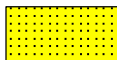


LOG created using LPLOT VH Version 3.0, July 09, 2013, Copyright (C) 1999-2009 Pason Systems Corp.

**OPERATOR:** NOBLE ENERGY INC  
**WELL:** ROHN STATE LD04-67-1HN  
**LOCATION:** SEC 4 T9N R58W  
**COUNTY:** WELD  
**STATE:** COLORADO  
**SPOT:** 1750' FNL, 480' FEL  
**ELEVATION:** 4707' GL; 4731' KB  
**FIELD:** WILDCAT  
**SPUD DATE:** 07/04/2013  
**TD DATE:** 07/05/2013  
**DATES LOGGED:** 07/04/2013 - 07/05/2013  
**DEPTHS LOGGED:** 1200' - 4862' MD  
**LOGGERS:** LAURA KELLOGG; CONOR PESICKA  
**DRILLING FLUID:** LSND  
**DRILLING RIG:** H&P 273  
**API:** 05-123-37480  
**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



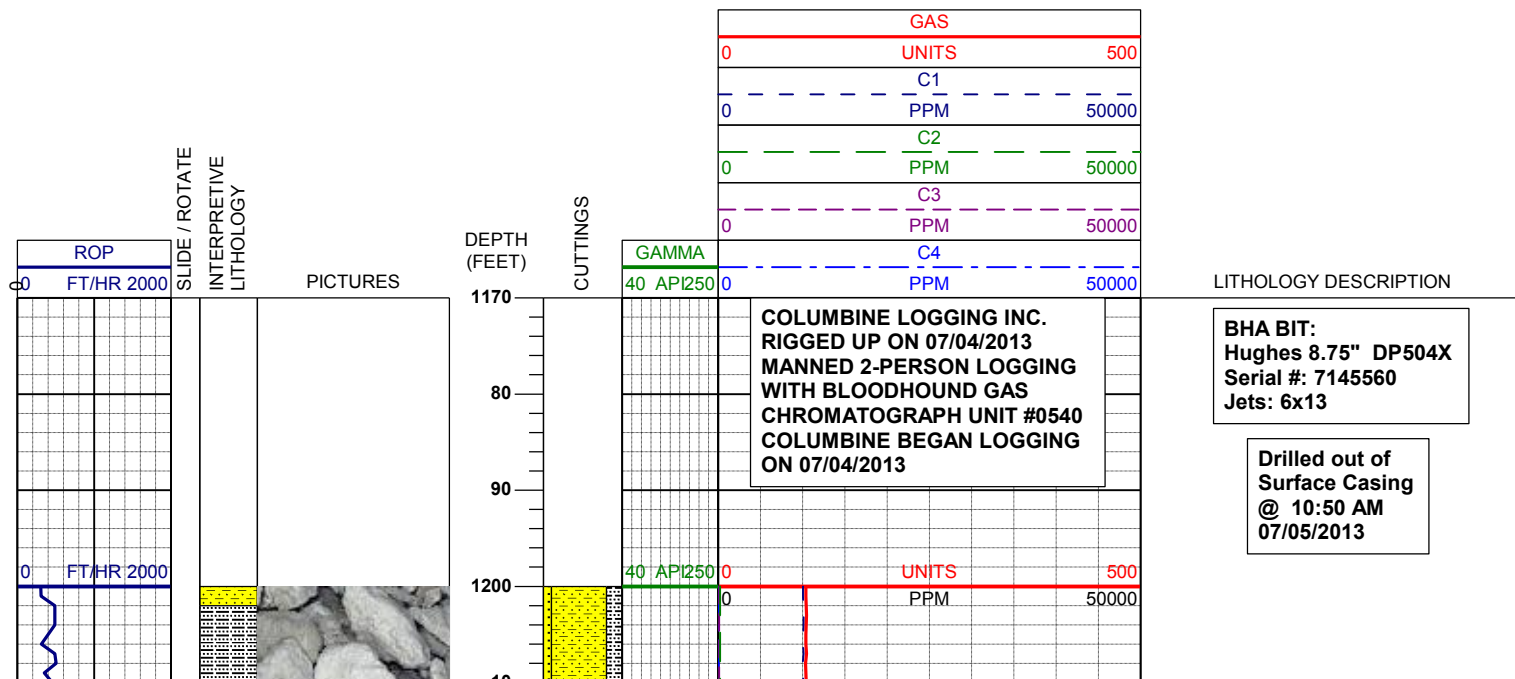
Connection

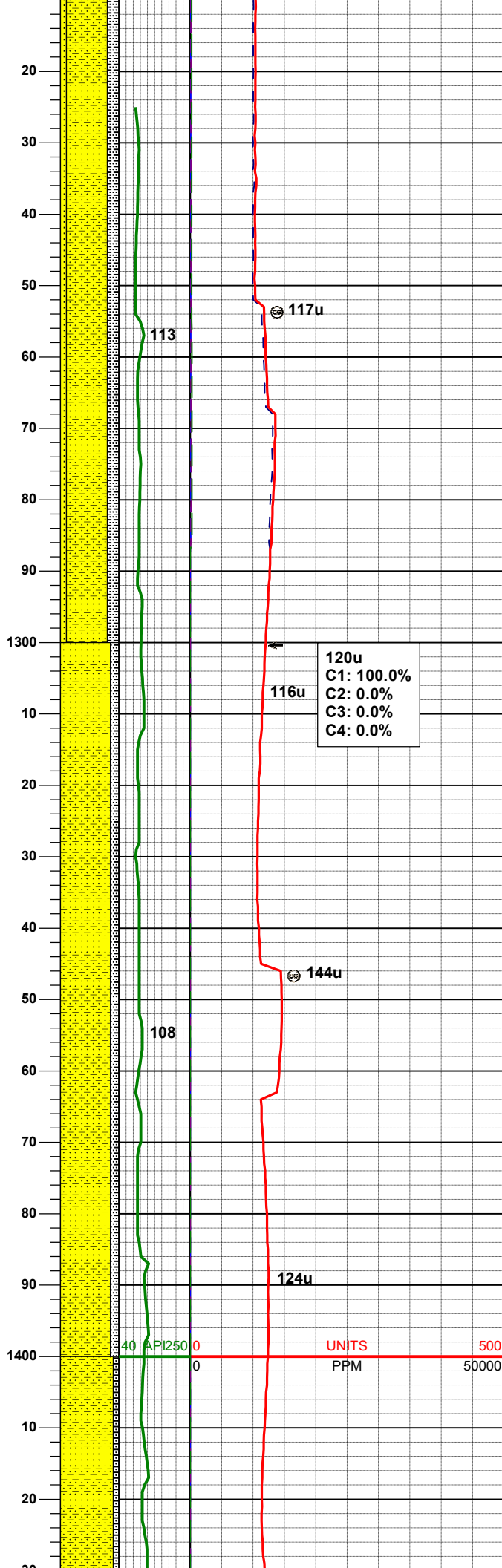
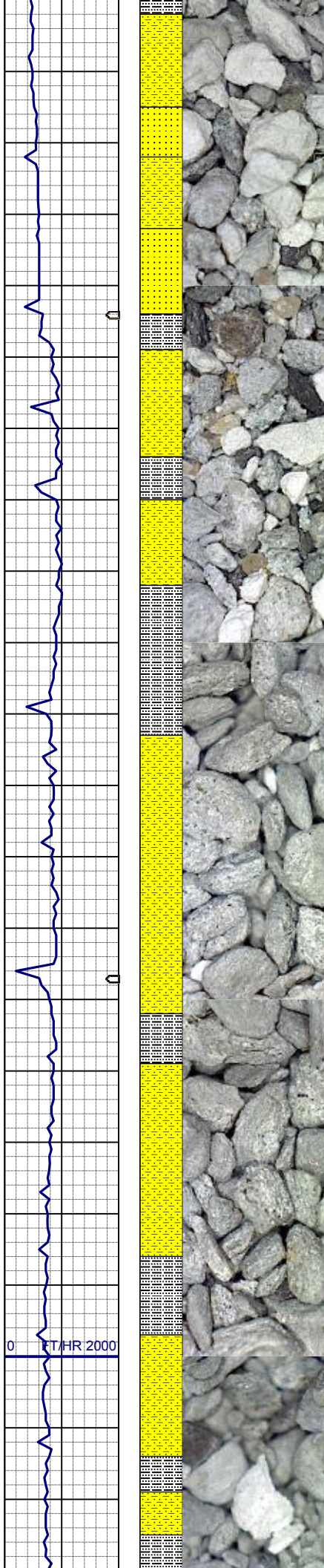


