



Scale: 5" / 100'
Measured Depth Log

Well Name Rattler 13N-3HZ

Location SECTION 34 T3N R66W

State COLORADO

County WELD

Country UNITED STATES OF AMERICA

Rig Number ENSIGN 145

API Number 0512337075

AFE # 2068419

Region DJ BASIN

Field WATTENBERG

Spud Date 8/3/2013

Drilling Completed 8/11/2013

Surface Coordinates 311FSL 761FWL

Bottom Hole Coordinates 1FSL 730FWL

Ground Elevation 4970

K.B. Elevation 4983

Logged Interval 6700

To 12867

Total Depth 6167

Formation SUSSEX, SHARON SPRINGS, NIOBRARA A, NIOBRARA B, NIOBRARA C

Type of Drilling Fluid FW LSND

Company Anadarko

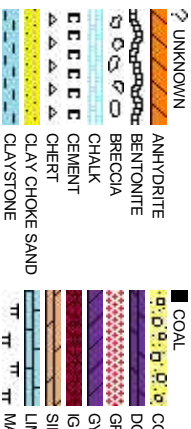
Address 1099 18th STREET SUIT
DENVER, CO. 80202

Name ZACK HEIDER

Company ANADARKO PETROLEUM
Address 1099 18th STREET SUIT
DENVER, CO. 80202

COLUMBINE LOGGERS

LACE



Operator

1800

Geologist

M COMPANY

1800

Other

















































Y LITTLE, KALEN SMITH, WHITNEY JACKS

Rock Types

[illegible]

Accessories

Fossils

Fossils	
 F FOSSIL	 ARGILLACEOUS
 GASTROPOD	 ARGILLITE GRAIN
 OOLITE	 B BENTONITE
 OSTRACOD	 BITUMINOUS SUBSTANCE
 PELECYPOD	 BRECCIA FRAGMENTS
 BIOCLASTIC	 CALCAREOUS
 BRYOZOA	 CARBONACEOUS FLAKES
 CEPHALOPOD	 CHERT
 CORAL	 CHERT
 CRINOID	 COAL - THIN BEDS
 ECHINOID	 DOLOMITIC
 FISH	 FELDSPAR
 FORAMINIFERA	 FERRUGINOUS PELLET
 ANHYDRITIC	 FERRUGINOUS
Minerals	
 GLAUCONITE	 HEAVY MINERAL
 GYPSIFEROUS	 NOCERAMUS
 KAOLIN	 MARLSTONE
 MINERAL CRYSTALS	 NODULES
 PHOSPHATE PELLETS	 PYRITE
 SALT CAST	 MARLSTONE (CALC) STRINGER
 SANDY	 MARLSTONE (DOL) STRINGER
 SILICEOUS	 SANDSTONE STRINGER
 SILTY	 SHALE STRINGER
 SILTSTONE STRINGER	 SILTSTONE STRINGER

Springer

Other Symbols

Oil Show

	MOLDIC		WIRELINE TESTED - LEFT		E EARTHY
	ORGANIC		WIRELINE TESTED - RT		FINELYXLN
	P PINPOINT		GAS SHOW		GRAINSTONE
	VUGGY		MN DEPTH		L LITHOGRAPHIC
	EVEN		FAULT		ROUNDING
	DEAD		FORMATION TOP		WIRELINE TESTED - LEFT
	OIL SHOW		WIRELINE TESTED - RT		FINELYXLN
	MOLDIC		GAS SHOW		GRAINSTONE
	ORGANIC		MN DEPTH		L LITHOGRAPHIC
	P PINPOINT		FAULT		ROUNDING
	VUGGY		FORMATION TOP		WIRELINE TESTED - LEFT
	EVEN		WIRELINE TESTED - RT		FINELYXLN

Engineering

	QUESTIONABLE
	SPOTTED STAINING
<h2>Engineering</h2>	
	NORMAL FAULT
	OIL SHOW
	OVERTURNED STRATA
	REVERSE FAULT
	SIDEWALL CORE (LEFT)
	SIDEWALL CORE (RIGHT)
<h2>Textures</h2>	
	ANGULAR
	ROUNDED
	SUBANG
	SUBSAND
<h2>Sorting</h2>	
	MICROCLIN
	MUDSTONE
	PACKSTONE
	WACKESTONE
<h2>Porosity</h2>	
	BIT
	CONNECTION (LEFT)
	CONNECTION (RIGHT)
	EARTHY
	FENESTRAL
	FRACTURE
	INTERCRYSTALLINE
	INTERROLLITIC
<h2>Textures</h2>	
	CORE - LOST
	CORE - RECOVERED
	DST INTERVAL
	SLIDE
	SURVEY
	TRIP GAS
<h2>Textures</h2>	
	BOUNDSTONE
	CHALKY
	CRYPTOXIN
<h2>Sorting</h2>	
	MODERATE
	POOR
	WELL

