

LOG created using Lplot VH Version 3.0, August 20, 2013, Copyright (C) 1999-2009 Pason Systems Corp.

OPERATOR: NOBLE ENERGY INC
WELL: ROHN STATE LD04-64-1HN
LOCATION: SEC 4 T9N R58W
COUNTY: WELD
STATE: COLORADO
SPOT: 1989' FSL; 480' FEL
ELEVATION: 4708' GL; 4732' KB
FIELD: WILDCAT
SPUD DATE: 08/15/2013
TD DATE: 08/16/2013
DATES LOGGED: 08/16/2013
DEPTHS LOGGED: 1200' - 4868' MD
LOGGERS: LAURA KELLOGG; CONOR PESICKA
DRILLING FLUID: LSND
DRILLING RIG: H&P 273
API: 05-123-37482
LOG TYPE: VERTICAL
SCALE: 1:240 (5 inches per 100 feet)
REMARKS: WELLSITE GEOLOGICAL SERVICES
 PROVIDED BY COLUMBINE LOGGING INC.

LITHOLOGIES



Sandstone



Shaly Sandstone



Silty Shale

ENGINEERING SYMBOLS



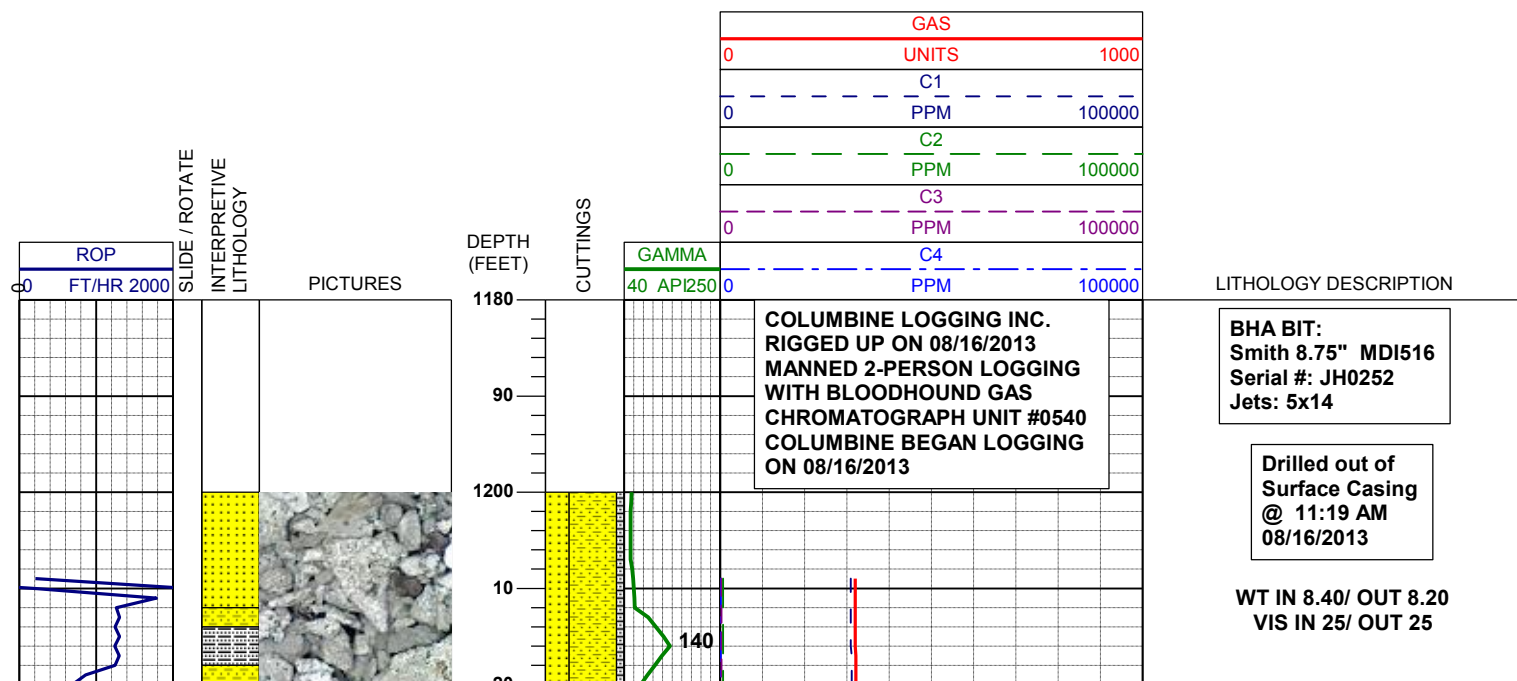
Connection

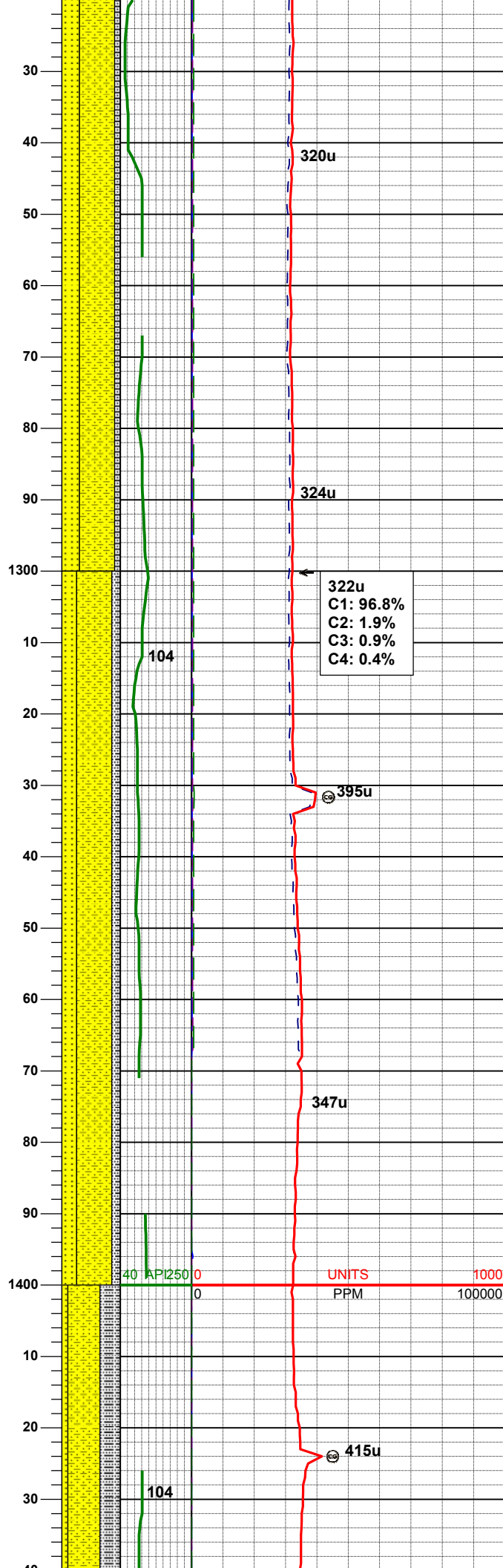
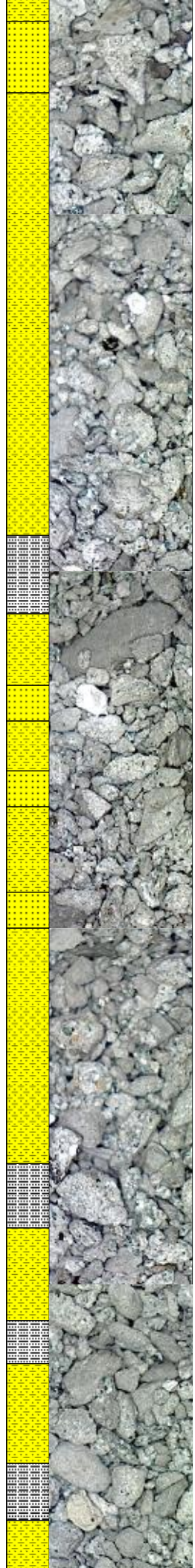
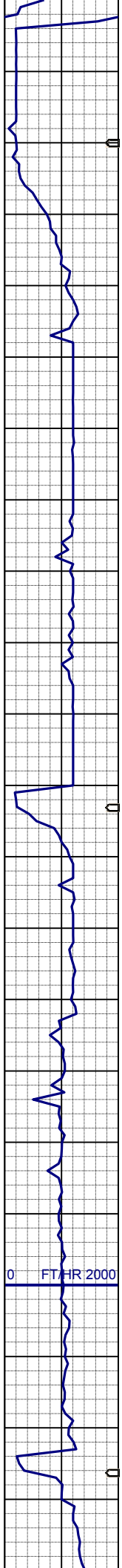


Connection Gas



Arrow





SHYSS: ltgy-gy, s&p ip, sbang, v fri,
vfgr, psrt, wrndd, abnt cly, arg cmt, sl
calc
SS: ltgy-gy-trnsl, sbang-ang, fgr, psrt,
wrndd, arg cmt, tr lit frag
SLTYSH: ltgy-gy, sbblky-sbply, sft, gt
-sdy tex, arg cmt

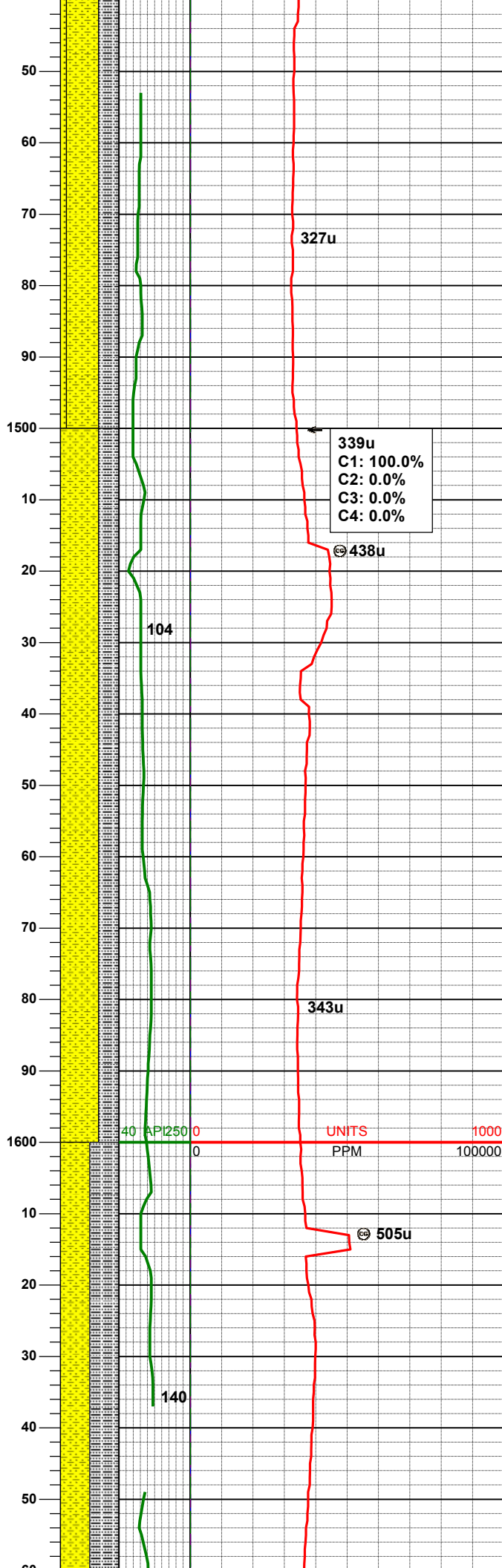
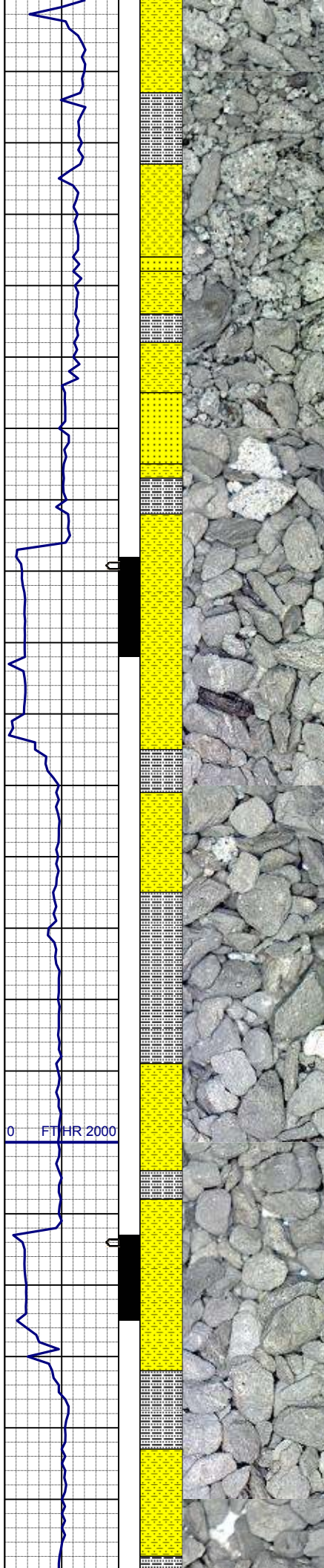
MD 1282'
INC 0.8°
AZM 352.1°
TVD 1281.96'

