COLUMBINE LOGGING

Scale: 5" / 100'
Measured Depth Log

Well Name	Steadfast E27-63.1HN		
Location	SEC26 T6N R65W		
State	COLORADO	**County**	WELD
Country	USA	**Rig Number**	PRECISION 828
API Number	05-123-38159	**AFE #**	139769
Region	DENVER-JULESBURG BASIN	**Field**	WATTENBERG
Spud Date	5/5/2014	**Drilling Completed**	5/13/2014
Surface Coordinates	395' FSL, 280' FEL	LAT/LONG: 40.45077/-104.62175	

Ground Elevation	4676'			**K.B. Elevation**	4692'
Logged Interval	6100'	**To**	13528'	**Total Depth**	13528'
Formation	TEEPEE BUTTES, SHARON SPRINGS, NIOBRARA				
Type of Drilling Fluid	LSND				

Company NOBLE ENERGY IN

Address 1625 Broadway
Denver, CO 80202

Name EVAN HOWELL

Company NOBLE ENERGY IN

Address 1625 Broadway
Denver, CO 80202

Wellsite Geologists: GARY MYE
WELLSITE
LOG CONT

CHALK

Operator

NC.

Geologist

NC.

Other

RS, GABE RUBIO, JEREMY LOFTNESS

GEOLOGICAL SERVICES PROVIDED BY COLUMBINE LOGGING INC.

INUES FROM FILE: Steadfast E27-63-1HN Vert.mplot

Rock Types

MARLSTONE

SILTY SHALE

Other Symbols

Engineering

CONNECTION (DOWN)

CONNECTION GAS

CONNECTION GAS (LEFT)

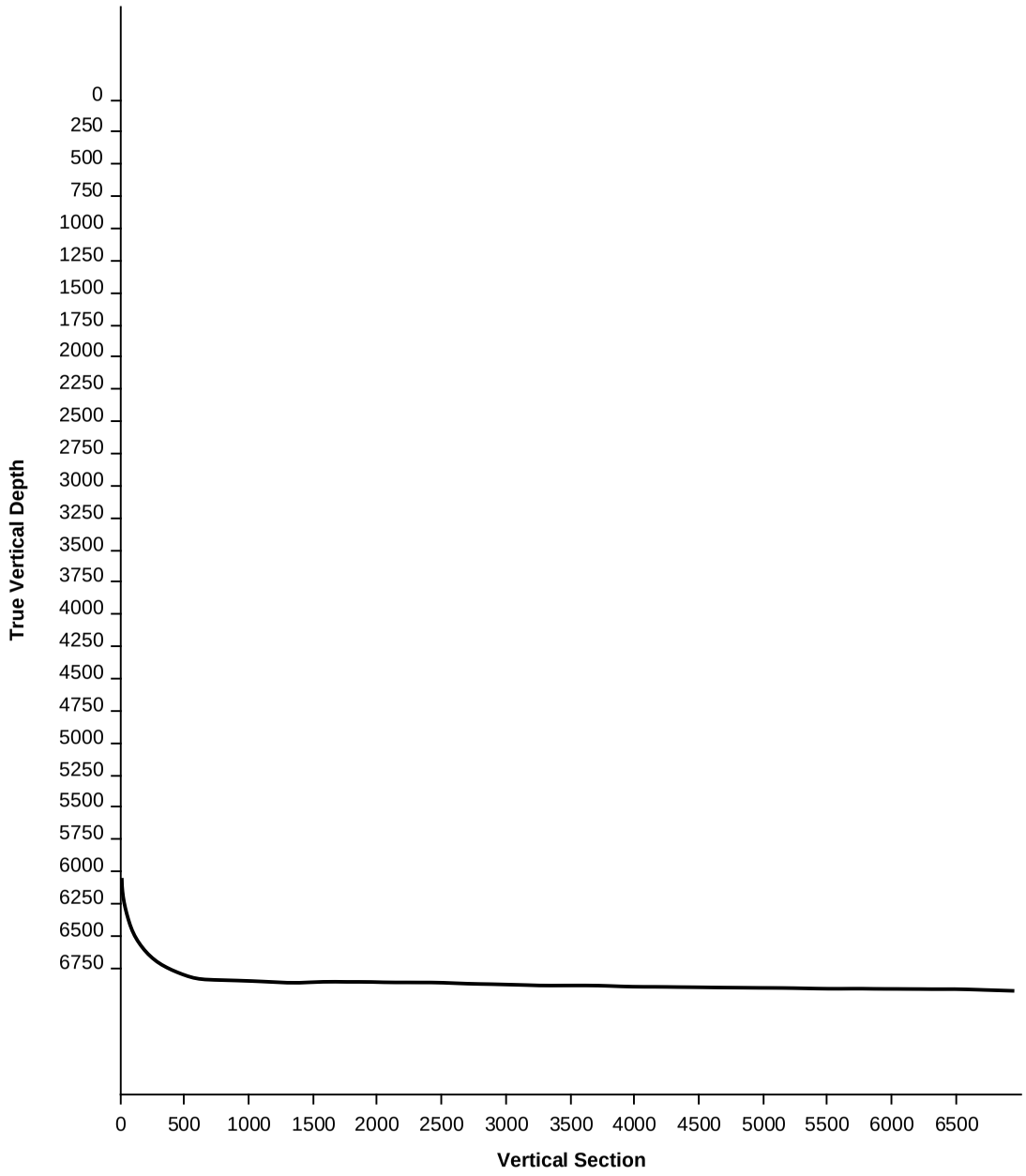
TRIP GAS

FAULT

MN DEPTH

Survey Plan

Survey Elevation



Slide/Rotate

ROP

ROP

500

WT 9.45 / VIS 37

ROP (ft/hr)

0

Total Gas & Chromatograph

GAS

C1

C2

C3

C4

COLUMBINE LOGGING, INC.
ON LOCATION 5/6/14
MANNED 2-PERSON LOGGING
USING PASON GAS ANALYZER

DRILLED OUT OF SHOE
2226 HRS, 5/614

5000

500000

GAS (units)
C1-C4 (PPM)

572u

2206u

874u

292u

859u

2747u

272u

800u

0

0

Depth Labels

6,070 6,080 6,090 6,100 6,110 6,120 6,130 6,140 6,150 6,160 6,170 6,180 6,190 6,200 6,210 6,220 6,230 6,240

% Lith

Gamma

GAMMA

200

GAMMA (api)

136

93

88

0

Well Bore

TVD

6000

Bit Data
Bit #: 2
Type: SMITH SDi513
Size: 8.75"
Depth In: 597'
S/N: JJ0860

LOG CONTINUES FROM FILE:
Steadfast E27-63-1HN Vert.mplot

MD: 6,102
TVD: 6,058
INC: 1
AZM: 222.2

MD: 6,147
TVD: 6,102.96
INC: 3.4
AZM: 254.8

MD: 6,192
TVD: 6,147.81
INC: 5.9
AZM: 260.7

MD: 6,237
TVD: 6,192.44
INC: 8.6
AZM: 261.4

BEGIN 30' SAMPLES
60' DESCRIPTIONS
OR BEST FIT

TVD (ft)

SLTY SH: med to sl dk gy, gy brn, sb blky to sb plty, occ plty, sft to sl frm, arg, sl calc ip, sdy ip, tr pyr clus, grdg to shy ss
SS: lt to m gy, gybrn, pred trnsl, occ clr, f to m gr, sbblky, pred sbang gr, mod srt, p cmt, brit, pred sil mtx, sl calc

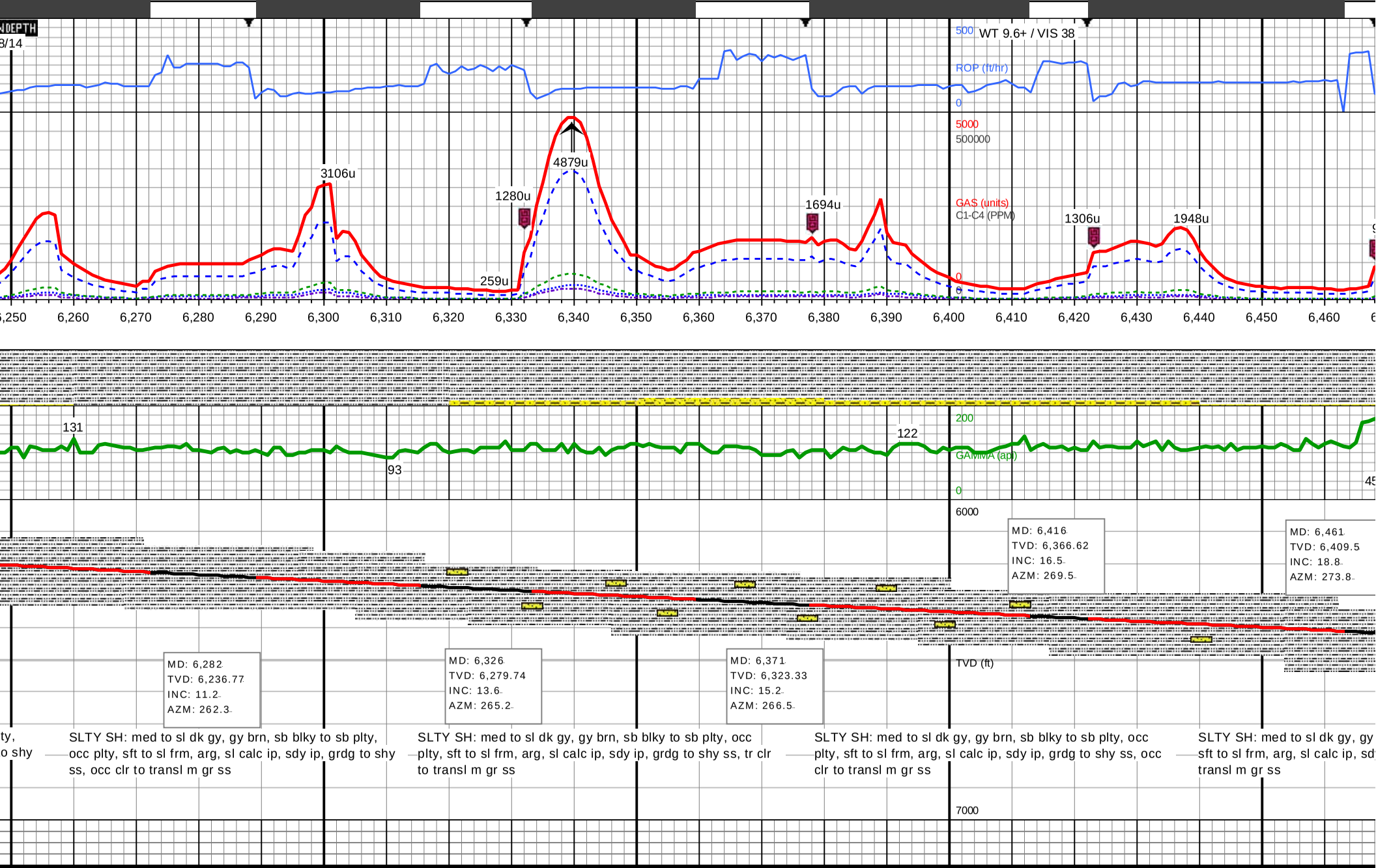
SLTY SH: med to sl dk gy, gy brn, sb blky to sb pl occ plty, sft to sl frm, arg, sl calc ip, sdy ip, grdg t ss, occ clr to transl m gr ss

