



Scale: 5" / 100'
Measured Depth Log

Well Name B-Farm LD 18-037HC

Location SEC 7 T1S R67W

State COLORADO

Country USA

API Number 05-001-10091-0000

Geographic Region DJ BASIN

Spud Date 12/29/2017

County ADAMS

Rig Number PRECISION 460

AFE # 18DC0001

Field WATTENBERG

Drilling Completed 1/28/2018

Ground Elevation 5124.6'

K.B. Elevation 5144.6'

Logged Interval 6000' MD To 14122' MD

Formation CODELL

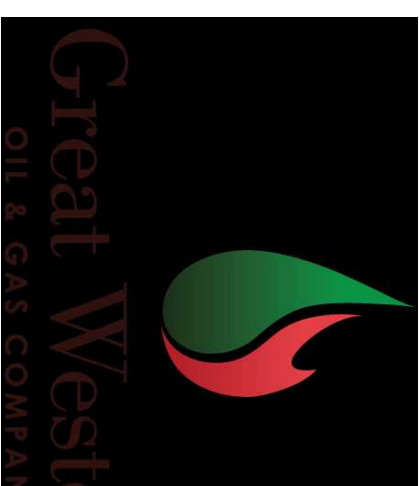
Type of Drilling Fluid OIL BASED MUD

Total Depth 14122' MD

Operator

Company Great Western Oil and Gas

Address 1801 Broadway, Ste 500
Denver, CO 80202



Geologist

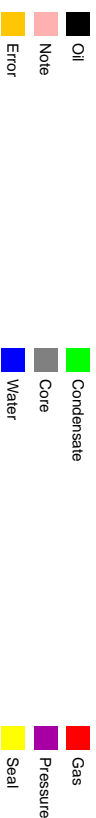
Name Joey Luce, Tim Bright, Gabe Rubio

Company Terra Guidance

Address 1298 O Road
Loma CO 81524
(970) 260-5408



Color Coding



Oil Show



D DEAD

V VUGGY

● EVEN

○ QUESTIONABLE

Engineering

● SPOTTED STAINING BIT

CASING

Porosity

◀ CONNECTION (LEFT)

E EARTHY

▶ CONNECTION (RIGHT)

D FENESTRAL

CONNECTION GAPS

F FRACTURE

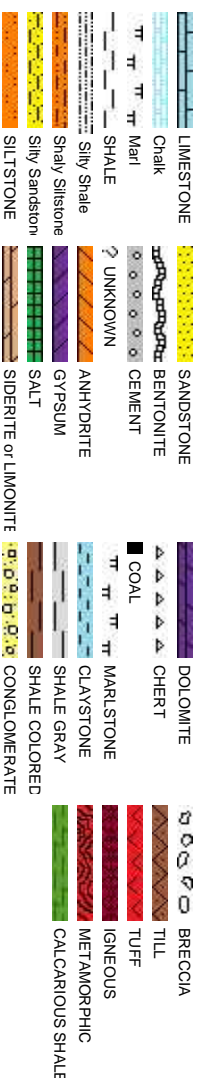
↓ CORE - LOST

X INTERCRYSTALLINE ■ CORE - RECOVERED

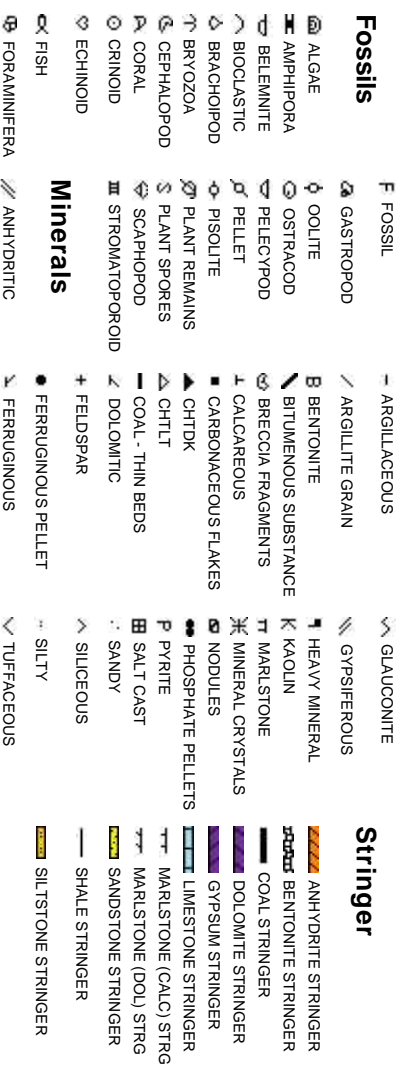
◇ INTEROOLITIC ∴ DST INTERVAL

∩ MOLDIC ↯ FAULT

Rock Types



Accessories



Minerals




Other Symbols

 FORMATION TOP

L LITHOGRAPHIC

Rounding

 GAS SHOW

MX MICROXLN

 MIN DEPTH


A ANGULAR

MS MUDSTONE

 NORMAL FAULT


R ROUNDED

PS PACKSTONE

 OIL SHOW

S SUBANG

WS WACKESTONE

 OVERTURNED STRATA

F SUBRND


Sorting

 REVERSE FAULT

Textures

 SIDEWALL CORE (LEFT)

M MODERATE

 SIDEWALL CORE (RIGHT)


BS BOUNDSTONE

P POOR

 SLIDE

C CHALKY

W WELL

 SURVEY

CX CRYPTOXLN

CALCARIUOS SHALE


 TRIP GAS

E EARTHY

 WIRELINE TESTED - LEFT

FX FINELYXLN

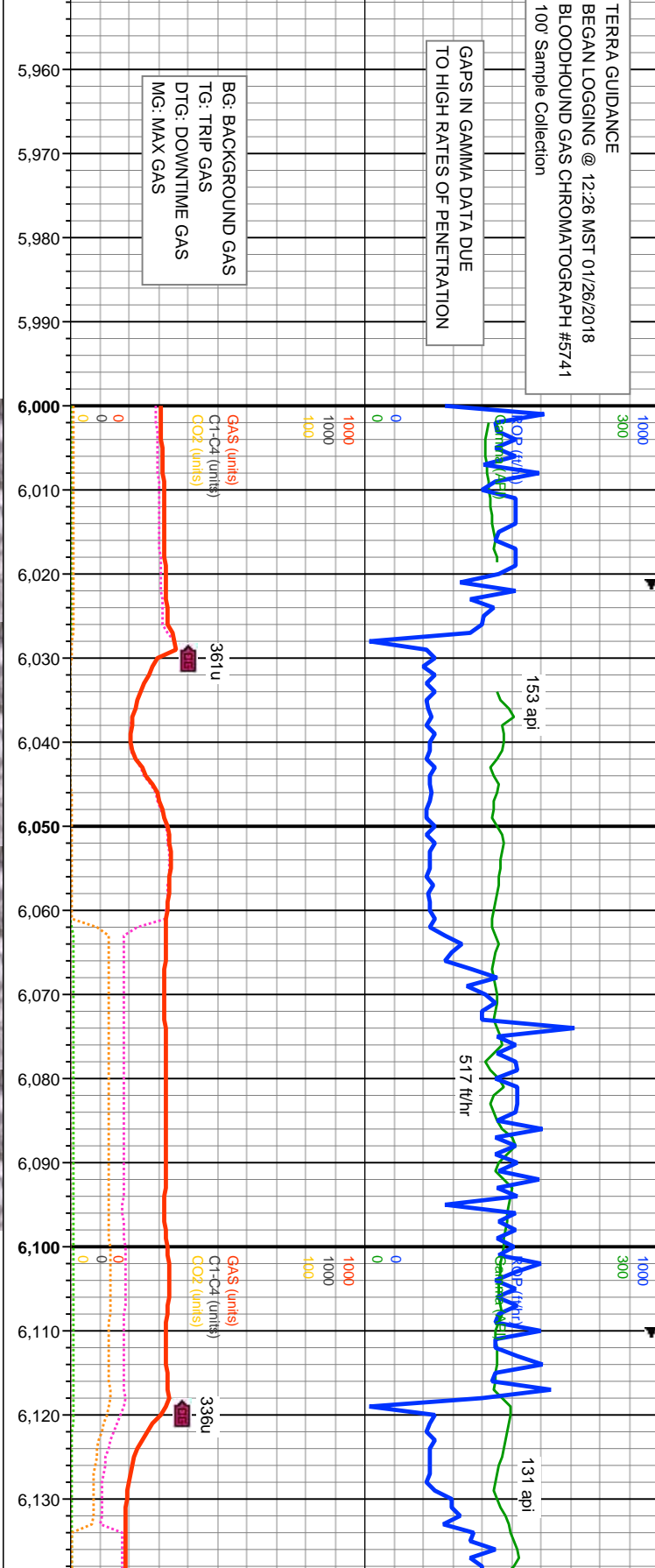
CALCARIOUS SHALE

 WIRELINE TESTED - RT

GS GRAINSTONE

TERRA GUIDANCE
BEGAN LOGGING @ 12:26 MST 01/26/2018
BLOODHOUND GAS CHROMATOGRAPH #5741
100' Sample Collection

GAPS IN GAMMA DATA DUE
TO HIGH RATES OF PENETRATION



BG: BACKGROUND GAS
TG: TRIP GAS
DTG: DOWNTIME GAS
MG: MAX GAS

Images



% Lithology

Well Bore
TVD

TVD Scale
5600' - 9000'

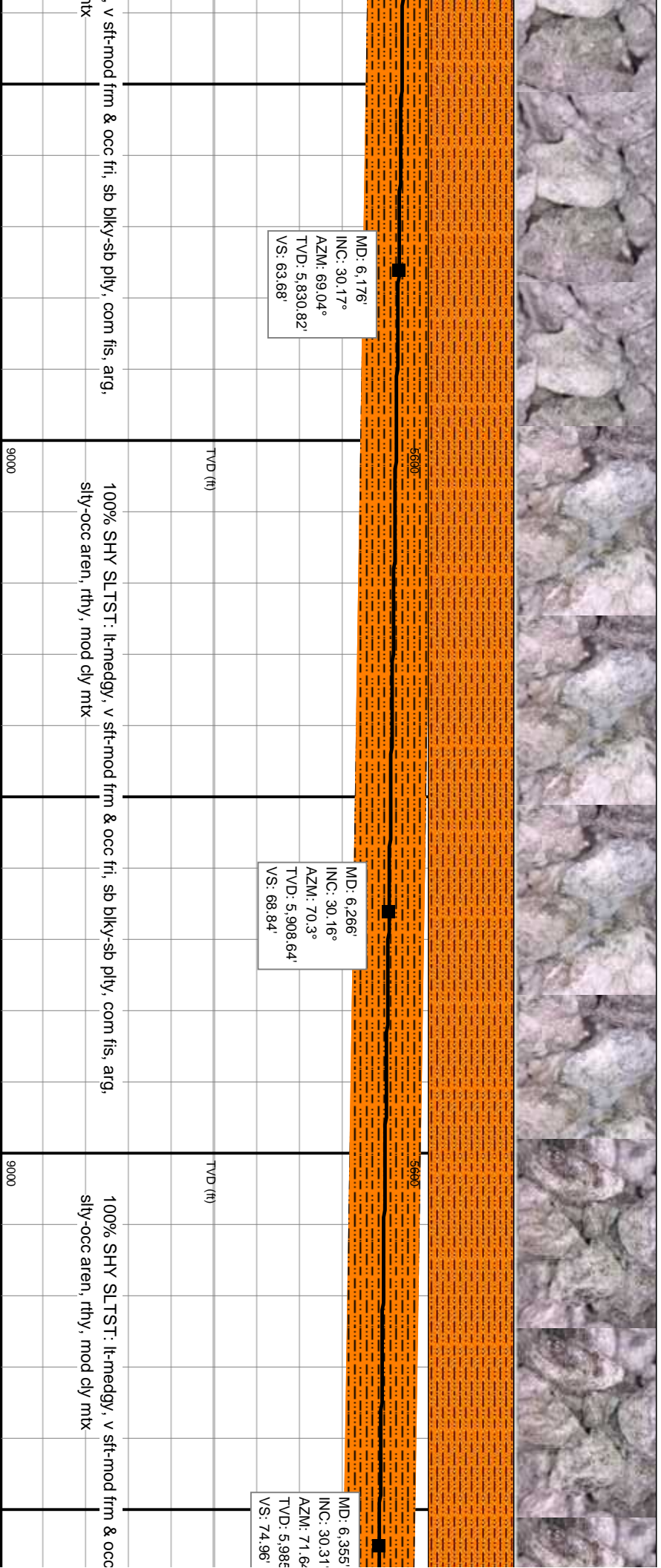
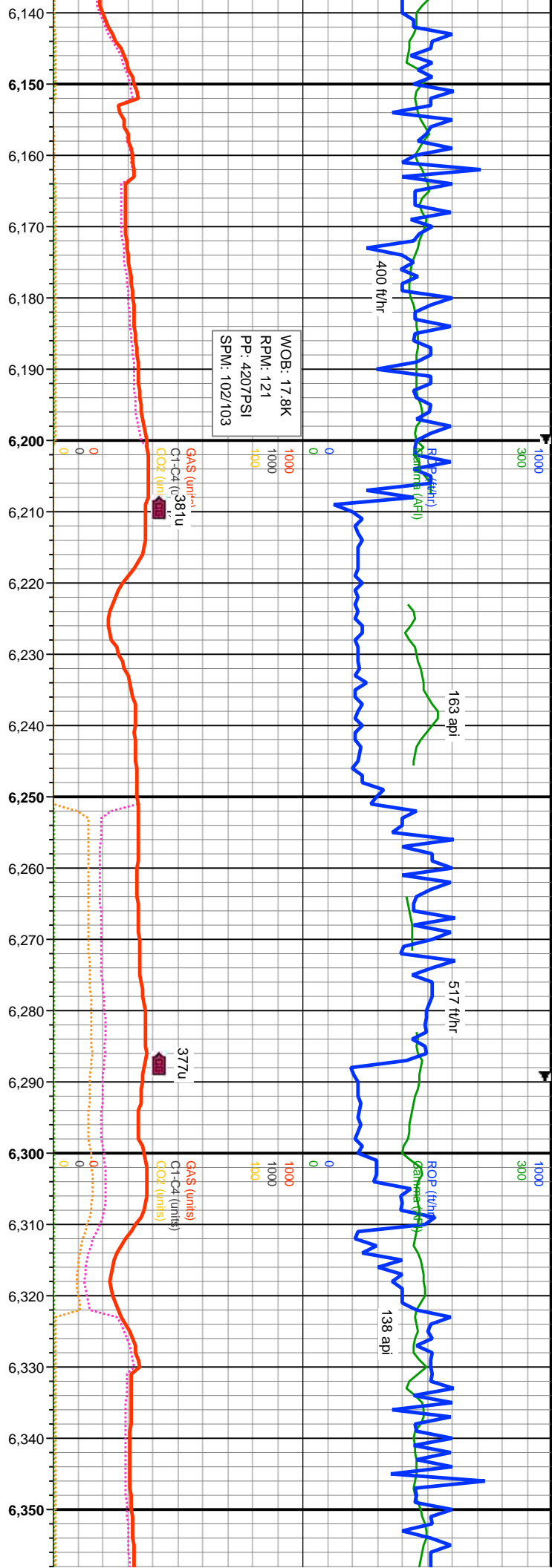
Bit #: 2
Type: HCC ATD505X
Size: 8.5"
Depth In: 1,721'
Jets: 5x15
S/N: 5274538

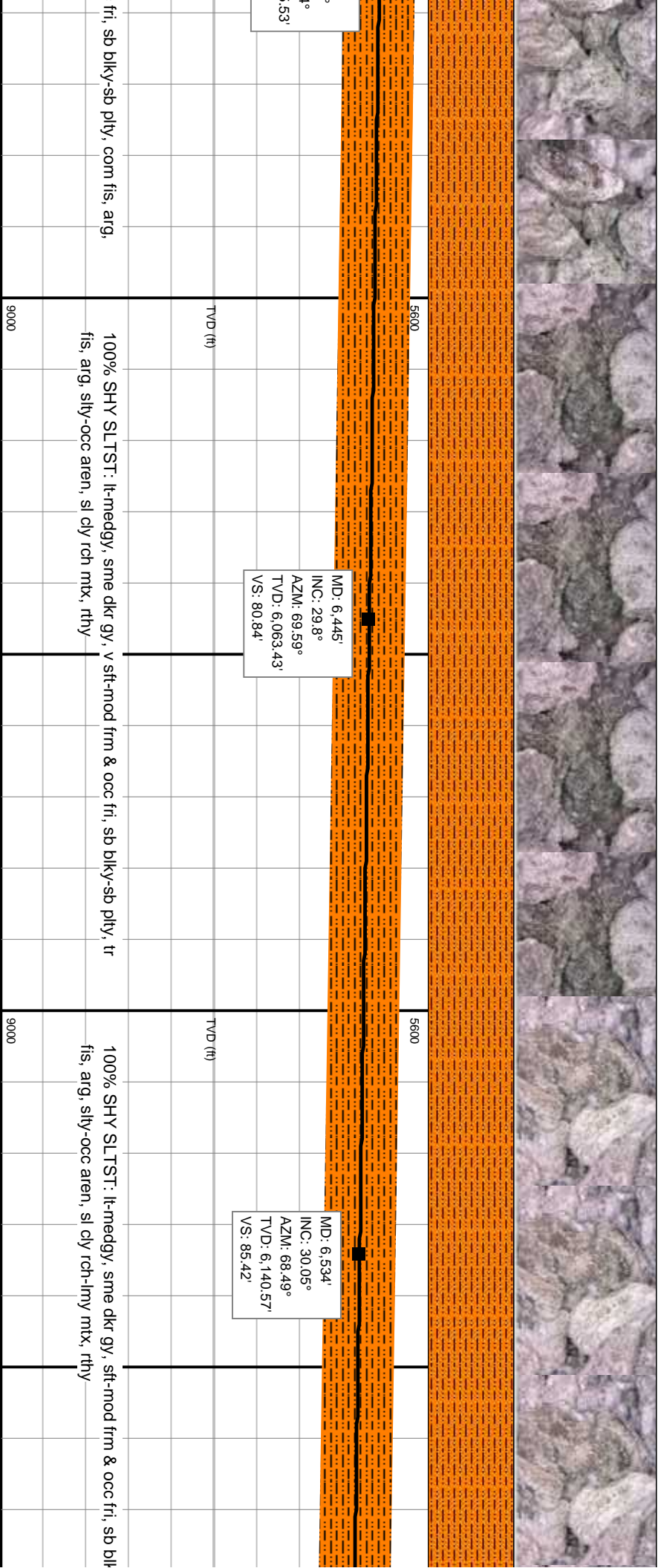
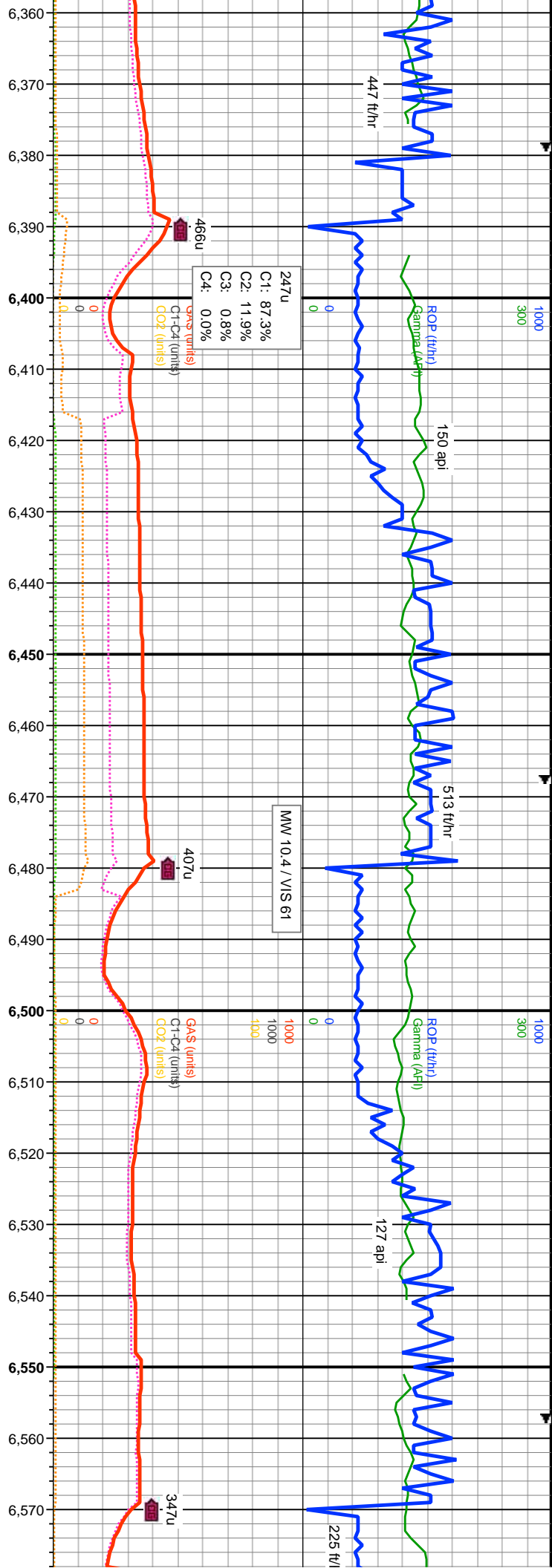
MD: 5,997'
INC: 30.12°
AZM: 66.14°
TVD: 5,676.09'
VS: 56.88'

