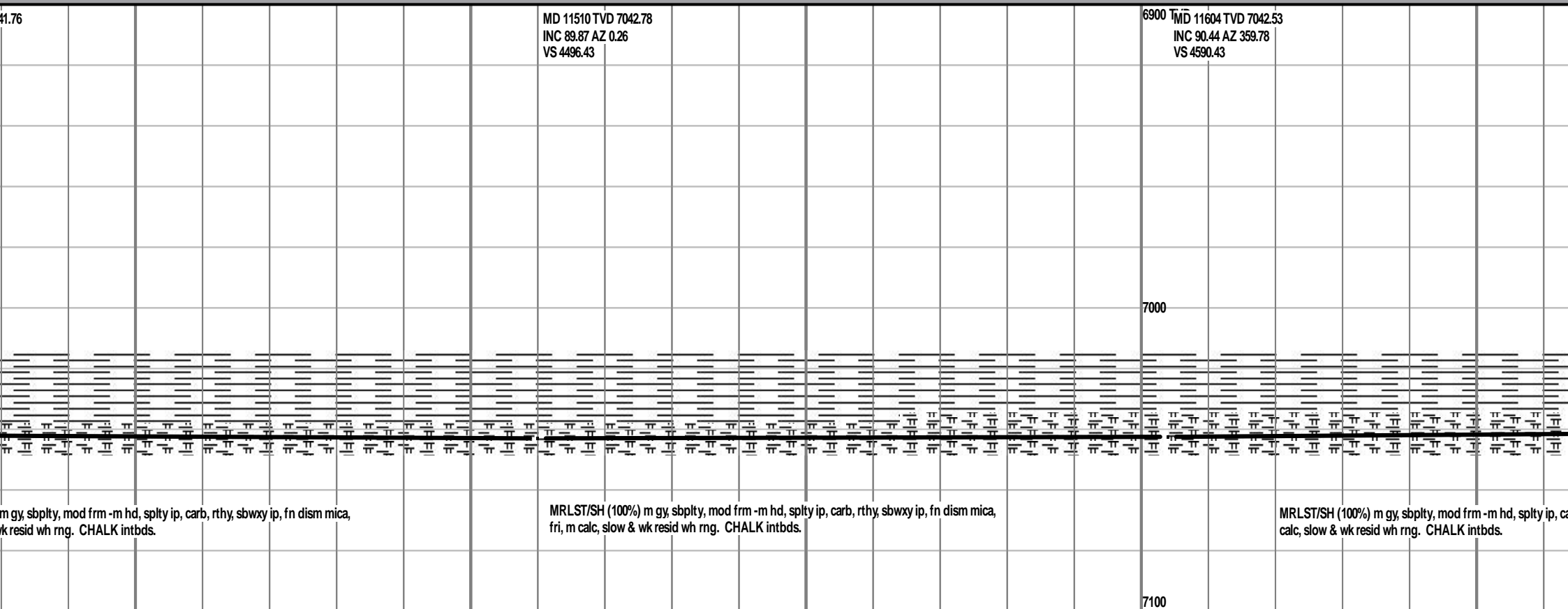
7100

WT 9.6+ / 9.6+ (IN/OUT)  
VIS 37 / 37 (IN/OUT)



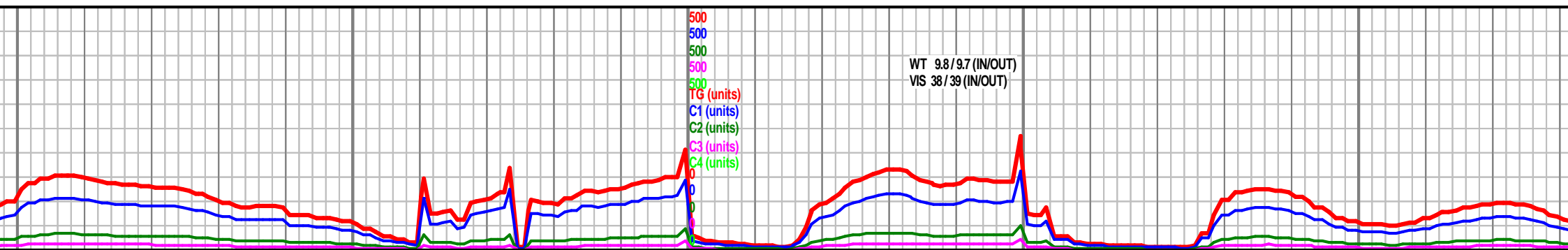
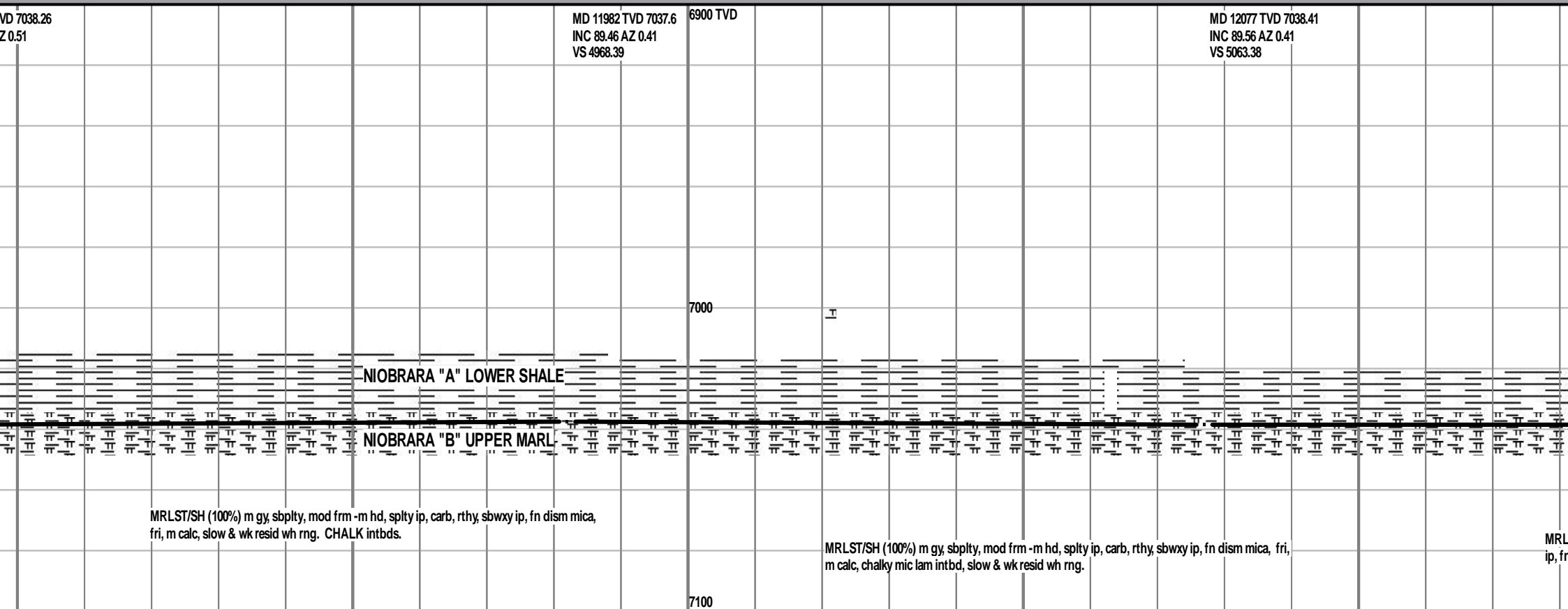
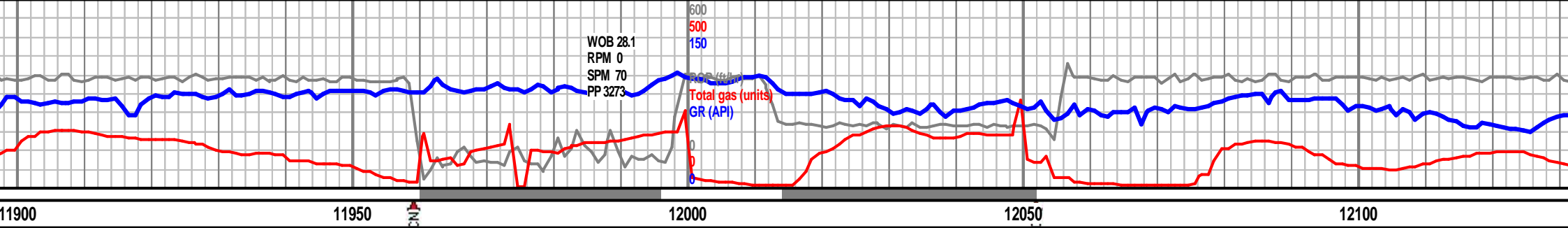


