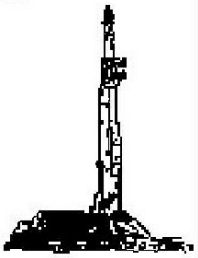
GOOLSBY BROTHERS
and associates, inc.
575 Union Blvd, Suite 208
Lakewood, CO 80228
303-945-2860 Office
Geological Wellsite
Supervision
www.goolsbybrothers.com
PETCOM



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

Well Name:	**Troudt 1C-23-M**
API:	**051234624200**
Location:	**NE/NW Section 27 T6N R66W Weld County, CO.**
License Number:	**Region: Wattenberg**
Spud Date:	**August 13, 2018 Drilling Completed: August 16, 2018**
Surface Coordinates:	**760' FNL 1654' FWL NE/NW Sec. 27 T6N R66W**
	Lat/Long: 40.464592 N, -104.767423 W
Bottom Hole Coordinates:	**Planned: 1655' FSL 510' FEL NE/SE Sec. 23 T6N R66W**
Ground Elevation (ft):	**4,720' K.B. Elevation (ft): 4,744'**
Logged Interval (ft):	**7100' To: 15,540' Total Depth (ft): 15,540' DMTD**
Formation:	**Codell Sand**
Type of Drilling Fluid:	**OBM (LSND Surface).**

Printed by HORIZONTAL.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

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

GEOLOGIST

Name: Tekabe Gedamu & Robin Brackman
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 15,528' MD

Casing

9 5/8" Surface Casing pre set @ 1,851' MD.
5 1/2" Production Liner set @ 15,528' on 08/18/2018.

Comments

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

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

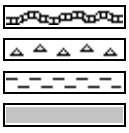
3) Mud Comapny : Anchor USA
Engineer: Joseph Wood, David Owen

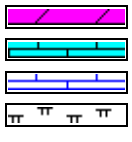
4) Directional Drilling: Baker Hughes
Drillers: Ryan Killian, Jeremiah Samson
MWD: Shawn McCaffery, Baker Remote Field Operations.

5) Gas Equipment: Pason Gas Analyzer (Spectrometer)

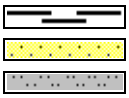
6) Wellsite Geologist: Tekabe Gedamu & Robin Brackman

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

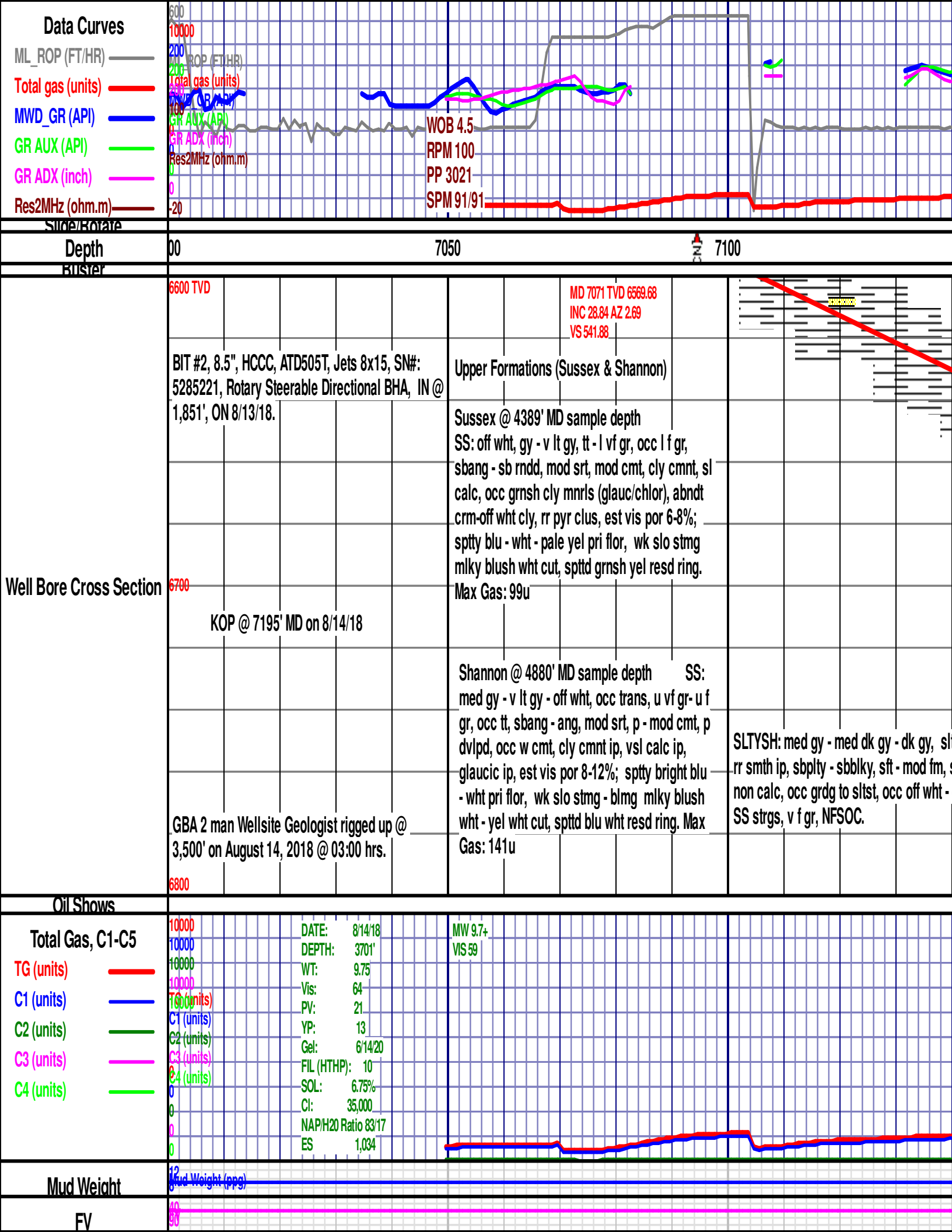
- E Earthy
- Fenest
- F Fracture
- Inter
- Moldic
- Organic
- P Pinpoint
- V Vuggy

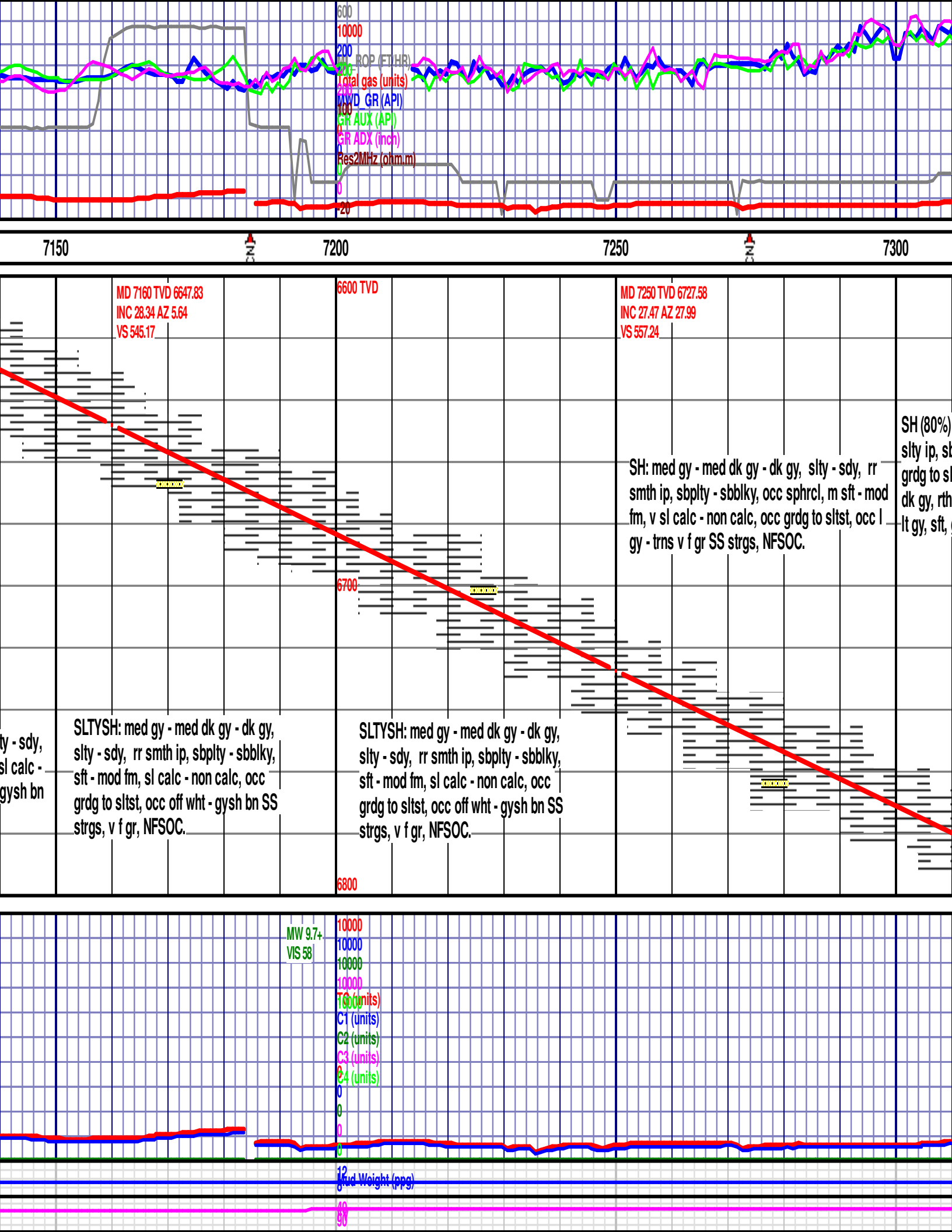
ROUNDING

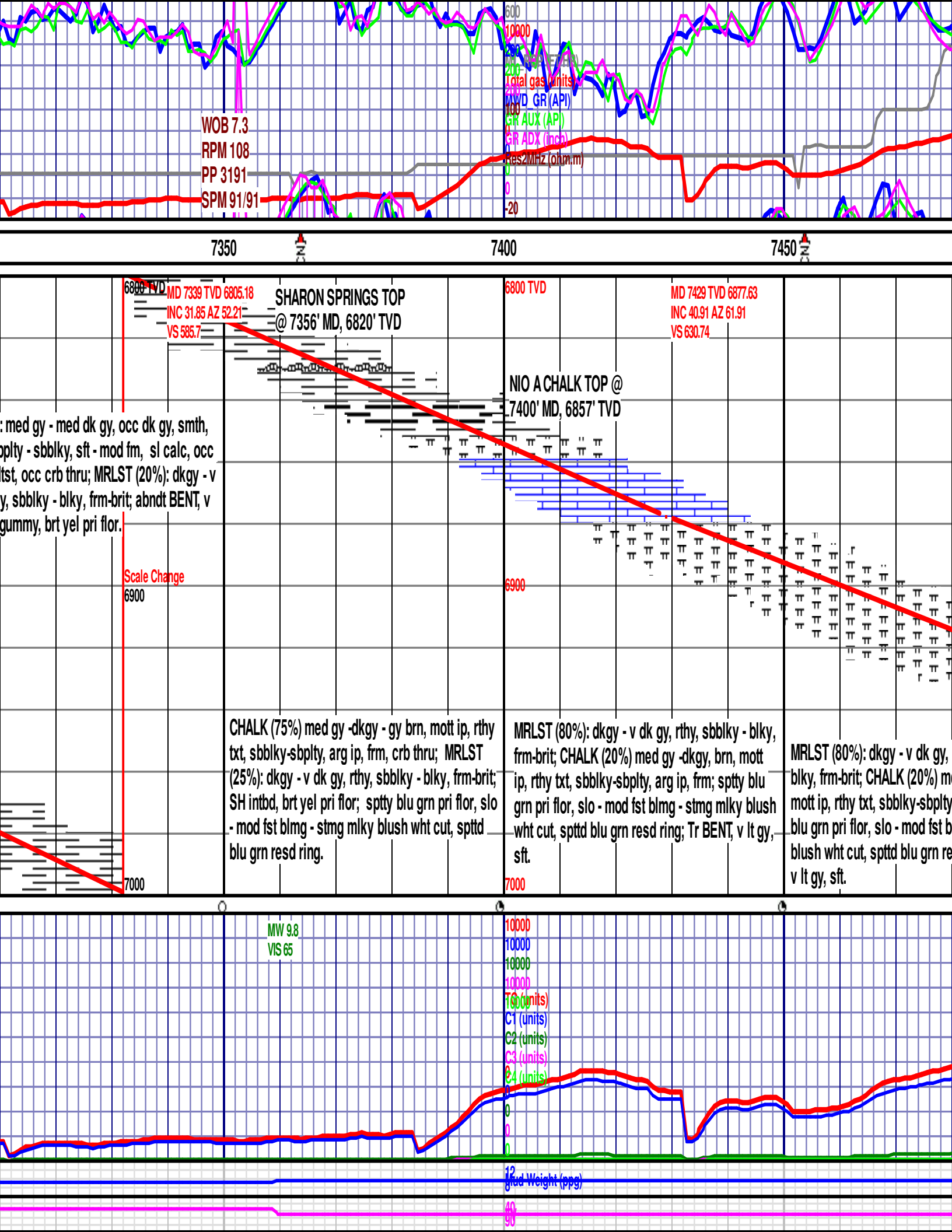
- R Rounded
- r Subrnd
- a Subang
- A Angular

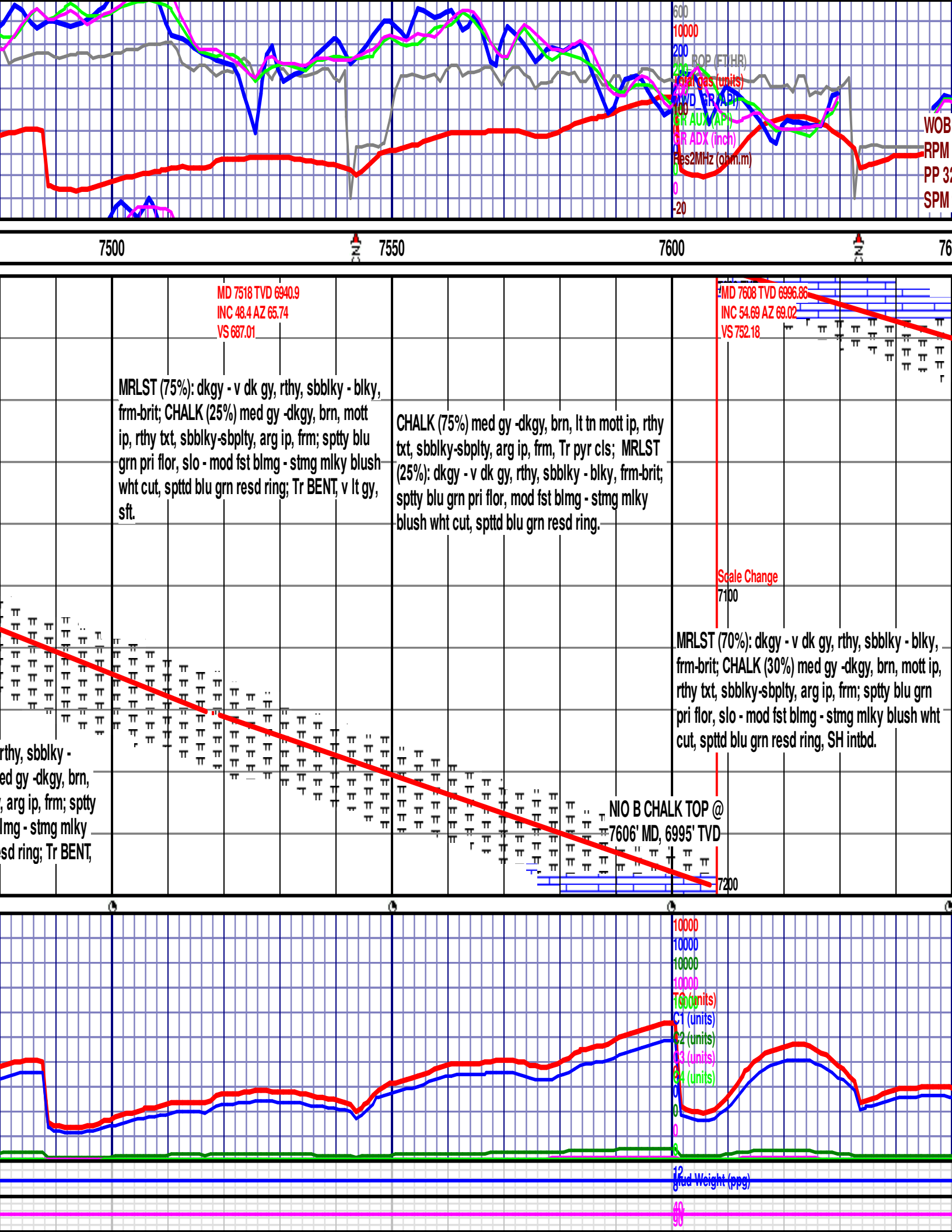
SORTING

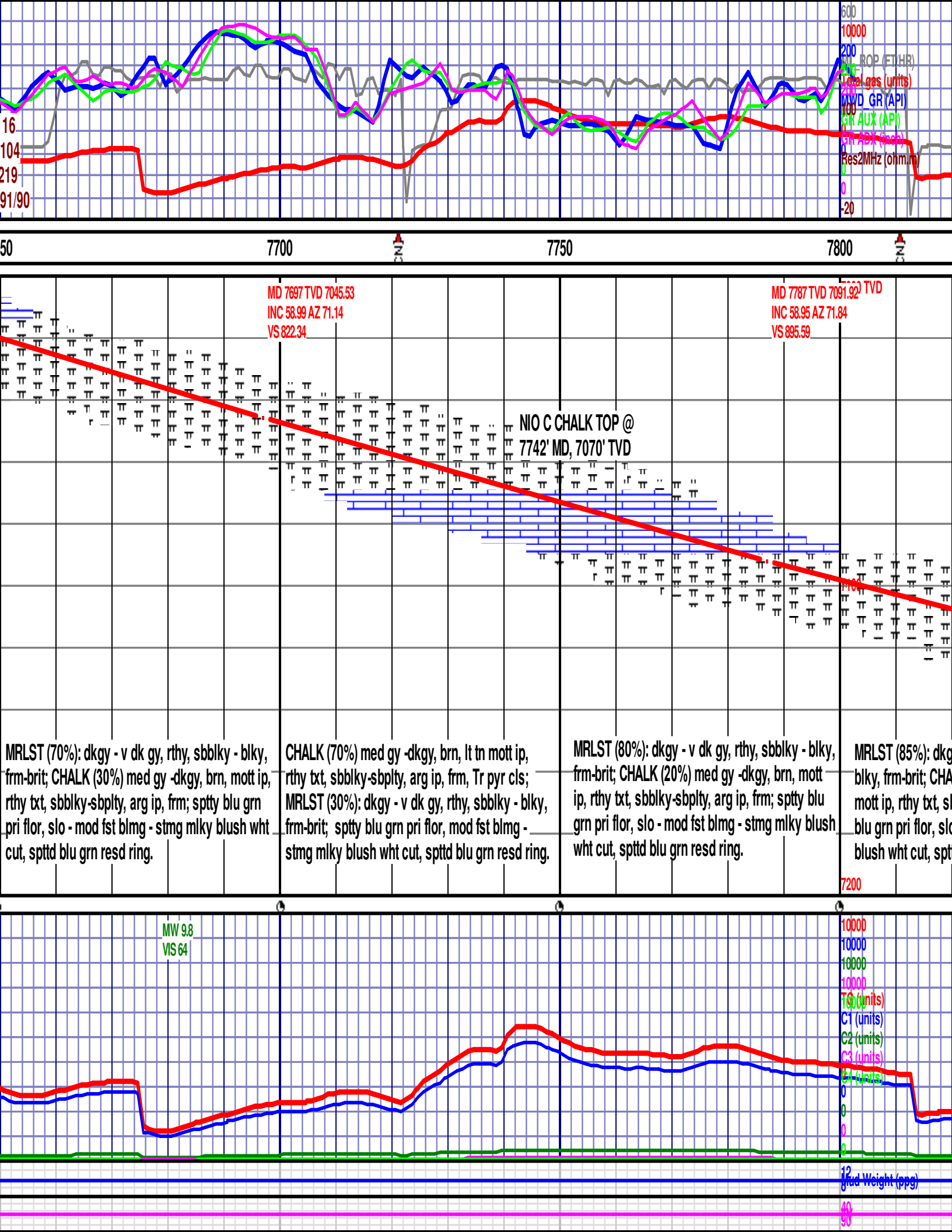
- W Well
- M Moderate
- P Poor

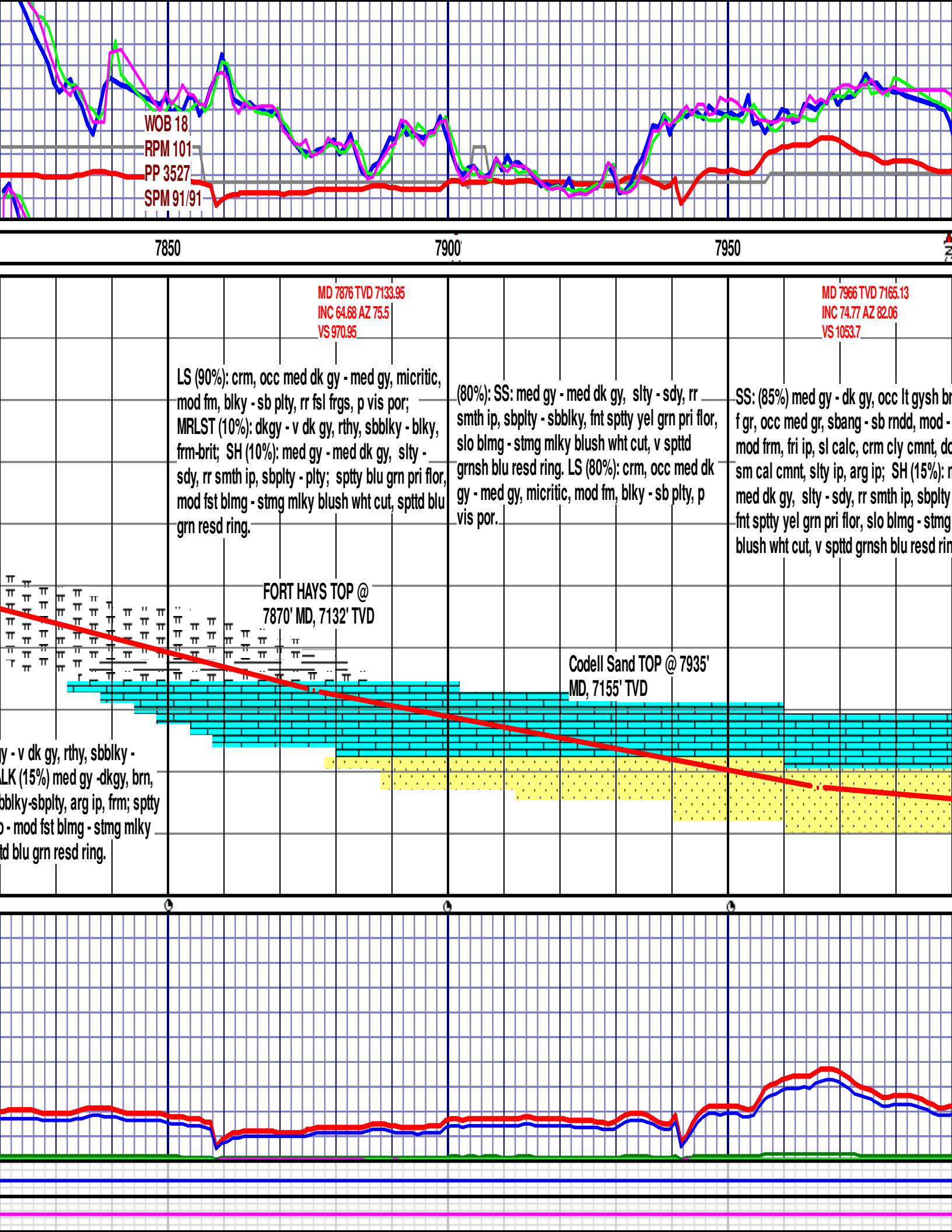

Data Curves
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
GR AUX (API)
GR ADX (inch)
Res2MHz (ohm.m)
600
10000
200
100
0
-20
WOB 4.5
RPM 100
PP 3021
SPM 91/91
Slide/Rotate
Depth
7050
7100
Buster
6600 TVD
MD 7071 TVD 6569.68
INC 28.84 AZ 2.69
VS 541.88
BIT #2, 8.5", HCCC, ATD505T, Jets 8x15, SN#: 5285221, Rotary Steerable Directional BHA, IN @ 1,851', ON 8/13/18.
Upper Formations (Sussex & Shannon)
Sussex @ 4389' MD sample depth
SS: off wht, gy - v lt gy, tt - l vf gr, occ l f gr, sbang - sb rndd, mod srt, mod cmt, cly cmnt, sl calc, occ grnsh cly mnrls (glauc/chlor), abndt crm-off wht cly, rr pyr clus, est vis por 6-8%; sptty blu - wht - pale yel pri flor, wk slo stmg mlky blush wht cut, sptd grnsh yel resd ring.
Max Gas: 99u
Well Bore Cross Section
6700
KOP @ 7195' MD on 8/14/18
Shannon @ 4880' MD sample depth SS: med gy - v lt gy - off wht, occ trans, u vf gr- u f gr, occ tt, sbang - ang, mod srt, p - mod cmt, p dvlpd, occ w cmt, cly cmnt ip, vsl calc ip, glaucic ip, est vis por 8-12%; sptty bright blu - wht pri flor, wk slo stmg - blmg mlky blush wht - yel wht cut, sptd blu wht resd ring. Max Gas: 141u
SLTYSH: med gy - med dk gy - dk gy, sl
rr smth ip, sbplty - sbblky, sft - mod fm,
non calc, occ grdg to sltst, occ off wht -
SS strgs, v f gr, NFSOC.
GBA 2 man Wellsite Geologist rigged up @ 3,500' on August 14, 2018 @ 03:00 hrs.
6800
Oil Shows
Total Gas, C1-C5
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
10000
0
DATE: 8/14/18
DEPTH: 3701'
WT: 9.75
Vis: 64
PV: 21
YP: 13
Gel: 6/14/20
FIL (HTHP): 10
SOL: 6.75%
Cl: 35,000
NAP/H20 Ratio 83/17
ES 1,034
MW 9.7+
VIS 59
Mud Weight
Mud Weight (ppg)
12
8
FV
40
90

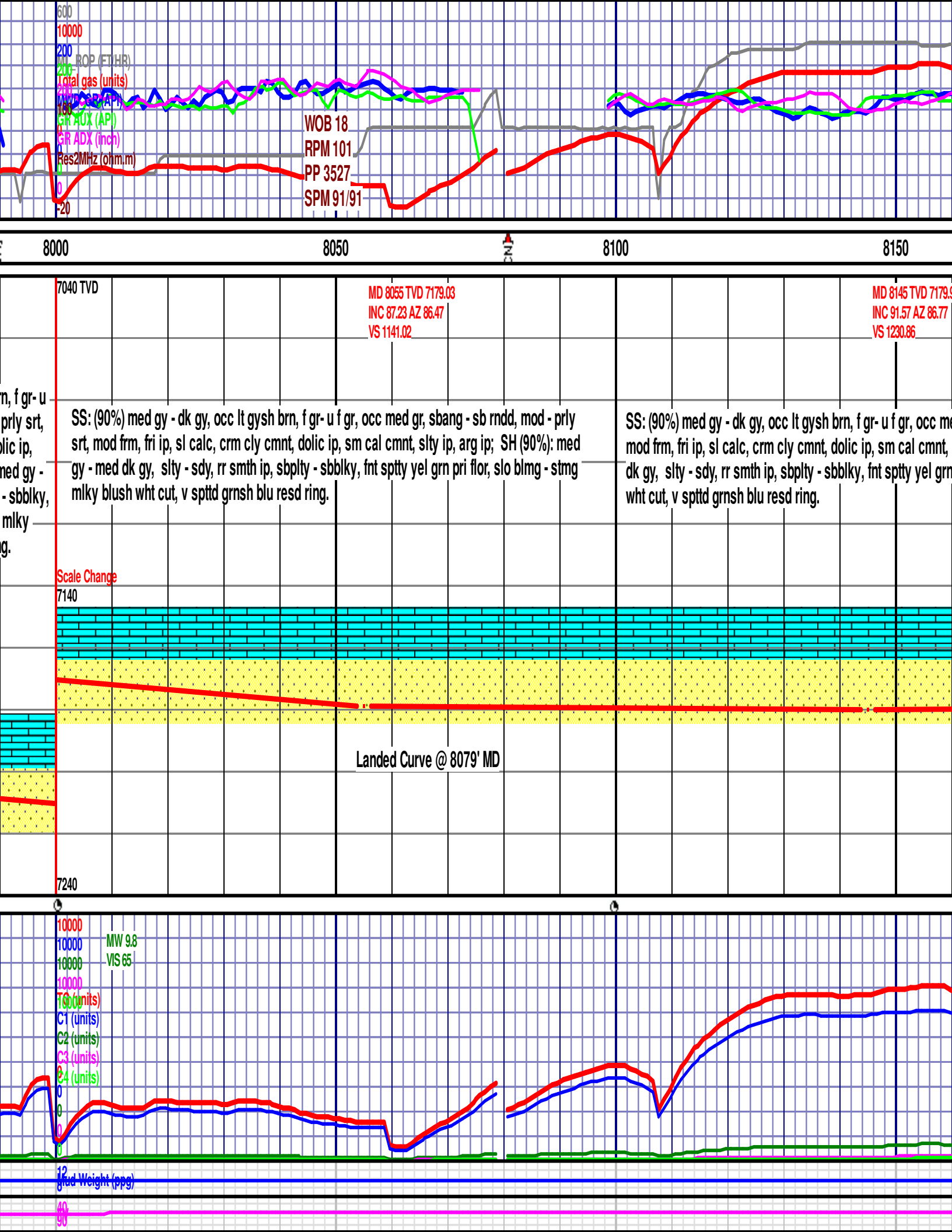

600
10000
200
ROP (FT/HR)
Total gas (units)
MWD_GR (API)
GR AUX (API)
GR ADX (inch)
Res2MHz (ohm.m)
0
-20
7150
7200
7250
7300
MD 7160 TVD 6647.83
INC 28.34 AZ 5.64
VS 545.17
6600 TVD
MD 7250 TVD 6727.58
INC 27.47 AZ 27.99
VS 557.24
SH (80%)
slty ip, sb
grdg to sl
dk gy, rth
lt gy, sft,
SH: med gy - med dk gy - dk gy, slty - sdy, rr smth ip, sbplty - sbblky, occ sphrcl, m sft - mod fm, v sl calc - non calc, occ grdg to sltst, occ l gy - trns v f gr SS strgs, NFSOC.
6700
ty - sdy,
sl calc -
gysh bn
SLTYSH: med gy - med dk gy - dk gy, slty - sdy, rr smth ip, sbplty - sbblky, sft - mod fm, sl calc - non calc, occ grdg to sltst, occ off wht - gysh bn SS strgs, v f gr, NFSOC.
SLTYSH: med gy - med dk gy - dk gy, slty - sdy, rr smth ip, sbplty - sbblky, sft - mod fm, sl calc - non calc, occ grdg to sltst, occ off wht - gysh bn SS strgs, v f gr, NFSOC.
6800
MW 9.7+
VIS 58
10000
10000
10000
10000
10000
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
8
Mud Weight (ppg)
40
90

