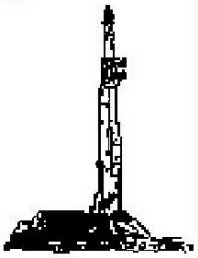
GOOLSBY BROTHERS
and associates, inc.
575 Union Blvd, Suite 208
Lakewood, CO 80228
303-945-2860 Office
Geological Wellsite
Supervision
www.goolsbybrothers.com
PETCOM



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

Well Name:	**Falken 33N-9C-L**
API:	**051234511400**
Location:	**NE/SE Section 11 T6N R66W Weld County, CO.**
License Number:	**Region: Wattenberg**
Spud Date:	**November 10, 2017 Drilling Completed: November 16, 2017**
Surface Coordinates:	**1799'FSL & 276'FEL NE/SE Sec. 11 T6N R66W**
	Lat/Long: 40°50'05.09"N / 104°73'59.48"W
Bottom Hole Coordinates:	**Planned: 981'FSL & 300'FEL, SEC.9 T6N R66W**
Ground Elevation (ft):	**4,810' K.B. Elevation (ft): 4,835'**
Logged Interval (ft):	**6,750' To: 18,884' Total Depth (ft): 18,994' DMTD**
Formation:	**Niobrara C Chalk**
Type of Drilling Fluid:	**OBM (LSND Surface).**

OPERATOR

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

GEOLOGIST

Name: Tekabe Gedamu & Blake Stacey
Company: Goolsby Brothers & Assoc. (GBA), Inc. (www.goolsbybrothers.com)
Address: 575 Union Blvd. Suite 208,
Lakewood CO. 80228
Tel 303-618-7736

E-logs

MWD GR from S.C. to 18,980' MD

Casing

9 5/8" Surface Casing pre set @ 1,800' MD.
5 1/2" Production Liner run on 11/17/2017.

Comments

1) Drilling Contractor: Precision Drilling, Rig #562
Pumps 1&2: Rostell F-1600 5" x 12" (.0692 Bbls./stroke)
Toolpusher: Michael Ellingsworth, Tyson Westgard.

2) Company Man: Kent Priddy
Kevin Brakovec
Tim Jones
Kalib Ford

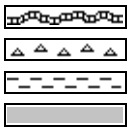
3) Mud Comapny : Reliable Drilling Fluids
Engineer: Wally Yates, Scott Allen

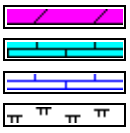
4) Directional Drilling: Baker Hughes
Drillers: Ryan Kielian, Aaron Herskind
MWD: Garrett Gedsen, Baker Remote Field Operations.

5) Gas Equipment: Pason Gas Analyzer (Spectrometer)

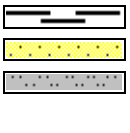
6) Wellsite Geologist: Blake Stacey & Tekabe Gedamu

ROCK TYPES


Bent
Cht
Clyst
Oil sat.


Dol
Lmst
Chalk
Mrlst


Mrlst_sh (intbdd)
Shale
Shgy
Slty sh


Carb sh
Ss
Sltst

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

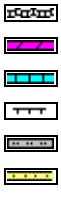
FOSSIL


Algae
Amph
Belm
Bioclst
Brach
Bryozoa


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

STRINGER


Chlkstg
Arg


Bent
Dol
Ls
Mrst
Sltstrg
Ssstrg

TEXTURE


Boundst
Chalky
Cryxln
Earthy
Finexln
Grainst
Lithogr
Microxln
Mudst
Packst
Wackest

OTHER SYMBOLS

OIL SHOWS

- Even
- Spotted
- Ques
- Dead
- Vspotty
- near even

POROSITY TYPE

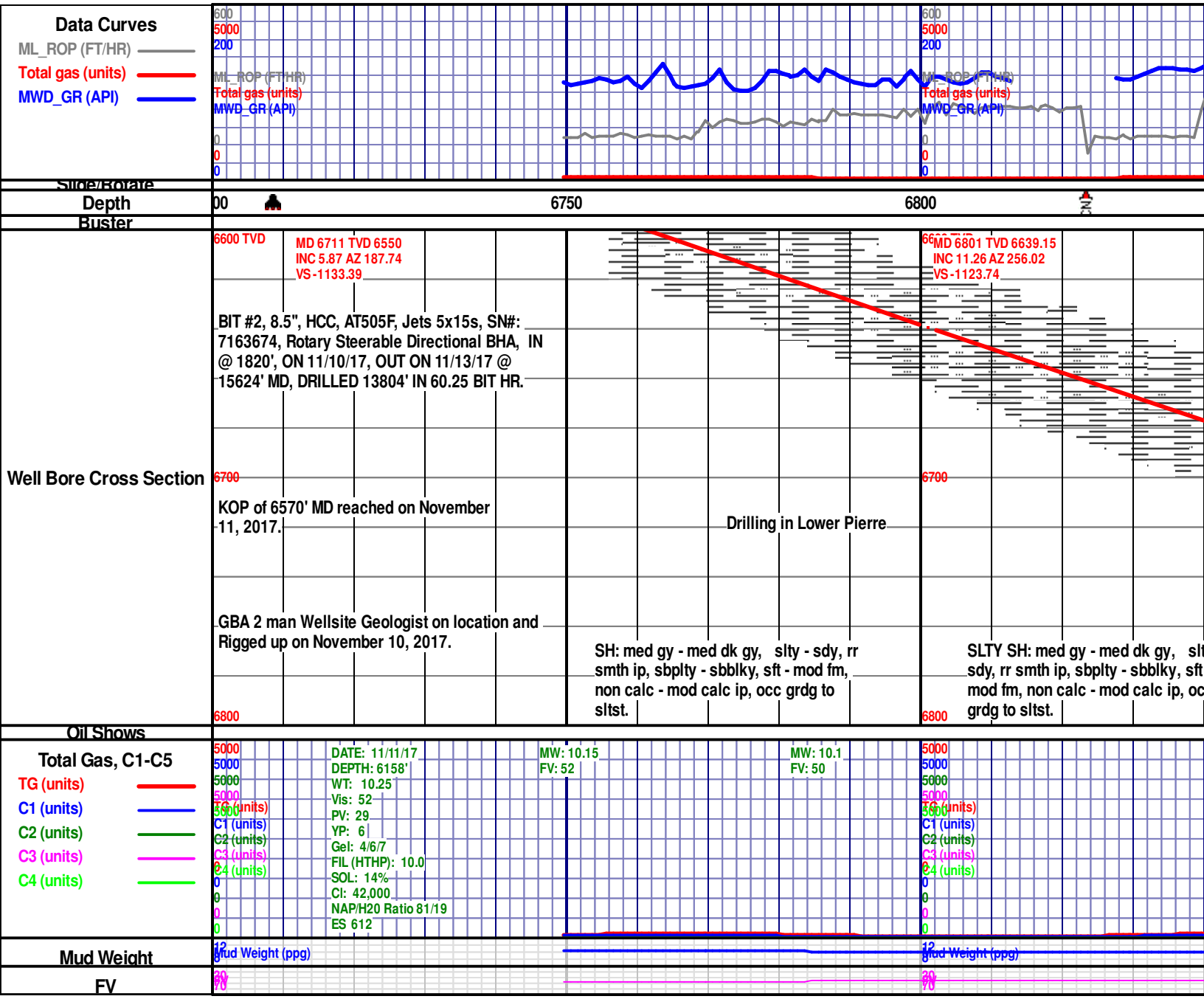
- E Earthy
- Fenest
- F Fracture
- Inter
- Moldic
- Organic
- P Pinpoint
- V Vuggy

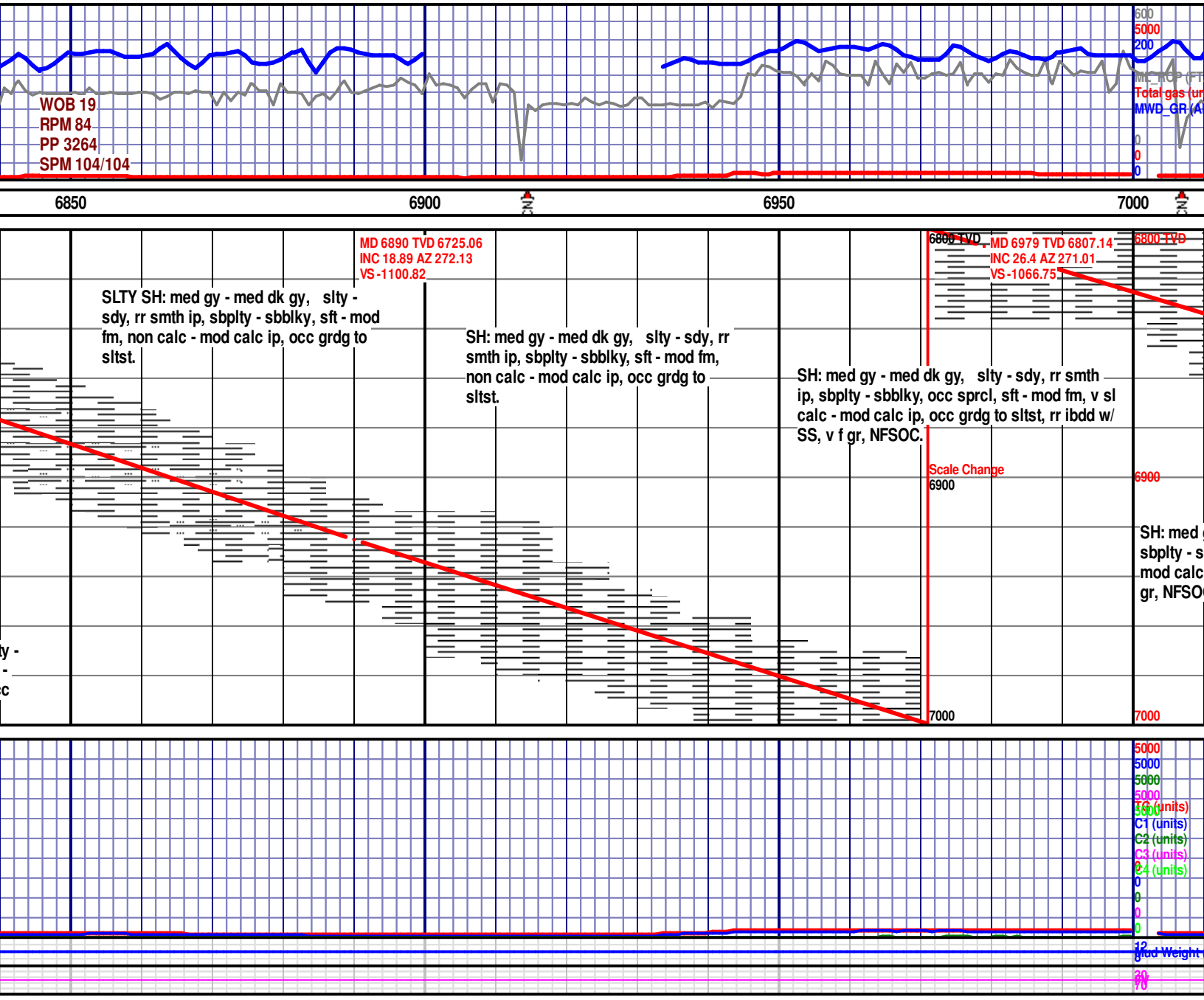
ROUNDING

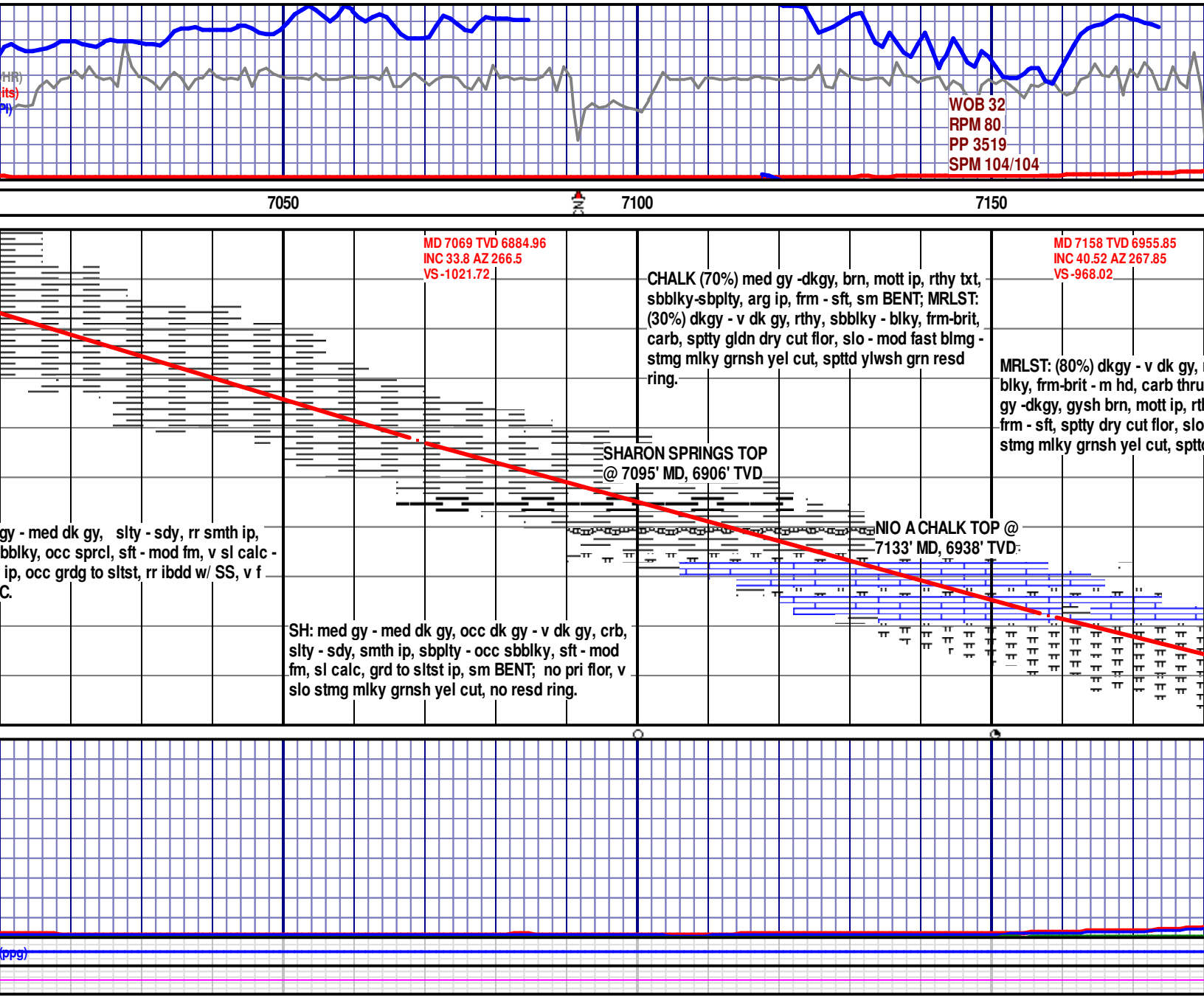
- R Rounded
- r Subrnd
- a Subang
- A Angular

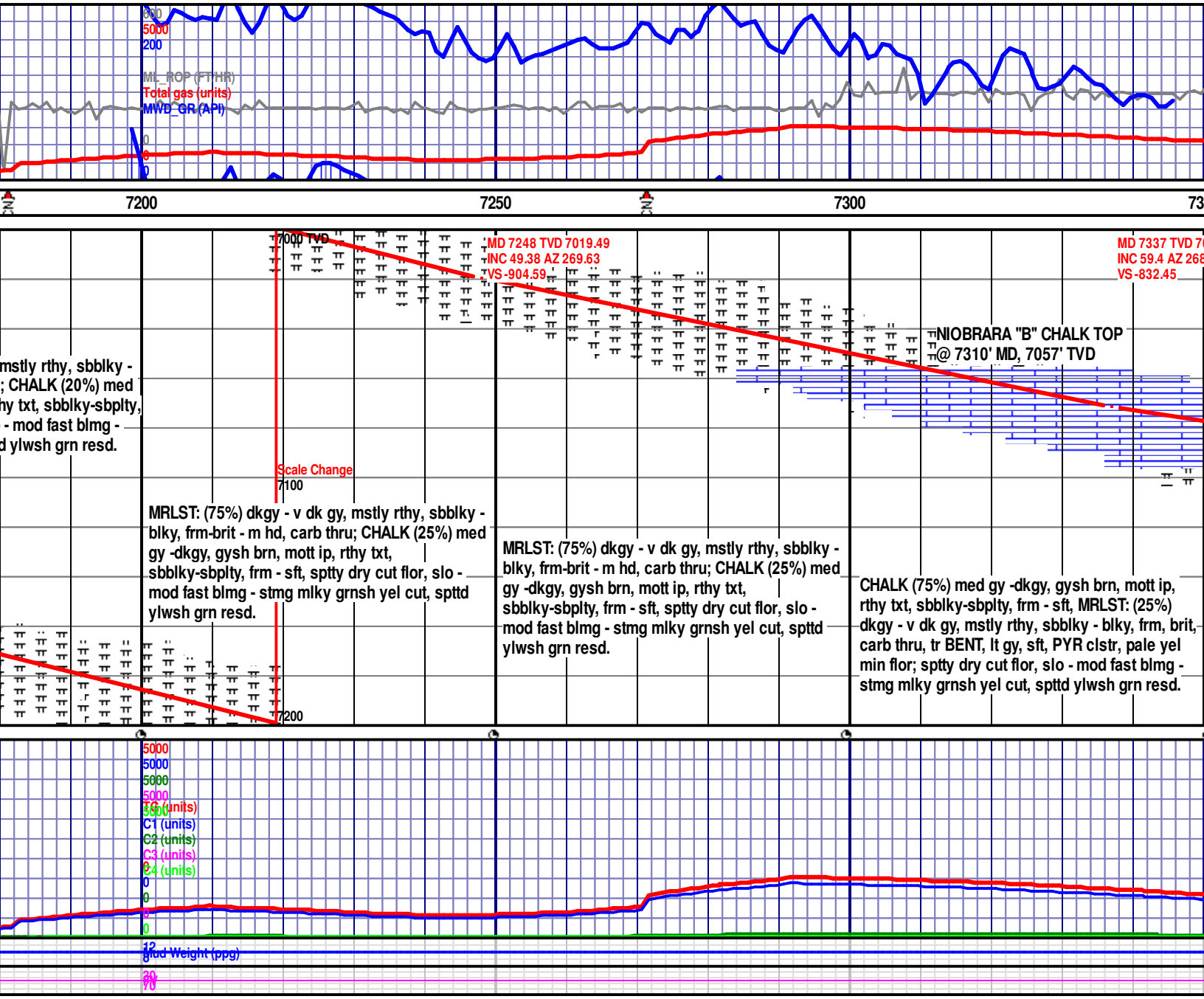
SORTING

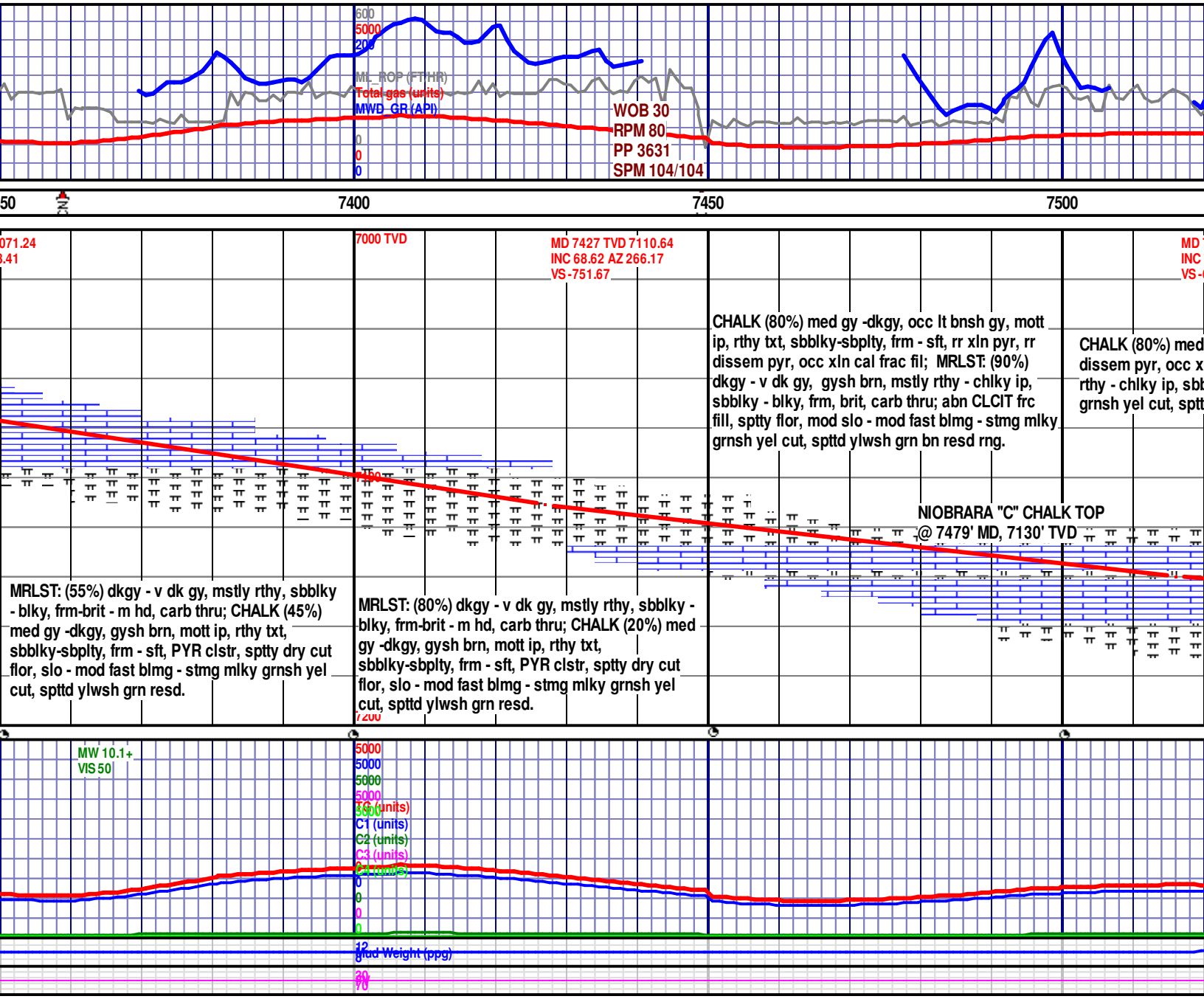
- W Well
- M Moderate
- P Poor

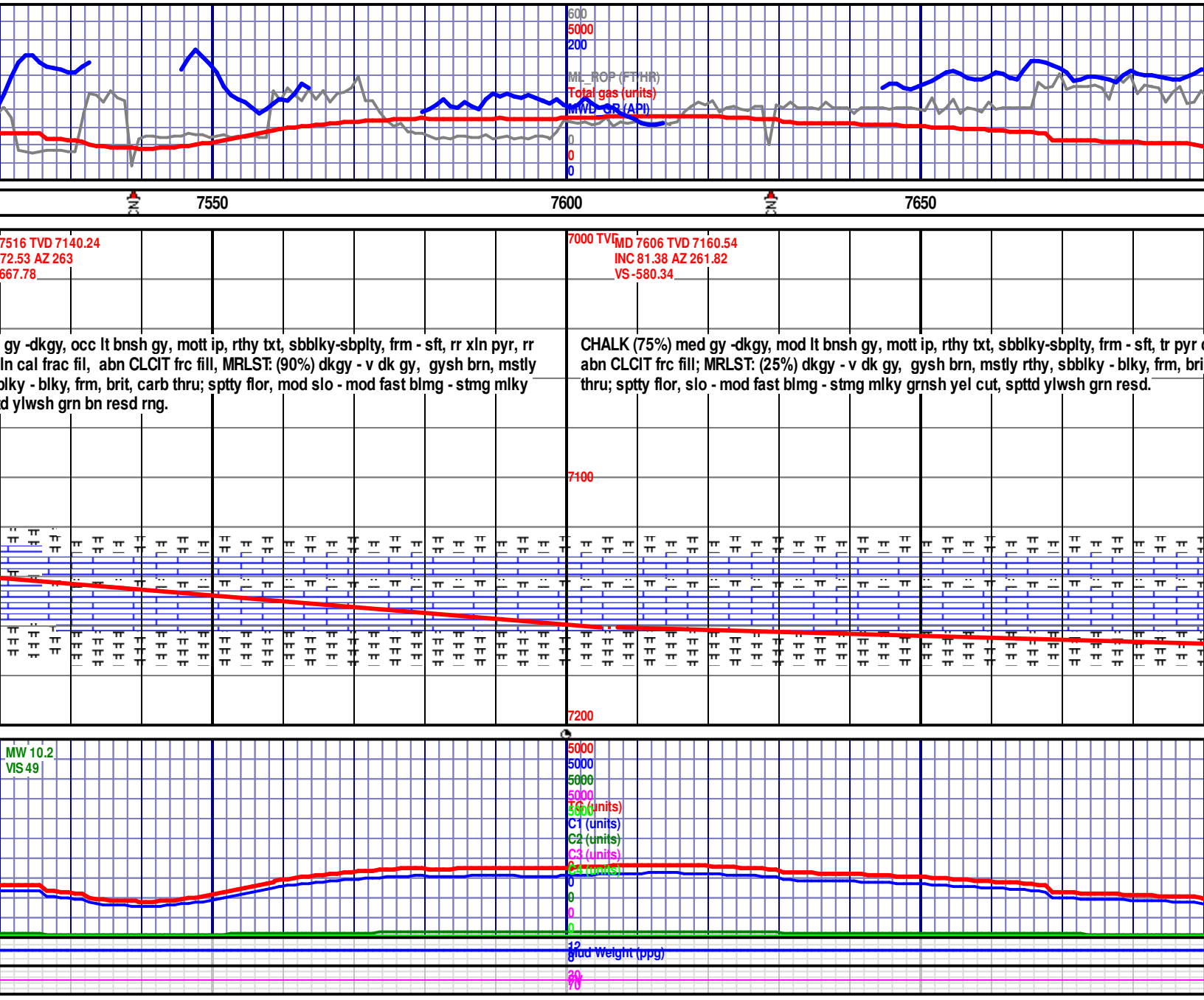

Data Curves
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
600
5000
200
0
0
0
Slide/Rotate
Depth
00
6750
6800
Buster
Well Bore Cross Section
6600 TVD
MD 6711 TVD 6550
INC 5.87 AZ 187.74
VS -1133.39
MD 6801 TVD 6639.15
INC 11.26 AZ 256.02
VS -1123.74
BIT #2, 8.5", HCC, AT505F, Jets 5x15s, SN#: 7163674, Rotary Steerable Directional BHA, IN @ 1820', ON 11/10/17, OUT ON 11/13/17 @ 15624' MD, DRILLED 13804' IN 60.25 BIT HR.
6700
KOP of 6570' MD reached on November 11, 2017.
Drilling in Lower Pierre
GBA 2 man Wellsite Geologist on location and Rigged up on November 10, 2017.
SH: med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, sft - mod fm, non calc - mod calc ip, occ grdg to sltst.
SLTY SH: med gy - med dk gy, slt
sdy, rr smth ip, sbplty - sbblky, sft
mod fm, non calc - mod calc ip, oc
grdg to sltst.
6800
Oil Shows
Total Gas, C1-C5
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
5000
DATE: 11/11/17
DEPTH: 6158'
WT: 10.25
Vis: 52
PV: 29
YP: 6
Gel: 4/6/7
FIL (HTHP): 10.0
SOL: 14%
Cl: 42,000
NAP/H20 Ratio 81/19
ES 612
MW: 10.15
FV: 52
MW: 10.1
FV: 50
Mud Weight
Mud Weight (ppg)
12
8
FV
30
70

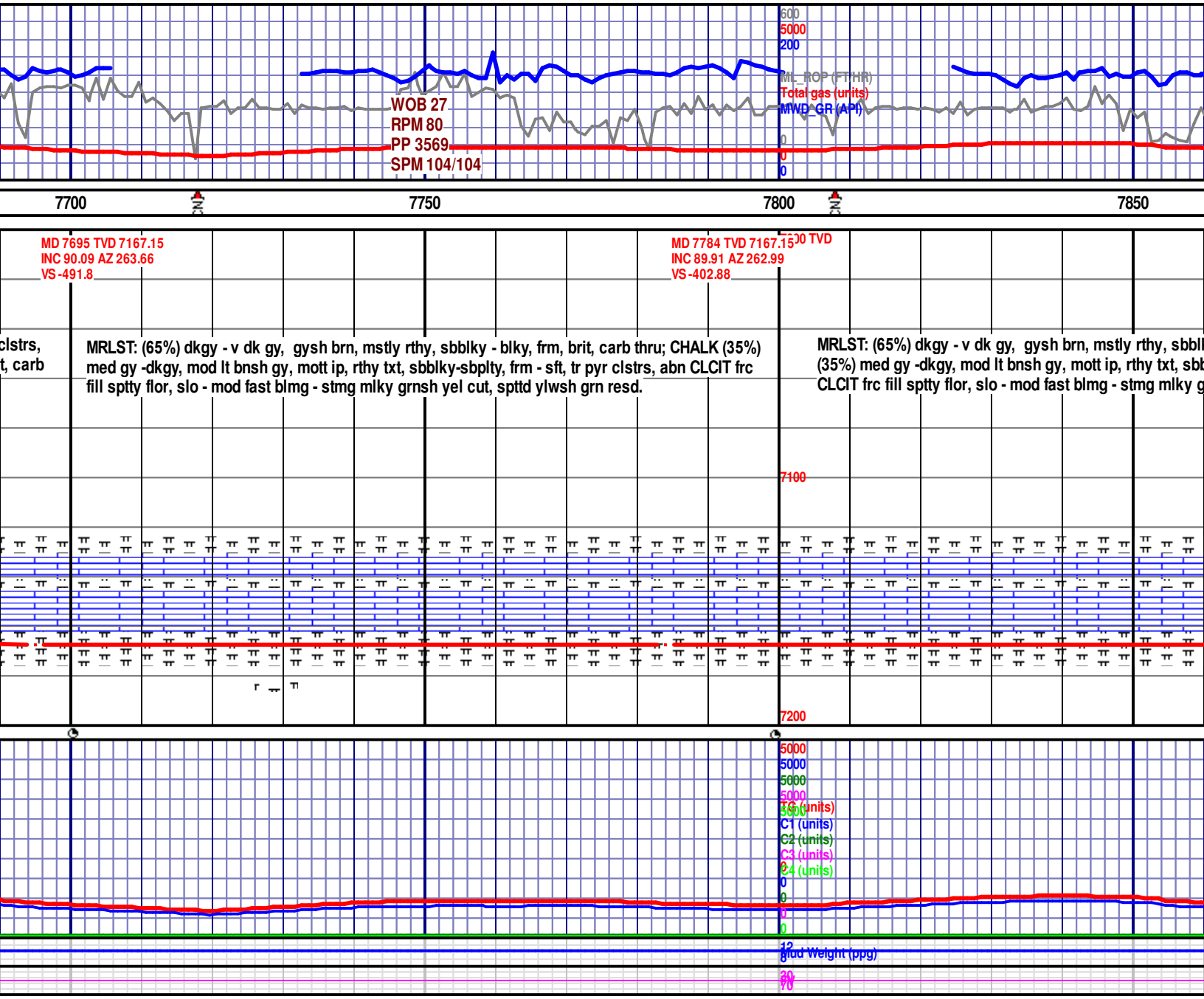

WOB 19
RPM 84
PP 3264
SPM 104/104
600
5000
200
Total gas (ur
MWD_GR (A
0
0
0
6850
6900
6950
7000
MD 6890 TVD 6725.06
INC 18.89 AZ 272.13
VS -1100.82
SLTY SH: med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, sft - mod fm, non calc - mod calc ip, occ grdg to sltst.
SH: med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, sft - mod fm, non calc - mod calc ip, occ grdg to sltst.
6800 TVD
MD 6979 TVD 6807.14
INC 26.4 AZ 271.01
VS -1066.75
SH: med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, occ sprcl, sft - mod fm, v sl calc - mod calc ip, occ grdg to sltst, rr ibdd w/ SS, v f gr, NFSOC.
Scale Change
6900
7000
6800 TVD
6900
7000
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
20
70

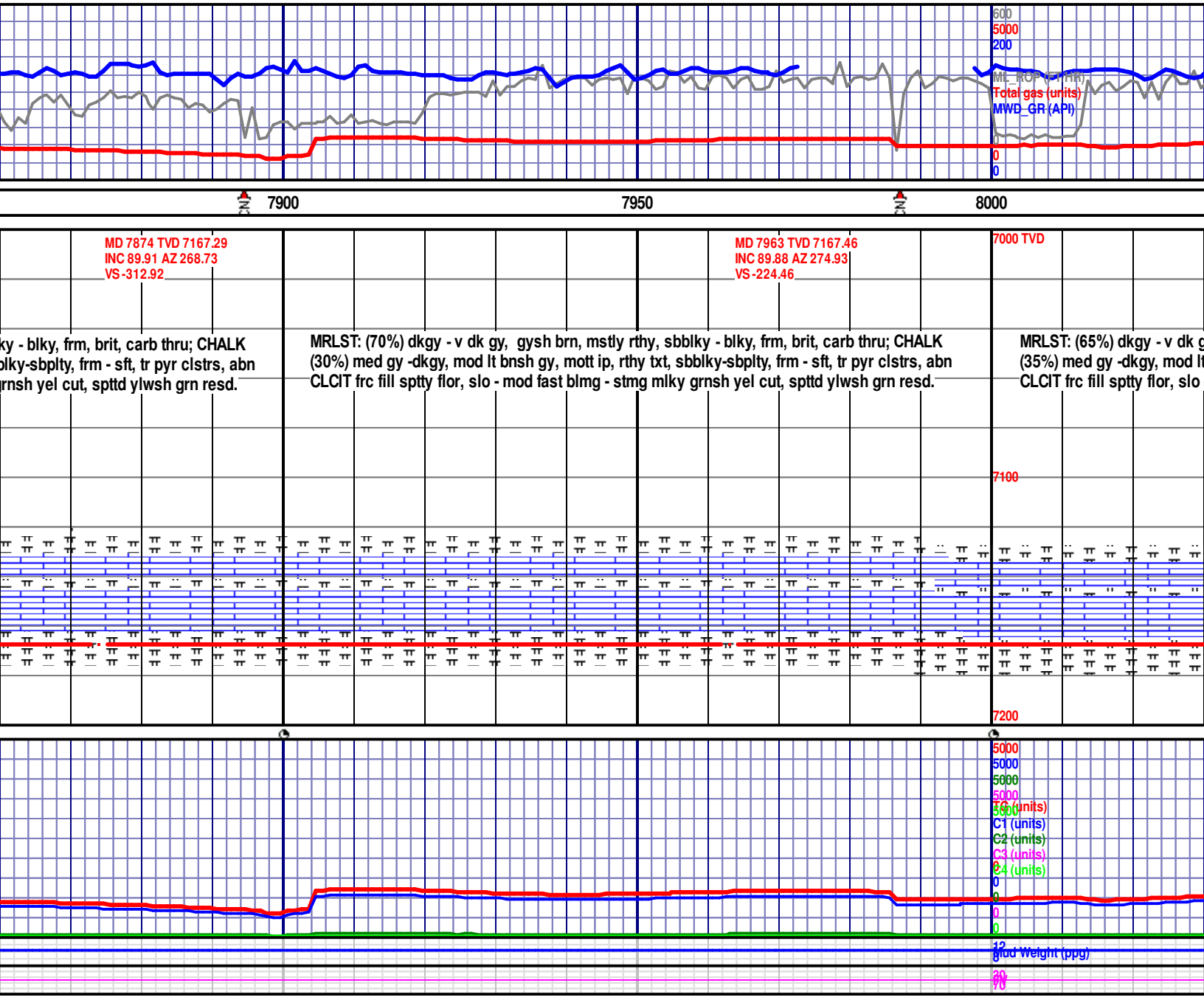

WOB 32
RPM 80
PP 3519
SPM 104/104
7050
7100
7150
MD 7069 TVD 6884.96
INC 33.8 AZ 266.5
VS -1021.72
CHALK (70%) med gy -dkgy, brn, mott ip, rthy txt, sbblky-sbplty, arg ip, frm - sft, sm BENT; MRLST: (30%) dkgy - v dk gy, rthy, sbblky - blky, frm-brit, carb, sptty gldn dry cut flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd ring.
MD 7158 TVD 6955.85
INC 40.52 AZ 267.85
VS -968.02
MRLST: (80%) dkgy - v dk gy,
blky, frm-brit - m hd, carb thru
gy -dkgy, gysh brn, mott ip, rt
frm - sft, sptty dry cut flor, slo
stmg mlky grnsh yel cut, sptt
SHARON SPRINGS TOP
@ 7095' MD, 6906' TVD
NIO A CHALK TOP @
7133' MD, 6938' TVD
gy - med dk gy, slty - sdy, rr smth ip,
bblky, occ sprcl, sft - mod fm, v sl calc -
ip, occ grdg to sltst, rr ibdd w/ SS, v f
C.
SH: med gy - med dk gy, occ dk gy - v dk gy, crb, slty - sdy, smth ip, sbplty - occ sbblky, sft - mod fm, sl calc, grd to sltst ip, sm BENT; no pri flor, v slo stmg mlky grnsh yel cut, no resd ring.

