



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

Well Name: RAZOR FEDERAL 26J-3510B
Location: NWSE 26-T10N-R58W, Weld County, Colorado
License Number: 05-123-38344
Spud Date: 2/28/2014
Surface Coordinates: Lat.: 40.808550 Long.: -103.829742
Bottom Hole Coordinates: Lat.: 40.788028 Long.: -103.829786
Ground Elevation (ft): 4726 **K.B. Elevation (ft):** 4743
Logged Interval (ft): 5200 **To:** 13500 **Total Depth (ft):**
Formation: Pierre, Sharon Springs, Niobrara
Type of Drilling Fluid: Water Based Mud

Region: Redtail Field

Drilling Completed:

Printed by WellSight Log Viewer from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Whiting Oil & Gas Corp.
Address: 1700 Broadway Suite 2300
Denver, CO 80290

GEOLOGIST

Name: Mark Denler and Kyle Newman
Company: Acme Geologic Consulting
Address: 108 Berry Street
Little Rock, AR 72205

Drilling Company

Frontier
Rig #26

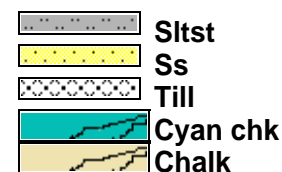
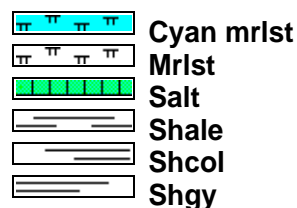
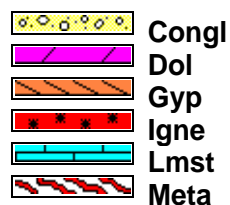
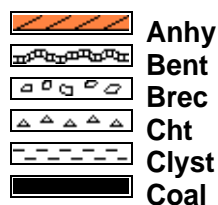
Gas Detection

Mudlogging Systems, Inc., M Logger, Model TGC, Total Gas and Chromatograph, #603

Comments

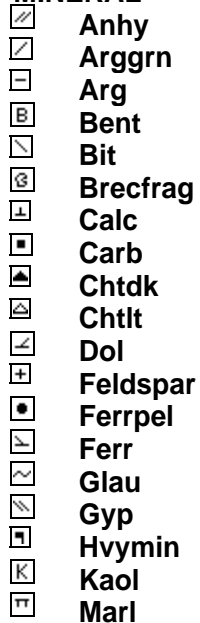
Lithologies and tops at drilled depths, not corrected to elogs. Where the well bore gas is 100% methane, the C1 line is moved to 85% for graphical purposes only.

ROCK TYPES

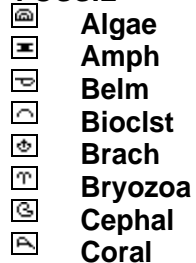


ACCESSORIES

MINERAL



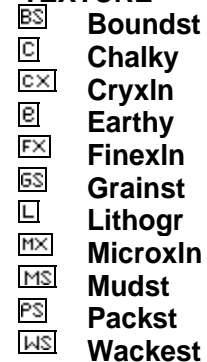
FOSSIL



STRINGER











TEXTURE



OTHER SYMBOLS




POROSITY

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

SORTING





-  Well
-  Moderate
-  Poor

ROUNDING



-  Rounded
-  Subrnd
-  Subang

-  Angular

OIL SHOW

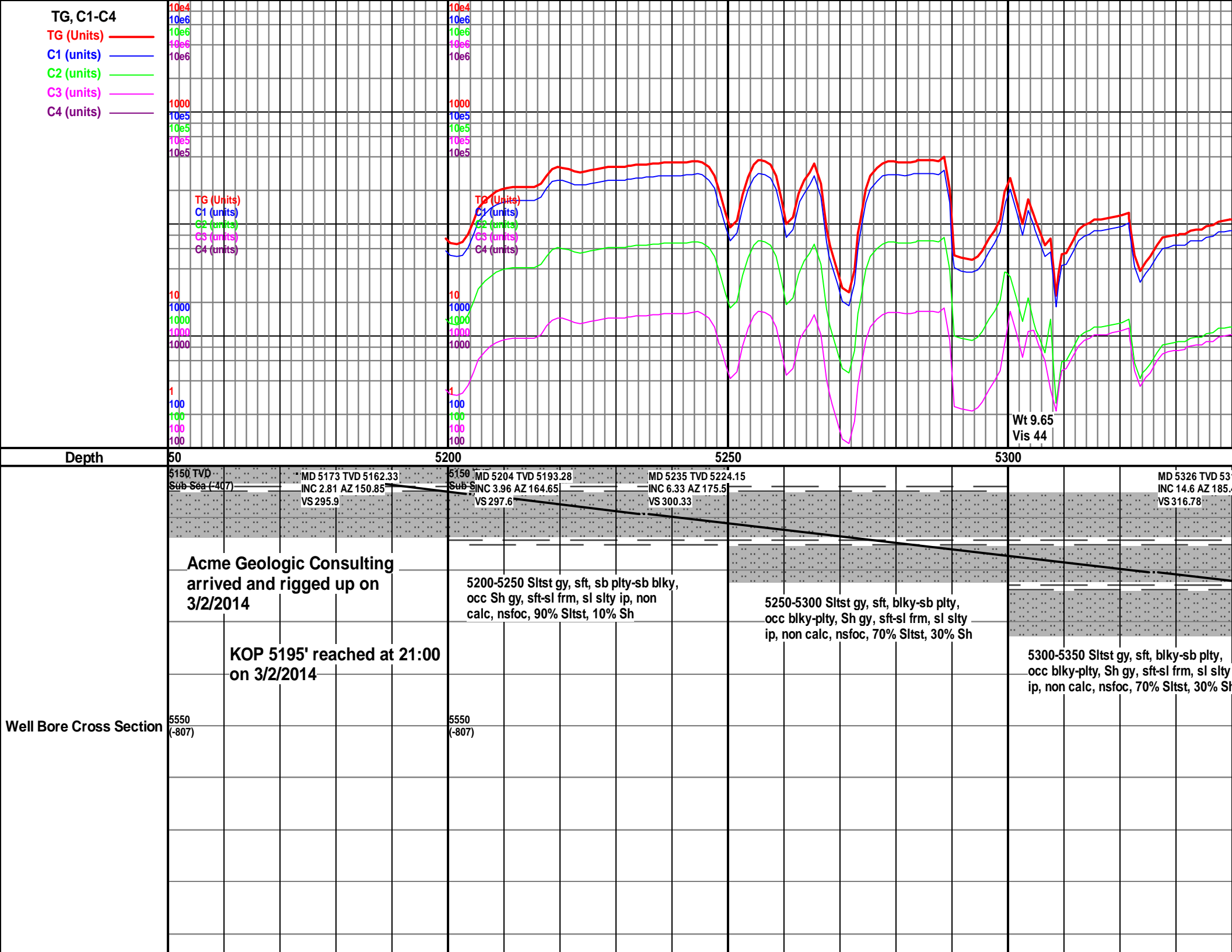
-  Even
-  Spotted
-  Ques
-  Dead

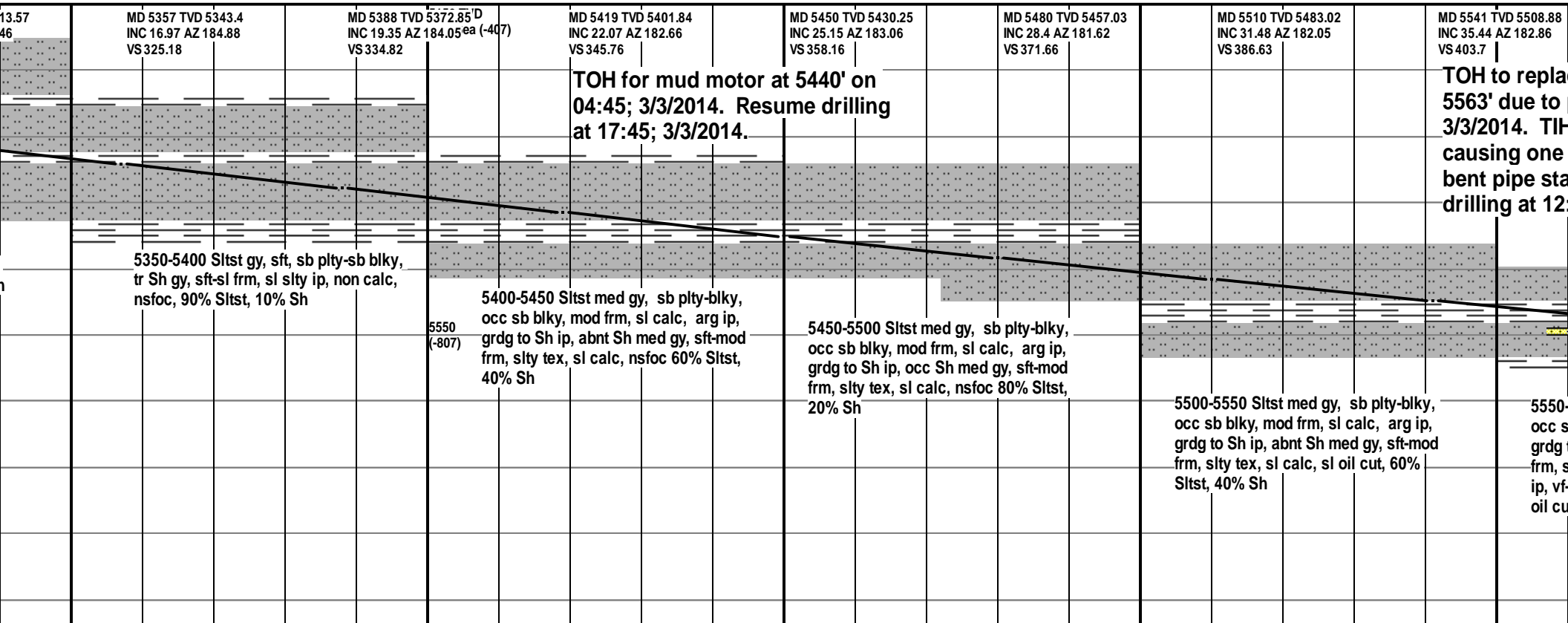
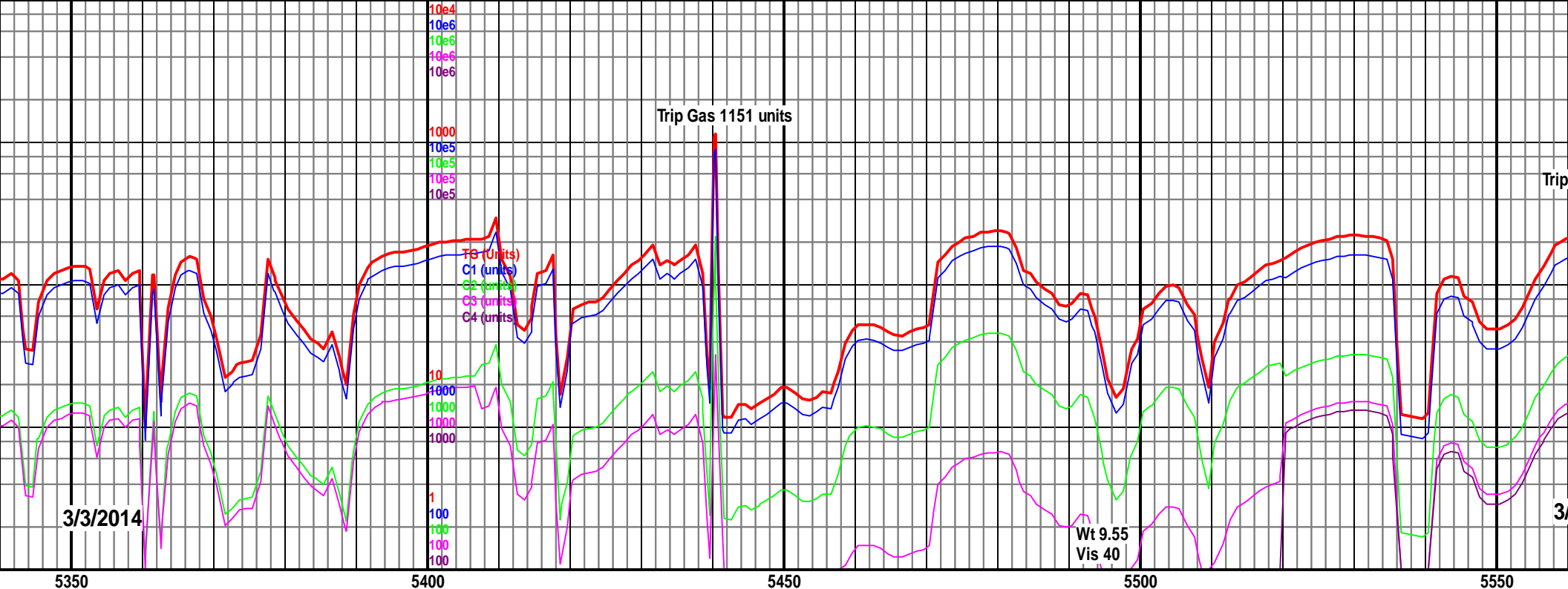
INTERVAL

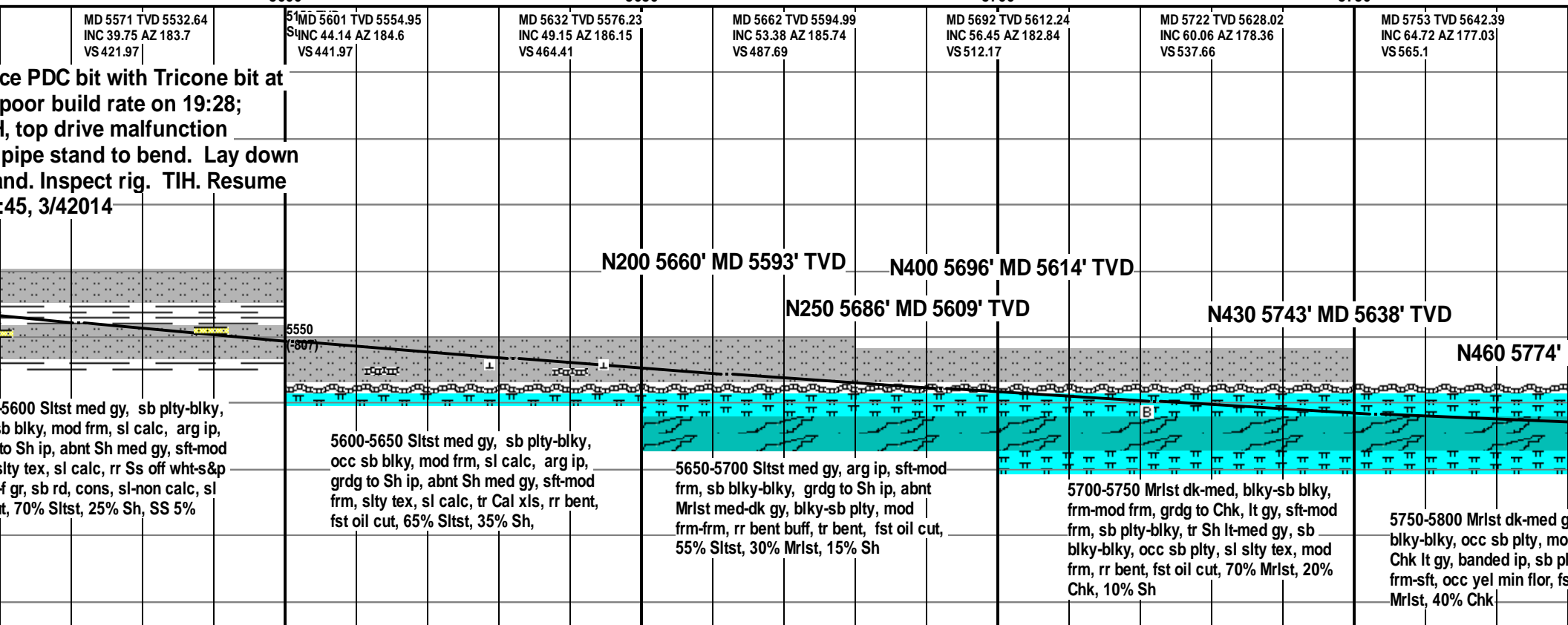
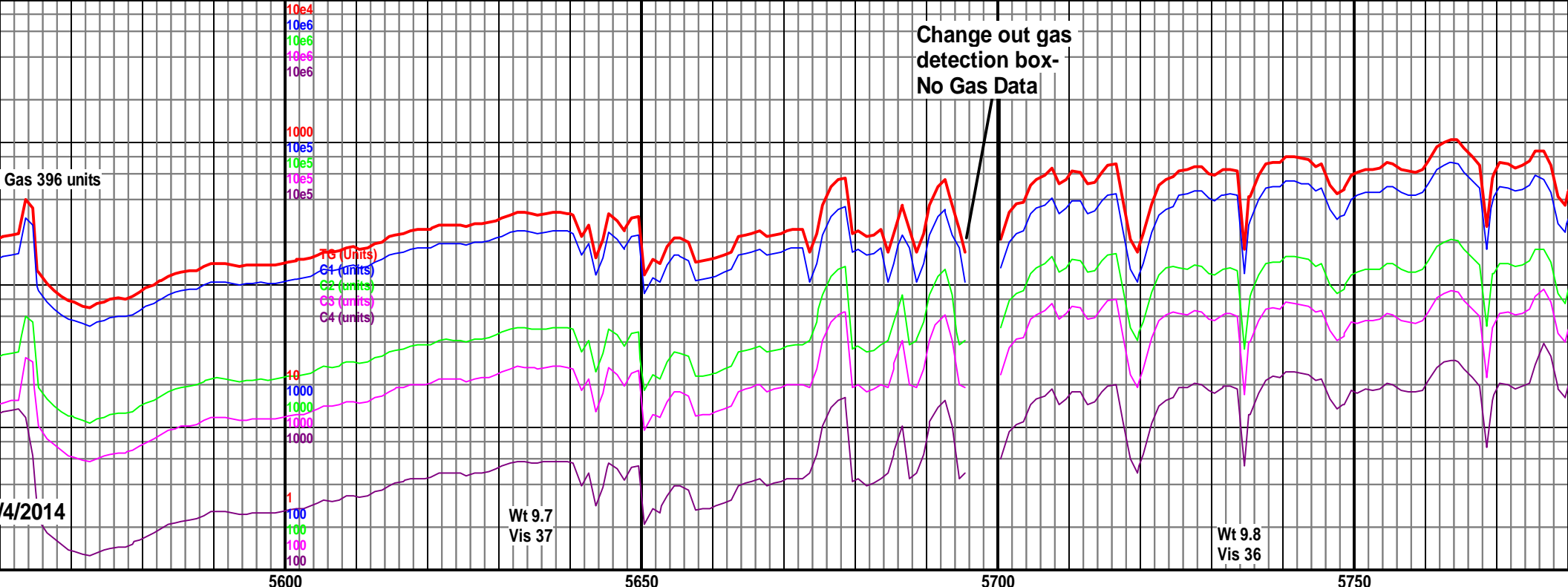
-  Core
-  Dst