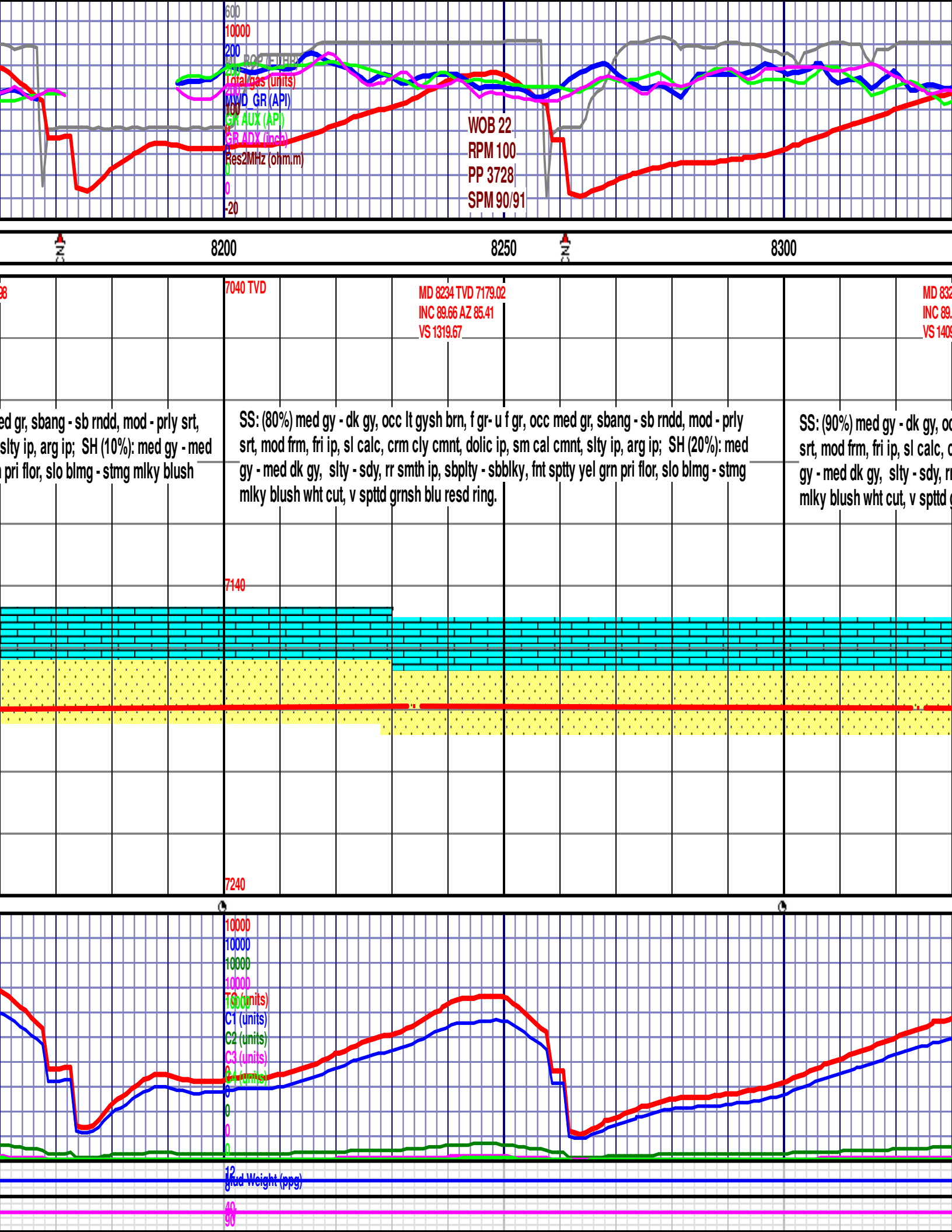

WOB 7.3
RPM 108
PP 3191
SPM 91/91
Total gas (units)
WWD_GR (API)
GR AUX (API)
GR ADX (inch)
Res2MHz (ohm.m)
7350
7400
7450
6800 TVD
MD 7339 TVD 6805.18
INC 31.85 AZ 52.21
VS 585.7
SHARON SPRINGS TOP
@ 7356' MD, 6820' TVD
NIO A CHALK TOP @
7400' MD, 6857' TVD
MD 7429 TVD 6877.63
INC 40.91 AZ 61.91
VS 630.74
: med gy - med dk gy, occ dk gy, smth,
pplty - sbblky, sft - mod fm, sl calc, occ
ltst, occ crb thru; MRLST (20%): dkgy - v
y, sbblky - blky, frm-brit; abndt BENT, v
gummy, brt yel pri flor.
Scale Change
6900
7000
CHALK (75%) med gy -dkgy - gy brn, mott ip, rthy txt, sbblky-sbplty, arg ip, frm, crb thru; MRLST (25%): dkgy - v dk gy, rthy, sbblky - blky, frm-brit; SH intbd, brt yel pri flor; sptty blu grn pri flor, slo - mod fst blmg - stmg mlky blush wht cut, spttd blu grn resd ring.
MRLST (80%): dkgy - v dk gy, rthy, sbblky - blky, frm-brit; CHALK (20%) med gy -dkgy, brn, mott ip, rthy txt, sbblky-sbplty, arg ip, frm; sptty blu grn pri flor, slo - mod fst blmg - stmg mlky blush wht cut, spttd blu grn resd ring; Tr BENT, v lt gy, sft.
MRLST (80%): dkgy - v dk gy,
blky, frm-brit; CHALK (20%) m
mott ip, rthy txt, sbblky-sbplty
blu grn pri flor, slo - mod fst b
blush wht cut, spttd blu grn re
v lt gy, sft.
MW 9.8
VIS 65
C1 (units)
C2 (units)
C3 (units)
C4 (units)
Mud Weight (ppg)

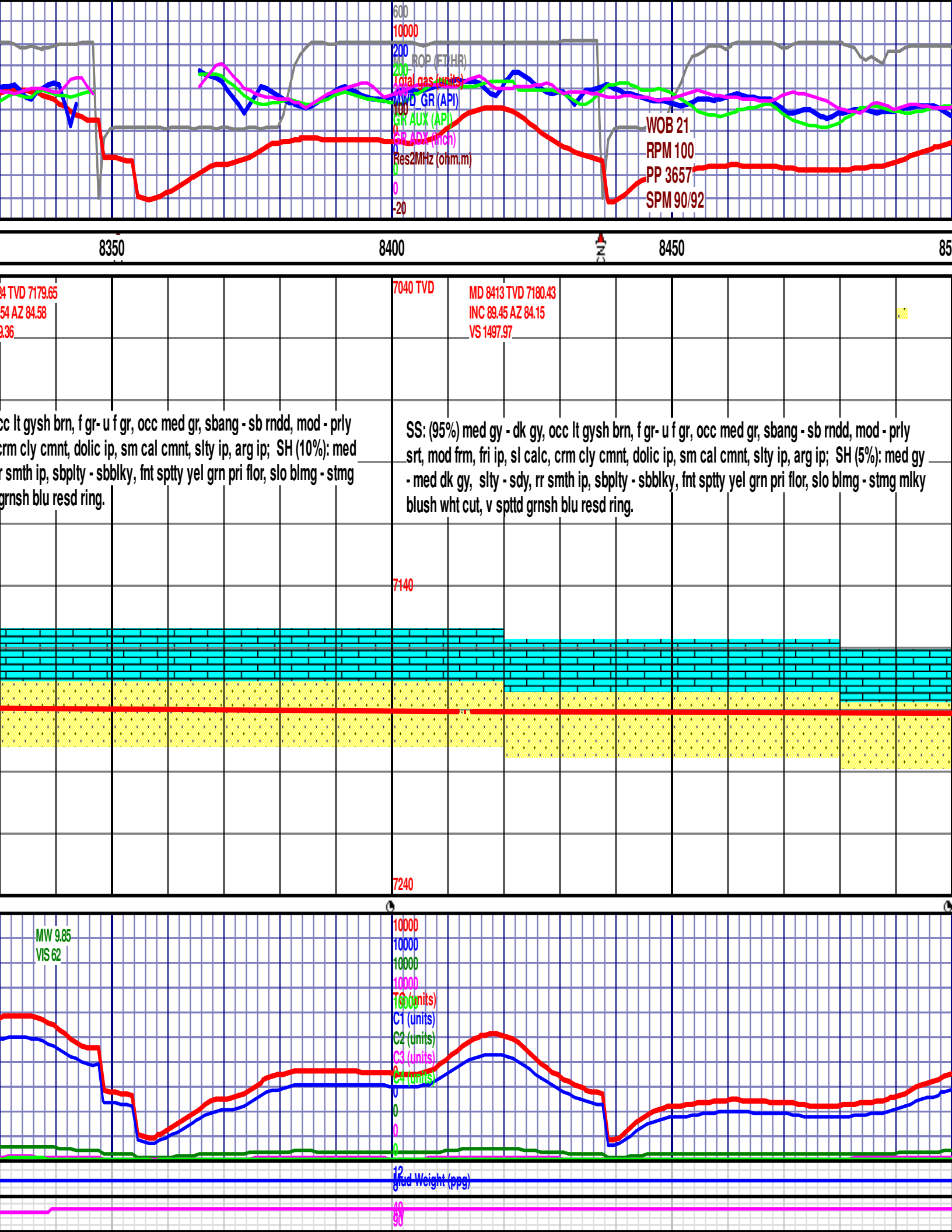

600
10000
200
ROP (FT/HR)
Gas (units)
WOB
RPM
PP 3
SPM
100
GR (API)
GR AUX (API)
GR ADX (inch)
Res2MHz (ohm.m)
0
-20
7500
7550
7600
76
MD 7518 TVD 6940.9
INC 48.4 AZ 65.74
VS 687.01
MRLST (75%): dkgy - v dk gy, rthy, sbblky - blky, frm-brit; CHALK (25%) med gy -dkgy, brn, mott ip, rthy txt, sbblky-sbplty, arg ip, frm; sptty blu grn pri flor, slo - mod fst blmg - stmg mlky blush wht cut, sptd blu grn resd ring; Tr BENT, v lt gy, sft.
CHALK (75%) med gy -dkgy, brn, lt tn mott ip, rthy txt, sbblky-sbplty, arg ip, frm, Tr pyr cls; MRLST (25%): dkgy - v dk gy, rthy, sbblky - blky, frm-brit; sptty blu grn pri flor, mod fst blmg - stmg mlky blush wht cut, sptd blu grn resd ring.
MD 7608 TVD 6996.86
INC 54.69 AZ 69.02
VS 752.18
Scale Change
7100
MRLST (70%): dkgy - v dk gy, rthy, sbblky - blky, frm-brit; CHALK (30%) med gy -dkgy, brn, mott ip, rthy txt, sbblky-sbplty, arg ip, frm; sptty blu grn pri flor, slo - mod fst blmg - stmg mlky blush wht cut, sptd blu grn resd ring, SH intbd.
rthy, sbblky -
ed gy -dkgy, brn,
, arg ip, frm; sptty
lmg - stmg mlky
sd ring; Tr BENT,
NIO B CHALK TOP @
7606' MD, 6995' TVD
7200
10000
10000
10000
10000
10000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
12
Mud Weight (ppg)
40
90

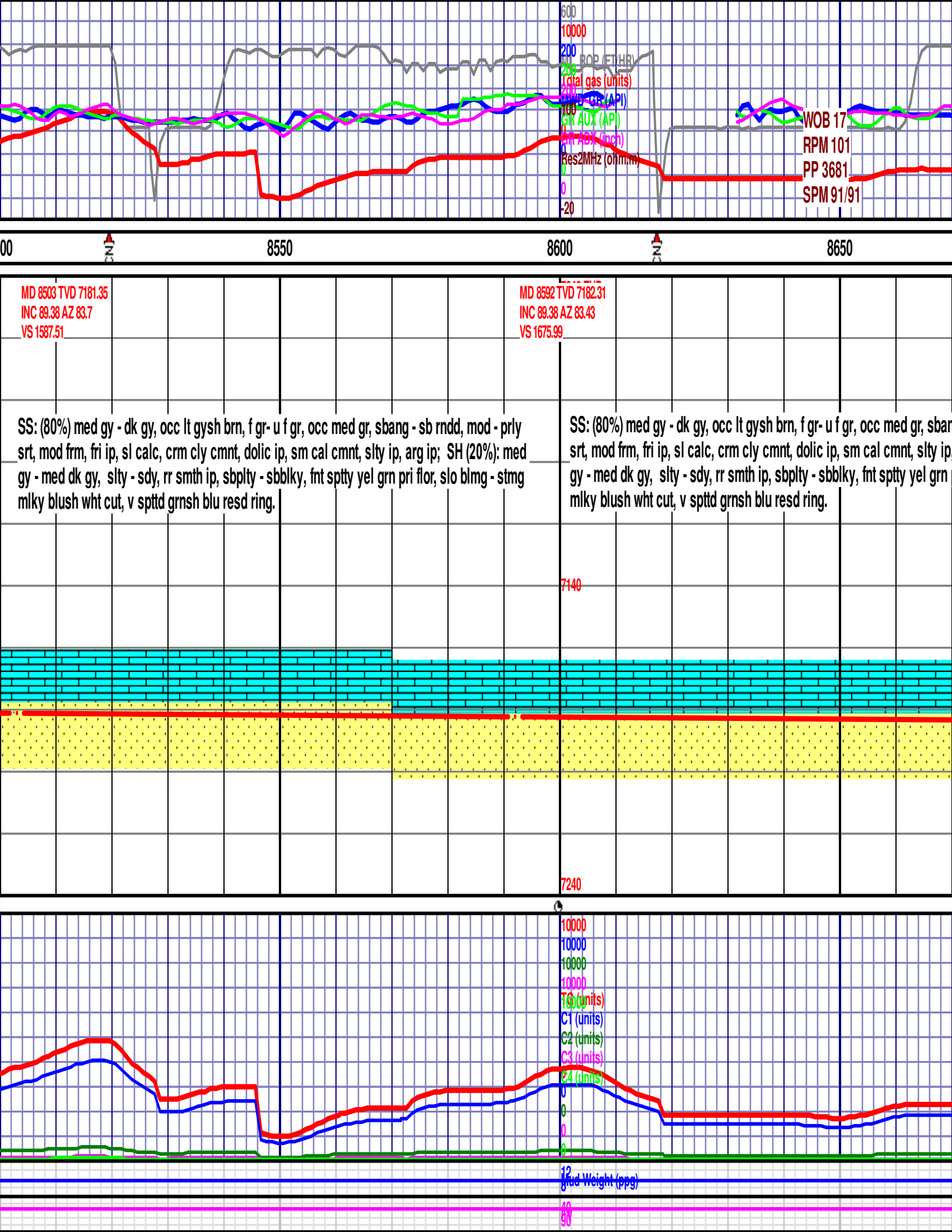

600
10000
200
ROP (FT/HR)
Total gas (units)
MWD_GR (API)
GR AUX (API)
GR ABX (units)
Res2MHz (ohm.m)
16
104
219
91/90
-20
50
7700
7750
7800
MD 7697 TVD 7045.53
INC 58.99 AZ 71.14
VS 822.34
MD 7787 TVD 7091.92
INC 58.95 AZ 71.84
VS 895.59
NIO C CHALK TOP @
7742' MD, 7070' TVD
MRLST (70%): dkgy - v dk gy, rthy, sbblky - blky, frm-brit; CHALK (30%) med gy -dkgy, brn, mott ip, rthy txt, sbblky-sbplty, arg ip, frm; sptty blu grn pri flor, slo - mod fst blmg - stmg mlky blush wht cut, sptd blu grn resd ring.
CHALK (70%) med gy -dkgy, brn, lt tn mott ip, rthy txt, sbblky-sbplty, arg ip, frm, Tr pyr cls; MRLST (30%): dkgy - v dk gy, rthy, sbblky - blky, frm-brit; sptty blu grn pri flor, mod fst blmg - stmg mlky blush wht cut, sptd blu grn resd ring.
MRLST (80%): dkgy - v dk gy, rthy, sbblky - blky, frm-brit; CHALK (20%) med gy -dkgy, brn, mott ip, rthy txt, sbblky-sbplty, arg ip, frm; sptty blu grn pri flor, slo - mod fst blmg - stmg mlky blush wht cut, sptd blu grn resd ring.
MRLST (85%): dkg
blky, frm-brit; CHA
mott ip, rthy txt, sl
blu grn pri flor, slo
blush wht cut, spt
7200
MW 9.8
VIS 64
10000
10000
10000
10000
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
40
90

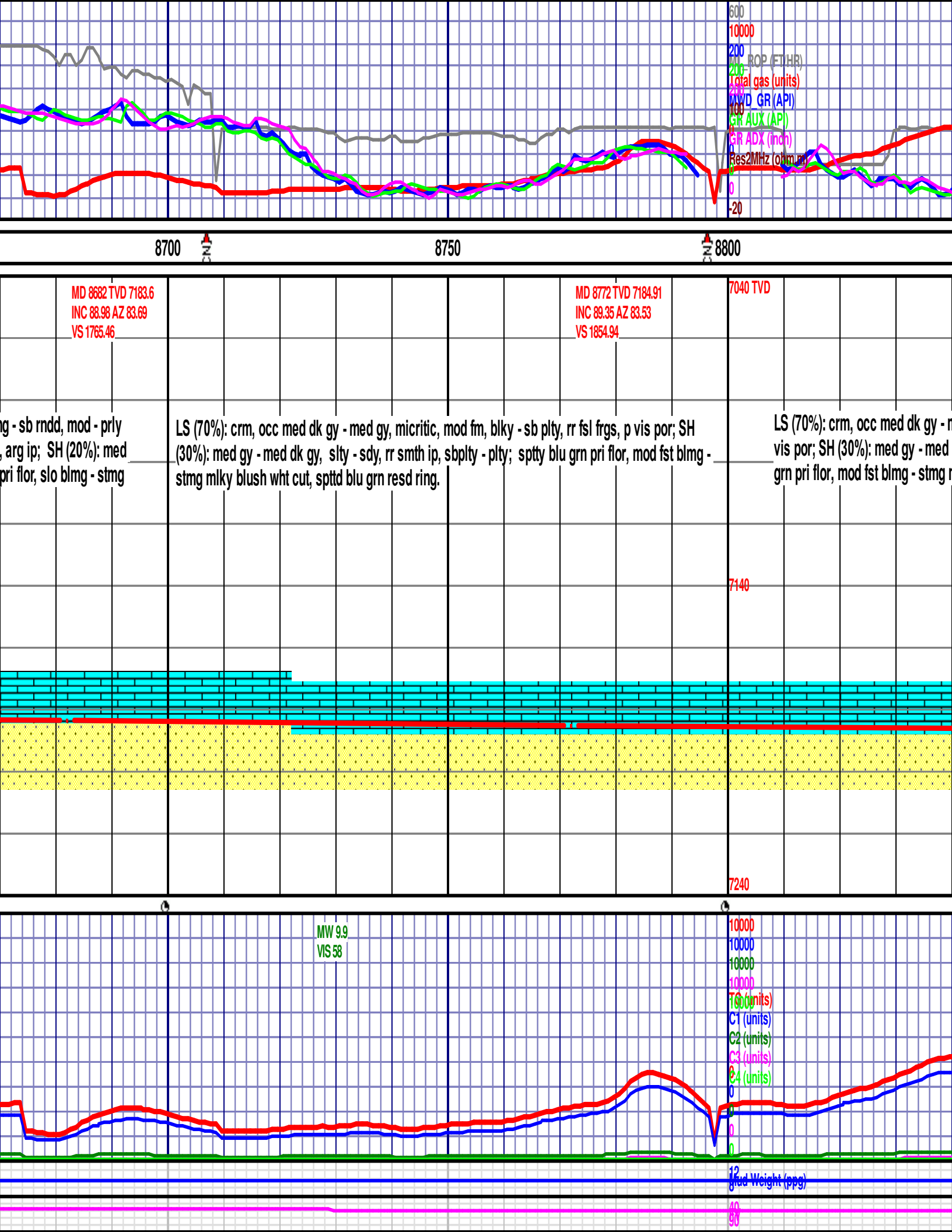

WOB 18
RPM 101
PP 3527
SPM 91/91
7850
7900
7950
MD 7876 TVD 7133.95
INC 64.68 AZ 75.5
VS 970.95
MD 7966 TVD 7165.13
INC 74.77 AZ 82.06
VS 1053.7
LS (90%): crm, occ med dk gy - med gy, micritic, mod fm, blky - sb plty, rr fsl frgs, p vis por; MRLST (10%): dkgy - v dk gy, rthy, sbblky - blky, frm-brit; SH (10%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - plty; sptty blu grn pri flor, mod fst blmg - stmg mlky blush wht cut, sptd blu grn resd ring.
(80%): SS: med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - stmg mlky blush wht cut, v sptd grnsh blu resd ring. LS (80%): crm, occ med dk gy - med gy, micritic, mod fm, blky - sb plty, p vis por.
SS: (85%) med gy - dk gy, occ lt gysh br
f gr, occ med gr, sbang - sb rndd, mod -
mod frm, fri ip, sl calc, crm cly cmnt, dc
sm cal cmnt, slty ip, arg ip; SH (15%): r
med dk gy, slty - sdy, rr smth ip, sbplty
fnt sptty yel grn pri flor, slo blmg - stmg
blush wht cut, v sptd grnsh blu resd rin
FORT HAYS TOP @
7870' MD, 7132' TVD
Codell Sand TOP @ 7935'
MD, 7155' TVD
y - v dk gy, rthy, sbblky -
LK (15%) med gy -dkgy, brn,
bblky-sbplty, arg ip, frm; sptty
- mod fst blmg - stmg mlky
td blu grn resd ring.

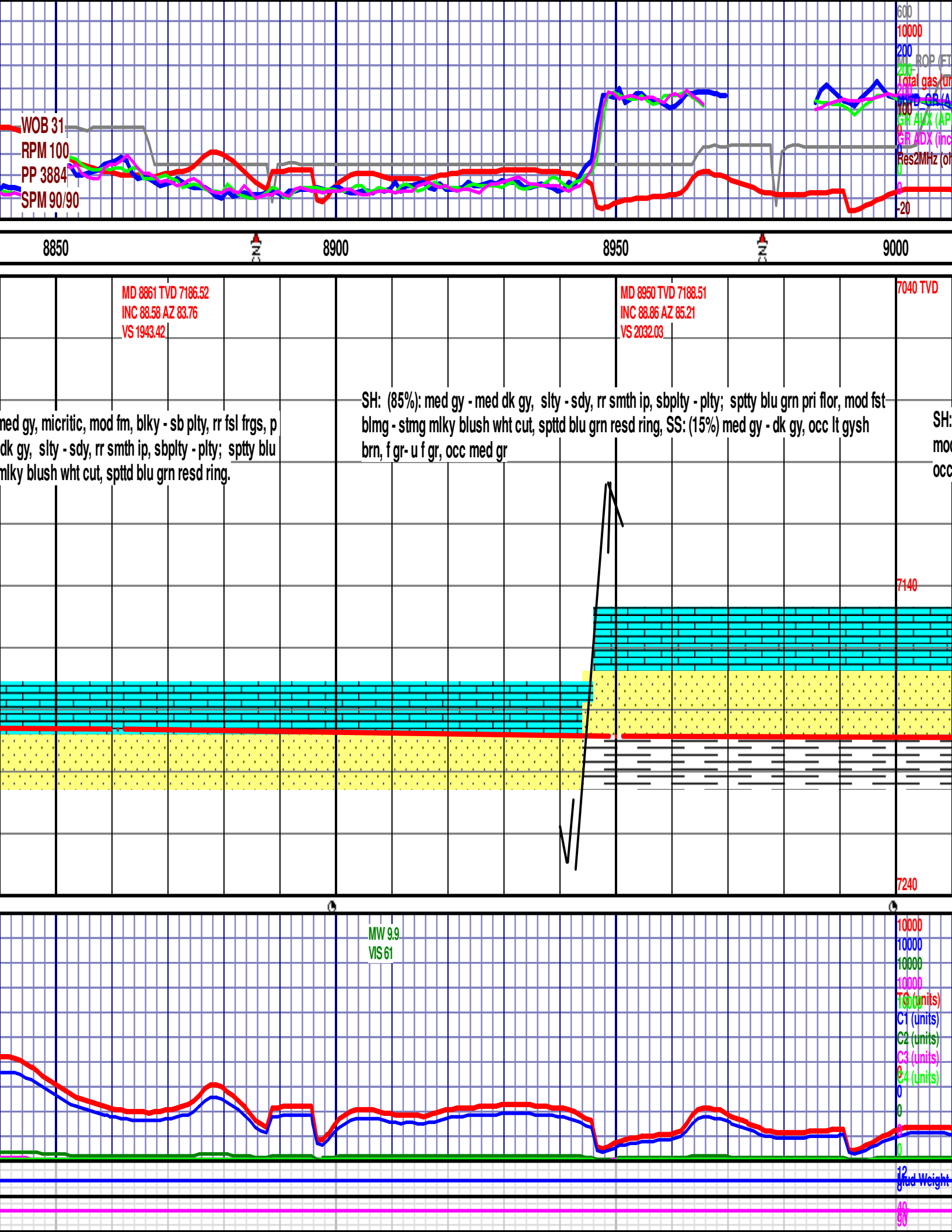

600
10000
200
ROP (FT/HR)
Total gas (units)
GR (API)
GR AUX (API)
GR ADX (inch)
Res2MHz (ohm.m)
0
-20
WOB 18
RPM 101
PP 3527
SPM 91/91
8000
8050
8100
8150
7040 TVD
MD 8055 TVD 7179.03
INC 87.23 AZ 86.47
VS 1141.02
MD 8145 TVD 7179.9
INC 91.57 AZ 86.77
VS 1230.86
SS: (90%) med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ med gr, sbang - sb rndd, mod - prly srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH (90%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - stmg mlky blush wht cut, v sptted grnsh blu resd ring.
SS: (90%) med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ me
mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt,
dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn
wht cut, v sptted grnsh blu resd ring.
Scale Change
7140
Landed Curve @ 8079' MD
7240
10000
MW 9.8
VIS 65
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
Mud Weight (ppg)

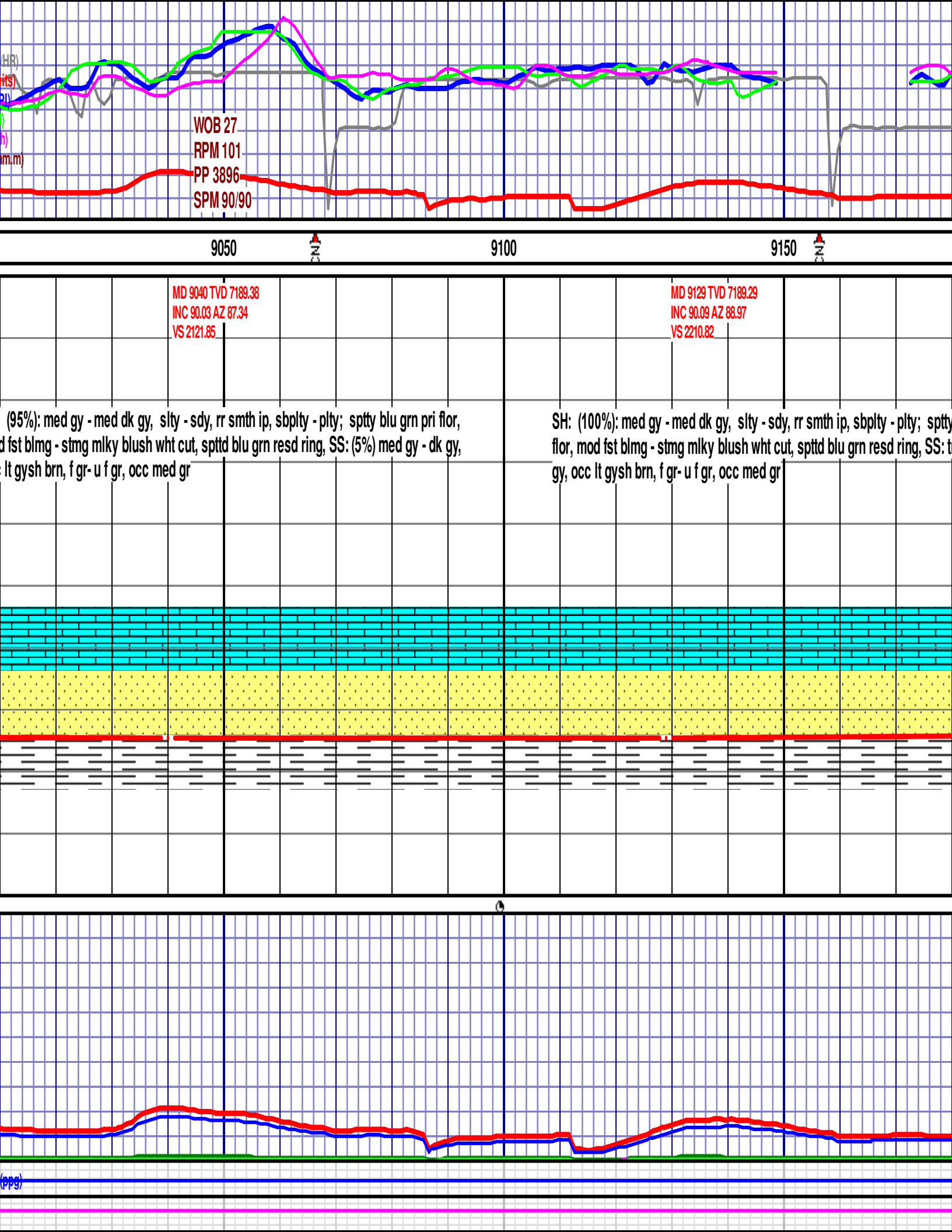

600
10000
200
Total Gas (units)
MWD_GR (API)
GR AUX (API)
GR ADX (inch)
Res2MHz (ohm.m)
100
0
-20
WOB 22
RPM 100
PP 3728
SPM 90/91
8200
8250
8300
7040 TVD
MD 8234 TVD 7179.02
INC 89.66 AZ 85.41
VS 1319.67
ed gr, sbang - sb rndd, mod - prly srt,
slty ip, arg ip; SH (10%): med gy - med
pri flor, slo blmg - stmg mlky blush
SS: (80%) med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ med gr, sbang - sb rndd, mod - prly srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH (20%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - stmg mlky blush wht cut, v sptted grnsh blu resd ring.
SS: (90%) med gy - dk gy, oc
srt, mod frm, fri ip, sl calc,
gy - med dk gy, slty - sdy,
mlky blush wht cut, v sptted
7140
7240
10000
10000
10000
10000
10000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
40
90

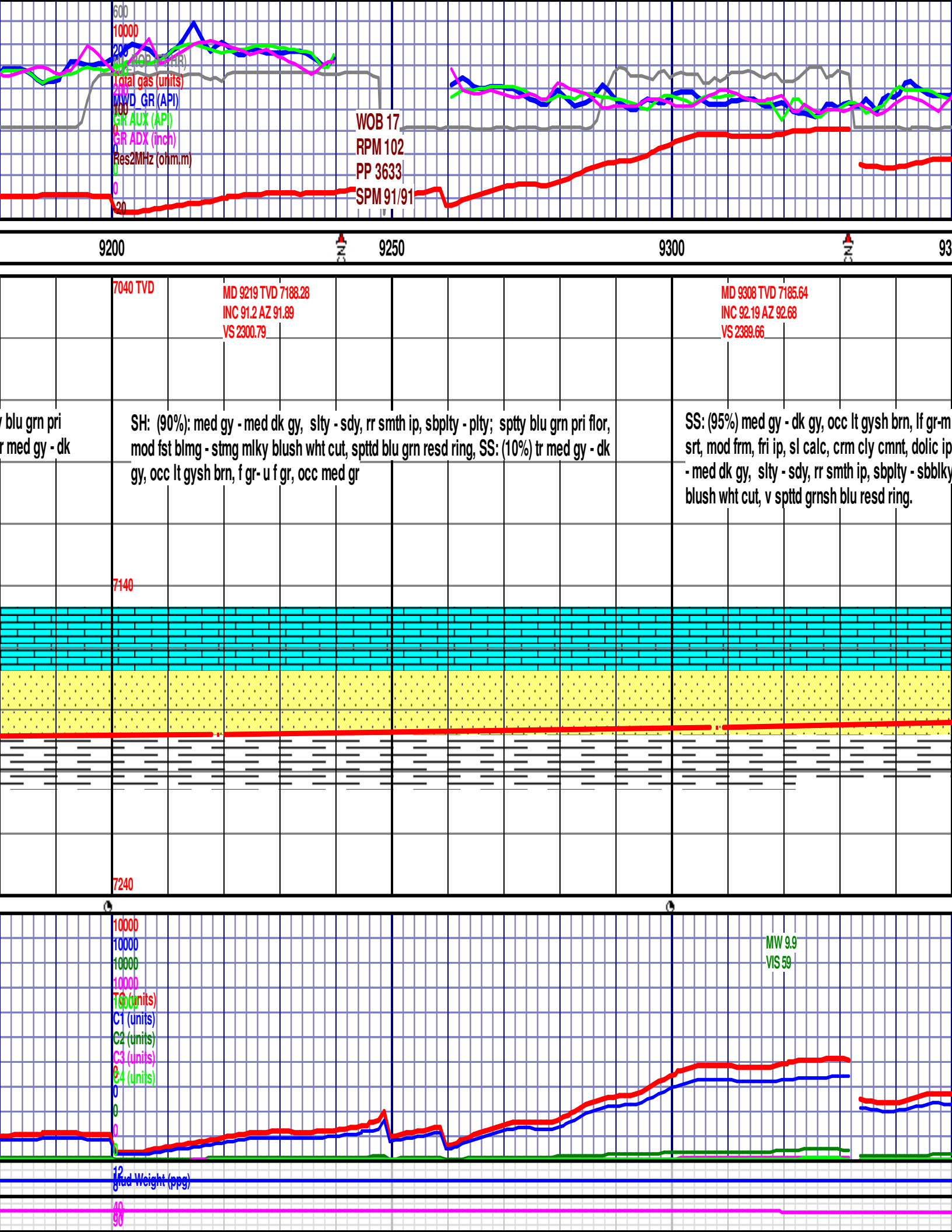

600
10000
200
MD_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
GR AUX (API)
GR_ADX (Rich)
Res2MHz (ohm.m)
0
-20
WOB 21
RPM 100
PP 3657
SPM 90/92
8350
8400
8450
85
24 TVD 7179.65
54 AZ 84.58
9.36
7040 TVD
MD 8413 TVD 7180.43
INC 89.45 AZ 84.15
VS 1497.97
cc lt gysh brn, f gr- u f gr, occ med gr, sbang - sb rndd, mod - prly
crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH (10%): med
r smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - stmg
grnsh blu resd ring.
SS: (95%) med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ med gr, sbang - sb rndd, mod - prly
srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH (5%): med gy
- med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - stmg mlky
blush wht cut, v sptd grnsh blu resd ring.
7140
7240
MW 9.85
VIS 62
10000
10000
10000
10000
10000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
40
98

