



Scale: 5" / 100'
Measured Depth Log

Well Name Rio LC 12-368HN

Location Section 6, T1S, R67W

State COLORADO

Country UNITED STATES

API Number 050011046600

Geographic Region DJ BASIN

County ADAMS

Rig Number PRECISION 460

AFF # 19DC0166

Field WATTENBERG

Ground Elevation 5068.4'

K.B. Elevation 5088.4'

Logged Interval 6000' MD To 18047' MD

Total Depth 18047' MD

Formation NIOBRARA B CHALK

Type of Drilling Fluid OIL BASED MUD

Operator

Company Great Western Operating Company, LLC

Address 1001 17th Street, Suite 2000
Denver, CO 80202



Geologist

Name Joey Luce, Zac Olds, Hunter Newman

Company Terra Guidance

Address 67 W. Floyd Ave. Ste 105
Englewood, CO 80110
(970) 260-5408

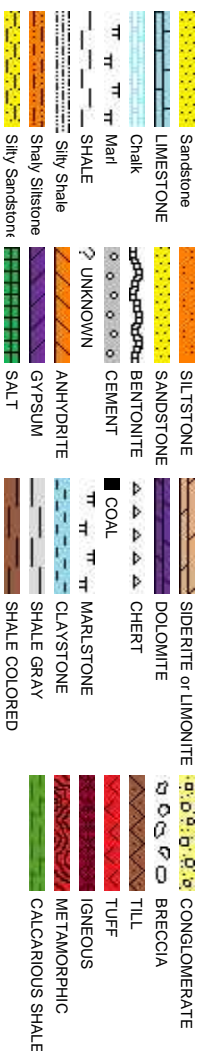


Other

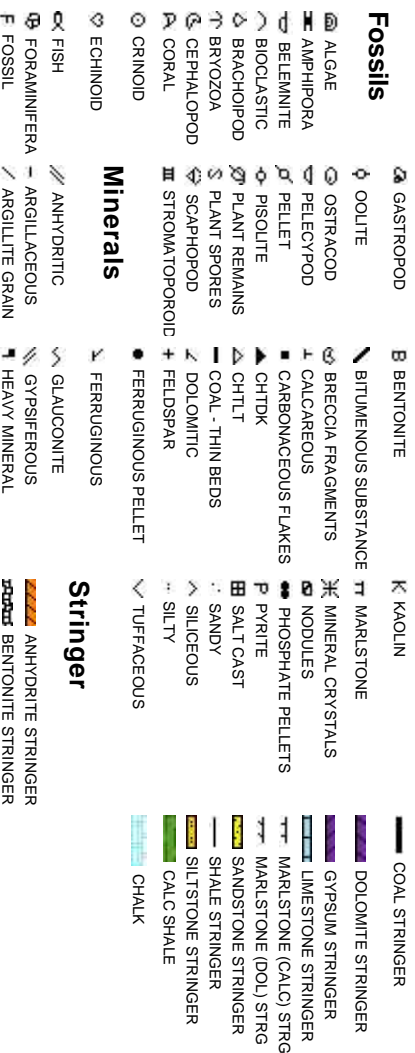
MUDLOG START DATE 08/29/2019

MUDLOG END DATE 08/31/2019

Rock Types



Accessories



Minerals

ANHYDRITE
ARGILLACEOUS
ARGILLITE GRAIN

Stringer

ANHYDRITE STRINGER
BENTONITE STRINGER

C

Oil Show

ORGANIC

PINPOINT

DEAD

VUGGY

EVEN

QUESTIONABLE

SPOTTED STAINING BIT

Engineering

CASING

CONNECTION (LEFT)

CONNECTION (RIGHT)

E EARTHY

CONNECTION GAS

F FRACTURE

CORE - LOST

INTERCRYSTALLINE CORE - RECOVERED

INTEROOLITIC DST INTERVAL

MOLDIC FAULT

S

M

L

G

T

I

C

P

R

O

S

D

A

N

T

E

R


F

B


I

U

Other Symbols

 FORMATION TOP L LITHOGRAPHIC


Rounding

GAS SHOW  MICROXLN

 MIN DEPTH  ANGULAR  MUDSTONE

NORMAL FAULT  ROUNDED  PACKSTONE

OIL SHOW  SUBANG  WACKESTONE

OVERTURNED STRATA  SUBRND

Sorting

REVERSE FAULT

Textures

SIDEWALL CORE (LEFT)  MODERATE


SIDEWALL CORE (RIGHT)  BOUNDSTONE  POOR

SLIDE  CHALKY  WELL


 SURVEY  CRYPTOXLN

CALCARIUOS SHALE

 TRIP GAS  EARTHY

WIRELINE TESTED - LEFT  FINELYXLN

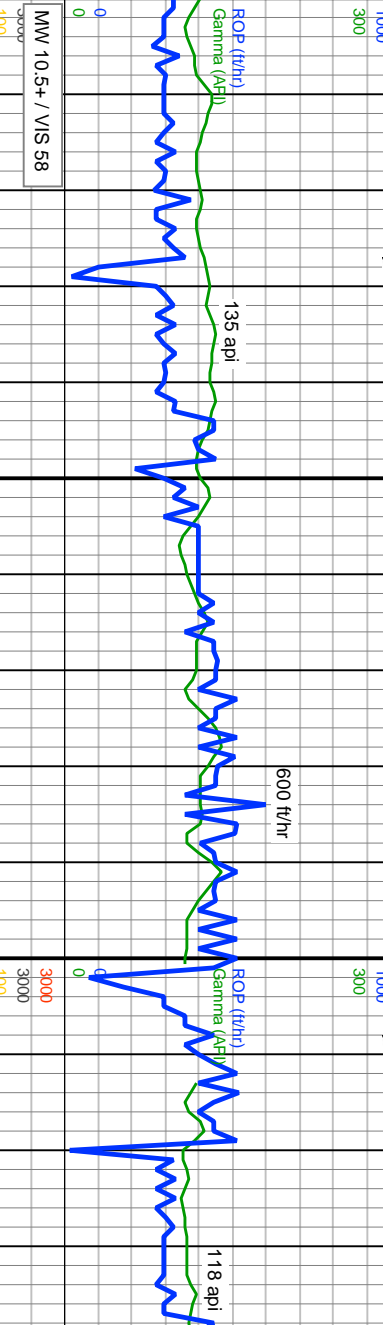
CALCARIOUS SHALE

WIRELINE TESTED - RT  GRAINSTONE

TERRA GUIDANCE
BEGAN LOGGING @ 12:42 MDT 08/29/2019
BLOODHOUND GAS CHROMATOGRAPH #5927
100' Sample Collection

ROP
ROP
Gamma

GAPS IN GAMMA DATA DUE
TO HIGH RATES OF PENETRATION



Total Gas & Chromatograph

GAS
C1
C2
C3
C4
CO2

Gas Scale
0 - 3000 Units

BG: BACKGROUND GAS
TG: TRIP GAS
DTG: DOWNTIME GAS
MG: MAX GAS

GAS (units)
C1-C4 (units)

GAS (units)
C1-C4 (units)
CO2 (units)

Depth



Images



% Lithology

TVD Scale
5700' - 8500'

MD: 6.005'
INC: 30.65°
AZM: 276.4°
TVD: 5,750.42'
VS: 83.71'

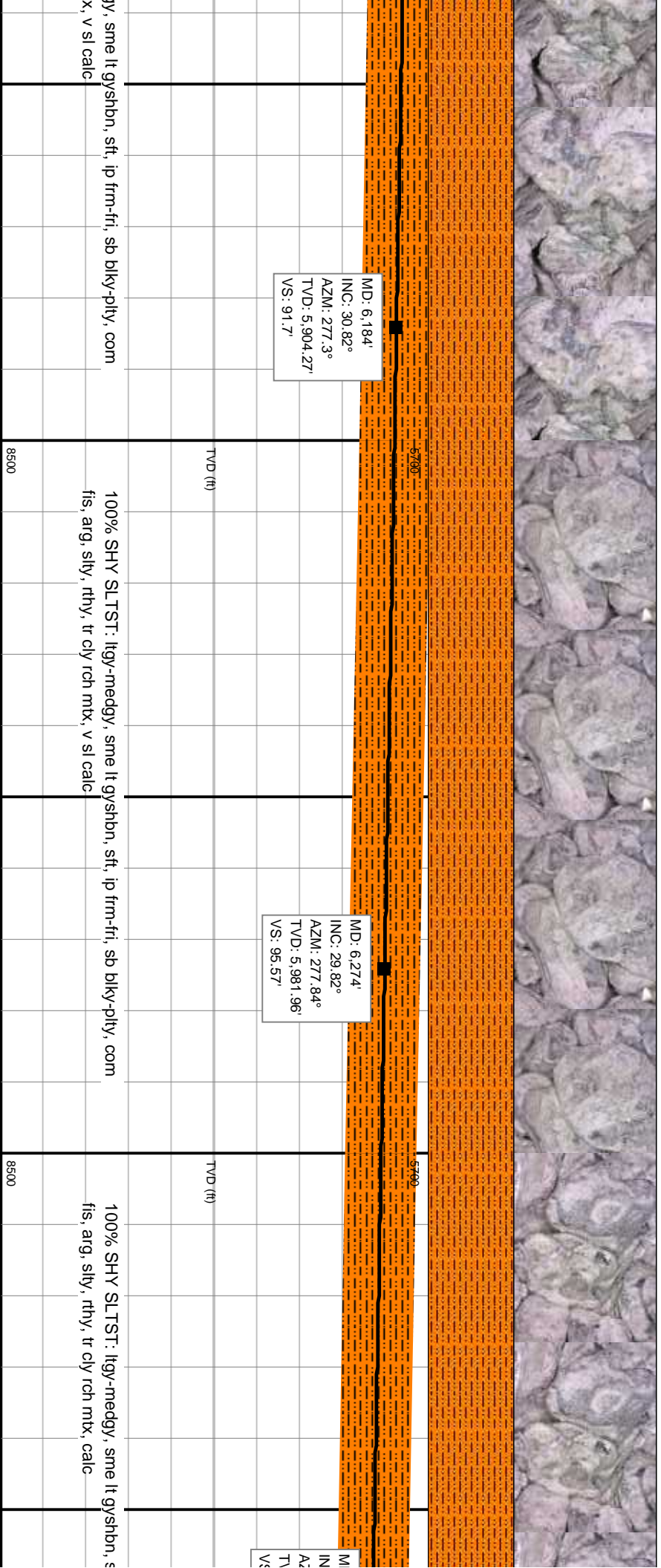
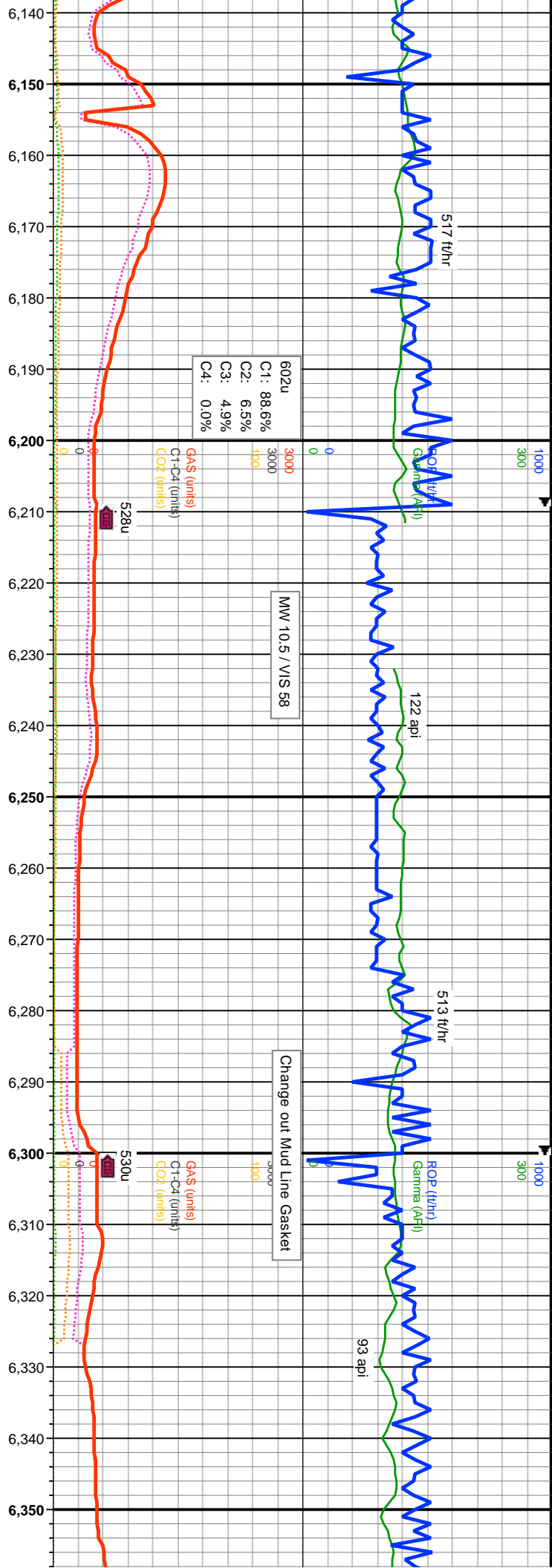
MD: 6.095'
INC: 30.75°
AZM: 278.05°
TVD: 5,827.81'
VS: 87.9'

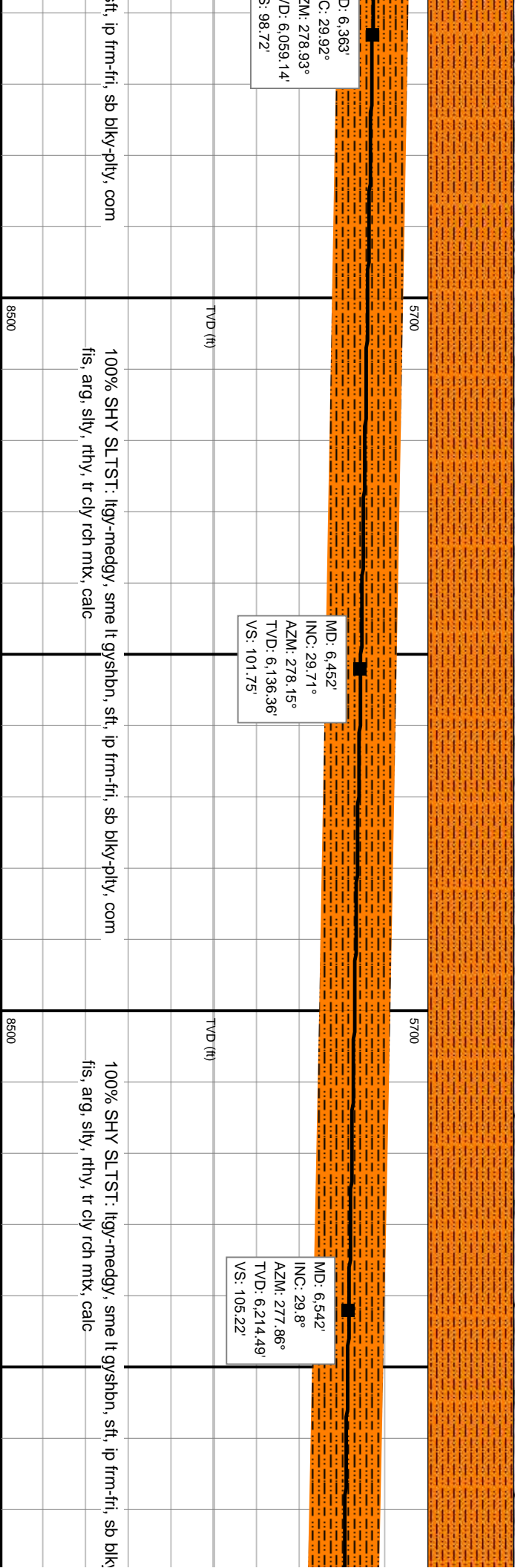
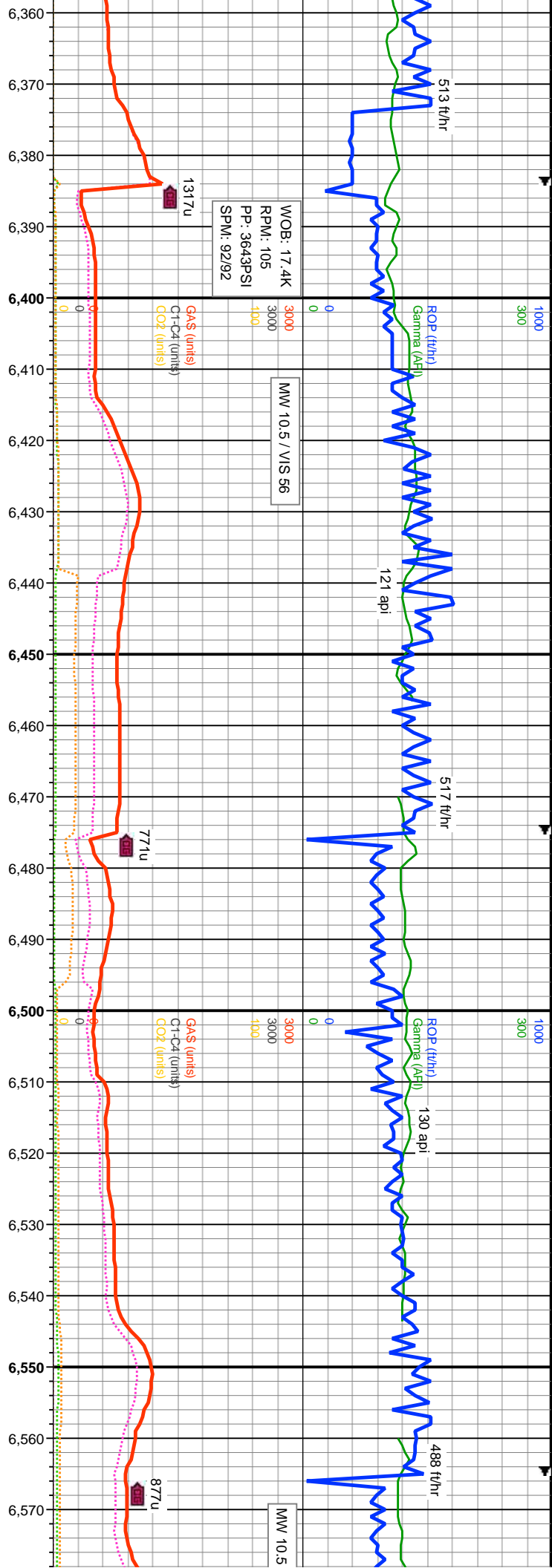
Well Bore
TVD

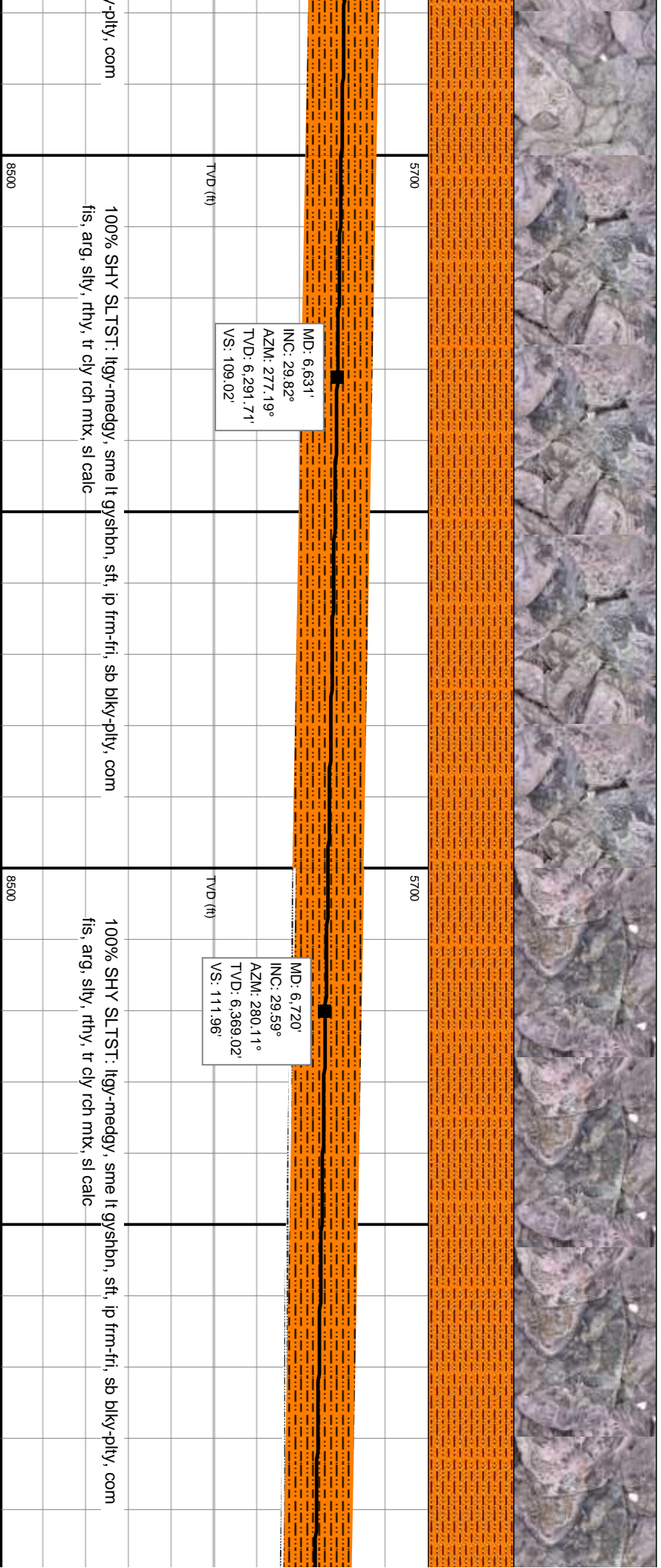
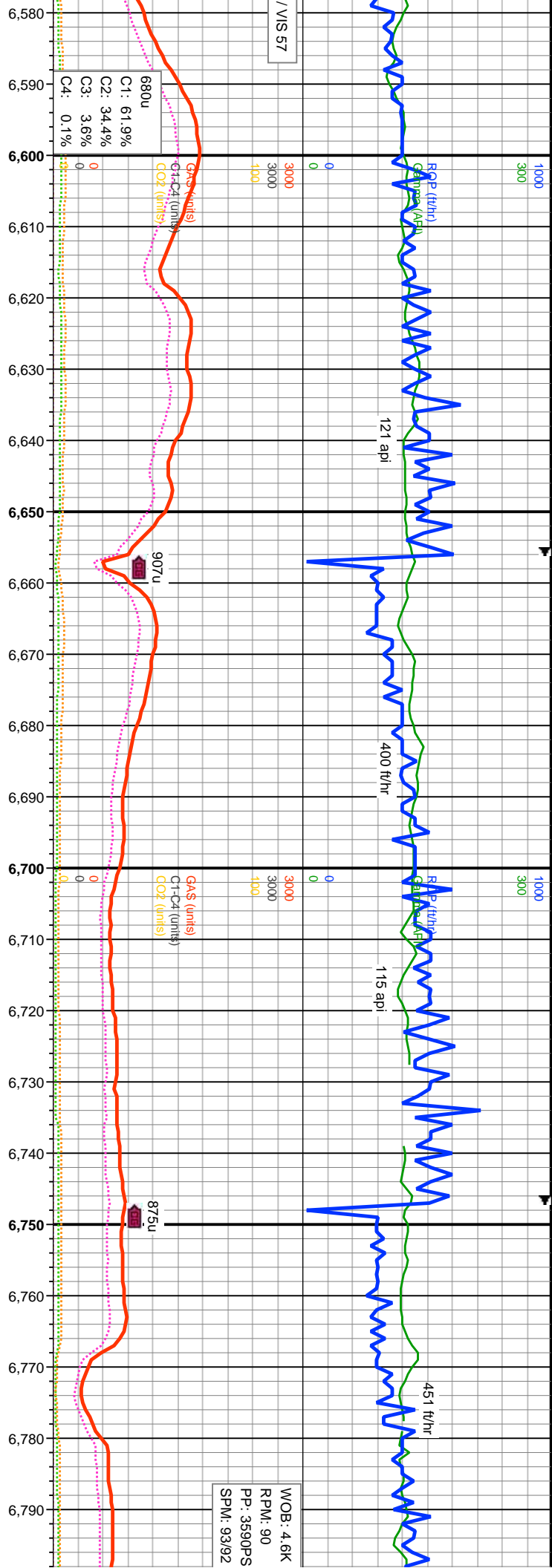
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Size: 8.5
Make: HCC
Model: ATD505T0
Jets: 5x15
S/N: 5292246
Depth In: 1,778