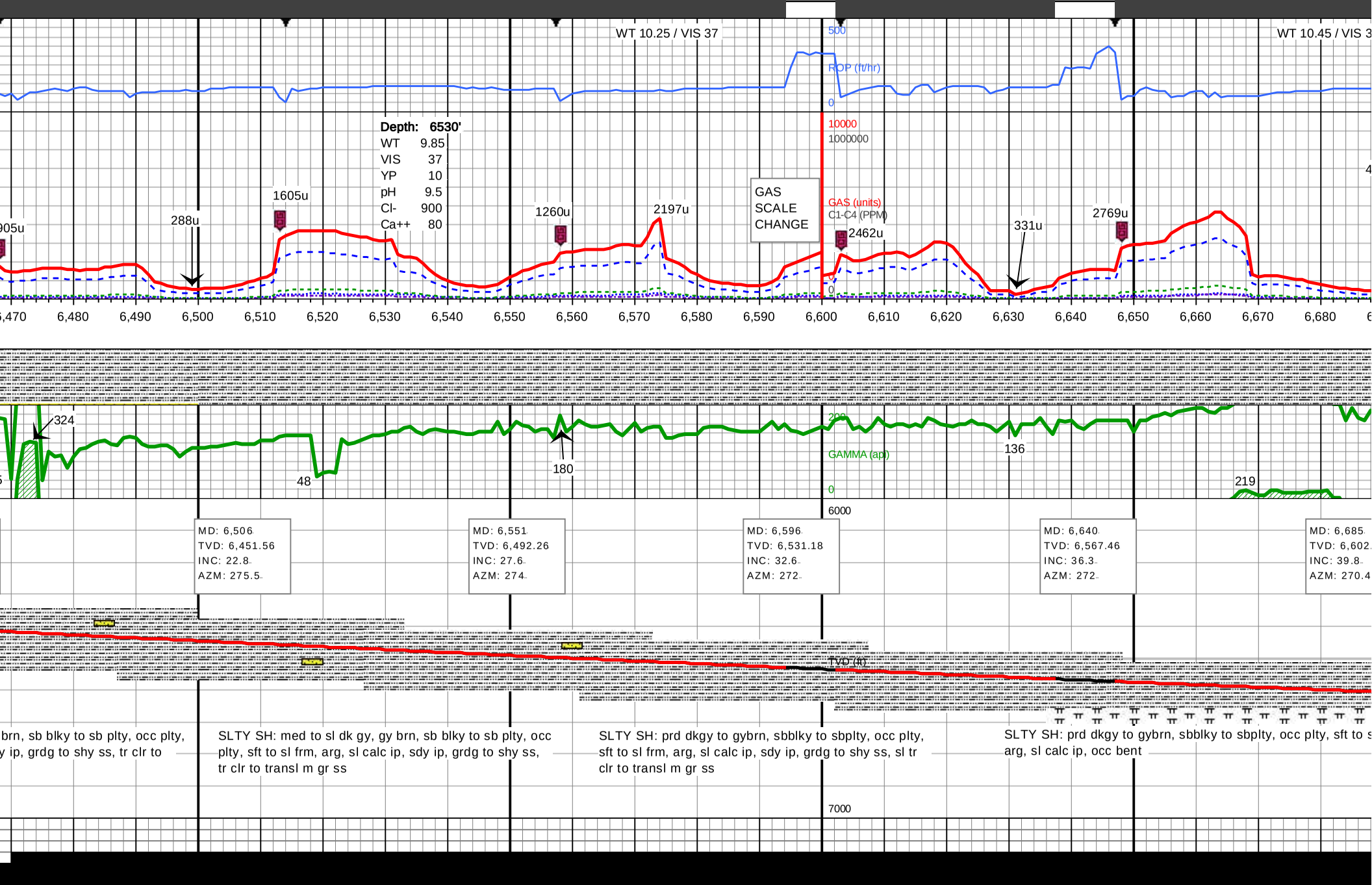
7000

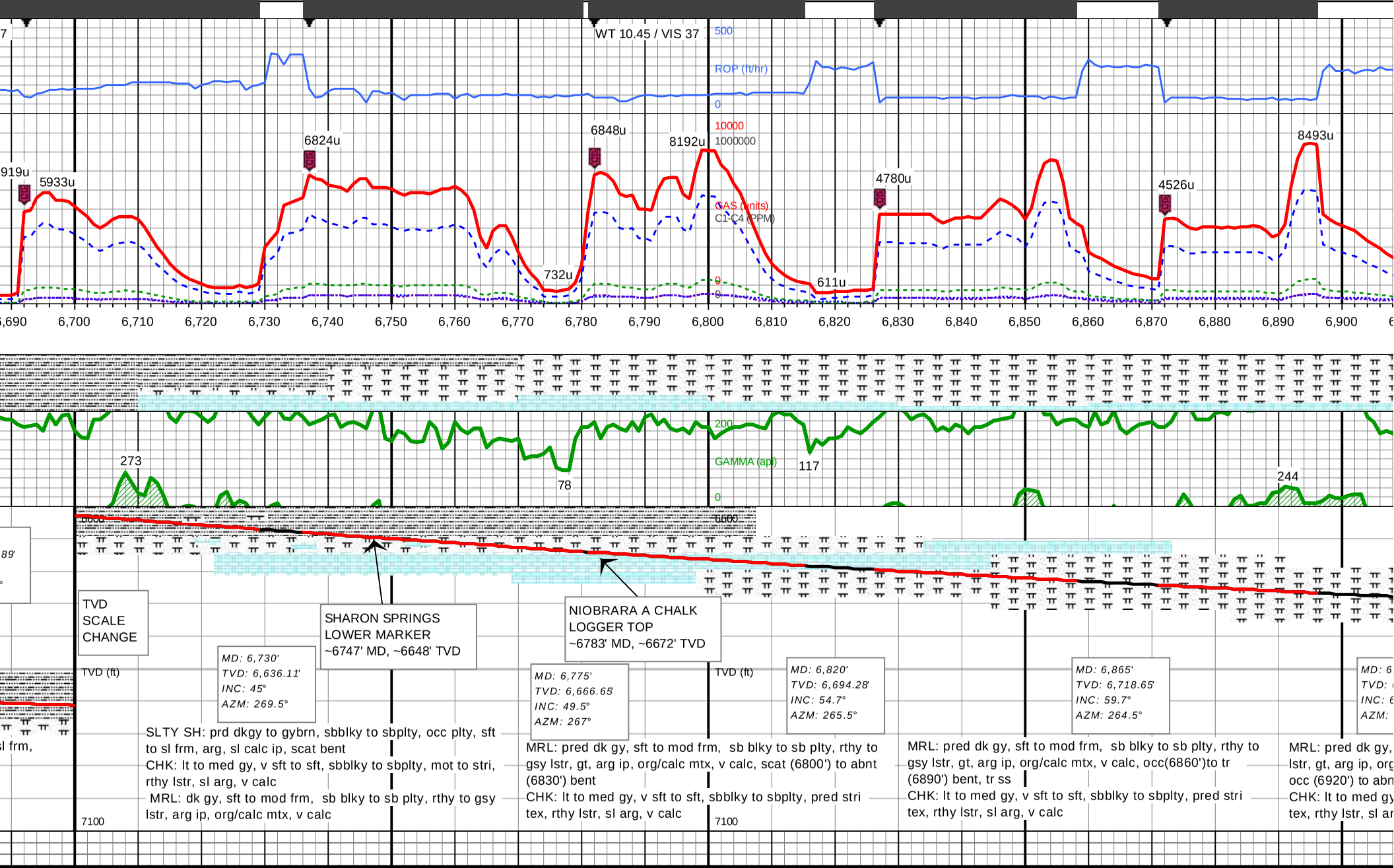
Oil Show

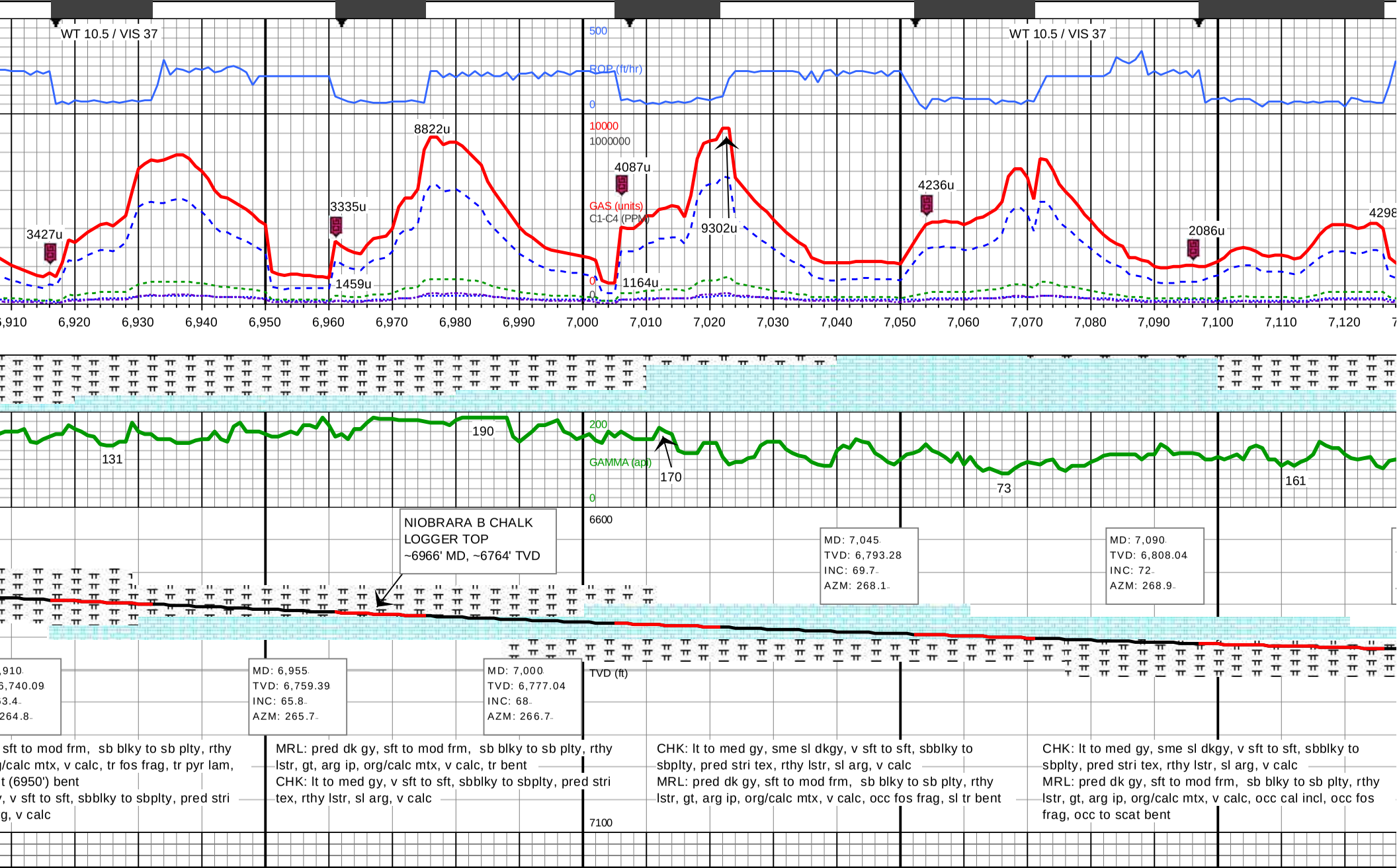
E
G
M
F
T
ST

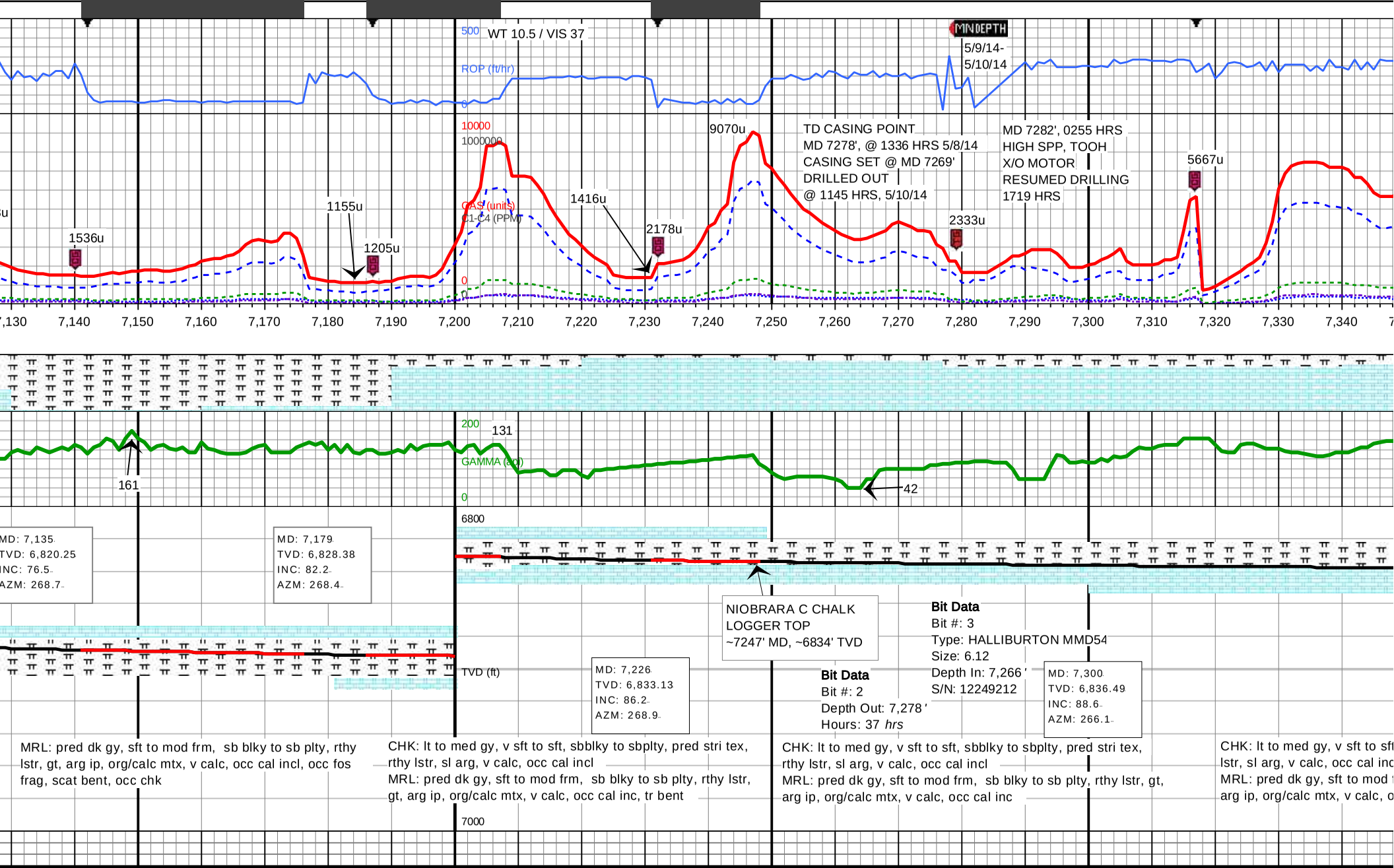
Images

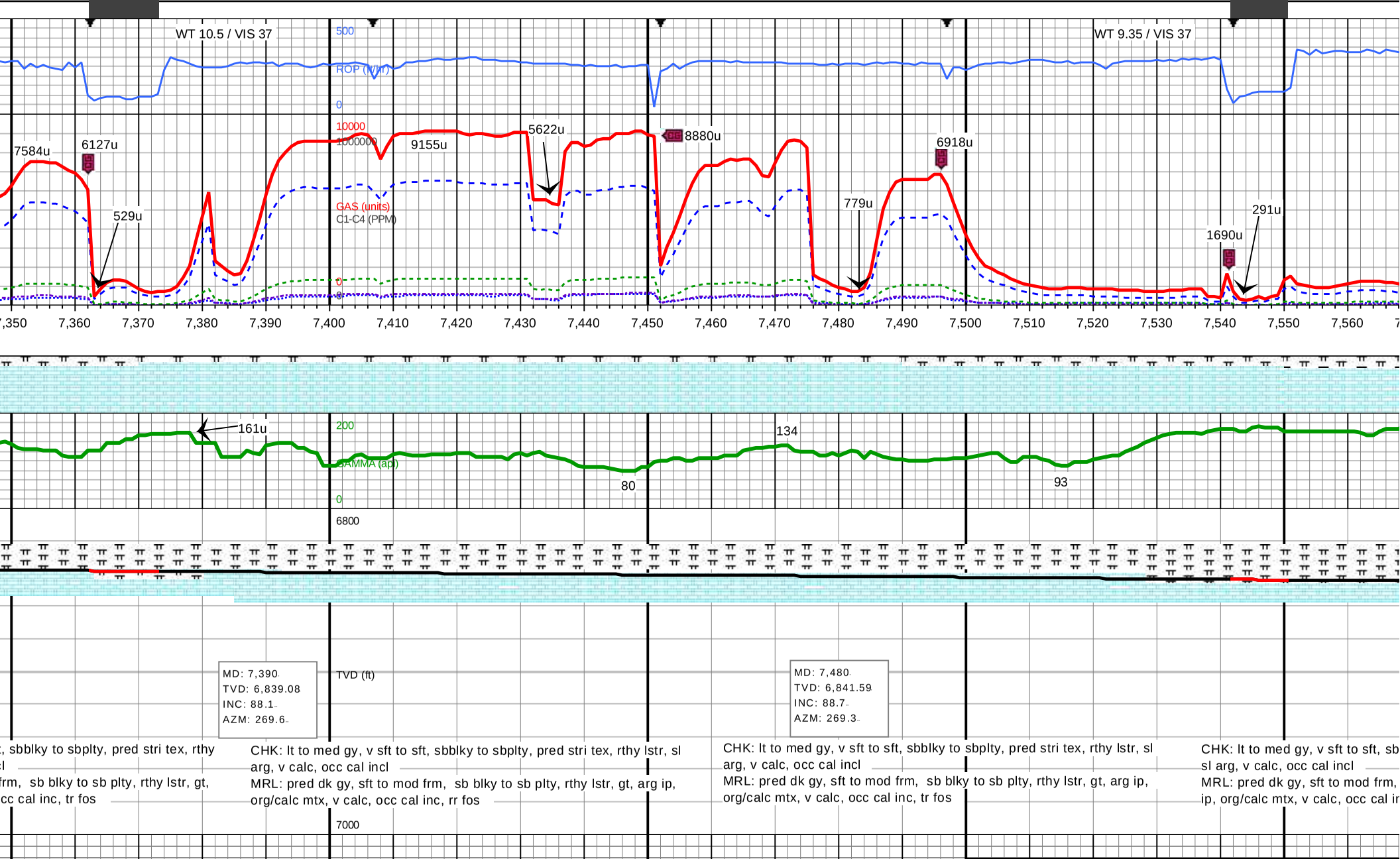

WDEPTH
8/14
500
WT 9.6+ / VIS 38
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
3106u
4879u
1280u
1694u
1306u
1948u
259u
6,250
6,260
6,270
6,280
6,290
6,300
6,310
6,320
6,330
6,340
6,350
6,360
6,370
6,380
6,390
6,400
6,410
6,420
6,430
6,440
6,450
6,460
131
93
122
200
GAMMA (api)
0
6000
MD: 6,282
TVD: 6,236.77
INC: 11.2
AZM: 262.3
MD: 6,326
TVD: 6,279.74
INC: 13.6
AZM: 265.2
MD: 6,371
TVD: 6,323.33
INC: 15.2
AZM: 266.5
MD: 6,416
TVD: 6,366.62
INC: 16.5
AZM: 269.5
MD: 6,461
TVD: 6,409.5
INC: 18.8
AZM: 273.8
TVD (ft)
7000
SLTY SH: med to sl dk gy, gy brn, sb blky to sb plty, occ plty, sft to sl frm, arg, sl calc ip, sdy ip, grdg to shy ss, occ clr to transl m gr ss
SLTY SH: med to sl dk gy, gy brn, sb blky to sb plty, occ plty, sft to sl frm, arg, sl calc ip, sdy ip, grdg to shy ss, tr clr to transl m gr ss
SLTY SH: med to sl dk gy, gy brn, sb blky to sb plty, occ plty, sft to sl frm, arg, sl calc ip, sdy ip, grdg to shy ss, occ clr to transl m gr ss
SLTY SH: med to sl dk gy, gy
sft to sl frm, arg, sl calc ip, sd
transl m gr ss


WT 10.25 / VIS 37
WT 10.45 / VIS 3
ROP (ft/hr)
500
0
Depth: 6530'
WT 9.85
VIS 37
YP 10
pH 9.5
Cl- 900
Ca++ 80
10000
1000000
GAS SCALE CHANGE
GAS (units)
C1-C4 (PPM)
905u
288u
1605u
1260u
2197u
2462u
331u
2769u
6,470
6,480
6,490
6,500
6,510
6,520
6,530
6,540
6,550
6,560
6,570
6,580
6,590
6,600
6,610
6,620
6,630
6,640
6,650
6,660
6,670
6,680
324
48
180
GAMMA (api)
200
0
6000
136
219
MD: 6,506
TVD: 6,451.56
INC: 22.8
AZM: 275.5
MD: 6,551
TVD: 6,492.26
INC: 27.6
AZM: 274
MD: 6,596
TVD: 6,531.18
INC: 32.6
AZM: 272
MD: 6,640
TVD: 6,567.46
INC: 36.3
AZM: 272
MD: 6,685
TVD: 6,602
INC: 39.8
AZM: 270.4
TVD 7/6
brn, sb blky to sb plty, occ plty, y ip, grdg to shy ss, tr clr to
SLTY SH: med to sl dk gy, gy brn, sb blky to sb plty, occ plty, sft to sl frm, arg, sl calc ip, sdy ip, grdg to shy ss, tr clr to transl m gr ss
SLTY SH: prd dkgy to gybrn, sbblky to sbplty, occ plty, sft to sl frm, arg, sl calc ip, sdy ip, grdg to shy ss, sl tr clr to transl m gr ss
SLTY SH: prd dkgy to gybrn, sbblky to sbplty, occ plty, sft to s arg, sl calc ip, occ bent
7000


WT 10.45 / VIS 37
ROP (ft/hr)
500
0
10000
1000000
GAS (units)
C1-C4 (PPM)
0
0
919u
5933u
6824u
732u
6848u
8192u
611u
4780u
4526u
8493u
6,690
6,700
6,710
6,720
6,730
6,740
6,750
6,760
6,770
6,780
6,790
6,800
6,810
6,820
6,830
6,840
6,850
6,860
6,870
6,880
6,890
6,900
GAMMA (api)
200
0
273
78
117
244
6600
6600
TVD SCALE CHANGE
TVD (ft)
SHARON SPRINGS LOWER MARKER ~6747' MD, ~6648' TVD
NIOBRARA A CHALK LOGGER TOP ~6783' MD, ~6672' TVD
MD: 6,730'
TVD: 6,636.11'
INC: 45°
AZM: 269.5°
MD: 6,775'
TVD: 6,666.65'
INC: 49.5°
AZM: 267°
MD: 6,820'
TVD: 6,694.28'
INC: 54.7°
AZM: 265.5°
MD: 6,865'
TVD: 6,718.65'
INC: 59.7°
AZM: 264.5°
SLTY SH: prd dkgy to gybrn, sbblky to sbplty, occ plty, sft to sl frm, arg, sl calc ip, scat bent
CHK: lt to med gy, v sft to sft, sbblky to sbplty, mot to stri, rthy lstr, sl arg, v calc
MRL: dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, arg ip, org/calc mtx, v calc
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, scat (6800') to abnt (6830') bent
CHK: lt to med gy, v sft to sft, sbblky to sbplty, pred stri tex, rthy lstr, sl arg, v calc
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, occ(6860')to tr (6890') bent, tr ss
CHK: lt to med gy, v sft to sft, sbblky to sbplty, pred stri tex, rthy lstr, sl arg, v calc
7100
7100


WT 10.5 / VIS 37
500
ROP (ft/hr)
0
10000
1000000
8822u
4087u
3335u
3427u
GAS (units)
C1-C4 (PPM)
9302u
4236u
2086u
1459u
1164u
0
6,910
6,920
6,930
6,940
6,950
6,960
6,970
6,980
6,990
7,000
7,010
7,020
7,030
7,040
7,050
7,060
7,070
7,080
7,090
7,100
7,110
7,120
131
190
200
GAMMA (api)
0
170
73
161
6600
NIOBRARA B CHALK
LOGGER TOP
~6966' MD, ~6764' TVD
MD: 7,045
TVD: 6,793.28
INC: 69.7
AZM: 268.1
MD: 7,090
TVD: 6,808.04
INC: 72
AZM: 268.9
MD: 6,955
TVD: 6,759.39
INC: 65.8
AZM: 265.7
MD: 7,000
TVD: 6,777.04
INC: 68
AZM: 266.7
TVD (ft)
7100
sft to mod frm, sb blky to sb plty, rthy
/calc mtx, v calc, tr fos frag, tr pyr lam,
t (6950') bent
, v sft to sft, sbblky to sbplty, pred stri
g, v calc
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy
lstr, gt, arg ip, org/calc mtx, v calc, tr bent
CHK: lt to med gy, v sft to sft, sbblky to sbplty, pred stri
tex, rthy lstr, sl arg, v calc
CHK: lt to med gy, sme sl dkgy, v sft to sft, sbblky to
sbplty, pred stri tex, rthy lstr, sl arg, v calc
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy
lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag, sl tr bent
CHK: lt to med gy, sme sl dkgy, v sft to sft, sbblky to
sbplty, pred stri tex, rthy lstr, sl arg, v calc
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy
lstr, gt, arg ip, org/calc mtx, v calc, occ cal incl, occ fos
frag, occ to scat bent


500
WT 10.5 / VIS 37
ROP (ft/hr)
0
MNDEPTH
5/9/14-
5/10/14
10000
1000000
GAS (units)
C1-C4 (PPM)
0
9070u
TD CASING POINT
MD 7278', @ 1336 HRS 5/8/14
CASING SET @ MD 7269'
DRILLED OUT
@ 1145 HRS, 5/10/14
MD 7282', 0255 HRS
HIGH SPP, TOOH
X/O MOTOR
RESUMED DRILLING
1719 HRS
5667u
2333u
1536u
1155u
1205u
1416u
2178u
7,130
7,140
7,150
7,160
7,170
7,180
7,190
7,200
7,210
7,220
7,230
7,240
7,250
7,260
7,270
7,280
7,290
7,300
7,310
7,320
7,330
7,340
200
GAMMA (api)
0
131
161
42
6800
MD: 7,135
TVD: 6,820.25
INC: 76.5
AZM: 268.7
MD: 7,179
TVD: 6,828.38
INC: 82.2
AZM: 268.4
NIOBRARA C CHALK
LOGGER TOP
~7247' MD, ~6834' TVD
Bit Data
Bit #: 3
Type: HALLIBURTON MMD54
Size: 6.12
Depth In: 7,266 '
S/N: 12249212
Bit Data
Bit #: 2
Depth Out: 7,278 '
Hours: 37 hrs
MD: 7,226
TVD: 6,833.13
INC: 86.2
AZM: 268.9
MD: 7,300
TVD: 6,836.49
INC: 88.6
AZM: 266.1
TVD (ft)
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ cal incl, occ fos frag, scat bent, occ chk
CHK: lt to med gy, v sft to sft, sbblky to sbplty, pred stri tex, rthy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ cal inc, tr bent
CHK: lt to med gy, v sft to sft, sbblky to sbplty, pred stri tex, rthy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ cal inc
CHK: lt to med gy, v sft to sft
lstr, sl arg, v calc, occ cal inc
MRL: pred dk gy, sft to mod
arg ip, org/calc mtx, v calc,
7000

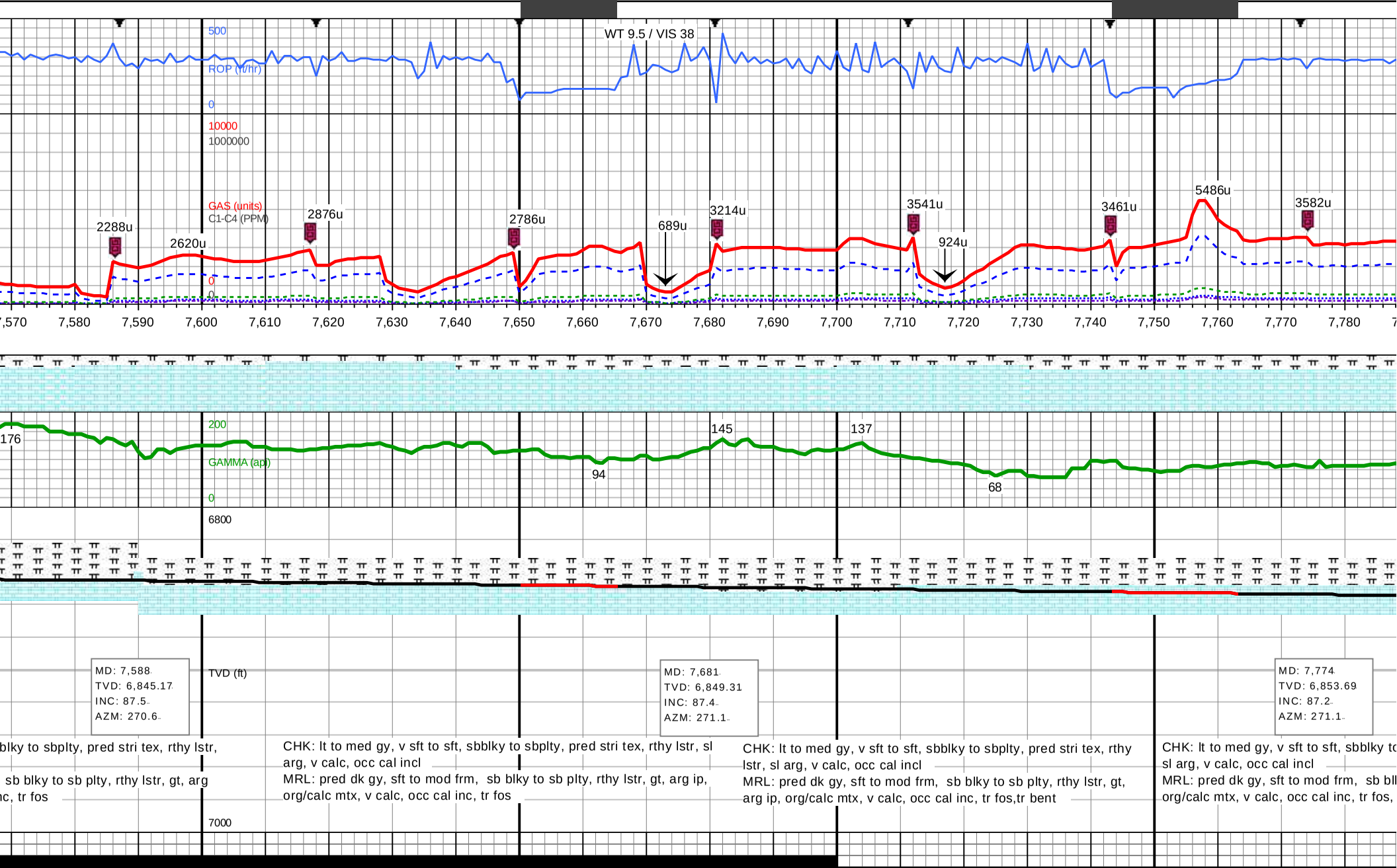


, sbblky to sbplty, pred stri tex, rthy
l
frm, sb blky to sb plty, rthy lstr, gt,
cc cal inc, tr fos