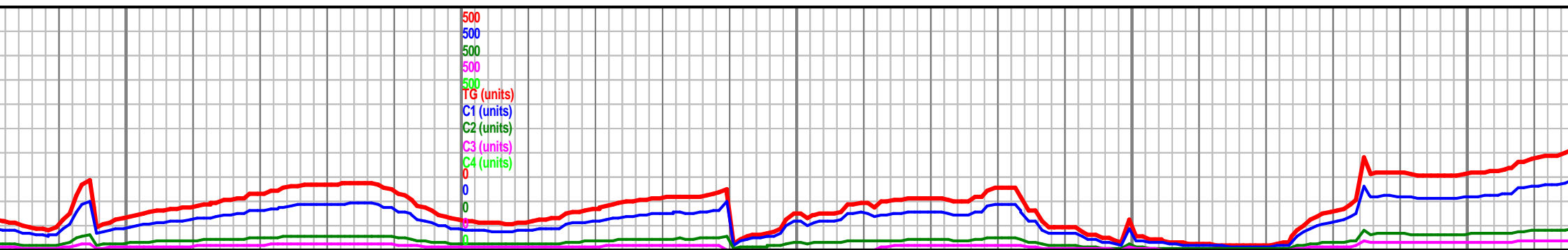
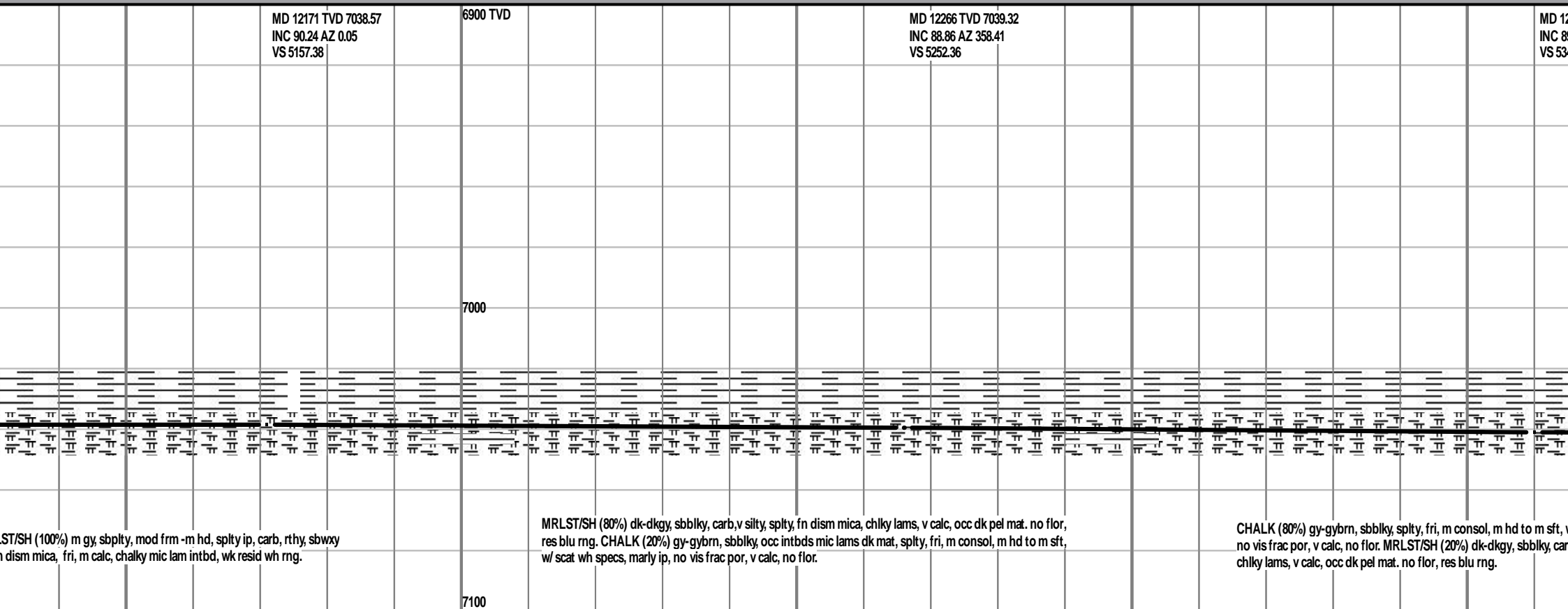
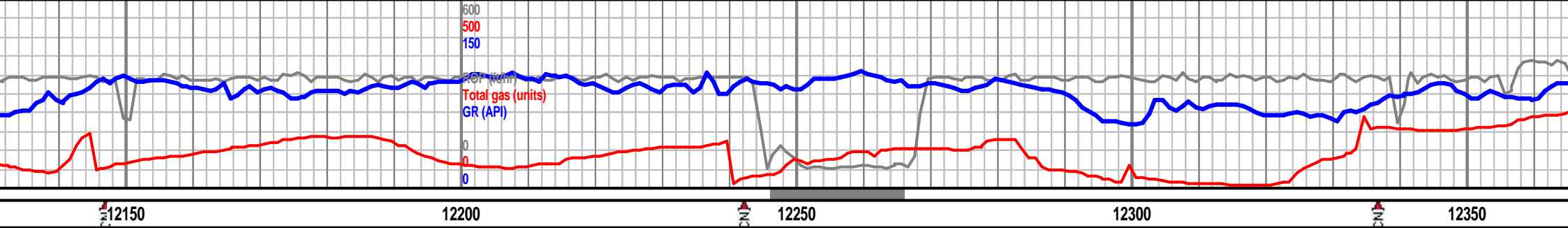


