

Intermountain Wellsite Geologists

Casper, Wyoming

GEOSTEERING LOG

WellSight Systems

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

Well Name: Ouray 5-64-15-16-1BHZ
API: SEC 15 T5S R64W
Location: ARAPAHOE COUNTY, COLORADO, USA
License Number: 05-005-07342
Spud Date: JUNE 12, 2018
Surface Coordinates: '1650' FNL 3272' FEL
236.94 987.06
Bottom Hole N/S 58.59
Coordinates: E/W -9967.89
Ground Elevation (ft): 5934'
Logged Interval (ft): 4800' To: TD
Formation: NIOBRARA B
Type of Drilling Fluid: OBM

Region: DJ BASIN
Drilling Completed: JUNE 19, 2018
K.B. Elevation (ft): 5961'
Total Depth (ft): 17796'

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

OPERATOR


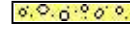

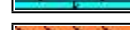

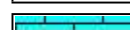


Company: TRUE OIL, LLC.
Address: TRUE OIL, LLC.
P.O. DRAWER 2360
CASPER, WY. 82602

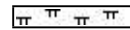

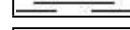
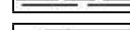
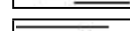
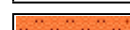


GEOLOGISTS

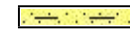

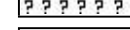
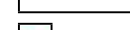
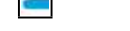
Name: KEVIN GOLDRICK & TYLER MURPHREE
Company: INTERMOUNTAIN WELLSITE GEOLOGISTS
Address: P.O. BOX 4007
CASPER, WY. 82609

ROCK TYPES

 Anhy
 Arg dol
 Arg ls
 Bent
 Brec
 Calc dol
 Cht
 Clyst

 Coal
 Congl
 Dol
 Dol ls
 Gyp
 Igne
 Ls
 Meta

 Mrlst
 Salt
 Shale
 Shblk
 Shcol
 Shgy
 Slst
 Ss

 Sssilty
 Tuff
 Unknown
 Blank
 Chlk

ACCESSORIES

FOSSIL

	Algae
	Amph
	Belm
	Bioclst
	Brach
	Bryozoa
	Cephal
	Coral
	Crin
	Echin
	Fish
	Foram
	Fossil
	Gastro
	Oolite
	Ostra
	Pelec
	Pellet
	Pisolite

	Plant
	Strom

MINERAL

	Anhy
	Arggrn
	Arg
	Bent
	Bit
	Brecfrag
	Calc
	Carb
	Chtdk
	Chtlt
	Dol
	Feldspar
	Ferrpel
	Ferr
	Glau
	Gyp

	Hvymn
	Kaol
	Marl
	Minxl
	Nodule
	Phos
	Pyr
	Salt
	Sandy
	Silt
	Sil
	Sulphur
	Tuff

	Gyp
	Ls
	Mrst
	Sltstrg
	Ssstrg

TEXTURE

	Boundst
	Chalky
	Cryxln
	Earthy
	Finexln
	Grainst
	Lithogr
	Microxln
	Mudst
	Packst
	Wackest

STRINGER

	Anhy
	Arg
	Bent
	Coal
	Dol

OTHER SYMBOLS

INTERVALS

	None
	Core
	Dst

EVENTS

	Rft
	Sidewall
	Bit change

OIL SHOWS

	Even
	Spotted
	Ques
	Dead

POROSITY TYPE

	Earthy
	Fenest

	Fracture
	Inter
	Moldic
	Organic
	Pinpoint
	Vuggy

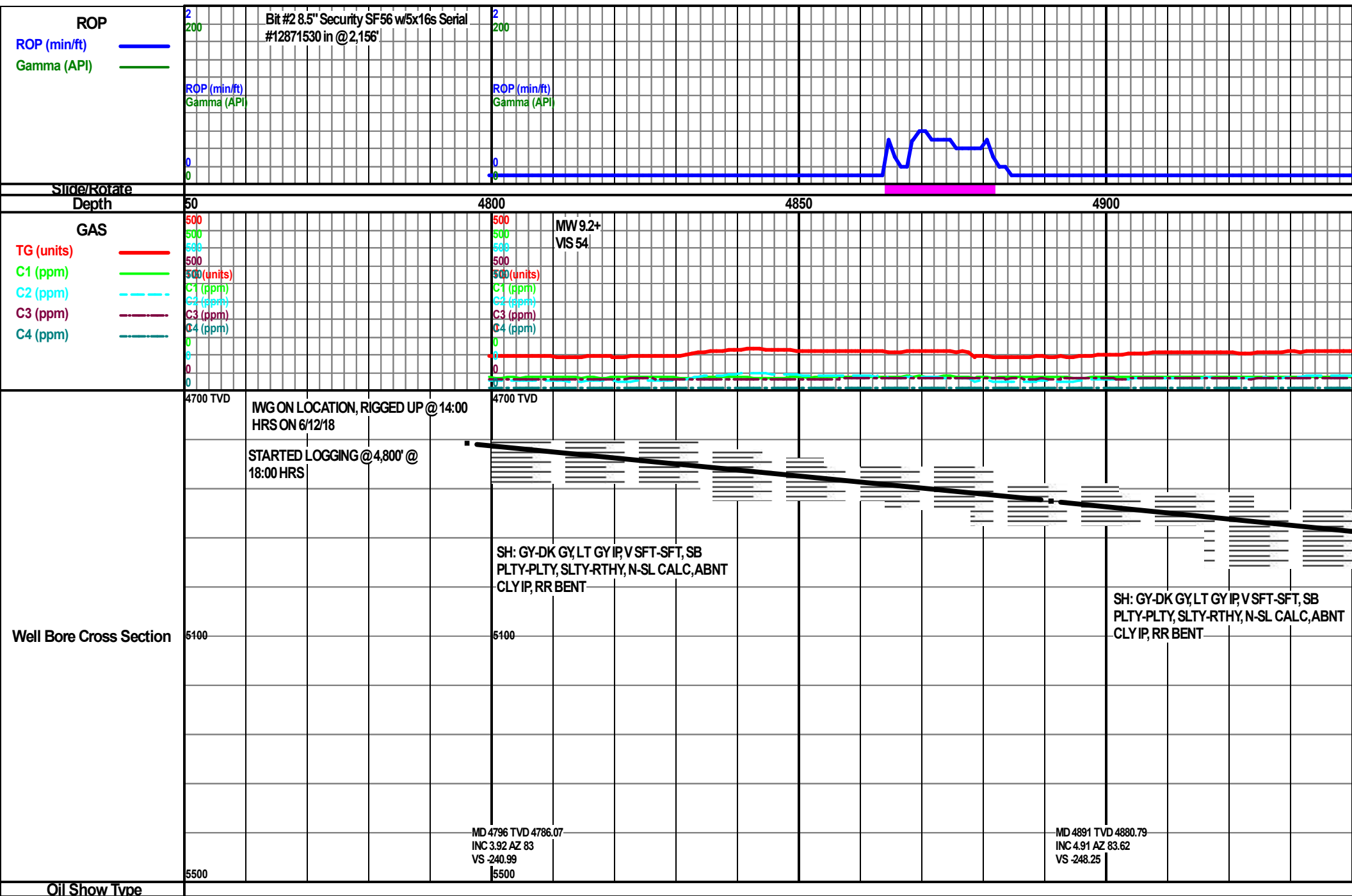
ROUNDING

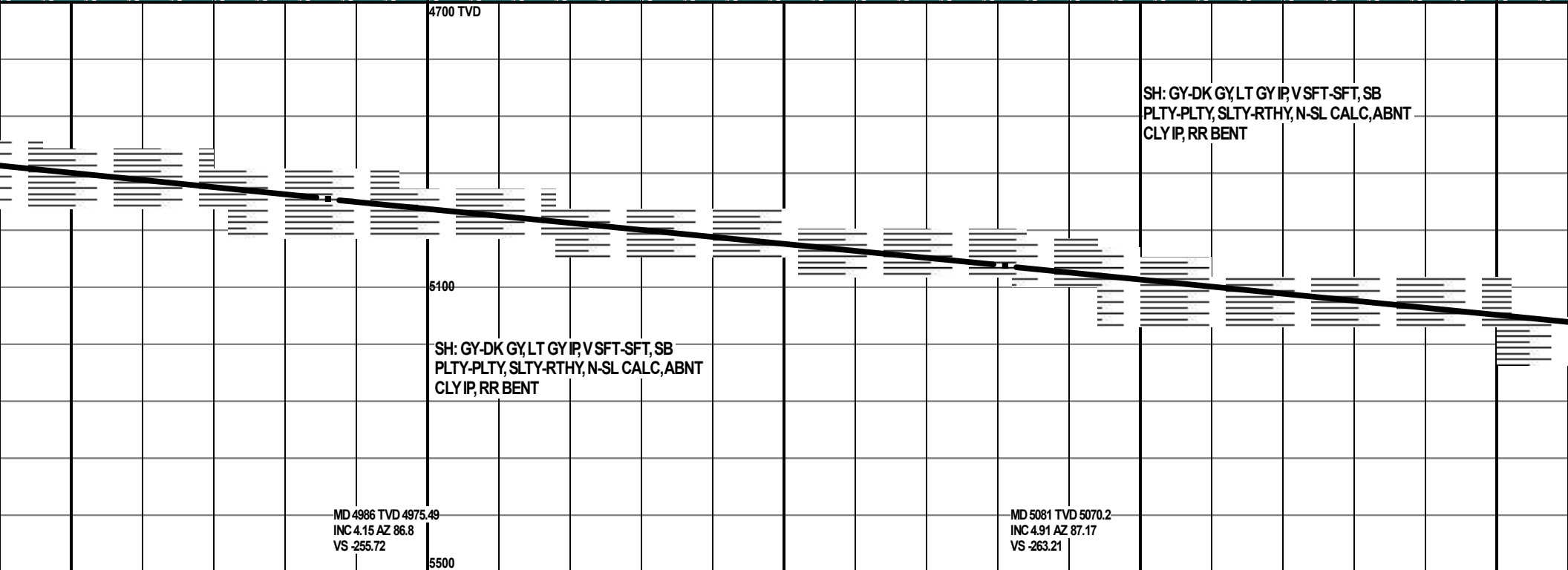
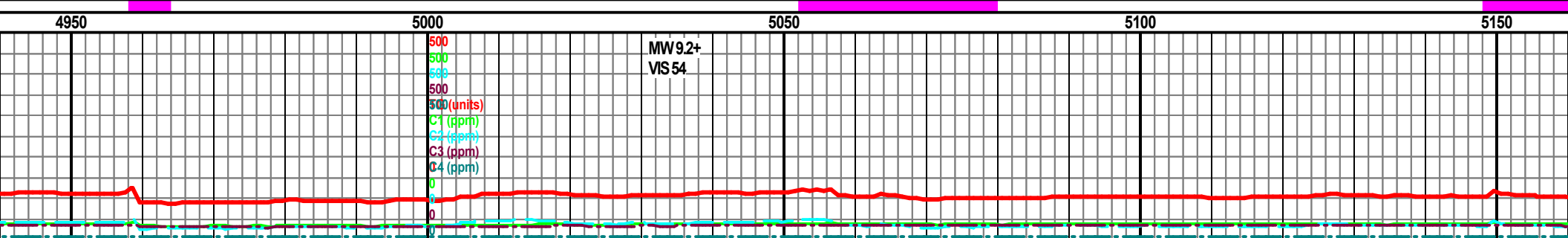
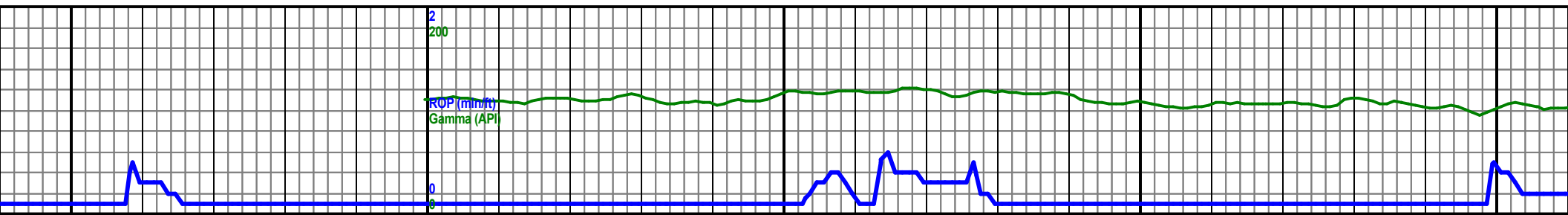
	Rounded
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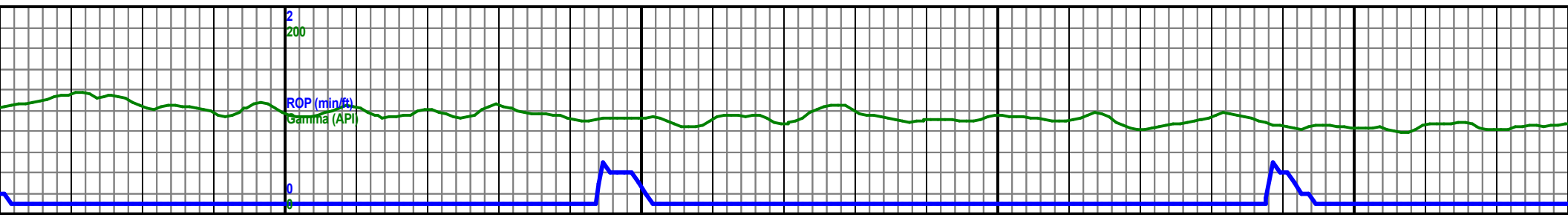
	Subrnd
	Subang
	Angular

SORTING

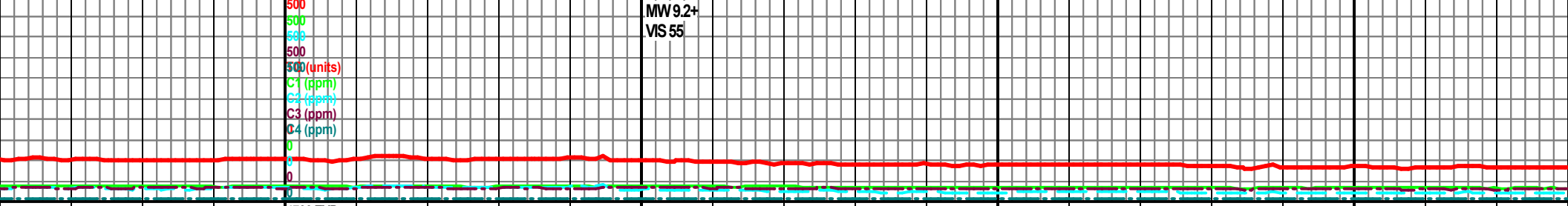
	Well
	Moderate
	Poor





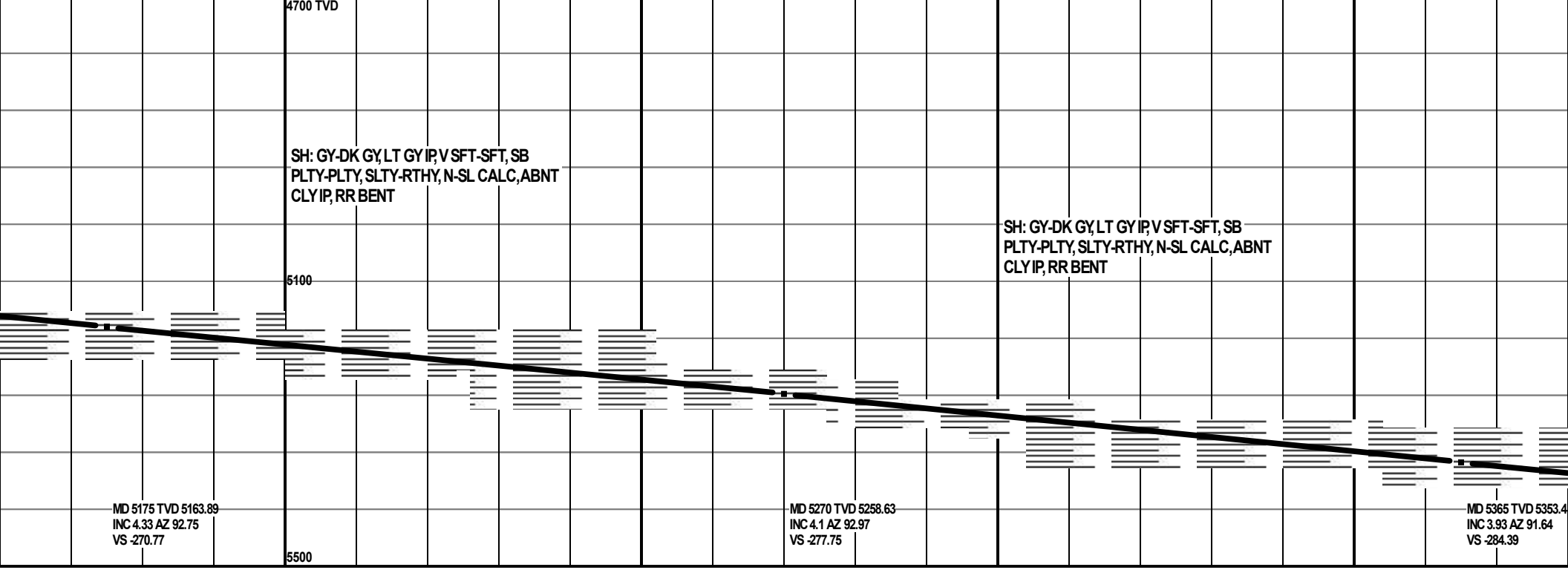


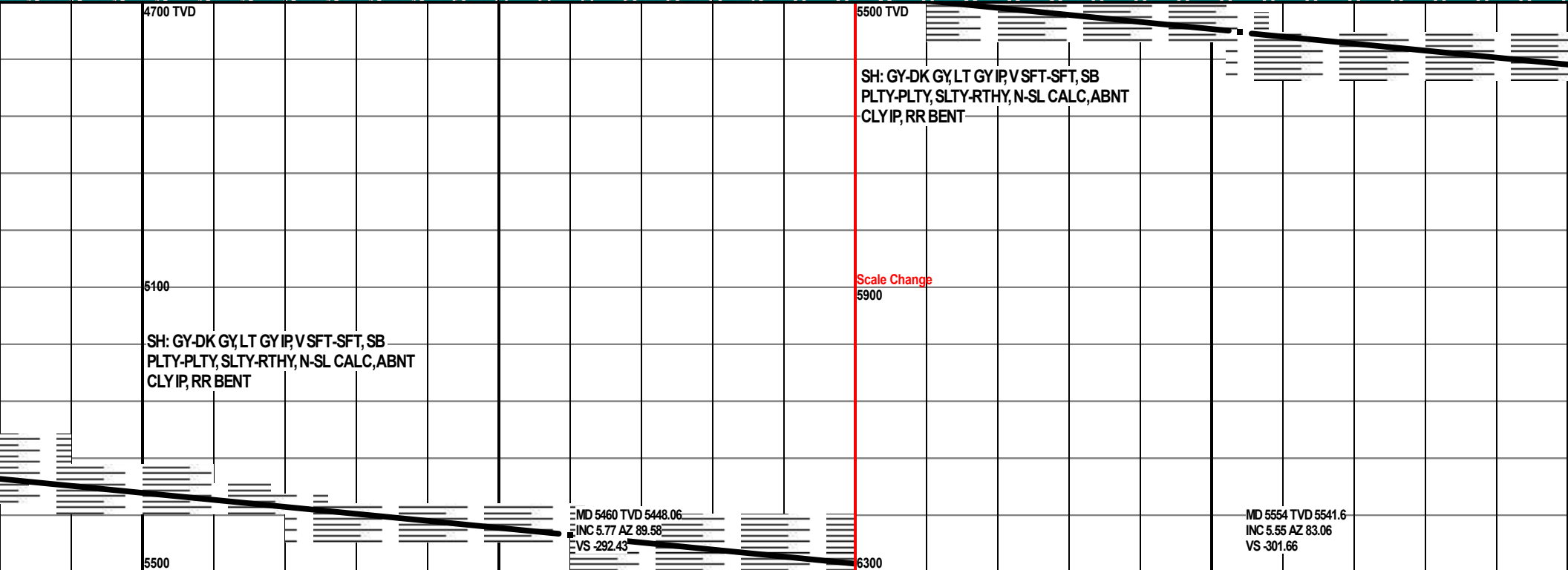
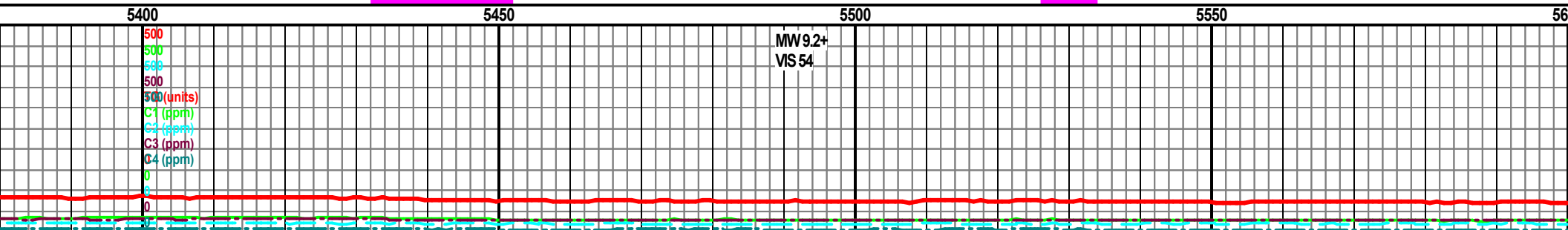
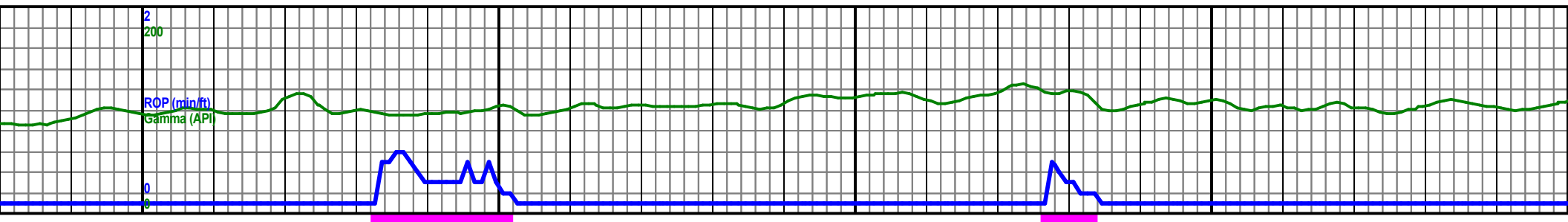
5200 5250 5300 5350

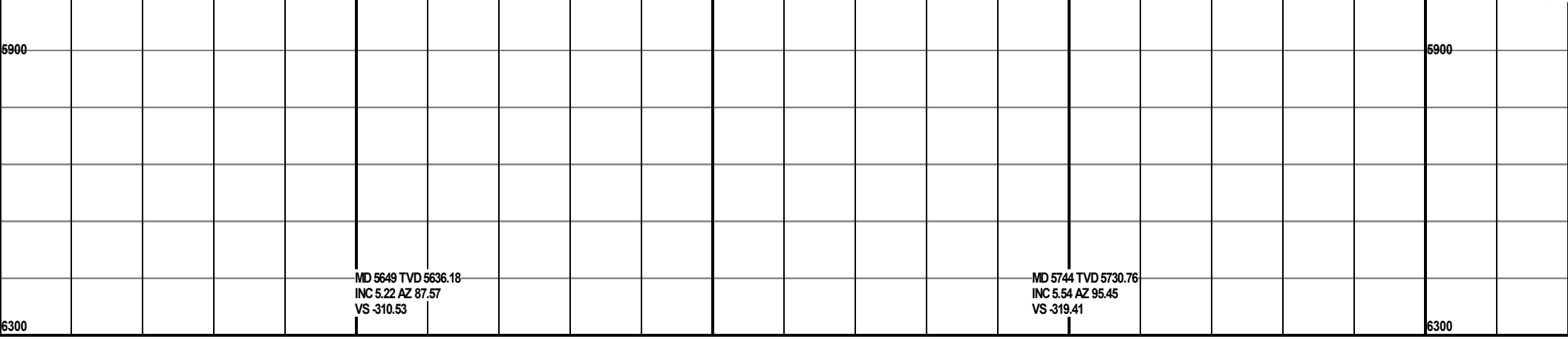
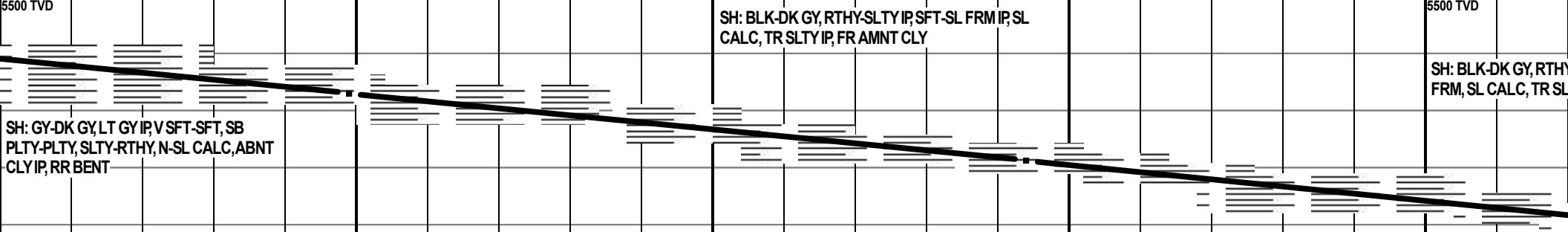
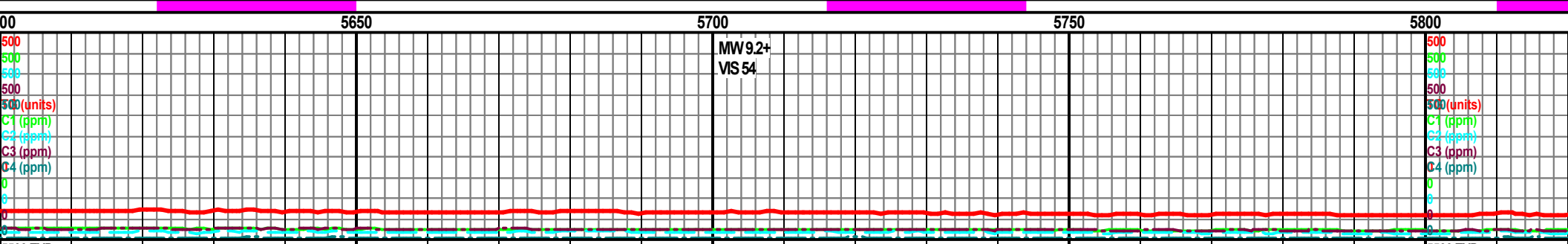
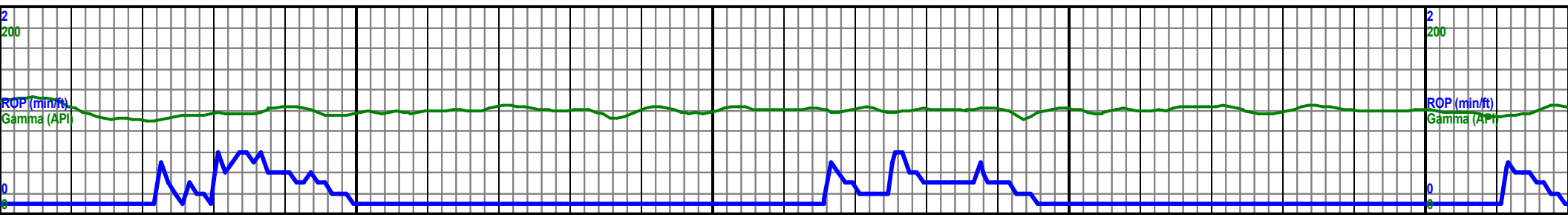


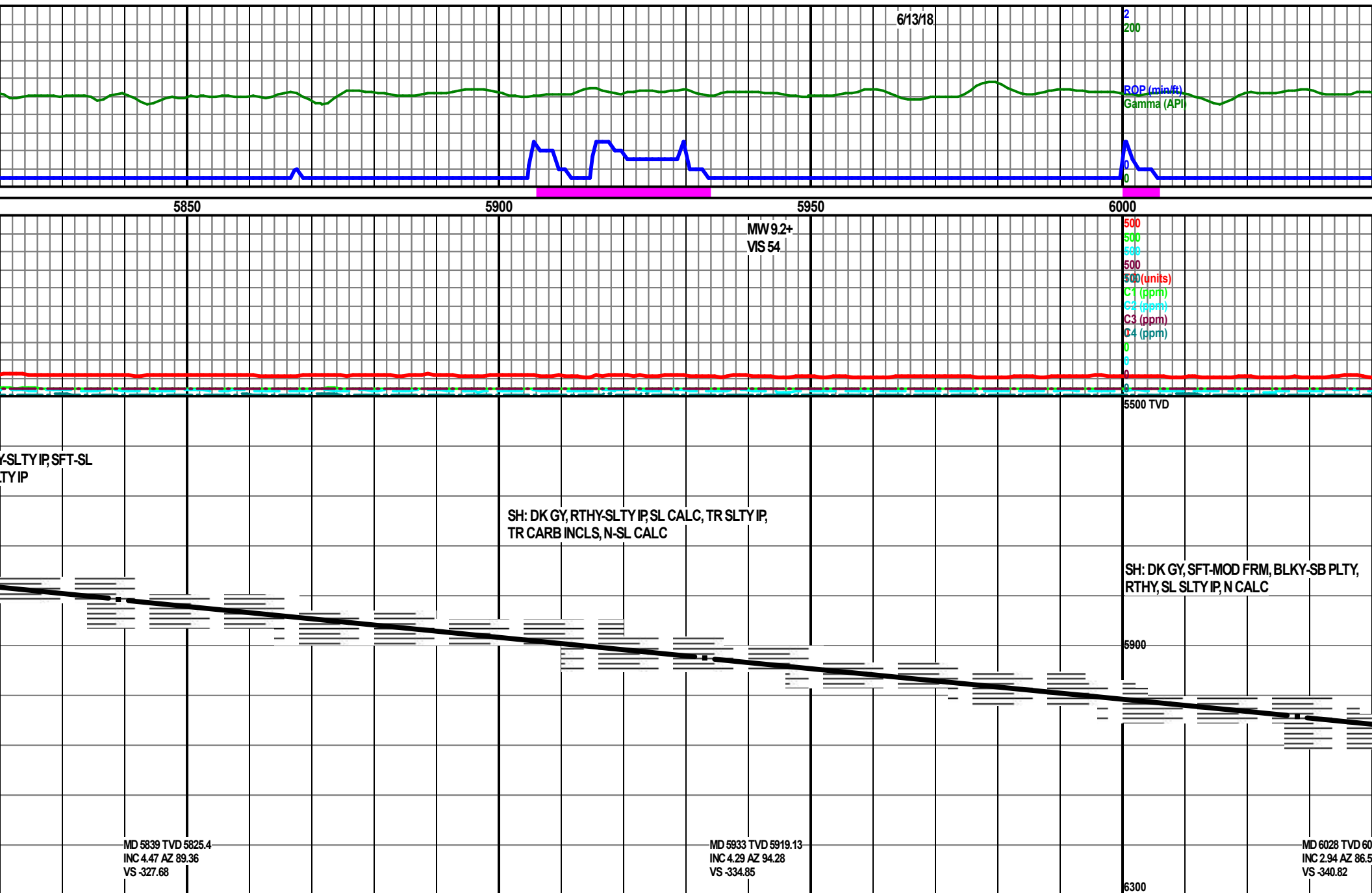
500
500
500
500
500 (units)
500
500
500
500

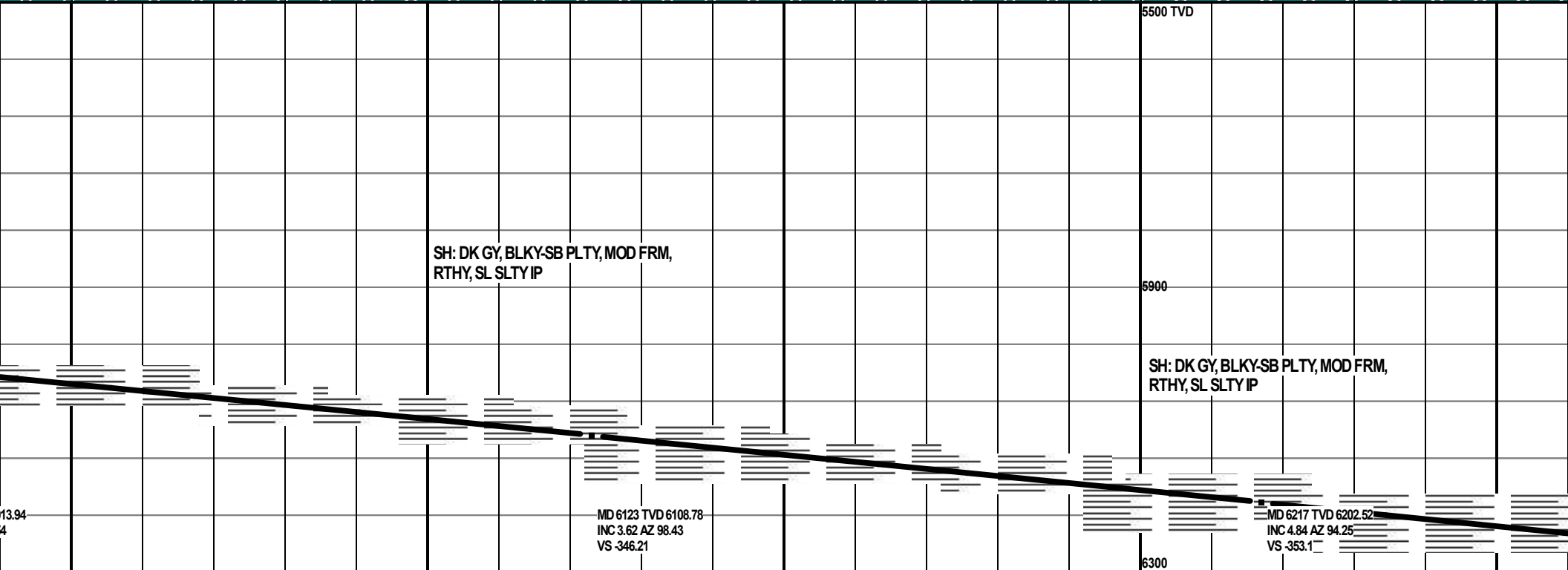
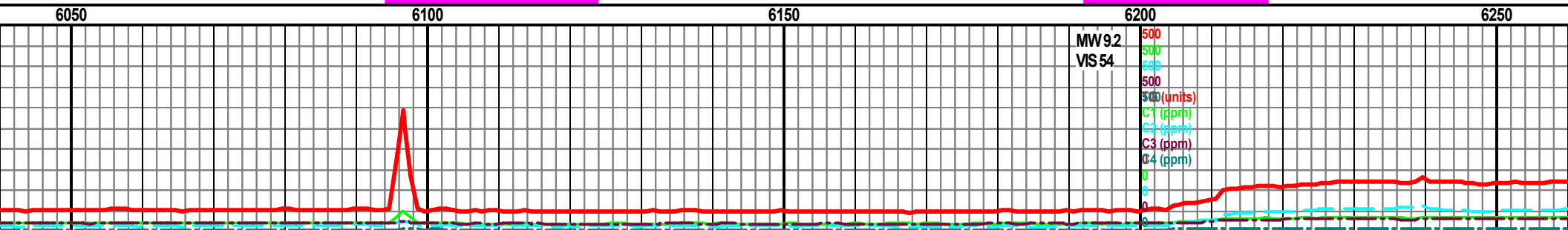
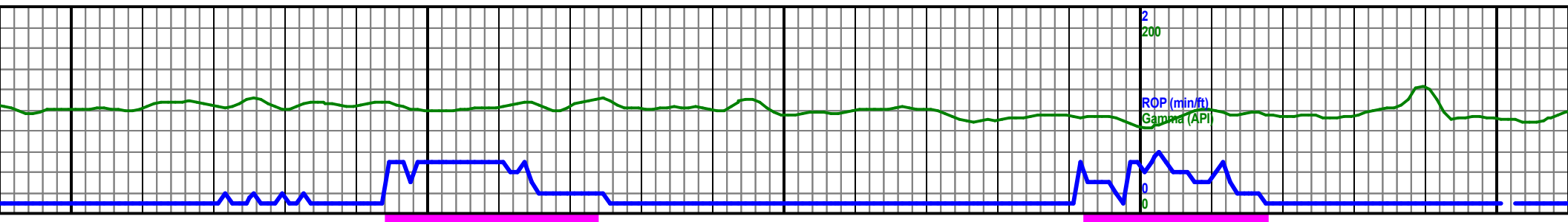
MW9.2+
VS 55