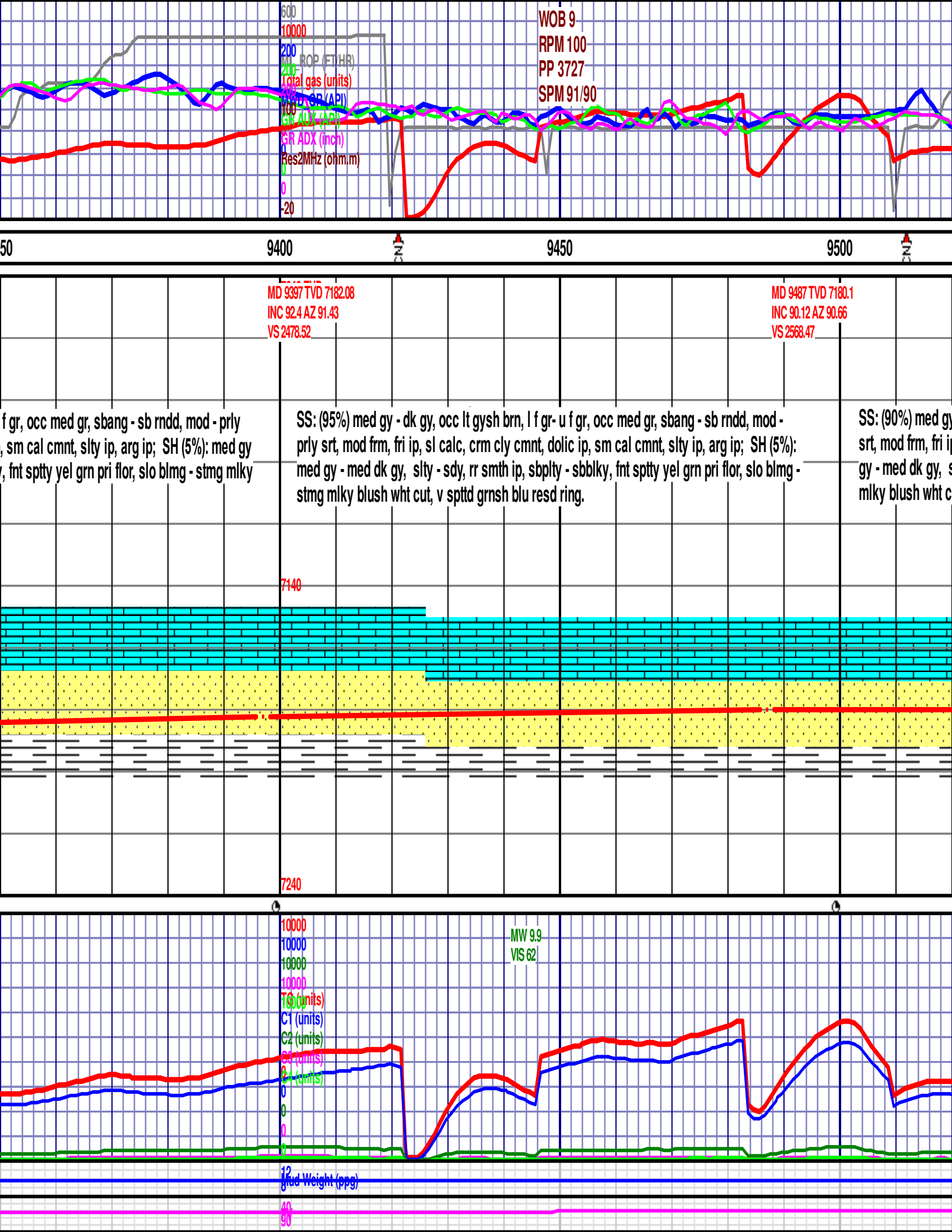

600
10000
200
ROP (FT/HR)
Total gas (units)
GR (API)
100
GR AUX (API)
BIT ABX (inch)
Res2MHz (ohm.m)
0
0
-20
WOB 17
RPM 101
PP 3681
SPM 91/91
00
8550
8600
8650
MD 8503 TVD 7181.35
INC 89.38 AZ 83.7
VS 1587.51
MD 8592 TVD 7182.31
INC 89.38 AZ 83.43
VS 1675.99
SS: (80%) med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ med gr, sbang - sb rndd, mod - prly srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH (20%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - stmg mlky blush wht cut, v sptd grnsh blu resd ring.
SS: (80%) med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ med gr, sbar
srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip,
gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn
mlky blush wht cut, v sptd grnsh blu resd ring.
7140
7240
10000
10000
10000
10000
10000
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
90

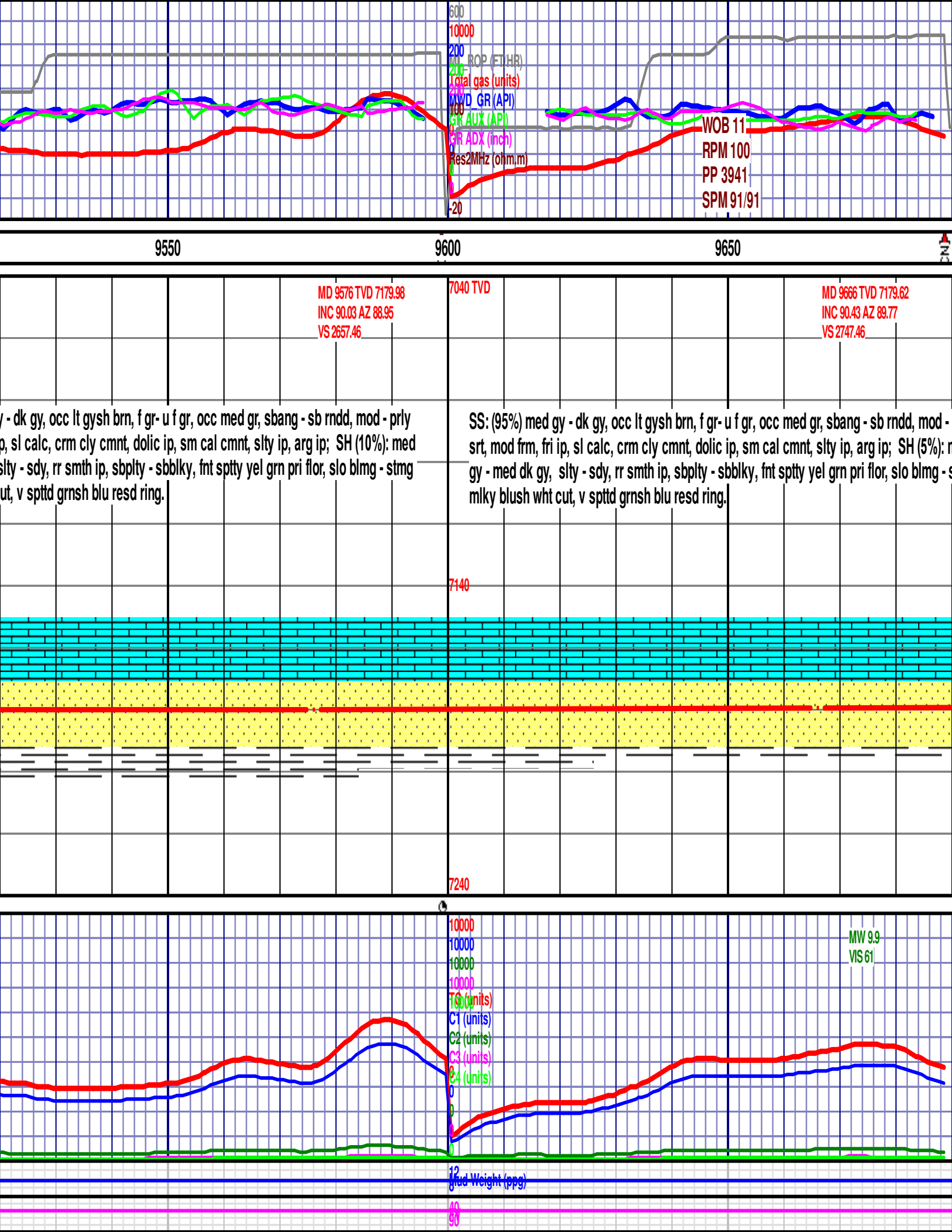

600
10000
200
ROP (FT/HR)
200
Total gas (units)
MWD_GR (API)
100
GR AUX (API)
GR ADX (inch)
Res2MHz (ohmm)
0
0
-20
8700
8750
8800
MD 8682 TVD 7183.6
INC 88.98 AZ 83.69
VS 1765.46
MD 8772 TVD 7184.91
INC 89.35 AZ 83.53
VS 1854.94
7040 TVD
ng - sb rndd, mod - prly
, arg ip; SH (20%): med
pri flor, slo blmg - stmg
LS (70%): crm, occ med dk gy - med gy, micritic, mod fm, blky - sb plty, rr fsl frgs, p vis por; SH (30%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - plty; sptty blu grn pri flor, mod fst blmg - stmg mlky blush wht cut, sptd blu grn resd ring.
LS (70%): crm, occ med dk gy - m
vis por; SH (30%): med gy - med
grn pri flor, mod fst blmg - stmg m
7140
7240
MW 9.9
VIS 58
10000
10000
10000
10000
10000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
40
90

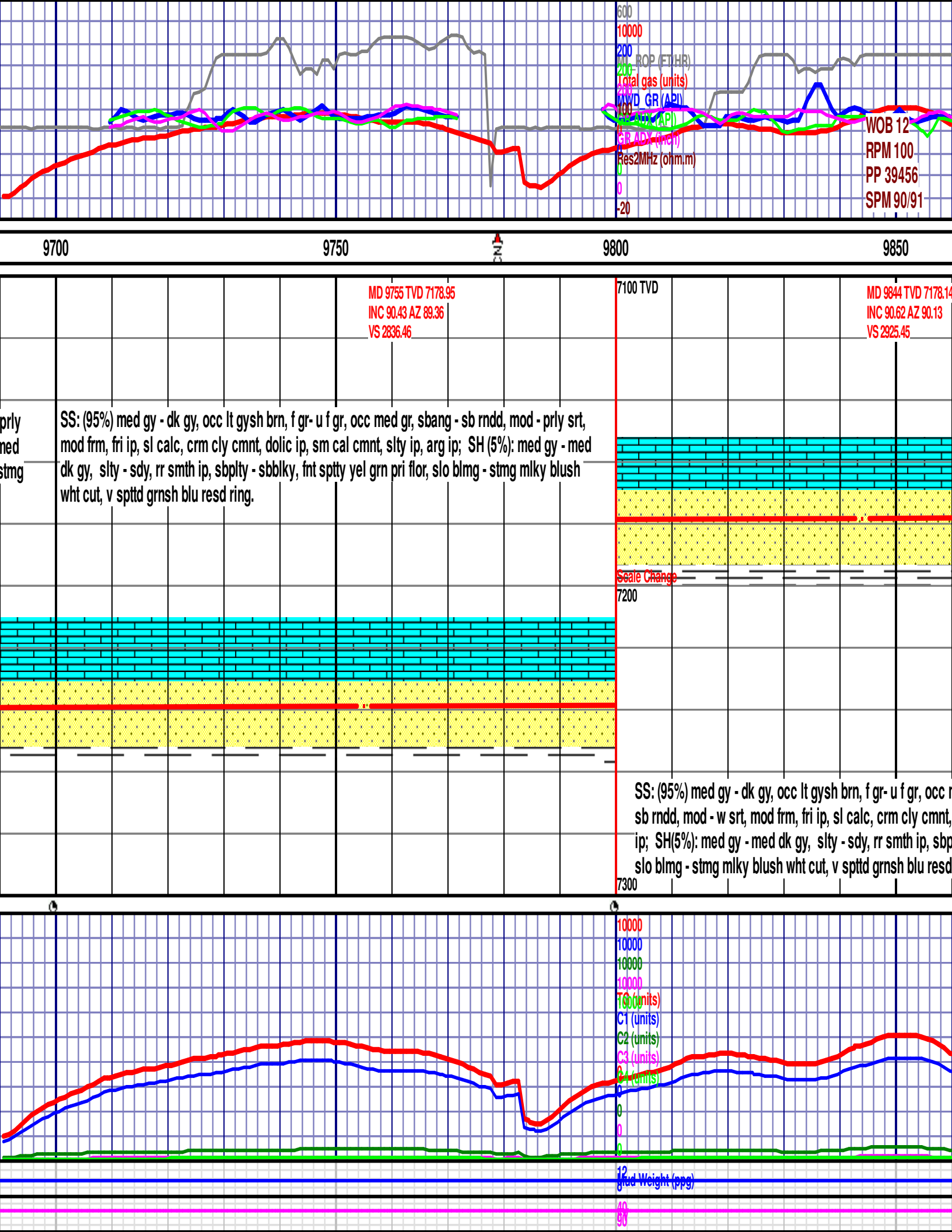

WOB 31
RPM 100
PP 3884
SPM 90/90
600
10000
200
ROP (FI
Total gas (un
GR ADX (AP
GR ADX (inc
Res2MHz (oh
-20
8850
8900
8950
9000
MD 8861 TVD 7186.52
INC 88.58 AZ 83.76
VS 1943.42
MD 8950 TVD 7188.51
INC 88.86 AZ 85.21
VS 2032.03
7040 TVD
med gy, micritic, mod fm, blky - sb plty, rr fsl frgs, p
dk gy, slty - sdy, rr smth ip, sbplty - plty; sptty blu
mlky blush wht cut, sptd blu grn resd ring.
SH: (85%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - plty; sptty blu grn pri flor, mod fst
blmg - stmg mlky blush wht cut, sptd blu grn resd ring, SS: (15%) med gy - dk gy, occ lt gysh
brn, f gr- u f gr, occ med gr
SH:
mod
occ
7140
7240
MW 9.9
VIS 61
10000
10000
10000
10000
T0 (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight
40
90

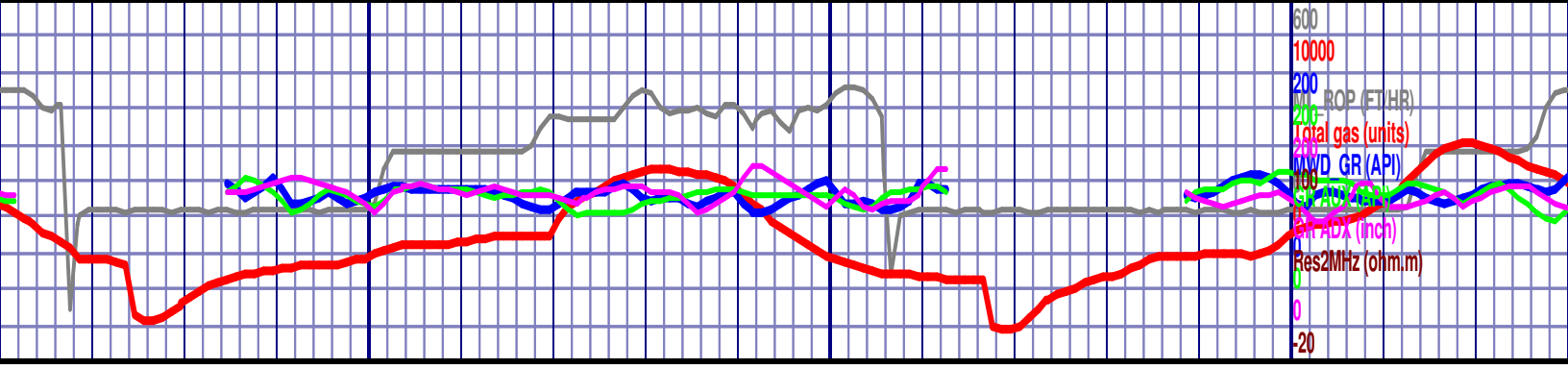

WOB 27
RPM 101
PP 3896
SPM 90/90
9050
9100
9150
MD 9040 TVD 7189.38
INC 90.03 AZ 87.34
VS 2121.85
MD 9129 TVD 7189.29
INC 90.09 AZ 88.97
VS 2210.82
(95%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - plty; sptty blu grn pri flor,
d fst blmg - stmg mlky blush wht cut, sptd blu grn resd ring, SS: (5%) med gy - dk gy,
lt gysh brn, f gr- u f gr, occ med gr
SH: (100%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - plty; sptty
flor, mod fst blmg - stmg mlky blush wht cut, sptd blu grn resd ring, SS: t
gy, occ lt gysh brn, f gr- u f gr, occ med gr


600
10000
200
ROP (FT/HR)
Total gas (units)
WWD_GR (API)
100
GR AUX (API)
GR ADX (inch)
Res2MHz (ohm.m)
0
0
20
WOB 17
RPM 102
PP 3633
SPM 91/91
9200
9250
9300
93
7040 TVD
MD 9219 TVD 7188.28
INC 91.2 AZ 91.89
VS 2300.79
MD 9308 TVD 7185.64
INC 92.19 AZ 92.68
VS 2389.66
blu grn pri
r med gy - dk
SH: (90%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - plty; sptty blu grn pri flor, mod fst blmg - stmg mlky blush wht cut, sptd blu grn resd ring, SS: (10%) tr med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ med gr
SS: (95%) med gy - dk gy, occ lt gysh brn, lf gr-m srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky blush wht cut, v sptd grnsh blu resd ring.
7140
7240
10000
10000
10000
10000
10000
Total (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
MW 9.9
VIS 59
12
Mud Weight (ppg)
40
90


600
10000
200
ROP (FT/HR)
200
Total gas (units)
GR (API)
GR ADX (API)
GR ADX (inch)
Res2MHz (ohm.m)
0
0
-20
WOB 9
RPM 100
PP 3727
SPM 91/90
50
9400
9450
9500
MD 9397 TVD 7182.08
INC 92.4 AZ 91.43
VS 2478.52
MD 9487 TVD 7180.1
INC 90.12 AZ 90.66
VS 2568.47
f gr, occ med gr, sbang - sb rndd, mod - prly
, sm cal cmnt, slty ip, arg ip; SH (5%): med gy
, fnt sptty yel grn pri flor, slo blmg - stmg mlky
SS: (95%) med gy - dk gy, occ lt gysh brn, l f gr- u f gr, occ med gr, sbang - sb rndd, mod - prly srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH (5%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - stmg mlky blush wht cut, v sptted grnsh blu resd ring.
SS: (90%) med gy
srt, mod frm, fri i
gy - med dk gy,
mlky blush wht c
7140
7240
10000
10000
10000
10000
10000
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
MW 9.9
VIS 62
12
8
Mud Weight (ppg)
40
90


600
10000
200
ROP (FT/HR)
Total gas (units)
MWD_GR (API)
GR_AUX (API)
GR ADX (inch)
Res2MHz (ohm.m)
-20
WOB 11
RPM 100
PP 3941
SPM 91/91
9550
9600
9650
MD 9576 TVD 7179.98
INC 90.03 AZ 88.95
VS 2657.46
7040 TVD
MD 9666 TVD 7179.62
INC 90.43 AZ 89.77
VS 2747.46
y - dk gy, occ lt gysh brn, f gr- u f gr, occ med gr, sbang - sb rndd, mod - prly
p, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH (10%): med
slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - stmg
ut, v sptd grnsh blu resd ring.
SS: (95%) med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ med gr, sbang - sb rndd, mod -
srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH (5%): r
gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - s
mlky blush wht cut, v sptd grnsh blu resd ring.
7140
7240
10000
10000
10000
10000
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
MW 9.9
VIS 61
13
Mud Weight (ppg)
40
90


600
10000
200
ROP (FT/HR)
Total gas (units)
WWD GR (API)
GR (API)
GR ADX (gncl)
Res2MHz (ohm.m)
WOB 12
RPM 100
PP 39456
SPM 90/91
9700
9750
9800
9850
MD 9755 TVD 7178.95
INC 90.43 AZ 89.36
VS 2836.46
7100 TVD
MD 9844 TVD 7178.14
INC 90.62 AZ 90.13
VS 2925.45
prly
med
stmg
SS: (95%) med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ med gr, sbang - sb rndd, mod - prly srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH (5%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - stmg mlky blush wht cut, v sptted grnsh blu resd ring.
Scale Change
7200
SS: (95%) med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ
sb rndd, mod - w srt, mod frm, fri ip, sl calc, crm cly cmnt,
ip; SH(5%): med gy - med dk gy, slty - sdy, rr smth ip, sbp
slo blmg - stmg mlky blush wht cut, v sptted grnsh blu resd
7300
10000
10000
10000
10000
Total gas (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
Mud Weight (ppg)



9900 9950 10000

MD 9934 TVD 7177.24
INC 90.52 AZ 88.01
VS 3015.44

7100 TVD

MD 1002
INC 90.2
VS 3104.

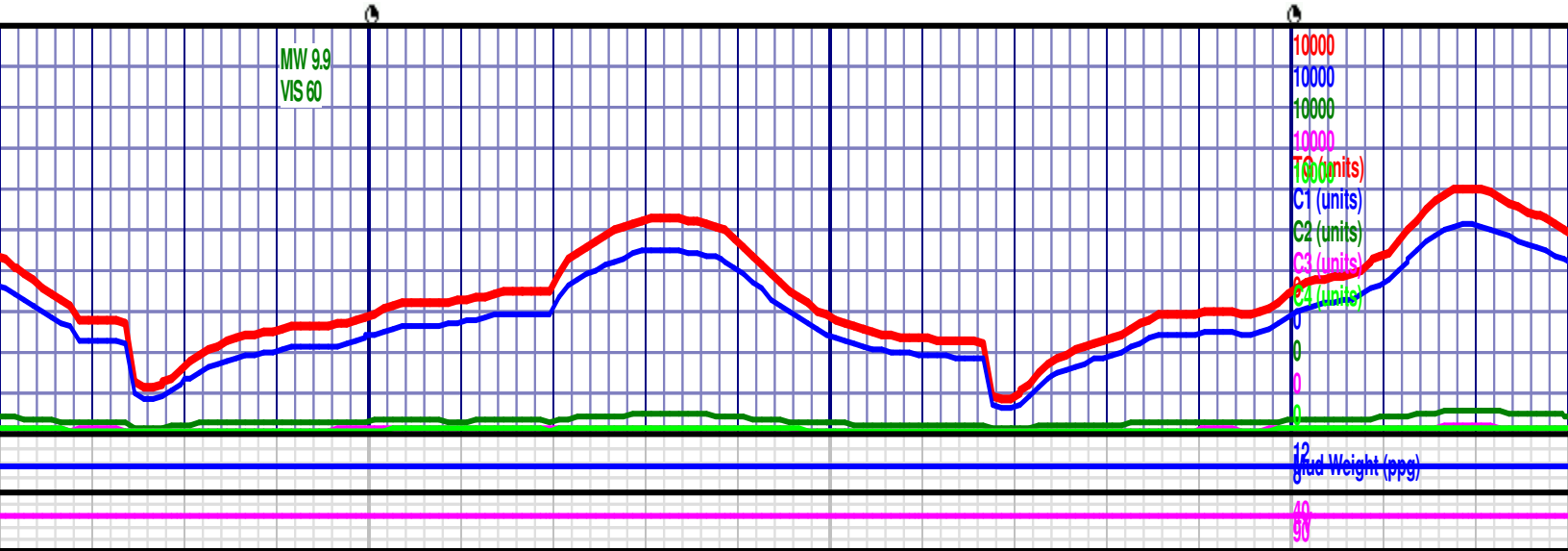
7200

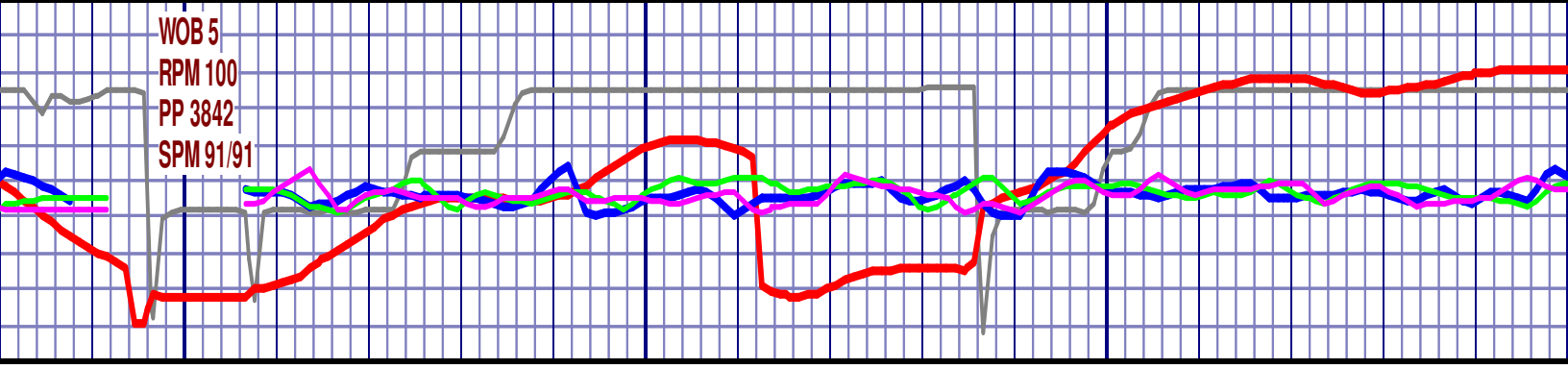
med gr, , 8-12% est vis por, sbang - dolic ip, sm cal cmnt, slty ip, arg lty - sbblky, fnt sptty yel grn pri flor, ring.

SS: (95%) med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ med gr, , 8-10% est vis por, sbang - sb rndd, mod - w srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH(5%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - stmg mlky blush wht cut, v sptttd grnsh blu resd ring.

