



Scale: 5" / 100'
Measured Depth Log

Well Name Ralph_34C_19HZ

Location NWNW 19 T1N, R67W 6 PM

State COLORADO

Country U.S.A.

API Number 05-123-36923-0000

Region D J BASIN

Spud Date 4/15/2013

Surface Coordinates PLANNED LOCATION: 280' FNL 1210' FWL,
LAT/LONG: 40.04319/-104.938186

Bottom Hole Coordinates BOTTOM HOLE LOCATION: SEC: 19 TWP: 1N 67W,
FOOTAGES: 460 FSL 50 FWL
DEPTH:12396'

Ground Elevation 5117'

Logged Interval 7300' To 12396'

Formation CODELL

Type of Drilling Fluid LSND

Rig Number XTREME 6

AFE # 2074865.011

Field WATTENBERG

Drilling Completed 8/19/2013

K.B. Elevation 5133'

Total Depth 12396'

Company Anadarko
Address 1099 18th St #1
Denver, CO 802

Name Isaac Smith, Ja
Company Columbine Logg
Address 2385 S. Lipan S
Denver, CO 802
Phone: 303-289
Fax: 303-648-4



Slide/Rotate

ROP
ROF
GAMMA

Total Gas & Chromatograph

Diagram illustrating the hierarchical structure of the GasNet model. The hierarchy is shown as a vertical stack of labels: GAS, C1, C2, C3, and C4. Each label is associated with a colored line segment: GAS is red solid, C1 is blue dashed, C2 is green dashed, C3 is purple dotted, and C4 is blue dotted.

Depth Labels

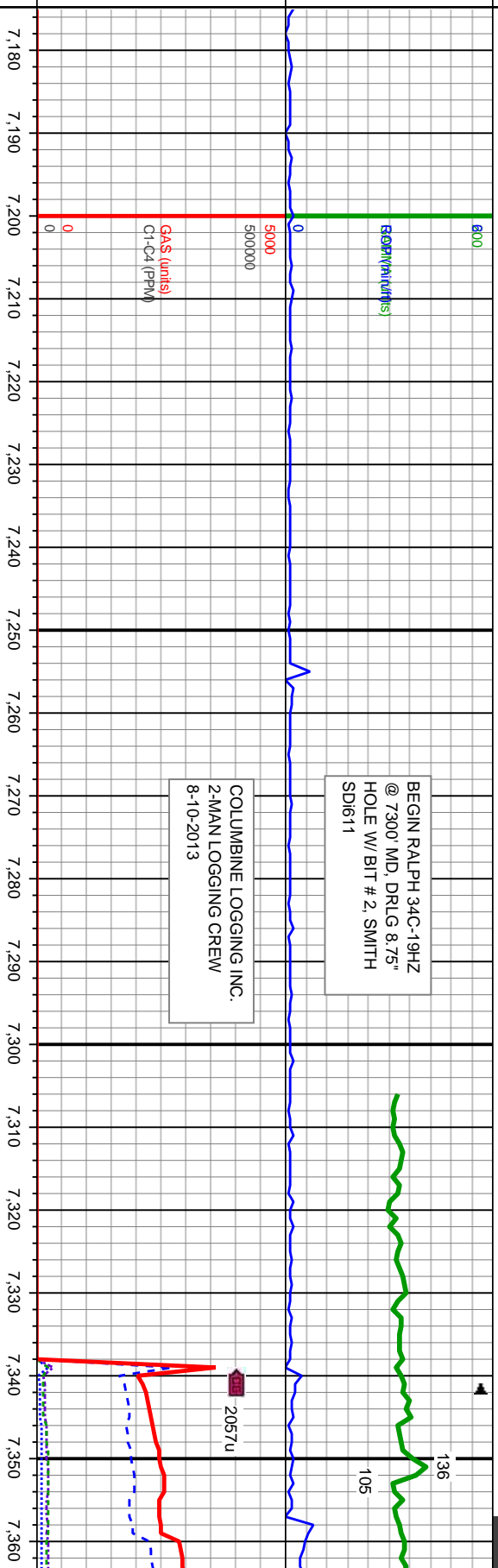
% Lith

Well Bore

TV D

Oil Show

Images



BEGIN RALPH 34C-19HZ
@ 7300' MD, DRLG 8.75"
HOLE W/ BIT #2, SMITH
SDi611

COLUMBINE LOGGING INC.
2-MAN LOGGING CREW
8-10-2013

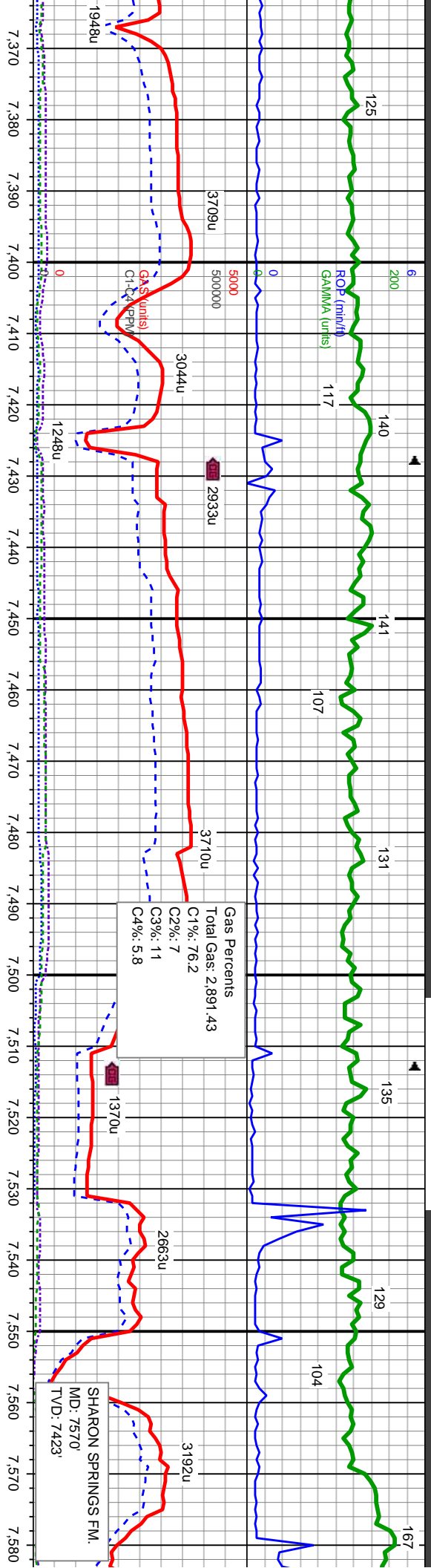
WT IN	8.8	OUT	8.8
VIS IN	31	OUT	29

MD: 7,294
TVD: 7,155.66
Inclination: 2.42
Azimuth: 190.25
VS: -235.85

SLTY SH: med gy-dk gy, ply-sb blkly,
frm-sft, sb rnd-sb ang, mod fri, sl
calc, tr lt bl flwr w/ fnt yel cut

SLTY SH: m
frm-sft, sb r
sl calc, tr lt





MD: 7,379
TVD: 7,240.48
Inclination: 4.99
Azimuth: 182.53
VS: -230.38

MD: 7,422
TVD: 7,283.05
Inclination: 10.82
Azimuth: 179.83
VS: -224.47

MD: 7,464
TVD: 7,323.88
Inclination: 16.14
Azimuth: 177.94
VS: -214.69

MD: 7,507
TVD: 7,364.67
Inclination: 20.7
Azimuth: 181.78
VS: -201.12

MD: 7,550
TVD: 7,404.66
Inclination: 22.45
Azimuth: 182.16
VS: -185.31

WTIN 9.8 OUT 9.6
VISIN 38 OUT 38

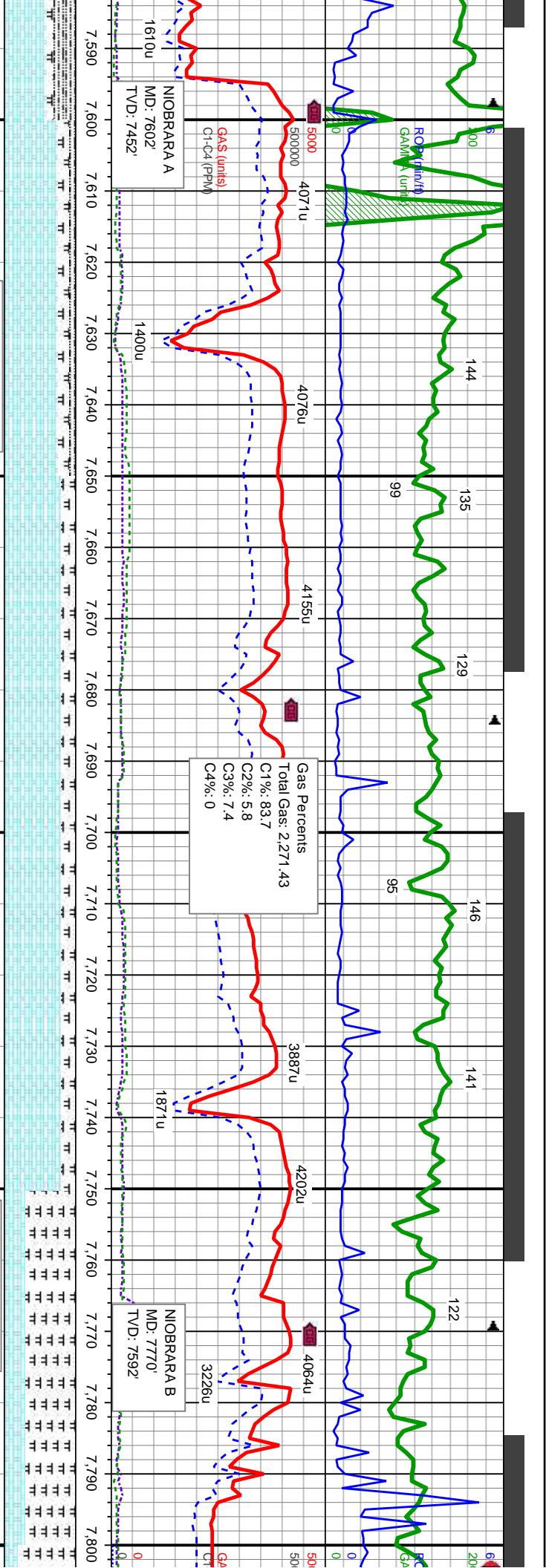
med gy-dk gy, pily-sb blk, y,
md-sb ang, mod fri, sl calc,
bl flr w/ frnt yel cut

SLTY SH: med gy-dk gy, pily-sb blk, y,
frm-sft, sb rnd-sb ang, mod fri, sl calc,
sl calc, tr lt bl flr w/ frnt yel cut
8100

SLTY SH: med gy-dk gy, pily-sb blk, y,
frm-sft, sb rnd-sb ang, mod fri, sl
calc, sl calc, tr lt bl flr w/ frnt yel cut