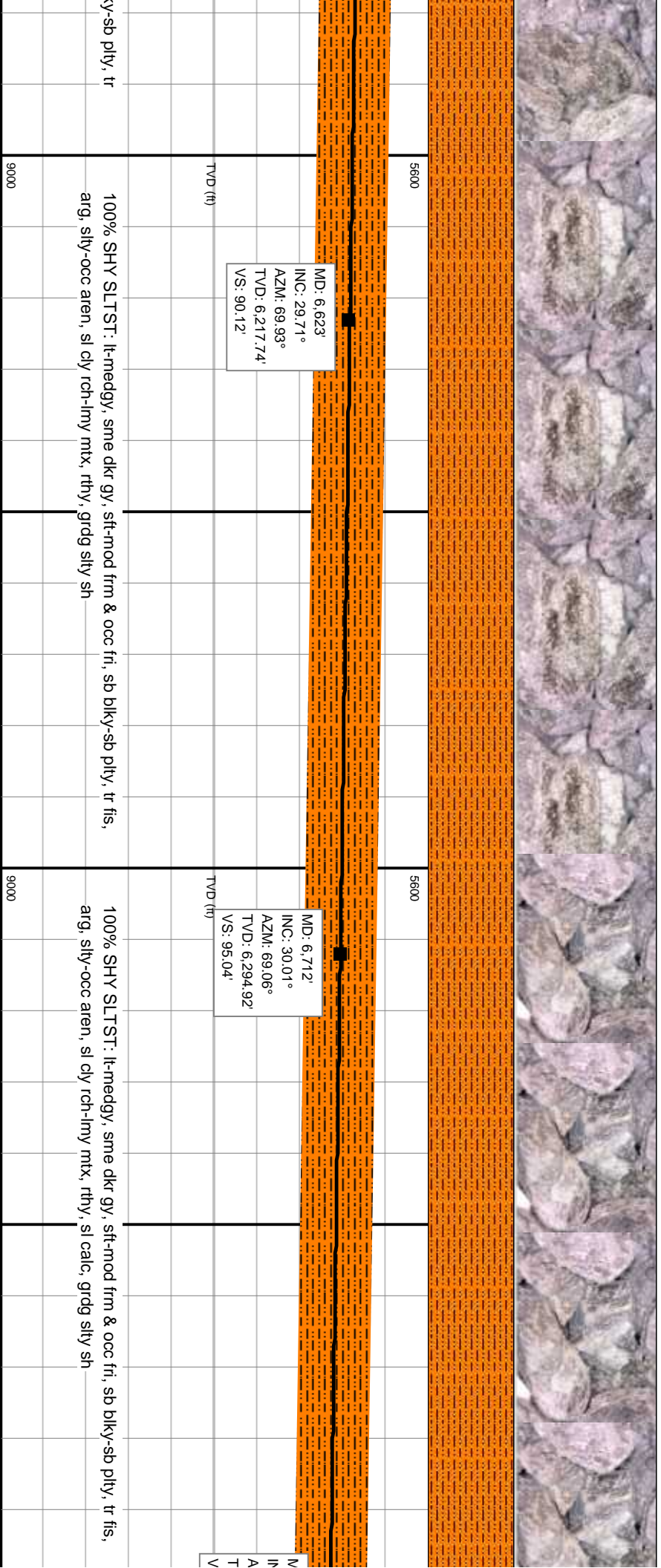
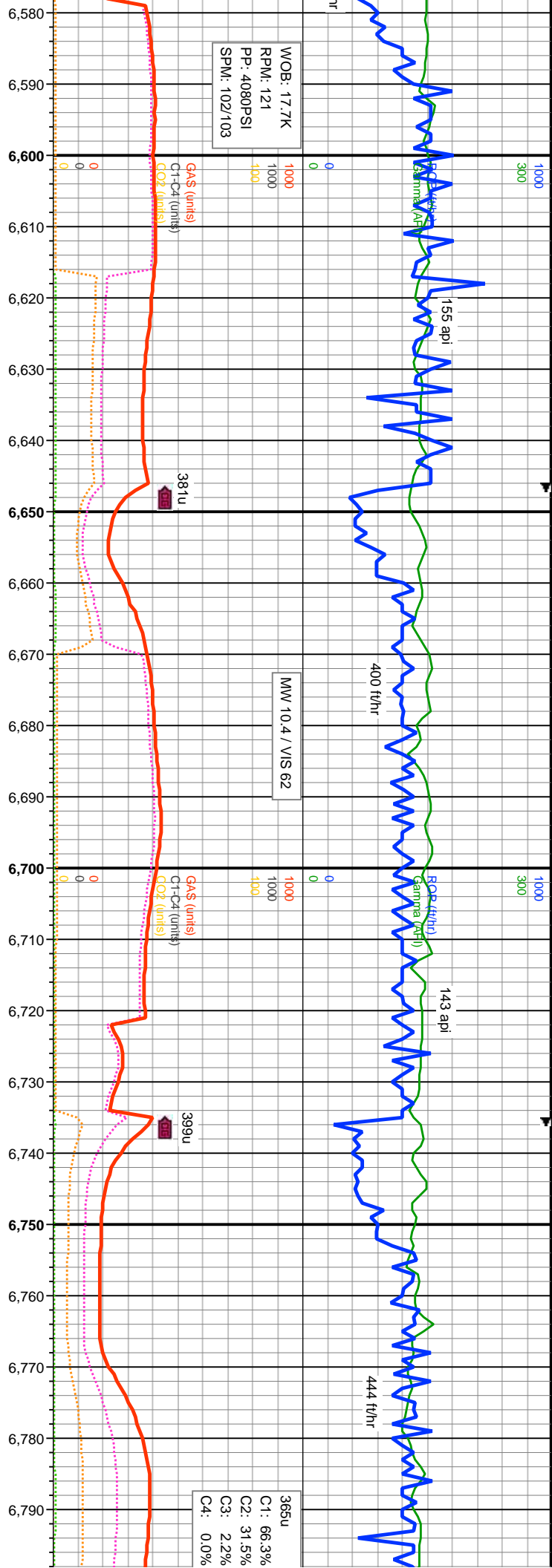
MD: 6,087'
INC: 30.22°
AZM: 67.32°
TVD: 5,763.9'
VS: 59.73'

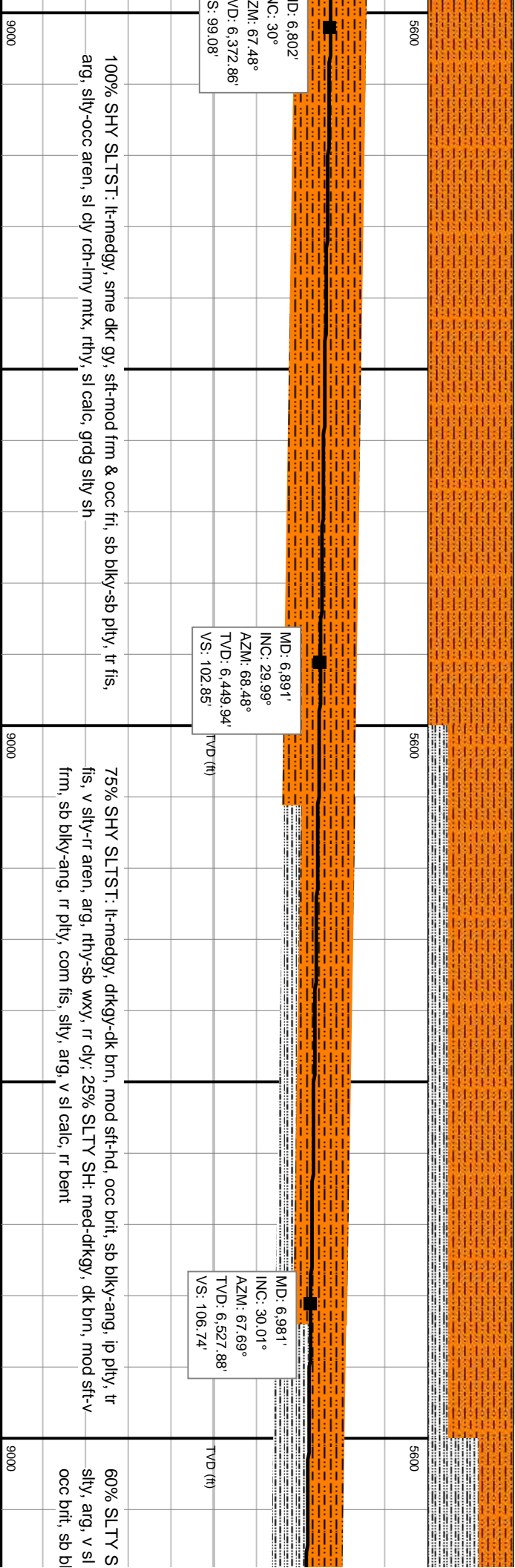
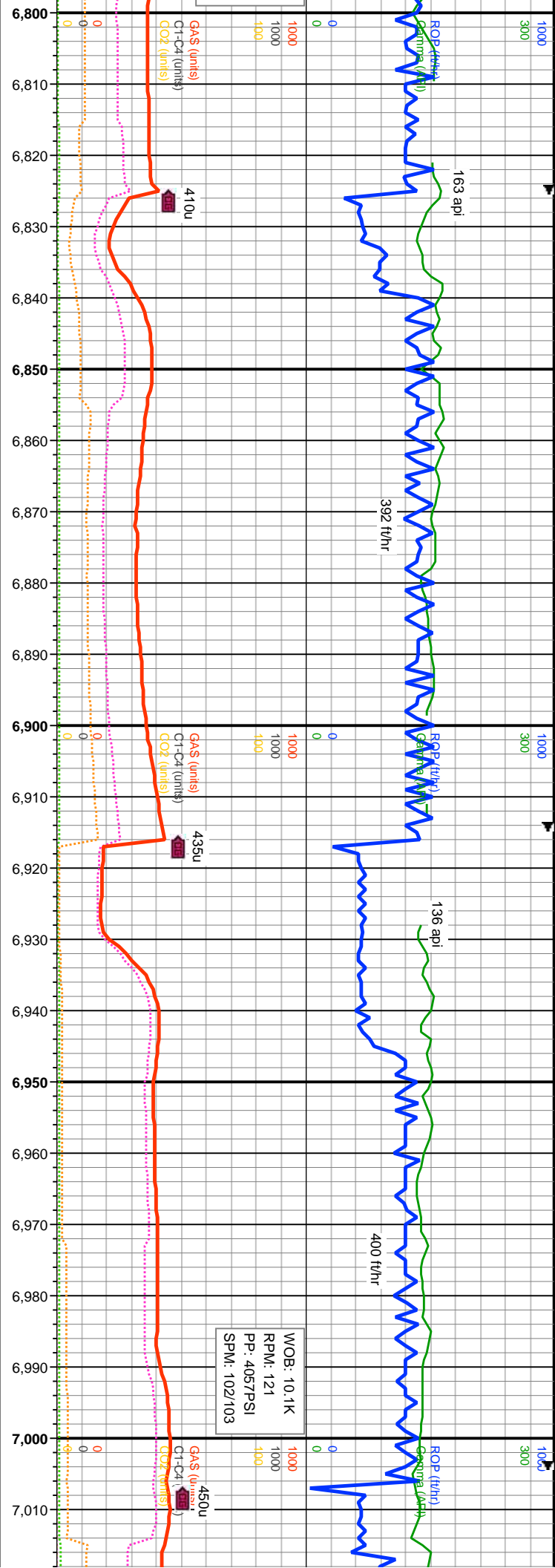
100% SHY SLTST: lt-medgy, v sft-mod frm & occ fri, sb blkly-sb ply, com fis, arg,
sily-occ aren, rthy, mod cly mix

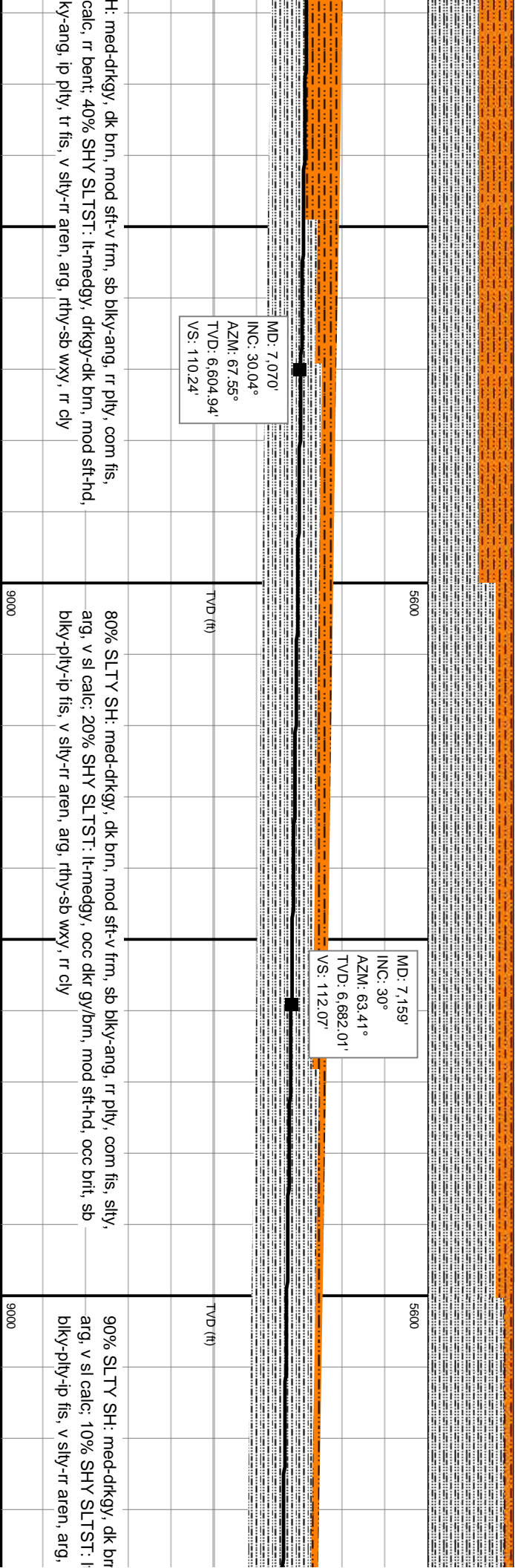
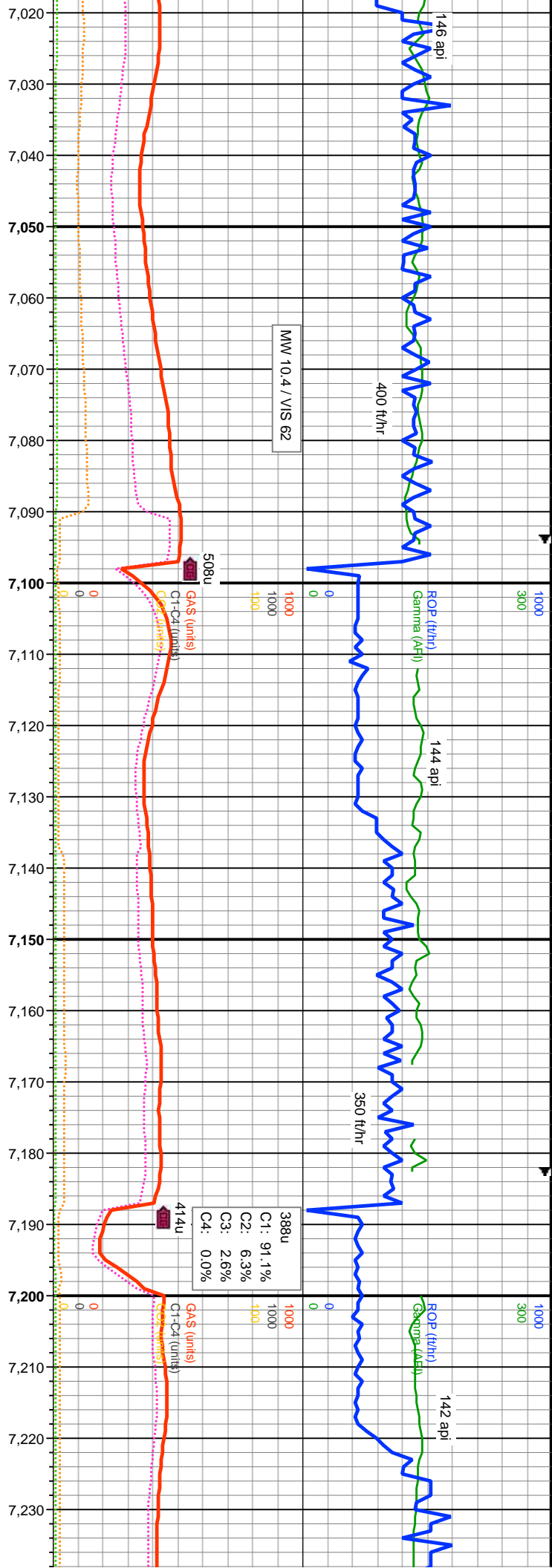
100% SHY SLTST: lt-medgy
sily-occ aren, rthy, mod cly r

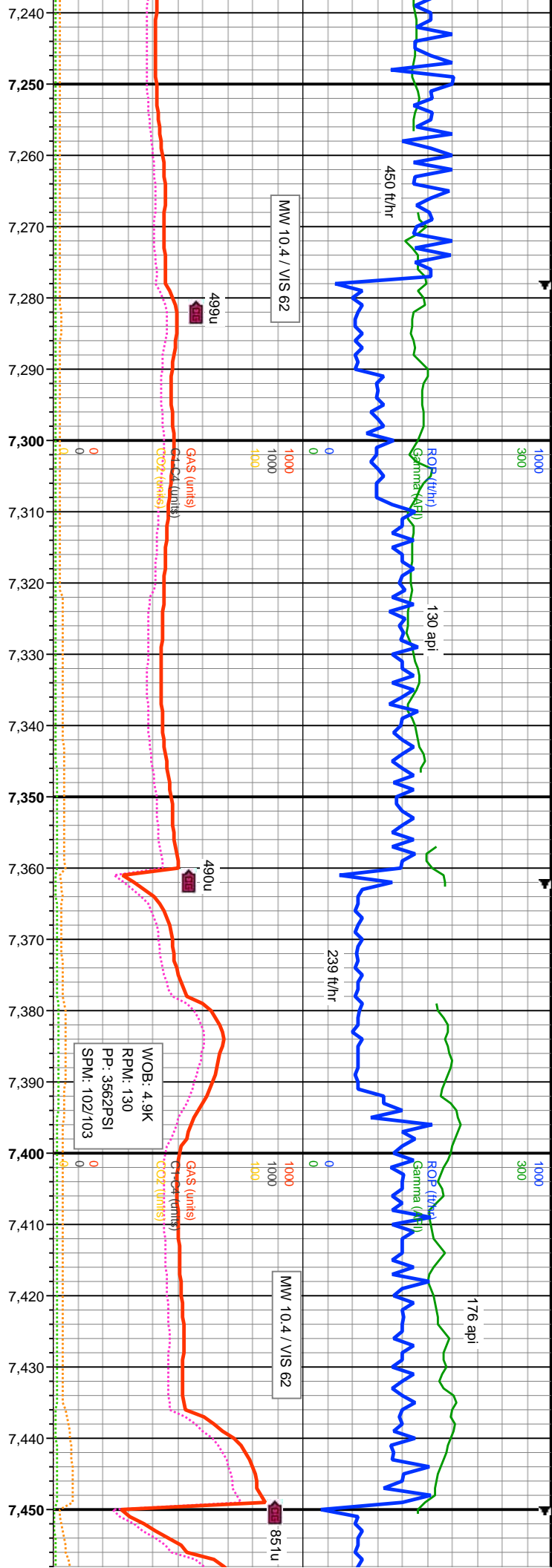












MD: 7,249'
INC: 29.43°
AZM: 61.63°
TVD: 6,760.18'
VS: 111.61'