322u
C1: 96.8%
C2: 1.9%
C3: 0.9%
C4: 0.4%

SHYSS: ltgy-gy, s&p ip, sbang, v fri,
vfgr, psrt, wrndd, abnt cly, arg cmt, sl
calc
SS: ltgy-gy-trnsl, sbang-ang, fgr, psrt,
wrndd, arg cmt, tr lit frag
SLTYSH: ltgy-gy, sbblky-sbply, sft, gt
-sdy tex, arg cmt

0 FT/HR 2000

40 API 250 0 UNITS 1000
PPM 100000



SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, psrt, wrndd, abnt cly, arg cmt, sl calc
SLTYSH: ltgy-gy, sbblky-sbply, sft, gt -sdy tex, arg cmt
SS: ltgy-gy-trnsl, sbang-ang, fgr, psrt, wrndd, arg cmt, tr lit frag

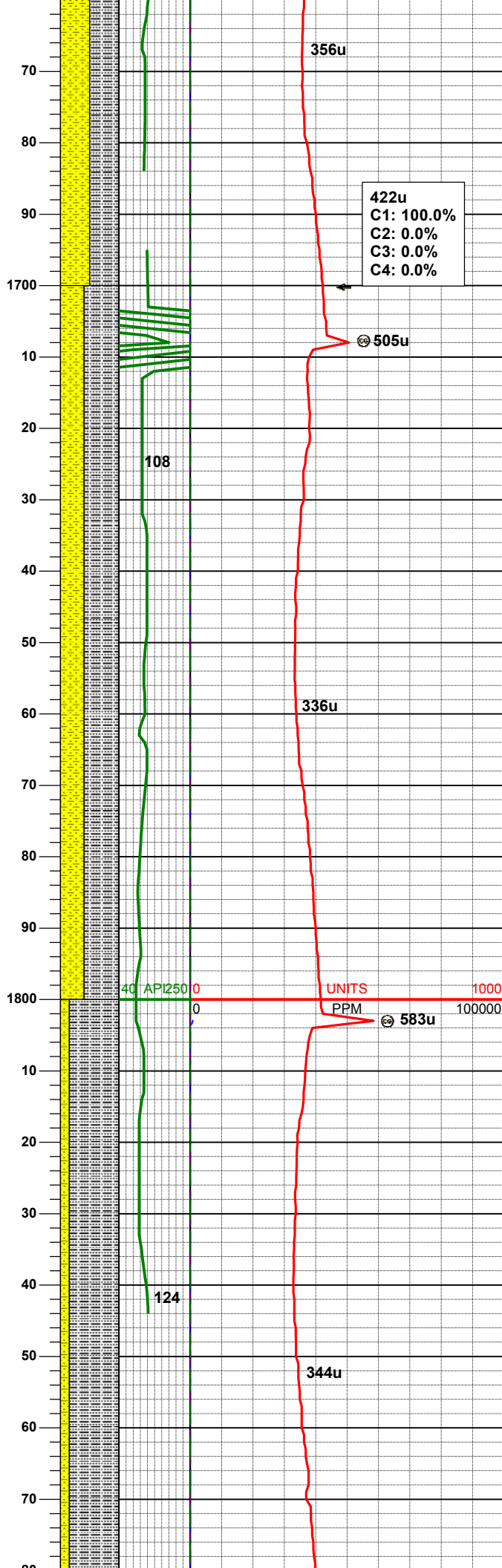
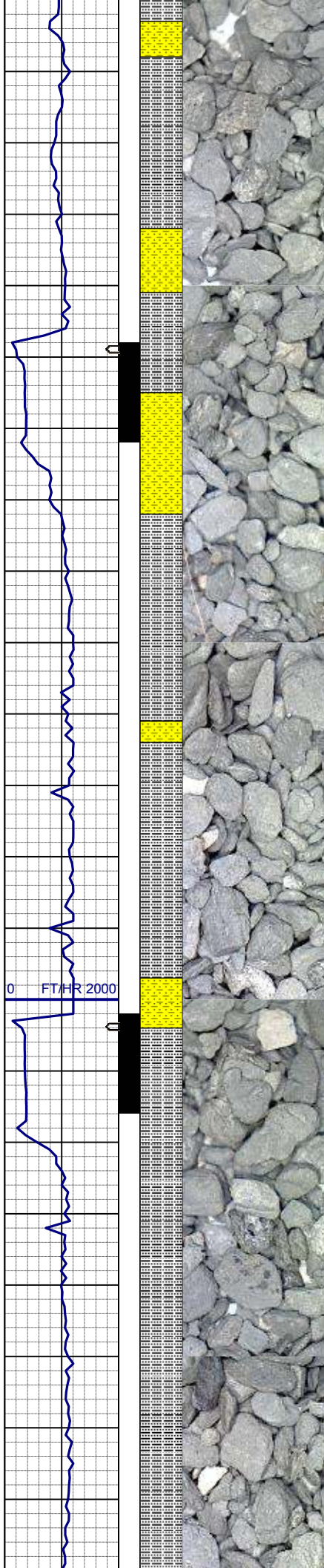
MD 1468'
INC 0.7°
AZM 350.0°
TVD 1467.94'

WT IN 8.50+ OUT 8.50+
VIS IN 26/ OUT 26

SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, psrt, wrndd, abnt cly, arg cmt, sl calc
SLTYSH: ltgy-gy, sbblky-sbply, sft, gt -sdy tex, arg cmt

MD 1563'
INC 0.9°
AZM 171.8°
TVD 1562.94'

SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, psrt, wrndd, abnt cly, arg cmt, sl calc
SLTYSH: ltgy-gy, sbblky-sbply, sft, gt -sdy tex, arg cmt



MD 1658'
INC 2.3°
AZM 173.0°
TVD 1657.90'

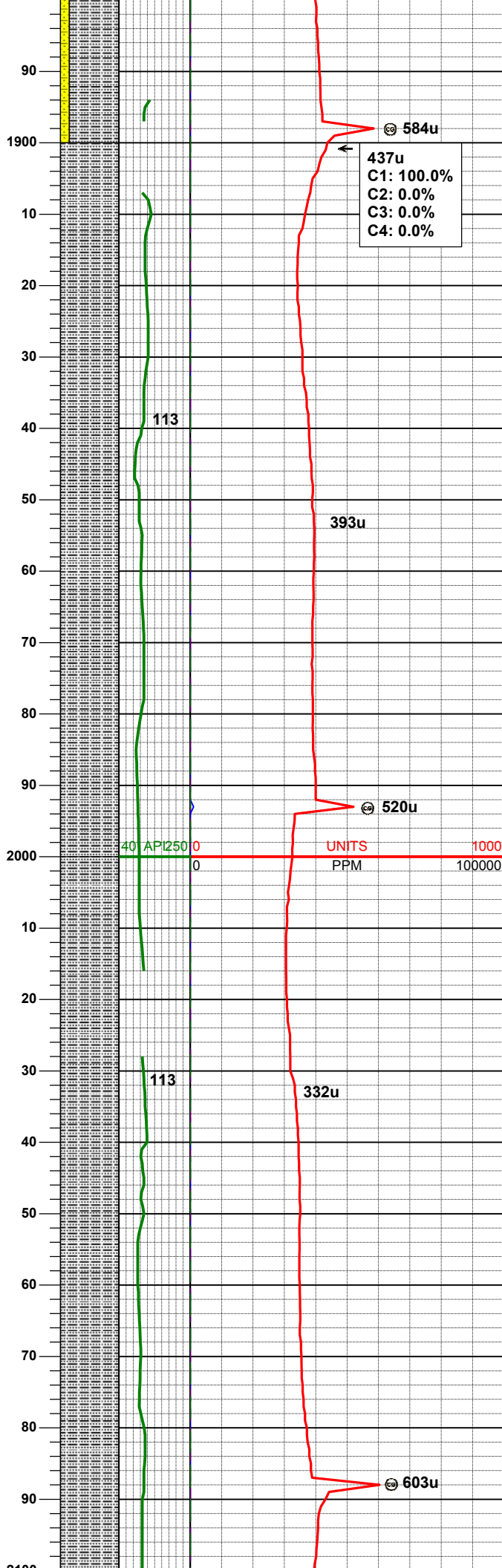
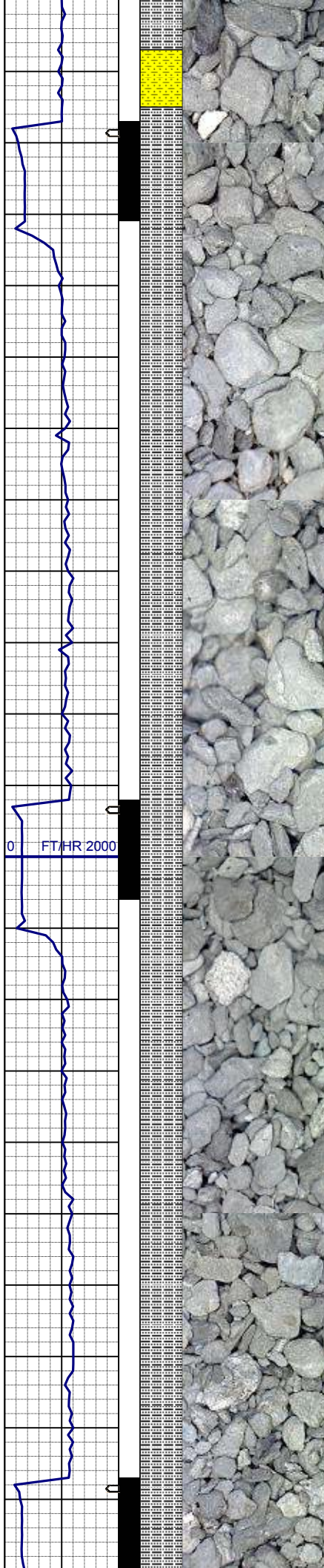
WT IN 8.60+ OUT 8.60+
VIS IN 26/ OUT 26