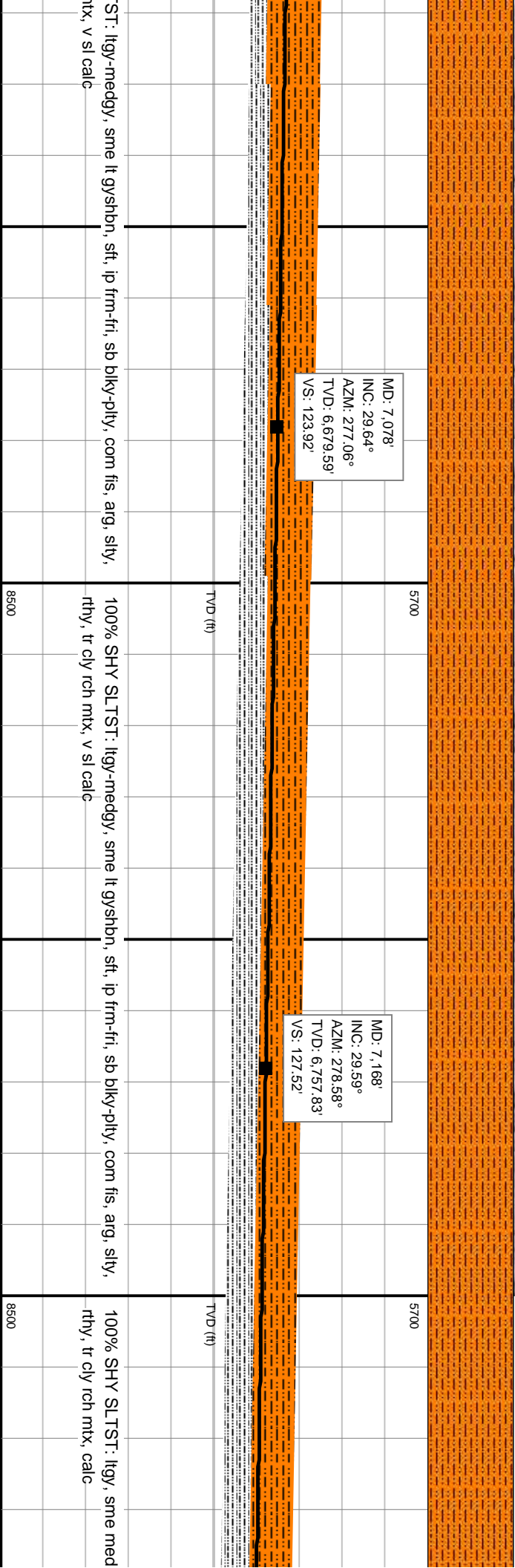
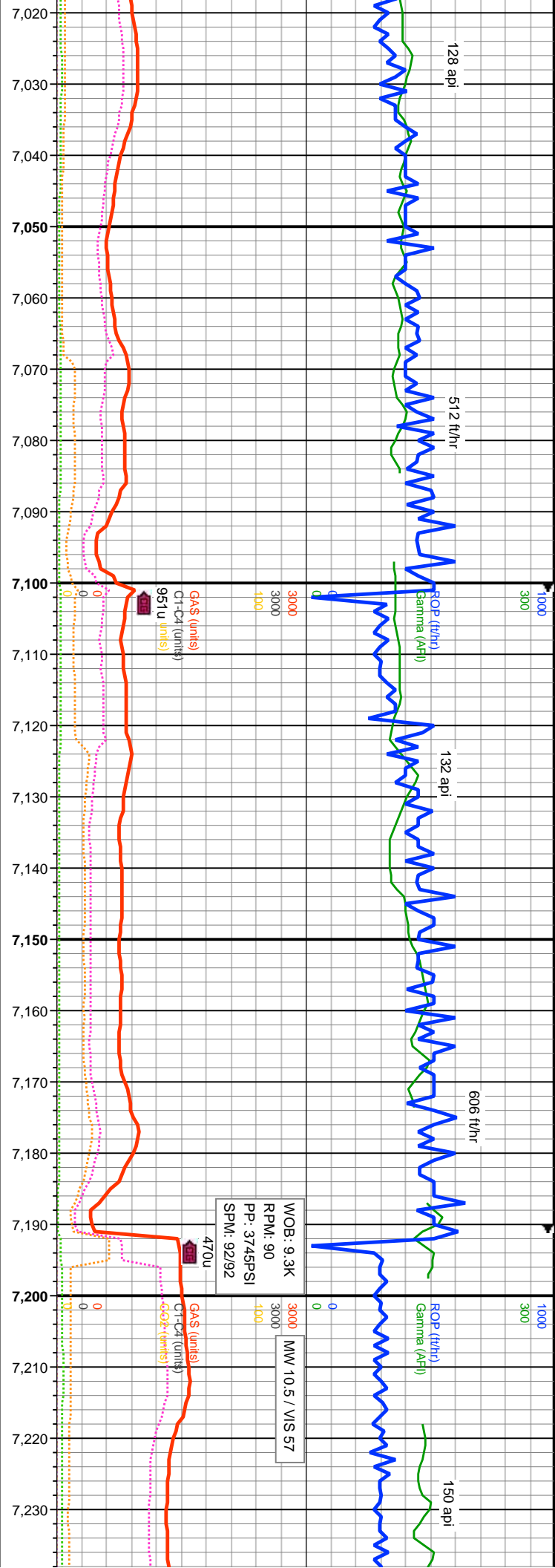
100% SHY SLTST: ltgy-medgy, sme lt gyshbn, sft, ip frm-fri, sb blkv-pltly, com
fis, arg, slty, rthy, tr cly rch mnx, v sl calic

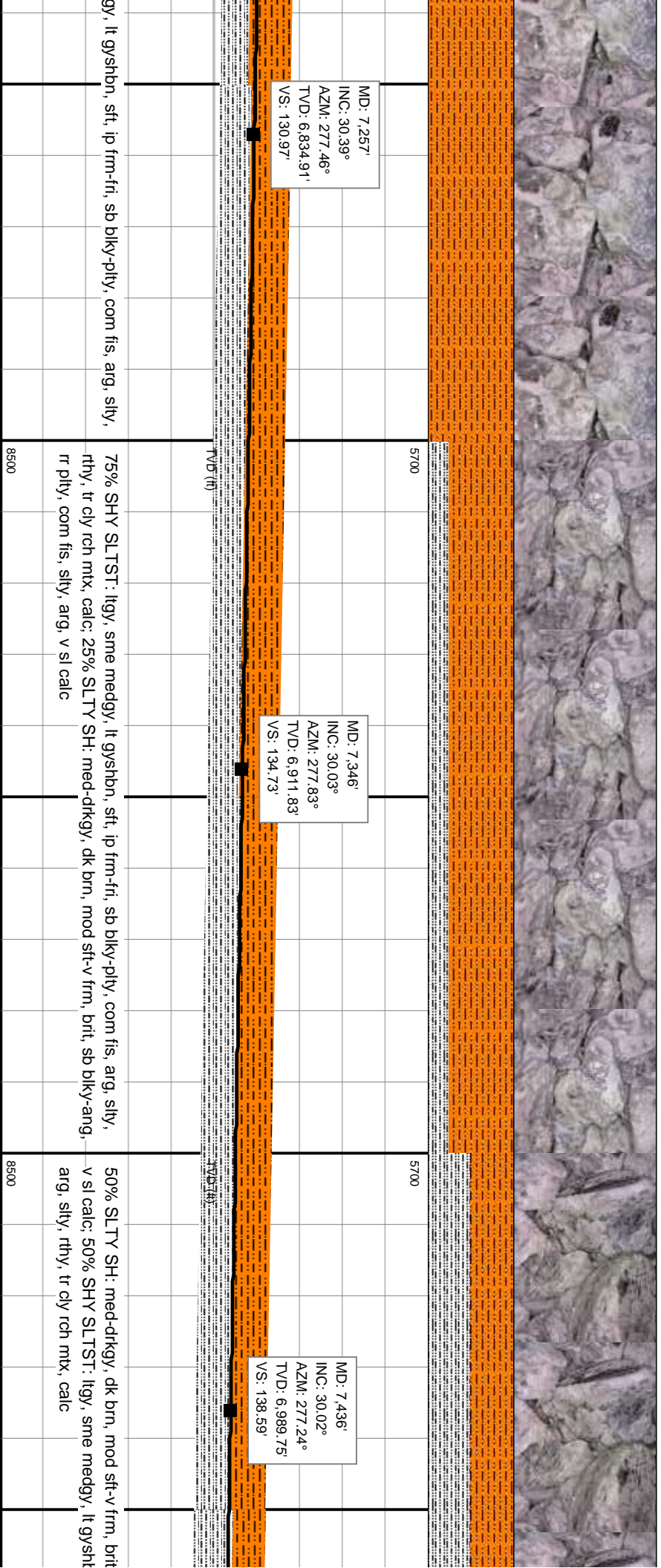
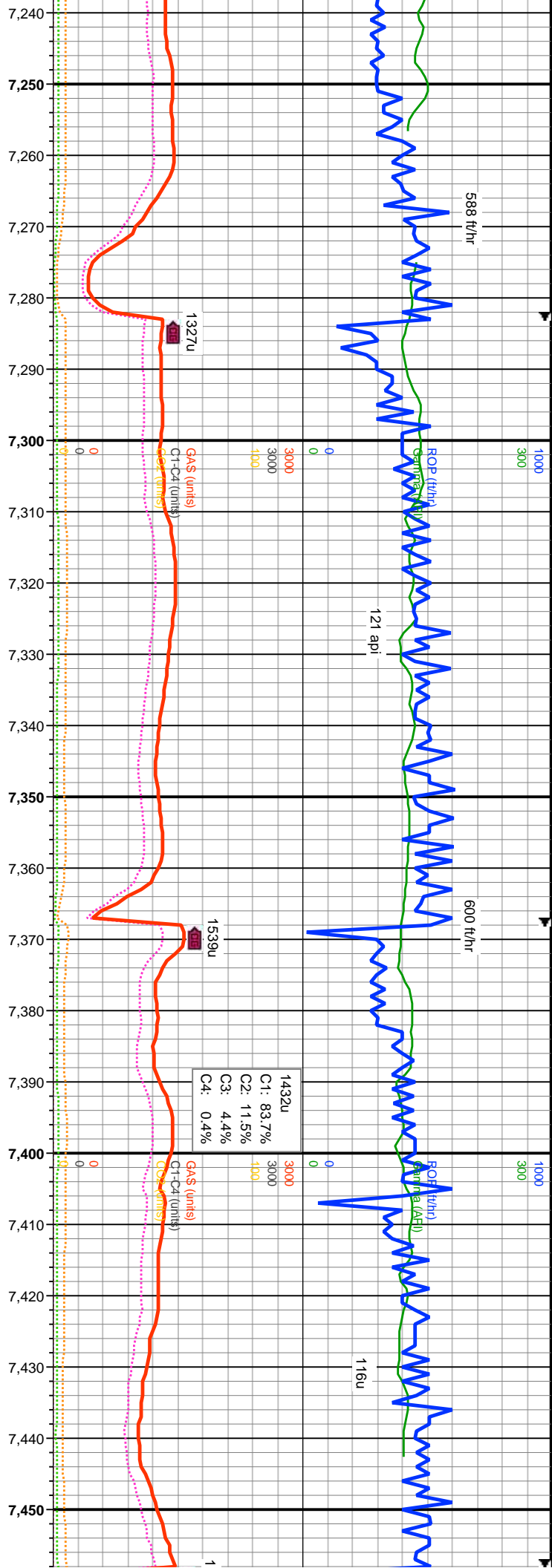
100% SHY SLTST: ltgy-medgy, sme lt gyshbn, sft, ip frm-fri, sb blkv-pltly, com
fis, arg, slty, rthy, tr cly rch mnx, v sl calic

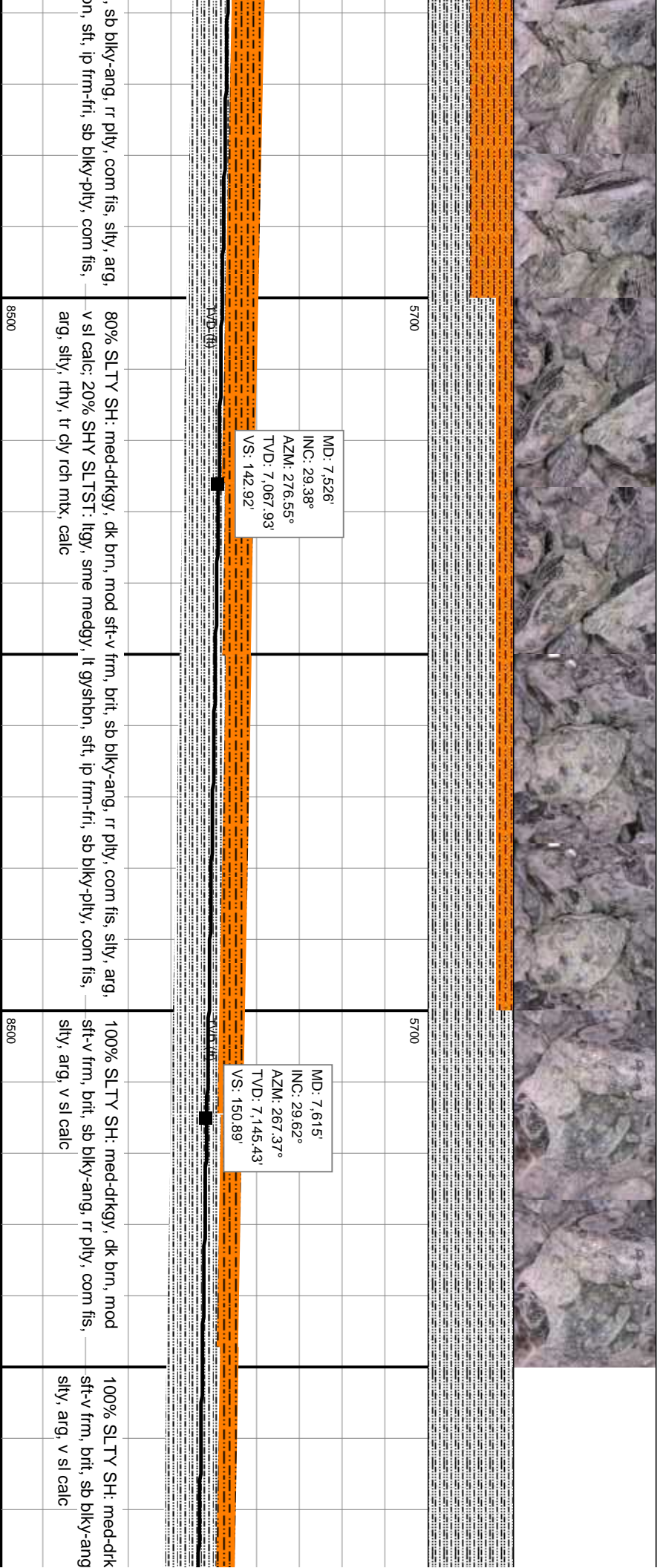
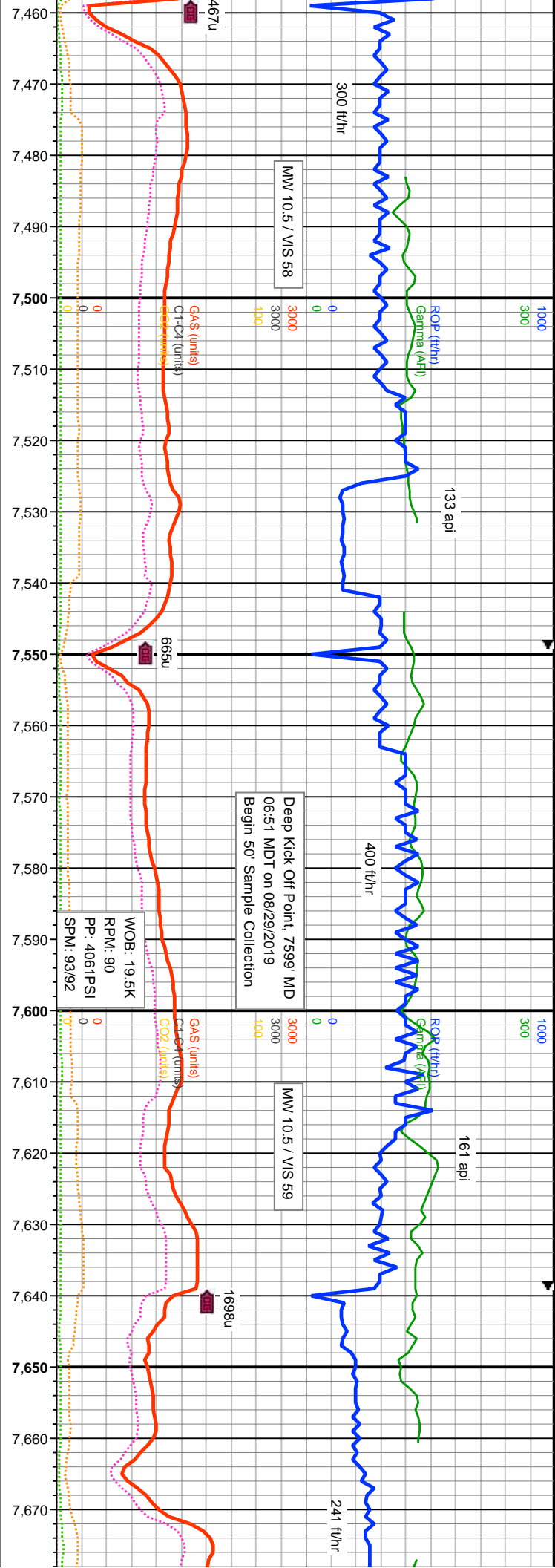


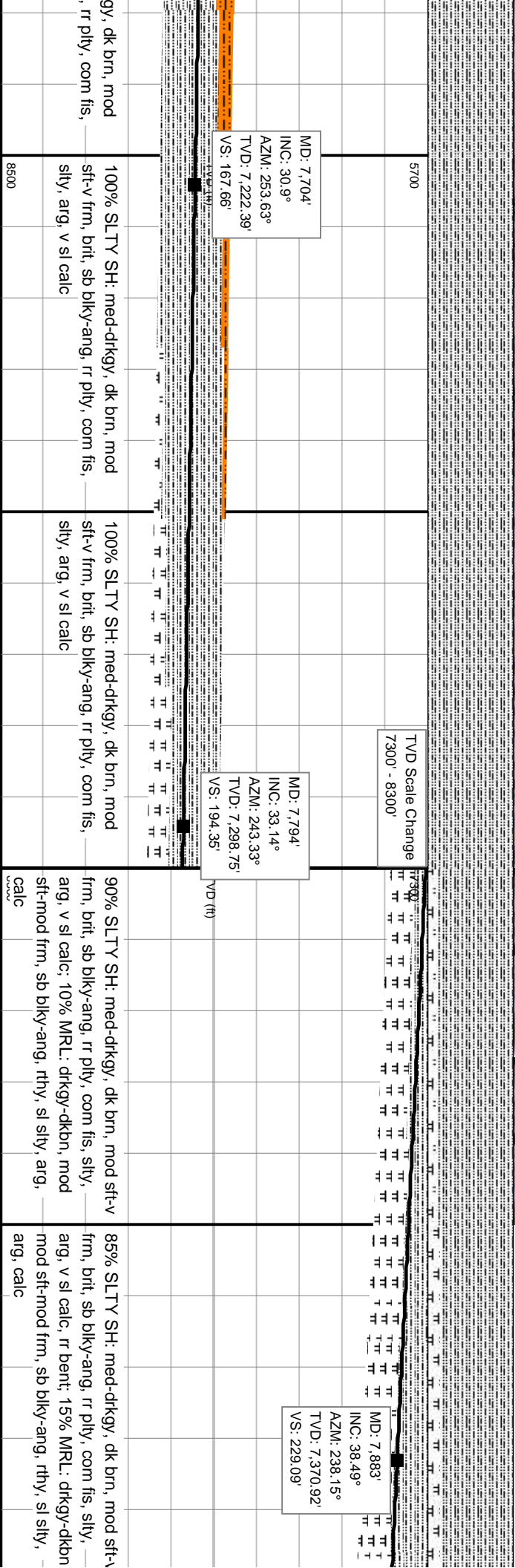
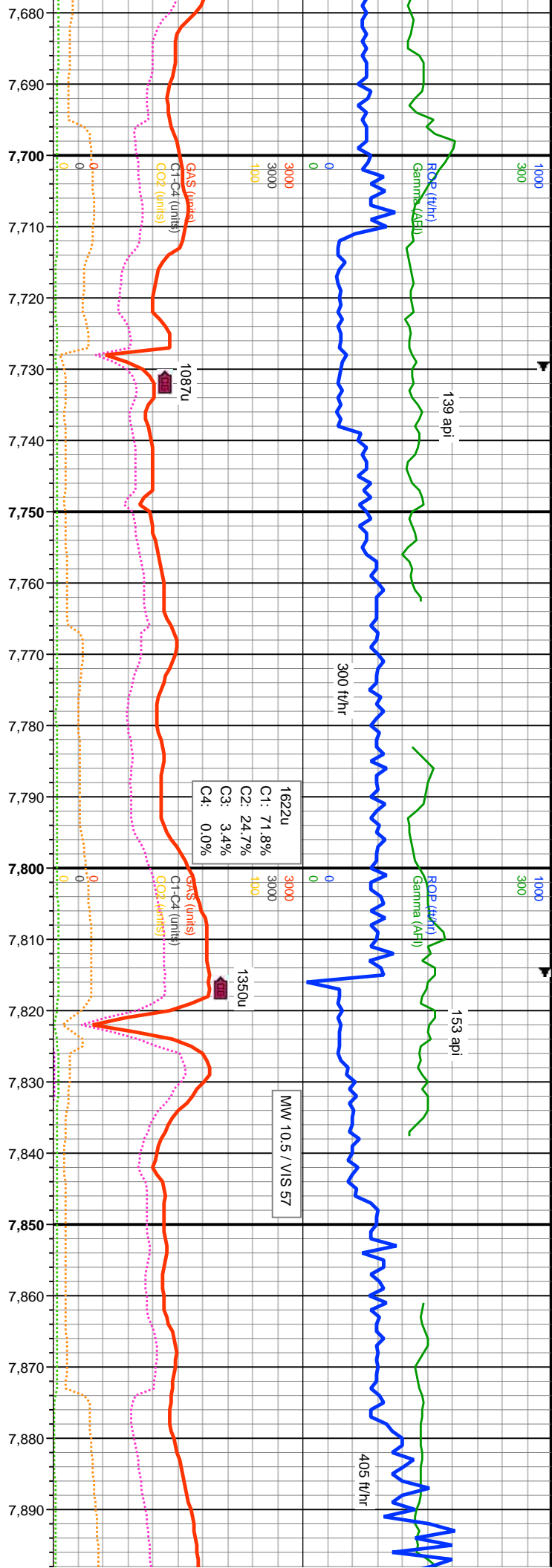


