

COLUMBINE LOGGING

Scale: 5" / 100'
Measured Depth Log

Well Name GLEASON LC26-720

Location SESE 26 9N 59W

State COLORADO

County WELD

Country USA

Rig Number H&P 273

API Number 05-123-40689

AFE # 200374

Region DJ BASIN

Field WATTENBERG

Spud Date 4/27/2015

Drilling Completed 5/2/2015

Surface Coordinates LAT: 40.71574
LONG: -103.93774
500' FSL
626' FEL

Bottom Hole Coordinates PROJECTED:
330' FNL
660' FEL

Ground Elevation 4888'

K.B. Elevation 4912'

Logged Interval 800' To 10160'

Total Depth 10160'

Formation NIOBRARA A CHALK

Type of Drilling Fluid H2O, LSND

Other Symbols

Oil Show

- DEAD
- EVEN
- QUESTIONABLE
- SPOTTED STAINING

Porosity

- E EARTHY
- F FENESTRAL
- F FRACTURE
- X INTERCRYSTALLINE
- Q INTEROOLITIC
- MOLDIC

ORGANIC

P PINPOINT

V VUGGY

Engineering

- BIT CHANGE
- CONNECTION (LEFT)
- CONNECTION (RIGHT)
- CONNECTION GAS
- TRIP GAS
- DOWN TIME GAS
- CORE - LOST
- CORE - RECOVERED
- DST INTERVAL

FAULT

FORMATION TOP

GAS SHOW

OIL SHOW

MN DEPTH MN DEPTH

MN DEPTH MN DEPTH (RIGHT)

NORMAL FAULT

OVERTURNED STRATA

REVERSE FAULT

CASING

SIDEWALL CORE (LEFT)

SIDEWALL CORE (RIGHT)

SLIDE

SURVEY

DST DRILL STEM TEST

WIRELINE TESTED - LEFT

WIRELINE TESTED - RT

Rounding

- ANGULAR
- ROUNDED
- SUBANG
- SUBRND

Textures

- BOUNDSTONE
- CHALKY
- CRYPTOXLN

E EARTHY

FINELYXLN

GRAINSTONE

L LITHOGRAPHIC

MX MICROXLN

MS MUDSTONE

PS PACKSTONE

WS WACKSTONE

Sorting

- M MODERATE
- P POOR
- W WELL

Accessories

Fossils

ALGAE
 AMPHIPORA
 BELEMNITE
 BIOCLASTIC
 BRACHIOPOD
 BRYOZOA
 CEPHALOPOD
 CORAL
 CRINOID
 ECHINOID
 FISH
 FORAMINIFERA
 FOSSIL

GASTROPOD
 INOCERAMUS

OOLITE
 OSTRACOD
 PELECYPOD
 PELLET
 PISOLITE
 PLANT REMAINS
 PLANT SPORES
 SCAPHOPOD
 STROMATOPOROID

Minerals

ANHYDRITIC
 ARGILLACEOUS

ARGILLITE GRAIN
 BENTONITE

BITUMENOUS SUBSTANCE
 BRECCIA FRAGMENTS
 CALCAREOUS
 CARBONACEOUS FLAKES
 CHTDK
 CHTLT
 COAL - THIN BEDS
 DOLOMITIC
 FELDSPAR
 FERRUGINOUS PELLET

FERRUGINOUS
 GLAUCONITE
 GYPSIFEROUS

HEAVY MINERAL
 KAOLIN

MARCASITE
 MARLSTONE
 MICACEOUS
 MINERAL CRYSTALS
 NODULES
 PHOSPHATE PELLETS
 PYRITE
 SALT CAST
 SANDY
 SIDERITE
 SILICEOUS
 SILTY
 TUFFACEOUS

Stringer

ANHYDRITE STRINGER
 BENTONITE STRINGER
 COAL STRINGER
 DOLOMITE STRINGER
 GYPSUM STRINGER
 LIMESTONE STRINGER
 MARLSTONE (CALC) STRG
 MARLSTONE (DOL) STRG
 SANDSTONE STRINGER
 SHALE STRINGER
 SILTSTONE STRINGER

Rock Types

UNKNOWN
 ANHYDRITE
 BENTONITE
 BRECCIA
 CEMENT
 CHALK
 CHERT
 CLAY CHOKE SAND
 CLAYSTONE

COAL
 CONGLOMERATE
 DOLOMITE
 DOLOMITIC LIMESTONE
 GRANITE
 GYPSUM
 IGNEOUS
 LIMESTONE
 SIDERITE or LIMONITE

MARLSTONE
 METAMORPHIC
 NO SAMPLE
 SALT
 SALT- PEPPER SAND
 SANDSTONE
 SHALE
 SHALE COLORED
 SHALE GRAY

SHALY SANDSTONE
 SHALY SILTSTONE
 SILTSTONE
 SILTY SHALE
 TILL
 TUFF
 WELDED TUFF

Operator

Company NOBLE ENERGY, INC.

Address 1625 BROADWAY
 DENVER, CO 80202
 (303) 228-4000

Geologist

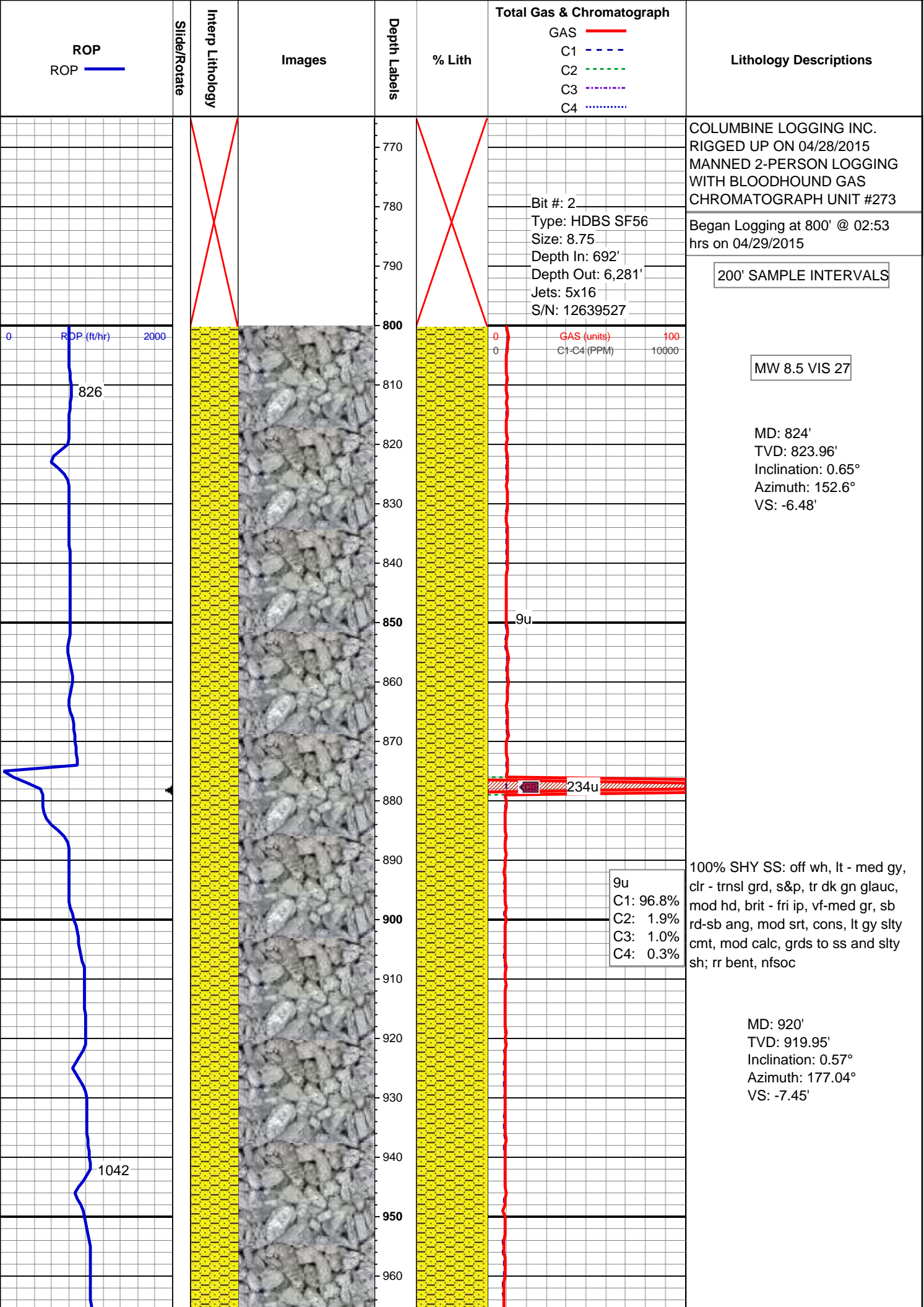
Name MICHAEL ANDERSON, SHANNA GILBERT, TRACY LAWSON

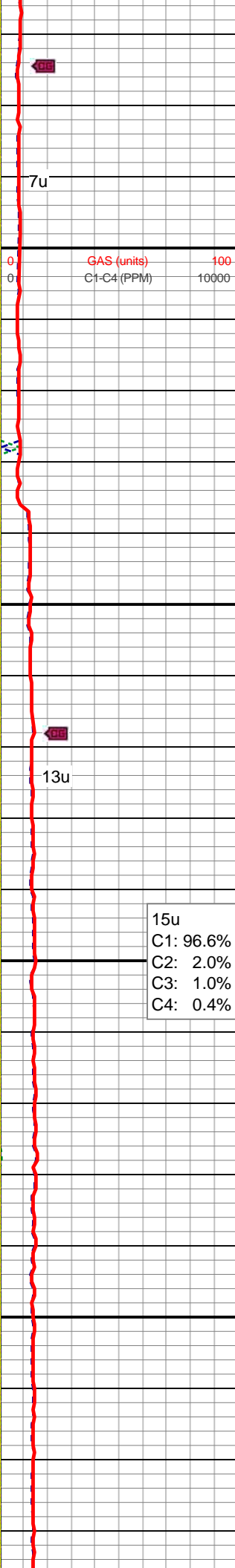
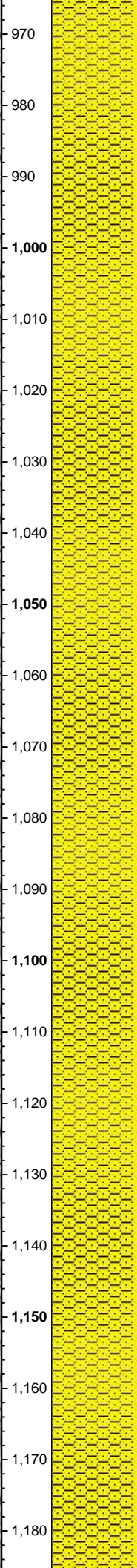
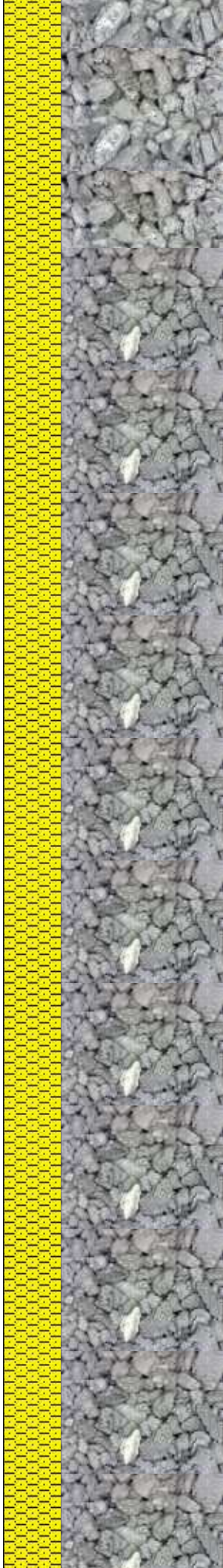
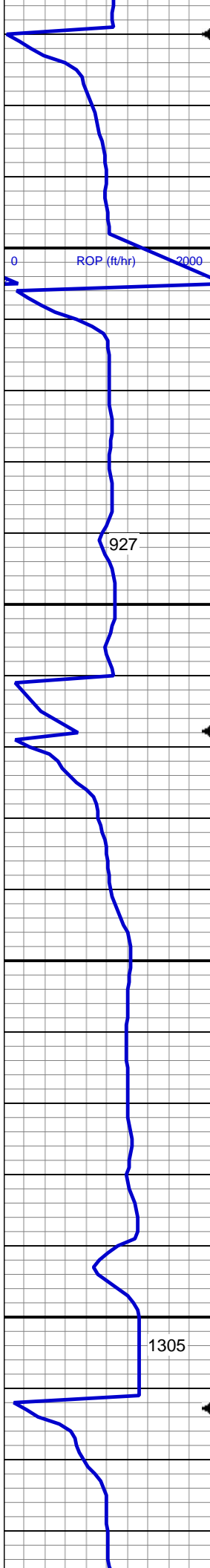
Company COLUMBINE LOGGING, INC.

