



Scale: 5" / 100'
Measured Depth Log

Well Name	Fiscus Federal L15-76HN		
Location	NENW SEC15 T9N R58W		
State	CO	County	WELD
Country	USA	Rig Number	PRECISION 828
API Number	05-123-37368	AFE #	200240
Region	DENVER-JULESBURG BASIN	Field	WILDCAT
Spud Date	11/11/2014	Drilling Completed	11/18/2014
Surface Coordinates	280' FNL, 1757' FWL		
	Lat/Long: 40.75786/-103.8535		
Ground Elevation	4700'	K.B. Elevation	4716'
Logged Interval	4900'	To	9886'
		Total Depth	9886'
Formation	PIERRE (TEEPEE BUTTES, SHARON SPRINGS), NIOBRARA (SMOKY HILLS A & B LAYERS)		
Type of Drilling Fluid	LSND		

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

Name TERESA MALESARDI
Company NOBLE ENERGY INC.
Address 1625 Broadway
Denver, CO 80202

WELLSITE GEOLOGISTS: GA
C.S
LO
GE

Operator

Geologist

Other

Rock Types

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

Accessories

GASTROPOD	ARGILLITE GRAIN	HEAVY MINERAL	ANHYDRITE STRINGER
INOCERAMUS	BENTONITE	KAOLIN	BENTONITE STRINGER
ALGAE	BITUMENOUS SUBSTANCE	MARLSTONE	COAL STRINGER
AMPHIPORA	BRECCIA FRAGMENTS	MICACEOUS	DOLOMITE STRINGER
BELEMNITE	CALCAREOUS	MINERAL CRYSTALS	GYPSUM STRINGER
BIOCLASTIC	CARBONACEOUS FLAKES	NODULES	LIMESTONE STRINGER
BRACHIOPOD	CHERT	PHOSPHATE PELLETS	MARLSTONE (CALC) STRG
BRYOZOA	CHERT	PYRITE	MARLSTONE (DOL) STRG
CEPHALOPOD	COAL - THIN BEDS	SALT CAST	SANDSTONE STRINGER
CORAL	DOLOMITIC	SANDY	SHALE STRINGER
CRINOID	FELDSPAR	SILTY	SILTSTONE STRINGER
ECHINOID	FERRUGINOUS PELLET		
FISH	FERRUGINOUS	TUFFACEOUS	
FORAMINIFERA	GLAUCONITE		
FOSSIL	GYPSIFEROUS	STRINGER	

RY L. MYERS
METZ
G CONTINUES FROM FILE: Fiscus Federal LD15-76HN Vert.mplot
OLOGICAL SERVICES PROVIDED BY COLUMBINE LOGGING, INC

Other Symbols

- P PINPOINT

VUGGY
- DST INTERVAL

FAULT
- WIRELINE TESTED - LEFT

WIRELINE TESTED - RT
- E EARTHY

FX FINELYXLN

- DEAD

FORMATION TOP

DRILL STEM TEST

GRAINSTONE
- Engineering

GAS SHOW

MN DEPTH

L LITHOGRAPHIC
- EVEN

OIL SHOW

MN DEPTH

MX MICROXLN

- QUESTIONABLE

BIT

MN DEPTH

MN DEPTH UP
- Rounding

MN DEPTH

MN DEPTH (DOWN)

MN DEPTH (UP)
- SPOTTED STAINING

CONNECTION (UP)

MN DEPTH

MN DEPTH UP

- CONNECTION (DOWN)

CONNECTION GAS

NORMAL FAULT

ROUNDED

PACKSTONE
- Porosity

CONNECTION GAS

CONNECTION GAS (LEFT)

OVERTURNED STRATA

SUBANG
- E EARTHY

FENESTRAL

TRIP GAS

REVERSE FAULT

SUBRND

- FRACTURE

CASING

Moderate
- Textures

TRIP GAS (LEFT)

SIDELINE CORE (LEFT)

POOR
- INTERCRYSTALLINE

DOWN TIME GAS

SIDELINE CORE (LEFT)

WELL

- INTEROOLITIC

DOWN TIME GAS (LEFT)

SIDELINE CORE (RIGHT)

BOUNDSTONE
- MOLDIC

CORE - LOST

SLIDE

CHALKY
- ORGANIC

CORE - RECOVERED

SURVEY

CRYPTOXLN

Survey Plan

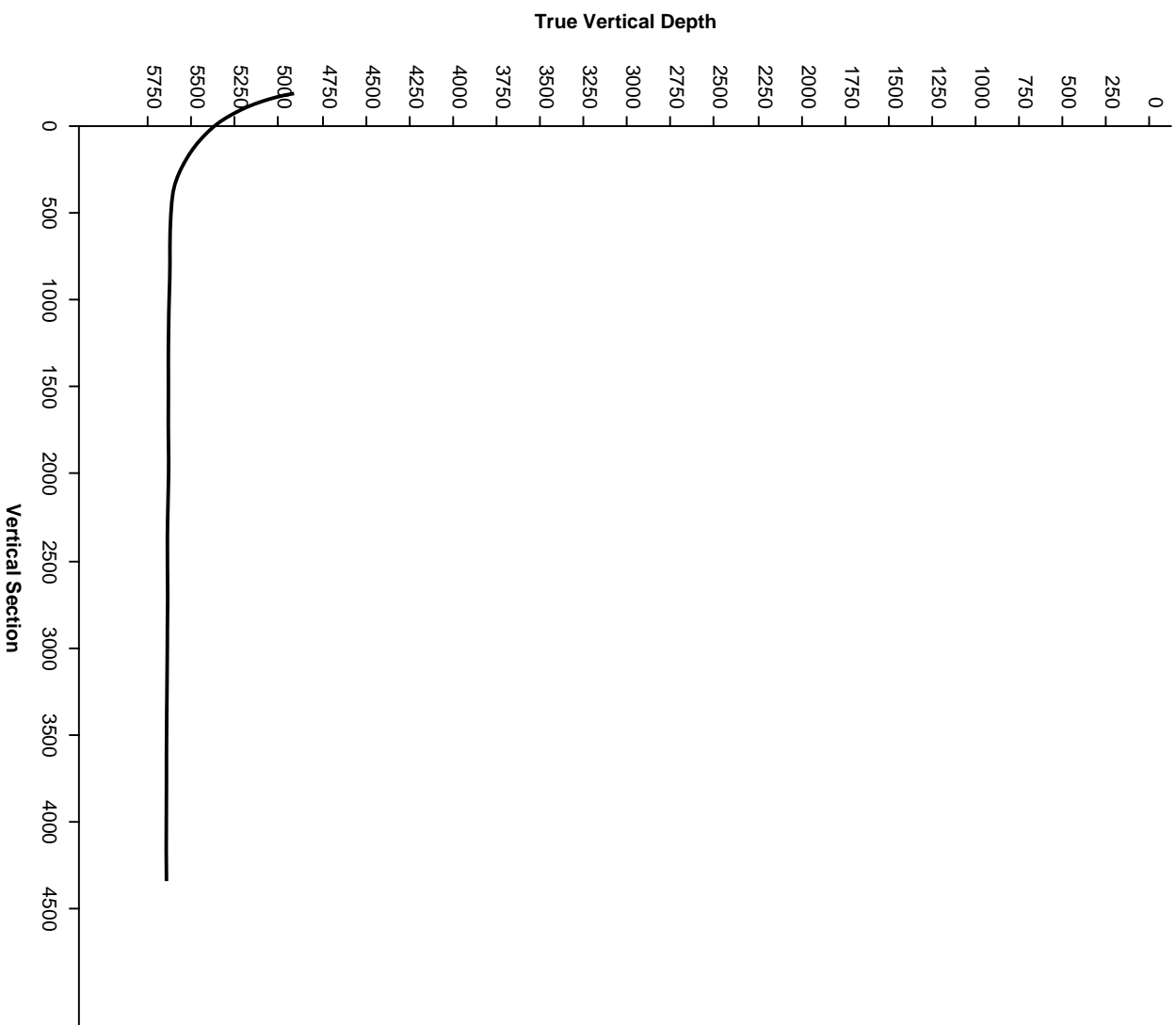


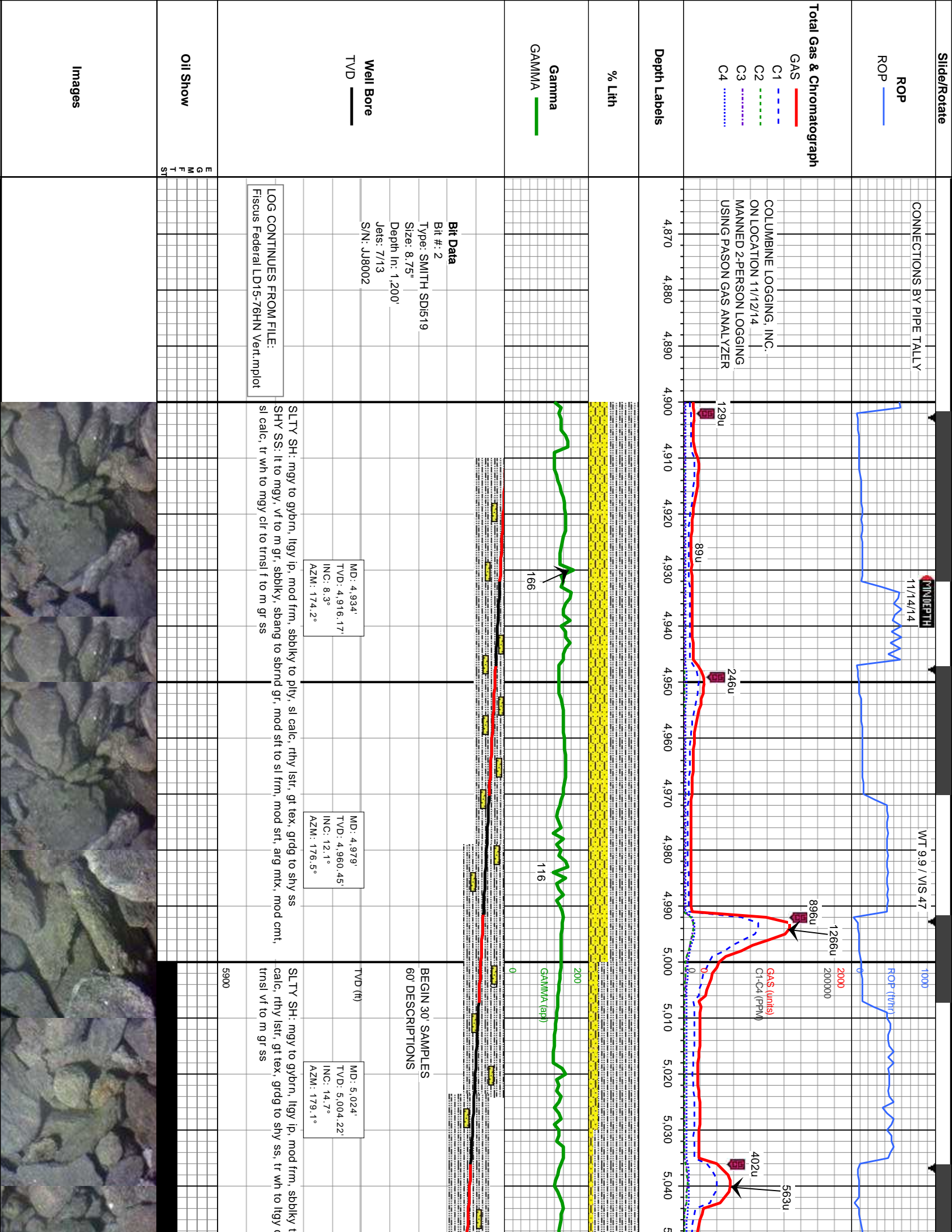
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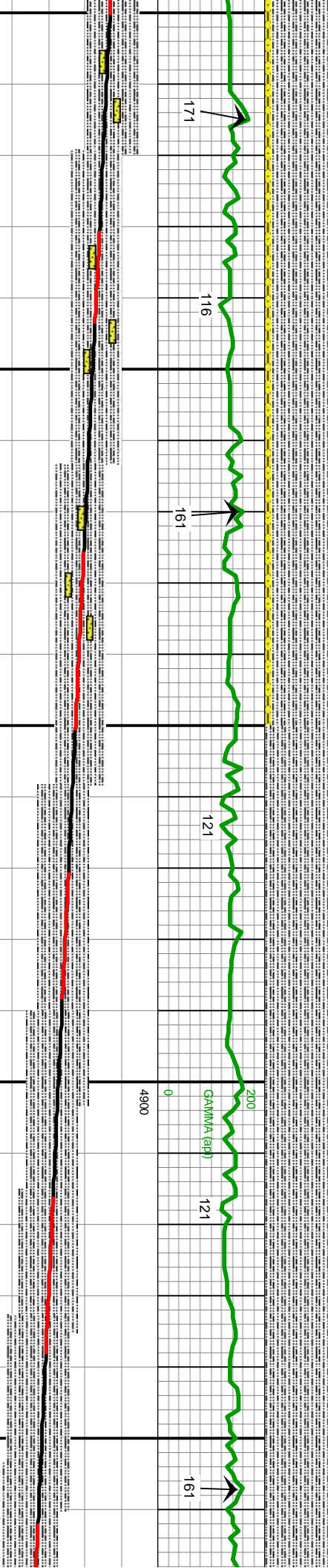
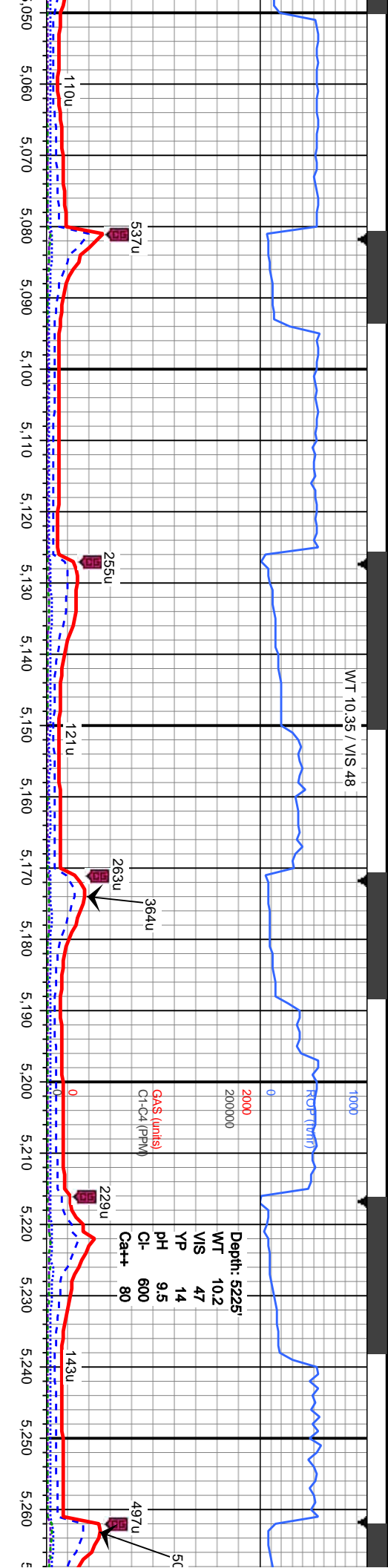


