

COLUMBINE LOGGING

Scale: 5" / 100'
Measured Depth Log

Well Name RICO LC29-74-1HNA

Location SWSE SEC 29 T9N R59W

State COLORADO

Country UNITED STATES

API Number 05-123-38777

Region DJ BASIN

Spud Date 5/7/2014

Surface Coordinates 340' FSL; 2092' FEL

County WELD

Rig Number H&P 273

Field WILDCAT

Drilling Completed 5/19/2014

Ground Elevation 4871'

Logged Interval 6415'

Formation NIOBRARA

Type of Drilling Fluid LSND

K.B. Elevation 4896'

To 15480'

Total Depth 15480'

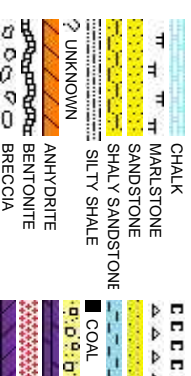
Company NOBLE ENERGY INC

Address 1625 Broadway Suite
Denver, CO 80202

Name SARAH COMPTON

Company NOBLE ENERGY INC
Address 1625 Broadway Suite
Denver, CO 80202

Wellsite Geologist #1: LAURA
Wellsite Geologist #2: TIM BROWN
Wellsite Geological Services



Operator

IC.

2000

Geologist

IC.

2000

Other

AKELLOGG
RIGHT

Provided By Columbine Logging Inc.

Rock Types

CEMENT

CHERT

CLAY CHOKE SAND

CLAYSTONE

CONGLOMERATE

DOLOMITE

GRANITE

GYP SUM

IGNEOUS

SIDERITE or LIMONITE

LIMESTONE

METAMORPHIC

NO SAMPLE

SALT

SALT-PEPPER SAND

SHALE

SHALE COLORED

SHALE GRAY

SHALY SILTSTONE

TILL

TUFF

WELDED TUFF

Accessories

F FOSSIL

GASTROPOD

OOLITE

AMPHIPORA

BELEMNITE

BIOCLASTIC

BRACHOPOD

BRYOZOA

CEPHALOPOD

CORAL

CRINOID

ECHINOID

FISH

FORAMINIFERA

ARGILLACEOUS

ARGILLITE GRAIN

B BENTONITE

BITUMENOUS SUBSTANCE

BRECCIA FRAGMENTS

CALCAREOUS

CARBONACEOUS FLAKES

CHTDK

CHTLT

COAL - THIN BEDS

DOLOMITIC

FELDSPAR

FERRUGINOUS PELLET

FERRUGINOUS

GLAUCONITE

GYP SIFEROUS

HEAVY MINERAL

INOCERAMUS

KAOLIN

MARLSTONE

MINERAL CRYSTALS

NODULES

PHOSPHATE PELLET

PYRITE

SALT CAST

SANDY

SILICEOUS

SILTY

TUFFACEOUS

ANHYDRITE STRINGER

BENTONITE STRINGER

COAL STRINGER

DOLomite STRINGER

GYP SUM STRINGER

LIMESTONE STRINGER

MARLSTONE (CALC) STRG

MARLSTONE (DOL) STRG

SANDSTONE STRINGER

SHALE STRINGER

SILTSTONE STRINGER

Other Symbols

OIL SHOW

DEAD

EVEN

QUESTIONABLE

SPOTTED STAINING

MOLDIC

ORGANIC

PINPOINT

VUGGY

Engineering

BIT

CONNECTION (LEFT)

CONNECTION (RIGHT)

CONNECTION GAS

CORE - LOST

INTERCRYSTALLINE

INTEROOLITIC

Porosity

E EARTHY

FENESTRAL

FRACTURE

INTERCRYSTALLINE

INTEROOLITIC

FAULT

FORMATION TOP

GAS SHOW

MINDEPTH MN DEPTH

NORMAL FAULT

OIL SHOW

OVERTURNED STRATA

REVERSE FAULT

SIDEWALL CORE (LEFT)

SIDEWALL CORE (RIGHT)

SLIDE

SURVEY

TRIP GAS

WIRELINE TESTED - LEFT

WIRELINE TESTED - RT

ANGULAR

ROUNDED

SUBANG

SUBRND

TEXTURES

BOUNDSTONE

CHALKY

CRYPTOXLN

Sorting

MODERATE

POOR

WELL

OIL SHOW

DEAD

EVEN

QUESTIONABLE

SPOTTED STAINING

MOLDIC

ORGANIC

PINPOINT

VUGGY

Engineering

BIT

CONNECTION (LEFT)

CONNECTION (RIGHT)

CONNECTION GAS

CORE - LOST

INTERCRYSTALLINE

INTEROOLITIC

Porosity

E EARTHY

FENESTRAL

FRACTURE

INTERCRYSTALLINE

INTEROOLITIC

FAULT

FORMATION TOP

GAS SHOW

MINDEPTH MN DEPTH

NORMAL FAULT

OIL SHOW

OVERTURNED STRATA

REVERSE FAULT

SIDEWALL CORE (LEFT)

SIDEWALL CORE (RIGHT)

SLIDE

SURVEY

TRIP GAS

WIRELINE TESTED - LEFT

WIRELINE TESTED - RT

ANGULAR

ROUNDED

SUBANG

SUBRND

TEXTURES

BOUNDSTONE

CHALKY

CRYPTOXLN

Sorting

MODERATE

POOR

WELL

Slide/Rotate

ROP

ROF

BEGAN DRILLING CURVE
@ 12:34 PM 05/09/2014

Total Gas & Chromatograph

GAS

C1

C2

C3

C4

COLUMBINE LOGGING INC.
RIGGED UP ON 05/08/2014
MANNED 2-PERSON LOGGING
WITH BLOODHOUND GAS
CHROMATOGRAPH UNIT #0680
COLUMBINE BEGAN LOGGING
ON 05/08/2014

BHA BIT:
Security 8.75" MMD55M
Serial #: 12451135
Jets: 5x16

50' Sample Interval

895u
C1: 89.3%
C2: 5.0%
C3: 5.7%
C4: 0.0%

Depth Labels

% Lith

Gamma

GAMMA

Well Bore
TVD

Oil Show

Images

Acetone was used as the cutting
agent with the dimple filled to the rim

The ratings are based on 7 descriptors:
None, Slight trace, Trace/Fair, Moderate,
Good, and Excellent. The descriptor used
is based on the loggers observations and
best judgment of brilliance, color and
longevity of the cut.

MD: 5,340 '
TVD: 5,296.85 '
Inclination: 1.27 °
Azimuth: 317.71 °
VS: -68.96 '

WT IN 9.80/ OUT 9.80
VIS IN 51/ OUT 51

MD: 5,434 '
TVD: 5,390.82 '
Inclination: 1.61 °
Azimuth: 344.11 °
VS: -66.94 '

WT IN 10.10/ OUT 10.10
VIS IN 43/ OUT 43

SLTY SH: gy-dk gy,
occ blk, sb blk-y-sb
ply, v sft - sft, silty tex,
arg cnt, tr shy ss, tr
pyr

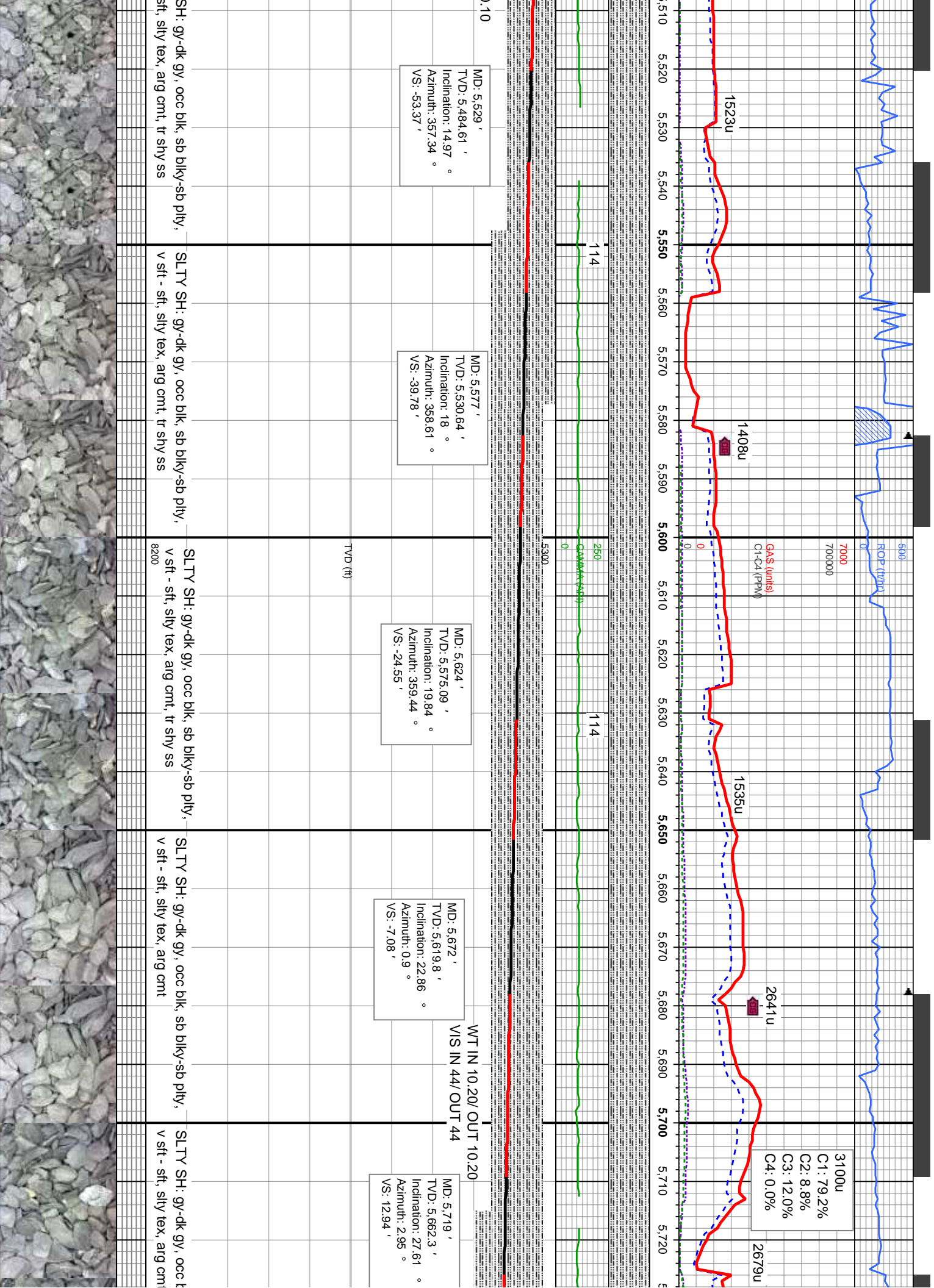
SLTY SH: gy-dk gy, occ blk, sb blk-y-sb ply,
v sft - sft, silty tex, arg cnt, tr shy ss

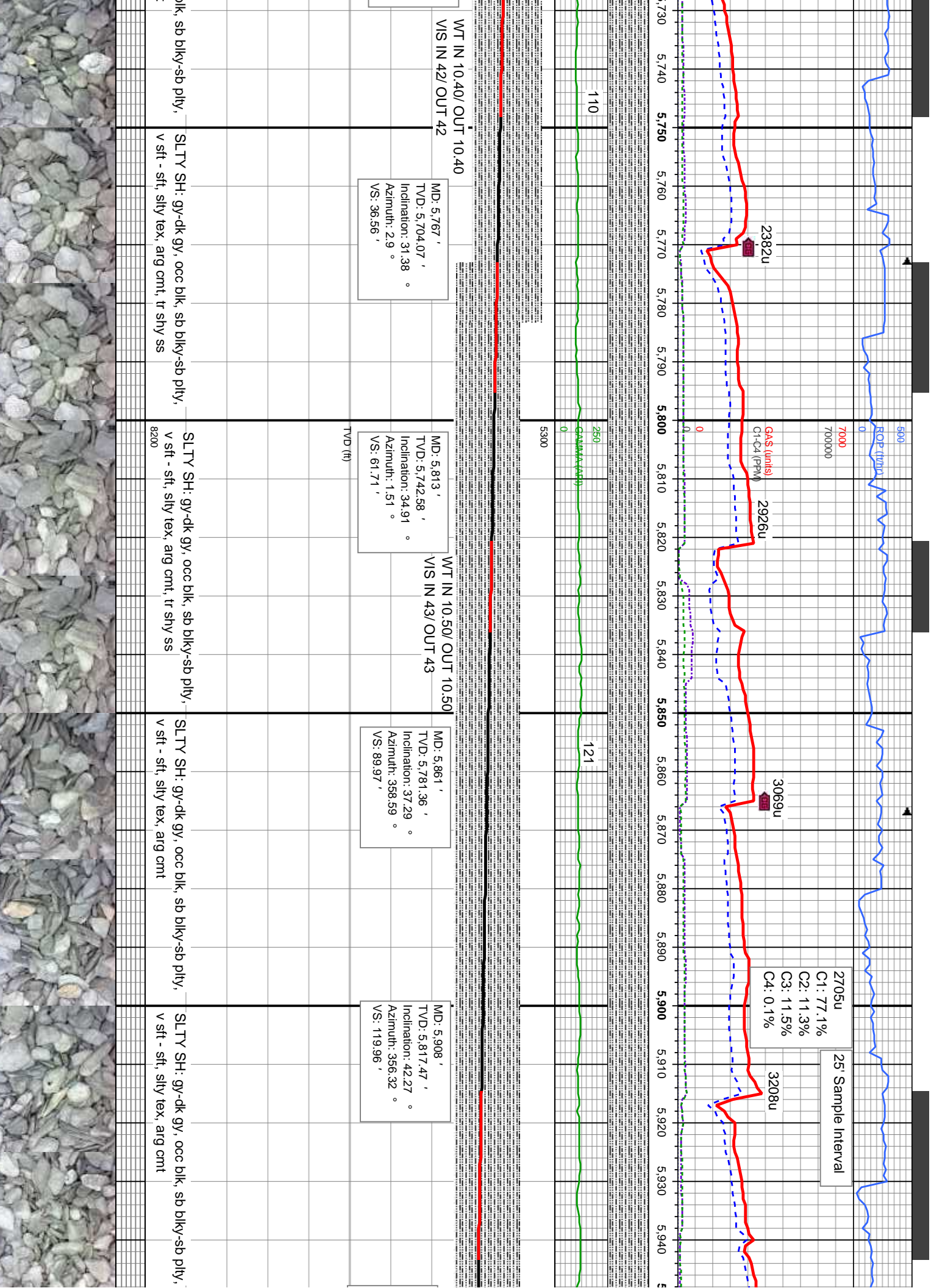
SLTY SH: gy-dk gy, occ blk, sb blk-y-sb ply,
v sft - sft, silty tex, arg cnt, tr shy ss

SLTY SH: gy-dk gy, occ blk, sb blk-y-sb ply,
v sft - sft, silty tex, arg cnt, tr shy ss

TVD (ft)







WT IN 10.40/ OUT 10.40
VIS IN 42/ OUT 42

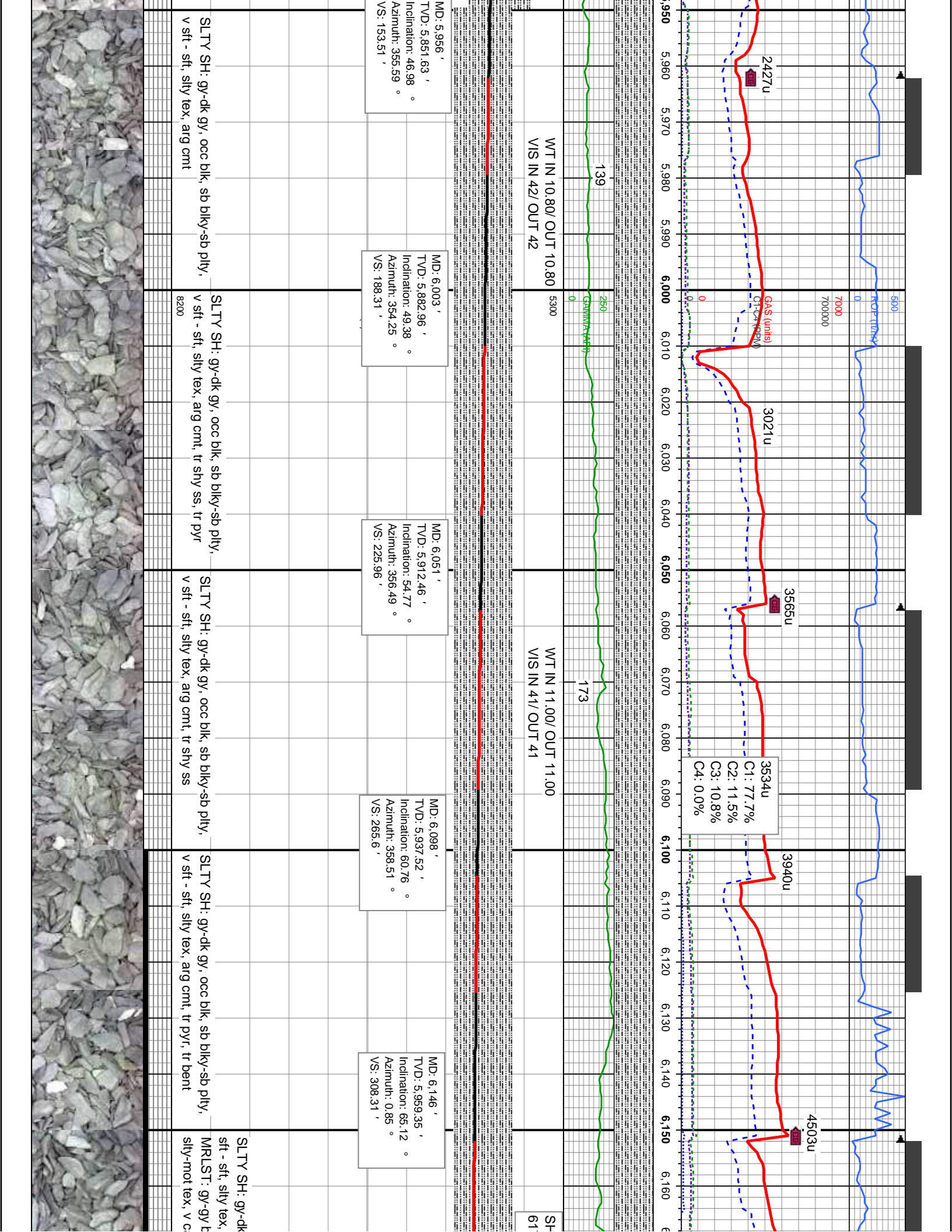
MD: 5,767 '
TVD: 5,704.07 '
Inclination: 31.38 °
Azimuth: 2.9 °
VS: 36.56 '

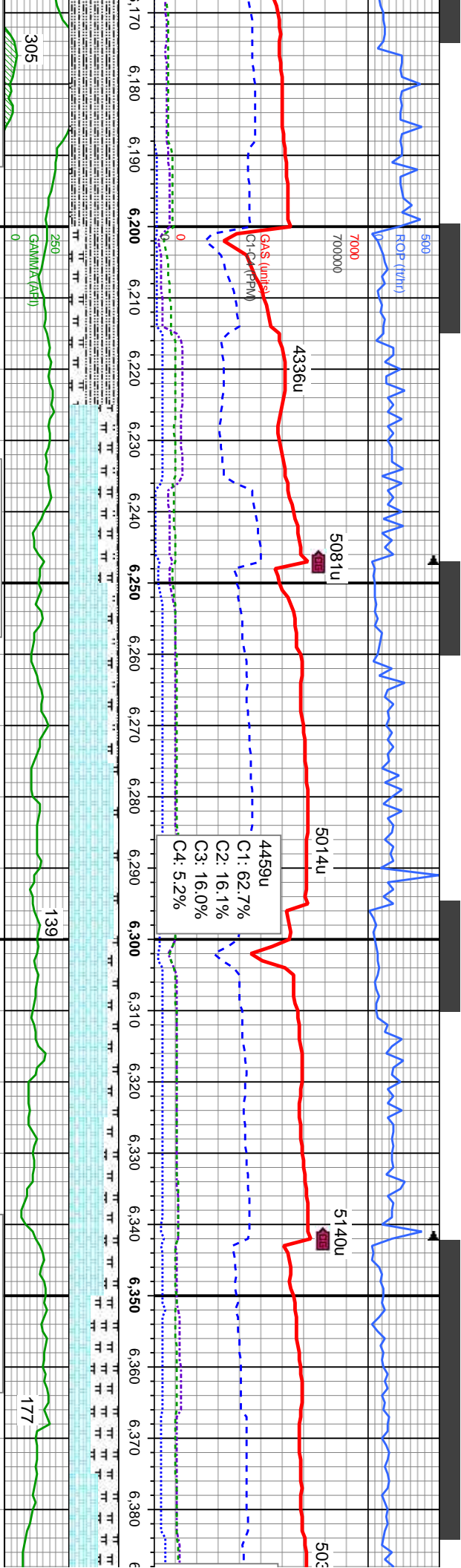
WT IN 10.50/ OUT 10.50
VIS IN 43/ OUT 43

MD: 5,861 '
TVD: 5,781.36 '
Inclination: 37.29 °
Azimuth: 358.59 °
VS: 89.97 '

