

LOG created using L PLOT VH Version 3.0, May 22, 2013, Copyright (C) 1999-2009 Pason Systems Corp.

OPERATOR:	NOBLE ENERGY INC.
WELL:	CASTOR LD12-78HN
LOCATION:	SEC 12, T9N, R58W
COUNTY:	WELD
STATE:	COLORADO
SPOT:	288' FSL, 660 FWL
ELEVATION:	4630' GL, 4654' KB
FIELD:	WILDCAT
SPUD DATE:	5/16/2013
TD DATE:	5/21/2013
DATES LOGGED:	5/17/2013 - 5/21/2013
DEPTHS LOGGED:	1229' - 9505'
LOGGERS:	JOHN T. READY, MOHAMMED ALMUBARAK
DRILLING FLUID:	WATER, MUD, POLY
DRILLING RIG:	H&P 322
API:	05-123-37096
LOG TYPE:	VERTICAL
SCALE:	1:240 (5 inches per 100 feet)
REMARKS:	WELLSITE GEOLOGICAL SERVICES PROVIDED BY COLUMBINE LOGGING INC.

LITHOLOGIES



Sandstone



Shaly Sandstone



Shaly Siltstone



Siltstone



Silty Shale

ENGINEERING SYMBOLS



Connection



Connection Gas



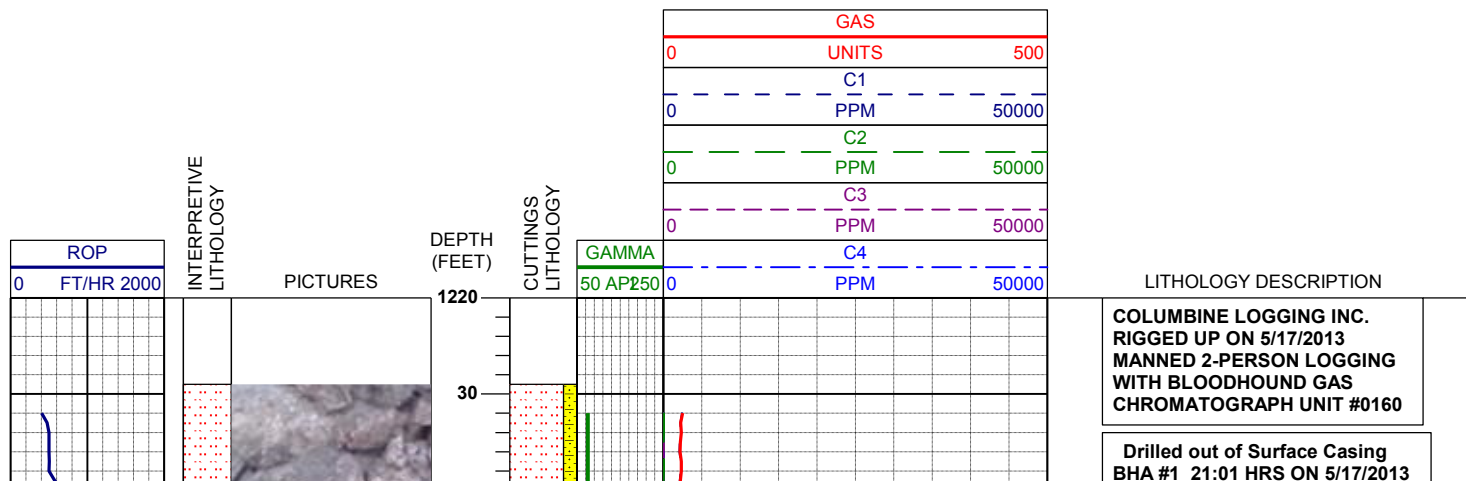
Arrow

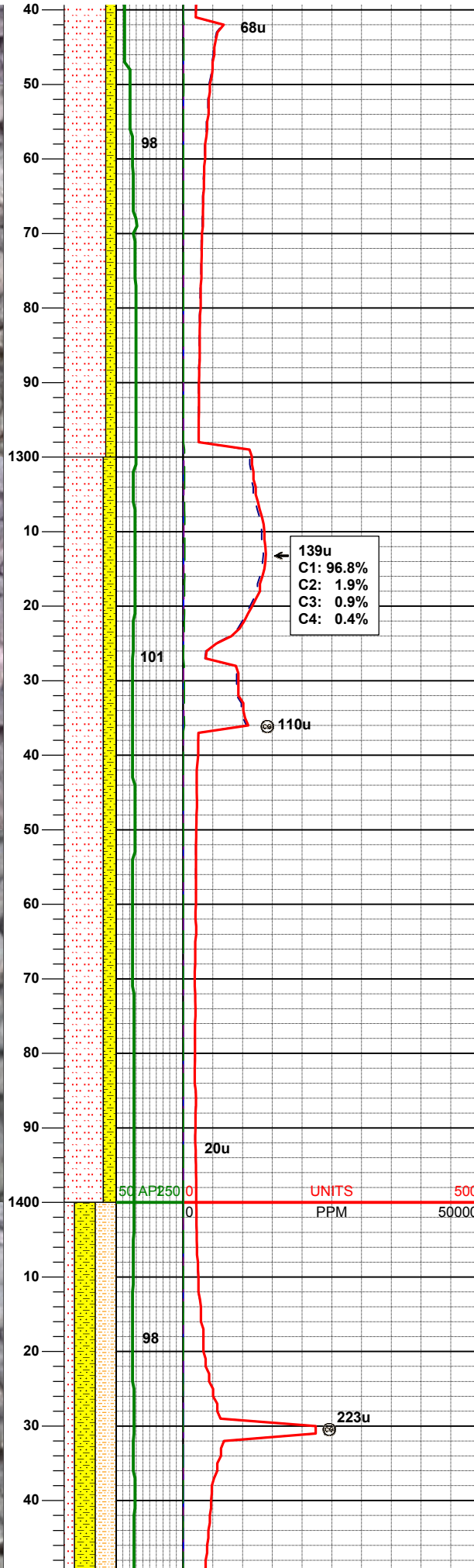
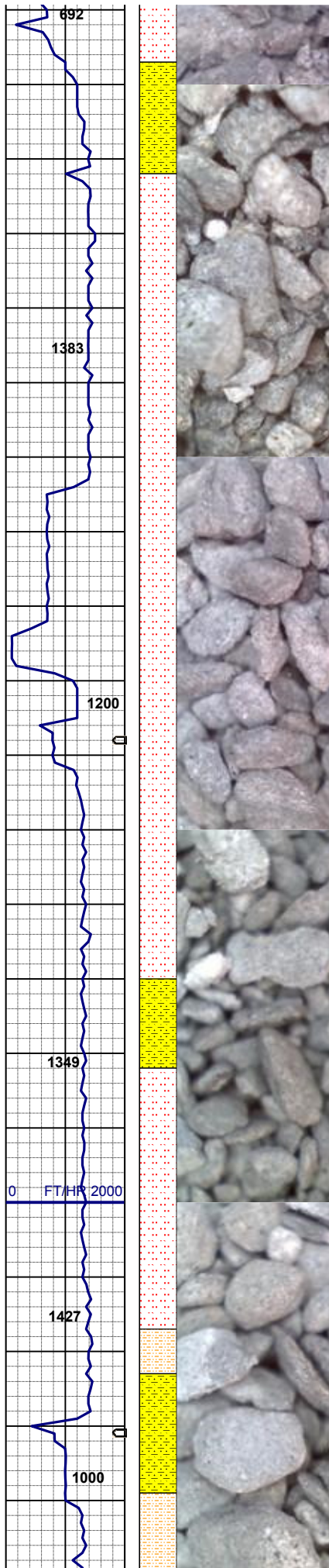


Midnight Depth



Arrow





BHA #1
Bit: 8.750"
Manufacturer: Schlumberger/Smith
Model: MDi516
Serial Number: JG4831
Nozzles: 5x14

Motor: 6.500"
Manufacturer: Wenzel
Serial Number: 650-10-044
Bend: 1.50

80% SLTST: ltgy, sft- fri, sbbly- sl sbply, aren
- slty tex, tr biot rr glau incl
20% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt, rr biot, sme
glau ; sme dk gy cly