Connection Gas



Arrow



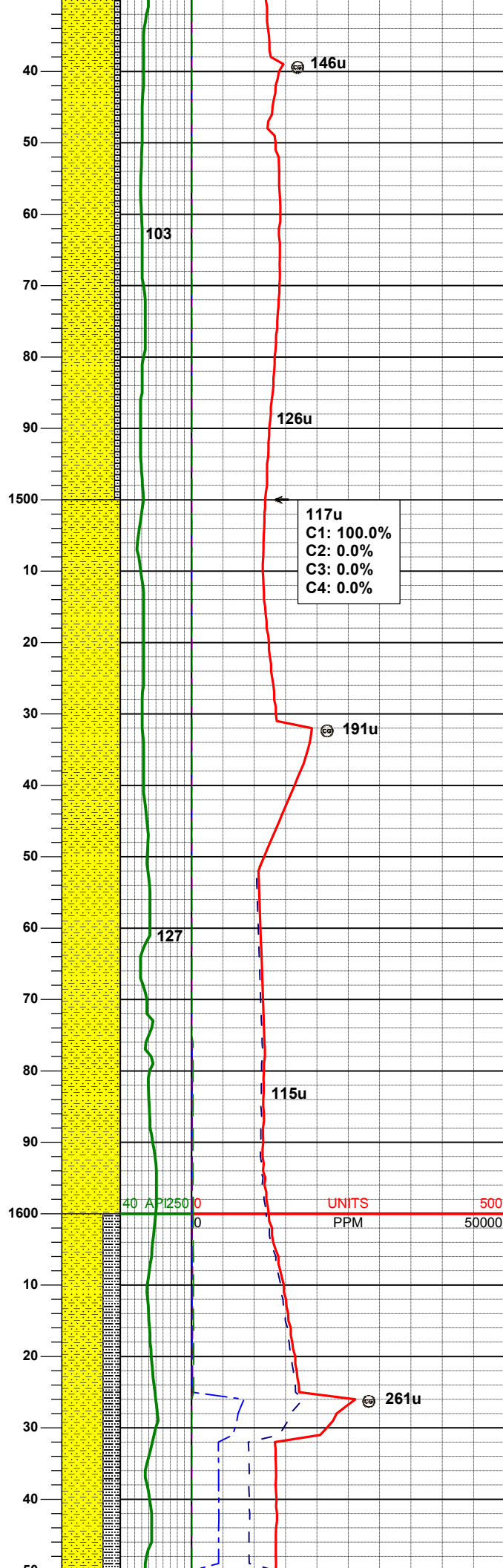
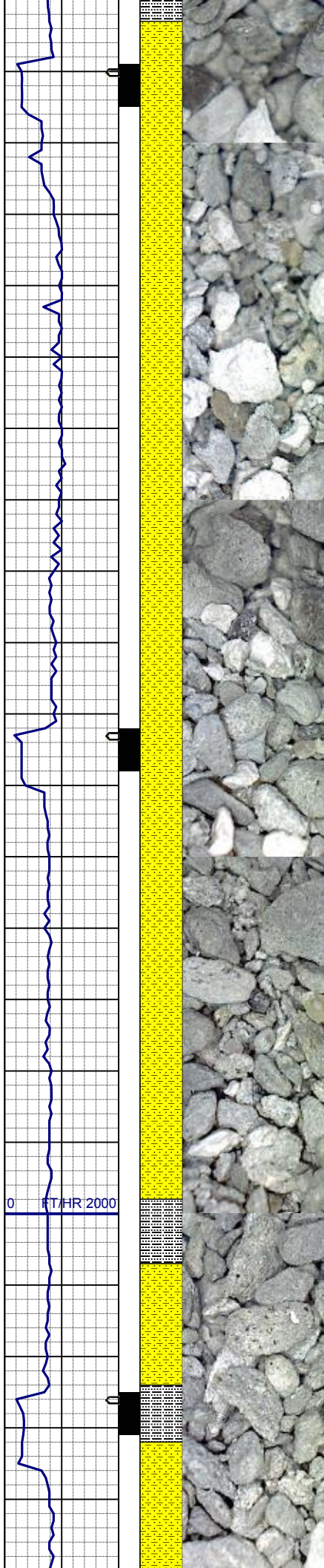


SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, psrt, wrndd, abnt cly, arg cmt, sl calc  
SLTYSH: ltgy-gy, sbbiky-sbplty, sft, gt -sdy tex, arg cmt  
SS: ltgy-gy-trnsl, sbang-ang, fgr, psrt, wrndd, arg cmt, tr lit frag, tr glau

MD	1296'
INC	0.3°
AZM	333.4°
TVD	1296.00'

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

MD	1389'
INC	0.4°
AZM	337.7°
TVD	1389.99'



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

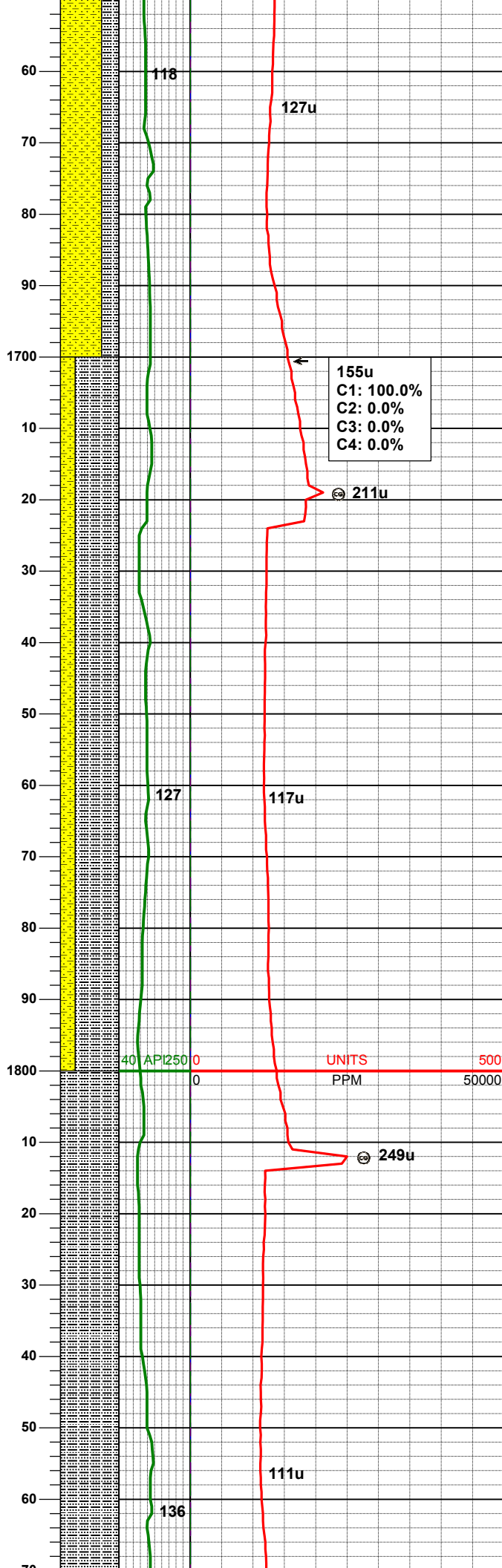
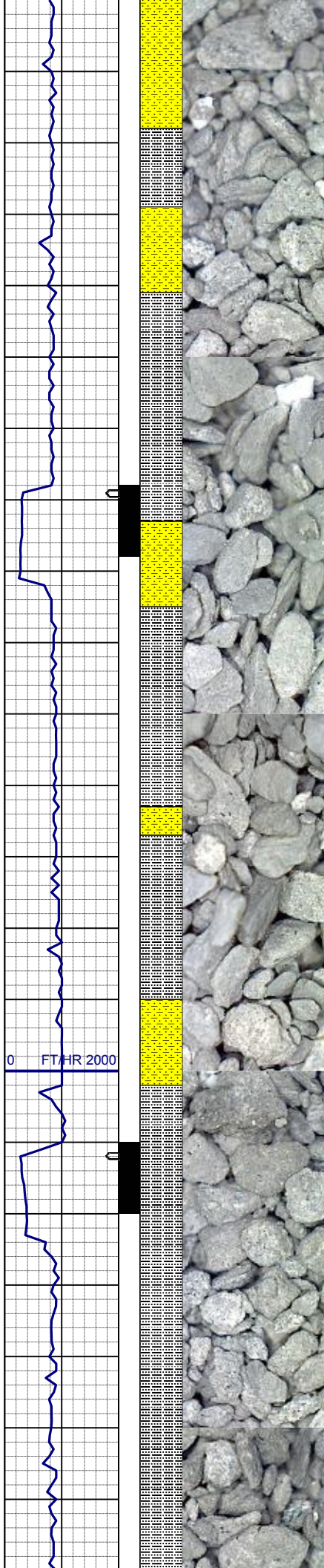
MD 1482'  
INC 1.1°  
AZM 40.4°  
TVD 1482.00'

SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, psrt, wrnnd, abnt cly, arg cmt, sl calc

MD 1575'  
INC 2.2°  
AZM 50.1°  
TVD 1574.95'

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 1668'  
INC 2.5°  
AZM 48.0°  
TVD 1667.90'

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 1760'  
INC 3.2°  
AZM 44.3°  
TVD 1759.75'