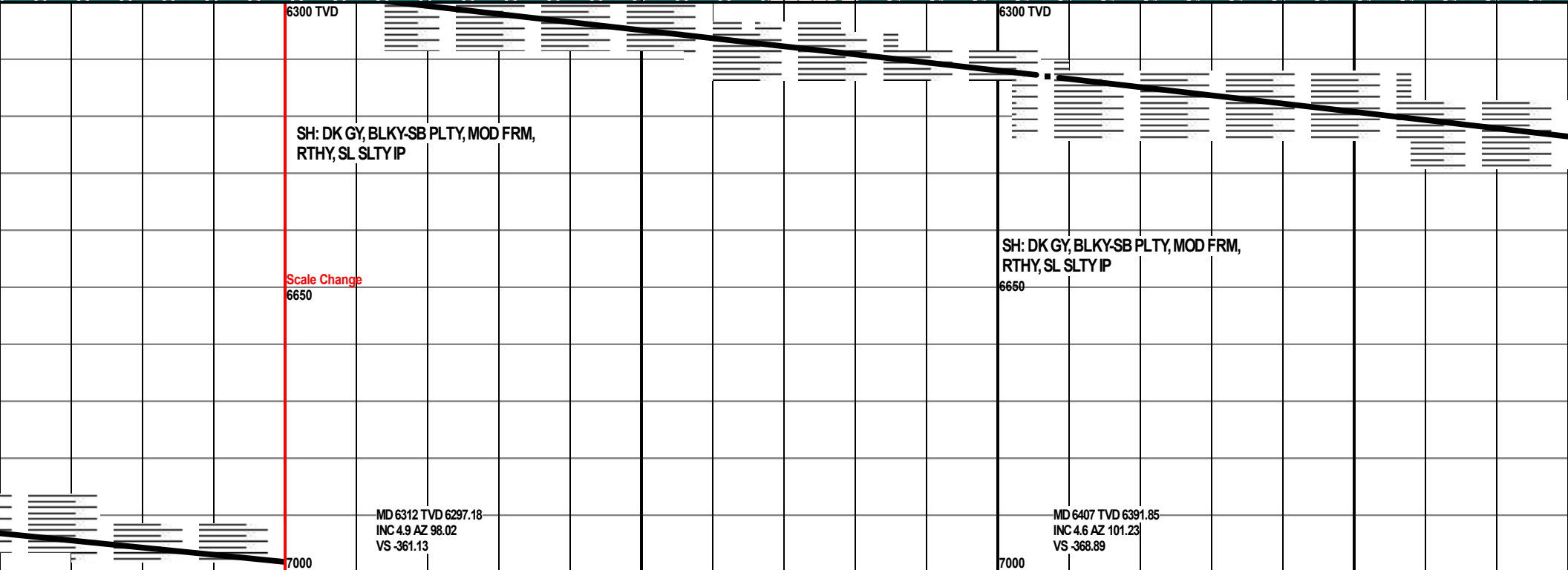
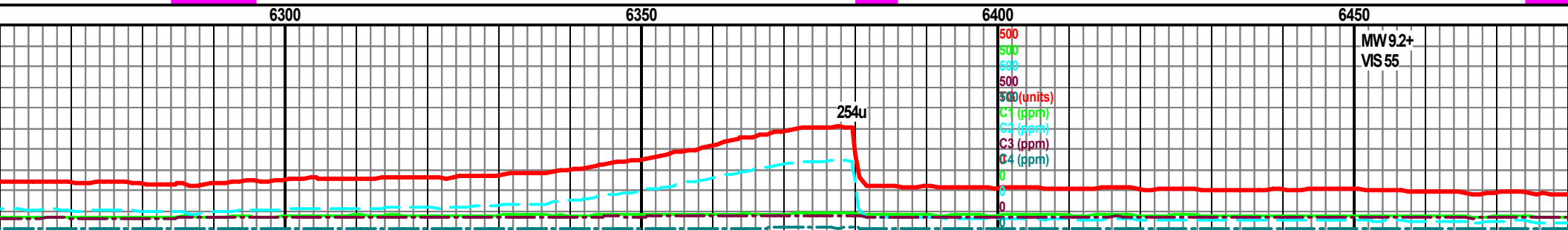
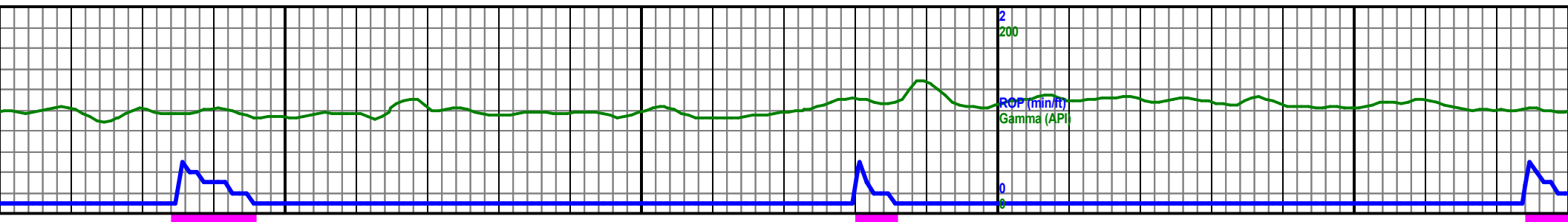


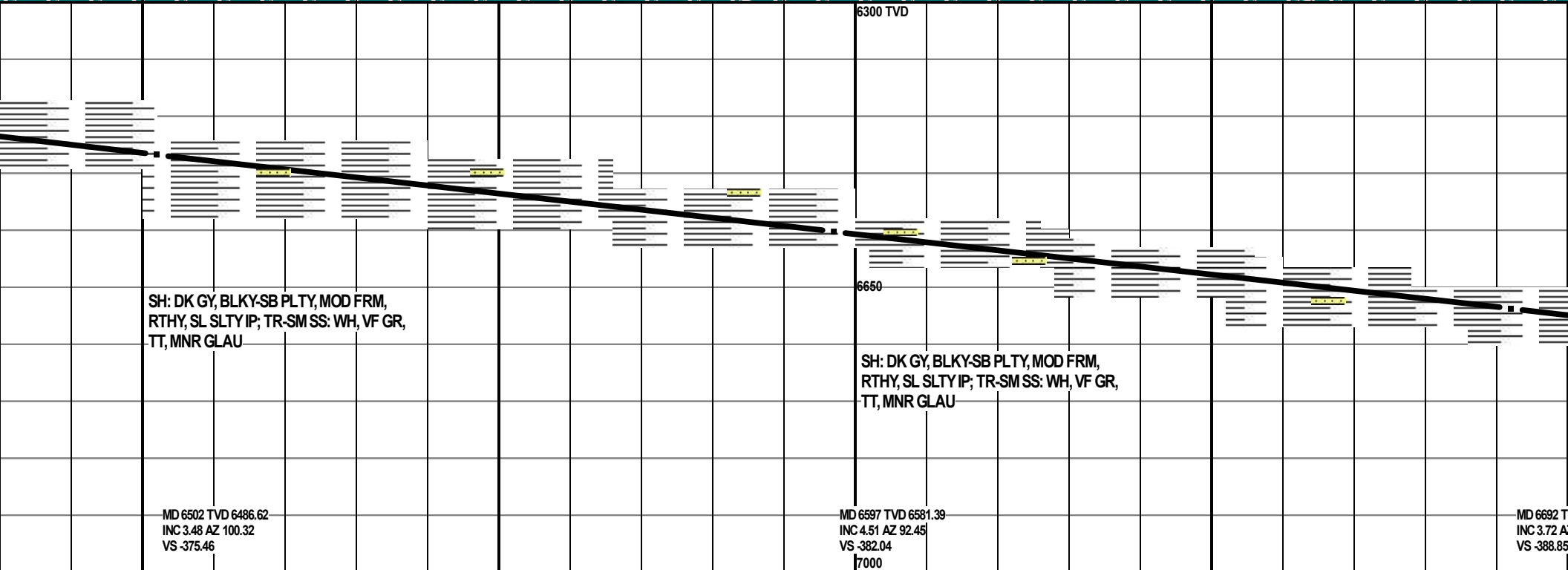
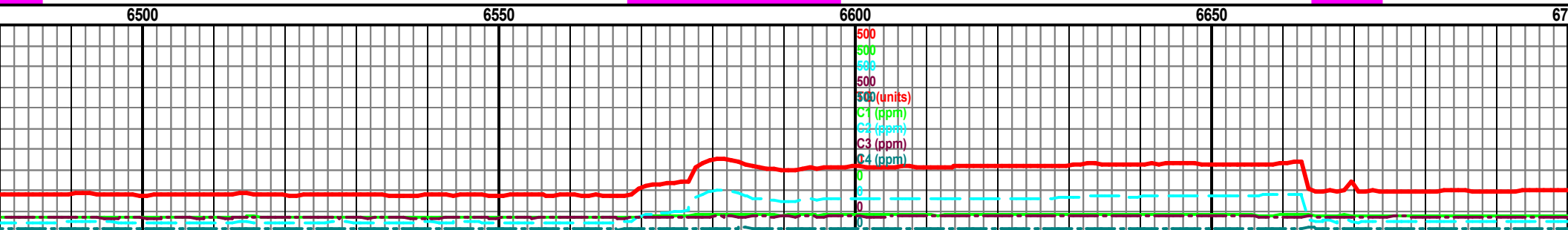
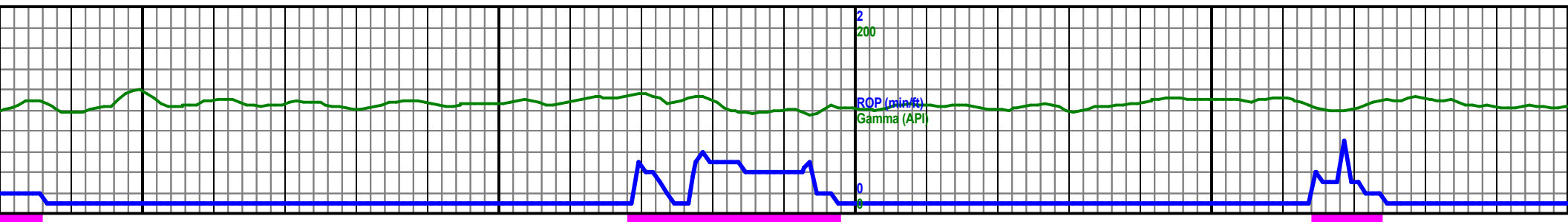


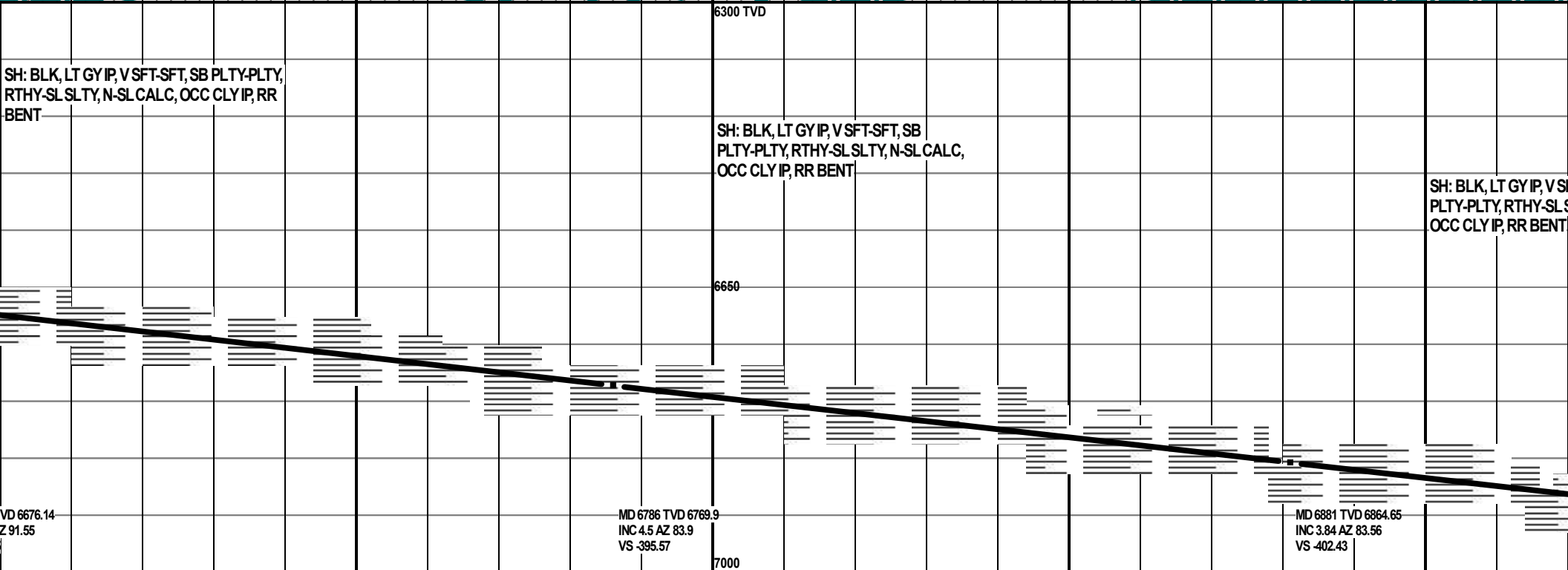
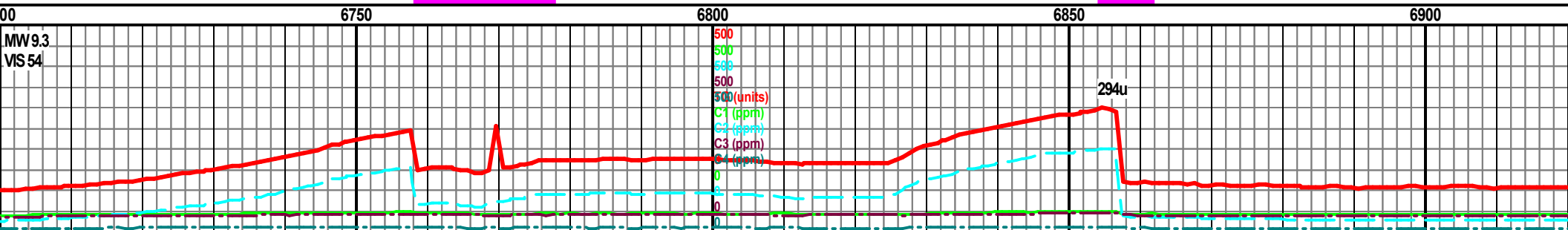
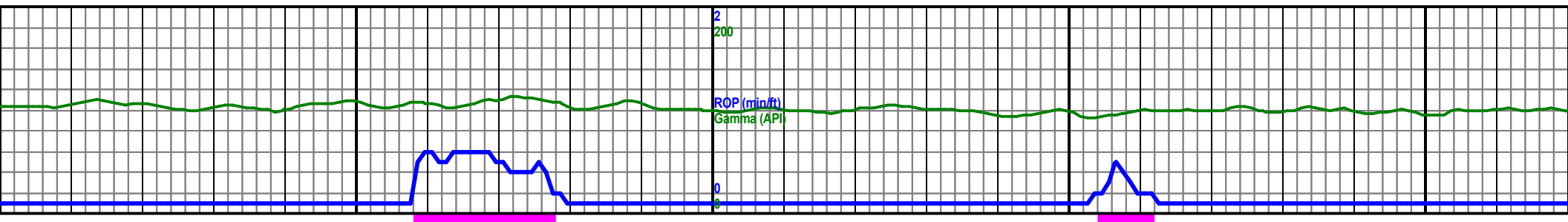


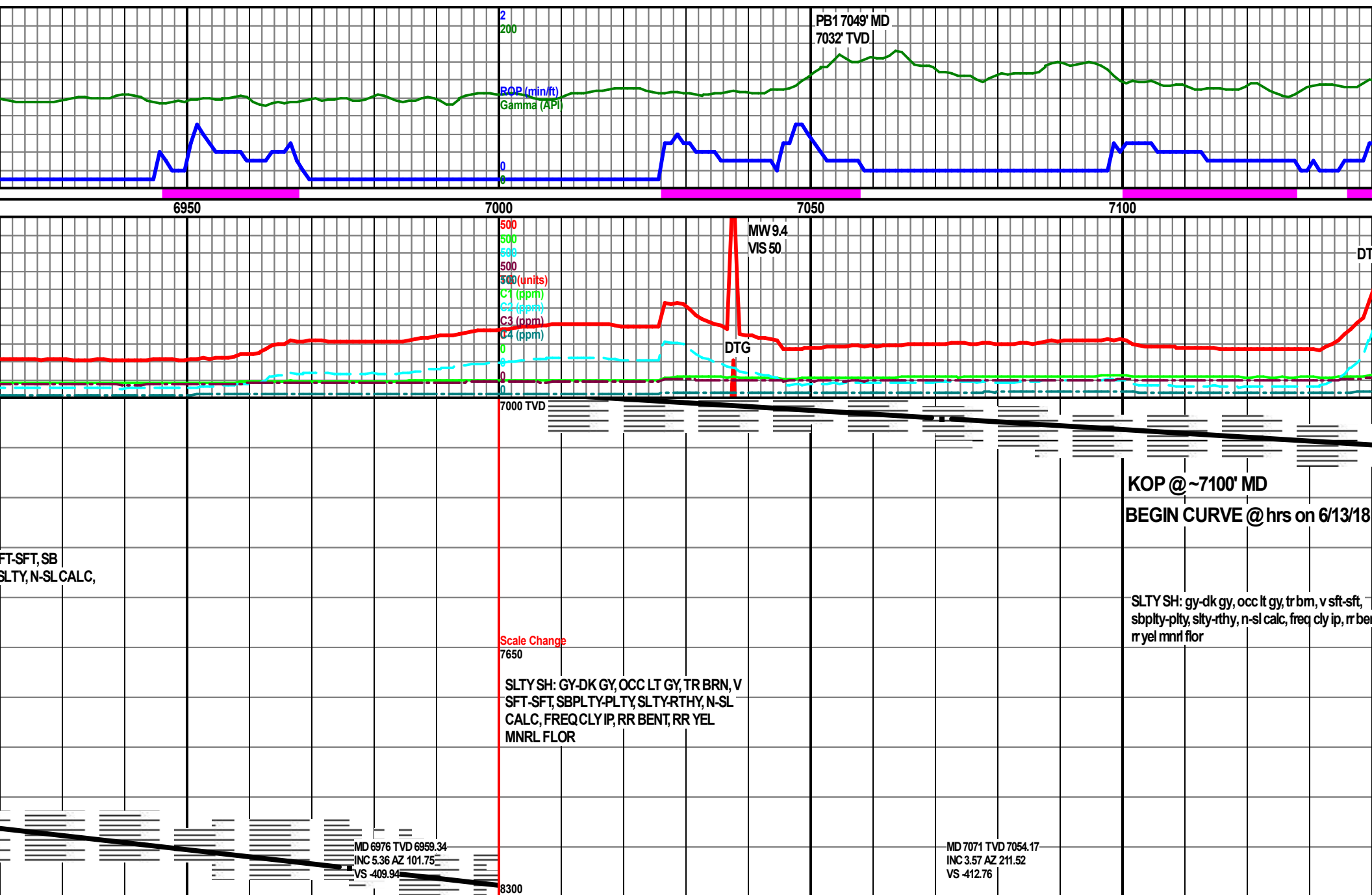


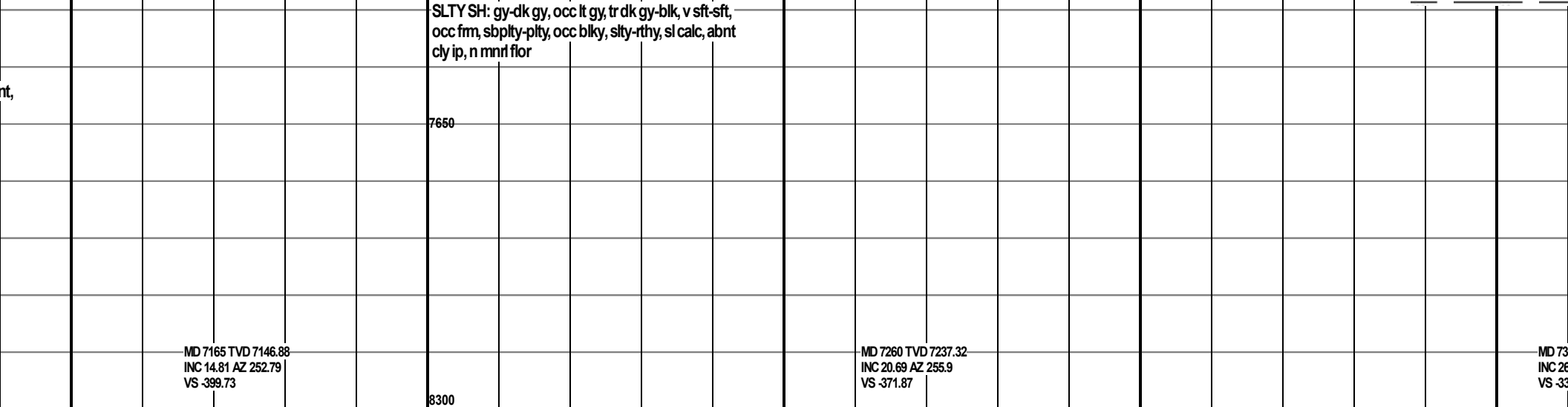
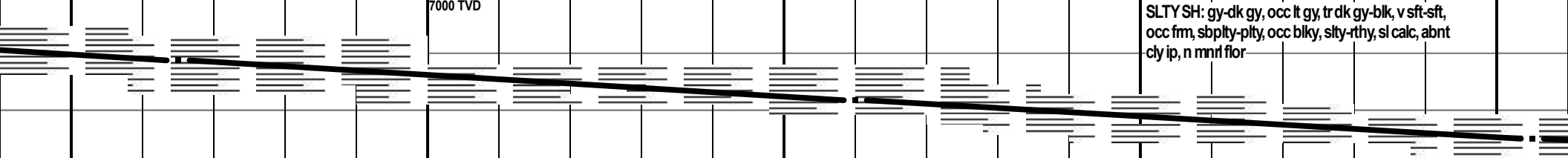
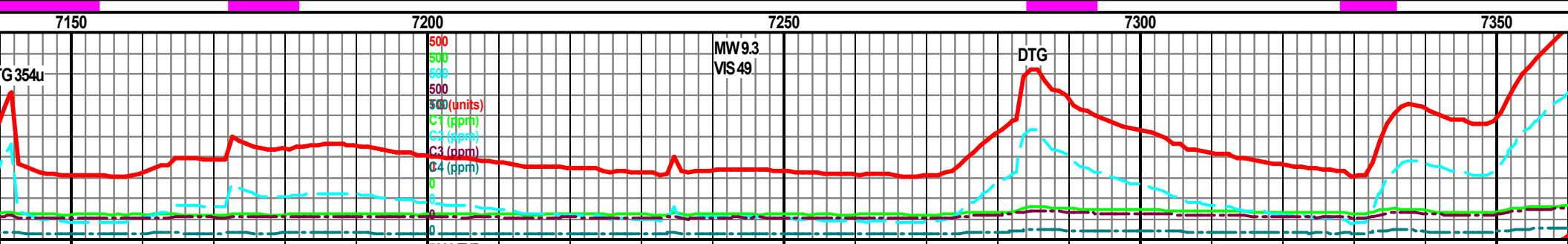
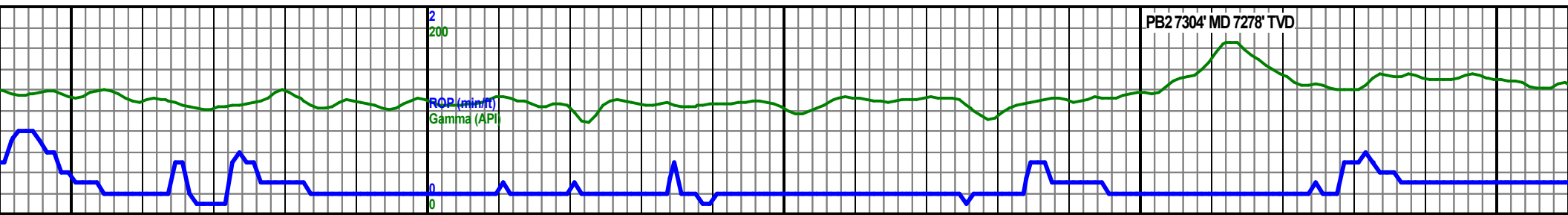


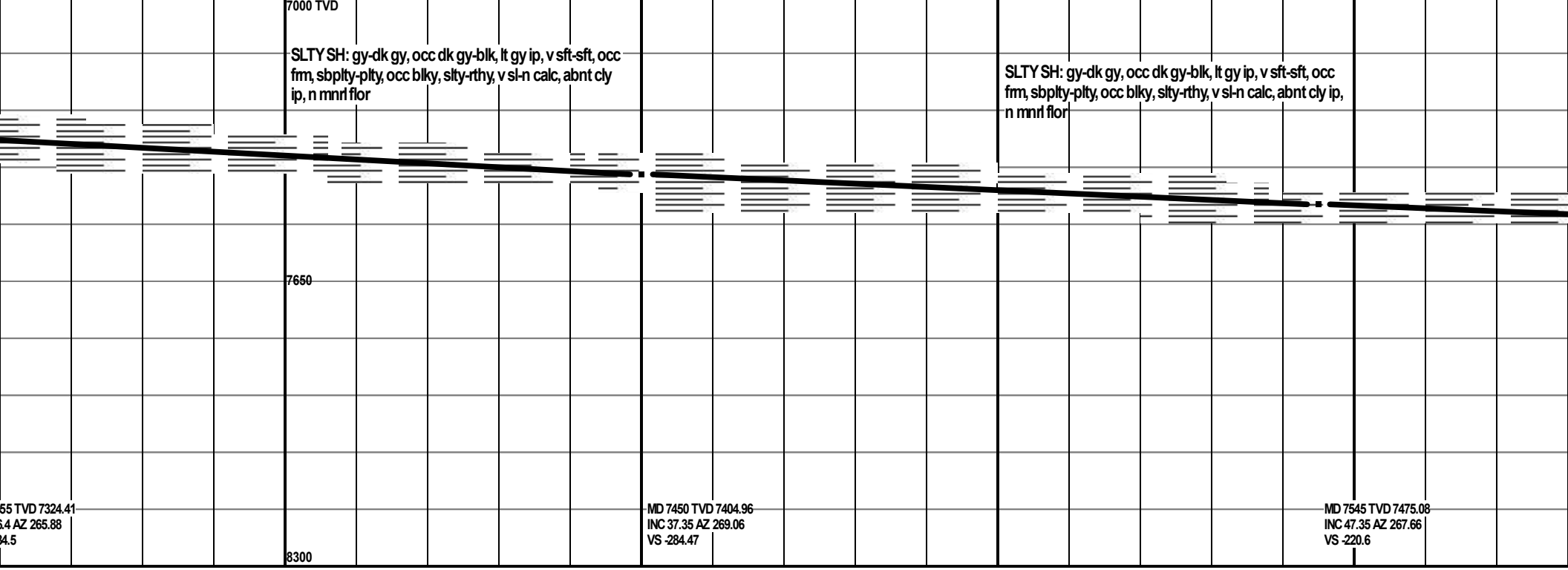
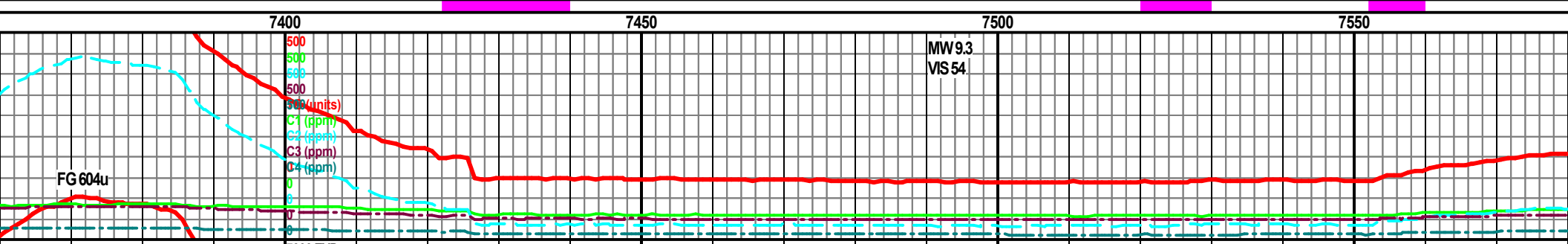
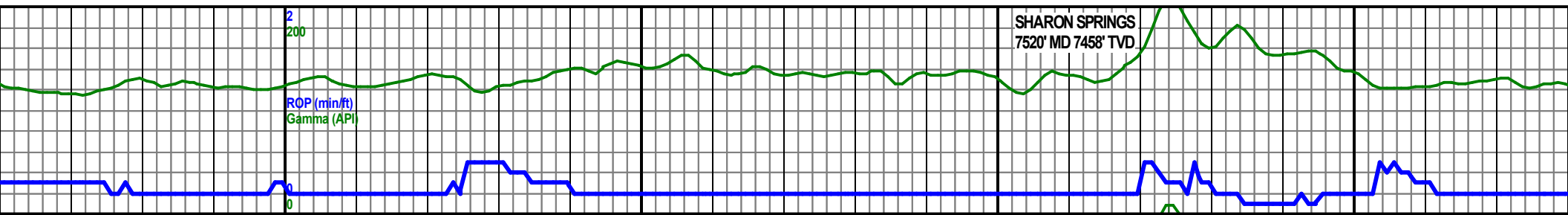


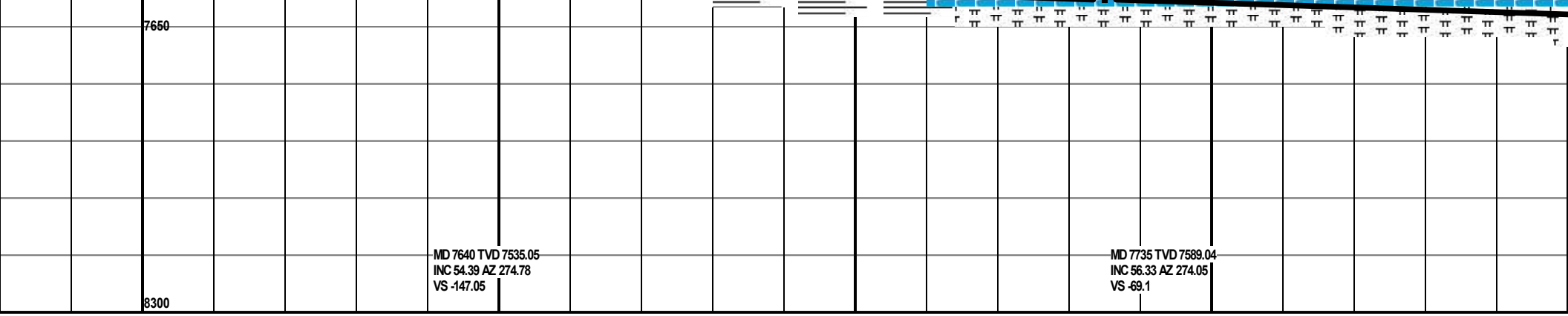
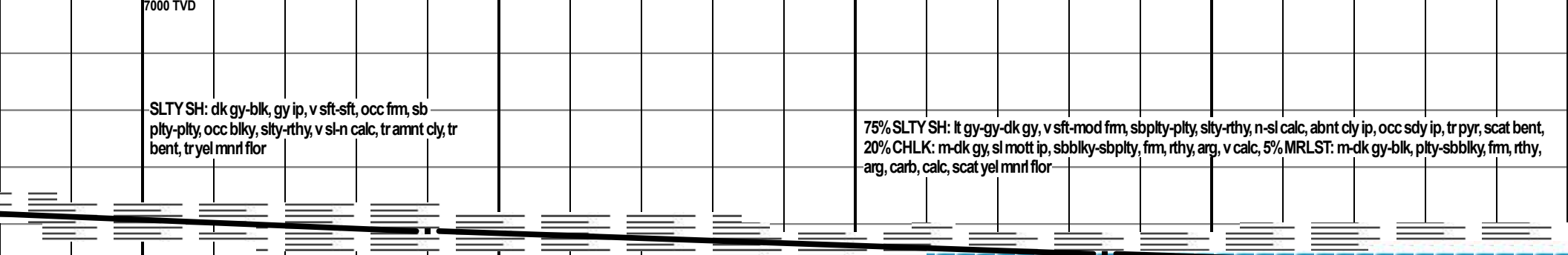
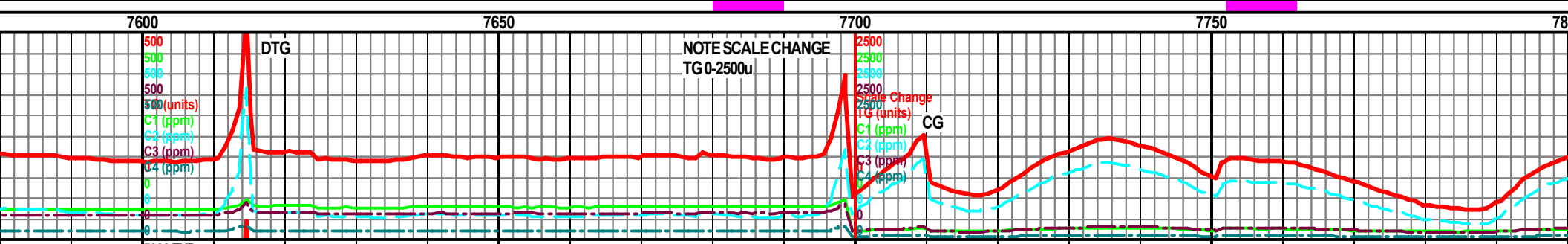
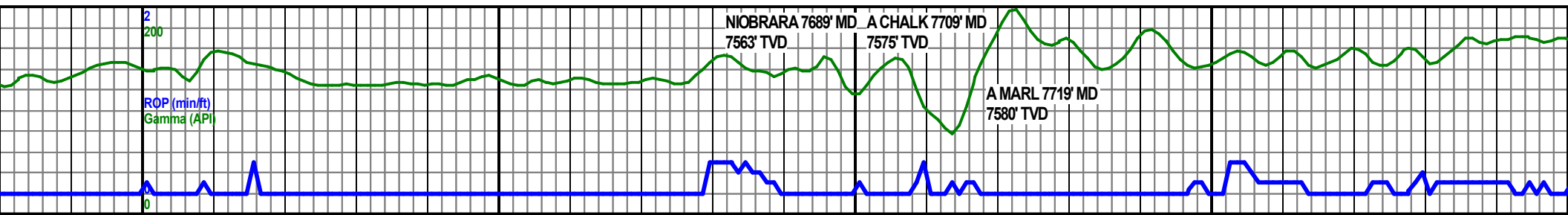