Address 602 S. LIPAN ST
 DENVER, COLORADO 80223
 (303) 289-7764

Zone Color Coding

Oil
 Condensate
 Gas
 Note
 Core
 Pressure
 Error
 Water
 Seal

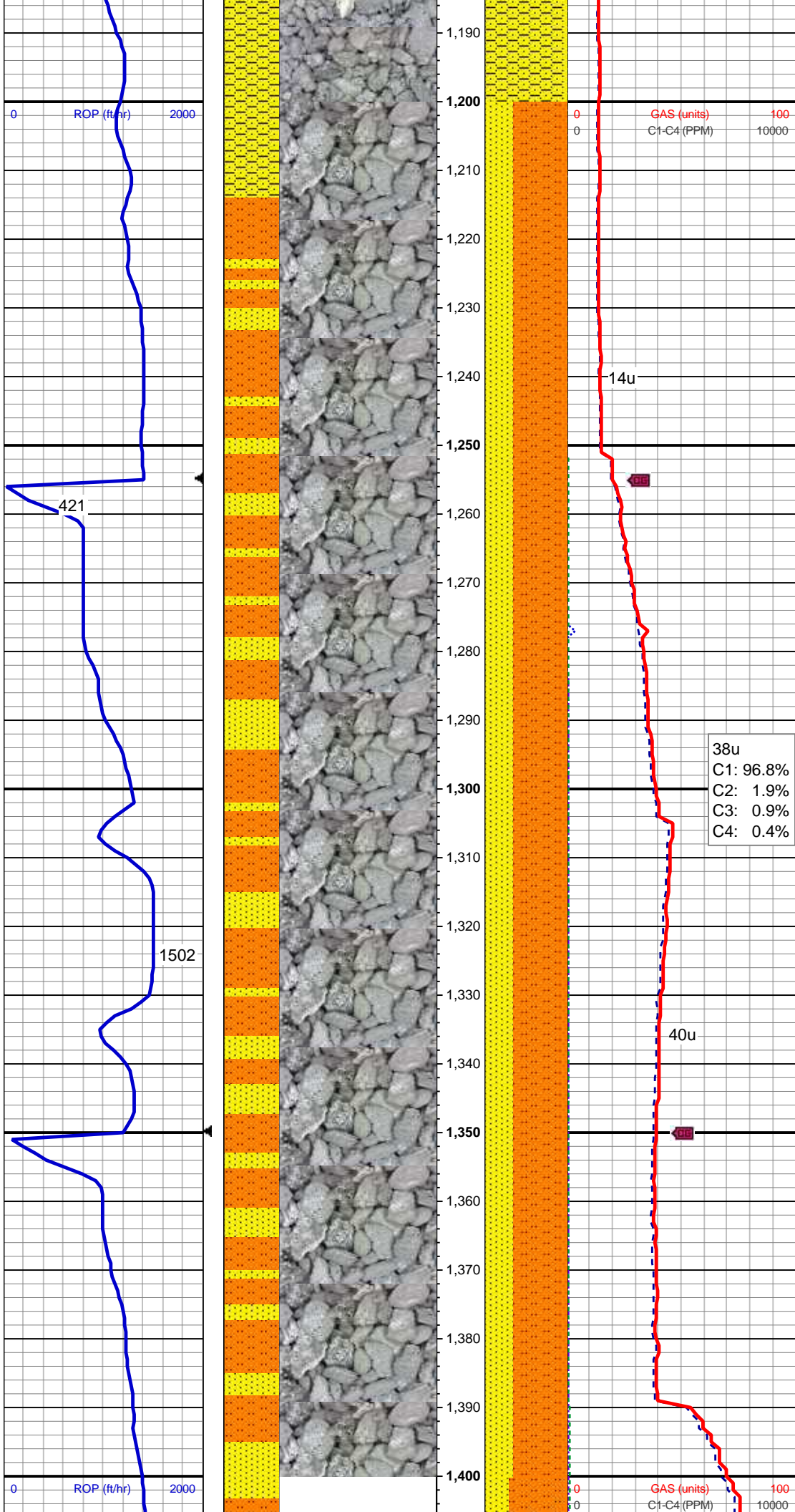




15u
C1: 96.6%
C2: 2.0%
C3: 1.0%
C4: 0.4%

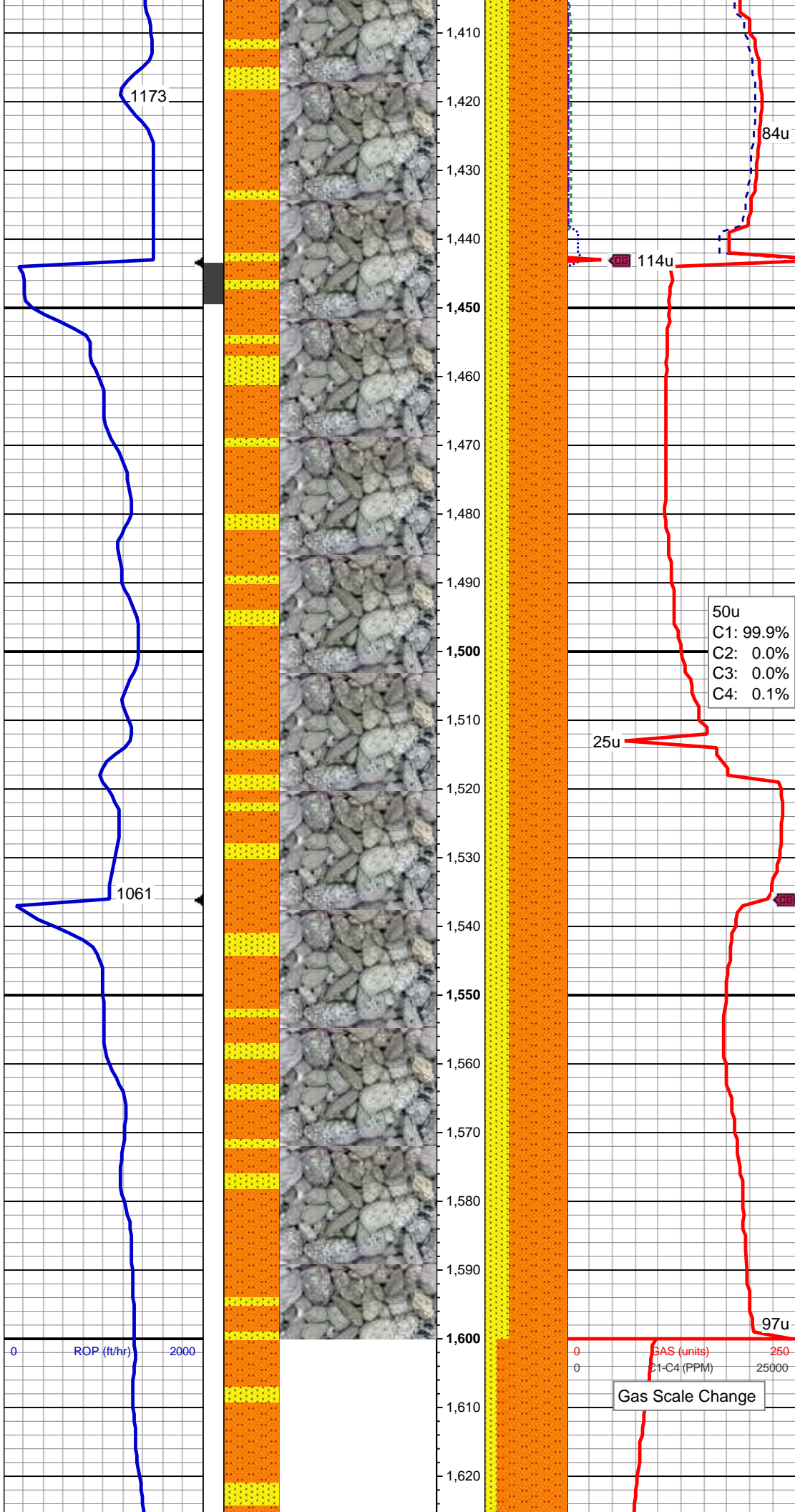
100% SHY SS: off wh, lt - med gy,
clr - trnsd grd, s&p, tr dk gn glauc,
mod hd, brit - fri ip, vf-med gr, sb
rd-sb ang, mod srt, cons, lt gy slty
cmt, mod calc, grds to ss and slty
sh; rr bent, nfsoc

MD: 1,109'
TVD: 1,108.94'
Inclination: 0.57°
Azimuth: 182.25°
VS: -9.32'



65% SLTST: lt - med gy, med gy
brn, sdy ip, pred sft, occ mod frm,
fri, sb blk, gt tex, v slty - sl arg mtx,
35% SS: wh - off wht, lt - med gy, clr
- trnsd grd, s&p, slty ip, v hd, brit, vf -
f gr, sb rd-sb ang, mod srt, cons, w
cmt, v sl calc, com glau, abnt pyr,
occ mics frag, nfsoc

MD: 1,386'
TVD: 1,385.92'
Inclination: 0.74°
Azimuth: 190.71°
VS: -12.43'



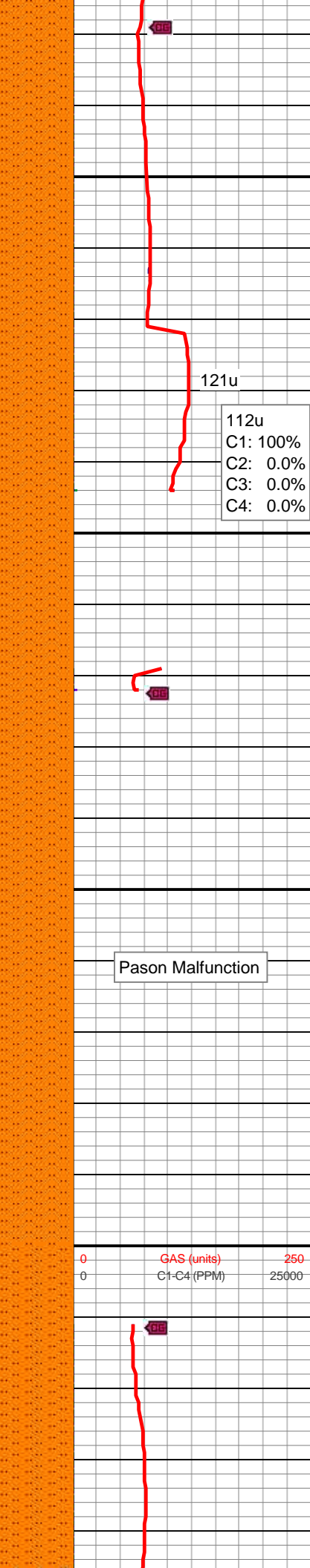
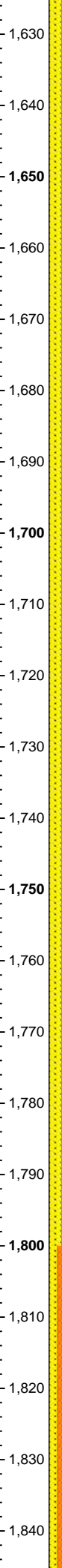
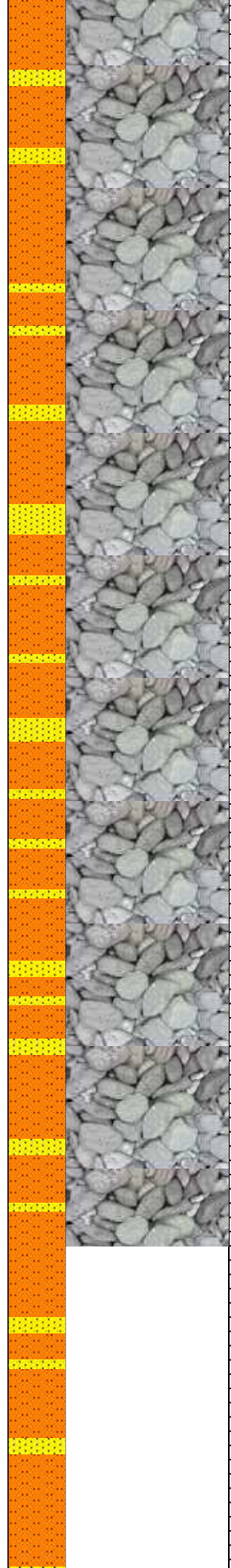
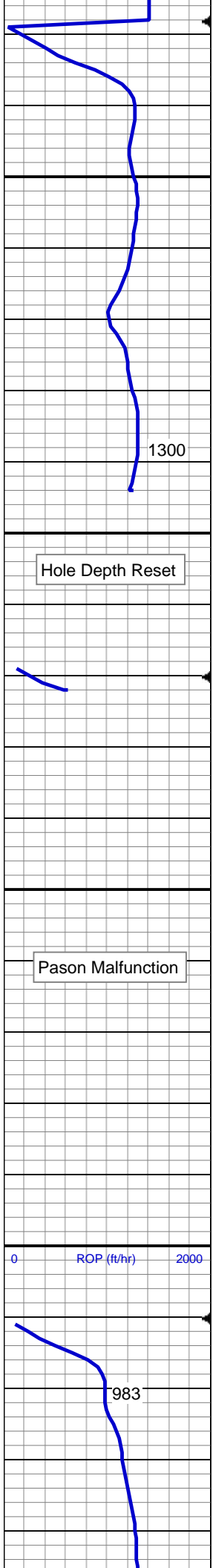
MD: 1,479'
TVD: 1,478.92'
Inclination: 0.3°
Azimuth: 334.63°
VS: -12.79'