SLTYSH: ltgy-gy, sbbiky-sbply, sft, gt
-sdy tex, arg cmt
SHYSS: ltgy-gy, s&p ip, sbang, v fri,
vfgr, psrt, wrnnd, abnt cly, arg cmt, sl
calc

MD 1752'
INC 3.8°
AZM 158.9°
TVD 1751.77'

MD 1847'
INC 5.3°
AZM 153.5°
TVD 1846.46'

SLTYSH: ltgy-gy, sbbiky-sbply, sft, gt
-sdy tex, arg cmt
SHYSS: ltgy-gy, s&p ip, sbang, v fri,
vfgr, psrt, wrnnd, abnt cly, arg cmt, sl
calc



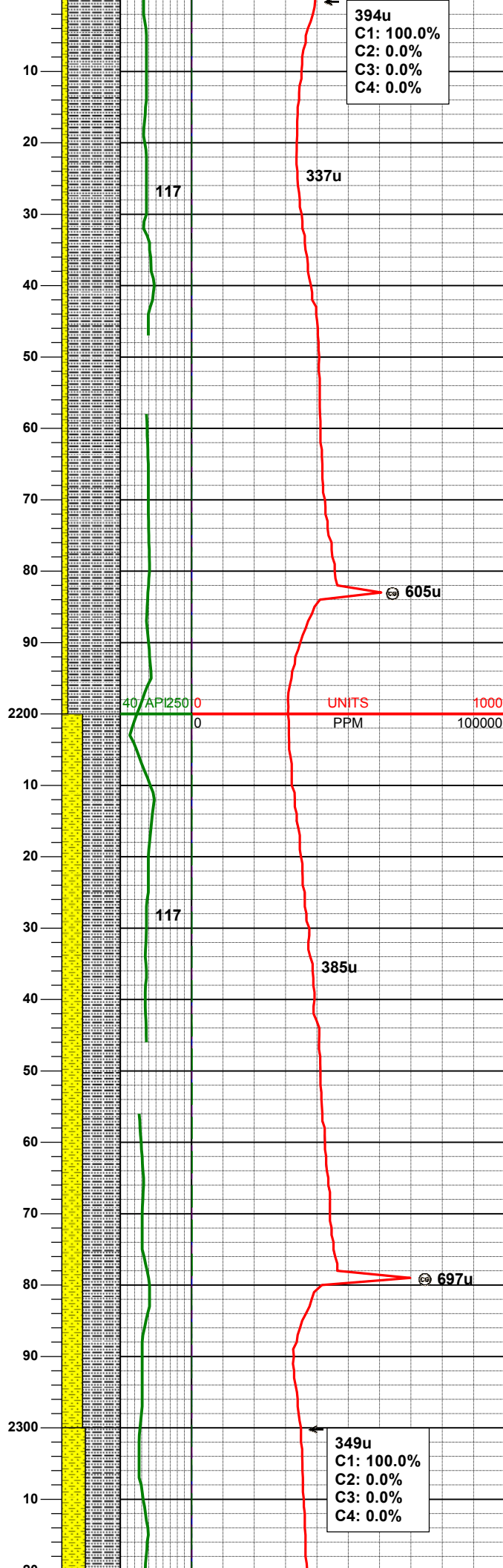
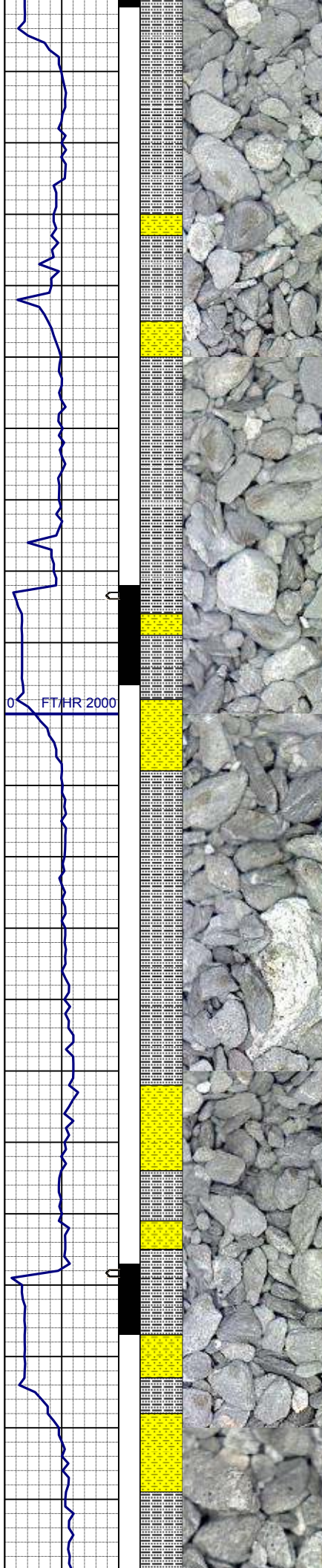
MD 1942'
INC 5.7°
AZM 162.5°
TVD 1941.03'

SLTYSH: ltgy-gy, sbblky-sbplty, sft, gt
-sdy tex, arg cmt

WT IN 8.30+/- OUT 8.50
VIS IN 25/ OUT 26

MD 2037'
INC 7.3°
AZM 162.8°
TVD 2035.41'

SLTYSH: ltgy-gy, sbblky-sbplty, sft, gt
-sdy tex, arg cmt



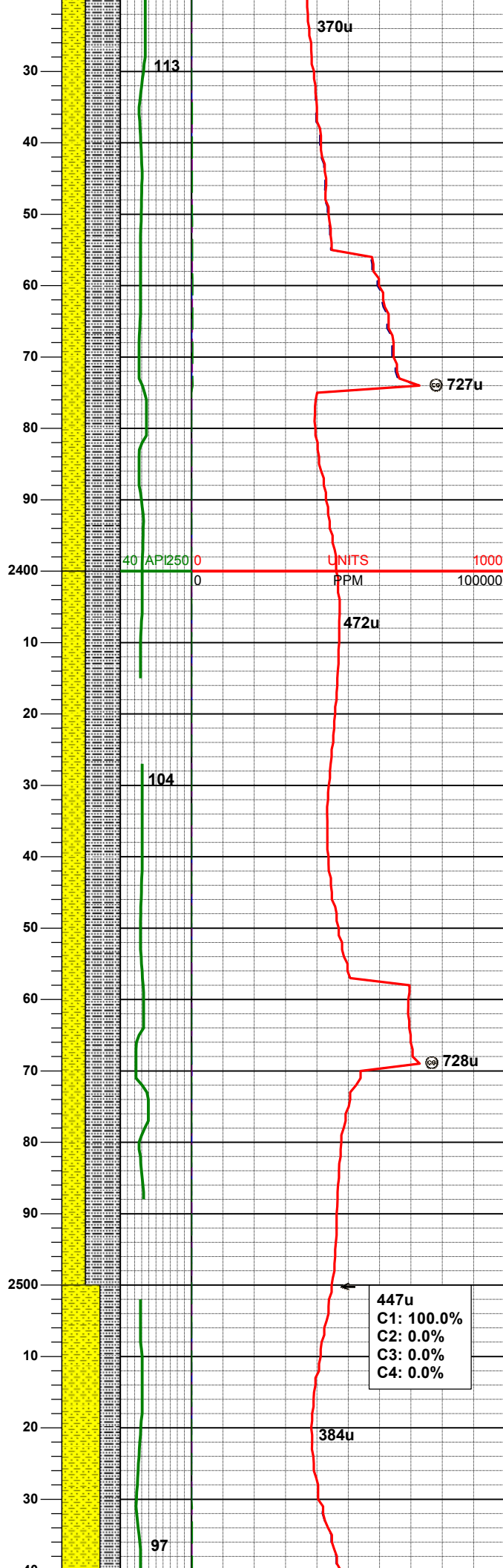
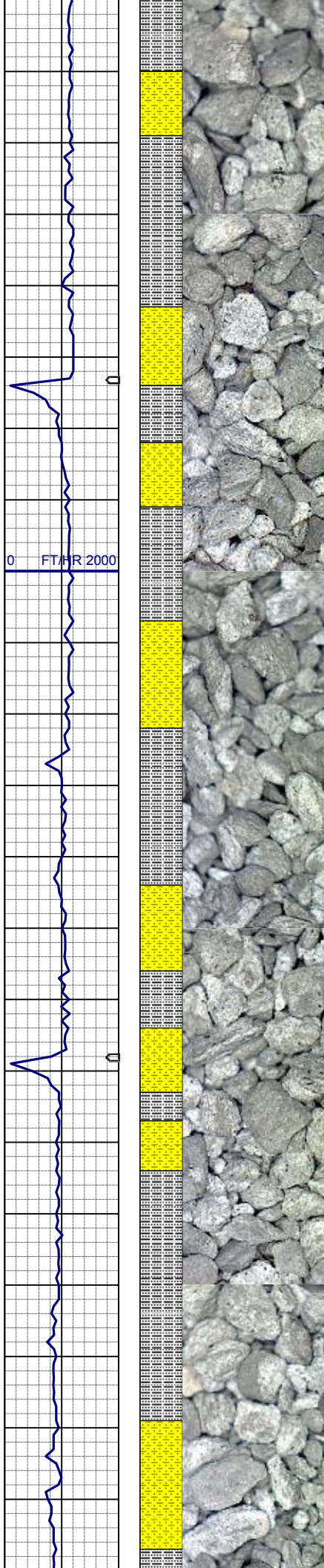
MD 2132'
INC 8.2°
AZM 162.1°
TVD 2129.55'

SLTYSH: ltgy-gy, sbblky-sbplty, sft, gt
-sdy tex, arg cmt
SHYSS: ltgy-gy, s&p ip, sbang, v fri,
vfgr, psrt, wrndd, abnt cly, arg cmt, sl
calc

MD 2227'
INC 8.8°
AZM 159.6°
TVD 2223.50'

SLTYSH: ltgy-gy, sbblky-sbplty, sft, gt
-sdy tex, arg cmt
SHYSS: ltgy-gy, s&p ip, sbang, v fri,
vfgr, psrt, wrndd, abnt cly, arg cmt, sl
calc

MD 2322'



SLTYSH: ltgy-gy, sbblky-sbply, sft, gt
-sdy tex, arg cmt
SHYSS: ltgy-gy, s&p ip, sbang, v fri,
vfgr, psrt, wrndd, abnt cly, arg cmt, sl
calc