Textures

Sorting

BS BOUNDSTONE
C CHALKY
CX CRYPTOXIN

M MODERATE
P POOR
W WELL

Slide/Rotate

ROP

ROP

Total Gas & Chromatograph

GAS

C1

C2

3

C4

1

Depth Labels

Gamma

GAMMA

% Lith

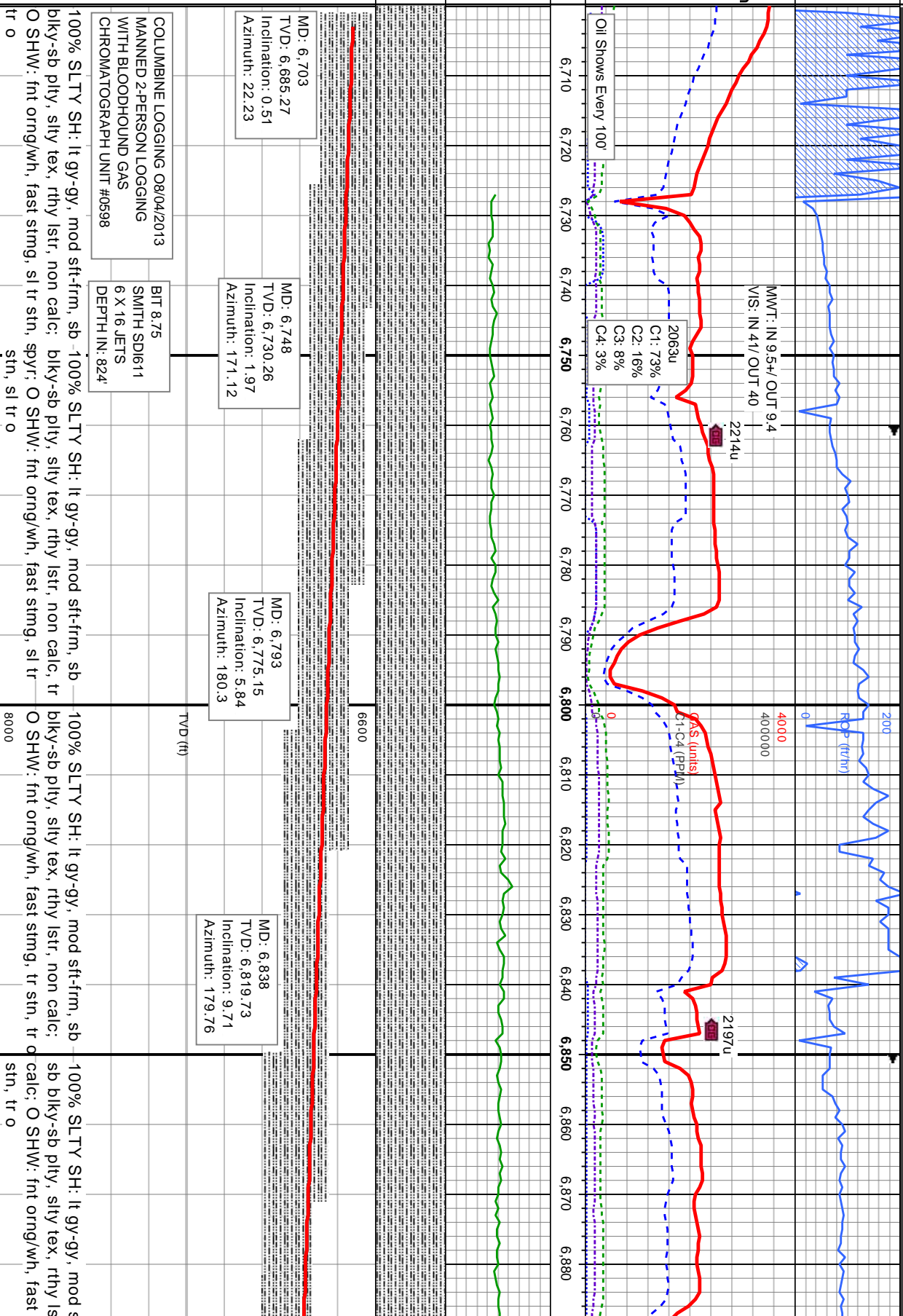
Well Bore

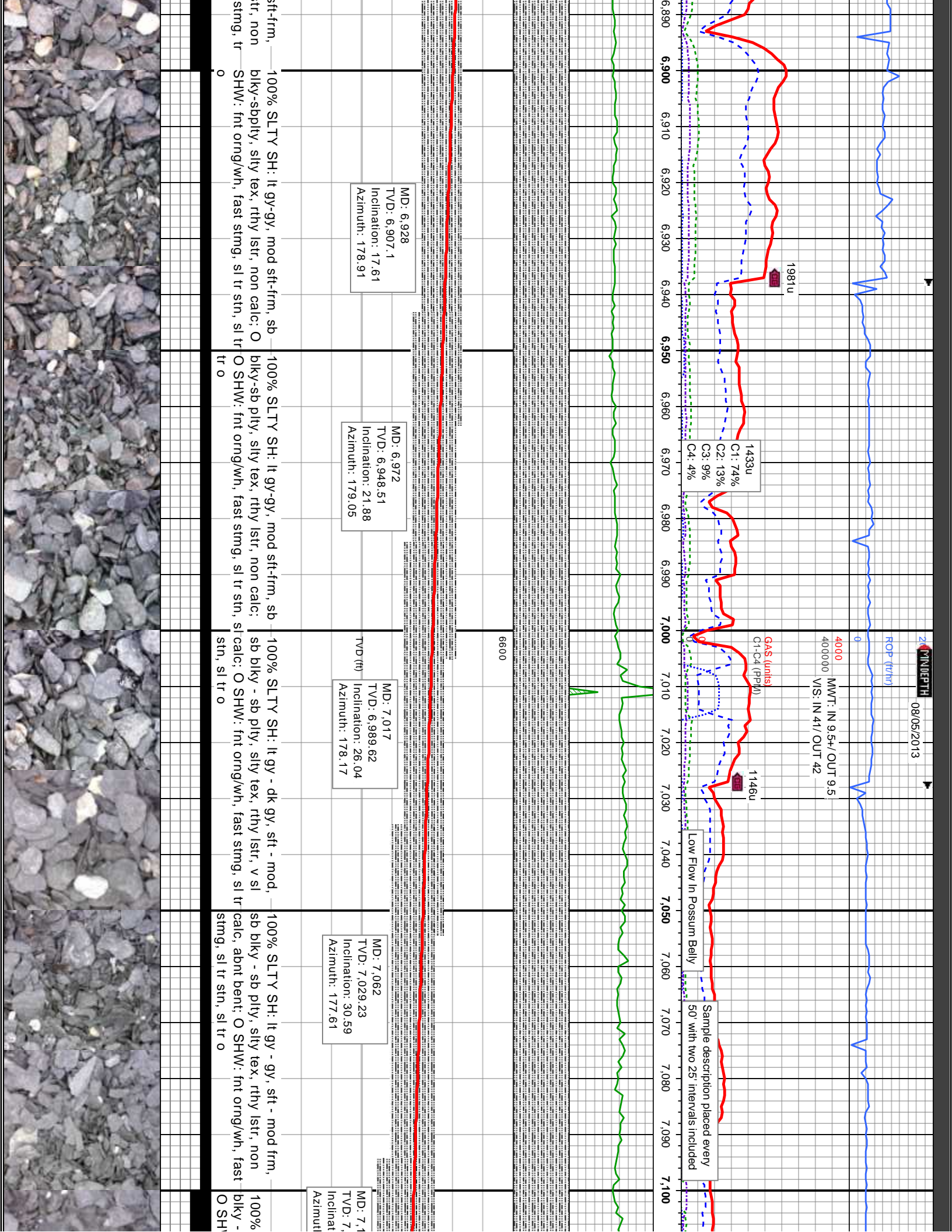
TV-D

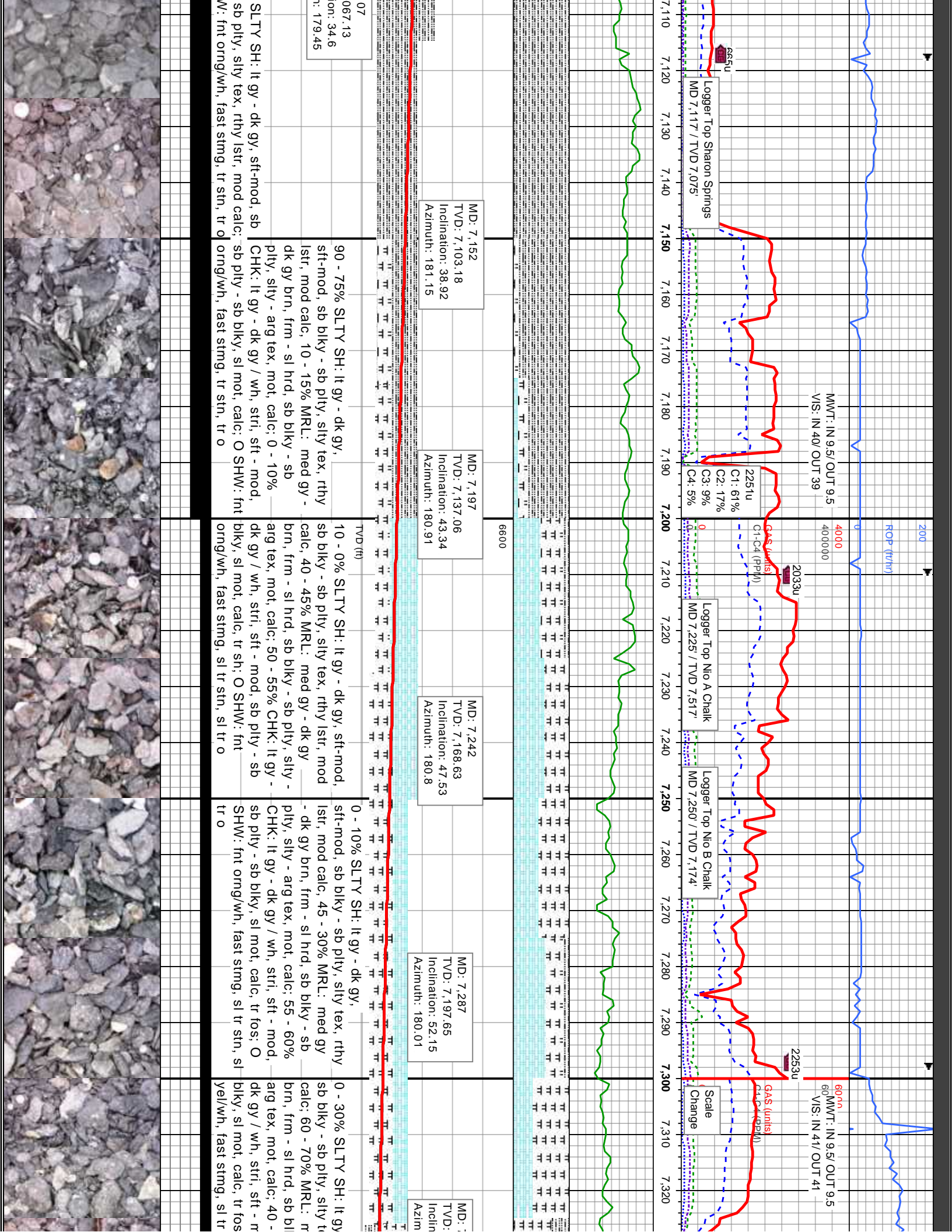
Oil Show

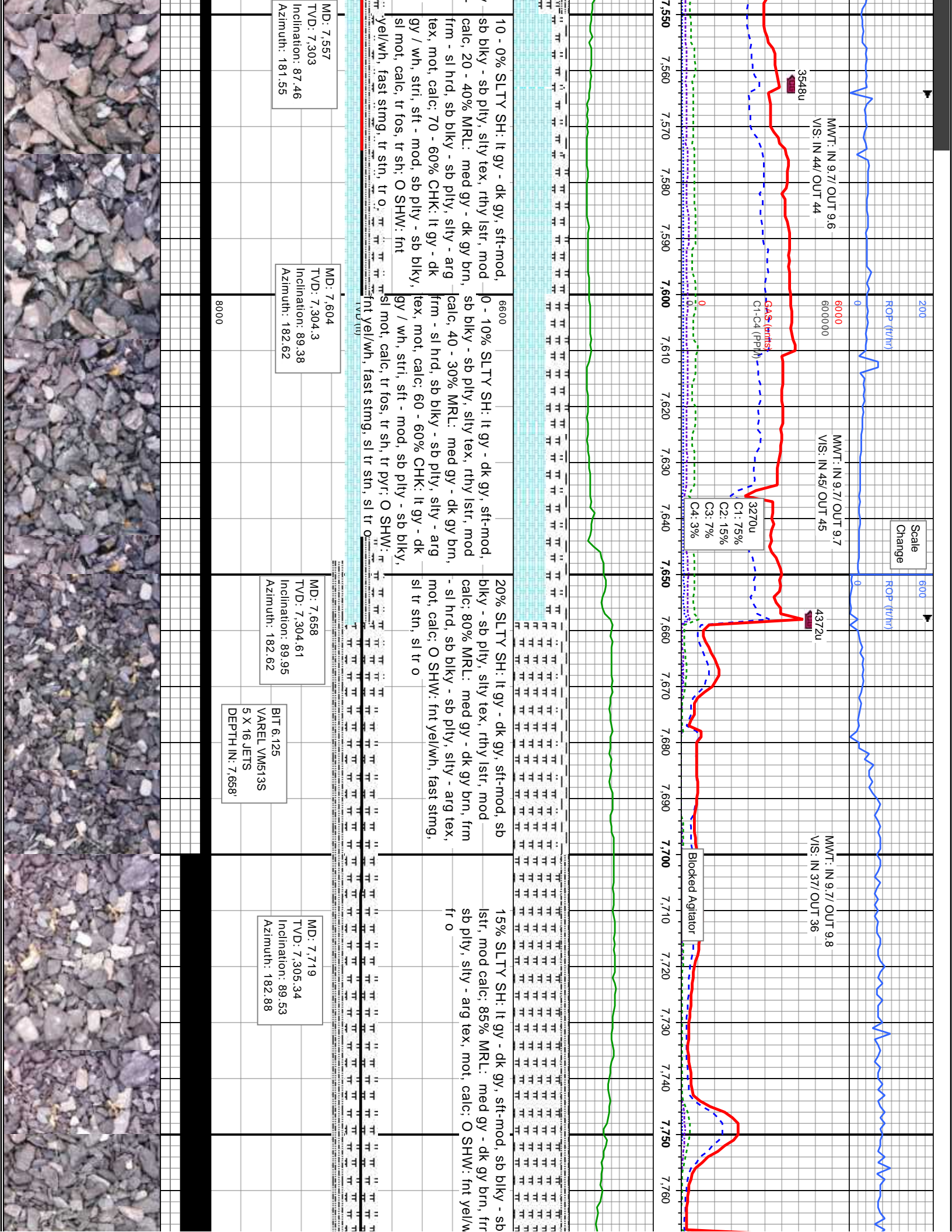
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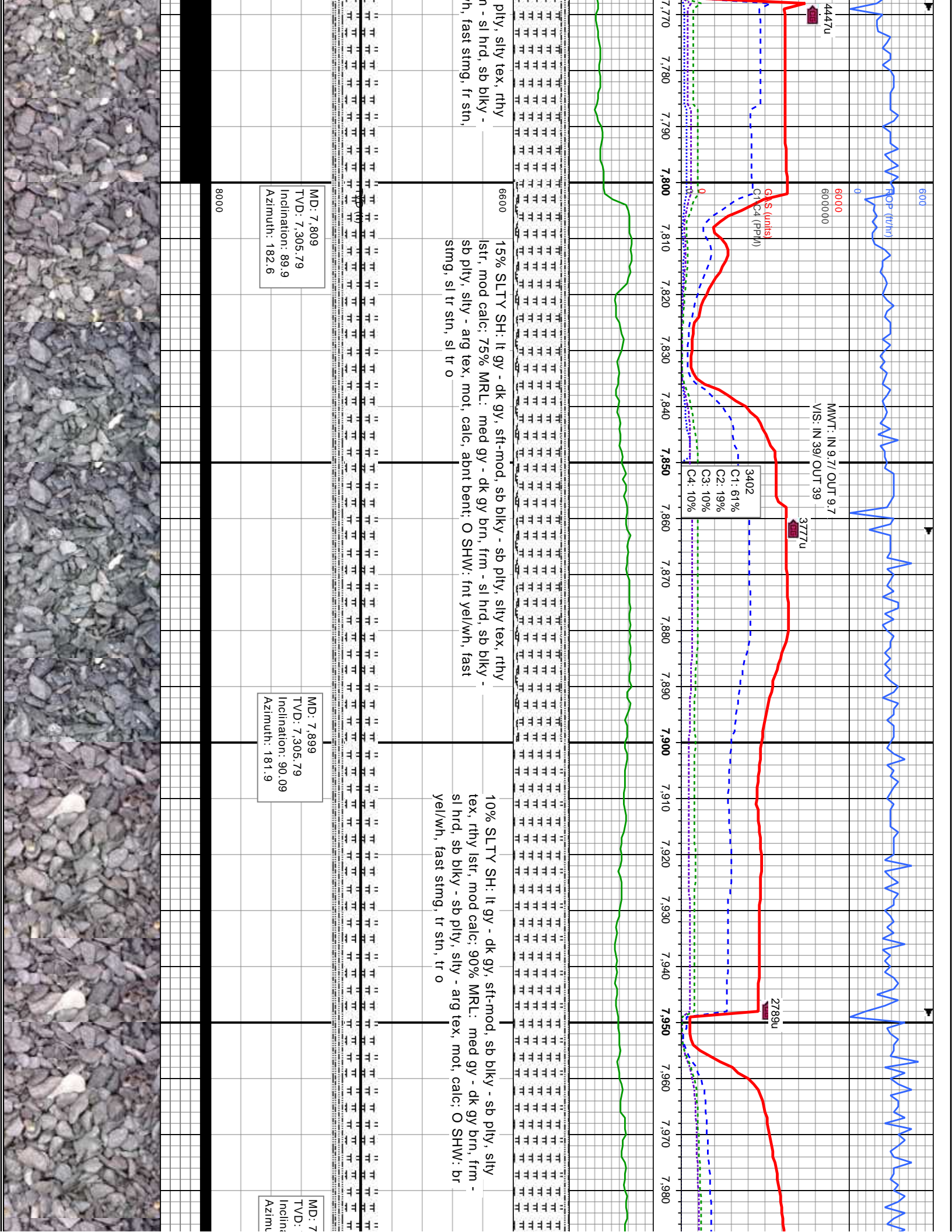
Images

