



Scale: 5" / 100'
Measured Depth Log

Well Name Rohn State LD10-62HN

Location SESE SEC 9 T9N R58W

State COLORADO

County WELD

Country USA

Rig Number H&P 273

API Number 05-123-37624

Field WILDCAT

Region DJ BASIN

Drilling Completed 10/26/2014

Spud Date 10/21/2014

Surface Coordinates 810' FSL; 330' FEL

Bottom Hole Coordinates 660' FFSSL; 660' FFELL

Ground Elevation 4719'

K.B. Elevation 4743'

Logged Interval 4929' To 10130'

Total Depth 10130'

Formation NIOBRARA

Type of Drilling Fluid LSND

Operator

Company NOBLE ENERGY INC.

Address 1625 Broadway Suite 2200
Denver, CO 80202

Geologist

Name RENEE CLACKER

Company NOBLE ENERGY INC.

Address 1625 Broadway Suite 2200
Denver, CO 80202

Other

Wellsite Geologist #1 Laura Kellogg

Wellsite Geologist #2 Nick Kopiasz

Wellsite Geological Services Provided By Columbine Logging








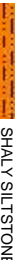




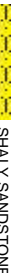








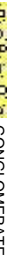











Zone Color Coding

Oil
Note
Error




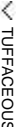

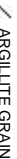
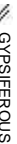
















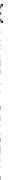























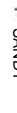




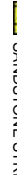

Condensate
Core
Water

Gas
Pres
Sea

Rock Types

 CHALK	 CEMENT	 IGNEOUS	 SHALE GRAY
 MARLSTONE	 CHERT	 SIDERITE or LIMONITE	 SHALY SILTSTONE
 SANDSTONE	 CLAY CHOKE SANC	 LIMESTONE	 SILTSTONE
 SHALY SANDSTONE	 CLAYSTONE	 METAMORPHIC	 TILL
 SILTY SHALE	 COAL	 NO SAMPLE	 TUFF
 UNKNOWN	 CONGLOMERATE	 SALT	 WELDED TUFF
 ANHYDRITE	 DOLOMITE	 SALT-PEPPER SAND	
 BENTONITE	 GRANITE	 SHALE	
 BRECCIA	 GYPSUM	 SHALE COLORED	









Accessories

 F FOSSIL	 ARGILLACEOUS	 GLAUCONITE	 TUFFACEOUS
 GASTROPOD	 ARGILLITE GRAIN	 GYPSIFEROUS	
 OOLITE	 B BENTONITE	 HEAVY MINERAL	
 AMPHIPORA	 BITUMENOUS SUBSTANCE	 INOCERAMUS	
 BELEMNITE	 BRECCIA FRAGMENTS	 K KAOLIN	 ANHYDRITE STRINGER
 BIOCLASTIC	 CALCAREOUS	 M MARLSTONE	 BENTONITE STRINGER
 BRACHIOPOD	 CARBONACEOUS FLAKES	 M MINERAL CRYSTALS	 COAL STRINGER
 BRYOZOA	 CHTDK	 N NODULES	 DOLOMITE STRINGER
 CEPHALOPOD	 CHTLT	 P PHOSPHATE PELLETS	 GYPSUM STRINGER
 CORAL	 COAL - THIN BEDS	 P PYRITE	 LIMESTONE STRINGER
 CRINOID	 D DOLOMITIC	 B SALT CAST	 MARLSTONE (CALC) STRG
 ECHINOID	 F FELDSPAR	 S SANDY	 MARLSTONE (DOL) STRG
 FISH	 F FERRUGINOUS PELLETT	 S SILICEOUS	 SANDSTONE STRINGER
 FORAMINIFERA	 F FERRUGINOUS	 S SILTY	 SHALE STRINGER
			 SILTSTONE STRINGER





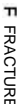



Minerals

Engineering

Oil Show

 MOLDIC	 O ORGANIC
 D DEAD	 P PINPOINT
 E EVEN	 V VUGGY
 Q QUESTIONABLE	
 S SPOTTED STAINING	

Porosity

 CONNECTION (LEFT)	 CONNECTION (RIGHT)
 E EARTHY	 F FENESTRAL
 F FRACTURE	 CONNECTION GAS
 I INTERCRYSTALLINE	 CORE - RECOVERED
 I INTEROOLITIC	 DST INTERVAL

Stringer

Fossils

Other Symbols

 FAULT  WIRELINE TESTED - LEFT **E** EARTHY

 FORMATION TOP  WIRELINE TESTED - RT **FX** FINELYXLN

 GAS SHOW **GS** GRAINSTONE

 MINDEPTH MN DEPTH **L** LITHOGRAPHIC

Rounding


 NORMAL FAULT **A** ANGULAR **MX** MICROXLN

 OIL SHOW **R** ROUNDED **MS** MUDSTONE

 OVERTURNED STRATA **B** SUBANG **PS** PACKSTONE


 REVERSE FAULT **F** SUBRND **WS** WACKESTONE


 SIDEWALL CORE (LEFT)

 SIDEWALL CORE (RIGHT)

Textures

 SLIDE **BS** BOUNDSTONE **M** MODERATE

 SURVEY **C** CHALKY **P** POOR

 TRIP GAS **CX** CRYPTOXLN **W** WELL

Sorting

Slide/Rotate

ROP

ROP

Total Gas & Chromatograph

GAS

C1

C2

C3

C4

COLUMBINE LOGGING INC.
RIGGED UP ON 10/21/2014
MANNED 2-PERSON LOGGING
WITH BLOODHOUND GAS
CHROMATOGRAPH UNIT
#0680 COLUMBINE BEGAN
LOGGING ON 10/23/2014

BEGAN DRILLING CURVE
@ 11:54 AM 10/23/2014

BHA BIT:
8.75" SMITH SD1519HPX
Serial #: JJ4812
Jets: 7x13

50' Sample Interval

678u

GAS (units)
C1-C4 (PPM)

935u

1024u

Depth Labels

% Lith

Gamma

GAMMA

Well Bore

TVD

Oil Show

Images

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.

SLTY SH: lt
gy-dk gy, sb
biky-sb pty, v
sft, stly tex, arg
cmt

SLTY SH: lt gy-dk gy, sb biky-sb pty, v sft,
stly tex, arg cmt; tr pyr

SLTY SH: lt gy-dk gy, sb biky-sb pty, v sft,
stly tex, arg cmt; tr pyr

SLTY
stly tex

WT IN 10.40/ OUT 10.40
VIS IN 32/ OUT 32

MD: 4,954 '
TVD: 4,944.64 '
Inclination: 3.57 °
Azimuth: 95.75 °
VS: 163.21 '

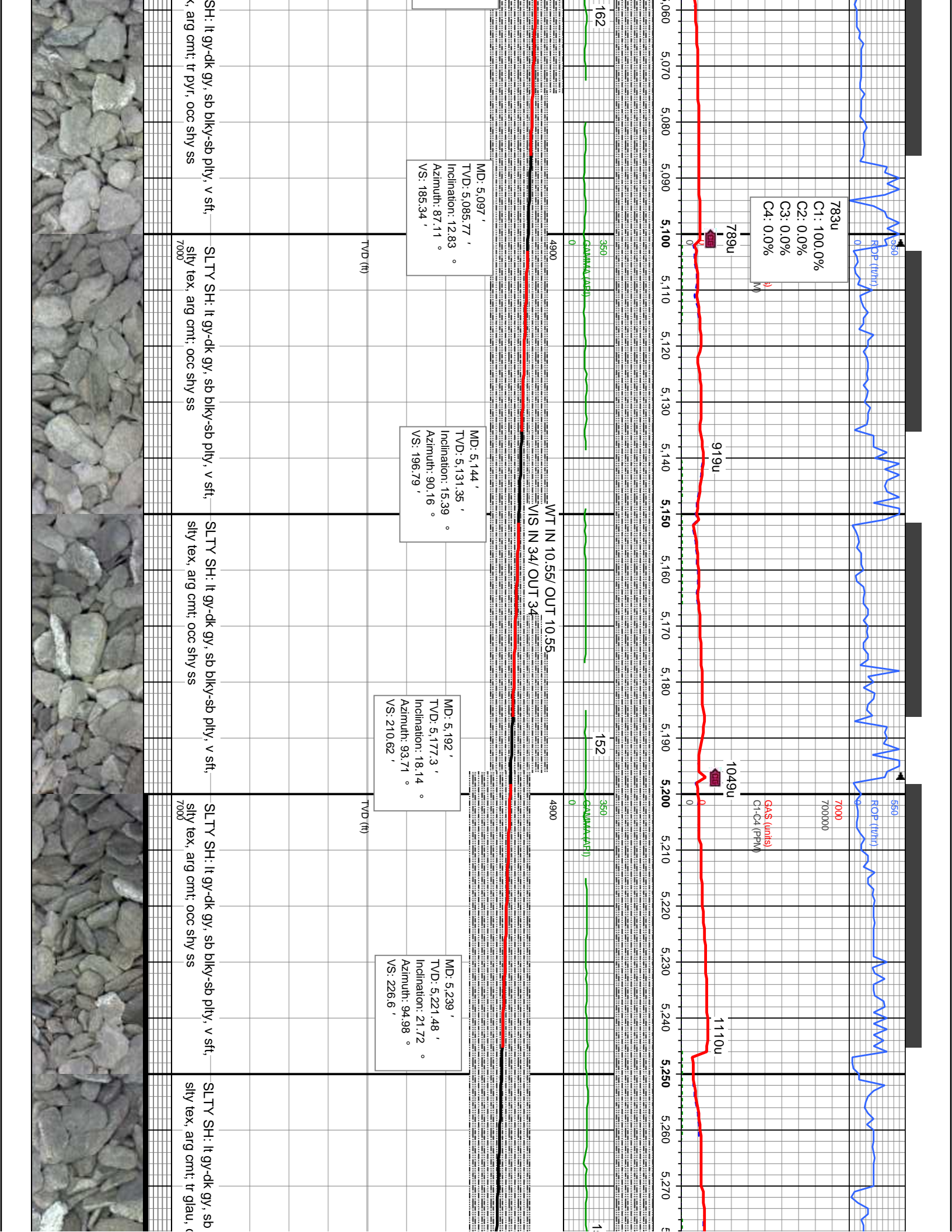
MD: 5,002 '
TVD: 4,992.37 '
Inclination: 8.27 °
Azimuth: 98.31 °
VS: 168.11 '