SS: (95%) med gy - dk gy, oc srt, mod frm, fri ip, sl calc, gy - med dk gy, slty - sdy, r mlky blush wht cut, v sptttd

7300

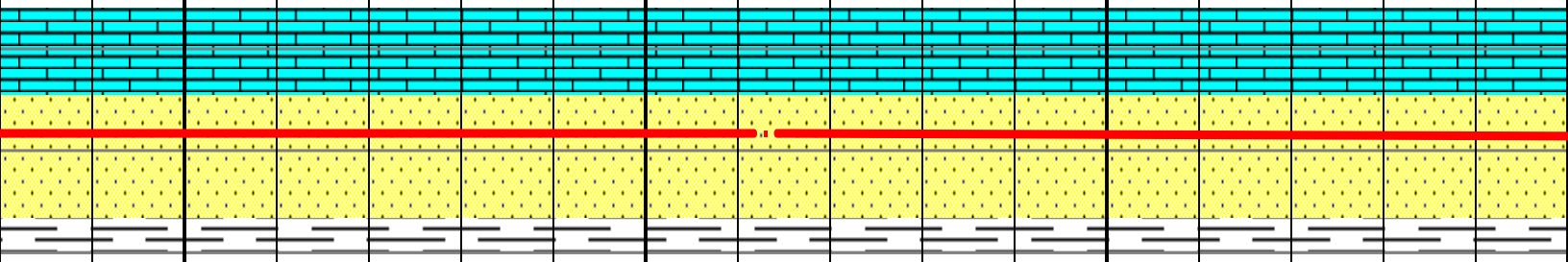




10050 10100 10150 102

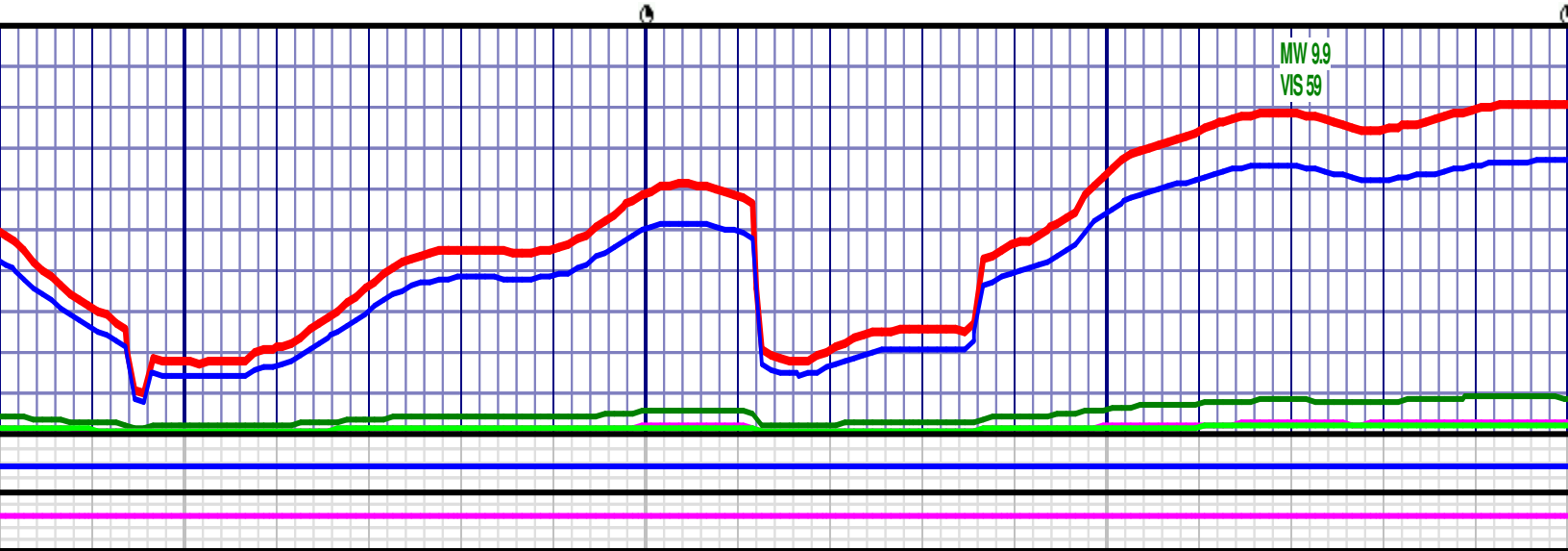
3 TVD 7176.67
2 AZ 87.03
37

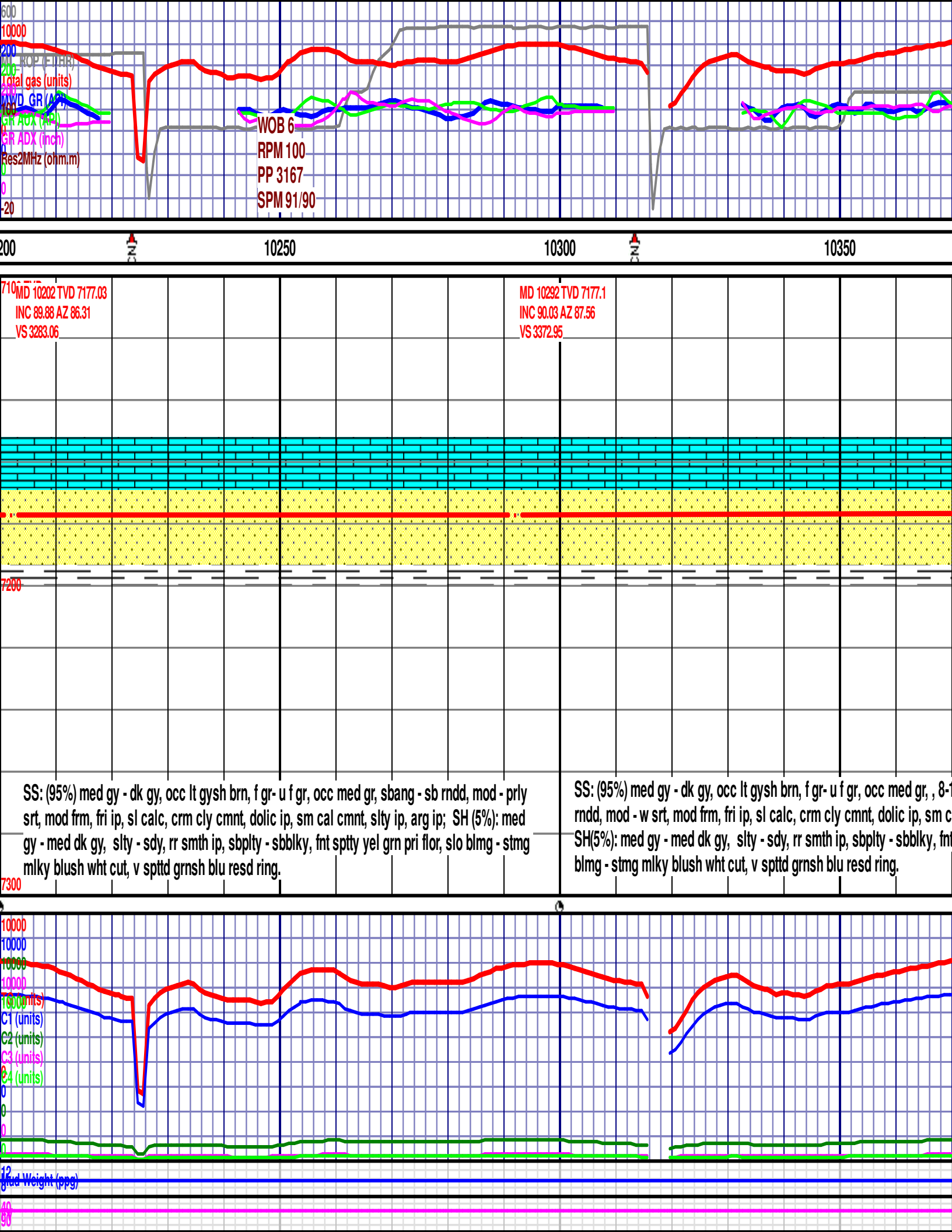
MD 10113 TVD 7176.72
INC 89.72 AZ 86.12
VS 3194.23

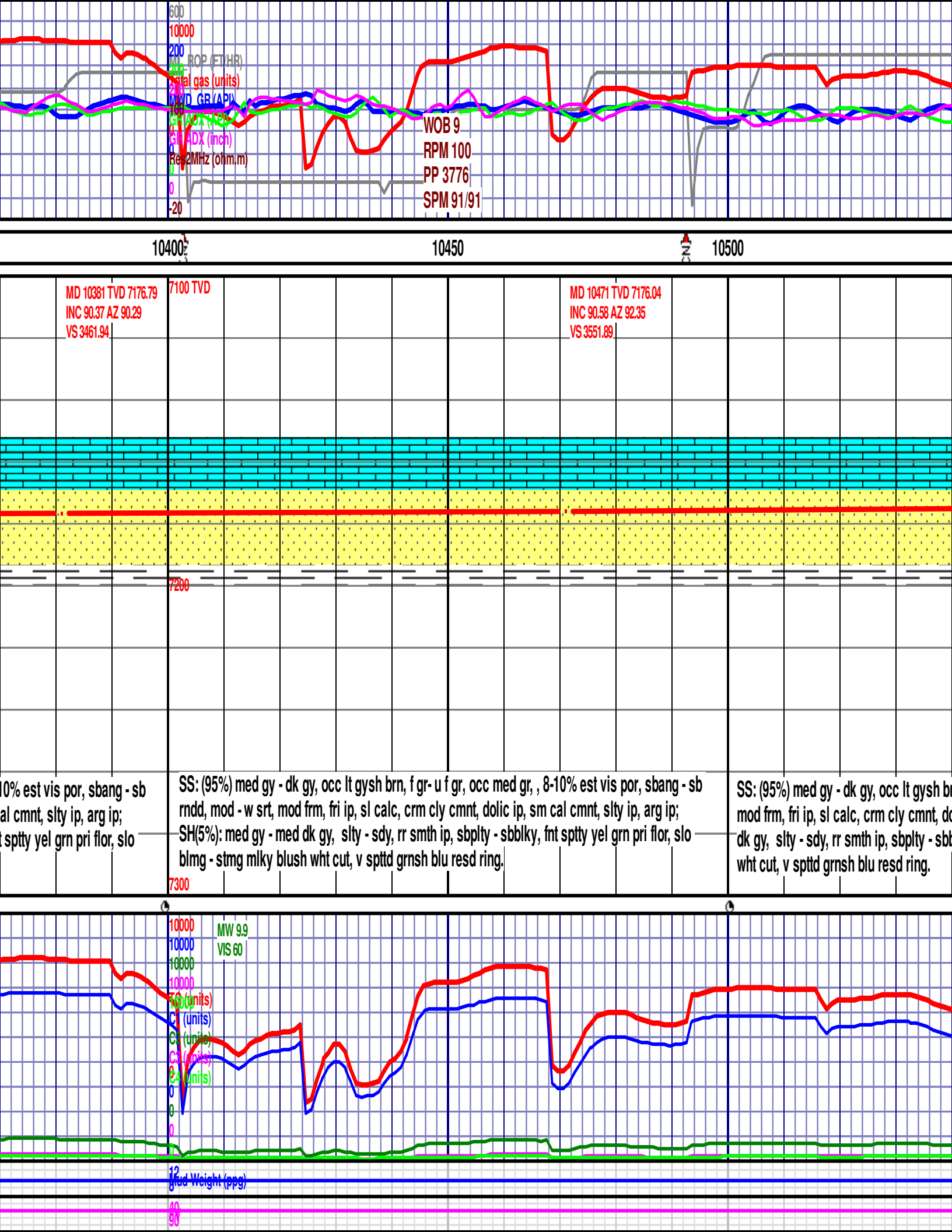


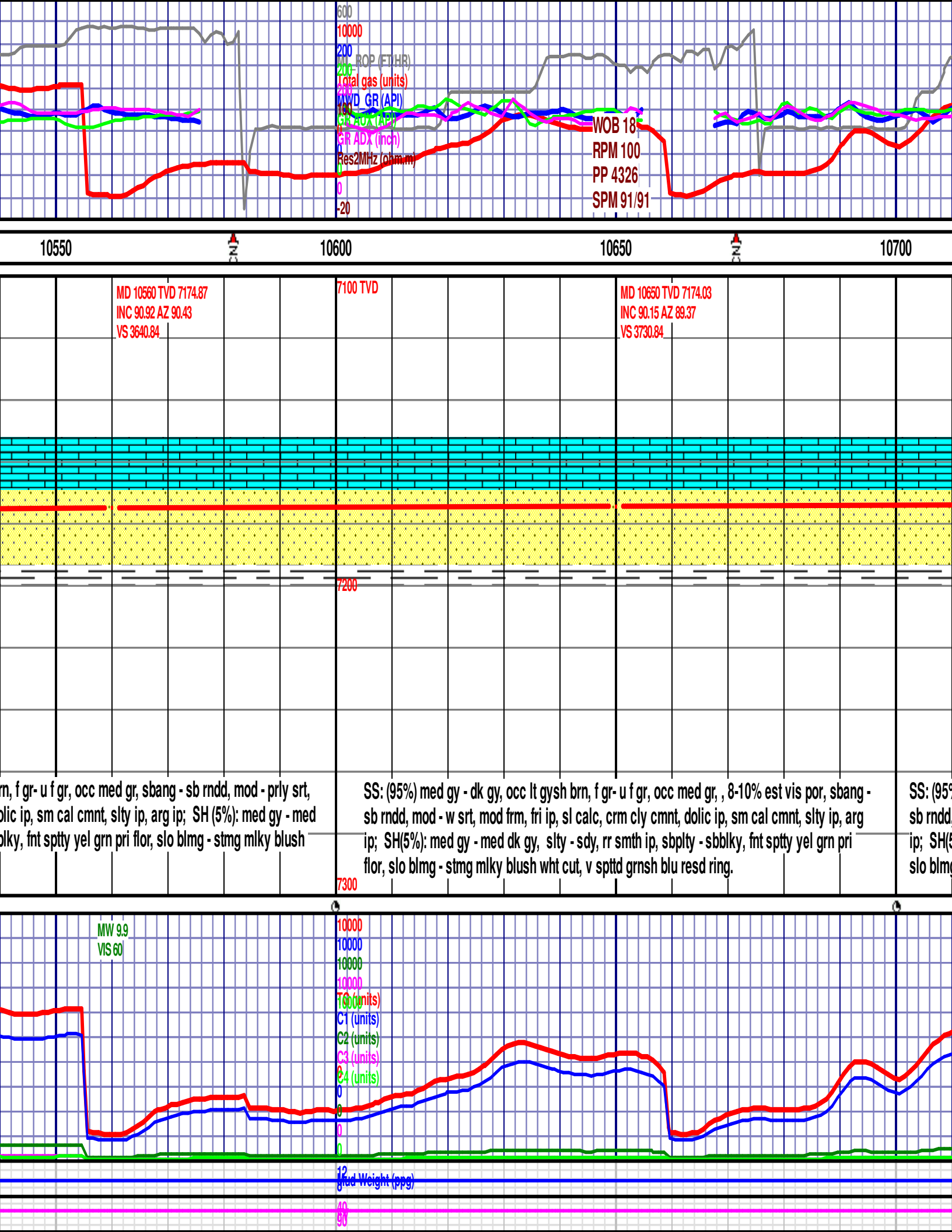
cc lt gysh brn, f gr- u f gr, occ med gr, sbang - sb rndd, mod - prly crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH (5%): med r smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - stmg grnsh blu resd ring.

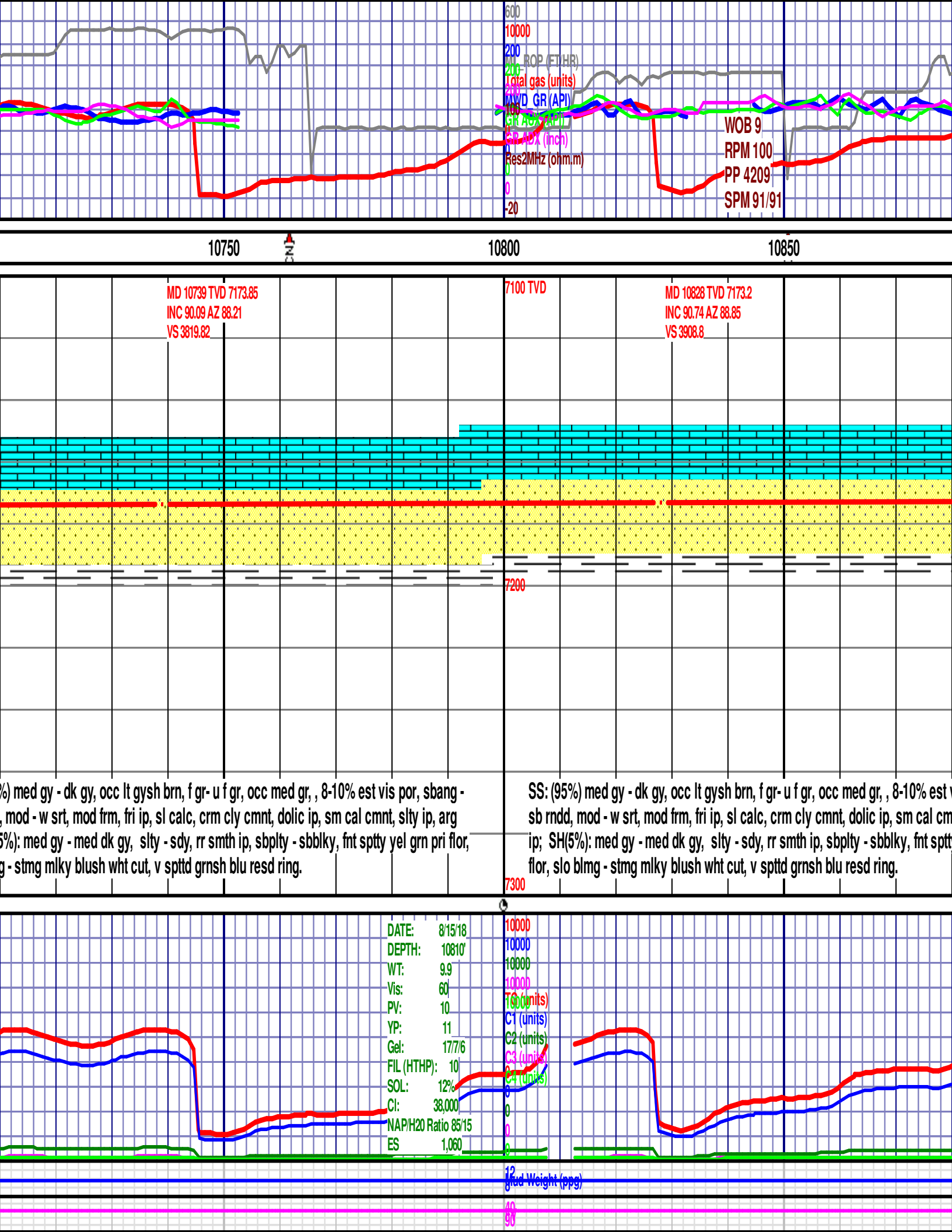
SS: (95%) med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ med gr, , 8-10% est vis por, sbang - sb rndd, mod - w srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH(5%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - stmg mlky blush wht cut, v sptd grnsh blu resd ring.

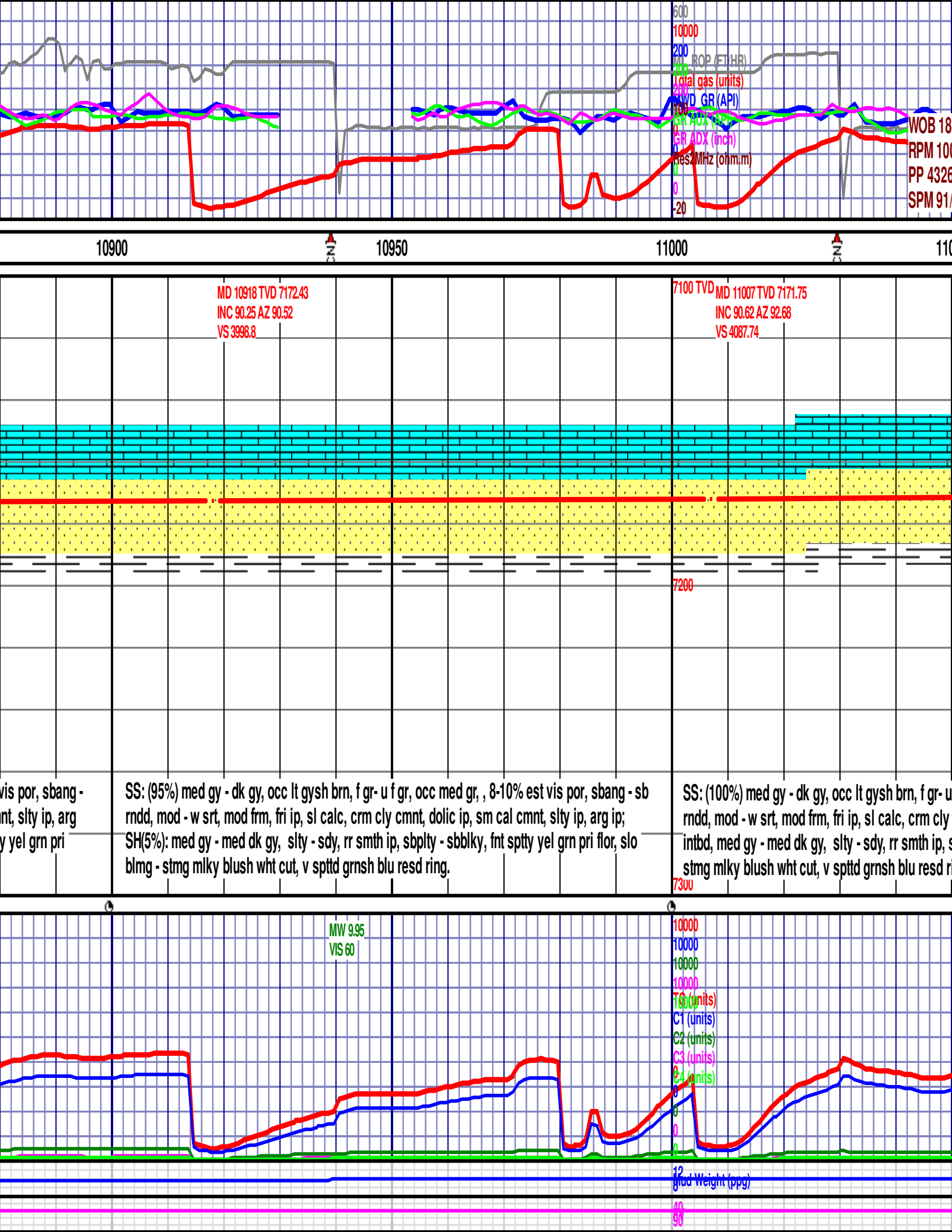


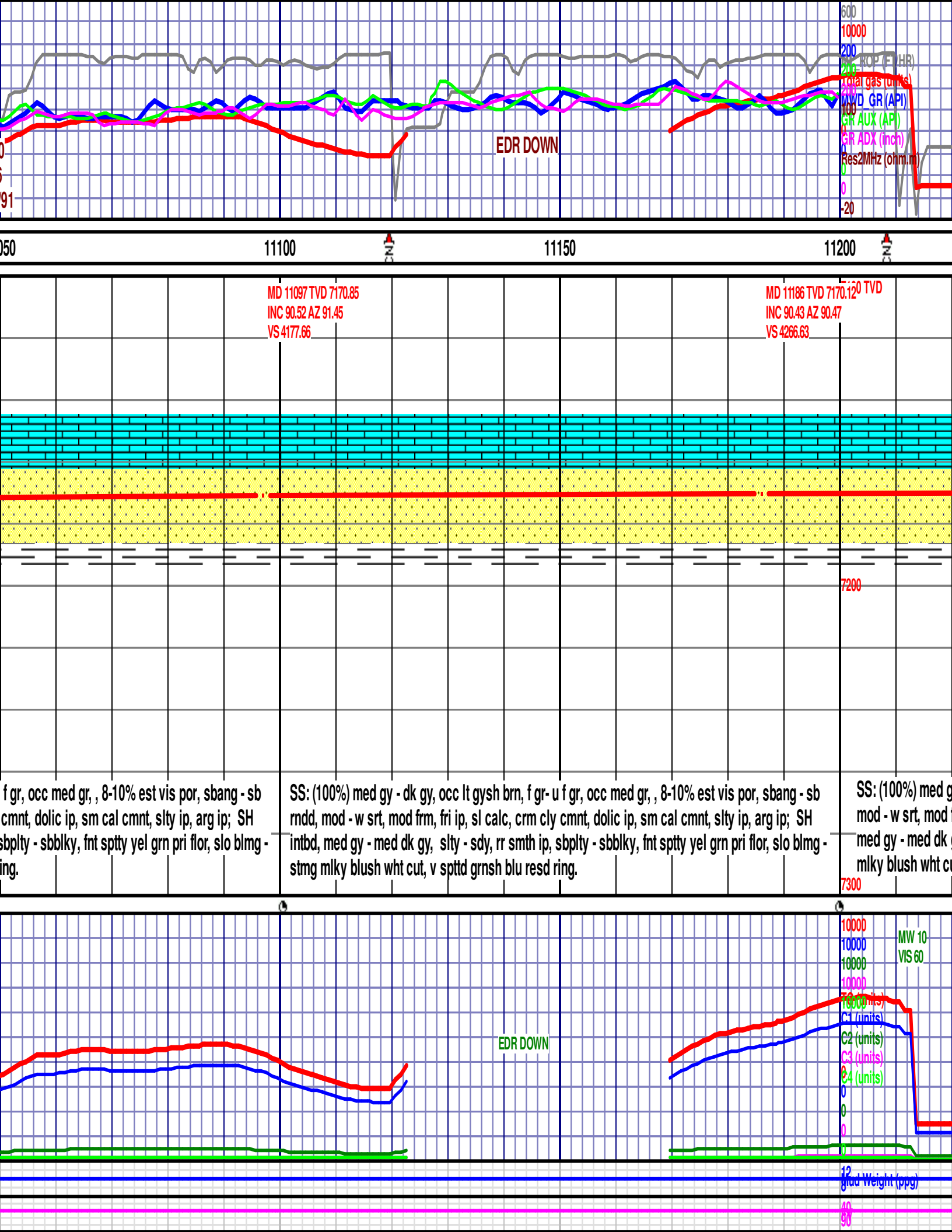

600
10000
200
MD_KOP (FEET)
Total gas (units)
WWD_GR (API)
GR ADX (API)
GR ADX (inch)
Res2MHz (ohm.m)
0
0
-20
WOB 6
RPM 100
PP 3167
SPM 91/90
200
10250
10300
10350
MD 10202 TVD 7177.03
INC 89.88 AZ 86.31
VS 3283.06
MD 10292 TVD 7177.1
INC 90.03 AZ 87.56
VS 3372.95
7200
SS: (95%) med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ med gr, sbang - sb rndd, mod - prly srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH (5%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - stmg mlky blush wht cut, v sptted grnsh blu resd ring.
SS: (95%) med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ med gr, , 8-1
rndd, mod - w srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm c
SH(5%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt
blmg - stmg mlky blush wht cut, v sptted grnsh blu resd ring.
7300
10000
10000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
12
Mud Weight (ppg)
40
90

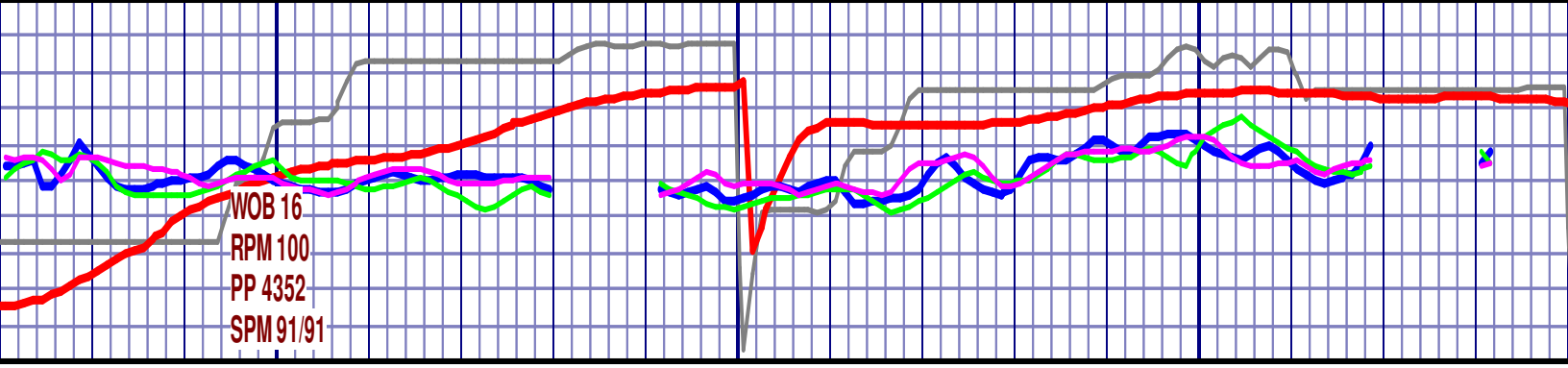

600
10000
200
ROP (FT/HR)
total gas (units)
MWD_GR (API)
GR_UDX (API)
GR_ADX (inch)
Res2MHz (ohm.m)
0
0
-20
WOB 9
RPM 100
PP 3776
SPM 91/91
10400
10450
10500
MD 10381 TVD 7176.79
INC 90.37 AZ 90.29
VS 3461.94
7100 TVD
MD 10471 TVD 7176.04
INC 90.58 AZ 92.35
VS 3551.89
7200
10% est vis por, sbang - sb
al cmnt, slty ip, arg ip;
t spty yel grn pri flor, slo
SS: (95%) med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ med gr, , 8-10% est vis por, sbang - sb
rndd, mod - w srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip;
SH(5%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt spty yel grn pri flor, slo
blmg - stmg mlky blush wht cut, v spttd grnsh blu resd ring.
SS: (95%) med gy - dk gy, occ lt gysh br
mod frm, fri ip, sl calc, crm cly cmnt, do
dk gy, slty - sdy, rr smth ip, sbplty - sbb
wht cut, v spttd grnsh blu resd ring.
7300
10000
10000
10000
10000
MW 9.9
VIS 60
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
12
Mud Weight (ppg)
40
90

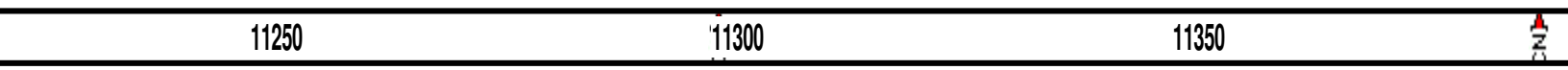

600
10000
200
ROP (FT/HR)
200
total gas (units)
400
MWD GR (API)
100
GR ADX (API)
0
GR ADX (inch)
Res2MHz (ohm.m)
0
0
-20
WOB 18
RPM 100
PP 4326
SPM 91/91
10550
10600
10650
10700
MD 10560 TVD 7174.87
INC 90.92 AZ 90.43
VS 3640.84
7100 TVD
MD 10650 TVD 7174.03
INC 90.15 AZ 89.37
VS 3730.84
7200
rn, f gr- u f gr, occ med gr, sbang - sb rndd, mod - prly srt,
olic ip, sm cal cmnt, slty ip, arg ip; SH (5%): med gy - med
olky, fnt sptty yel grn pri flor, slo blmg - stmg mlky blush
SS: (95%) med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ med gr, , 8-10% est vis por, sbang - sb rndd, mod - w srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH(5%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - stmg mlky blush wht cut, v sptd grnsh blu resd ring.
7300
SS: (95%
sb rndd,
ip; SH(5
slo blmg
MW 9.9
VIS 60
10000
10000
10000
10000
10000
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
40
90

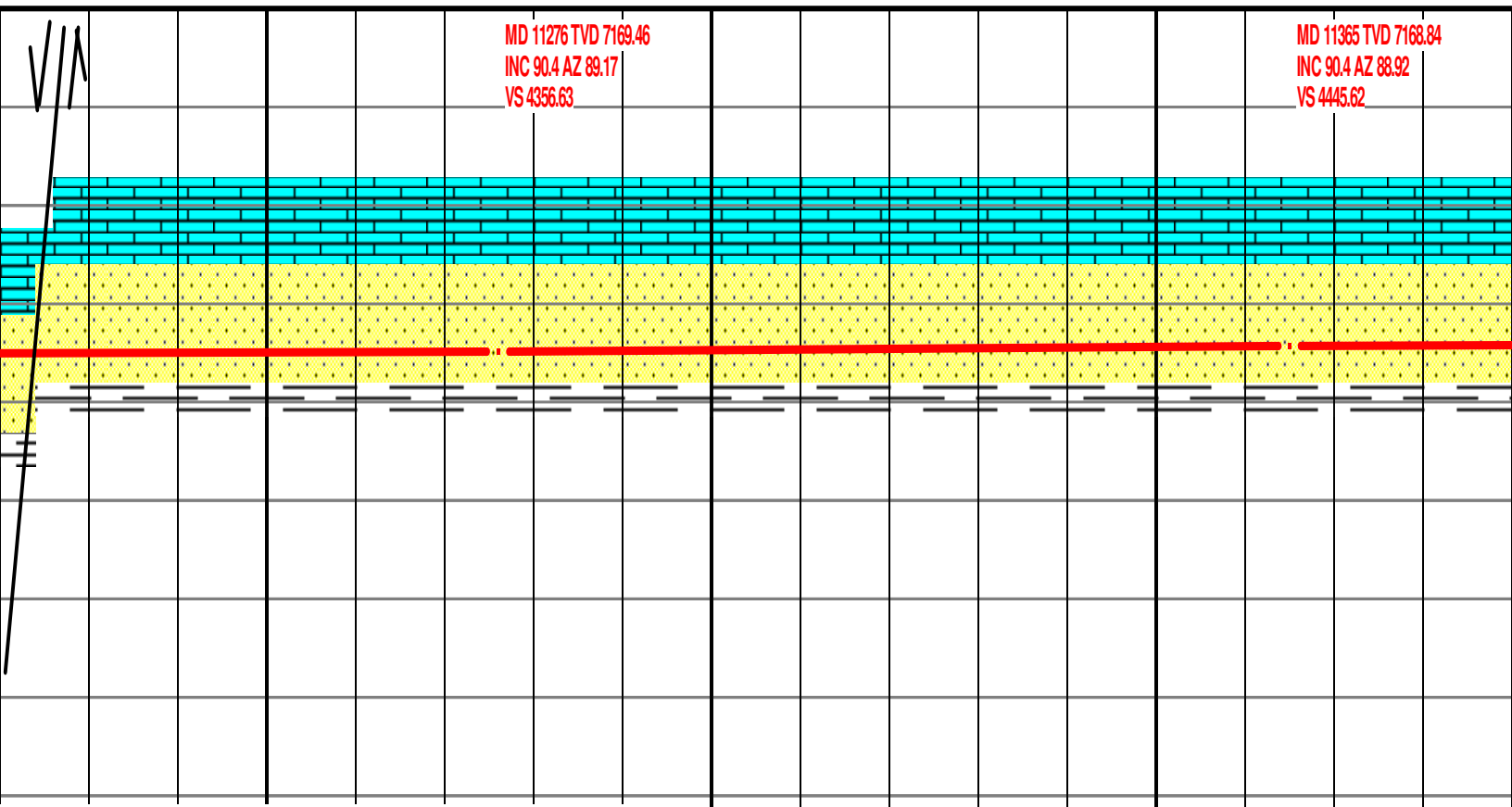

600
10000
200
ROP (FT/HR)
200
Total gas (units)
200
WWD_GR (API)
100
GR ADX (API)
GR ADX (inch)
Res2MHz (ohm.m)
0
0
-20
WOB 9
RPM 100
PP 4209
SPM 91/91
10750
10800
10850
MD 10739 TVD 7173.85
INC 90.09 AZ 88.21
VS 3819.82
7100 TVD
MD 10828 TVD 7173.2
INC 90.74 AZ 88.85
VS 3908.8
7200
%) med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ med gr, , 8-10% est vis por, sbang -
, mod - w srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg
5%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor,
g - stmg mlky blush wht cut, v sptted grnsh blu resd ring.
SS: (95%) med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ med gr, , 8-10% est v
sb rndd, mod - w srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cm
ip; SH(5%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt spt
flor, slo blmg - stmg mlky blush wht cut, v sptted grnsh blu resd ring.
7300
DATE: 8/15/18
DEPTH: 10810'
WT: 9.9
Vis: 60
PV: 10
YP: 11
Gel: 17/7/6
FIL (HTHP): 10
SOL: 12%
Cl: 38,000
NAP/H20 Ratio 85/15
ES 1,060
10000
10000
10000
10000
Total (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
40
90