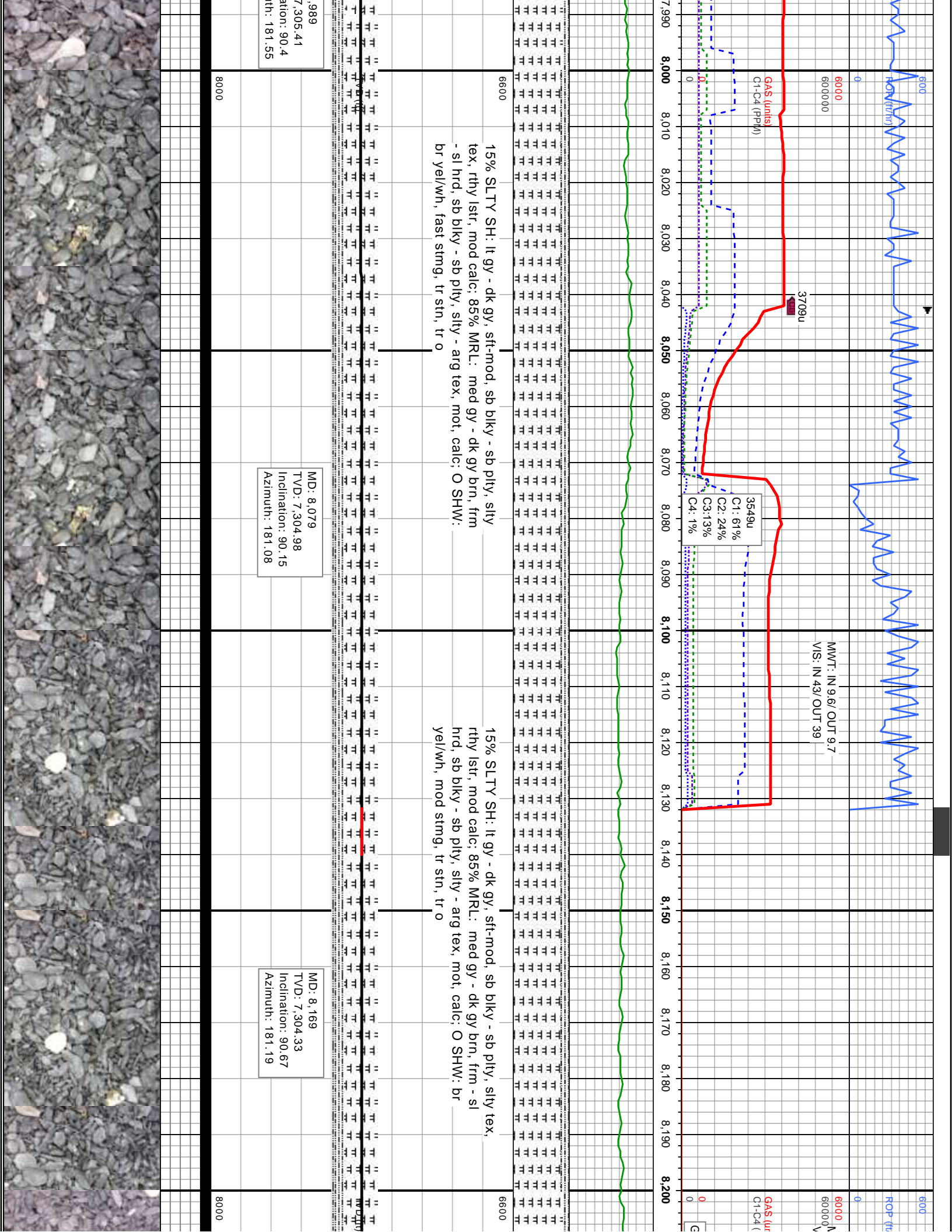


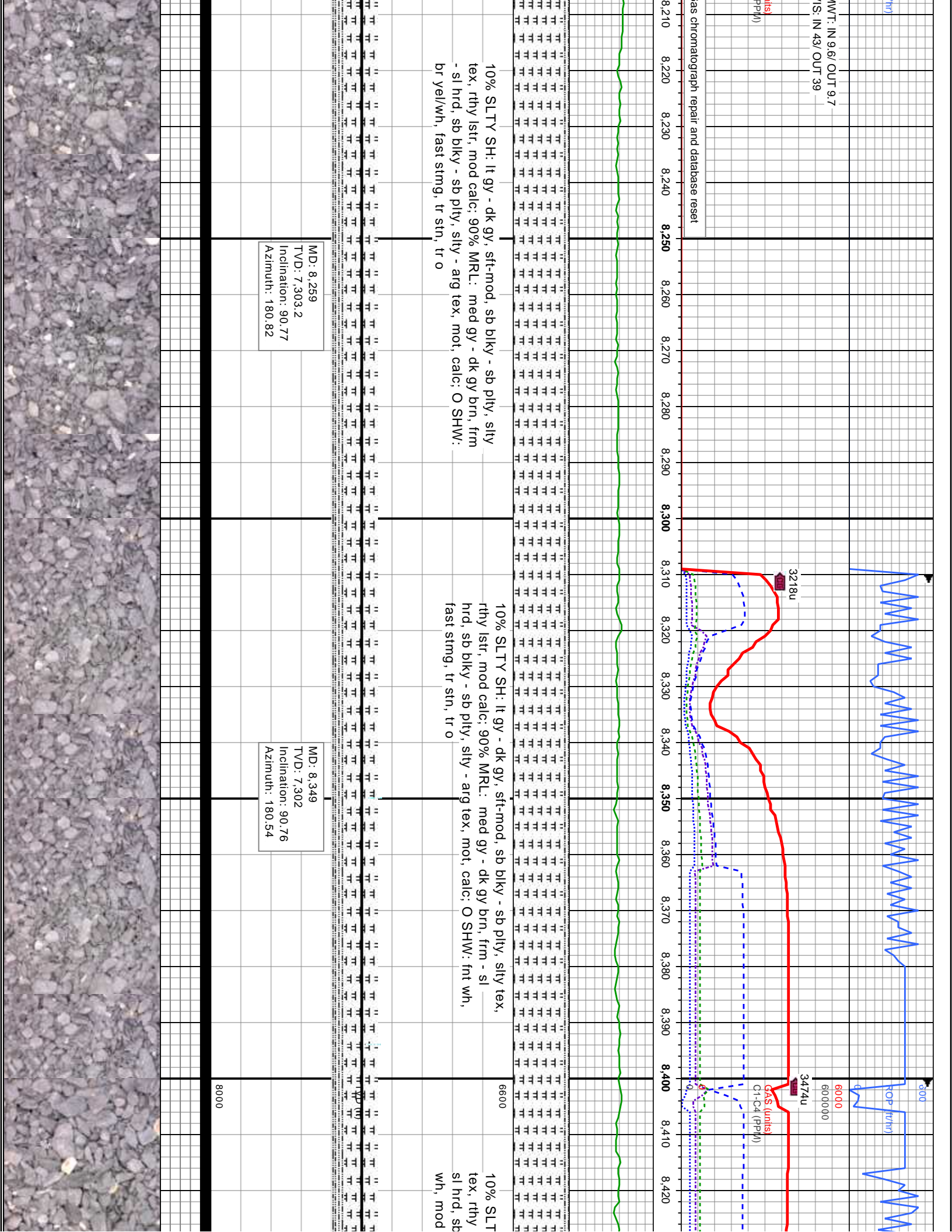


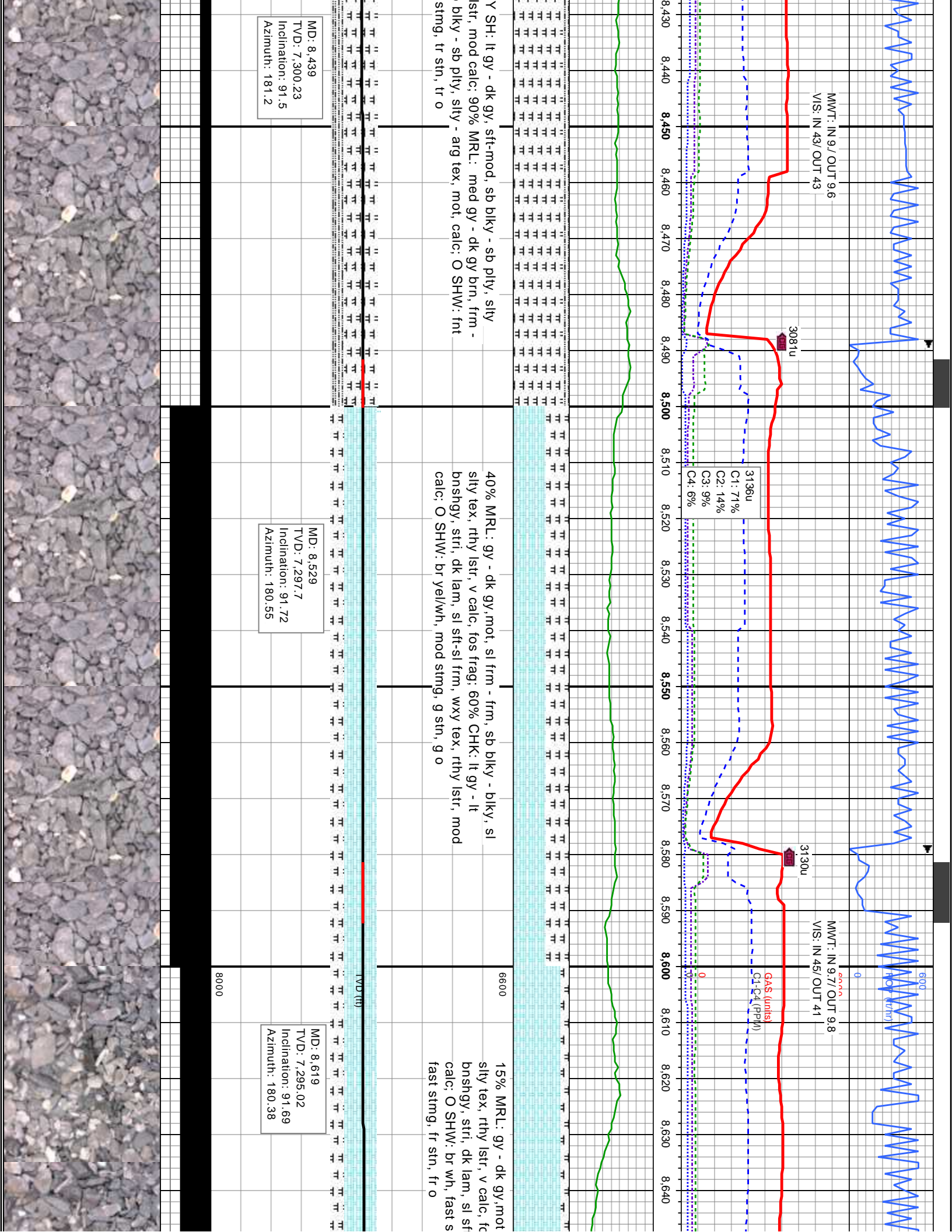


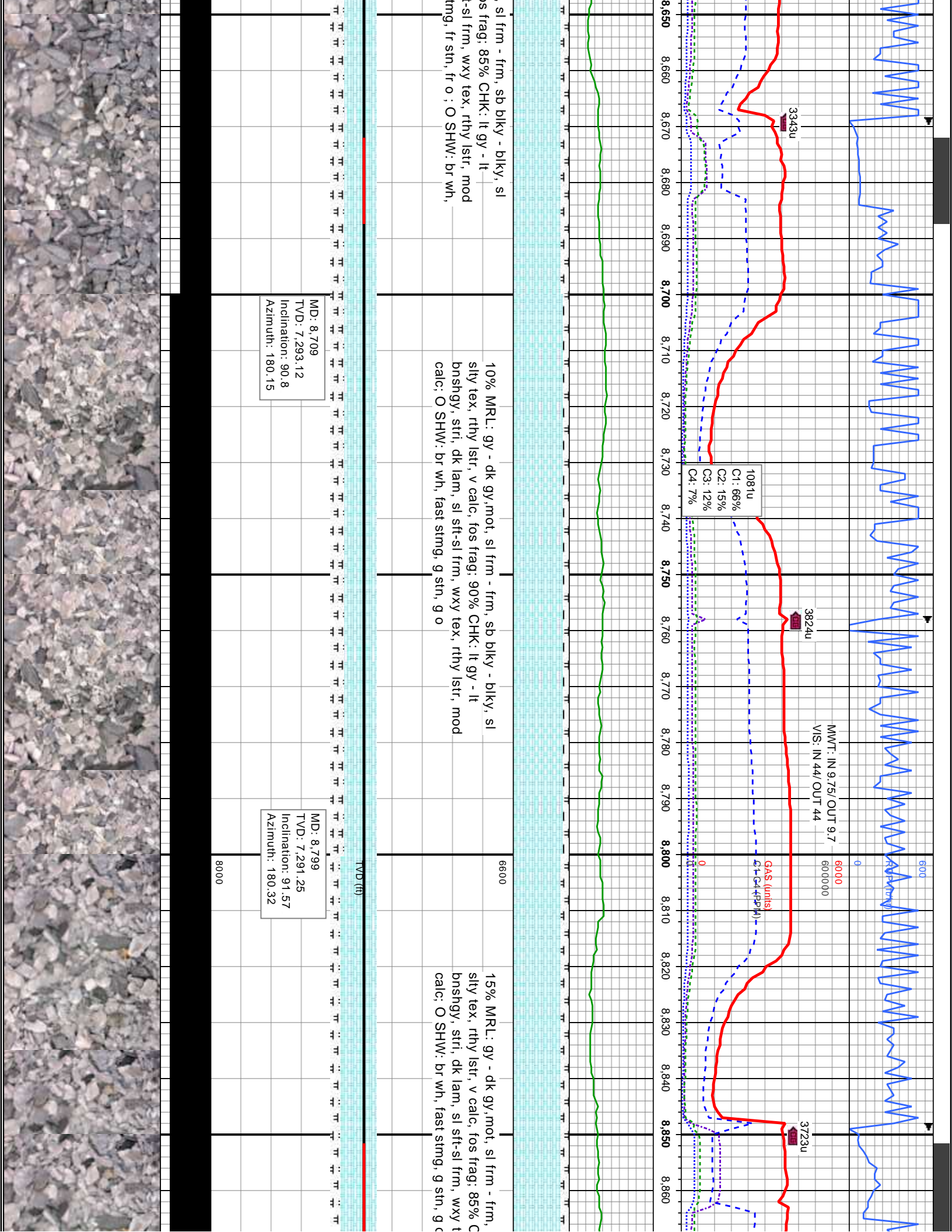


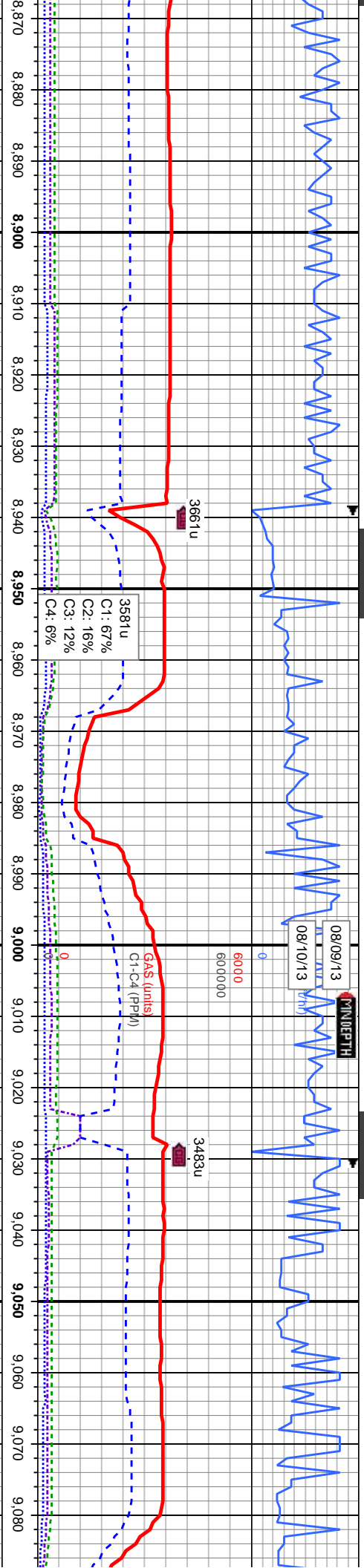












sb blkly - blkly, sl
HK: lt gy - lt
ex, rthy lstr, mod

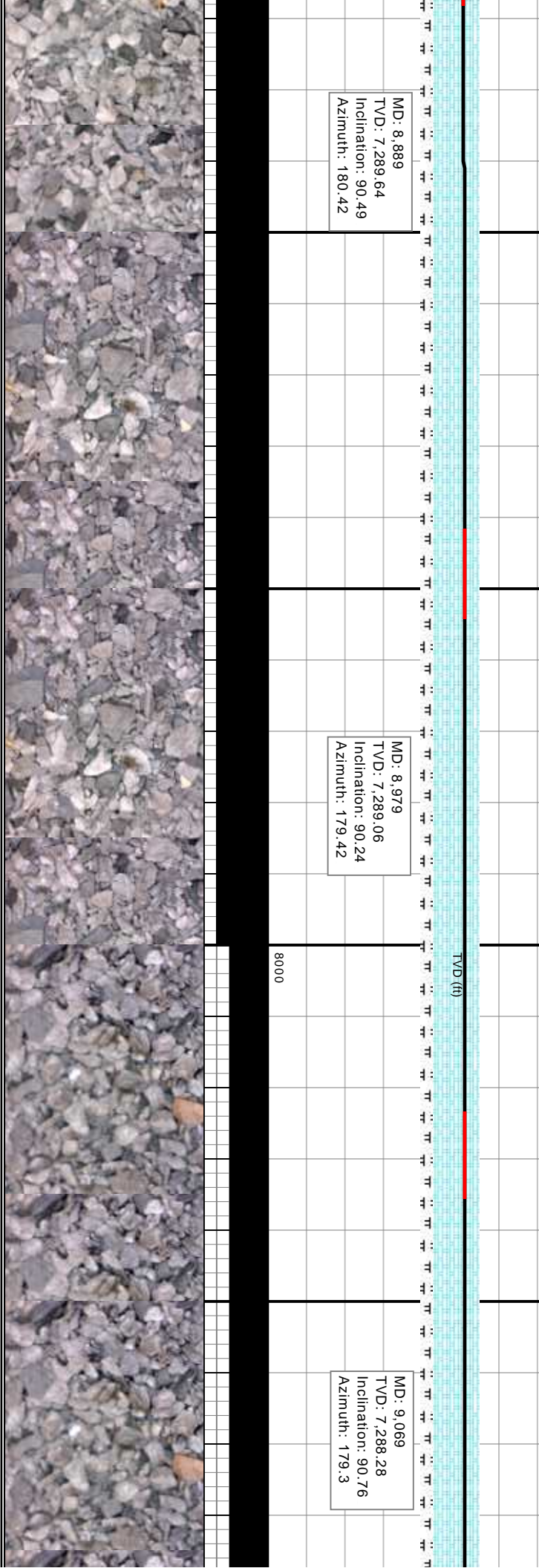
10% MRL: gy - dk gy, mot, sl frm - frm, sb blkly - blkly, sl