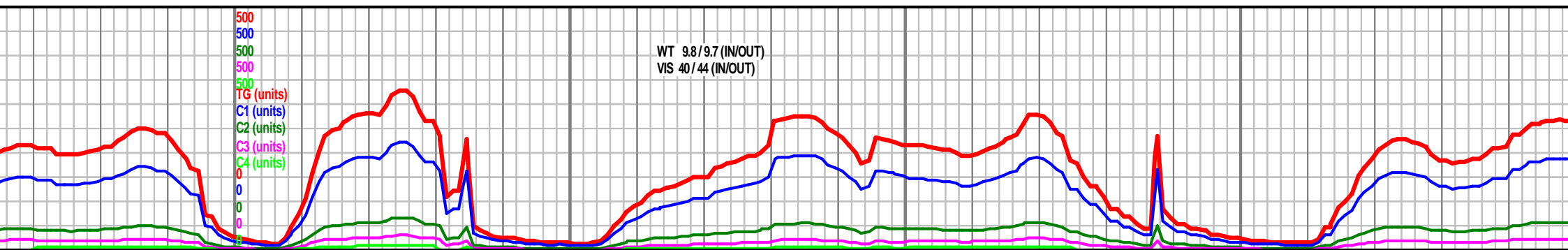
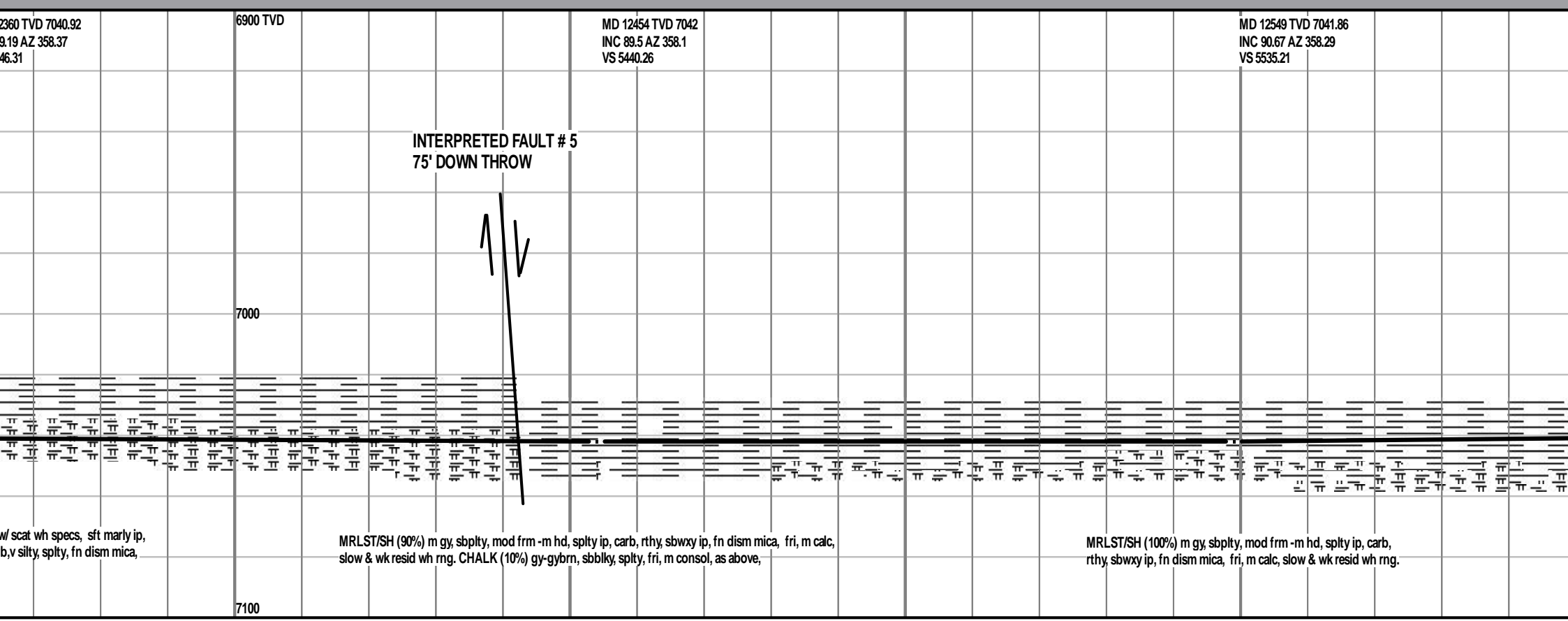
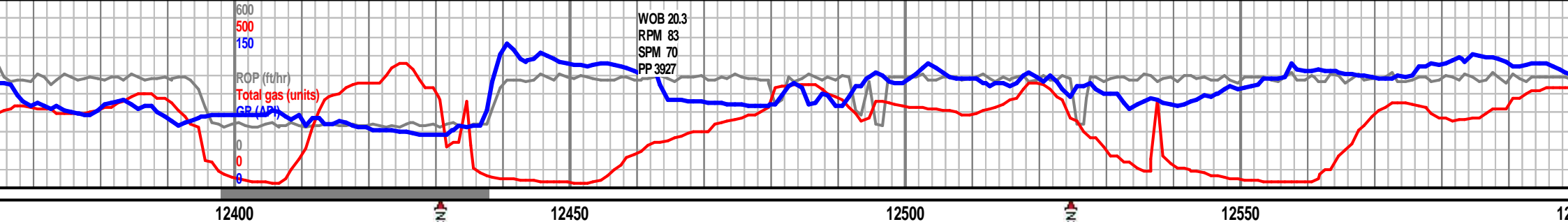


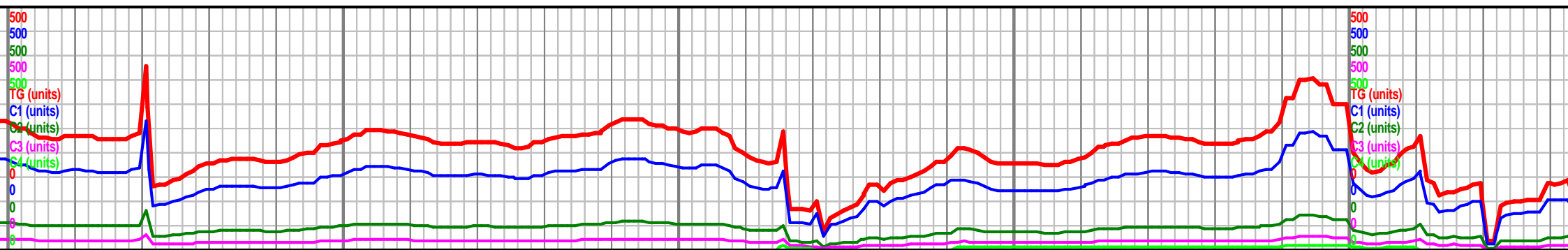
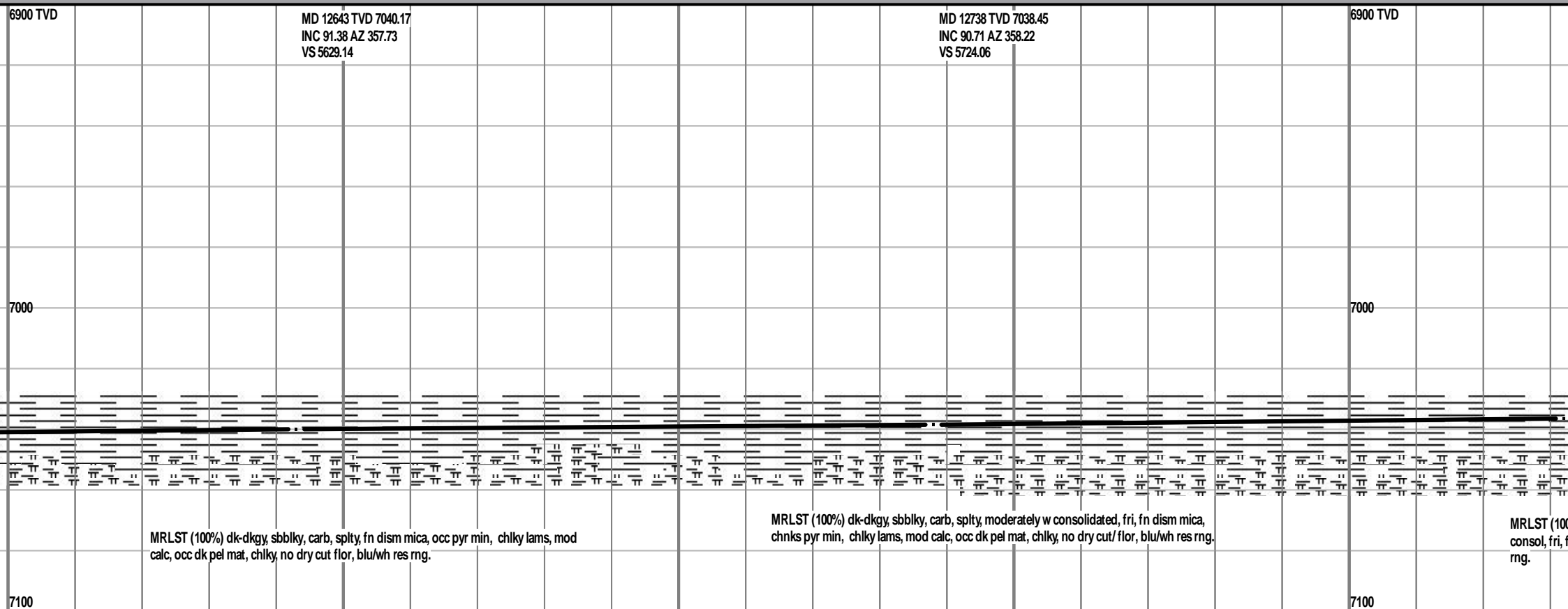
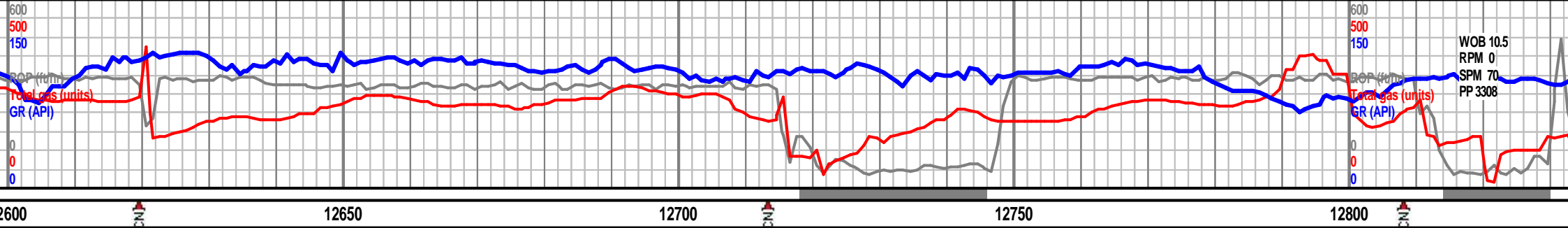