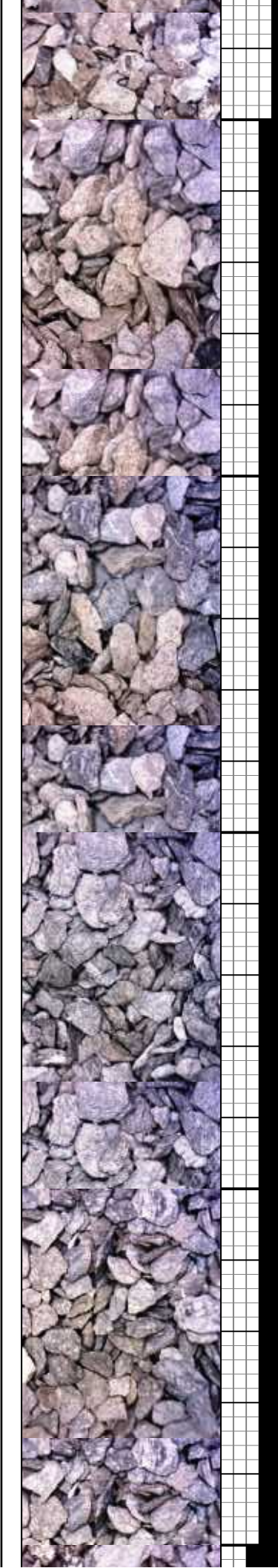
SLTY SH: med gy-dk gy, pily-sb blk, y,
frm-sft, sb rnd-sb ang, mod fri, sl calc,
com bent, lt bl flr w/ mod bl-wh cut

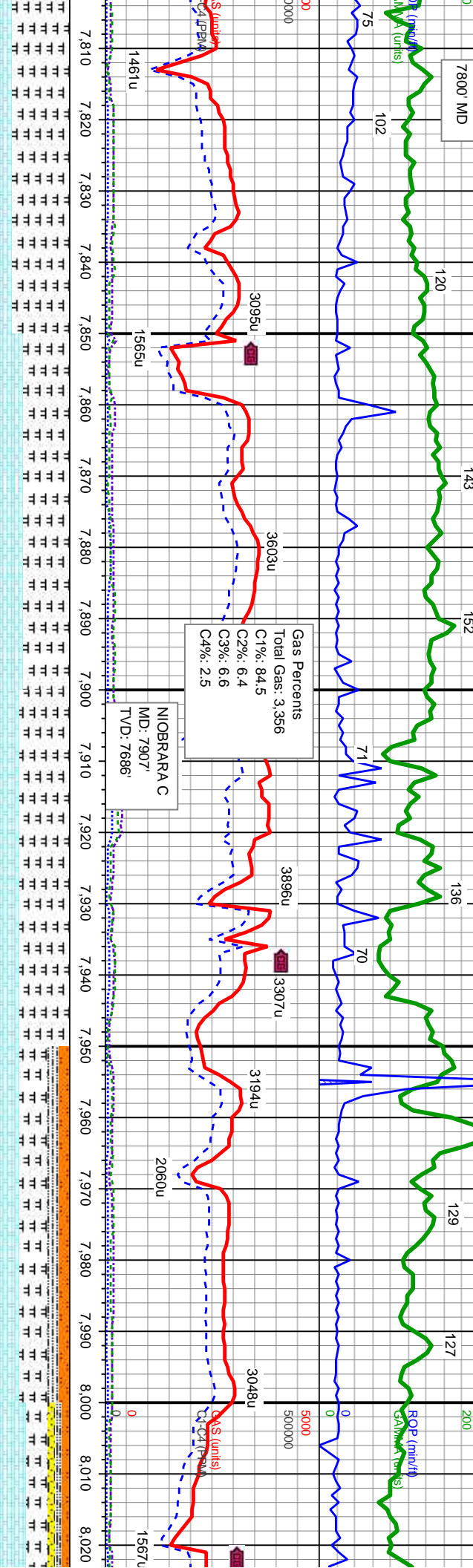
SLTY SH: med gy-dk gy, pily-sb bl
rnd-sb ang, mod fri, v calc, tr bent,
med-dk gy-gy brn, sb pily-blk, y, mc
arg-slt, calc, tr bent, CHK: lt-med
blk, y-sb pily, sft-sl frm, fri, chky-sb
flr w/ mod bl-wh cut



MD: 7.592 TVD: 7.443.11 Inclination: 24.97 Azimuth: 183.63 VS: -168.44	WT IN 10.2 OUT 10.0 VIS IN 45 OUT 43	MD: 7.635 TVD: 7.481.44 Inclination: 28.87 Azimuth: 181.25 VS: -149	MD: 7.678 TVD: 7.518.28 Inclination: 33.18 Azimuth: 180.44 VS: -126.84	MD: 7.721 TVD: 7.563.6 Inclination: 36.37 Azimuth: 177.82 VS: -102.33	MD: 7.763 TVD: 7.586.61 Inclination: 39.97 Azimuth: 176.69 VS: -76.41
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ky, frm-sft, sb MRLST: med-dk gy-gy brn, sb ply-biky, mod sft-frm, sb arg-sily, calc, tr bent, CHK: lt-med gy, mot, sb biky-sb ply, sft-sl frm, fri, chky-sb wxy, v calc, lt bl	SLTY SH: med gy-dk gy, ply-sb biky, frm-sft, sb md-sb ang, mod fri, v calc, tr bent, MRLST: med-dk gy-gy brn, sb ply-biky, mod sft-frm, sb arg-sily, calc, tr bent, CHK: lt-med gy, mot, sb biky-sb ply, sft-sl frm, fri, chky-sb wxy, v calc, lt bl	MRLST: med-dk gy-gy brn, sb ply-biky, mod sft-frm, sb arg-sily, calc, tr bent, CHK: lt-med gy, mot, sb biky-sb ply, sft-sl frm, fri, chky-sb wxy, v calc, lt bl	MRLST: med-dk gy-gy brn, sb ply-biky, mod sft-frm, sb arg-sily, calc, tr bent, CHK: lt-med gy, mot, sb biky-sb ply, sft-sl frm, fri, chky-sb wxy, v calc, lt bl	MRLST: med-dk gy-gy brn, sb ply-biky, mod sft-frm, sb arg-sily, calc, com bent, CHK: lt-med gy, mot, sb biky-sb ply, sft-sl frm, fri, chky-sb wxy, v calc, lt bl
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D: 7.806
VD: 7.618.88
Inclination: 42.77
Azimuth: 176.88
VS: -48.05

MD: 7.849
TVD: 7.649.18
Inclination: 47.61
Azimuth: 177.54
VS: -17.59

MD: 7.891
TVD: 7.676.24
Inclination: 52.13
Azimuth: 178.46
VS: 14.48

WT IN 10.2 OUT 10.2
VIS IN 42 OUT 42

MD: 7.934
TVD: 7.701.36
Inclination: 56.37
Azimuth: 180.13
VS: 49.37

MD: 7.977
TVD: 7.723.95
Inclination: 60.24
Azimuth: 180.19
VS: 85.95

MD: 8.019
TVD: 7.743.26
Inclination: 64
Azimuth: 180
VS: 123.23

MRSLT: med-dk gy-gy brn, sb pily-blky,
mod sft-frm, sb arg-sily, calc, tr bent,
CHK: lt-med gy, mot, sb blky-sb pily,
t-si frm, fri, chky-sb wxy, v calc, tr lt
flor w/ v sl sting halo cut

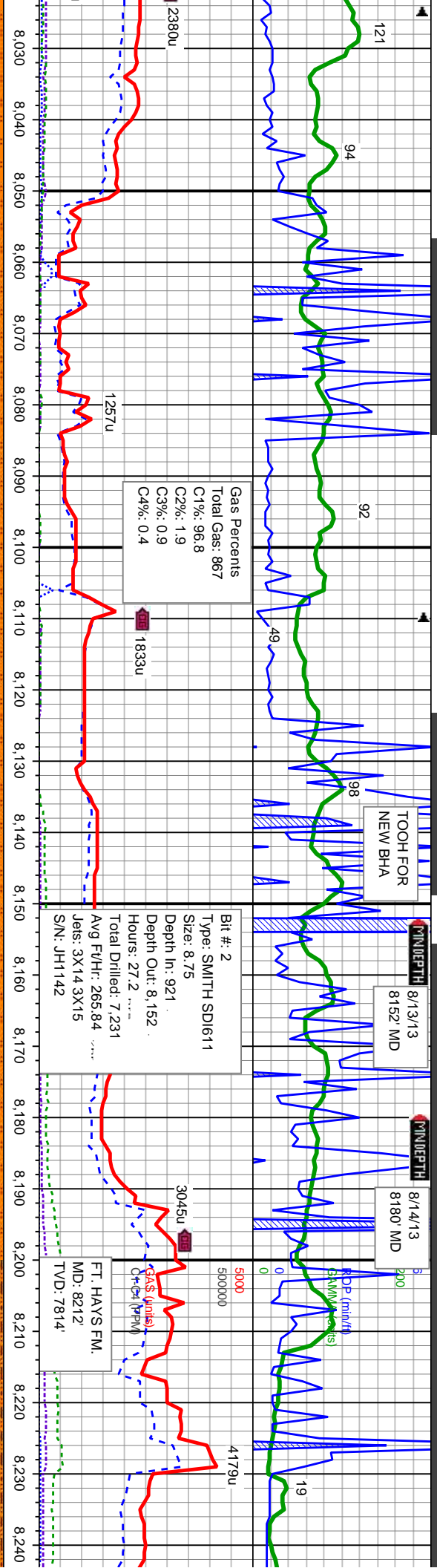
MRSLT: med-dk gy-gy brn, sb pily-blky,
mod sft-frm, sb arg-sily, calc, tr bent, CHK:
lt-med gy, mot, sb blky-sb pily, sft-si frm,
fri, chky-sb wxy, v calc, tr lt bl flor w/ v sl
sting halo cut

MRSLT: med-dk gy-gy brn, sb pily-blky,
mod sft-frm, sb arg-sily, calc, tr bent, CHK:
lt-med gy, mot, sb blky-sb pily, sft-si frm,
fri, chky-sb wxy, v calc, tr lt bl
flor w/ v sl sting halo cut

SLTY SH: med gy-dk gy, pily-sb blky, frm-sft,
sb rnd-sb ang, mod fri, v calc, tr bent,
MRSLT: med-dk gy-gy brn, sb pily-blky, mod
sft-frm, sb arg-sily, calc, tr bent, CHK: lt-med
gy, mot, sb blky-sb pily, sft-si frm, fri, chky-sb
wxy, v calc, SLTST: lt gy-lt gy-brn,
sb-blky-sb-pily, med-v frm, v sl calc, fnt tr lt
bl flor w/ v sl halo cut

SLTY SH: med gy-dk gy,
rnd-sb ang, mod fri, v c
med-dk gy-gy brn, sb p
arg-sily, calc, tr bent, C
blky-sb pily, sft-si frm, C
Shy SS: brn-dk gy, brn-
rnd-sb pily lam, frm-me
gy-lt gy-brn, sb-blky-sb
fnt tr lt bl flor w/ v sl ha





