



Scale: 5" / 100'  
Measured Depth Log

Well Name    Resolute E25-63HN

Location    SESE SEC26 T6N R65W

State    COLORADO

Country    USA

API Number    05-123-38158

Region    DENVER JULESBURG BASIN

Spud Date    5/30/2014

Surface Coordinates    350' FSL, 280' FEL

Lat/Long: 40.45065/-104.62175

County    WELD

Rig Number    USA

AFE #    1139762

Field    WATTENBERG

Drilling Completed    6/5/2014

Ground Elevation    4676'

K.B. Elevation    4692'

Logged Interval    6200'    To    11151'

Total Depth    11151'

Formation    TEEPEE BUTTES, SHARON SPRINGS, NIOBRARA

Type of Drilling Fluid    LSND

Company    NOBLE ENERGY INC

Address    1625 Broadway  
Denver, CO 80202

Name    EVAN HOWELL

Company    NOBLE ENERGY INC  
Address    1625 Broadway  
Denver, CO 80202

Wellsite Geologists:    GARY MYER  
WELLSITE  
LOG CONT



# Operator

NC.

## Geologist

NC.

## Other

RS, GABRIEL RUBIO

GEOLOGICAL SERVICES PROVIDED BY COLUMBINE LOGGING INC.

INJUES FROM FILE: Resolute E25-63HN Vert.mplot

## Rock Types

MARLSTONE



A diagram showing the texture of silty shale. It consists of a series of horizontal, slightly wavy lines representing the bedding. The lines are closely spaced, indicating a fine-grained texture. The overall appearance is that of a dense, layered material.

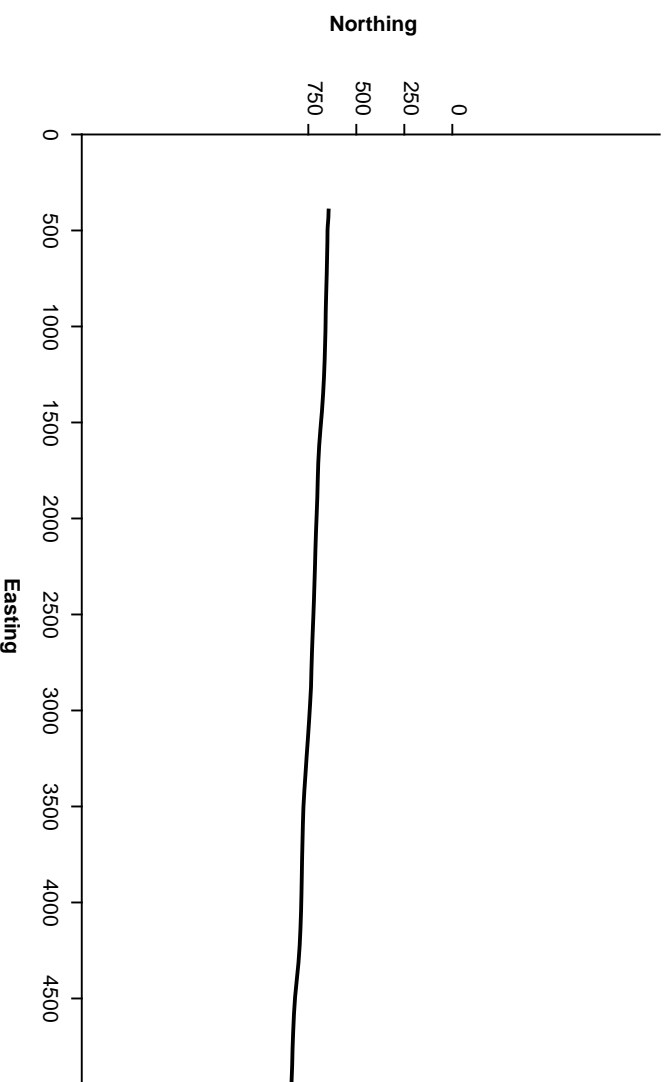
**SILTY SHALE**

# Engineering

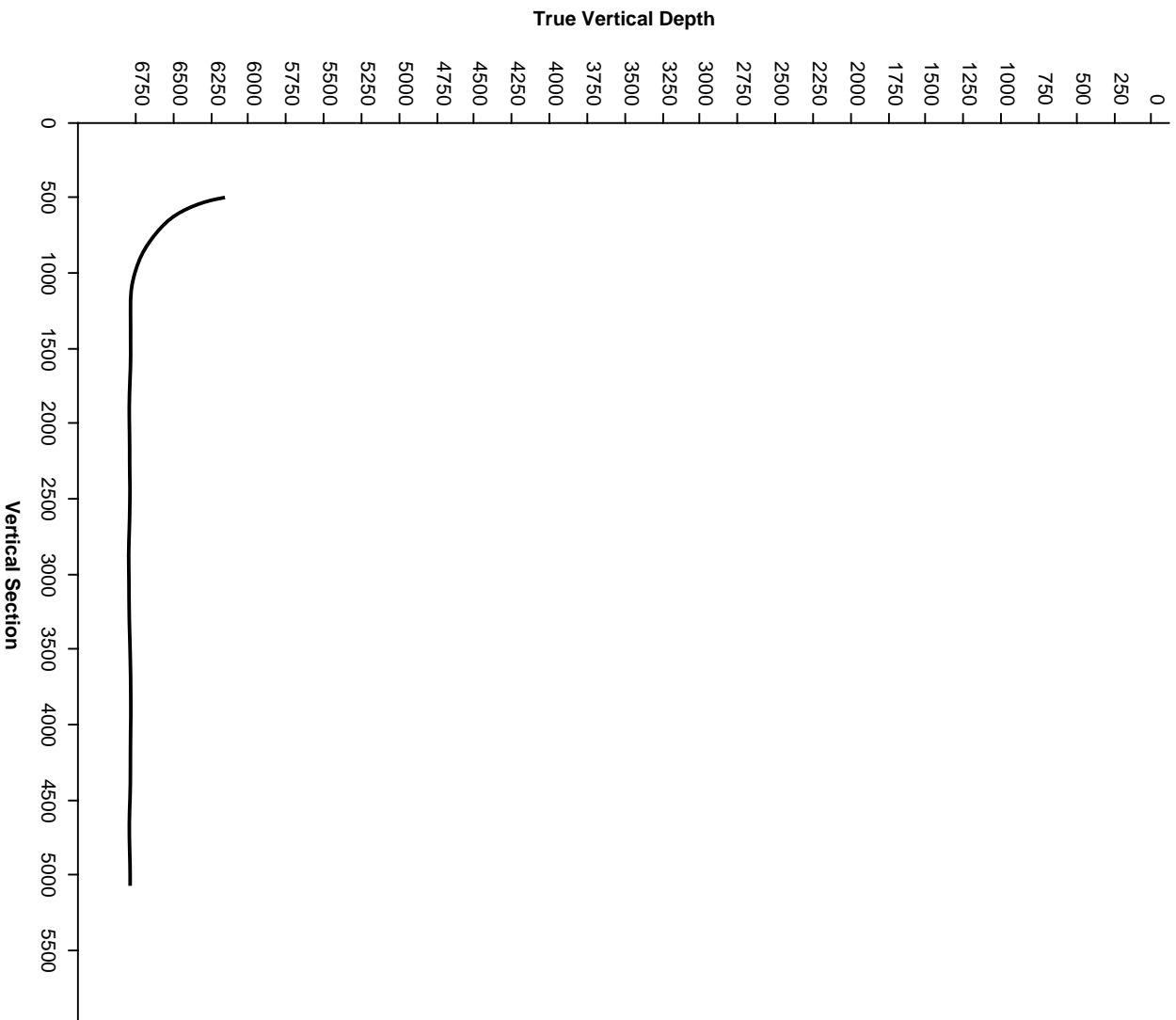
- BIT  
CONNECTION (DOWN)  
CONNECTION GAS  
CONNECTION GAS (LEFT)  
TRIP GAS (LEFT)  
CASING  
MIN DEPTH MN DEPTH