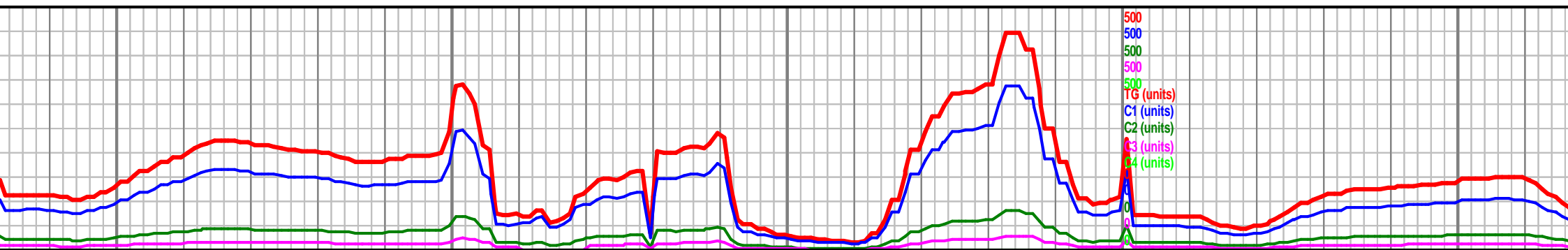
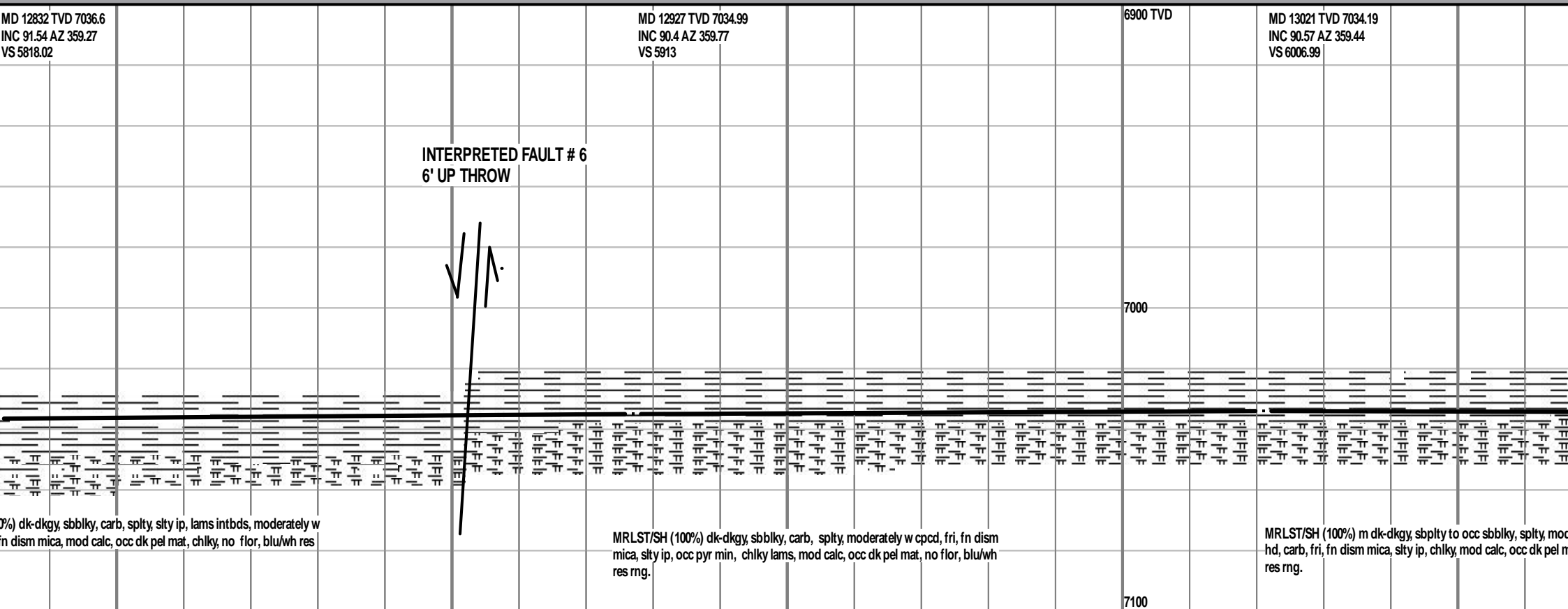
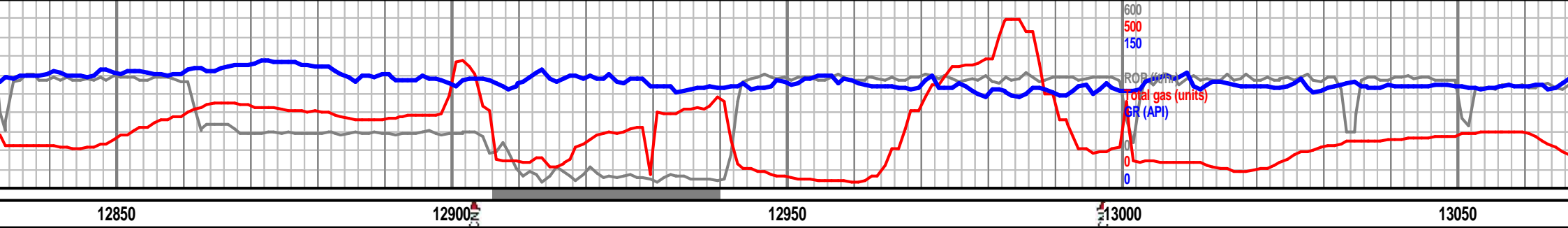