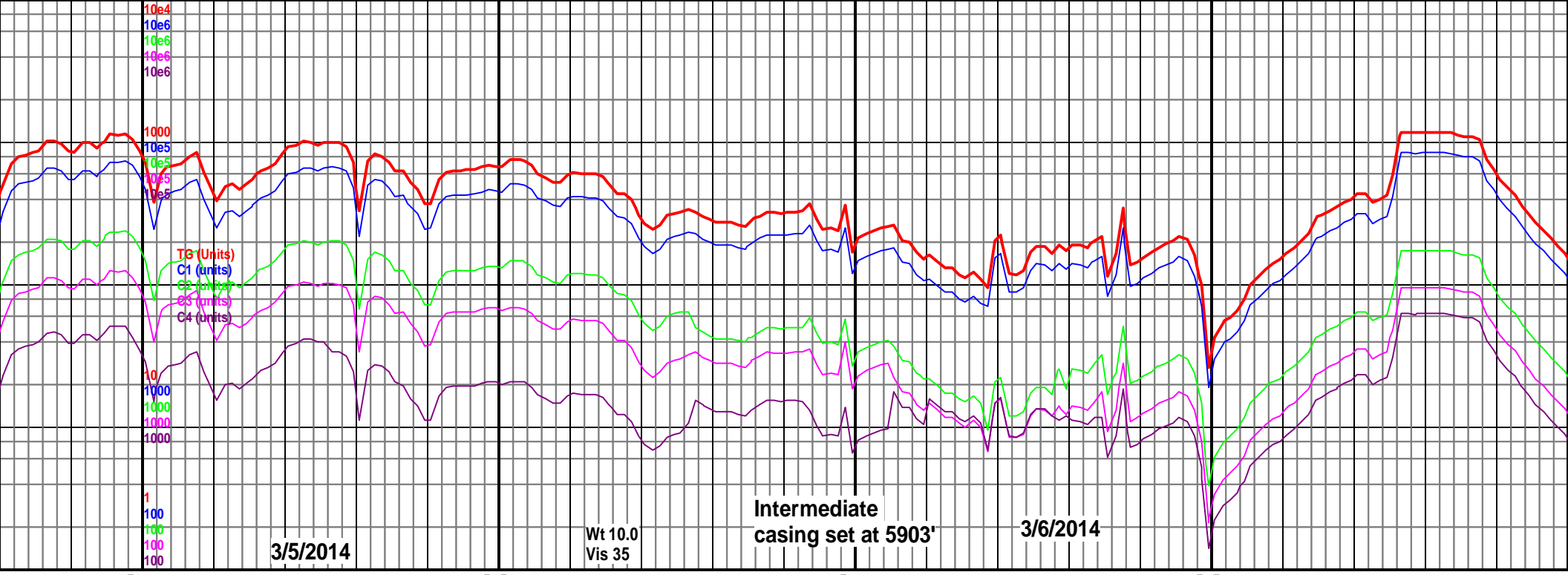
EVENT

-  Rft
-  Sidewall

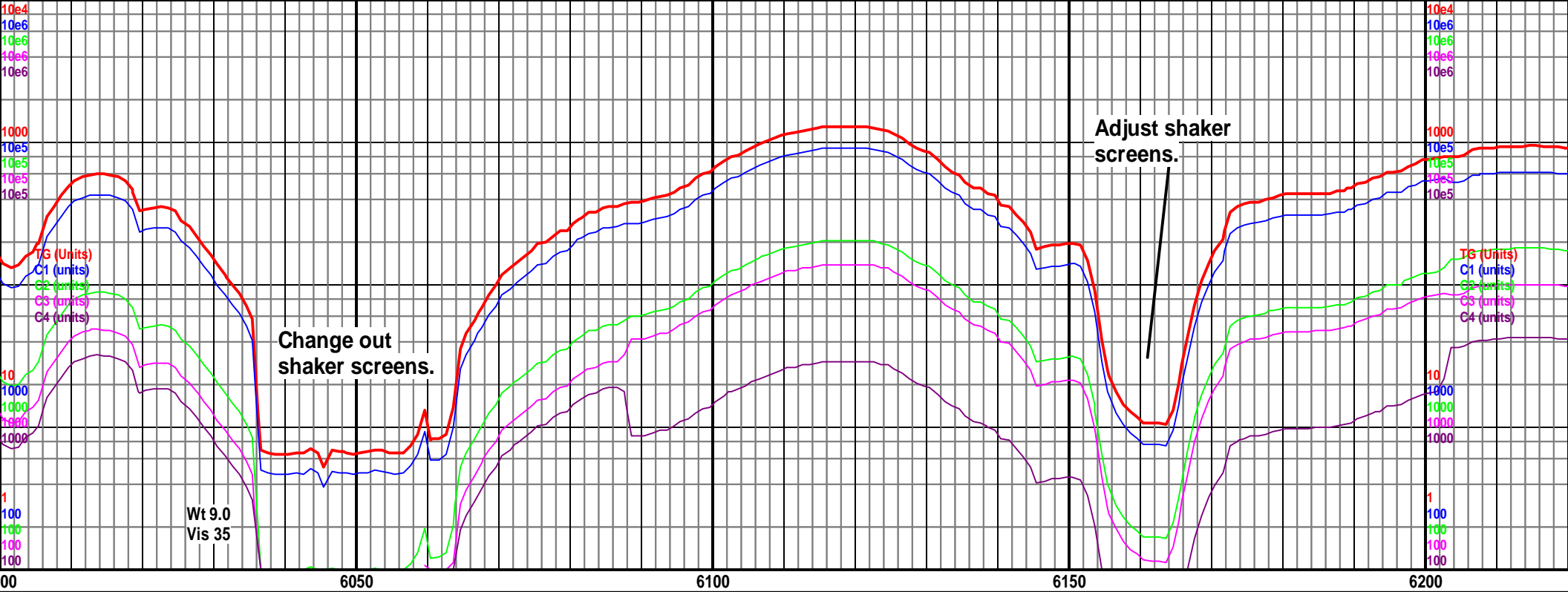








MD 5783 TVD 5654.15 INC 69.12 AZ 177.74 VS 592.66	MD 5813 TVD 5663.56 INC 74.3 AZ 179.19 VS 621.12	MD 5844 TVD 5670.73 INC 78.96 AZ 180.23 VS 651.27	MD 5870 TVD 5674.88 INC 82.66 AZ 181.32 VS 676.93				MD 5954 TVD 5679.19 INC 91.45 AZ 182.66 VS 760.69		MD 5983 TVD 5683.19 INC 95.45 AZ 183.66 VS 780.69
<p>MD 5651' TVD</p> <p>5550 (-807)</p> <p>5800-5850 Chk lt gy, sb plty-blky, mod frm-sft, banded, occ-tr Mrlst dk-med gy, sb blky-blky, occ sb plty, mod frm, rr inoc, rr bent, yel min flor, fst oil cut, 90% Chk, 10% Mrlst</p>			<p>5850-5900 Chk lt gy, sb plty-blky, mod frm-sft, banded, occ-tr Mrlst dk-med gy, sb blky-blky, occ sb plty, mod frm, rr bent, abnt inocs, yel min flor, fst oil cut, 60% Chk, 40% Mrlst</p>		<p>5900-5950 Mrlst dk-med gy, sb blky-blky, occ sb plty, mod frm, abnt Chk lt gy-lt brn, banded ip, sb plty-blky, mod frm-sft ip, rr bent, tr-occ inocs, rr yel min flor, sl oil cut, 65% Mrlst, 35%</p>		<p>5950-6000 Mrlst dk-med gy, sb blky-blky, occ sb plty, mod frm, tr Chk lt gy-lt brn, banded ip, sb plty-blky, mod frm-sft ip, tr bent, tr inocs, tr yel min flor, sl oil cut, 80% Mrlst, 20% Chk</p>		



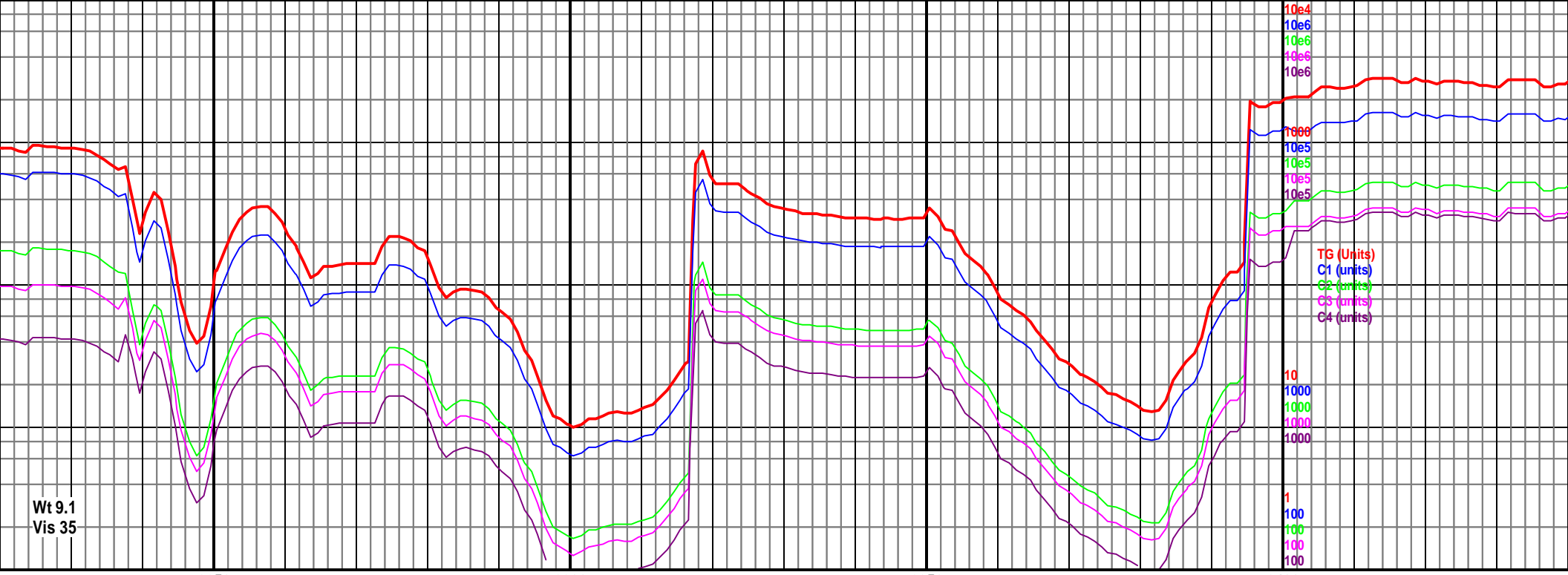
5996 TVD 5678.06 91.63 AZ 182.94 02.63	MD 6080 TVD 5675.29 INC 92.15 AZ 183.23 VS 886.48	MD 6164 TVD 5672.52 INC 91.63 AZ 182.3 VS 970.35	5150 TVD Sub Sea (-407)
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5550 (-807)			5550 (-807)
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6000-6100 Mrlst dk-med gy, sb
blkly-blky, occ sb plty, mod frm, occ
Chk lt gy-lt brn, banded ip, sb plty-blky,
mod frm-sft ip, tr bent, g tr inocs, tr yel
min flr, sl oil cut, 75% Mrlst, 25% Chk

6100-6200 Mrlst dk-med gy, sb
blkly-blky, occ sb plty, mod frm, abnt
Chk lt gy-lt brn, banded ip, sb plty-blky,
mod frm-sft ip, tr bent, g tr inocs, tr yel
min flr, sl oil cut, 55% Mrlst, 45% Chk



6250

6300

6350

6400

MD 6249 TVD 5670.69
INC 90.84 AZ 178.42
VS 1055.31

MD 6333 TVD 5669.01
INC 91.45 AZ 178.52
VS 1139.26

5150 TVD
Sub Sea (-407)

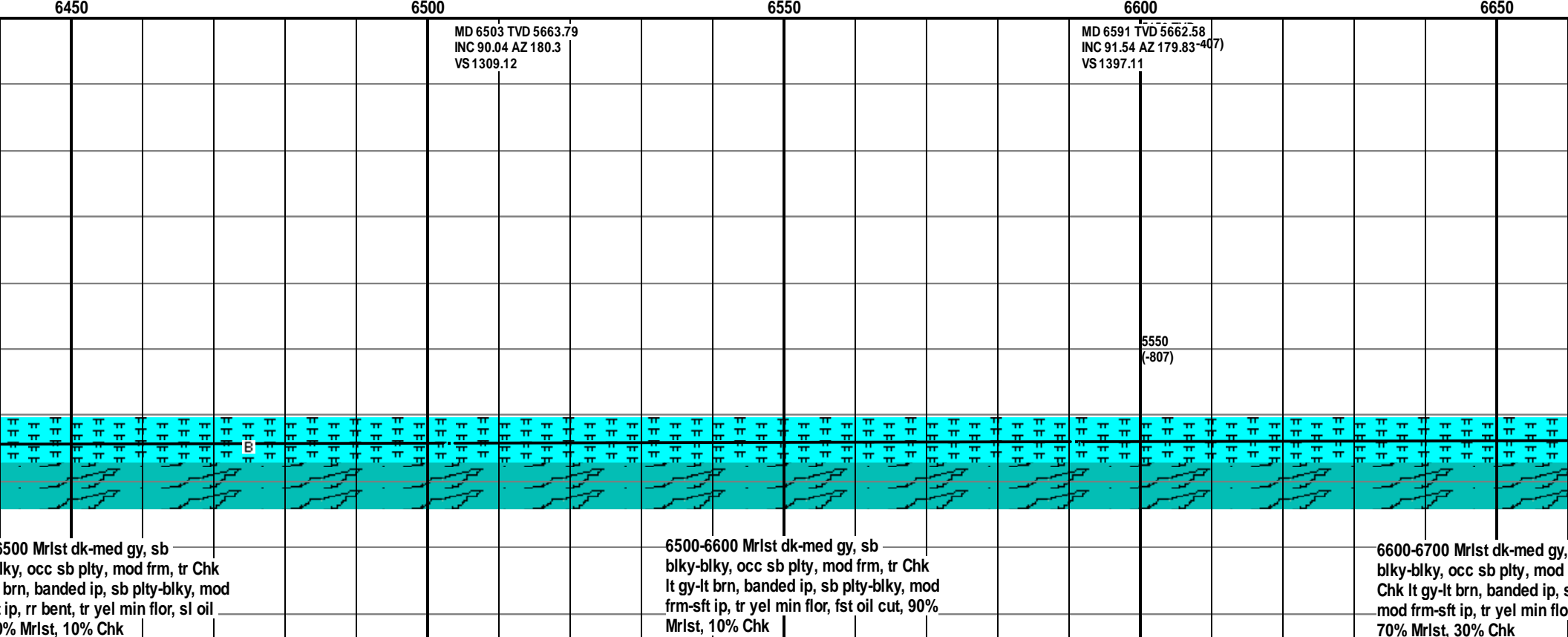
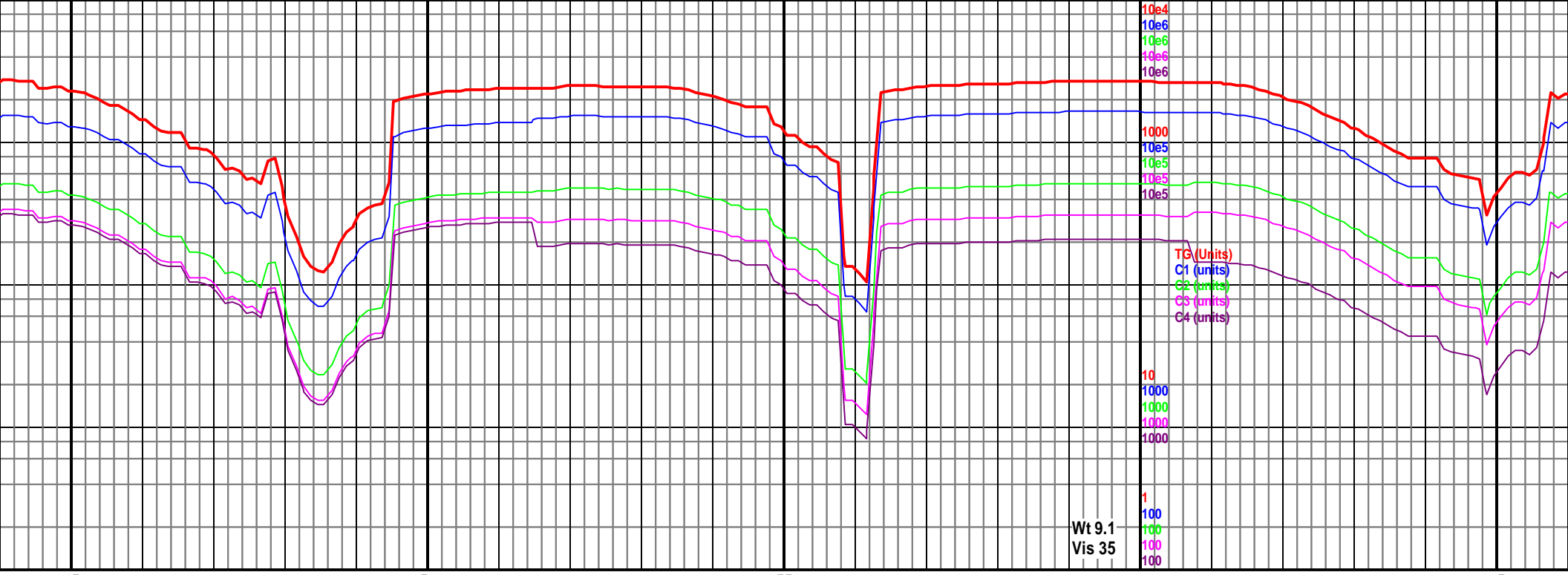
MD 6418 TVD 5665.88
INC 92.77 AZ 178.57
VS 1224.16