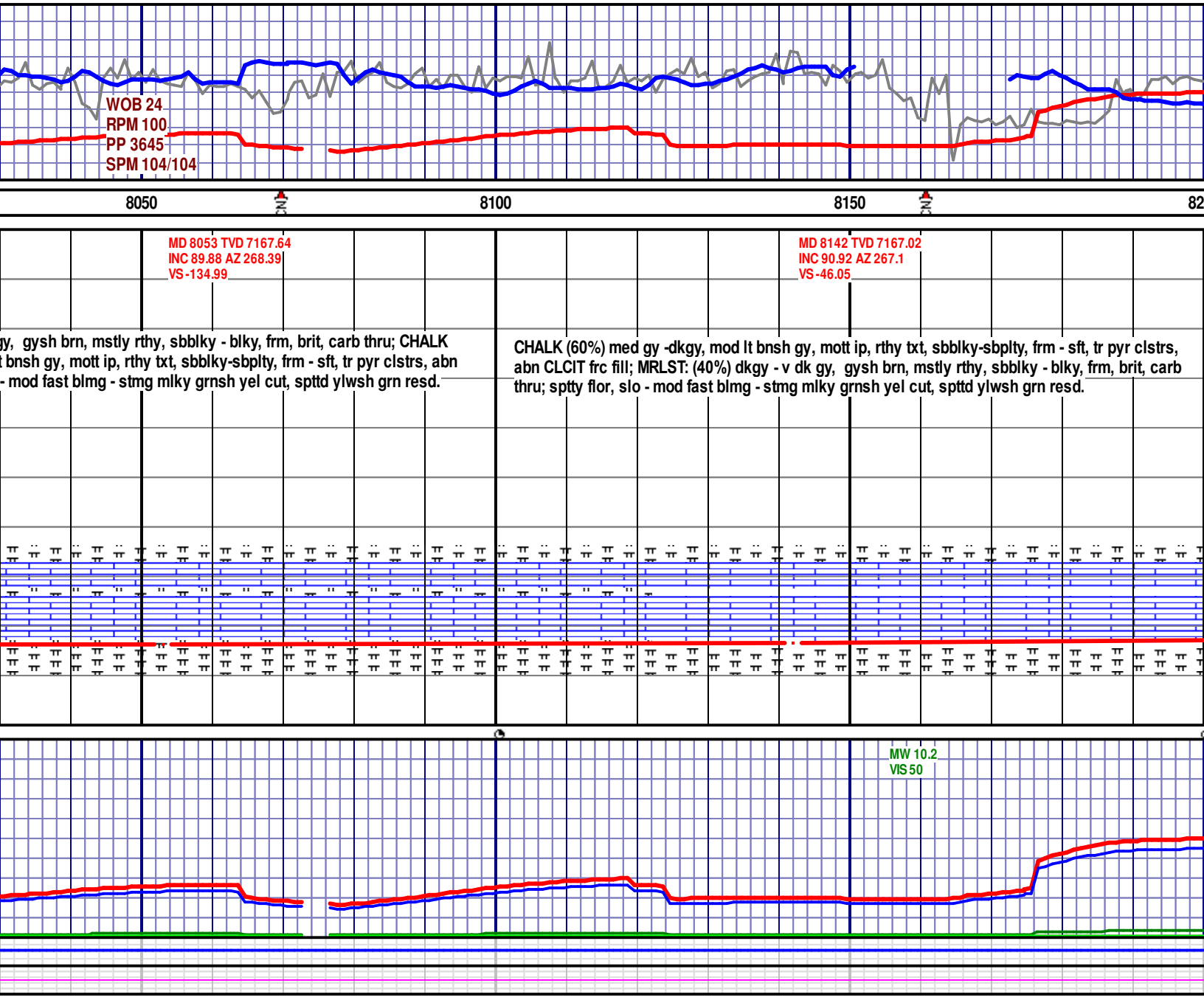

5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
7200
7250
7300
7000 TVD
MD 7248 TVD 7019.49
INC 49.38 AZ 269.63
VS -904.59
MD 7337 TVD 7
INC 59.4 AZ 268
VS -832.45
NIOBRARA "B" CHALK TOP
@ 7310' MD, 7057' TVD
mstly rthy, sbblky -
; CHALK (20%) med
hy txt, sbblky-sbplty,
- mod fast blmg -
d ylwsh grn resd.
Scale Change
7100
7200
MRLST: (75%) dkgy - v dk gy, mstly rthy, sbblky - blky, frm-brit - m hd, carb thru; CHALK (25%) med gy -dkgy, gysh brn, mott ip, rthy txt, sbblky-sbplty, frm - sft, sptty dry cut flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
MRLST: (75%) dkgy - v dk gy, mstly rthy, sbblky - blky, frm-brit - m hd, carb thru; CHALK (25%) med gy -dkgy, gysh brn, mott ip, rthy txt, sbblky-sbplty, frm - sft, sptty dry cut flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
CHALK (75%) med gy -dkgy, gysh brn, mott ip, rthy txt, sbblky-sbplty, frm - sft, MRLST: (25%) dkgy - v dk gy, mstly rthy, sbblky - blky, frm, brit, carb thru, tr BENT, lt gy, sft, PYR clstr, pale yel min flor; sptty dry cut flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
5000
5000
5000
5000
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
20
70

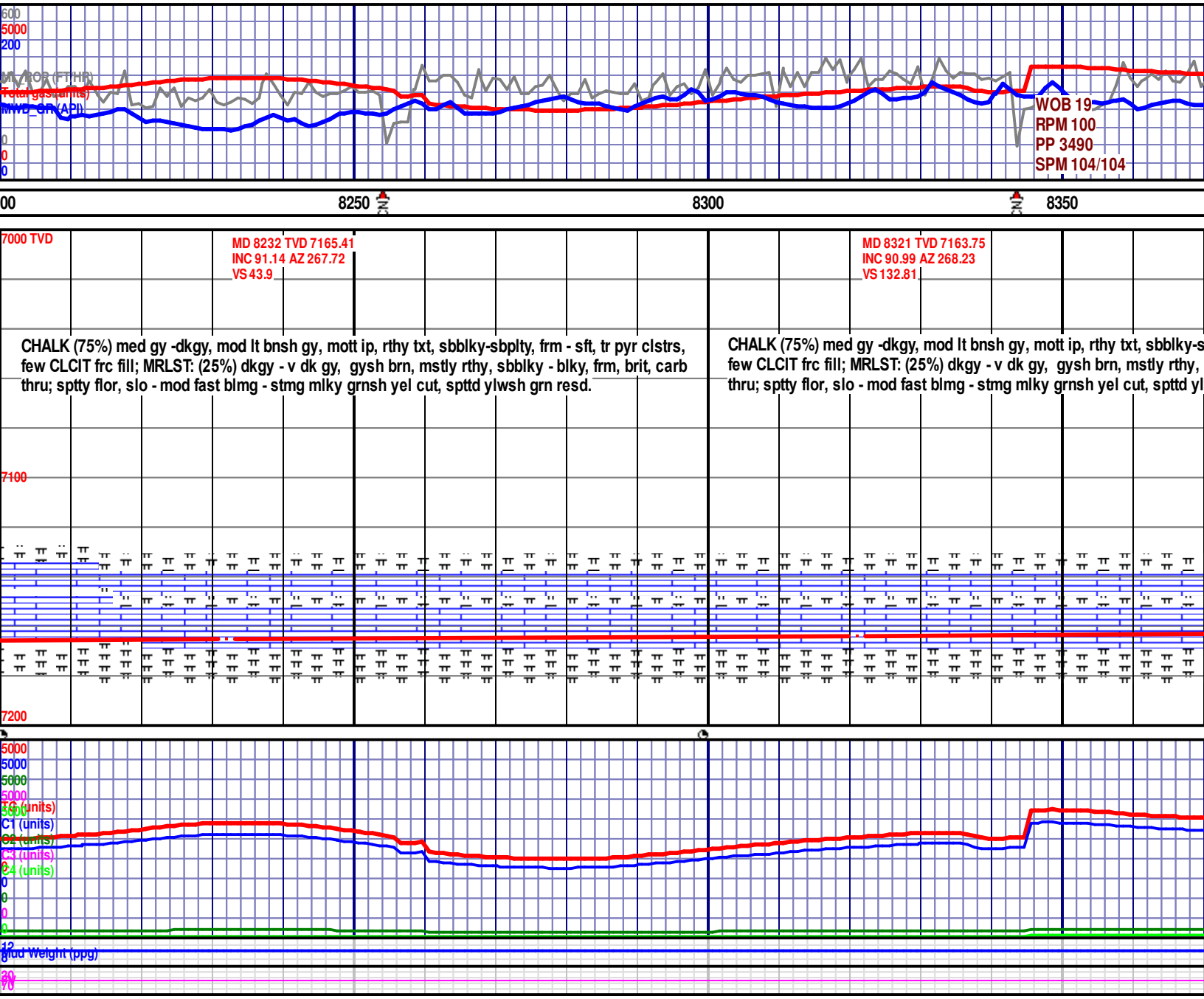

600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 30
RPM 80
PP 3631
SPM 104/104
50
7400
7450
7500
071.24
.41
7000 TVD
MD 7427 TVD 7110.64
INC 68.62 AZ 266.17
VS -751.67
CHALK (80%) med gy -dkgy, occ lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, rr xln pyr, rr dissem pyr, occ xln cal frac fil; MRLST: (90%) dkgy - v dk gy, gysh brn, mstly rthy - chlky ip, sbblky - blky, frm, brit, carb thru; abn CLCIT frc fill, sptty flor, mod slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn bn resd rng.
CHALK (80%) med
dissem pyr, occ x
rthy - chlky ip, sbb
grnsh yel cut, sptt
NIOBRARA "C" CHALK TOP
@ 7479' MD, 7130' TVD
MRLST: (55%) dkgy - v dk gy, mstly rthy, sbblky - blky, frm-brit - m hd, carb thru; CHALK (45%) med gy -dkgy, gysh brn, mott ip, rthy txt, sbblky-sbplty, frm - sft, PYR clstr, sptty dry cut flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
MRLST: (80%) dkgy - v dk gy, mstly rthy, sbblky - blky, frm-brit - m hd, carb thru; CHALK (20%) med gy -dkgy, gysh brn, mott ip, rthy txt, sbblky-sbplty, frm - sft, PYR clstr, sptty dry cut flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
7200
MW 10.1+
VIS 50
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
0
0
0
0
12
8
Mud Weight (ppg)
30
70

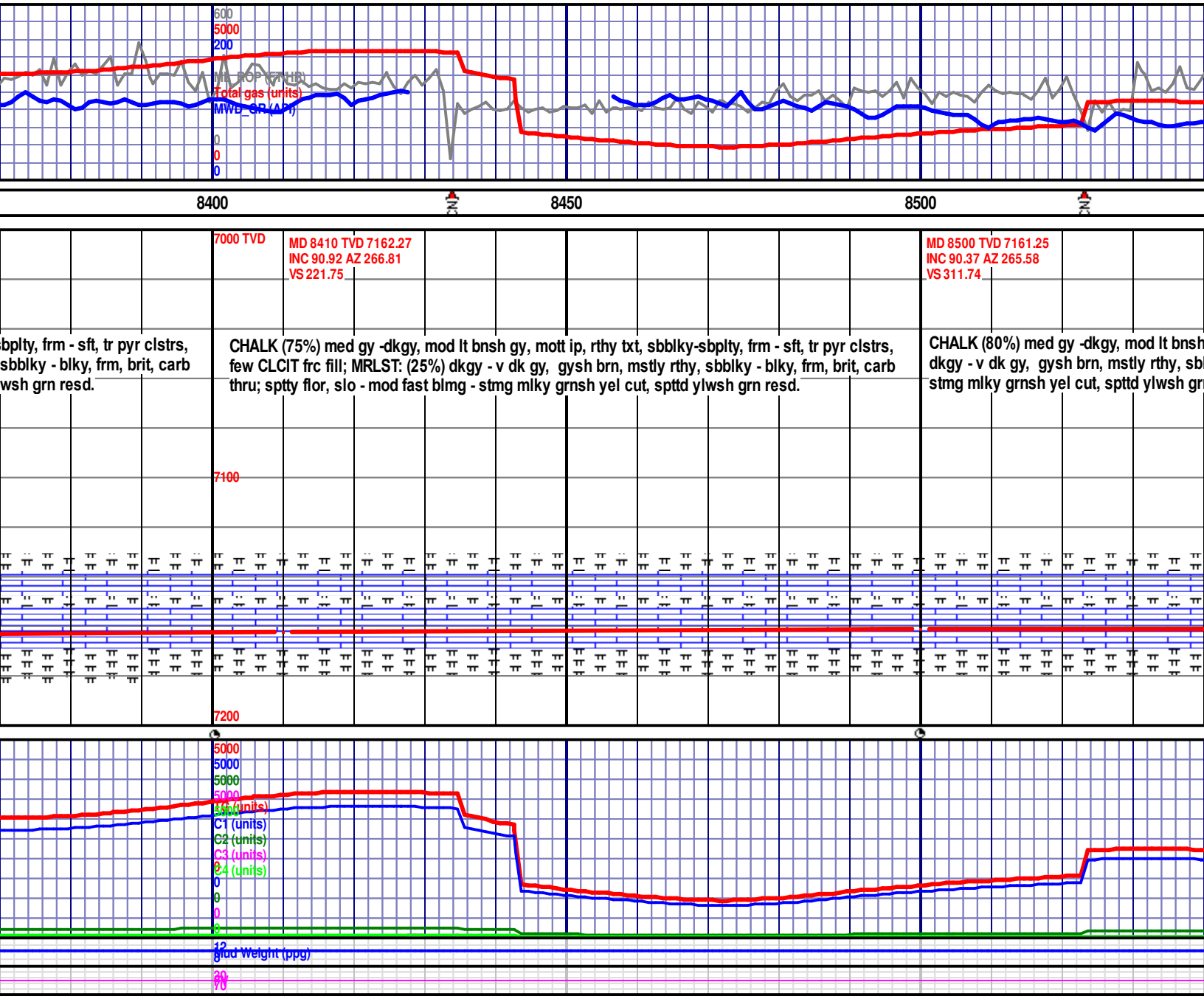

600
5000
200
IML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
7550
7600
7650
7516 TVD 7140.24
72.53 AZ 263
667.78
7000 TVD
MD 7606 TVD 7160.54
INC 81.38 AZ 261.82
VS -580.34
gy -dkgy, occ lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, rr xln pyr, rr
ln cal frac fil, abn CLCIT frc fill, MRLST: (90%) dkgy - v dk gy, gysh brn, mstly
lky - blky, frm, brit, carb thru; sptty flor, mod slo - mod fast blmg - stmg mlky
d ylwsh grn bn resd rng.
CHALK (75%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, tr pyr
abn CLCIT frc fill; MRLST: (25%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, bri
thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
7100
7200
MW 10.2
VIS 49
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
0
0
0
0
12
Mud Weight (ppg)
8
30
70

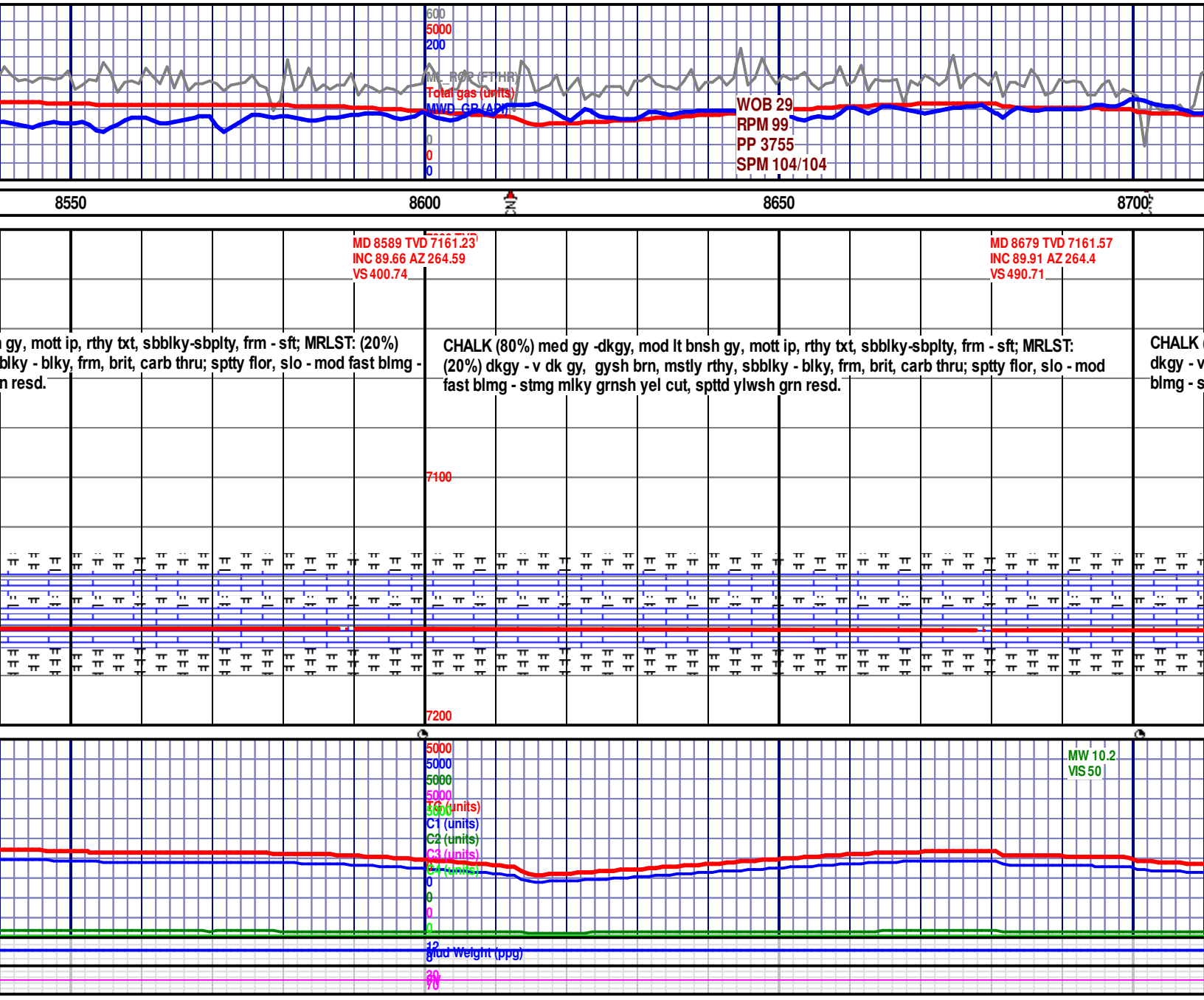

600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 27
RPM 80
PP 3569
SPM 104/104
7700
7750
7800
7850
MD 7695 TVD 7167.15
INC 90.09 AZ 263.66
VS -491.8
MD 7784 TVD 7167.15
INC 89.91 AZ 262.99
VS -402.88
clstrs,
t, carb
MRLST: (65%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; CHALK (35%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, tr pyr clstrs, abn CLCIT frc fill sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
MRLST: (65%) dkgy - v dk gy, gysh brn, mstly rthy, sbbl
(35%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sb
CLCIT frc fill sptty flor, slo - mod fast blmg - stmg mlky g
7100
7200
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
8
30
90
Mud Weight (ppg)

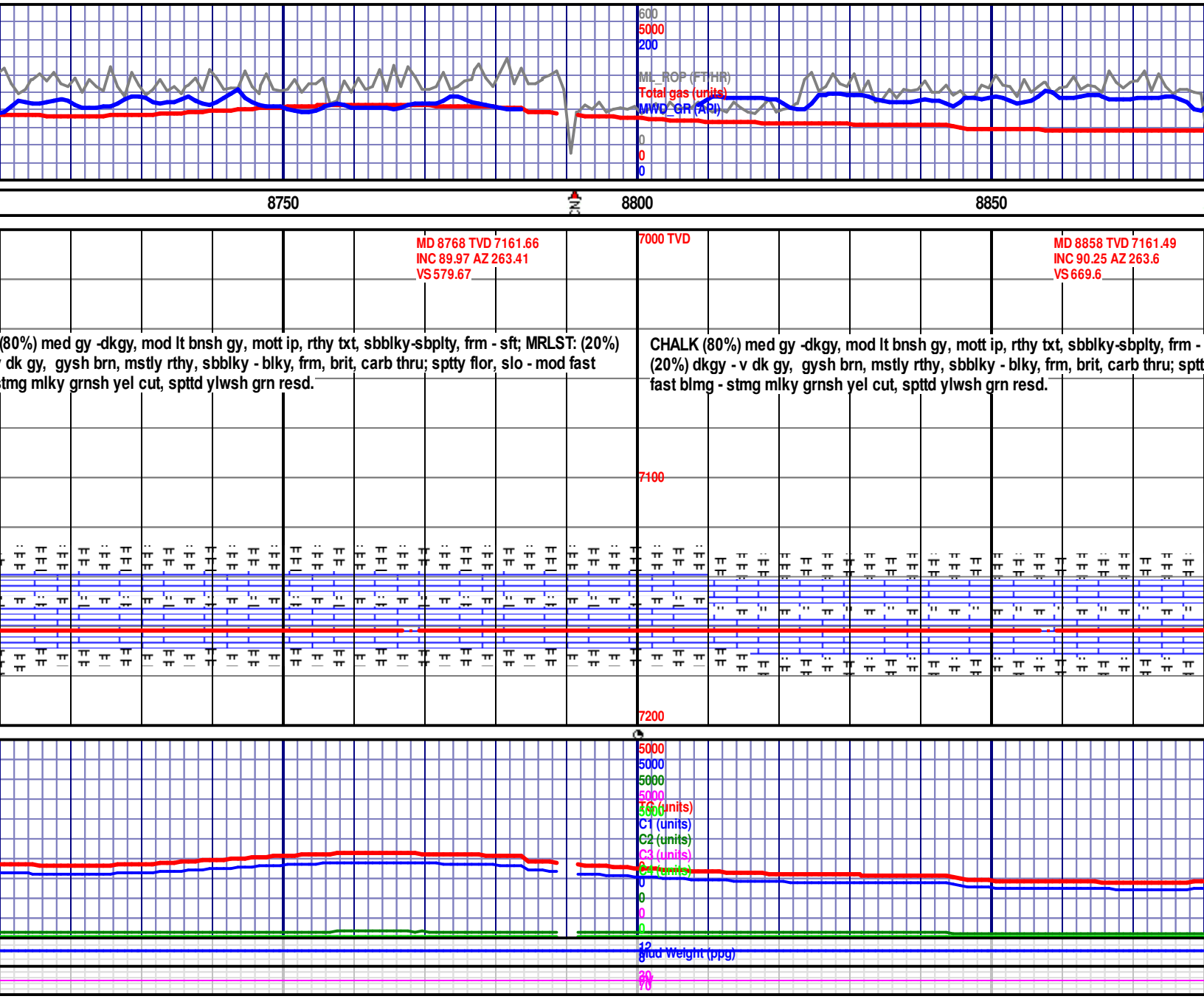

600
5000
200
ML_ROP (ft/hr)
Total gas (units)
MWD_GR (API)
0
0
0
7900
7950
8000
MD 7874 TVD 7167.29
INC 89.91 AZ 268.73
VS -312.92
MD 7963 TVD 7167.46
INC 89.88 AZ 274.93
VS -224.46
7000 TVD
ky - blky, frm, brit, carb thru; CHALK
blky-sbplty, frm - sft, tr pyr clstrs, abn
rnsh yel cut, spttd ylwsh grn resd.
MRLST: (70%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; CHALK
(30%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, tr pyr clstrs, abn
CLCIT frc fill sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
MRLST: (65%) dkgy - v dk g
(35%) med gy -dkgy, mod lt
CLCIT frc fill sptty flor, slo
7100
7200
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
8
Mud Weight (ppg)
30
70

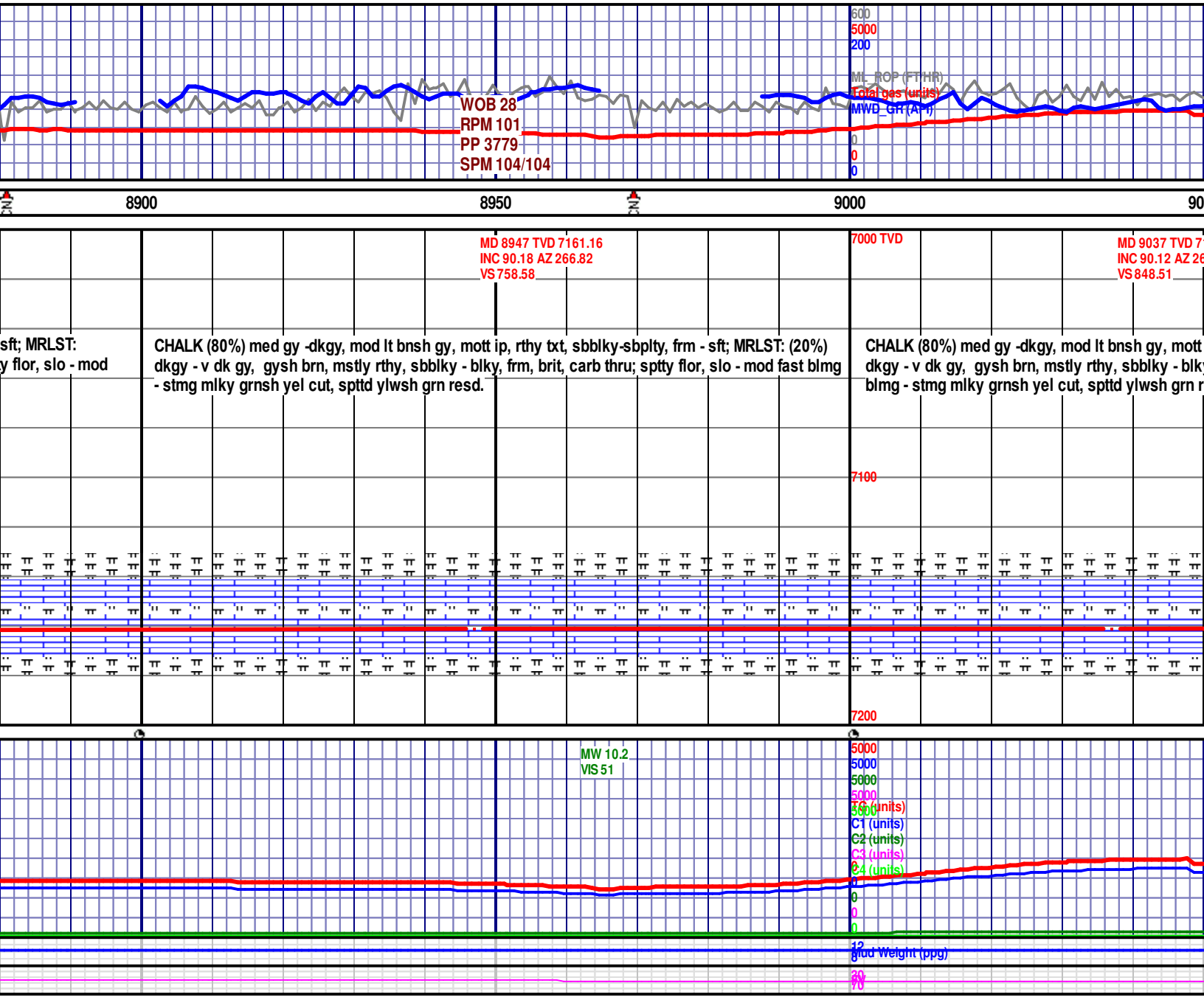

WOB 24
RPM 100
PP 3645
SPM 104/104
8050
8100
8150
MD 8053 TVD 7167.64
INC 89.88 AZ 268.39
VS -134.99
MD 8142 TVD 7167.02
INC 90.92 AZ 267.1
VS -46.05
gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; CHALK
t bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, tr pyr clstrs, abn
- mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
CHALK (60%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, tr pyr clstrs, abn CLCIT frc fill; MRLST: (40%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
MW 10.2
VIS 50

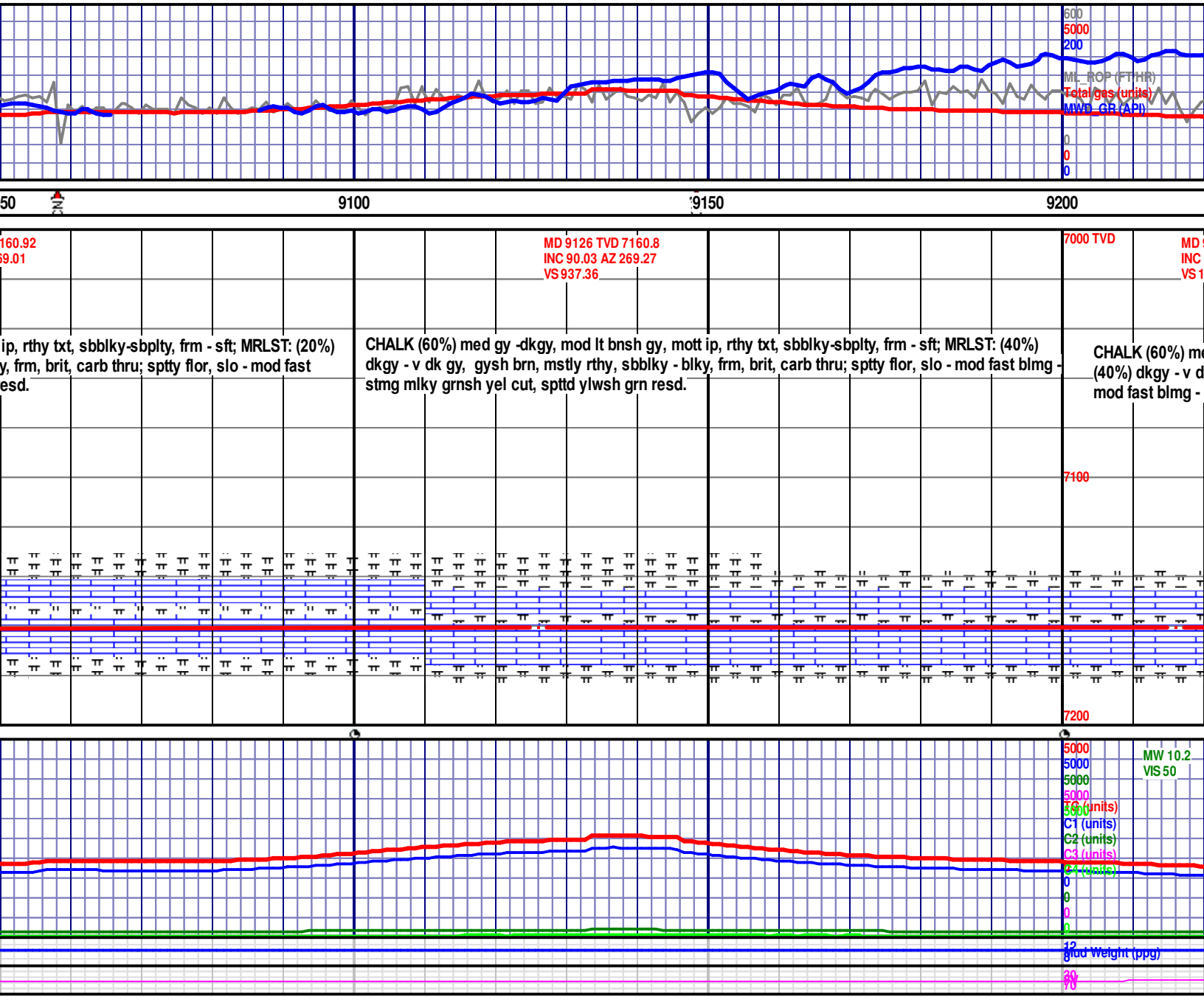

600
5000
200
ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 19
RPM 100
PP 3490
SPM 104/104
00
8250
CNX
8300
CNX
8350
7000 TVD
MD 8232 TVD 7165.41
INC 91.14 AZ 267.72
VS 43.9
MD 8321 TVD 7163.75
INC 90.99 AZ 268.23
VS 132.81
CHALK (75%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, tr pyr clstrs, few CLCIT frc fill; MRLST: (25%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (75%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-s
few CLCIT frc fill; MRLST: (25%) dkgy - v dk gy, gysh brn, mstly rthy,
thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd yl
7100
7200
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
8
20
70

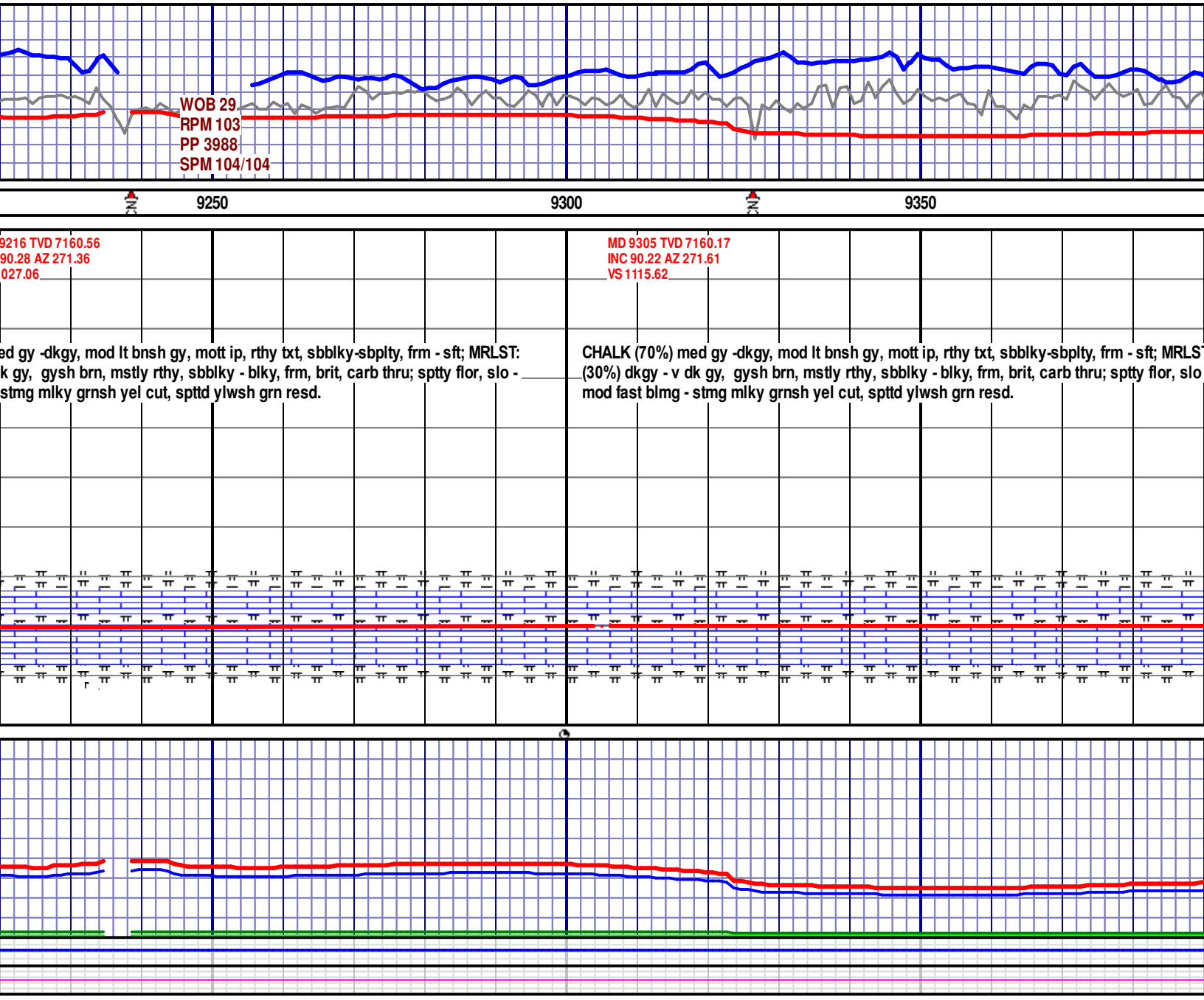

600
5000
200
Total gas (units)
MWD_GR (API)
0
0
0
8400
8450
8500
7000 TVD
MD 8410 TVD 7162.27
INC 90.92 AZ 266.81
VS 221.75
MD 8500 TVD 7161.25
INC 90.37 AZ 265.58
VS 311.74
sbplty, frm - sft, tr pyr clstrs, sbblky - blky, frm, brit, carb wsh grn resd.
CHALK (75%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, tr pyr clstrs, few CLCIT frc fill; MRLST: (25%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
CHALK (80%) med gy -dkgy, mod lt bnsh dkgy - v dk gy, gysh brn, mstly rthy, sb stmg mlky grnsh yel cut, sptd ylwsh gr
7100
7200
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
8
30
70

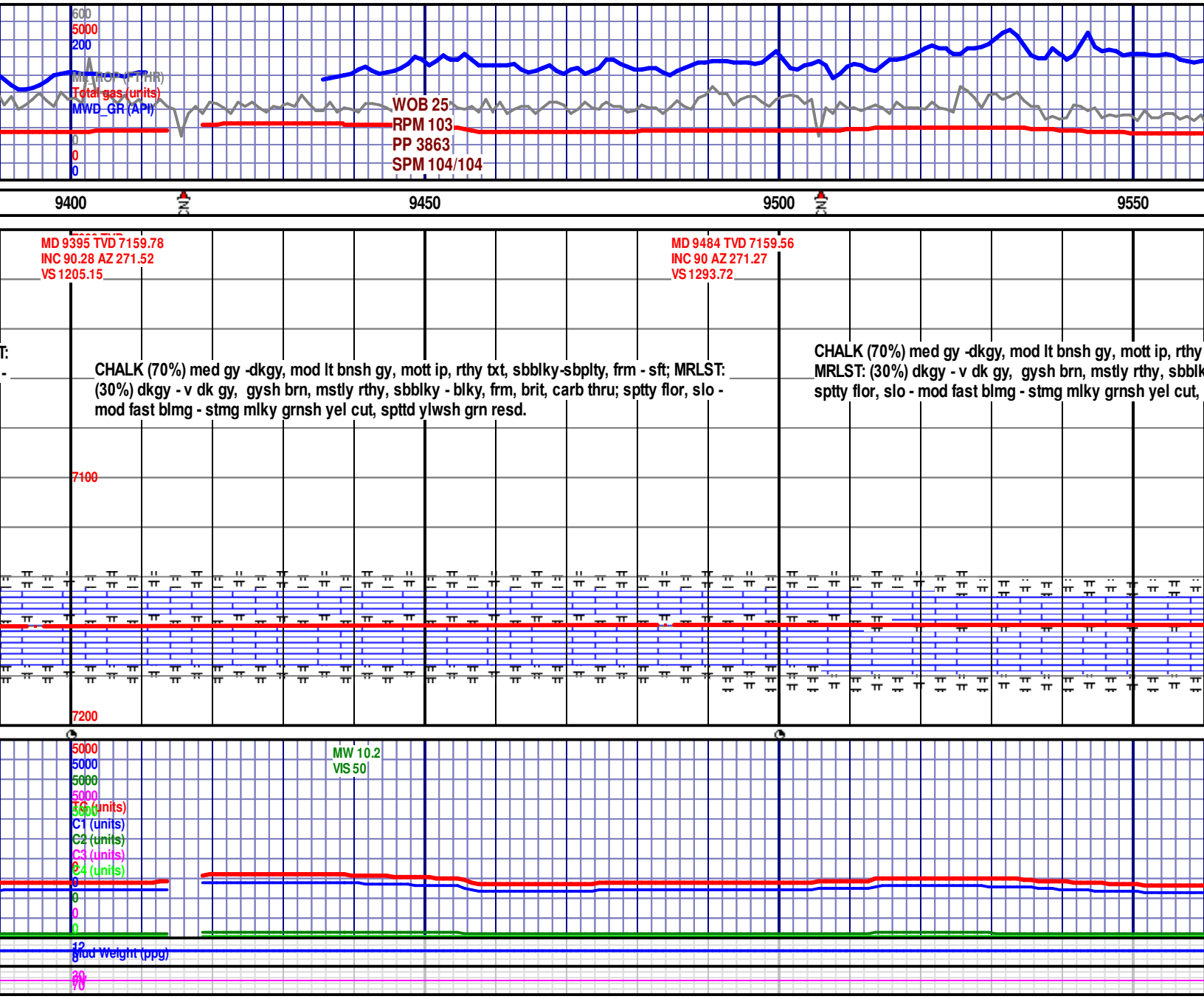

600
5000
200
ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 29
RPM 99
PP 3755
SPM 104/104
8550
8600
8650
8700
MD 8589 TVD 7161.23
INC 89.66 AZ 264.59
VS 400.74
MD 8679 TVD 7161.57
INC 89.91 AZ 264.4
VS 490.71
gy, mott ip, rthy txt, sbblky-sbplty, frm - sft; MRLST: (20%)
blky - blky, frm, brit, carb thru; sptty flor, slo - mod fast blmg -
n resd.
CHALK (80%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft; MRLST:
(20%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod
fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
CHALK
dkgy - v
blmg - s
7100
7200
5000
5000
5000
5000
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
8
Mud Weight (ppg)
30
70
MW 10.2
VIS 50

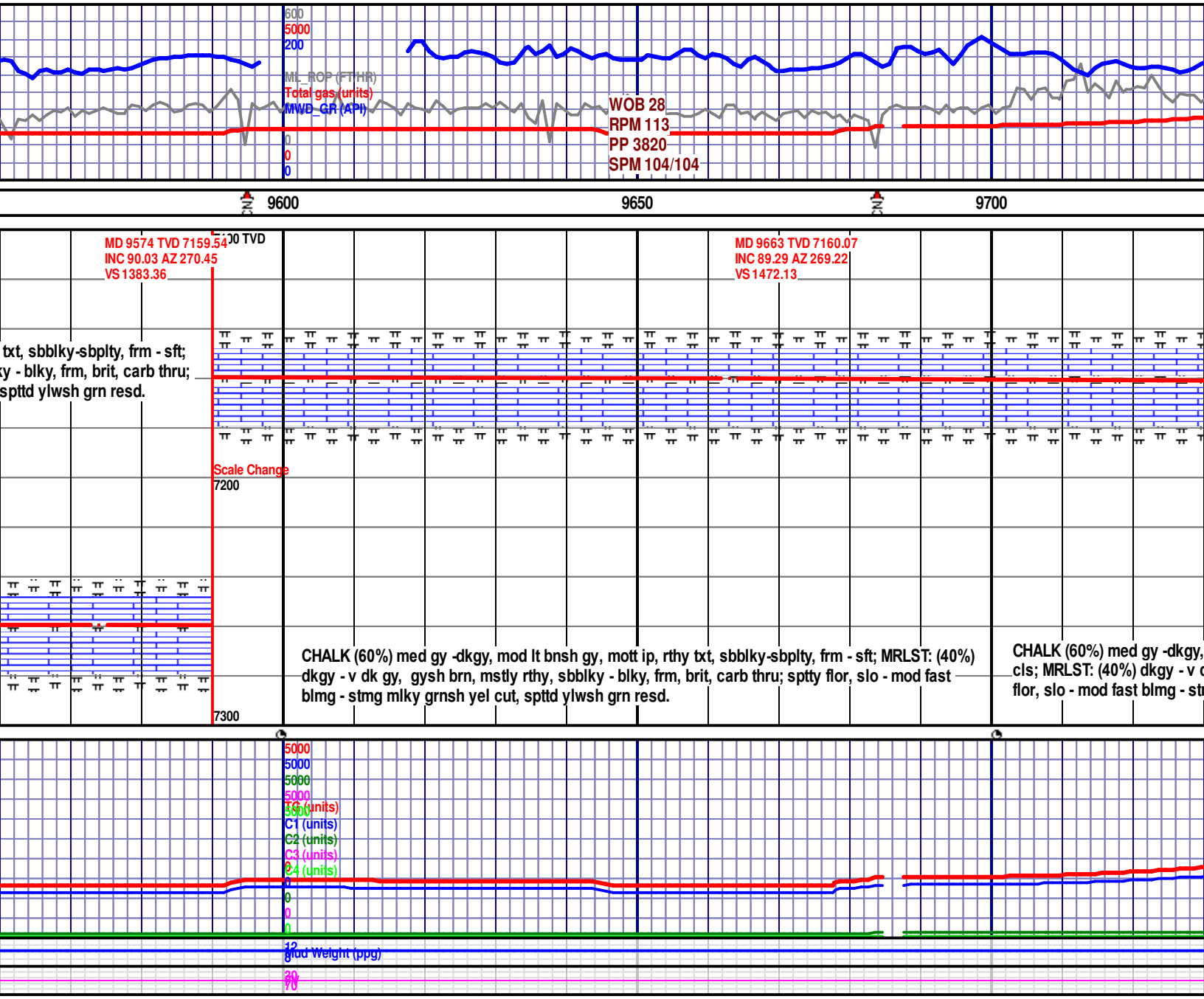

600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
8750
8800
8850
MD 8768 TVD 7161.66
INC 89.97 AZ 263.41
VS 579.67
7000 TVD
MD 8858 TVD 7161.49
INC 90.25 AZ 263.6
VS 669.6
(80%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft; MRLST: (20%)
dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod fast
tmg mlky grnsh yel cut, sptted ylwsh grn resd.
CHALK (80%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm -
(20%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptt
fast blmg - stmg mlky grnsh yel cut, sptted ylwsh grn resd.
7100
7200
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
0
0
0
0
12
Mud Weight (ppg)
30
70