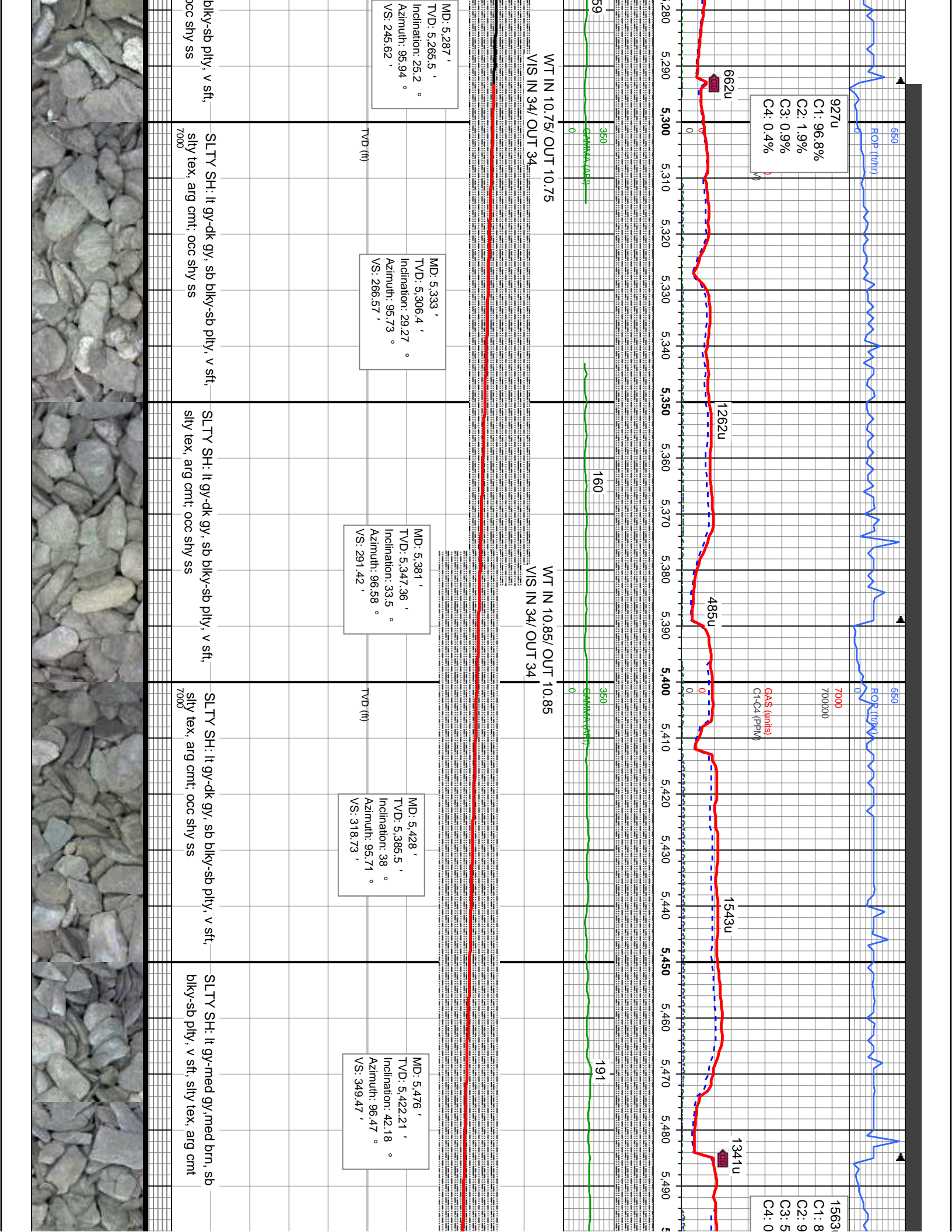
MD: 5,049 '
TVD: 5,038.75 '
Inclination: 10.39 °
Azimuth: 93.07 °
VS: 175.69 '

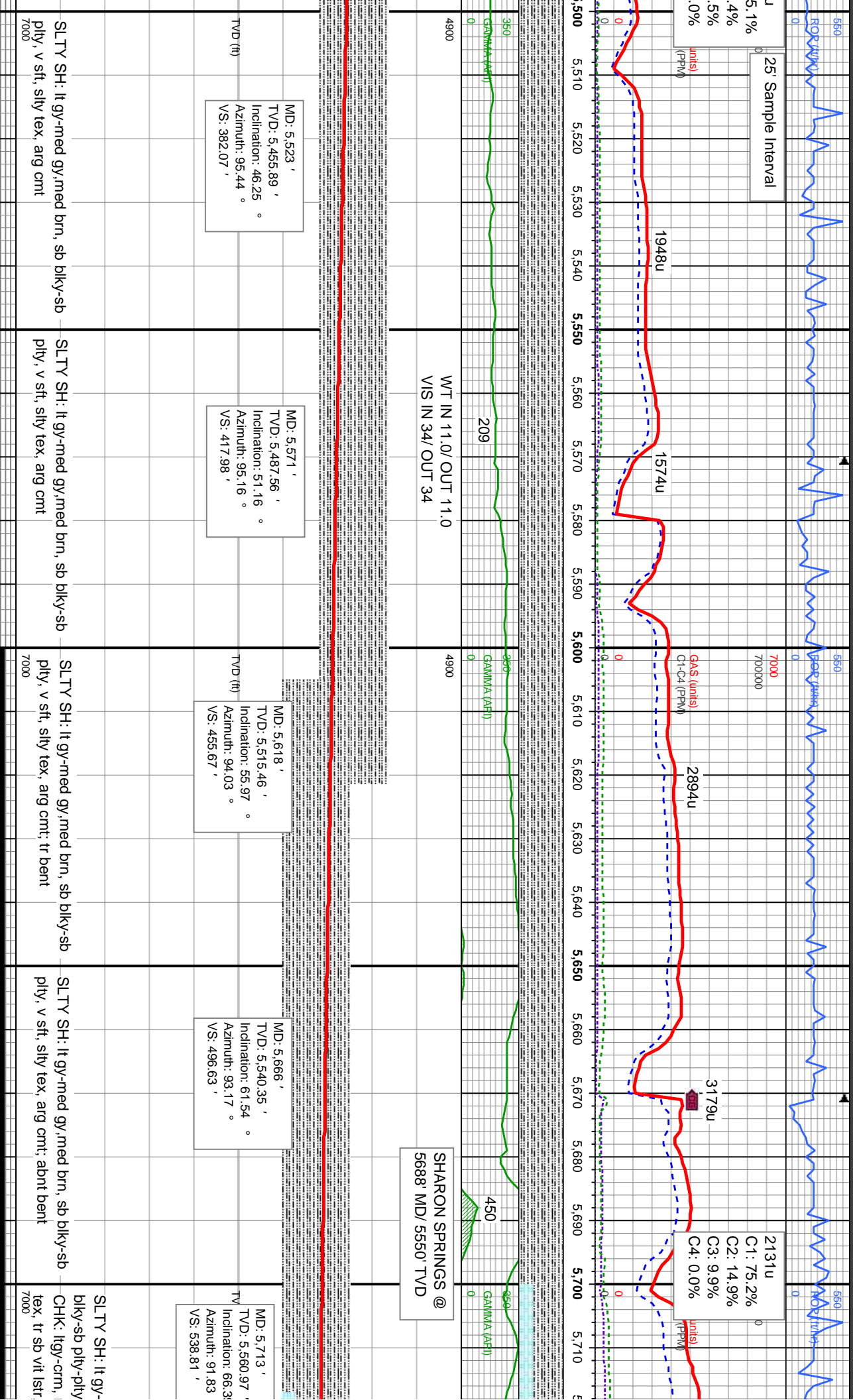
TVD (ft)

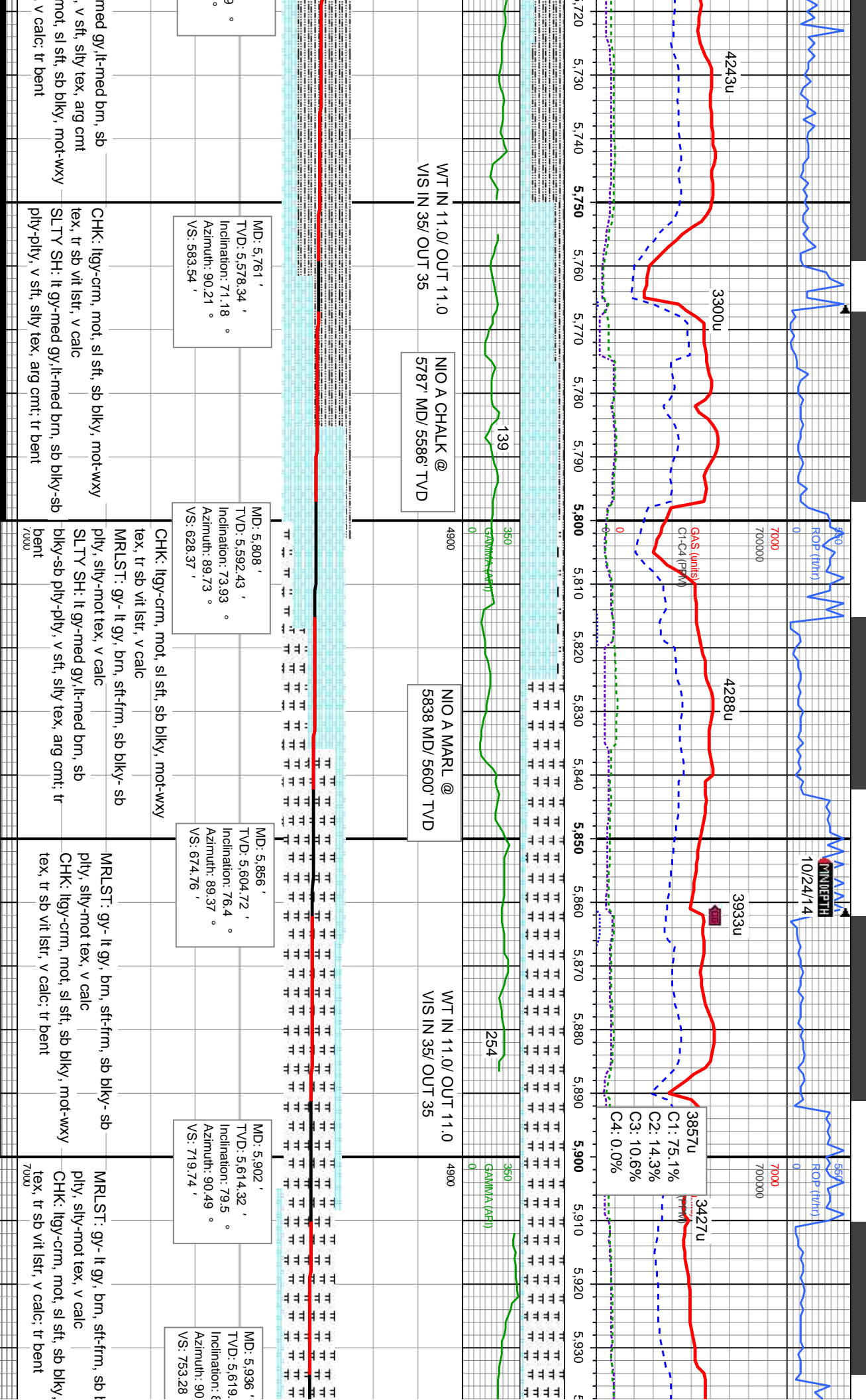
TVD (ft)