sly tex, rthy lstr, v calc, fos frag; 90% CHK: lt gy - lt
bnshgy, stri, dk lam, sl sft-sl frm, wxy tex, rthy lstr, mod
calc; O SHW: br wh, mod stmg, g str, g o

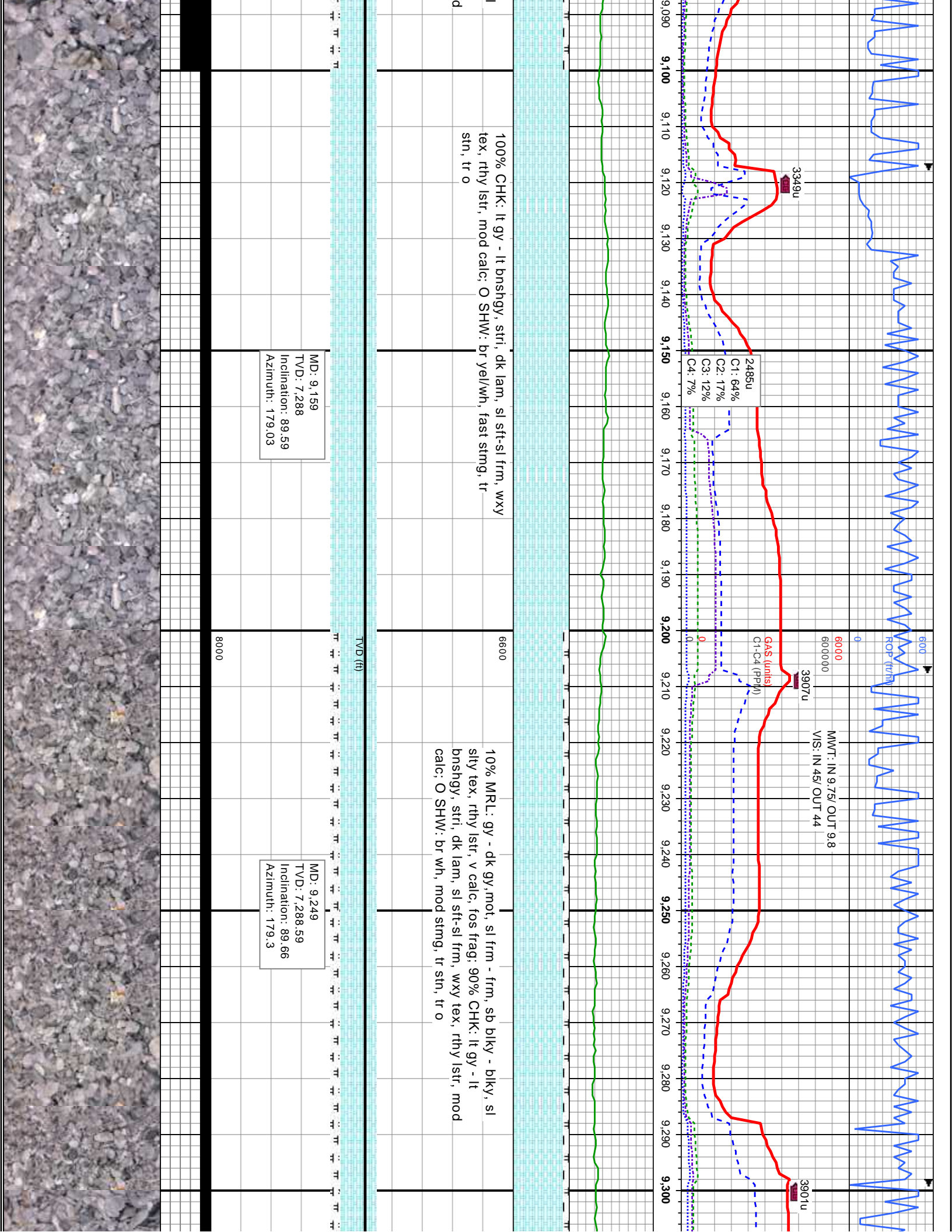
10% MRL: gy - dk gy, mot, sl frm - frm, sb blkly - blkly, s
sly tex, rthy lstr, v calc, fos frag; 90% CHK: lt gy - lt
bnshgy, stri, dk lam, sl sft-sl frm, wxy tex, rthy lstr, mo
calc; O SHW: br wh, fast stmg, fr str, fr o