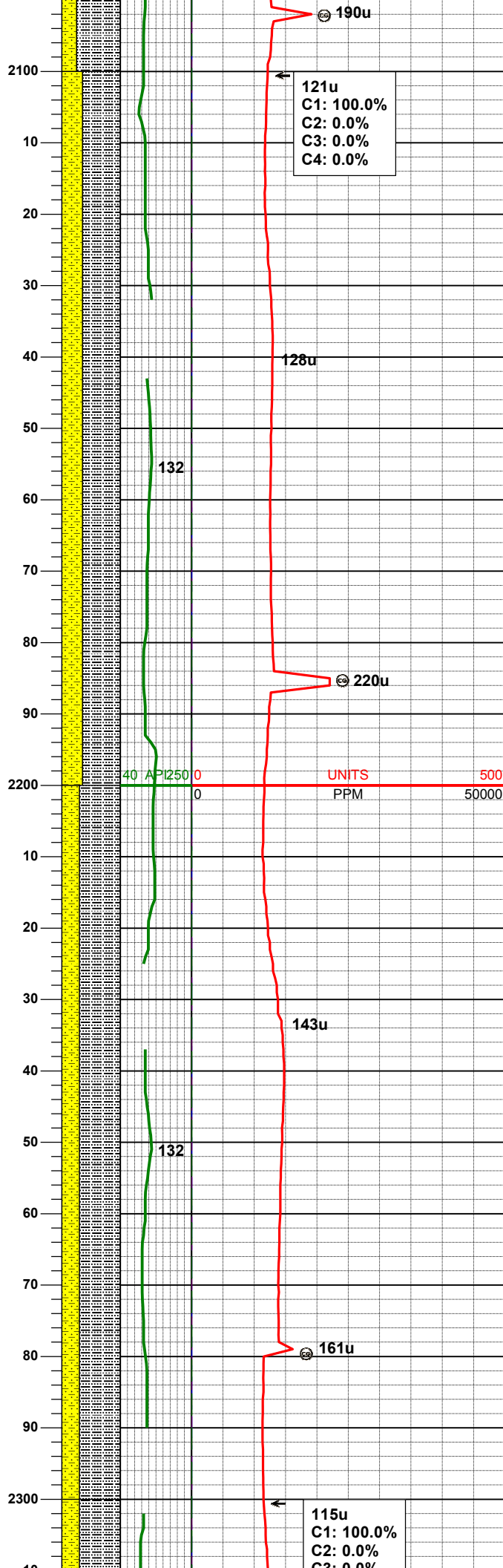
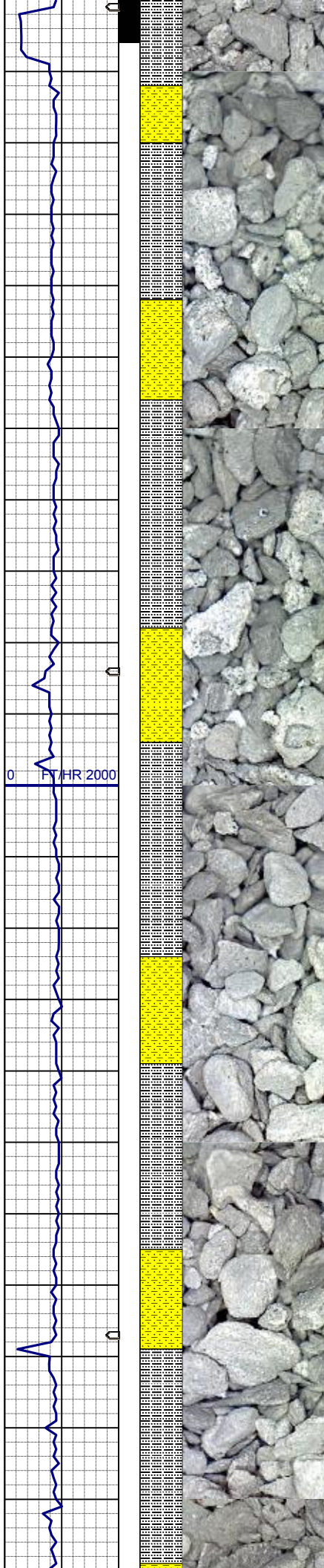
WT IN 8.40/ OUT 8.40  
VIS IN 27/ OUT 27

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

MD 1853'  
INC 4.2°  
AZM 67.3°  
TVD 1852.56'







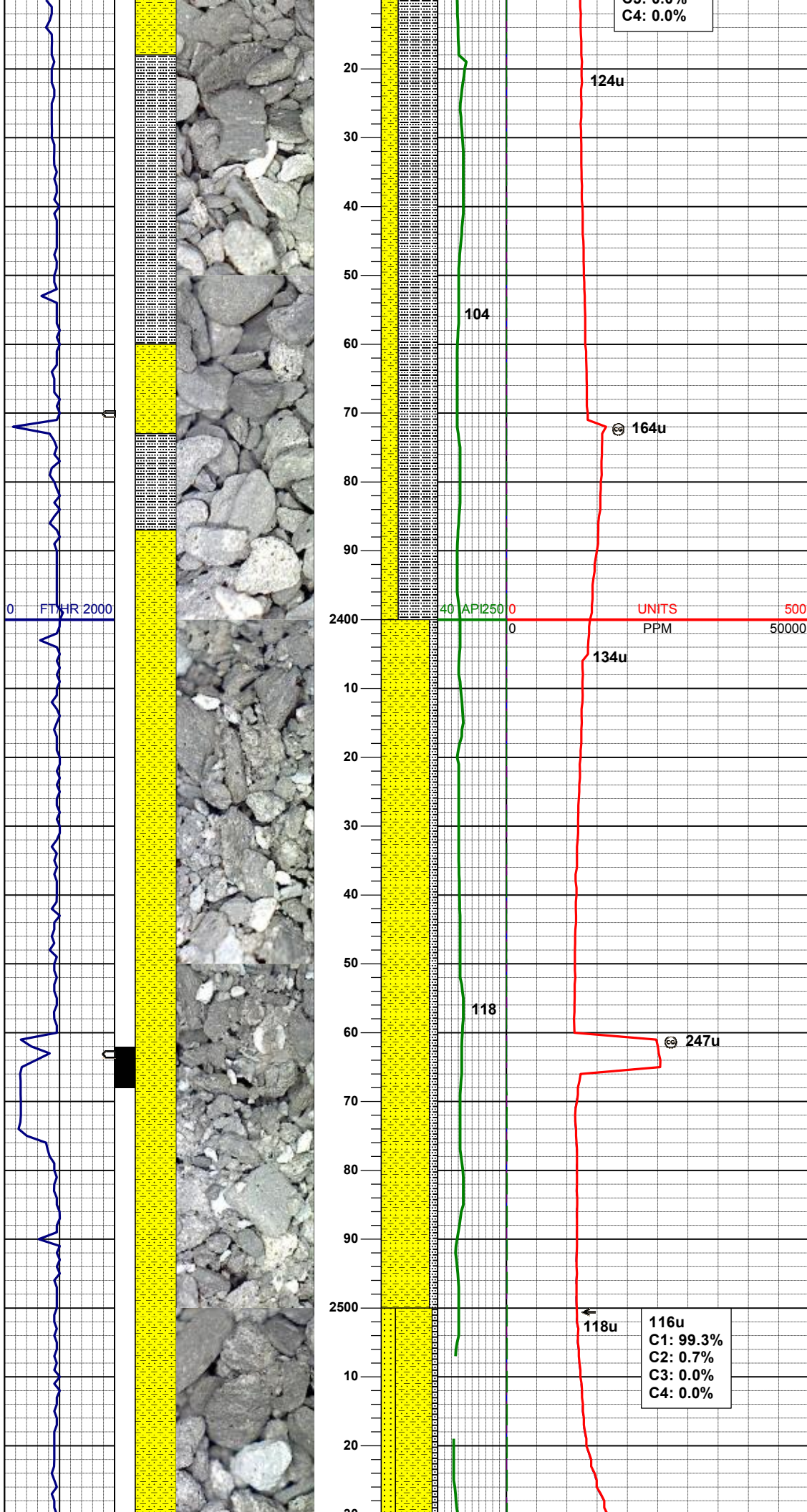
MD 2133'  
INC 6.8°  
AZM 58.0°  
TVD 2131.24'

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 2226'  
INC 6.8°  
AZM 55.7°  
TVD 2223.57'