Easting

Survey Elevation







MD: 5,069'
TVD: 5,047.57'
INC: 16.5°
AZM: 180.9°

MD: 5,114'
TVD: 5,090.52'
INC: 18.2°
AZM: 179.6°

MD: 5,158'
TVD: 5,131.99'
INC: 20.8°
AZM: 181.5°

MD: 5,203'
TVD: 5,173.7'
INC: 23.3°
AZM: 179°

MD: 5,248'
TVD: 5,214.57'
INC: 26.1°
AZM: 177.9°

SLTY SH: mgy to gybrn, ltgy ip, mod frm, sbbkly to pily, sl
calc, rthy lstr, gt tex, grdg to shy ss, tr wh to ltgy clr to
tnsl vf to m gr ss

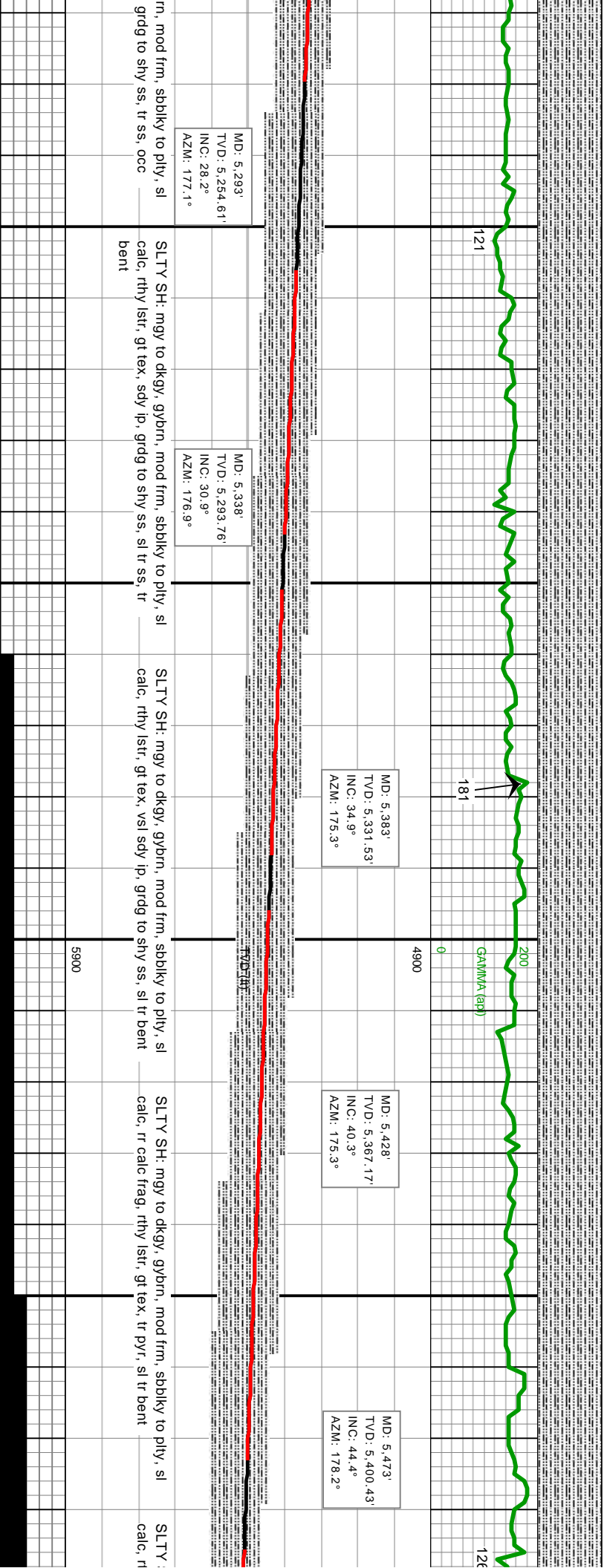
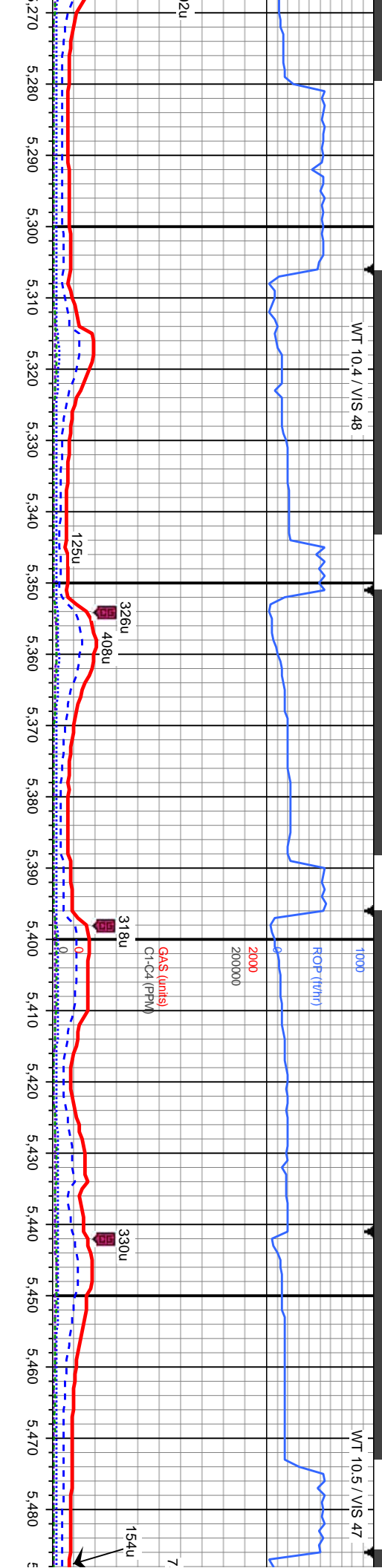
SLTY SH: mgy to gybrn, ltgy ip, mod frm, sbbkly to pily, sl
calc, rthy lstr, gt tex, grdg to shy ss, tr wh to ltgy clr to
tnsl vf to m gr ss

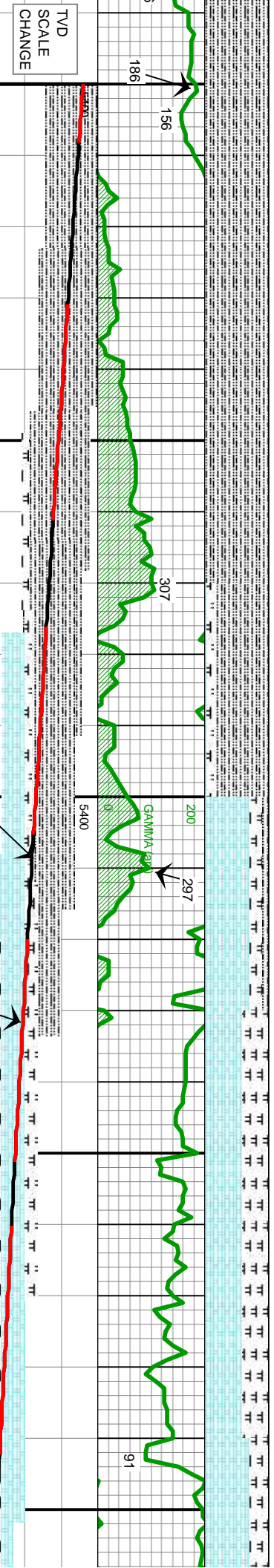
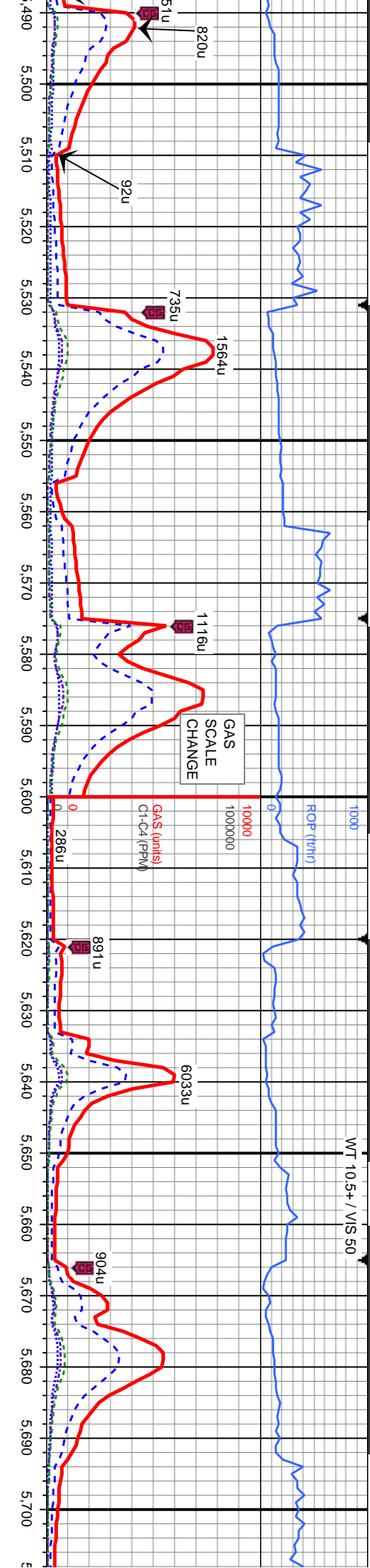
SLTY SH: mgy to gybrn, oclly ltgy, mod frm, sbbkly to
pily, sl calc, rthy lstr, gt tex, grdg to shy ss, tr wh to ltgy
clr to tnsl vf to m gr ss, tr bent