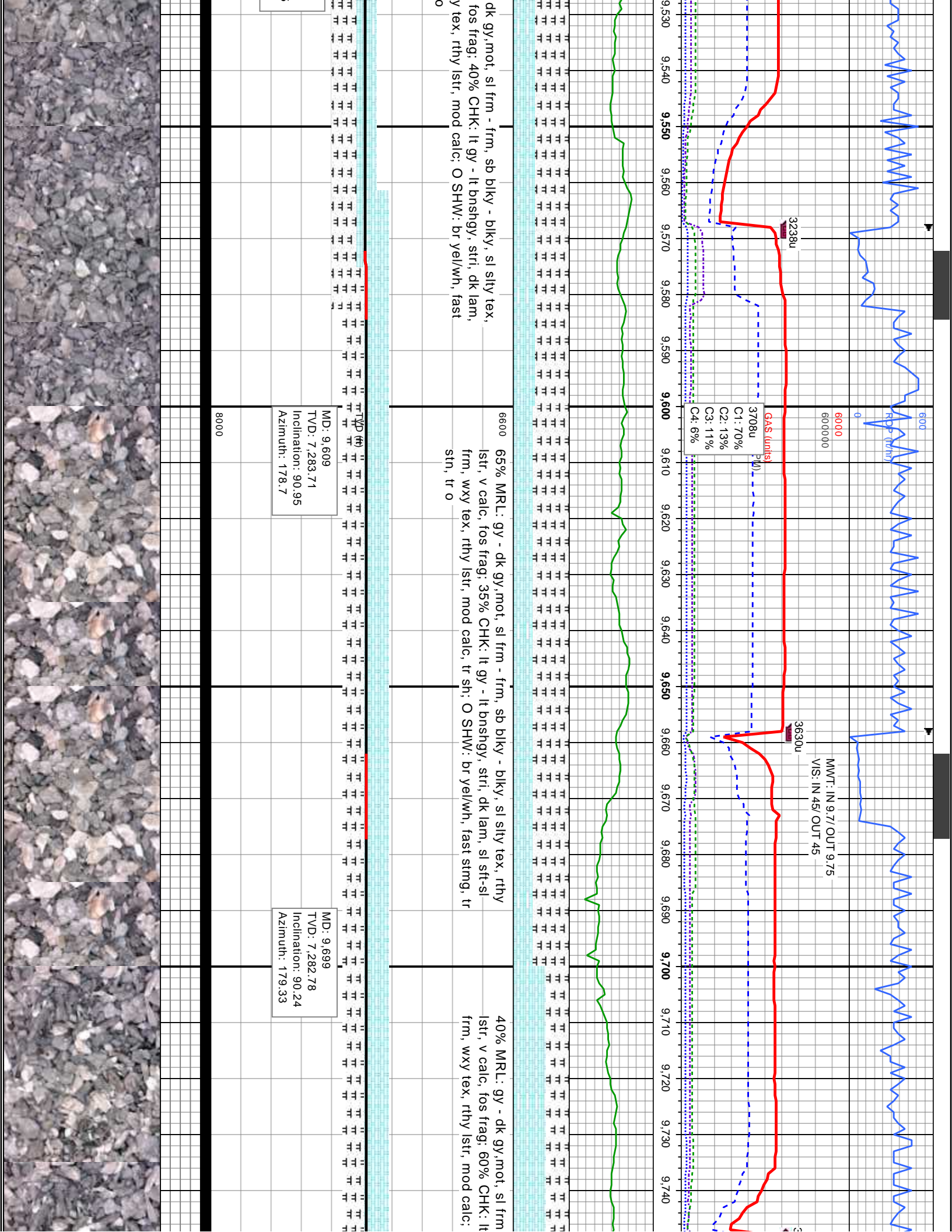
MD: 8,889
TVD: 7,289.64
Inclination: 90.49
Azimuth: 180.42

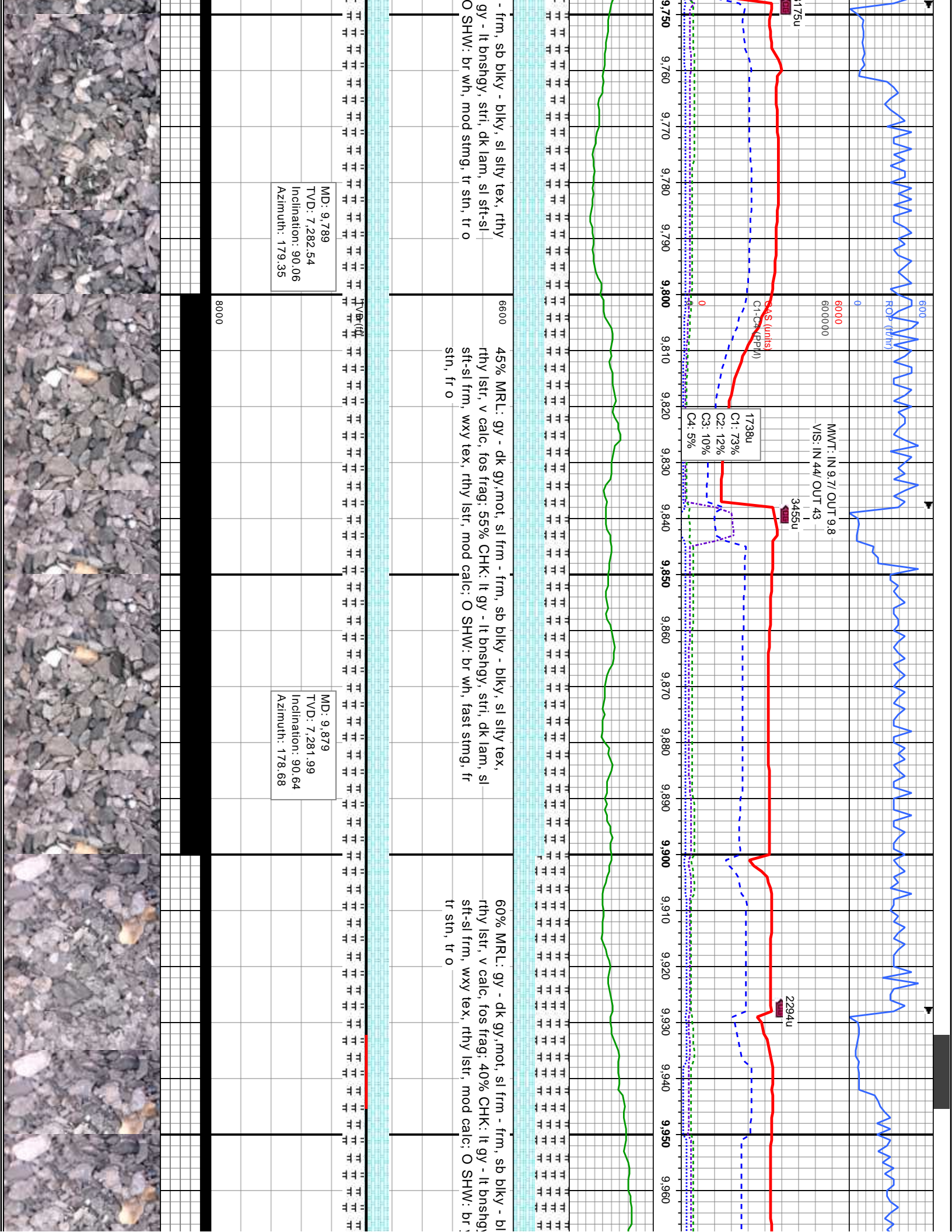
MD: 8,979
TVD: 7,289.06
Inclination: 90.24
Azimuth: 179.42

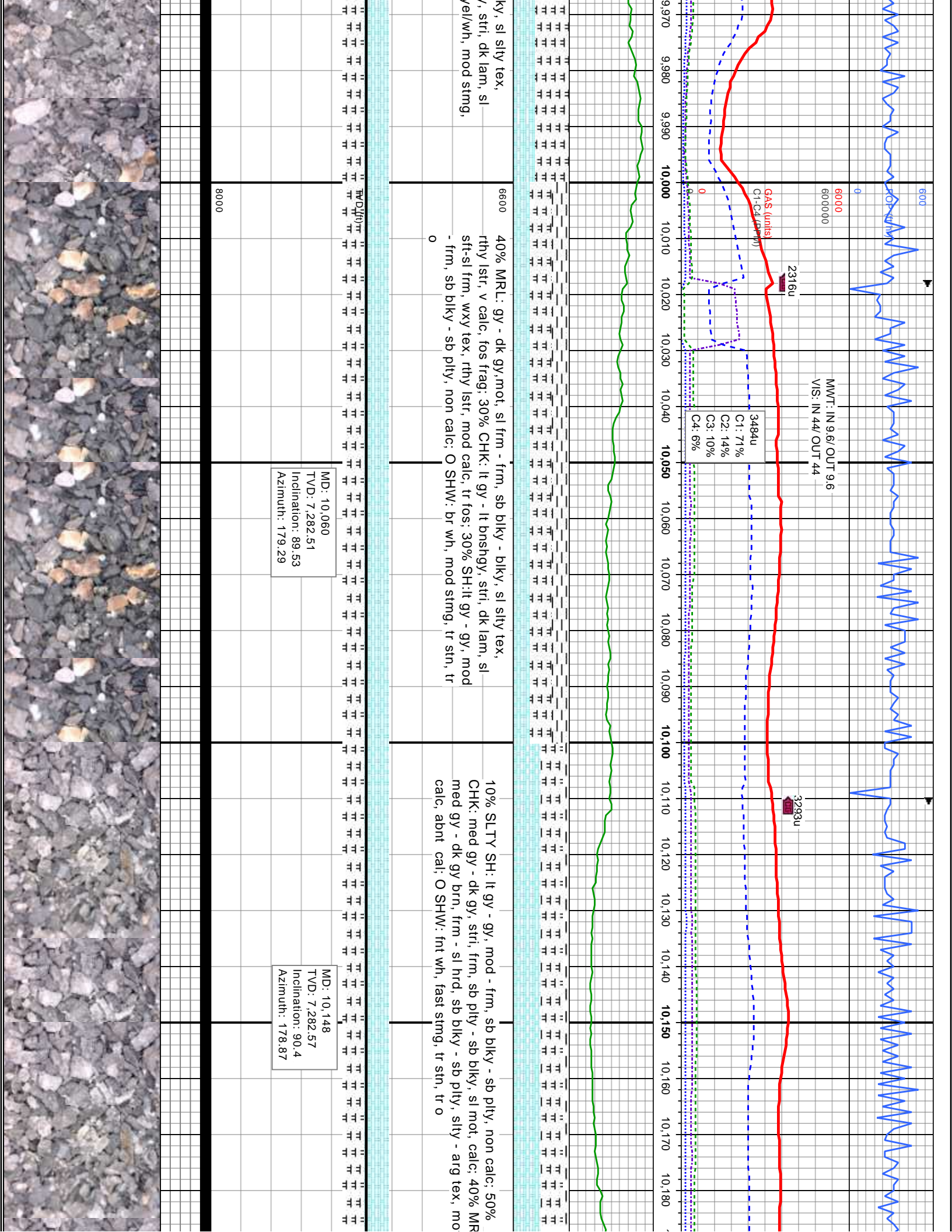
MD: 9,069
TVD: 7,288.28
Inclination: 90.76
Azimuth: 179.3

