

LOG created using LPLOT VH Version 3.0, February 12, 2012, Copyright (C) 1999-2009 Pason Systems Corp.

**OPERATOR:** NOBLE ENERGY INC.  
**WELL:** WAHLERT AC33-66HN  
**LOCATION:** NWNW, SEC 33, T7N, R63W  
**COUNTY:** WELD  
**STATE:** COLORADO  
**SPOT:** 687' FNL, 275' FWL  
**ELEVATION:** GL 4782', KB 4806'  
**FIELD:** WATTENBERG  
**SPUD DATE:** 02/11/2012  
**TD DATE:** 02/14/2012  
**DATES LOGGED:** 02/12/2012 - 2/14/2012 (VERTICAL)  
**DEPTHS LOGGED:** 900' - 6,100' (VERTICAL)  
**LOGGERS:** JANET MARKS; MARK COLE  
**DRILLING FLUID:** LSND  
**DRILLING RIG:** H&P 315  
**API:** 05-123-34517  
**LOG TYPE:** VERTICAL  
**SCALE:** 1:240 (5 inches per 100 feet)  
**REMARKS:** See corresponding horizontal log: WAHLERT AC33-66HN HORZ.

### LITHOLOGIES



Sandstone



Shaly Sandstone



Shaly Siltstone



Silty Shale

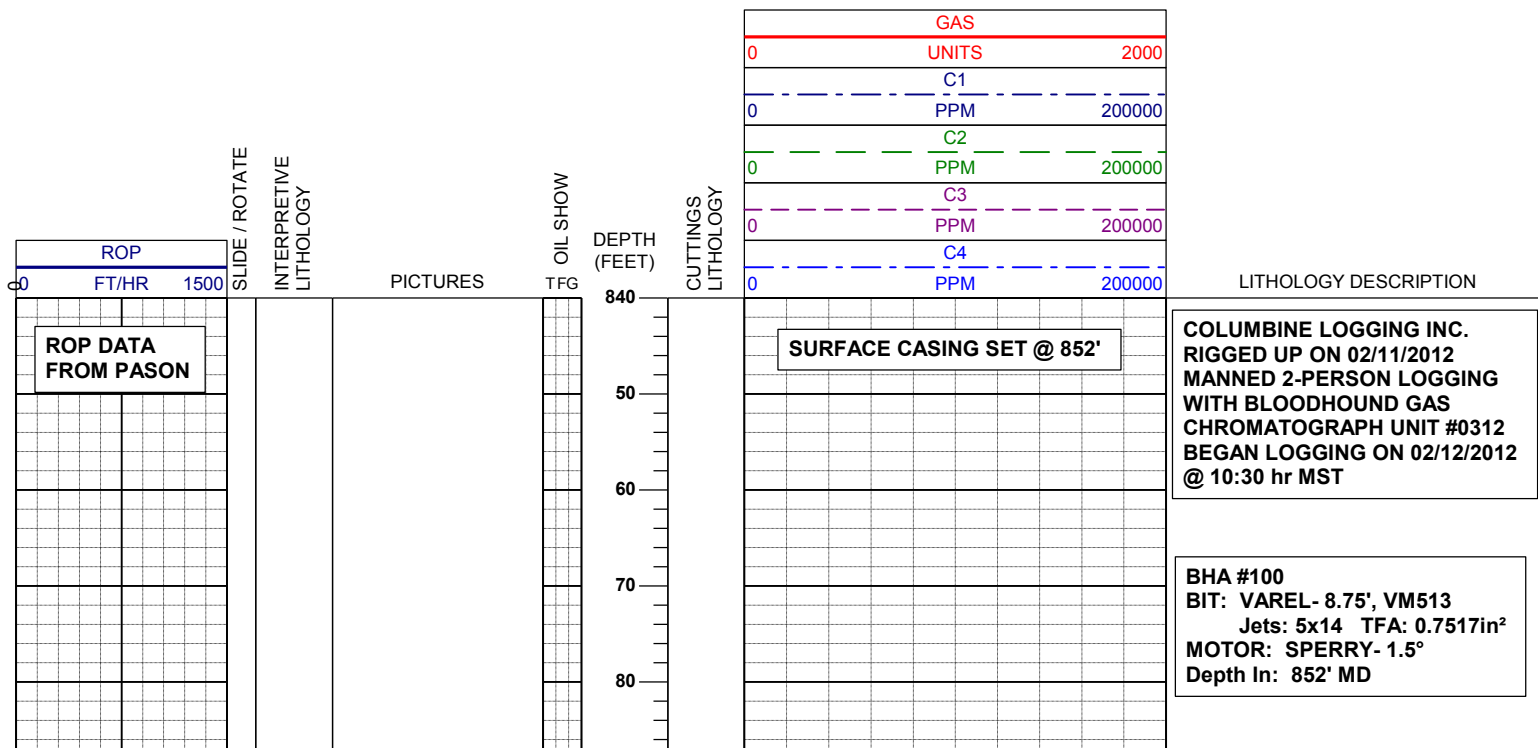
### ENGINEERING SYMBOLS

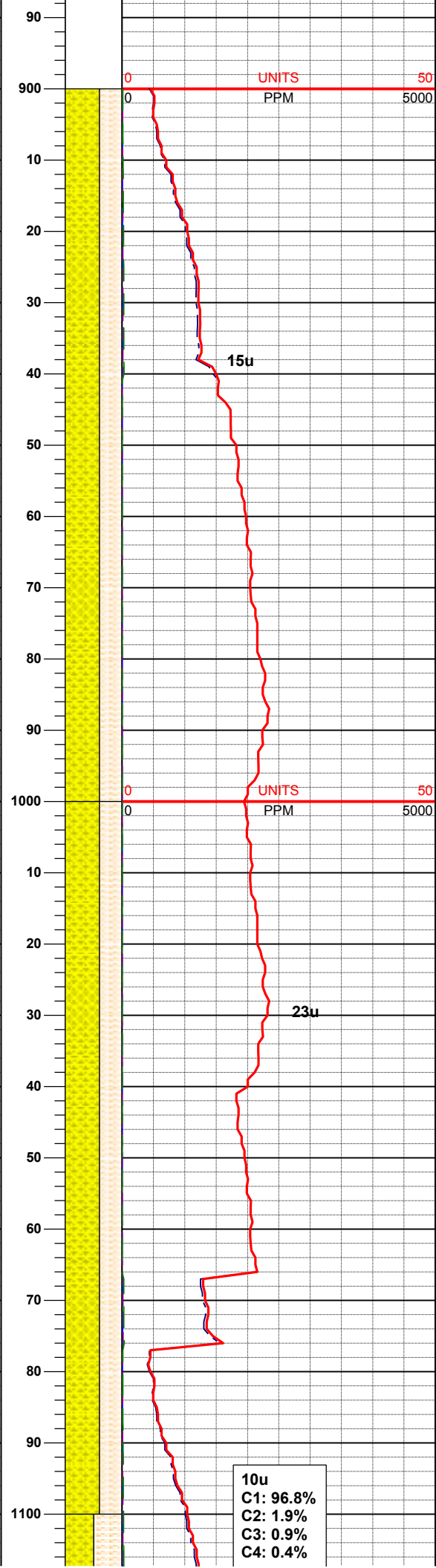
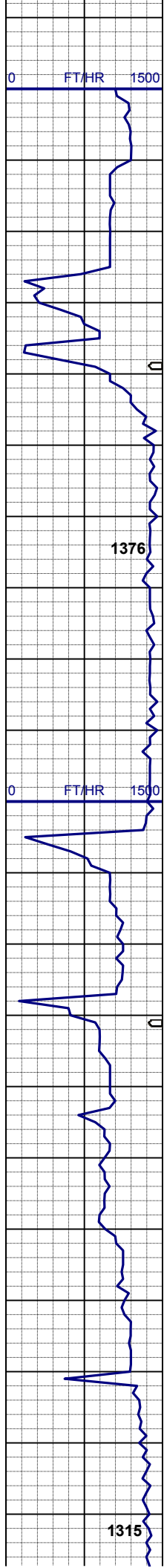


Connection



Midnight Depth





100' SAMPLE INTERVAL

LARAMIE-  
FOX HILLS  
FORMATION

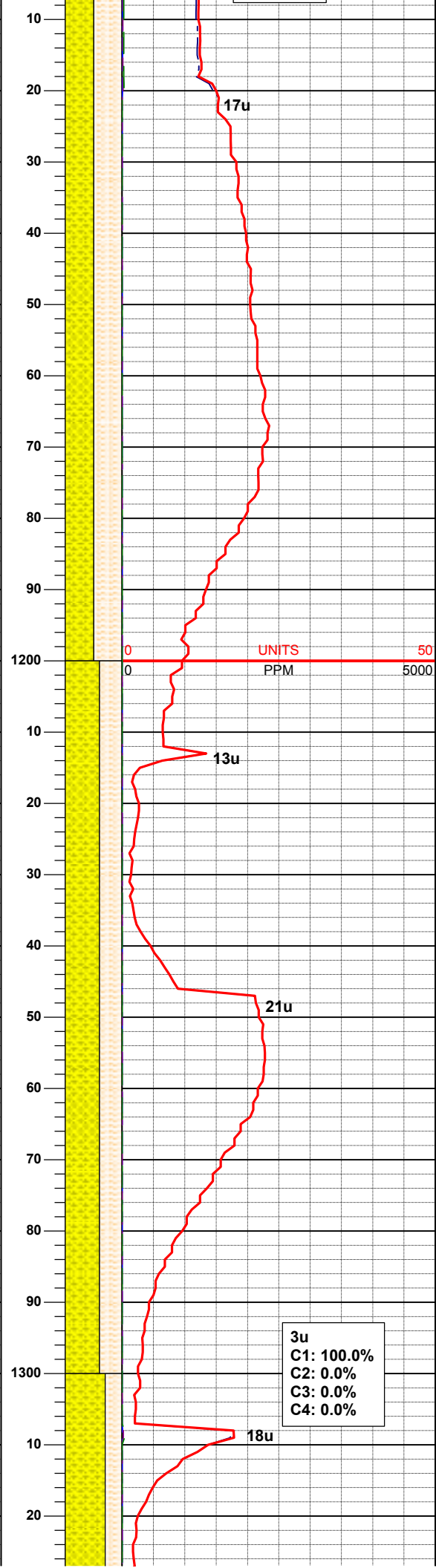
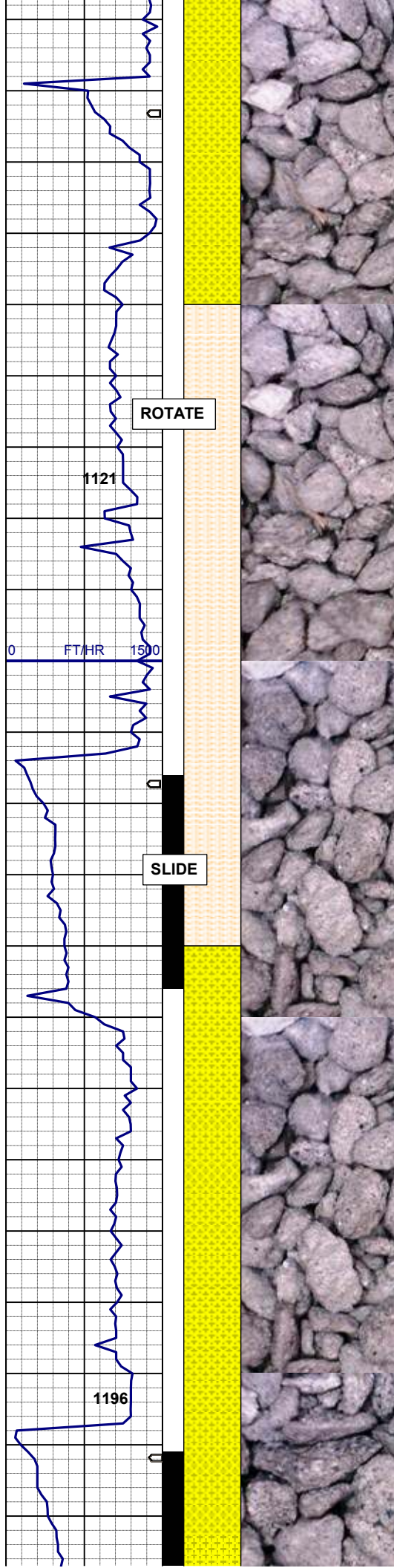
02/12/2012  
Mud Wt: 8.50  
FVis: 28  
PVis: 1  
YP: 4  
GELS: ns  
API Filt: ns  
CAKE: 1/0  
pH: 7.6  
Cl: 5,500  
Ca: 480

SHY SS: wh-ltgy-gy, vfgr, sbang-  
sbrd, mod srt, fria, p por, arg cmt, occ  
glau & carb incl  
SHLY SLTST: wh-crm-gy, sft, p por,  
arg cmt, occ coal: blk, carb mat, calc

MD 1065'  
INC 1.10°  
AZM 43.02°

SHY SS: wh-ltgy-gy, vf-fgr, sbang-  
sbrd, mod srt, fria, p por, arg cmt, occ  
glau & carb incl  
SHLY SLTST: wh-crm-gy, sft, p por,  
arg cmt, occ coal: blk, carb mat, calc