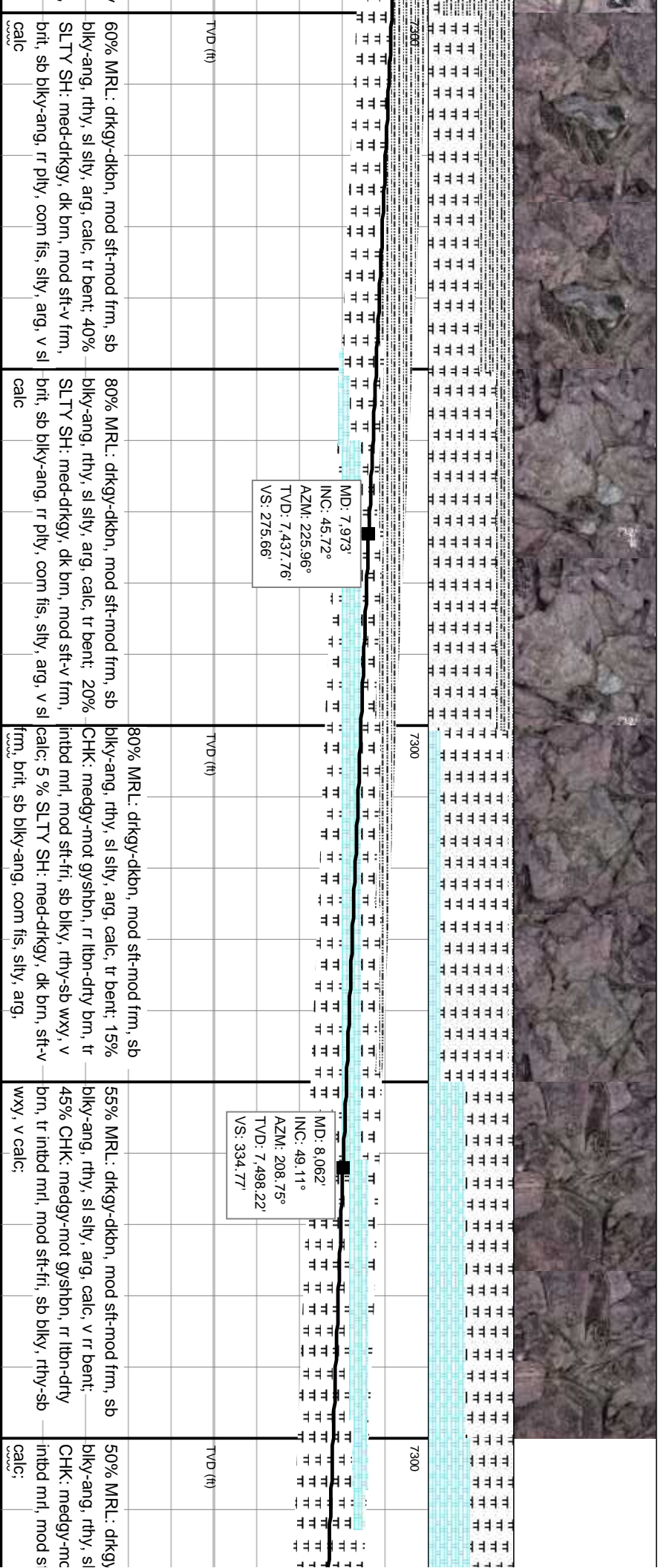
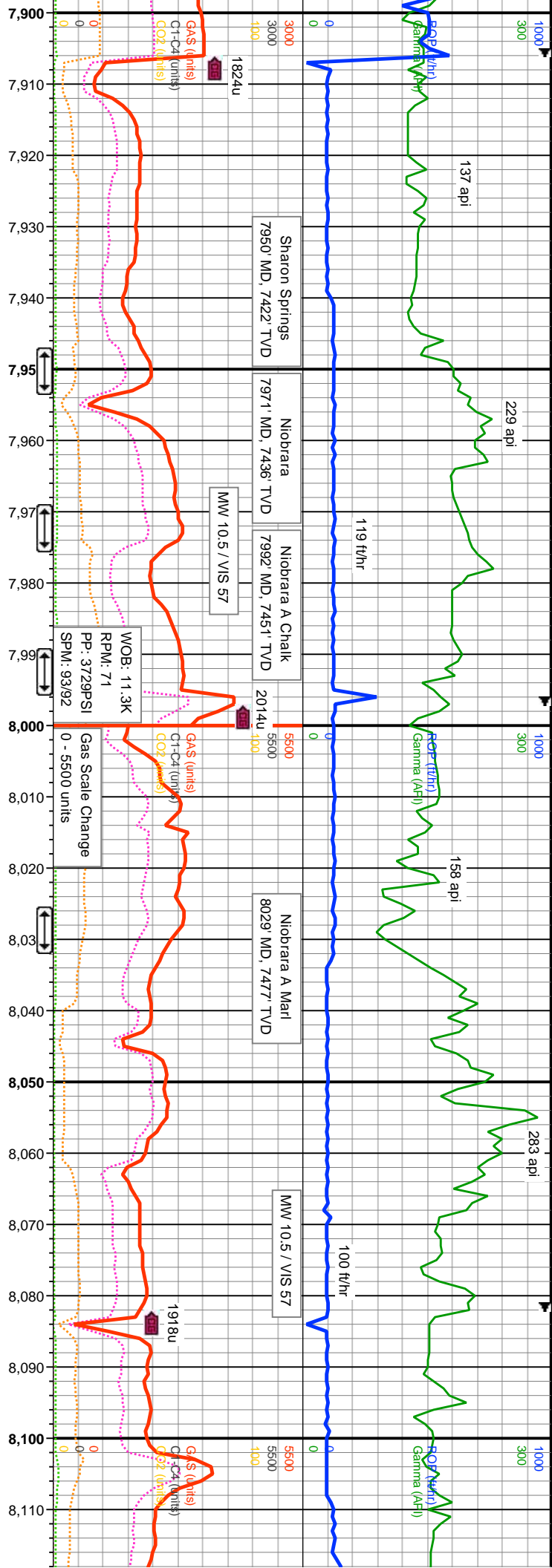


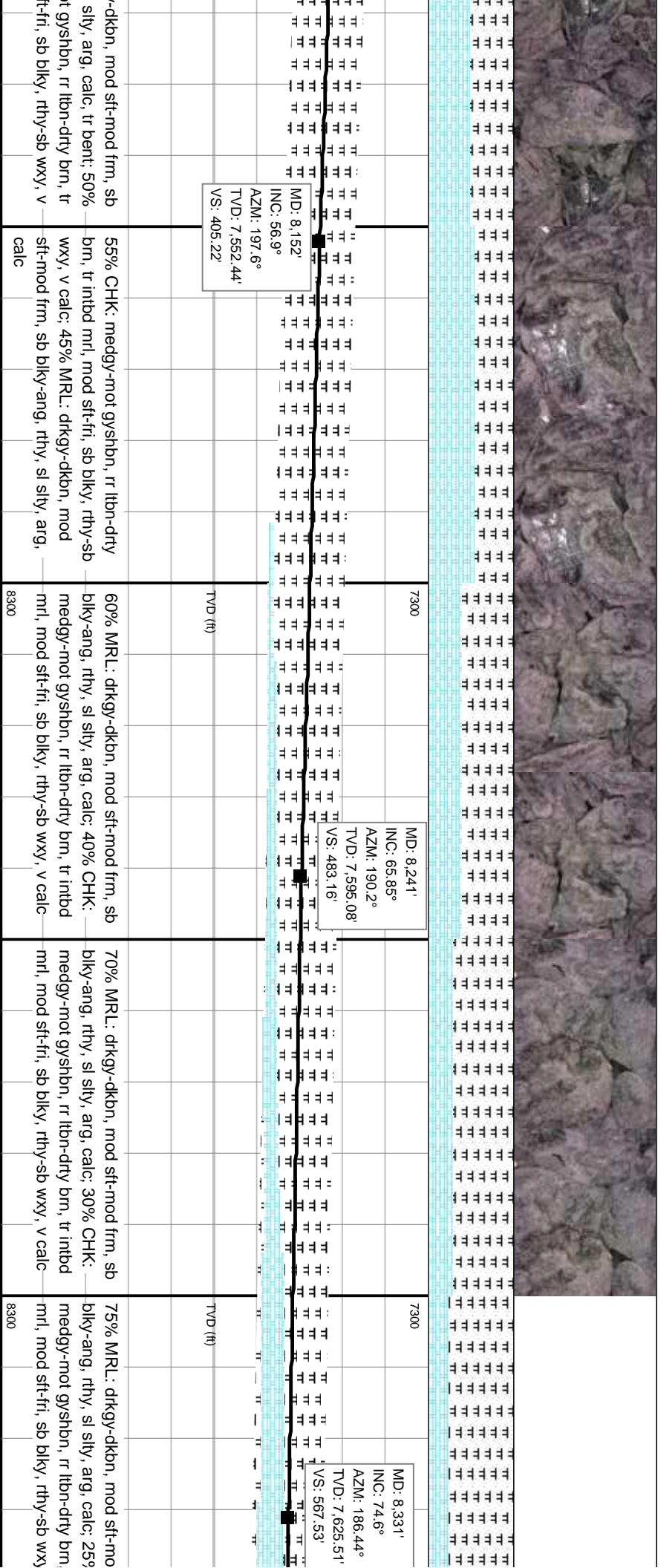
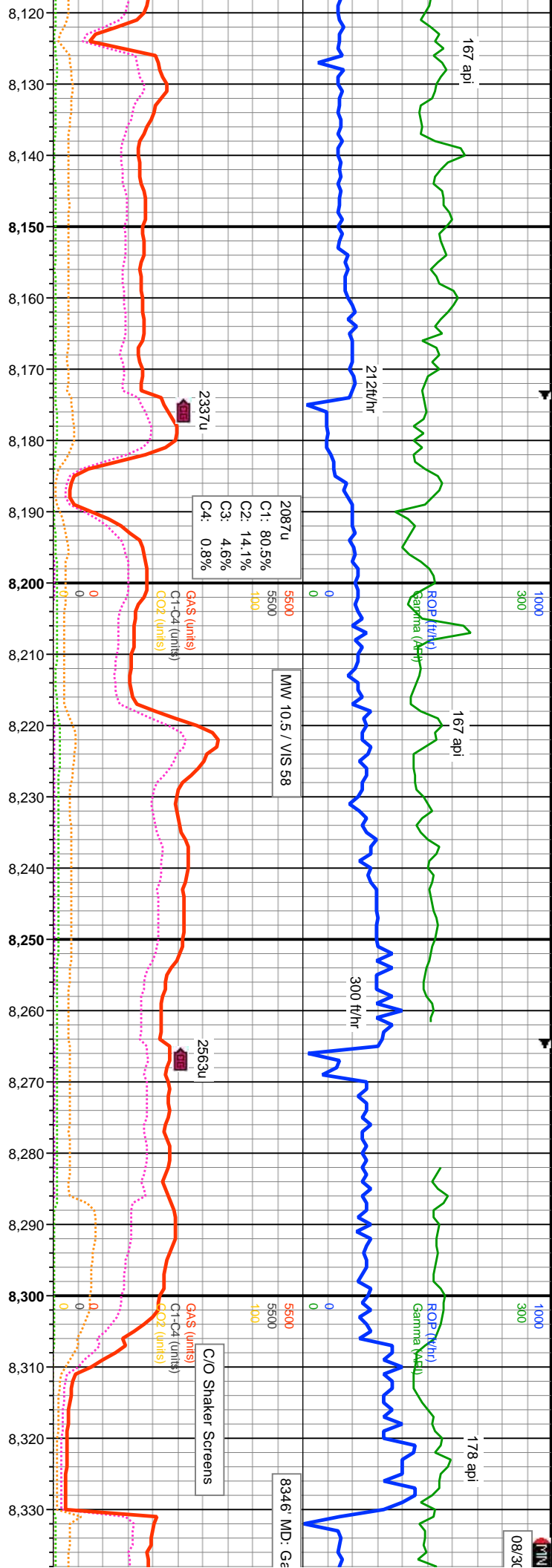


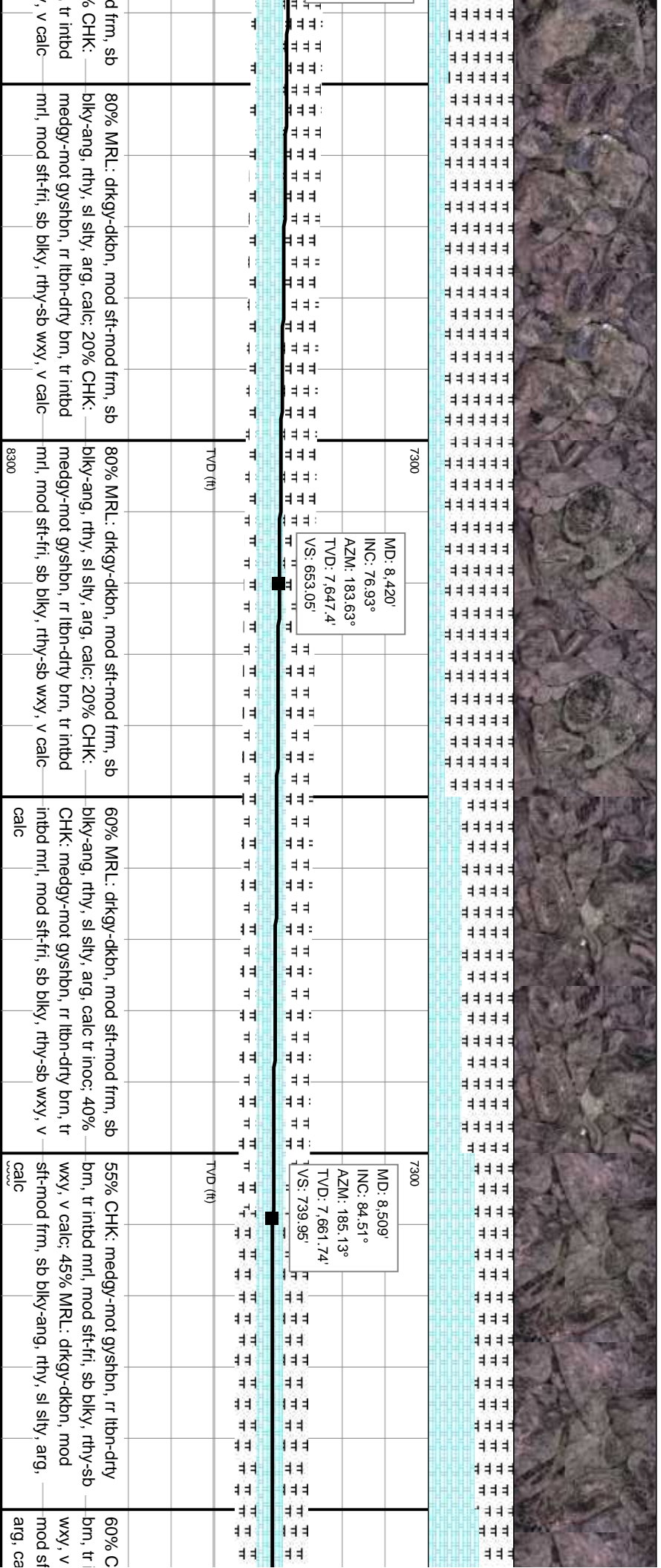
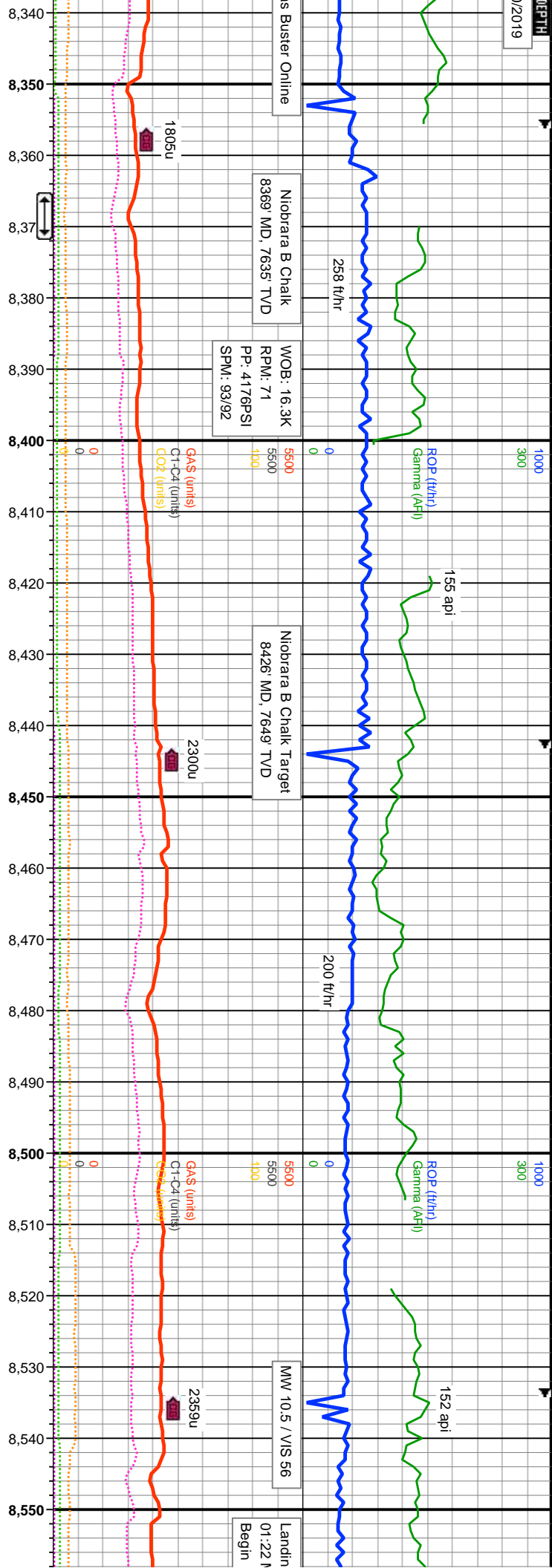


