

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

**Well Name:** Wardell 1N-29HZ  
**Location:** Section 29, T3N, R65W, Weld County, CO.  
**License Number:** API: 05-123-35112  
**Spud Date:** 14 July 2012  
**Surface Coordinates:** SESE Sec 29 T3N R65W; 370' FSL & 1267' FEL  
Lat. 40° 11' 24.66" N Long. 104° 40' 56.82" W  
**Bottom Hole Coordinates:** NE NE Sec 29 T3N R65W; 460' FNL & 740' FEL

**Region:** DJ Basin, Development  
**Drilling Completed:** 24 July 2012

**Ground Elevation (ft):** 4870' **K.B. Elevation (ft):** 4887'  
**Logged Interval (ft):** 6350' **To:** 11504' **Total Depth (ft):** 11504'  
**Formation:** Pierre Sands/Shales, Niobrara Target  
**Type of Drilling Fluid:** Water & Poly to 871', LSND

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

**OPERATOR**

**Company:** Kerr-McGee Oil & Gas Onshore LP  
**Address:** Granite Tower - 1099 18th St, Ste 1800  
Denver, CO 80202  
CO Geologist, Tom Birmingham

**GEOLOGIST**

**Name:** Robert Nordeck, Tekabe Gedamu, Andrew Krueger  
**Company:** Goolsby Brothers & Assoc. (GBA), Inc. ([www.goolsbybrothers.com](http://www.goolsbybrothers.com))  
**Address:** 575 Union Blvd.  
Suite 208,  
Lakewood CO. 80228

**E-logs**


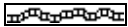
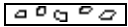

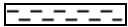
## Casing

9 5/8" Surface Casing set @ 939'  
 7" Intermediate Casing set @ 7400'  
 4 1/2" Production Liner run to near Total Depth




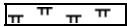
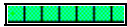
## Comments

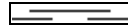
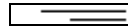
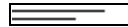


- 1) Drilling Contractor: Xtreme Drilling, Rig # 22  
 Rig Manager: Chris Sandoval, Gene Williams
- 2) Company Man: Bobby Dean, Mike Cooney, Jason
- 3) Mud Company : Imperial Drilling Fluids,  
 Mud Engineer: Weston Moffett, Lyle Fischer
- 4) Directional Drilling: Sperry / Halliburton  
 Drillers: Ryan White  
 MWD: Clay Wass,
- 5) Gas Equipment: Mudlogging Systems Inc.  
 by Terra Services  
 Redbox # ML-173 & Ratcliff Agitator



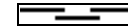
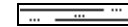
## ROCK TYPES

 Anhy  
 Bent  
 Brec  
 Cht  
 Clyst
















 Coal  
 Oil sat.  
 Congl  
 Dol  
 Gyp







 Igne  
 Lmst  
 Meta  
 Mrlst  
 Salt

 Shale  
 Shcol  
 Shgy  
 Ss  
 Sltst









 Ss  
 Chalk  
 Carb sh  
 Sltly sh






## ACCESSORIES









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

 Ostra  
 Pelec  
 Pellet  
 Pisolite  
 Plant  
 Strom












**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

**STRINGER**  
 Chlkstg  
 Anhy  
 Arg  
 Bent  
 Coal  
 Dol  
 Gyp  
 Ls  
 Mrst

 Sltstgr  
 Ssstgr

**TEXTURE**  
 Boundst  
 Chalky  
 Cryxln  
 Earthy  
 Finexln  
 Grainst  
 Lithogr  
 Microxln  
 Mudst  
 Packst  
 Wackest




**POROSITY TYPE**

 Earthy  
 Fenest  
 Fracture  
 Inter  
 Moldic  
 Organic  
 Pinpoint  
 Vuggy

**SORTING**

 Well  
 Moderate  
 Poor



**ROUNDING**

 Rounded  
 Subrnd  
 Subang

**OTHER SYMBOLS**

 Angular

**OIL SHOWS**





 Even  
 Spotted  
 Ques  
 Dead  
 Vspotty  
 near even

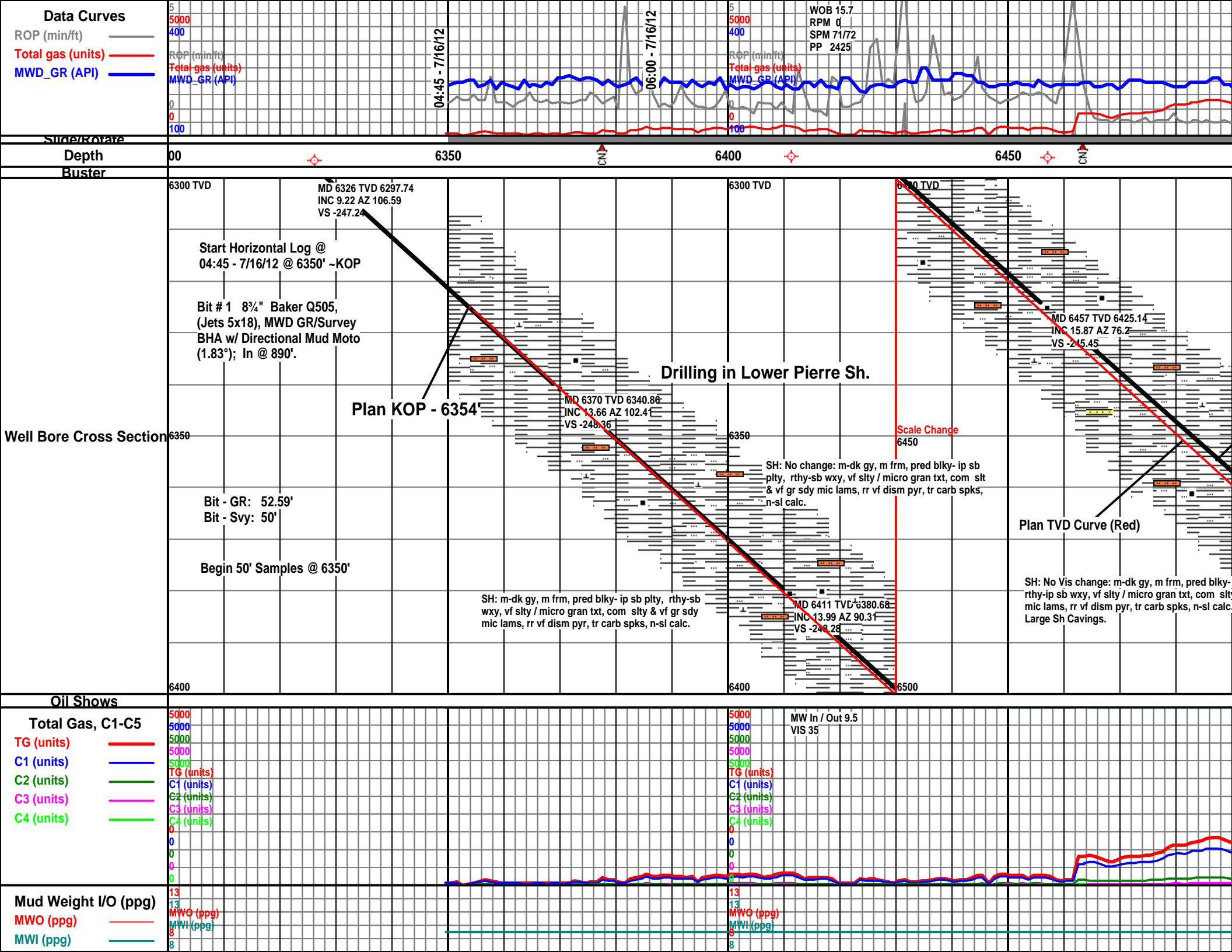
**INTERVALS**

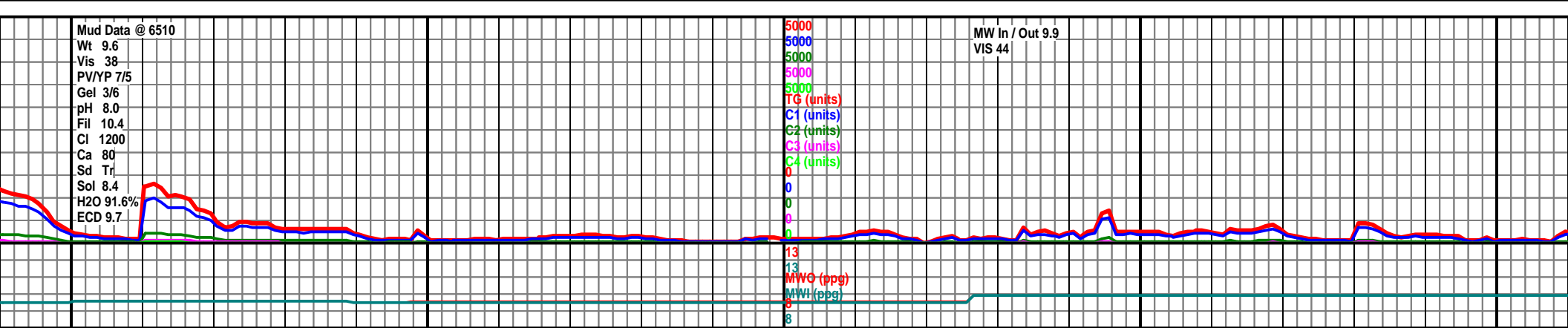
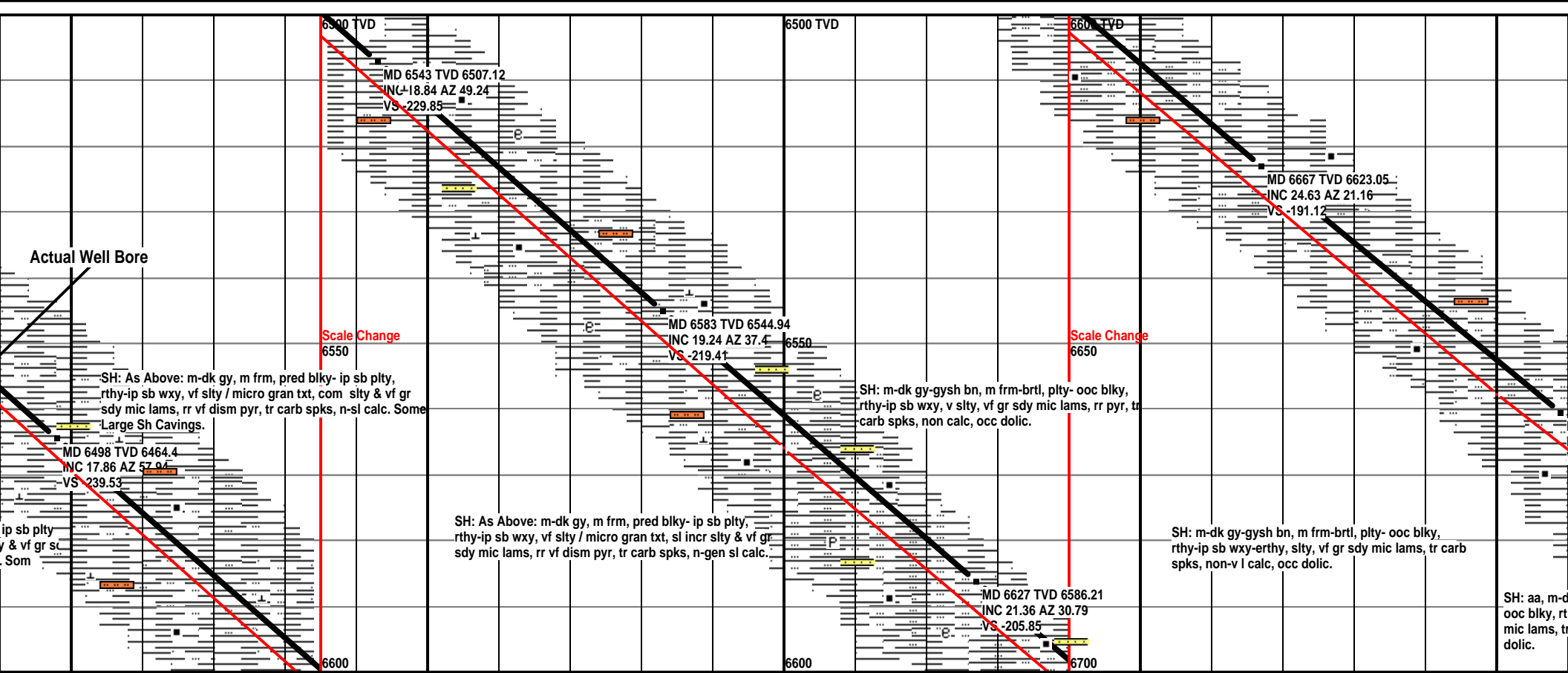
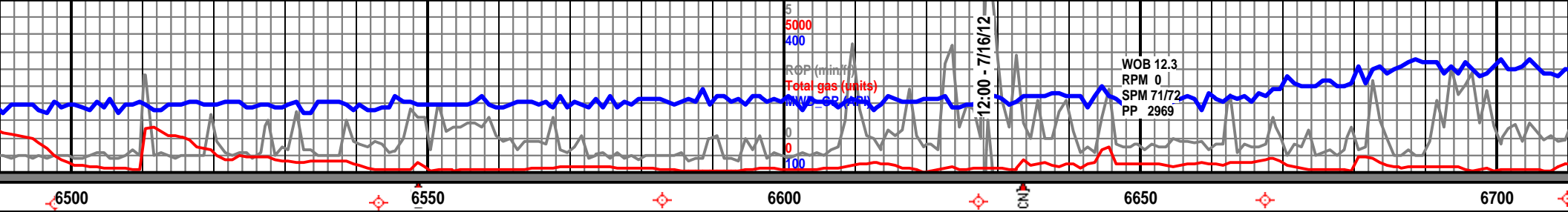
 Core  
 Dst