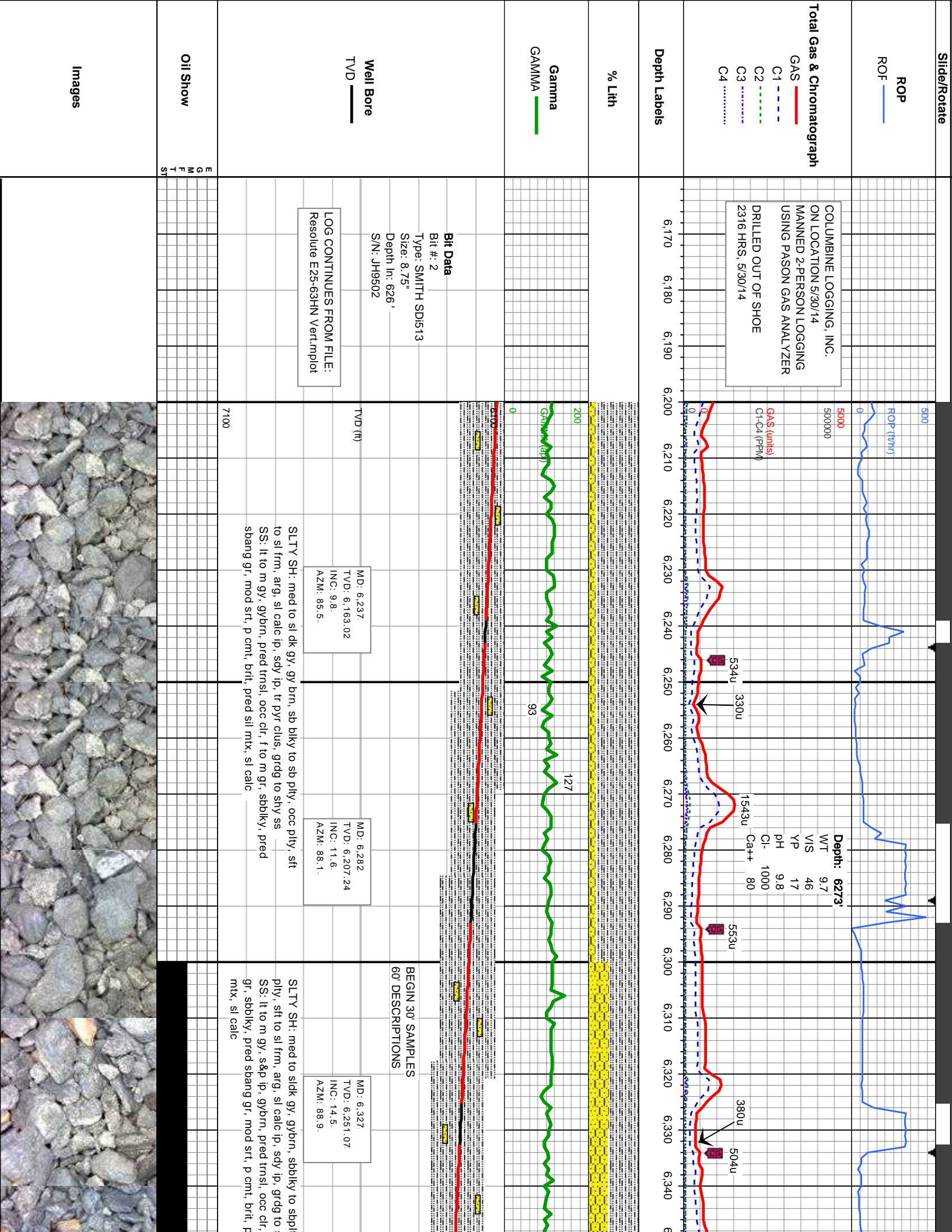
## Other Symbols

# Survey Plan

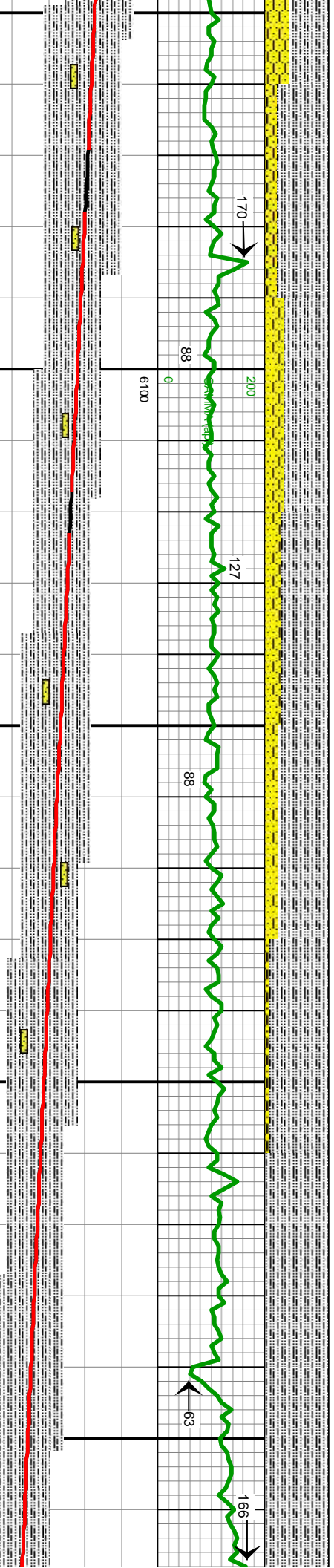
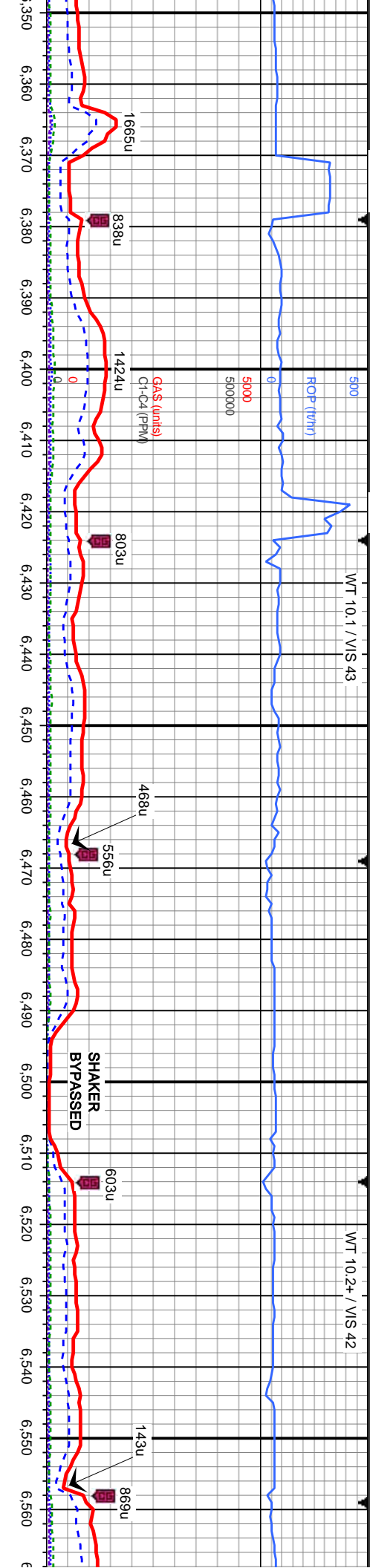


# Survey Elevation









MD: 6,372  
TVD: 6,294.28  
INC: 17.9  
AZM: 88

MD: 6,417  
TVD: 6,336.76  
INC: 20.6  
AZM: 86.3

MD: 6,462  
TVD: 6,378.54  
INC: 23  
AZM: 85.1

MD: 6,507  
TVD: 6,419.31  
INC: 27  
AZM: 85.3

MD: 6,552  
TVD: 6,458.72  
INC: 30.7  
AZM: 89

SLTY SH: med to sldk gy, gybrn, sbblky to sbply, occ  
ply, sft to sl frm, arg, sl calc ip, sdy ip, tr bent, grdg to  
shy ss  
SS: lt to m gy, gybrn, pred trnsi, occ clr, f to m gr,  
sbblky, pred sbang gr, mod srt, p cmt, brit, pred sil mtX,  
sl calc

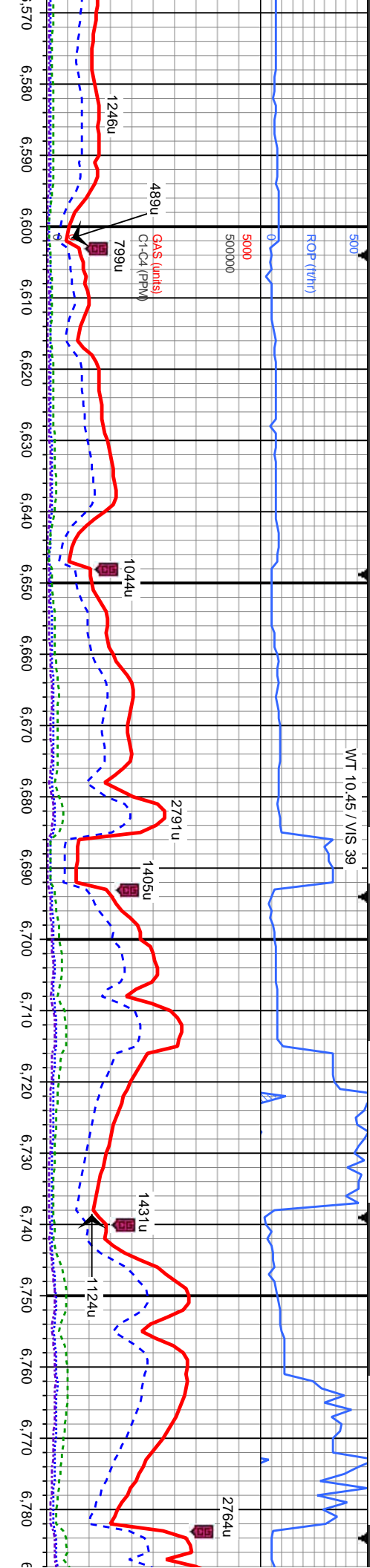
SLTY SH: med to sldk gy, gybrn, sbblky to sbply, occ  
ply, sft to sl frm, arg, sl calc ip, sdy ip, grdg to shy ss  
SS: lt to m gy, gybrn, pred trnsi, occ clr, f to m gr,  
sbblky, pred sbang gr, mod srt, p cmt, brit, pred sil mtX,  
sl calc

SLTY SH: med to dk gy, gybrn, sbblky to sbply, occ  
ply, sft to sl frm, arg, sl calc ip, sl sdy ip, grdg to shy  
ss, occ to tr f to m gr ss

SLTY SH: pred dk gy, sn  
frm, arg, sl calc ip, occ b







MD: 6.597  
TVD: 6.496.37  
INC: 35.7.  
AZM: 89.7.

MD: 6.642  
TVD: 6.531.6  
INC: 41.2.  
AZM: 89.

MD: 6.687.  
TVD: 6.564.04  
INC: 46.5.  
AZM: 88.9.

MD: 6.732.  
TVD: 6.594.26  
INC: 49.1.  
AZM: 89.

MD: 6.777.  
TVD: 6.622.88  
INC: 51.9.  
AZM: 88.4.

SHARON SPRINGS  
MARKER  
~6752 MD, ~6607 TVD

NOBRAR  
LOGGER  
6776 MD,

TVD (ft)

SLTY SH: pred dk gy, sme mgy, sbblky to sbply, occ  
ply, sft to sl frm, arg, sl calc ip

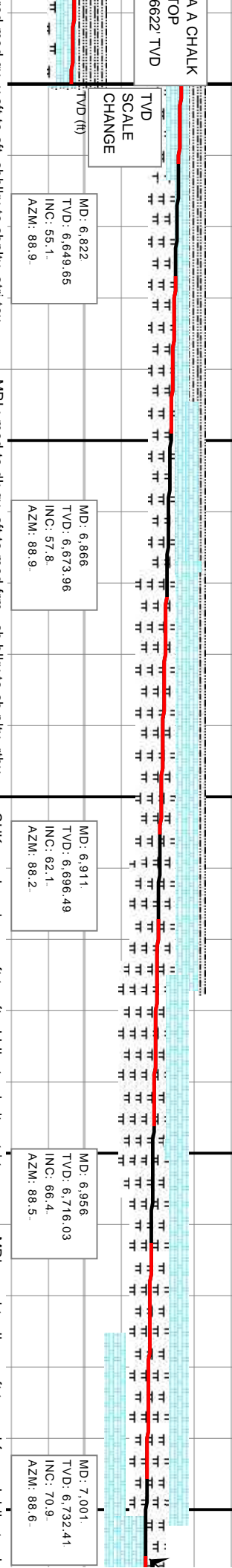
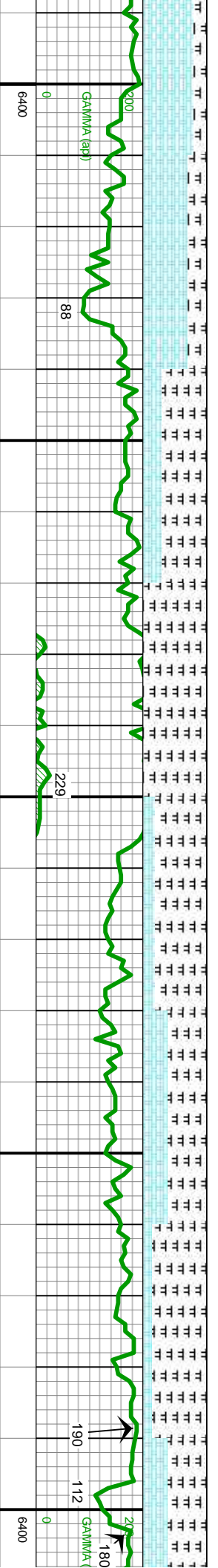
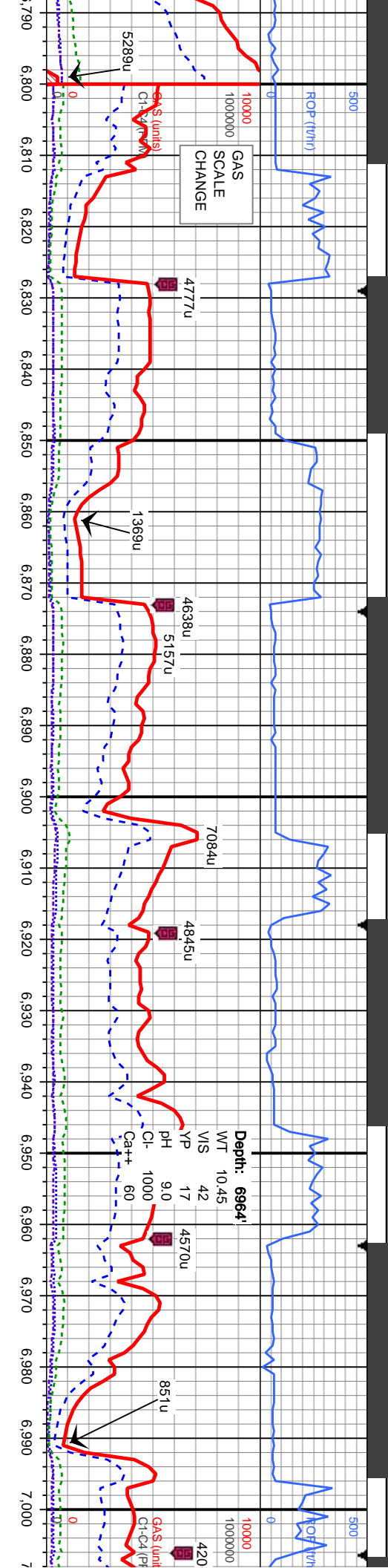
SLTY SH: pred dk gy, sme mgy, sbblky to sbply, occ  
ply, sft to sl frm, arg, sl calc ip, occ (6690) to scat  
(6720)bent

