



Scale: 5" / 100'
Measured Depth Log

Well Name Peaks K26-77-1HN

Location NWNW SEC 35 T4N R66W

State COLORADO

Country UNITED STATES

API Number 05-123-38238

Region DJ BASIN

Spud Date 2/21/2014

Surface Coordinates 770' FNL; 1035' FWL

Bottom Hole Coordinates 75' FNL; 1650' FWL

County WELD

Rig Number H&P 273

Field HAMBERT

Drilling Completed 2/26/2014

Ground Elevation 4787'

K.B. Elevation 4811'

Logged Interval 5886' To 12100'

Total Depth 12100'

Formation NIOBRARA

Type of Drilling Fluid LSND

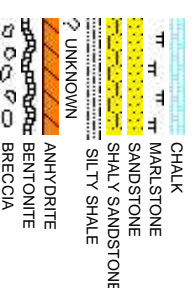
Company NOBLE ENERGY

Address 1625 Broadway
Denver, CO 80202

Name SARAH COMP

Company NOBLE ENERGY
Address 1625 Broadway
Denver, CO 80202

Wellsite Geologist #1: LA
Wellsite Geologist #2: TIF
Wellsite Geological Services



Operator

BY INC.

Suite 2200
202

Geologist

TON

BY INC.

Suite 2200
202

Other

URA KELLOGG
M BRIGHT

ces Provided By Columbine Logging Inc.

Rock Types

CEMENT

CHERT

CLAY CHOKE SAND

CLAYSTONE

CONGLOMERATE

DOLomite

GRANITE

GYPsum

IGNEOUS

SIDERITE or LIMONITE

LIMESTONE

METAMORPHIC

NO SAMPLE

SALT

SALT-PEPPER SAND

SHALE

SHALE COLORED

SHALE GRAY

SHALY SILTSTONE

SILTSTONE

TILL

TUFF

WELDED TUFF

Accessories

F Fossil

GASTROPOD

OOLITE

OSTRACOD

BELEMITE

PELECYPOD

BIOCLASTIC

PELLET

BRACHIOPOD

PISOLITE

BRYOZOA

PLANT REMAINS

CEPHALOPOD

PLANT SPORES

CORAL

SCAPHOPOD

CRINOID

STROMATOPOROID

ECHINOID

ARGILLACEOUS

ARGILLITE GRAIN

BENTONITE

BITUMENOUS SUBSTANCE

BRECCIA FRAGMENTS

CALCAREOUS

CARBONACEOUS FLAKES

CHTDK

CHTLT

COAL - THIN BEDS

CRINOID

DOLOMITIC

FELDSPAR

GLAUCONITE

GYPSIFEROUS

HEAVY MINERAL

INOCERAMUS

KAOLIN

MARLSTONE

MINERAL CRYSTALS

NODULES

PHOSPHATE PELLETS

PYRITE

SALT CAST

SANDY

TUFFACEOUS

ANHYDRITE STRINGER

BENTONITE STRINGER

COAL STRINGER

DOLomite STRINGER

GYPSUM STRINGER

LIMESTONE STRINGER

MARLSTONE (CALC) STRG

MARLSTONE (DOL) STRG

SANDSTONE STRINGER

FERRUGINOUS PELLET

SILICEOUS

SILT TY

SILTSTONE STRINGER

Other Symbols

MOLDIC

ORGANIC

DEAD

PINPOINT

EVEN

FAULT

FORMATION TOP

GAS SHOW

MINDEPTH MN DEPTH

WIRELINE TESTED - LEFT

E EARTHY

WIRELINE TESTED - RT

FX FINELYXLN

ES GRAINSTONE

L LITHOGRAPHIC

ENGINEERING

BIT

CONNECTION (LEFT)

CONNECTION (RIGHT)

OVERTURNED STRATA

REVERSE FAULT

SIDEWALL CORE (LEFT)

SIDEWALL CORE (RIGHT)

ANGULAR

ROUNDED

SUBANG

SUBBRND

MS MUDSTONE

PS PACKSTONE

MS MICROXLN

WS WACKSTONE

TEXTURES

BOUNDSTONE

CHALKY

CRYPTOXLN

SORTING

MODERATE

POOR

W WELL

QUESTONABLE

SPOTTED STAINING

POROSITY

E EARTHY

FENESTRAL

F FRACTURE

INTERCRYSTALLINE

INTEROOLITIC

SLIDE

SURVEY

TRIP GAS

Slide/Rotate

BEGAN DRILLING CURVE
@ 02:21 AM 02/23/2014

TIMEDEPTH 02/23/2014

Total Gas & Chromatograph

- GAS — — — — —
- C1 —
 - C2 —
 - C3 —
 - C4 —
- COLUMBINE LOGGING INC.
RIGGED UP ON 02/21/2014
MANNED 2-PERSON LOGGING
WITH BLOODHOUND GAS
CHROMATOGRAPH UNIT #0540
COLUMBINE BEGAN LOGGING
ON 02/21/2014

BHA BIT:
SMITH 8.75" 1513
Serial #: JH9508
Jets: 6x13

640u
C1: 69.8%
C2: 6.3%
C3: 23.9%
C4: 0.0%

1329u

1949u

100 Sample Interval

Depth Labels

% Lith

Gamma

GAMMA —

Well Bore
TVD —

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.

SLTY SH: gy-dk gy, sb rd-sb pty, v sft-sft, slty tex, arg cmt
SHY SS: ltgy-gy, sb ang-sb rd, occ w rd, mod-v frm, v f gr, mod srt, p por, arg cmt

SLTY SH: gy-dk gy, sb rd-sb pty, v sft-sft, slty tex, arg cmt
SHY SS: ltgy-gy, sb ang-sb rd, occ w rd, mod-v frm, v f gr, mod srt, p por, arg cmt