65% SLTST: lt - med gy, med gy
brn, sdy ip, pred sft, occ mod frm,
fri, sb blk, gt tex, v slty - sl arg mtx,
35% SS: wh - off wht, lt - med gy, clr
- trnsd grd, s&p, slty ip, v hd, brit, vf -
f gr, sb rd-sb ang, mod srt, cons, w
cmt, v sl calc, com glau, abnt pyr,
occ mics frag, nfsoc

50u
C1: 99.9%
C2: 0.0%
C3: 0.0%
C4: 0.1%

MD: 1,571'
TVD: 1,570.92'
Inclination: 0.06°
Azimuth: 45.51°
VS: -12.54'

Gas Scale Change



MD: 1,664'
TVD: 1,663.92'
Inclination: 0.09°
Azimuth: 302.27°
VS: -12.46'

85% SLTST: lt - med gy, med gy brn
ip, sdy ip, pred sft, occ mod frm, fri,
sb blk, gt tex, v slty - sl arg mtx,
grdg to 15% SS: lt - med gy, rr
offwht, clr - trns grd, s&p, mod - v
hd, brit - fri ip, vf - f gr, sb rd-sb ang,
slty mtx, mod srt, cons, w cmt, v sl
calc, tr pyr, rr glau, tr mics frag,
nfsoc

MD: 1,756'
TVD: 1,755.92'
Inclination: 0.43°
Azimuth: 4.63°
VS: -12.07'

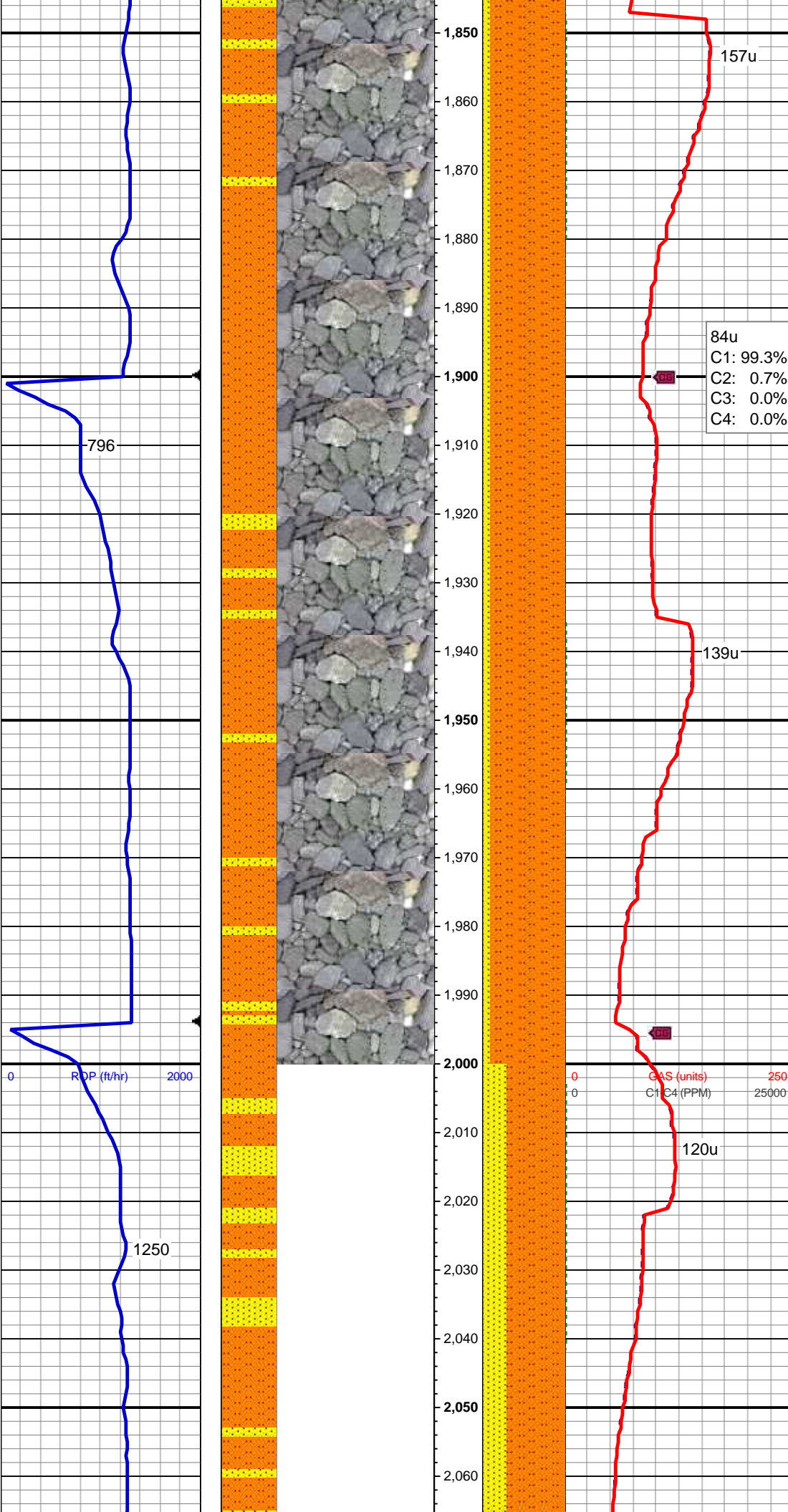
MD: 1,847'
TVD: 1,846.92'

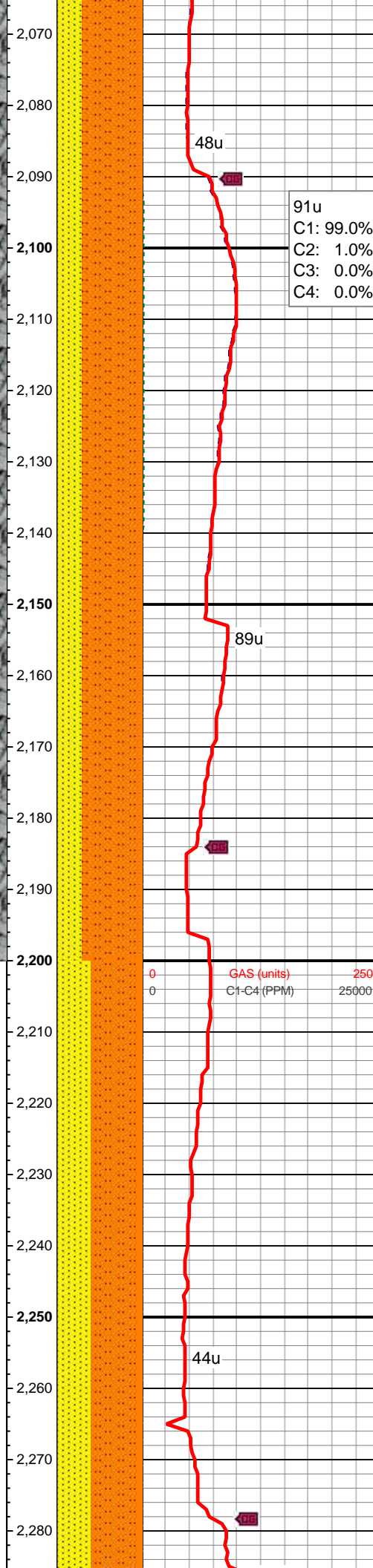
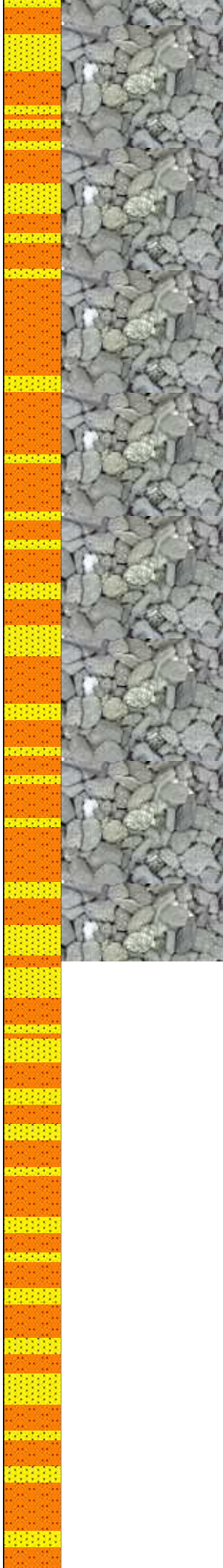
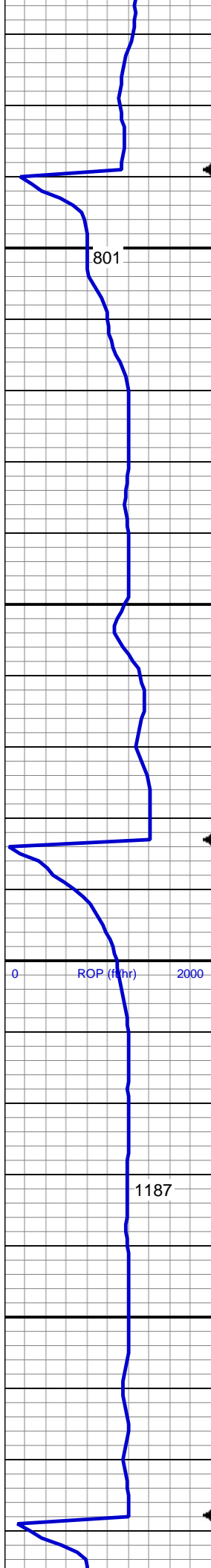
Inclination: 0.56°
Azimuth: 3.04°
VS: -11.29'

MW 8.5 VIS 28

84u
C1: 99.3%
C2: 0.7%
C3: 0.0%
C4: 0.0%

85% SLTST: lt - med gy, med gy brn
ip, sdy ip, pred sft, occ mod frm, fri,
sb blk, gt tex, v slty - sl arg mt, v sl
calc, tr (10%) ss, tr pyr, rr glau, tr
mics frag, nfsoc

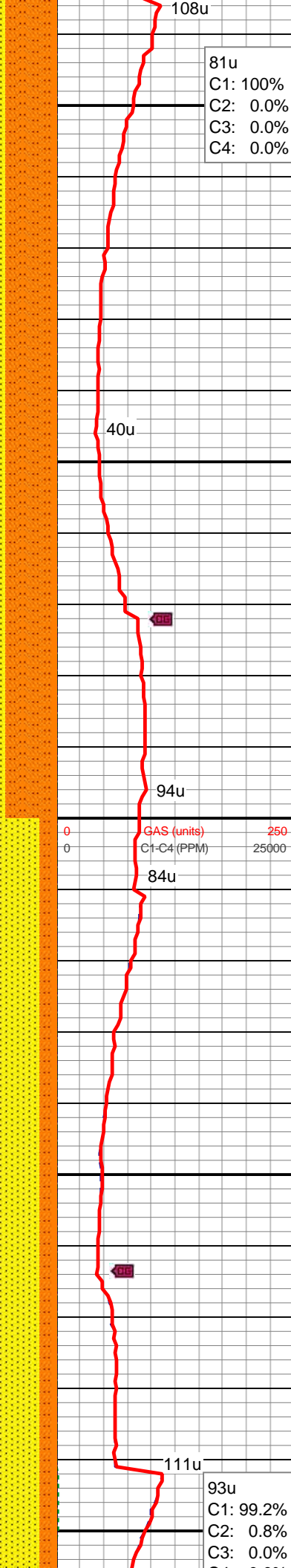
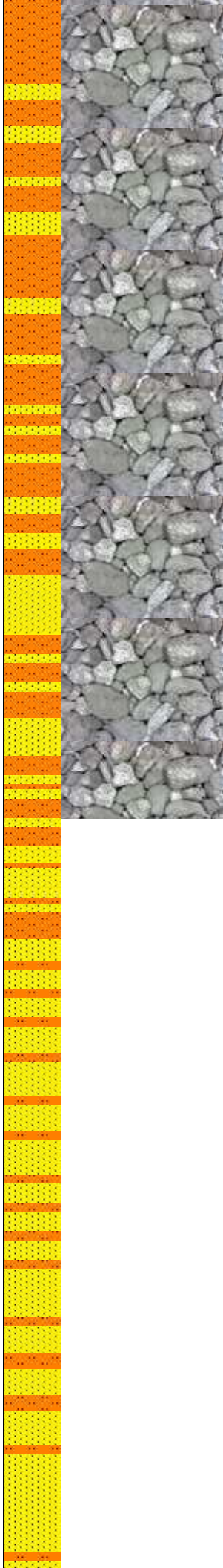
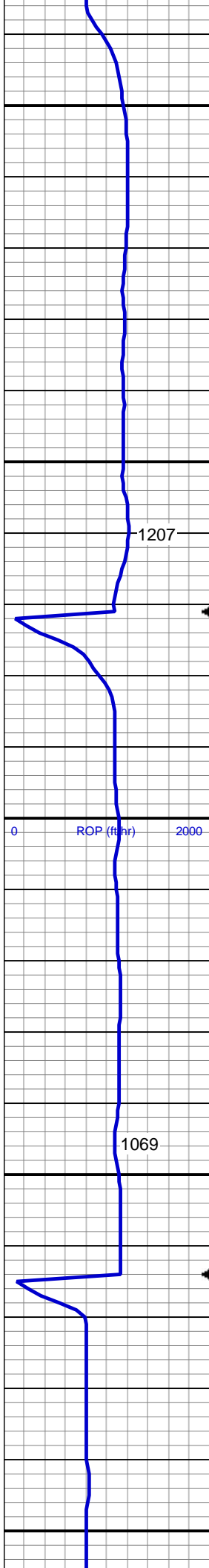