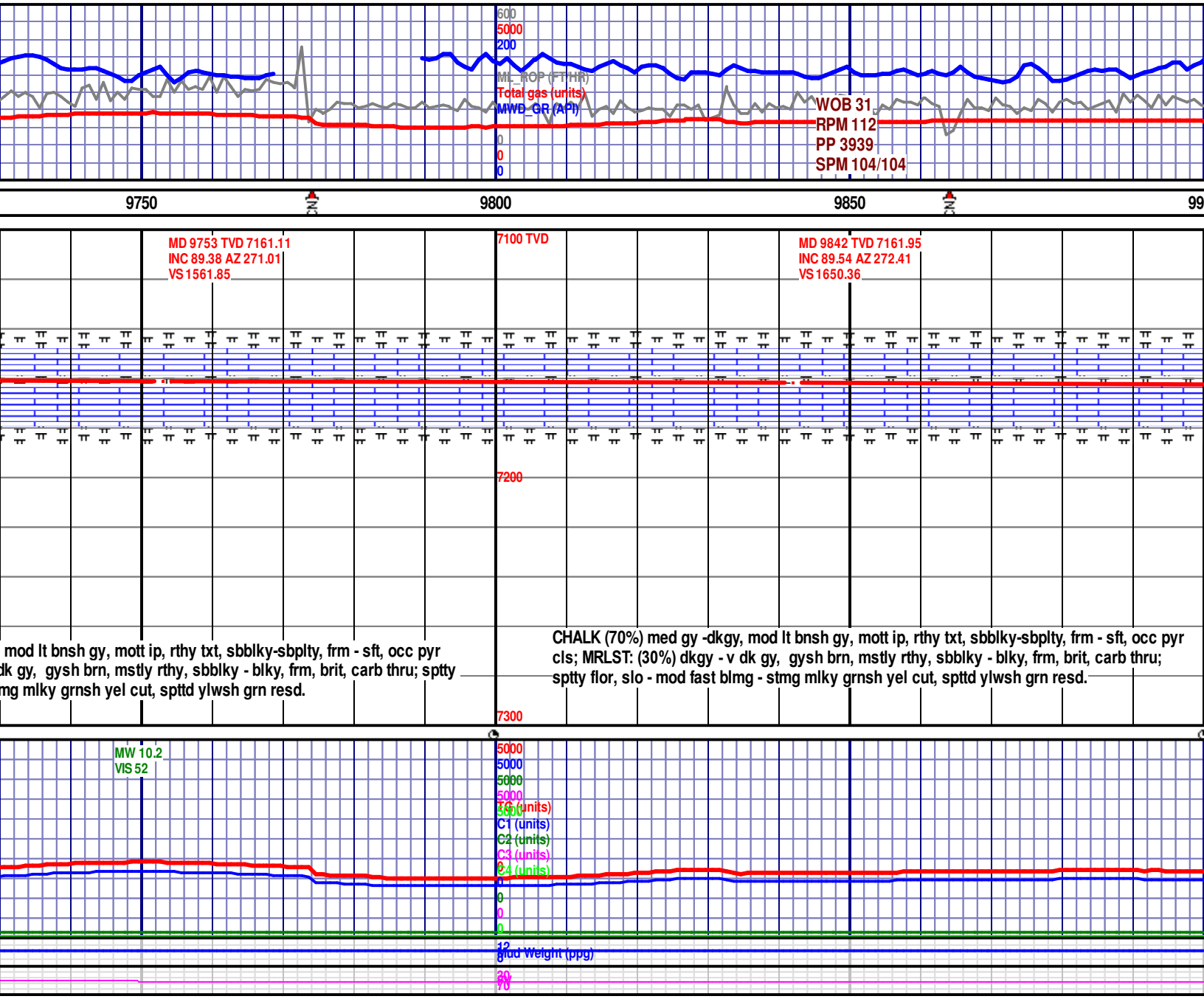

600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 28
RPM 101
PP 3779
SPM 104/104
8900
8950
9000
MD 8947 TVD 7161.16
INC 90.18 AZ 266.82
VS 758.58
7000 TVD
MD 9037 TVD 7
INC 90.12 AZ 26
VS 848.51
sft; MRLST:
y flor, slo - mod
CHALK (80%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft; MRLST: (20%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (80%) med gy -dkgy, mod lt bnsh gy, mott
dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blk
blmg - stmg mlky grnsh yel cut, spttd ylwsh grn r
7100
7200
MW 10.2
VIS 51
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
8
Mud Weight (ppg)
30
70

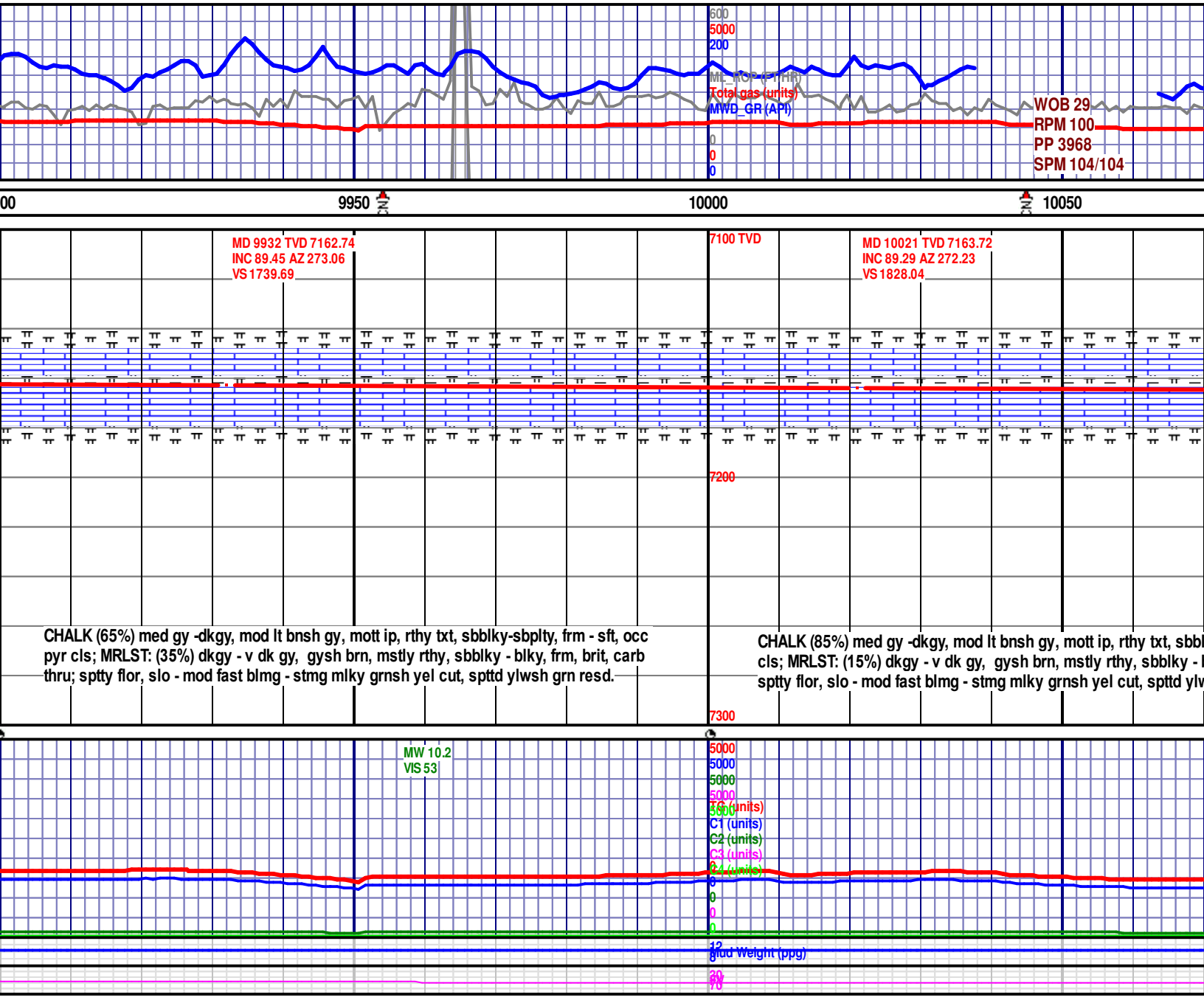

600
5000
200
IML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
50
9100
9150
9200
160.92
69.01
MD 9126 TVD 7160.8
INC 90.03 AZ 269.27
VS 937.36
7000 TVD
MD
INC
VS 1
ip, rthy txt, sbblky-sbplty, frm - sft; MRLST: (20%)
y, frm, brit, carb thru; sptty flor, slo - mod fast
esd.
CHALK (60%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft; MRLST: (40%)
dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod fast blmg -
stmg mlky grnsh yel cut, sptd ylwsh grn resd.
CHALK (60%) m
(40%) dkgy - v d
mod fast blmg -
7100
7200
5000
5000
5000
5000
MW 10.2
VIS 50
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
8
Mud Weight (ppg)
30
70

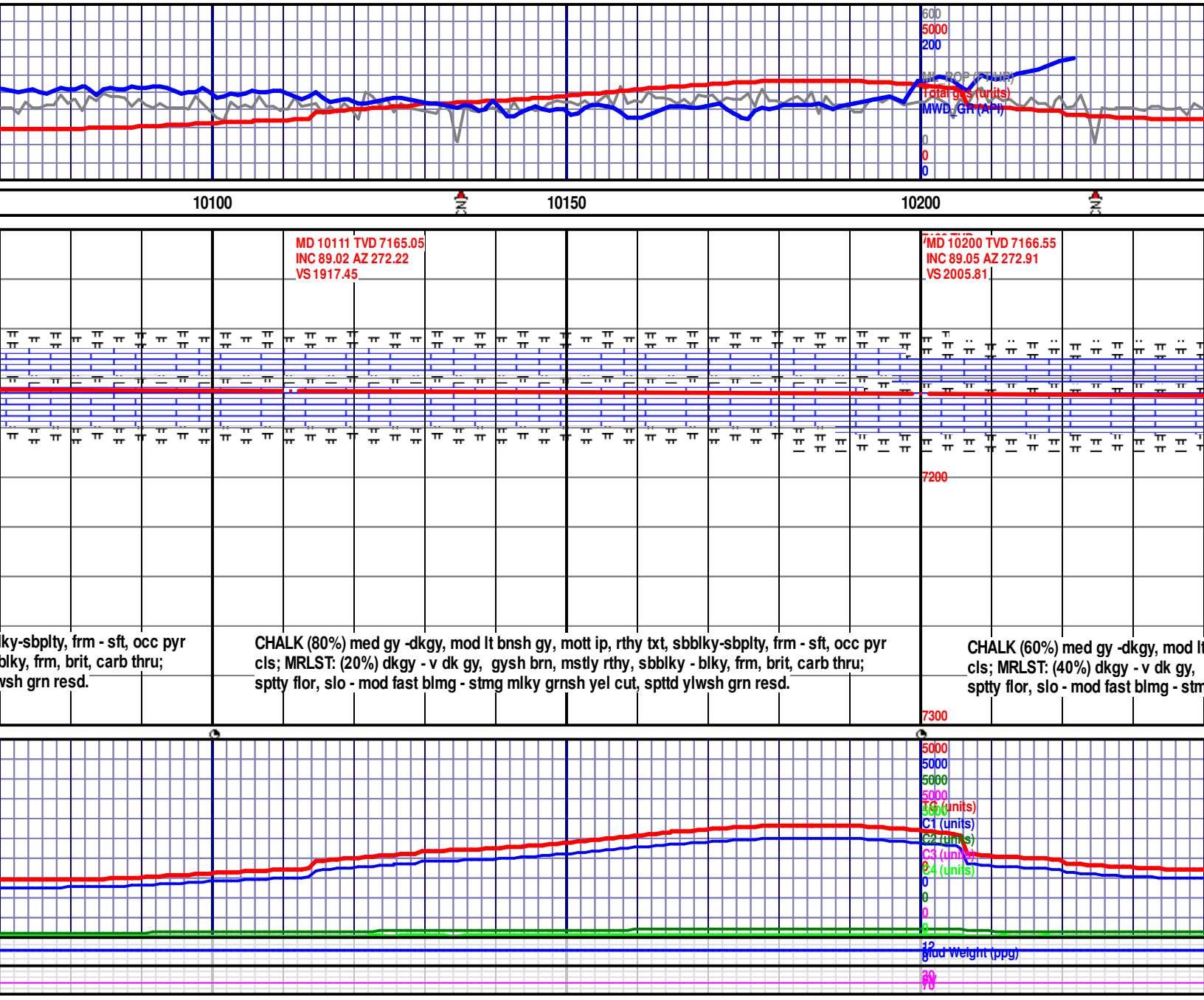

WOB 29
RPM 103
PP 3988
SPM 104/104
9250
9300
9350
9216 TVD 7160.56
90.28 AZ 271.36
027.06
ed gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft; MRLST:
k gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo -
stmg mlky grnsh yel cut, spttd ylwsh grn resd.
MD 9305 TVD 7160.17
INC 90.22 AZ 271.61
VS 1115.62
CHALK (70%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft; MRLS
(30%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo
mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.

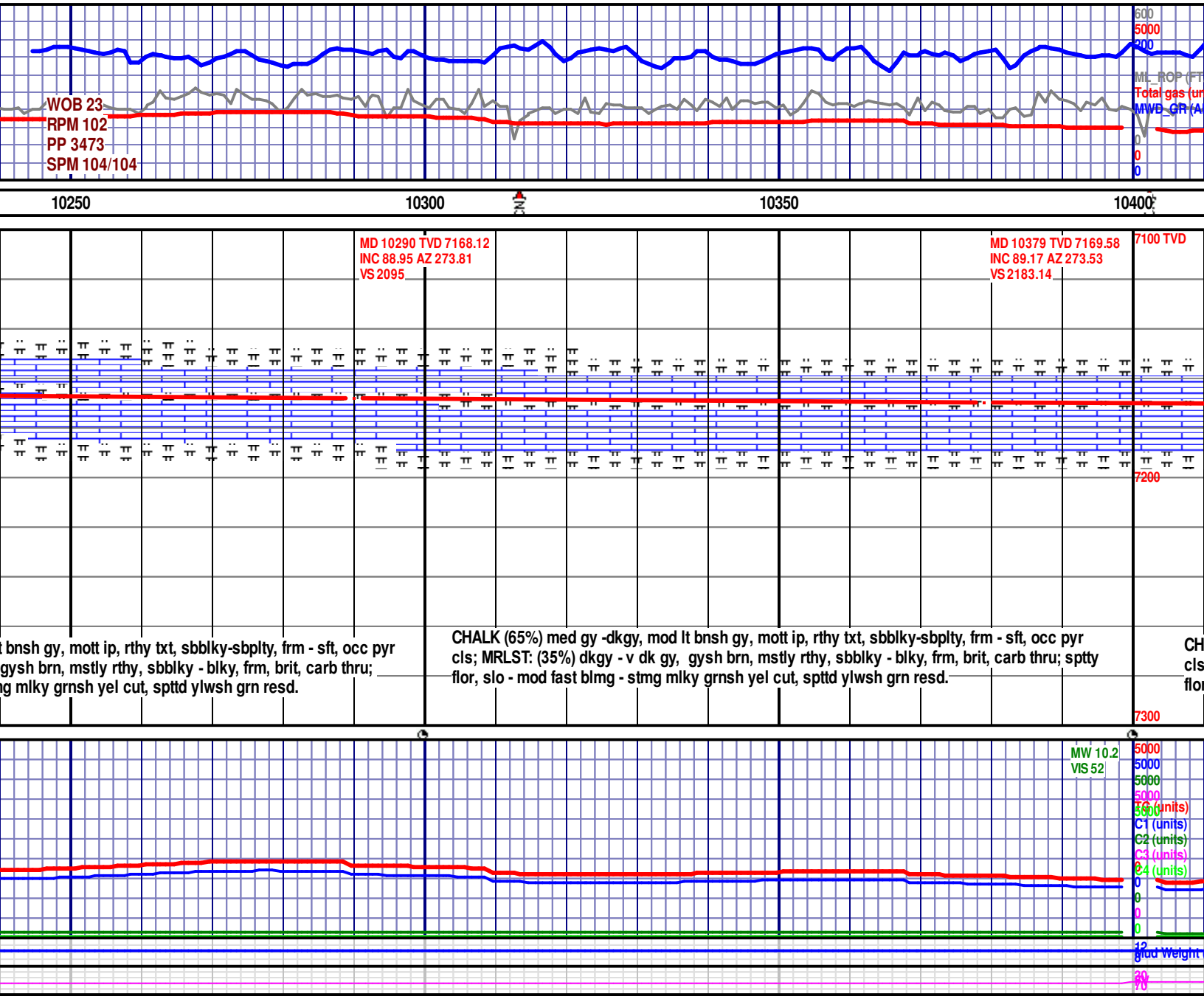

600
5000
200
Total gas (units)
IMWD_GR (API)
0
0
0
WOB 25
RPM 103
PP 3863
SPM 104/104
9400
CN
9450
9500
CN
9550
MD 9395 TVD 7159.78
INC 90.28 AZ 271.52
VS 1205.15
MD 9484 TVD 7159.56
INC 90 AZ 271.27
VS 1293.72
CHALK (70%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft; MRLST: (30%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (70%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy
MRLST: (30%) dkgy - v dk gy, gysh brn, mstly rthy, sbblk
sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut,
7100
7200
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
MW 10.2
VIS 50
12
Mud Weight (ppg)
8
30
70

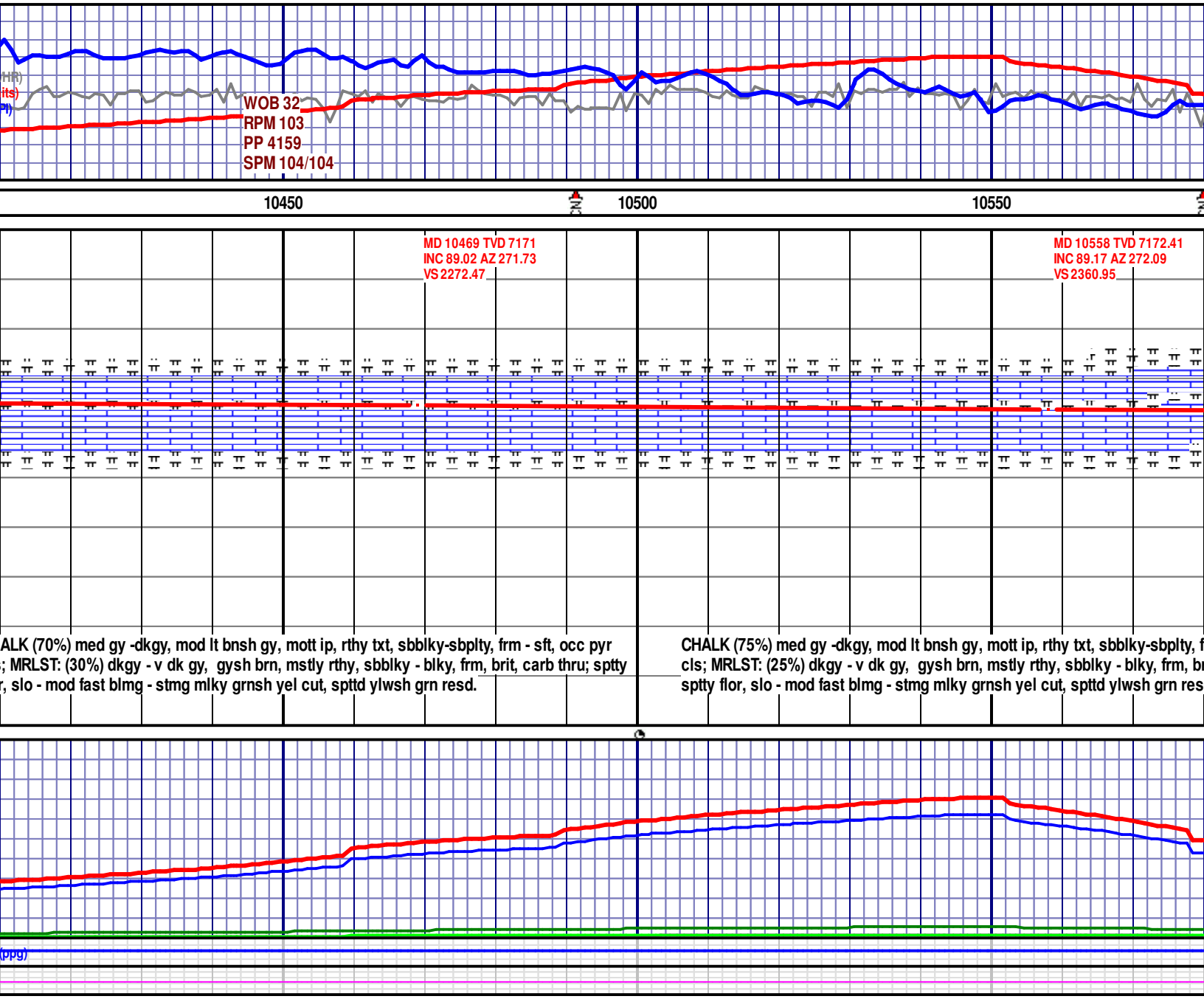

600
5000
200
MIL_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 28
RPM 113
PP 3820
SPM 104/104
9600
9650
9700
MD 9574 TVD 7159.54
INC 90.03 AZ 270.45
VS 1383.36
MD 9663 TVD 7160.07
INC 89.29 AZ 269.22
VS 1472.13
txt, sbblky-sbplty, frm - sft;
y - blky, frm, brit, carb thru;
spttd ylwsh grn resd.
Scale Change
7200
7300
CHALK (60%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft; MRLST: (40%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (60%) med gy -dkgy,
cls; MRLST: (40%) dkgy - v
flor, slo - mod fast blmg - st
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
30
70

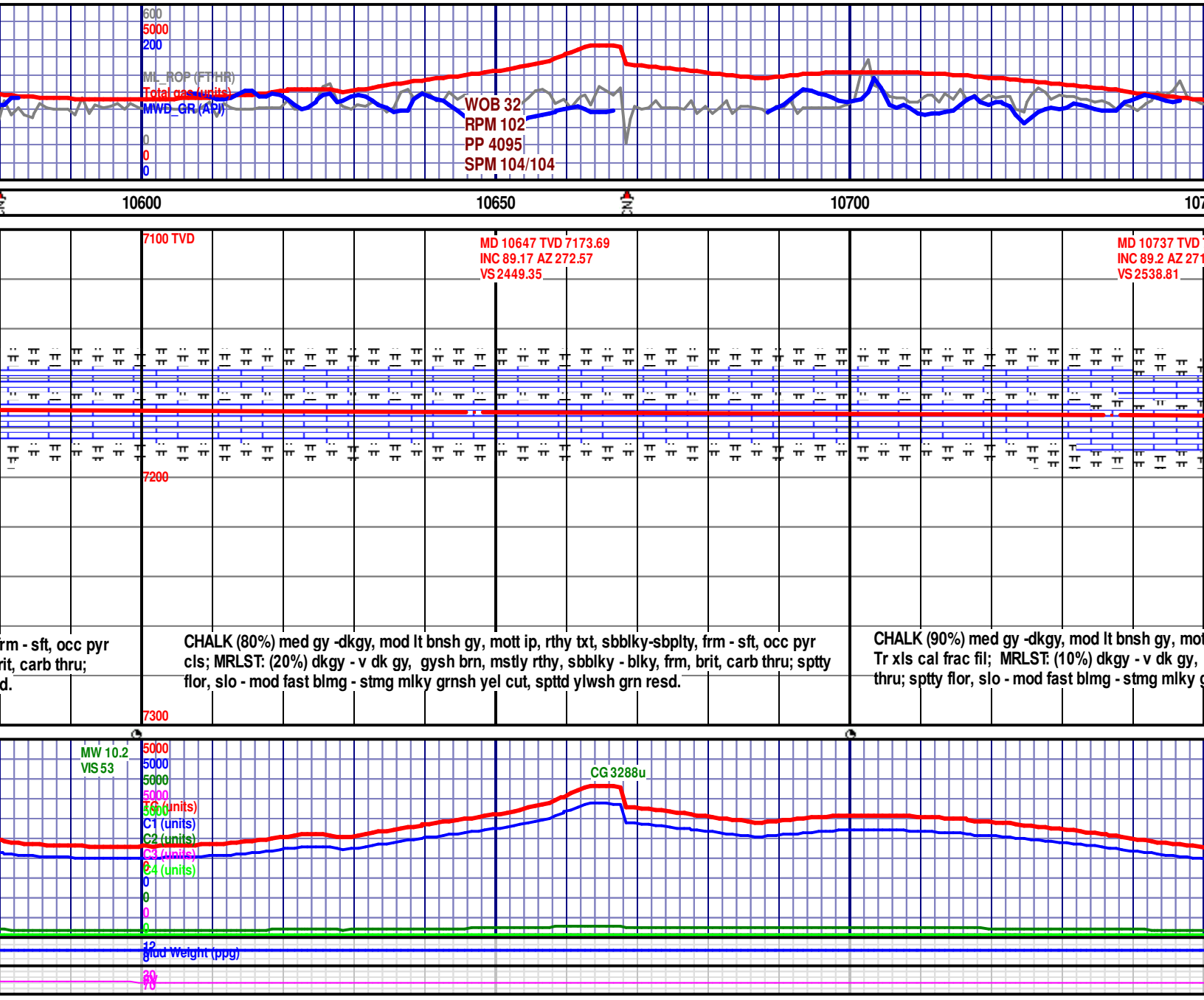

600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 31
RPM 112
PP 3939
SPM 104/104
9750
INC
9800
9850
INC
99
MD 9753 TVD 7161.11
INC 89.38 AZ 271.01
VS 1561.85
7100 TVD
MD 9842 TVD 7161.95
INC 89.54 AZ 272.41
VS 1650.36
7200
mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr
dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty
mg mlky grnsh yel cut, sptted ylwsh grn resd.
CHALK (70%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr
cls; MRLST: (30%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru;
sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptted ylwsh grn resd.
7300
MW 10.2
VIS 52
5000
5000
5000
5000
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
8
30
70

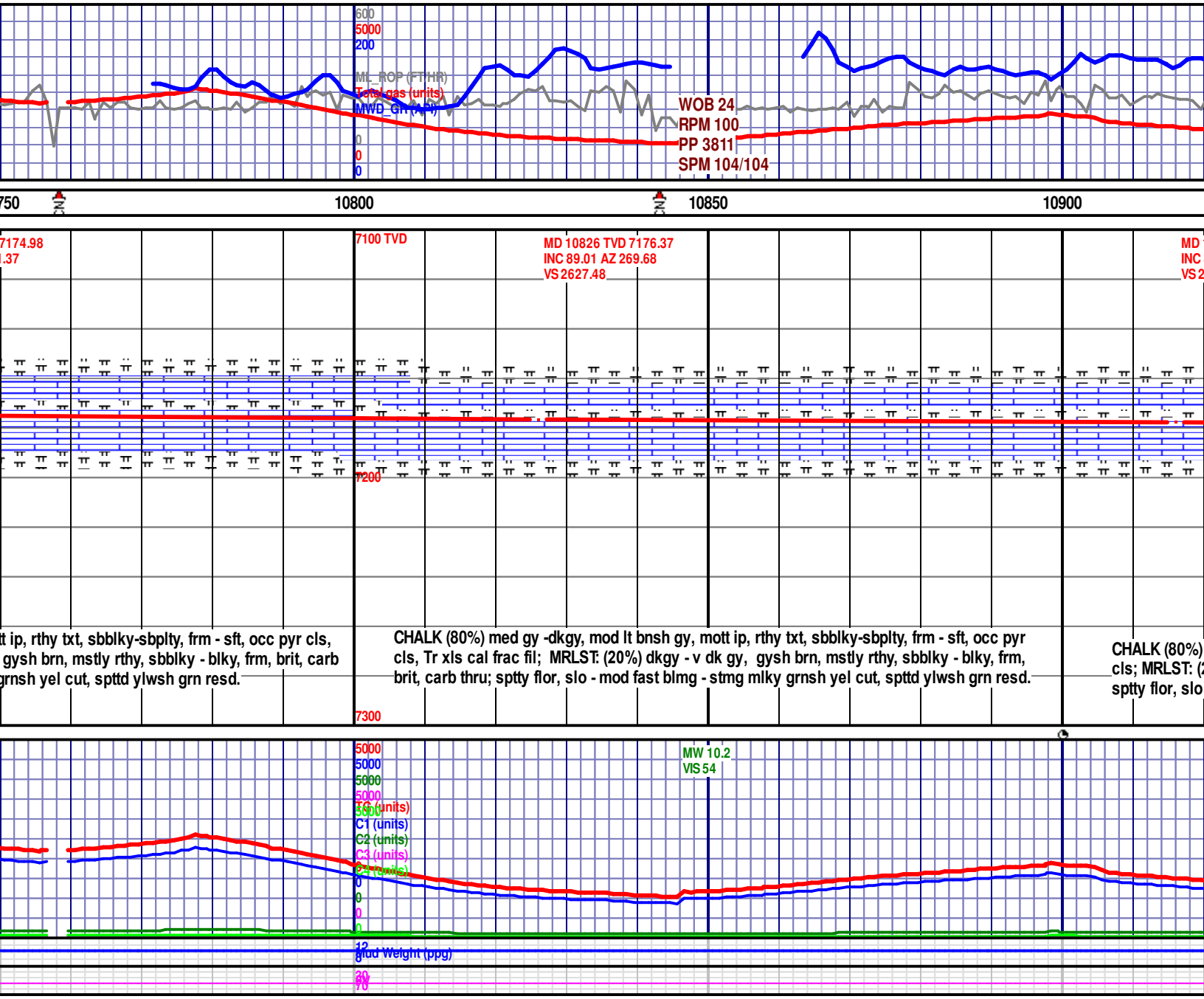

600
5000
200
Total gas (units)
MWD_GR (API)
0
0
0
WOB 29
RPM 100
PP 3968
SPM 104/104
00
9950
10000
10050
MD 9932 TVD 7162.74
INC 89.45 AZ 273.06
VS 1739.69
7100 TVD
MD 10021 TVD 7163.72
INC 89.29 AZ 272.23
VS 1828.04
7200
7300
CHALK (65%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls; MRLST: (35%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptty ylwsh grn resd.
CHALK (85%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbbl
cls; MRLST: (15%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky -
sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptty ylw
MW 10.2
VIS 53
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
0
0
0
0
12
Mud Weight (ppg)
8
30
70

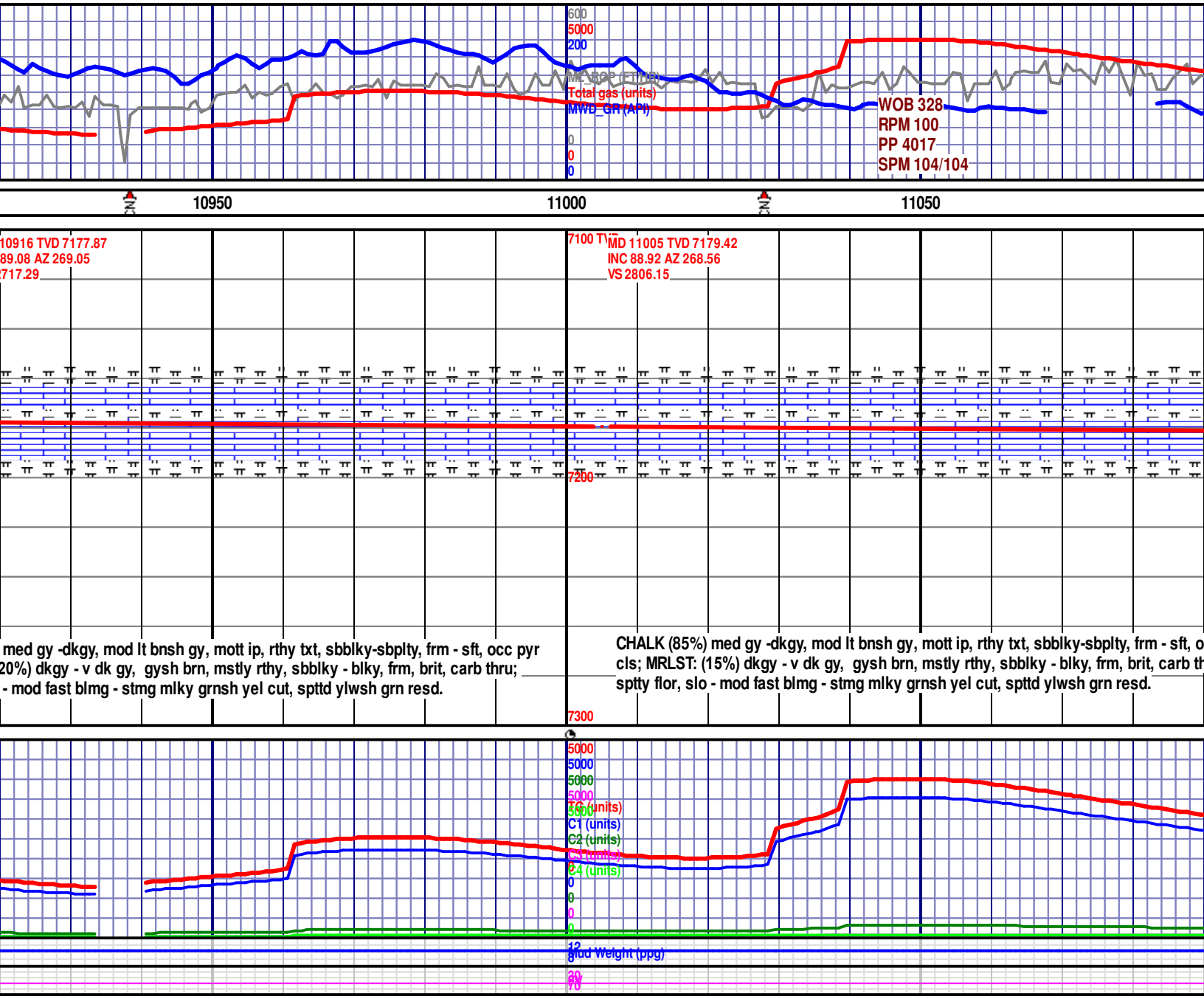

600
5000
200
Total gas (units)
MWD GR (API)
0
0
0
10100
10150
10200
MD 10111 TVD 7165.05
INC 89.02 AZ 272.22
VS 1917.45
MD 10200 TVD 7166.55
INC 89.05 AZ 272.91
VS 2005.81
7200
7300
lky-sbplty, frm - sft, occ pyr
blky, frm, brit, carb thru;
vsh grn resd.
CHALK (80%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr
cls; MRLST: (20%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru;
sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
CHALK (60%) med gy -dkgy, mod lt
cls; MRLST: (40%) dkgy - v dk gy,
sptty flor, slo - mod fast blmg - stm
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)

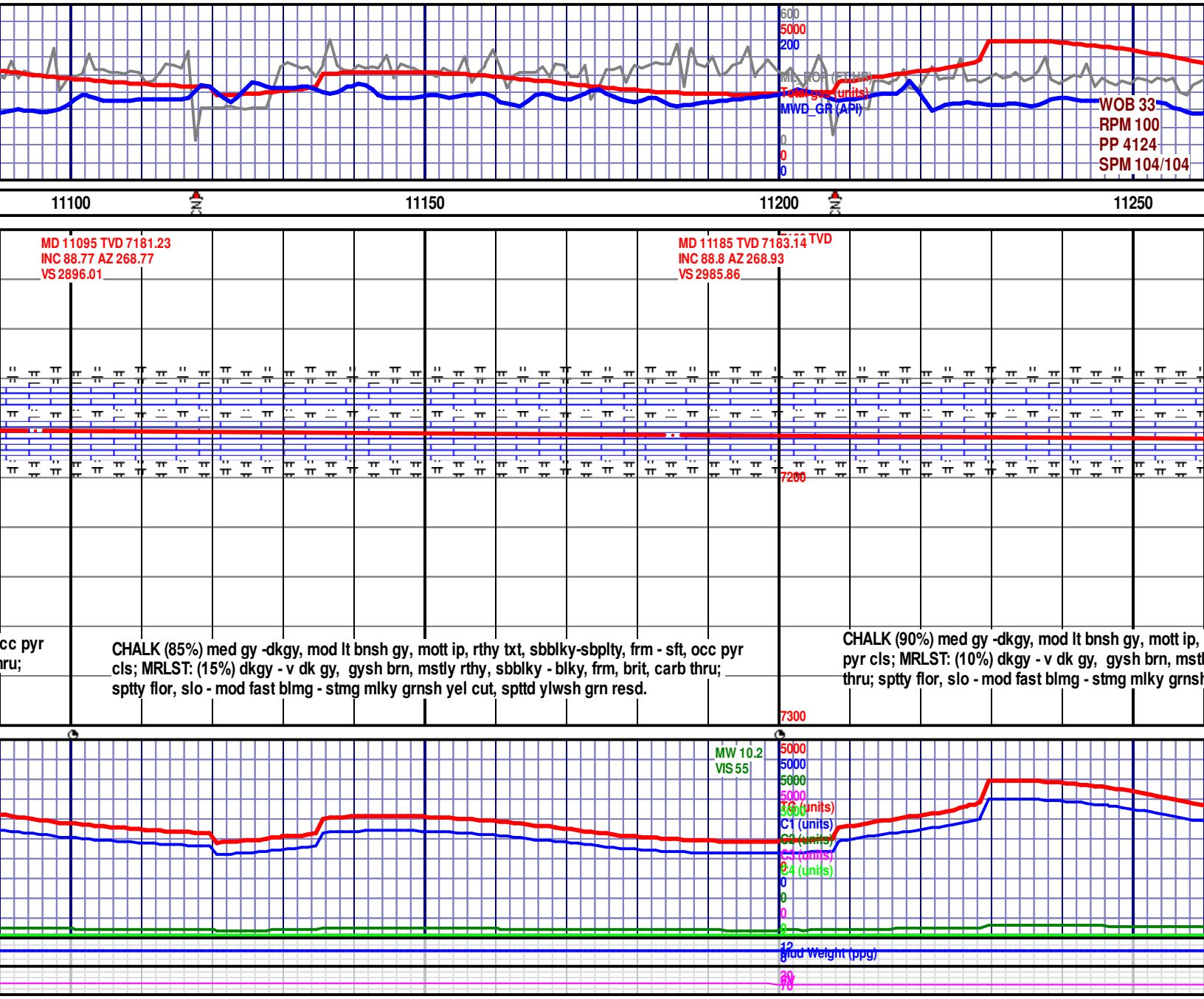

WOB 23
RPM 102
PP 3473
SPM 104/104
600
5000
200
ML_ROP (FT
Total gas (ur
MWD_GR (A
0
0
0
10250
10300
10350
10400
MD 10290 TVD 7168.12
INC 88.95 AZ 273.81
VS 2095
MD 10379 TVD 7169.58
INC 89.17 AZ 273.53
VS 2183.14
7100 TVD
7200
7300
t bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr
gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru;
g mlky grnsh yel cut, sptd ylwsh grn resd.
CHALK (65%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr
cls; MRLST: (35%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty
flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
CH
cls
flo
MW 10.2
VIS 52
5000
5000
5000
5000
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
0
12
Mud Weight
30
70

