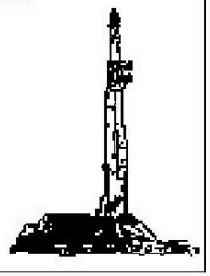
GOOLSBY BROTHERS
and associates, inc.

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

Geological Wellsite
Supervision

www.goolsbybrothers.com



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

Well Name:	**Falken 16C-9-L**		
API:	**051234512700**		
Location:	**NE/SE Section 11 T6N R66W Weld County, CO.**		
License Number:		**Region:**	**Wattenberg**
Spud Date:	**November 18, 2017**	**Drilling Completed:**	**November 24, 2017**
Surface Coordinates:	**1784'FSL & 276'FEL NE/SE Sec. 11 T6N R66W**		
	Lat/Long: 40.500468N / 104.735949W		
Bottom Hole Coordinates:	**Planned: 761'FSL & 300'FEL SE/SE, SEC.9 T6N R66W**		
	Projected: 773'FSL & 442' FEL SE/SE, SEC.9 T6N R66W		
Ground Elevation (ft):	**4,810'**	**K.B. Elevation (ft):**	**4,835'**
Logged Interval (ft):	**6,750'** **To: 19,093'**	**Total Depth (ft):**	**19,093' DMTD**
Formation:	**Codell SS**		
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: **Dallan Gardner, Blake Stacey & Tekabe Gedamu**
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 19,059' MD

Casing

9 5/8" Surface Casing pre set @ 1,800' MD.
5 1/2" Production Liner run on 11/25/2017 to 19,076' MD.

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

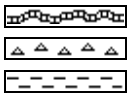
3) Mud Comapny : Reliable Drilling Fluids
Engineer: Wally Yates, Scott Allen

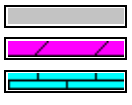
4) Directional Drilling: Baker Hughes
Drillers: Ryan Kielian, Aaron Herskind
MWD: Garrett Gedsen, Baker Remote Field Operations.

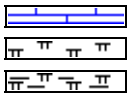
5) Gas Equipment: Pason Gas Analyzer (Spectrometer)

6) Wellsite Geologist: Blake Stacey, Dallan Gardner, and Tekabe Gedamu

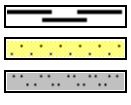
ROCK TYPES


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

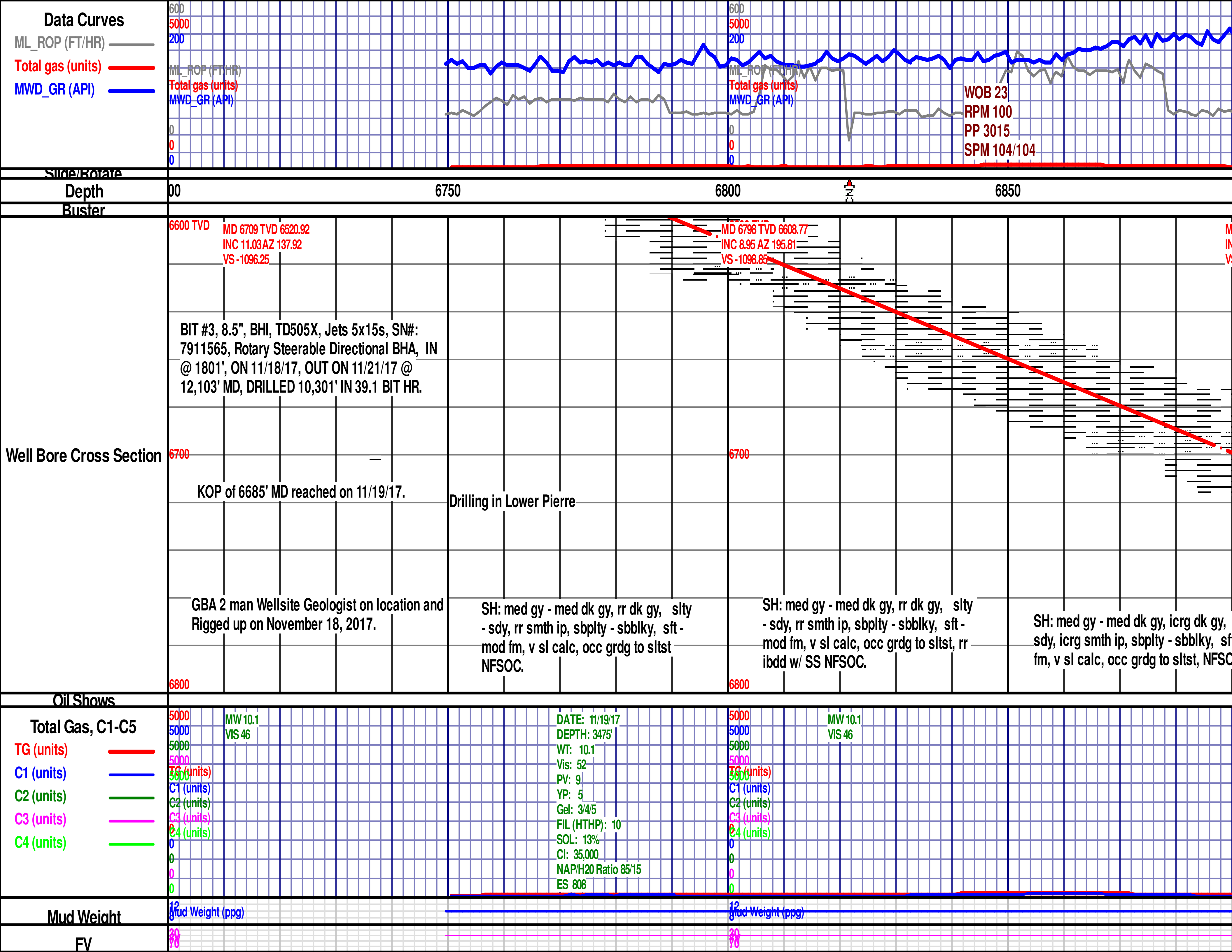
- Earthy
- Fenest
- Fracture
- Inter
- Moldic
- Organic
- Pinpoint
- Vuggy

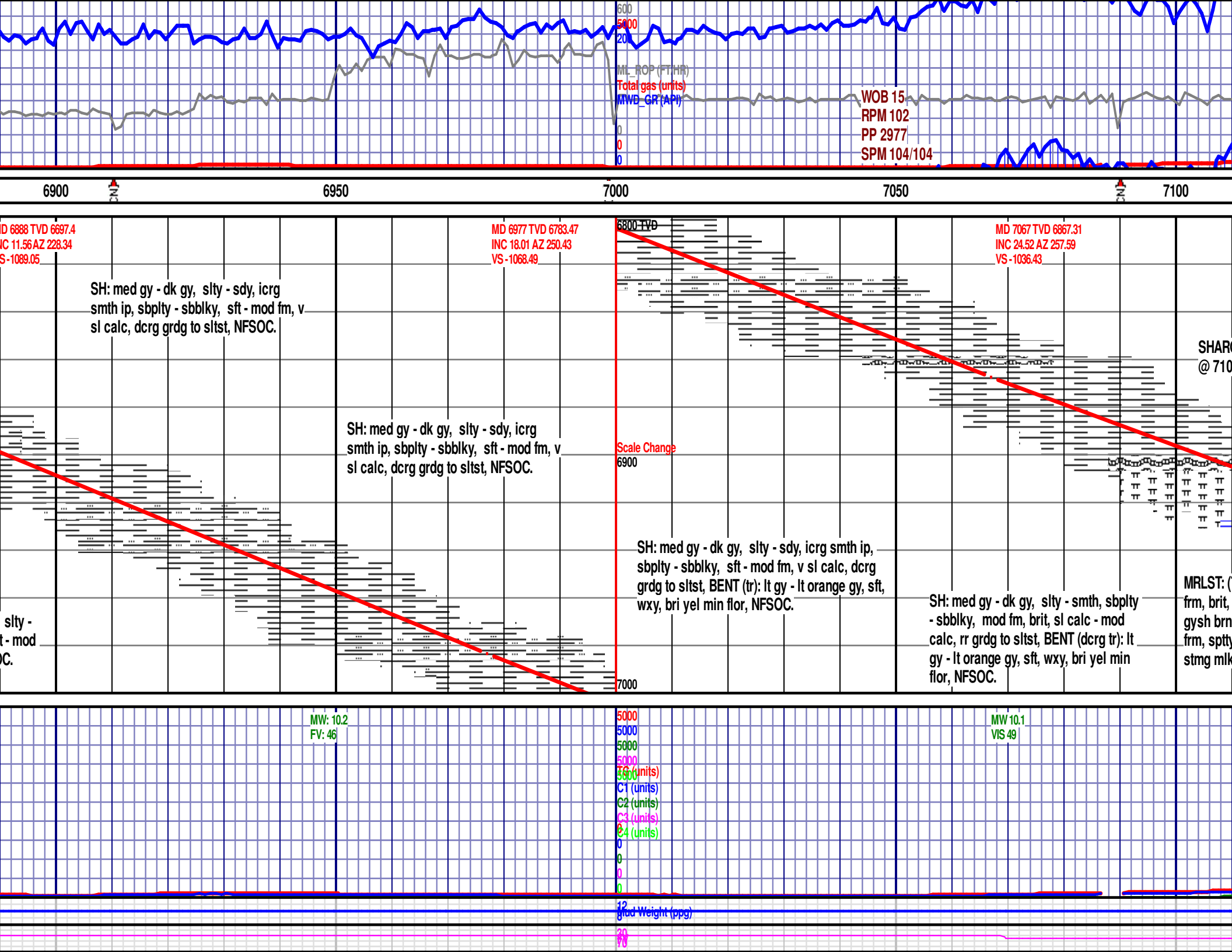
ROUNDING

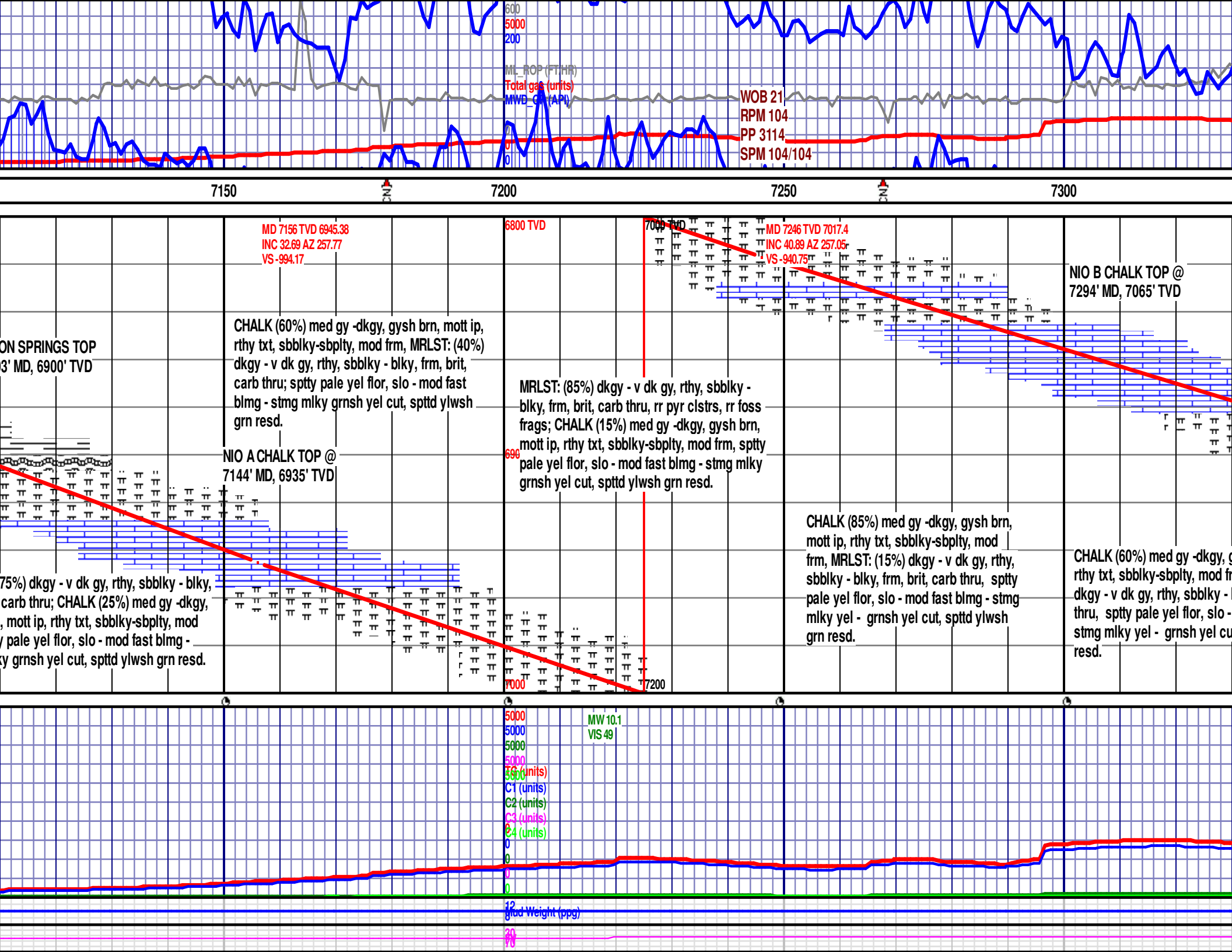
- Rounded
- Subrnd
- Subang
- Angular

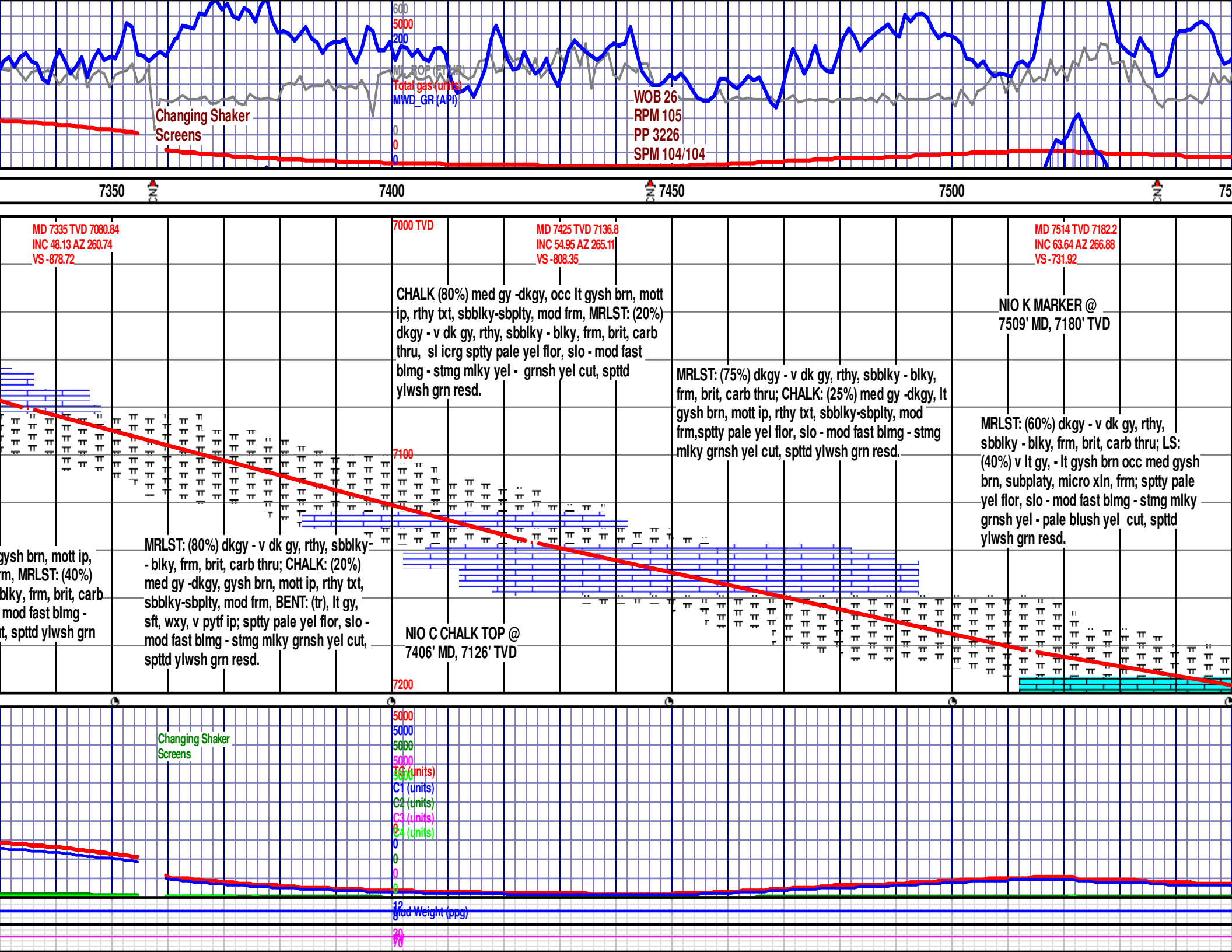
SORTING

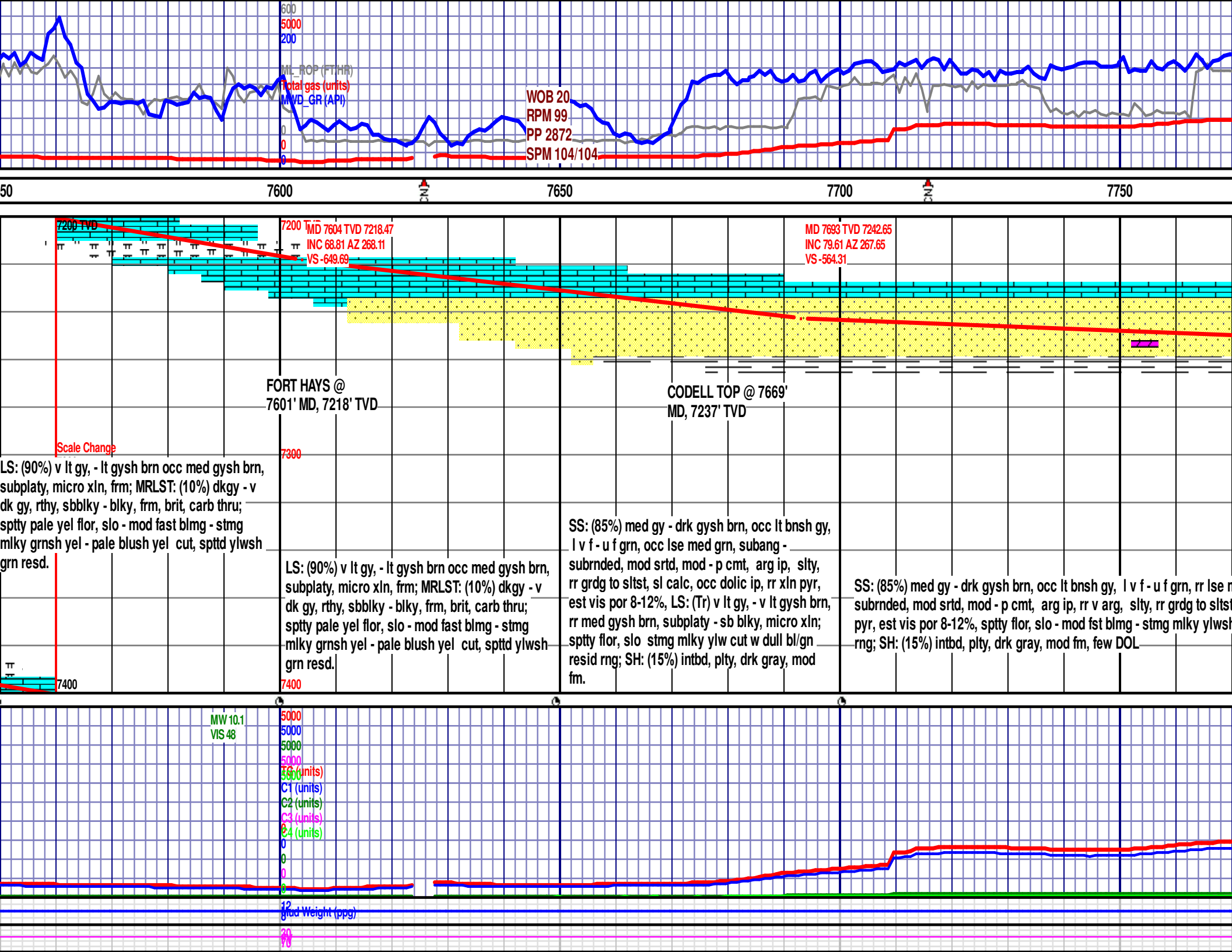
- Well
- Moderate
- Poor

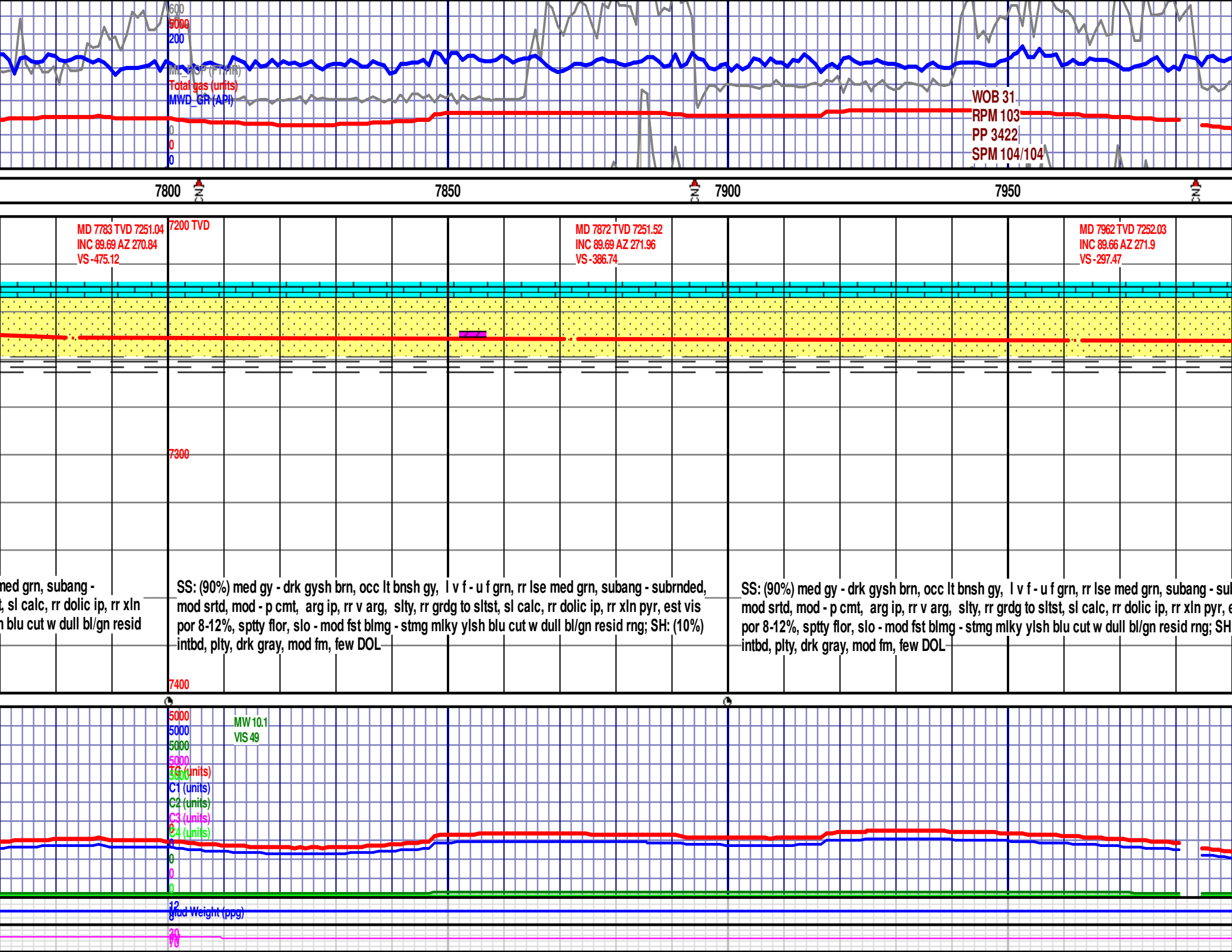

Data Curves
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 23
RPM 100
PP 3015
SPM 104/104
Slide/Rotate
Depth
00
6750
6800
6850
Buster
Well Bore Cross Section
6600 TVD
MD 6709 TVD 6520.92
INC 11.03 AZ 137.92
VS -1096.25
MD 6798 TVD 6608.77
INC 8.95 AZ 195.81
VS -1098.85
BIT #3, 8.5", BHI, TD505X, Jets 5x15s, SN#: 7911565, Rotary Steerable Directional BHA, IN @ 1801', ON 11/18/17, OUT ON 11/21/17 @ 12,103' MD, DRILLED 10,301' IN 39.1 BIT HR.
6700
KOP of 6685' MD reached on 11/19/17.
Drilling in Lower Pierre
GBA 2 man Wellsite Geologist on location and Rigged up on November 18, 2017.
SH: med gy - med dk gy, rr dk gy, slty - sdy, rr smth ip, sbplty - sbblky, sft - mod fm, v sl calc, occ grdg to sltst NFSOC.
SH: med gy - med dk gy, rr dk gy, slty - sdy, rr smth ip, sbplty - sbblky, sft - mod fm, v sl calc, occ grdg to sltst, rr ibdd w/ SS NFSOC.
SH: med gy - med dk gy, icrg dk gy, sdy, icrg smth ip, sbplty - sbblky, sf fm, v sl calc, occ grdg to sltst, NFSOC
6800
Oil Shows
Total Gas, C1-C5
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
5000
MW 10.1
VIS 46
DATE: 11/19/17
DEPTH: 3475'
WT: 10.1
Vis: 52
PV: 9
YP: 5
Gel: 3/4/5
FIL (HTHP): 10
SOL: 13%
Cl: 35,000
NAP/H20 Ratio 85/15
ES 808
MW 10.1
VIS 46
Mud Weight
12
Mud Weight (ppg)
8
FV
30
70

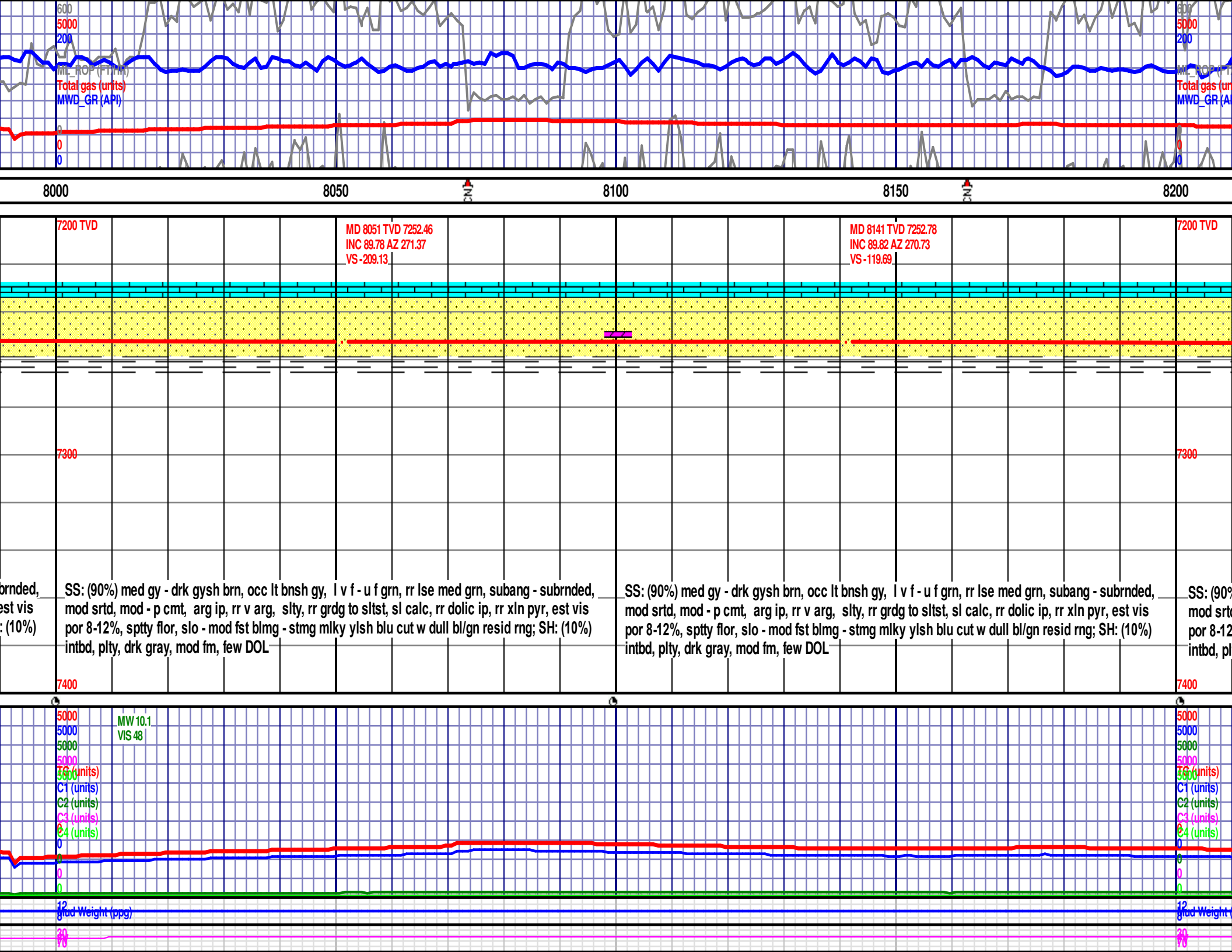

600
5000
200
MIL_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 15
RPM 102
PP 2977
SPM 104/104
6900
6950
7000
7050
7100
D 6888 TVD 6697.4
NC 11.56 AZ 228.34
S -1089.05
SH: med gy - dk gy, slty - sdy, icrg smth ip, sbplty - sbblky, sft - mod fm, v sl calc, dcrg grdg to sltst, NFSOC.
MD 6977 TVD 6783.47
INC 18.01 AZ 250.43
VS -1068.49
SH: med gy - dk gy, slty - sdy, icrg smth ip, sbplty - sbblky, sft - mod fm, v sl calc, dcrg grdg to sltst, NFSOC.
6800 TVD
Scale Change
6900
7000
SH: med gy - dk gy, slty - sdy, icrg smth ip, sbplty - sbblky, sft - mod fm, v sl calc, dcrg grdg to sltst, BENT (tr): lt gy - lt orange gy, sft, wxy, bri yel min flor, NFSOC.
MD 7067 TVD 6867.31
INC 24.52 AZ 257.59
VS -1036.43
SH: med gy - dk gy, slty - smth, sbplty - sbblky, mod fm, brit, sl calc - mod calc, rr grdg to sltst, BENT (dcrg tr): lt gy - lt orange gy, sft, wxy, bri yel min flor, NFSOC.
SHAR
@ 710
MRLST: (
frm, brit,
gysh brn
frm, sptty
stmg mlk
slty -
t - mod
C.
MW: 10.2
FV: 46
5000
5000
5000
5000
3600 (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
MW 10.1
VIS 49
12
Mud Weight (ppg)
30

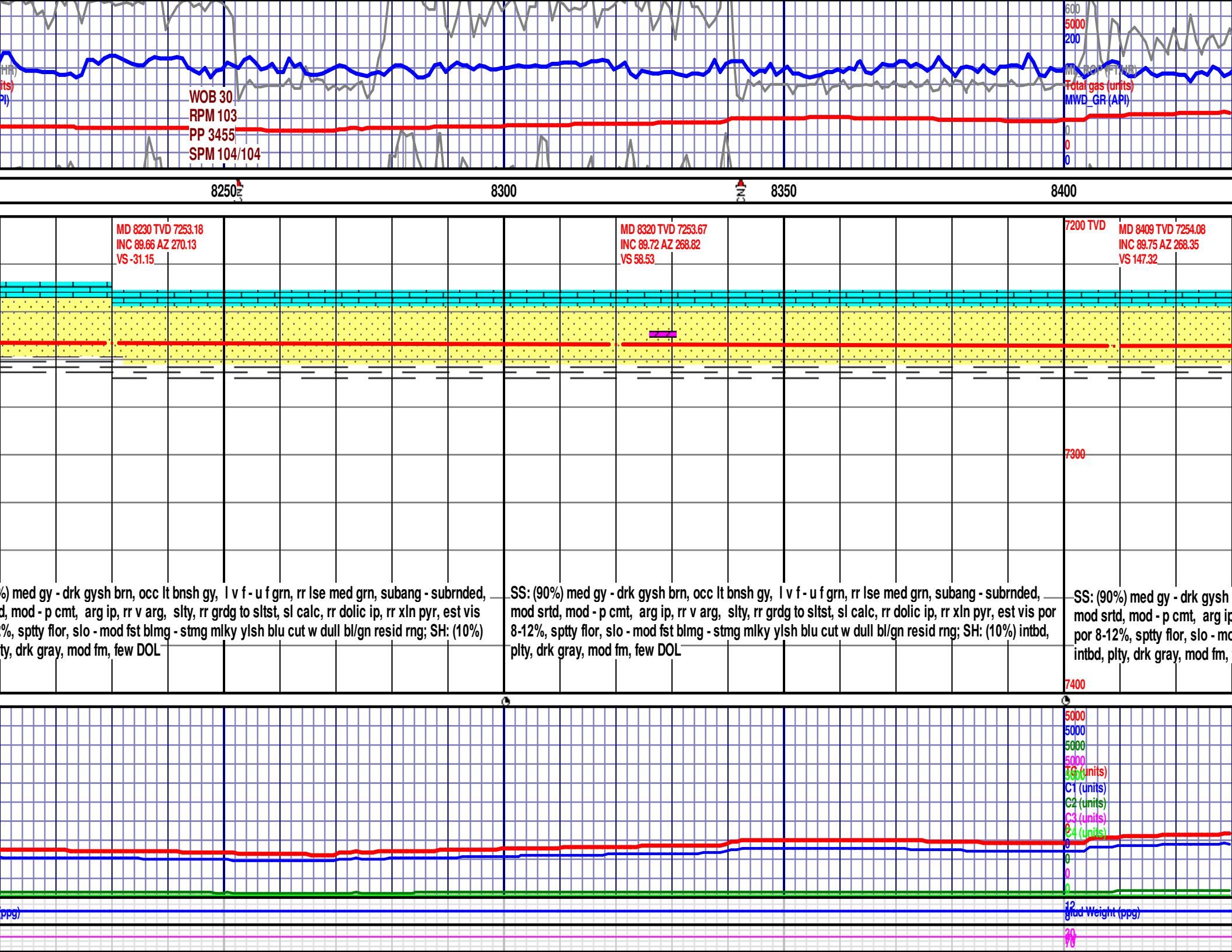

600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
WOB 21
RPM 104
PP 3114
SPM 104/104
7150
CN
7200
7250
CN
7300
MD 7156 TVD 6945.38
INC 32.69 AZ 257.77
VS -994.17
6800 TVD
7000 TVD
MD 7246 TVD 7017.4
INC 40.89 AZ 257.05
VS -940.75
NIO B CHALK TOP @
7294' MD, 7065' TVD
ON SPRINGS TOP
3' MD, 6900' TVD
CHALK (60%) med gy -dkgy, gysh brn, mott ip, rthy txt, sbblky-sbplty, mod frm, MRLST: (40%) dkgy - v dk gy, rthy, sbblky - blky, frm, brit, carb thru; sptty pale yel flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
NIO A CHALK TOP @
7144' MD, 6935' TVD
MRLST: (85%) dkgy - v dk gy, rthy, sbblky - blky, frm, brit, carb thru, rr pyr clstrs, rr foss frags; CHALK (15%) med gy -dkgy, gysh brn, mott ip, rthy txt, sbblky-sbplty, mod frm, sptty pale yel flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd.
690
7000
7200
75%) dkgy - v dk gy, rthy, sbblky - blky, carb thru; CHALK (25%) med gy -dkgy, , mott ip, rthy txt, sbblky-sbplty, mod pale yel flor, slo - mod fast blmg - ky grnsh yel cut, spttd ylwsh grn resd.
CHALK (85%) med gy -dkgy, gysh brn, mott ip, rthy txt, sbblky-sbplty, mod frm, MRLST: (15%) dkgy - v dk gy, rthy, sbblky - blky, frm, brit, carb thru, sptty pale yel flor, slo - mod fast blmg - stmg mlky yel - grnsh yel cut, spttd ylwsh grn resd.
CHALK (60%) med gy -dkgy, rthy txt, sbblky-sbplty, mod fr dkgy - v dk gy, rthy, sbblky - thru, sptty pale yel flor, slo - stmg mlky yel - grnsh yel cu resd.
5000
5000
5000
5000
5000
MW 10.1
VIS 49
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
20
70