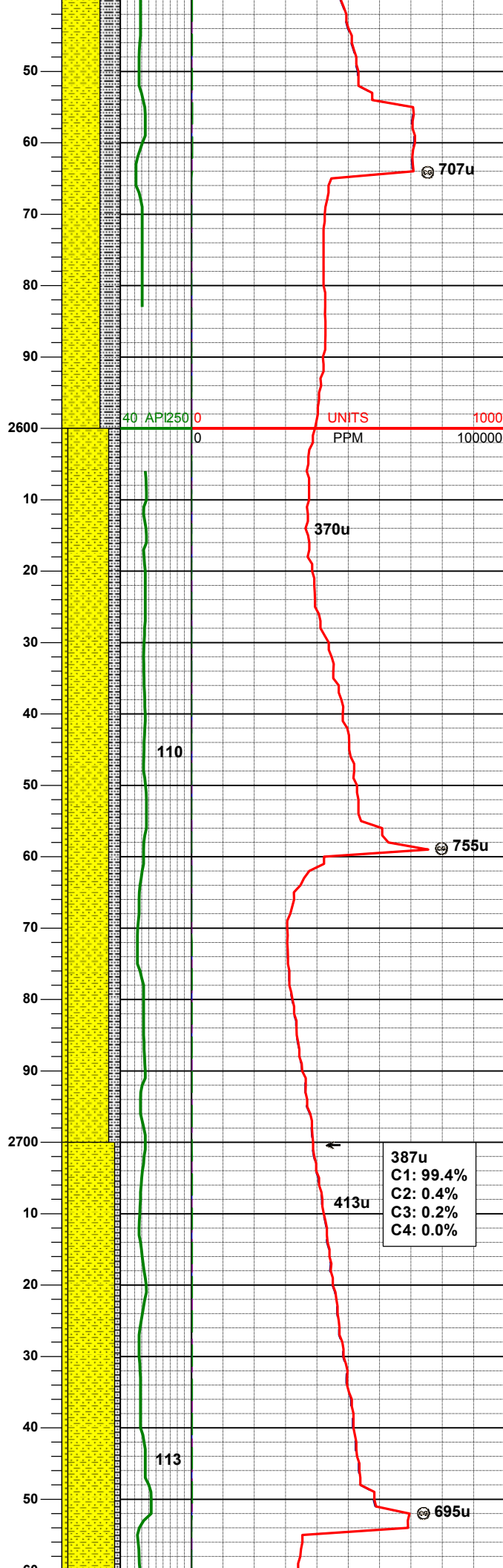
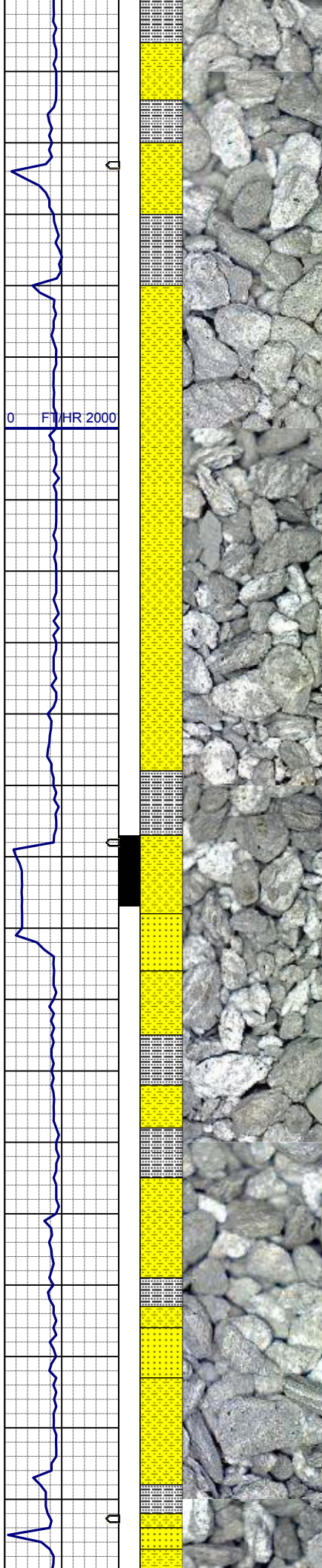
WT IN 8.40+ / OUT 8.50+
VIS IN 27 / OUT 26

MD 2417'
INC 9.7°
AZM 153.5°
TVD 2410.96'

SLTYSH: ltgy-gy, sbblky-sbply, sft, gt
-sdy tex, arg cmt
SHYSS: ltgy-gy, s&p ip, sbang, v fri,
vfgr, psrt, wrndd, abnt cly, arg cmt, sl
calc

MD 2512'
INC 9.8°
AZM 152.1°
TVD 2504.59'

447u
C1: 100.0%
C2: 0.0%
C3: 0.0%
C4: 0.0%



SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, psrt, wrndd, abnt cly, arg cmt, sl calc
SLTYSH: ltgy-gy, sbblky-sbplty, sft, gt -sdy tex, arg cmt

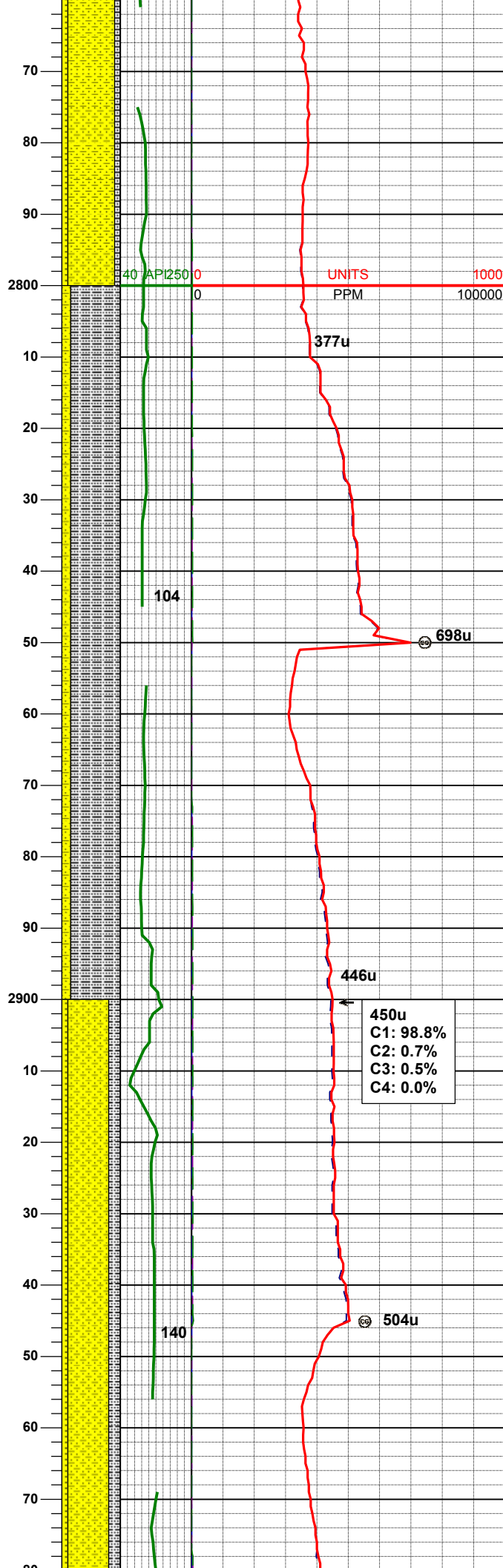
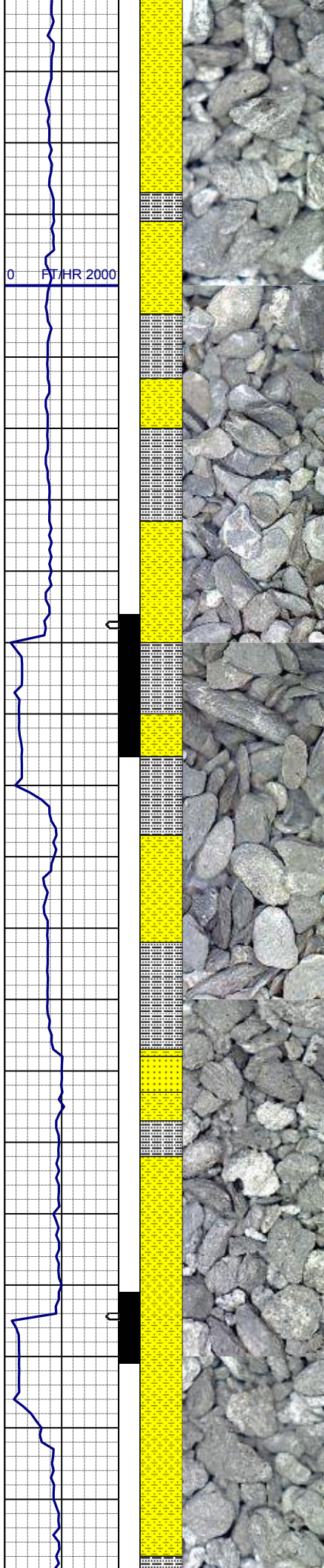
MD 2607'
INC 9.8°
AZM 150.7°
TVD 2598.21'

SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, psrt, wrndd, abnt cly, arg cmt, sl calc
SLTYSH: ltgy-gy, sbblky-sbplty, sft, gt -sdy tex, arg cmt
SS: ltgy-gy-trnsl, sbang-ang, fgr, psrt, wrndd, arg cmt, tr lit frag

MD 2701'
INC 10.0°
AZM 156.3°
TVD 2690.81'

387u
C1: 99.4%
C2: 0.4%
C3: 0.2%
C4: 0.0%

SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, psrt, wrndd, abnt cly, arg cmt, sl calc
SLTYSH: ltgy-gy, sbblky-sbplty, sft, gt -sdy tex, arg cmt
SS: ltgy-gy-trnsl, sbang-ang, fgr, psrt, wrndd, arg cmt, tr lit frag