SLTY SH: mgy to dkgy, gyb
calc, rthy lstr, gt tex, sdy ip,
bent

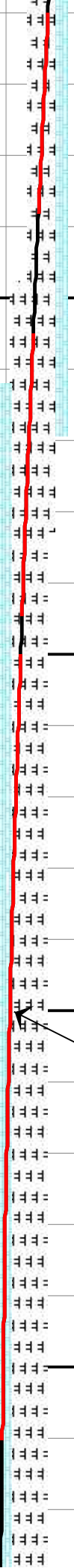
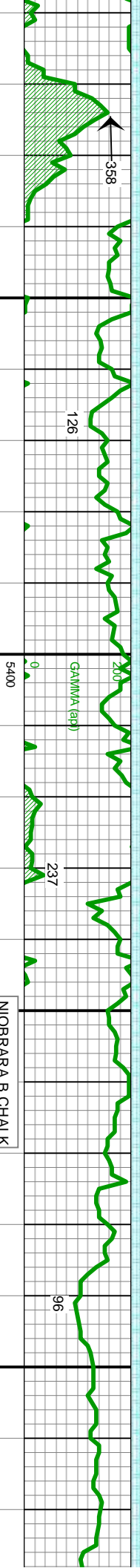
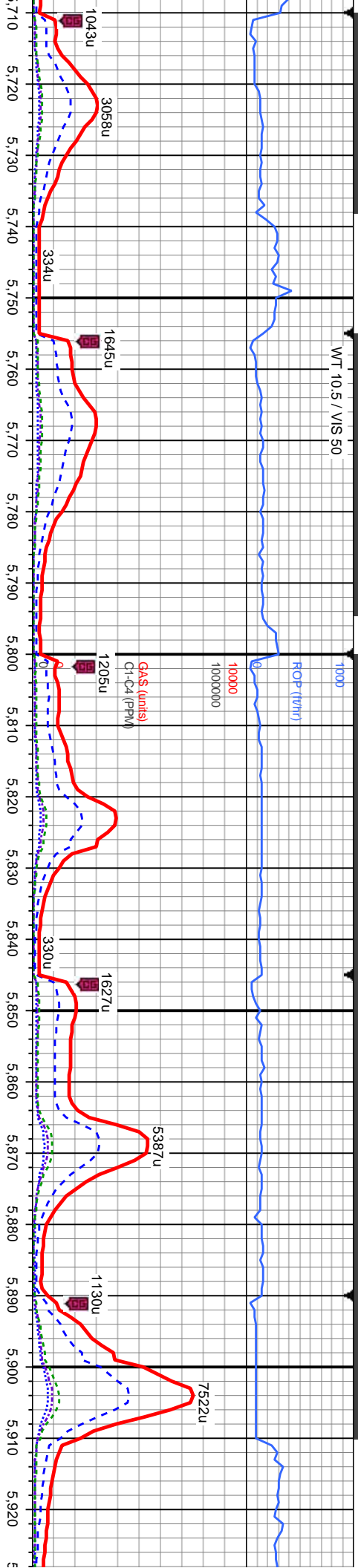
5900







SHARON SPRINGS LOWER MARKER 5608 MD, 5489' TVD		MD: 5,562' TVD: 5,460.99' INC: 50.5° AZM: 179°	NIOBRARA A CHALK LOGGER TOP 5632 MD, 5502' TVD		MD: 5,652' TVD: 5,513.25' INC: 58° AZM: 175.4°
SLTY SH: pred mgy, mod frm, sme sft, sbblky to plty, sl calc, rthy lstr, gt tex, abnt bent MRL: m to dkgy, sbblky to sbply, mod frm, rthy, stri, gt, calc CHK: it to mgy, mod sft, sbblky to sbply, rthy, sl mot to stri, v calc			CHK: it to mgy, mod sft, sbblky to sbply, rthy, v mot tex, v calc MRL: m to dkgy, sbblky to sbply, mod frm, rthy, stri, gt, calc, decrn sfty sh, scat to abnt bent		CHK: it to mgy, mod sft, sbblky to sbply, rthy, v calc MRL: m to dkgy, sbblky to sbply, mod frm, rthy, calc, occ to scat bent
TVD (ft)		MD: 5,517' TVD: 5,431.24' INC: 46.7° AZM: 179.6°	TVD (ft)		MD: 5,697' TVD: 5,536.09' INC: 61° AZM: 175°
5900			5900		



MD: 5,742'
TVD: 5,556.87'
INC: 64°
AZM: 177.3°

MD: 5,787'
TV D: 5,575.02'
INC: 68.4°
AZM: 179.1°

MD: 5,832'
TVD: 5,589.67
INC: 73.6°
AZM: 179.3°

MD: 5,877'
TVD: 5,599.98
INC: 79.9°
AZM: 178.8°

NIOBRARA B CHALK
LOGGER TOP
5850' MD, 5594' TVD

mot tex,	CHK: It to mgy, mod sft, sbblky to sply, rhy, v mot tex,
v calc	
stri, gt,	MR: m to dky, sbblky to sply, mod frm, rhy, stri, gt,
calc, occ bent	

CHK: It to mgy, mod sft, sbblky to sblply, rthy, v mot tex,
v calc —————
MRL: m to dkyg, sbblky to sblply, mod frm, rthy, stri, gt,
calc, tr fos frag, tr (58r10) to occ (58a40) bent —————

CHK: It to mgy, mod sft, sbply to sbply, rthy, v mot tex,
v calc, dul gn flor
MR: m to dky, sbply to sbply, mod frm, rthy, stri, gt,
calc, tr pyr, occ (5870'), to sl tr (5900') bent

CHK: It to mgy, mod sft, sbi
v calc, dul gn flor
MRL: m to dkgy, sbblky to s
calc, occ to abnt fos frag, tr



MINDEPTH 11/15/14 - 11/16/14

ROP (ft/hr)

TD CASING POINT
MD 5992, 12:19 MST
CASING SET @ MD 5987'
DRILLED OUT 21:23 MDT, 11/16/14

10000
1000000

2694u

509u

2116u

967u

1731u

2662u

332u

1561u

452u

WT 9.8 / VIS 39

57

51

116

131

Bit Data
Bit #: 2

Depth In: 1,200'
Depth Out: 5,992'
Hours: 27.5 hrs

TV Avg FV/Hr: 174.3 /hr

TVD
SCALE
CHANGE

MD: 6,007'
TVD: 5,612.65'
INC: 86.5°
AZM: 177.9°

Bit Data
Bit #: 3

Type: SMITH SD516
Size: 6.125"
Depth In: 5,992'
Jets: 5/14

S/N: JJB663

MD: 6,101'
TVD: 5,616.83'
INC: 88.4°
AZM: 177.1°

MD: 5,934'
TVD: 5,607.37'
NC: 85.2°
ZM: 178.1°

CHK: It to mgy, mod sft,

sbblky to sbply, rthy, v mot tex,

stri tex, v calc, dli gn flr

MRL: m to dkgy, sbblky to

sbply, mod frm, rthy, stri, gt,

pyr, occ bent

CHK: It to mgy, mod sft, sbblky to sbply, rthy, mot to

stri tex, v calc

MRL: m to dkgy, sbblky to sbply, mod frm, rthy, stri,

gt, calc, occ fos frag, tr bent

CHK: It to mgy, mod sft, sbblky to sbply, rthy, mot

to stri tex, v calc

MRL: m to dkgy, sbblky to sbply, mod frm, rthy,

stri, gt, calc, occ fos frag, tr bent

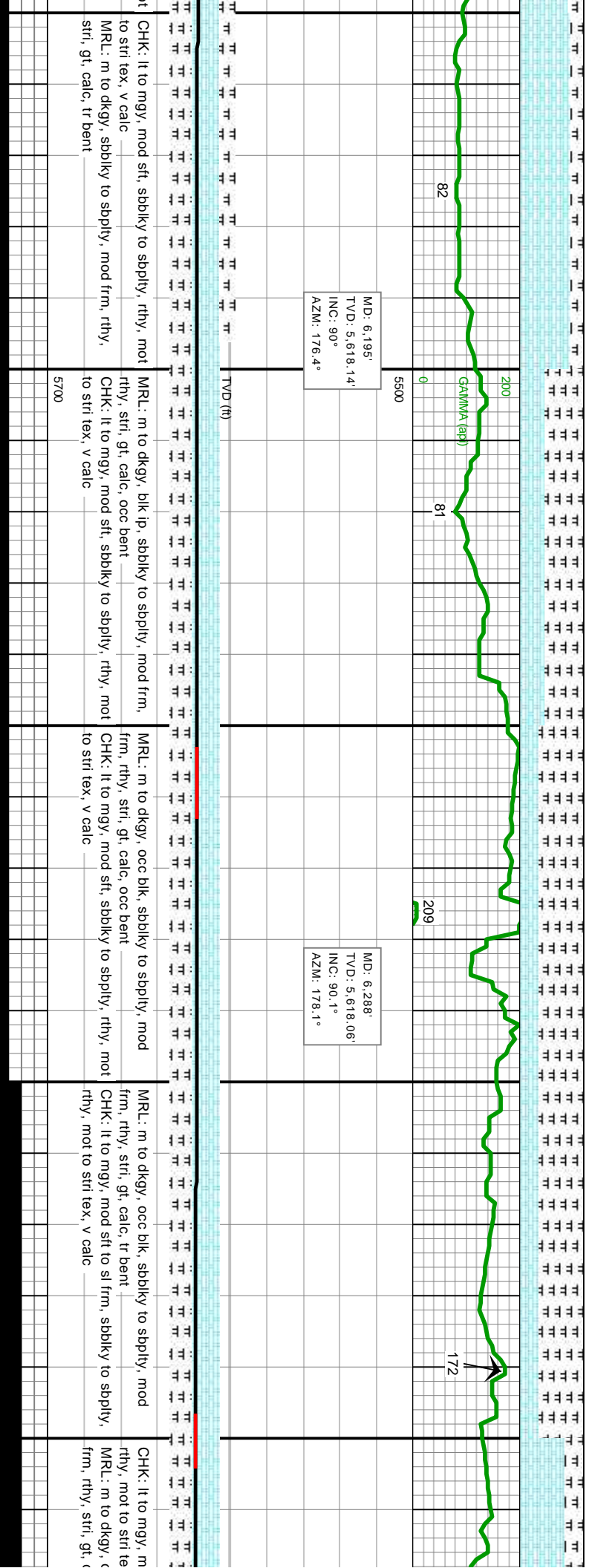
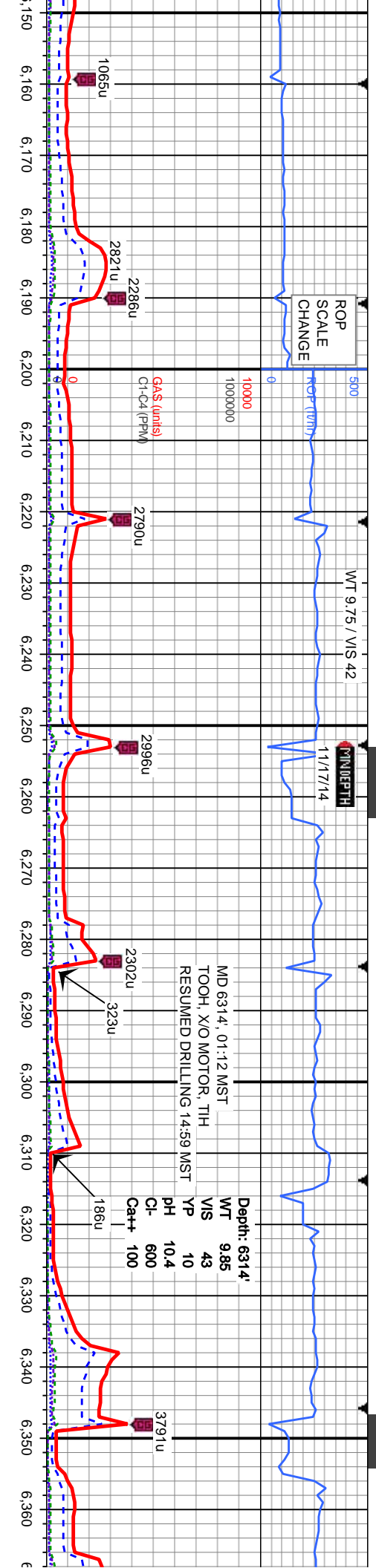
CHK: It to mgy, mod sft, sbblky to sbply, rthy, mot