CHK: lt to med gy, v sft to sft, sbblky to sbplty, pred stri tex, rthy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ cal inc, rr fos

CHK: lt to med gy, v sft to sft, sbblky to sbplty, pred stri tex, rthy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ cal inc, tr fos

CHK: lt to med gy, v sft to sft, sb
sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm,
ip, org/calc mtx, v calc, occ cal in



blky to sbplty, pred stri tex, rthy lstr,

sb blky to sb plty, rthy lstr, gt, arg

nc, tr fos

CHK: lt to med gy, v sft to sft, sbblky to sbplty, pred stri tex, rthy lstr, sl arg, v calc, occ cal incl

MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ cal inc, tr fos

CHK: lt to med gy, v sft to sft, sbblky to sbplty, pred stri tex, rthy lstr, sl arg, v calc, occ cal incl

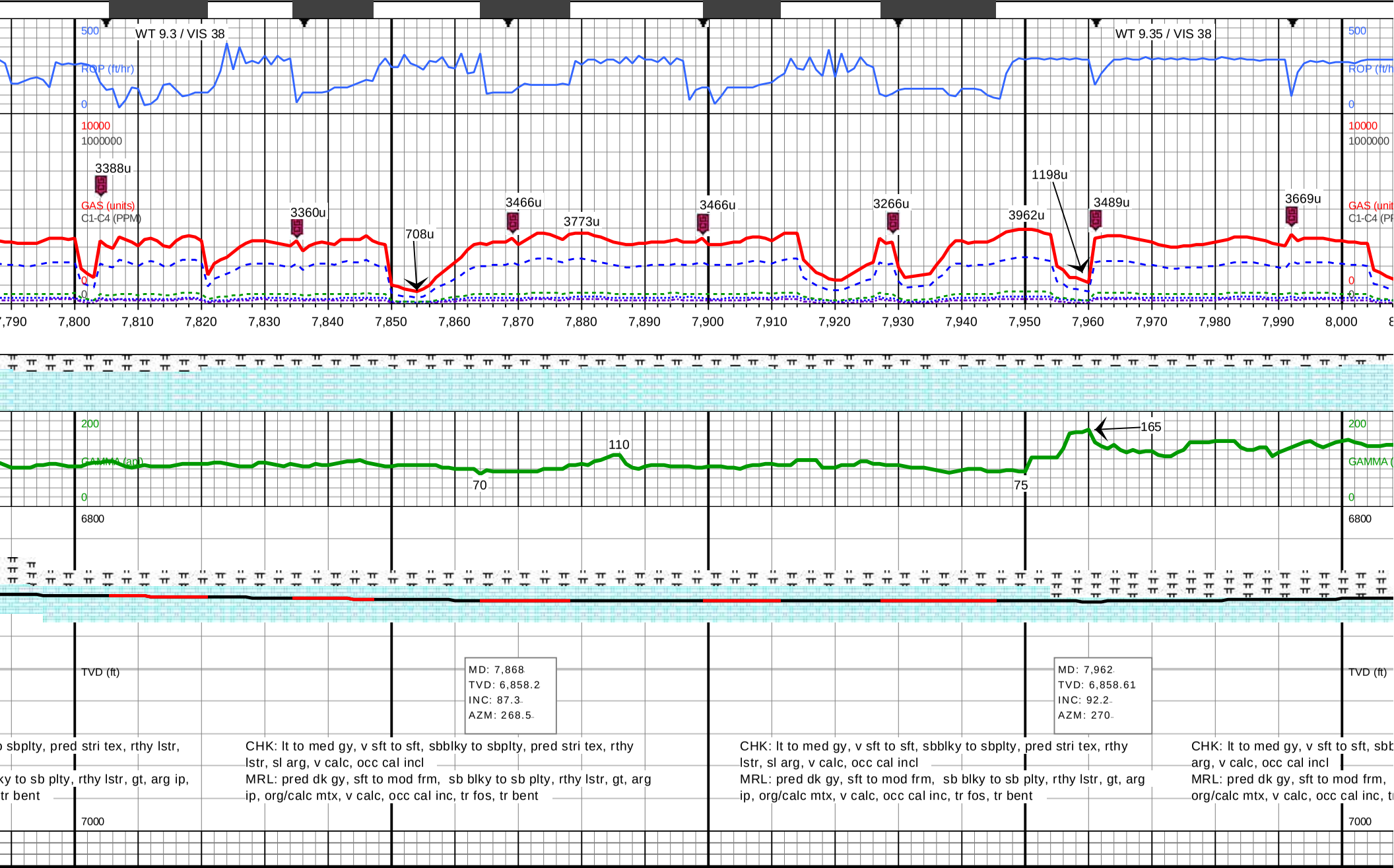
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ cal inc, tr fos,tr bent

CHK: lt to med gy, v sft to sft, sbblky to

sl arg, v calc, occ cal incl

MRL: pred dk gy, sft to mod frm, sb bl

org/calc mtx, v calc, occ cal inc, tr fos,

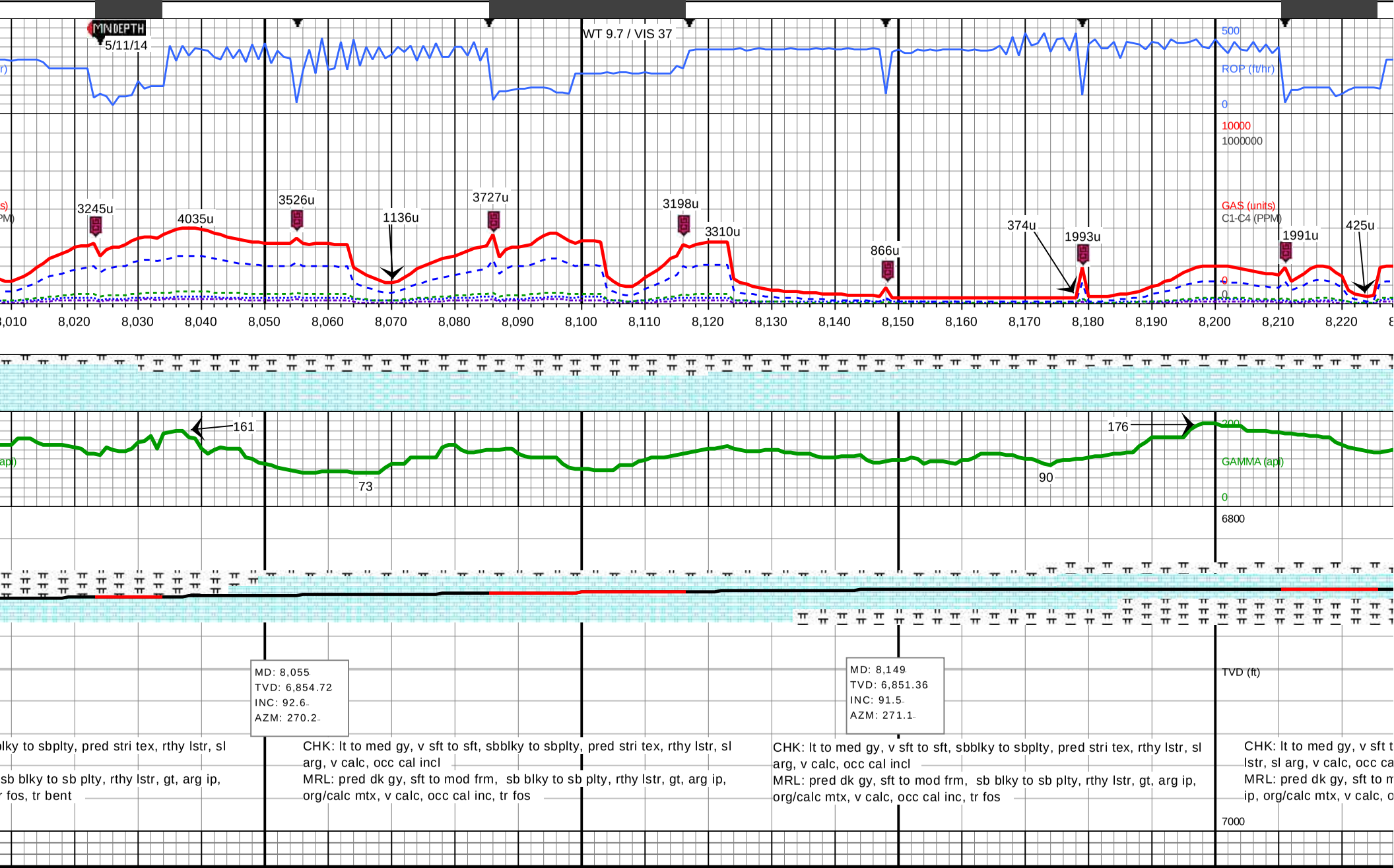


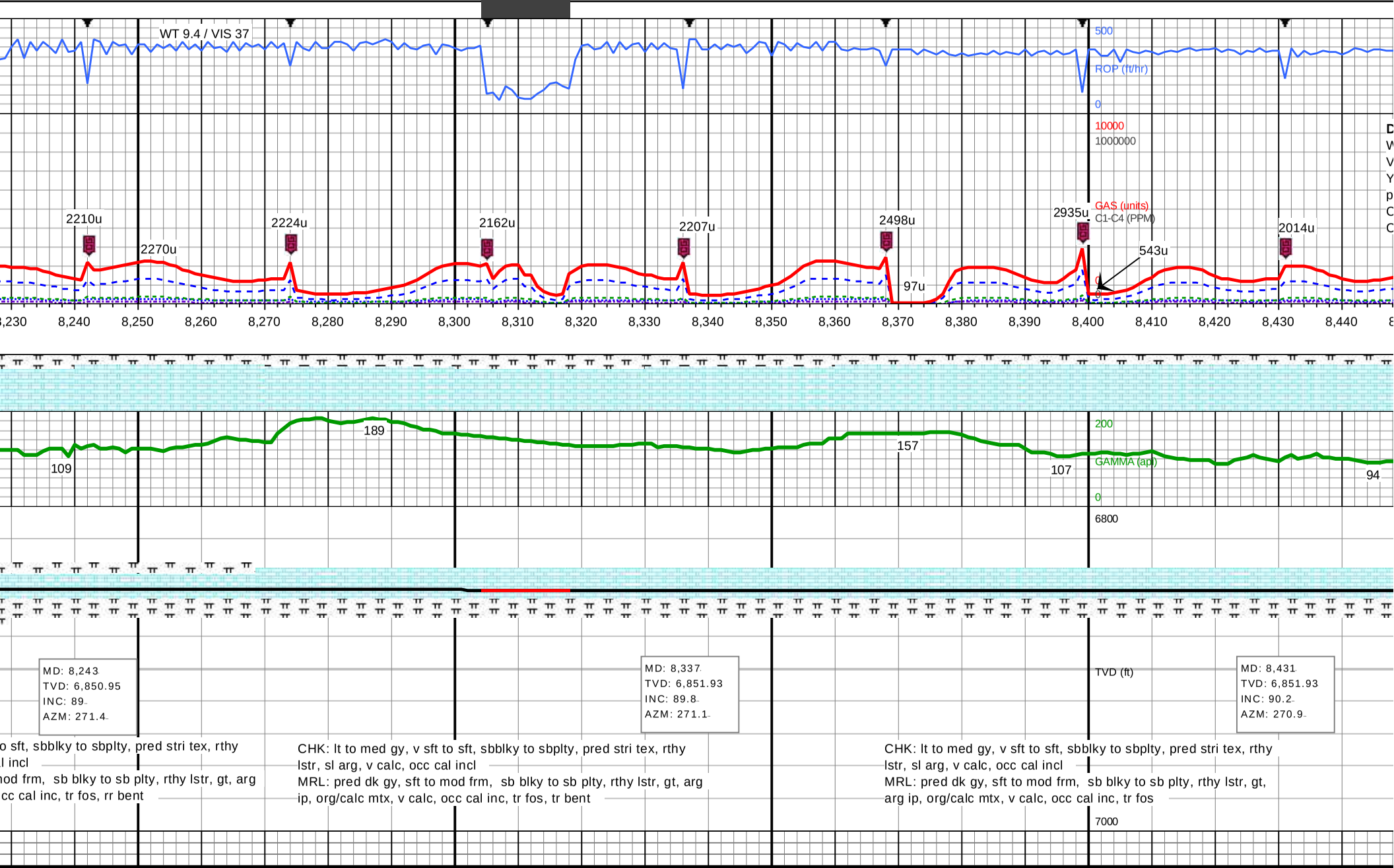
o sbplty, pred stri tex, rthy lstr,
ky to sb plty, rthy lstr, gt, arg ip,
tr bent

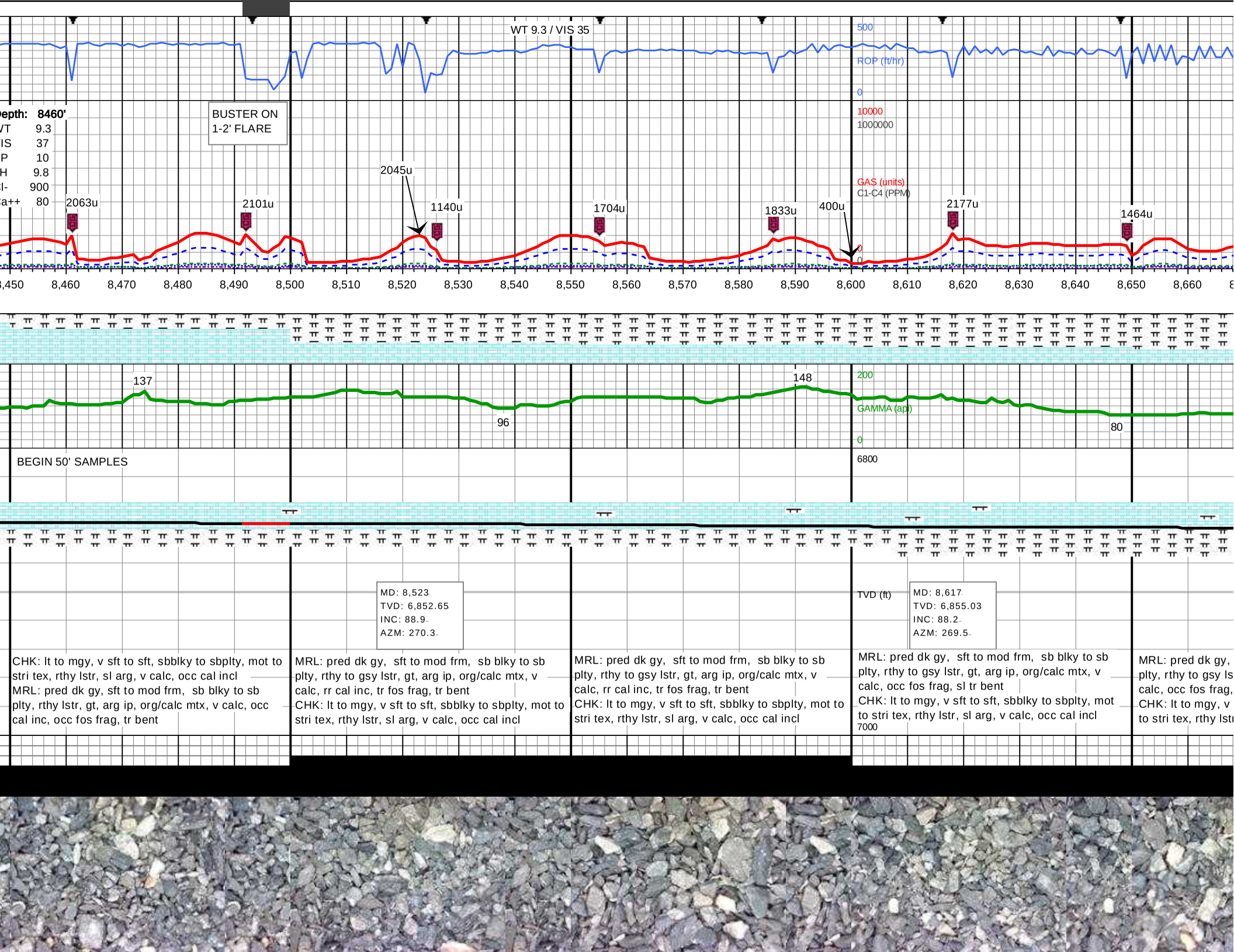
CHK: lt to med gy, v sft to sft, sbblky to sbplty, pred stri tex, rthy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ cal inc, tr fos, tr bent

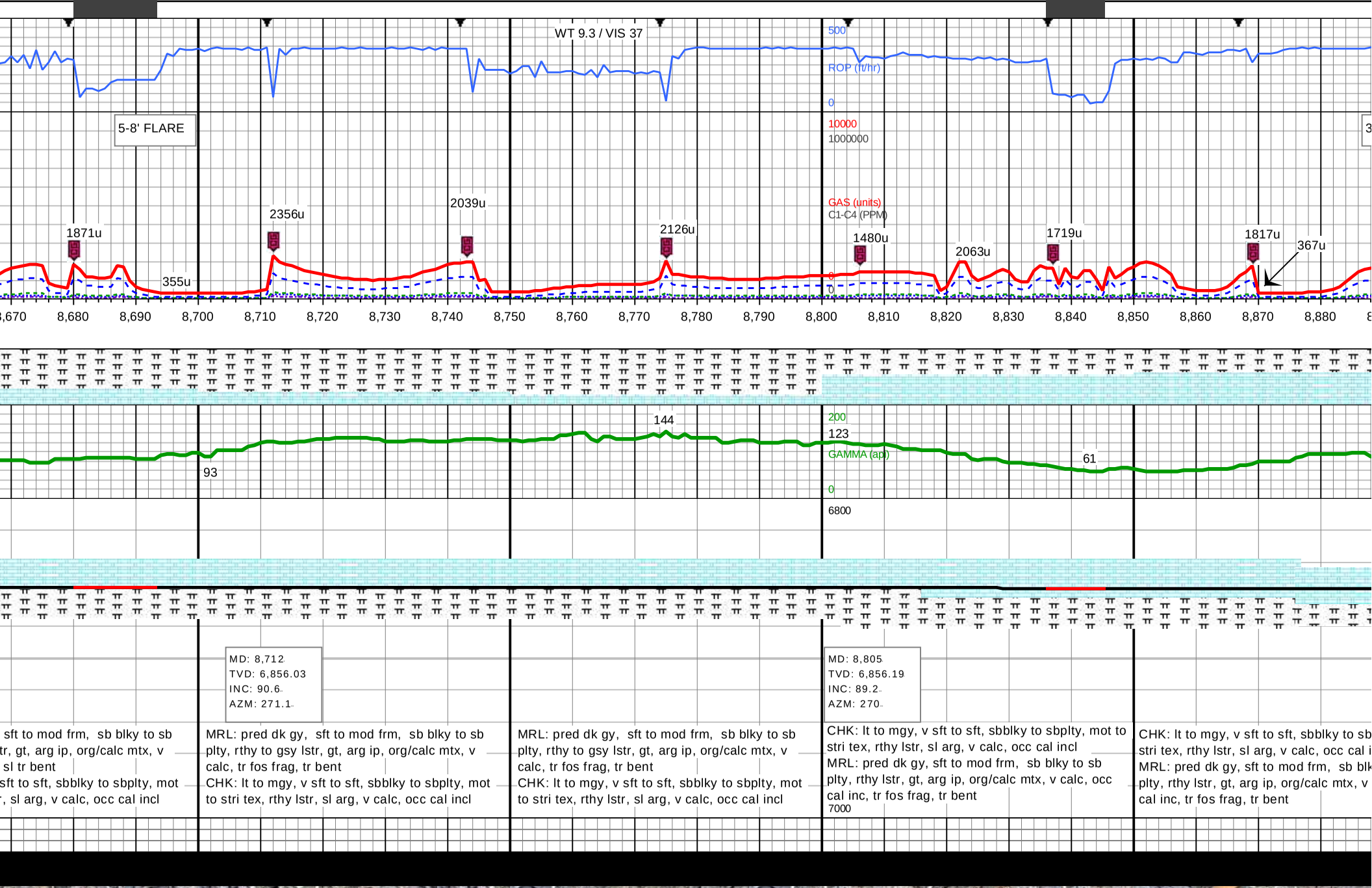
CHK: lt to med gy, v sft to sft, sbblky to sbplty, pred stri tex, rthy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ cal inc, tr fos, tr bent

CHK: lt to med gy, v sft to sft, sbb
arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm,
org/calc mtx, v calc, occ cal inc, t


