

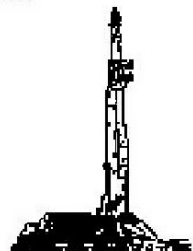
GOOLSBY BROTHERS
and associates, inc.

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: Butterball 3N-15HZ

Location: Section 10, T2N, R67W, Weld County, CO.

License Number: API# 05-123-37906

Spud Date: 18 October 2013

Surface Coordinates: 639' FNL & 1974' FWL NE NW Sec 10 T2N R67W

Lat: 40° 09' 29.29" N; Long: -104° 52' 43.73" W

Bottom Hole Coordinates: 445' FSL & 1880' FWL SE SW Sec 15 T2N R67W

Lat: 40° 07' 55.946" N; Long: -104° 52' 37.716" W

Ground Elevation (ft): 4935'

K.B. Elevation (ft): 4951'

Logged Interval (ft): 6700'

To: 16,476'

Total Depth (ft): 16,476'

Formation: Niobrara

Type of Drilling Fluid: Water Base Mud for curve, Oil Base Mud Lateral

Region: Wattenberg

Drilling Completed: 14 November 2013

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

OPERATOR

Company: Anadarko/Kerr-McGee Oil & Gas Onshore LP

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

Denver, CO 80202

CO Geologist, Tom Birmingham

GEOLOGIST

Name: Robert Nordek & Andrew Krueger & Jack Rogers & Phillip Willcox

Company: Goolsby Brothers & Assoc. (GBA), Inc. (www.goolsbybrothers.com)

Address: 575 Union Blvd.

Suite 208,

Lakewood CO. 80228

E-logs

MWD Gamma ' - 16,476'
MWD Resistivity


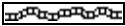
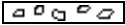

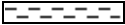
Casing






9 5/8" Surface Casing set @ 1038'
7" Casing Set @ 7670'
4.5" Liner Set to


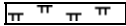


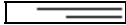
Comments

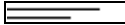




- 1) Drilling Contractor: Xtreme Drilling, Rig # 22
Rig Manager: Mike Headley / Tyler Humphrey
- 2) Company Man: Butch Beddingfield/ Scott Hancock
Dave Cornett / Hal Curlett
- 3) Well Site Geologists: Goolsby Brothers & Assoc. :
Robert Nordek / Andrew Krueger / Jack Rogers / Phillip Willcox
- 4) Mud Company : AES Drilling Fluids,
Mud Engineer: Sam Evans / Michael Cook
- 5) Directional Drilling: Sperry / Halliburton
Drillers: Randy Bernatow,
MWD: Clay Wass / Caleb Jones
- 6) Gas Equipment: Mudlogging Systems Inc.
by Terra Services
Redbox # ML-058 w/ Ratcliff Agitator

ROCK TYPES

 Anhy
 Bent
 Brec
 Cht
 Clyst

 Coal
 Oil sat.
 Congl
 Dol
 Gyp

 Lmst
 Mrlst
 Salt
 Shale
 Shcol

 Shgy
 Ss
 Sltst
 Ss
 Chalk

 Carb sh
 Sltty sh

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
 Anhy
 Arg
 Bent
 Coal
 Dol
 Gyp
 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

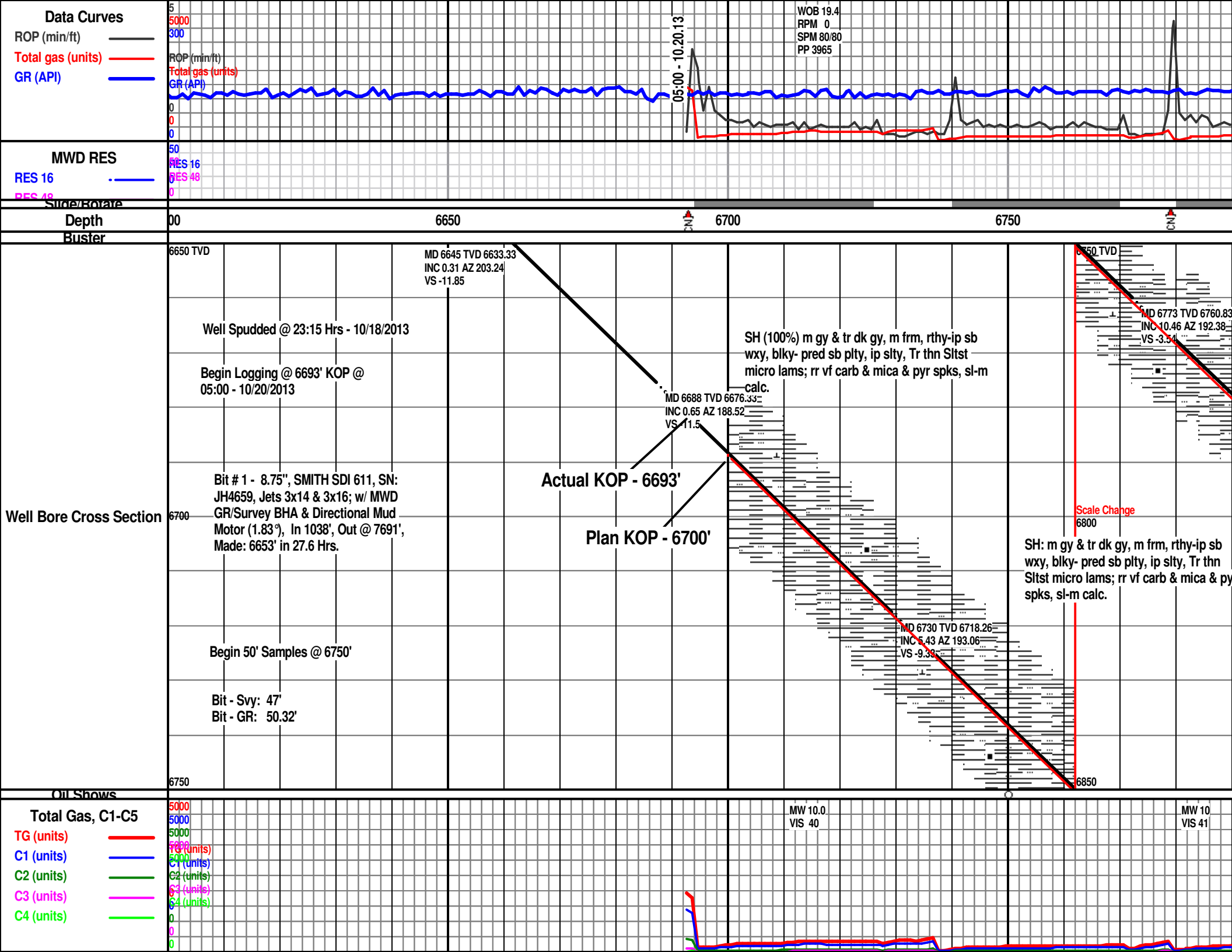
Inter
 Moldic
 Organic
 Pinpoint
 Vuggy

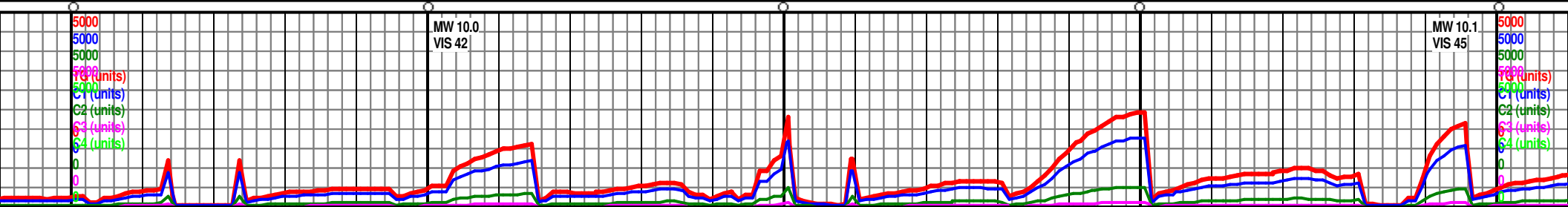
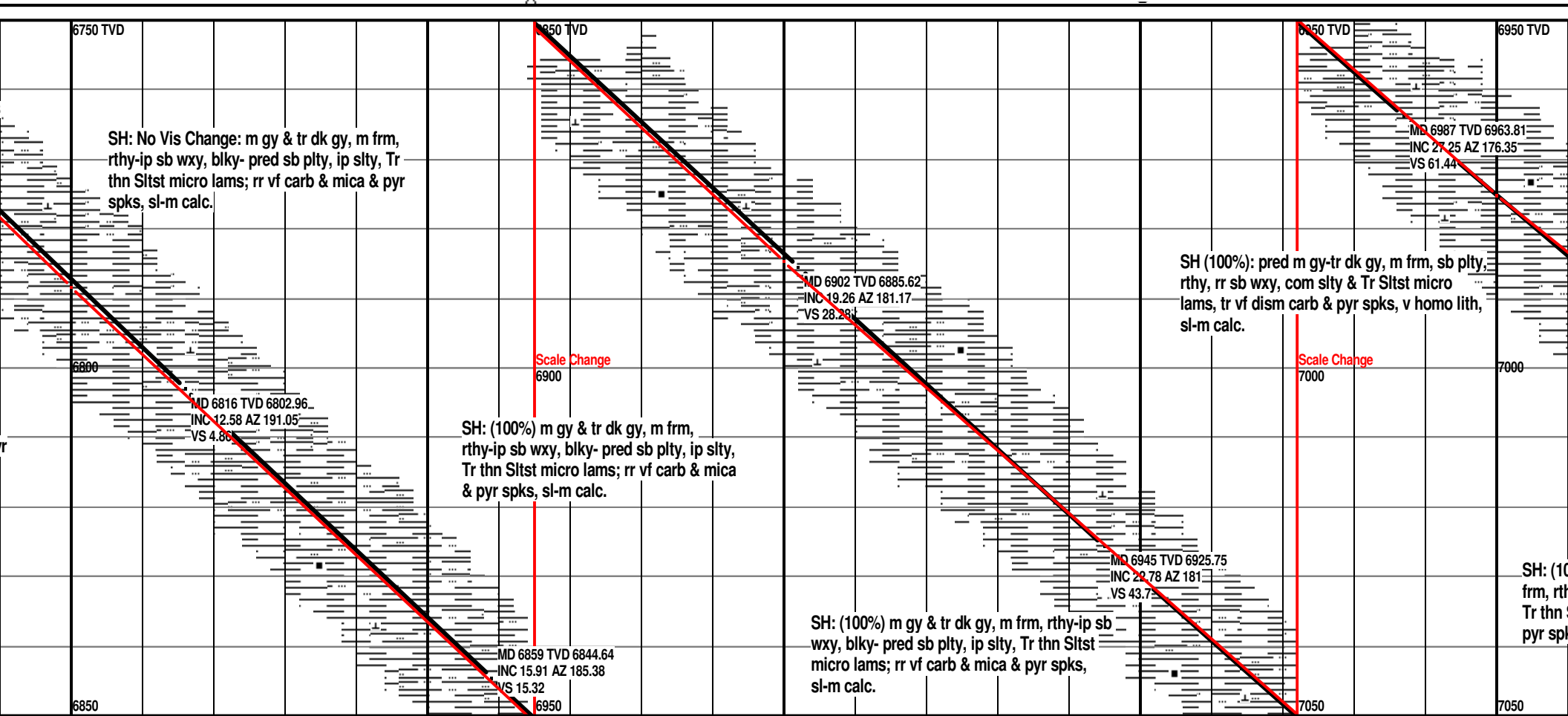
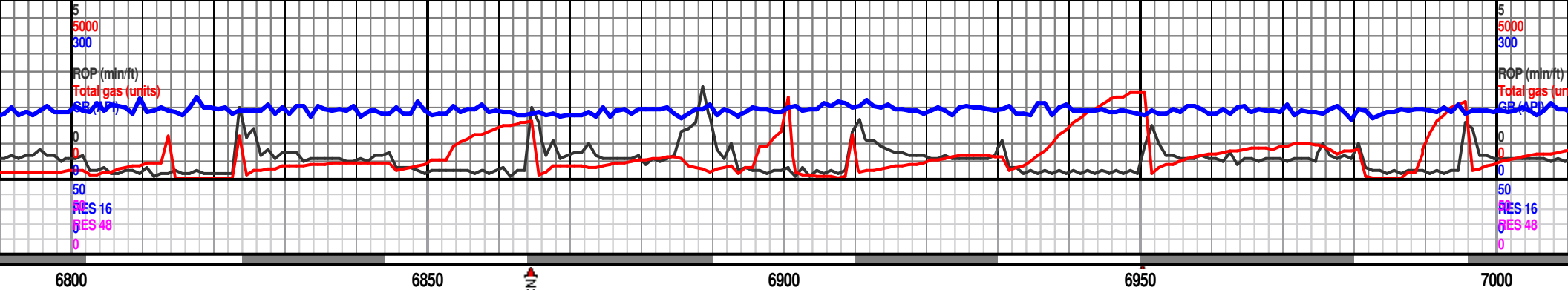
ROUNDING

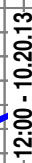
Rounded
 Subrnd
 Subang
 Angular

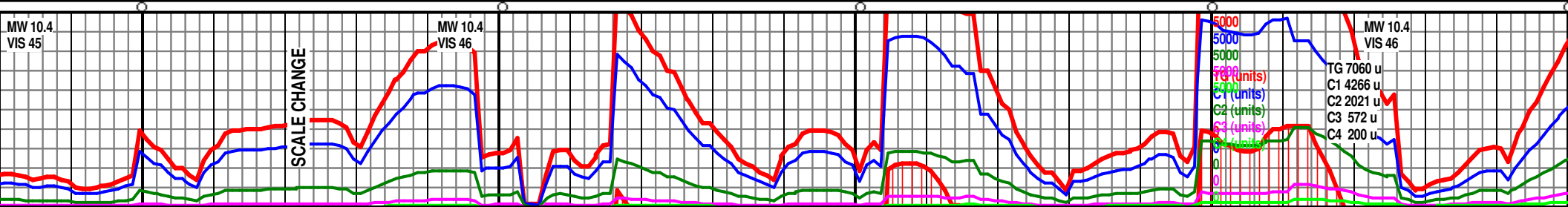
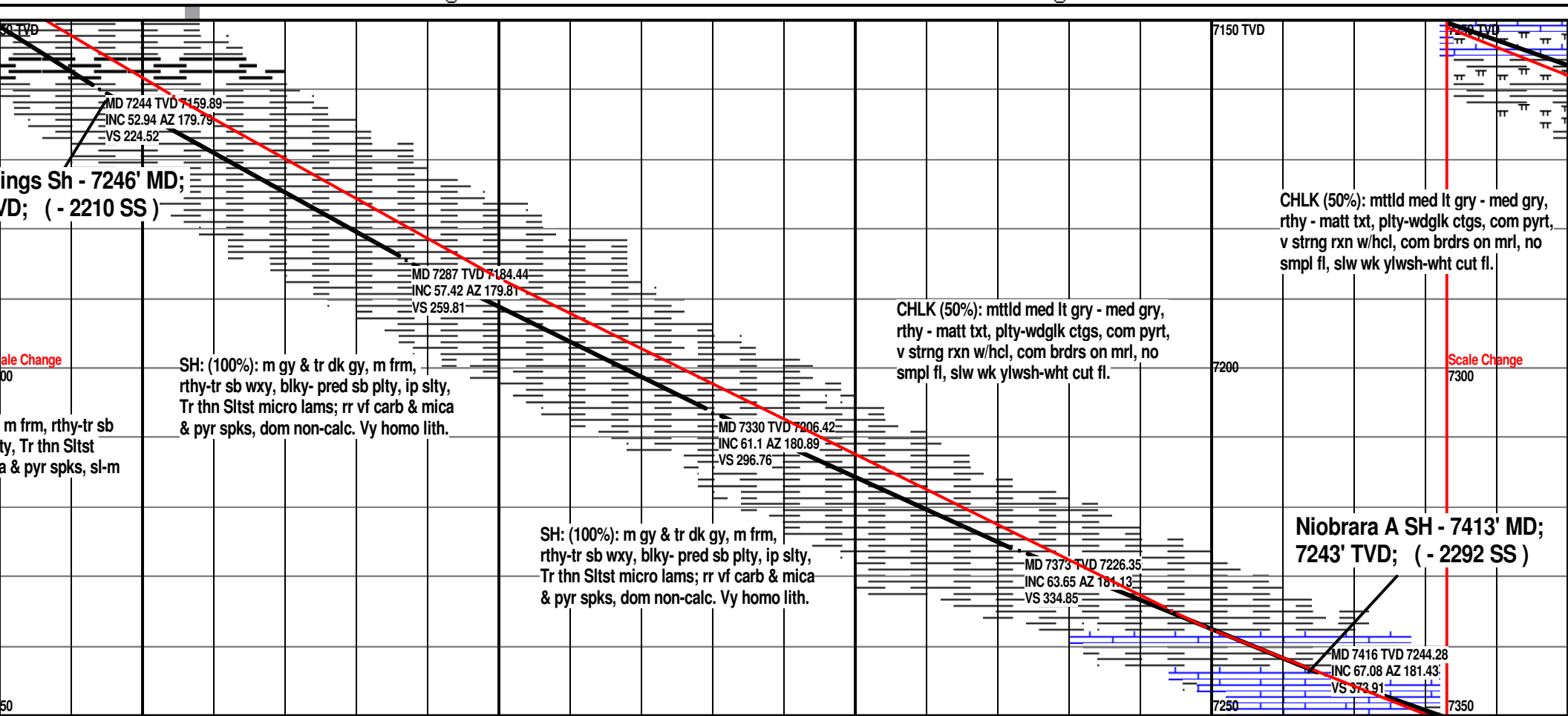
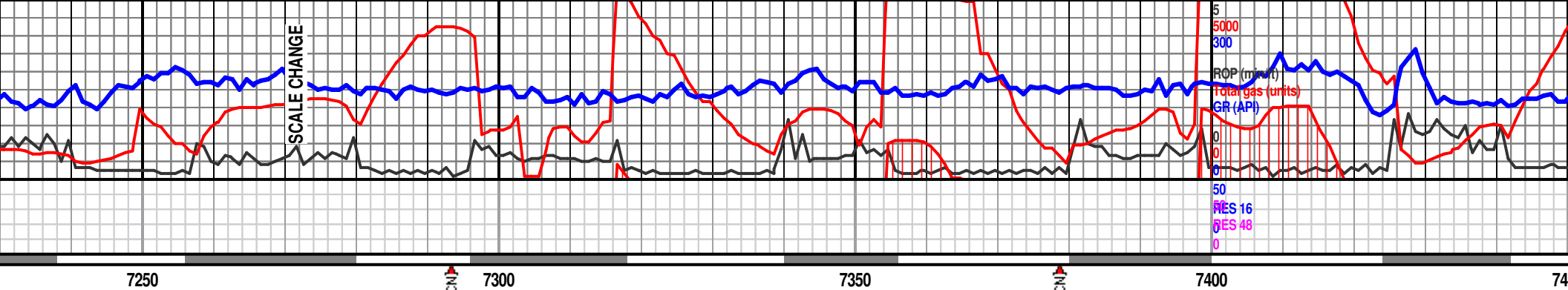
SORTING

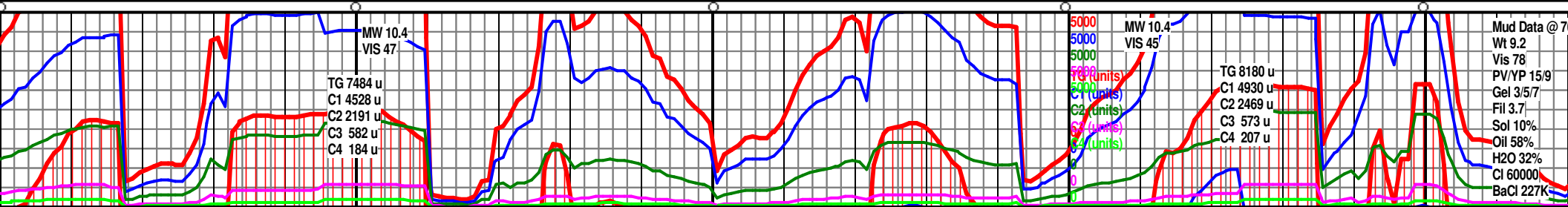
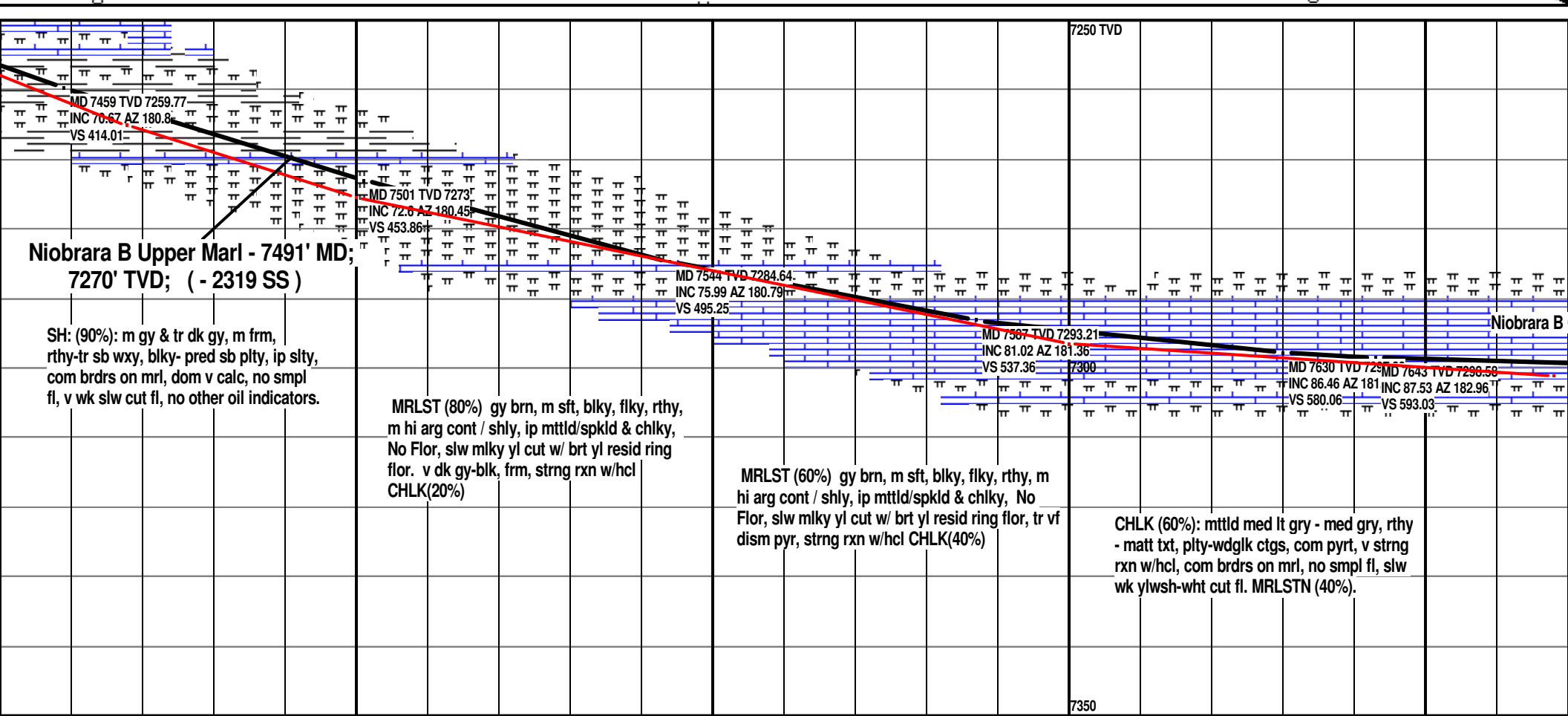
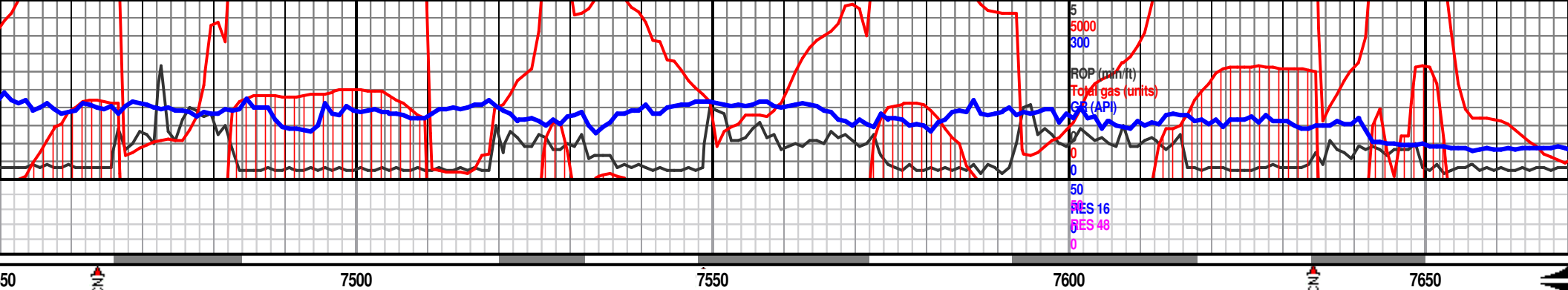
Well
 Moderate
 Poor