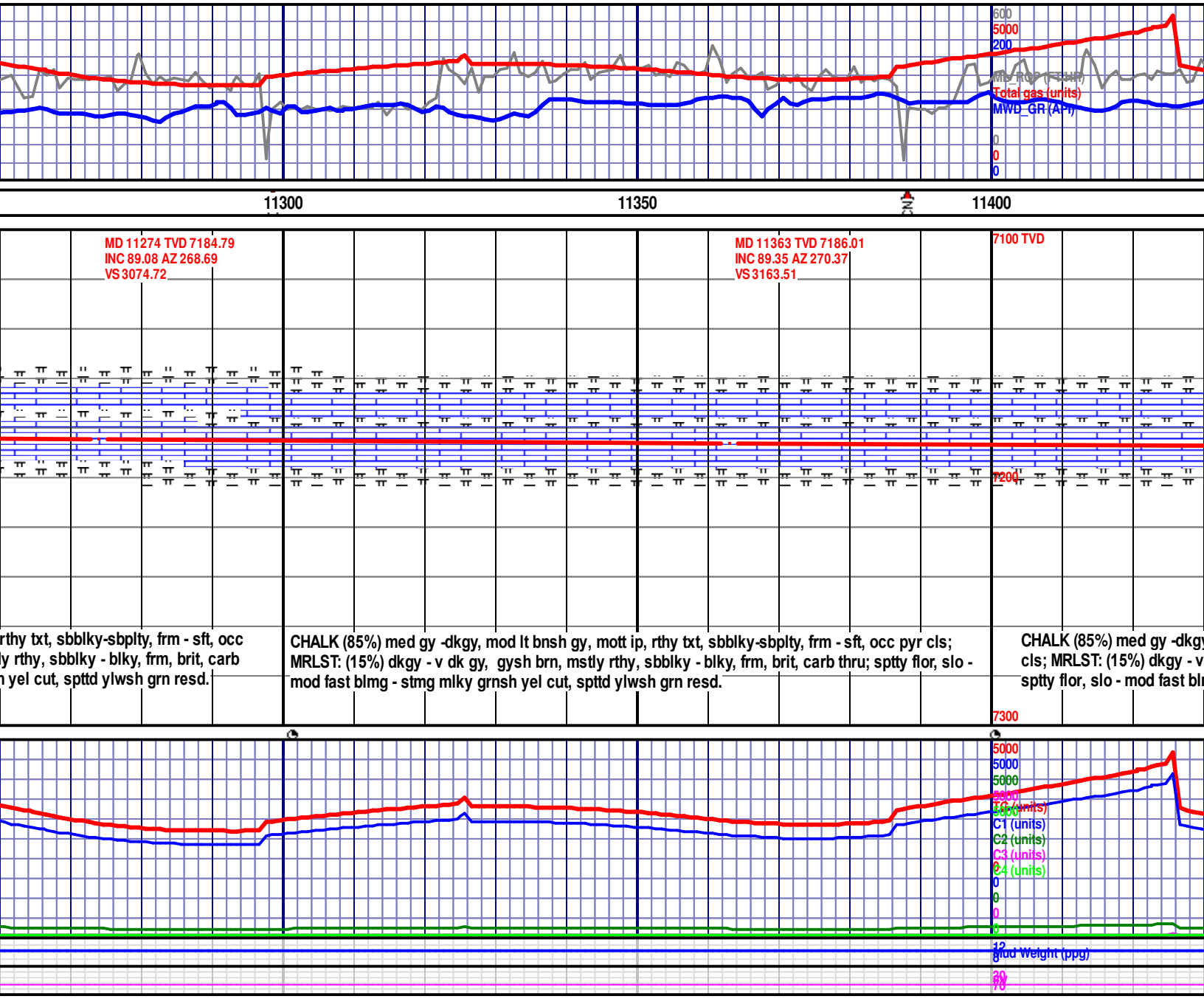

WOB 32
RPM 103
PP 4159
SPM 104/104
10450
10500
10550
MD 10469 TVD 7171
INC 89.02 AZ 271.73
VS 2272.47
MD 10558 TVD 7172.41
INC 89.17 AZ 272.09
VS 2360.95
ALK (70%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr
; MRLST: (30%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty
r, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
CHALK (75%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, f
cls; MRLST: (25%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, br
sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn res
(ppg)

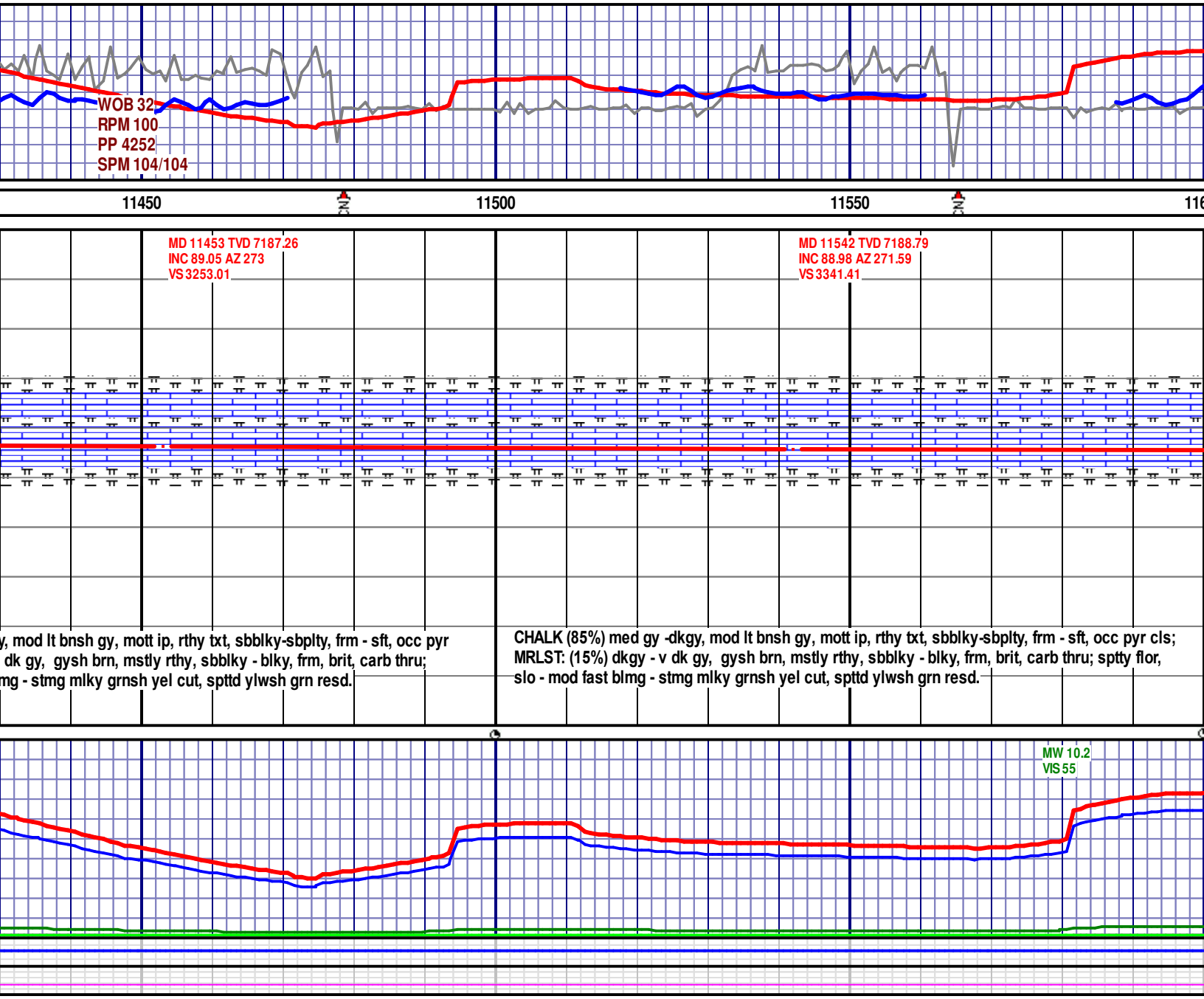

600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 32
RPM 102
PP 4095
SPM 104/104
10600
10650
10700
7100 TVD
MD 10647 TVD 7173.69
INC 89.17 AZ 272.57
VS 2449.35
MD 10737 TVD
INC 89.2 AZ 271
VS 2538.81
7200
rm - sft, occ pyr
rit, carb thru;
d.
CHALK (80%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls; MRLST: (20%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
CHALK (90%) med gy -dkgy, mod lt bnsh gy, mot
Tr xls cal frac fil; MRLST: (10%) dkgy - v dk gy,
thru; sptty flor, slo - mod fast blmg - stmg mlky
7300
MW 10.2
VIS 53
5000
5000
5000
5000
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
30
70
CG 3288u

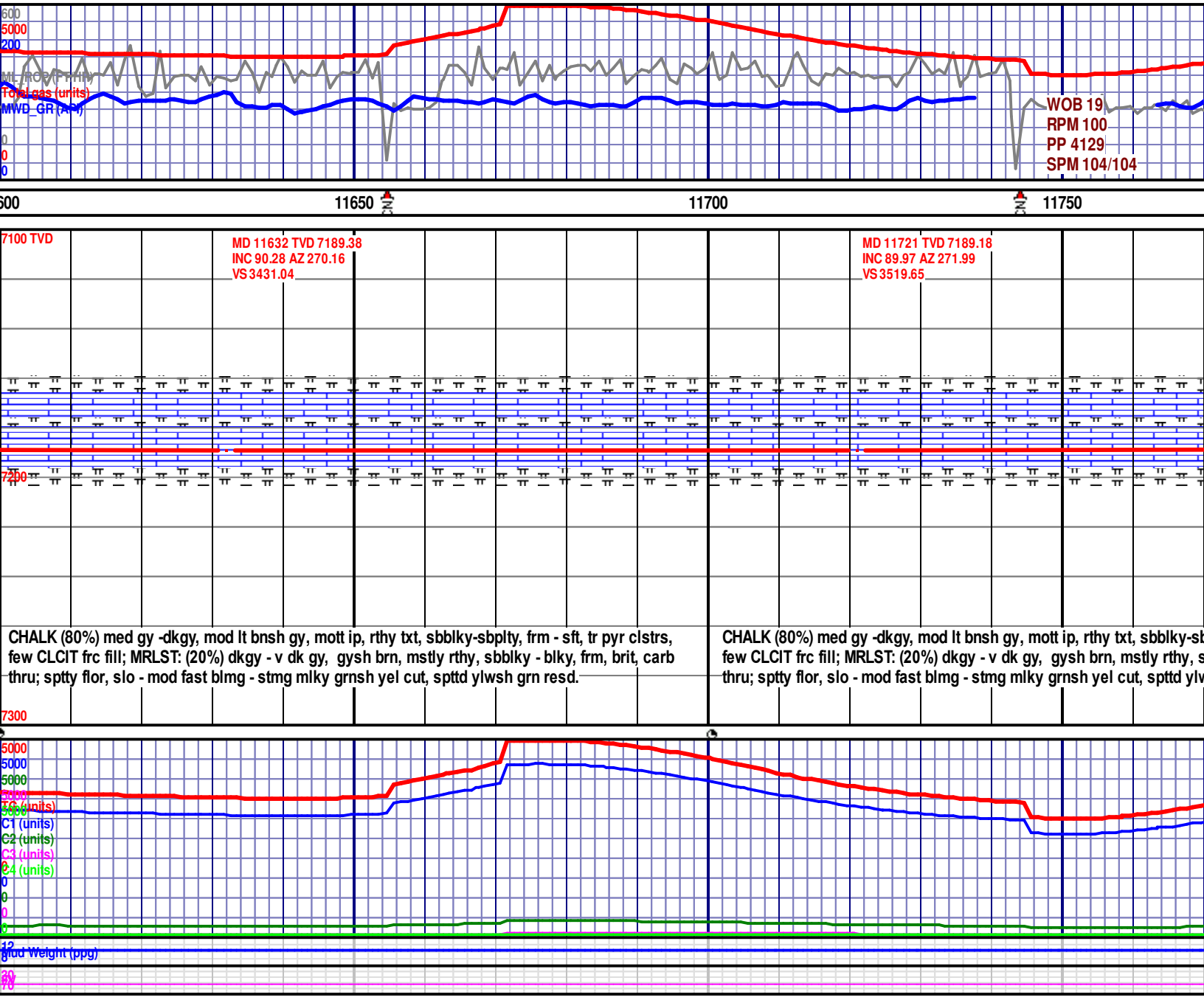

600
5000
200
ML ROP (FT/HR)
Total gas (units)
MWD GR (API)
0
0
0
WOB 24
RPM 100
PP 3811
SPM 104/104
750
10800
10850
10900
7174.98
.37
7100 TVD
MD 10826 TVD 7176.37
INC 89.01 AZ 269.68
VS 2627.48
MD
INC
VS 2
7200
7300
t ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls,
gysh brn, mstly rthy, sbblky - blky, frm, brit, carb
grnsh yel cut, spttd ylwsh grn resd.
CHALK (80%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls, Tr xls cal frac fil; MRLST: (20%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (80%)
cls; MRLST: (2
sptty flor, slo
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
8
30
90
MW 10.2
VIS 54
Mud Weight (ppg)

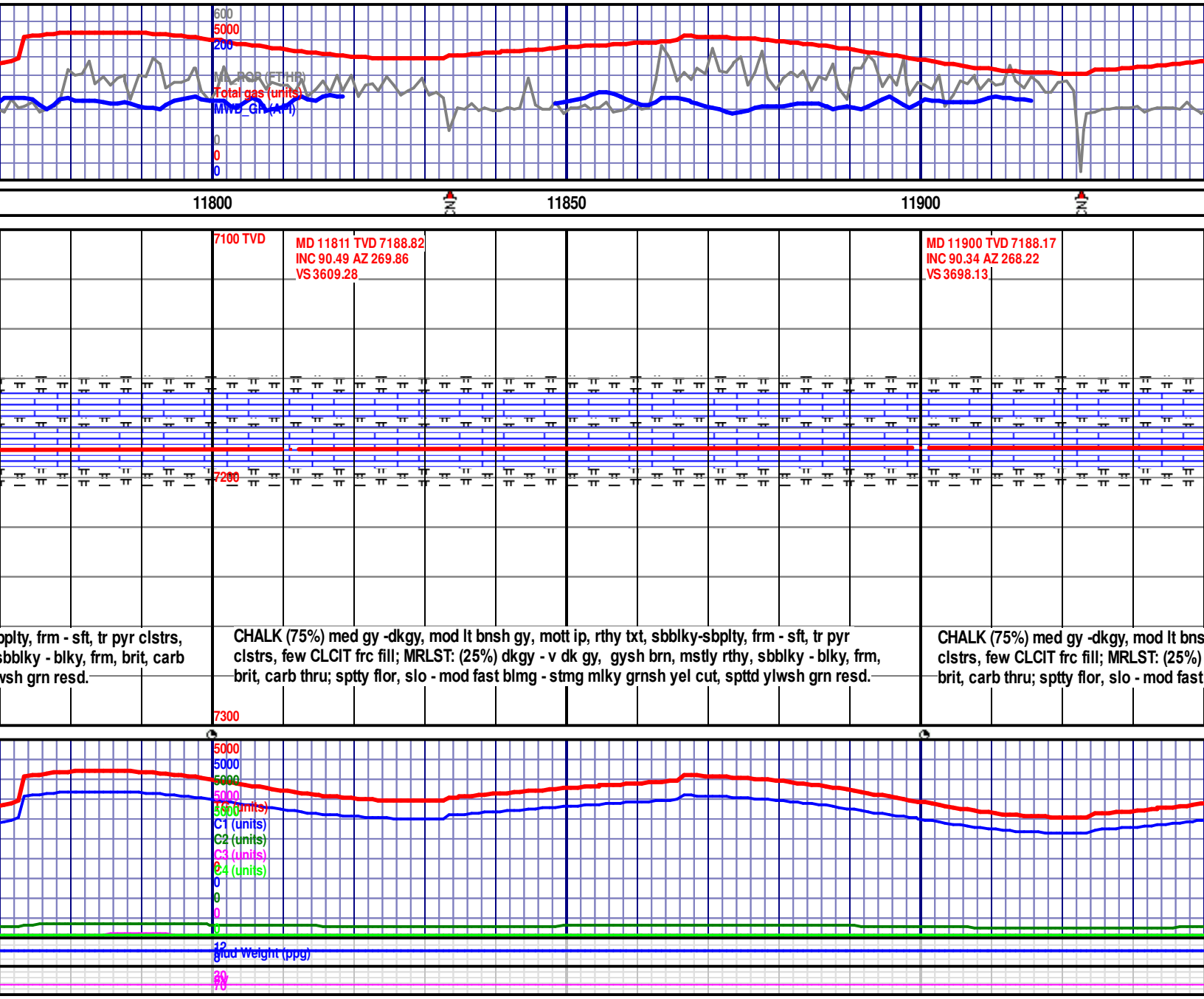

600
5000
200
Total gas (units)
WOB 328
RPM 100
PP 4017
SPM 104/104
10950
11000
11050
10916 TVD 7177.87
89.08 AZ 269.05
717.29
MD 11005 TVD 7179.42
INC 88.92 AZ 268.56
VS 2806.15
7200
med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr
20%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru;
- mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
CHALK (85%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, o
cls; MRLST: (15%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb th
sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
7300
5000
5000
5000
5000
C1 (units)
C2 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
30
70

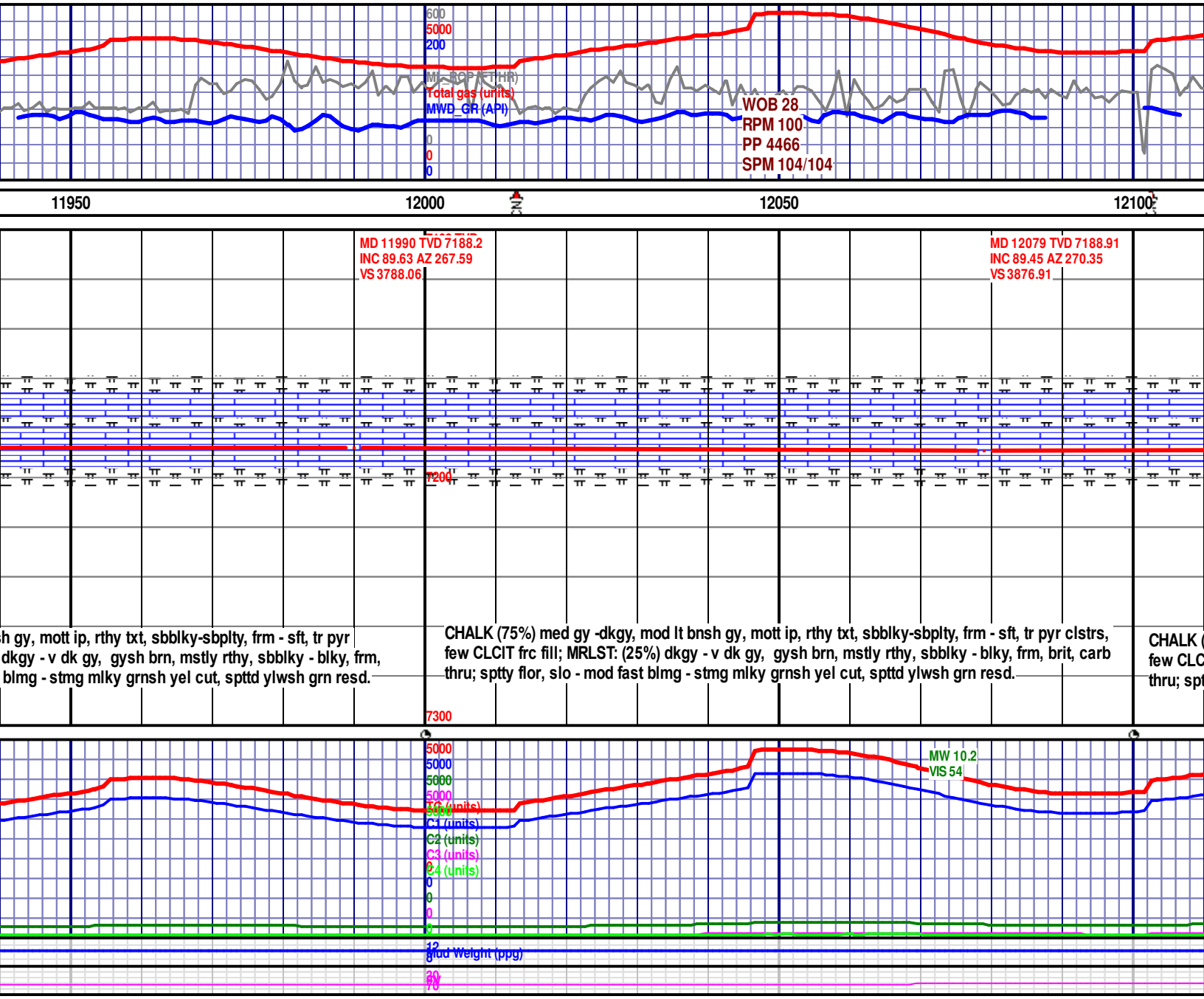

600
5000
200
MWD_GR (API)
0
0
0
WOB 33
RPM 100
PP 4124
SPM 104/104
11100
11150
11200
11250
MD 11095 TVD 7181.23
INC 88.77 AZ 268.77
VS 2896.01
MD 11185 TVD 7183.14
INC 88.8 AZ 268.93
VS 2985.86
7200
7300
cc pyr
hru;
CHALK (85%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls; MRLST: (15%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (90%) med gy -dkgy, mod lt bnsh gy, mott ip, pyr cls; MRLST: (10%) dkgy - v dk gy, gysh brn, mstl thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh
MW 10.2
VIS 55
5000
5000
5000
5000
C1 (units)
C4 (units)
0
0
0
12
8
30
70

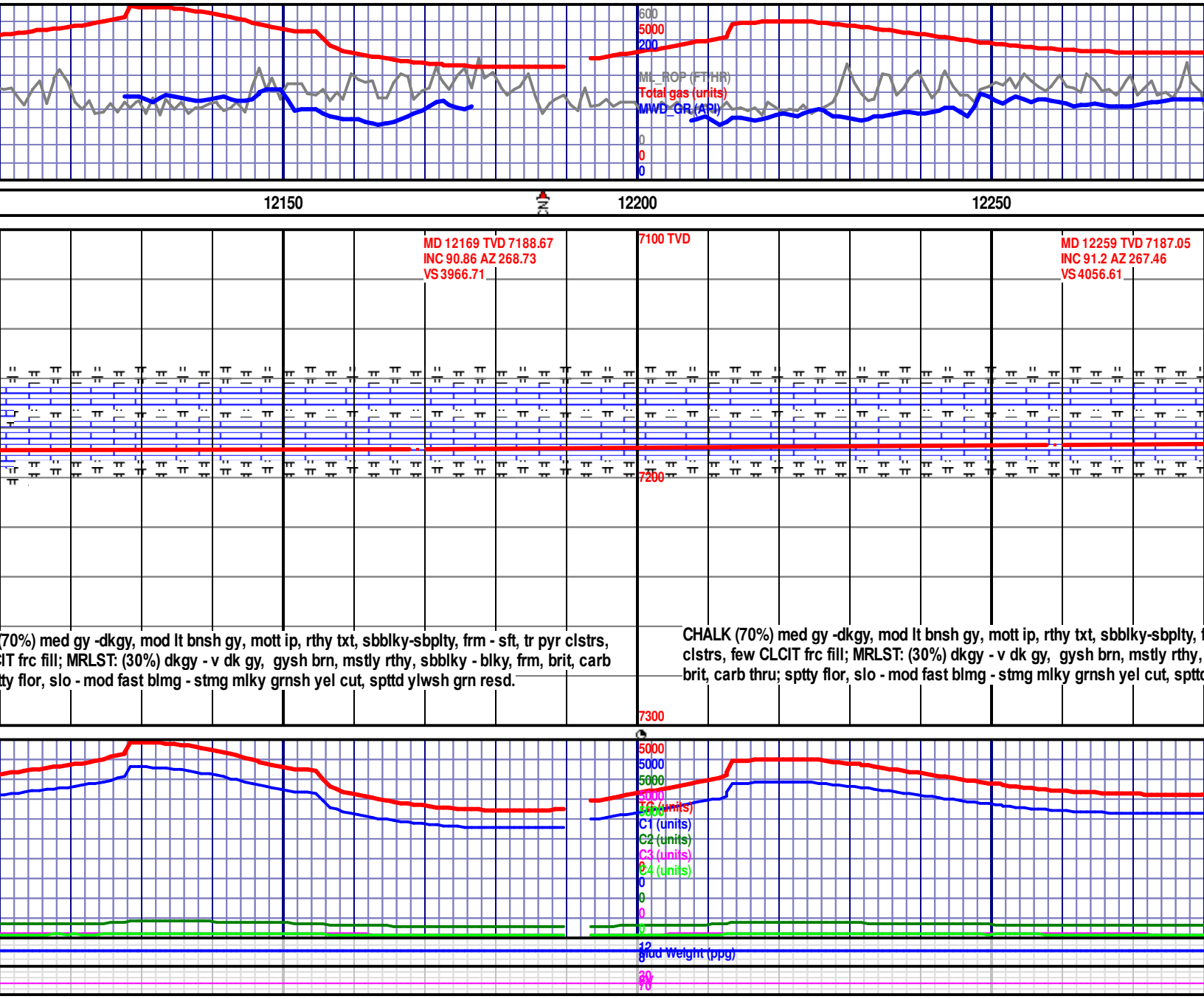

600
5000
200
Total gas (units)
MWD_GR (API)
0
0
0
11300
11350
11400
MD 11274 TVD 7184.79
INC 89.08 AZ 268.69
VS 3074.72
MD 11363 TVD 7186.01
INC 89.35 AZ 270.37
VS 3163.51
7100 TVD
7200
7300
rthy txt, sbblky-sbplty, frm - sft, occ
y rthy, sbblky - blky, frm, brit, carb
n yel cut, spttd ylwsh grn resd.
CHALK (85%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls;
MRLST: (15%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo -
mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (85%) med gy -dkgy
cls; MRLST: (15%) dkgy - v
sptty flor, slo - mod fast bl
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
8
20
70

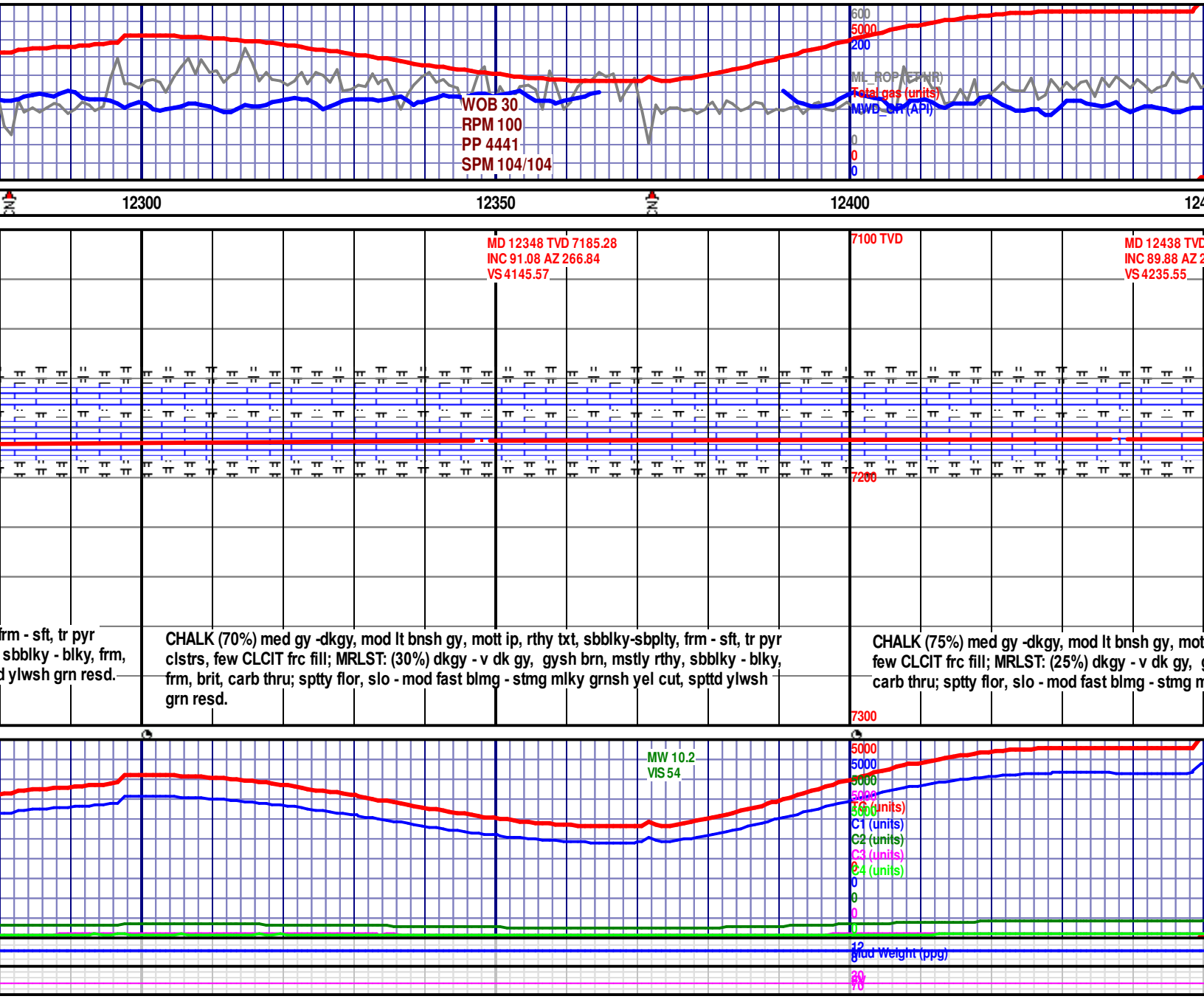

WOB 32
RPM 100
PP 4252
SPM 104/104
11450
CN
11500
11550
CN
MD 11453 TVD 7187.26
INC 89.05 AZ 273
VS 3253.01
MD 11542 TVD 7188.79
INC 88.98 AZ 271.59
VS 3341.41
y, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr
dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru;
mg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (85%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls;
MRLST: (15%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor,
slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
MW 10.2
VIS 55

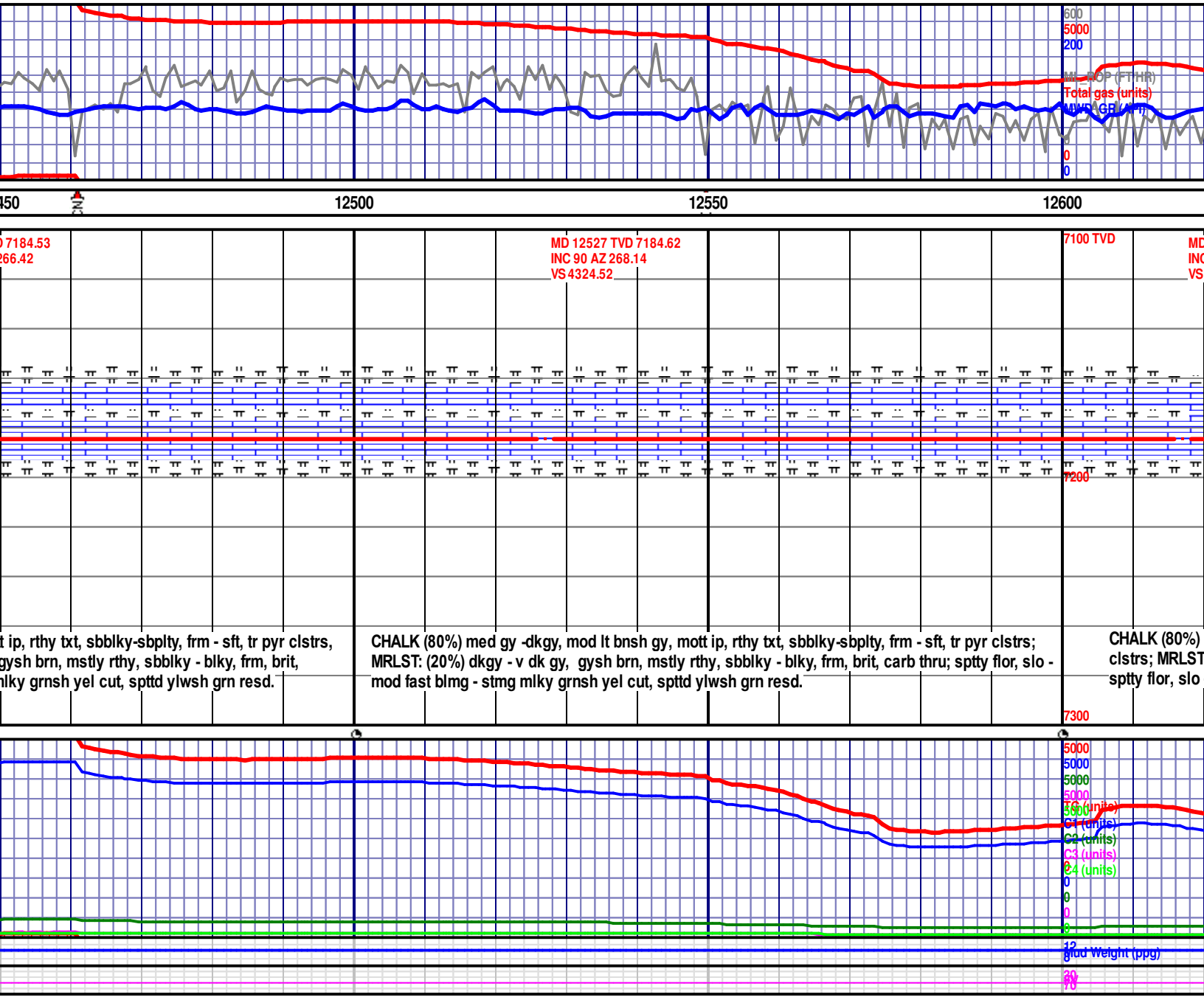

600
5000
200
ROP (FPHR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 19
RPM 100
PP 4129
SPM 104/104
600
11650
CN
11700
CN
11750
7100 TVD
MD 11632 TVD 7189.38
INC 90.28 AZ 270.16
VS 3431.04
MD 11721 TVD 7189.18
INC 89.97 AZ 271.99
VS 3519.65
7200
CHALK (80%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, tr pyr clstrs, few CLCIT frc fill; MRLST: (20%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (80%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sb
few CLCIT frc fill; MRLST: (20%) dkgy - v dk gy, gysh brn, mstly rthy, s
thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylw
7300
5000
5000
5000
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
12
Mud Weight (ppg)
8
20
70

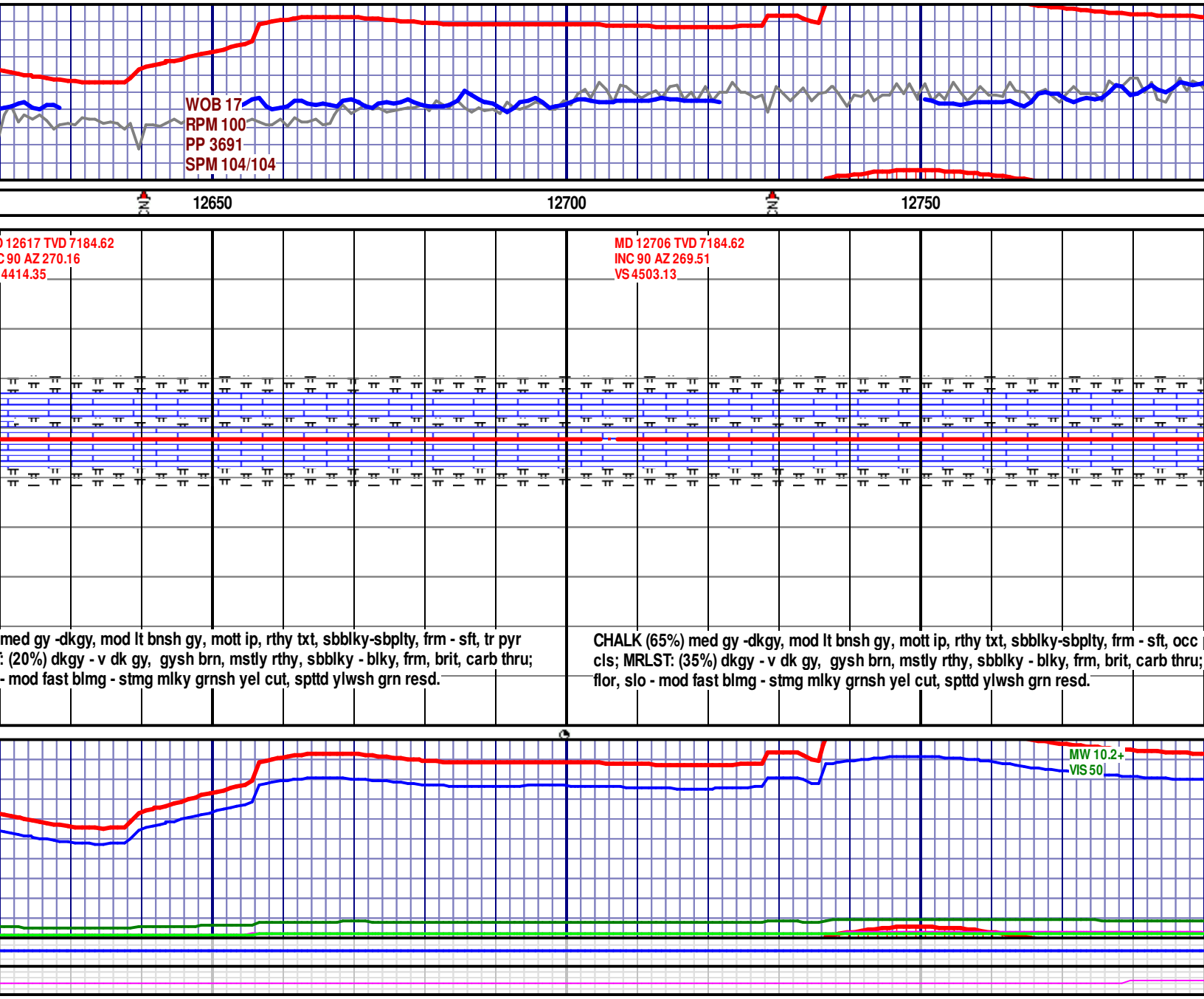

600
5000
200
Total gas (units)
0
0
0
11800
11850
11900
7100 TVD
MD 11811 TVD 7188.82
INC 90.49 AZ 269.86
VS 3609.28
MD 11900 TVD 7188.17
INC 90.34 AZ 268.22
VS 3698.13
7200
pplty, frm - sft, tr pyr clstrs,
sbblky - blky, frm, brit, carb
vsh grn resd.
CHALK (75%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, tr pyr clstrs, few CLCIT frc fill; MRLST: (25%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
CHALK (75%) med gy -dkgy, mod lt bns
clstrs, few CLCIT frc fill; MRLST: (25%)
brit, carb thru; sptty flor, slo - mod fast
7300
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
30
70

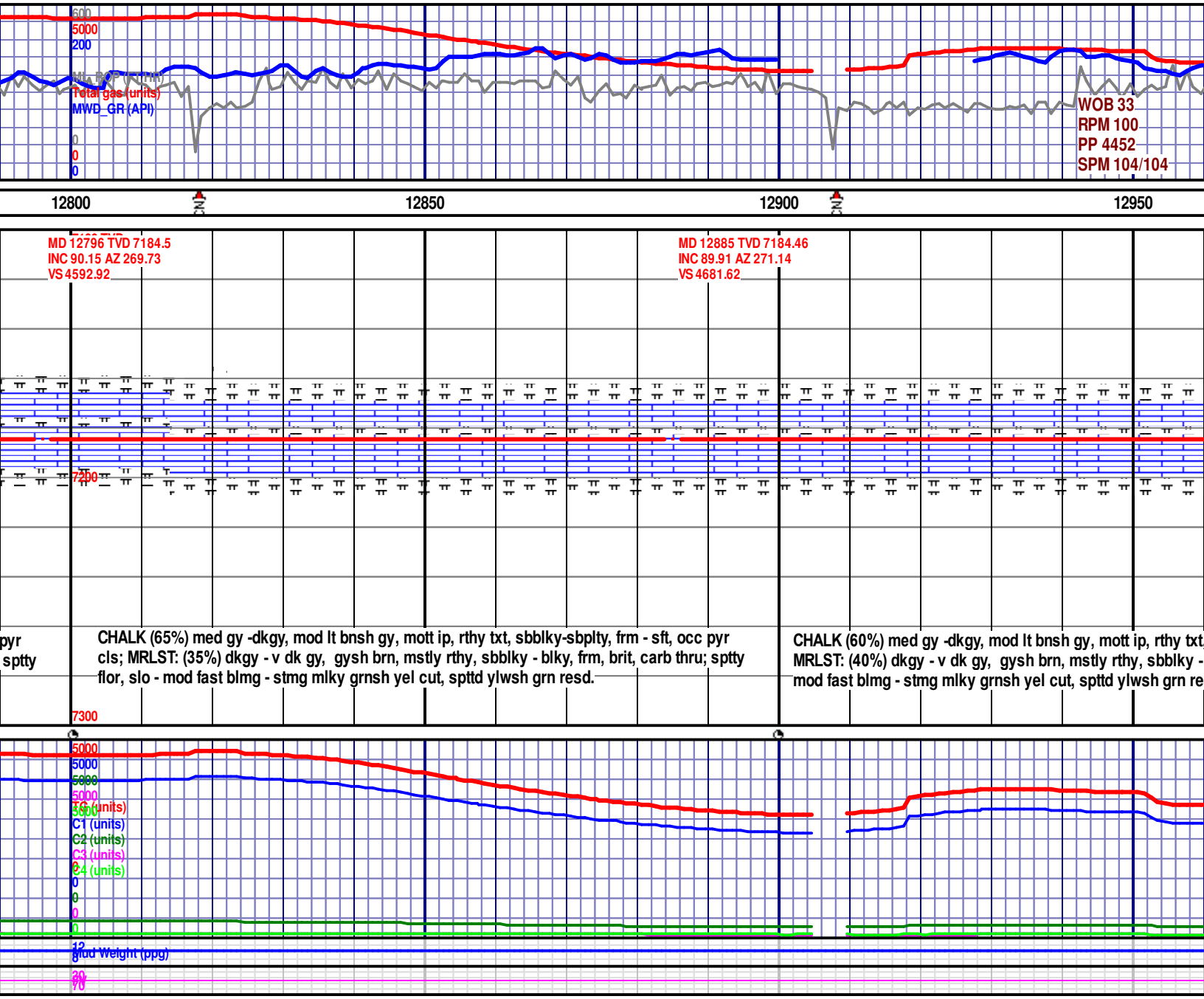

600
5000
200
MI_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 28
RPM 100
PP 4466
SPM 104/104
11950
12000
12050
12100
MD 11990 TVD 7188.2
INC 89.63 AZ 267.59
VS 3788.06
MD 12079 TVD 7188.91
INC 89.45 AZ 270.35
VS 3876.91
7200
sh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, tr pyr
dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm,
blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (75%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, tr pyr clstrs,
few CLCIT frc fill; MRLST: (25%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb
thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (
few CLC
thru; spt
7300
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
MW 10.2
VIS 54
12
Mud Weight (ppg)
8
30
70