SLTY SH: pred dk gy, sme mgy, sbblky to sbply, occ  
ply, sft to sl frm, arg, sl calc ip, abnt  
MRL: m to dkgy, sft to mod frm, sb bly to sb ply, rthy  
lstr, arg ip, org/calc mtx, v calc, occ mgy chk

CHK: p  
rthy lstr  
MRL: n  
lstr, gt,







med gy, v sft to sft, sbblky to sbply, stri tex, sl arg, v calc

med to dk gy, sft to mod frm, sb blky to sb ply, rthy

arg ip, org/calc mix, v calc, tr sily sh, occ bent

MRL: med to dk gy, sft to mod frm, sb blky to sb ply, rthy

to gsy lstr, gt, arg ip, org/calc mix, v calc, scat bent

CHK: pred med gy, v sft to sft, sbblky to sbply, stri tex, rthy lstr, sl arg, v calc

MRL: med to dk gy, sft to mod frm, sb blky to sb ply, rthy

lstr, gt, arg ip, org/calc mix, v calc, tr bent

CHK: pred med gy, v sft to sft, sbblky to sbply, s

lstr, gt, arg ip, org/calc mix, v calc, tr bent

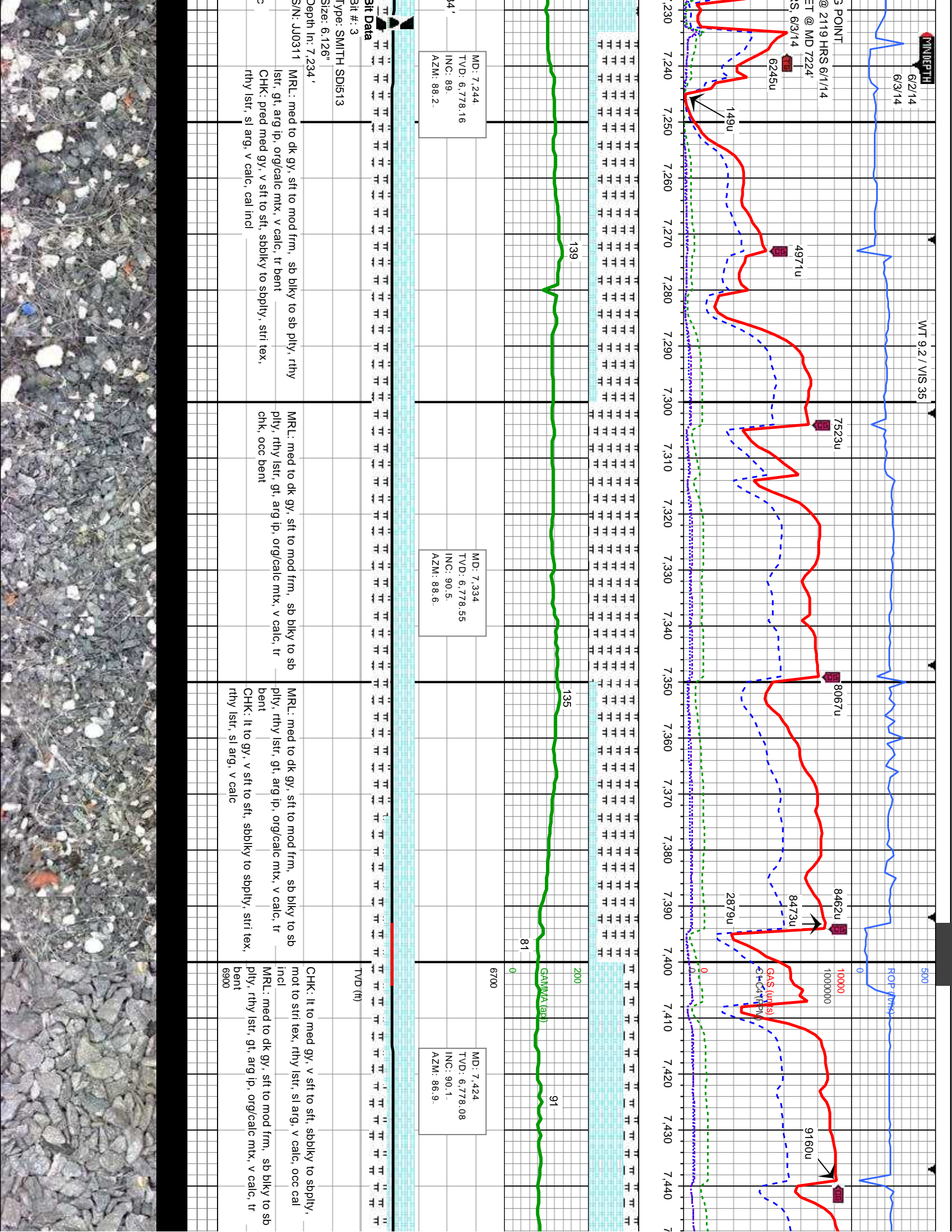
7400

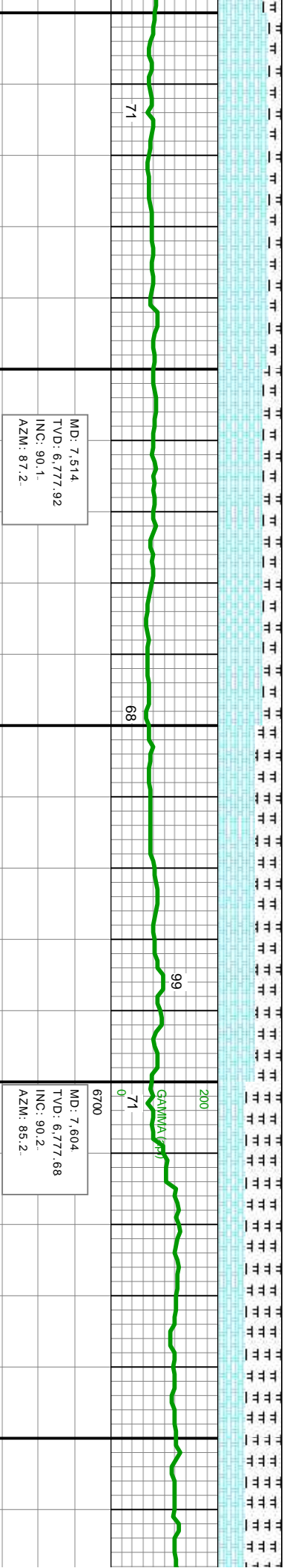
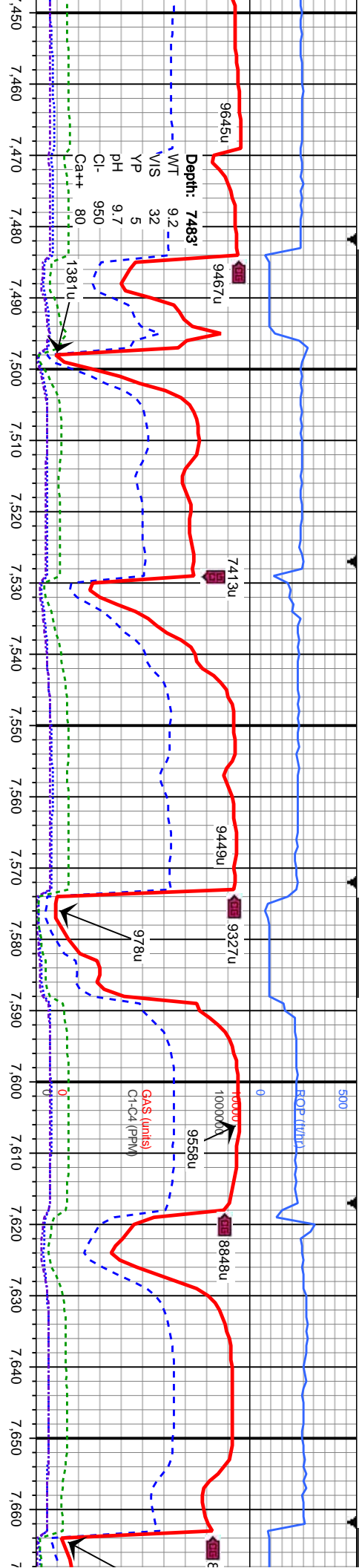