MD: 5,908 '
TVD: 5,817.47 '
Inclination: 42.27 °
Azimuth: 356.32 °
VS: 119.96 '

TVD (ft)





JARON SPRINGS @ 76' MD/ 5971' TVD

5300 WT IN 11.00/ OUT 11.00 NIO A CHALK @ 6243' MD/ 5993' TVD

WT IN 11.00/ OUT 11.00 NIO A MARL @ 6344' MD/ 6018' TVD

MD: 6.193 '
TVD: 5.977.43 '
Inclination: 69.62 °
Azimuth: 1.2 °
VS: 351.68 '

MD: 6.241 '
TVD: 5.992.74 '
Inclination: 73.18 °
Azimuth: 0.82 °
VS: 397.17 '

MD: 6.288 '
TVD: 6.005.45 '
Inclination: 75.45 °
Azimuth: 0.62 °
VS: 442.41 '

MD: 6.336 '
TVD: 6.016.61 '
Inclination: 77.64 °
Azimuth: 0.95 °
VS: 489.09 '

MD: 6.361 '
TVD: 6.021.18 '
Inclination: 81.31 °
Azimuth: 0.78 °
VS: 513.66 '

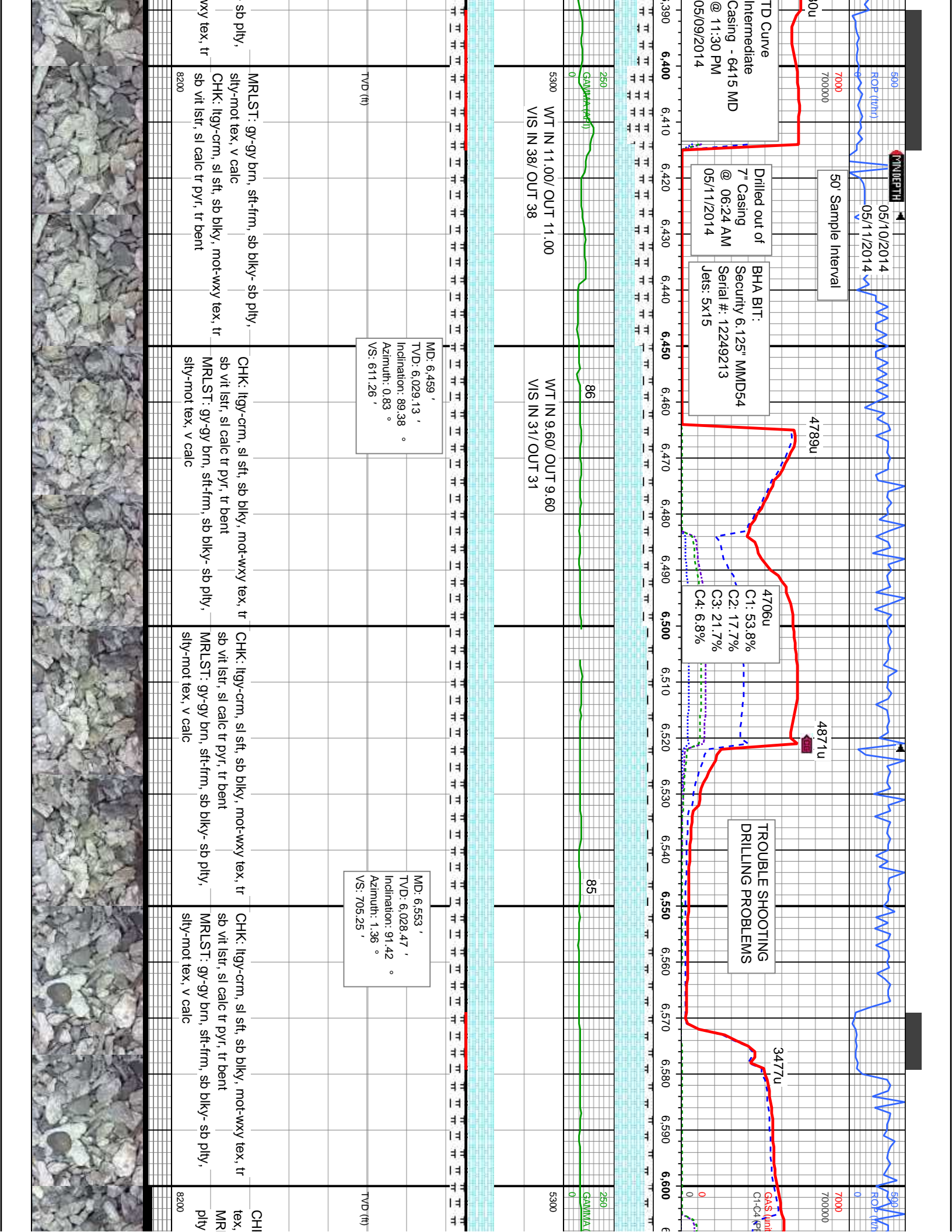
CHK: ltgy-crm, sl sft, sb blk, mot-wxy tex, tr sb vit lstr, sl calc
MRLST: gy-gy brn, sft-fm, sb blk- sb ply, slty-mot tex, v calc
SLTY SH: lt-dk gy, sft - mod frm, sb blk - ply, arg cnt, slty tex, non calc, tr pyr, occ bent

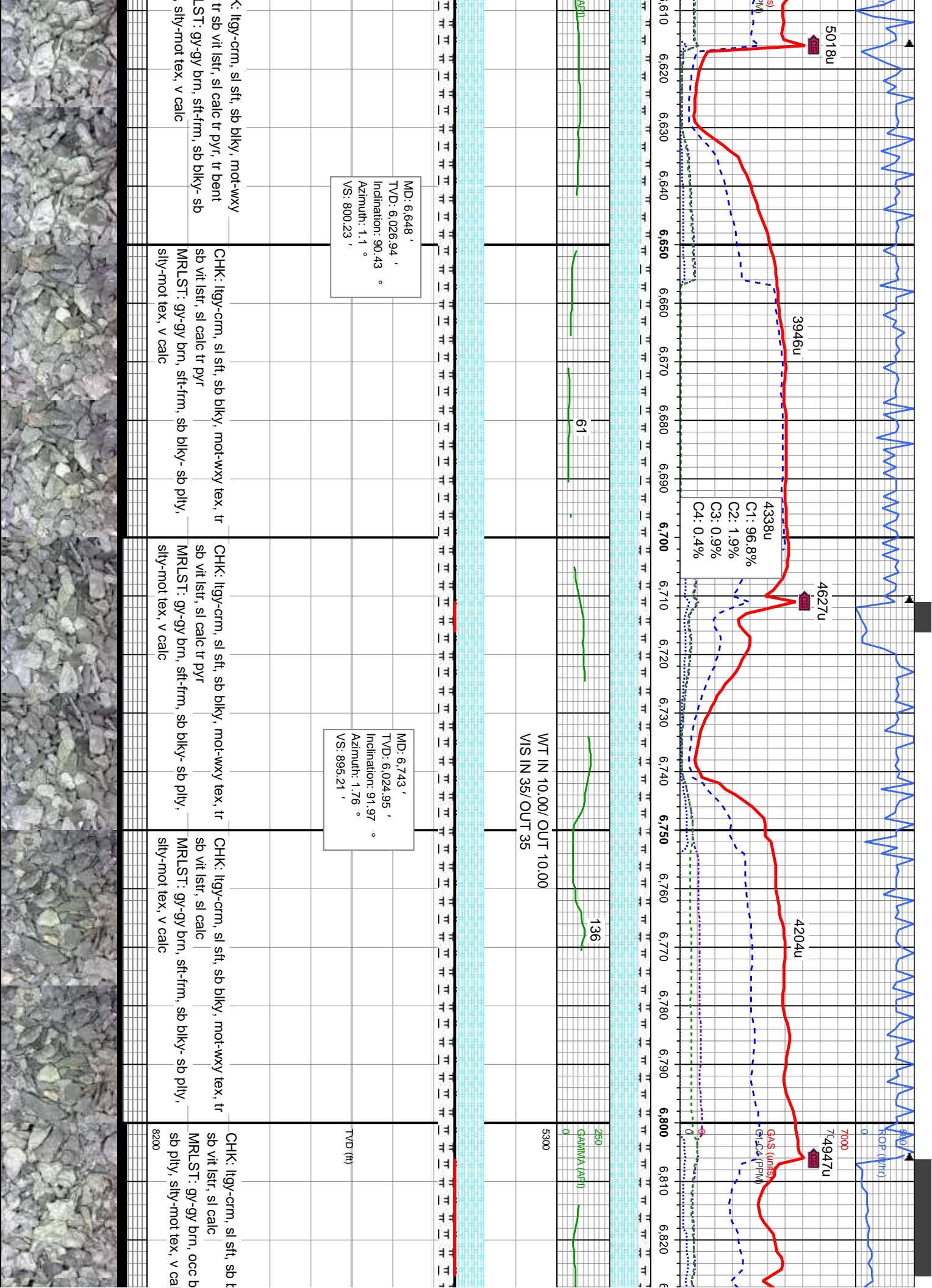
CHK: ltgy-crm, sl sft, sb blk, mot-wxy tex, tr sb vit lstr, sl calc
MRLST: gy-gy brn, sft-fm, sb blk- sb ply, slty-mot tex, v calc
SLTY SH: lt-dk gy, sft - mod frm, sb blk - ply, arg cnt, slty tex, non calc, tr pyr, tr bent

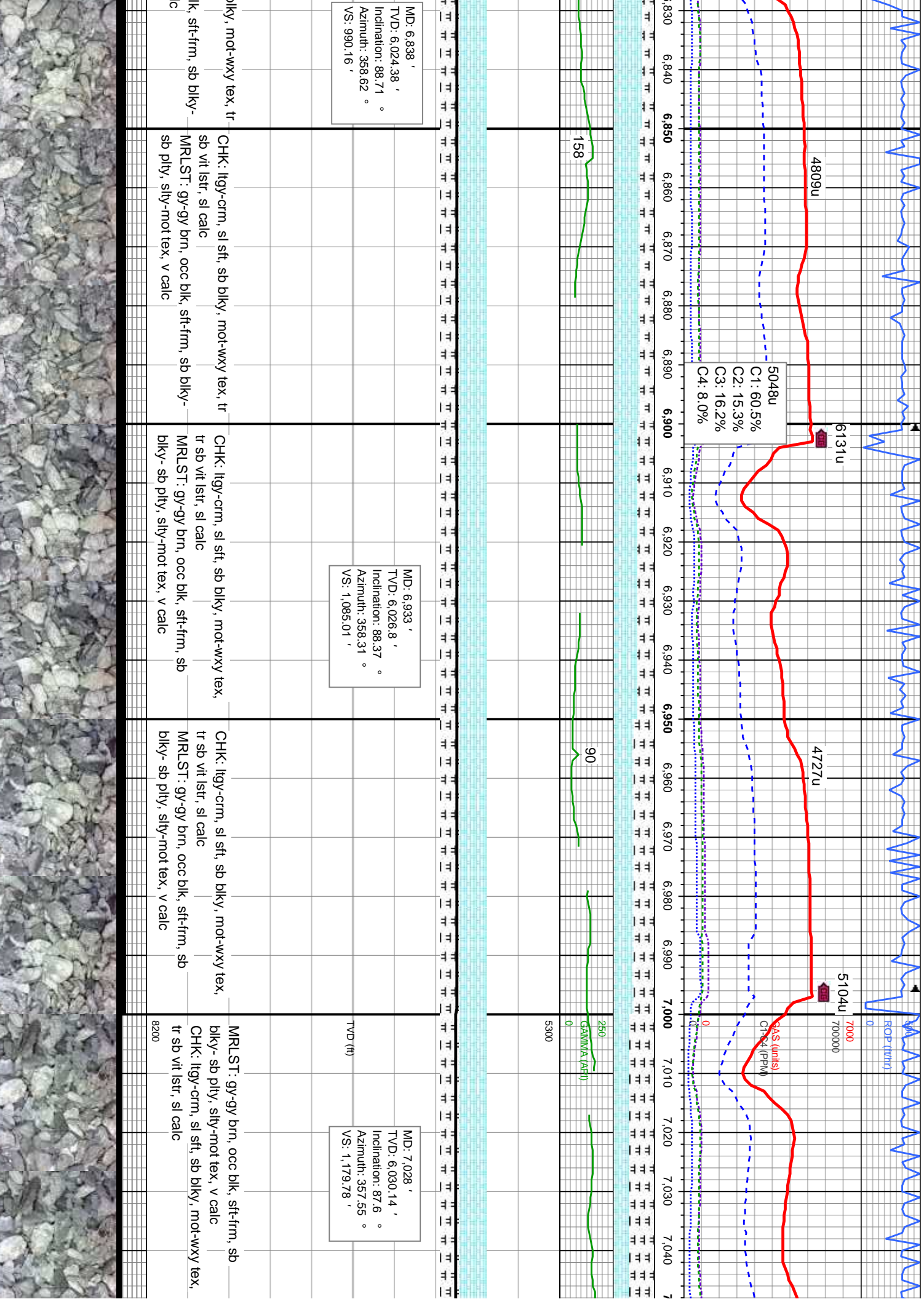
CHK: ltgy-crm, sl sft, sb blk, mot-wxy tex, tr sb vit lstr, sl calc
MRLST: gy-gy brn, sft-fm, sb blk- sb ply, slty-mot tex, v calc
SLTY SH: lt-dk gy, sft - mod frm, sb blk - ply, arg cnt, slty tex, non calc, tr pyr, tr bent

CHK: ltgy-crm, sl sft, sb blk, mot-wxy tex, tr sb vit lstr, sl calc
MRLST: gy-gy brn, sft-fm, sb blk- sb ply, slty-mot tex, v calc
SLTY SH: lt-dk gy, sft - mod frm, sb blk - ply, arg cnt, slty tex, non calc, tr pyr, tr bent









MD: 6,838 '
TVD: 6,024.38 '
Inclination: 88.71 °
Azimuth: 358.62 °
VS: 990.16 '

5048u
C1: 60.5%
C2: 15.3%
C3: 16.2%
C4: 8.0%

MD: 6,933 '
TVD: 6,026.8 '
Inclination: 88.37 °
Azimuth: 358.31 °
VS: 1,085.01 '

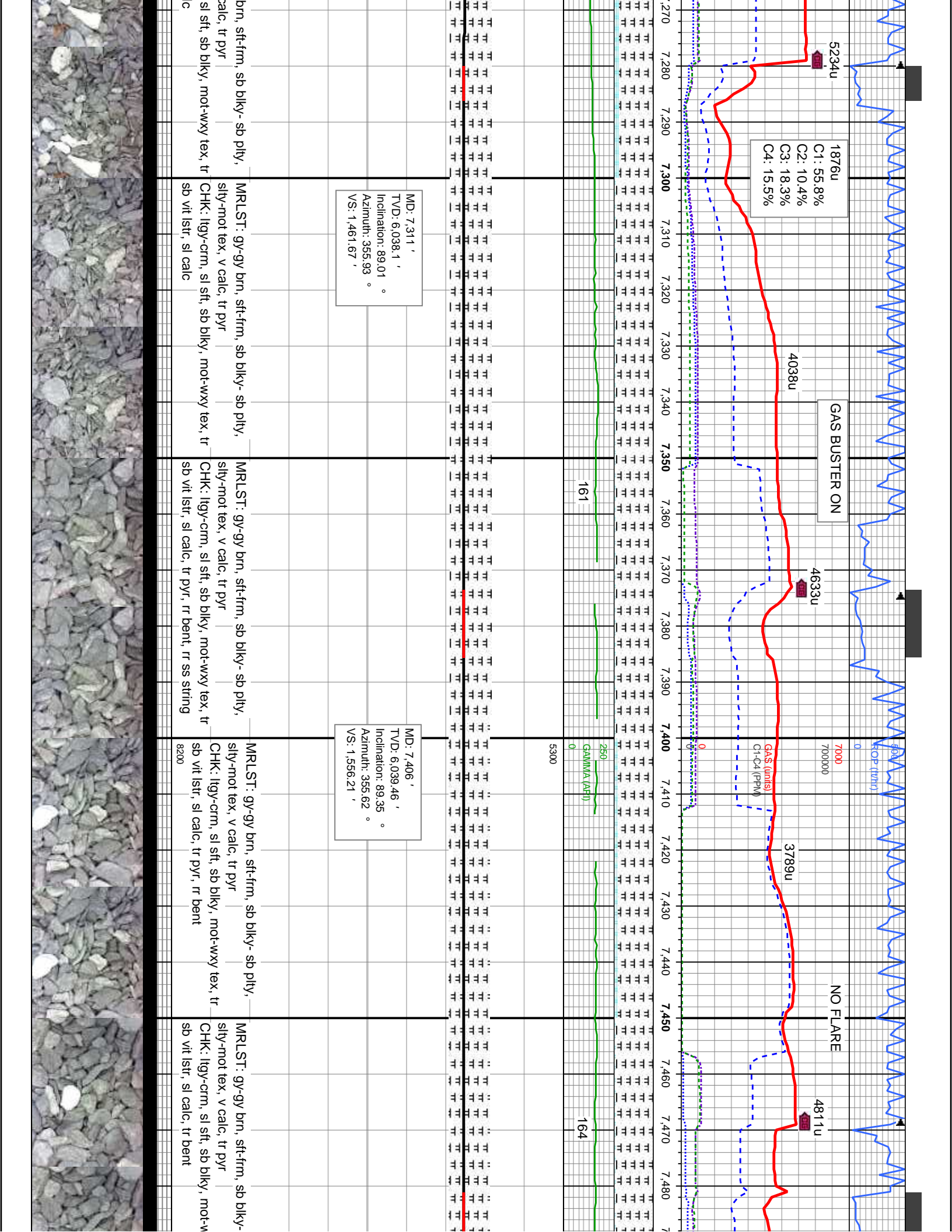
MD: 7,028 '
TVD: 6,030.14 '
Inclination: 87.6 °
Azimuth: 357.55 °
VS: 1,179.78 '

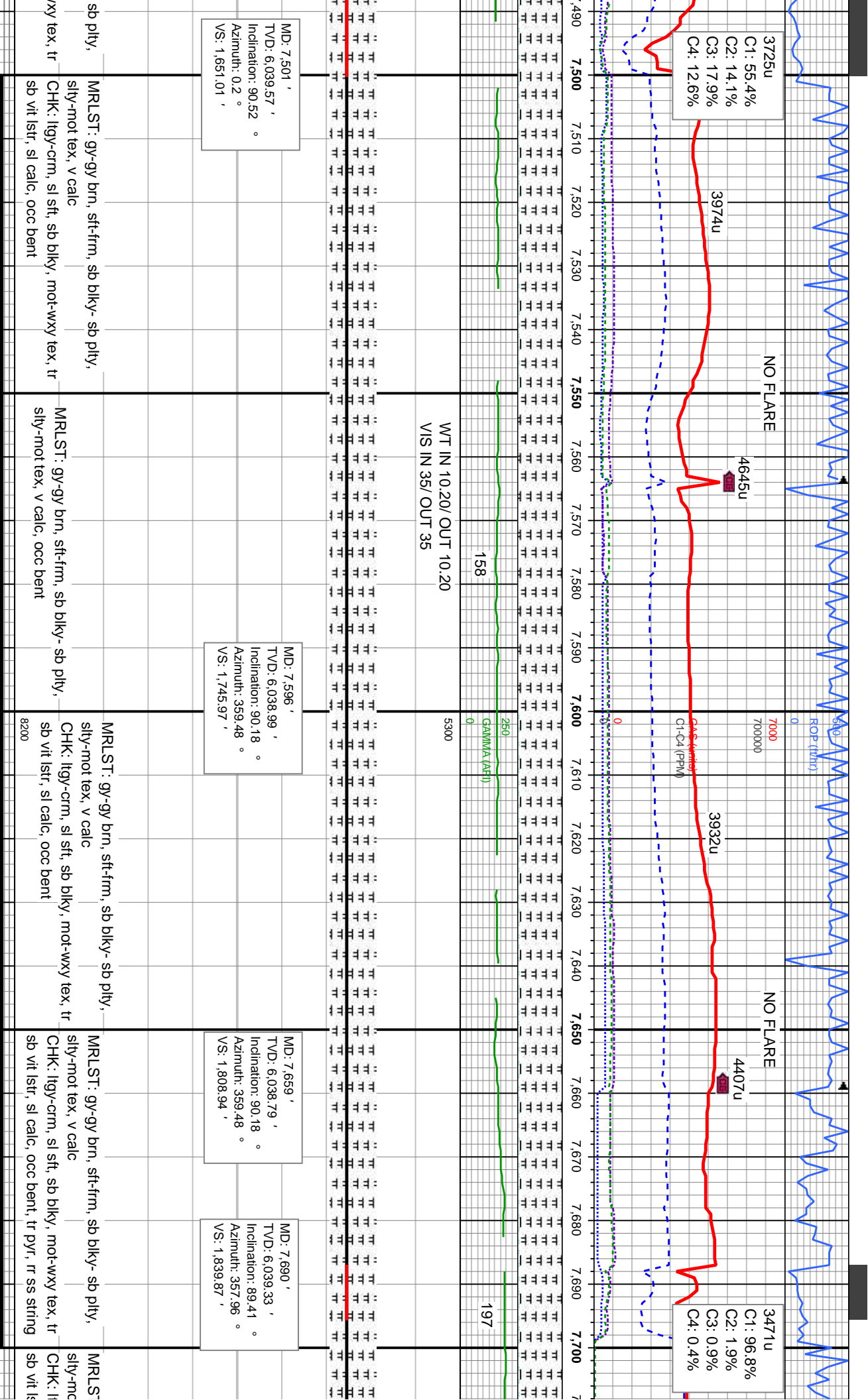
CHK: ltgy-crm, sl sft, sb blk, mot-wxy tex, tr sb vit lstr, sl calc
MRLST: gy-gy brn, occ blk, sft-frm, sb blk, sb ply, slty-mot tex, v calc

