



Scale: 5" / 100'
Measured Depth Log

Well Name	Rohn State LD10-69-1HN		
Location	NENE SEC9 T9N R58W		
State	CO	County	WELD
Country	USA		
API Number	05-123-37619	Rig Number	PRECISION 828
		AFE #	200316
Region	DENVER-JULESBURG BASIN		
Field	WILDCAT		
Spud Date	10/17/2014	Drilling Completed	10/22/2014
Surface Coordinates	860' FNL, 330' FEL		
	Lat/Long: 40.7708/-103.86116		
Ground Elevation	4739'	K.B. Elevation	4755'
Logged Interval	5300'	To	9551'
		Total Depth	9551'
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

WELL SITE GEOLOGISTS: GA
C.S
LO
GE

Operator

Geologist

Other

RY L. MYERS
METZ
G CONTINUES FROM FILE: Rohn State LD-10-69-1HN Vert.mplot
OLOGICAL SERVICES PROVIDED BY COLUMBINE LOGGING, INC

Rock Types

UNKNOWN	BRECCIA	GRANITE	SHALE
CHALK	CEMENT	GYPSUM	SHALE COLORET
MARLSTONE	CHERT	IGNEOUS	SHALE GRAY
SANDSTONE	CLAY CHOKESAND	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	ANHYDRITIC	GLAUCONITE	
FOSSIL	ARGILLACEOUS	GYPSIFEROUS	

Stringer

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
- EVEN

GAS SHOW

MN DEPTH

L LITHOGRAPHIC
- QUESTIONABLE

OIL SHOW

MN DEPTH

MX MICROXLN

- SPOTTED STAINING

CONNECTION (UP)

MN DEPTH UP

MUDSTONE
- CONNECTION (DOWN)

MN DEPTH (DOWN)

ANGULAR

PACKSTONE

Porosity

- CONNECTION GAS

NORMAL FAULT

ROUNDED

WACKESTONE
- CONNECTION GAS (LEFT)

OVERTURNED STRATA

SUBANG

Sorting
- FENESTRAL

TRIP GAS

REVERSE FAULT

SUBRND

- FRACTURE

TRIP GAS (LEFT)

CASING

MODERATE

Textures

- INTERCRYSTALLINE

DOWN TIME GAS

SIDEWALL CORE (LEFT)

POOR
- INTEROOLITC

DOWN TIME GAS (LEFT)

SIDEWALL CORE (RIGHT)

BOUNDSTONE
- MOLDIC

CORE - LOST

SLIDE

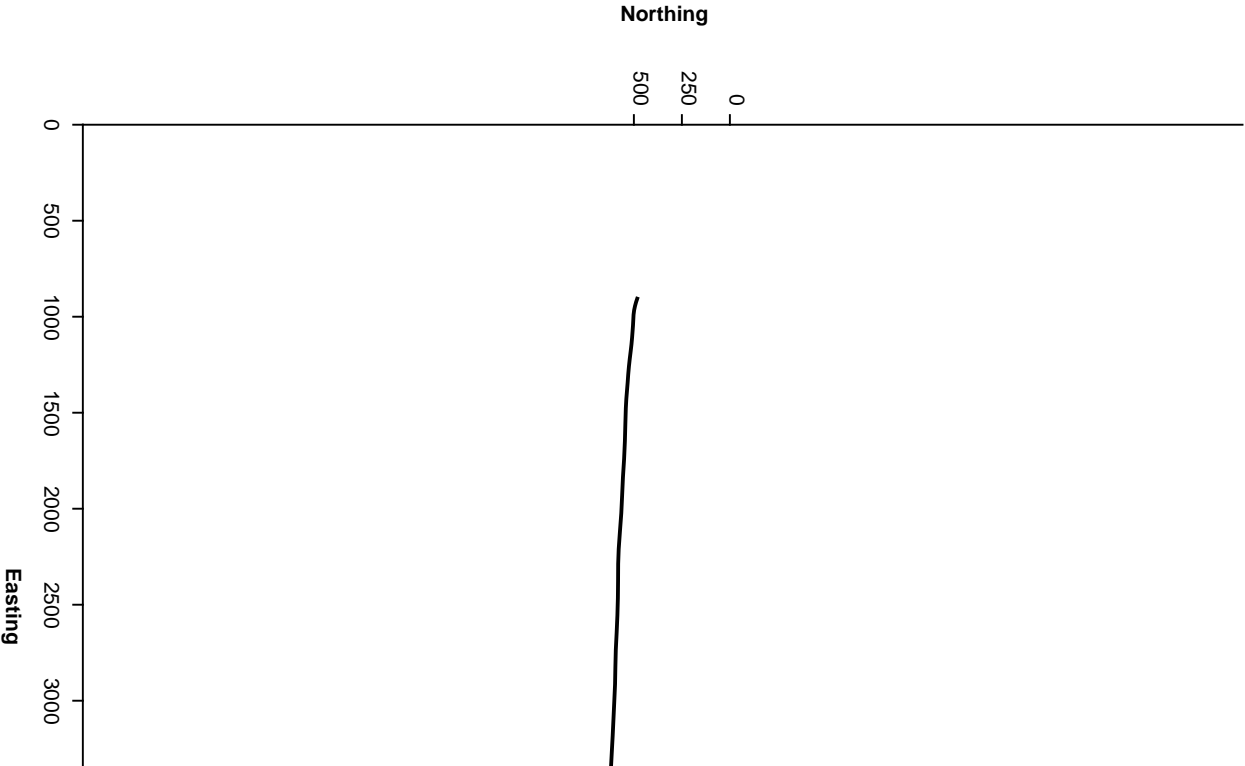
CHALKY
- ORGANIC

CORE - RECOVERED

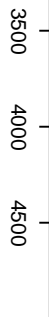
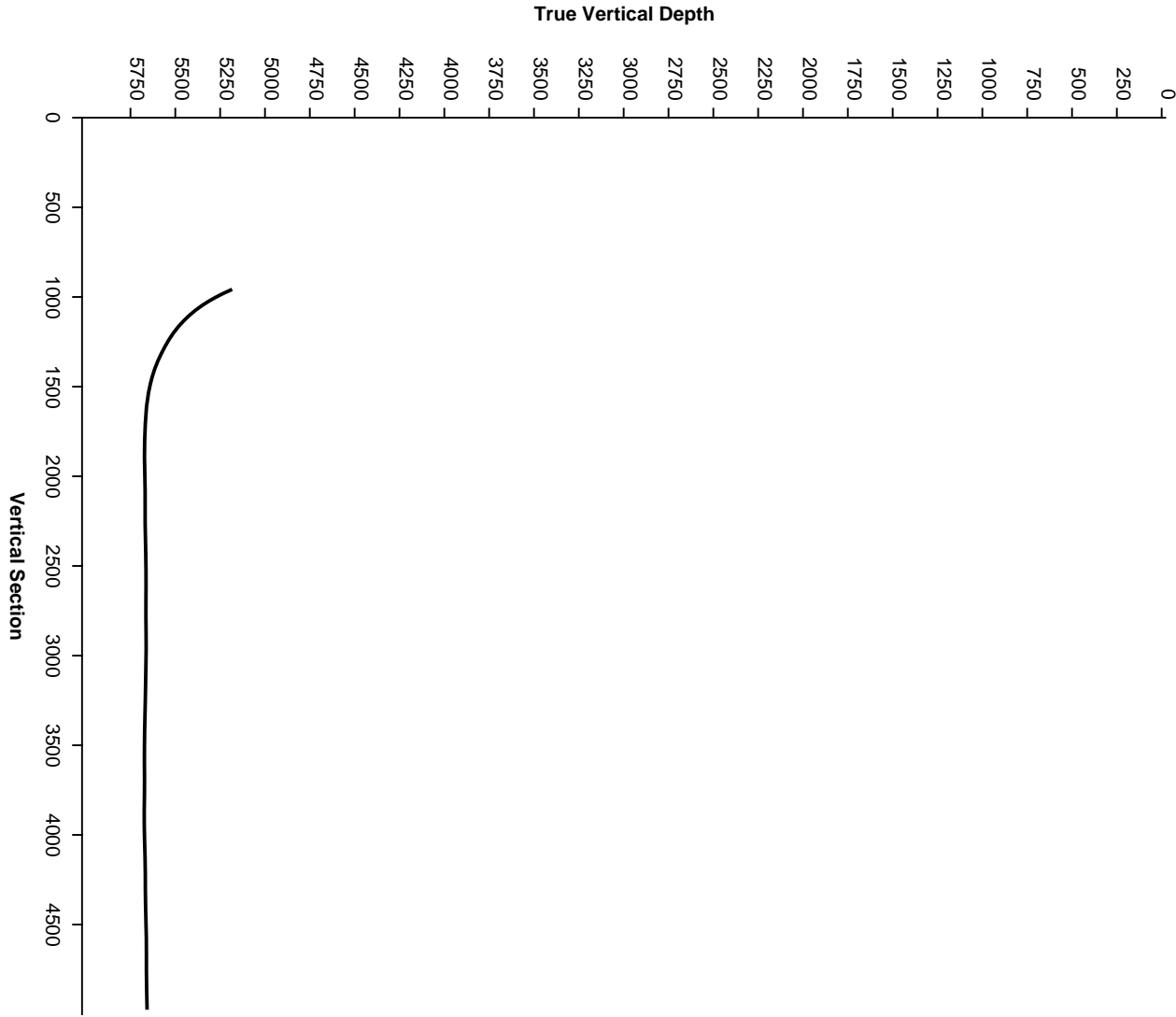
SURVEY