Oil Show

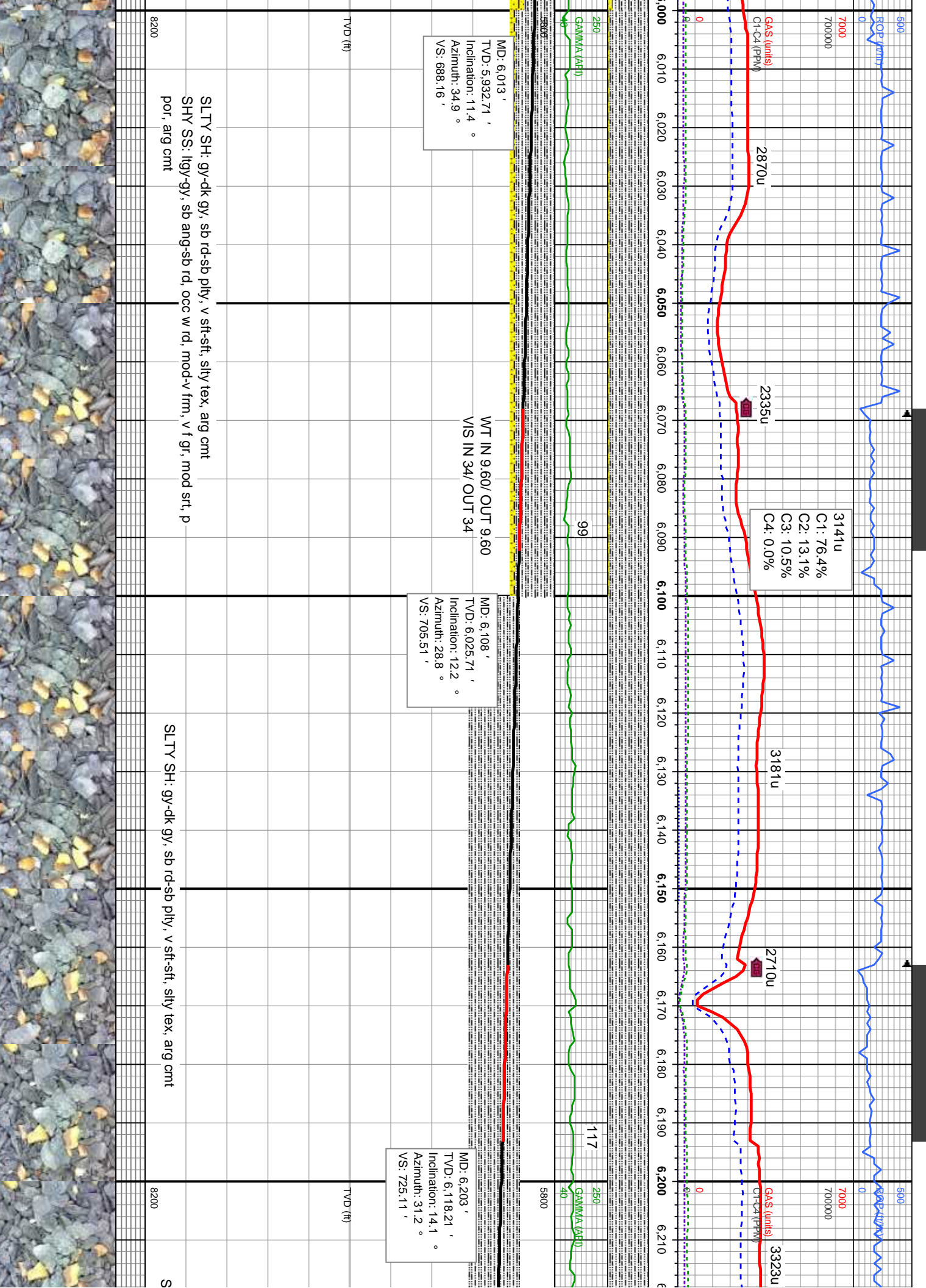
Images

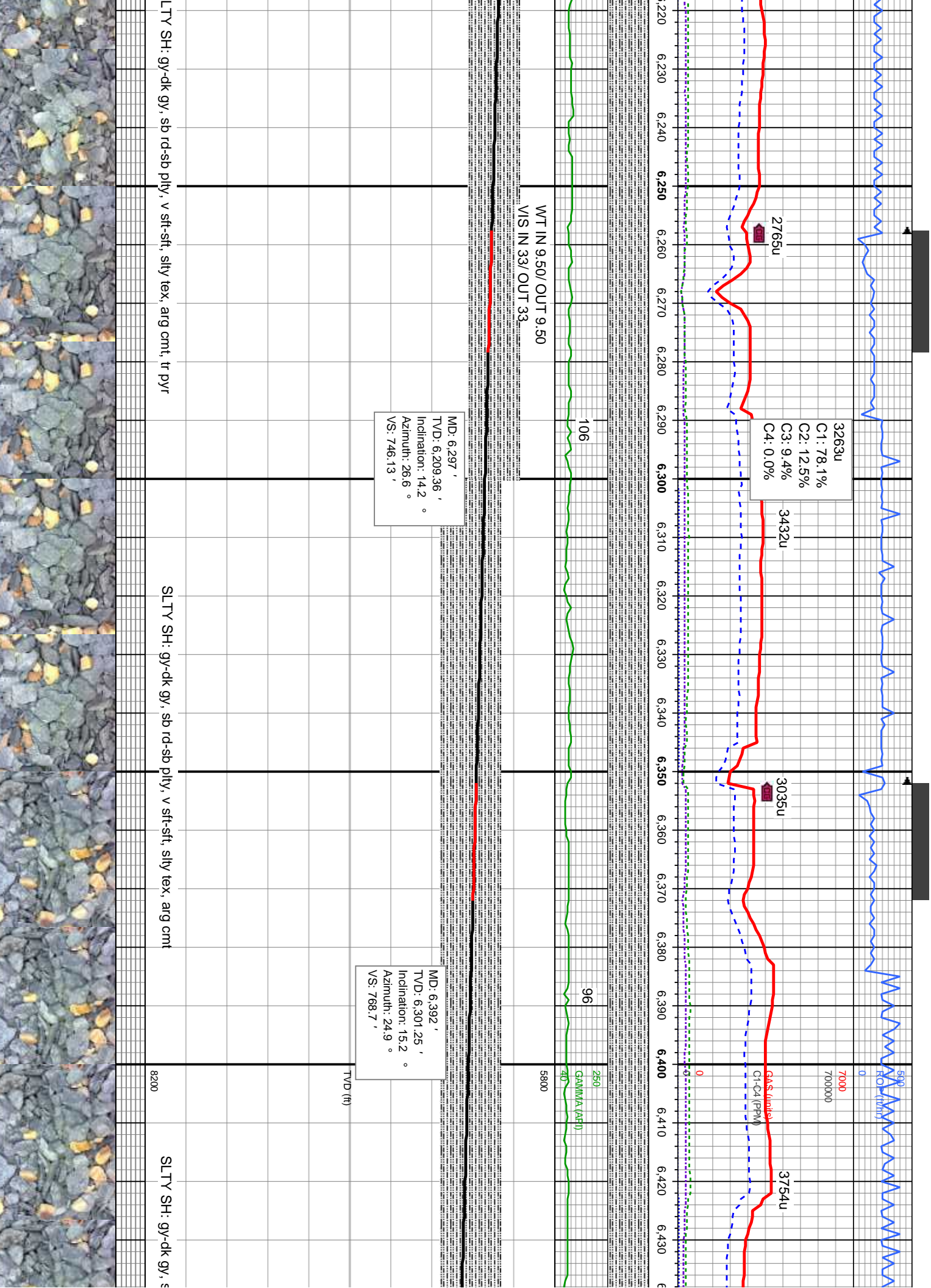


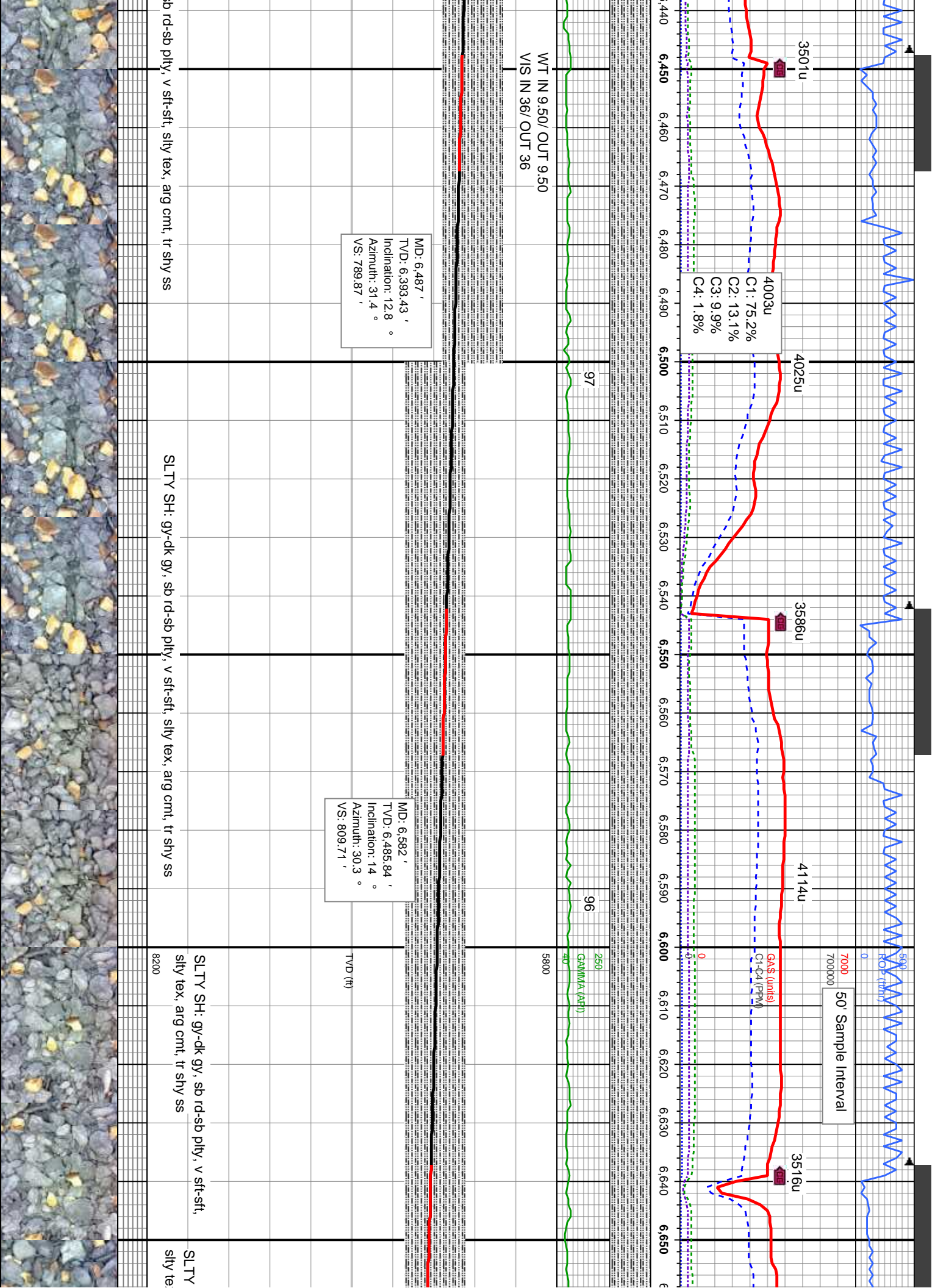
WT IN 9.45/ OUT 9.45
VIS IN 35/ OUT 35

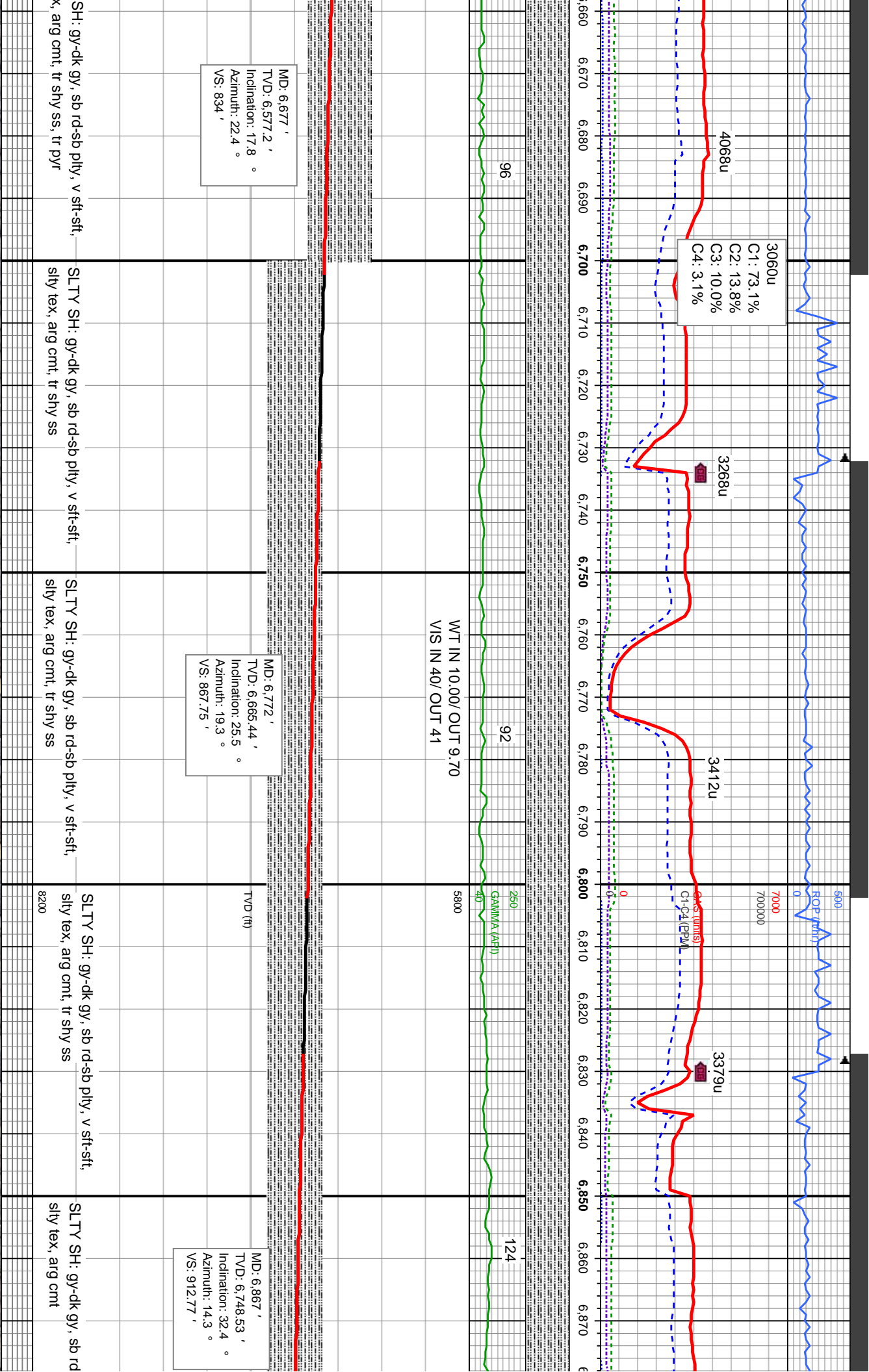
MD: 5,918 '
TVD: 5,839.4 '
Inclination: 10.3 °
Azimuth: 24.7 °
VS: 672 '