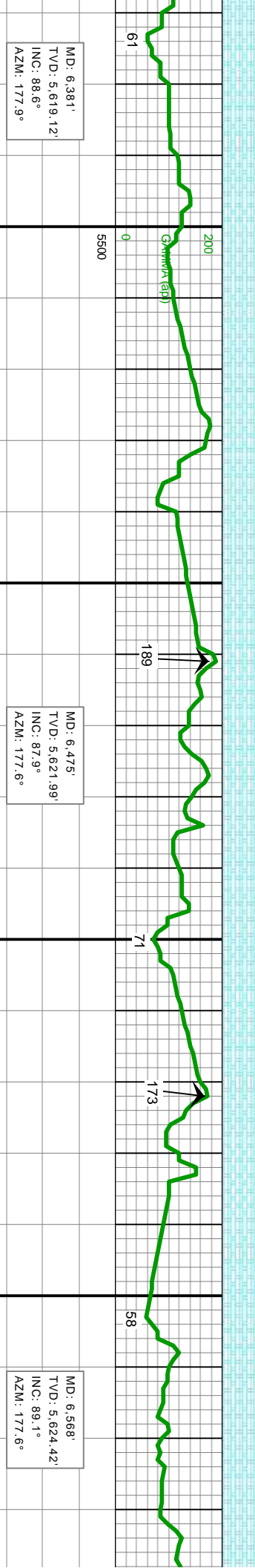
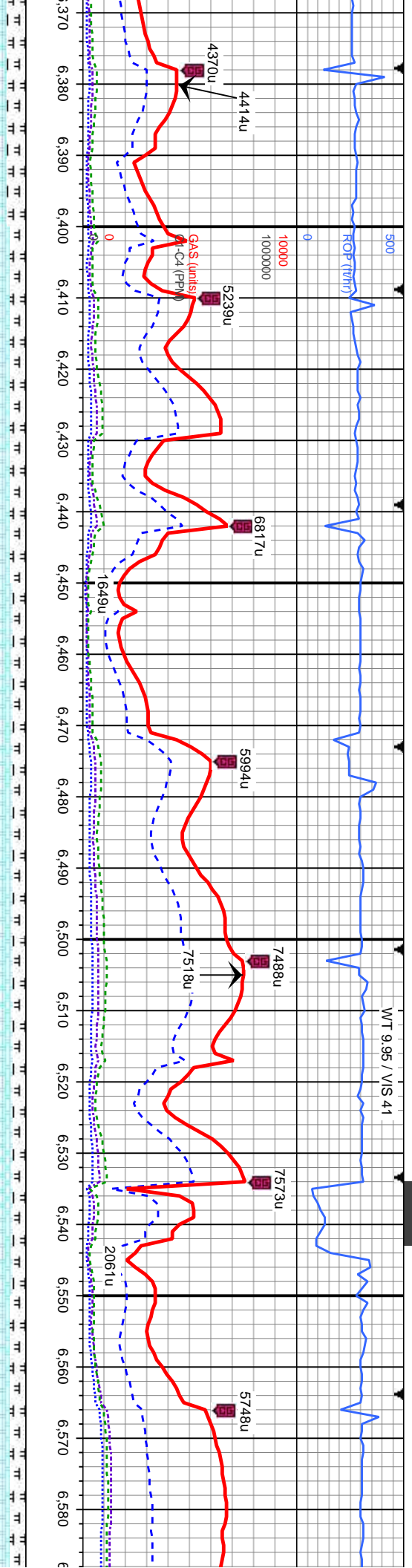
to stri tex, v calc

MRL: m to dkgy, sbblky to sbply, mod frm, rthy,

stri, gt, calc, occ fos frag, tr bent

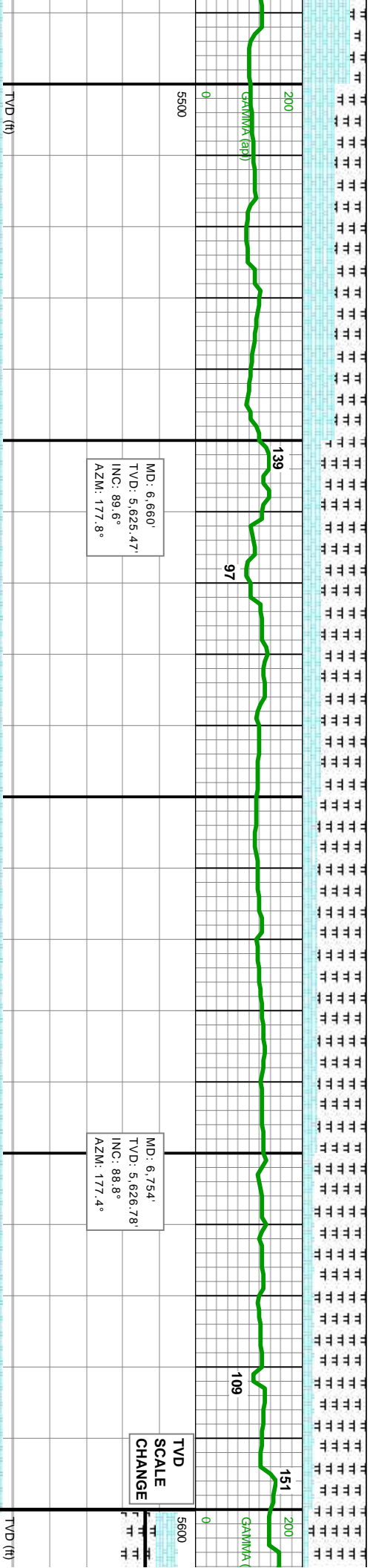
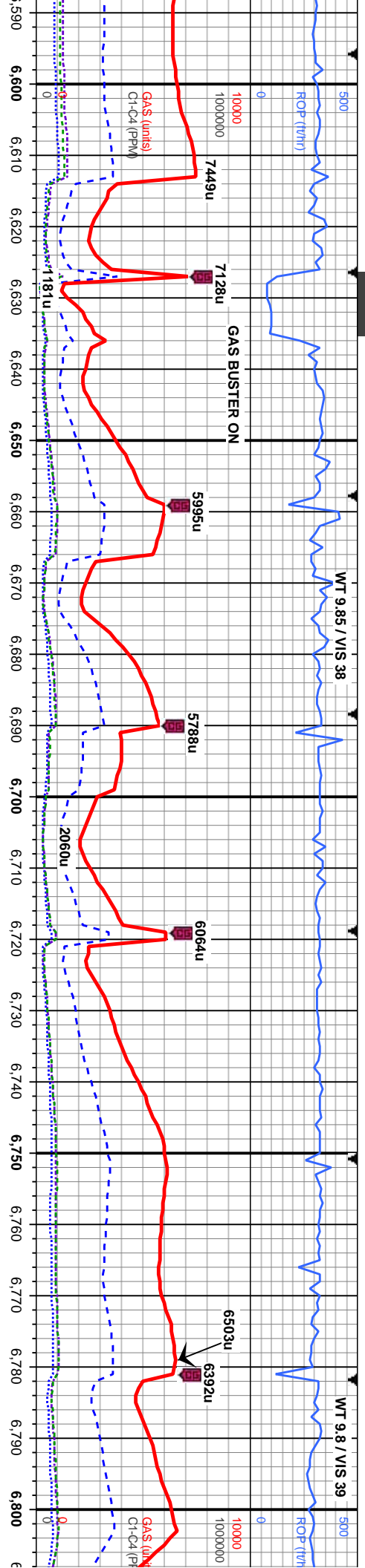