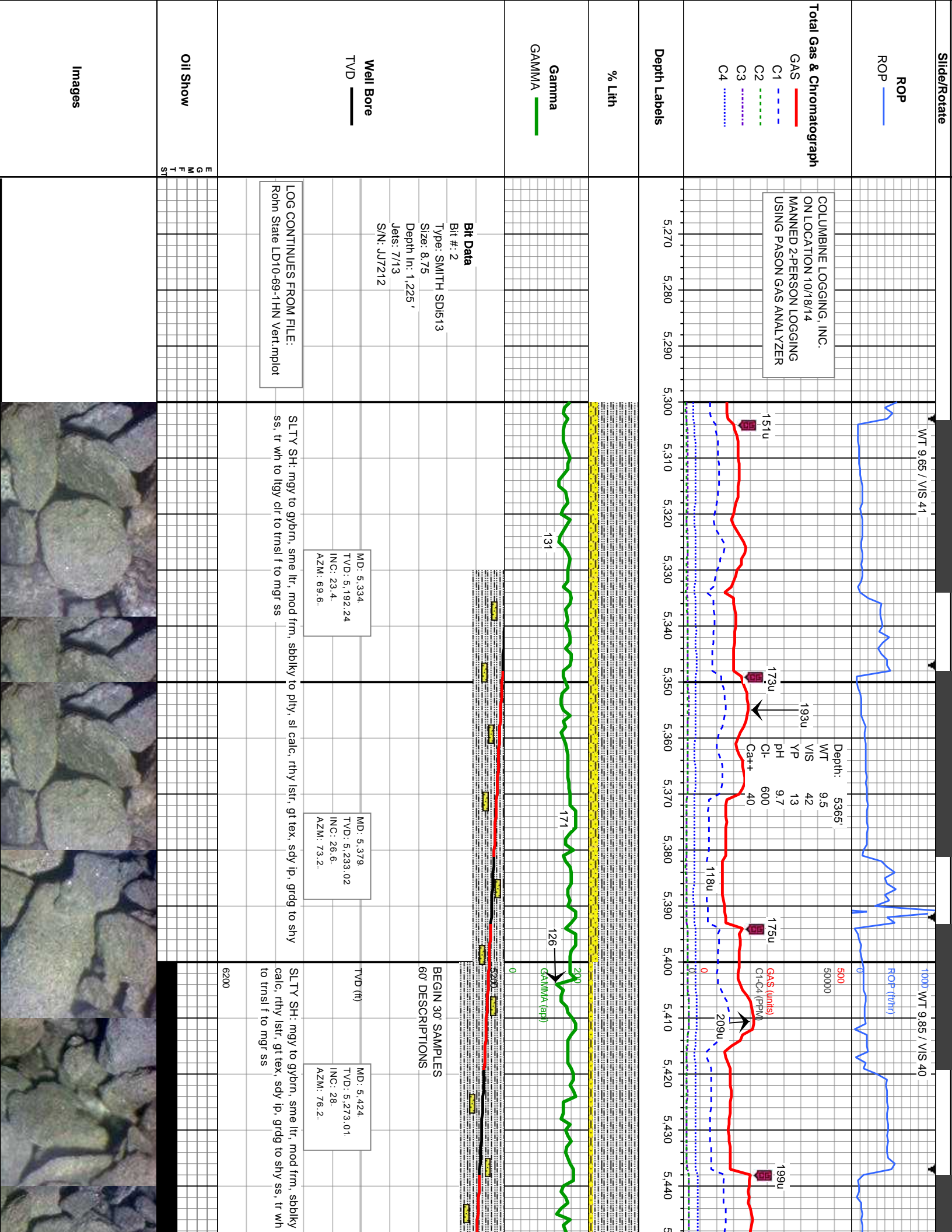
CRYPTOXLN

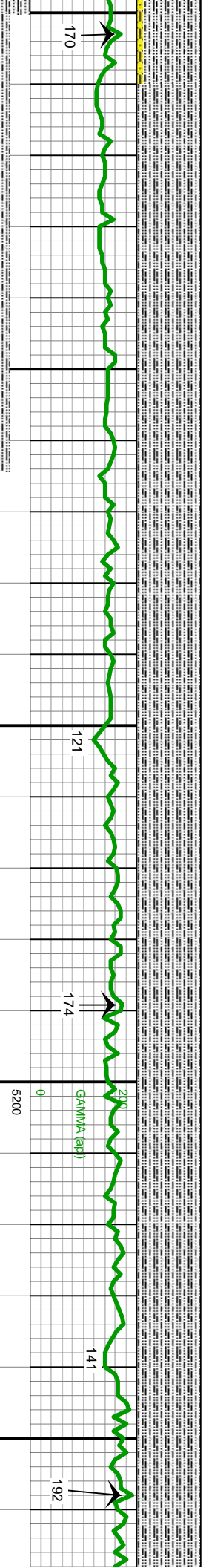
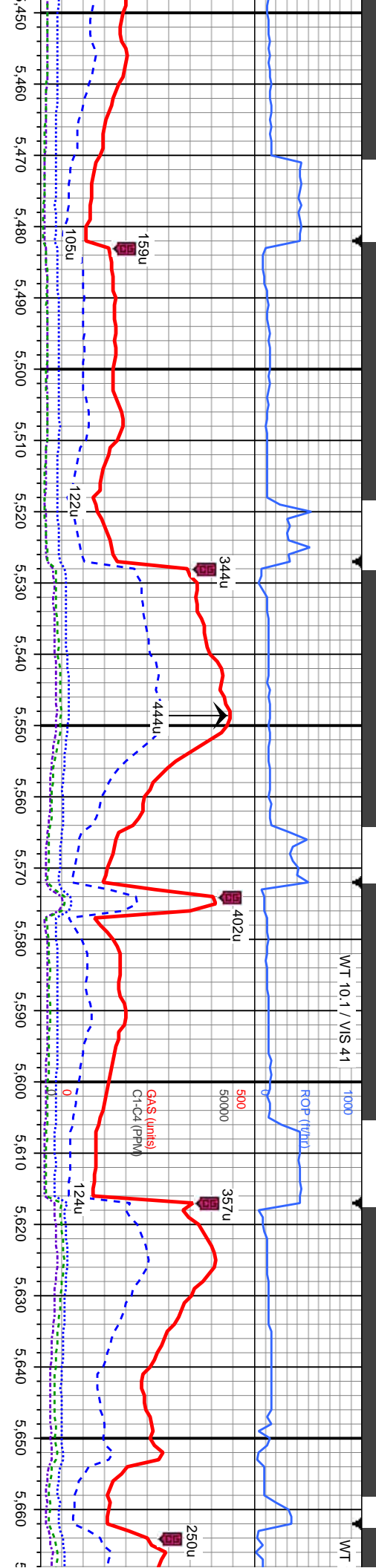
Survey Plan



Survey Elevation







MD: 5,469
TVD: 5,312.23
INC: 30.7
AZM: 80.

MD: 5,514
TVD: 5,350.19
INC: 34.3
AZM: 85.1

MD: 5,559
TVD: 5,386.57
INC: 37.8
AZM: 88.5

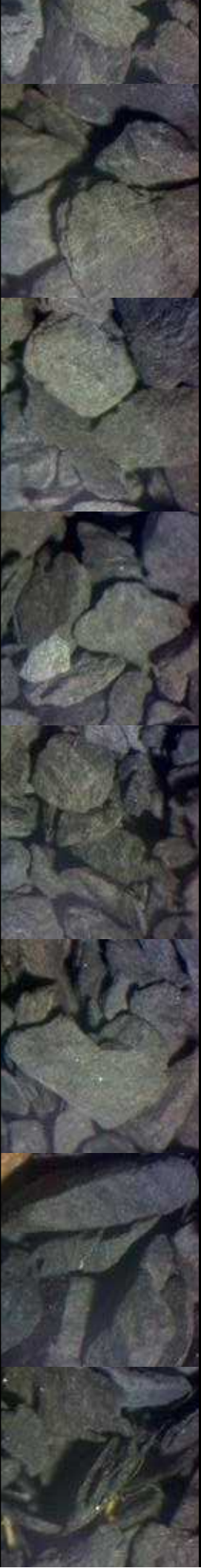
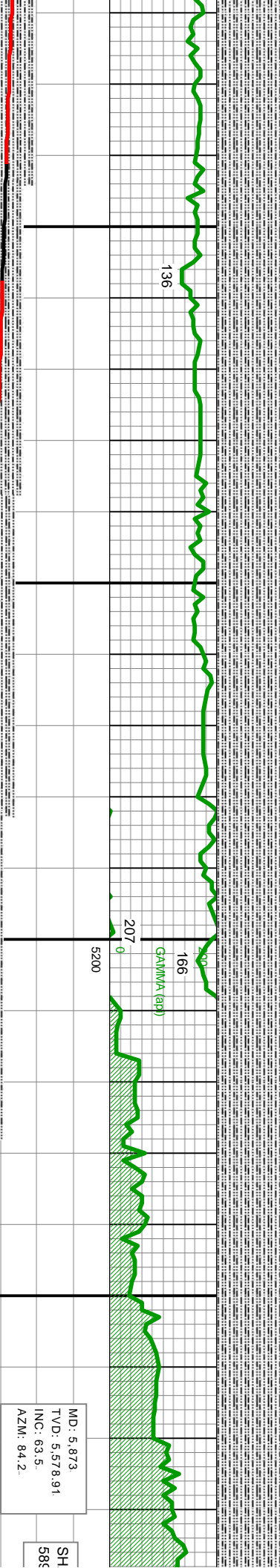
MD: 5,604
TVD: 5,421.06
INC: 42.1
AZM: 85.6