10u  
C1: 96.8%  
C2: 1.9%  
C3: 0.9%  
C4: 0.4%



MD 1159'  
INC 0.84°  
AZM 33.28°

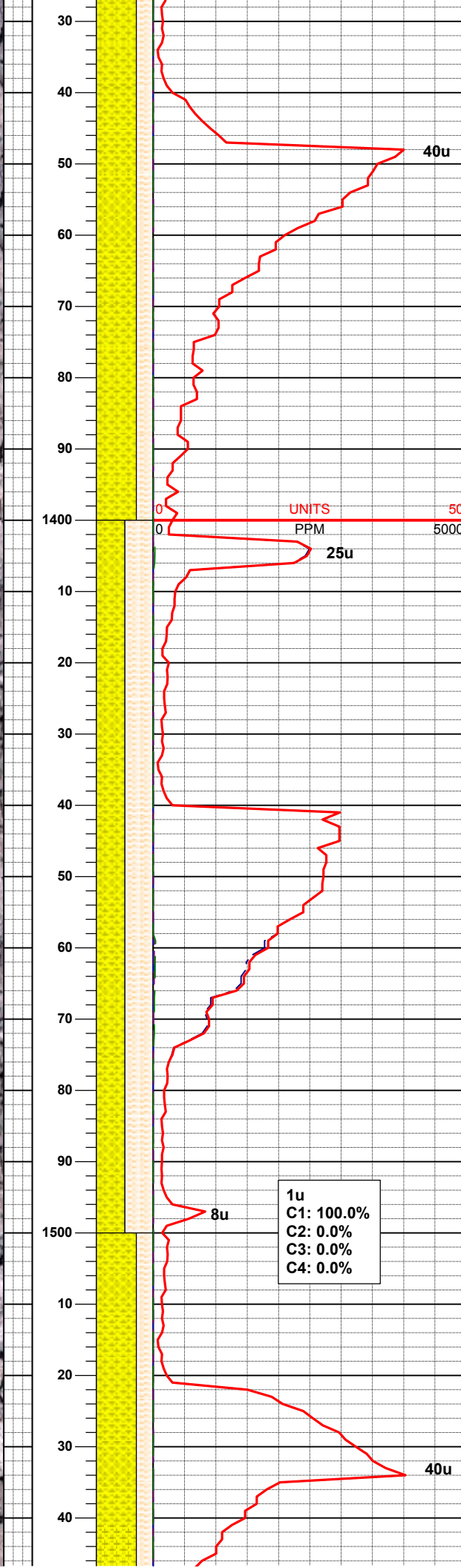
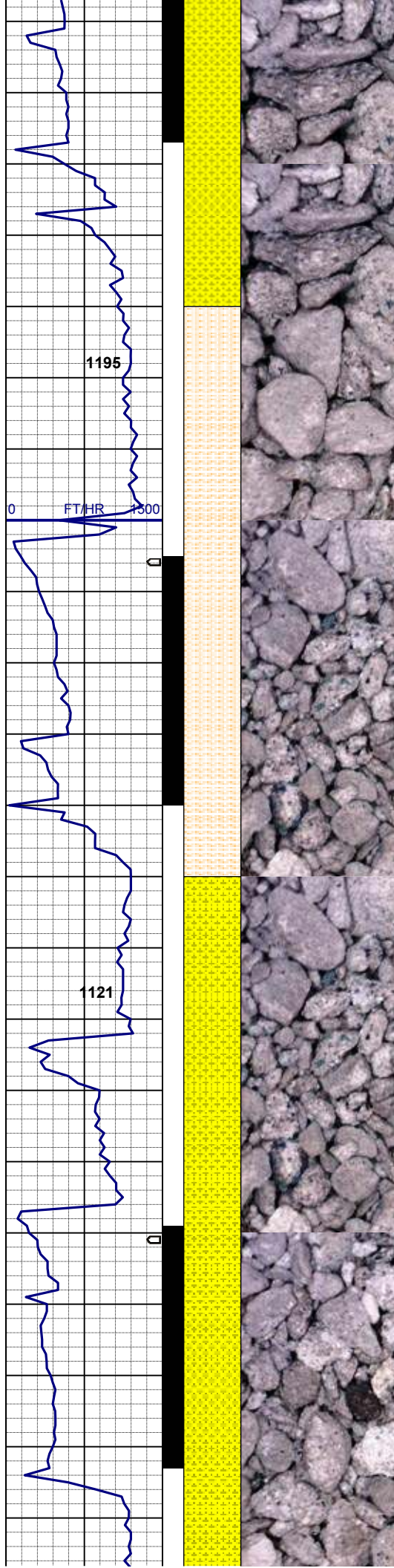
SHY SS: wh-ltgy-gy, vfgr, sbang-sbrd, mod srt, fria, p por, arg cmt, occ glau & carb incl  
SHLY SLTST: wh-crm-gy, sft, p por, arg cmt, occ coal: blk, carb mat, calc

MD 1254'  
INC 2.27°  
AZM 149.18°

SHY SS: wh-ltgy-gy, vfgr, sbang-sbrd, mod srt, fria, p por, arg cmt, occ glau & carb incl  
SHLY SLTST: wh-crm-gy, sft, p por, arg cmt, occ coal: blk, carb mat, sme pyr, calc

MUD WT 8.5+/8.5+  
VIS 28/28 IN/OUT





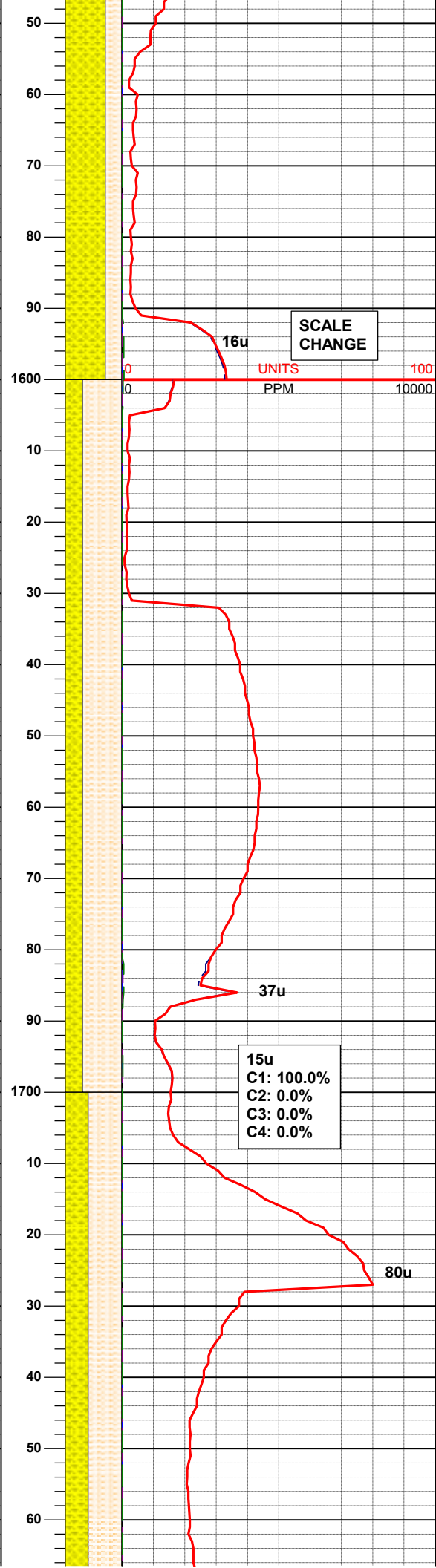
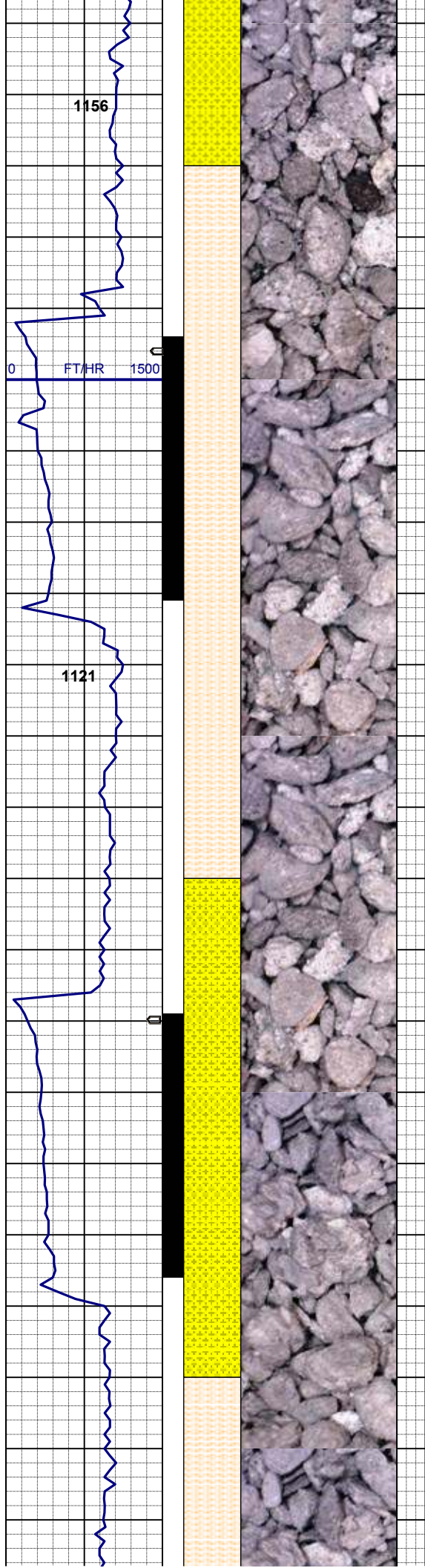
**MD 1348'**  
**INC 3.86°**  
**AZM 177.99°**

SHY SS: wh-ltgy-gy, vf-fgr, sbang-sbrd, p srt, fria, p por, arg cmt, vabnt glau, sme carb incl  
SHLY SLTST: wh-crm-gy, sft, p por, arg cmt, occ coal: blk, carb mat, sme pyr, calc

**MD 1442'**  
**INC 6.35°**  
**AZM 184.16°**

SHY SS: wh-ltgy-gy, vf-fgr, sbang-sbrd, p srt, fria, p por, arg cmt, vabnt glau, sme carb incl  
SHLY SLTST: wh-crm-gy, sft, p por, arg cmt, occ coal: blk, carb mat, sme pyr, calc

**MD 1537'**  
**INC 8.76°**  
**AZM 180.27°**



SHY SS: wh-ltgy-gy, vf-fgr, sbang-sbrd, p srt, fria, p por, arg cmt, abnt glau, sme carb incl  
SHLY SLTST: wh-crm-gy, sft, p por, arg cmt, occ coal: blk, carb mat, tr pyr, calc

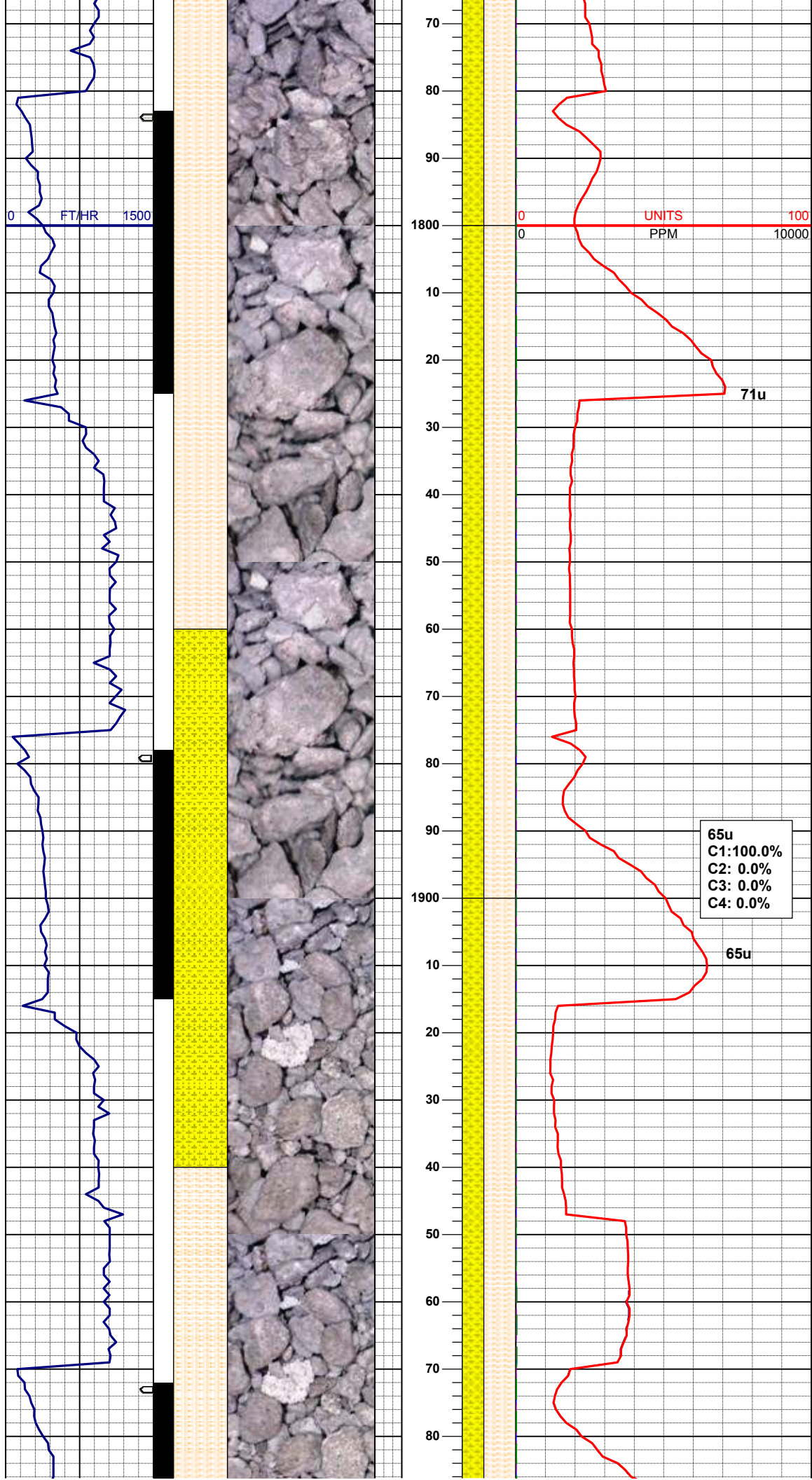
MD 1632'  
TVD 1629.19'  
INC 10.89°  
AZM 184.28°

SHLY SLTST: wh-crm-gy, vsft, p por, v arg cmt,  
SHY SS: wh-ltgy-gy, vf-fgr, sbang-sbrd, p srt, fria, p por, arg cmt, sme glau, sme carb incl, tr pyr, calc

MD 1726'  
TVD 1720.99'  
INC 13.89°  
AZM 187.30°



MUD WT 8.6/8.6  
VIS 32/32 IN/OUT



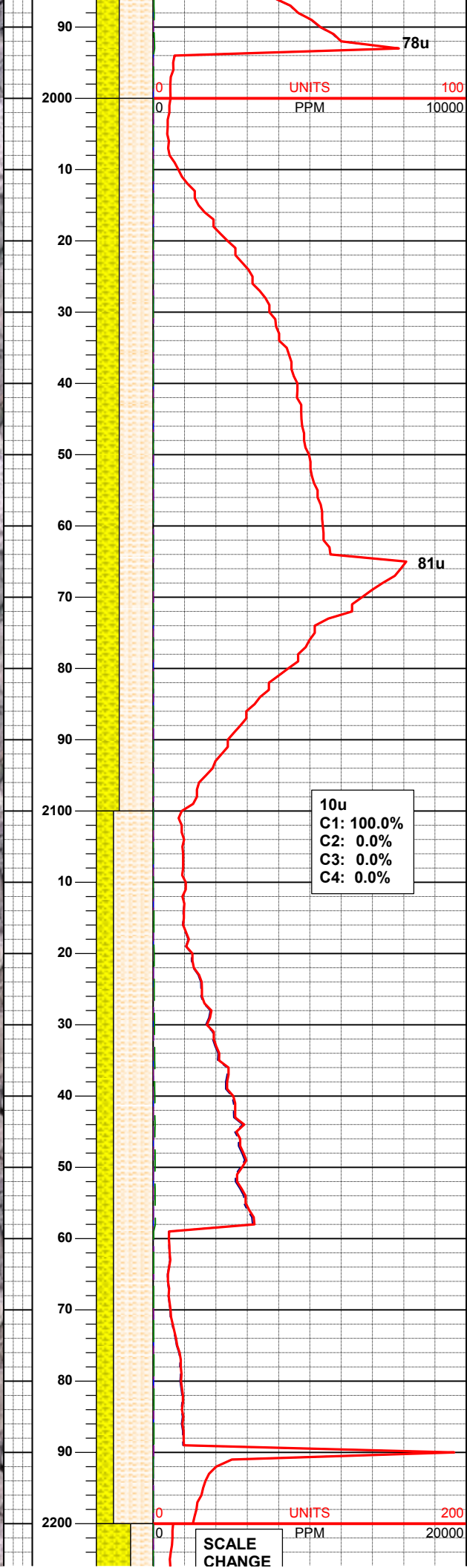
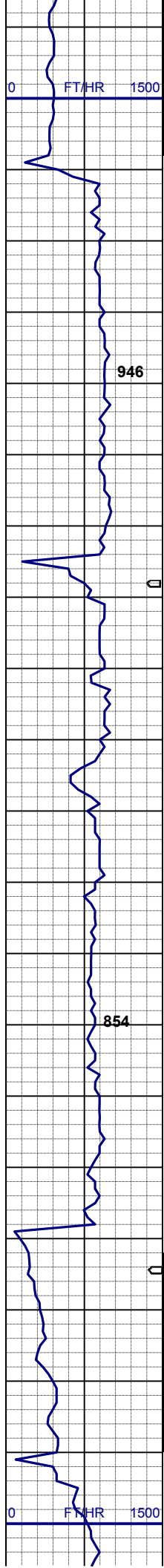
SHLY SLTST: wh-crm-gy, vsft, p por, v arg cmt  
SHY SS: wh-ltgy-gy, vfgr, sbang-sbrd, p srt, fria, p por, arg cmt, sme glau, sme carb incl, tr pyr, calc