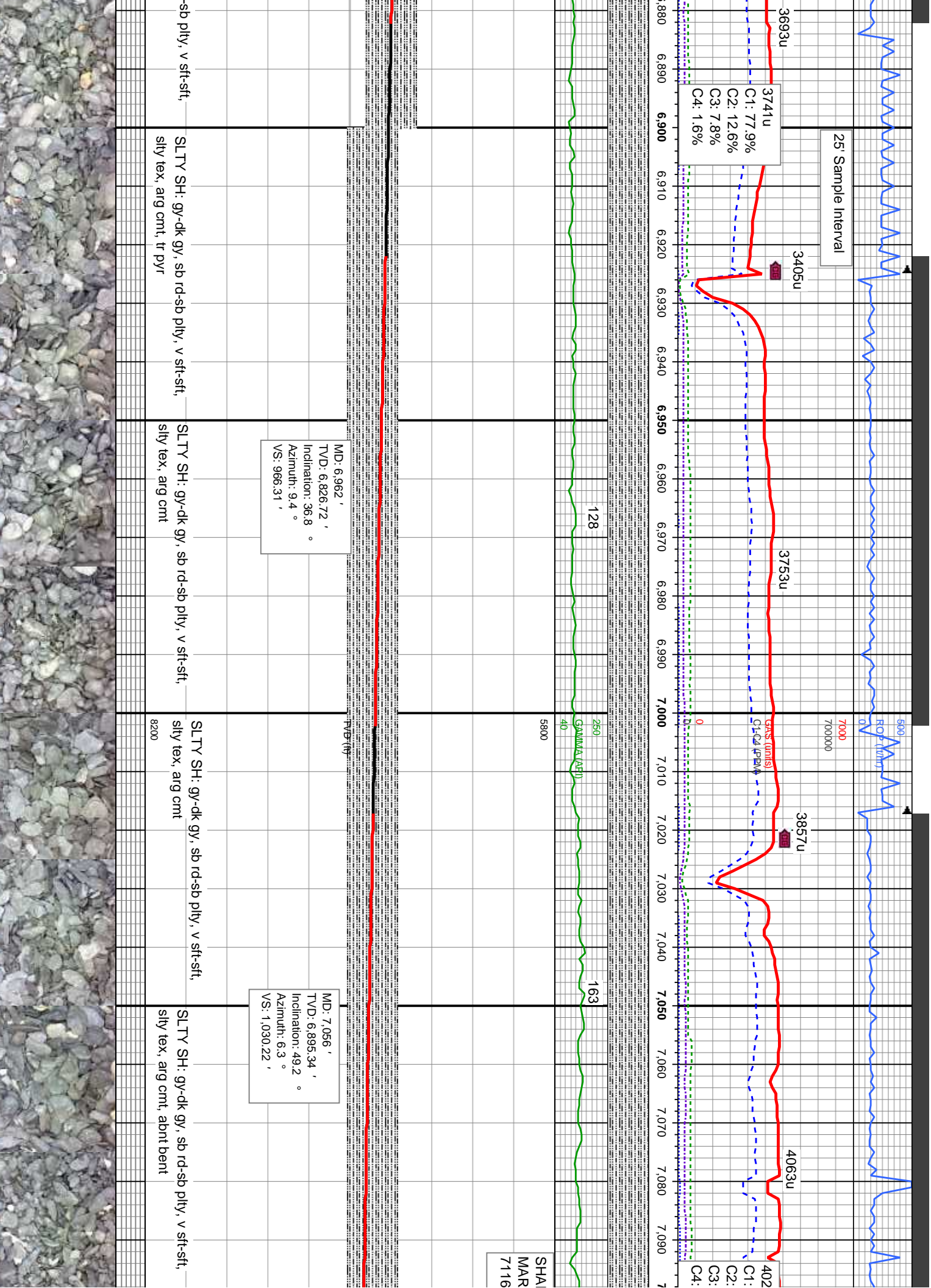
WT IN 9.60/ OUT 9.60
VIS IN 34/ OUT 34



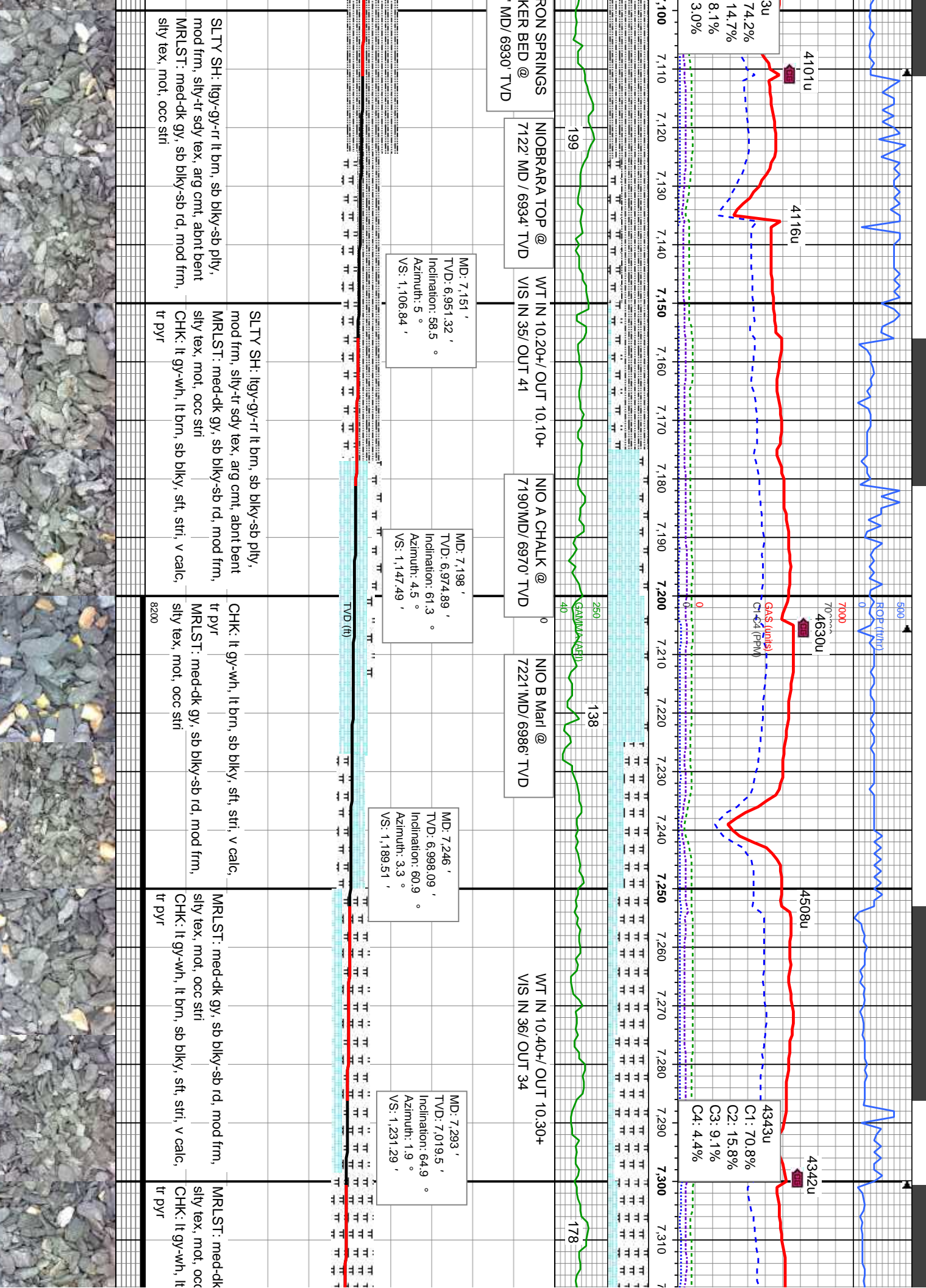








SHA
MAR
7116



IRON SPRINGS
KER BED @
MD/ 6930' TVD

NIOBRARA TOP @
7122' MD / 6934' TVD

WT IN 10.20+ / OUT 10.10+
VIS IN 35 / OUT 41

NIO A CHALK @
7190 MD/ 6970' TVD

NIO B Marl @
7221' MD/ 6986' TVD

WT IN 10.40+ / OUT 10.30+
VIS IN 36 / OUT 34

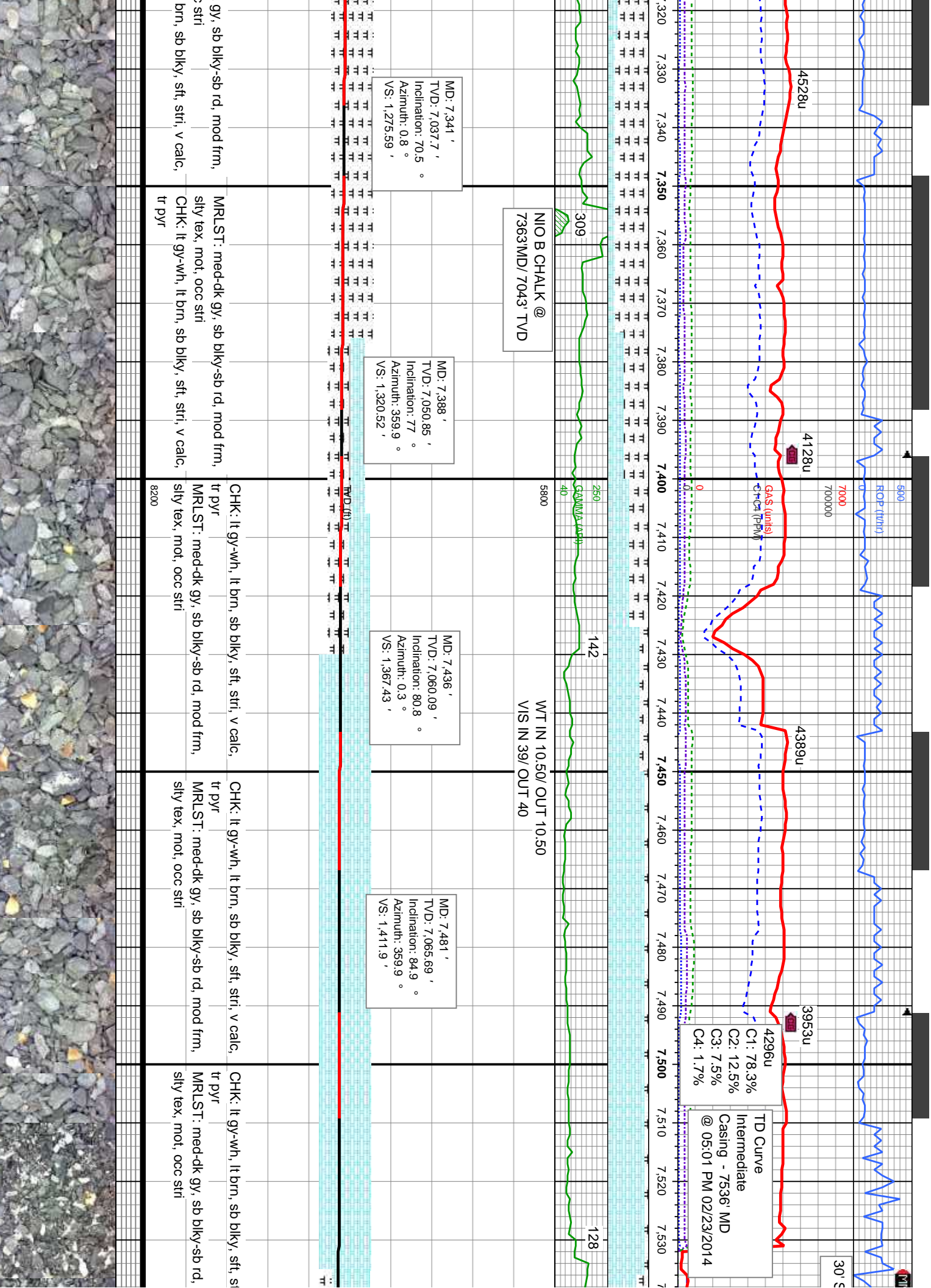
SLTY SH: ltgy-gy-rr lt brn, sb blkly-sb pty,
mod frm, sily-tr sdy tex, arg cnt, abnt bent
MRLST: med-dk gy, sb blkly-sb rd, mod frm,
sily tex, mot, occ stri
CHK: lt gy-wh, lt brn, sb blkly, sft, stri, v calc,
tr pyr

SLTY SH: ltgy-gy-rr lt brn, sb blkly-sb pty,
mod frm, sily-tr sdy tex, arg cnt, abnt bent
MRLST: med-dk gy, sb blkly-sb rd, mod frm,
sily tex, mot, occ stri
CHK: lt gy-wh, lt brn, sb blkly, sft, stri, v calc,
tr pyr

CHK: lt gy-wh, lt brn, sb blkly, sft, stri, v calc,
tr pyr
MRLST: med-dk gy, sb blkly-sb rd, mod frm,
sily tex, mot, occ stri

MRLST: med-dk gy, sb blkly-sb rd, mod frm,
sily tex, mot, occ stri
CHK: lt gy-wh, lt brn, sb blkly, sft, stri, v calc,
tr pyr

MRLST: med-dk
sily tex, mot, occ
CHK: lt gy-wh, lt



MD: 7.341 '
TVD: 7.037.7 '
Inclination: 70.5 °
Azimuth: 0.8 °
VS: 1.275.59 '

NIO B CHALK @
7363MD/ 7043' TVD

MD: 7.388 '
TVD: 7.050.85 '
Inclination: 77 °
Azimuth: 359.9 °
VS: 1.320.52 '

MD: 7.436 '
TVD: 7.060.09 '
Inclination: 80.8 °
Azimuth: 0.3 °
VS: 1.367.43 '

MD: 7.481 '
TVD: 7.065.69 '
Inclination: 84.9 °
Azimuth: 359.9 °
VS: 1.411.9 '

C1: 78.3%
C2: 12.5%
C3: 7.5%
C4: 1.7%

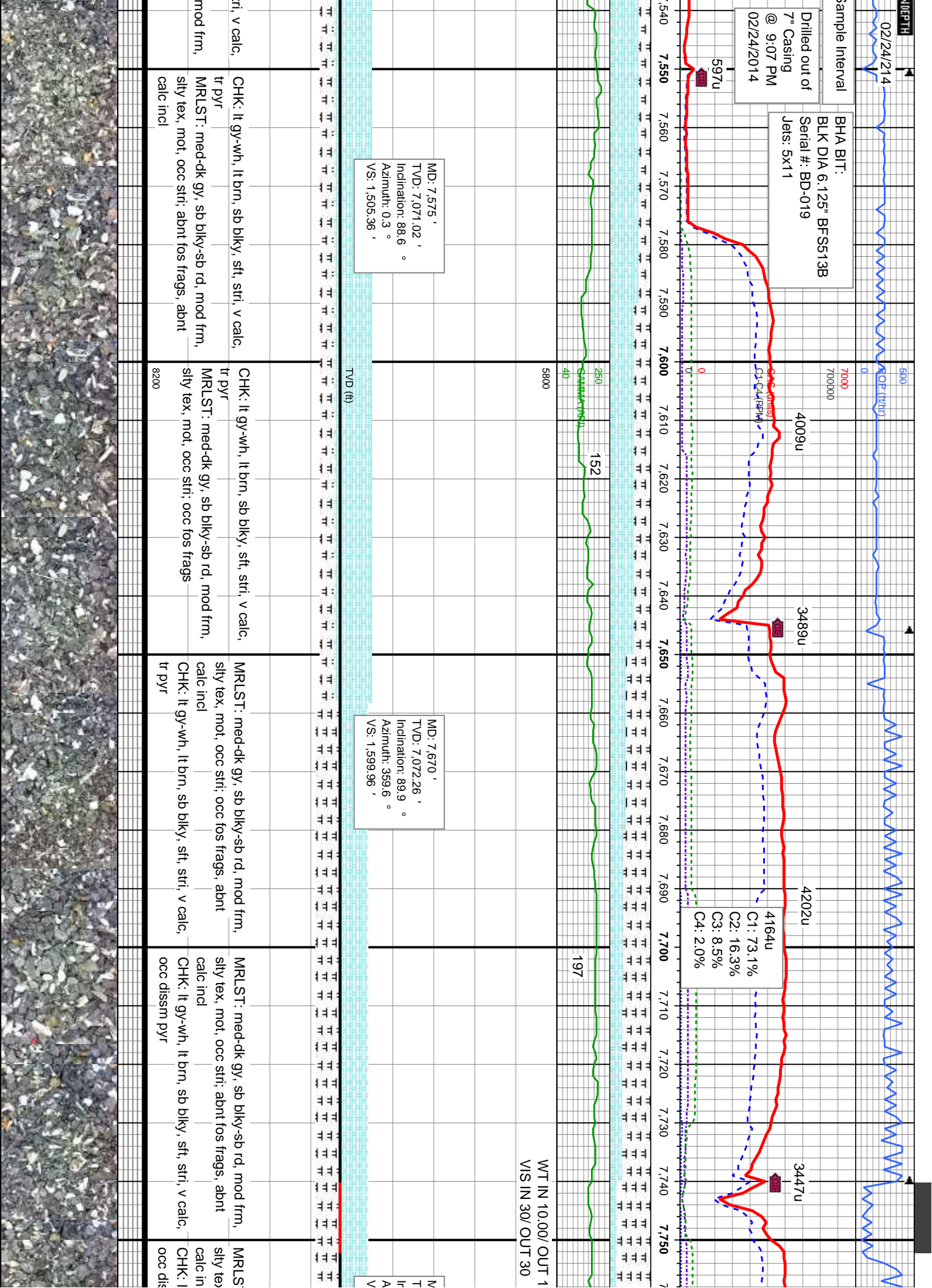
TD Curve
Intermediate
Casing - 7536' MD
@ 05:01 PM 02/23/2014

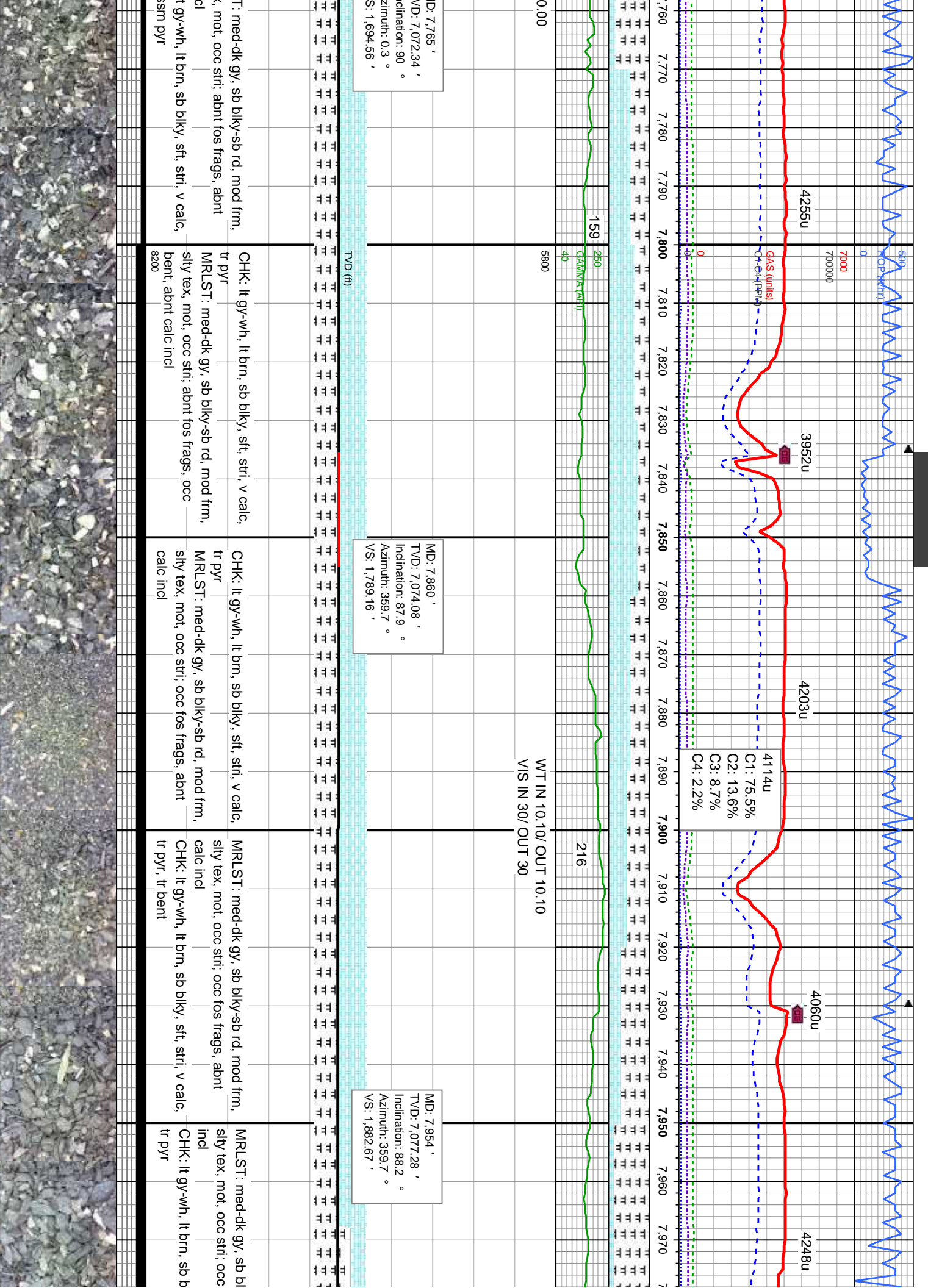
MRLST: med-dk gy, sb blkly-sb rd, mod frm,
silty tex, mot, occ stri
CHK: lt gy-wh, lt brn, sb blkly, sft, stri, v calc,
tr pyr