MD 1279'
INC 0.66°
AZM 218.02°

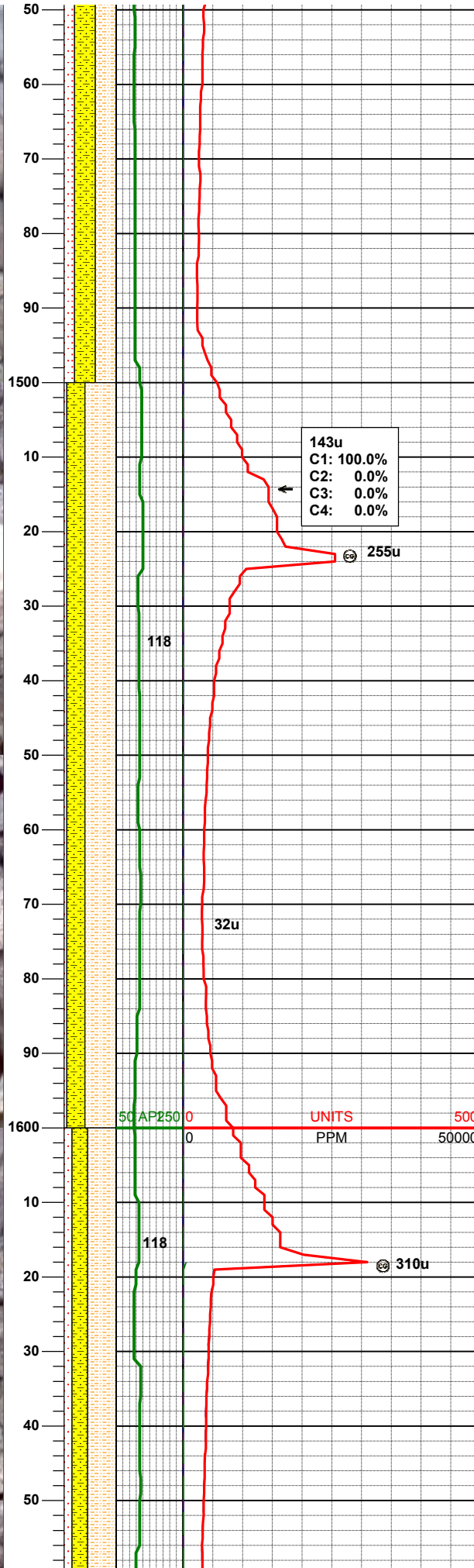
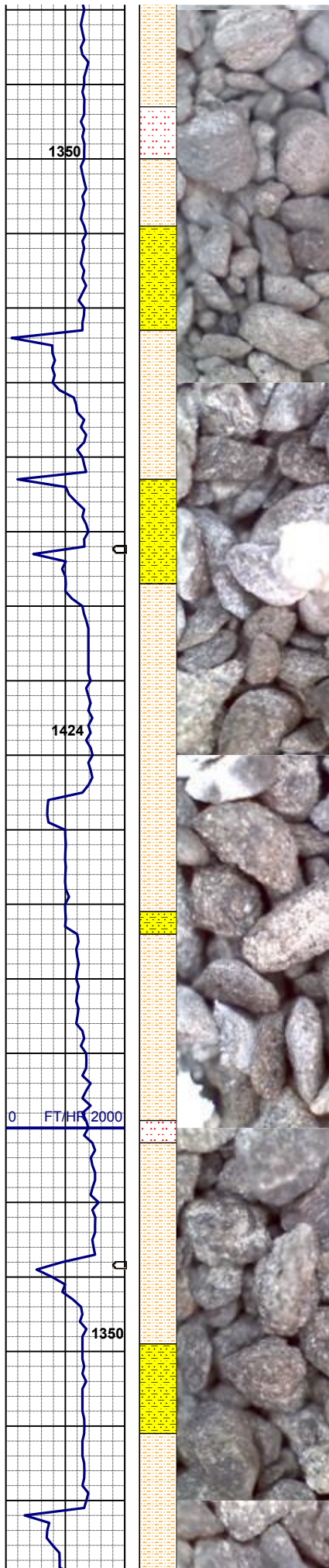
75% SLTST: ltgy, sft- fri, sbbly- sl sbply, aren
- slty tex, tr biot rr glau incl
25% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt, rr biot, sme
glau ; sme dk gy cly

MD 1372'
INC 0.52°
AZM 228.41°

MUD WT 8.4+ VIS 27

50 AP250 0 UNITS 500
PPM 50000

40% SHYSLTST: ltgy, sft- fri, sbbly- sl sbply,
aren- slty tex, tr biot incl



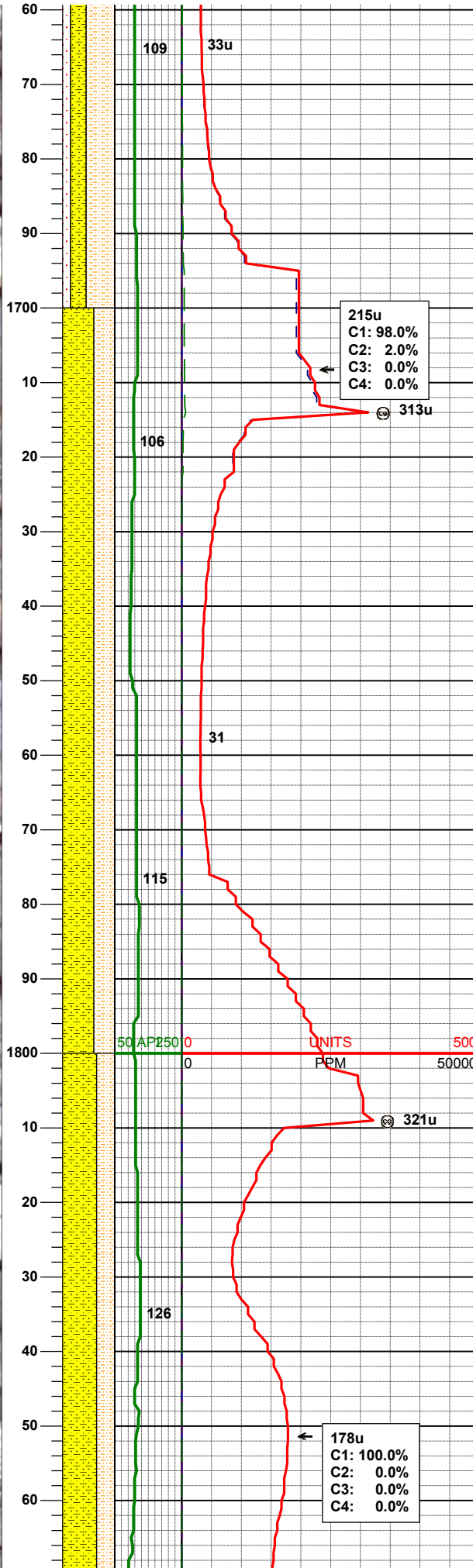
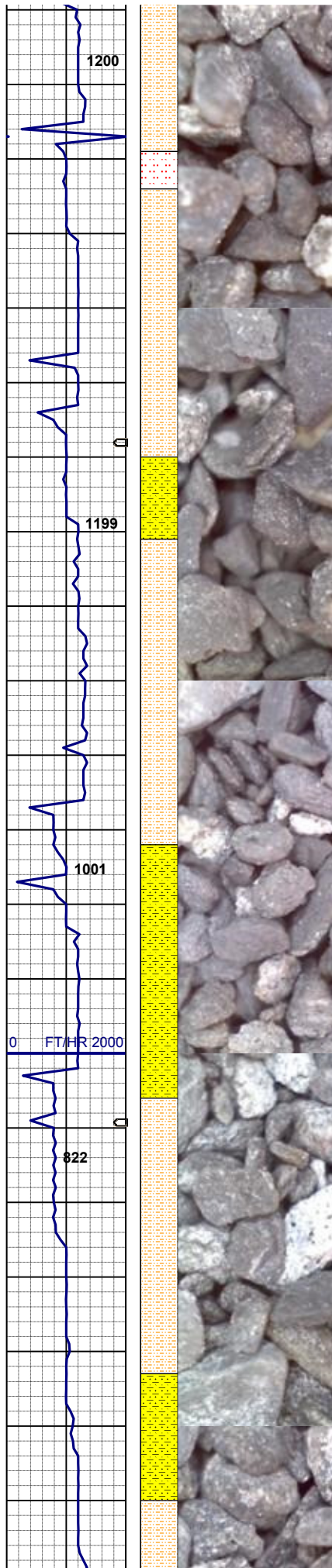
40% SLTST: ltgy, sft- fri, sbblky- sl sbplty, aren
- slty tex, tr biot rr glau incl
20% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt, rr biot, sme
glau ; sme dk gy cly