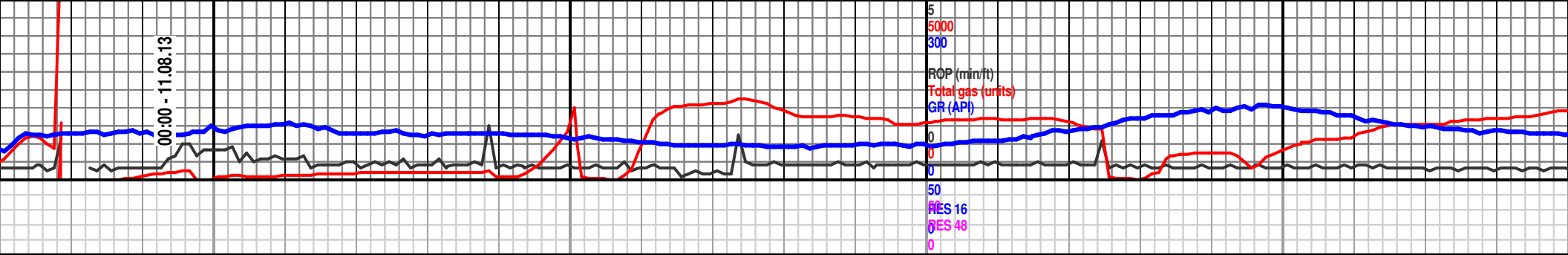




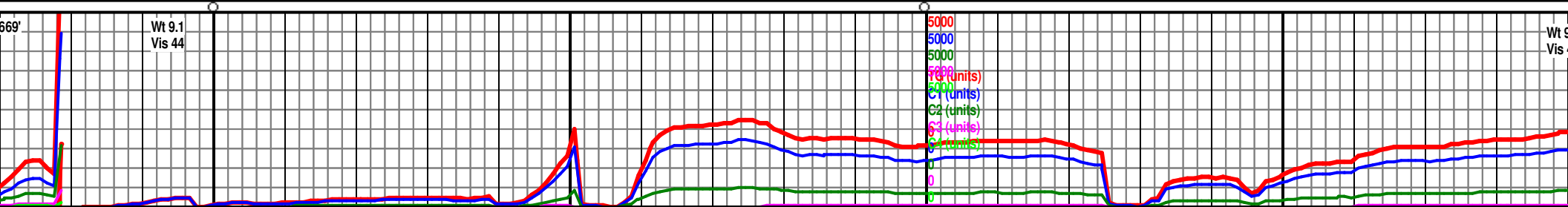
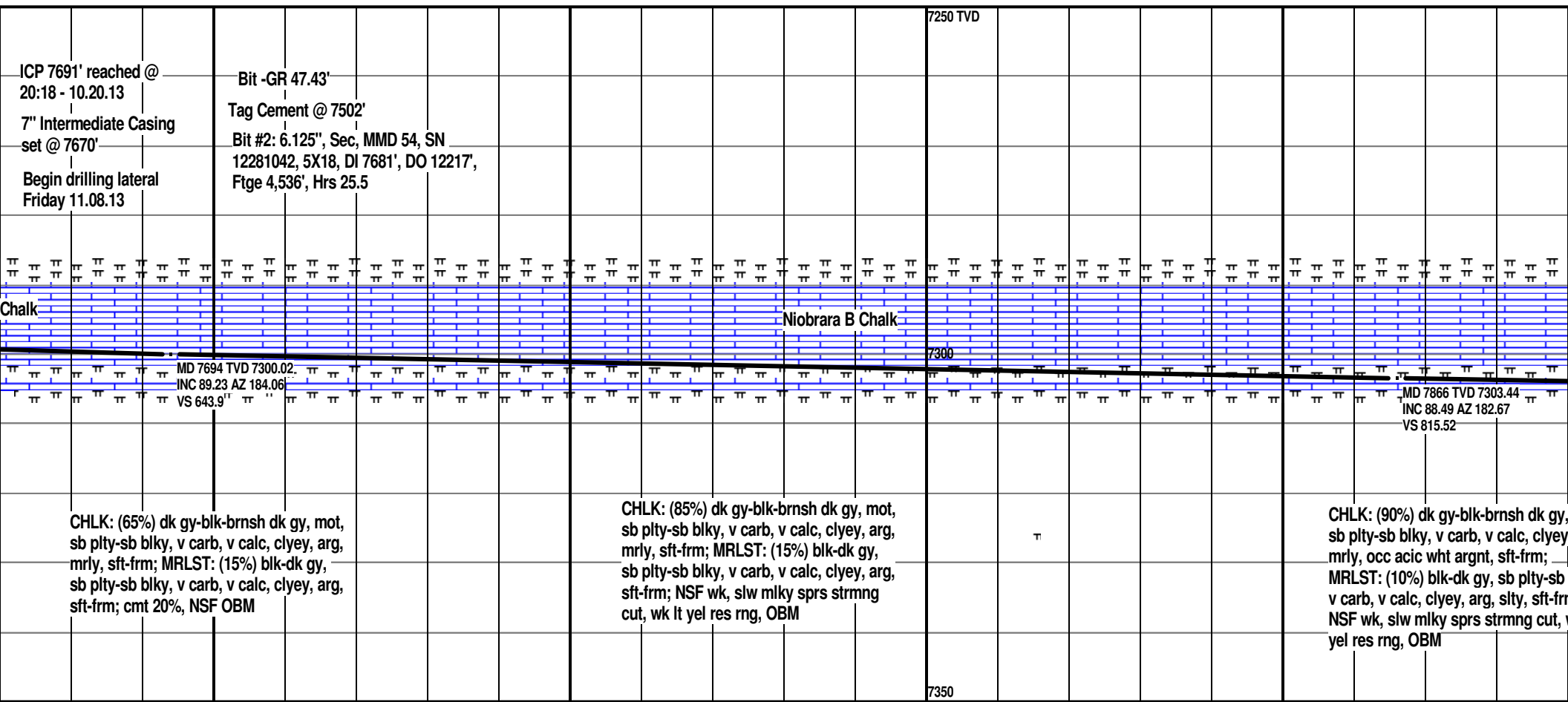








7700 7750 7800 7850



WOB 24k
RPM 62
SPM 78
PP 3194

7900

7950

8000

8050

8100

CHLK: (65%) dk gy-blk-brnsh dk gy, mot, sb
 plty-sb blk, v carb, v calc, clyey, arg, mrlly, occ
 acic wht argnt, sft frm; MRLST: (35%) blk-dk gy,
 sb plty-sb blk, v carb, v calc, clyey, arg, slty,
 sft frm; NSF wk, slw mlky sprs strmg cut, wk lt
 yel res rg, OBM

7250 TVD

Fault Throw 19

Niobrara B Chalk

Upper B Mar

Niobrara B Chalk

MD 8037 TVD 7306.38
INC 89.54 AZ 181.56
VS 986.34

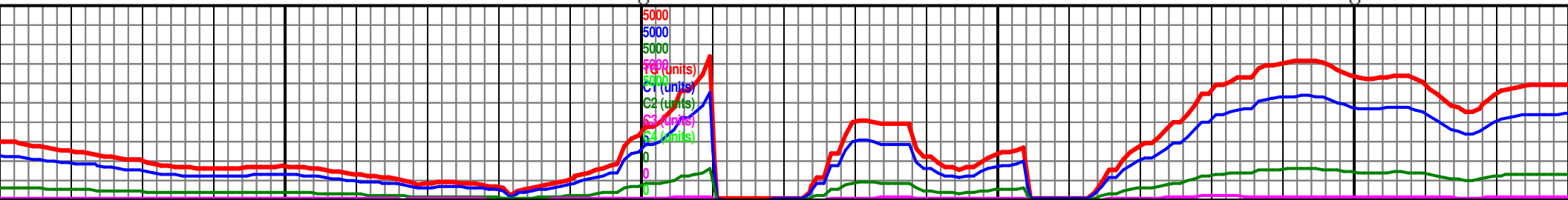
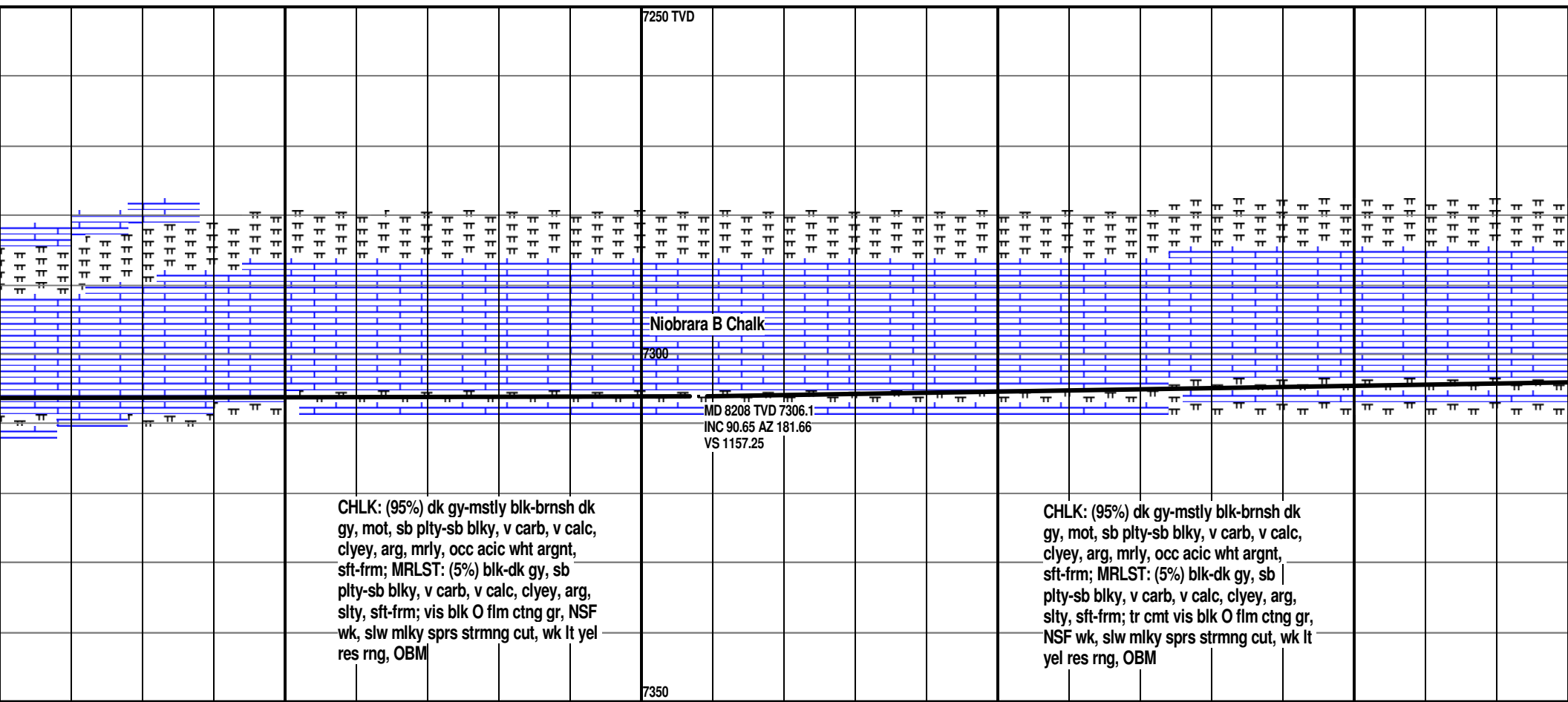
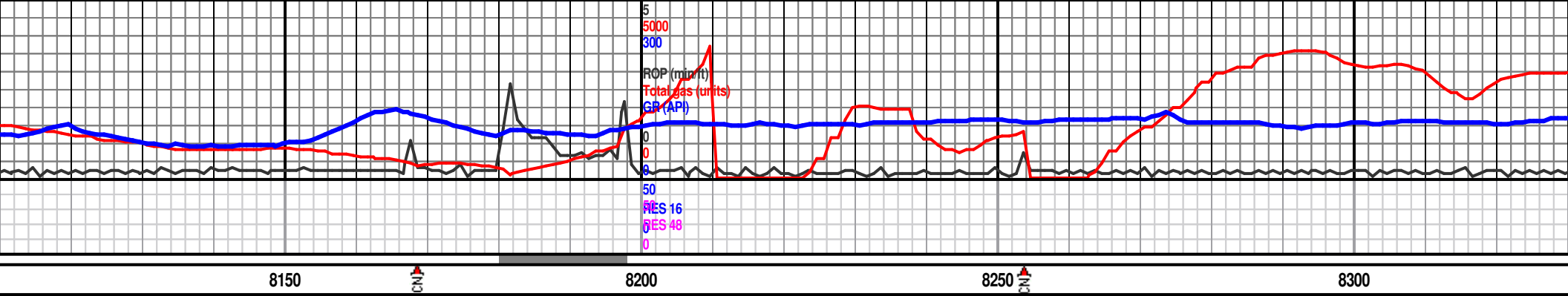
CHLK: (95%) dk gy-mstly blk-brnsh dk gy, mot, sb plty-sb blkly, v carb, v calc, clyey, arg, mrly, occ acic wht argnt, sft frm; MRLST: (5%) blk-dk gy, sb plty-sb blkly, v carb, v calc, clyey, arg, slty, sft frm; vis blk O flm ctng gr, NSF wk, slw mky sprs strmnng cut, wk lt yel res gr, OBM

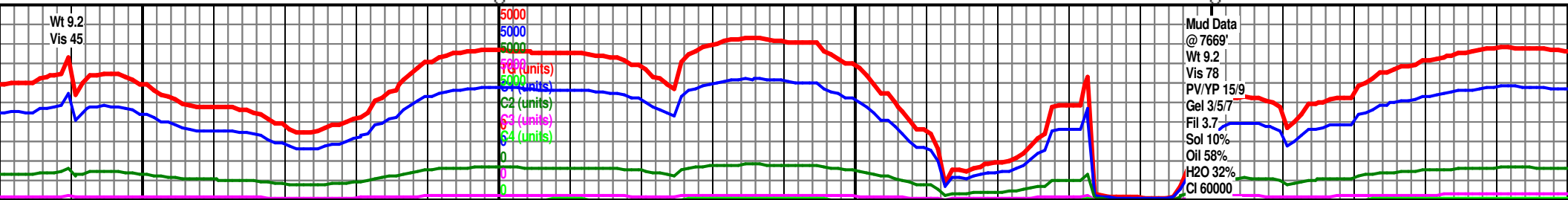
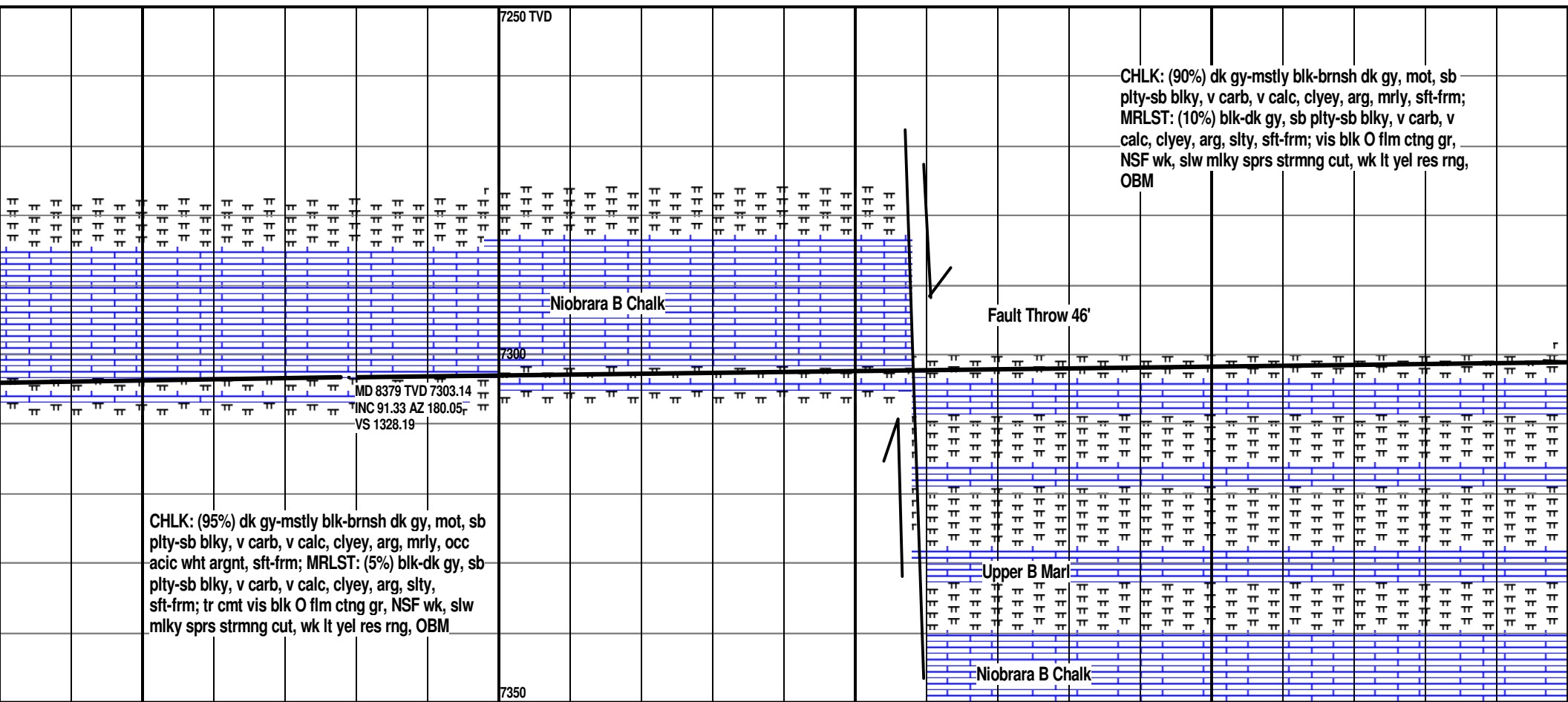
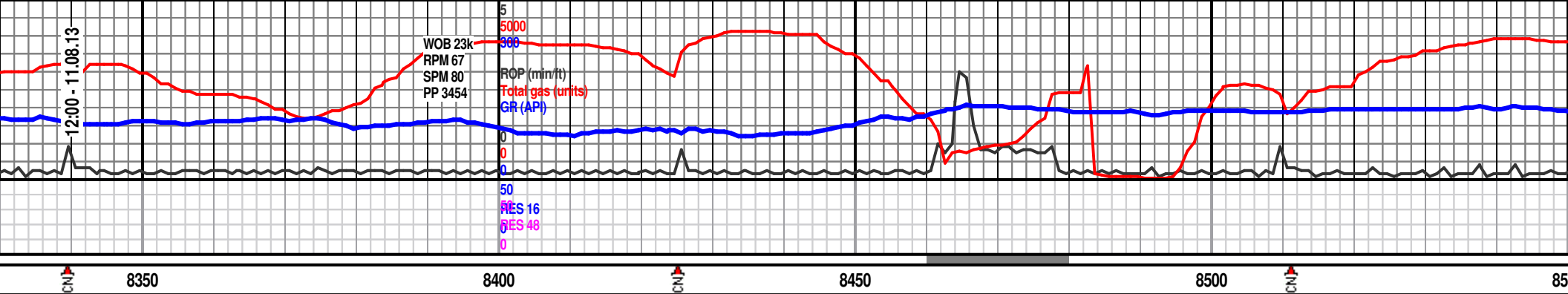
mot,
, arg,
blky,
n;
wk lt

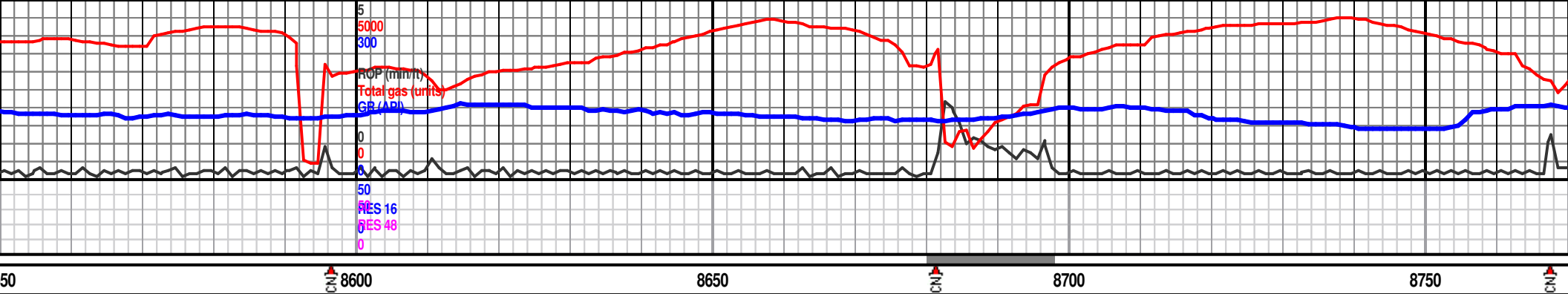
0.1
45

Wt 9.1
Vis 44

5000
5000
5000
5000
T0 (units)
5000
C1 (units)
C2 (units)
C3 (units)
6
C4 (units)