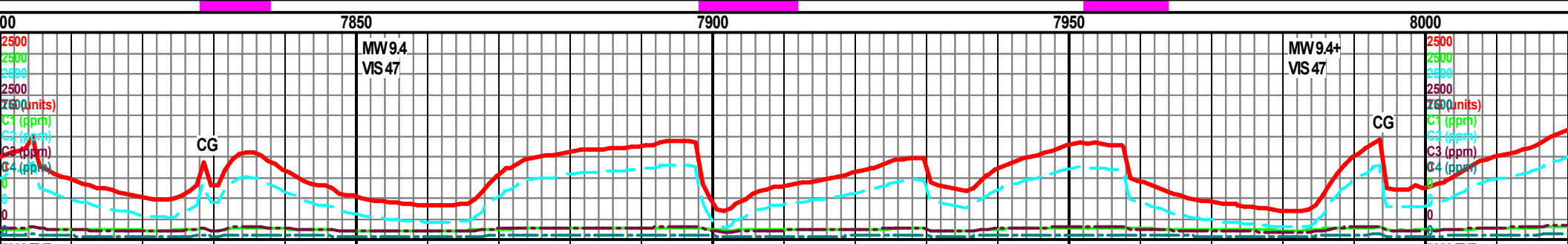
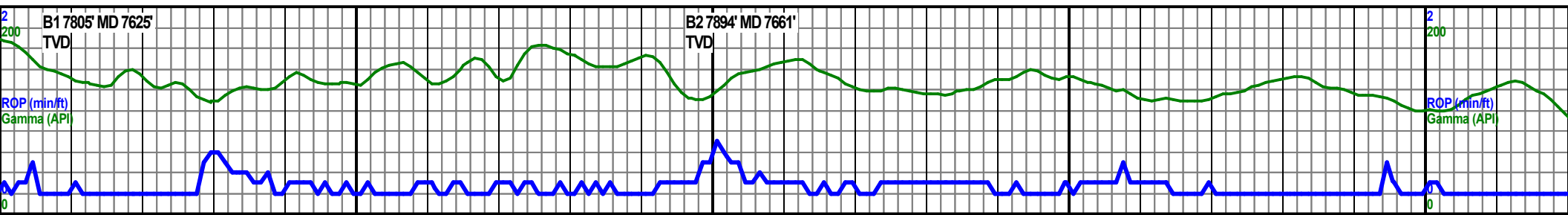








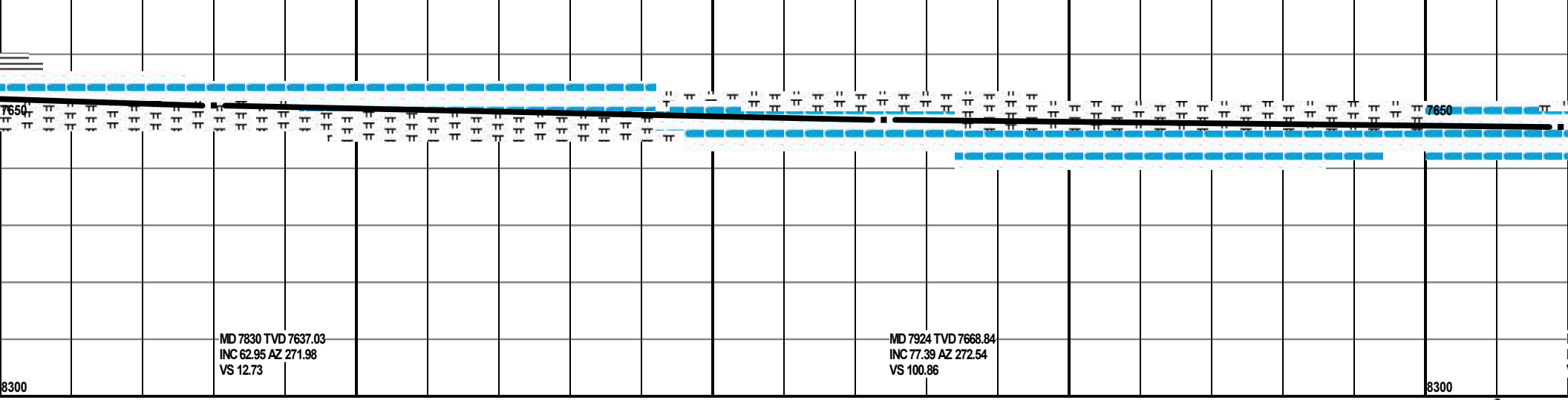


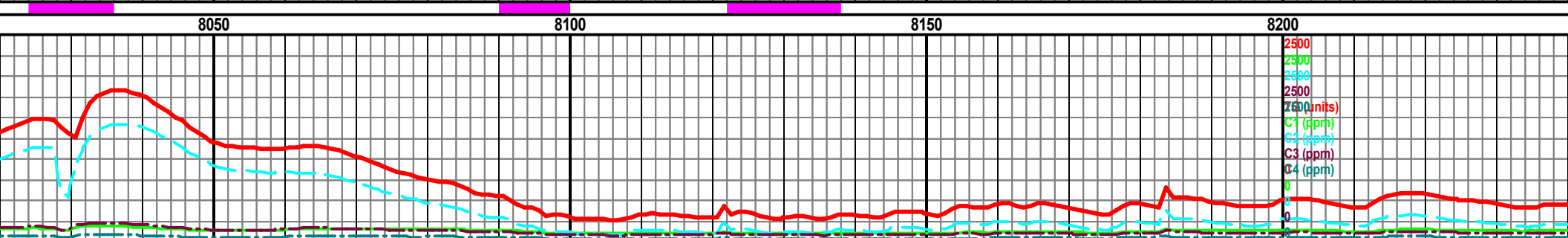


90% MRLST: m-dk gy-blk, pty-sbbly, fm, rthy, arg, carb, calc, scat bent, scat yel mnrl flr, 10% CHLK: m-dk gy, sl mott ip, sbbly-sbply, fm, rthy, arg, v calc

70% MRLST: m-dk gy-blk, pty-sbbly, fm, rthy, arg, carb, calc, tr bent, tr yel mnrl flr, 30% CHLK: m-dk gy, sl mott ip, sbbly-blky, fm, rthy, arg, v calc

60% CHLK: m-dk gy, sl mott ip, sbbly-blky, fm, rthy, arg, v calc





tt ip, sbblky-blky, fm, rthy, arg, v calc, 40% MRLST: m-dk gy-blk, pity-sbblky, fm, rthy, arg, carb,
nt, tr yel mnrl flor, trace oil in sample

70% CHLK: m-dk gy, sl mott ip, sbblky-blky, frm, rthy, v calc, 30% MRLST: m-dk gy-blk, plty-sbblky, frm, rthy, arg, sl carb, calc, tr bent, tr yel mnrl flor, trace free oil in sample

70% CHLK: m-dk gy, sl mott ip, sbblky-blky
sl carb, calc, tr bent, tr yel mnrl flor, trace fre

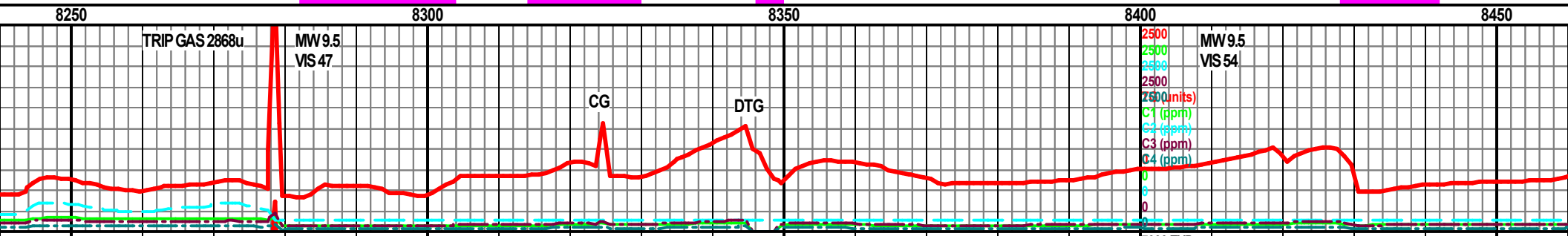
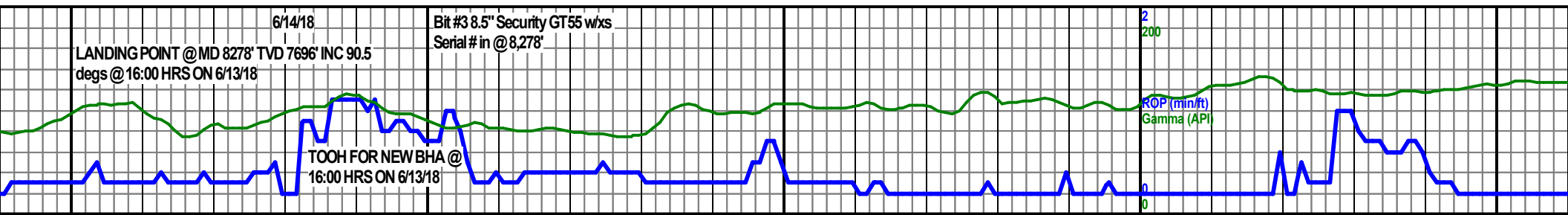


MD 8019 TVD 7686.48
INC 81.21 AZ 271.9
VS 194.14

—MD 8114 TVD 7695.51
INC 87.87 AZ 270.08
VS 288.64

MD 8209 TVD 7696.83
INC 90.52 AZ 268.98
VS 383.62

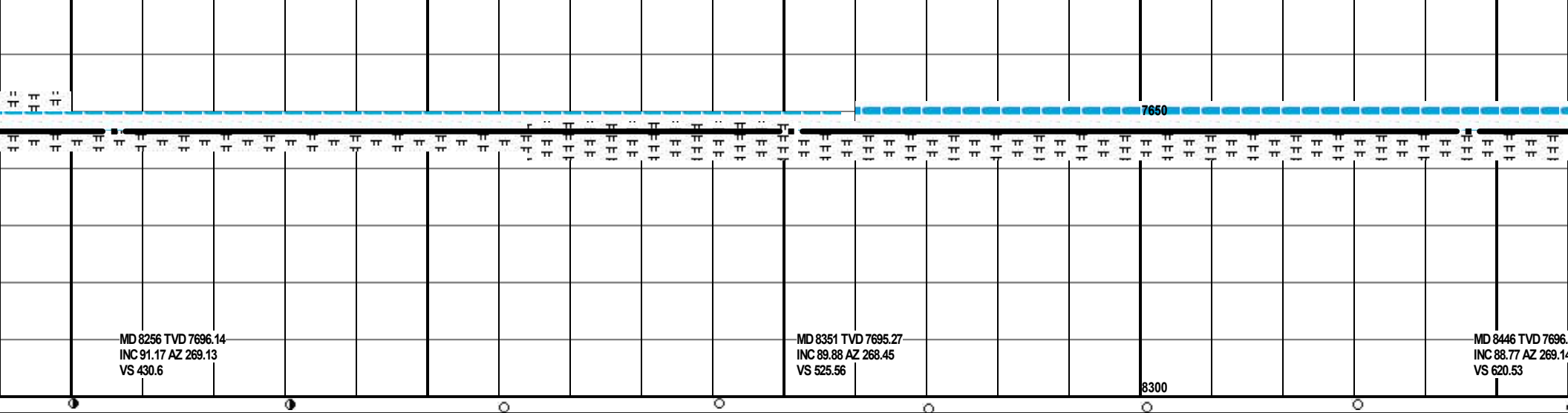
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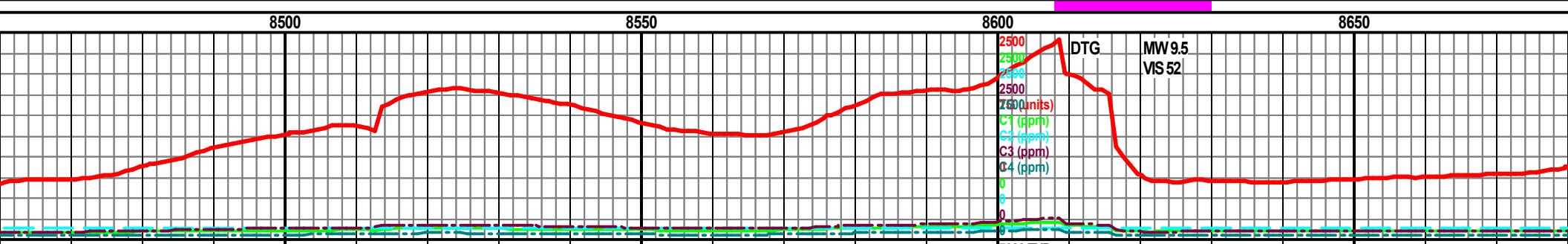
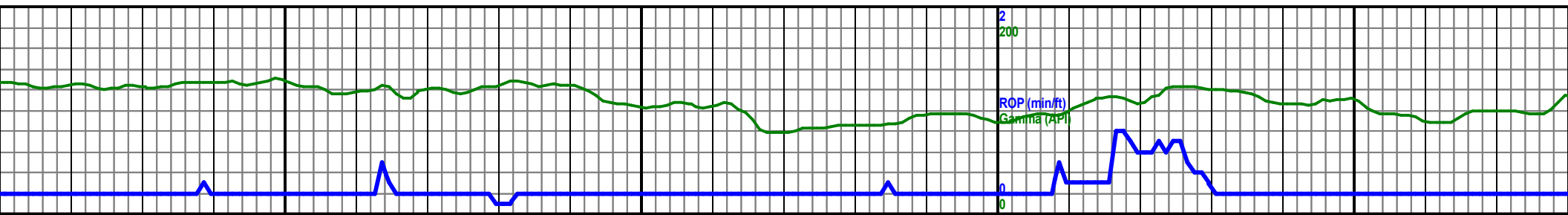


fm, rthy, v calc, 30% MRLST: m-dk gy-blk, plty-sbbiky, fm, rthy, arg, e oil in sample

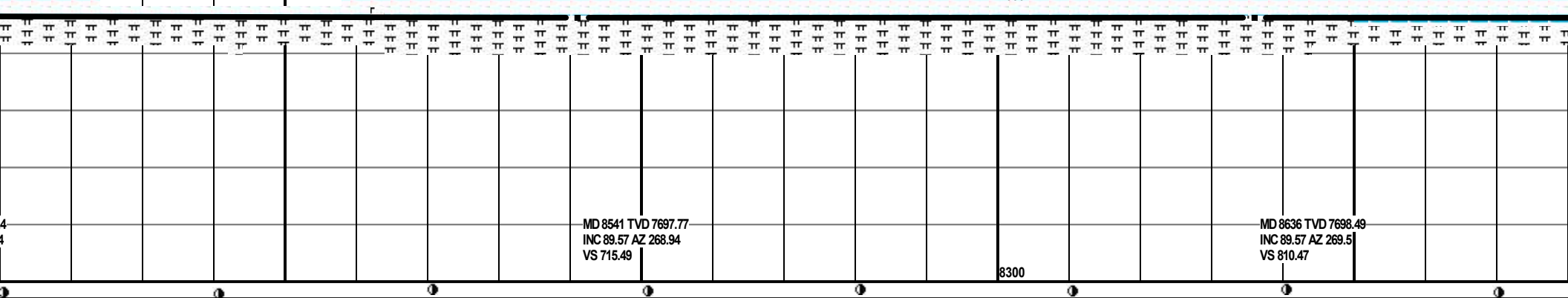
50% CHLK: m-dk gy, sl mott ip, sbbiky-blky, fm, rthy, v calc, 40% MRLST: m-dk gy-blk, plty-sbbiky, fm, rthy, arg, sl carb, calc, tr bent, tr yel mnrl flor, trace free oil in sample

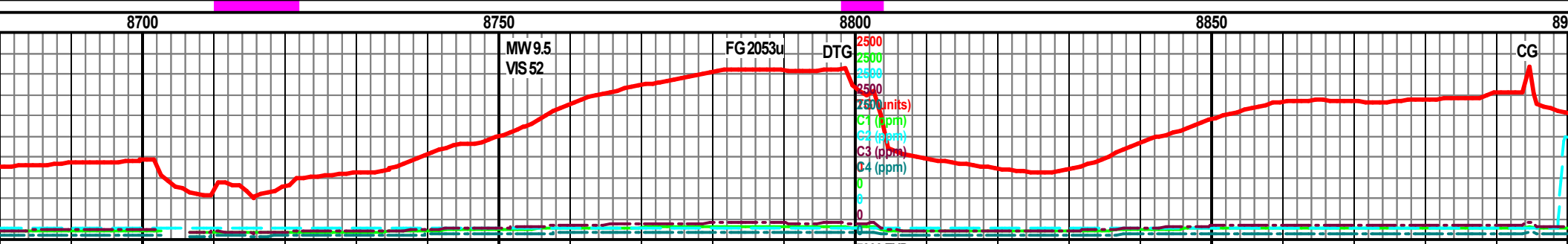
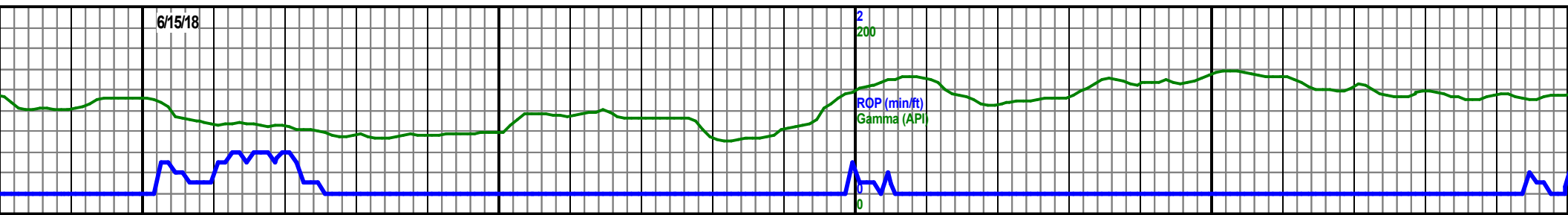
70% CHLK: m-dk gy, sl mott ip, sbbiky-blky, fm, rthy, v calc, 30% MRLST: m-dk gy-blk, plty-sbbiky, fm, rthy, arg, sl carb, calc, sl incr bent, tr yel mnrl flor, trace free oil in sample





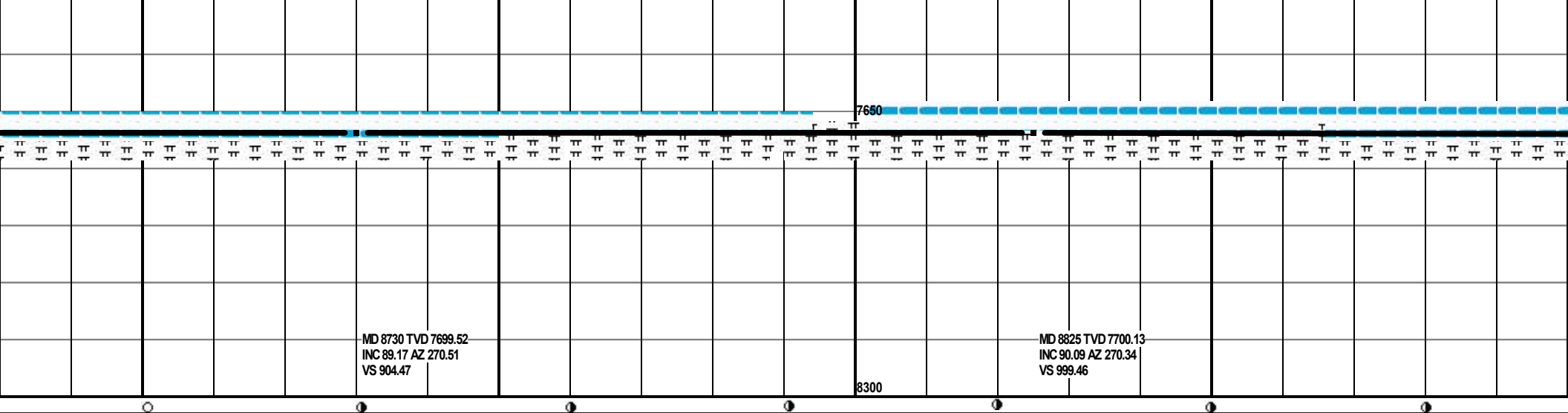
ST: m-dk gy-blk, plty-sbblky, frm, rthy, arg, sl
70% CHLK: m-dk gy, sl mott ip, sbblky-blky, frm, rthy, v calc, 30% MRLST: m-dk gy-blk, plty-sbblky, frm, rthy, arg, 70% CHLK: m-dk gy, sl mott ip, sbblky-blky, frm, rthy, v calc, 30% MRLST: m-dk gy-blk, plty-sbblky, sl carb, calc, tr bent, tr yel mnrl flr, trace free oil in sample
occ intrbd pyr, tr bent, tr yel mnrl flr, trace free oil in sample





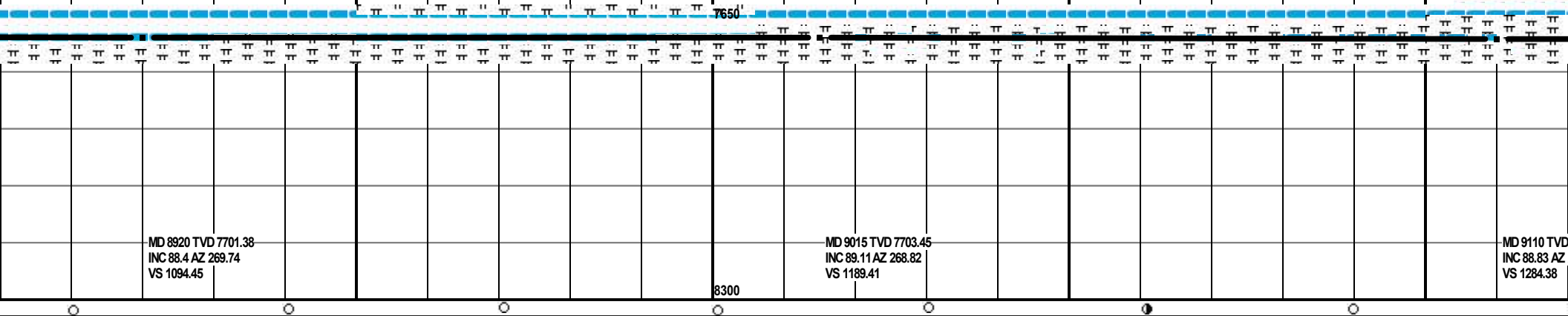
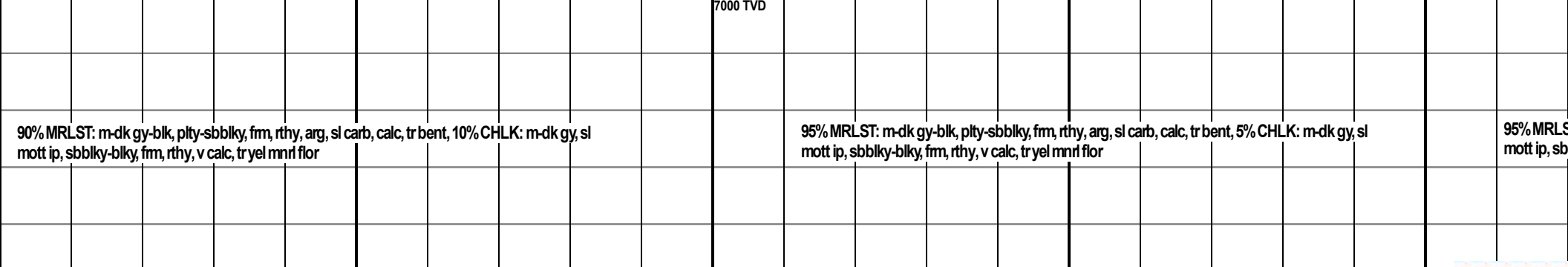
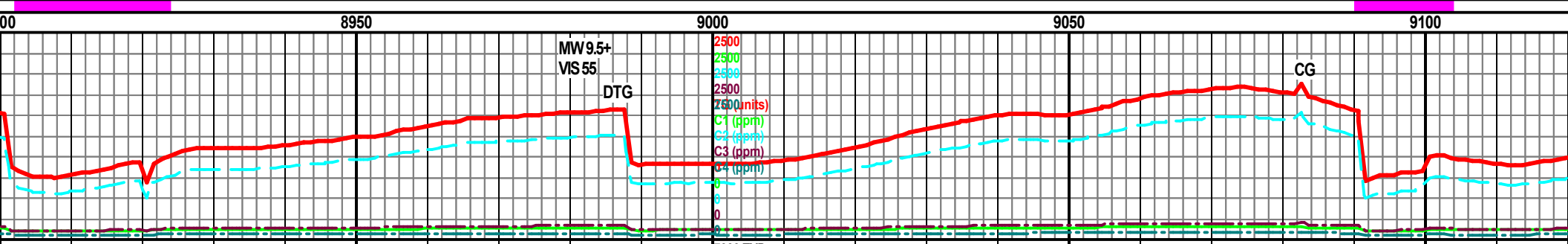
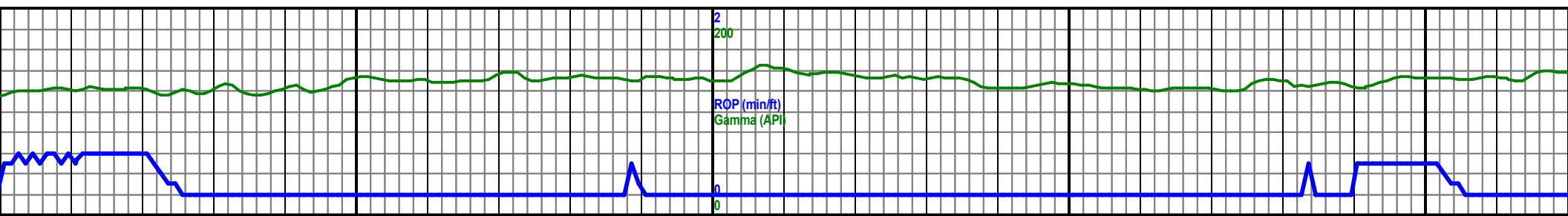
70% CHLK: m-dk gy, sl mott ip, sbblky-blky, frm, rthy, v calc, 30% MRLST: m-dk gy-blk, plty-sbblky, frm, rthy, arg, sl carb, calc, tr bent, tr yel mnrl flr, trace free oil in sample

sl 90% MRLST: m-dk gy-blk, plty-sbblky, frm, rthy, arg, sl carb, calc, tr bent, 10% CHLK: m-dk gy, sl mott ip, sbblky-blky, frm, rthy, v calc, tr yel mnrl flr, trace free oil in sample



MD 8730 TVD 7699.52
INC 89.17 AZ 270.51
VS 904.47

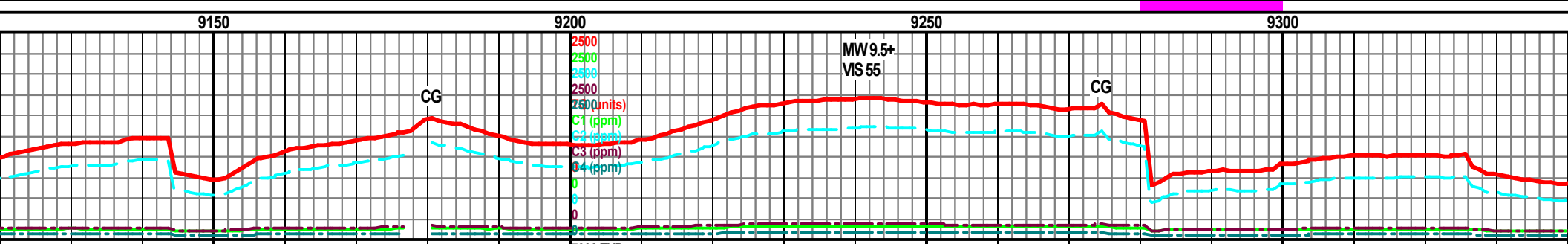
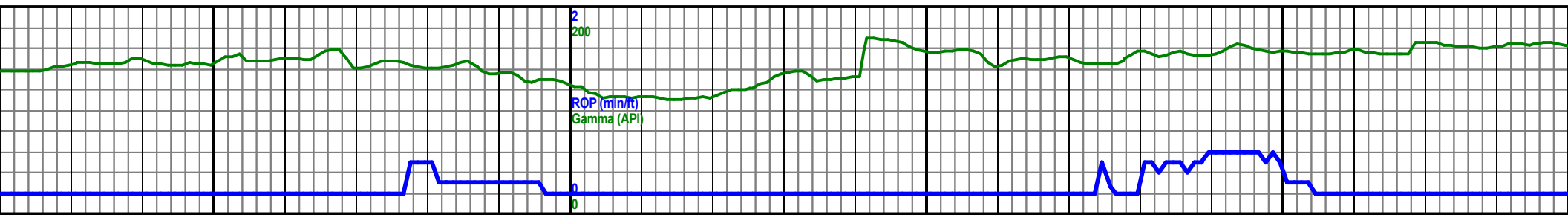
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INC 90.09 AZ 270.34
VS 999.46



MD 8920 TVD 7701.38
INC 88.4 AZ 269.74
VS 1094.45

MD 9015 TVD 7703.45
INC 89.11 AZ 268.82
VS 1189.41

MD 9110 TVD
INC 88.83 AZ
VS 1284.38

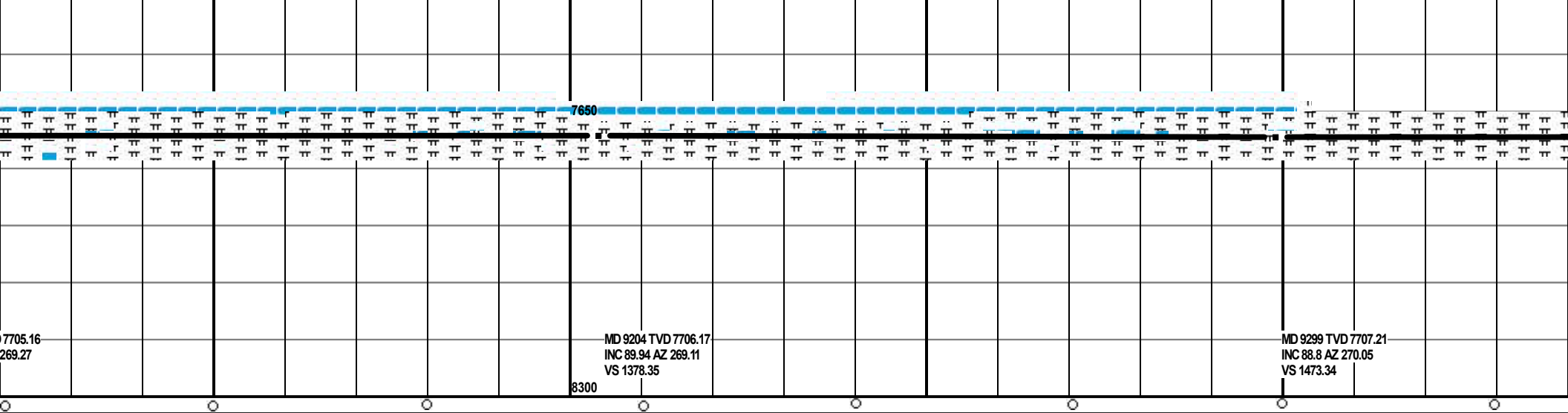


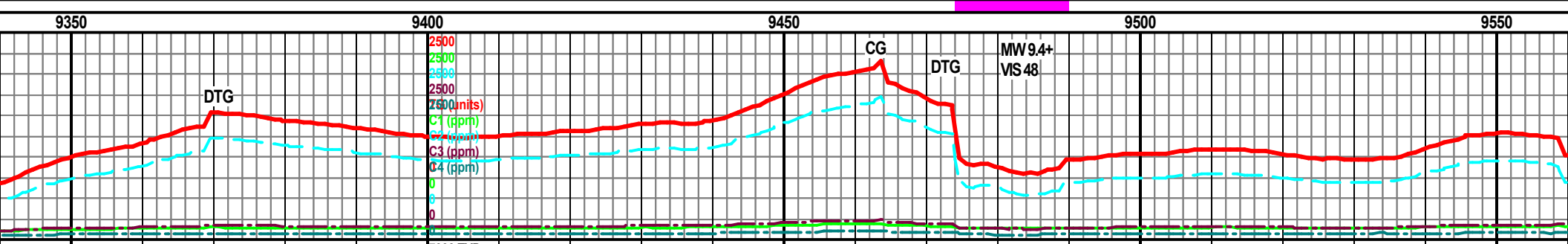
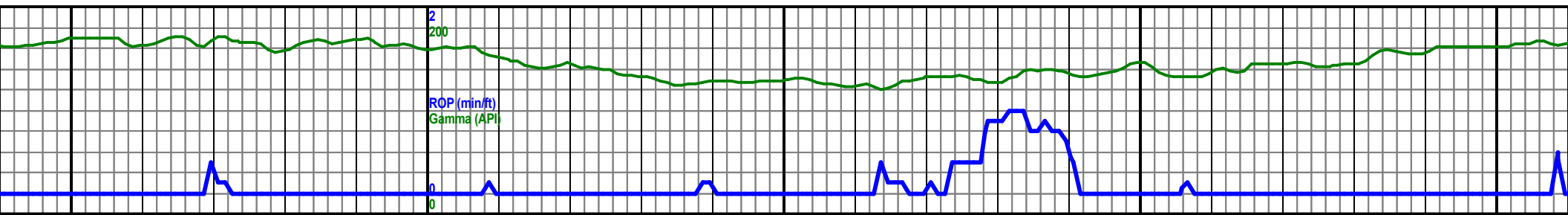
7000 TVD