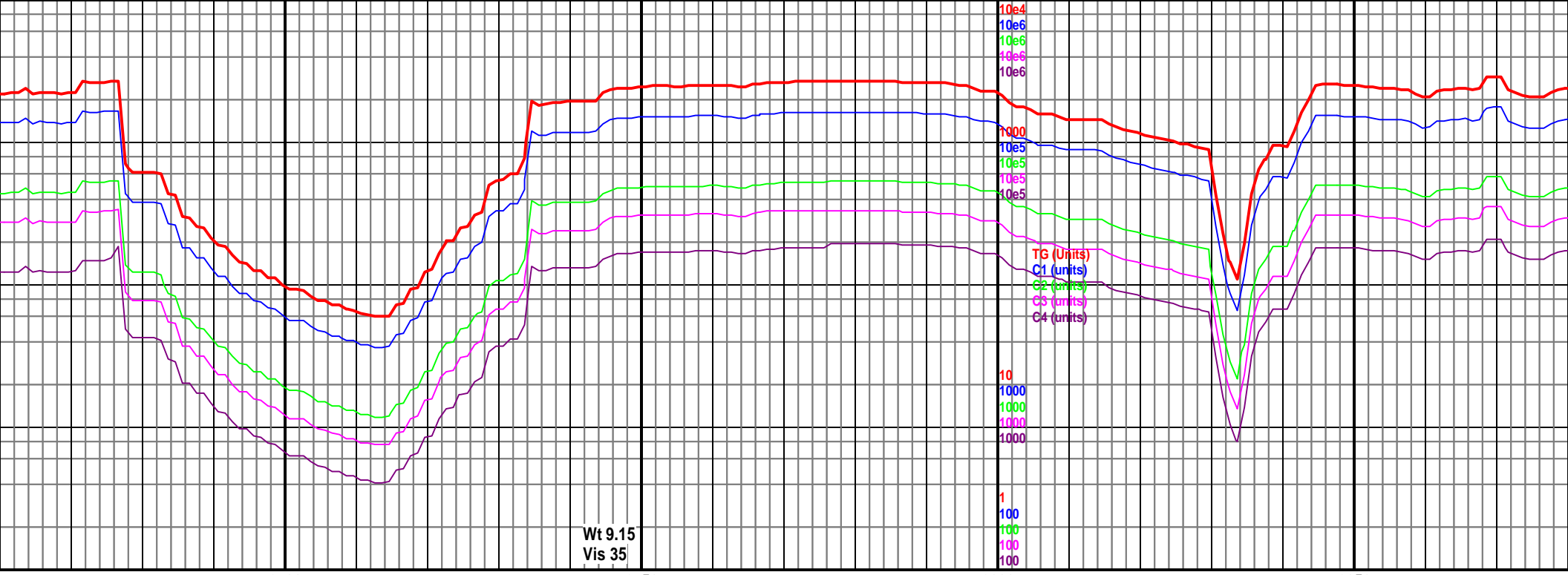
5550
(-807)

6200-6300 Mrlst dk-med gy, sb
blky-blky, occ sb plty, mod frm, tr Chk
lt gy-lt brn, banded ip, sb plty-blky, mod
frm-sft ip, rr bent, tr inocs, tr yel min
flor. sl oil cut, 85% Mrlst. 15% Chk

6300-6400 Mrlst dk-med gy, sb
blky-blky, occ sb plty, mod frm, tr Chk
lt gy-lt brn, banded ip, sb plty-blky, mod
frm-sft ip, tr yel min flor, sl oil cut, 85%
Mrlst. 15% Chk

6400-6
blky-bl
lt gy-lt
frm-sft
cut, 90





6700

6750

6800

6850

MD 6678 TVD 5660.51
INC 91.19 AZ 180.65
VS 1484.08

MD 6770 TVD 5657.89
INC 92.07 AZ 181.86
VS 1576.03

5150 TVD
Sub Sea (-407)

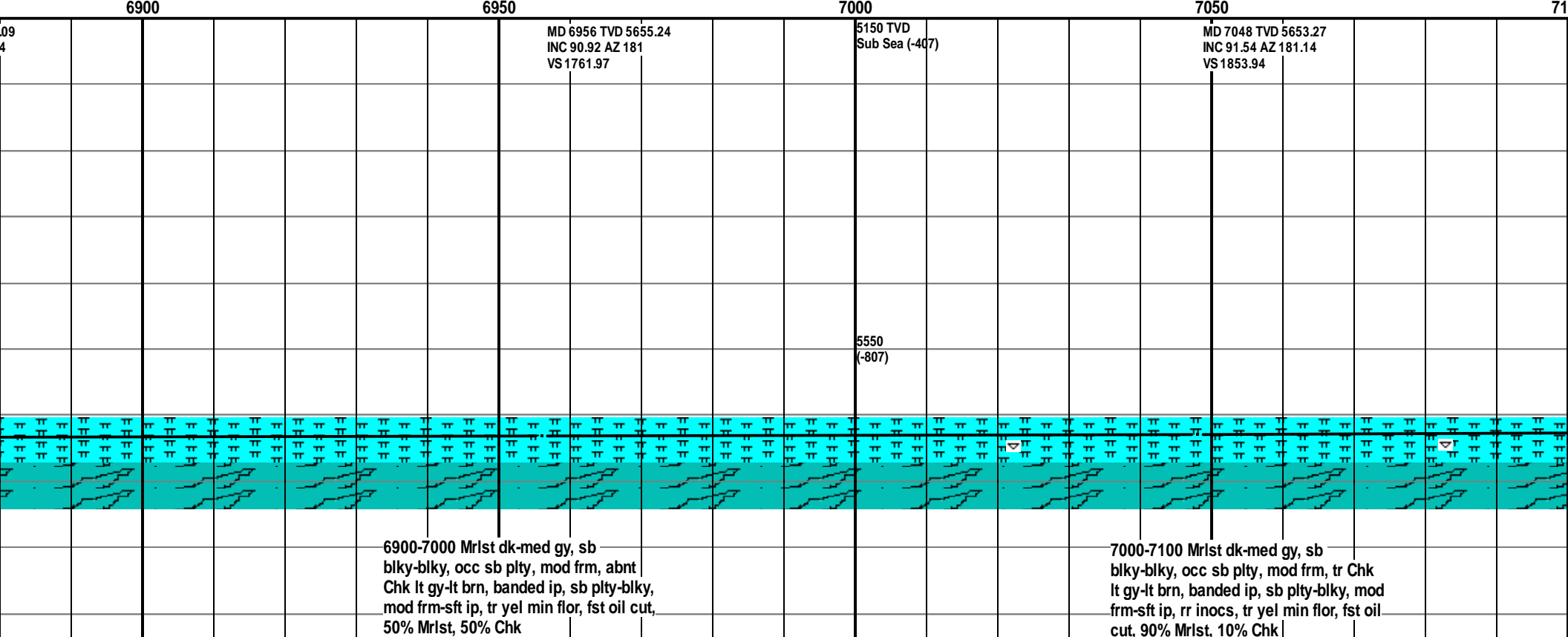
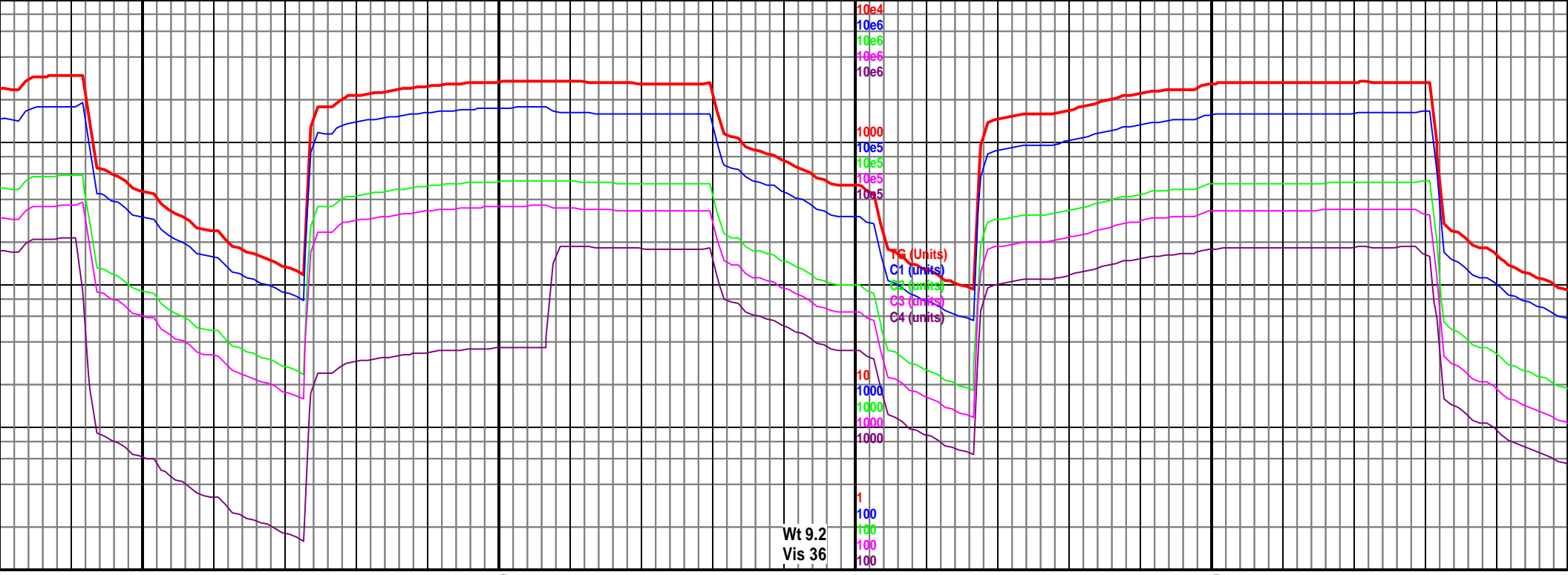
MD 6864 TVD 5656.
INC 90.13 AZ 180.6
VS 1669.98

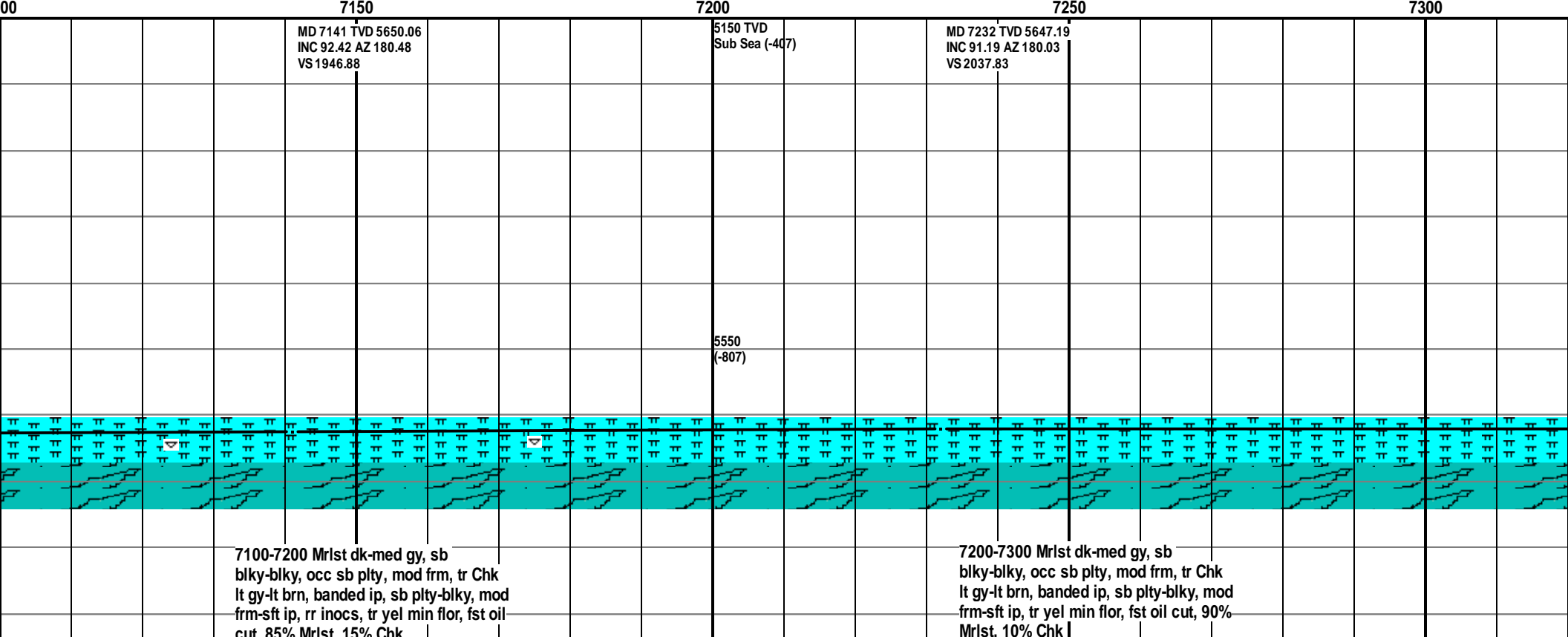
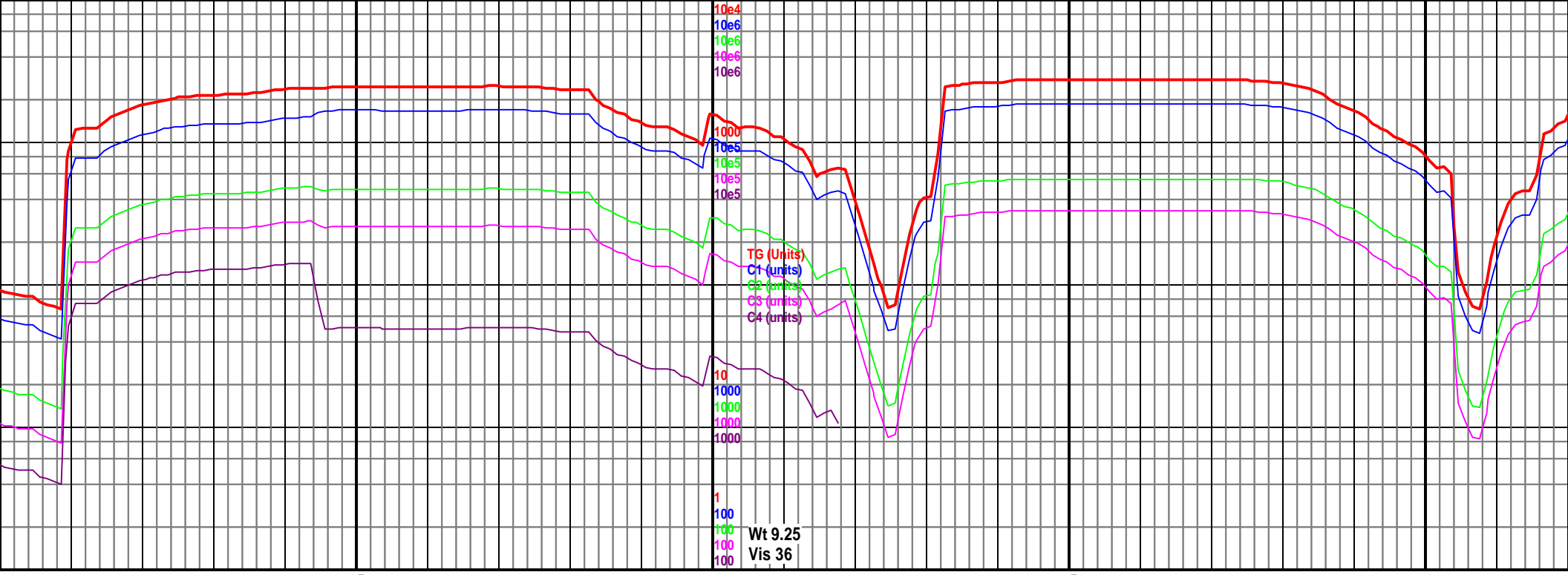
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(-807)

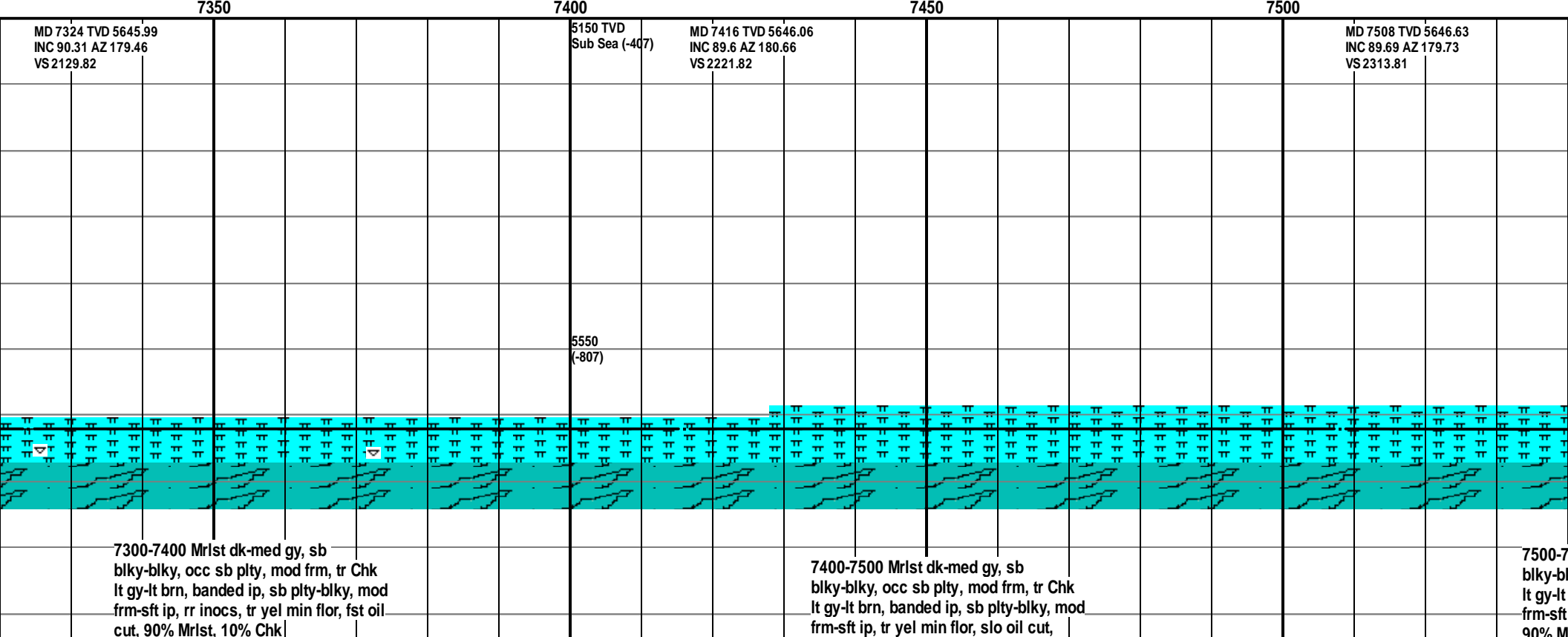
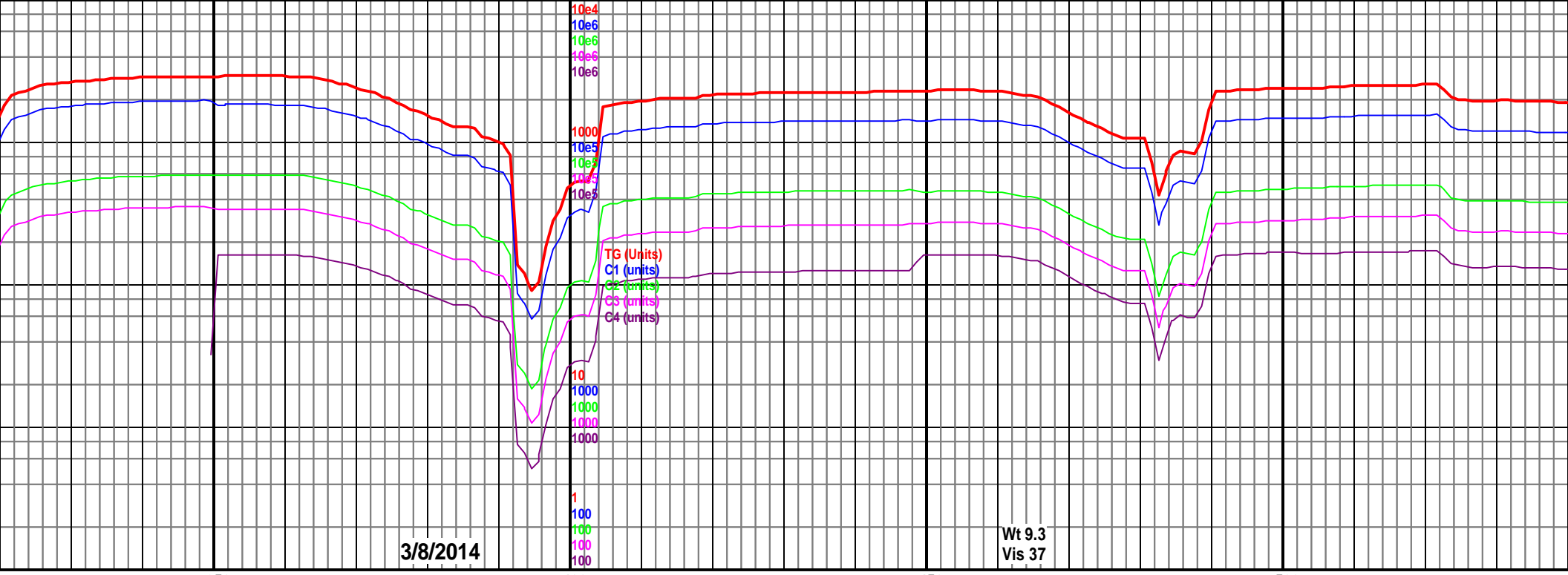
sb
frm, abnt
sb ply-blky,
r, fst oil cut,