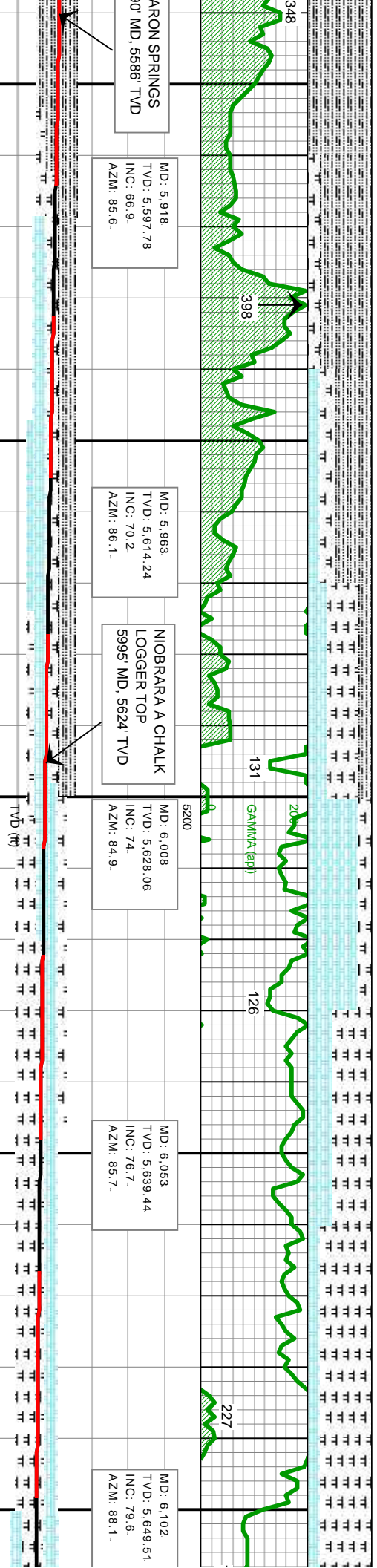
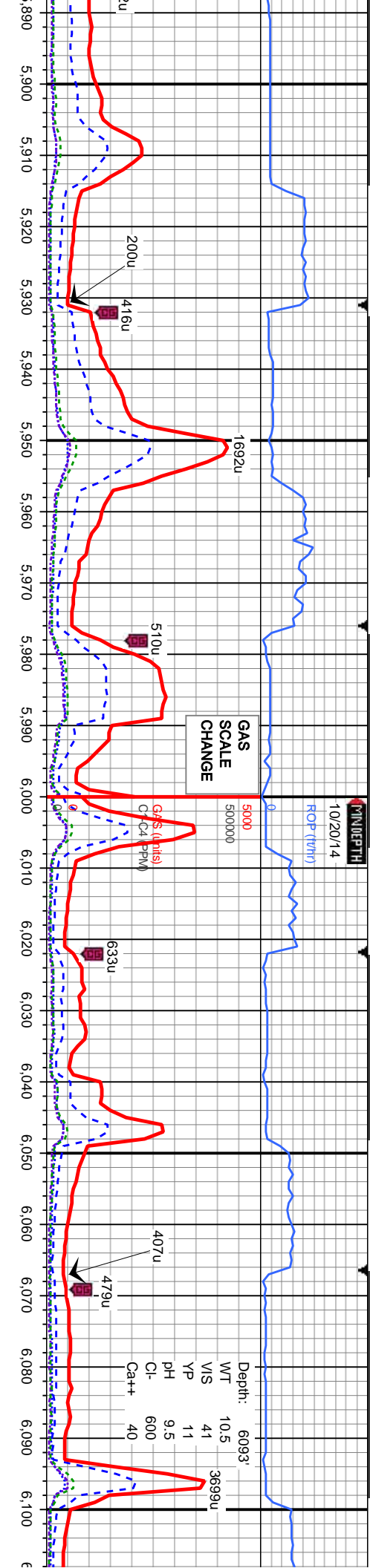
MD: 5,648
TVD: 5,452.73
INC: 45.8
AZM: 86

SLTY SH: mgy to gybrn, sme ltr, mod frm, sbbkly to plty, sl
calc, rthy lstr, gt tex

6200







ARON SPRINGS
10 MD, 5586' TVD

MD: 5,918
TVD: 5,597.78
INC: 66.9
AZM: 85.6

MD: 5,963
TVD: 5,614.24
INC: 70.2
AZM: 86.1

NIOBRARA A CHALK
LOGGER TOP
5995' MD, 5624' TVD

MD: 6,008
TVD: 5,628.06
INC: 74
AZM: 84.9

MD: 6,053
TVD: 5,639.44
INC: 76.7
AZM: 85.7

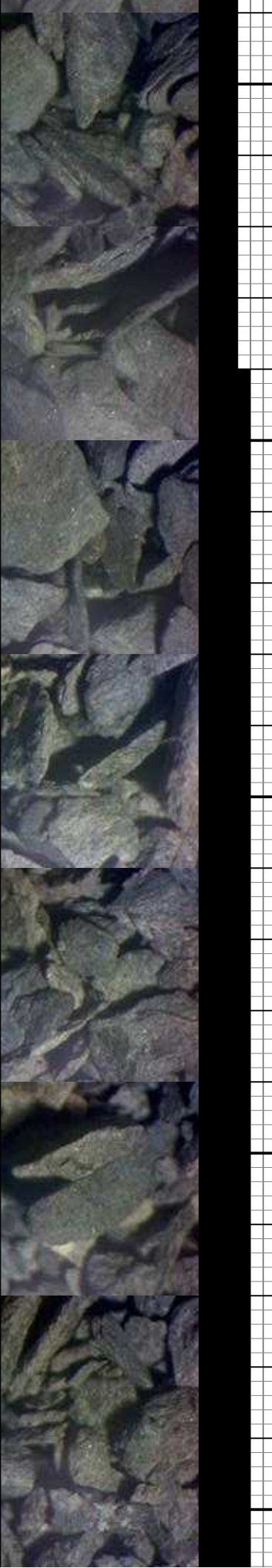
MD: 6,102
TVD: 5,649.51
INC: 79.6
AZM: 88.1

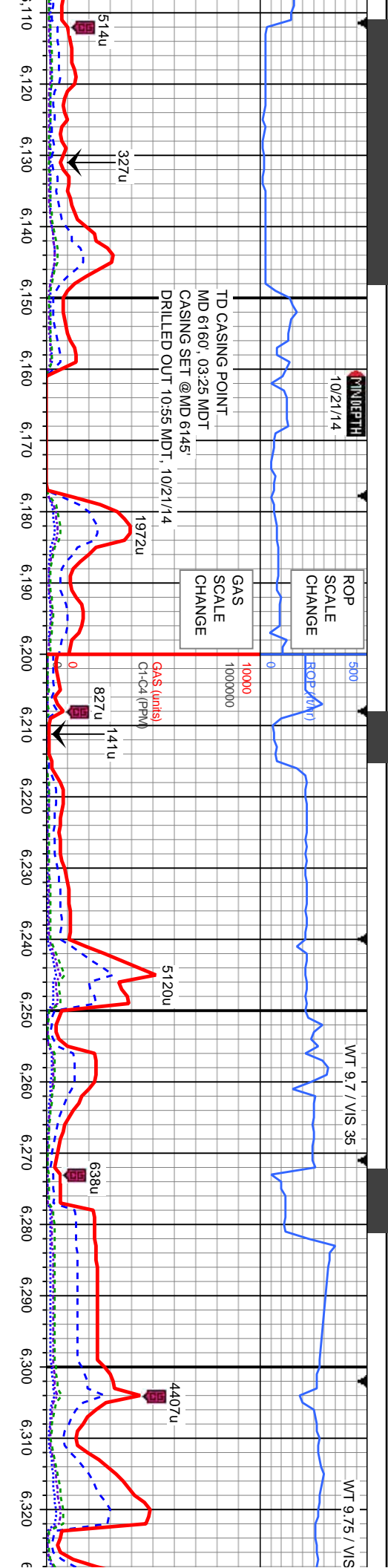
H: mgy to gybrn, mod frm, sbblky to sbply, sl calc,
gt tex, abnt bent, tr pyr

SL.TY SH: mgy to gybrn, mod frm, sbblky to sbply, sl calc,
rthy lstr, gt tex, abnt bent, tr pyr
MRL: med to dk gy, sbblky to sbply, mod frm, rthy, sl mot,
calc, tr pyr
CHK: lt to med gy, occ gy brn, mod sft to sl frm, sbply to
sbblky, rthy, sl mot, v calc

CHK: lt to med gy, occ gy brn, mod sft to sl frm, sbply to
sbblky, rthy, sl mot, v calc

MRL: med to dk gy, sbblky to sbply, mod frm, rthy, sl mot,
calc, tr bent
CHK: lt to med gy, occ gy brn, mod sft to sl frm, s
sbblky, rthy, sl mot, v calc