ST: m-dk gy-blk, plty-sbbiky, fm, rthy, arg, sl carb, calc, tr bent, 5% CHLK: m-dk gy, sl
blk-y-blky, fm, rthy, v calc, tr yel mnri flor

95% MRLST: m-dk gy-blk, plty-sbbiky, fm, rthy, arg, sl carb, calc, tr bent, 5% CHLK: m-dk gy, sl
mott ip, sbbiky-blky, fm, rthy, v calc, tr yel mnri flor

100% MRLST: m-dk gy-blk, plty-sbbiky, fm, r



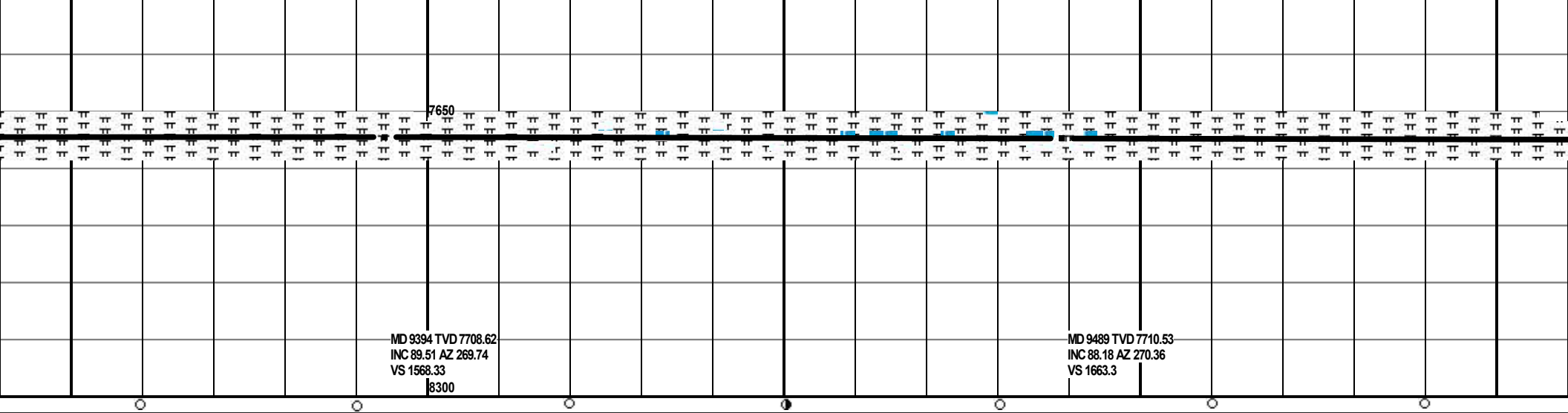


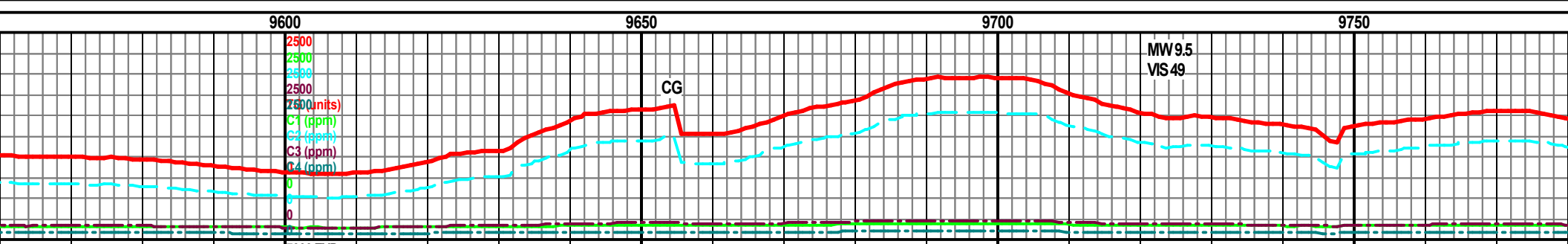
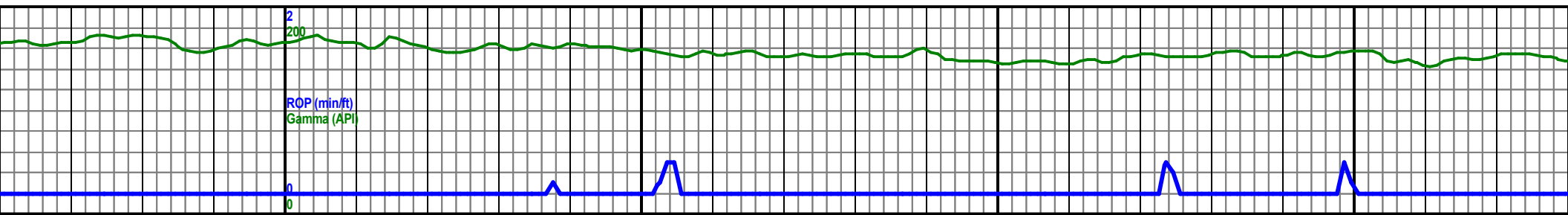
7000 TVD

thy, arg, sl carb, calc, tr bent, tr yel mnrl flor

95% MRLST: m-dk gy-blk, plty-sbblky, frm, rthy, arg, sl carb, calc, tr bent, 5% CHLK: m-dk gy, sl mott ip, sbblky-blky, frm, rthy, v calc, n flor

100% MRLST: m-dk gy-blk, plty-sbblky, frm, rthy, arg, sl carb, calc, tr bent

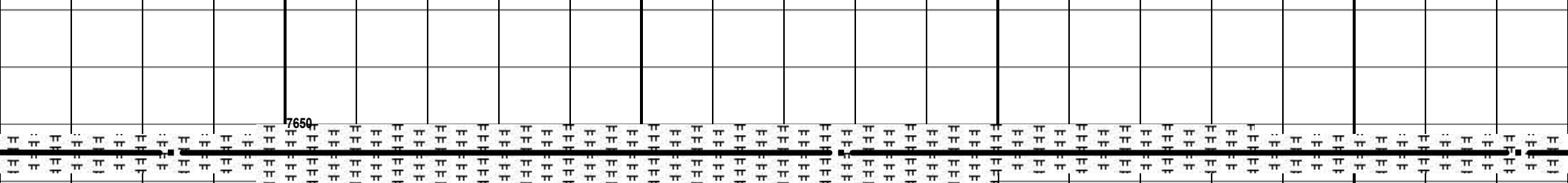




ent, n flor

100% MRLST: m-dk gy-blk, plty-sbblky, frm, rthy, arg, sl carb, calc, tr bent, tr yel mnrl flor

100% MRLST: m-dk gy-blk, plty-sbblky, frm, rthy, arg, sl carb, calc, tr bent, tr yel mnrl flor

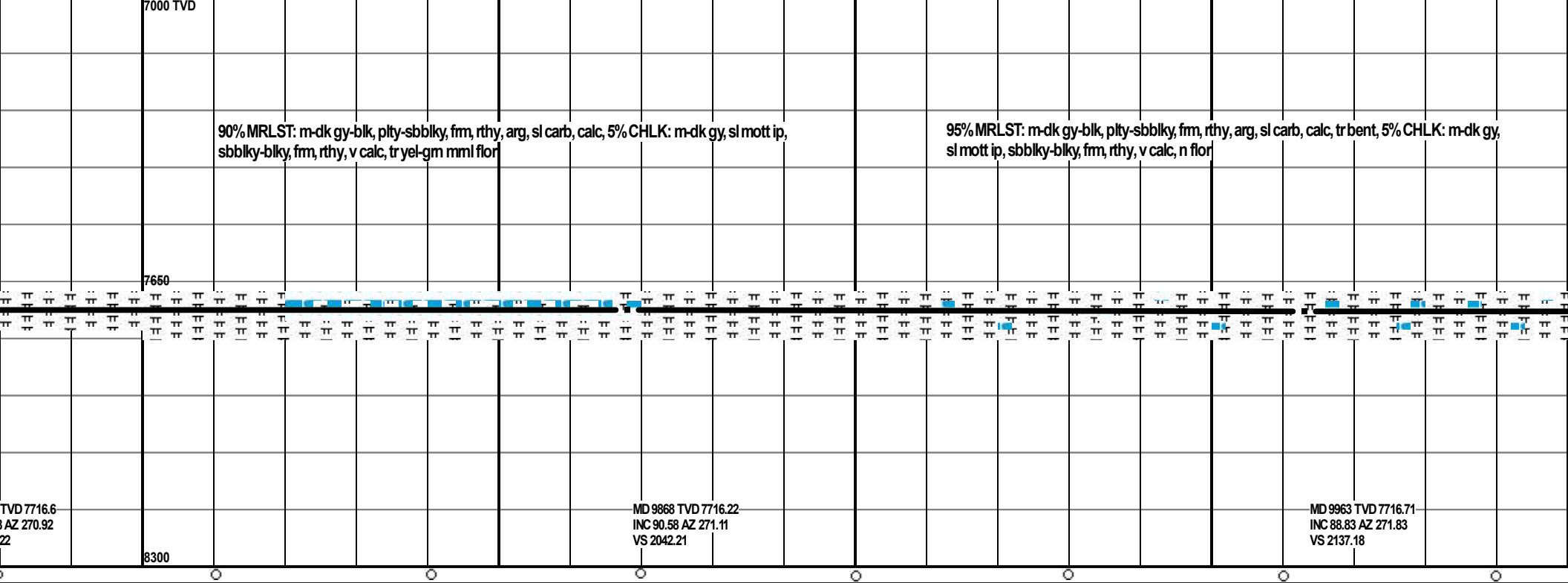
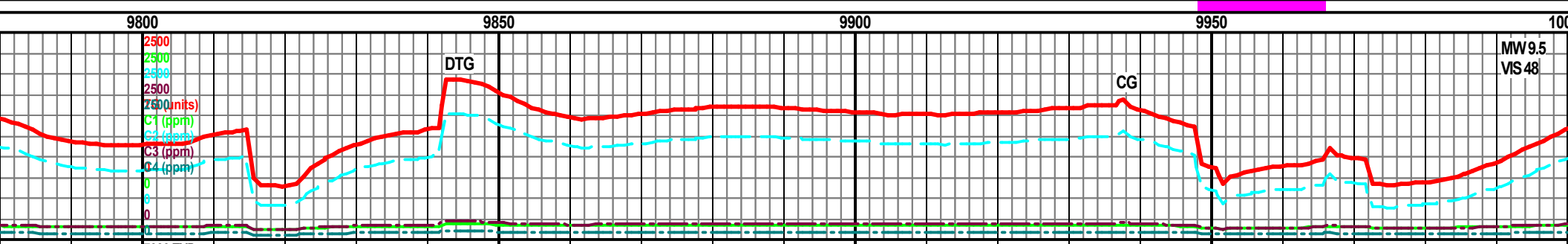
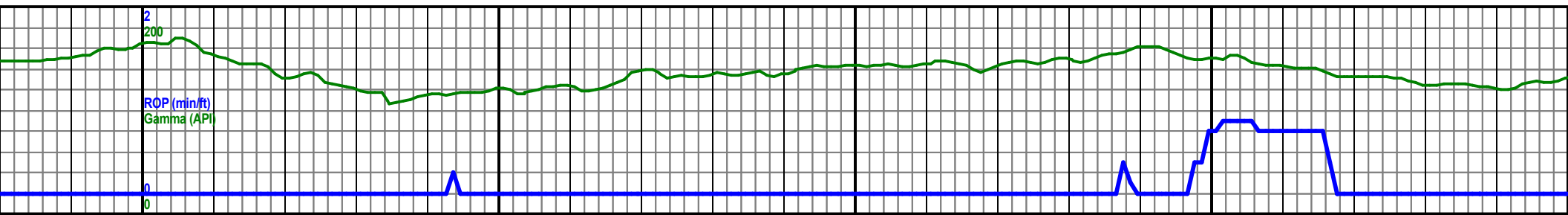


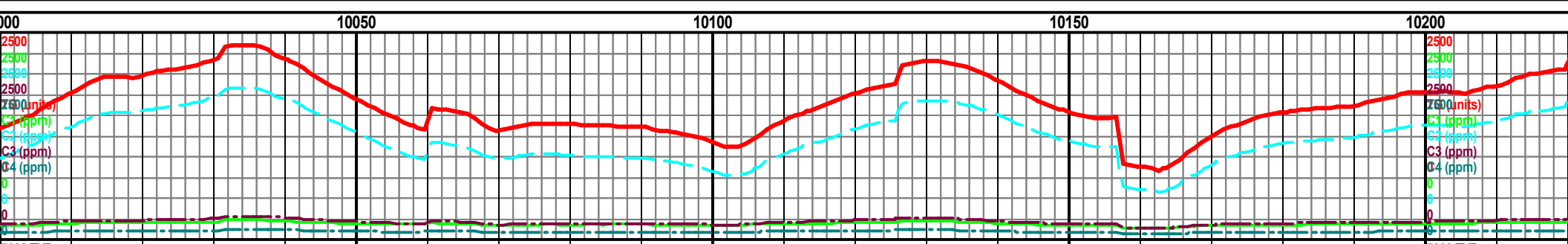
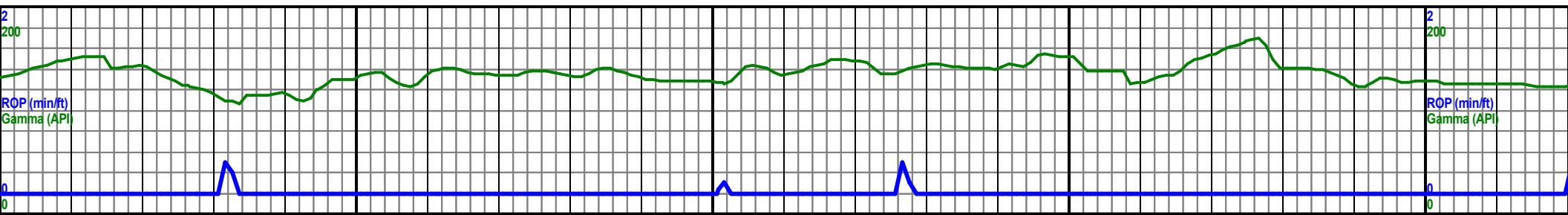
MD 9584 TVD 7713.49
INC 88.24 AZ 270.5
VS 1758.26

MD 9678 TVD 7715.71
INC 89.05 AZ 270.72
VS 1852.23

MD 9773
INC 89.88
VS 1947.7

8300



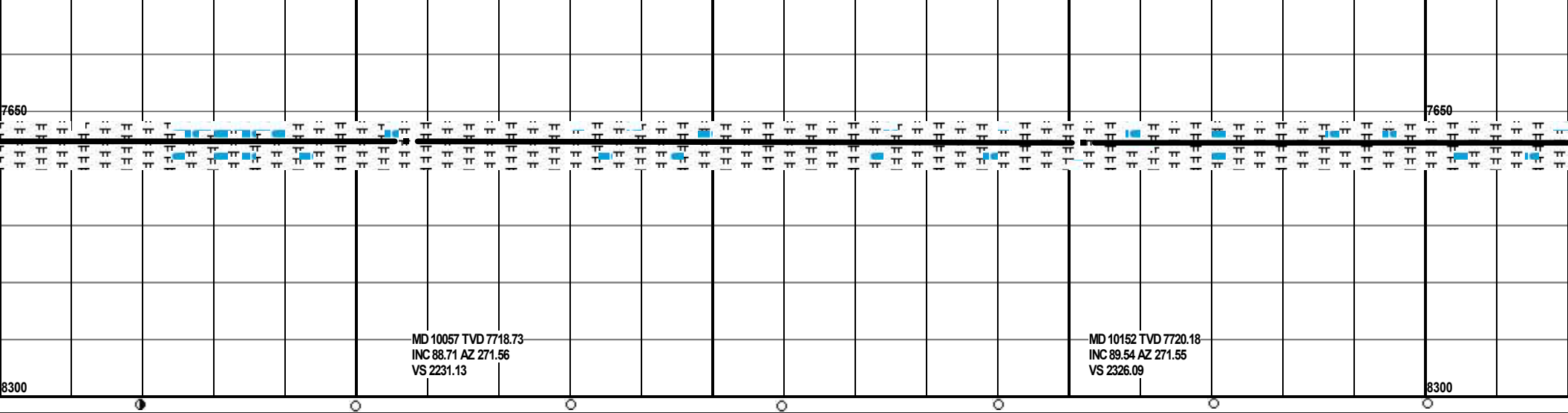


7000 TVD

90% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, 10% CHLK: m-dk gy, occ lt gy-mott ip, sbblky-blky, sl frm-frm, rthy, v calc, n flor

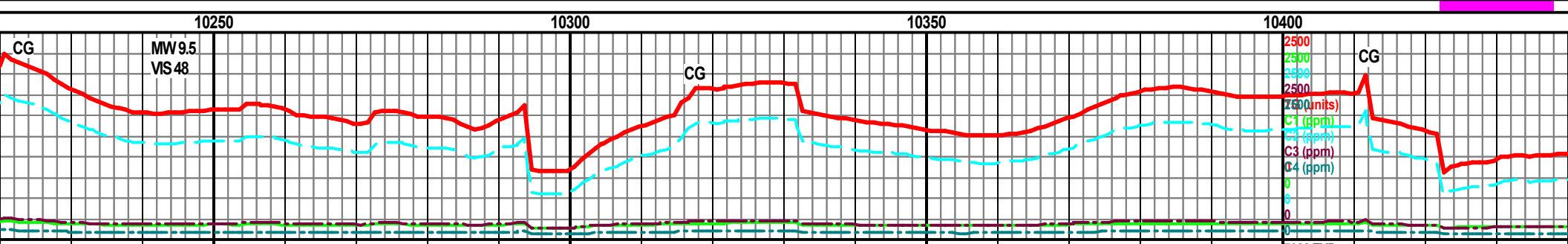
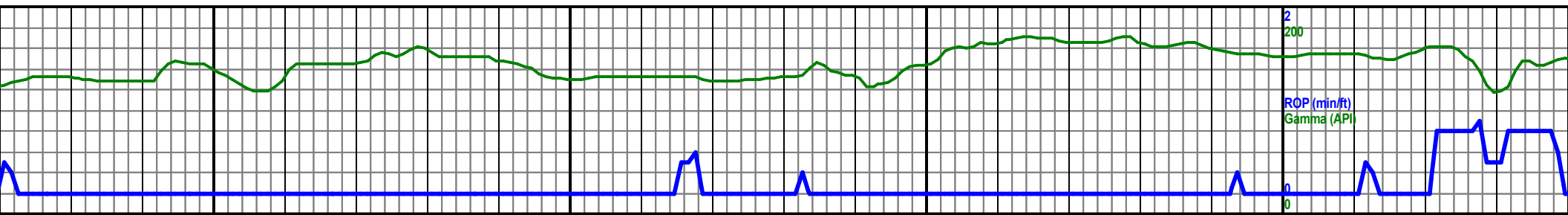
95% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 5% CHLK: m-dk gy, occ lt gy-mott ip, sbblky-blky, sl frm-frm, rthy, v calc, n flor

90% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, 10% CHLK: m-dk gy, occ lt gy-mott ip, sbblky-blky, sl frm-frm, rthy, v calc, n flor



MD 10057 TVD 7718.73
INC 88.71 AZ 271.56
VS 2231.13

MD 10152 TVD 7720.18
INC 89.54 AZ 271.55
VS 2326.09



7000 TVD

7650

8300

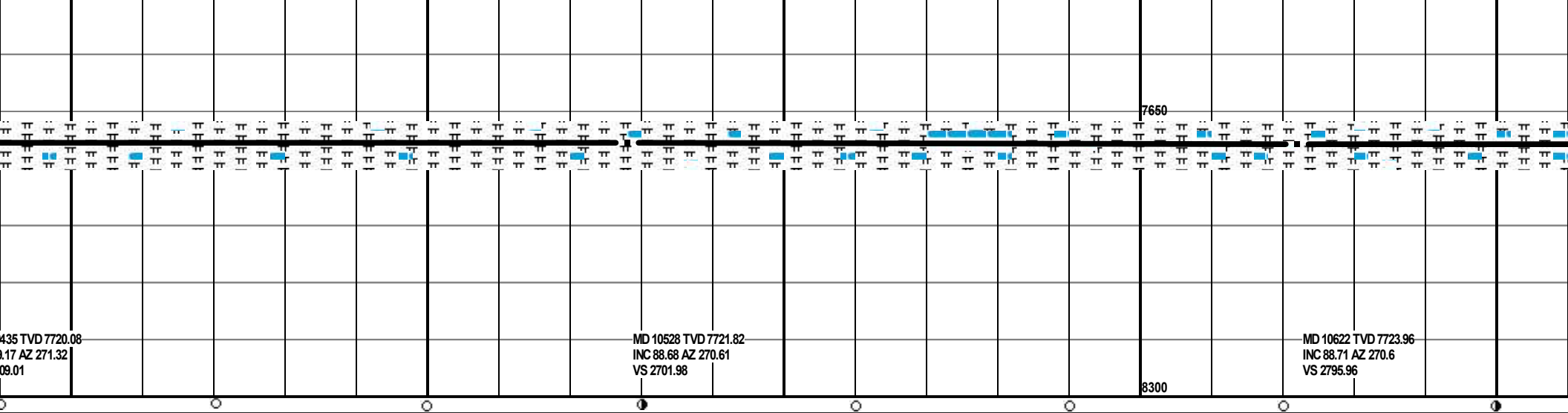
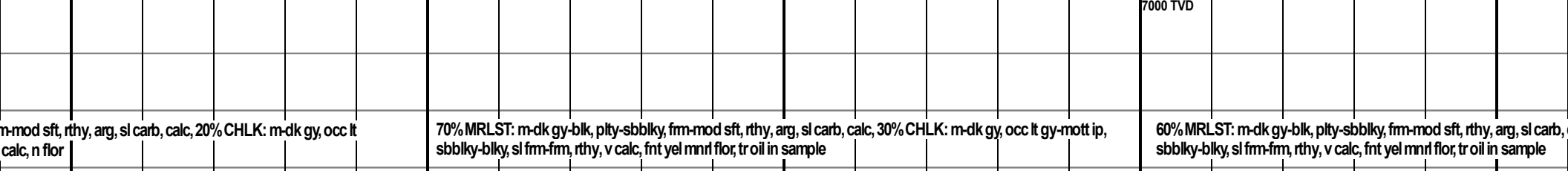
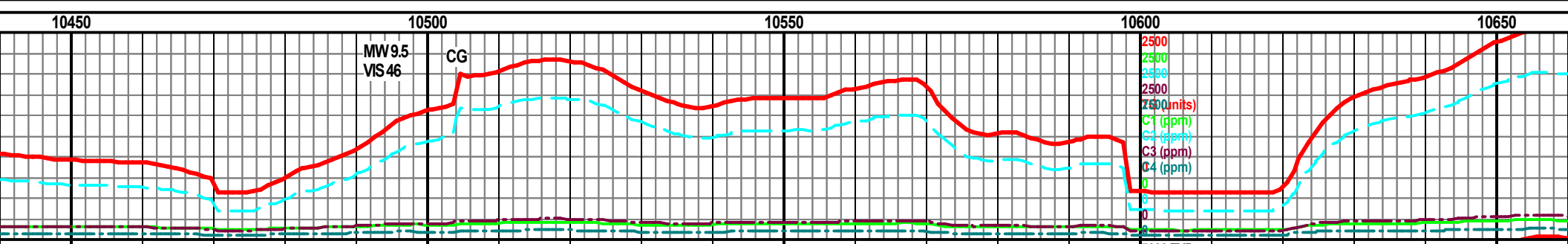
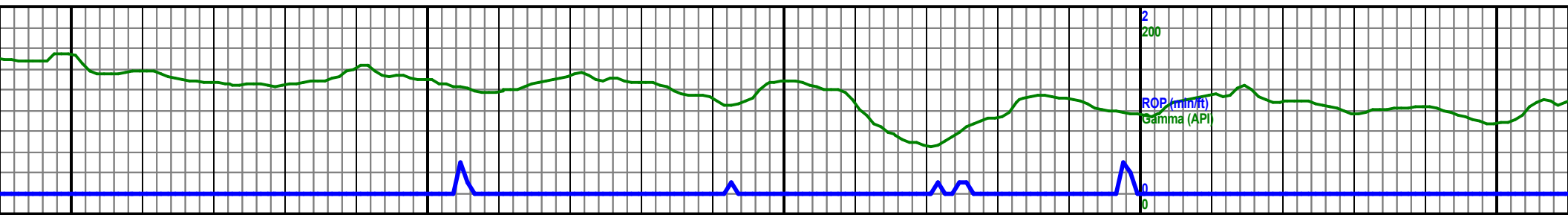
MD 10247 TVD 7720.54
INC 90.03 AZ 271.64
VS 2421.06

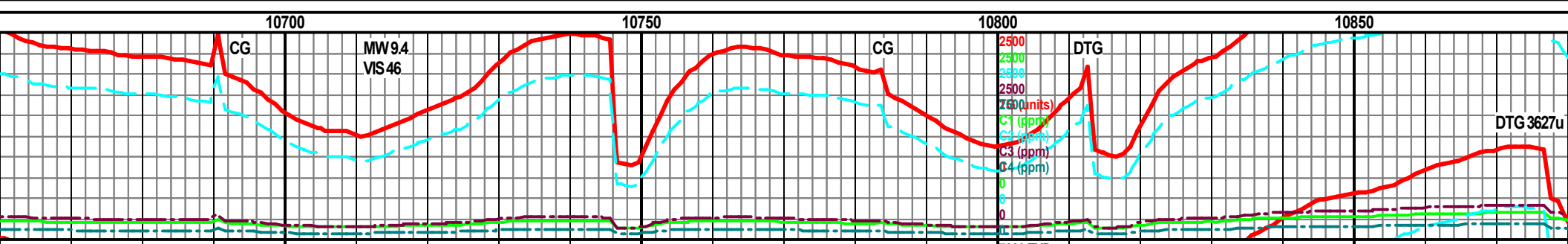
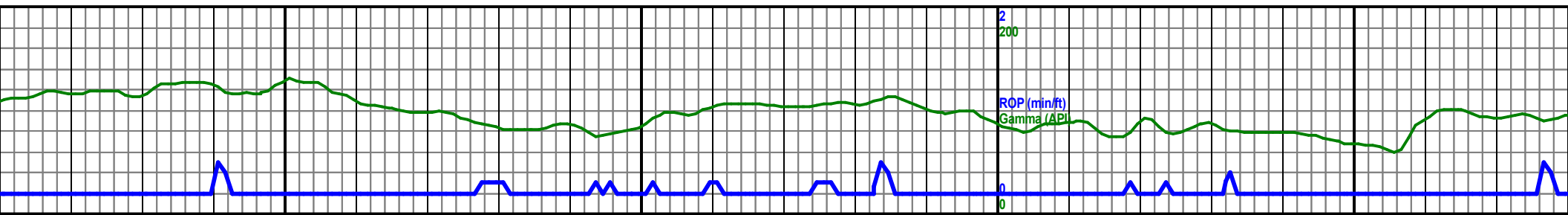
MD 10342 TVD 7719.95
INC 90.68 AZ 271.72
VS 2516.03

MD 10447 TVD 7719.95
INC 89.88 AZ 271.72
VS 2616.03

90% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 10% CHLK: m-dk gy, occ lt
lt gy-mott ip, sbblky-blky, sl frm-fm, rthy, v calc, n flor

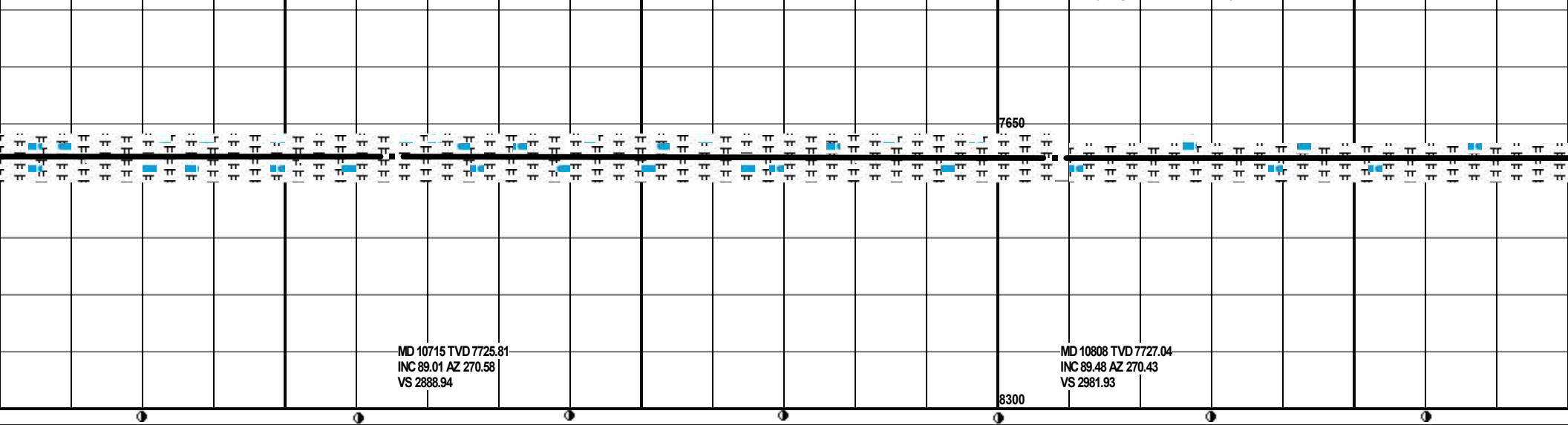
80% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 10% CHLK: m-dk gy, occ lt
lt gy-mott ip, sbblky-blky, sl frm-fm, rthy, v calc, n flor

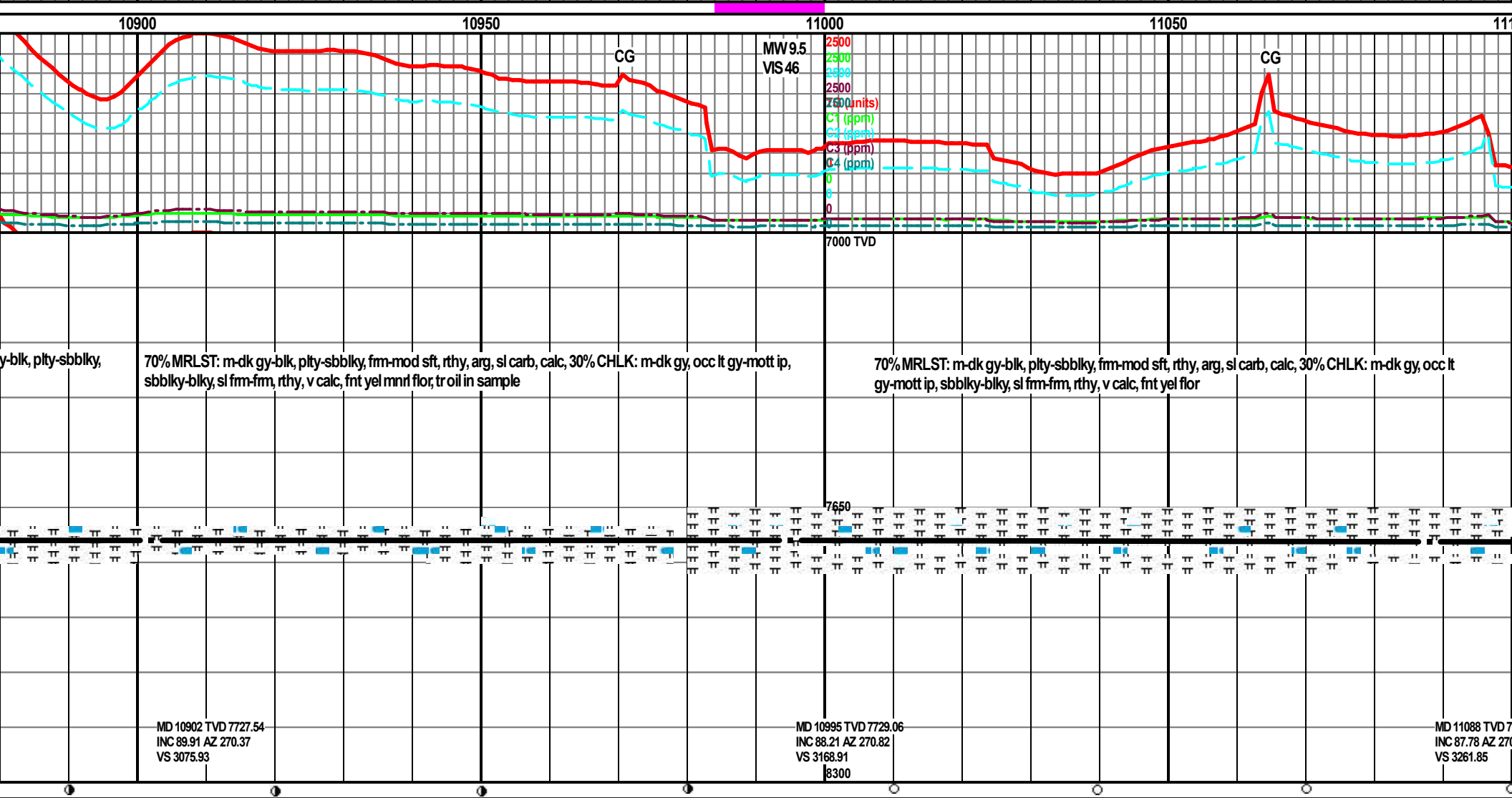


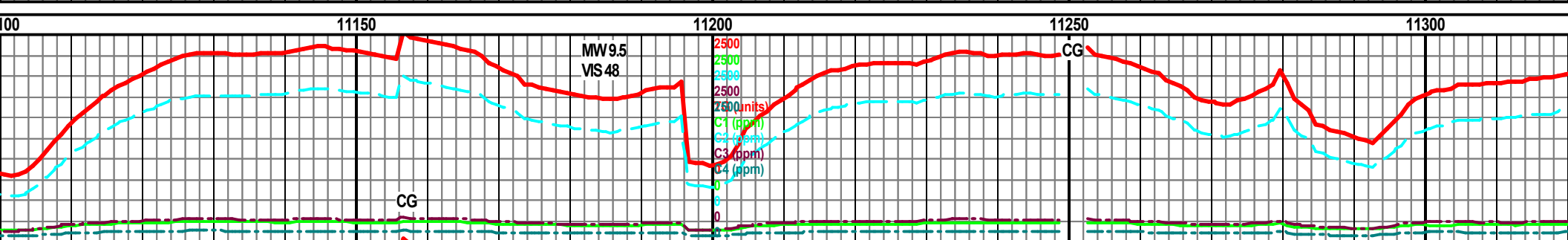
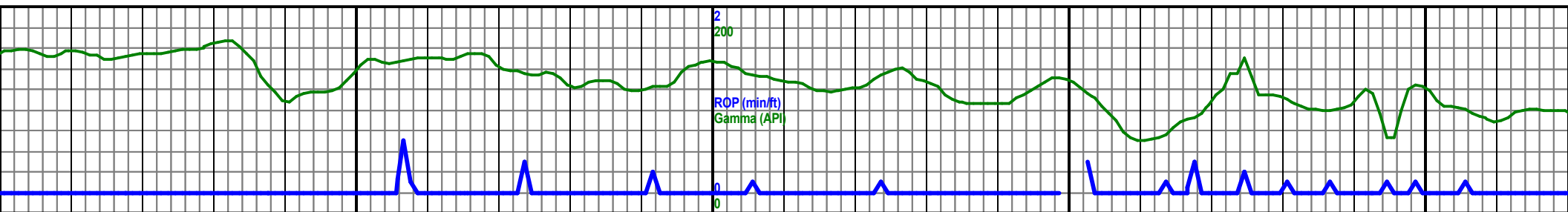