MD 1821'  
TVD 1812.77'  
INC 16.05°  
AZM 185.54°

SHLY SLTST: wh-crm-gy, vsft, p por, v arg cmt  
SHY SS: wh-ltgy-gy, vfgr, sbang-sbrd, p srt, fria, p por, arg cmt, sme glau, sme carb incl, calc

MD 1915'  
TVD 1902.59'  
INC 18.21°  
AZM 184.91°

SHLY SLTST: wh-crm-gy, vsft, p por, v arg cmt



SHY SS: wh-ltgy-gy, vfgr, sbang-sbrd, p srt, fria, p por, arg cmt, sme glau, sme carb incl, calc

**MD 2010'**  
**TVD 1992.49'**  
**INC 19.53°**  
**AZM 183.45°**

SHLY SLTST: wh-crm-gy, vsft, p por, v arg cmt  
SHY SS: wh-ltgy-gy, vfgr, sbang-sbrd, p srt, fria, p por, arg cmt, sme glau, sme carb incl, calc

**MUD WT 8.7/8.7**  
**VIS 32/32 IN/OUT**

10u  
C1: 100.0%  
C2: 0.0%  
C3: 0.0%  
C4: 0.0%

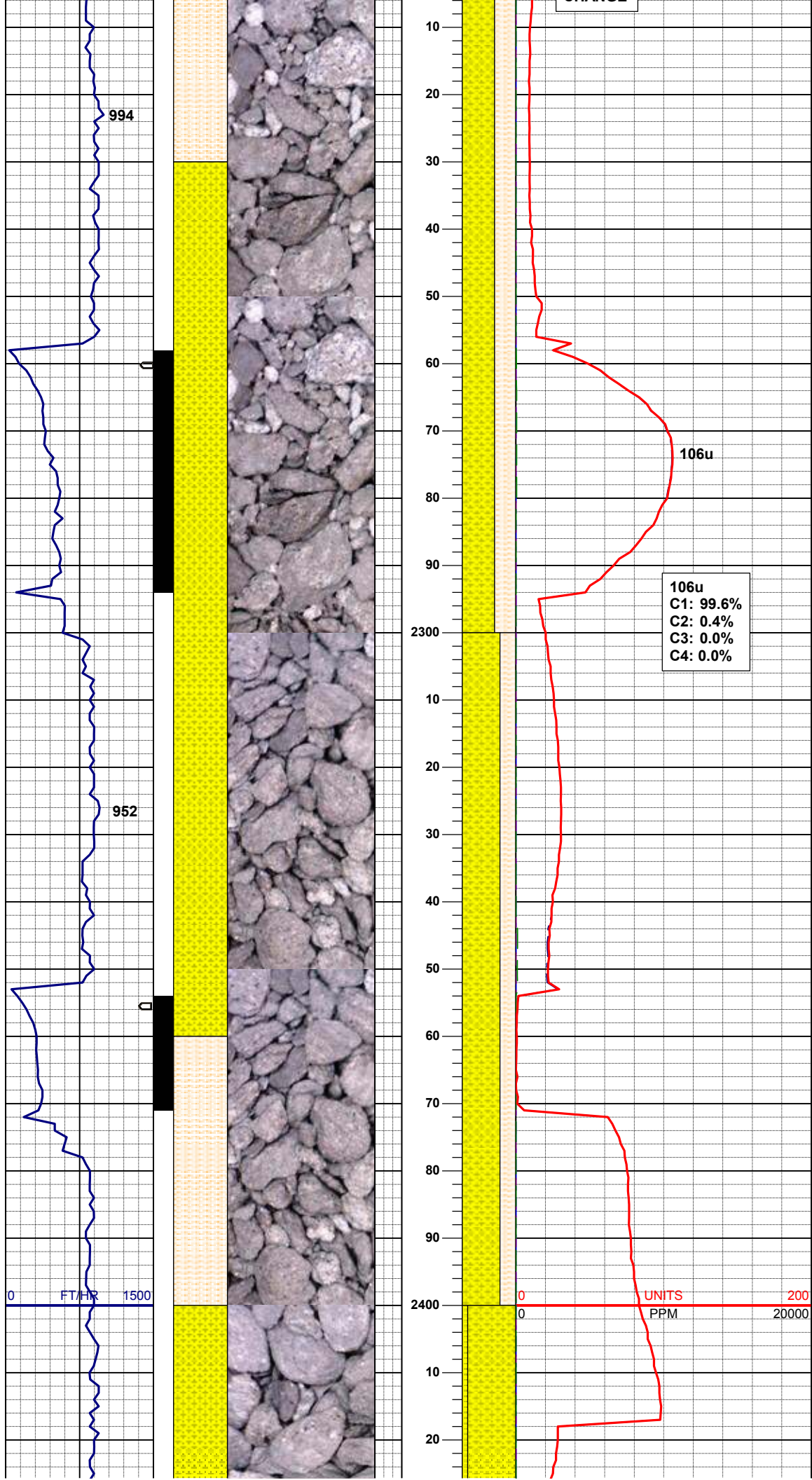
**MD 2104'**  
**TVD 2081.65'**  
**INC 17.36°**  
**AZM 183.02°**

SHLY SLTST: wh-crm-gy, vsft, p por, v arg cmt  
SHY SS: wh-ltgy-gy, vfgr, sbang-sbrd, p srt, fria, p por, arg cmt, sme glau, sme carb incl, calc

**02/12/2012**  
**Mud Wt: 8.60**  
**FVis: 28**  
**PVis: 2**  
**YP: 4**  
**GELS: 1/2/3**  
**API Filt: ns**  
**CAKE: 1/0**  
**pH: 10.4**  
**Cl: 5,500**  
**Ca: 480**

96u





SHY SS: wh-ltgy-gy, vfgr, sbang-sbrd, p srt, fria, p por, arg cmt, sme glau, sme carb incl, calc  
SHLY SLTST: wh-crm-gy, vsft, p por, v arg cmt

**MD 2202'**  
**TVD 2175.02'**  
**INC 18.02°**  
**AZM 180.22°**

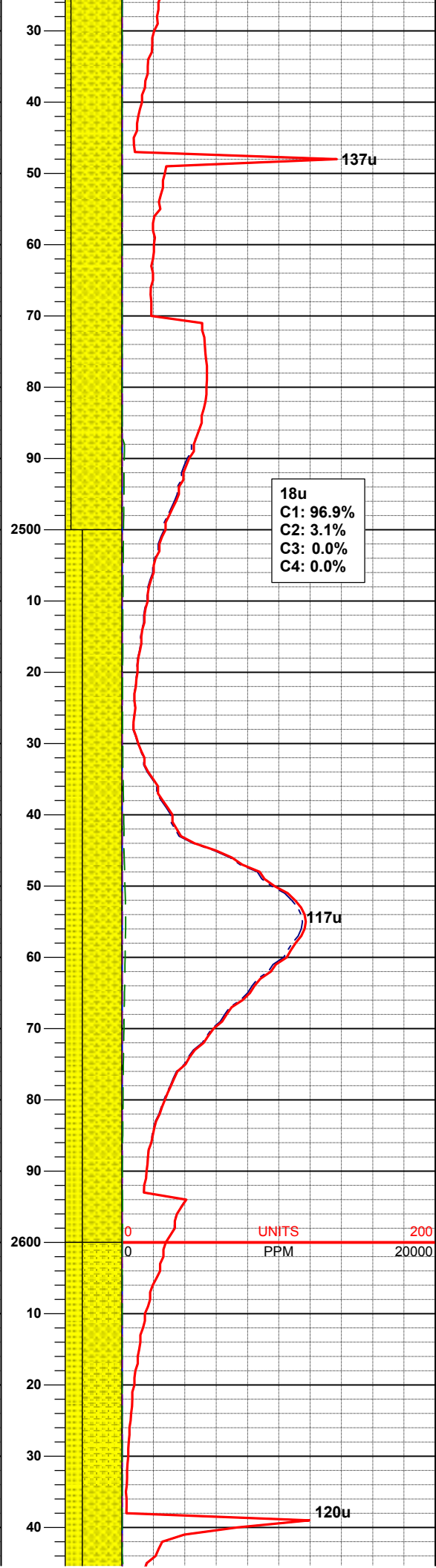
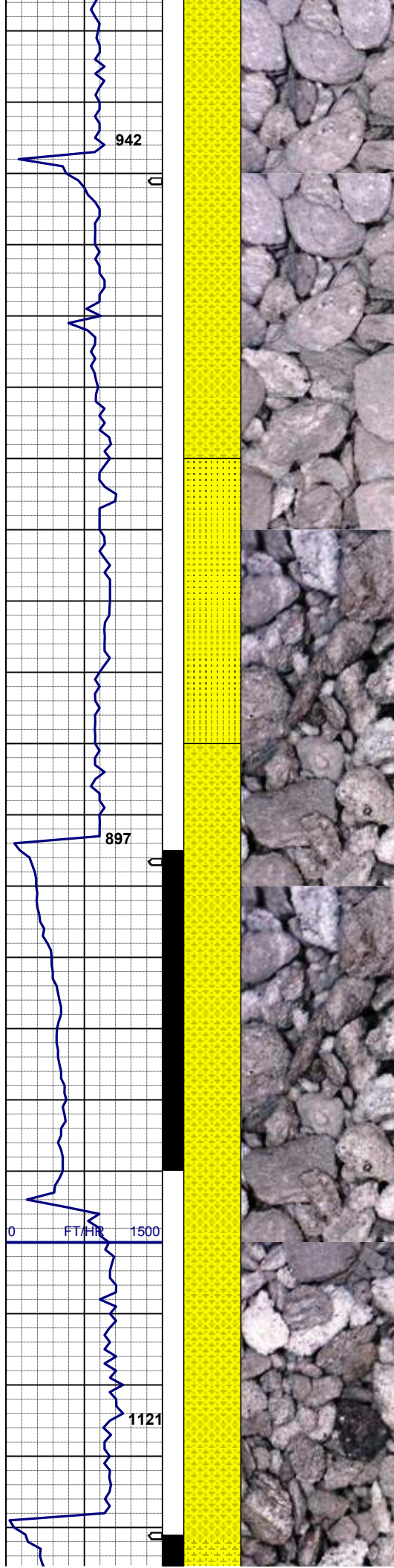
**MD 2297'**  
**TVD 2264.89'**  
**INC 19.80°**  
**AZM 176.95°**

SHY SS: wh-ltgy-gy, vfgr, sbang-sbrd, p srt, fria, p por, arg cmt, sme glau, sme carb incl, calc  
SHLY SLTST: wh-crm-gy, vsft, p por, v arg cmt

**MD 2393'**  
**TVD 2355.05'**  
**INC 20.38°**  
**AZM 175.01°**

**MUD WT 8.8/8.9**  
**VIS 32/32 IN/OUT**





SHLY SS: wh-ltgy-gy, vfgr, sbang-sbrd, mod srt, fria, p por, occ glau & carb incl grdg - SS  
SS: lt gy - wh, hd, f - vf, sbrd - sbang, mod srt, s&p, tr glau, occ carb incl

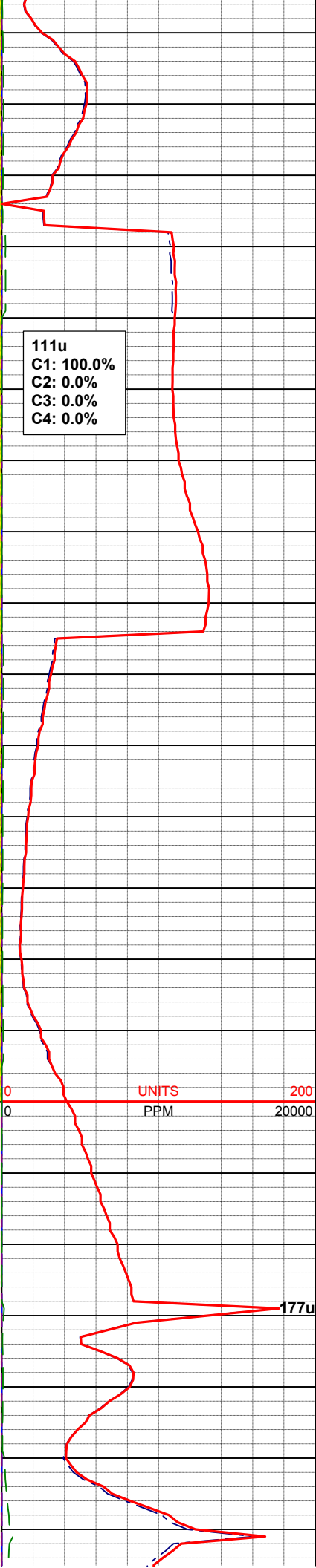
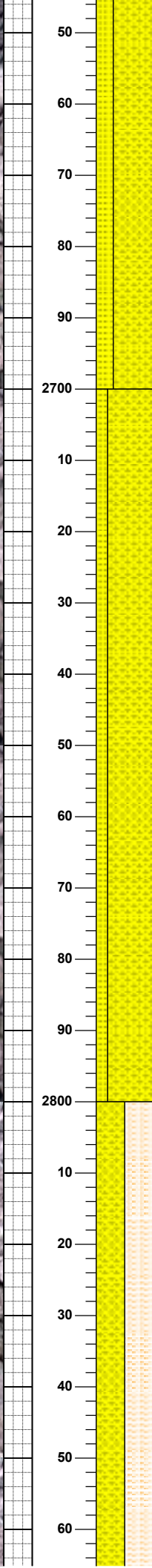
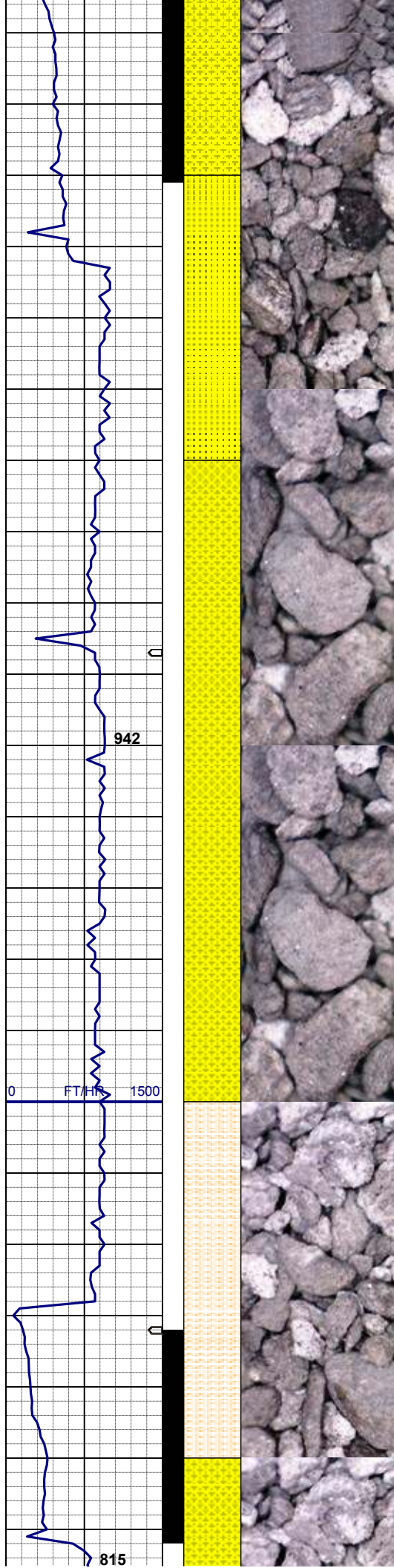
MD 2488'  
TVD 2444.77'  
INC 18.01°  
AZM 176.65°