MNDEPTH
5/11/14
WT 9.7 / VIS 37
ROP (ft/hr)
500
0
10000
1000000
GAS (units)
C1-C4 (PPM)
3245u
4035u
3526u
1136u
3727u
3198u
3310u
866u
374u
1993u
1991u
425u
8,010
8,020
8,030
8,040
8,050
8,060
8,070
8,080
8,090
8,100
8,110
8,120
8,130
8,140
8,150
8,160
8,170
8,180
8,190
8,200
8,210
8,220
161
73
90
176
GAMMA (api)
200
0
6800
MD: 8,055
TVD: 6,854.72
INC: 92.6
AZM: 270.2
MD: 8,149
TVD: 6,851.36
INC: 91.5
AZM: 271.1
TVD (ft)
7000
lky to sbplty, pred stri tex, rthy lstr, sl
sb blky to sb plty, rthy lstr, gt, arg ip,
r fos, tr bent
CHK: lt to med gy, v sft to sft, sbblky to sbplty, pred stri tex, rthy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ cal inc, tr fos
CHK: lt to med gy, v sft to sft, sbblky to sbplty, pred stri tex, rthy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ cal inc, tr fos
CHK: lt to med gy, v sft t
lstr, sl arg, v calc, occ ca
MRL: pred dk gy, sft to m
ip, org/calc mtx, v calc, o


WT 9.4 / VIS 37
500
ROP (ft/hr)
0
10000
1000000
GAS (units)
C1-C4 (PPM)
2210u
2270u
2224u
2162u
2207u
2498u
2935u
543u
97u
2014u
8,230
8,240
8,250
8,260
8,270
8,280
8,290
8,300
8,310
8,320
8,330
8,340
8,350
8,360
8,370
8,380
8,390
8,400
8,410
8,420
8,430
8,440
109
189
157
107
94
200
GAMMA (api)
0
6800
MD: 8,243
TVD: 6,850.95
INC: 89
AZM: 271.4
MD: 8,337
TVD: 6,851.93
INC: 89.8
AZM: 271.1
TVD (ft)
MD: 8,431
TVD: 6,851.93
INC: 90.2
AZM: 270.9
o sft, sbblky to sbplty, pred stri tex, rthy
l incl
od frm, sb blky to sb plty, rthy lstr, gt, arg
cc cal inc, tr fos, rr bent
CHK: lt to med gy, v sft to sft, sbblky to sbplty, pred stri tex, rthy
lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg
ip, org/calc mtx, v calc, occ cal inc, tr fos, tr bent
CHK: lt to med gy, v sft to sft, sbblky to sbplty, pred stri tex, rthy
lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt,
arg ip, org/calc mtx, v calc, occ cal inc, tr fos
7000


WT 9.3 / VIS 35
500
ROP (ft/hr)
0
Depth: 8460'
WT 9.3
VIS 37
P 10
H 9.8
I- 900
Ca++ 80
BUSTER ON
1-2' FLARE
10000
1000000
GAS (units)
C1-C4 (PPM)
2063u
2101u
2045u
1140u
1704u
1833u
400u
2177u
1464u
0
0
8,450
8,460
8,470
8,480
8,490
8,500
8,510
8,520
8,530
8,540
8,550
8,560
8,570
8,580
8,590
8,600
8,610
8,620
8,630
8,640
8,650
8,660
137
96
148
80
200
GAMMA (api)
0
6800
BEGIN 50' SAMPLES
MD: 8,523
TVD: 6,852.65
INC: 88.9
AZM: 270.3
TVD (ft)
MD: 8,617
TVD: 6,855.03
INC: 88.2
AZM: 269.5
CHK: lt to mgy, v sft to sft, sbblky to sbplty, mot to stri tex, rthy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ cal inc, occ fos frag, tr bent
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, rr cal inc, tr fos frag, tr bent
CHK: lt to mgy, v sft to sft, sbblky to sbplty, mot to stri tex, rthy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, rr cal inc, tr fos frag, tr bent
CHK: lt to mgy, v sft to sft, sbblky to sbplty, mot to stri tex, rthy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag, sl tr bent
CHK: lt to mgy, v sft to sft, sbblky to sbplty, mot to stri tex, rthy lstr, sl arg, v calc, occ cal incl
7000
MRL: pred dk gy, plty, rthy to gsy ls
calc, occ fos frag,
CHK: lt to mgy, v
to stri tex, rthy lst



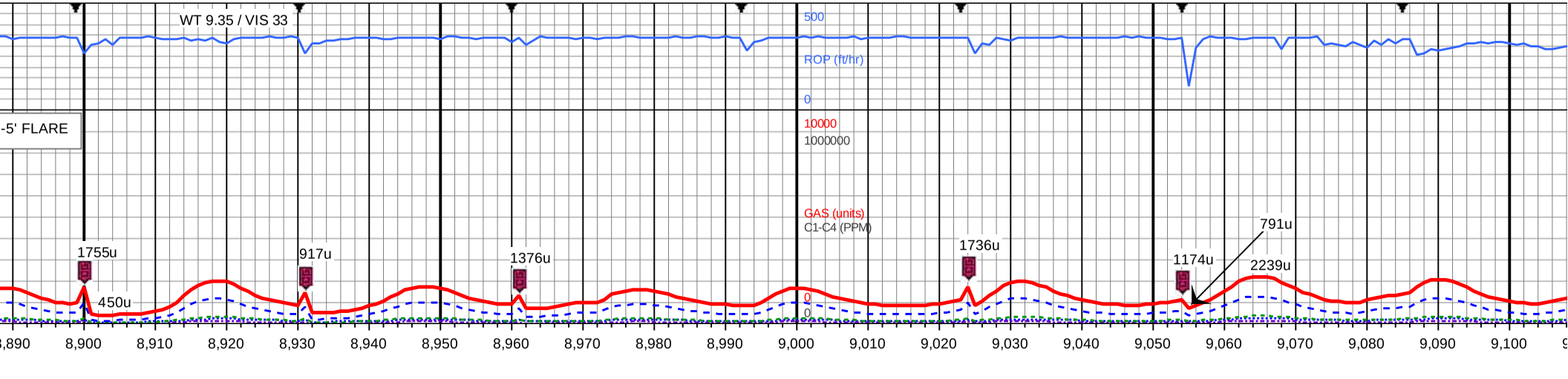
sft to mod frm, sb blky to sb
tr, gt, arg ip, org/calc mtx, v
sl tr bent
sft to sft, sbblky to sbplty, mot
r, sl arg, v calc, occ cal incl

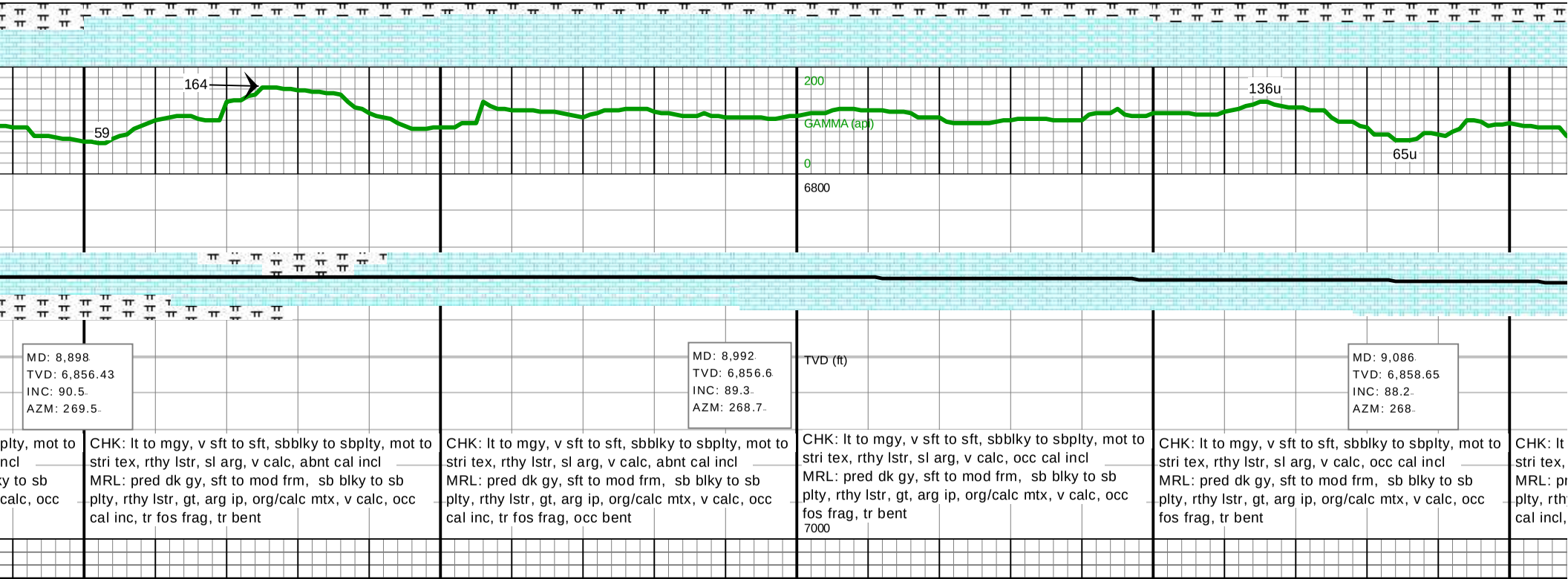
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, tr fos frag, tr bent
CHK: lt to mgy, v sft to sft, sbblky to sbplty, mot to stri tex, rthy lstr, sl arg, v calc, occ cal incl

MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, tr fos frag, tr bent
CHK: lt to mgy, v sft to sft, sbblky to sbplty, mot to stri tex, rthy lstr, sl arg, v calc, occ cal incl

CHK: lt to mgy, v sft to sft, sbblky to sbplty, mot to stri tex, rthy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ cal inc, tr fos frag, tr bent

CHK: lt to mgy, v sft to sft, sbblky to sb
stri tex, rthy lstr, sl arg, v calc, occ cal i
MRL: pred dk gy, sft to mod frm, sb blk
plty, rthy lstr, gt, arg ip, org/calc mtx, v
cal inc, tr fos frag, tr bent





plty, mot to
ncl
y to sb
calc, occ

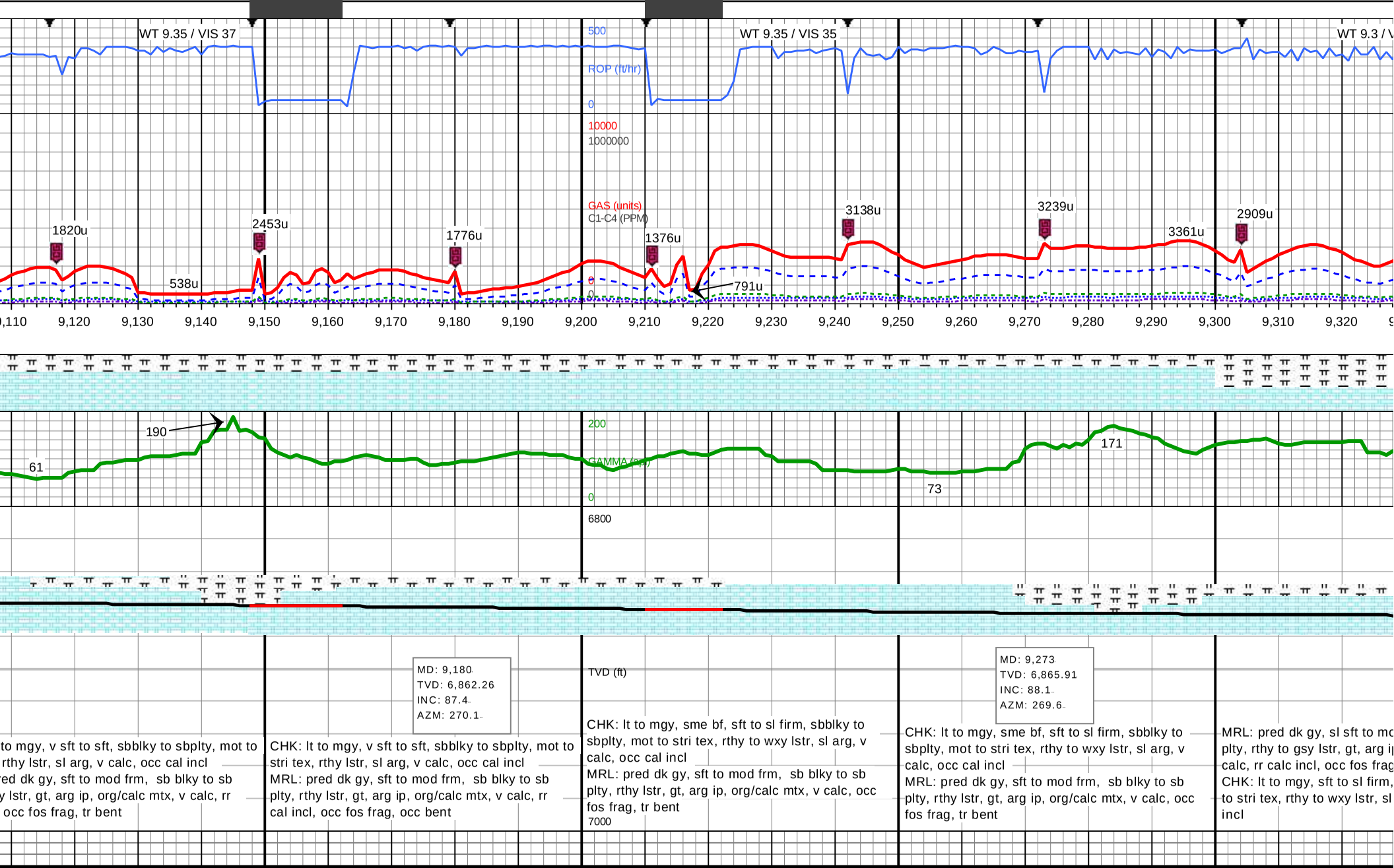
CHK: lt to mgy, v sft to sft, sbblky to sbplty, mot to stri tex, rthy lstr, sl arg, v calc, abnt cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ cal inc, tr fos frag, tr bent

CHK: lt to mgy, v sft to sft, sbblky to sbplty, mot to stri tex, rthy lstr, sl arg, v calc, abnt cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ cal inc, tr fos frag, occ bent

CHK: lt to mgy, v sft to sft, sbblky to sbplty, mot to stri tex, rthy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag, tr bent
7000

CHK: lt to mgy, v sft to sft, sbblky to sbplty, mot to stri tex, rthy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag, tr bent

CHK: lt
stri tex,
MRL: pr
plty, rth
cal incl,



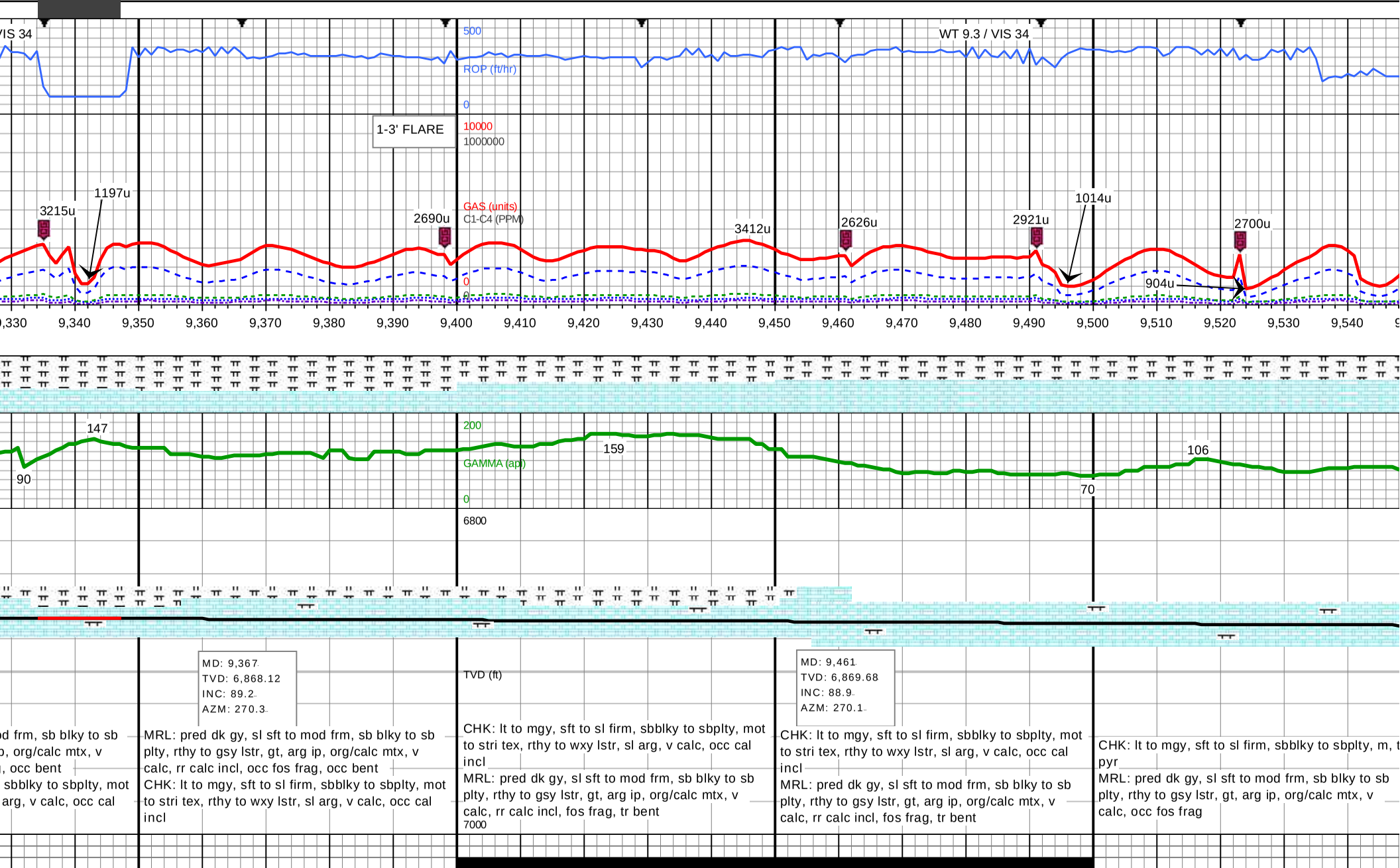
to mgy, v sft to sft, sbblky to sbplty, mot to rthy lstr, sl arg, v calc, occ cal incl
red dk gy, sft to mod frm, sb blky to sb
y lstr, gt, arg ip, org/calc mtx, v calc, rr
occ fos frag, tr bent

CHK: lt to mgy, v sft to sft, sbblky to sbplty, mot to stri tex, rthy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, rr cal incl, occ fos frag, occ bent

CHK: lt to mgy, sme bf, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy to wxy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag, tr bent

CHK: lt to mgy, sme bf, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy to wxy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag, tr bent

MRL: pred dk gy, sl sft to mo
plty, rthy to gsy lstr, gt, arg i
calc, rr calc incl, occ fos frag
CHK: lt to mgy, sft to sl firm,
to stri tex, rthy to wxy lstr, sl
incl



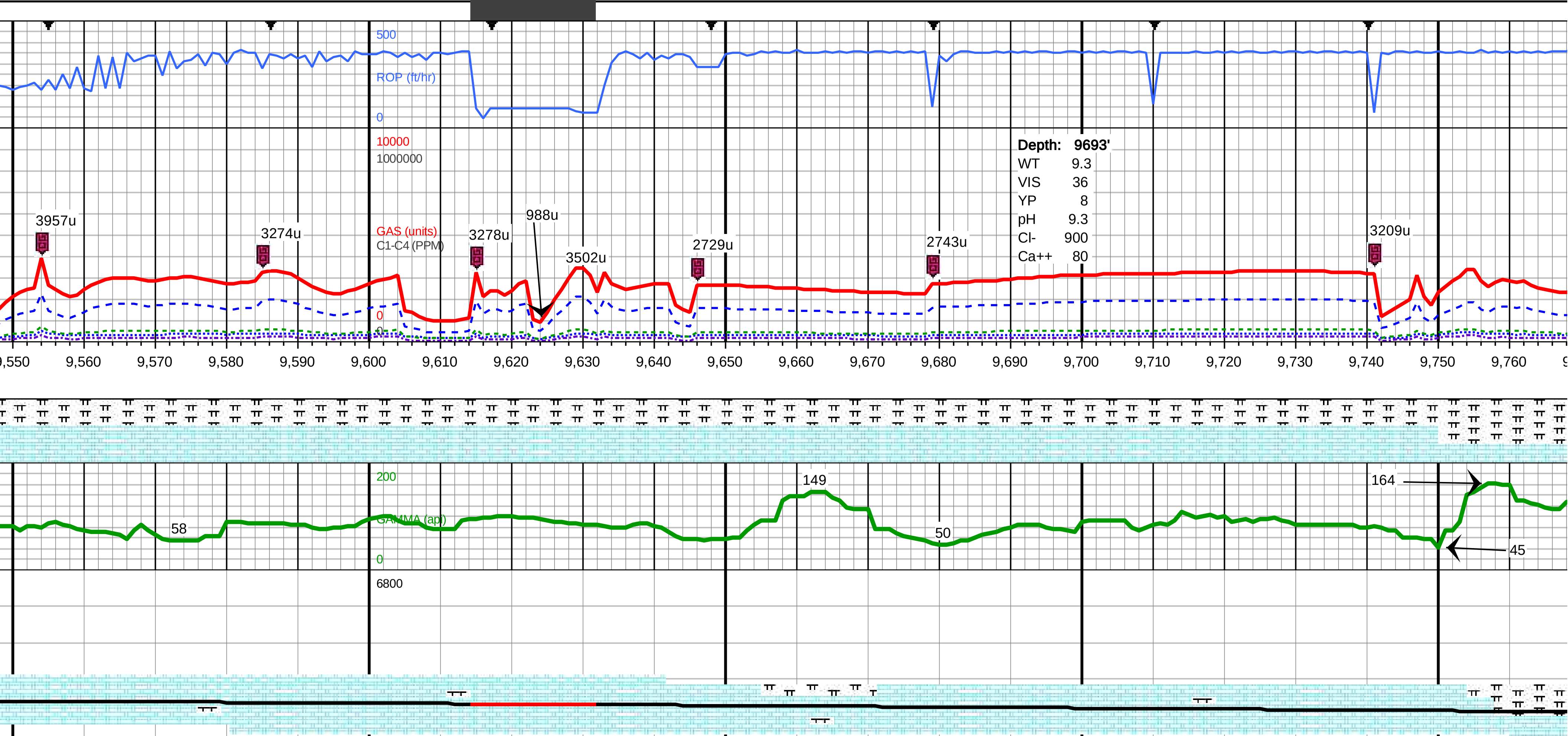
od frm, sb blky to sb
p, org/calc mtx, v
, occ bent
sbblky to sbplty, mot
arg, v calc, occ cal