60% CHLK: m-dk gy, occ lt gy-mott ip, sbbiky-blky, sl frm-fm, rthy, v calc, 40% MRLST: m-dk gy-blk, plty-sbbiky, frm-mod sft, rthy, arg, sl carb, calc, fnt yel mnrl flor, tr oil in sample

calc, 40% CHLK: m-dk gy, occ lt gy-mott ip, 75% CHLK: m-dk gy, occ lt gy-mott ip, sbbiky-blky, sl frm-fm, rthy, v calc, 25% MRLST: m-dk gy-blk, plty-sbbiky, frm-mod sft, rthy, arg, sl carb, calc, fnt yel mnrl flor, tr oil in sample



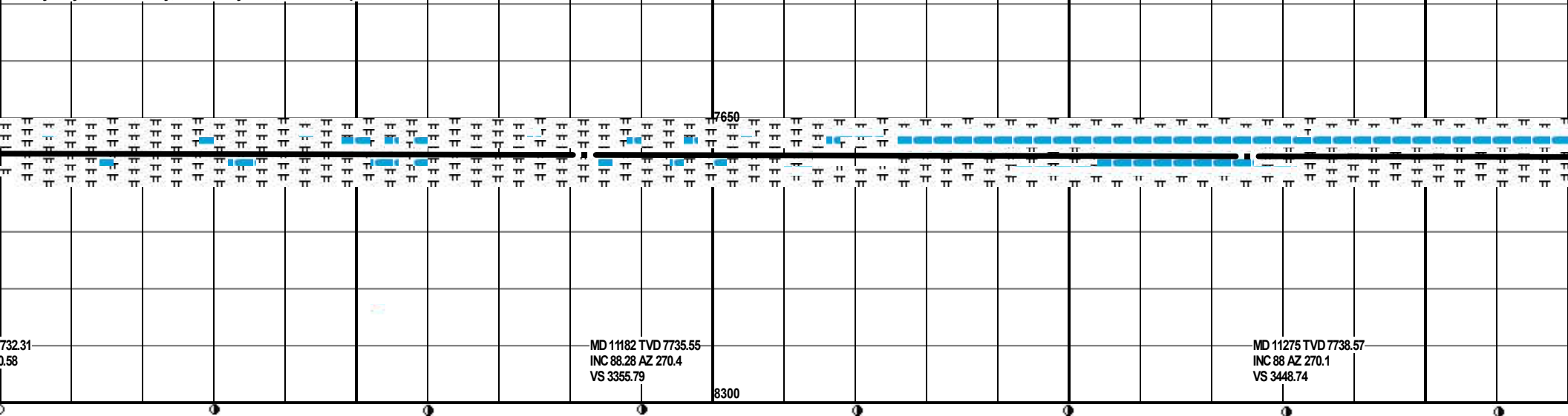


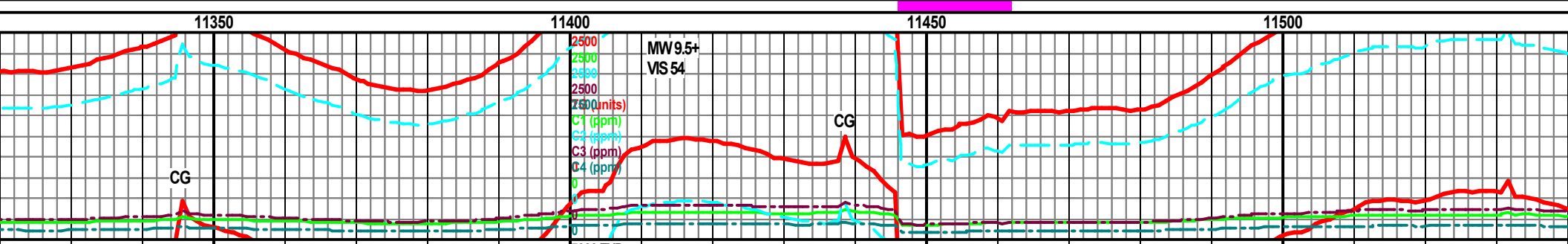
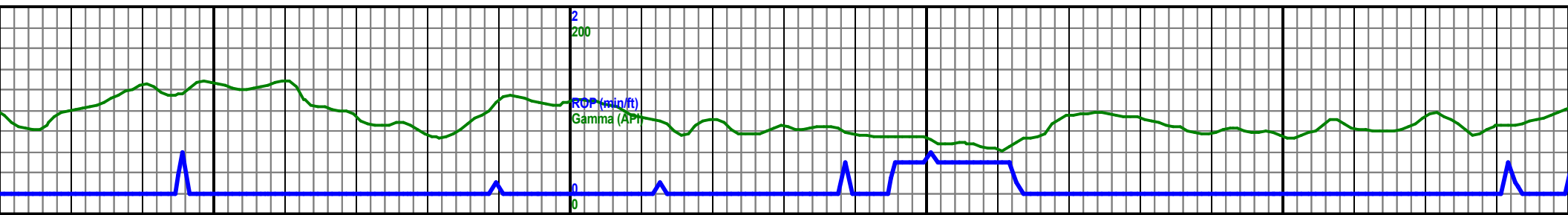


70% MRLST: m-dk gy-blk, pty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, 30% CHLK: m-dk gy, occ lt gy-mott ip, sbblky-blky, sl frm-frm, rthy, v calc, fnt yel flor, troil in sample

50% MRLST: m-dk gy-blk, pty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, 50% CHLK: m-dk gy, occ lt gy-mott ip, sbblky-blky, sl frm-frm, rthy, v calc, fnt yel mnrl flor, troil in sample

50% MRLST: m-dk gy-sbblky-blky, sl frm-frm,



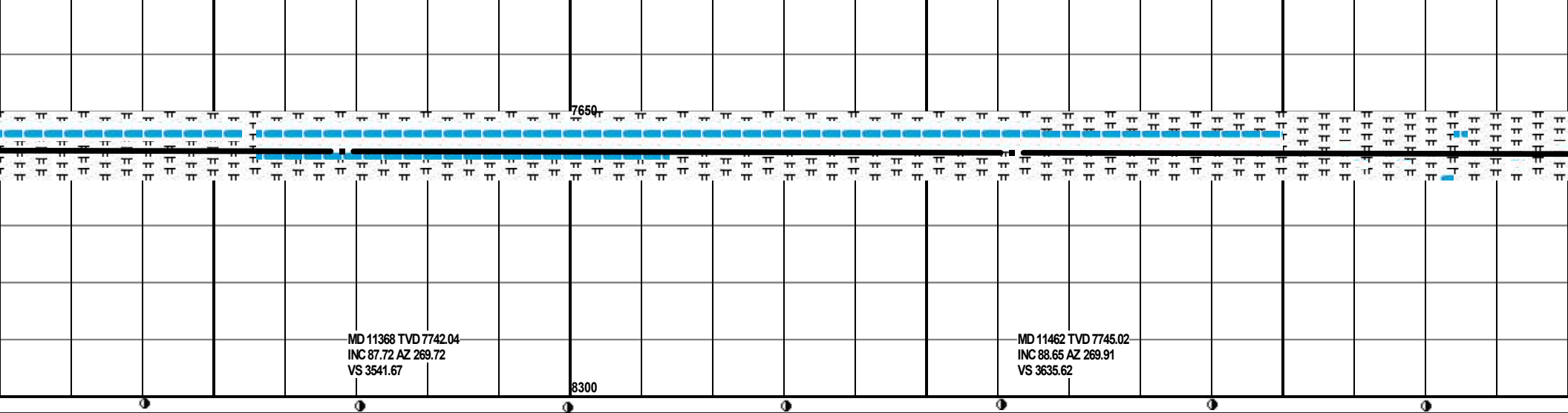


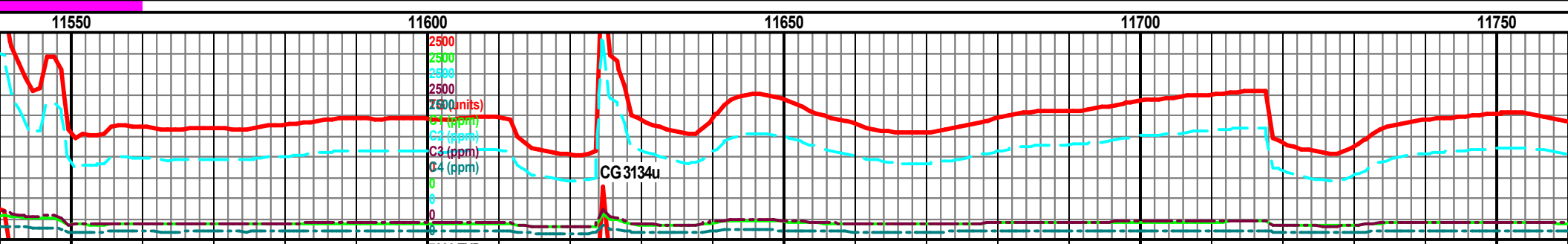
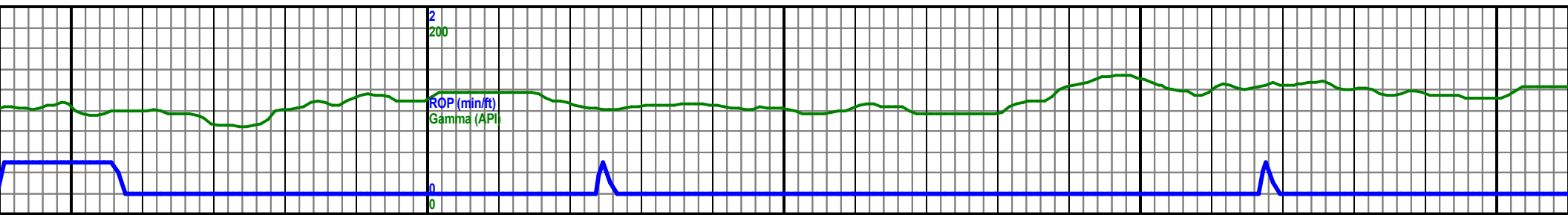
7000 TVD

blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, 50% CHLK: m-dk gy, occ lt gy-mott ip, rthy, v calc, fnt yel mnrl flr, tr oil in sample

50% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, 50% CHLK: m-dk gy, occ lt gy-mott ip, sbblky-blky, sl frm-frm, rthy, v calc, fnt yel mnrl flr, tr oil in sample

70% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, 50% CHLK: m-dk gy, occ lt gy-mott ip, sbblky-blky, sl frm-frm, rthy, v calc, fnt yel mnrl flr, tr oil in sample



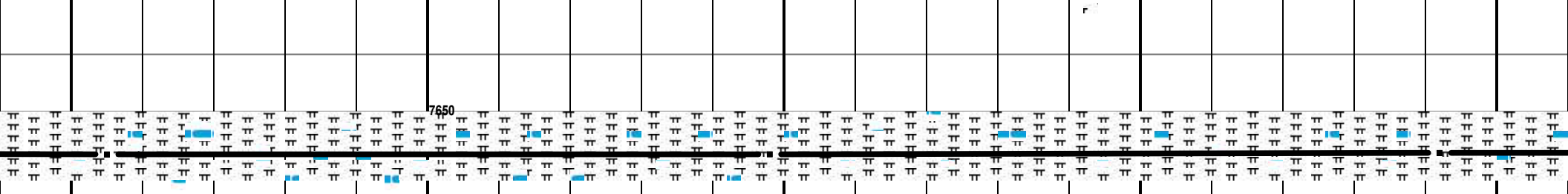


7000 TVD

nd sft, rthy, arg, sl carb, calc, 30% CHLK: m-dk gy, occ lt gy-mott ip, flr, tr oil in sample

70% MRLST: m-dk gy-blk, plty-sbbiky, frm-mod sft, rthy, arg, sl carb, calc, 30% CHLK: m-dk gy, occ lt gy-mott ip, sbbiky-blky, sl frm-frm, rthy, v calc, fnt yel mnrl flr, tr oil in sample

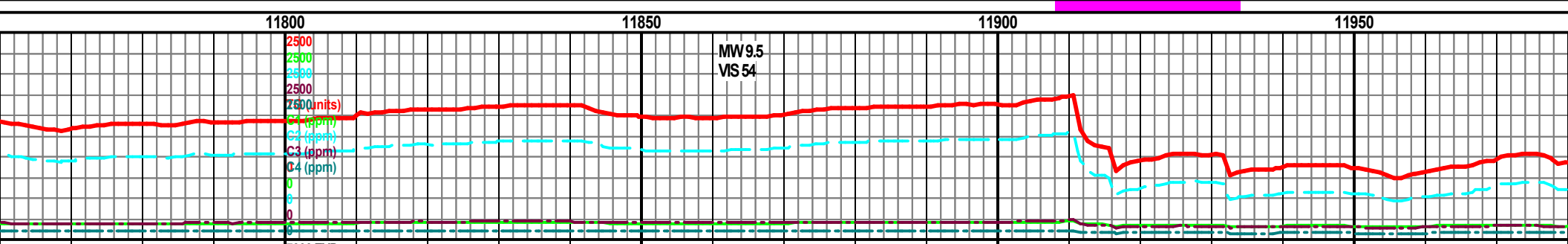
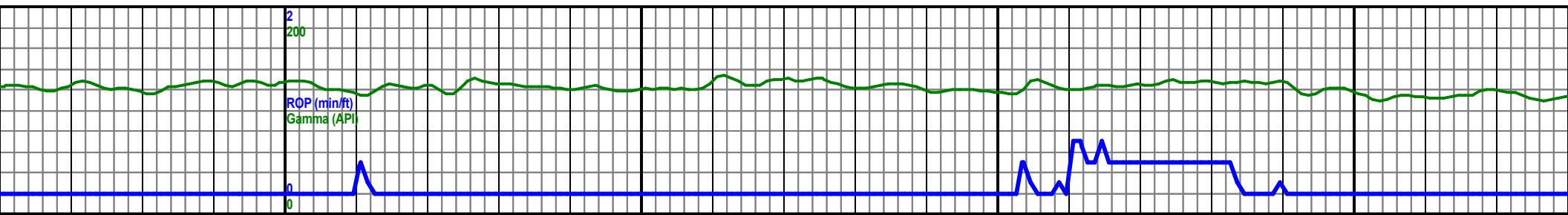
60% MRLST: m-dk gy-blk, plty-sbbiky, frm-mod sft, rthy, arg, sl carb, calc, 30% CHLK: m-dk gy, occ lt gy-mott ip, sbbiky-blky, sl frm-frm, rthy, v calc, fnt yel mnrl flr



MD 11555 TVD 7746.31
INC 89.75 AZ 271.07
VS 3728.61

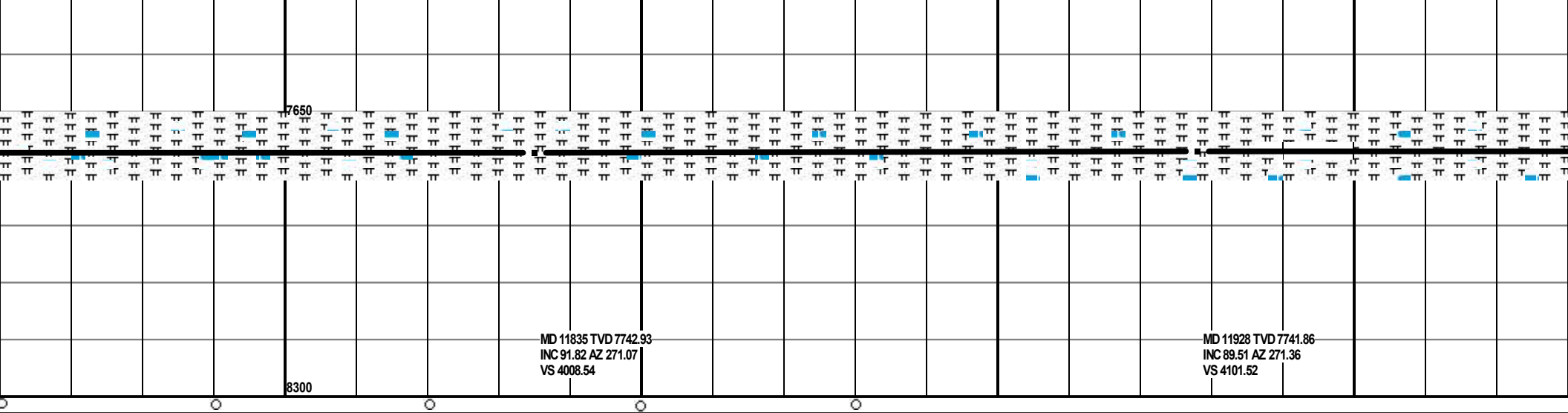
MD 11648 TVD 7746.19
INC 90.4 AZ 271.3
VS 3821.6

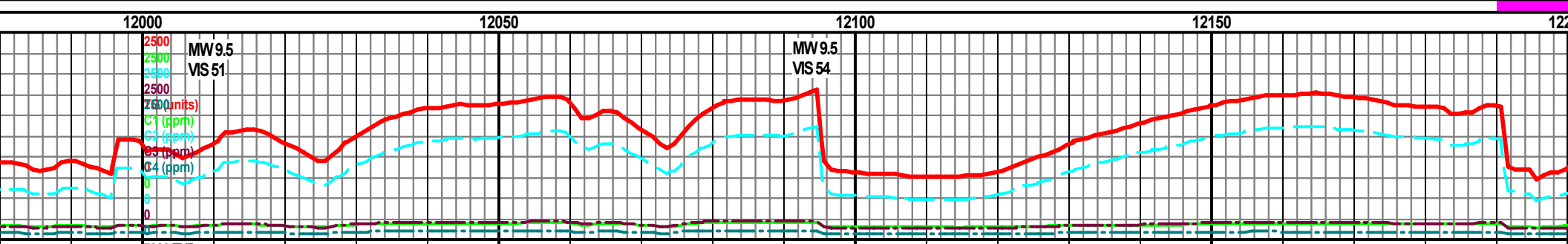
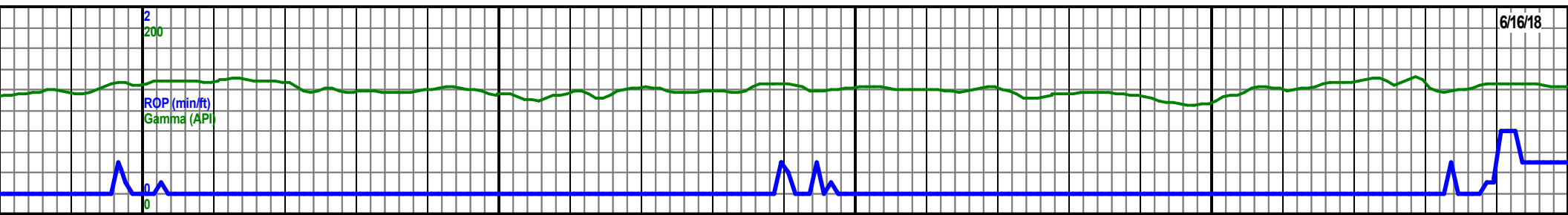
MD 11742 TVD 7745.13
INC 90.89 AZ 270.96
VS 3915.58



7000 TVD

alc, 40% CHLK: m-dk gy, occ lt gy-mott ip, 70% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 30% CHLK: m-dk gy, occ lt gy-mott ip, sbblky-blky, sl frm-frm, rthy, v calc, n flor 70% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, 30% CHLK: m-dk gy, occ lt gy-mott ip, sbblky-blky, sl frm-frm, rthy, v calc, n flor

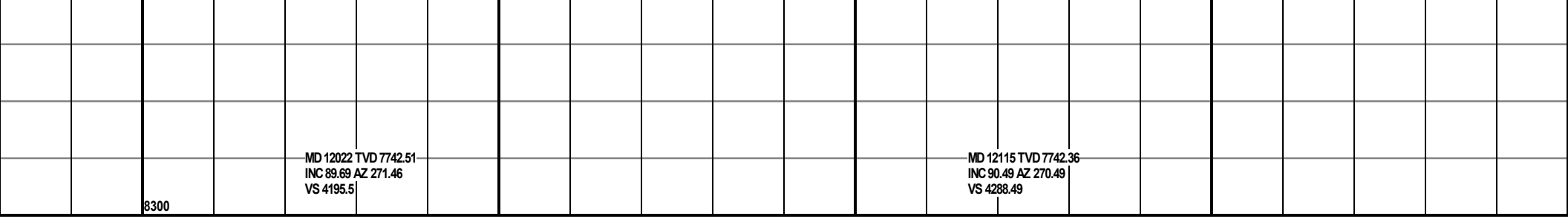
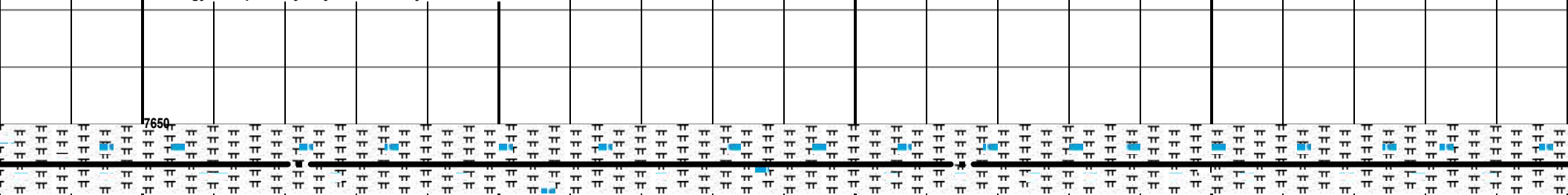




m-dk gy, occ lt

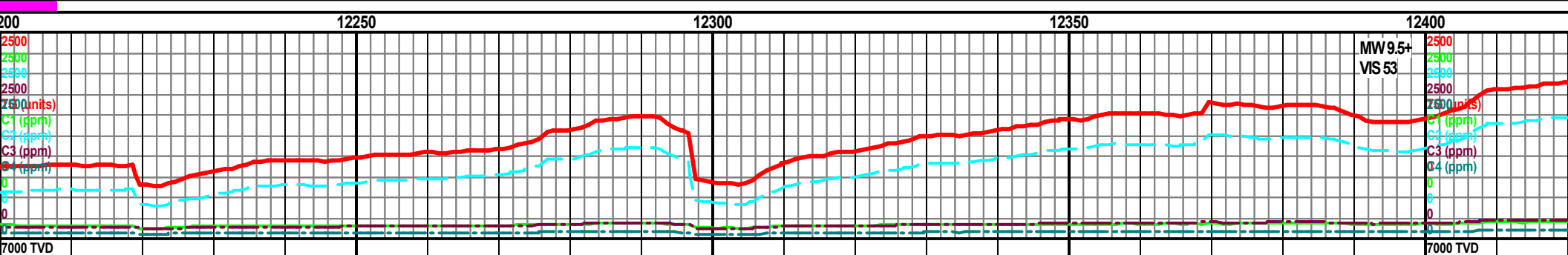
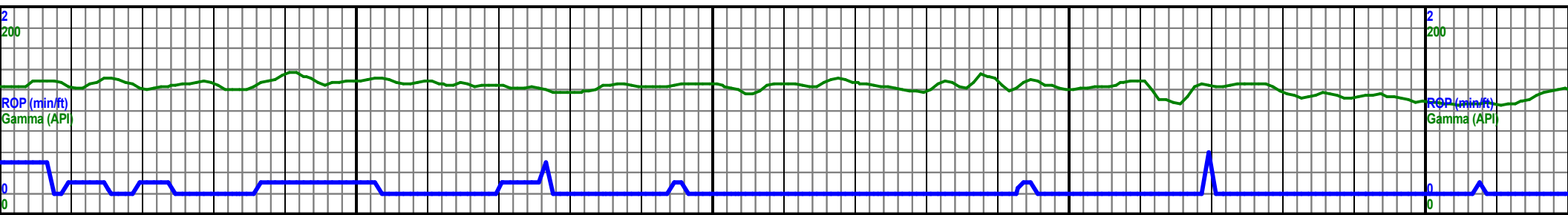
70% MRLST: m-dk gy-blk, plty-sbblky, fm-mod sft, rthy, arg, sl carb, calc, 30% CHLK: m-dk gy, occ lt
gy-mott ip, sbblky-blky, sl fm-fm, rthy, v calc, n flor

70% MRLST: m-dk gy-blk, plty-sbblky, fm-mod sft, rthy, arg, sl carb, calc, 30% CHLK: m-dk gy, occ lt gy-mott
ip, sbblky-blky, sl fm-fm, rthy, v calc, n flor



MD 12022 TVD 7742.51
INC 89.69 AZ 271.46
VS 4195.5

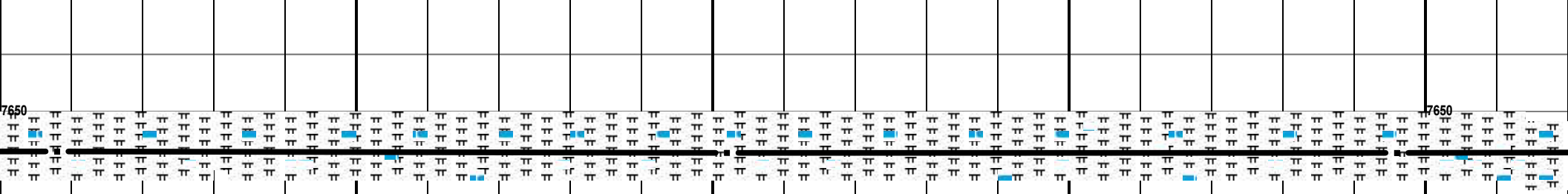
MD 12115 TVD 7742.36
INC 90.49 AZ 270.49
VS 4288.49



70% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, 30% CHLK: m-dk gy, occ lt
gy-mott ip, sbblky-blky, sl frm-fm, rthy, v calc, n flor

70% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, 30% CHLK: m-dk gy, occ lt
gy-mott ip, sbblky-blky, sl frm-fm, rthy, v calc, n flor

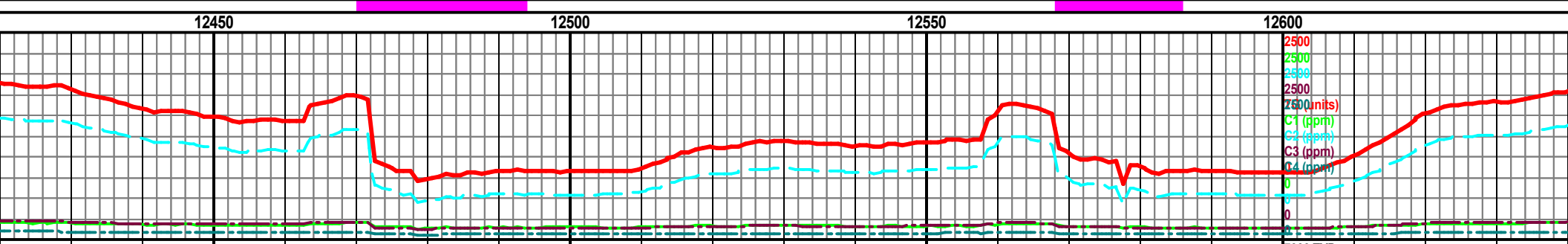
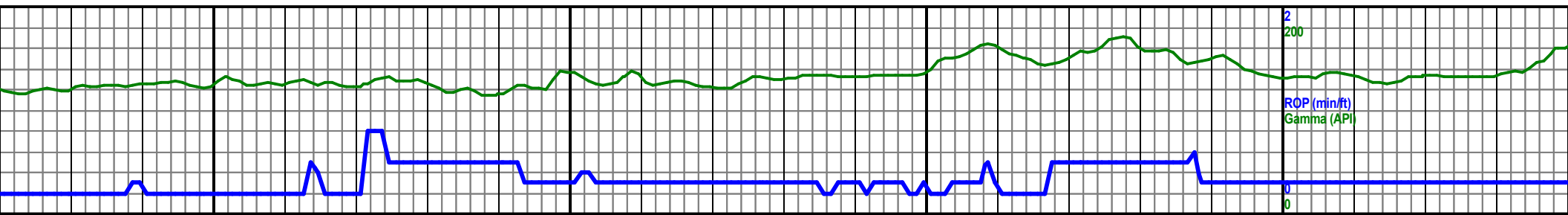
60% MRLST: m
gy-mott ip, sbbl



MD 12208 TVD 7742.44
INC 89.41 AZ 269.28
VS 4381.48

MD 12302 TVD 7743.1
INC 89.78 AZ 268.73
VS 4475.46

MD 12396 TVD 7742.82
INC 90.55 AZ 267.91
VS 4569.4

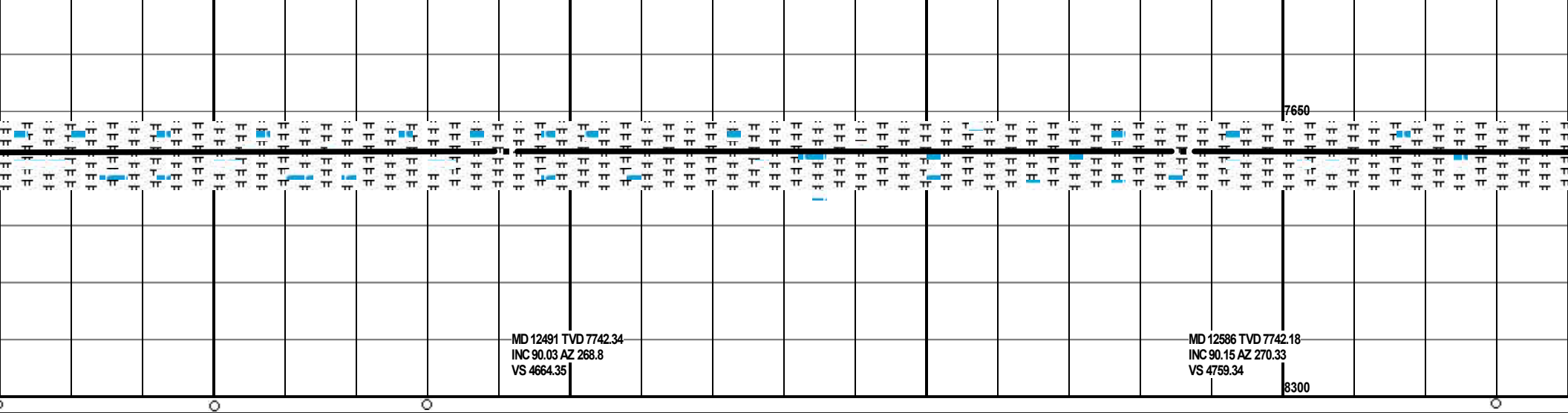


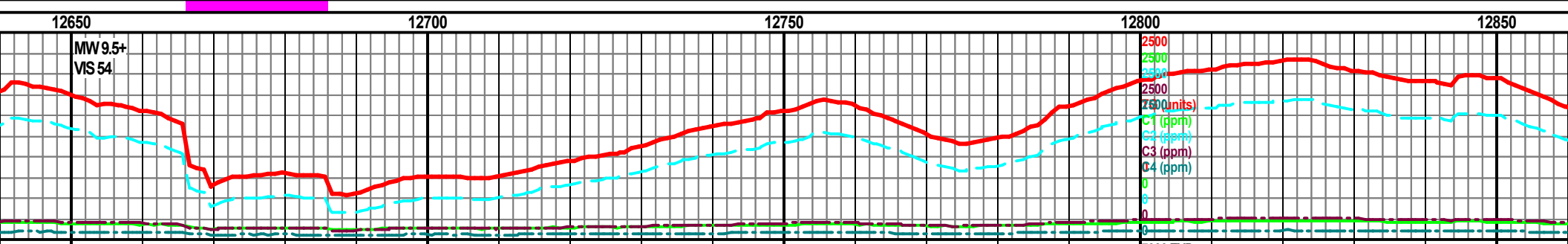
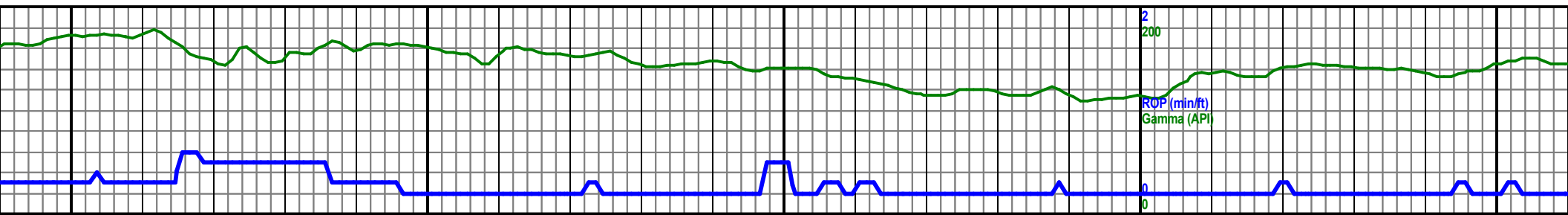
7000 TVD

dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, 40% CHLK: m-dk gy, occ lt
ky-blky, sl frm-frm, rthy, v calc, fnt mnt flr

75% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, 25% CHLK: m-dk gy, occ lt
gy-mott ip, sbblky-blky, sl frm-frm, rthy, v calc, n flr

80% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, 15% CHLK: m-dk gy, occ lt
gy-mott ip, sbblky-blky, sl frm-frm, rthy, v calc, n flr