SHLY SS: wh-ltgy-gy, vfgr, sbang-sbrd, mod srt, fria, p por, occ glau & carb incl grdg - SS  
SS: lt gy - wh, hd, f - vf, sbrd - sbang, mod srt, s&p, tr glau, occ carb incl

MD 2584'  
TVD 2535.69'  
INC 19.42°  
AZM 177.91°

MUD WT 8.8/8.9  
VIS 33/32 IN/OUT

SHLY SS: wh-ltgy-gy, vfgr, sbang-sbrd, mod srt, fria, p por, occ glau & carb incl grdg - SS



SHLY SS: wh-ltgy-gy, vfgr, sbang  
sbrd, mod srt, fria, p por, occ glau &  
carb incl grdg - SS  
SS: lt gy - wh, hd, f - vf, sbrd - sbang,  
mod srt, s&p, tr glau, occ carb incl

MD 2679'  
TVD 2624.80'  
INC 21.10°  
AZM 178.13°

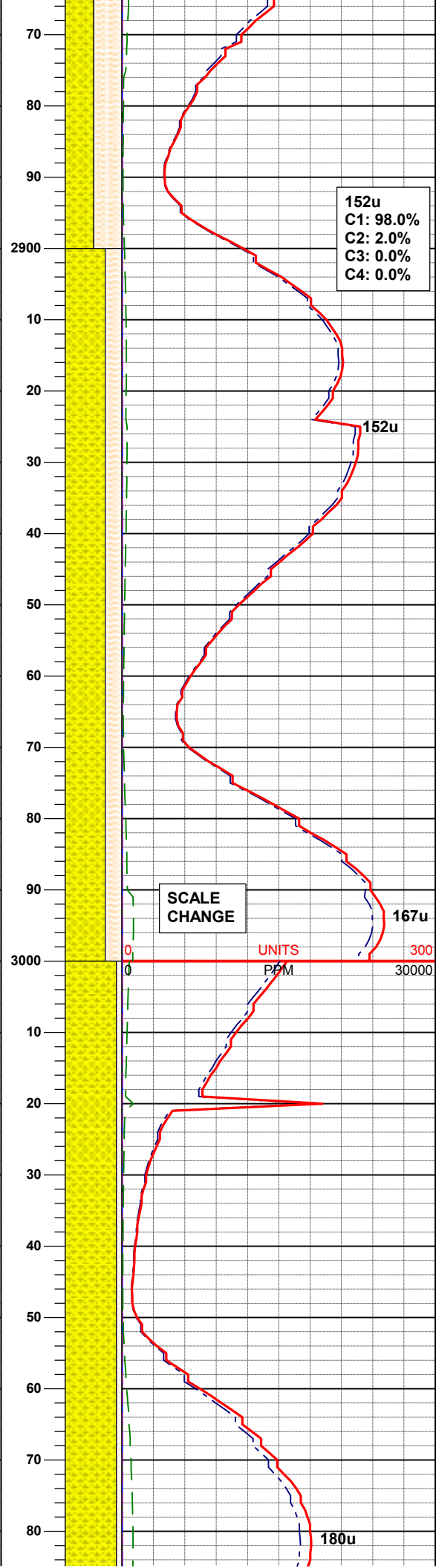
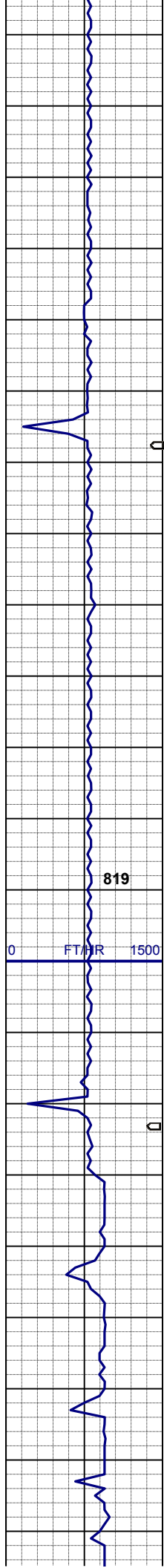
SHLY SS: wh-ltgy-gy, vfgr, sbang-  
sbrd, mod srt, fria, p por, occ glau &  
carb incl grdg - SS  
SS: lt gy - wh, hd, f - vf, sbrd - sbang,  
mod srt, s&p, tr glau, occ carb incl

MD 2775'  
TVD 2714.87'  
INC 19.38°  
AZM 176.54°

SHLY SLTST: wh-crm-gy, v sft, p por,  
abnt arg cmt  
SHLY SS: wh-ltgy-gy, vfgr, sbang-  
sbrd, mod srt, fria, p por, abnt arg  
cmt, occ glau & carb inc, grdg - SS

MD 2869'  
TVD 2802.42'





TVD 2803.42'  
INC 19.86°  
AZM 180.05°

MUD WT 8.8/8.9  
VIS 32/32 IN/OUT

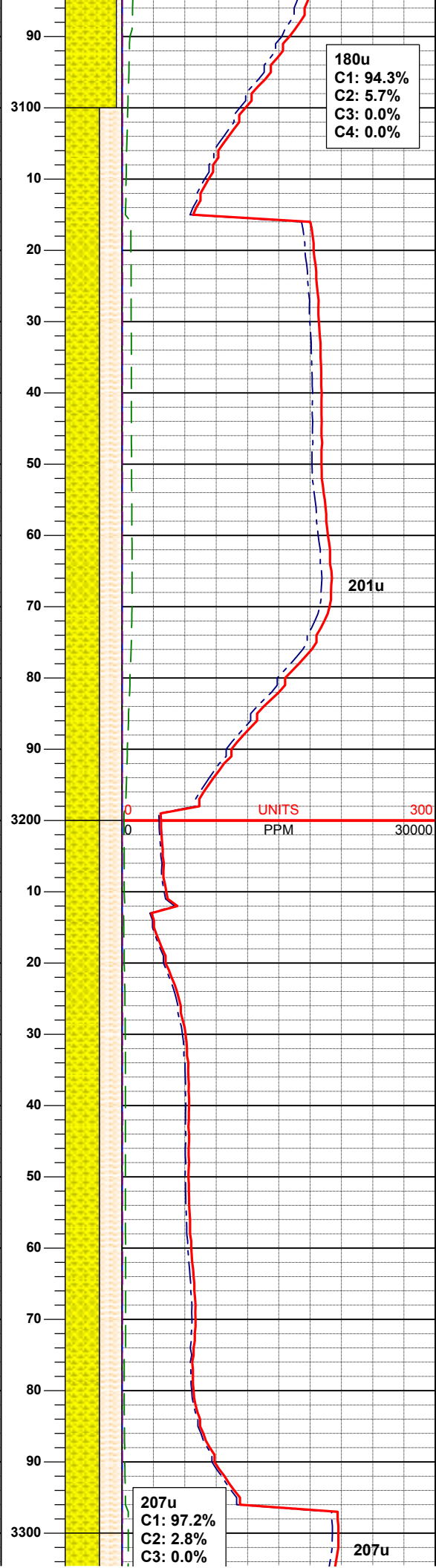
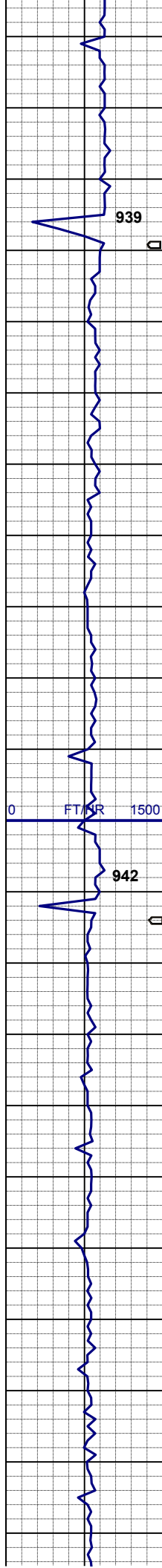
LOGGER TOP OF  
PIERRE SHALE  
MD 2,923' TVD 2,853'

SHLY SLTST: wh-crm-gy, v sft, p por,  
abnt arg cmt  
SHLY SS: wh-ltgy-gy, vfgr, sbang-  
sbrd, mod srt, fria, p por, abnt arg  
cmt, occ glau & carb inc, grdg - SS

MD 2965'  
TVD 2893.85'  
INC 19.39°  
AZM 179.69°

SHLY SS: wh-ltgy-gy, vfgr, sbang-  
sbrd, mod srt, fria, p por, abnt arg  
cmt, occ glau & carb inc, grdg - SS  
SHLY SLTST: wh-crm-gy, v sft, p por,  
abnt arg cmt

MD 3060'  
TVD 2983.62'  
INC 18.78°  
AZM 180.20°



180u  
C1: 94.3%  
C2: 5.7%  
C3: 0.0%  
C4: 0.0%

SHLY SS: wh-ltgy-gy, vfgr, sbang-sbrd, mod srt, fria, p por, abnt arg cmt, occ glau & carb inc, grdg - SS  
SHLY SLTST: wh-crm-gy, v sft, p por, abnt arg cmt

MD 3156'  
TVD 3074.42'  
INC 19.12°  
AZM 181.72°

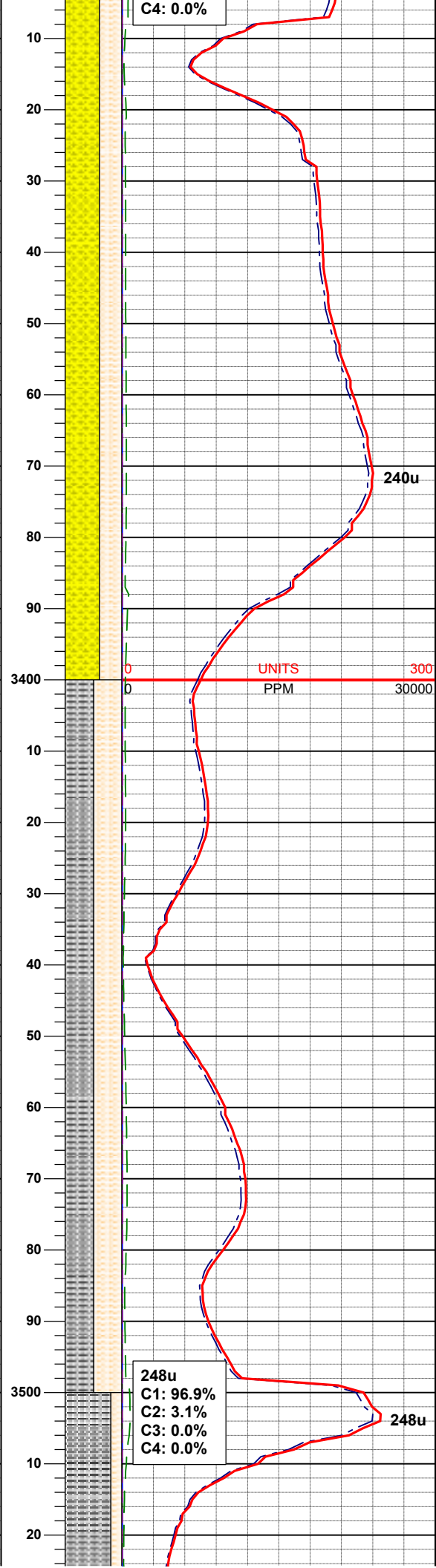
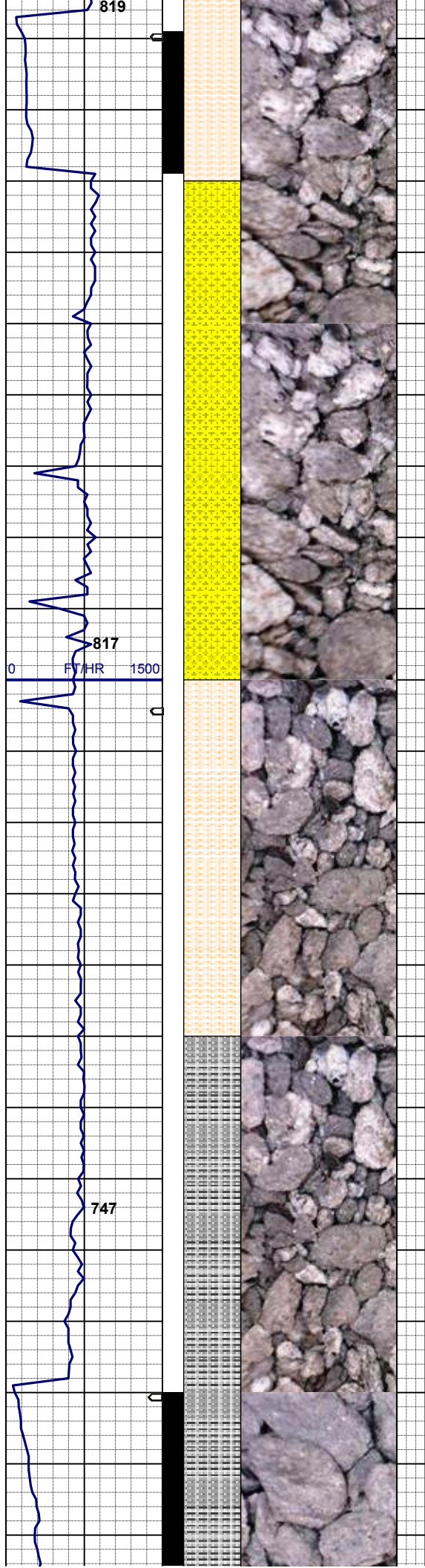
SHLY SS: wh-ltgy-gy, vfgr, sbang-sbrd, mod srt, fria, p por, abnt arg cmt, occ glau & carb inc, grdg - SS  
SHLY SLTST: wh-crm-gy, v sft, p por, abnt arg cmt