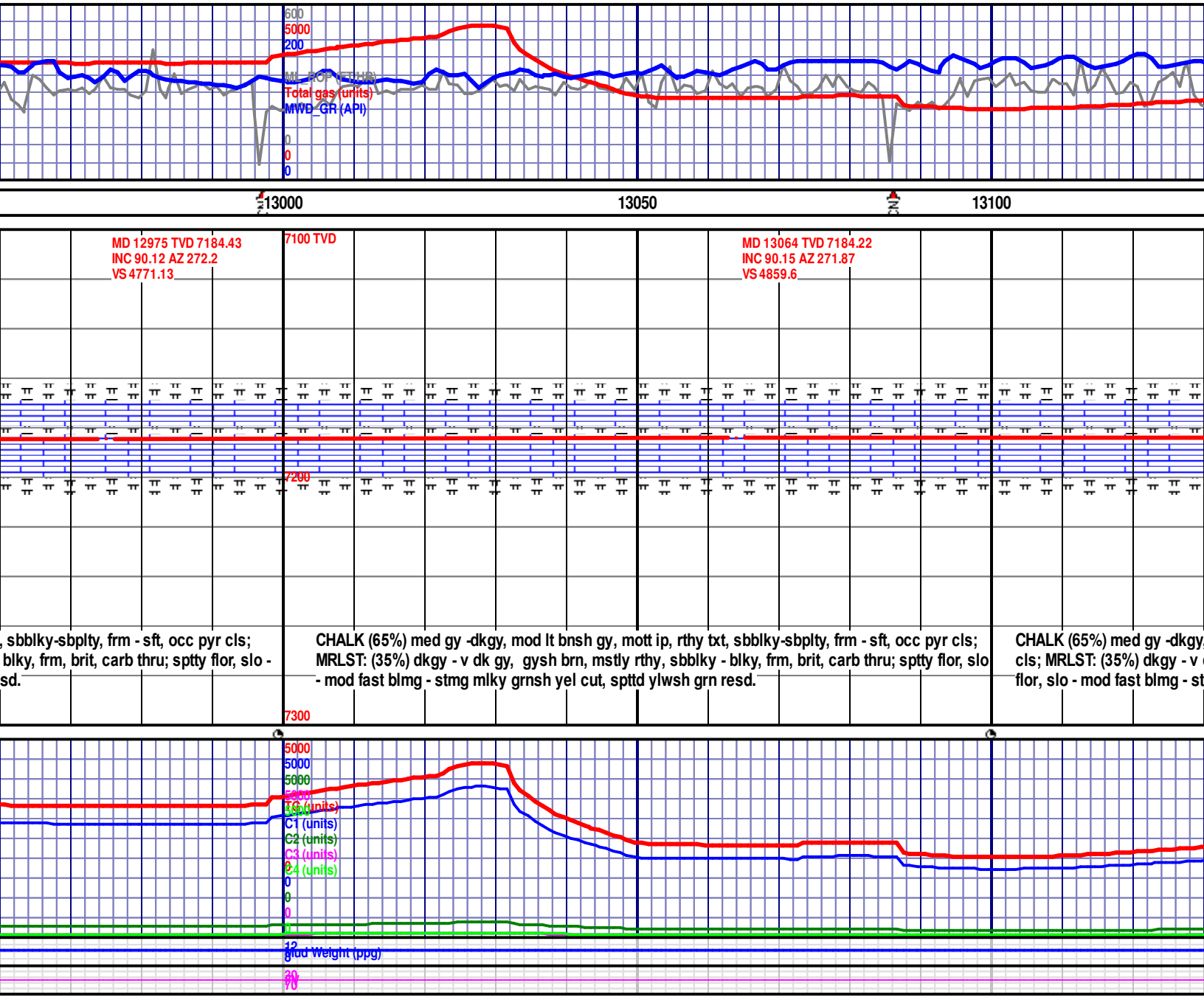

600
5000
200
MI_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
12150
12200
12250
MD 12169 TVD 7188.67
INC 90.86 AZ 268.73
VS 3966.71
7100 TVD
MD 12259 TVD 7187.05
INC 91.2 AZ 267.46
VS 4056.61
7200
7300
(70%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, tr pyr clstrs,
IT frc fill; MRLST: (30%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb
tty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (70%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty,
clstrs, few CLCIT frc fill; MRLST: (30%) dkgy - v dk gy, gysh brn, mstly rthy,
brit, carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptt
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
30
70

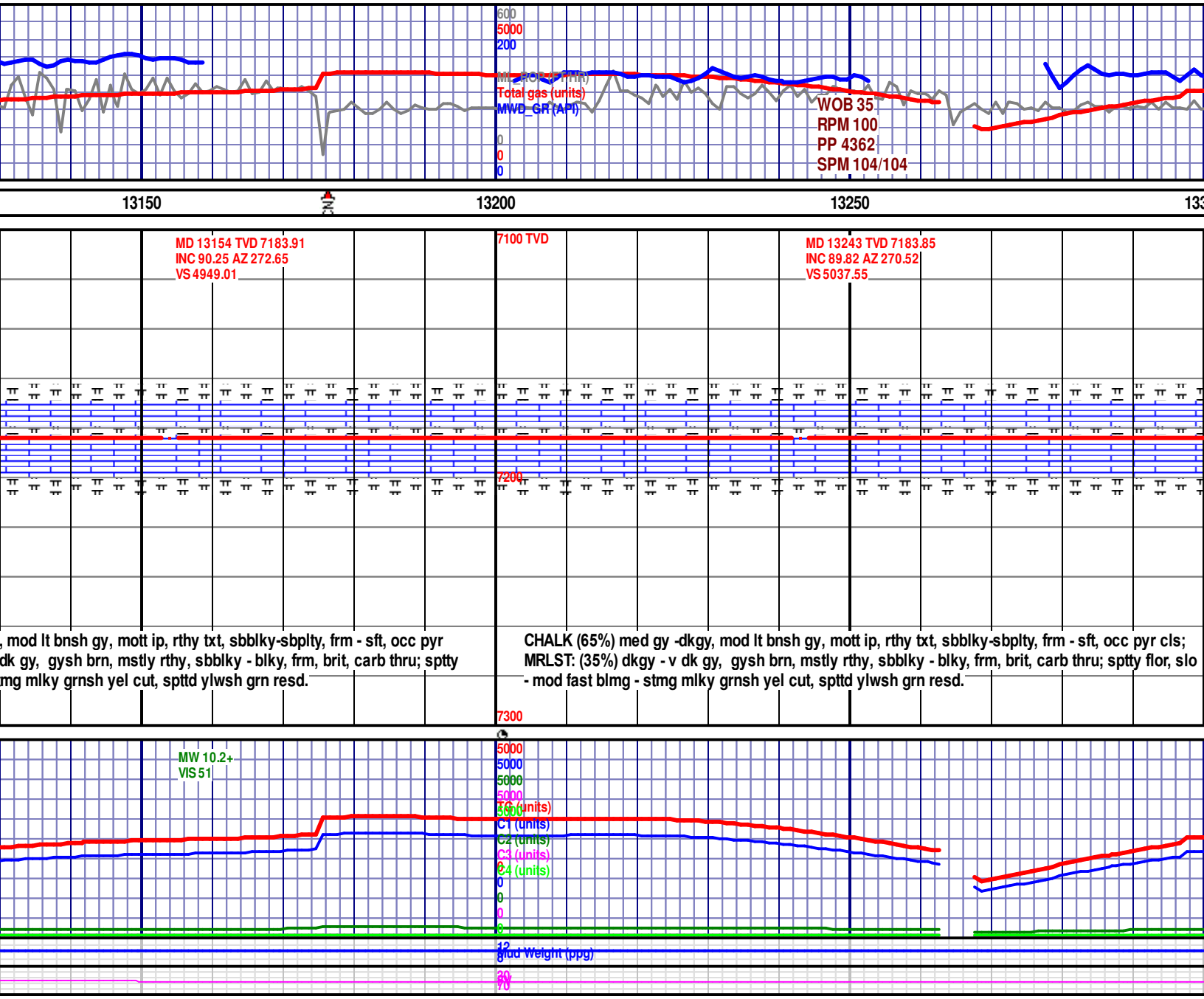

600
5000
200
MI_ROP(FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 30
RPM 100
PP 4441
SPM 104/104
12300
12350
12400
MD 12348 TVD 7185.28
INC 91.08 AZ 266.84
VS 4145.57
7100 TVD
MD 12438 TVD
INC 89.88 AZ
VS 4235.55
7200
frm - sft, tr pyr
sbblky - blky, frm,
d ylwsh grn resd.
CHALK (70%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, tr pyr clstrs, few CLCIT frc fill; MRLST: (30%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (75%) med gy -dkgy, mod lt bnsh gy, mot
few CLCIT frc fill; MRLST: (25%) dkgy - v dk gy,
carb thru; sptty flor, slo - mod fast blmg - stmg
7300
MW 10.2
VIS 54
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
8
30
70

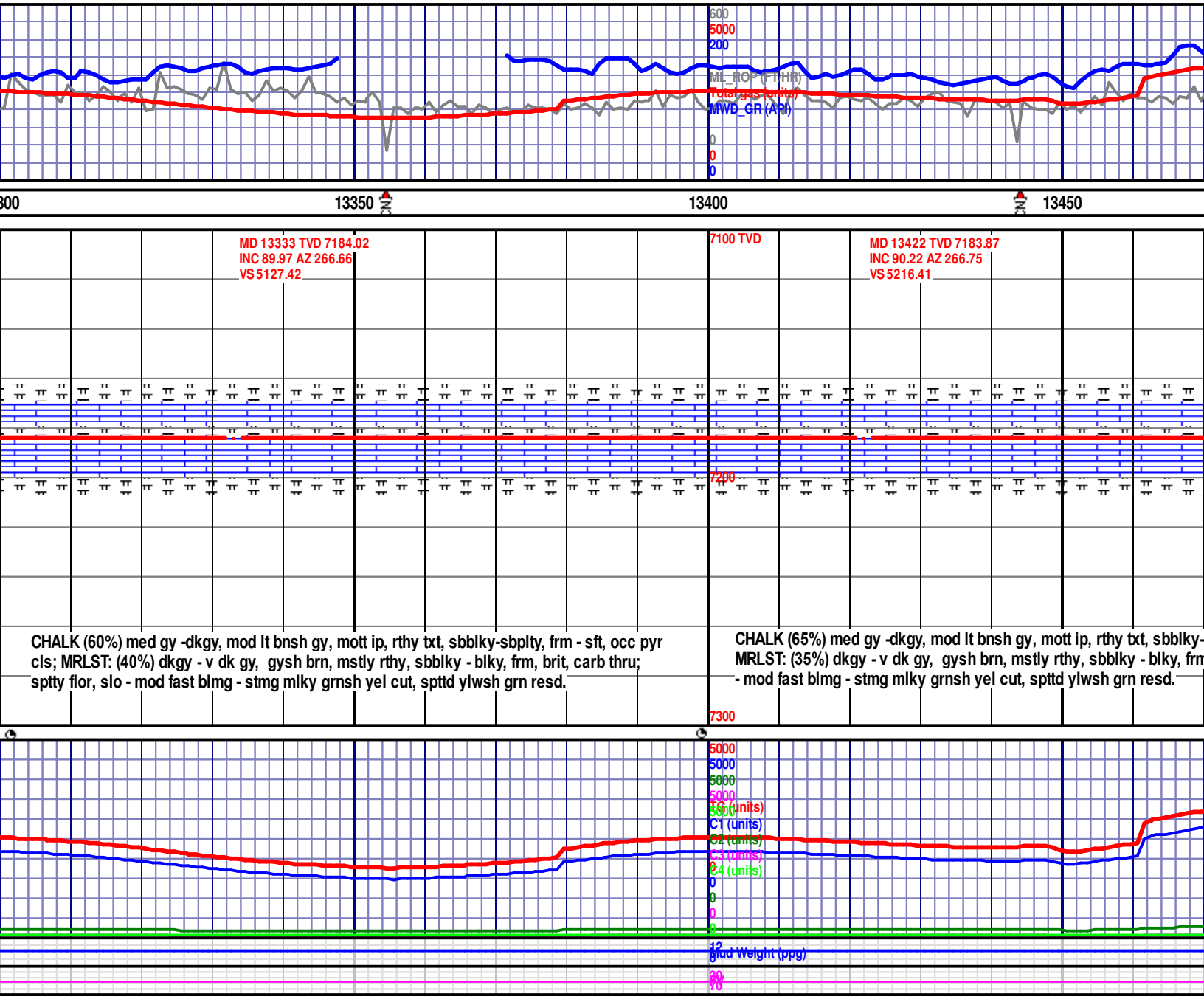

600
5000
200
ROP (FT/HR)
Total gas (units)
MWD GR (API)
0
0
450
12500
12550
12600
MD 7184.53
INC 266.42
MD 12527 TVD 7184.62
INC 90 AZ 268.14
VS 4324.52
7100 TVD
7200
7300
t ip, rthy txt, sbblky-sbplty, frm - sft, tr pyr clstrs, gysh brn, mstly rthy, sbblky - blky, frm, brit, nlky grnsh yel cut, sptd ylwsh grn resd.
CHALK (80%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, tr pyr clstrs; MRLST: (20%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
CHALK (80%)
clstrs; MRLST
sptty flor, slo
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
8
12
Mud Weight (ppg)
30
70

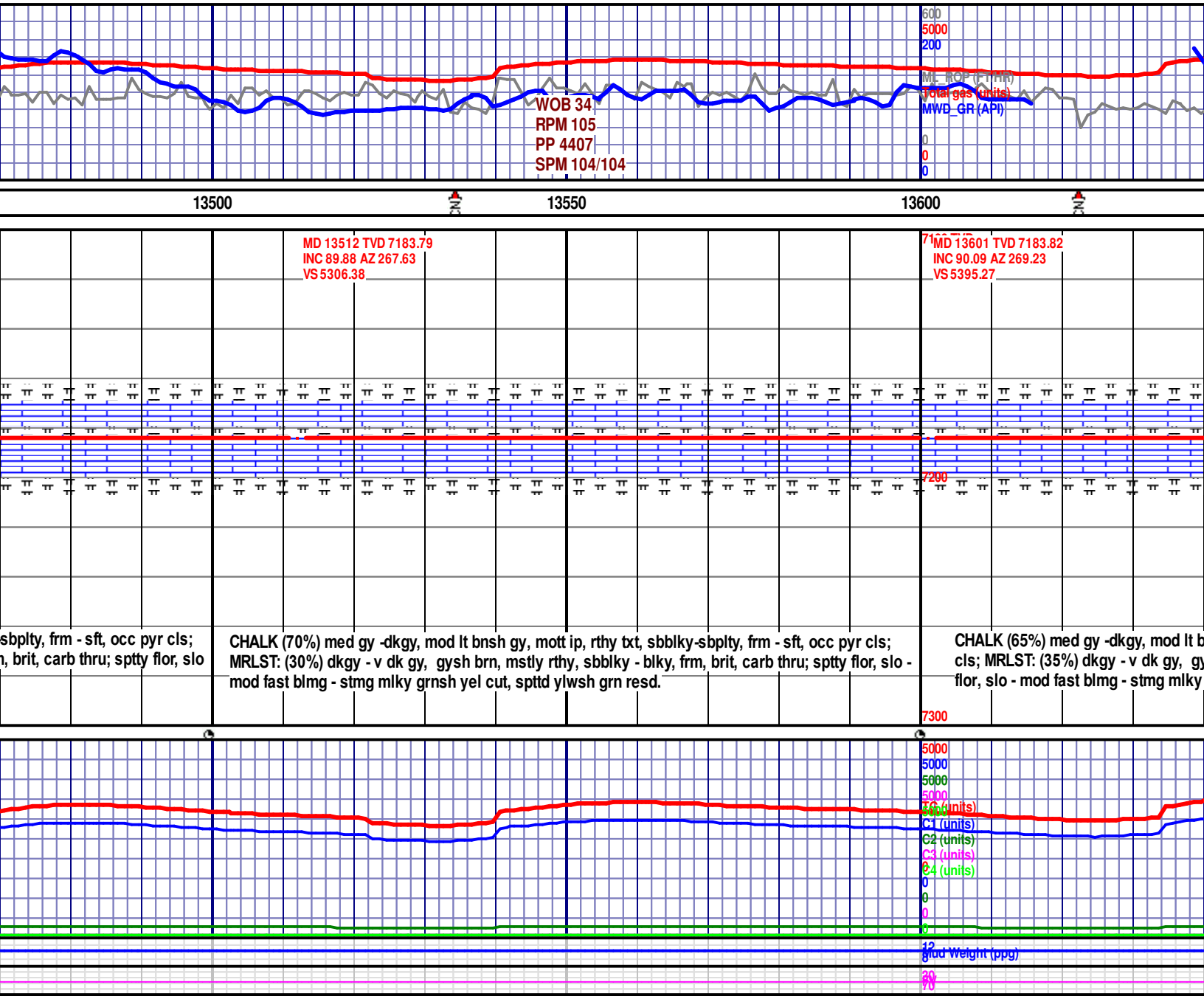

WOB 17
RPM 100
PP 3691
SPM 104/104
12650
12700
12750
D 12617 TVD 7184.62
C 90 AZ 270.16
4414.35
MD 12706 TVD 7184.62
INC 90 AZ 269.51
VS 4503.13
med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, tr pyr
: (20%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru;
- mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (65%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ
cls; MRLST: (35%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru;
flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
MW 10.2+
VIS 50

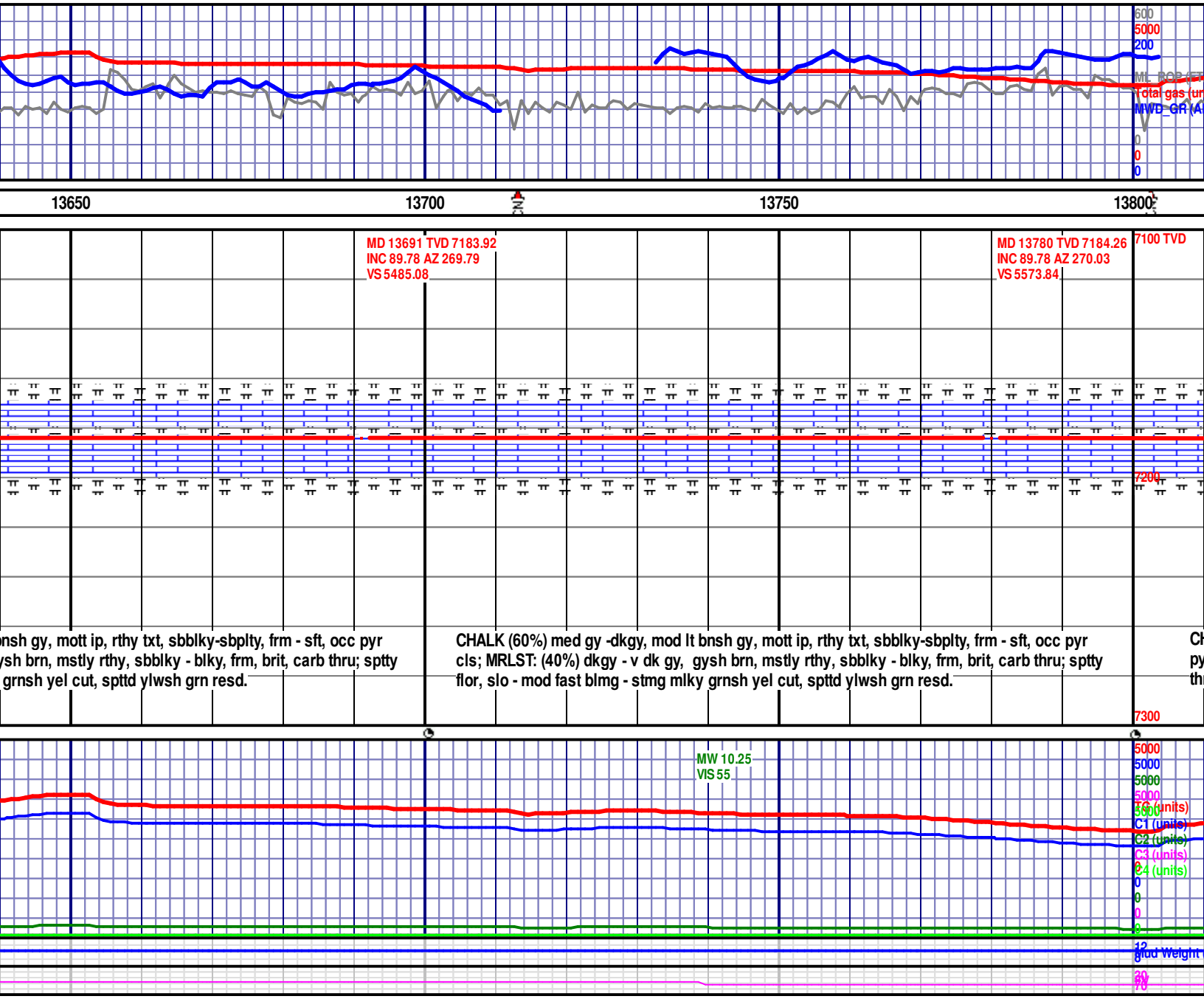

600
5000
200
ROP (ft/hr)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 33
RPM 100
PP 4452
SPM 104/104
12800
INC
12850
12900
INC
12950
MD 12796 TVD 7184.5
INC 90.15 AZ 269.73
VS 4592.92
MD 12885 TVD 7184.46
INC 89.91 AZ 271.14
VS 4681.62
7200
pyr
sptty
CHALK (65%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls; MRLST: (35%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
CHALK (60%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt
MRLST: (40%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky -
mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn re
7300
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
8
30
70

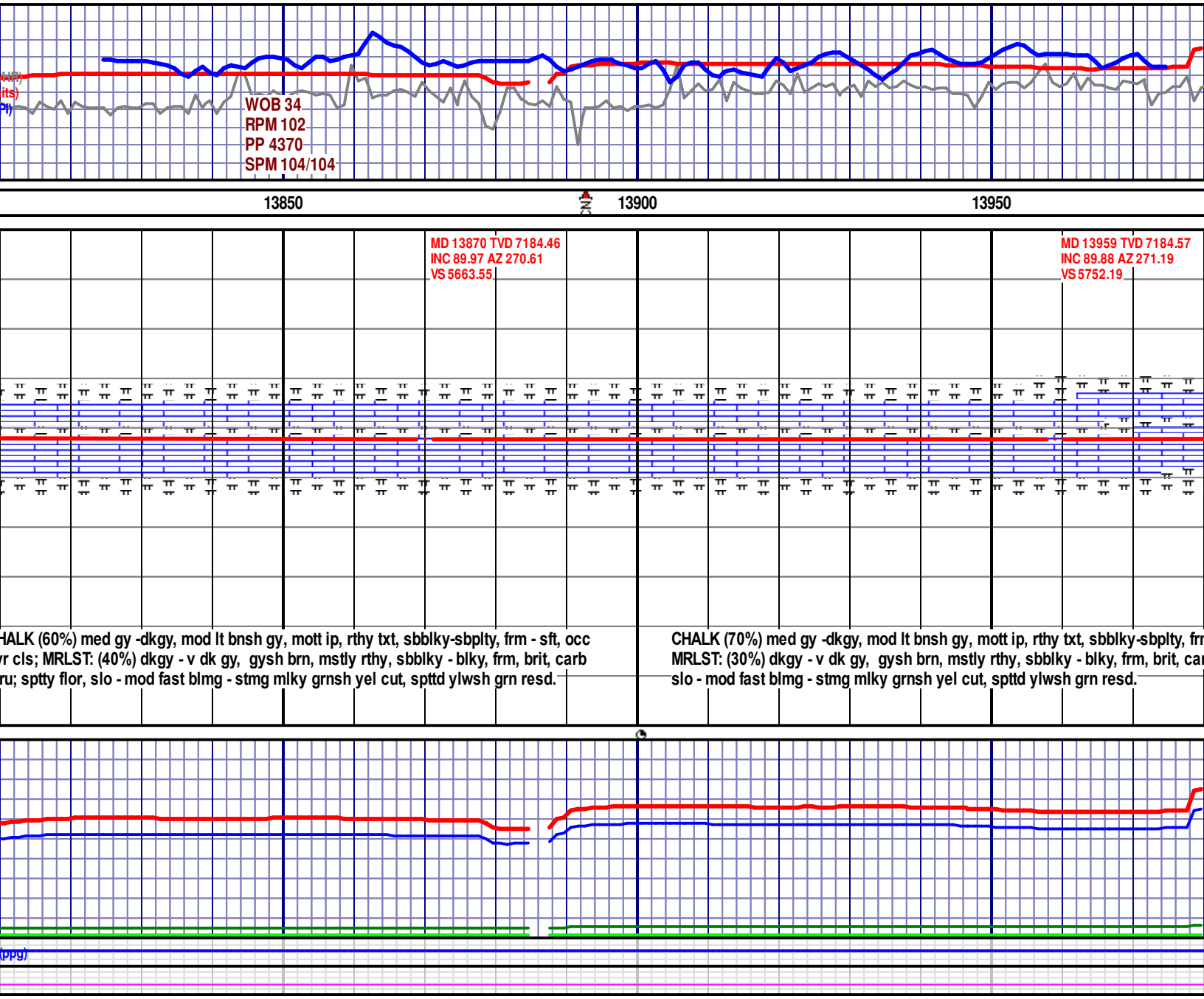

600
5000
200
MWD_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
13000
13050
13100
MD 12975 TVD 7184.43
INC 90.12 AZ 272.2
VS 4771.13
7100 TVD
MD 13064 TVD 7184.22
INC 90.15 AZ 271.87
VS 4859.6
7200
, sbblky-sbplty, frm - sft, occ pyr cls;
blky, frm, brit, carb thru; sptty flor, slo -
sd.
CHALK (65%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls;
MRLST: (35%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo
- mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
CHALK (65%) med gy -dkgy,
cls; MRLST: (35%) dkgy - v
flor, slo - mod fast blmg - st
7300
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
12
Mud Weight (ppg)
30
90

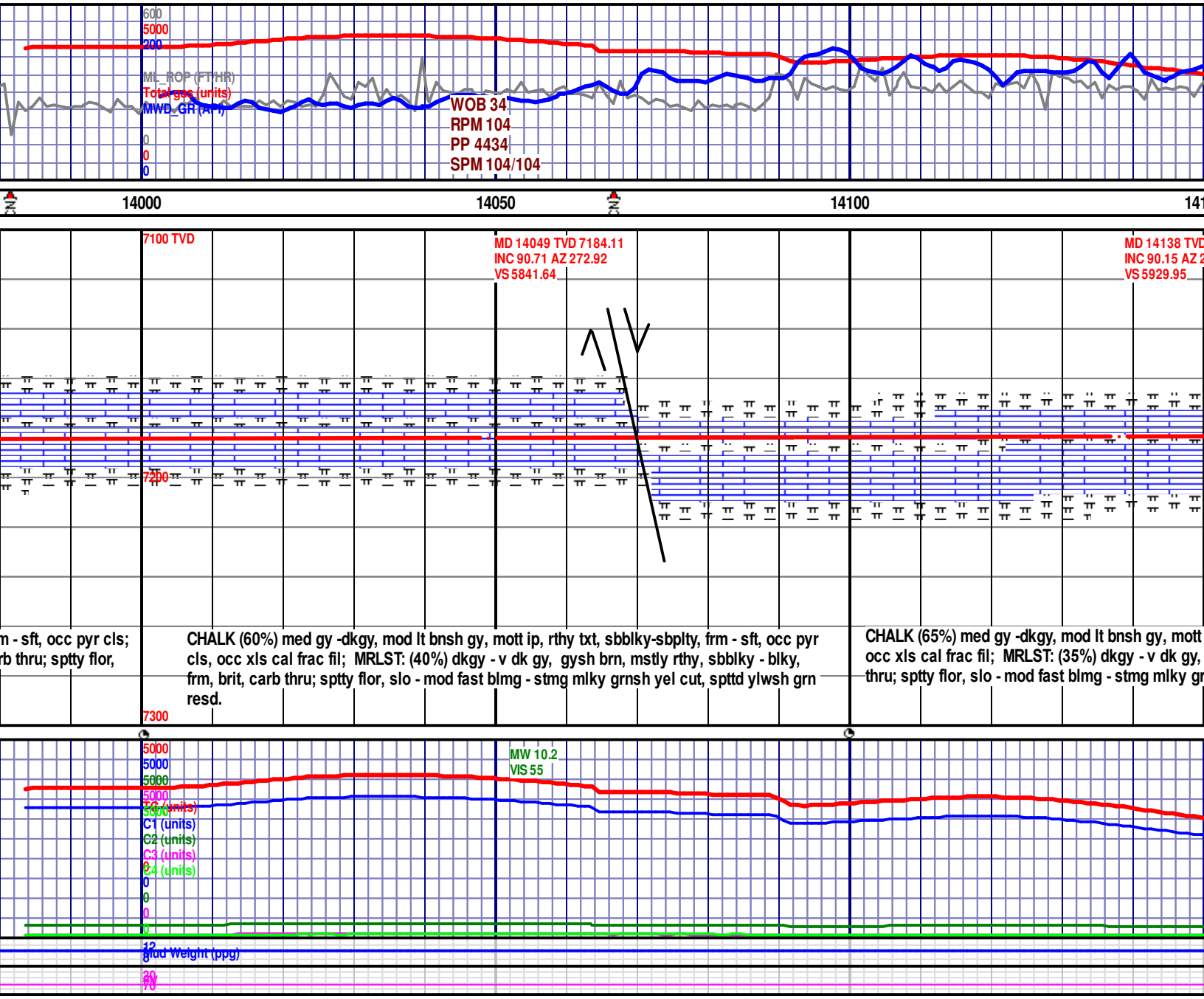

600
5000
200
Total gas (units)
MWD_GR (API)
0
0
0
WOB 35
RPM 100
PP 4362
SPM 104/104
13150
13200
13250
MD 13154 TVD 7183.91
INC 90.25 AZ 272.65
VS 4949.01
7100 TVD
MD 13243 TVD 7183.85
INC 89.82 AZ 270.52
VS 5037.55
7200
, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr
dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty
mg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (65%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls;
MRLST: (35%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo
- mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
7300
MW 10.2+
VIS 51
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
8
30
70

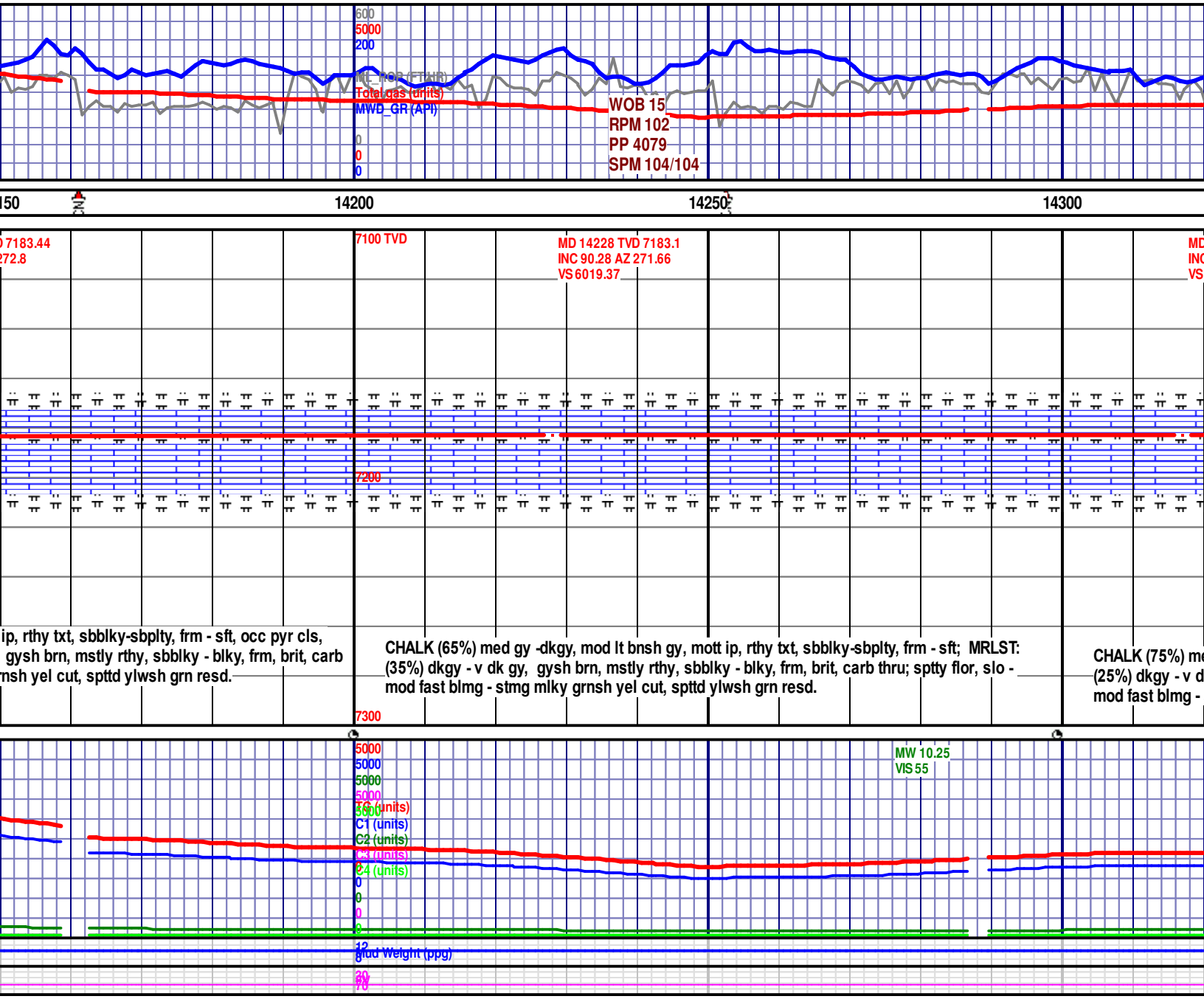

600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
300
13350
13400
13450
MD 13333 TVD 7184.02
INC 89.97 AZ 266.66
VS 5127.42
7100 TVD
MD 13422 TVD 7183.87
INC 90.22 AZ 266.75
VS 5216.41
7200
CHALK (60%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls; MRLST: (40%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (65%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-
MRLST: (35%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm
- mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
7300
5000
5000
5000
5000
C1 (units)
C2 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
30
70

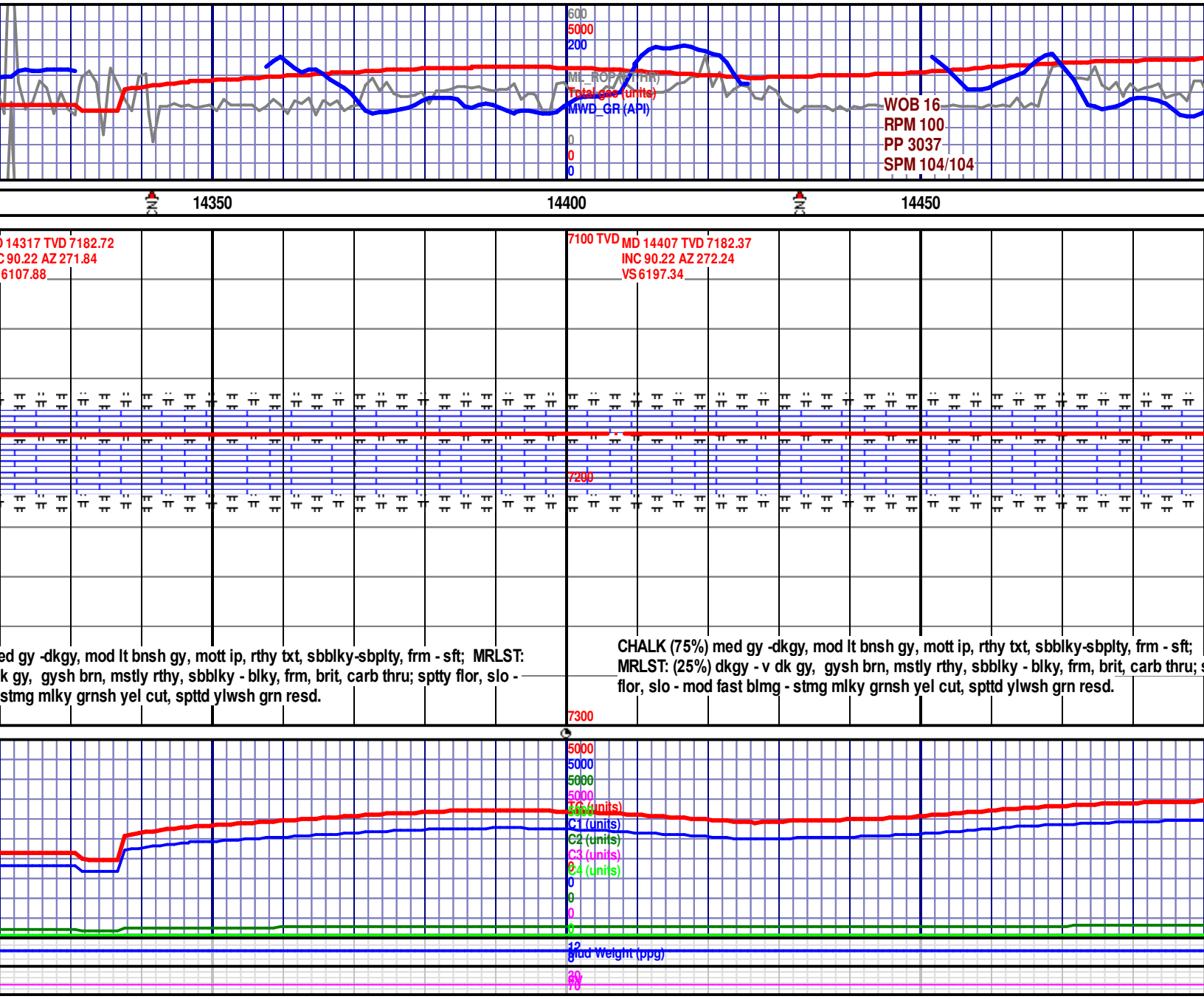

600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 34
RPM 105
PP 4407
SPM 104/104
13500
13550
13600
MD 13512 TVD 7183.79
INC 89.88 AZ 267.63
VS 5306.38
MD 13601 TVD 7183.82
INC 90.09 AZ 269.23
VS 5395.27
7200
7300
sbplty, frm - sft, occ pyr cls;
n, brit, carb thru; sptty flor, slo
CHALK (70%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls;
MRLST: (30%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo -
mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (65%) med gy -dkgy, mod lt b
cls; MRLST: (35%) dkgy - v dk gy, gy
flor, slo - mod fast blmg - stmg mlky
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
30
70