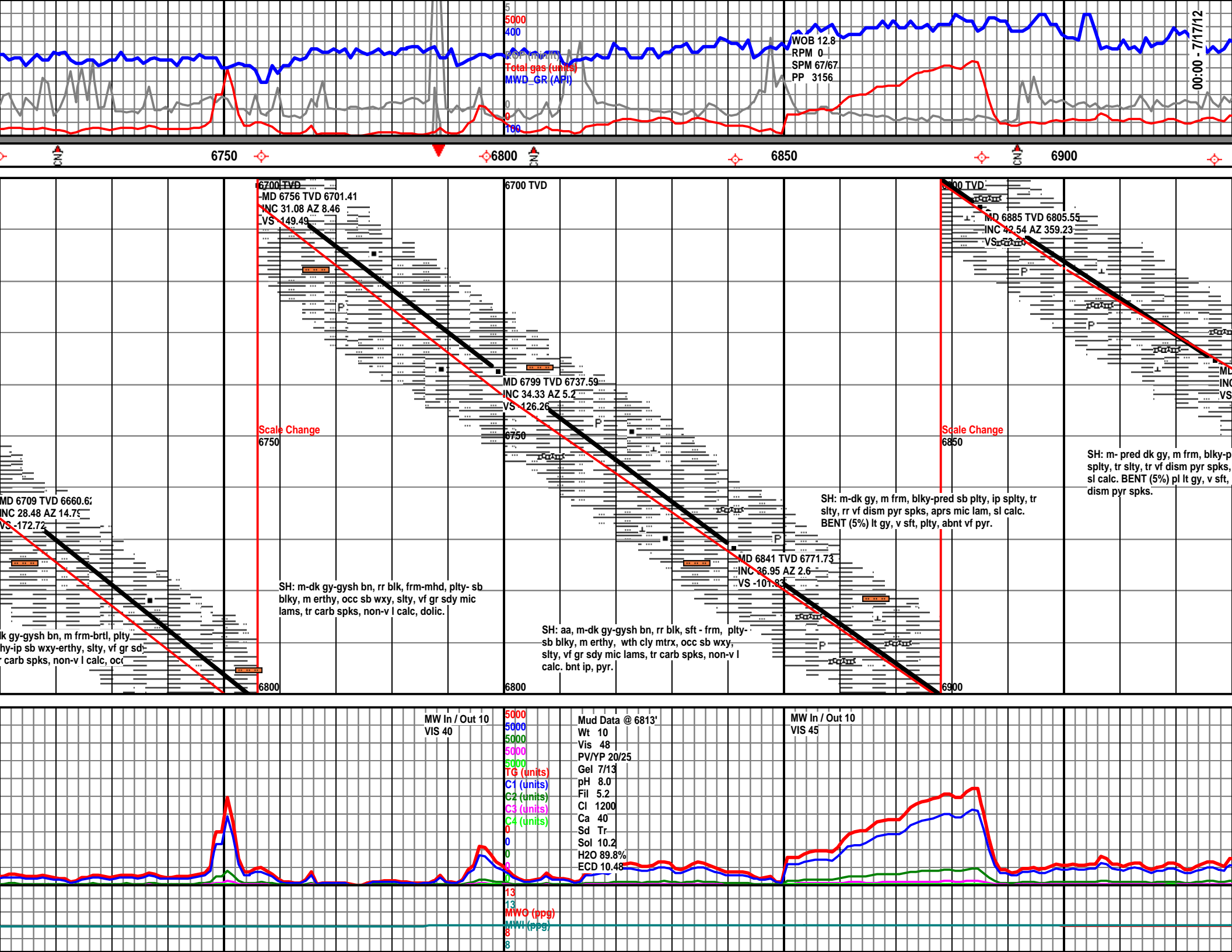
**EVENTS**

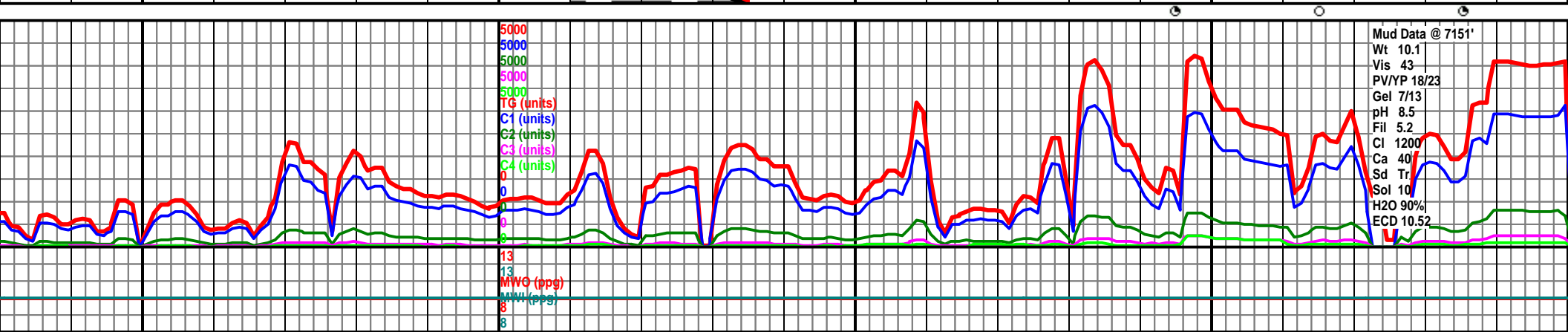
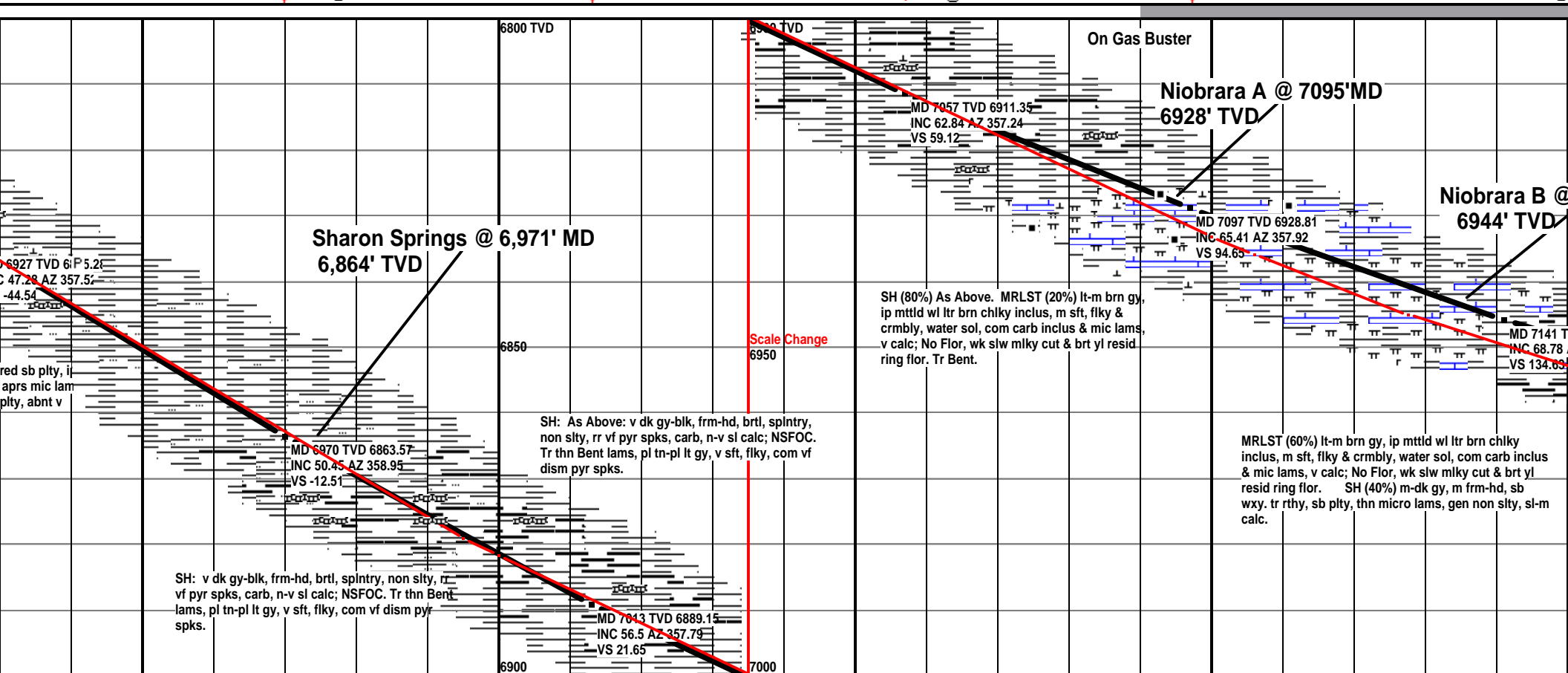
 Rft  
 Sidewall  
 Off bottom  
 conn

 Survey(red)  
 bit  
 casingrh  
 casingh



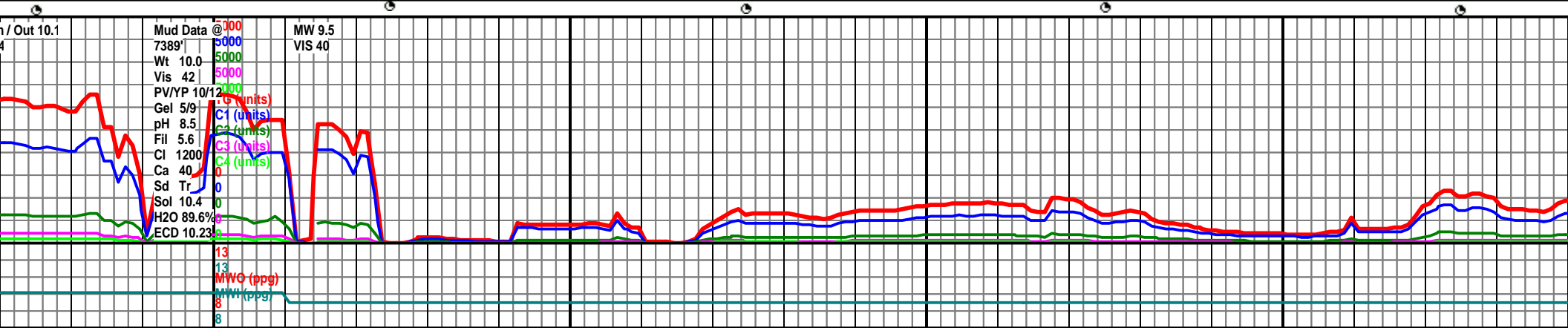
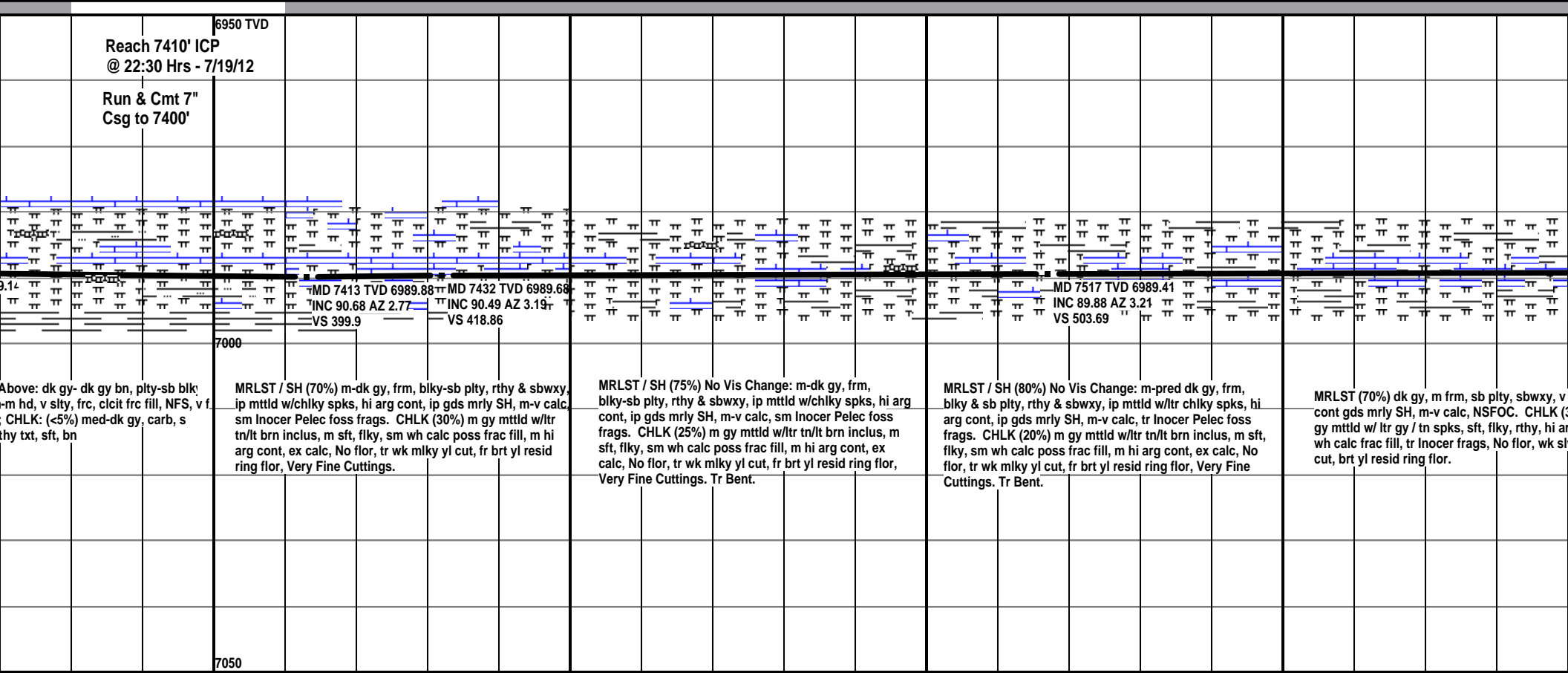
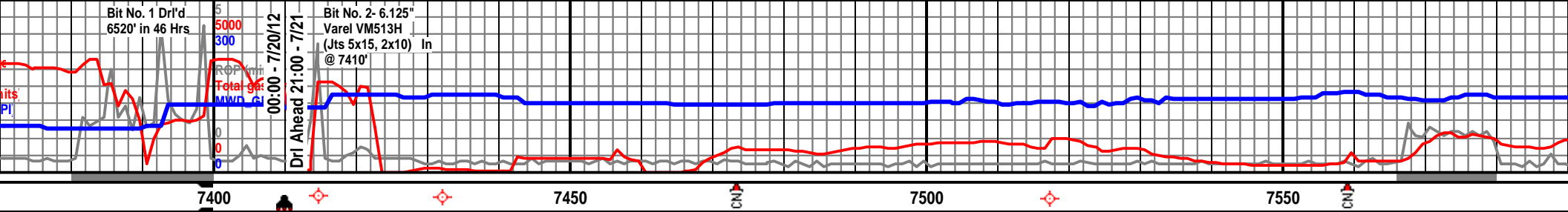