MRL: pred dk gy, sl sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, rr calc incl, occ fos frag, occ bent
CHK: lt to mgy, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy to wxy lstr, sl arg, v calc, occ cal incl

CHK: lt to mgy, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy to wxy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sl sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, rr calc incl, fos frag, tr bent

CHK: lt to mgy, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy to wxy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sl sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, rr calc incl, fos frag, tr bent

CHK: lt to mgy, sft to sl firm, sbblky to sbplty, m, t
pyr
MRL: pred dk gy, sl sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag



TVD (ft)

7000

MD: 9,555
TVD: 6,872.06
INC: 88.2
AZM: 269.7

CHK: lt to mgy, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy to wxy lstr, sl arg, v calc, tr pyr
MRL: pred dk gy, sl sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag, sl tr bent

CHK: lt to mgy, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy lstr, sl arg, v calc, occ calc incl
MRL: pred dk gy, sl sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag, sl tr bent

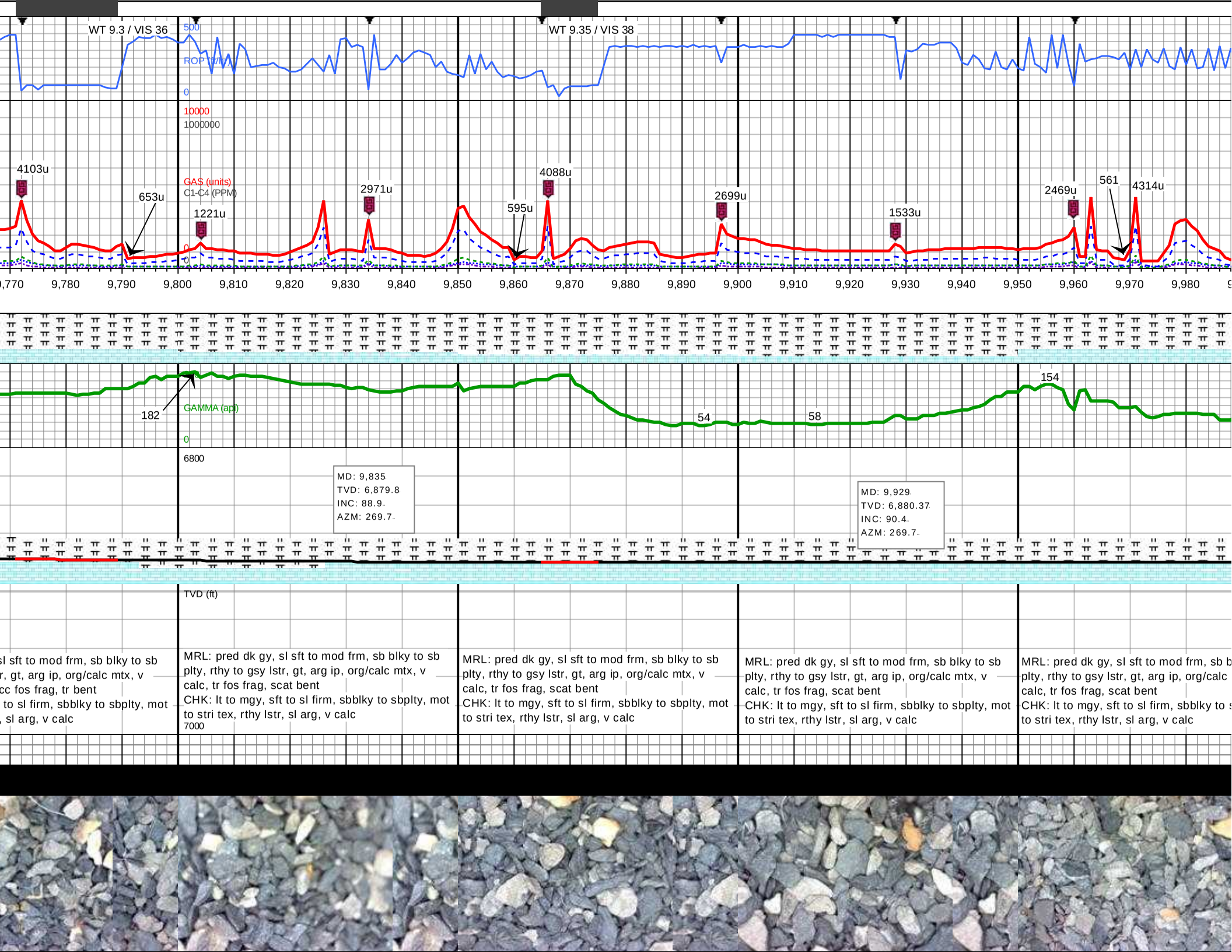
MD: 9,648
TVD: 6,874.33
INC: 89
AZM: 269.9

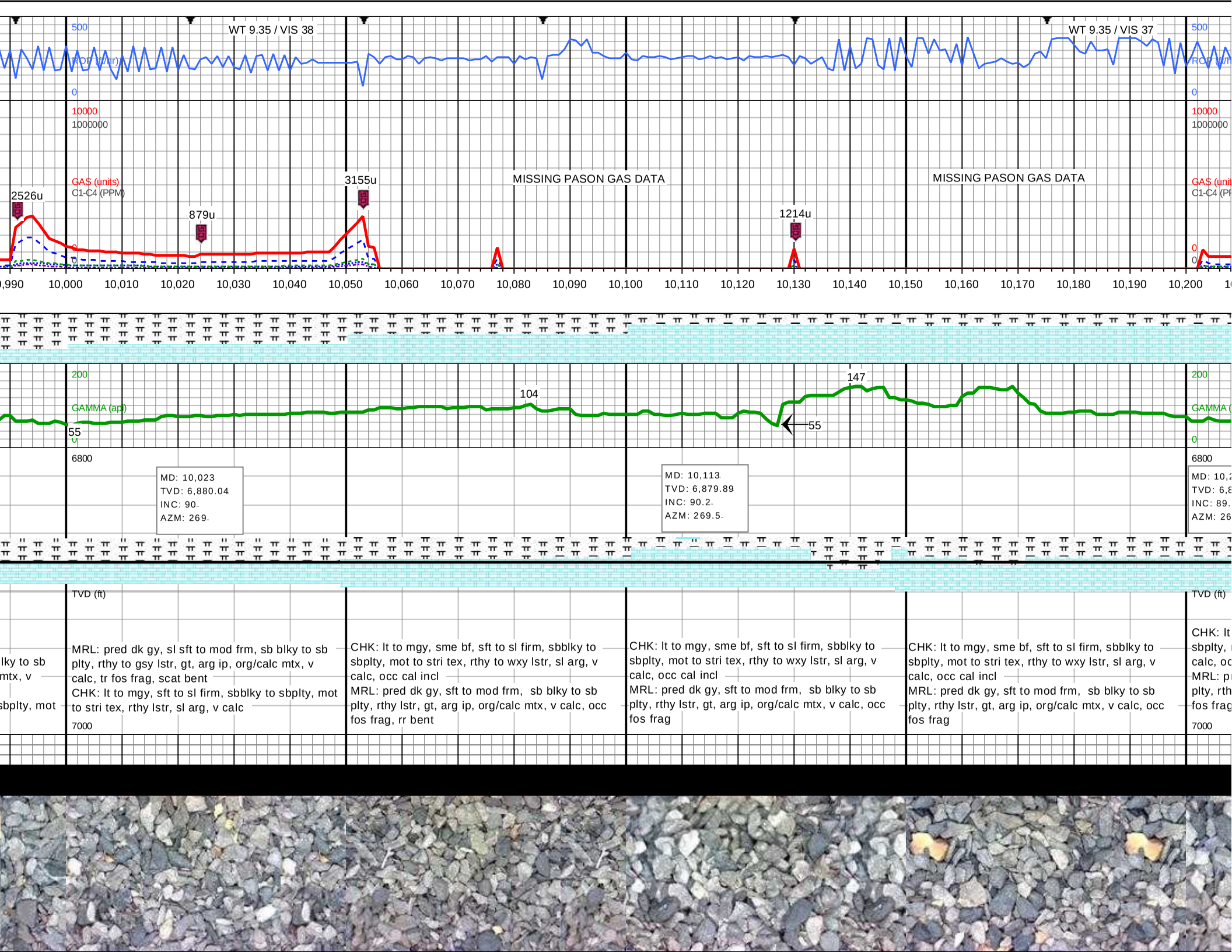
CHK: lt to mgy, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy lstr, sl arg, v calc, occ calc incl
MRL: pred dk gy, sl sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag, sl tr bent

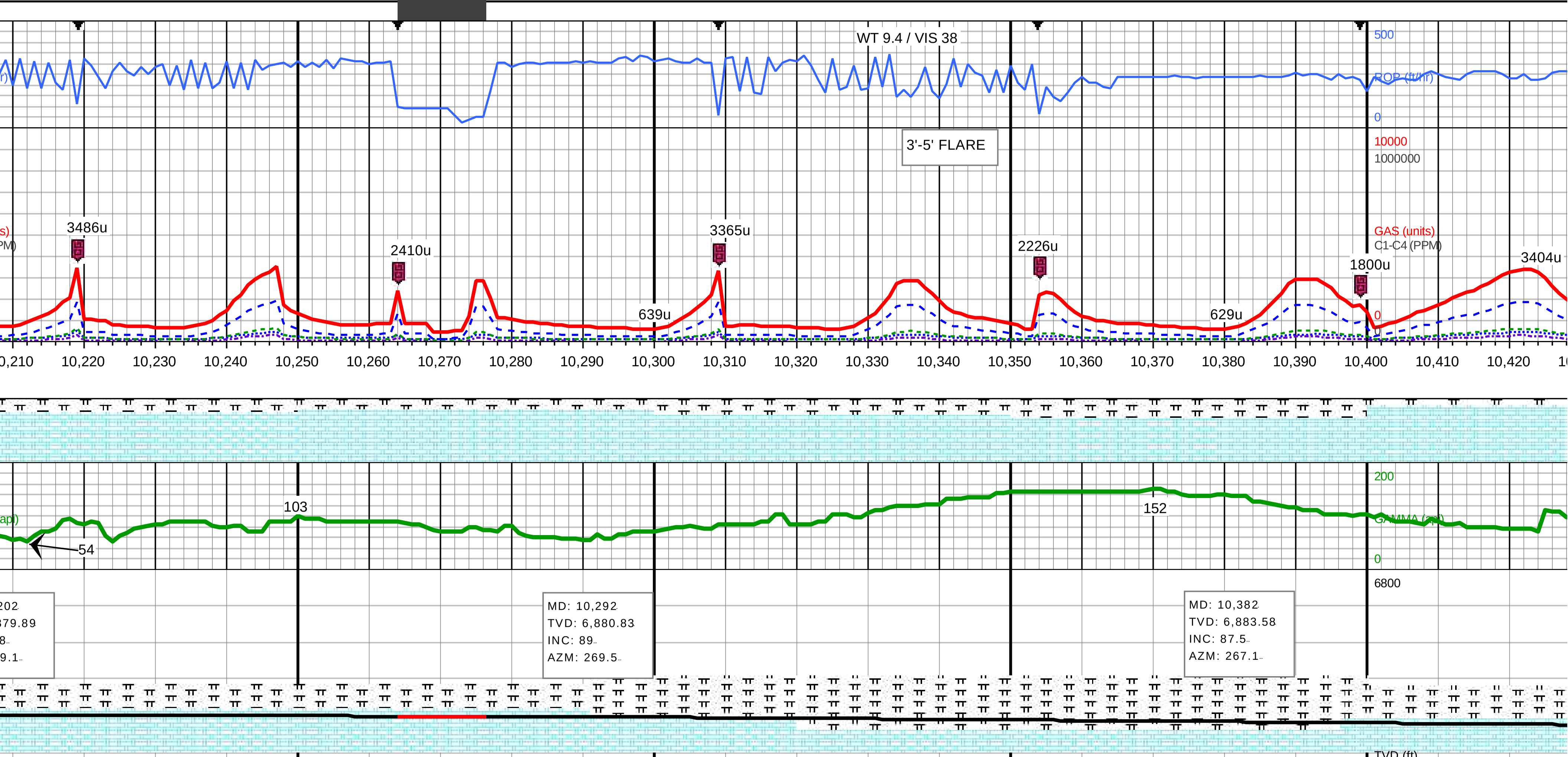
MD: 9,741
TVD: 6,877.01
INC: 87.7
AZM: 269.7

CHK: lt to mgy, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy lstr, sl arg, v calc, occ calc incl
MRL: pred dk gy, sl sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag, sl tr bent

MRL: pred dk gy, s
plty, rthy to gsy lst
calc, rr calc incl, o
CHK: lt to mgy, sft
to stri tex, rthy lstr


WT 9.3 / VIS 36
WT 9.35 / VIS 38
500
ROP (m/h)
0
10000
1000000
GAS (units)
C1-C4 (PPM)
4103u
653u
1221u
2971u
595u
4088u
2699u
1533u
2469u
561
4314u
0
0
9,770
9,780
9,790
9,800
9,810
9,820
9,830
9,840
9,850
9,860
9,870
9,880
9,890
9,900
9,910
9,920
9,930
9,940
9,950
9,960
9,970
9,980
182
GAMMA (api)
0
6800
54
58
154
MD: 9,835
TVD: 6,879.8
INC: 88.9
AZM: 269.7
MD: 9,929
TVD: 6,880.37
INC: 90.4
AZM: 269.7
TVD (ft)
sl sft to mod frm, sb blky to sb
r, gt, arg ip, org/calc mtx, v
cc fos frag, tr bent
to sl firm, sbblky to sbplty, mot
, sl arg, v calc
MRL: pred dk gy, sl sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, tr fos frag, scat bent
CHK: lt to mgy, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy lstr, sl arg, v calc
7000
MRL: pred dk gy, sl sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, tr fos frag, scat bent
CHK: lt to mgy, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy lstr, sl arg, v calc
MRL: pred dk gy, sl sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, tr fos frag, scat bent
CHK: lt to mgy, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy lstr, sl arg, v calc
MRL: pred dk gy, sl sft to mod frm, sb b
plty, rthy to gsy lstr, gt, arg ip, org/calc
calc, tr fos frag, scat bent
CHK: lt to mgy, sft to sl firm, sbblky to s
to stri tex, rthy lstr, sl arg, v calc


WT 9.35 / VIS 38
WT 9.35 / VIS 37
500
ROP (min/ft)
0
10000
1000000
GAS (units)
C1-C4 (PPM)
2526u
879u
3155u
MISSING PASON GAS DATA
MISSING PASON GAS DATA
1214u
10,000
10,010
10,020
10,030
10,040
10,050
10,060
10,070
10,080
10,090
10,100
10,110
10,120
10,130
10,140
10,150
10,160
10,170
10,180
10,190
10,200
200
GAMMA (api)
55
104
147
55
6800
MD: 10,023
TVD: 6,880.04
INC: 90
AZM: 269
MD: 10,113
TVD: 6,879.89
INC: 90.2
AZM: 269.5
TVD (ft)
MRL: pred dk gy, sl sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, tr fos frag, scat bent
CHK: lt to mgy, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy lstr, sl arg, v calc
CHK: lt to mgy, sme bf, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy to wxy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag, rr bent
CHK: lt to mgy, sme bf, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy to wxy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag
CHK: lt to mgy, sme bf, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy to wxy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag
7000



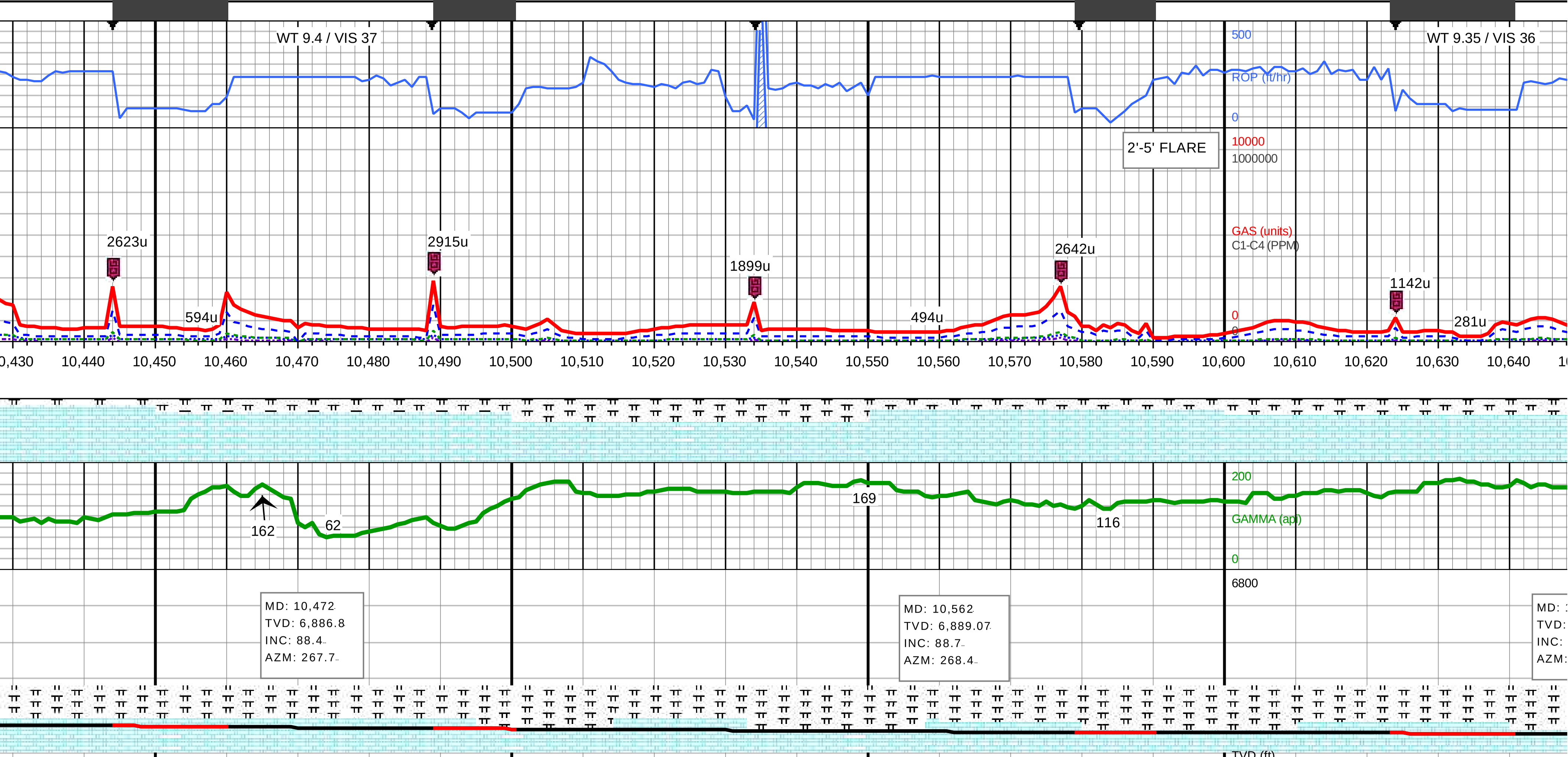
to mgy, sme bf, sft to sl firm, sbblky to
mot to stri tex, rthy to wxy lstr, sl arg, v
c cal incl
red dk gy, sft to mod frm, sb blky to sb
y lstr, gt, arg ip, org/calc mtx, v calc, occ

CHK: lt to mgy, sme bf, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy to wxy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag

CHK: lt to mgy, sme bf, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy to wxy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag

CHK: lt to mgy, sme bf, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy to wxy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag, rr bent