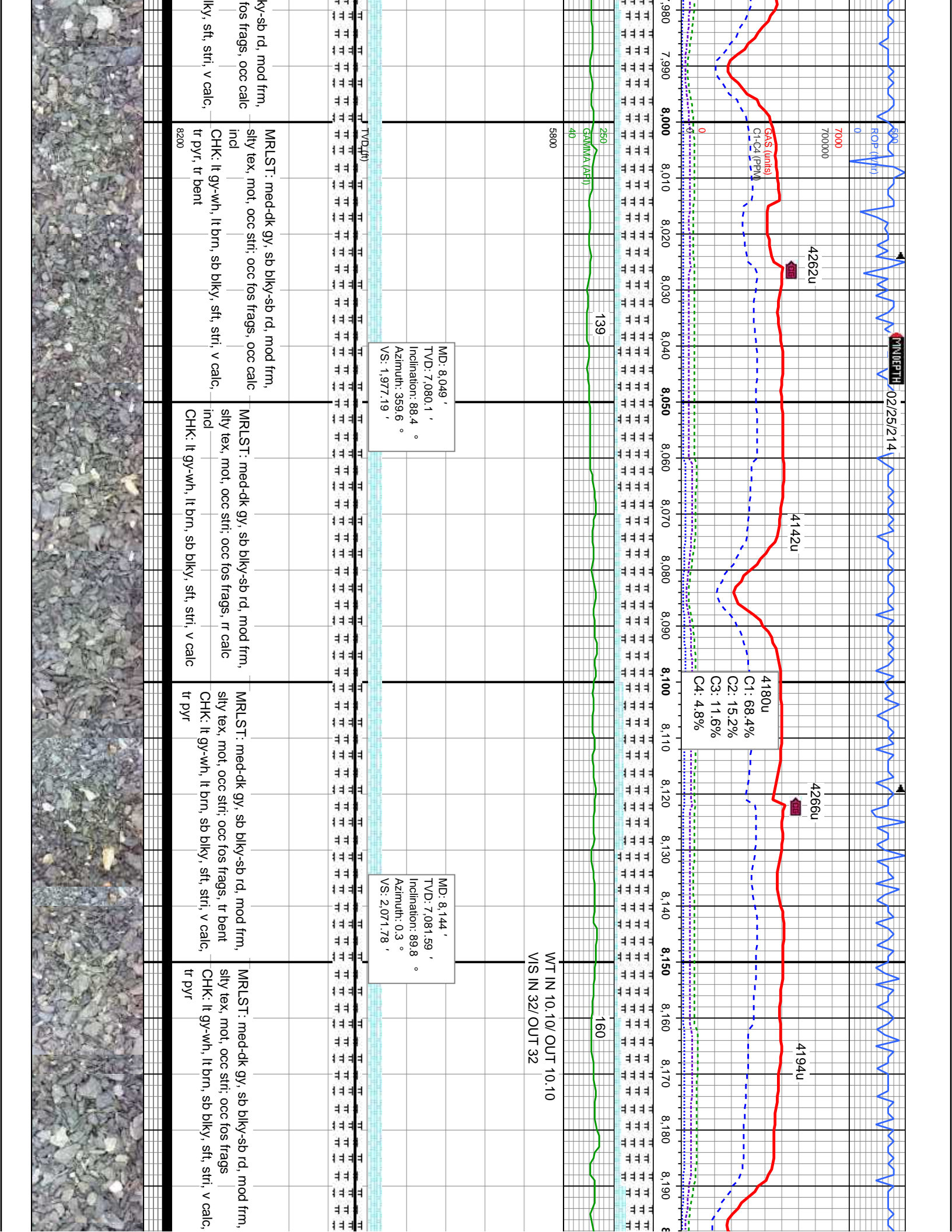
CHK: lt gy-wh, lt brn, sb blkly, sft, stri, v calc,
tr pyr
MRLST: med-dk gy, sb blkly-sb rd, mod frm,
silty tex, mot, occ stri

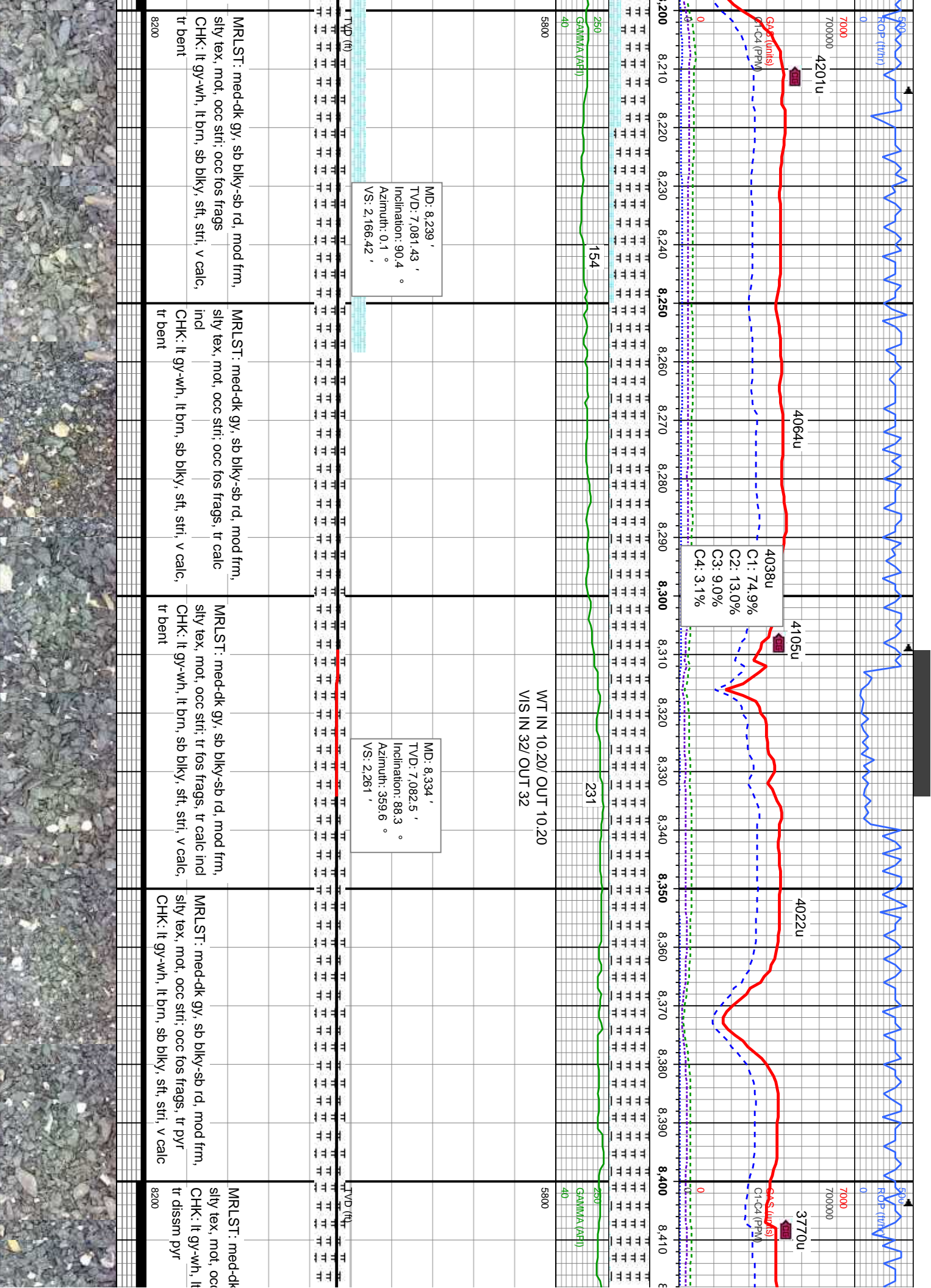
CHK: lt gy-wh, lt brn, sb blkly, sft, stri, v calc,
tr pyr
MRLST: med-dk gy, sb blkly-sb rd, mod frm,
silty tex, mot, occ stri

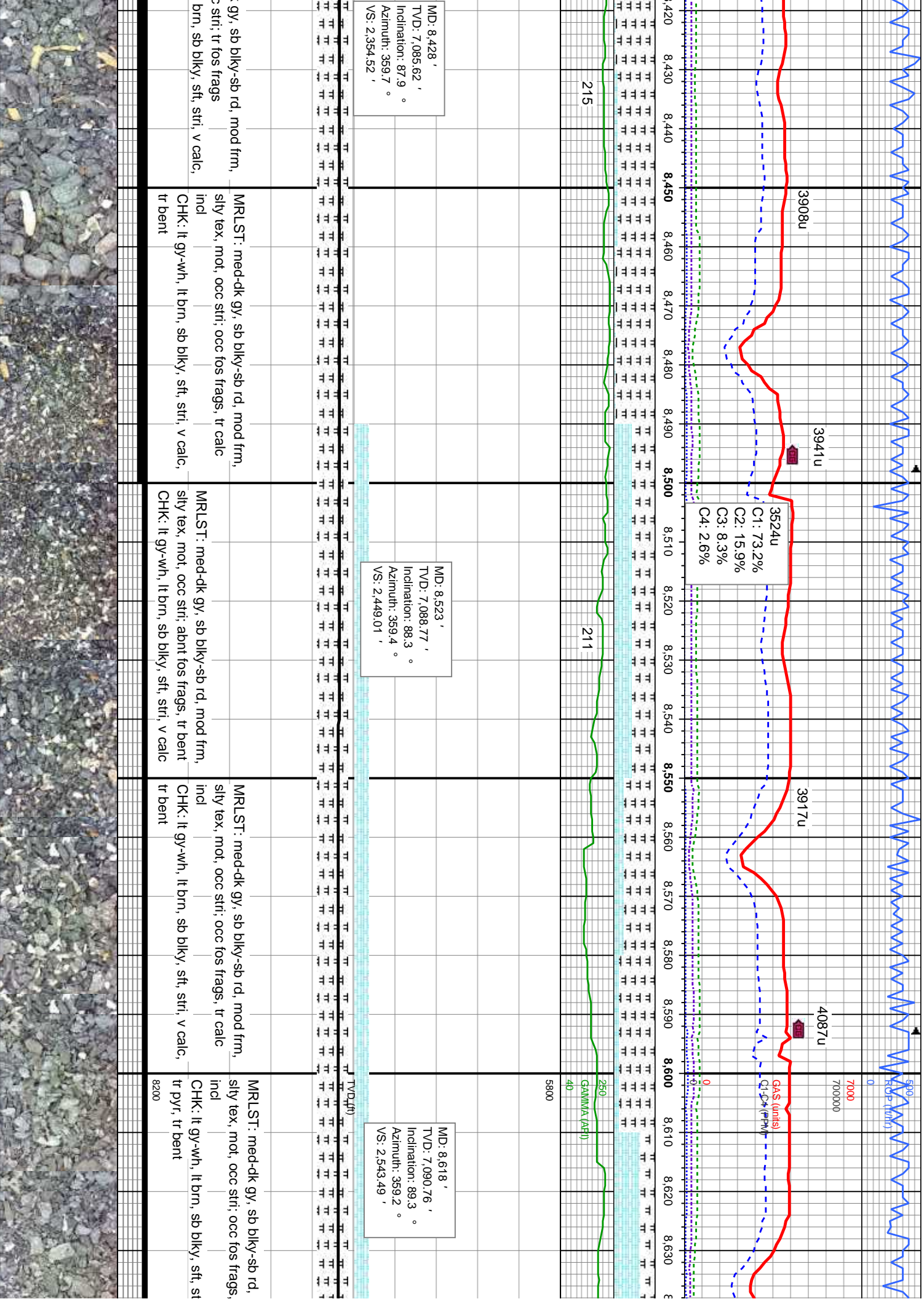
CHK: lt gy-wh, lt brn, sb blkly, sft, stri, v calc,
tr pyr
MRLST: med-dk gy, sb blkly-sb rd, mod frm,
silty tex, mot, occ stri