55% SHYSLTST: ltgy, sft- fri, sbblky- sl sbplty,
aren- slty tex, tr biot incl
35% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt, rr biot, sme
glau
10% SLTST: ltgy, sft- fri, sbblky- sl sbplty, aren
- slty tex, tr biot rr glau incl ; sme dk gy cly

MD 1560'
INC 0.88°
AZM 184.04°

MD 1655'
INC 0.96°
AZM 148.69°

55% SHYSLTST: ltgy, sft- fri, sbblky- sl sbplty,
aren- slty tex, tr biot incl
30% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt, rr biot, sme
glau
15% SLTST: ltqv, sft- fri, sbblky- sl sbplty, aren



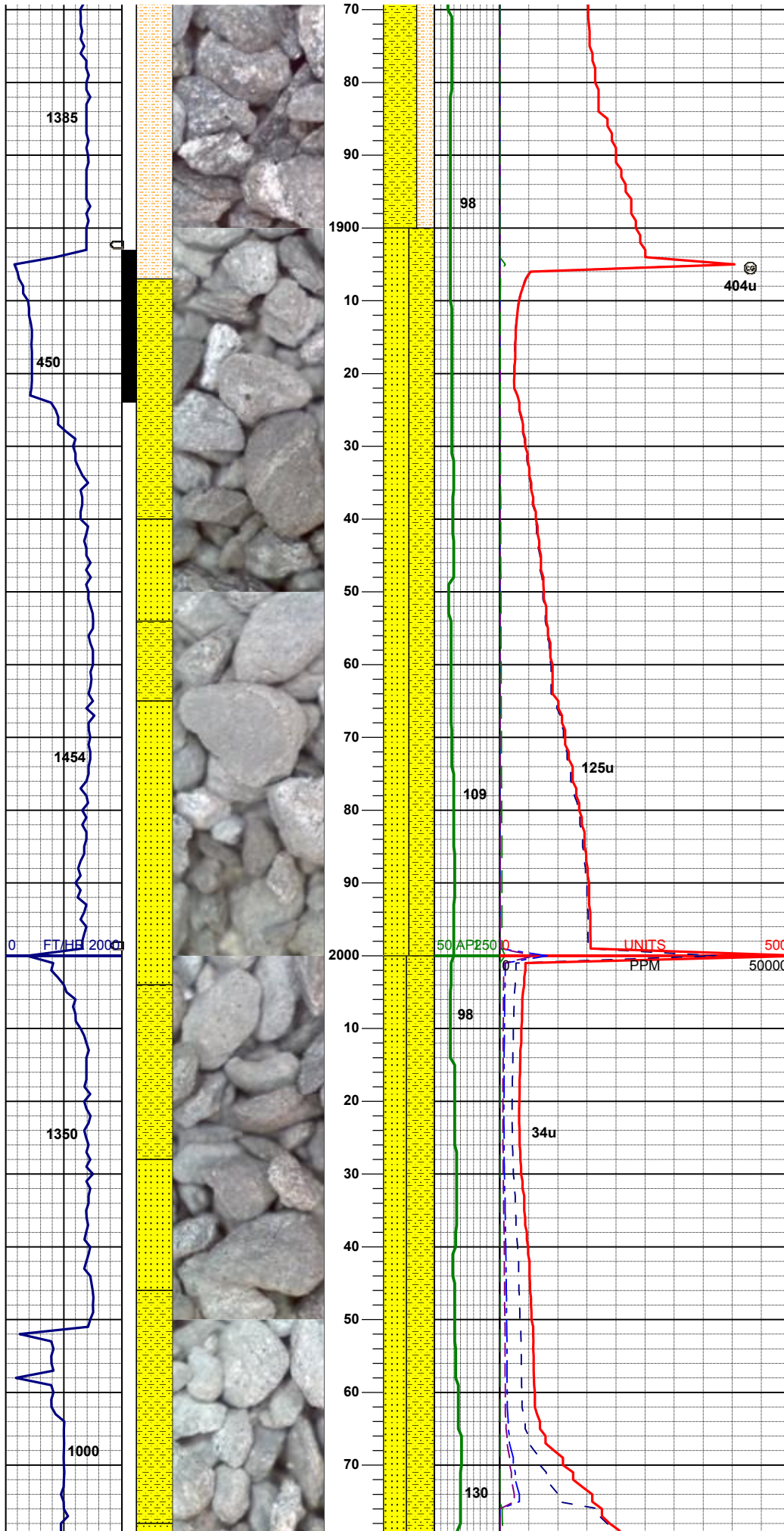
- slty tex, tr biot rr glau incl ; sme dk gy cly

MD 1750'
INC 1.49°
AZM 151.54°

60% SHYSLTST: ltgy, sft- fri, sbblky- sl sbplty,
aren- slty tex, tr biot incl
40% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt, rr biot, sme
glau ; abnt dk gy cly

MD 1845'
INC 1.97°
AZM 131.94°

65% SHYSLTST: ltgy, sft- fri, sbblky- sl sbplty,
aren- slty tex, sme biot incl
35% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt, sme glau ;
abnt dk gy cly

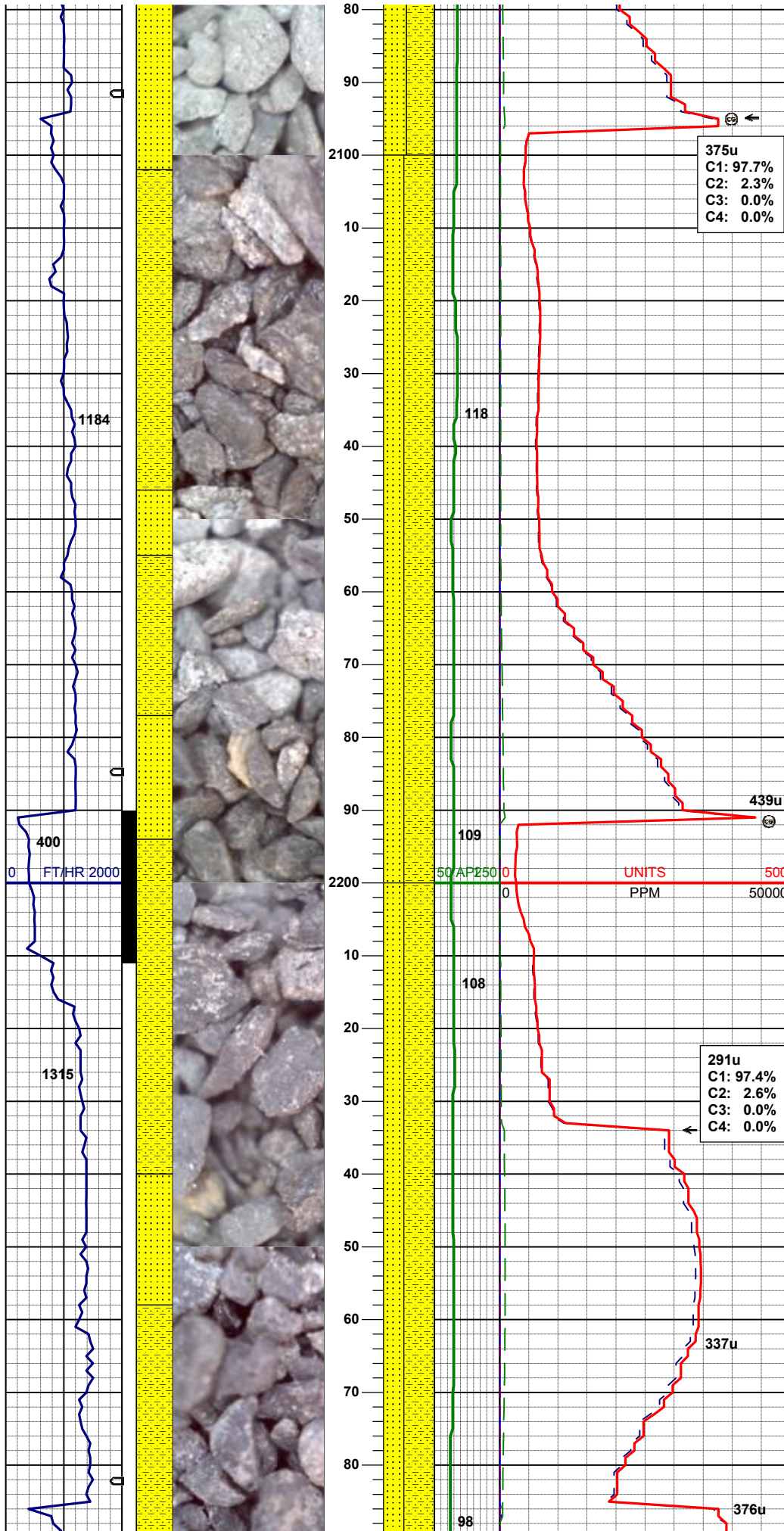


MD 1940'
INC 1.31°
AZM 73.74°

50% SHYSS: ltgy- tr s&p, vf-fgr, sbdr - sbang,
mod srt, firm- fri, p por, arg cmt, sme glau
50% SS: wh-op occ lt gy, s&p, fgr, sbdr-sbang,
mod w srt, firm, brit ; abnt dk gy cly