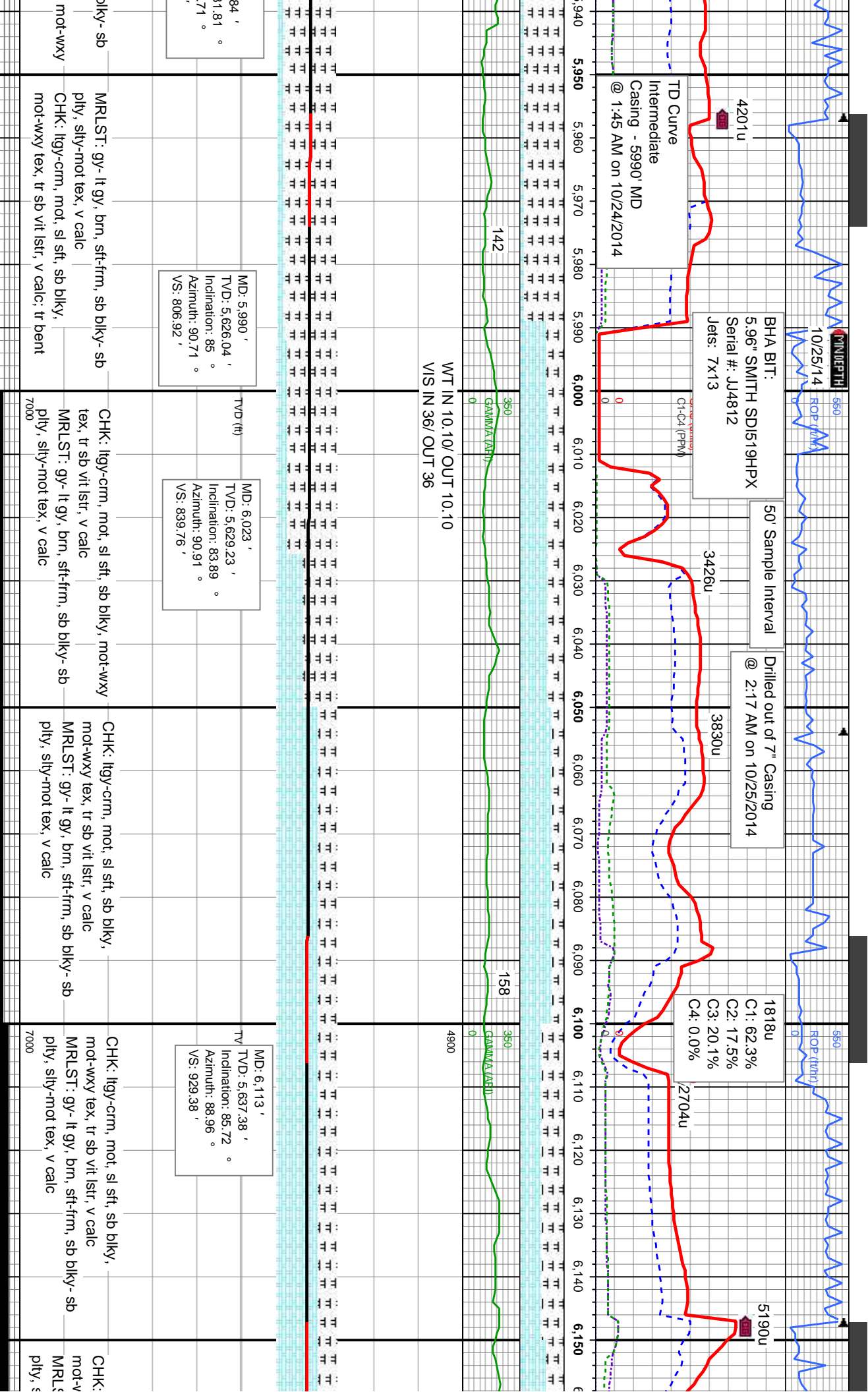


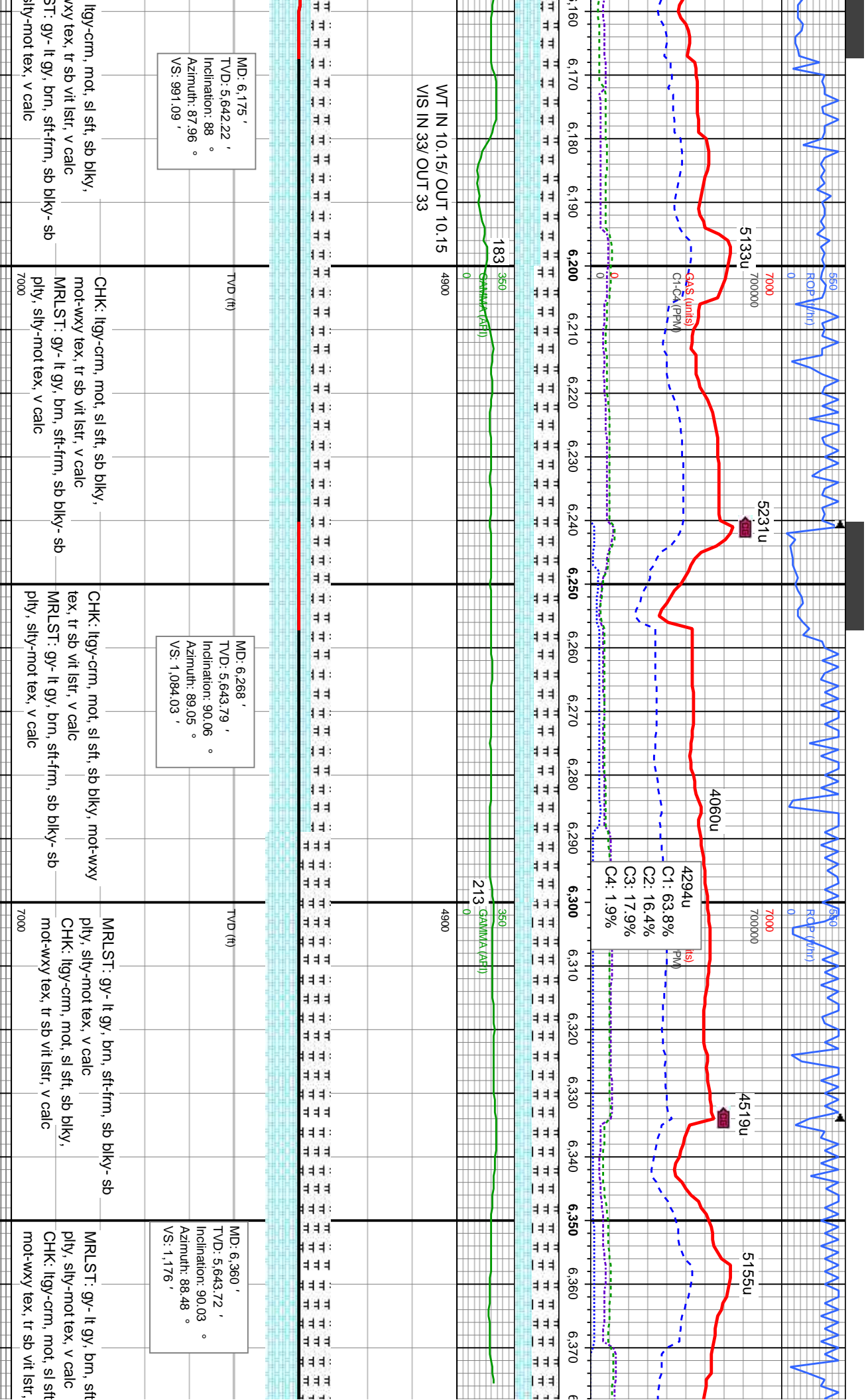


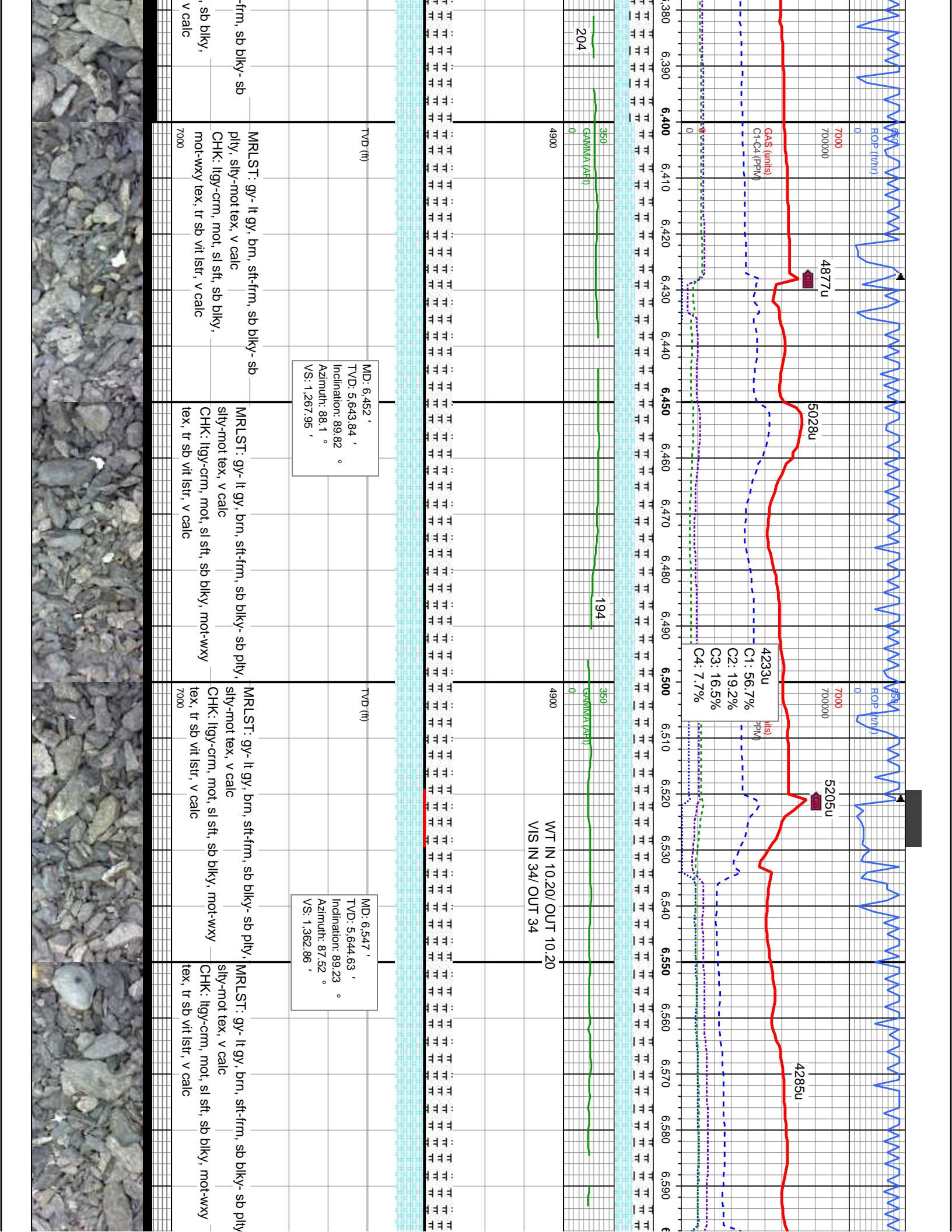