CHK: lt to mgy, sme bf, sft to
sbplty, mot to stri tex, rthy to
calc, occ cal incl
MRL: pred dk gy, sft to mod
plty, rthy lstr, gt, arg ip, org/c
fos frag, rr bent
7000



o sl firm, sbblky to
wxy lstr, sl arg, v

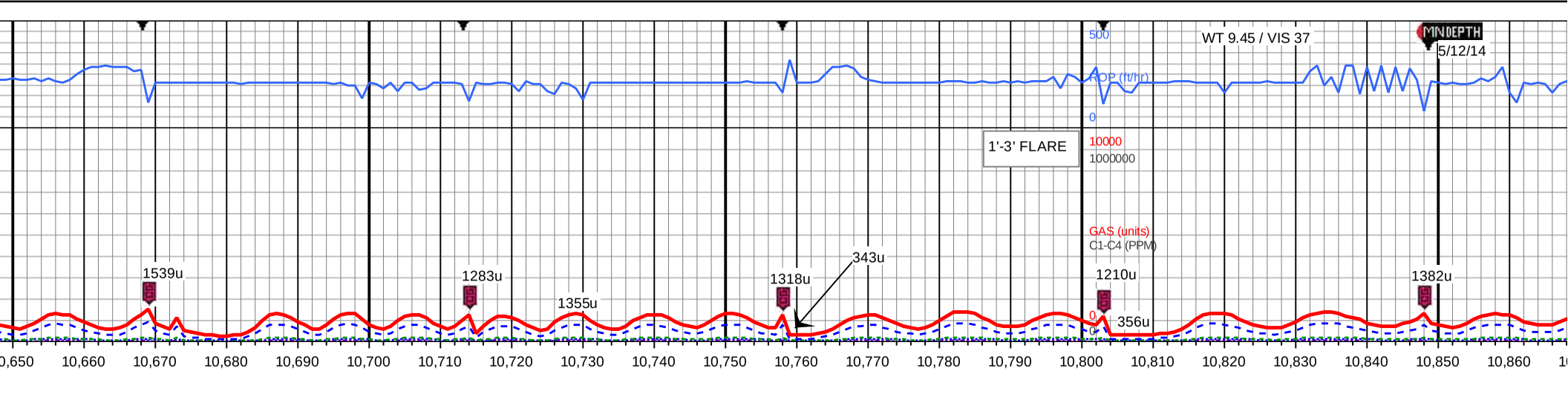
frm, sb blky to sb
calc mtx, v calc, occ

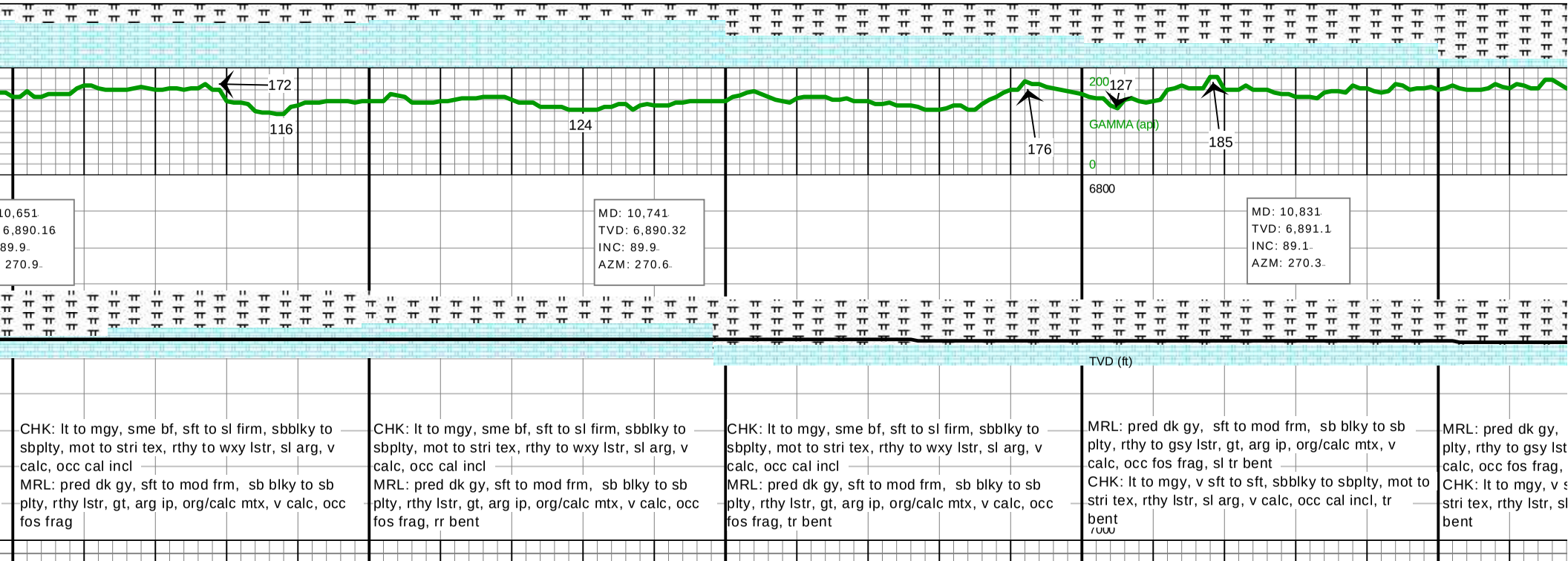
CHK: lt to mgy, sme bf, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy to wxy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag

CHK: lt to mgy, sme bf, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy to wxy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag

CHK: lt to mgy, sme bf, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy to wxy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag, tr bent

CHK: lt to mgy, sme bf, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy to wxy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag





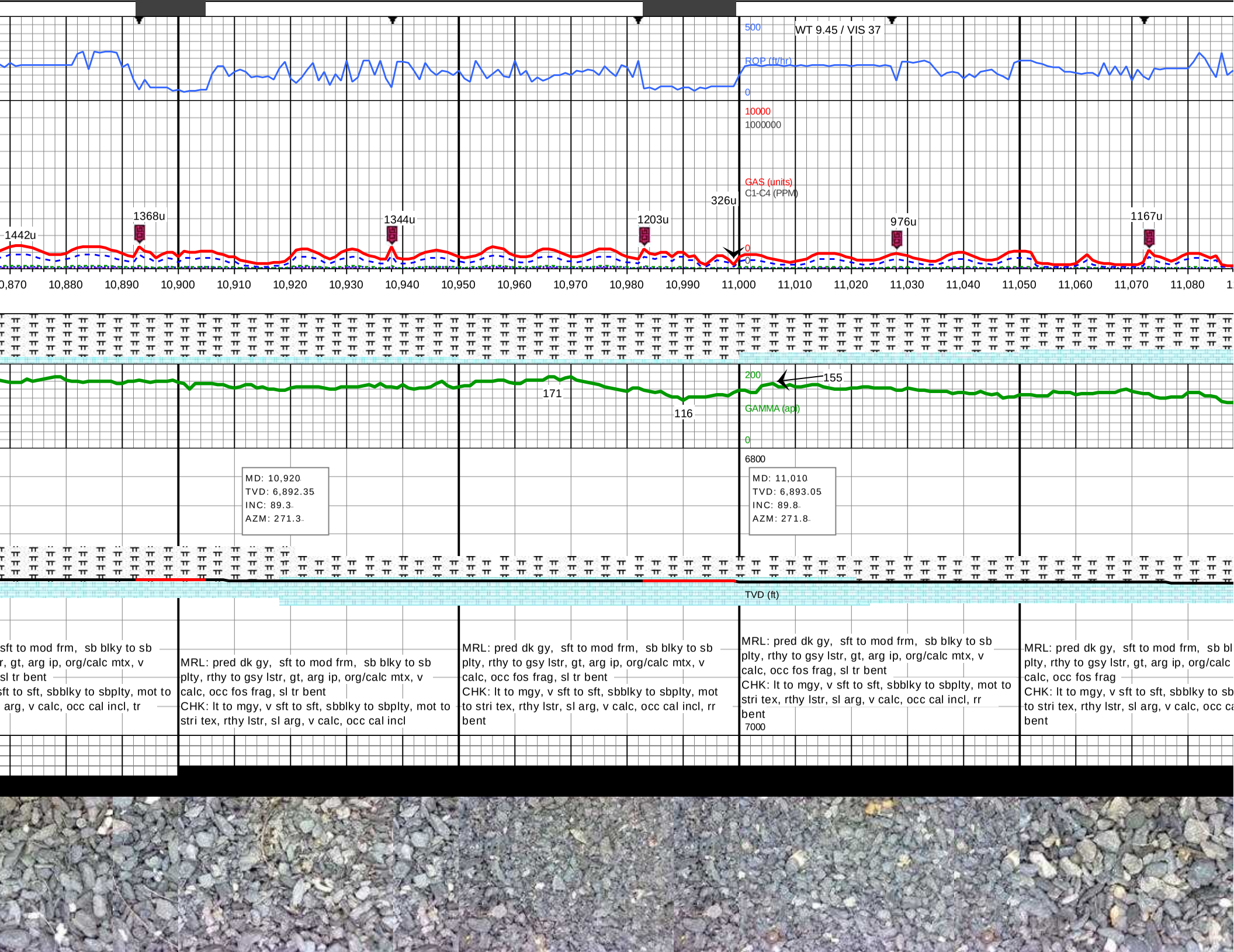
CHK: lt to mgy, sme bf, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy to wxy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag

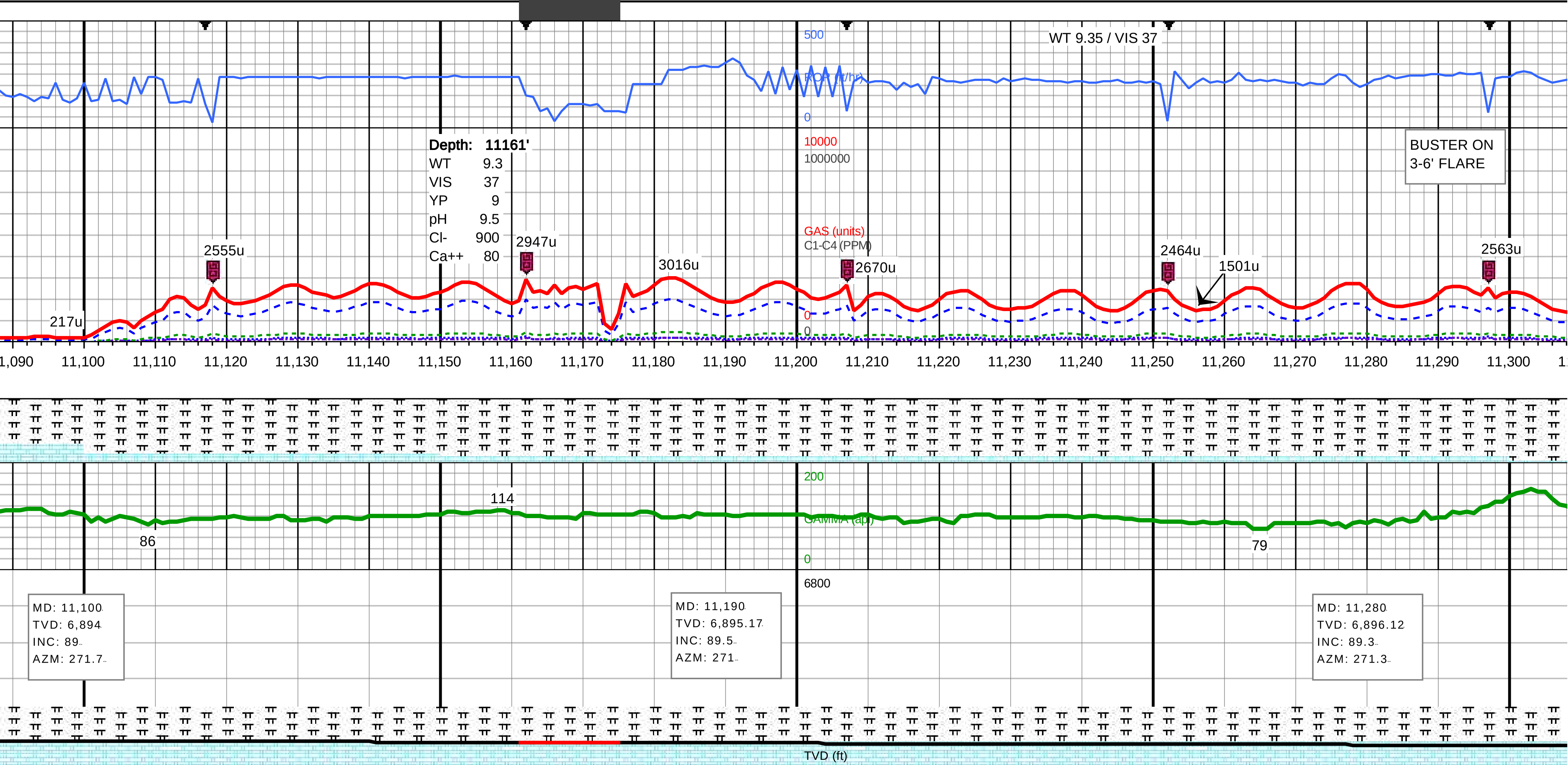
CHK: lt to mgy, sme bf, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy to wxy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag, rr bent

CHK: lt to mgy, sme bf, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy to wxy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag, tr bent

MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag, sl tr bent
CHK: lt to mgy, v sft to sft, sbblky to sbplty, mot to stri tex, rthy lstr, sl arg, v calc, occ cal incl, tr bent

MRL: pred dk gy, plty, rthy to gsy lst calc, occ fos frag,
CHK: lt to mgy, v s stri tex, rthy lstr, sl bent


500
WT 9.45 / VIS 37
ROP (ft/hr)
0
10000
1000000
GAS (units)
C1-C4 (PPM)
326u
1442u
1368u
1344u
1203u
976u
1167u
0
0
10,870
10,880
10,890
10,900
10,910
10,920
10,930
10,940
10,950
10,960
10,970
10,980
10,990
11,000
11,010
11,020
11,030
11,040
11,050
11,060
11,070
11,080
200
155
171
116
GAMMA (api)
0
6800
MD: 10,920
TVD: 6,892.35
INC: 89.3
AZM: 271.3
MD: 11,010
TVD: 6,893.05
INC: 89.8
AZM: 271.8
TVD (ft)
sft to mod frm, sb blky to sb
r, gt, arg ip, org/calc mtx, v
sl tr bent
sft to sft, sbblky to sbplty, mot to
arg, v calc, occ cal incl, tr
MRL: pred dk gy, sft to mod frm, sb blky to sb
plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v
calc, occ fos frag, sl tr bent
CHK: lt to mgy, v sft to sft, sbblky to sbplty, mot to
stri tex, rthy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb
plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v
calc, occ fos frag, sl tr bent
CHK: lt to mgy, v sft to sft, sbblky to sbplty, mot
to stri tex, rthy lstr, sl arg, v calc, occ cal incl, rr
bent
MRL: pred dk gy, sft to mod frm, sb blky to sb
plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v
calc, occ fos frag, sl tr bent
CHK: lt to mgy, v sft to sft, sbblky to sbplty, mot to
stri tex, rthy lstr, sl arg, v calc, occ cal incl, rr
bent
7000
MRL: pred dk gy, sft to mod frm, sb bl
plty, rthy to gsy lstr, gt, arg ip, org/calc
calc, occ fos frag
CHK: lt to mgy, v sft to sft, sbblky to sb
to stri tex, rthy lstr, sl arg, v calc, occ ca
bent



ky to sb
mtx, v
plty, mot
al incl, tr

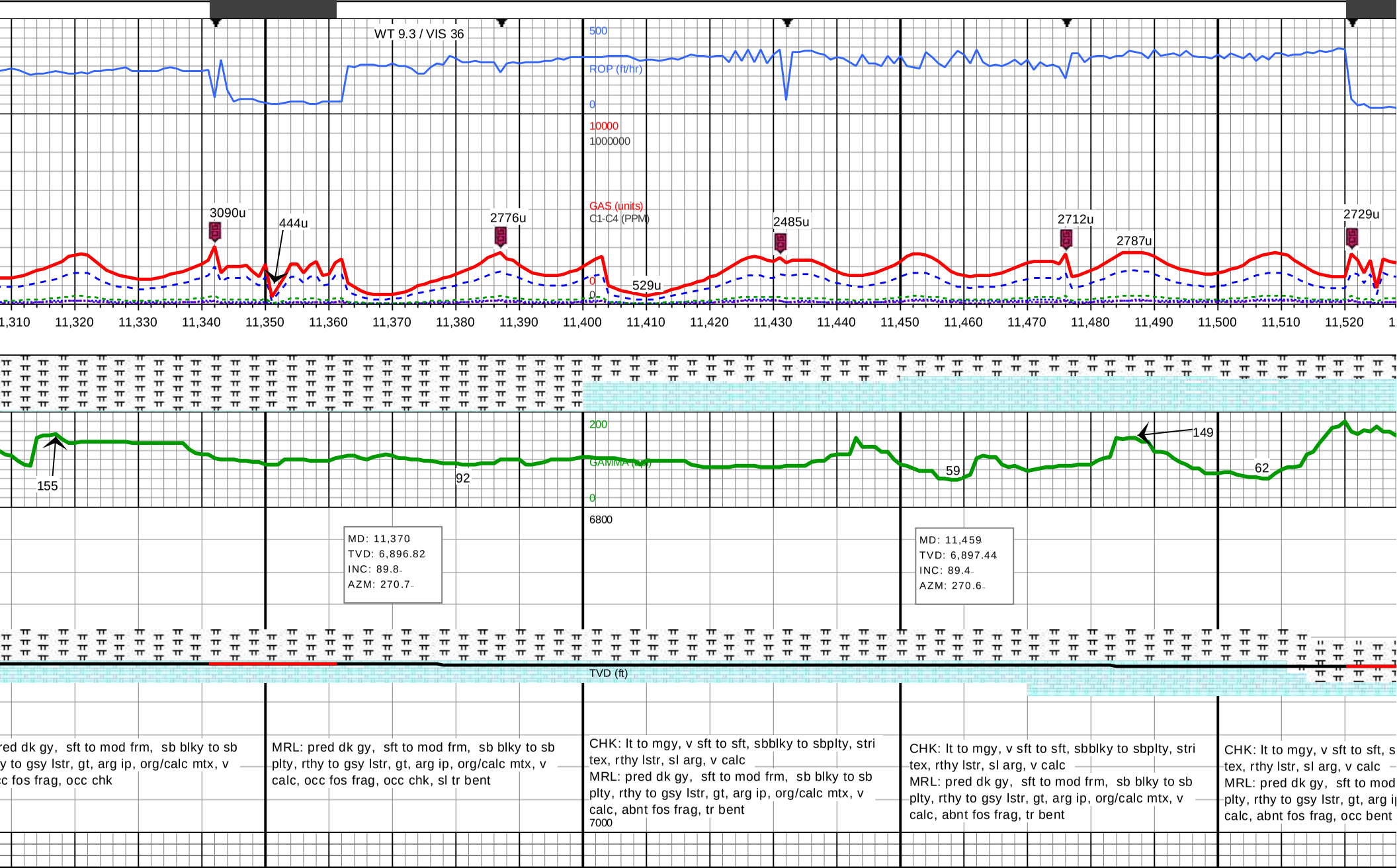
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, abnt fos frag, tr bent
CHK: lt to mgy, v sft to sft, sbblky to sbplty, stri tex, rthy lstr, sl arg, v calc

MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, abnt fos frag, tr bent
CHK: lt to mgy, v sft to sft, sbblky to sbplty, stri tex, rthy lstr, sl arg, v calc

MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, abnt fos frag, tr bent
CHK: lt to mgy, v sft to sft, sbblky to sbplty, stri tex, rthy lstr, sl arg, v calc

MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, abnt fos frag, tr bent
CHK: lt to mgy, v sft to sft, sbblky to sbplty, stri tex, rthy lstr, sl arg, v calc

MRL: p
plty, rth
calc, ol



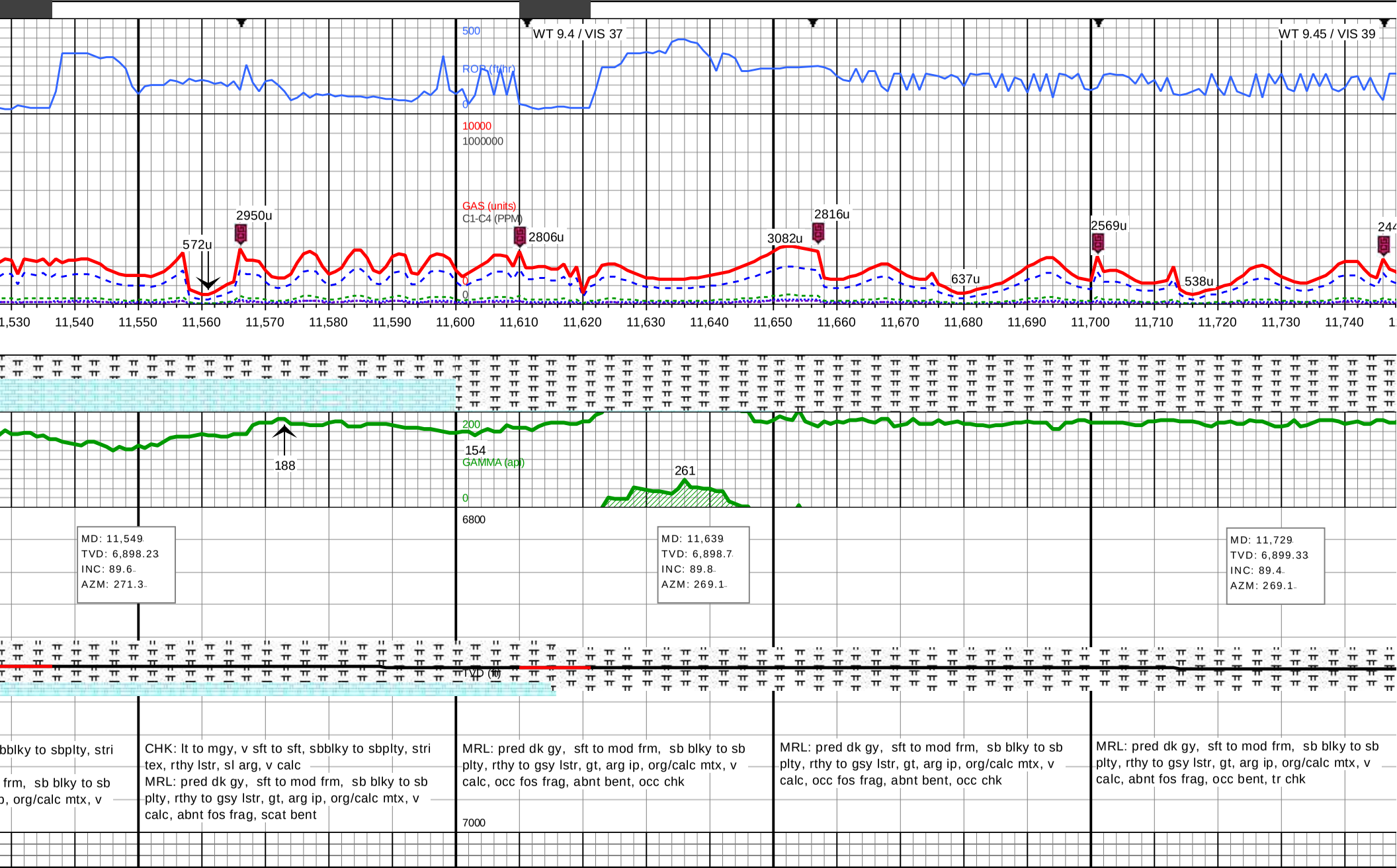
red dk gy, sft to mod frm, sb blky to sb
y to gsy lstr, gt, arg ip, org/calc mtx, v
c fos frag, occ chk

MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag, occ chk, sl tr bent

CHK: lt to mgy, v sft to sft, sbblky to sbplty, stri tex, rthy lstr, sl arg, v calc
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, abnt fos frag, tr bent

CHK: lt to mgy, v sft to sft, sbblky to sbplty, stri tex, rthy lstr, sl arg, v calc
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, abnt fos frag, tr bent

CHK: lt to mgy, v sft to sft, s
tex, rthy lstr, sl arg, v calc
MRL: pred dk gy, sft to mod
plty, rthy to gsy lstr, gt, arg i
calc, abnt fos frag, occ bent



bblky to sbplty, stri

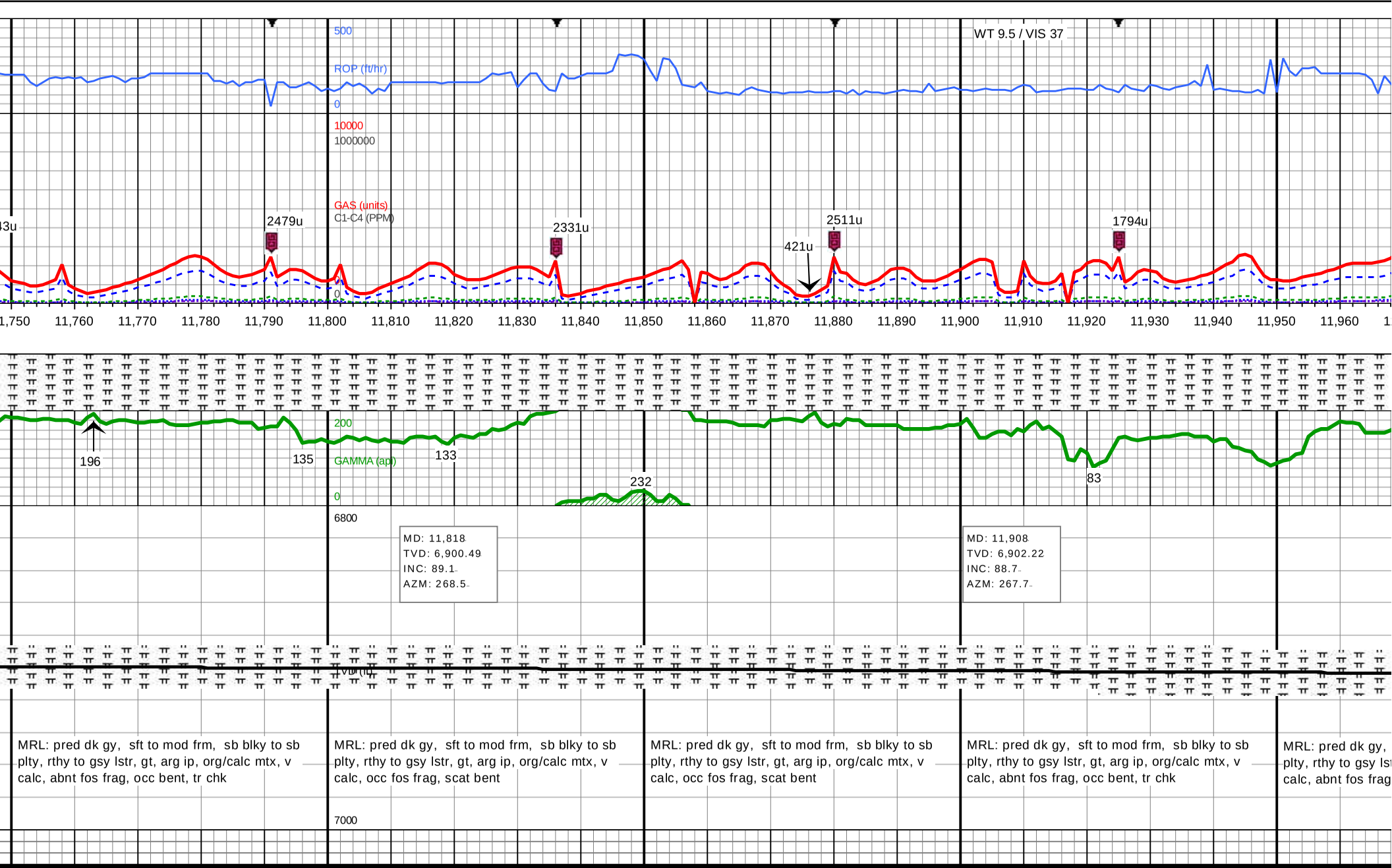
frm, sb blky to sb
p, org/calc mtx, v

CHK: lt to mgy, v sft to sft, sbblky to sbplty, stri tex, rthy lstr, sl arg, v calc
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, abnt fos frag, scat bent

MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag, abnt bent, occ chk

MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag, abnt bent, occ chk

MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, abnt fos frag, occ bent, tr chk



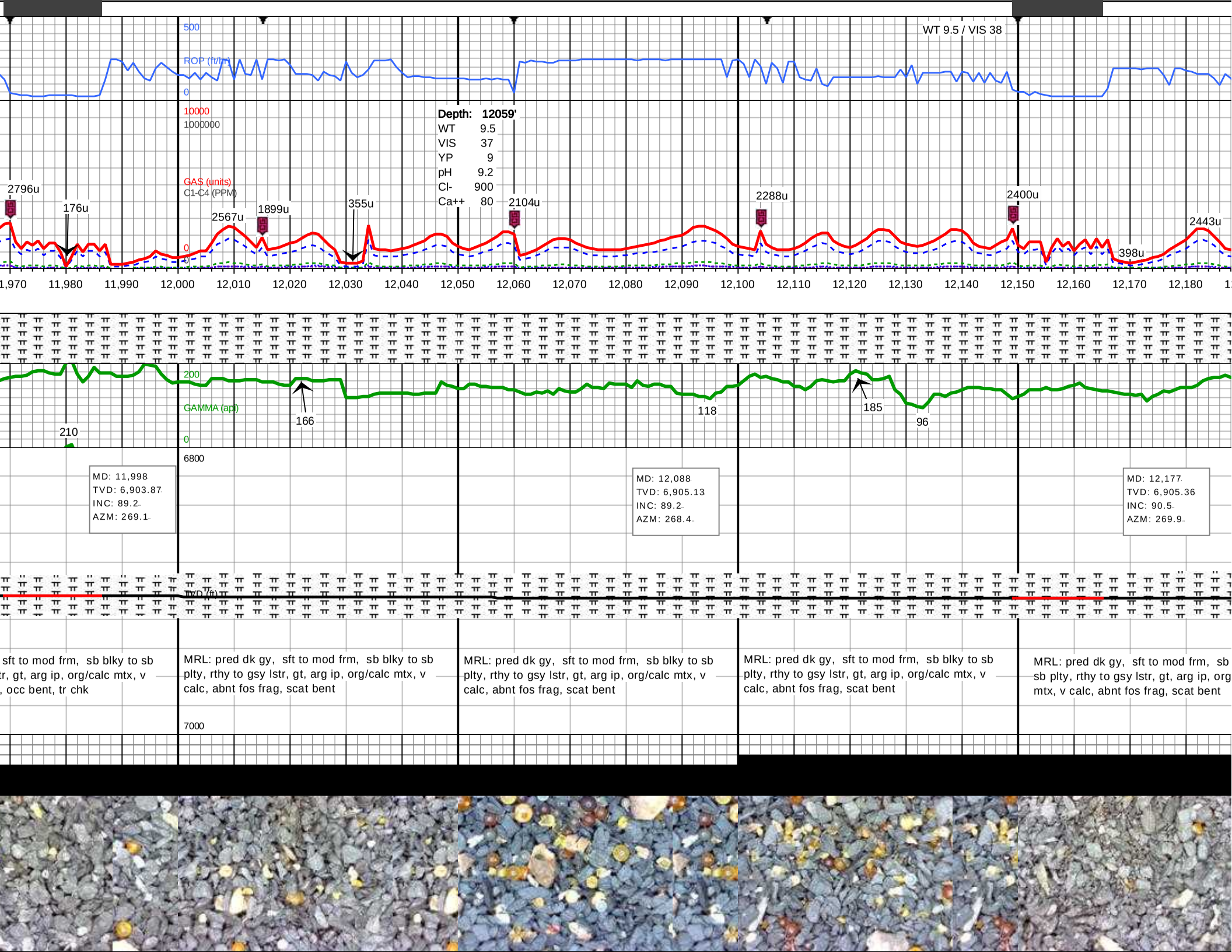
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, abnt fos frag, occ bent, tr chk

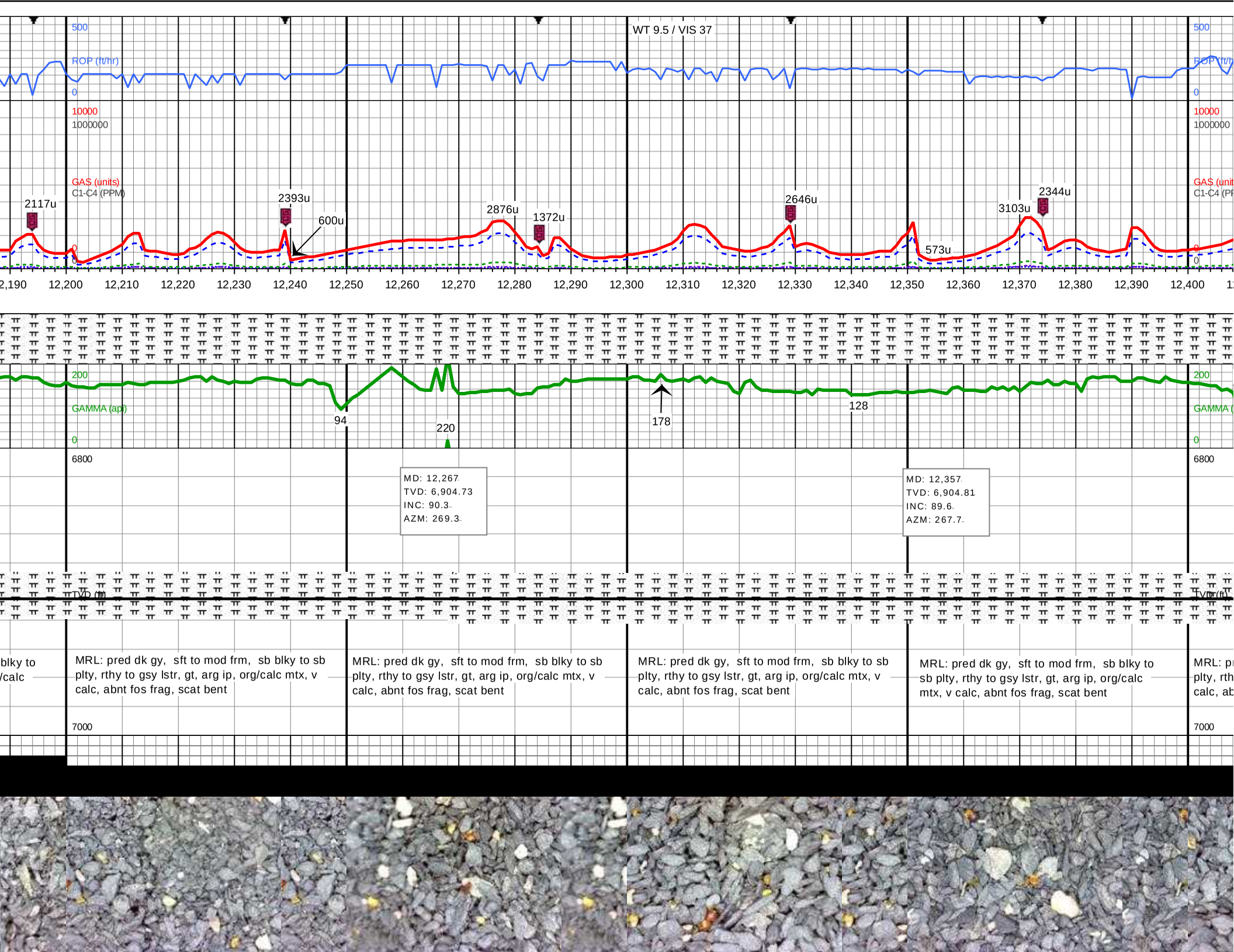
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag, scat bent

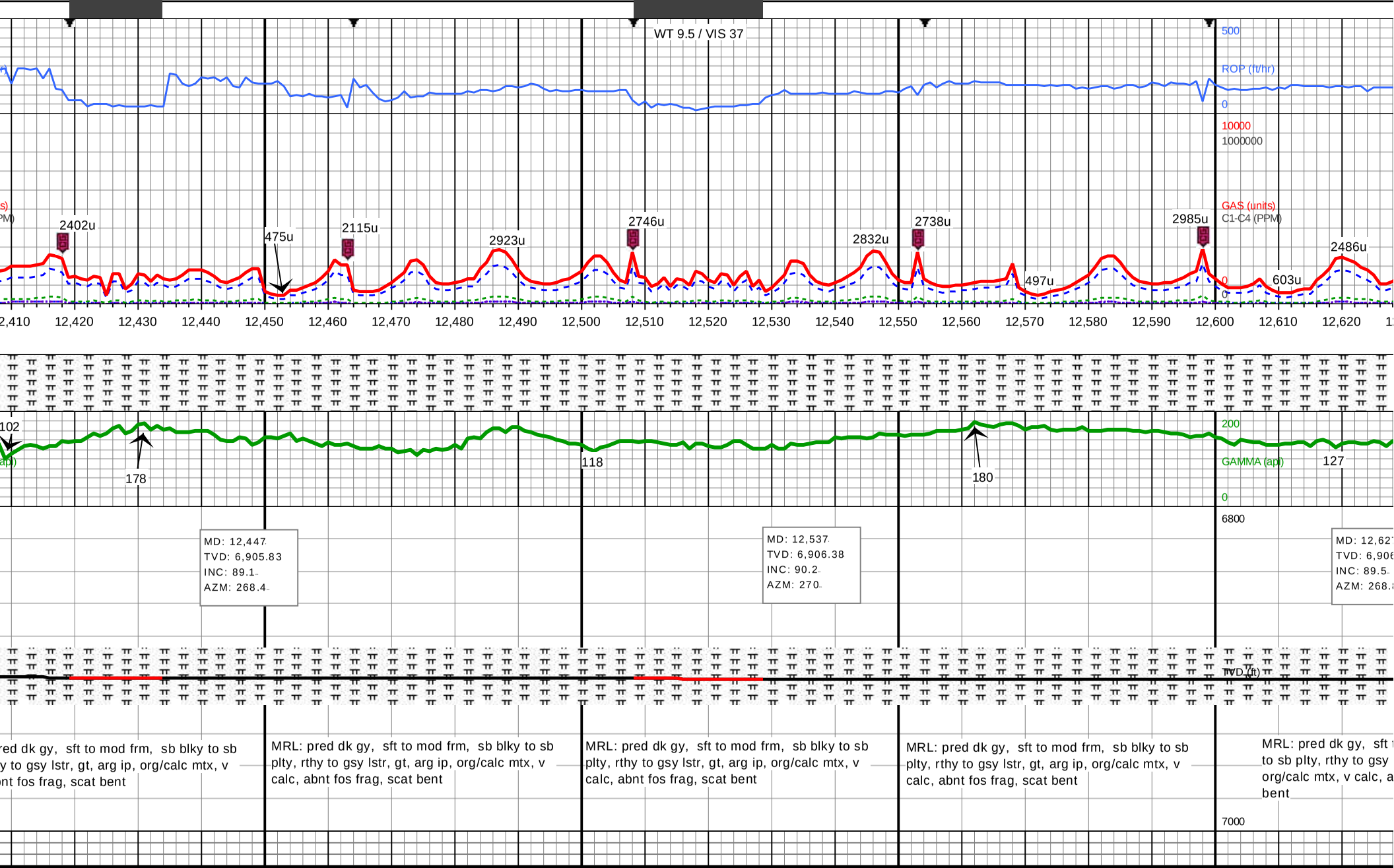
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag, scat bent

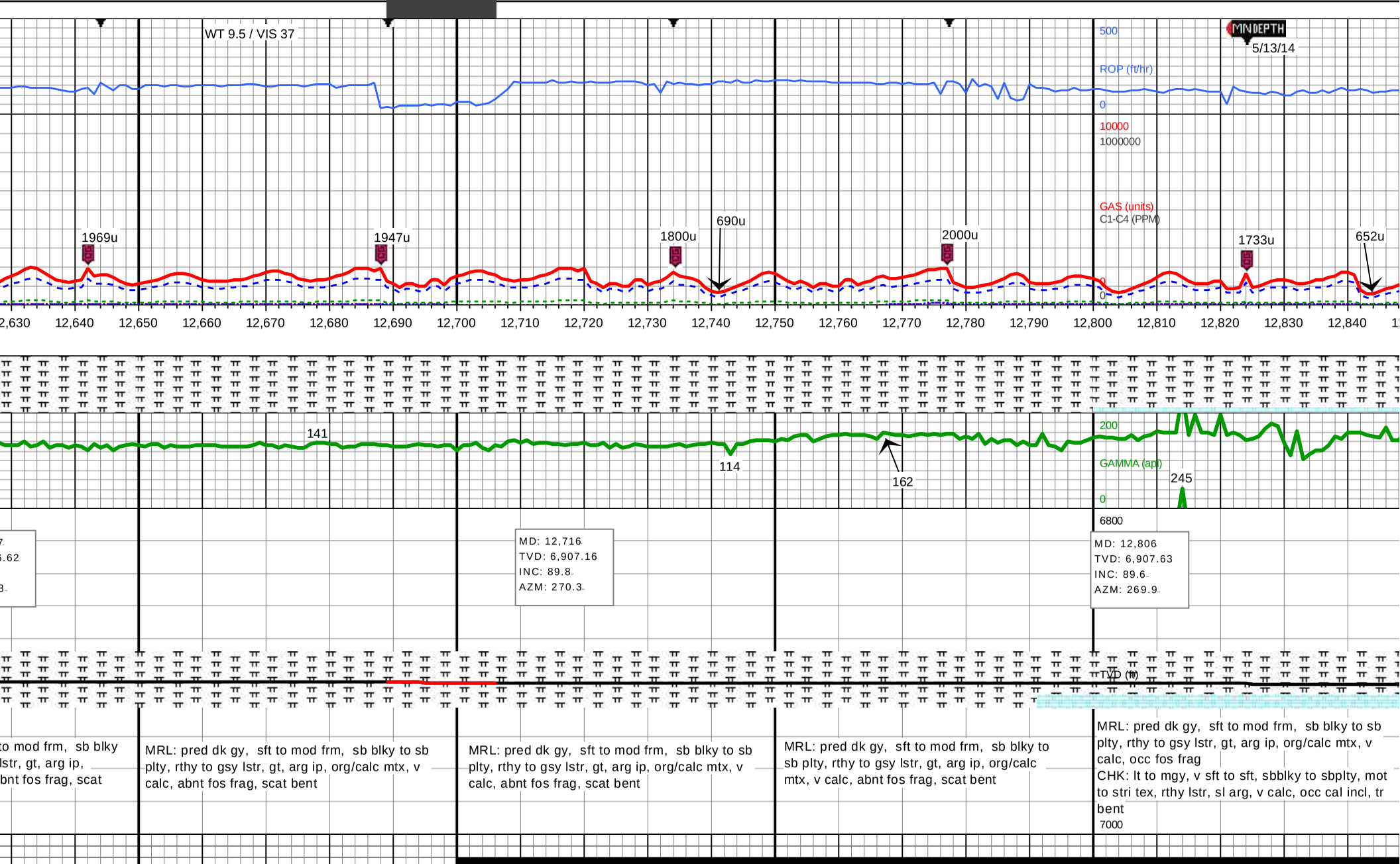
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, abnt fos frag, occ bent, tr chk