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



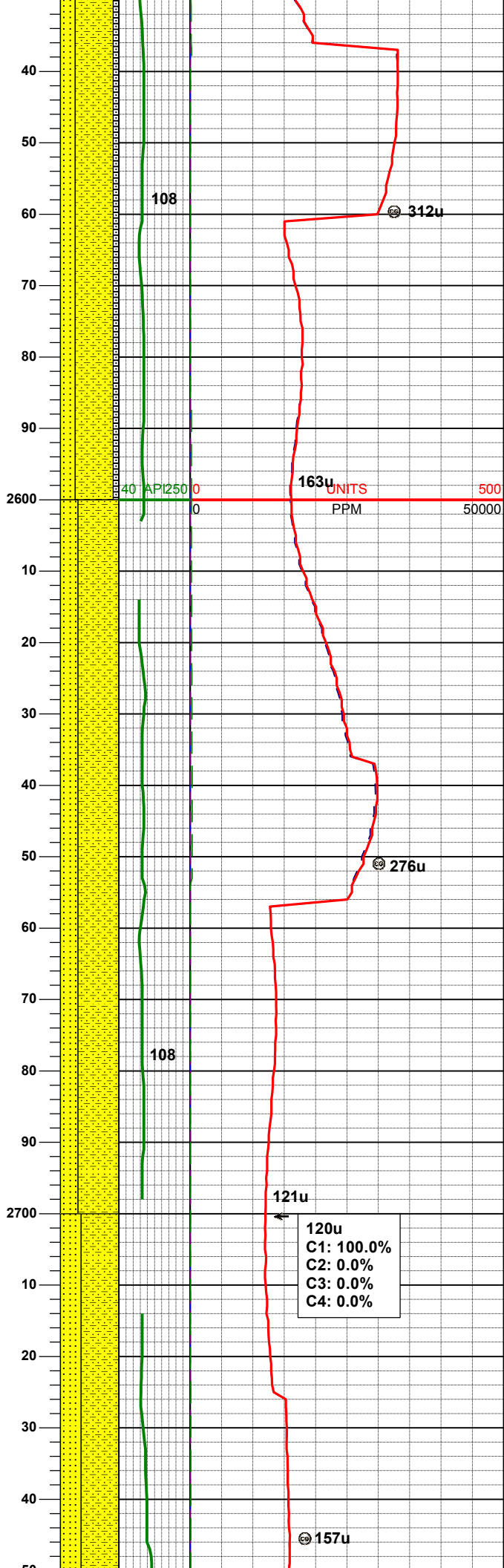
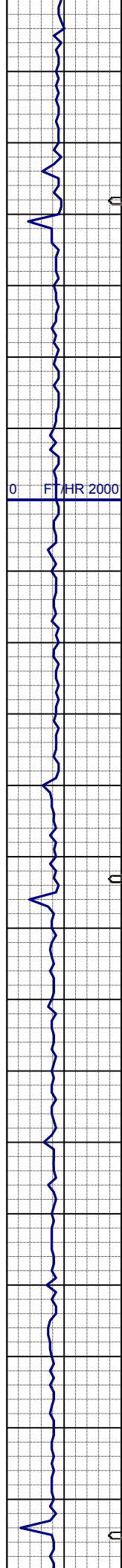


SLTYSH: ltgy-gy, sbbiky-sbply, sft, gt  
-sdy tex, arg cmt  
SHYSS: ltgy-gy, s&p ip, sbang, v fri,  
vfgr, psrt, wrndd, abnt cly, arg cmt, sl  
calc

MD	2414'
INC	6.5°
AZM	51.7°
TVD	2410.30'

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

MD	2507'
INC	6.9°
AZM	60.1°
TVD	2502.66'



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

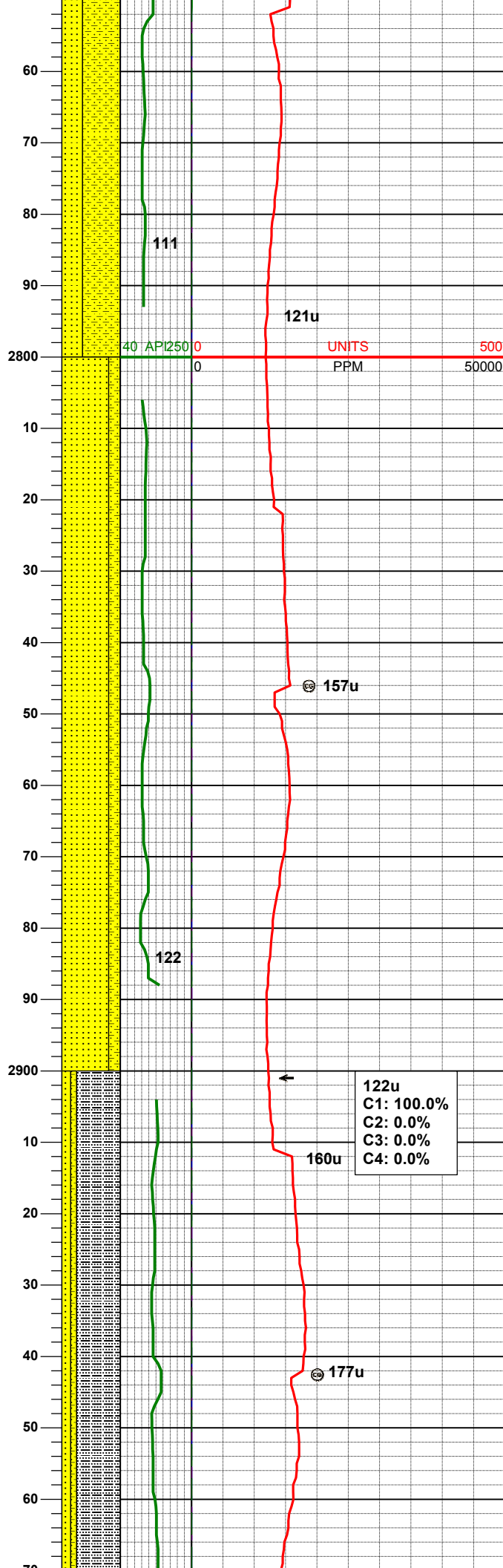
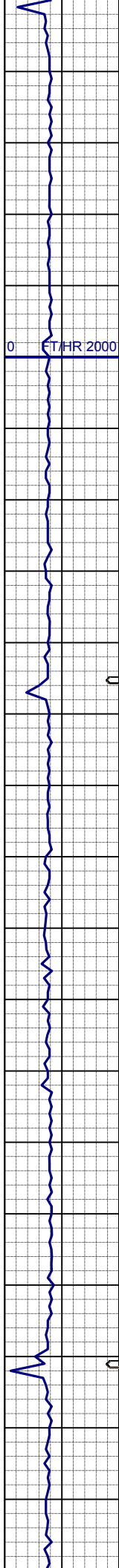
MD	2602'
INC	7.0°
AZM	58.5°
TVD	2596.97'

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, tr glau

MD	2696'
INC	7.0°
AZM	58.7°
TVD	2690.27'

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, wrnnd, arg cmt, occ lit frag, occ glau

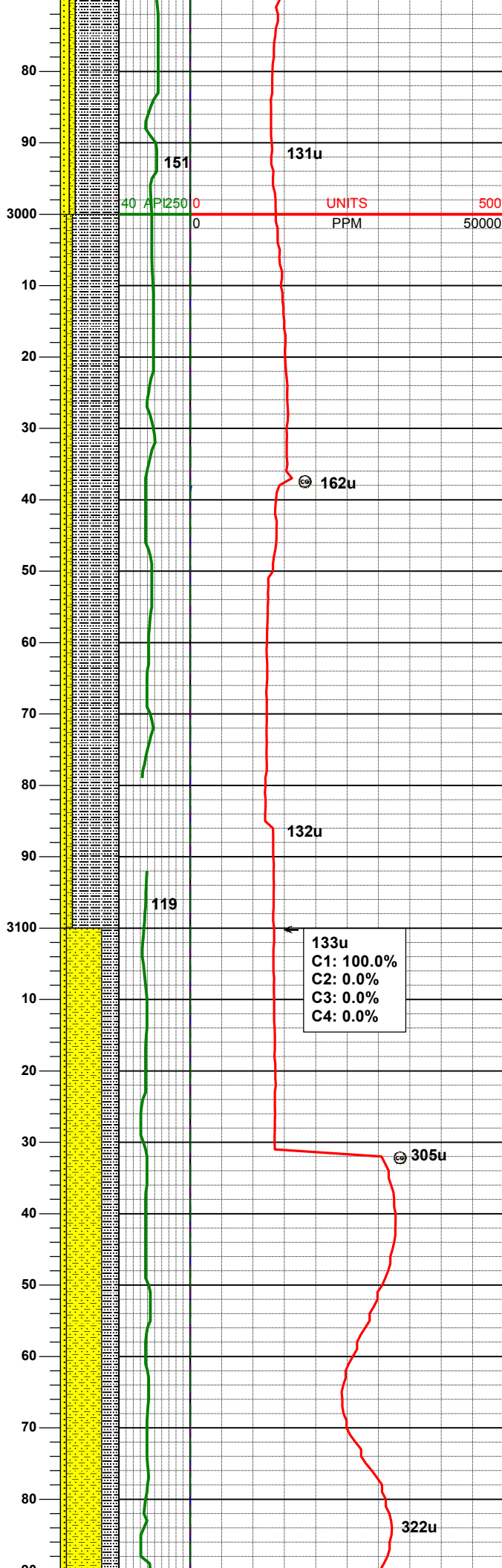
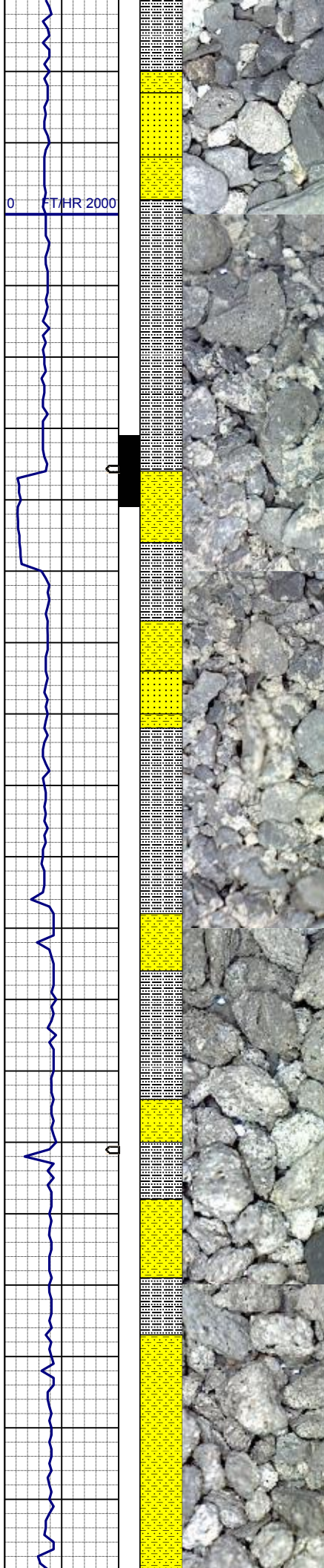
MD 2791'  
INC 6.8°  
AZM 57.5°  
TVD 2784.58'