MD 2034'
INC 1.62
AZM 85.64

55% SHYSS: ltgy- tr s&p, vf-fgr, sbdr - sbang,
mod srt, firm- fri, p por, arg cmt, sme glau
45% SS: wh-op occ lt gy, s&p, fgr, sbdr-sbang,
mod w srt, firm, brit ; abnt dk gy cly

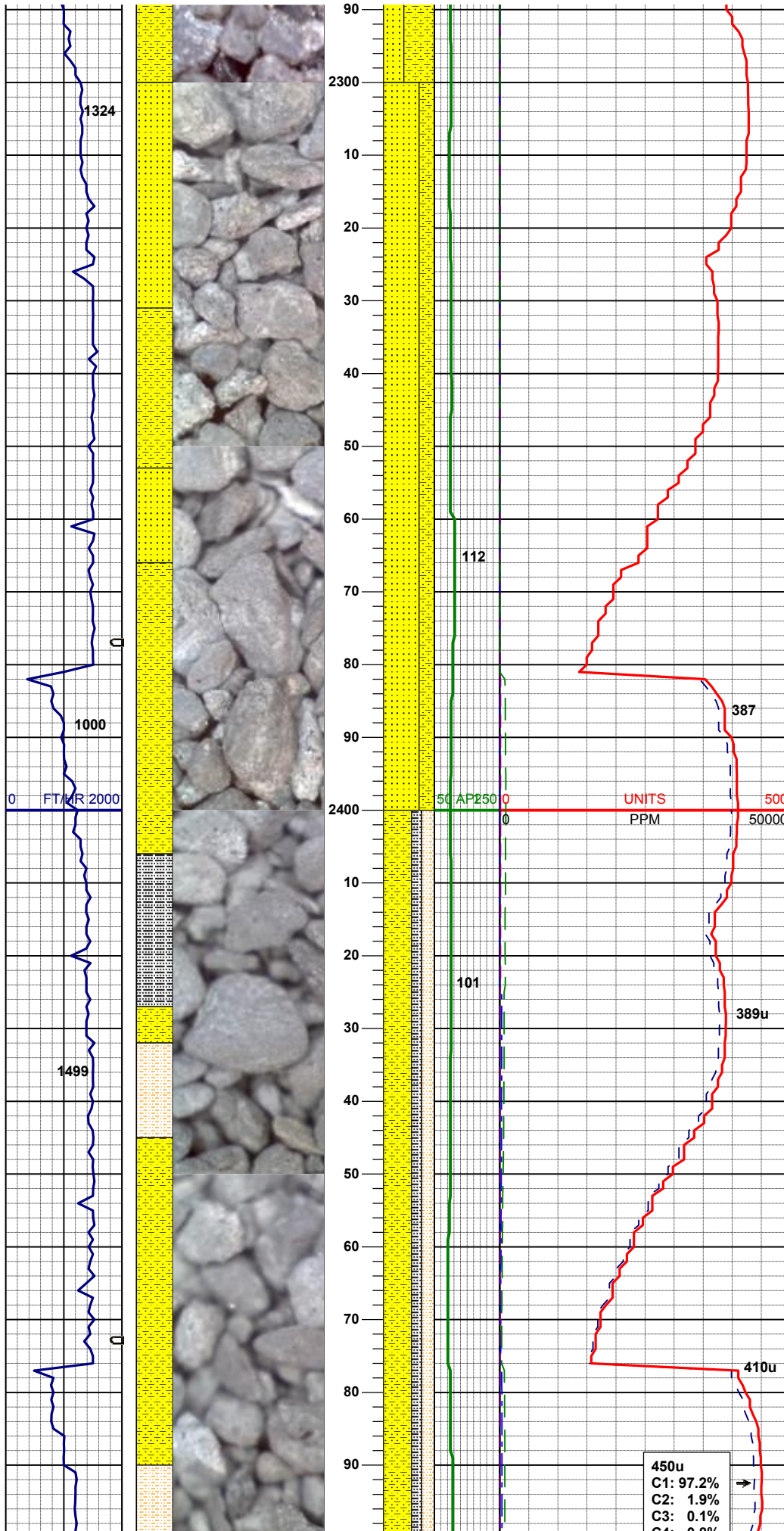


MD 2129'
INC 2.06°
AZM 79.04°

60% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt, sme glau
40% SS: wh-op occ lt gy, s&p, fgr, sbrd-sbang,
mod w srt, firm, brit ; abnt dk gy cly

MD 2224'
INC 1.27°
AZM 343.50°

60% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt, sme glau
40% SS: wh-op occ lt gy, s&p, fgr, sbrd-sbang,
mod w srt, firm, brit ; abnt dk gy cly