WT IN 10.2+ OUT 10.2
VIS IN 41 OUT 43

MD: 8,062
TVD: 7,761.15
Inclination: 65.85
Azimuth: 181.37
VS: 162.33

WT IN 10.2 OUT 10.2
VIS IN 42 OUT 41

MD: 8,105
TVD: 7,778.31
Inclination: 67.1
Azimuth: 181.35
VS: 201.74

WT IN 10.3 OUT 10.3
VIS IN 42 OUT 42

MD: 8,182
TVD: 7,805.49
Inclination: 72.25
Azimuth: 181.96
VS: 273.74

MD: 8,225
TVD: 7,816.56
Inclination: 77.08
Azimuth: 183.52
VS: 315.15

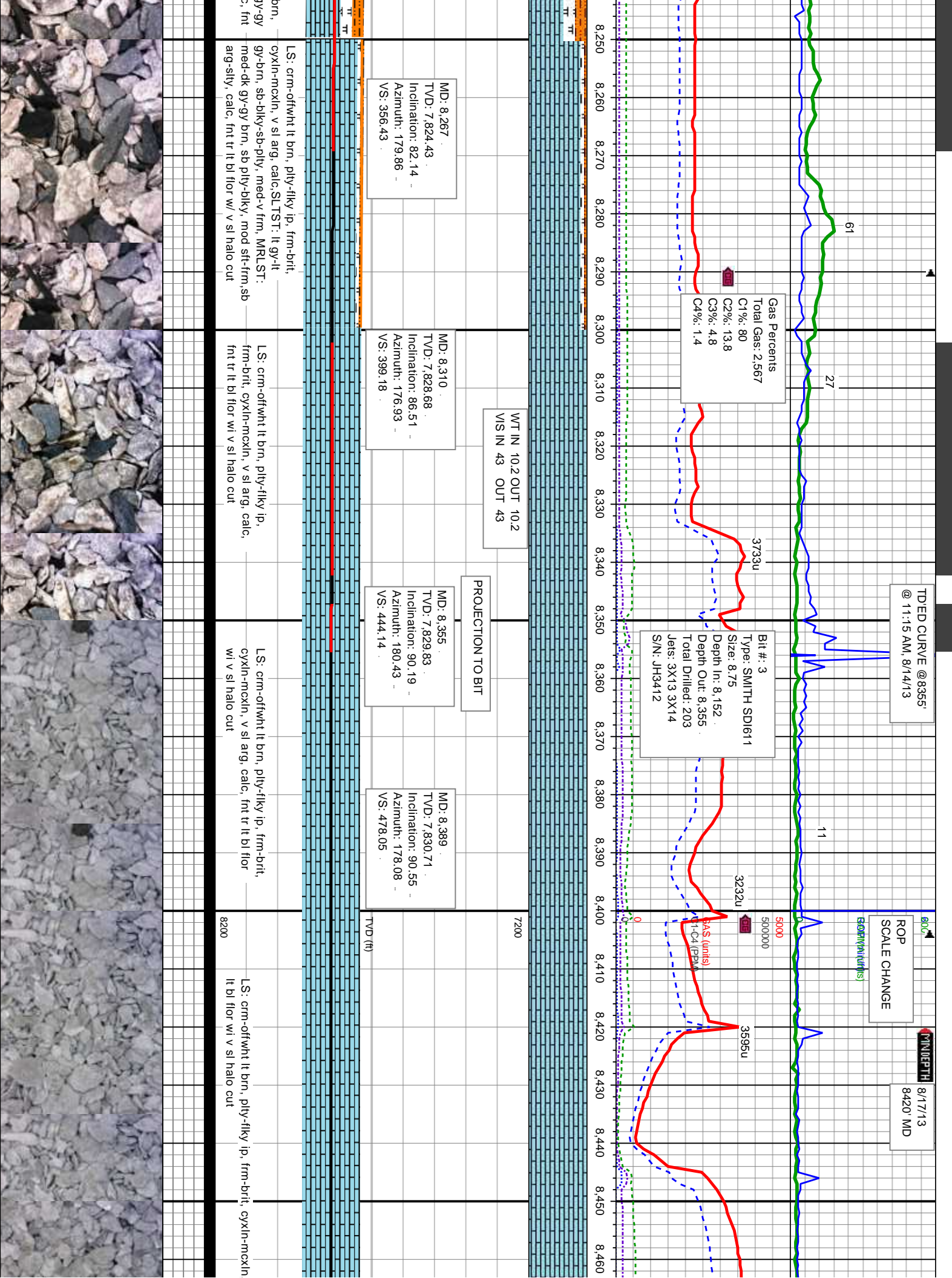
ply-sb biky, frm-st, sb
calc, rr bent, MRLST:
SLTY SH: med gy-dk gy, ply-sb biky, frm-st, sb
rnd-sb ang, mod fri, v calc, rr bent, MRLST: SEE
PRIOR: CHK: SEE PRIOR: Shy SS: brn-dk gy,
brn-mot, vf-f gr, v frm, sb rnd-sb ply lam,
frm-med stf w/ calc cnt, SLTST: it gy-lt gy-brn,
sb-biky-sb-ply, med-v frm, v sl calc, fnt tr it bl
flor w/ v sl halo cut

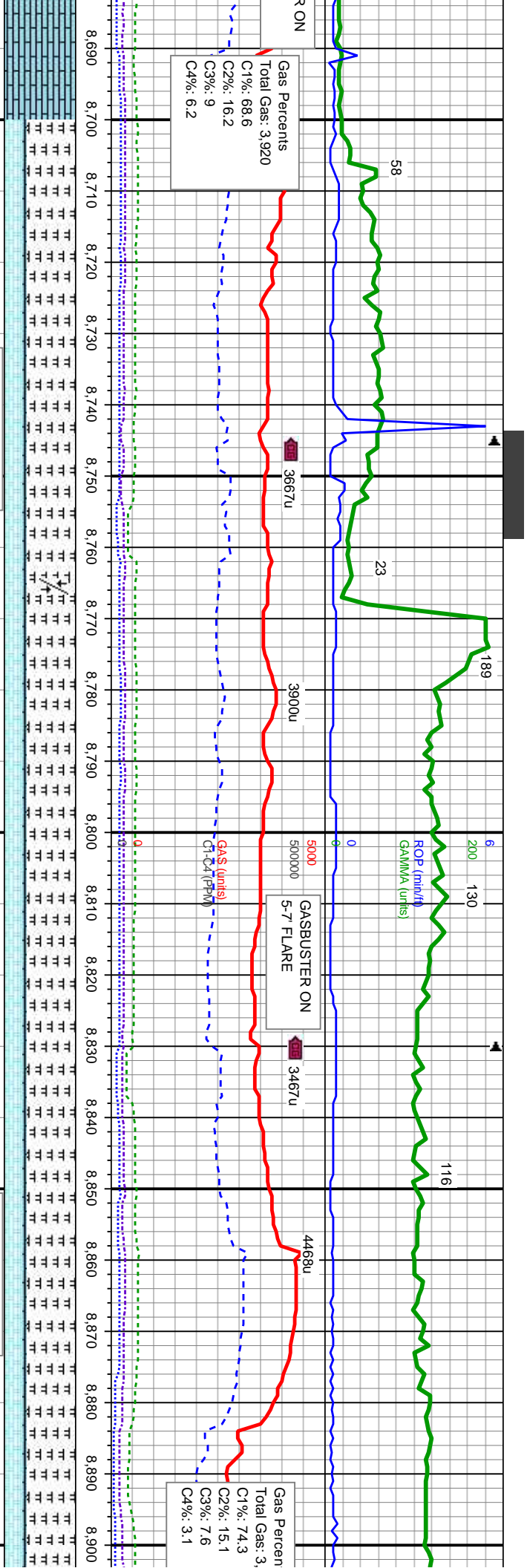
ply-sb biky, frm-st, sb
calc, rr bent, MRLST:
SLTY SH: med gy-dk gy, ply-sb biky, frm-st, sb
rnd-sb ang, mod fri, v calc, rr bent, MRLST: SEE
PRIOR: CHK: SEE PRIOR: Shy SS: brn-dk gy,
brn-mot, vf-f gr, v frm, sb rnd-sb ply lam,
frm-med stf w/ calc cnt, SLTST: it gy-lt gy-brn,
sb-biky-sb-ply, med-v frm, v sl calc, fnt tr it bl
flor w/ v sl halo cut

LS: crm-offwht lt brn, ply-fiky ip, frm-brt,
cyxln-mcxln, v sl arg, calc, SLTST: it gy-lt gy-brn,
sb-biky-sb-ply, med-v frm, MRLST: med-dk gy-gy
brn, sb ply-biky, mod stf-frm, sb arg-sily, calc, tr
bent, CHK: lt-med gy, mot, sb biky-sb ply, stf-sl
frm, fri, chky-sb wxy, v calc, fnt tr it bl flor w/ v sl
halo cut

LS: crm-offwht lt brn, ply-fiky ip, frm-brt,
cyxln-mcxln, v sl arg, calc, SLTST: it gy-lt gy-brn,
sb-biky-sb-ply, med-v frm, MRLST: med-dk gy-gy
brn, sb ply-biky, mod stf-frm, sb arg-sily, calc, fnt
tr it bl flor w/ v sl halo cut