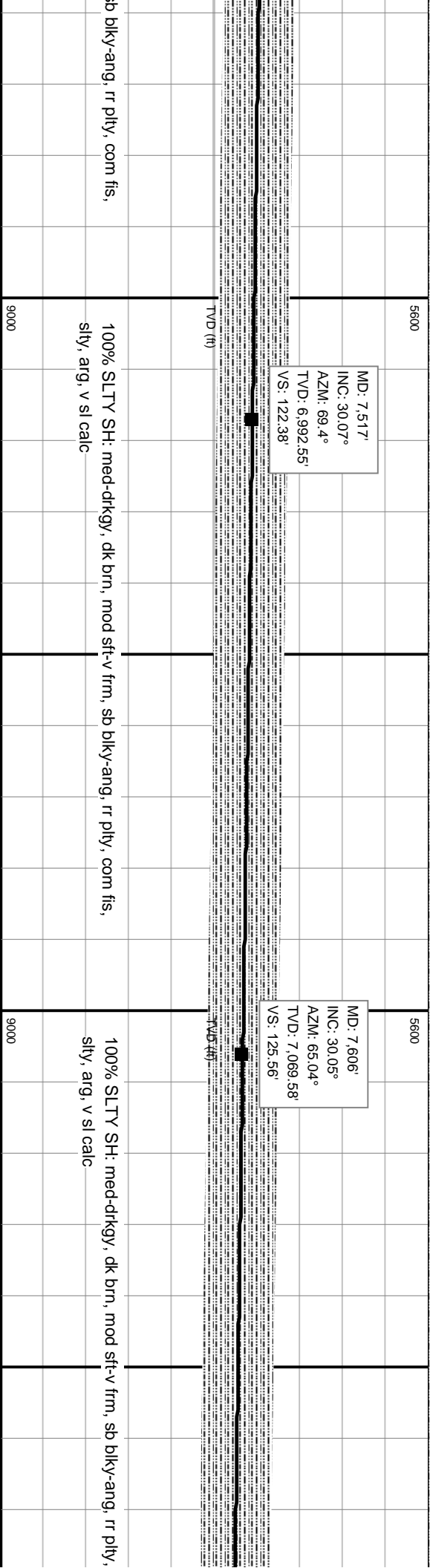
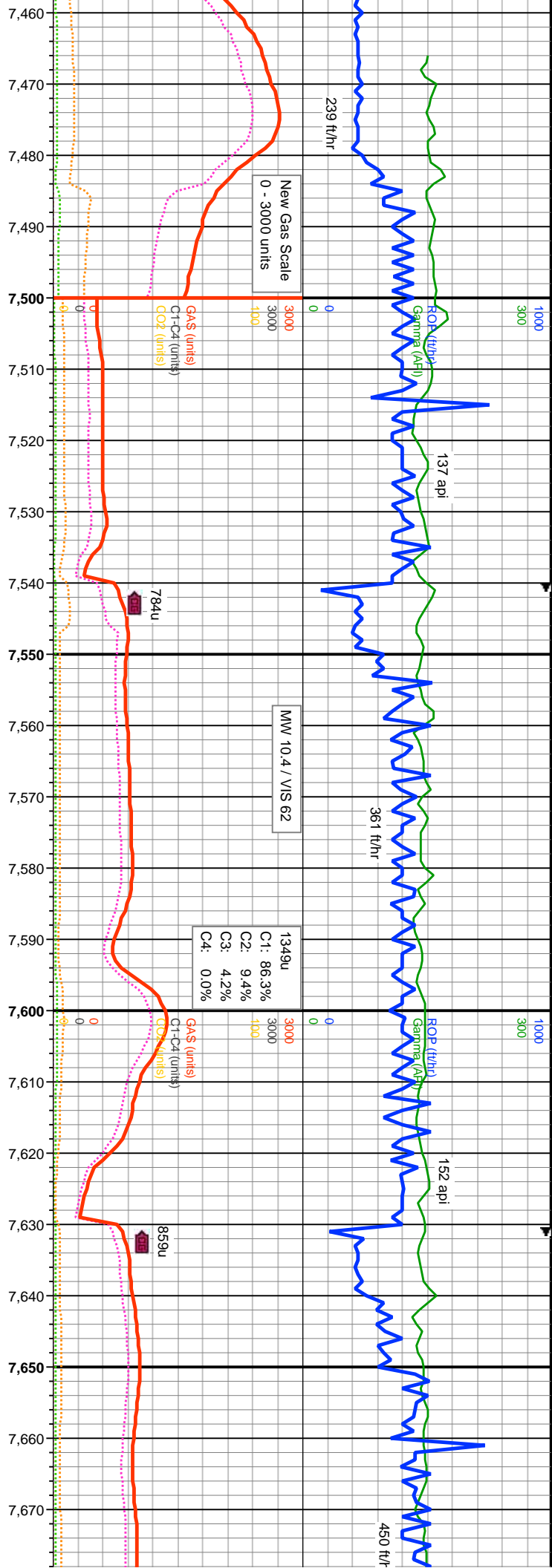
MD: 7,338'
INC: 29.91°
AZM: 67.16°
TVD: 6,837.52'
VS: 112.61'

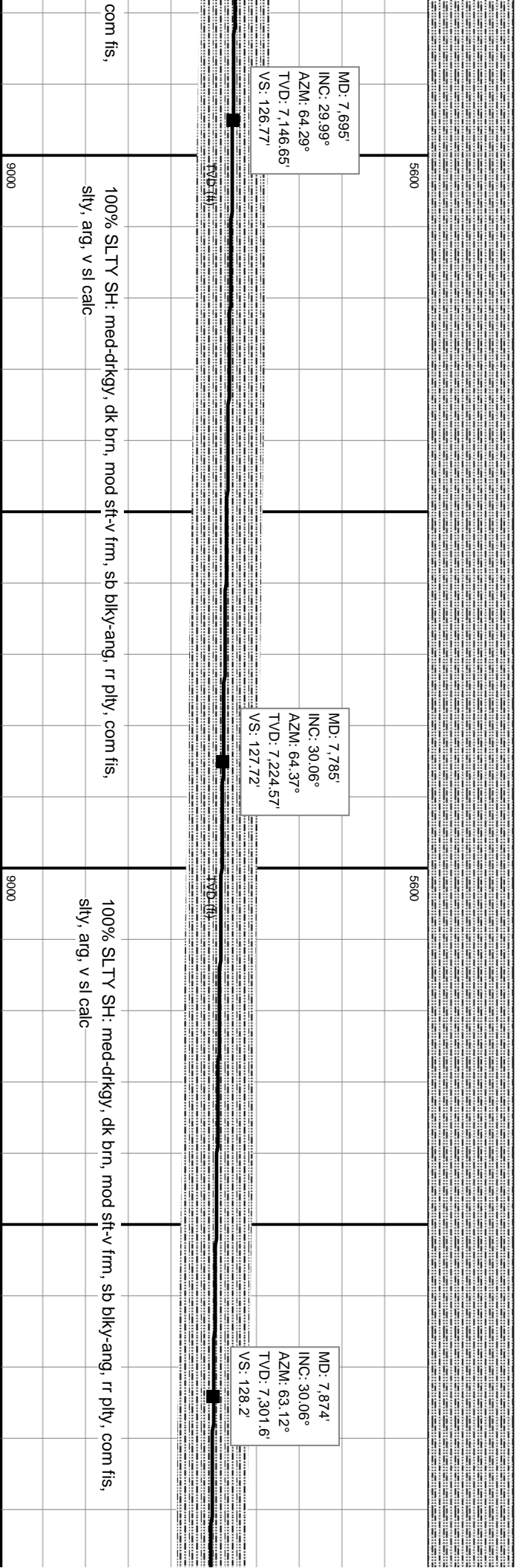
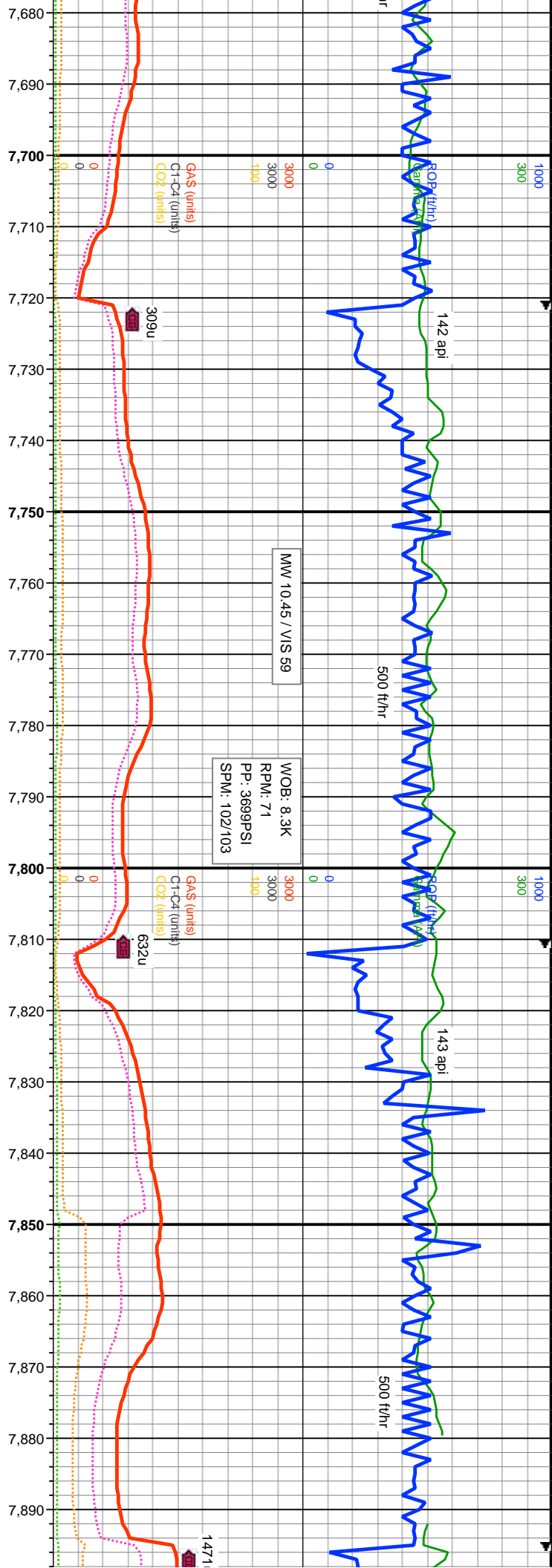
MD: 7,427'
INC: 30.01°
AZM: 70.49°
TVD: 6,914.63'
VS: 117.03'

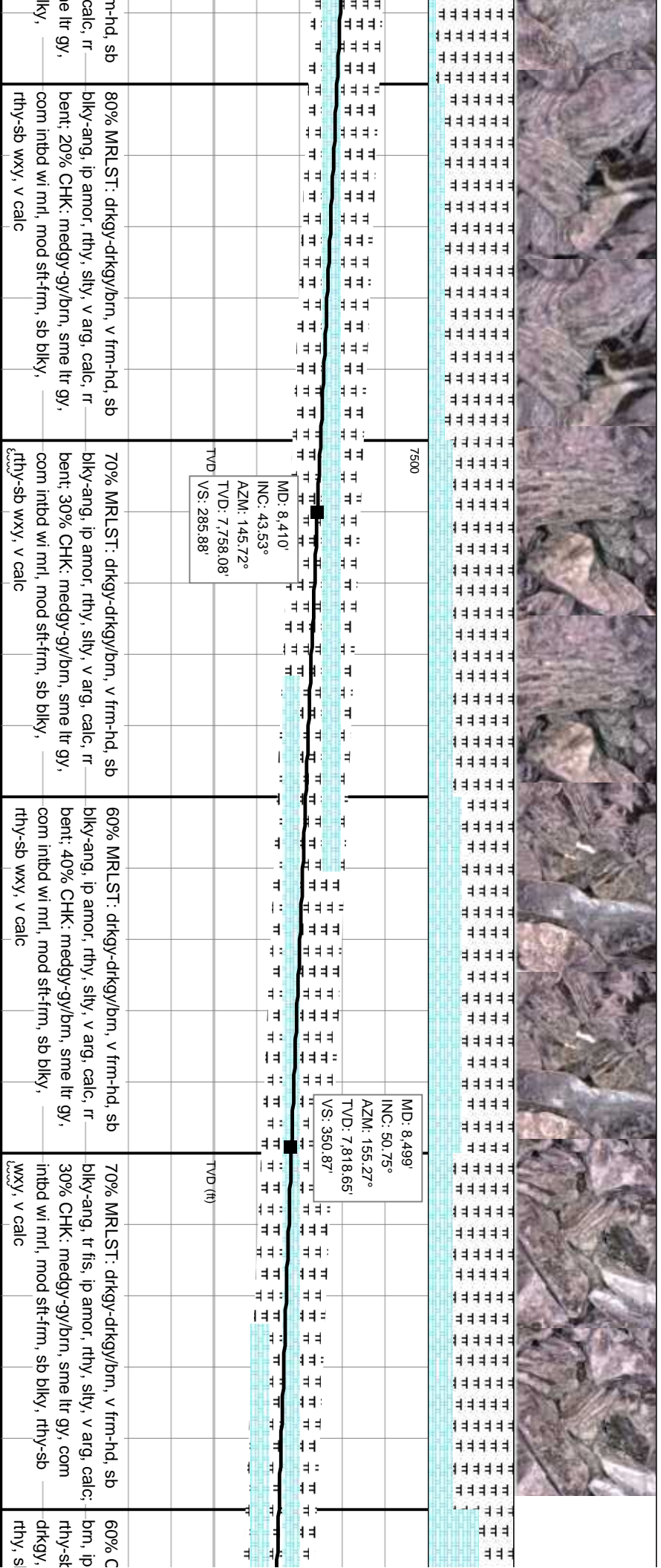
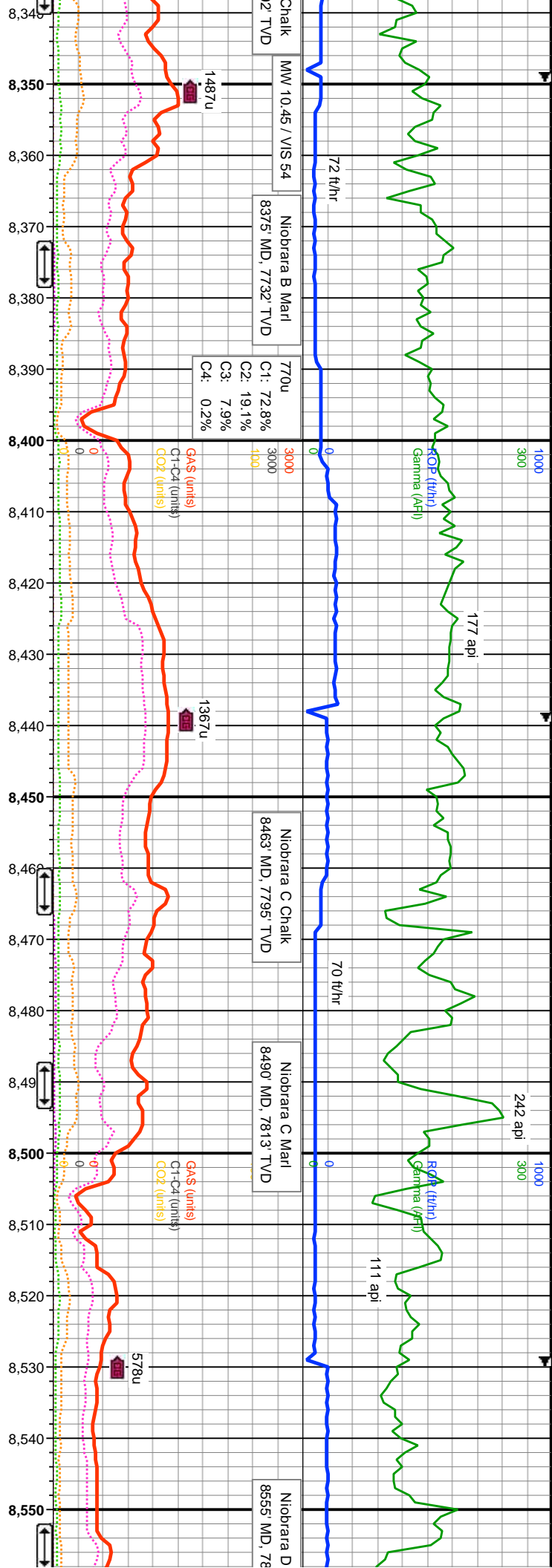
1, mod sft-v frm, sb blk-y-ang, rr pily, com fis, slty,
-medgy, occ dkr gy/brn, mod sft-hd, occ brt, sb
rthy-sb wxy, rr cly

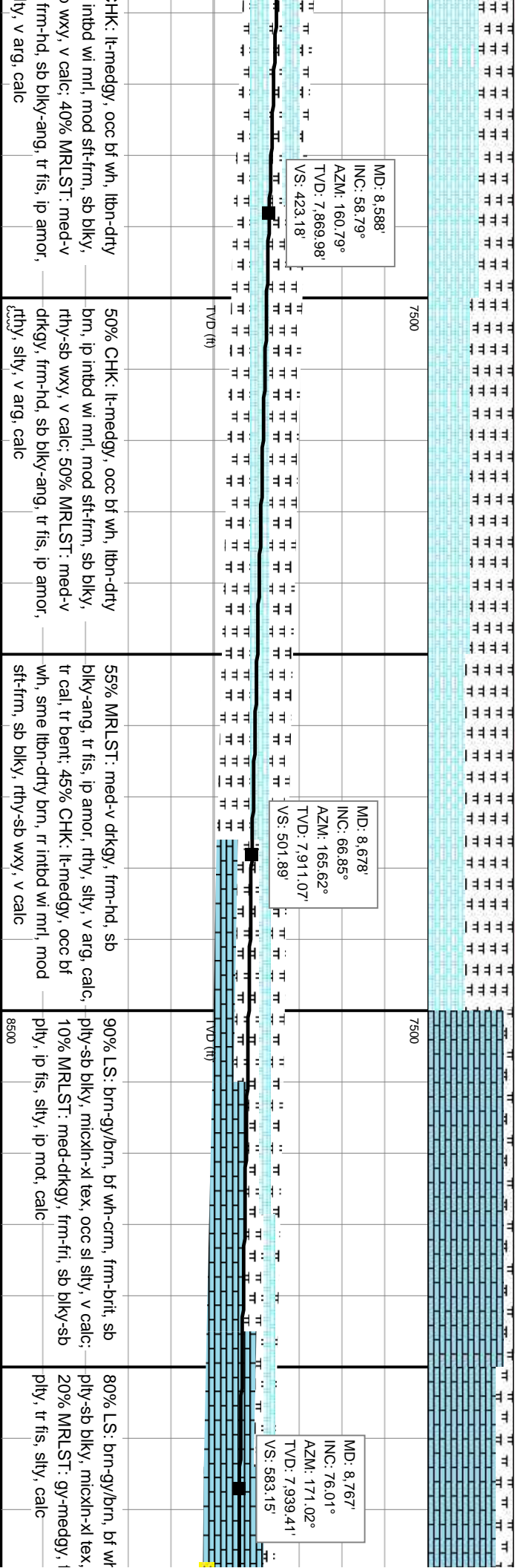
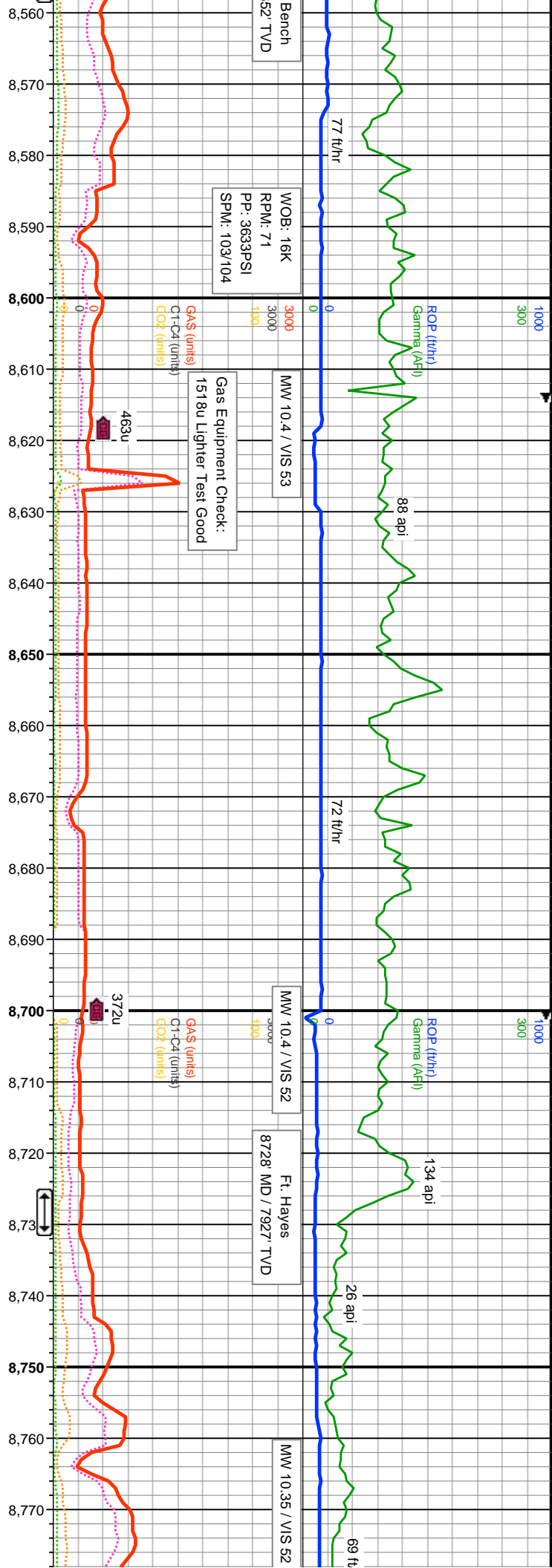
100% SLTY SH: med-dkgy, dk brn, mod sft-v frm, sb blk-y-ang, rr pily, com fis,
slty, arg, v sl calc