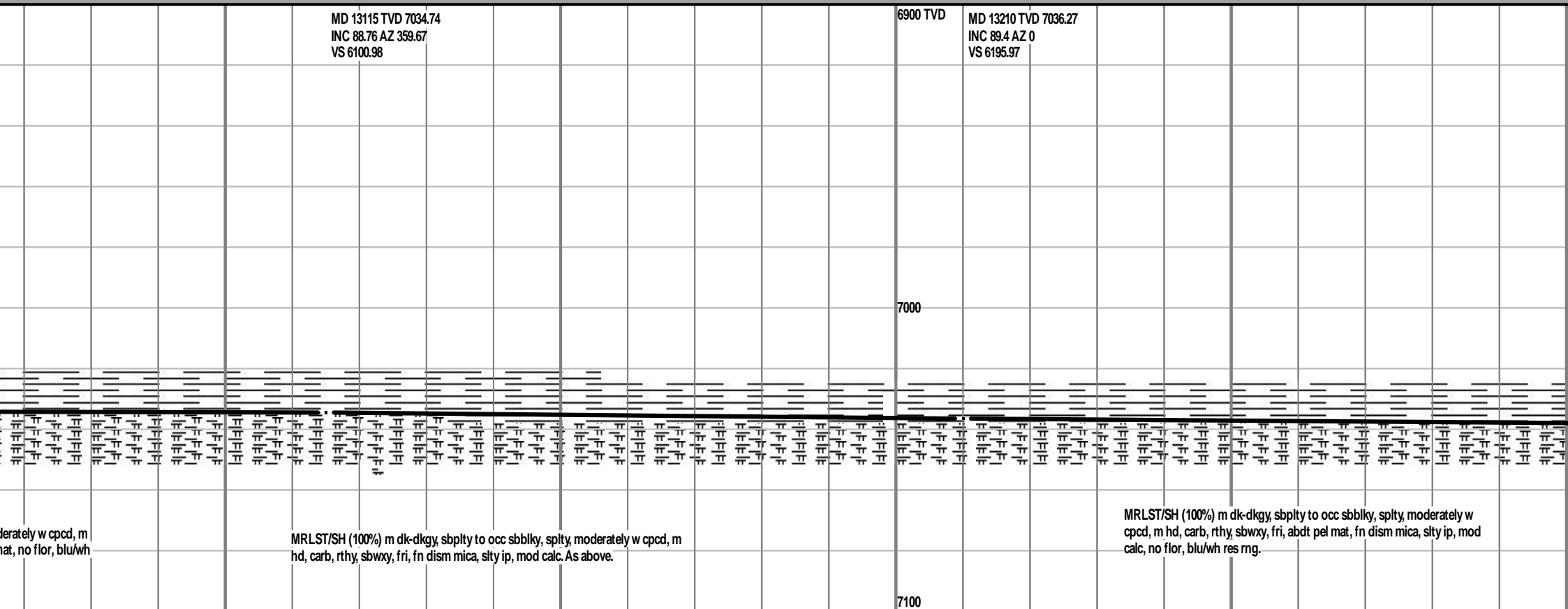
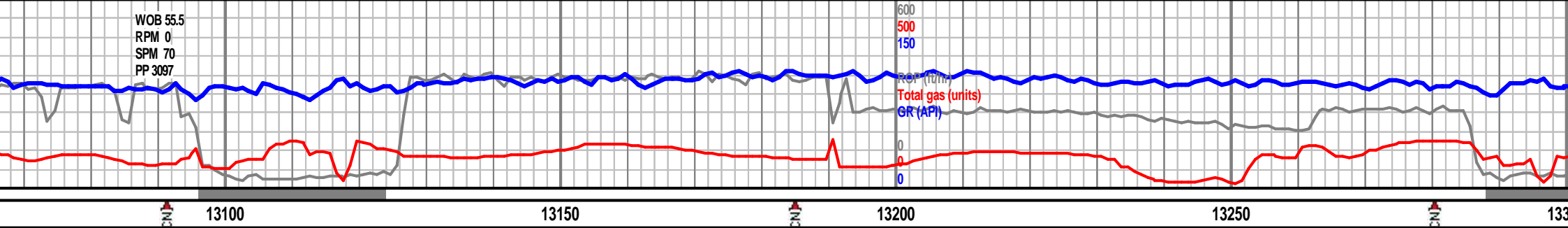








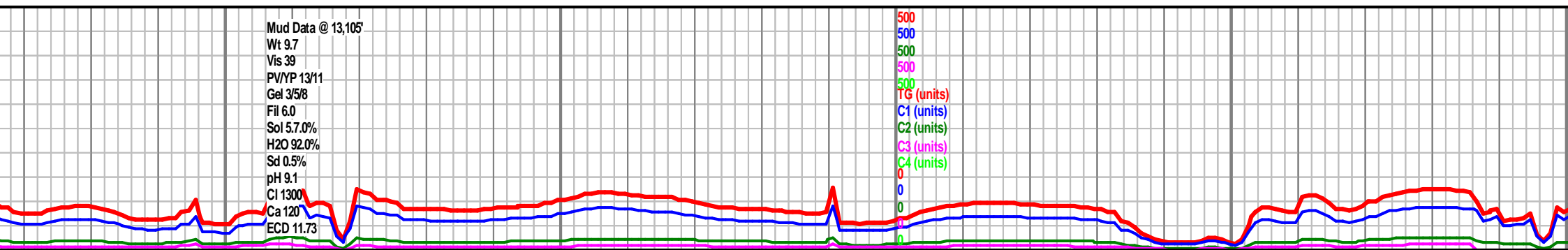


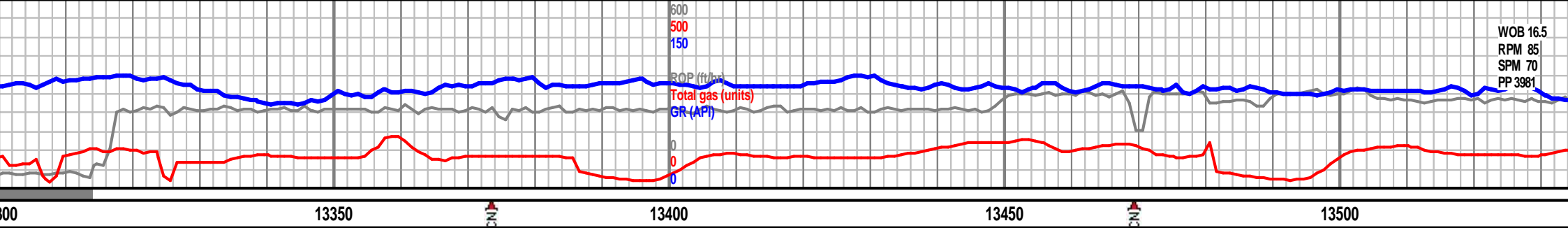


derately w cpd, m  
mat, no flor, blu/wh

MRLST/SH (100%) m dk-dkgy, sbply to occ sbbly, splty, moderately w cpd, m  
hd, carb, rthy, sbwxy, fri, fn dism mica, slty ip, mod calc. As above.