8,688
7,829.47
ation: 89.29
uth: 179.43
776.98

WT IN 9.8 OUT 9.8
VIS IN 43 OUT 42

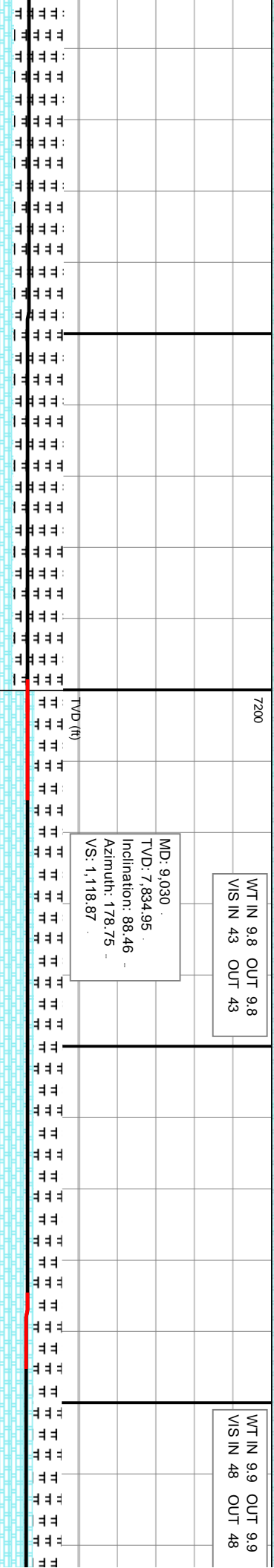
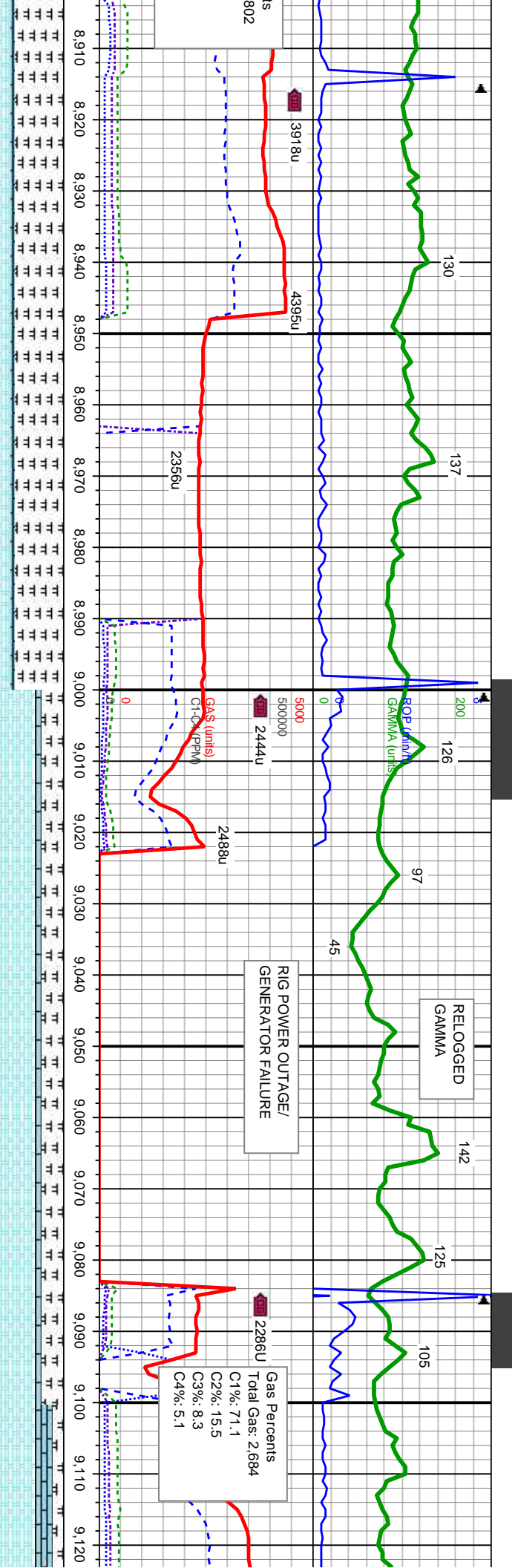
FAULT @ 8767' MD, 856' VS
133' DOWNWARD THROW

MD: 8,859
TVD: 7,831.59
Inclination: 89.29
Azimuth: 179.25
VS: 947.95

MRSLT: med-dk gy-gy brn, sb pty-blky, mod sft-firm, sb arg-sily, calc, tr bent, CHK: lt-med gy, mot, sb blk-ty-sb pty, sft-sl frm, fri, chky-sb wxy, v calc, LS: crm-offwht lt brn, pty-fiky ip, frm-brt, cyxln-mcxln, v sl arg, calc, stmg/ strgs, lt bl flr wi mod-g bl-wh cut

MRSLT: med-dk gy-gy brn, sb pty-blky, mod sft-firm, sb arg-sily, calc, tr bent, CHK: lt-med gy, mot, sb blk-ty-sb pty, sft-sl frm, fri, chky-sb wxy, v calc, LS: crm-offwht lt brn, pty-fiky ip, frm-brt, cyxln-mcxln, v sl arg, calc, stmg/ strgs, lt bl flr wi mod-g bl-wh cut



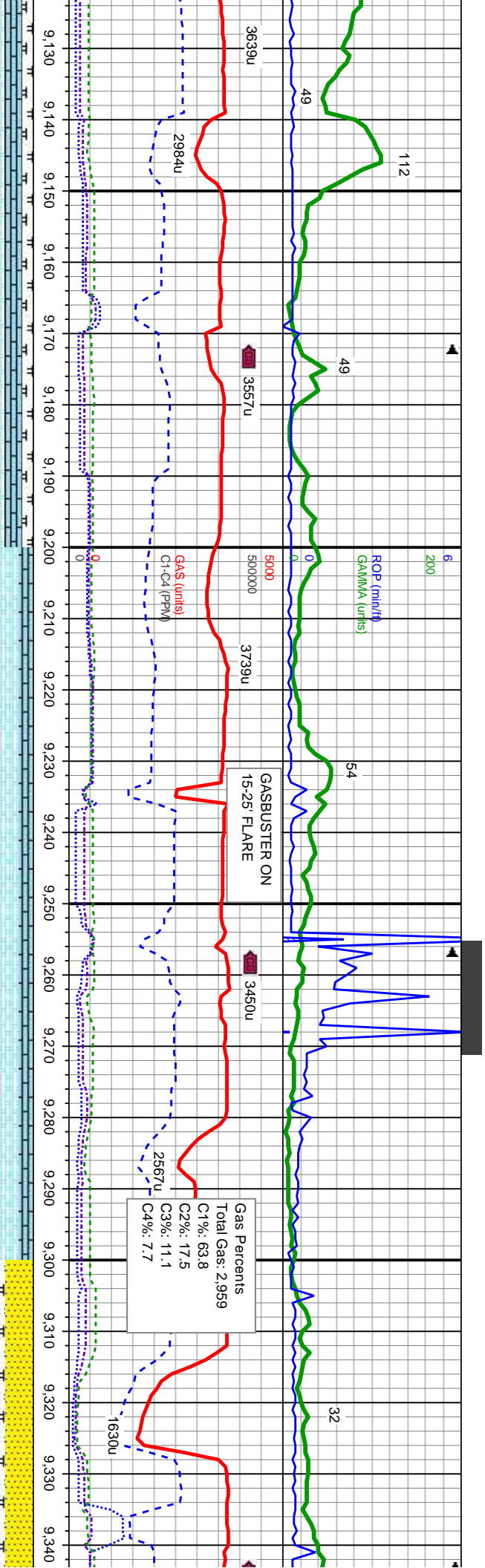


MRSLST: med-dk gy-gy brn, sb pily-biky, mod sft-firm, sb arg-sily, calc, tr bent, CHK: lt-med gy, mot, sb biky-sb pily, sft-sl frm, fri, chky-sb wxy, v calc, LS: crm-offwht lt brn, pily-fiky ip, frm-brt, cyxin-mcxln, v sl arg, calc, stmg/ strgs, lt bl flr wi mod-g bl-wh cut

MRSLST: med-dk gy-gy brn, sb pily-biky, mod sft-firm, sb arg-sily, calc, tr bent, CHK: lt-med gy, mot, sb biky-sb pily, sft-sl frm, fri, chky-sb wxy, v calc, LS: crm-offwht lt brn, pily-fiky ip, frm-brt, cyxin-mcxln, v sl arg, calc, tr bent, stmg/ strgs, lt bl flr wi mod-g bl-wh cut

MRSLST: m bent, CHK: calc, LS: c calc, stmg/





MD: 9,201
TVD: 7,841.17
Inclination: 87.37
Azimuth: 178.93
VS: 1,289.7

WT IN 9.85 OUT 9.85
VIS IN 48 OUT 48

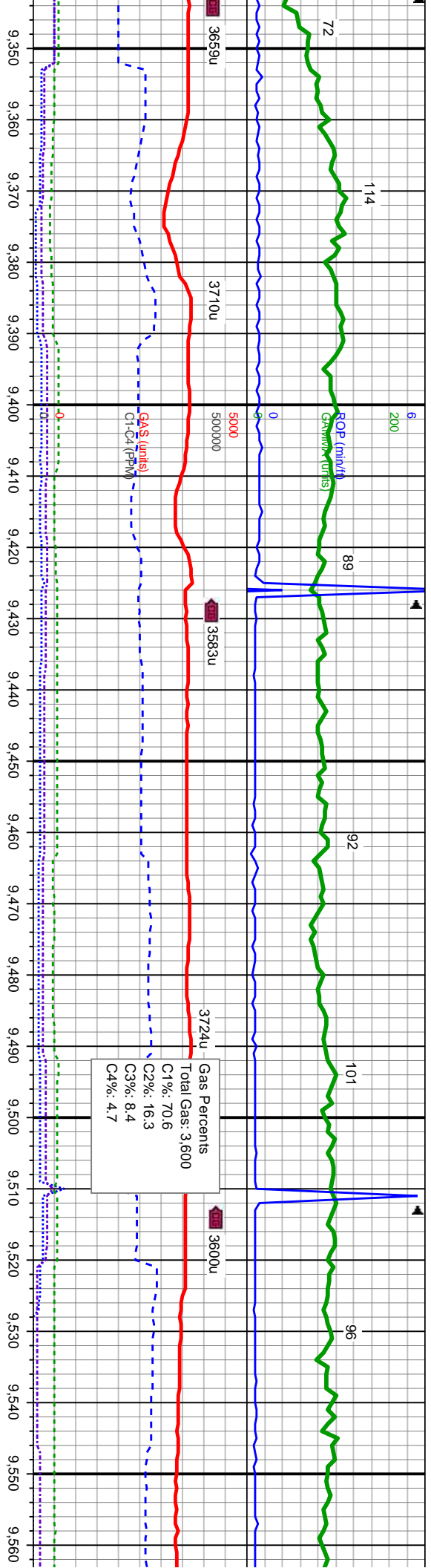
WT IN 9.7 OUT 9.7
VIS IN 46 OUT 46

ed-dk-gy-gy brn, sb pily-blky, mod sft-firm, sb arg-sily, calc, tr
lt-med gy, mot, sb blky-sb pily, sft-sl frm, fri, chky-sb wxy v
frm-offwht lt brn, pily-fiky ip, frm-brt, cyxln-mcxln, v sl arg, calc,
strgs, lt bl flr wl mod-g bl-wh cut

CHK: lt-med gy, mot, sb blky-sb pily, sft-sl frm, fri, chky-sb wxy v calc,
LS: frm-offwht lt brn, pily-fiky ip, frm-brt, cyxln-mcxln, v sl arg, calc,
stng/ strgs, lt bl flr wl mod-g bl-wh cut

MRLS: med-dk-gy-gy brn, sb pily-b
gy, mot, sb blky-sb pily, sft-sl frm, fri
frm-brt, cyxln-mcxln, v sl arg, calc, t
frm, sb-rnd-rnd, med-w strd, p-mod





MD: 9.371
TVD: 7,847.13
Inclination: 88.61
Azimuth: 180.51
VS: 1,459.58

TVD (ft)