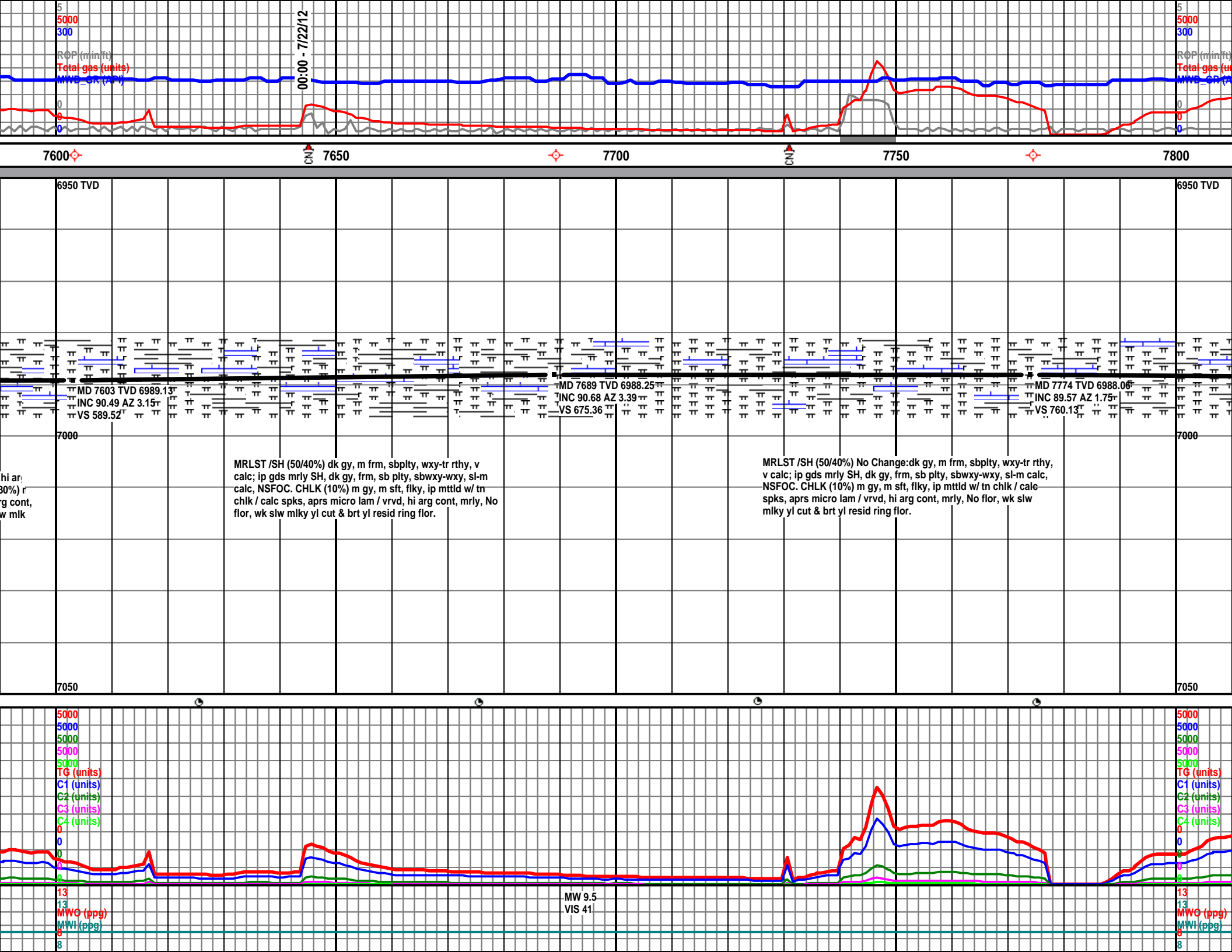


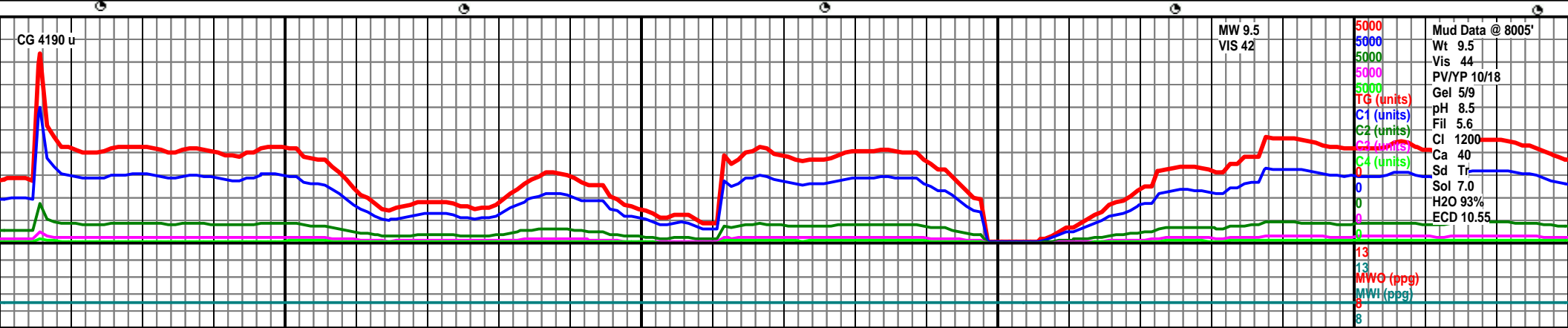
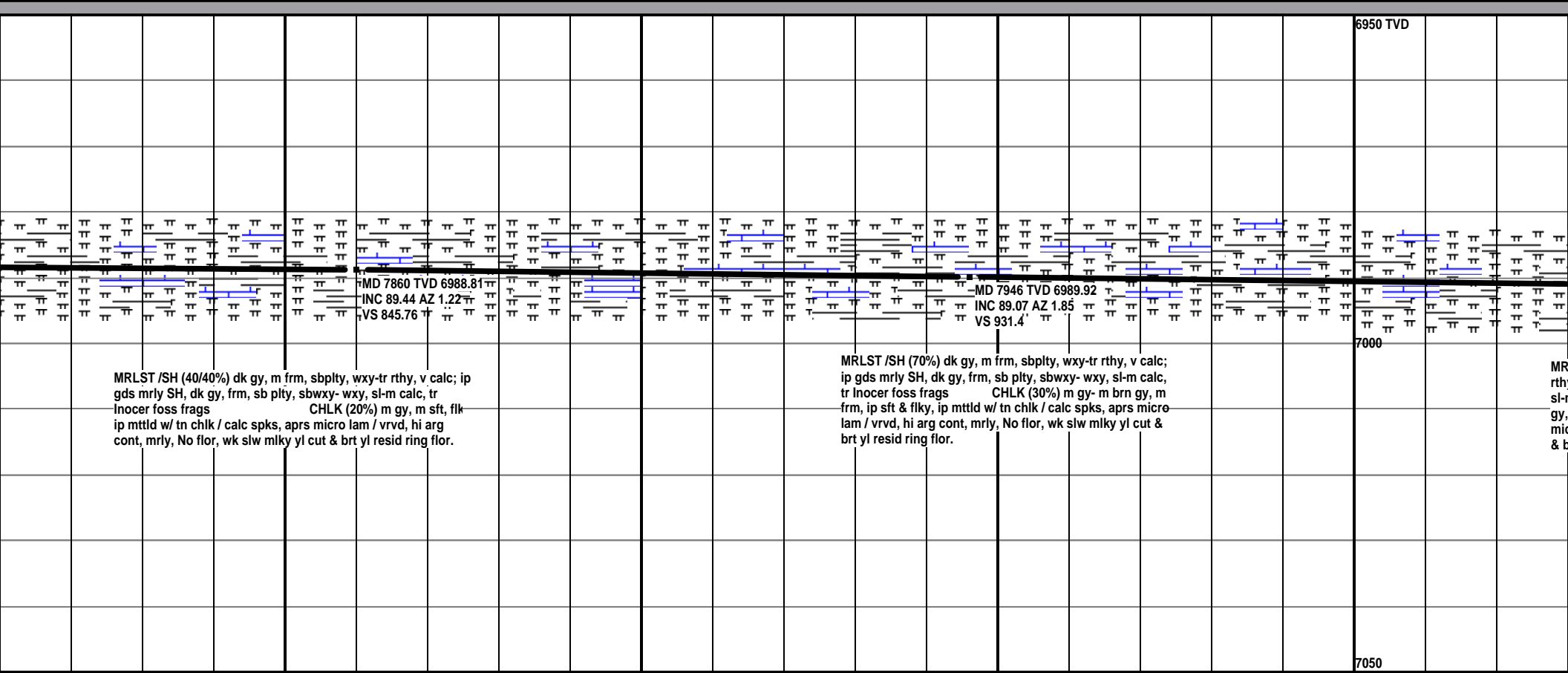
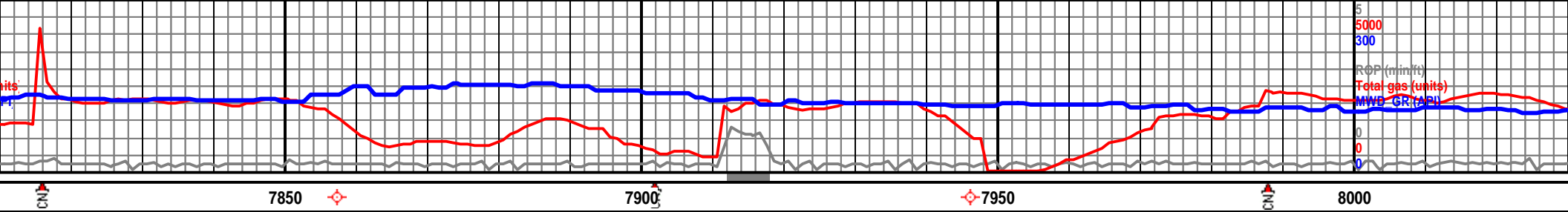


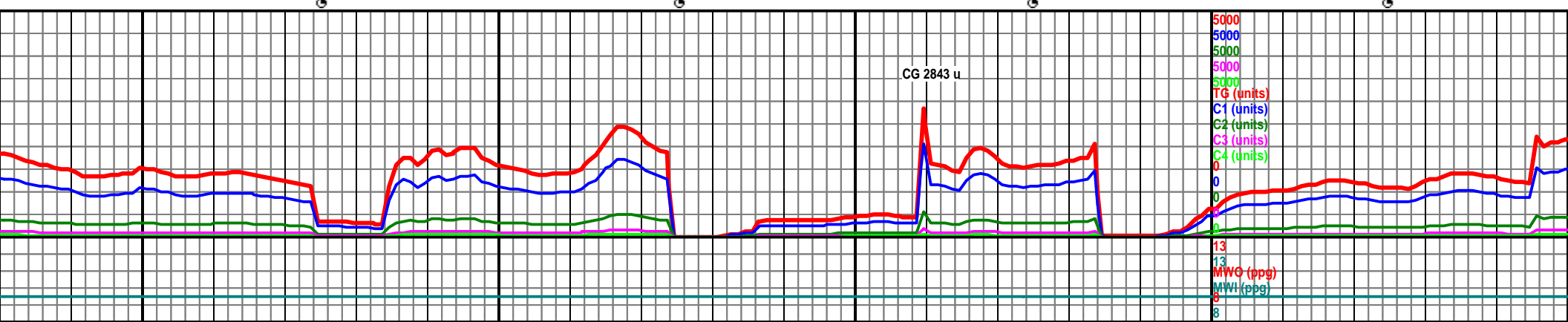
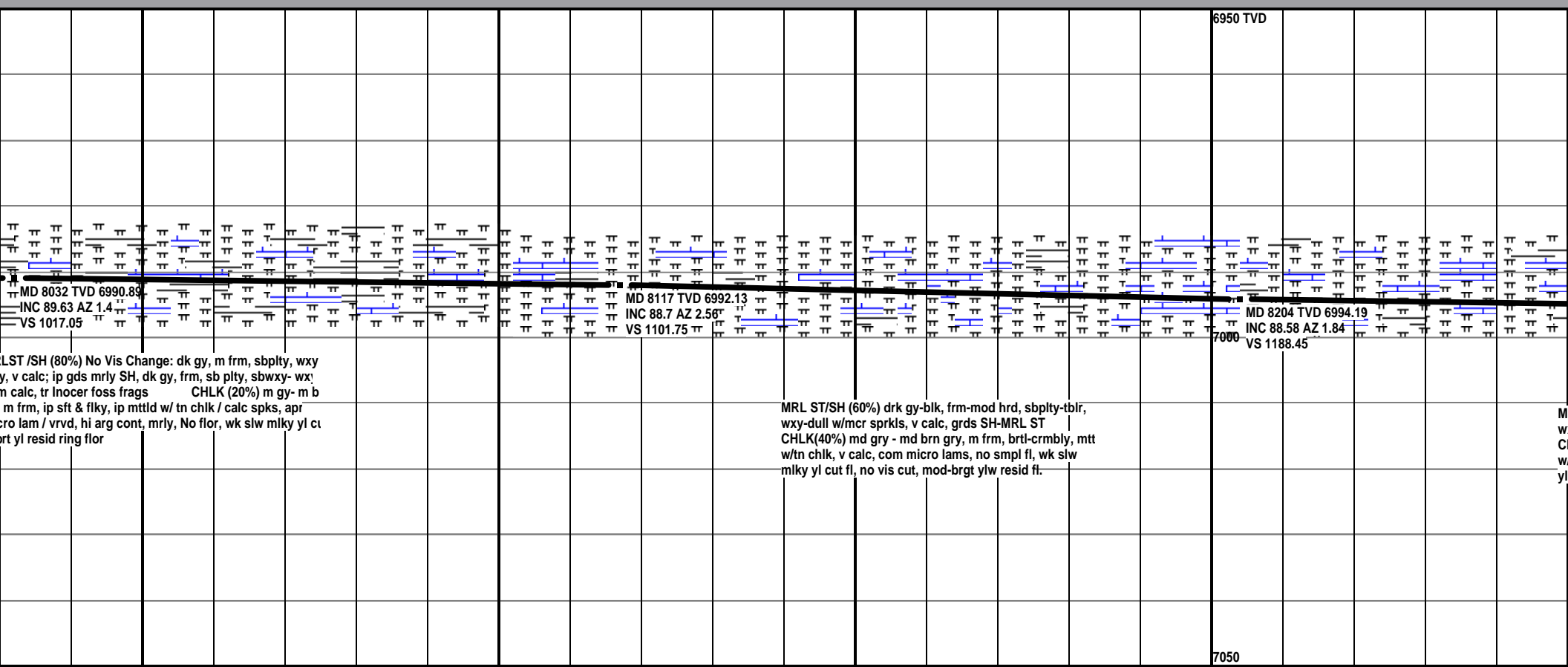
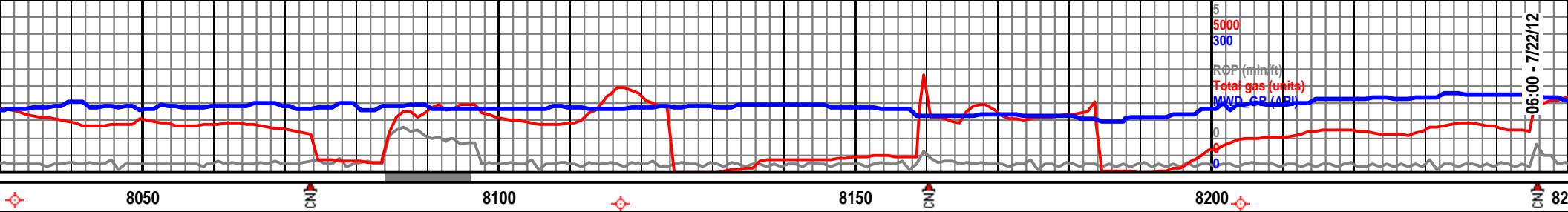