SS: ltgy-gy-trnsl, sbang-ang, fgr, psrt, wrnnd, arg cmt, occ lit frag, occ glau  
SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, psrt, wrnnd, abnt cly, arg cmt, sl calc

MD 2886'  
INC 6.7°  
AZM 56.2°  
TVD 2878.92'

122u  
C1: 100.0%  
C2: 0.0%  
C3: 0.0%  
C4: 0.0%

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



MD 2981'  
INC 5.9°  
AZM 51.7°  
TVD 2973.35'

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

MD 3076'  
INC 7.0°  
AZM 53.8°  
TVD 3067.74'

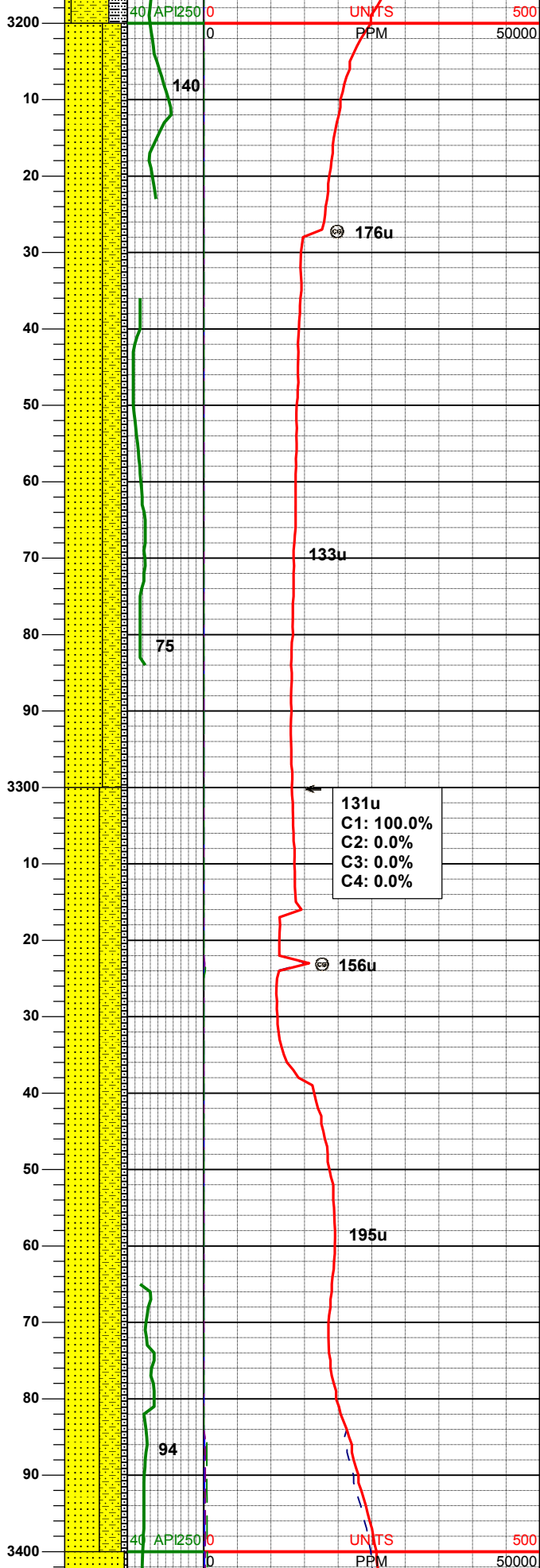
SHYSS: ltgy-gy, s&p ip, sbang, v fri,  
vfgr, psrt, wrndd, abnt cly, arg cmt, sl  
calc  
SLTYSH: gy-dkgy, sbblky-sbplty, sft,  
gt-slty tex, arg cmt  
SS: ltgy-gy-trnsl, sbang-ang, fgr, psrt,  
wrndd, arg cmt, occ lit frag, occ glau

MD 3171'  
INC 7.7°  
AZM 51.7°  
TVD 3161.96'



0 17/HR 2000

0 17/HR 2000



WT IN 8.40/ OUT 8.60  
VIS IN 27/ OUT 27

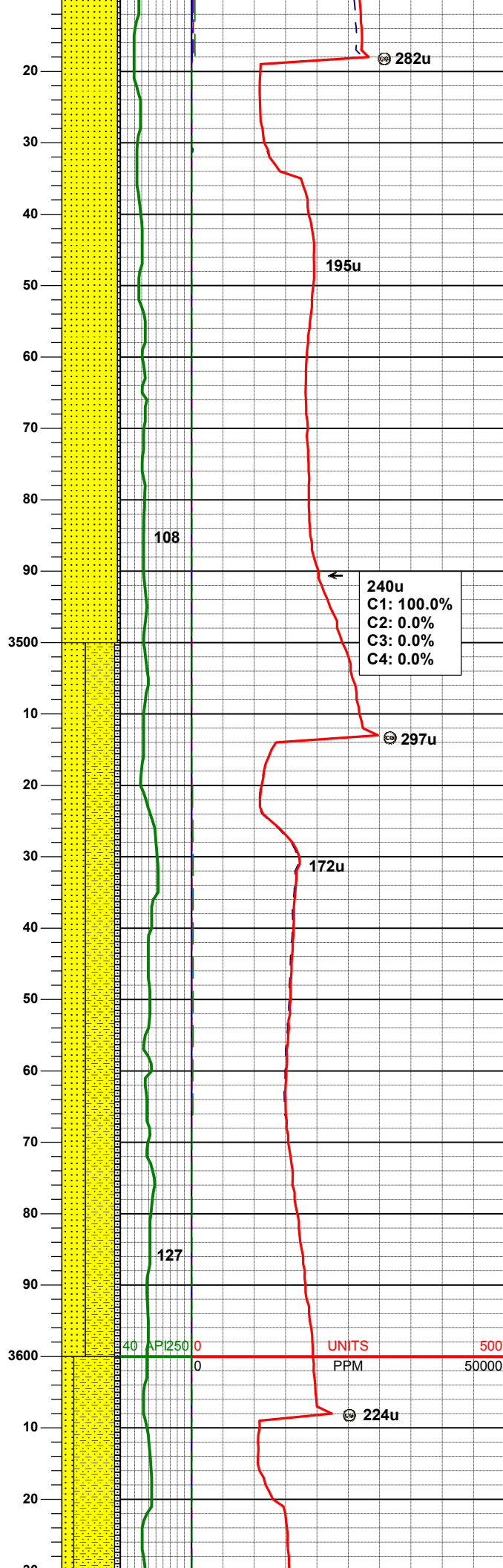
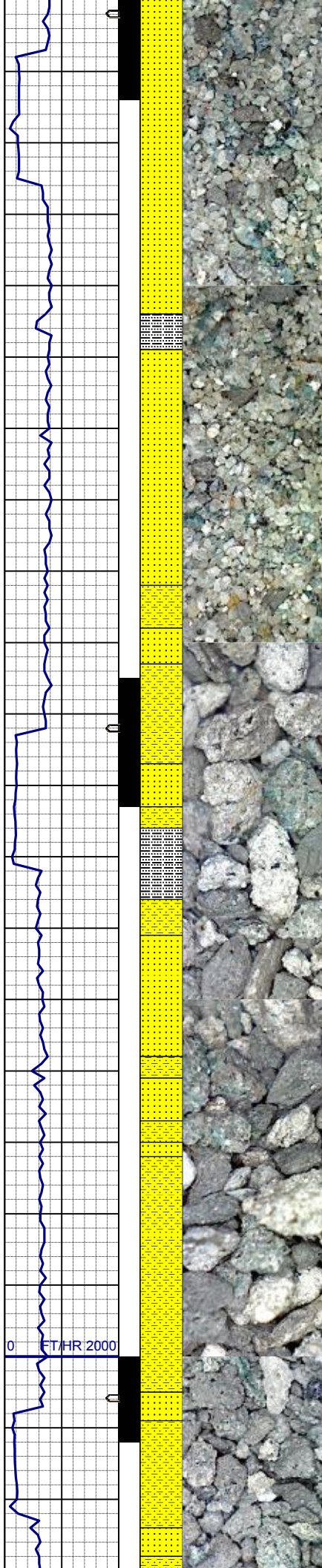
SS: ltgy-gy-trnsl, sbang-ang, fgr, psrt, wrndd, arg cmt, occ lit frag, occ glau  
SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, psrt, wrndd, abnt cly, arg cmt, sl calc  
SLTYSH: gy-dkgy, sbblky-sbply, sft, gt-sly tex, arg cmt