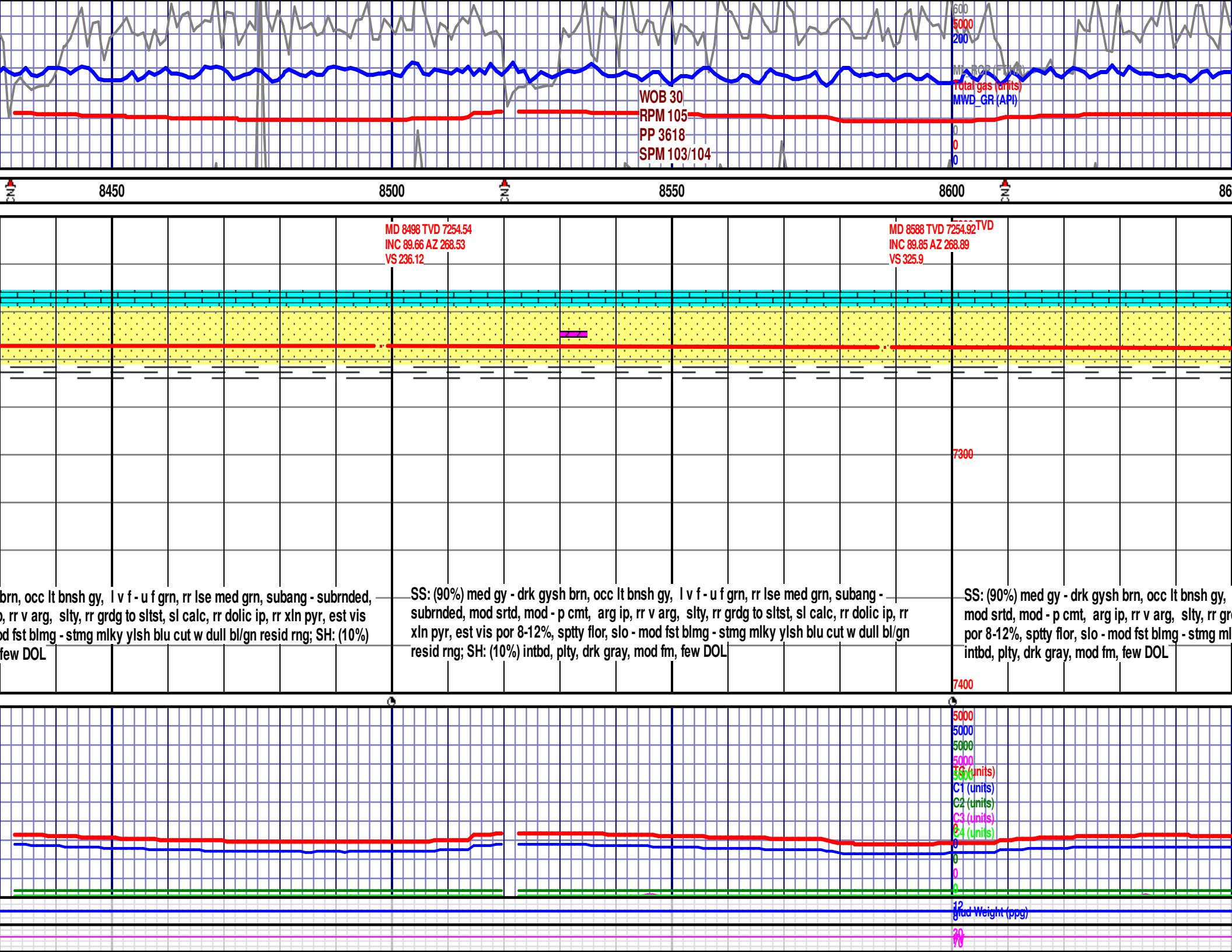

600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
Changing Shaker Screens
WOB 26
RPM 105
PP 3226
SPM 104/104
7350
7400
7450
7500
MD 7335 TVD 7080.84
INC 48.13 AZ 260.74
VS -878.72
7000 TVD
MD 7425 TVD 7136.8
INC 54.95 AZ 265.11
VS -808.35
MD 7514 TVD 7182.2
INC 63.64 AZ 266.88
VS -731.92
CHALK (80%) med gy -dkgy, occ lt gysh brn, mott ip, rthy txt, sbblky-sbplty, mod frm, MRLST: (20%) dkgy - v dk gy, rthy, sbblky - blky, frm, brit, carb thru, sl icrg sptty pale yel flor, slo - mod fast blmg - stmg mlky yel - grnsh yel cut, sptd ylwsh grn resd.
NIO K MARKER @ 7509' MD, 7180' TVD
MRLST: (75%) dkgy - v dk gy, rthy, sbblky - blky, frm, brit, carb thru; CHALK: (25%) med gy -dkgy, lt gysh brn, mott ip, rthy txt, sbblky-sbplty, mod frm,sptty pale yel flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
MRLST: (60%) dkgy - v dk gy, rthy, sbblky - blky, frm, brit, carb thru; LS: (40%) v lt gy, - lt gysh brn occ med gysh brn, subplaty, micro xln, frm; sptty pale yel flor, slo - mod fast blmg - stmg mlky grnsh yel - pale blush yel cut, sptd ylwsh grn resd.
7100
7200
gysh brn, mott ip,
rm, MRLST: (40%)
blky, frm, brit, carb
mod fast blmg -
t, sptd ylwsh grn
MRLST: (80%) dkgy - v dk gy, rthy, sbblky- - blky, frm, brit, carb thru; CHALK: (20%) med gy -dkgy, gysh brn, mott ip, rthy txt, sbblky-sbplty, mod frm, BENT: (tr), lt gy, sft, wxy, v pytf ip; sptty pale yel flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd.
NIO C CHALK TOP @ 7406' MD, 7126' TVD
Changing Shaker Screens
5000
5000
5000
5000
5000
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
30
70

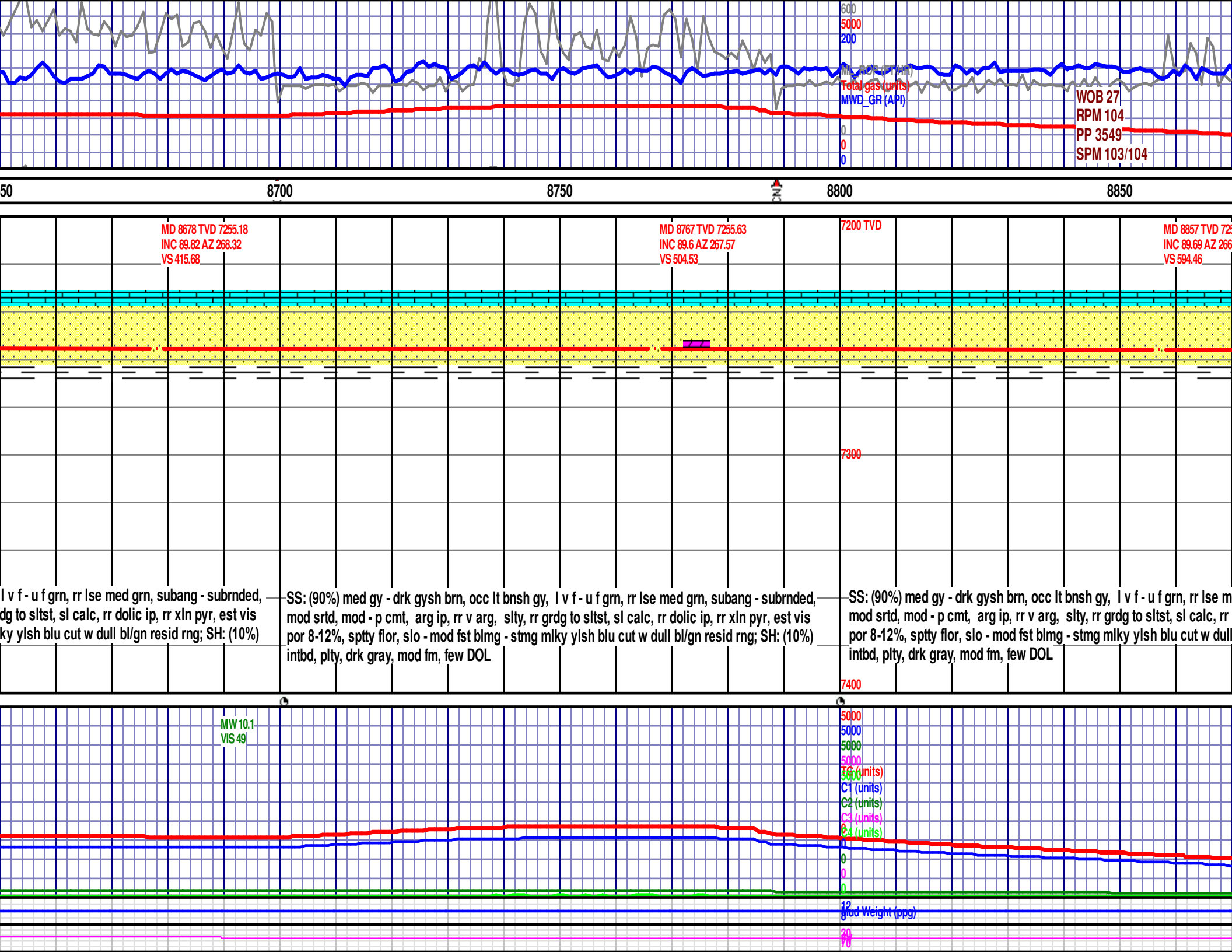

600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 20
RPM 99
PP 2872
SPM 104/104
50
7600
7650
7700
7750
7200 TVD
MD 7604 TVD 7218.47
INC 68.81 AZ 268.11
VS -649.69
MD 7693 TVD 7242.65
INC 79.61 AZ 267.65
VS -564.31
FORT HAYS @
7601' MD, 7218' TVD
CODELL TOP @ 7669'
MD, 7237' TVD
Scale Change
7300
7400
LS: (90%) v lt gy, - lt gysh brn occ med gysh brn, subplaty, micro xln, frm; MRLST: (10%) dkgy - v dk gy, rthy, sbblky - blky, frm, brit, carb thru; sptty pale yel flor, slo - mod fast blmg - stmg mlky grnsh yel - pale blush yel cut, sptd ylwsh grn resd.
LS: (90%) v lt gy, - lt gysh brn occ med gysh brn, subplaty, micro xln, frm; MRLST: (10%) dkgy - v dk gy, rthy, sbblky - blky, frm, brit, carb thru; sptty pale yel flor, slo - mod fast blmg - stmg mlky grnsh yel - pale blush yel cut, sptd ylwsh grn resd.
SS: (85%) med gy - drk gysh brn, occ lt bnsh gy, l v f - u f grn, occ lse med grn, subang - subrnded, mod srtd, mod - p cmt, arg ip, slty, rr grdg to sltst, sl calc, occ dolic ip, rr xln pyr, est vis por 8-12%, LS: (Tr) v lt gy, - v lt gysh brn, rr med gysh brn, subplaty - sb blky, micro xln; sptty flor, slo stmg mlky ylw cut w dull bl/gn resid rng; SH: (15%) intbd, plty, drk gray, mod fm.
SS: (85%) med gy - drk gysh brn, occ lt bnsh gy, l v f - u f grn, rr lse r
subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst
pyr, est vis por 8-12%, sptty flor, slo - mod fst blmg - stmg mlky ylwsh
rng; SH: (15%) intbd, plty, drk gray, mod fm, few DOL
MW 10.1
VIS 48
5000
5000
5000
5000
3600
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
30
70

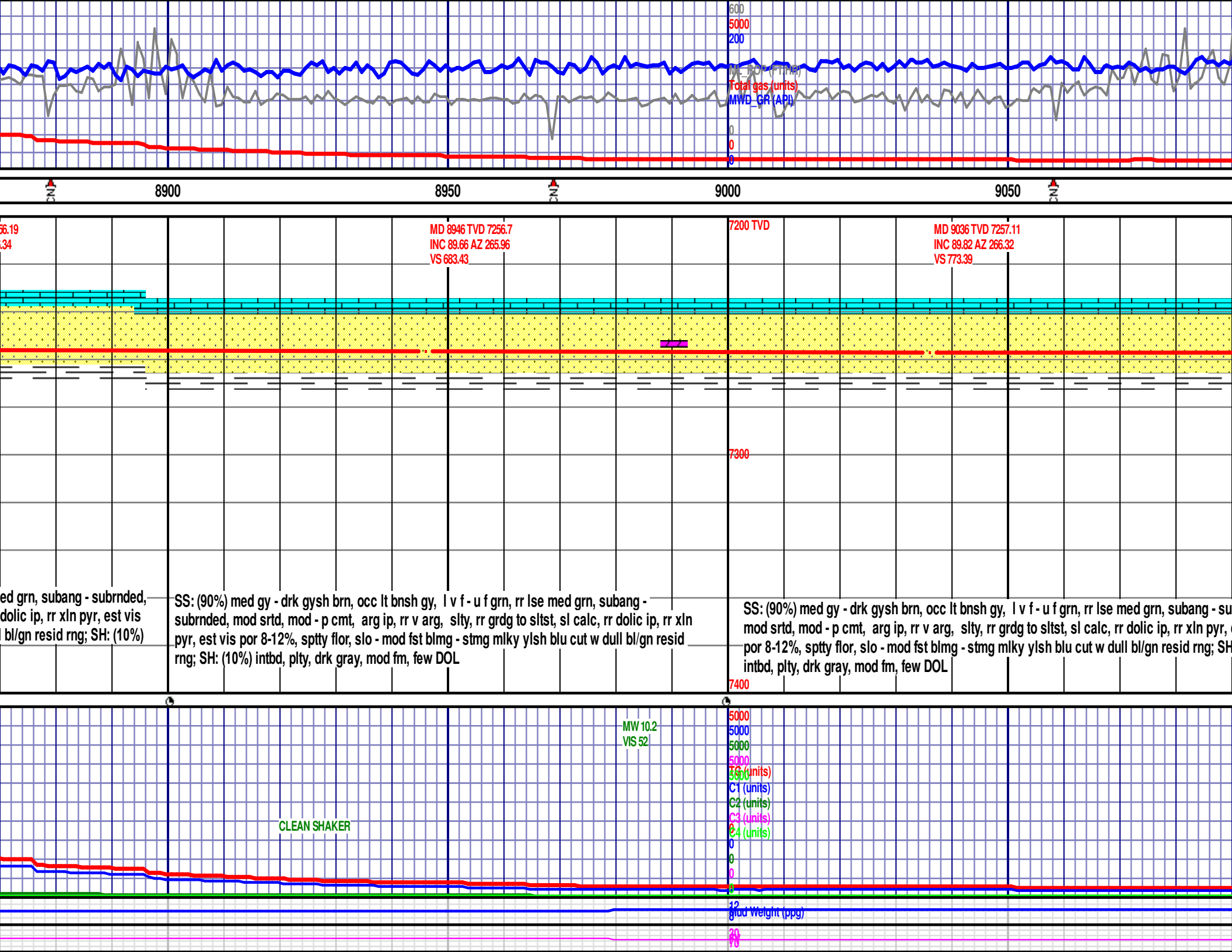

600
5000
200
Total gas (units)
MWD_GR (API)
0
0
0
WOB 31
RPM 103
PP 3422
SPM 104/104
7800
7850
7900
7950
MD 7783 TVD 7251.04
INC 89.69 AZ 270.84
VS -475.12
7200 TVD
MD 7872 TVD 7251.52
INC 89.69 AZ 271.96
VS -386.74
MD 7962 TVD 7252.03
INC 89.66 AZ 271.9
VS -297.47
7300
med grn, subang -
t, sl calc, rr dolic ip, rr xln
h blu cut w dull bl/gn resid
SS: (90%) med gy - drk gysh brn, occ lt bnsh gy, l v f - u f grn, rr lse med grn, subang - subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, rr dolic ip, rr xln pyr, est vis por 8-12%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (10%) intbd, plty, drk gray, mod fm, few DOL
SS: (90%) med gy - drk gysh brn, occ lt bnsh gy, l v f - u f grn, rr lse med grn, subang - sul
mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, rr dolic ip, rr xln pyr, e
por 8-12%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH
intbd, plty, drk gray, mod fm, few DOL
7400
5000
5000
5000
5000
5000
MW 10.1
VIS 49
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
20
70

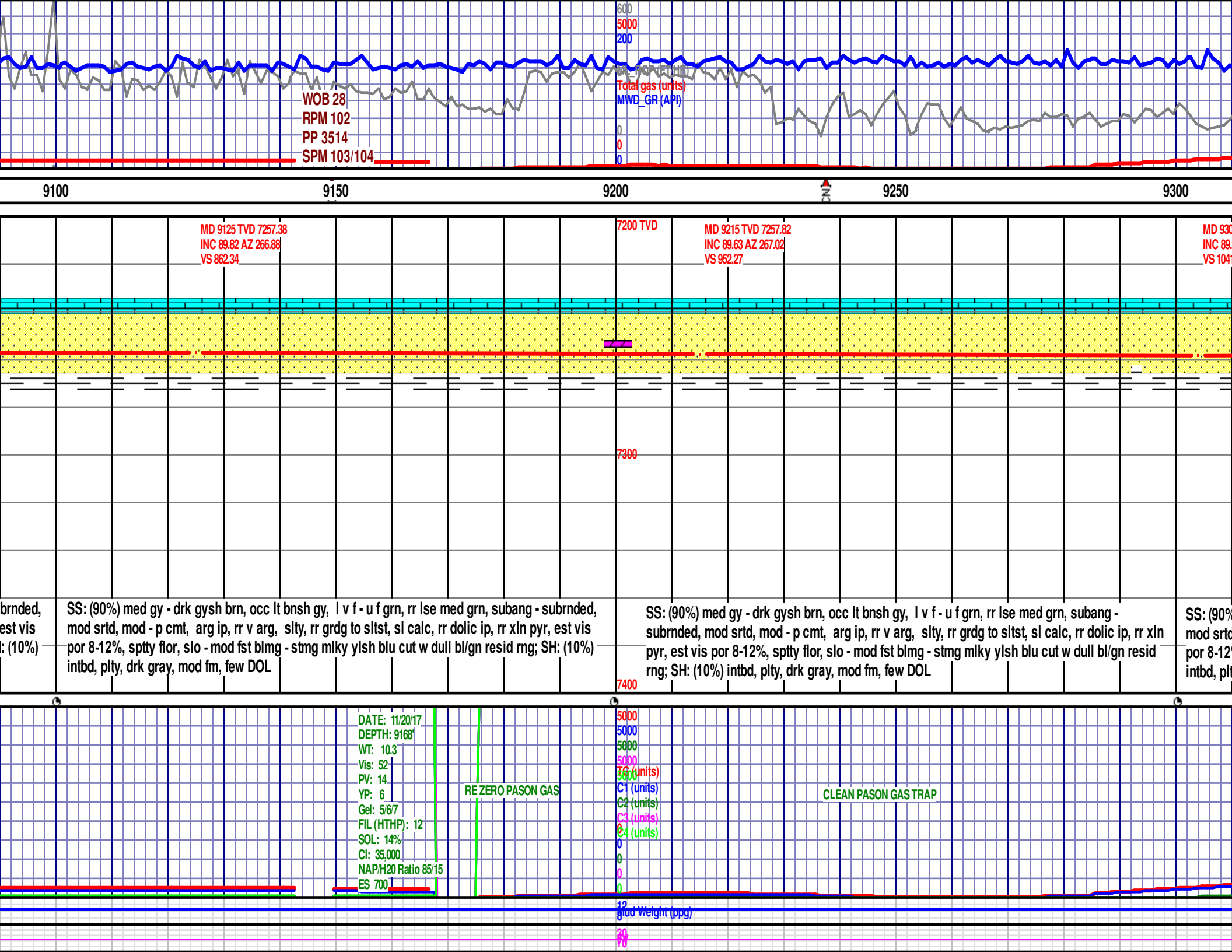

600
5000
200
ME_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
8000
8050
8100
8150
8200
7200 TVD
MD 8051 TVD 7252.46
INC 89.78 AZ 271.37
VS -209.13
MD 8141 TVD 7252.78
INC 89.82 AZ 270.73
VS -119.69
7300
SS: (90%) med gy - drk gysh brn, occ lt bnsh gy, l v f - u f grn, rr lse med grn, subang - subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, rr dolic ip, rr xln pyr, est vis por 8-12%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (10%) intbd, plty, drk gray, mod fm, few DOL
7400
5000
MW 10.1
VIS 48
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
12
Mud Weight (ppg)
30
70

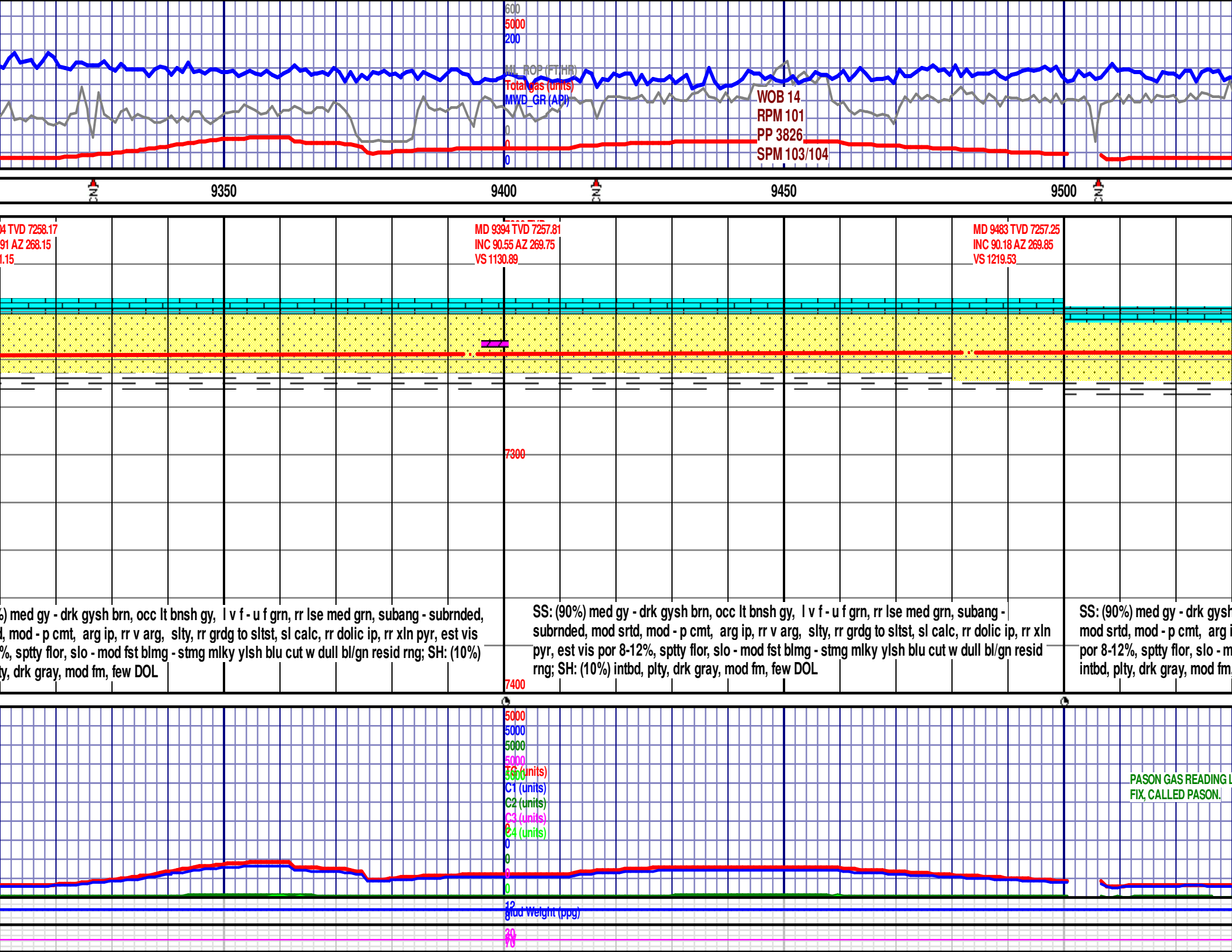

WOB 30
RPM 103
PP 3455
SPM 104/104
Total gas (units)
MWD_GR (API)
8250
8300
8350
8400
MD 8230 TVD 7253.18
INC 89.66 AZ 270.13
VS -31.15
MD 8320 TVD 7253.67
INC 89.72 AZ 268.82
VS 58.53
7200 TVD
MD 8409 TVD 7254.08
INC 89.75 AZ 268.35
VS 147.32
7300
7400
%) med gy - drk gysh brn, occ lt bnsh gy, l v f - u f grn, rr lse med grn, subang - subrnded,
d, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, rr dolic ip, rr xln pyr, est vis
%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (10%)
ty, drk gray, mod fm, few DOL
SS: (90%) med gy - drk gysh brn, occ lt bnsh gy, l v f - u f grn, rr lse med grn, subang - subrnded,
mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, rr dolic ip, rr xln pyr, est vis por
8-12%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (10%) intbd,
plty, drk gray, mod fm, few DOL
SS: (90%) med gy - drk gysh
mod srtd, mod - p cmt, arg ip
por 8-12%, sptty flor, slo - mo
intbd, plty, drk gray, mod fm,
C1 (units)
C2 (units)
C3 (units)
C4 (units)
Mud Weight (ppg)

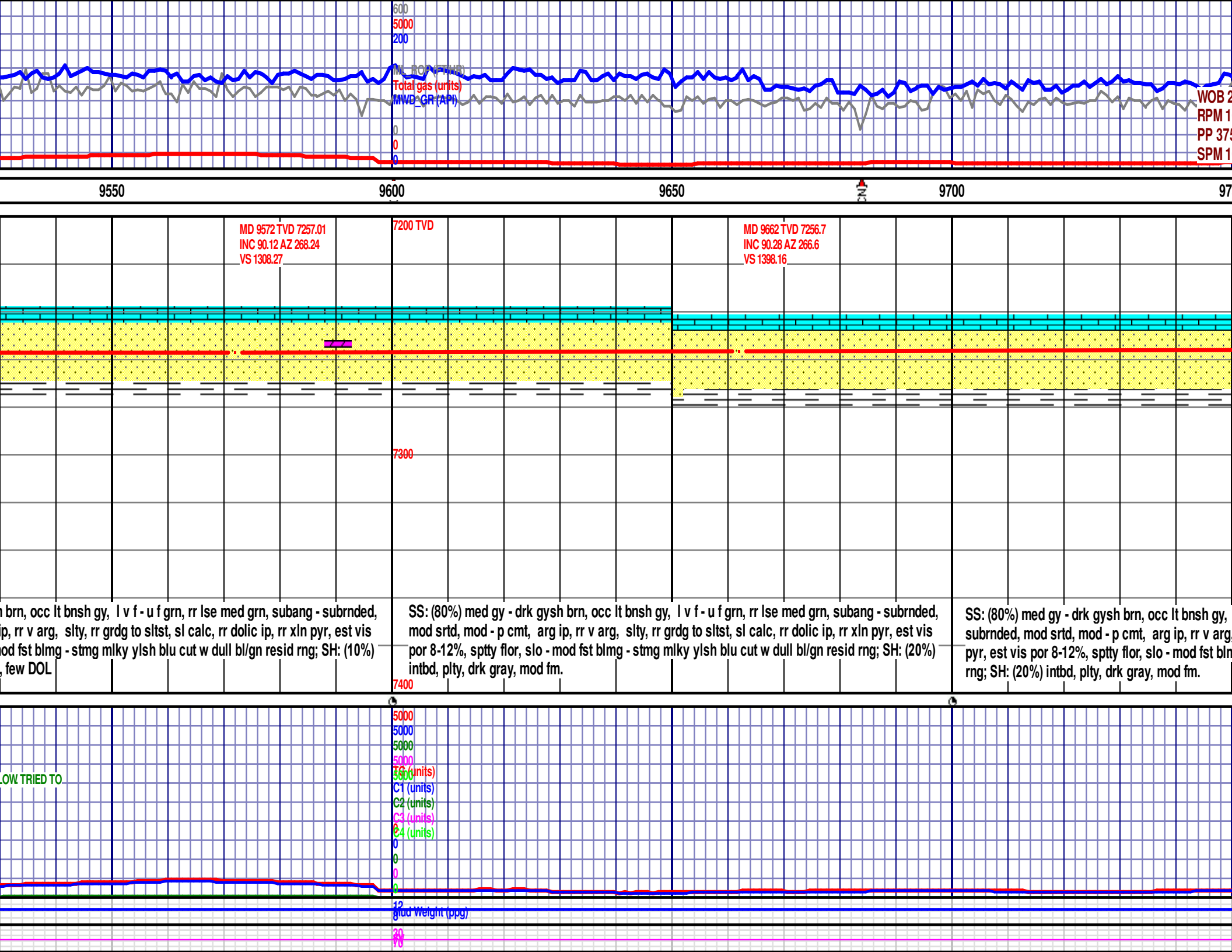

600
5000
200
Total gas (units)
MWD_GR (API)
WOB 30
RPM 105
PP 3618
SPM 103/104
0
0
0
8450
8500
8550
8600
MD 8498 TVD 7254.54
INC 89.66 AZ 268.53
VS 236.12
MD 8588 TVD 7254.92
INC 89.85 AZ 268.89
VS 325.9
TVD
7300
7400
brn, occ lt bnsh gy, l v f - u f grn, rr lse med grn, subang - subrnded,
, rr v arg, slty, rr grdg to sltst, sl calc, rr dolic ip, rr xln pyr, est vis
od fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (10%)
few DOL
SS: (90%) med gy - drk gysh brn, occ lt bnsh gy, l v f - u f grn, rr lse med grn, subang -
subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, rr dolic ip, rr
xln pyr, est vis por 8-12%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn
resid rng; SH: (10%) intbd, plty, drk gray, mod fm, few DOL
SS: (90%) med gy - drk gysh brn, occ lt bnsh gy,
mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr gr
por 8-12%, sptty flor, slo - mod fst blmg - stmg ml
intbd, plty, drk gray, mod fm, few DOL
5000
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
8
20
70

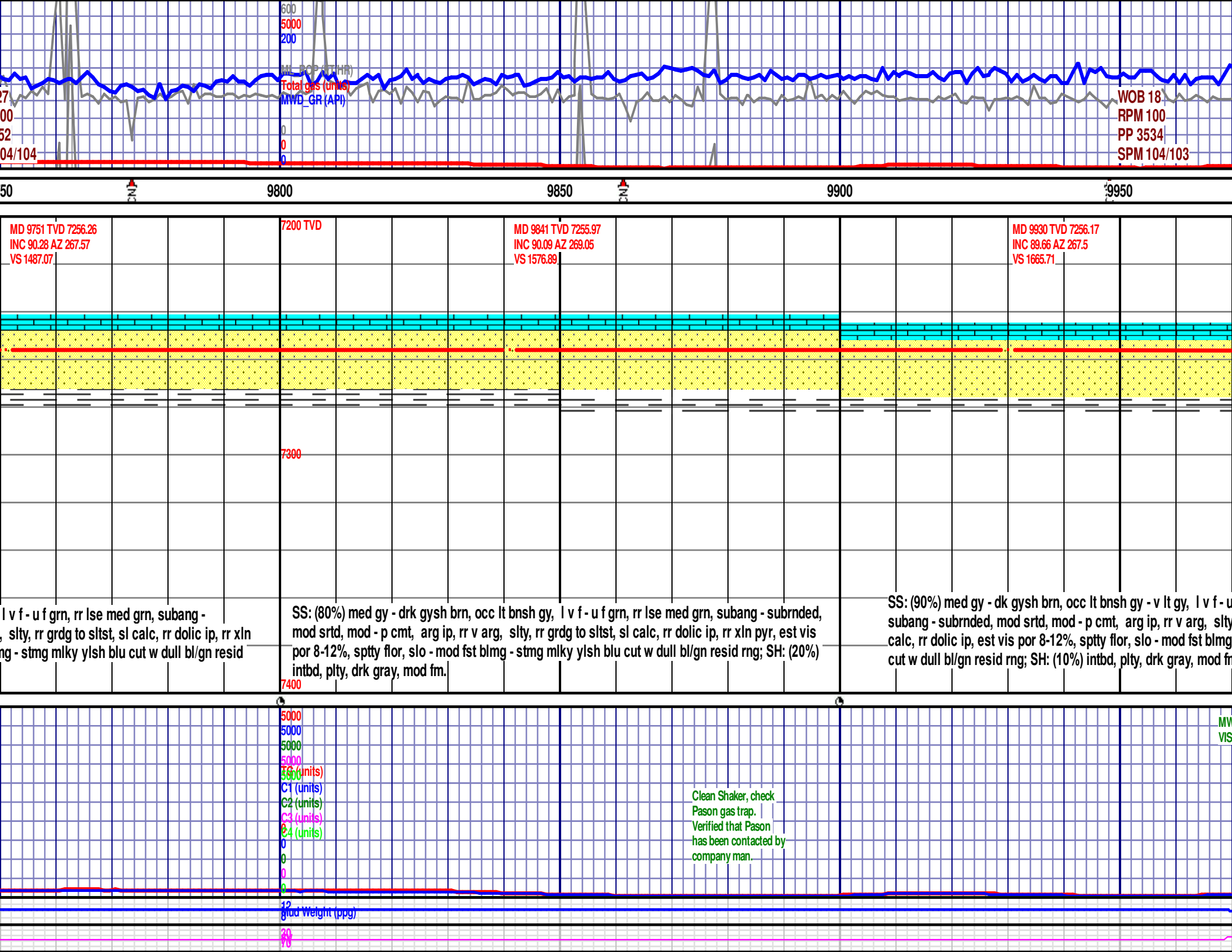

600
5000
200
Total gas (units)
MWD_GR (API)
0
0
0
WOB 27
RPM 104
PP 3549
SPM 103/104
50
8700
8750
8800
8850
MD 8678 TVD 7255.18
INC 89.82 AZ 268.32
VS 415.68
MD 8767 TVD 7255.63
INC 89.6 AZ 267.57
VS 504.53
7200 TVD
MD 8857 TVD 725
INC 89.69 AZ 266
VS 594.46
7300
l v f - u f grn, rr lse med grn, subang - subrnded,
dg to sltst, sl calc, rr dolic ip, rr xln pyr, est vis
ky ylsh blu cut w dull bl/gn resid rng; SH: (10%)
SS: (90%) med gy - drk gysh brn, occ lt bnsh gy, l v f - u f grn, rr lse med grn, subang - subrnded,
mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, rr dolic ip, rr xln pyr, est vis
por 8-12%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (10%)
intbd, plty, drk gray, mod fm, few DOL
SS: (90%) med gy - drk gysh brn, occ lt bnsh gy, l v f - u f grn, rr lse m
mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, rr
por 8-12%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull
intbd, plty, drk gray, mod fm, few DOL
7400
MW 10.1
VIS 49
5000
5000
5000
5000
3500
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
30
70