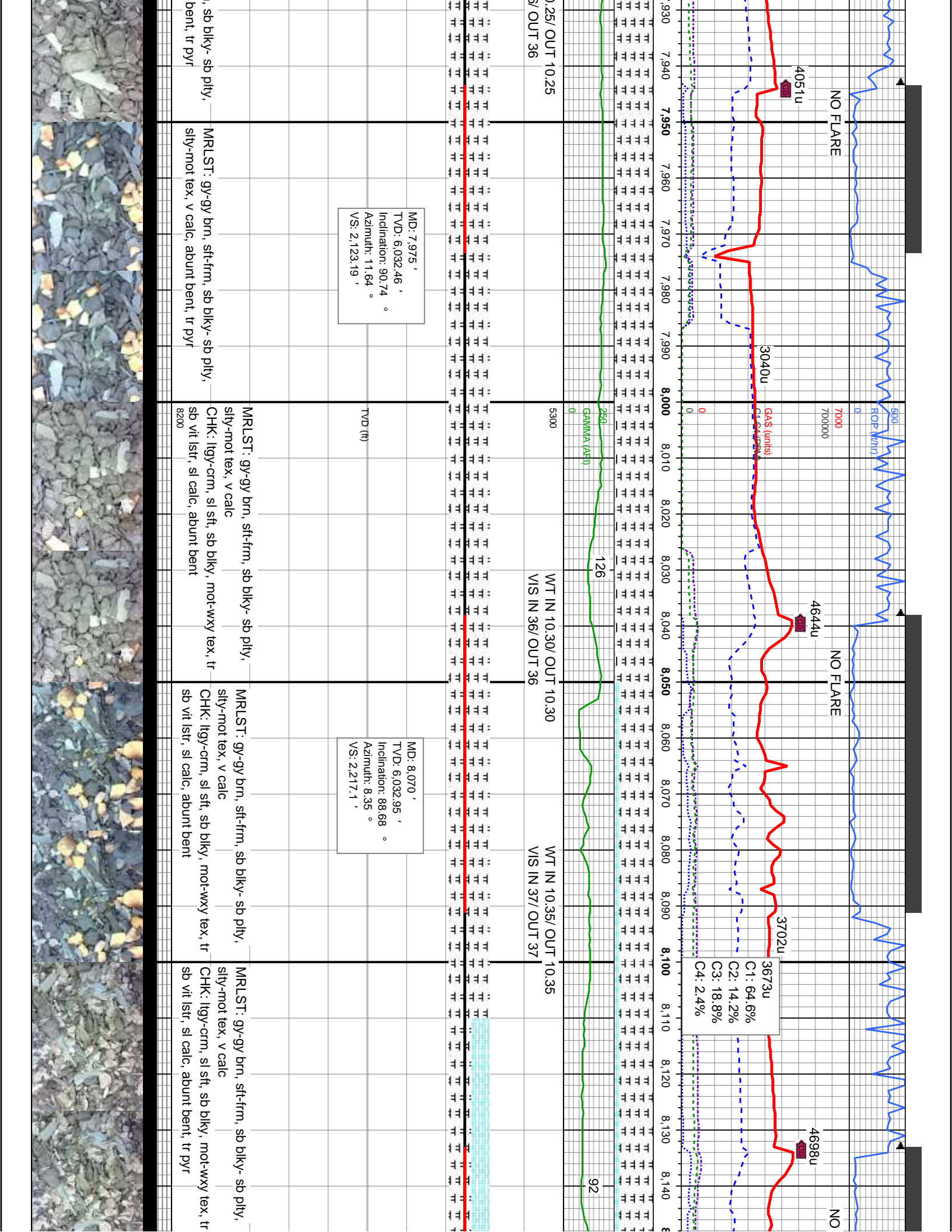
CHK: ltgy-crm, sl sft, sb blk, mot-wxy tex, tr sb vit lstr, sl calc
MRLST: gy-gy brn, occ blk, sft-frm, sb blk, sb ply, slty-mot tex, v calc

CHK: ltgy-crm, sl sft, sb blk, mot-wxy tex, tr sb vit lstr, sl calc
MRLST: gy-gy brn, occ blk, sft-frm, sb blk, sb ply, slty-mot tex, v calc

MRLST: gy-gy brn, occ blk, sft-frm, sb blk, sb ply, slty-mot tex, v calc
CHK: ltgy-crm, sl sft, sb blk, mot-wxy tex, tr sb vit lstr, sl calc







NO FLARE

4051u

3040u

4644u

NO FLARE

3702u

4698u

NO

C1: 64.6%
C2: 14.2%
C3: 18.8%
C4: 2.4%

MD: 7.975 '
TVD: 6.032.46 '
Inclination: 90.74 °
Azimuth: 11.64 °
VS: 2.123.19 '

MD: 8.070 '
TVD: 6.032.95 '
Inclination: 88.68 °
Azimuth: 8.35 °
VS: 2.217.1 '

sb blkly- sb pty, bent, tr pyr
MRLST: gy-gy brn, sft-frm, sb blkly- sb pty, silty-mot tex, v calc
CHK: ltgy-crm, sl sft, sb blkly, mot-wxy tex, tr sb vit lstr, sl calc, abunt bent, tr pyr

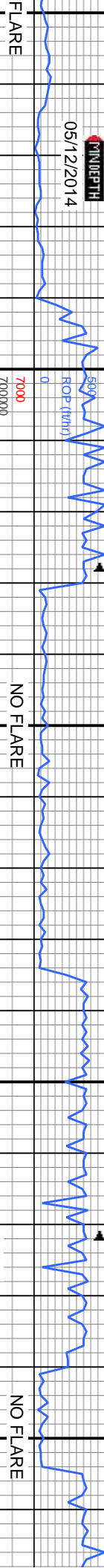
MRLST: gy-gy brn, sft-frm, sb blkly- sb pty, silty-mot tex, v calc
CHK: ltgy-crm, sl sft, sb blkly, mot-wxy tex, tr sb vit lstr, sl calc, abunt bent

MRLST: gy-gy brn, sft-frm, sb blkly- sb pty, silty-mot tex, v calc
CHK: ltgy-crm, sl sft, sb blkly, mot-wxy tex, tr sb vit lstr, sl calc, abunt bent

MRLST: gy-gy brn, sft-frm, sb blkly- sb pty, silty-mot tex, v calc
CHK: ltgy-crm, sl sft, sb blkly, mot-wxy tex, tr sb vit lstr, sl calc, abunt bent, tr pyr

MINDEPTH

05/12/2014



NO FLARE

NO FLARE

C1: 77.5%
C2: 12.1%
C3: 10.3%
C4: 0.0%

WT IN 10.25/ OUT 10.25300
VIS IN 37/ OUT 37

WT IN 10.10/ OUT 10.10
VIS IN 36/ OUT 36

MD: 8.164 '
TVD: 6.036.46 '
Inclination: 87.04 °
Azimuth: 4.21 °
VS: 2.310.66 '

MD: 8.259 '
TVD: 6.041.32 '
Inclination: 87.1 °
Azimuth: 359.4 °
VS: 2.405.5 '

MD: 8.354 '
TVD: 6.045.4 '
Inclination: 87.97 °
Azimuth: 356.28 °
VS: 2.500.23 '

MRLST: gy-gy brn, sft-frm, sb blk- sb ply,
sly-mot tex, v calc
CHK: lty-gy-crm, sl sft, sb blk, mot-wxy tex, tr
sb vit lstr, sl calc, abunt bent

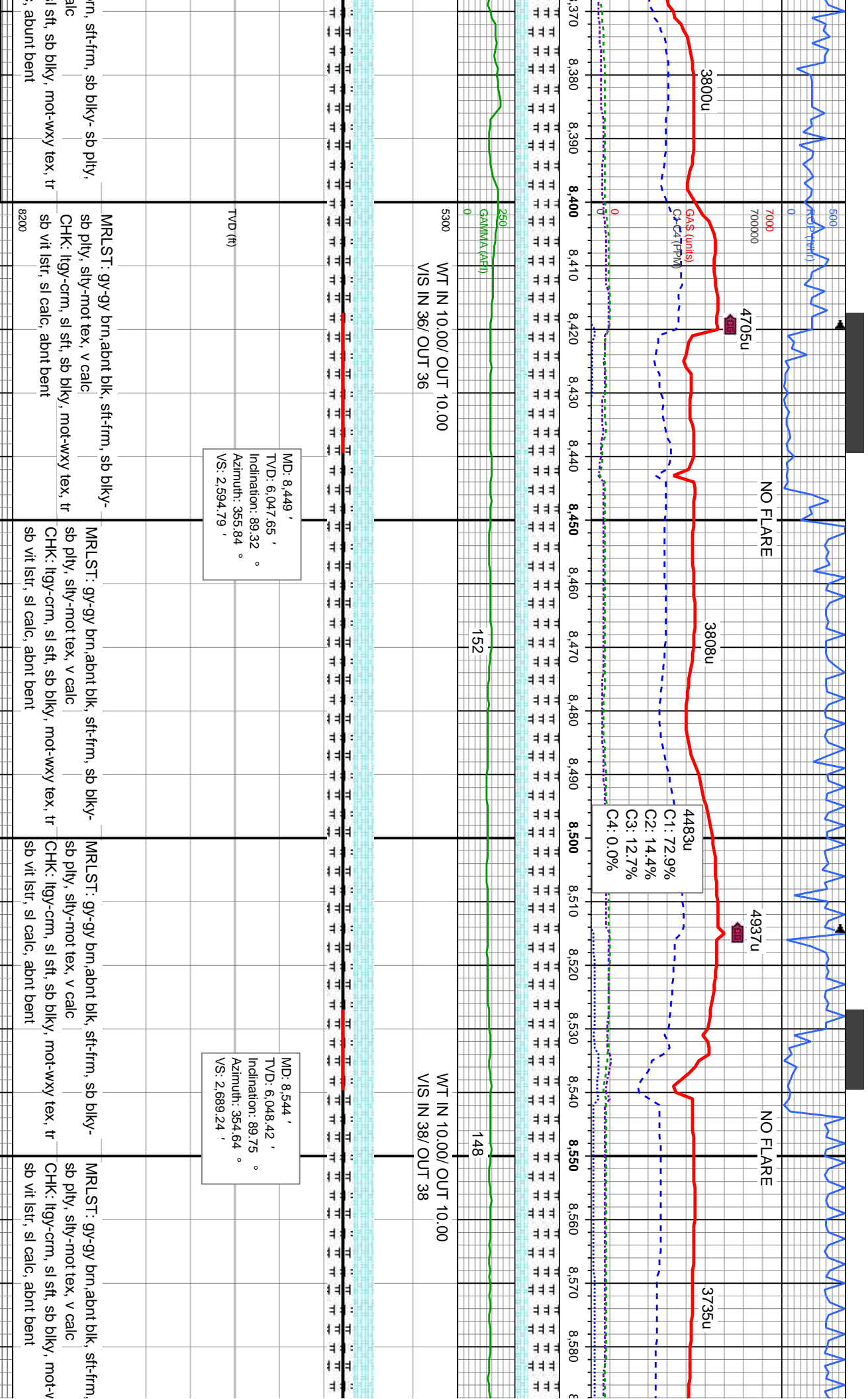
CHK: lty-gy-crm, sl sft, sb blk, mot-wxy tex, tr
sb vit lstr, sl calc
MRLST: gy-gy brn, occ blk, sft-frm, sb blk-
sb ply, sly-mot tex, v calc, abunt bent

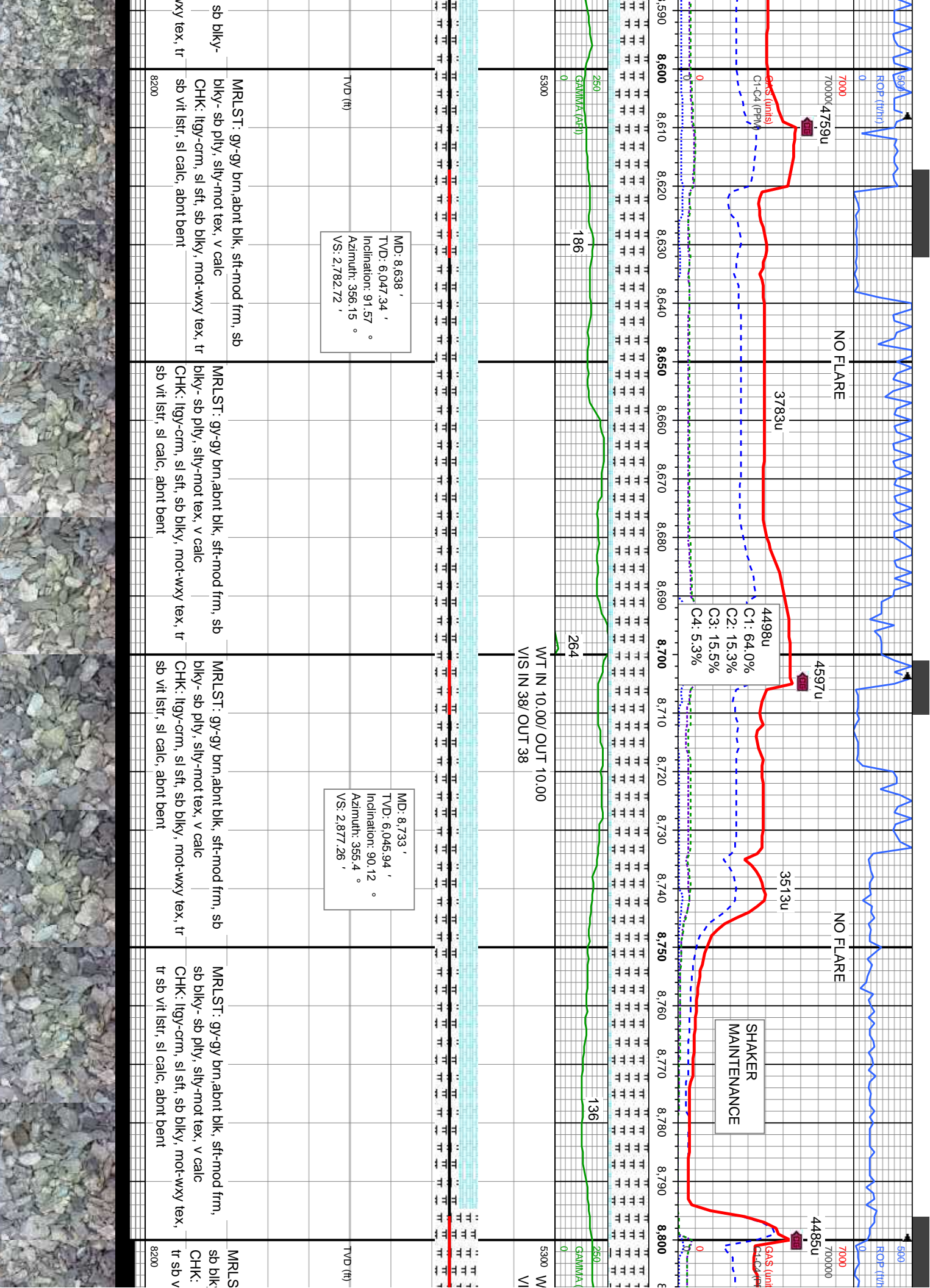
MRLST: gy-gy brn, sft-frm, sb blk- sb ply,
sly-mot tex, v calc
CHK: lty-gy-crm, sl sft, sb blk, mot-wxy tex, tr
sb vit lstr, sl calc, abunt bent

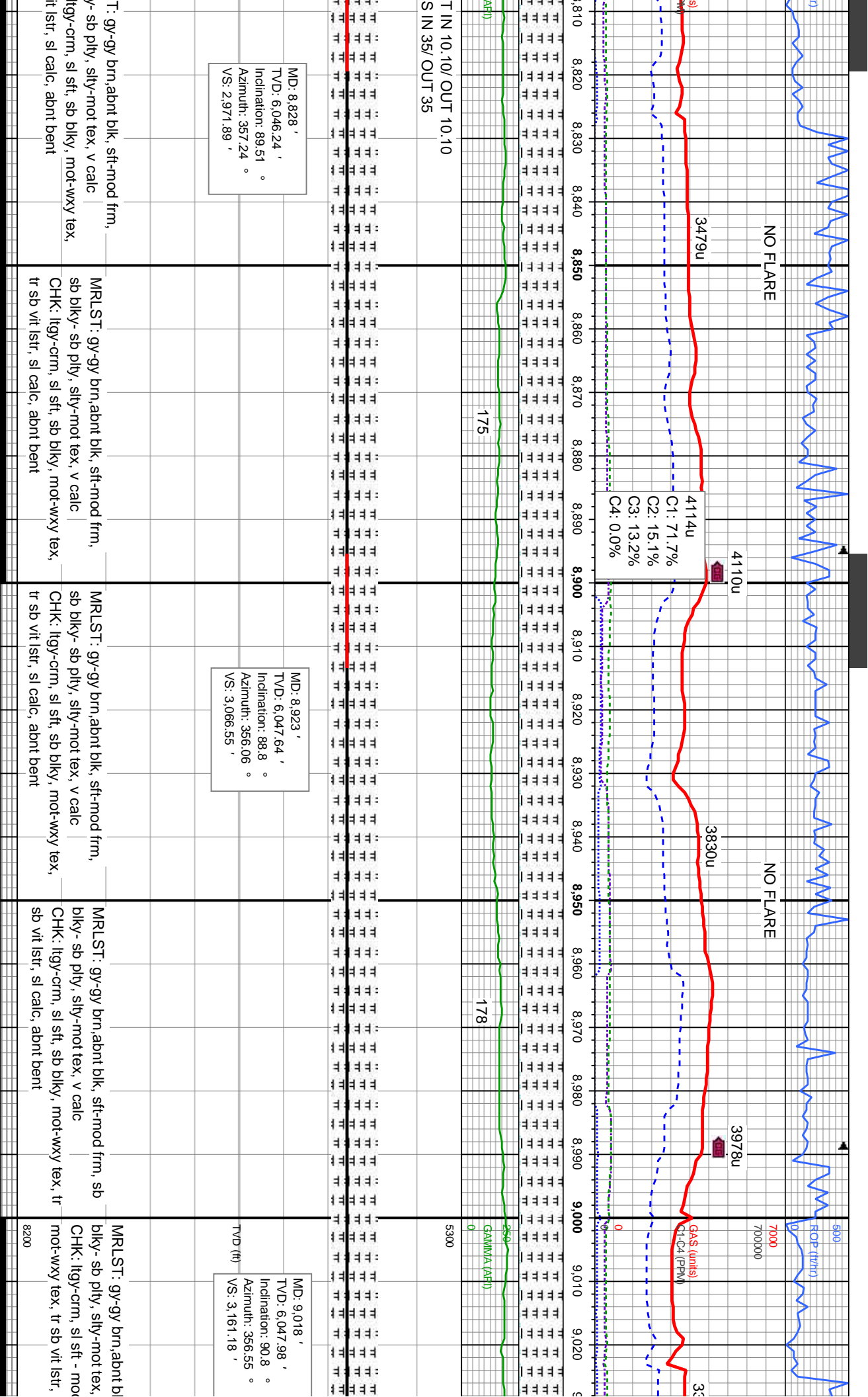
CHK: lty-gy-crm, sl sft, sb blk, mot-wxy tex, tr
sb vit lstr, sl calc
MRLST: gy-gy brn, occ blk, sft-frm, sb blk-
sb ply, sly-mot tex, v calc, abunt bent