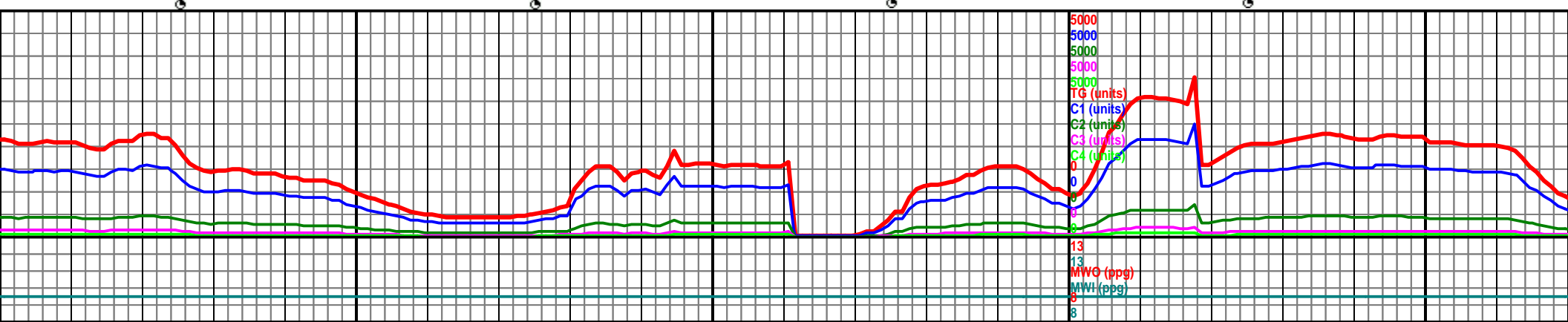
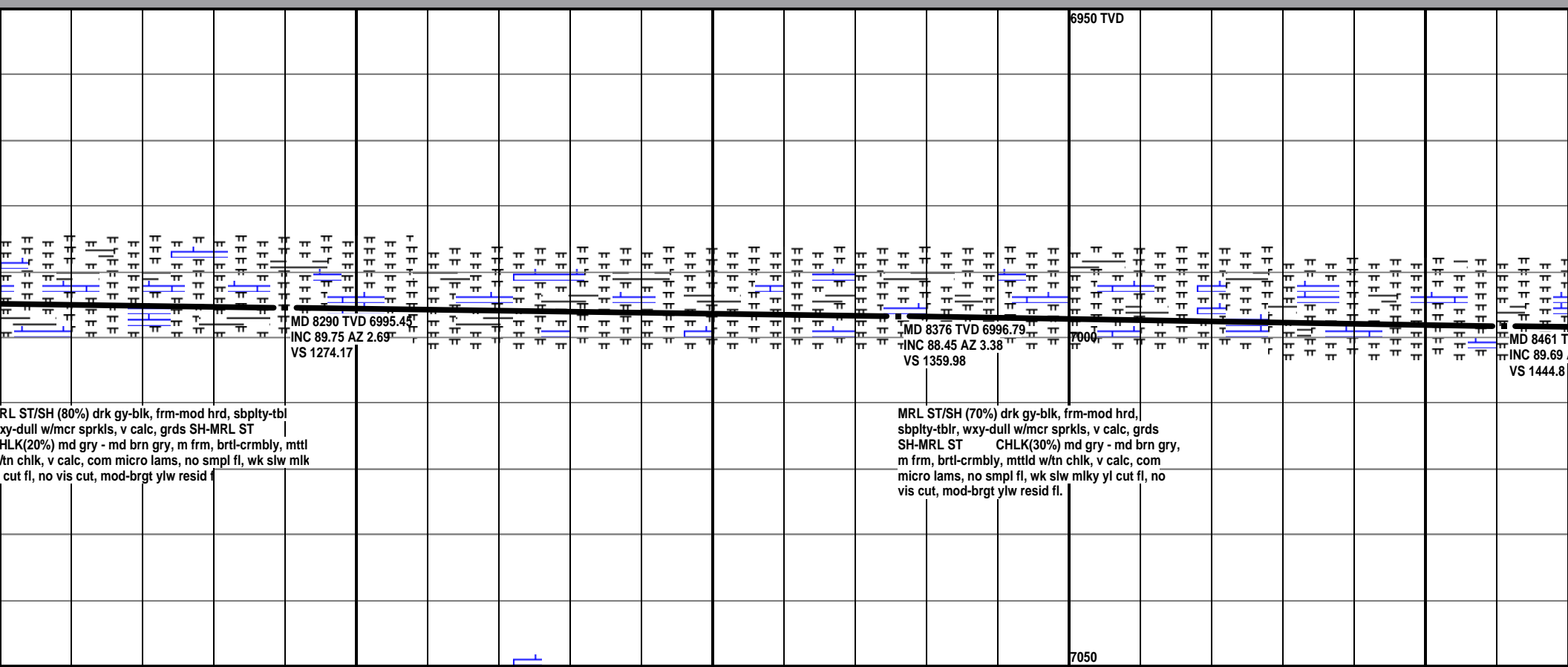
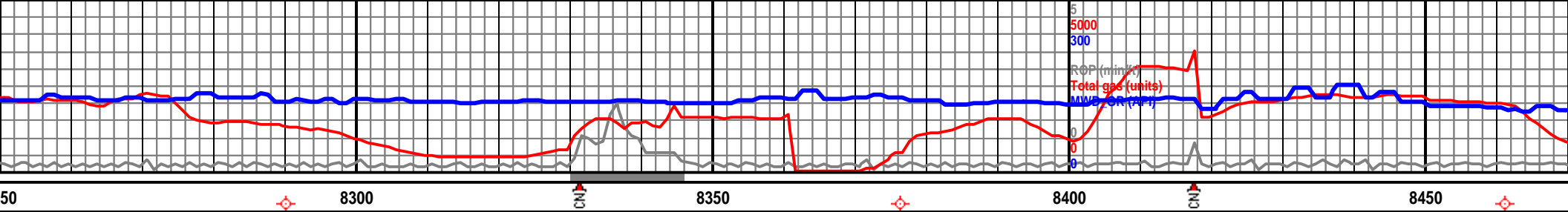


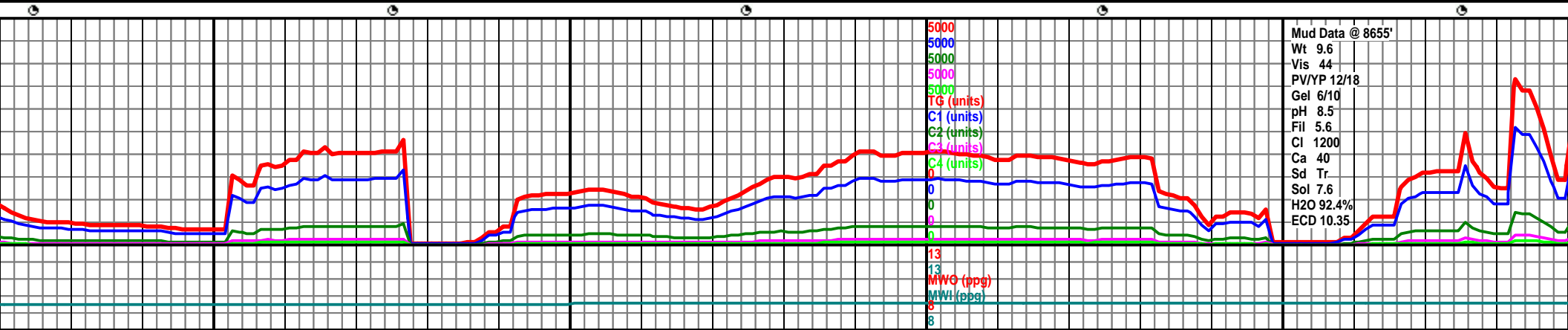
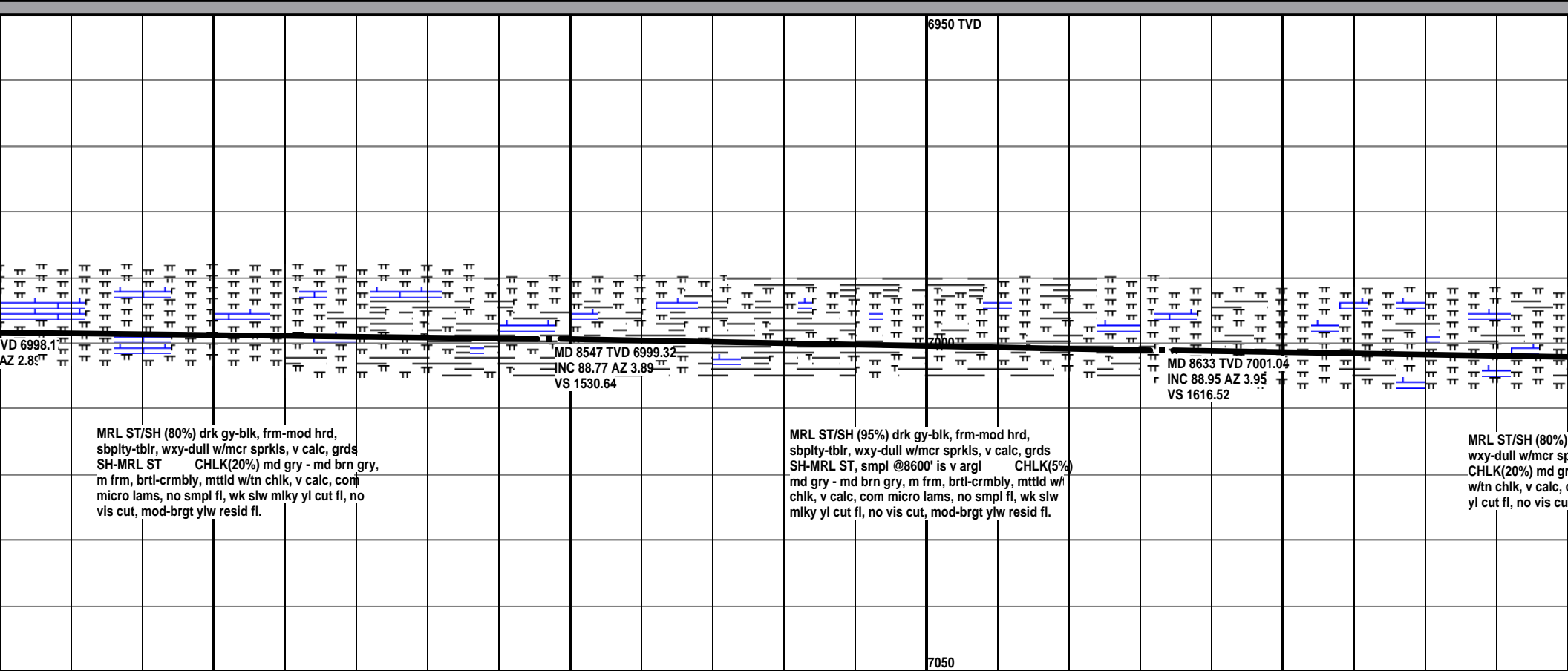


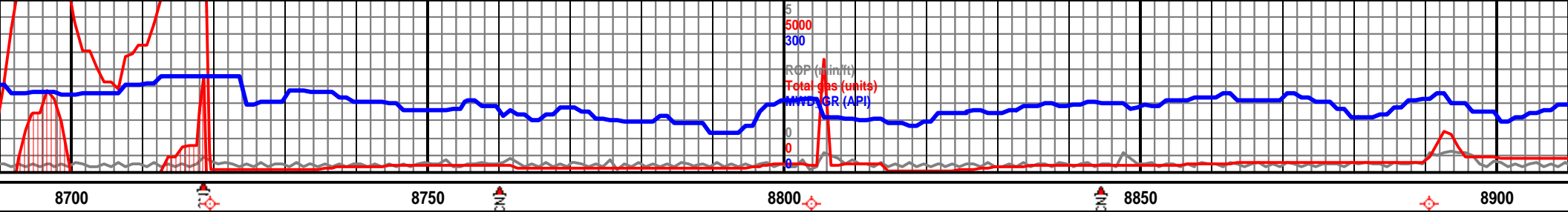




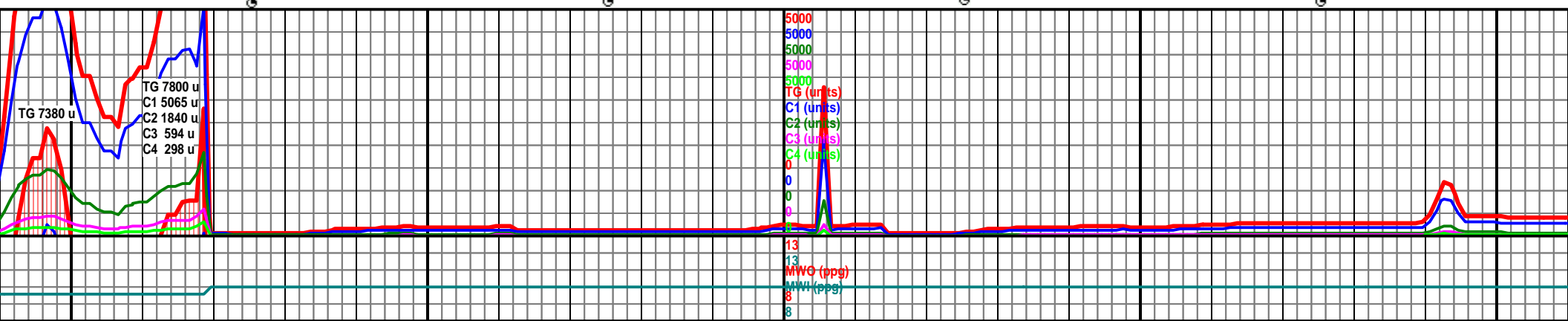
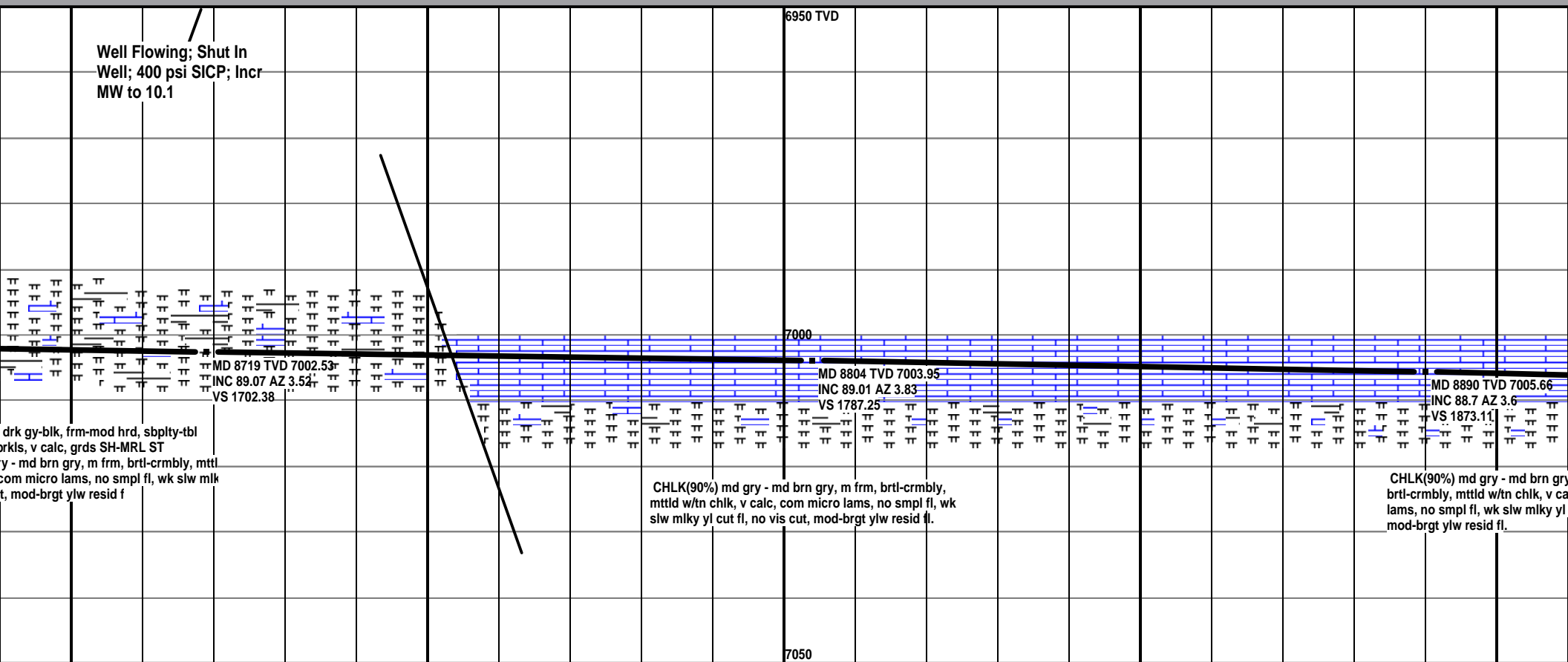