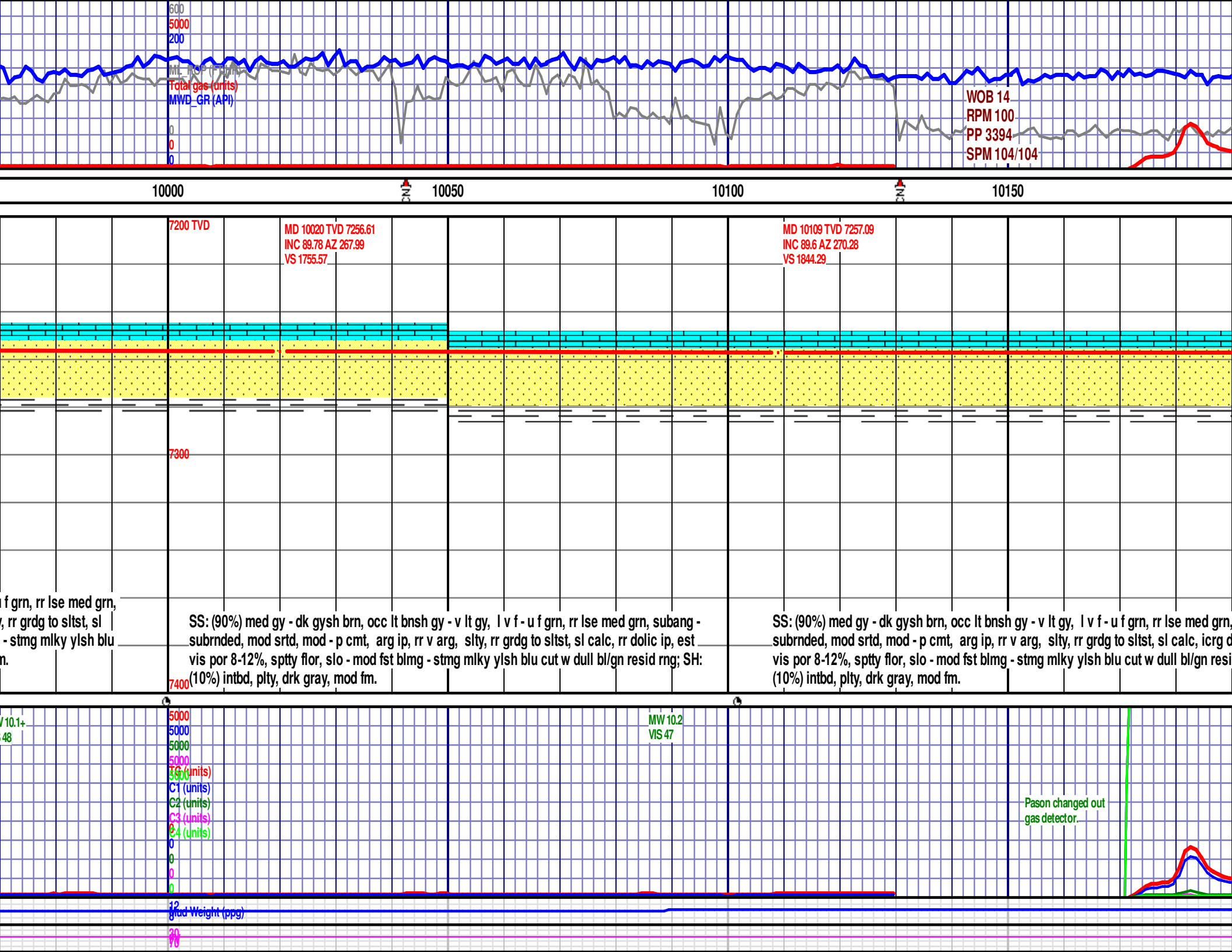

600
5000
200
ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
8900
8950
9000
9050
MD 8946 TVD 7256.7
INC 89.66 AZ 265.96
VS 683.43
7200 TVD
MD 9036 TVD 7257.11
INC 89.82 AZ 266.32
VS 773.39
7300
7400
ed grn, subang - subrnded,
dolic ip, rr xln pyr, est vis
bl/gn resid rng; SH: (10%)
SS: (90%) med gy - drk gysh brn, occ lt bnsh gy, l v f - u f grn, rr lse med grn, subang - subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, rr dolic ip, rr xln pyr, est vis por 8-12%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (10%) intbd, plty, drk gray, mod fm, few DOL
SS: (90%) med gy - drk gysh brn, occ lt bnsh gy, l v f - u f grn, rr lse med grn, subang - su
mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, rr dolic ip, rr xln pyr,
por 8-12%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH
intbd, plty, drk gray, mod fm, few DOL
MW 10.2
VIS 52
CLEAN SHAKER
5000
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
8
30
70

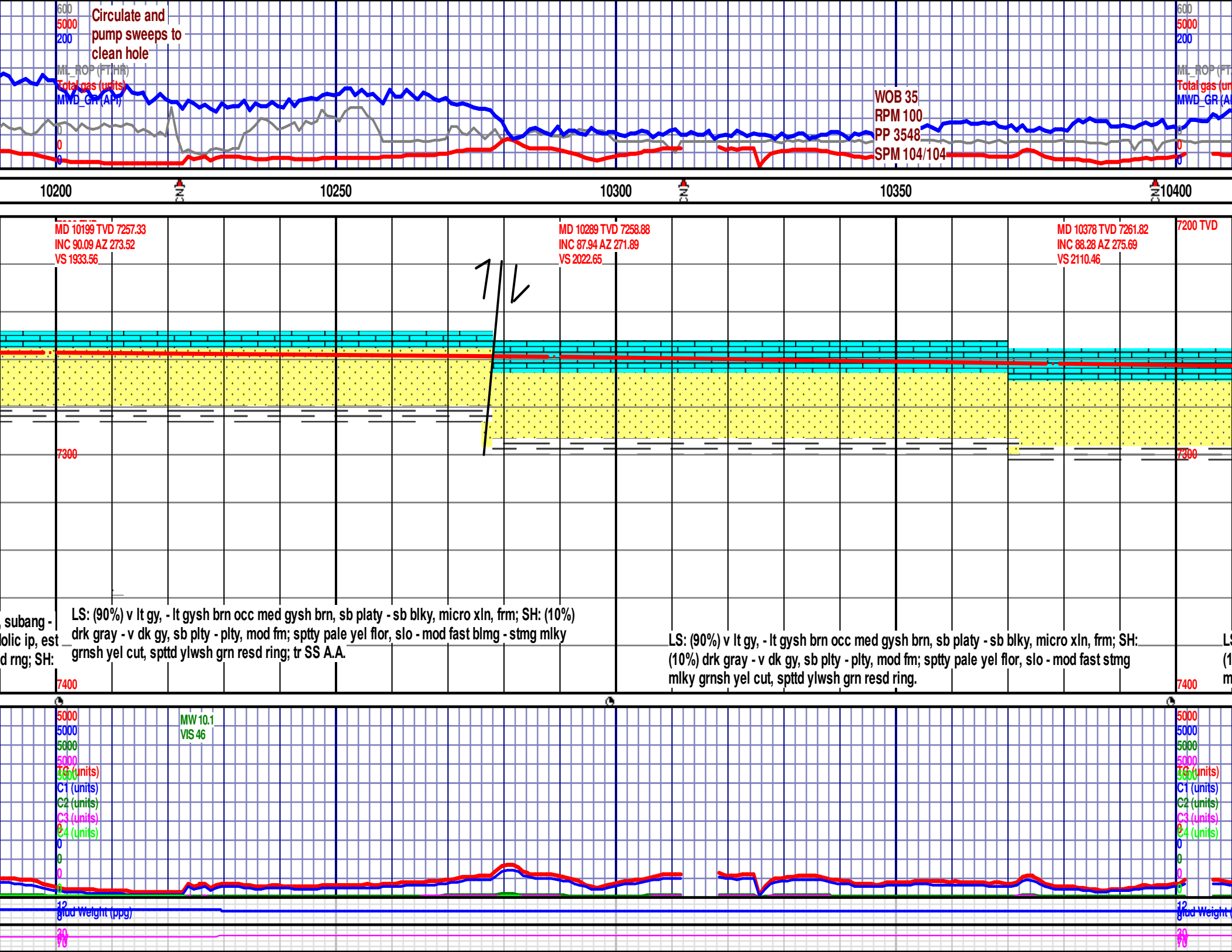

WOB 28
RPM 102
PP 3514
SPM 103/104
600
5000
200
Total gas (units)
MWD_GR (API)
0
0
0
9100
9150
9200
9250
9300
MD 9125 TVD 7257.38
INC 89.82 AZ 266.88
VS 862.34
7200 TVD
MD 9215 TVD 7257.82
INC 89.63 AZ 267.02
VS 952.27
7300
7400
SS: (90%) med gy - drk gysh brn, occ lt bnsh gy, l v f - u f grn, rr lse med grn, subang - subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, rr dolic ip, rr xln pyr, est vis por 8-12%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (10%) intbd, plty, drk gray, mod fm, few DOL
SS: (90%) med gy - drk gysh brn, occ lt bnsh gy, l v f - u f grn, rr lse med grn, subang - subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, rr dolic ip, rr xln pyr, est vis por 8-12%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (10%) intbd, plty, drk gray, mod fm, few DOL
DATE: 11/20/17
DEPTH: 9168'
WT: 10.3
Vis: 52
PV: 14
YP: 6
Gel: 5/6/7
FIL (HTHP): 12
SOL: 14%
Cl: 35,000
NAP/H20 Ratio 85/15
ES 700
RE ZERO PASON GAS
5000
5000
5000
5000
3600
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
CLEAN PASON GAS TRAP
12
Mud Weight (ppg)
30

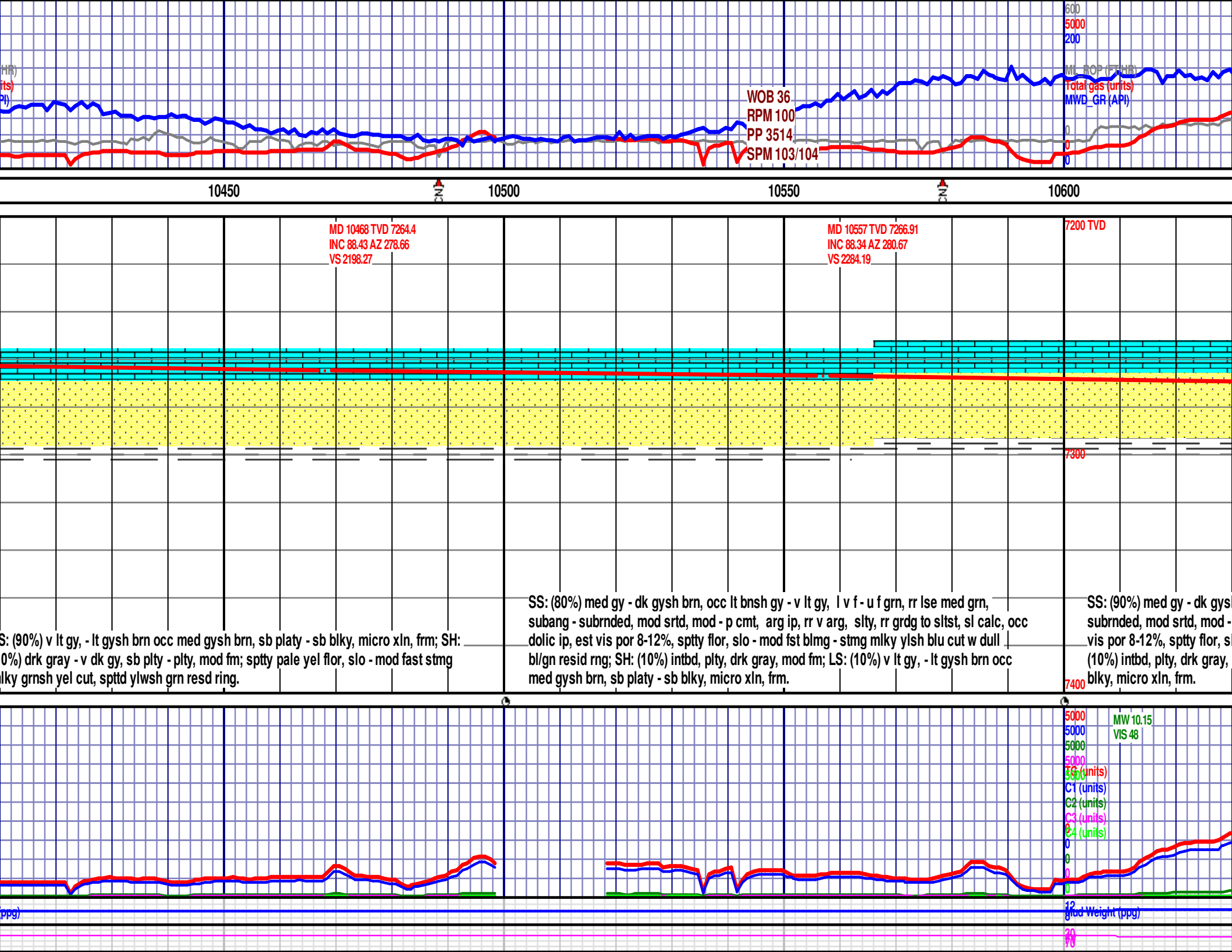

600
5000
200
ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 14
RPM 101
PP 3826
SPM 103/104
9350
9400
9450
9500
4 TVD 7258.17
91 AZ 268.15
1.15
MD 9394 TVD 7257.81
INC 90.55 AZ 269.75
VS 1130.89
MD 9483 TVD 7257.25
INC 90.18 AZ 269.85
VS 1219.53
7300
7400
%) med gy - drk gysh brn, occ lt bnsh gy, l v f - u f grn, rr lse med grn, subang - subrnded,
d, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, rr dolic ip, rr xln pyr, est vis
%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (10%)
ty, drk gray, mod fm, few DOL
SS: (90%) med gy - drk gysh brn, occ lt bnsh gy, l v f - u f grn, rr lse med grn, subang -
subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, rr dolic ip, rr xln
pyr, est vis por 8-12%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid
rng; SH: (10%) intbd, plty, drk gray, mod fm, few DOL
SS: (90%) med gy - drk gysh
mod srtd, mod - p cmt, arg i
por 8-12%, sptty flor, slo - m
intbd, plty, drk gray, mod fm
5000
5000
5000
5000
5000
Total gas (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
0
PASON GAS READING L
FIX, CALLED PASON.
12
Mud Weight (ppg)
20
70

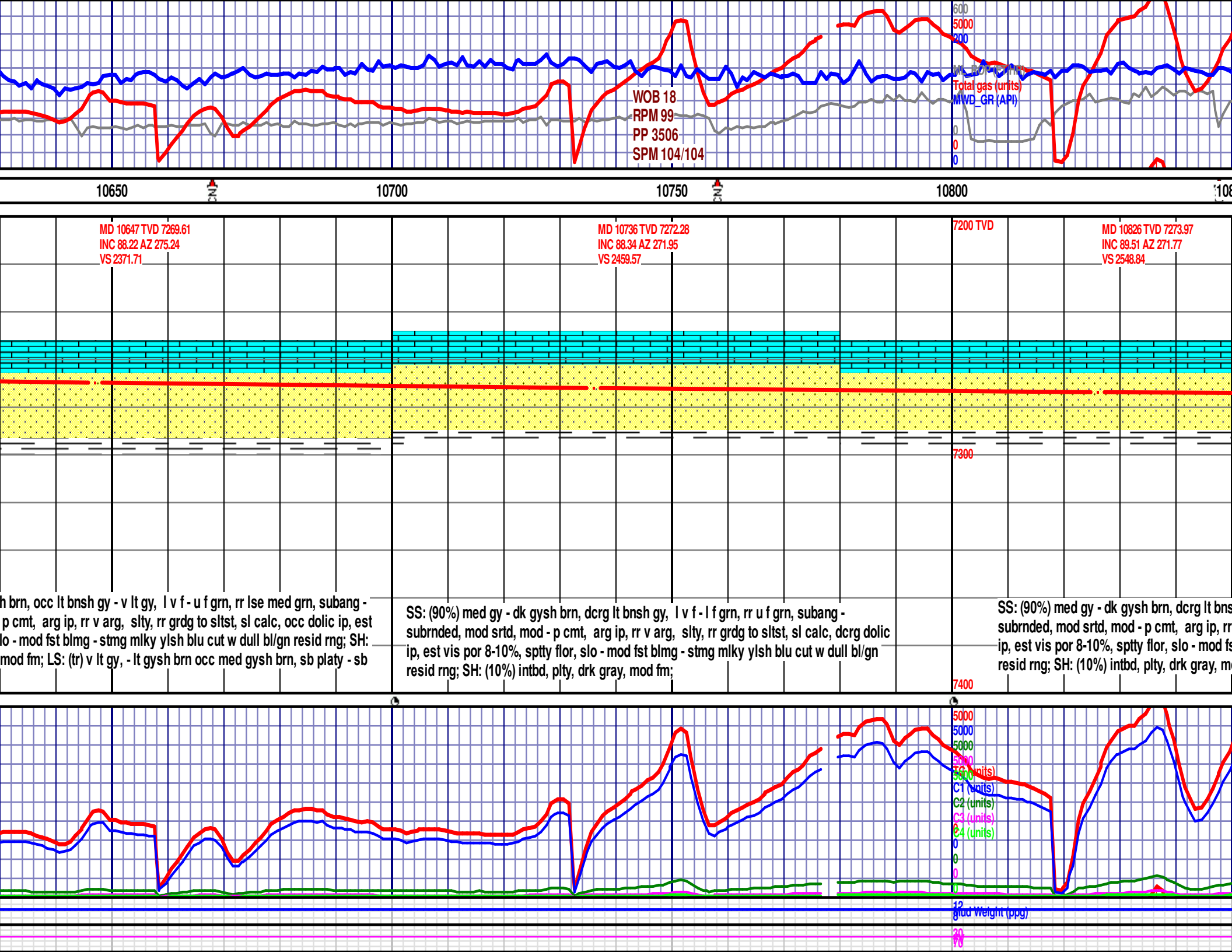

600
5000
200
Total gas (units)
MWD_GR (API)
0
0
0
WOB 2
RPM 1
PP 375
SPM 1
9550
9600
9650
9700
97
MD 9572 TVD 7257.01
INC 90.12 AZ 268.24
VS 1308.27
7200 TVD
MD 9662 TVD 7256.7
INC 90.28 AZ 266.6
VS 1398.16
7300
7400
h brn, occ lt bnsh gy, l v f - u f grn, rr lse med grn, subang - subrnded,
ip, rr v arg, slty, rr grdg to sltst, sl calc, rr dolic ip, rr xln pyr, est vis
od fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (10%)
, few DOL
SS: (80%) med gy - drk gysh brn, occ lt bnsh gy, l v f - u f grn, rr lse med grn, subang - subrnded,
mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, rr dolic ip, rr xln pyr, est vis
por 8-12%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (20%)
intbd, plty, drk gray, mod fm.
SS: (80%) med gy - drk gysh brn, occ lt bnsh gy,
subrnded, mod srtd, mod - p cmt, arg ip, rr v arg,
pyr, est vis por 8-12%, sptty flor, slo - mod fst bln
rng; SH: (20%) intbd, plty, drk gray, mod fm.
LOW TRIED TO
5000
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)

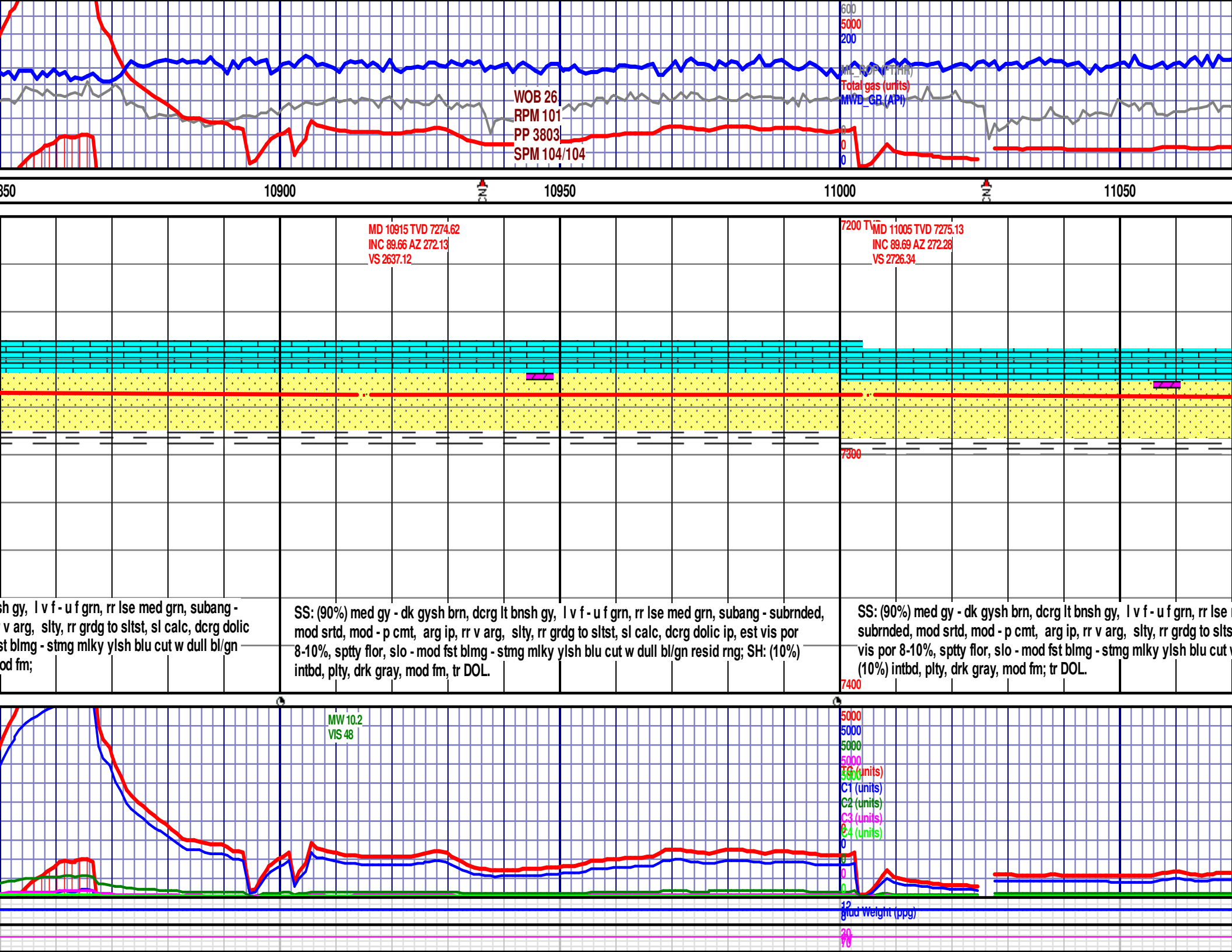

600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 18
RPM 100
PP 3534
SPM 104/103
9800
9850
9900
9950
MD 9751 TVD 7256.26
INC 90.28 AZ 267.57
VS 1487.07
7200 TVD
MD 9841 TVD 7255.97
INC 90.09 AZ 269.05
VS 1576.89
MD 9930 TVD 7256.17
INC 89.66 AZ 267.5
VS 1665.71
7300
l v f - u f grn, rr lse med grn, subang -
slty, rr grdg to sltst, sl calc, rr dolic ip, rr xln
ng - stmg mlky ylsh blu cut w dull bl/gn resid
SS: (80%) med gy - drk gysh brn, occ lt bnsh gy, l v f - u f grn, rr lse med grn, subang - subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, rr dolic ip, rr xln pyr, est vis por 8-12%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (20%) intbd, plty, drk gray, mod fm.
SS: (90%) med gy - dk gysh brn, occ lt bnsh gy - v lt gy, l v f - u
subang - subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, slty
calc, rr dolic ip, est vis por 8-12%, sptty flor, slo - mod fst blmg
cut w dull bl/gn resid rng; SH: (10%) intbd, plty, drk gray, mod fr
7400
5000
5000
5000
5000
C0 (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
Clean Shaker, check
Pason gas trap.
Verified that Pason
has been contacted by
company man.
MW
VIS
12
Mud Weight (ppg)
8
30
70

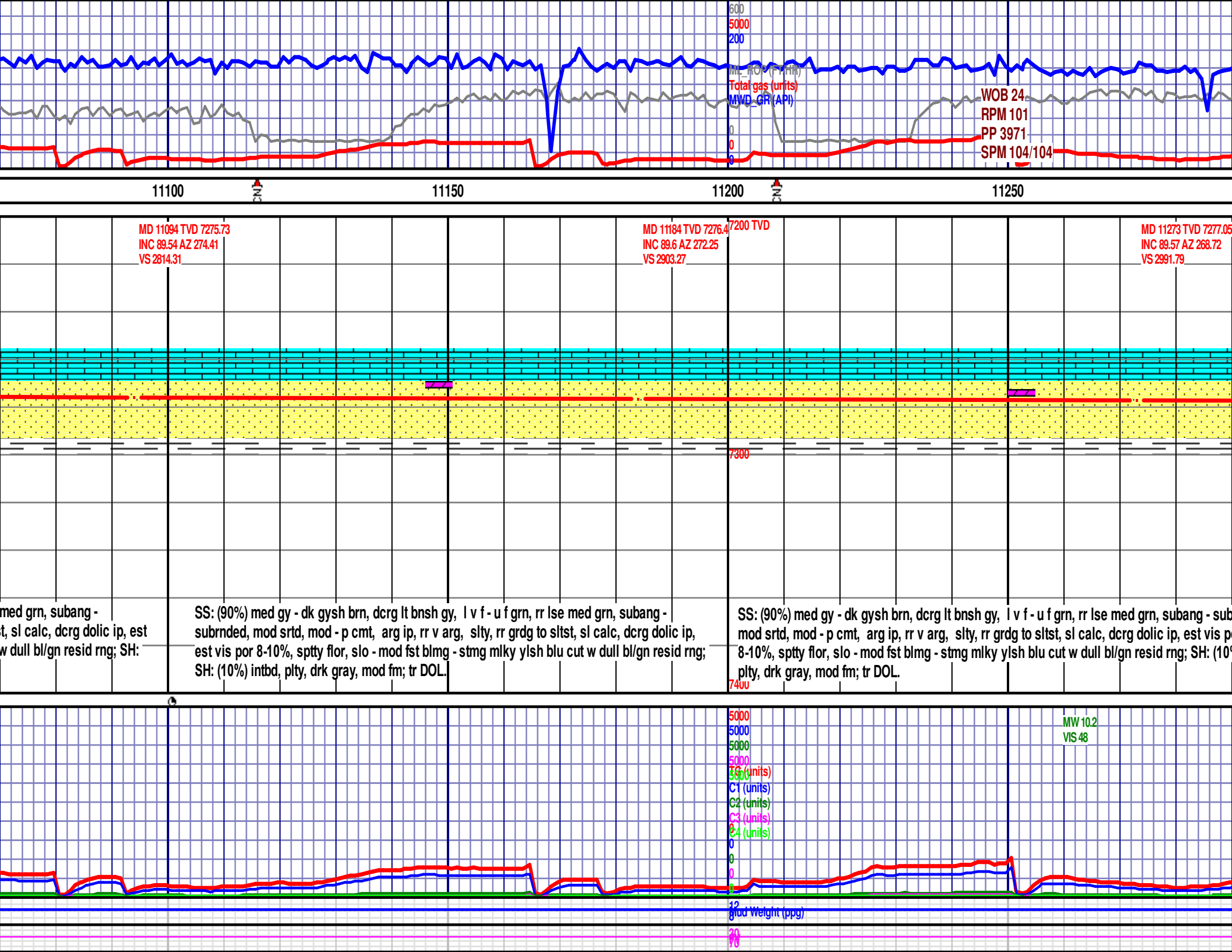

600
5000
200
Total gas (units)
MWD_GR (API)
0
0
0
WOB 14
RPM 100
PP 3394
SPM 104/104
10000
10050
10100
10150
7200 TVD
MD 10020 TVD 7256.61
INC 89.78 AZ 267.99
VS 1755.57
MD 10109 TVD 7257.09
INC 89.6 AZ 270.28
VS 1844.29
7300
7400
f grn, rr lse med grn,
, rr grdg to sltst, sl
- stmg mlky ylsh blu
n.
SS: (90%) med gy - dk gysh brn, occ lt bnsh gy - v lt gy, l v f - u f grn, rr lse med grn, subang - subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, rr dolic ip, est vis por 8-12%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (10%) intbd, plty, drk gray, mod fm.
SS: (90%) med gy - dk gysh brn, occ lt bnsh gy - v lt gy, l v f - u f grn, rr lse med grn,
subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, icrg d
vis por 8-12%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resi
(10%) intbd, plty, drk gray, mod fm.
V 10.1+
48
5000
5000
5000
5000
5000
(units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
MW 10.2
VIS 47
Pason changed out
gas detector.
12
Mud Weight (ppg)
20
70

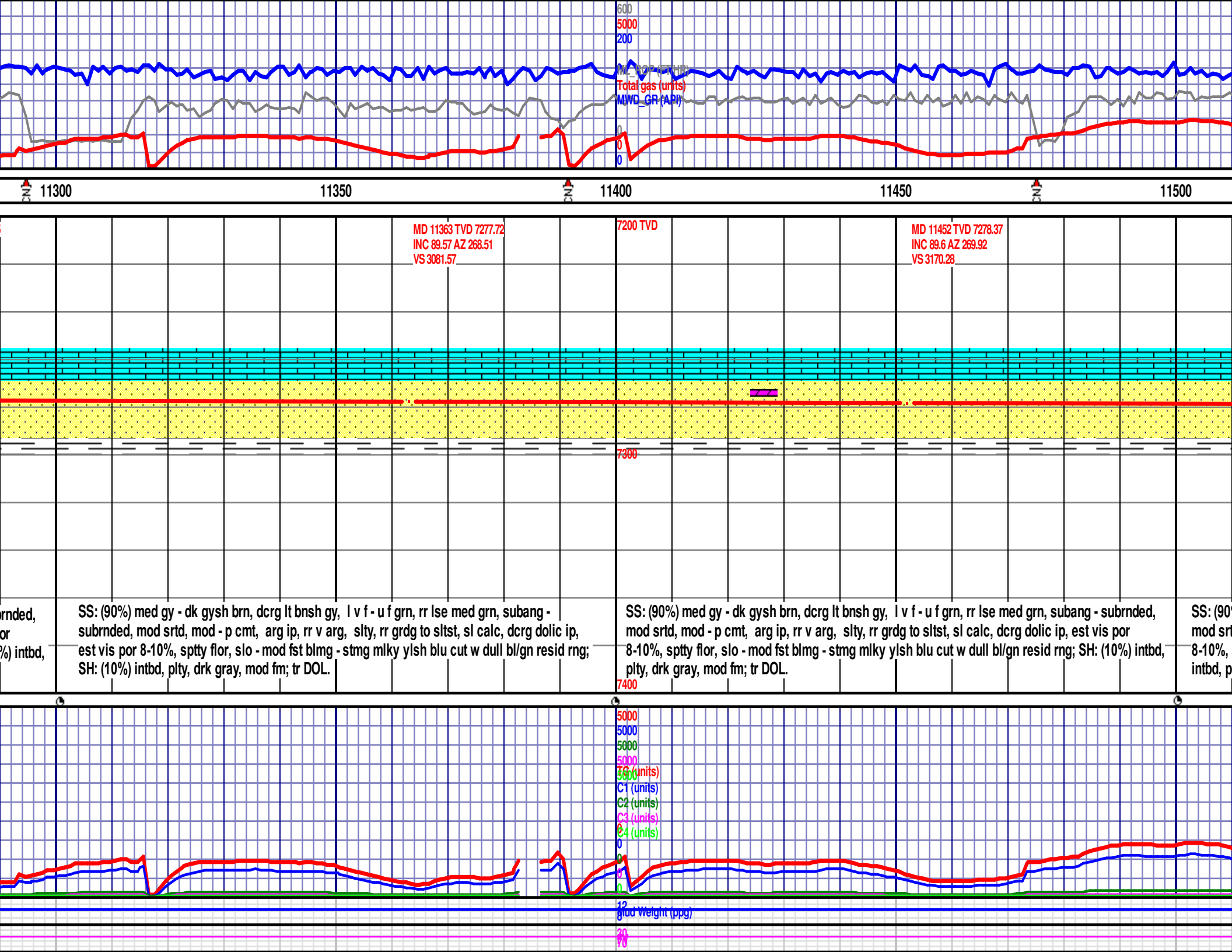

Circulate and pump sweeps to clean hole
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
WOB 35
RPM 100
PP 3548
SPM 104/104
10200
10250
10300
10350
10400
MD 10199 TVD 7257.33
INC 90.09 AZ 273.52
VS 1933.56
MD 10289 TVD 7258.88
INC 87.94 AZ 271.89
VS 2022.65
MD 10378 TVD 7261.82
INC 88.28 AZ 275.69
VS 2110.46
7200 TVD
7300
7400
LS: (90%) v lt gy, - lt gysh brn occ med gysh brn, sb platy - sb blky, micro xln, frm; SH: (10%) drk gray - v dk gy, sb plty - plty, mod fm; sptty pale yel flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd ring; tr SS A.A.
LS: (90%) v lt gy, - lt gysh brn occ med gysh brn, sb platy - sb blky, micro xln, frm; SH: (10%) drk gray - v dk gy, sb plty - plty, mod fm; sptty pale yel flor, slo - mod fast stmg mlky grnsh yel cut, sptd ylwsh grn resd ring.
MW 10.1
VIS 46
C1 (units)
C2 (units)
C3 (units)
C4 (units)
Mud Weight (ppg)

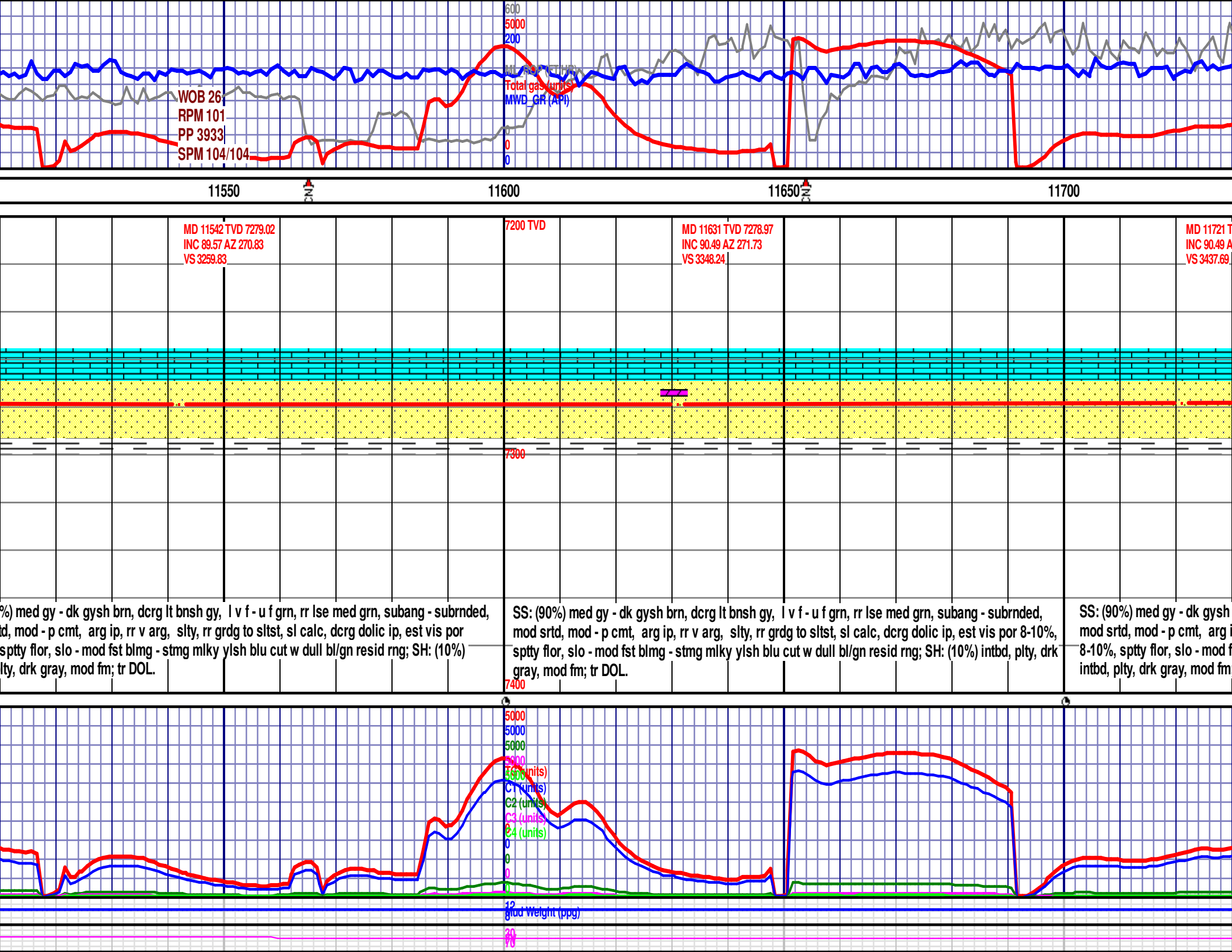

600
5000
200
WOB 36
RPM 100
PP 3514
SPM 103/104
Total gas (units)
MWD_GR (API)
10450
10500
10550
10600
MD 10468 TVD 7264.4
INC 88.43 AZ 278.66
VS 2198.27
MD 10557 TVD 7266.91
INC 88.34 AZ 280.67
VS 2284.19
7200 TVD
7300
7400
SS: (90%) v lt gy, - lt gysh brn occ med gysh brn, sb platy - sb blky, micro xln, frm; SH:
0%) drk gray - v dk gy, sb plty - plty, mod fm; sptty pale yel flor, slo - mod fast stmg
lky grnsh yel cut, sptd ylwsh grn resd ring.
SS: (80%) med gy - dk gysh brn, occ lt bnsh gy - v lt gy, l v f - u f grn, rr lse med grn,
subang - subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, occ
dolic ip, est vis por 8-12%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull
bl/gn resid rng; SH: (10%) intbd, plty, drk gray, mod fm; LS: (10%) v lt gy, - lt gysh brn occ
med gysh brn, sb platy - sb blky, micro xln, frm.
SS: (90%) med gy - dk gys
subrnded, mod srtd, mod -
vis por 8-12%, sptty flor, s
(10%) intbd, plty, drk gray,
blky, micro xln, frm.
5000
5000
5000
5000
5000
MW 10.15
VIS 48
C1 (units)
C2 (units)
C3 (units)
C4 (units)
(ppg)
Mud Weight (ppg)