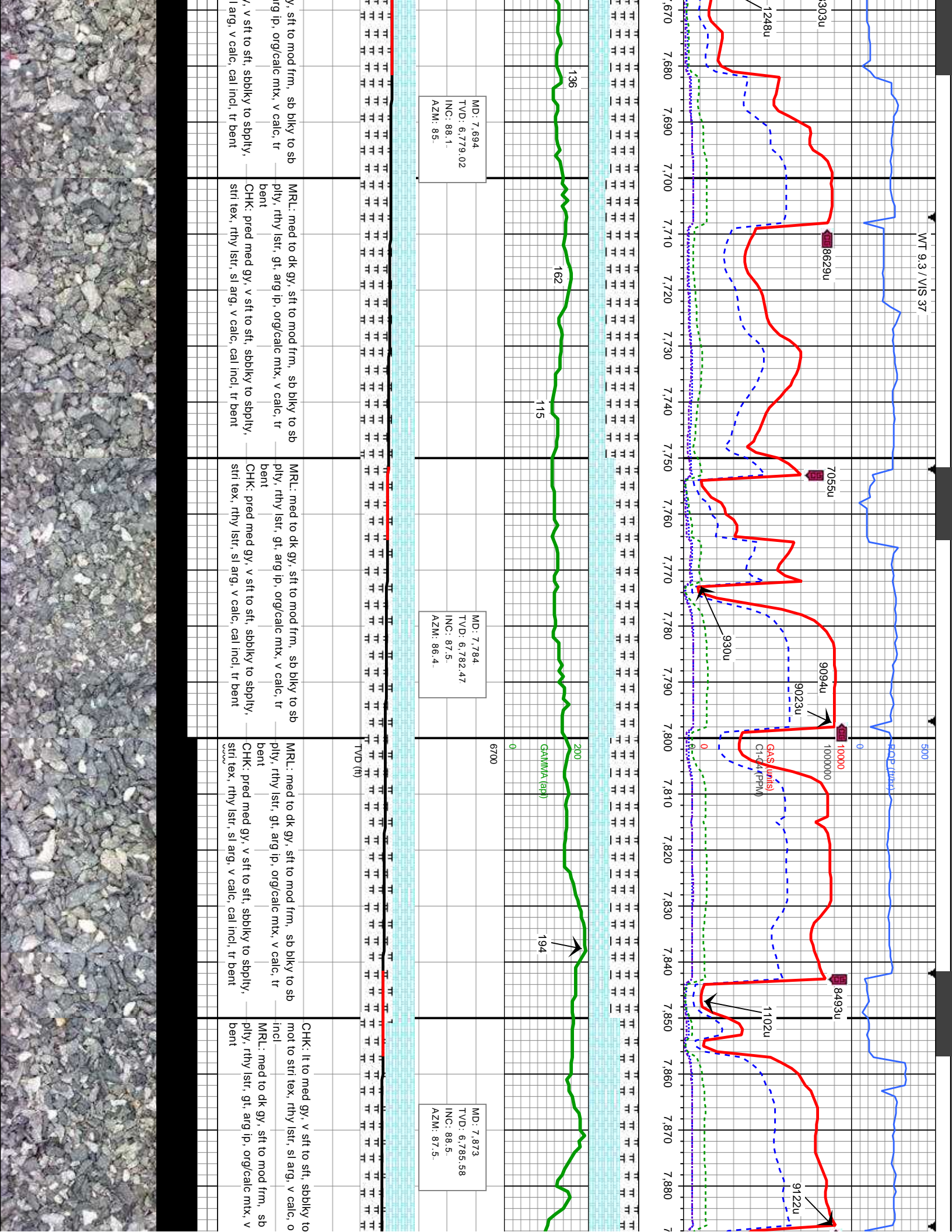




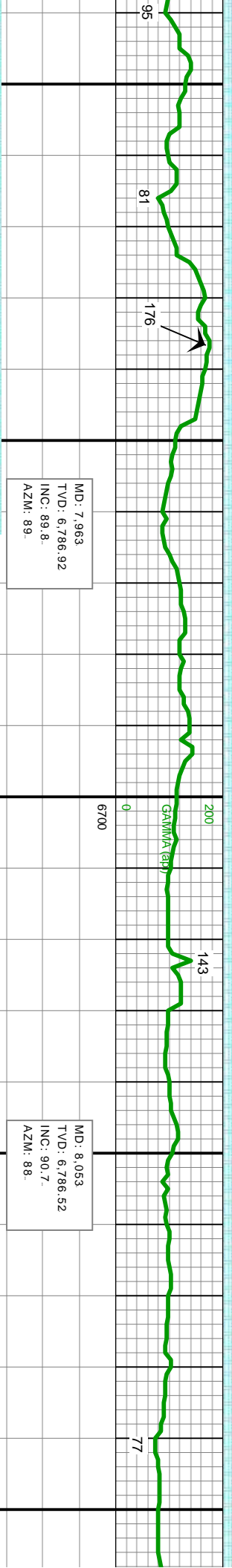
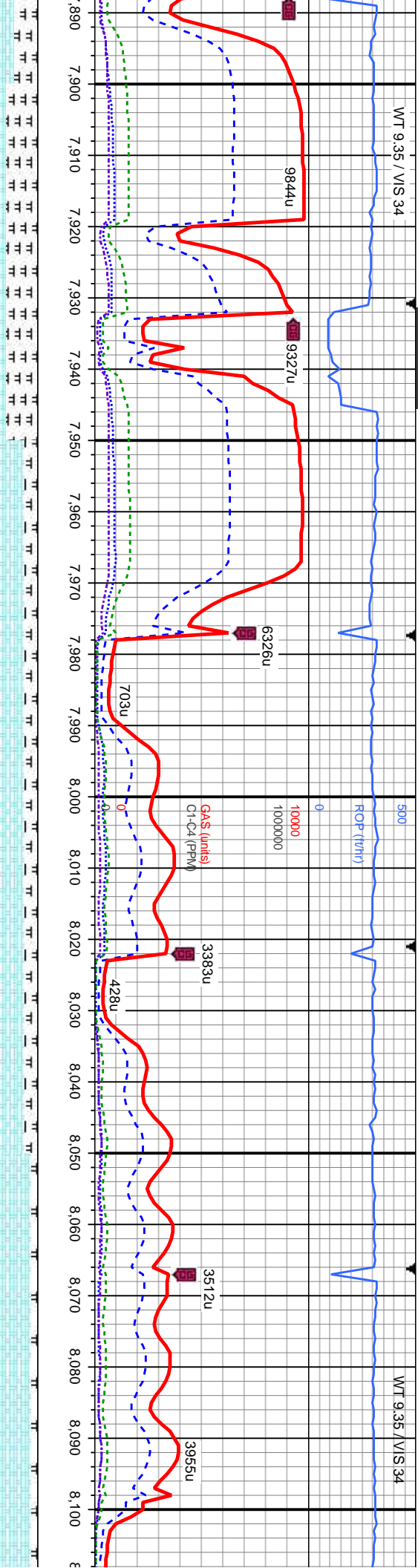
71	MD: 7.514 TVD: 6.777.92 INC: 90.1. AZM: 87.2	6700	MD: 7.604 TVD: 6.777.68 INC: 90.2. AZM: 85.2.	6900
CHK: It to med gy, v sft to sft, sbblky to sbply, mot to stri tex, rthy lstr, sl arg, v calc, occ cal incl	CHK: It to med gy, v sft to sft, sbblky to sbply, mot to stri tex, rthy lstr, sl arg, v calc, occ cal incl	CHK: It to med gy, v sft to sft, sbblky to sbply, mot to stri tex, rthy lstr, sl arg, v calc, occ cal incl	MR: med to dk gy, sft to mod frm, sb blky to sb ply, rthy lstr, gt, arg ip, org/calc mt, v calc	MR: med to dk gy, sft to mod frm, sb blky to sb ply, rthy lstr, gt, arg ip, org/calc mt, v calc