70% SLTST: lt - med gy, med gy brn ip, sdy ip, pred sft, occ mod frm, fri, sb blk, gt tex, v slty - sl arg mtx, grdg to 30% SS: lt - med gy, rr offwht, clr - trnsd grd, s&p, mod - v hd, brit - fri ip, vf - f gr, sb rd-sb ang, slty mtx, mod srt, cons, w cmted, v sl calc, tr pyr, rr glau, tr mics frag, nfsoc

MD: 2,125'
TVD: 2,124.9'
Inclination: 0.83°
Azimuth: 33.21°
VS: -8.3'

MD: 2,218'
TVD: 2,217.89'
Inclination: 0.8°
Azimuth: 11.07°
VS: -7.17'

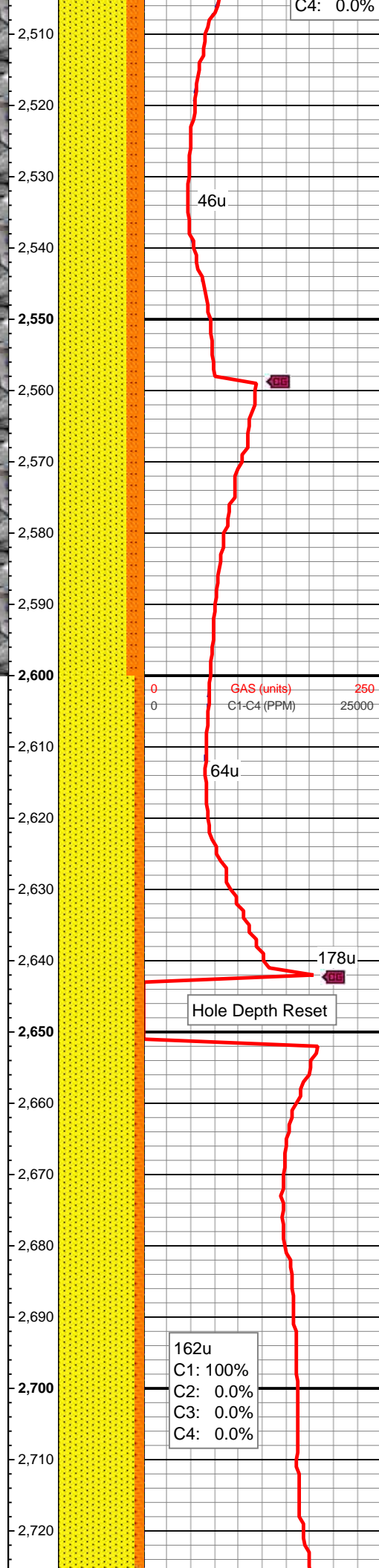
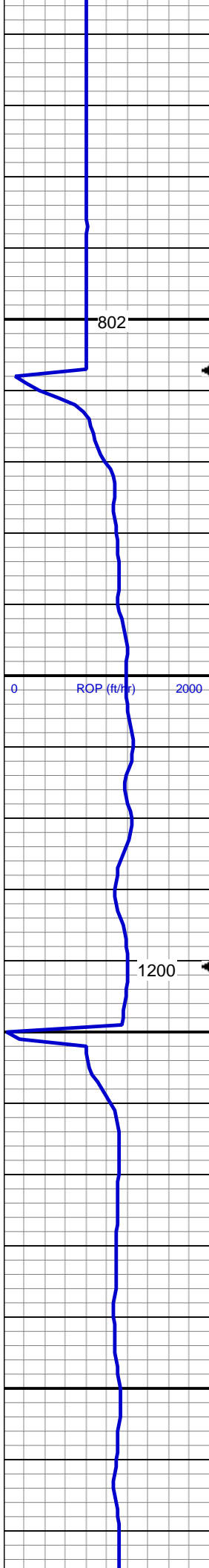


60% SLTST: lt - med gy, lt - med gy
brn, sdy ip, sft, fri, sb blk, gt tex, slty
- arg mt, grdg to 40% SS: wh -
offwht, lt - med gy, clr - trns grd,
s&p, mod - v hd, brit - fri ip, vf - f gr,
sb rd-sb ang, slty mt ip, mod srt,
cons, w cmt, sl calc, rr diss pyr,
rr glau, tr mics frag, nfsoc

MD: 2,401'
TVD: 2,400.86'
Inclination: 1.09°
Azimuth: 9.83°
VS: -4.16'

MD: 2,494'
TVD: 2,493.85'
Inclination: 1.04°
Azimuth: 18.12°
VS: -2.51'

80% SS: lt - med gy, offwht - wh, clr
- trns grd, s&p, mod frm-hd, brit, vf
gr, sb rd-sb ang, mod - w srt, cons,
mod - w cmt, 20% SLTST: lt - med
gy, gy brn ip, sdy ip, pred sft, occ
mod frm, fri, sb blk, gt tex, slty - arg

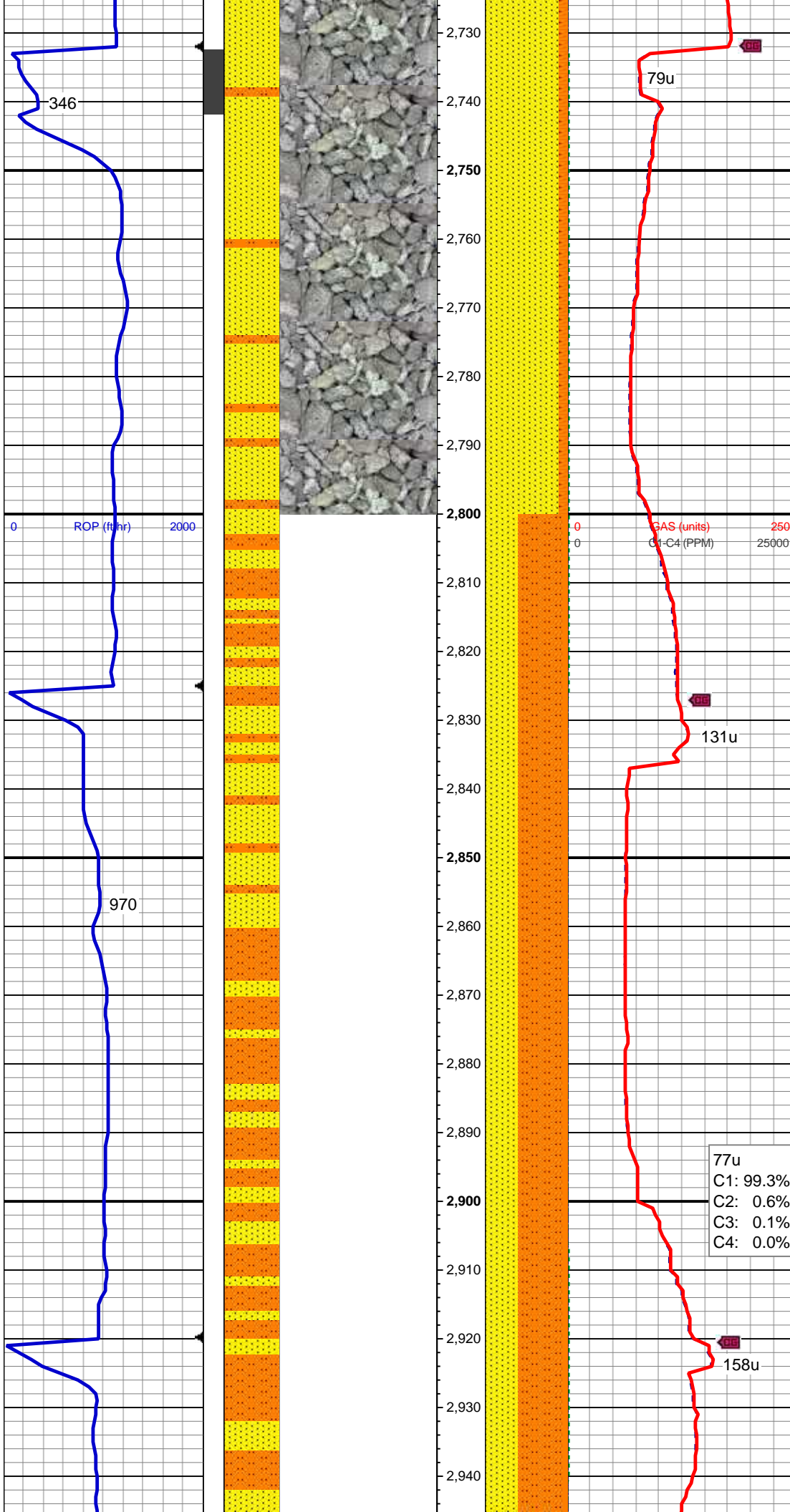


mtx, sl calc, occ mics frag, tr diss
pyr, rr glau, rr bent, tr dul yel gn mnrl
flor, nsoc

MD: 2,587'
TVD: 2,586.83'
Inclination: 1.27°
Azimuth: 21.92°
VS: -0.78'

MD: 2,679'
TVD: 2,678.81'
Inclination: 1.24°
Azimuth: 15.74°
VS: 1.1'