WT IN 9.8+ OUT 9.8+
VIS IN 45 OUT 45

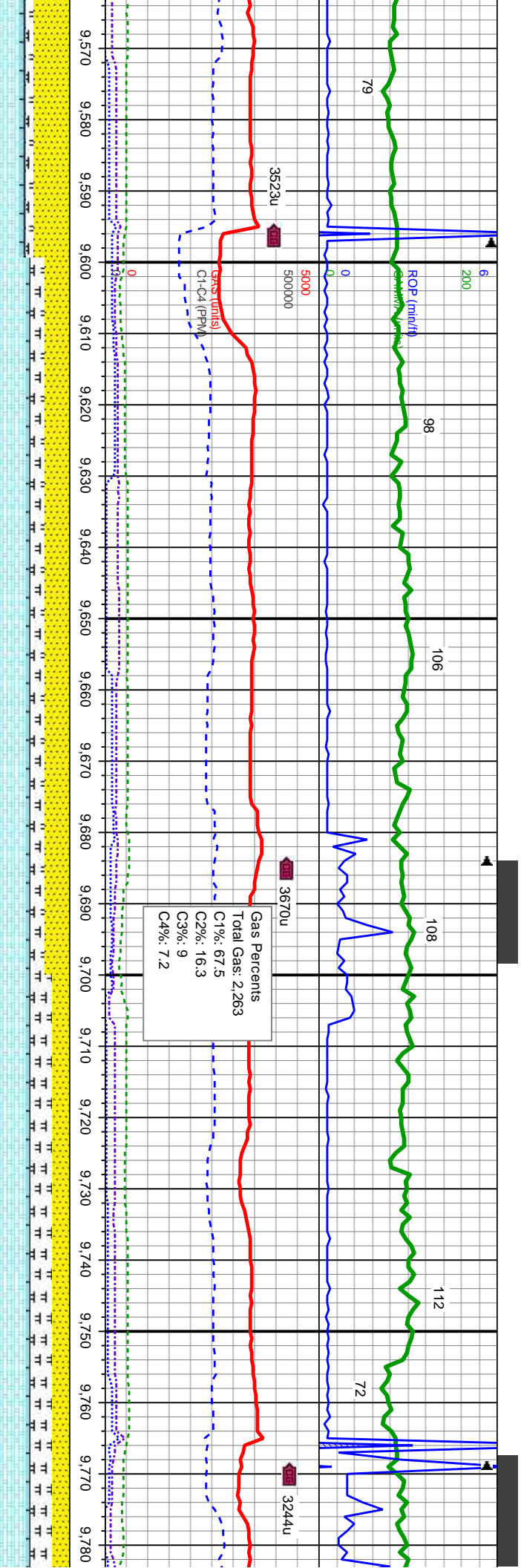
MD: 9.542
TVD: 7,847.55
Inclination: 91.11
Azimuth: 181.75
VS: 1,630.55

ky, mod sft-frm, sb arg-sily, calc, abnt bent, CHK: lt-med
l, chky-sb wxy, v calc, LS: crm-offwht lt brn, pily-fiky ip,
r inoc, SS: lt brn-dk, med-gry, brn-mot, vf-f gr, med-v
cons w/ v sl calc cmt, lt bl flr w/ mod bl-wh cut

MRLST: med-dk gy-gy brn, sb pily-biky, mod sft-frm, sb arg-sily, calc, abnt bent, CHK: lt-med
gy, mot, sb biky-sb pily, sft-sl frm, fri, chky-sb wxy, v calc, LS: crm-offwht lt brn, pily-fiky ip,
frm-brt, cyxln-mcxln, v sl arg, calc, tr inoc, SS: lt brn-dk, med-gry, brn-mot, vf-f gr, med-v frm,
sb-rnd-rnd, med-w strd, p-mod cons w/ v sl calc cmt, lt bl flr w/ mod bl-wh cut

MRLST: med-dk gy-gy brn, sb pily-biky, mod sft-frm, sb arg-sily,
gy, mot, sb biky-sb pily, sft-sl frm, fri, chky-sb wxy, v calc, LS: c
frm-brt, cyxln-mcxln, v sl arg, calc, tr inoc, SS: lt brn-dk, med-gr
frm, sb-rnd-rnd, med-w strd, p-m cons w/ v sl calc cmt, lt bl flr





7200

WT IN 9.8 OUT 9.7

VIS IN 45 OUT 51

TVD (ft)

MD: 9,712

TVD: 7,843.5

Inclination: 91.62

Azimuth: 181.41

VS: 1,800.45

WT IN 9.8 OUT 9.8

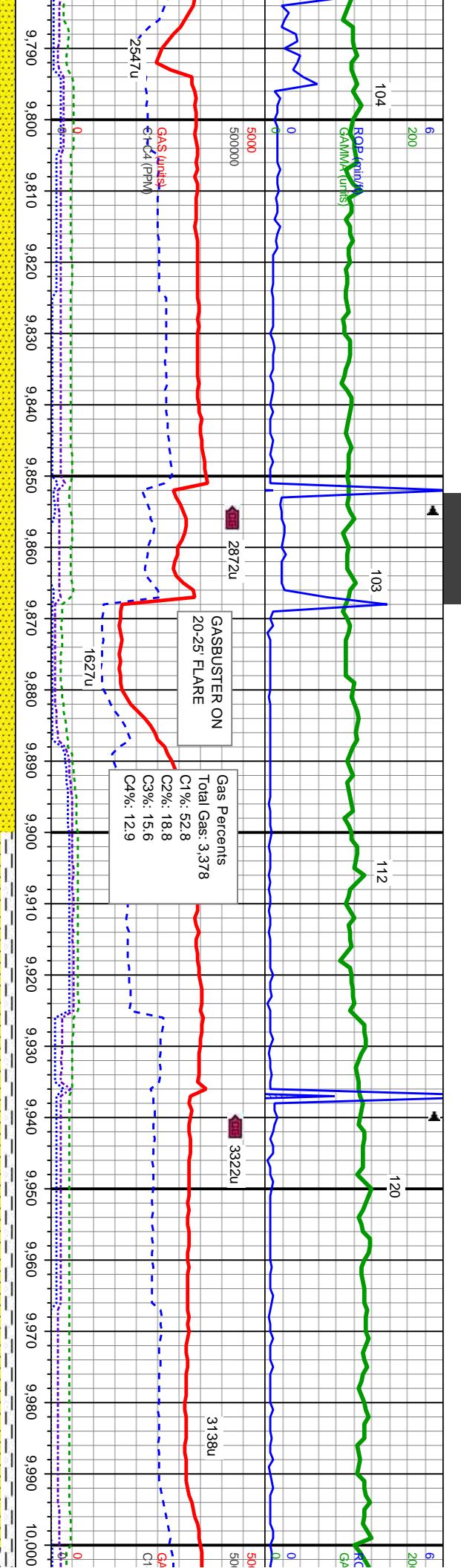
VIS IN 41 OUT 41

calc.abnt bent, CHK: lt-med
sl calc cmt,MRST: med-dk gy-gy brn, sb ply-biky ip,
CHK: lt-med gy, mot, sb biky-sb ply, sft-sl frm, fri, chky-sb wxy,v calc, LS: crm-offwht lt brn,
8200ply-fiky ip, frm-brlt, cyxin-mcxln, v sl arg, calc, tr inoc, lt bl flr wi mod bl-wh cut

SS: lt brn-dk,med-gry, brn-mot, vf-f gr, med-v frm, sb-rnd-rnd, med-w strd, p-mod cons w/ v
calc cmt,MRST: med-dk gy-gy brn, sb ply-biky, mod sft-frm,sb arg-sily, calc.abnt bent,
CHK: lt-med gy, mot, sb biky-sb ply, sft-sl frm, fri, chky-sb wxy,v calc, LS: crm-offwht lt brn,
8200ply-fiky ip, frm-brlt, cyxin-mcxln, v sl arg, calc, tr inoc, lt bl flr wi mod bl-wh cut

SS: lt brn-dk,med-gry, brn-mot, vf-f gr, med-v frm, sb-rnd-rnd, med-w strd, p-mod con
calc cmt,MRST: med-dk gy-gy brn, sb ply-biky, mod sft-frm,sb arg-sily, calc.abnt b
lt-med gy, mot, sb biky-sb ply, sft-sl frm, fri, chky-sb wxy,v calc, LS: crm-offwht lt br
ip, frm-brlt, cyxin-mcxln, v sl arg, calc, tr inoc, lt bl flr wi mod bl-wh cut



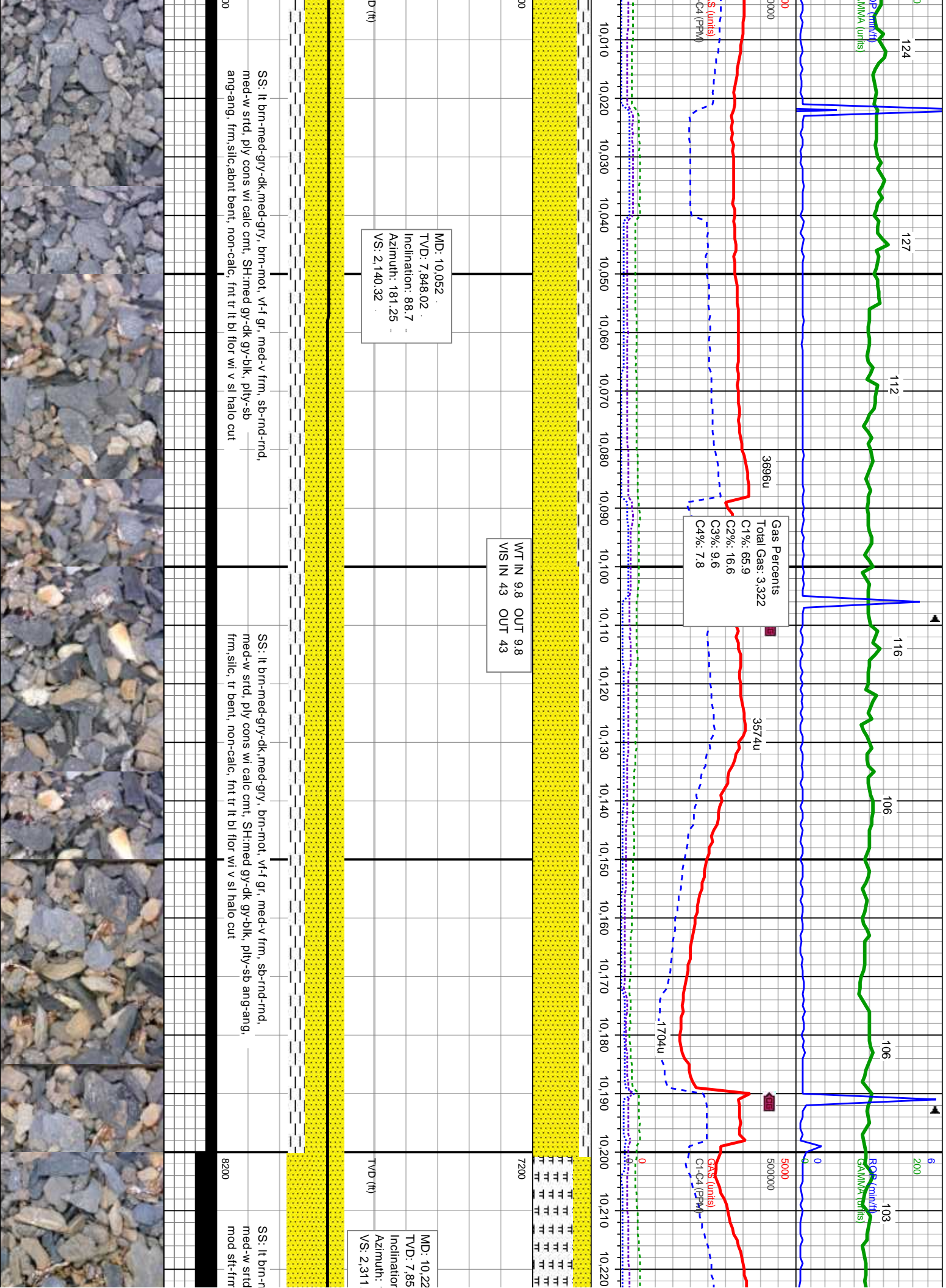


MD: 9.864
TVD: 7.843.62
Inclination: 88.3
Azimuth: 181.07
VS: 1.972.4

WT IN 9.8 OUT 9.8
VIS IN 42 OUT 42

SS: lt brn-dk, med-gr, brn-mot, vt-f gr, med-v frm, sb-rnd-rnd, med-w strd, p-mod cons w/ v sl calc cmt, MRLST: med-dk gy-gy brn, sb ply-biky, mod sft-frm, sb arg-sily, calc, abnt bent, CHK: lt-med gy, mot, sb biky-sb ply, sft-sl frm, fri, chky-sb wxy, v calc, tr inoc, lt bl flr w/ mod bl-wh cut