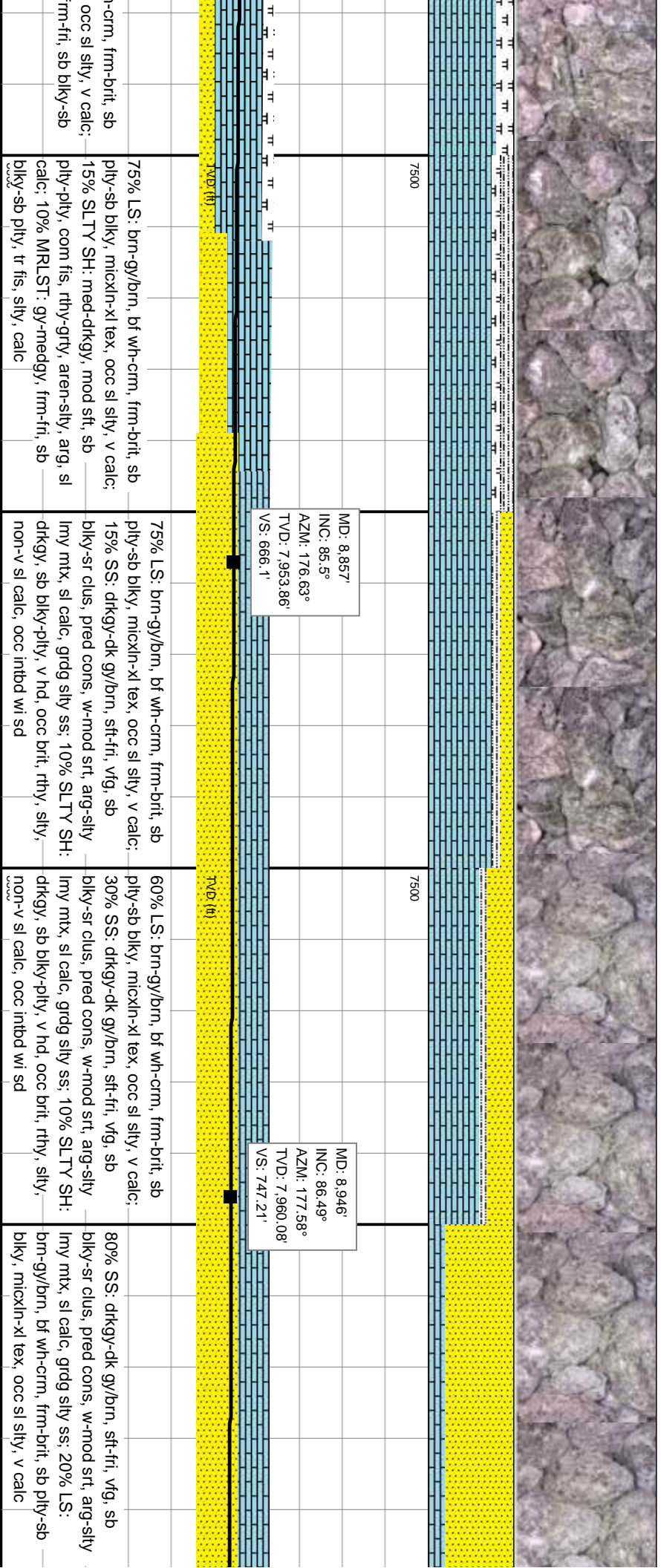
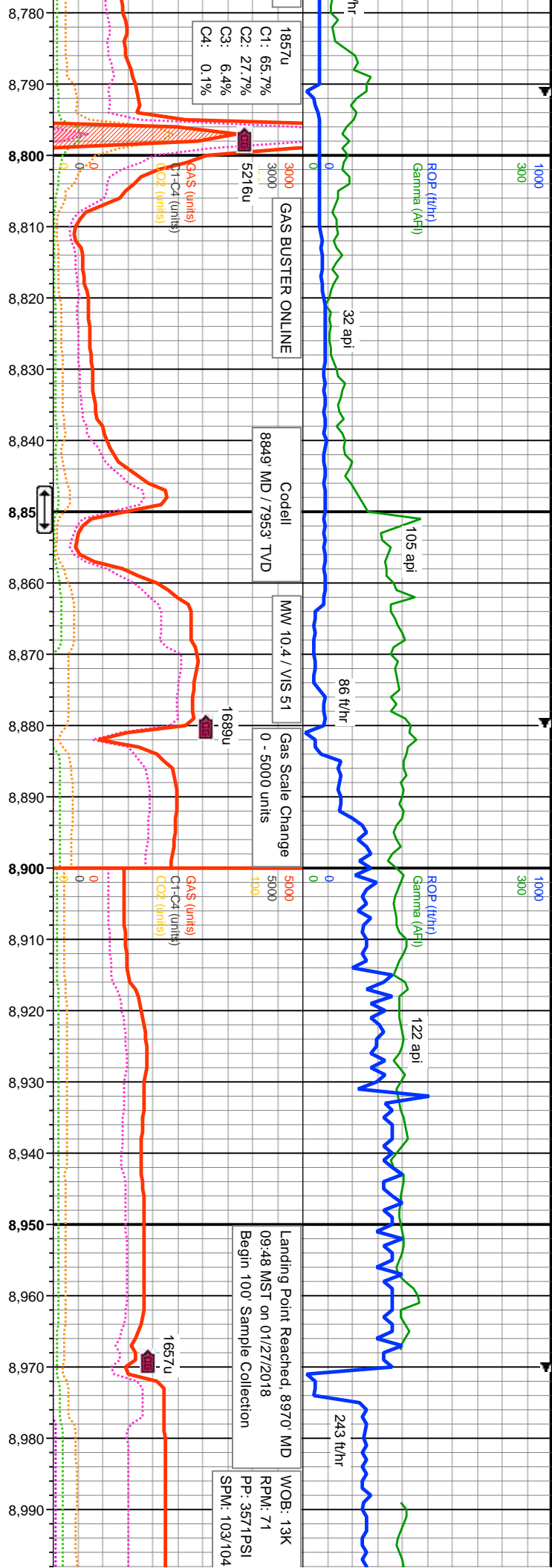
100% SLTY SH: med-dkgy, dk brn, mod sft-v frm, s
slty, arg, v sl calc

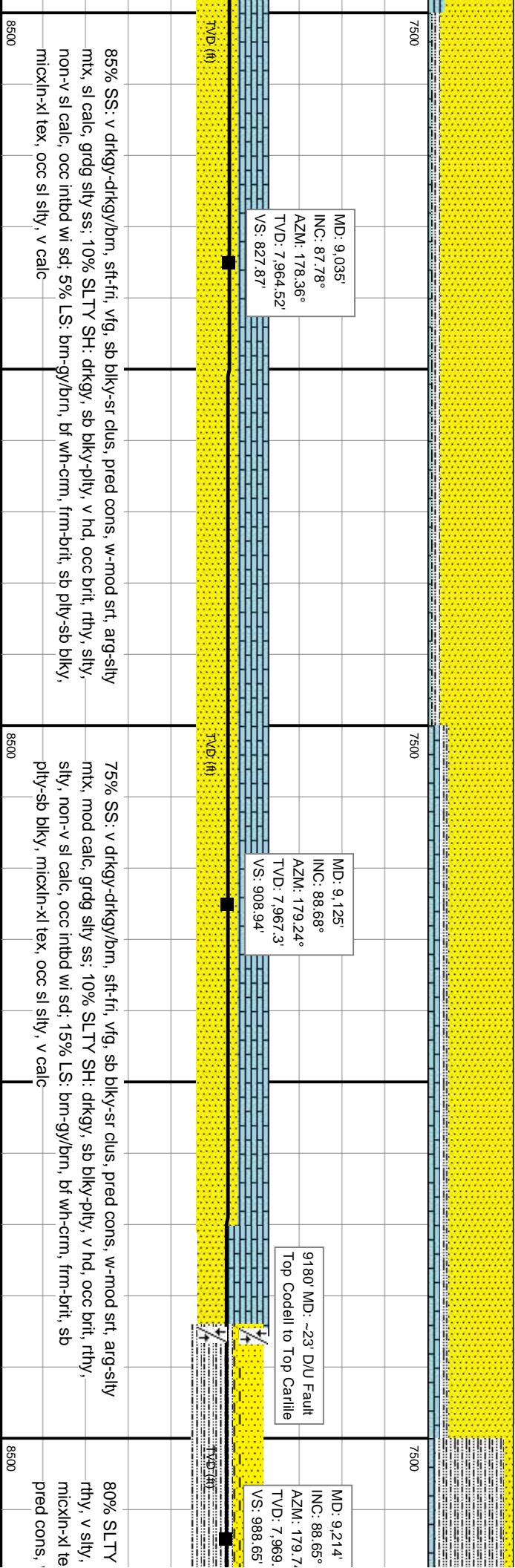
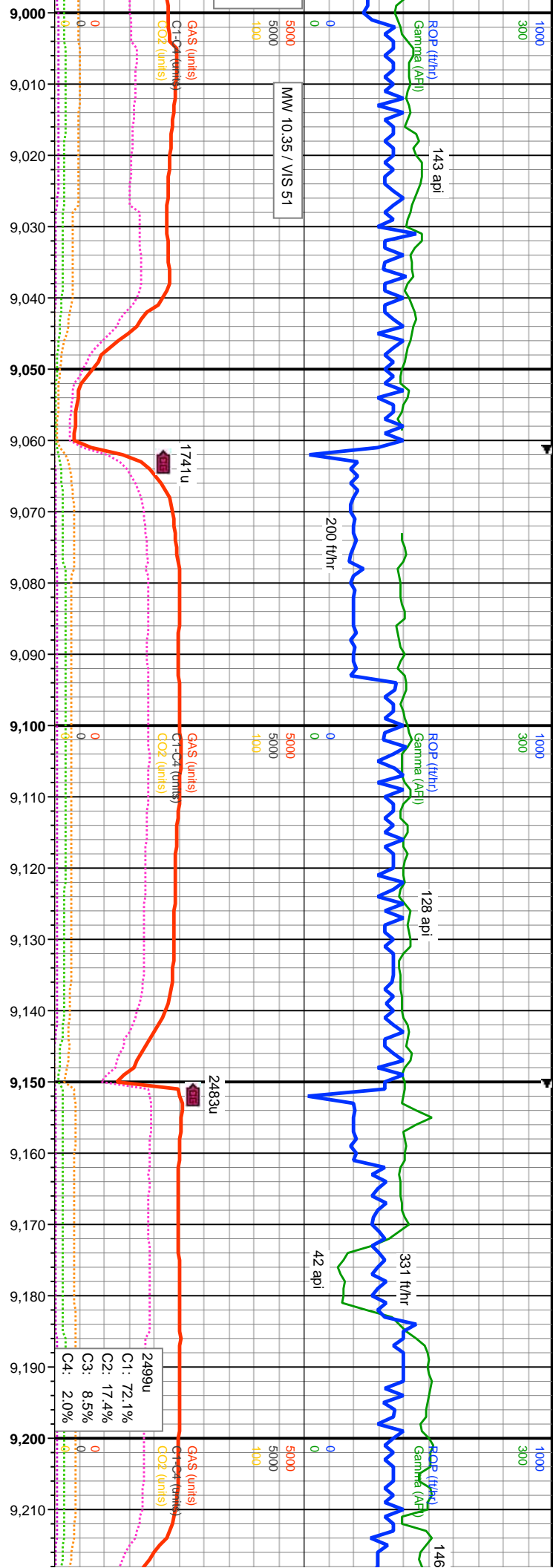


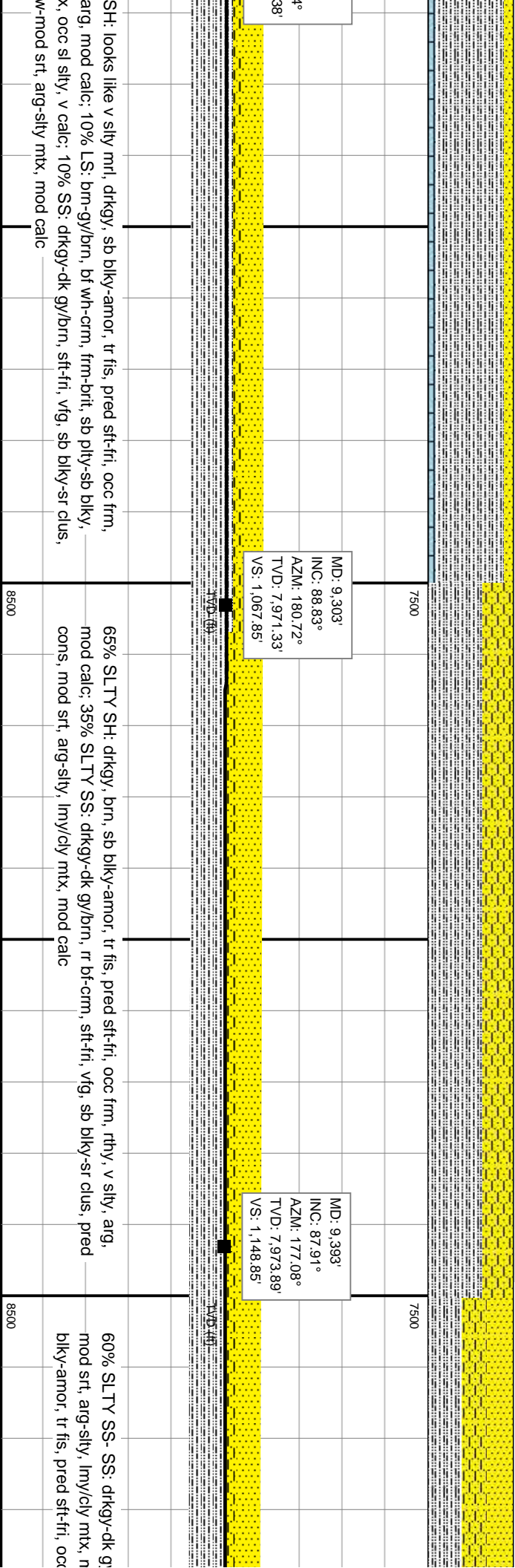
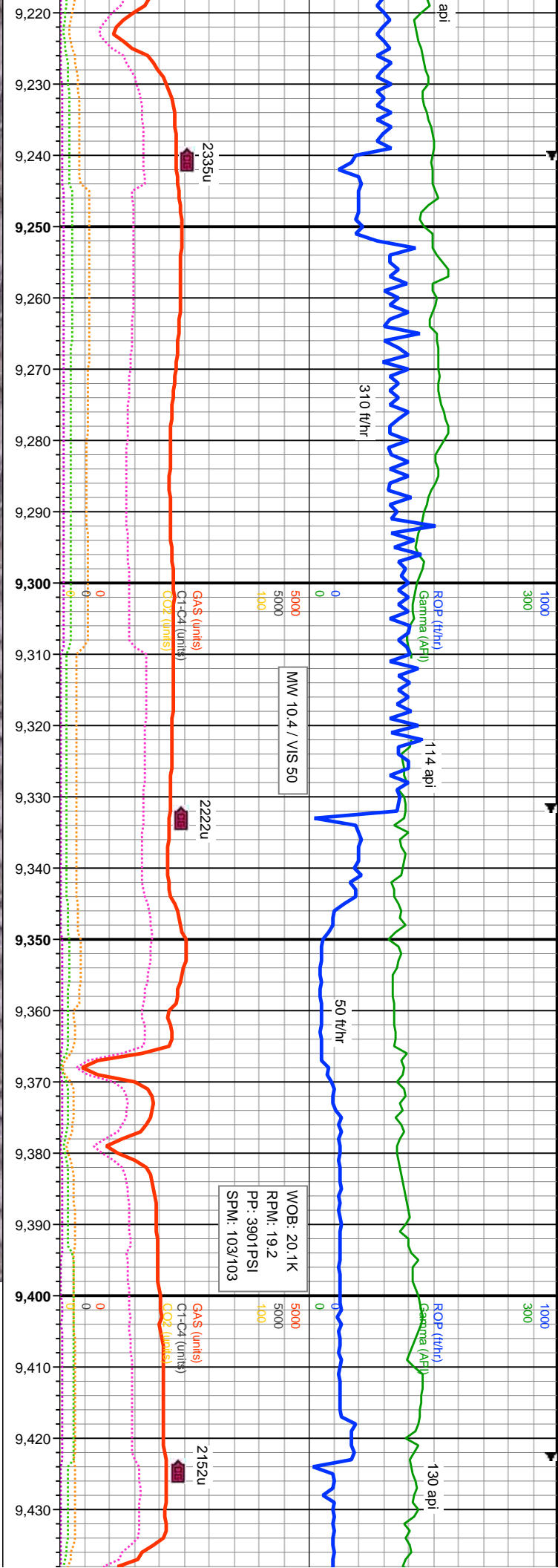


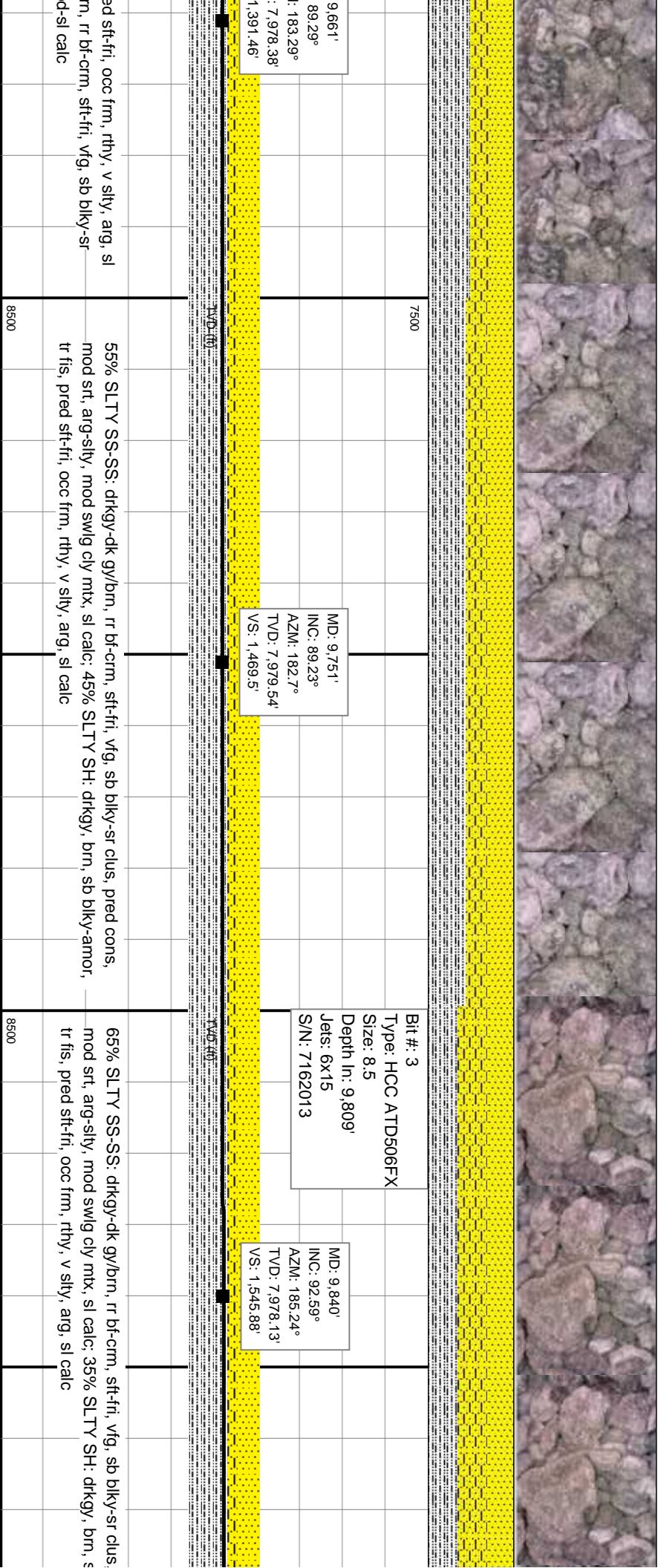
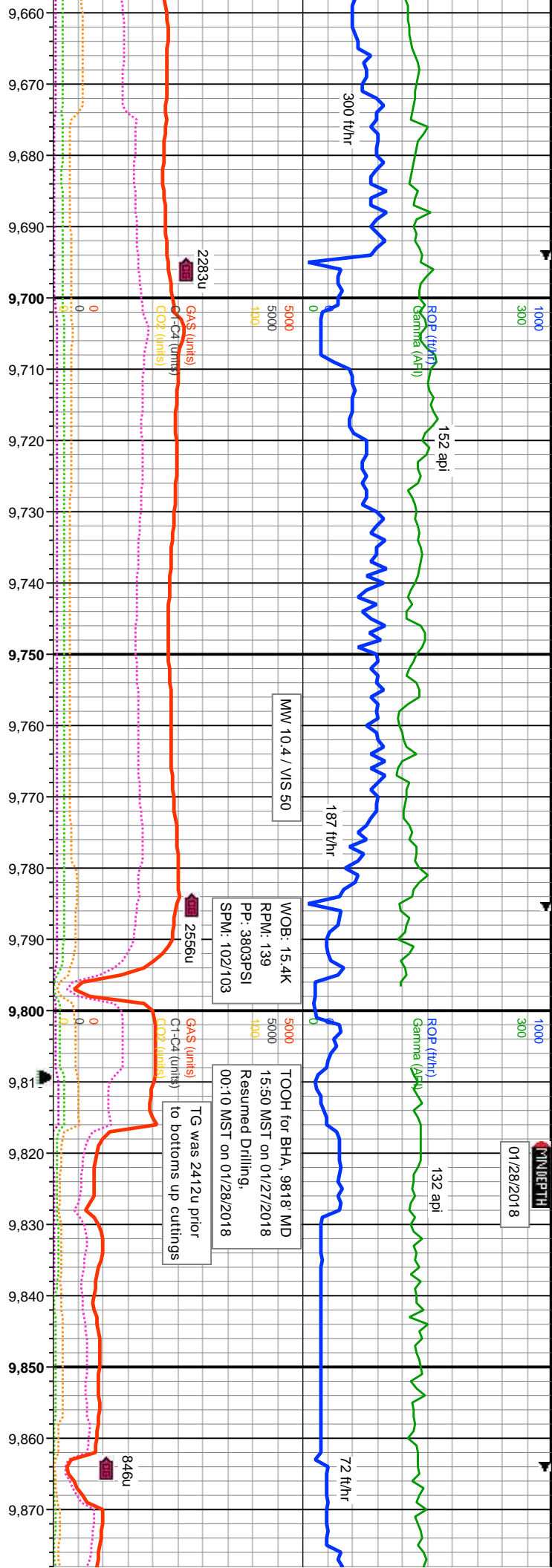