MRLST/SH (100%) m dk-dkgy, sbply to occ sbbly, splty, moderately w  
cpd, m hd, carb, rthy, sbwxy, fri, abdt pel mat, fn dism mica, slty ip, mod  
calc, no flor, blu/wh res rng.

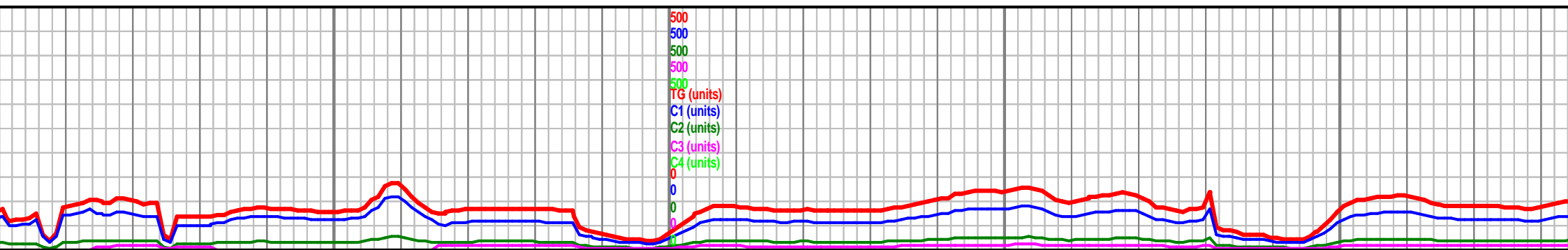
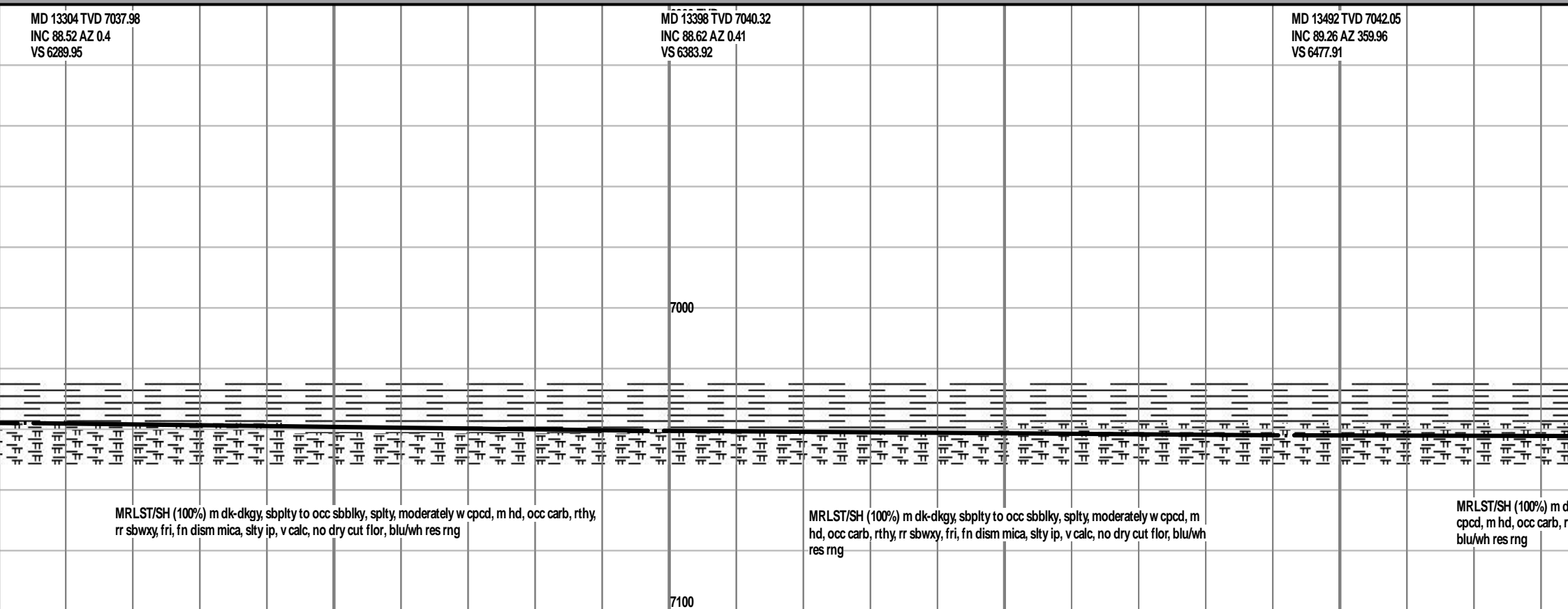