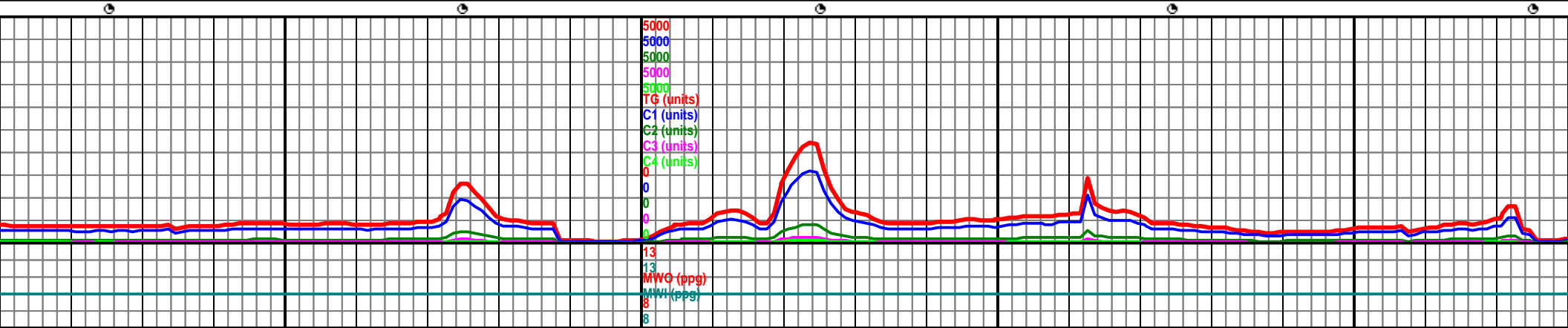
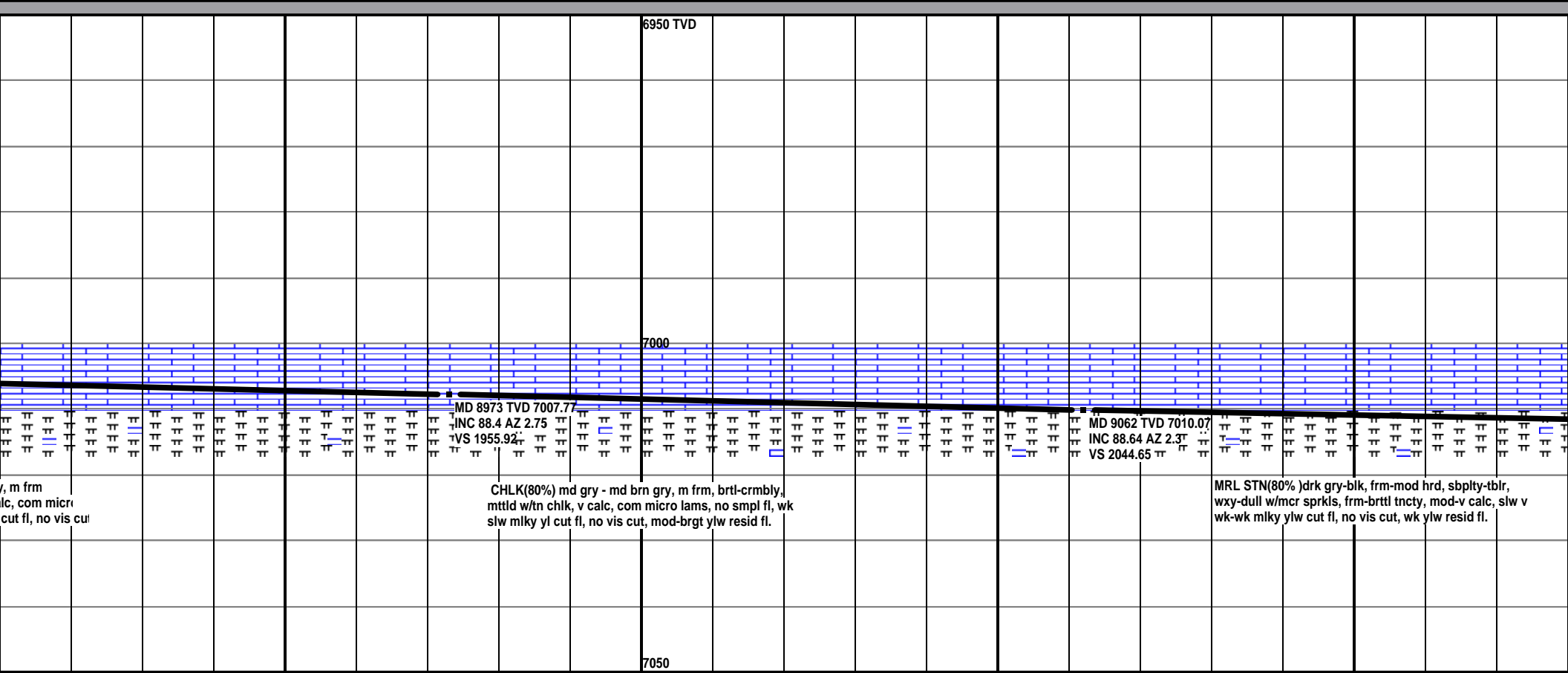
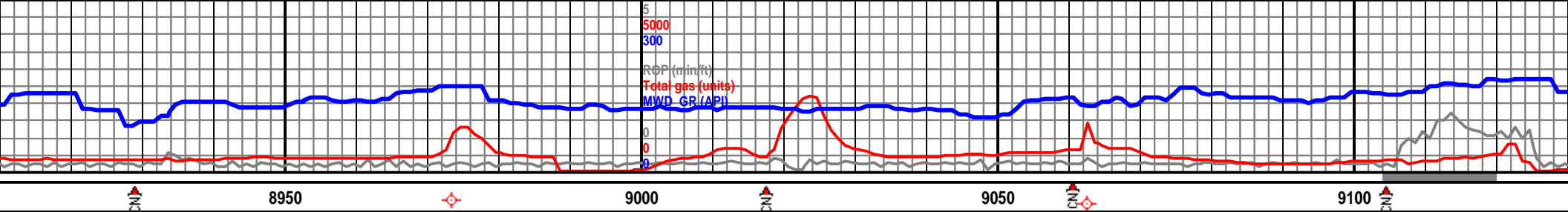




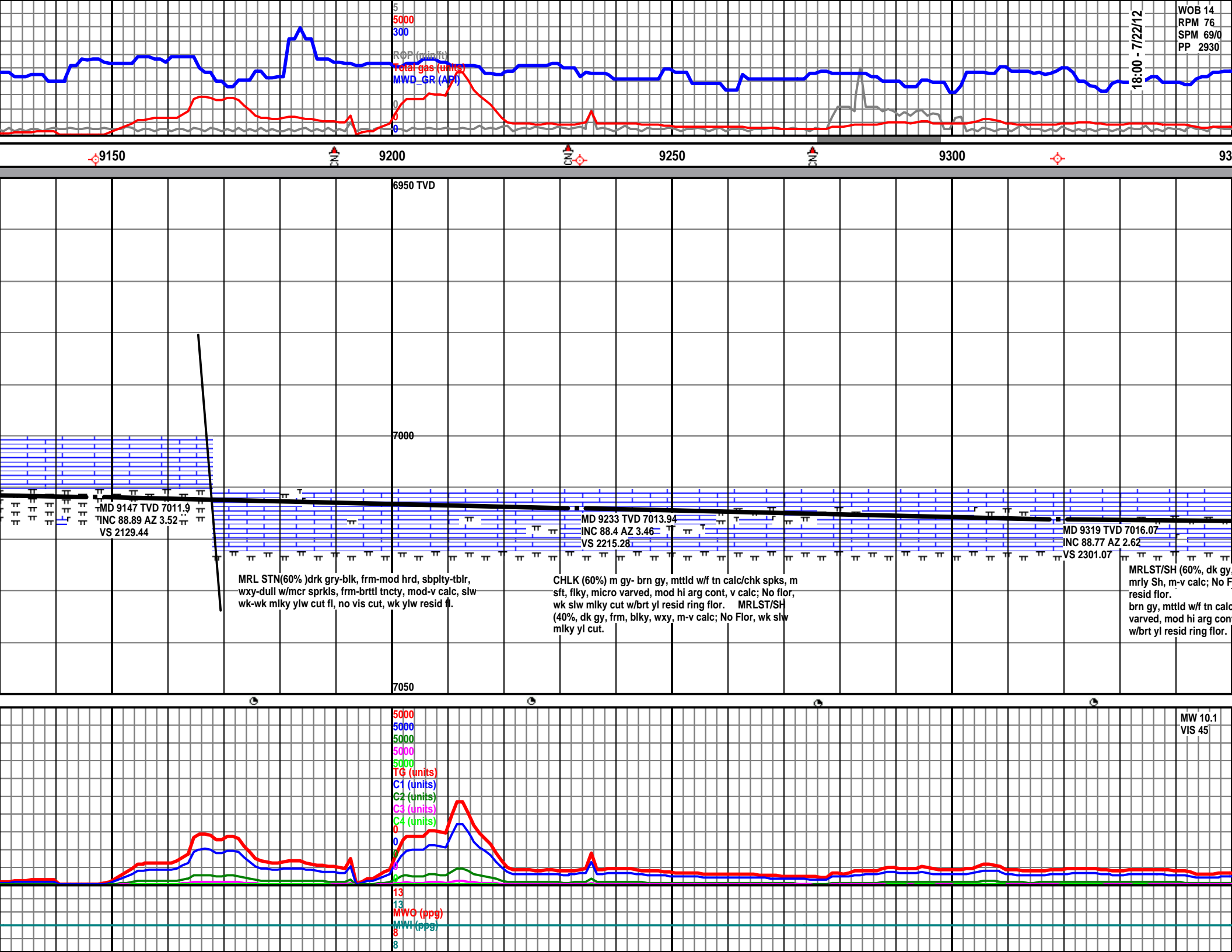


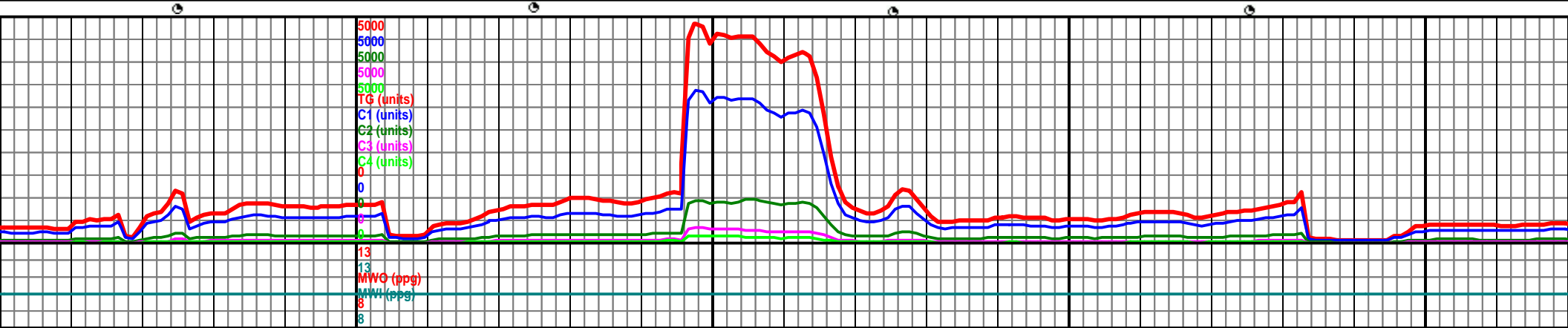
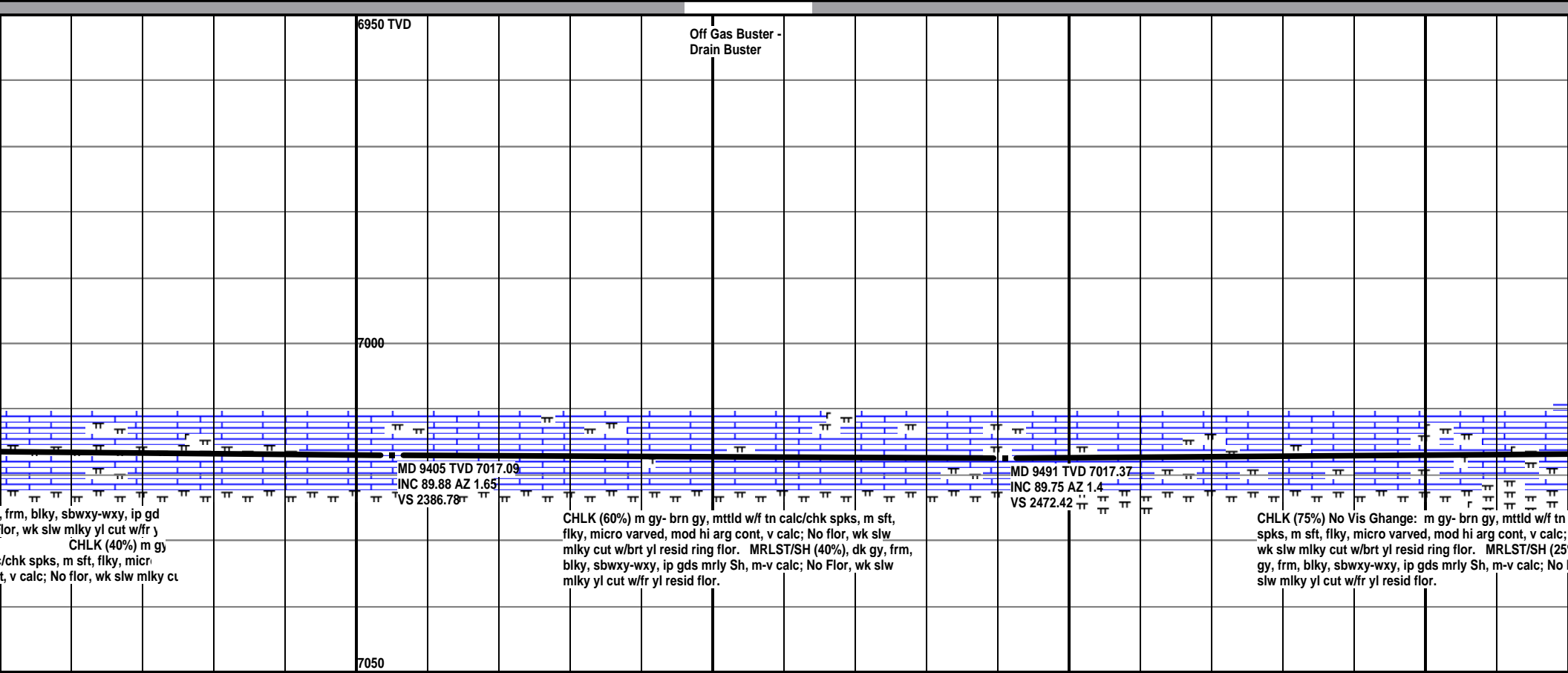
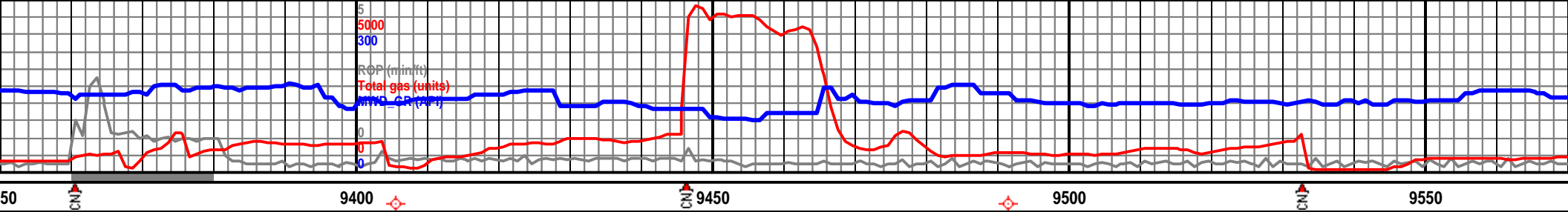
Well Flowing; Shut In  
Well; 400 psi SICP; Incr  
MW to 10.1