MD 3252'  
TVD 3165.30'  
INC 18.46°  
AZM 181.41°

207u  
C1: 97.2%  
C2: 2.8%  
C3: 0.0%

207u



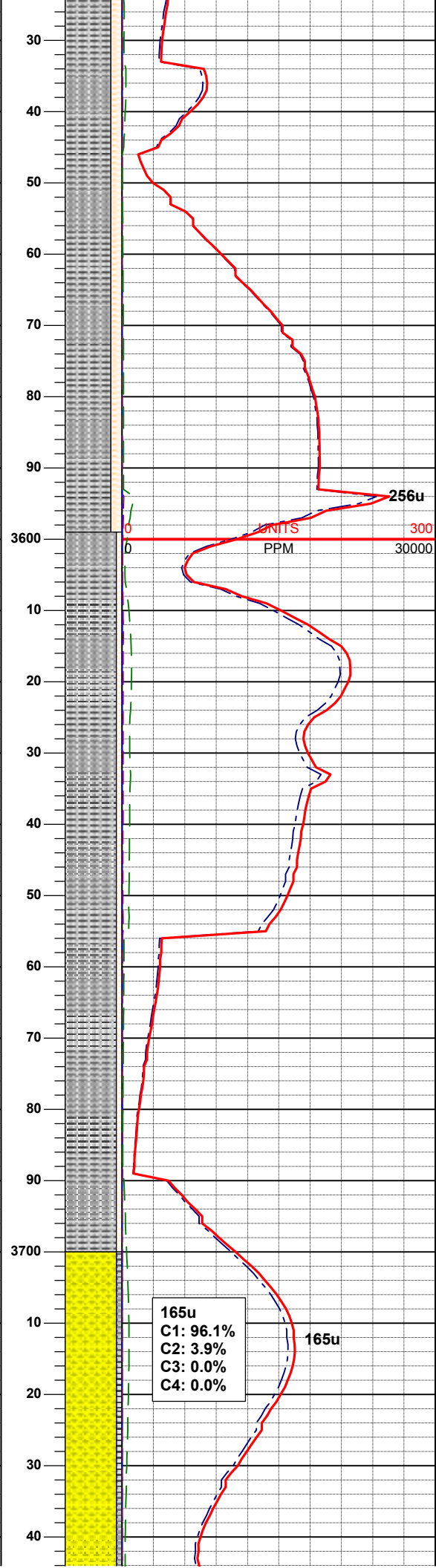
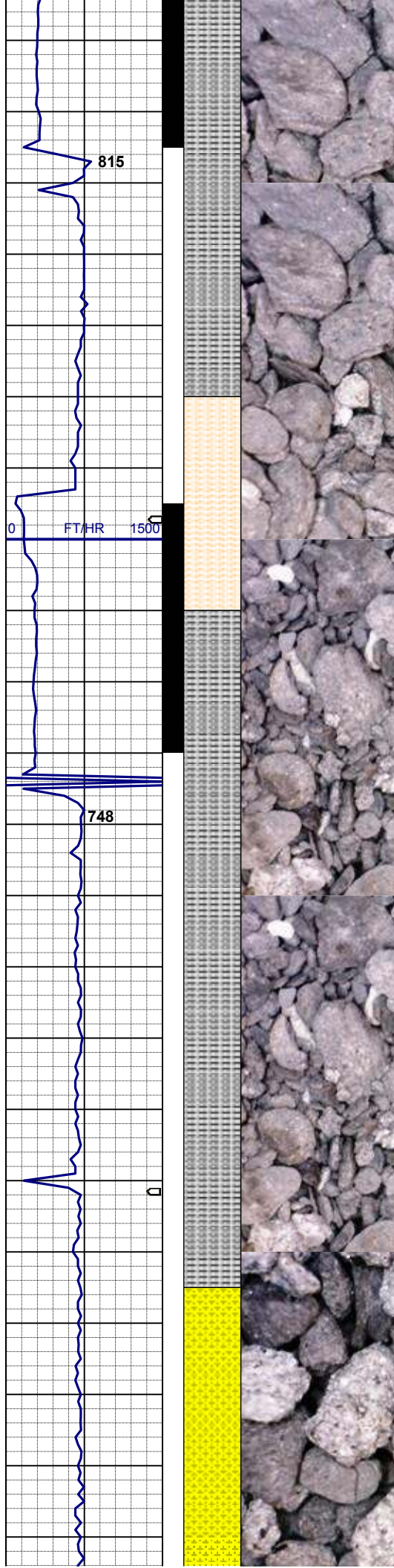


MD 3347'  
TVD 3255.26'  
INC 19.03°  
AZM 181.17°

SHLY SS: wh-ltgy-gy, vfgr, sbang-sbrd, mod srt, fria, p por, abnt arg cmt, occ glau & carb inc, grdg - SS  
SHLY SLTST: wh-crm-gy, v sft, p por, abnt arg cmt

MD 3443'  
TVD 3346.46'  
INC 17.37°  
AZM 180.33°

SLTY SH: gy - dk gy, sft - frm, plty - fis, sdy - silty tex  
SHLY SLTST: wh-crm-gy, v sft, p por, abnt arg cmt, grdg - SHLY SS



MD 3538'  
TVD 3437.03'  
INC 17.76°  
AZM 183.04°

MUD WT 8.8/8.9  
VIS 32/31 IN/OUT

SLTY SH: gy - dk gy, sft - frm, plty -  
fis, sdy - slty tex  
SHLY SLTST: wh-crm-gy, v sft, p por,  
abnt arg cmt, grdg - SHLYSS

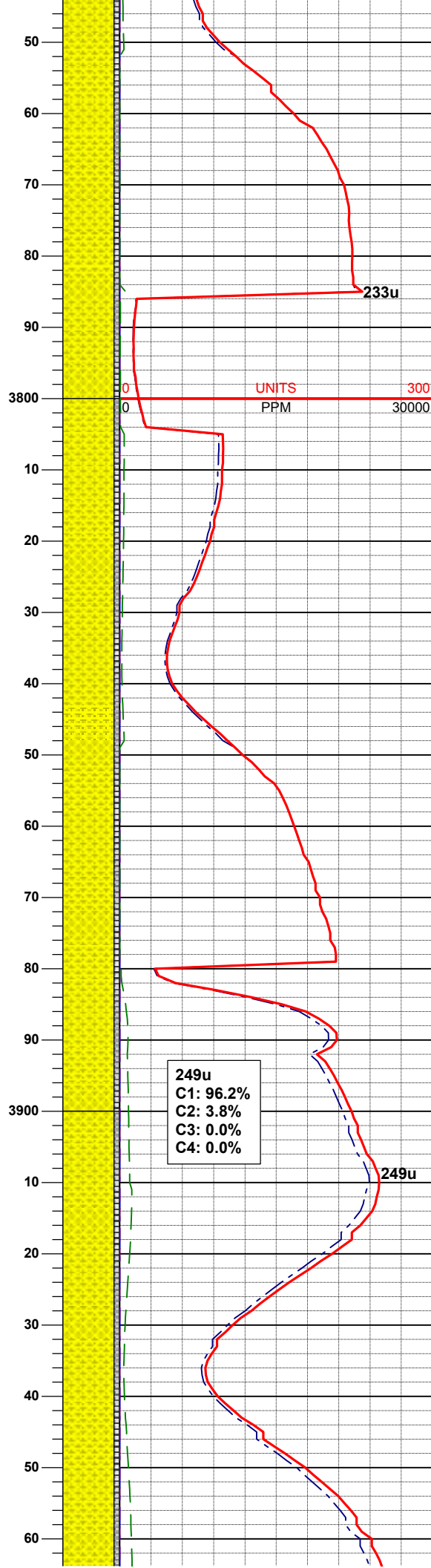
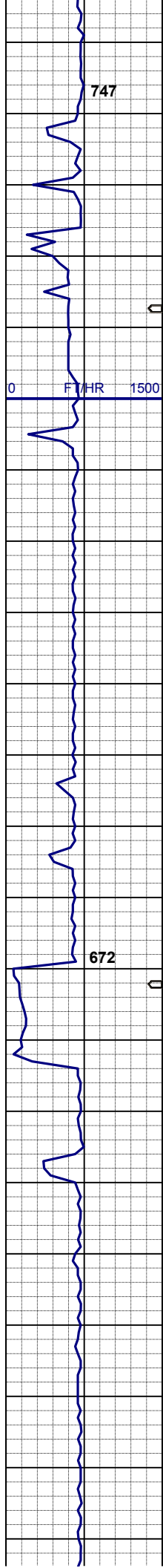
MD 3634'  
TVD 3528.27'  
INC 18.46°  
AZM 180.15°

SLTY SH: gy - dk gy, sft - frm, plty -  
fis, sdy - slty tex  
SHLY SLTST: wh-crm-gy, v sft, p por,  
abnt arg cmt

LOGGER TOP OF  
PARKMAN SS  
3,705' MD 3,596' TVD

MD 3729'  
TVD 3618.82'  
INC 16.77°  
AZM 180.72°





SHLY SS: wh-ltgy-gy, hd, f-vf gr, sbrd  
-sbang, mod srt, fria, p por, abnt arg  
cmt, occ glau & carb incl  
SLTY SH: gy - dk gy, sft - frm, plty -  
fis, sdy - slty tex, calc

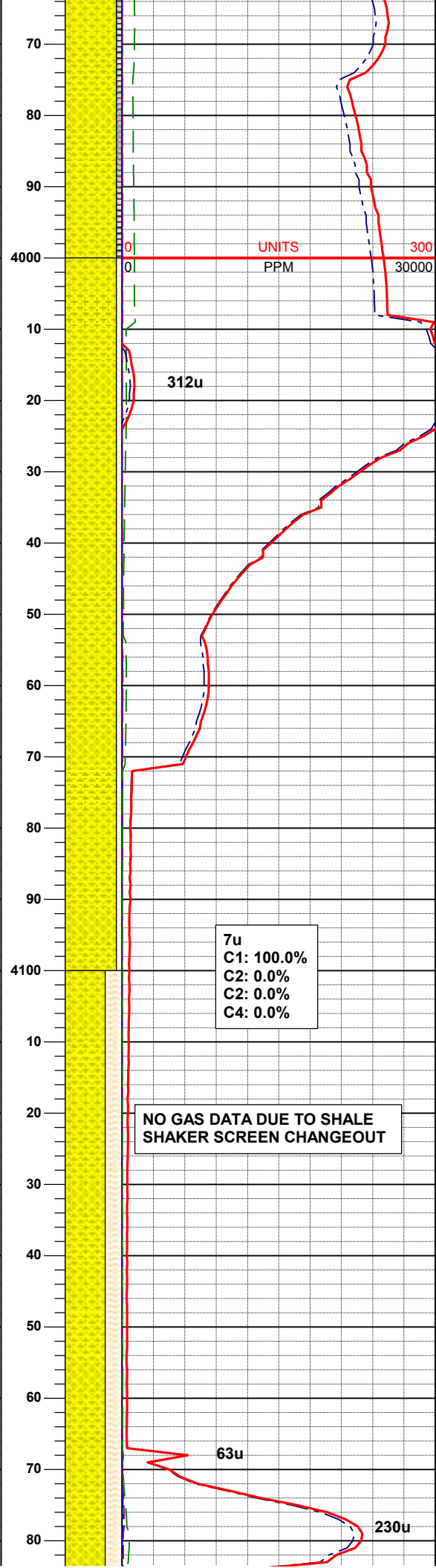
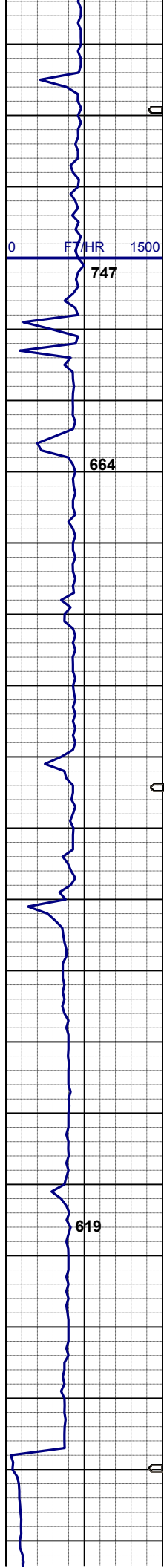
MD 3824'  
TVD 3709.53'  
INC 17.80°  
AZM 182.87°

SHLY SS: wh-ltgy-gy, hd, f-vf gr, sbrd  
-sbang, mod srt, fria, p por, abnt arg  
cmt, occ glau & carb incl  
SLTY SH: gy - dk gy, sft - frm, plty -  
fis, sdy - slty tex, calc

MUD WT 8.8/8.9  
VIS 32/32 IN/OUT

MD 3920'  
TVD 3800.47'  
INC 19.56°  
AZM 178.98°

SHLY SS: wh-ltgy-gy, hd, f-vf gr, sbrd  
-sbang, mod srt, fria, p por, abnt arg  
cmt, occ glau & carb incl  
SLTY SH: gy - dk gy, sft - frm, plty -  
fis, sdy - slty tex, calc



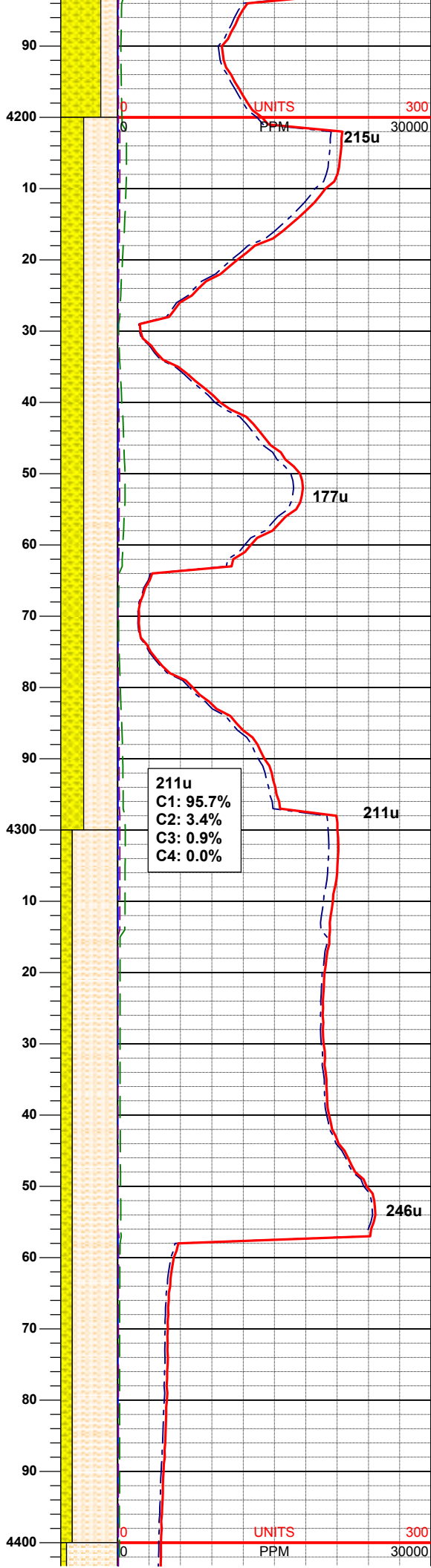
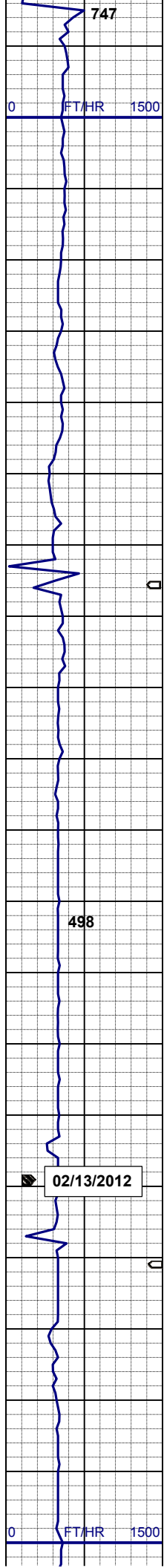
MD 4017'  
TVD 3891.42'  
INC 21.12°  
AZM 177.12°