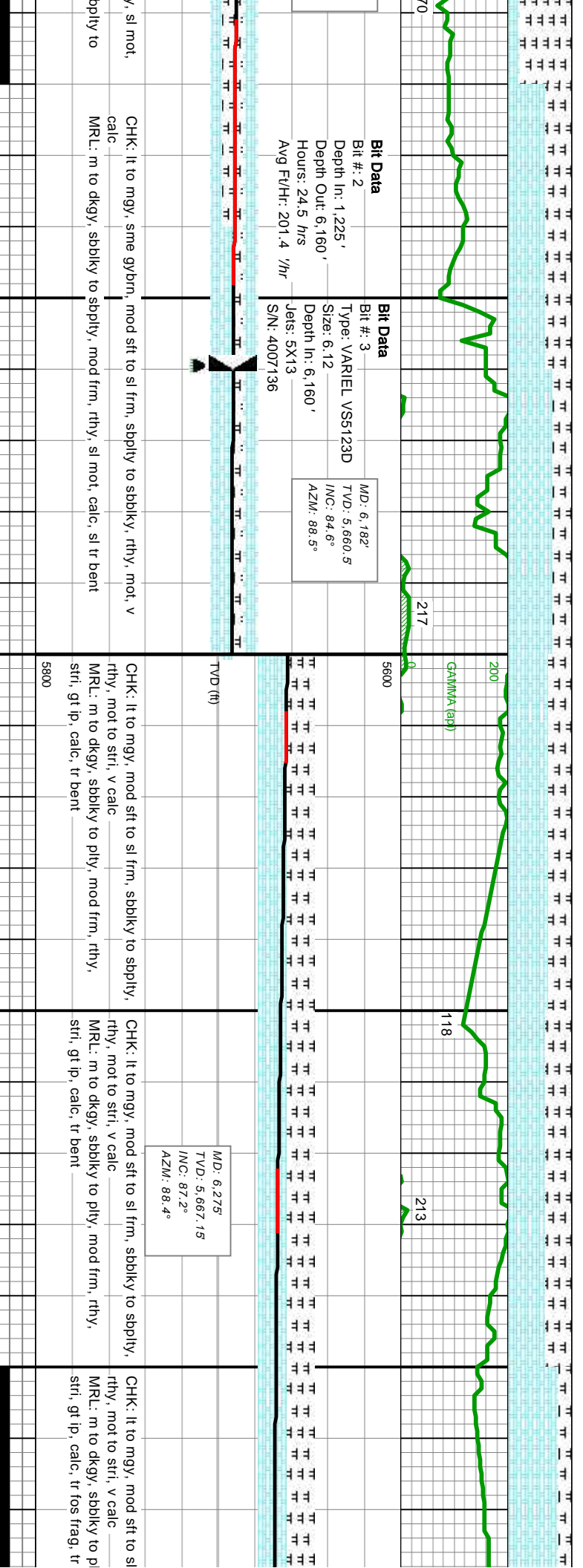


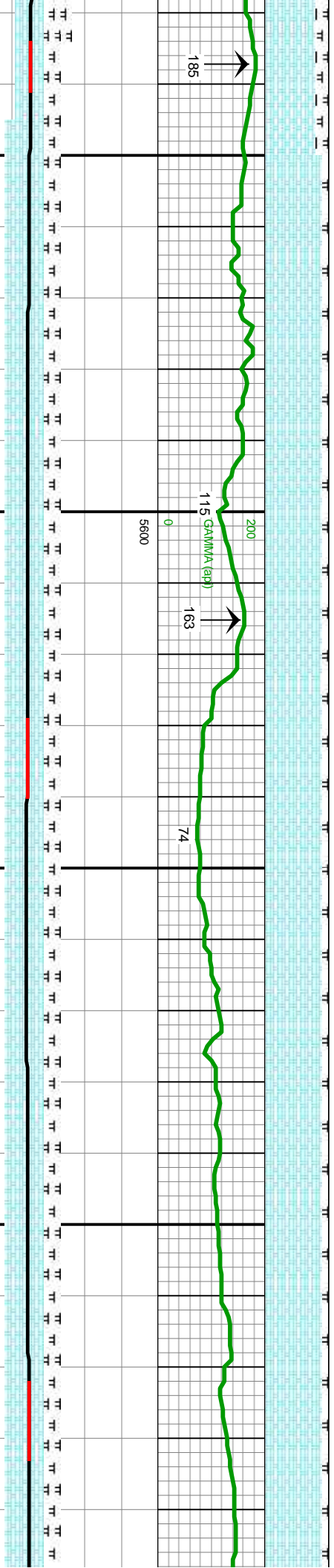
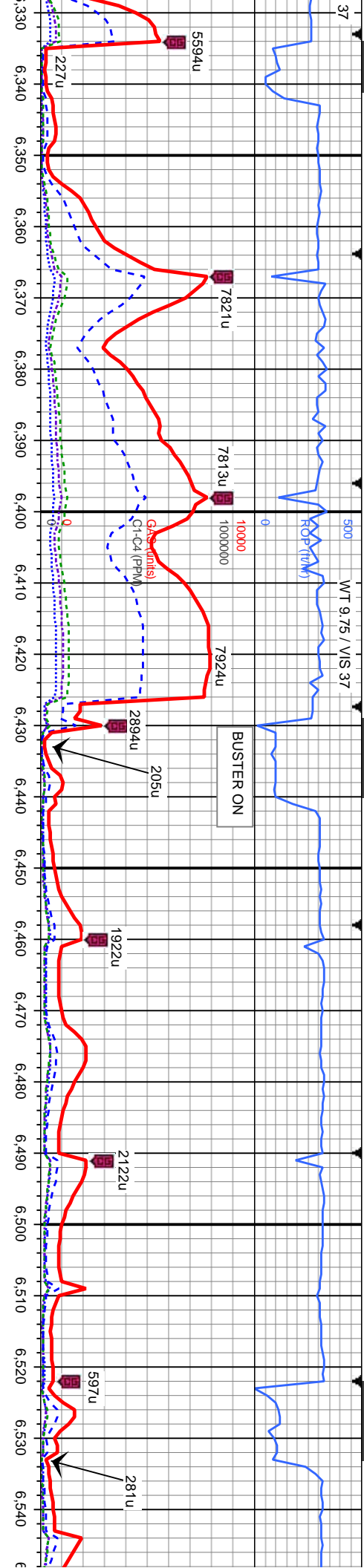


Bit Data
Bit #: 2
Depth In: 1,225'
Depth Out: 6,160'
Hours: 24.5 hrs
Avg Fv/Hr: 201.4 '/hr

Bit Data
Bit #: 3
Type: VARIEL VS6123D
Size: 6.12
Depth In: 6,160'
Jets: 5X13
S/N: 4007136

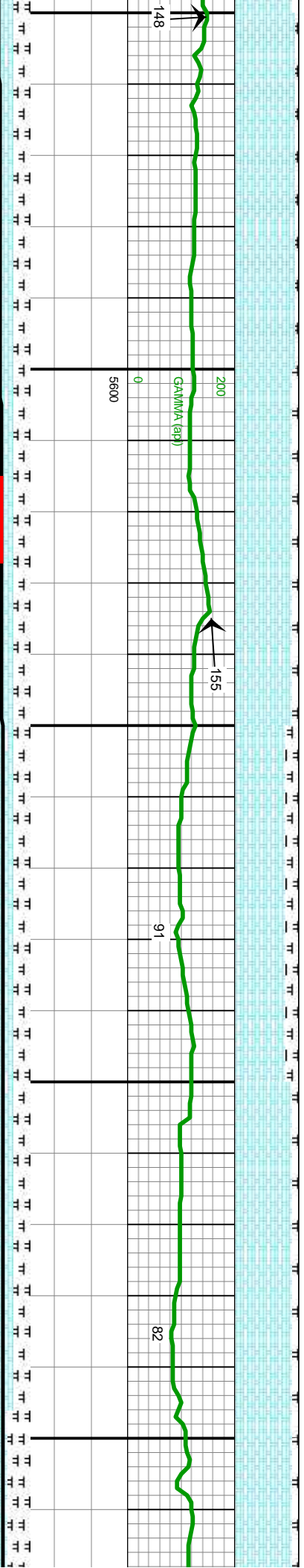
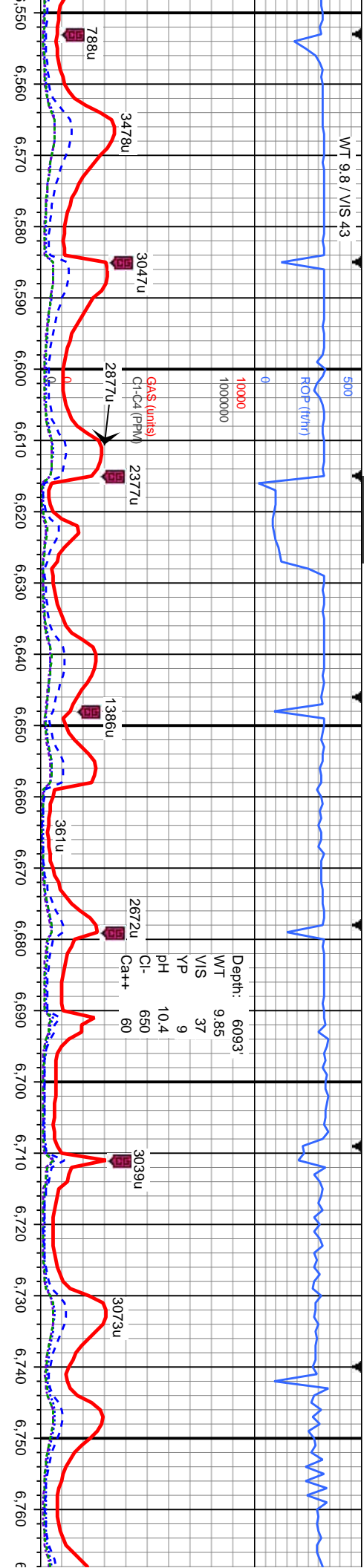
MD: 6,182'
TVD: 5,660.5'
INC: 84.6°
AZM: 88.5°