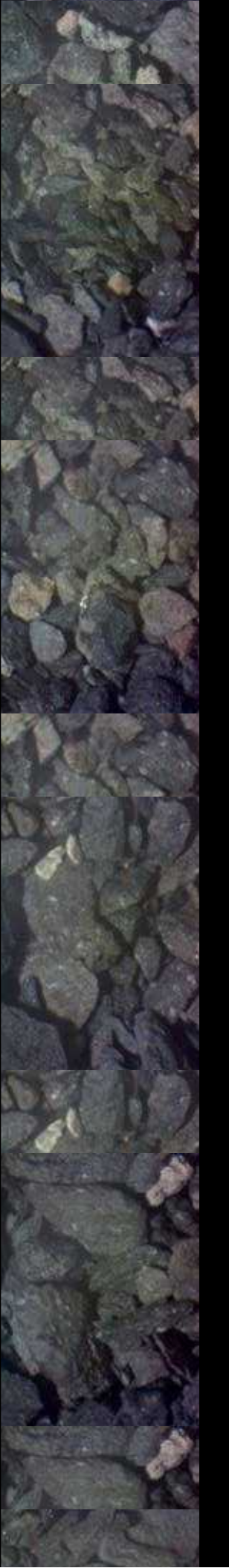


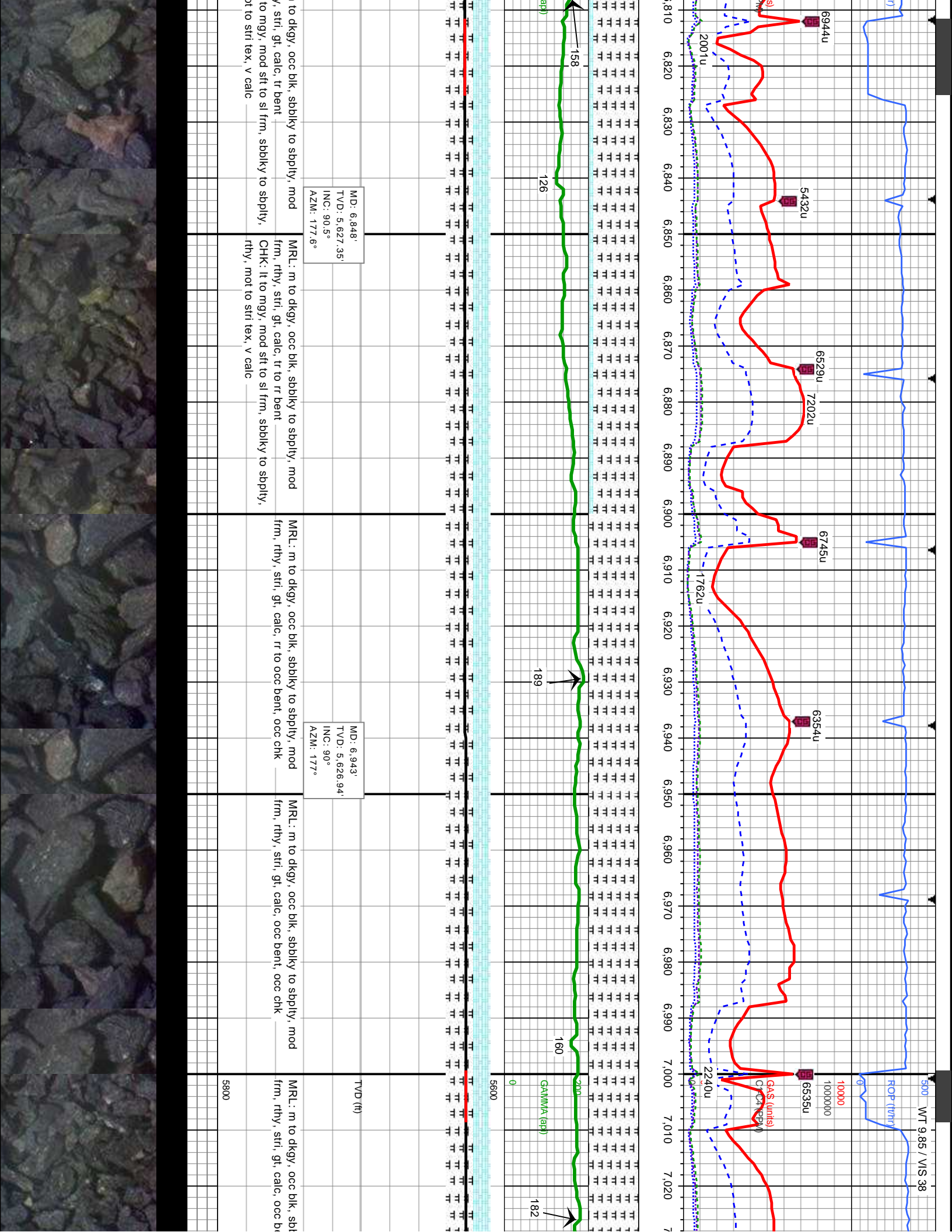
MD: 6.381' TVD: 5,619.12' INC: 88.6° AZM: 177.9°	CHK: It to mgy, mod sft to sl frm, sbbkly to sbply, rthy, mot to stri tex, v calc MRL: m to dkgy, occ blk, sbbkly to sbply, mod frm, rthy, stri, gt, calc
MD: 6.475' TVD: 5,621.99' INC: 87.9° AZM: 177.6°	CHK: It to mgy, mod sft to sl frm, sbbkly to sbply, rthy, mot to stri tex, v calc MRL: m to dkgy, occ blk, sbbkly to sbply, mod frm, rthy, stri, gt, calc
MD: 6.568' TVD: 5,624.42' INC: 89.1° AZM: 177.6°	CHK: It to mgy, mod sft, sbbkly to sbply, mot to stri tex, v calc MRL: m to dkgy, occ blk, sbbkly to sbply, mod frm, rthy, stri, gt, calc