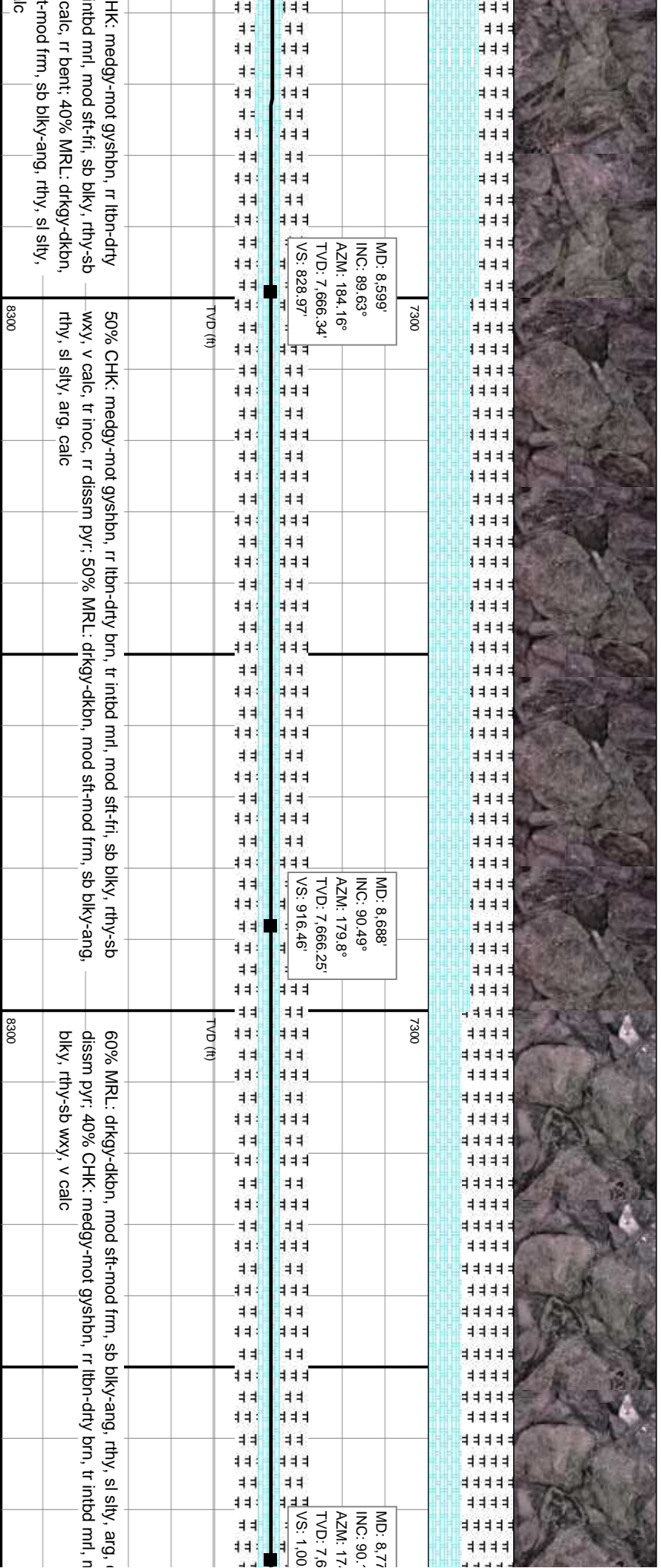
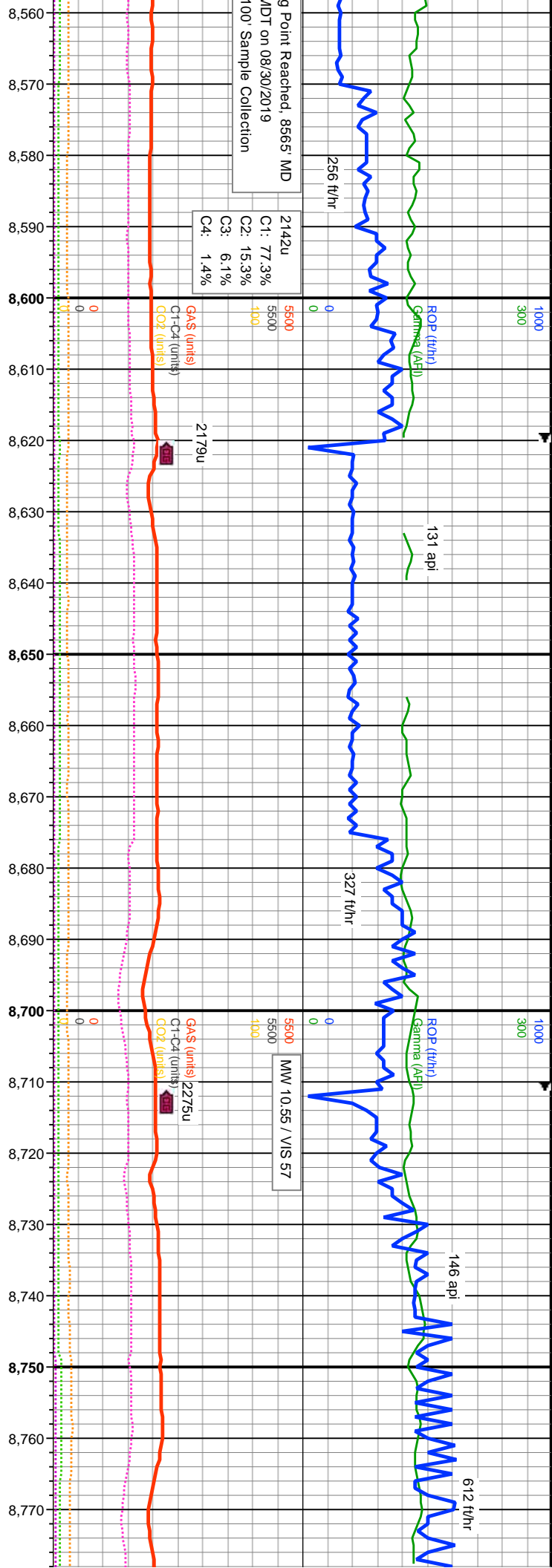


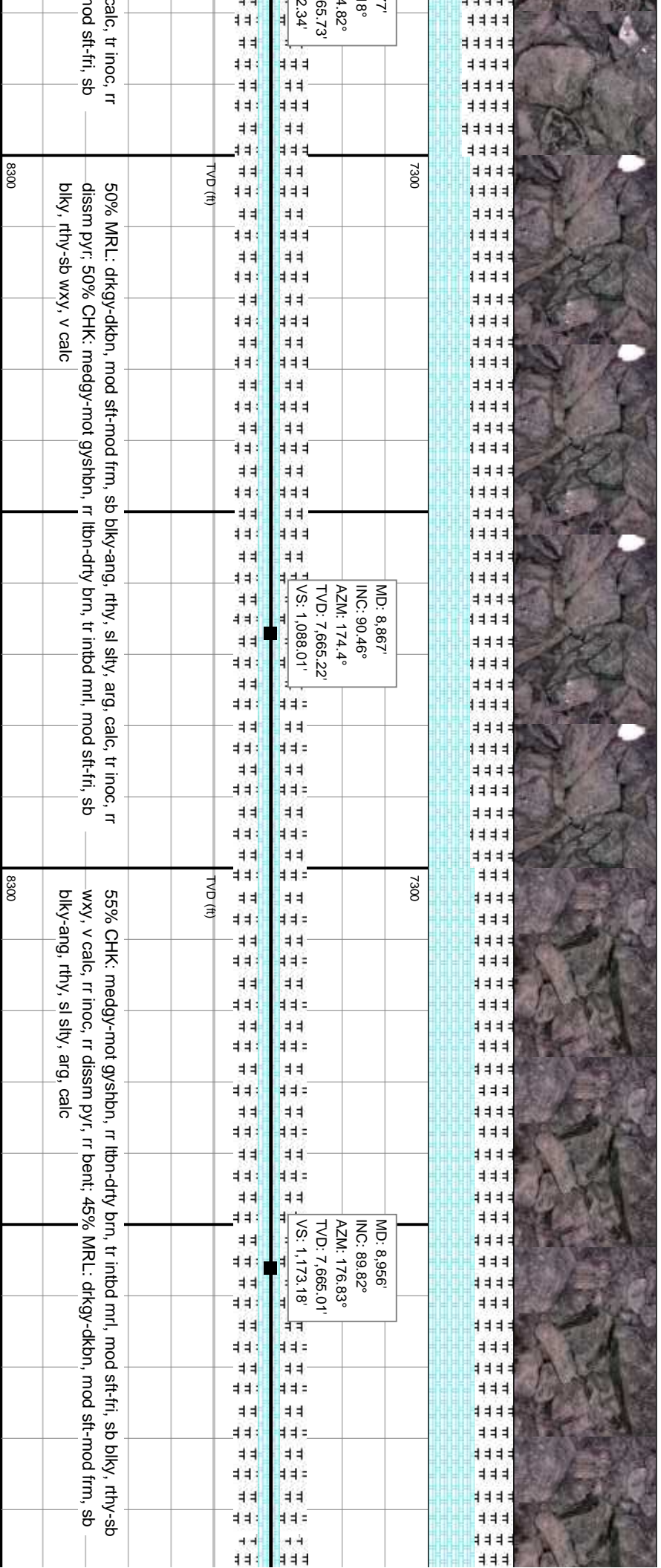
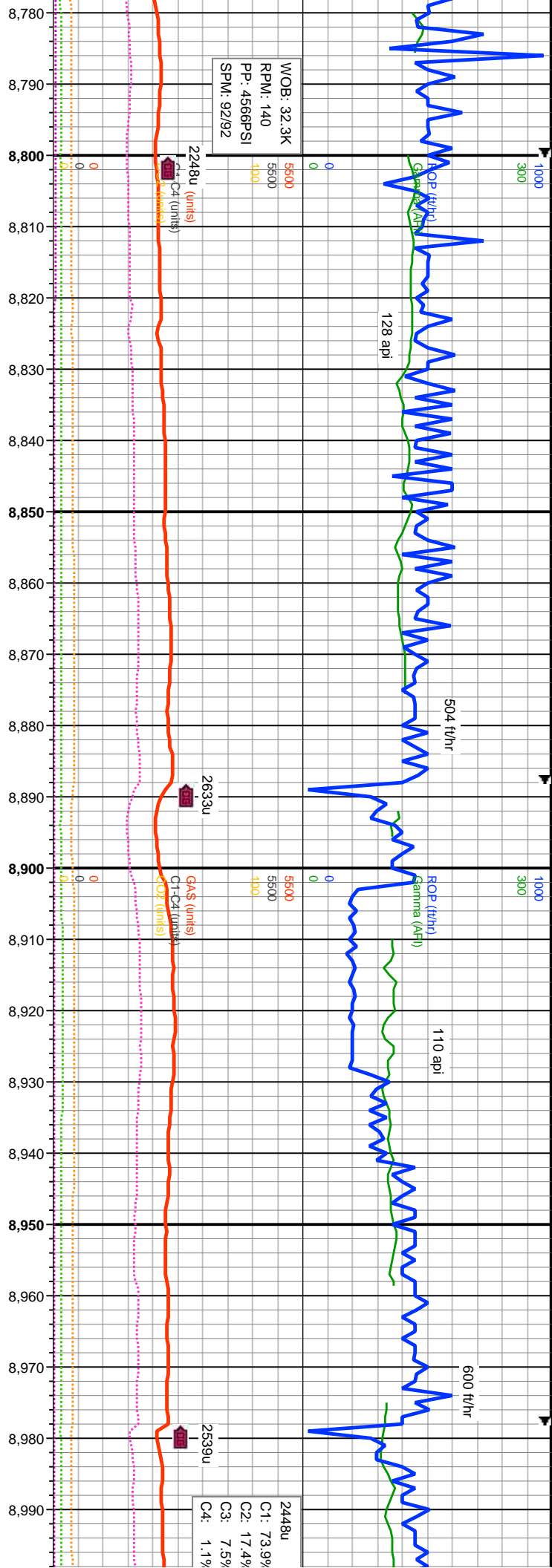


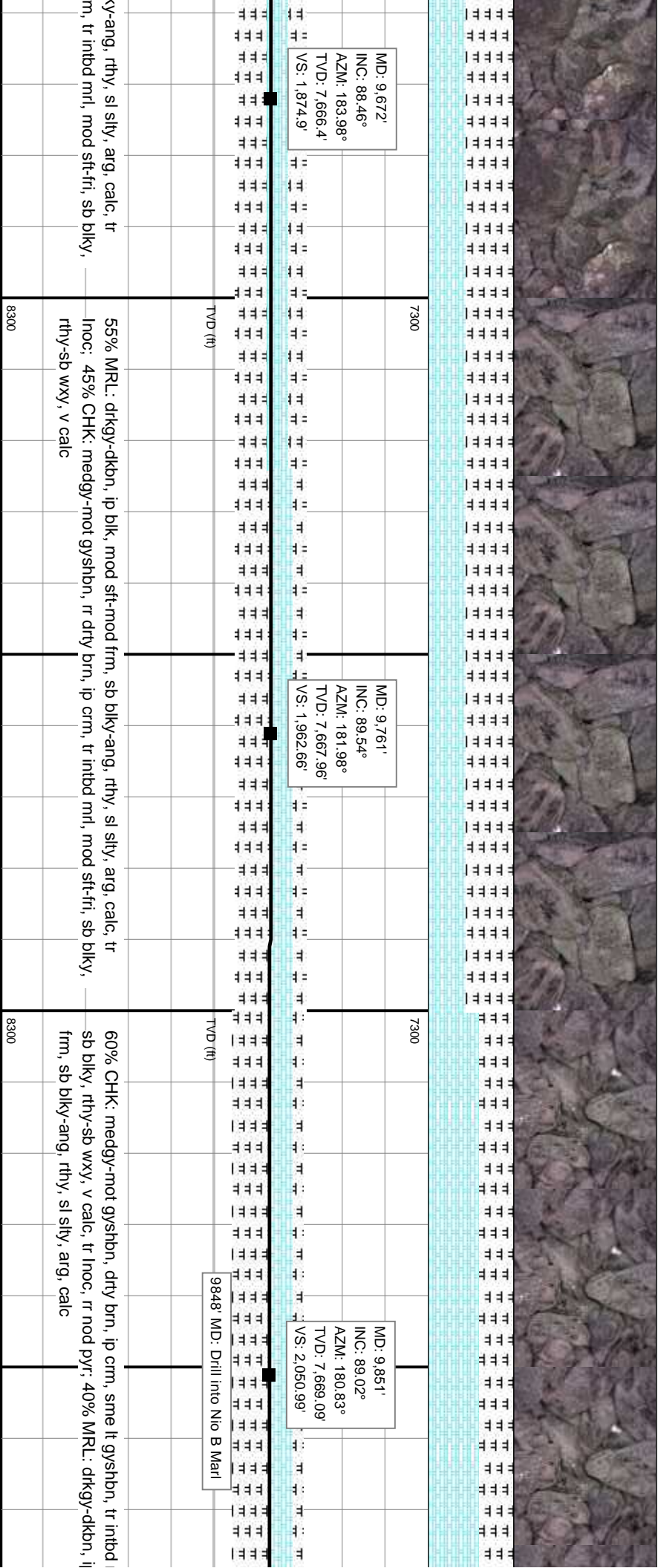
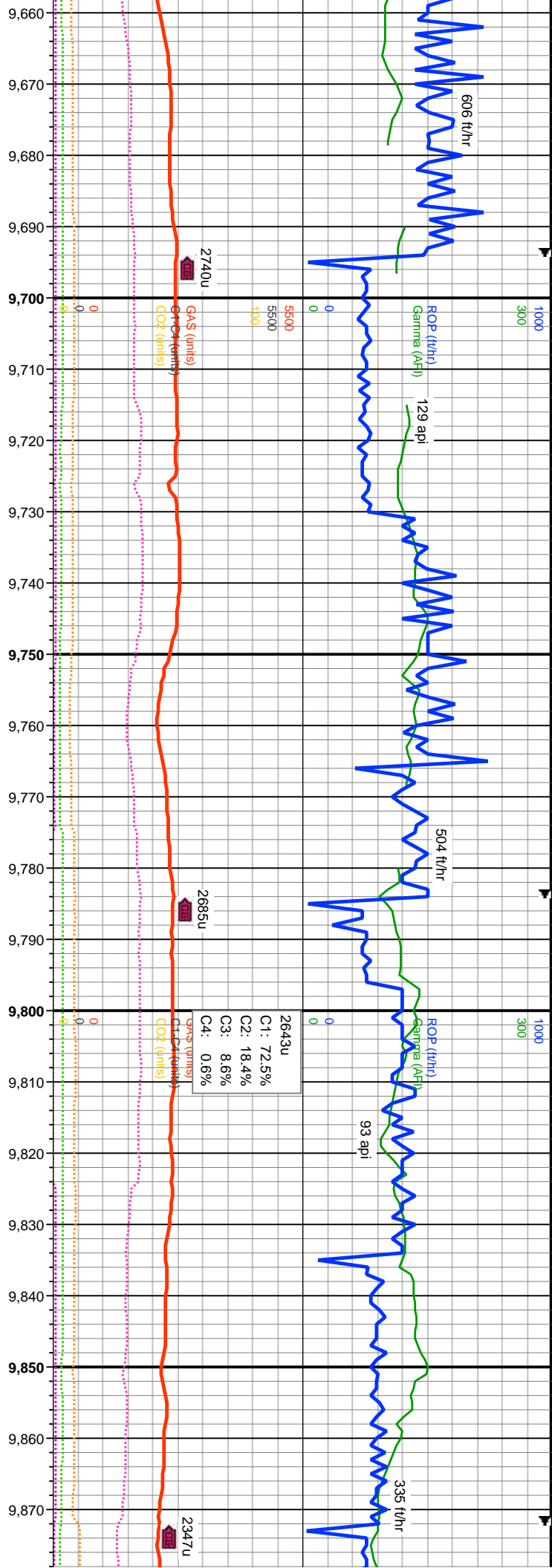


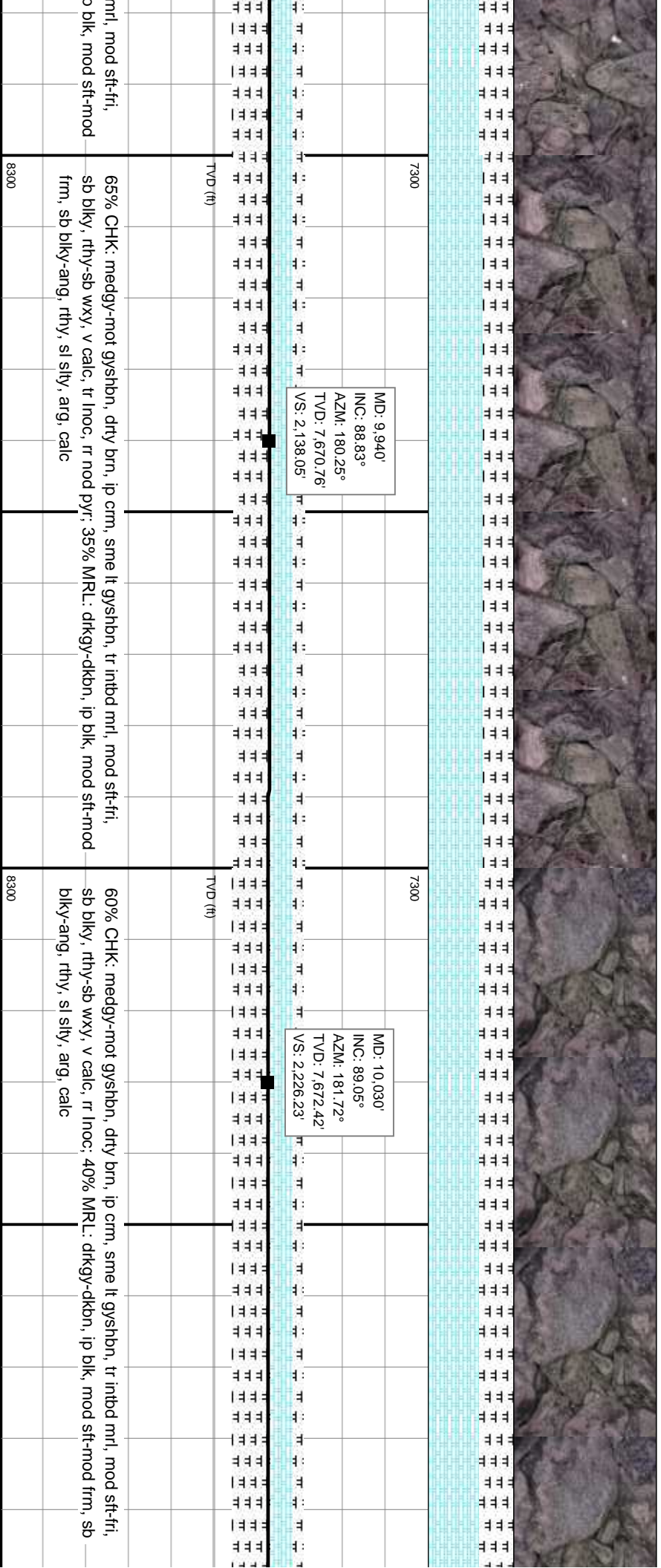
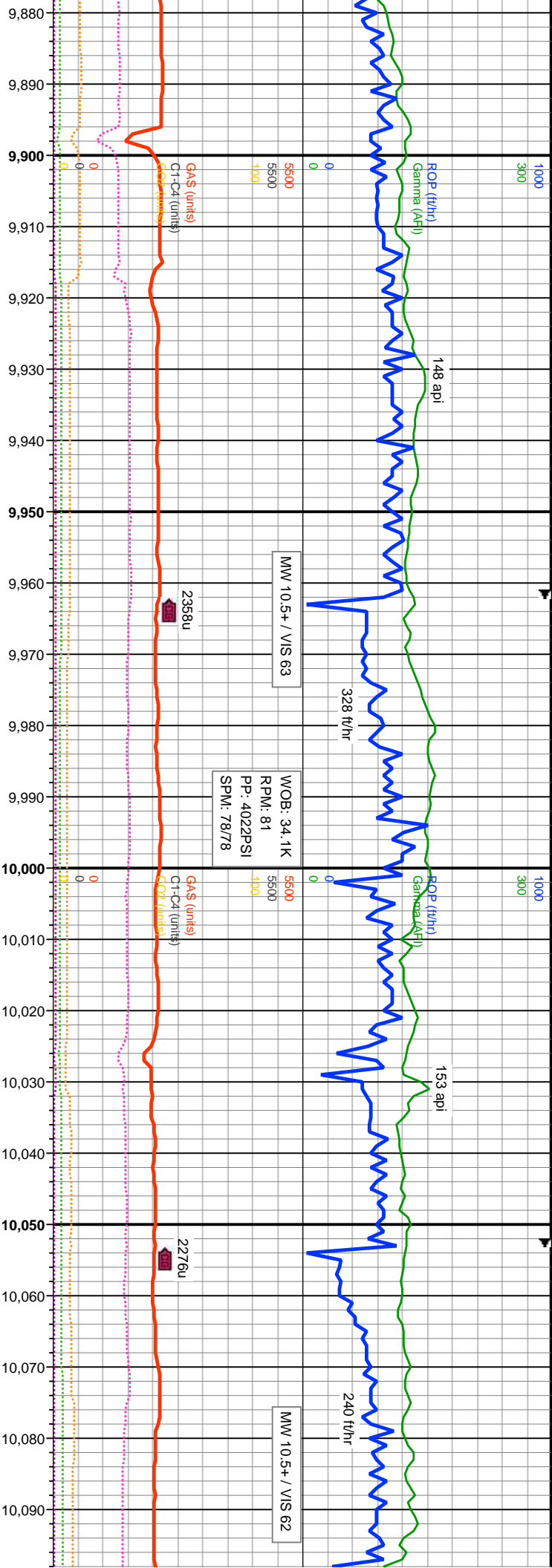