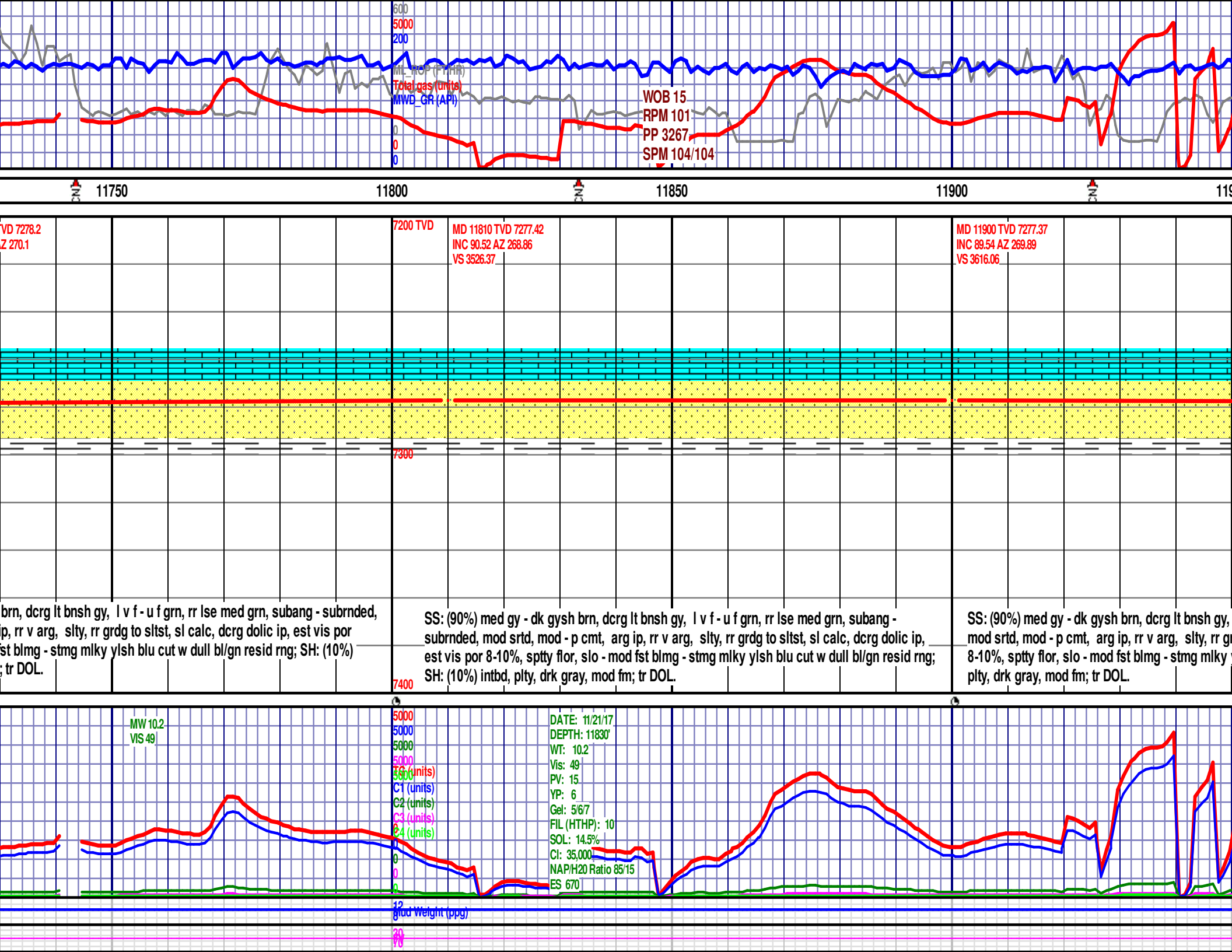

WOB 18
RPM 99
PP 3506
SPM 104/104
600
5000
200
Total gas (units)
MWD_GR (API)
0
0
0
10650
10700
10750
10800
MD 10647 TVD 7269.61
INC 88.22 AZ 275.24
VS 2371.71
MD 10736 TVD 7272.28
INC 88.34 AZ 271.95
VS 2459.57
7200 TVD
MD 10826 TVD 7273.97
INC 89.51 AZ 271.77
VS 2548.84
7300
7400
h brn, occ lt bnsh gy - v lt gy, l v f - u f grn, rr lse med grn, subang -
p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, occ dolic ip, est
lo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH:
mod fm; LS: (tr) v lt gy, - lt gysh brn occ med gysh brn, sb platy - sb
SS: (90%) med gy - dk gysh brn, dcrg lt bnsh gy, l v f - l f grn, rr u f grn, subang -
subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, dcrg dolic
ip, est vis por 8-10%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn
resid rng; SH: (10%) intbd, plty, drk gray, mod fm;
SS: (90%) med gy - dk gysh brn, dcrg lt bns
subrnded, mod srtd, mod - p cmt, arg ip, rr
ip, est vis por 8-10%, sptty flor, slo - mod fs
resid rng; SH: (10%) intbd, plty, drk gray, m
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
8
20
70

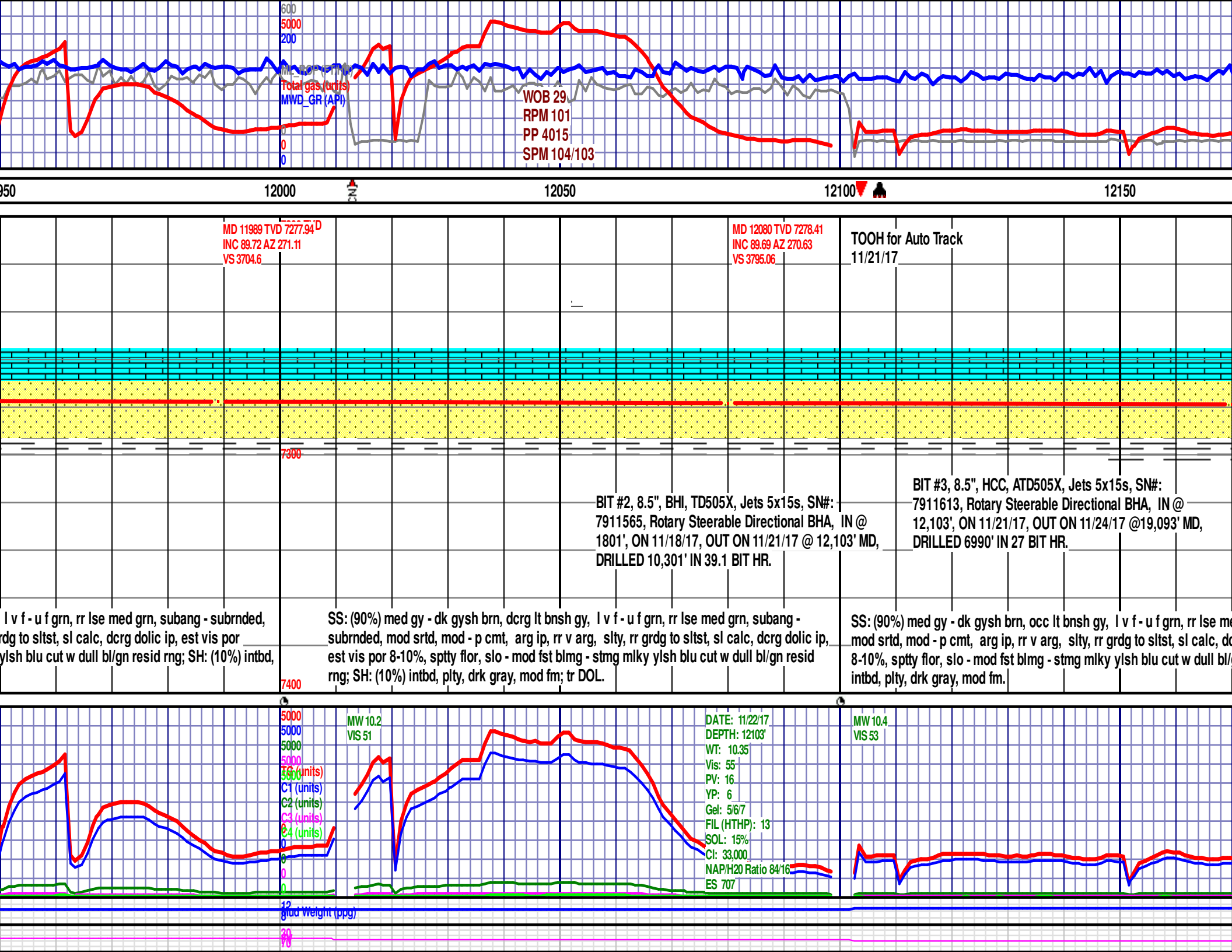

600
5000
200
Total gas (units)
MWD_GR (API)
WOB 26
RPM 101
PP 3803
SPM 104/104
0
0
350
10900
CN
10950
11000
CN
11050
MD 10915 TVD 7274.62
INC 89.66 AZ 272.13
VS 2637.12
7200 TVD
MD 11005 TVD 7275.13
INC 89.69 AZ 272.28
VS 2726.34
7300
sh gy, l v f - u f grn, rr lse med grn, subang -
v arg, slty, rr grdg to sltst, sl calc, dcrg dolic
st blmg - stmg mlky ylsh blu cut w dull bl/gn
od fm;
SS: (90%) med gy - dk gysh brn, dcrg lt bnsh gy, l v f - u f grn, rr lse med grn, subang - subrnded,
mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, dcrg dolic ip, est vis por
8-10%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (10%)
intbd, plty, drk gray, mod fm, tr DOL.
SS: (90%) med gy - dk gysh brn, dcrg lt bnsh gy, l v f - u f grn, rr lse
subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to slts
vis por 8-10%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut
(10%) intbd, plty, drk gray, mod fm; tr DOL.
7400
MW 10.2
VIS 48
5000
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
20
70

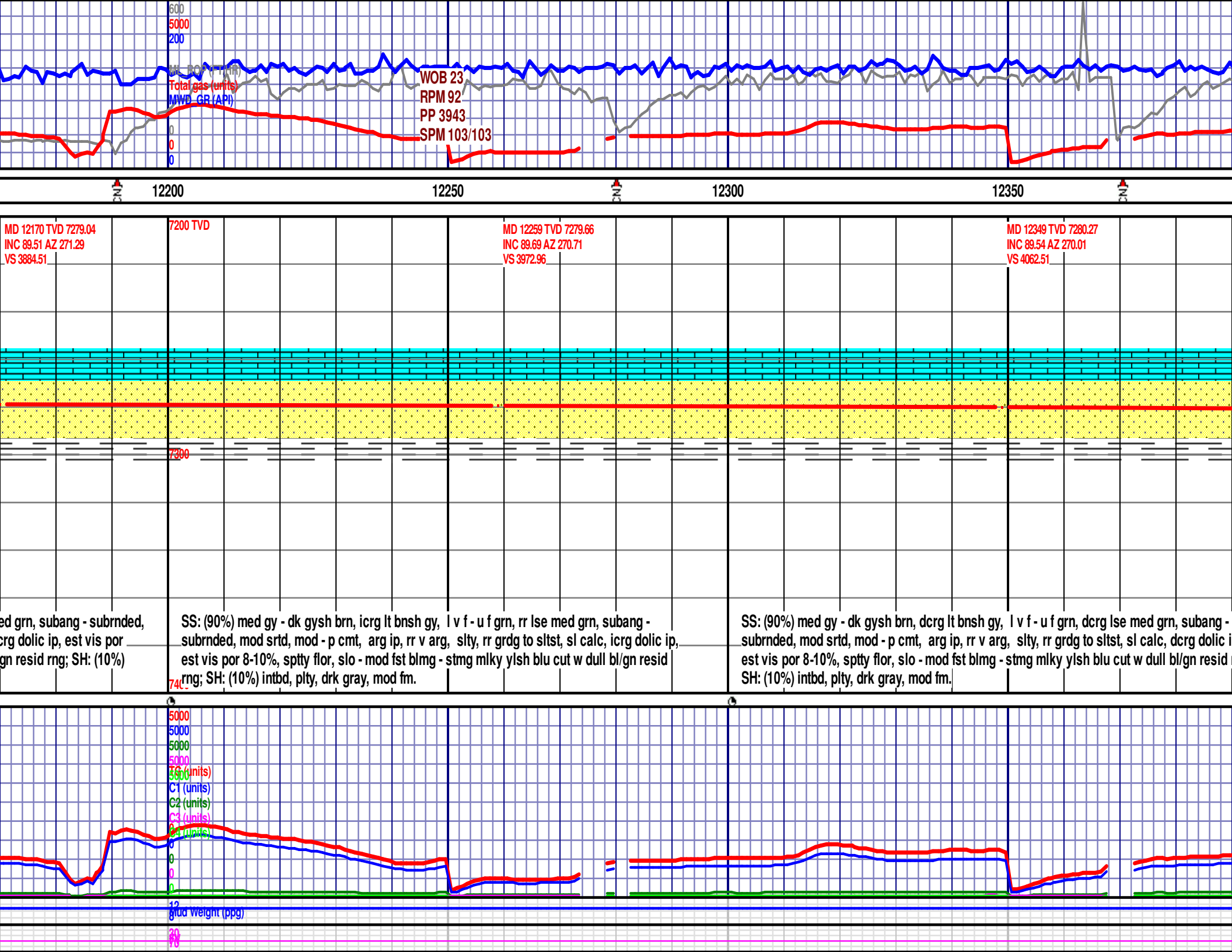

600
5000
200
Total gas (units)
MWD_GR (API)
0
0
0
WOB 24
RPM 101
PP 3971
SPM 104/104
11100
11150
11200
11250
MD 11094 TVD 7275.73
INC 89.54 AZ 274.41
VS 2814.31
MD 11184 TVD 7276.4
INC 89.6 AZ 272.25
VS 2903.27
7200 TVD
MD 11273 TVD 7277.05
INC 89.57 AZ 268.72
VS 2991.79
7300
7400
med grn, subang -
t, sl calc, dcrg dolic ip, est
w dull bl/gn resid rng; SH:
SS: (90%) med gy - dk gysh brn, dcrg lt bnsh gy, l v f - u f grn, rr lse med grn, subang - subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, dcrg dolic ip, est vis por 8-10%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (10%) intbd, plty, drk gray, mod fm; tr DOL.
SS: (90%) med gy - dk gysh brn, dcrg lt bnsh gy, l v f - u f grn, rr lse med grn, subang - sub
mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, dcrg dolic ip, est vis p
8-10%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (10
plty, drk gray, mod fm; tr DOL.
5000
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
MW 10.2
VIS 48
12
8
Mud Weight (ppg)
30
70

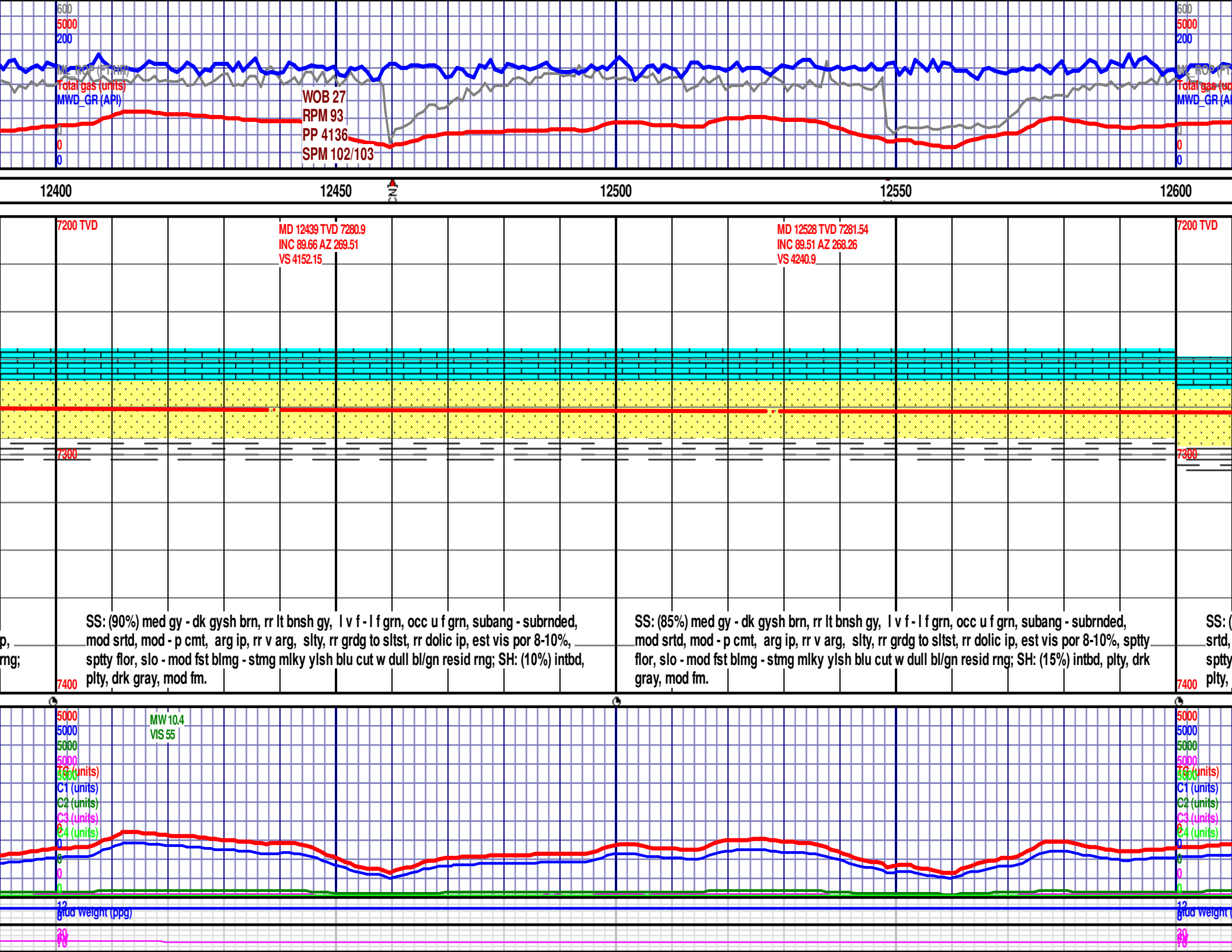

600
5000
200
Total gas (units)
MWD_GR (API)
0
0
0
11300
11350
11400
11450
11500
MD 11363 TVD 7277.72
INC 89.57 AZ 268.51
VS 3081.57
7200 TVD
MD 11452 TVD 7278.37
INC 89.6 AZ 269.92
VS 3170.28
7300
SS: (90%) med gy - dk gysh brn, dcrg lt bnsh gy, l v f - u f grn, rr lse med grn, subang - subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, dcrg dolic ip, est vis por 8-10%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (10%) intbd, plty, drk gray, mod fm; tr DOL.
SS: (90%) med gy - dk gysh brn, dcrg lt bnsh gy, l v f - u f grn, rr lse med grn, subang - subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, dcrg dolic ip, est vis por 8-10%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (10%) intbd, plty, drk gray, mod fm; tr DOL.
7400
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
30

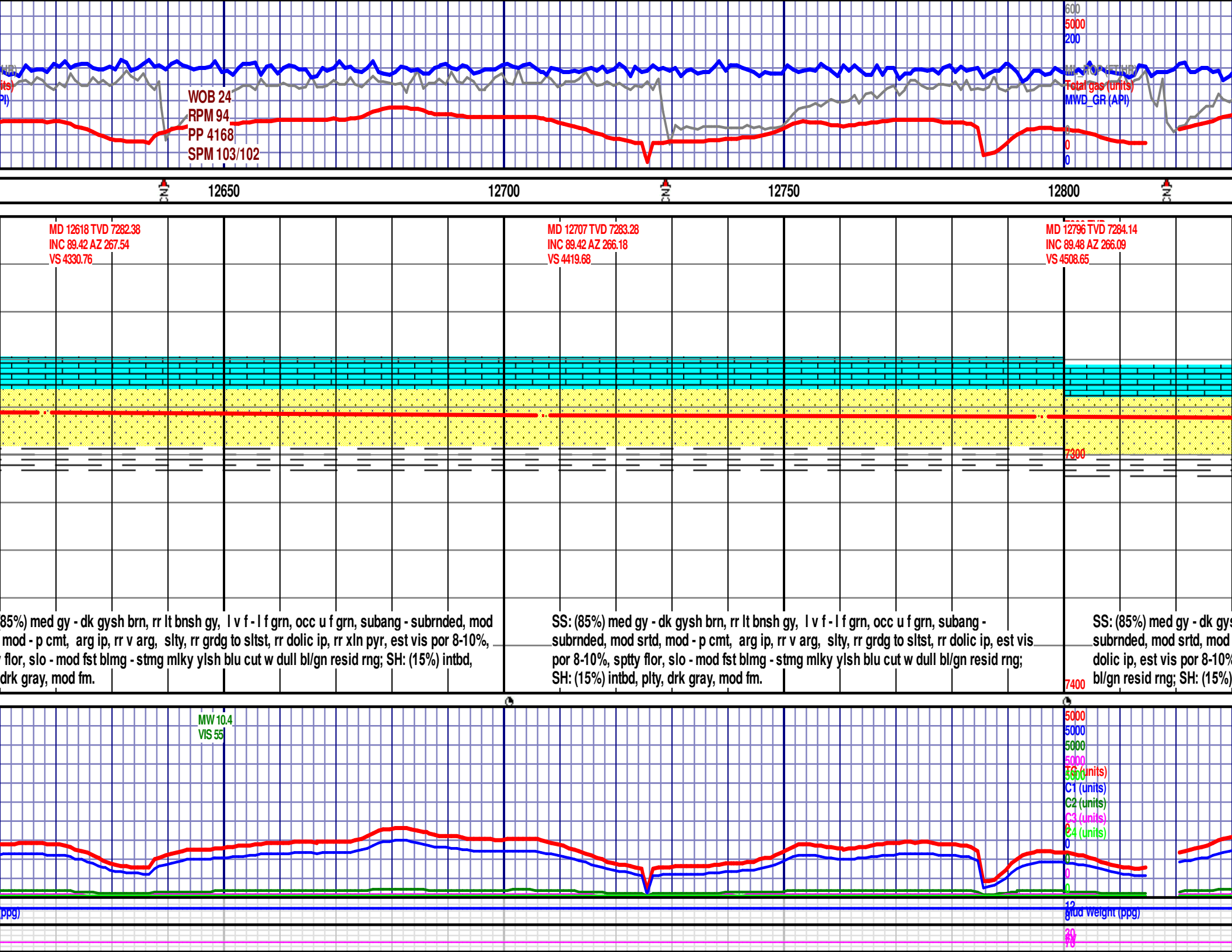

WOB 26
RPM 101
PP 3933
SPM 104/104
600
5000
200
MWD_GR (API)
0
0
11550
11600
11650
11700
MD 11542 TVD 7279.02
INC 89.57 AZ 270.83
VS 3259.83
7200 TVD
MD 11631 TVD 7278.97
INC 90.49 AZ 271.73
VS 3348.24
MD 11721 T
INC 90.49 A
VS 3437.69
7300
%) med gy - dk gysh brn, dcrg lt bnsh gy, l v f - u f grn, rr lse med grn, subang - subrnded,
td, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, dcrg dolic ip, est vis por
sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (10%)
lty, drk gray, mod fm; tr DOL.
SS: (90%) med gy - dk gysh brn, dcrg lt bnsh gy, l v f - u f grn, rr lse med grn, subang - subrnded,
mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, dcrg dolic ip, est vis por 8-10%,
sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (10%) intbd, plty, drk
gray, mod fm; tr DOL.
SS: (90%) med gy - dk gysh
mod srtd, mod - p cmt, arg i
8-10%, sptty flor, slo - mod f
intbd, plty, drk gray, mod fm
7400
5000
5000
5000
units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
20
70

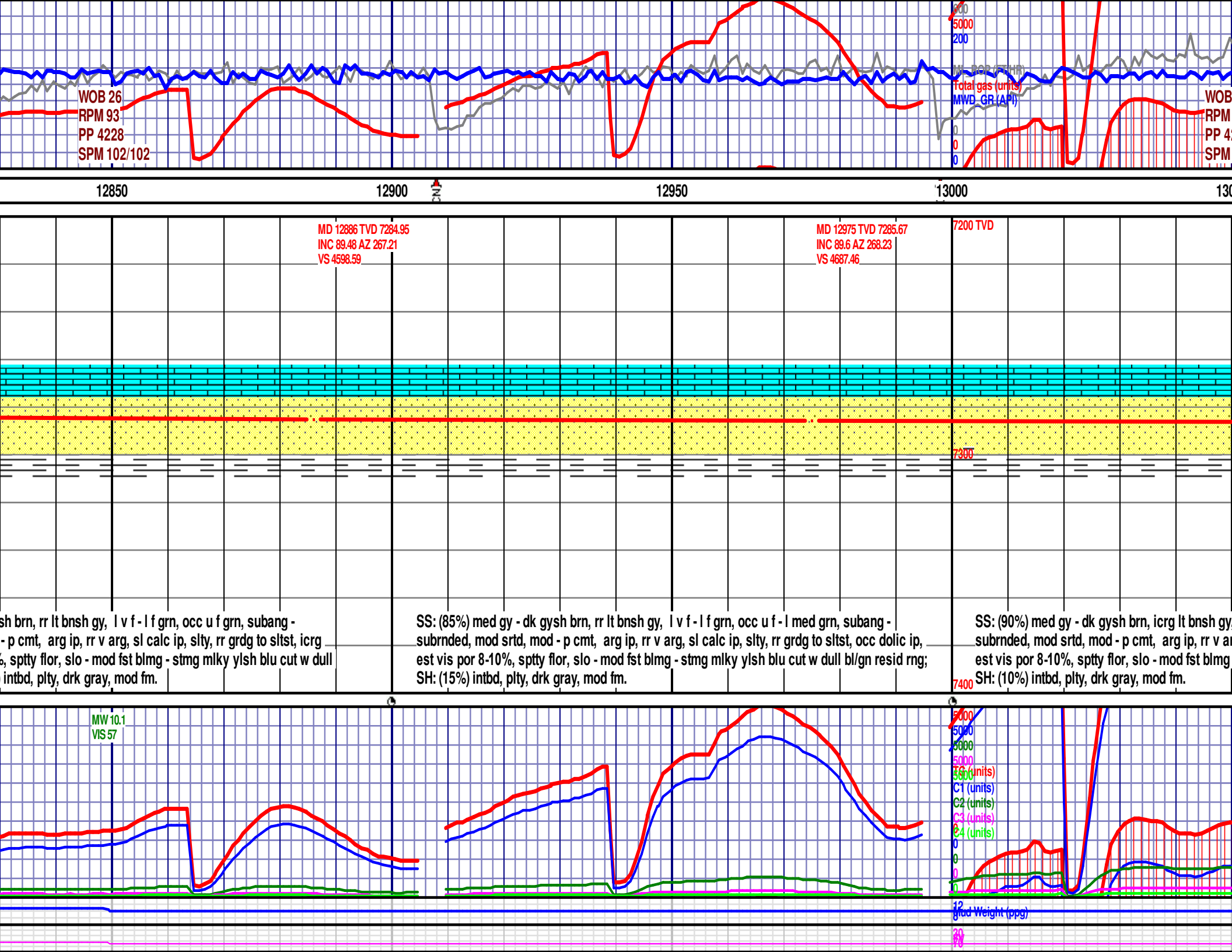

600
5000
200
ML_ROP (FT/Hr)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 15
RPM 101
PP 3267
SPM 104/104
11750
11800
11850
11900
VD 7278.2
Z 270.1
7200 TVD
MD 11810 TVD 7277.42
INC 90.52 AZ 268.86
VS 3526.37
MD 11900 TVD 7277.37
INC 89.54 AZ 269.89
VS 3616.06
7300
7400
brn, dcrg lt bnsh gy, l v f - u f grn, rr lse med grn, subang - subrnded,
ip, rr v arg, slty, rr grdg to sltst, sl calc, dcrg dolic ip, est vis por
st blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (10%)
; tr DOL.
SS: (90%) med gy - dk gysh brn, dcrg lt bnsh gy, l v f - u f grn, rr lse med grn, subang -
subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, dcrg dolic ip,
est vis por 8-10%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng;
SH: (10%) intbd, plty, drk gray, mod fm; tr DOL.
SS: (90%) med gy - dk gysh brn, dcrg lt bnsh gy,
mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr g
8-10%, sptty flor, slo - mod fst blmg - stmg mlky
plty, drk gray, mod fm; tr DOL.
MW 10.2
VIS 49
5000
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
DATE: 11/21/17
DEPTH: 11830'
WT: 10.2
Vis: 49
PV: 15
YP: 6
Gel: 5/6/7
FIL (HTHP): 10
SOL: 14.5%
CI: 35,000
NAP/H20 Ratio 85/15
ES 670
12
Mud Weight (ppg)
8
20
70

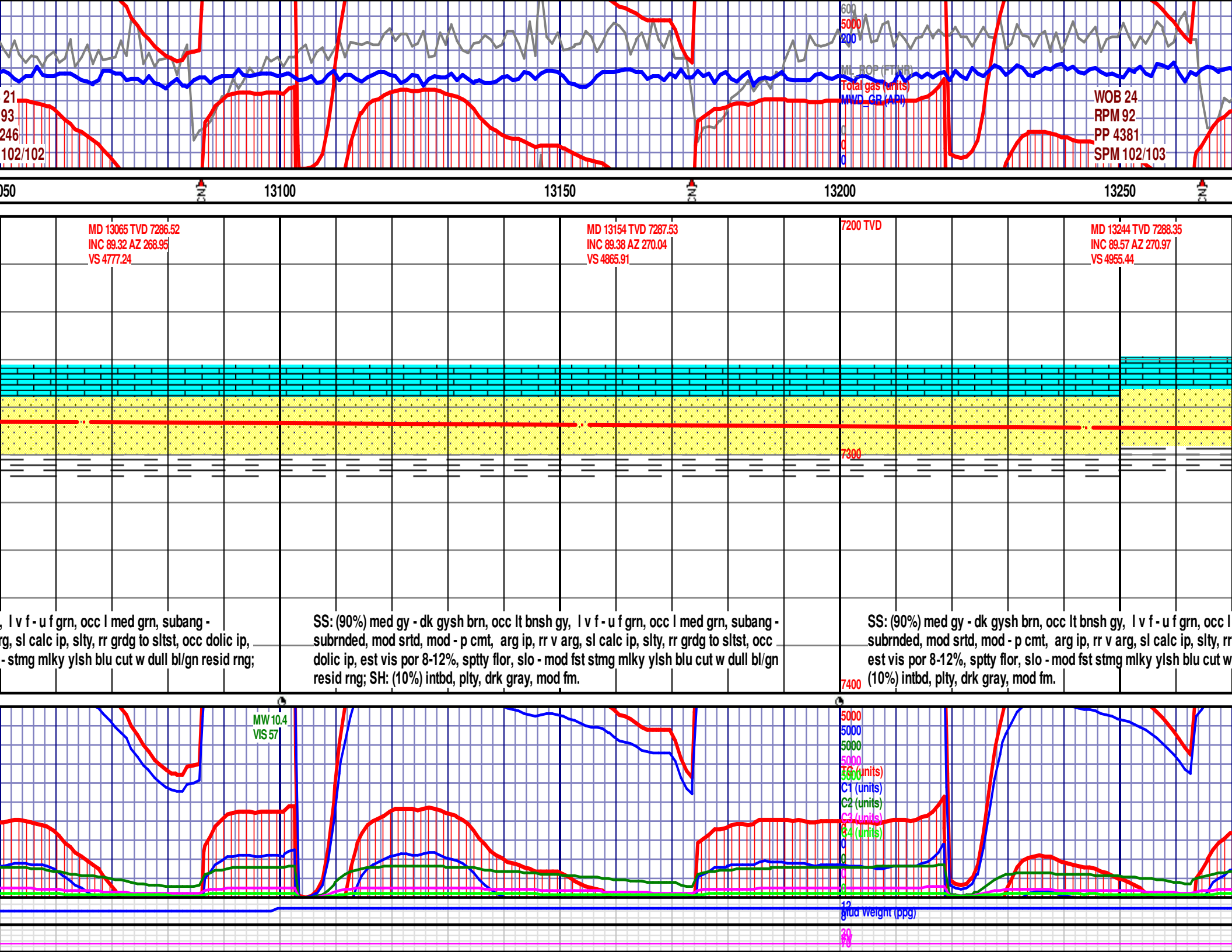

600
5000
200
Total gas (units)
MWD_GR (API)
0
0
WOB 29
RPM 101
PP 4015
SPM 104/103
950
12000
12050
12100
12150
MD 11989 TVD 7277.94
INC 89.72 AZ 271.11
VS 3704.6
MD 12080 TVD 7278.41
INC 89.69 AZ 270.63
VS 3795.06
TOOH for Auto Track
11/21/17
7300
BIT #2, 8.5", BHI, TD505X, Jets 5x15s, SN#: 7911565, Rotary Steerable Directional BHA, IN @ 1801', ON 11/18/17, OUT ON 11/21/17 @ 12,103' MD, DRILLED 10,301' IN 39.1 BIT HR.
BIT #3, 8.5", HCC, ATD505X, Jets 5x15s, SN#: 7911613, Rotary Steerable Directional BHA, IN @ 12,103', ON 11/21/17, OUT ON 11/24/17 @19,093' MD, DRILLED 6990' IN 27 BIT HR.
l v f - u f grn, rr lse med grn, subang - subrnded, rdg to sltst, sl calc, dcrg dolic ip, est vis por ylsh blu cut w dull bl/gn resid rng; SH: (10%) intbd,
SS: (90%) med gy - dk gysh brn, dcrg lt bnsh gy, l v f - u f grn, rr lse med grn, subang - subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, dcrg dolic ip, est vis por 8-10%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (10%) intbd, plty, drk gray, mod fm; tr DOL.
SS: (90%) med gy - dk gysh brn, occ lt bnsh gy, l v f - u f grn, rr lse me mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, dc 8-10%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/ intbd, plty, drk gray, mod fm.
7400
5000
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
MW 10.2
VIS 51
DATE: 11/22/17
DEPTH: 12103'
WT: 10.35
Vis: 55
PV: 16
YP: 6
Gel: 5/6/7
FIL (HTHP): 13
SOL: 15%
CI: 33,000
NAP/H20 Ratio 84/16
ES 707
MW 10.4
VIS 53
12
8
Mud Weight (ppg)
30
70