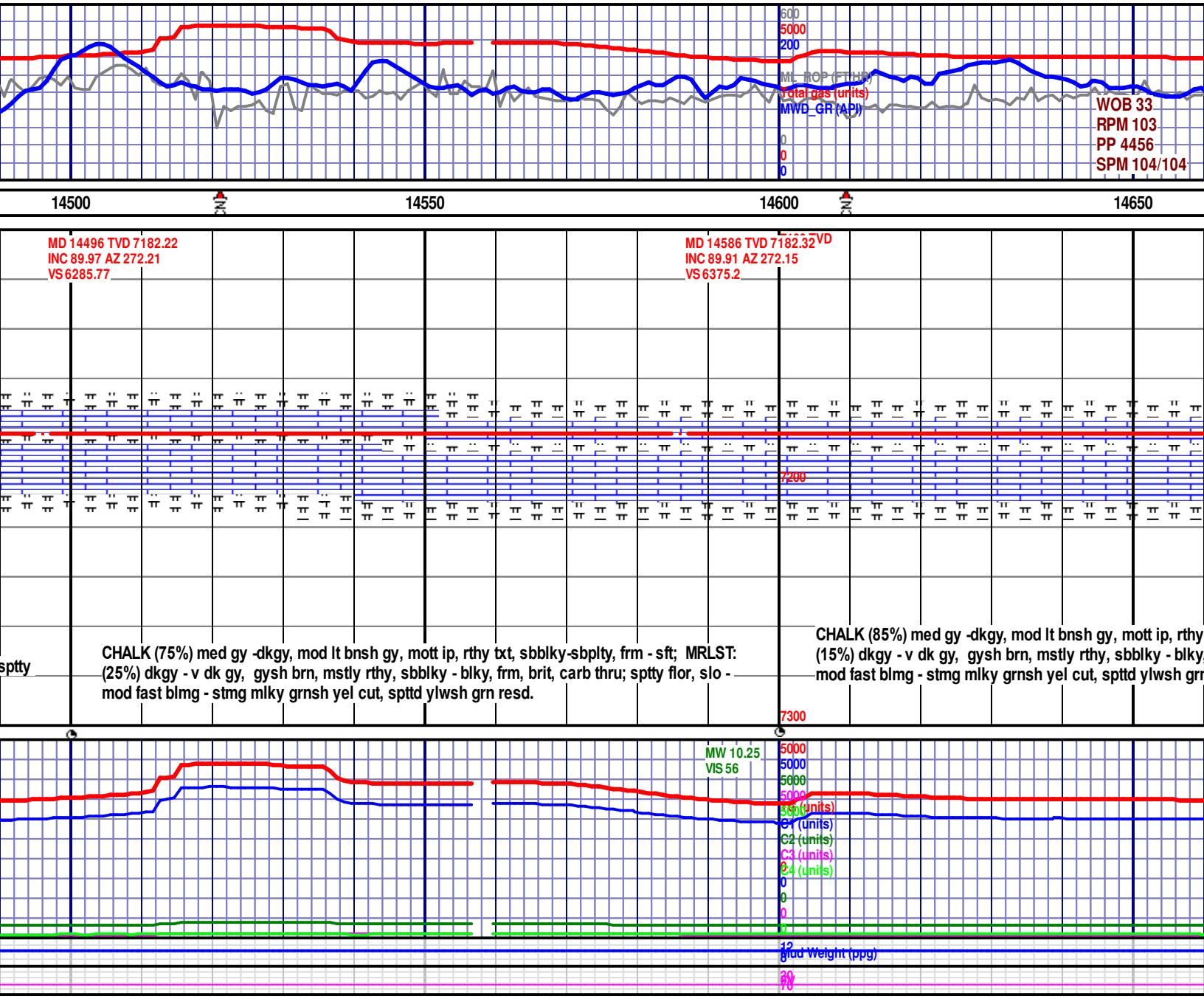

600
5000
200
0
0
0
13650
13700
13750
13800
MD 13691 TVD 7183.92
INC 89.78 AZ 269.79
VS 5485.08
MD 13780 TVD 7184.26
INC 89.78 AZ 270.03
VS 5573.84
7100 TVD
7200
7300
nsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr
ysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty
grnsh yel cut, spttd ylwsh grn resd.
CHALK (60%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr
cls; MRLST: (40%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty
flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
MW 10.25
VIS 55
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
30
70

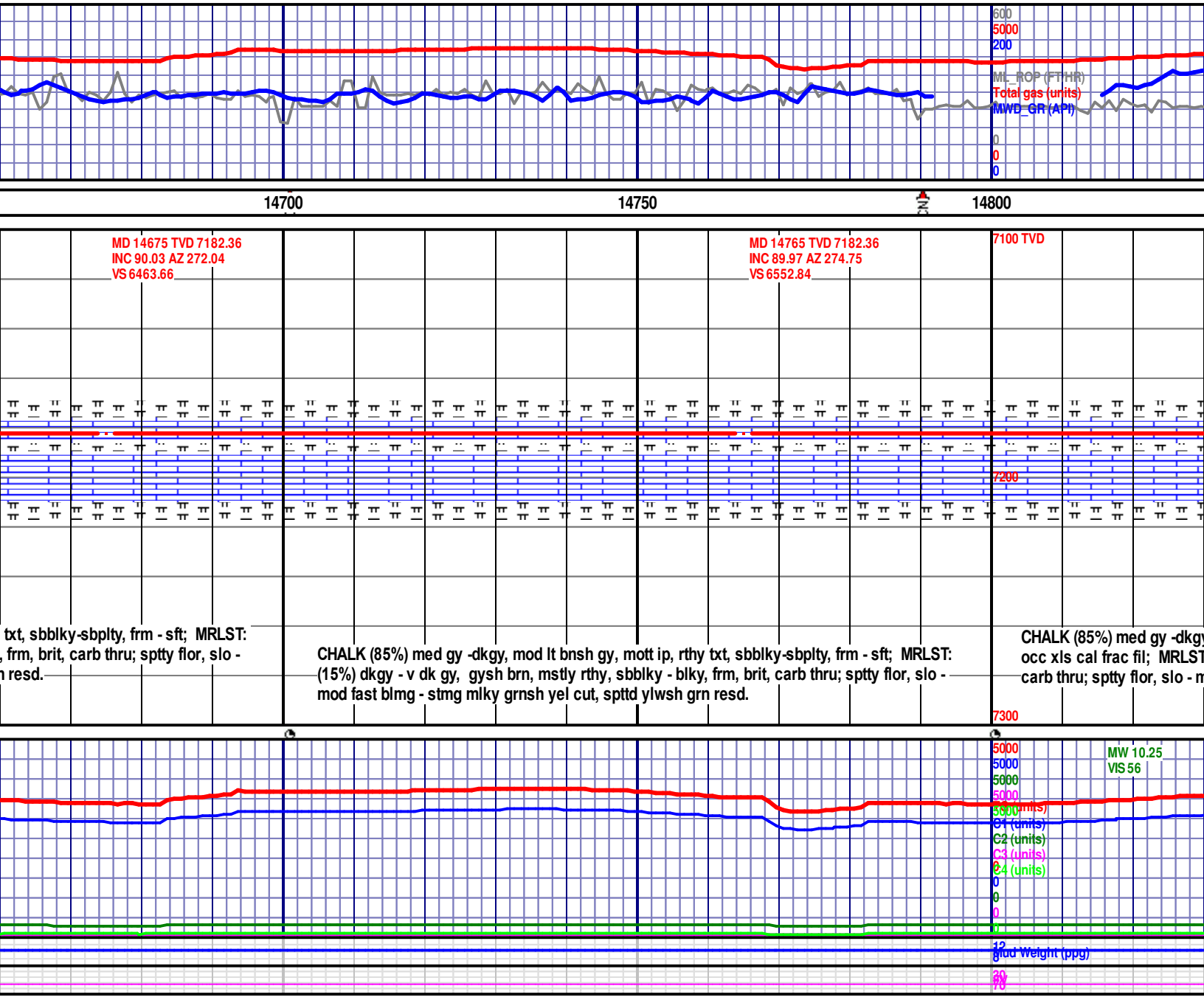

WOB 34
RPM 102
PP 4370
SPM 104/104
13850
13900
13950
MD 13870 TVD 7184.46
INC 89.97 AZ 270.61
VS 5663.55
MD 13959 TVD 7184.57
INC 89.88 AZ 271.19
VS 5752.19
HALK (60%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ
vr cls; MRLST: (40%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb
ru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (70%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, fr
MRLST: (30%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, ca
slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.

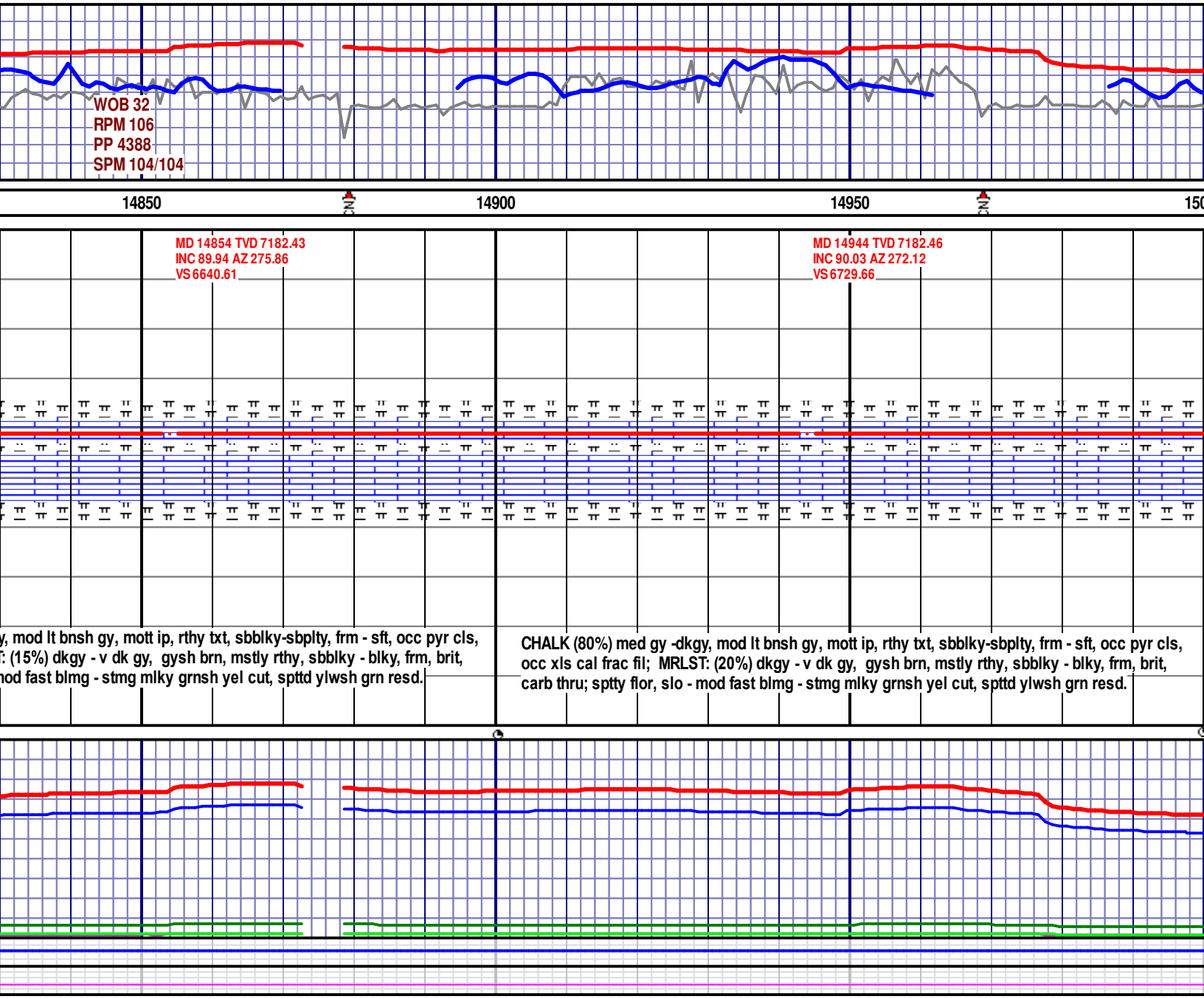

600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 34
RPM 104
PP 4434
SPM 104/104
14000
14050
14100
7100 TVD
MD 14049 TVD 7184.11
INC 90.71 AZ 272.92
VS 5841.64
MD 14138 TVD
INC 90.15 AZ 2
VS 5929.95
7200
m - sft, occ pyr cls;
rb thru; sptty flor,
CHALK (60%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls, occ xls cal frac fil; MRLST: (40%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (65%) med gy -dkgy, mod lt bnsh gy, mott
occ xls cal frac fil; MRLST: (35%) dkgy - v dk gy,
thru; sptty flor, slo - mod fast blmg - stmg mlky gr
7300
5000
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
30
70
MW 10.2
VIS 55

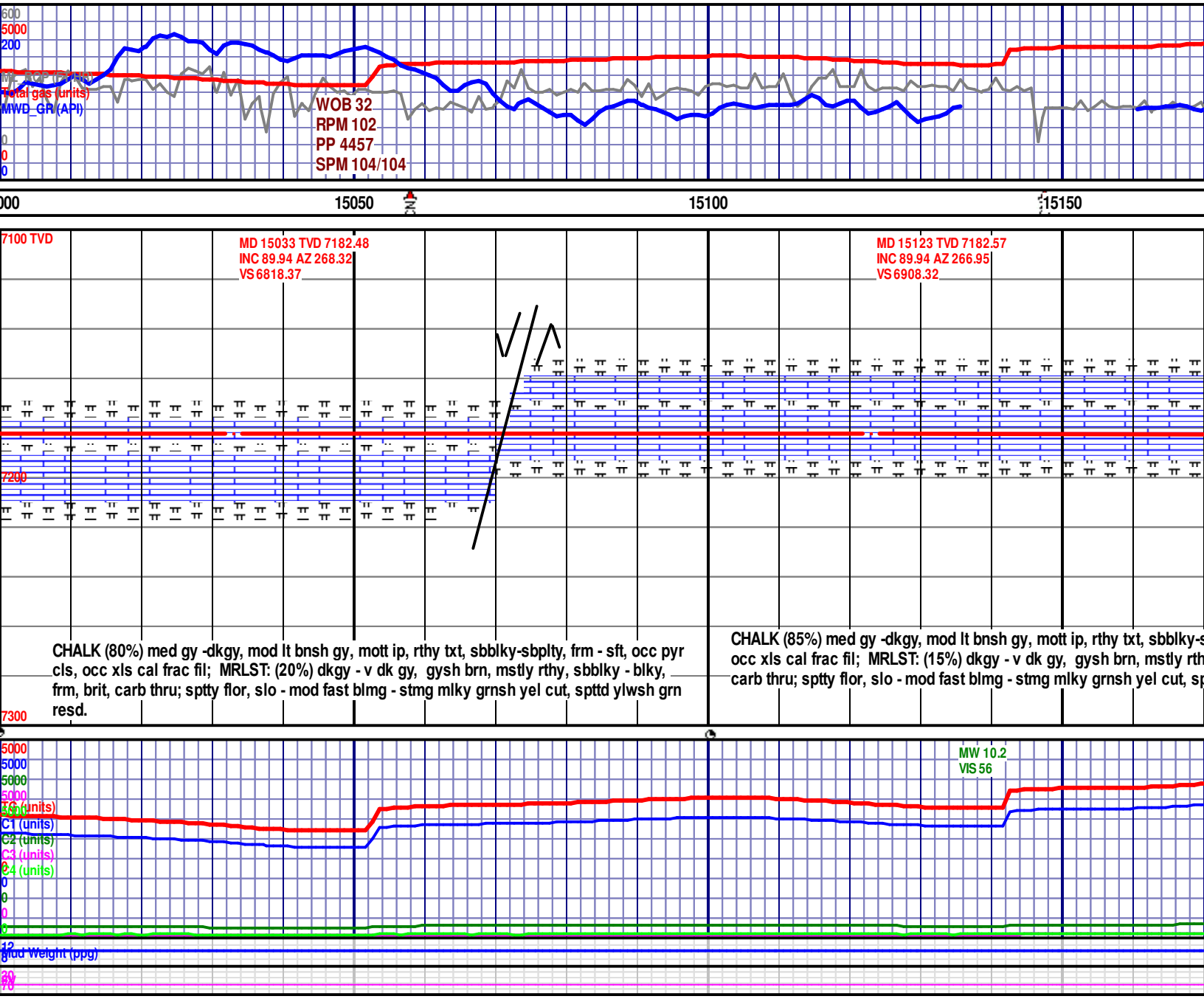

600
5000
200
Totalgas (units)
MWD_GR (API)
0
0
0
WOB 15
RPM 102
PP 4079
SPM 104/104
150
14200
14250
14300
7183.44
272.8
7100 TVD
MD 14228 TVD 7183.1
INC 90.28 AZ 271.66
VS 6019.37
7200
ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls,
gysh brn, mstly rthy, sbblky - blky, frm, brit, carb
rnsh yel cut, sptttd ylwsh grn resd.
CHALK (65%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft; MRLST:
(35%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo -
mod fast blmg - stmg mlky grnsh yel cut, sptttd ylwsh grn resd.
CHALK (75%) me
(25%) dkgy - v d
mod fast blmg -
7300
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
8
30
70
MW 10.25
VIS 55
Mud Weight (ppg)

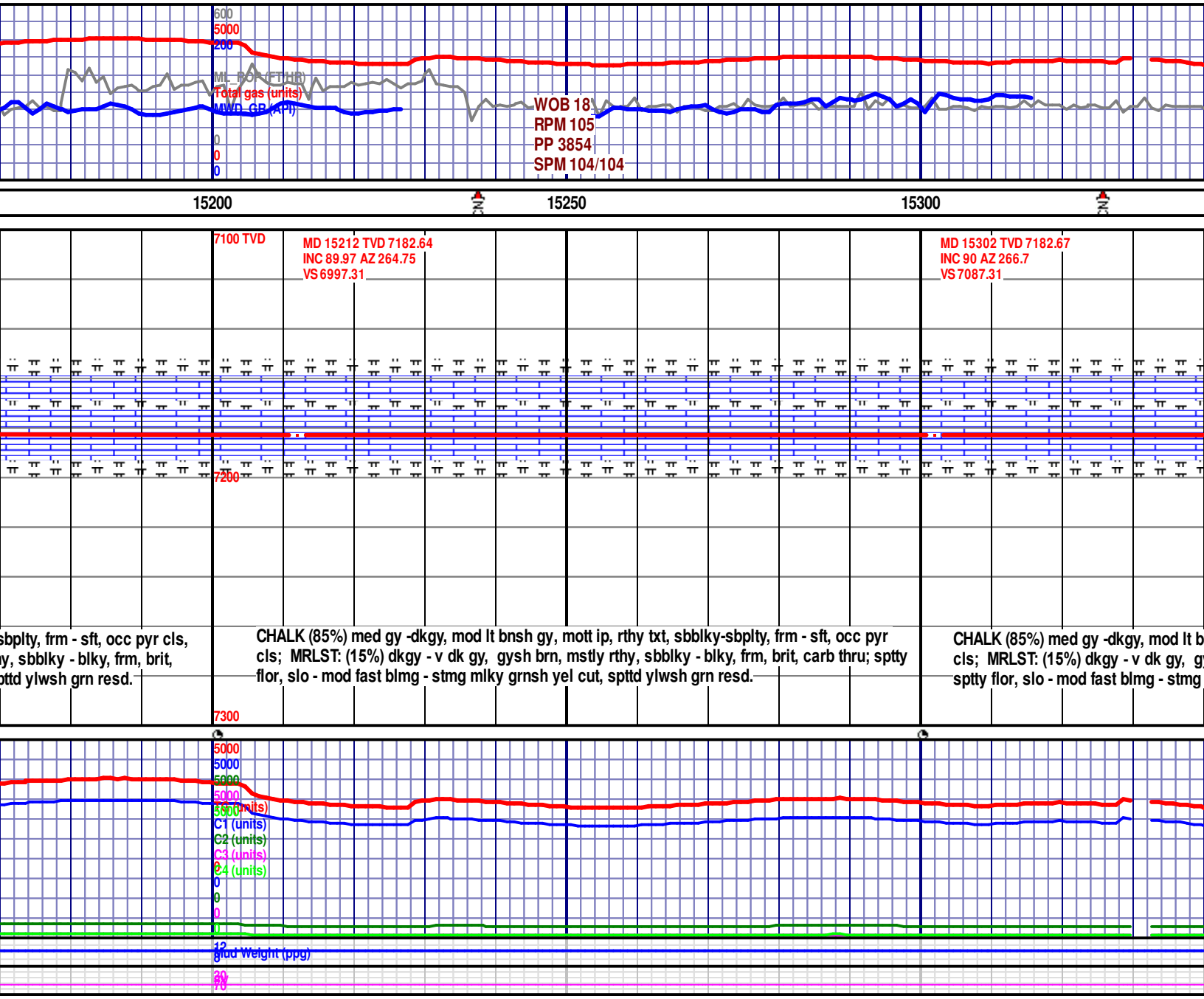

600
5000
200
IML_ROP(AVGTHR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 16
RPM 100
PP 3037
SPM 104/104
14350
14400
14450
14317 TVD 7182.72
C 90.22 AZ 271.84
6107.88
7100 TVD
MD 14407 TVD 7182.37
INC 90.22 AZ 272.24
VS 6197.34
7200
ed gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft; MRLST:
k gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo -
stmg mlky grnsh yel cut, sptd ylwsh grn resd.
CHALK (75%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft;
MRLST: (25%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru;
flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
7300
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
12
Mud Weight (ppg)

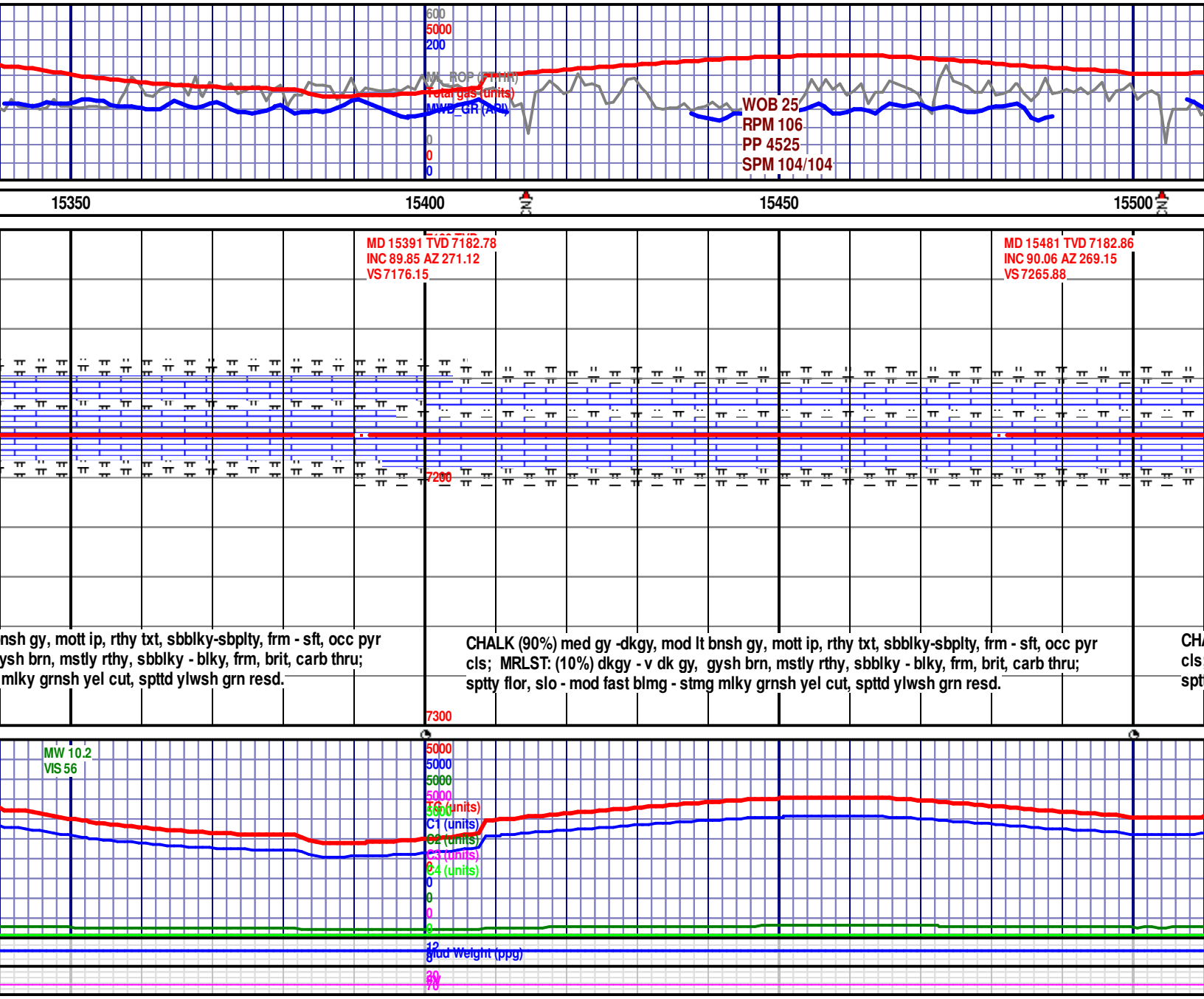

600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 33
RPM 103
PP 4456
SPM 104/104
14500
INC
14550
14600
INC
14650
MD 14496 TVD 7182.22
INC 89.97 AZ 272.21
VS 6285.77
MD 14586 TVD 7182.32
INC 89.91 AZ 272.15
VS 6375.2
7200
sptty
CHALK (75%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft; MRLST:
(25%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo -
mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (85%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy
(15%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky
mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn
7300
MW 10.25
VIS 56
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
12
Mud Weight (ppg)
30

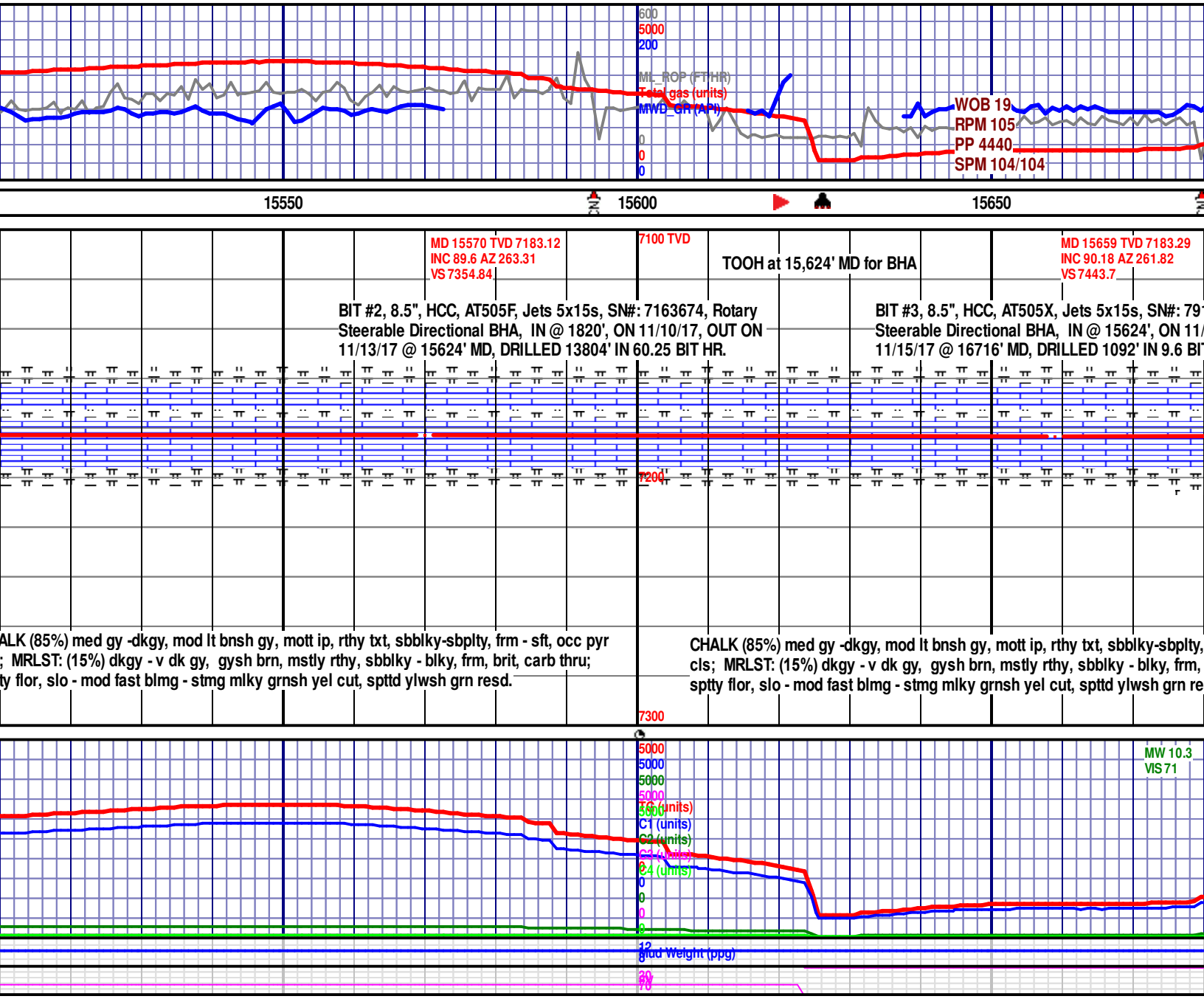

600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
14700
14750
14800
MD 14675 TVD 7182.36
INC 90.03 AZ 272.04
VS 6463.66
MD 14765 TVD 7182.36
INC 89.97 AZ 274.75
VS 6552.84
7100 TVD
7200
7300
txt, sbblky-sbplty, frm - sft; MRLST:
frm, brit, carb thru; sptty flor, slo -
resd.
CHALK (85%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft; MRLST:
(15%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo -
mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (85%) med gy -dkgy
occ xls cal frac fil; MRLST
carb thru; sptty flor, slo - m
5000
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
MW 10.25
VIS 56
12
Mud Weight (ppg)
8
20
70

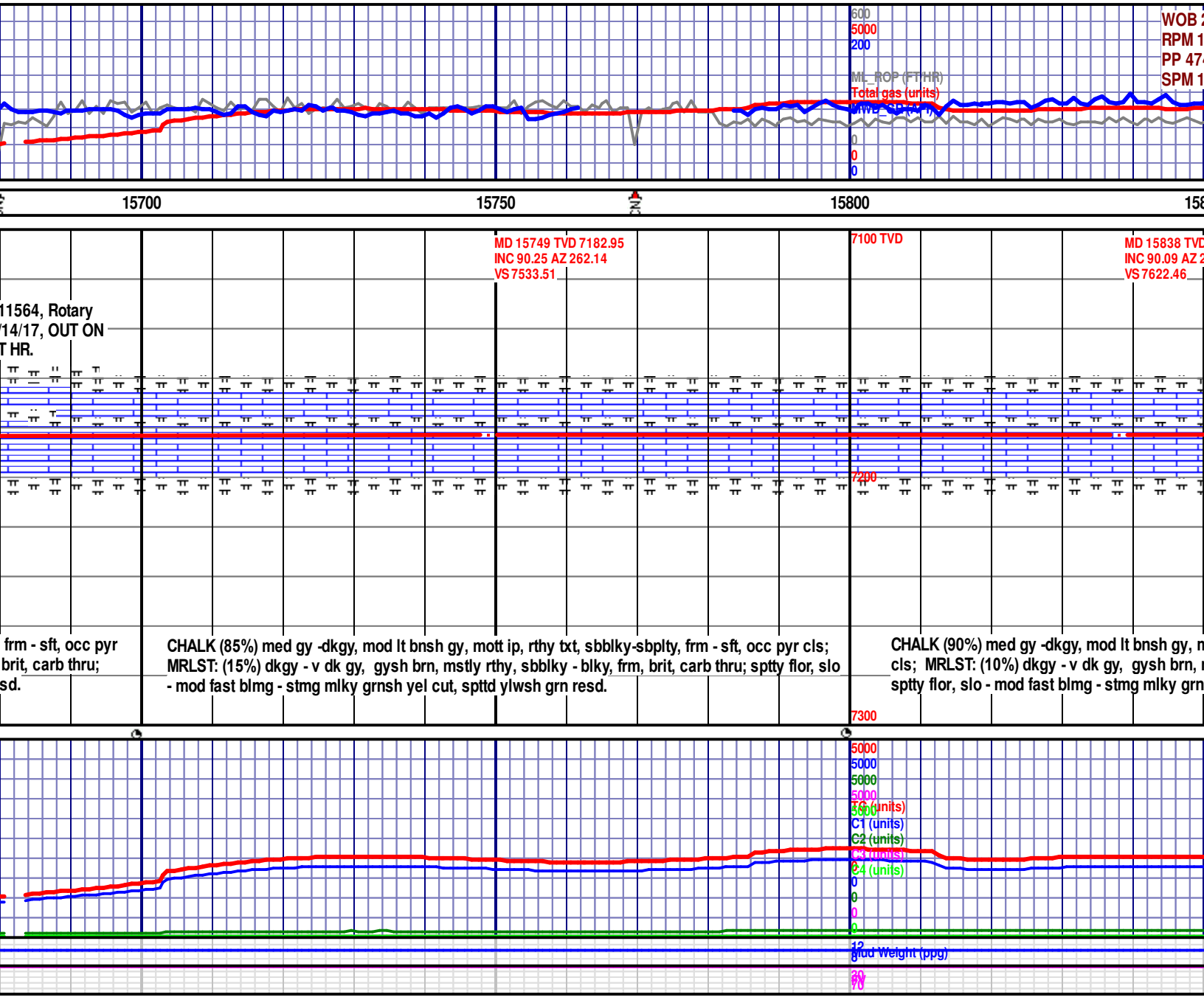

WOB 32
RPM 106
PP 4388
SPM 104/104
14850
14900
14950
MD 14854 TVD 7182.43
INC 89.94 AZ 275.86
VS 6640.61
MD 14944 TVD 7182.46
INC 90.03 AZ 272.12
VS 6729.66
y, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls,
T: (15%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit,
nod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
CHALK (80%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls,
occ xls cal frac fil; MRLST: (20%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit,
carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.

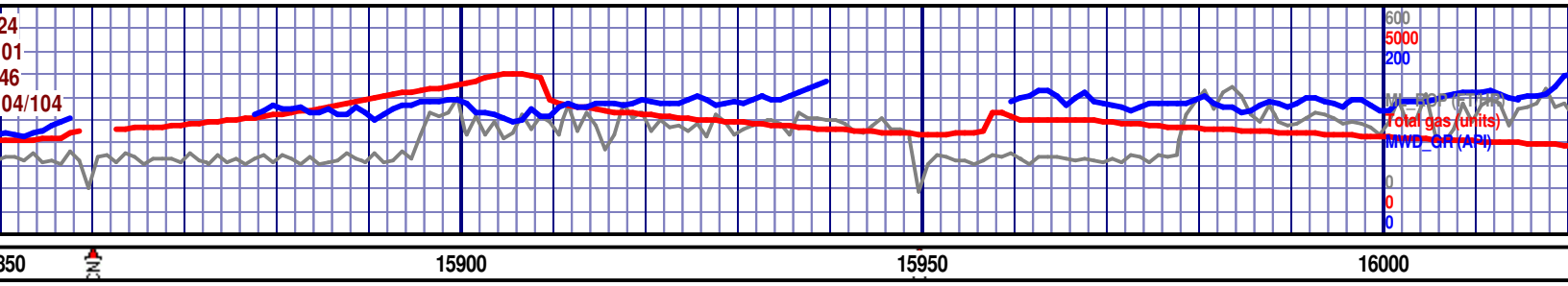

600
5000
200
Total gas (units)
MWD_GR (API)
0
0
WOB 32
RPM 102
PP 4457
SPM 104/104
000
15050
15100
15150
7100 TVD
MD 15033 TVD 7182.48
INC 89.94 AZ 268.32
VS 6818.37
MD 15123 TVD 7182.57
INC 89.94 AZ 266.95
VS 6908.32
7200
CHALK (80%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls, occ xls cal frac fil; MRLST: (20%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (85%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-s
occ xls cal frac fil; MRLST: (15%) dkgy - v dk gy, gysh brn, mstly rth
carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sp
7300
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
8
30
70
MW 10.2
VIS 56

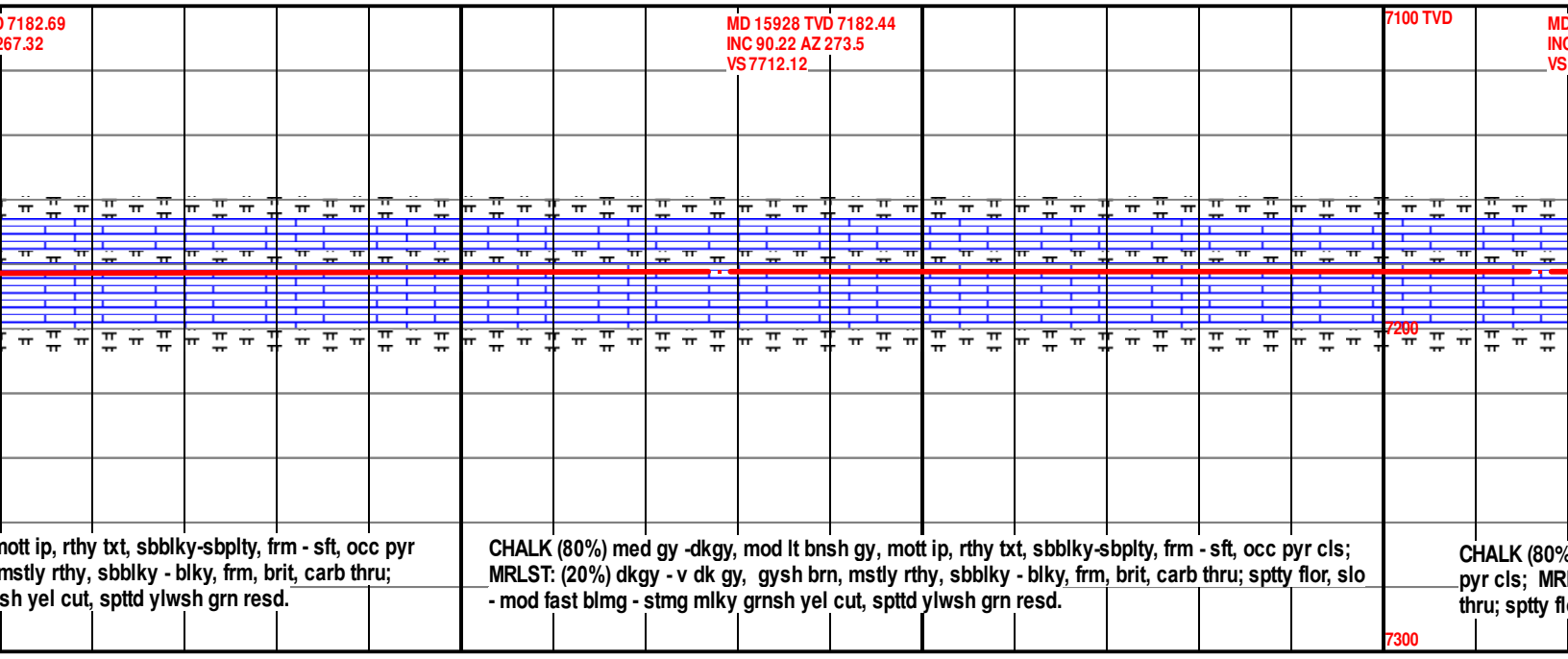

600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 18
RPM 105
PP 3854
SPM 104/104
15200
CN
15250
15300
CN
7100 TVD
MD 15212 TVD 7182.64
INC 89.97 AZ 264.75
VS 6997.31
MD 15302 TVD 7182.67
INC 90 AZ 266.7
VS 7087.31
7200
sbplty, frm - sft, occ pyr cls,
y, sbblky - blky, frm, brit,
ttd ylwsh grn resd.
CHALK (85%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls; MRLST: (15%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (85%) med gy -dkgy, mod lt b
cls; MRLST: (15%) dkgy - v dk gy, g
sptty flor, slo - mod fast blmg - stmg
7300
5000
5000
5000
5000
3000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
8
Mud Weight (ppg)
30
70


600
5000
200
Total gas (units)
MWD_GR (API)
0
0
0
WOB 25
RPM 106
PP 4525
SPM 104/104
15350
15400
15450
15500
MD 15391 TVD 7182.78
INC 89.85 AZ 271.12
VS 7176.15
MD 15481 TVD 7182.86
INC 90.06 AZ 269.15
VS 7265.88
7200
nsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr
ysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru;
mlky grnsh yel cut, sptd ylwsh grn resd.
CHALK (90%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr
cls; MRLST: (10%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru;
sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
CH
cls
spt
7300
MW 10.2
VIS 56
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
8
30
70


600
5000
200
MI_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 19
RPM 105
PP 4440
SPM 104/104
15550
15600
15650
MD 15570 TVD 7183.12
INC 89.6 AZ 263.31
VS 7354.84
7100 TVD
TOOH at 15,624' MD for BHA
MD 15659 TVD 7183.29
INC 90.18 AZ 261.82
VS 7443.7
BIT #2, 8.5", HCC, AT505F, Jets 5x15s, SN#: 7163674, Rotary Steerable Directional BHA, IN @ 1820', ON 11/10/17, OUT ON 11/13/17 @ 15624' MD, DRILLED 13804' IN 60.25 BIT HR.
BIT #3, 8.5", HCC, AT505X, Jets 5x15s, SN#: 791
Steerable Directional BHA, IN @ 15624', ON 11/
11/15/17 @ 16716' MD, DRILLED 1092' IN 9.6 BI
7200
ALK (85%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr
; MRLST: (15%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru;
ty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
CHALK (85%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty,
cls; MRLST: (15%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm,
sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn re
7300
5000
5000
5000
5000
C1 (units)
C2 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
MW 10.3
VIS 71