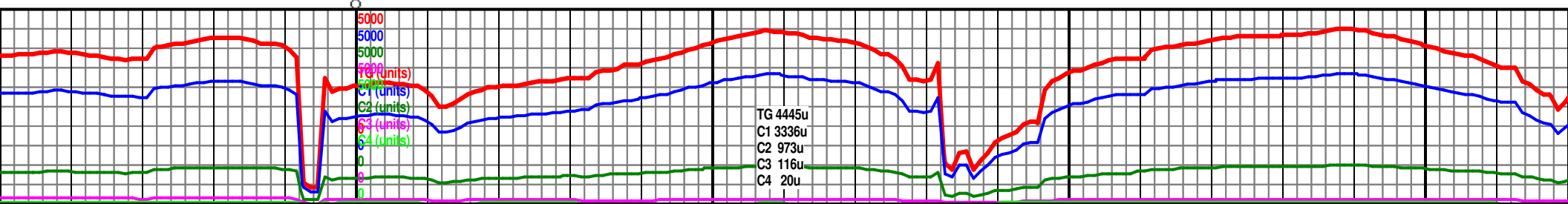
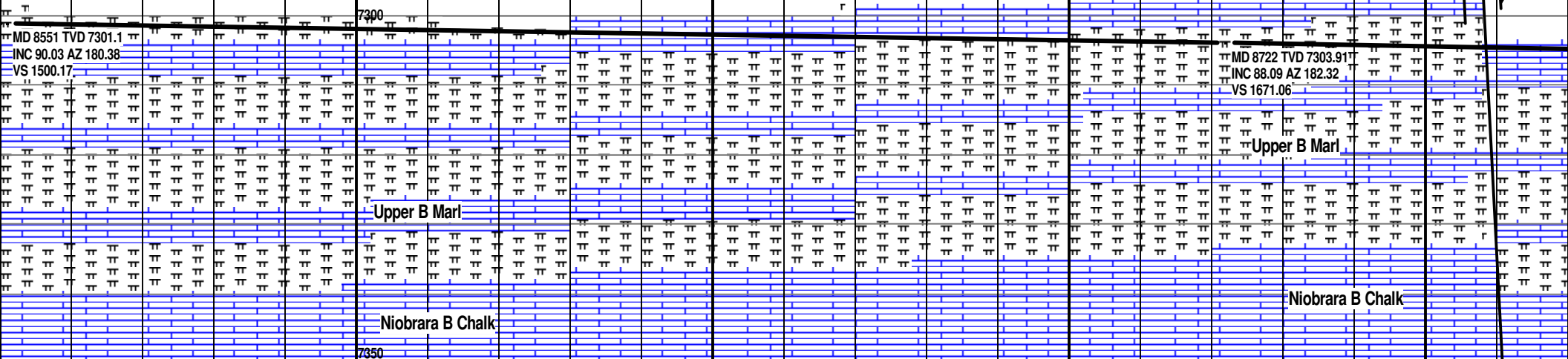


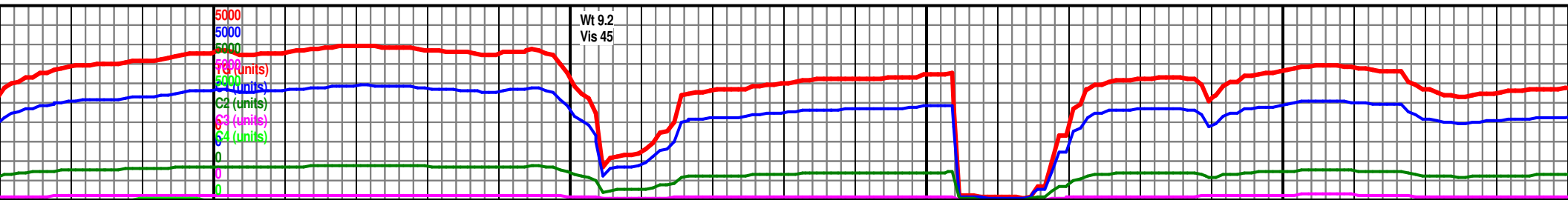
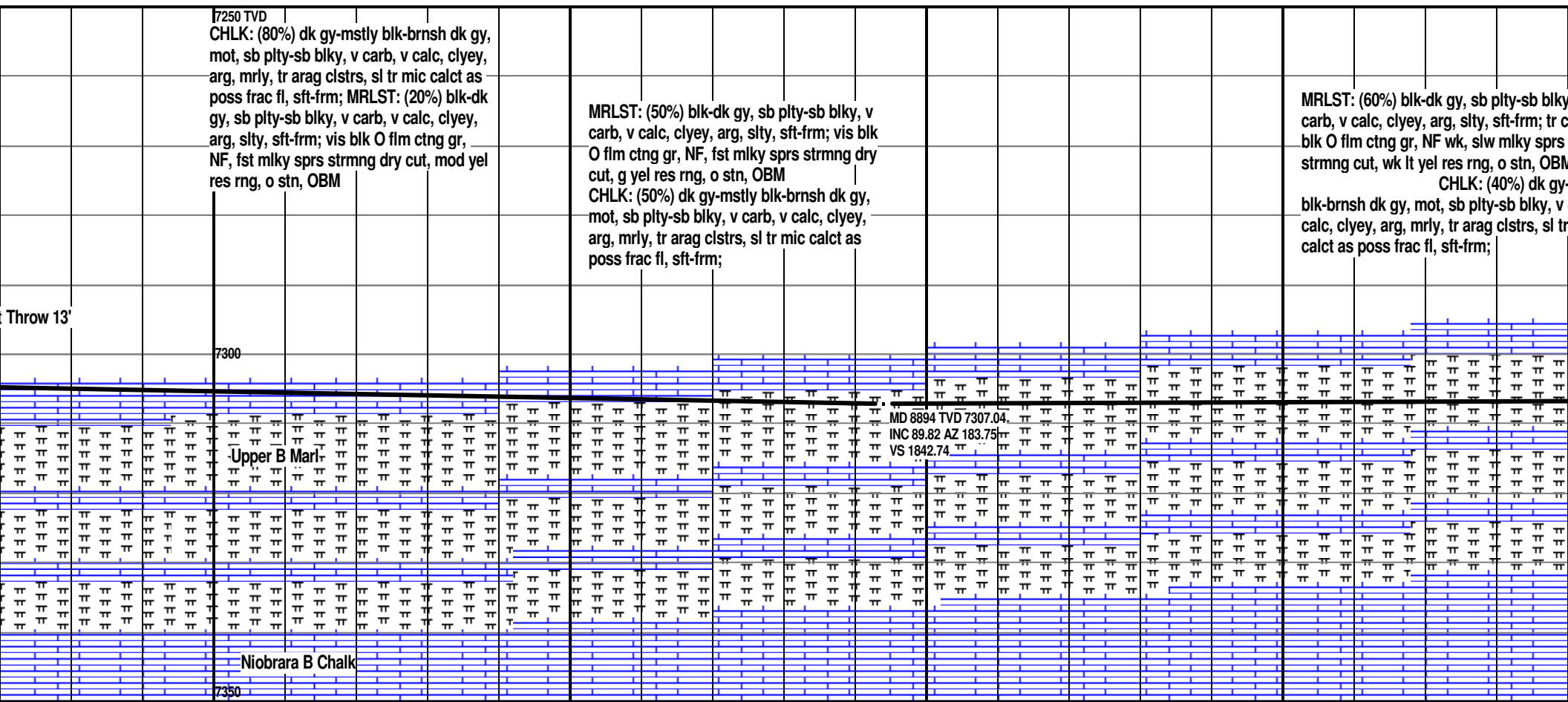
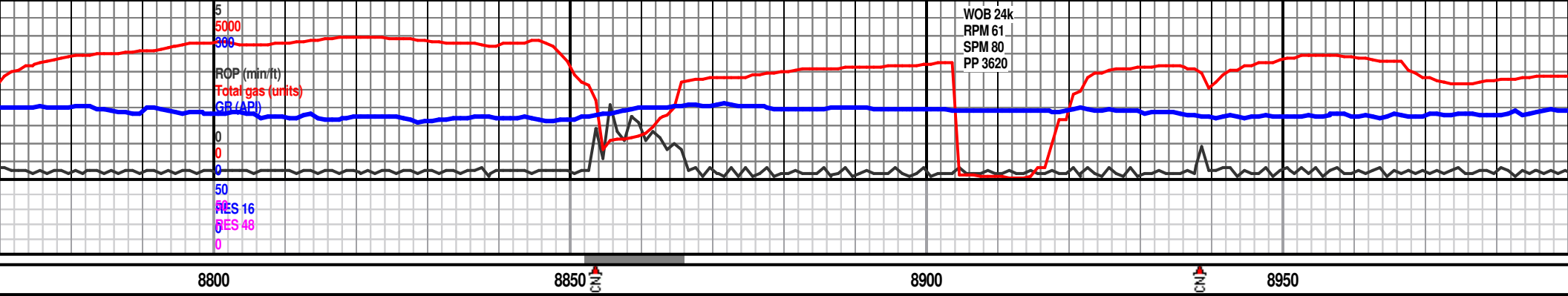


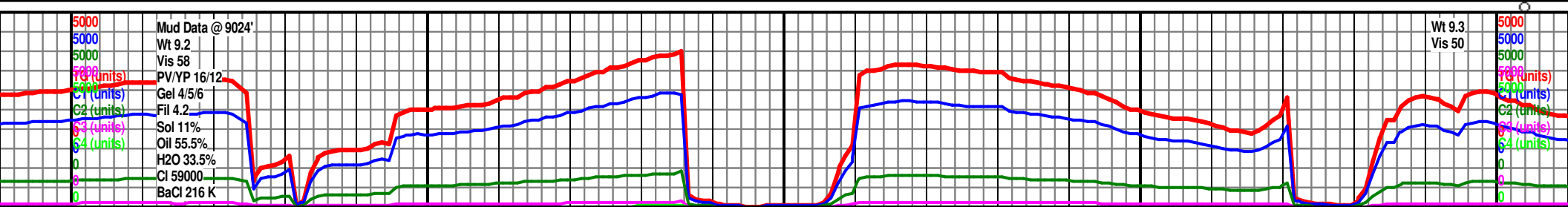
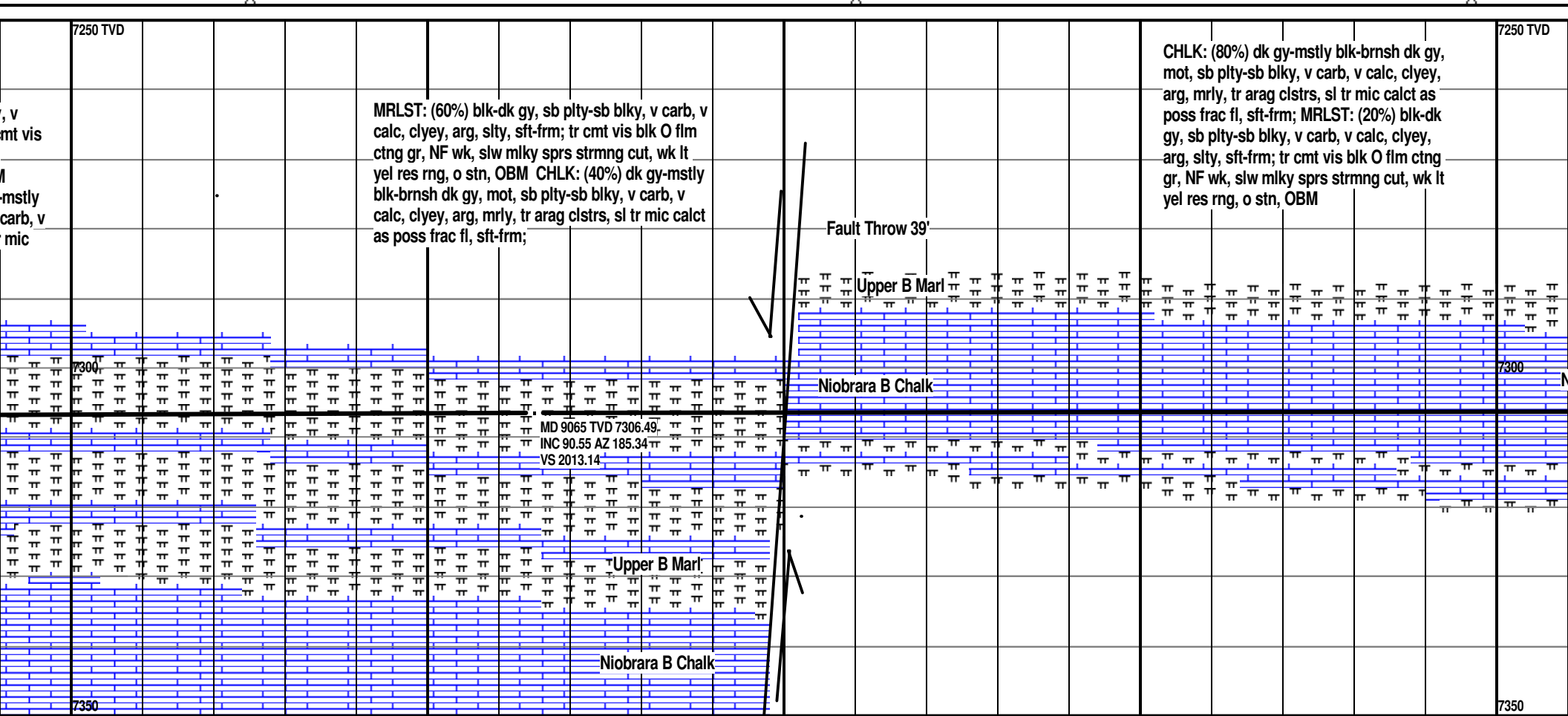
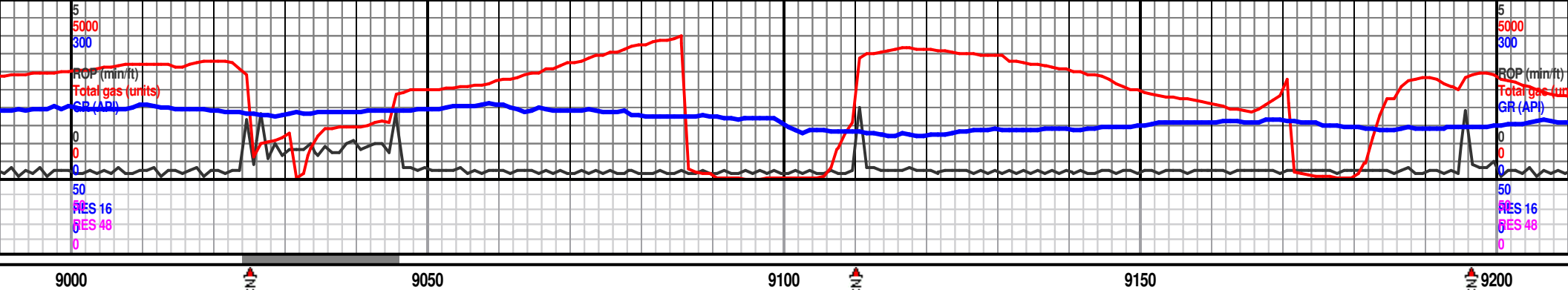


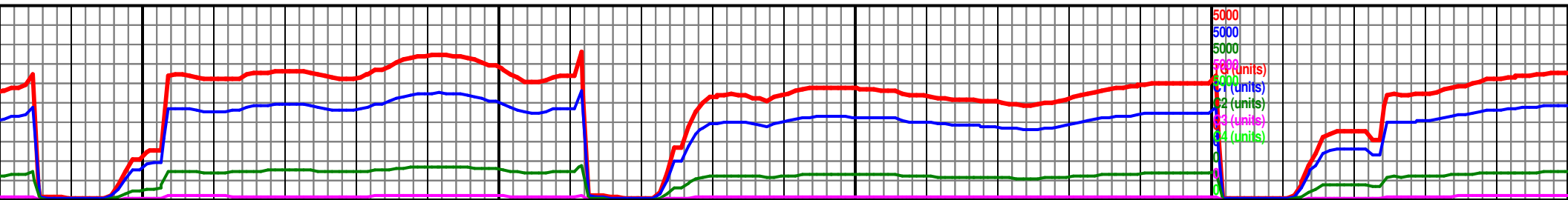
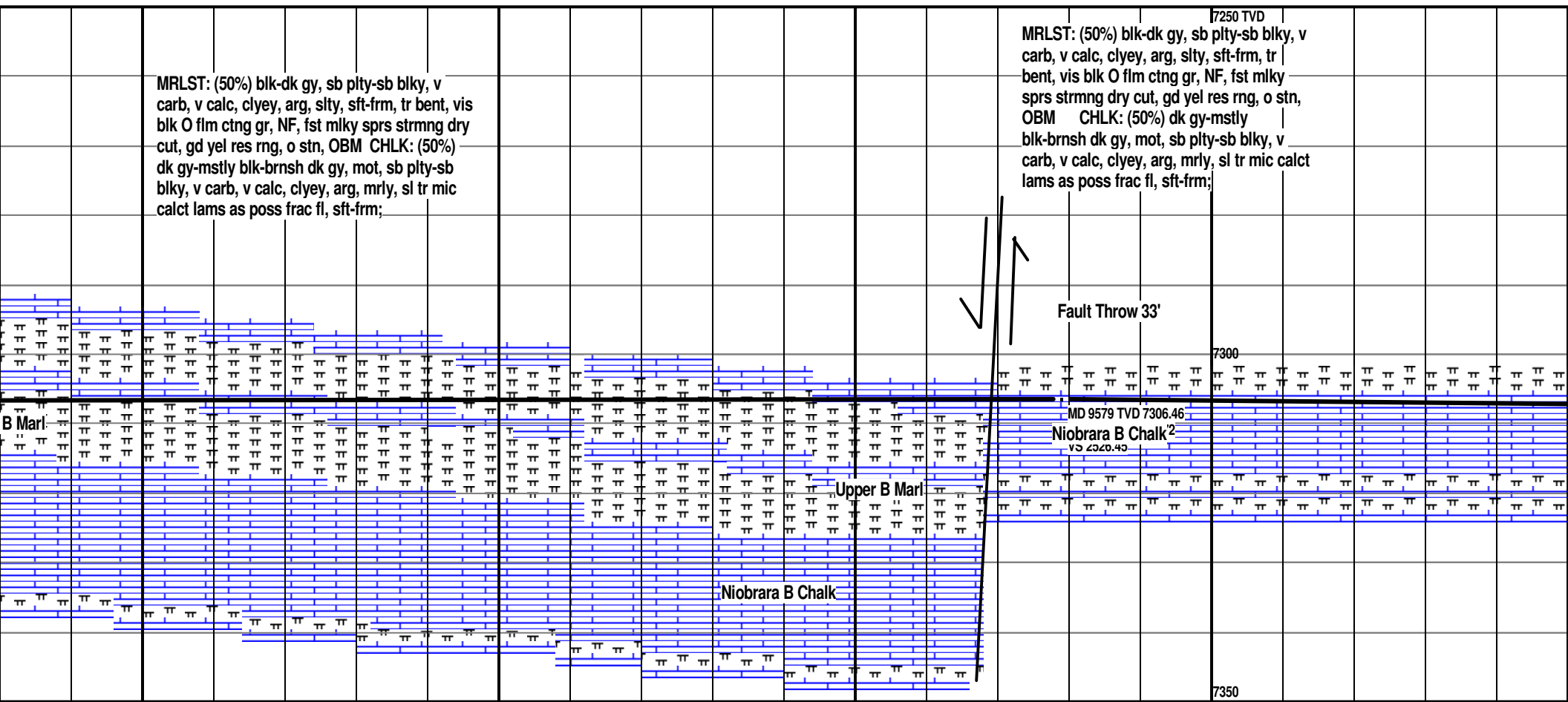
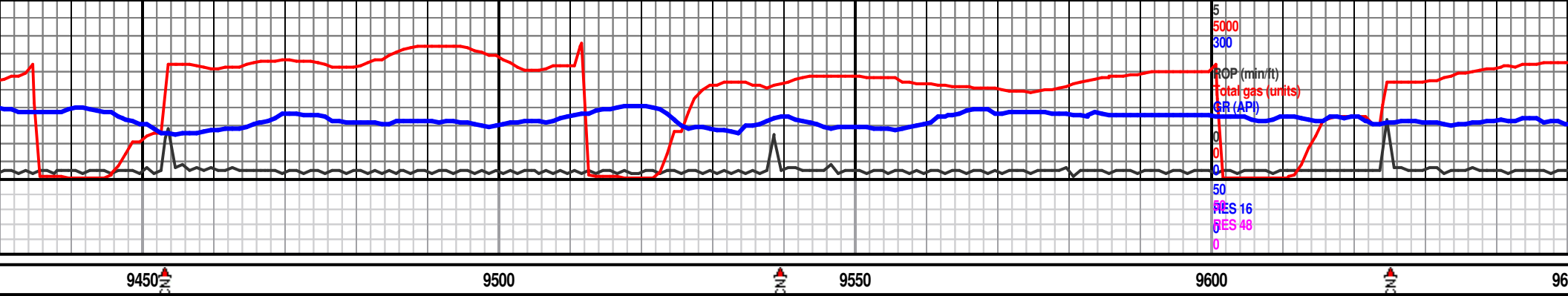
CHLK: (90%) dk gy-mstly blk-brnsh dk gy, mot, sb plty-sb blk, v carb, v calc, clayey, arg, mrlly, sft-frn; MRLST: (10%) blk-dk gy, sb plty-sb blk, v carb, v calc, clayey, arg, slty, sft-frn; vis blk O flm ctng gr, NSF wk, slw mlky sprs strmg cut, wk lt yel res rng, o stn, OBM

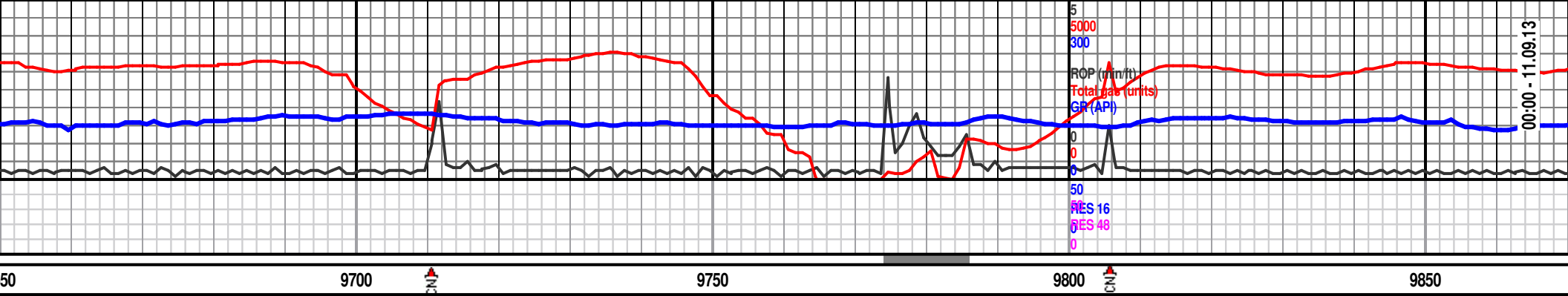
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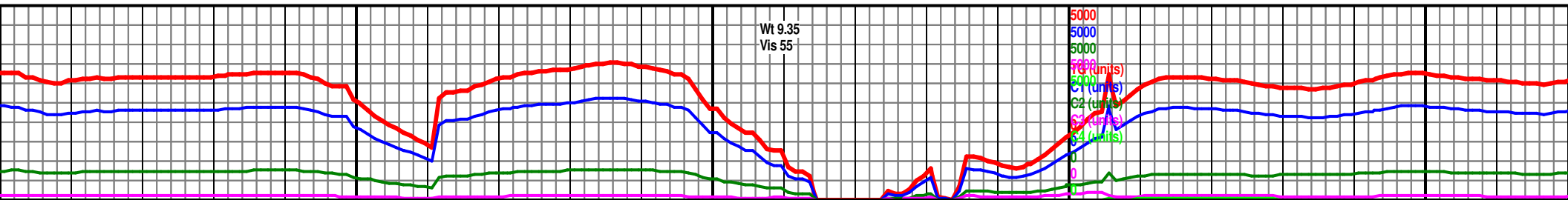