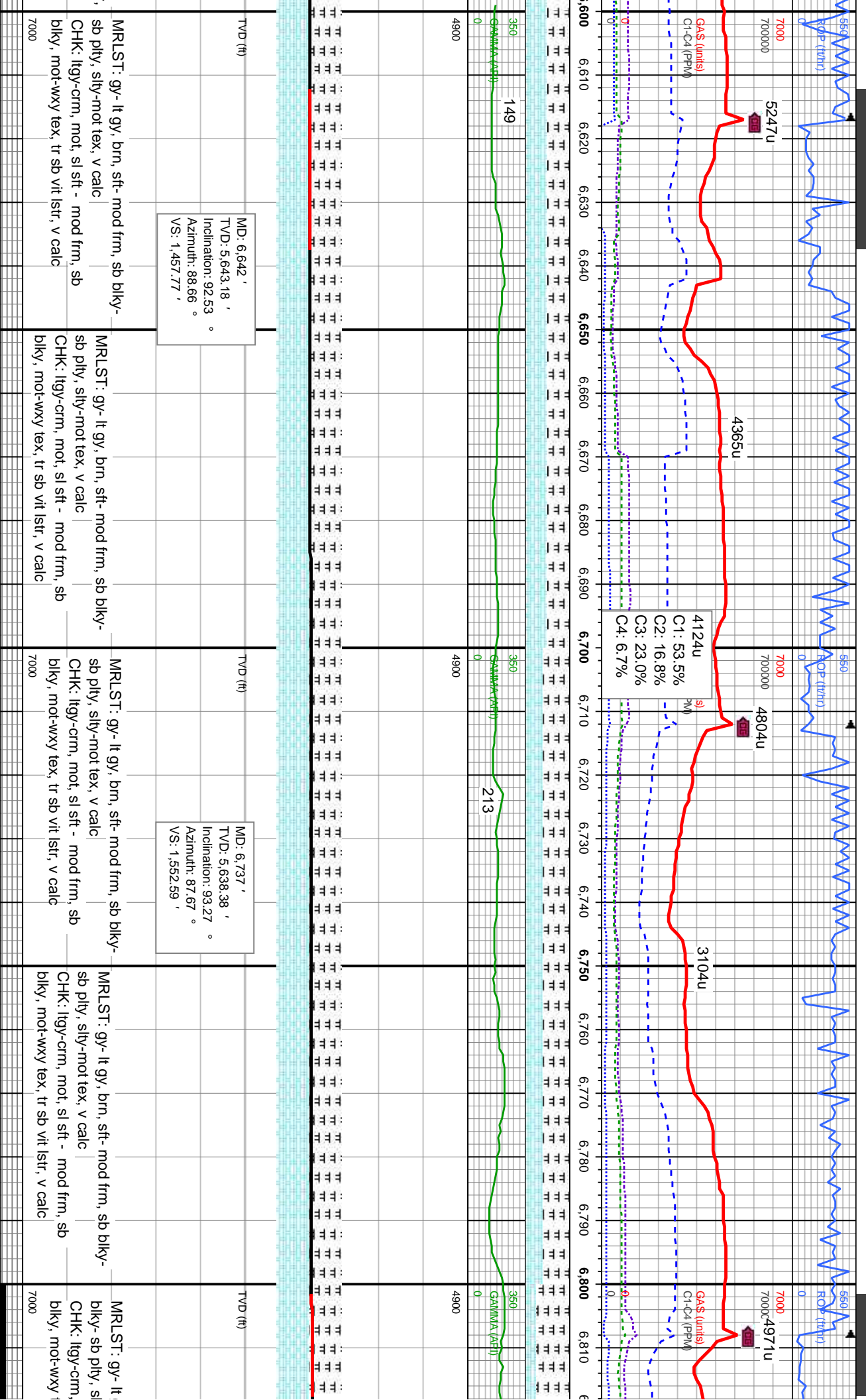


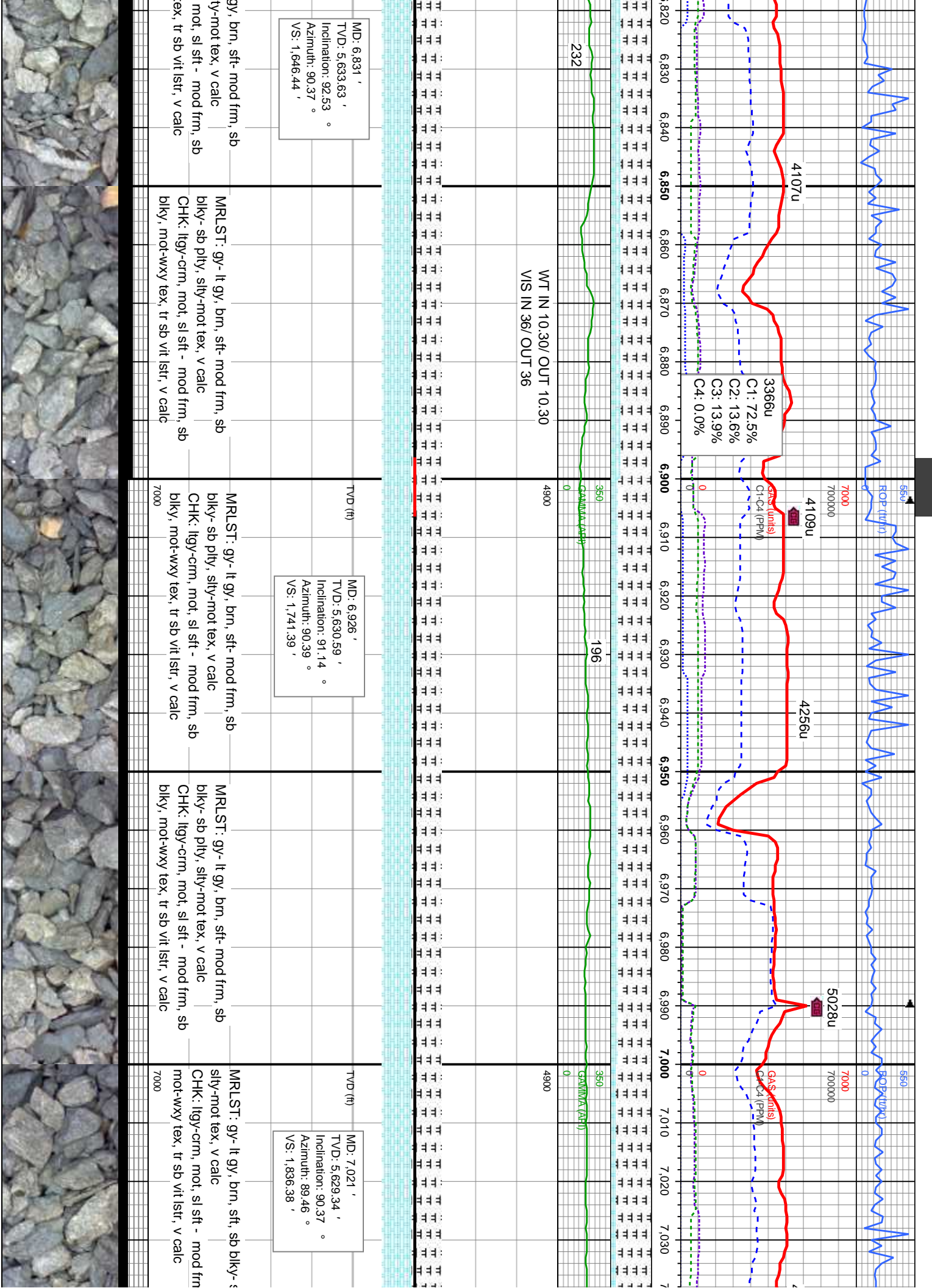


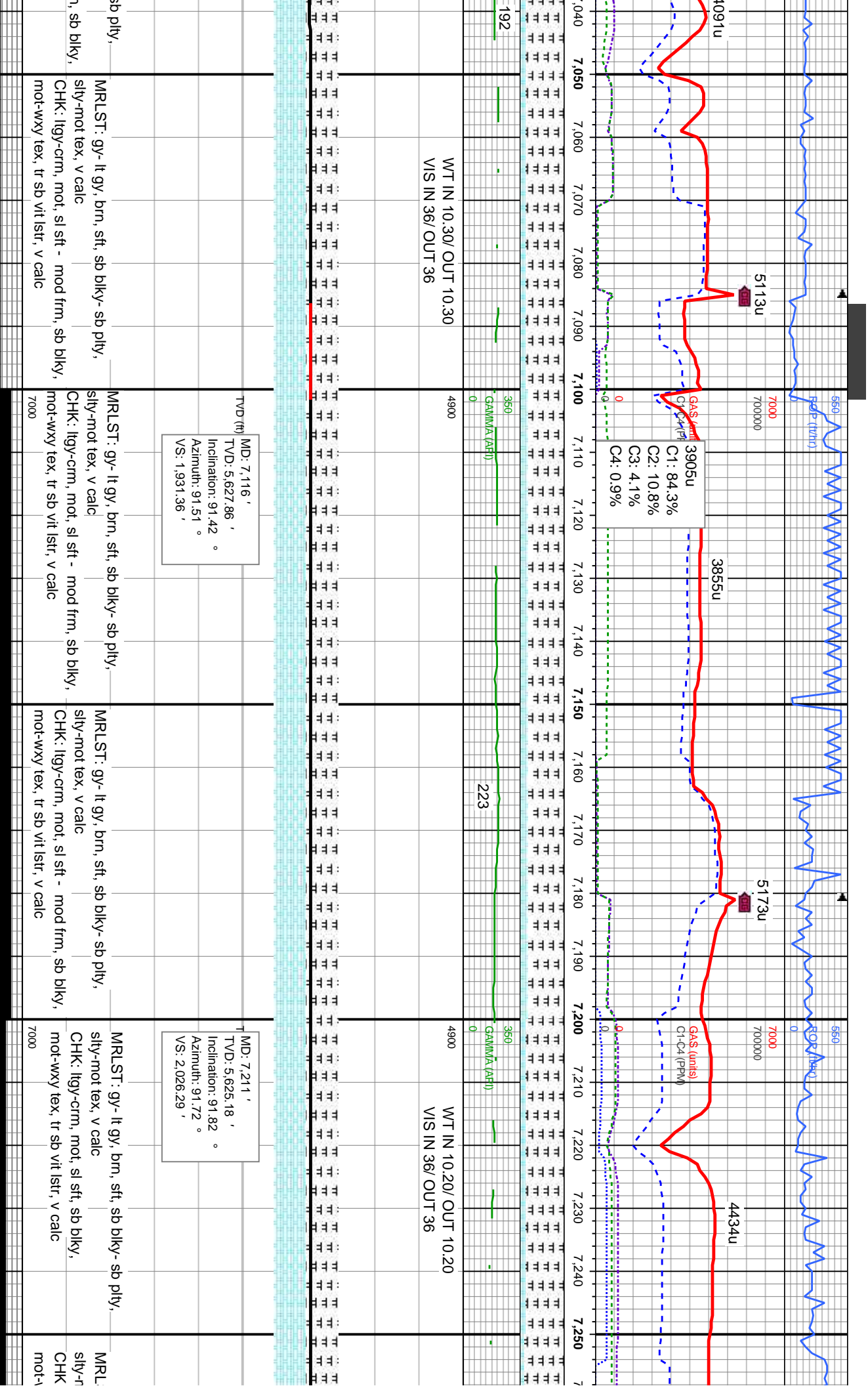


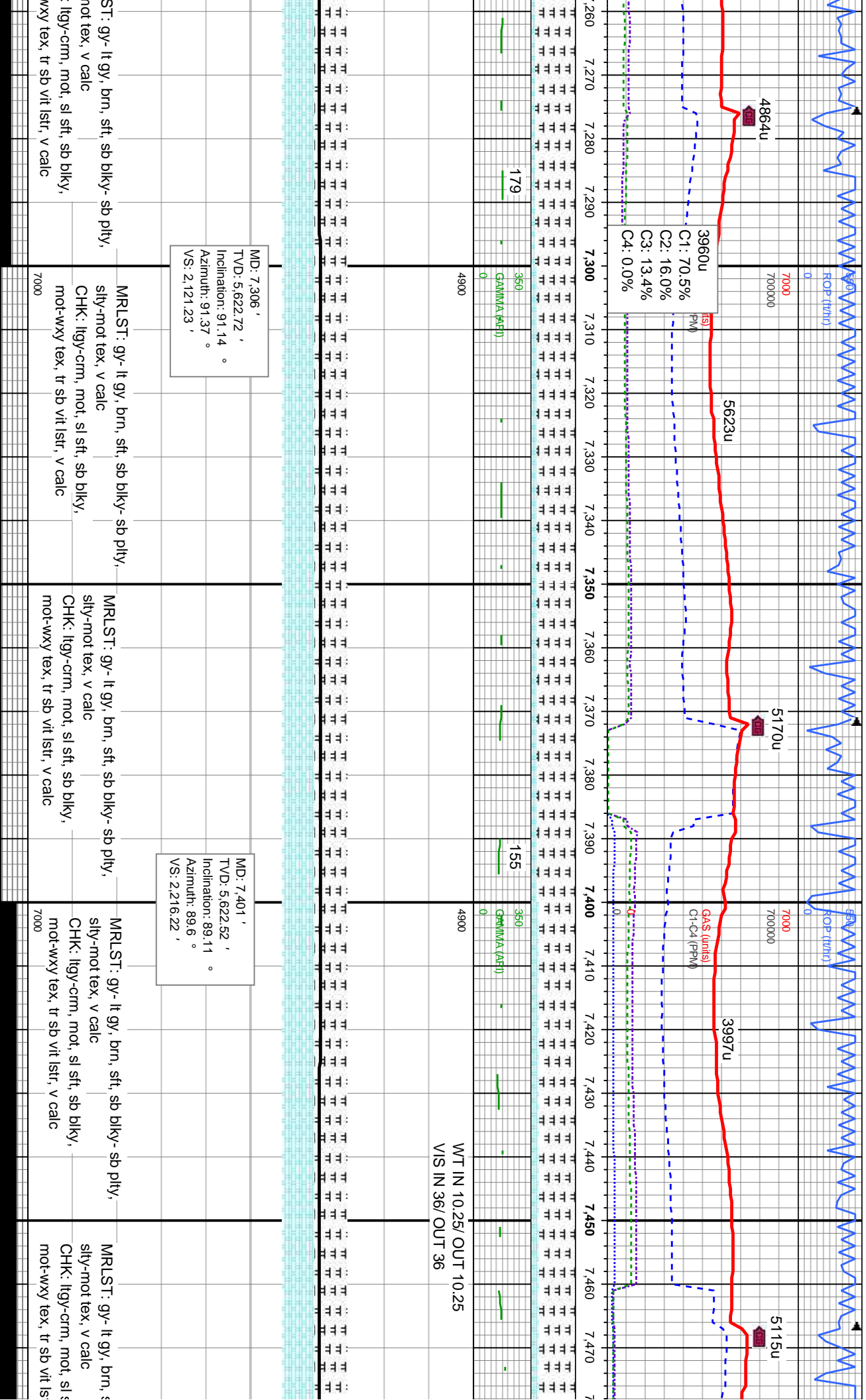