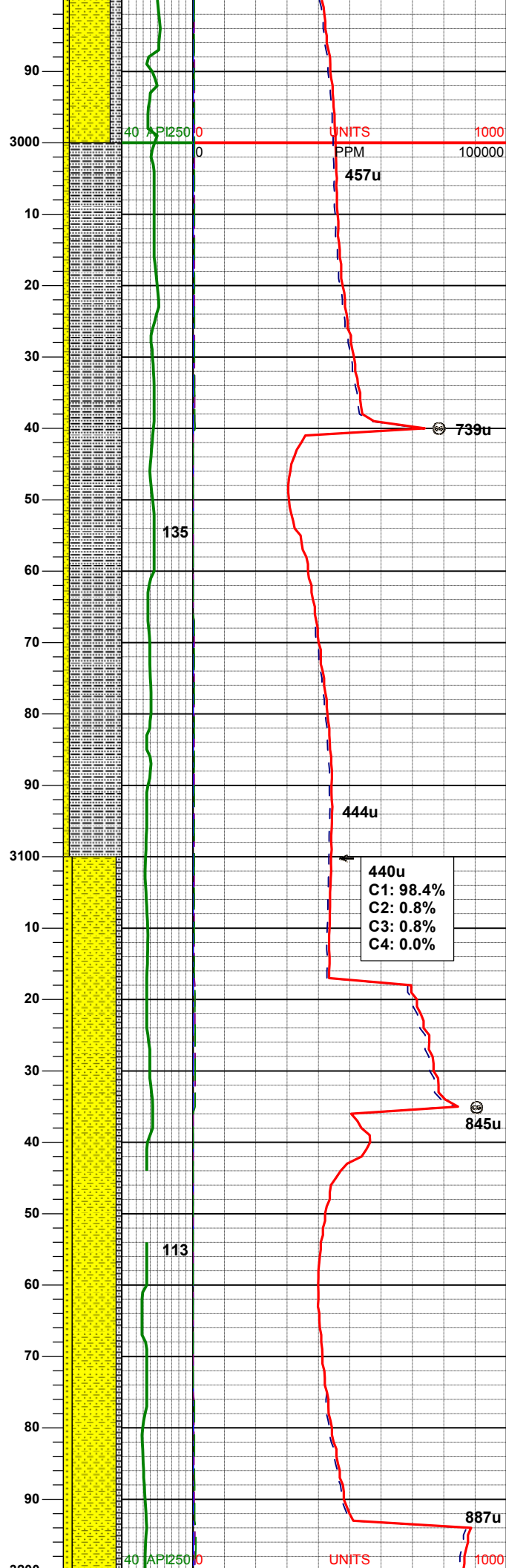
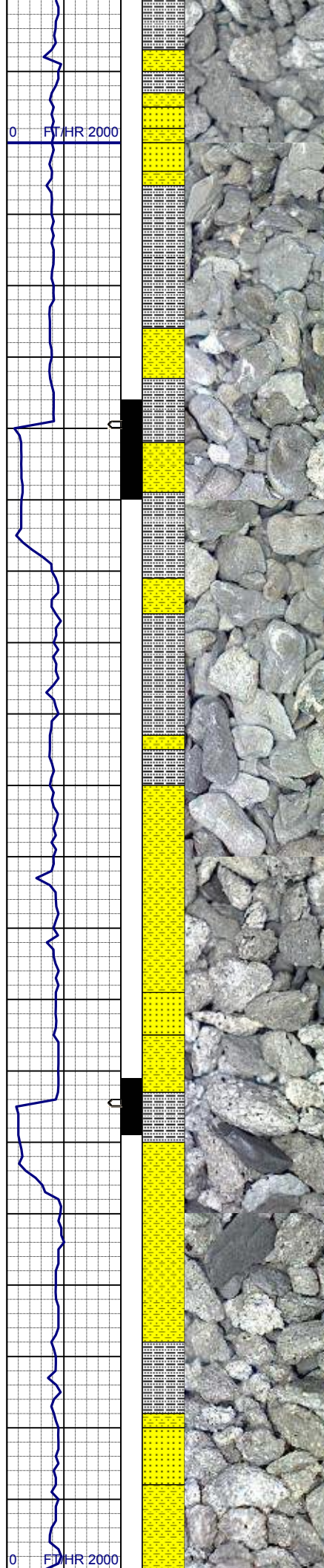


MD 2796'
INC 9.1°
AZM 153.7°
TVD 2784.49'

SLTYSH: ltgy-gy, sbblky-sbply, sft, gt
-sdy tex, arg cmt
SHYSS: ltgy-gy, s&p ip, sbang, v fri,
vfgr, psrt, wrnnd, abnt cly, arg cmt, sl
calc

MD 2891'
INC 9.0°
AZM 155.8°
TVD 2878.31'

SHYSS: ltgy-gy, s&p ip, sbang, v fri,
vfgr, psrt, wrnnd, abnt cly, arg cmt, sl
calc
SLTYSH: ltgy-gy, sbblky-sbply, sft, gt
-sdy tex, arg cmt
SS: ltgy-gy-trnsl, sbang-ang, fgr, psrt,
wrnnd, arg cmt, tr lit frag



MD	2986'
INC	8.4°
AZM	156.6°
TVD	2972.22'

SLTYSH: ltgy-gy, sbblky-sbplty, sft, gt
-sdy tex, arg cmt
SHYSS: ltgy-gy, s&p ip, sbang, v fri,
vfgr, psrt, wrndd, abnt cly, arg cmt, sl
calc

MD	3081'
INC	8.6°
AZM	149.8°
TVD	3066.17'

**WT IN 8.30+ / OUT 8.40+
VIS IN 27 / OUT 26**

SHYSS: ltgy-gy, s&p ip, sbang, v fri,
vfrg, psrt, wrnrd, abnt cly, arg cmt, sl
calc
SS: ltgy-gy-trnsl, sbang-ang, fgr, psrt,
wrnrd, arg cmt, tr lit frag
SLTYSH: ltgy-gy, sbblky-sbply, sft, gt
-sdy tex, arg cmt

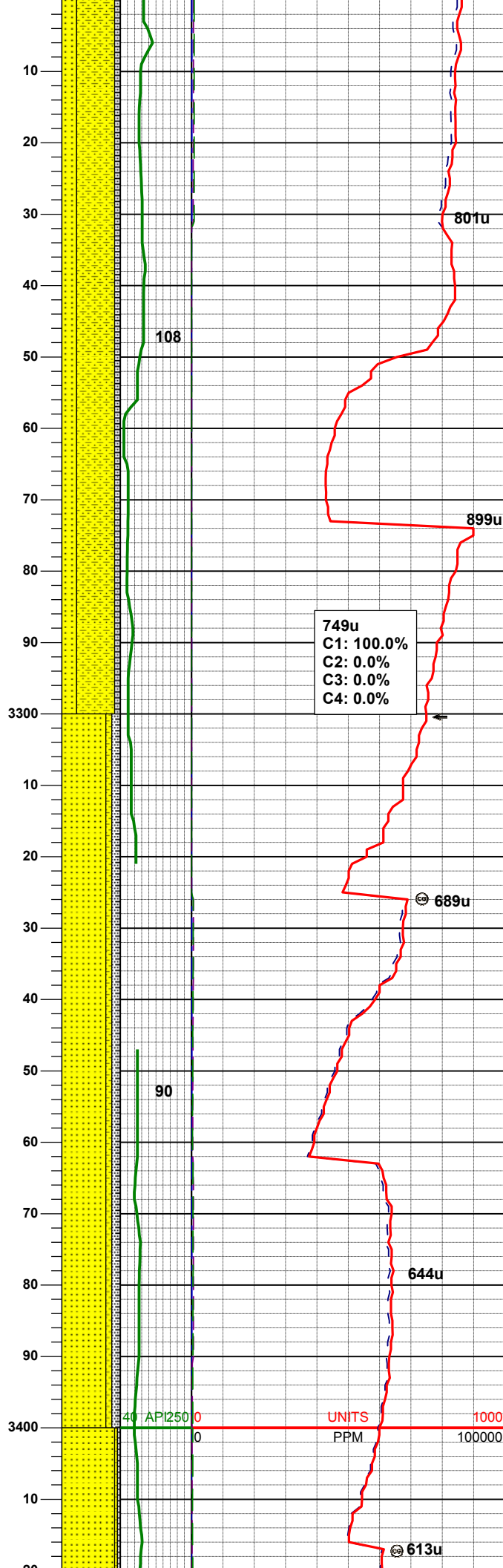
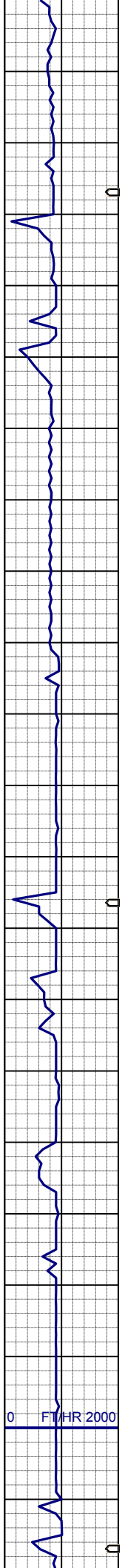
MD	3176'
INC	9.2°
AZM	158.1°
TVD	3169.03'

0 FT/HR 2000

40 API250

UNITS

1000



WT IN 8.30+ / OUT 8.50+
VIS IN 26 / OUT 28

SHYSS: ltgy-gy, s&p ip, sbang, v fri,
vfgr, psrt, wrnnd, abnt cly, arg cmt, sl
calc
SS: ltgy-gy-trnsl, sbang-ang, fgr, psrt,
wrnnd, arg cmt, tr lit frag
SLTYSH: ltgy-gy, sbblky-sbply, sft, gt
-sdy tex, arg cmt

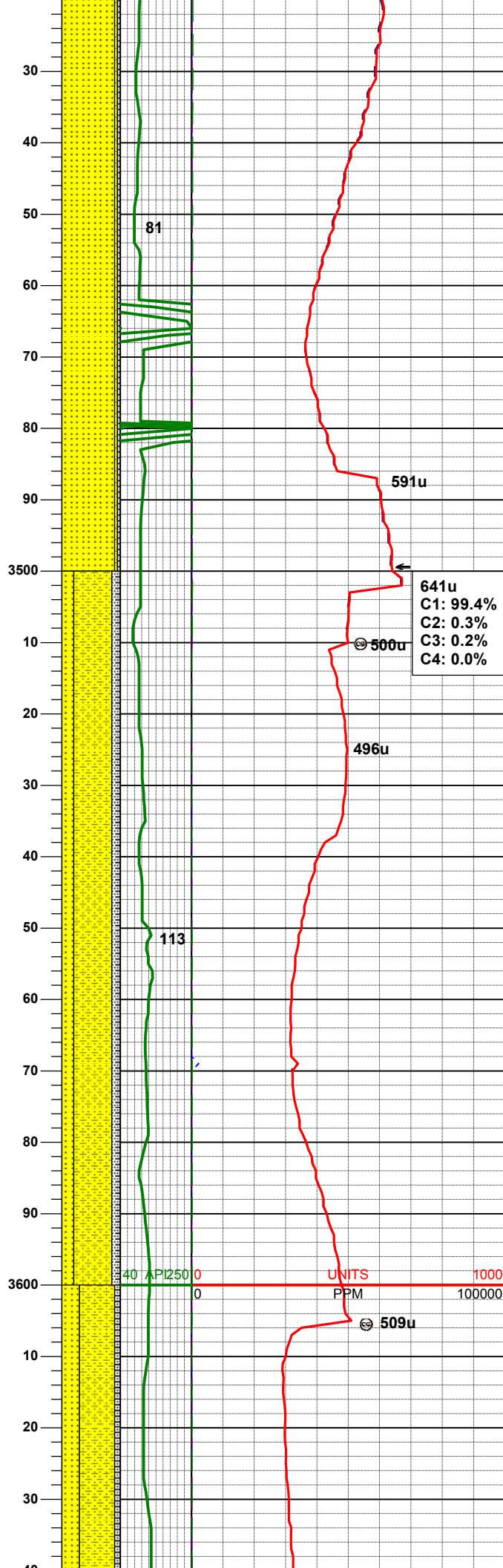
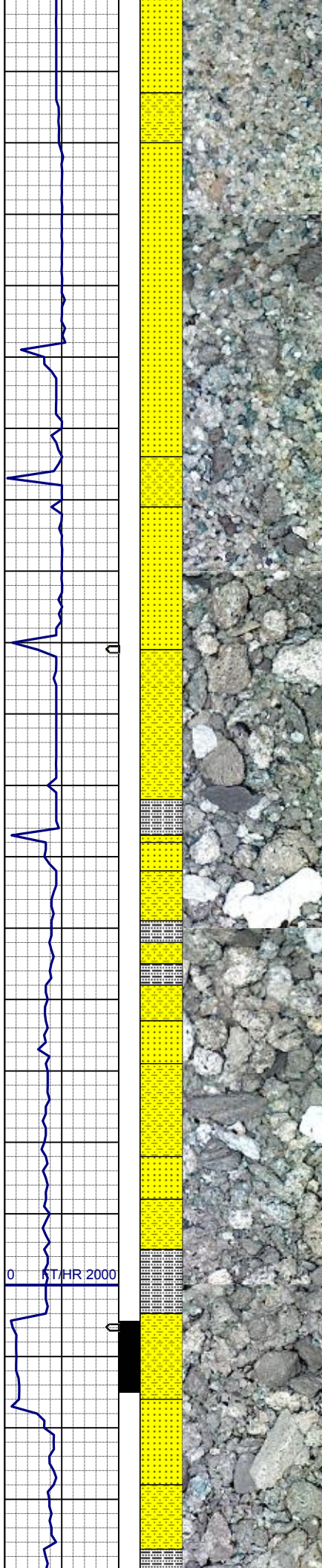
MD	3270'
INC	10.0°
AZM	156.8°
TVD	3252.72'