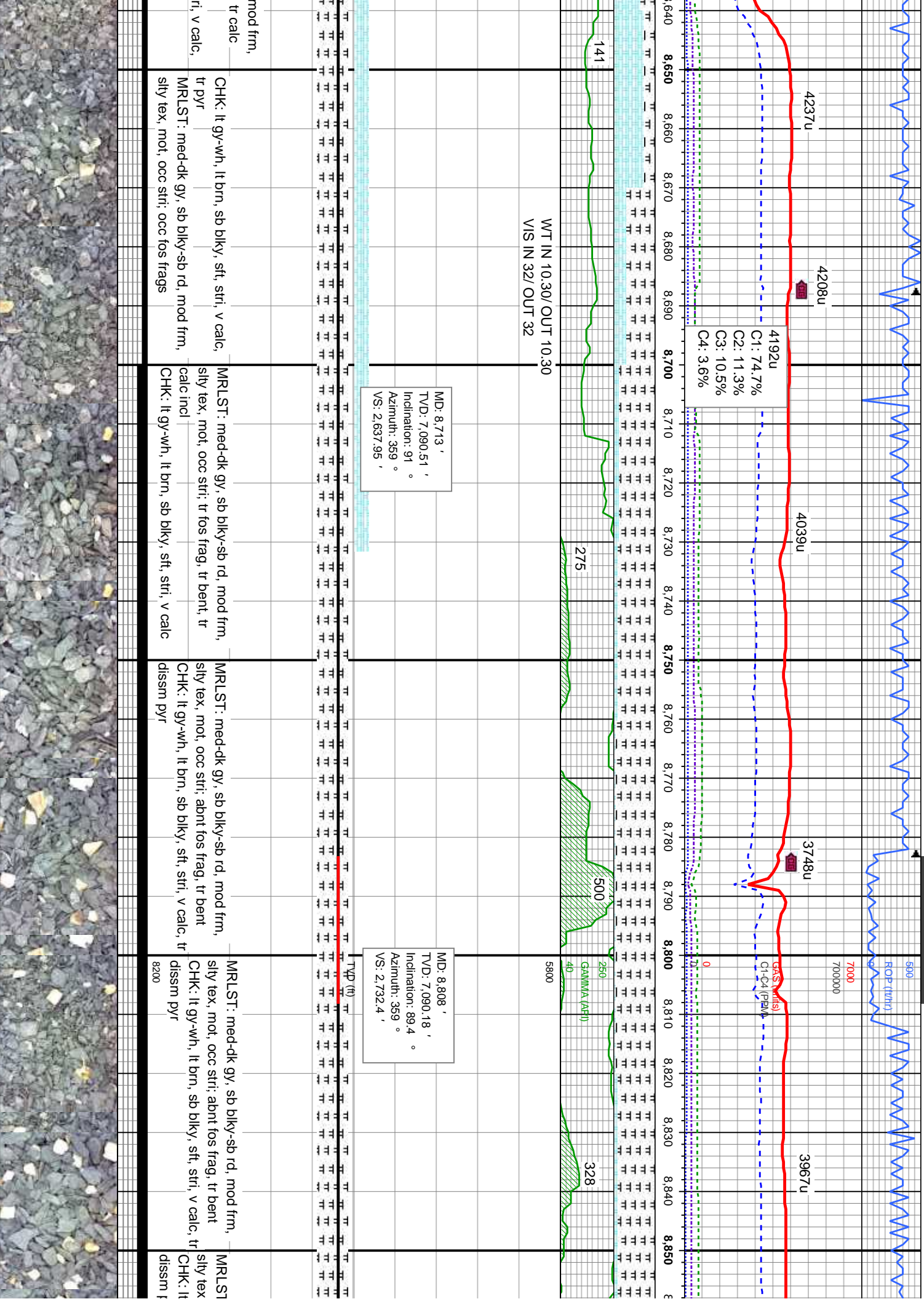


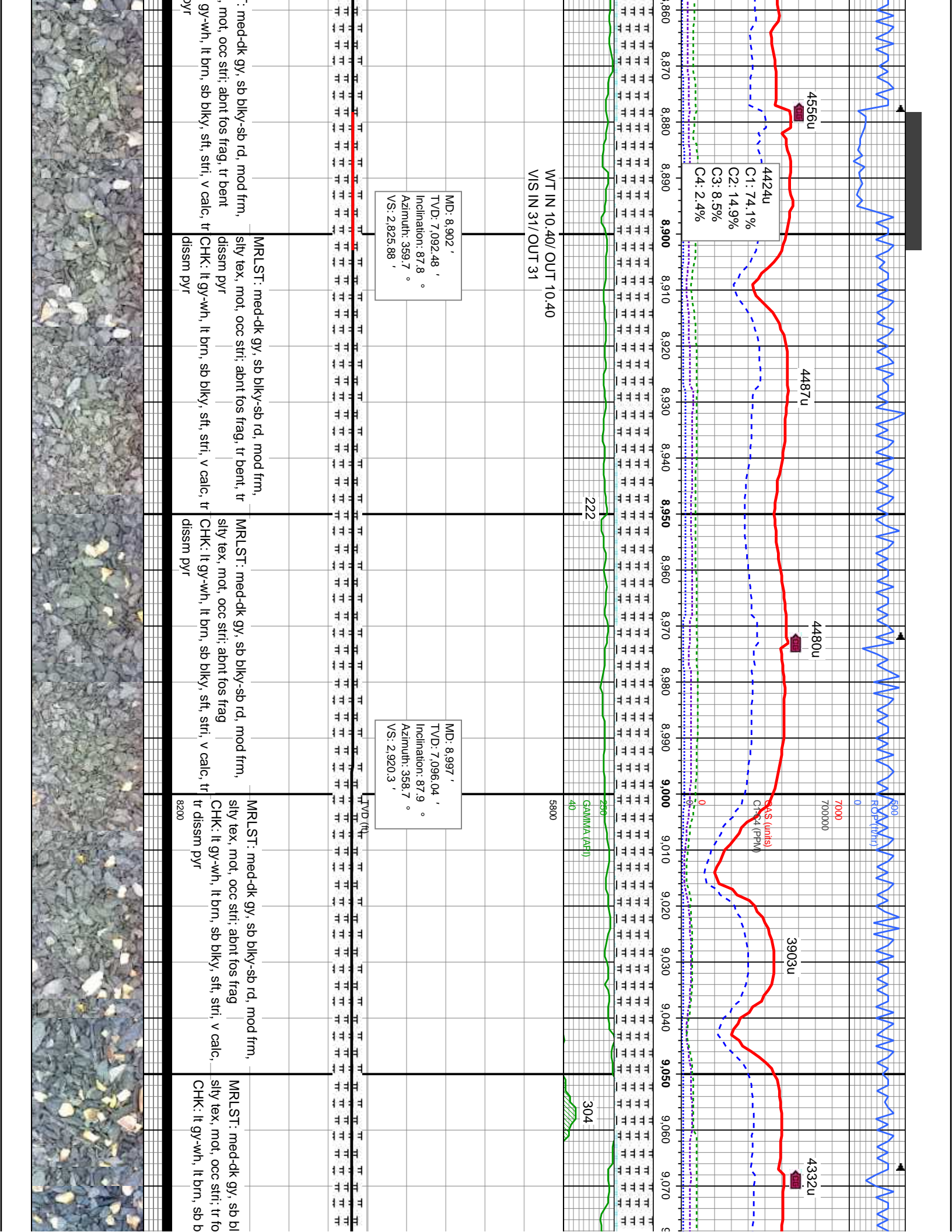


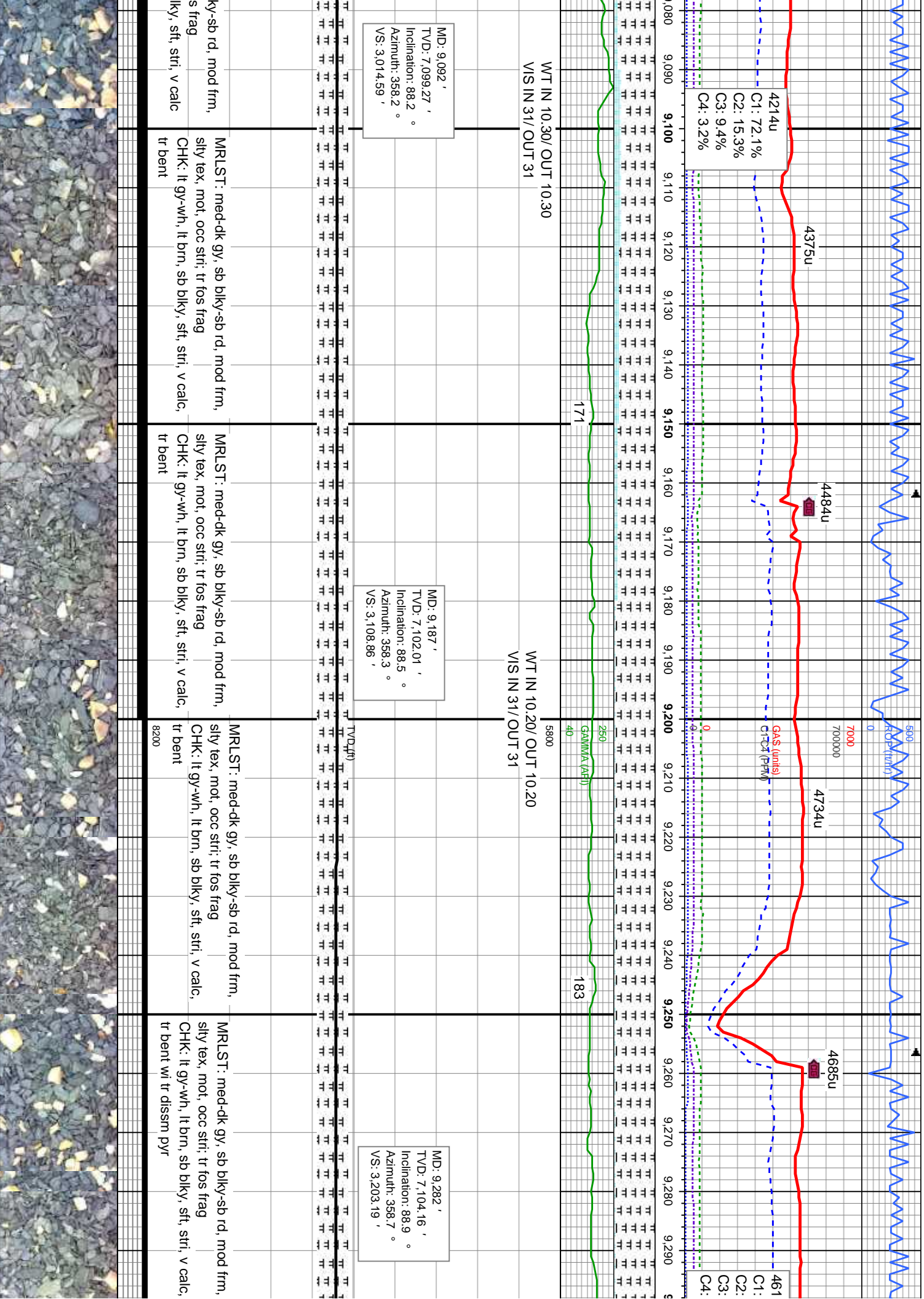


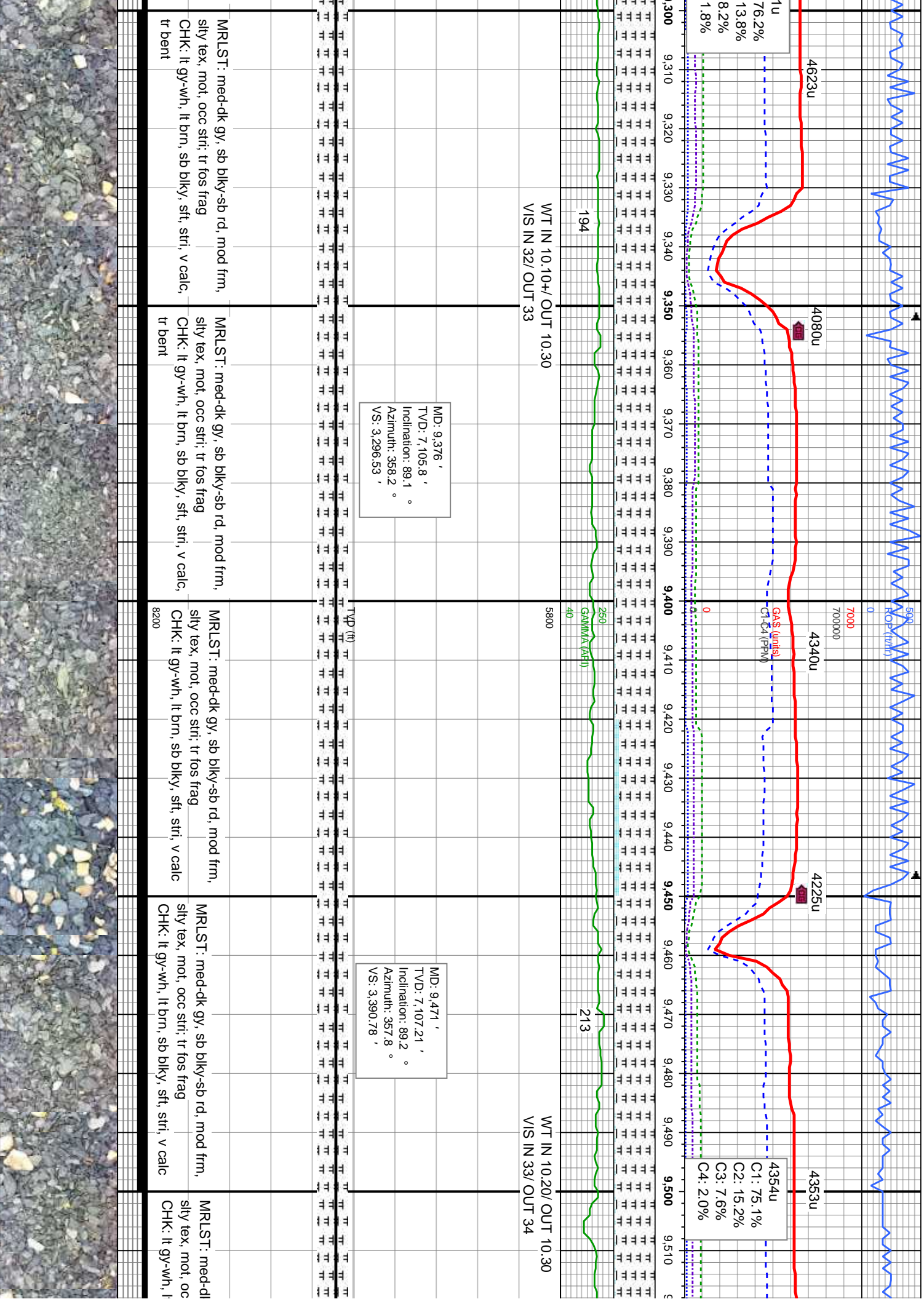


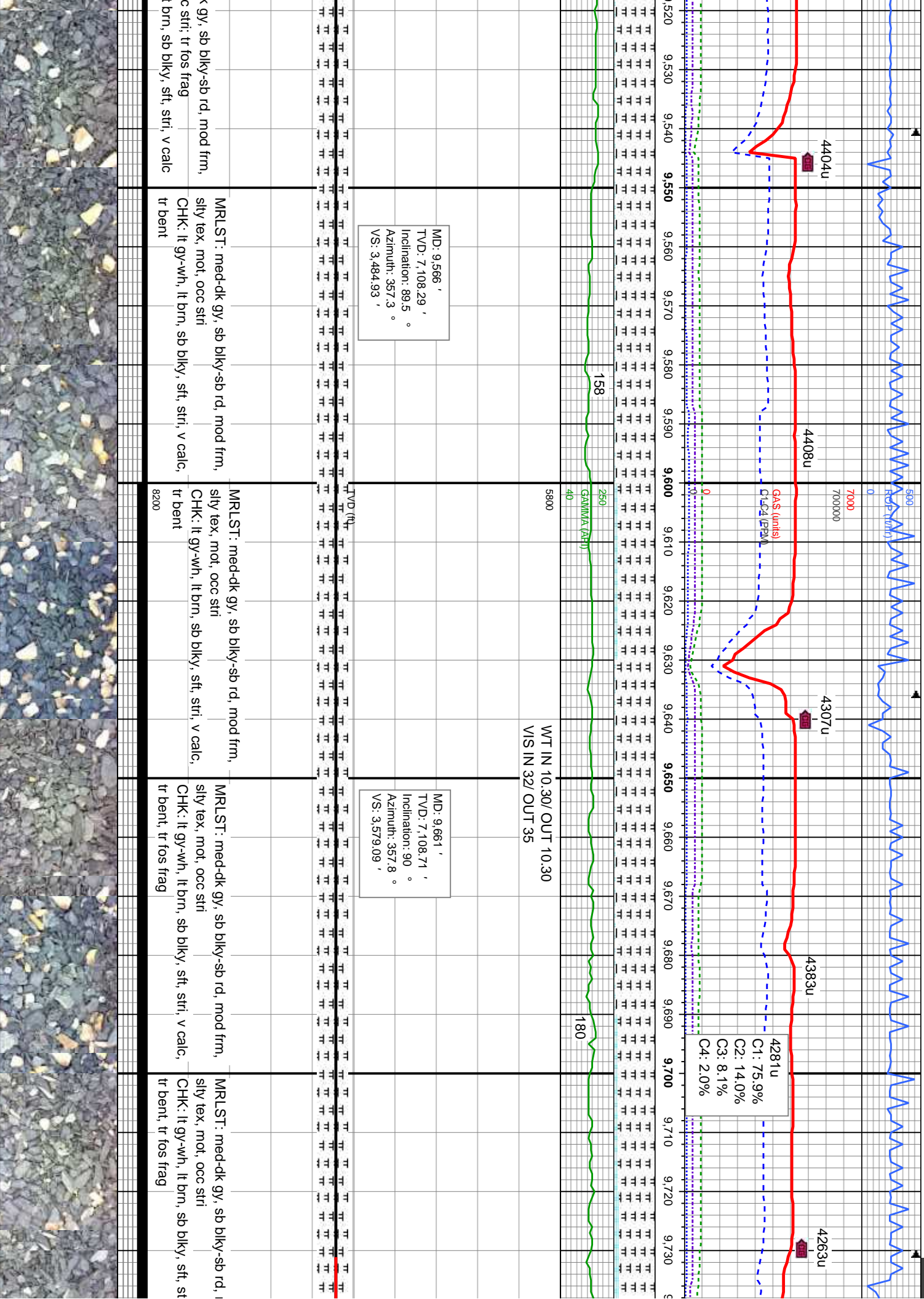


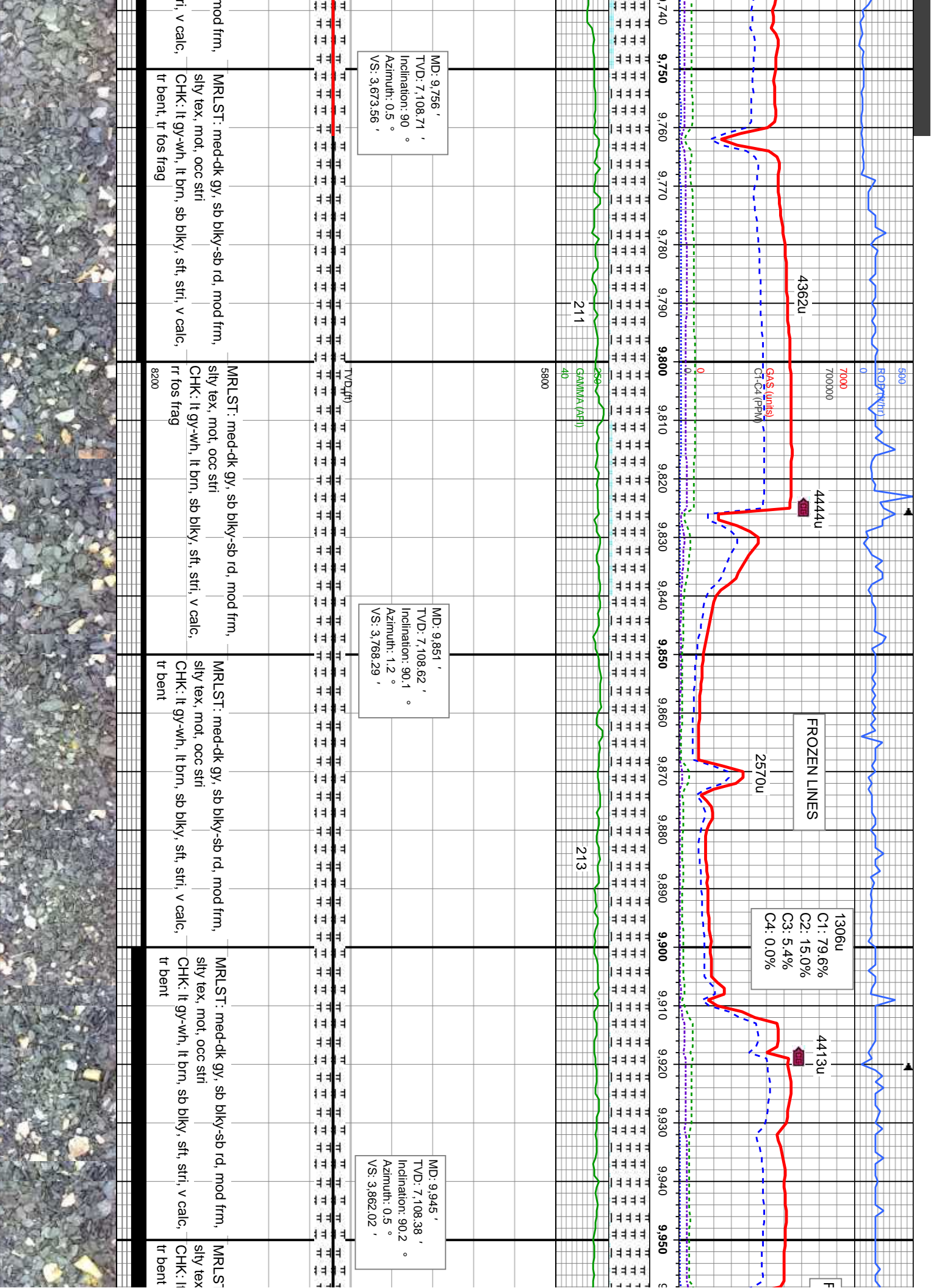












ROZEN LINES

4478u

4110u

4500u

3736u

FROZEN LINES

C1: 75.5%
C2: 14.4%
C3: 8.1%