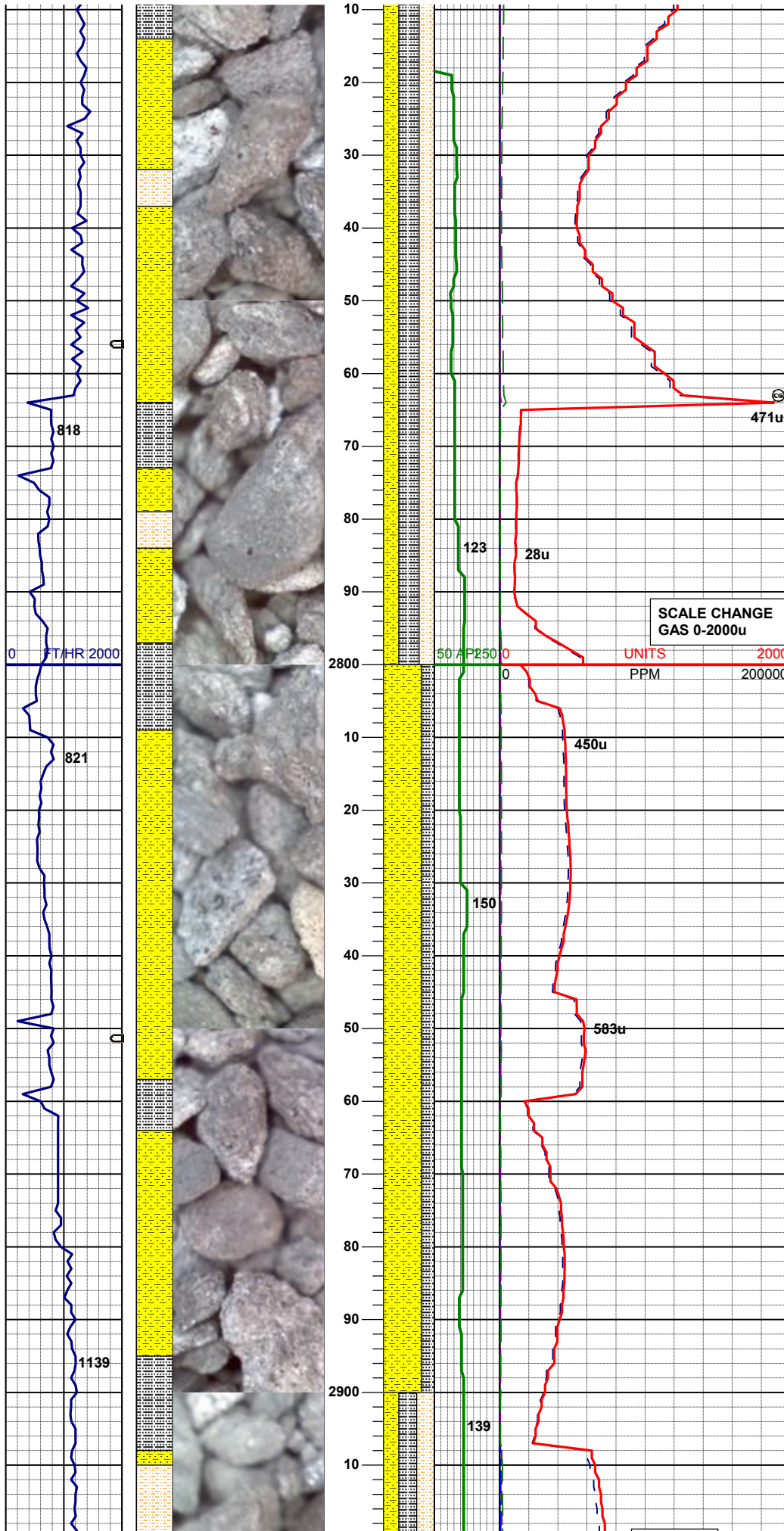
MD 2319'
INC 1.09°
AZM 14.60°

70% SS: wh-op occ lt gy, s&p, fgr, sbrd-sbang,
mod w srt, firm, brit
30% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt ; abnt dk gy cly

MD 2414'
INC 1.13°
AZM 23.63°

55% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt ; abnt dk gy cly
20% SHYSLTST: ltgy, sft- fri, sbbky- sl sbply,
aren- slty tex, sme biot incl
25% SILTY SH: m gy-mgybrn occ v dk gy, firm -
sft , sbbky - sbply, rthy sl slty tex

450u
C1: 97.2%
C2: 1.9%
C3: 0.1%
C4: 0.8%

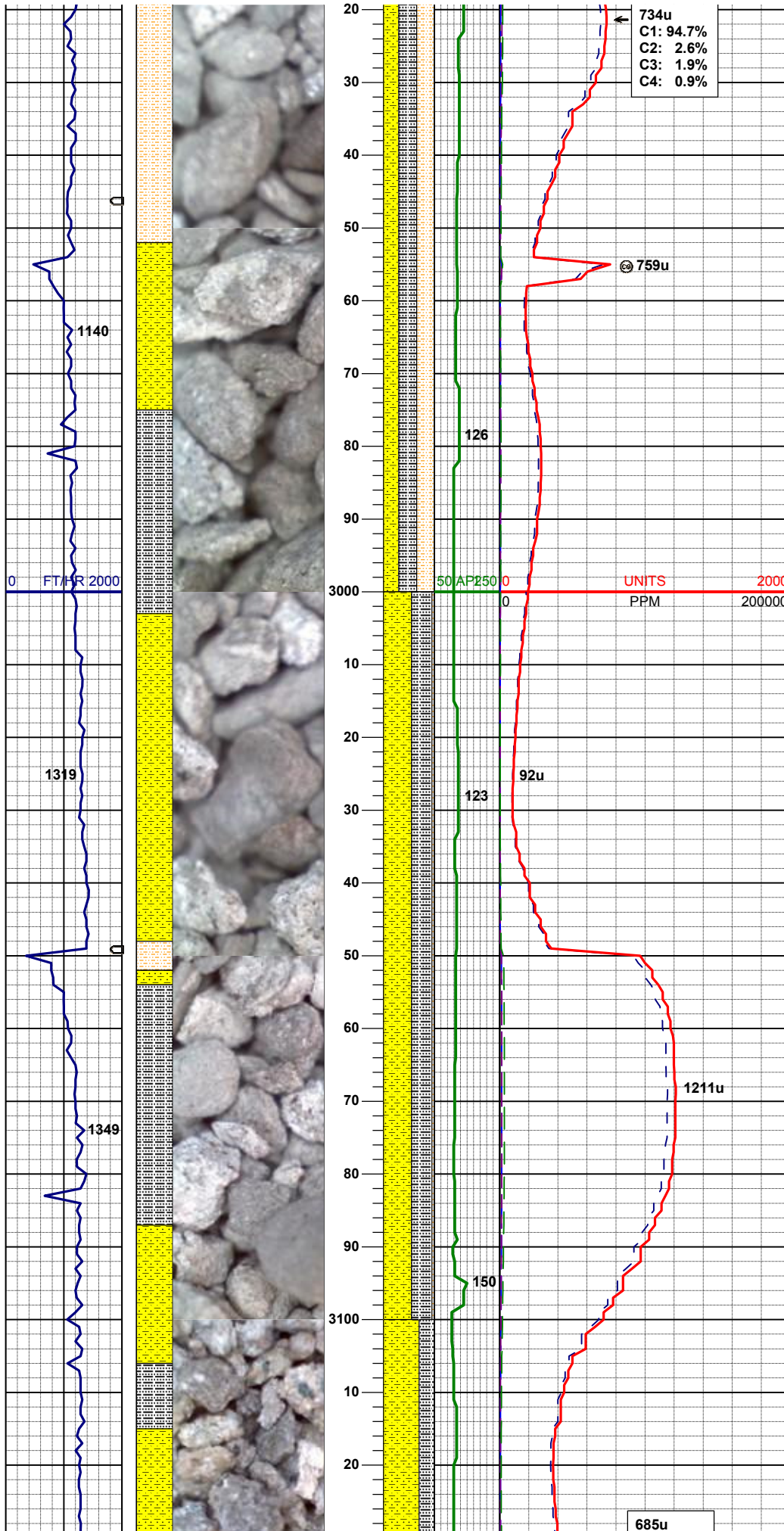


30% SILTY SH: m gy-mgybrn occ v dk gy, firm -
sft , sbblky - sbply, rthy sl slty tex
40% SHYSLTST: ltgy, sft- fri, sbblky- sl sbply,
aren- slty tex, rr biot incl
30% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt

MD 2794'
INC 0.22°
AZM 336.94°

75% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt
25% SILTY SH: m gy-mgybrn occ v dk gy, firm -
sft , sbblky - sbply, rthy sl slty tex