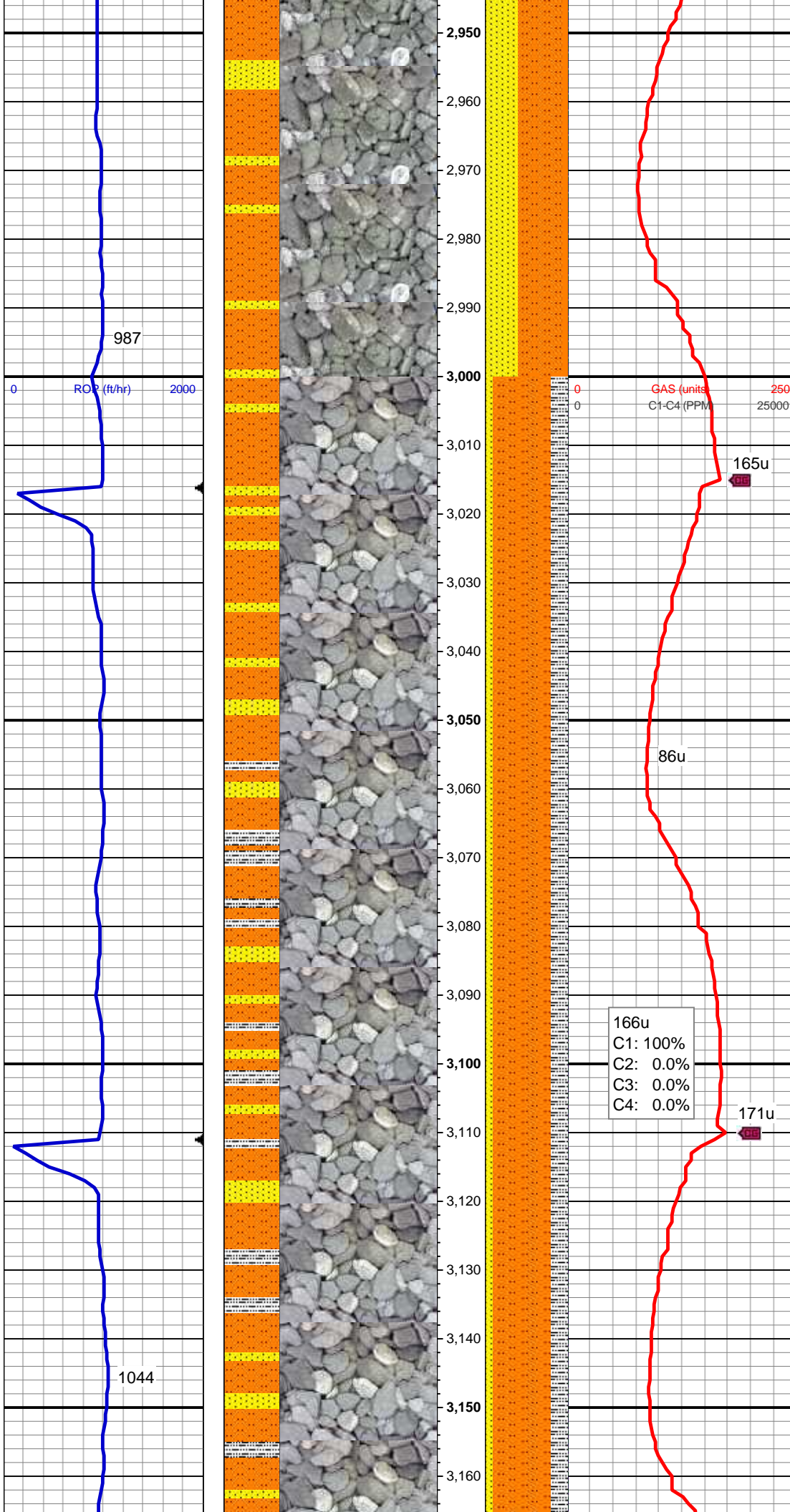
90% SS: offwht - wh, lt - med gy, clr
- trns l grd, s&p, mod frm-hd, brit - fri
ip, vf gr, sb rd-sb ang, mod - w srt,
cons, mod - w cmdt, sl calc, occ
(10%) fy intlaml sltst strg, occ mics
frag, tr calcite, tr diss pyr, tr glau,
nfsoc



MD: 2,866'
TVD: 2,865.74'
Inclination: 1.87°
Azimuth: 322.69°
VS: 5.52'

60% SLTST: lt - med gy, sdy ip, pred sft, occ mod frm, fri, sb blk, gt tex, slty - arg mt, fy intlam wi 40% SS: lt - med gy, offwht, clr - trns grd, s&p, mod frm-hd, brit, vf gr, sb rd-sb ang, occ slty mt, mod - w srt, cons, mod cmt, sl calc, occ mics frag, rr pyr, nfsoc

77u
C1: 99.3%
C2: 0.6%
C3: 0.1%
C4: 0.0%

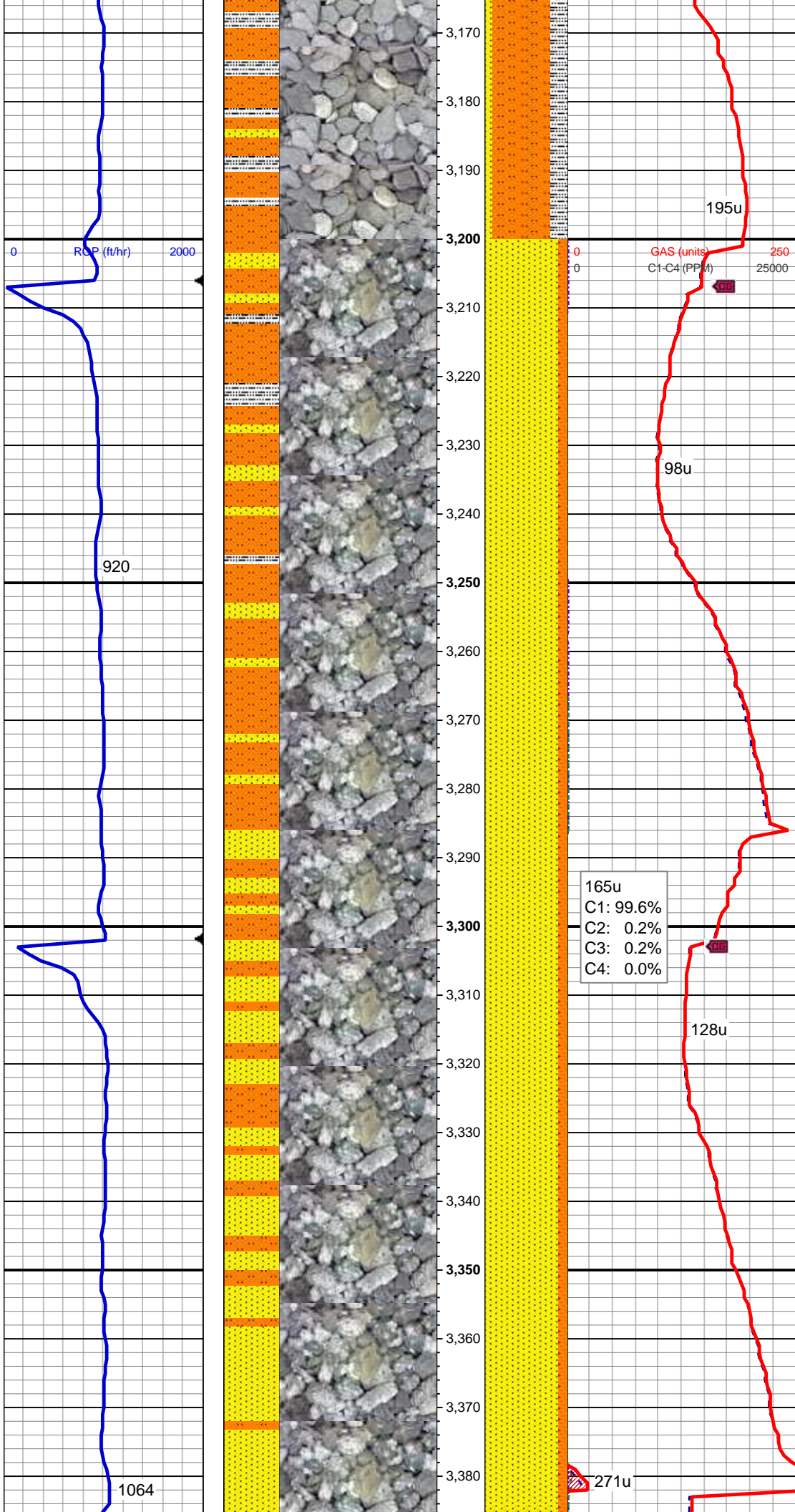


MD: 2,960'
TVD: 2,959.7'
Inclination: 1.71°
Azimuth: 320.9°
VS: 7.89'

MD: 3,054'
TVD: 3,053.66'
Inclination: 1.52°
Azimuth: 319.67°
VS: 9.99'

65% SLTST: lt - med gy, sdy ip,
pred sft, occ mod frm, fri, sb plty -
sb blk, gt tex, slty - arg mtx, 25%
SLTY SH: med-dk gy, blk ip, mod sft
- mod frm, brit, sb plty - sb blk, sb
wxy - sl gt tex, pred arg - sl slty mtx,
pred non calc, v sl calc ip, occ
(10%) ss, occ mics frag, rr pyr,
nfsoc

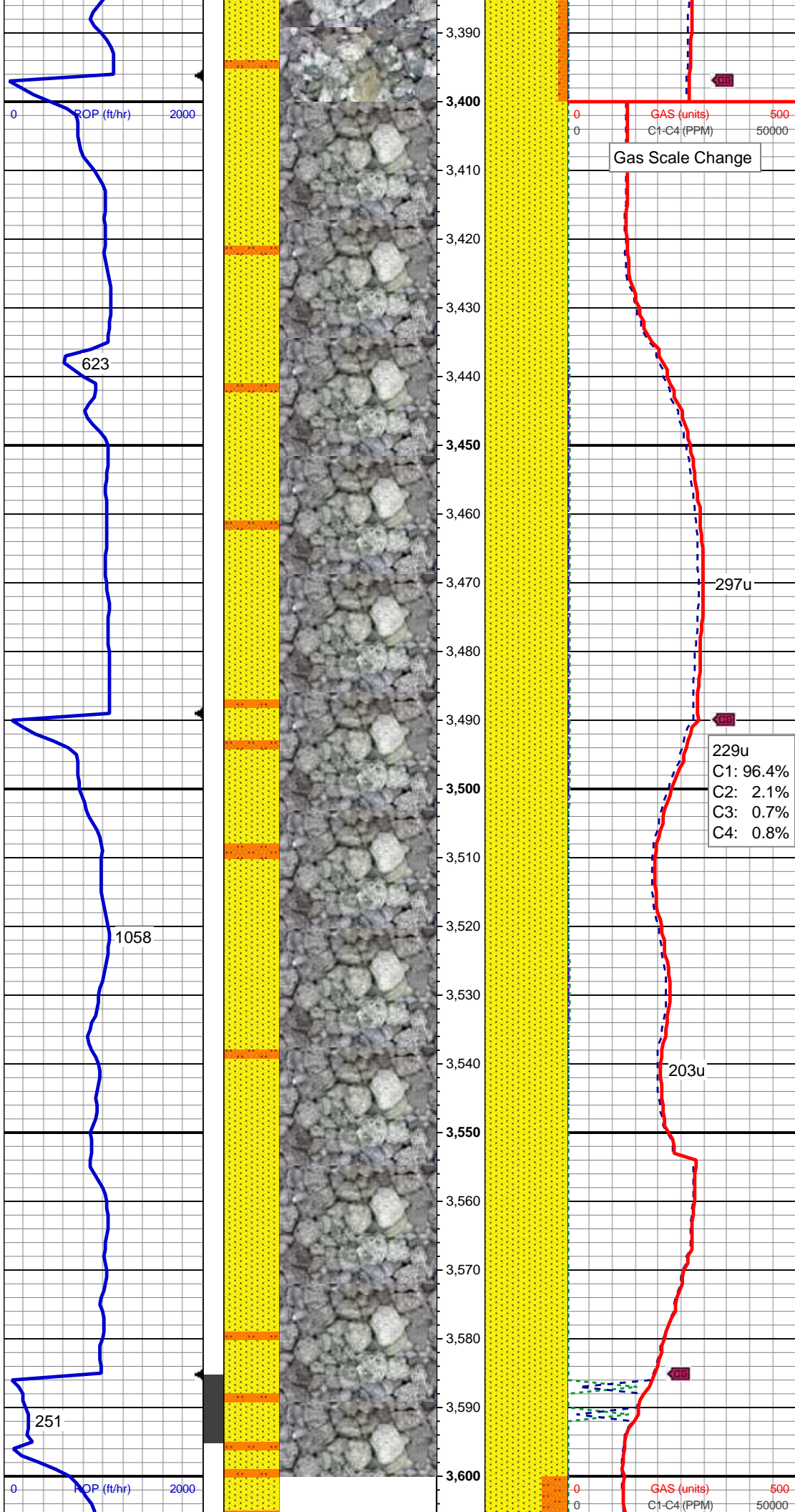
MD: 3,148'
TVD: 3,147.63'
Inclination: 1.6°
Azimuth: 305.39°
VS: 11.76'



MD: 3,243'
TVD: 3,242.6'
Inclination: 1.25°
Azimuth: 305.21°
VS: 13.19'

90% SS: wh - offwht, lt - med gy, clr
- trnsl grd, s&p, mod-v hd, brit, vf - u
f gr, tr med gr sd, sb rd-sb ang,
mod srt, mod cons, mod cmt, sl -
mod calc, occ (10%) sltst, com gn
glau, occ mics frag, com ss stnd
yel - orng wi dd o, v slow difse, v dul
bl wh cut, n flor or od