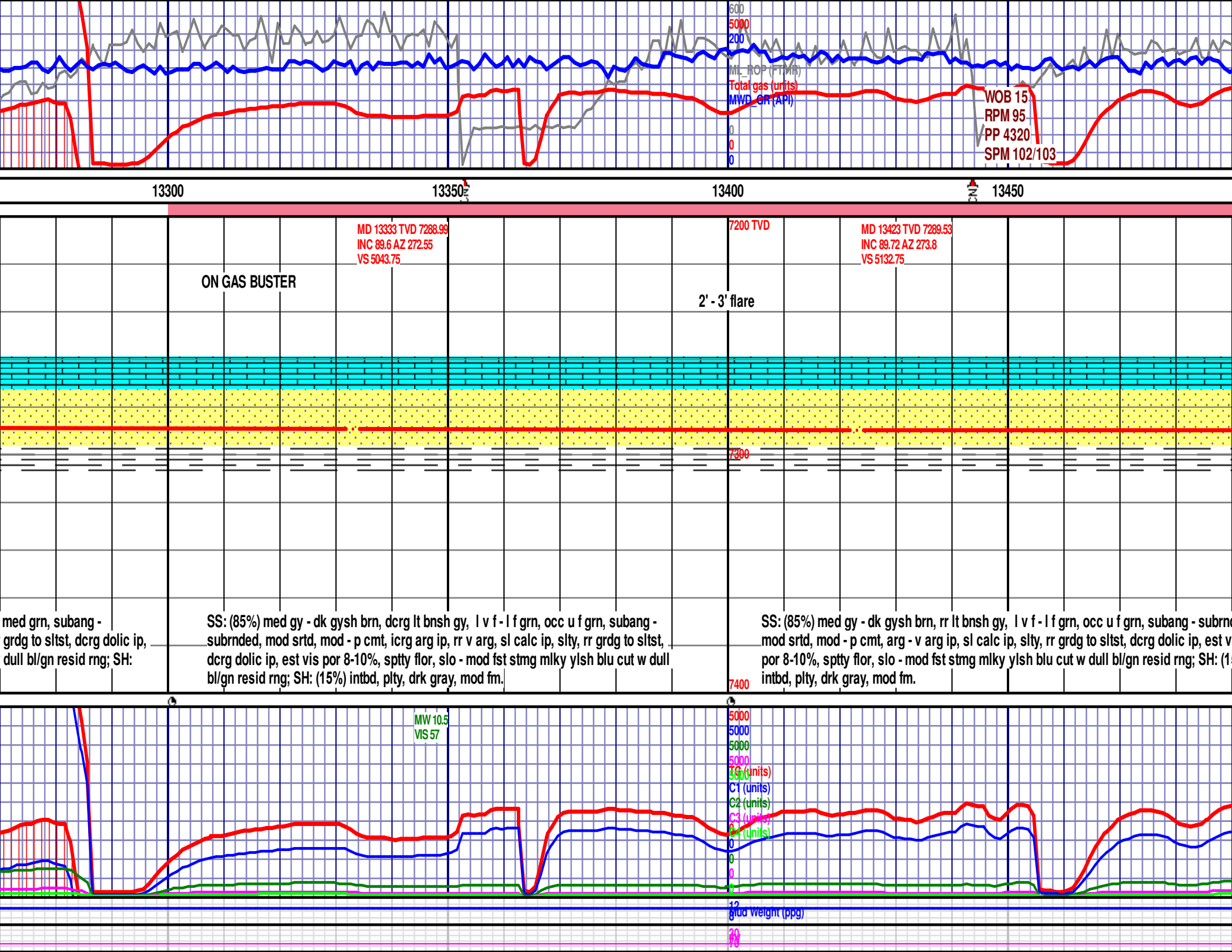

600
5000
200
Total gas (units)
MWD_GR (API)
0
0
0
WOB 23
RPM 92
PP 3943
SPM 103/103
CN
12200
12250
CN
12300
12350
CN
MD 12170 TVD 7279.04
INC 89.51 AZ 271.29
VS 3884.51
7200 TVD
MD 12259 TVD 7279.66
INC 89.69 AZ 270.71
VS 3972.96
MD 12349 TVD 7280.27
INC 89.54 AZ 270.01
VS 4062.51
7300
ed grn, subang - subrnded,
crg dolic ip, est vis por
gn resid rng; SH: (10%)
SS: (90%) med gy - dk gysh brn, icrg lt bnsh gy, l v f - u f grn, rr lse med grn, subang -
subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, icrg dolic ip,
est vis por 8-10%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid
rng; SH: (10%) intbd, plty, drk gray, mod fm.
SS: (90%) med gy - dk gysh brn, dcrg lt bnsh gy, l v f - u f grn, dcrg lse med grn, subang -
subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, sl calc, dcrg dolic i
est vis por 8-10%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid
SH: (10%) intbd, plty, drk gray, mod fm.
5000
5000
5000
5000
3600
C1 (units)
C2 (units)
C3 (units)
0
0
0
12
Mud Weight (ppg)

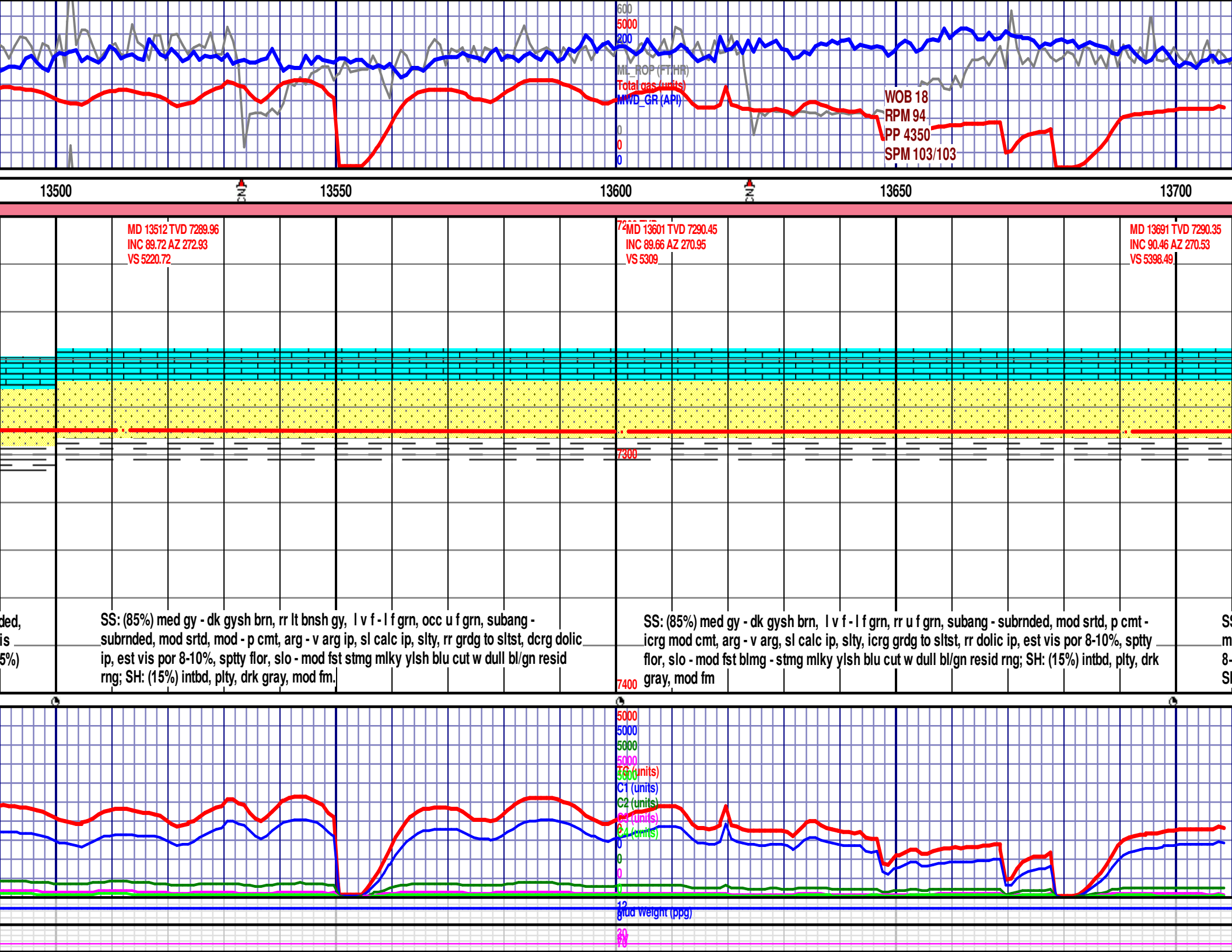

600
5000
200
Total gas (units)
MWD_GR (API)
0
0
WOB 27
RPM 93
PP 4136
SPM 102/103
12400
12450
12500
12550
12600
7200 TVD
MD 12439 TVD 7280.9
INC 89.66 AZ 269.51
VS 4152.15
MD 12528 TVD 7281.54
INC 89.51 AZ 268.26
VS 4240.9
7300
7400
SS: (90%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ u f grn, subang - subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, rr dolic ip, est vis por 8-10%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (10%) intbd, plty, drk gray, mod fm.
SS: (85%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ u f grn, subang - subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, rr dolic ip, est vis por 8-10%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (15%) intbd, plty, drk gray, mod fm.
MW 10.4
VIS 55
C1 (units)
C2 (units)
C3 (units)
C4 (units)
Mud Weight (ppg)

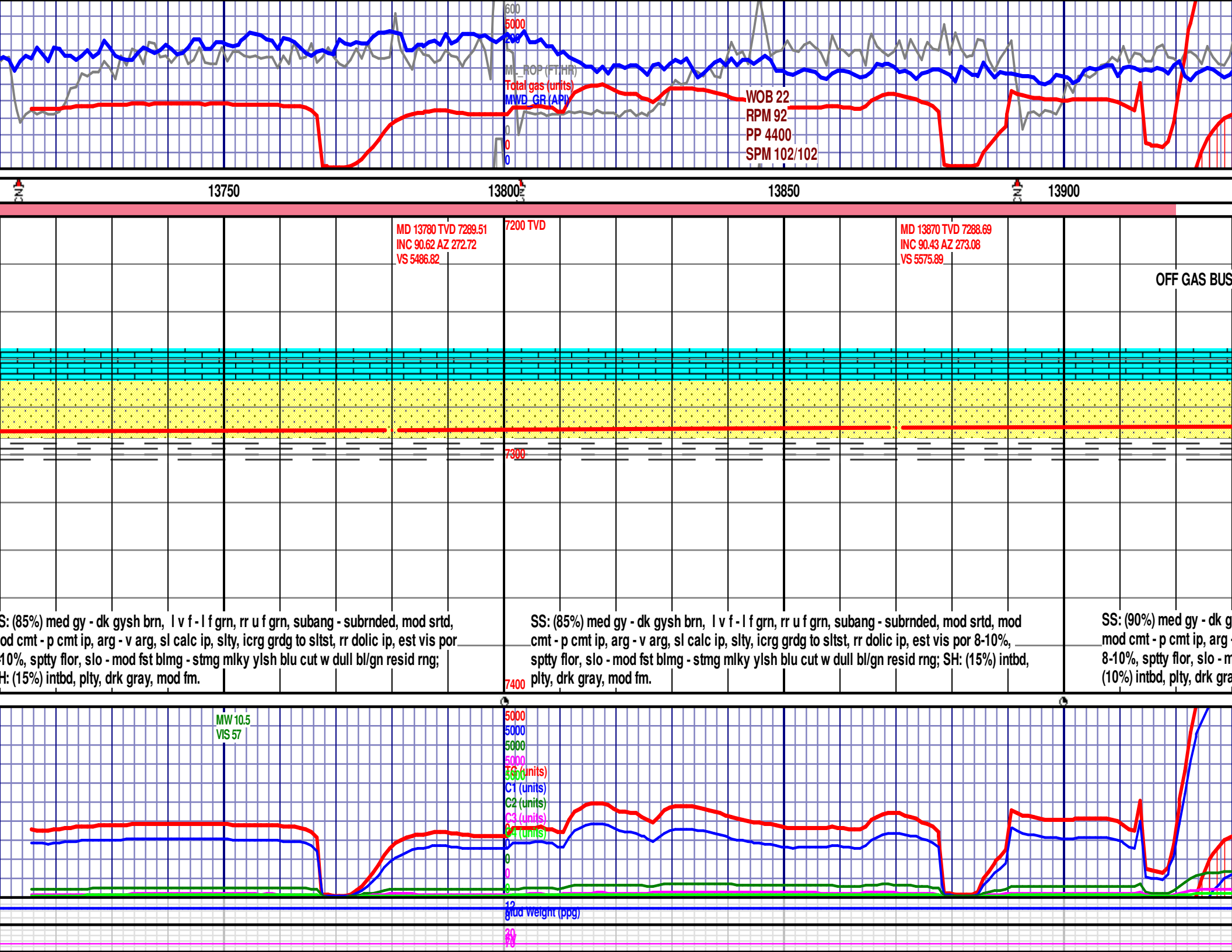

WOB 24
RPM 94
PP 4168
SPM 103/102
Total gas (units)
MWD_GR (API)
12650
12700
12750
12800
MD 12618 TVD 7282.38
INC 89.42 AZ 267.54
VS 4330.76
MD 12707 TVD 7283.28
INC 89.42 AZ 266.18
VS 4419.68
MD 12796 TVD 7284.14
INC 89.48 AZ 266.09
VS 4508.65
7300
7400
85%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ u f grn, subang - subrnded, mod
mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, rr dolic ip, rr xln pyr, est vis por 8-10%,
flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (15%) intbd,
drk gray, mod fm.
SS: (85%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ u f grn, subang -
subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, slty, rr grdg to sltst, rr dolic ip, est vis
por 8-10%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng;
SH: (15%) intbd, plty, drk gray, mod fm.
SS: (85%) med gy - dk gys
subrnded, mod srtd, mod
dolic ip, est vis por 8-10%
bl/gn resid rng; SH: (15%)
MW 10.4
VIS 55
C1 (units)
C2 (units)
C3 (units)
C4 (units)
mud weight (ppg)

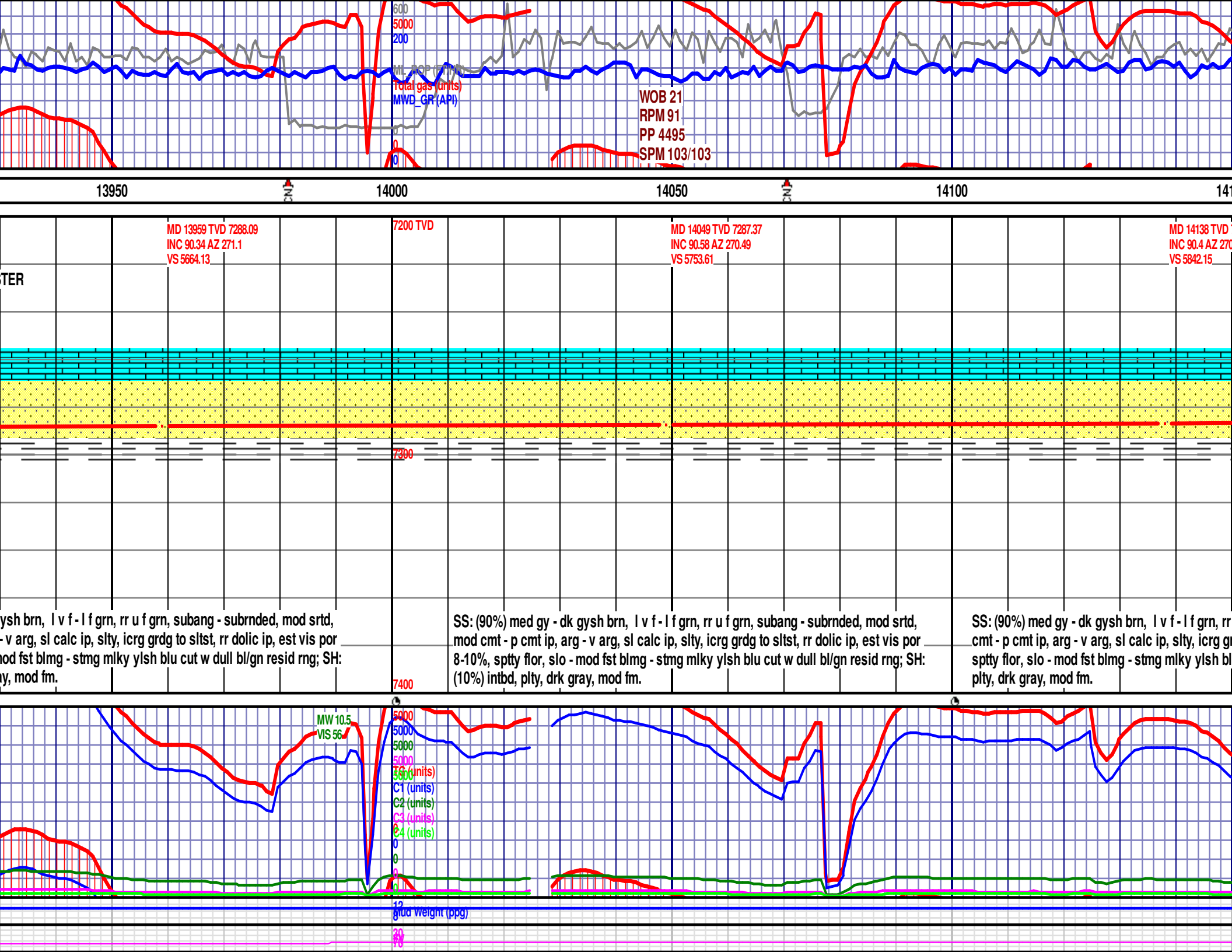

WOB 26
RPM 93
PP 4228
SPM 102/102
5000
200
Total gas (units)
MWD_GR (API)
0
0
12850
12900
12950
13000
MD 12886 TVD 7284.95
INC 89.48 AZ 267.21
VS 4598.59
MD 12975 TVD 7285.67
INC 89.6 AZ 268.23
VS 4687.46
7200 TVD
7300
7400
sh brn, rr lt bnsh gy, l v f - l f grn, occ u f grn, subang -
- p cmt, arg ip, rr v arg, sl calc ip, slty, rr grdg to sltst, icrg
%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull
intbd, plty, drk gray, mod fm.
SS: (85%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ u f - l med grn, subang -
subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, sl calc ip, slty, rr grdg to sltst, occ dolic ip,
est vis por 8-10%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng;
SH: (15%) intbd, plty, drk gray, mod fm.
SS: (90%) med gy - dk gysh brn, icrg lt bnsh gy,
subrnded, mod srtd, mod - p cmt, arg ip, rr v ar
est vis por 8-10%, sptty flor, slo - mod fst blmg
SH: (10%) intbd, plty, drk gray, mod fm.
MW 10.1
VIS 57
5000
5000
5000
5000
3600
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
8
20
0

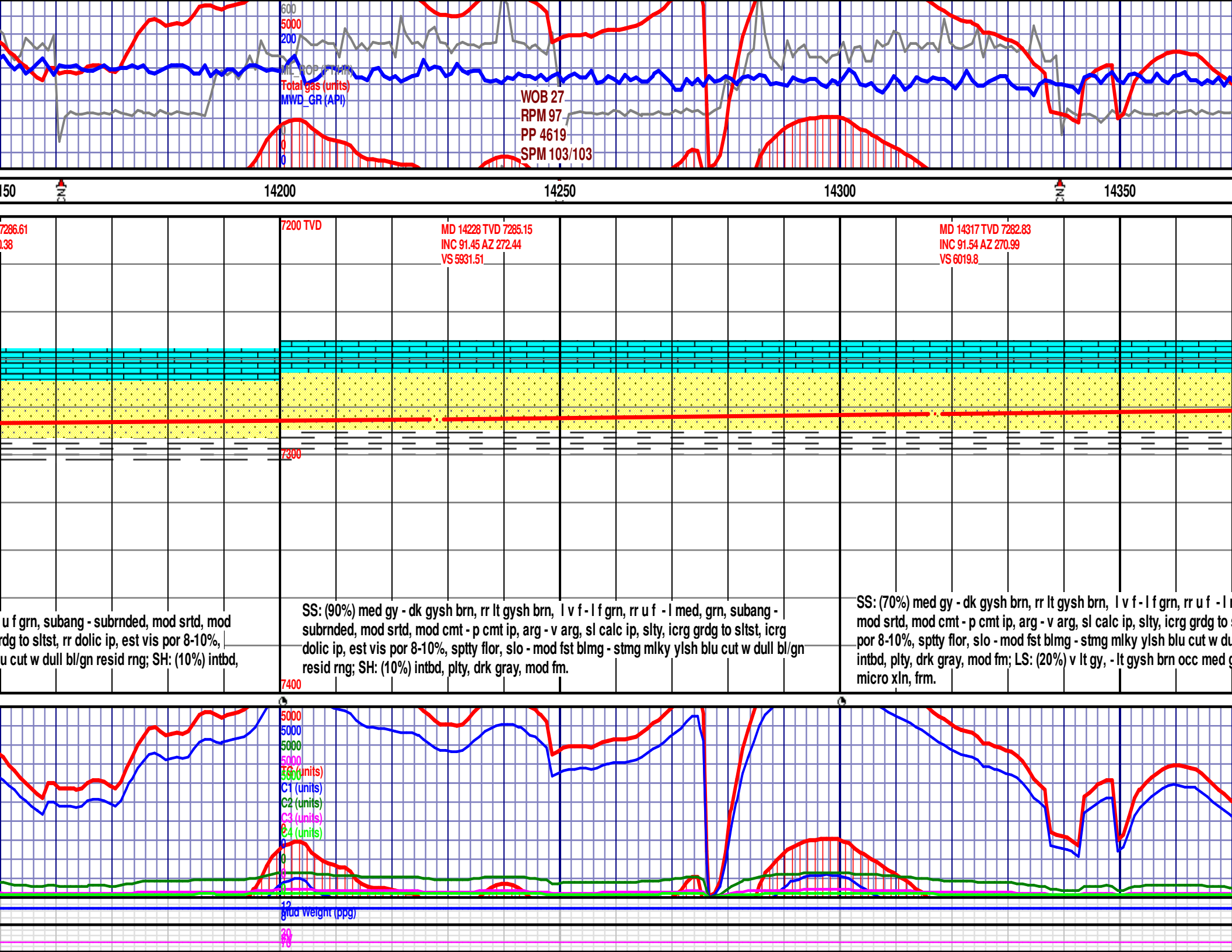

600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
21
93
246
102/102
WOB 24
RPM 92
PP 4381
SPM 102/103
050
CN
13100
13150
CN
13200
13250
CN
MD 13065 TVD 7286.52
INC 89.32 AZ 268.95
VS 4777.24
MD 13154 TVD 7287.53
INC 89.38 AZ 270.04
VS 4865.91
7200 TVD
MD 13244 TVD 7288.35
INC 89.57 AZ 270.97
VS 4955.44
7300
7400
l v f - u f grn, occ l med grn, subang -
rg, sl calc ip, slty, rr grdg to sltst, occ dolic ip,
- stmg mlky ylsh blu cut w dull bl/gn resid rng;
SS: (90%) med gy - dk gysh brn, occ lt bnsh gy, l v f - u f grn, occ l med grn, subang -
subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, sl calc ip, slty, rr grdg to sltst, occ
dolic ip, est vis por 8-12%, sptty flor, slo - mod fst stmg mlky ylsh blu cut w dull bl/gn
resid rng; SH: (10%) intbd, plty, drk gray, mod fm.
SS: (90%) med gy - dk gysh brn, occ lt bnsh gy, l v f - u f grn, occ l
subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, sl calc ip, slty, rr
est vis por 8-12%, sptty flor, slo - mod fst stmg mlky ylsh blu cut w
(10%) intbd, plty, drk gray, mod fm.
MW 10.4
VIS 57
5000
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
20

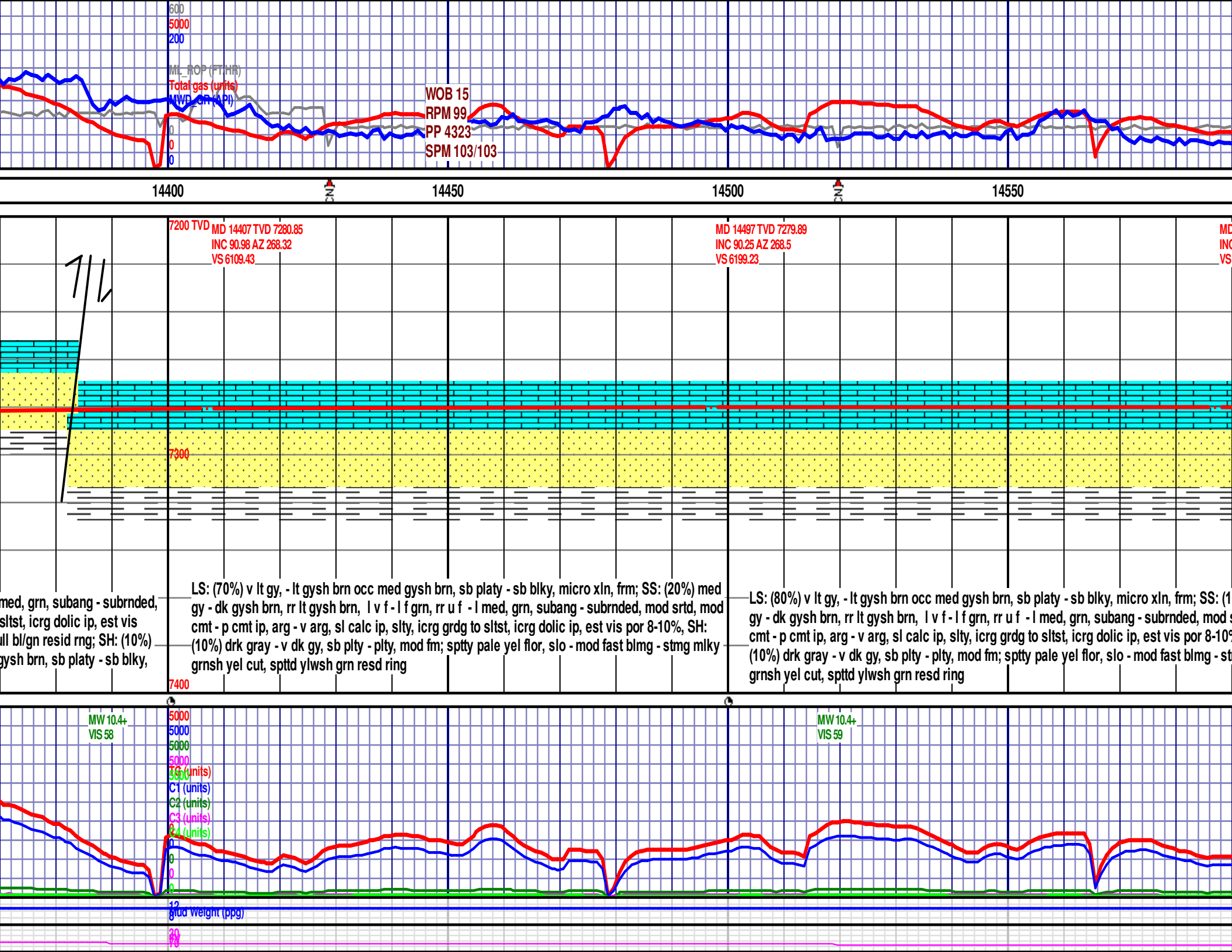

600
5000
200
MIL_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 15
RPM 95
PP 4320
SPM 102/103
13300
13350
13400
13450
MD 13333 TVD 7288.99
INC 89.6 AZ 272.55
VS 5043.75
7200 TVD
MD 13423 TVD 7289.53
INC 89.72 AZ 273.8
VS 5132.75
ON GAS BUSTER
2' - 3' flare
7300
med grn, subang -
grdg to sltst, dcrg dolic ip,
dull bl/gn resid rng; SH:
SS: (85%) med gy - dk gysh brn, dcrg lt bnsh gy, l v f - l f grn, occ u f grn, subang -
subrnded, mod srtd, mod - p cmt, icrg arg ip, rr v arg, sl calc ip, slty, rr grdg to sltst,
dcrg dolic ip, est vis por 8-10%, sptty flor, slo - mod fst stmg mlky ylsh blu cut w dull
bl/gn resid rng; SH: (15%) intbd, plty, drk gray, mod fm.
SS: (85%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ u f grn, subang - subrnd
mod srtd, mod - p cmt, arg - v arg ip, sl calc ip, slty, rr grdg to sltst, dcrg dolic ip, est v
por 8-10%, sptty flor, slo - mod fst stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (1
intbd, plty, drk gray, mod fm.
7400
MW 10.5
VIS 57
5000
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
8
mud weight (ppg)
30
70

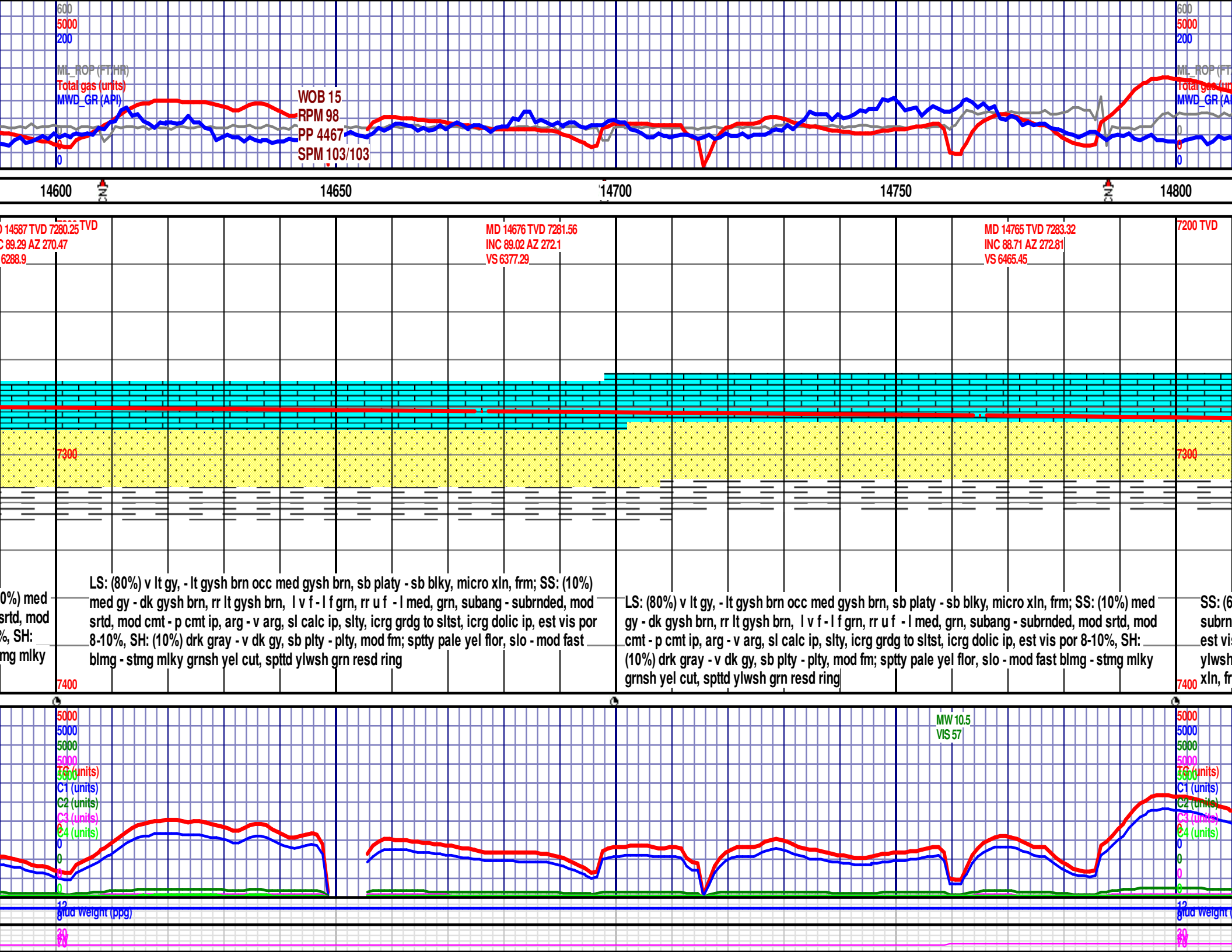

600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 18
RPM 94
PP 4350
SPM 103/103
13500
CN
13550
13600
CN
13650
13700
MD 13512 TVD 7289.96
INC 89.72 AZ 272.93
VS 5220.72
MD 13601 TVD 7290.45
INC 89.66 AZ 270.95
VS 5309
MD 13691 TVD 7290.35
INC 90.46 AZ 270.53
VS 5398.49
7300
7400
SS: (85%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ u f grn, subang - subrnded, mod srtd, mod - p cmt, arg - v arg ip, sl calc ip, slty, rr grdg to sltst, dcrg dolic ip, est vis por 8-10%, sptty flor, slo - mod fst stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (15%) intbd, plty, drk gray, mod fm.
SS: (85%) med gy - dk gysh brn, l v f - l f grn, rr u f grn, subang - subrnded, mod srtd, p cmt - icrg mod cmt, arg - v arg, sl calc ip, slty, icrg grdg to sltst, rr dolic ip, est vis por 8-10%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (15%) intbd, plty, drk gray, mod fm
5000
5000
5000
5000
3600
C1 (units)
C2 (units)
0
0
0
12
8
Mud Weight (ppg)
30