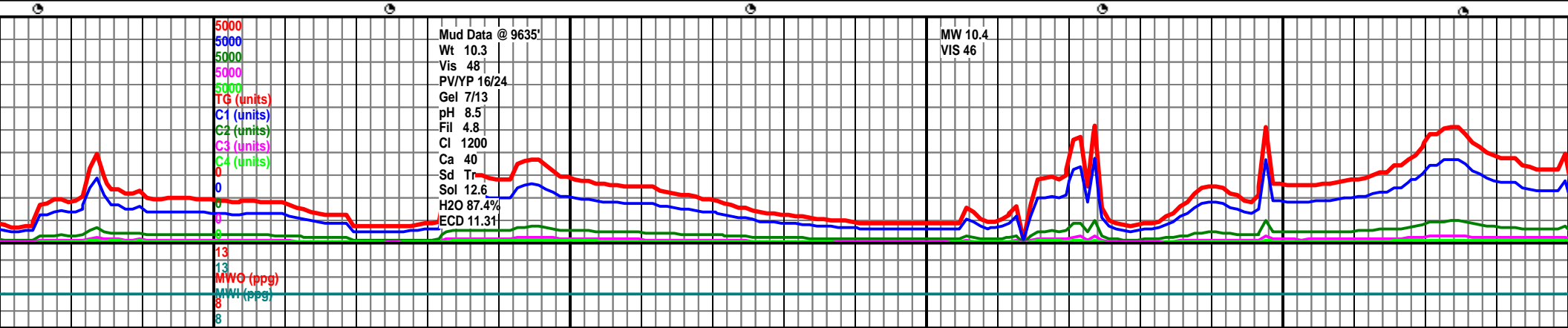
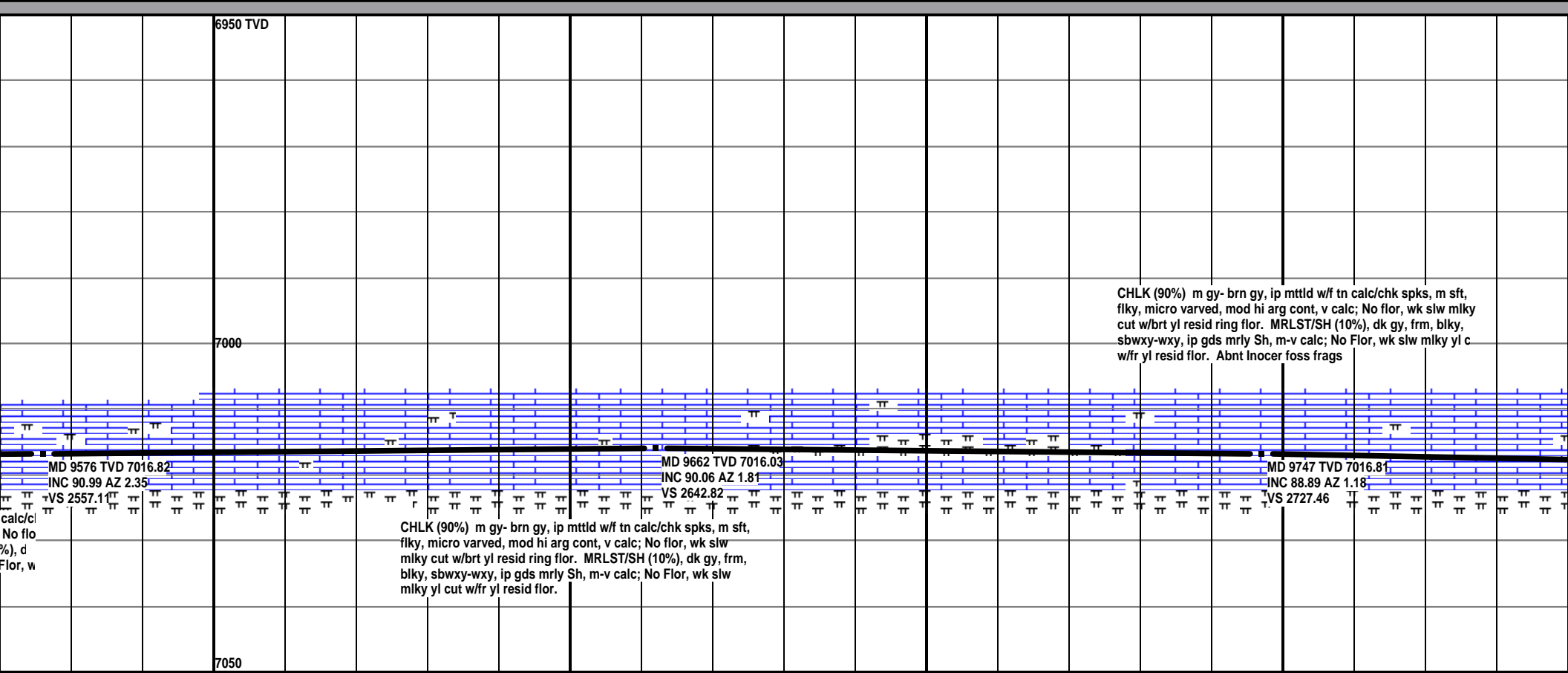
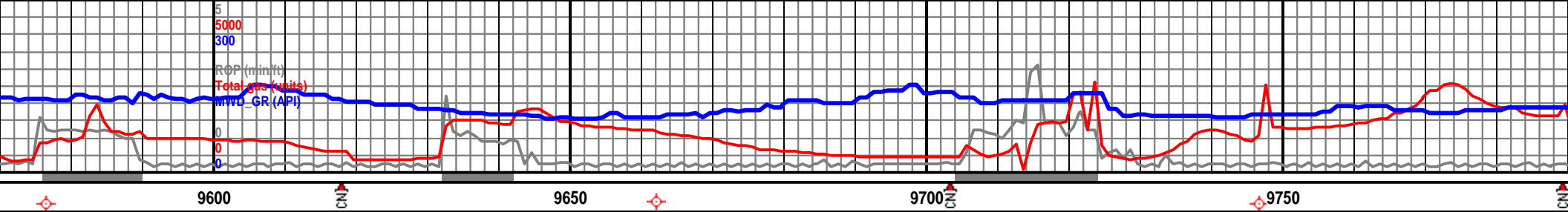


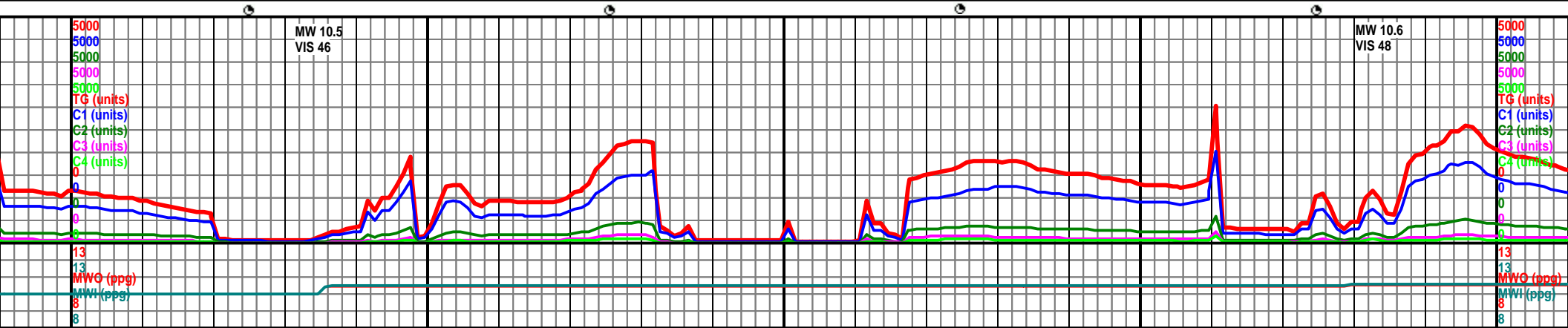
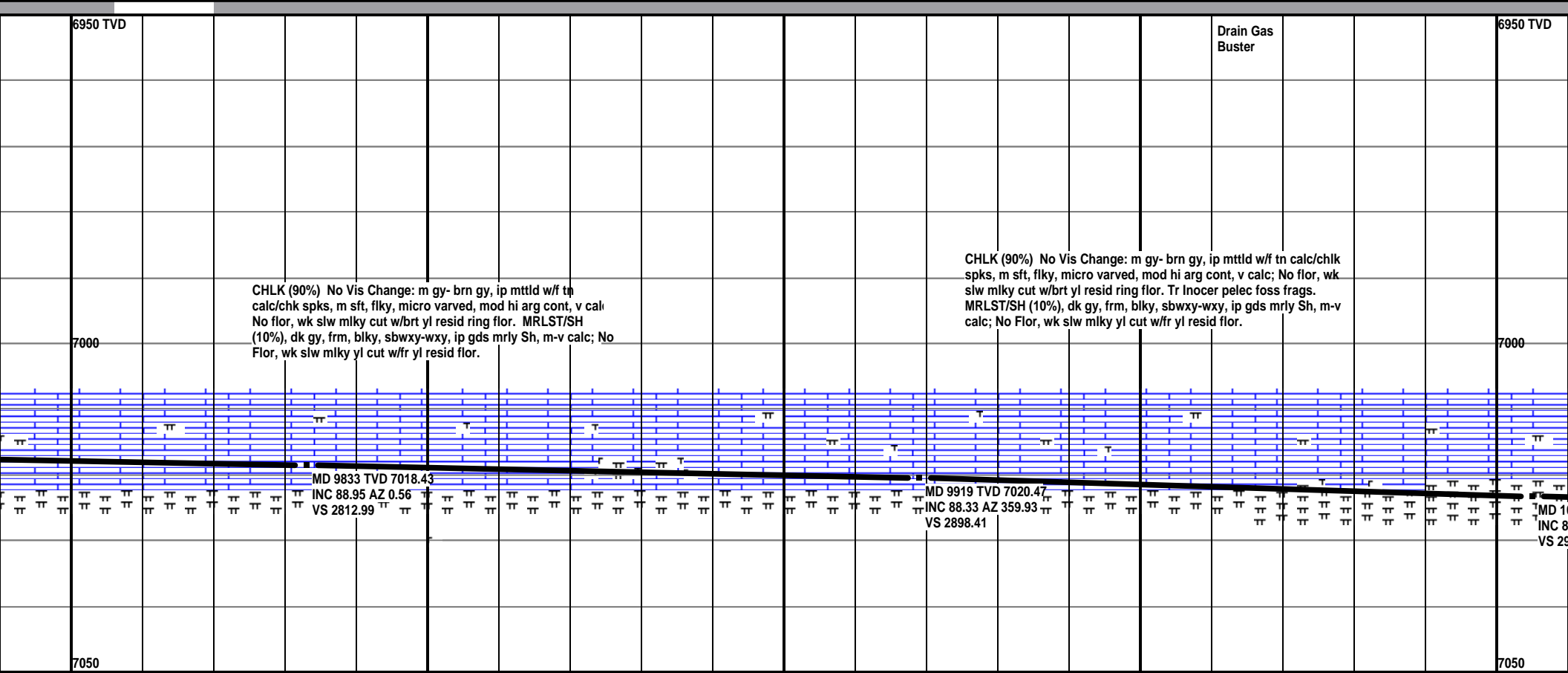
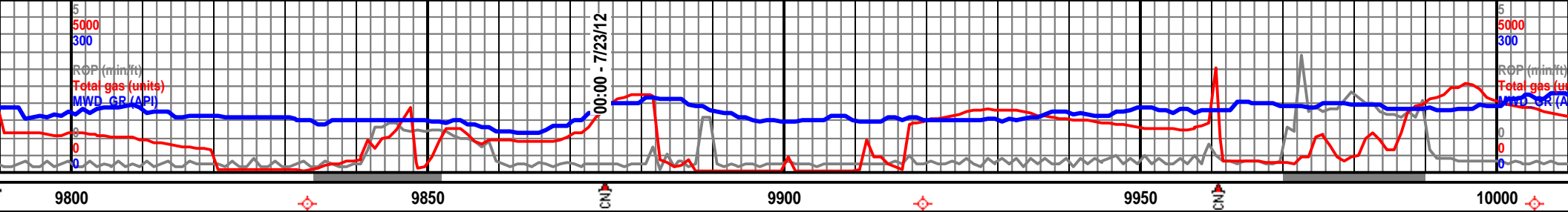


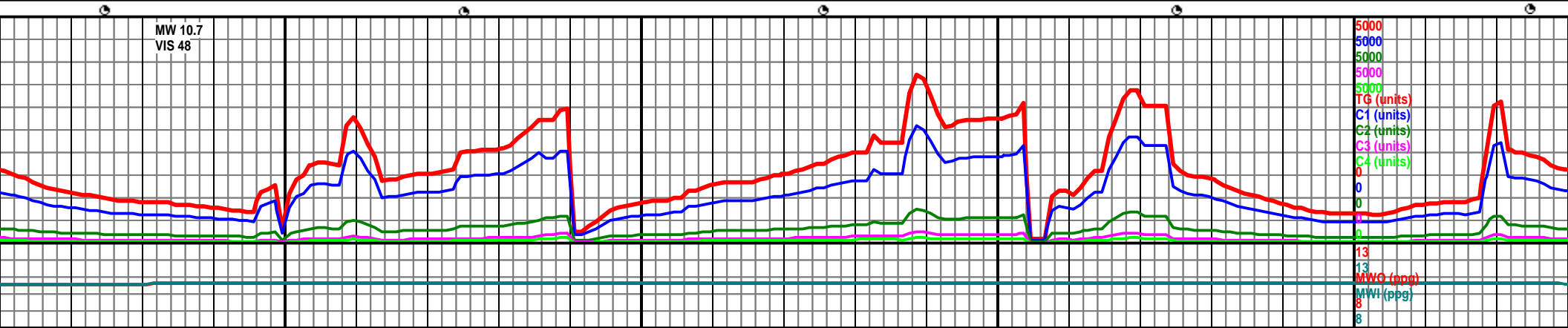
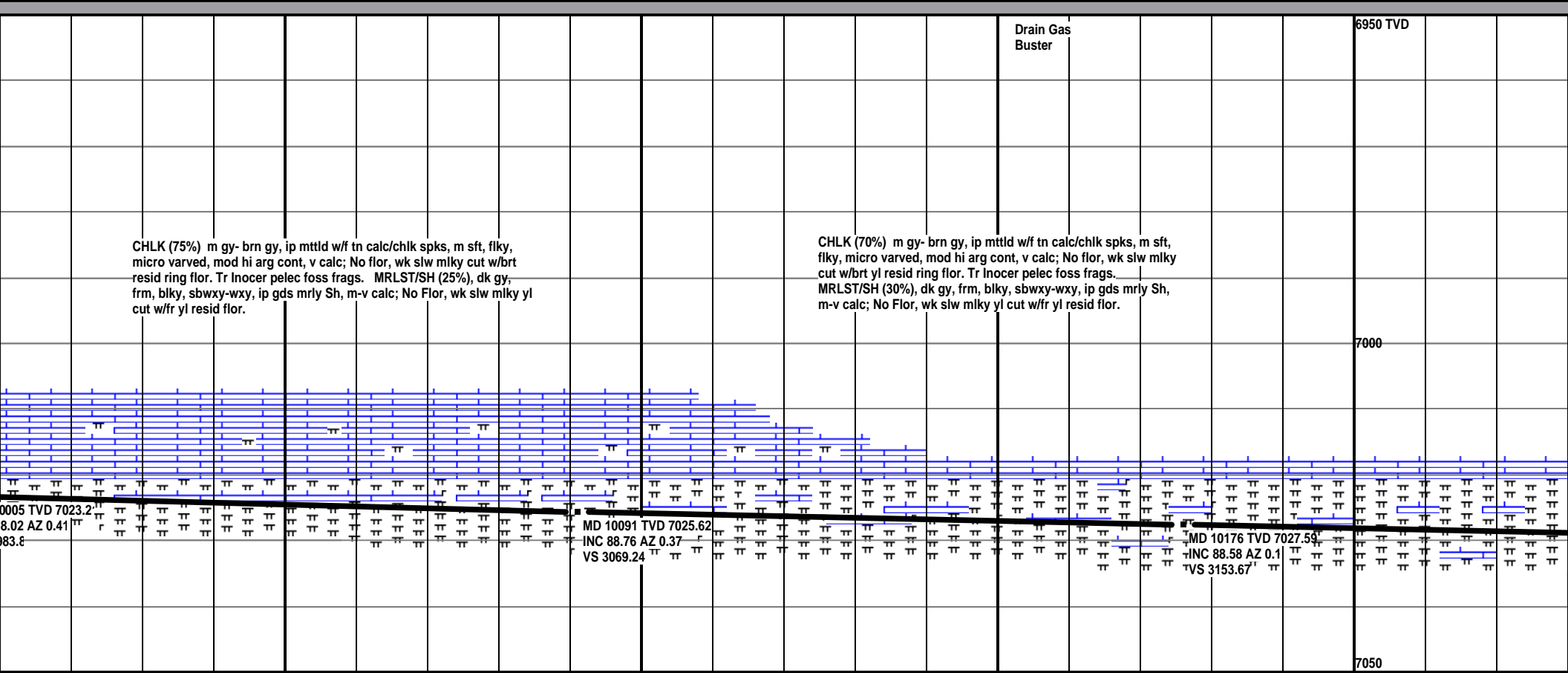
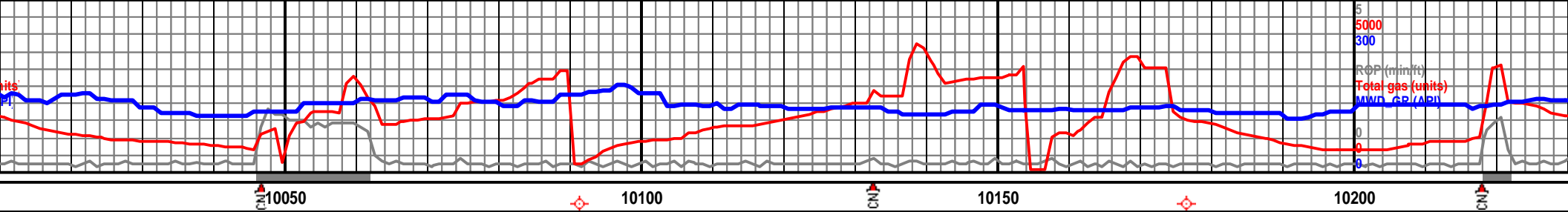