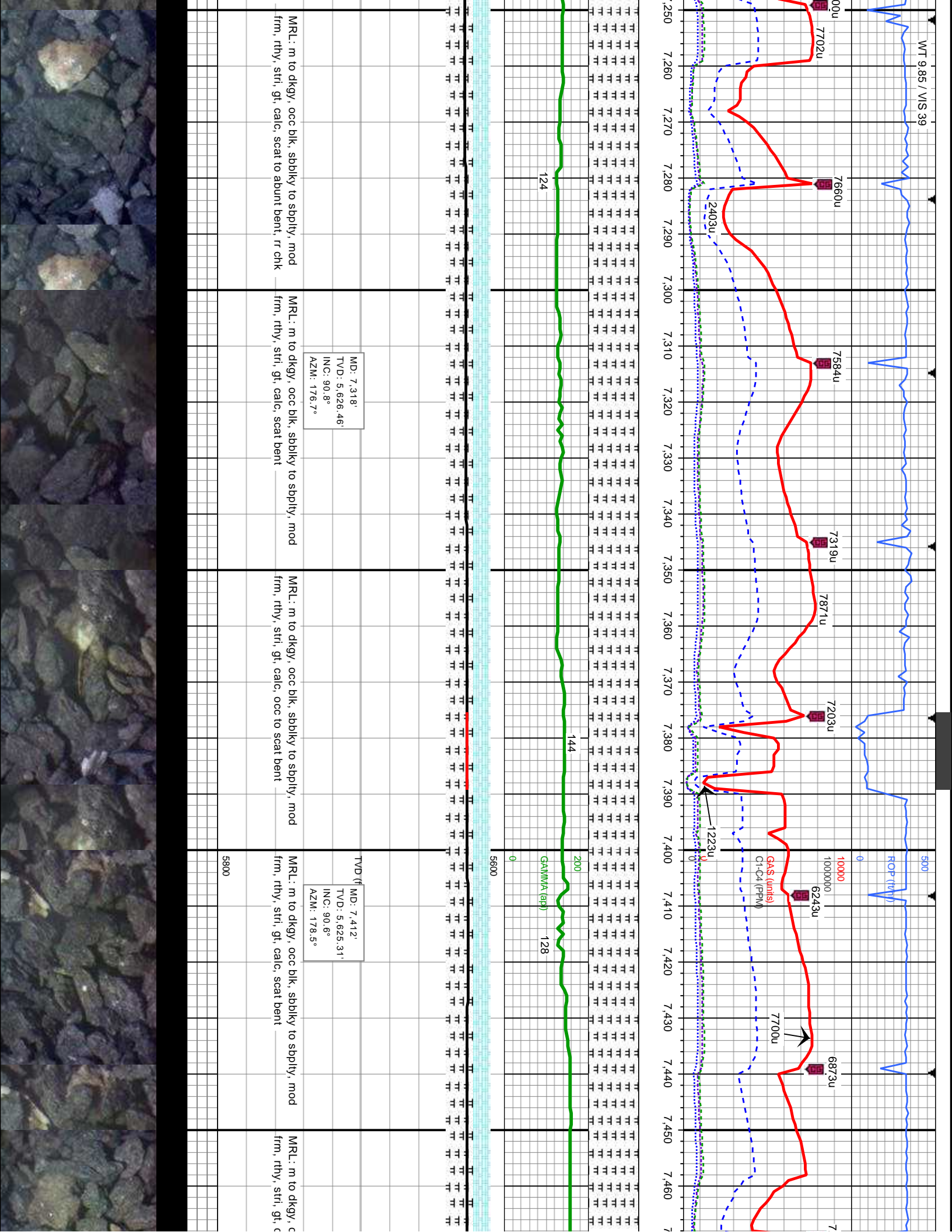


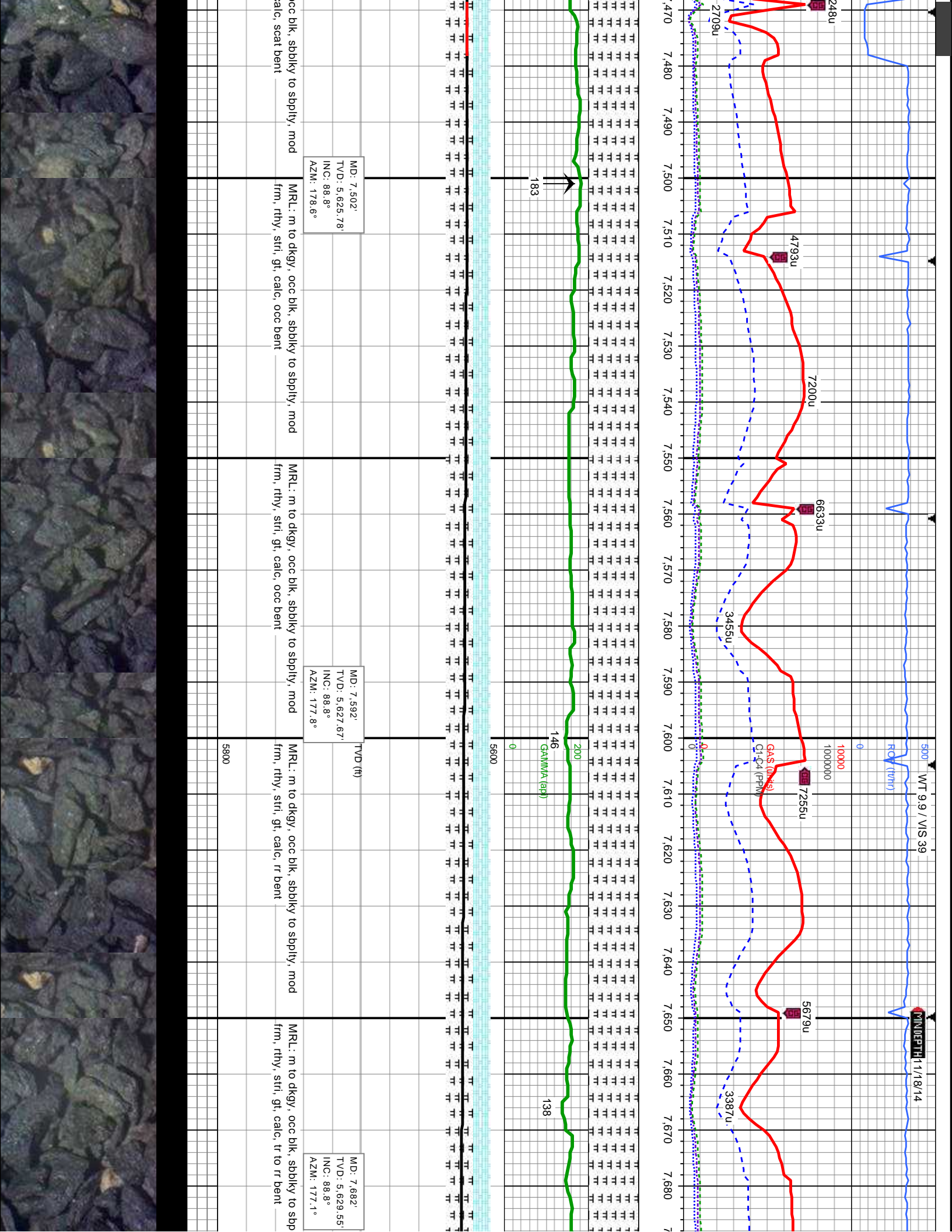


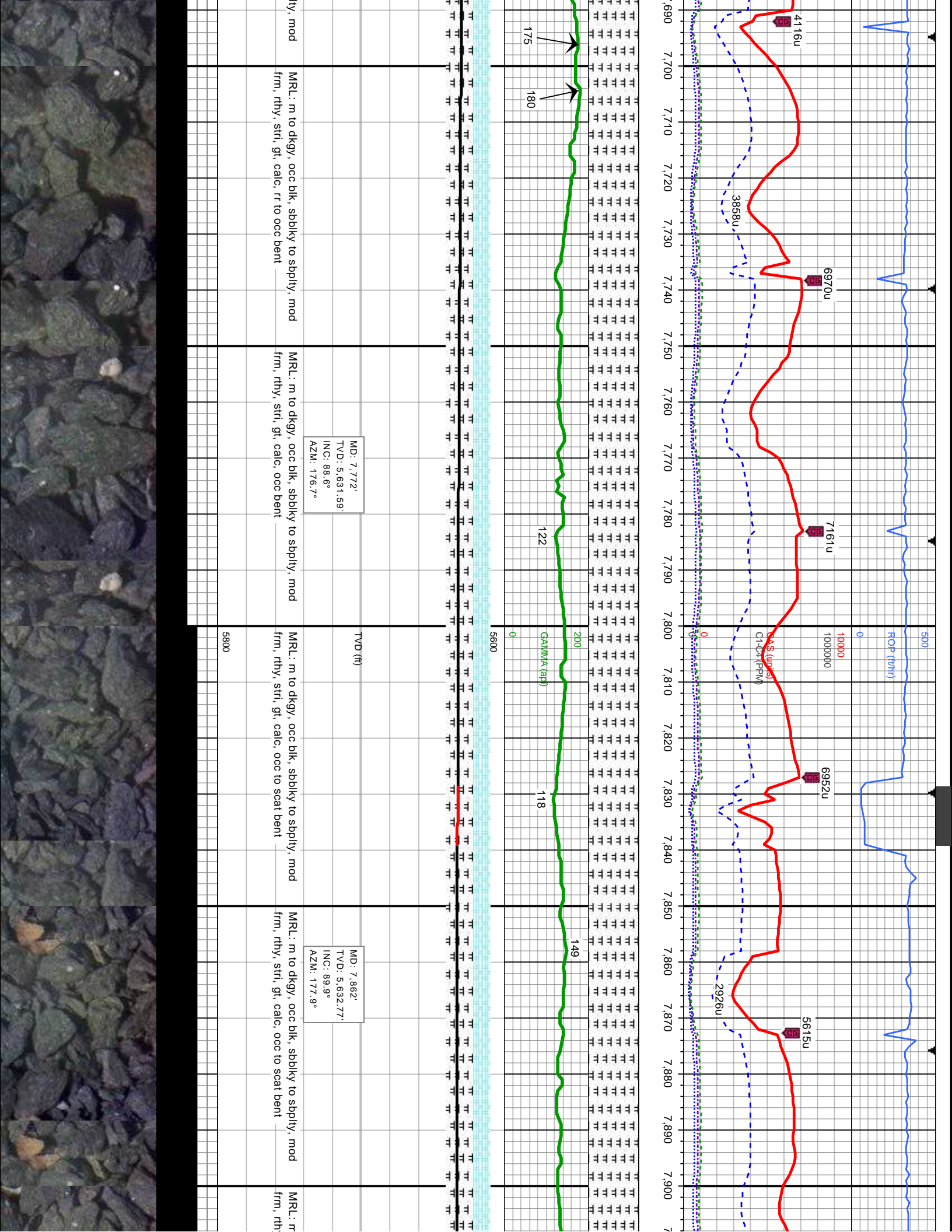
5500	MD: 6.660' TVD: 5.625.47' INC: 89.6° AZM: 177.8°	MD: 6.754' TVD: 5.626.78' INC: 88.8° AZM: 177.4°	MD: 6.754' TVD: 5.626.78' INC: 88.8° AZM: 177.4°
5700	CHK: It to mgy, mod sft to sl frm, sbblky to sbply, rthy, mot to stri tex, v calc MRL: m to dkgy, occ blk, sbblky to sbply, mod frm, rthy, stri, gt, calc, tr bent CHK: It to mgy, mod sft to sl frm, sbblky to sbply, rthy, mot to stri tex, v calc	CHK: It to mgy, mod sft to sl frm, sbblky to sbply, rthy, mot to stri tex, v calc	CHK: It to mgy, mod sft to sl frm, sbblky to sbply, rthy, mot to stri tex, v calc