600
5000
200
MI_ROP (FT/HR)
Total gas (units)
0
0
0
WOB
RPM
PP
SPM
15700
15750
15800
MD 15749 TVD 7182.95
INC 90.25 AZ 262.14
VS 7533.51
7100 TVD
MD 15838 TVD
INC 90.09 AZ
VS 7622.46
11564, Rotary
/14/17, OUT ON
T HR.
7200
frm - sft, occ pyr
brit, carb thru;
sd.
CHALK (85%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls; MRLST: (15%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (90%) med gy -dkgy, mod lt bnsh gy,
cls; MRLST: (10%) dkgy - v dk gy, gysh brn,
sptty flor, slo - mod fast blmg - stmg mlky grn
7300
5000
5000
5000
5000
C1 (units)
C2 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
8
30
70

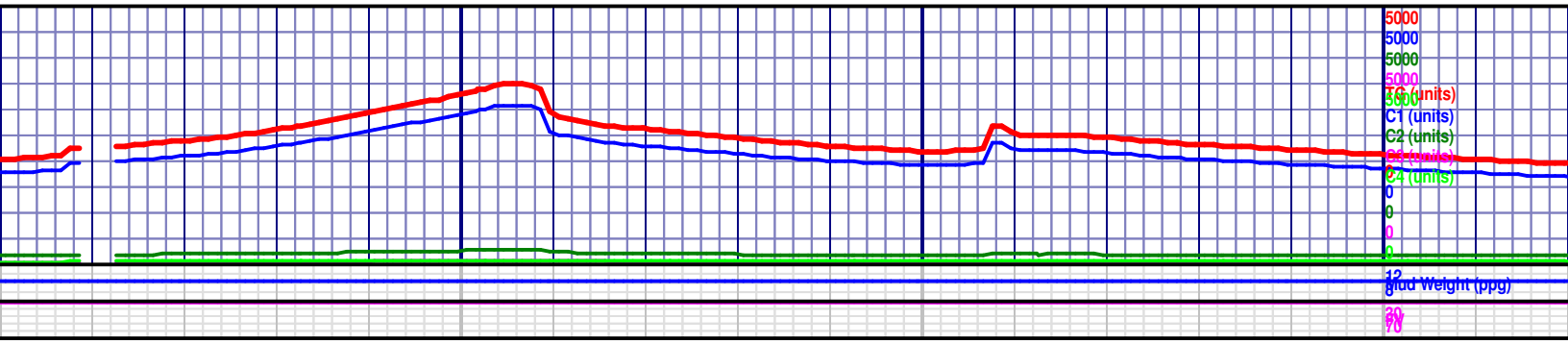


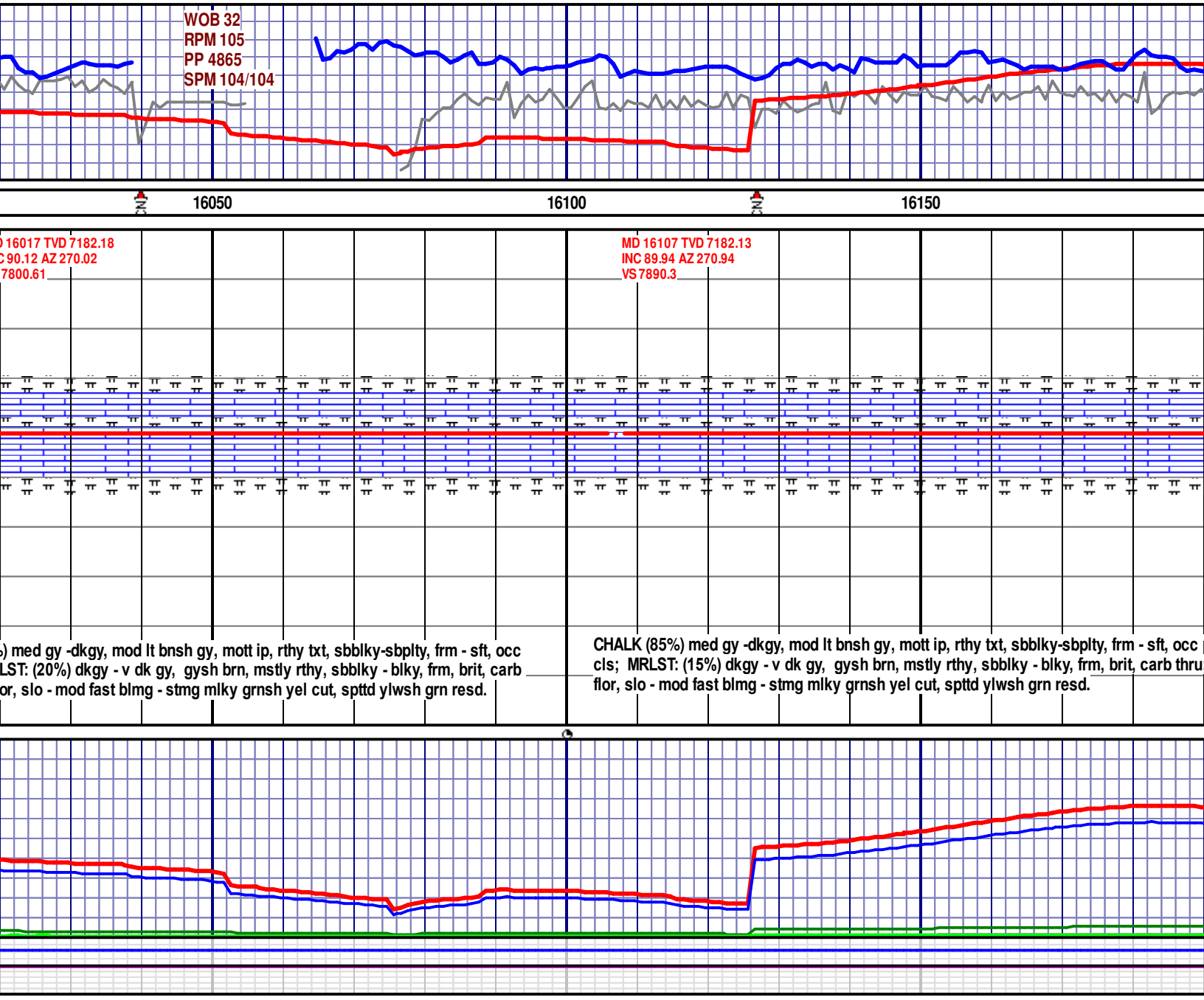


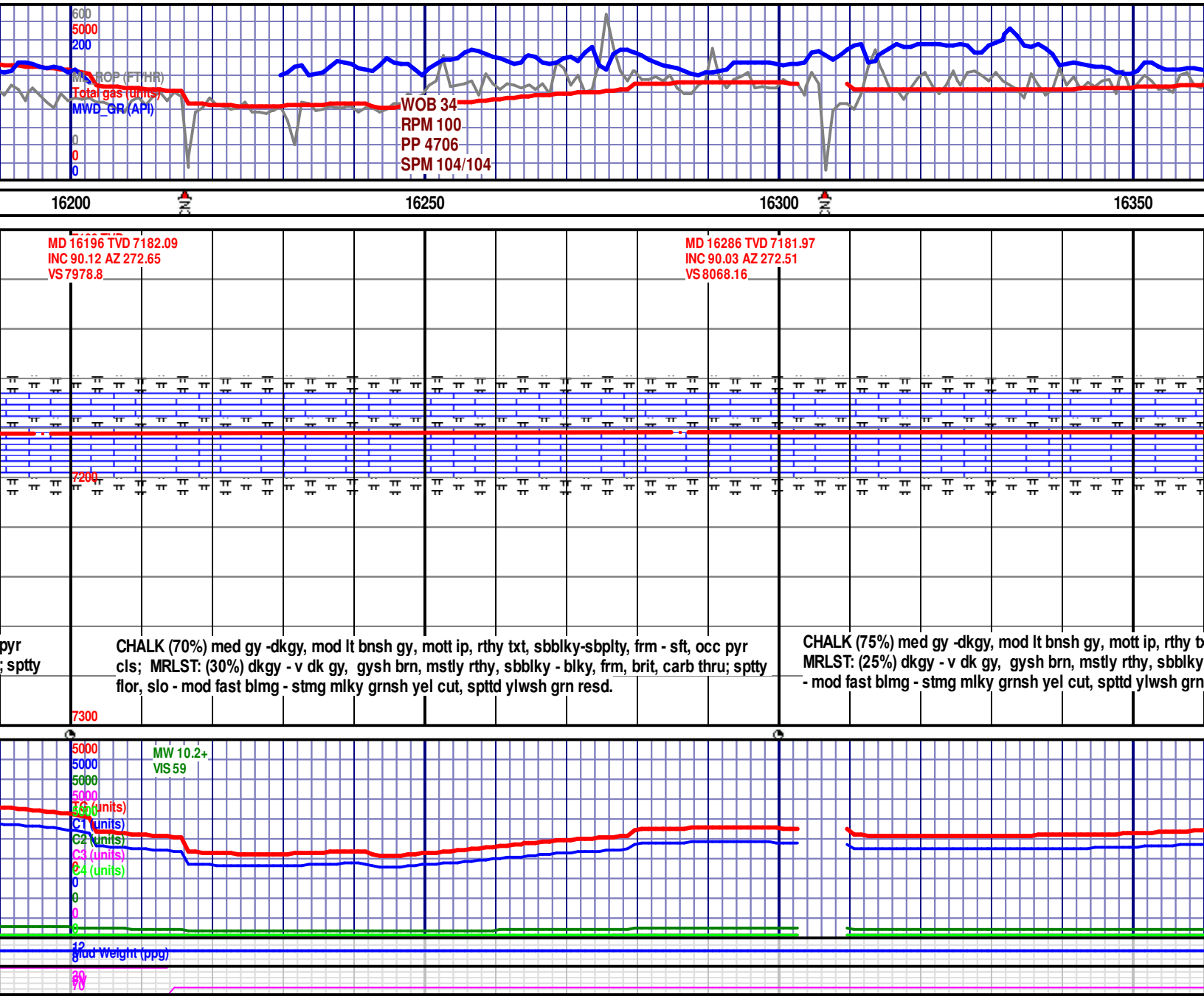
mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr
mstly rthy, sbblky - blky, frm, brit, carb thru;
sh yel cut, sptd ylwsh grn resd.

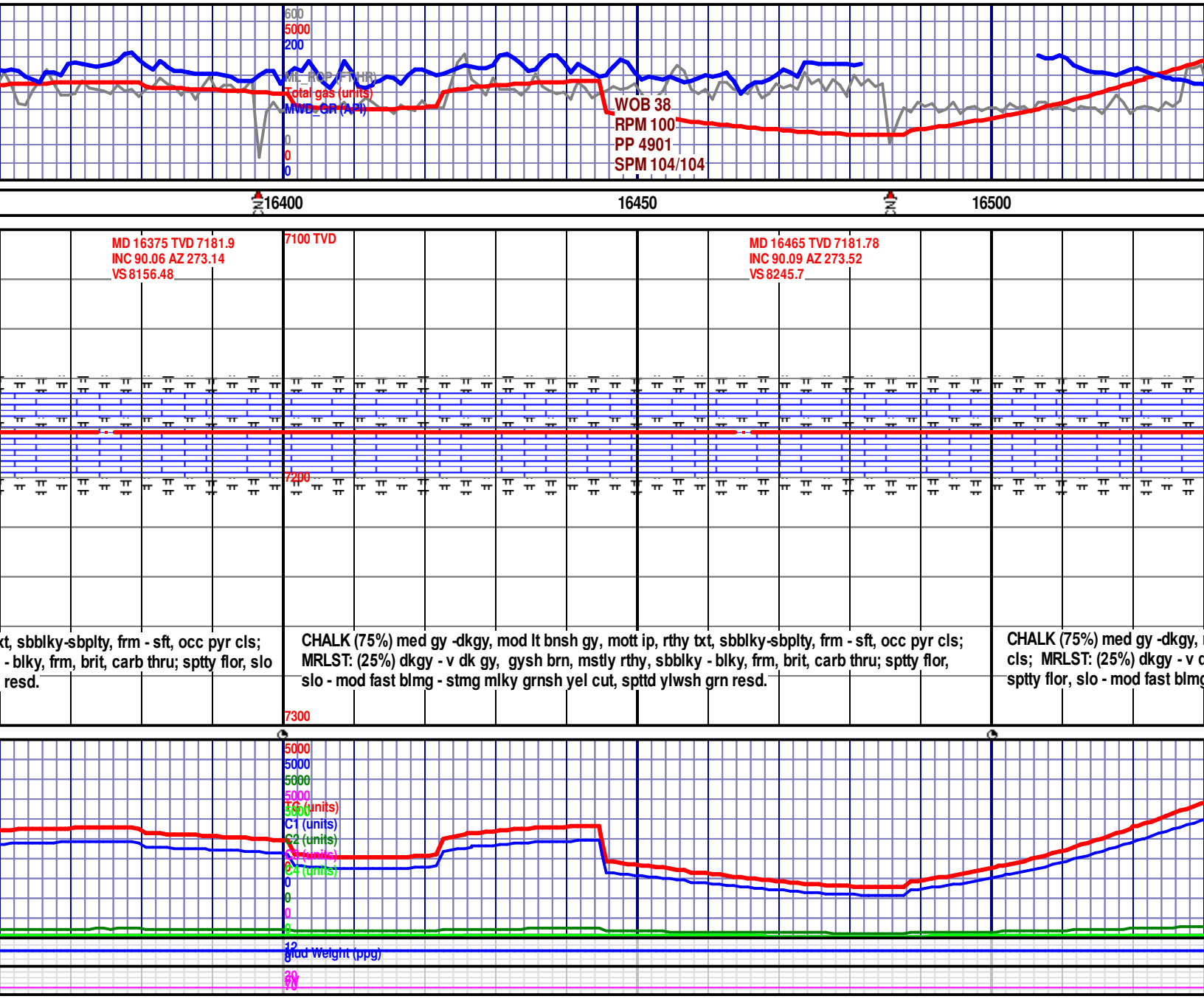
CHALK (80%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls; MRLST: (20%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.

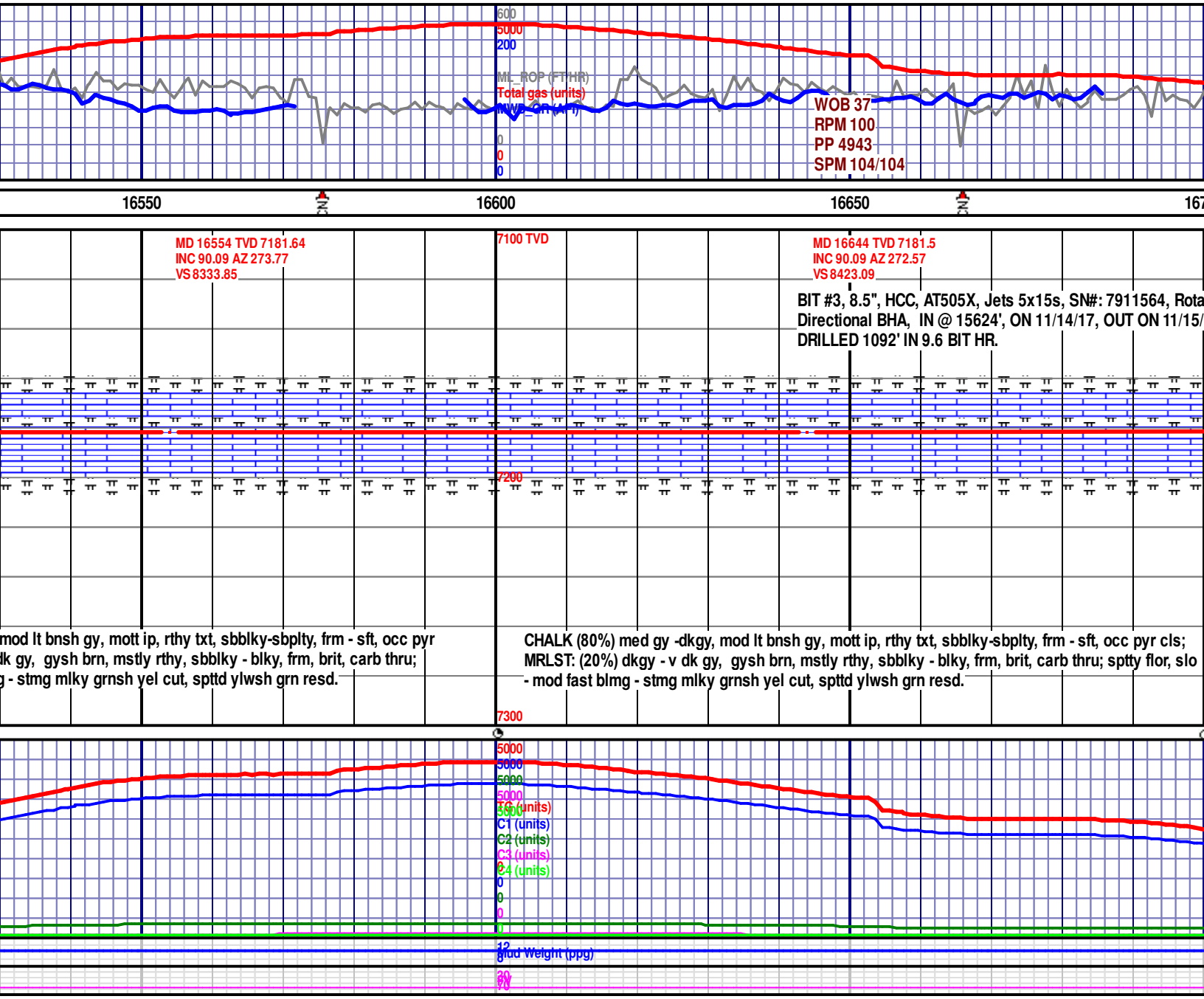
CHALK (80%
pyr cls; MR
thru; sptty fl

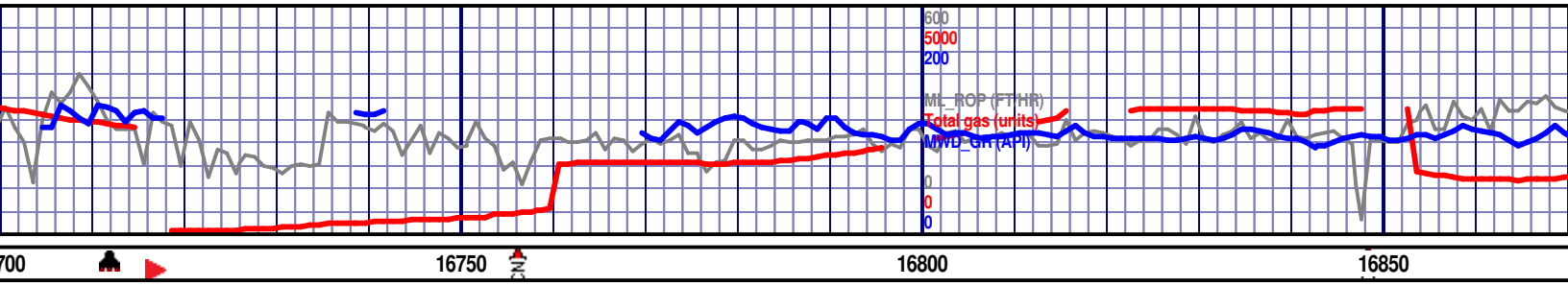



WOB 32
RPM 105
PP 4865
SPM 104/104
16050
16100
16150
D 16017 TVD 7182.18
C 90.12 AZ 270.02
7800.61
MD 16107 TVD 7182.13
INC 89.94 AZ 270.94
VS 7890.3
%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ
LST: (20%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb
or, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (85%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ
cls; MRLST: (15%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru
flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.


600
5000
200
MWD_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 34
RPM 100
PP 4706
SPM 104/104
16200
16250
16300
16350
MD 16196 TVD 7182.09
INC 90.12 AZ 272.65
VS 7978.8
MD 16286 TVD 7181.97
INC 90.03 AZ 272.51
VS 8068.16
7200
pyr
; sptty
CHALK (70%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls; MRLST: (30%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
CHALK (75%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy b
MRLST: (25%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky
- mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn
7300
5000
5000
5000
5000
MW 10.2+
VIS 59
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
8
12
Mud Weight (ppg)
8
30
70


600
5000
200
Total gas (units)
0
0
0
WOB 38
RPM 100
PP 4901
SPM 104/104
16400
16450
16500
MD 16375 TVD 7181.9
INC 90.06 AZ 273.14
VS 8156.48
7100 TVD
MD 16465 TVD 7181.78
INC 90.09 AZ 273.52
VS 8245.7
7200
xt, sbblky-sbplty, frm - sft, occ pyr cls;
- blky, frm, brit, carb thru; sptty flor, slo
resd.
CHALK (75%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls;
MRLST: (25%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor,
slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
CHALK (75%) med gy -dkgy,
cls; MRLST: (25%) dkgy - v d
sptty flor, slo - mod fast blmg
7300
5000
5000
5000
5000
C1 (units)
C2 (units)
0
0
0
0
12
Mud Weight (ppg)
30


600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_Grn (API)
0
0
0
WOB 37
RPM 100
PP 4943
SPM 104/104
16550
16600
16650
MD 16554 TVD 7181.64
INC 90.09 AZ 273.77
VS 8333.85
7100 TVD
MD 16644 TVD 7181.5
INC 90.09 AZ 272.57
VS 8423.09
BIT #3, 8.5", HCC, AT505X, Jets 5x15s, SN#: 7911564, Rota
Directional BHA, IN @ 15624', ON 11/14/17, OUT ON 11/15/
DRILLED 1092' IN 9.6 BIT HR.
7200
mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr
dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru;
g - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (80%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls;
MRLST: (20%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; spty flor, slo
- mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
7300
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
12
Mud Weight (ppg)
8
20



TOOH at 16,716' MD
for MWD Tool.

MD 16739 TVD 7180.94
INC 90.59 AZ 270.24
VS 8517.62

ry Steerable
17 @ 16716' MD,

RR BIT #3, 8.5", HCC, AT505X, Jets 5x15s, SN#: 7911564, Rotary Steerable Directional BHA, IN @ 16716', ON 11/15/17, OUT ON 11/16/17 @ 18994' MD, DRILLED 2278' IN 10.4 BIT HR.

7100 TVD

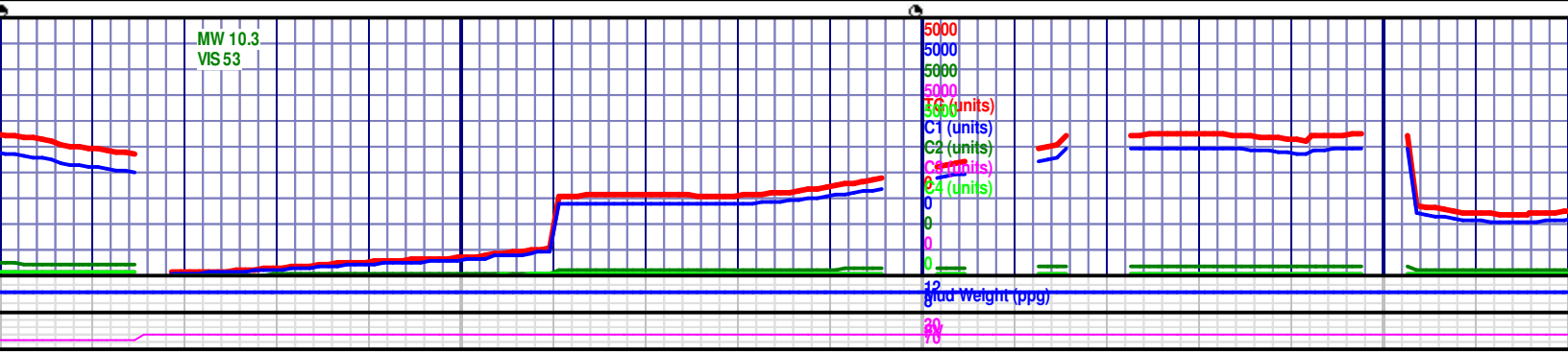
MD 16828 TVD 7180.41
INC 90.09 AZ 269.22
VS 8606.4

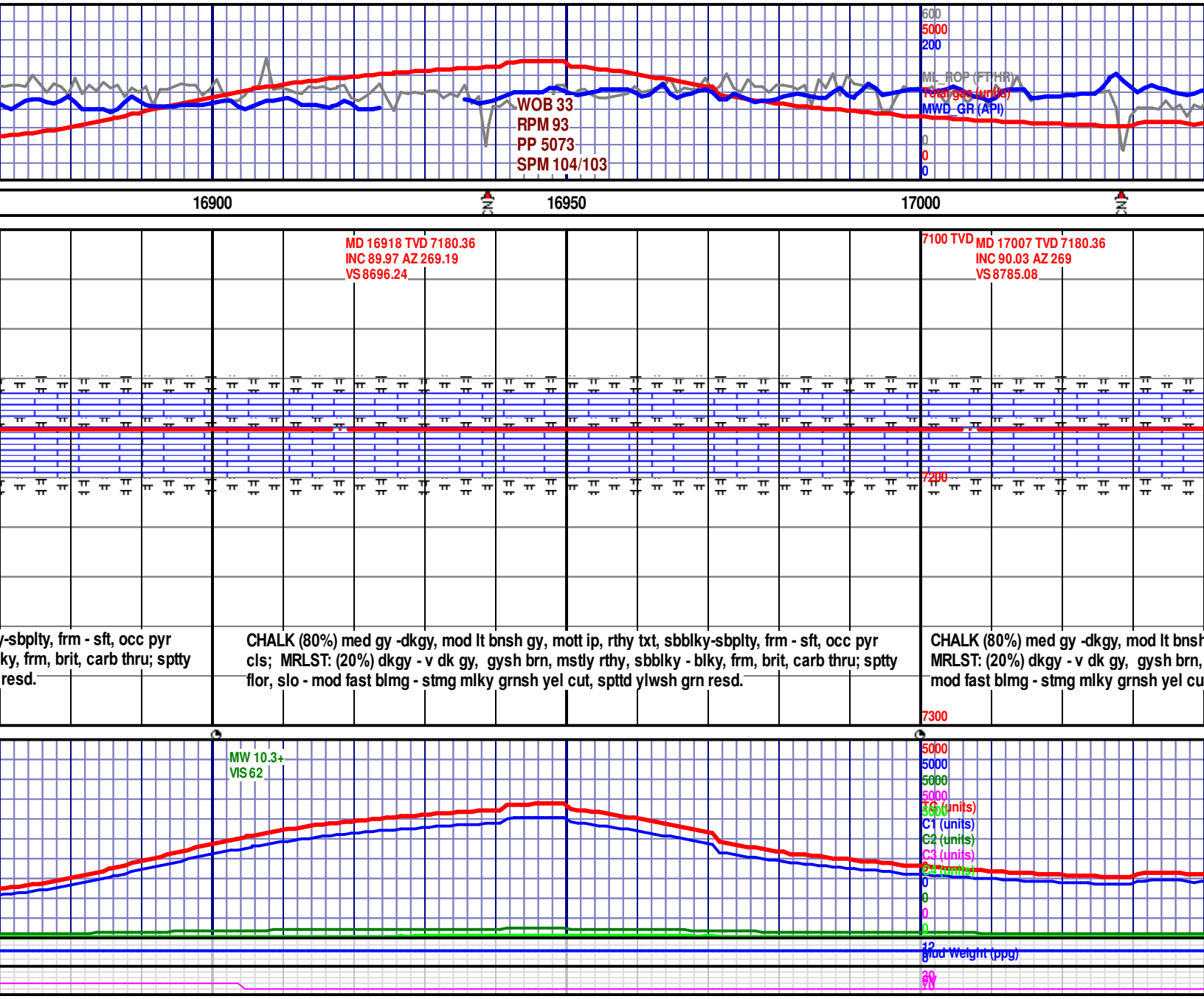
7200

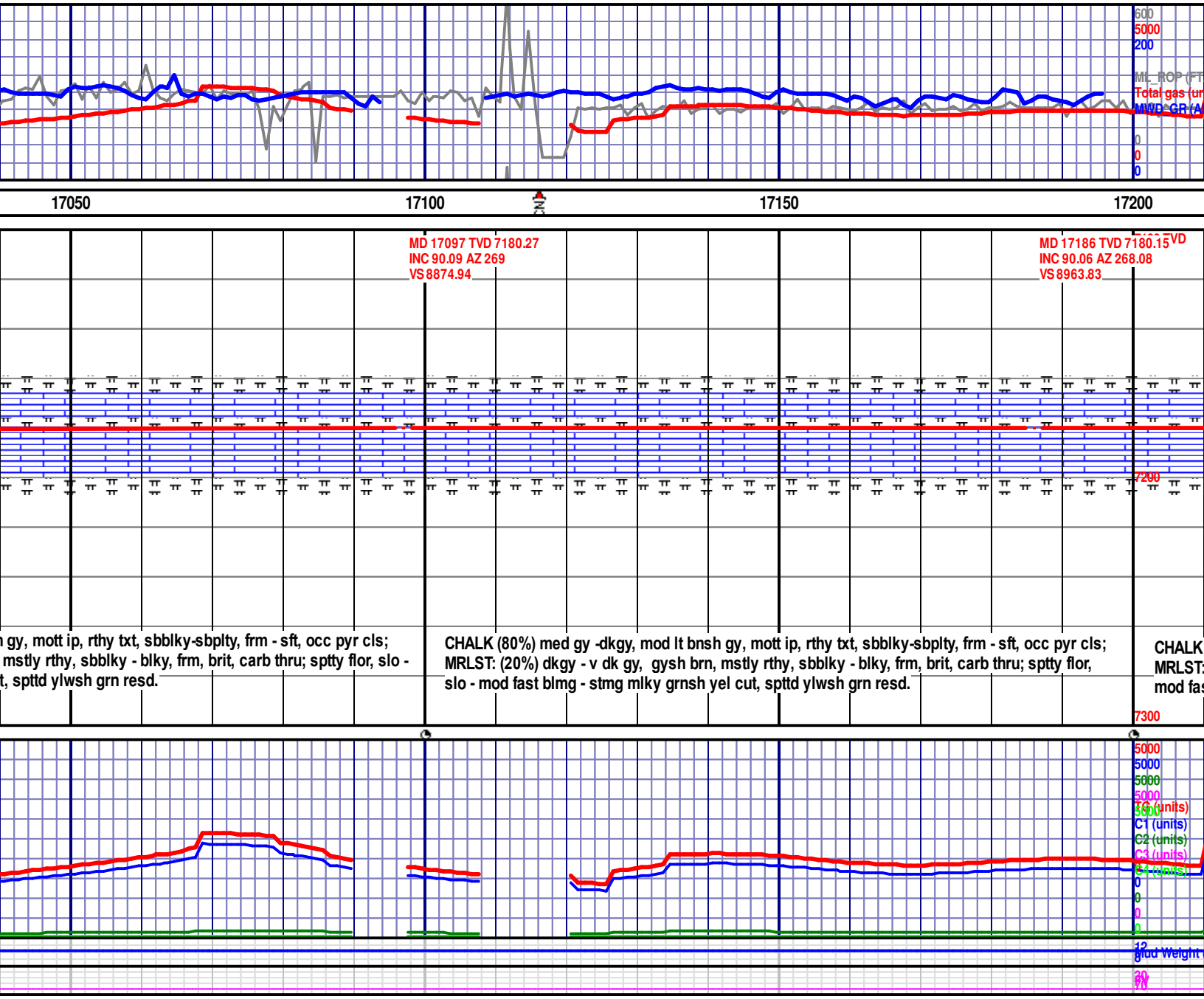
CHALK (80%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls; MRLST: (20%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.

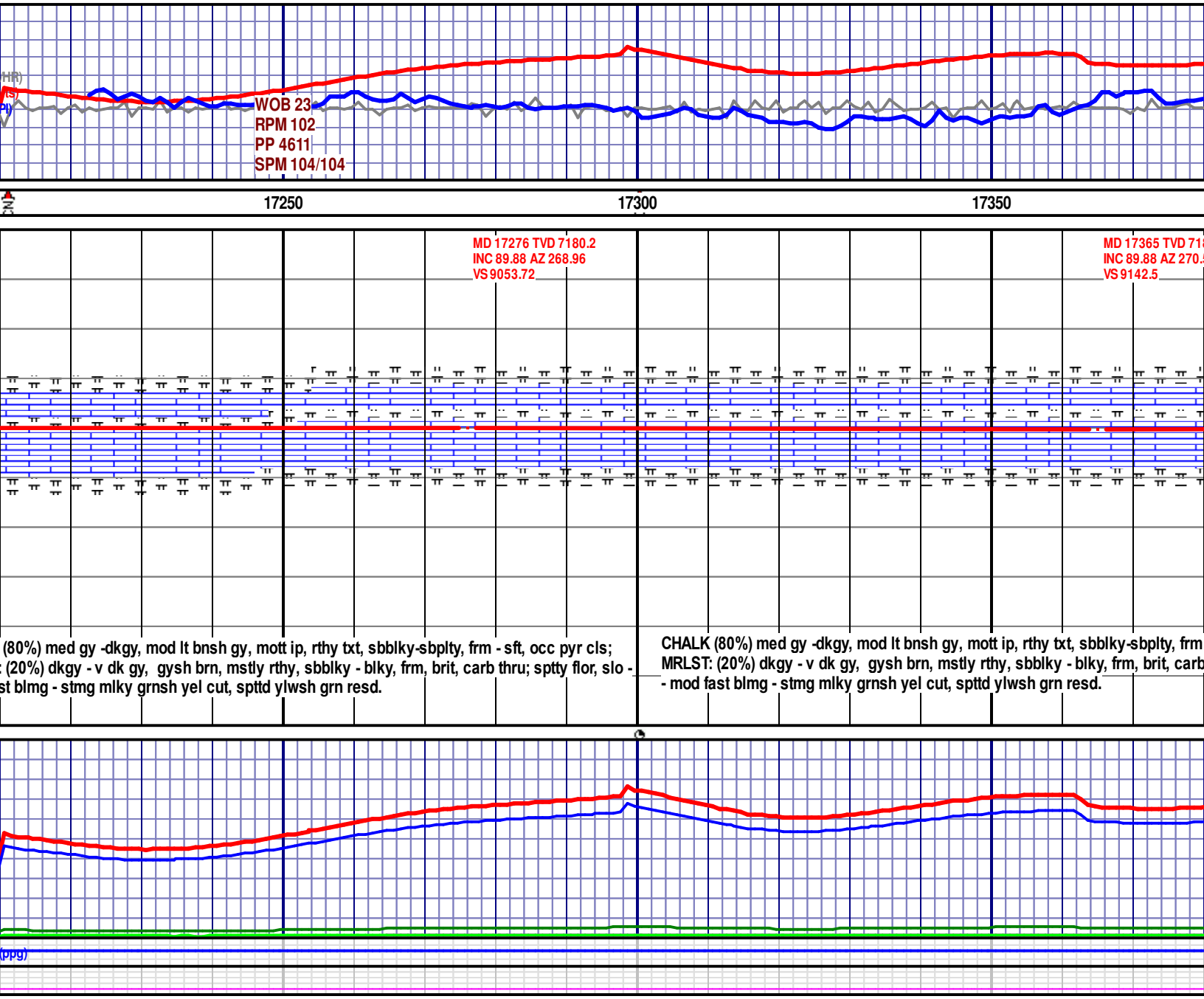
CHALK (80%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky
cls; MRLST: (20%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - bl
flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn