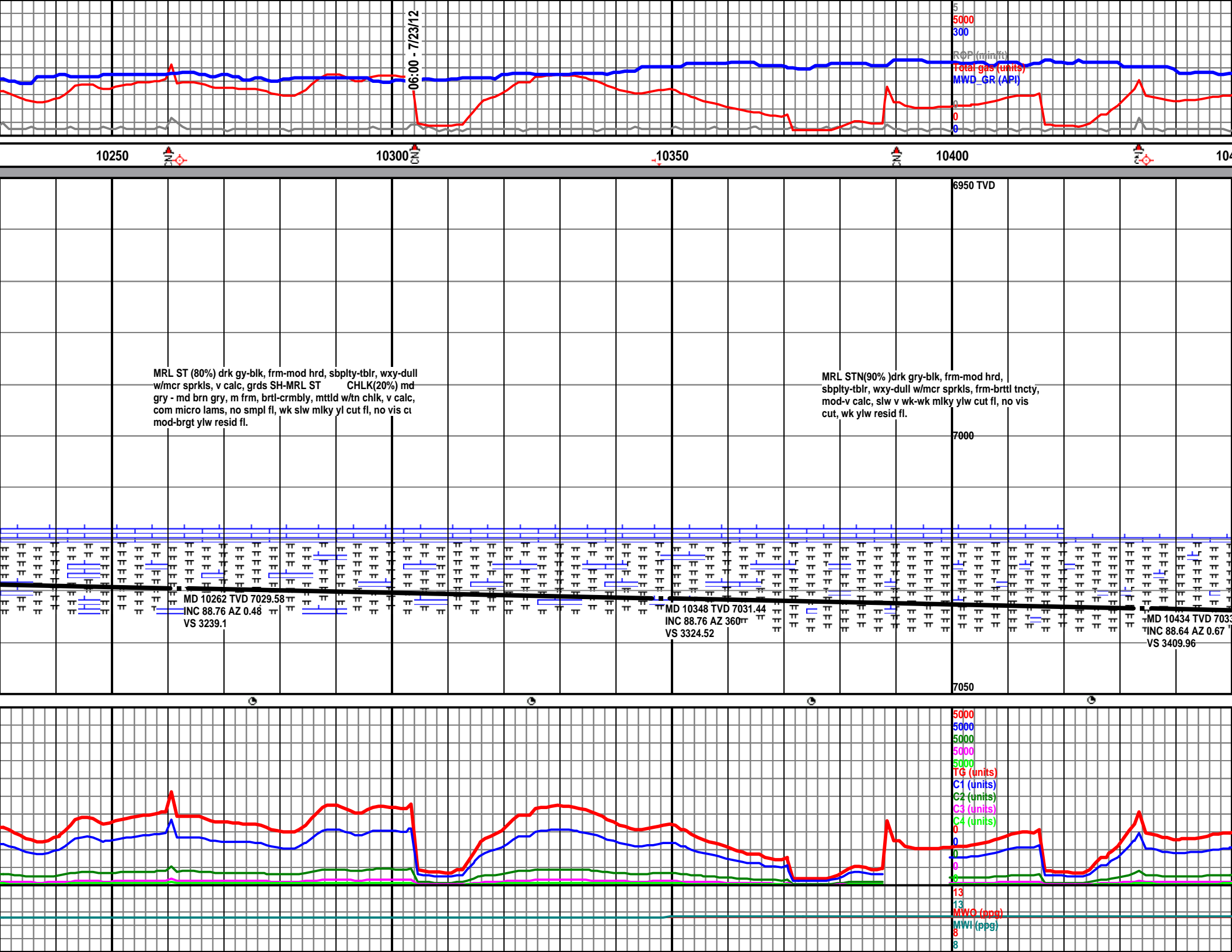


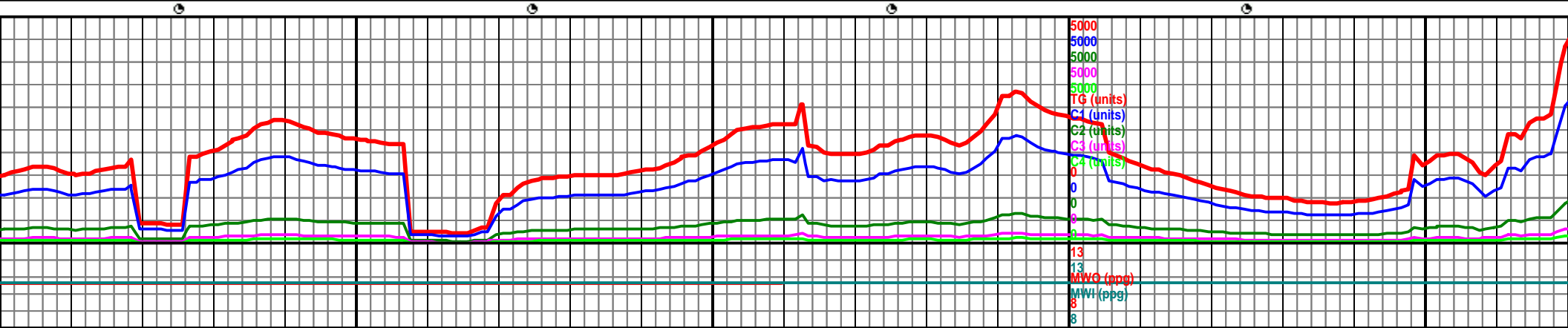
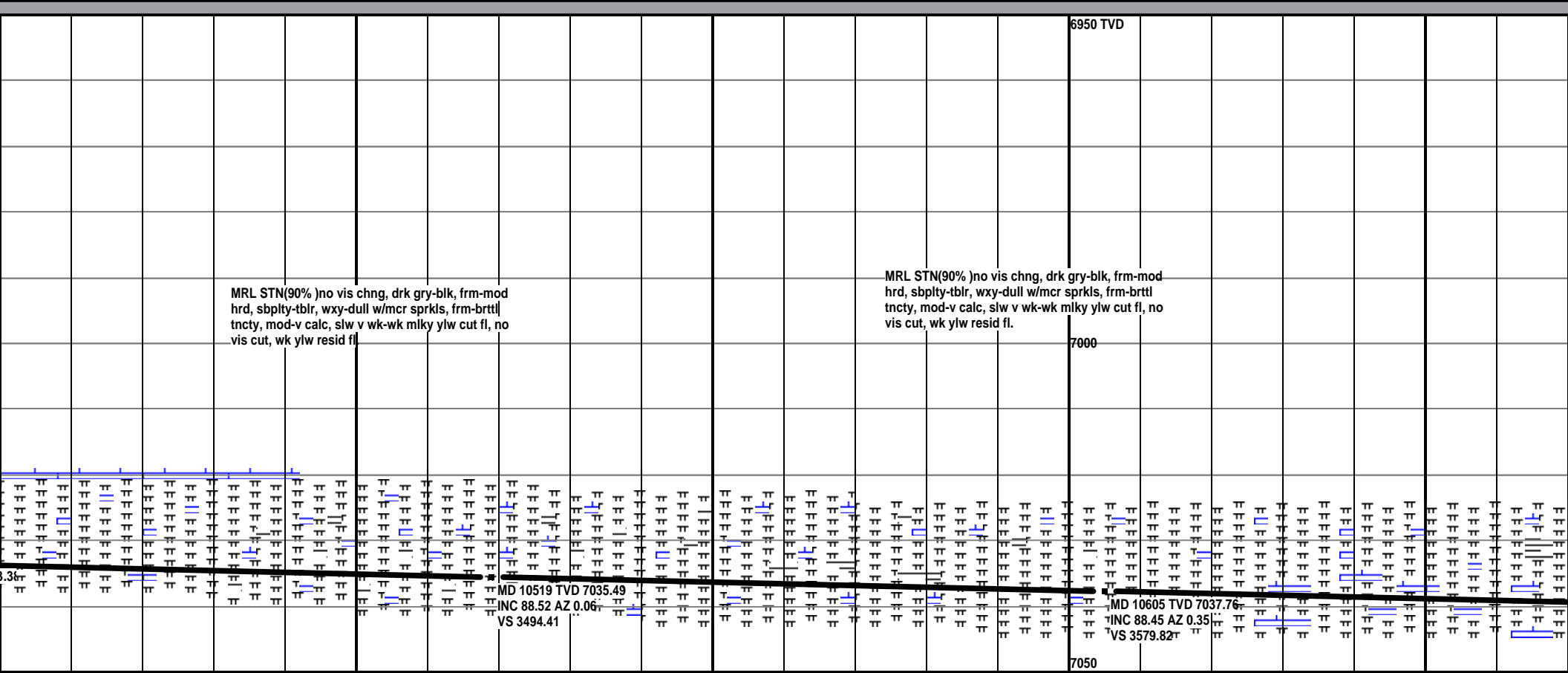
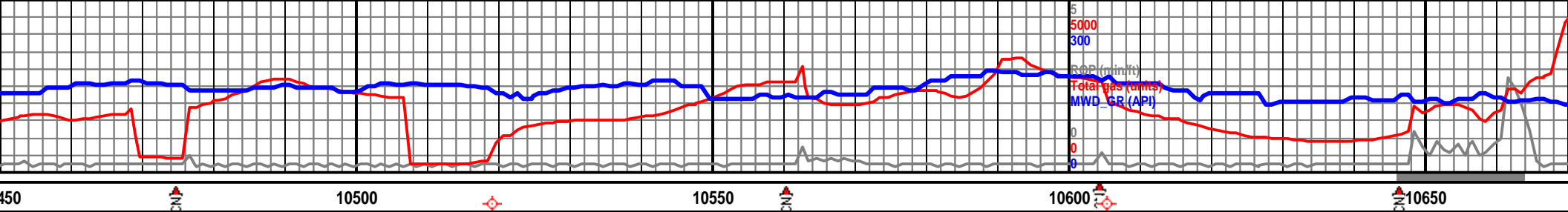


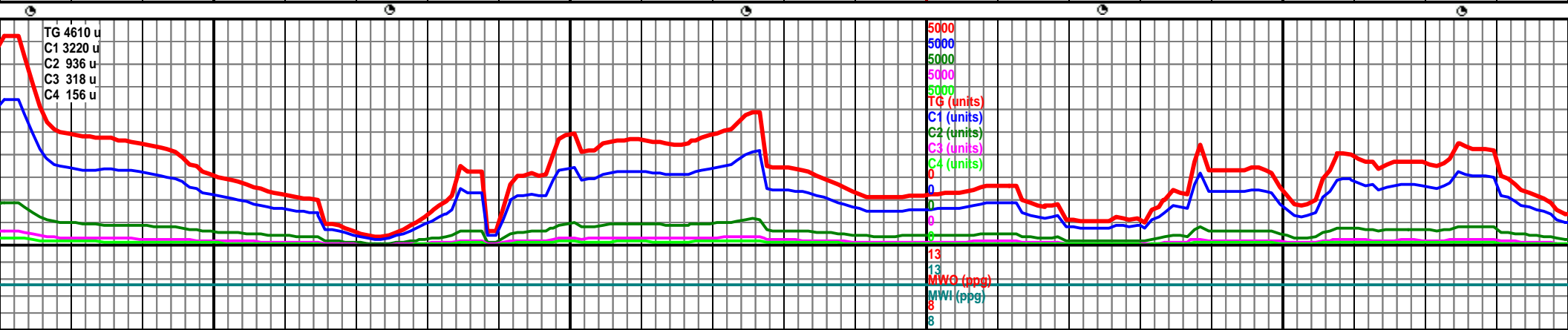
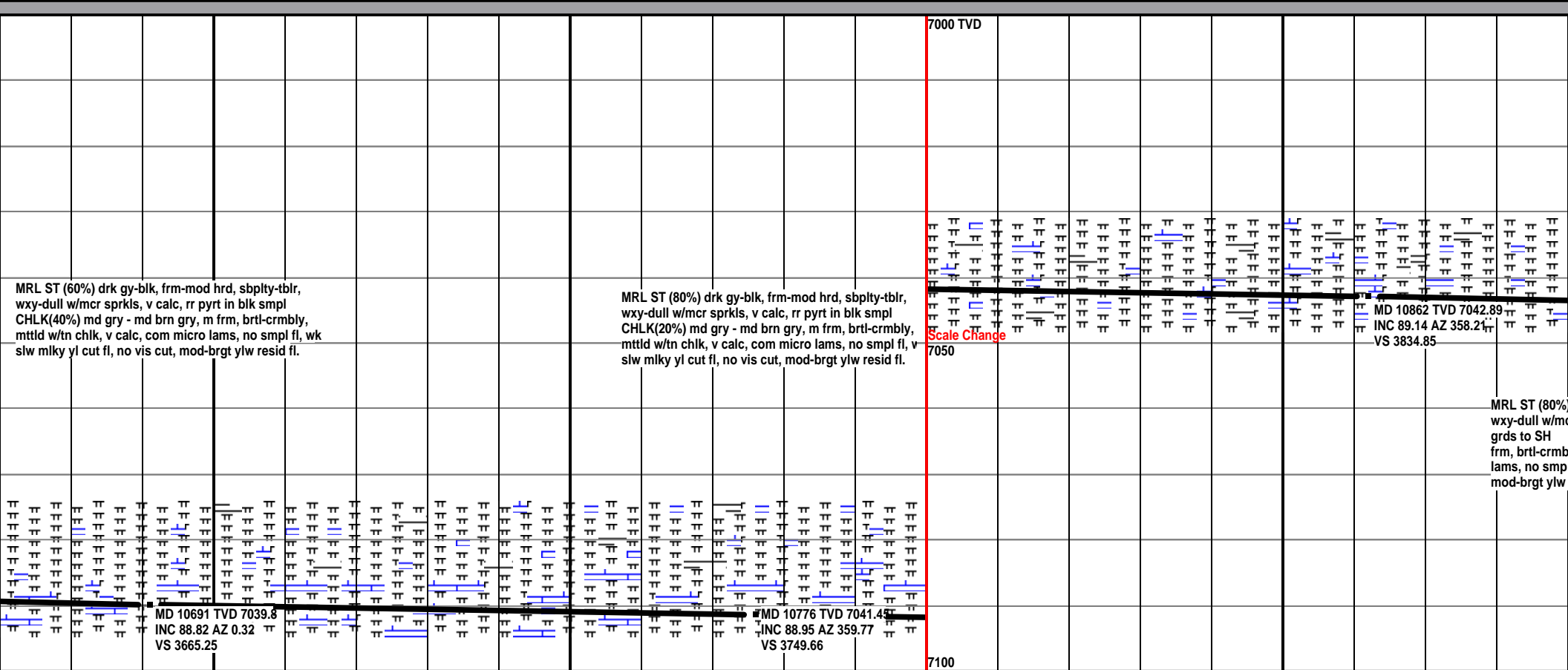
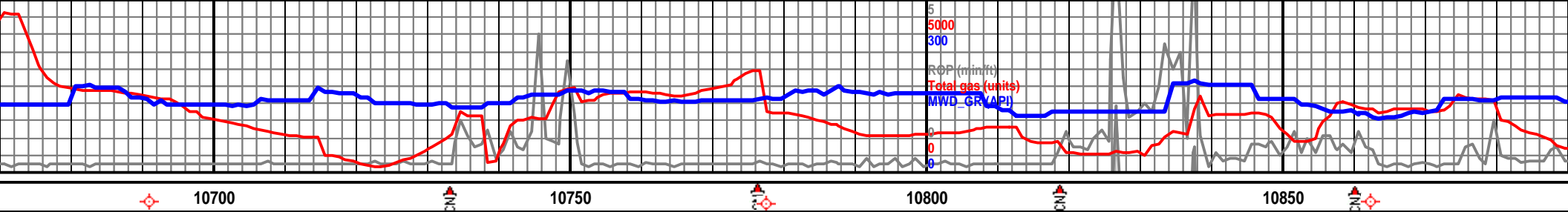