SHLY SS: wh-ltgy-gy, hd, f-vf gr, sbrd  
-sbang, mod srt, fria, p por, abnt arg  
cmt, occ glau & carb incl, intbd w/  
SHLY SLTST: wh-crm-gy, v sft, p por,  
abnt arg cmt, calc

MD 4112'  
TVD 3979.66'  
INC 22.36°  
AZM 176.09°

SHLY SS: wh-ltgy-gy, hd, f-vf gr, sbrd  
-sbang, mod srt, fria, p por, abnt arg  
cmt, occ glau & carb incl, intbd w/  
SHLY SLTST: wh-crm-gy, v sft, p por,  
abnt arg cmt, calc





MD 4207'  
TVD 4068.04'  
INC 20.64°  
AZM 177.19°

SHLY SLTST: wh-crm-gy, v sft, p por,  
abnt arg cmt, intbd w/  
SHLY SS: wh-ltgy-gy, s&p, hd, f-vf  
gr, sbrd -sbang, mod srt, fria, p por,  
abnt arg cmt, occ glau & carb incl,  
calc

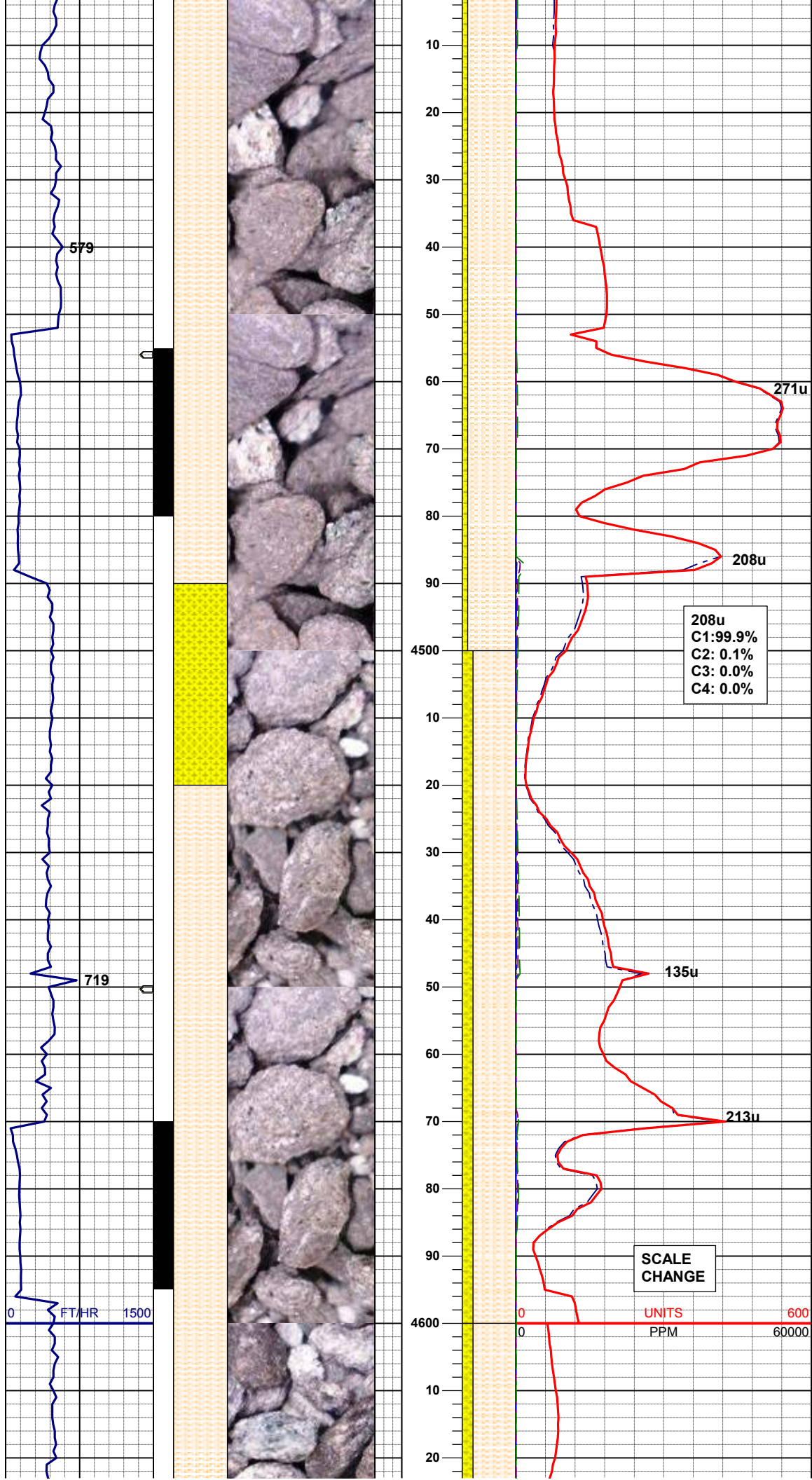
LOGGER TOP OF  
SUSSEX (TERRY) SS  
MD 4,260' TVD 4,117'

MD 4302'  
TVD 4157.14'  
INC 19.95°  
AZM 178.12°

MUD WT 8.8/8.9  
VIS 33/32 IN/OUT

SHLY SLTST: wh-crm-gy, v sft, p por,  
abnt arg cmt, intbd w/  
SHLY SS: wh-ltgy-gy, s&p, hd, f-vf  
gr, sbrd -sbang, mod srt, fria, p por,  
abnt arg cmt, occ glau & carb incl,  
calc

MD 4398'  
TVD 4247.99'  
INC 17.75°  
AZM 175.01°



SHLY SLTST: wh-crm-gy, v sft, p por,  
abnt arg cmt, intbd w/  
SHLY SS: wh-ltgy-gy, s&p, hd, f-vf  
gr, sbrd -sbang, mod srt, fria, p por,  
abnt arg cmt, sme glau & carb incl,  
sme fos, calc

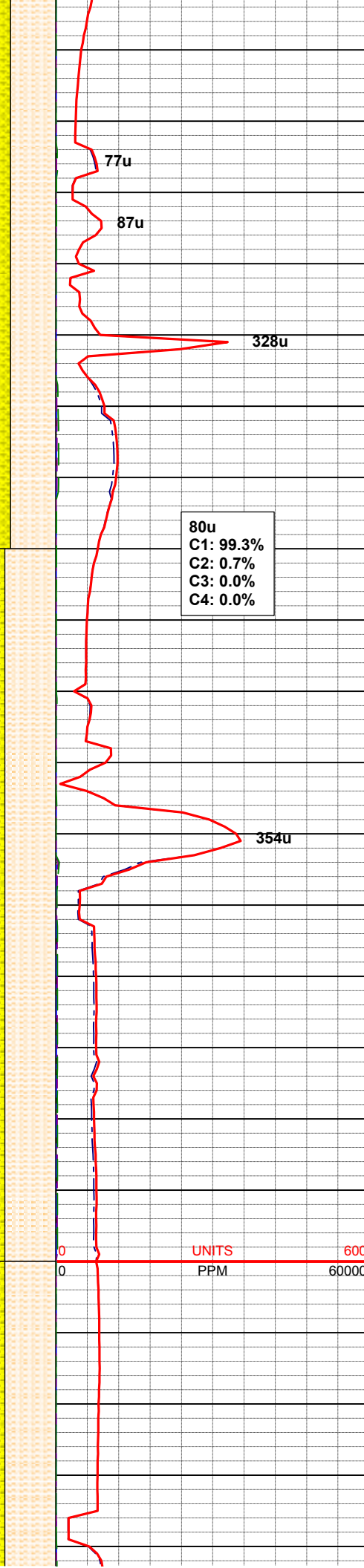
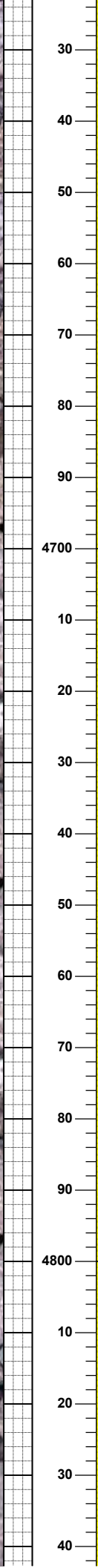
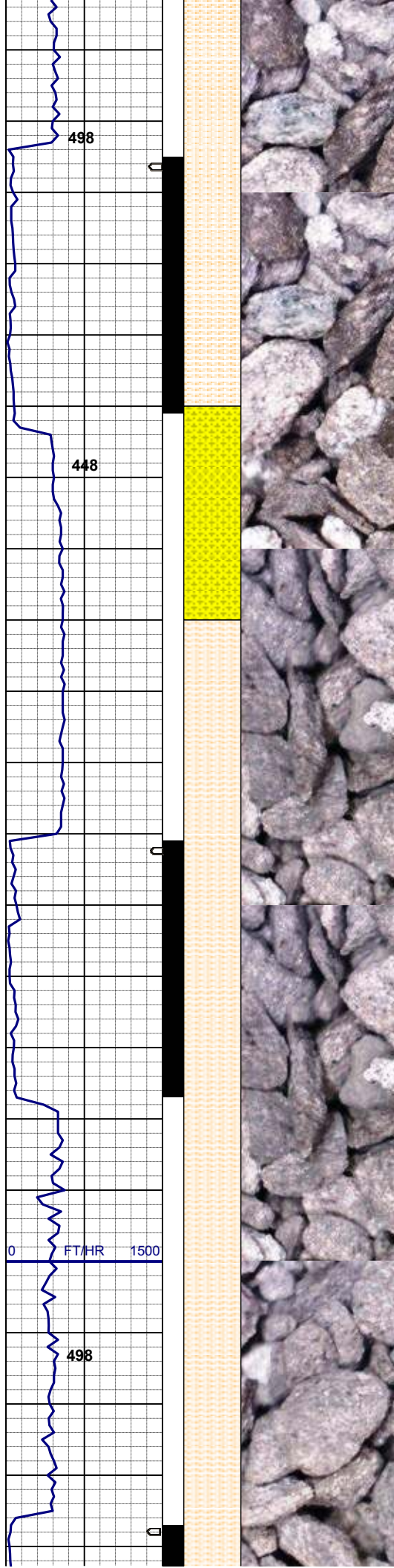
MD 4493'  
TVD 4338.40'  
INC 18.03°  
AZM 174.32°

SHLY SLTST: wh-crm-gy, v sft, p por,  
abnt arg cmt, intbd w/  
SHLY SS: wh-ltgy-gy, s&p, hd, f-vf  
gr, sbrd -sbang, mod srt, fria, p por,  
abnt arg cmt, sme glau & carb incl,  
sme fos, calc

MUD WT 8.8/8.9  
VIS 32/33 IN/OUT

MD 4588'  
TVD 4429.10'  
INC 16.60°  
AZM 178.36°





MD 4684'  
TVD 4520.87'  
INC 17.53°  
AZM 181.90°

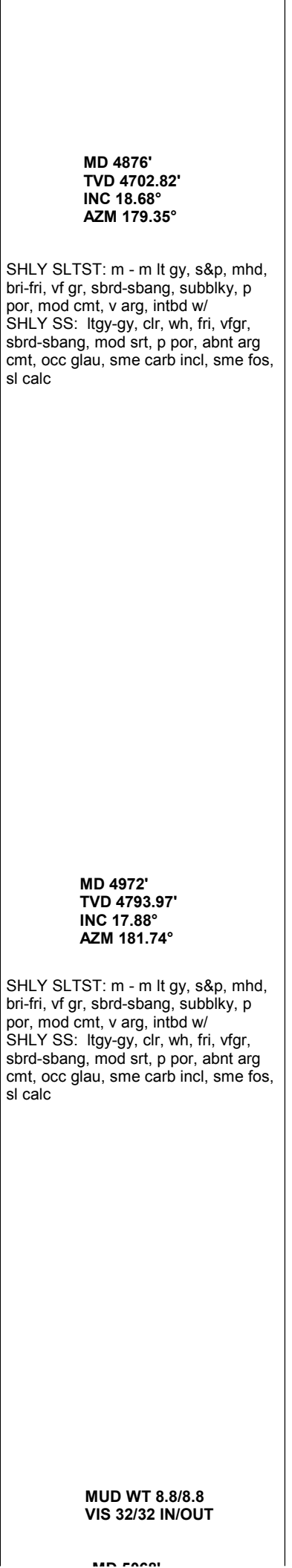
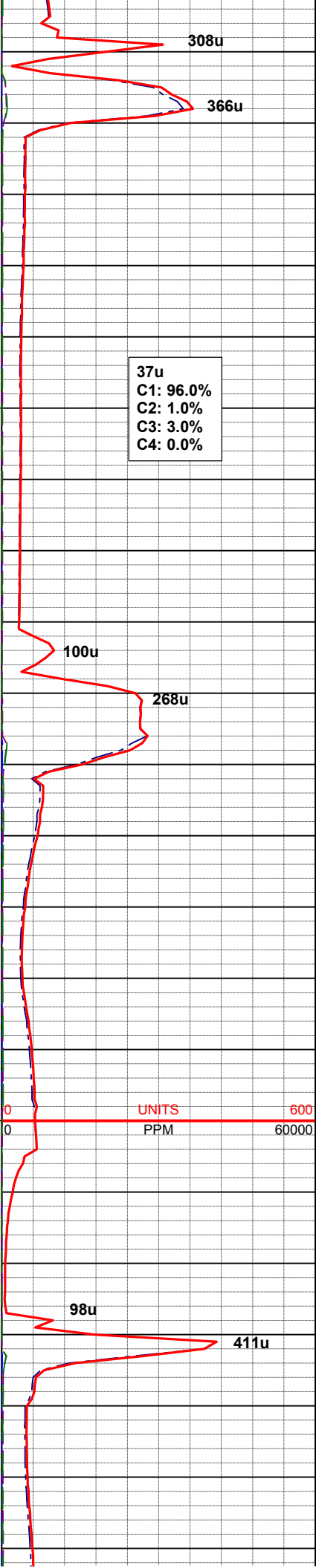
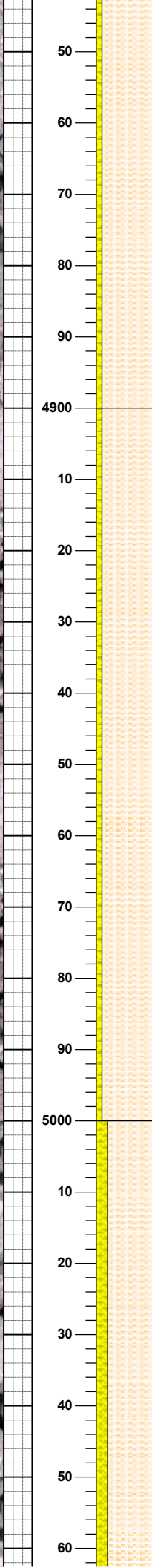
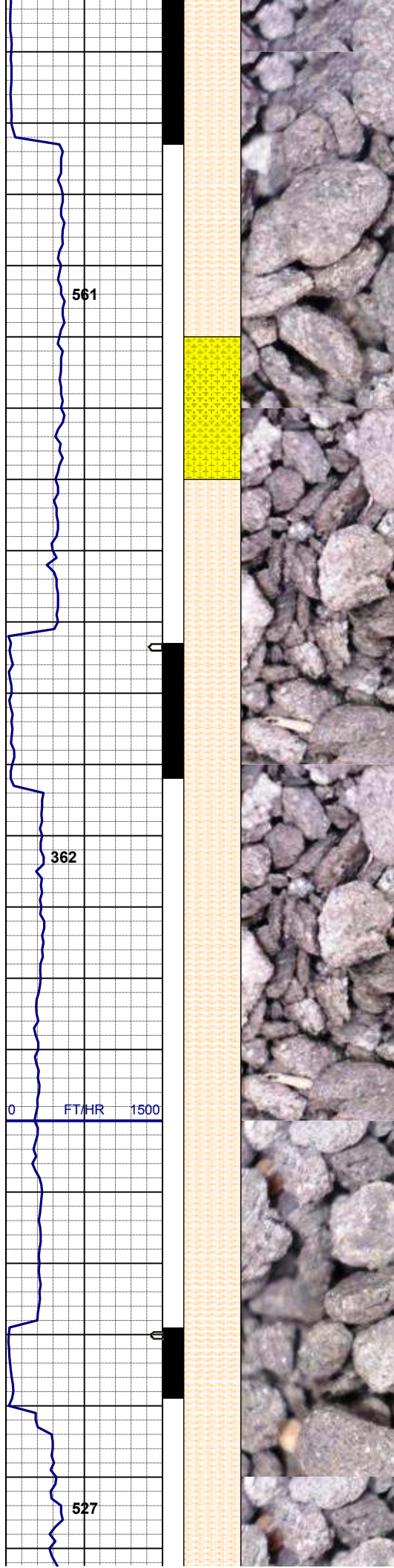
SHLY SLTST: m - m lt gy, s&p, sft-hd, bri-fri, vf gr, sbrd-sbang, subblky, p por, mod cmt, v arg, intbd w/ SHLY SS: ltgy-gy, clr, wh, fri, vfgr, sbrd-sbang, mod srt, p por, abnt arg cmt, abnt glau & carb incl, sme fos, sl calc