SS: lt brn-med-gr, dk, med-gr, brn-mot, vt-f gr, med-v frm, sb-rnd-rnd, med-w strd, ply cons w/ calc cmt, SH: med gy-dk gy-bik, ply-sb ang-ang, frm, silc, non-calc, fnt tr lt bl flr w/ v sl halo cut



MD: 10,052
TVD: 7,848.02
Inclination: 88.7
Azimuth: 181.25
VS: 2,140.32

Gas Percents
Total Gas: 3.322
C1%: 65.9
C2%: 16.6
C3%: 9.6
C4%: 7.8

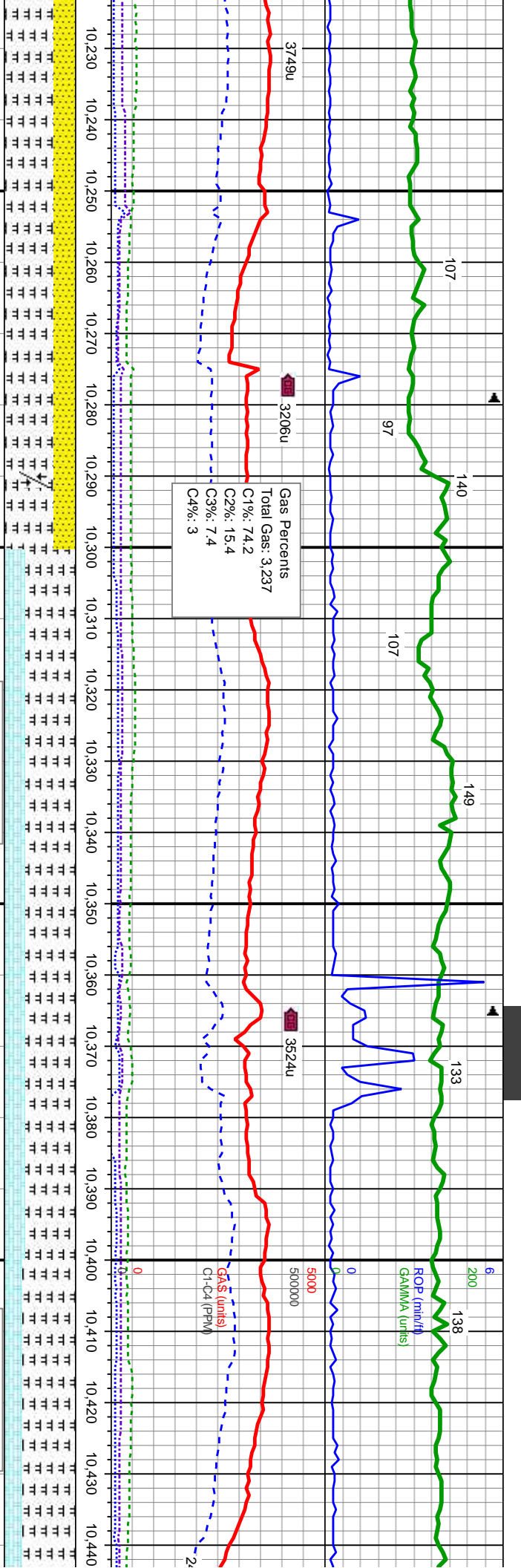
WT IN 9.8 OUT 9.8
VIS IN 43 OUT 43

SS: lt brn-med-grv-dk, med-grv, brn-mot, vf-f gr, med-v frm, sb-rnd-rnd, med-w strd, ply cons w/ calc cnt, SH: med gy-dk gy-blk, ply-sb ang-ang, frm, silc, abnt bent, non-calc, fnt tr lt bl flr w/ v sl halo cut

SS: lt brn-med-grv-dk, med-grv, brn-mot, vf-f gr, med-v frm, sb-rnd-rnd, med-w strd, ply cons w/ calc cnt, SH: med gy-dk gy-blk, ply-sb ang-ang, frm, silc, tr bent, non-calc, fnt tr lt bl flr w/ v sl halo cut

8200

MD: 10,222
TVD: 7,85
Inclination:
Azimuth:
VS: 2,311



Gas Percents
Total Gas: 3.237
C1%: 74.2
C2%: 15.4
C3%: 7.4
C4%: 3

FAULT @ 10289 MD, 2377' VS
124' DOWNWARD THROW

WT IN 9.8 OUT 9.8
VIS IN 42 OUT 42

MD: 10,394
TVD: 7,855.3
Inclination: 88.7
Azimuth: 180.55
VS: 2,482.16

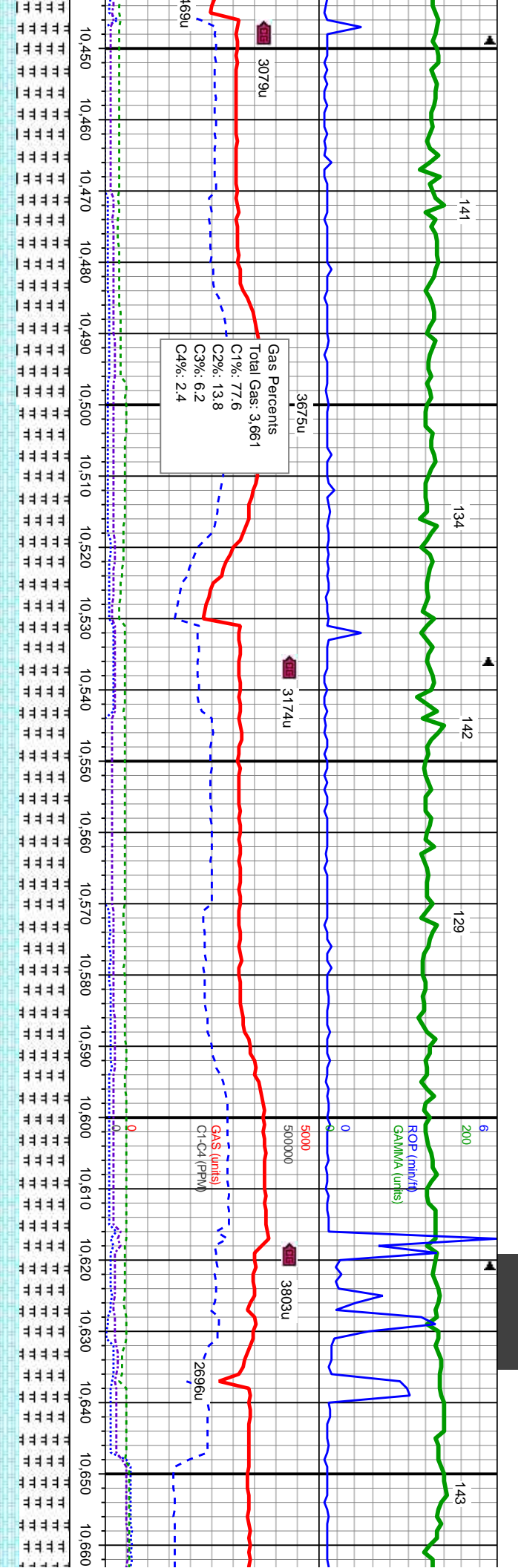
WT IN 9.8 OUT 9.8
VIS IN 43 OUT 43

med-gry-dk, med-gry, brn-mot, v-f gr, med-v frm, sb-rnd-rnd,
ply cons w/ calc cnt, MRLST: med-dk-gy-gy brn, sb ply-bkly,
sb arg-sily, calc, tr lt bl flr w/ v sl sting halo cut

MRLST: med-dk gy-gy brn, sb ply-bkly, mod sft-frm, sb arg-sily, calc, tr
bent, CHK: lt-med gy, mot, sb bkly-sb ply, sft-sl frm, fri, chky-sb
wxy v calc, sting/ strgs, lt bl flr w/ mod-g bl-wh cut

MRLST: med-dk gy-gy brn, sb
calc, tr bent, CHK: lt-med gy, m
chky-sb wxy, v calc, sting/ strgs





WT IN 9.8 OUT 9.8
VIS IN 42 OUT 42

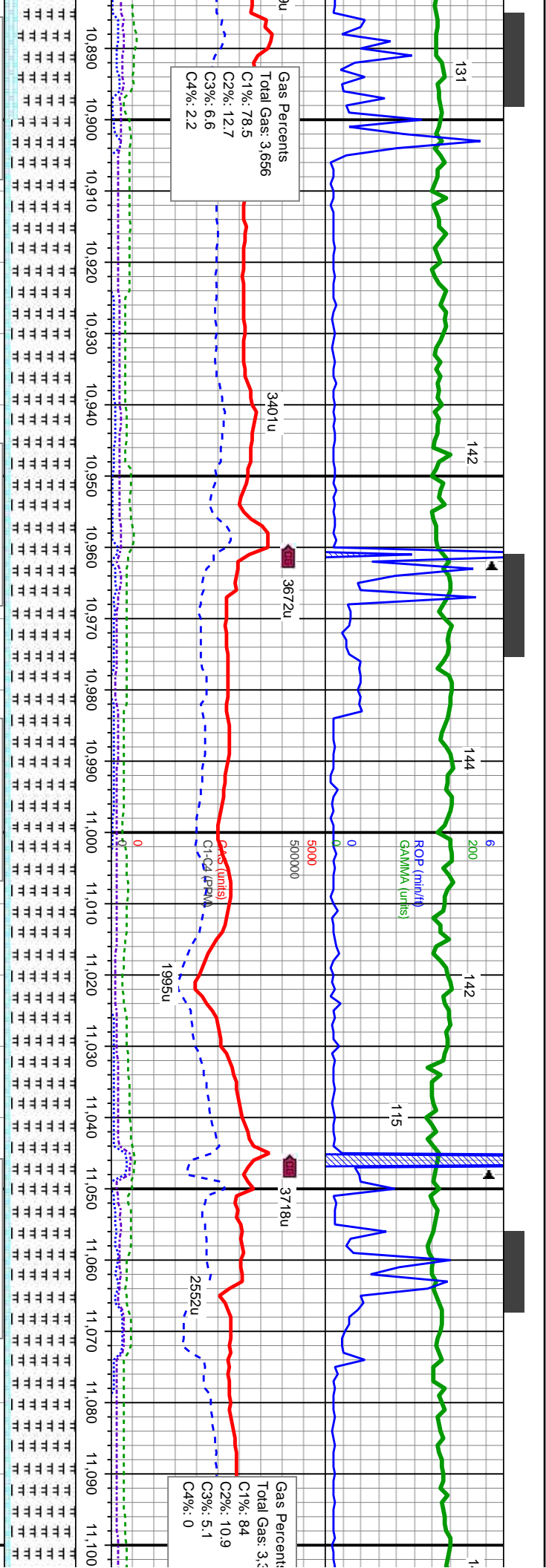
MD: 10.564
TVD: 7.859.34
Inclination: 88.58
Azimuth: 180.93
VS: 2.652.1