MD	3266'
INC	7.4°
AZM	47.4°
TVD	3256.14'

131u  
C1: 100.0%  
C2: 0.0%  
C3: 0.0%  
C4: 0.0%

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

MD	3360'
INC	7.0°
AZM	45.7°
TVD	3349.40'



SS: ltgy-gy-trnsl, sbang-ang, fgr, uncons, wrnnd, occ lit frag, occ glau  
SLTYSH: gy-dkgy, sbblky-sbplty, sft, gt-slty tex, arg cmt

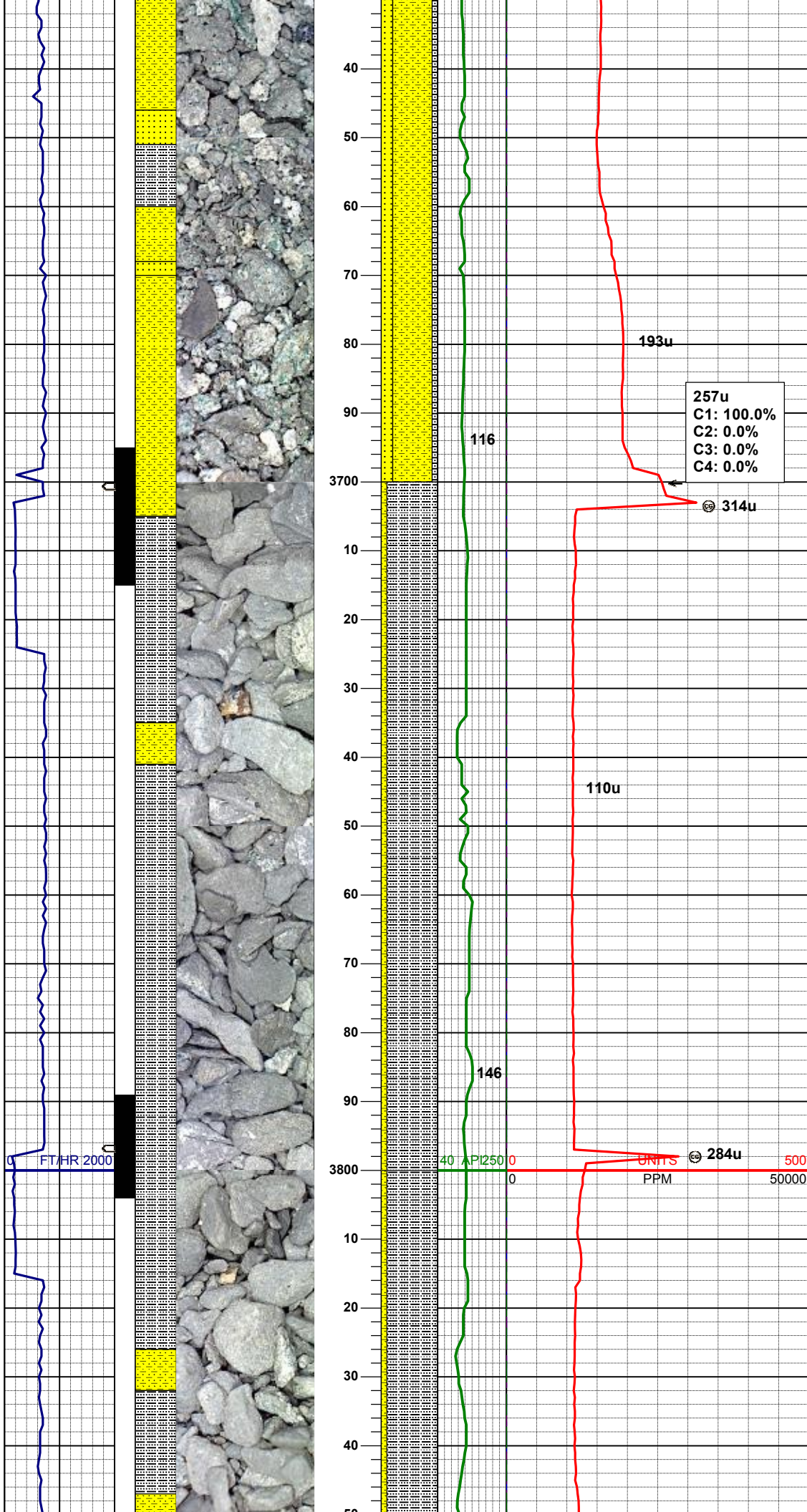
MD	3455'
INC	6.5°
AZM	52.2°
TVD	3443.74'

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

MD	3550'
INC	4.9°
AZM	55.3°
TVD	3538.27'

MD	3445'
----	-------





MD 3645  
 INC 4.1°  
 AZM 57.1°  
 TVD 3632.97'

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

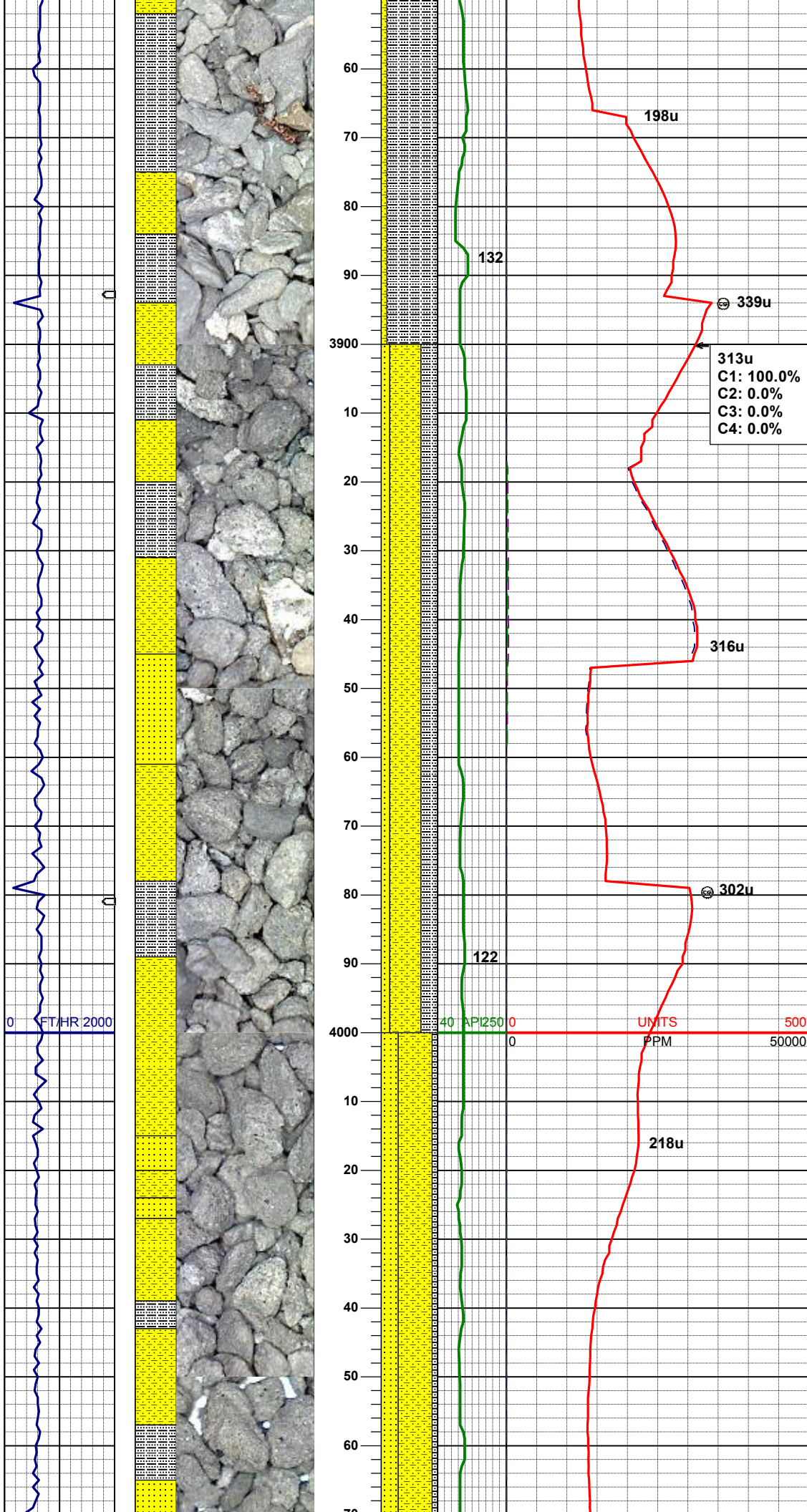
MD 3739'  
 INC 1.7°  
 AZM 62.6°  
 TVD 3726.85'