600
10000
200
ROP (FT/HR)
Total gas (units)
GR (API)
GR AUX (API)
GR ADX (inch)
Res2MHz (ohm.m)
-20
WOB 18
RPM 100
PP 4326
SPM 91/
10900
10950
11000
MD 10918 TVD 7172.43
INC 90.25 AZ 90.52
VS 3998.8
7100 TVD
MD 11007 TVD 7171.75
INC 90.62 AZ 92.68
VS 4087.74
7200
vis por, sbang -
nt, slty ip, arg
y yel grn pri
SS: (95%) med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ med gr, , 8-10% est vis por, sbang - sb rndd, mod - w srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH(5%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - stmg mlky blush wht cut, v sptd grnsh blu resd ring.
SS: (100%) med gy - dk gy, occ lt gysh brn, f gr- u
rndd, mod - w srt, mod frm, fri ip, sl calc, crm cly
intbd, med gy - med dk gy, slty - sdy, rr smth ip, s
stmg mlky blush wht cut, v sptd grnsh blu resd ri
7300
MW 9.95
VIS 60
10000
10000
10000
10000
1000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
12
8
Mud Weight (ppg)
40
90


600
10000
200
ROP (FT/HR)
200
Total gas (units)
WWD_GR (API)
100
GR AUX (API)
GR ADX (inch)
Res2MHz (ohm.m)
0
0
-20
EDR DOWN
050
11100
11150
11200
MD 11097 TVD 7170.85
INC 90.52 AZ 91.45
VS 4177.66
MD 11186 TVD 7170.12
INC 90.43 AZ 90.47
VS 4266.63
7200
f gr, occ med gr, , 8-10% est vis por, sbang - sb
cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH
sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg -
ing.
SS: (100%) med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ med gr, , 8-10% est vis por, sbang - sb
rndd, mod - w srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH
intbd, med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg -
stmg mlky blush wht cut, v sptd grnsh blu resd ring.
SS: (100%) med g
mod - w srt, mod
med gy - med dk
mlky blush wht cu
7300
10000
10000
10000
10000
10000 (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
MW 10
VIS 60
EDR DOWN
12
Mud Weight (ppg)
40
90

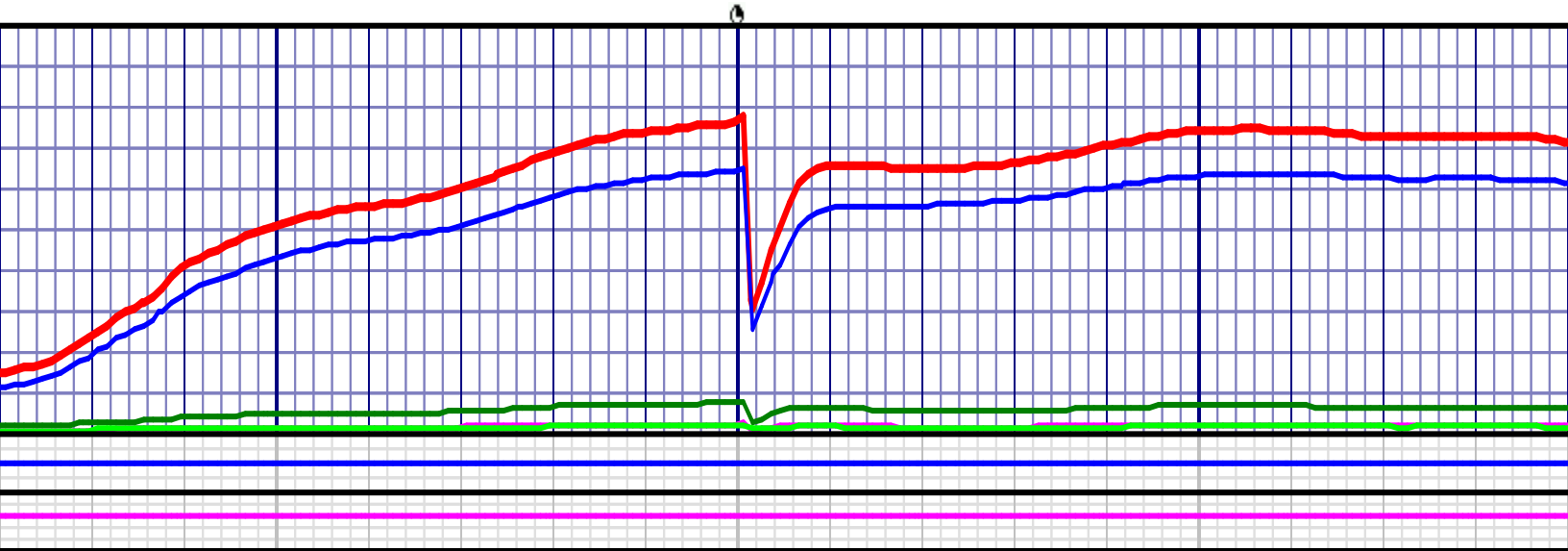


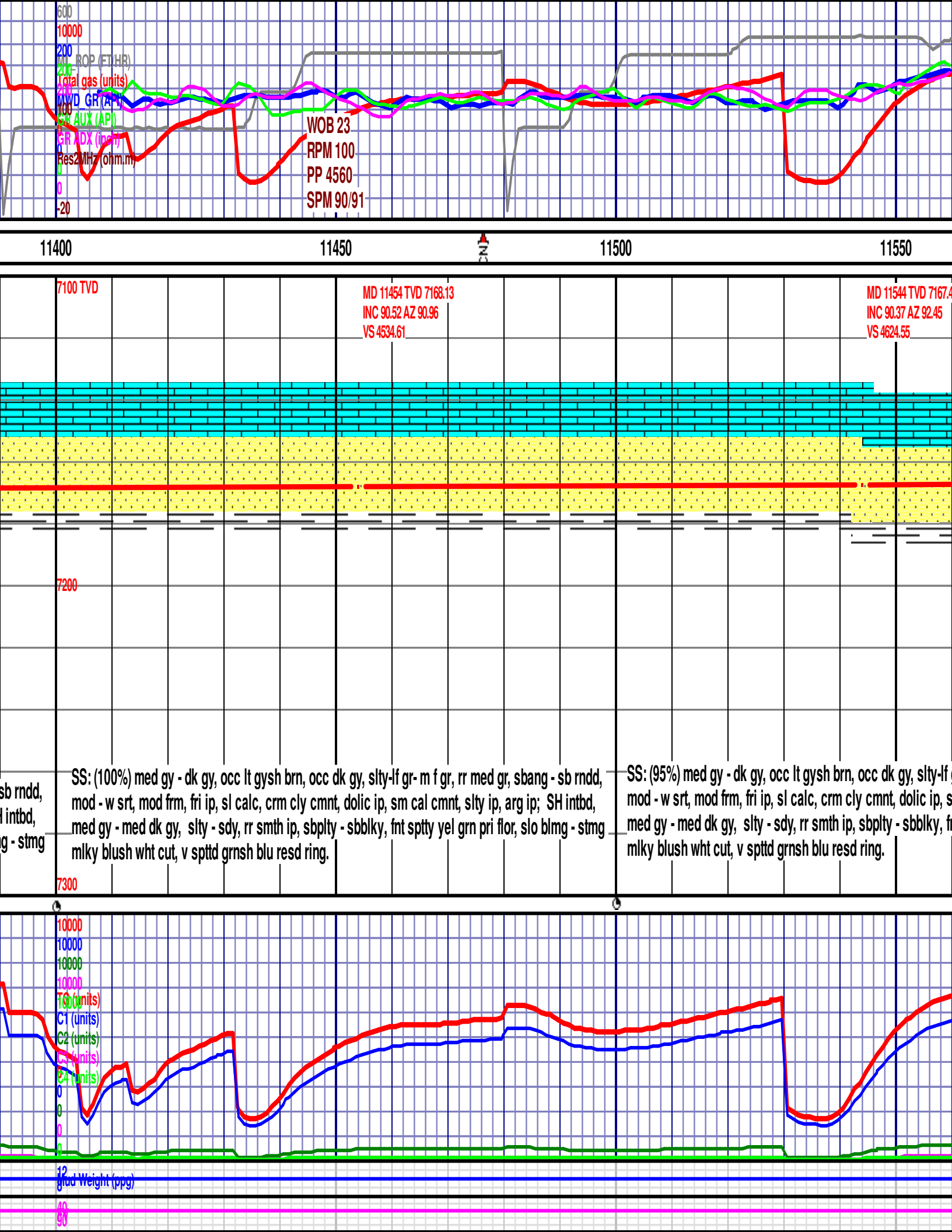


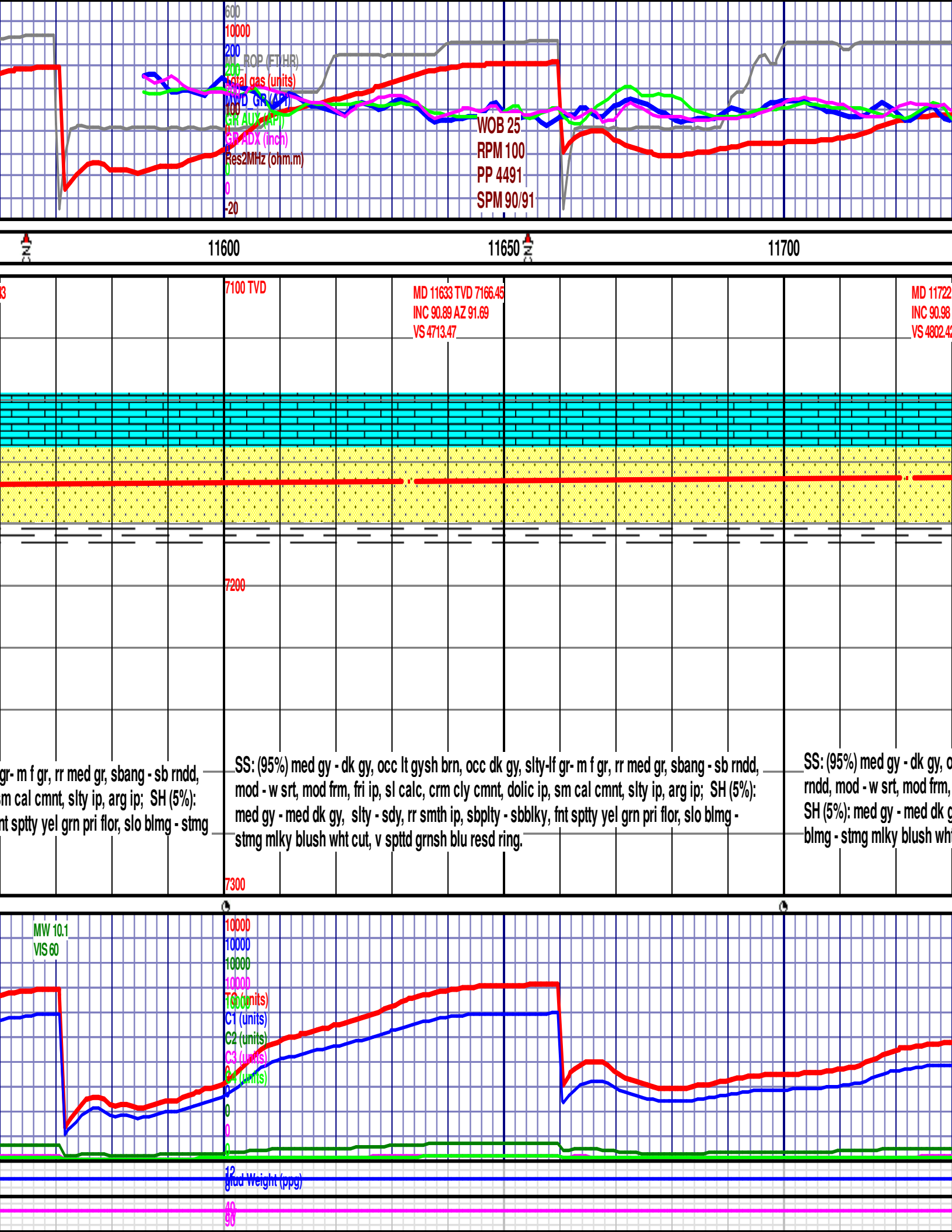


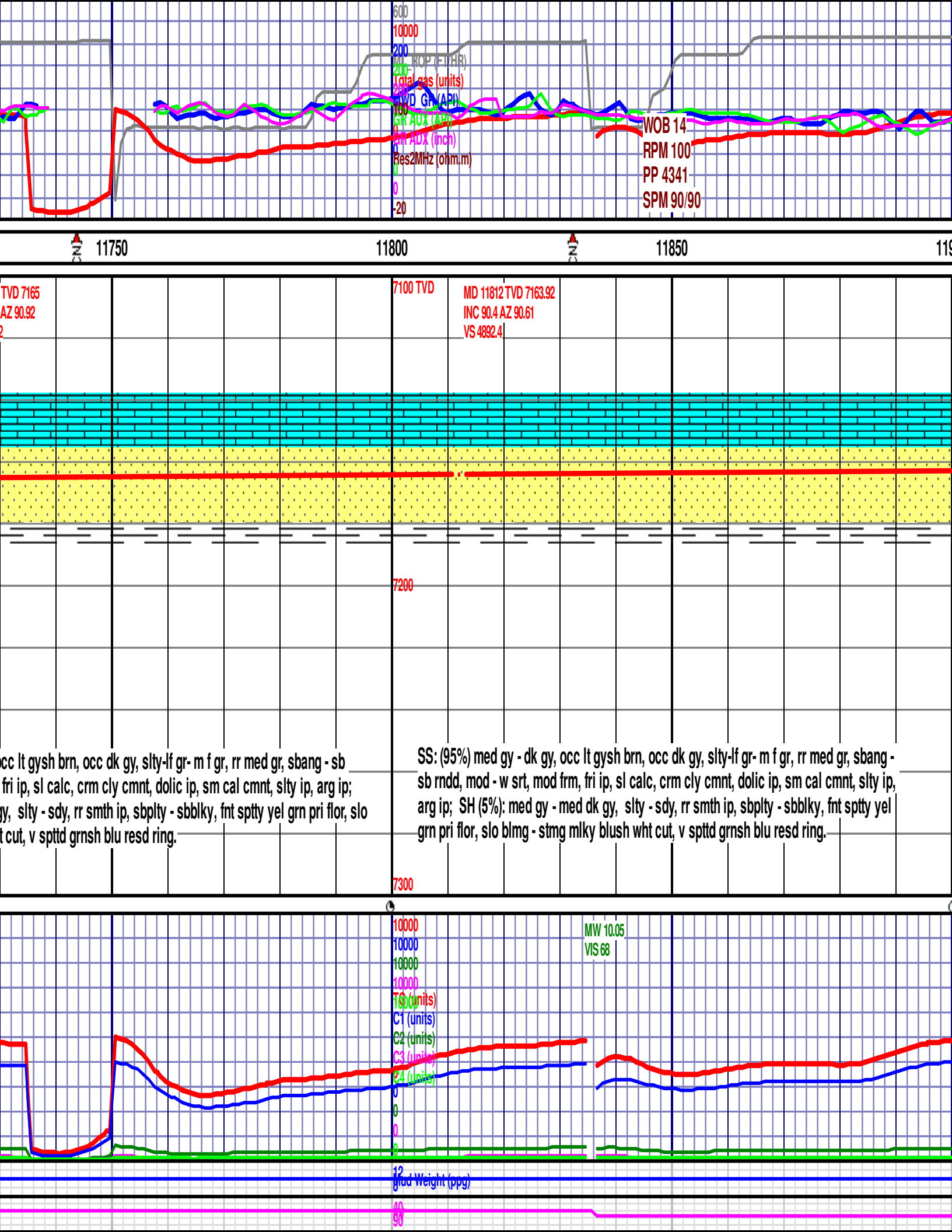
y - dk gy, occ lt gysh brn, occ dk gy, slty-lf gr- m f gr, rr med gr, sbang - sb rndd, frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH intbd, gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - stmg ut, v sptd grnsh blu resd ring.

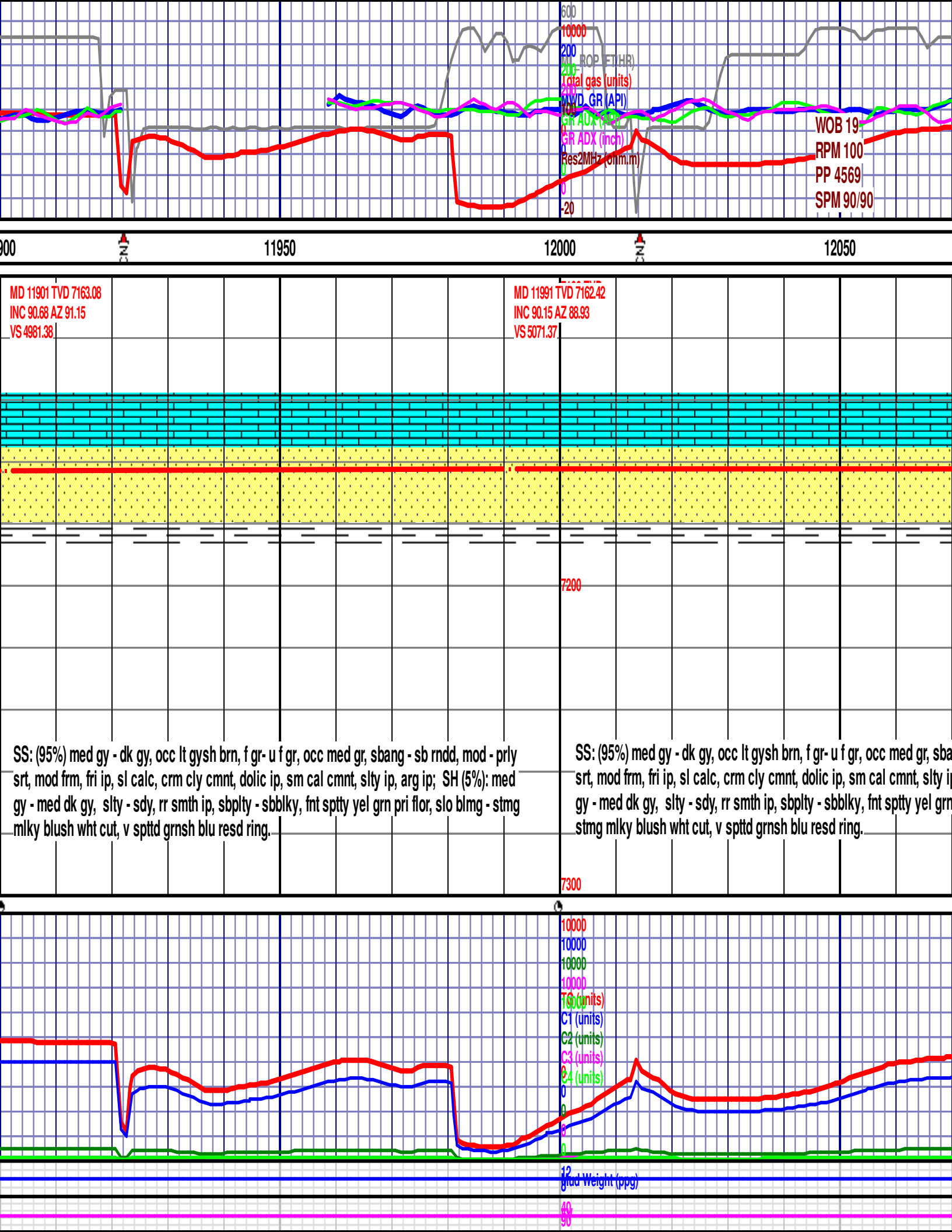
SS: (100%) med gy - dk gy, occ lt gysh brn, occ dk gy, slty-lf gr- m f gr, rr med gr, sbang - mod - w srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blm mlky blush wht cut, v sptd grnsh blu resd ring.

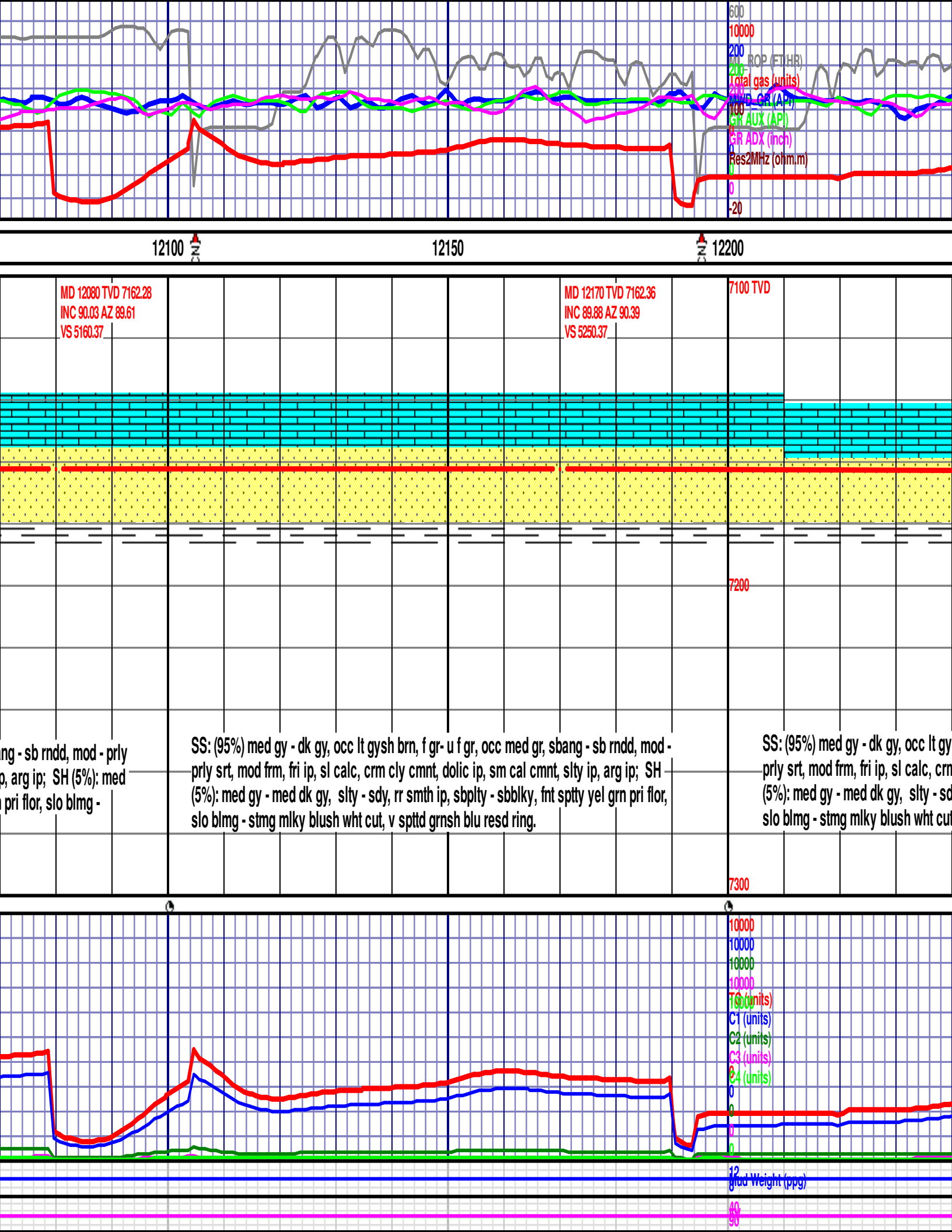


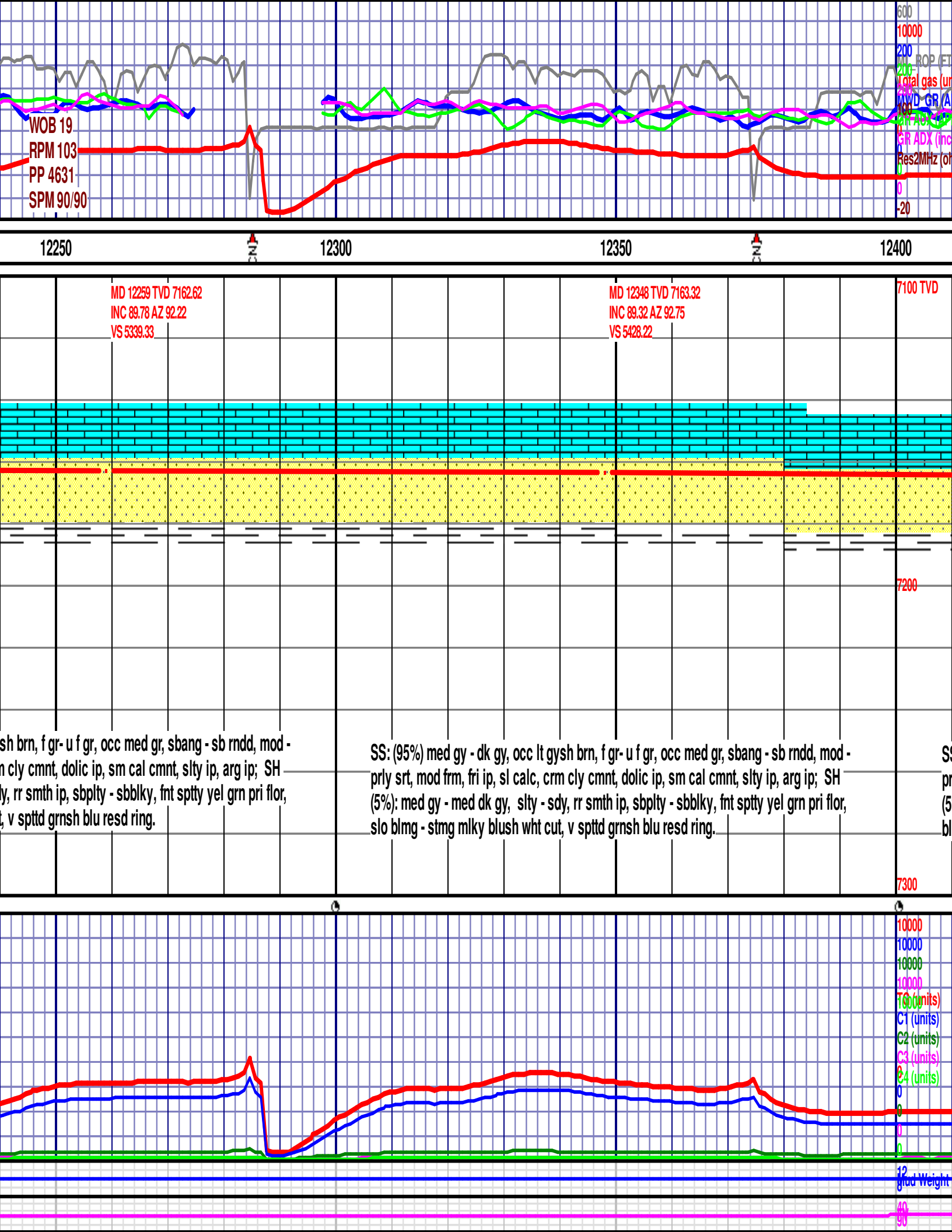

600
10000
200
ROP (FT/HR)
Total gas (units)
MWD_GR (API)
GR AUX (API)
GR ADX (inch)
Res2MHz (ohm.m)
0
-20
WOB 23
RPM 100
PP 4560
SPM 90/91
11400
11450
11500
11550
7100 TVD
MD 11454 TVD 7168.13
INC 90.52 AZ 90.96
VS 4534.61
MD 11544 TVD 7167.4
INC 90.37 AZ 92.45
VS 4624.55
7200
7300
SS: (100%) med gy - dk gy, occ lt gysh brn, occ dk gy, slty-lf gr- m f gr, rr med gr, sbang - sb rndd, mod - w srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH intbd, med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - stmg mlky blush wht cut, v sptd grnsh blu resd ring.
SS: (95%) med gy - dk gy, occ lt gysh brn, occ dk gy, slty-lf
mod - w srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip,
med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky,
mlky blush wht cut, v sptd grnsh blu resd ring.
10000
10000
10000
10000
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
8
40
90

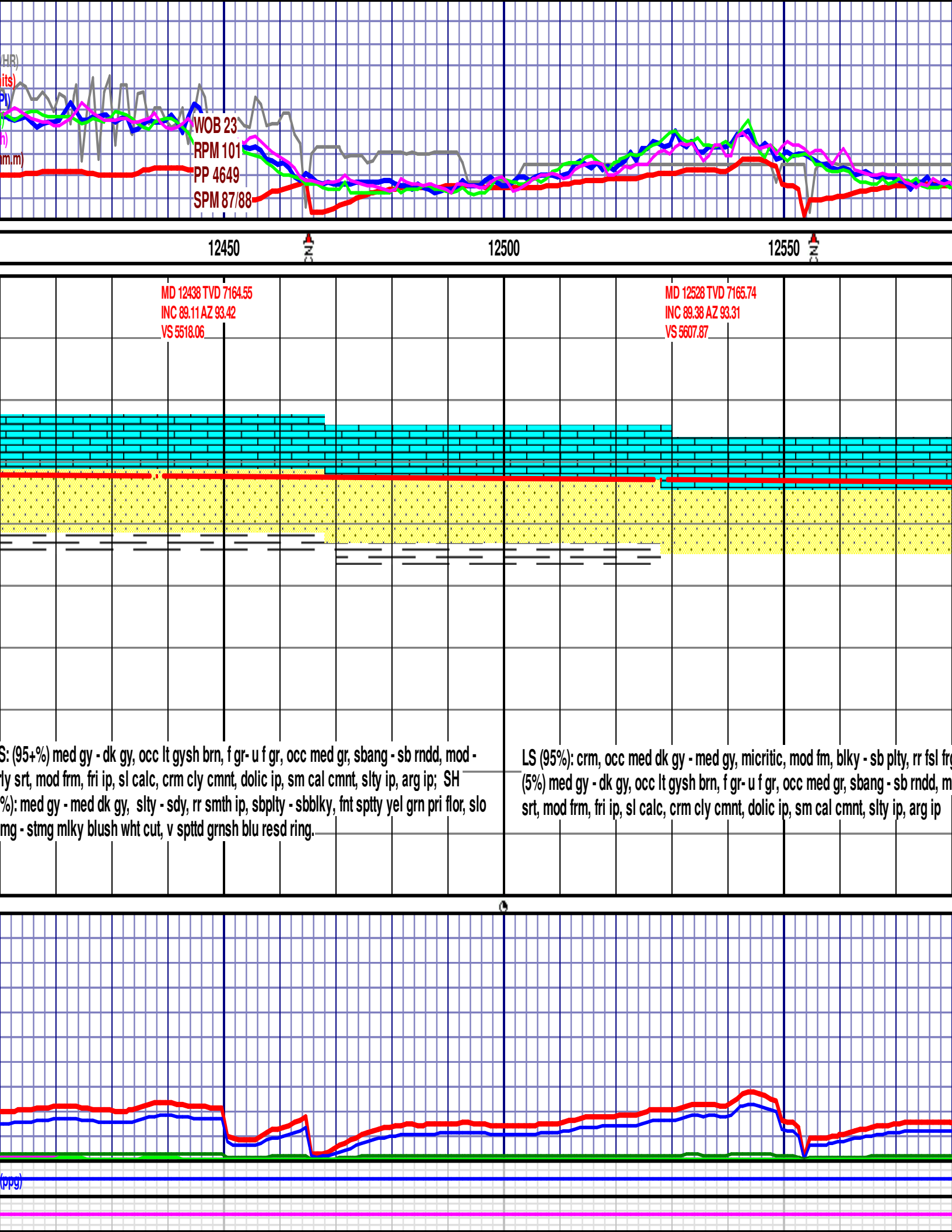

600
10000
200
ROP (FT/HR)
Total gas (units)
WOB 25
RPM 100
PP 4491
SPM 90/91
-20
11600
11650
11700
7100 TVD
MD 11633 TVD 7166.45
INC 90.89 AZ 91.69
VS 4713.47
MD 11722
INC 90.98
VS 4802.42
7200
7300
SS: (95%) med gy - dk gy, occ lt gysh brn, occ dk gy, slty-lf gr- m f gr, rr med gr, sbang - sb rndd, mod - w srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH (5%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - stmg mlky blush wht cut, v sptted grnsh blu resd ring.
MW 10.1
VIS 60
10000
10000
C1 (units)
C2 (units)
0
0
12
90