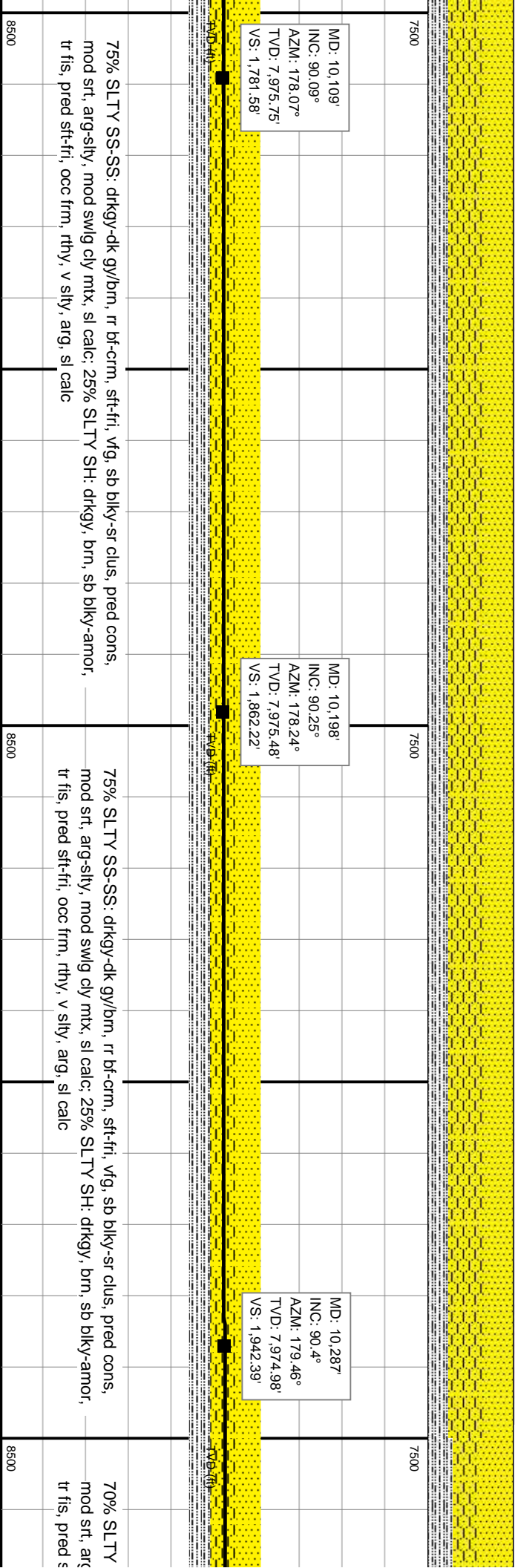
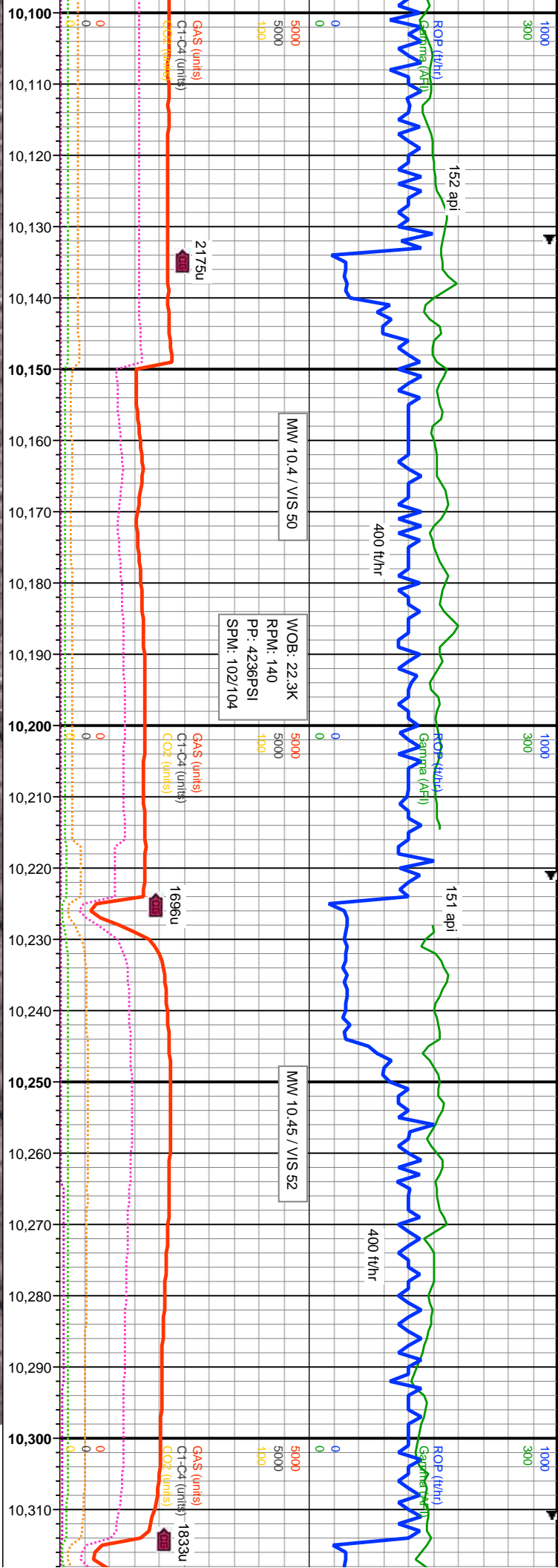












MD: 10,109'
INC: 90.09°
AZM: 178.07°
TVD: 7,975.75'
VS: 1,781.58'

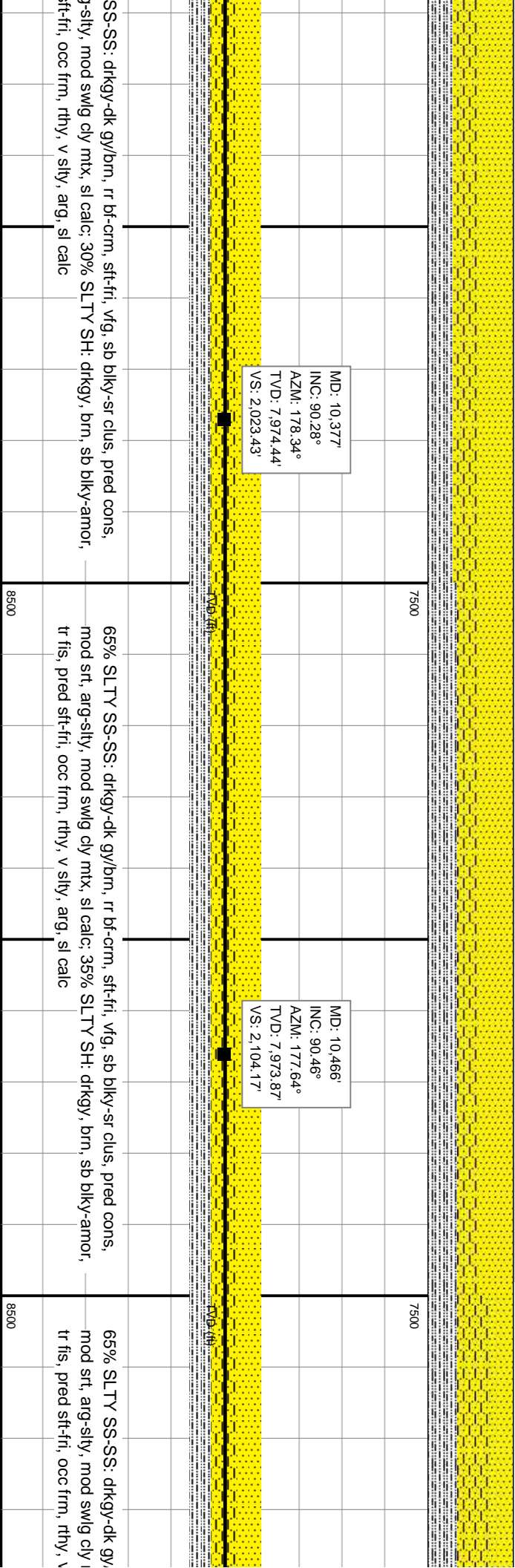
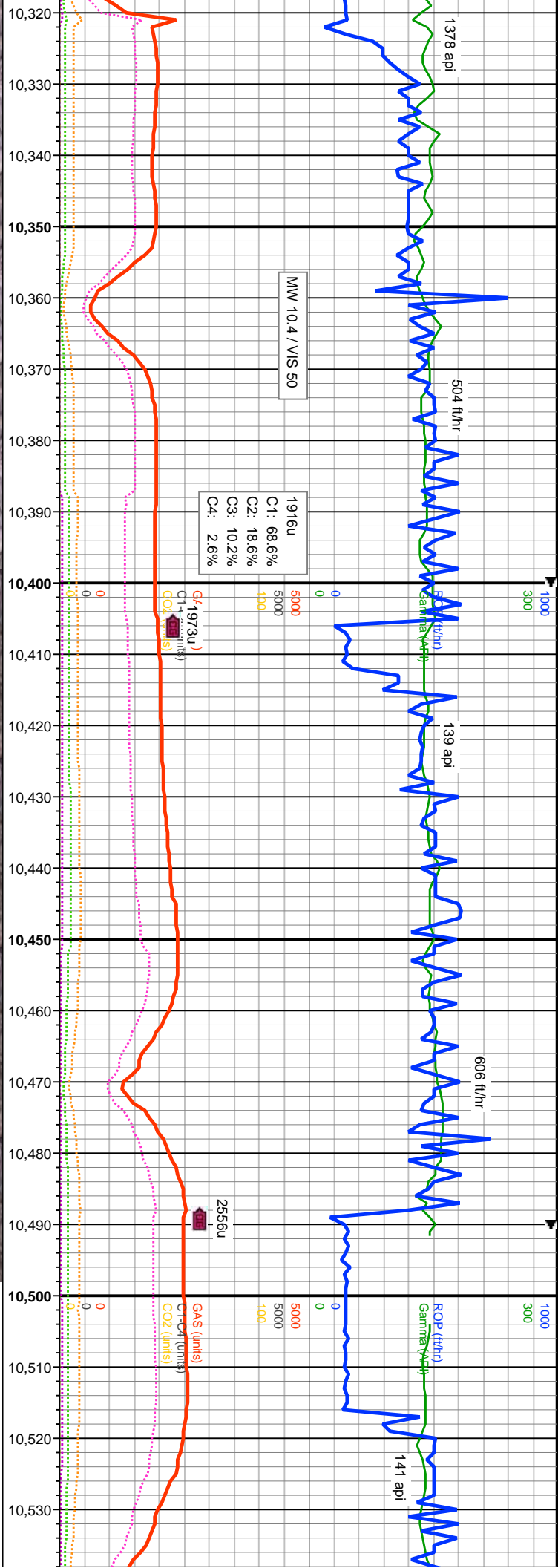
MD: 10,198'
INC: 90.25°
AZM: 178.24°
TVD: 7,975.48'
VS: 1,862.22'

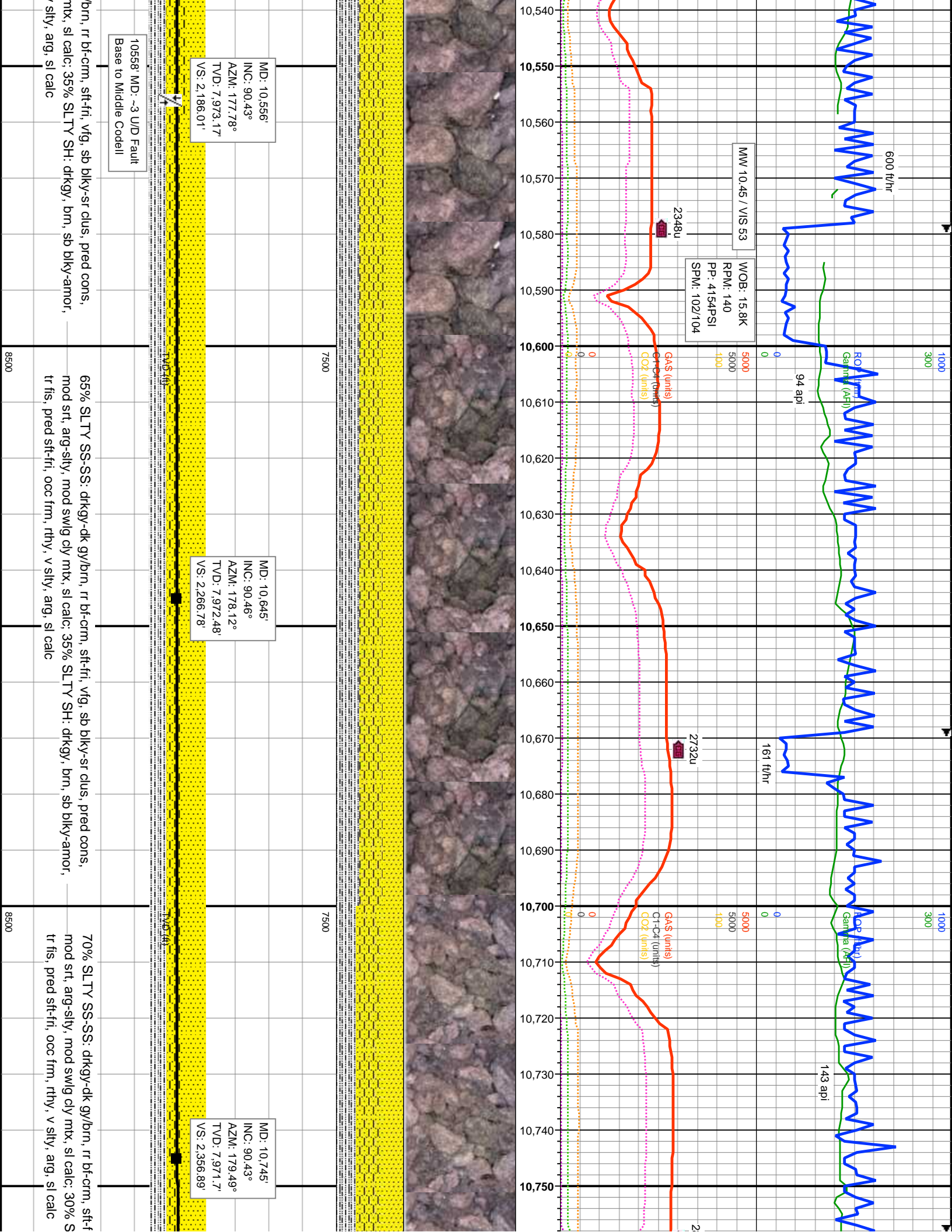
MD: 10,287'
INC: 90.4°
AZM: 179.46°
TVD: 7,974.98'
VS: 1,942.39'

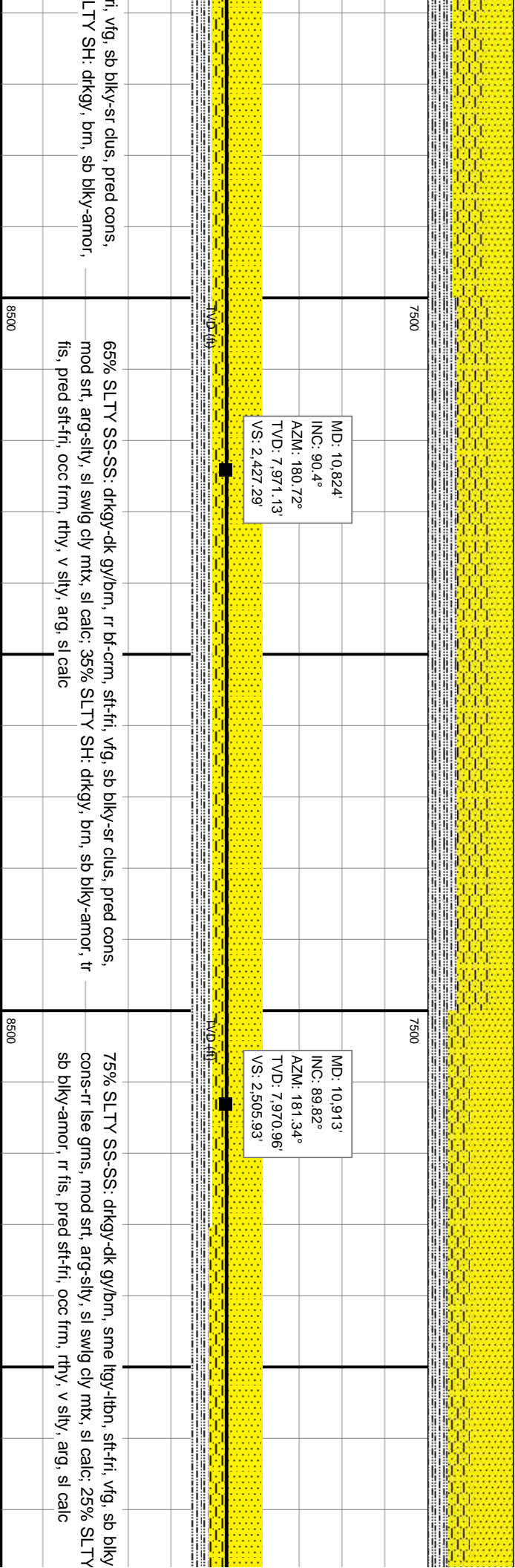
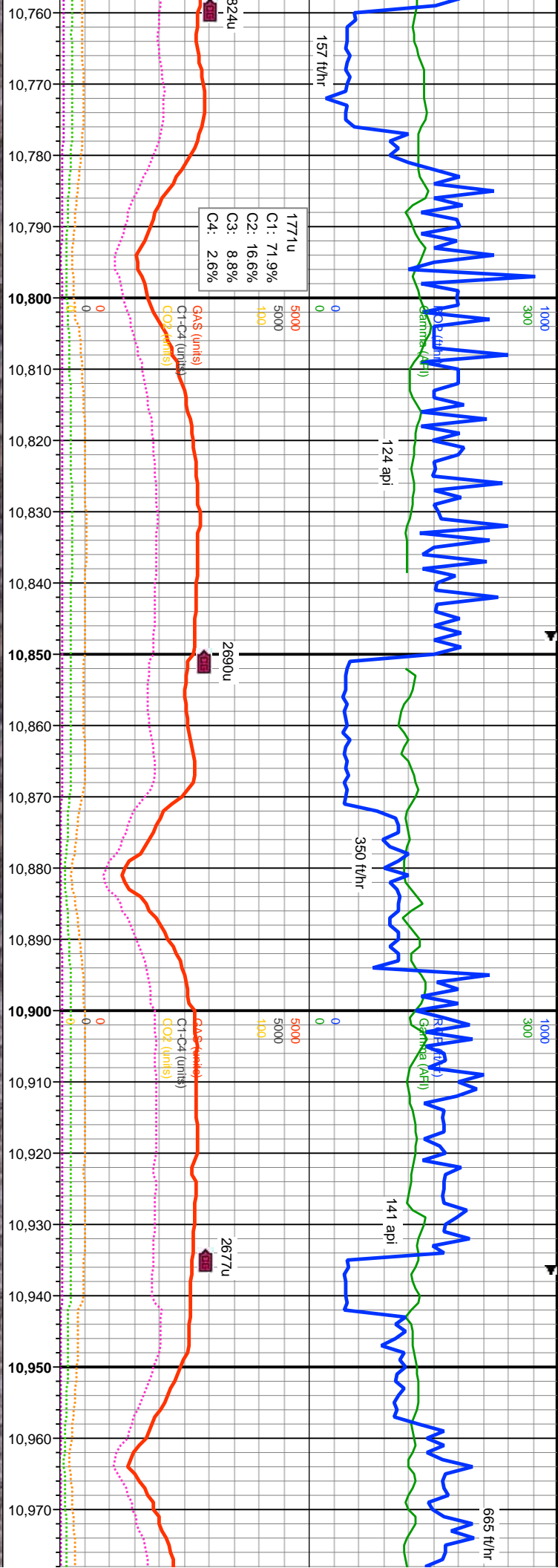
75% SLTY SS-SS: drkgy-dk gy/bn, rr bf-crm, sft-fri, vfg, sb blk-y-sr clus, pred cons, mod srt, arg-slty, mod swlg cly mtx, sl calc; 25% SLTY SH: drkgy, brn, sb blk-y-armor, tr fls, pred sft-fri, occ frm, rthy, v slty, arg, sl calc