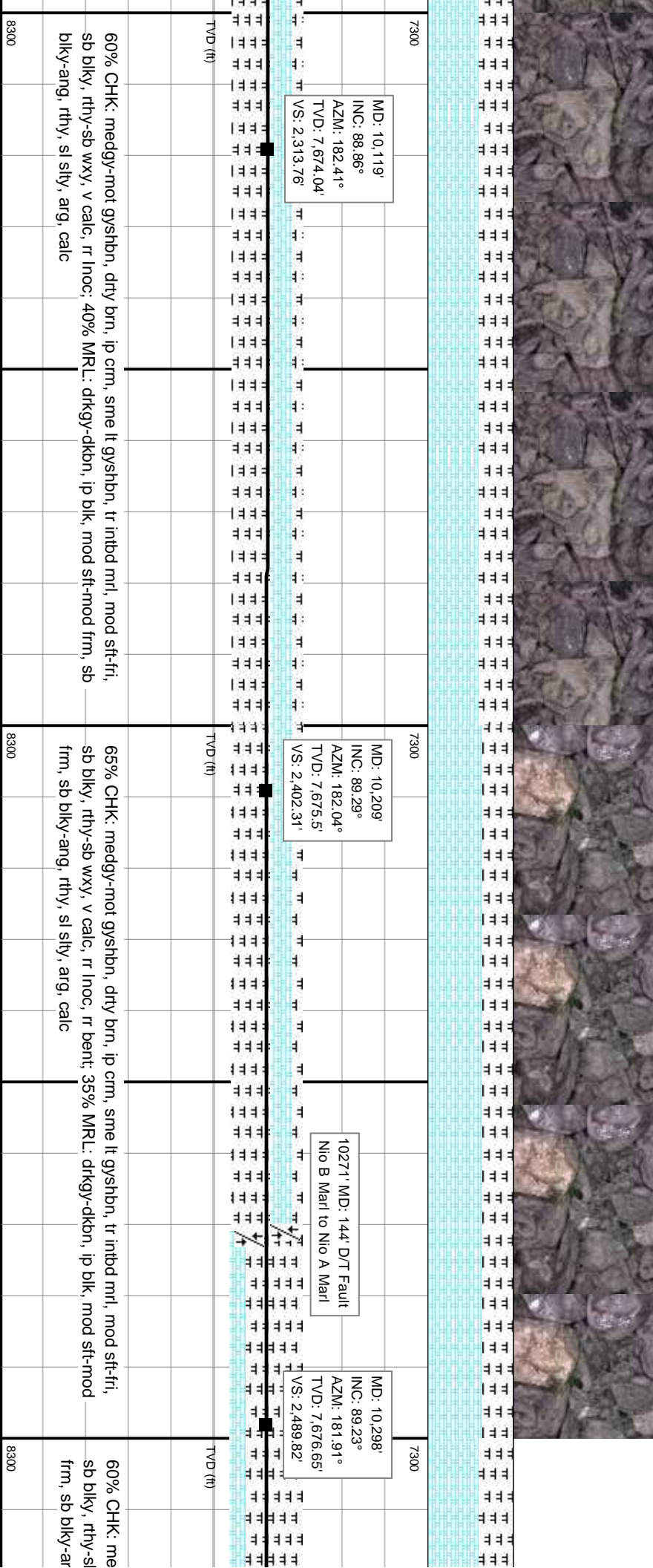
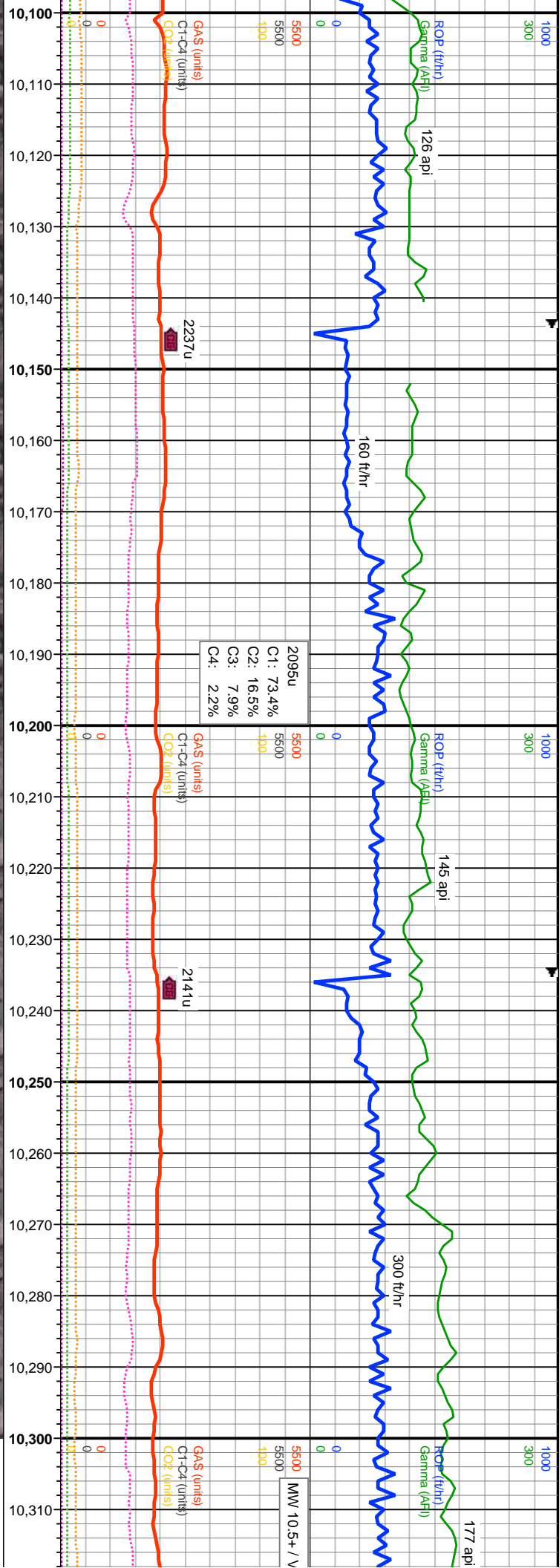


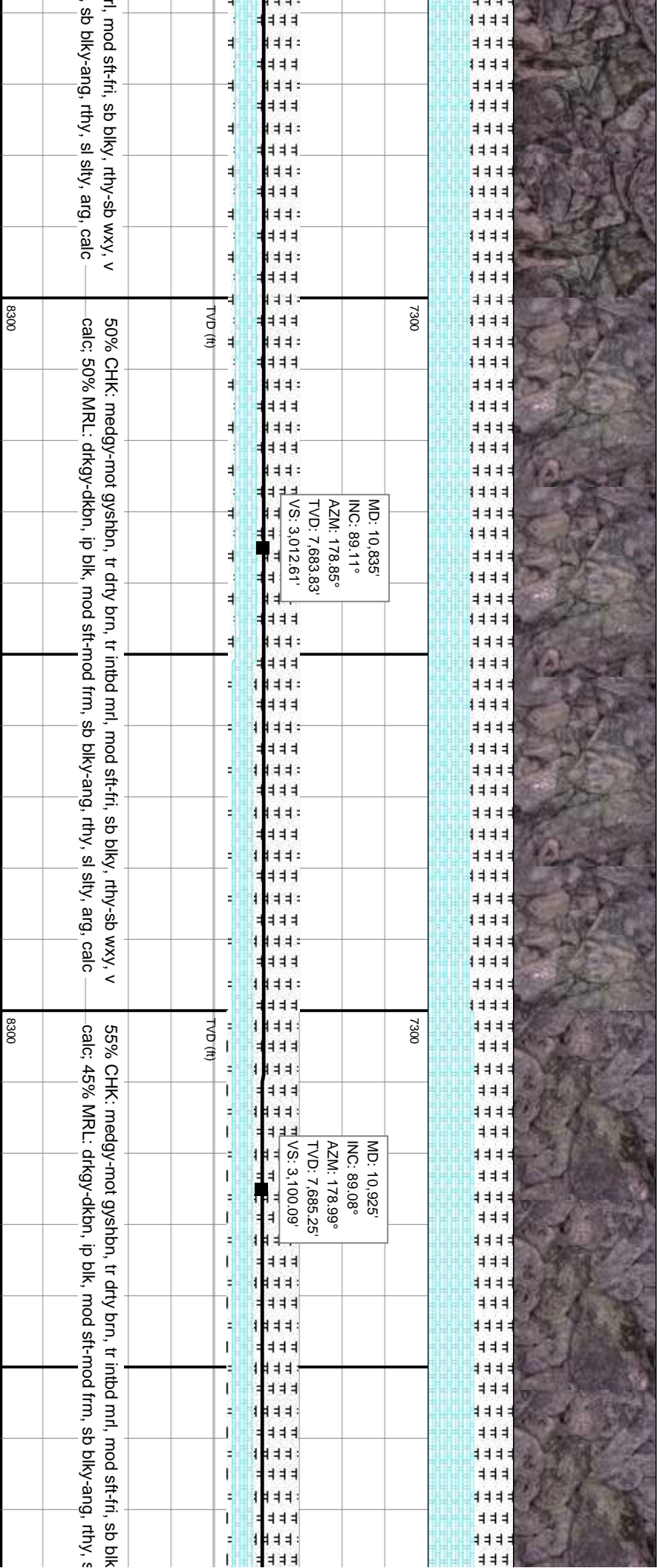
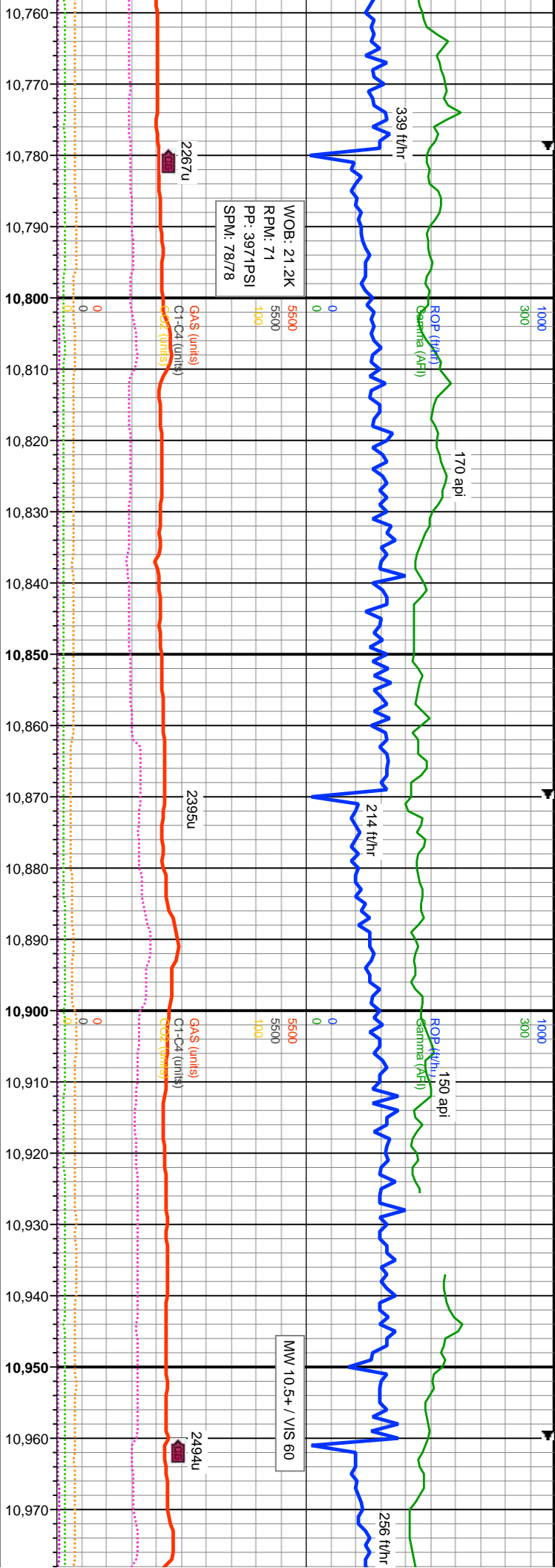


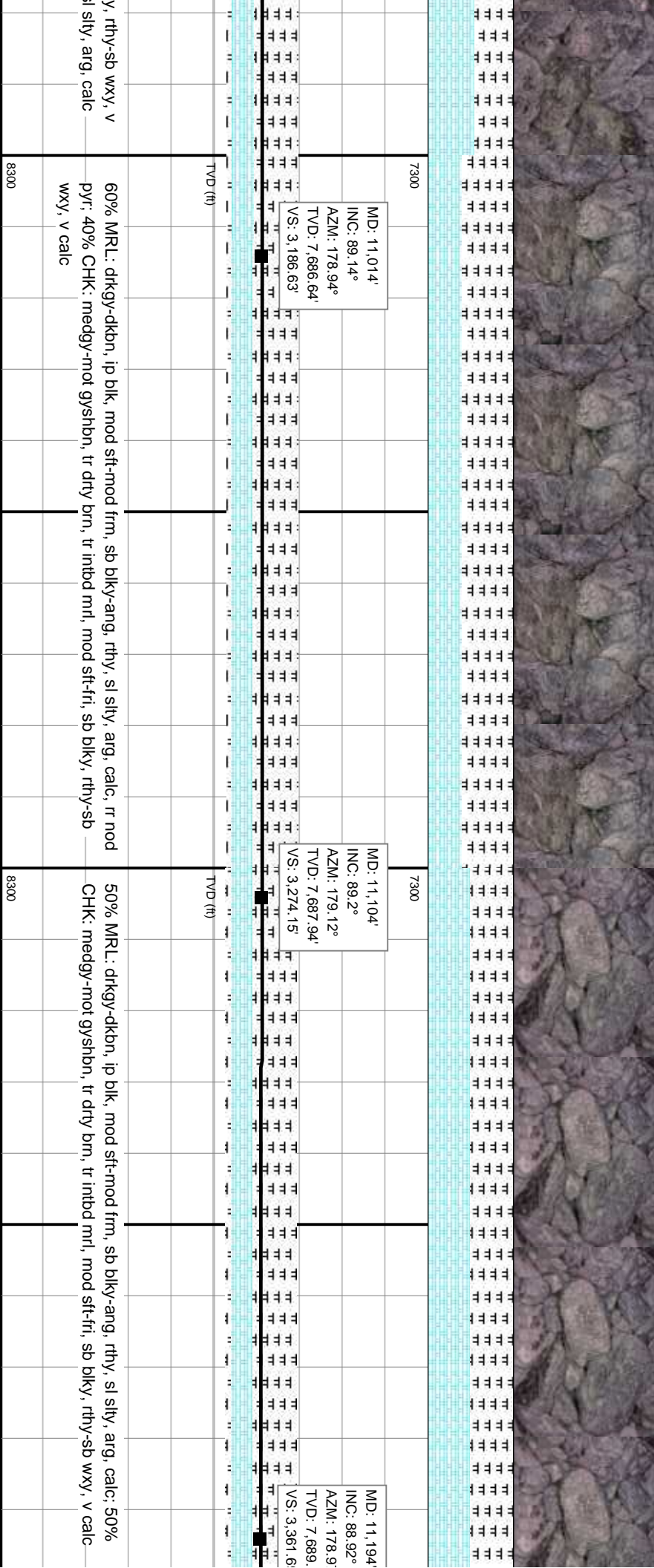
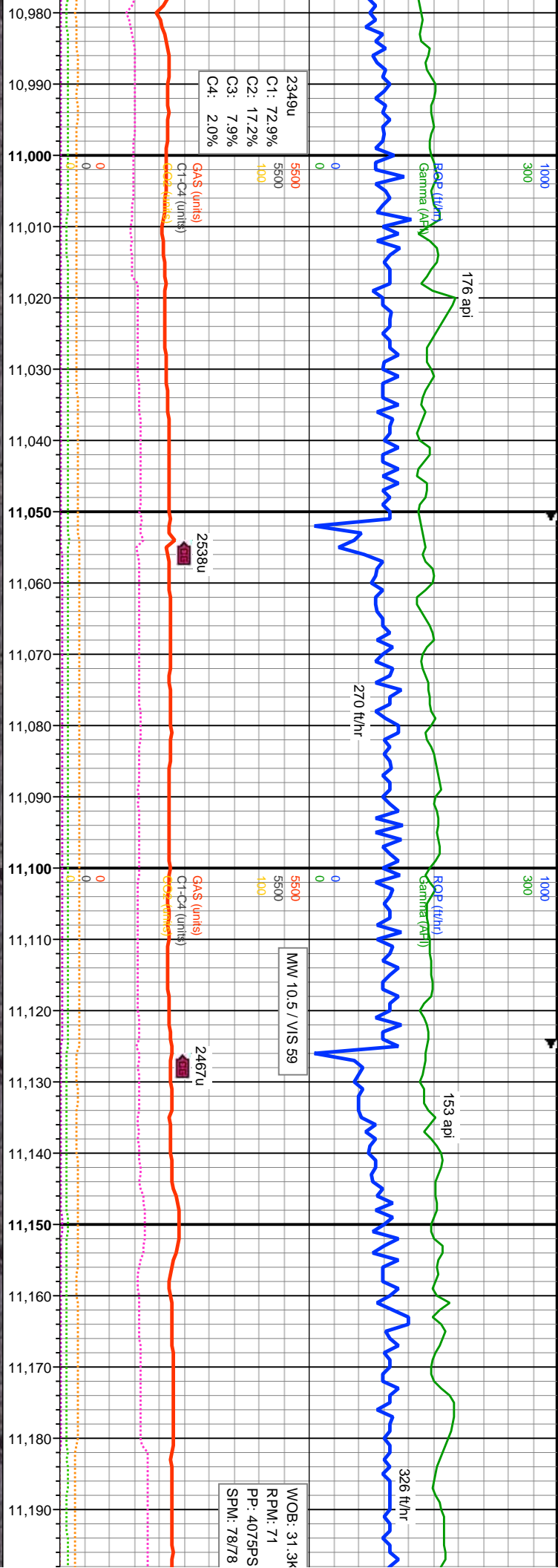


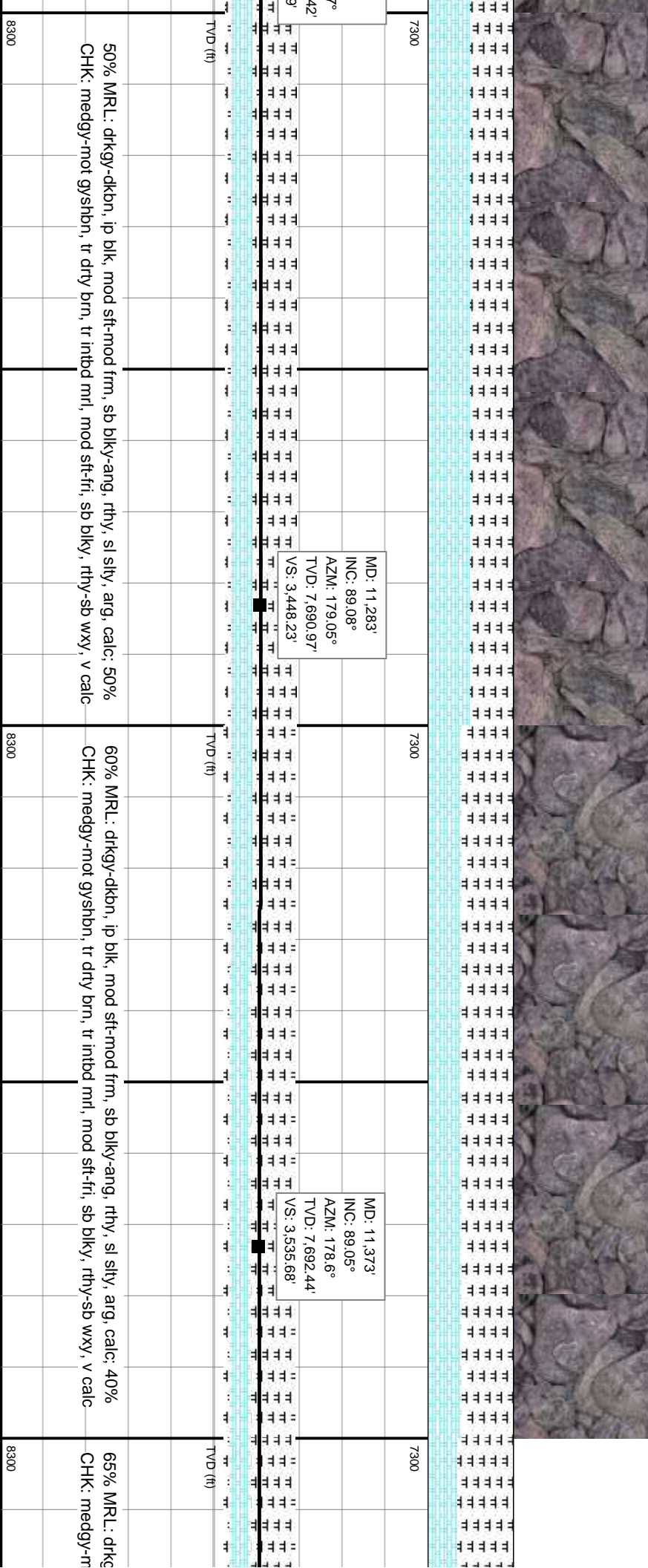
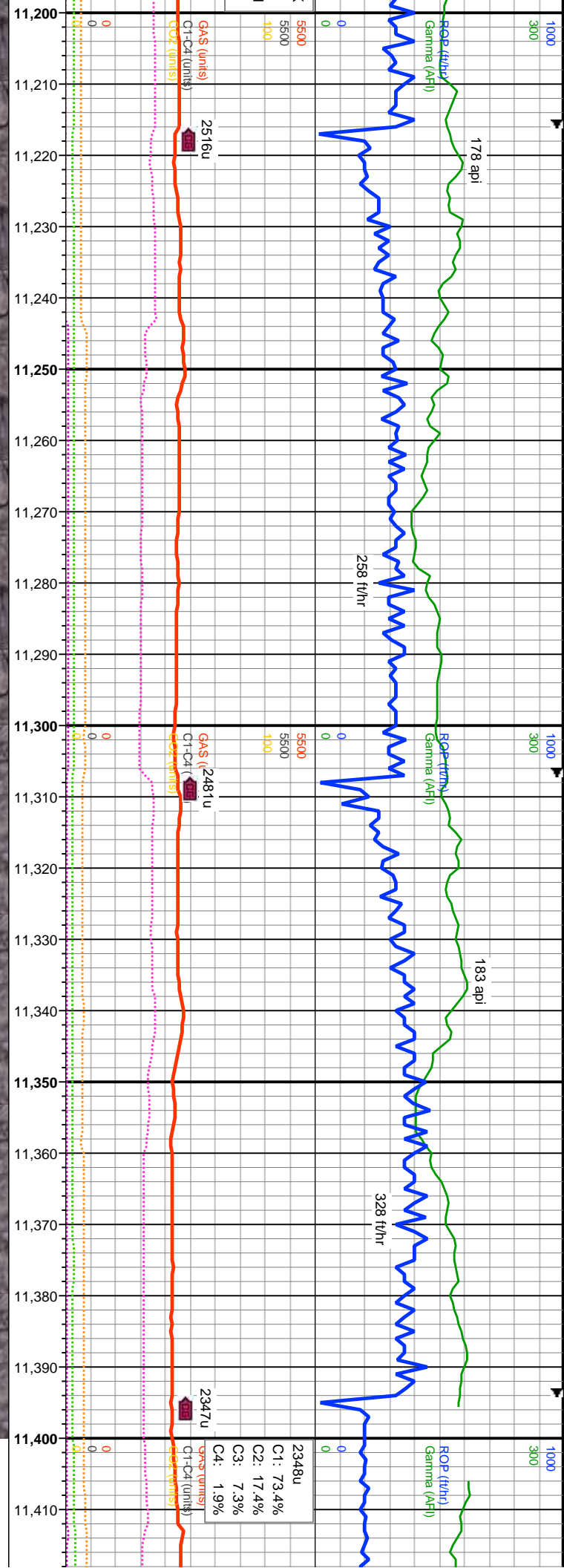