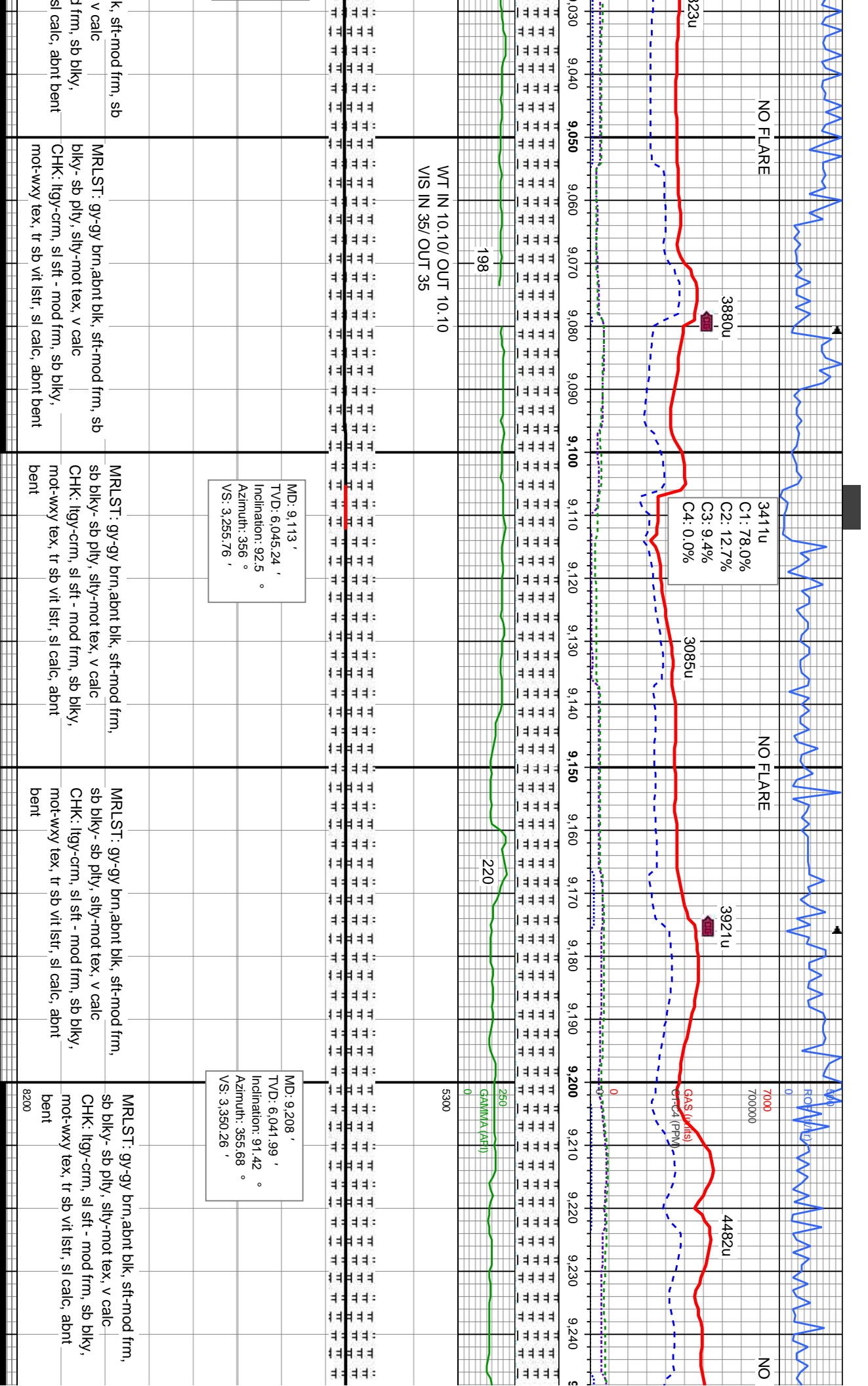
MRLST: gy-gy b
sly-mot tex, v c
CHK: lty-gy-crm, s
sb vit lstr, sl calc

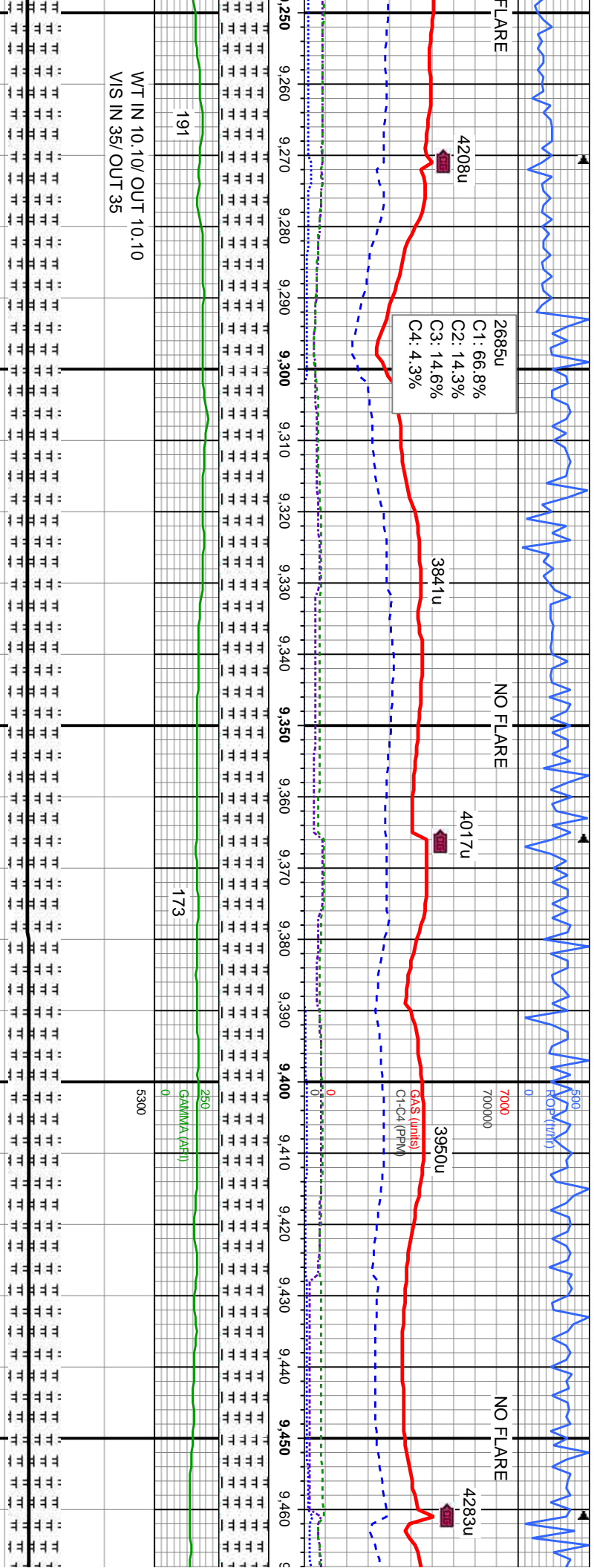












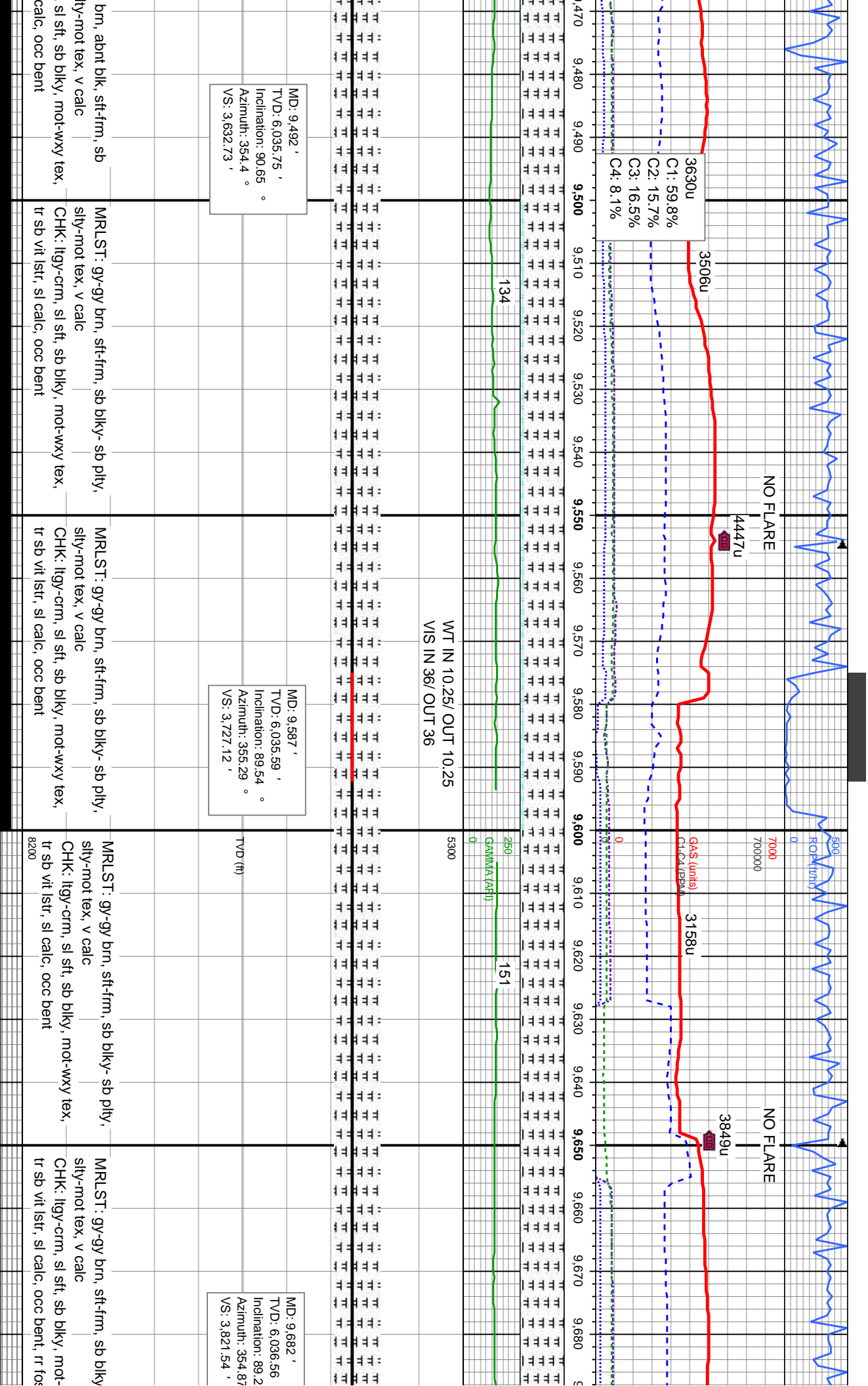
2685u
C1: 66.8%
C2: 14.3%
C3: 14.6%
C4: 4.3%

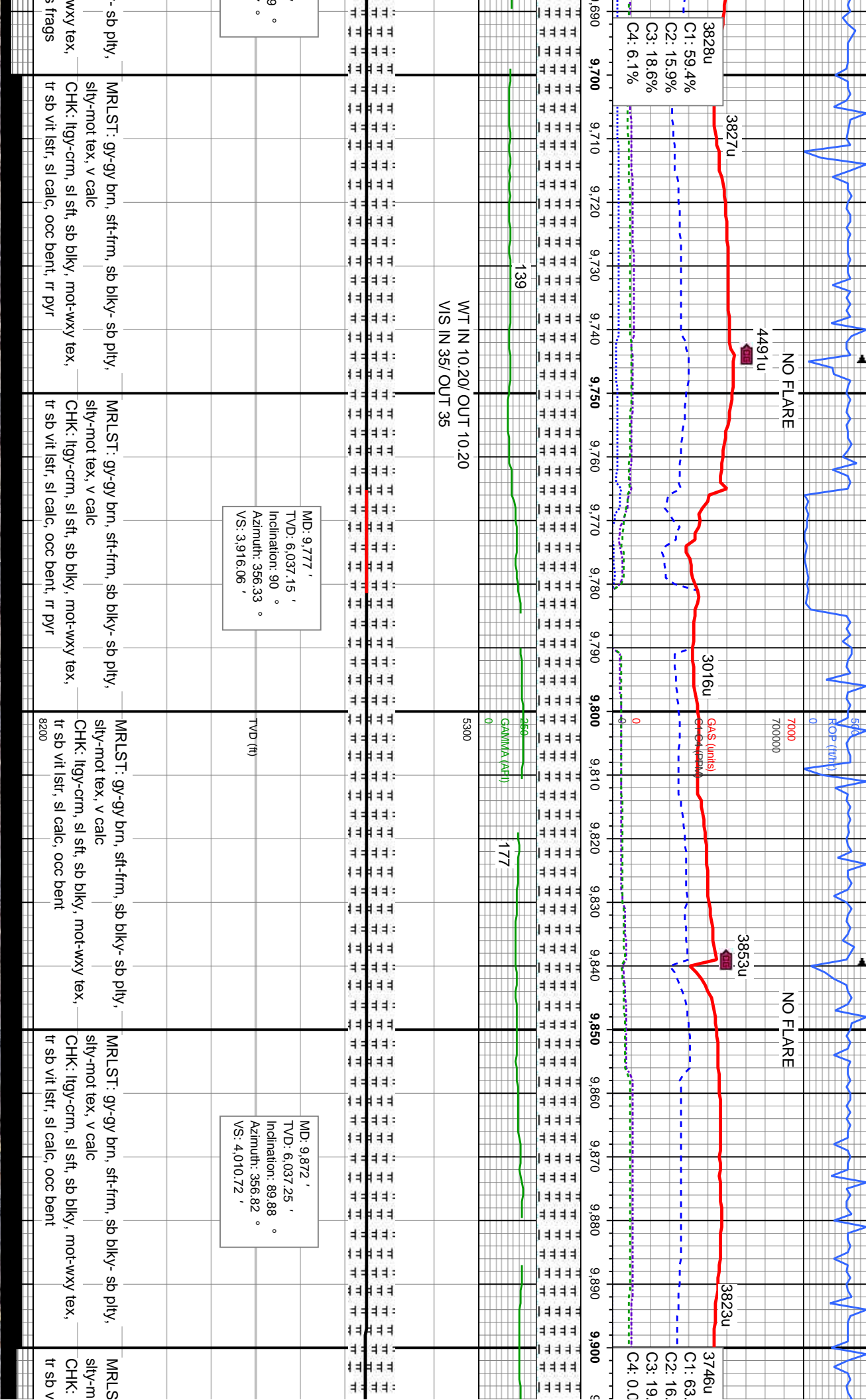
MD: 9,303 '
TVD: 6,039.26 '
Inclination: 91.88 °
Azimuth: 356.25 °
VS: 3,444.8 '

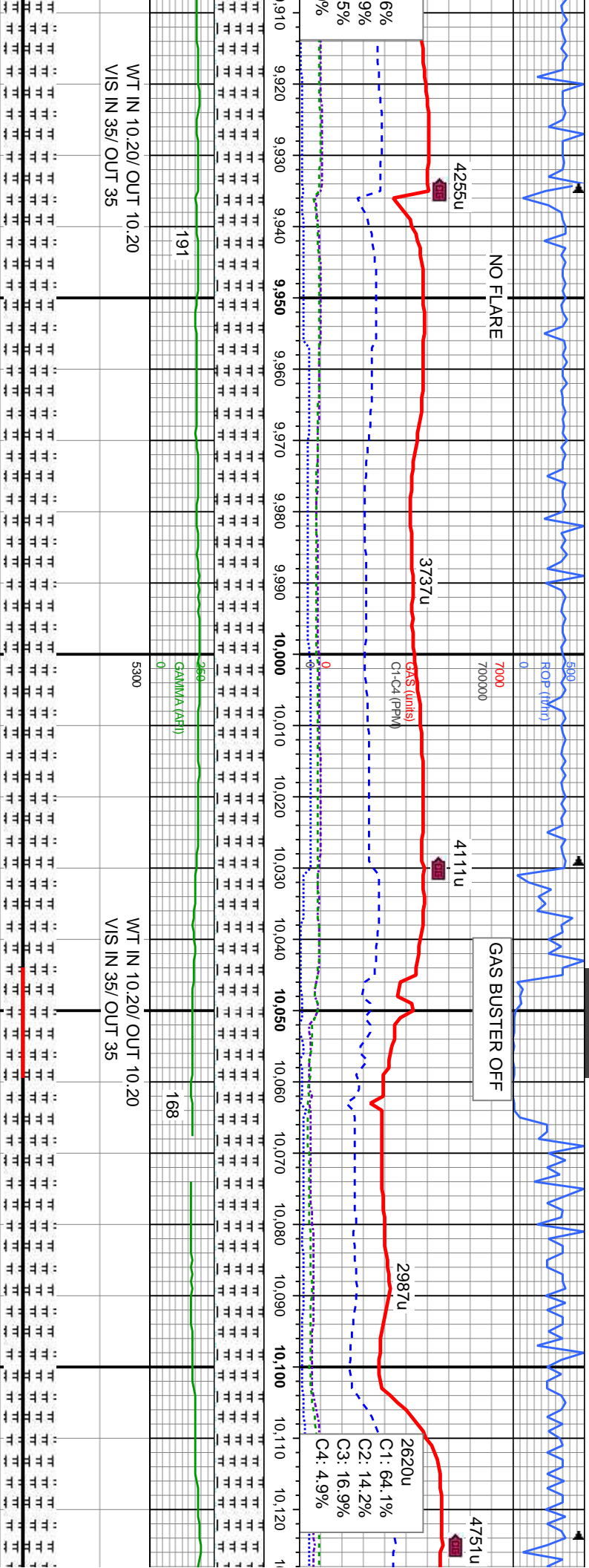
MD: 9,398 '
TVD: 6,036.98 '
Inclination: 90.86 °
Azimuth: 355.45 °
VS: 3,539.33 '

WT IN 10.10 OUT 10.10 VIS IN 35/ OUT 35	MRLST: gy-gy brn, abnt blk, sft-mod frm, sb blk-y- sb ply, sily-mot tex, v calc CHK: llyg-crm, sl sft - mod frm, sb blk-y, mot-wxy tex, tr sb vit lstr, sl calc, abnt bent	MRLST: gy-gy brn, abnt blk, sft-mod frm, sb blk-y- sb ply, sily-mot tex, v calc CHK: llyg-crm, sl sft - mod frm, sb blk-y, mot-wxy tex, tr sb vit lstr, sl calc, abnt bent	MRLST: gy-gy brn, abnt blk, sft-mod frm, sb blk-y- sb ply, sily-mot tex, v calc CHK: llyg-crm, sl sft - mod frm, sb blk-y, mot-wxy tex, tr sb vit lstr, sl calc, occ bent	MRLST: gy-gy brn, abnt blk, sft-firm, sb blk-y- sb ply, sily-mot tex, v calc CHK: llyg-crm, sl sft, sb blk-y, mot-wxy tex, tr sb vit lstr, sl calc, occ bent	MRLST: gy-gy blk-y- sb ply, s CHK: llyg-crm tr sb vit lstr, sl
--------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------









TT: gy-gy brn, sft-firm, sb blk-y- sb plty,
not tex, v calc
itly-gy-crm, sl sft, sb blk-y, mot-wxy tex,
it lsr, sl calc, occ bent, rr pyr

MRST: gy-gy brn, sft-frm, sb blk-y-sb ply, sfty-mot tex, v calc, occ bent

MRST: gy-gy brn, sft-fm, sb blyk- sb ply,
sfty-mot tex, v calc
CHK: lly-crm, sl sft, sb blyk, mot-wxy tex,
tr sb vit lstr, sl calc, occ bent, rr pyr

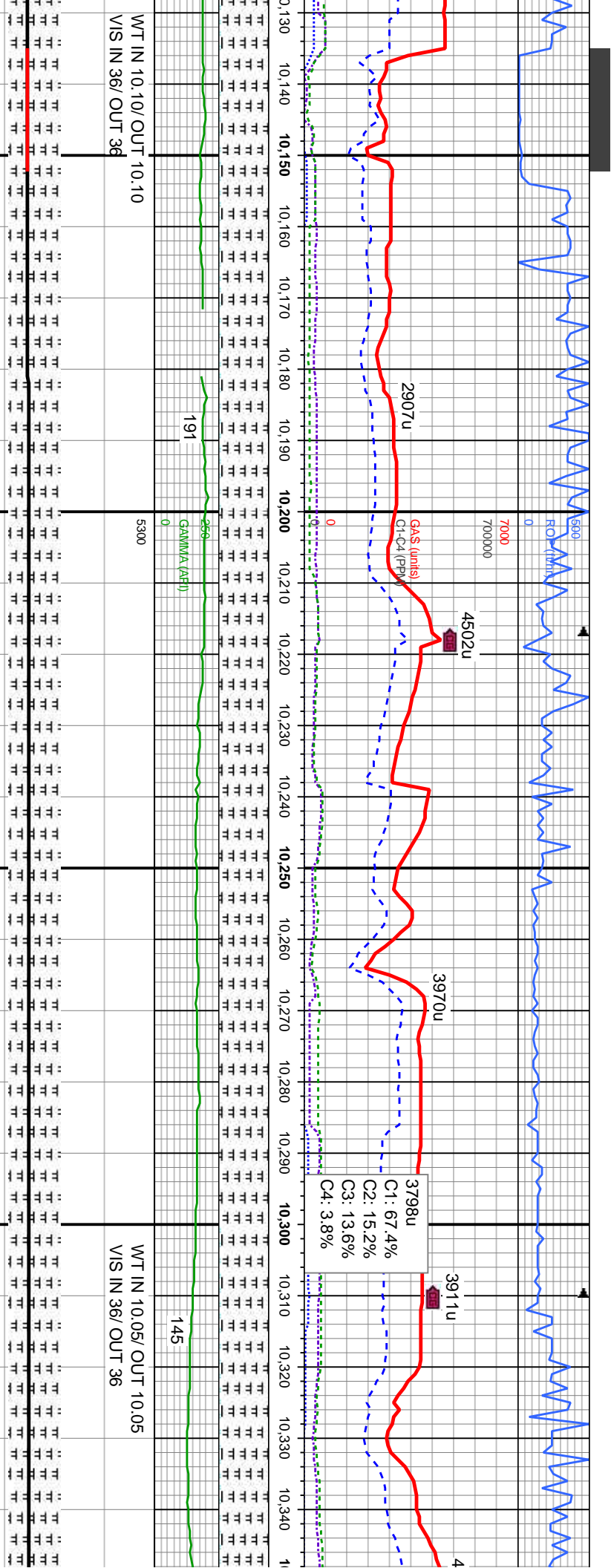
MR.LST: gy-gy brn, stf-firm, sb blkyy-sb plty
sily-mot tex, v calc
CHK: Itly-crm, sl sft, sb blkly, mot-wxy tex,
tr sb vit lst, sl calc, occ bent, rr pyr