SLTYSH: gy-dkgy, sbblky-sbplty, sft, gt-slty tex, arg cmt  
 SHYSS: gy-dkgy, s&p ip, sbang, v fri, vfgr, psrt, wrndd, abnt cly, arg cmt, sl calc, abnt glau, grdg to ss

WT IN 8.30/ OUT 8.30  
 VIS IN 26/ OUT 26

MD 3834'  
 INC 0.4°  
 AZM 241.2°  
 TVD 3821.84'

SLTYSH: gy-dkgy, sbblky-sbplty, sft, gt-slty tex, arg cmt  
 SHYSS: gy-dkgy, s&p ip, sbang, v fri, vfgr, psrt, wrndd, abnt cly, arg cmt, sl calc, abnt glau, grdg to ss



SHYSS: gy-dkgy, s&p ip, sbang, v fri, vfgr, psrt, wrndd, abnt cly, arg cmt, sl calc, abnt glau, grd to ss

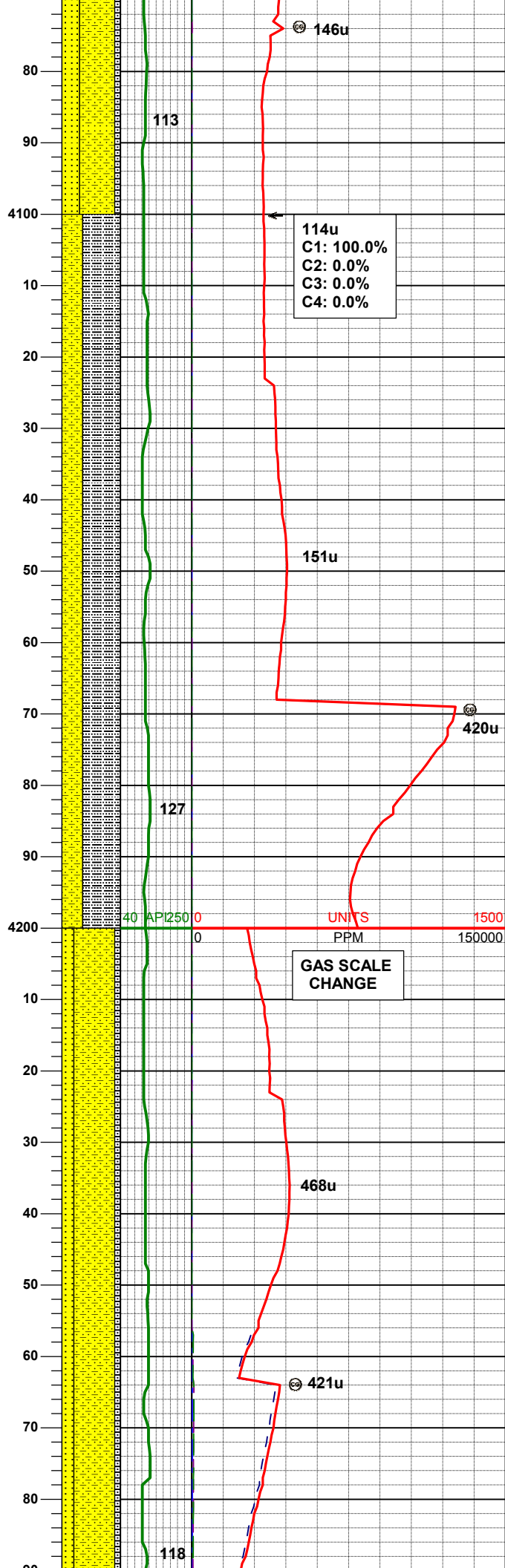
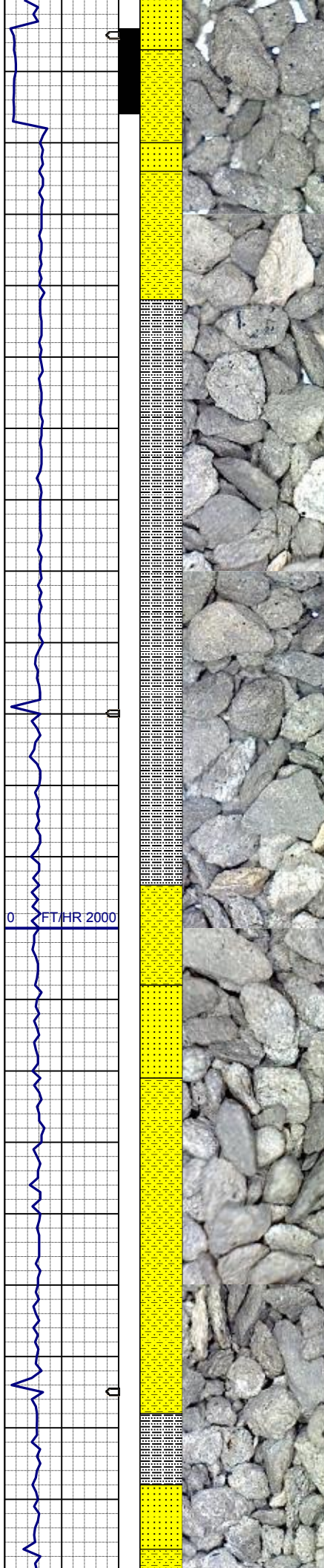
MD 3929'  
INC 0.6°  
AZM 245.4°  
TVD 3916.83'

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

MD 4024'  
INC 0.6°  
AZM 205.5°  
TVD 4011.83'

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





MD 4118'  
INC 2.0°  
AZM 186.1°  
TVD 4105.80'

SLTYSH: gy-dkgy, sblky-sbply, sft,  
gt-slty tex, arg cmt  
SHYSS: gy-dkgy, s&p ip, sbang, v fri,  
vfgr, psrt, wrndd, abnt cly, arg cmt, sl  
calc, tr glau