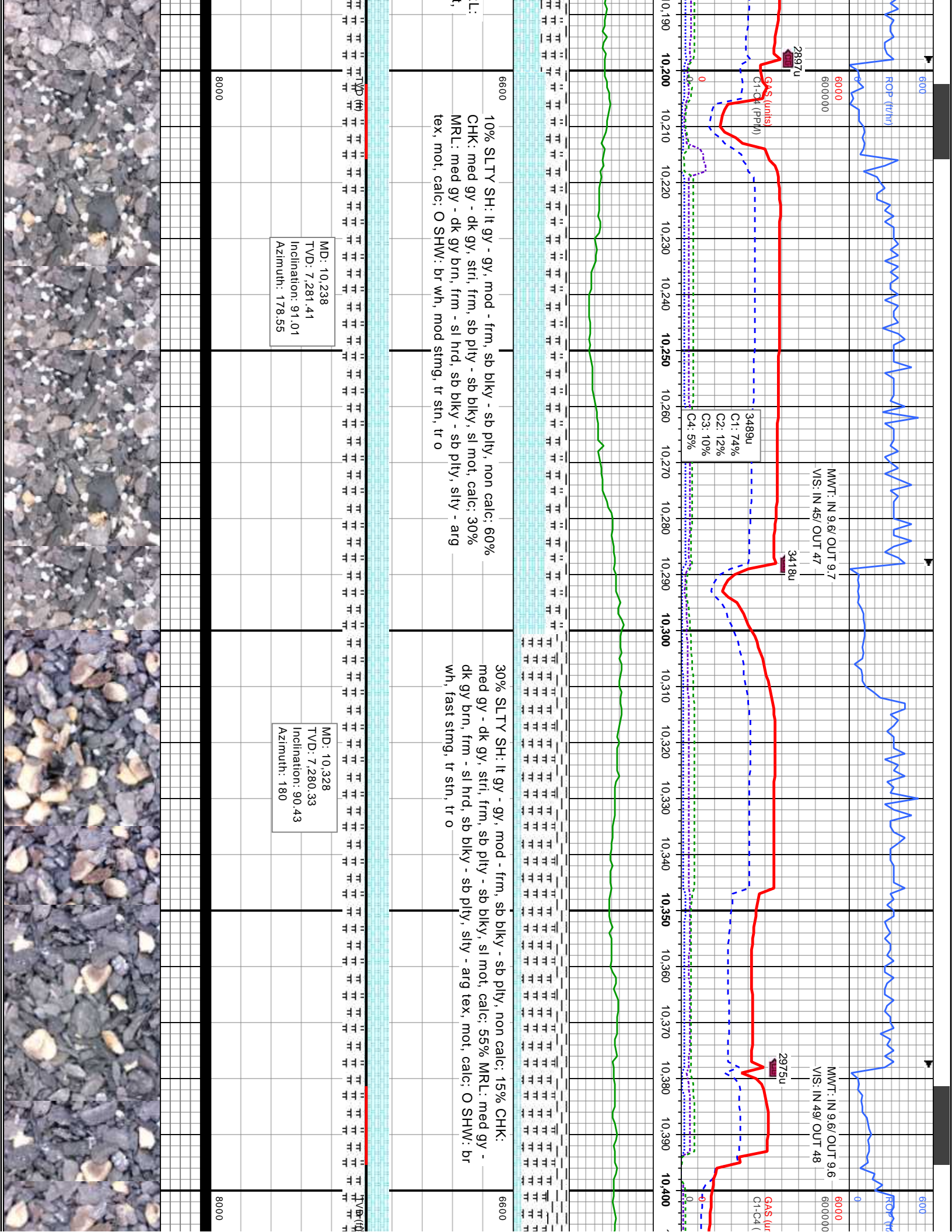


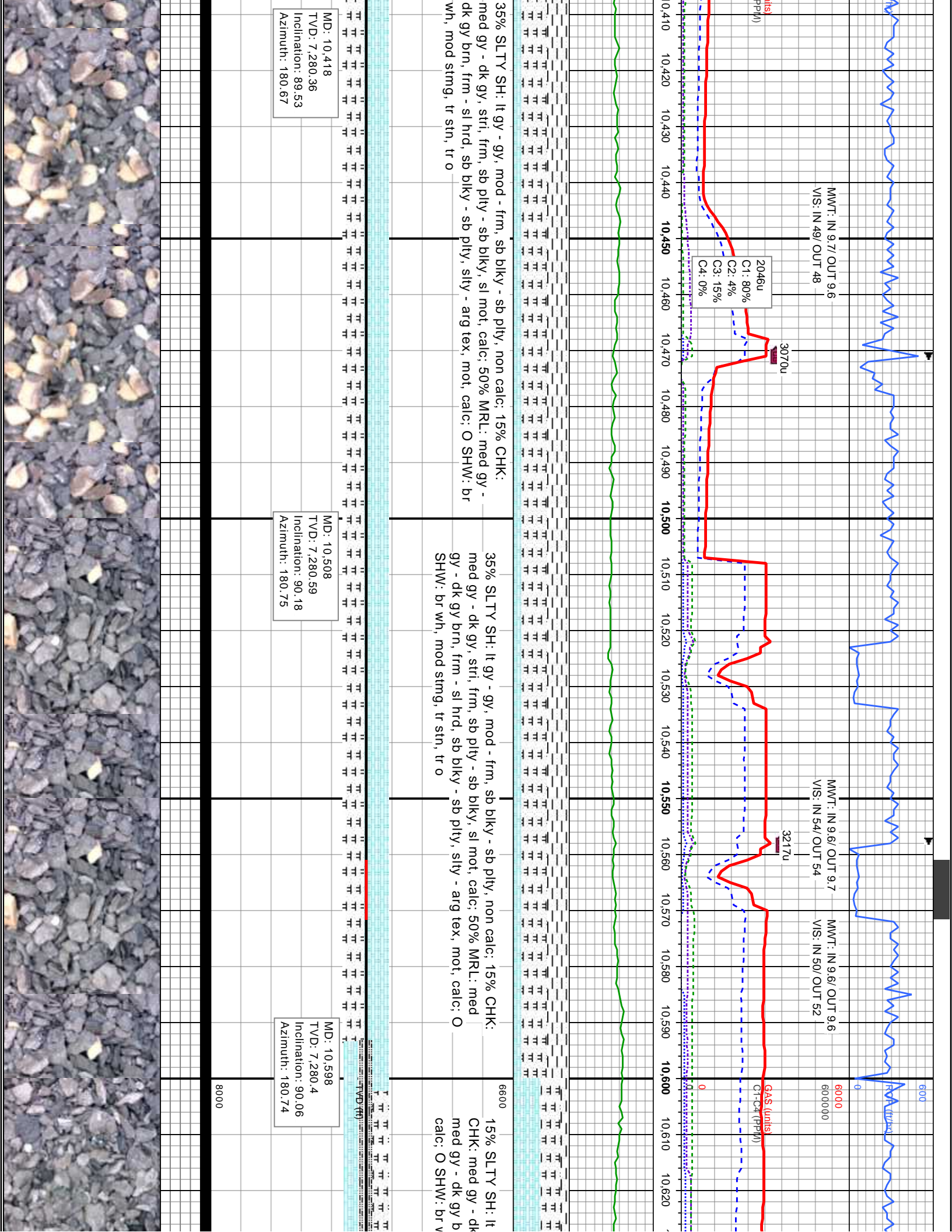


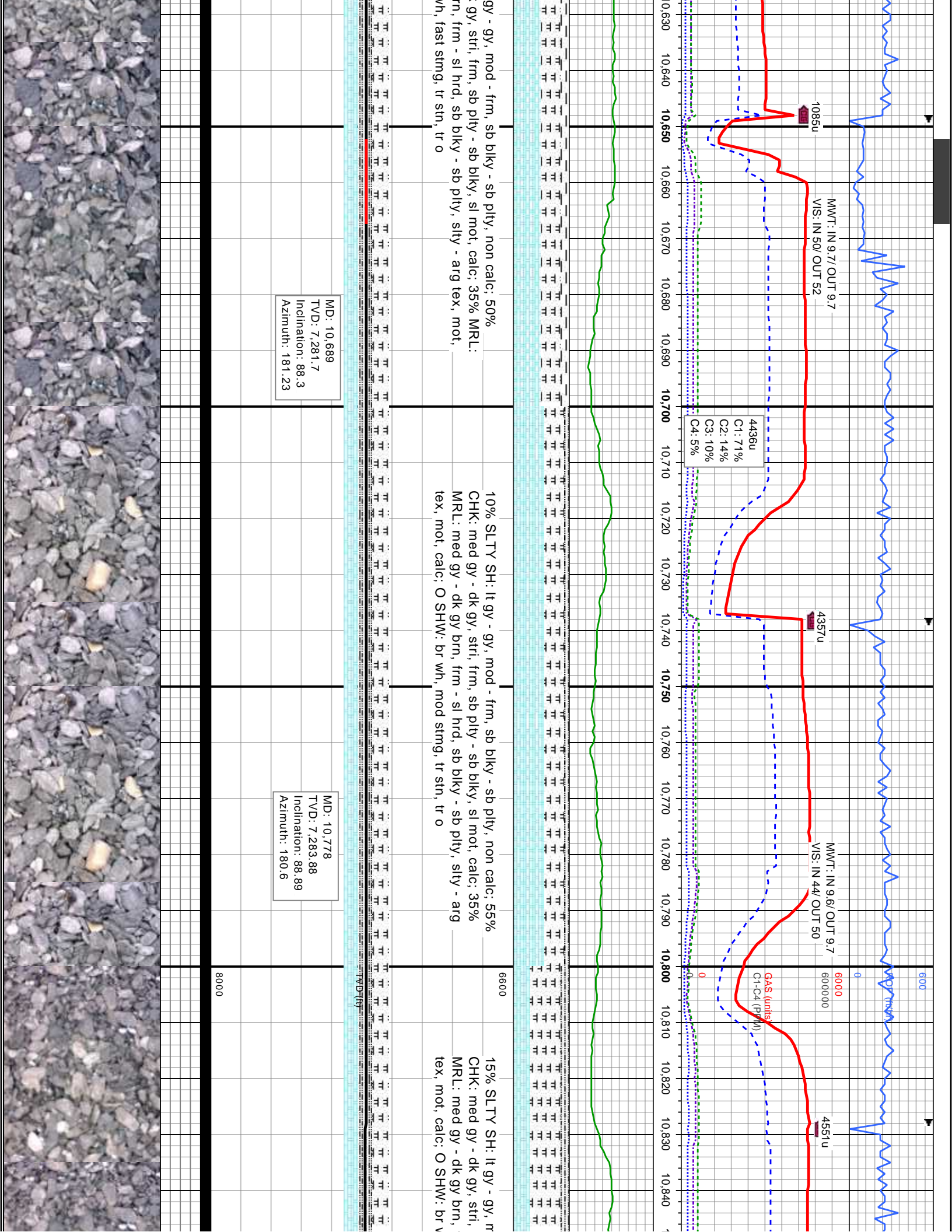


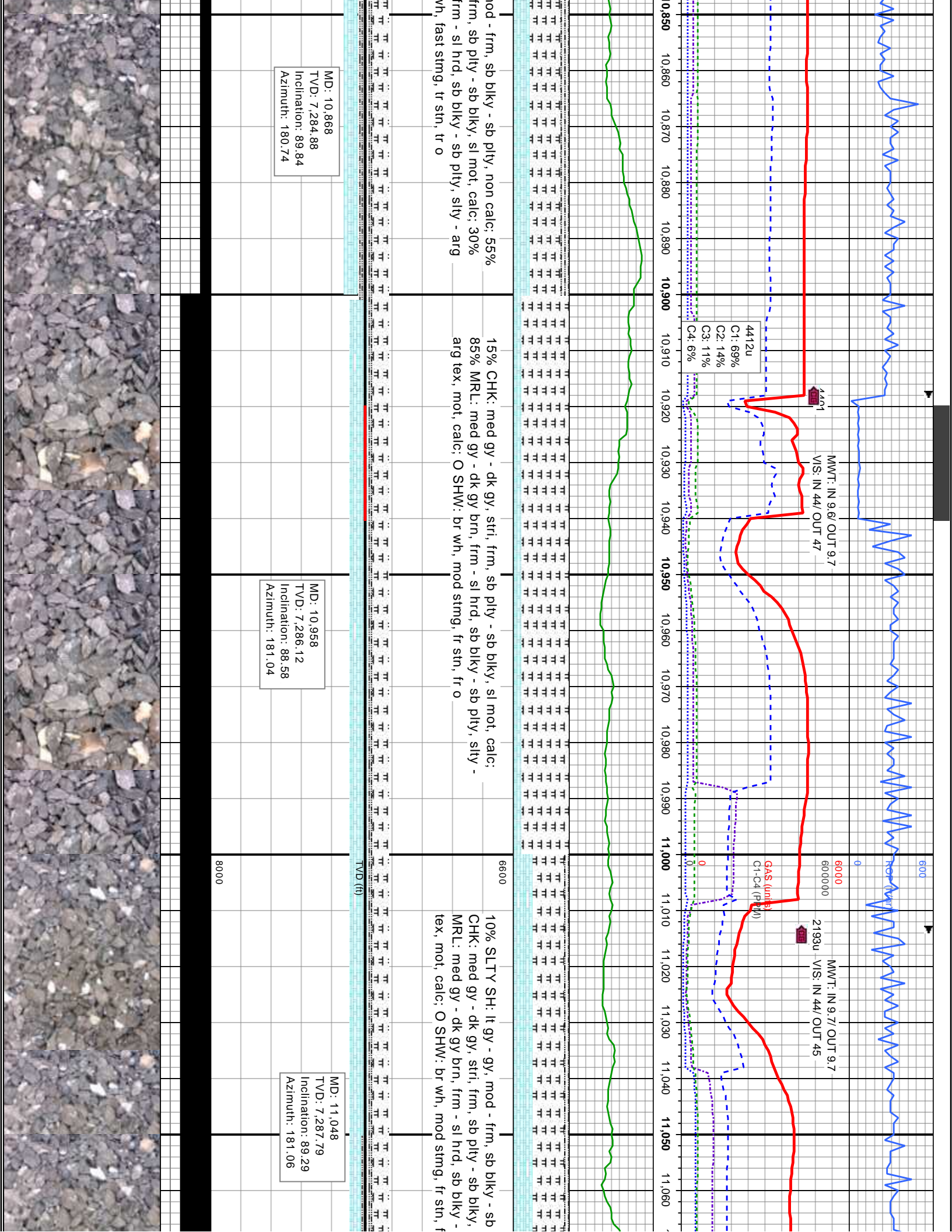


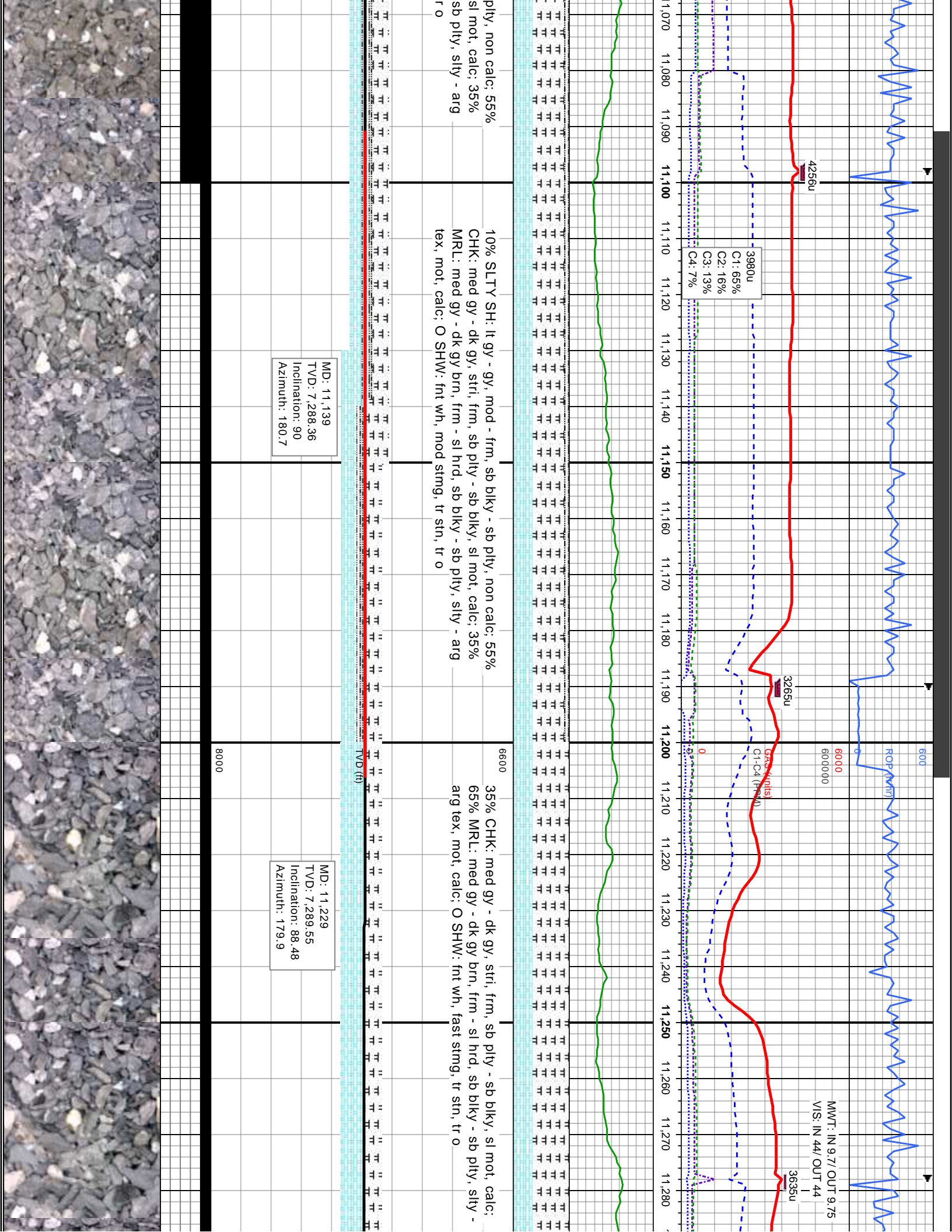


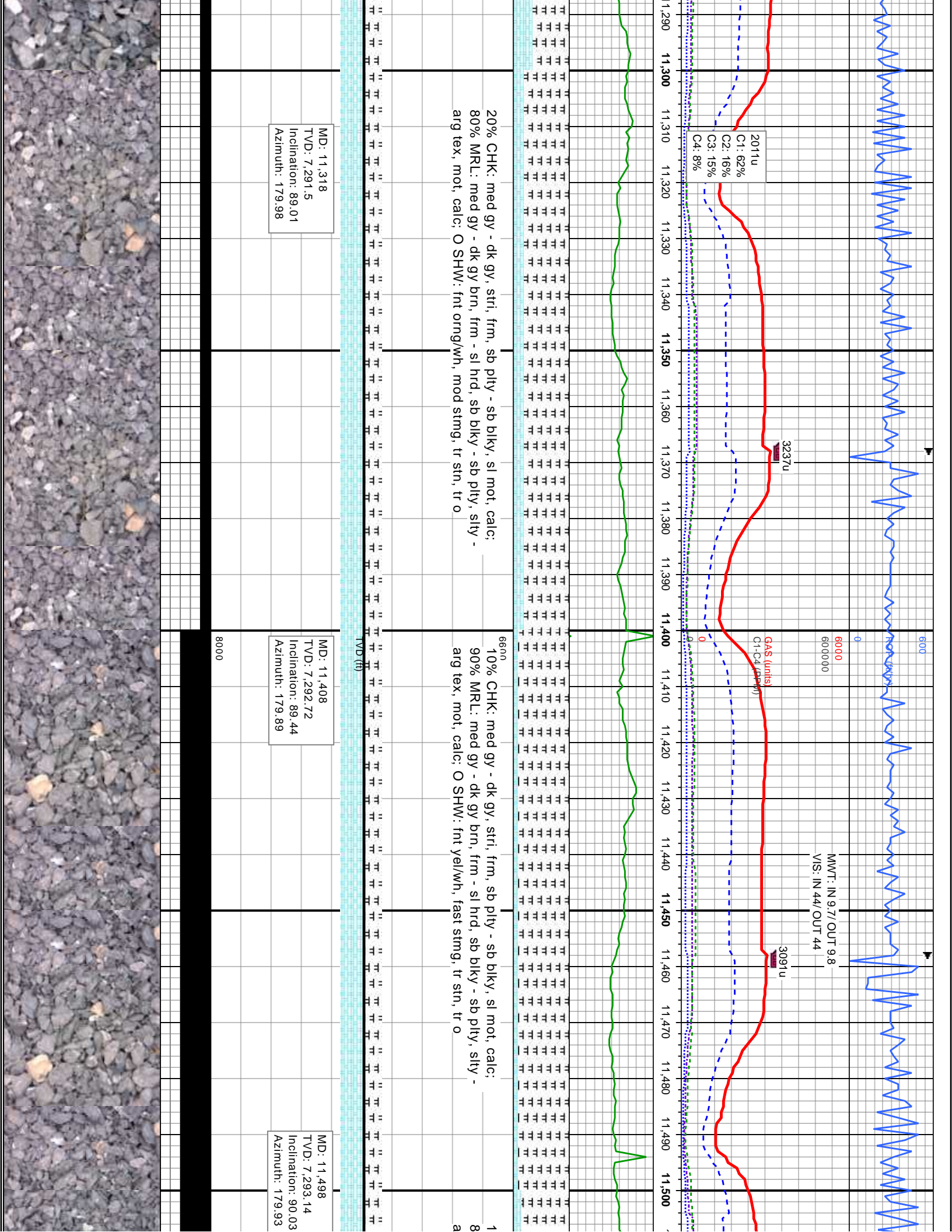






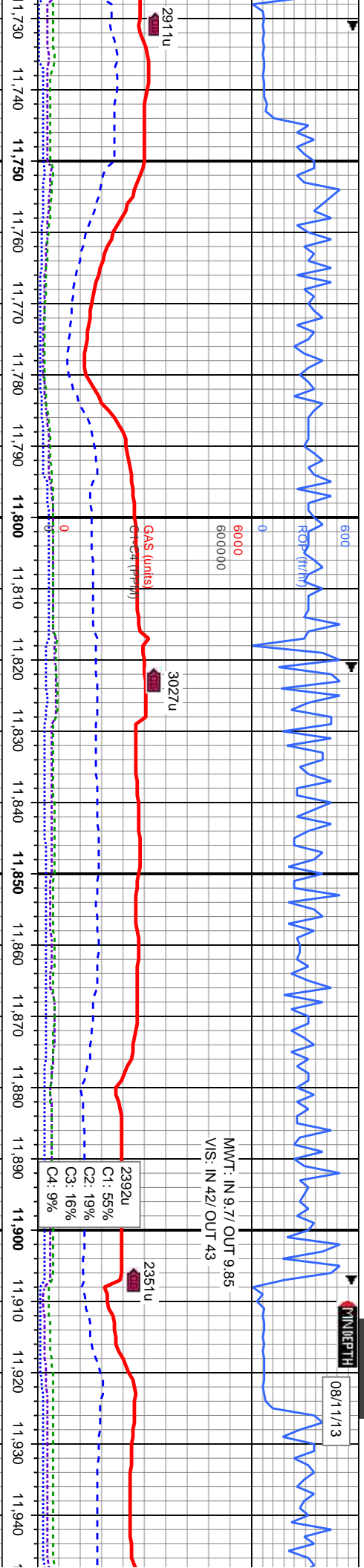






NMT: IN 9.7/ OUT 9.85
VIS: IN 42/ OUT 43

2392u
C1: 55%
C2: 19%
C3: 16%
C4: 9%



gy, mod - frm, sb blkly - sb plty, non calc; 85% MRL:
m - sl hrd, sb blkly - sb plty, silty - arg tex, mot, calc;
mg, fr stn, fr o

6600
15% SLTY SH: lt gy - gy, mod - frm, sb blkly - sb plty, non calc; 85% MRL:
med gy - dk gy brn, frm - sl hrd, sb blkly - sb plty, silty - arg tex, mot, calc;
O SHW: br wh, fast stmg, tr stn, tr o

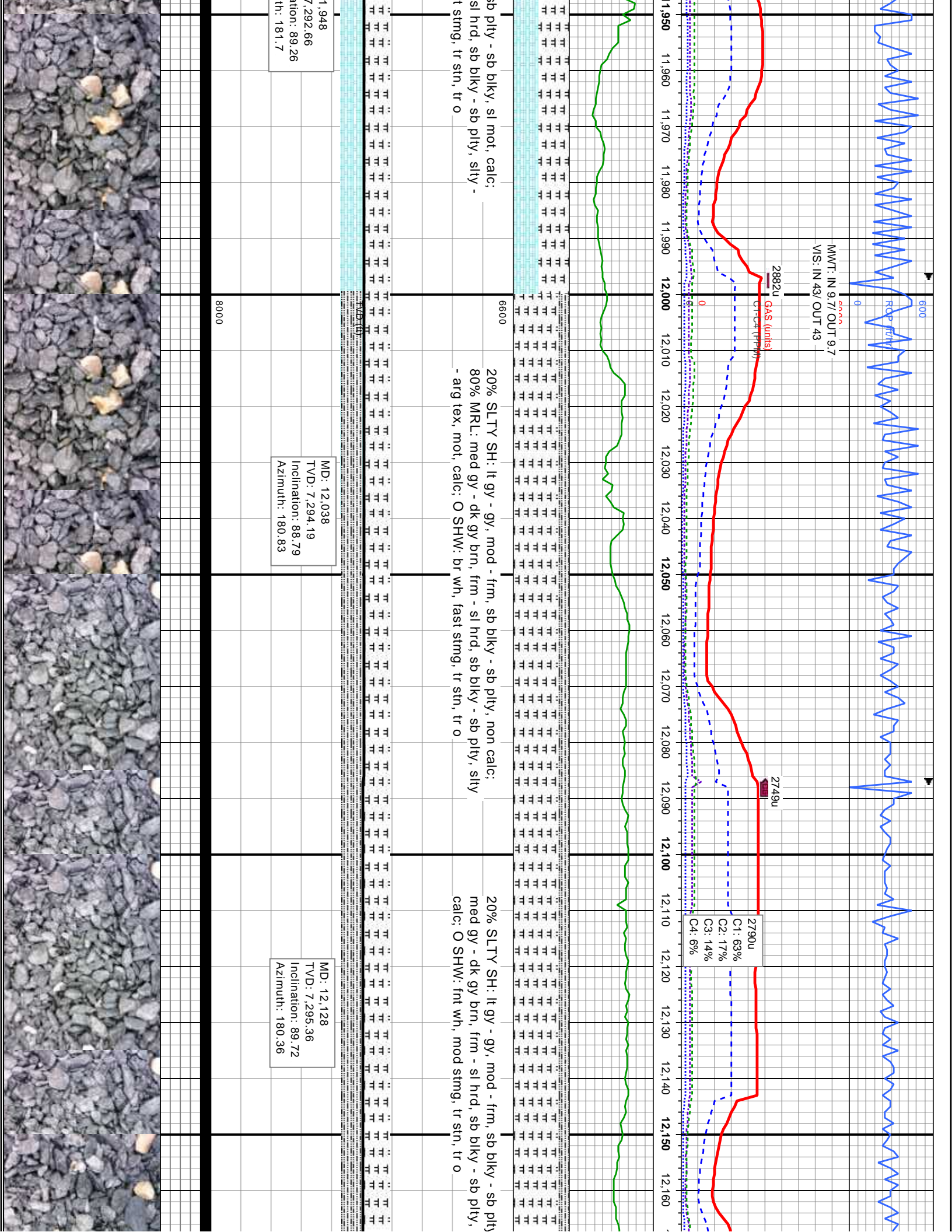
45% CHK: med gy - dk gy, strn, frm, s
55% MRL: med gy - dk gy brn, frm -
arg tex, mot, calc; O SHW: br wh, fas

MD: 11,768
TVD: 7,291.8
Inclination: 89.29
Azimuth: 180.69

MD: 11,858
TVD: 7,292.22
Inclination: 90.18
Azimuth: 180.56

MD: 1
TVD:
Incline:
Azimu



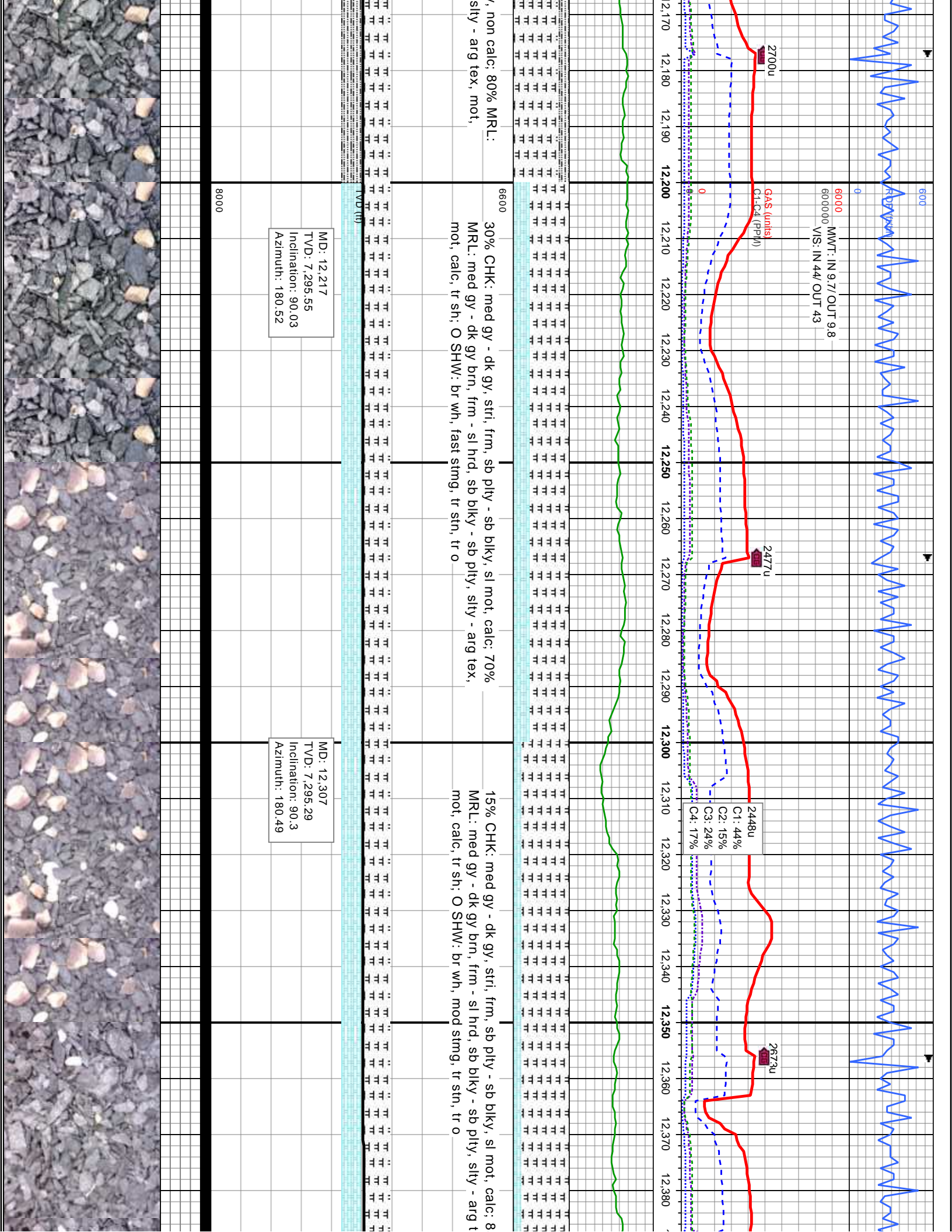


MMWT: IN 9.7/ OUT 9.7
VIS: IN 43/ OUT 43

C1: 63%
C2: 17%
C3: 14%
C4: 6%

MD: 12,038
TVD: 7,294.19
Inclination: 88.79
Azimuth: 180.83

MD: 12,128
TVD: 7,295.36
Inclination: 89.72
Azimuth: 180.36



6000
60000
MWT: IN 9.7/OUT 9.8
VIS: IN 44/OUT 43

GAS (units)
Cl-Cd (PPM)

2700u

2477u

2448u
C1: 44%
C2: 15%
C3: 24%
C4: 17%

2672u

30% CHK: med gy - dk gy, stri, frm, sb pily - sb blk, sl mot, calc; 70%
MRL: med gy - dk gy brn, frm - sl hrd, sb blk - sb pily, silty - arg tex,
mot, calc, tr sh; O SHW: br wh, fast stmg, tr stn, tr o

15% CHK: med gy - dk gy, stri, frm, sb pily - sb blk, sl mot, calc; 8
MRL: med gy - dk gy brn, frm - sl hrd, sb blk - sb pily, silty - arg t
mot, calc, tr sh; O SHW: br wh, mod stmg, tr stn, tr o

MD: 12.217
TVD: 7,295.55
Inclination: 90.03
Azimuth: 180.52

MD: 12.307
TVD: 7,295.29
Inclination: 90.3
Azimuth: 180.49