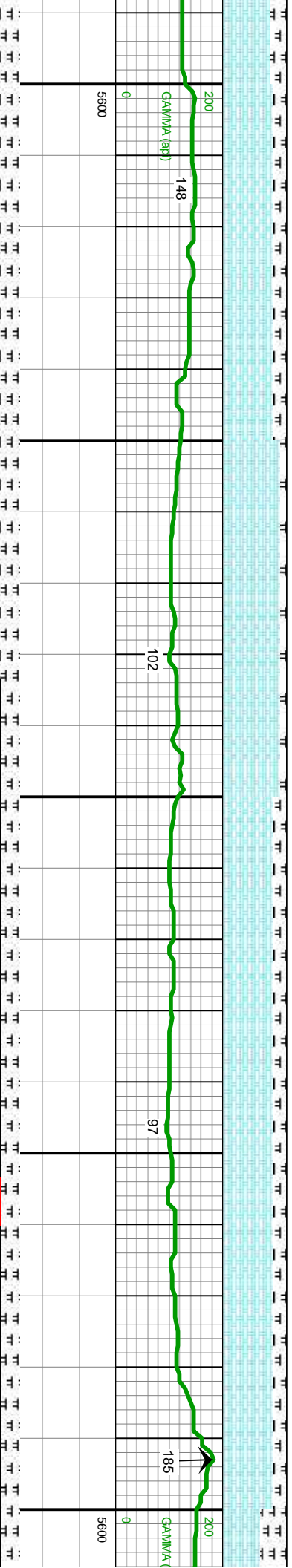
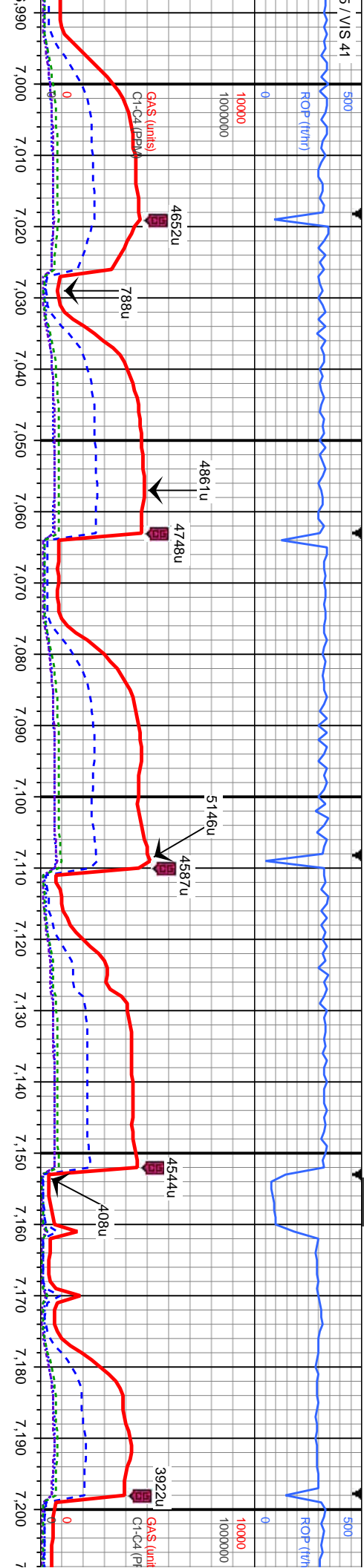
frm, sbblky to sbply, rthy, mod frm, rthy, bent	CHK: It to mgy, mod sft to sl frm, sbblky to sbply, rthy, mot to strl, v calc MRL: m to dkgy, sbblky to ply, mod frm, rthy, strl, gt lp, calc, tr fos frag, tr bent	MD: 6.369 TVD: 5.670.67 INC: 88.5 AZM: 86.5	TVD (ft)	CHK: It to mgy, mod sft to sl frm, sbblky to sbply, rthy, mot to strl, v calc MRL: m to dkgy, sbblky to ply, mod frm, rthy, strl, gt lp, calc, sl tr bent	MD: 6.464 TVD: 5.671.75 INC: 90.2 AZM: 86.3	CHK: It to mgy, mod sft to sl frm, sbblky to sbply, rthy, mot to strl, v calc MRL: m to dkgy, sbblky to ply, mod frm, rthy, strl, gt lp, calc, sl tr bent
			5800			





MD: 6.557 TVD: 5.669.97 INC: 92 AZM: 88.6.	TVD (ft)	MD: 6.651 TVD: 5.668.33 INC: 90 AZM: 86.	MD: 6.745 TVD: 5.668.24 INC: 90.1- AZM: 85.5.
CHK: It to mgy, mod sft to sl frm, sbbkly to sbply, rthy, mot to strl, v calc MR.L: m to dkgy, sbbkly to ply, mod frm, rthy, strl, gt ip, calc, tr bent	CHK: It to mgy, mod sft to sl frm, sbbkly to sbply, rthy, mot to strl, v calc MR.L: pred dkgy, sbbkly to ply, mod frm, rthy, strl, gt ip, calc, sl tr bent	CHK: It to mgy, mod sft to sl frm, sbbkly to sbply, rthy, mot to strl, v calc MR.L: pred dkgy, sbbkly to ply, mod frm, rthy, strl, gt ip, calc, sl tr bent	CHK: It to mgy, mod sft to sl frm, sbbkly to sbply, rthy, mot to strl, v calc MR.L: pred dkgy, sbbkly to ply, mod frm, rthy, strl, gt ip, calc
5800			



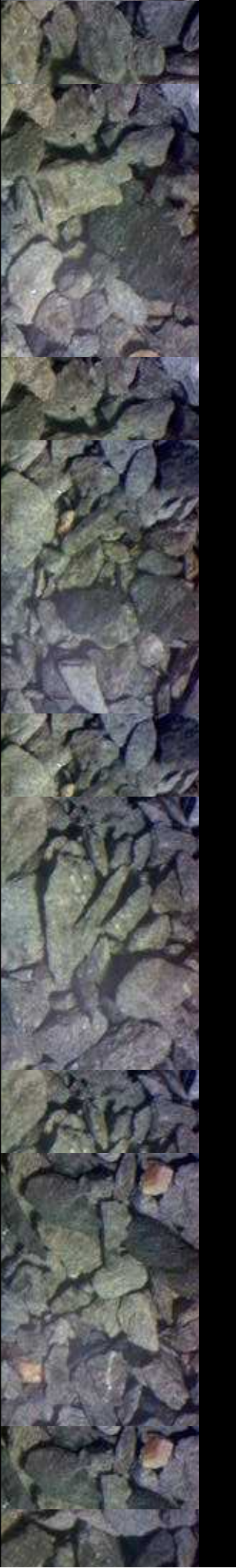


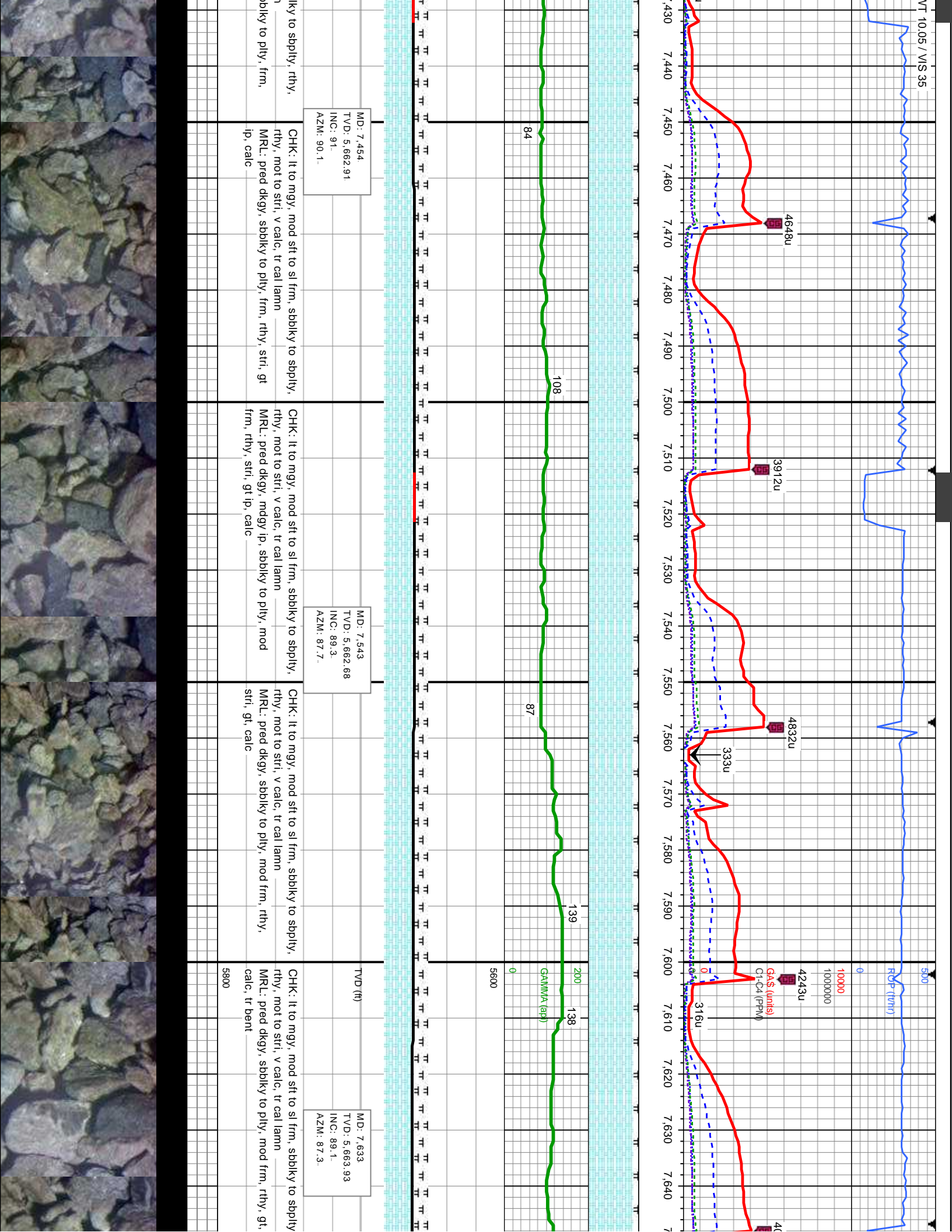
MD: 7.005
TVD: 5,664.7
INC: 90.5
AZM: 89.8