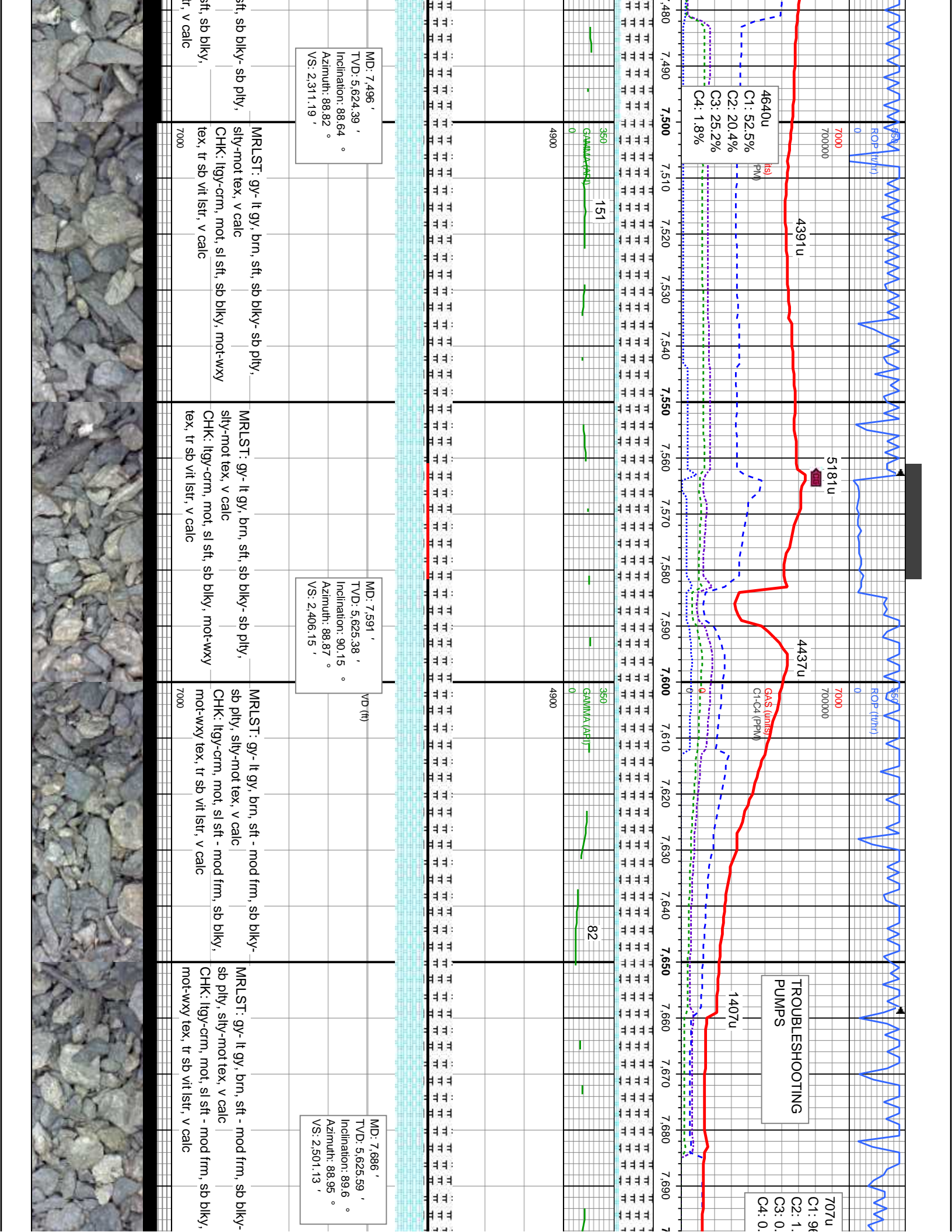


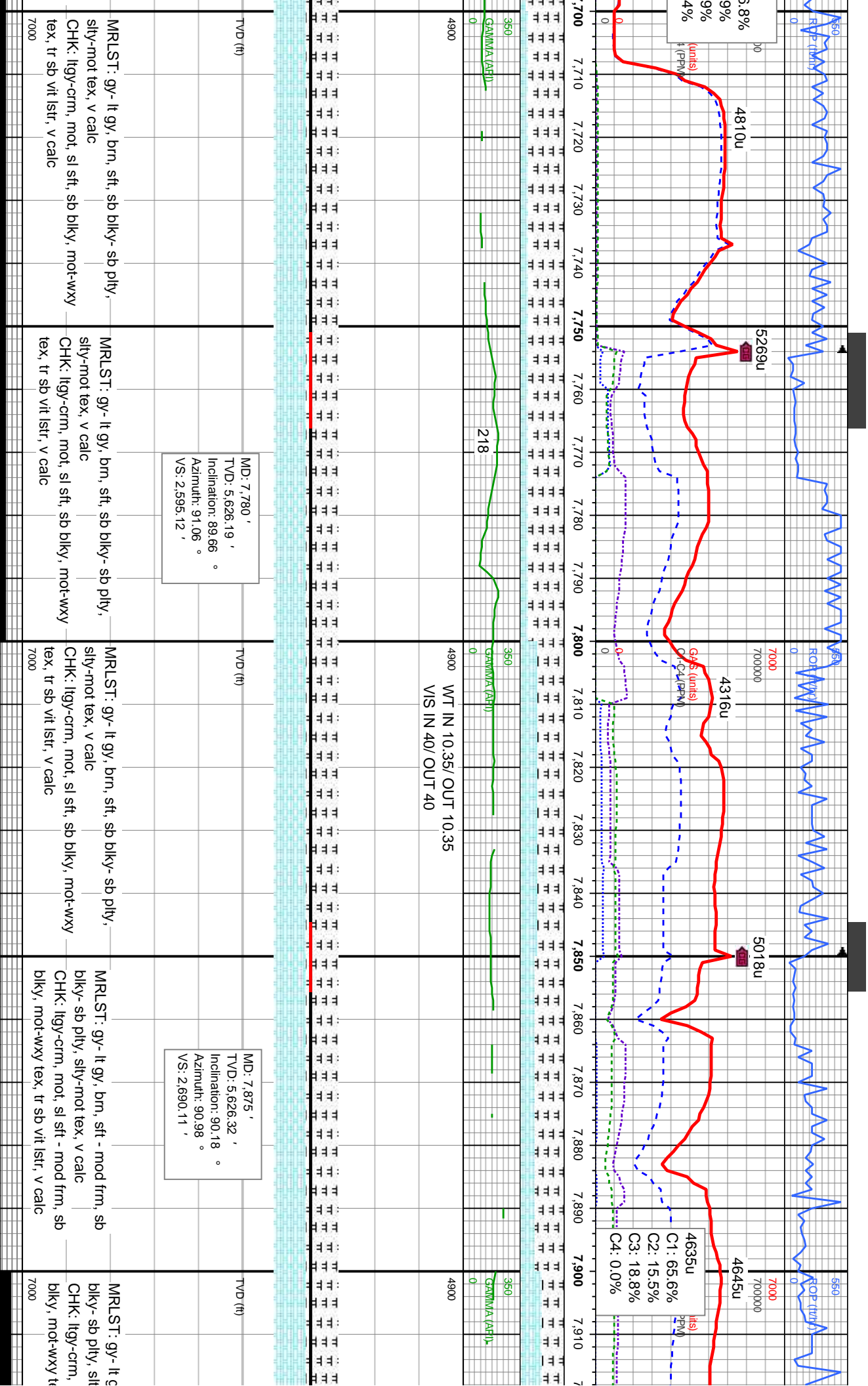


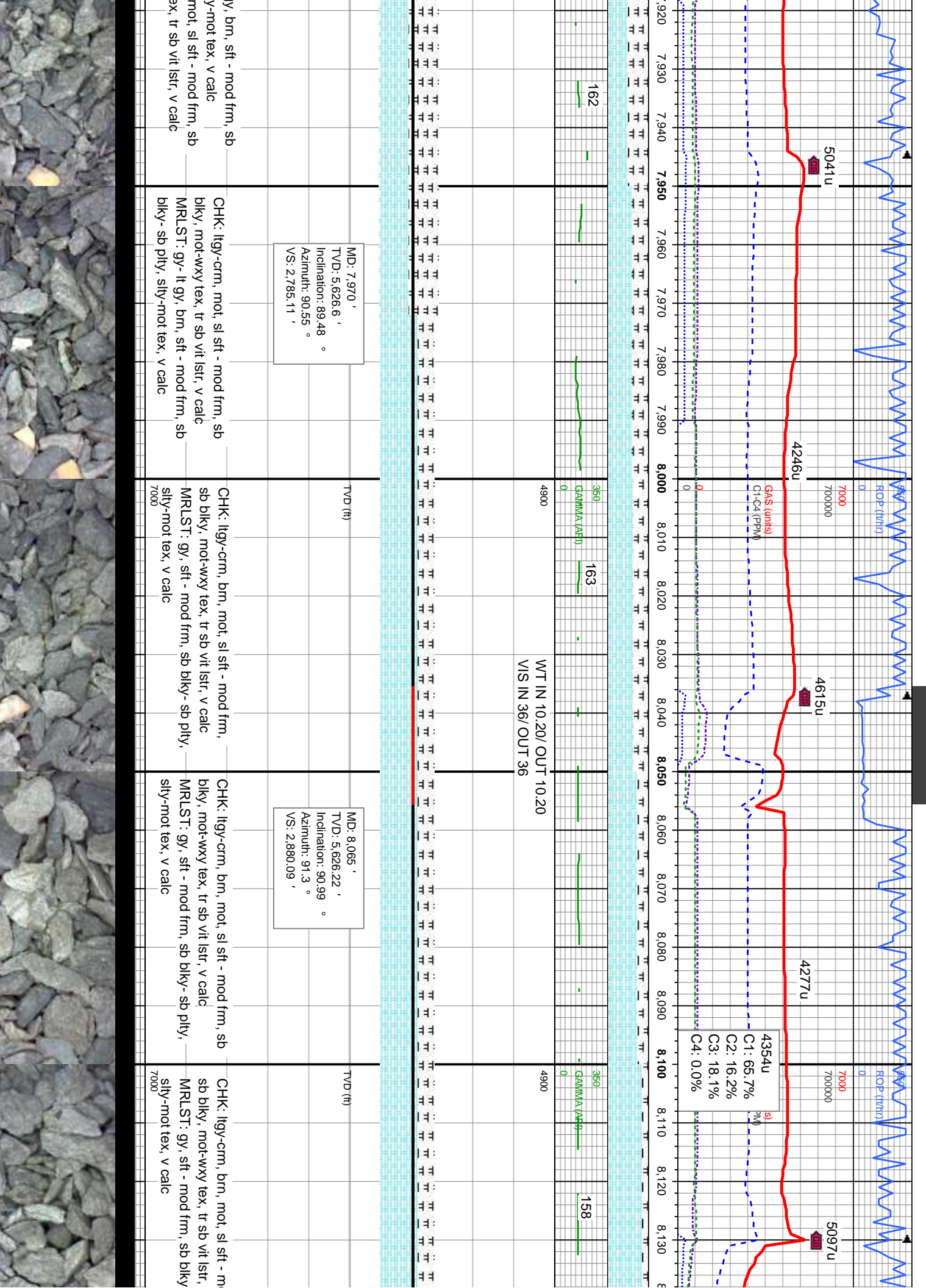