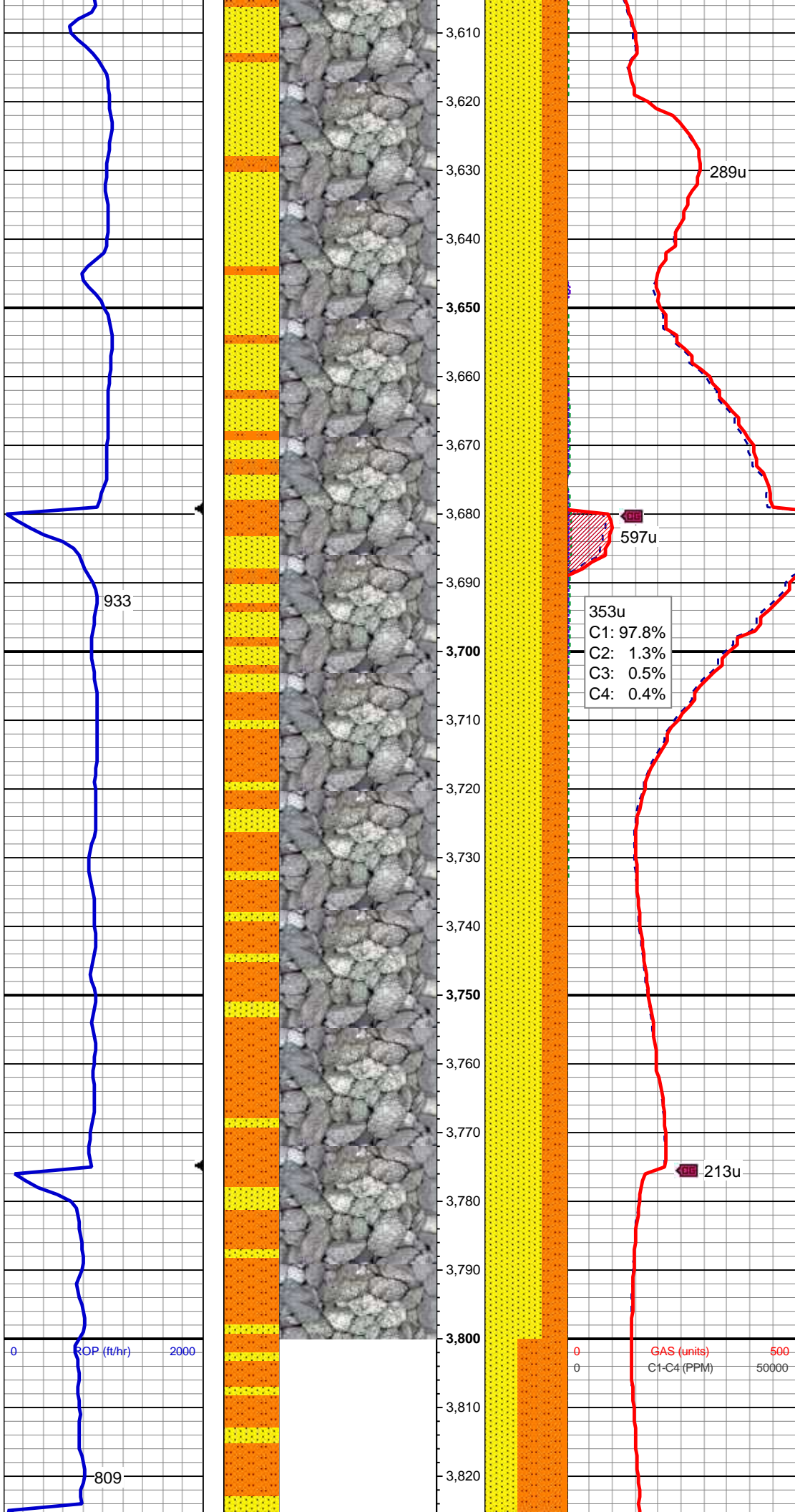
MD: 3,338'
TVD: 3,337.57'
Inclination: 1.31°
Azimuth: 314.24°
VS: 14.6'



MD: 3,432'
TVD: 3,431.54'
Inclination: 1.52°
Azimuth: 313.86°
VS: 16.28'

100% SS: wh - offwht, lt - med gy,
clr - trnsl grd, s&p, mod hd, brit, vf -
u f gr, sb rd-sb ang, mod srt, mod
cons, mod cmtd, sl calc, v rr sltst,
occ glau, occ mics frag, occ v dul
orng ss flor, com ss stnd yel wi dd
o, v slow difse, v dul bl wh cut, n od

MD: 3,527'
TVD: 3,526.51'
Inclination: 1.59°
Azimuth: 310.83°
VS: 18.07'

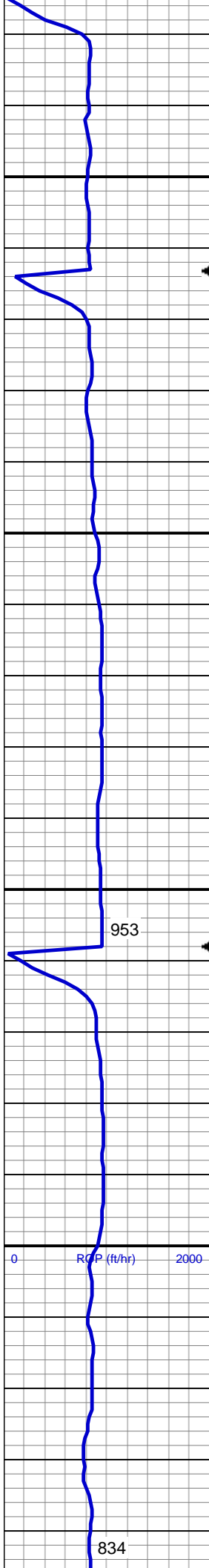


MD: 3,622'
TVD: 3,621.49'
Inclination: 0.91°
Azimuth: 249.44°
VS: 18.73'

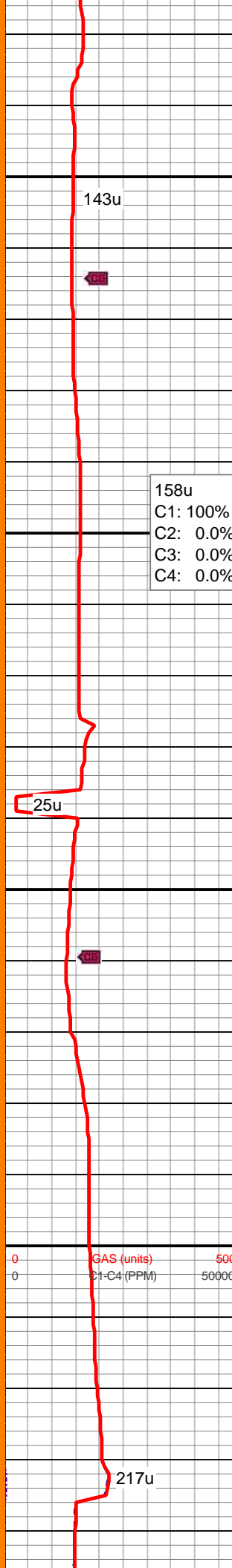
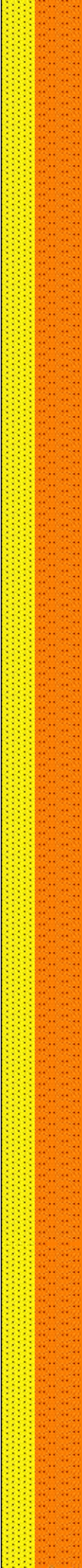
70% SS: wh - offwht, lt - med gy, clr
- trnsl grd, s&p, mod-v hd, brit, vf - u
f gr, sb rd-sb ang, mod srt, mod
cons, mod cmdt, 30% SLTST: lt -
med gy, gy brn, sdy ip, mod frm, sb
blky, gt tex, slty - arg mtx, sl - mod
calc, occ glau, occ mics frag, v slow
difse, v dul bl wh cut, n flor stn or od

MD: 3,716'
TVD: 3,715.48'
Inclination: 0.88°
Azimuth: 255.38°
VS: 18.33'

MD: 3,810'
TVD: 3,809.47'
Inclination: 0.84°
Azimuth: 249.85°
VS: 17.96'



3,830
3,840
3,850
3,860
3,870
3,880
3,890
3,900
3,910
3,920
3,930
3,940
3,950
3,960
3,970
3,980
3,990
4,000
4,010
4,020
4,030
4,040



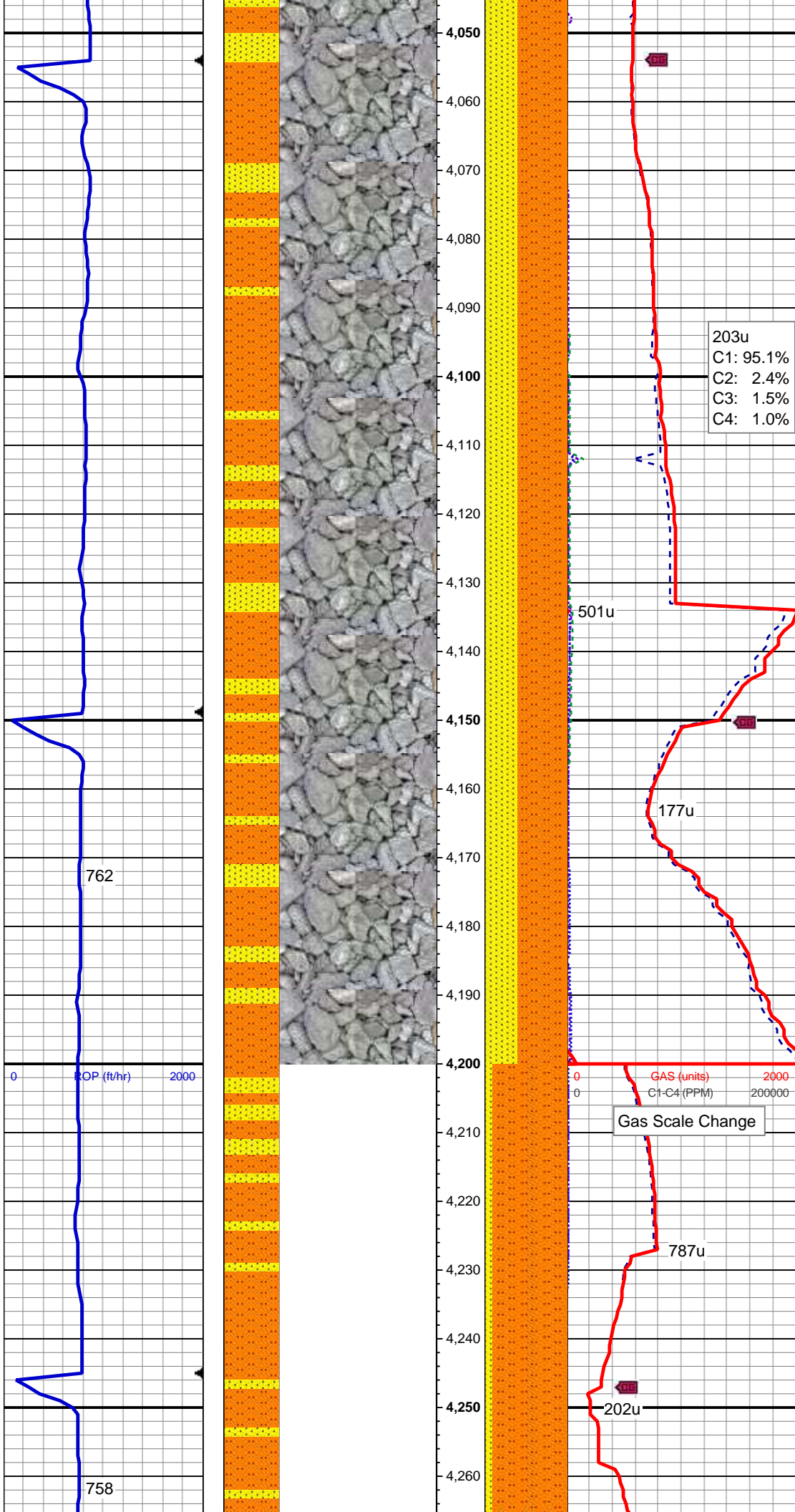
158u
C1: 100%
C2: 0.0%
C3: 0.0%
C4: 0.0%

60% SLTST: med gy, occ dk gy,
med gy brn, mod frm, sb plty - sb
blky, gt tex, slty - arg mtx, 40% SS:
wh - offwht, lt - med gy, clr - trnsI
grd, s&p, mod-v hd, brit, vf - f gr, sb
rd-sb ang, mod - w srt, mod cons,
mod cmted, sl - mod calc, tr glau,
occ mics frag, tr fos frag Inoc, tr pyr,
tr dul orng flor, v slow difse, v dul bl
wh cut, n stn or od

MD: 3,906'
TVD: 3,905.46'
Inclination: 0.75°
Azimuth: 249.53°
VS: 17.54'

MD: 4,000'
TVD: 3,999.45'
Inclination: 1.12°
Azimuth: 231.33°
VS: 16.79'