02/13/2012  
Mud Wt: 8.85  
FVis: 28  
PVis: 1  
YP: 4  
GELS: ns  
API Filt: ns  
CAKE: 1/0  
pH: 8.4  
Cl: 4,900  
Ca: 320

MUD WT 8.8+/8.9  
VIS 33/32 IN/OUT

MD 4780'  
TVD 4612.00'  
INC 19.13°  
AZM 181.36°

SHLY SLTST: m - m lt gy, s&p, sft-hd, bri-fri, vf gr, sbrd-sbang, subblky, p por, mod cmt, v arg, intbd w/ SHLY SS: ltgy-gy, clr, wh, fri, vfgr, sbrd-sbang, mod srt, p por, abnt arg cmt, abnt glau & carb incl, sme fos, sl calc



MD 4876'  
TVD 4702.82'  
INC 18.68°  
AZM 179.35°

SHLY SLTST: m - m lt gy, s&p, mhd,  
bri-fri, vf gr, sbrd-sbang, subblky, p  
por, mod cmt, v arg, intbd w/  
SHLY SS: ltgy-gy, clr, wh, fri, vfgr,  
sbrd-sbang, mod srt, p por, abnt arg  
cmt, occ glau, sme carb incl, sme fos,  
sl calc

37u  
C1: 96.0%  
C2: 1.0%  
C3: 3.0%  
C4: 0.0%

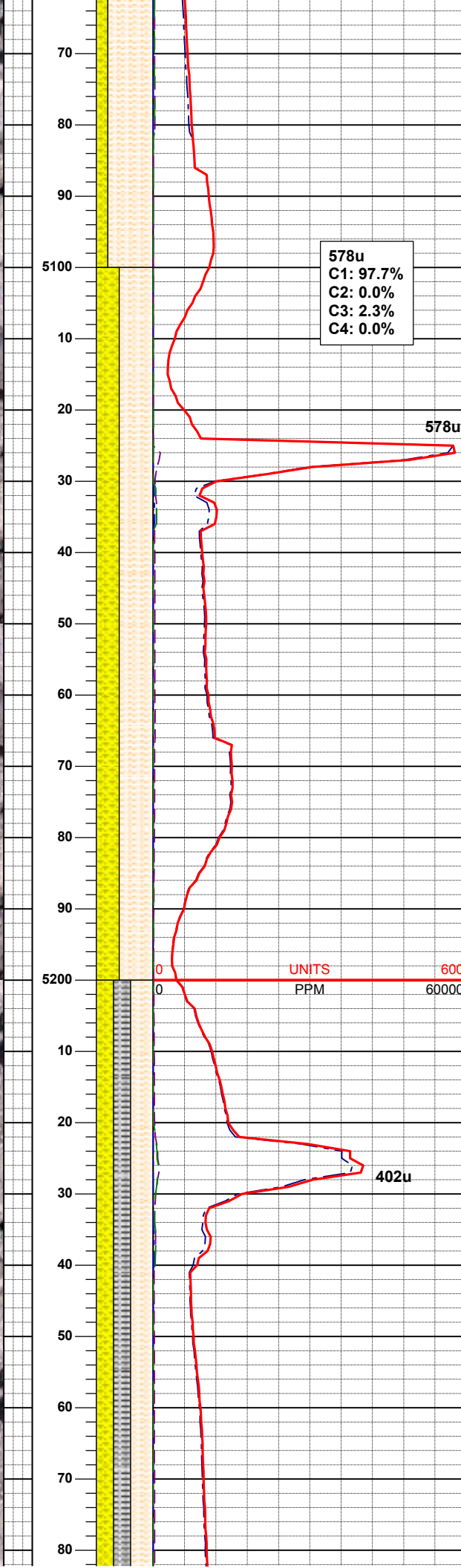
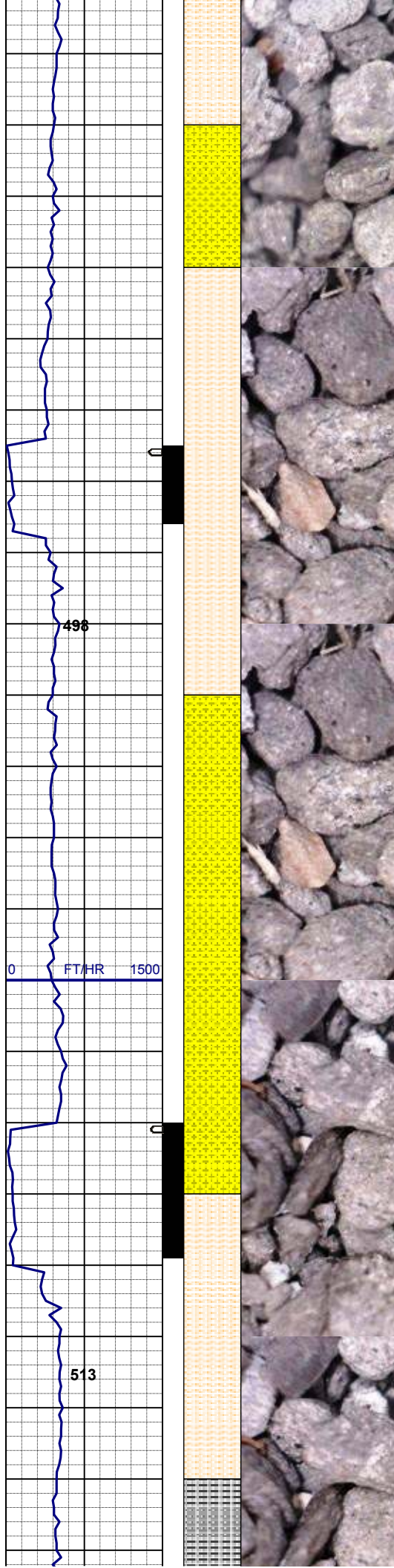
MD 4972'  
TVD 4793.97'  
INC 17.88°  
AZM 181.74°

SHLY SLTST: m - m lt gy, s&p, mhd,  
bri-fri, vf gr, sbrd-sbang, subblky, p  
por, mod cmt, v arg, intbd w/  
SHLY SS: ltgy-gy, clr, wh, fri, vfgr,  
sbrd-sbang, mod srt, p por, abnt arg  
cmt, occ glau, sme carb incl, sme fos,  
sl calc

UNITS  
PPM

MUD WT 8.8/8.8  
VIS 32/32 IN/OUT





MD 5068'  
TVD 4885.00'  
INC 16.98°  
AZM 180.41°

SHLY SLTST: m - m lt gy, s&p, mhd, bri-fri, vf gr, sbrd-sbang, subblky, p por, mod cmt, v arg, intbd w/ SHLY SS: ltgy-gy, clr, wh, fri, vfgr, sbrd-sbang, mod srt, p por, abnt arg cmt, occ glau, sme carb incl, sme fos, occ LS, sl calc

MUD WT 8.7/8.8  
VIS 32/32 IN/OUT

LOGGER TOP OF SHANNON (HYGIENE) SS  
MD 5,160' TVD 4,974'

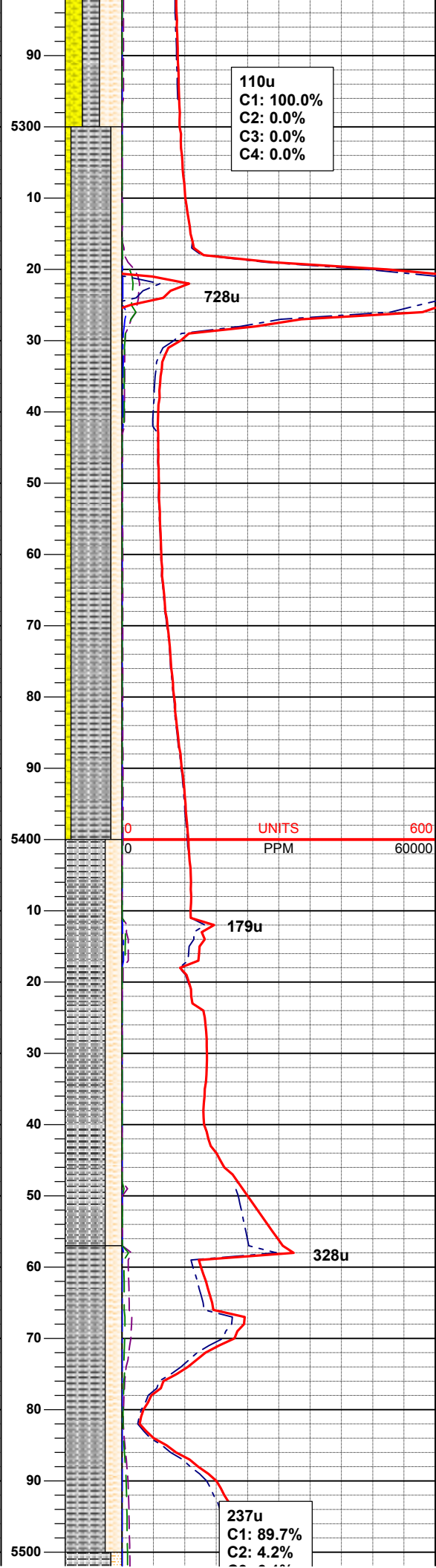
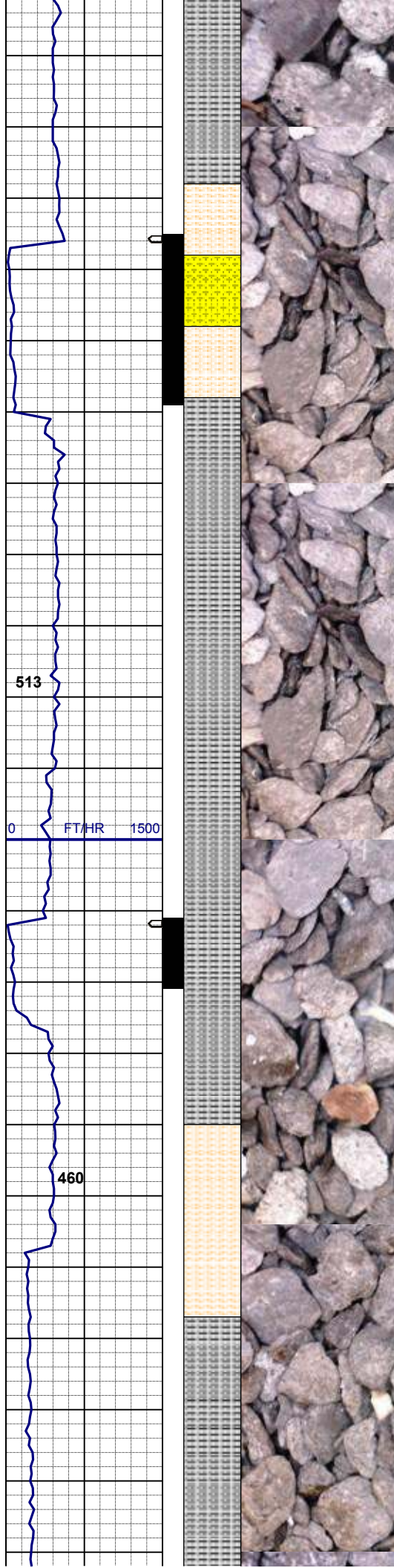
MD 5163'  
TVD 4976.79'  
INC 15.44°  
AZM 177.47°

SHLY SLTST: m - m lt gy, s&p, mhd, bri-fri, vf gr, sbrd-sbang, subblky, p por, mod cmt, v arg, intbd w/ SHLY SS: ltgy-gy, clr, wh, fri, vfgr, sbrd-sbang, mod srt, p por, abnt arg cmt, occ glau, sme carb incl, occ Inoc, occ LS, tr BENT: wh, plty w/ flor, sme calc

MUD WT 8.6/8.8  
VIS 32/32 IN/OUT

MD 5258'  
TVD 5068.54'  
INC 14.61°  
AZM 176.30°

SHLY SLTST: m - m lt gy, mhd, bri-fri, vf gr, subblky, mod cmt, v arg, intbd w/



SHLY SS: ltgy-gy, clr, wh, fri, vfgr, sbrd-sbang, mod srt, p por, sme arg cmt, occ glau & carb incl  
SLTY SH: ltgy-mgy, firm, sbplty-pty, slty tex, sl calc, tr pyr, vtr BENT: wh, pty w/ flor, sme calc

**MUD WT 8.7/8.7  
VIS 32/32 IN/OUT**

SLTY SH: ltgy-mgy, firm, sbplty-pty, slty tex  
SHLY SLTST: m - m lt gy, mhd, bri-fri, vf gr, subblky, mod cmt, v arg, intbd w/  
SHLY SS: ltgy-gy, clr, wh, fri, vfgr, sbrd-sbang, mod srt, p por, sme arg cmt, occ glau & carb incl, sme carb, occ LS, vtr BENT: wh, pty w/ flor, sme calc

SLTY SH: ltgy-mgy, firm, sbplty-pty, slty tex  
SHLY SLTST: m - m lt gy, mhd, bri-fri, vf gr, subblky, mod cmt, v arg, sme LS, tr carb, tr lnoc, vtr BENT: wh, pty w/ flor, sme calc