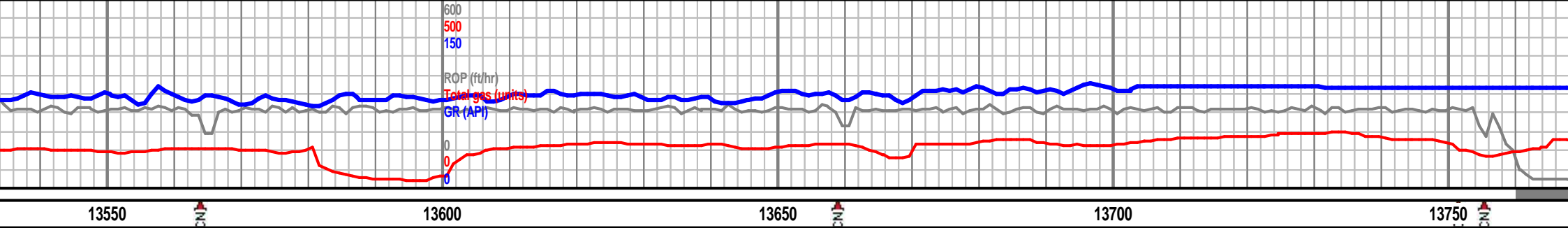


MD 13304 TVD 7037.98  
INC 88.52 AZ 0.4  
VS 6289.95

MD 13398 TVD 7040.32  
INC 88.62 AZ 0.41  
VS 6383.92

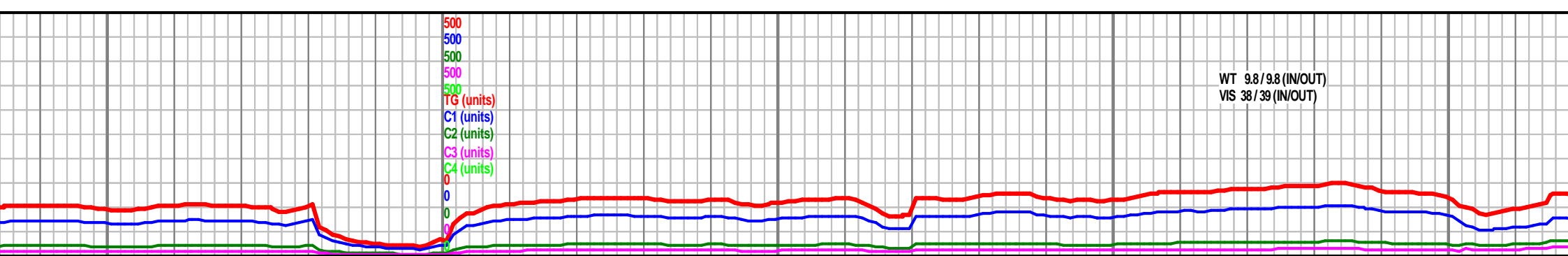
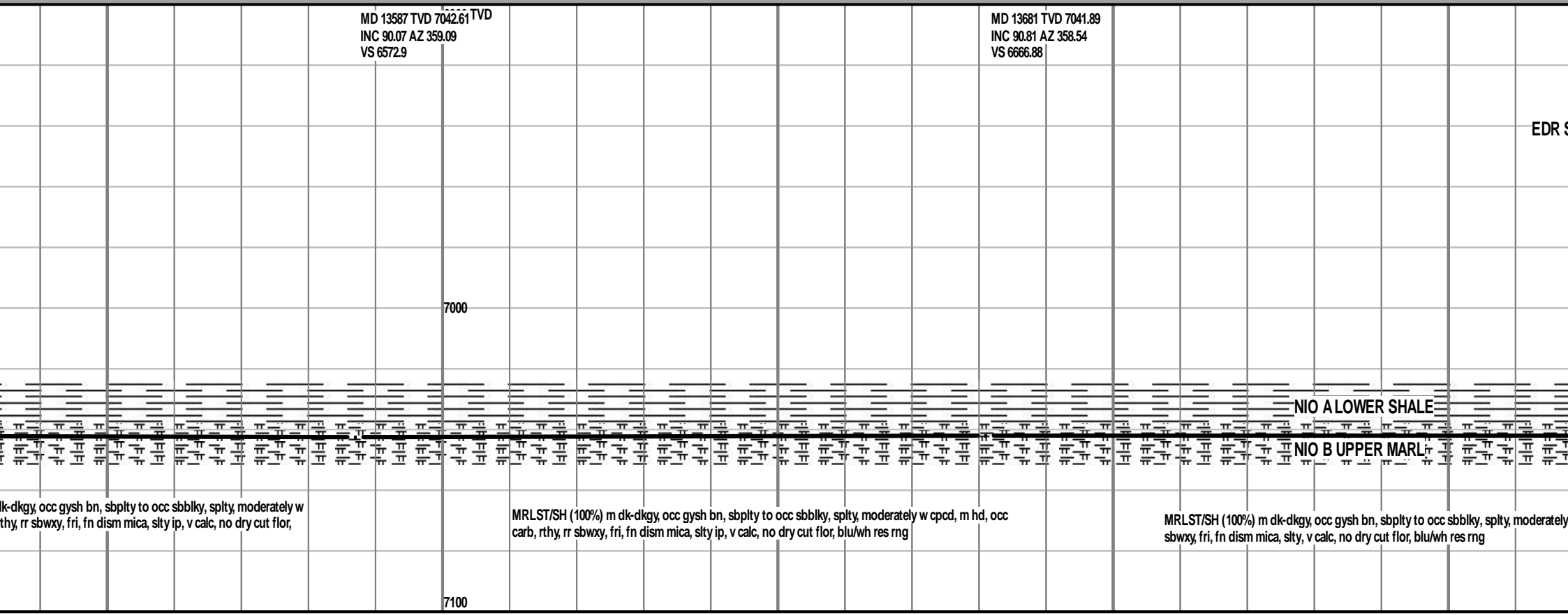
MD 13492 TVD 7042.05  
INC 89.26 AZ 359.96  
VS 6477.91



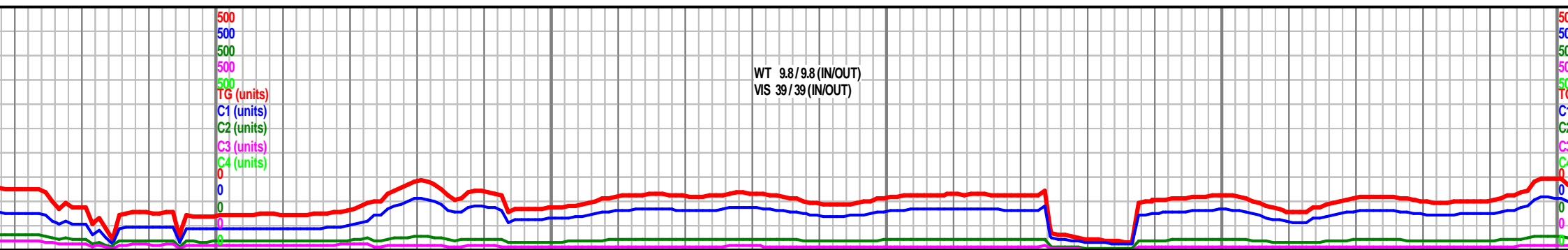
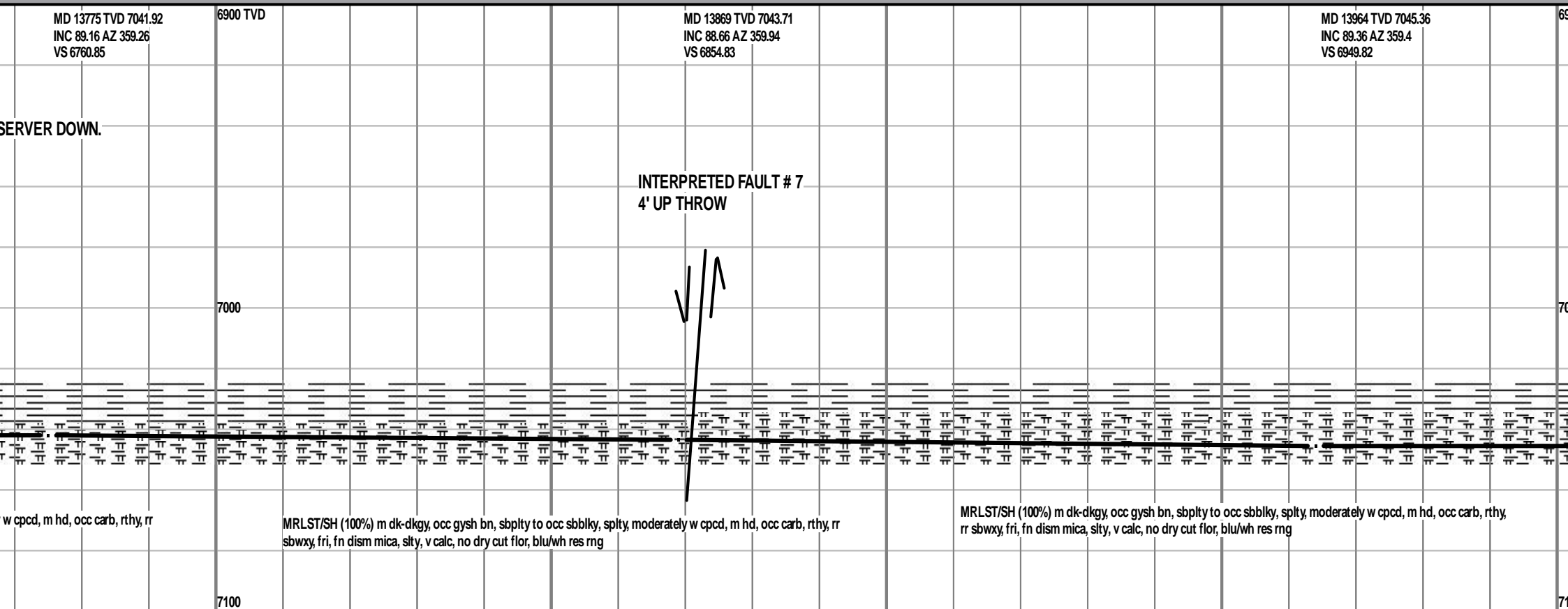
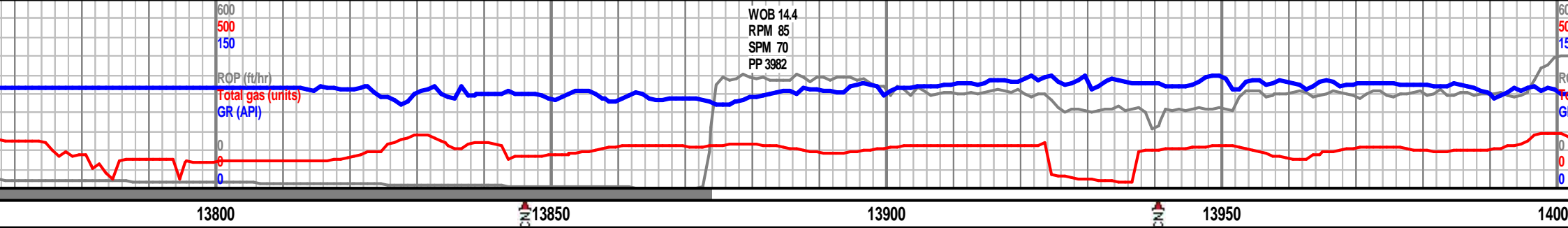