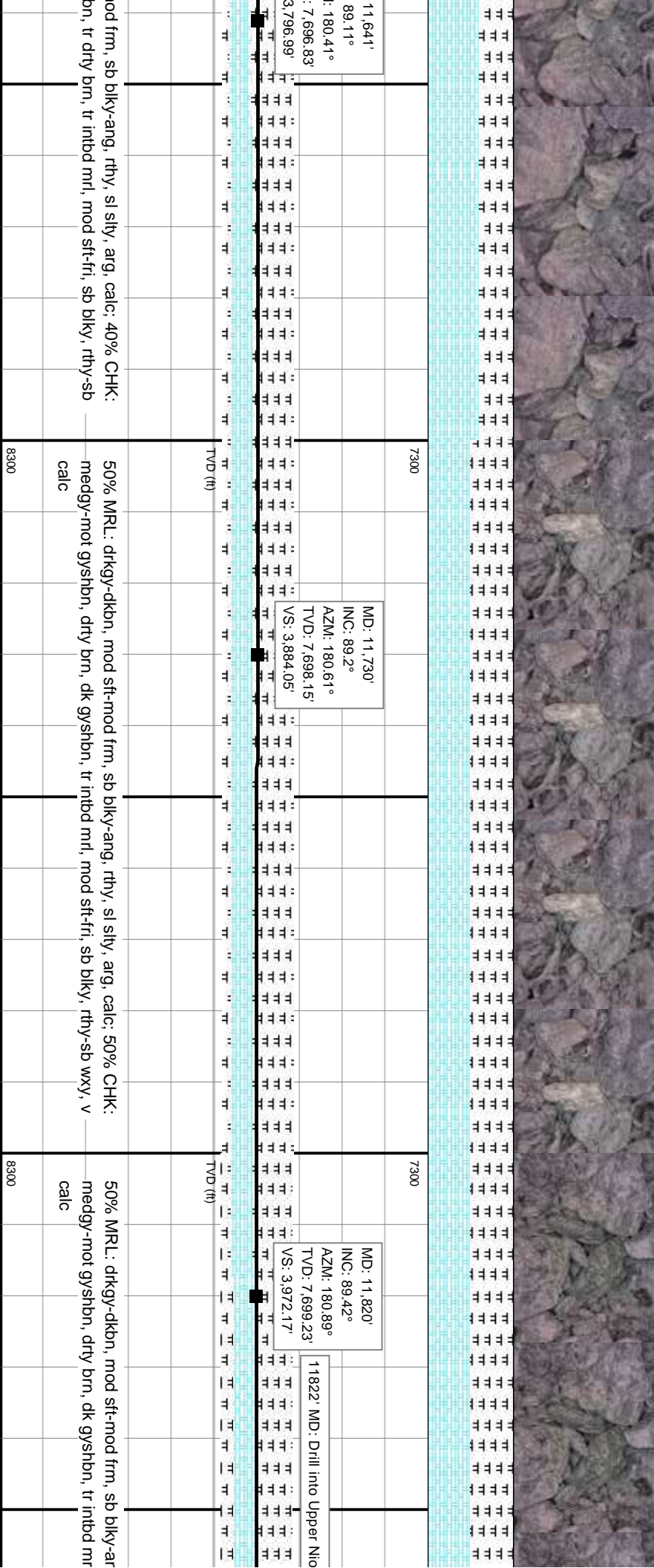
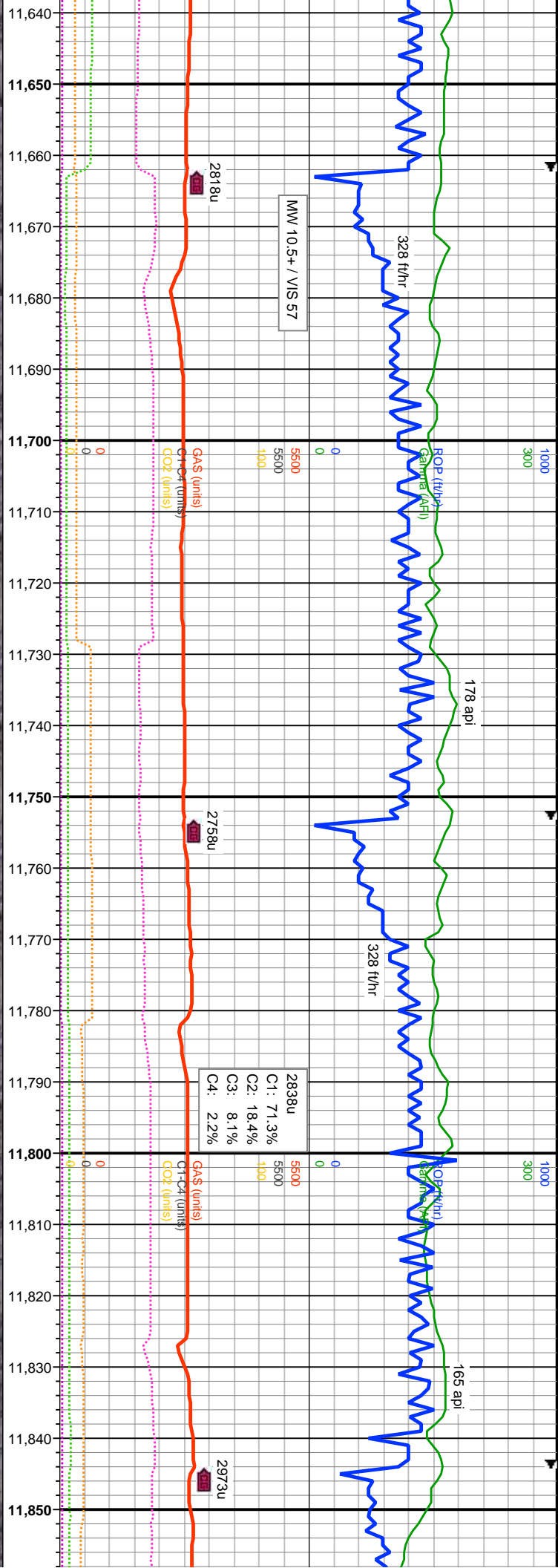


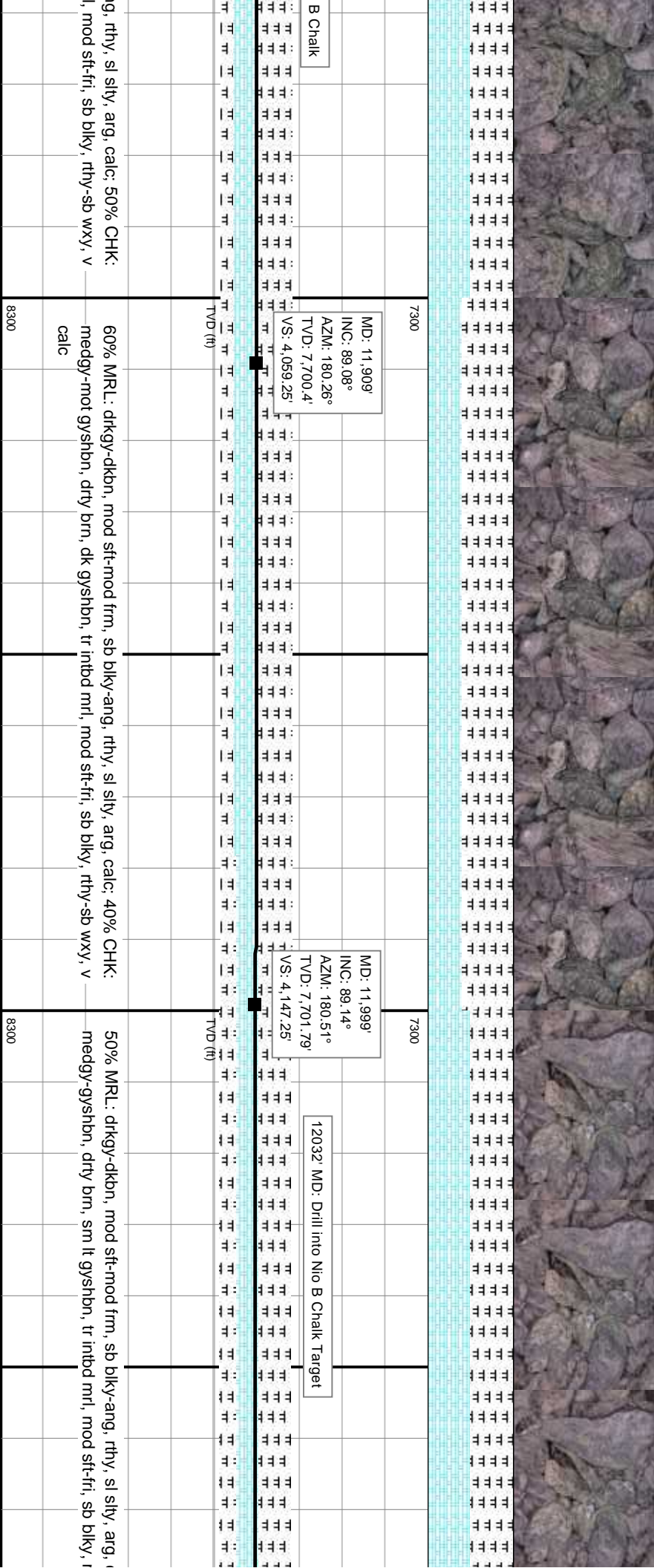
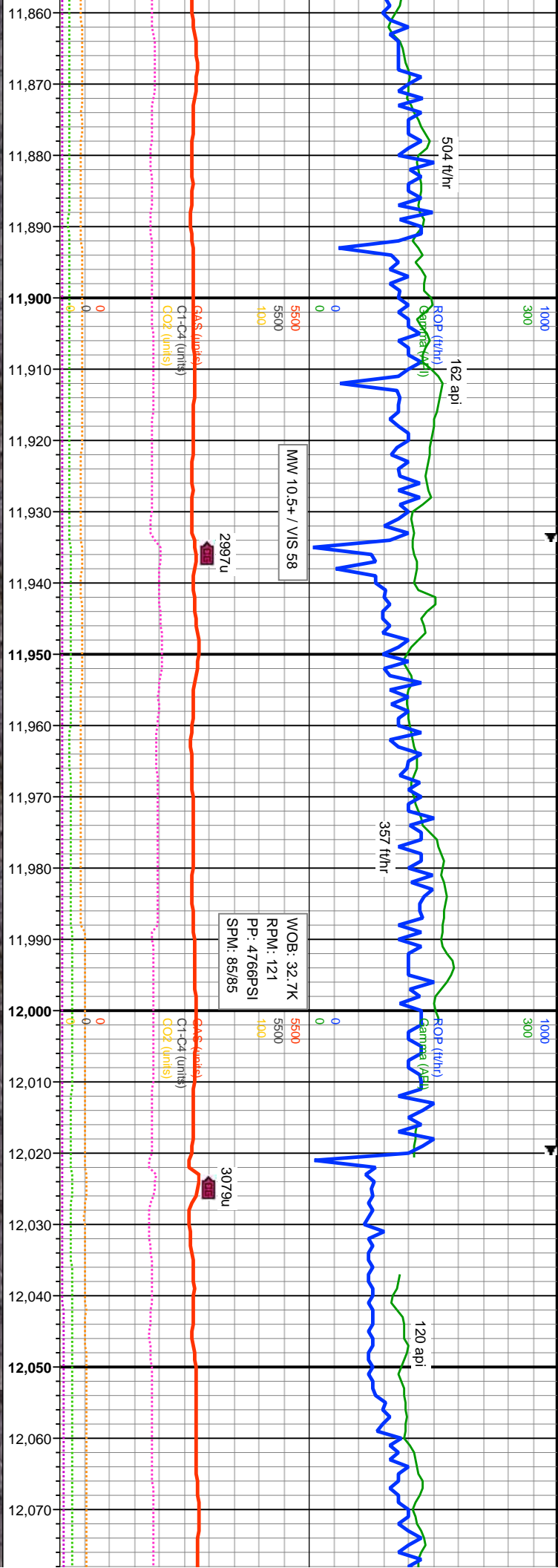


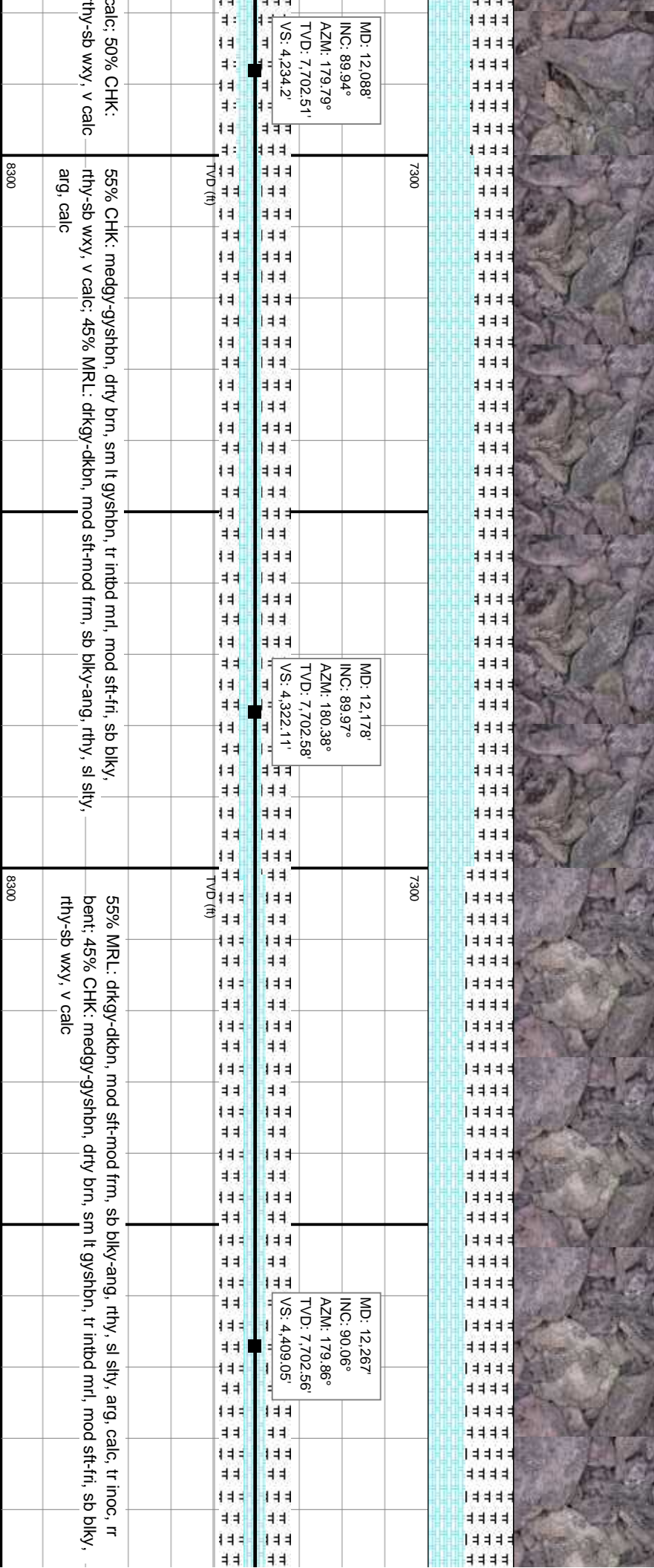
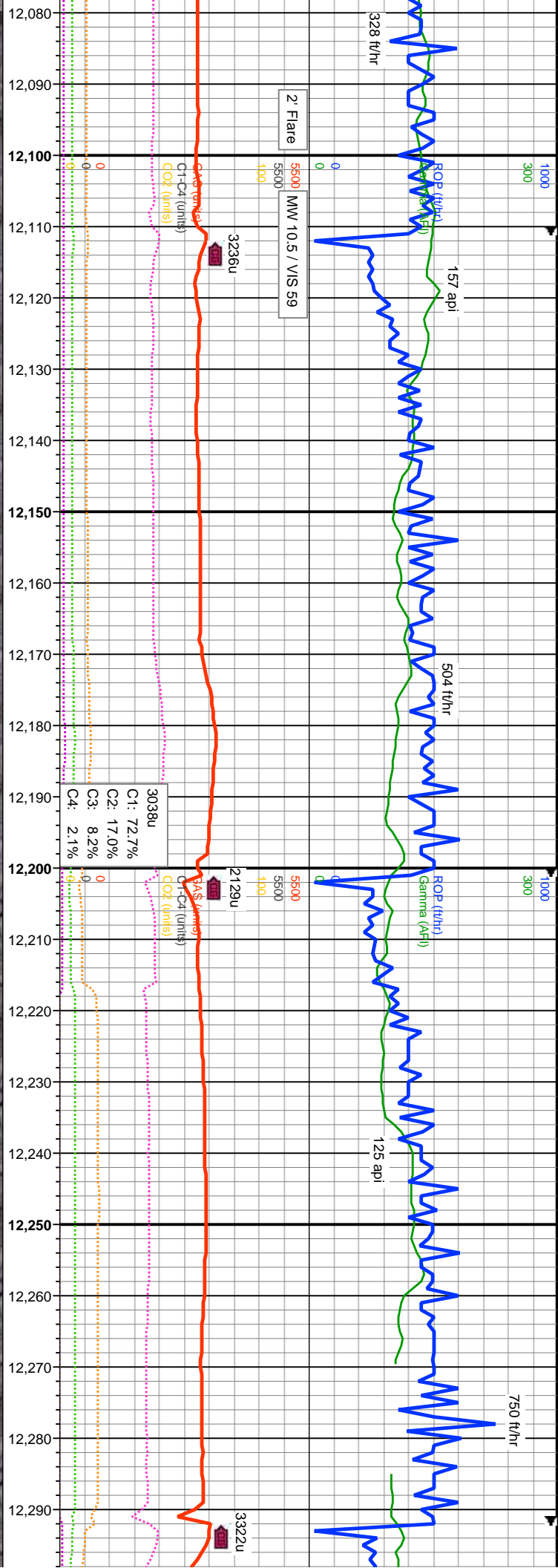








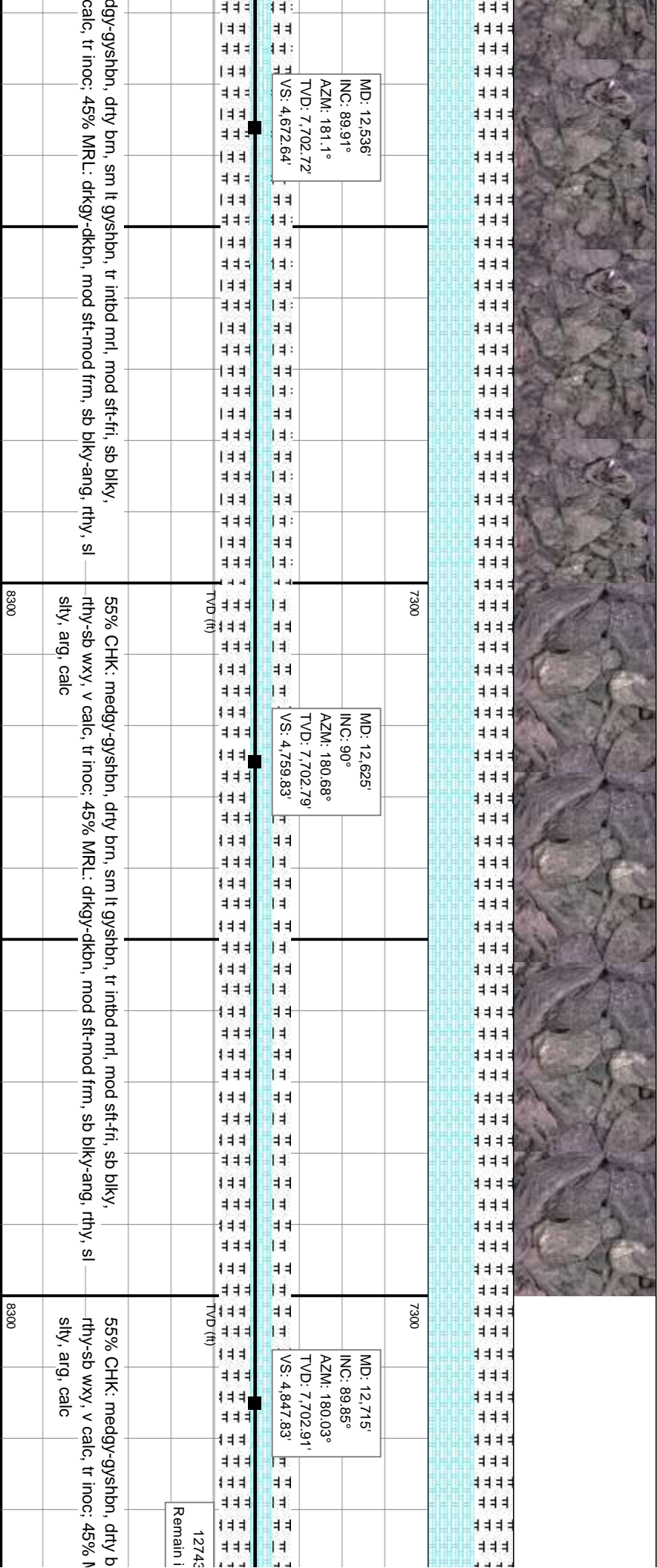
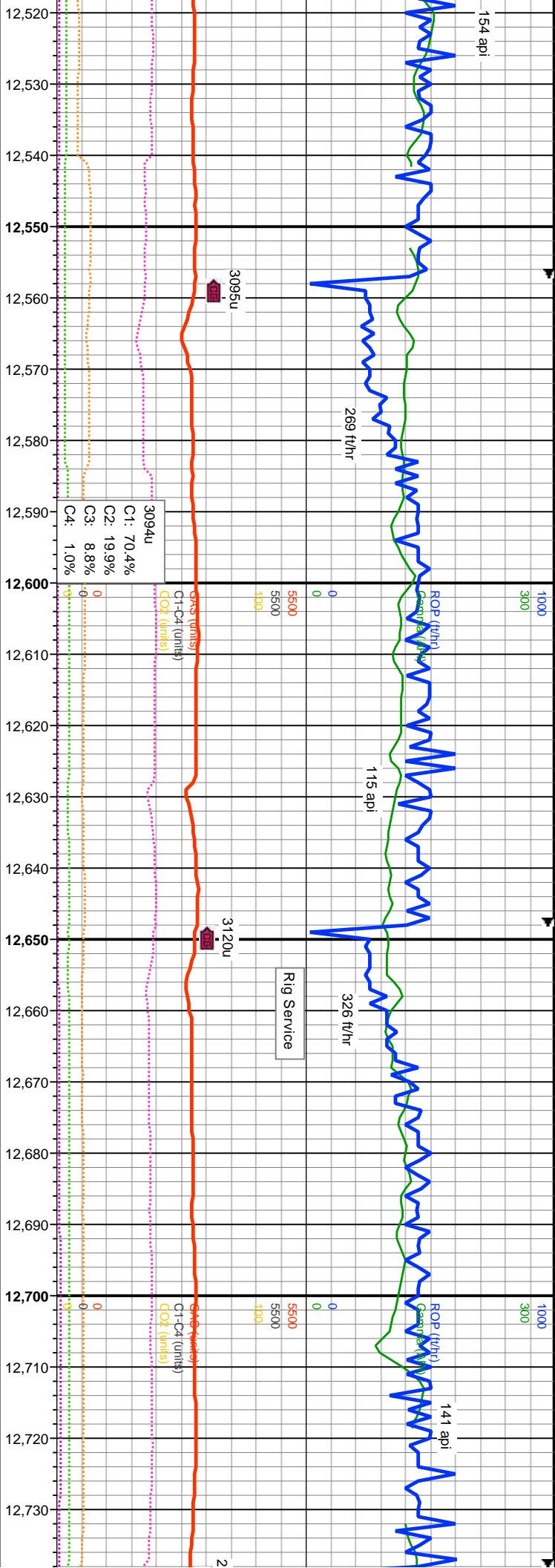