MRLST: gy-gy brn, sft-fr
silty-mot tex, v calc
CHK: ltgy-crm, sl sft, sb
tr sb vit lstr, sl calc, occ k

MD: 9,966 '
TVD: 6,037.9 '
Inclination: 89.32 °
Azimuth: 355.96 °
VS: 4,104.37 '

TVD (ft)

MD: 10,061 '
TVD: 6,038.82 '
Inclination: 89.57 '
Azimuth: 357.06 °
VS: 4,199.02 '



WT IN 10.10/ OUT 10.10
VIS IN 36/ OUT 36

WT IN 10.05/ OUT 10.05
VIS IN 36/ OUT 36

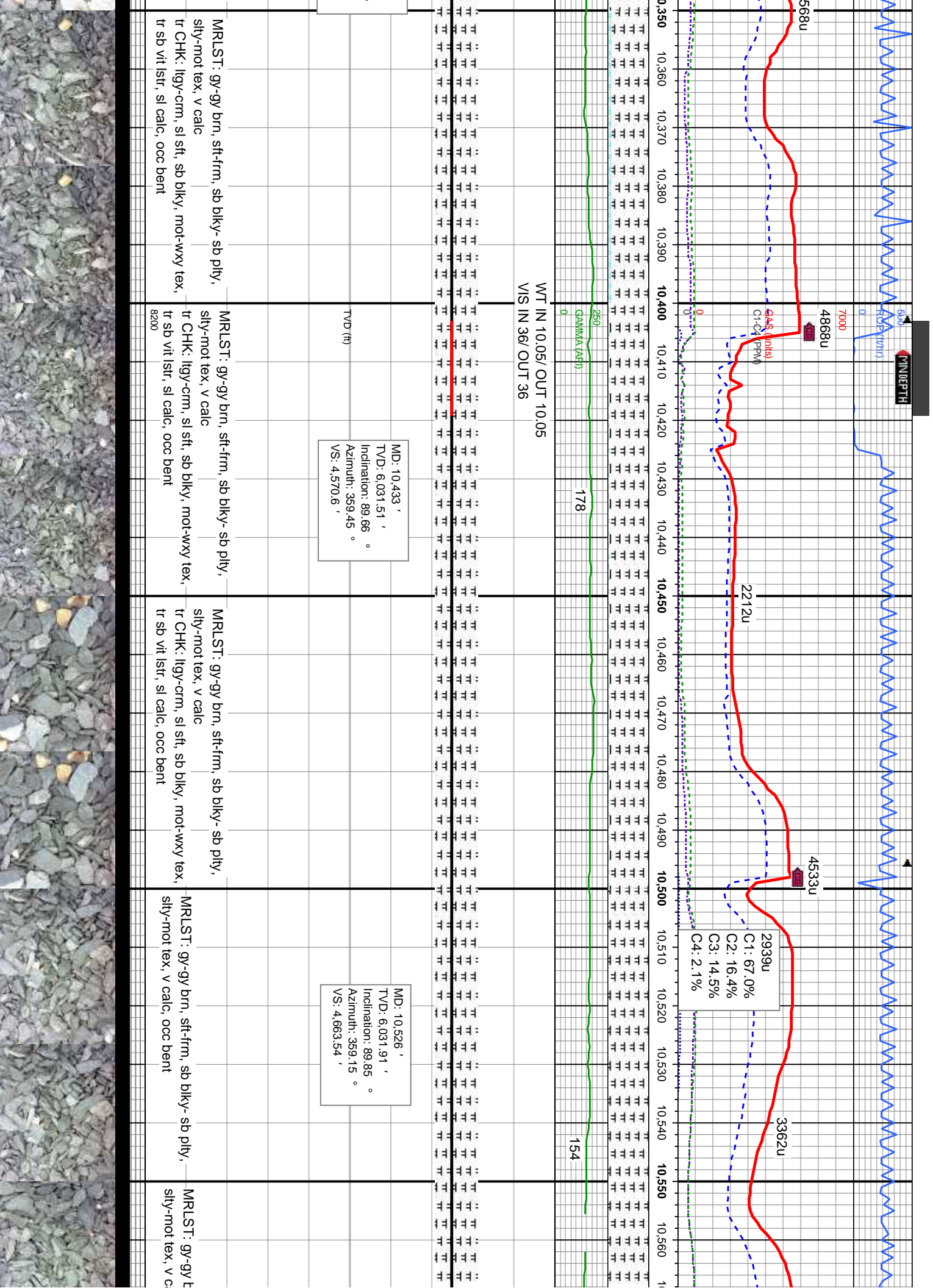
MD: 10,154 '
TVD: 6,038.13 '
Inclination: 91.29 °
Azimuth: 359.41 °
VS: 4,291.87 '

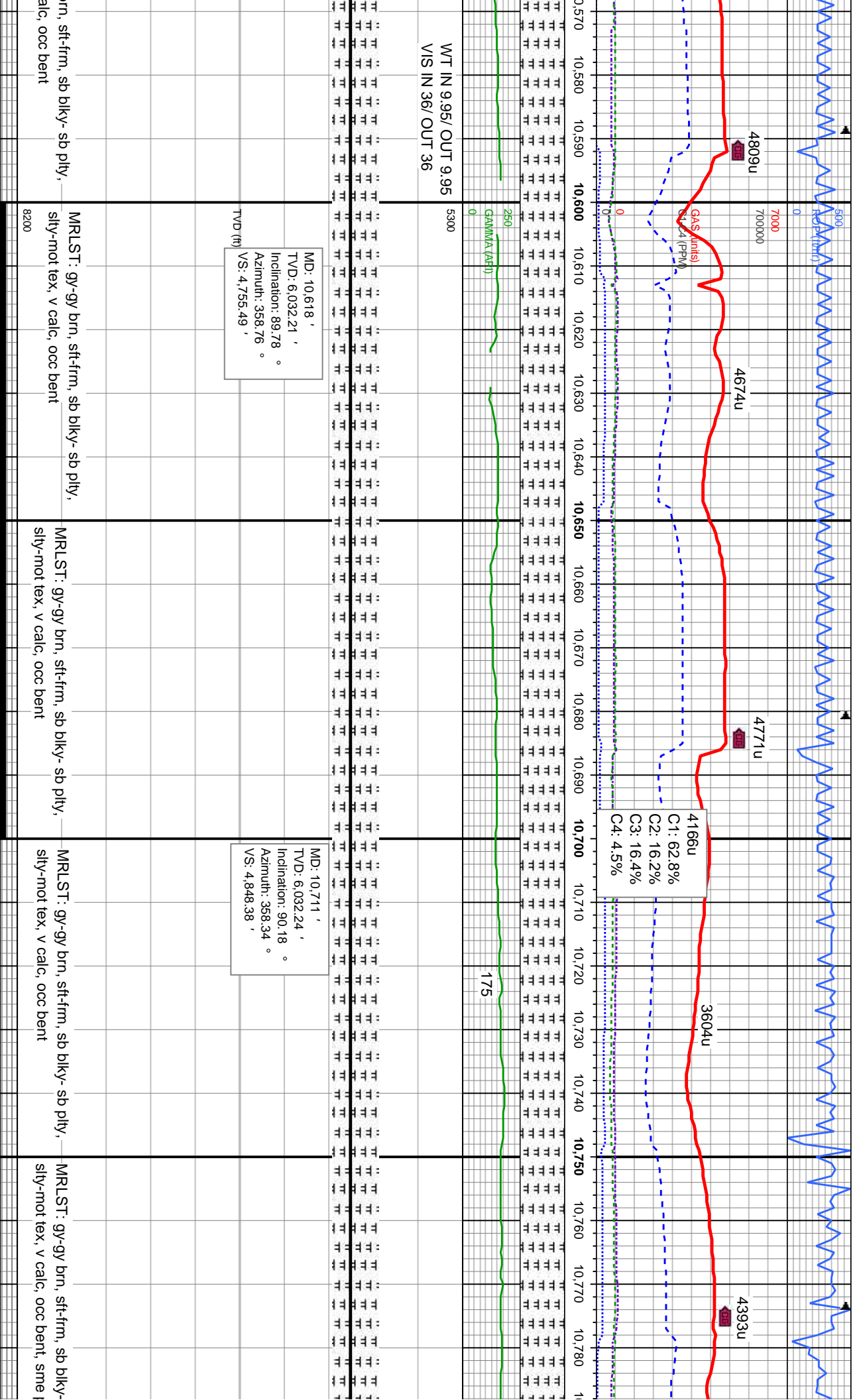
MD: 10,247 '
TVD: 6,035.76 '
Inclination: 91.63 °
Azimuth: 359.58 °
VS: 4,384.79 '

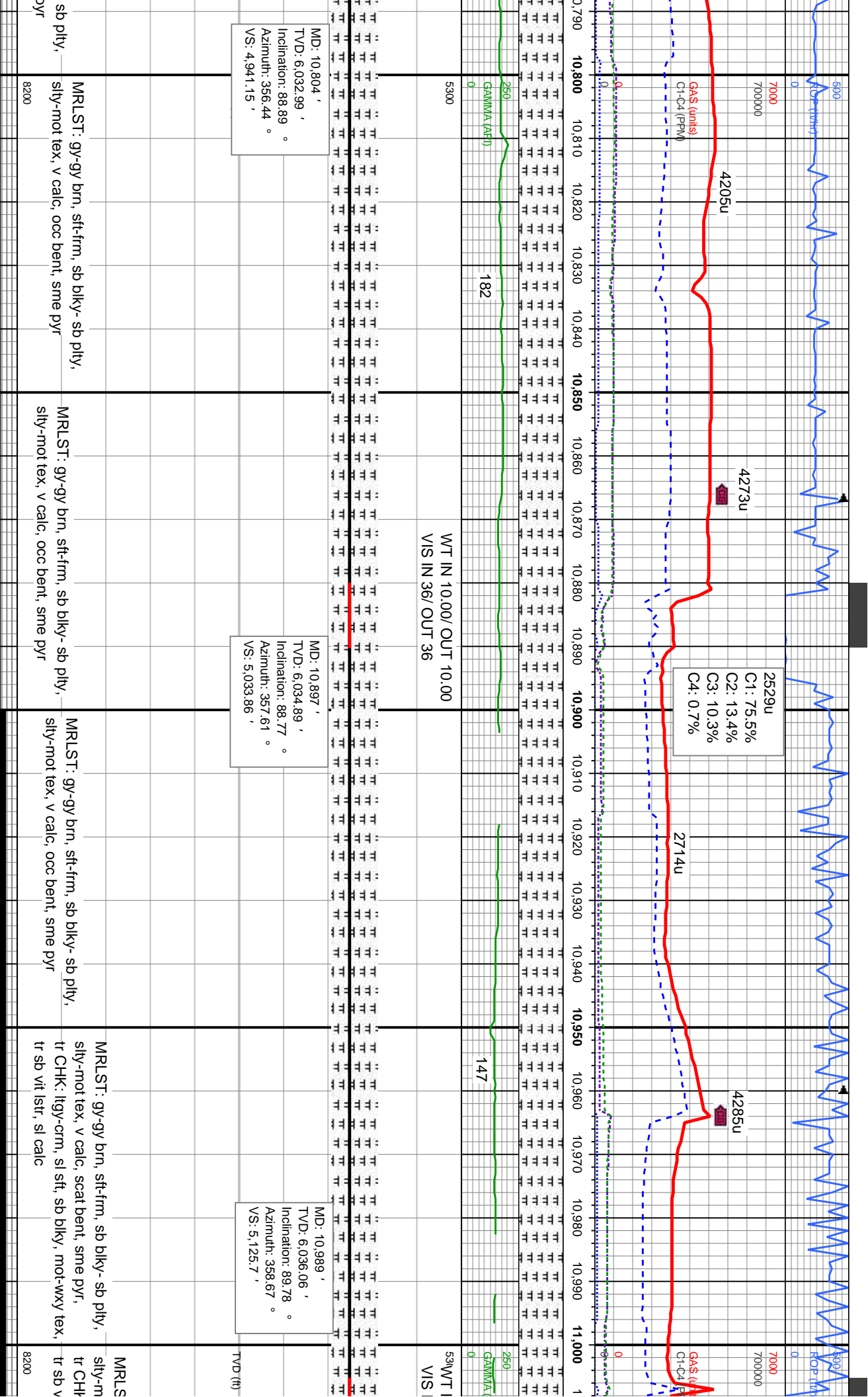
MD: 10,340 '
TVD: 6,032.83 '
Inclination: 91.97 °
Azimuth: 358.94 °
VS: 4,477.68 '

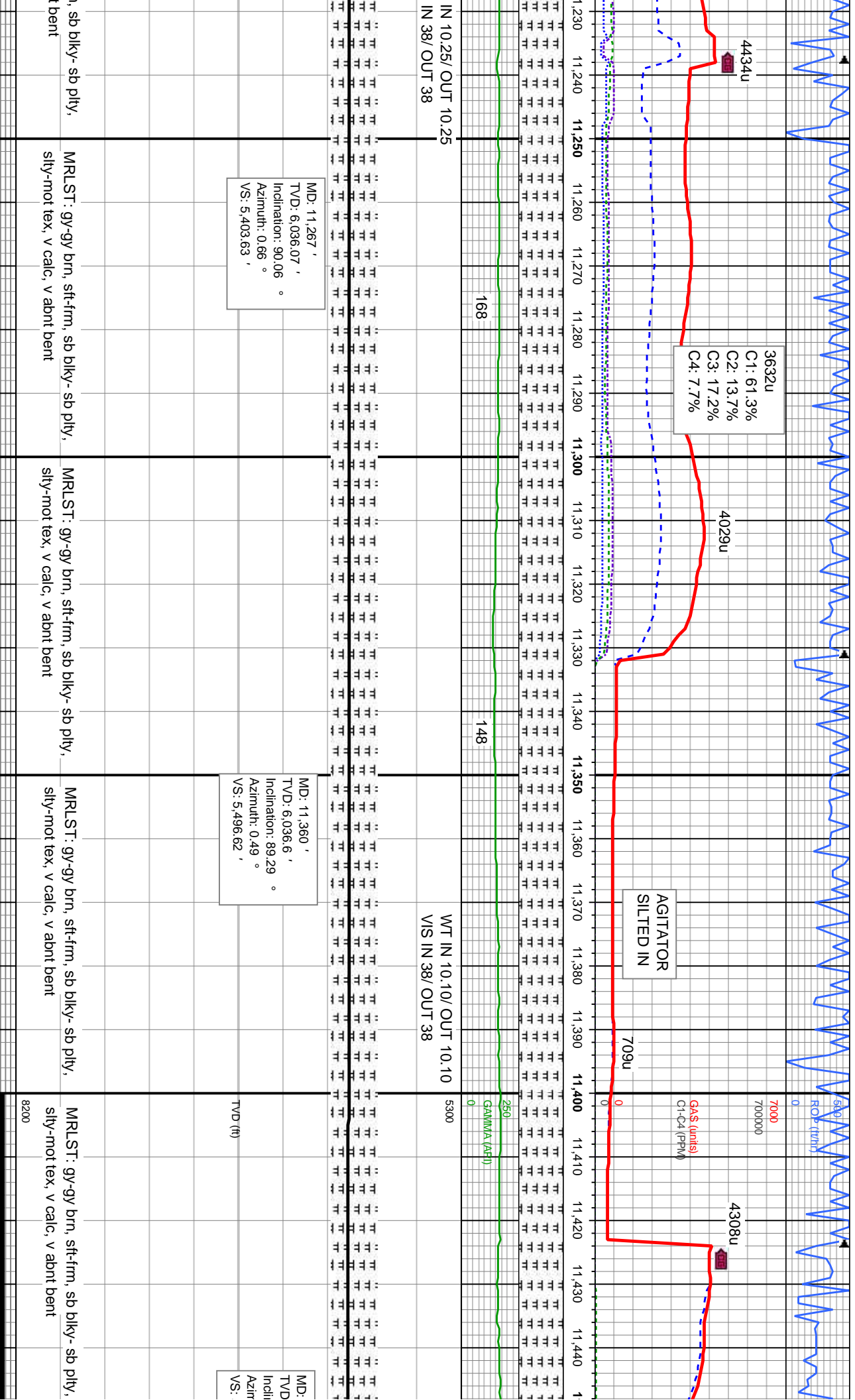
n, sb blkly- sb plty,	MRLST: gy-gy brn, sft-frn, sb blkly- sb plty,	n, sb blkly- sb plty,	MRLST: gy-gy brn, sft-frn, sb blkly- sb plty,	n, sb blkly- sb plty,	MRLST: gy-gy brn, sft-frn, sb blkly- sb plty,
blkly, mot-wxy tex,	CHK: ltgy-crm, sl sft, sb blkly, mot-wxy tex, tr	blkly, mot-wxy tex,	CHK: ltgy-crm, sl sft, sb blkly, mot-wxy tex, tr	blkly, mot-wxy tex,	CHK: ltgy-crm, sl sft, sb blkly, mot-wxy
bent	sb vit lstf, sl calc, occ bent	8200	sb vit lstf, sl calc, occ bent, tr pyr	sb vit lstf, sl calc, occ bent	tr CHK: ltgy-crm, sl sft, sb blkly, mot-wxy tex, tr sb vit lstf, sl calc, occ bent, tr pyr