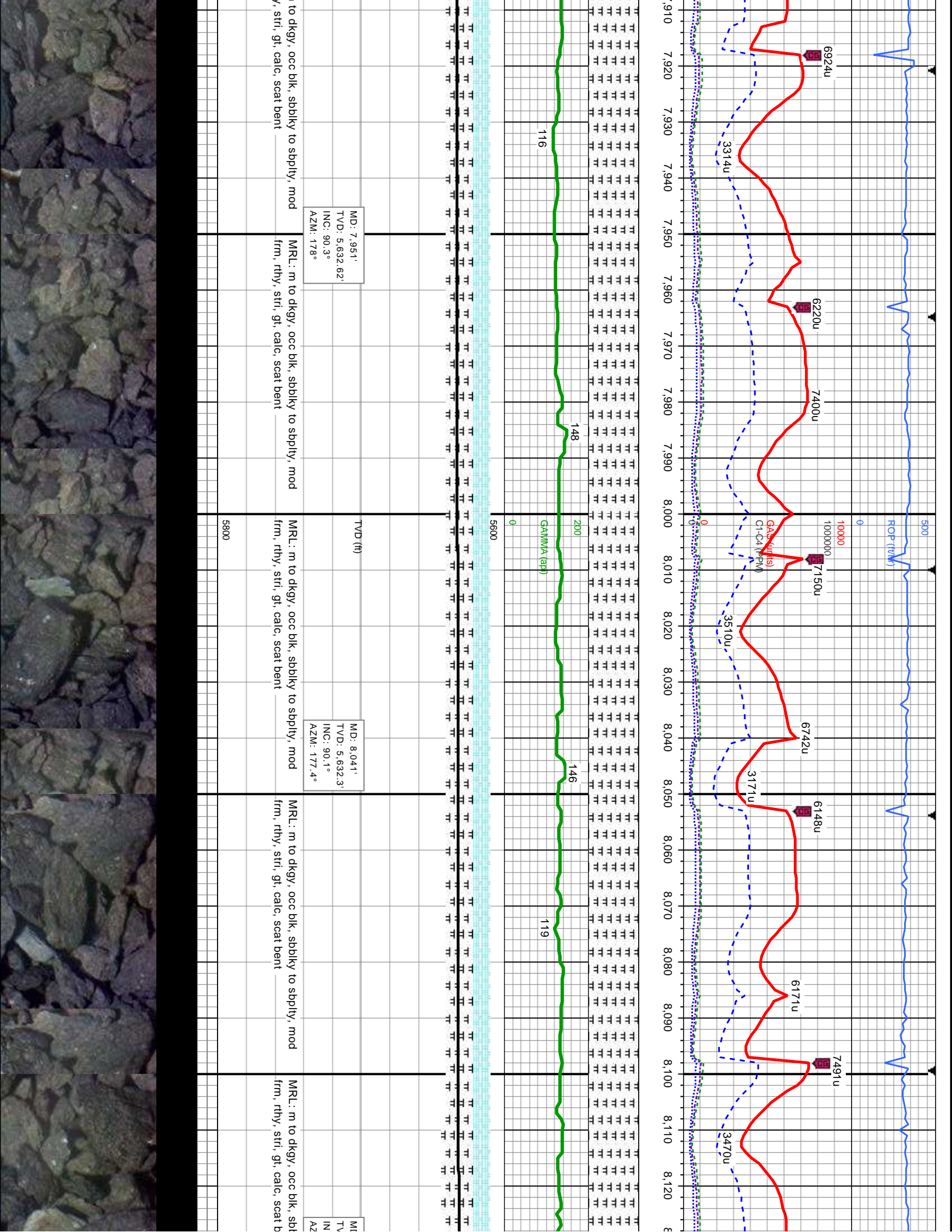


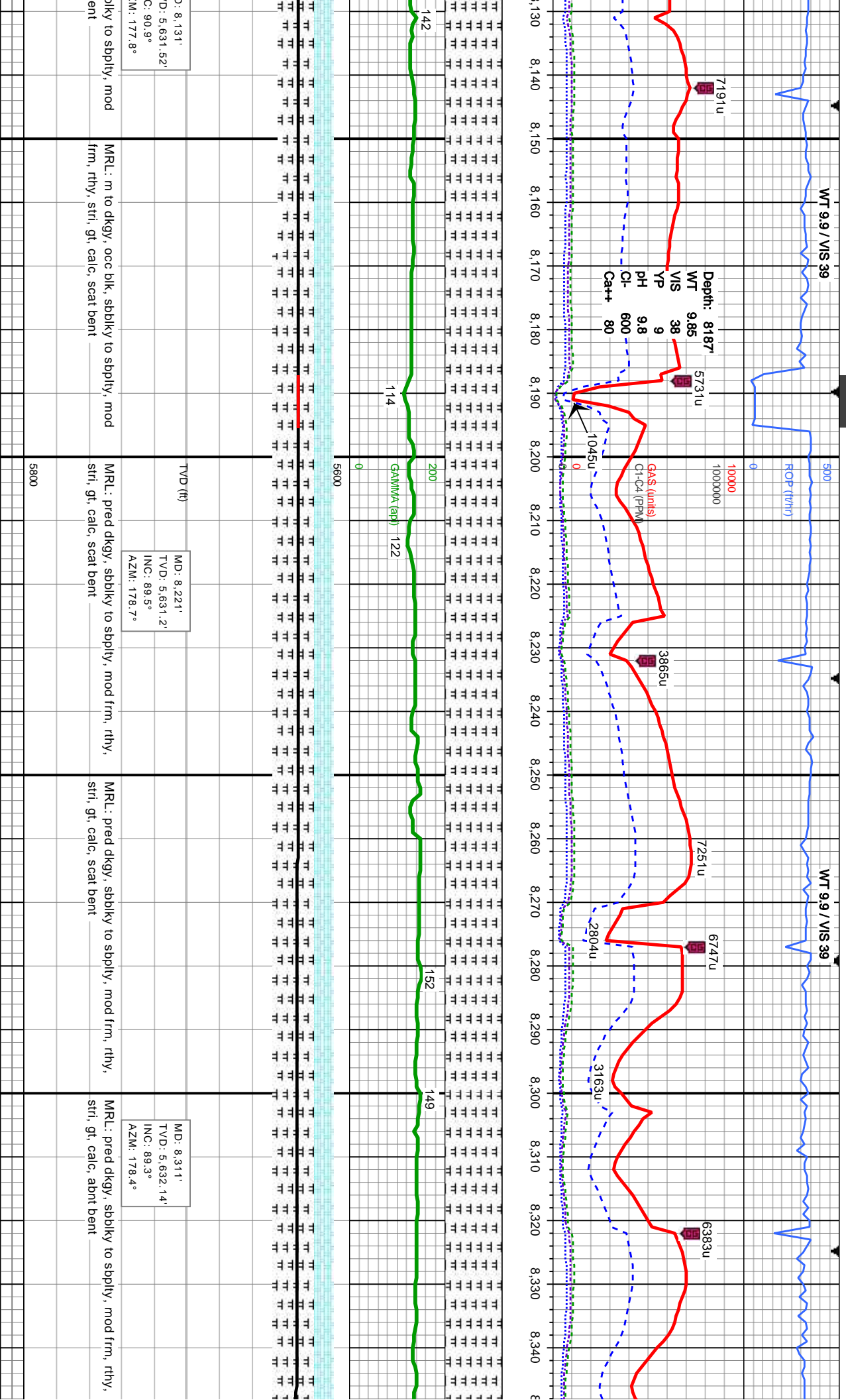


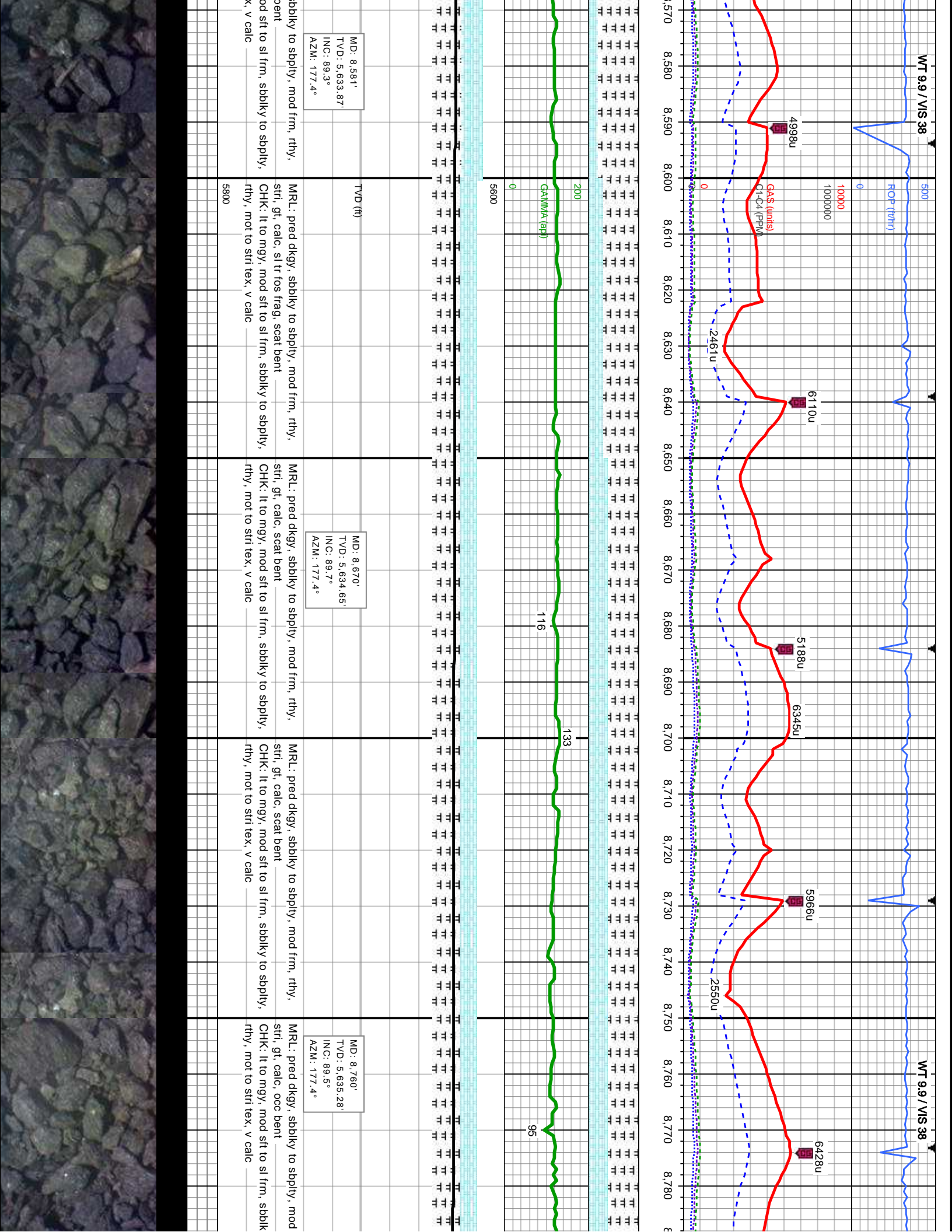


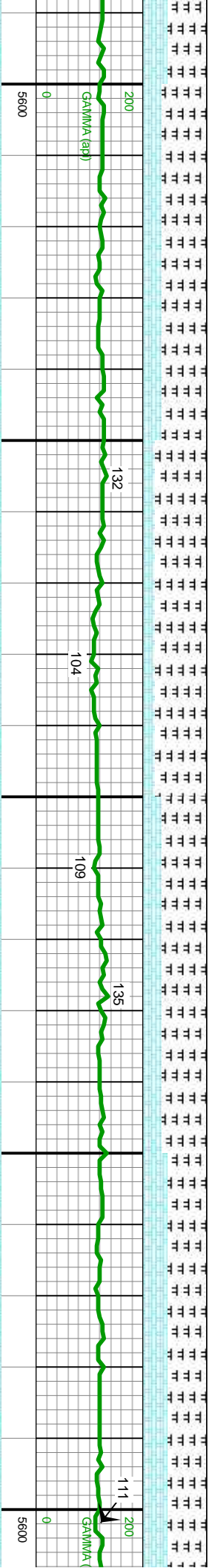
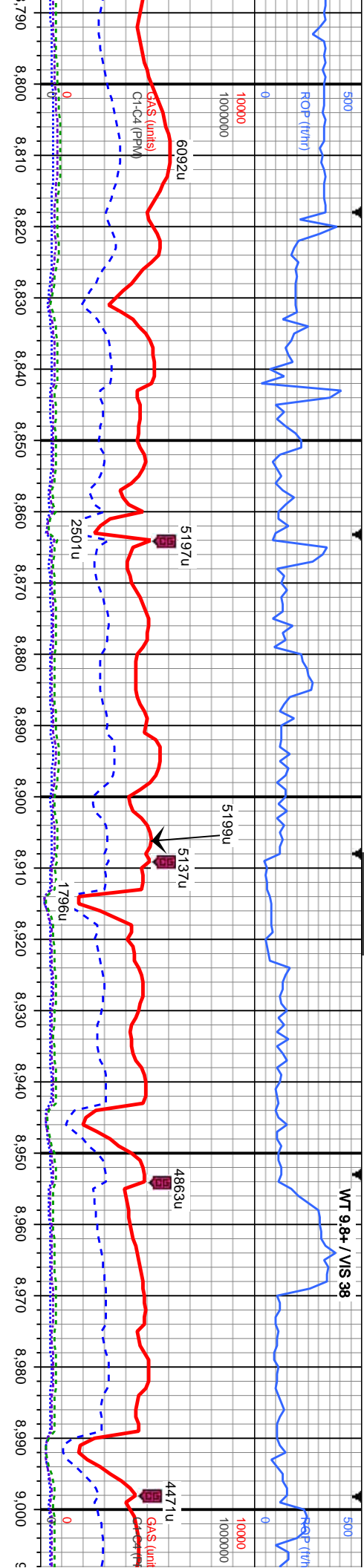




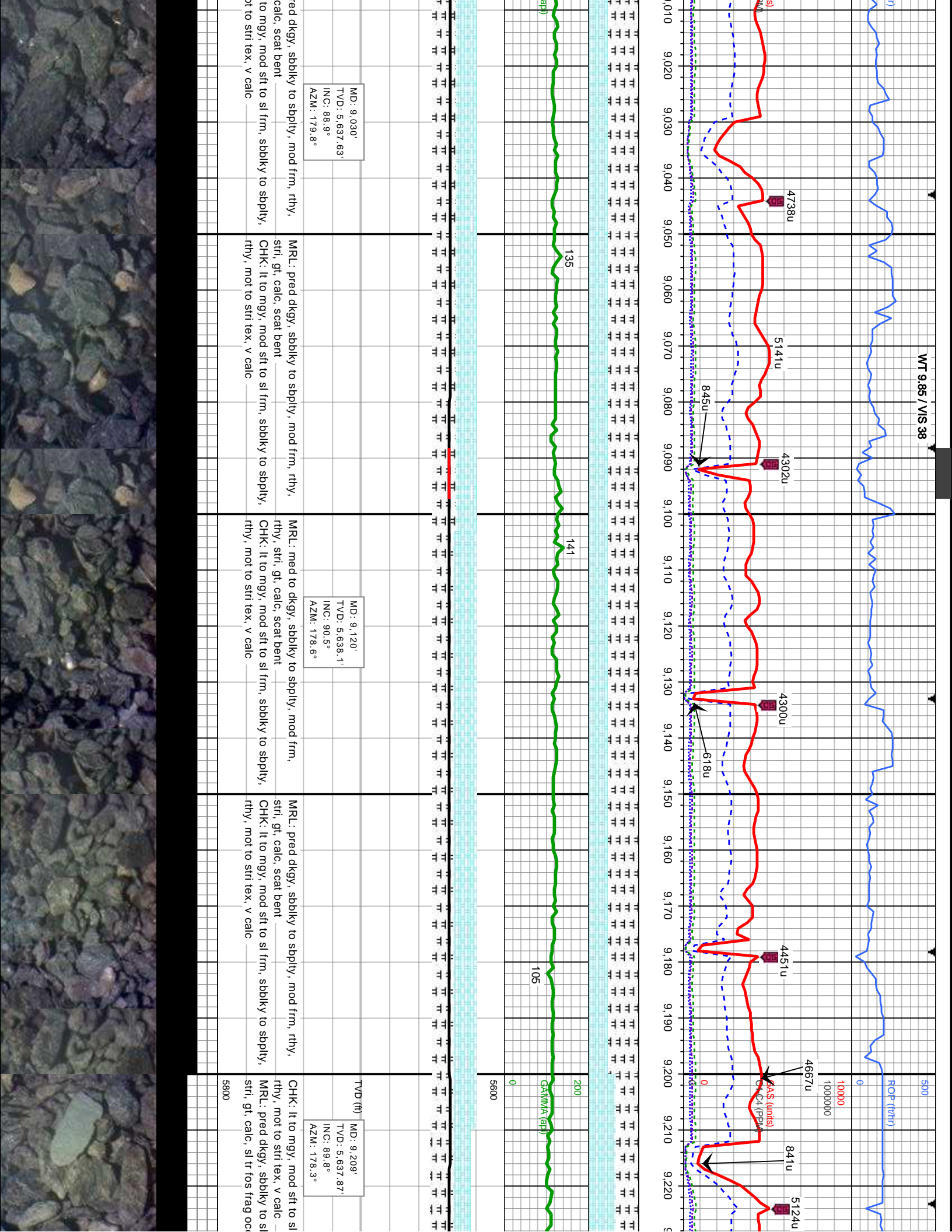


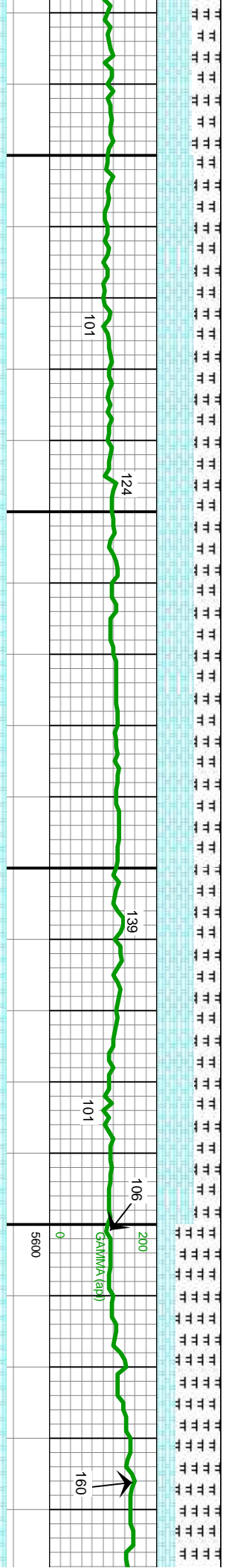
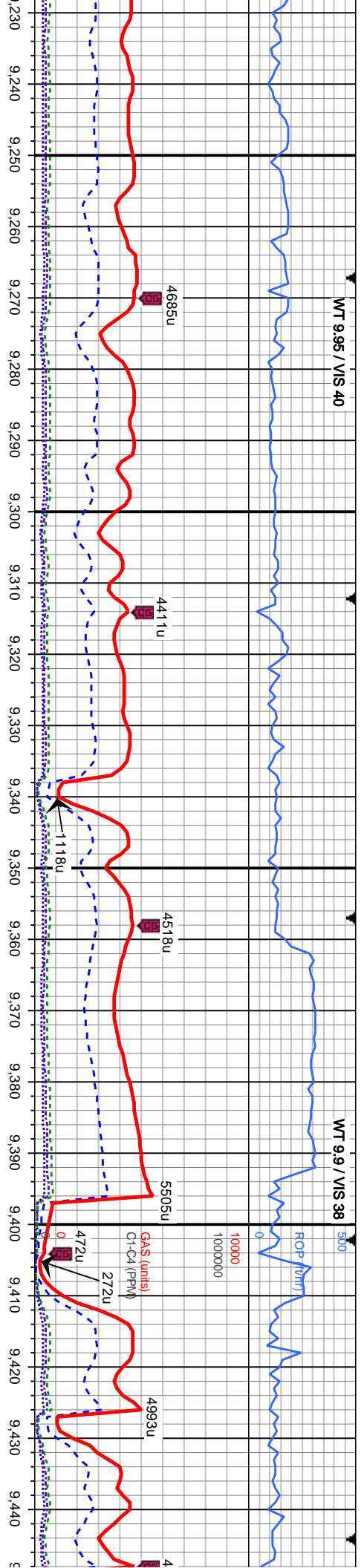