MD 2889'
INC 0.37°
AZM 341.59°

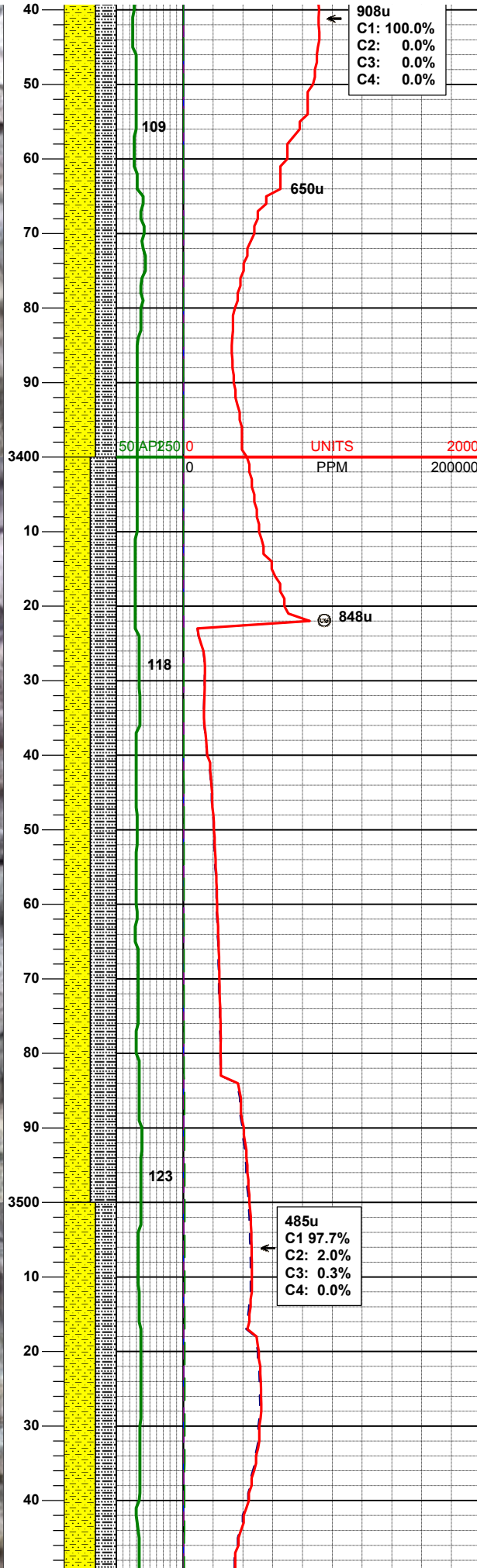
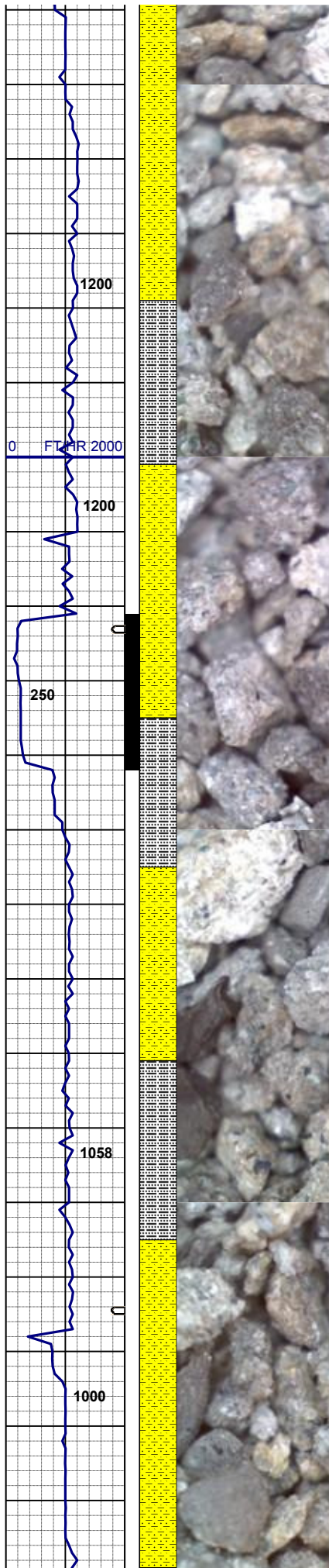


30% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt
35% SILTY SH: m gy-mgybrn occ v dk gy, firm -
sft , sbblky - sbplty, rthy sl slty tex
35% SHYSLTST: ltgy, sft- fri, sbblky- sl sbplty,
aren- slty tex, rr biot incl

MD 2984'
INC 0.75°
AZM 345.20°

55% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt
40% SILTY SH: m gy-mgybrn occ v dk gy, firm -
sft , sbblky - sbplty, rthy sl slty tex
5% SHYSLTST: ltgy, sft- fri, sbblky- sl sbplty,
aren- slty tex, rr biot incl

MD 3079'
INC 1.00°
AZM 335.41°



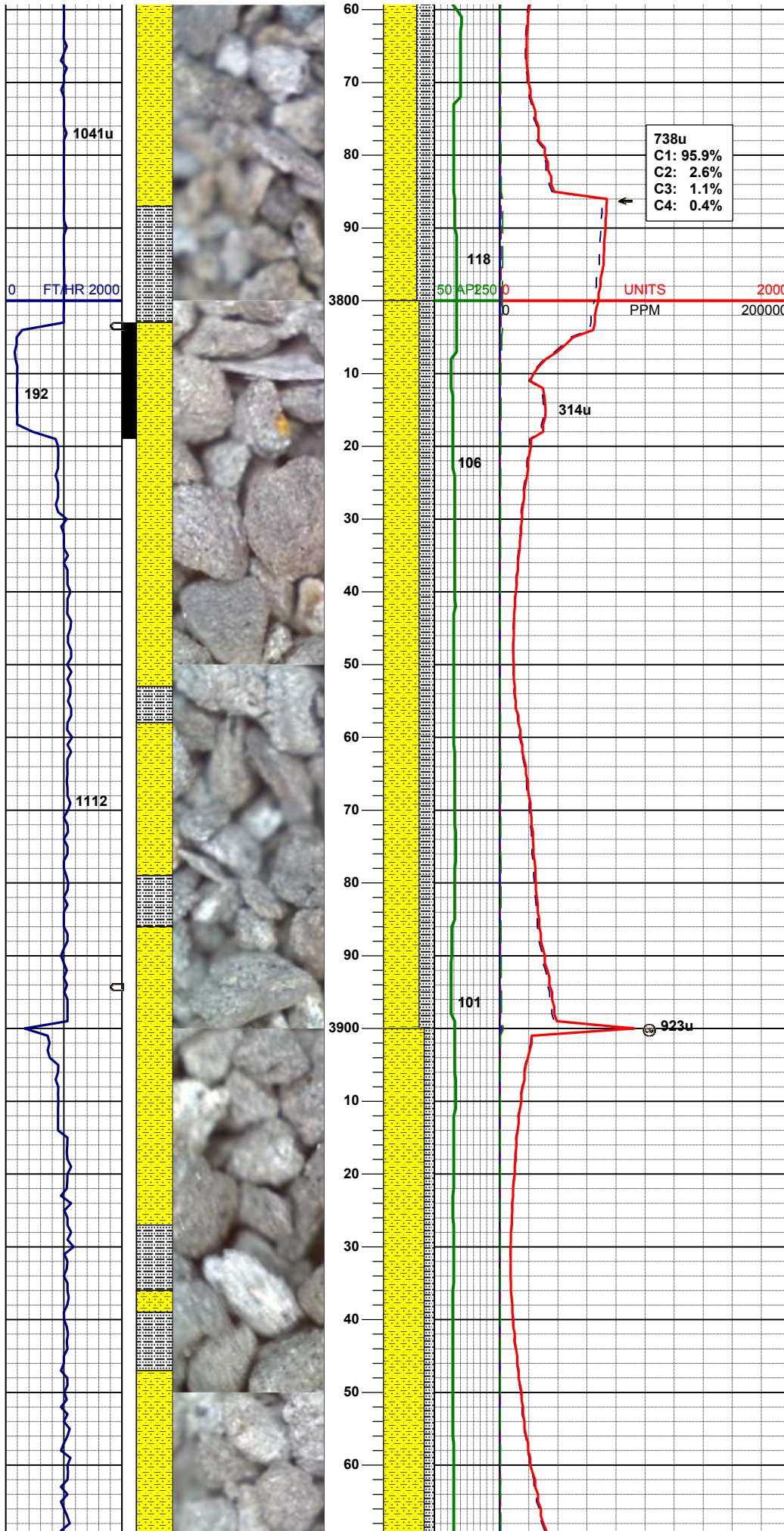
60% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt, sme glau, rr
biot
40% SILTY SH: m gy-mgybrn occ v dk gy, firm -
sft , sbblky - sbplty, rthy sl slty tex

MD 3364'
INC 1.68°
AZM 253.86°
MUD WT 8.9+ VIS 30

50% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt, sme glau, rr
biot
50% SILTY SH: m gy-mgybrn occ v dk gy, firm -
sft , sbblky - sbplty, rthy sl slty tex