C4: 2.0%

WT IN 10.30/ OUT 10.30
VIS IN 35/ OUT 35

MD: 10.040 '
TVD: 7,108.13 '
Inclination: 90.1 °
Azimuth: 0.3 °
VS: 3.956.69 '

MD: 10.135 '
TVD: 7,108.71 '
Inclination: 89.2 °
Azimuth: 0.6 °
VS: 4.051.37 '

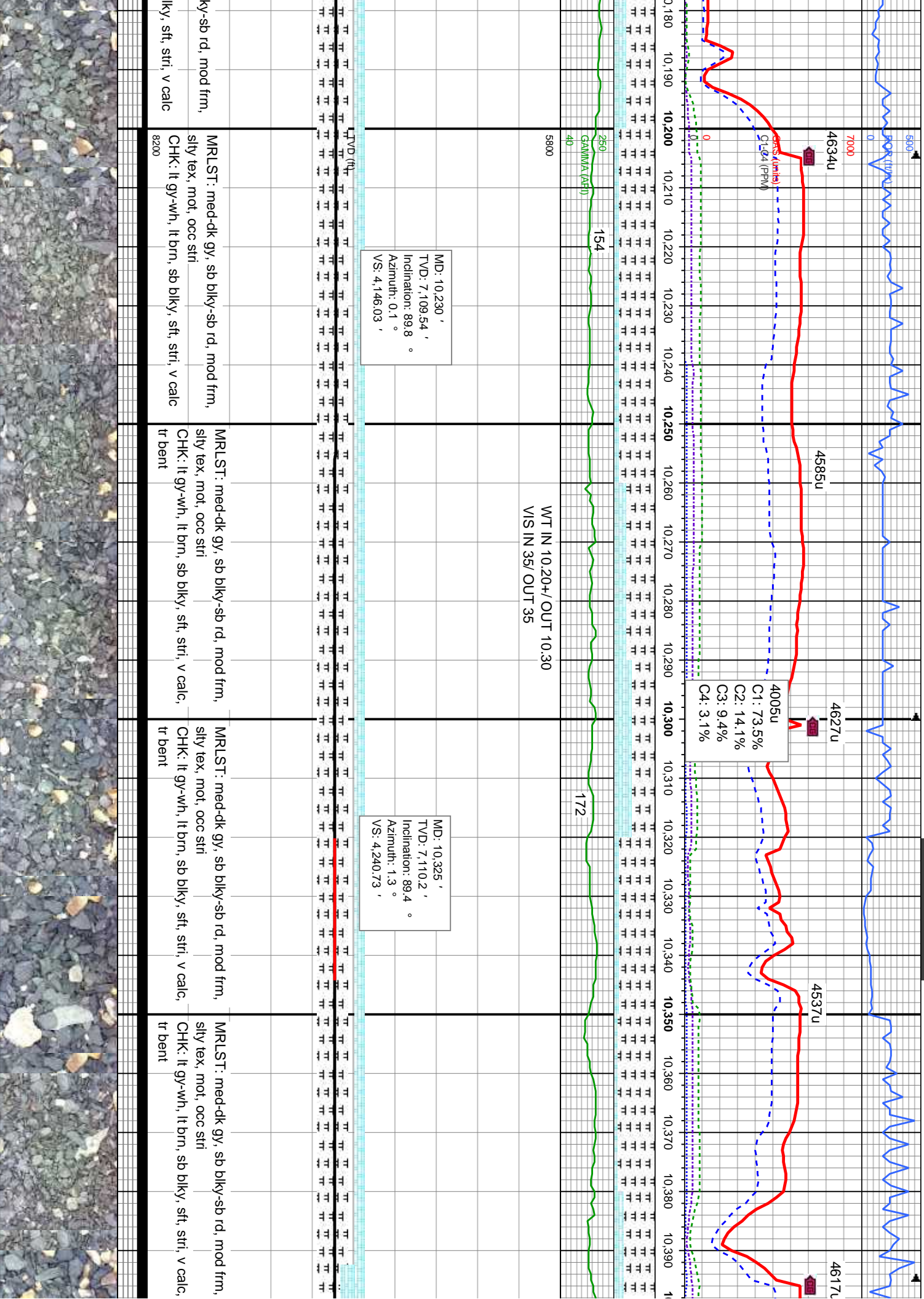
: med-dk gy, sb blkly-sb rd, mod frm,
, mot, occ stri
gy-wh, lt brn, sb blkly, sft, stri, v calc,