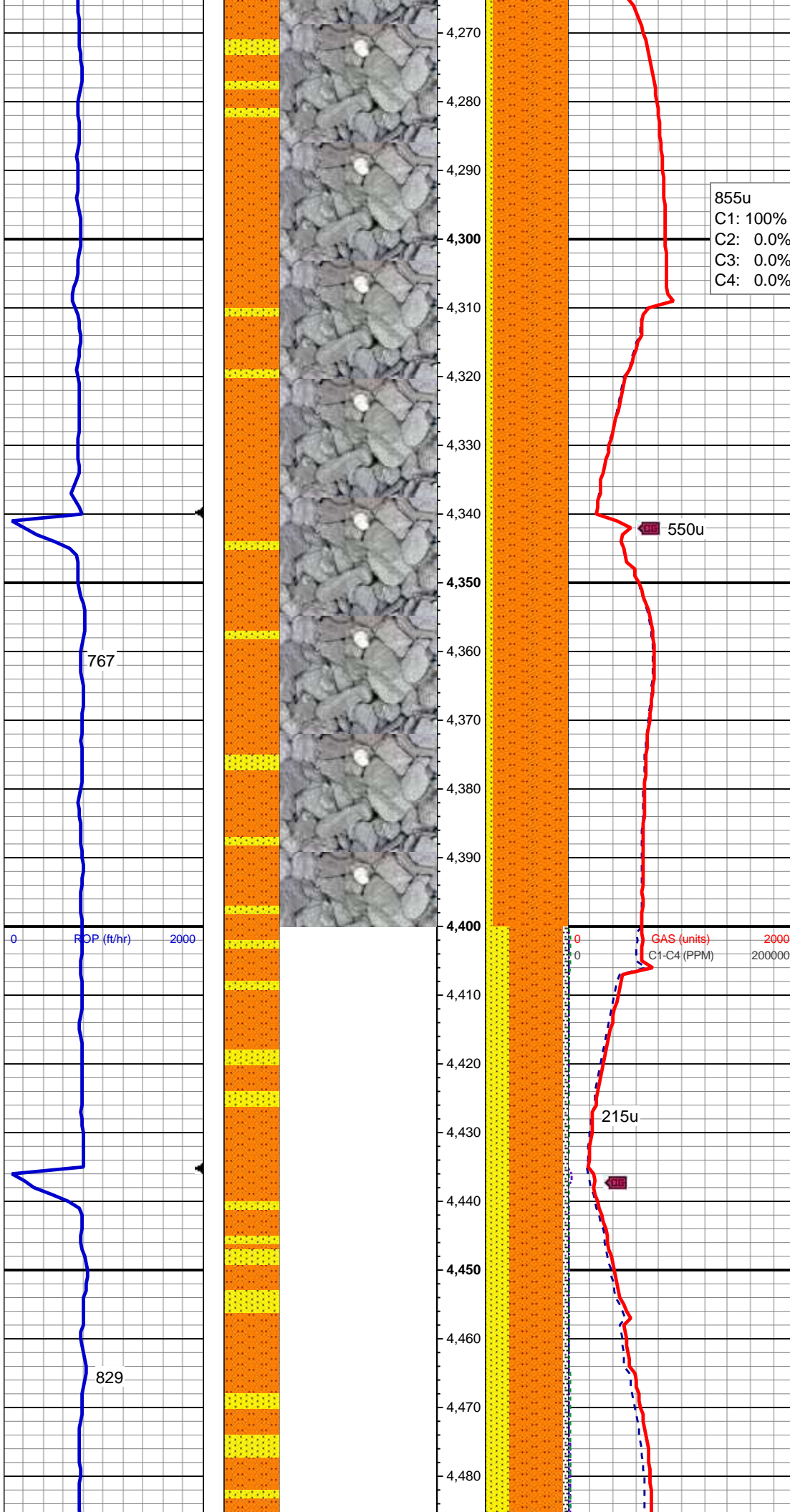
0 500
0 50000
GAS (units)
C1-C4 (PPM)



MD: 4,094'
TVD: 4,093.42'
Inclination: 1.46°
Azimuth: 222.39°
VS: 15.39'

60% SLTST: lt - med gy, gy brn, com sdy ip, mod frm, sb blk, gt tex, slty - arg mtx, 40% SS: lt - med gy, gy brn, rr offwht, clr - trns grd, s&p, mod hd, brit, slty - vf gr, sb rd-sb ang, p - mod srt, mod cons, mod cmt, sl - mod calc, occ clus & diss pyr, tr mics frag, v slow difse, v dul bl wh cut, n flr stn or od

MD: 4,188'
TVD: 4,187.39'
Inclination: 1.68°
Azimuth: 223.6°
VS: 13.57'

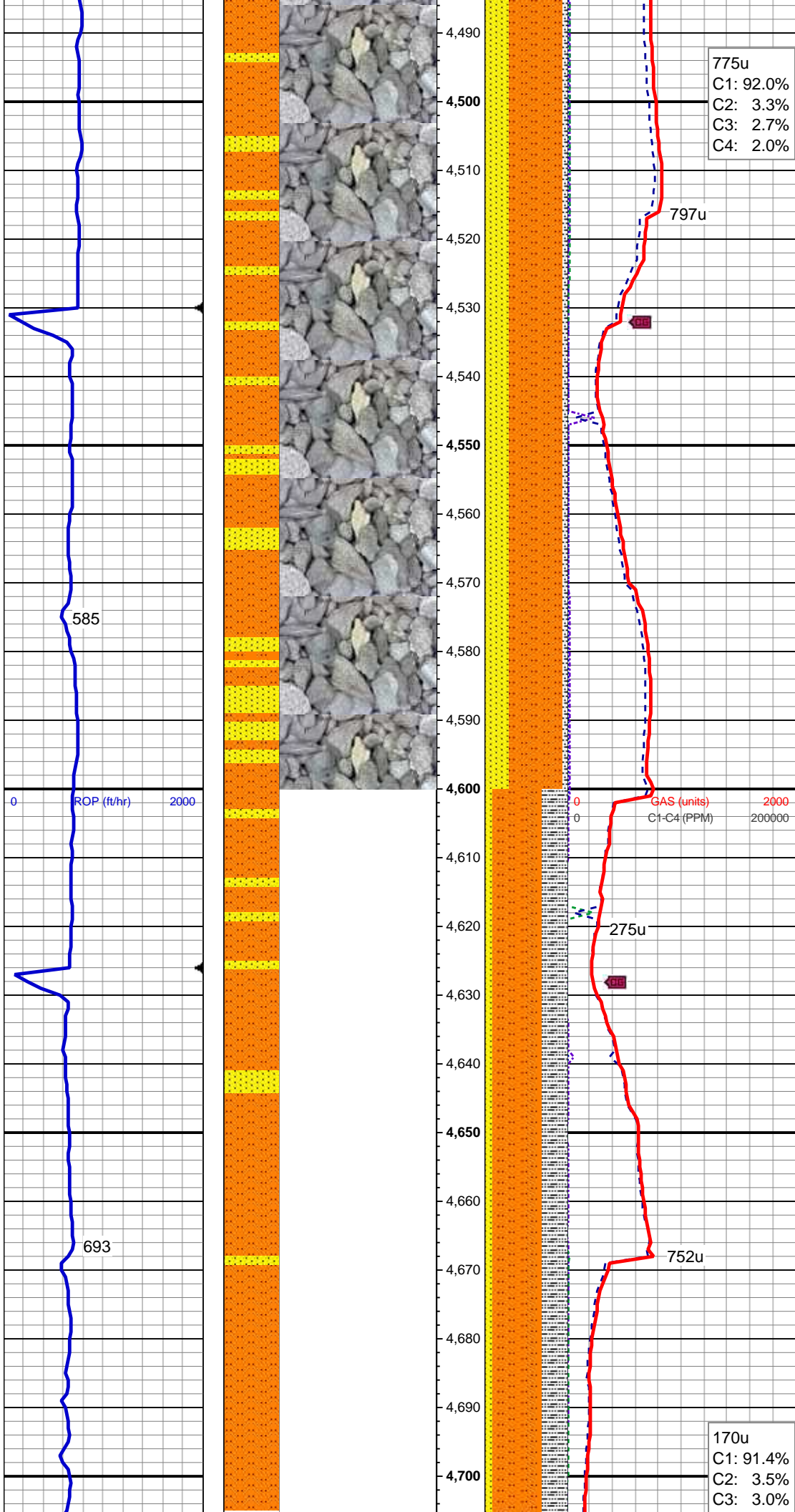


MD: 4,283'
TVD: 4,282.35'
Inclination: 1.51°
Azimuth: 213.41°
VS: 11.57'

90% SLTST: lt - med gy, gy brn, sdy
ip, mod frm, sb plty - sb blkly, gt tex,
silty - arg mtx, sl calc, occ (10%) ss,
tr clus & diss m pyr, tr mics frag, rr
fos frag Inoc, v slow difse, v dul bl
wh cut, n flor stn or od

MD: 4,377'
TVD: 4,376.32'
Inclination: 1.55°
Azimuth: 202.49°
VS: 9.4'

MD: 4,471'
TVD: 4,470.28'
Inclination: 1.69°
Azimuth: 185.97°
VS: 6.88'

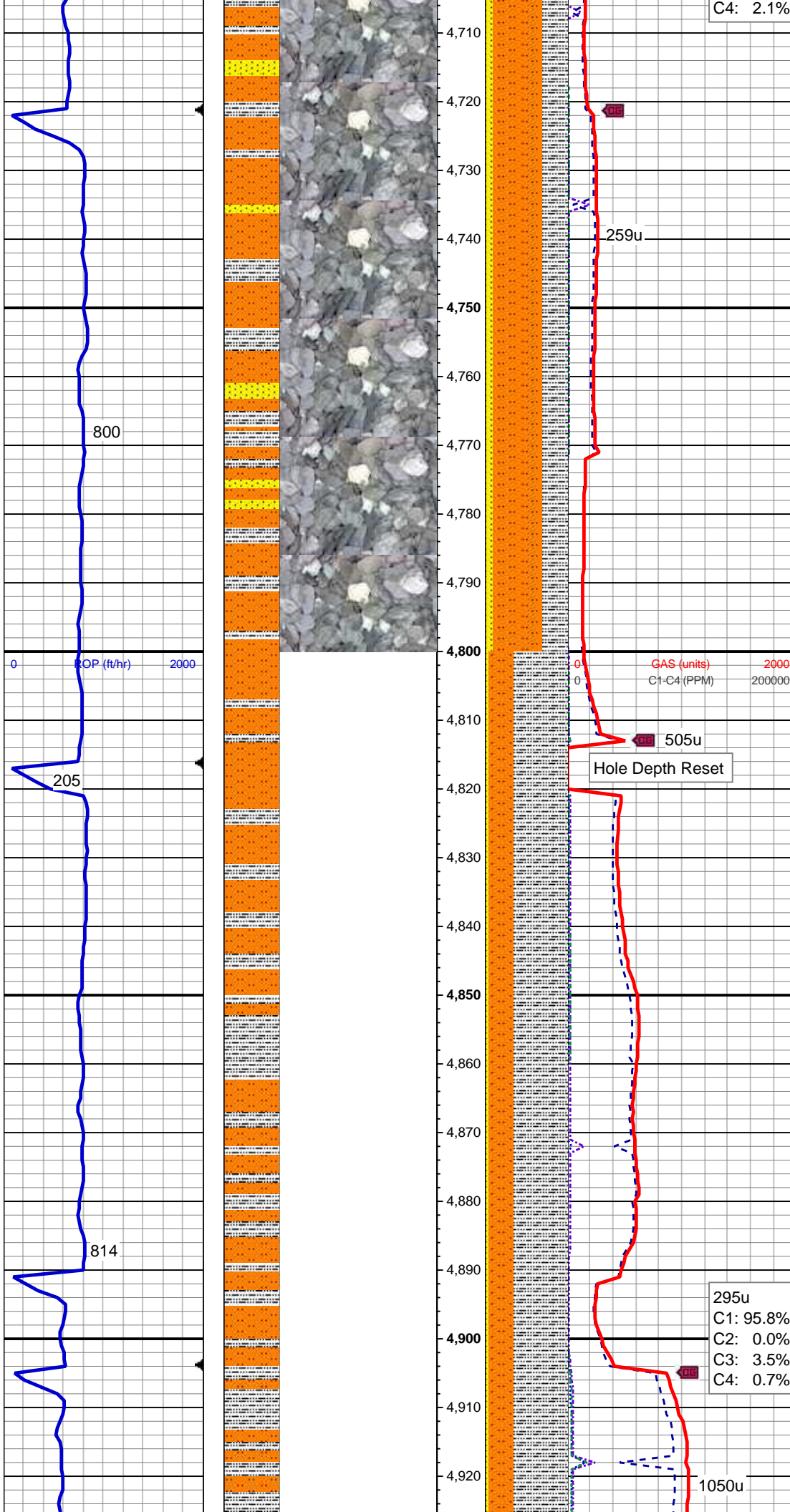


65% SLTST: med gy, med gy brn, occ sdy ip, mod frm, sb plty - sb blk, gt tex, slty - arg mtx, 30% SS: lt - med gy, gy brn, clr - trnsd grd, s&p, mod hd, brit, slty - vf gr, sb rd-sb ang, p - mod srt, mod cons, mod cmtd, sl calc, tr (5%) slty sh, tr pyr, rr mics frag, rr fos frag Inoc, nfsoc