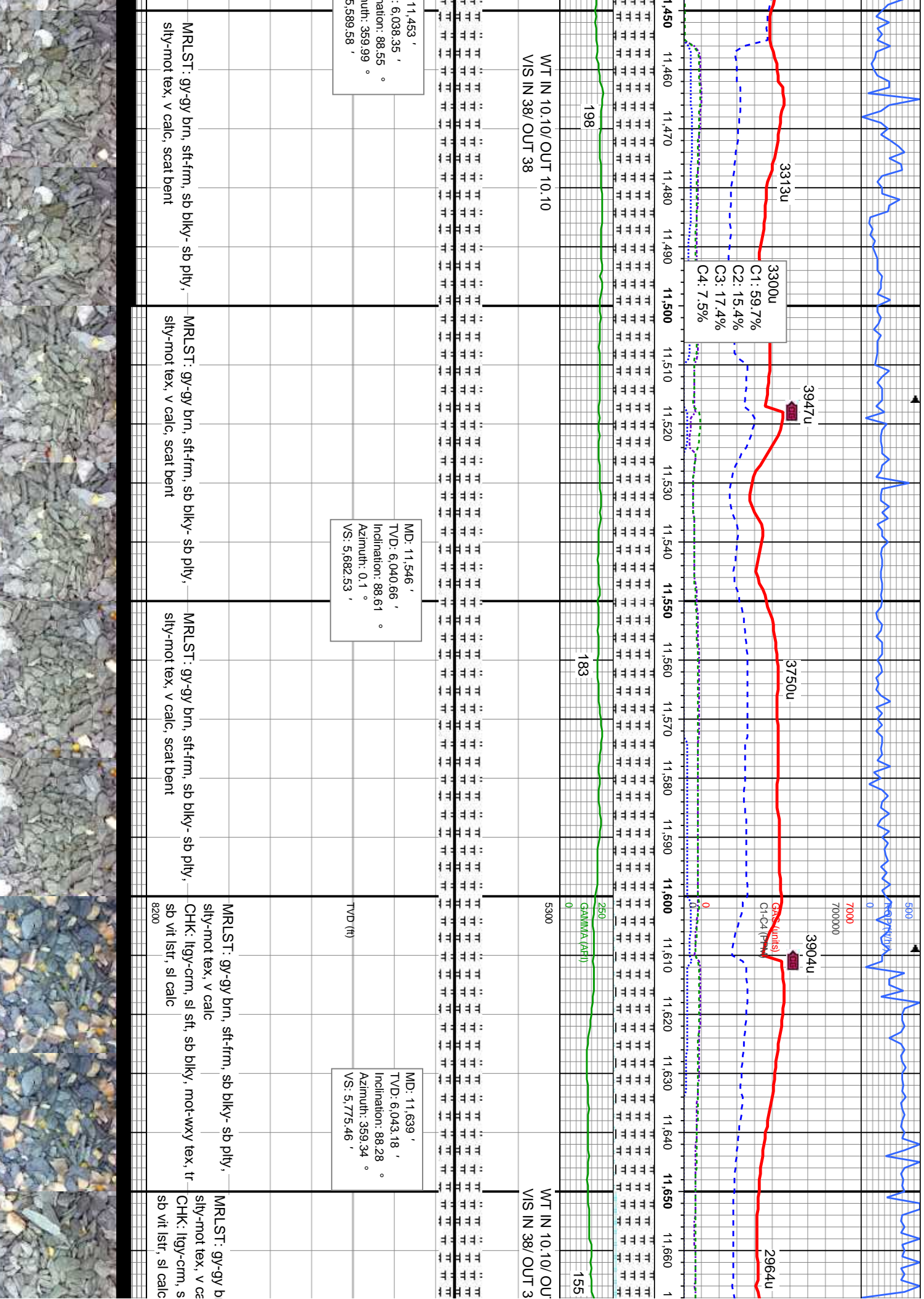


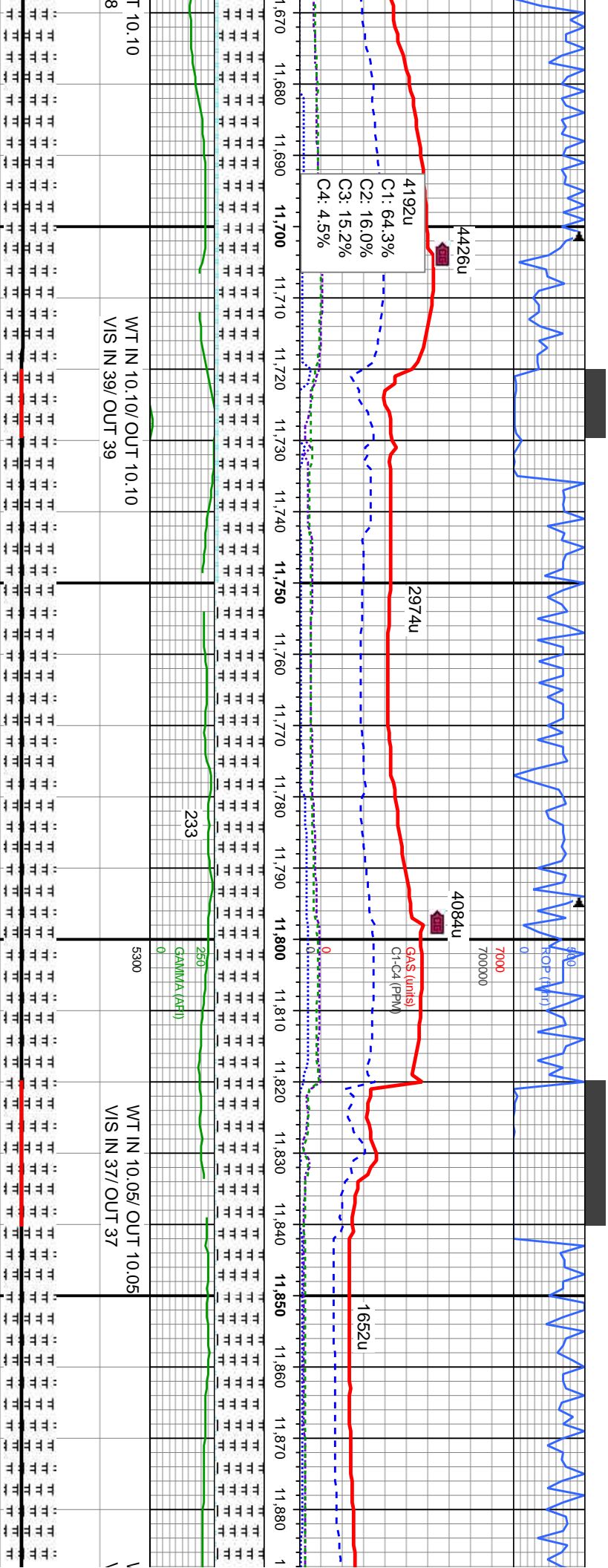


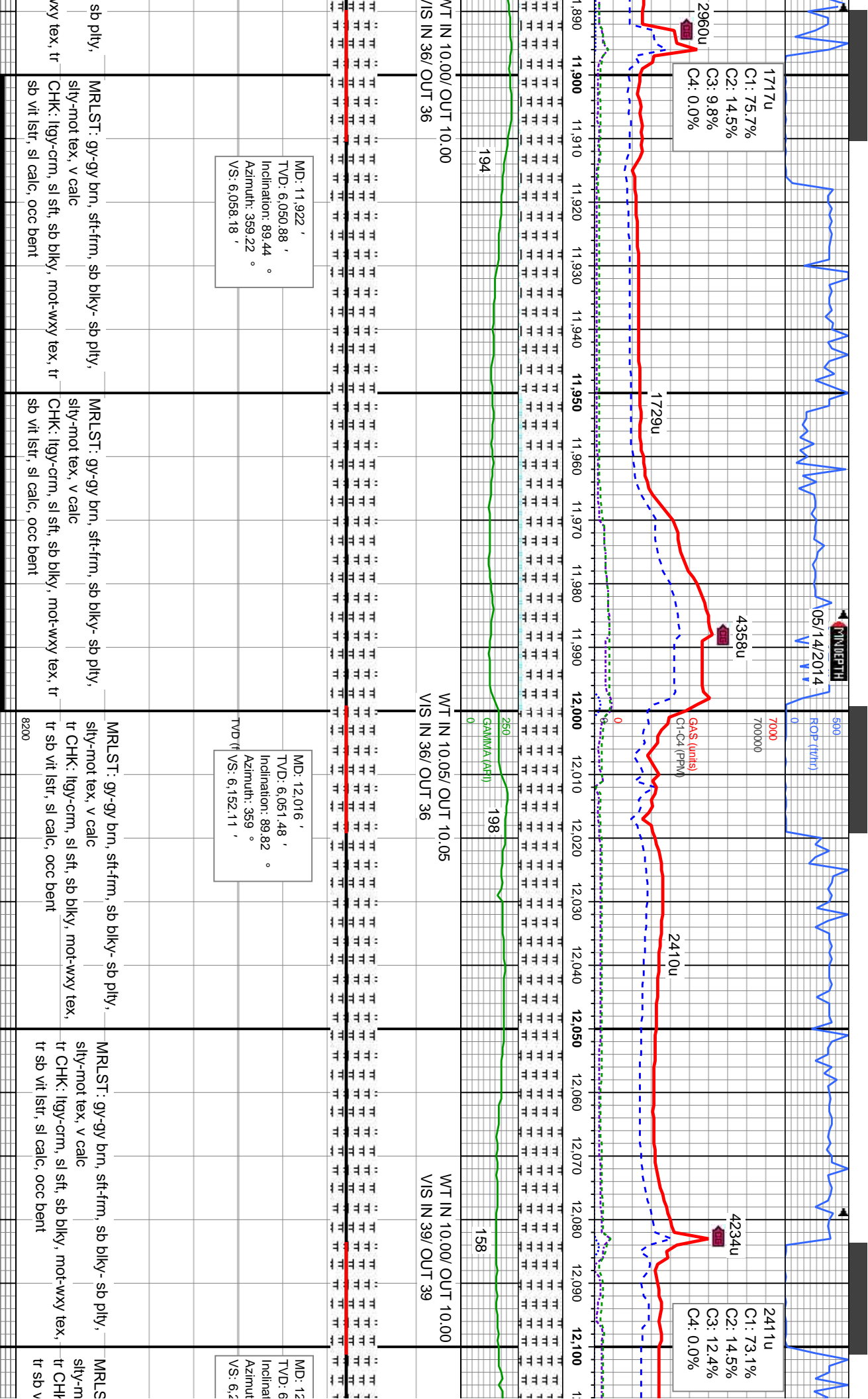


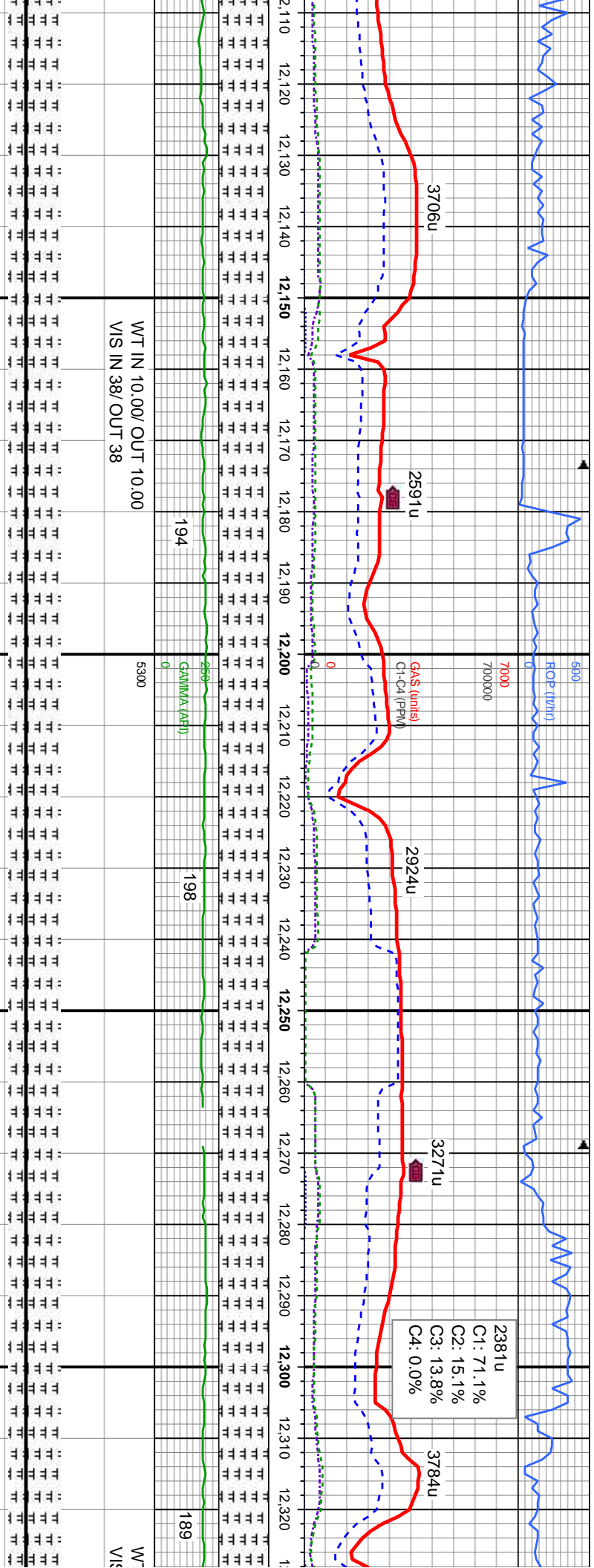






[illegible]





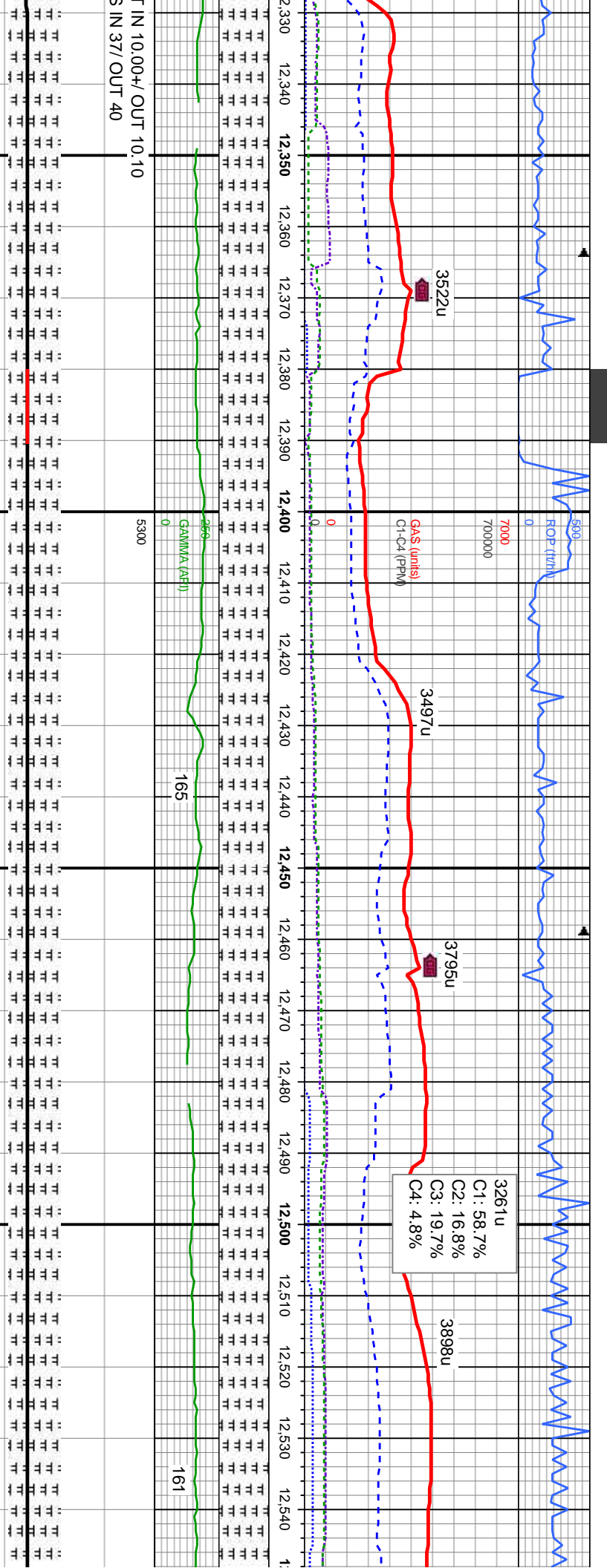
MD: 12,111 '
TVD: 6,050.97 '
Inclination: 90.8 °
Azimuth: 359.35 °
VS: 6,47.03 '

MD: 12,206 '
TVD: 6,049.44 '
Inclination: 91.05 °
Azimuth: 359.43 °
VS: 6,341.97 '

MD: 12,301 '
TVD: 6,046.52 '
Inclination: 92.47 °
Azimuth: 0.08 °
VS: 6,436.88 '

MRLST: gy-gy brn, sft-firm, sb blkly- sb ply, silty-mot tex, v calc
MRLST: gy-gy brn, sft-firm, sb blkly- sb ply, silty-mot tex, v calc
MRLST: gy-gy brn, sft-firm, sb blkly- sb ply, silty-mot tex, v calc
MRLST: gy-gy brn, sft-firm, sb blkly- sb ply, silty-mot tex, v calc





MD: 12,396 '
TVD: 6,043.86 '
Inclination: 90.74 °
Azimuth: 359.45 °
VS: 6,531.8 '

3261u
C1: 58.7%
C2: 16.8%
C3: 19.7%
C4: 4.8%

MD: 12,491 '
TVD: 6,043.29 '
Inclination: 89.94 °
Azimuth: 359.36 °
VS: 6,626.75 '

12,330 12,340 12,350 12,360 12,370 12,380 12,390 12,400 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

IN 10.00+ OUT 10.10
S IN 37/ OUT 40

ROP (ft/hr)
7000
7000000

GAS (units)
C1-C4 (PPM)

3522u

3497u

3795u

3261u

3898u

MD: 12,396 '
TVD: 6,043.86 '
Inclination: 90.74 °
Azimuth: 359.45 °
VS: 6,531.8 '

MD: 12,491 '
TVD: 6,043.29 '
Inclination: 89.94 °
Azimuth: 359.36 °
VS: 6,626.75 '

MRLST: gy-gy brn, sft-firm, sb blk-y- sb ply,
sily-mot tex, v calc

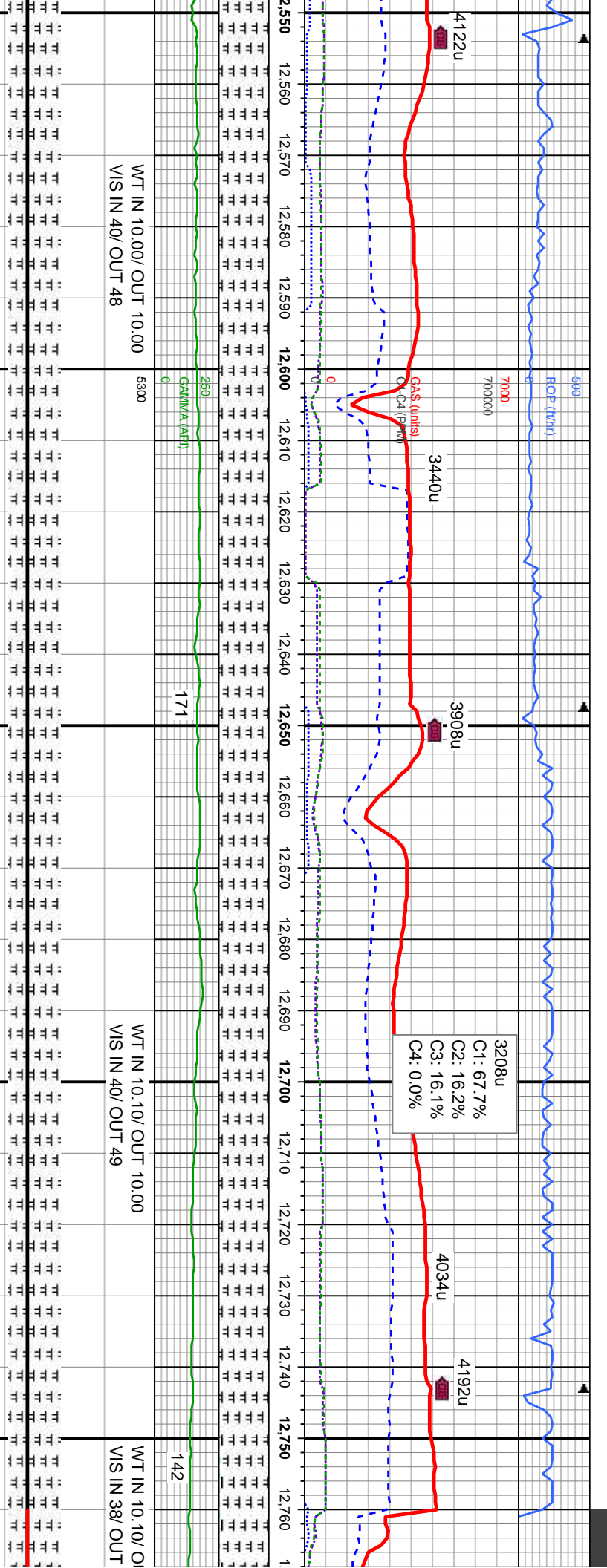
MRLST: gy-gy brn, sft-firm, sb blk-y- sb ply,
sily-mot tex, v calc

MRLST: gy-gy brn, sft-firm, sb blk-y- sb ply,
sily-mot tex, v calc, abnt bent

MRLST: gy-gy brn, sft-firm, sb blk-y- sb ply,
sily-mot tex, v calc, abnt bent

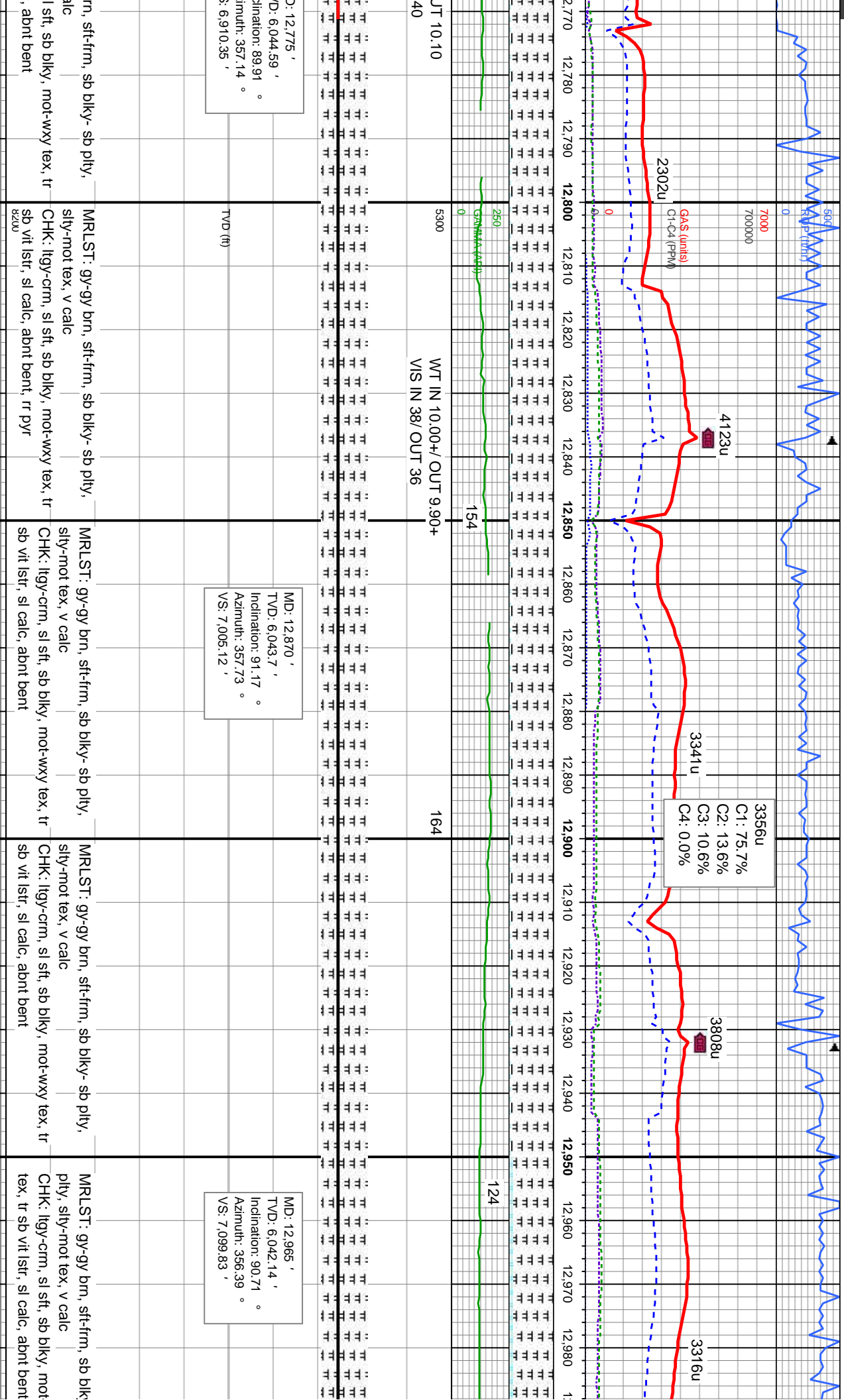
8200





WT IN 10.00/ OUT 10.00 VIS IN 40/ OUT 48	5300	WT IN 10.10/ OUT 10.00 VIS IN 40/ OUT 49	WT IN 10.10/ OUT 10.00 VIS IN 38/ OUT 40
MD: 12.585 ' TVD: 6,043.42 ' Inclination: 89.91 ° Azimuth: 358.93 ° VS: 6,720.67 '	TVD (ft)	MD: 12.680 ' TVD: 6,044 ' Inclination: 89.38 ° Azimuth: 358.07 ° VS: 6,815.55 '	MD: 12.680 ' TVD: 6,044 ' Inclination: 89.38 ° Azimuth: 358.07 ° VS: 6,815.55 '
MRLST: gy-gy brn, sft-firm, sb blk-y- sb ply, sily-mot tex, v calc, abnt bent	MRLST: gy-gy brn, sft-firm, sb blk-y- sb ply, sily-mot tex, v calc, abnt bent	MRLST: gy-gy brn, sft-firm, sb blk-y- sb ply, sily-mot tex, v calc, abnt bent	MRLST: gy-gy brn, sft-firm, sb blk-y- sb ply, sily-mot tex, v calc, abnt bent
tr CHK: lly-gy-crm, sl sft, sb blk-y, mot-wxy tex, tr sb vit lstr, sl calc	8200		sb vit lstr, sl calc