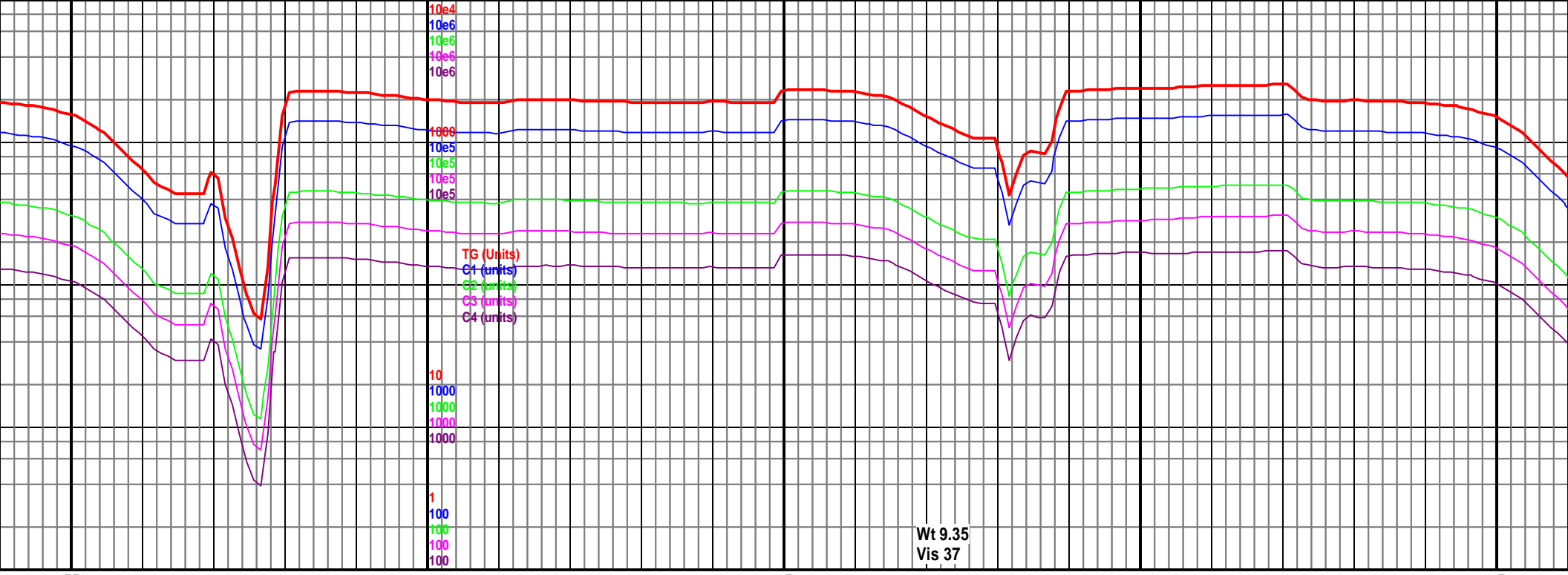
6700-6800 Mrlst dk-med gy, sb
blky-blky, occ sb ply, mod frm, abnt
Chk lt gy-lt brn, banded ip, sb ply-blky,
mod frm-sft ip, tr yel min flor, fst oil cut,
50% Mrlst, 50% Chk

6800-6900 Mrlst dk-med gy, sb
blky-blky, occ sb ply, mod frm, abnt
Chk lt gy-lt brn, banded ip, sb ply-blky,
mod frm-sft ip, rr bent, tr yel min flor,
fst oil cut, 50% Mrlst, 50% Chk









MD 7600 TVD 5647.55
INC 89.16 AZ 179.94
VS 2405.81

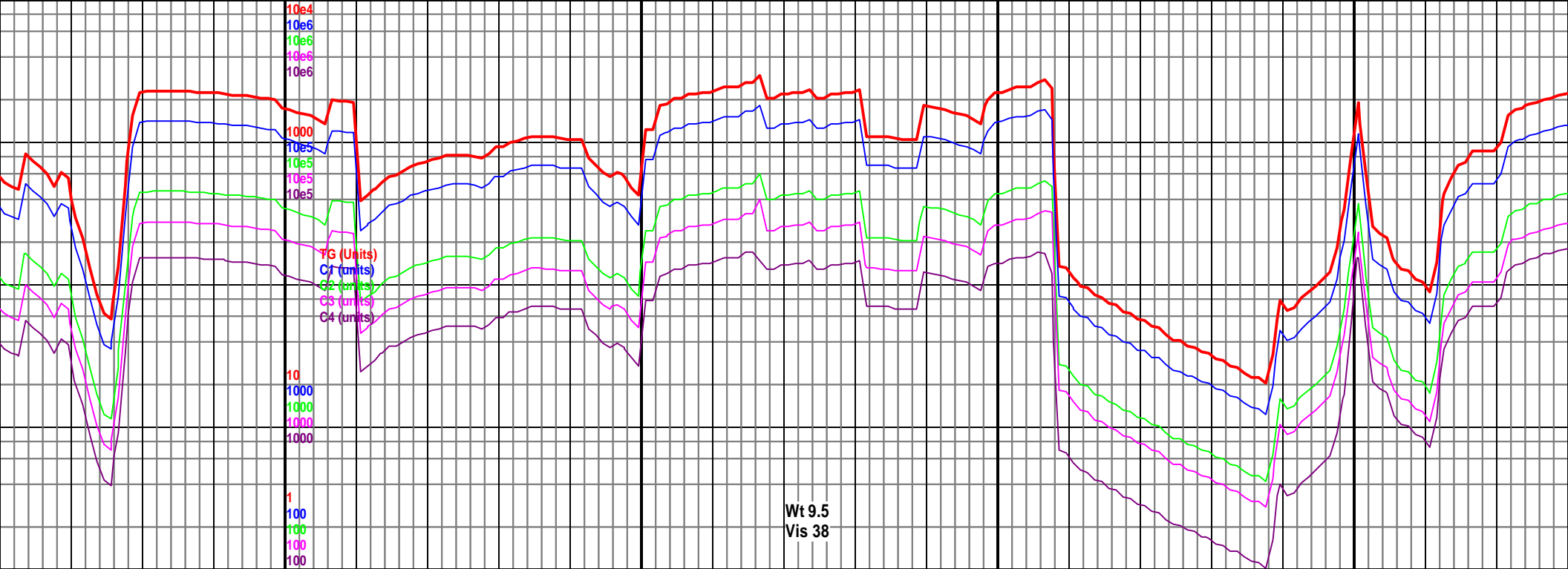
MD 7692 TVD 5648.19
INC 90.04 AZ 179.88
VS 2497.8

5550
(-807)

7550-7600 Mrlst dk-med gy, sb
blky, occ sb plty, mod frm, tr Chk
brn, banded ip, sb plty-blky, mod
ip, tr yel min flor, slo oil cut,
90% Mrlst 10% Chk

7600-7700 Mrlst dk-med gy, sb
blky-blky, occ sb plty, mod frm, tr Chk
lt gy-lt brn, banded ip, sb plty-blky, mod
frm-sft ip, rr inocs, tr yel min flor, slo
oil cut 90% Mrlst 10% Chk

7700-7800 Mrlst dk-med gy
blky-blky, occ sb plty, mod
lt gy-lt brn, banded ip, sb p
frm-sft ip, tr yel min flor, slo
90% Mrlst 10% Chk



MD 7785 TVD 5648.98 TVD
INC 88.99 AZ 180.09 ID Sea (-407)
VS 2590.8

MD 7877 TVD 5649.9
INC 89.87 AZ 180.12
VS 2682.79

MD 7970 TVD 5649.9
INC 88.72 AZ 180.12
VS 2775.78

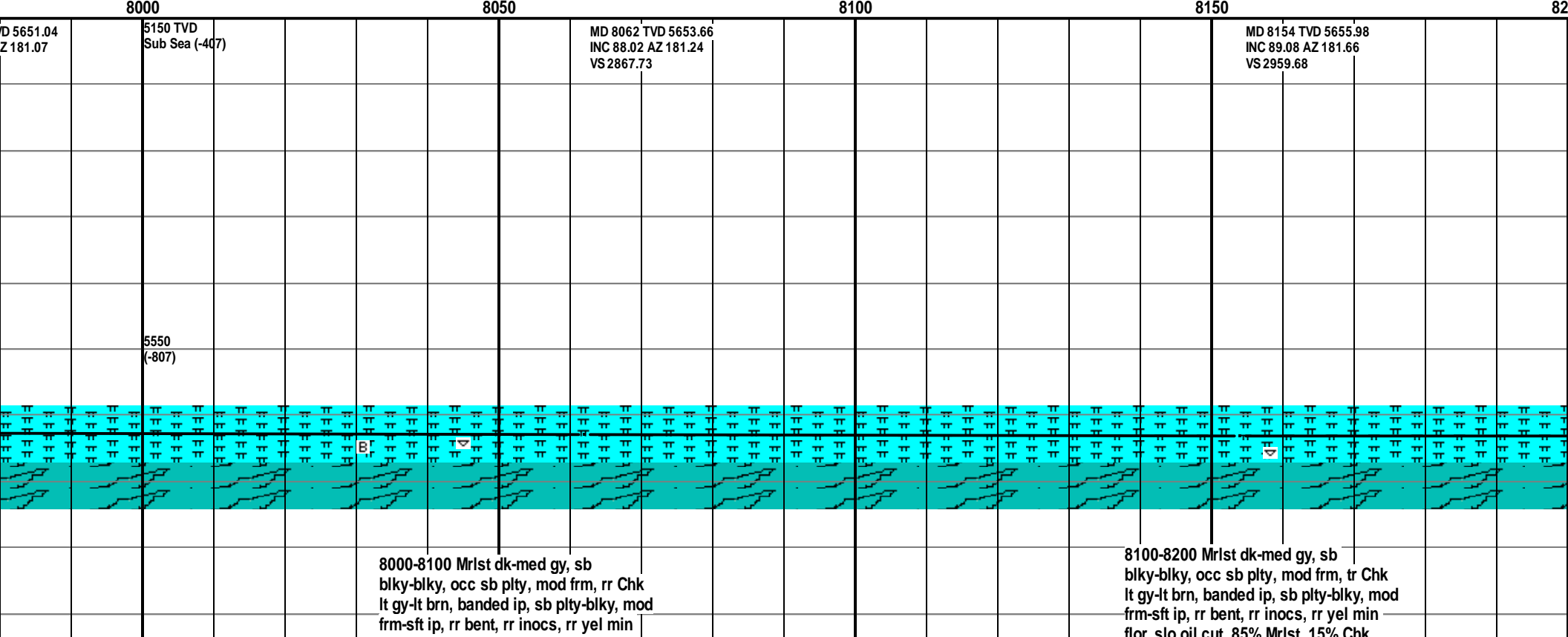
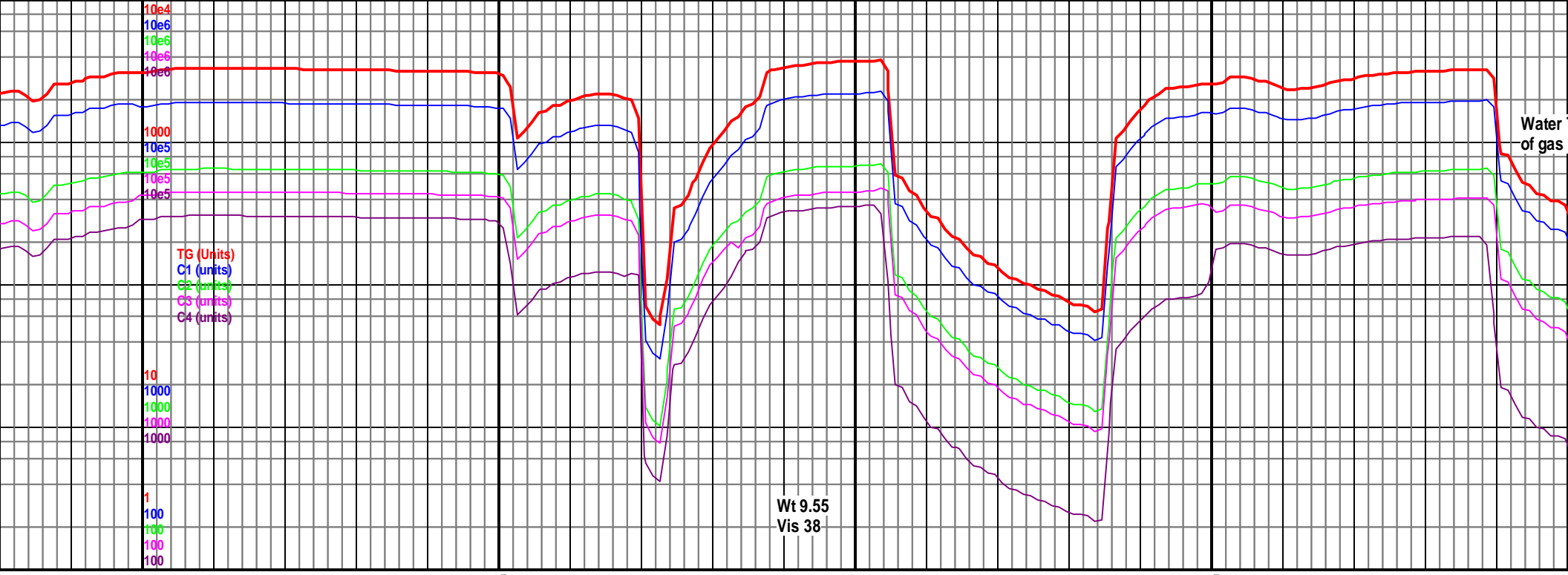
**FIX HYDRAULIC LINE
LEAK ON TOP DRIVE**