749u
C1: 100.0%
C2: 0.0%
C3: 0.0%
C4: 0.0%

SS: wh-ltgy-gy-trnsl, sbang-ang, fgr,
psrt, wrnnd, uncon, arg cmt, tr lit
frag, abnt glau
SLTYSH: ltgy-gy, sbblky-sbply, sft, gt
-sdy tex, arg cmt
SHYSS: ltgy-gy, s&p ip, sbang, v fri,
vfgr, psrt, wrnnd, abnt cly, arg cmt, sl
calc, sme glau

MD	3365'
INC	10.5°
AZM	157.7°
TVD	3346.20'

0 FVHR 2000



SS: wh-ltgy-gy-trnsl, sbang-ang, fgr, psrt, wrnnd, uncon, arg cmt, tr lit frag, abnt glau
SLTYSH: ltgy-gy, sbblky-sbply, sft, gt-sdy tex, arg cmt
SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, psrt, wrnnd, abnt cly, arg cmt, sl calc, sme glau

MD 3460'
INC 11.9°
AZM 155.9°
TVD 3439.39'

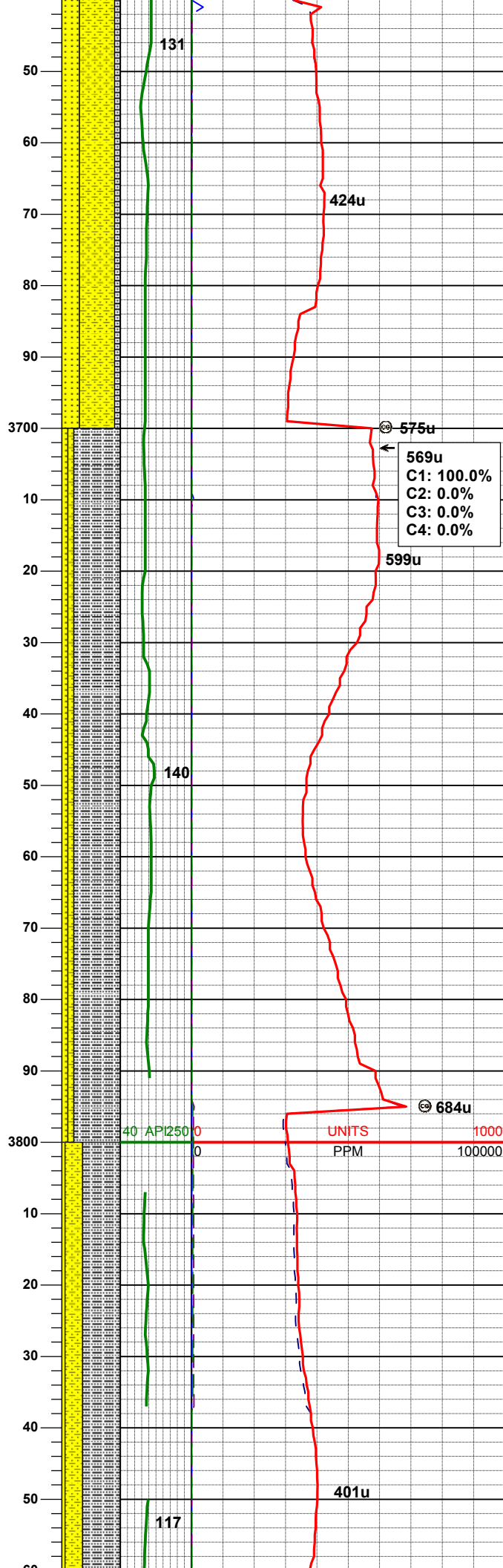
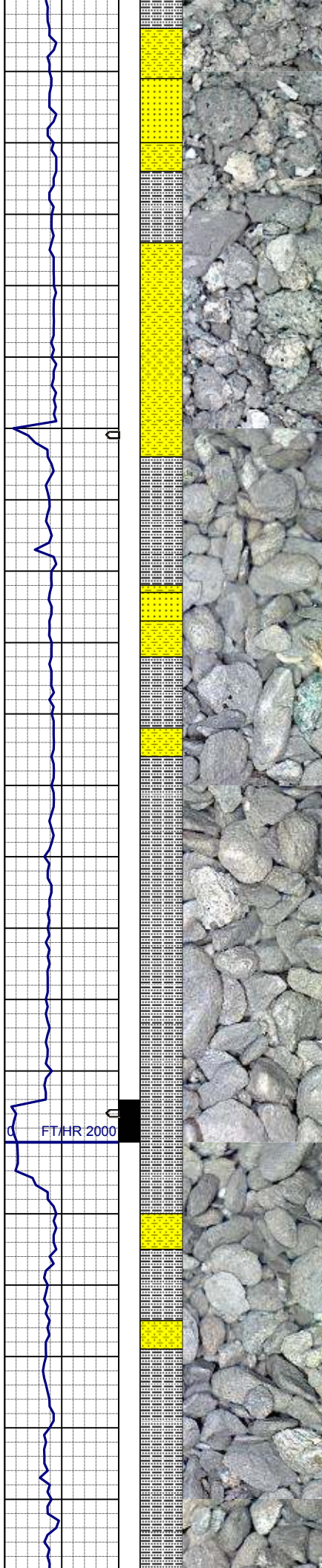
641u
C1: 99.4%
C2: 0.3%
C3: 0.2%
C4: 0.0%

SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, psrt, wrnnd, sme uncon, abnt cly, arg cmt, sl calc, sme glau
SS: wh-ltgy-gy-trnsl, sbang-ang, fgr, psrt, wrnnd, sme uncon, arg cmt, tr lit frag, abnt glau
SLTYSH: ltgy-gy, sbblky-sbply, sft, gt-sdy tex, arg cmt

MD 3555'
INC 12.0°
AZM 155.1°
TVD 3532.33'

UNITS
PPM

MD 3649'
INC 9.9°
AZM 158.6°
TVD 3624.47'



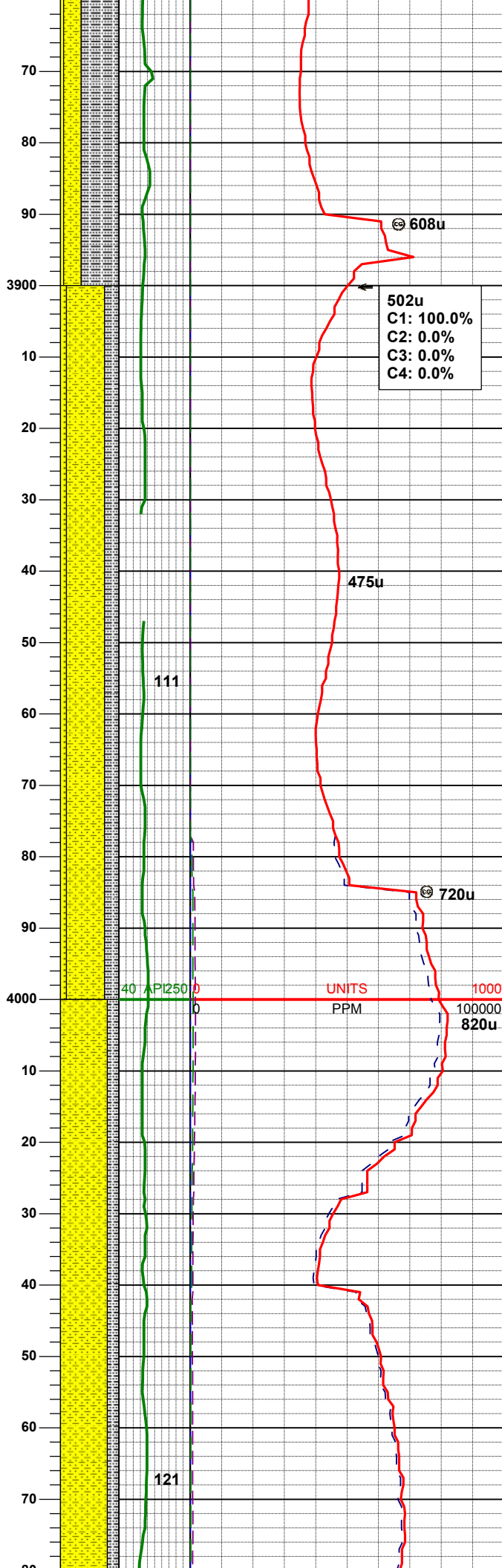
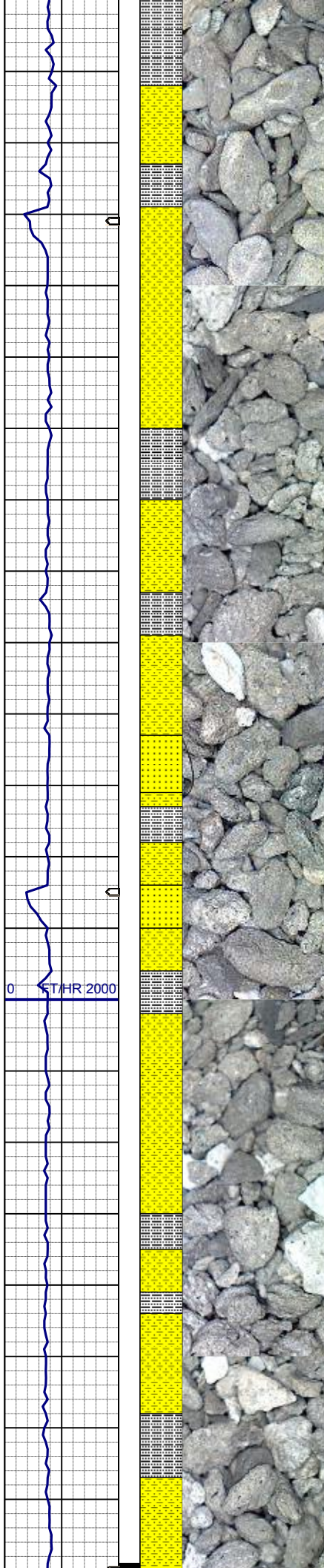
SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, psrt, wrndd, sme uncon, abnt cly, arg cmt, sl calc, sme glau
SS: wh-ltgy-gy-trnsl, sbang-ang, fgr, psrt, wrndd, sme uncon, arg cmt, tr lit frag, abnt glau
SLTYSH: ltgy-gy, sbblky-sbply, sft, gt -sdy tex, arg cmt