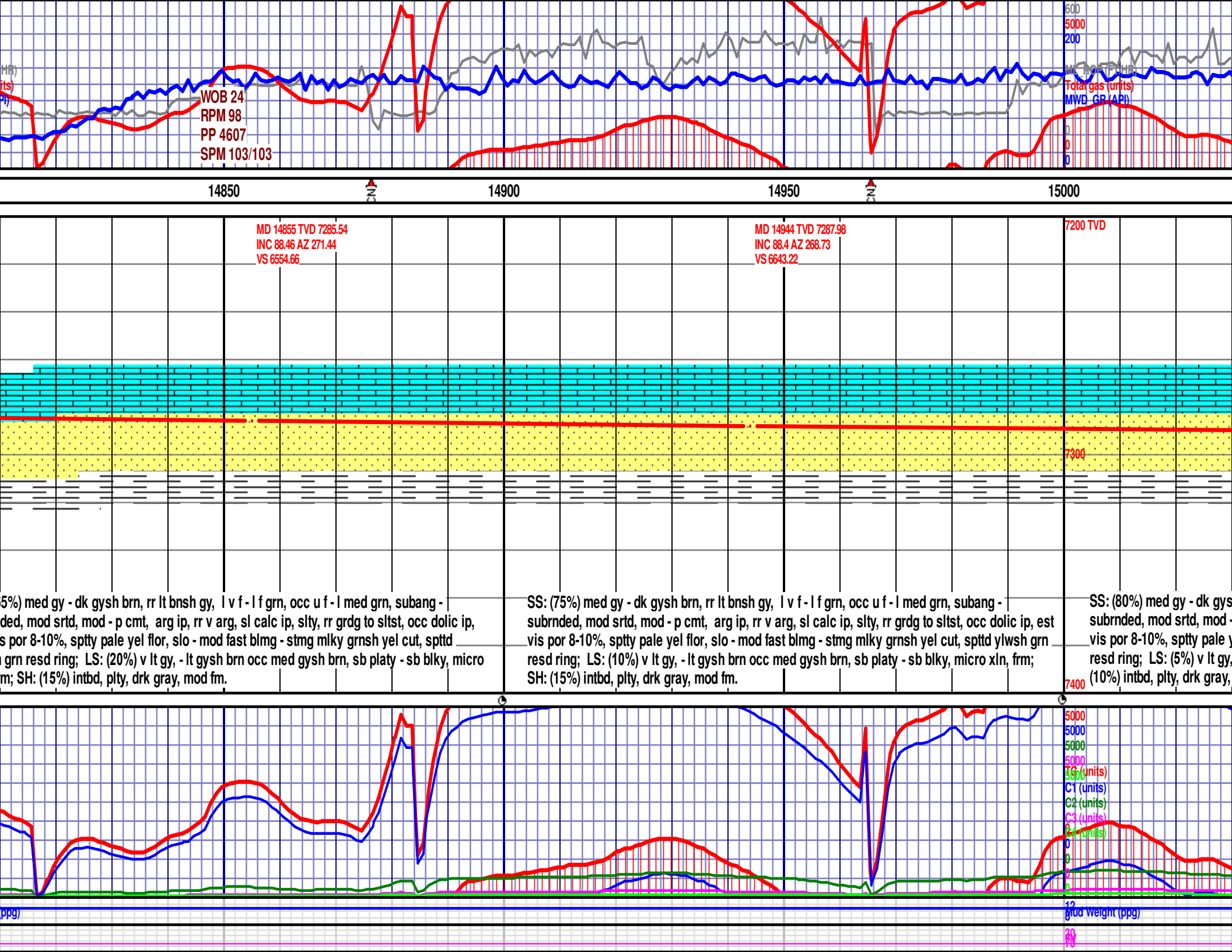

600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 22
RPM 92
PP 4400
SPM 102/102
13750
13800
13850
13900
MD 13780 TVD 7289.51
INC 90.62 AZ 272.72
VS 5486.82
7200 TVD
MD 13870 TVD 7288.69
INC 90.43 AZ 273.08
VS 5575.89
OFF GAS BUS
7300
7400
S: (85%) med gy - dk gysh brn, l v f - l f grn, rr u f grn, subang - subrnded, mod srtd,
od cmt - p cmt ip, arg - v arg, sl calc ip, slty, icrg grdg to sltst, rr dolic ip, est vis por
10%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng;
H: (15%) intbd, plty, drk gray, mod fm.
SS: (85%) med gy - dk gysh brn, l v f - l f grn, rr u f grn, subang - subrnded, mod srtd, mod
cmt - p cmt ip, arg - v arg, sl calc ip, slty, icrg grdg to sltst, rr dolic ip, est vis por 8-10%,
sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH: (15%) intbd,
plty, drk gray, mod fm.
SS: (90%) med gy - dk g
mod cmt - p cmt ip, arg
8-10%, sptty flor, slo - m
(10%) intbd, plty, drk gra
MW 10.5
VIS 57
5000
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
12
Mud Weight (ppg)
20

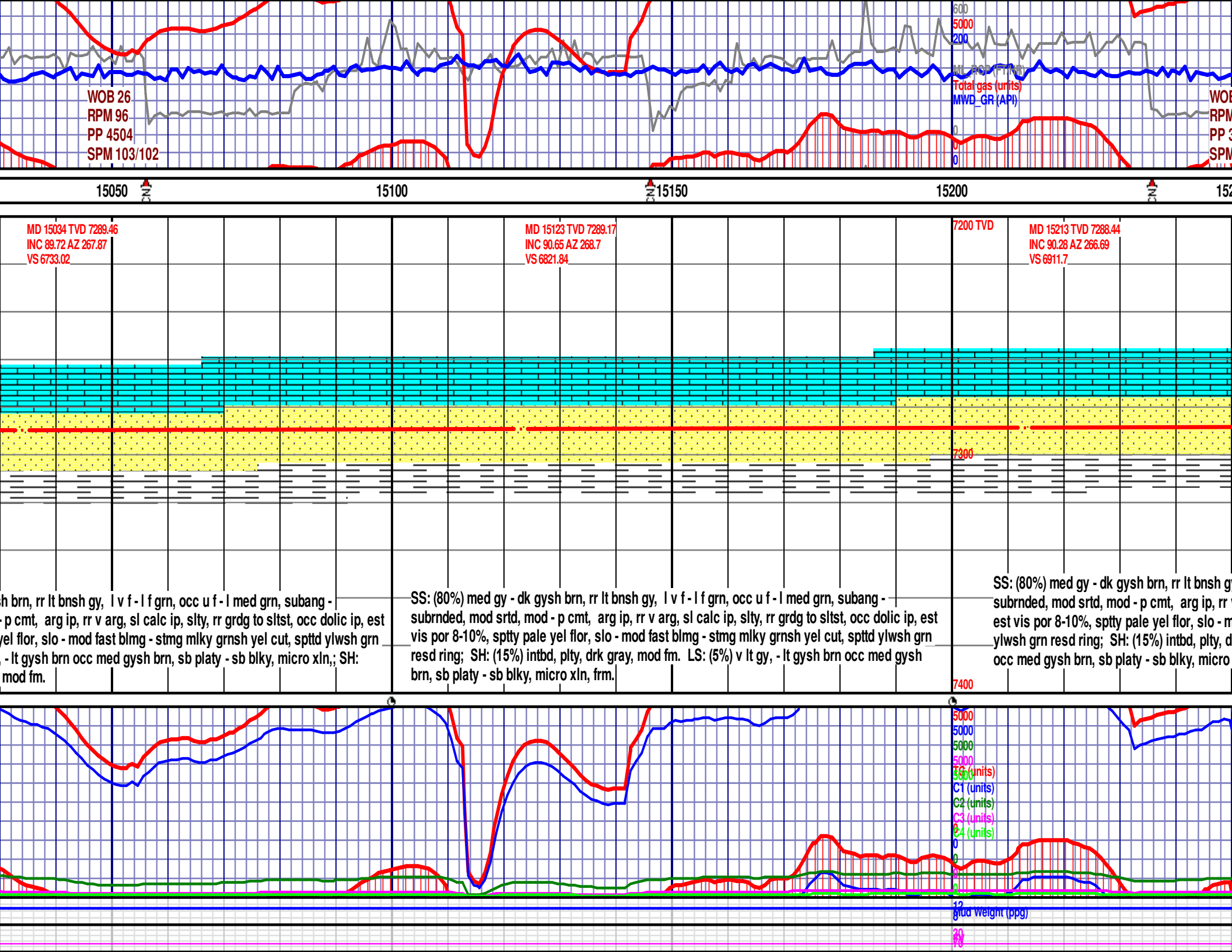

600
5000
200
Total gas (units)
MWD_GR (API)
0
0
WOB 21
RPM 91
PP 4495
SPM 103/103
13950
14000
14050
14100
MD 13959 TVD 7288.09
INC 90.34 AZ 271.1
VS 5664.13
7200 TVD
MD 14049 TVD 7287.37
INC 90.58 AZ 270.49
VS 5753.61
MD 14138 TVD
INC 90.4 AZ 270
VS 5842.15
7300
7400
ysh brn, l v f - l f grn, rr u f grn, subang - subrnded, mod srtd,
- v arg, sl calc ip, slty, icrg grdg to sltst, rr dolic ip, est vis por
od fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH:
y, mod fm.
SS: (90%) med gy - dk gysh brn, l v f - l f grn, rr u f grn, subang - subrnded, mod srtd,
mod cmt - p cmt ip, arg - v arg, sl calc ip, slty, icrg grdg to sltst, rr dolic ip, est vis por
8-10%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn resid rng; SH:
(10%) intbd, plty, drk gray, mod fm.
SS: (90%) med gy - dk gysh brn, l v f - l f grn, rr
cmt - p cmt ip, arg - v arg, sl calc ip, slty, icrg gr
sptty flor, slo - mod fst blmg - stmg mlky ylsh bl
plty, drk gray, mod fm.
MW 10.5
VIS 56
5000
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
20

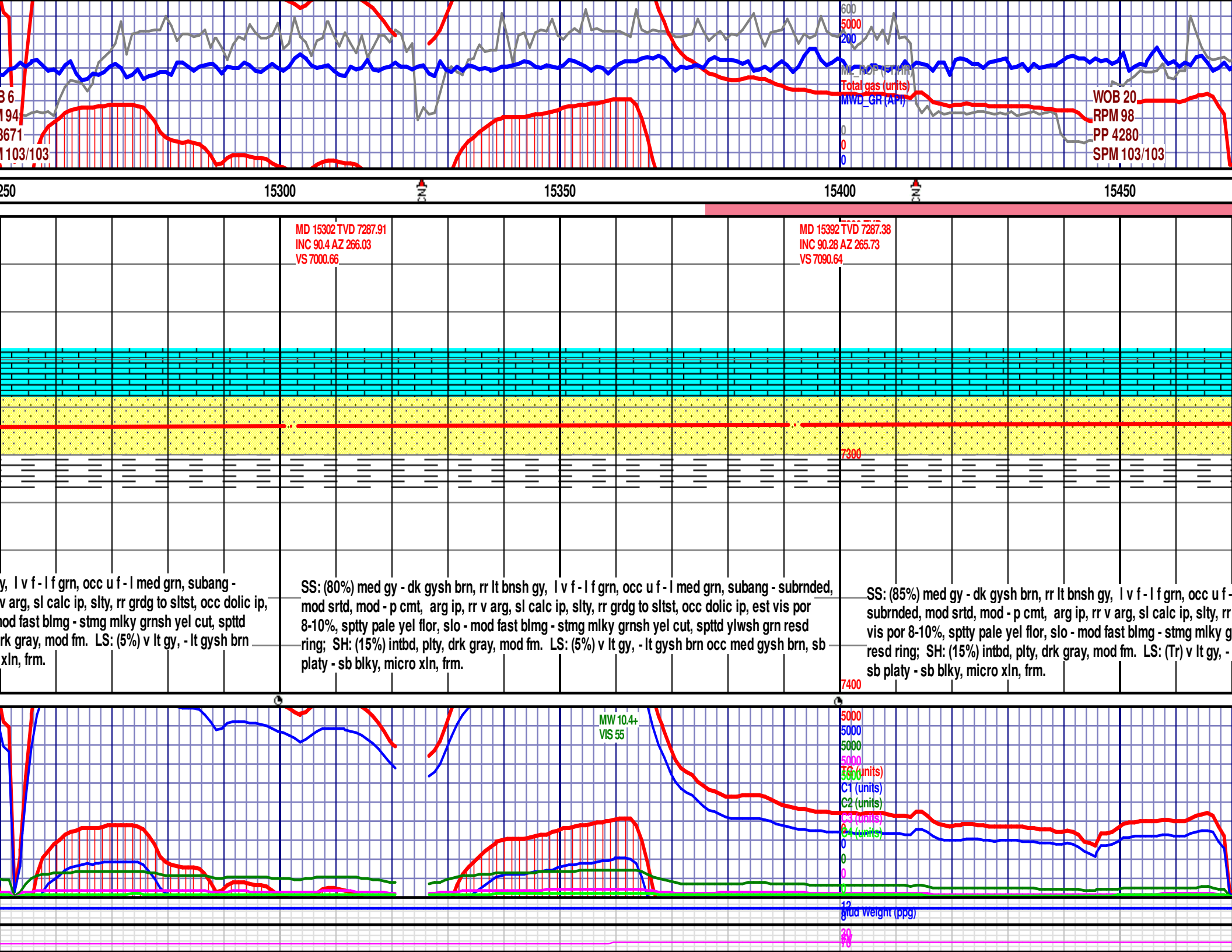

600
5000
200
ROP (FT/HR)
Total gas (units)
MWD_GR (API)
WOB 27
RPM 97
PP 4619
SPM 103/103
150
14200
14250
14300
14350
7286.61
0.38
7200 TVD
MD 14228 TVD 7285.15
INC 91.45 AZ 272.44
VS 5931.51
MD 14317 TVD 7282.83
INC 91.54 AZ 270.99
VS 6019.8
7300
7400
u f grn, subang - subrnded, mod srtd, mod
rdg to sltst, rr dolic ip, est vis por 8-10%,
u cut w dull bl/gn resid rng; SH: (10%) intbd,
SS: (90%) med gy - dk gysh brn, rr lt gysh brn, l v f - l f grn, rr u f - l med, grn, subang -
subrnded, mod srtd, mod cmt - p cmt ip, arg - v arg, sl calc ip, slty, icrg grdg to sltst, icrg
dolic ip, est vis por 8-10%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w dull bl/gn
resid rng; SH: (10%) intbd, plty, drk gray, mod fm.
SS: (70%) med gy - dk gysh brn, rr lt gysh brn, l v f - l f grn, rr u f - l
mod srtd, mod cmt - p cmt ip, arg - v arg, sl calc ip, slty, icrg grdg to
por 8-10%, sptty flor, slo - mod fst blmg - stmg mlky ylsh blu cut w du
intbd, plty, drk gray, mod fm; LS: (20%) v lt gy, - lt gysh brn occ med g
micro xln, frm.
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
mud weight (ppg)

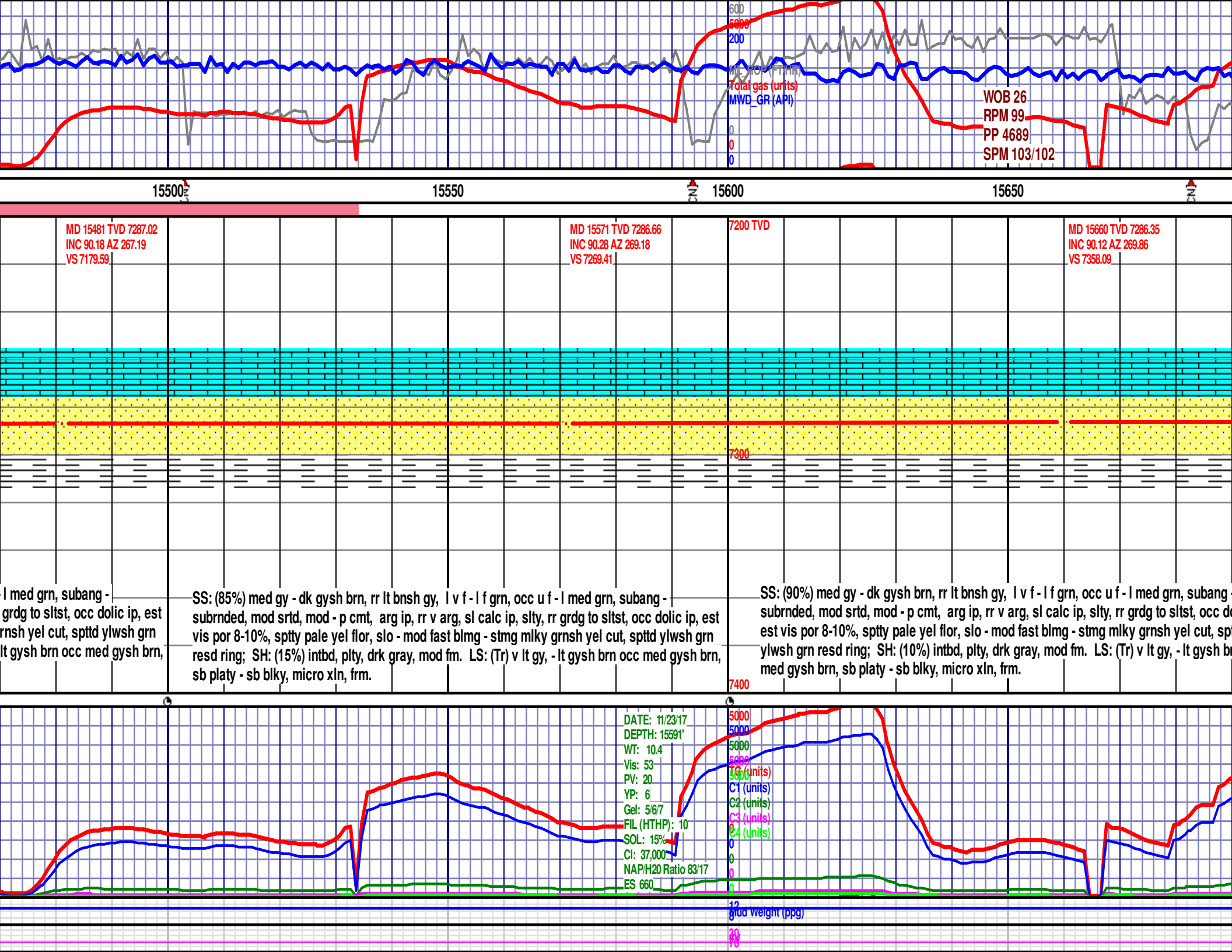

600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 15
RPM 99
PP 4323
SPM 103/103
14400
CN
14450
14500
CN
14550
7200 TVD
MD 14407 TVD 7280.85
INC 90.98 AZ 268.32
VS 6109.43
MD 14497 TVD 7279.89
INC 90.25 AZ 268.5
VS 6199.23
7300
med, grn, subang - subrnded,
sltst, icrg dolic ip, est vis
ull bl/gn resid rng; SH: (10%)
gysh brn, sb platy - sb blky,
LS: (70%) v lt gy, - lt gysh brn occ med gysh brn, sb platy - sb blky, micro xln, frm; SS: (20%) med gy - dk gysh brn, rr lt gysh brn, l v f - l f grn, rr u f - l med, grn, subang - subrnded, mod srtd, mod cmt - p cmt ip, arg - v arg, sl calc ip, slty, icrg grdg to sltst, icrg dolic ip, est vis por 8-10%, SH: (10%) drk gray - v dk gy, sb plty - plty, mod fm; sptty pale yel flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptted ylwsh grn resd ring
LS: (80%) v lt gy, - lt gysh brn occ med gysh brn, sb platy - sb blky, micro xln, frm; SS: (1
gy - dk gysh brn, rr lt gysh brn, l v f - l f grn, rr u f - l med, grn, subang - subrnded, mod
cmt - p cmt ip, arg - v arg, sl calc ip, slty, icrg grdg to sltst, icrg dolic ip, est vis por 8-10
(10%) drk gray - v dk gy, sb plty - plty, mod fm; sptty pale yel flor, slo - mod fast blmg - st
grnsh yel cut, sptted ylwsh grn resd ring
7400
MW 10.4+
VIS 58
MW 10.4+
VIS 59
5000
5000
5000
5000
3600
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
12
Mud Weight (ppg)
8
20
10

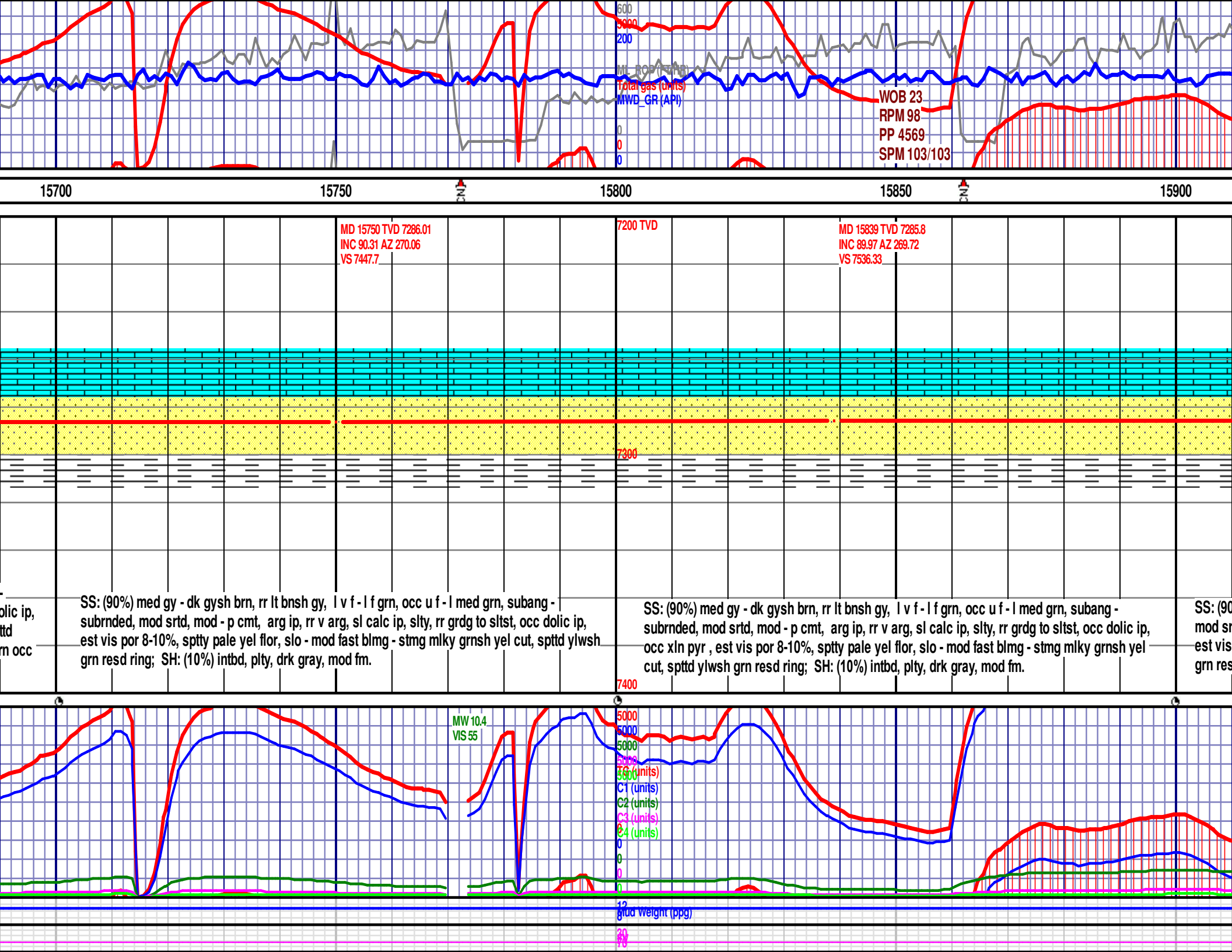

600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
WOB 15
RPM 98
PP 4467
SPM 103/103
14600
14650
14700
14750
14800
TVD
14587 TVD 7280.25
C 89.29 AZ 270.47
6288.9
MD 14676 TVD 7281.56
INC 89.02 AZ 272.1
VS 6377.29
MD 14765 TVD 7283.32
INC 88.71 AZ 272.81
VS 6465.45
7200 TVD
7300
7400
0%) med
srtd, mod
%, SH:
mg mlky
LS: (80%) v lt gy, - lt gysh brn occ med gysh brn, sb platy - sb blky, micro xln, frm; SS: (10%) med gy - dk gysh brn, rr lt gysh brn, l v f - l f grn, rr u f - l med, grn, subang - subrnded, mod srtd, mod cmt - p cmt ip, arg - v arg, sl calc ip, slty, icrg grdg to sltst, icrg dolic ip, est vis por 8-10%, SH: (10%) drk gray - v dk gy, sb plty - plty, mod fm; sptty pale yel flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd ring
LS: (80%) v lt gy, - lt gysh brn occ med gysh brn, sb platy - sb blky, micro xln, frm; SS: (10%) med gy - dk gysh brn, rr lt gysh brn, l v f - l f grn, rr u f - l med, grn, subang - subrnded, mod srtd, mod cmt - p cmt ip, arg - v arg, sl calc ip, slty, icrg grdg to sltst, icrg dolic ip, est vis por 8-10%, SH: (10%) drk gray - v dk gy, sb plty - plty, mod fm; sptty pale yel flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd ring
SS: (6
subrn
est vi
ylwsh
xln, fr
MW 10.5
VIS 57
C1 (units)
C2 (units)
C3 (units)
C4 (units)
Mud Weight (ppg)

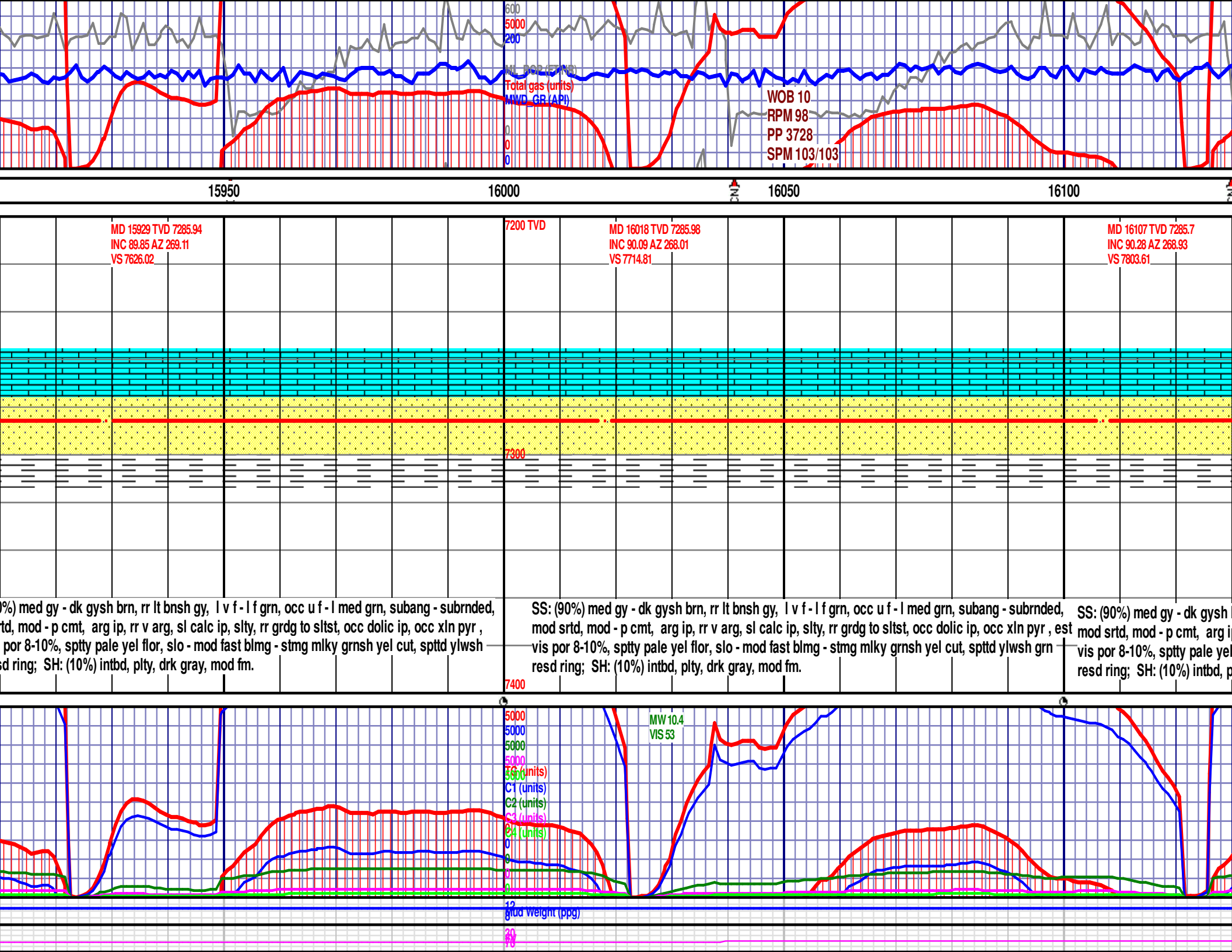

WOB 24
RPM 98
PP 4607
SPM 103/103
600
5000
200
Total gas (units)
MWD_GR (API)
14850
CN
14900
14950
CN
15000
MD 14855 TVD 7285.54
INC 88.46 AZ 271.44
VS 6554.66
MD 14944 TVD 7287.98
INC 88.4 AZ 268.73
VS 6643.22
7200 TVD
7300
7400
5%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ u f - l med grn, subang -
ded, mod srtd, mod - p cmt, arg ip, rr v arg, sl calc ip, slty, rr grdg to sltst, occ dolic ip,
s por 8-10%, sptty pale yel flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd
grn resd ring; LS: (20%) v lt gy, - lt gysh brn occ med gysh brn, sb platy - sb blky, micro
m; SH: (15%) intbd, plty, drk gray, mod fm.
SS: (75%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ u f - l med grn, subang -
subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, sl calc ip, slty, rr grdg to sltst, occ dolic ip, est
vis por 8-10%, sptty pale yel flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn
resd ring; LS: (10%) v lt gy, - lt gysh brn occ med gysh brn, sb platy - sb blky, micro xln, frm;
SH: (15%) intbd, plty, drk gray, mod fm.
SS: (80%) med gy - dk gys
subrnded, mod srtd, mod -
vis por 8-10%, sptty pale y
resd ring; LS: (5%) v lt gy,
(10%) intbd, plty, drk gray,
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
ppg)
Mud Weight (ppg)

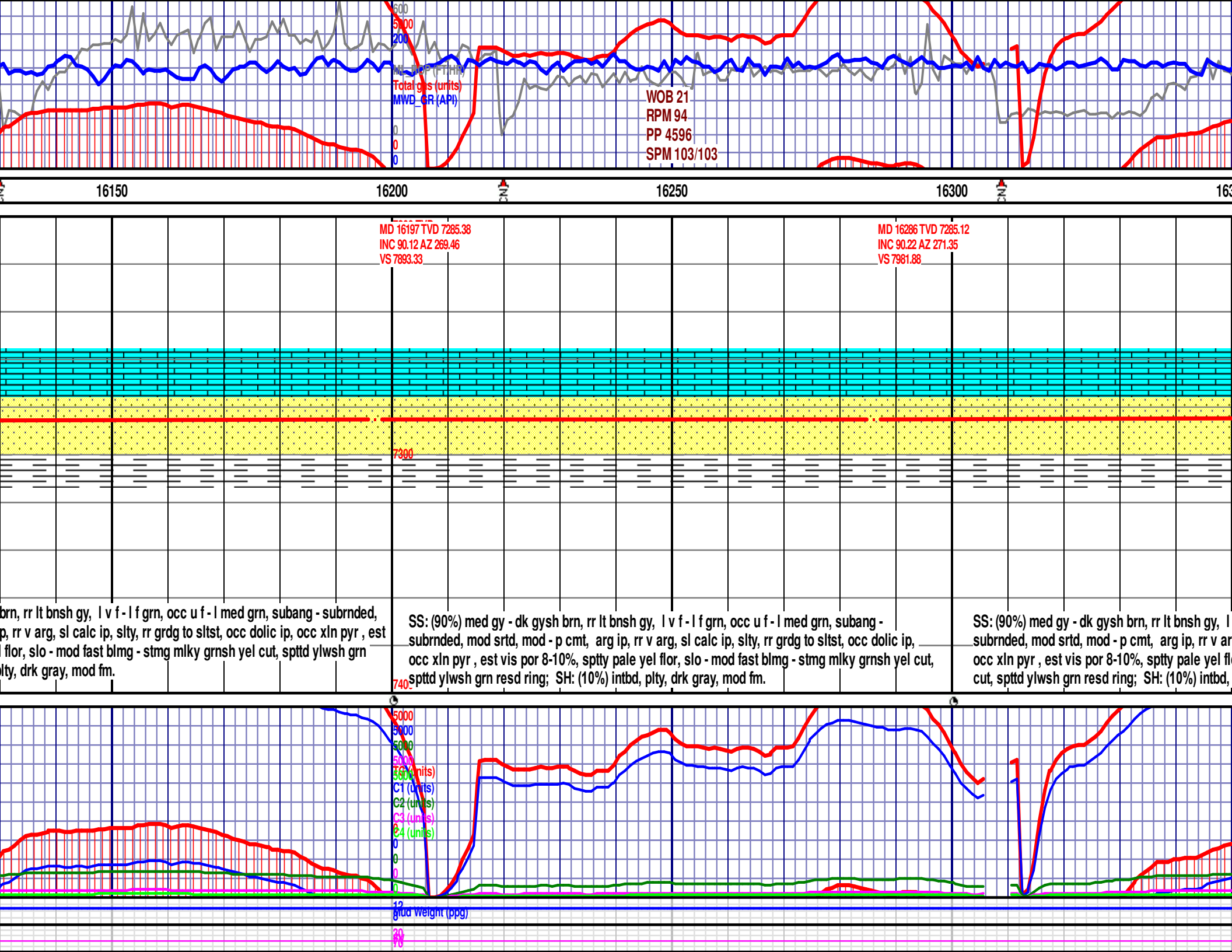

WOB 26
RPM 96
PP 4504
SPM 103/102
600
5000
200
Total gas (units)
MWD_GR (API)
0
0
15050
15100
15150
15200
MD 15034 TVD 7289.46
INC 89.72 AZ 267.87
VS 6733.02
MD 15123 TVD 7289.17
INC 90.65 AZ 268.7
VS 6821.84
7200 TVD
MD 15213 TVD 7288.44
INC 90.28 AZ 266.69
VS 6911.7
7300
7400
SS: (80%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ u f - l med grn, subang - subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, sl calc ip, slty, rr grdg to sltst, occ dolic ip, est vis por 8-10%, sptty pale yel flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd ring; SH: (15%) intbd, plty, drk gray, mod fm. LS: (5%) v lt gy, - lt gysh brn occ med gysh brn, sb platy - sb blky, micro xln, frm.
5000
5000
5000
5000
3600
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
mud weight (ppg)
8

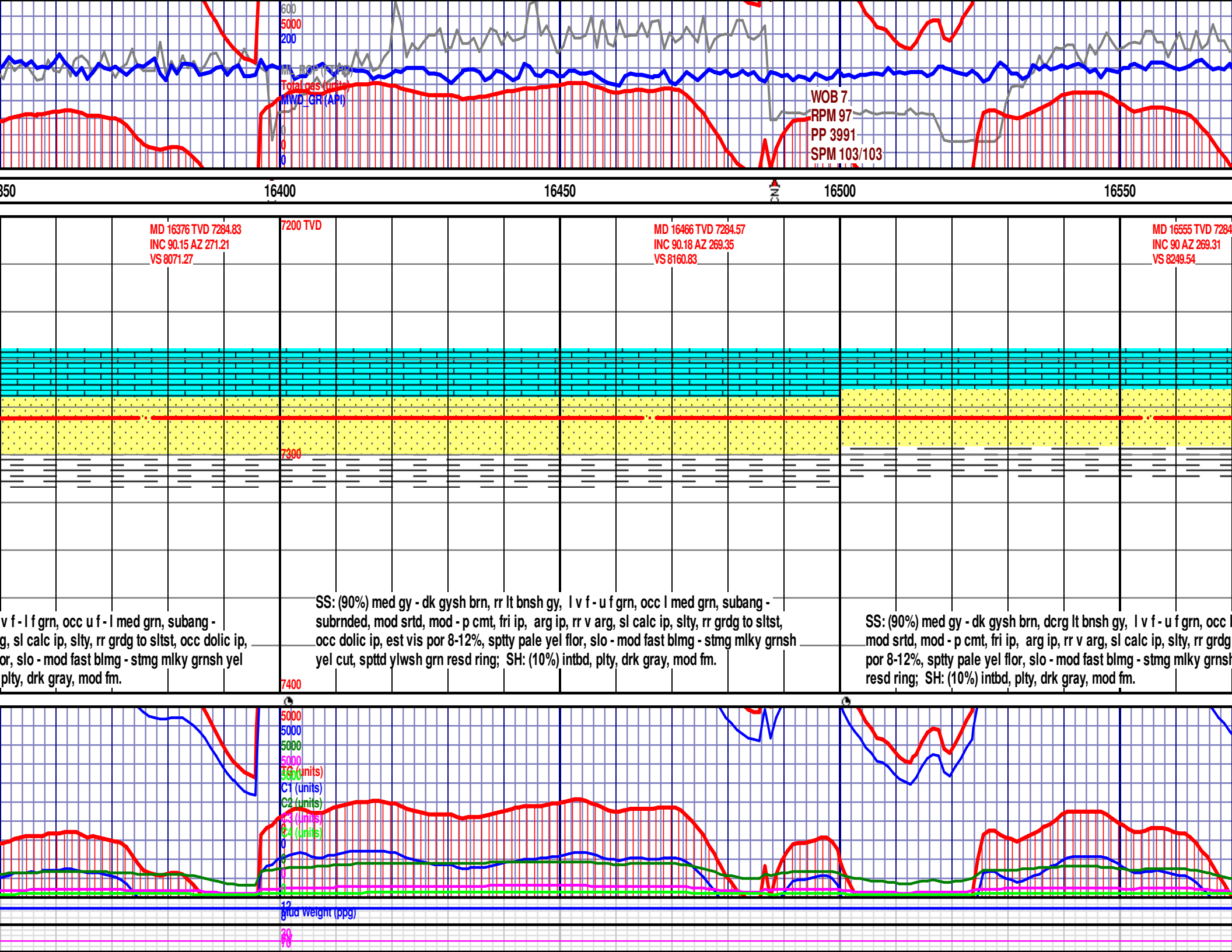

600
5000
200
Total gas (units)
MWD_GR (API)
0
0
0
B 6
194
3671
1103/103
WOB 20
RPM 98
PP 4280
SPM 103/103
250
15300
CN
15350
15400
CN
15450
MD 15302 TVD 7287.91
INC 90.4 AZ 266.03
VS 7000.66
MD 15392 TVD 7287.38
INC 90.28 AZ 265.73
VS 7090.64
7300
y, l v f - l f grn, occ u f - l med grn, subang -
v arg, sl calc ip, slty, rr grdg to sltst, occ dolic ip,
od fast blmg - stmg mlky grnsh yel cut, spttd
rk gray, mod fm. LS: (5%) v lt gy, - lt gysh brn
xln, frm.
SS: (80%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ u f - l med grn, subang - subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, sl calc ip, slty, rr grdg to sltst, occ dolic ip, est vis por 8-10%, sptty pale yel flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd ring; SH: (15%) intbd, plty, drk gray, mod fm. LS: (5%) v lt gy, - lt gysh brn occ med gysh brn, sb platy - sb blky, micro xln, frm.
SS: (85%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ u f -
subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, sl calc ip, slty, rr
vis por 8-10%, sptty pale yel flor, slo - mod fast blmg - stmg mlky g
resd ring; SH: (15%) intbd, plty, drk gray, mod fm. LS: (Tr) v lt gy, -
sb platy - sb blky, micro xln, frm.
7400
MW 10.4+
VIS 55
5000
5000
5000
5000
3500
units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
8
Mud Weight (ppg)
20
10