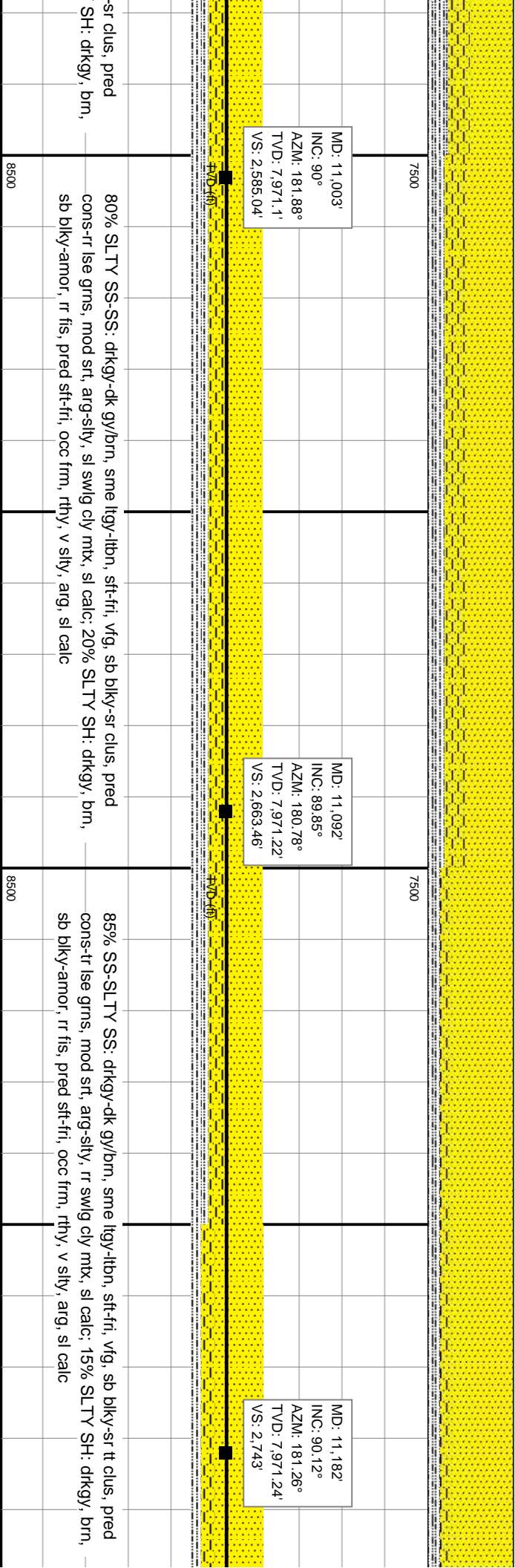
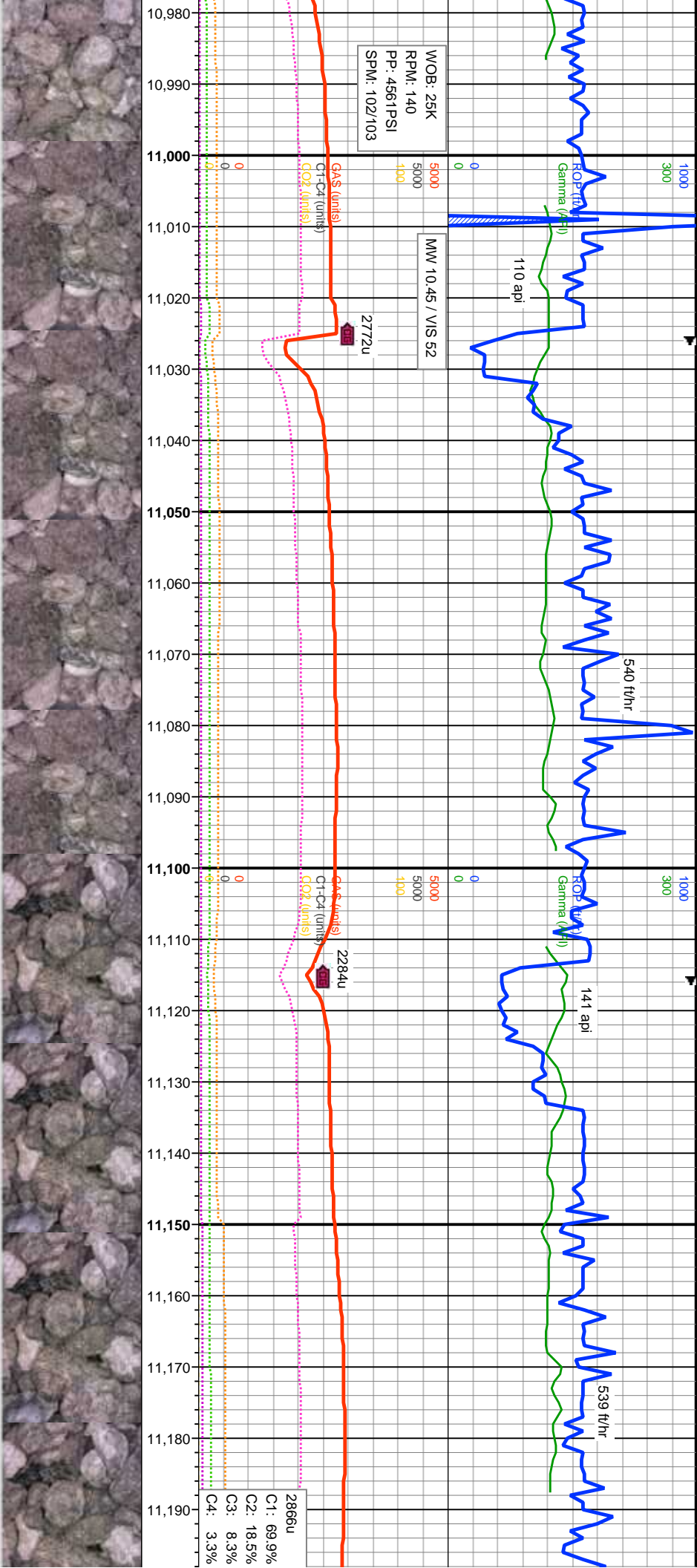
75% SLTY SS-SS: drkgy-dk gy/bn, rr bf-crm, sft-fri, vfg, sb blk-y-sr clus, pred cons, mod srt, arg-slty, mod swlg cly mtx, sl calc; 25% SLTY SH: drkgy, brn, sb blk-y-armor, tr fls, pred sft-fri, occ frm, rthy, v slty, arg, sl calc

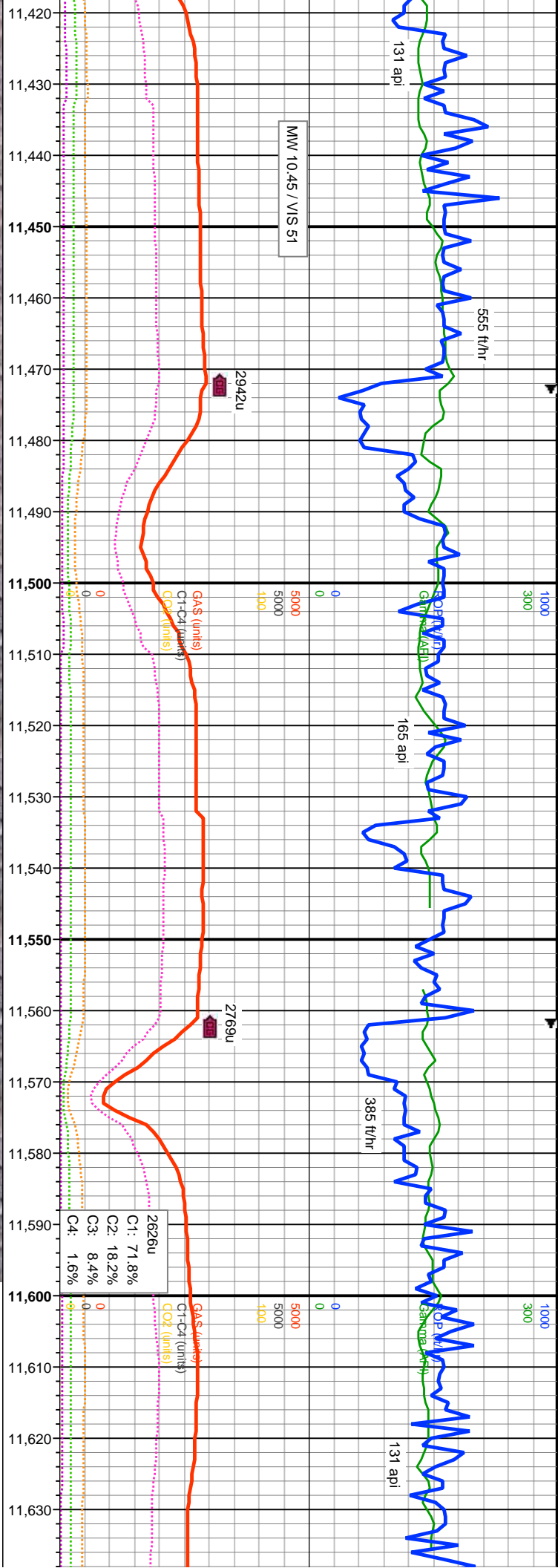
70% SLTY
mod srt, arg
tr fls, pred s











MD: 11,449'
INC: 90°
AZM: 182.68°
TVD: 7,971.05'
VS: 2,975.63'

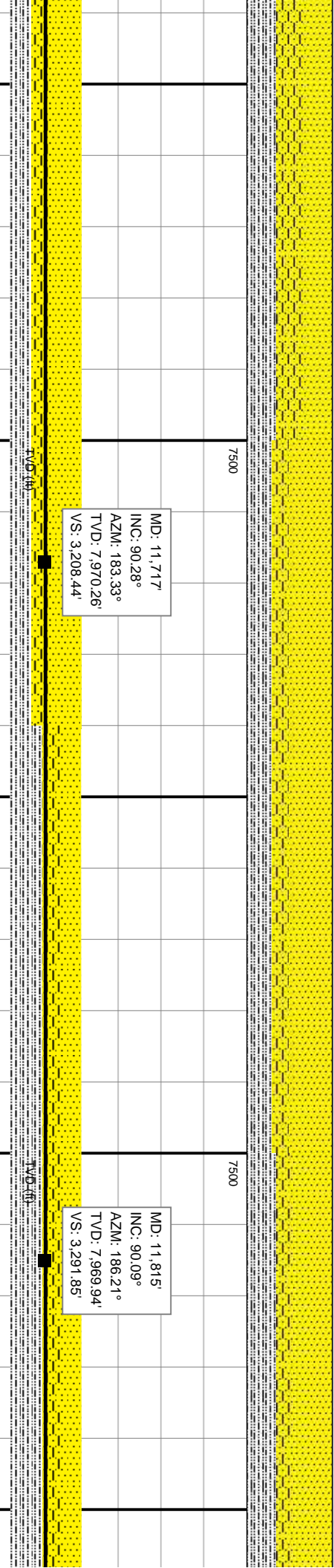
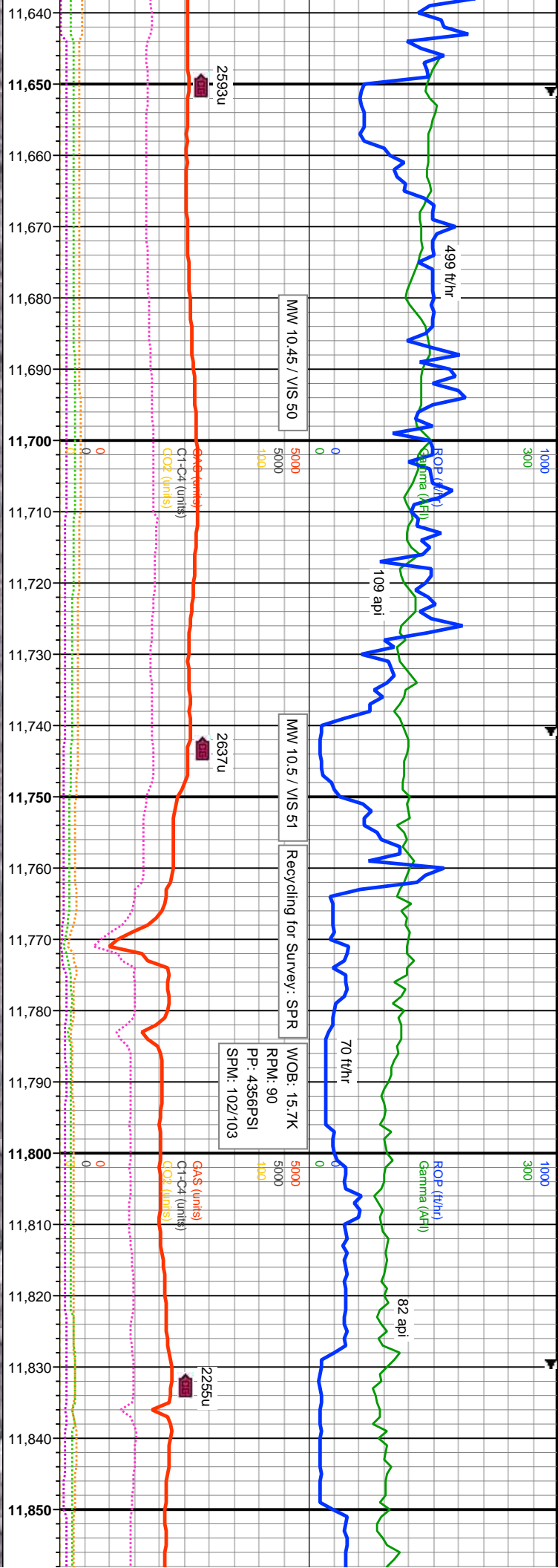
MD: 11,539'
INC: 90.12°
AZM: 182.81°
TVD: 7,970.96'
VS: 3,053.86'

MD: 11,628'
INC: 90.25°
AZM: 182.62°
TVD: 7,970.67'
VS: 3,131.25'

TY SS: drkgy-dk gy/bm, sme lly-ibn, sft-fri, vfg, sb blkv-sr tt clus, pred
gns, mod srt, arg-slt, rr swlg cly mt, sl calc, 30% SLTY SH: drkgy, brn,
br, rr fis, pred sft-fri, occ frm, rthy, v slty-aren, arg, sl calc

65% SS-SLTY SS: v drkgy-dk gy/bm, rr ltr gy & bm, sft-fri, vfg, sb blkv-sr clus, pred
cons-rr lse gns, mod srt, arg-v slty, rr swlg cly mt, sl calc, 35% SLTY SH: drkgy,
brn, sb blkv-amor, rr fis, pred sft-fri, occ frm, rthy, v slty-aren, arg, sl calc

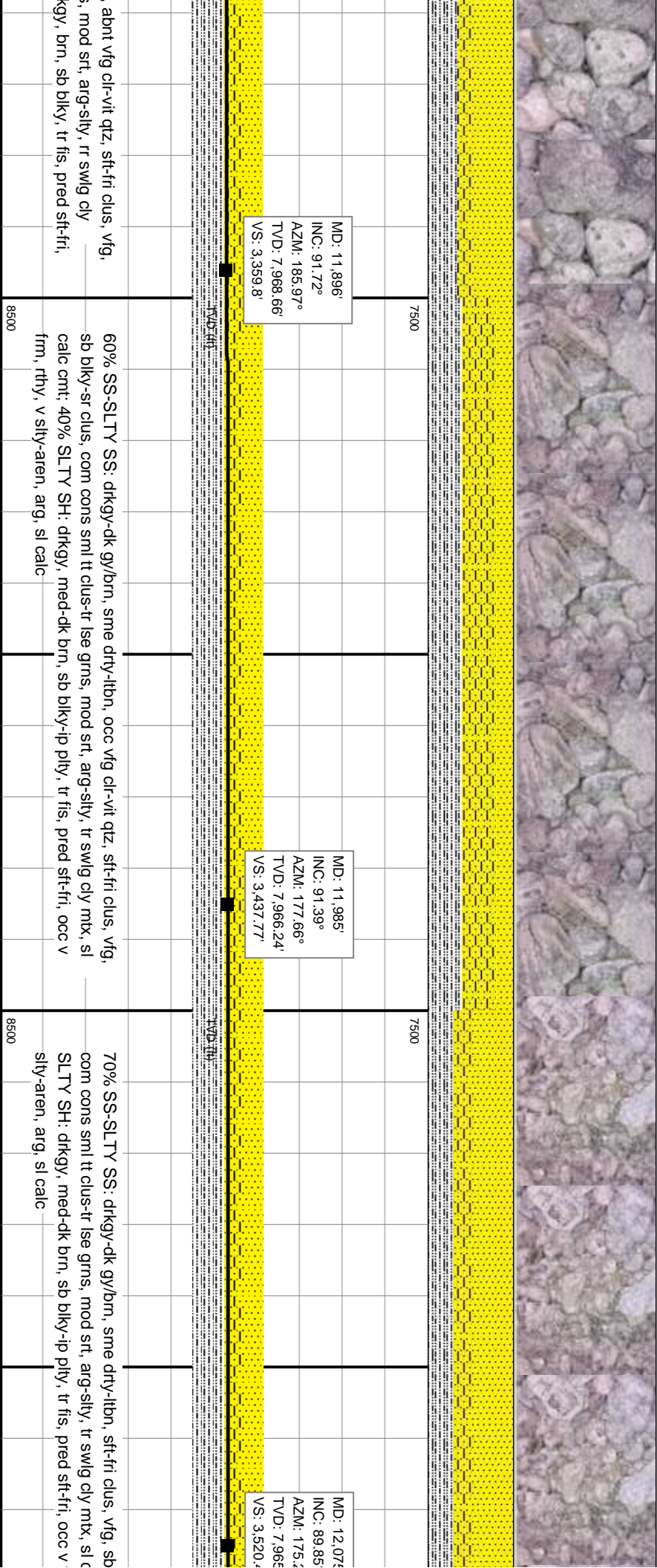
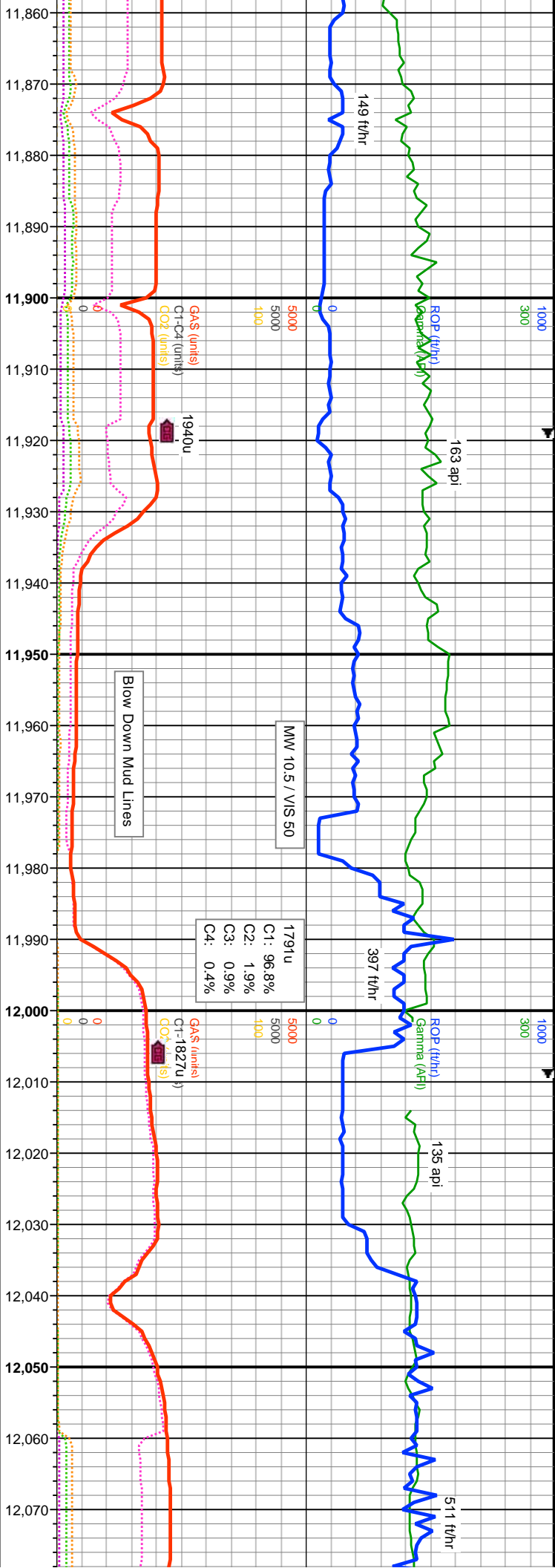
65% SS-SLTY SS: v drkgy-dk
cons-rr lse gns, mod srt, arg-v
brn, sb blkv-amor, rr fis, pred s