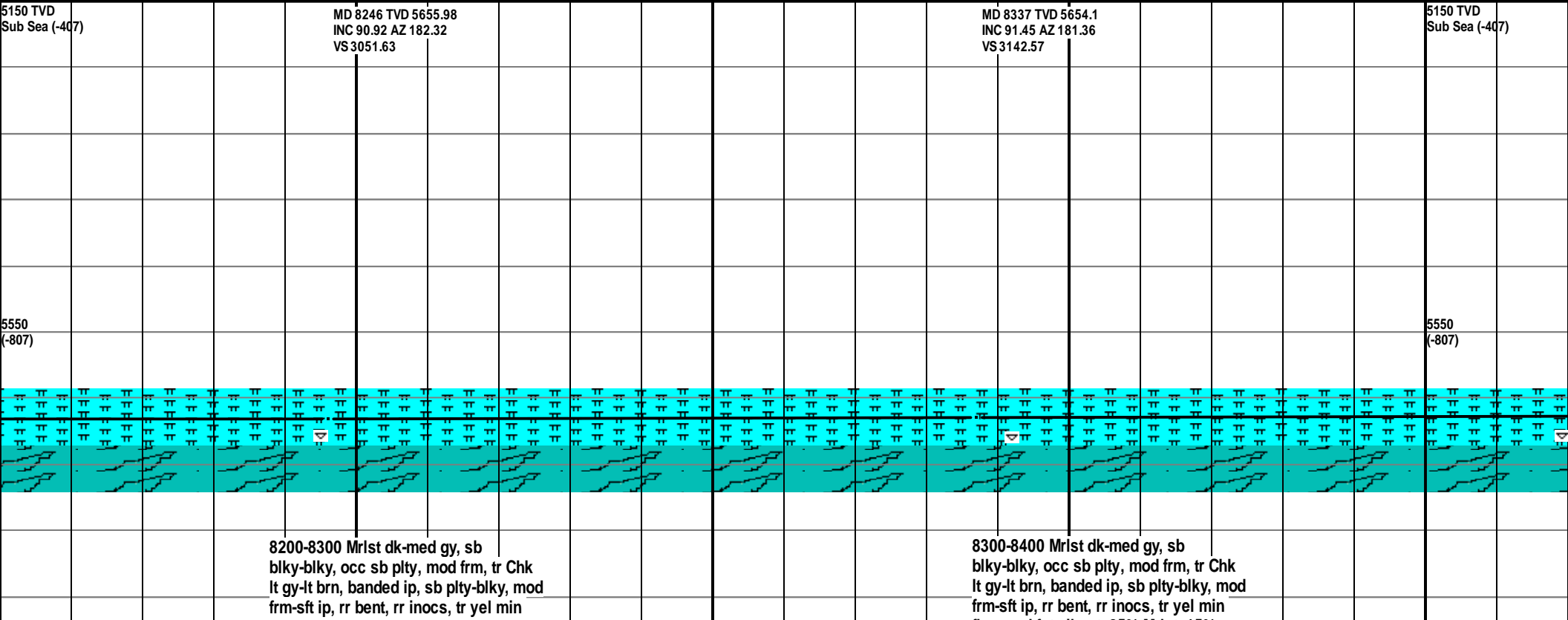
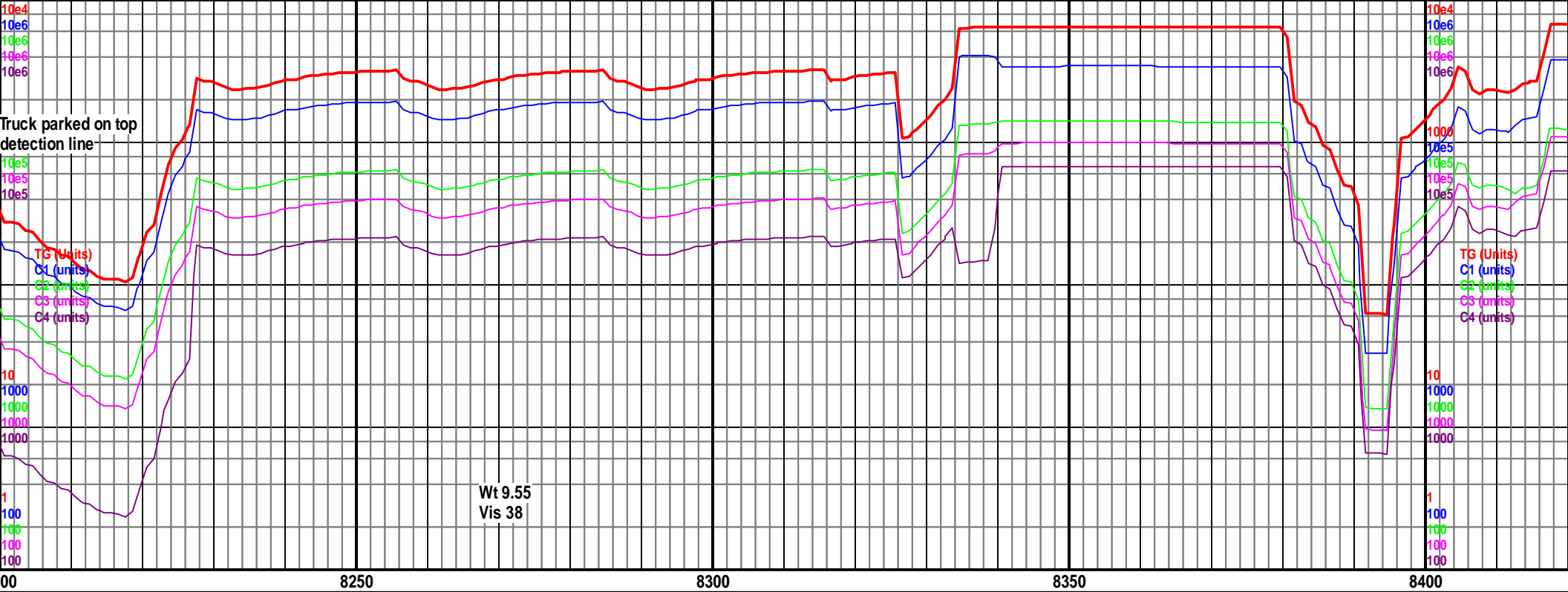
5550
(-807)

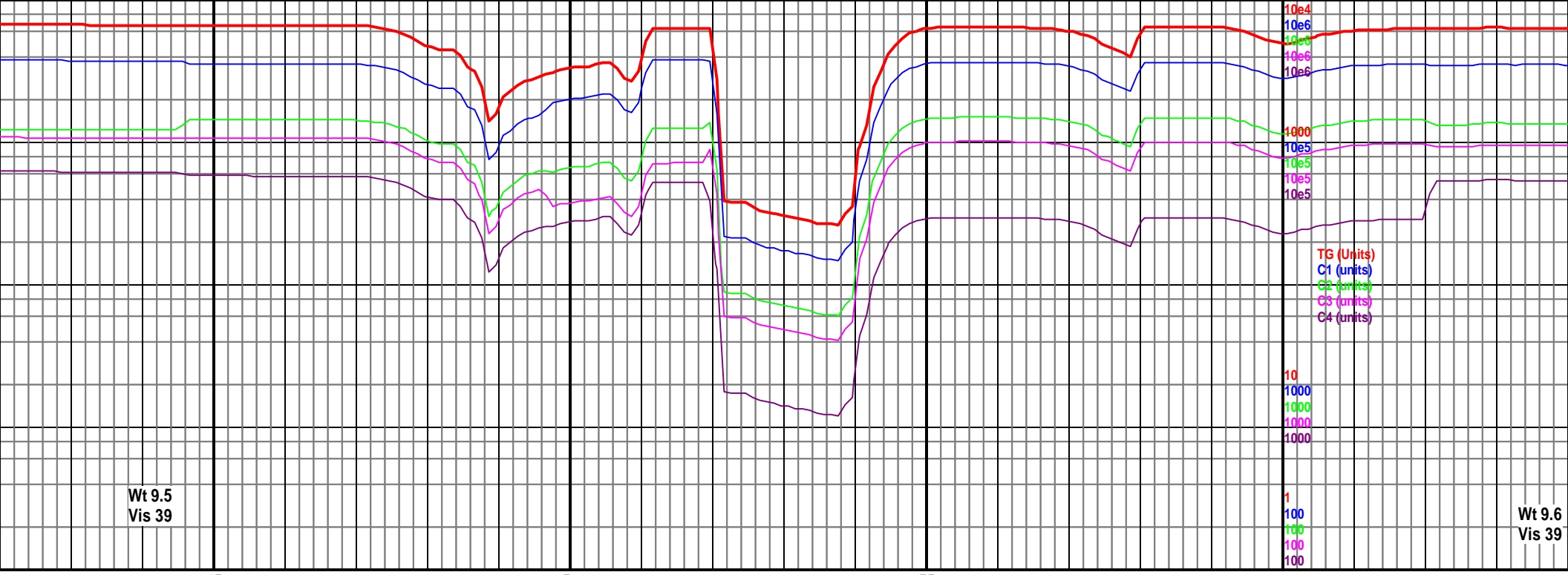
, sb
l frm, rr Chk
lty-blky, mod
o oil cut,

7800-7900 Mrst dk-med gy, sb
blky-blky, occ sb plty, mod frm, tr Chk
lt gy-lt brn, banded ip, sb plty-blky, mod
frm-sft ip, abnt bent, tr inocs, abnt yel
min flor. slo oil cut. 85% Mrst. 15%

7900-8000 Mrst dk-med gy, sb
blky-blky, occ sb plty, mod frm, tr Chk
lt gy-lt brn, banded ip, sb plty-blky, mod
frm-sft ip, g tr bent, tr inocs, g tr yel
min flor. slo oil cut. 90% Mrst. 10%







Wt 9.5
Vis 39

Wt 9.6
Vis 39

8450

8500

8550

8600

MD 8429 TVD 5652.13
INC 91.01 AZ 179.51
VS 3234.54

MD 8521 TVD 5652.63
INC 88.37 AZ 179.99
VS 3326.53

5150 TVD
Sub Sea (-407)

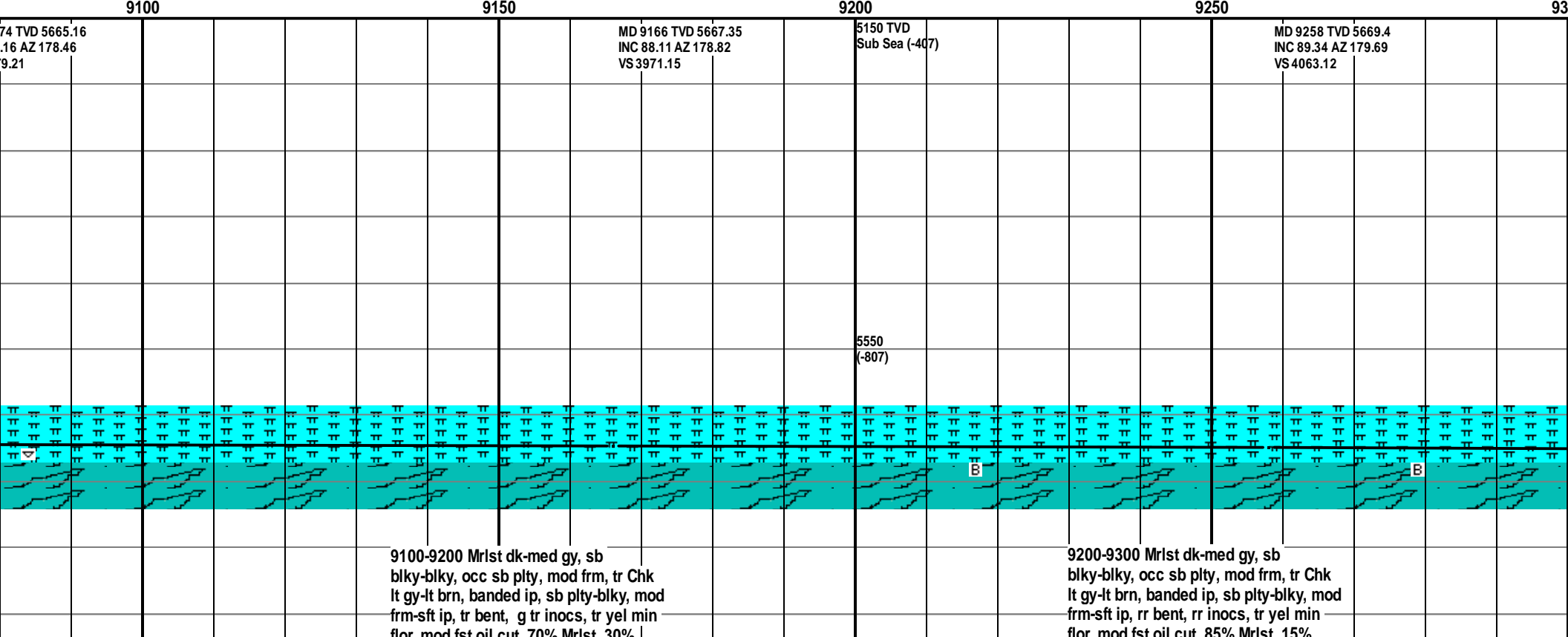
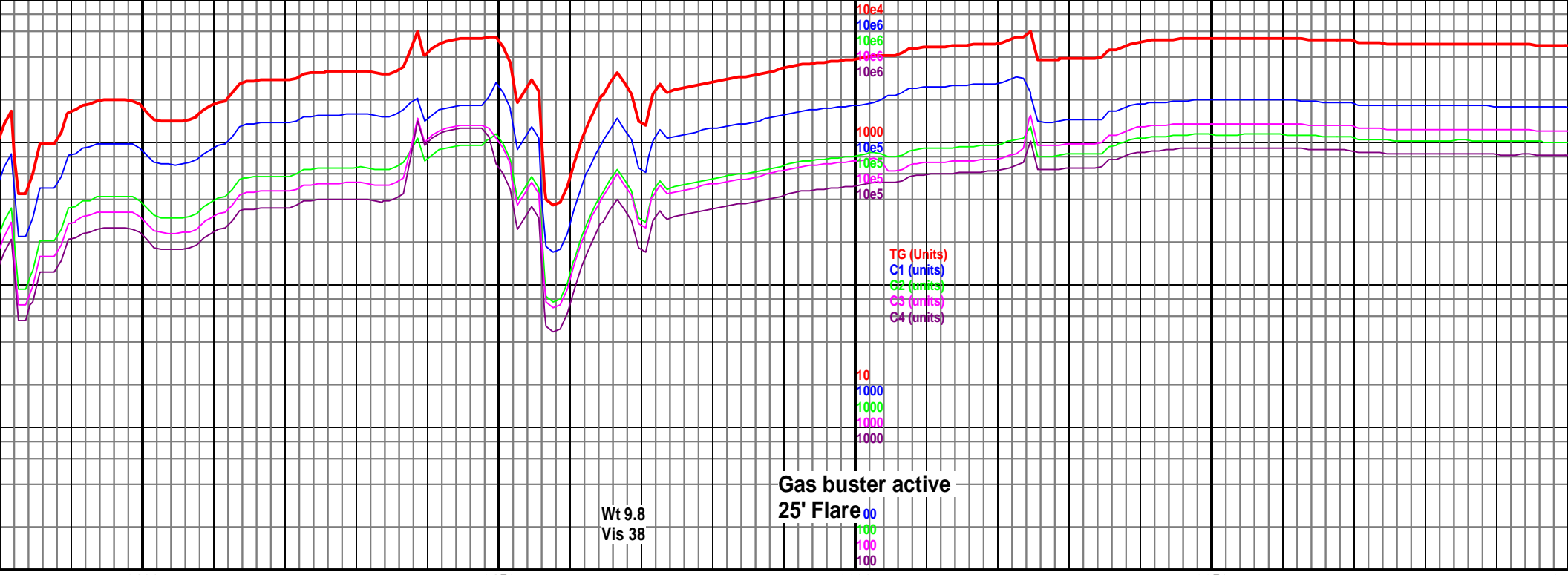
MD 8613 TVD 5653.97
INC 89.96 AZ 180.32
VS 3418.52

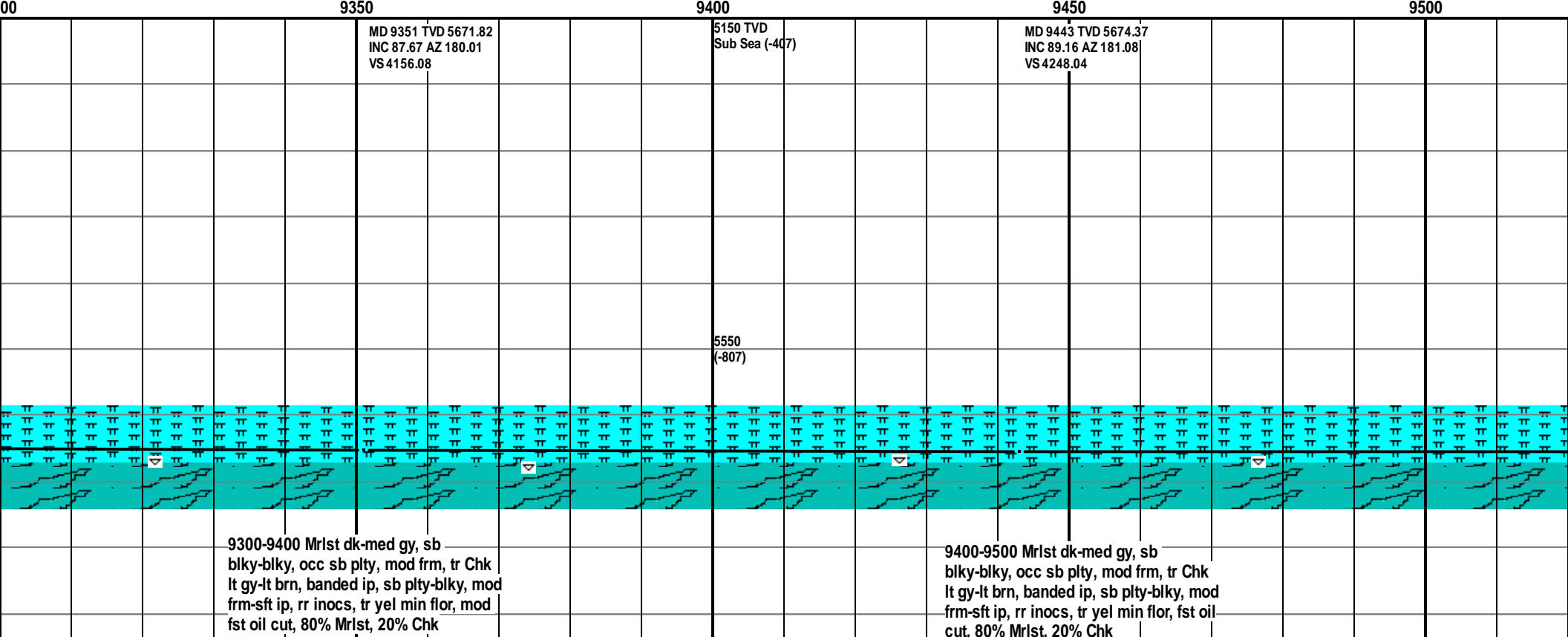
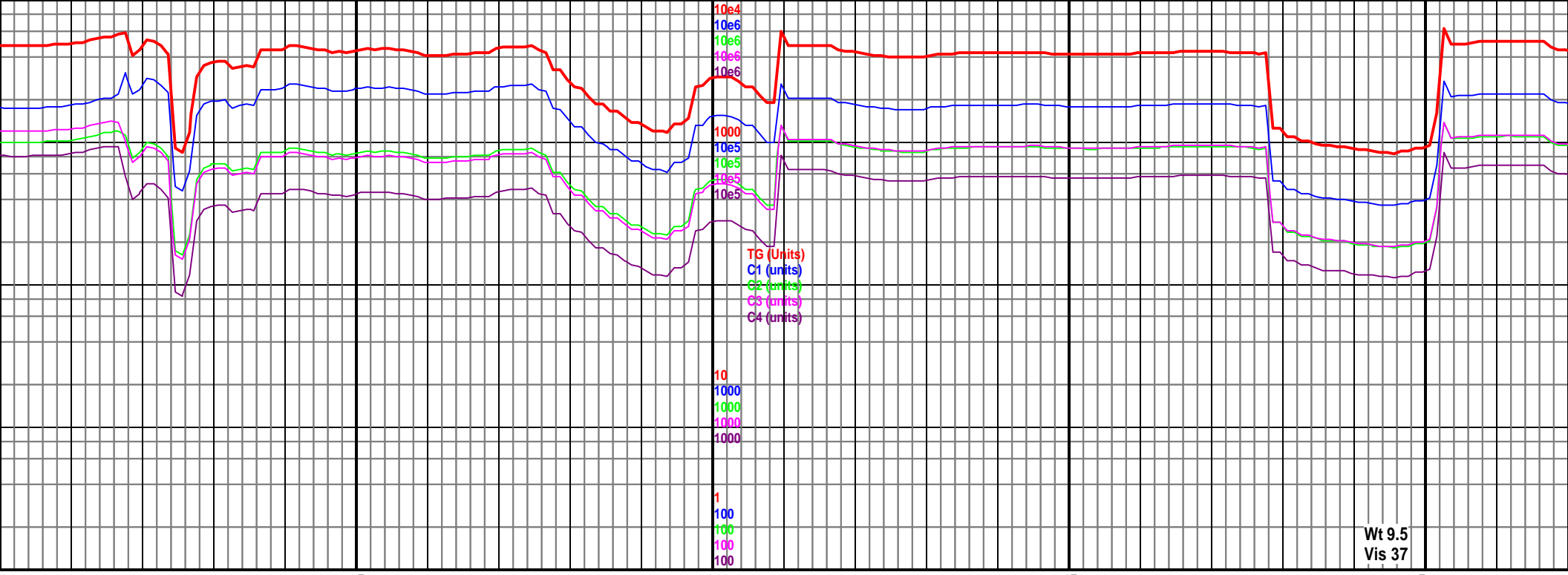
5550
(-807)