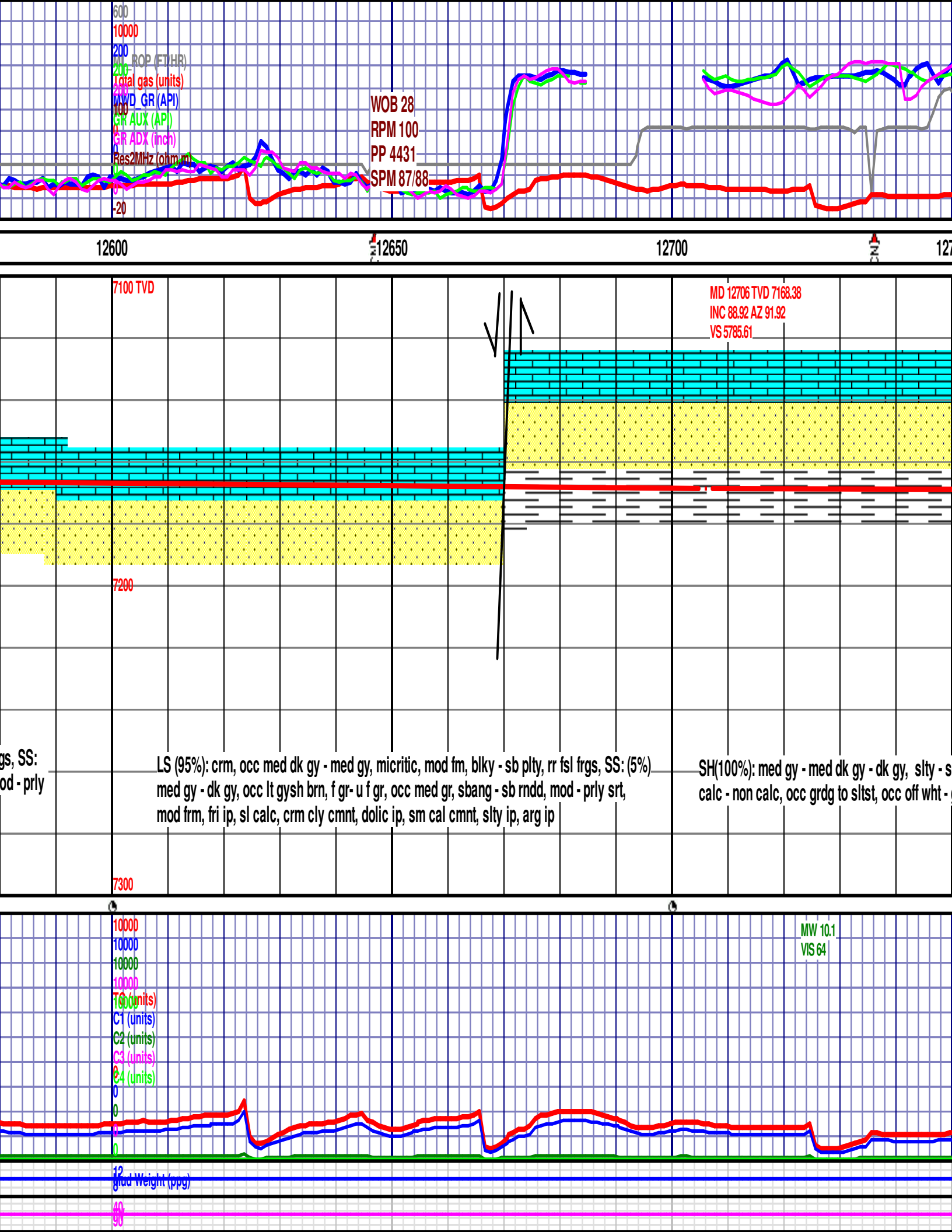

600
10000
200
MD_ROP (FT/HR)
Total_gas (units)
MWD_GR (API)
GR AUX (API)
BR ADX (inch)
Res2MHz (ohm.m)
-20
WOB 14
RPM 100
PP 4341
SPM 90/90
11750
11800
11850
TVD 7165
AZ 90.92
7100 TVD
MD 11812 TVD 7163.92
INC 90.4 AZ 90.61
VS 4892.4
7200
7300
cc lt gysh brn, occ dk gy, slty-lf gr- m f gr, rr med gr, sbang - sb
fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip;
gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo
t cut, v sptted grnsh blu resd ring.
SS: (95%) med gy - dk gy, occ lt gysh brn, occ dk gy, slty-lf gr- m f gr, rr med gr, sbang - sb rndd, mod - w srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH (5%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - stmg mlky blush wht cut, v sptted grnsh blu resd ring.
10000
10000
10000
10000
10000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
MW 10.05
VIS 68
12
Mud Weight (ppg)
40
98

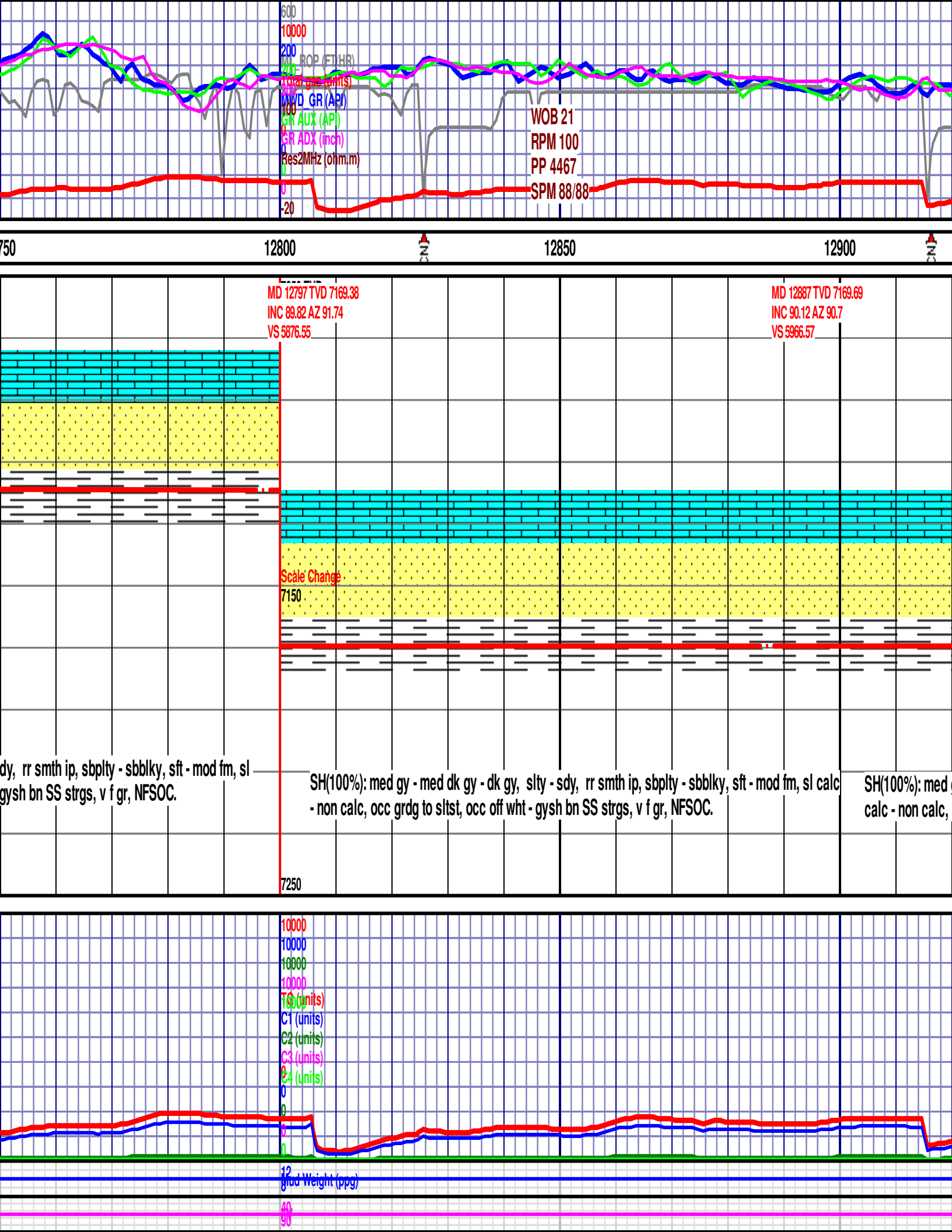

600
10000
200
ROP (FT/HR)
Total gas (units)
WWD GR (API)
GR ADX (inch)
Res2MHz (ohm.m)
WOB 19
RPM 100
PP 4569
SPM 90/90
900
11950
12000
12050
MD 11901 TVD 7163.08
INC 90.68 AZ 91.15
VS 4981.38
MD 11991 TVD 7162.42
INC 90.15 AZ 88.93
VS 5071.37
7200
7300
SS: (95%) med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ med gr, sbang - sb rndd, mod - prly srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH (5%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - stmg mlky blush wht cut, v sptted grnsh blu resd ring.
SS: (95%) med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ med gr, sba
srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty i
gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn
stmg mlky blush wht cut, v sptted grnsh blu resd ring.
10000
10000
10000
10000
10000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
Mud Weight (ppg)
90

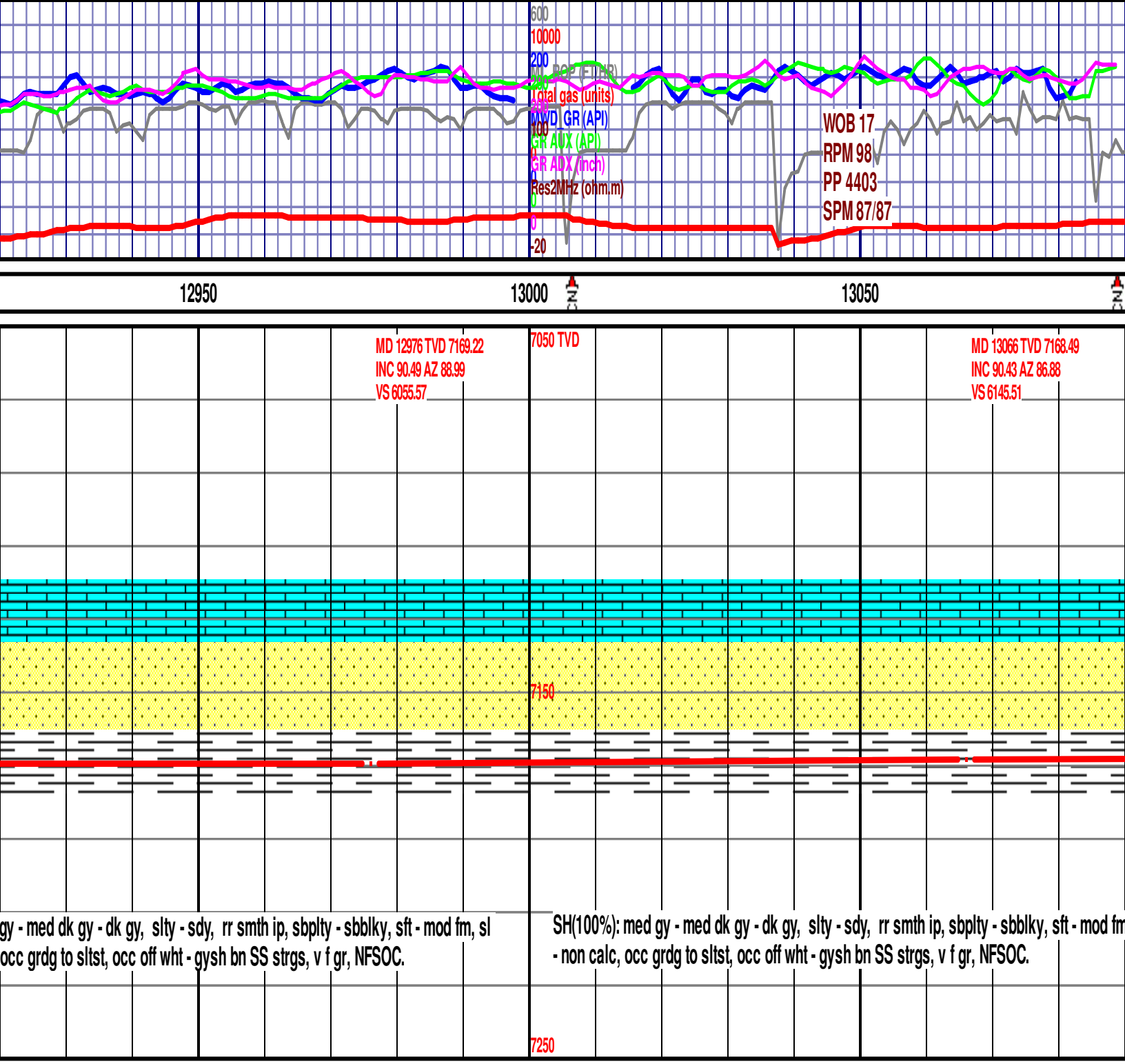

600
10000
200
ROP (FT/HR)
total gas (units)
GR (API)
GR AUX (API)
GR ADX (inch)
Res2MHz (ohm.m)
-20
12100
12150
12200
MD 12080 TVD 7162.28
INC 90.03 AZ 89.61
VS 5160.37
MD 12170 TVD 7162.36
INC 89.88 AZ 90.39
VS 5250.37
7100 TVD
7200
7300
ng - sb rndd, mod - prly
p, arg ip; SH (5%): med
pri flor, slo blmg -
SS: (95%) med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ med gr, sbang - sb rndd, mod - prly srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH (5%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - stmg mlky blush wht cut, v sptd grnsh blu resd ring.
SS: (95%) med gy - dk gy, occ lt gy
prly srt, mod frm, fri ip, sl calc, crm
(5%): med gy - med dk gy, slty - sd
slo blmg - stmg mlky blush wht cut
10000
10000
10000
10000
10000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
8
Mud Weight (ppg)
40
90

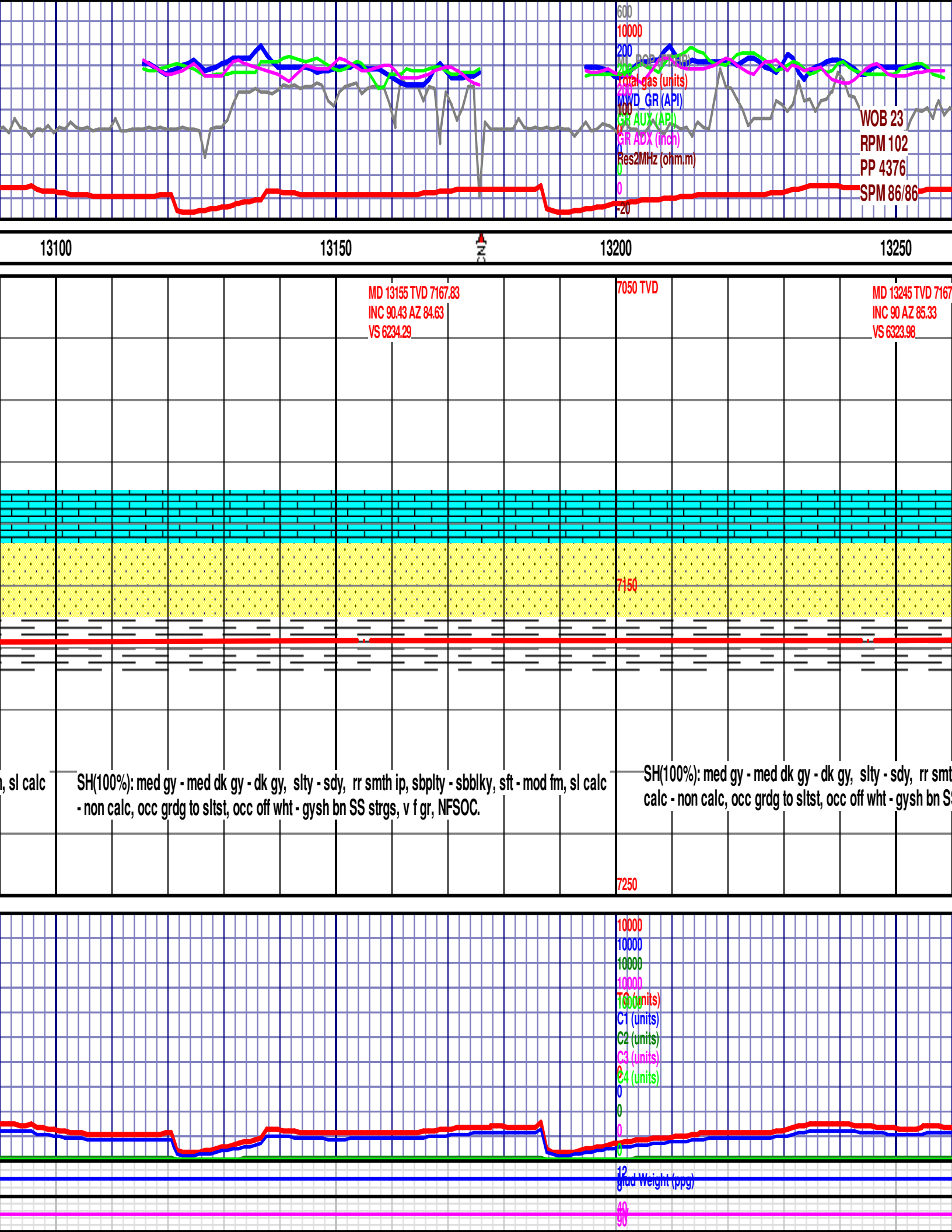

WOB 19
RPM 103
PP 4631
SPM 90/90
600
10000
200
ROP (FT
Total gas (un
MWD GR (A
GR ADX (inc
Res2MHz (oh
0
-20
12250
12300
12350
12400
MD 12259 TVD 7162.62
INC 89.78 AZ 92.22
VS 5339.33
MD 12348 TVD 7163.32
INC 89.32 AZ 92.75
VS 5428.22
7100 TVD
7200
7300
sh brn, f gr- u f gr, occ med gr, sbang - sb rndd, mod -
n cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH
y, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor,
, v sptd grnsh blu resd ring.
SS: (95%) med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ med gr, sbang - sb rndd, mod -
prly srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH
(5%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor,
slo blmg - stmg mlky blush wht cut, v sptd grnsh blu resd ring.
10000
10000
10000
10000
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
Mud Weight
8
40
90

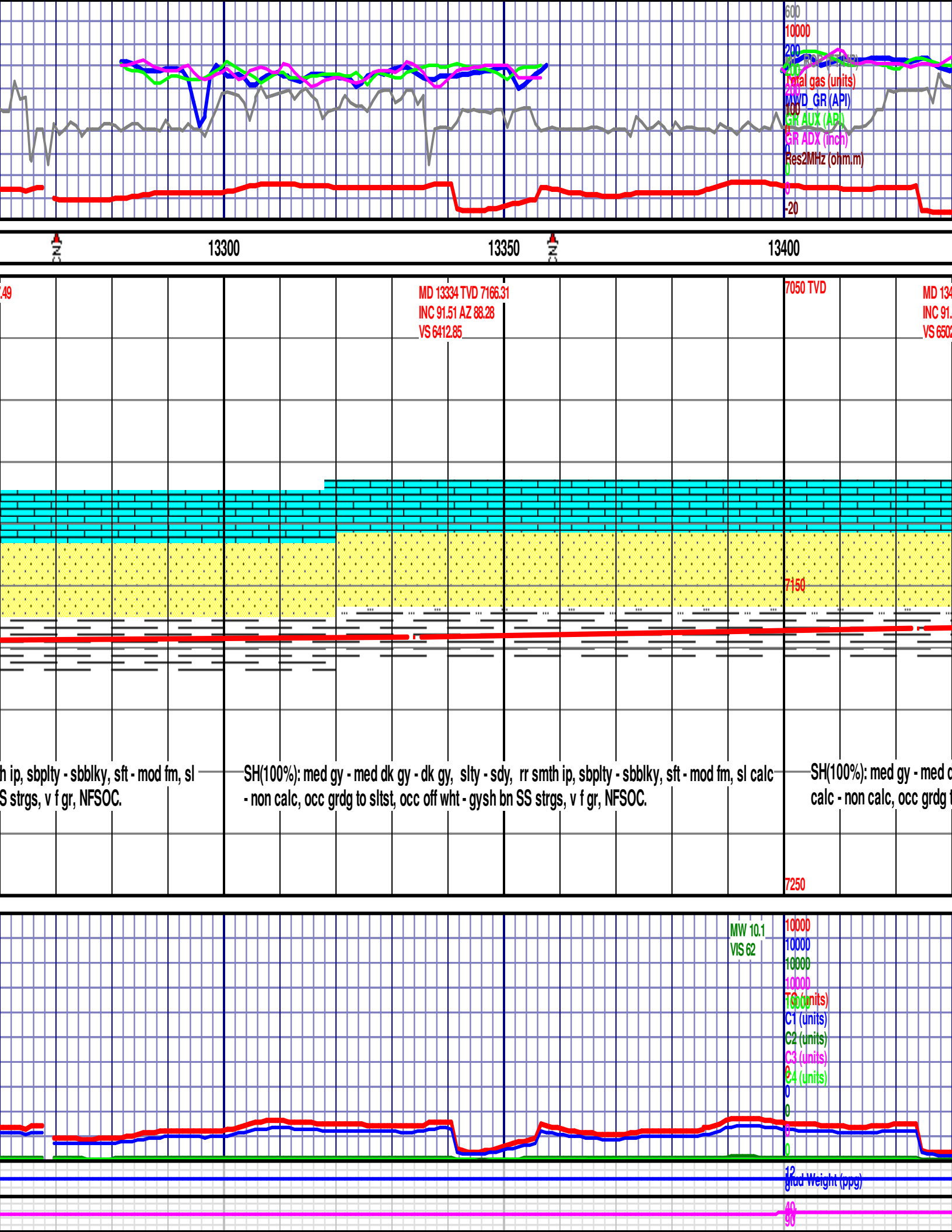

WOB 23
RPM 101
PP 4649
SPM 87/88
12450
12500
12550
MD 12438 TVD 7164.55
INC 89.11 AZ 93.42
VS 5518.06
MD 12528 TVD 7165.74
INC 89.38 AZ 93.31
VS 5607.87
S: (95+%) med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ med gr, sbang - sb rndd, mod - rly srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH %): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo mg - stmg mlky blush wht cut, v sptd grnsh blu resd ring.
LS (95%): crm, occ med dk gy - med gy, micritic, mod fm, blky - sb plty, rr fsl fr (5%) med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ med gr, sbang - sb rndd, m srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip

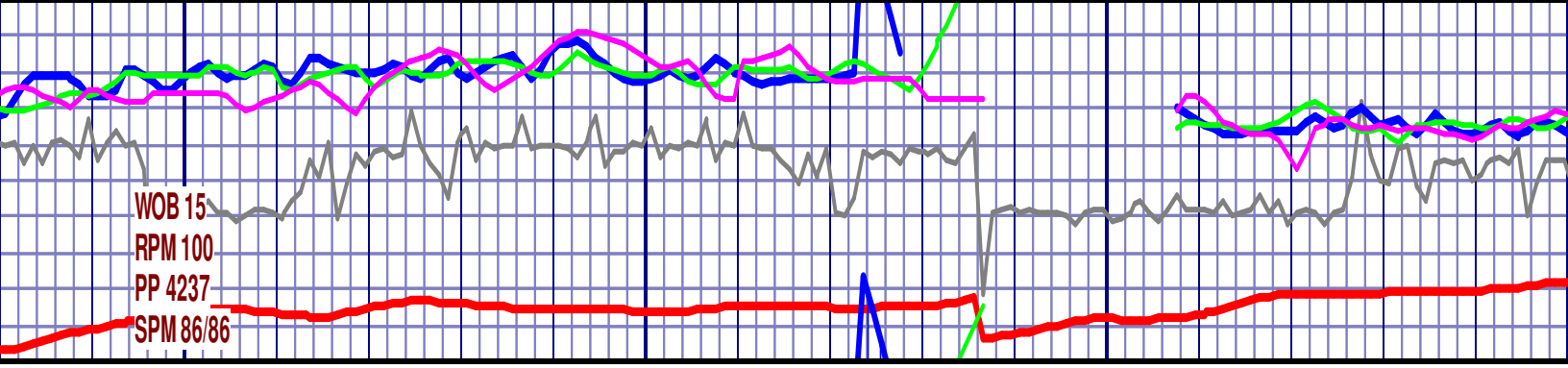

600
10000
200
ROP (FT/HR)
200
Total gas (units)
200
WWD_GR (API)
100
GR AUX (API)
0
GR ADX (inch)
Res2MHz (ohm.m)
0
-20
WOB 28
RPM 100
PP 4431
SPM 87/88
12600
12650
12700
127
7100 TVD
MD 12706 TVD 7168.38
INC 88.92 AZ 91.92
VS 5785.61
7200
7300
gs, SS:
od - prly
LS (95%): crm, occ med dk gy - med gy, micritic, mod fm, blky - sb plty, rr fsl frgs, SS: (5%)
med gy - dk gy, occ lt gysh brn, f gr- u f gr, occ med gr, sbang - sb rndd, mod - prly srt,
mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip
SH(100%): med gy - med dk gy - dk gy, slty - s
calc - non calc, occ grdg to sltst, occ off wht -
10000
10000
10000
10000
10000
Total (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
MW 10.1
VIS 64
12
Mud Weight (ppg)
40
90


600
10000
200
ROP (FT/HR)
Total gas (units)
DWD_GR (API)
GR AUX (API)
GR ADX (inch)
Res2MHz (ohm.m)
100
0
-20
WOB 21
RPM 100
PP 4467
SPM 88/88
750
12800
12850
12900
MD 12797 TVD 7169.38
INC 89.82 AZ 91.74
VS 5876.55
MD 12887 TVD 7169.69
INC 90.12 AZ 90.7
VS 5966.57
Scale Change
7150
7250
dy, rr smth ip, sbplty - sbblky, sft - mod fm, sl gysh bn SS strgs, v f gr, NFSOC.
SH(100%): med gy - med dk gy - dk gy, slty - sdy, rr smth ip, sbplty - sbblky, sft - mod fm, sl calc - non calc, occ grdg to sltst, occ off wht - gysh bn SS strgs, v f gr, NFSOC.
SH(100%): med
calc - non calc,
10000
10000
10000
10000
10000
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
0
12
8
Mud Weight (ppg)
40
90


600
10000
200
ROP (FT/HR)
Total gas (units)
100
MWD GR (API)
GR AUX (API)
GR ADX (inch)
Res2MHz (ohm.m)
0
0
-20
WOB 17
RPM 98
PP 4403
SPM 87/87
12950
13000
13050
MD 12976 TVD 7169.22
INC 90.49 AZ 88.99
VS 6055.57
7050 TVD
MD 13066 TVD 7168.49
INC 90.43 AZ 86.88
VS 6145.51
7150
gy - med dk gy - dk gy, slty - sdy, rr smth ip, sbplty - sbblky, sft - mod fm, sl
occ grdg to sltst, occ off wht - gysh bn SS strgs, v f gr, NFSOC.
SH(100%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, sft - mod fm
- non calc, occ grdg to sltst, occ off wht - gysh bn SS strgs, v f gr, NFSOC.
7250
10000
10000
10000
10000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
Mud Weight (ppg)
90


600
10000
200
Total gas (units)
MWD_GR (API)
GR AUX (API)
GR ADX (inch)
Res2MHz (ohm.m)
0
-20
WOB 23
RPM 102
PP 4376
SPM 86/86
13100
13150
13200
13250
MD 13155 TVD 7167.83
INC 90.43 AZ 84.63
VS 6234.29
7050 TVD
MD 13245 TVD 7167
INC 90 AZ 85.33
VS 6323.98
7150
7250
, sl calc
SH(100%): med gy - med dk gy - dk gy, slty - sdy, rr smth ip, sbplty - sbblky, sft - mod fm, sl calc - non calc, occ grdg to sltst, occ off wht - gysh bn SS strgs, v f gr, NFSOC.
SH(100%): med gy - med dk gy - dk gy, slty - sdy, rr smt
calc - non calc, occ grdg to sltst, occ off wht - gysh bn S
10000
10000
10000
10000
10000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
40
90

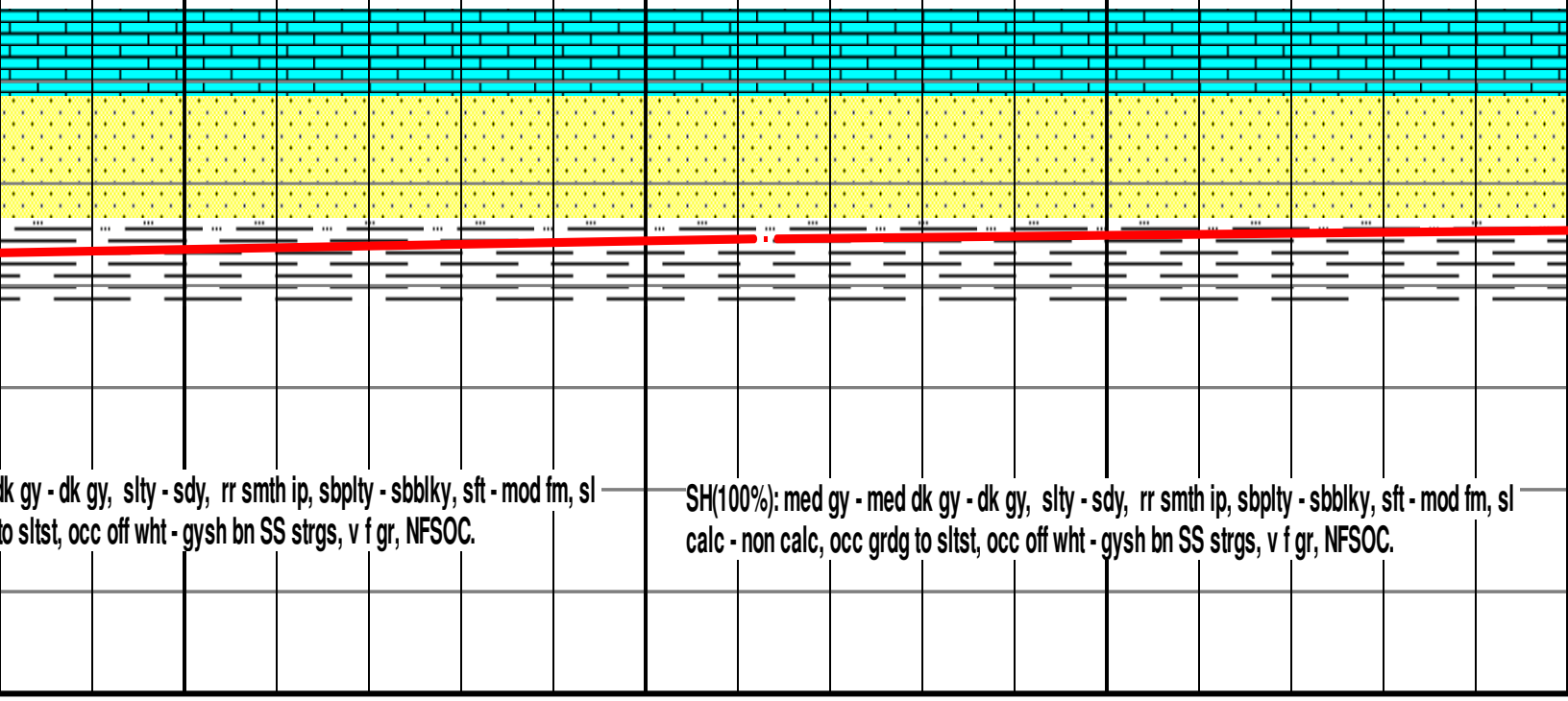

600
10000
200
Total gas (units)
MWD_GR (API)
GR AUX (API)
GR ADX (inch)
Res2MHz (ohm.m)
0
-20
13300
13350
13400
MD 13334 TVD 7166.31
INC 91.51 AZ 88.28
VS 6412.85
7050 TVD
7150
7250
h ip, sbplty - sbblky, sft - mod fm, sl
S strgs, v f gr, NFSOC.
SH(100%): med gy - med dk gy - dk gy, slty - sdy, rr smth ip, sbplty - sbblky, sft - mod fm, sl calc
- non calc, occ grdg to sltst, occ off wht - gysh bn SS strgs, v f gr, NFSOC.
SH(100%): med gy - med
calc - non calc, occ grdg
MW 10.1
VIS 62
10000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
Mud Weight (ppg)