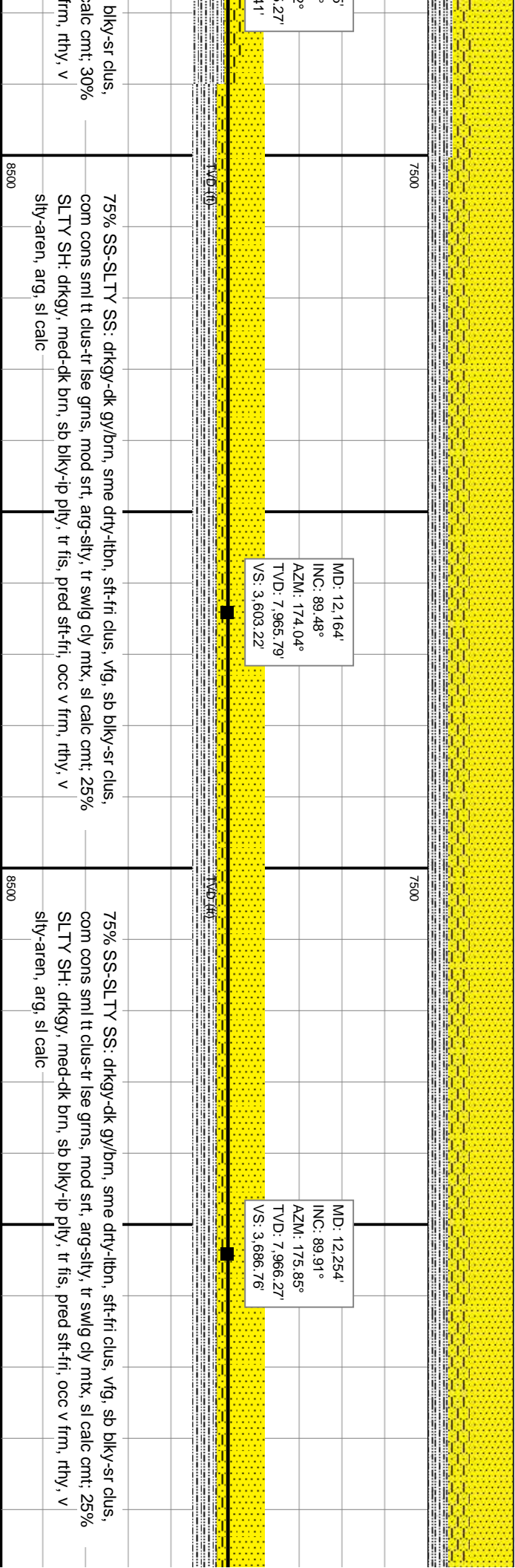
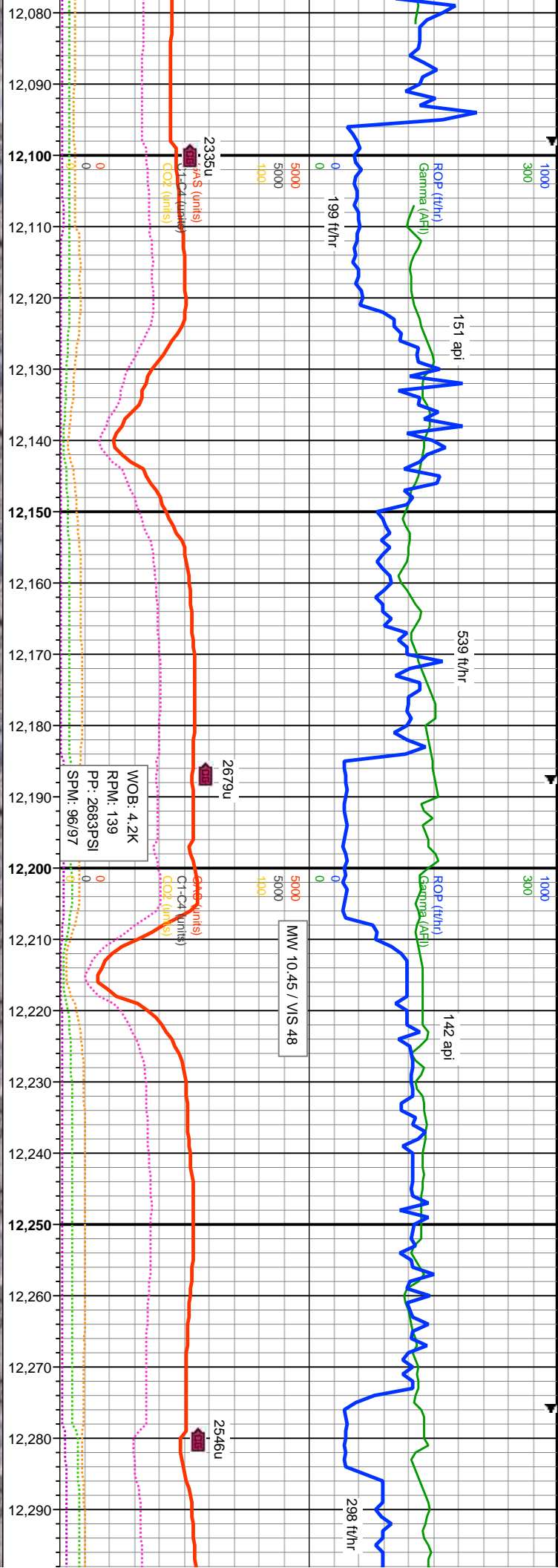


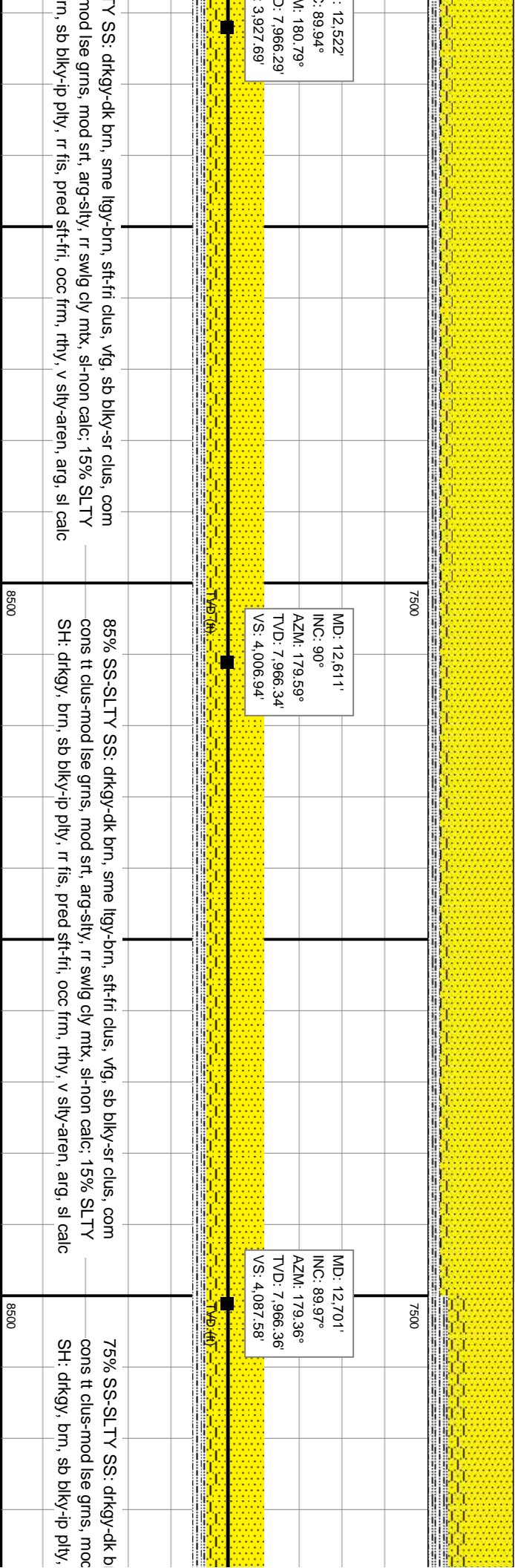
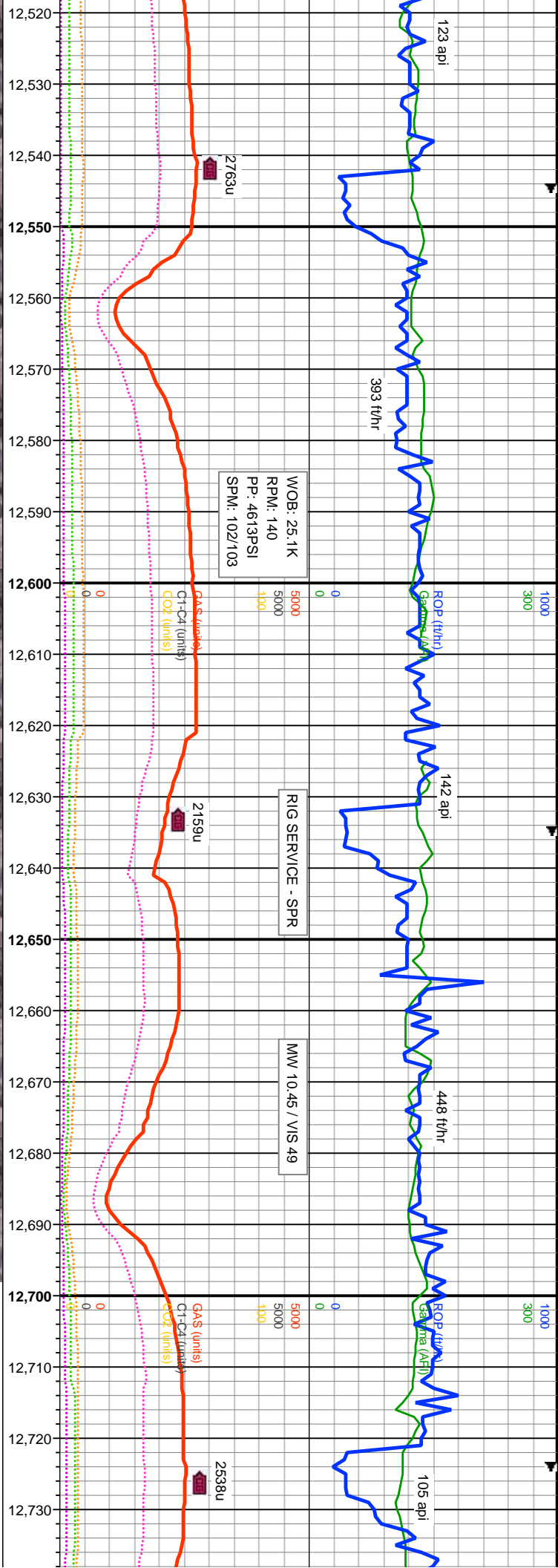
gy/bm, rr ltr gy & bm, sft-fri, vfg, sb blk-y-sr clus, pred
sily, rr swlg cly mtx, sl calc; 35% SLTY SH: drkgy,
sft-fri, occ frm, rthy, v sily-aren, arg, sl calc

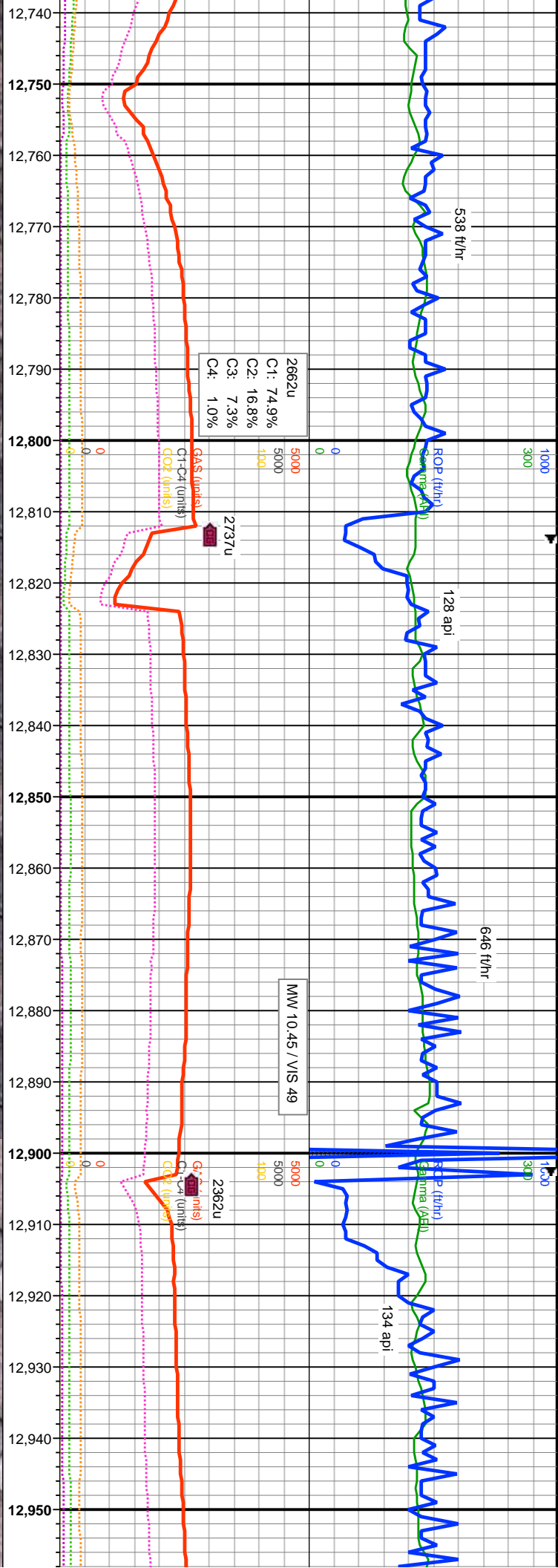
70% SS-SLTY SS: drkgy-dk gy/bm, sme dry bm, clr-vit qtz grns, sft-fri clus, vfg, sb
blk-y-sr clus, pred cons smt tt clus-tr lse grns, mod srt, arg-sily, rr swlg cly mtx, sl
calc cmt, rr pyr, rr flor bent; 30% SLTY SH: drkgy, brn, sb blk-y, rr fts, pred sft-fri, occ v
frm, rthy, v sily-aren, arg, sl calc

65% SS-SLTY SS: drkgy-dk gy/bm, sme dry bm
sb blk-y-sr clus, com cons smt tt clus-abnt lse grns
mtx, sl calc cmt, rr pyr, rr bent; 35% SLTY SH: dr
occ v frm, rthy, v sily-aren, arg, sl calc







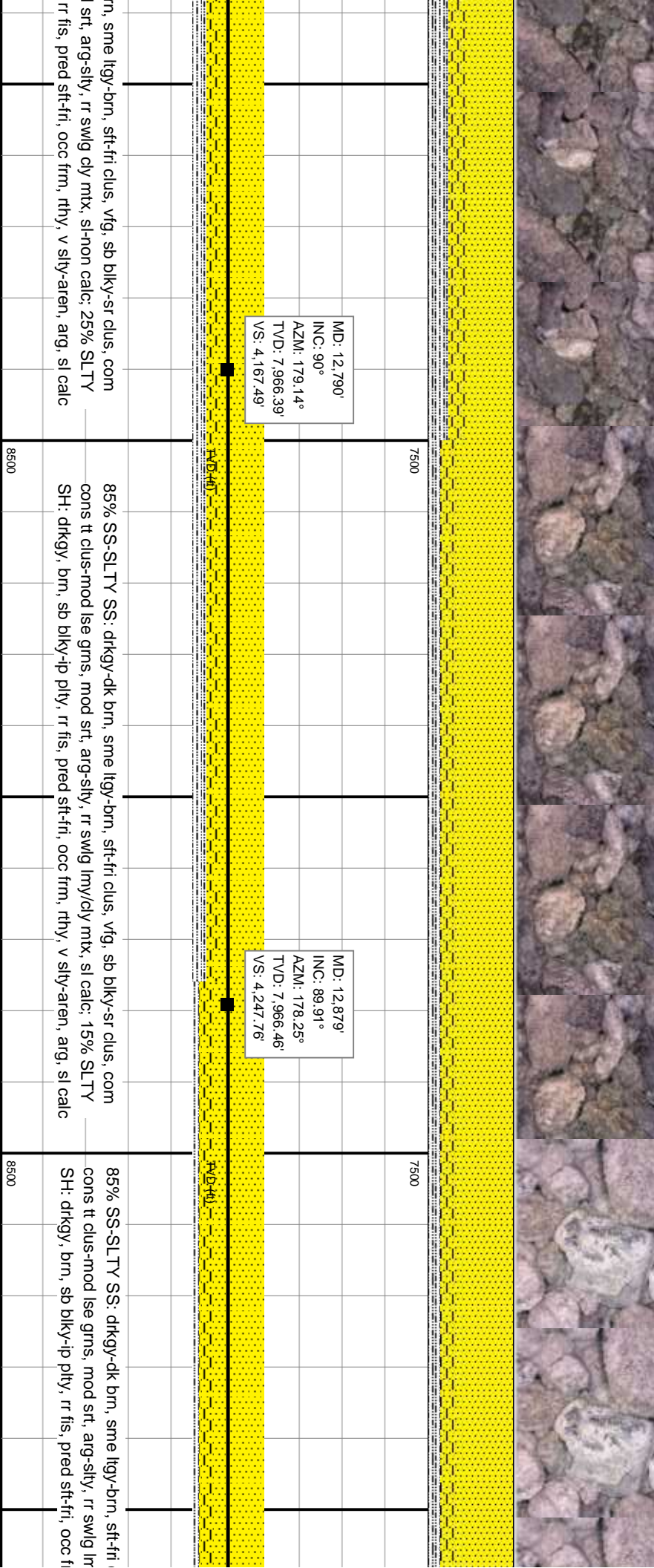


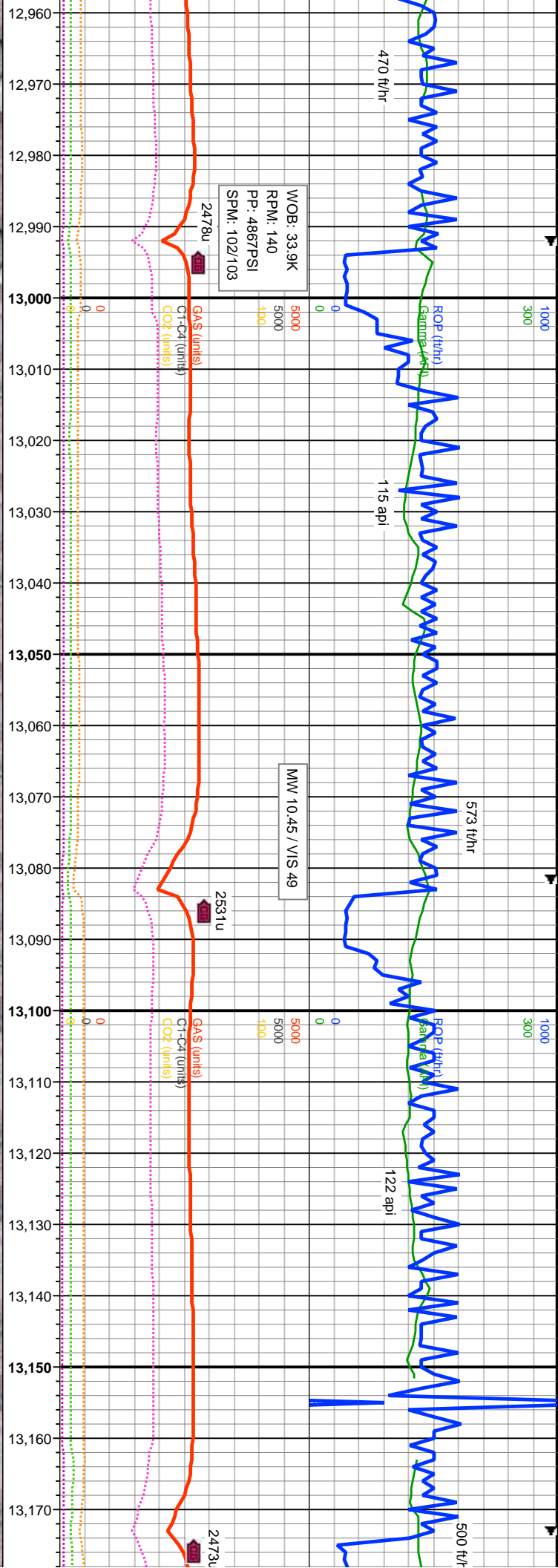
2662u
C1: 74.9%
C2: 16.8%
C3: 7.3%
C4: 1.0%

MW 10.45 / VIS 49

MD: 12,790'
INC: 90°
AZM: 179.14°
TVD: 7,966.39'
VS: 4,167.49'

MD: 12,879'
INC: 89.91°
AZM: 178.25°
TVD: 7,966.46'
VS: 4,247.76'





MD: 12.969'
INC: 89.88°
AZM: 178.35°
TVD: 7.966.62'
VS: 4.329.21'

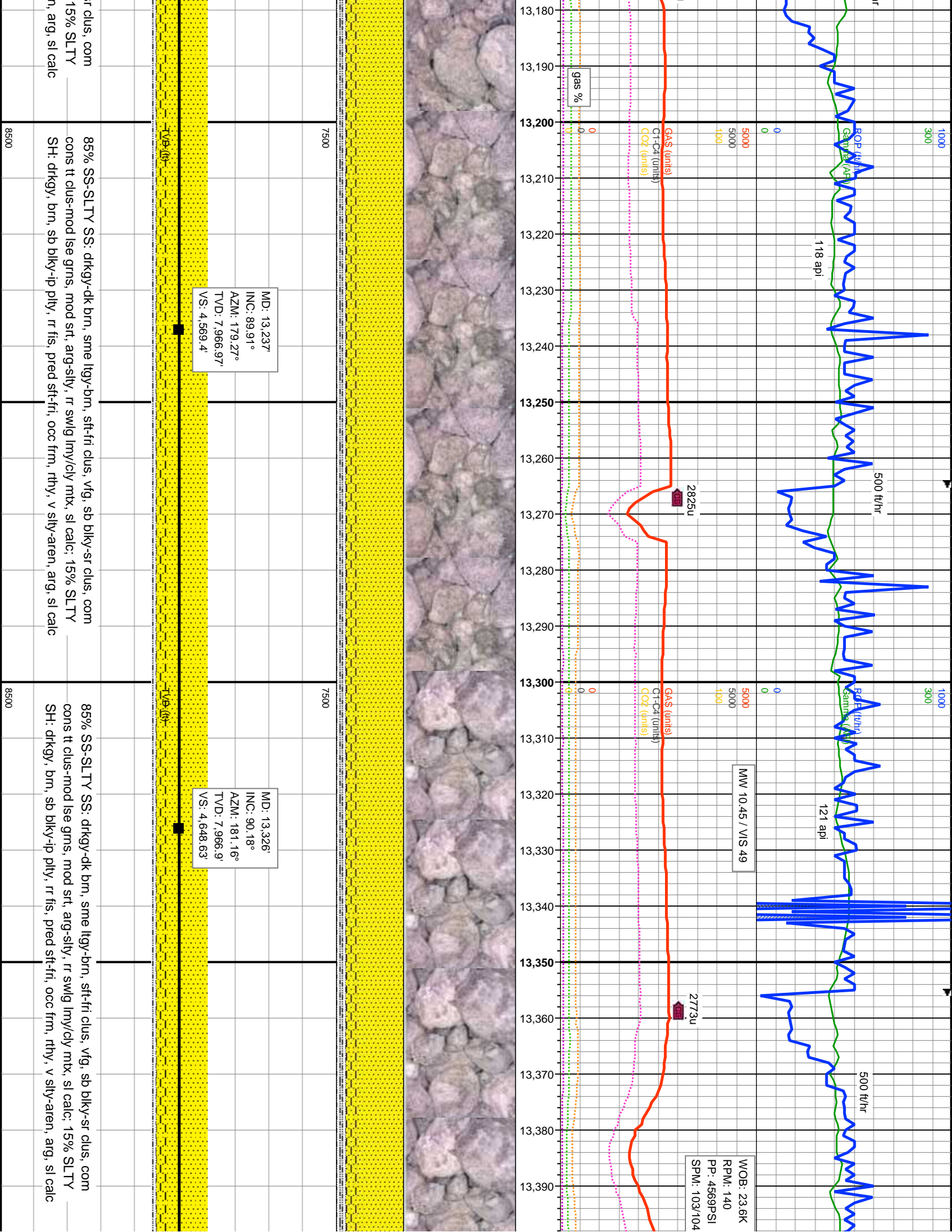
MD: 13.058'
INC: 89.94°
AZM: 179.19°
TVD: 7.966.76'
VS: 4.409.44'