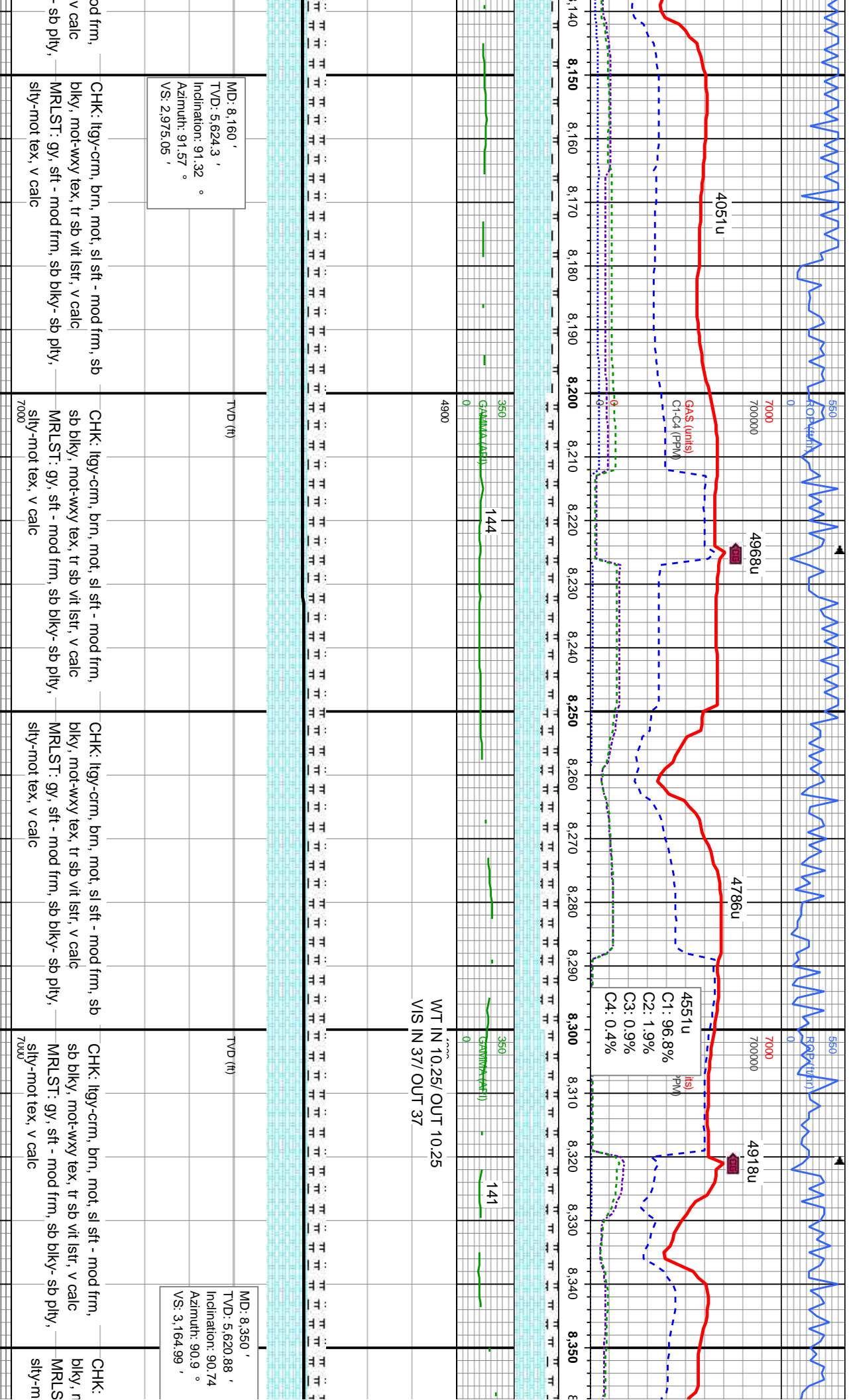










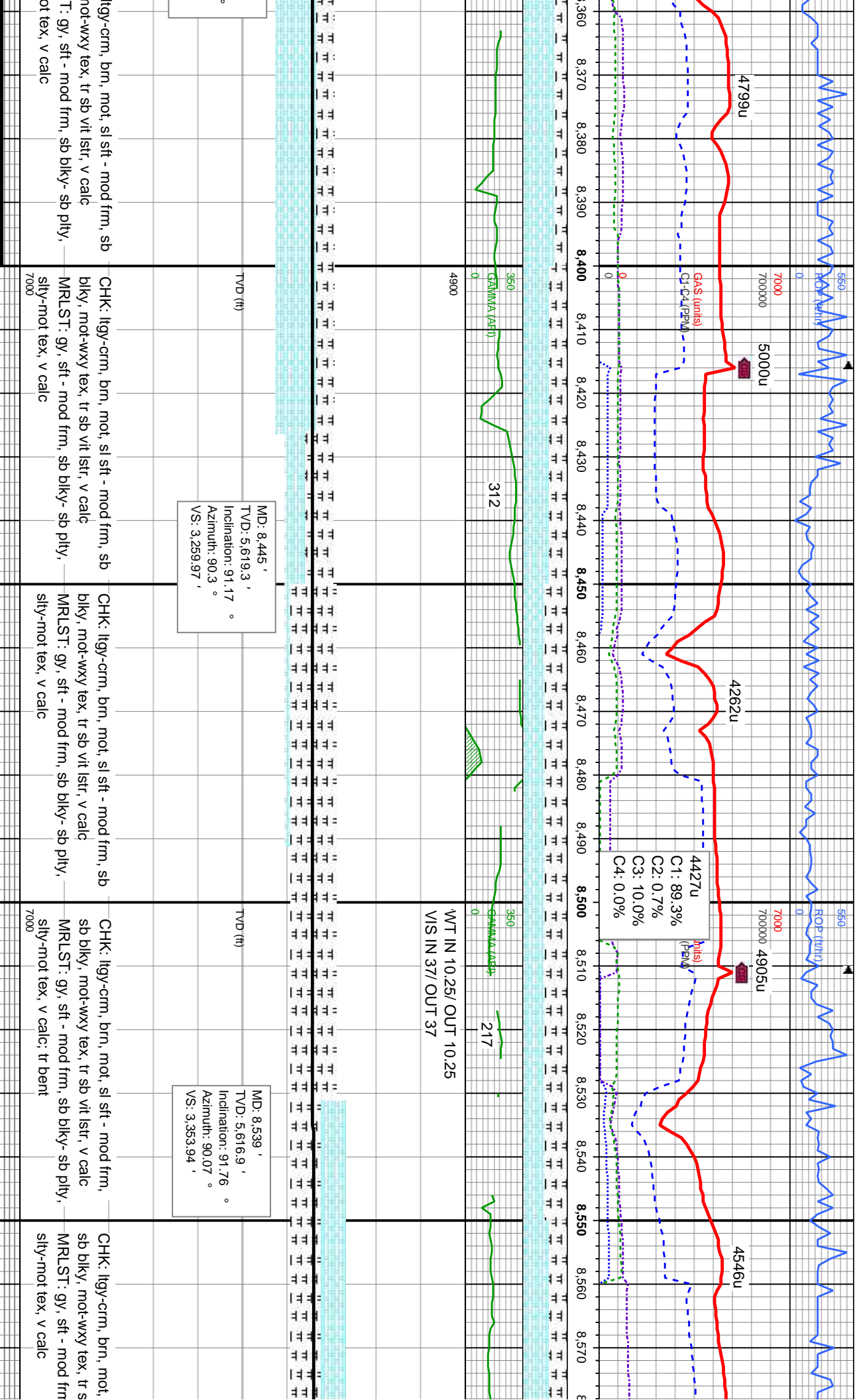


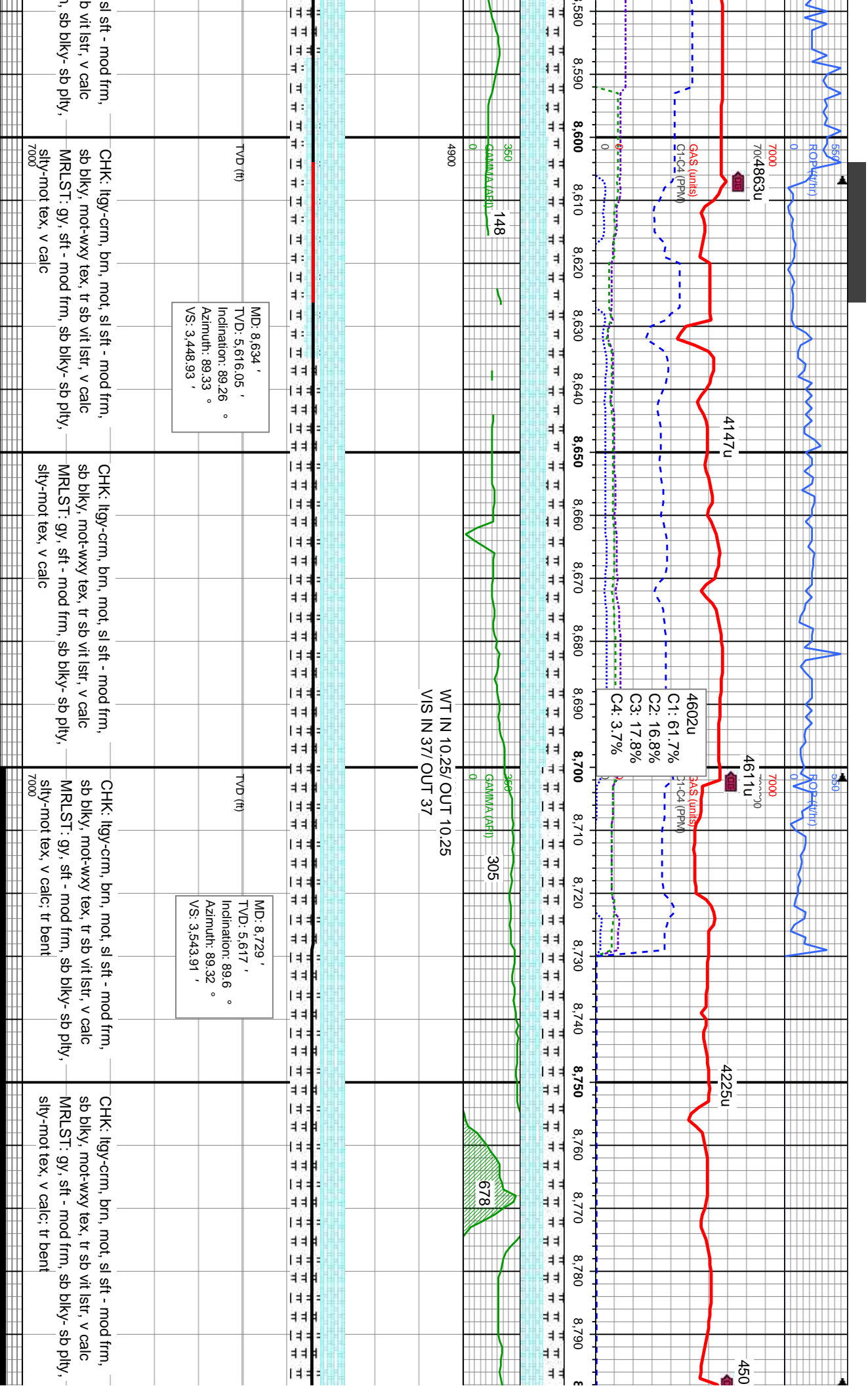
MD: 8,160 '
TVD: 5,624.3 '