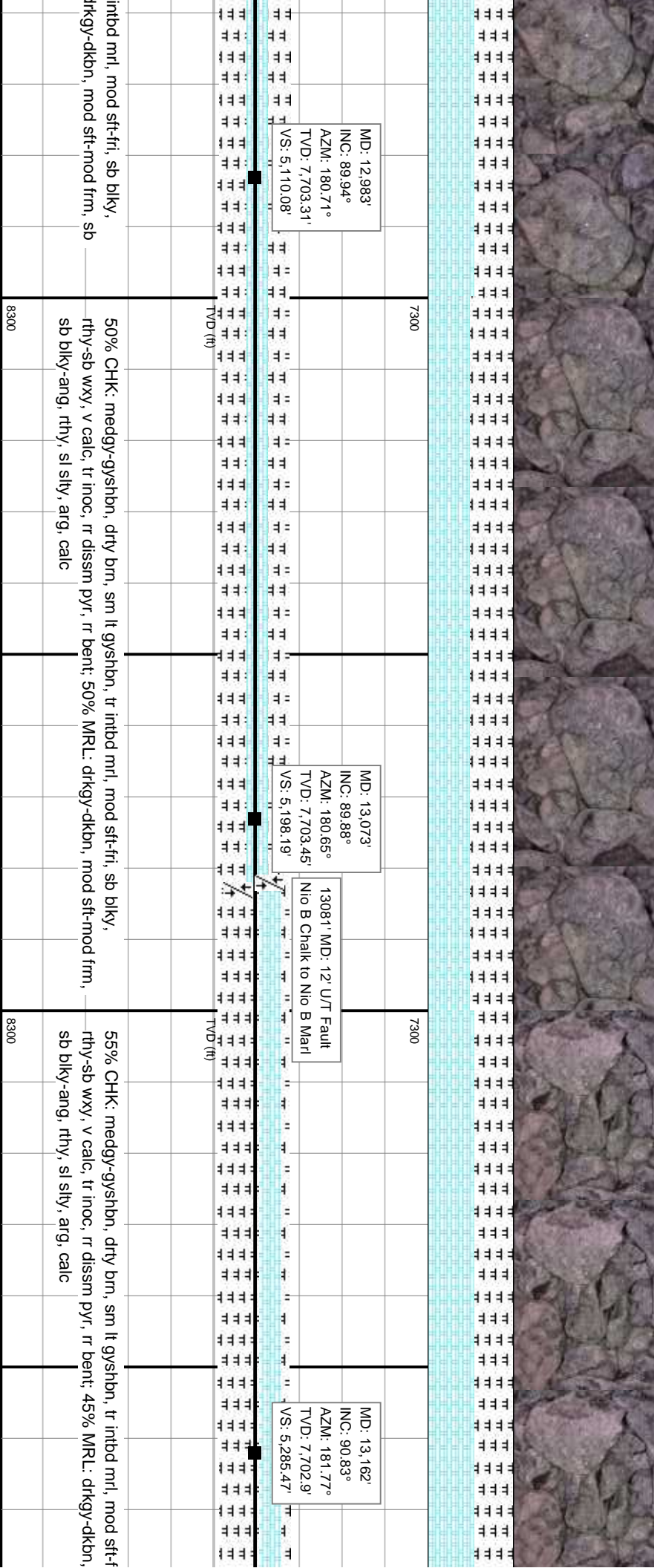
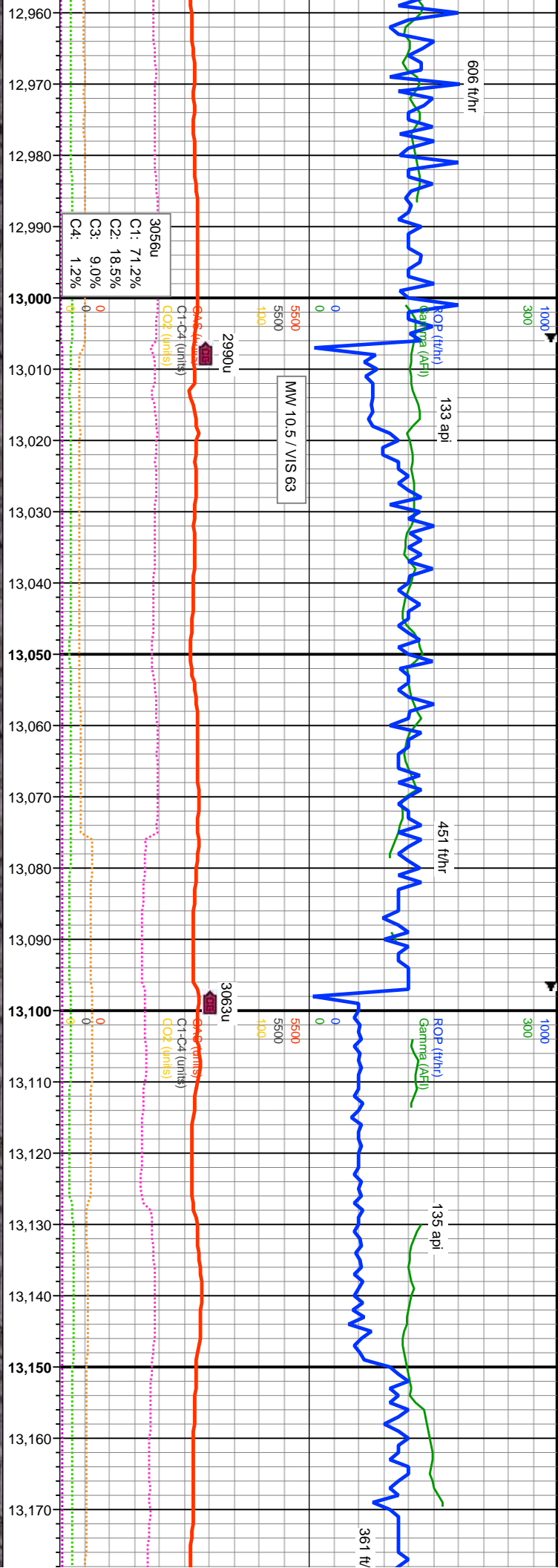


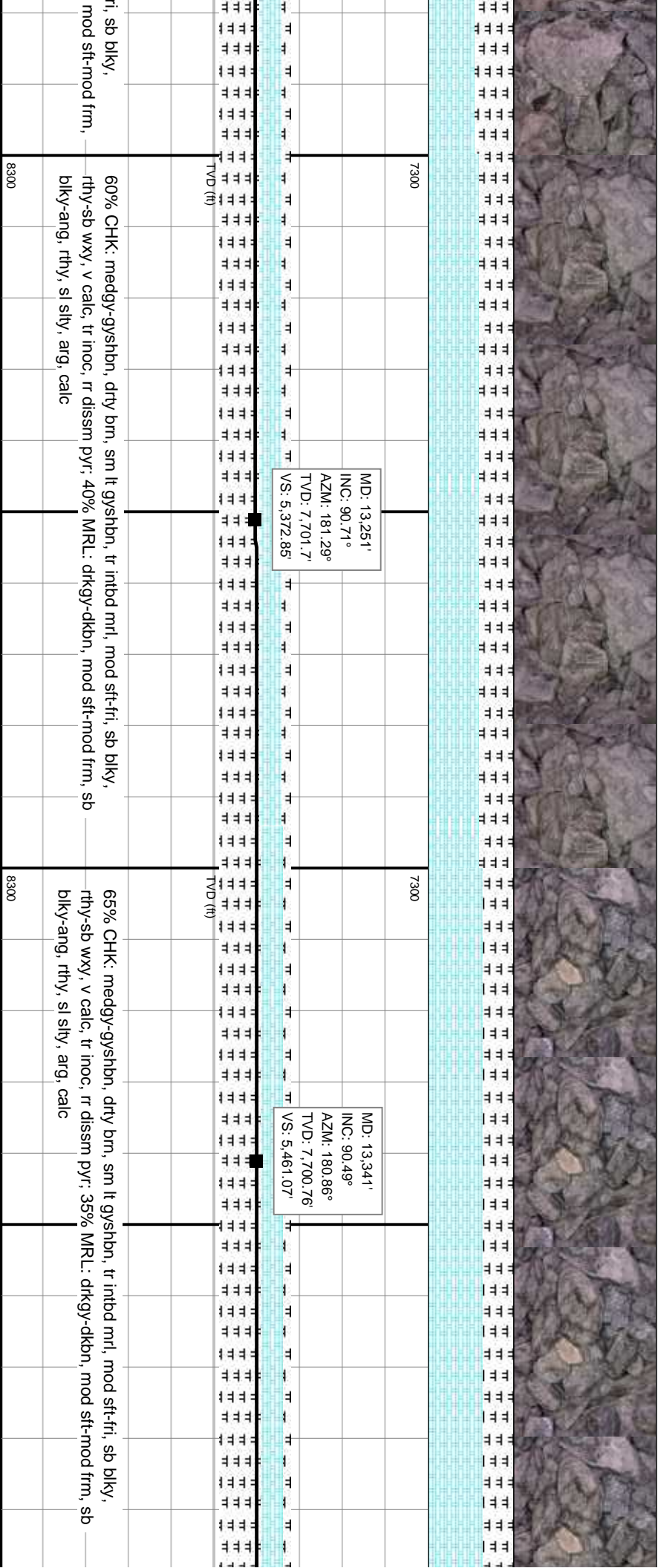
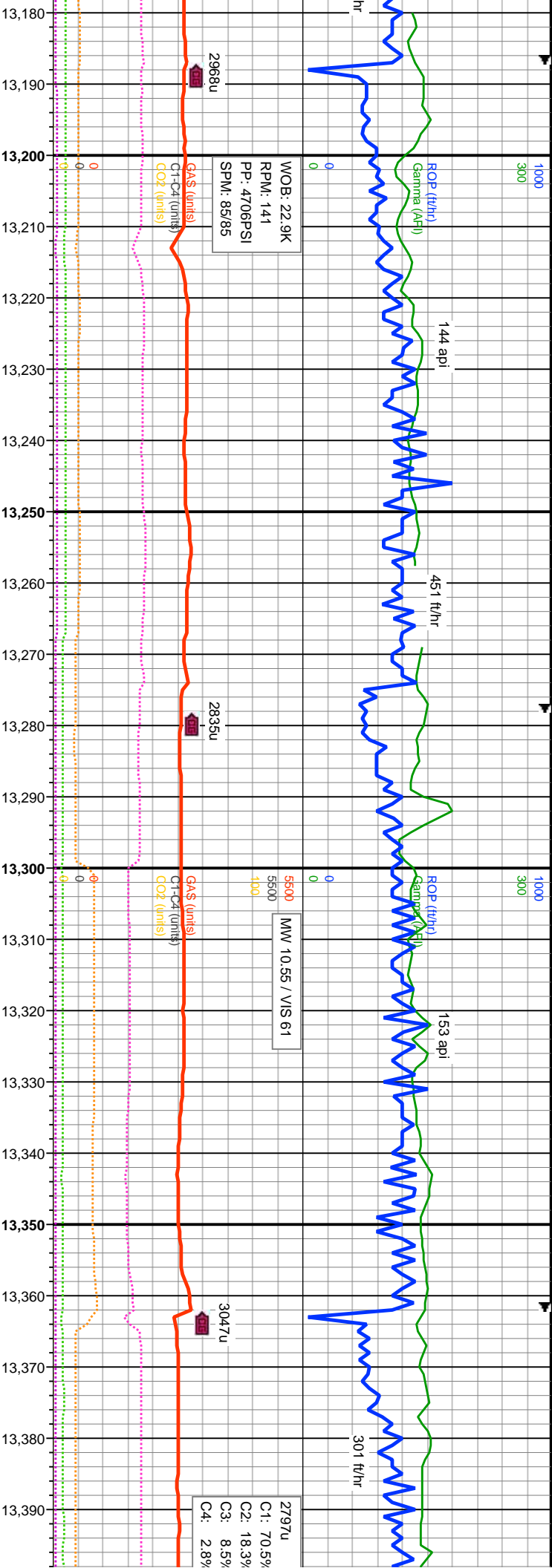
calc, 50% CHK: rthy-sb wxy, v calc

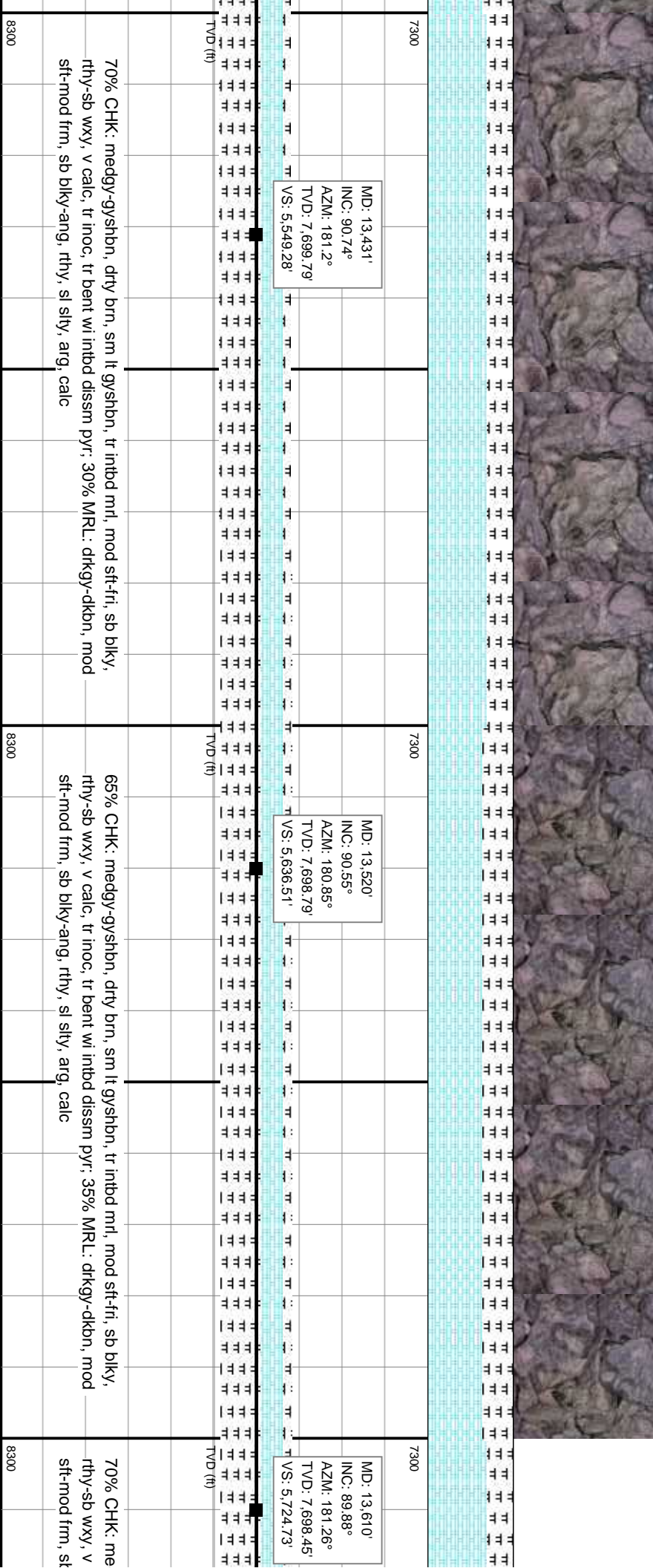
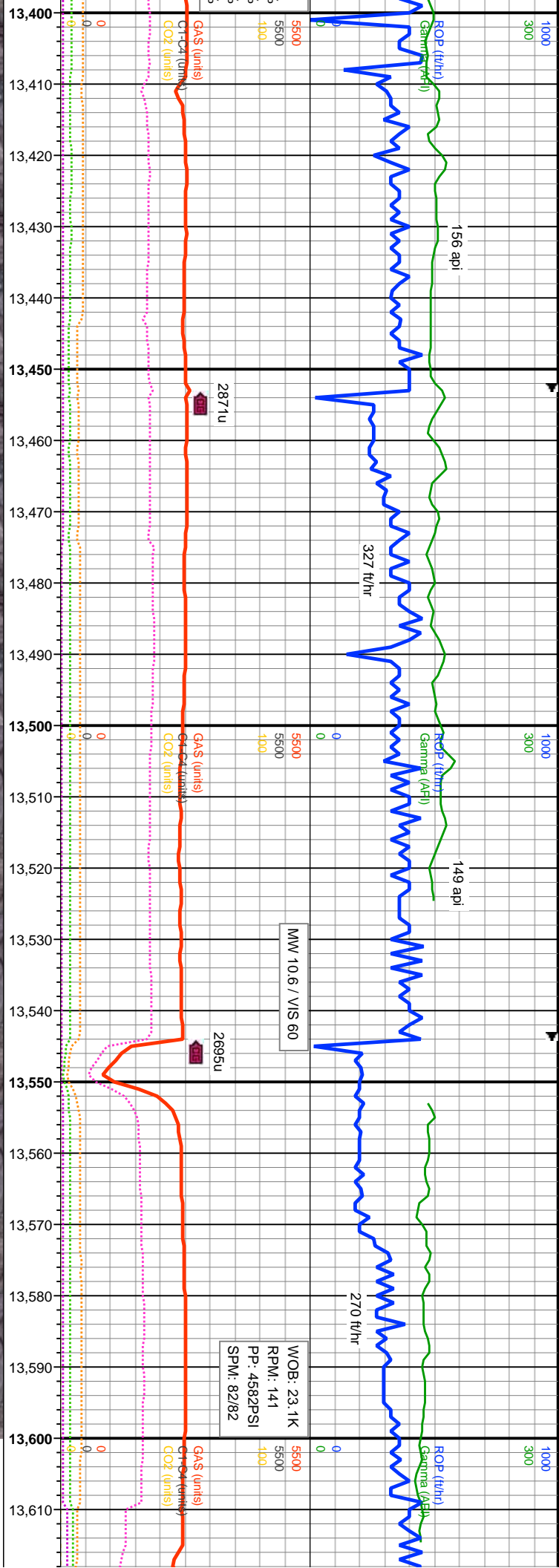
55% CHK: medgy-gyshbn, drty brn, sm lt gysbhn, tr intbd mrl, mod sft-frt, sb blkly, arg, calc