MD 3744'
INC 8.9°
AZM 161.0°
TVD 3718.34'

SLTYSH: ltgy-gy, sbblky-sbply, sft, gt -sdy tex, arg cmt
SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, psrt, wrndd, abnt cly, arg cmt, sl calc
SS: wh-ltgy-gy-trnsl, sbang-ang, fgr, psrt, wrndd, sme uncon, arg cmt, tr lit frag, abnt glau

MD 3839'
INC 6.9°
AZM 161.0°
TVD 3812.29'

SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, psrt, wrndd, abnt cly, arg cmt, sl calc
SLTYSH: ltgy-gy, sbblky-sbply, sft, gt -sdy tex, arg cmt
SS: wh-ltgy-gy-trnsl, sbang-ang, fgr, psrt, wrndd, sme uncon, arg cmt, tr lit frag, abnt glau

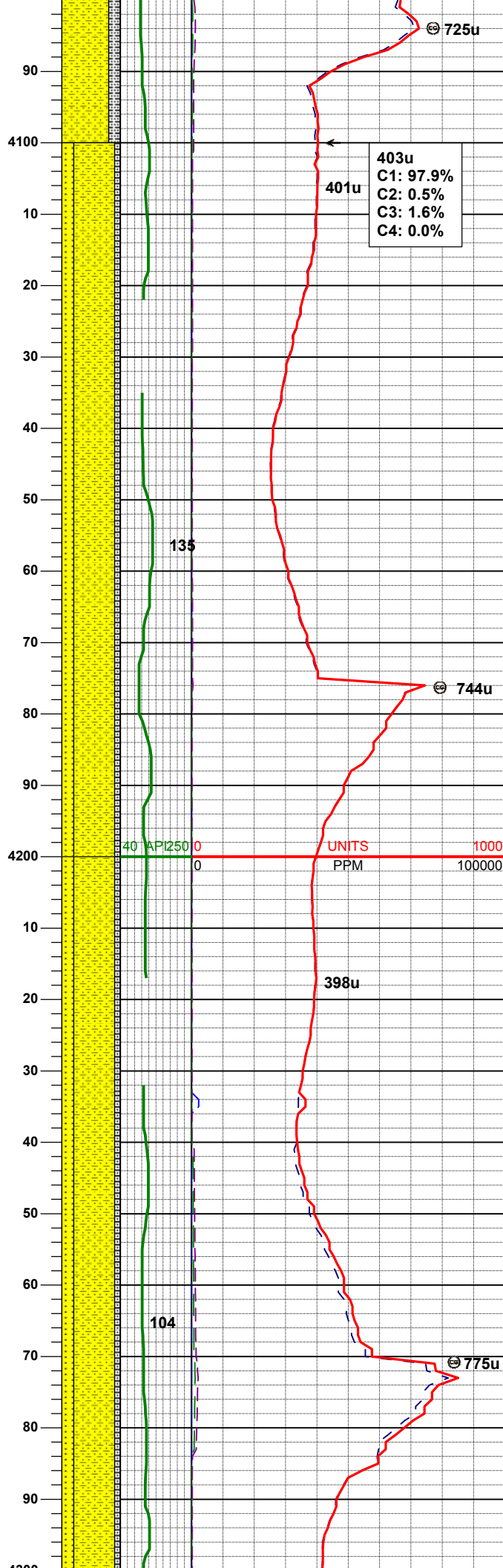
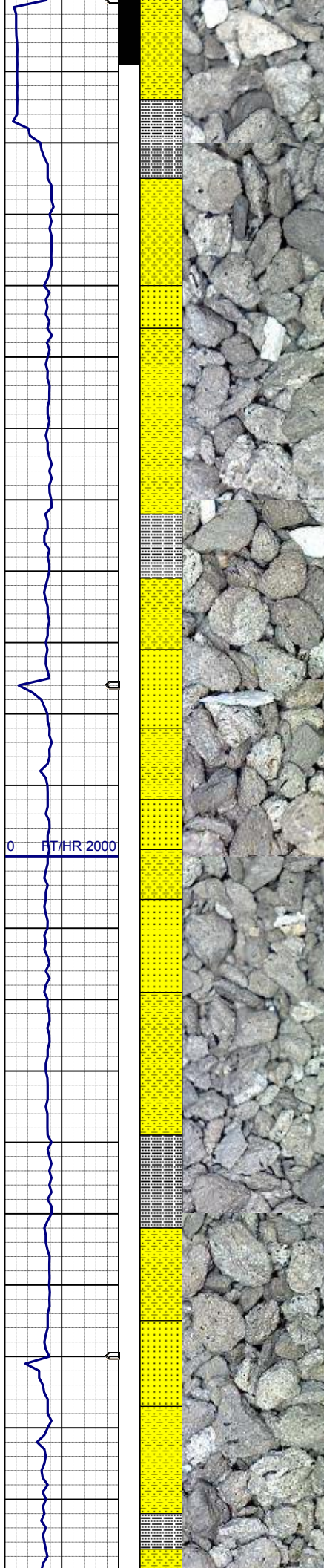


MD 3934'
INC 5.8°
AZM 159.1°
TVD 3906.85'

SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, psrt, wrnnd, abnt cly, arg cmt, sl calc
SLTYSH: ltgy-gy, sbblky-sbply, sft, gt -sdy tex, arg cmt
SS: wh-ltgy-gy-trnsl, sbang-ang, fgr, psrt, wrnnd, sme unconsl, arg cmt, tr lit frag, abnt glau

MD 4029'
INC 5.0°
AZM 158.1°
TVD 4001.43'

SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, psrt, wrnnd, abnt cly, arg cmt, sl calc
SLTYSH: ltgy-gy, sbblky-sbply, sft, gt -sdy tex, arg cmt

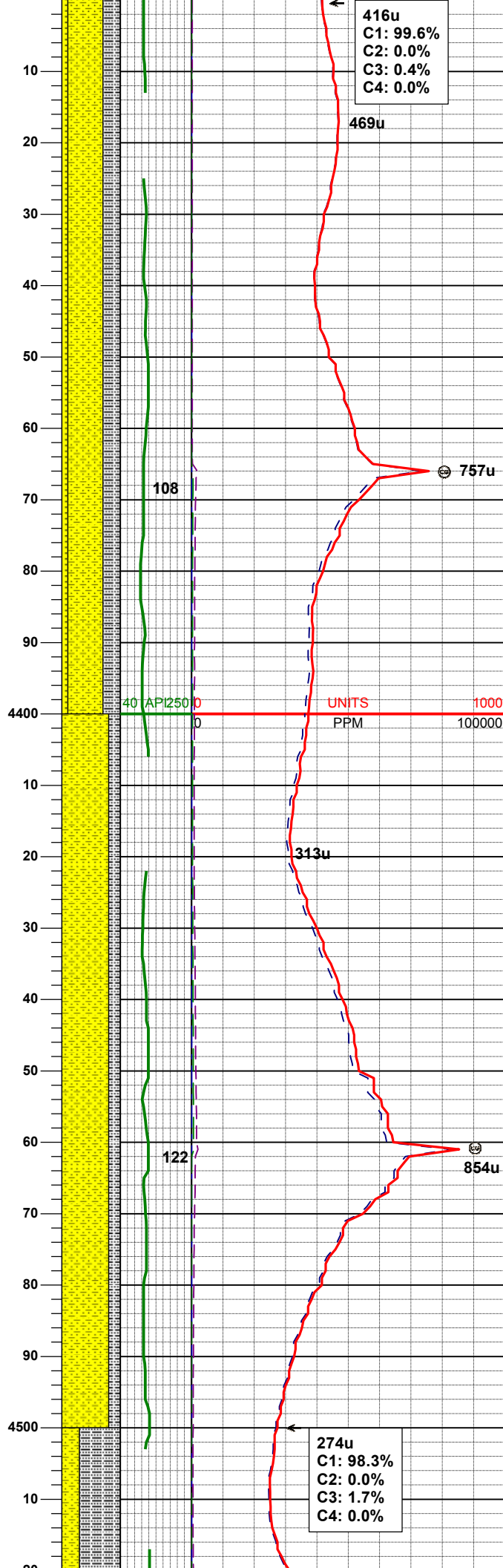
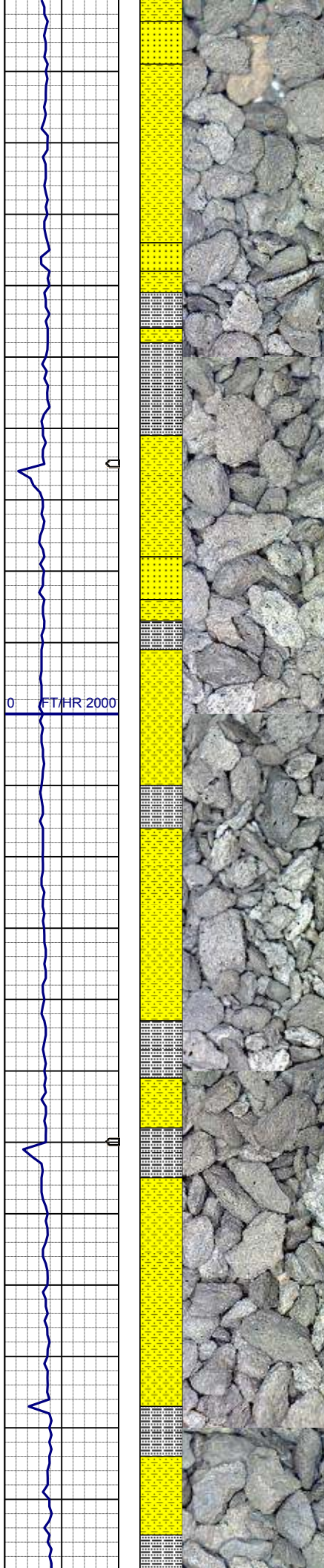


MD 4123'
INC 3.2°
AZM 145.8°
TVD 4095.04'

SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, psrt, wrndd, abnt cly, arg cmt, sl calc
SS: wh-ltgy-gy-trnsl, sbang-ang, fgr, psrt, wrndd, sme uncon, arg cmt, tr lit frag, abnt glau
SLTYSH: ltgy-gy, sbbiky-sbply, sft, gt -sdy tex, arg cmt

MD 4218'
INC 2.3°
AZM 141.7°
TVD 4190.07'

SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, psrt, wrndd, abnt cly, arg cmt, sl calc
SS: wh-ltgy-gy-trnsl, sbang-ang, fgr, psrt, wrndd, sme uncon, arg cmt, tr lit frag, abnt glau
SLTYSH: ltgy-gy, sbbiky-sbply, sft, gt -sdy tex, arg cmt



MD 4313'
INC 1.3°
AZM 128.5°
TVD 4285.02'