Inclination: 91.32 °
Azimuth: 91.57 °
VS: 2,975.05 '

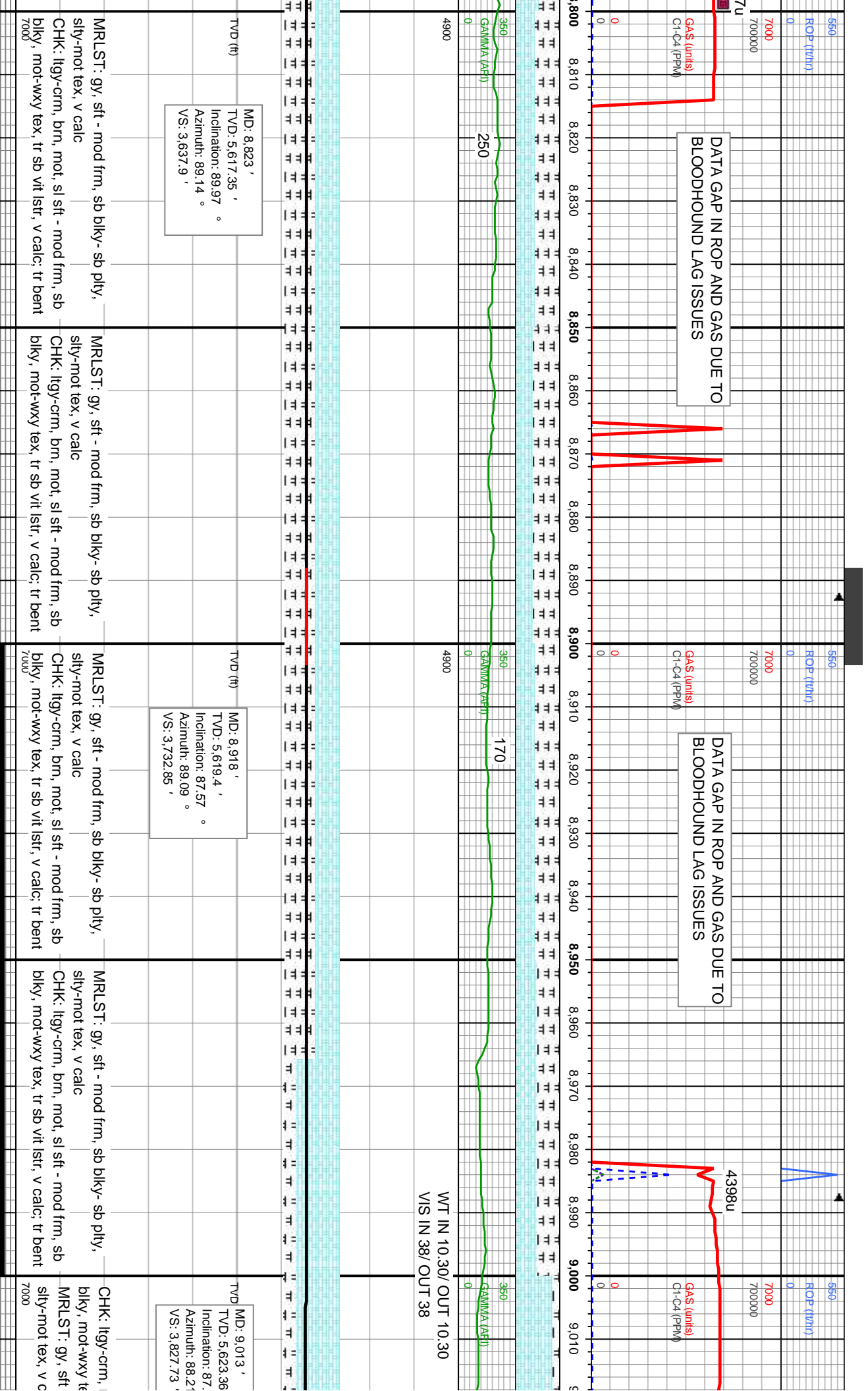
4551u
C1: 96.8%
C2: 1.9%
C3: 0.9%
C4: 0.4%