WT IN 9.8 OUT 9.8
VIS IN 43 OUT 43

ply-biky, mod sft-frn, sb arg-sily, ot, sb biky-sb ply, sft-sl frn, fri, s, lt bl flr wi mod-g bl-wh cut

MRLST: med-dk gy-gy brn, sb ply-biky, mod sft-frn, sb arg-sily, calc, tr bent, CHK: lt-med gy, mot, sb biky-sb ply, sft-sl frn, fri, chky-sb wxy, v calc, sting/ strgs, lt bl flr wi mod-g bl-wh cut



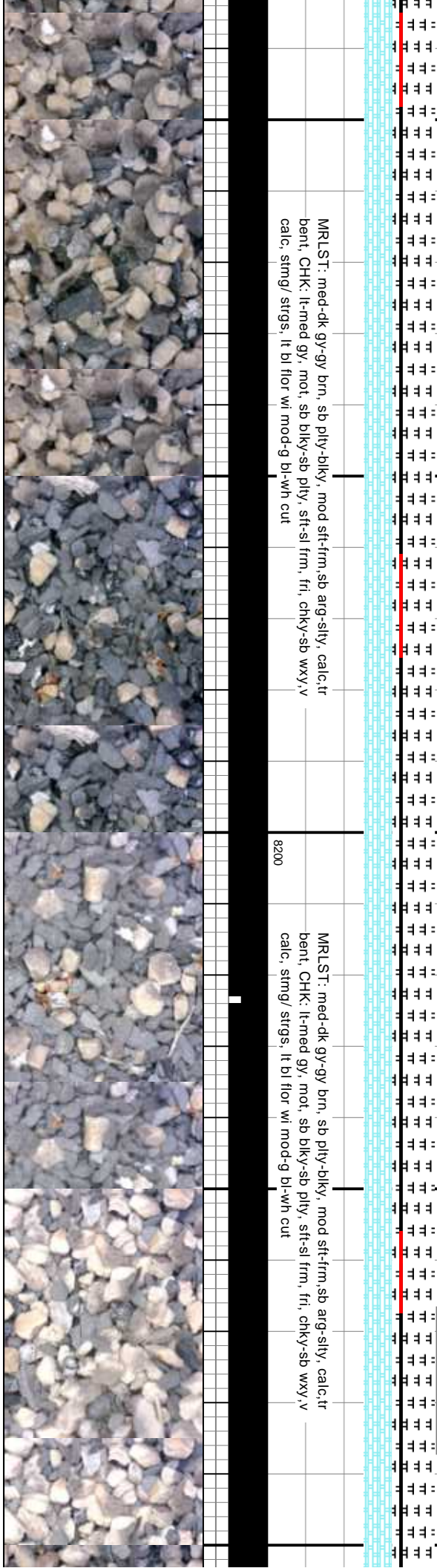


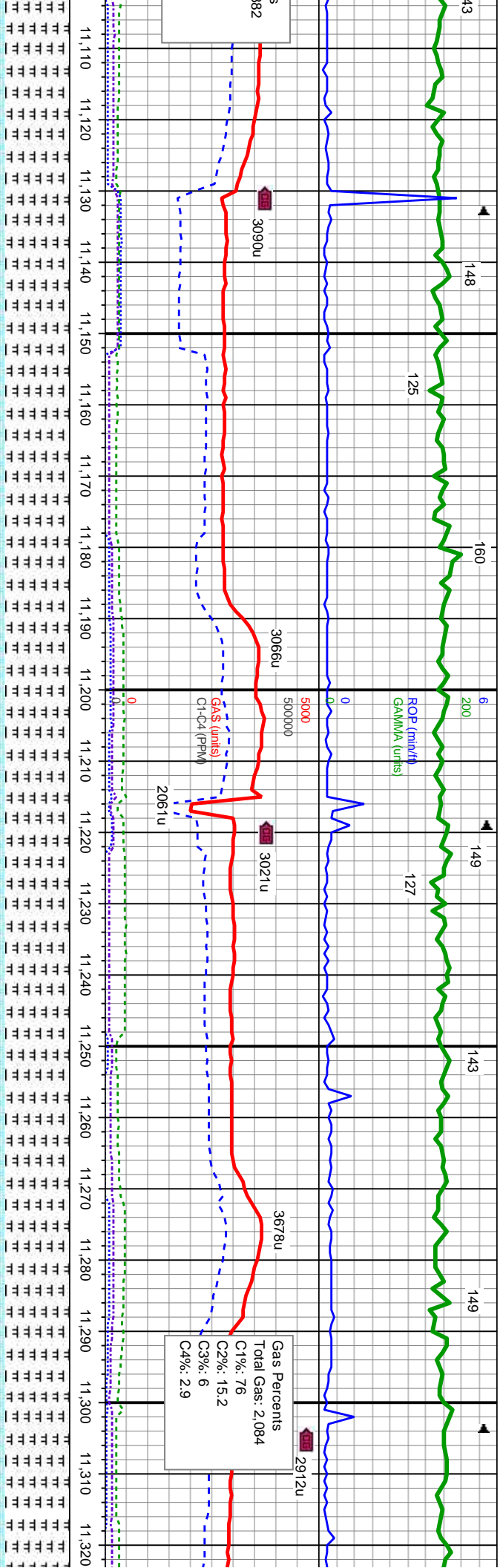
MD: 10.906
TVD: 7,854.28
Inclination: 91.13
Azimuth: 180.49
VS: 2.994.02

MRLST: med-dk gy-gy brn, sb pty-blky, mod sft-frn, sb arg-sily, calc, tr bent, CHK: lt-med gy, mot, sb blky-sb pty, sft-sl frn, fri, chky-sb wxy, v calc, sting/ strgs, lt bl flr wi mod-g bl-wh cut

MD: 11.077
TVD: 7,854.64
Inclination: 88.63
Azimuth: 179.71
VS: 3.165

MRLST: med-dk gy-gy brn, sb pty-blky, mod sft-frn, sb arg-sily, calc, tr bent, CHK: lt-med gy, mot, sb blky-sb pty, sft-sl frn, fri, chky-sb wxy, v calc, sting/ strgs, lt bl flr wi mod-g bl-wh cut





WT IN 9.75 OUT 9.75
VIS IN 45 OUT 45

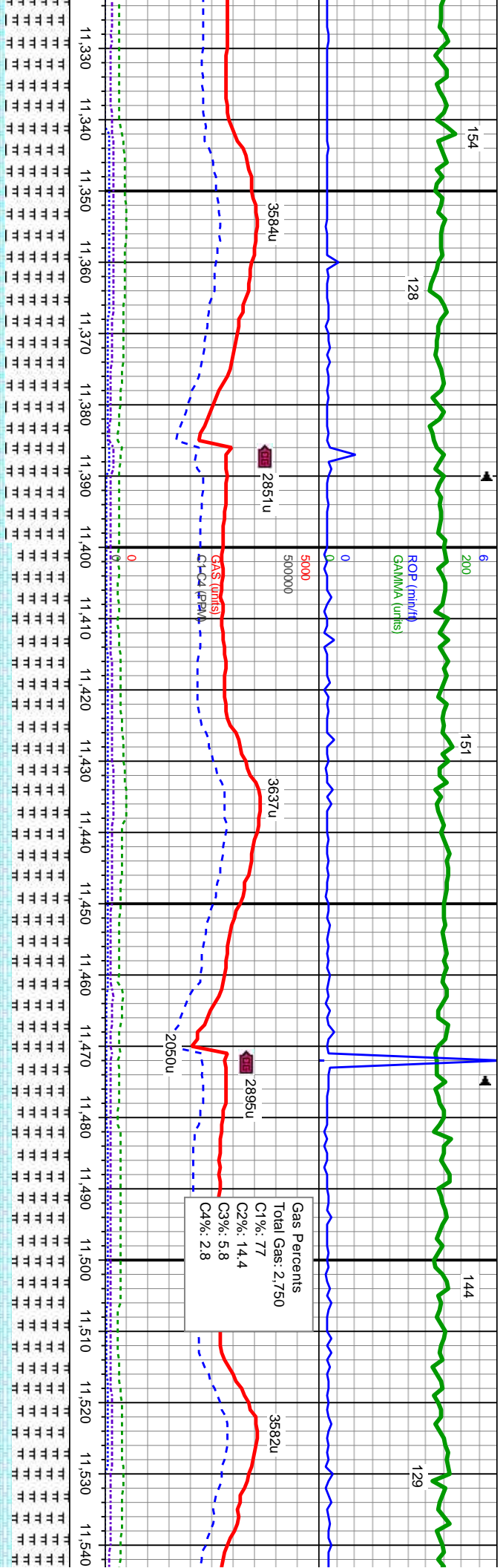
WT IN 9.8 OUT 9.8
VIS IN 44 OUT 44

MD: 11,247
TVD: 7,857
Inclination: 89.78
Azimuth: 180.3
VS: 3.334.98

MRLST: med-dk gy-gy brn, sb pily-blky, mod sft-frm, sb arg-sily, calc, tr bent, CHK: lt-med gy, mot, sb blk-y-sb pily, sft-sl frm, fri, chky-sb wxy, v calc, stmg/ strgs, lt bl flr wi mod-g bl-wh cut

MRLST: med-dk gy-gy brn, sb pily-blky, mod sft-frm, sb arg-sily, calc, tr bent, CHK: lt-med gy, mot, sb blk-y-sb pily, sft-sl frm, fri, chky-sb wxy, v calc, stmg/ strgs, lt bl flr wi mod-g bl-wh cut

MRLST: med-dk gy-gy brn, sb pily-blky, mod sft-frm, sb arg-sily, calc, tr bent, CHK: lt-med gy, mot, sb blk-y-sb pily, sft-sl frm, fri, chky-sb wxy, v calc, stmg/ strgs, lt bl flr wi mod-g bl-wh cut