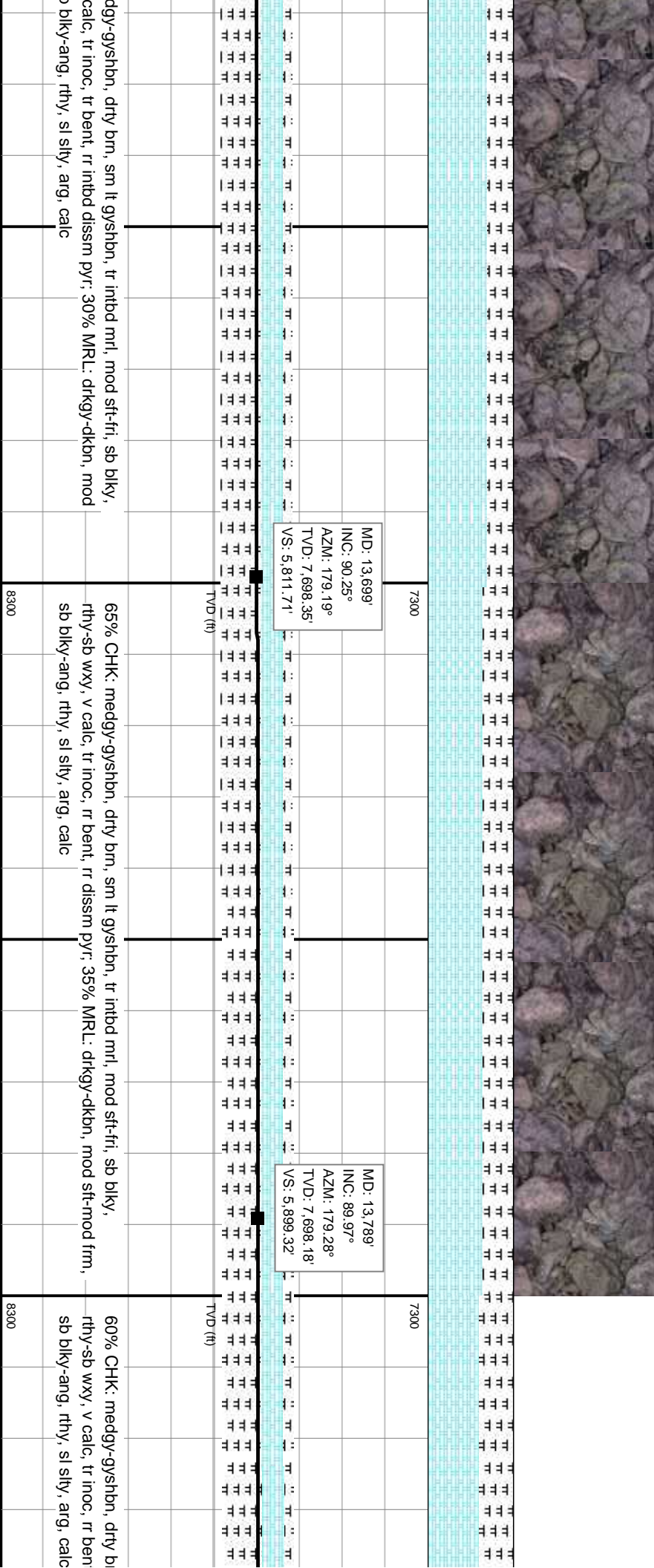
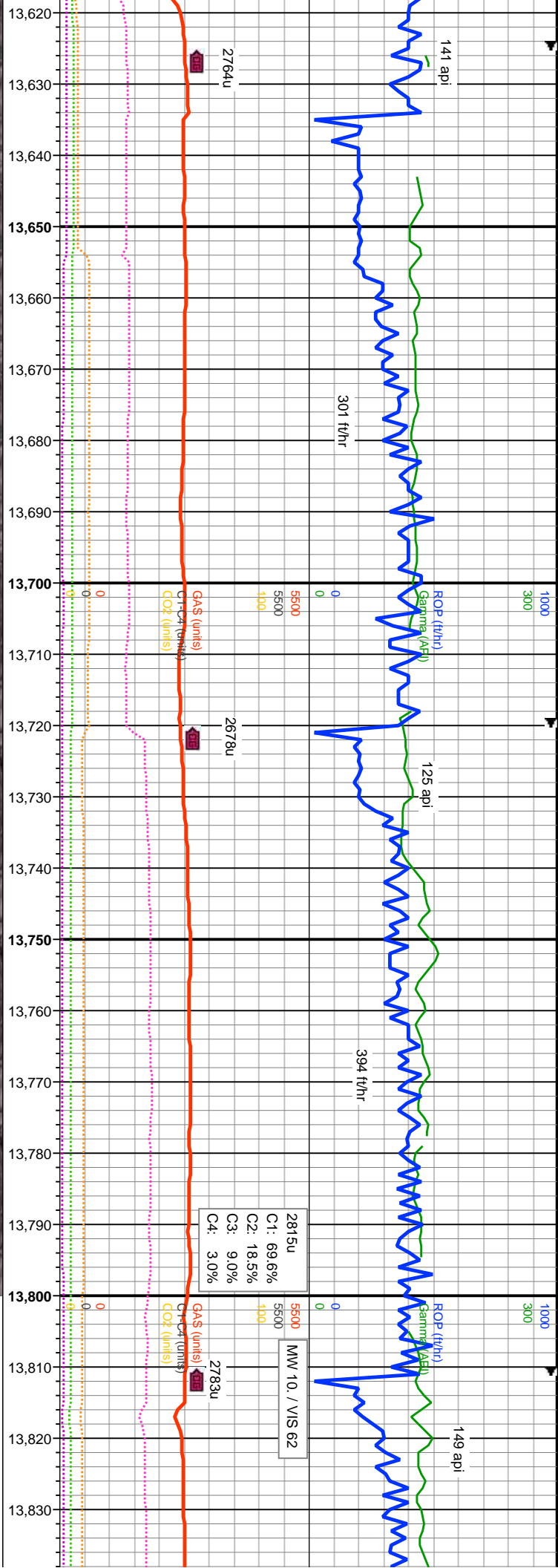
55% MRL: drkgy-dkbn, mod sft-mod frm, sb blkly-ang, rthy, sl silty, bent, 45% CHK: medgy-gyshbn, drty brn, sm lt gysbhn, tr intbd mrl, mod sft-frt, sb blkly, rthy-sb wxy, v calc

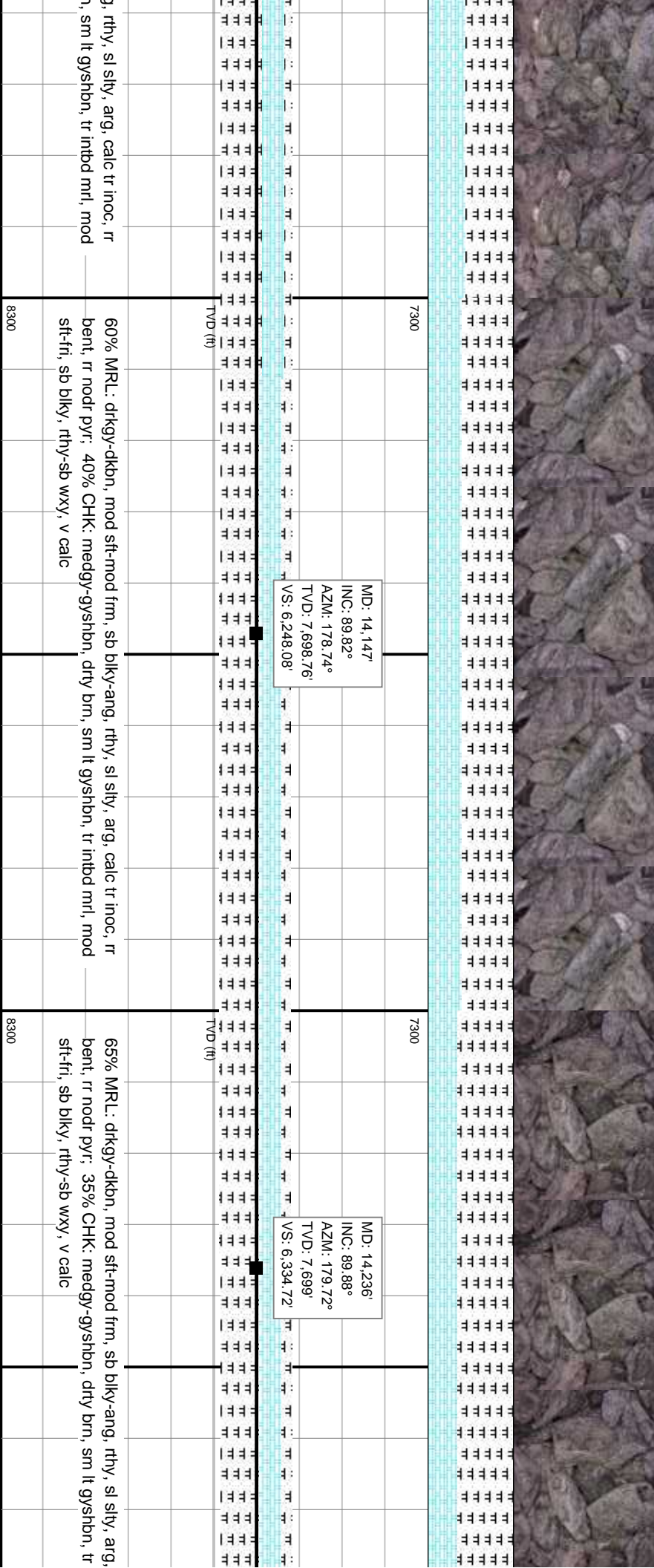
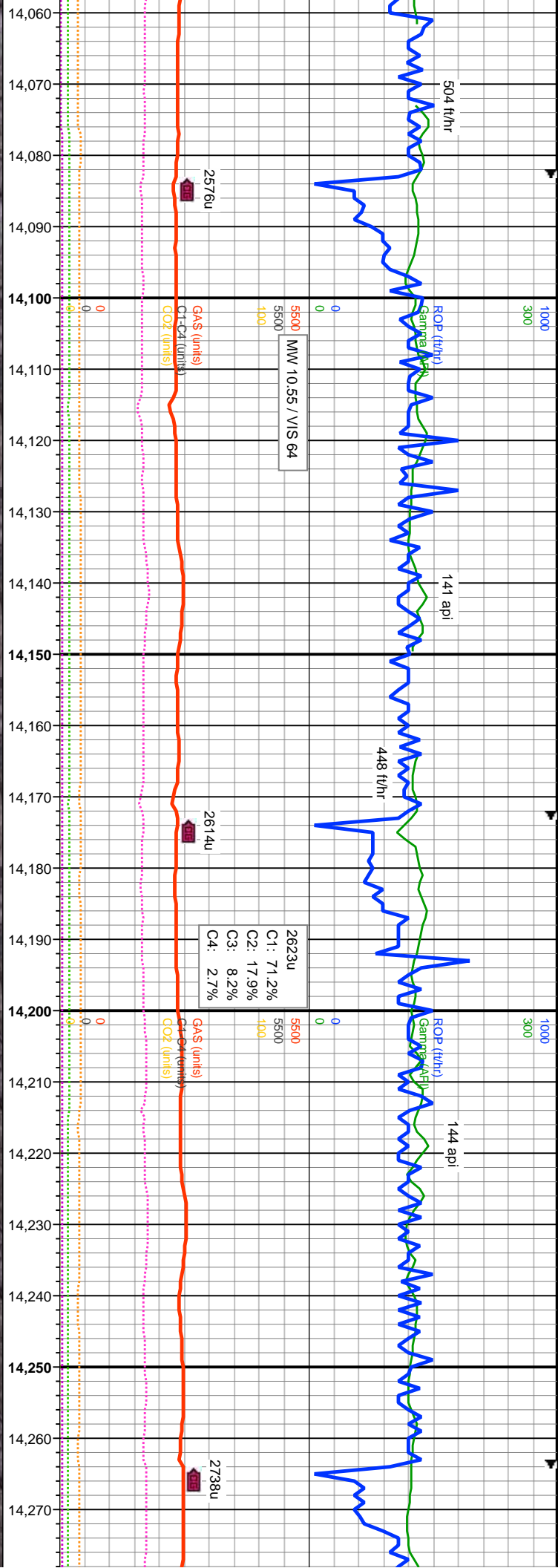


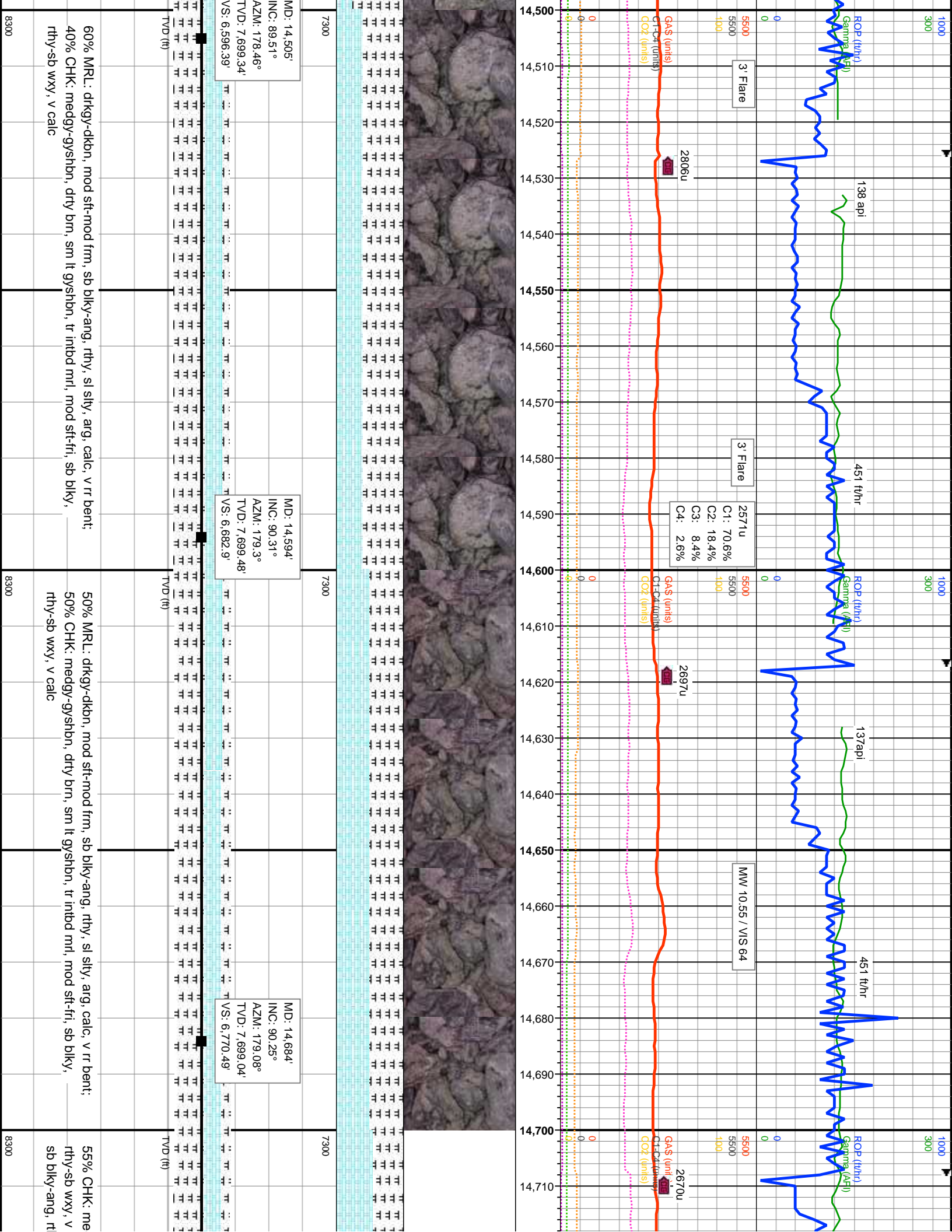


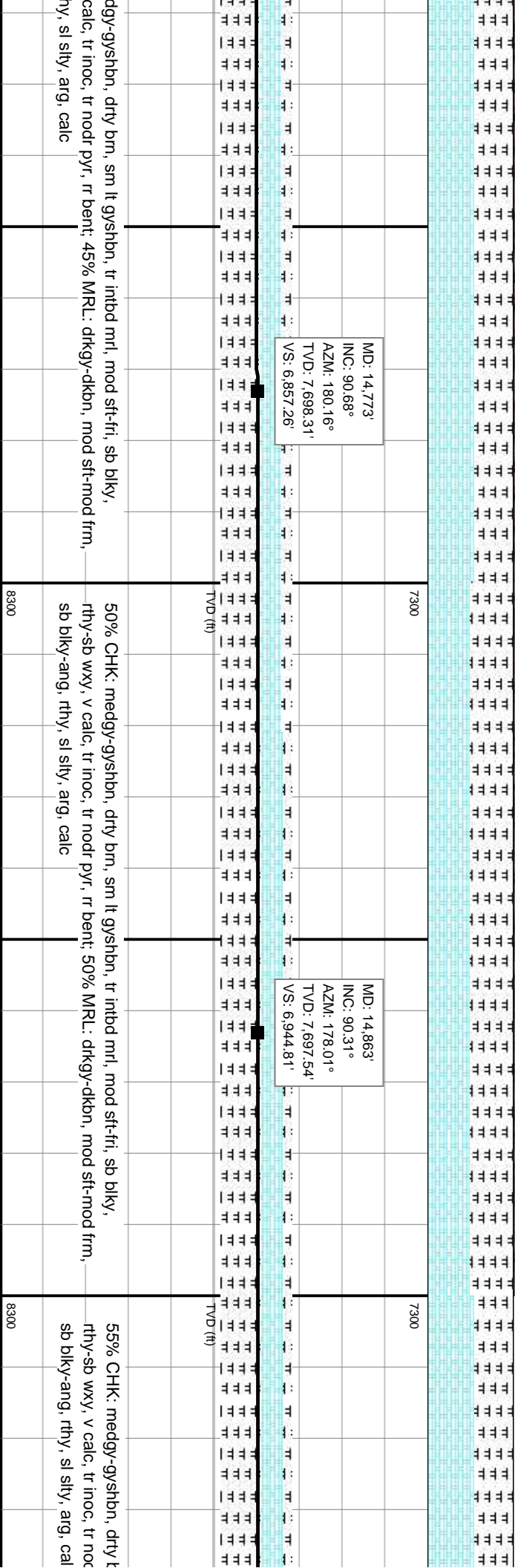
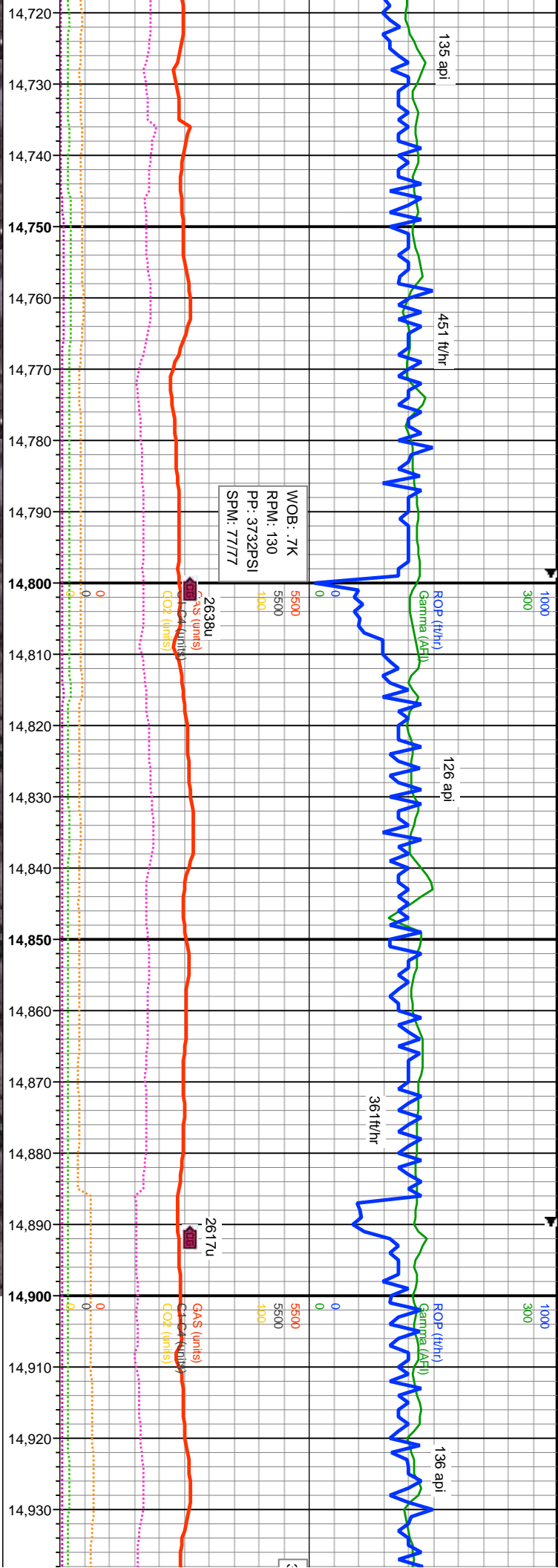


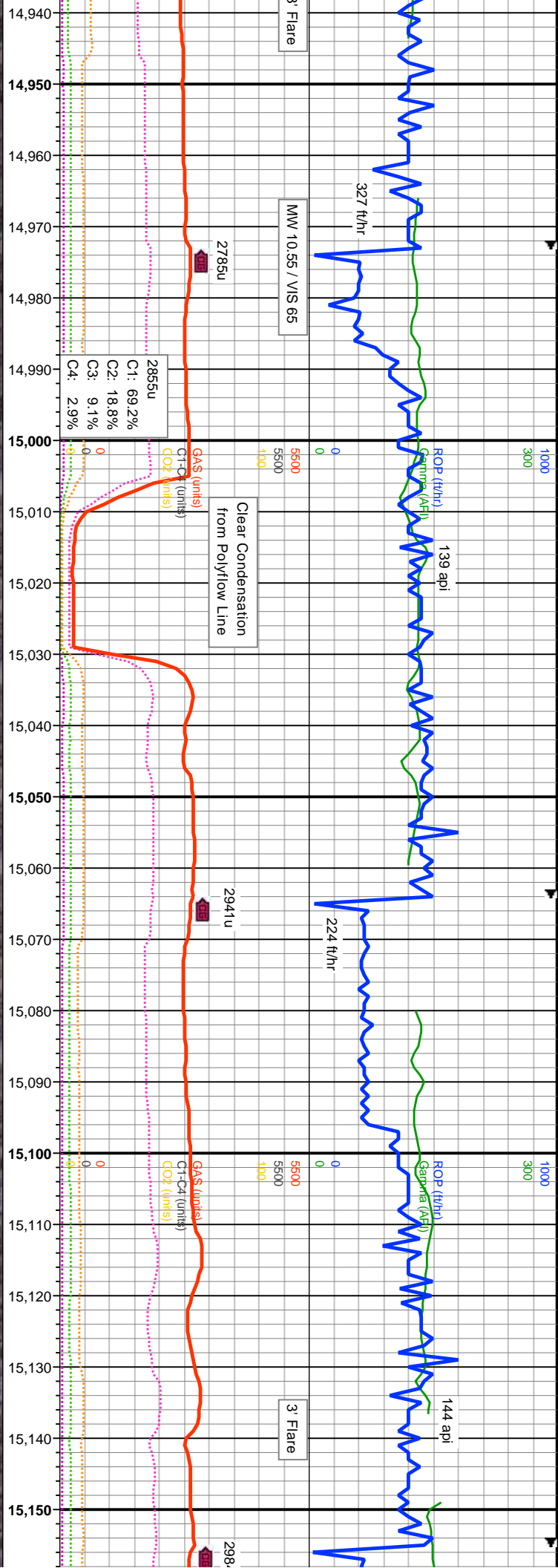












MD: 14.952 INC: 90.68° AZM: 181.48° TVD: 7.696.77' VS: 7.031.61'		7300	8300
MD: 15.042 INC: 90.65° AZM: 178.4° TVD: 7.695.72' VS: 7.119.46'		7300	8300
MD: 15.131' INC: 89.91° AZM: 178.66° TVD: 7.695.29' VS: 7.205.84'		7300	8300
55% CHK: medgy-gyshbn, drty brn, sm lt gyshbn, tr inbd mtl, mod sft-fri, sb blkly, rthy-sb wxy, v calc, tr inoc, rr bent; 45% MRL: drkgy-dkbn, mod sft-mod frm, rthy, sl slty, arg, calc		55% CHK: medgy-gyshbn, drty brn, sm lt gyshbn, tr inbd mtl, mod sft-fri, sb blkly, rthy-sb wxy, v calc, tr inoc, rr bent; 45% MRL: drkgy-dkbn, mod sft-mod frm, rthy, sl slty, arg, calc	