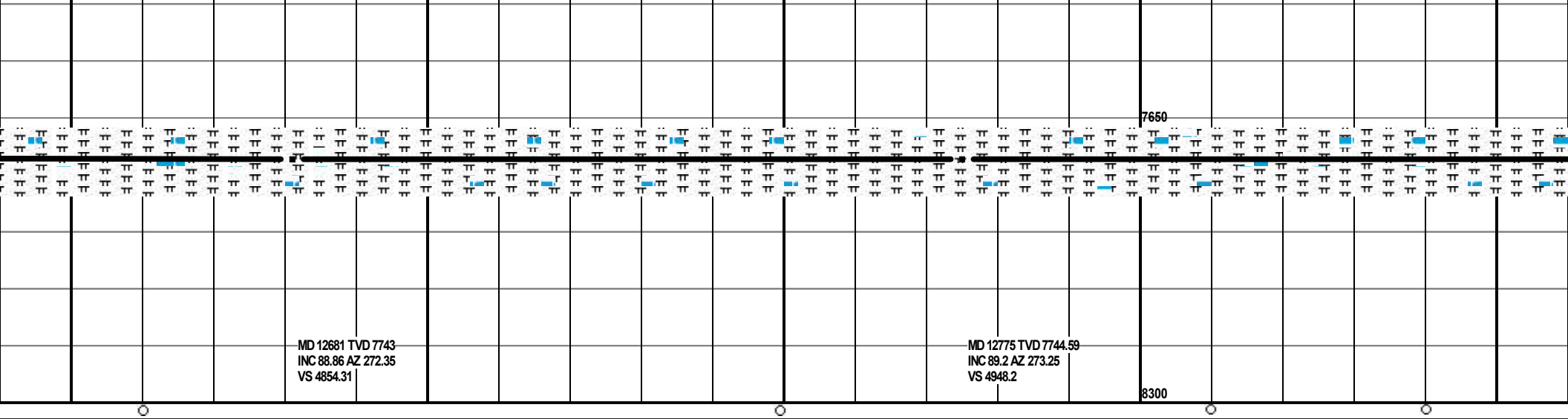


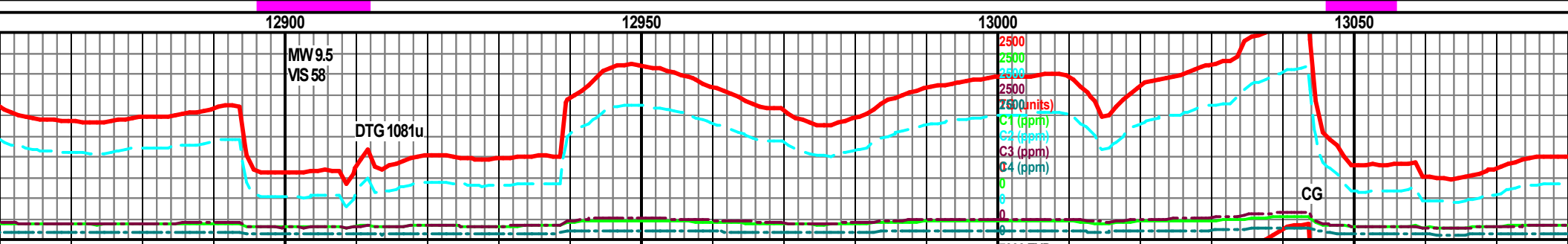
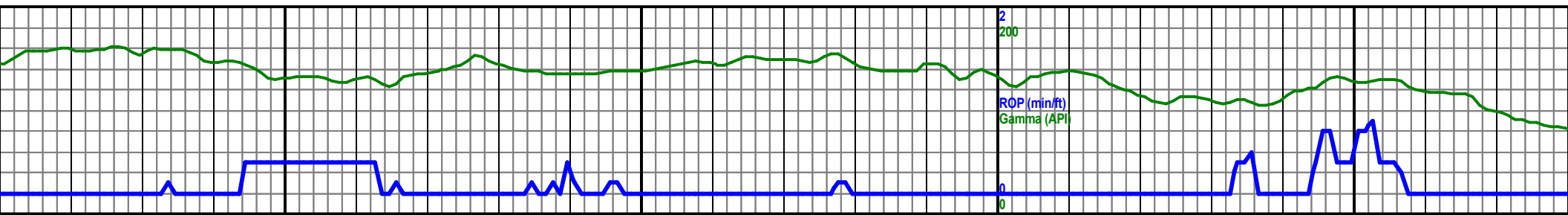


m-mod sft, rthy, arg, sl carb, calc, 20% CHLK: m-dk gy, occ lt calc, n flor

80% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, 20% CHLK: m-dk gy, occ lt gy-mott ip, sbblky-blky, sl fm-fm, rthy, v calc, n flor

70% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, 20% CHLK: m-dk gy, occ lt ip, sbblky-blky, sl fm-fm, rthy, v calc, n flor

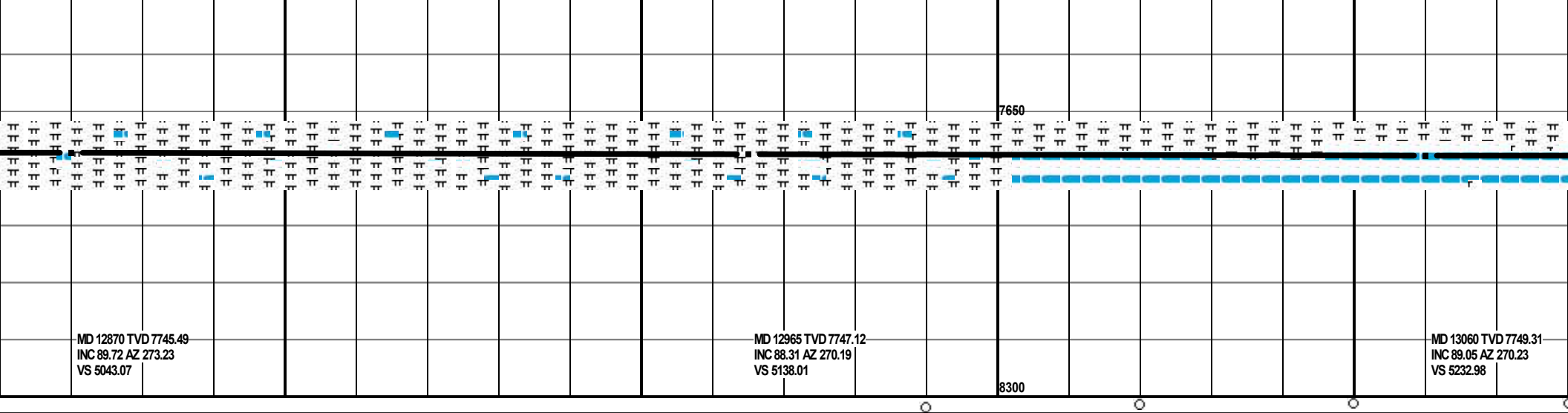


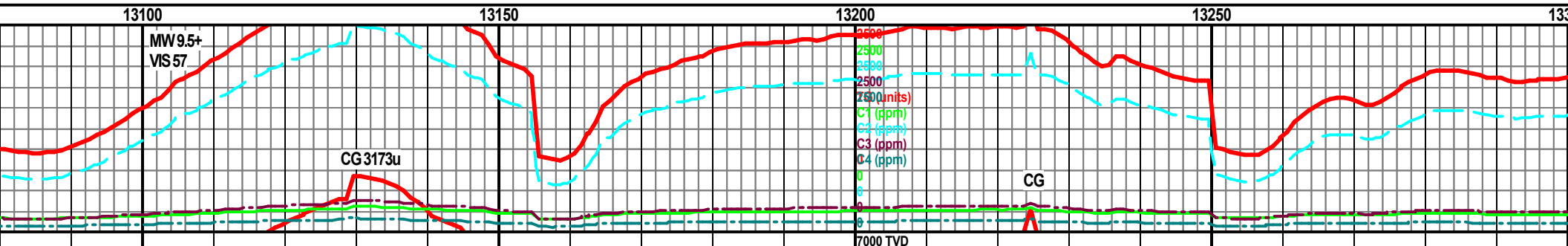
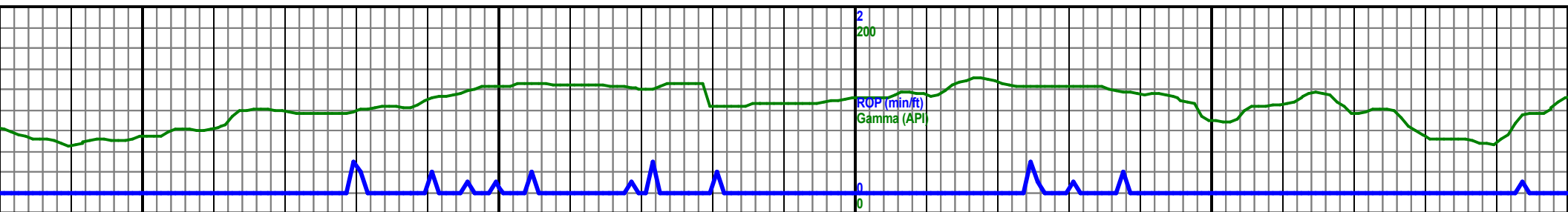


60% CHLK: m-dk gy, occ lt gy-mott ip, sbblky-blky, sl fm-fm, rthy, v calc, 40% MRLST: m-dk
fm-mod sft, rthy, arg, sl carb, calc, frt yel mnrl flr

b, calc, 30% CHLK: m-dk gy, occ lt gy-mott

70% MRLST: m-dk gy-blk, plty-sbblky, fm-mod sft, rthy, arg, sl carb, calc, 30% CHLK: m-dk gy, occ lt
gy-mott ip, sbblky-blky, sl fm-fm, rthy, v calc, n flr





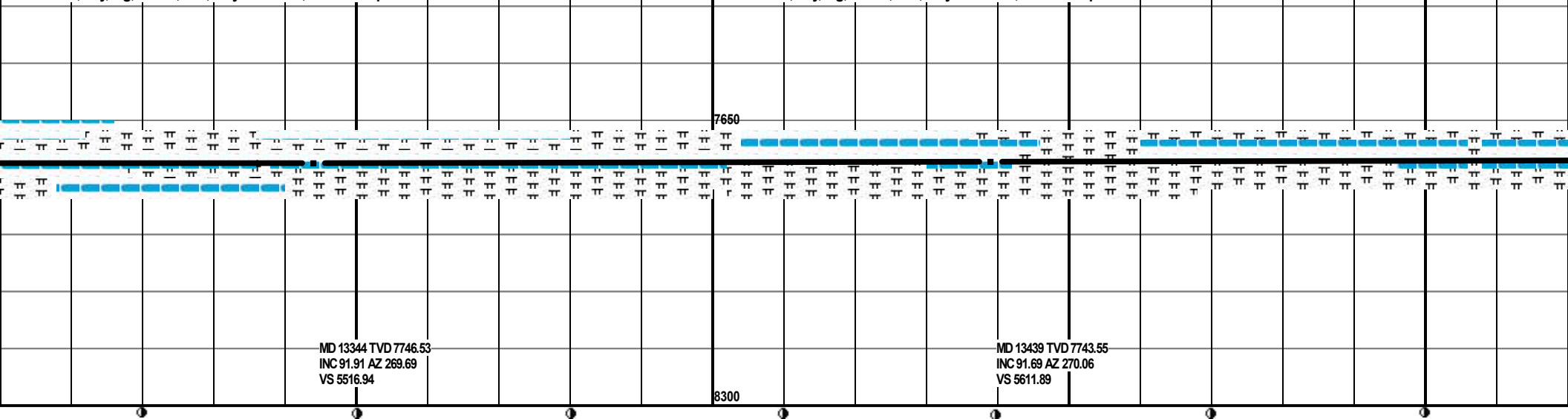
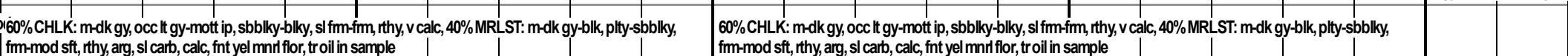
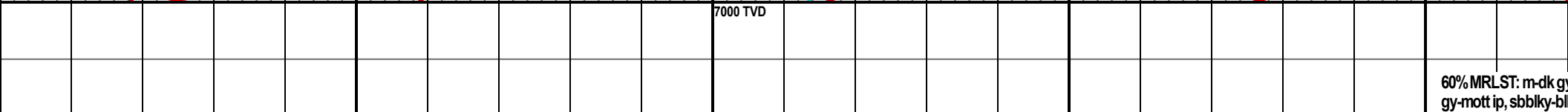
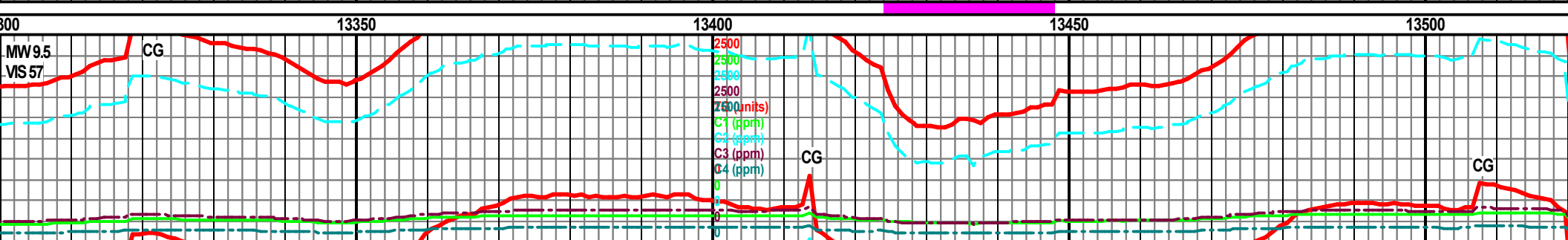
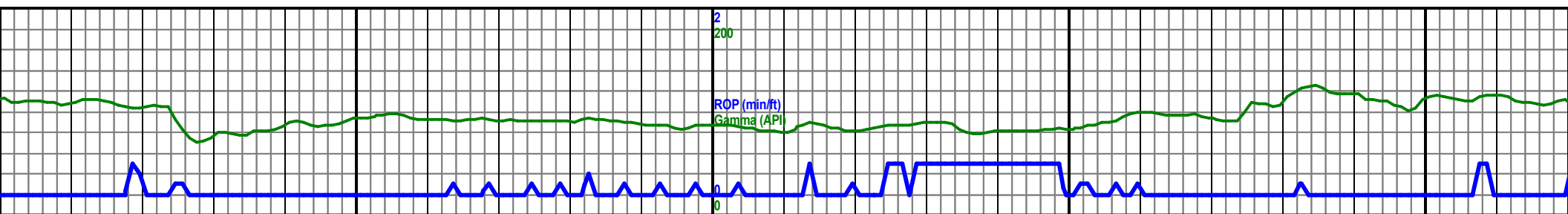
gy-blk, plty-sbbiky,

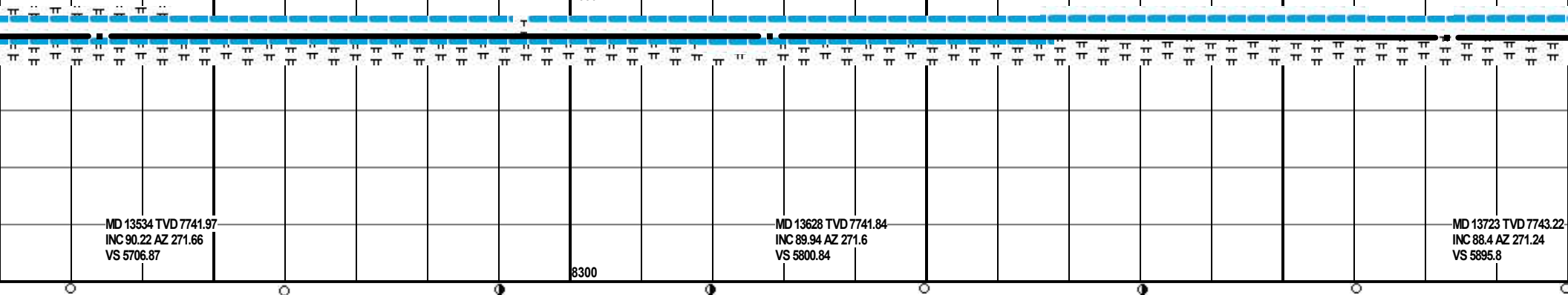
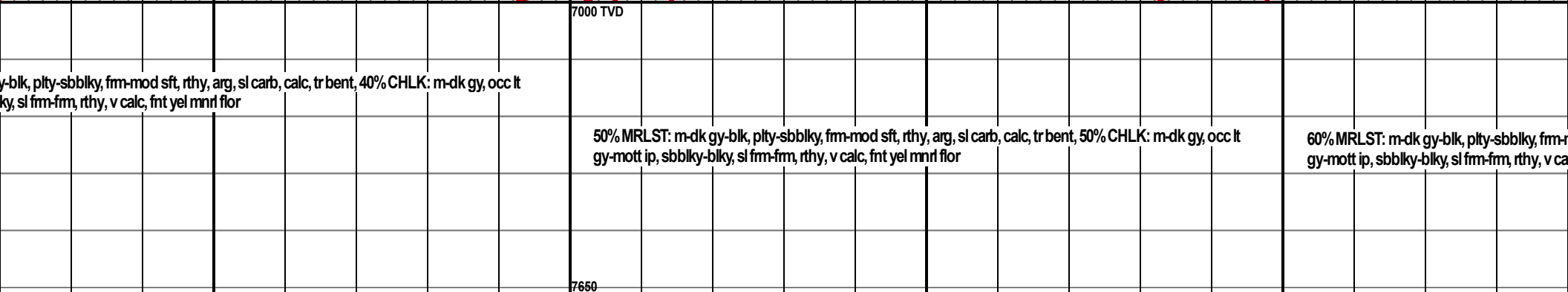
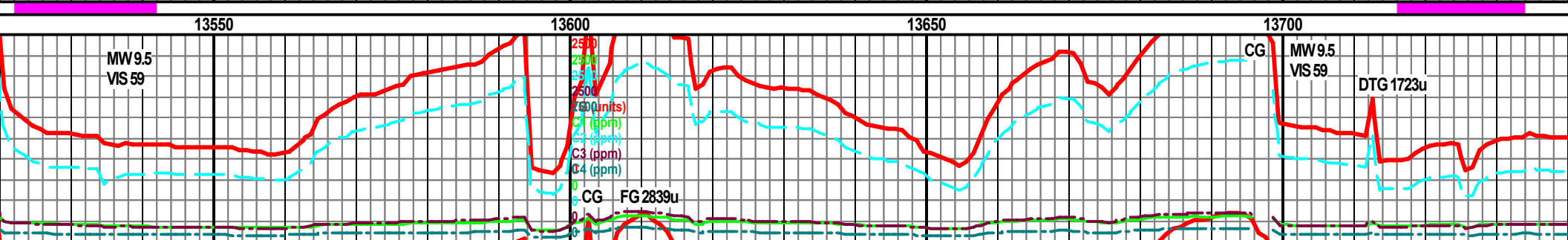
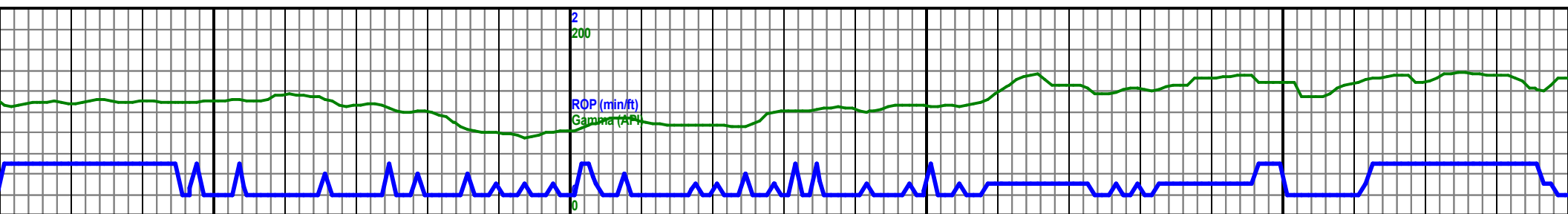
70% CHLK: m-dk gy, occ lt gy-mott ip, sbbiky-blky, sl frm-frm, rthy, v calc, 30% MRLST: m-dk gy-blk, plty-sbbiky, frm-mo
rthy, arg, sl carb, calc, fnt yel mnrl flr, tr oil in sample

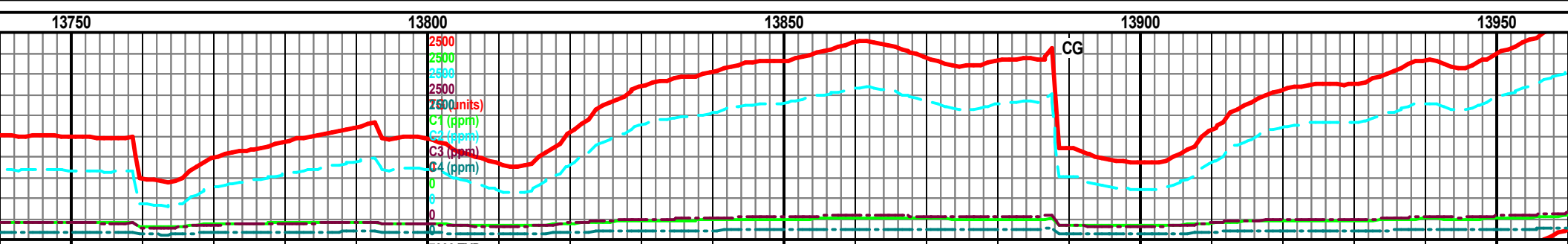
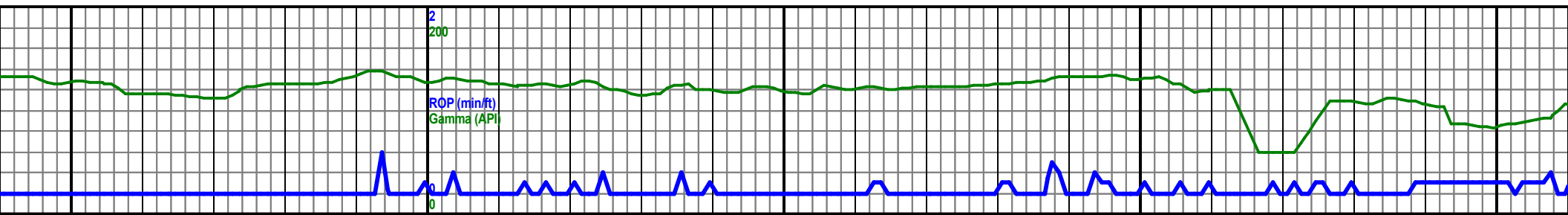
MD 13154 TVD 7750
INC 90.12 AZ 270.21
VS 5326.98

MD 13249 TVD 7749.01
INC 91.08 AZ 269.94
VS 5421.97

8300



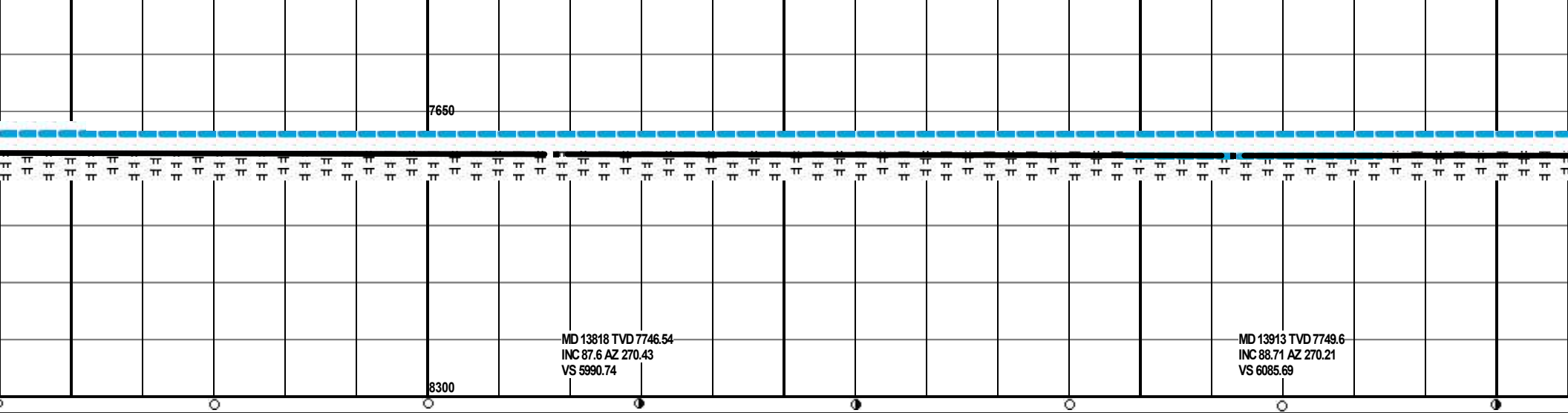


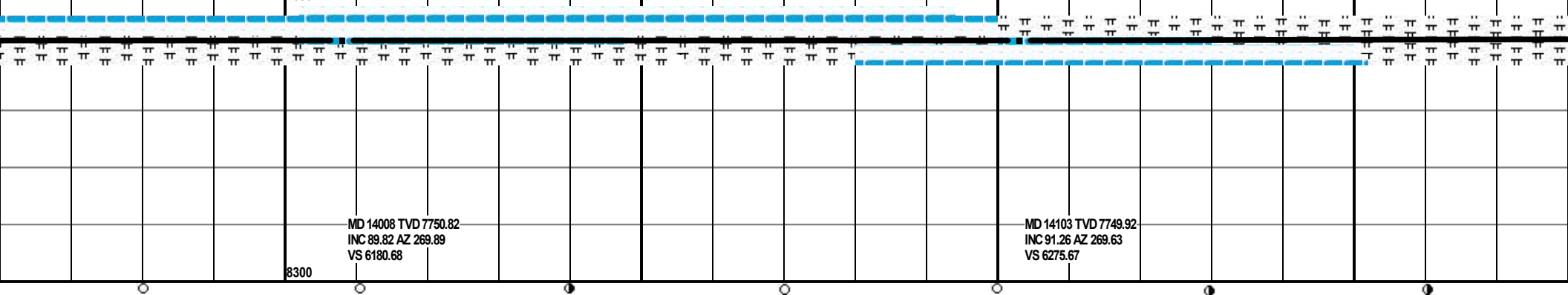
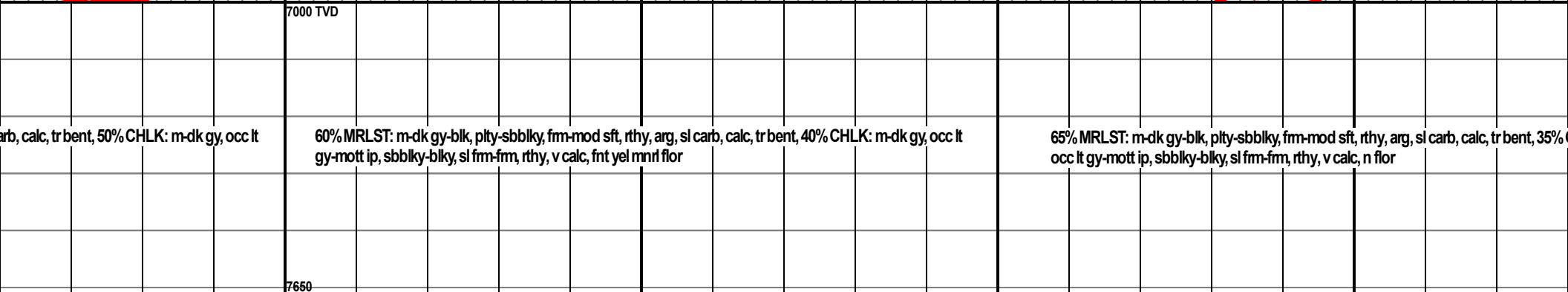
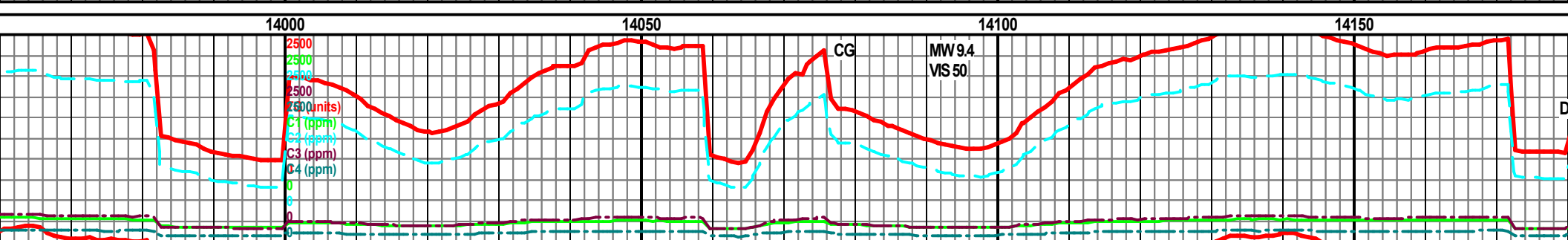
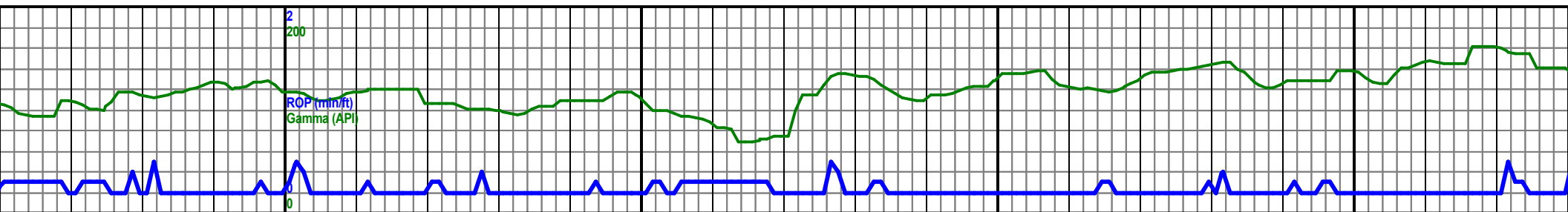


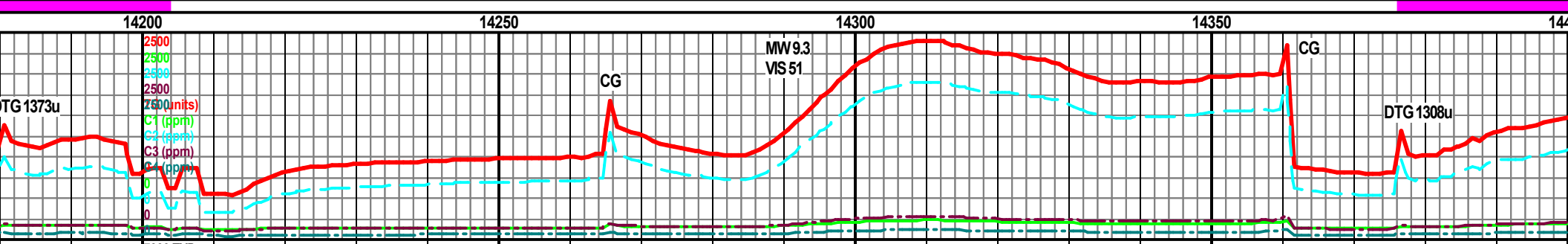
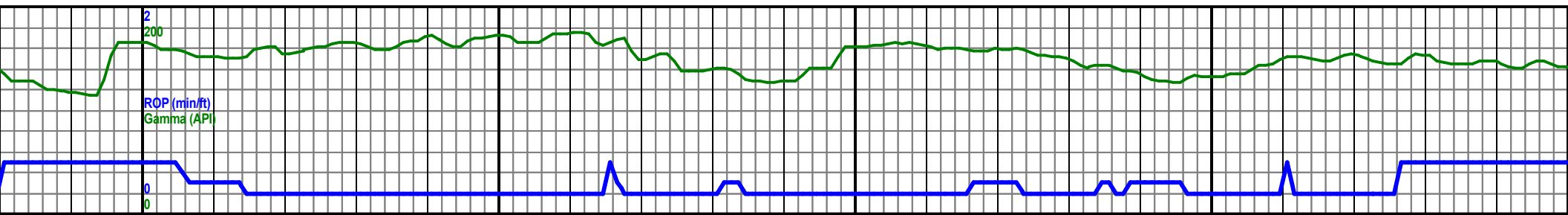
mod sft, rthy, arg, sl carb, calc, tr bent, 40% CHLK: m-dk gy, occ lt
lc, fnt yel mnrl flr

50% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 50% CHLK: m-dk gy, occ lt
gy-mott ip, sbblky-blky, sl frm-frm, rthy, v calc, fnt yel mnrl flr

50% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 50% CHLK: m-dk gy, occ lt
gy-mott ip, sbblky-blky, sl frm-frm, rthy, v calc, fnt yel mnrl flr





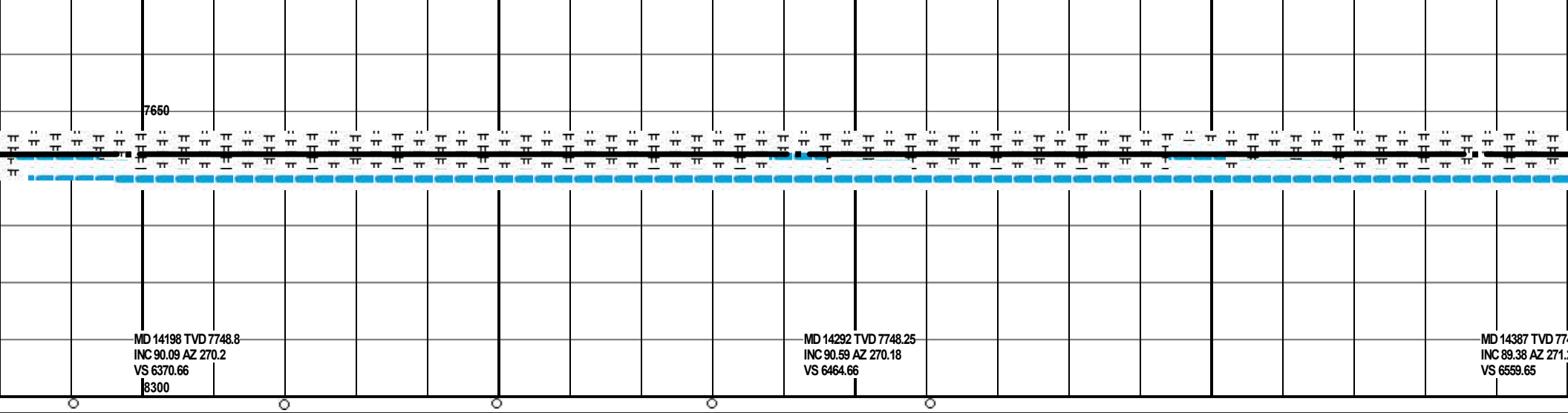


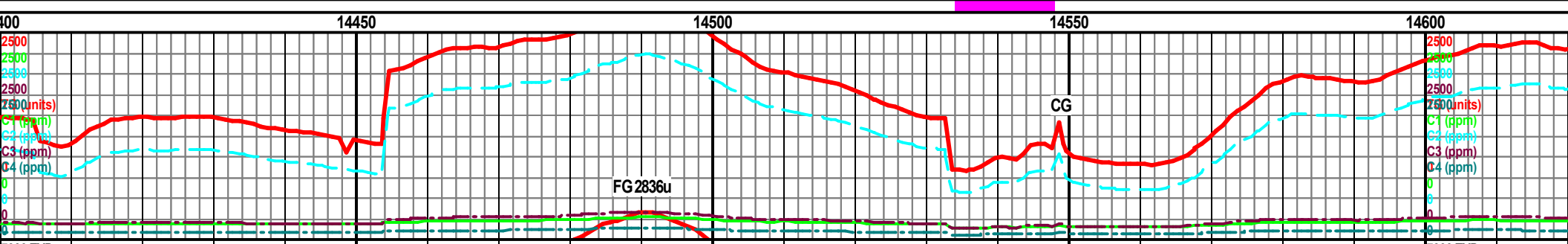
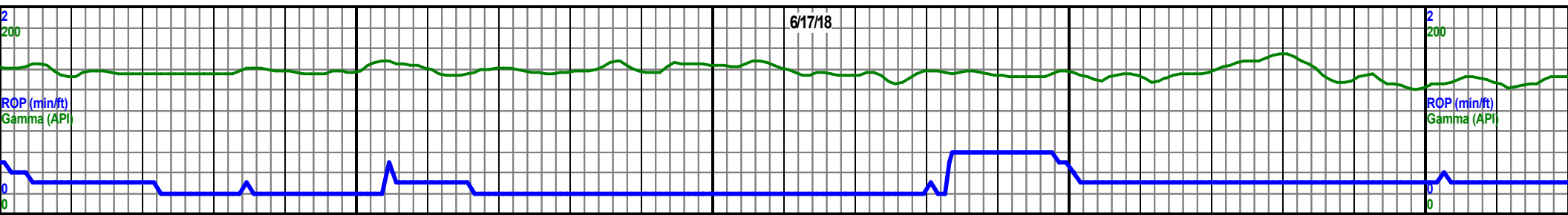
7000 TVD