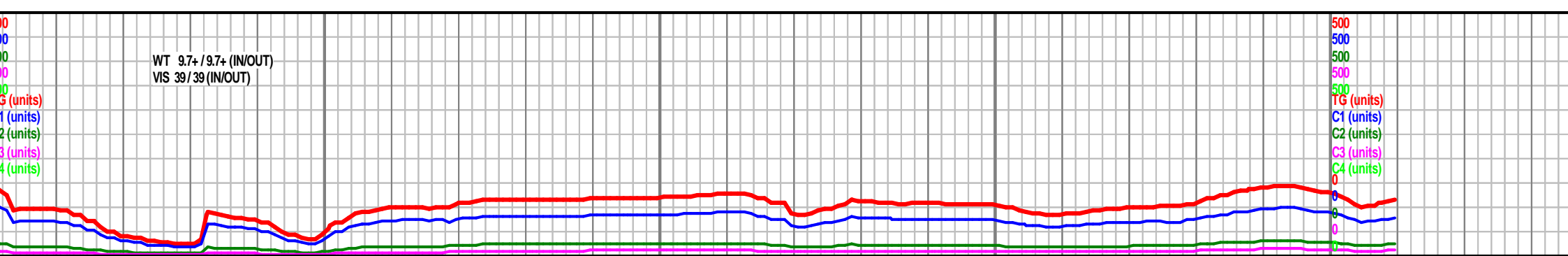
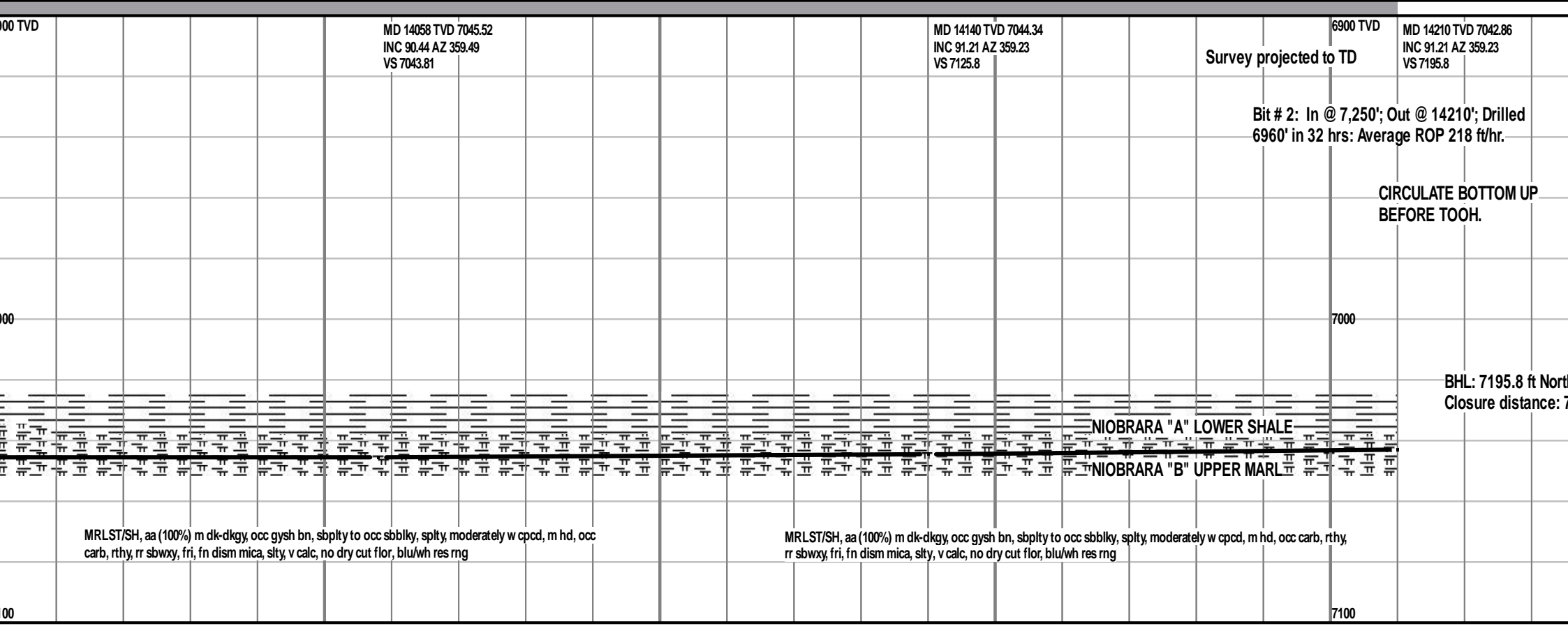
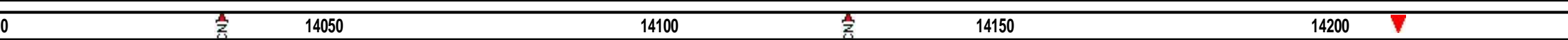
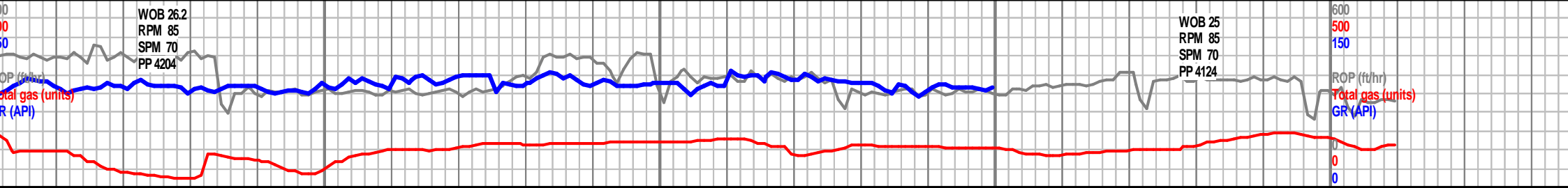
MD 13587 TVD 7042.61  
INC 90.07 AZ 359.09  
VS 6572.9

MD 13681 TVD 7041.89  
INC 90.81 AZ 358.54  
VS 6666.88









14250

14300

14350

**TD @ 14210' REACHED  
ON 10/18/13 @ 01:50 HRS MDT.**

4.5" production liner set and cemented at  
14,196' on October 19-20, 2013.

ing; 467.97 ft Easting;  
7195.8 ft

**THANK YOU !**

**MAREK CIESNIK  
TEKABE GEDAMU**

**(GOOLSBY BROTHERS & ASSOCIATES)**

October 20, 2011