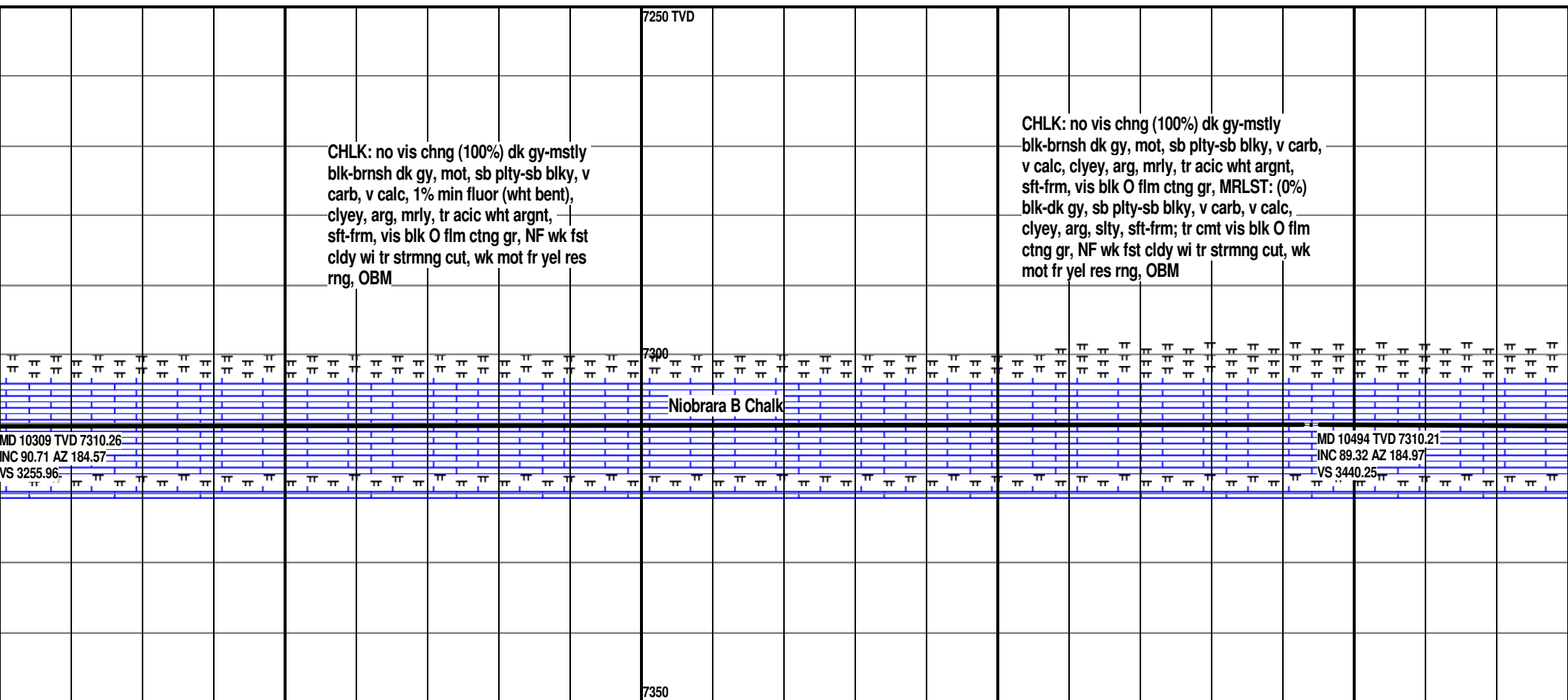


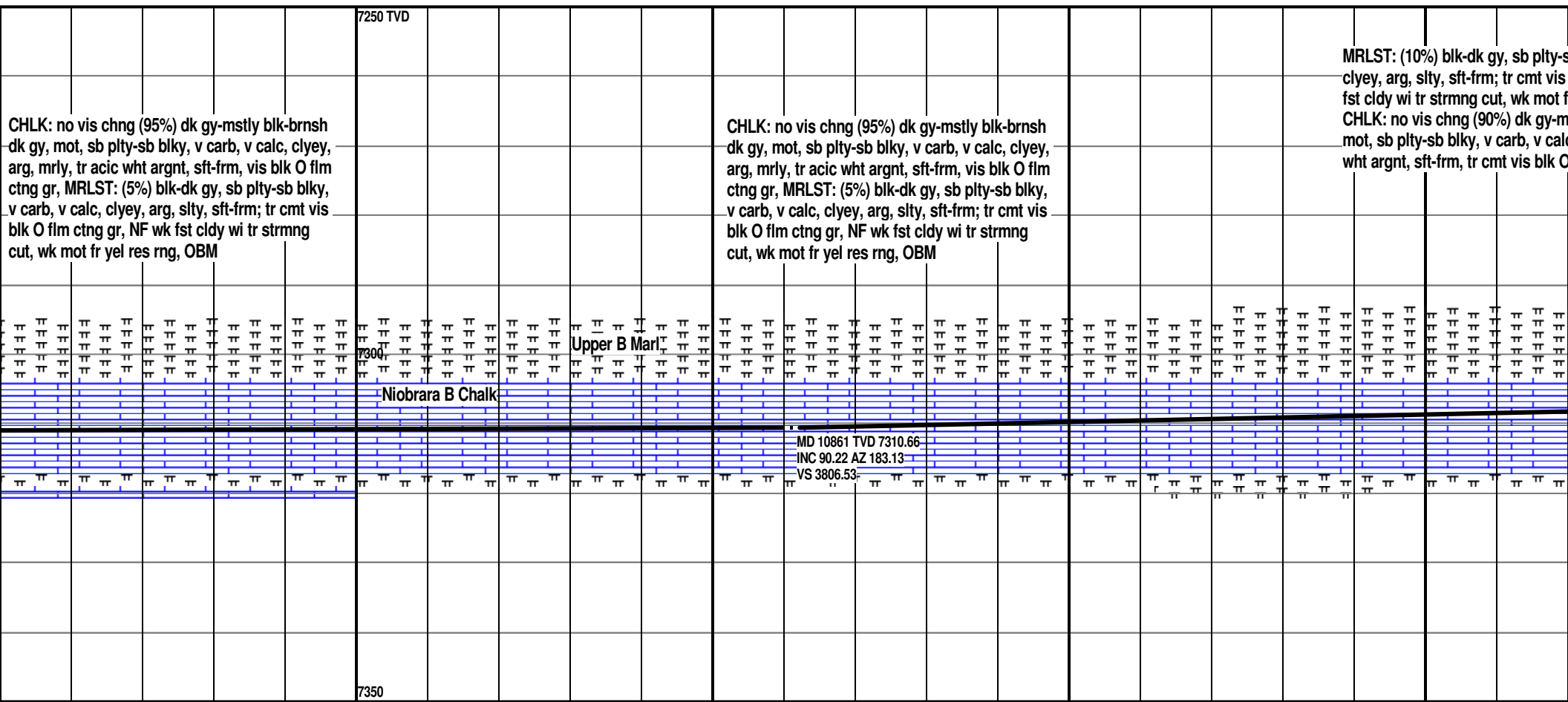


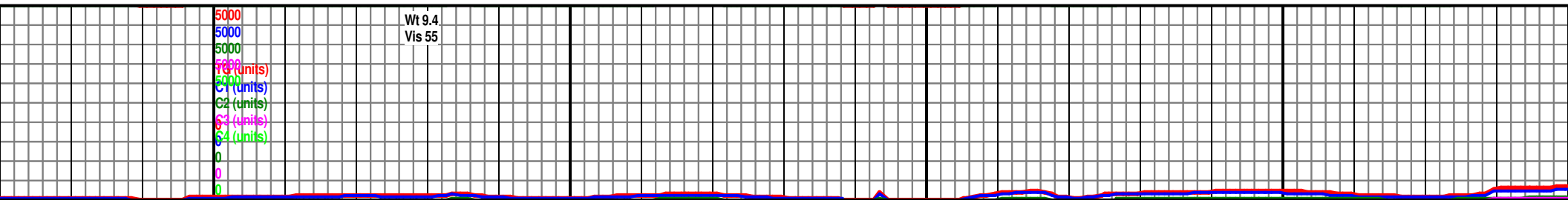
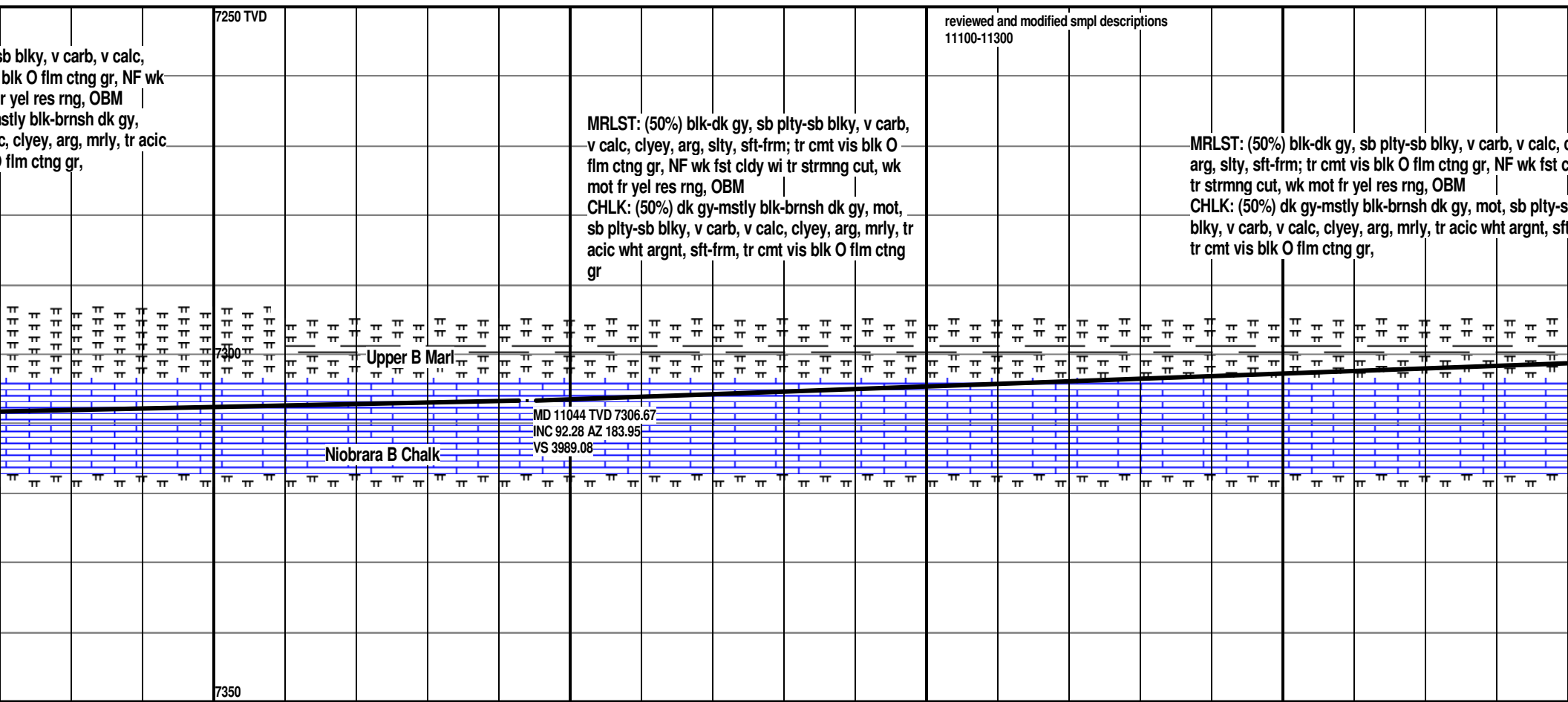
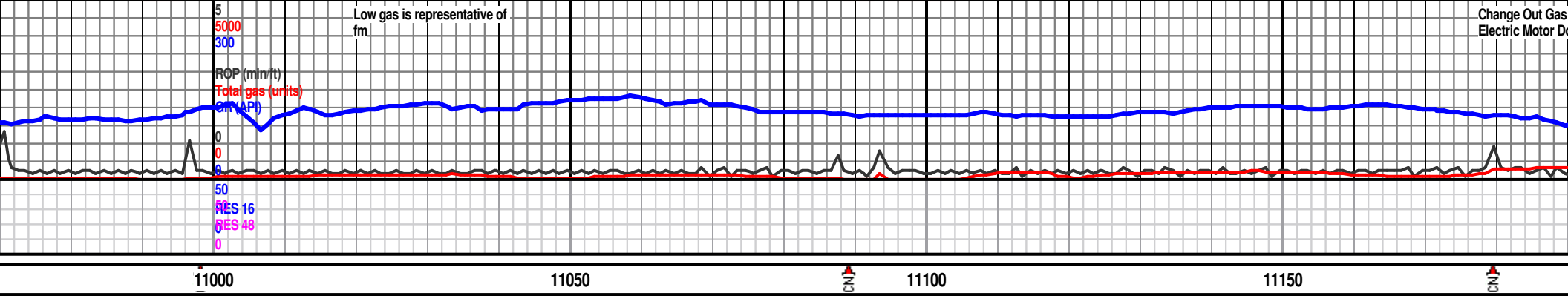


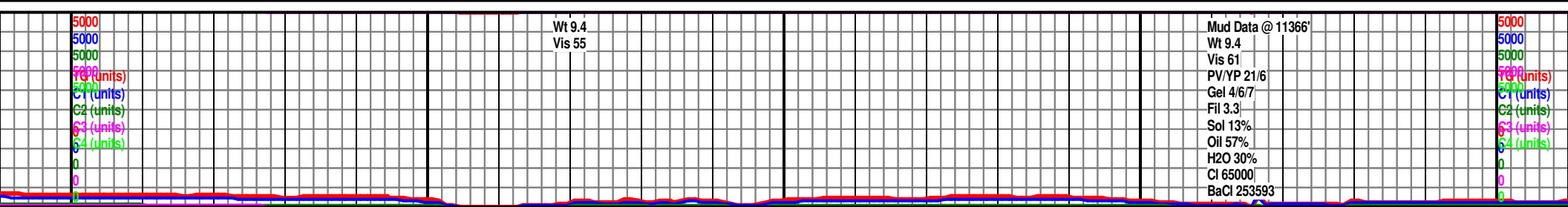
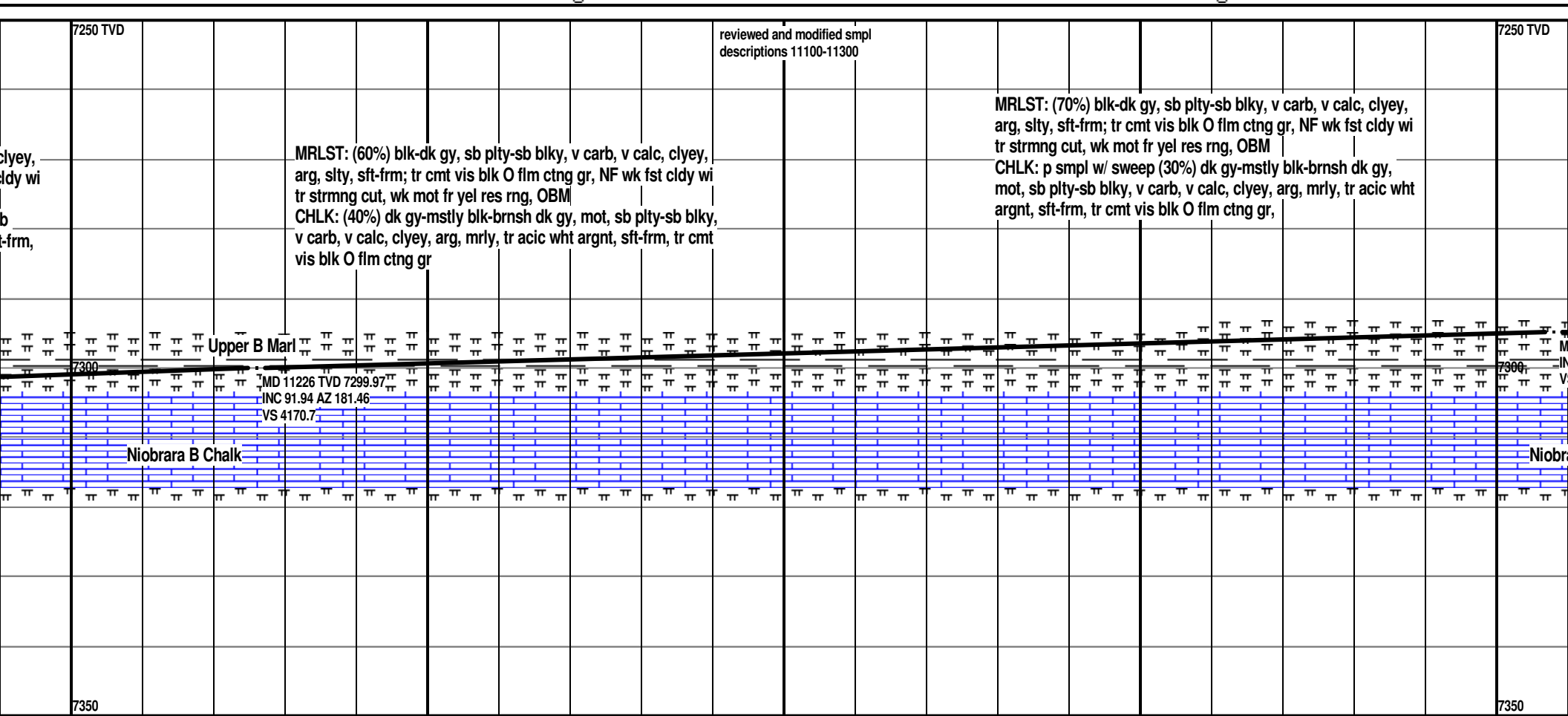
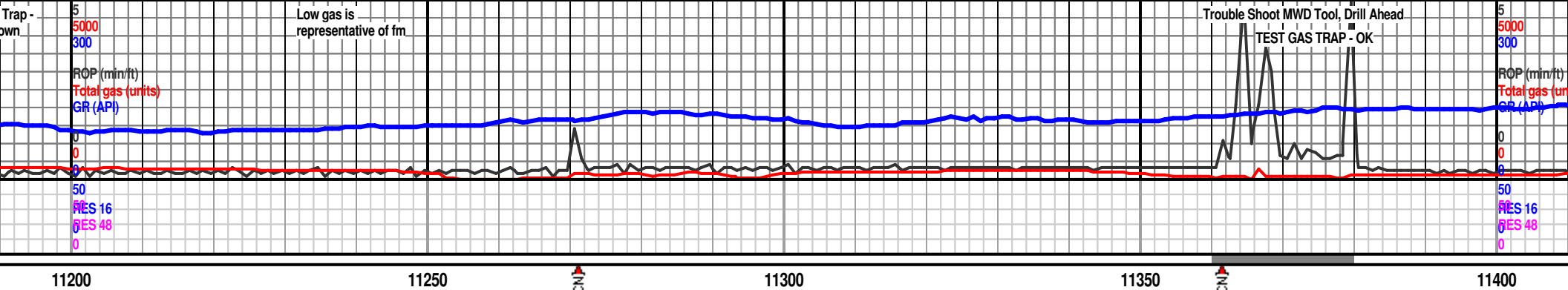
<p>CHLK: (70%) dk gy-mstly blk-brnsh dk gy, mot, sb plty-sb blk, v carb, v calc, clayey, arg, mrlly, sl tr mic calct lams as poss frac fl, sft frm; MRLST: (30%) blk-dk gy, sb plty-sb blk, v carb, v calc, clayey, arg, slty, sft frm, tr bent; NF, fst mlky sprs strmg dry cut, gd yel res rng, o stn, OBM</p>	<p>CHLK: (70%) dk gy-mstly blk-brnsh dk gy, mot, sb plty-sb blk, v carb, v calc, clayey, arg, mrlly, sl tr mic calct lams as poss frac fl, sft frm; MRLST: (30%) blk-dk gy, sb plty-sb blk, v carb, v calc, clayey, arg, slty, sft frm, tr bent; vis blk tar O flm ctng gr, NF, fst mlky sprs strmg dry cut, gd yel res rng, o stn, OBM</p>	<p>CHLK: (95%) dk gy, mot, sb plty-sb blk, v carb, v calc, clayey, arg, mrlly, sl tr mic calct lams as poss frac fl, sft frm; MRLST: (30%) blk-dk gy, sb plty-sb blk, v carb, v calc, clayey, arg, slty, sft frm, tr bent; vis blk tar O flm ctng gr, NF, fst mlky sprs strmg dry cut, gd yel res rng, o stn, OBM</p>
<p>7250 TVD</p>	<p>7300</p>	<p>7350</p>

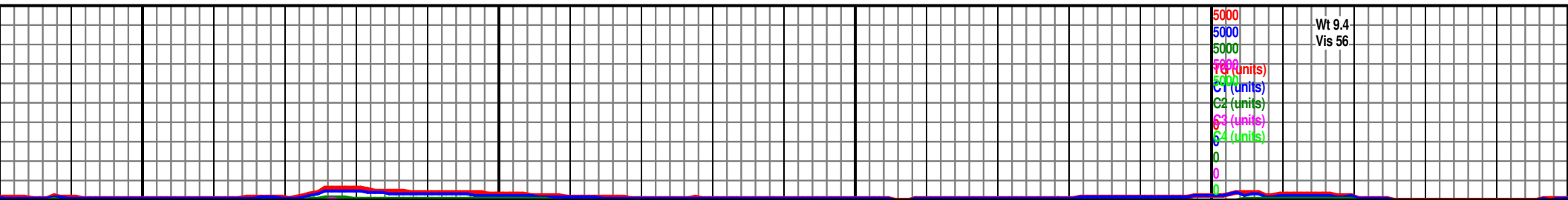
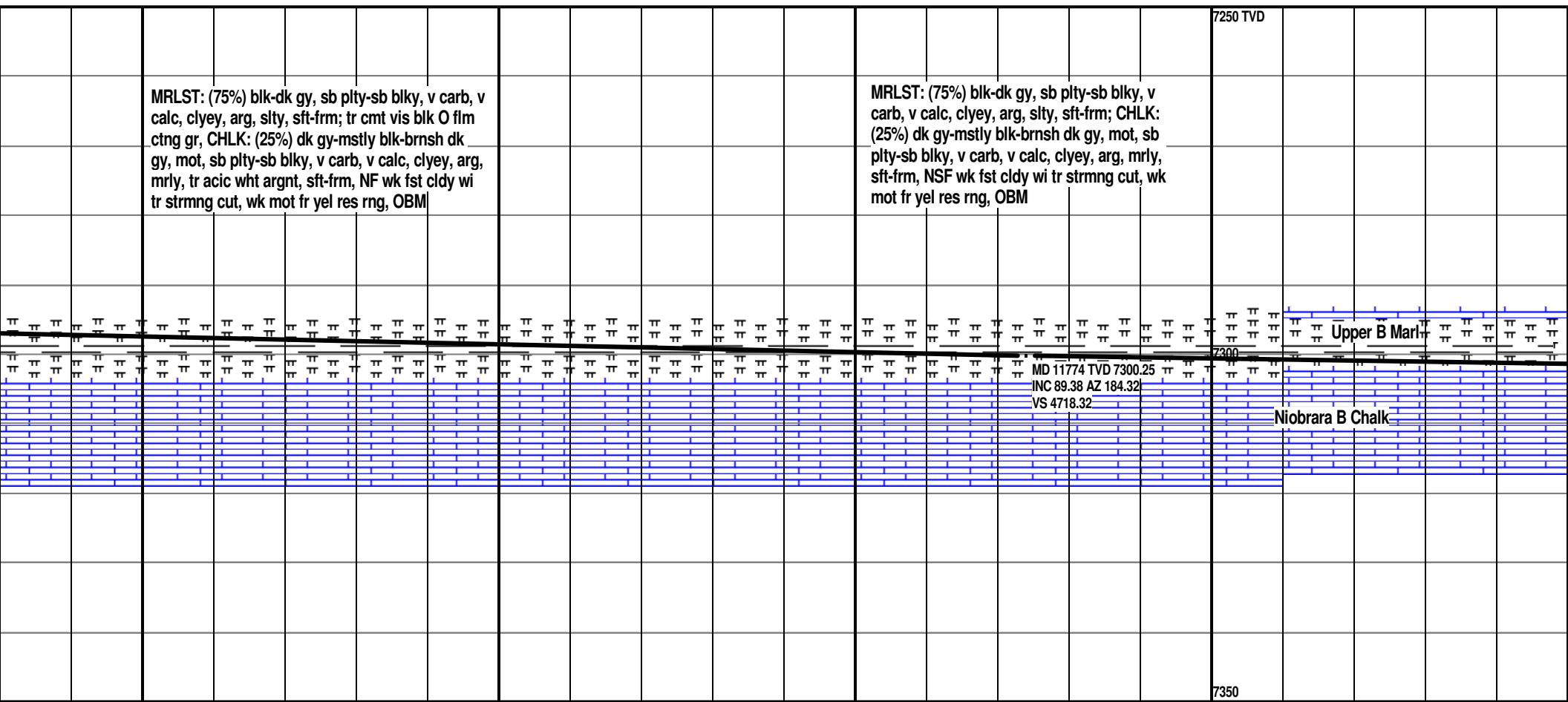
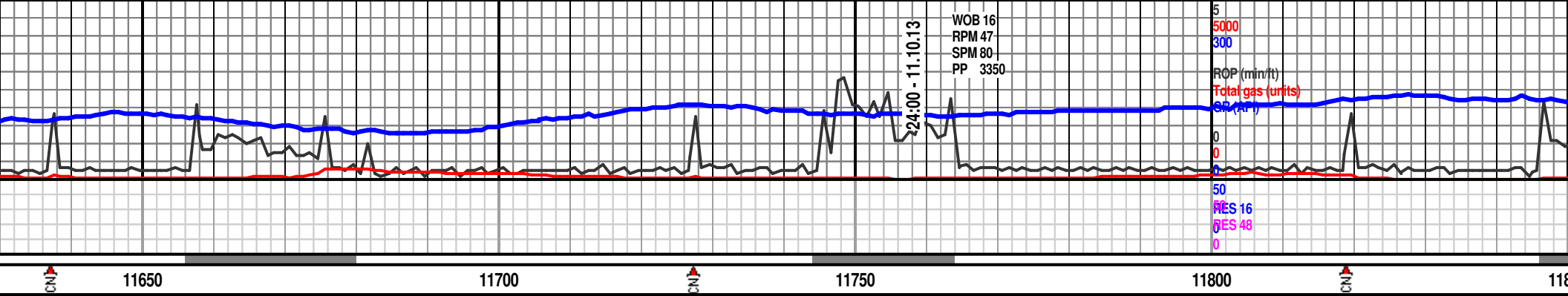