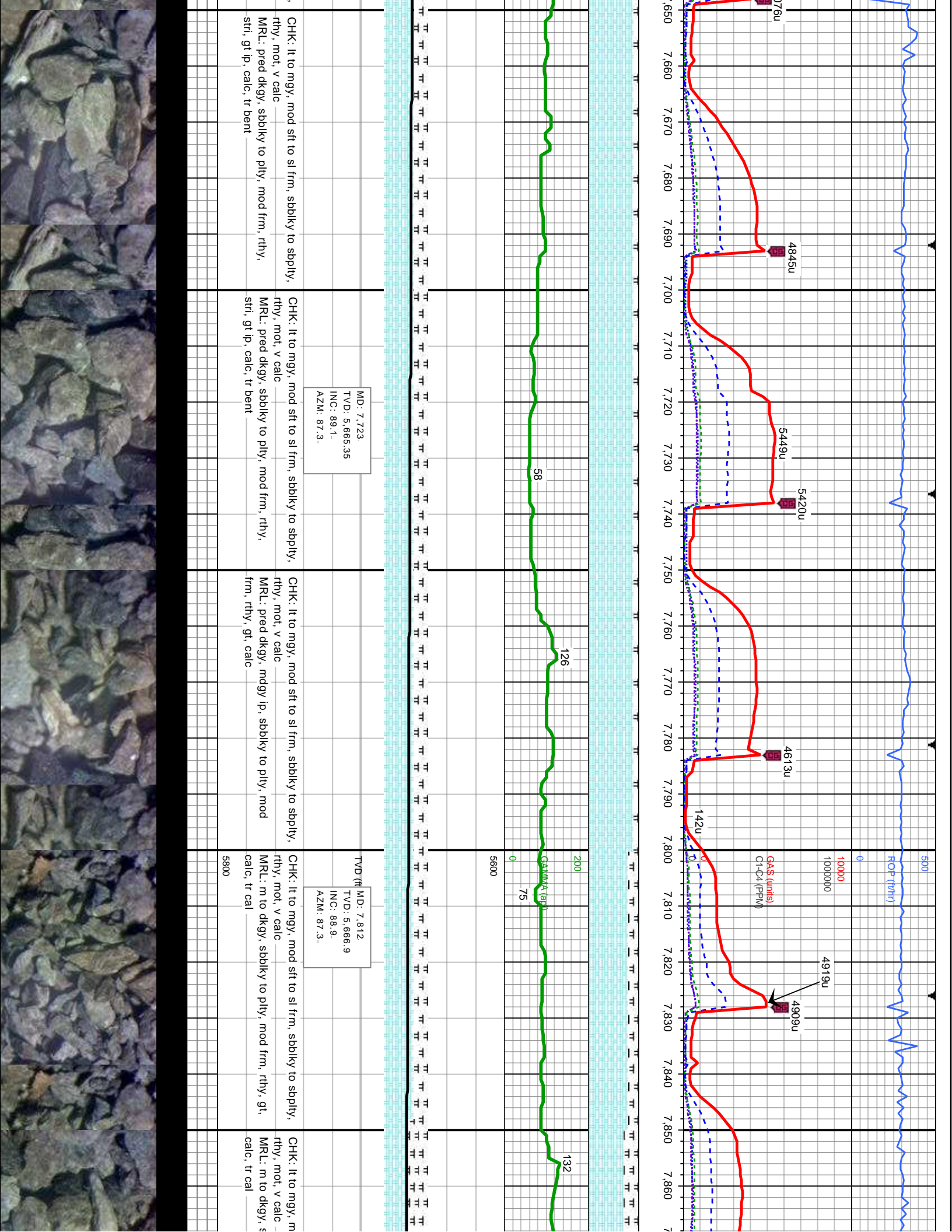
MD: 7.094
TVD: 5,663.54
INC: 91
AZM: 89

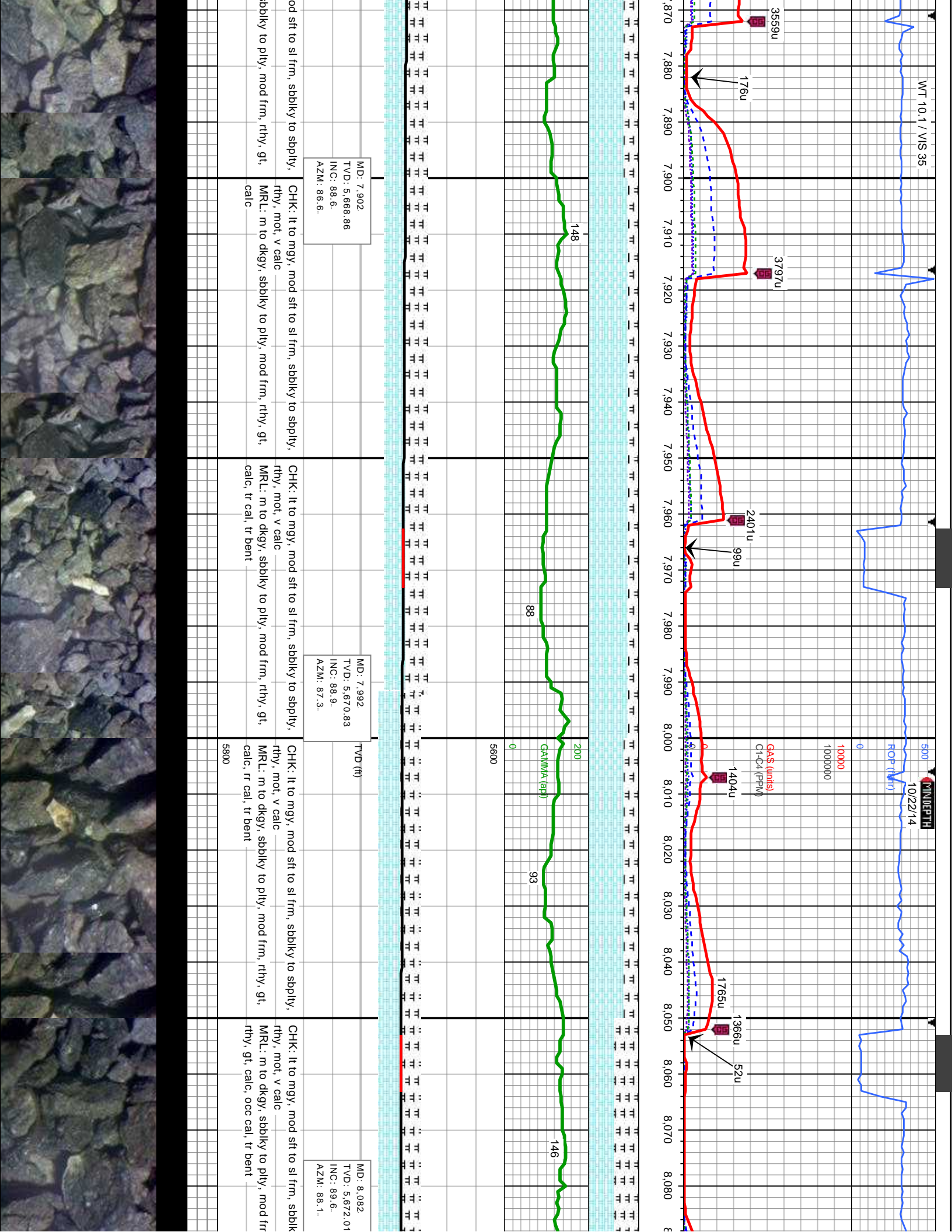
MD: 7.184
TVD: 5,663.15
INC: 89.5
AZM: 87.7