MD: 4,566'
TVD: 4,565.24'
Inclination: 1.68°
Azimuth: 176.04°
VS: 4.1'

MD: 4,661'
TVD: 4,660.21'
Inclination: 1.38°
Azimuth: 165°
VS: 1.6'

65% SLTST: med gy, med gy brn, occ sdy ip, mod frm, sb plty - sb blk, gt tex, slty - arg mtx, 25% SLTY SH: med-dk gy, mod frm, brit, plty - sb plty, occ sb blk, sb fis ip, sb wxy



C4: 2.1%
- sl gt tex, arg - sl slty mtx, sl calc,
occ (10%) ss, tr clus & dissm pyr, tr
fos frag Inoc, nfsoc

MD: 4,755'
TVD: 4,754.18'
Inclination: 1.27°
Azimuth: 154.81°
VS: -0.45'

GAS (units)
C1-C4 (PPM)

505u
Hole Depth Reset

MD: 4,850'
TVD: 4,849.17'
Inclination: 0.8°
Azimuth: 142.85°
VS: -1.96'

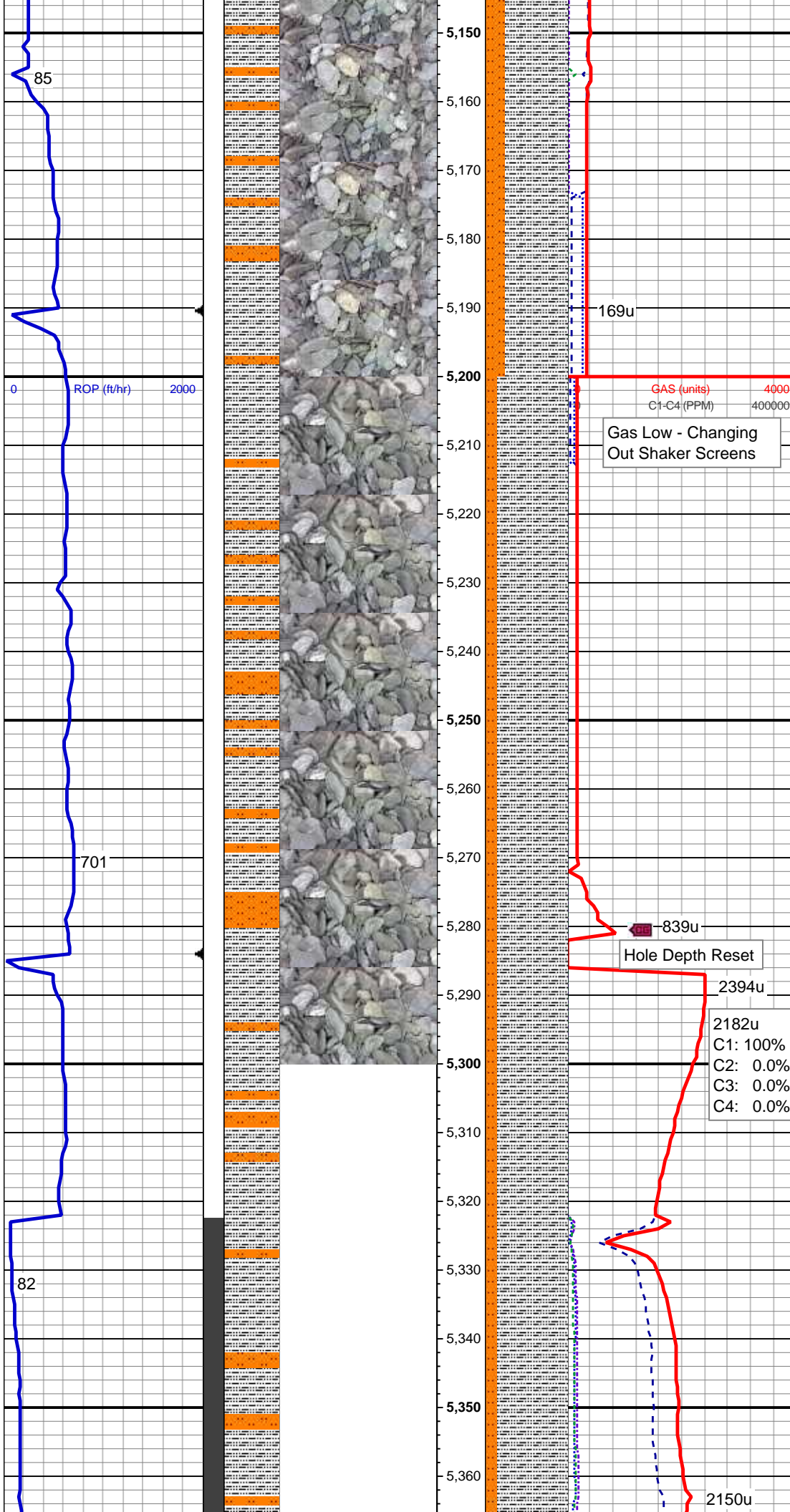
MW 9.1 VIS 30

295u
C1: 95.8%
C2: 0.0%
C3: 3.5%
C4: 0.7%

65% SLTY SH: med-dk gy, mod
frm, brit, plty - sb plty, sb fis ip, sb
wxy tex, arg - sl slty mtx, 30%
SLTST: lt - med gy, med gy brn,
mod frm, sb plty - sb blkly, gt tex, slty
- arg mtx, mod calc, tr (5%) ss, tr
clus & dissm pyr, tr fos frag Inoc,
slow difse, sl strng, fnt bl wh mky
cut, n flor stn or od

1050u

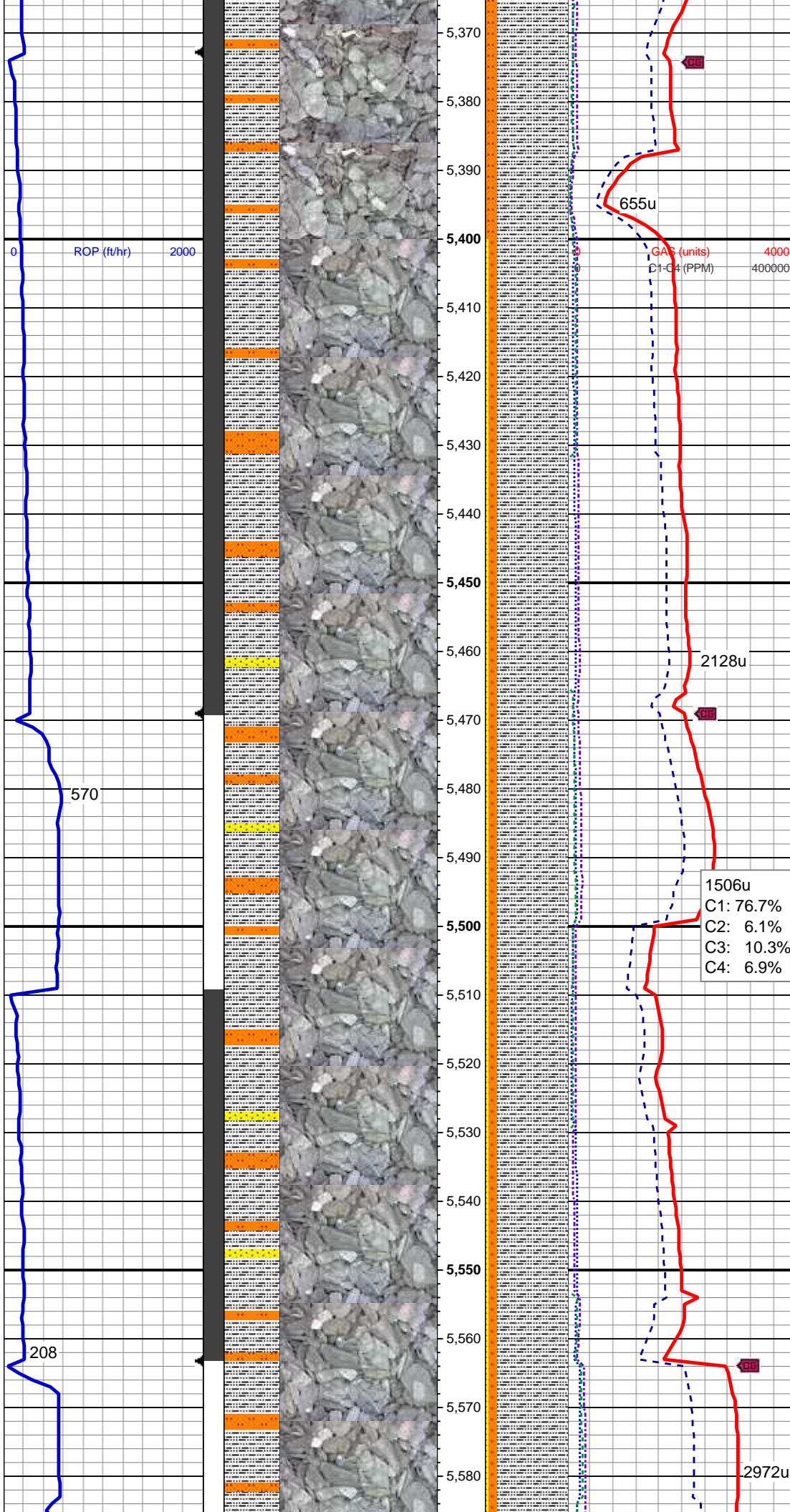




MD: 5,226'
TVD: 5,225.14'
Inclination: 0.68°
Azimuth: 171.54°
VS: -5.78'

85% SLTY SH: med-dk gy, med - dk gy brn, mod frm, sb plty - sb blk, sb wxy - sl gt tex, arg - sl slty mt, 15% SLTST: lt - med gy, mod frm, sb blk, gt tex, slty - arg mt, v sl calc, r ss, rr fos frag lnc, rr bent, rr dul yel mnrl flor, slow difse, sl strng, fnt bl wh mky cut, n stn or od

KOP @ 5322' MD



MD: 5,415'
TVD: 5,412.8'
Inclination: 12.14°
Azimuth: 0.86°
VS: 13.04'

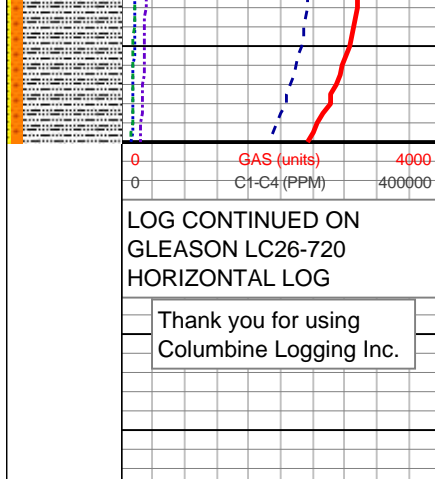
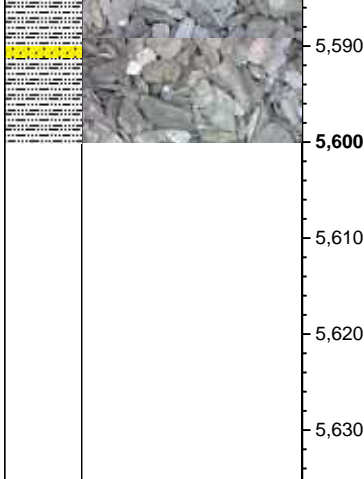
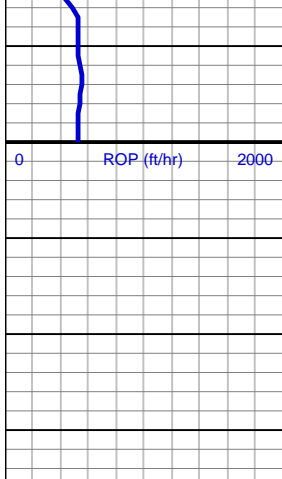
MW 9.7 VIS 45

85% SLTY SH: med-dk gy, med - dk
gy brn, mod frm, sb plty - sb blkly, sb
wxy - sl gt tex, arg - sl slty mtx, v sl
calc, occ (10%) sltst, tr (5%) fy
intlam ss strg, rr fos frag Inoc, rr
bent, rr bri yel gn mnrl flor, slow
difse, sl stmng, fnt bl wh mky cut, n
stn or od

MD: 5,510'
TVD: 5,503.92'
Inclination: 20.4°
Azimuth: 358.34°
VS: 39.63'

MW 10.0 VIS 50

MD: 5,604'
TVD: 5,598.92'



TVD: 5,590.06
Inclination: 26.67°
Azimuth: 355.62°
VS: 77.12'

MW 10.2 VIS 47

LOG CONTINUED ON
GLEASON LC26-720
HORIZONTAL LOG

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