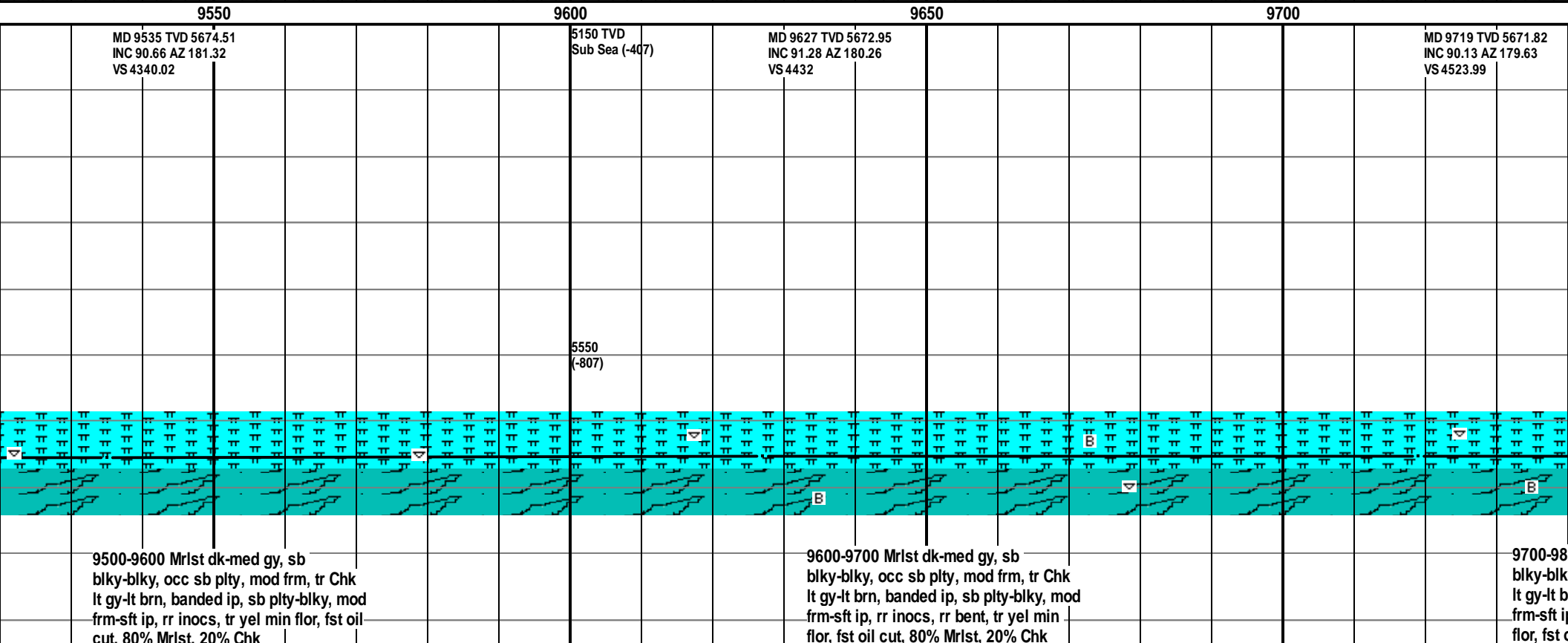
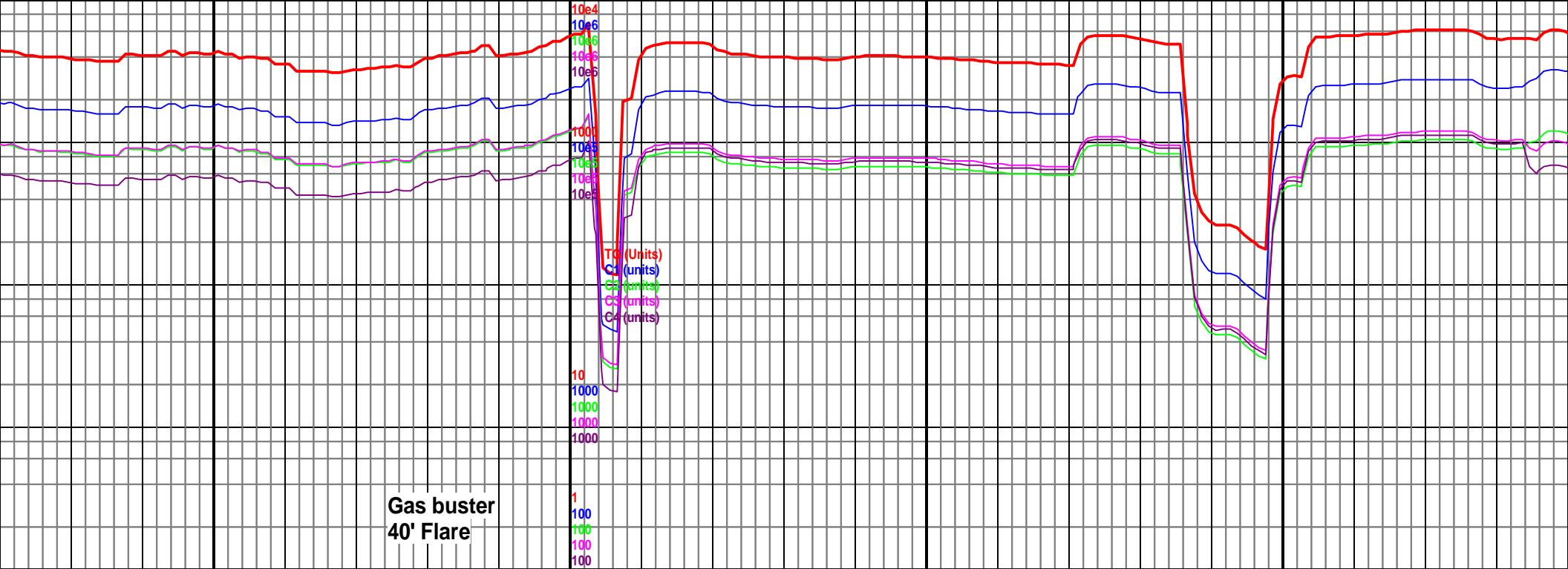
8400-8500 Mrlst dk-med gy, sb
blky-blky, occ sb plty, mod frm, tr Chk
lt gy-lt brn, banded ip, sb plty-blky, mod
frm-sft ip, rr bent, rr inocs, tr yel min

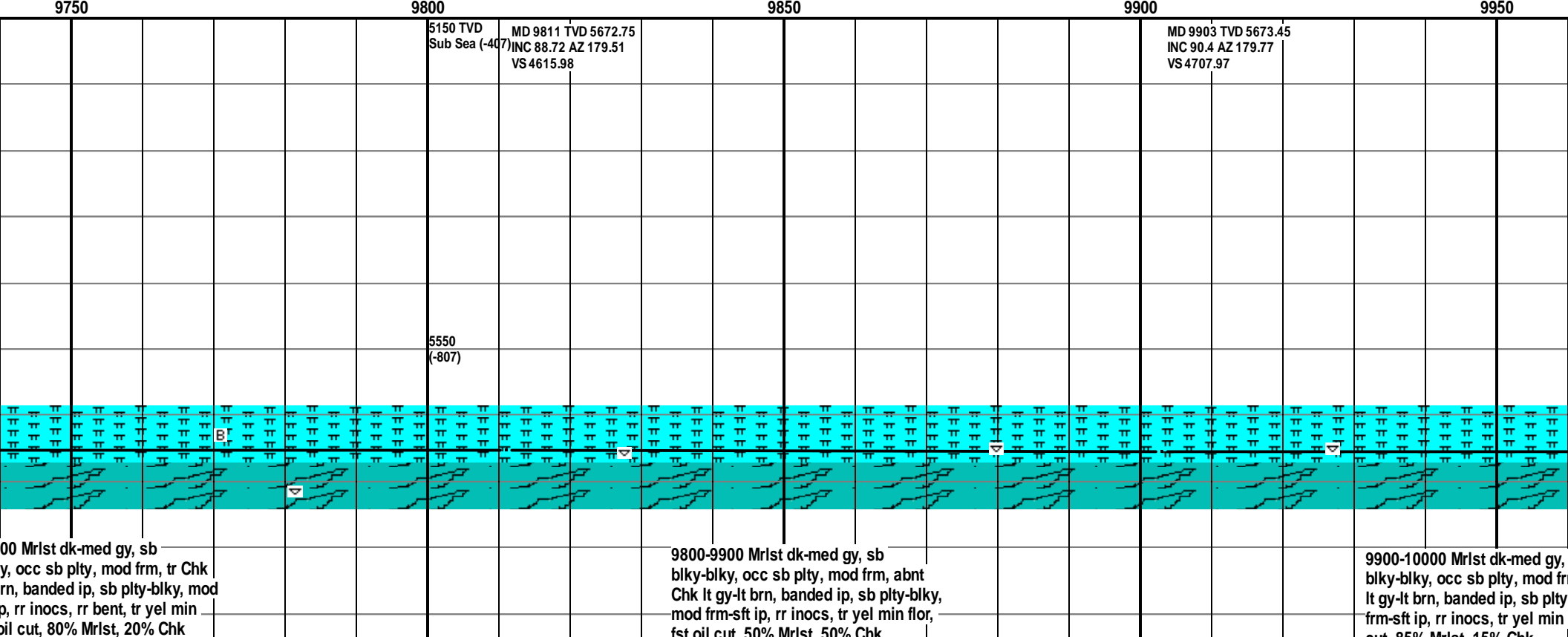
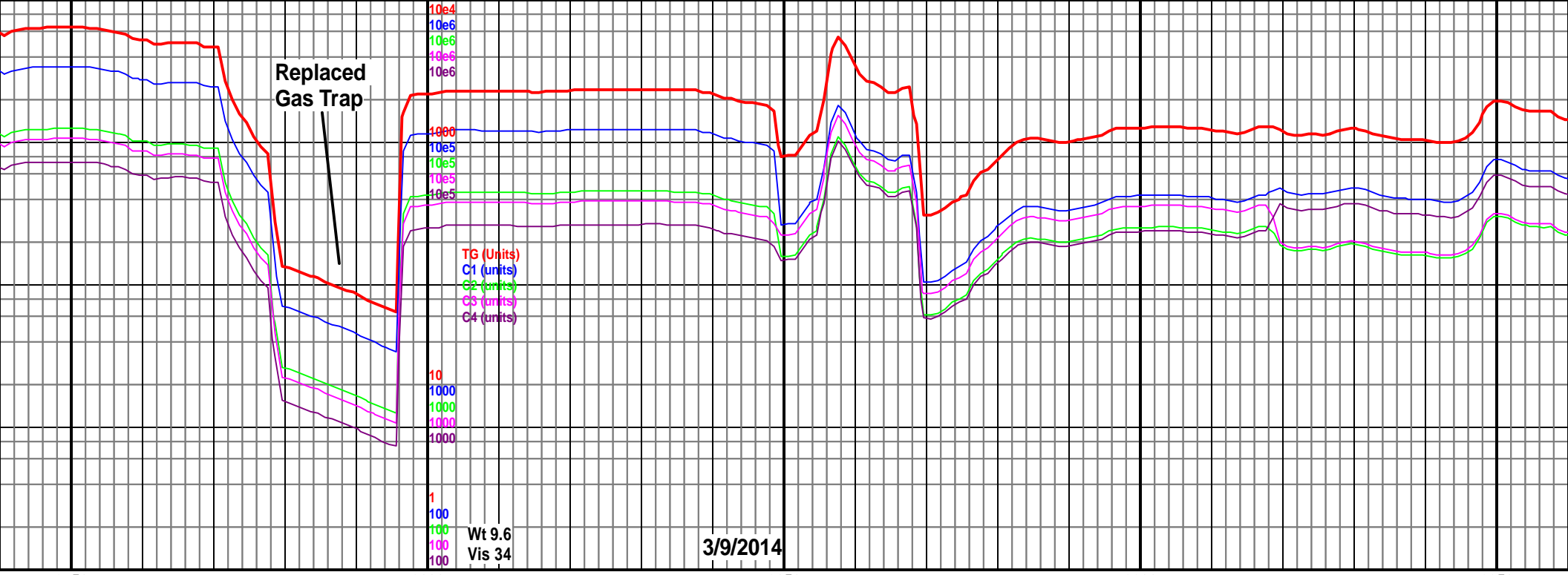
8500-8600 Mrlst dk-med gy, sb
blky-blky, occ sb plty, mod frm, tr Chk
lt gy-lt brn, banded ip, sb plty-blky, mod
frm-sft ip, rr bent, rr inocs, rr yel min
flor. mod fst oil cut. 80% Mrlst. 20%

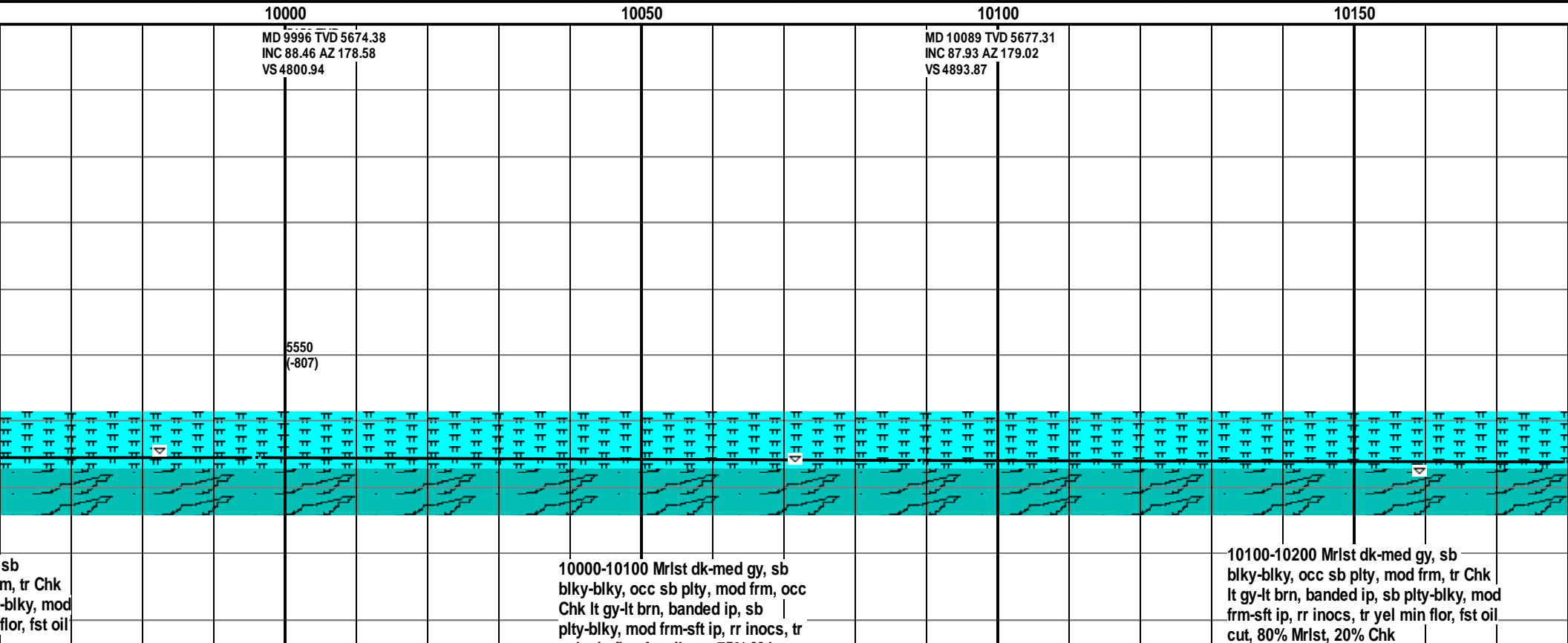
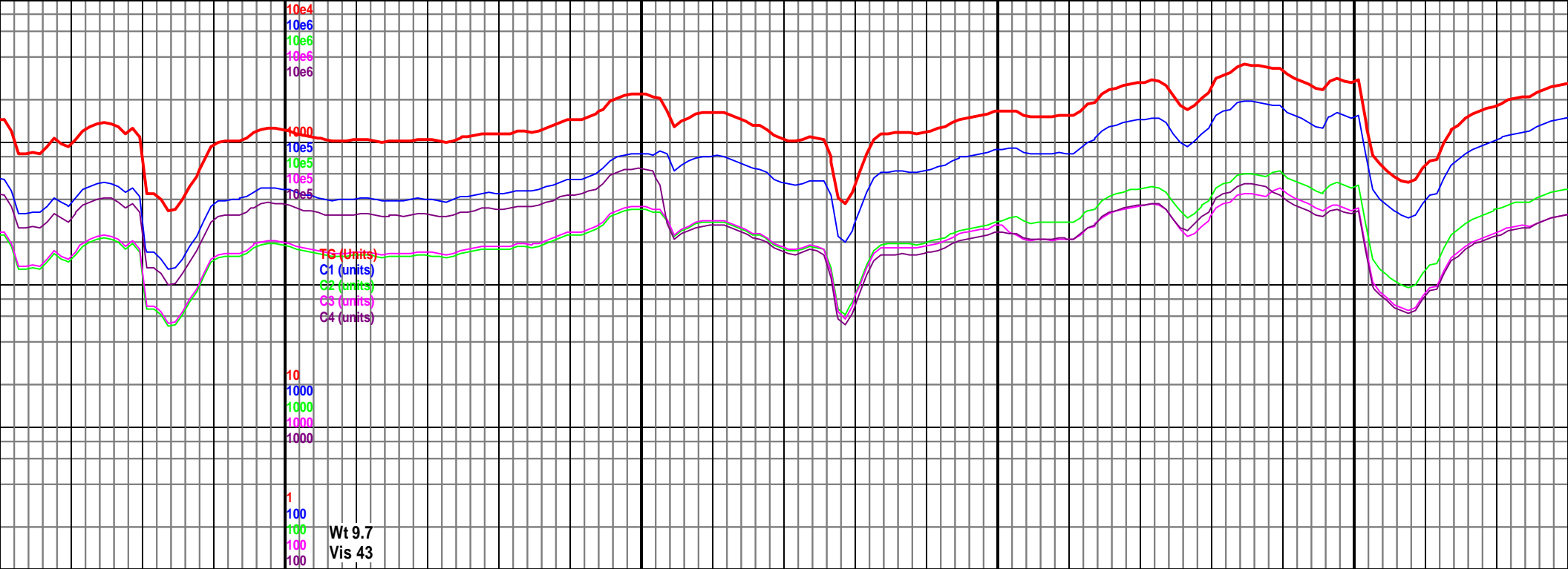
860
blky
lt gy
frm-
flor