13450 13500 13550 136

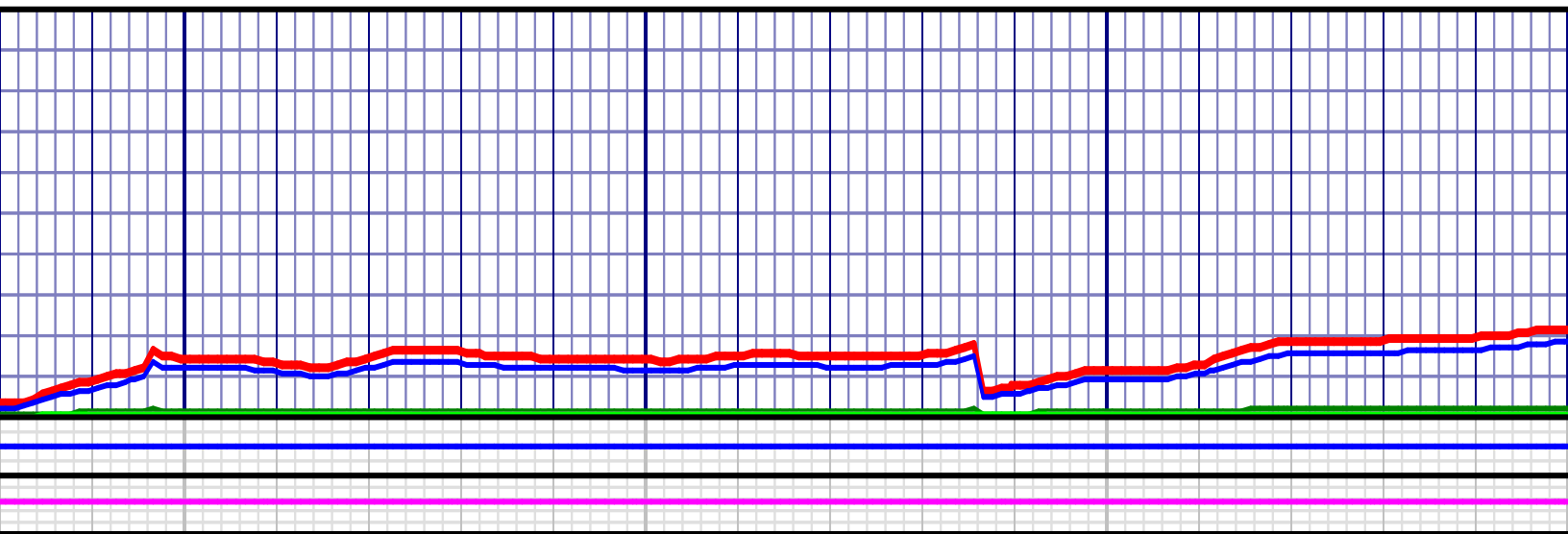
24 TVD 7163.68
85 AZ 90.13
2.8

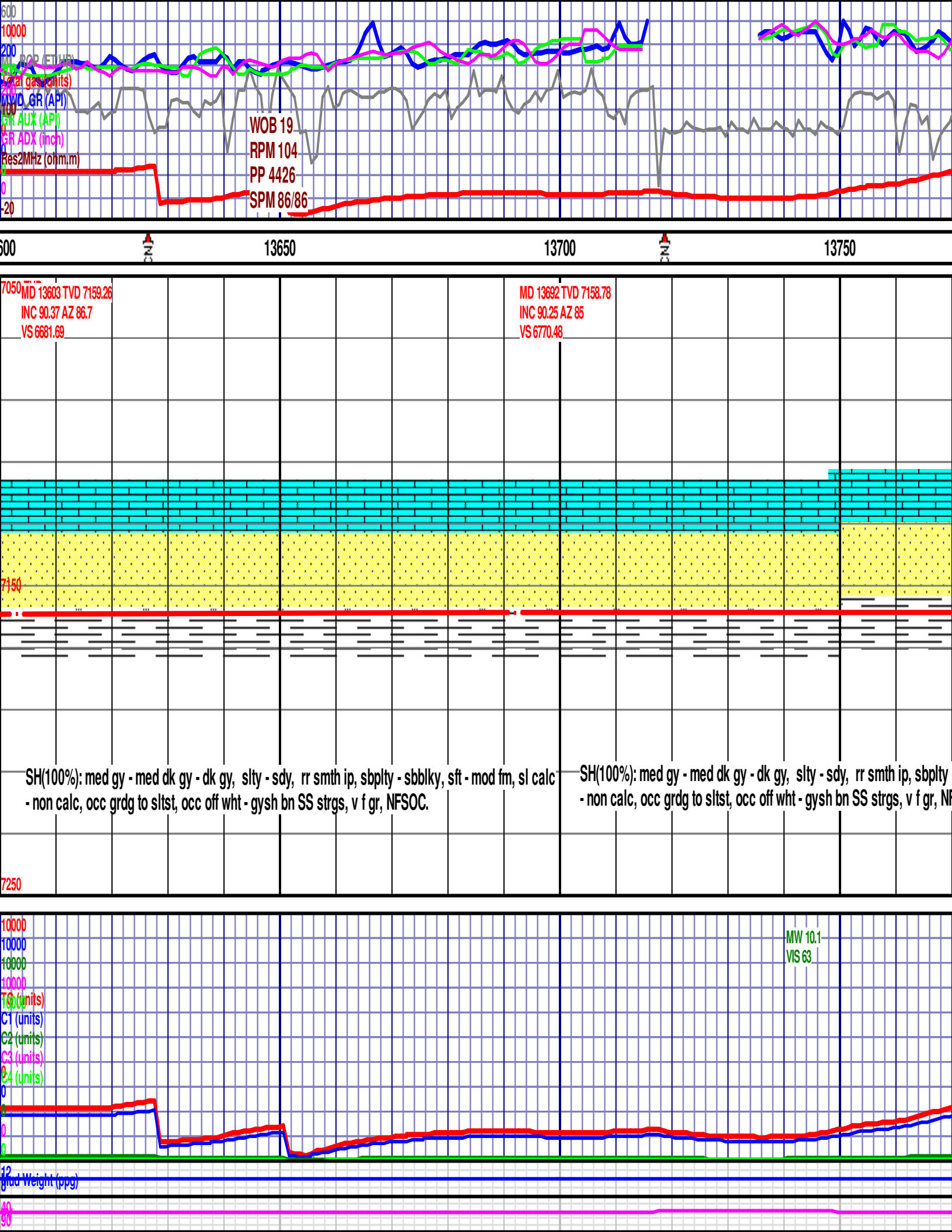
MD 13513 TVD 7160.9
INC 91.72 AZ 88.98
VS 6591.76

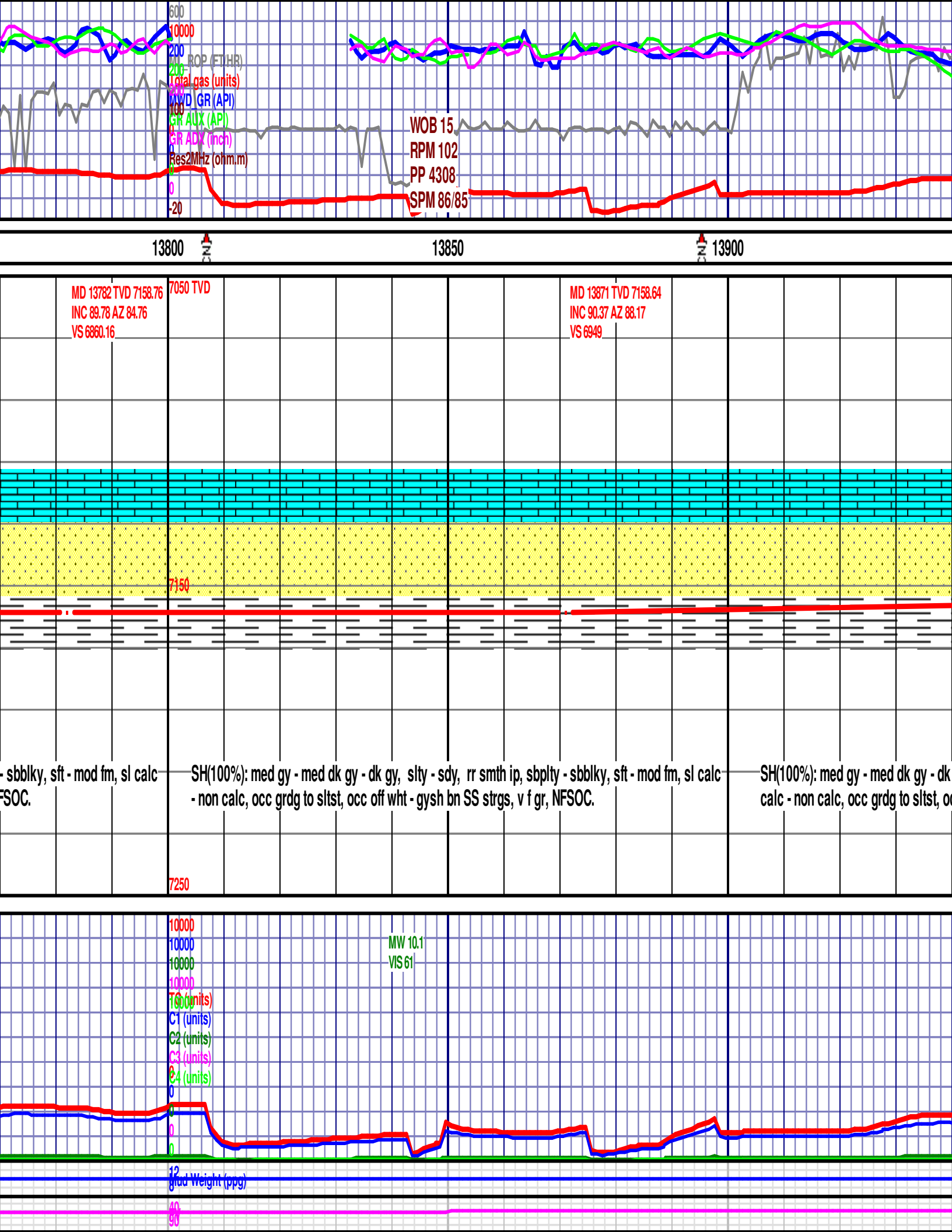


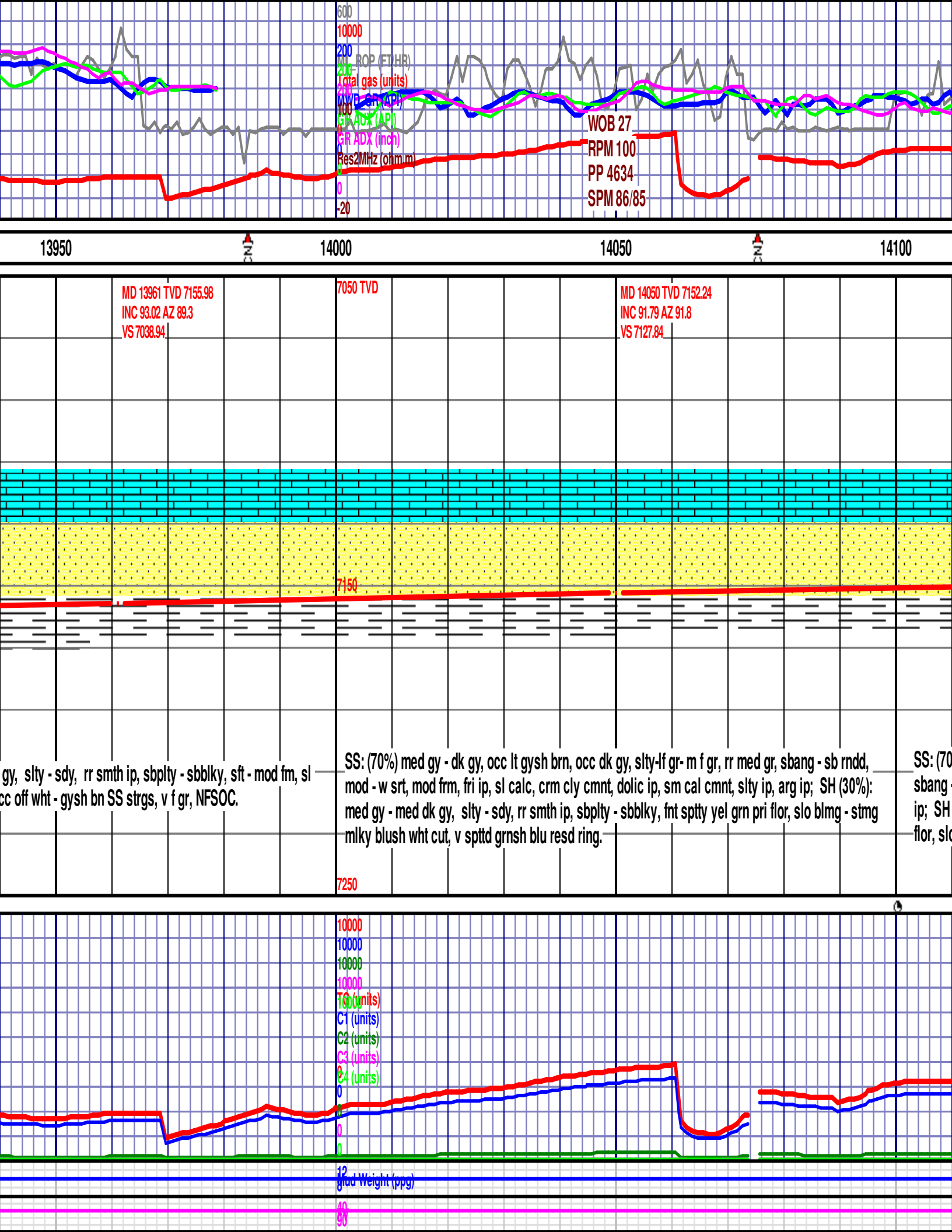
dk gy - dk gy, slty - sdy, rr smth ip, sbplty - sbblky, sft - mod fm, sl to sltst, occ off wht - gysh bn SS strgs, v f gr, NFSOC.

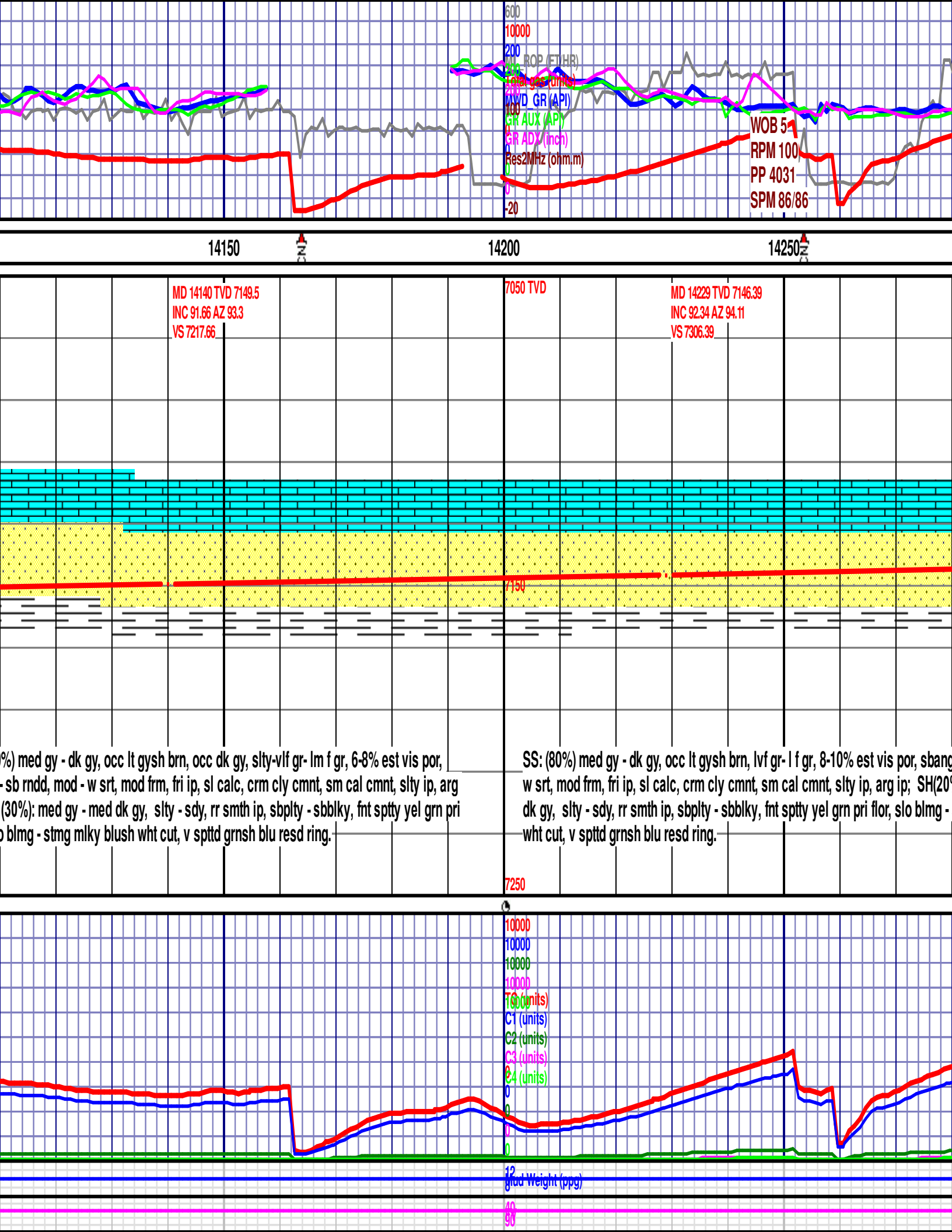
SH(100%): med gy - med dk gy - dk gy, slty - sdy, rr smth ip, sbplty - sbblky, sft - mod fm, sl calc - non calc, occ grdg to sltst, occ off wht - gysh bn SS strgs, v f gr, NFSOC.

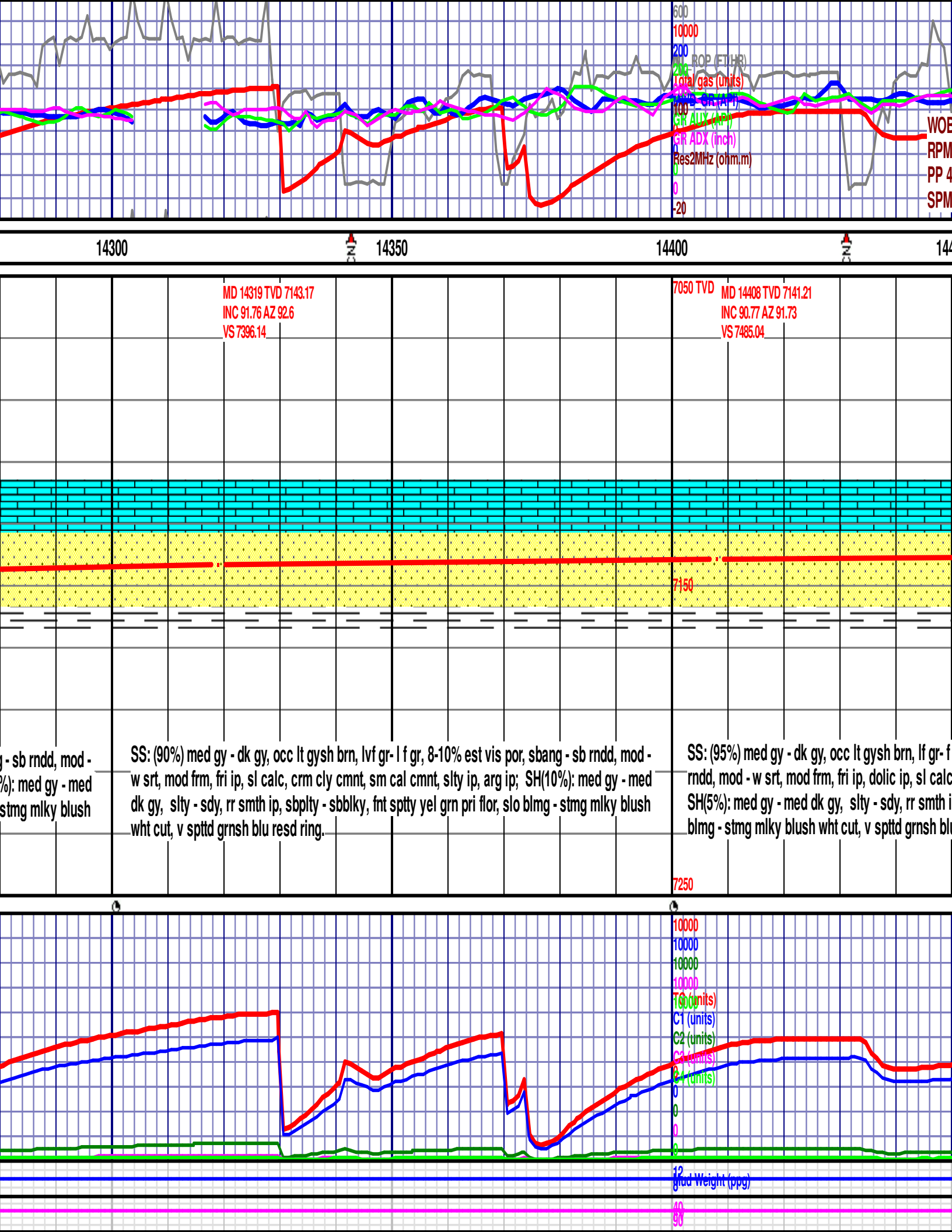


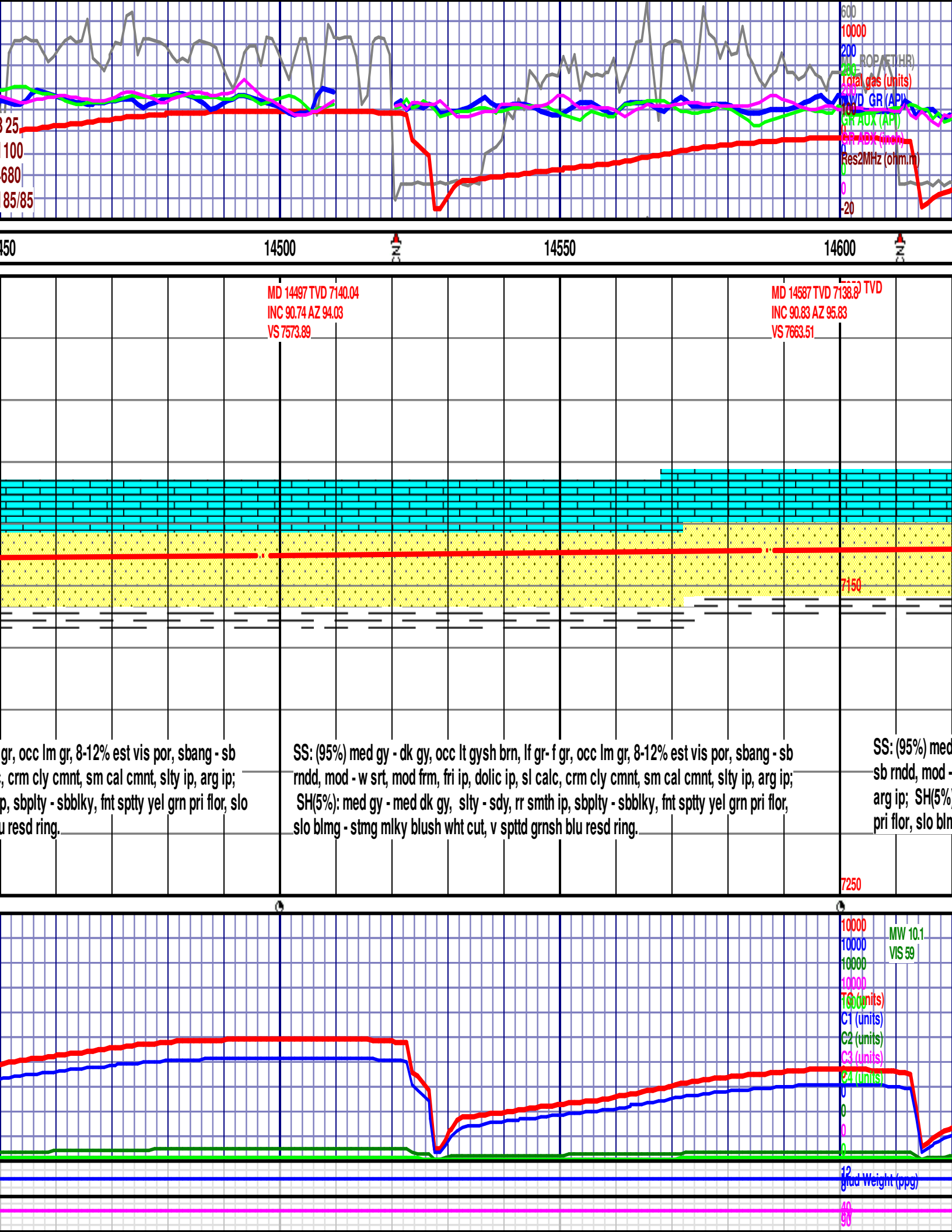

600
10000
200
MD_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
100
GR AUX (API)
GR ADX (inch)
Res2MHz (ohm.m)
0
-20
WOB 19
RPM 104
PP 4426
SPM 86/86
600
13650
13700
13750
7050
MD 13603 TVD 7159.26
INC 90.37 AZ 86.7
VS 6681.69
MD 13692 TVD 7158.78
INC 90.25 AZ 85
VS 6770.48
7150
SH(100%): med gy - med dk gy - dk gy, slty - sdy, rr smth ip, sbplty - sbblky, sft - mod fm, sl calc - non calc, occ grdg to sltst, occ off wht - gysh bn SS strgs, v f gr, NFSOC.
SH(100%): med gy - med dk gy - dk gy, slty - sdy, rr smth ip, sbplty - non calc, occ grdg to sltst, occ off wht - gysh bn SS strgs, v f gr, NF
7250
10000
10000
10000
10000
10000
Total (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
8
Mud Weight (ppg)
40
90
MW 10.1
VIS 63

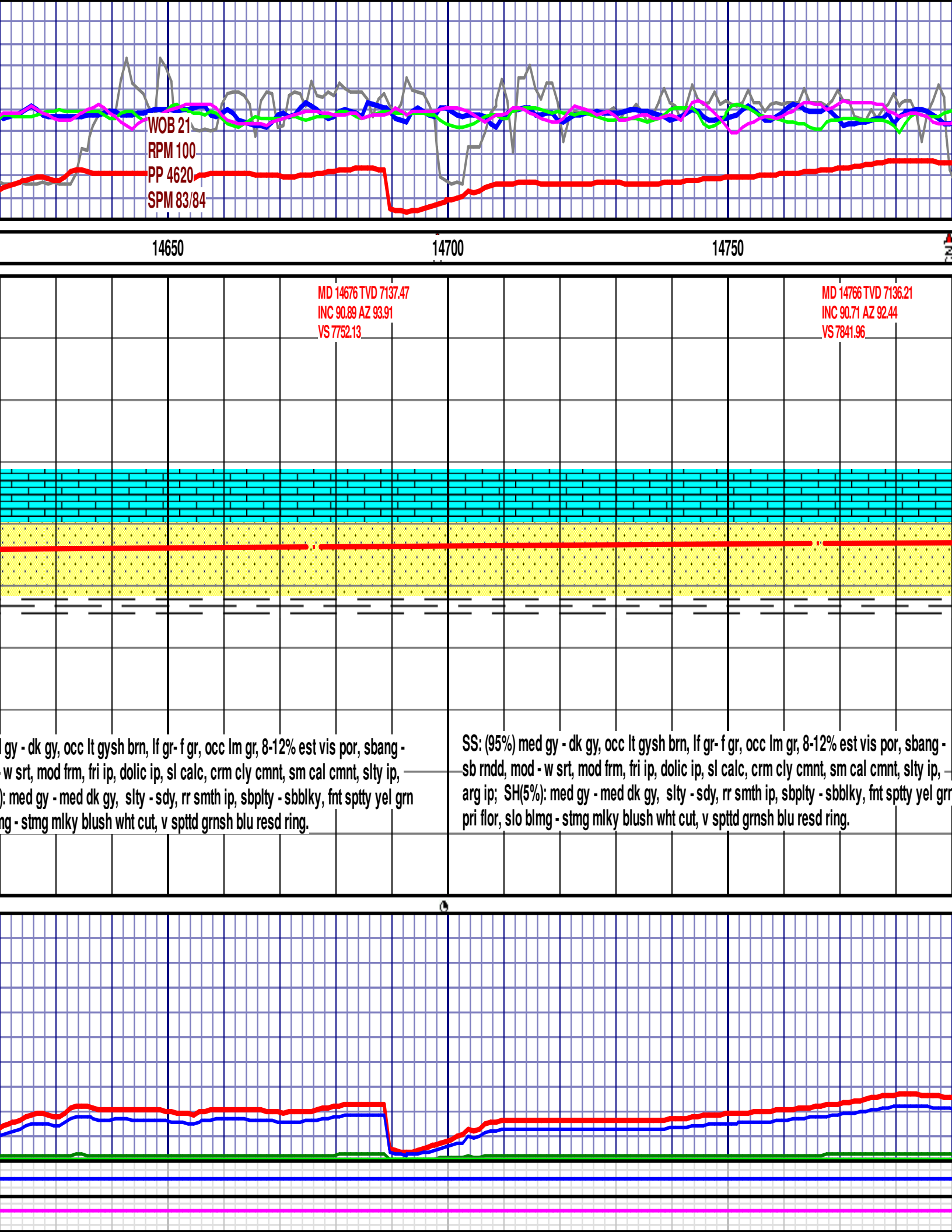

600
10000
200
ROP (FT/HR)
200
Total gas (units)
MWD GR (API)
100
GR AUX (API)
0
GR ADX (inch)
Res2MHz (ohm.m)
0
-20
WOB 15
RPM 102
PP 4308
SPM 86/85
13800
13850
13900
MD 13782 TVD 7158.76
INC 89.78 AZ 84.76
VS 6860.16
7050 TVD
MD 13871 TVD 7158.64
INC 90.37 AZ 88.17
VS 6949
7150
7250
- sbblky, sft - mod fm, sl calc
FSOC.
SH(100%): med gy - med dk gy - dk gy, slty - sdy, rr smth ip, sbplty - sbblky, sft - mod fm, sl calc
- non calc, occ grdg to sltst, occ off wht - gysh bn SS strgs, v f gr, NFSOC.
SH(100%): med gy - med dk gy - dk
calc - non calc, occ grdg to sltst, o
10000
10000
10000
10000
MW 10.1
VIS 61
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
40
90