MD 3459'
INC 2.22°
AZM 216.66°

60% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt, sme glau, rr
biot

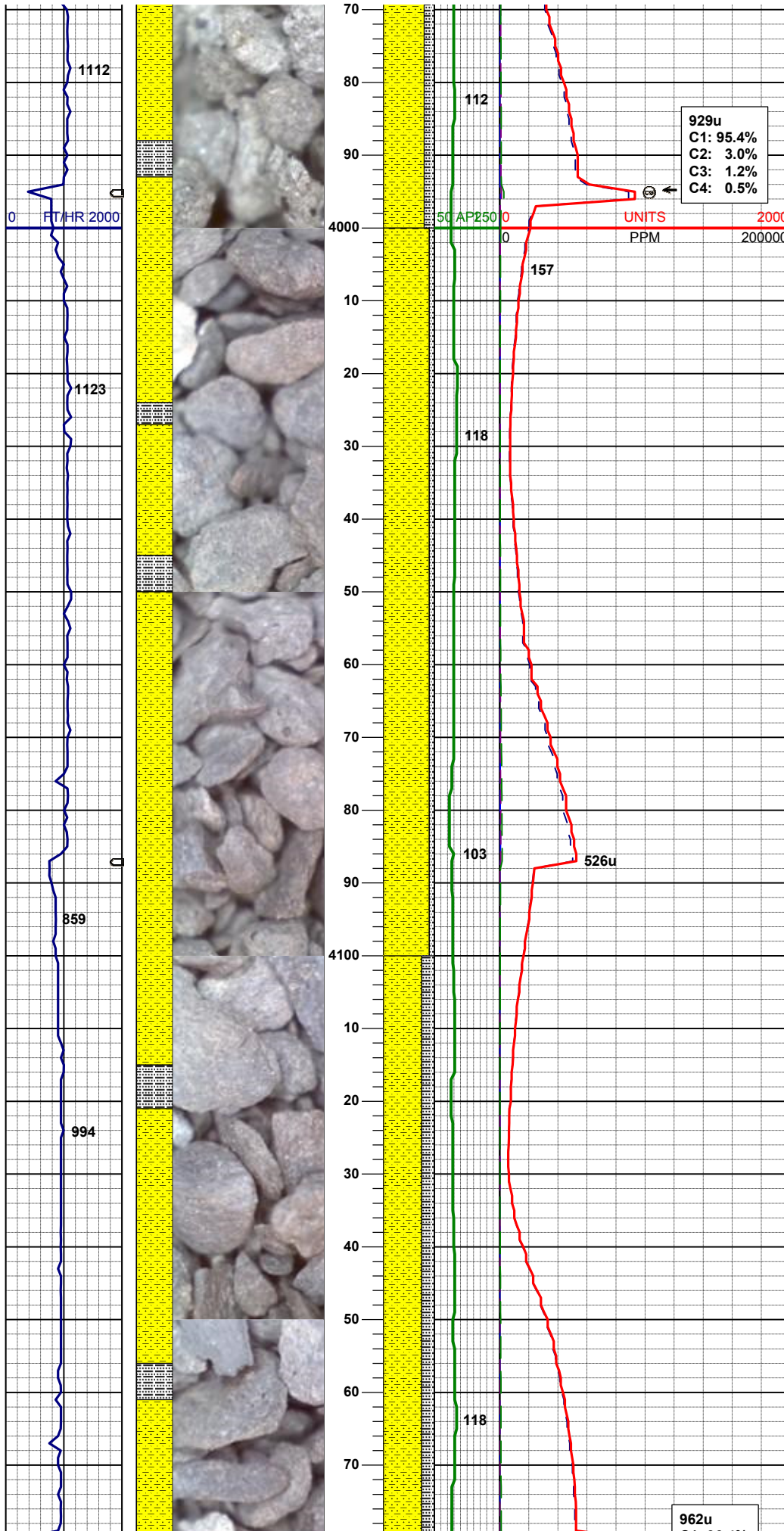


MD 3839'
INC 2.00°
AZM 167.91°

70% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt, sme glau, rr
biot
30% SILTY SH: m gy-mgybrn occ v dk gy, firm -
sft , sbbkly - sbplty, rthy sl slty tex

MD 3934'
INC 2.28°
AZM 165.91°

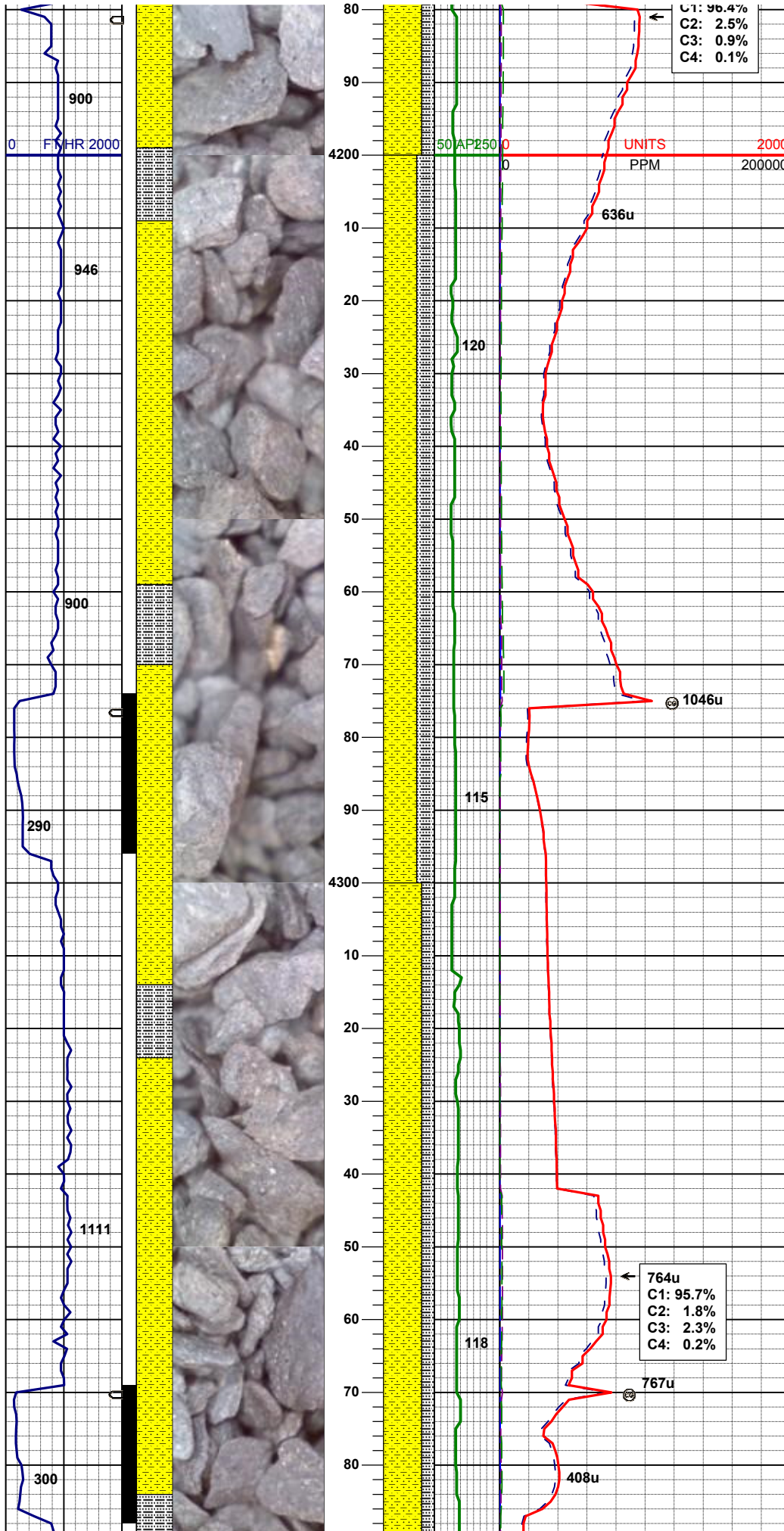
80% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt,
20% SILTY SH: m gy-mgybrn occ v dk gy, firm -
sft , sbbkly - sbplty, rthy sl slty tex



MD 4029'
INC 2.19°
AZM 167.71°

80% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt,
20% SILTY SH: m gy-mgybrn occ v dk gy, firm -
sft , sbbiky - sbply, rthy sl silty tex

75% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt,
25% SILTY SH: m gy-mgybrn occ v dk gy, firm -
sft , sbbiky - sbply, rthy sl silty tex