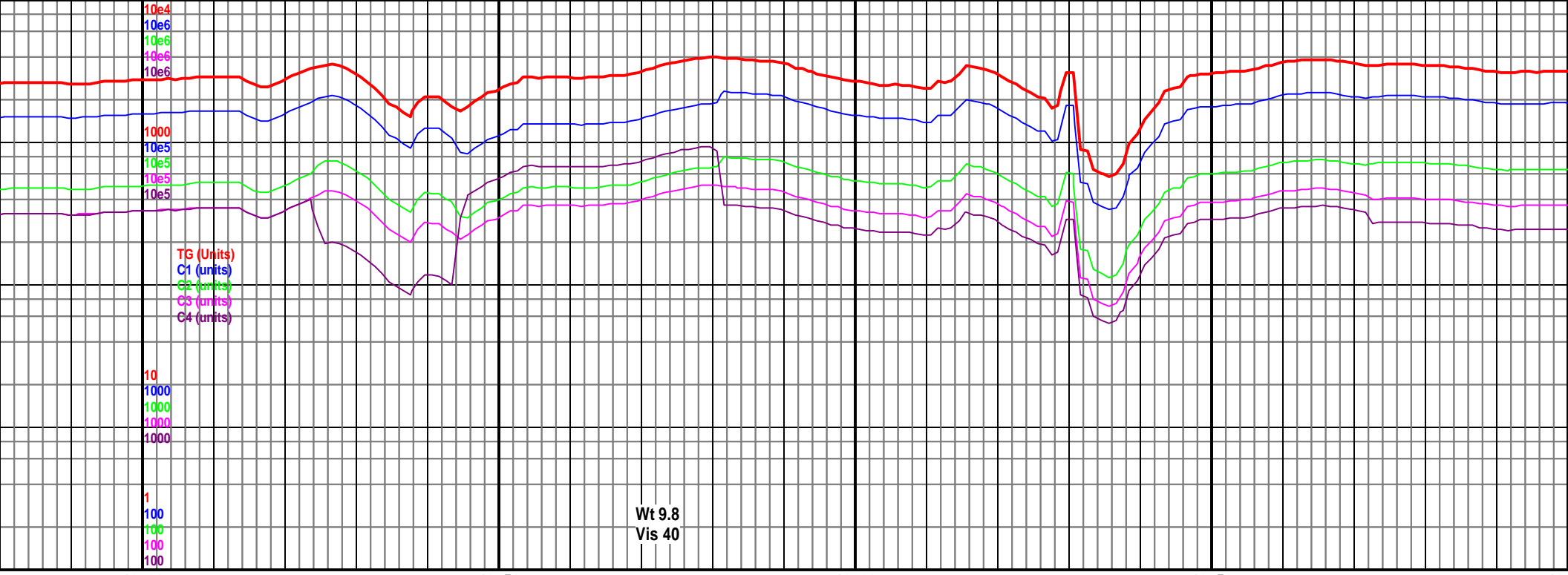




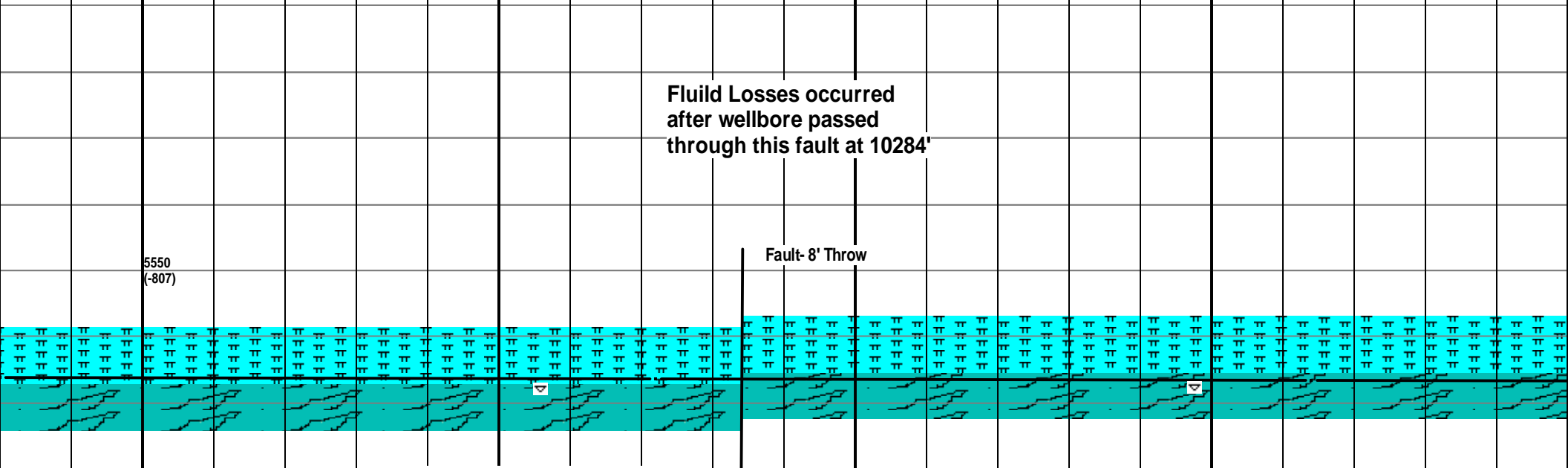






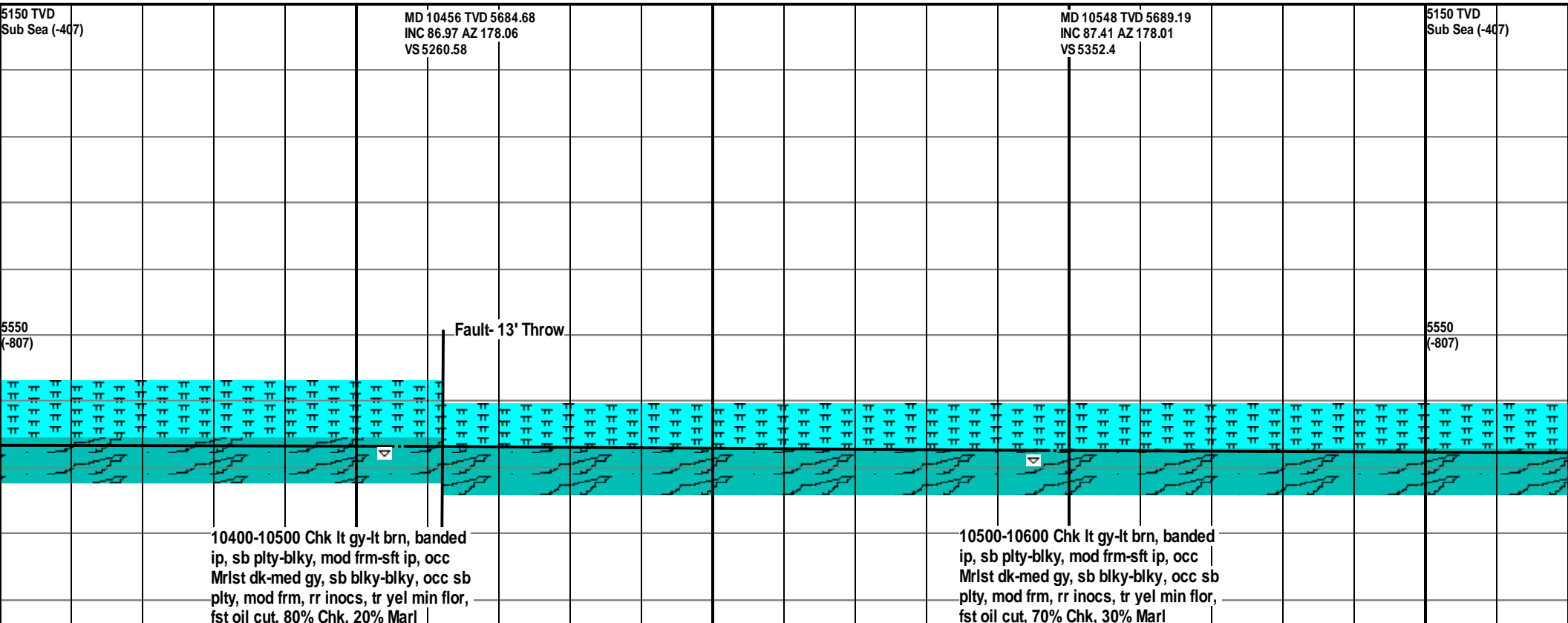
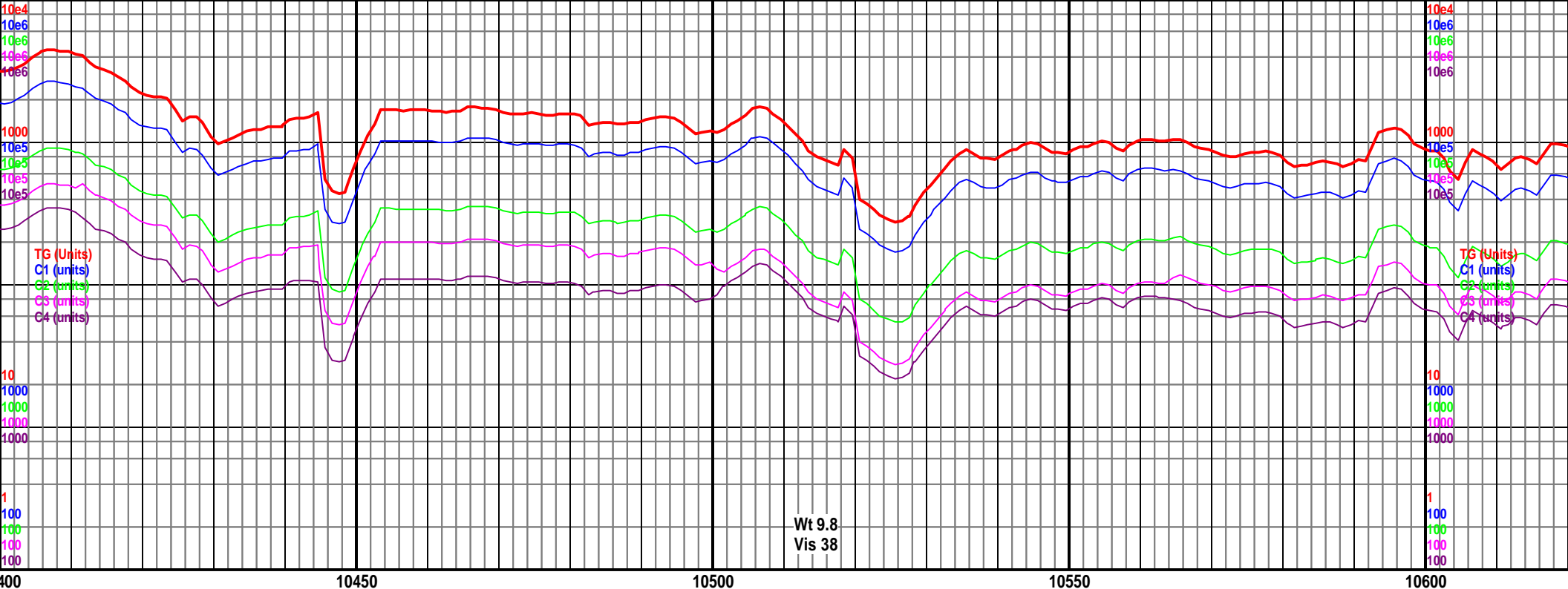


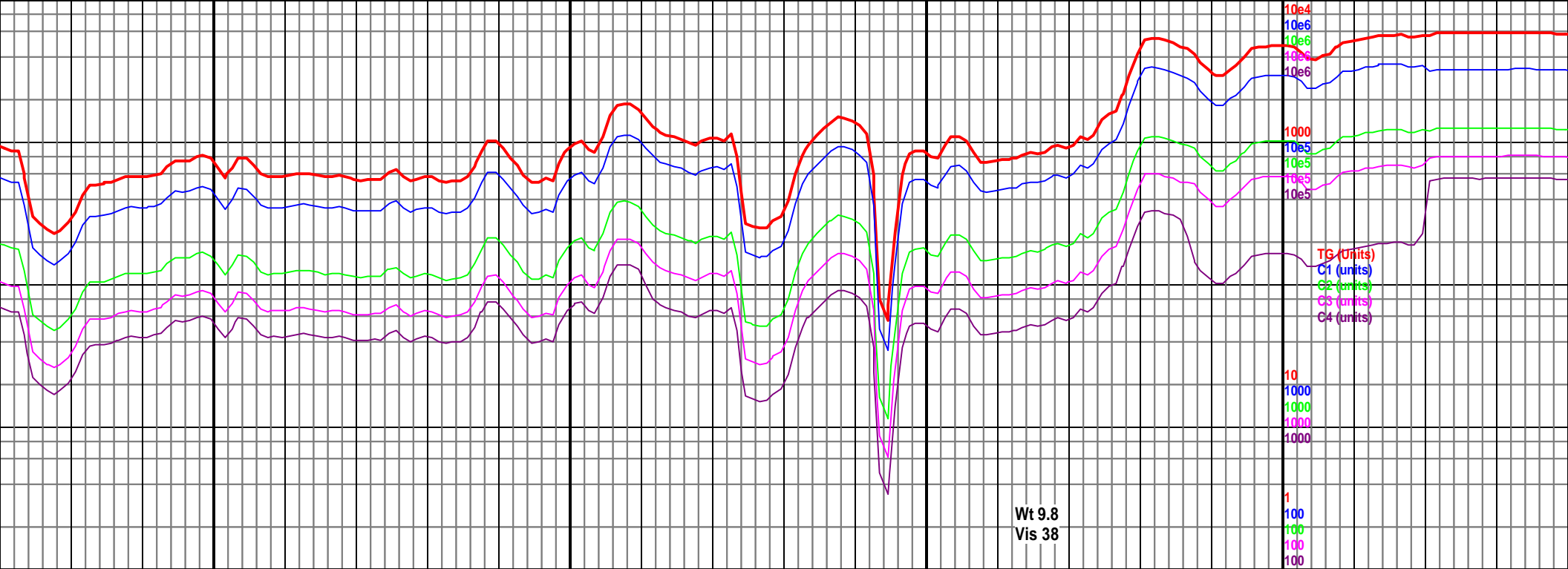
MD 10180 TVD 5680.03 INC 88.64 AZ 178.88 VS 4984.81	5150 TVD Sub Sea (-407)	MD 10272 TVD 5681.58 INC 89.43 AZ 178.07 VS 5076.75	MD 10364 TVD 5682.14 INC 89.87 AZ 178.03 VS 5168.69
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10200-10300 Mrlst dk-med gy, sb
blkyl-blky, occ sb plty, mod frm, abnt
Chk lt gy-lt brn, banded ip, sb plty-blky,
mod frm-sft ip, rr inocs, tr yel min flr,
fst oil cut 60% Mrlst 40% Chk

10300-10400 Chk lt gy-lt brn, banded
ip, sb plty-blky, mod frm-sft ip, occ
Mrlst dk-med gy, sb blkyl-blky, occ sb
plty, mod frm, rr inocs, tr yel min flr,





10650

10700

10750

10800

MD 10641 TVD 5692.68
INC 88.29 AZ 177.55
VS 5445.25

MD 10733 TVD 5694.72
INC 89.16 AZ 177.95
VS 5537.15

5150 TVD
Sub Sea (-407)

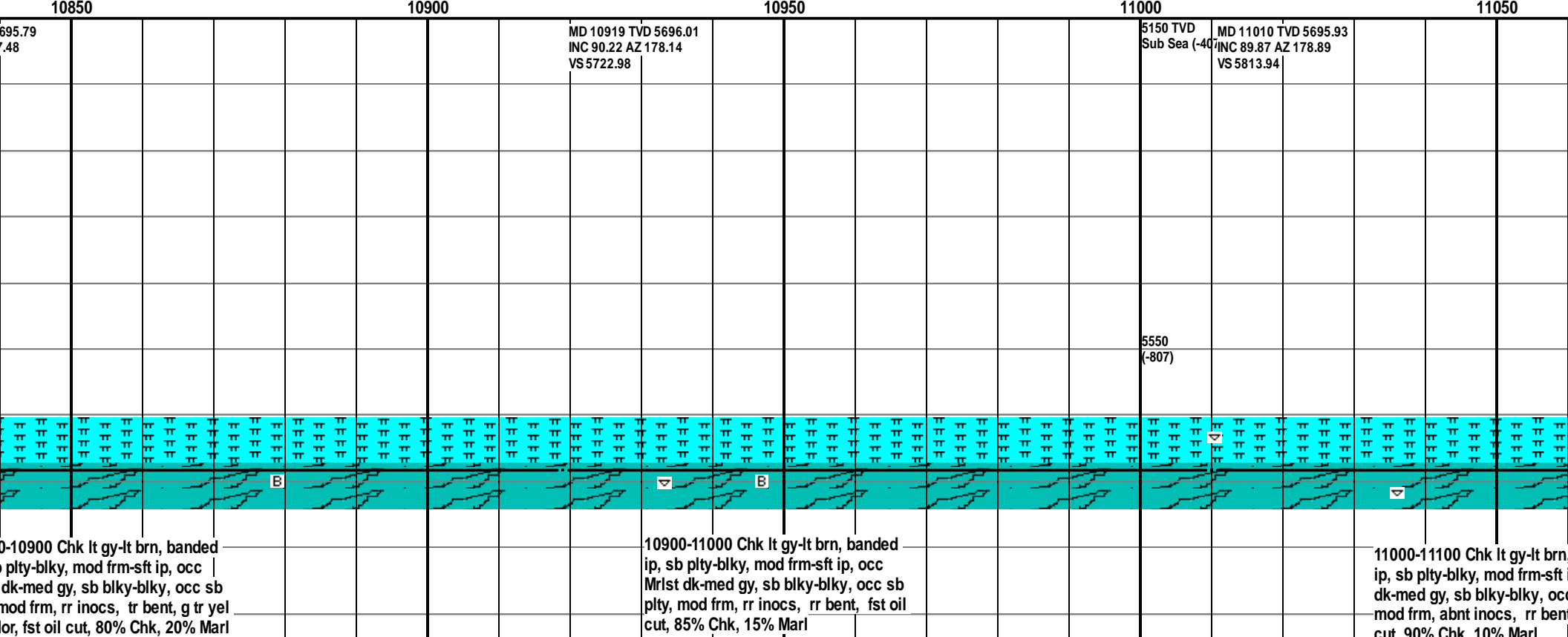
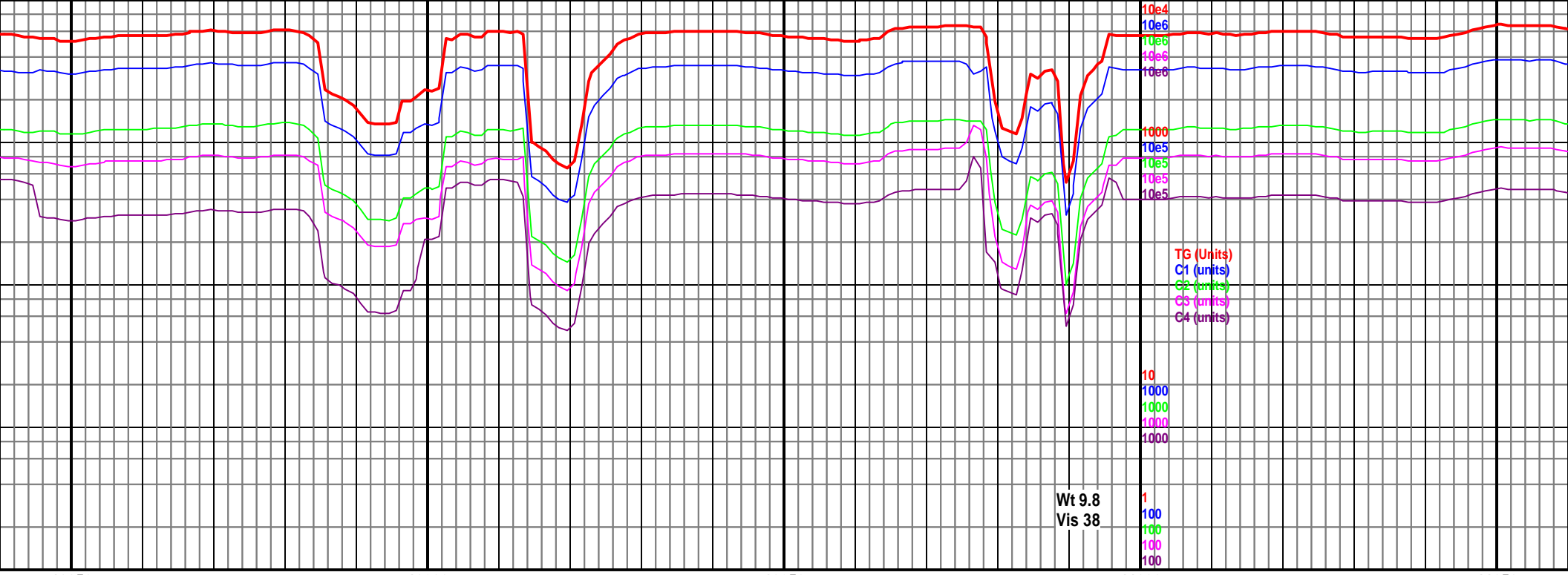
MD 10826 TVD 5696.72
INC 89.52 AZ 177.95
VS 5630.06