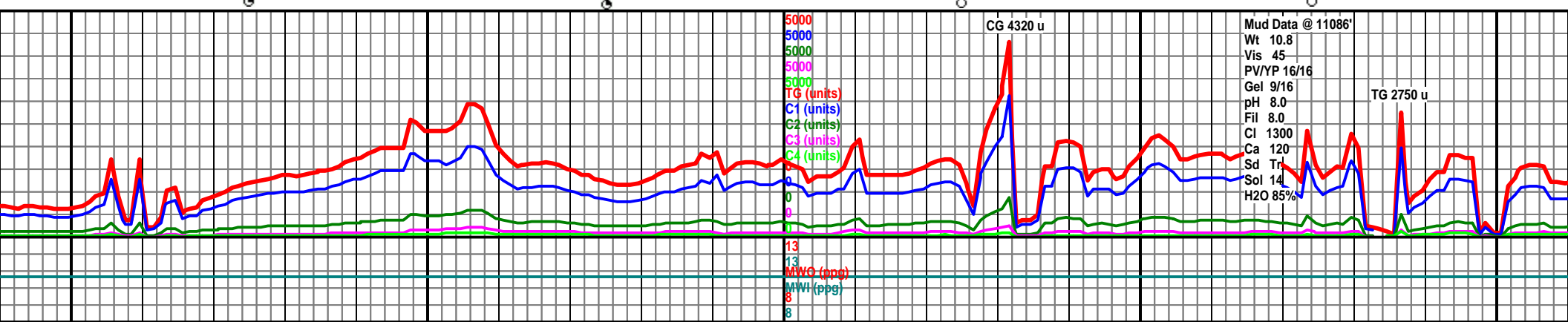
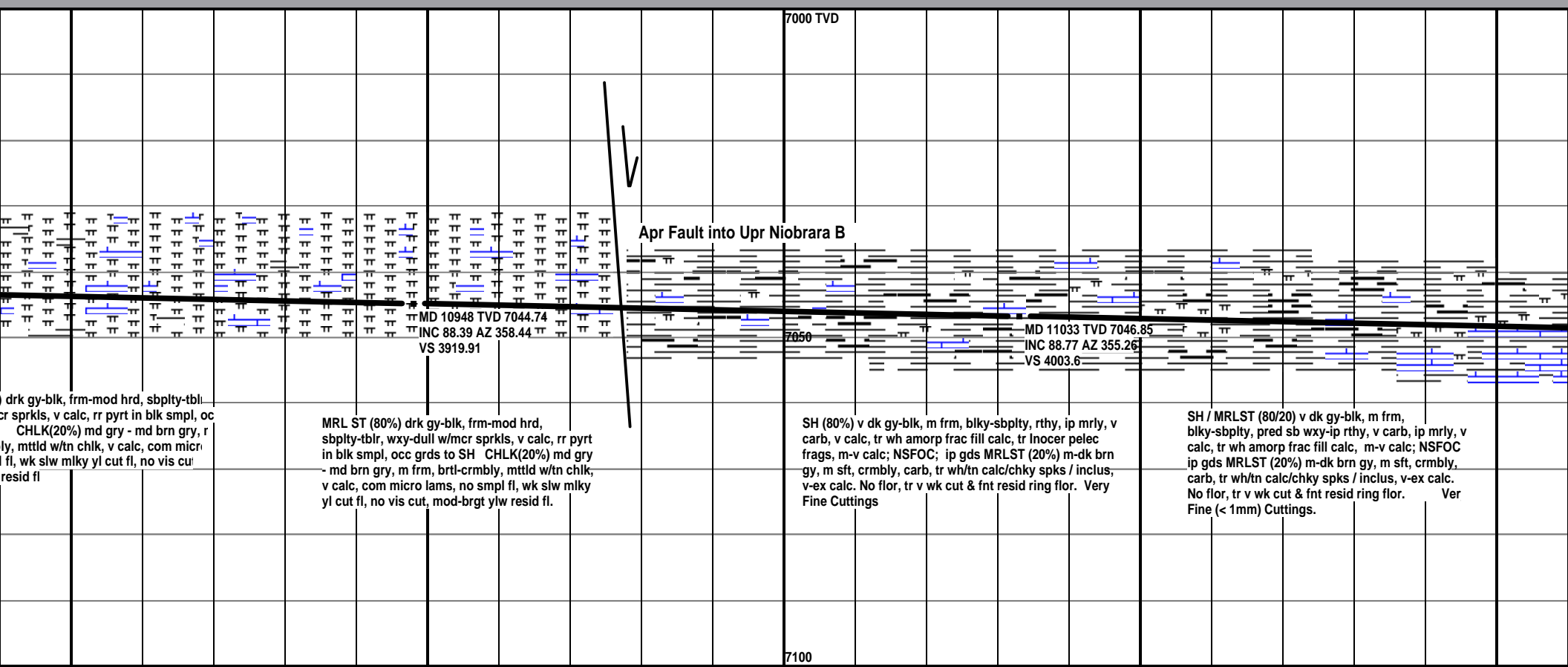
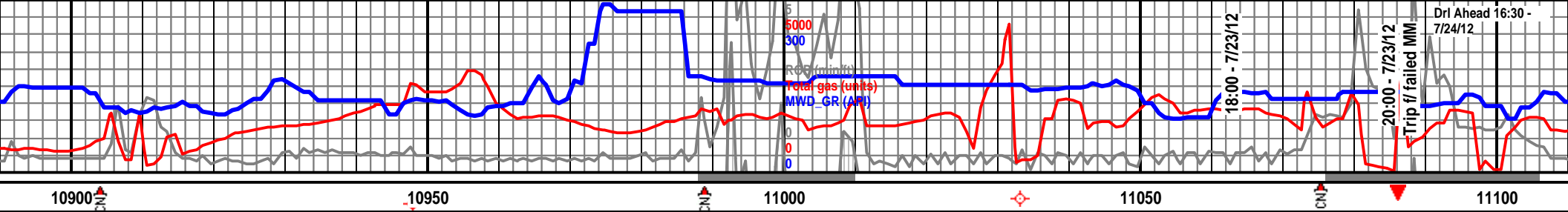












WOB 22  
RPM 76  
SPM 69/0  
PP 2590

ROP (min/ft)  
Total gas (units)  
MWD\_GR (API)

11150

11200

11250

11300

7000 TVD

MD 11120 TVD 7048.63  
INC 88.89 AZ 355.35  
VS 4088.86

MD 11206 TVD 7050.22  
INC 88.99 AZ 354.02  
VS 4172.94

MD 11292 TVD 7051.08  
INC 89.87 AZ 353.67  
VS 4256.76

SH / MRLST (75/25) v dk gy-blk, m frm, blkly-sbplty, pred sb wxy-ip rthy, v carb, ip mrlly, v calc, tr wh amorp frac fill calc, m-v calc; NSFOC; ip gds MRLST (25%) m-dk brn gy, m sft, crmbly, carb, tr wh/tn calc/chky spks / inclus, v-ex calc. No flor, tr v wk cut & fnt resid ring flor. Very Fine (0.5-1mm) Cuttings.

MRLST / SH (60%) v dk gy-blk, m frm, blkly-sbplty, pred sb wxy-ip rthy, v carb, ip mrlly, v calc, tr wh amorp frac fill calc, m-v calc; NSFOC; sl incr MRLST (30%) m-dk brn gy, m sft, crmbly, carb, tr wh/tn calc/chky spks / inclus & thn CHLK lams, v-ex calc; Tr Inocer foss frags; No flor, tr v wk cut & fnt resid ring flor. CHLK (40%) m brn gy, sft-m frm, flky, blkly, rthy, v hi arg cont, mrlly, ip spkld w/tr brn/tn calc/chlk inclus; wk mlky cut & lt yl resid ring flor.

SH / MRLST (100%) : v dk gy-blk, m frm, blkly-sbplty, pred sb wxy-ip rthy, ip mrlly, m-v calc, tr wh amorp calc; NSFOC; Tr Inocer foss frags; No flor, tr v wk cut & fnt resid ring flor. CHLK (Tr) m brn gy, sft-m frm, flky, blkly, rthy, v hi arg cont, mrlly, ip spkld w/tr brn/tn calc/chlk inclus; wk mlky cut & lt yl resid ring flor.

B Shale

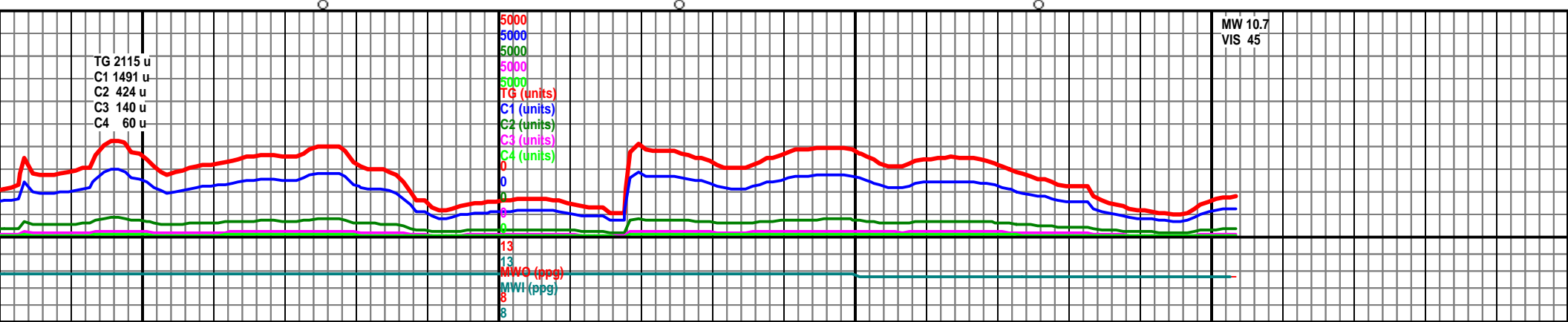
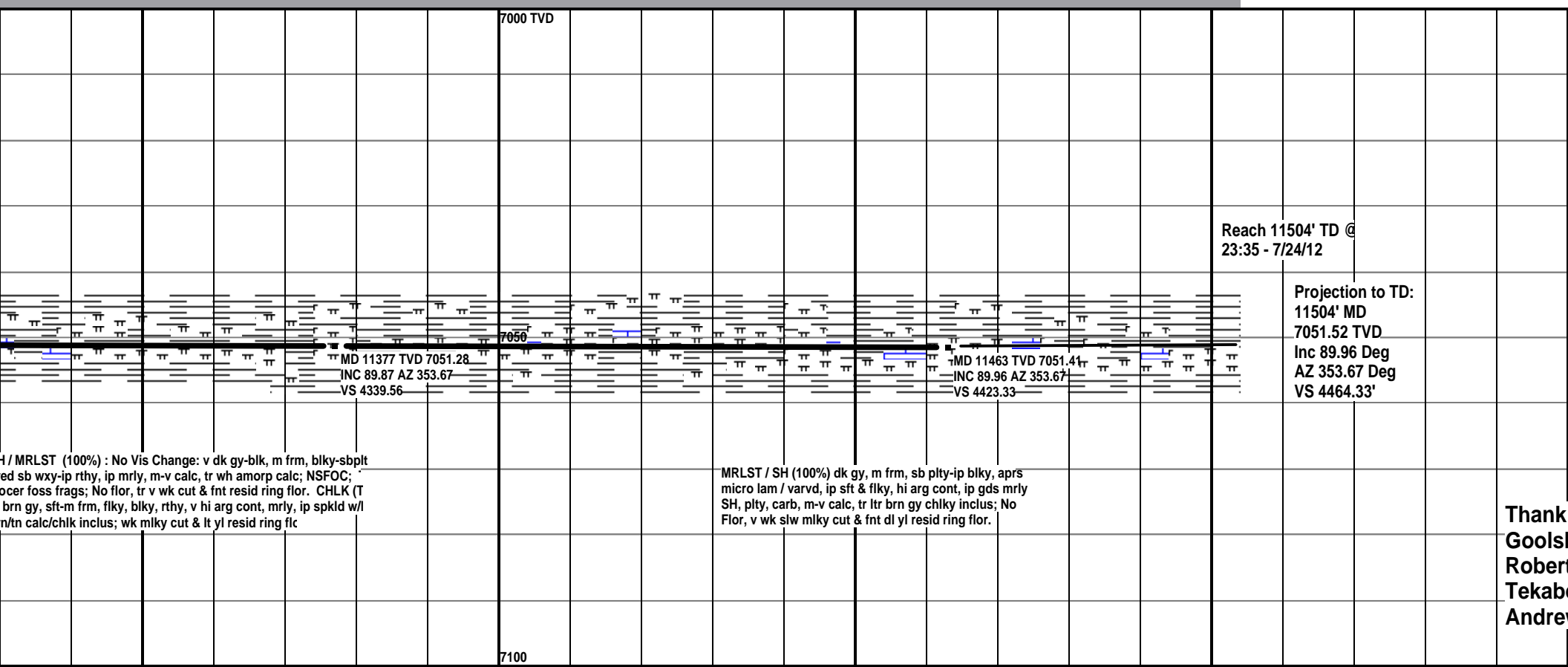
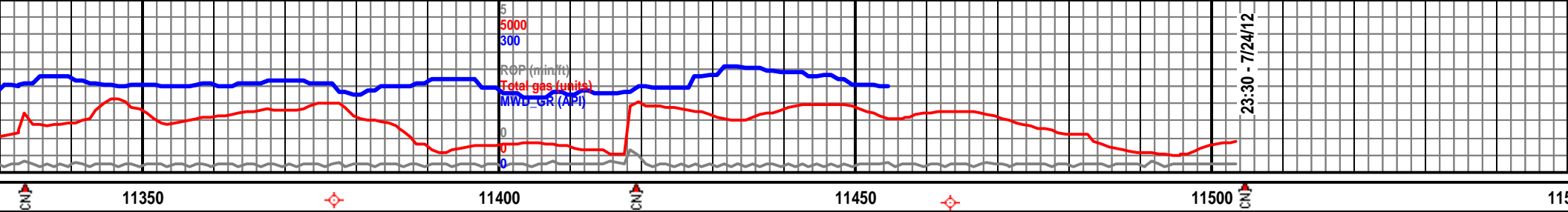
7100

MW 10.7  
VIS 42

Mud Data @ 11291'  
Wt 10.8  
Vis 46  
PV/YP 19/106  
Gel 8/19  
pH 8.0  
Fil 8.0  
Cl 1300  
Ca 120  
Sd Tr  
Sol 15  
H2O 84%  
ECD 11.35

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

13  
13  
MWD (ppg)  
MWI (ppg)  
8  
8



Thank  
Goolis  
Robert  
Tekab  
Andre

A large rectangular area filled with a fine grid of small squares, intended for drawing a picture.

You,				
by Brothers & Assoc. Inc (GBA				
t Nordek				
e Gedamu				
w Krueger				

A blank sheet of graph paper featuring a uniform grid of small squares. The grid is composed of thin black lines forming a continuous pattern across the entire page. There are no margins, text, or other markings present.