C1: 96.4%
C2: 2.5%
C3: 0.9%
C4: 0.1%

MD 4219'
INC 1.16°
AZM 187.40°

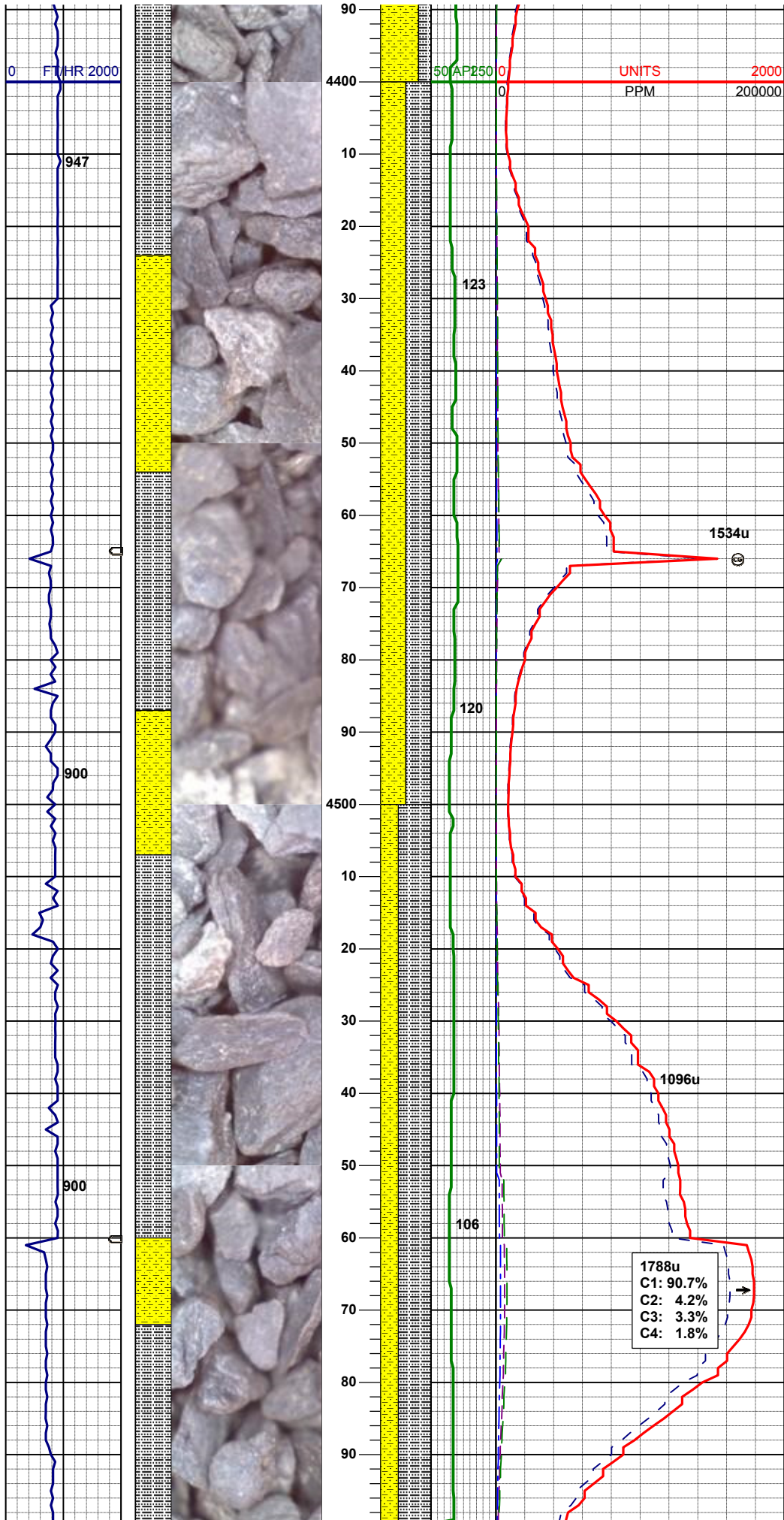
65% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt,
35% SILTY SH: m gy-mgybrn occ v dk gy, firm -
sft , sbblky - sbplty, rthy sl slty tex

MUD WT 9.1+ VIS 30

MD 4313'
INC 1.16°
AZM 187.40°

75% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt,
25% SILTY SH: m gy-mgybrn occ v dk gy, firm -
sft , sbblky - sbplty, rthy sl slty tex

764u
C1: 95.7%
C2: 1.8%
C3: 2.3%
C4: 0.2%



MD 4408'
INC 0.35°
AZM 343.72°

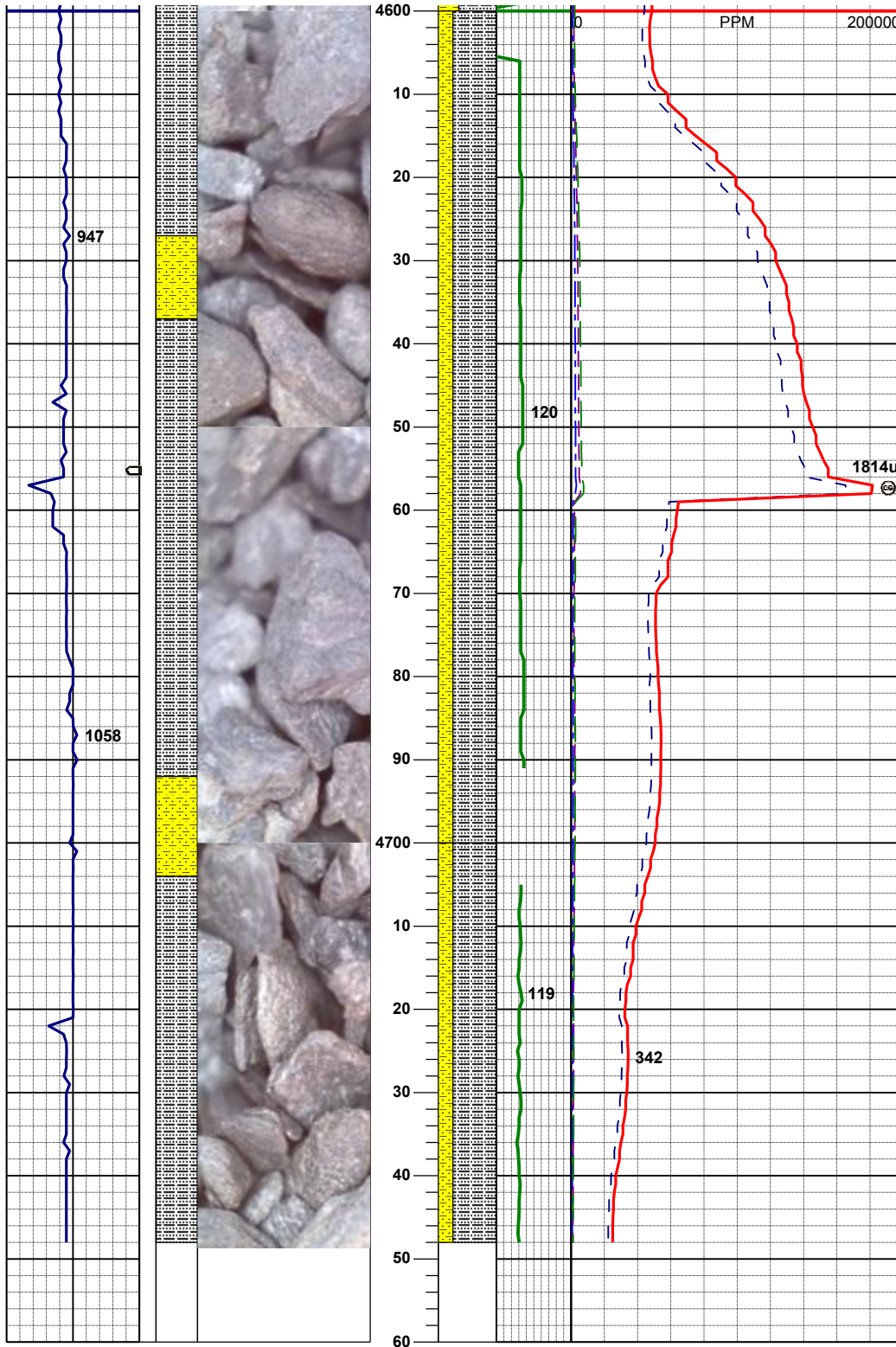
50% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt,
50% SILTY SH: m gy-mgybrn occ v dk gy, firm -
sft, sbblky - sbplty, rthy sl slty tex

MD 4503'
INC 1.03°
AZM 35.81°

65% SILTY SH: m gy-mgybrn occ v dk gy, firm -
sft, sbblky - sbplty, rthy sl slty tex
35% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt,

1788u
C1: 90.7%
C2: 4.2%
C3: 3.3%
C4: 1.8%

MD 4598'
INC 1.27°



75% SILTY SH: m gy-mgybrn occ v dk gy, firm -
sft , sbblky - sbply, rthy sl slty tex
25% SHYSS: ltgy- tr s&p, vf-fgr, sbrd - sbang,
mod srt, firm- fri, p por, arg cmt,

MD 4691'
INC 1.02°
AZM 51.54°

TOOH For Tools @: 4748' MD
06:02 hrs 5/18/2013

Log Continued On:
CASTOR LD12-78HN(HORZ).lplot

Thank you for choosing
Columbine Logging INC.