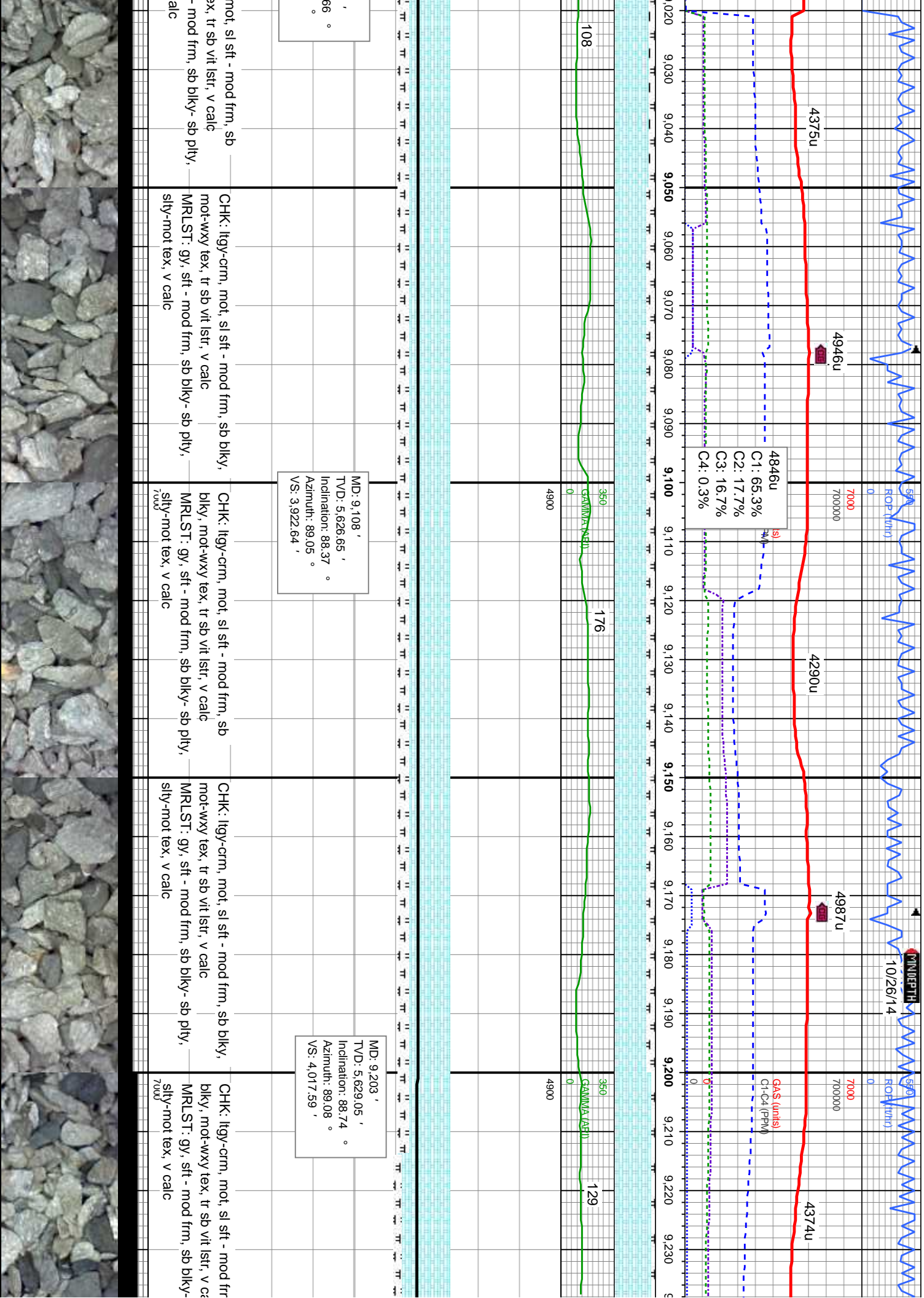
WT IN 10.25/ OUT 10.25
VIS IN 37/ OUT 37

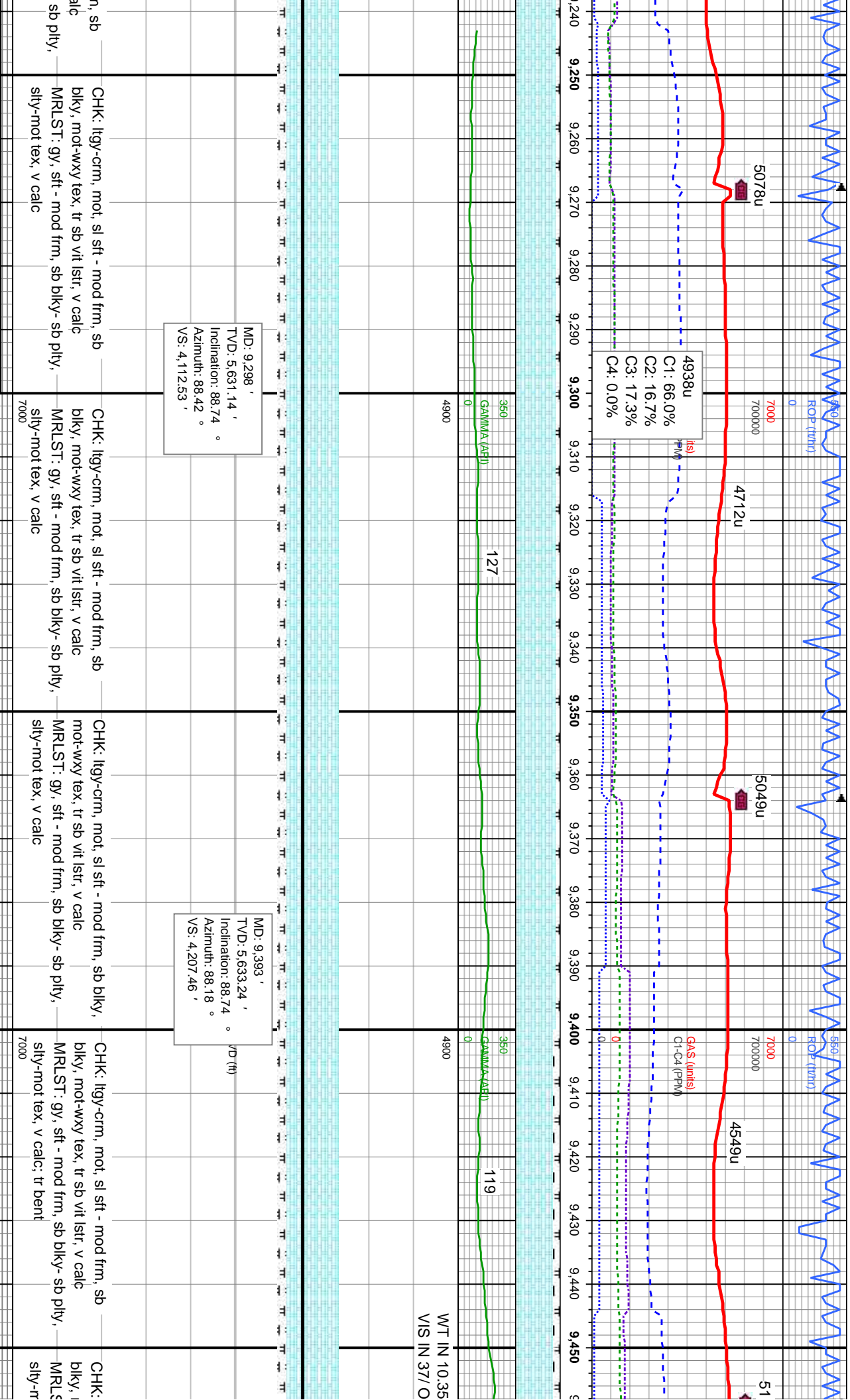
MD: 8,350 '
TVD: 5,620.88 '
Inclination: 90.74
Azimuth: 90.9 °
VS: 3,164.99 '

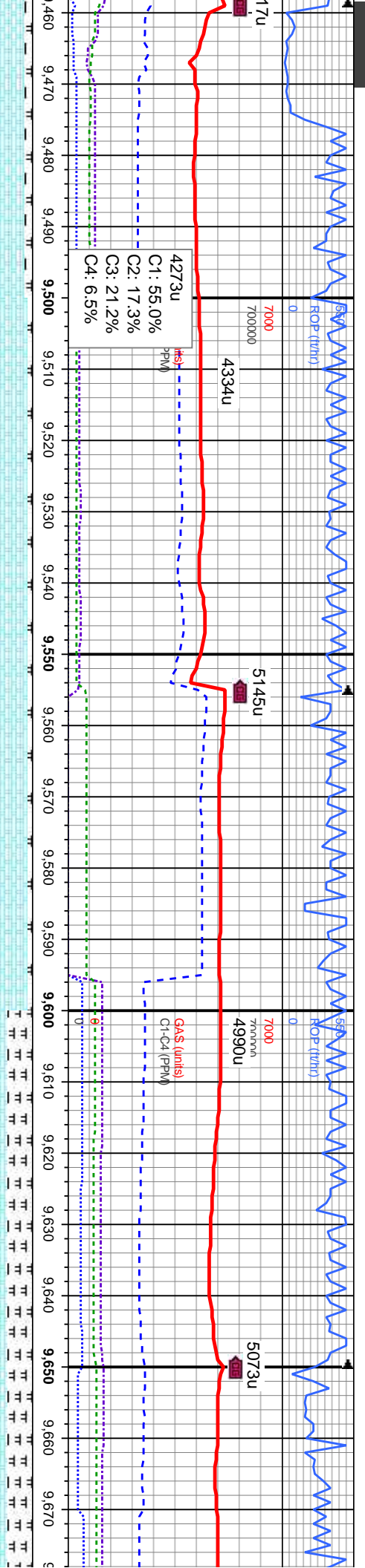












OUT 10.35
UT 37

MD: 9,487 '
TVD: 5,633.47 '
Inclination: 90.99 °
Azimuth: 88.5 °
VS: 4,301.4 '

ltyg-crm, mot, sl sft - mod frm, sb
mot-wxy tex, tr sb vit lstr, v calc
sft: gy, sft - mod frm, sb blkly-sb ply,
mot tex, v calc; tr bent

CHK: ltyg-crm, mot, sl sft - mod frm, sb
blkly, mot-wxy tex, tr sb vit lstr, v calc
MRLST: gy, sft - mod frm, sb blkly-sb ply,
silty-mot tex, v calc; tr bent

MD: 9,582 '
TVD: 5,631.45 '
Inclination: 91.45 °
Azimuth: 88.56 °
VS: 4,396.34 '

CHK: ltyg-crm, mot, sl sft - mod frm, sb
blkly, mot-wxy tex, tr sb vit lstr, v calc
MRLST: gy, sft - mod frm, sb blkly-sb ply,
silty-mot tex, v calc; tr bent

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

MD: 9,676
TVD: 5,628
Inclination: 88
Azimuth: 88
VS: 4,490.2

CHK: ltyg-crm, brn, mot, s
blkly, mot-wxy tex, tr sb vit
MRLST: gy, sft - mod frm,
silty-mot tex, v calc