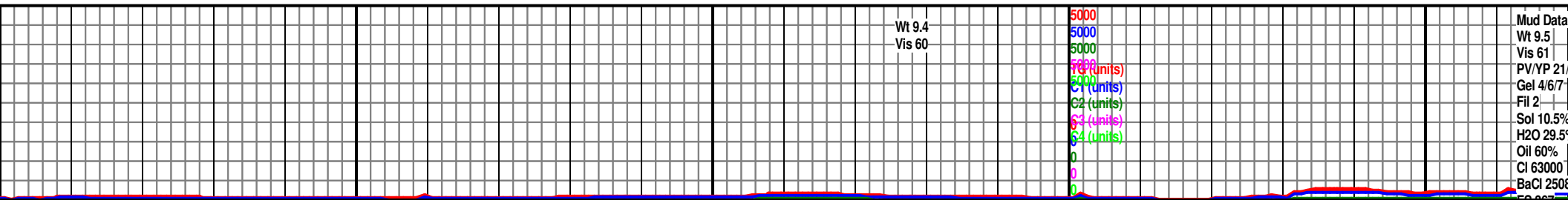
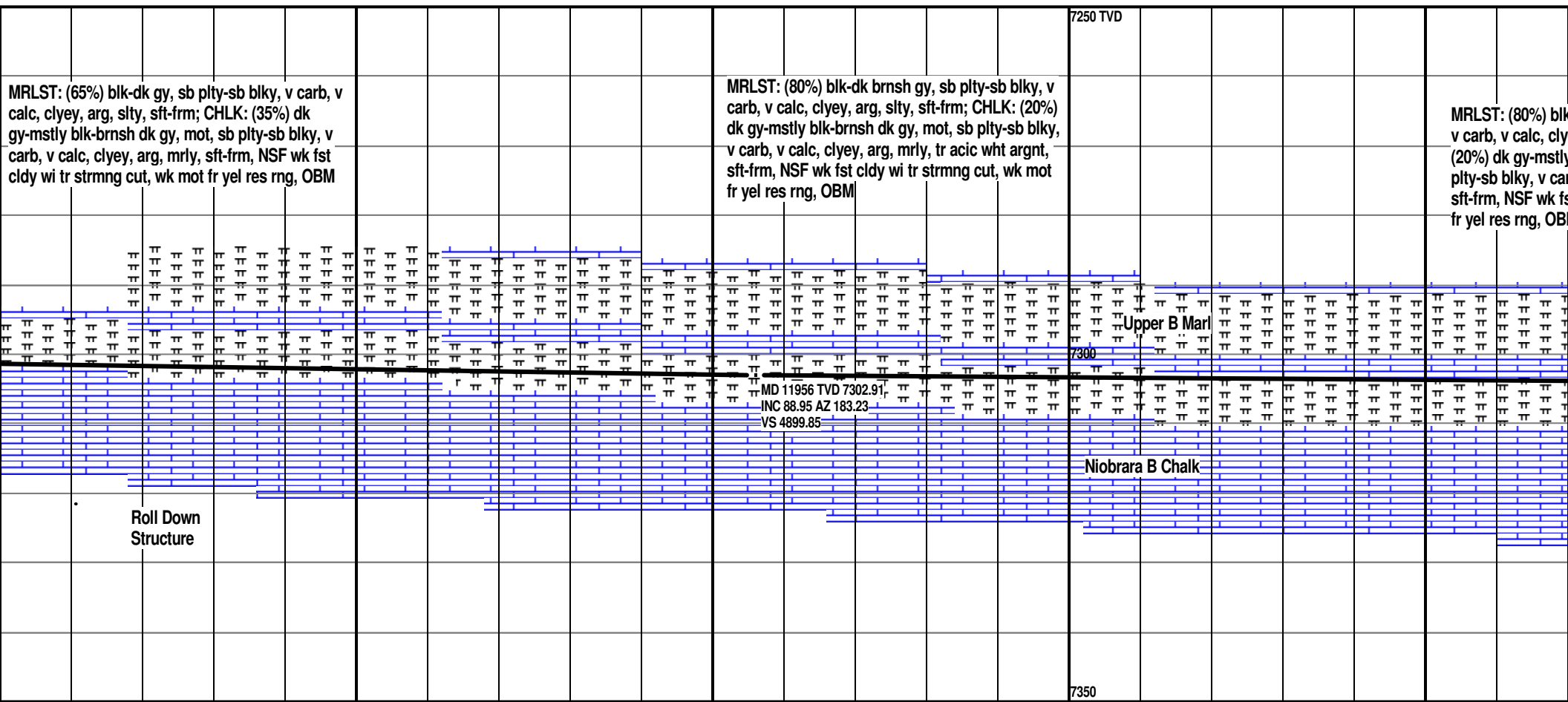
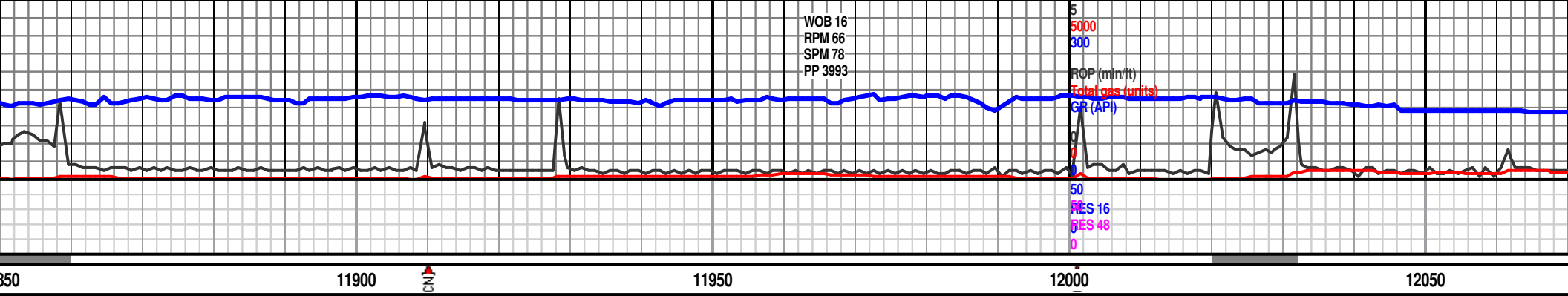


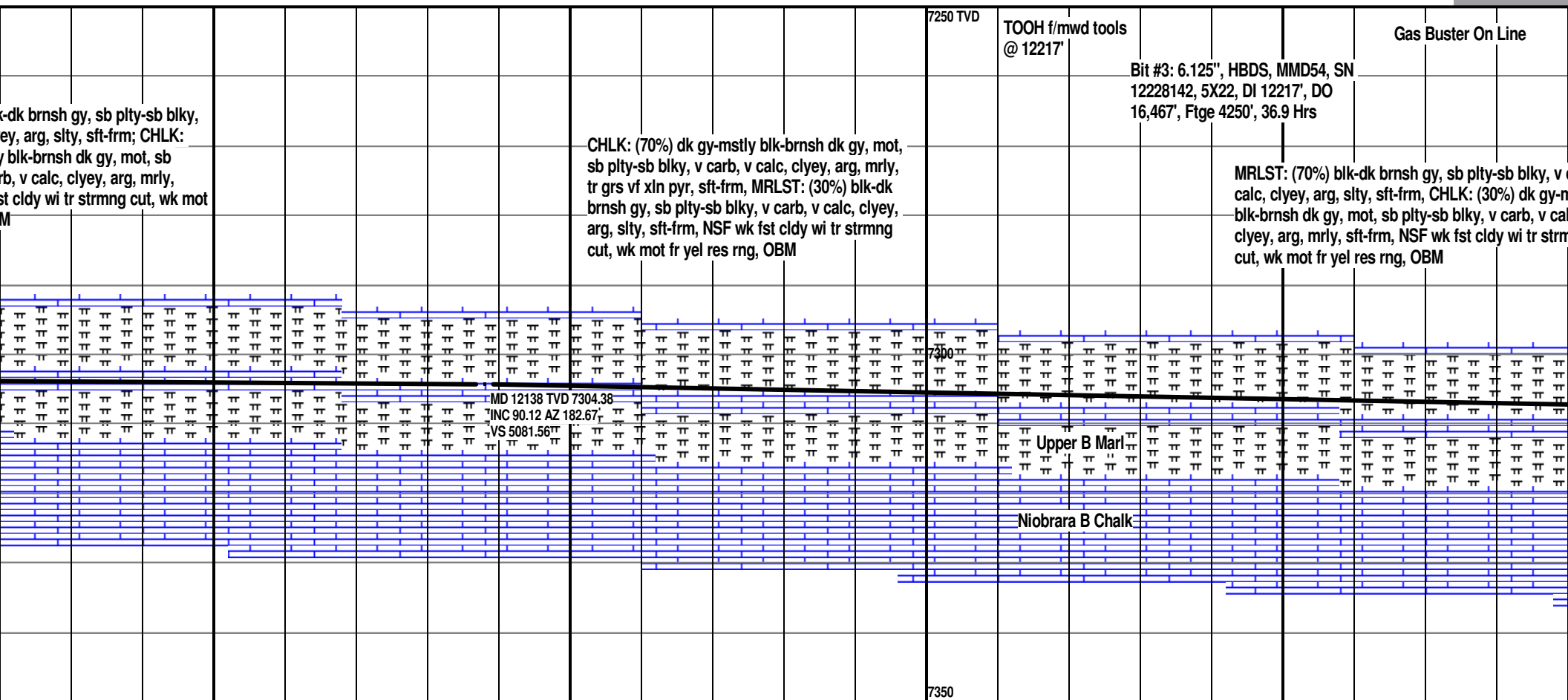


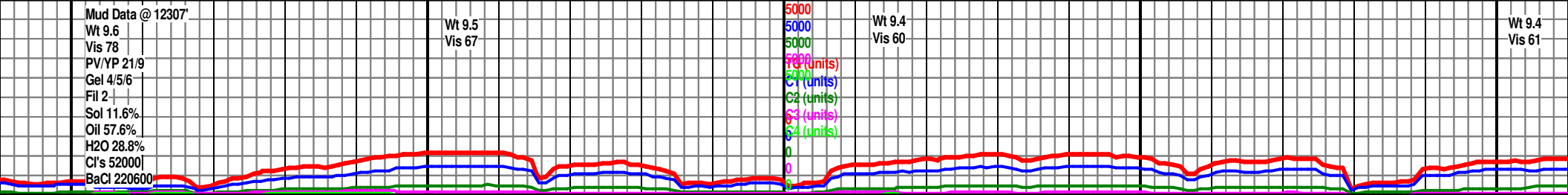
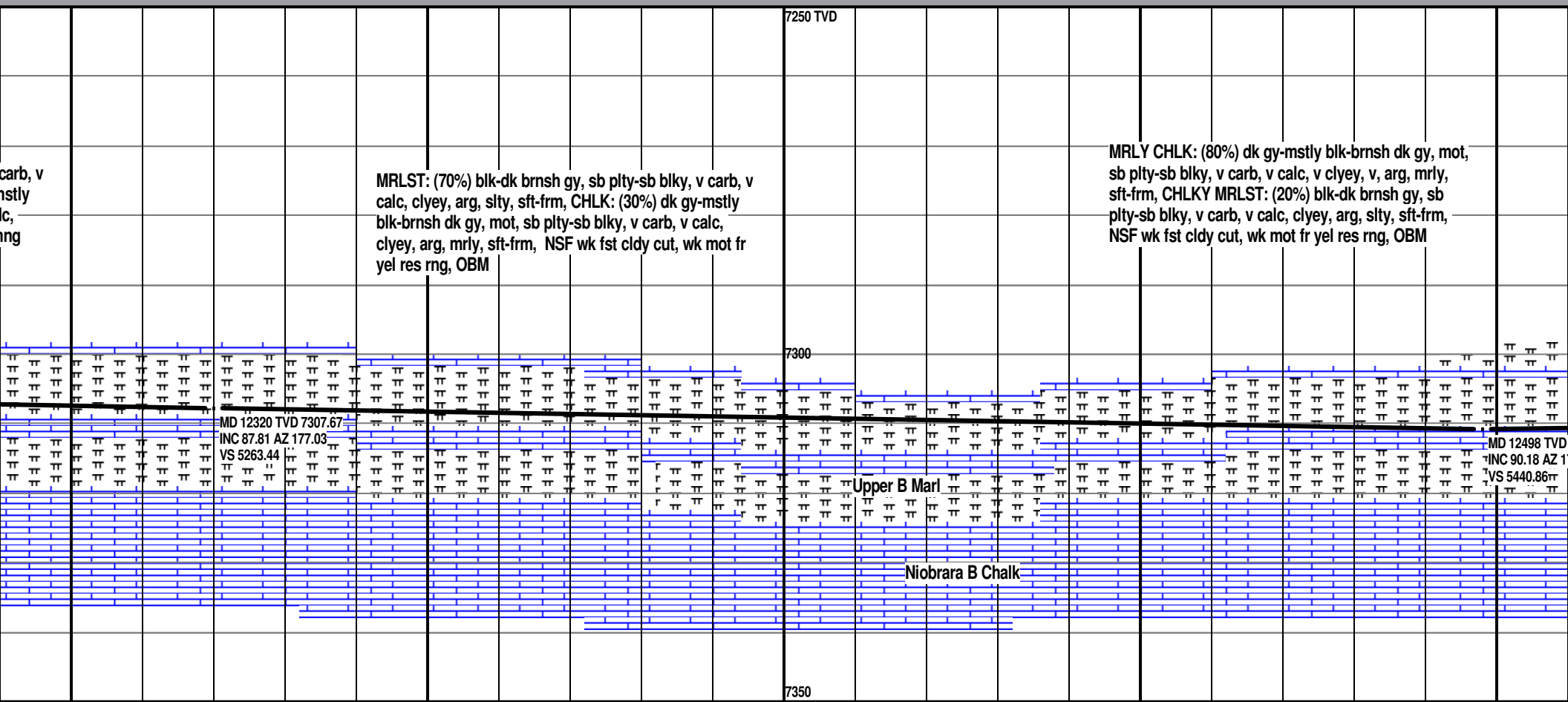
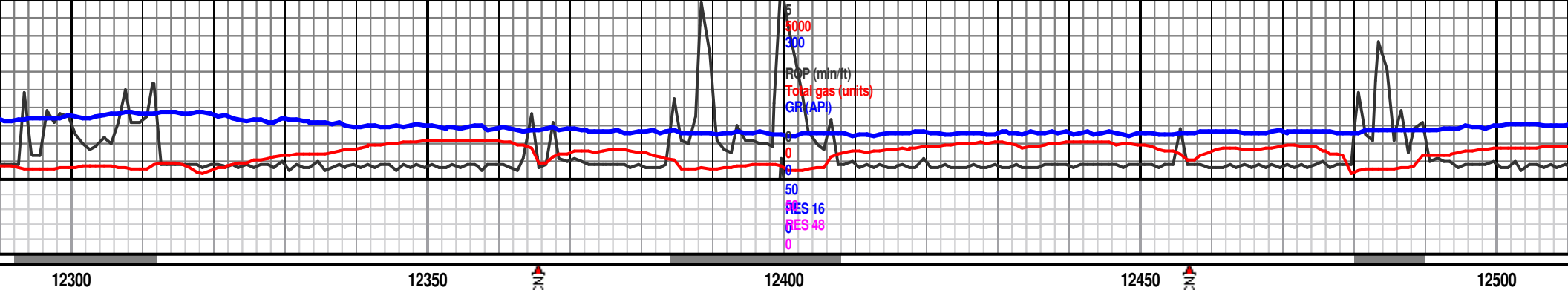


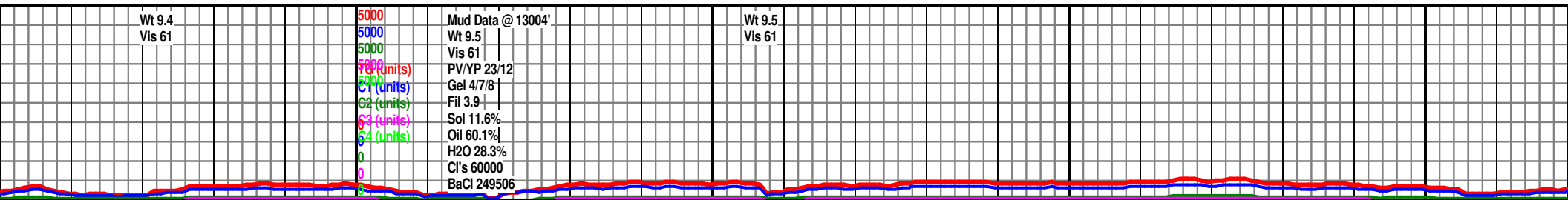
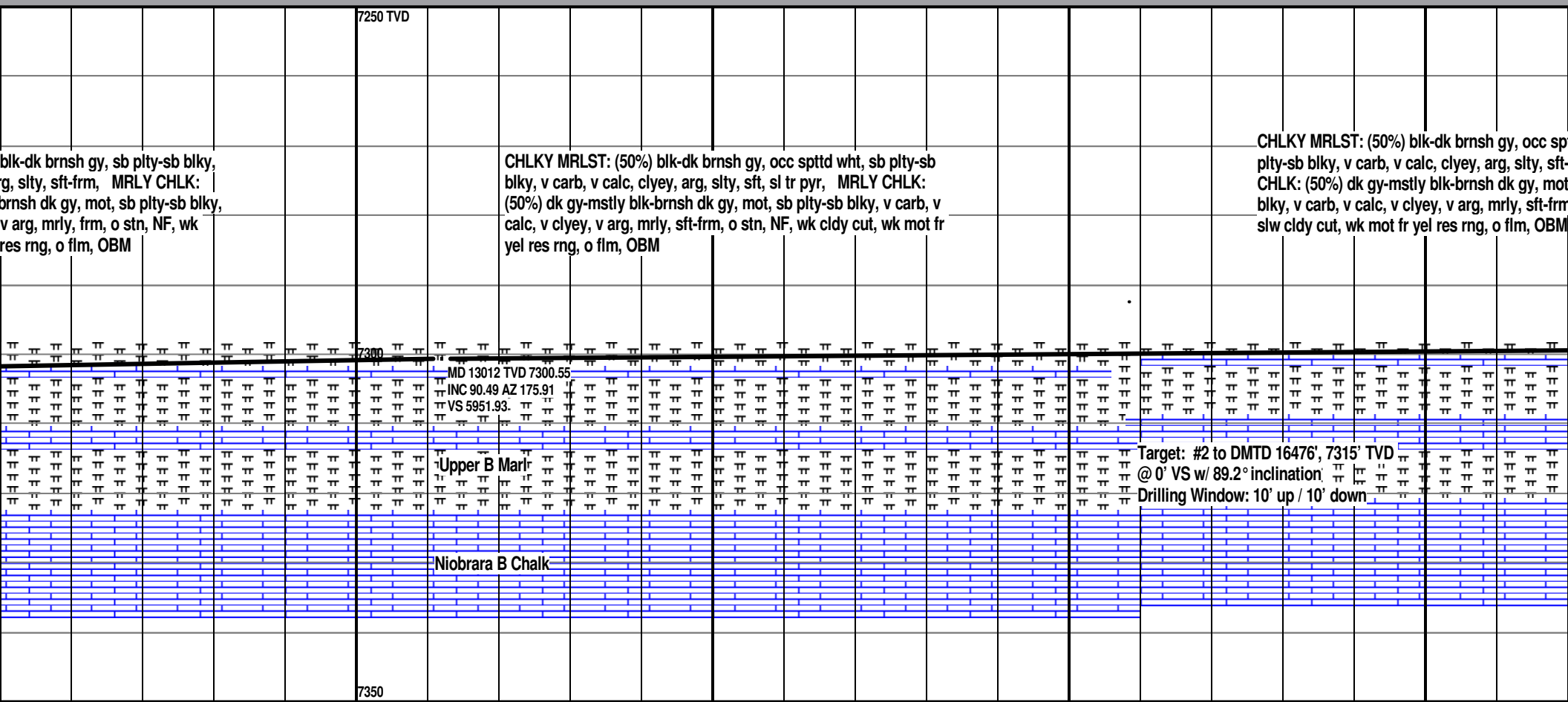
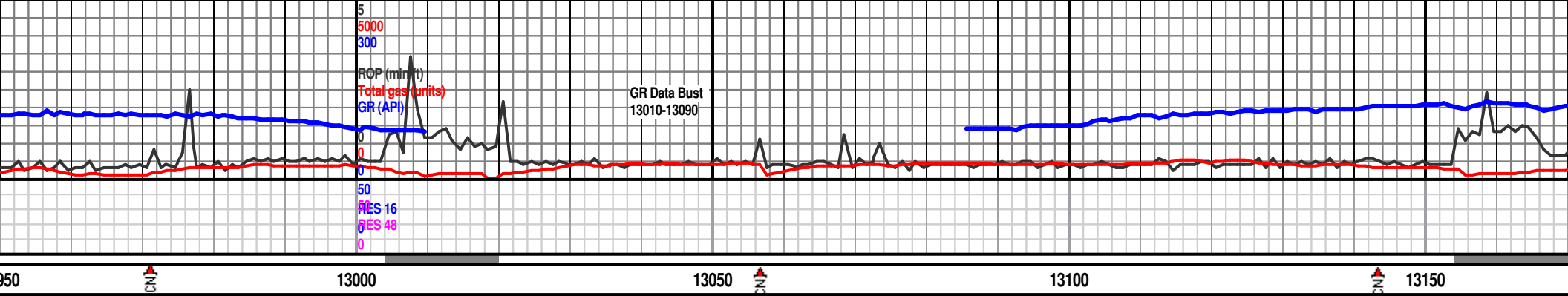