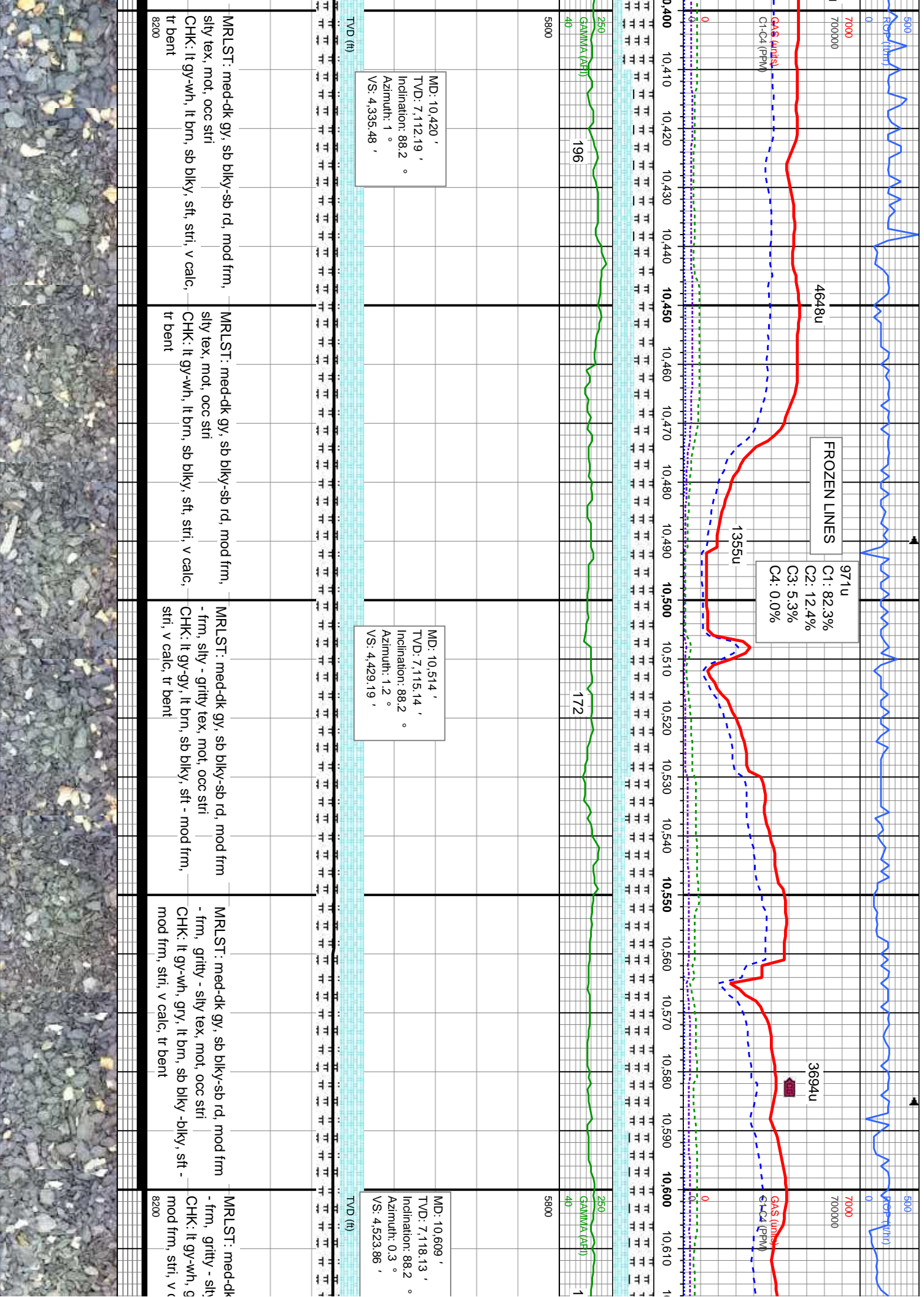
MRLST: med-dk gy, sb blkly-sb rd, mod frm,
sily tex, mot, occ stri
CHK: lt gy-wh, lt brn, sb blkly, sft, stri, v calc

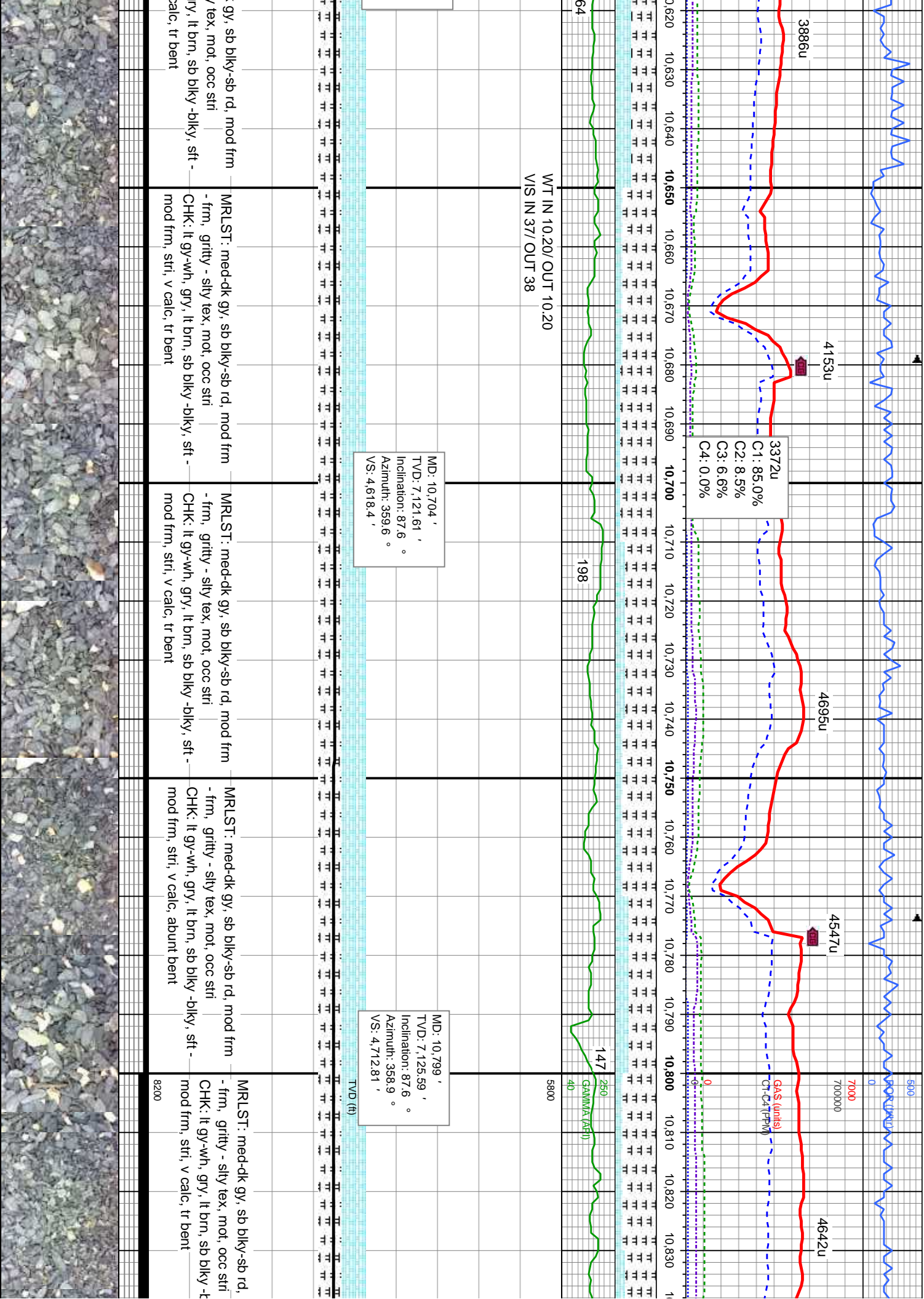
MRLST: med-dk gy, sb blkly-sb rd, mod frm,
sily tex, mot, occ stri
CHK: lt gy-wh, lt brn, sb blkly, sft, stri, v calc

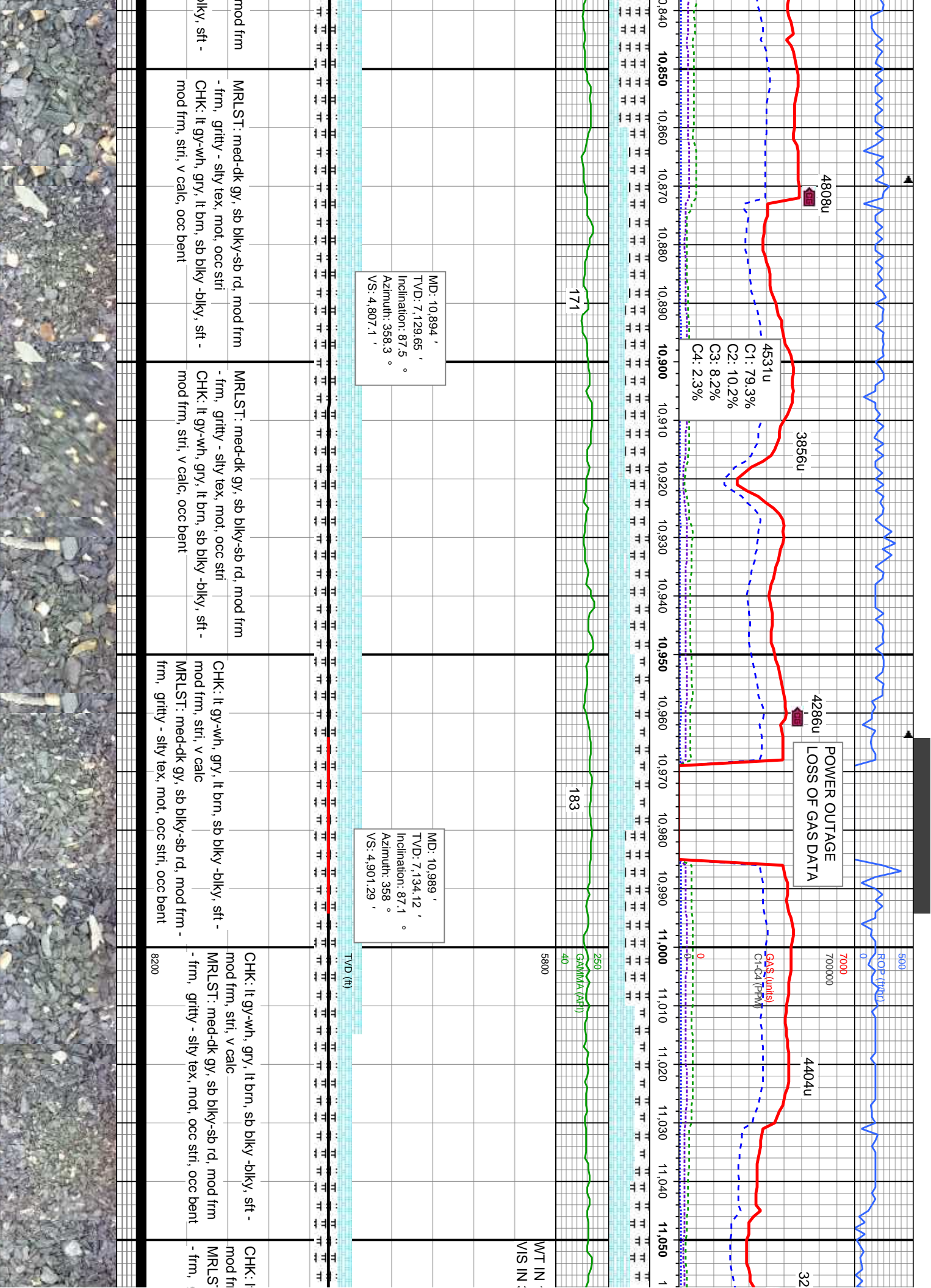
MRLST: med-dk gy, sb blkly-sb rd, mod frm,
sily tex, mot, occ stri
CHK: lt gy-wh, lt brn, sb blkly, sft, stri, v calc

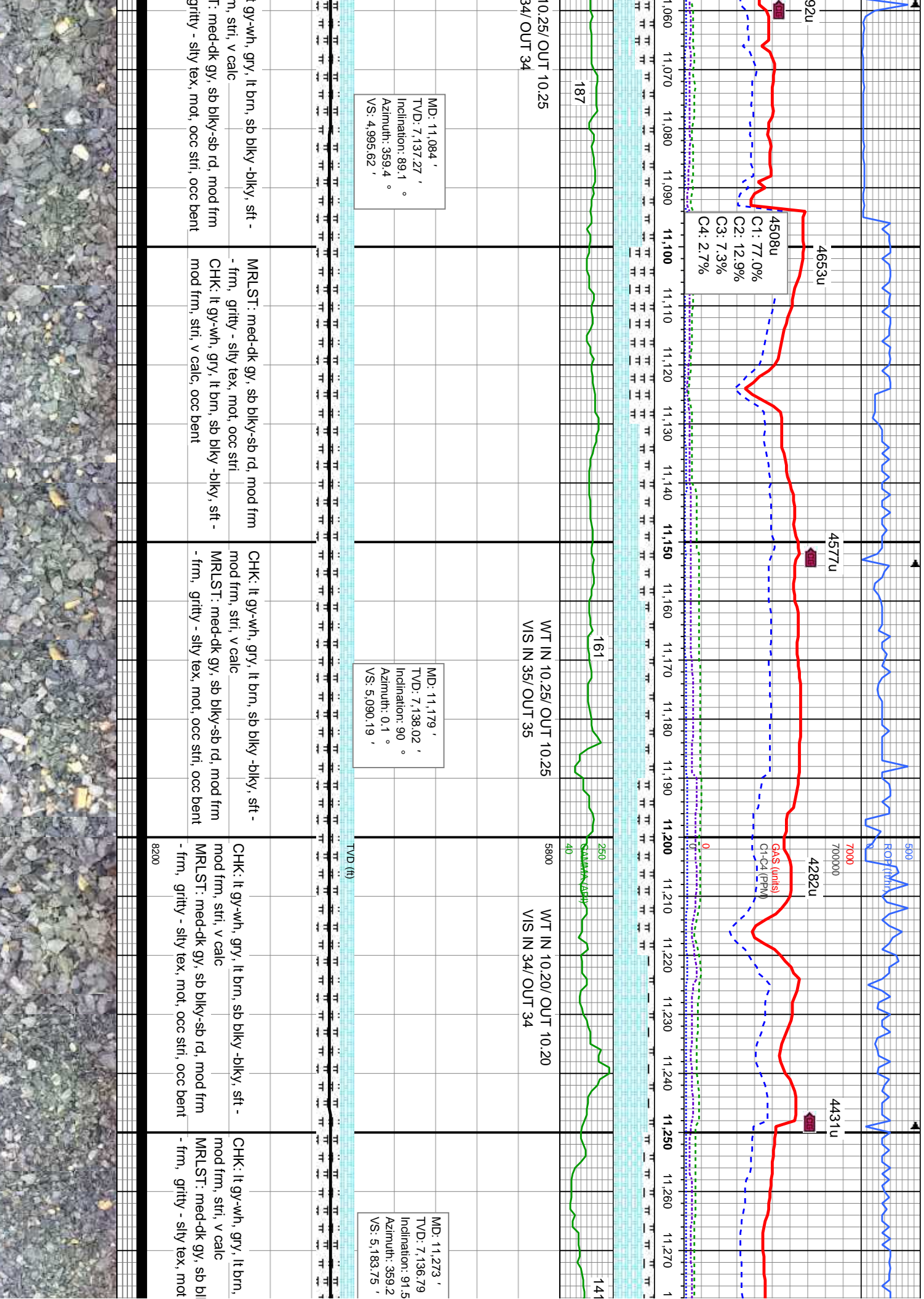
MRLST: med-dk gy, sb blkly-sb rd, mod frm,
sily tex, mot, occ stri
CHK: lt gy-wh, lt brn, sb blkly, sft, stri, v calc