CHLK: m-dk gy,
70% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 30% CHLK: m-dk gy, occ
lt gy-mott ip, sbblky-blky, sl frm-fm, rthy, v calc, n flor

7650

70% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 30% CHLK: m-dk gy, occ
lt gy-mott ip, sbblky-blky, sl frm-fm, rthy, v calc, n flor

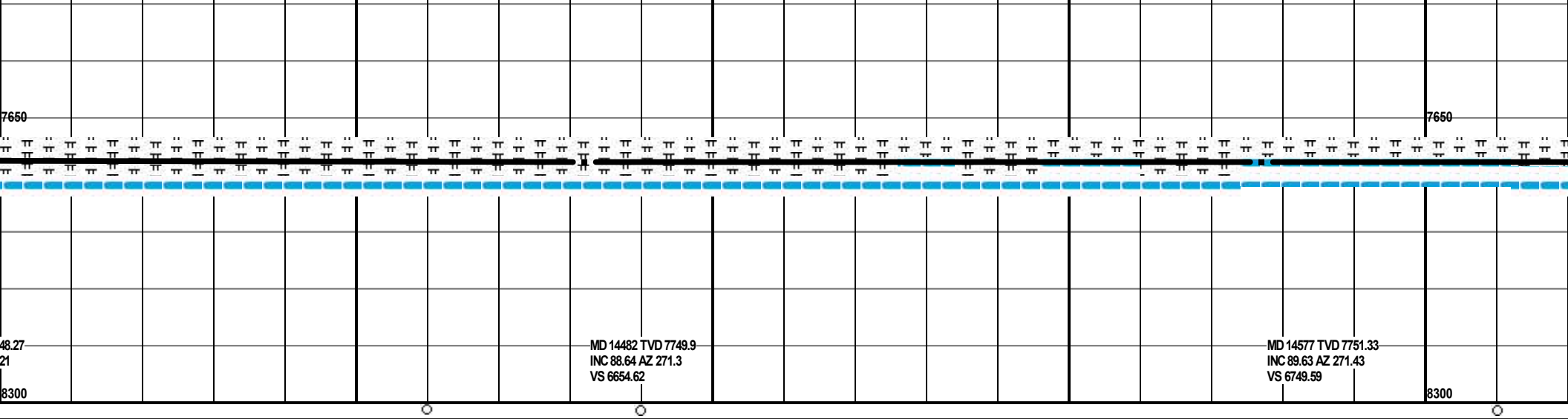


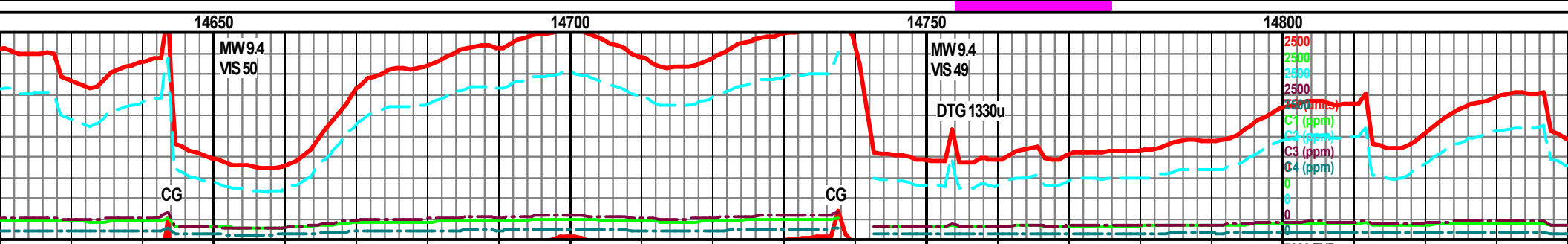
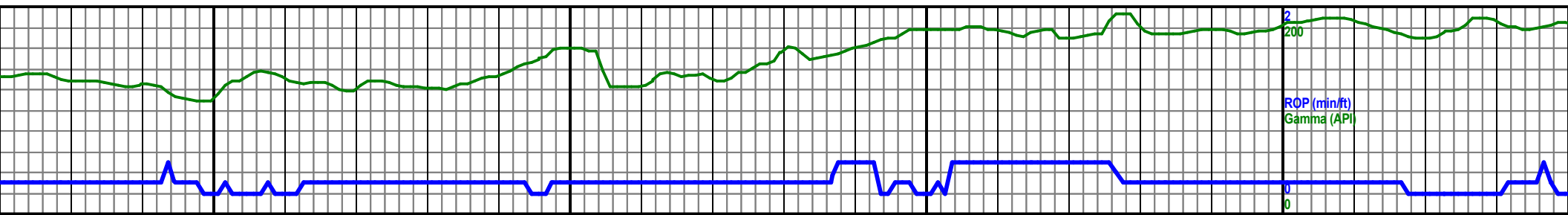


70% MRLST: m-dk gy-blk, plty-sbbiky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 30% CHLK: m-dk gy, occ lt gy-mott ip, sbbiky-blky, sl frm-fm, rthy, v calc, v fnt dul yel mml flor

70% MRLST: m-dk gy-blk, plty-sbbiky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 30% CHLK: m-dk gy, occ lt gy-mott ip, sbbiky-blky, sl frm-fm, rthy, v calc, n flor

70% MRLST: m-dk gy-blk, plty-sbbiky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 30% CHLK: m-dk gy, occ lt gy-mott ip, sbbiky-blky, sl frm-fm, rthy, v calc, n flor

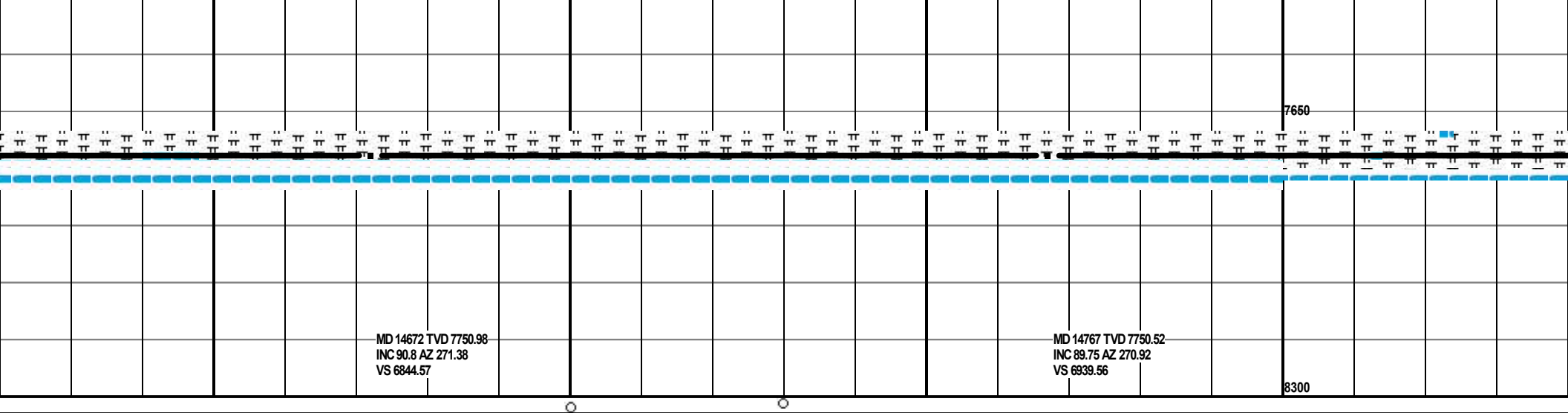


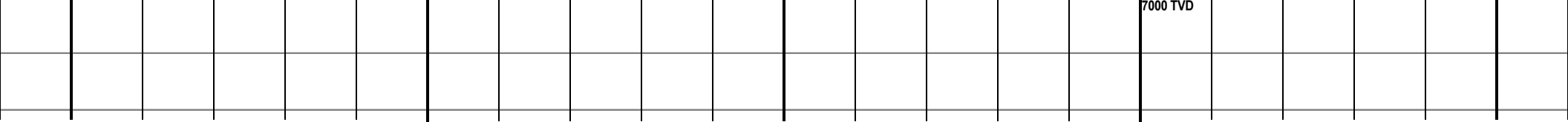
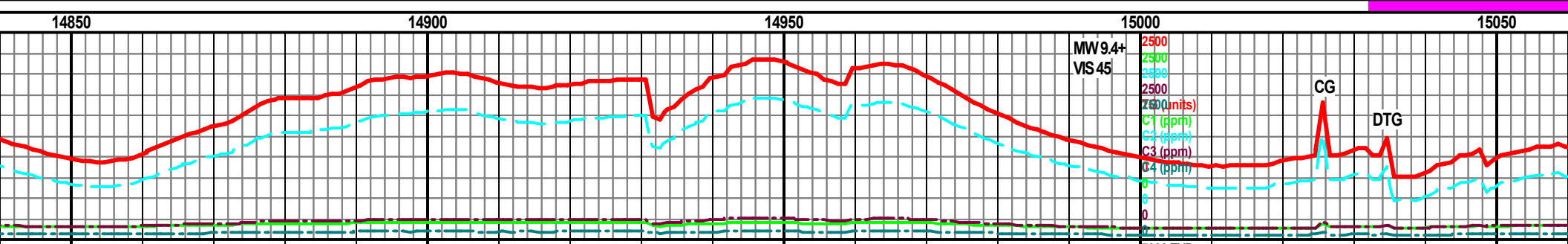
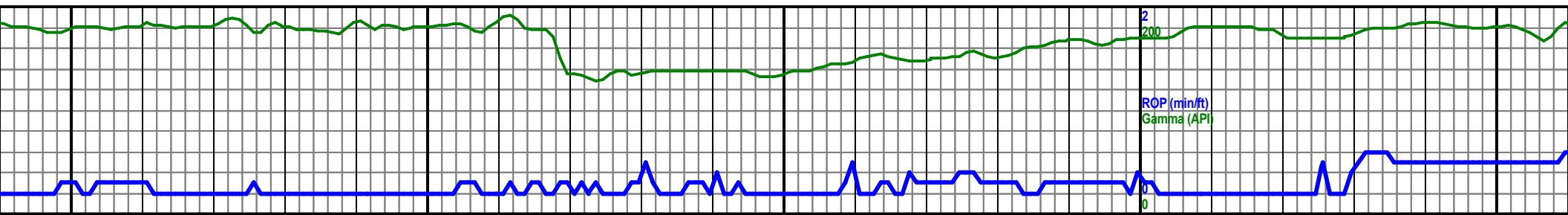


m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 30% CHLK: m-dk gy, occ lt
sblky-blky, sl frm-frm, rthy, v calc, n flor

80% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 20% CHLK: m-dk gy,
occ lt gy-mott ip, sblky-blky, sl frm-frm, rthy, v calc, n flor

90% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 10% CHLK: m-dk gy,
occ lt gy-mott ip, sblky-blky, sl frm-frm, rthy, v calc, n flor

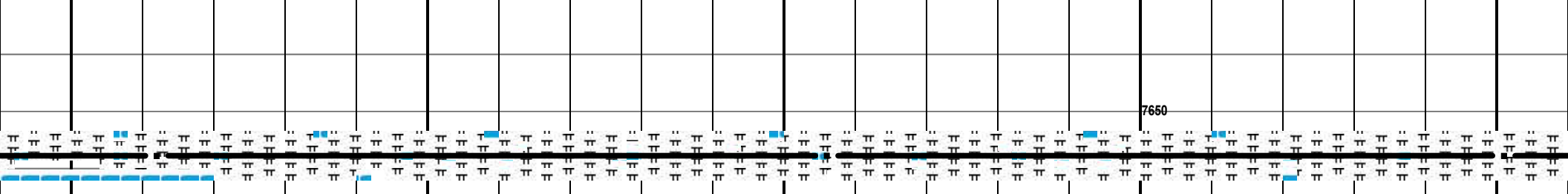




m-mod sft, rthy, arg, sl carb, calc, tr bent, 10% CHLK: m-dk gy, occ
v calc, n flor

95% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 5% CHLK: m-dk gy, occ lt
gy-mott ip, sbblky-blky, sl frm-fm, rthy, v calc, n flor

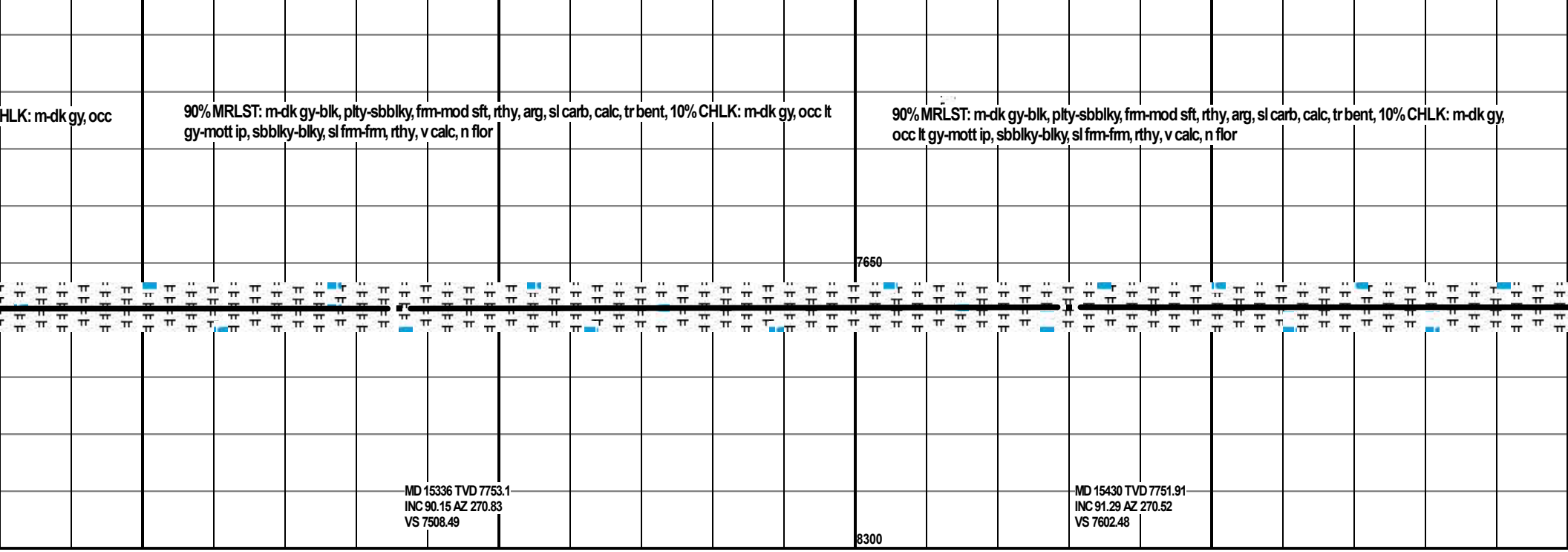
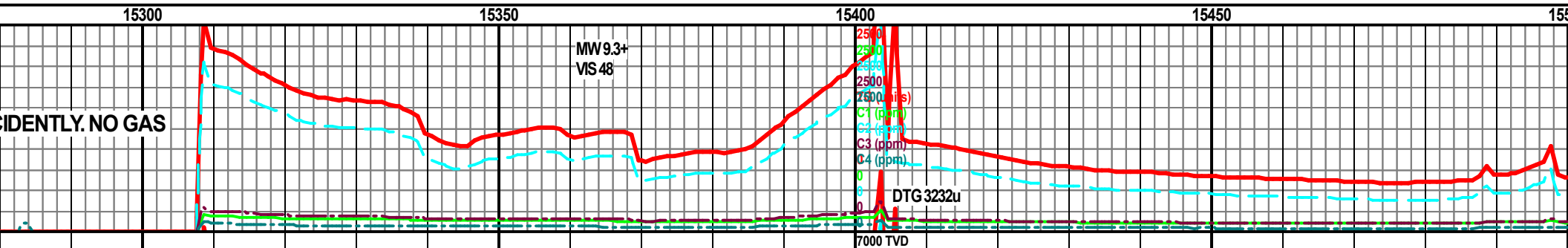
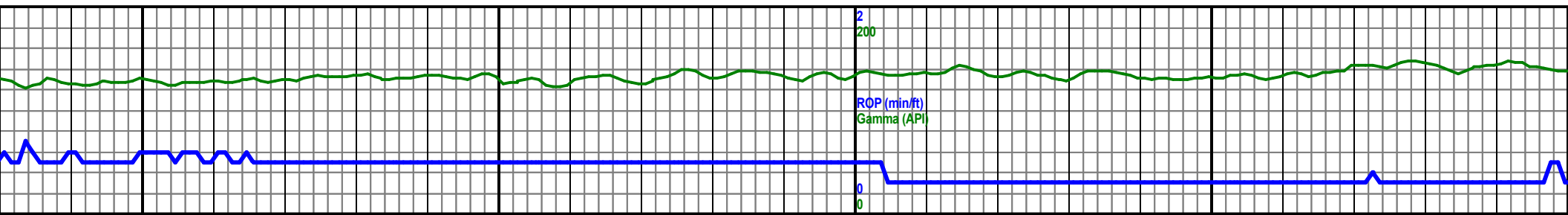
95% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl
gy-mott ip, sbblky-blky, sl frm-fm, rthy, v calc, n flor

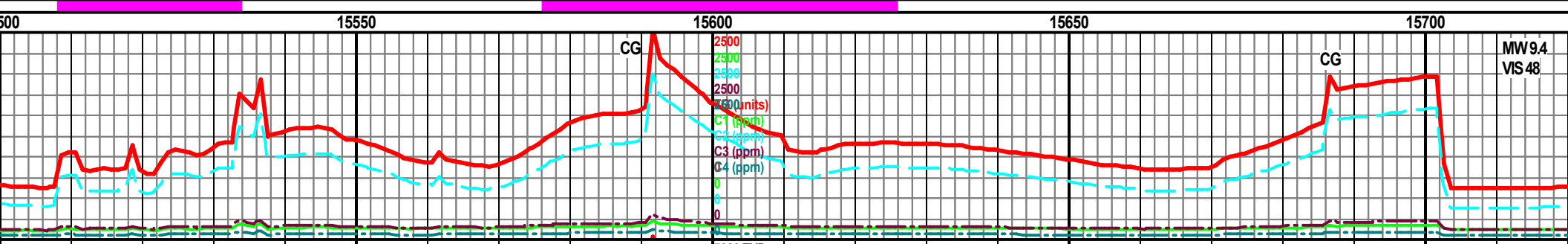
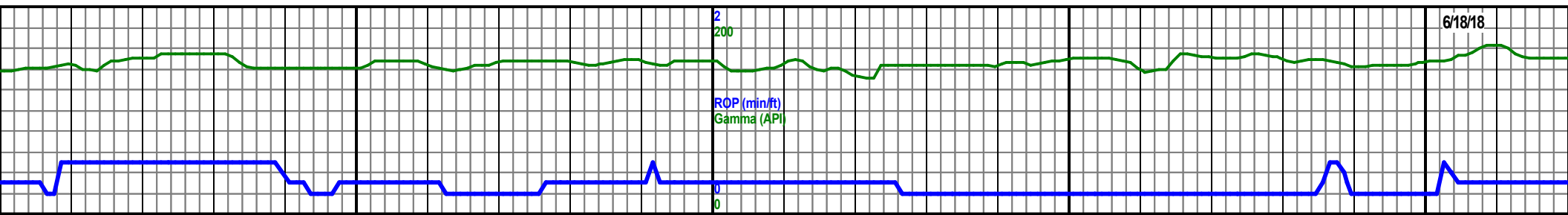


MD 14862 TVD 7751.05
INC 89.6 AZ 270.29
VS 7034.55

MD 14956 TVD 7750.78
INC 90.74 AZ 270.1
VS 7128.55

MD 15051 T
INC 89.57 AZ
VS 7223.55





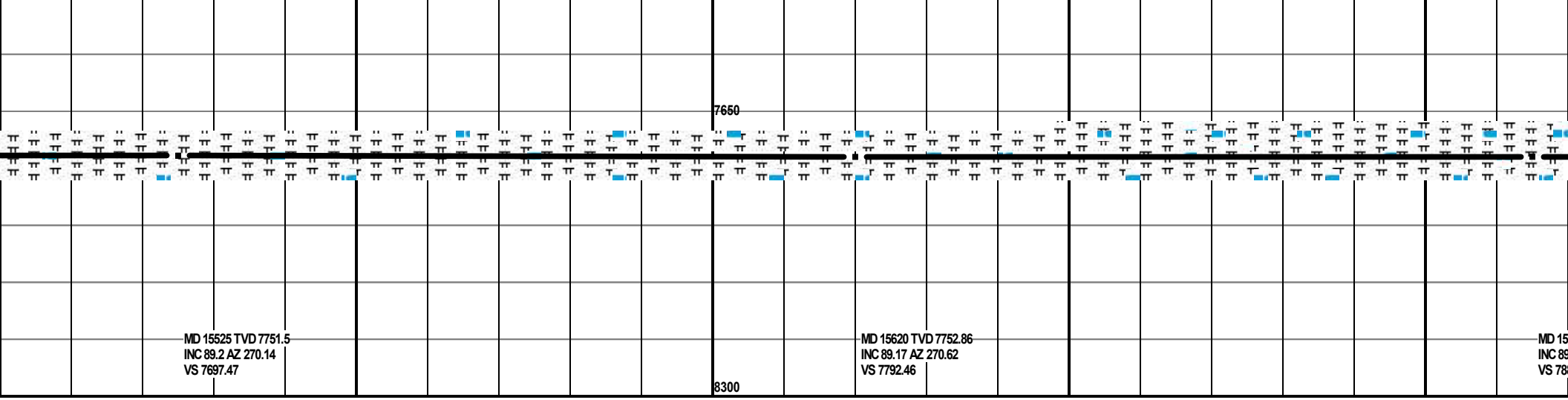
7000 TVD

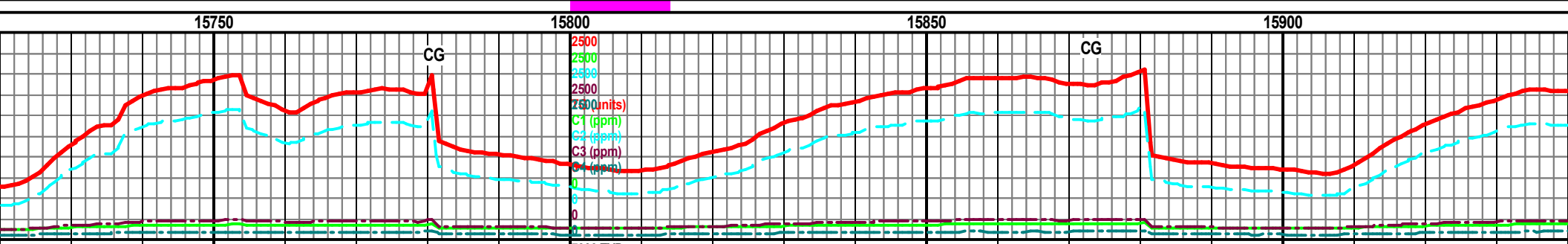
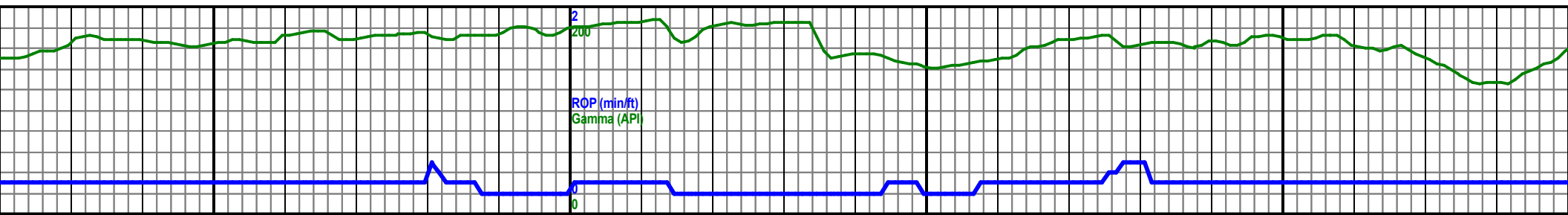
90% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 10% CHLK: m-dk gy, occ lt gy-mott ip, sbblky-blky, sl frm-frm, rthy, v calc, n flor

80% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 20% CHLK: m-dk gy, occ lt gy-mott ip, sbblky-blky, sl frm-frm, rthy, v calc, n flor

80% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 20% CHLK: m-dk gy, occ lt gy-mott ip, sbblky-blky, sl frm-frm, rthy, v calc, n flor

This section contains three columns of lithological descriptions. Each column describes the rock composition at different depths, including percentages of mudstone (m-dk gy-blk), siltstone (plty-sbblky), and other components like argillaceous (arg), siliceous (sl), carbonaceous (carb), calcareous (calc), and bentonitic (tr bent) materials. The descriptions also mention the presence of chert (CHLK) and other features like mottled iron pyrite (mott ip) and flint (flor).

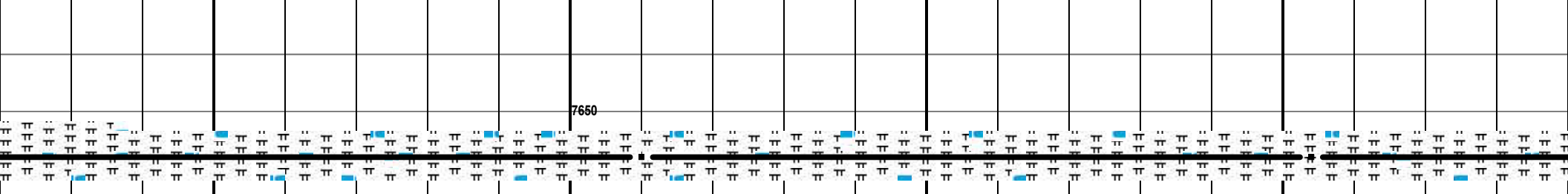




gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 20% CHLK: m-dk gy, occ lt
blky, sl frm-frm, rthy, v calc, n flor

90% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 10% CHLK: m-dk gy, occ
lt gy-mott ip, sbblky-blky, sl frm-frm, rthy, v calc, n flor

90% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 10% CHLK: m-dk gy, occ
lt gy-mott ip, sbblky-blky, sl frm-frm, rthy, v calc, n flor

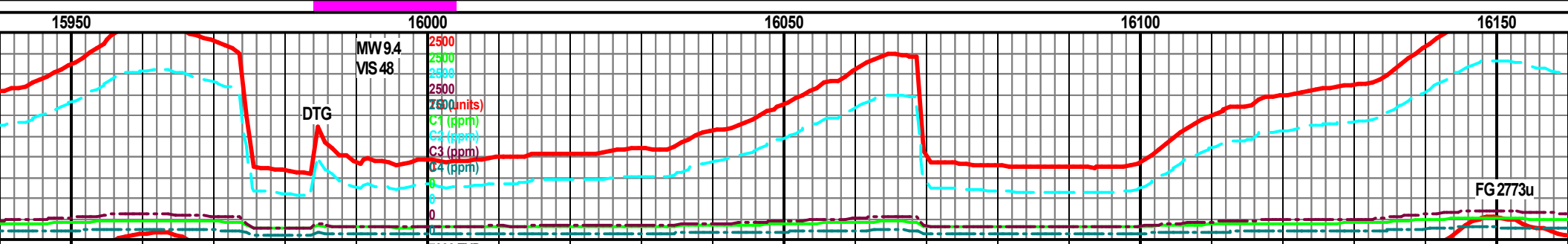
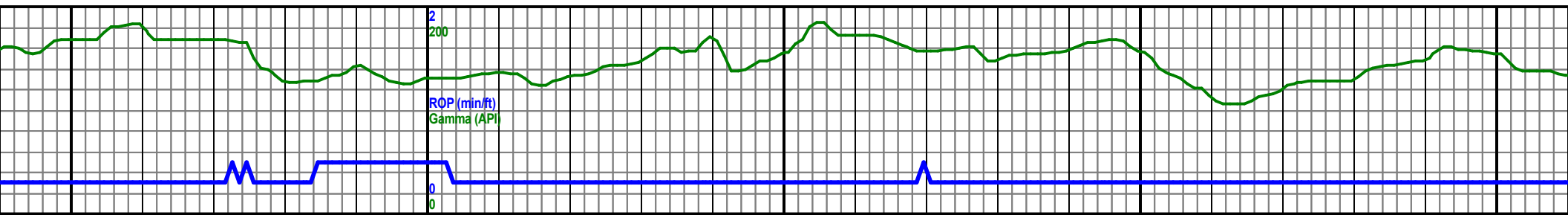


715 TVD 7753.9
INC 89.97 AZ 269.95
VS 7982.46

MD 15810 TVD 7754.29
INC 89.97 AZ 269.91
VS 7982.46

MD 15904 TVD 7753.91
INC 90.49 AZ 269.57
VS 8076.45

8300

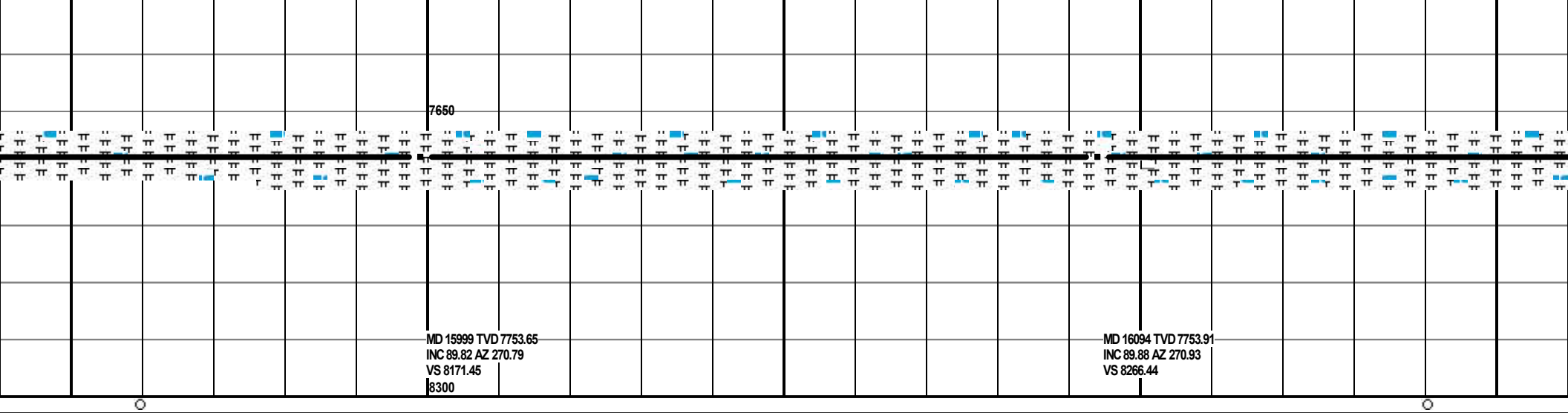


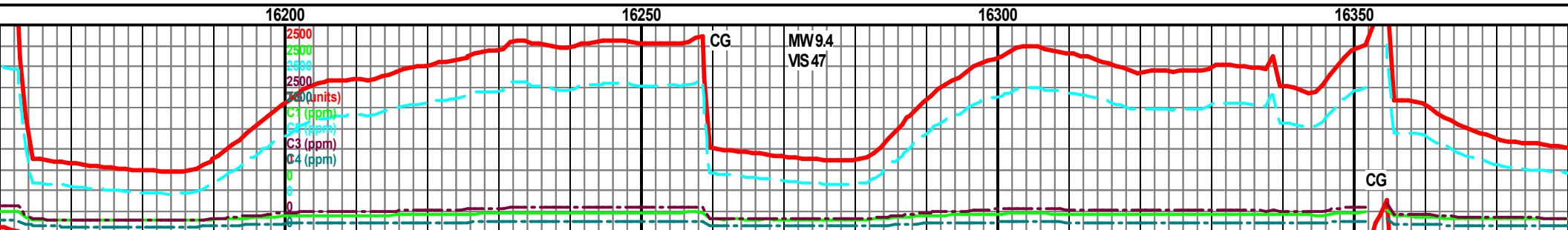
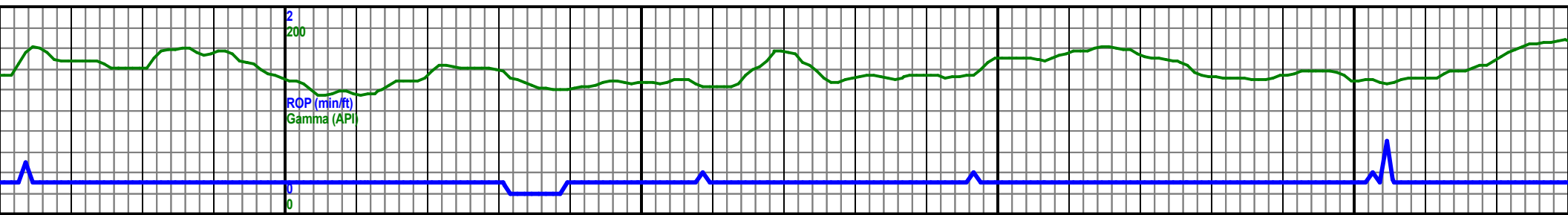
7000 TVD

m-mod sft, rthy, arg, sl carb, calc, tr bent, 10% CHLK: m-dk gy, occ lt calc, n flor