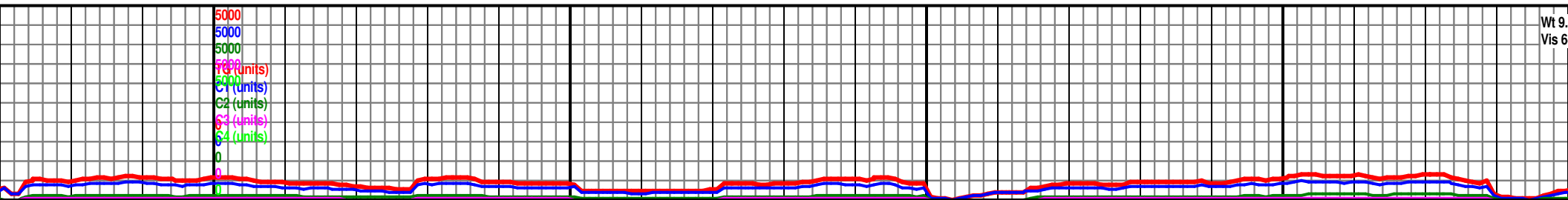
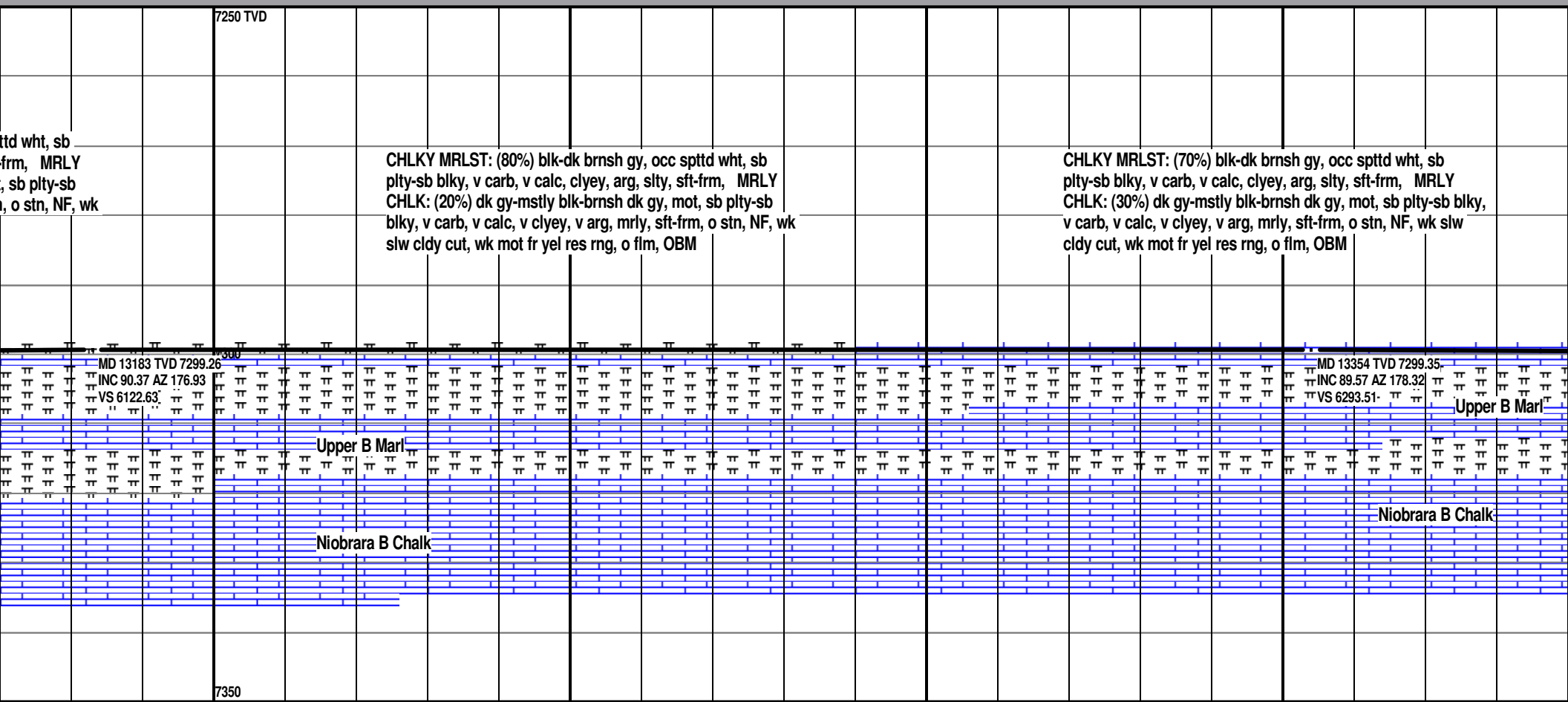
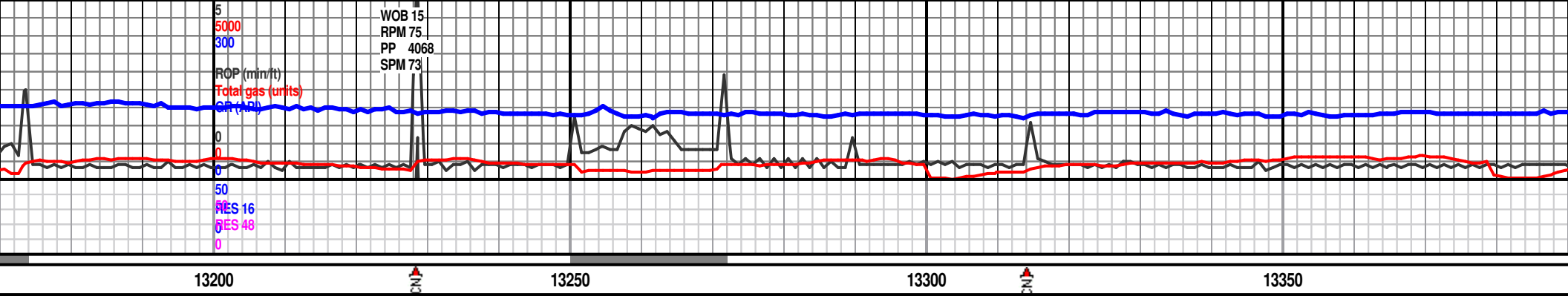


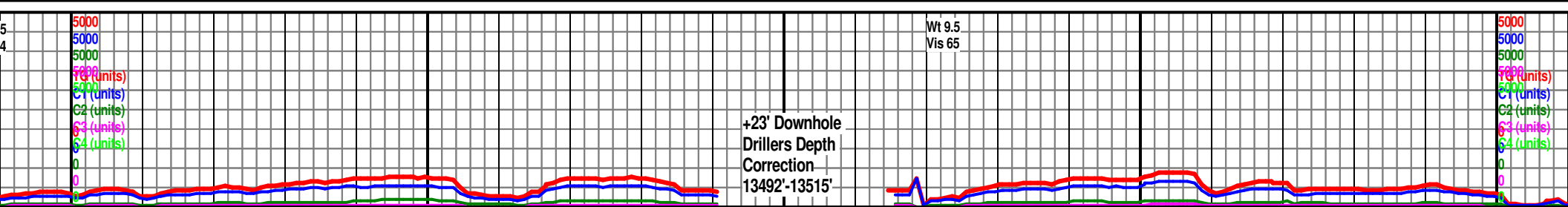
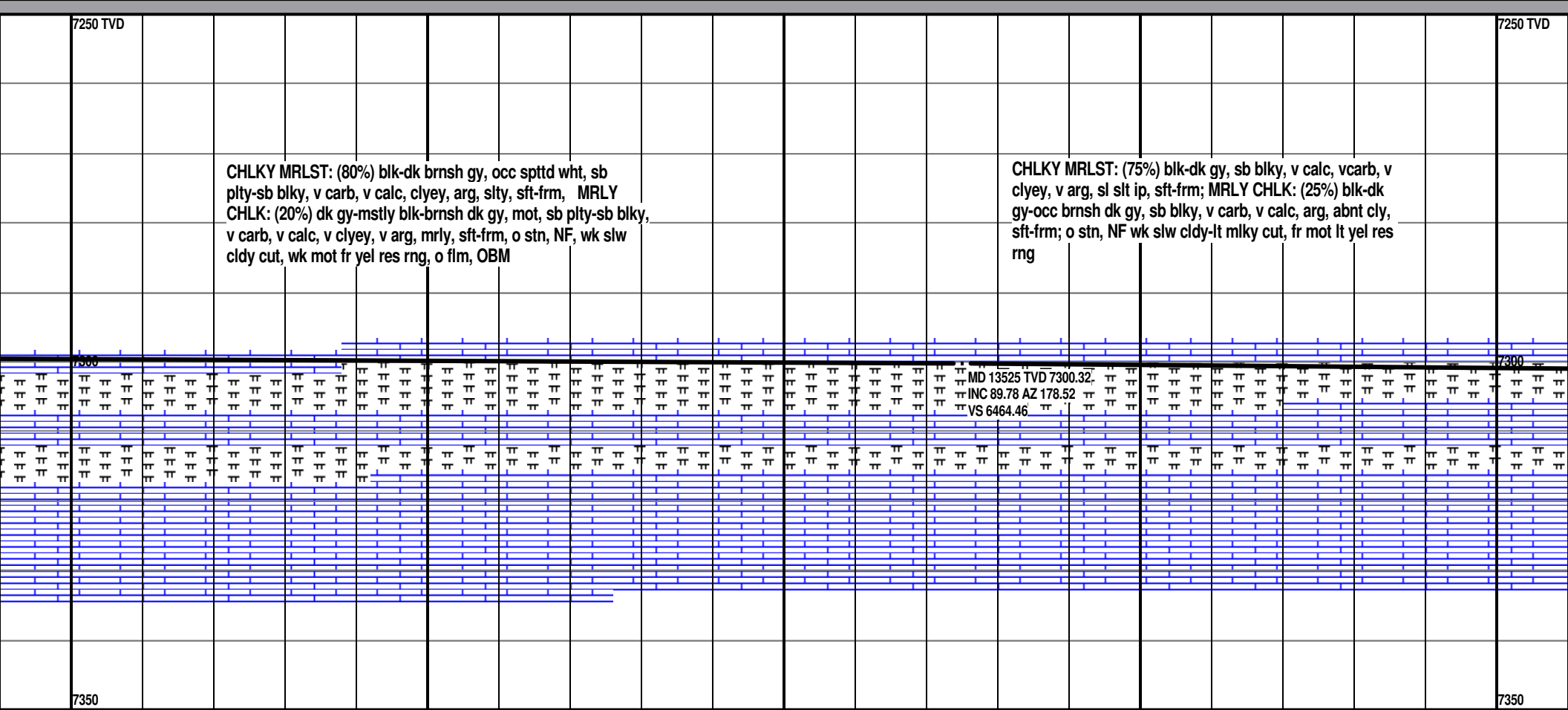
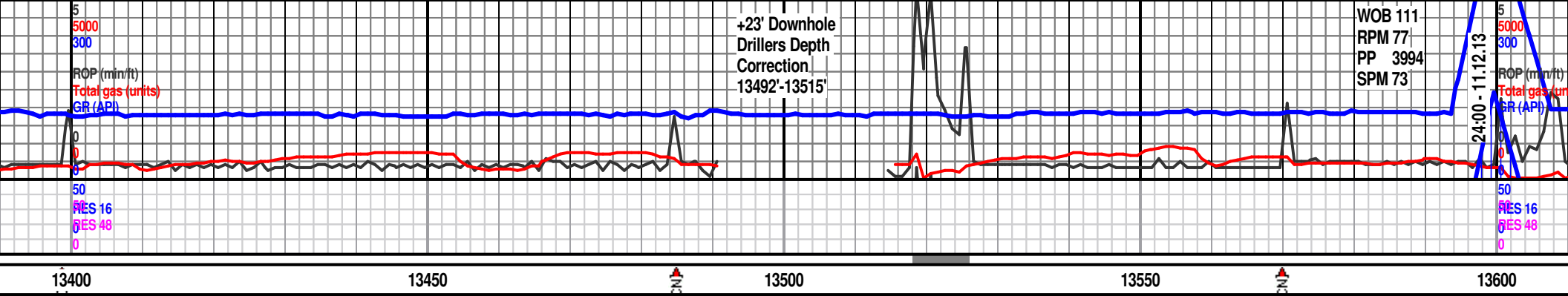


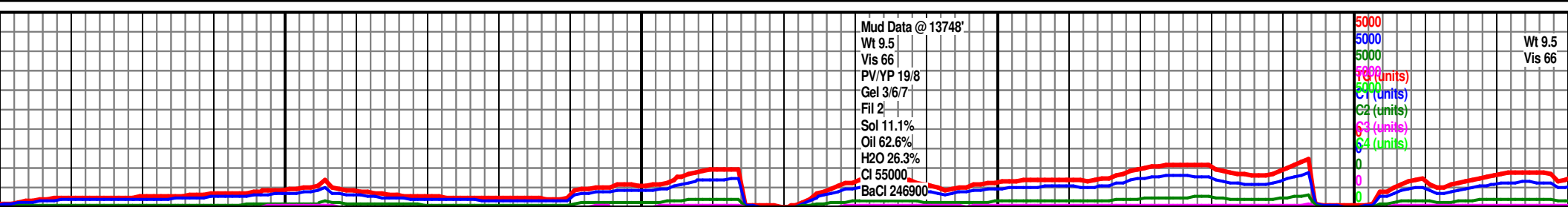
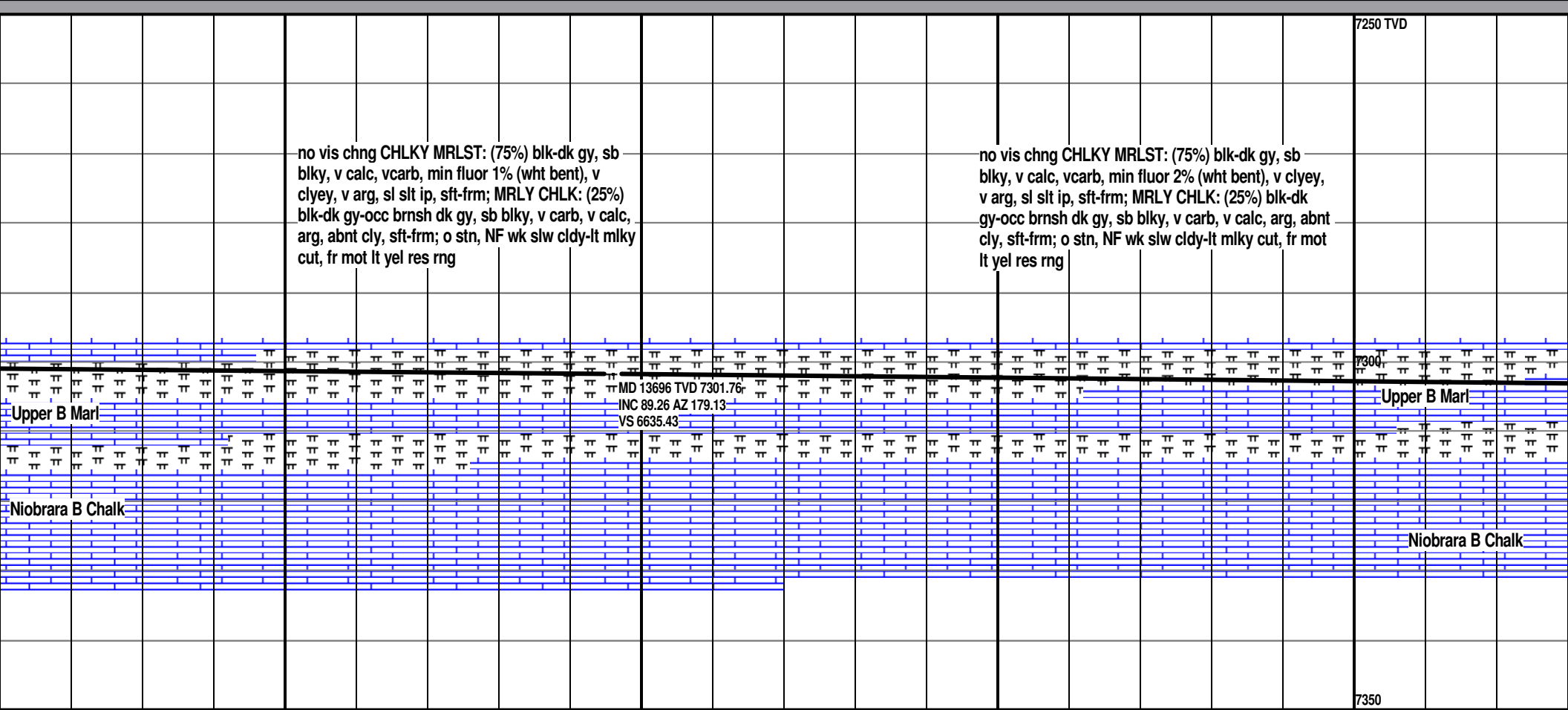
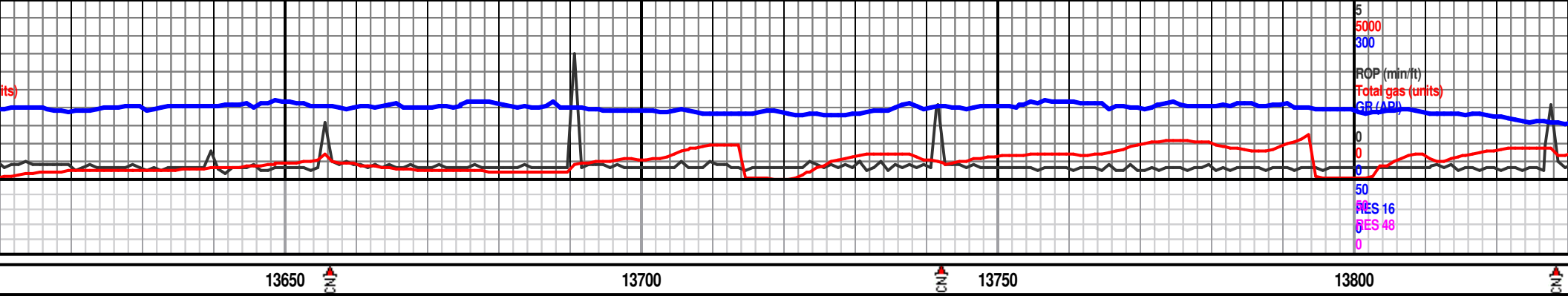


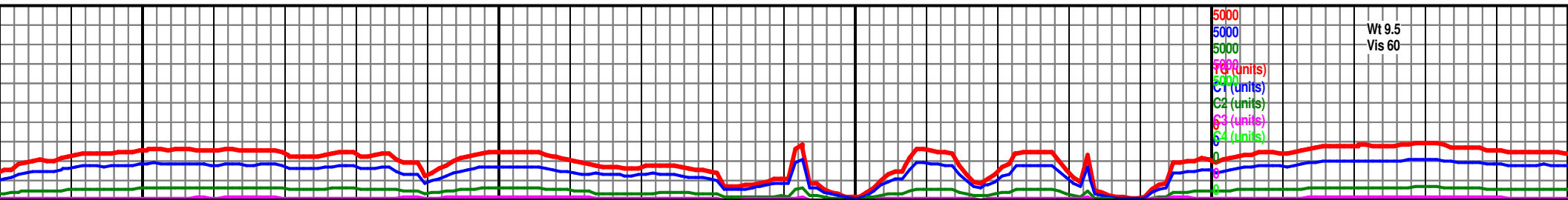
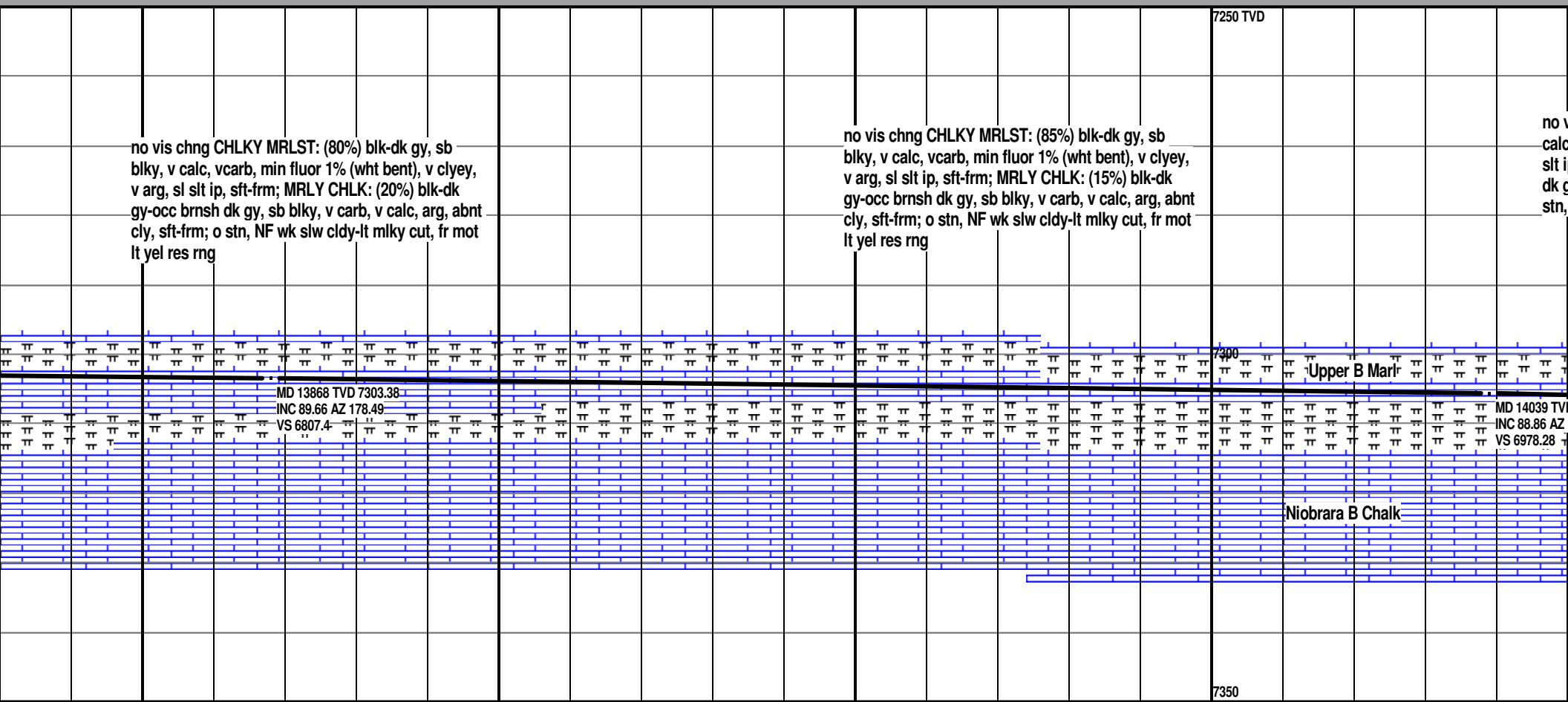
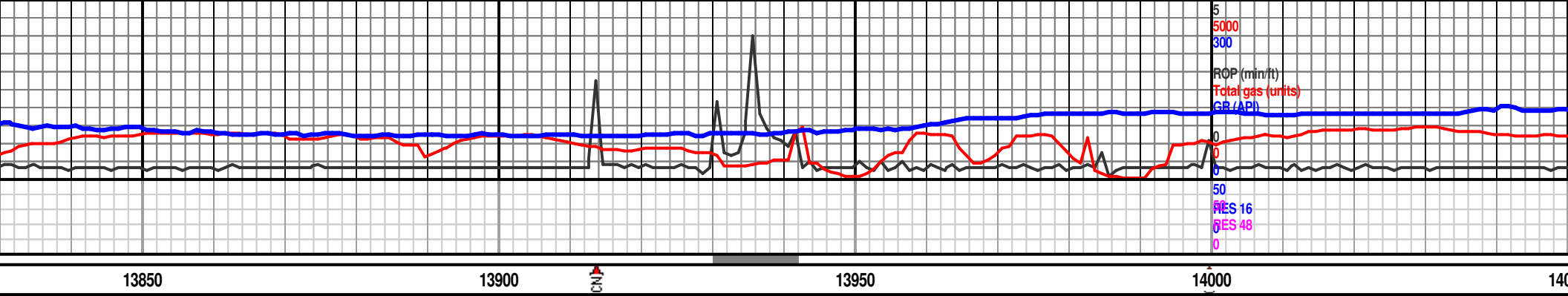