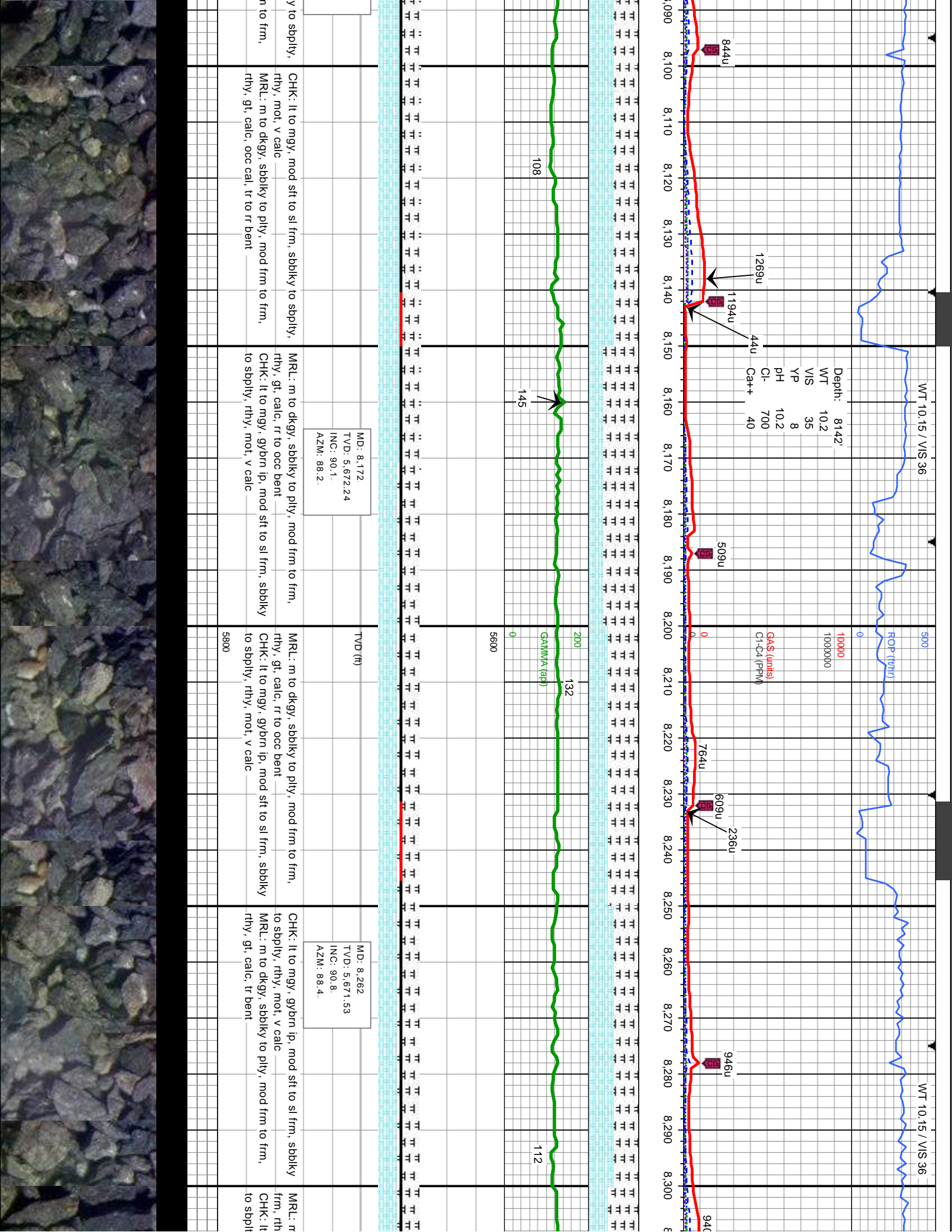
CHK: It to mgy, mod sft to sl frm, sbbiky to sbply, rthy, mot to str, v calc, rr cal lann	CHK: It to mgy, mod sft to sl frm, sbbiky to sbply, rthy, mot to str, v calc, rr cal lann	CHK: It to mgy, mod sft to sl frm, sbbiky to sbply, rthy, mot to str, v calc, rr cal lann	CHK: It to mgy, mod sft to sl frm, sbbiky to sbply, rthy, mot to str, v calc, rr cal lann
MRL: pied dkgy, mdgy ip, sbbiky to plty, mod frm, rthy, str, gt ip, calc	MRL: pied dkgy, mdgy ip, sbbiky to plty, mod frm, rthy, gt, calc	MRL: pied dkgy, mdgy ip, sbbiky to plty, mod frm, rthy, gt, calc	MRL: pied dkgy, mdgy ip, sbbiky to plty, frm, ip, calc
5800			5800