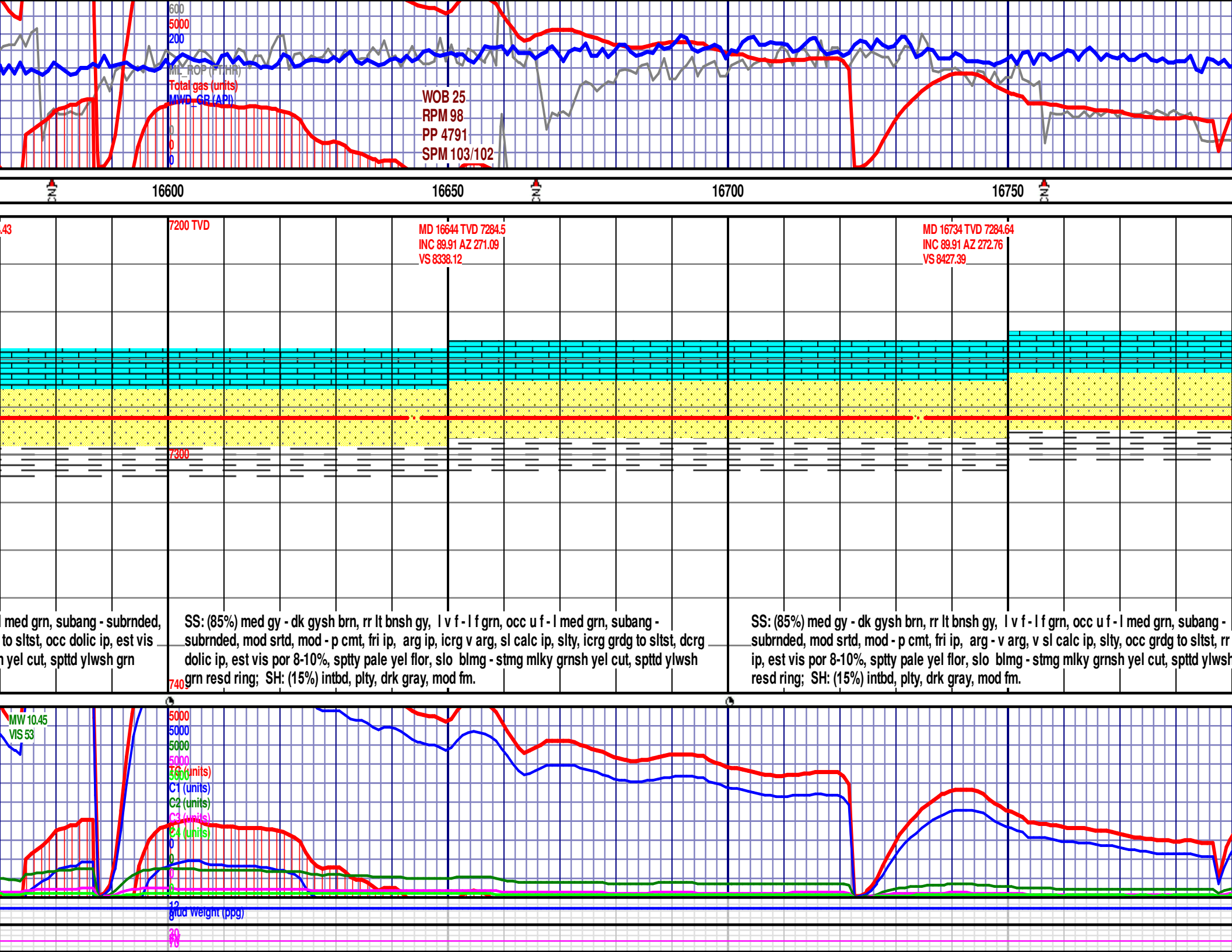

600
5000
200
Total gas (units)
MWD_GR (API)
0
0
0
WOB 26
RPM 99
PP 4689
SPM 103/102
15500
15550
15600
15650
MD 15481 TVD 7287.02
INC 90.18 AZ 267.19
VS 7179.59
MD 15571 TVD 7286.66
INC 90.28 AZ 269.18
VS 7269.41
7200 TVD
MD 15660 TVD 7286.35
INC 90.12 AZ 269.86
VS 7358.09
7300
7400
l med grn, subang -
grdg to sltst, occ dolic ip, est
rnsh yel cut, spttd ylwsh grn
lt gysh brn occ med gysh brn,
SS: (85%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ u f - l med grn, subang -
subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, sl calc ip, slty, rr grdg to sltst, occ dolic ip, est
vis por 8-10%, sptty pale yel flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn
resd ring; SH: (15%) intbd, plty, drk gray, mod fm. LS: (Tr) v lt gy, - lt gysh brn occ med gysh brn,
sb platy - sb blky, micro xln, frm.
SS: (90%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ u f - l med grn, subang -
subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, sl calc ip, slty, rr grdg to sltst, occ d
est vis por 8-10%, sptty pale yel flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sp
ylwsh grn resd ring; SH: (10%) intbd, plty, drk gray, mod fm. LS: (Tr) v lt gy, - lt gysh br
med gysh brn, sb platy - sb blky, micro xln, frm.
DATE: 11/23/17
DEPTH: 15591'
WT: 10.4
Vis: 53
PV: 20
YP: 6
Gel: 5/6/7
FIL (HTHP): 10
SOL: 15%
CI: 37,000
NAP/H20 Ratio 83/17
ES 660
5000
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
8
30
Mud Weight (ppg)

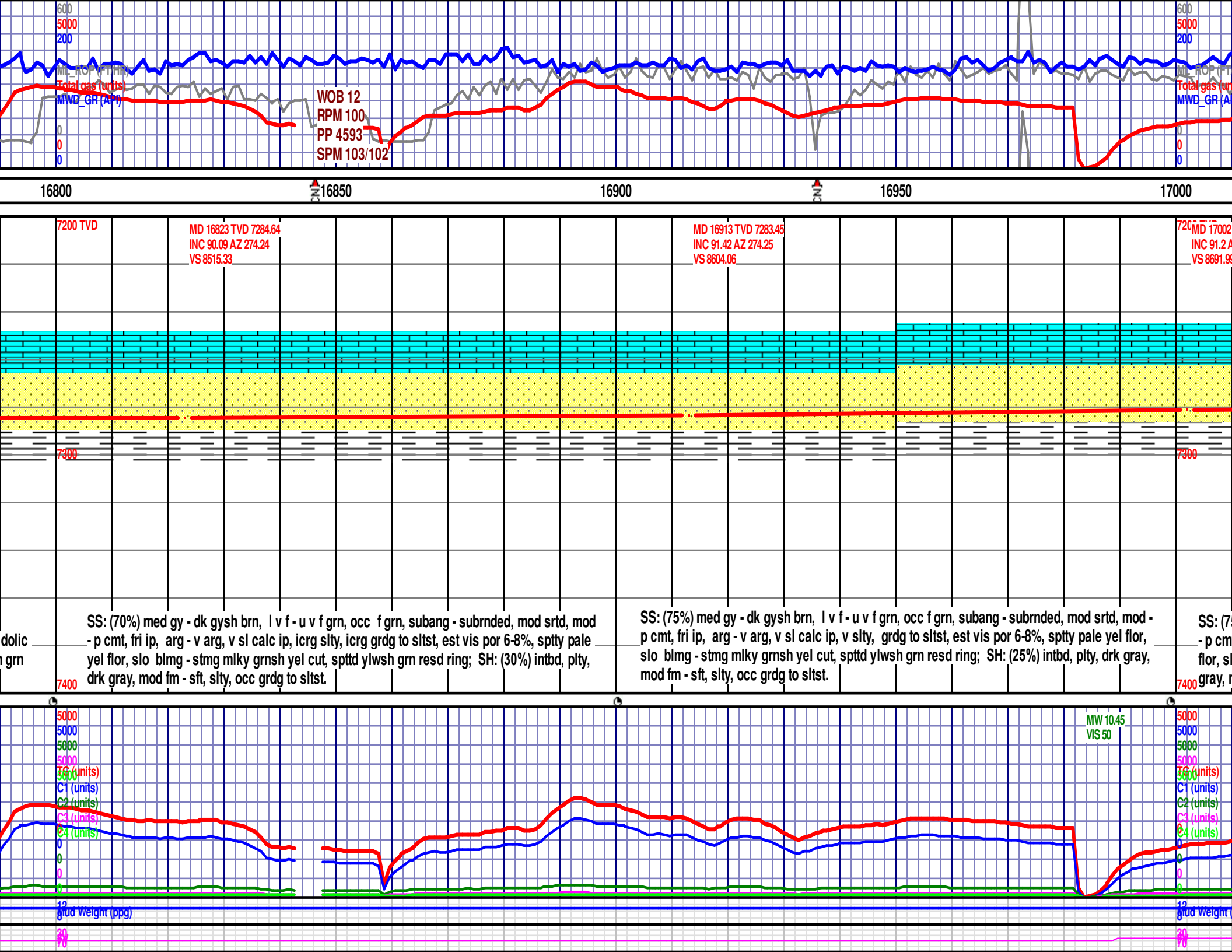

600
5000
200
Total gas (units)
MWD_GR (API)
0
0
0
WOB 23
RPM 98
PP 4569
SPM 103/103
15700
15750
CN
15800
15850
CN
15900
MD 15750 TVD 7286.01
INC 90.31 AZ 270.06
VS 7447.7
7200 TVD
MD 15839 TVD 7285.8
INC 89.97 AZ 269.72
VS 7536.33
7300
olic ip,
ttd
rn occ
SS: (90%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ u f - l med grn, subang - subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, sl calc ip, slty, rr grdg to sltst, occ dolic ip, est vis por 8-10%, sptty pale yel flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd ring; SH: (10%) intbd, plty, drk gray, mod fm.
SS: (90%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ u f - l med grn, subang - subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, sl calc ip, slty, rr grdg to sltst, occ dolic ip, occ xln pyr , est vis por 8-10%, sptty pale yel flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd ring; SH: (10%) intbd, plty, drk gray, mod fm.
SS: (90
mod sr
est vis
grn res
7400
MW 10.4
VIS 55
5000
5000
5000
5000
3600 (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
8
mud weight (ppg)
30
70

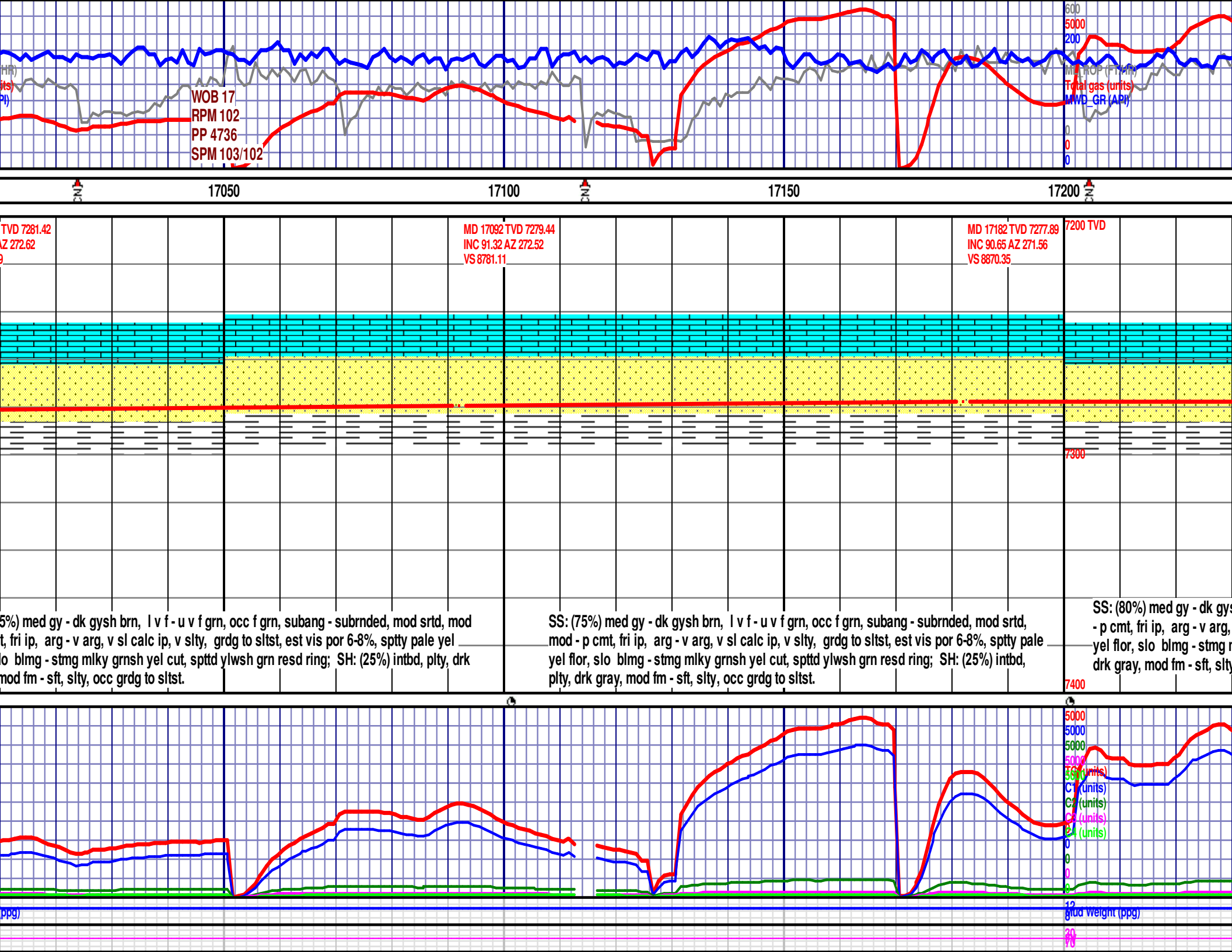

600
5000
200
Total gas (units)
MWD_GR (API)
0
0
0
WOB 10
RPM 98
PP 3728
SPM 103/103
15950
16000
16050
16100
MD 15929 TVD 7285.94
INC 89.85 AZ 269.11
VS 7626.02
7200 TVD
MD 16018 TVD 7285.98
INC 90.09 AZ 268.01
VS 7714.81
MD 16107 TVD 7285.7
INC 90.28 AZ 268.93
VS 7803.61
7300
%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ u f - l med grn, subang - subrnded,
td, mod - p cmt, arg ip, rr v arg, sl calc ip, slty, rr grdg to sltst, occ dolic ip, occ xln pyr ,
por 8-10%, sptty pale yel flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh
d ring; SH: (10%) intbd, plty, drk gray, mod fm.
SS: (90%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ u f - l med grn, subang - subrnded,
mod srtd, mod - p cmt, arg ip, rr v arg, sl calc ip, slty, rr grdg to sltst, occ dolic ip, occ xln pyr , est
vis por 8-10%, sptty pale yel flor, slo - mod fast blmg - stmg mlky grnsh yel cut, sptd ylwsh grn
resd ring; SH: (10%) intbd, plty, drk gray, mod fm.
7400
SS: (90%) med gy - dk gysh
mod srtd, mod - p cmt, arg i
vis por 8-10%, sptty pale yel
resd ring; SH: (10%) intbd, p
5000
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
MW 10.4
VIS 53
12
Mud Weight (ppg)
20
70

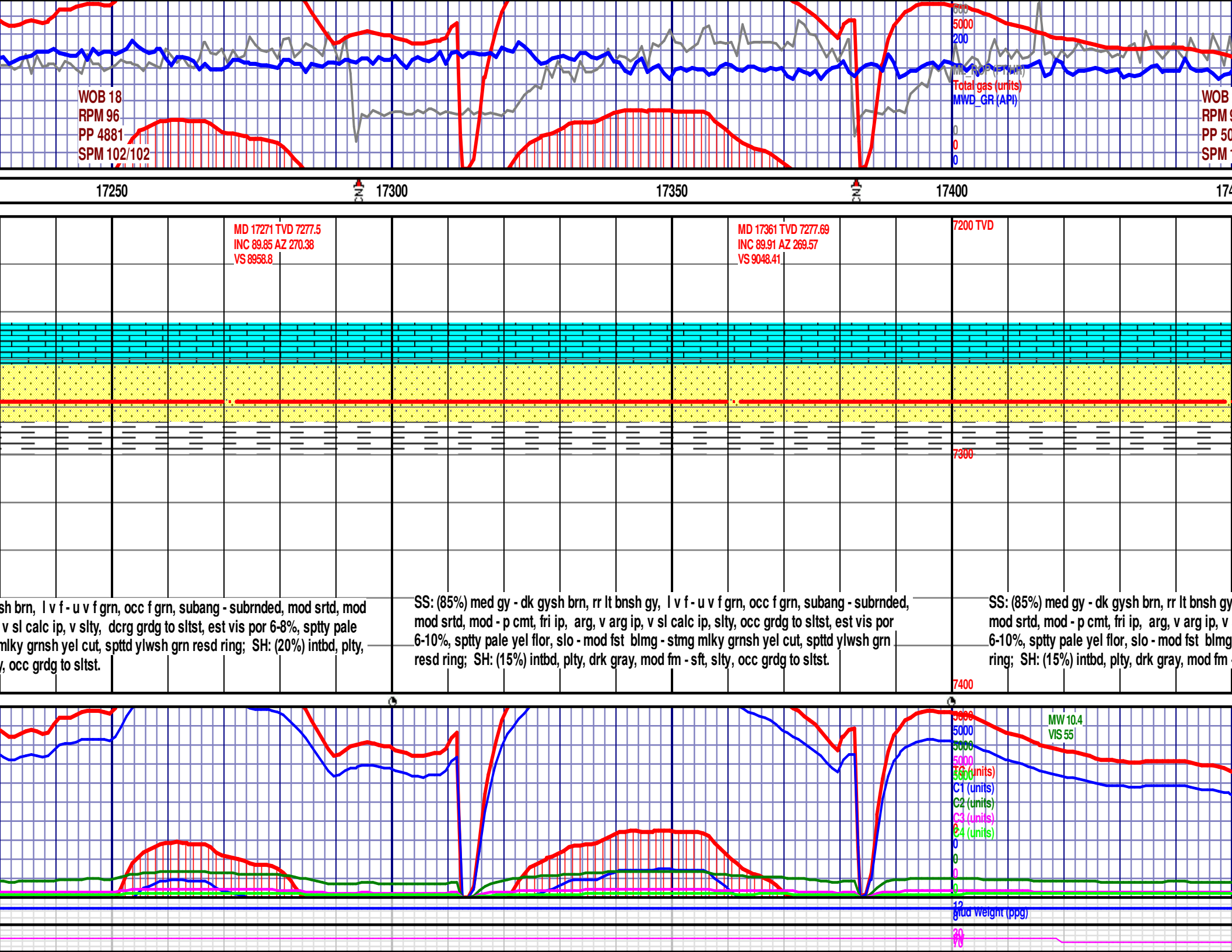

Total gas (units)
MWD_GR (API)
WOB 21
RPM 94
PP 4596
SPM 103/103
16150
16200
16250
16300
MD 16197 TVD 7285.38
INC 90.12 AZ 269.46
VS 7893.33
MD 16286 TVD 7285.12
INC 90.22 AZ 271.35
VS 7981.88
7300
7400
brn, rr lt bnsh gy, l v f - l f grn, occ u f - l med grn, subang - subrnded,
p, rr v arg, sl calc ip, slty, rr grdg to sltst, occ dolic ip, occ xln pyr , est
l flor, slo - mod fast blmg - stmg mlky grnsh yel cut, spttd ylwsh grn
lty, drk gray, mod fm.
SS: (90%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ u f - l med grn, subang -
subrnded, mod srtd, mod - p cmt, arg ip, rr v arg, sl calc ip, slty, rr grdg to sltst, occ dolic ip,
occ xln pyr , est vis por 8-10%, sptty pale yel flor, slo - mod fast blmg - stmg mlky grnsh yel cut,
spttd ylwsh grn resd ring; SH: (10%) intbd, plty, drk gray, mod fm.
SS: (90%) med gy - dk gysh brn, rr lt bnsh gy, l
subrnded, mod srtd, mod - p cmt, arg ip, rr v ar
occ xln pyr , est vis por 8-10%, sptty pale yel fl
cut, spttd ylwsh grn resd ring; SH: (10%) intbd,
C1 (units)
C2 (units)
C3 (units)
C4 (units)
Mud Weight (ppg)

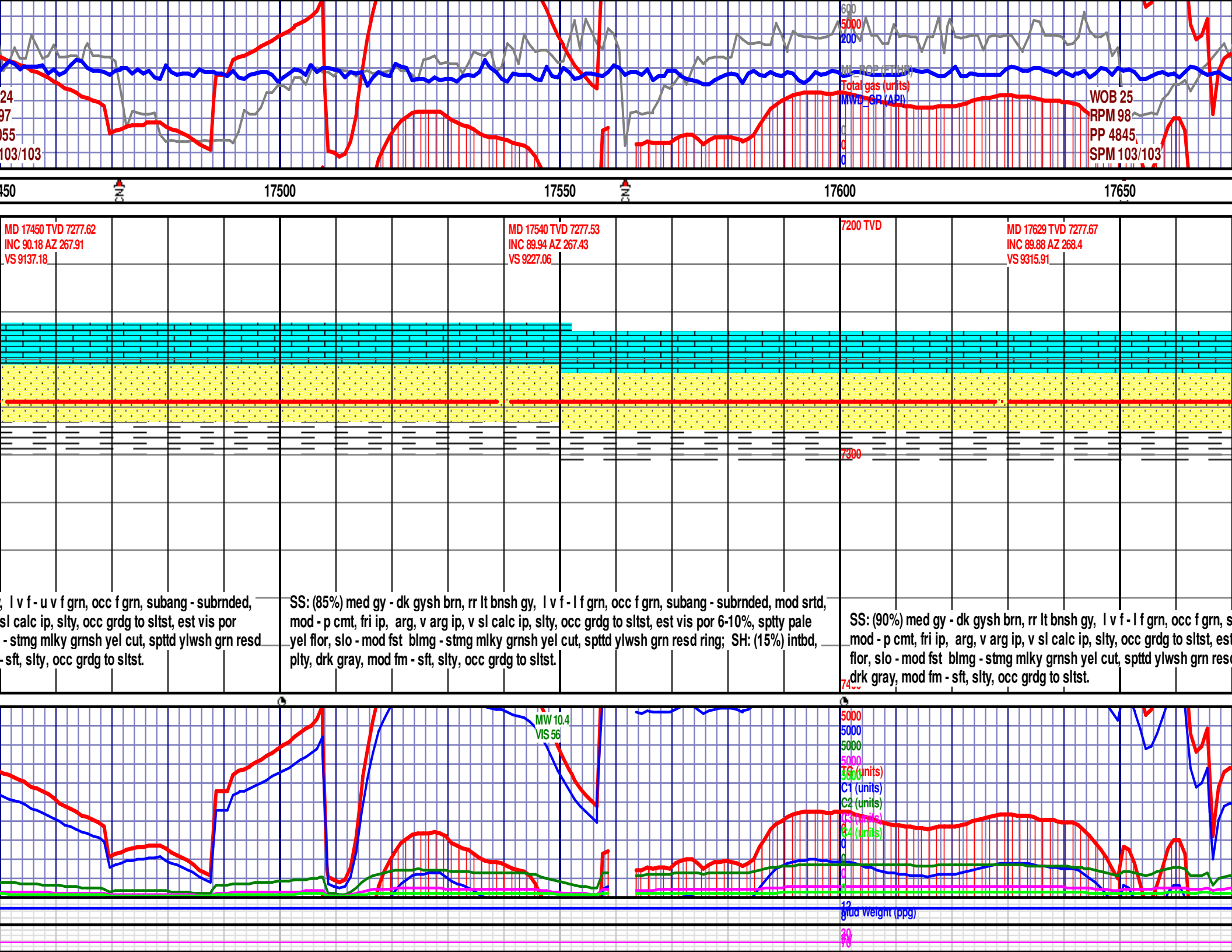

600
5000
200
Total gas (units)
MWD_GR (API)
WOB 7
RPM 97
PP 3991
SPM 103/103
350
16400
16450
16500
16550
MD 16376 TVD 7284.83
INC 90.15 AZ 271.21
VS 8071.27
7200 TVD
MD 16466 TVD 7284.57
INC 90.18 AZ 269.35
VS 8160.83
MD 16555 TVD 7284
INC 90 AZ 269.31
VS 8249.54
7300
v f - l f grn, occ u f - l med grn, subang -
g, sl calc ip, slty, rr grdg to sltst, occ dolic ip,
or, slo - mod fast blmg - stmg mlky grnsh yel
plty, drk gray, mod fm.
SS: (90%) med gy - dk gysh brn, rr lt bnsh gy, l v f - u f grn, occ l med grn, subang -
subrnded, mod srtd, mod - p cmt, fri ip, arg ip, rr v arg, sl calc ip, slty, rr grdg to sltst,
occ dolic ip, est vis por 8-12%, sptty pale yel flor, slo - mod fast blmg - stmg mlky grnsh
yel cut, spttd ylwsh grn resd ring; SH: (10%) intbd, plty, drk gray, mod fm.
7400
SS: (90%) med gy - dk gysh brn, dcrg lt bnsh gy, l v f - u f grn, occ l
mod srtd, mod - p cmt, fri ip, arg ip, rr v arg, sl calc ip, slty, rr grdg
por 8-12%, sptty pale yel flor, slo - mod fast blmg - stmg mlky grnsh
resd ring; SH: (10%) intbd, plty, drk gray, mod fm.
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
12
mud weight (ppg)

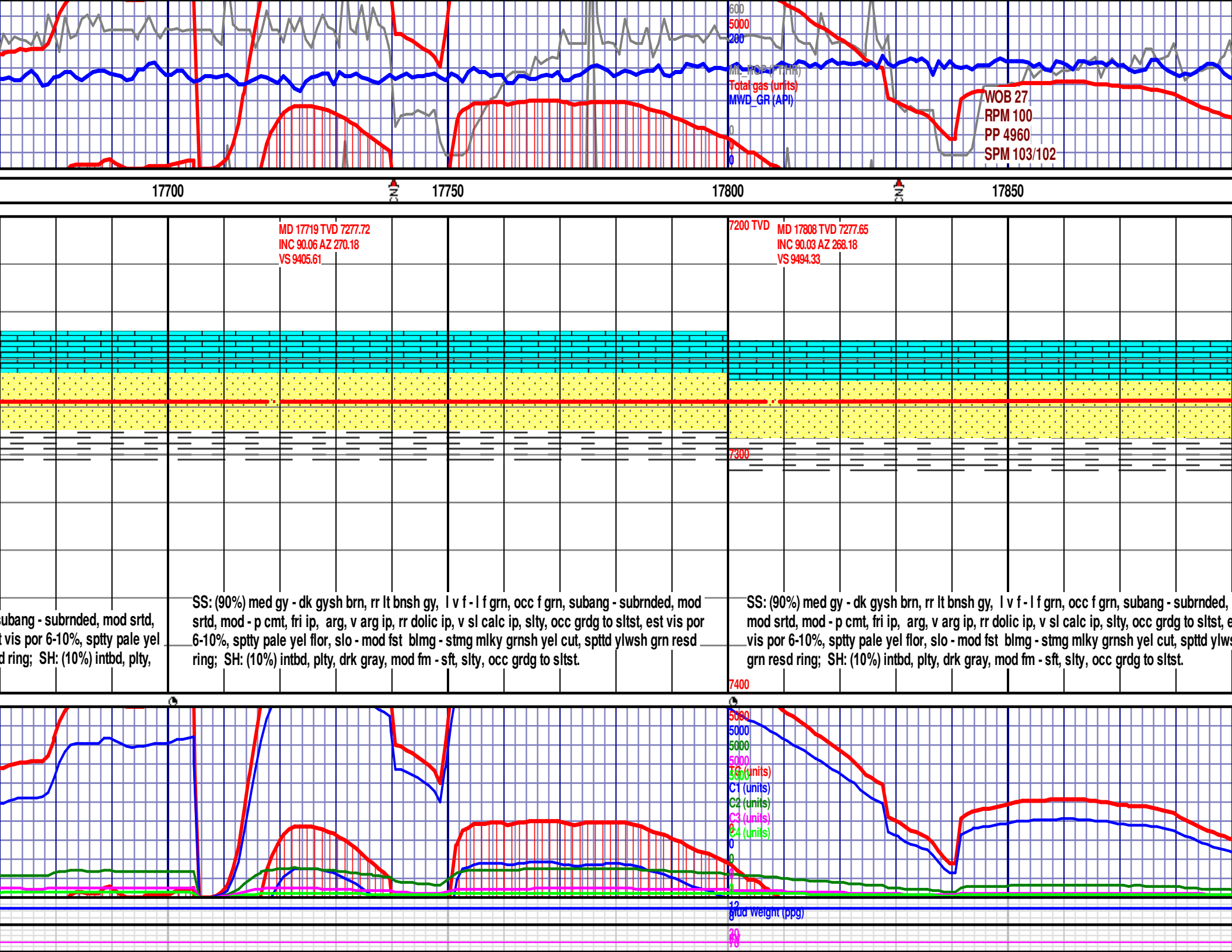

600
5000
200
Total gas (units)
MWD_GR (API)
WOB 25
RPM 98
PP 4791
SPM 103/102
16600
16650
16700
16750
7200 TVD
MD 16644 TVD 7284.5
INC 89.91 AZ 271.09
VS 8338.12
MD 16734 TVD 7284.64
INC 89.91 AZ 272.76
VS 8427.39
7300
7400
med grn, subang - subrnded, to sltst, occ dolic ip, est vis yel cut, spttd ylwsh grn
SS: (85%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ u f - l med grn, subang - subrnded, mod srtd, mod - p cmt, fri ip, arg ip, icrg v arg, sl calc ip, slty, icrg grdg to sltst, dcrg dolic ip, est vis por 8-10%, sptty pale yel flor, slo blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd ring; SH: (15%) intbd, plty, drk gray, mod fm.
SS: (85%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ u f - l med grn, subang - subrnded, mod srtd, mod - p cmt, fri ip, arg - v arg, v sl calc ip, slty, occ grdg to sltst, rr ip, est vis por 8-10%, sptty pale yel flor, slo blmg - stmg mlky grnsh yel cut, spttd ylwsh resd ring; SH: (15%) intbd, plty, drk gray, mod fm.
MW 10.45
VIS 53
5000
5000
5000
5000
3600 (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
8 Mud Weight (ppg)
20
70

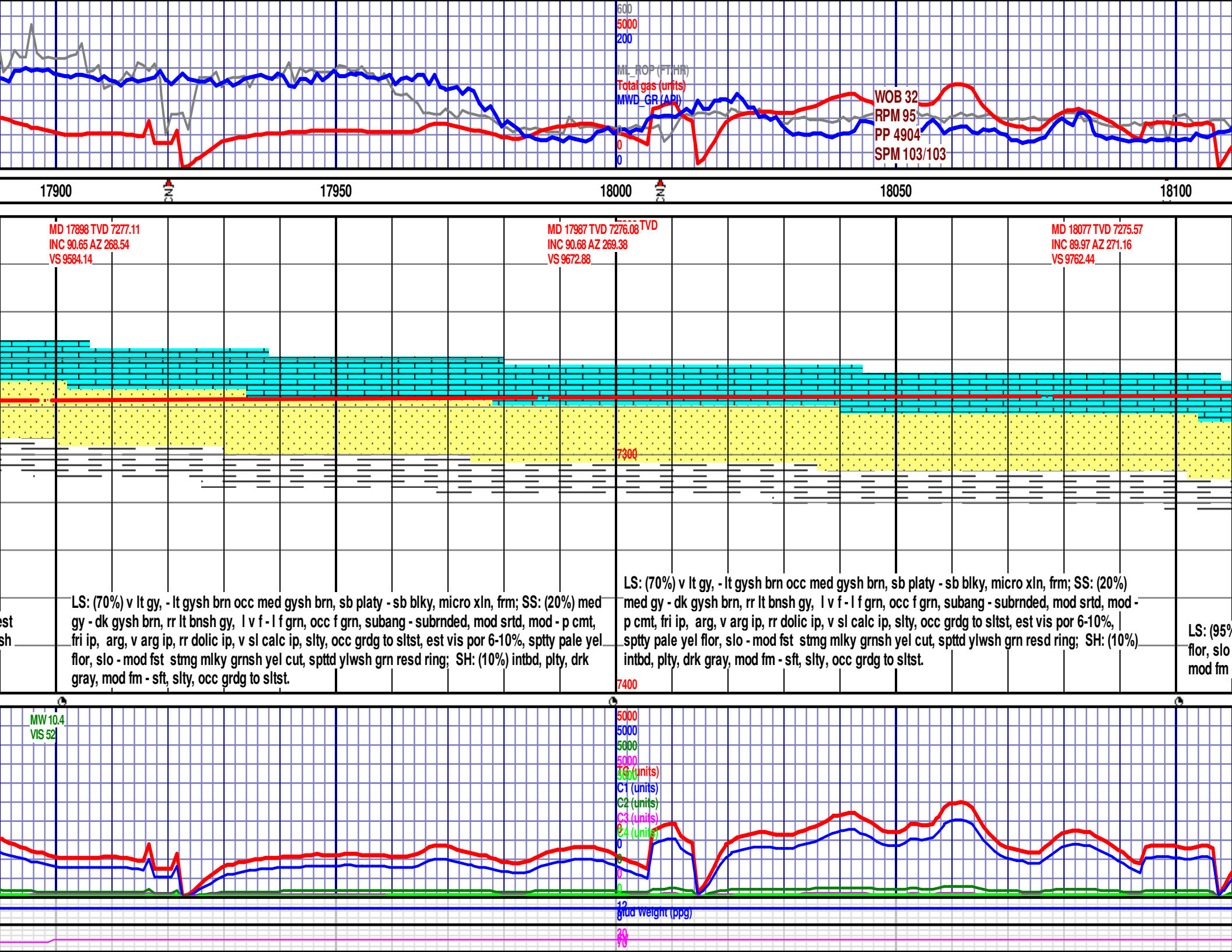

600
5000
200
ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 12
RPM 100
PP 4593
SPM 103/102
16800
16850
16900
16950
17000
7200 TVD
MD 16823 TVD 7284.64
INC 90.09 AZ 274.24
VS 8515.33
MD 16913 TVD 7283.45
INC 91.42 AZ 274.25
VS 8604.06
7300
7400
SS: (70%) med gy - dk gysh brn, l v f - u v f grn, occ f grn, subang - subrnded, mod srtd, mod - p cmt, fri ip, arg - v arg, v sl calc ip, icrg slty, icrg grdg to sltst, est vis por 6-8%, sptty pale yel flor, slo blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd ring; SH: (30%) intbd, plty, drk gray, mod fm - sft, slty, occ grdg to sltst.
SS: (75%) med gy - dk gysh brn, l v f - u v f grn, occ f grn, subang - subrnded, mod srtd, mod - p cmt, fri ip, arg - v arg, v sl calc ip, v slty, grdg to sltst, est vis por 6-8%, sptty pale yel flor, slo blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd ring; SH: (25%) intbd, plty, drk gray, mod fm - sft, slty, occ grdg to sltst.
MW 10.45
VIS 50
C1 (units)
C2 (units)
C3 (units)
C4 (units)
Mud Weight (ppg)