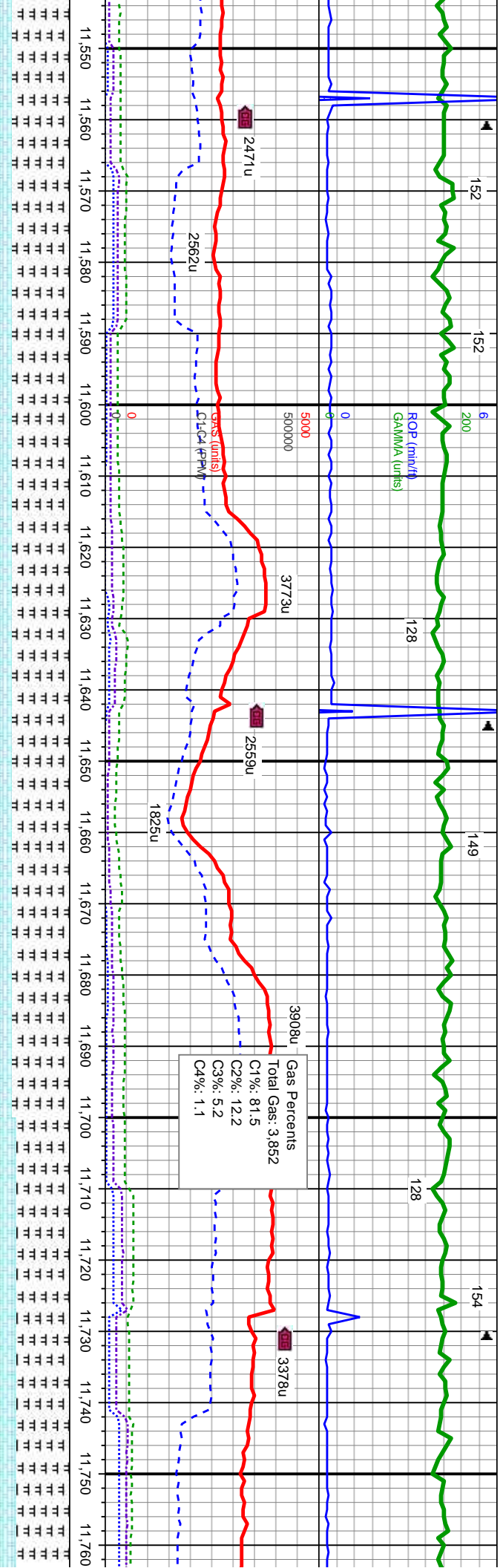
MD: 11,418
TVD: 7,857.7
Inclination: 89.75
Azimuth: 180.96
VS: 3,505.97

WT IN 9.9 OUT 9.9
VIS IN 44 OUT 44

d-dk gy-gy brn, sb pily-blky, mod sft-frn, sb arg-sily, calc, tr bent,
gy, mot, sb blky-sb pily, sft-sl frm, fri, chky-sb wxy, v calc, stmg/
or wi mod-g bl-wh cut

MR LST: med-dk gy-gy brn, sb pily-blky, mod sft-frn, sb arg-sily, calc, tr bent,
CHK: lt-med gy, mot, sb blky-sb pily, sft-sl frm, fri, chky-sb wxy, v calc,
stmg/ strgs, lt bl flr wi mod-g bl-wh cut





MD: 11,589
TVD: 7,858.44
Inclination: 89.75
Azimuth: 180.66
VS: 3.676.96

TVD (ft)

ply-blky, mod sft-frm, sb arg-sily, calc, tr bent,
o ply, sft-sl frm, fri, chky-sb wxy, v calc, stmg/
cut

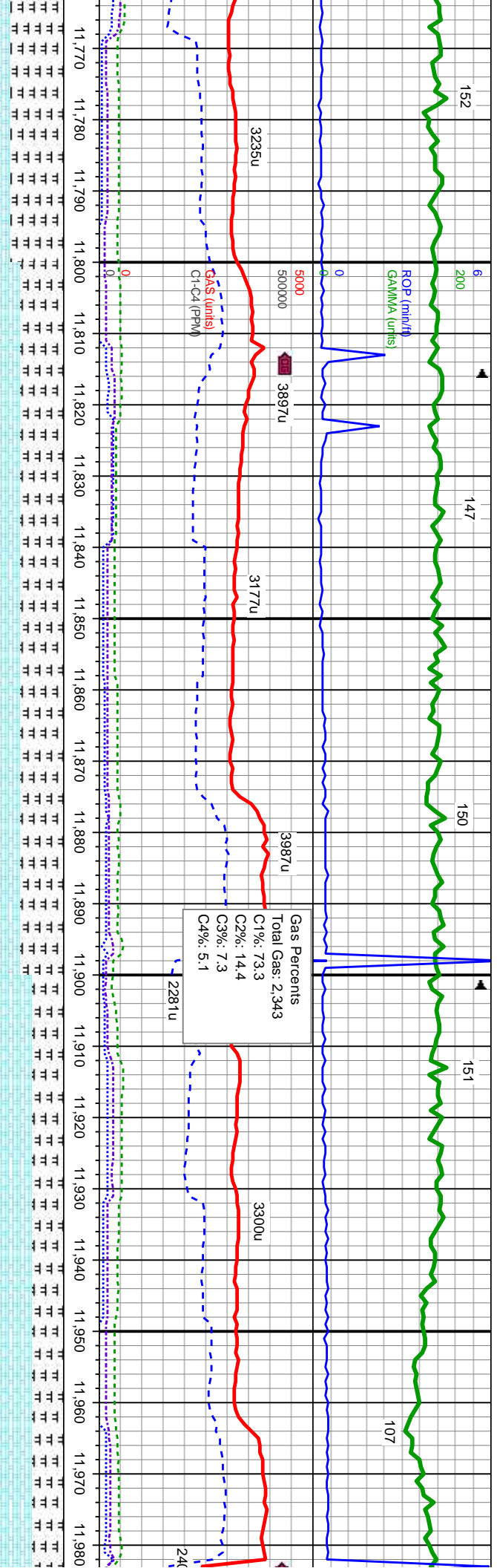
8200

MRLST: med-dk gy-gy brn, sb ply-blky, mod sft-frm, sb arg-sily, calc, tr bent,
CHK: lt-med gy, mot, sb blk-sb ply, sft-sl frm, fri, chky-sb wxy, v calc, stmg/
strgs, lt bl flr wi mod-g bl-wh cut

MD: 11,759
TVD: 7,859.05
Inclination: 89
Azimuth: 180.7
VS: 3.846.96

WT IN 9.9 OU
VIS IN 43 OU



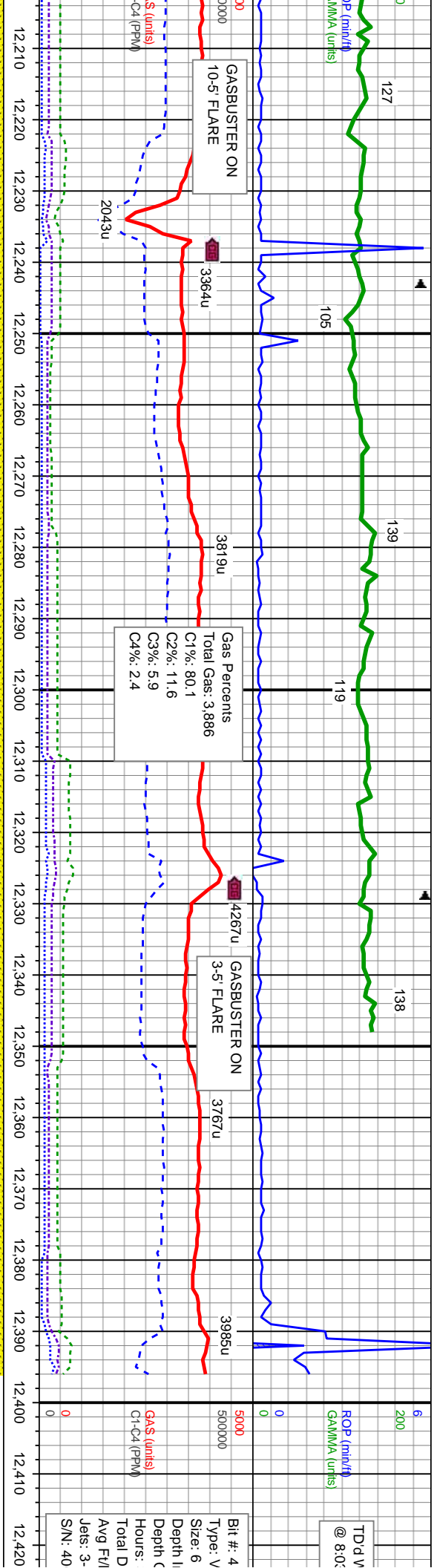


T 9.9
T 43
WT IN 9.9 OUT 9.9
VIS IN 44 OUT 44

MD: 11,930
TVD: 7,860.35
Inclination: 89.29
Azimuth: 181
VS: 4,017.94

MRSLT: med-dk gy-gy brn, sb pily-blky, mod sft-frn, sb arg-sily, calc, tr bent,
CHK: lt-med gy, mot, sb blky-sb pily, sft-sl frm, fri, chky-sb wxy, v calc, strng/
strgs, lt bl flr wi mod-g bl-wh cut





TD @ V
@ 8:03

Bit #: 4
Type: V
Size: 6
Depth I:
Depth C:
Hours:
Total D
Avg FV/
Jets: 3-
S/N: 40

WT IN 9.8 OUT 9.8
VIS IN 42 OUT 42

MD: 12,272
TVD: 7,867.32
Inclination: 89.56
Azimuth: 180.19
VS: 4,359.86

MD: 12,340
TVD: 7,867.44
Inclination: 90.24
Azimuth: 180.32
VS: 4,427.86

WT IN 9.9 OUT 9.9+
VIS IN 44 OUT 46

PROJECTION TO BIT

MD: 12,396
TVD: 7,867.2
Inclination: 90.24
Azimuth: 180.32
VS: 4,483.86

THANK YOU
COLUMBIA

SS: lt brn-med-gry-dk, med-gry, brn-mot, vf-f gr, med-v frm, sb-rnd-rnd, med-w
strd, ply cons wi calc cmt, MRLST: med-dk gy-gy brn, sb pily-blky, mod
stf-frm, sb arg-sily, calc, tr bent, CHK: lt-med gy, mot, sb blky-sb pily, stf-sl frm,
fri, chky-sb wxy, v calc, stimg/ strgs, lt bl flr wi mod-g bl-wh cut

SS: lt brn-med-gry-dk, med-gry, brn-mot, vf-f gr, med-v frm, sb-rnd-rnd,
med-w strd, ply cons wi calc cmt, MRLST: med-dk gy-gy brn, sb pily-blky,
mod stf-frm, sb arg-sily, calc, tr bent, CHK: lt-med gy, mot, sb blky-sb pily,
stf-sl frm, fri, chky-sb wxy, v calc, stimg/ strgs, lt bl flr wi mod-g bl-wh cut

8200



CELL @ 12.396' MD
AM ON 8/19/2013

AREL VM513S
1/8
r: 8.355
put: 12.396
30.4
filled: 4.041
ht: 132.9
13.2-12
05722

12.430 12.440 12.450 12.460 12.470 12.480 12.490 12.500

YOU FOR USING
NE LOGGING!