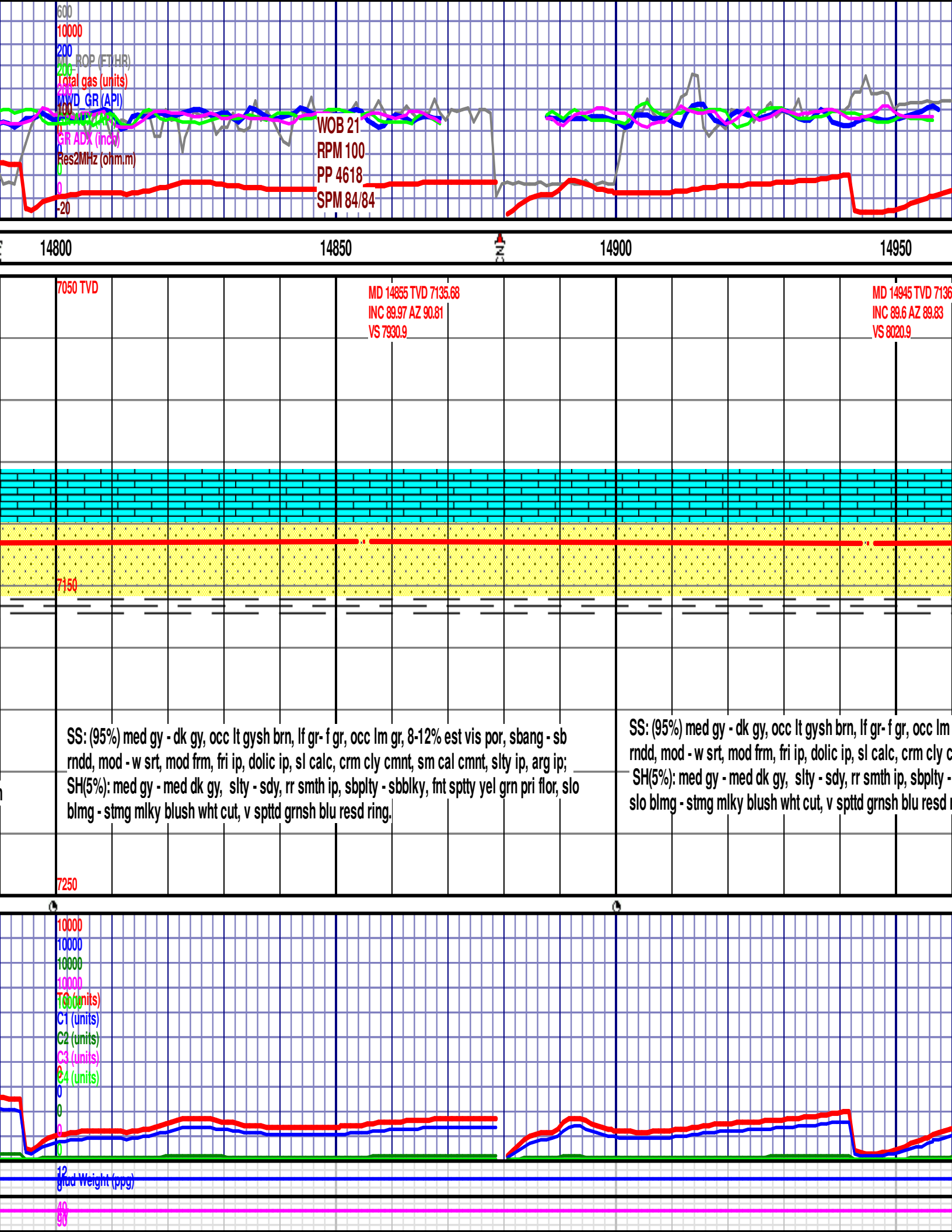

600
10000
200
ROP (FT/HR)
200
total gas (units)
200
WOB (KLB)
100
GR ADX (API)
GR ADX (inch)
Res2MHz (ohm.m)
0
0
-20
WOB 27
RPM 100
PP 4634
SPM 86/85
13950
CN
14000
14050
CN
14100
MD 13961 TVD 7155.98
INC 93.02 AZ 89.3
VS 7038.94
7050 TVD
MD 14050 TVD 7152.24
INC 91.79 AZ 91.8
VS 7127.84
7150
gy, slty - sdy, rr smth ip, sbplty - sbblky, sft - mod fm, sl
cc off wht - gysh bn SS strgs, v f gr, NFSOC.
SS: (70%) med gy - dk gy, occ lt gysh brn, occ dk gy, slty-lf gr- m f gr, rr med gr, sbang - sb rndd,
mod - w srt, mod frm, fri ip, sl calc, crm cly cmnt, dolic ip, sm cal cmnt, slty ip, arg ip; SH (30%):
med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - stmg
mlky blush wht cut, v sptd grnsh blu resd ring.
SS: (70
sbang
ip; SH
flor, slo
7250
10000
10000
10000
10000
10000
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
40
98

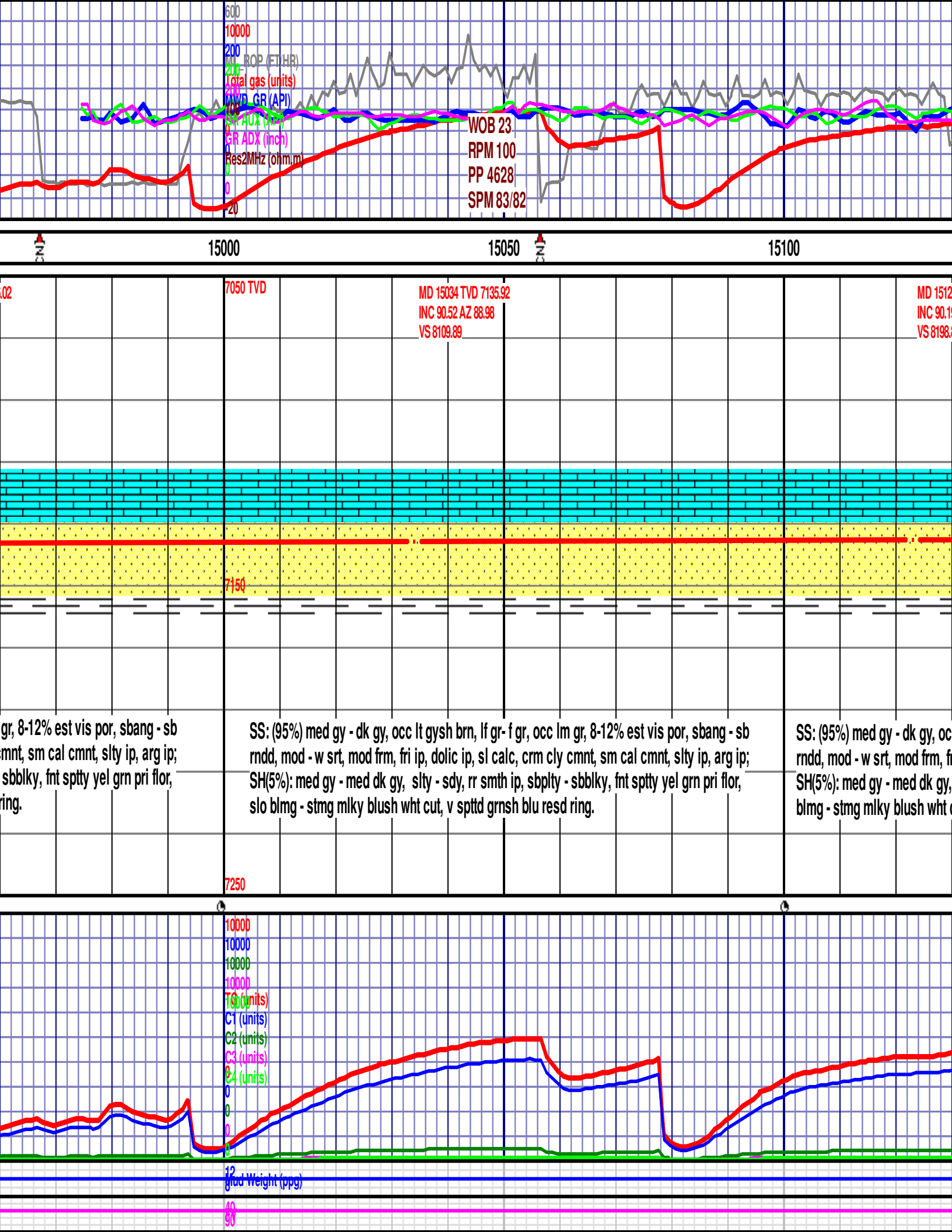

600
10000
200
ROP (FT/HR)
Total gas (units)
WWD_GR (API)
GR AUX (API)
GR ADX (inch)
Res2MHz (ohm.m)
-20
WOB 5
RPM 100
PP 4031
SPM 86/86
14150
14200
14250
MD 14140 TVD 7149.5
INC 91.66 AZ 93.3
VS 7217.66
7050 TVD
MD 14229 TVD 7146.39
INC 92.34 AZ 94.11
VS 7306.39
7150
%) med gy - dk gy, occ lt gysh brn, occ dk gy, slty-vlf gr- lm f gr, 6-8% est vis por,
- sb rndd, mod - w srt, mod frm, fri ip, sl calc, crm cly cmnt, sm cal cmnt, slty ip, arg
(30%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri
o blmg - stmg mlky blush wht cut, v sptted grnsh blu resd ring.
SS: (80%) med gy - dk gy, occ lt gysh brn, lvf gr- l f gr, 8-10% est vis por, sbang
w srt, mod frm, fri ip, sl calc, crm cly cmnt, sm cal cmnt, slty ip, arg ip; SH(20%
dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg -
wht cut, v sptted grnsh blu resd ring.
7250
10000
10000
10000
10000
10000
T0 (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
13
Mud Weight (ppg)
40
90

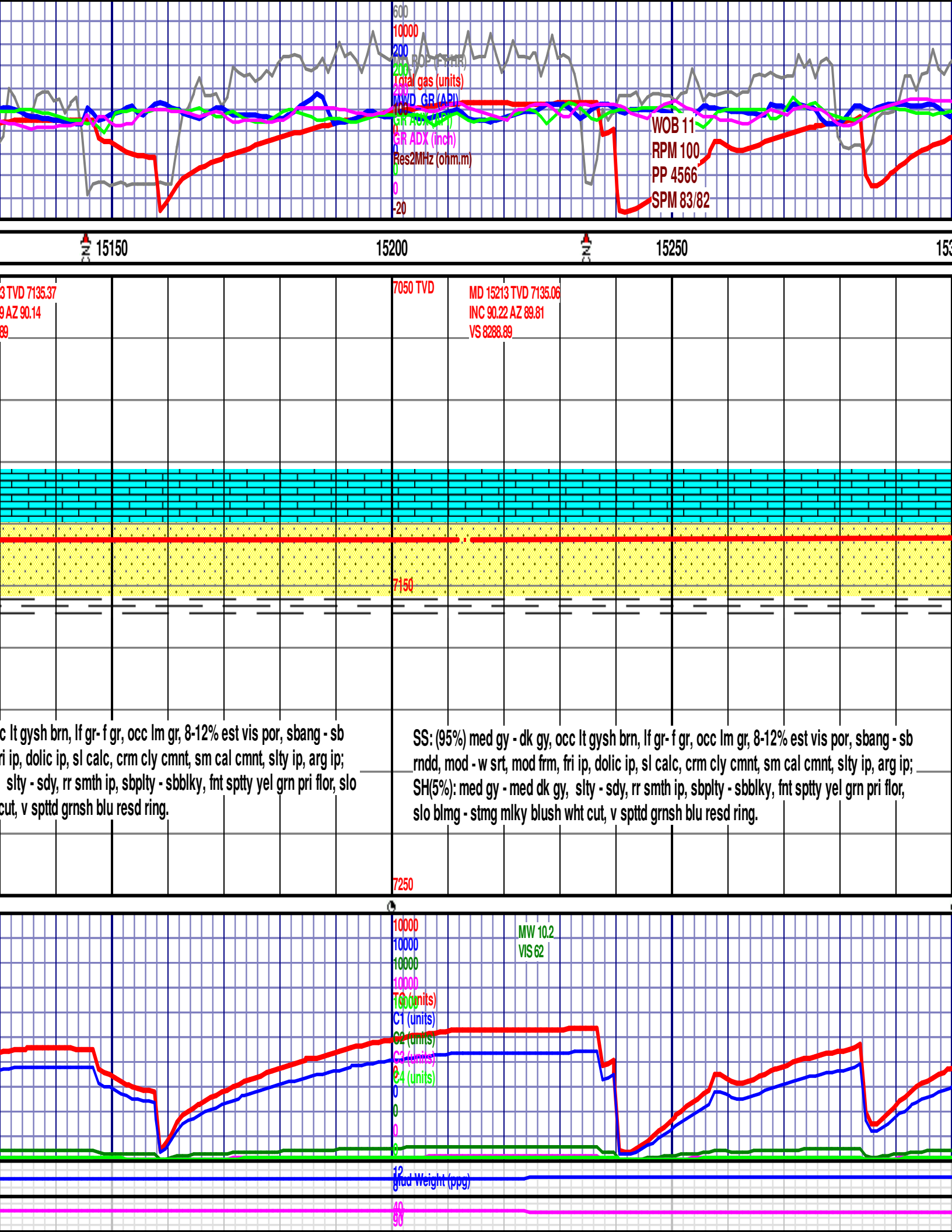

600
10000
200
ROP (FT/HR)
Total gas (units)
GR (API)
GR AUX (API)
GR ADX (inch)
Res2MHz (ohm.m)
0
-20
WOB
RPM
PP 4
SPM
14300
14350
14400
144
MD 14319 TVD 7143.17
INC 91.76 AZ 92.6
VS 7396.14
7050 TVD
MD 14408 TVD 7141.21
INC 90.77 AZ 91.73
VS 7485.04
7150
7250
g - sb rndd, mod -
%): med gy - med
stmg mlky blush
SS: (90%) med gy - dk gy, occ lt gysh brn, lvf gr- l f gr, 8-10% est vis por, sbang - sb rndd, mod - w srt, mod frm, fri ip, sl calc, crm cly cmnt, sm cal cmnt, slty ip, arg ip; SH(10%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - stmg mlky blush wht cut, v sptted grnsh blu resd ring.
SS: (95%) med gy - dk gy, occ lt gysh brn, lf gr- f
rndd, mod - w srt, mod frm, fri ip, dolic ip, sl calc
SH(5%): med gy - med dk gy, slty - sdy, rr smth i
blmg - stmg mlky blush wht cut, v sptted grnsh blu
10000
10000
10000
10000
10000
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
8
Mud Weight (ppg)
40
90

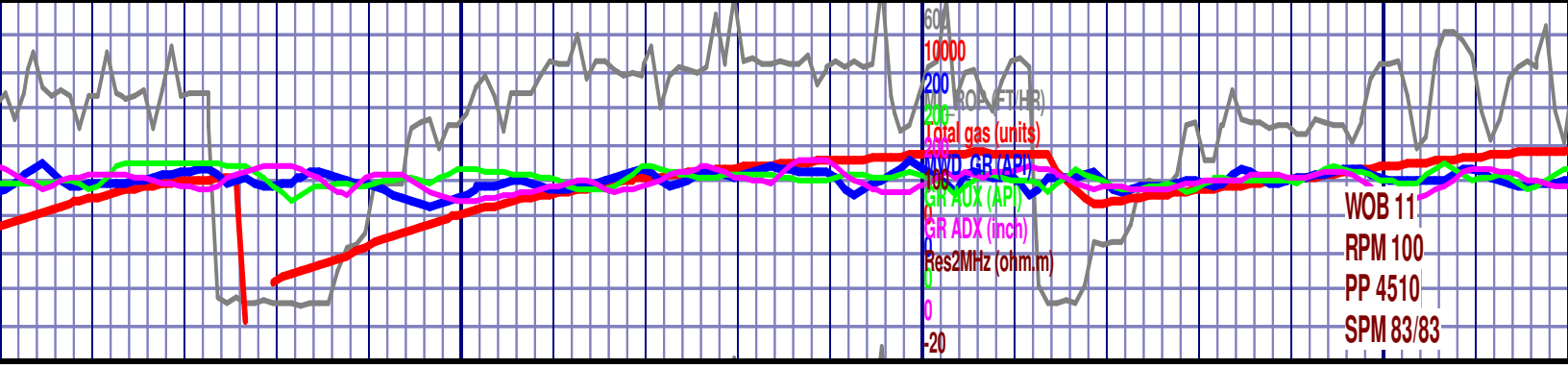

600
10000
200
ROP (FT/HR)
Total gas (units)
MWD GR (API)
GR AUX (API)
Res2MHz (ohm.m)
0
-20
3 25
100
680
85/85
450
14500
14550
14600
MD 14497 TVD 7140.04
INC 90.74 AZ 94.03
VS 7573.89
MD 14587 TVD 7138.8
INC 90.83 AZ 95.83
VS 7663.51
7150
7250
gr, occ lm gr, 8-12% est vis por, sbang - sb
, crm cly cmnt, sm cal cmnt, slty ip, arg ip;
p, sbplty - sbblky, fnt sptty yel grn pri flor, slo
u resd ring.
SS: (95%) med gy - dk gy, occ lt gysh brn, lf gr- f gr, occ lm gr, 8-12% est vis por, sbang - sb
rndd, mod - w srt, mod frm, fri ip, dolic ip, sl calc, crm cly cmnt, sm cal cmnt, slty ip, arg ip;
SH(5%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor,
slo blmg - stmg mlky blush wht cut, v sptttd grnsh blu resd ring.
SS: (95%) med
sb rndd, mod -
arg ip; SH(5%
pri flor, slo bln
10000
10000
10000
10000
MW 10.1
VIS 59
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
40
90

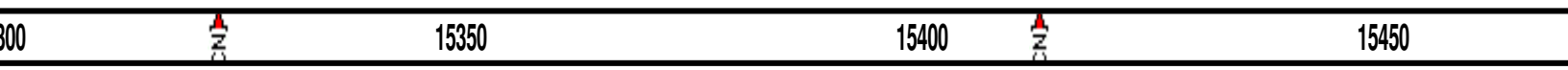

WOB 21
RPM 100
PP 4620
SPM 83/84
14650
14700
14750
MD 14676 TVD 7137.47
INC 90.89 AZ 93.91
VS 7752.13
MD 14766 TVD 7136.21
INC 90.71 AZ 92.44
VS 7841.96
l gy - dk gy, occ lt gysh brn, lf gr- f gr, occ lm gr, 8-12% est vis por, sbang -
w srt, mod frm, fri ip, dolic ip, sl calc, crm cly cmnt, sm cal cmnt, slty ip,
): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn
ng - stmg mlky blush wht cut, v sptd grnsh blu resd ring.
SS: (95%) med gy - dk gy, occ lt gysh brn, lf gr- f gr, occ lm gr, 8-12% est vis por, sbang -
sb rndd, mod - w srt, mod frm, fri ip, dolic ip, sl calc, crm cly cmnt, sm cal cmnt, slty ip,
arg ip; SH(5%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn
pri flor, slo blmg - stmg mlky blush wht cut, v sptd grnsh blu resd ring.

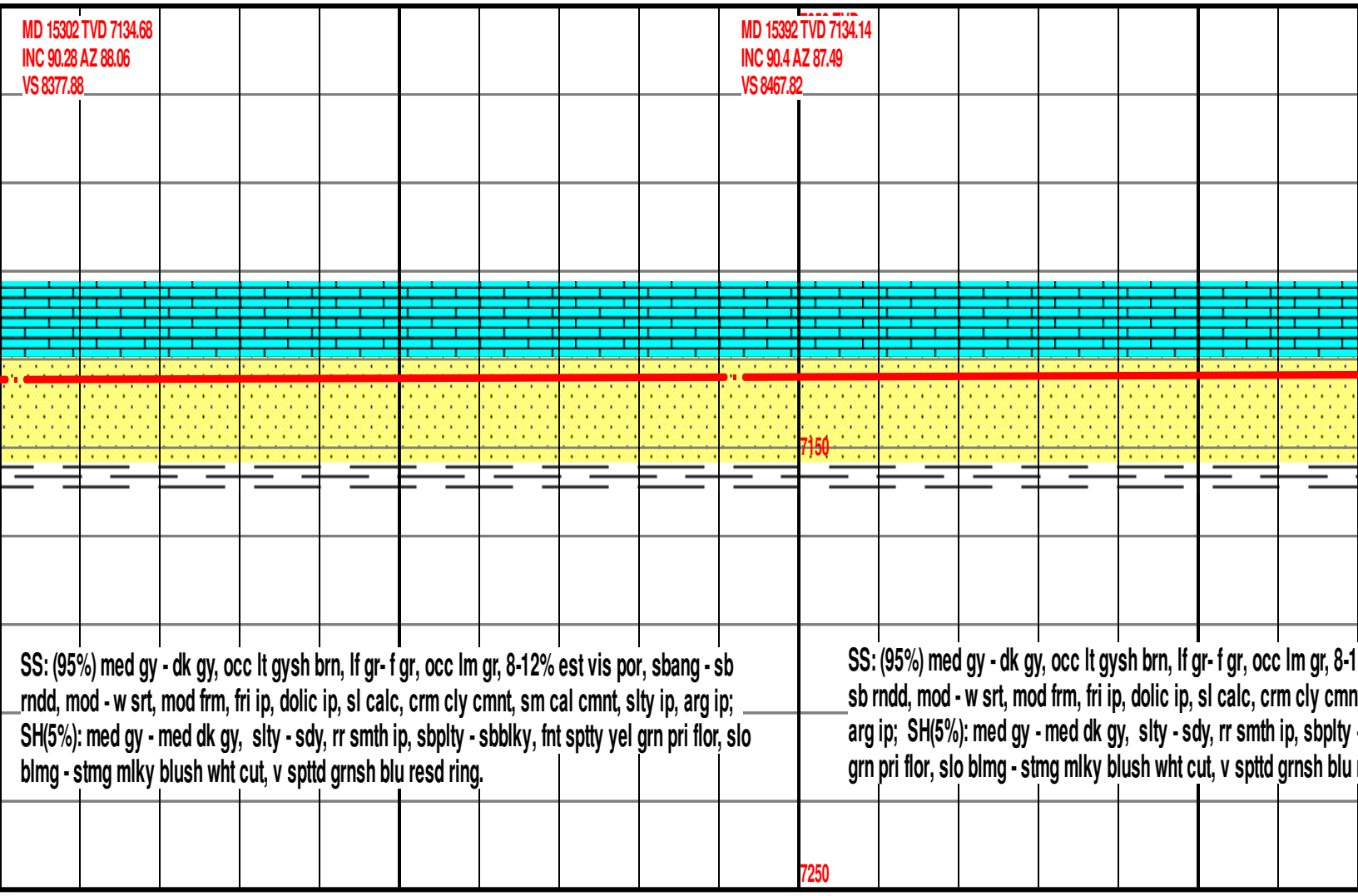

600
10000
200
ROP (FT/HR)
Total gas (units)
MWD_GR (API)
GR ADX (incid)
Res2MHz (ohm.m)
0
-20
WOB 21
RPM 100
PP 4618
SPM 84/84
14800
14850
14900
14950
7050 TVD
MD 14855 TVD 7135.68
INC 89.97 AZ 90.81
VS 7930.9
MD 14945 TVD 7136
INC 89.6 AZ 89.83
VS 8020.9
7150
SS: (95%) med gy - dk gy, occ lt gysh brn, lf gr- f gr, occ lm gr, 8-12% est vis por, sbang - sb rndd, mod - w srt, mod frm, fri ip, dolic ip, sl calc, crm cly cmnt, sm cal cmnt, slty ip, arg ip; SH(5%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - stmg mlky blush wht cut, v sptd grnsh blu resd ring.
SS: (95%) med gy - dk gy, occ lt gysh brn, lf gr- f gr, occ lm
rndd, mod - w srt, mod frm, fri ip, dolic ip, sl calc, crm cly c
SH(5%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty -
slo blmg - stmg mlky blush wht cut, v sptd grnsh blu resd
7250
10000
10000
10000
10000
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
8
40
90


600
10000
200
ROP (FT/HR)
200
Total gas (units)
MWD_GR (API)
GR ADX (inch)
Res2MHz (ohm.m)
0
0
20
WOB 23
RPM 100
PP 4628
SPM 83/82
15000
15050
15100
7050 TVD
MD 15034 TVD 7135.92
INC 90.52 AZ 88.98
VS 8109.89
7150
7250
gr, 8-12% est vis por, sbang - sb
mnt, sm cal cmnt, slty ip, arg ip;
sbblky, fnt sptty yel grn pri flor,
ring.
SS: (95%) med gy - dk gy, occ lt gysh brn, lf gr- f gr, occ lm gr, 8-12% est vis por, sbang - sb
rndd, mod - w srt, mod frm, fri ip, dolic ip, sl calc, crm cly cmnt, sm cal cmnt, slty ip, arg ip;
SH(5%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor,
slo blmg - stmg mlky blush wht cut, v sptted grnsh blu resd ring.
SS: (95%) med gy - dk gy, oc
rndd, mod - w srt, mod frm, f
SH(5%): med gy - med dk gy,
blmg - stmg mlky blush wht
10000
10000
10000
10000
10000
Total (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
40
90


600
10000
200
ROP (FT/HR)
Total gas (units)
RWD_GR (API)
GR ADX (API)
GR ADX (inch)
Res2MHz (ohm.m)
0
-20
WOB 11
RPM 100
PP 4566
SPM 83/82
15150
15200
15250
3 TVD 7135.37
9 AZ 90.14
89
7050 TVD
MD 15213 TVD 7135.06
INC 90.22 AZ 89.81
VS 8288.89
7150
c lt gysh brn, lf gr- f gr, occ lm gr, 8-12% est vis por, sbang - sb
ri ip, dolic ip, sl calc, crm cly cmnt, sm cal cmnt, slty ip, arg ip;
slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo
cut, v sptted grnsh blu resd ring.
SS: (95%) med gy - dk gy, occ lt gysh brn, lf gr- f gr, occ lm gr, 8-12% est vis por, sbang - sb
rndd, mod - w srt, mod frm, fri ip, dolic ip, sl calc, crm cly cmnt, sm cal cmnt, slty ip, arg ip;
SH(5%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor,
slo blmg - stmg mlky blush wht cut, v sptted grnsh blu resd ring.
7250
10000
10000
10000
10000
10000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
MW 10.2
VIS 62
12
Mud Weight (ppg)
40
90

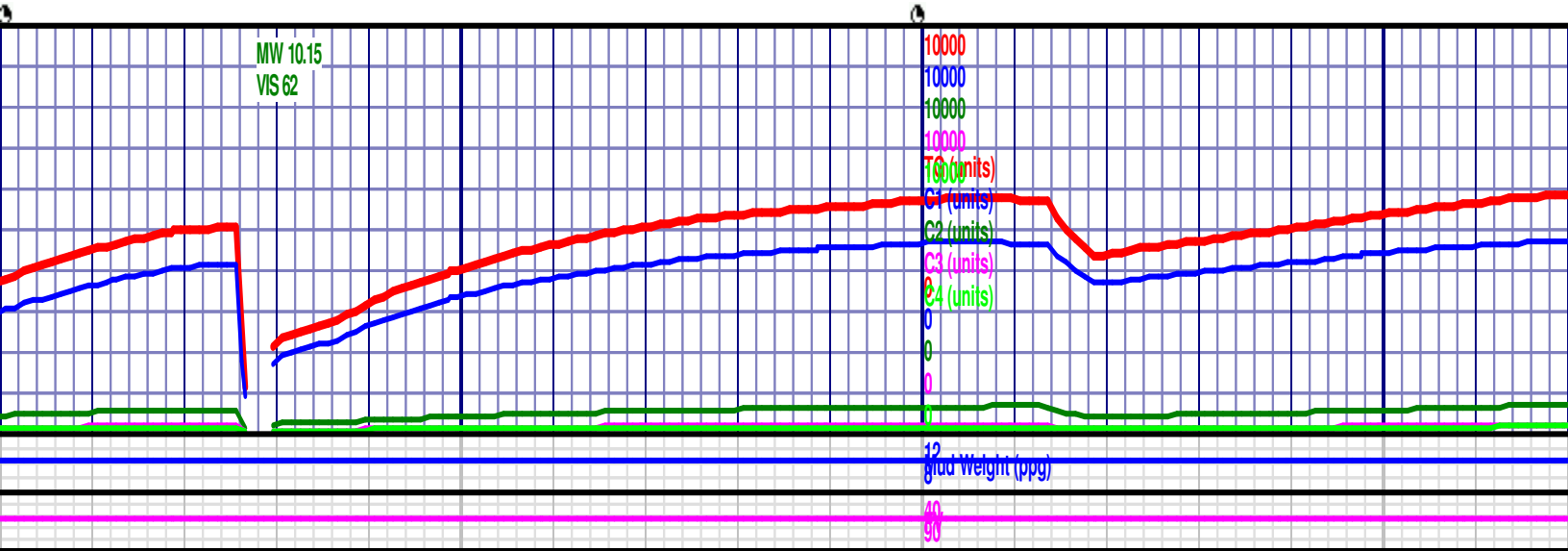


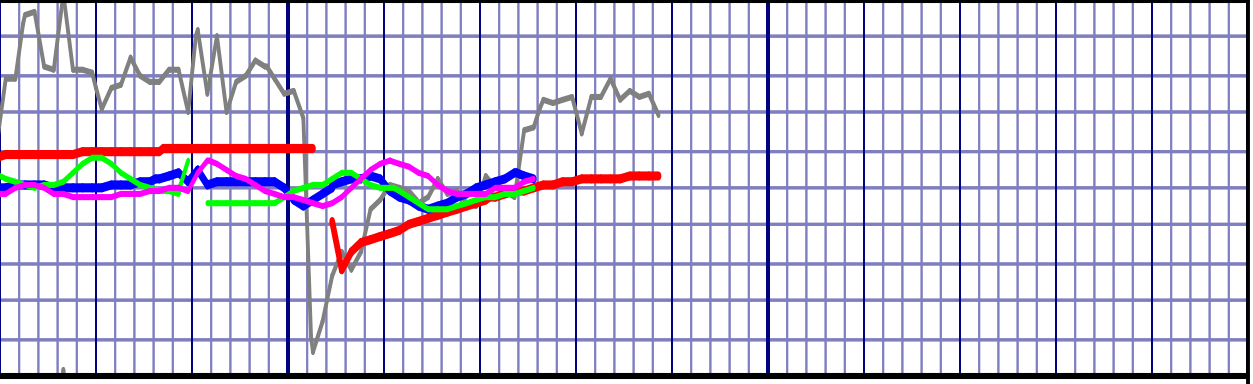




SS: (95%) med gy - dk gy, occ lt gysh brn, lf gr- f gr, occ lm gr, 8-12% est vis por, sbang - sb rndd, mod - w srt, mod frm, fri ip, dolic ip, sl calc, crm cly cmnt, sm cal cmnt, slty ip, arg ip; SH(5%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - stmg mlky blush wht cut, v sptd grnsh blu resd ring.

SS: (95%) med gy - dk gy, occ lt gysh brn, lf gr- f gr, occ lm gr, 8-1 sb rndd, mod - w srt, mod frm, fri ip, dolic ip, sl calc, crm cly cmn arg ip; SH(5%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty grn pri flor, slo blmg - stmg mlky blush wht cut, v sptd grnsh blu





15500 15550 15

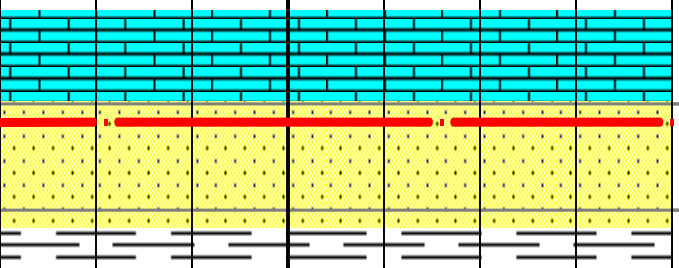
MD 15481 TVD 7133.62
INC 90.28 AZ 87.74
VS 8556.76

MD 15516 TVD 7133.38
INC 90.49 AZ 87.04
VS 8591.73

MD 15540 TVD 7133.43
INC 90.36

BIT #2, 8.5", HCCC, ATD505T, Jets 8x15, SN#: 5285221, Rotary Steerable Directional BHA, IN @ 1,851', ON 8/13/18, OUT ON 08/16/18 @ 15,540', DRILLED 13,689', IN 46.2 BIT HR.

TD @ 15,540' ON 08/16/18, 15:30HR.



2% est vis por, sbang -
t, sm cal cmnt, slty ip,
- sbblky, fnt sptty yel
resd ring.

SS: (95%) med gy - dk gy, occ lt gysh brn, lf gr- f gr, occ lm gr, 8-12% est vis por, sbang - sb rndd, mod - w srt, mod frm, fri ip, dolic ip, sl calc, crm cly cmnt, sm cal cmnt, slty ip, arg ip; SH(5%): med gy - med dk gy, slty - sdy, rr smth ip, sbplty - sbblky, fnt sptty yel grn pri flor, slo blmg - stmg mlky blush wht cut, v sptd grnsh blu resd ring.

Formation Top's

	MD	TVD	SSD
Sharon Springs	7350'	6820'	-2076'
Niobrara A Chalk	7400'	6857'	-2113'
Niobrara B Chalk	7606'	6995'	-2251'
Niobrara C Chalk	7742'	7070'	-2326'
Ft Hays	7870'	7132'	-2388'
Codell	7935'	7155'	-2411'
Target Heel	8079'	7176'	-2432'
Target Toe	15540'	7133'	-2389'

Thank You
Goolsby Brothers & Assoc.

MW 10.15
VIS 61