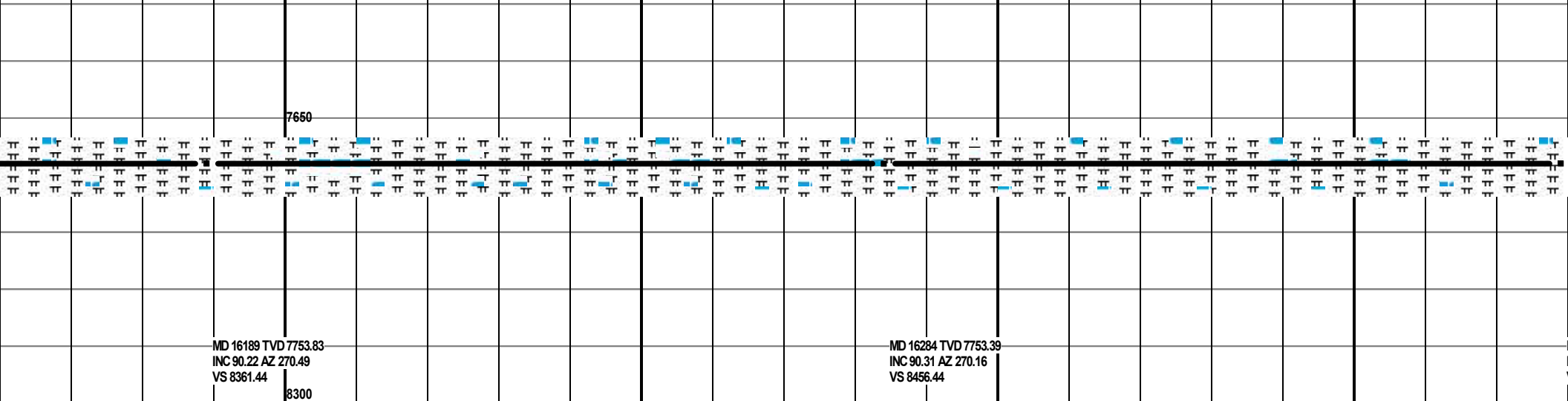
80% MRLST: m-dk gy-blk, plty-sbbiky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 20% CHLK: m-dk gy, occ lt gy-mott ip, sbbiky-blky, sl frm-frm, rthy, v calc, n flor

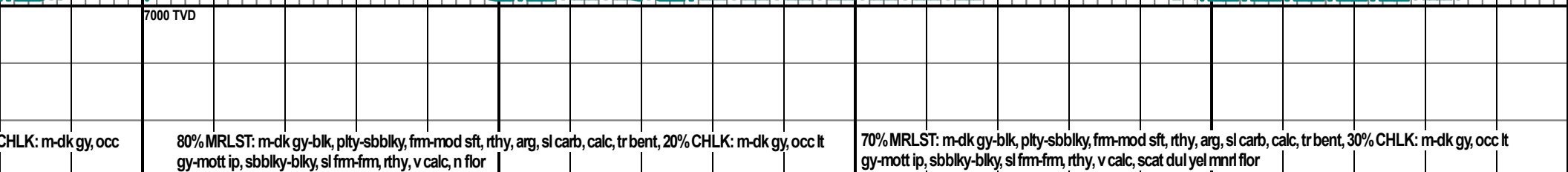
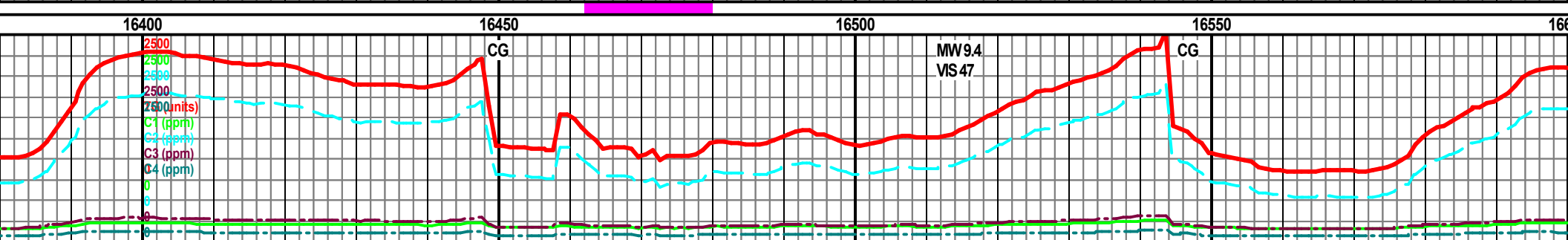
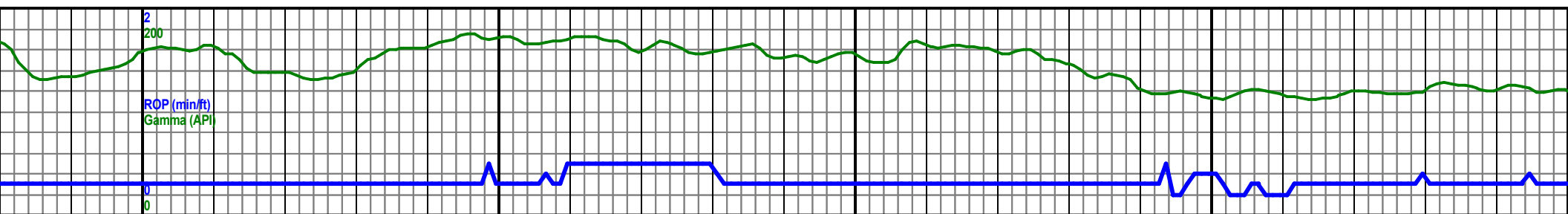
70% MRLST: m-dk gy-blk, plty-sbbiky, frm-mod sft, rthy, arg, s occ lt gy-mott ip, sbbiky-blky, sl frm-frm, rthy, v calc, n flor





carb, calc, tr bent, 30% CHLK: m-dk gy,
80% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 20% CHLK: m-dk gy,
occ lt gy-mott ip, sbblky-blky, sl fm-fm, rthy, v calc, n flor
90% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 10%
lt gy-mott ip, sbblky-blky, sl fm-fm, rthy, v calc, n flor



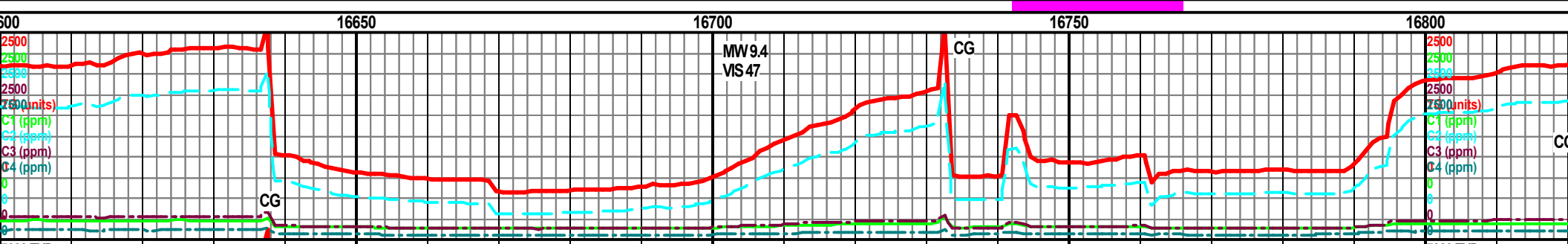
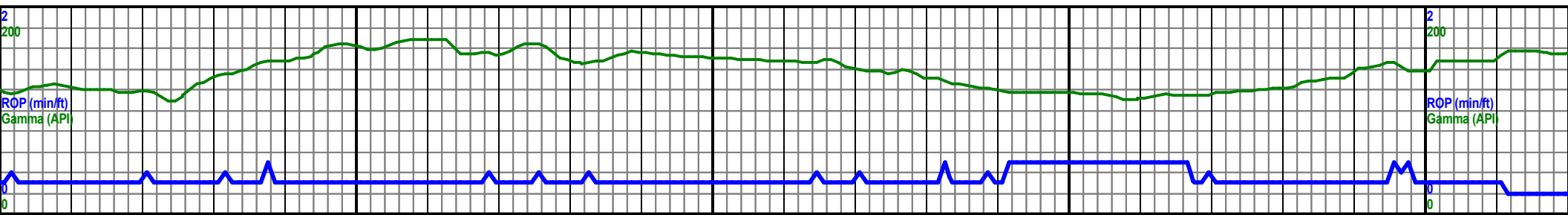


MD 16379 TVD 7752.42
INC 90.86 AZ 270.11
VS 8551.43

MD 16474 TVD 7751.68
INC 90.03 AZ 270.04
VS 8646.43

MD 16568 TVD 7751.58
INC 90.09 AZ 270.25
VS 8740.43

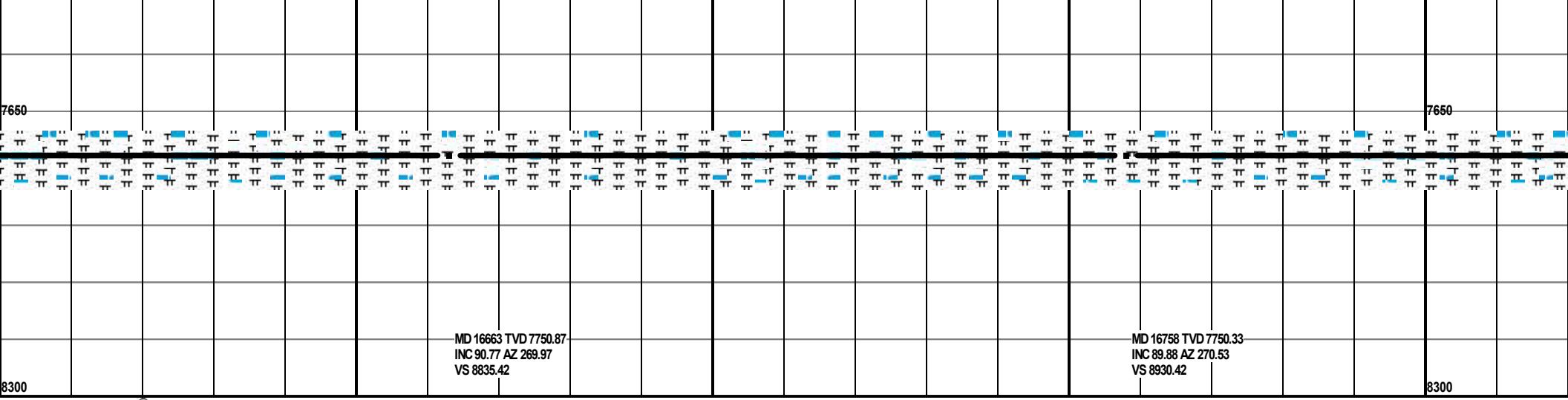
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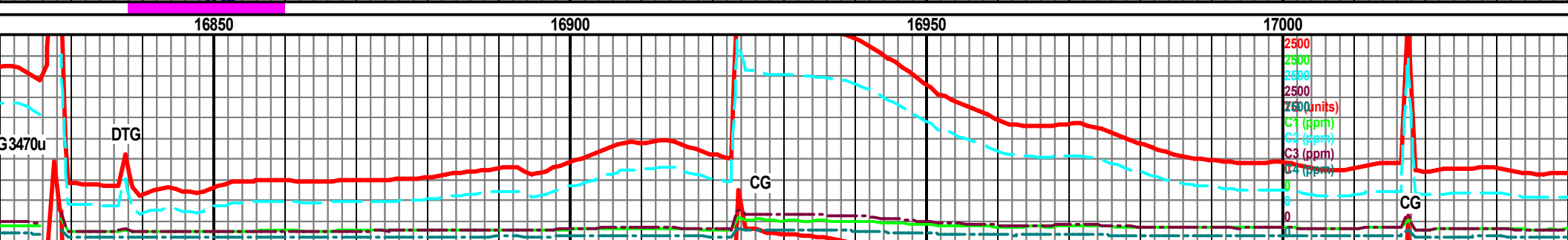
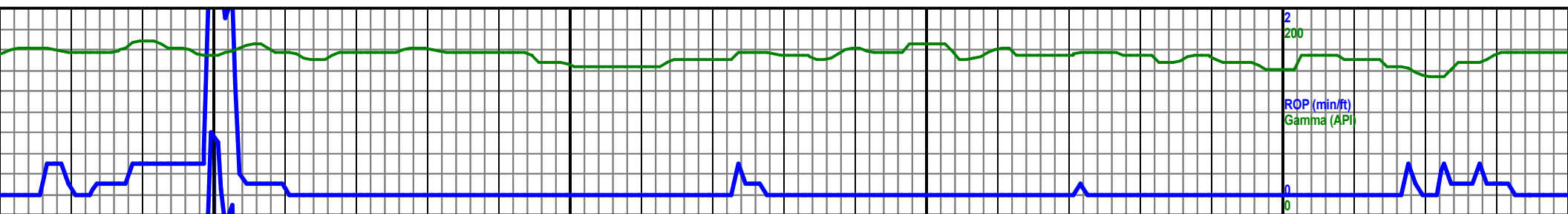


70% MRLST: m-dk gy-blk, pty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 30% CHLK: m-dk gy, occ lt gy-mott ip, sbblky-blky, sl frm-fm, rthy, v calc, scat dul yel mnrl flr

60% MRLST: m-dk gy-blk, pty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 40% CHLK: m-dk gy, occ lt gy-mott ip, sbblky-blky, sl frm-fm, rthy, v calc, scat dul yel mnrl flr

60% MRLST: m-dk gy-blk, pty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 40% CHLK: m-dk gy, occ lt gy-mott ip, sbblky-blky, sl frm-fm, rthy, v calc, scat dul yel mnrl flr

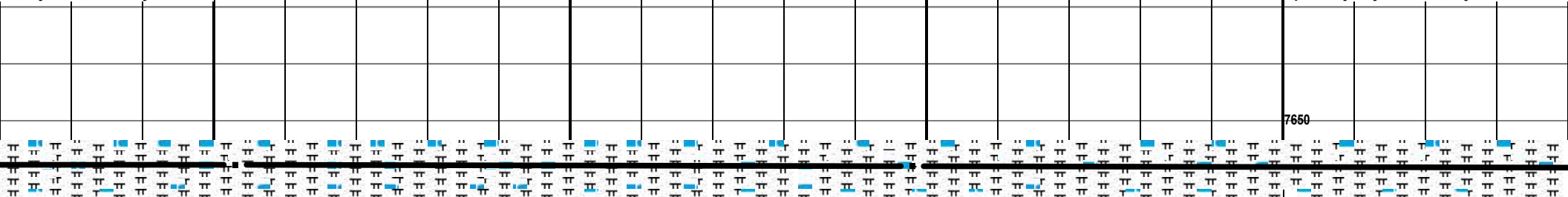




blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 40% CHLK: m-dk gy, occ lt gy-mott
m, rthy, v calc, scat dul yel mnrl flr

70% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 30% CHLK: m-dk gy, occ lt gy-mott
ip, sbblky-blky, sl fm-fm, rthy, v calc, scat dul yel mnrl flr

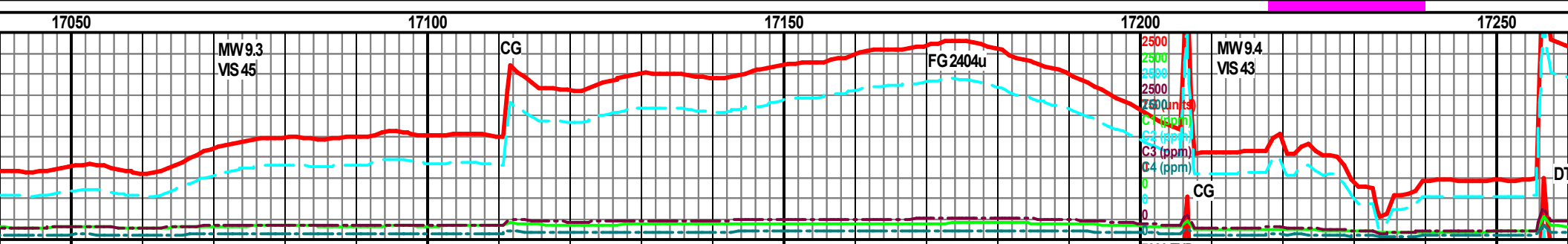
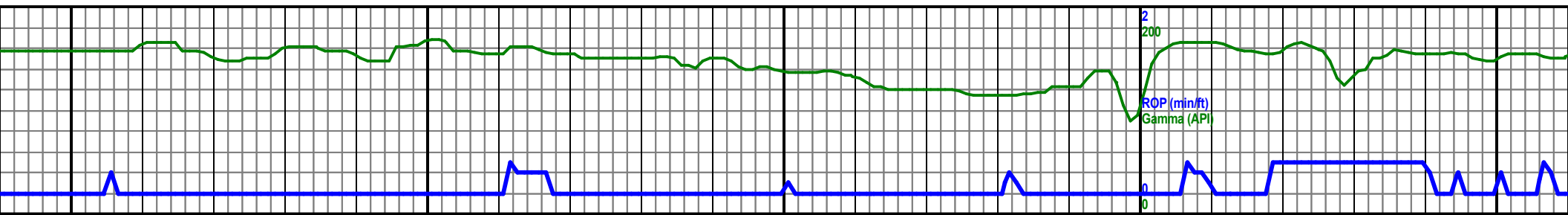
70% MRLST: m-dk gy-blk, plty-sbblky, frm-mod
ip, sbblky-blky, sl fm-fm, rthy, v calc, scat dul



MD 16853 TVD 7752.19
INC 87.88 AZ 271.4
VS 9025.39

MD 16948 TVD 7755.12
INC 88.58 AZ 271.21
VS 9120.33

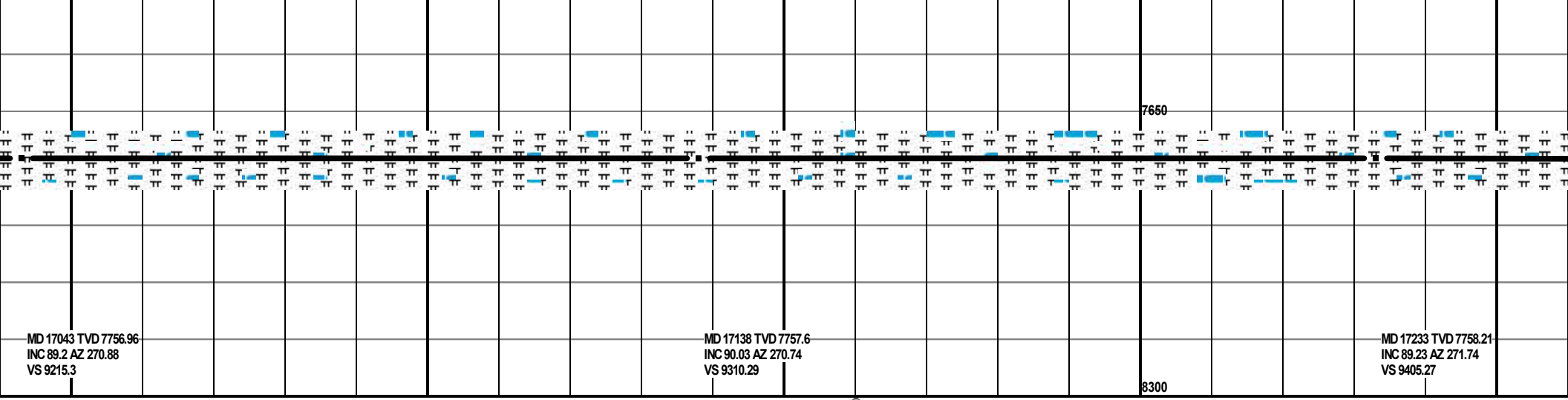
8300



d sft, rthy, arg, sl carb, calc, tr bent, 30% CHLK: m-dk gy, occ lt gy-mott
yel mnrl flor

70% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 30% CHLK: m-dk gy, occ lt gy-mott
ip, sbblky-blky, sl frm-fm, rthy, v calc, scat dul yel mnrl flor

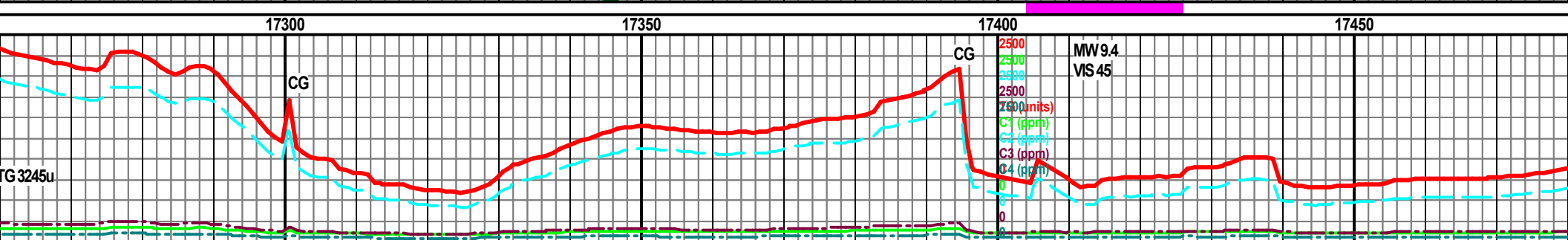
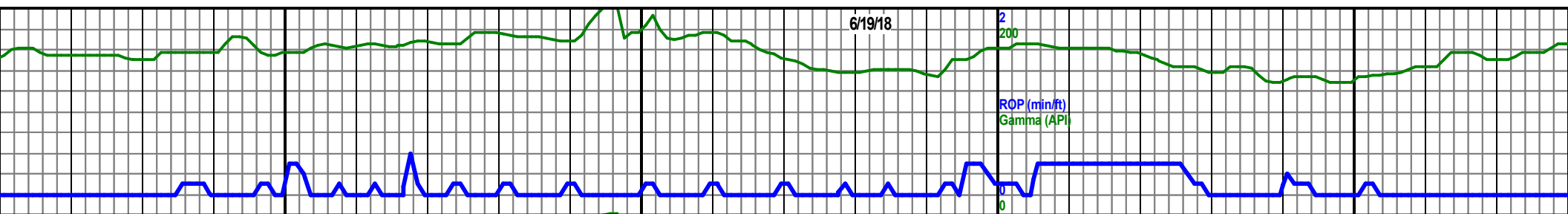
80% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 30% CHLK: m-dk gy, occ lt gy-mott
ip, sbblky-blky, sl frm-fm, rthy, v calc, scat dul yel mnrl flor



MD 17043 TVD 7756.96
INC 89.2 AZ 270.88
VS 9215.3

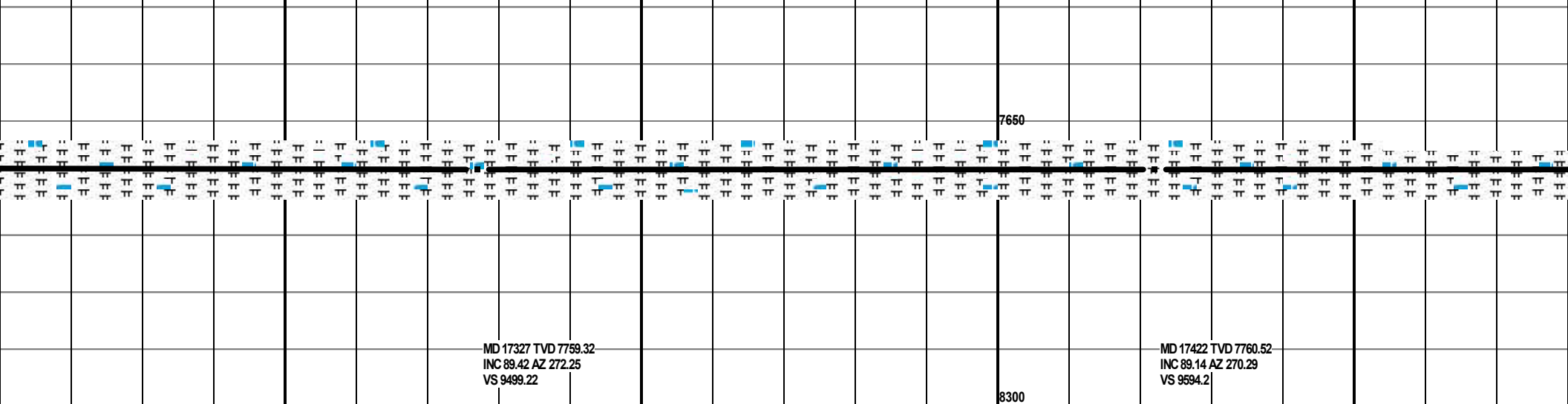
MD 17138 TVD 7757.6
INC 90.03 AZ 270.74
VS 9310.29

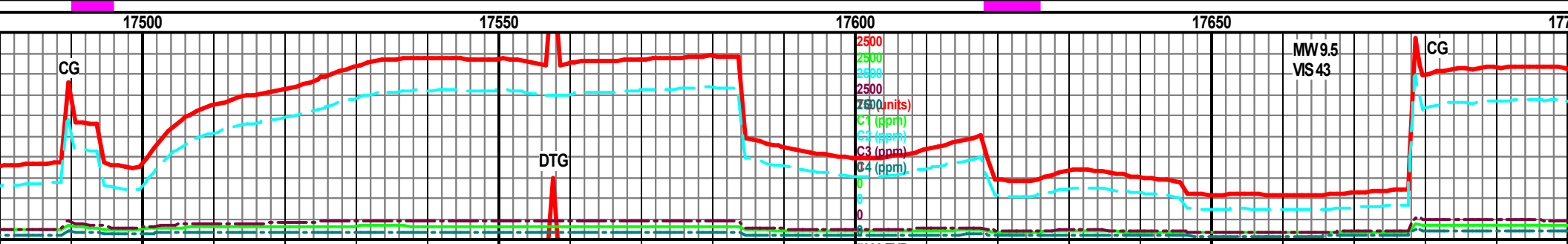
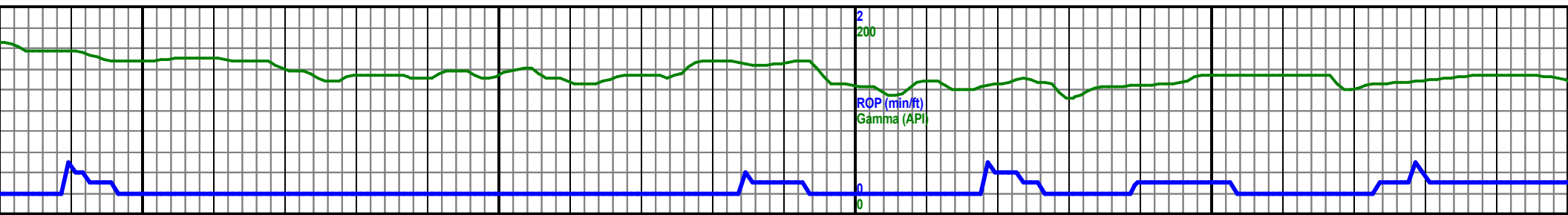
MD 17233 TVD 7758.21
INC 89.23 AZ 271.74
VS 9405.27



calc, tr bent, 20% CHLK: m-dk gy, occ lt gy-mott
80% MRLST: m-dk gy-blk, plty-sbbly, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 20% CHLK: m-dk gy, occ lt gy-mott
ip, sbbly-blky, sl fm-fm, rthy, v calc, scat dul yel mnrl flr

75% MRLST: m-dk gy-blk, plty-sbbly, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 25% CHLK: m-dk gy, occ lt gy-mott
ip, sbbly-blky, sl fm-fm, rthy, v calc, scat dul yel mnrl flr

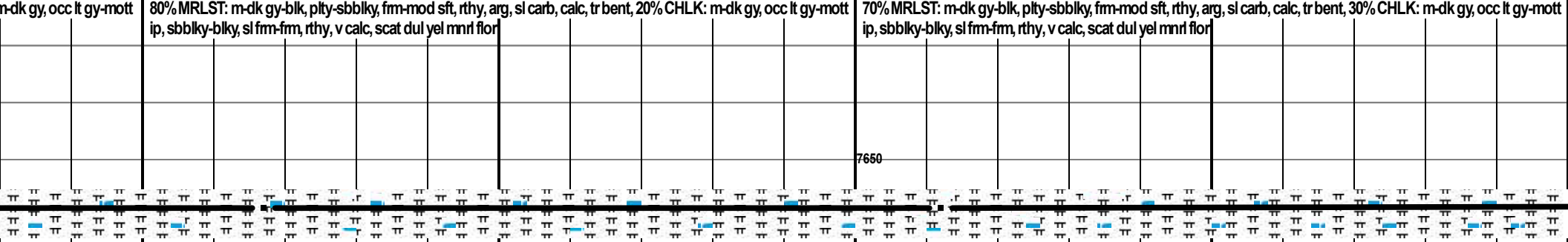




7000 TVD

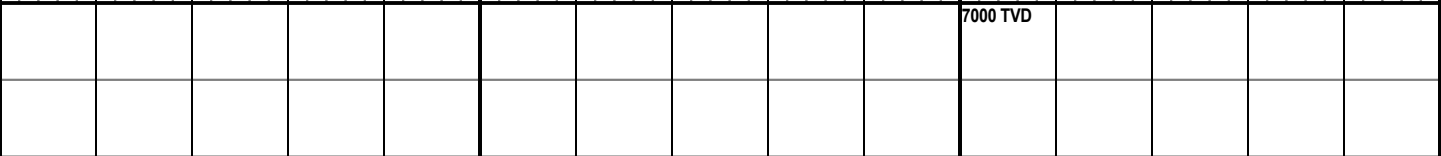
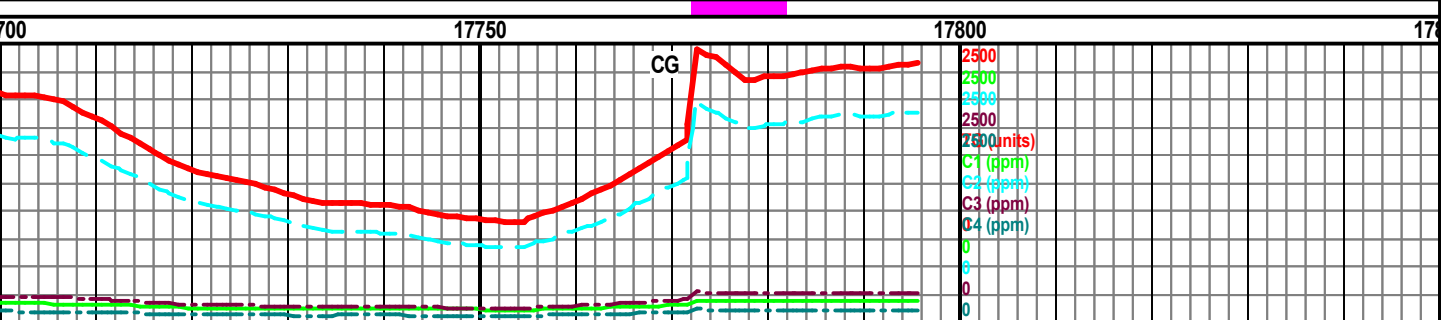
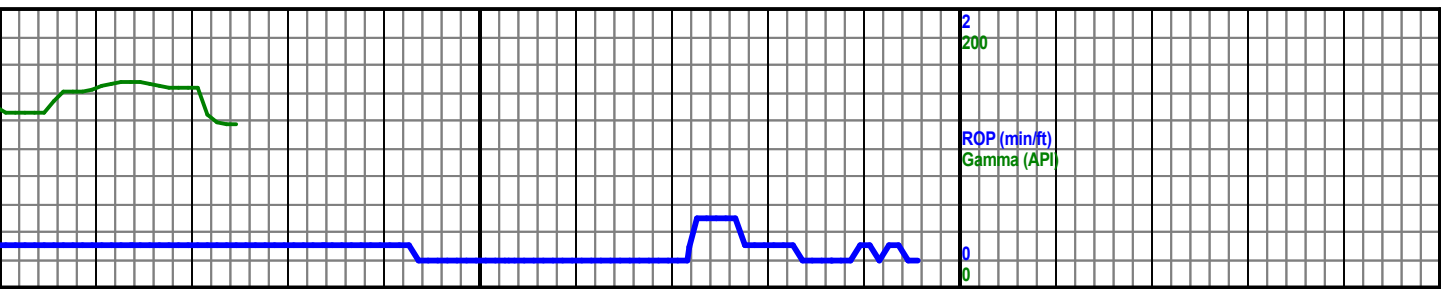
m-dk gy, occ lt gy-mott
80% MRLST: m-dk gy-blk, plty-sbbiky, fm-mod sft, rthy, arg, sl carb, calc, tr bent, 20% CHLK: m-dk gy, occ lt gy-mott
ip, sbbiky-blky, sl fm-fm, rthy, v calc, scat dul yel mnrl flr

70% MRLST: m-dk gy-blk, plty-sbbiky, fm-mod sft, rthy, arg, sl carb, calc, tr bent, 30% CHLK: m-dk gy, occ lt gy-mott
ip, sbbiky-blky, sl fm-fm, rthy, v calc, scat dul yel mnrl flr

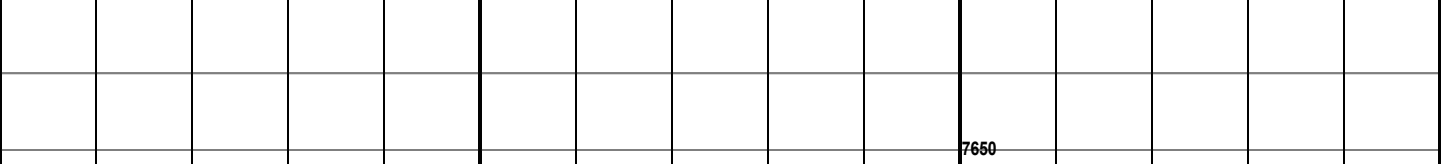


MD 17517 TVD 7761.57
INC 89.6 AZ 269.82
VS 9689.19

MD 17612 TVD 7761.19
INC 90.86 AZ 269.75
VS 9784.18



70% MRLST: m-dk gy-blk, plty-sbblky, frm-mod sft, rthy, arg, sl carb, calc, tr bent, 30% CHLK: m-dk gy, occ lt gy-mott
ip, sbblky-blky, sl frm-frm, rthy, v calc, scat dul yel mnrl flr



TD WELL @ MD 17,796' TVD
7,754.50' @ 06:00 HRS ON
6/19/18

MD 17707 TVD 7758.48
INC 92.4 AZ 269.82
VS 9879.14

MD 17726 TVD 7757.66
INC 92.59 AZ 269.73
VS 9898.12

MD 17796 TVD 7754.5
INC 92.59 AZ 269.73
VS 9968.05
8300