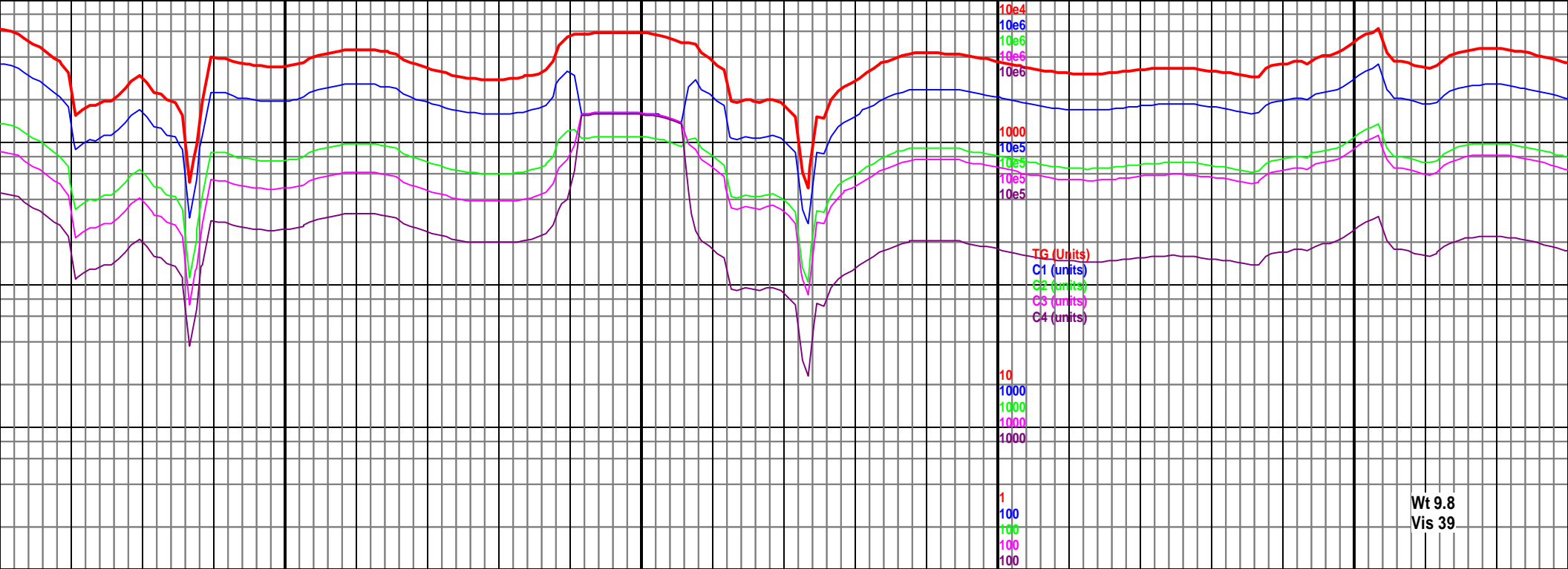
5550
(-807)

10600-10700 Chk lt gy-lt brn, banded
ip, sb plty-blky, mod frm-sft ip, occ
Mrst dk-med gy, sb blkyl-blky, occ sb
plty, mod frm, rr inoccs, tr yel min flor,
fst oil cut 70% Chk 30% Marl

10700-10800 Chk lt gy-lt brn, banded
ip, sb plty-blky, mod frm-sft ip, occ
Mrst dk-med gy, sb blkyl-blky, occ sb
plty, mod frm, rr inoccs, g tr bent, g tr
vel min flor fst oil cut 90% Chk 10%

10800-10900 Chk lt gy-lt brn, banded
ip, sb plty-blky, mod frm-sft ip, occ
Mrst dk-med gy, sb blkyl-blky, occ sb
plty, mod frm, rr inoccs, g tr bent, g tr
vel min flor fst oil cut 90% Chk 10%





Wt 9.8
Vis 39

11100

11150

11200

11250

MD 11103 TVD 5696.29
INC 89.69 AZ 181.54
VS 5906.93

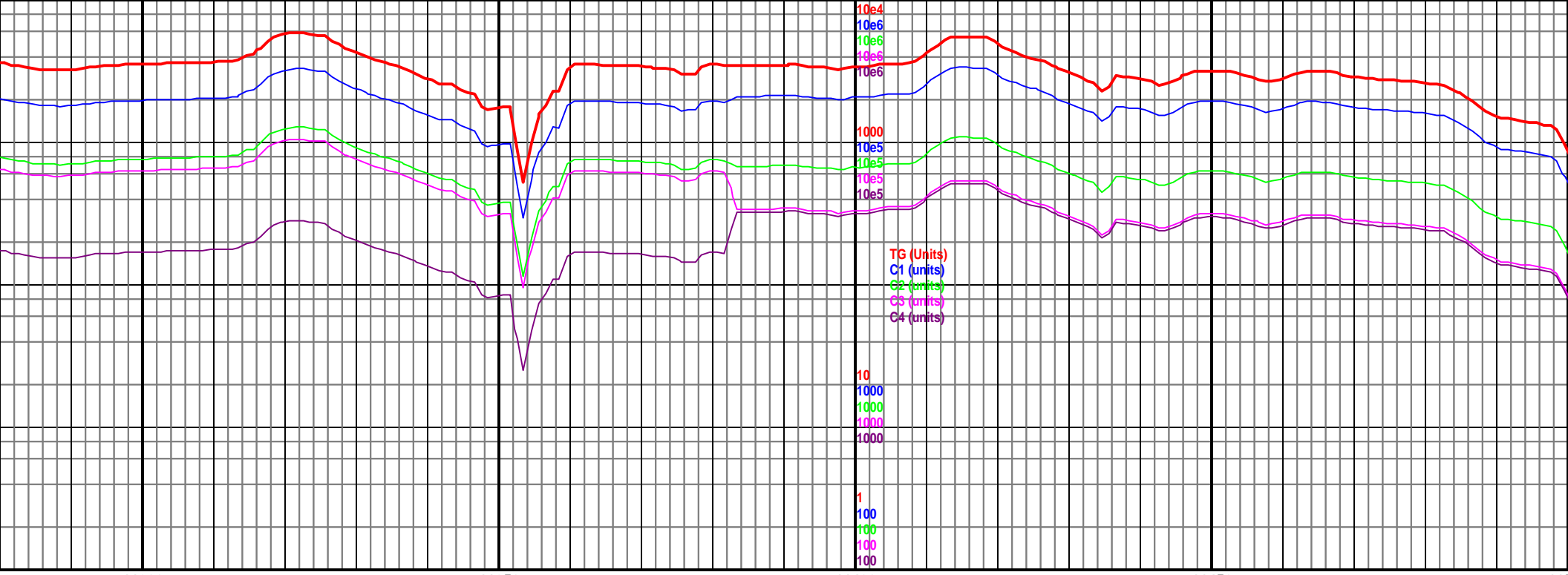
MD 11194 TVD 5697.62
INC 88.64 AZ 182.96
VS 5997.85

5550
(-807)

, banded
ip, tr Mrlst
c sb plty,
t, fst oil

11100-11200 Chk lt gy-lt brn, banded ip,
sb plty-blky, mod frm-sft ip, tr Mrlst
dk-med gy, sb blky-blky, occ sb plty,
mod frm, abnt inocs, fst oil cut, 90%
Chk 10% Marl

11200-11300 Chk lt gy-lt brn, banded
ip, sb plty-blky, mod frm-sft ip, abnt
Mrlst dk-med gy, sb blky-blky, occ sb
plty, mod frm, tr inocs, rr bent, fst oil
cut. 60% Chk. 40% Marl



MD 11286 TVD 5699.74
INC 88.72 AZ 182.42
VS 6089.74

MD 11377 TVD 5700.86
INC 89.87 AZ 181.34
VS 6180.69

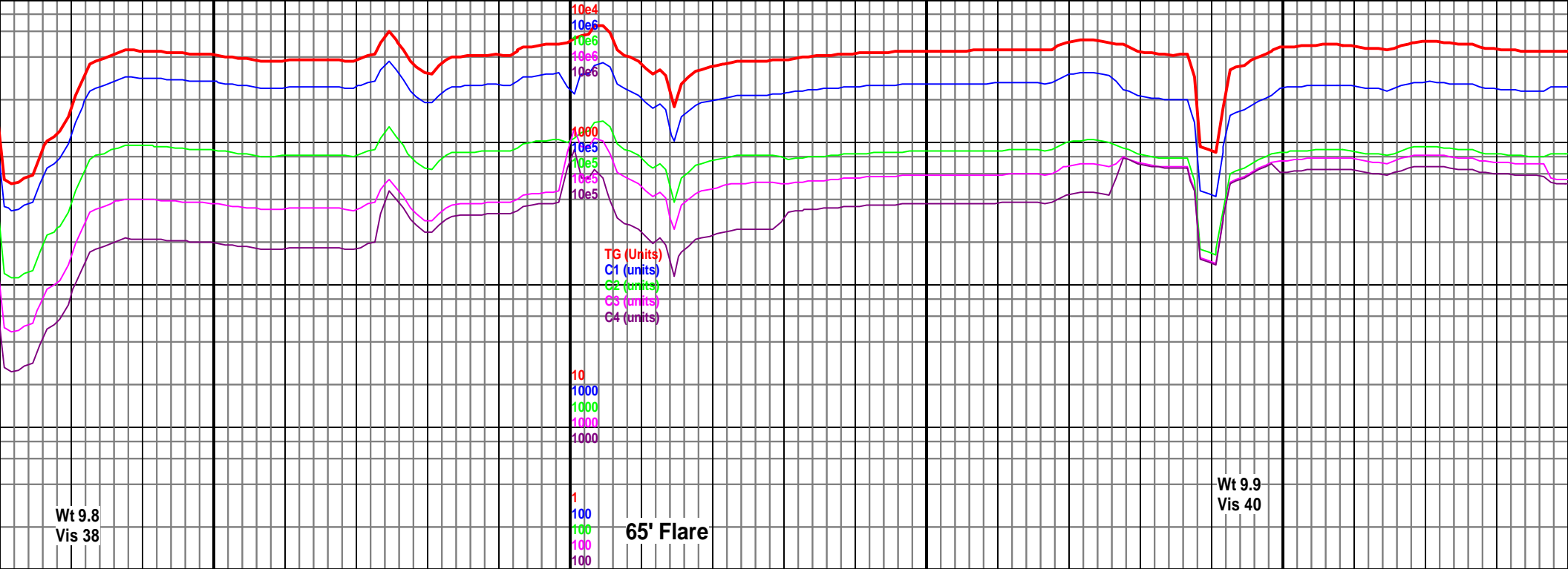
5150 TVD
Sub Sea (-407)

MD 11468 TVD 5700.51
INC 90.57 AZ 182.04
VS 6271.66

5550
(-807)

11300-11400 Mrlst dk-med gy, sb
blky-blky, occ sb plty, mod frm, abnt
Chk lt gy-lt brn, banded ip, sb plty-blky,
mod frm-sft ip, rr inoccs, tr yel min flor,
fst oil cut 60% Mrlst 40% Chk

11400-11500 Mrlst dk-med gy, sb
blky-blky, occ sb plty, mod frm, abnt
Chk lt gy-lt brn, banded ip, sb plty-blky,
mod frm-sft ip, rr inoccs, tr yel min flor,
fst oil cut 60% Mrlst 40% Chk



Wt 9.8
Vis 38

65' Flare

Wt 9.9
Vis 40

11750

11800

11850

11900

MD 11741 TVD 5697.51
INC 90.92 AZ 180.55
VS 6544.53

5150 TVD
Sub Sea (-407)

MD 11832 TVD 5696.96
INC 89.78 AZ 179.94
VS 6635.53

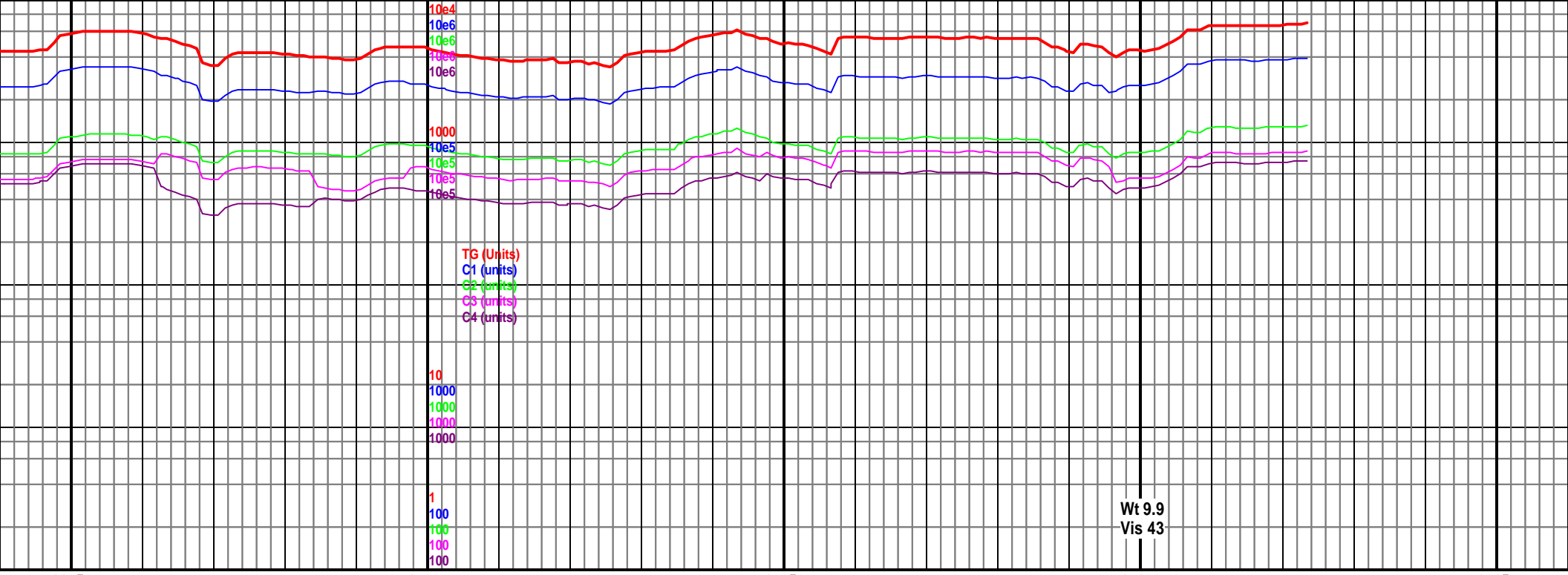
MD 11916 TVD 5697.35
INC 89.69 AZ 179.87
VS 6719.52

5550
(-807)

11700-11800 Chk lt gy-lt brn, banded
ip, sb plty-blky, mod frm-sft ip, occ
Mrlst dk-med gy, sb blky-blky, occ sb
plty, mod frm, abnt inocs, fst oil cut,
85% Chk, 15% Marl

11800-11900 Chk lt gy-lt brn, banded
ip, sb plty-blky, mod frm-sft ip, occ
Mrlst dk-med gy, sb blky-blky, occ sb
plty, mod frm, g amt inocs, fst oil cut,
85% Chk, 15% Marl

11900-
ip, s
Mrlst
plty,
s



11950 12000 12050 12100 12150

MD 12000 TVD 5697.6
INC 89.96 AZ 179.79
VS 6803.52

MD 12066 TVD 5697.35
INC 90.48 AZ 179.32
VS 6869.52

MD 12124 TVD 5696.86
INC 90.48 AZ 179.32
VS 6927.51

5550
(-807)

TD reached 12124' at 8
on 3/10/2014

11900-12000 Chk lt gy-lt brn, banded
sb plty-blky, mod frm-sft ip, occ
st dk-med gy, sb blky-blky, occ sb
mod frm, g amt inocs, fst oil cut,
Chk, 20% Marl

12000-12100 Chk lt gy-lt brn, banded
ip, sb plty-blky, mod frm-sft ip, occ
Mrlst dk-med gy, sb blky-blky, occ sb
plty, mod frm, tr inocs, fst oil cut, 75%
Chk, 25% Marl

12100-12124 Chk lt gy-lt brn, banded
ip, sb plty-blky, mod frm-sft ip, occ
Mrlst dk-med gy, sb blky-blky, occ sb
plty, mod frm, tr inocs, fst oil cut, 80%
Chk, 20% Marl

[illegible]

3:38	