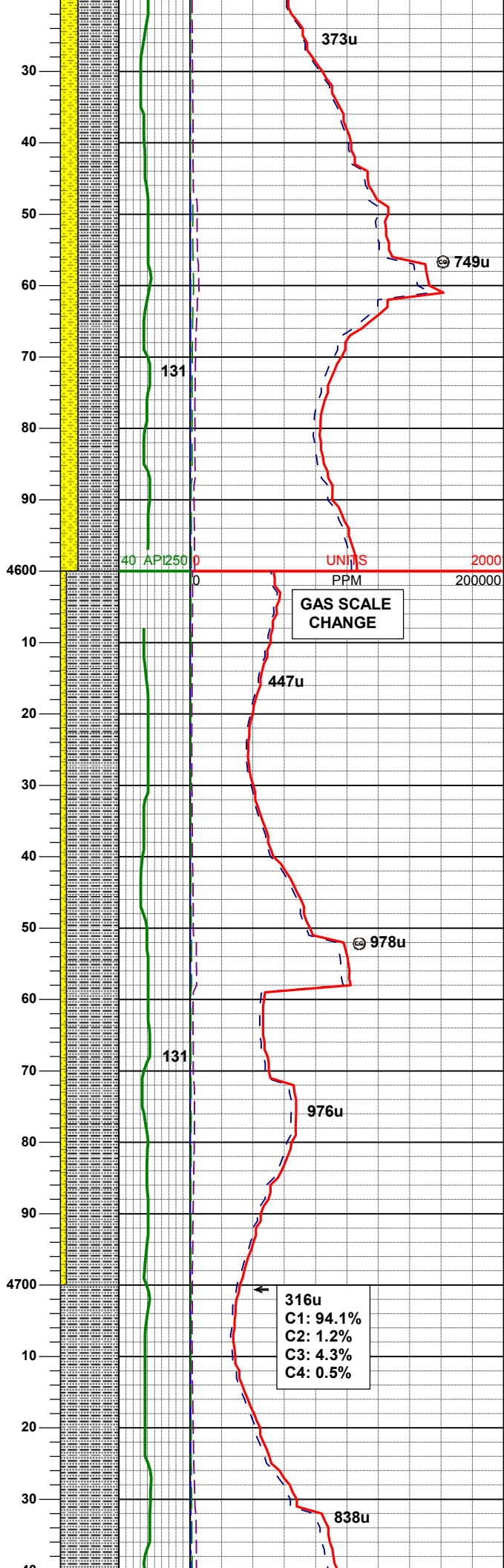
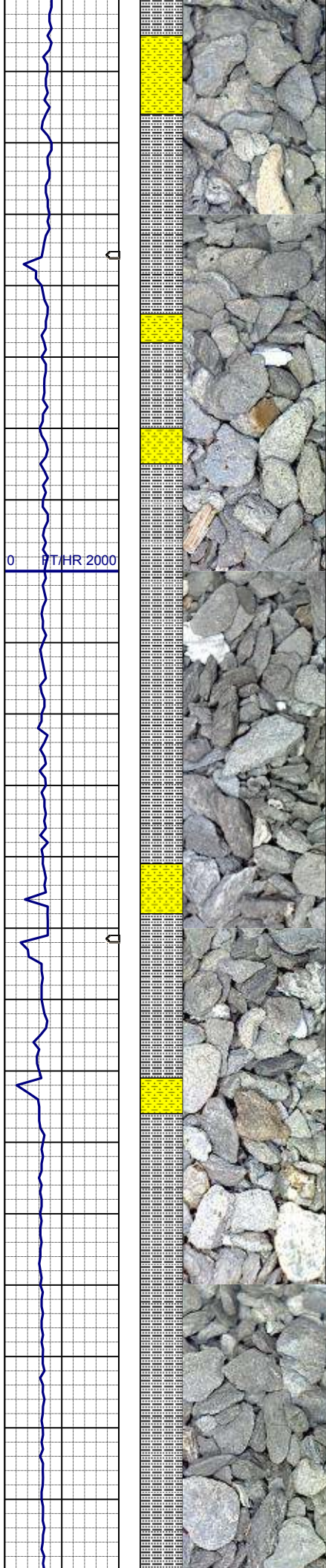
SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, psrt, wrndd, abnt cly, arg cmt, sl calc
SLTYSH: ltgy-gy, sbblky-sbply, sft, gt -sdy tex, arg cmt
SS: wh-ltgy-gy-trnsl, sbang-ang, fgr, psrt, wrndd, sme uncon, arg cmt, tr lit frag

MD 4408'
INC 0.4°
AZM 118.0°
TVD 4380.01'

SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, psrt, wrndd, abnt cly, arg cmt, sl calc
SLTYSH: ltgy-gy, sbblky-sbply, sft, gt -sdy tex, arg cmt

WT IN 9.00/ OUT 9.00
VIS IN 28/ OUT 28

MD 4503'
INC 1.0°
AZM 298.9°
TVD 4475.01'

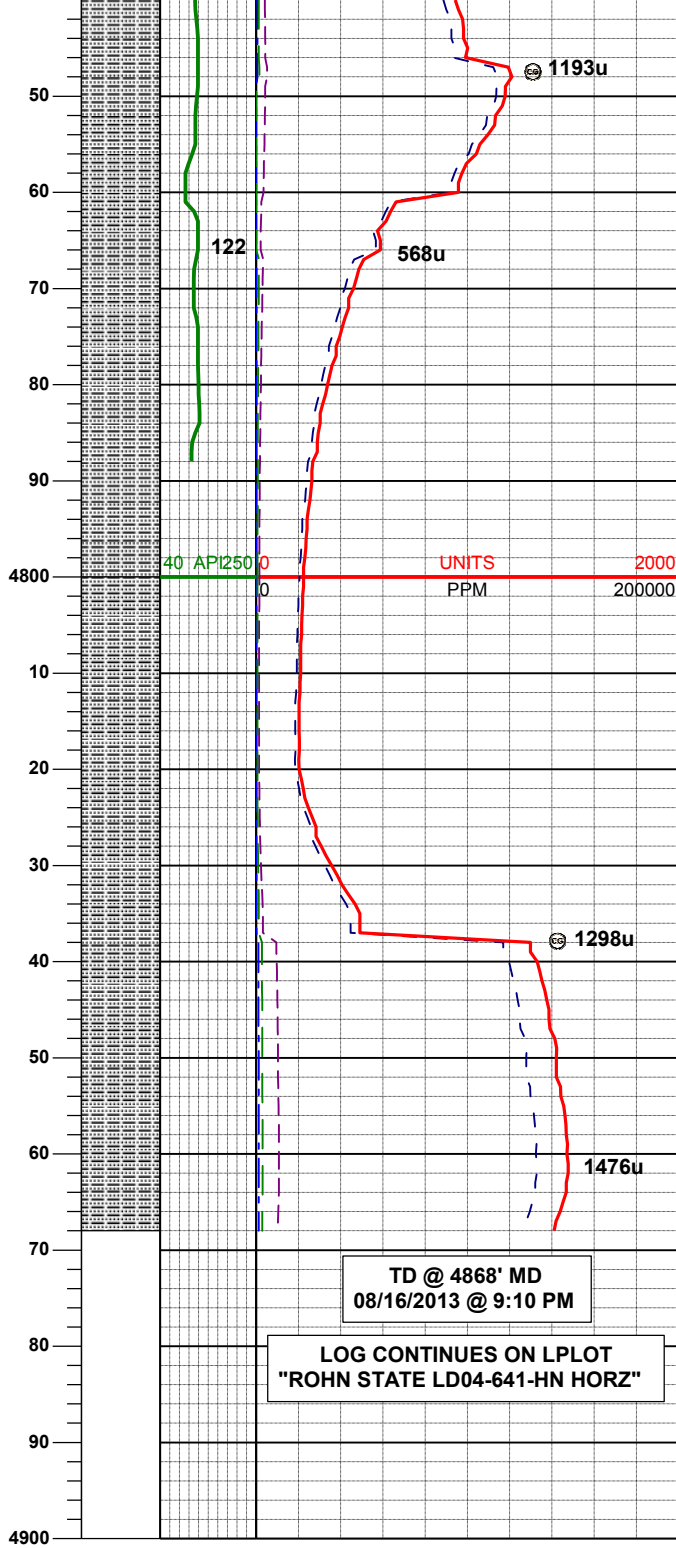
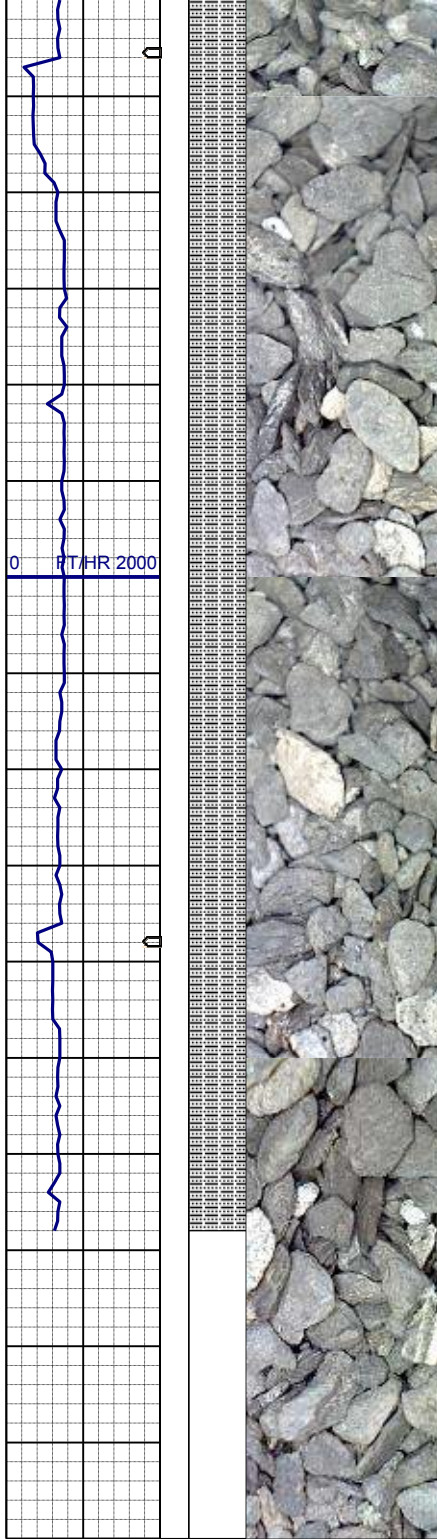


SLTYSH: ltgy-gy, sbbiky-sbply, sft, gt
-sdy tex, arg cmt
SHYSS: ltgy-gy, s&p ip, sbang, v fri,
vfgr, psrt, wrnnd, abnt cly, arg cmt, sl
calc

MD	4596'
INC	0.7°
AZM	290.2°
TVD	4470.00'

SLTYSH: ltgy-gy, sbbiky-sbply, sft, gt
-sdy tex, arg cmt
SHYSS: ltgy-gy, s&p ip, sbang, v fri,
vfgr, psrt, wrnnd, abnt cly, arg cmt, sl
calc

MD	4691'
INC	0.4°
AZM	322.8°
TVD	4663.00'



SLTYSH: ltgy-gy, sbblky-sbplty, sft, gt
-sdy tex, arg cmt

SLTYSH: ltgy-gy, sbblky-sbplty, sft, gt
-sdy tex, arg cmt