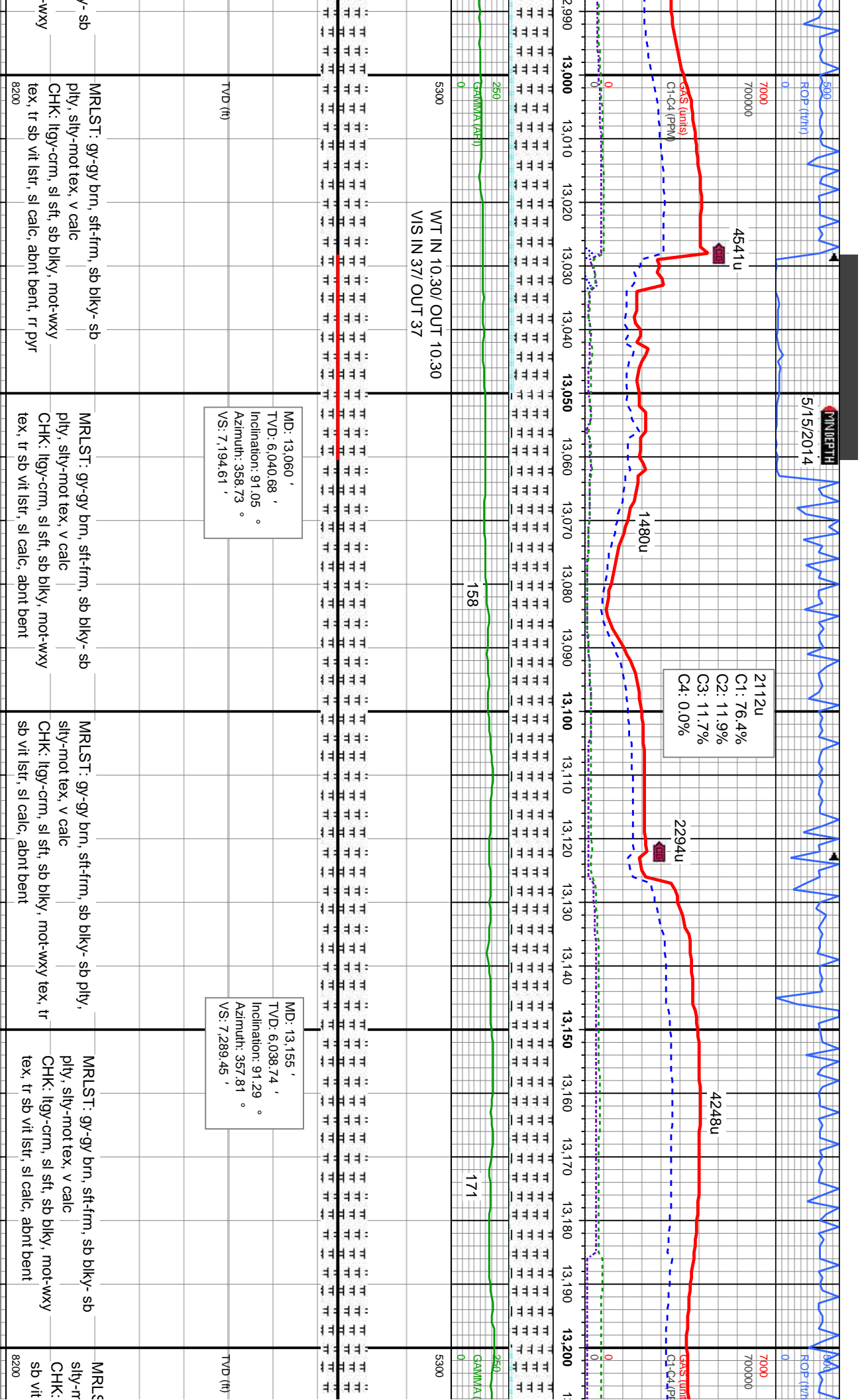


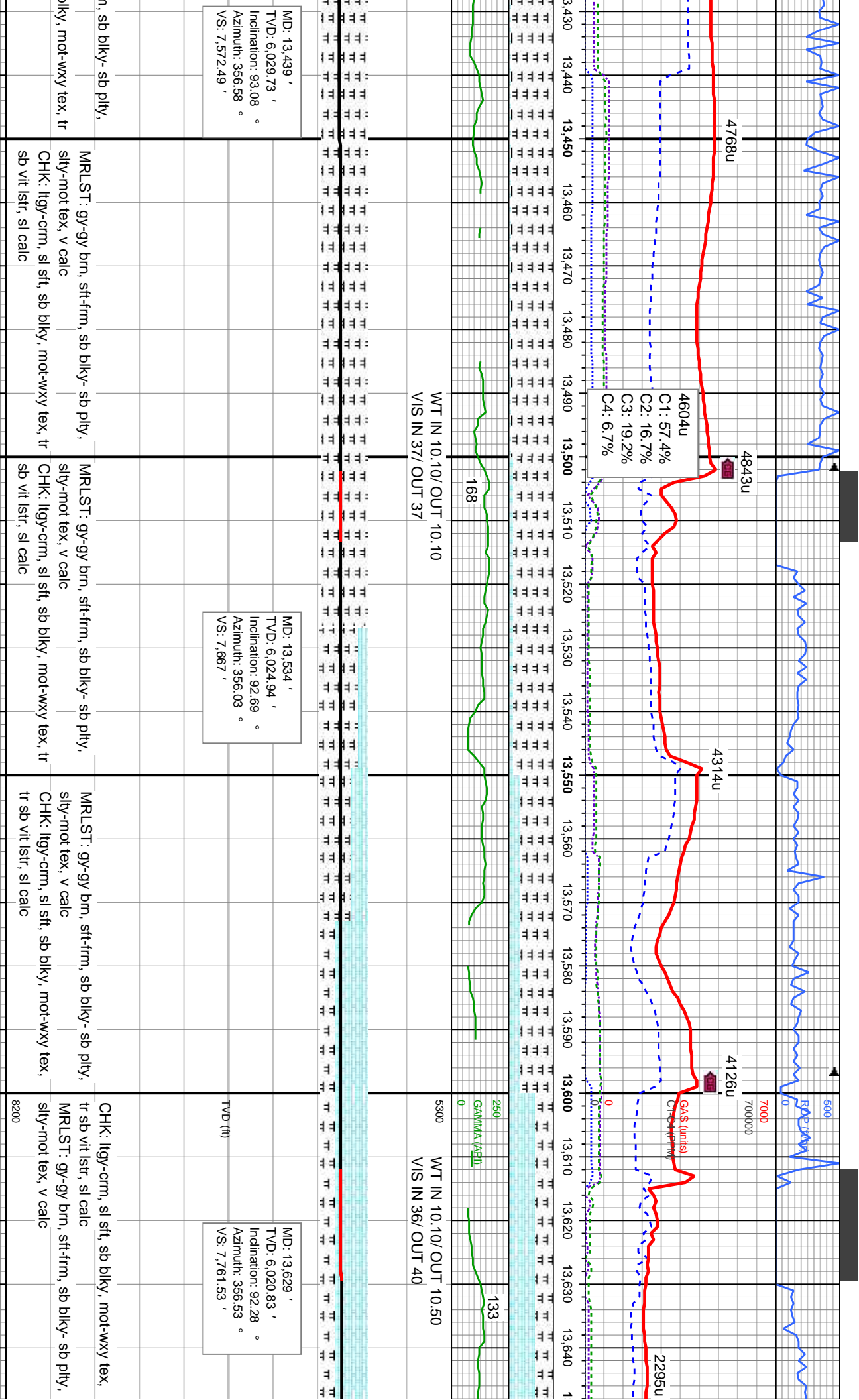
MD: 12,775 '
TVD: 6,044.59 '
Inclination: 89.91 °
Azimuth: 357.14 °
VS: 6,910.35 '

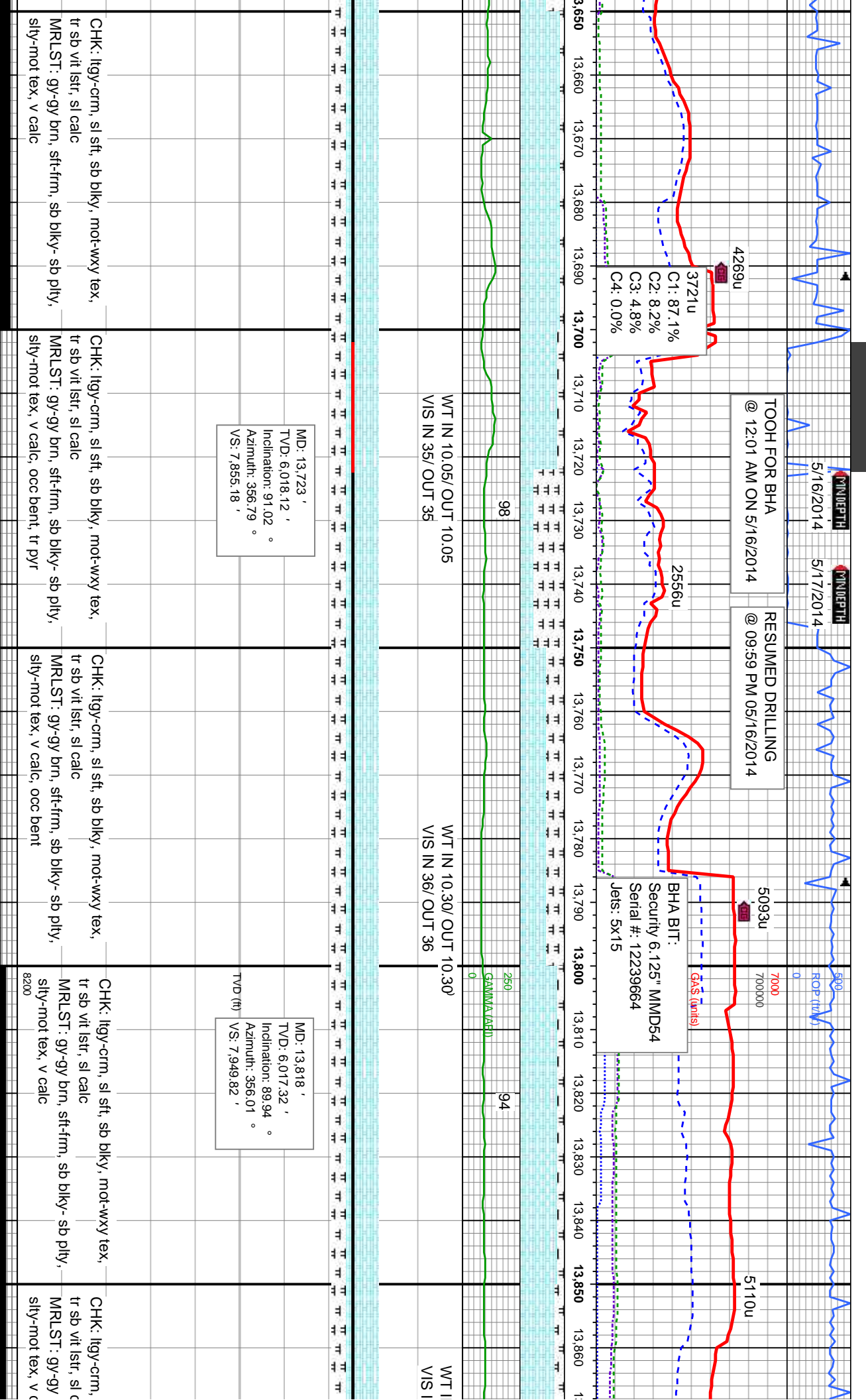
MD: 12,870 '
TVD: 6,043.7 '
Inclination: 91.17 °
Azimuth: 357.73 °
VS: 7,005.12 '

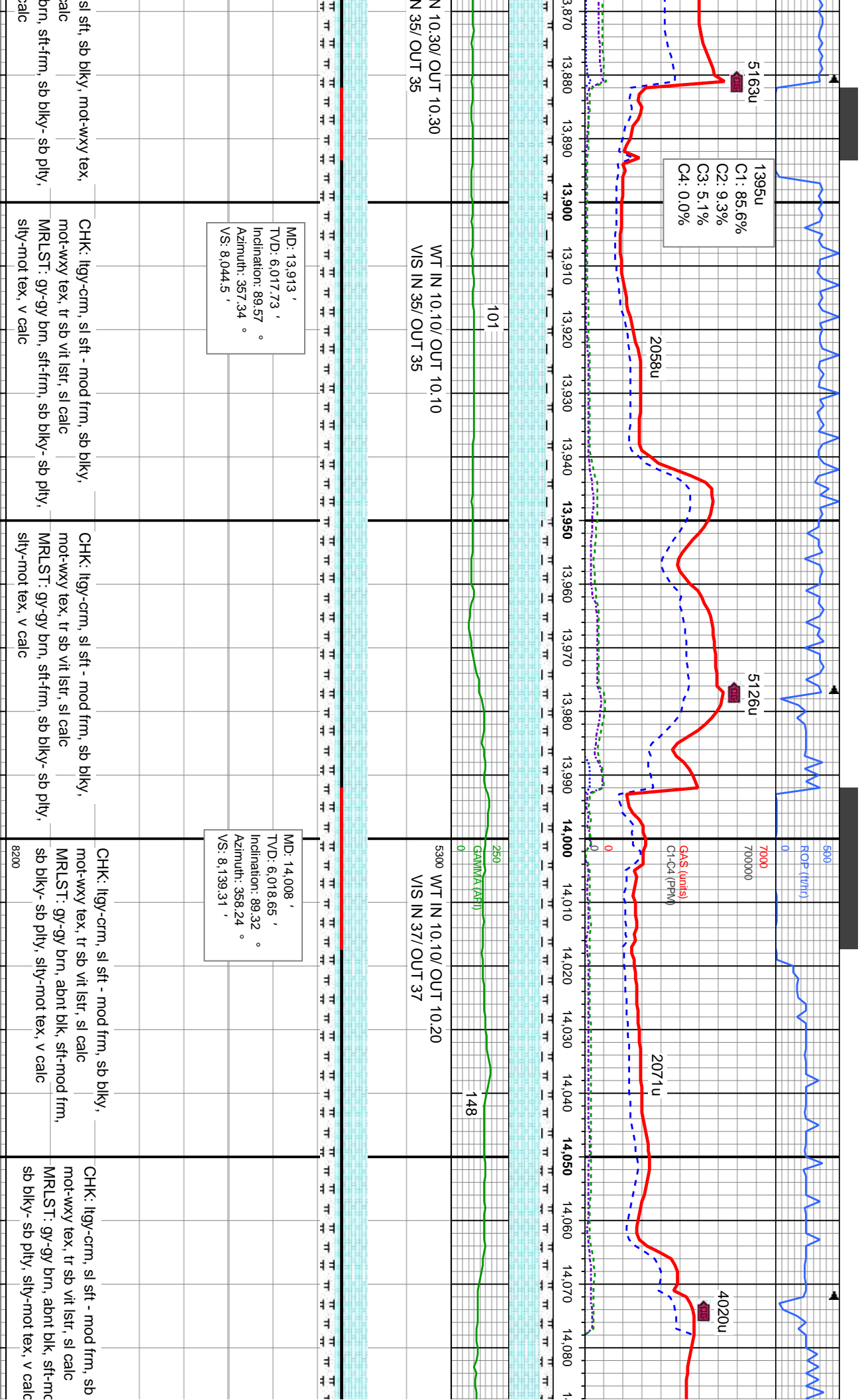
MD: 12,965 '
TVD: 6,042.14 '
Inclination: 90.71 °
Azimuth: 356.39 °
VS: 7,099.83 '





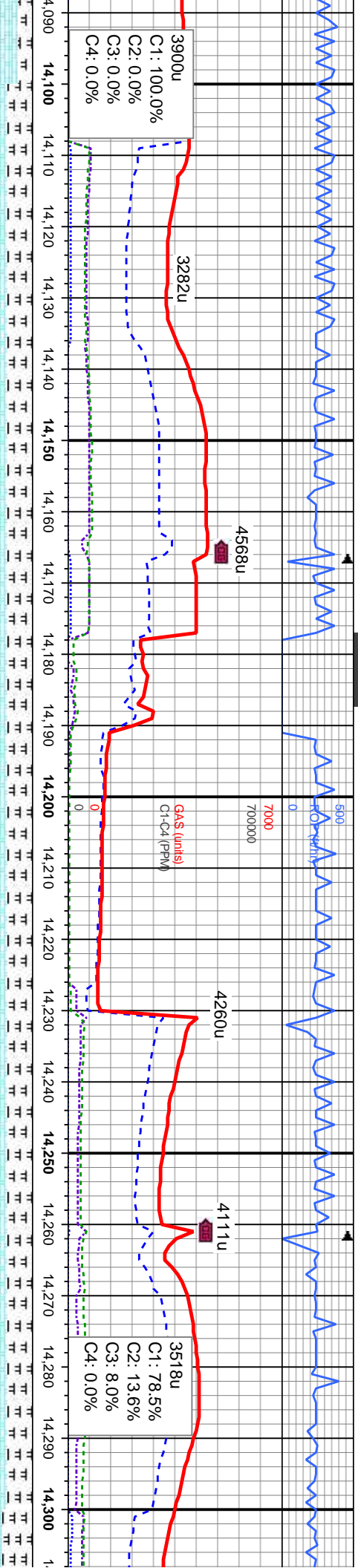






sl sft, sb blkly, mot-wxy tex, alc	CHK: ltgy-crm, sl sft - mod frm, sb blkly, mot-wxy tex, tr sb vit lstr, sl calc	CHK: ltgy-crm, sl sft - mod frm, sb blkly, mot-wxy tex, tr sb vit lstr, sl calc	CHK: ltgy-crm, sl sft - mod frm, sb blkly, mot-wxy tex, tr sb vit lstr, sl calc
brn, sft-frm, sb blkly- sb ply, alc	MRLST: gy-gy brn, sft-frm, sb blkly- sb ply, silty-mot tex, v calc	MRLST: gy-gy brn, sft-frm, sb blkly- sb ply, silty-mot tex, v calc	MRLST: gy-gy brn, sft-frm, sb blkly- sb ply, silty-mot tex, v calc





3900u
C1: 100.0%
C2: 0.0%
C3: 0.0%
C4: 0.0%

GAs (units)
C1-C4 (PPM)

3518u
C1: 78.5%
C2: 13.6%
C3: 8.0%
C4: 0.0%

MD: 14,103 '
TVD: 6,018.48 '
Inclination: 90.89 °
Azimuth: 359.34 °
VS: 8,234.21 '

MD: 14,198 '
TVD: 6,019.4 '
Inclination: 88 °
Azimuth: 358.06 °
VS: 8,329.09 '

MD: 14,292 '
TVD: 6,022.15 '
Inclination: 88.64 °
Azimuth: 357.38 °
VS: 8,422.86 '

CHK: lgy-crm, sl sft - mod frm, sb blk, mot-wxy tex, tr sb vit lstr, sl calc
MRLST: gy-gy brn, abnt blk, sft-mod frm, sb blk - sb ply, silty-mot tex, v calc

CHK: lgy-crm, sl sft, sb blk, mot-wxy tex, tr sb vit lstr, sl calc
MRLST: gy-gy brn, abnt blk, sft, sb blk - sb ply, silty-mot tex, v calc