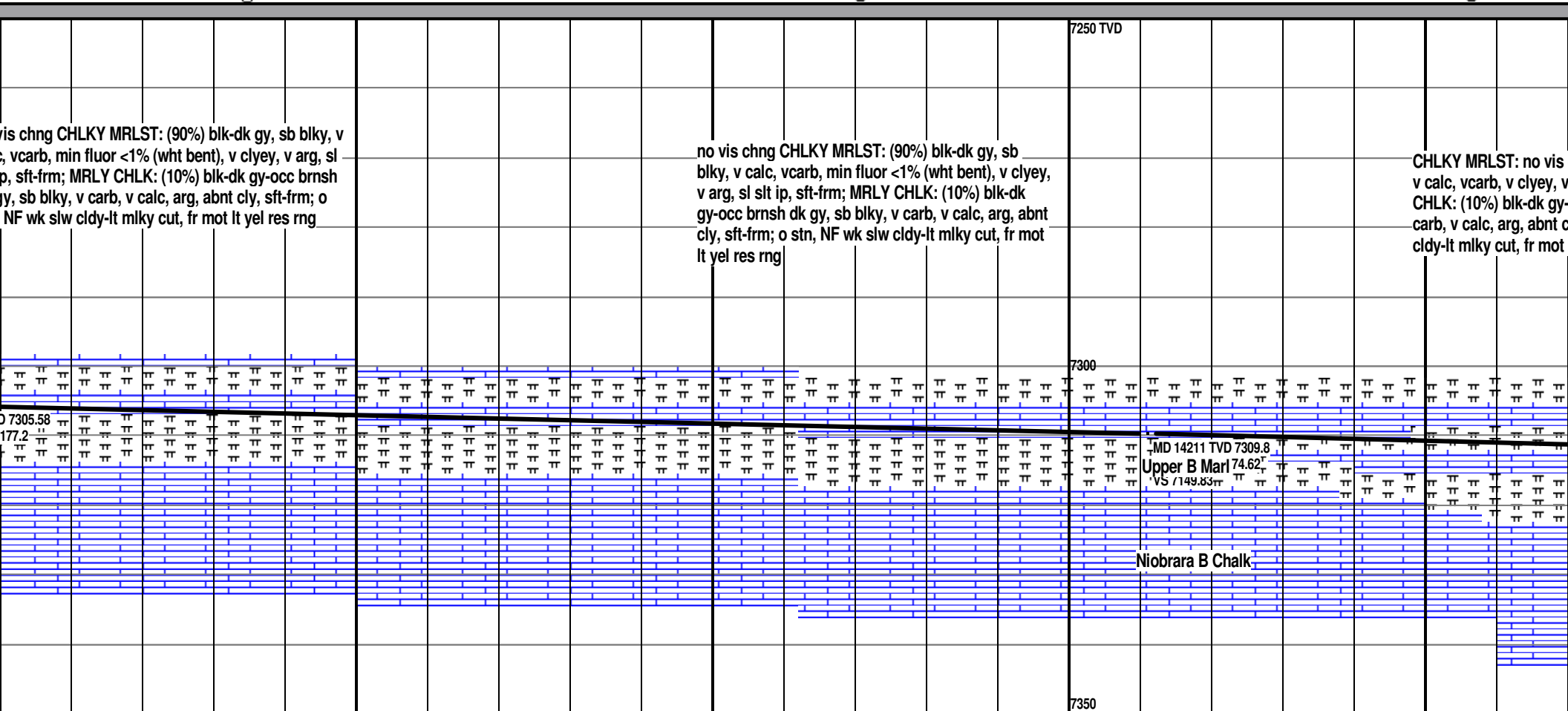


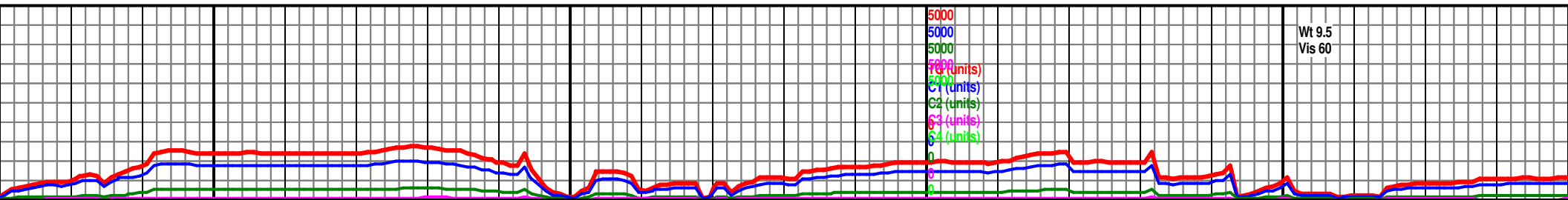
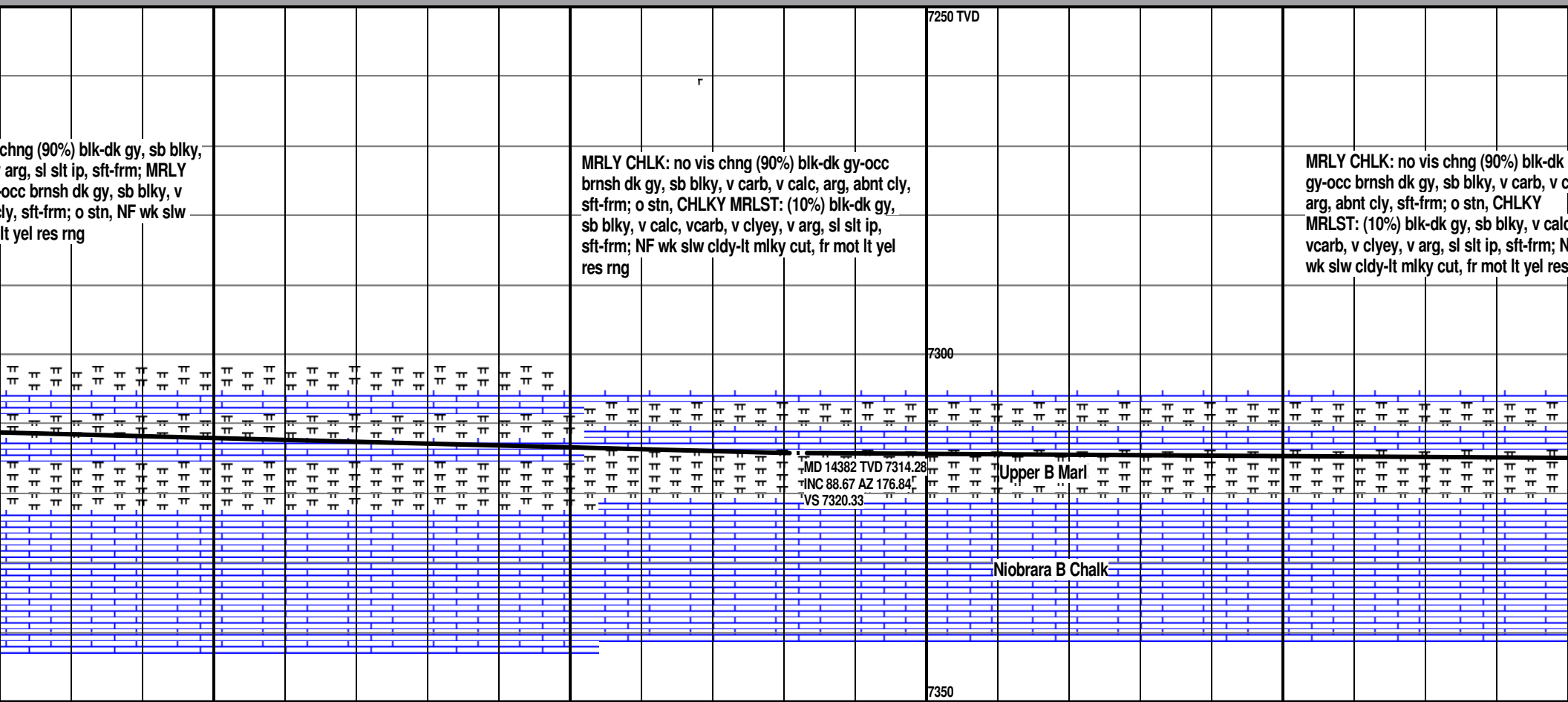
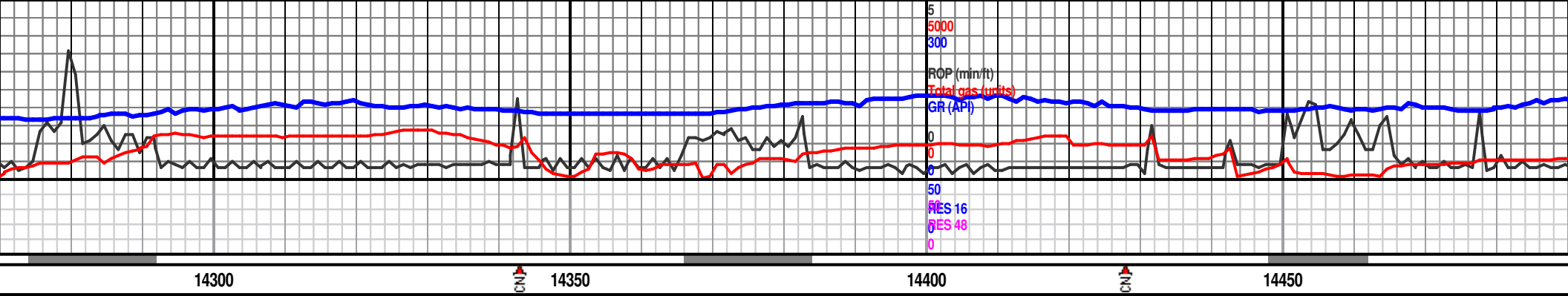


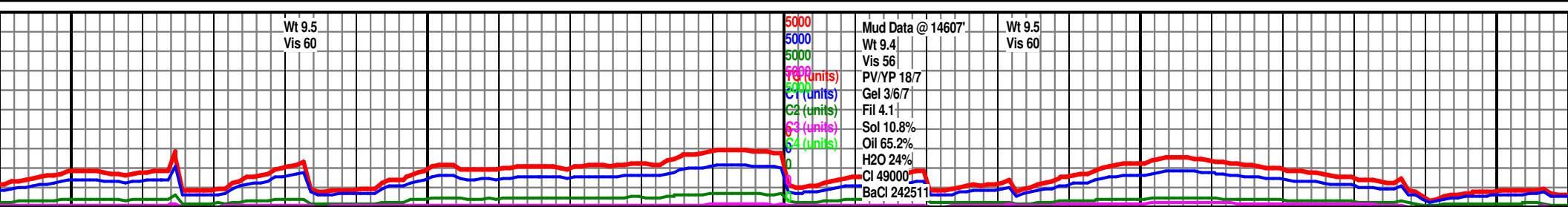
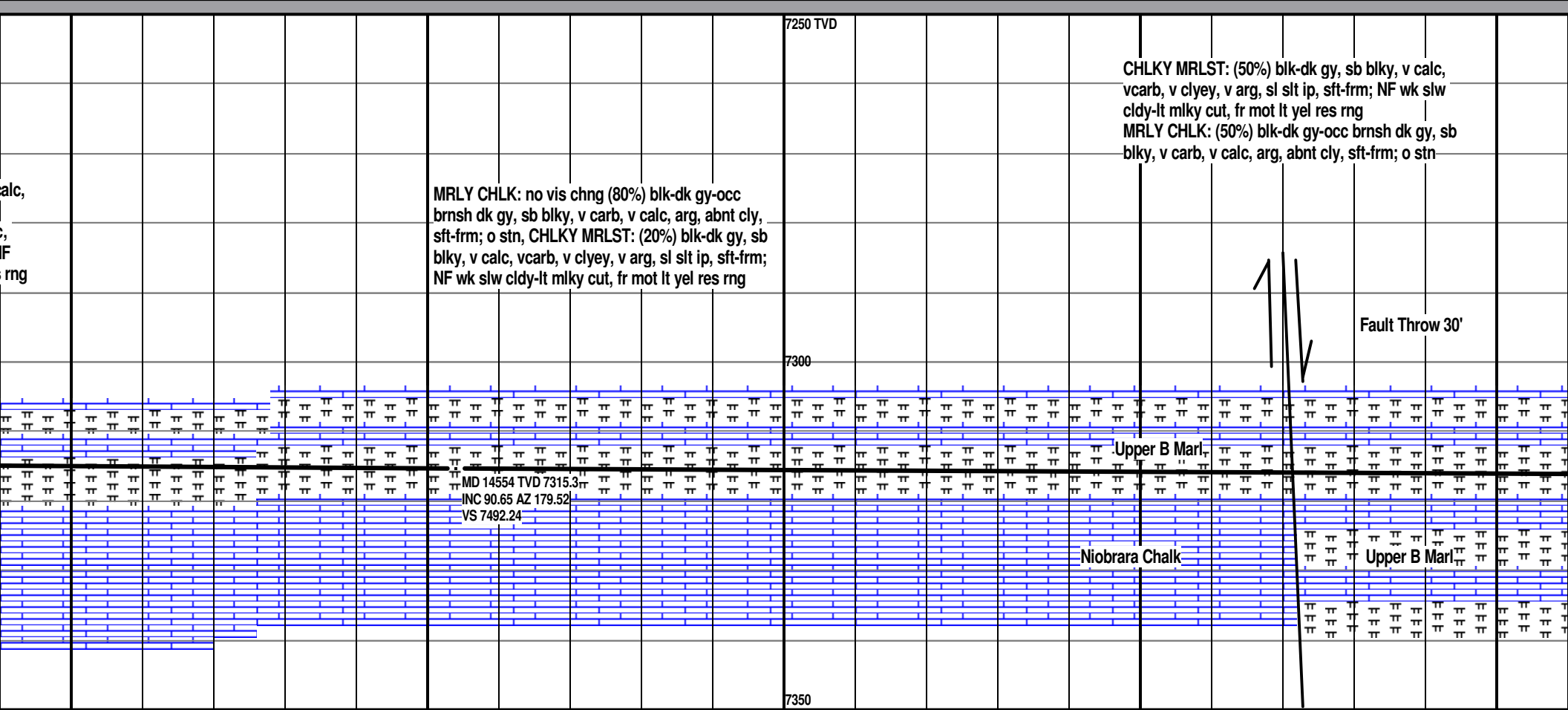
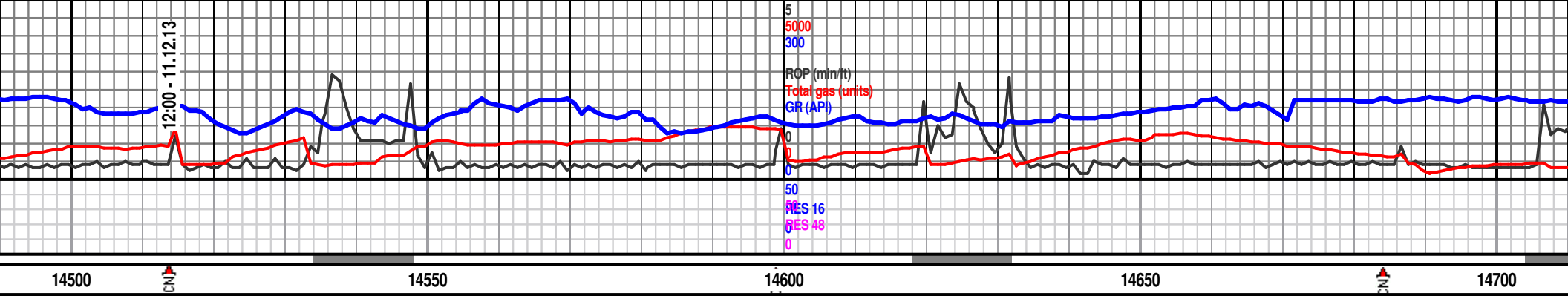


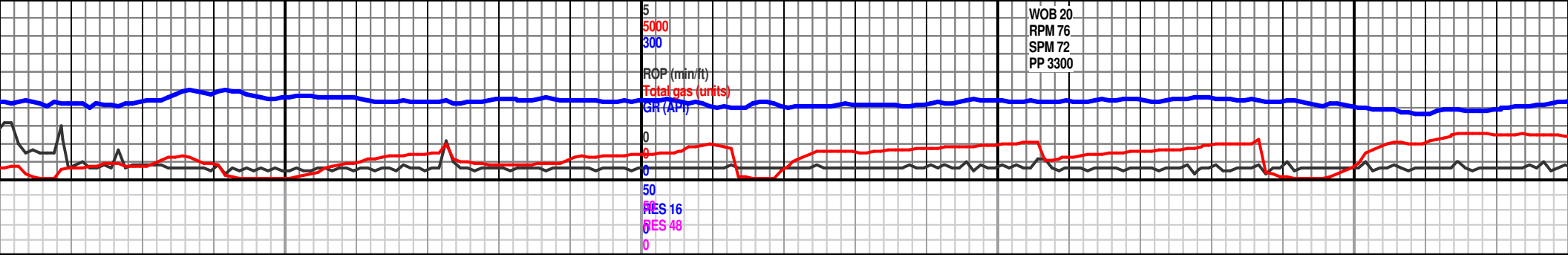












14750

14800

14850

14900

CHLKY MRLST: (50%) blk-dk gy, sb
blky, v calc, vcarb, v clyey, v arg, sl slit
ip, sft-frm; NF wk slw cldy-lt mlky cut, fr
mot lt yel res rng
MRLY CHLK: (50%) blk-dk gy-occ brnsh
dk gy, sb blky, v carb, v calc, arg, abnt
cly, sft-frm; o stn

CHLKY MRLST: (60%) blk-dk gy, sb
blky, v calc, vcarb, v clyey, v arg, sl slit
ip, sft-frm; NF wk slw cldy-lt mlky cut, fr
mot lt yel res rng
MRLY CHLK: (40%) blk-dk gy-occ brnsh
dk gy, sb blky, v carb, v calc, arg, abnt
cly, sft-frm; o stn

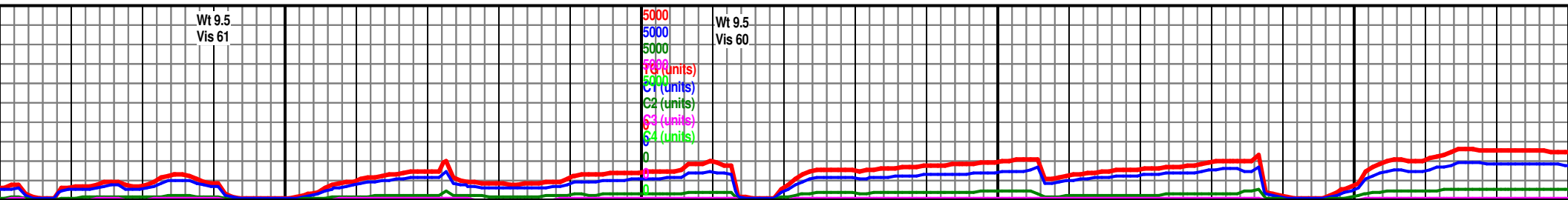
MD 14725 TVD 7316.08
INC 88.83 AZ 179.81
VS 7663.23

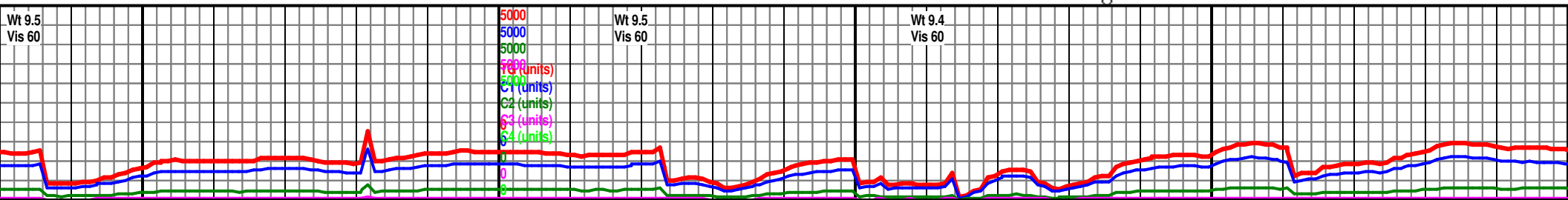
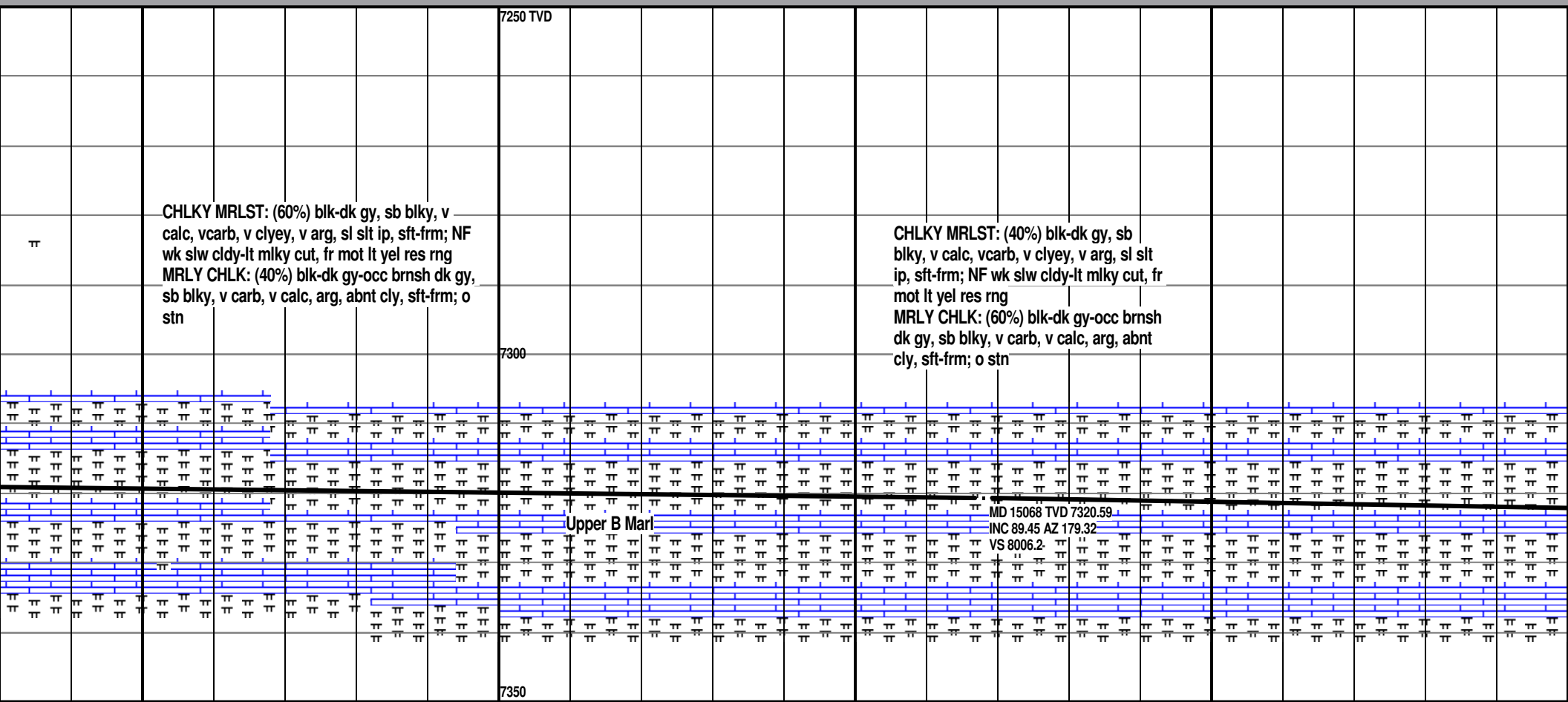
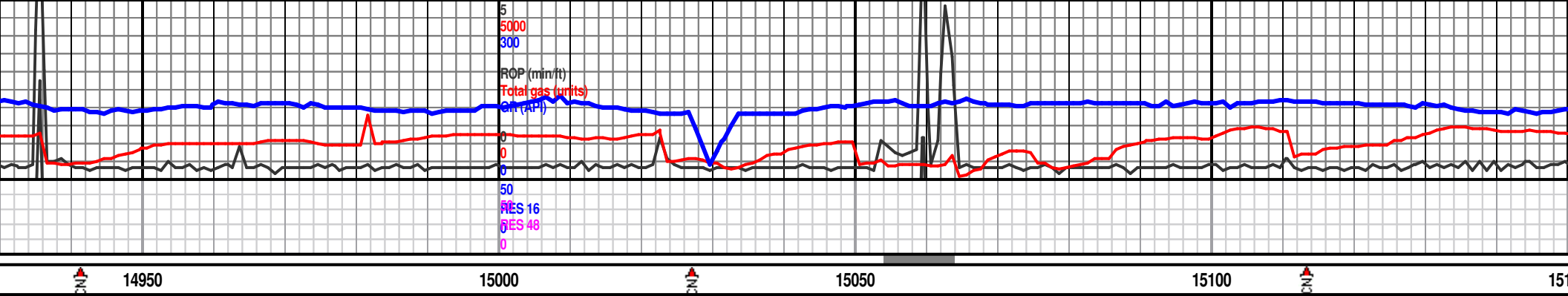
Upper B Marl