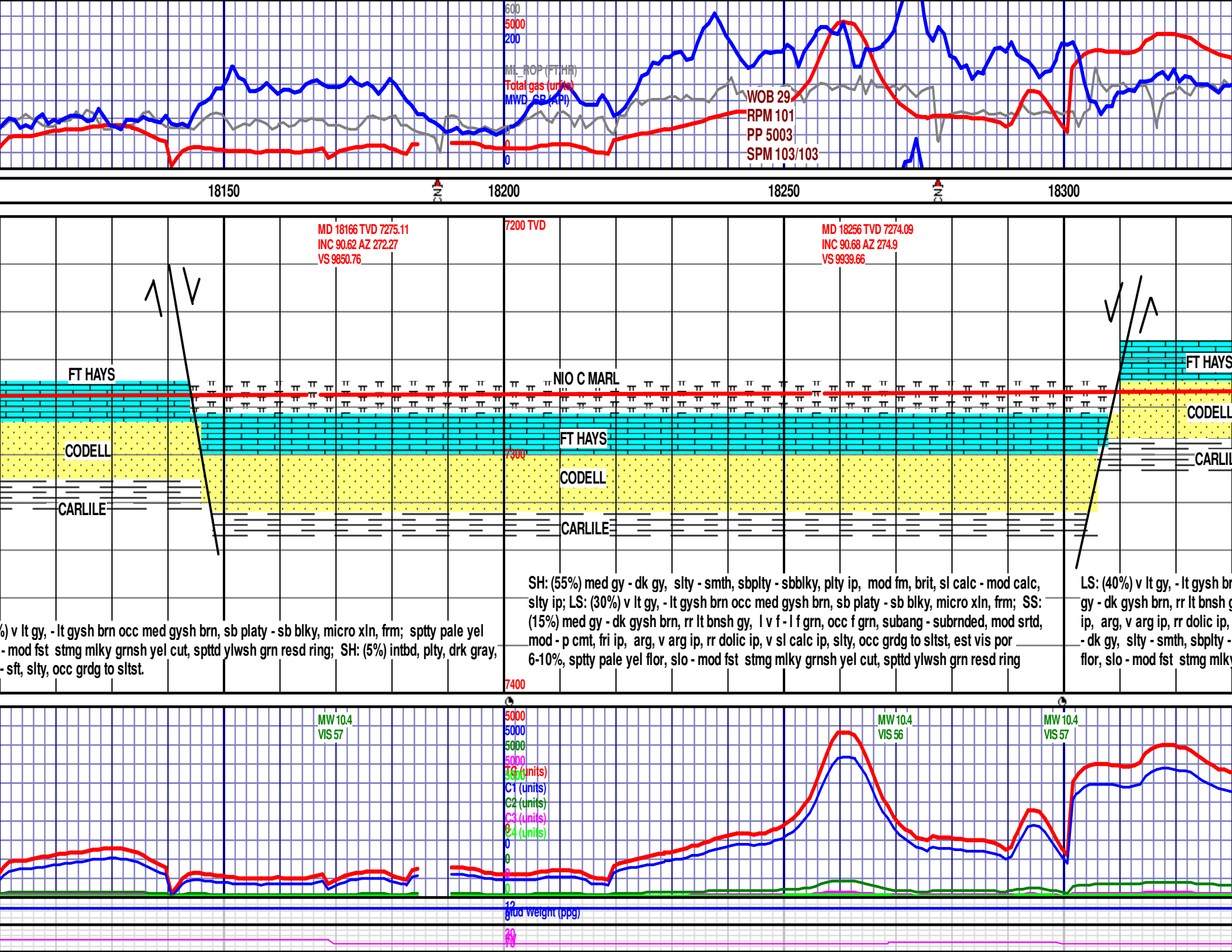

WOB 17
RPM 102
PP 4736
SPM 103/102
Total gas (units)
MWD_GR (API)
17050
17100
17150
17200
TVD 7281.42
AZ 272.62
MD 17092 TVD 7279.44
INC 91.32 AZ 272.52
VS 8781.11
MD 17182 TVD 7277.89
INC 90.65 AZ 271.56
VS 8870.35
7200 TVD
7300
7400
5%) med gy - dk gysh brn, l v f - u v f grn, occ f grn, subang - subrnded, mod srtd, mod
t, fri ip, arg - v arg, v sl calc ip, v slty, grdg to sltst, est vis por 6-8%, sptty pale yel
lo blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd ring; SH: (25%) intbd, plty, drk
mod fm - sft, slty, occ grdg to sltst.
SS: (75%) med gy - dk gysh brn, l v f - u v f grn, occ f grn, subang - subrnded, mod srtd,
mod - p cmt, fri ip, arg - v arg, v sl calc ip, v slty, grdg to sltst, est vis por 6-8%, sptty pale
yel flor, slo blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd ring; SH: (25%) intbd,
plty, drk gray, mod fm - sft, slty, occ grdg to sltst.
SS: (80%) med gy - dk gys
- p cmt, fri ip, arg - v arg,
yel flor, slo blmg - stmg
drk gray, mod fm - sft, slty
C1 (units)
C2 (units)
C3 (units)
C4 (units)
ppg)
Mud Weight (ppg)

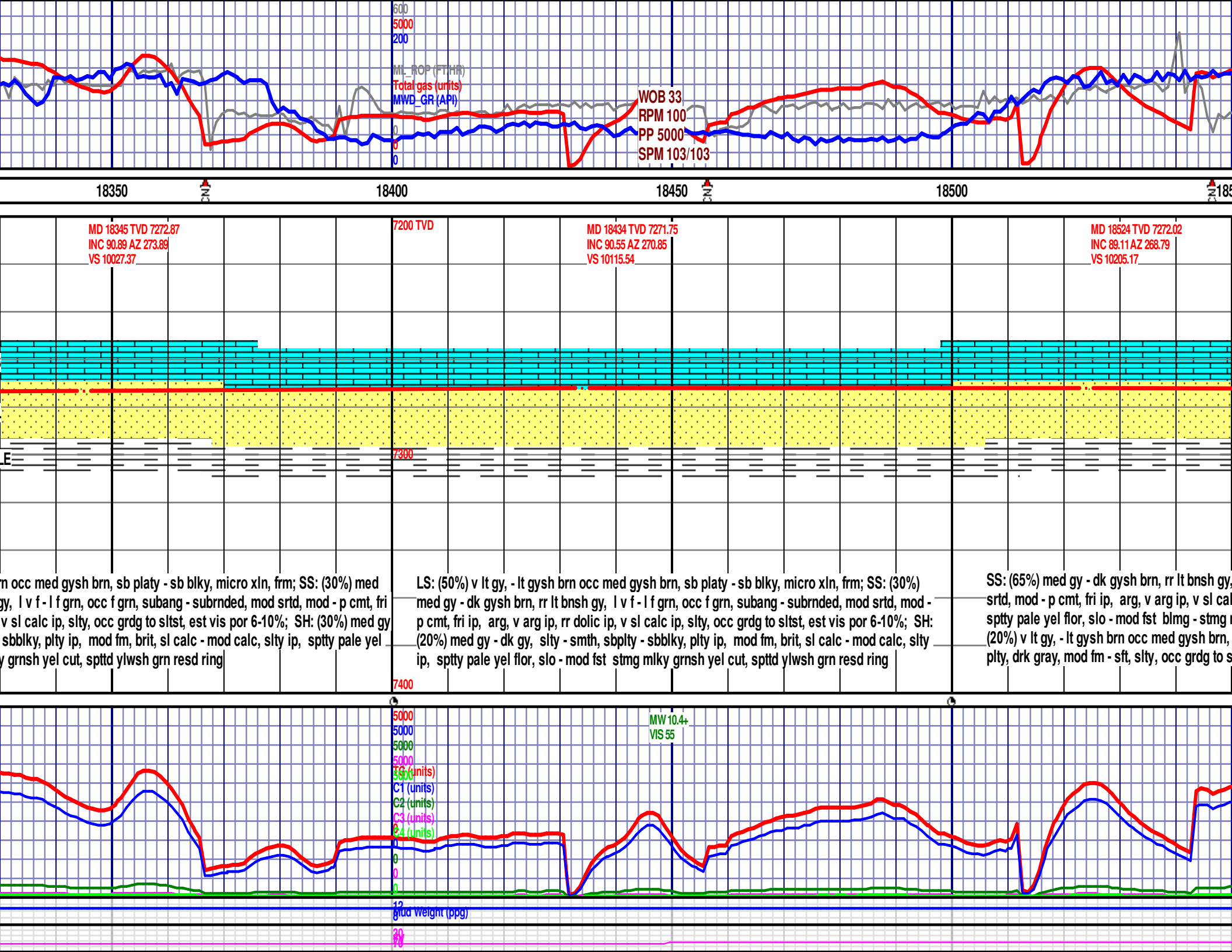

WOB 18
RPM 96
PP 4881
SPM 102/102
5000
200
Total gas (units)
MWD_GR (API)
0
0
0
17250
17300
17350
17400
MD 17271 TVD 7277.5
INC 89.85 AZ 270.38
VS 8958.8
MD 17361 TVD 7277.69
INC 89.91 AZ 269.57
VS 9048.41
7200 TVD
7300
7400
sh brn, l v f - u v f grn, occ f grn, subang - subrnded, mod srtd, mod
v sl calc ip, v slty, dcrg grdg to sltst, est vis por 6-8%, sptty pale
mlky grnsh yel cut, sptted ylwsh grn resd ring; SH: (20%) intbd, plty,
, occ grdg to sltst.
SS: (85%) med gy - dk gysh brn, rr lt bnsh gy, l v f - u v f grn, occ f grn, subang - subrnded,
mod srtd, mod - p cmt, fri ip, arg, v arg ip, v sl calc ip, slty, occ grdg to sltst, est vis por
6-10%, sptty pale yel flor, slo - mod fst blmg - stmg mlky grnsh yel cut, sptted ylwsh grn
resd ring; SH: (15%) intbd, plty, drk gray, mod fm - sft, slty, occ grdg to sltst.
SS: (85%) med gy - dk gysh brn, rr lt bnsh gy
mod srtd, mod - p cmt, fri ip, arg, v arg ip, v
6-10%, sptty pale yel flor, slo - mod fst blmg
ring; SH: (15%) intbd, plty, drk gray, mod fm
MW 10.4
VIS 55
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
Mud Weight (ppg)
8
30
70

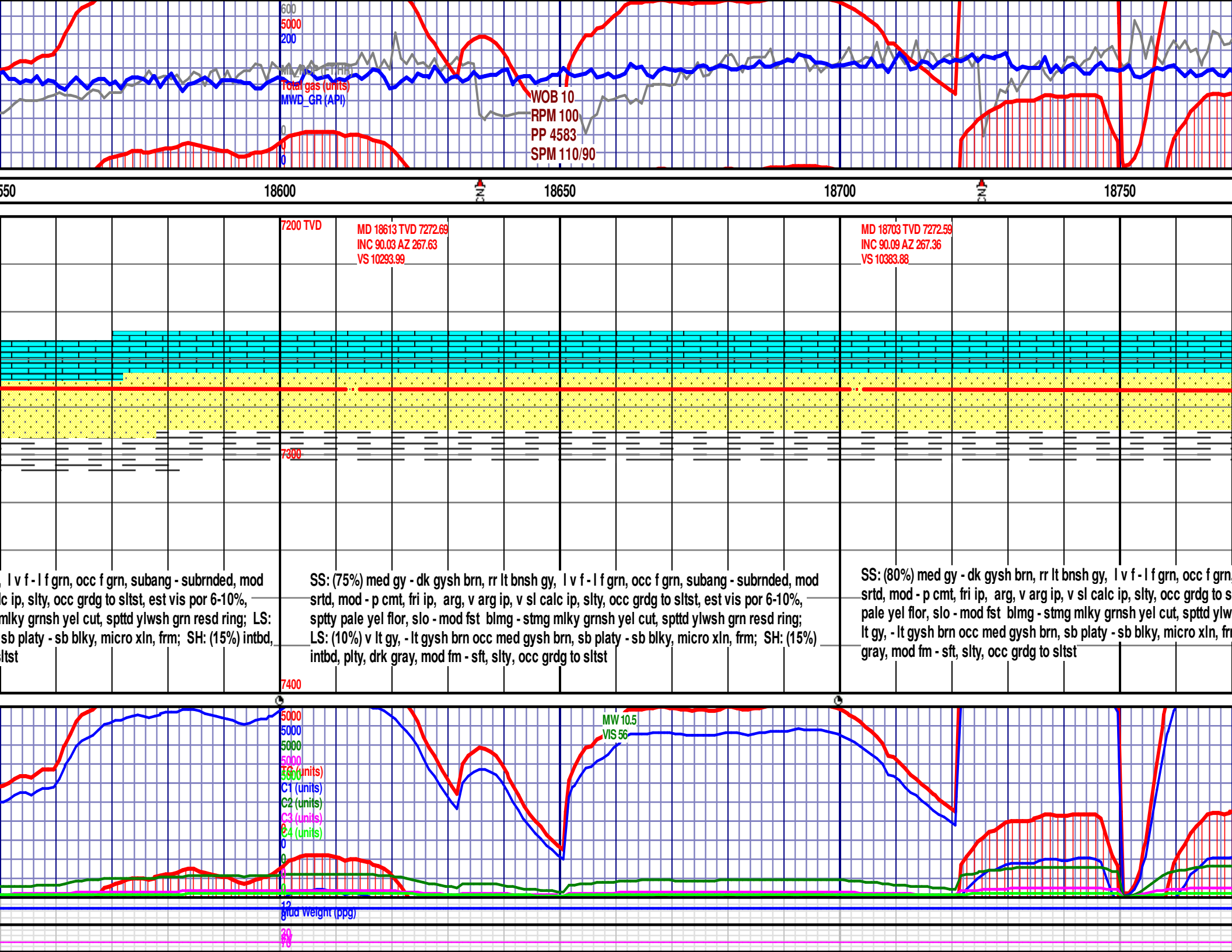

600
5000
200
Total gas (units)
MWD_GR (API)
WOB 25
RPM 98
PP 4845
SPM 103/103
17500
17550
17600
17650
MD 17450 TVD 7277.62
INC 90.18 AZ 267.91
VS 9137.18
MD 17540 TVD 7277.53
INC 89.94 AZ 267.43
VS 9227.06
7200 TVD
MD 17629 TVD 7277.67
INC 89.88 AZ 268.4
VS 9315.91
7300
SS: (85%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ f grn, subang - subrnded, mod srtd, mod - p cmt, fri ip, arg, v arg ip, v sl calc ip, slty, occ grdg to sltst, est vis por 6-10%, sptty pale yel flor, slo - mod fst blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd ring; SH: (15%) intbd, plty, drk gray, mod fm - sft, slty, occ grdg to sltst.
SS: (90%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ f grn, s
mod - p cmt, fri ip, arg, v arg ip, v sl calc ip, slty, occ grdg to sltst, est
flor, slo - mod fst blmg - stmg mlky grnsh yel cut, sptd ylwsh grn resd
drk gray, mod fm - sft, slty, occ grdg to sltst.
MW 10.4
VIS 56
5000
5000
5000
5000
C1 (units)
C2 (units)
C4 (units)
Mud Weight (ppg)

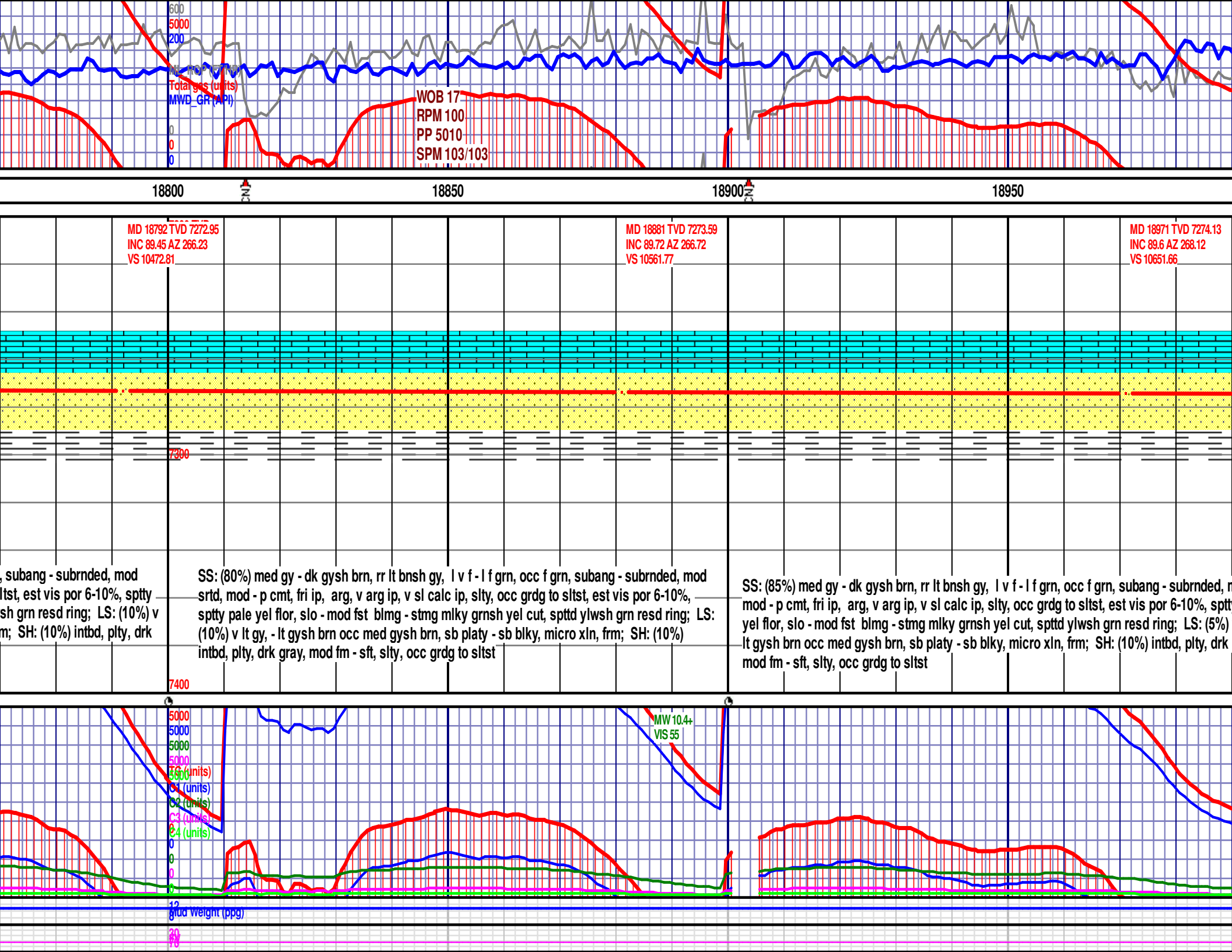

600
5000
200
Total gas (units)
MWD_GR (API)
0
0
WOB 27
RPM 100
PP 4960
SPM 103/102
17700
17750
17800
17850
MD 17719 TVD 7277.72
INC 90.06 AZ 270.18
VS 9405.61
7200 TVD
MD 17808 TVD 7277.65
INC 90.03 AZ 268.18
VS 9494.33
7300
7400
ubang - subrnded, mod srtd,
t vis por 6-10%, sptty pale yel
d ring; SH: (10%) intbd, plty,
SS: (90%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ f grn, subang - subrnded, mod srtd, mod - p cmt, fri ip, arg, v arg ip, rr dolic ip, v sl calc ip, slty, occ grdg to sltst, est vis por 6-10%, sptty pale yel flor, slo - mod fst blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd ring; SH: (10%) intbd, plty, drk gray, mod fm - sft, slty, occ grdg to sltst.
SS: (90%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ f grn, subang - subrnded, mod srtd, mod - p cmt, fri ip, arg, v arg ip, rr dolic ip, v sl calc ip, slty, occ grdg to sltst, e
vis por 6-10%, sptty pale yel flor, slo - mod fst blmg - stmg mlky grnsh yel cut, spttd ylws
grn resd ring; SH: (10%) intbd, plty, drk gray, mod fm - sft, slty, occ grdg to sltst.
5000
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
12
mud weight (ppg)
8
30

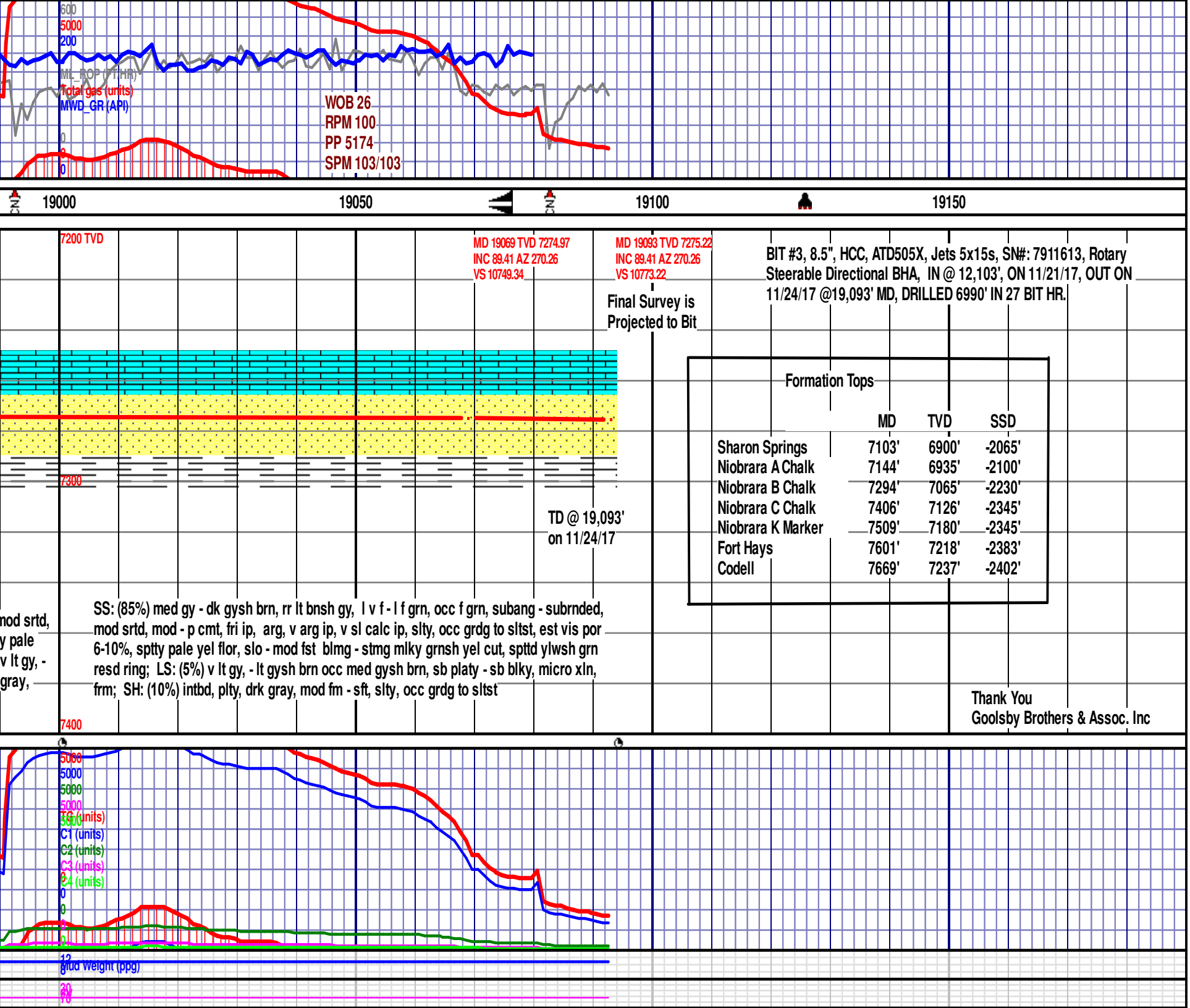

600
5000
200
MIL_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
WOB 32
RPM 95
PP 4904
SPM 103/103
17900
17950
18000
18050
18100
MD 17898 TVD 7277.11
INC 90.65 AZ 268.54
VS 9584.14
MD 17987 TVD 7276.08 TVD
INC 90.68 AZ 269.38
VS 9672.88
MD 18077 TVD 7275.57
INC 89.97 AZ 271.16
VS 9762.44
7300
LS: (70%) v lt gy, - lt gysh brn occ med gysh brn, sb platy - sb blky, micro xln, frm; SS: (20%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ f grn, subang - subrnded, mod srtd, mod - p cmt, fri ip, arg, v arg ip, rr dolic ip, v sl calc ip, slty, occ grdg to sltst, est vis por 6-10%, sptty pale yel flor, slo - mod fst stmg mlky grnsh yel cut, spttd ylwsh grn resd ring; SH: (10%) intbd, plty, drk gray, mod fm - sft, slty, occ grdg to sltst.
LS: (70%) v lt gy, - lt gysh brn occ med gysh brn, sb platy - sb blky, micro xln, frm; SS: (20%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ f grn, subang - subrnded, mod srtd, mod - p cmt, fri ip, arg, v arg ip, rr dolic ip, v sl calc ip, slty, occ grdg to sltst, est vis por 6-10%, sptty pale yel flor, slo - mod fst stmg mlky grnsh yel cut, spttd ylwsh grn resd ring; SH: (10%) intbd, plty, drk gray, mod fm - sft, slty, occ grdg to sltst.
7400
MW 10.4
VIS 52
5000
5000
5000
5000
3600 (units)
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
WOB 29
RPM 101
PP 5003
SPM 103/103
18150
CN
18200
18250
CN
18300
MD 18166 TVD 7275.11
INC 90.62 AZ 272.27
VS 9850.76
7200 TVD
MD 18256 TVD 7274.09
INC 90.68 AZ 274.9
VS 9939.66
FT HAYS
CODELL
CARLILE
NIO C MARL
FT HAYS
7300
CODELL
CARLILE
FT HAYS
CODELL
CARLIL
%) v lt gy, - lt gysh brn occ med gysh brn, sb platy - sb blky, micro xln, frm; sptty pale yel
- mod fst stmg mlky grnsh yel cut, sptd ylwsh grn resd ring; SH: (5%) intbd, plty, drk gray,
- sft, slty, occ grdg to sltst.
SH: (55%) med gy - dk gy, slty - smth, sbplty - sbblky, plty ip, mod fm, brit, sl calc - mod calc,
slty ip; LS: (30%) v lt gy, - lt gysh brn occ med gysh brn, sb platy - sb blky, micro xln, frm; SS:
(15%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ f grn, subang - subrnded, mod srtd,
mod - p cmt, fri ip, arg, v arg ip, rr dolic ip, v sl calc ip, slty, occ grdg to sltst, est vis por
6-10%, sptty pale yel flor, slo - mod fst stmg mlky grnsh yel cut, sptd ylwsh grn resd ring
7400
LS: (40%) v lt gy, - lt gysh br
gy - dk gysh brn, rr lt bnsh g
ip, arg, v arg ip, rr dolic ip,
- dk gy, slty - smth, sbplty -
flor, slo - mod fst stmg mlk
MW 10.4
VIS 57
5000
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
MW 10.4
VIS 56
MW 10.4
VIS 57
12
Mud Weight (ppg)
20


600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 33
RPM 100
PP 5000
SPM 103/103
18350
18400
18450
18500
MD 18345 TVD 7272.87
INC 90.89 AZ 273.89
VS 10027.37
7200 TVD
MD 18434 TVD 7271.75
INC 90.55 AZ 270.85
VS 10115.54
MD 18524 TVD 7272.02
INC 89.11 AZ 268.79
VS 10205.17
7300
7400
rn occ med gysh brn, sb platy - sb blky, micro xln, frm; SS: (30%) med
gy, l v f - l f grn, occ f grn, subang - subrnded, mod srtd, mod - p cmt, fri
v sl calc ip, slty, occ grdg to sltst, est vis por 6-10%; SH: (30%) med gy
sbblky, plty ip, mod fm, brit, sl calc - mod calc, slty ip, sptty pale yel
y grnsh yel cut, spttd ylwsh grn resd ring
LS: (50%) v lt gy, - lt gysh brn occ med gysh brn, sb platy - sb blky, micro xln, frm; SS: (30%)
med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ f grn, subang - subrnded, mod srtd, mod -
p cmt, fri ip, arg, v arg ip, rr dolic ip, v sl calc ip, slty, occ grdg to sltst, est vis por 6-10%; SH:
(20%) med gy - dk gy, slty - smth, sbplty - sbblky, plty ip, mod fm, brit, sl calc - mod calc, slty
ip, sptty pale yel flor, slo - mod fst stmg mlky grnsh yel cut, spttd ylwsh grn resd ring
SS: (65%) med gy - dk gysh brn, rr lt bnsh gy,
srtd, mod - p cmt, fri ip, arg, v arg ip, v sl cal
sptty pale yel flor, slo - mod fst blmg - stmg
(20%) v lt gy, - lt gysh brn occ med gysh brn,
plty, drk gray, mod fm - sft, slty, occ grdg to s
5000
5000
5000
5000
5000
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
0
MW 10.4+
VIS 55
12
Mud Weight (ppg)
8
20
60
70


600
5000
200
Total gas (units)
MWD_GR (API)
0
0
WOB 10
RPM 100
PP 4583
SPM 110/90
550
18600
18650
18700
18750
7200 TVD
MD 18613 TVD 7272.69
INC 90.03 AZ 267.63
VS 10293.99
MD 18703 TVD 7272.59
INC 90.09 AZ 267.36
VS 10383.88
7300
7400
l v f - l f grn, occ f grn, subang - subrnded, mod
lc ip, slty, occ grdg to sltst, est vis por 6-10%,
mlky grnsh yel cut, spttd ylwsh grn resd ring; LS:
sb platy - sb blky, micro xln, frm; SH: (15%) intbd,
ltst
SS: (75%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ f grn, subang - subrnded, mod
srtd, mod - p cmt, fri ip, arg, v arg ip, v sl calc ip, slty, occ grdg to sltst, est vis por 6-10%,
sptty pale yel flor, slo - mod fst blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd ring;
LS: (10%) v lt gy, - lt gysh brn occ med gysh brn, sb platy - sb blky, micro xln, frm; SH: (15%)
intbd, plty, drk gray, mod fm - sft, slty, occ grdg to sltst
SS: (80%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ f grn
srtd, mod - p cmt, fri ip, arg, v arg ip, v sl calc ip, slty, occ grdg to s
pale yel flor, slo - mod fst blmg - stmg mlky grnsh yel cut, spttd ylw
lt gy, - lt gysh brn occ med gysh brn, sb platy - sb blky, micro xln, fr
gray, mod fm - sft, slty, occ grdg to sltst
5000
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
12
8
mud weight (ppg)
MW 10.5
VIS 56


600
5000
200
Total gas (units)
MWD_GR (API)
0
0
0
WOB 17
RPM 100
PP 5010
SPM 103/103
18800
18850
18900
18950
MD 18792 TVD 7272.95
INC 89.45 AZ 266.23
VS 10472.81
MD 18881 TVD 7273.59
INC 89.72 AZ 266.72
VS 10561.77
MD 18971 TVD 7274.13
INC 89.6 AZ 268.12
VS 10651.66
7300
7400
, subang - subrnded, mod
ltst, est vis por 6-10%, sptty
sh grn resd ring; LS: (10%) v
m; SH: (10%) intbd, plty, drk
SS: (80%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ f grn, subang - subrnded, mod srtd, mod - p cmt, fri ip, arg, v arg ip, v sl calc ip, slty, occ grdg to sltst, est vis por 6-10%, sptty pale yel flor, slo - mod fst blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd ring; LS: (10%) v lt gy, - lt gysh brn occ med gysh brn, sb platy - sb blky, micro xln, frm; SH: (10%) intbd, plty, drk gray, mod fm - sft, slty, occ grdg to sltst
SS: (85%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ f grn, subang - subrnded, r
mod - p cmt, fri ip, arg, v arg ip, v sl calc ip, slty, occ grdg to sltst, est vis por 6-10%, sptt
yel flor, slo - mod fst blmg - stmg mlky grnsh yel cut, spttd ylwsh grn resd ring; LS: (5%)
lt gysh brn occ med gysh brn, sb platy - sb blky, micro xln, frm; SH: (10%) intbd, plty, drk
mod fm - sft, slty, occ grdg to sltst
5000
5000
5000
5000
5600
(units)
(units)
(units)
(units)
(units)
0
0
0
0
MW 10.4+
VIS 55
12
8
Mud Weight (ppg)


600
5000
200
ML_ROP (FT/HR)
Total gas (units)
MWD_GR (API)
0
0
0
WOB 26
RPM 100
PP 5174
SPM 103/103
19000
19050
19100
19150
7200 TVD
MD 19069 TVD 7274.97
INC 89.41 AZ 270.26
VS 10749.34
MD 19093 TVD 7275.22
INC 89.41 AZ 270.26
VS 10773.22
Final Survey is
Projected to Bit
BIT #3, 8.5", HCC, ATD505X, Jets 5x15s, SN#: 7911613, Rotary
Steerable Directional BHA, IN @ 12,103', ON 11/21/17, OUT ON
11/24/17 @19,093' MD, DRILLED 6990' IN 27 BIT HR.
Formation Tops
MD TVD SSD
Sharon Springs 7103' 6900' -2065'
Niobrara A Chalk 7144' 6935' -2100'
Niobrara B Chalk 7294' 7065' -2230'
Niobrara C Chalk 7406' 7126' -2345'
Niobrara K Marker 7509' 7180' -2345'
Fort Hays 7601' 7218' -2383'
Codell 7669' 7237' -2402'
7300
TD @ 19,093'
on 11/24/17
mod srtd,
y pale
v lt gy, -
gray,
SS: (85%) med gy - dk gysh brn, rr lt bnsh gy, l v f - l f grn, occ f grn, subang - subrnded,
mod srtd, mod - p cmt, fri ip, arg, v arg ip, v sl calc ip, slty, occ grdg to sltst, est vis por
6-10%, sptty pale yel flor, slo - mod fst blmg - stmg mlky grnsh yel cut, spttd ylwsh grn
resd ring; LS: (5%) v lt gy, - lt gysh brn occ med gysh brn, sb platy - sb blky, micro xln,
frm; SH: (10%) intbd, plty, drk gray, mod fm - sft, slty, occ grdg to sltst
7400
Thank You
Goolsby Brothers & Assoc. Inc
5000
5000
5000
5000
5000
C1 (units)
C2 (units)
C3 (units)
C4 (units)
0
0
0
0
12
8
Mud Weight (ppg)
20
10