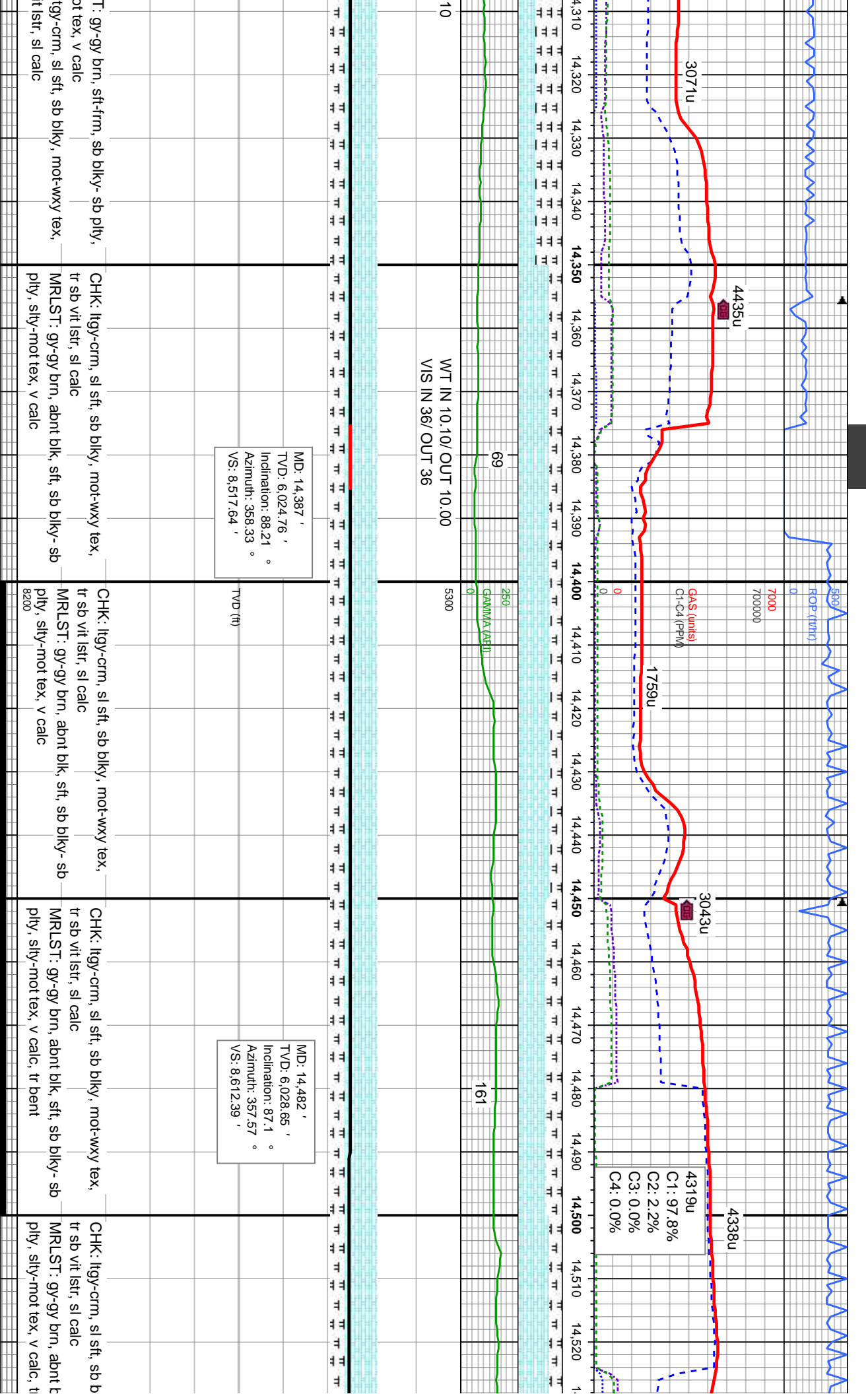
CHK: lgy-crm, sl sft, sb blk, mot-wxy tex, tr sb vit lstr, sl calc
MRLST: gy-gy brn, abnt blk, sft, sb blk - sb ply, silty-mot tex, v calc

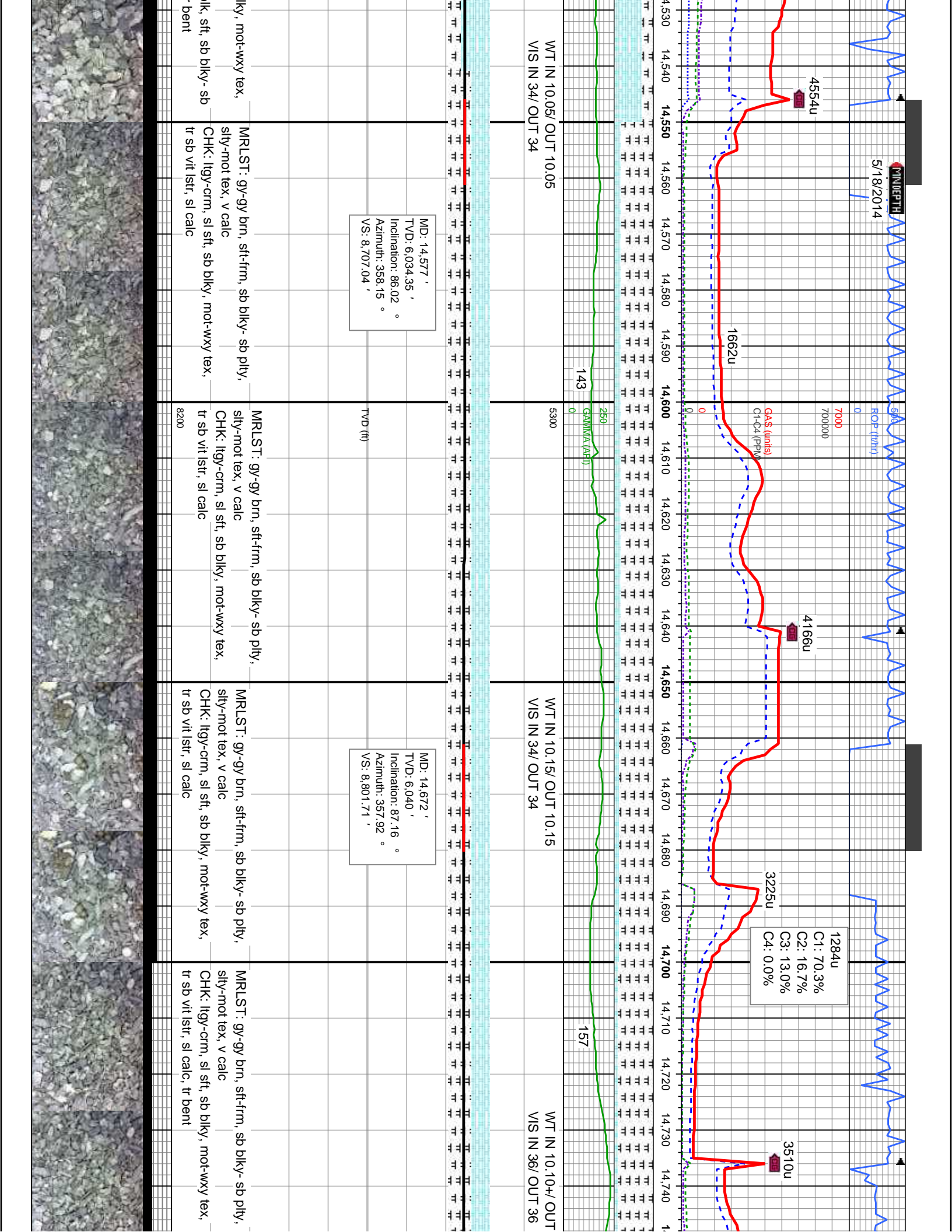
CHK: lgy-crm, sl sft, sb blk, mot-wxy tex, tr sb vit lstr, sl calc
MRLST: gy-gy brn, abnt blk, sft, sb blk - sb ply, silty-mot tex, v calc

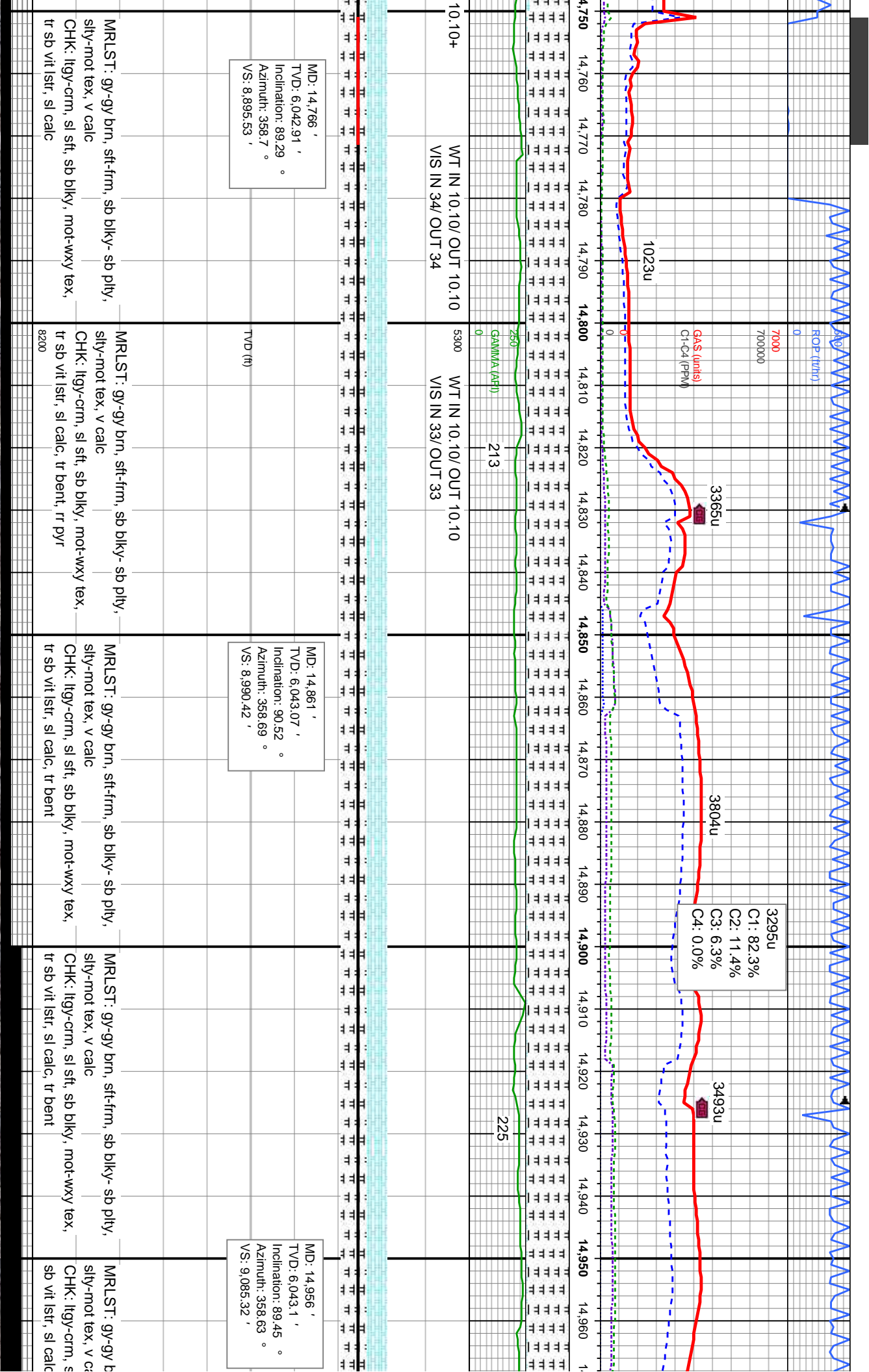
MRLS
silty-m
CHK:
tr sb v

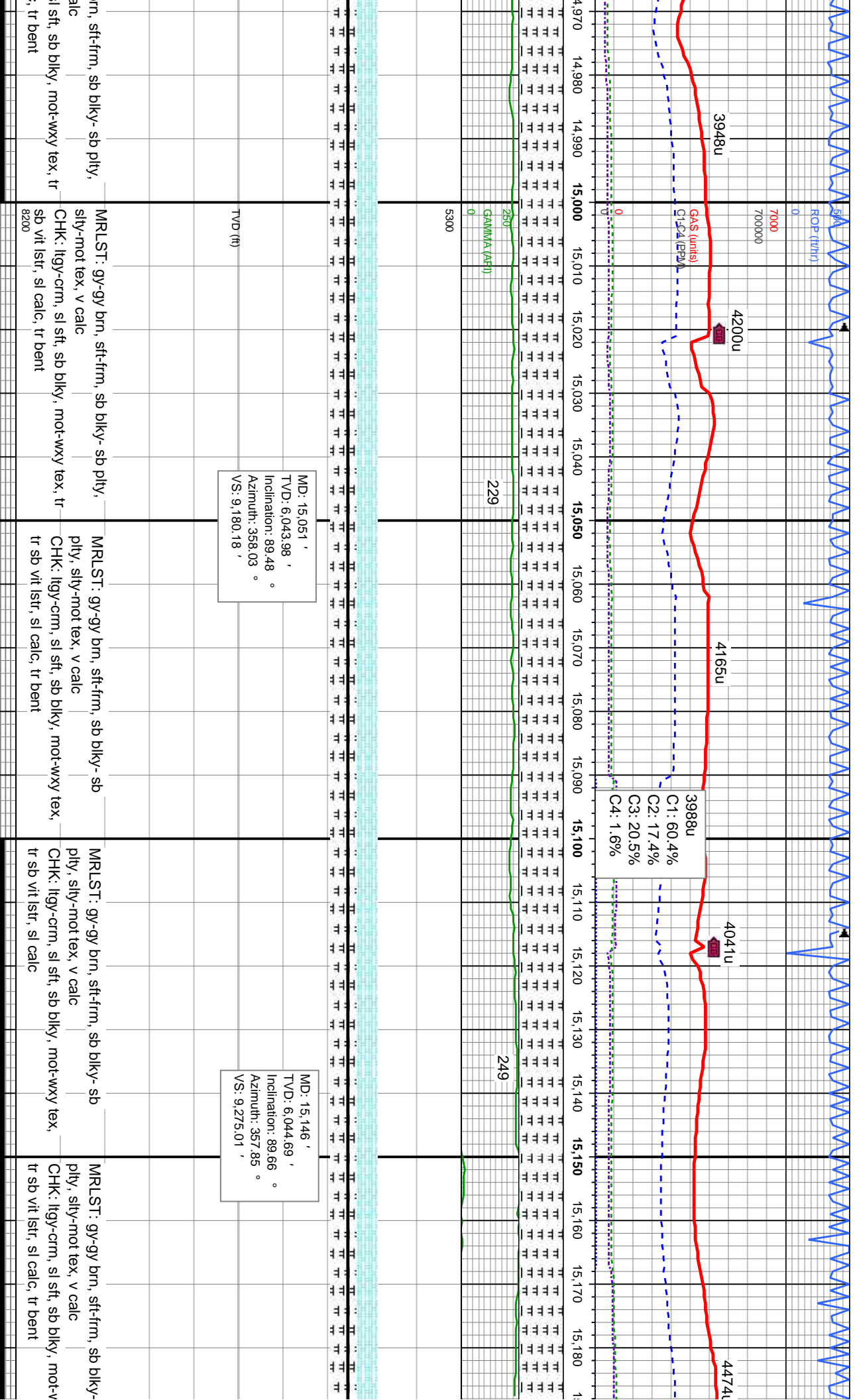
WT IN 10.10/ OUT 10.
VIS IN 36/ OUT 36

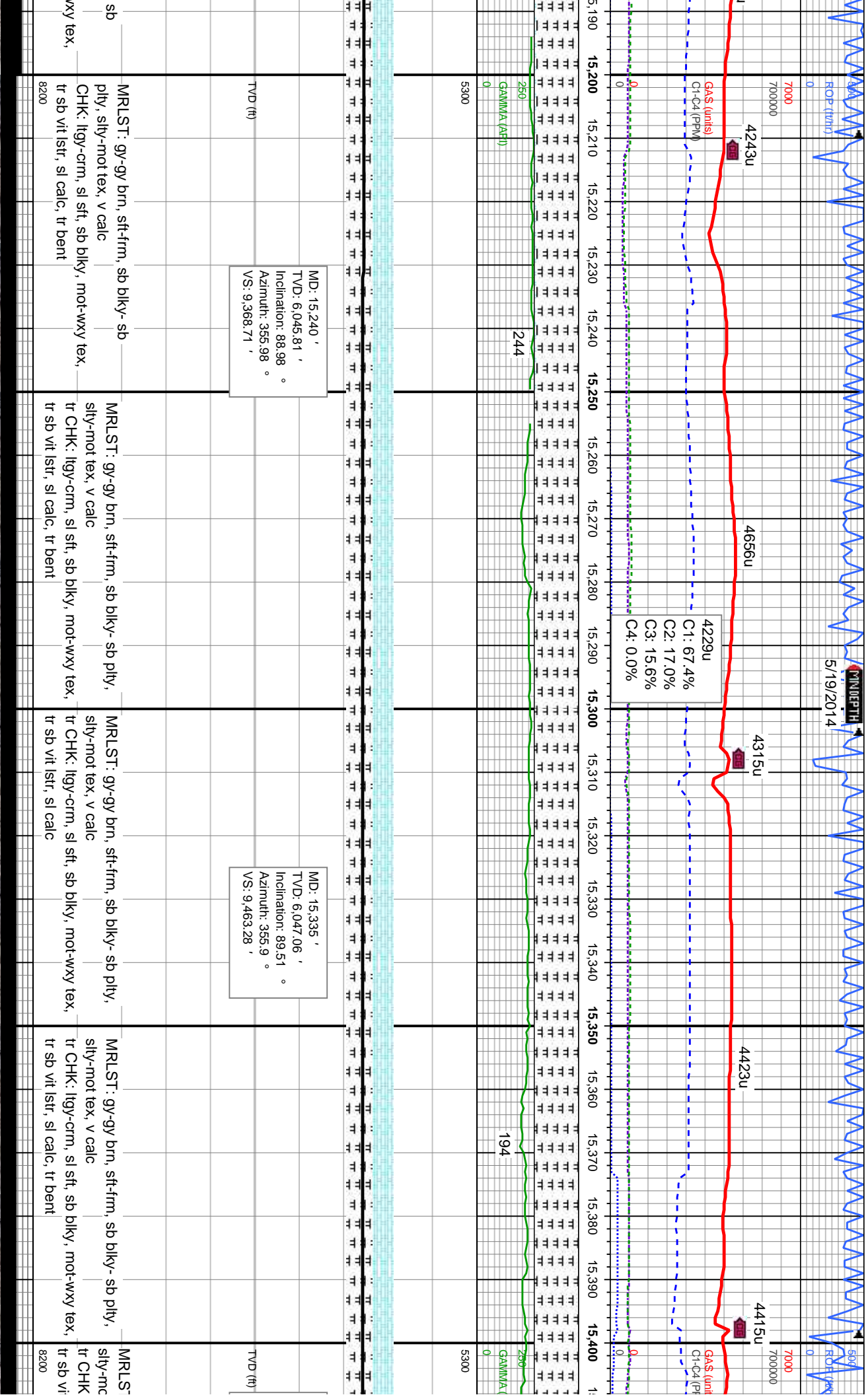






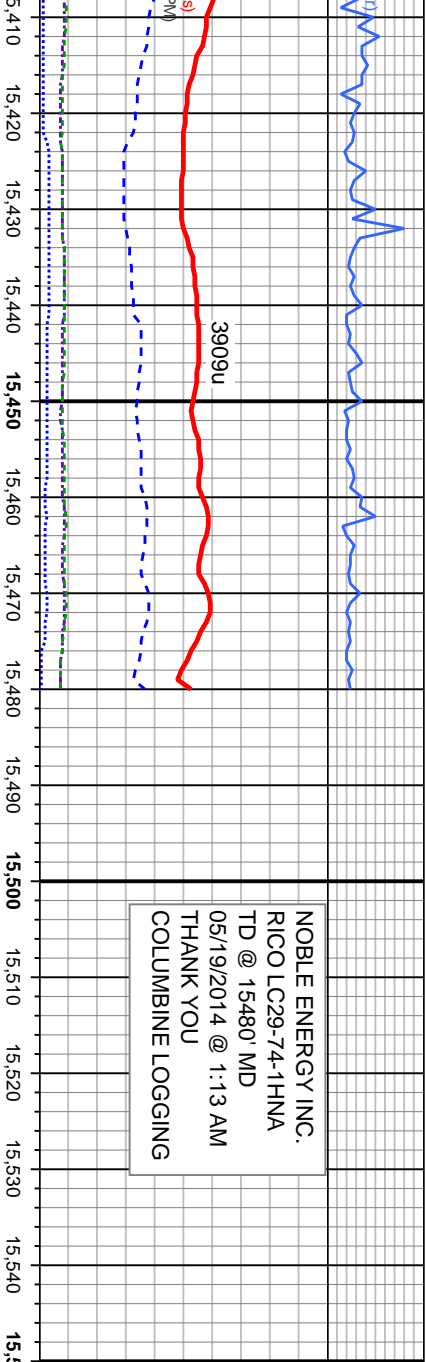






NOBLE ENERGY INC.
RICO LC29-74-1HNA
TD @ 15480' MD
05/19/2014 @ 1:13 AM
THANK YOU
COLUMBINE LOGGING

3909u



AFD

PROJECTED

MD: 15,480 '
TVD: 6,048.03 '
Inclination: 89.66 °
Azimuth: 355.1 °
VS: 9,607.47 '

MD: 15,416 '
TVD: 6,047.65 '
Inclination: 89.66 °
Azimuth: 355.1 °
VS: 9,543.85 '

F. gy-gy brn, sft-frn, sb blk-y- sb plty,
t tex, v calc
lly-crm, sl sft, sb blk-y, mot-wxy tex,
lstr, sl calc, tr bent

MRLST: gy-gy brn, sft-frn, sb blk-y- sb plty,
sly-mot tex, v calc
tr CHK: lly-crm, sl sft, sb blk-y, mot-wxy tex,
tr sb vit lstr, sl calc