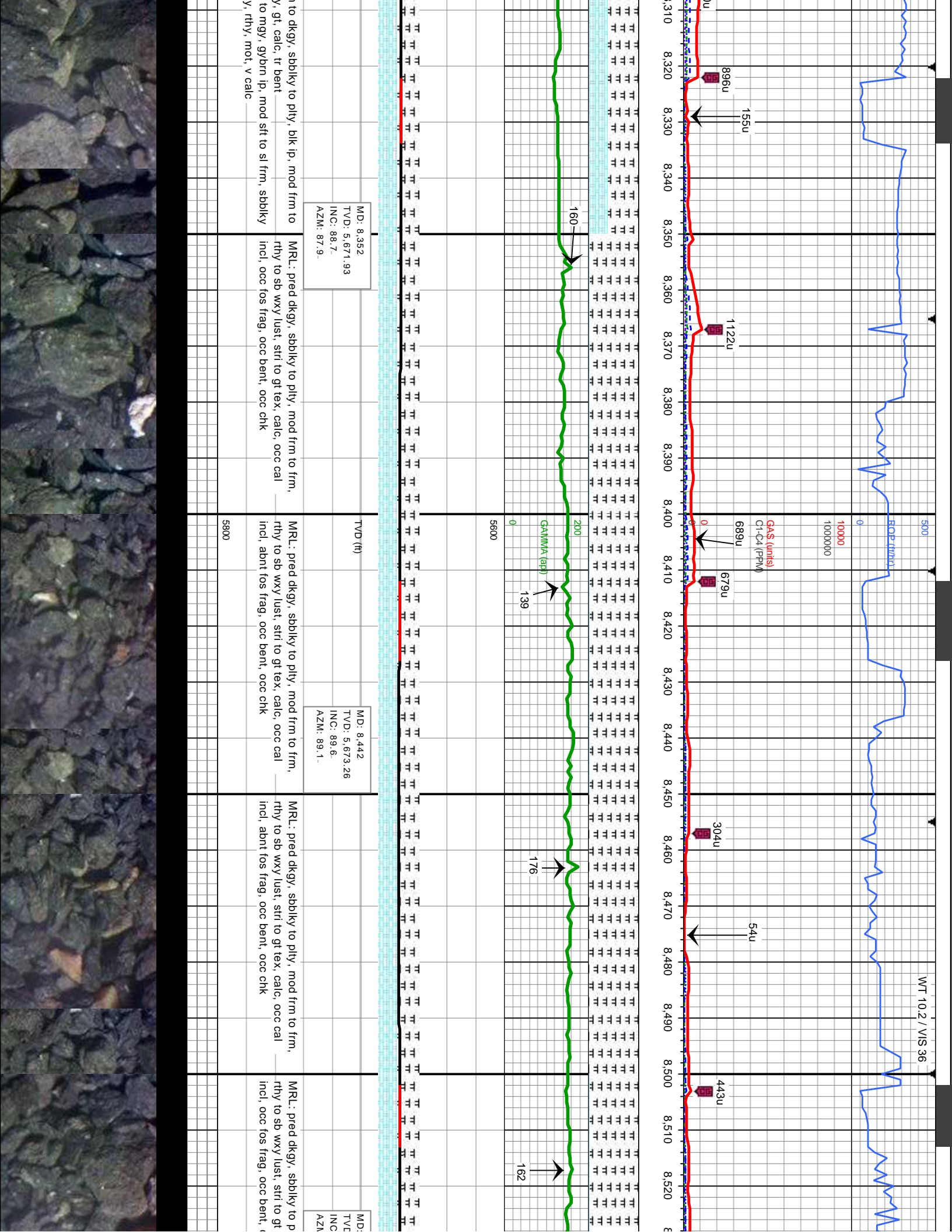


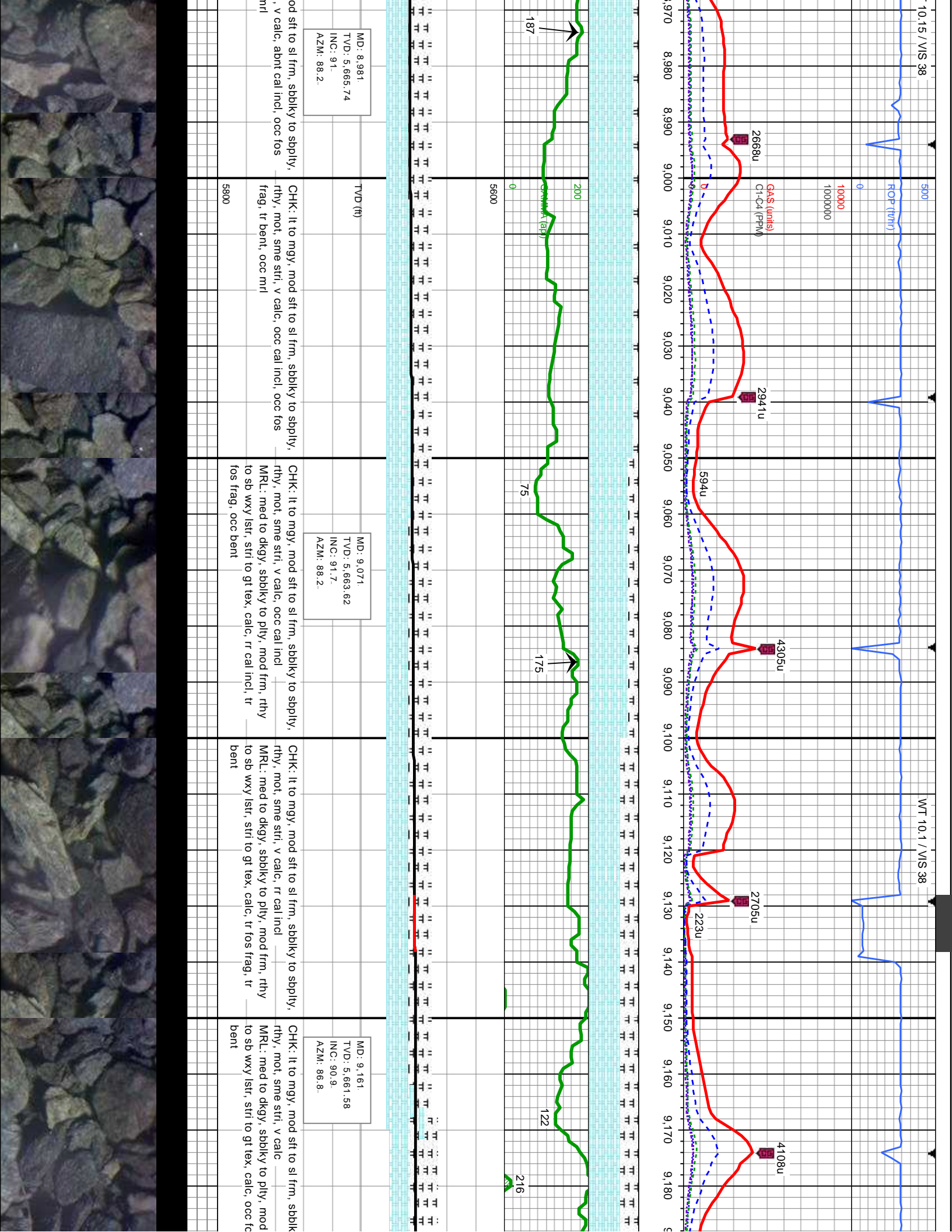


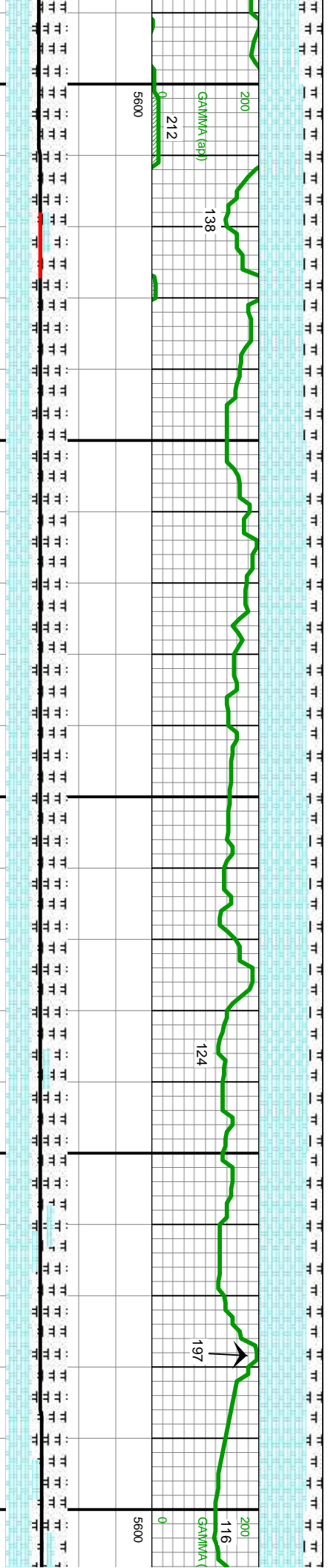
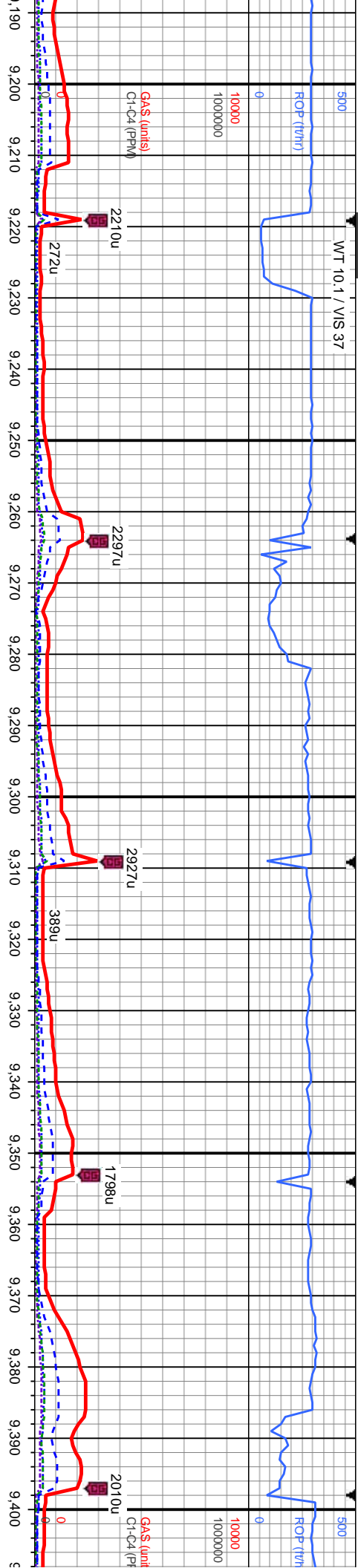




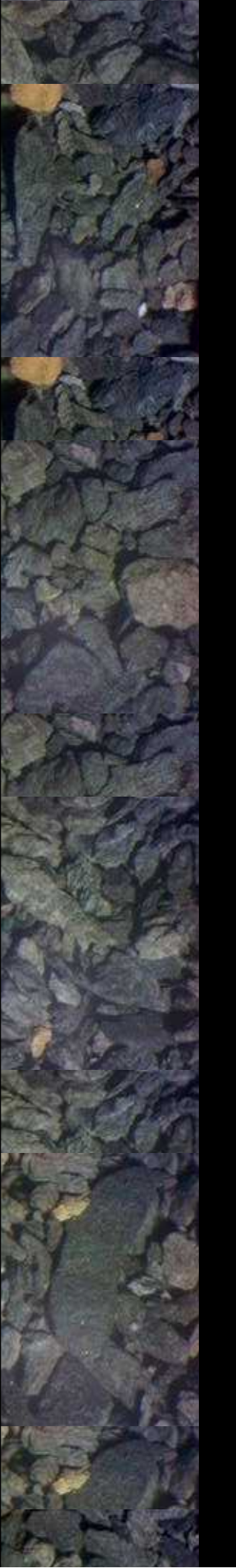




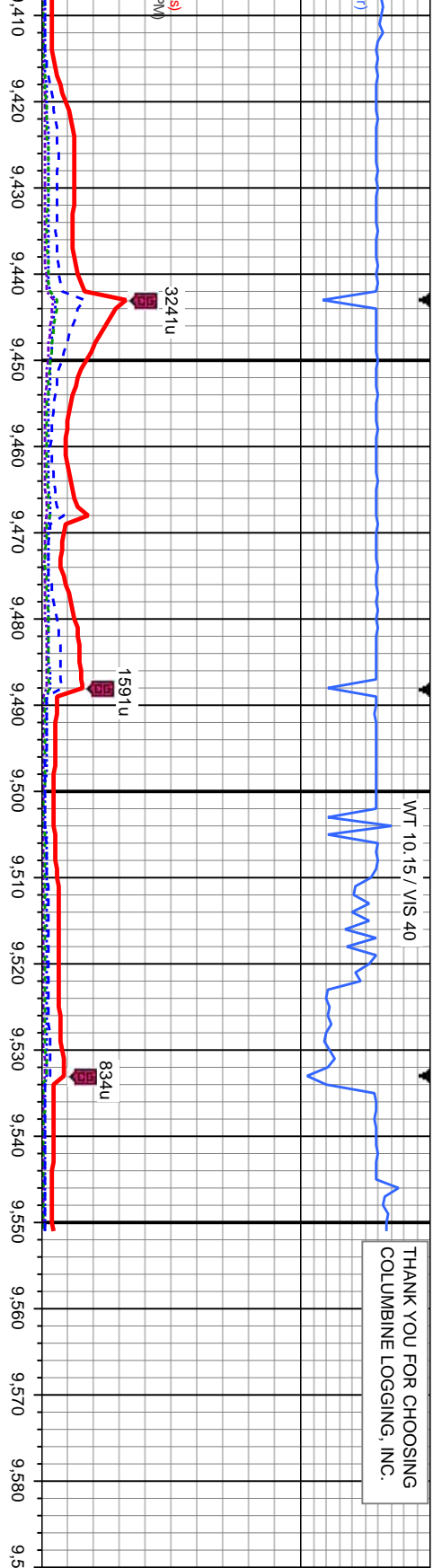




TVD (ft)	MD: 9.251 TVD: 5.661.11 INC: 89.7 AZM: 87.4	CHK: It to mgy, mod sft to sl frm, sbblky to sbply, rthy, mot, sme stri, v calc, rr cal incl
		MR: med to dky, sbblky to ply, mod frm, rthy to sb wxy lstr, stri to gt tex, calc, tr fos frag, occ bent
TVD (ft)	MD: 9.340 TVD: 5.661.11 INC: 90.3 AZM: 86.5	CHK: It to mgy, mod sft to sl frm, sbblky to sbply, rthy, mot, sme stri, v calc, rr cal incl
		MR: med to dky, sbblky to ply, mod frm, rthy to sb wxy lstr, stri to gt tex, calc, tr fos frag, occ bent
TVD (ft)		CHK: It to mgy, mod sft to sl frm, sbblky to sbply, rthy, mot, sme stri, v calc, rr cal incl
		MR: med to dky, sbblky to ply, mod frm, rthy to sb wxy lstr, stri to gt tex, calc, tr fos frag, occ bent



WT 10.15 / VIS 40



TD @ MD 9651'
12:46 MDT, 10/22/14

MD: 9,430.
TVD: 5,660.01
INC: 91.1
AZM: 85.8.

MD: 9,493
TVD: 5,658.75
INC: 91.2
AZM: 84.8.

MD: 9,551
TVD: 5,657.53
INC: 91.2
AZM: 84.8.

Bit Data

Bit #: 3
Depth In: 6,160 '
Depth Out: 9,551 '
Hours: 24 hrs
Avg Ft/Hr: 141.3 '/hr

CHK: It to mgy, mod sft to sl frm, sbbkly to sbply, rthy, mot, sme stri, v calc
MRL: med to dkgy, sbbkly to plty, mod frm, rthy to sb wxy lstr, stri to gt tex, calc, tr fos frag, occ bent
CHK: It to mgy, mod sft to sl frm, sbbkly to sbply, rthy, mot, sme stri, v calc

to mgy, mod sft to sl frm, sbbkly to sbply, out sme stri, v calc
med to dkgy, sbbkly to plty, mod frm, rthy to sb wxy lstr, stri to gt tex, calc, tr fos frag, tr