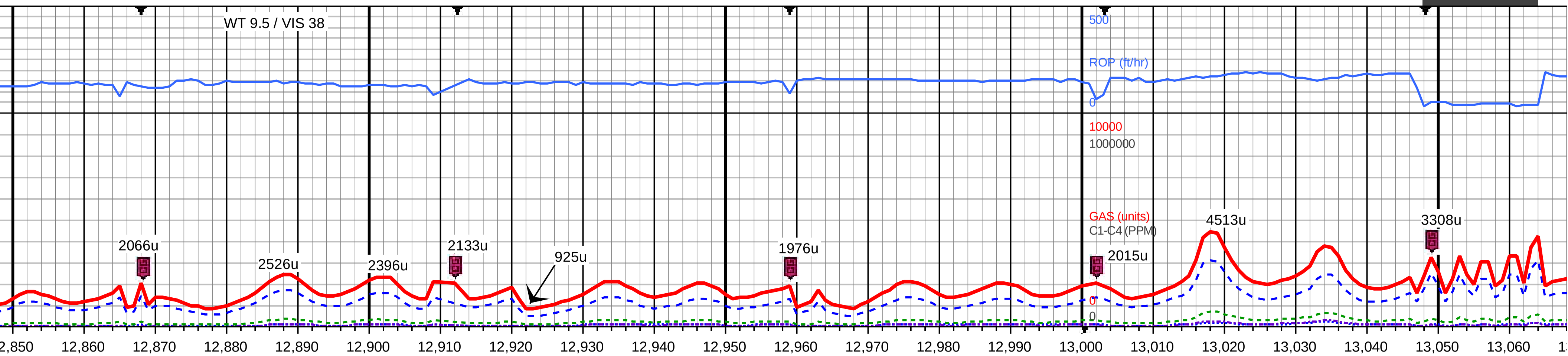
MRL: pred dk gy, plty, rthy to gsy ls calc, abnt fos frag

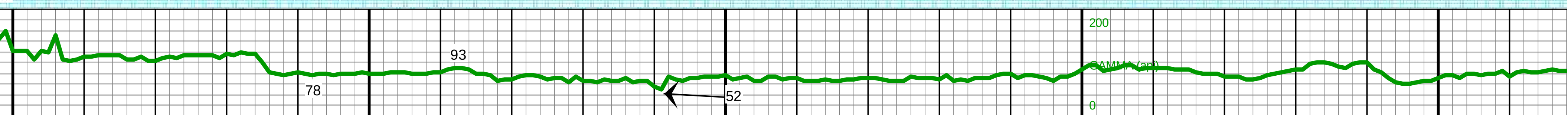

500
ROP (ft/hr)
0
WT 9.5 / VIS 38
10000
1000000
Depth: 12059'
WT 9.5
VIS 37
YP 9
pH 9.2
Cl- 900
Ca++ 80
GAS (units)
C1-C4 (PPM)
2796u
176u
2567u
1899u
355u
2104u
2288u
2400u
2443u
398u
0
11,970
11,980
11,990
12,000
12,010
12,020
12,030
12,040
12,050
12,060
12,070
12,080
12,090
12,100
12,110
12,120
12,130
12,140
12,150
12,160
12,170
12,180
200
GAMMA (api)
0
6800
210
166
118
185
96
MD: 11,998
TVD: 6,903.87
INC: 89.2
AZM: 269.1
MD: 12,088
TVD: 6,905.13
INC: 89.2
AZM: 268.4
MD: 12,177
TVD: 6,905.36
INC: 90.5
AZM: 269.9
TVD (ft)
7000
sft to mod frm, sb blky to sb
r, gt, arg ip, org/calc mtx, v
, occ bent, tr chk
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, abnt fos frag, scat bent
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, abnt fos frag, scat bent
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, abnt fos frag, scat bent
MRL: pred dk gy, sft to mod frm, sb
sb plty, rthy to gsy lstr, gt, arg ip, org
mtx, v calc, abnt fos frag, scat bent


WT 9.5 / VIS 37
500
ROP (ft/hr)
0
10000
1000000
GAS (units)
C1-C4 (PPM)
2117u
2393u
600u
2876u
1372u
2646u
573u
3103u
2344u
12,190
12,200
12,210
12,220
12,230
12,240
12,250
12,260
12,270
12,280
12,290
12,300
12,310
12,320
12,330
12,340
12,350
12,360
12,370
12,380
12,390
12,400
200
GAMMA (api)
0
6800
94
220
178
128
MD: 12,267
TVD: 6,904.73
INC: 90.3
AZM: 269.3
MD: 12,357
TVD: 6,904.81
INC: 89.6
AZM: 267.7
TVD (ft)
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, abnt fos frag, scat bent
7000


WT 9.5 / VIS 37
500
ROP (ft/hr)
0
10000
1000000
GAS (units)
C1-C4 (PPM)
2402u
475u
2115u
2923u
2746u
2832u
2738u
2985u
497u
603u
2486u
12,410
12,420
12,430
12,440
12,450
12,460
12,470
12,480
12,490
12,500
12,510
12,520
12,530
12,540
12,550
12,560
12,570
12,580
12,590
12,600
12,610
12,620
102
178
118
180
127
200
GAMMA (api)
0
6800
MD: 12,447
TVD: 6,905.83
INC: 89.1
AZM: 268.4
MD: 12,537
TVD: 6,906.38
INC: 90.2
AZM: 270
MD: 12,62
TVD: 6,906
INC: 89.5
AZM: 268.
TVD (ft)
7000
red dk gy, sft to mod frm, sb blky to sb
y to gsy lstr, gt, arg ip, org/calc mtx, v
nt fos frag, scat bent
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, abnt fos frag, scat bent
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, abnt fos frag, scat bent
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, abnt fos frag, scat bent
MRL: pred dk gy, sft
to sb plty, rthy to gsy
org/calc mtx, v calc, a
bent


WT 9.5 / VIS 37
MN DEPTH
5/13/14
500
ROP (ft/hr)
0
10000
1000000
GAS (units)
C1-C4 (PPM)
0
1969u
1947u
1800u
690u
2000u
1733u
652u
12,630
12,640
12,650
12,660
12,670
12,680
12,690
12,700
12,710
12,720
12,730
12,740
12,750
12,760
12,770
12,780
12,790
12,800
12,810
12,820
12,830
12,840
141
114
162
200
GAMMA (api)
245
0
6800
MD: 12,716
TVD: 6,907.16
INC: 89.8
AZM: 270.3
MD: 12,806
TVD: 6,907.63
INC: 89.6
AZM: 269.9
TVD (ft)
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, abnt fos frag, scat bent
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, abnt fos frag, scat bent
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag
CHK: lt to mgy, v sft to sft, sbblky to sbplty, mot to stri tex, rthy lstr, sl arg, v calc, occ cal incl, tr bent
7000





6800

MD: 12,896
TVD: 6,908.5
INC: 89.3
AZM: 269.5

MD: 12,986
TVD: 6,908.42
INC: 90.8
AZM: 267.8

TVD (ft)

7000

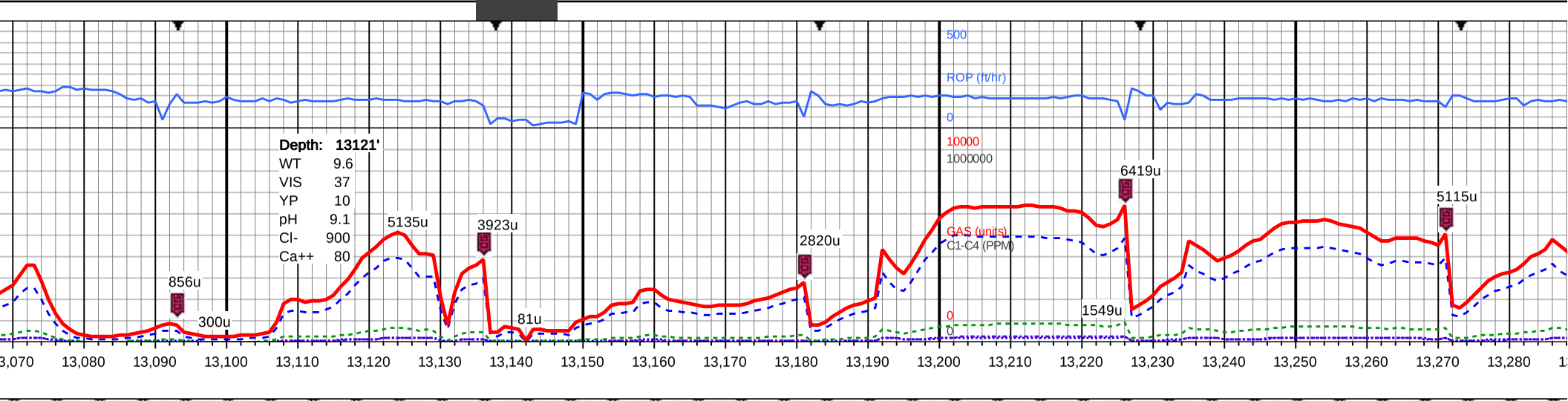
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag
CHK: lt to mgy, v sft to sft, sbblky to sbplty, mot to stri tex, rthy lstr, sl arg, v calc, occ cal incl, tr bent

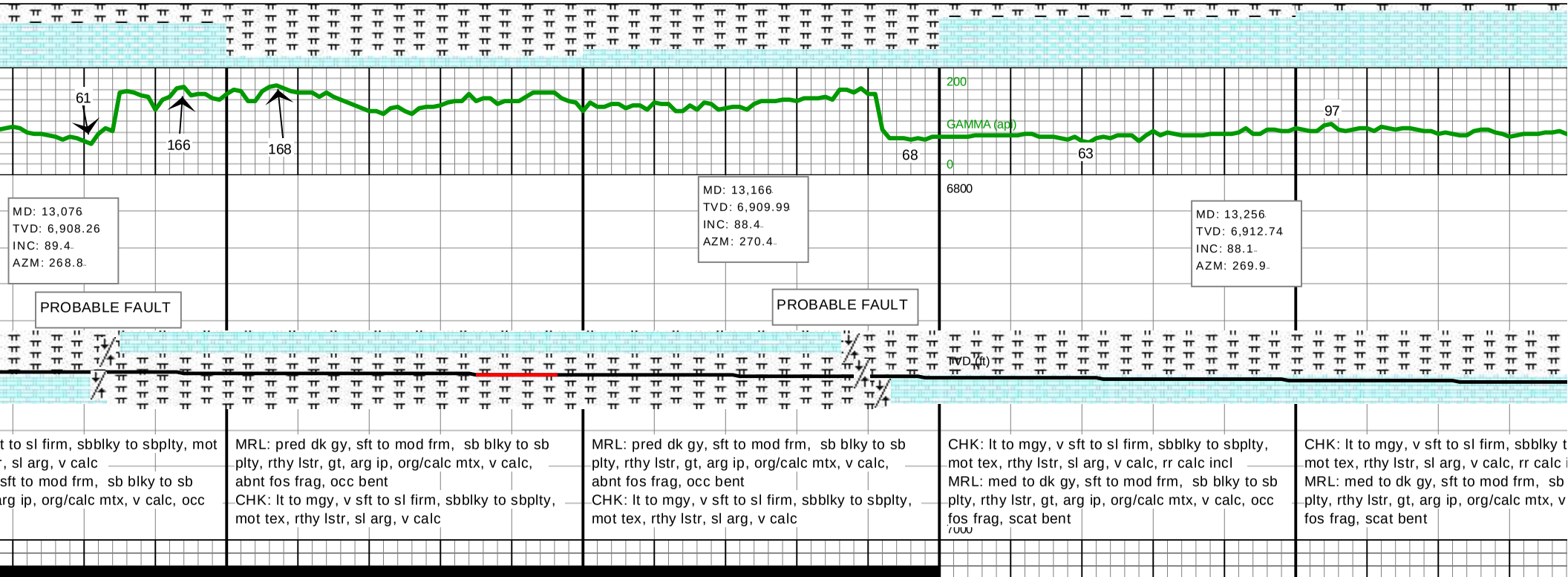
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag
CHK: lt to mgy, v sft to sft, sbblky to sbplty, mot to stri tex, rthy lstr, sl arg, v calc, occ cal incl, tr bent

MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy to gsy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag
CHK: lt to mgy, v sft to sft, sbblky to sbplty, mot to stri tex, rthy lstr, sl arg, v calc, occ cal incl, tr bent

CHK: lt to mgy, sme bf, sft to sl firm, sbblky to sbplty, mot to stri tex, rthy to wxy lstr, sl arg, v calc, occ cal incl
MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag, tr bent

CHK: lt to mgy, sf
to stri tex, rthy lstr
MRL: pred dk gy,
plty, rthy lstr, gt, a
fos frag, occ bent





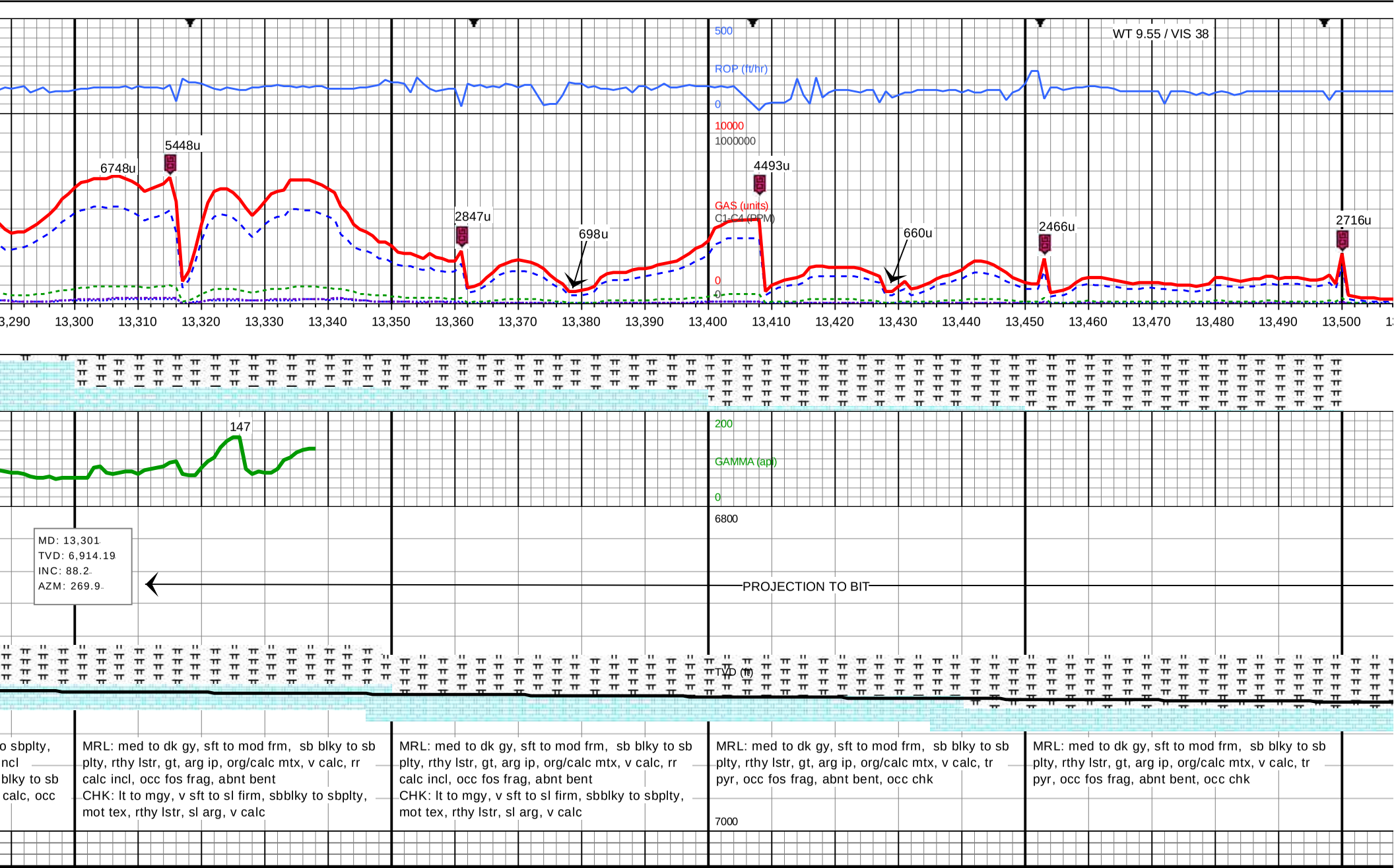
t to sl firm, sbblky to sbplty, mot
, sl arg, v calc
sft to mod frm, sb blky to sb
rg ip, org/calc mtx, v calc, occ

MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, abnt fos frag, occ bent
CHK: lt to mgy, v sft to sl firm, sbblky to sbplty, mot tex, rthy lstr, sl arg, v calc

MRL: pred dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, abnt fos frag, occ bent
CHK: lt to mgy, v sft to sl firm, sbblky to sbplty, mot tex, rthy lstr, sl arg, v calc

CHK: lt to mgy, v sft to sl firm, sbblky to sbplty, mot tex, rthy lstr, sl arg, v calc, rr calc incl
MRL: med to dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, occ fos frag, scat bent

CHK: lt to mgy, v sft to sl firm, sbblky t
mot tex, rthy lstr, sl arg, v calc, rr calc i
MRL: med to dk gy, sft to mod frm, sb
plty, rthy lstr, gt, arg ip, org/calc mtx, v
fos frag, scat bent



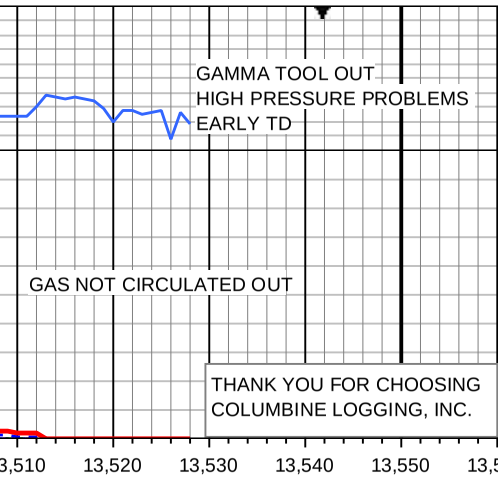
o sbplty, ncl blky to sb calc, occ

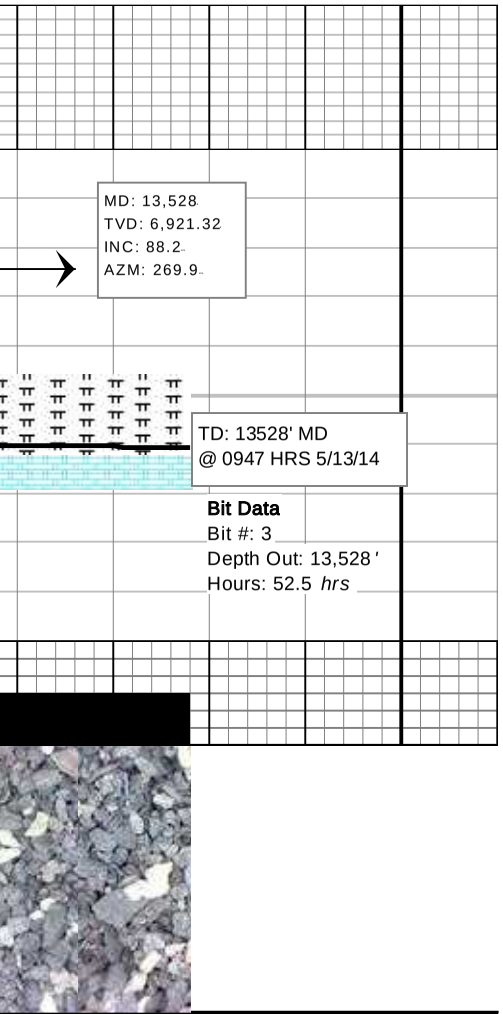
MRL: med to dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, rr calc incl, occ fos frag, abnt bent
CHK: lt to mgy, v sft to sl firm, sbblky to sbplty, mot tex, rthy lstr, sl arg, v calc

MRL: med to dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, rr calc incl, occ fos frag, abnt bent
CHK: lt to mgy, v sft to sl firm, sbblky to sbplty, mot tex, rthy lstr, sl arg, v calc

MRL: med to dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, tr pyr, occ fos frag, abnt bent, occ chk

MRL: med to dk gy, sft to mod frm, sb blky to sb plty, rthy lstr, gt, arg ip, org/calc mtx, v calc, tr pyr, occ fos frag, abnt bent, occ chk


GAMMA TOOL OUT
HIGH PRESSURE PROBLEMS
EARLY TD
GAS NOT CIRCULATED OUT
THANK YOU FOR CHOOSING
COLUMBINE LOGGING, INC.
13,510
13,520
13,530
13,540
13,550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TVD: 6,921.32
INC: 88.2
AZM: 269.9
TD: 13528' MD
@ 0947 HRS 5/13/14
Bit Data
Bit #: 3
Depth Out: 13,528 '
Hours: 52.5 hrs