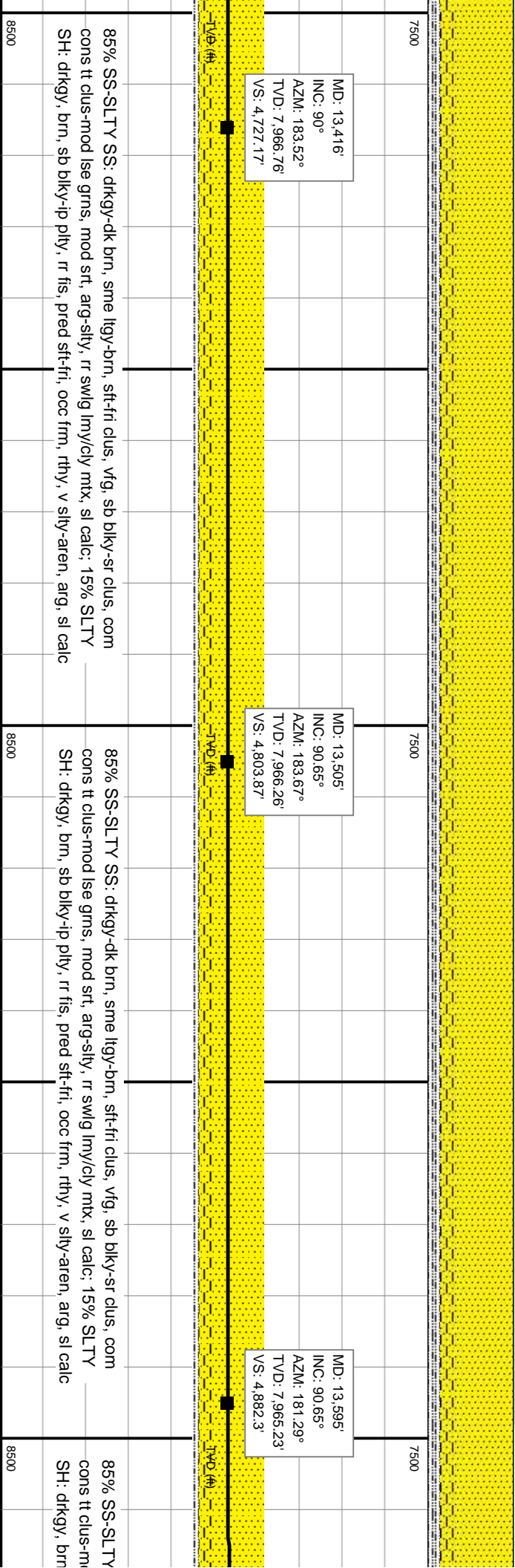
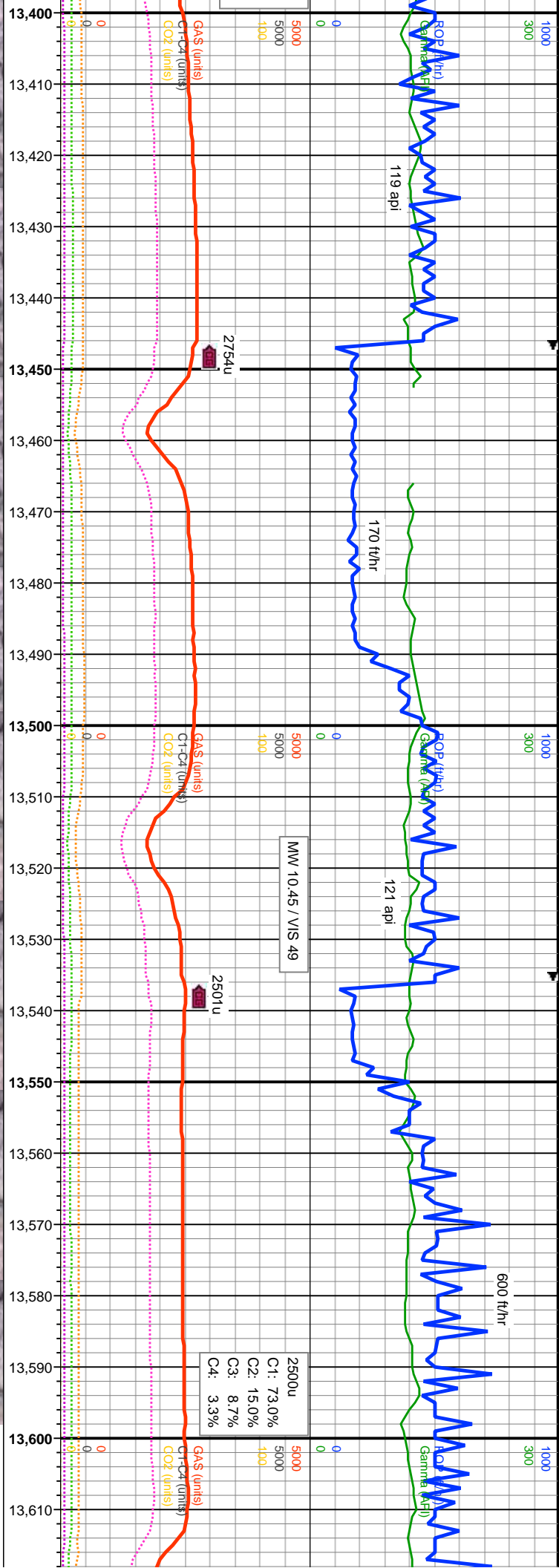
MD: 13.147'
INC: 89.94°
AZM: 180.34°
TVD: 7.966.85'
VS: 4.488.99'

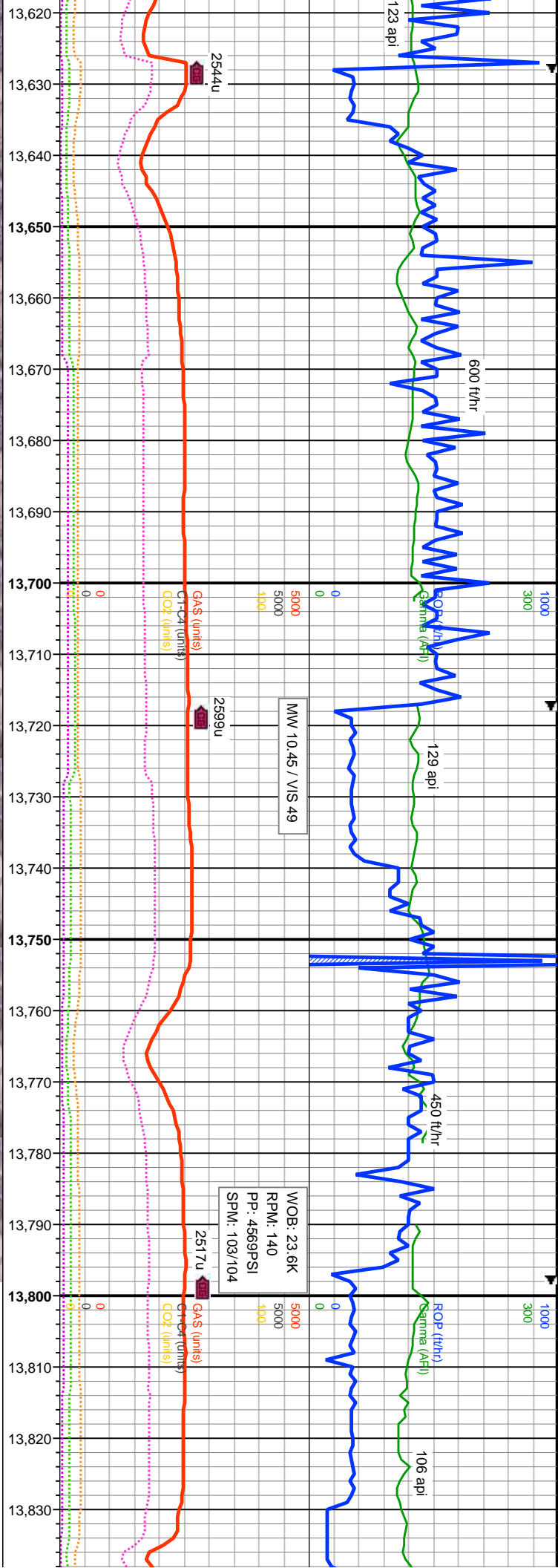
clus, vfg, sb blk-y-sr clus, com
v/cly mtx, sl calc: 15% SLTY
m, rthy, v stly-aren, arg, sl calc

85% SS-SLTY SS: drkgy-dk brn, sme ltgy-brn, sft-fri clus, vfg, sb blk-y-sr clus, com
cons tt clus-mod lse grns, mod srt, arg-sily, rr swig lmy/cly mtx, sl calc: 15% SLTY
SH: drkgy, brn, sb blk-y-ip plty, rr fis, pred sft-fri, occ frm, rthy, v stly-aren, arg, sl calc

85% SS-SLTY SS: drkgy-dk brn, sme ltgy-brn, sft-fri clus, vfg, sb blk-y-sr clus, com
cons tt clus-mod lse grns, mod srt, arg-sily, rr swig lmy/cly mtx, sl calc: 15% SLTY
SH: drkgy, brn, sb blk-y-ip plty, rr fis, pred sft-fri, occ frm, rthy, v stly-aren, arg, sl calc







MD: 13.685'
INC: 90.74°
AZM: 177.07°
TVD: 7.964.14'
VS: 4.963.13'

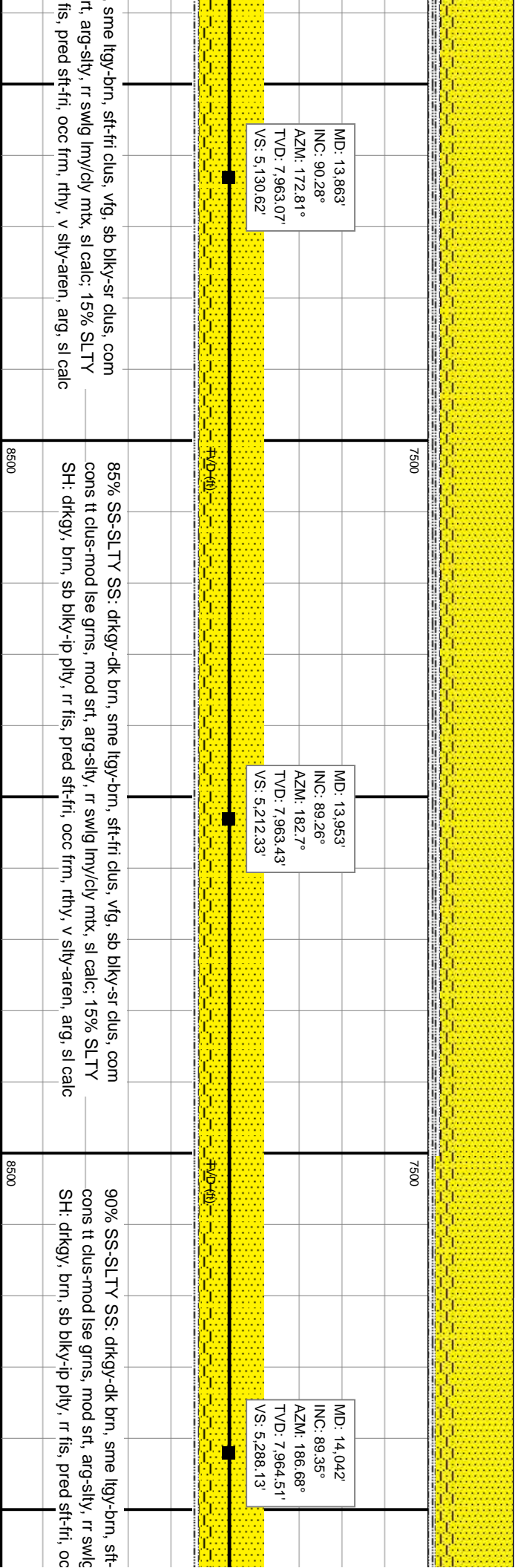
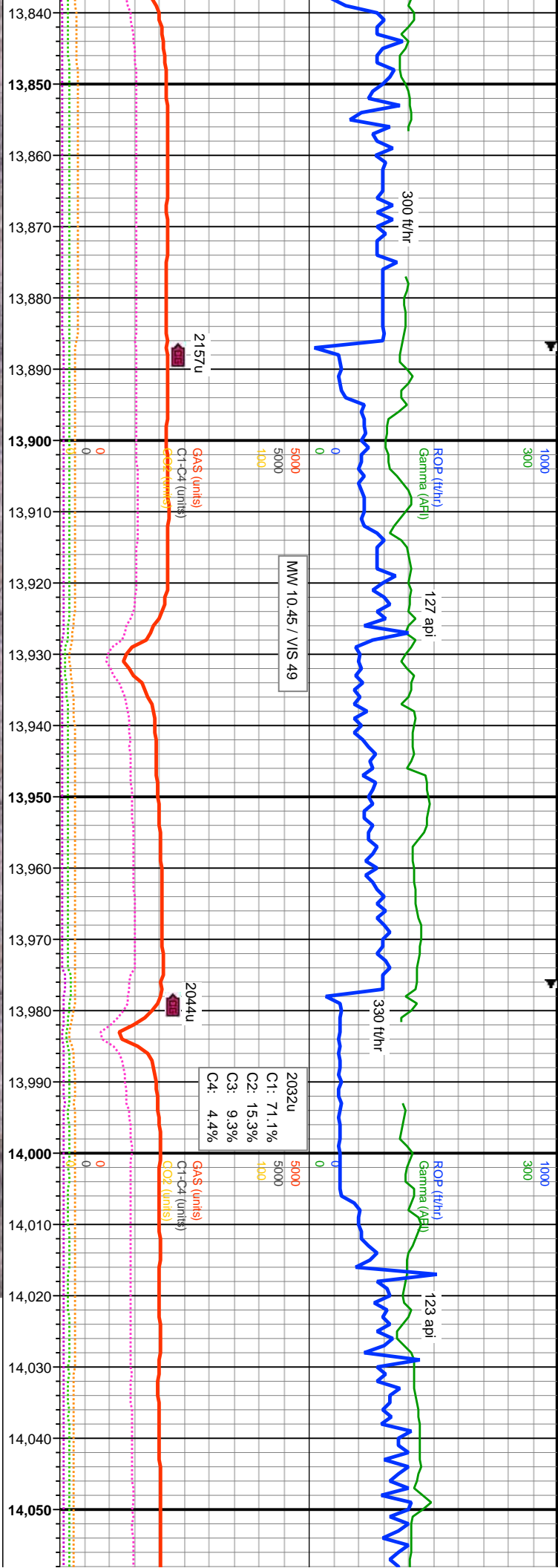
MD: 13.774'
INC: 90.18°
AZM: 170.72°
TVD: 7.963.43'
VS: 5.046.3'

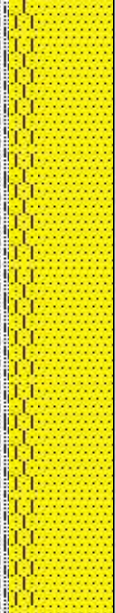
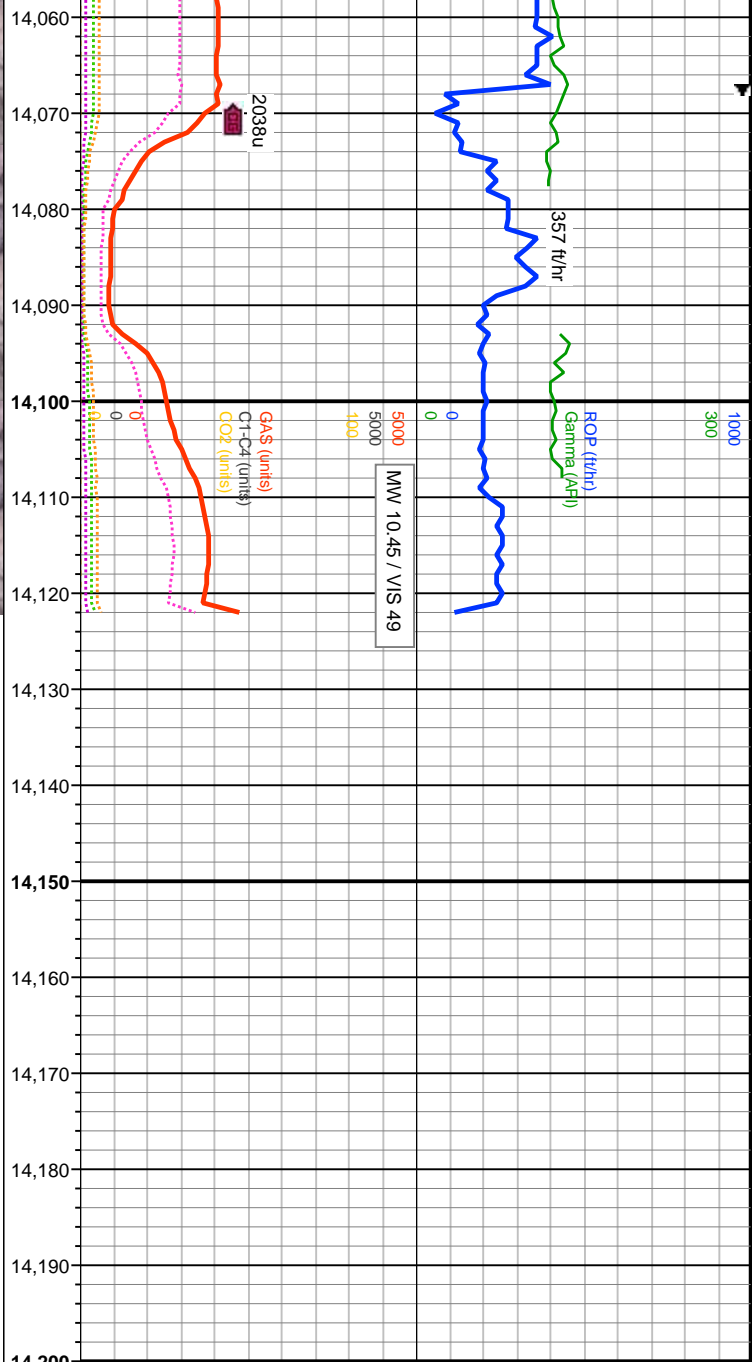
TVD (#)

TVD (#)

SS: drkgy-dk brn, sme ltgy-brn, sft-fri clus, vfg, sb blkly-sr clus, com
mod lse grns, mod srt, arg-sily, rr swig lmy/clly mtb, sl calc; 15% SLTY
sb blkly-ip plty, rr fis, pred sft-fri, occ frm, rthy, v sily-aren, arg, sl calc

85% SS-SLTY SS: drkgy-dk brn, sme ltgy-brn, sft-fri clus, vfg, sb blkly-sr clus, com
cons it clus-mod lse grns, mod srt, arg-sily, rr swig lmy/clly mtb, sl calc; 15% SLTY
SH: drkgy, brn, sb blkly-ip plty, rr fis, pred sft-fri, occ frm, rthy, v sily-aren, arg, sl calc





MD: 14,098'
INC: 89.35°
AZM: 186.63°
TVD: 7,965.15'
VS: 5,334.81'

MD: 14,122'
INC: 89.35°
AZM: 186.63°
TVD: 7,965.42'
VS: 5,354.82'

TD Reached, 14122' MD, 21:10 MST, 01/28/2018
Thank you for using Terra Guidance, LLC.

Projection to Bit

frt clus, vfg, sb blk-y-sr clus, com
lmy/cly mtx, sl calc: 10% SLTY
c frm, rthy, v slty-aren, arg, sl calc

90% SS-SLTY SS: drkgy-dk brn, sme ltgy-brn, sft-frt clus, vfg, sb blk-y-sr clus, com
cons it clus-mod lse grms, mod srt, arg-slty, rr swlg lmy/cly mtx, sl calc: 10% SLTY
SH: drkgy, brn, sb blk-y-lp ply, rr fls, pred sft-frt, occ frm, rthy, v slty-aren, arg, sl calc