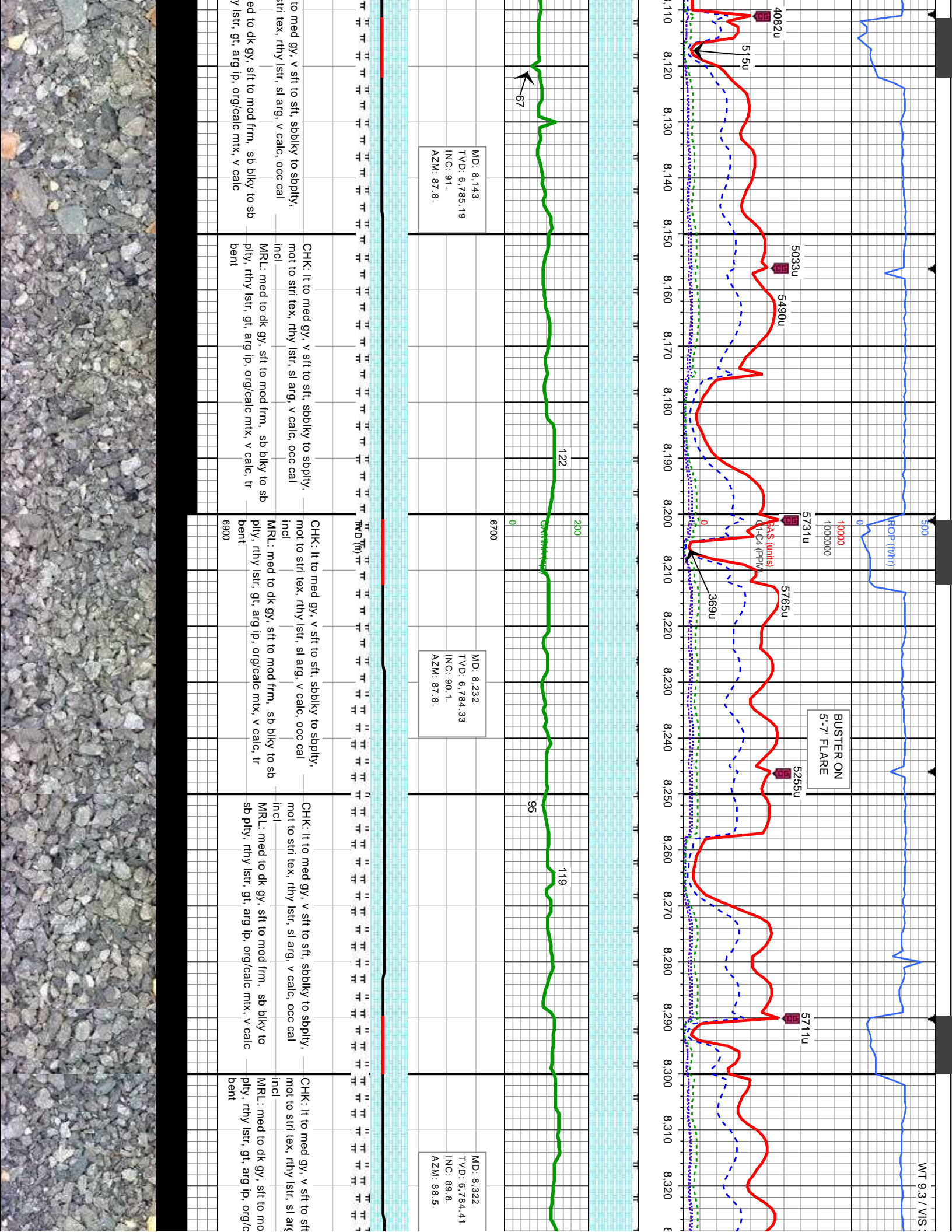




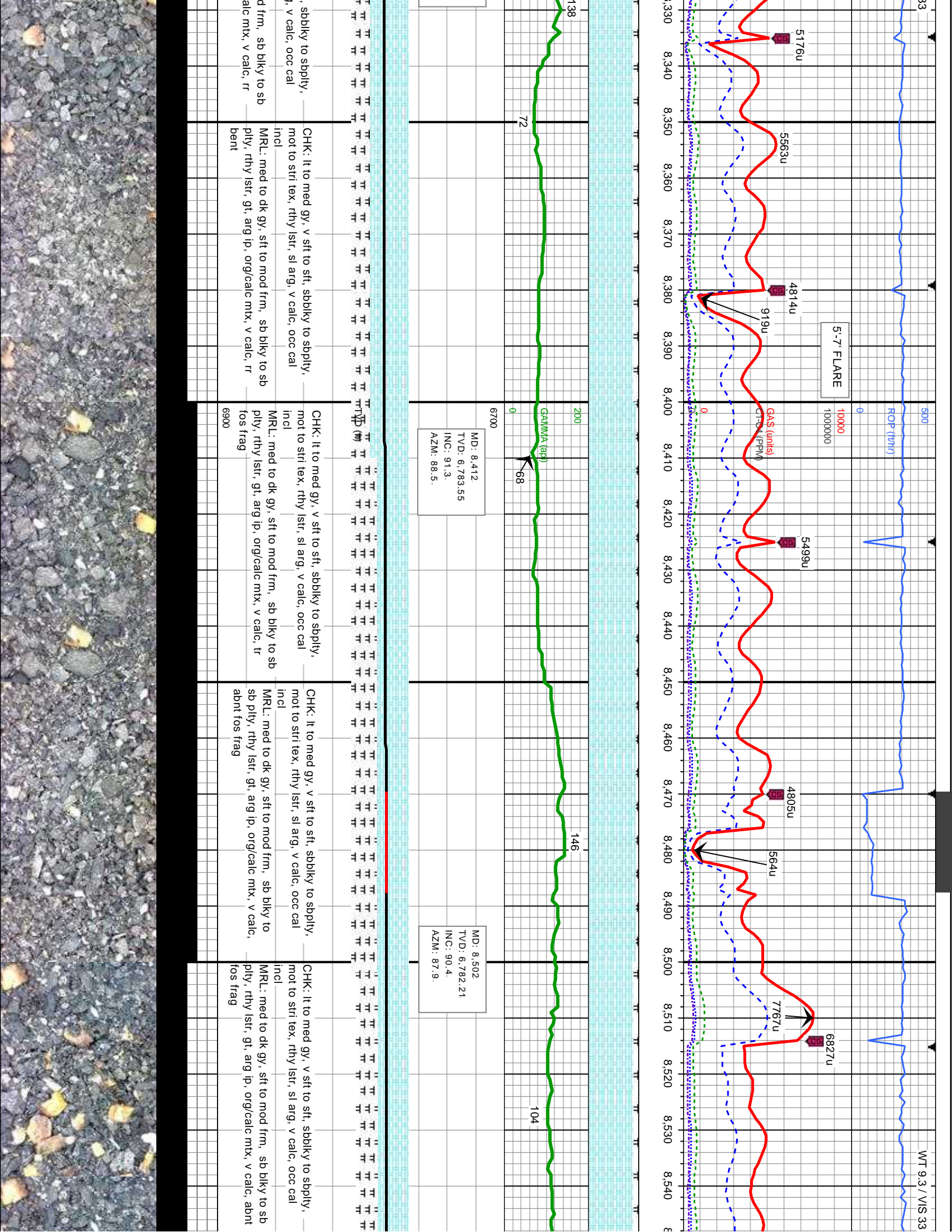
sbply, — occ cal	CHK: It to med gy, v sft to sft, sbply to sbply, mot to str tex, rthy lstr, sl arg, v calc, occ cal	CHK: It to med gy, v sft to sft, sbply to sbply, mot to str tex, rthy lstr, sl arg, v calc, occ cal	CHK: It to med gy, v sft to sft, sbply to sbply, mot to str tex, rthy lstr, sl arg, v calc, occ cal	CHK: It to med gy, v sft to sft, sbply to sbply, mot to str tex, rthy lstr, sl arg, v calc, occ cal
sbply to sb calc, abnt	MRL: med to dk gy, sft to mod frm, sb bly to sb ply, rthy lstr, gt, arg ip, org/calc mtx, v calc, tr bent	MRL: med to dk gy, sft to mod frm, sb bly to sb ply, rthy lstr, gt, arg ip, org/calc mtx, v calc, rr bent	MRL: med to dk gy, sft to mod frm, sb bly to sb ply, rthy lstr, gt, arg ip, org/calc mtx, v calc	MRL: med to dk gy, sft to mod frm, sb bly to sb ply, rthy lstr, gt, arg ip, org/calc mtx, v calc



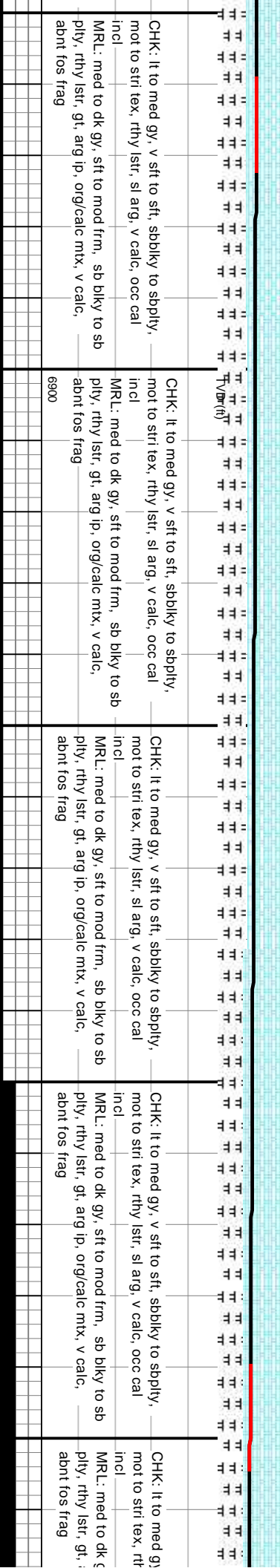
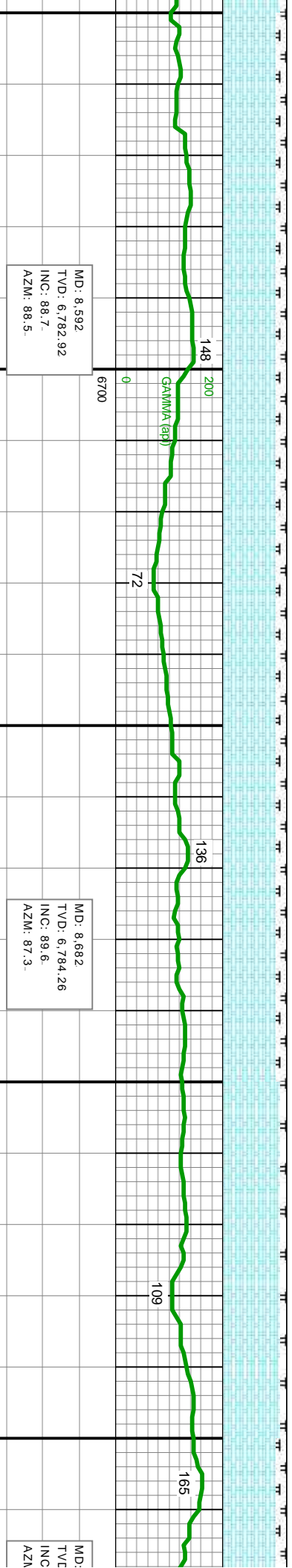
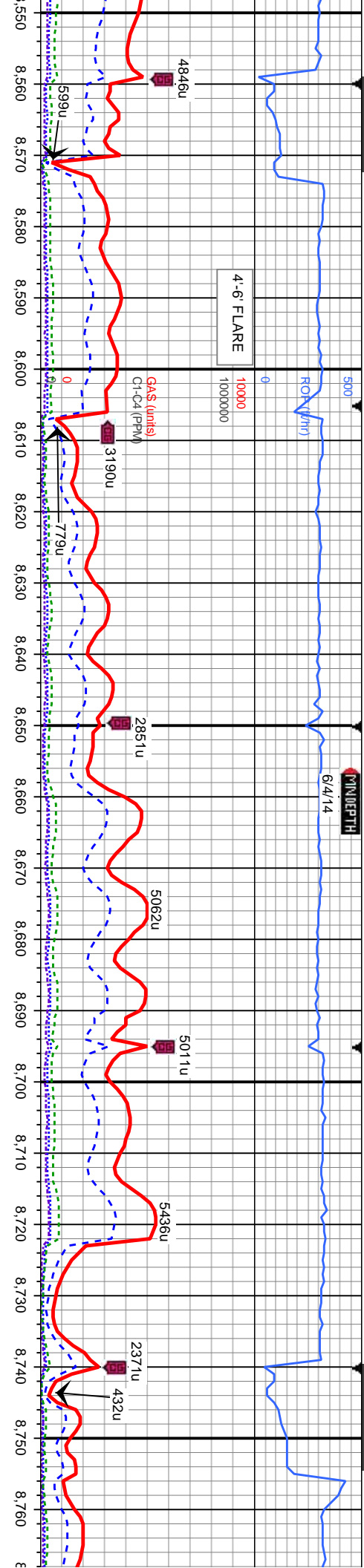