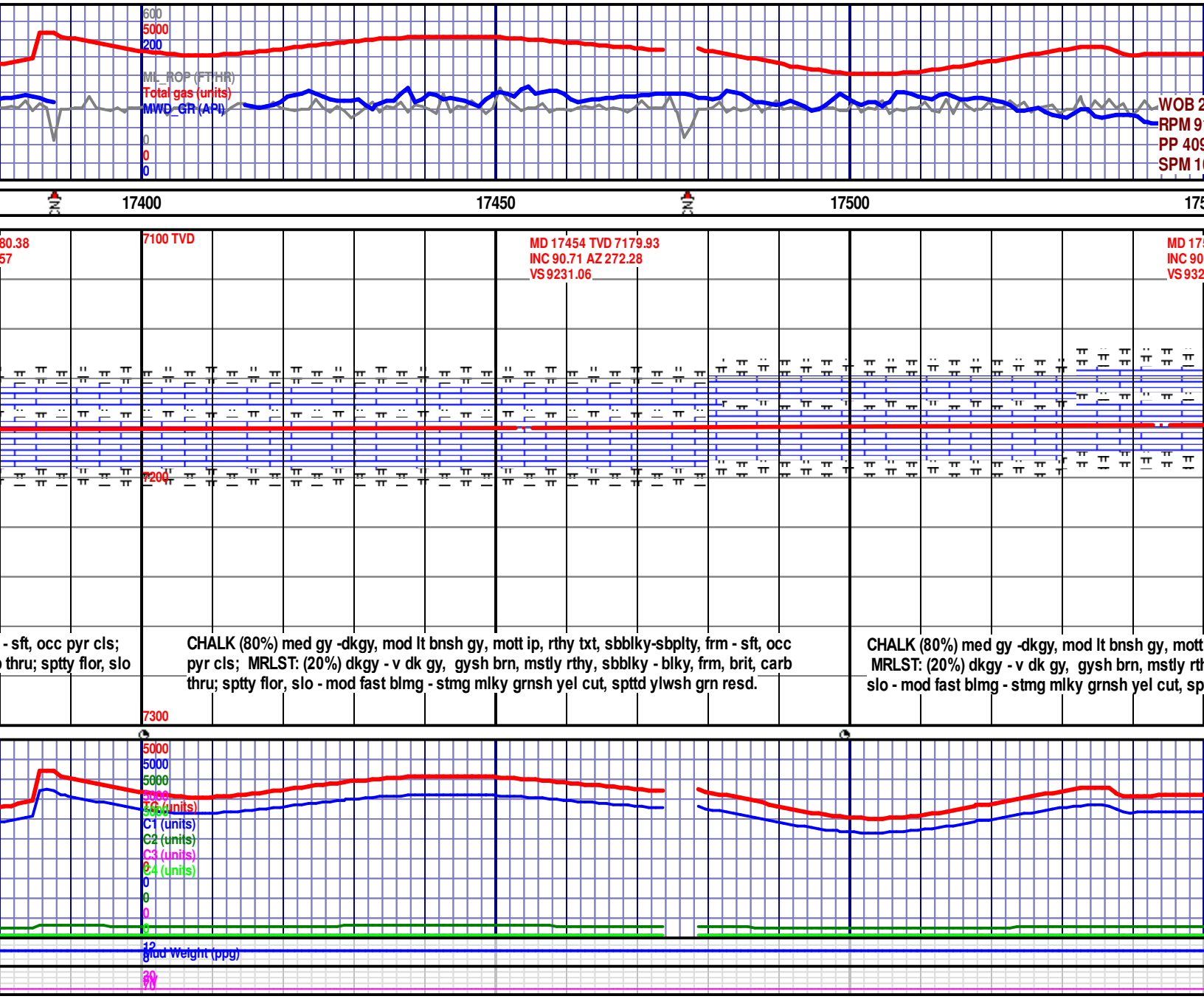
7300

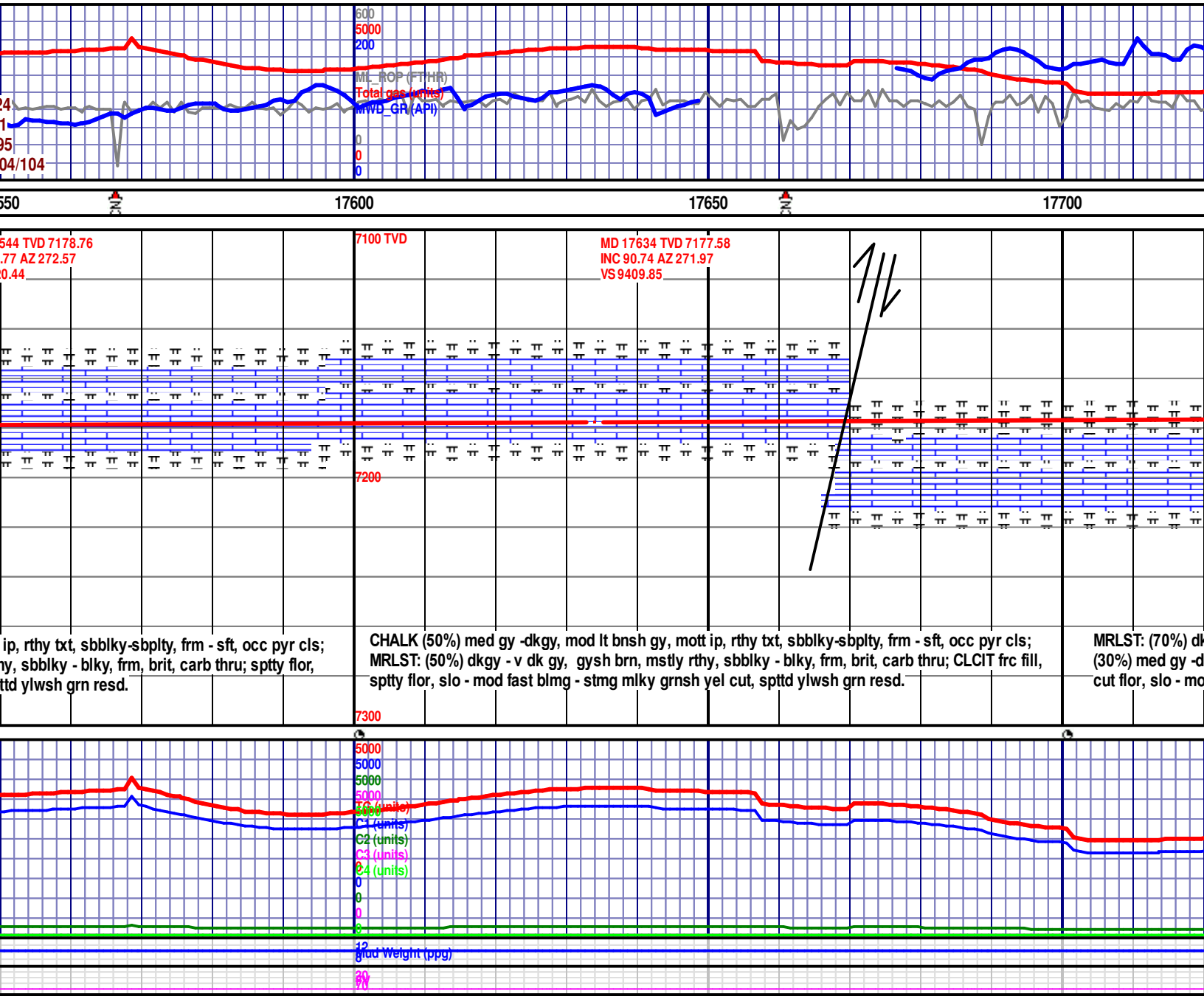


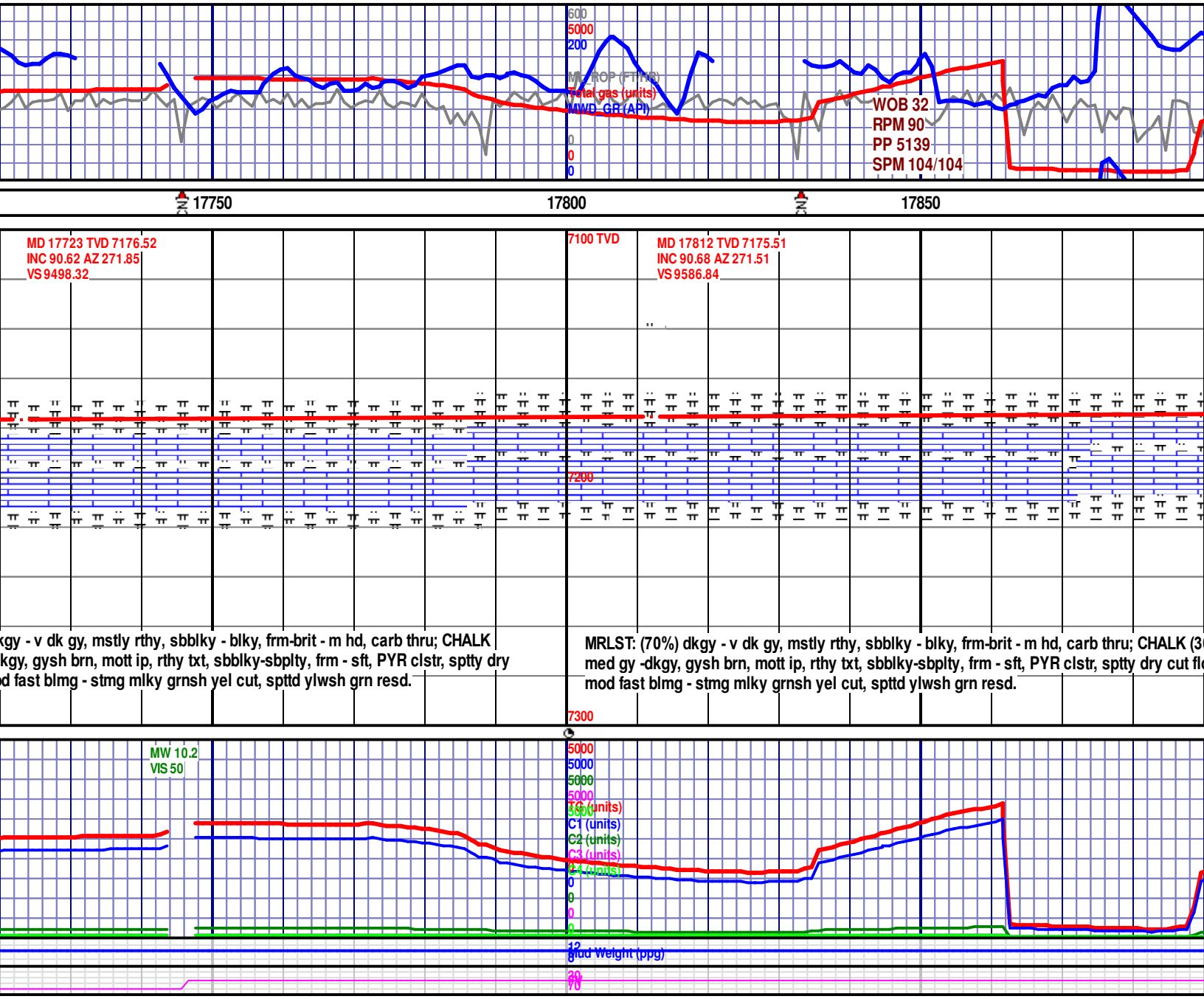

600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 33
RPM 93
PP 5073
SPM 104/103
16900
16950
17000
MD 16918 TVD 7180.36
INC 89.97 AZ 269.19
VS 8696.24
7100 TVD
MD 17007 TVD 7180.36
INC 90.03 AZ 269
VS 8785.08
7200
y-sbplty, frm - sft, occ pyr
ky, frm, brit, carb thru; sptty
resd.
CHALK (80%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr
cls; MRLST: (20%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty
flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (80%) med gy -dkgy, mod lt bnsh
MRLST: (20%) dkgy - v dk gy, gysh brn,
mod fast blmg - stmg mlky grnsh yel cu
7300
MW 10.3+
VIS 62
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
8
Mud Weight (ppg)
30
PW

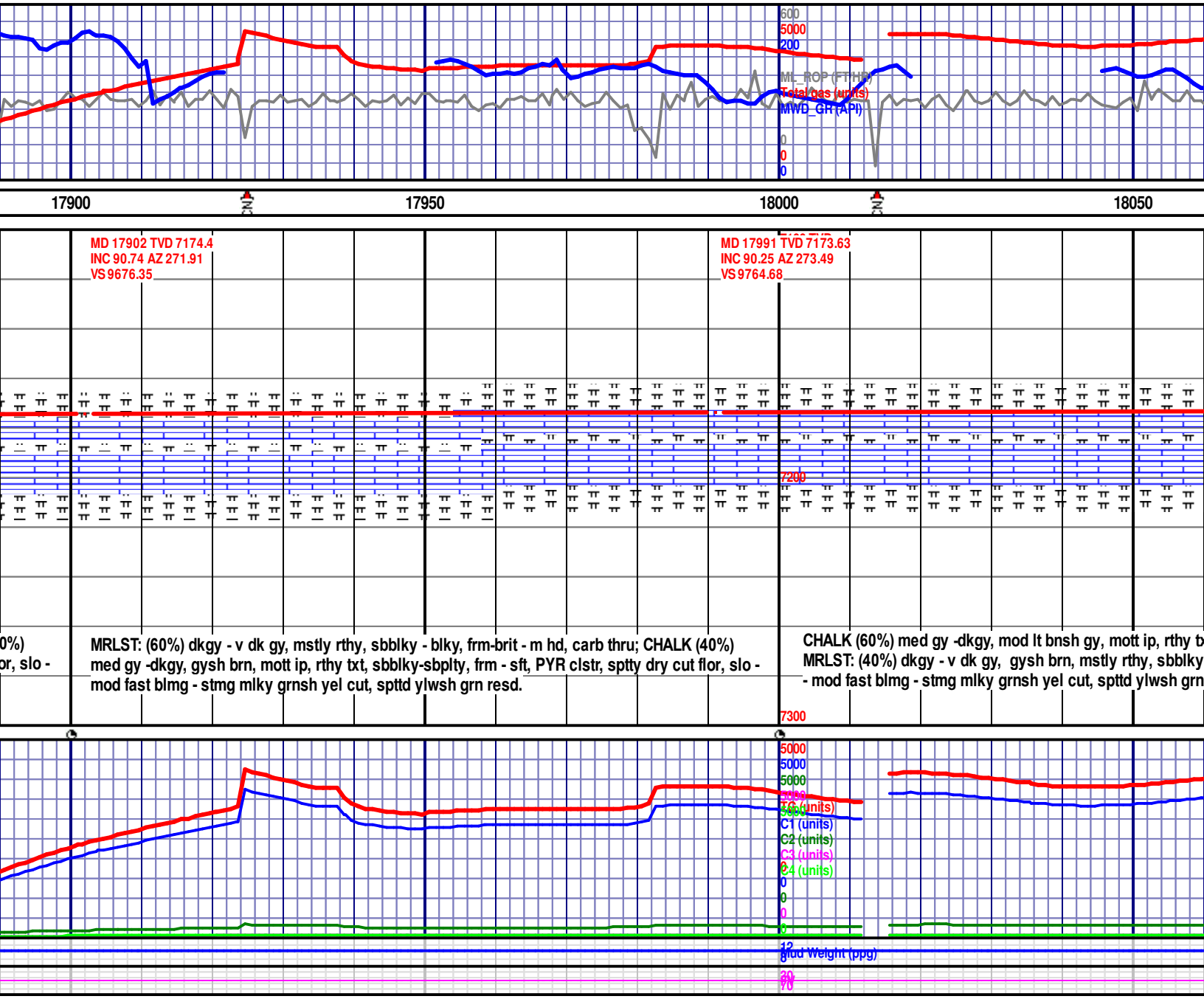

600
5000
200
ML_ROP (FT
Total gas (ur
MWD_GR (A
0
0
0
17050
17100
17150
17200
MD 17097 TVD 7180.27
INC 90.09 AZ 269
VS 8874.94
MD 17186 TVD 7180.15
INC 90.06 AZ 268.08
VS 8963.83
7200
gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls;
mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo -
t, sptd ylwsh grn resd.
CHALK (80%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls;
MRLST: (20%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor,
slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
CHALK
MRLST:
mod fas
7300
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
0
0
0
0
12
Mud Weight
30
70

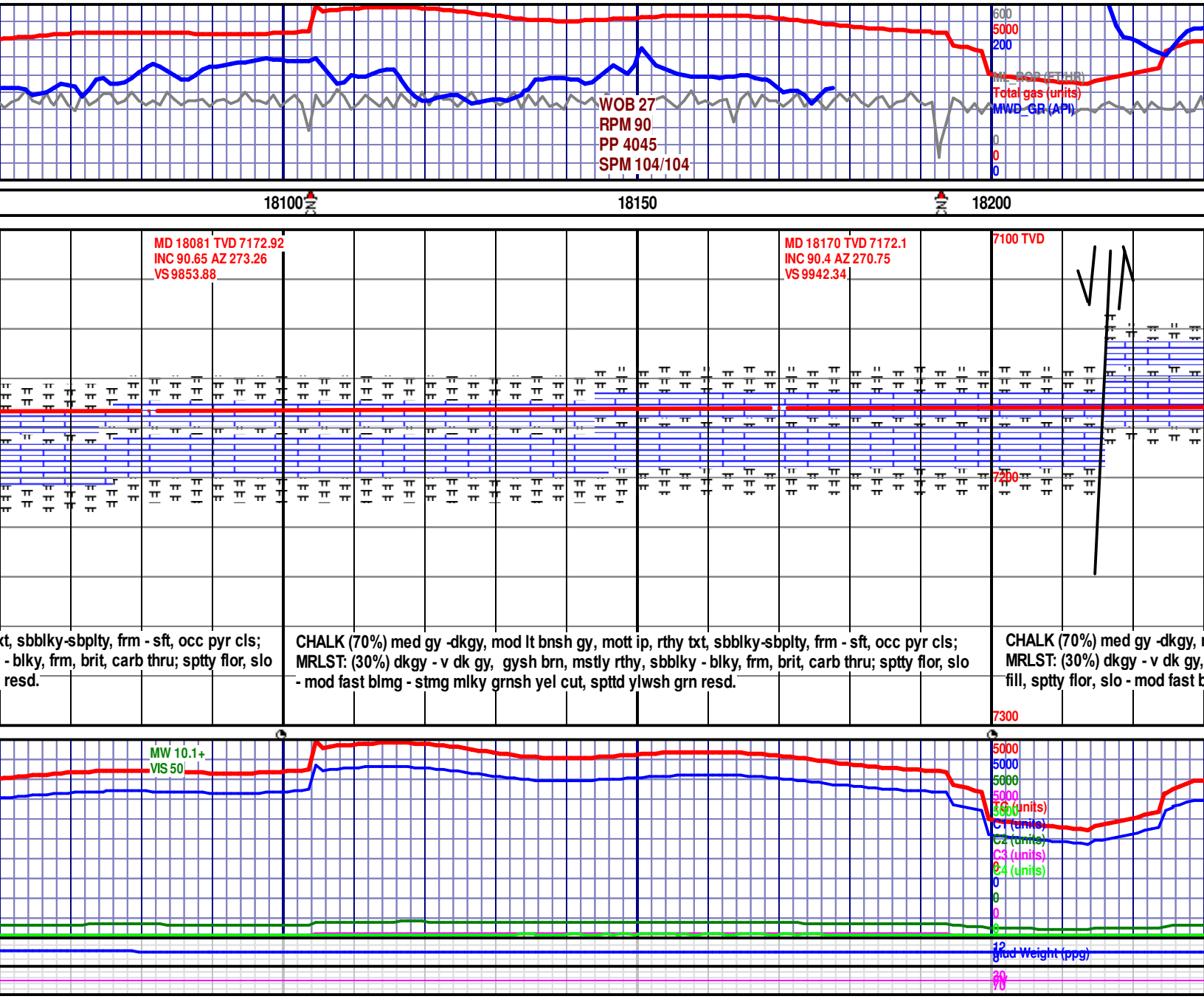

WOB 23
RPM 102
PP 4611
SPM 104/104
17250
17300
17350
MD 17276 TVD 7180.2
INC 89.88 AZ 268.96
VS 9053.72
MD 17365 TVD 71
INC 89.88 AZ 270.
VS 9142.5
(80%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls;
(20%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo -
st blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
CHALK (80%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm
MRLST: (20%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb
- mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.

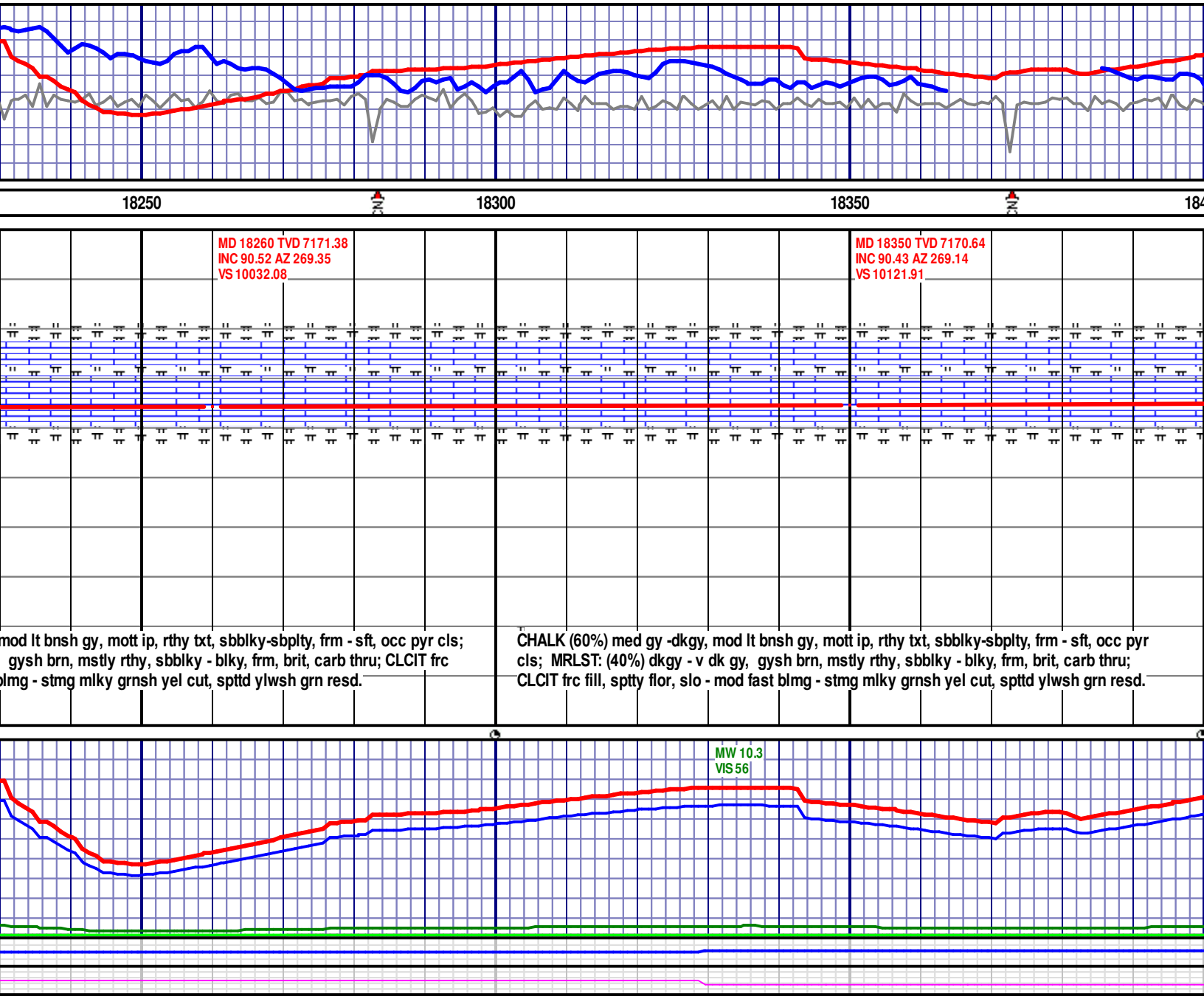

600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 2
RPM 9
PP 409
SPM 1
17400
17450
17500
175
80.38
57
7100 TVD
MD 17454 TVD 7179.93
INC 90.71 AZ 272.28
VS 9231.06
MD 175
INC 90
VS 932
7200
- sft, occ pyr cls;
thru; sptty flor, slo
CHALK (80%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls; MRLST: (20%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (80%) med gy -dkgy, mod lt bnsh gy, mott
MRLST: (20%) dkgy - v dk gy, gysh brn, mstly rth
slo - mod fast blmg - stmg mlky grnsh yel cut, sp
7300
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
30
0

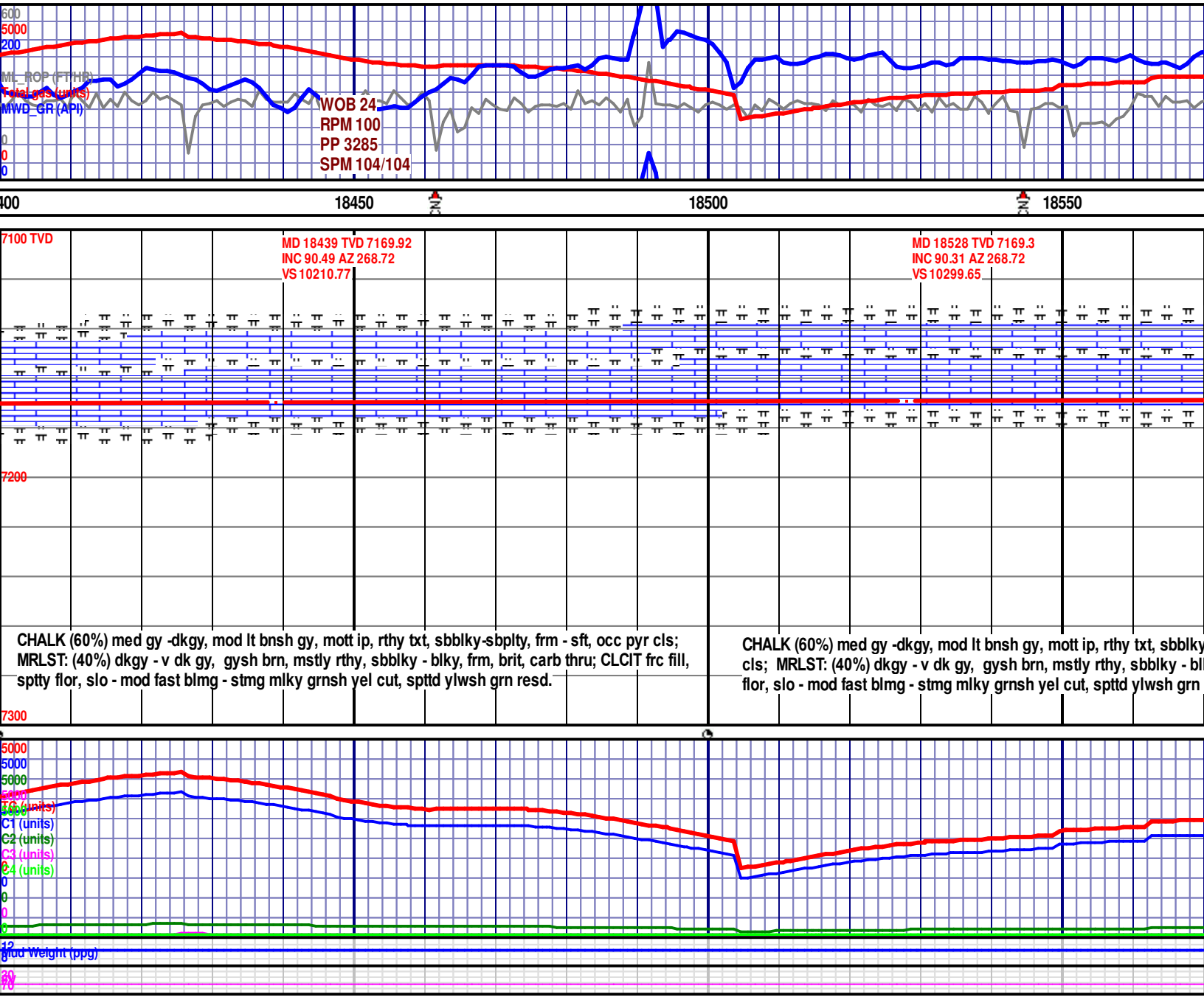

600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
24
1
95
04/104
550
17600
17650
17700
544 TVD 7178.76
.77 AZ 272.57
0.44
7100 TVD
MD 17634 TVD 7177.58
INC 90.74 AZ 271.97
VS 9409.85
7200
ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls;
ny, sbblky - blky, frm, brit, carb thru; sptty flor,
ttd ylwsh grn resd.
CHALK (50%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls;
MRLST: (50%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; CLCIT frc fill,
sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
MRLST: (70%) dk
(30%) med gy -d
cut flor, slo - mo
7300
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
8
12
Mud Weight (ppg)
8
30

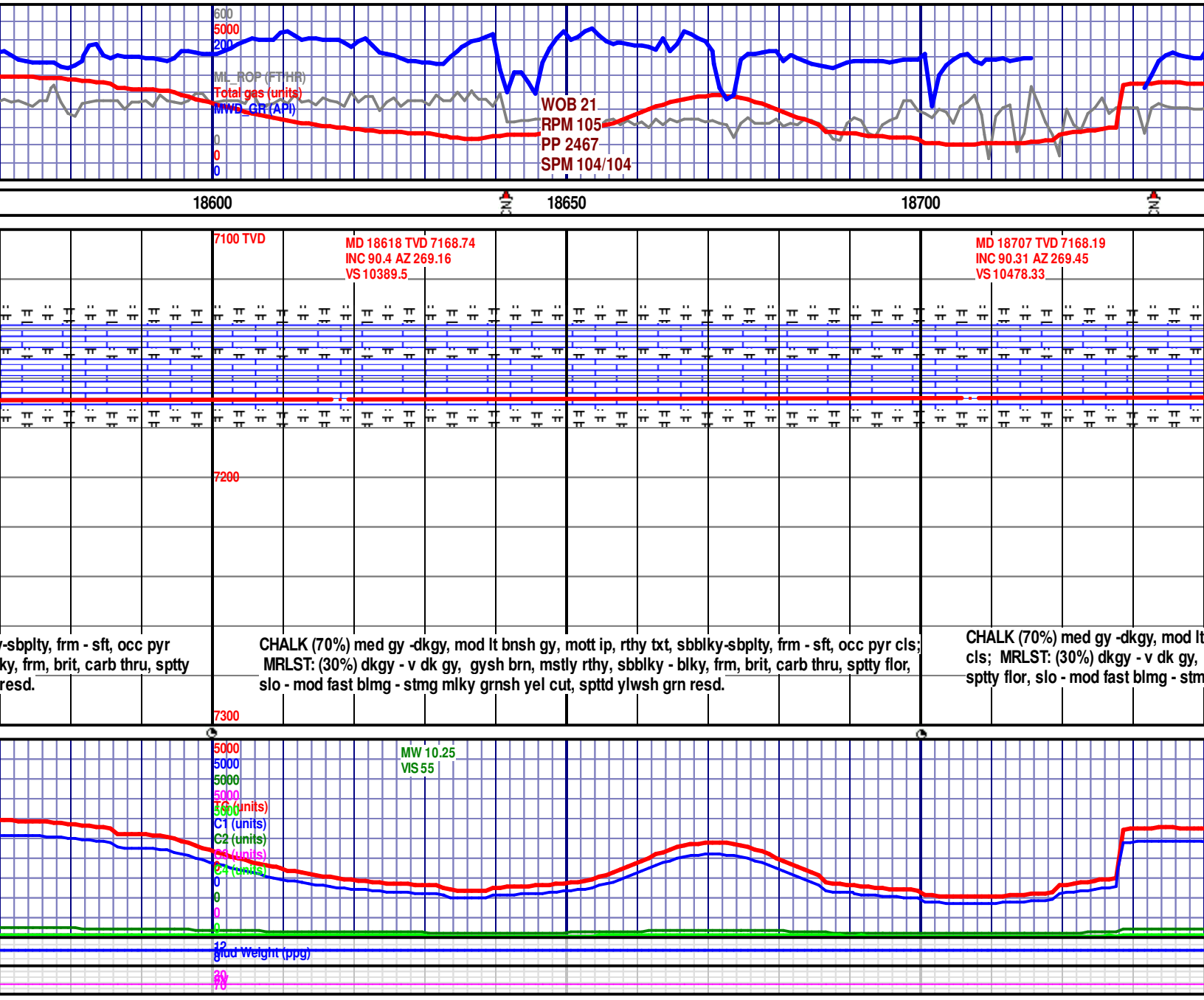

600
5000
200
MWD ROP (FT/HR)
Total gas (units)
MWD GR (API)
0
0
0
WOB 32
RPM 90
PP 5139
SPM 104/104
17750
17800
17850
MD 17723 TVD 7176.52
INC 90.62 AZ 271.85
VS 9498.32
7100 TVD
MD 17812 TVD 7175.51
INC 90.68 AZ 271.51
VS 9586.84
7200
kgy - v dk gy, mstly rthy, sbblky - blky, frm-brit - m hd, carb thru; CHALK
kgy, gysh brn, mott ip, rthy txt, sbblky-sbplty, frm - sft, PYR clstr, sptty dry
d fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
MRLST: (70%) dkgy - v dk gy, mstly rthy, sbblky - blky, frm-brit - m hd, carb thru; CHALK (3
med gy -dkgy, gysh brn, mott ip, rthy txt, sbblky-sbplty, frm - sft, PYR clstr, sptty dry cut flo
mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
7300
MW 10.2
VIS 50
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
0
0
0
0
12
Mud Weight (ppg)
30
70

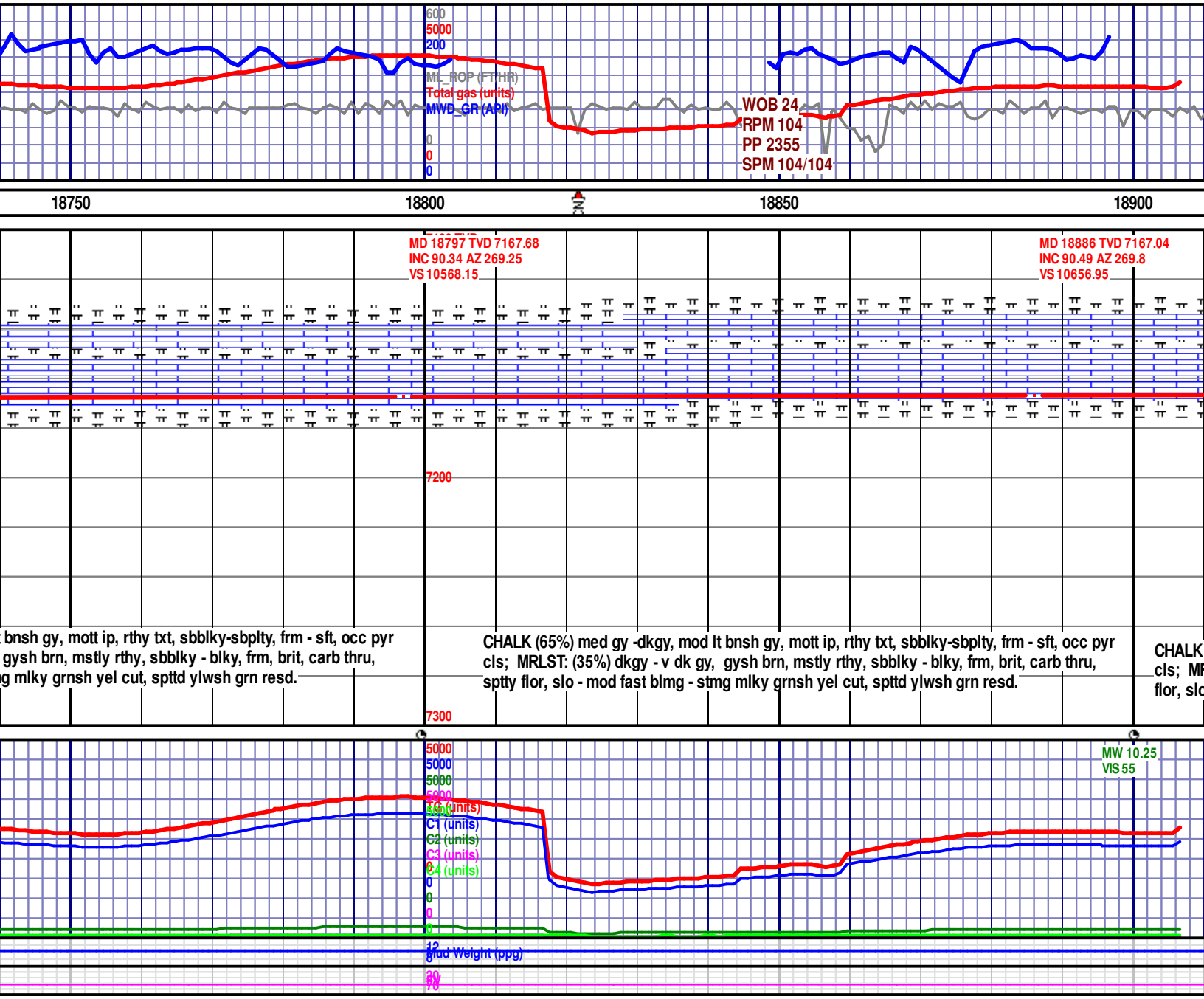

600
5000
200
ML_ROP (FT/HR)
Total Gas (units)
MWD_GR (API)
0
0
0
17900
17950
18000
18050
MD 17902 TVD 7174.4
INC 90.74 AZ 271.91
VS 9676.35
MD 17991 TVD 7173.63
INC 90.25 AZ 273.49
VS 9764.68
7200
7300
0%)
or, slo -
MRLST: (60%) dkgy - v dk gy, mstly rthy, sbblky - blky, frm-brit - m hd, carb thru; CHALK (40%) med gy -dkgy, gysh brn, mott ip, rthy txt, sbblky-sbplty, frm - sft, PYR clstr, sptty dry cut flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptted ylwsh grn resd.
CHALK (60%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy b
MRLST: (40%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky
- mod fast blmg - stmg mlky grnsh yel cut, sptted ylwsh grn
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
8
Mud Weight (ppg)
30
70

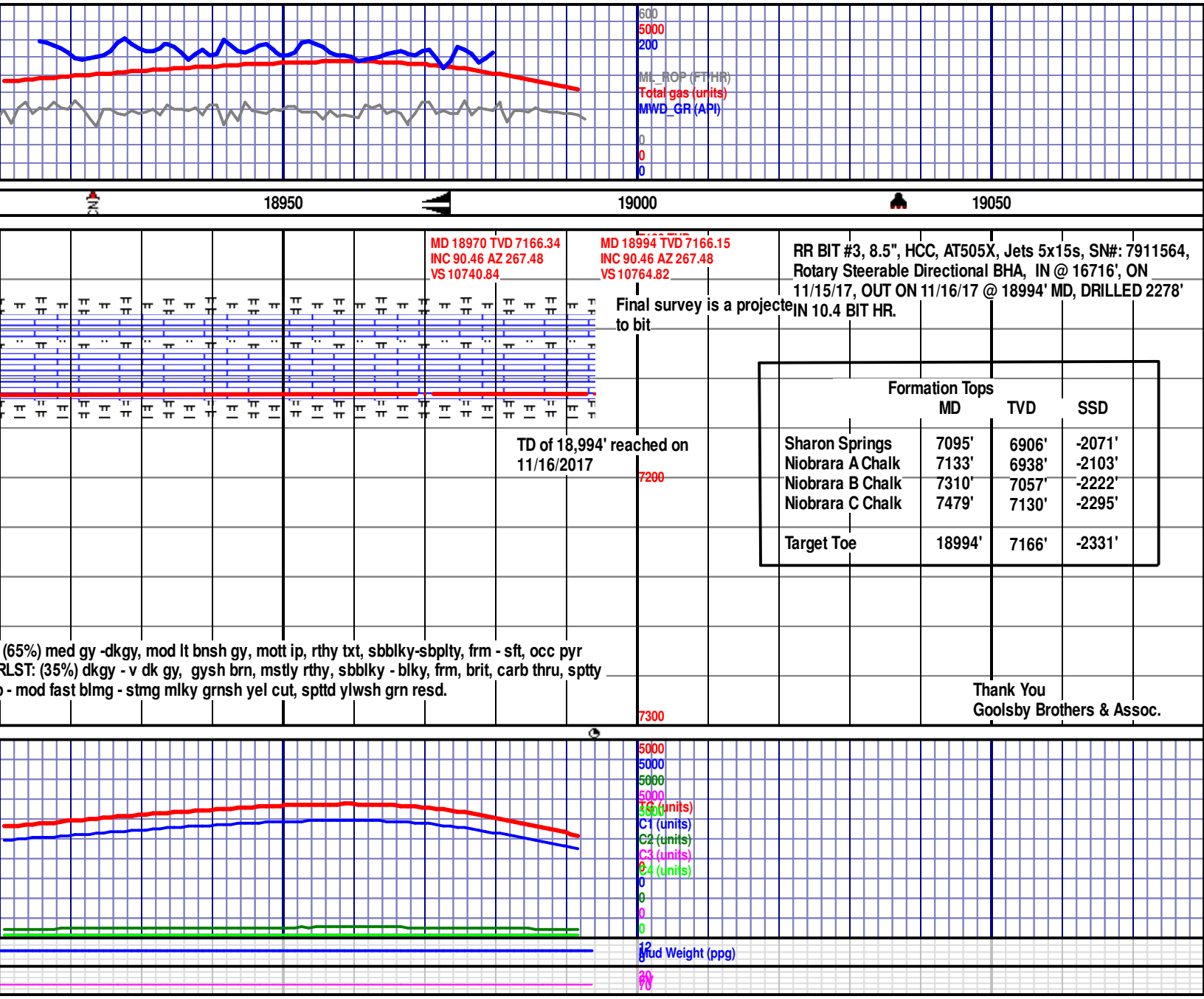

600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 27
RPM 90
PP 4045
SPM 104/104
18100
18150
18200
MD 18081 TVD 7172.92
INC 90.65 AZ 273.26
VS 9853.88
MD 18170 TVD 7172.1
INC 90.4 AZ 270.75
VS 9942.34
7100 TVD
7200
7300
xt, sbblky-sbplty, frm - sft, occ pyr cls;
- blky, frm, brit, carb thru; sptty flor, slo
resd.
CHALK (70%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls;
MRLST: (30%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; sptty flor, slo
- mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (70%) med gy -dkgy,
MRLST: (30%) dkgy - v dk gy,
fill, sptty flor, slo - mod fast b
MW 10.1+
VIS 50
5000
5000
5000
5000
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
8
30
70


18250
18300
18350
MD 18260 TVD 7171.38
INC 90.52 AZ 269.35
VS 10032.08
MD 18350 TVD 7170.64
INC 90.43 AZ 269.14
VS 10121.91
mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls; gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; CLCIT frc blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (60%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls; MRLST: (40%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; CLCIT frc fill, sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
MW 10.3
VIS 56


600
5000
200
ML_ROP (FT/HR)
Total_gas (units)
MWD_GR (API)
0
0
0
WOB 24
RPM 100
PP 3285
SPM 104/104
400
18450
18500
18550
7100 TVD
MD 18439 TVD 7169.92
INC 90.49 AZ 268.72
VS 10210.77
MD 18528 TVD 7169.3
INC 90.31 AZ 268.72
VS 10299.65
7200
CHALK (60%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls; MRLST: (40%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru; CLCIT frc fill, sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
CHALK (60%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky
cls; MRLST: (40%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - bl
flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn
7300
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
12
Mud Weight (ppg)
8
20
70


600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 21
RPM 105
PP 2467
SPM 104/104
18600
CN
18650
18700
CN
7100 TVD
MD 18618 TVD 7168.74
INC 90.4 AZ 269.16
VS 10389.5
MD 18707 TVD 7168.19
INC 90.31 AZ 269.45
VS 10478.33
7200
-sbplty, frm - sft, occ pyr
ky, frm, brit, carb thru, sptty
resd.
CHALK (70%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr cls;
MRLST: (30%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru, sptty flor,
slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
CHALK (70%) med gy -dkgy, mod lt
cls; MRLST: (30%) dkgy - v dk gy,
sptty flor, slo - mod fast blmg - stm
7300
5000
5000
5000
5000
C1 (units)
C2 (units)
C4 (units)
0
0
0
0
12
8
MW 10.25
VIS 55
Mud Weight (ppg)


600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 24
RPM 104
PP 2355
SPM 104/104
18750
18800
18850
18900
MD 18797 TVD 7167.68
INC 90.34 AZ 269.25
VS 10568.15
MD 18886 TVD 7167.04
INC 90.49 AZ 269.8
VS 10656.95
7200
7300
bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr
gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru,
g mlky grnsh yel cut, sptd ylwsh grn resd.
CHALK (65%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr
cls; MRLST: (35%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru,
sptty flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
CHALK
cls; MF
flor, slo
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
8
Mud Weight (ppg)
30
70
MW 10.25
VIS 55


600
5000
200
MI_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
18950
19000
19050
MD 18970 TVD 7166.34
INC 90.46 AZ 267.48
VS 10740.84
MD 18994 TVD 7166.15
INC 90.46 AZ 267.48
VS 10764.82
Final survey is a projecte
to bit
RR BIT #3, 8.5", HCC, AT505X, Jets 5x15s, SN#: 7911564,
Rotary Steerable Directional BHA, IN @ 16716', ON
11/15/17, OUT ON 11/16/17 @ 18994' MD, DRILLED 2278'
IN 10.4 BIT HR.
Formation Tops
MD TVD SSD
Sharon Springs 7095' 6906' -2071'
Niobrara A Chalk 7133' 6938' -2103'
Niobrara B Chalk 7310' 7057' -2222'
Niobrara C Chalk 7479' 7130' -2295'
Target Toe 18994' 7166' -2331'
TD of 18,994' reached on
11/16/2017
7200
(65%) med gy -dkgy, mod lt bnsh gy, mott ip, rthy txt, sbblky-sbplty, frm - sft, occ pyr
RLST: (35%) dkgy - v dk gy, gysh brn, mstly rthy, sbblky - blky, frm, brit, carb thru, sptty
- mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
7300
Thank You
Goolsby Brothers & Assoc.
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
8
30
70