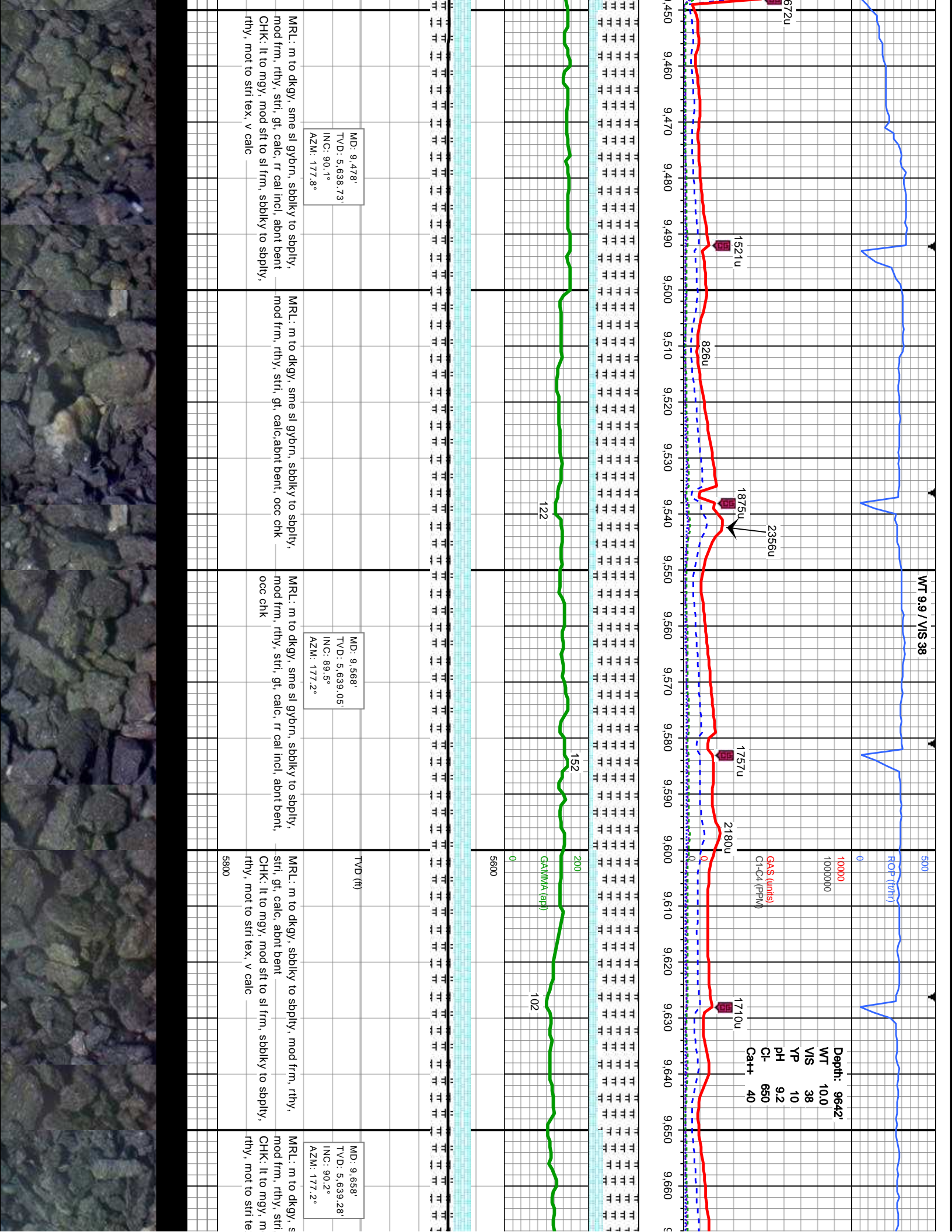
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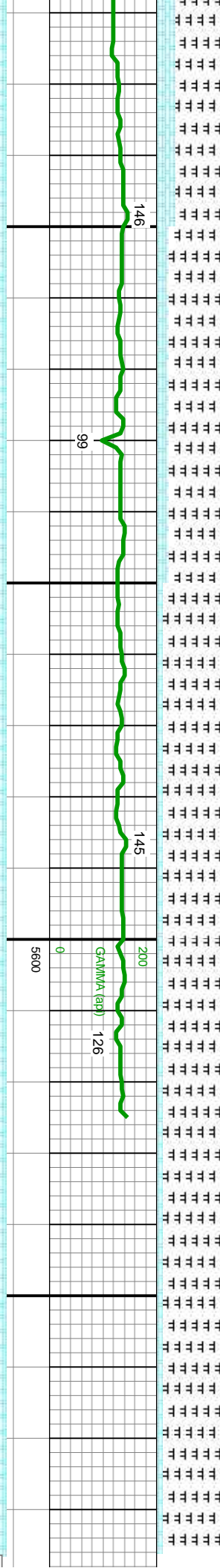
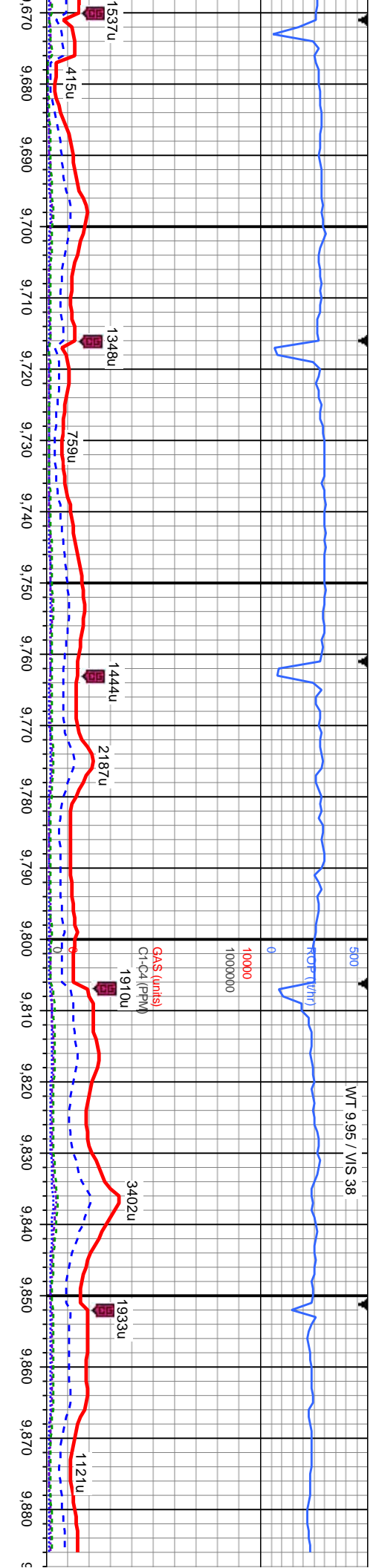




frm, sbbkly to sbply,	CHK: It to mgy, mod sft to sl frm, sbbkly to sbply,	CHK: It to mgy, mod sft to sl frm, sbbkly to sbply,	CHK: It to mgy, mod sft to sl frm, sbbkly to sbply,	MR.L: m to dkgv, sme sl gybrn, sbbkly to sbply, mod frm, rthy, stfi, gt, calc, abnt bent
sbply, mod frm, rthy, bent	rthy, mot to str tex, v calc MR.L: pred dkgv, sbbkly to sbply, mod frm, rthy, stfi, gt, calc, occ bent	rthy, mot to str tex, v calc MR.L: pred dkgv, sbbkly to sbply, mod frm, rthy, stfi, gt, calc, tr fos frag, occ bent	rthy, mot to str tex, v calc MR.L: pred dkgv, sbbkly to sbply, mod frm, rthy, stfi, gt, calc, tr fos frag, occ bent	rthy, mot to str tex, v calc
	MD: 9.299' TVD: 5.638.11' INC: 89.9° AZM: 178.1°	MD: 9.389' TVD: 5.638.5' INC: 89.6° AZM: 177.8°		TVD (ft)







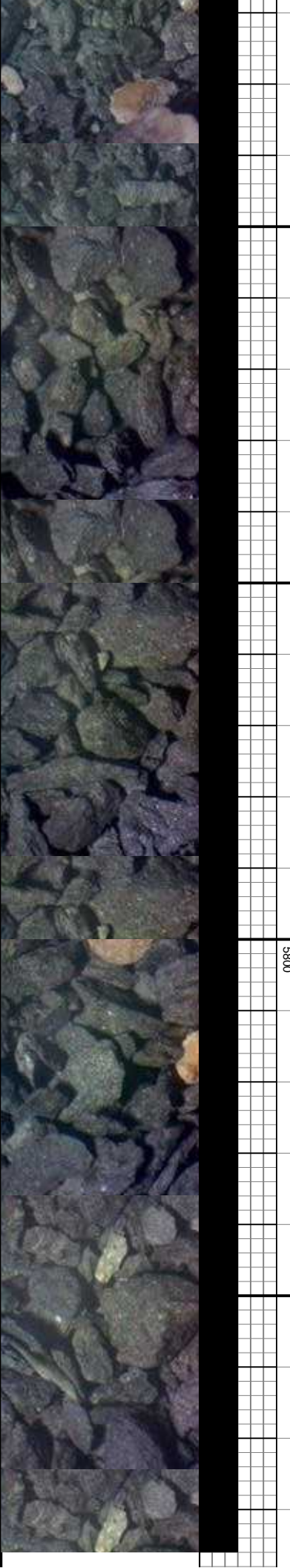
me sl gybrn, sbblky to spbly, gt, calc, abnt bent	MRL: m to dkgy, sme sl gybrn, sbblky to spbly, mod frm, rthy, stri, gt, calc, abnt bent	MRL: m to dkgy, sbblky to spbly, mod frm, rthy, stri, gt, calc, tr cal incl, abnt bent, occ chk	MRL: m to dkgy, sl gybrn, sbblky to spbly, mod frm, rthy, stri, gt, calc, r to tr cal incl, abnt bent, occ chk	MRL: m to dkgy, sl gybrn ip, sbblky to : frm, rthy, stri, gt, calc, r cal incl, abnt b chk
od sft to sl frm, sbblky to spbly, x, v calc	MRL: m to dkgy, sme sl gybrn, sbblky to spbly, mod frm, rthy, stri, gt, calc, abnt bent	MRL: m to dkgy, sbblky to spbly, mod frm, rthy, stri, gt, calc, tr cal incl, abnt bent, occ chk	MRL: m to dkgy, sl gybrn, sbblky to spbly, mod frm, rthy, stri, gt, calc, r to tr cal incl, abnt bent, occ chk	MRL: m to dkgy, sl gybrn ip, sbblky to : frm, rthy, stri, gt, calc, r cal incl, abnt b chk

MD: 9,748'
TVD: 5,638.65'
INC: 90.6°
AZM: 177.4°

MD: 9,828'
TVD: 5,638.1'
INC: 90.2°
AZM: 176.9°

PROJECTION TO BIT

MD: 9,828'
TVD: 5,638.1'
INC: 90.2°
AZM: 176.9°



9,890 9,900 9,910 9,9

D @ MD 9886'
7:03 MST, 11/18/14

Bit Data

Bit #: 3

Depth In: 5,992'

Depth Out: 9,886'

Hours: 37 hrs

Avg Ft/Hr: 105.2 '/hr

76.9°

sbply, mod
ent, occ