2810u
C1: 76.3%
C2: 10.9%
C3: 9.6%
C4: 3.2%

FROZEN LINES

1455u

4546u

4421u

4026u
C1: 75.5%
C2: 13.8%
C3: 8.5%
C4: 2.3%

WT IN 10.25/ OUT 10.25
VIS IN 35/ OUT 35

WT IN 10.40/ OUT 10.40
VIS IN 35/ OUT 35

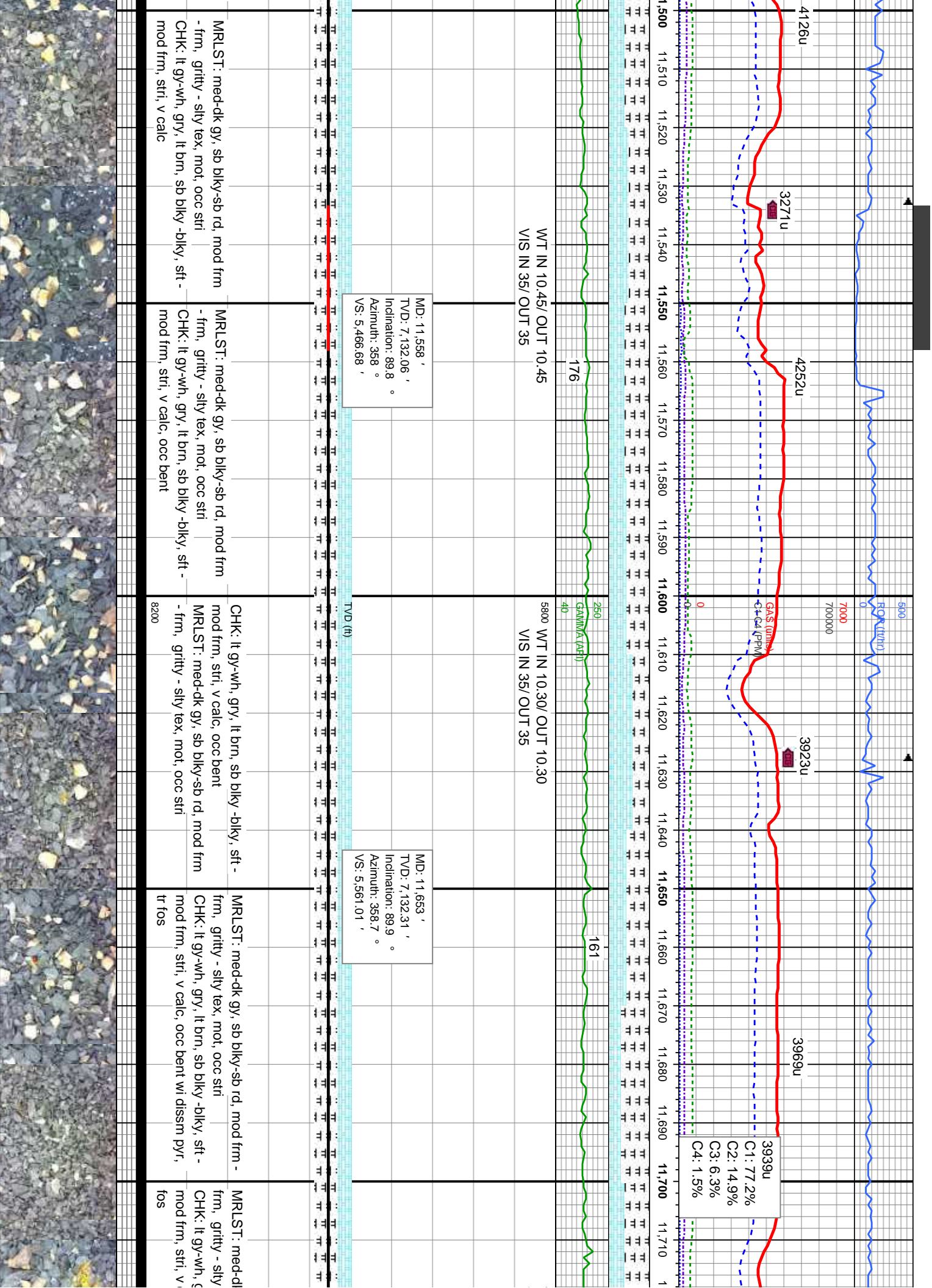
MD: 11,368 '
TVD: 7,134.88 '
Inclination: 90.8 °
Azimuth: 358.9 °
VS: 5,278.18 '

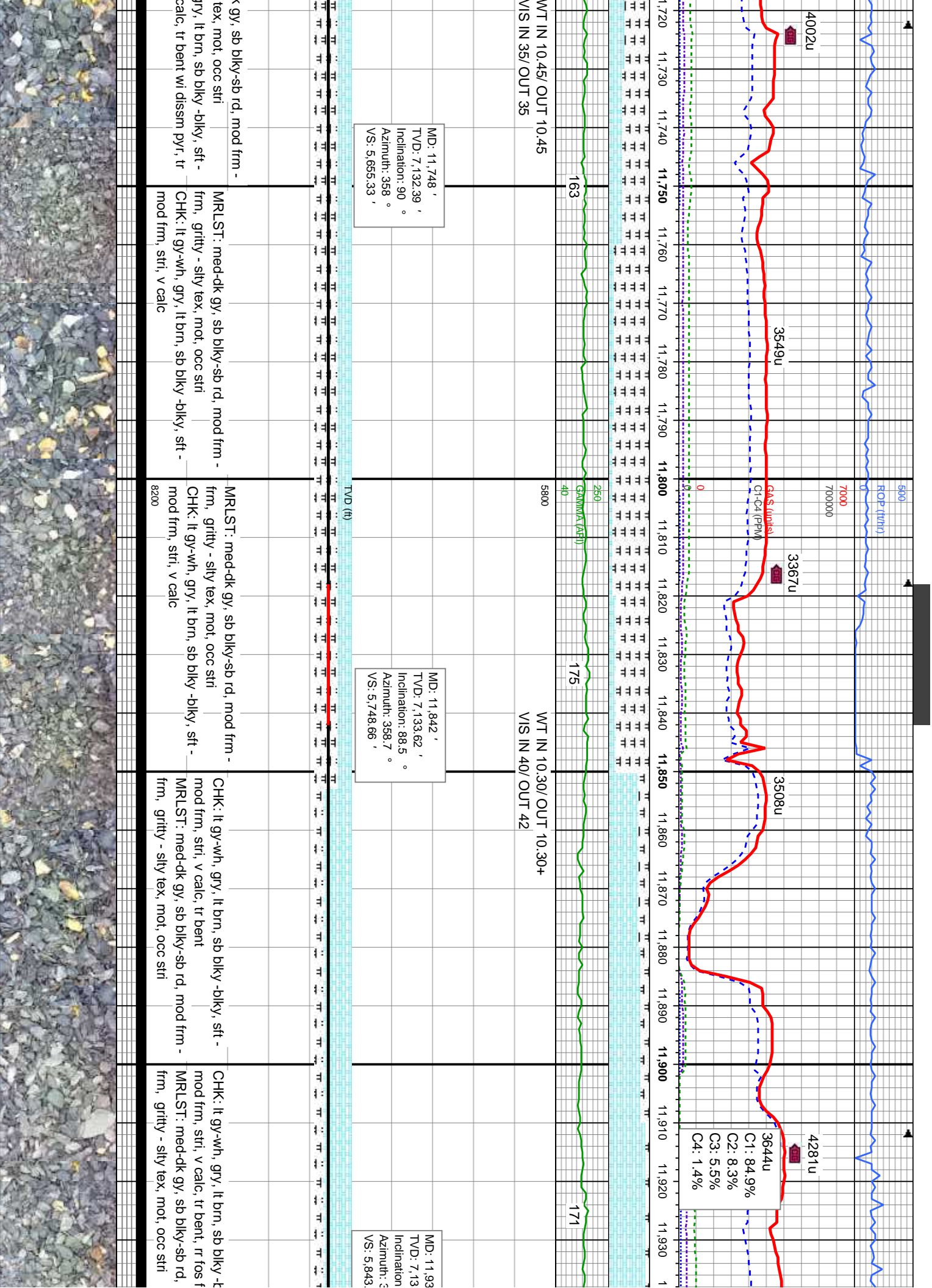
MD: 11,463 '
TVD: 7,133.06 '
Inclination: 91.4 °
Azimuth: 357.6 °
VS: 5,372.47 '

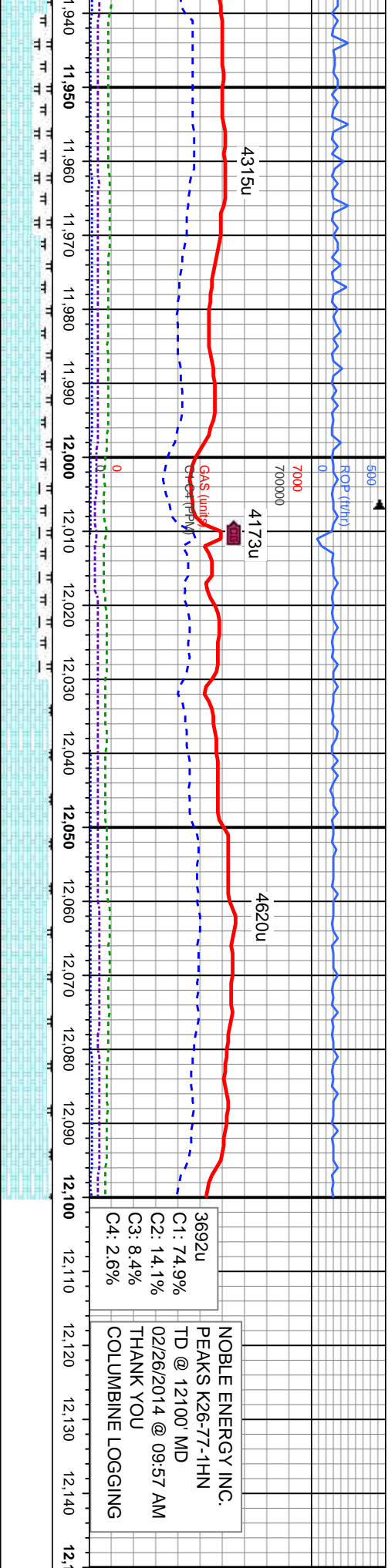
TVD (ft)

sb blkly -blkly, sft -	CHK: lt gy-wh, gry, lt brn, sb blkly -blkly, sft -	CHK: lt gy-wh, gry, lt brn, sb blkly -blkly, sft -	CHK: lt gy-wh, gry, lt brn, sb blkly -blkly, sft -
ky-sb rd, mod frm	mod frm, stri, v calc	mod frm, stri, v calc	mod frm, stri, v calc
occ stri, tr bent	MRLST: med-dk gy, sb blkly-sb rd, mod frm	MRLST: med-dk gy, sb blkly-sb rd, mod frm	MRLST: med-dk gy, sb blkly-sb rd, mod frm
	- frm, gritty - sily tex, mot, occ stri, tr bent	- frm, gritty - sily tex, mot, occ stri, tr bent	- frm, gritty - sily tex, mot, occ stri, tr bent









7' 5.7' 89° 458.9° 05'

MD: 12,030' TVD: 7,137' Inclination: 89.4° Azimuth: 359° VS: 5,935.49'

PROJECTION

MD: 12,100' TVD: 7,137.73' Inclination: 89.4° Azimuth: 359° VS: 6,005.08'

CHK: lt gy-wh, gry, lt brn, sb blk - blk, sft - mod frm, stri, v calc, tr bent wi dissim pyr, r fos frag	CHK: lt gy-wh, gry, lt brn, sb blk - blk, sft - mod frm, stri, v calc, tr bent wi dissim pyr, r fos frag, tr calc incl	CHK: lt gy-wh, gry, lt brn, sb blk - blk, sft - mod frm, stri, v calc, tr bent wi dissim pyr, r fos frag, tr calc incl
MRLST: med-dk gy, sb blk - sb rd, mod frm - frm, gritty - silty tex, mot, occ stri	MRLST: med-dk gy, sb blk - sb rd, mod frm - frm, gritty - silty tex, mot, occ stri	MRLST: med-dk gy, sb blk - sb rd, mod frm - frm, gritty - silty tex, mot, occ stri