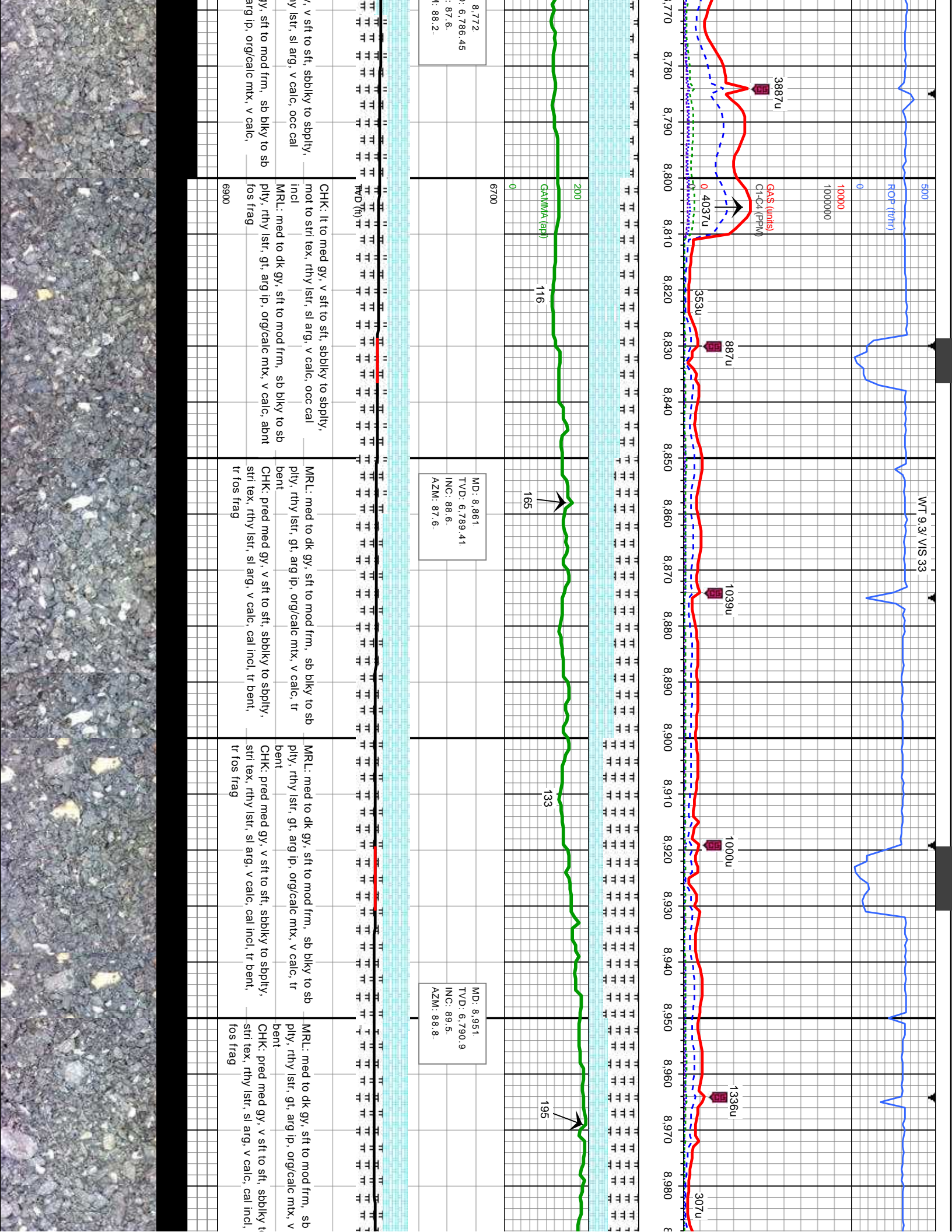




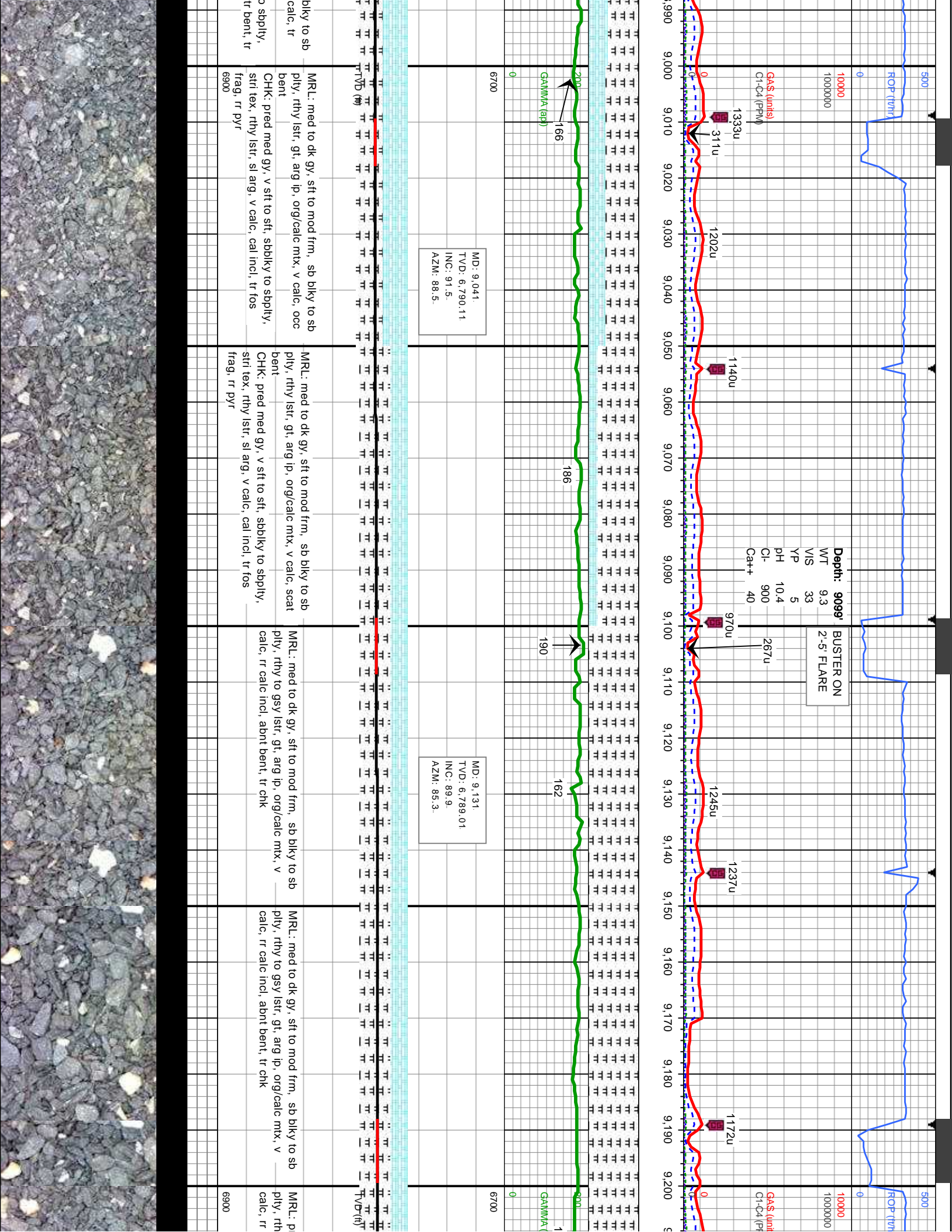




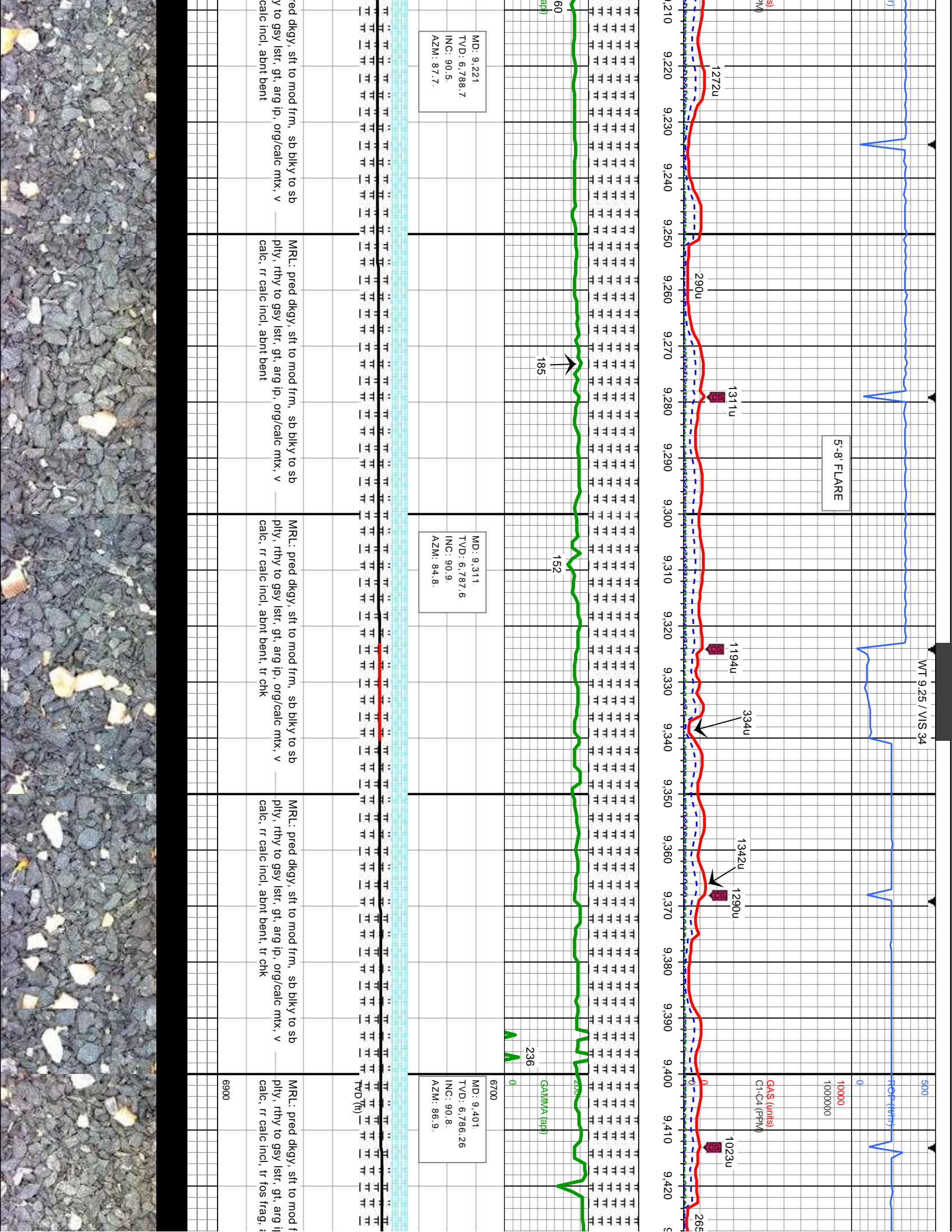


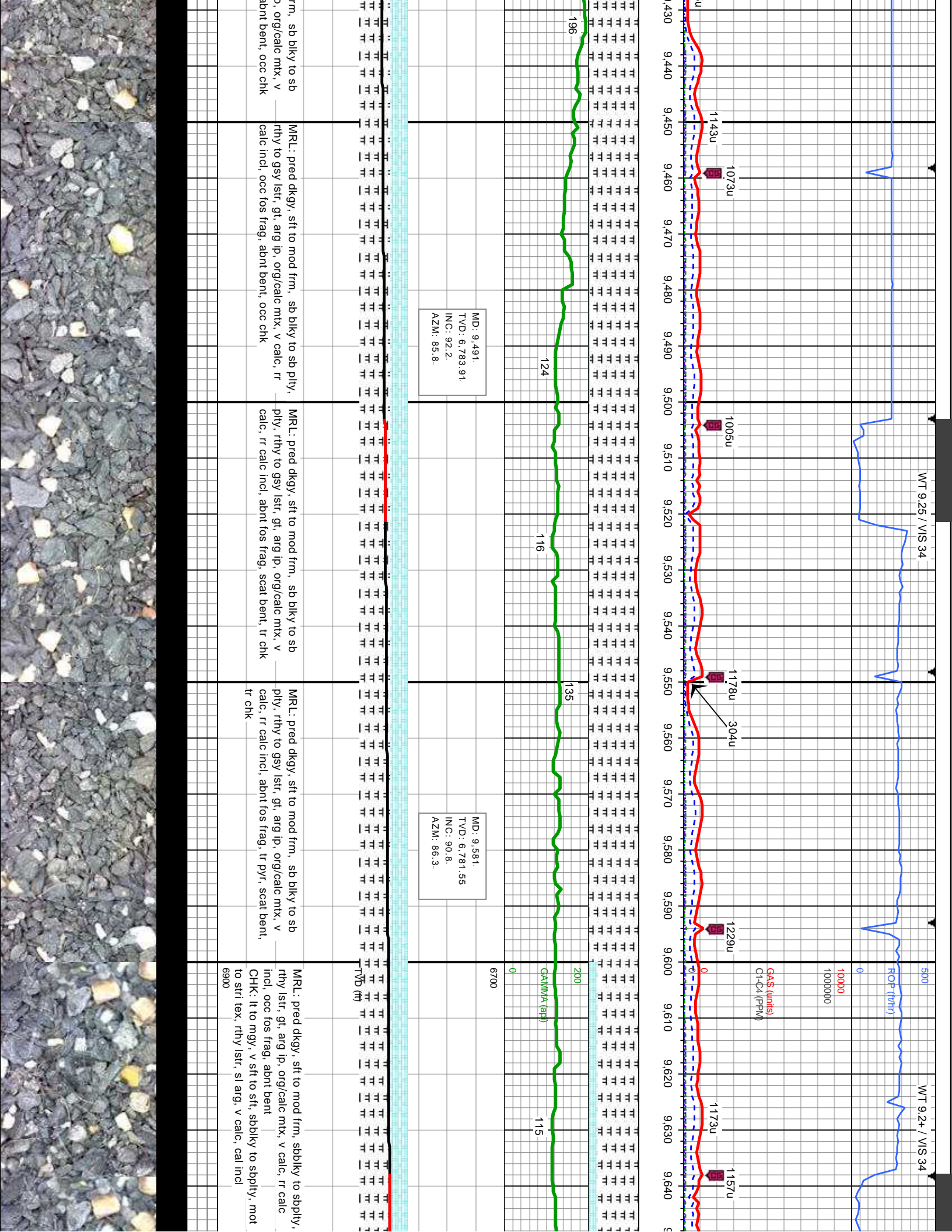




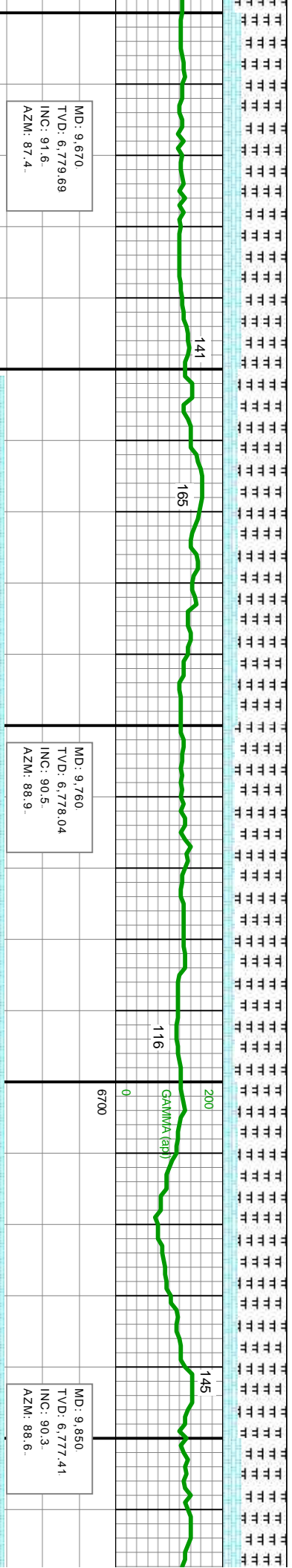
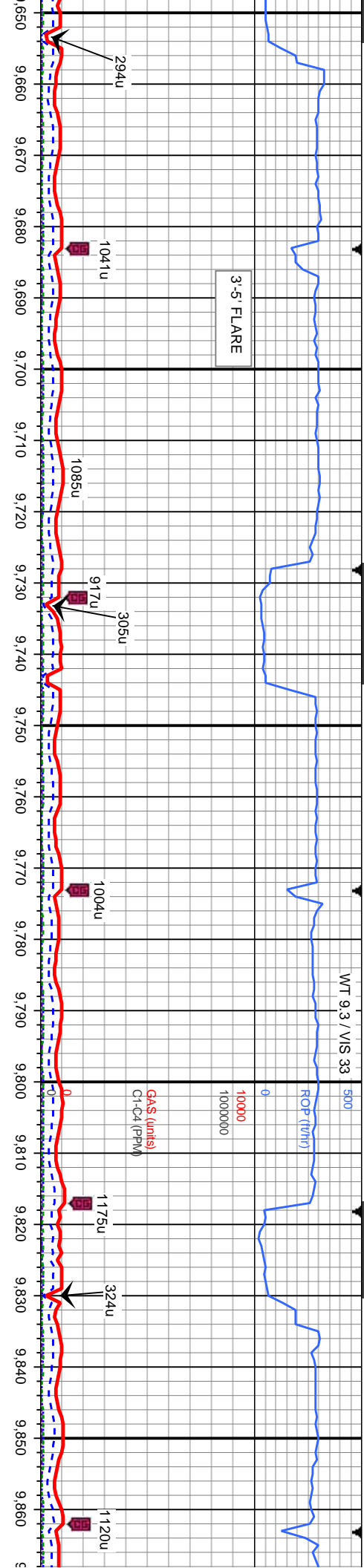












MD: 9.670. TVD: 6,779.69 INC: 91.6. AZM: 87.4.		MD: 9.760. TVD: 6,778.04 INC: 90.5. AZM: 88.9.		MD: 9.850. TVD: 6,777.41 INC: 90.3. AZM: 88.6.	
MRL: pred dkgy, sft to mod frm, sbblky to sbply, rthy lstr, gt, arg lp, org/calc mtx, v calc, rr calc incl, occ fos frag, abnt bent	MRL: pred dkgy, sft to mod frm, sbblky to sbply, rthy lstr, gt, arg lp, org/calc mtx, v calc, rr calc incl, abnt fos frag, abnt bent	MRL: pred dkgy, sft to mod frm, sbblky to sbply, rthy lstr, gt, arg lp, org/calc mtx, v calc, rr calc incl, abnt fos frag, abnt bent	MRL: pred dkgy, sft to mod frm, sbblky to sbply, rthy lstr, gt, arg lp, org/calc mtx, v calc, rr calc incl, abnt fos frag, scat bent	MRL: pred dkgy, sft to mod frm, sbblky to sbply, rthy lstr, gt, arg lp incl, abnt fos frag	MRL: pred dkgy, sft to mod frm, sbblky to sbply, rthy lstr, gt, arg lp incl, abnt fos frag
CHK: It to mgy, v sft to sft, sbblky to sbply, mot to str tex, rthy lstr, sl arg, v calc, cal incl	CHK: It to mgy, v sft to sft, sbblky to sbply, mot to str tex, rthy lstr, sl arg, v calc	CHK: It to mgy, v sft to sft, sbblky to sbply, mot to str tex, rthy lstr, sl arg, v calc	CHK: It to mgy, v sft to sft, sbblky to sbply, mot to str tex, rthy lstr, sl arg, v calc, occ calc incl	CHK: It to mgy, v sft to sft, sbblky to sbply, mot to str tex, rthy lstr, sl arg, v calc, occ calc incl	CHK: It to mgy, v sft to sft, sbblky to sbply, mot to str tex, rthy lstr, sl arg, v calc, occ calc incl