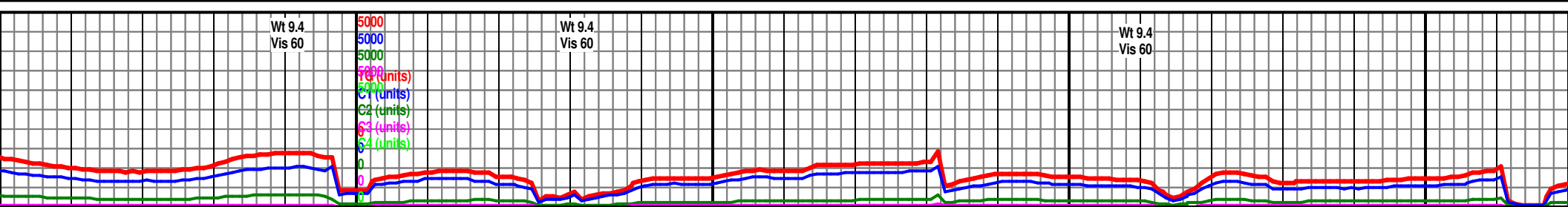
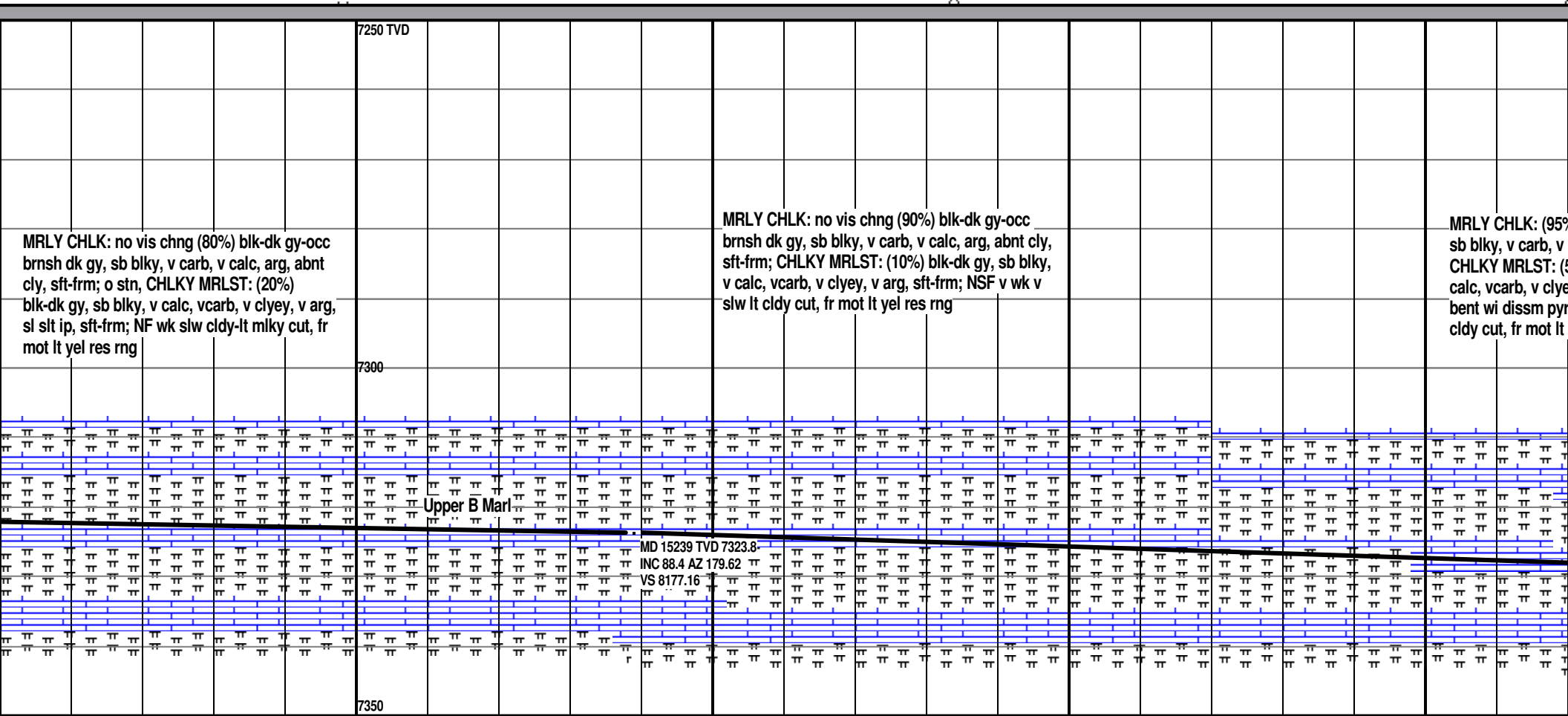
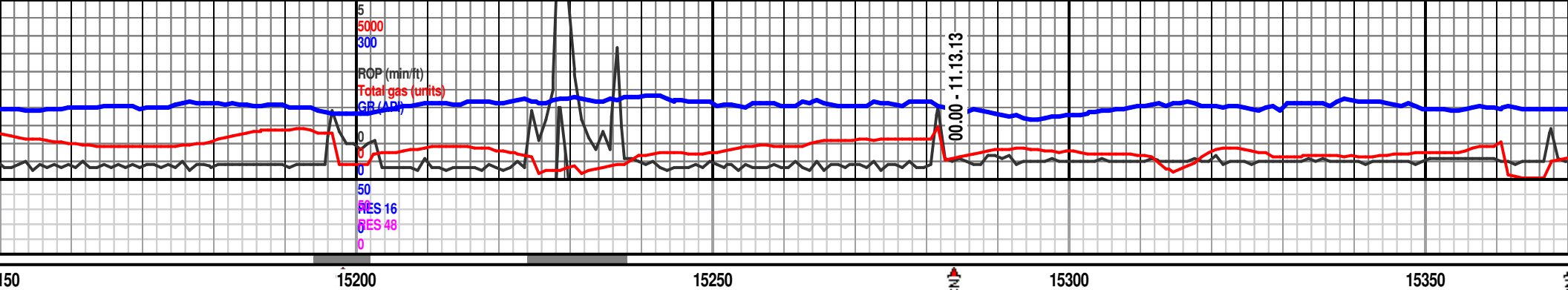
MD 14896 TVD 7318.79
INC 89.35 AZ 180.18
VS 7834.21

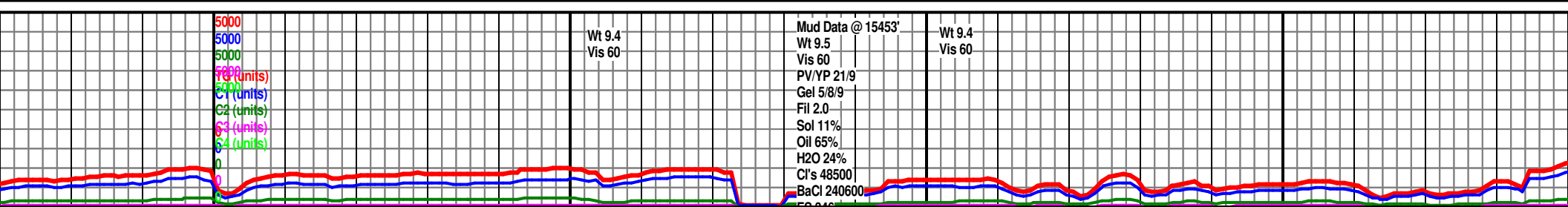
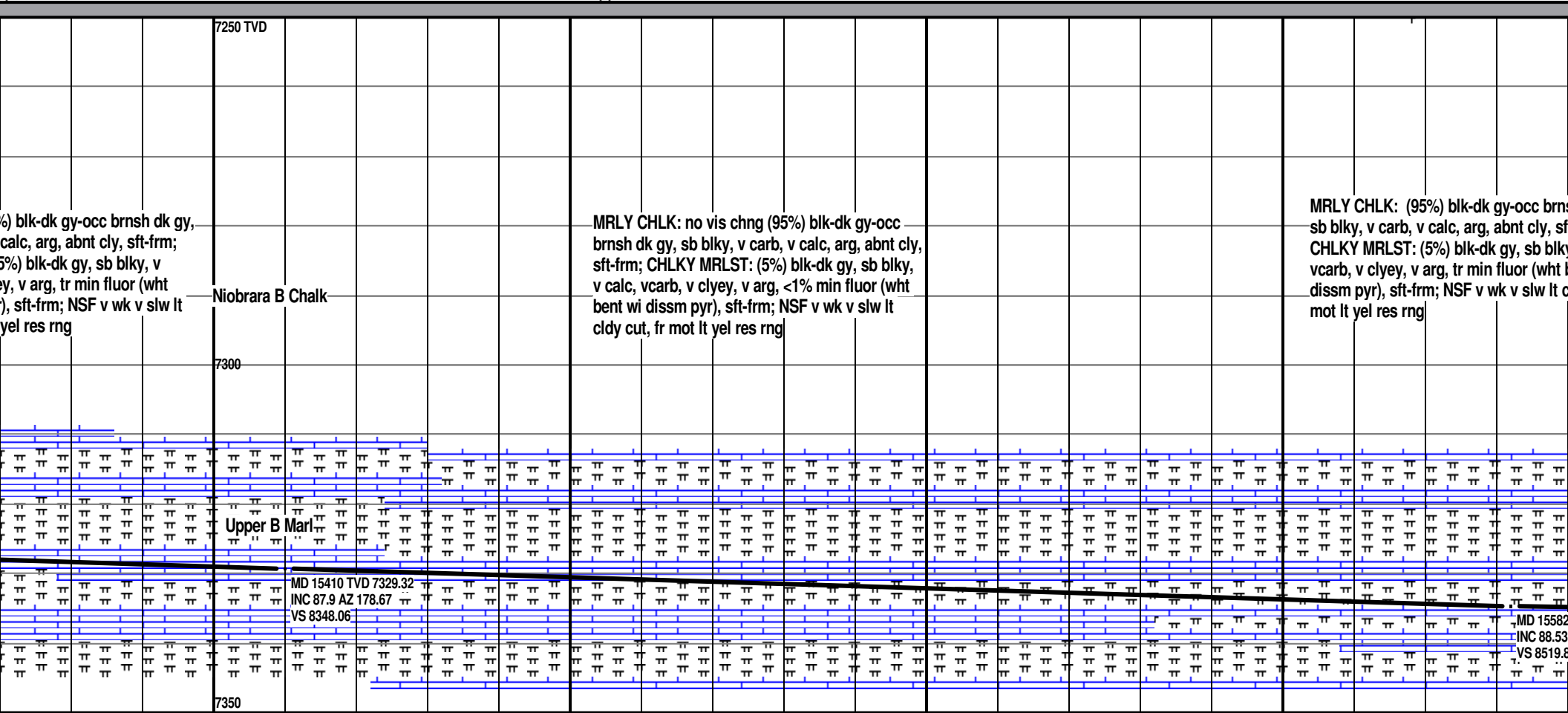
Wt 9.5
Vis 61

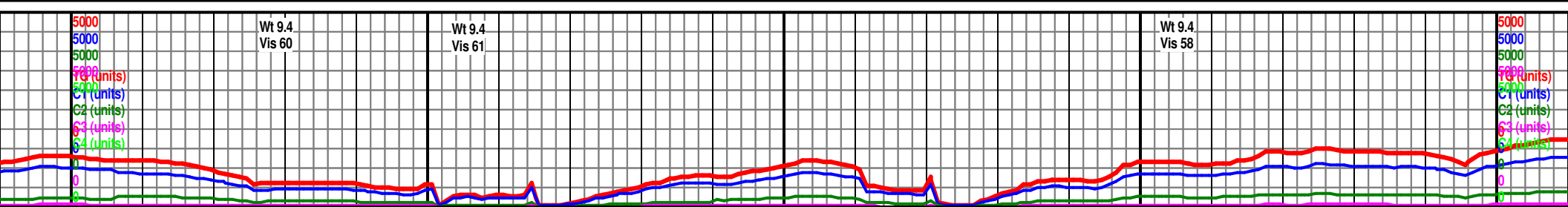
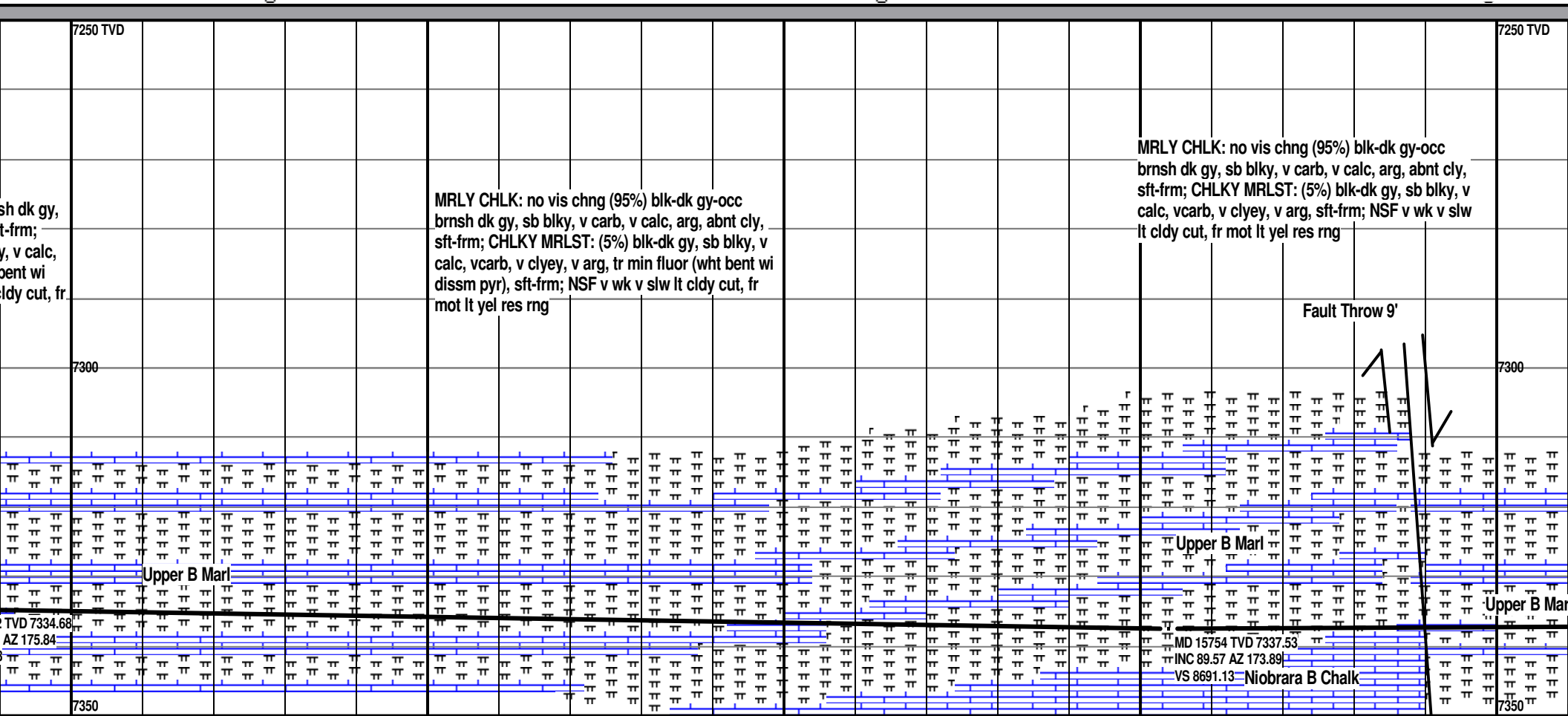
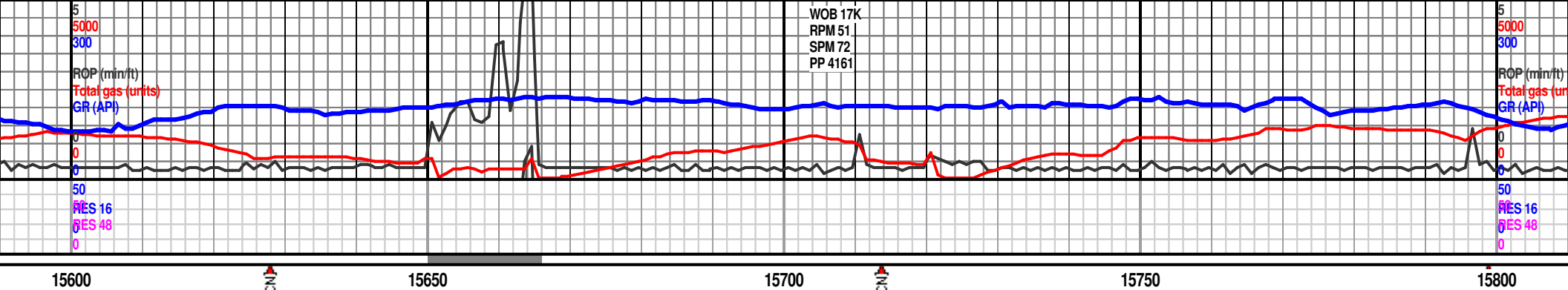
Wt 9.5
Vis 60

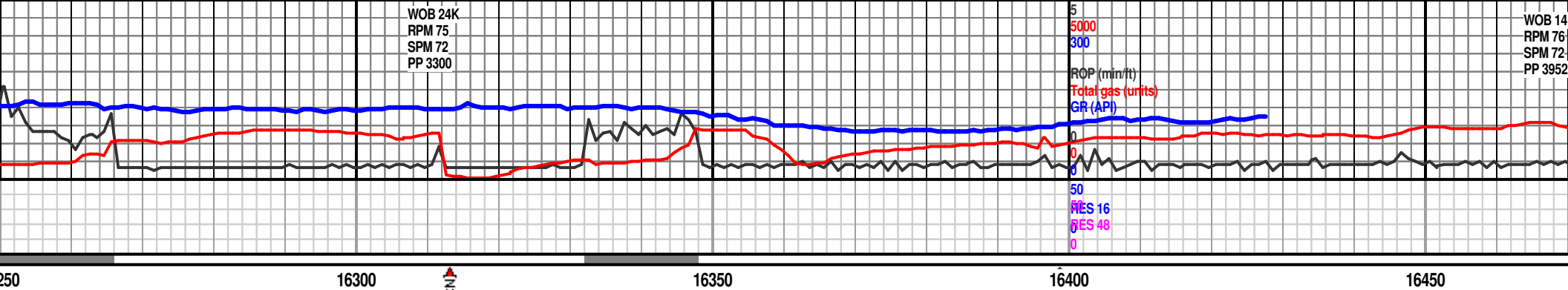




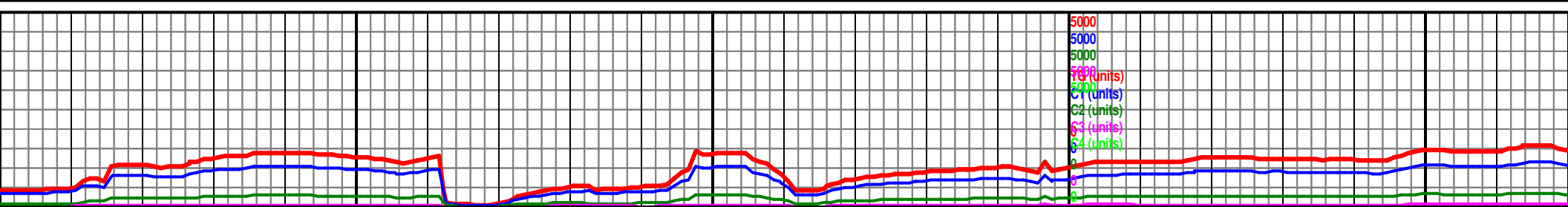








MRLY CHLK: no vis chng (90%) blk-dk gy-occ brnsh dk gy, sb blk, v carb, v calc, arg, abnt cly, tr min fluor (wht bent wi diss pyr), sft-frm; CHLKY MRLST: (10%) blk-dk gy, sb blk, v calc, vcarb, v clyey, v arg, sft-frm; NF v wk v slw lt cldy cut, fr mot lt yel res rng, o stn									
Niobrara B Chalk									
MRLY CHLK: no vis chng (90%) blk-dk gy-occ brnsh dk gy, sb blk, v carb, v calc, arg, abnt cly, tr min fluor (wht bent wi diss pyr), sft-frm; CHLKY MRLST: (10%) blk-dk gy, sb blk, v calc, vcarb, v clyey, v arg, sft-frm; NF v wk v slw lt cldy cut, fr mot lt yel res rng, o stn									
MRLY CHLK: no vis chng (90%) blk-dk gy-occ brnsh dk gy, sb blk, v carb, v calc, arg, abnt cly, tr min fluor (wht bent wi dissm pyr), sft-frm; CHLKY MRLST: (10%) blk-dk gy, sb blk, v calc, vcarb, v clyey, v arg, sft-frm; NF v wk v slw lt cldy cut, fr m lt yel res rng, o stn									
Upper B Marl									
MD 16268 TVD 7334.52 INC 89.66 AZ 179.22 VS 9203.87									
MD 16431 TVD 7336.27 INC 89.11 AZ 178.77 VS 9366.85									



TD @ 16476'
11.13.13

16500

16500

TD 16476' MD @ 19:20 Hrs -
11.13.13; Circ & Condition
Hole, TOOH 8 Stands, ream to
bottom, TOOH

Liner set @ 16466'

Bit Projection
BOTTOM HOLE LOCATION
445' FSL X 1880' FWL
SESW Sec 15, T2N_R67W

THANK YOU FOR CHOOSING
GOOLSBY BROTHERS &
ASSOCIATES

Jack R.Rogers
Phillip Willcox
Robert Nordeck
Andrew Krueger

MD 16476 TVD 7336.97
INC 89.11 AZ 178.77
VS 9411.84