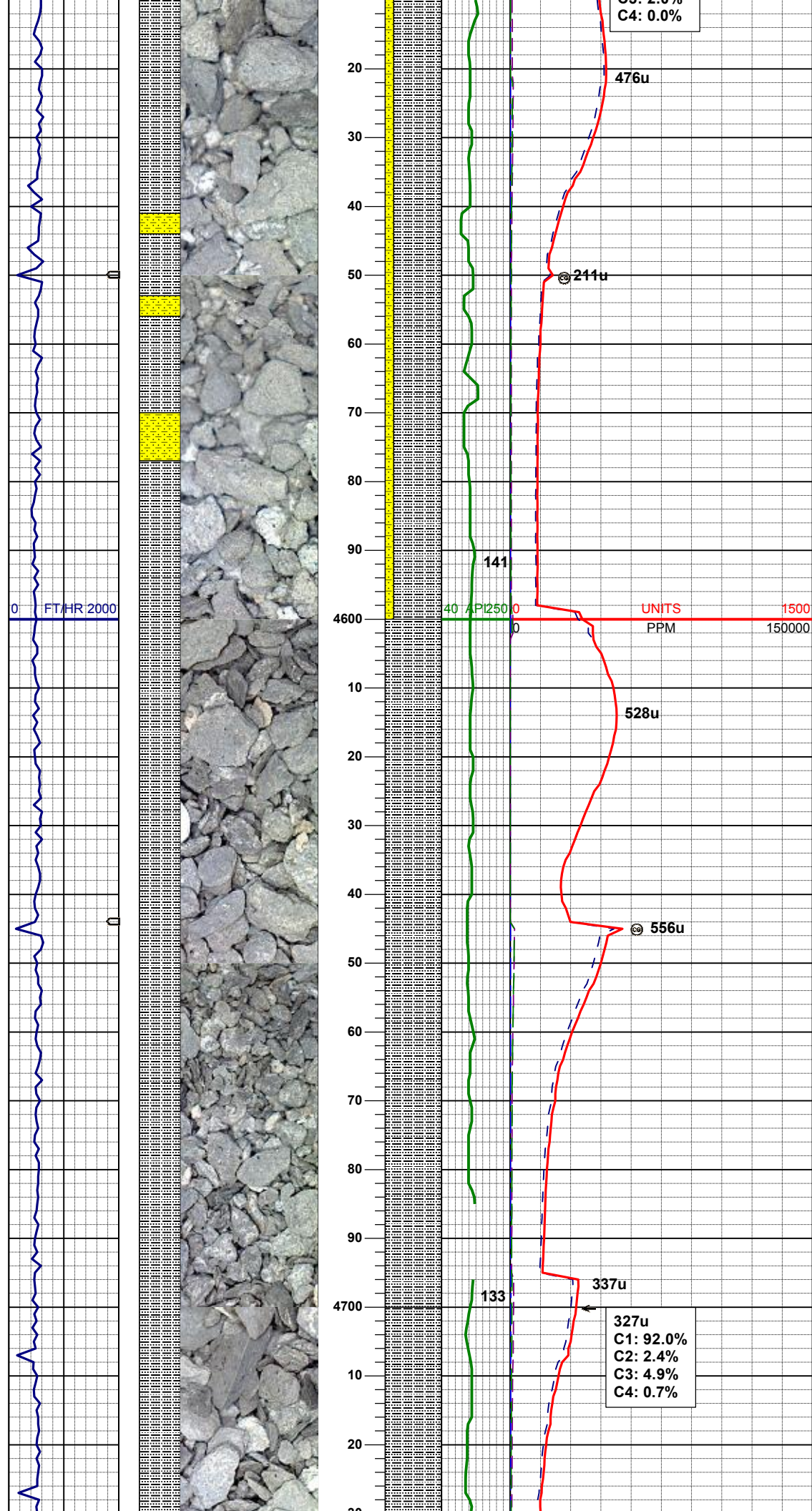
WT IN 8.60/ OUT 8.60  
VIS IN 26/ OUT 26

MD 4213'  
INC 2.0°  
AZM 184.5°  
TVD 4200.74'

SHYSS: gy-dkgy, s&p ip, sbang, v fri,  
vfgr, psrt, wrndd, abnt cly, arg cmt, sl  
calc, occ glau  
SS: ltgy-gy-trns, sbang-ang, fgr, psrt,  
wrndd, arg cmt, occ lit frag, abnt glau  
SLTYSH: gy-dkgy, sblky-sbply, sft,  
gt-slty tex, arg cmt



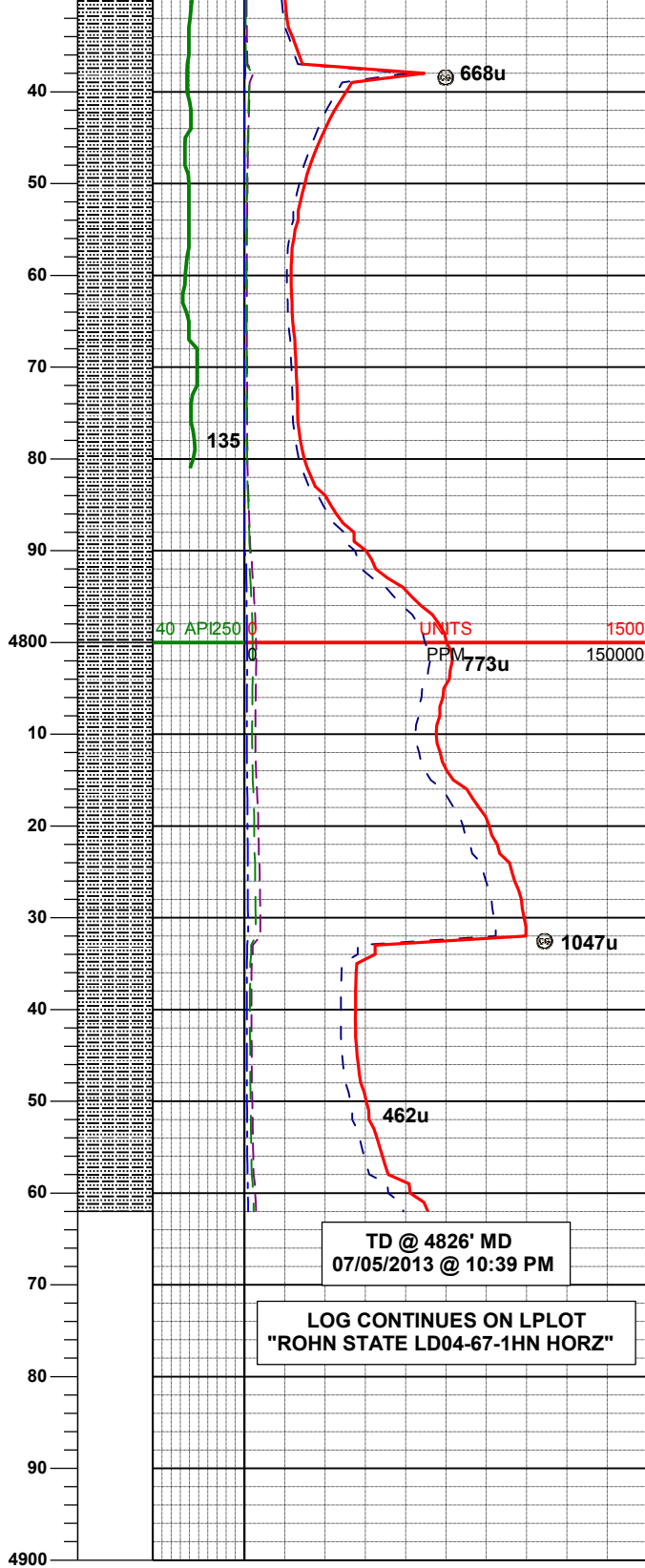
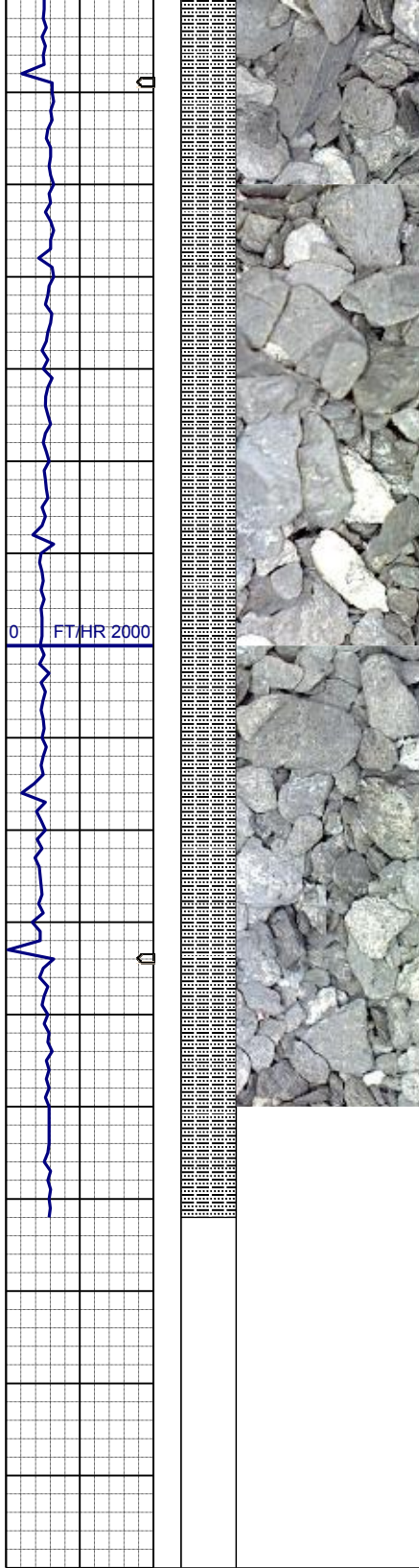




SLTYSH: gy-dkgy, sbblky-sbplty, sft,  
gt-sltly tex, arg cmt  
SHYSS: gy-dkgy, s&p ip, sbang, v fri,  
vfgr, psrt, wrndd, abnt cly, arg cmt, sl  
calc, occ glau

MD 4593'  
INC 0.9°  
AZM 221.1°  
TVD 4580.60'

SLTYSH: gy-dkgy, sbblky-sbplty, sft,  
gt-sltly tex, arg cmt



SLTYSH: gy-dkgy, sbblky-sbplty, sft,  
gt-slty tex, arg cmt

MD	4782'
INC	0.4°
AZM	210.2°
TVD	4769.59'

SLTYSH: gy-dkgy, sbblky-sbplty, sft,  
gt-slty tex, arg cmt

WT IN 8.80/ OUT 8.80  
VIS IN 32/ OUT 32