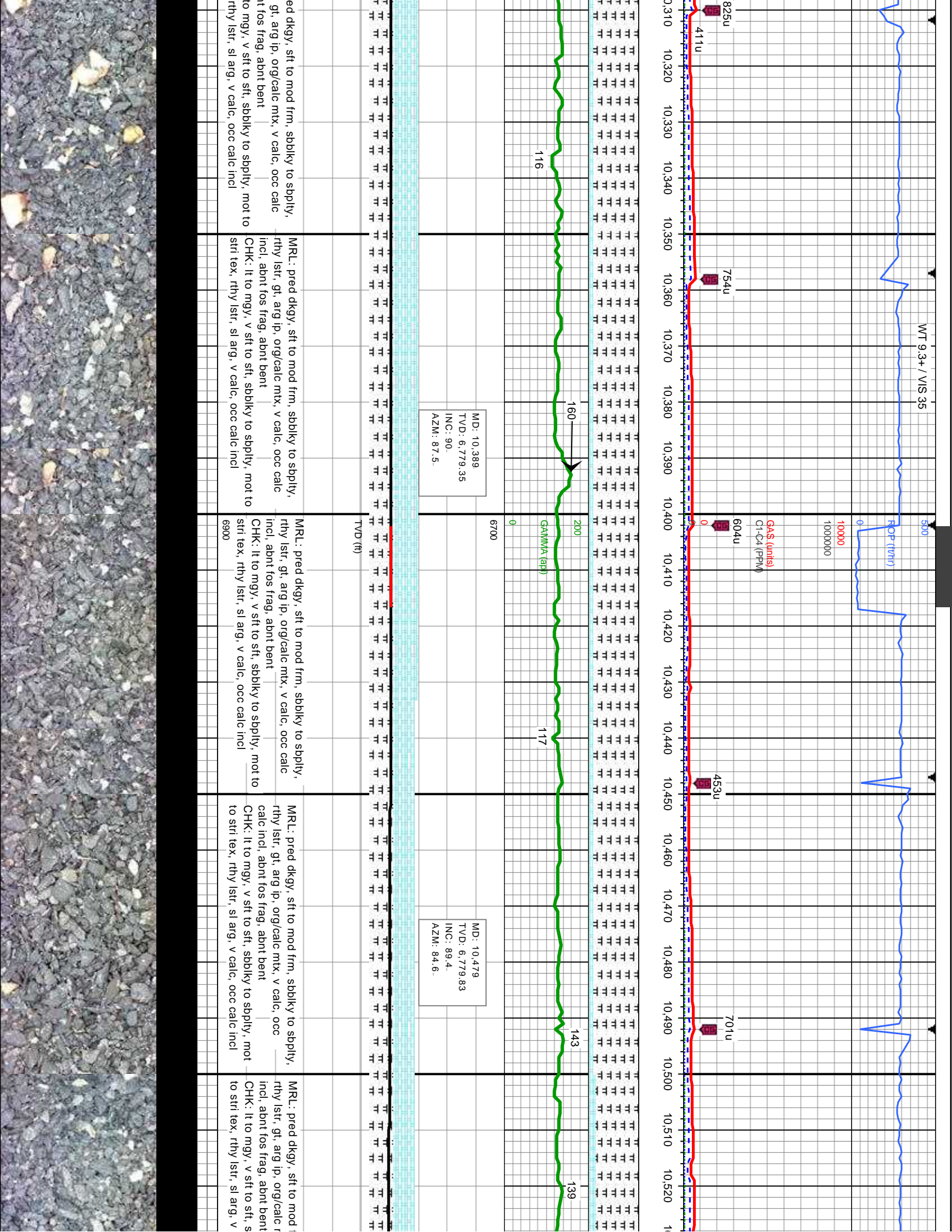


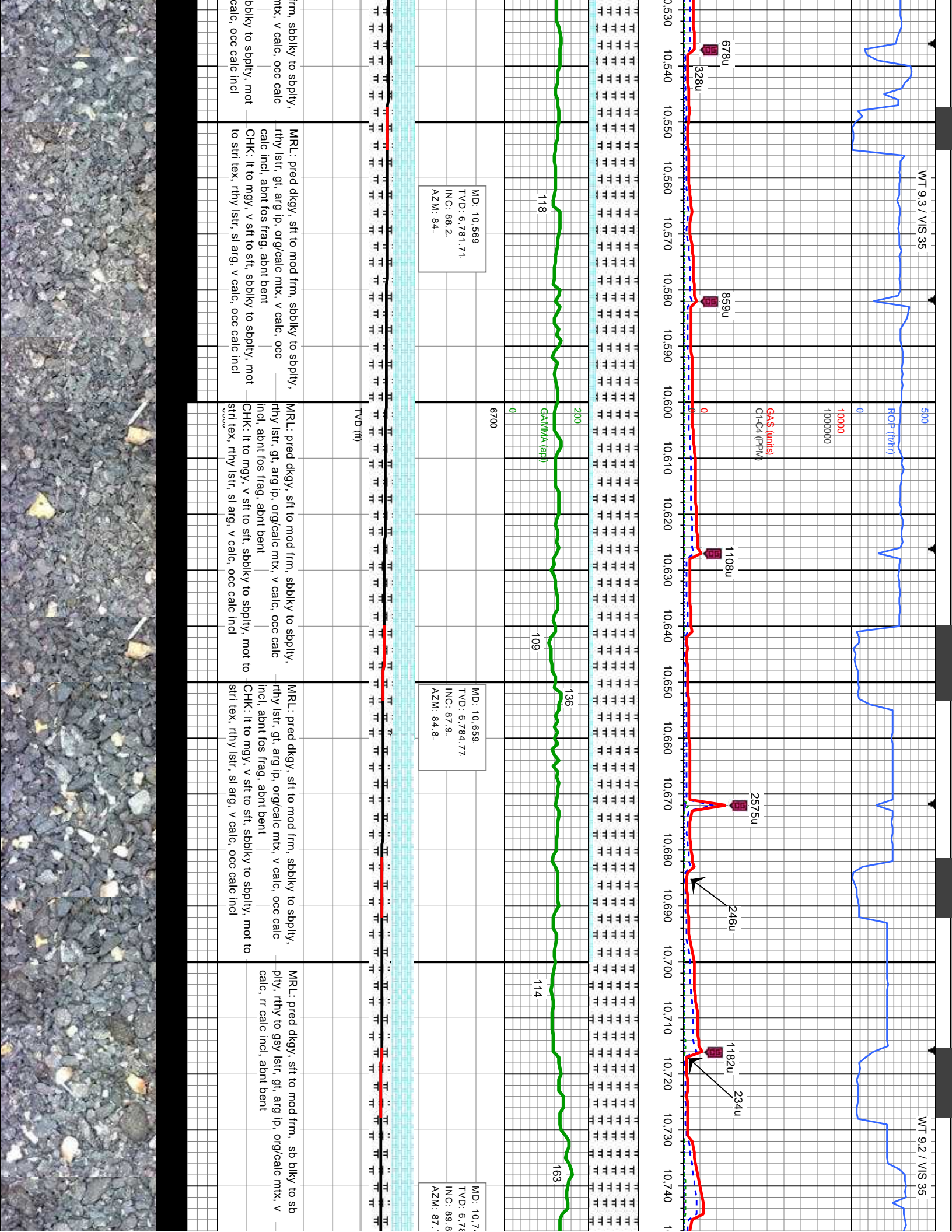




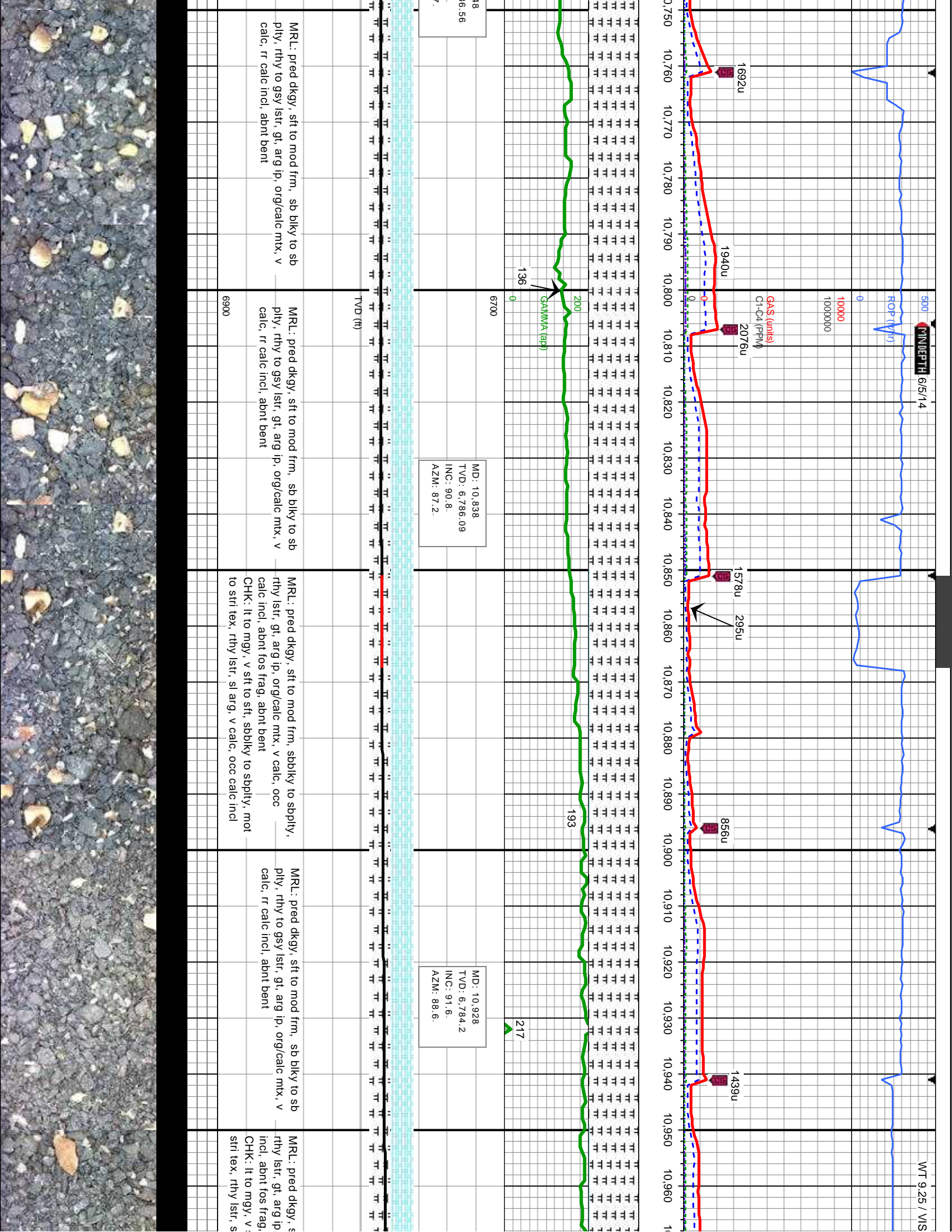


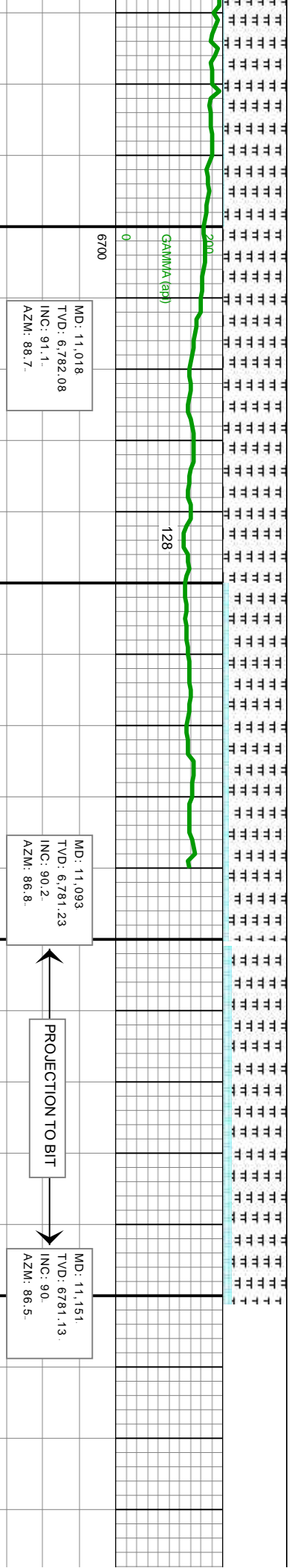
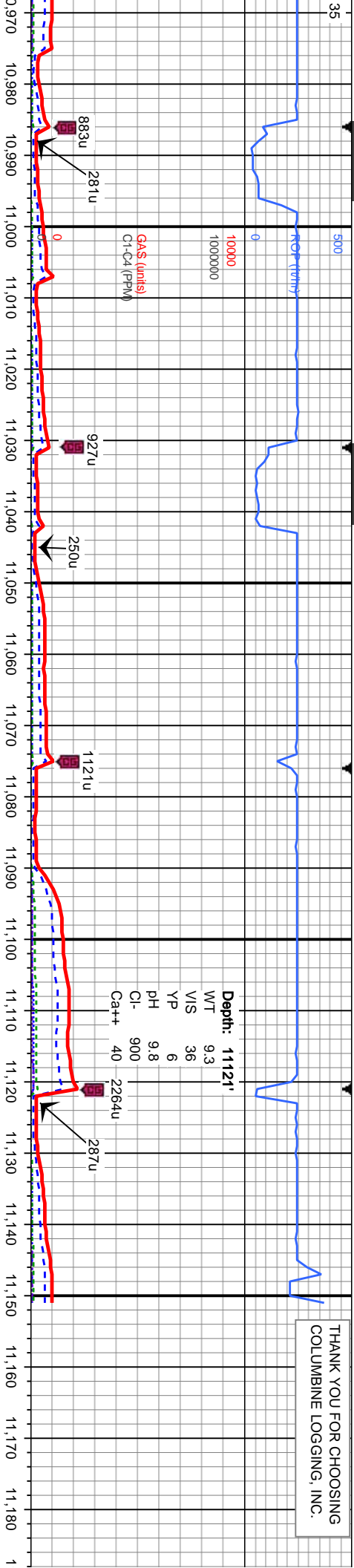












MD: 11,018  
TVD: 6,782.08  
INC: 91.1  
AZM: 88.7

MD: 11,093  
TVD: 6,781.23  
INC: 90.2  
AZM: 86.8

MD: 11,151  
TVD: 6,781.13  
INC: 90  
AZM: 86.5

PROJECTION TO BIT

TD: 11151' MD  
@ 0316 HRS 6/5/14

Bit Data  
Bit #: 3  
Depth Out: 11,151'  
Hours: 45 hrs

MRL: pred dkgy, sft to mod frm, sb bly to sb  
rthy lstr, gt, arg ip, org/calc mtx, v  
calc, rr calc incl, abnt bent  
CHK: It to mgy, v sft to sft, sbly to sbply, mot  
to stri tex, rthy lstr, sl arg, v calc, occ calc incl

MRL: pred dkgy, sft to mod frm, sbly to sbply,  
rthy lstr, gt, arg ip, org/calc mtx, v calc, occ  
calc incl, abnt fos frag, abnt bent  
CHK: It to mgy, v sft to sft, sbly to sbply, mot  
to stri tex, rthy lstr, sl arg, v calc, occ calc incl

MRL: pred dkgy, sft to mod frm, sbly to sbply,  
rthy lstr, gt, arg ip, org/calc mtx, v calc, occ  
calc incl, tr pyr, abnt fos frag, abnt bent  
CHK: It to mgy, v sft to sft, sbly to sbply, mot  
to stri tex, rthy lstr, sl arg, v calc, occ calc incl