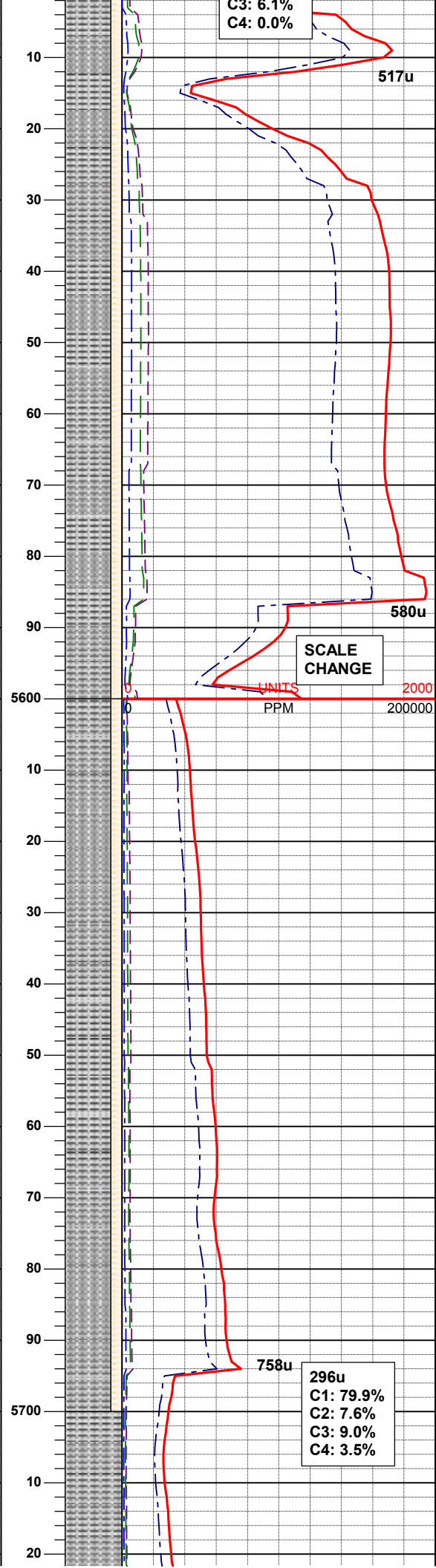
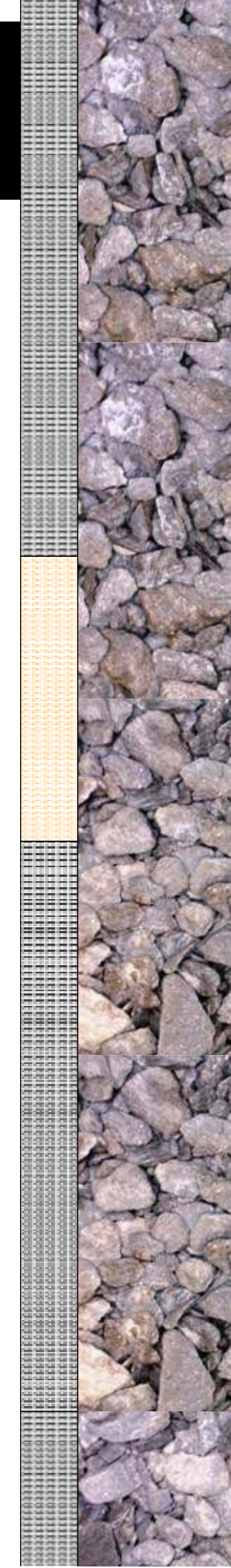
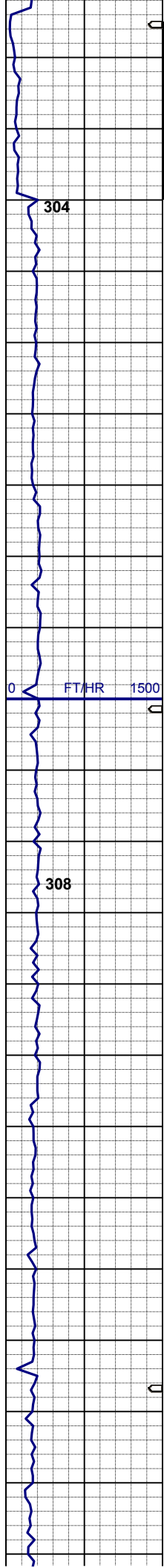
**MD 5450'  
TVD 5254.83'  
INC 12.76°  
AZM 177.75°**

**HAD TROUBLE  
GETTING ENOUGH  
YIELD FROM THE MOTOR**

**TOOH FOR DIRECTIONAL  
BHA ASSEMBLY @ 5,457'  
on 02/13/2012,  
600' SHALLOWER  
THAN INTENDED**

**02/13/2012  
Mud Wt: 9.00  
FVis: 33  
PVis: 6  
YP: 8  
GELS: 2/4/7  
API Filt: 12.0  
CAKE: 1/0**





CARE: 1/0  
pH: 8.4  
Cl: 4,900  
Ca: 320

CONTINUED DRILLING  
VERTICAL AT 20:00 hr  
ON 02/13/2012

MD 5545'  
TVD 5347.20'  
INC 13.23°  
AZM 181.35°

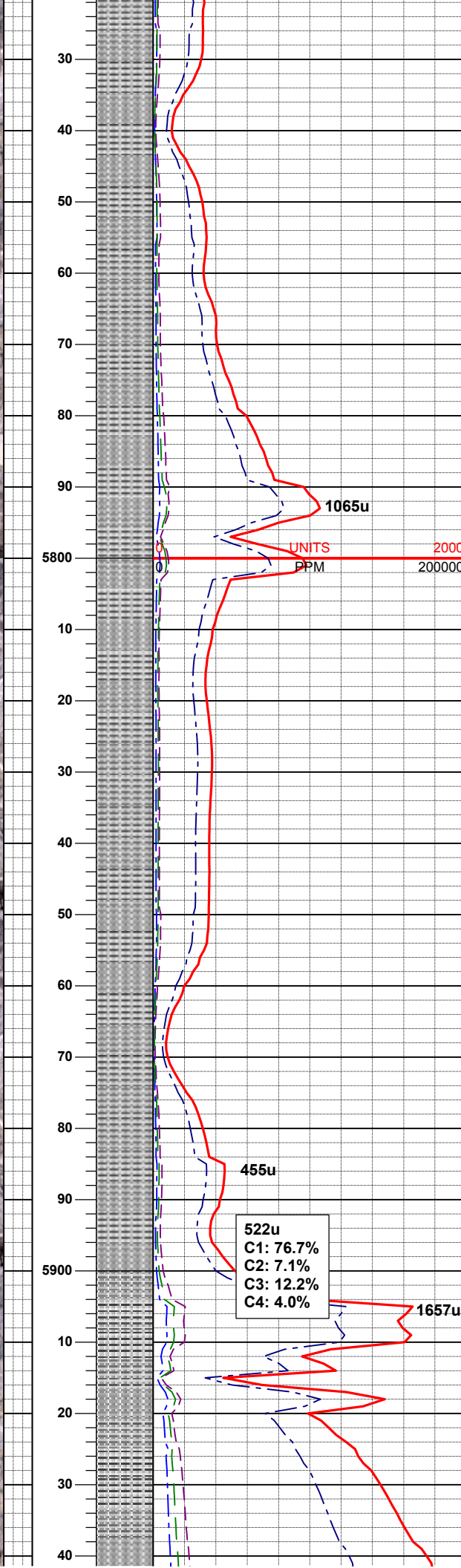
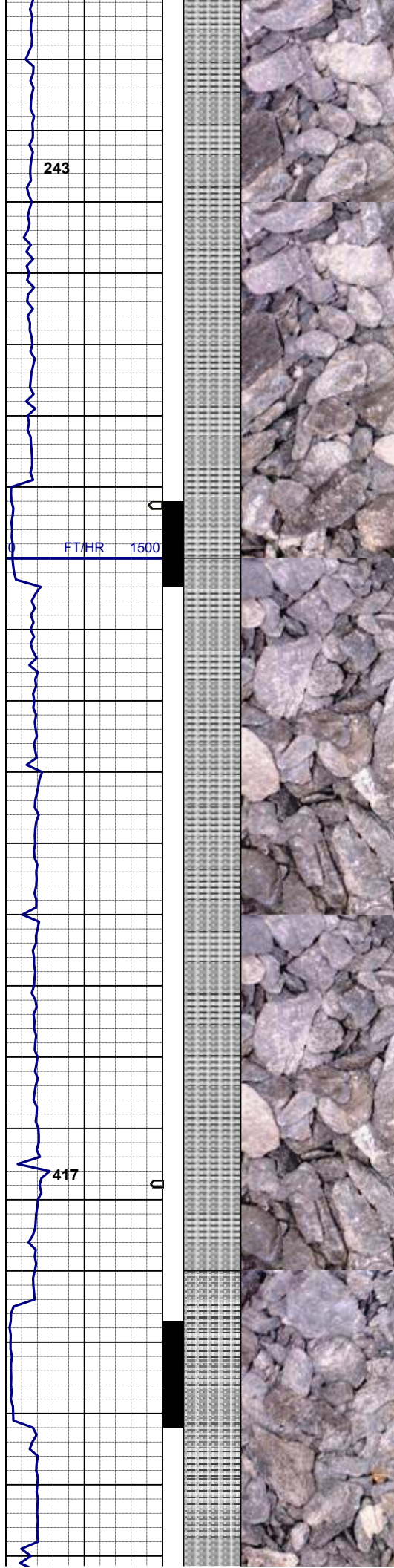
SLTY SH: ltgy-mgy, firm, sbplty-plty,  
silty tex  
SHLY SLTST: m - m lt gy, mhd, brit-  
fri, vf gr, subblky, mod cmt, v arg, tr  
carb, tr Inoc

MUD WT 9.1/9.1  
VIS 37/33 IN/OUT

MD 5641'  
TVD 5441.15'  
INC 10.46°  
AZM 178.49°

SLTY SH: ltgy-mgy, firm, sbplty-plty,  
silty tex  
SHLY SLTST: m - m lt gy, mhd, brit-  
fri, vf gr, subblky, mod cmt, v arg, tr  
carb, tr Inoc, tr LS

MUD WT 9.1/9.1  
VIS 37/36 IN/OUT



MD 5737'  
TVD 5535.79'  
INC 8.80°  
AZM 176.62°

SLTY SH: ltgy-mgy, firm, sbplty-plty,  
slyt tex, tr LS, tr bent

MD 5832'  
TVD 5629.70'  
INC 8.58°  
AZM 183.64°

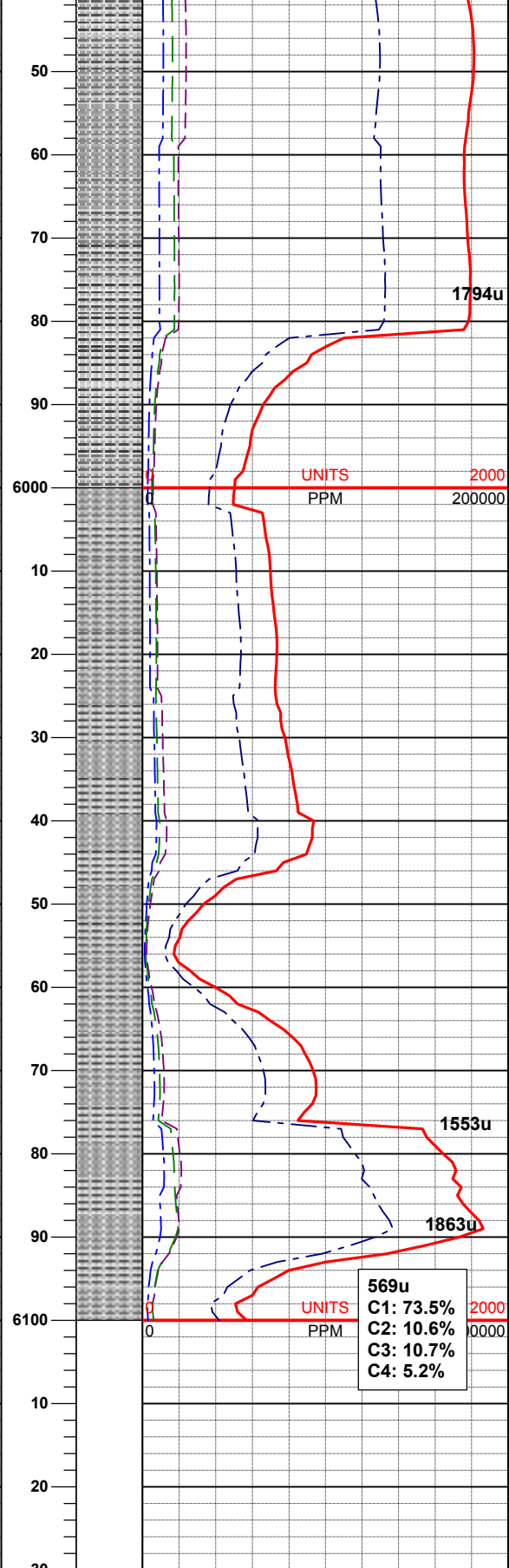
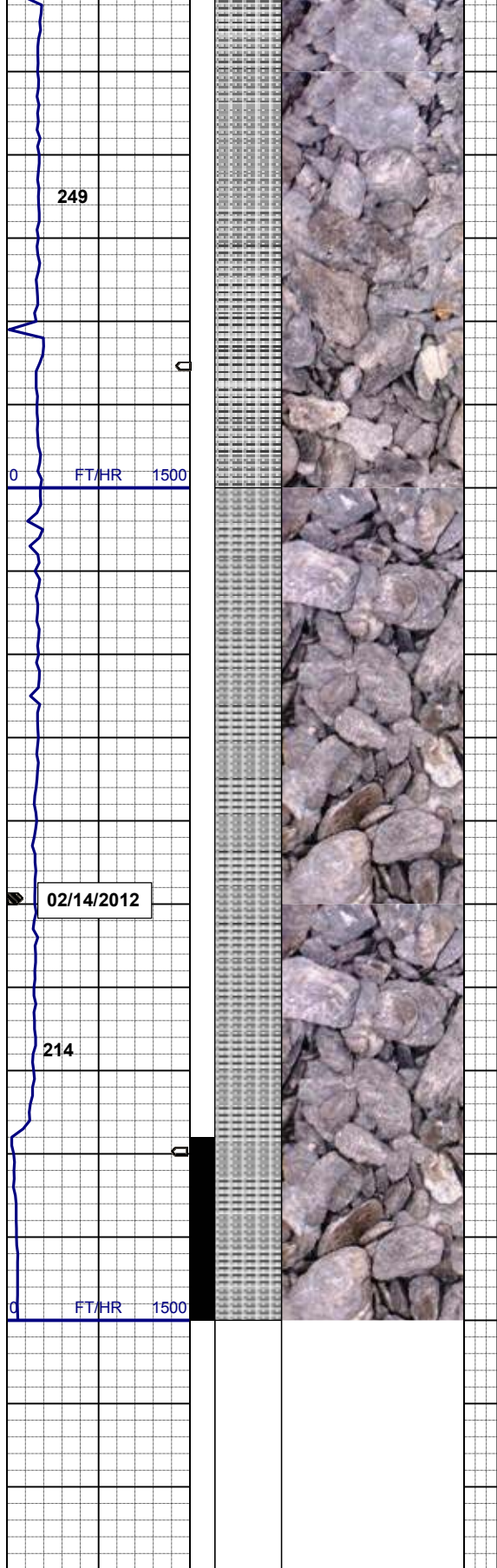
SLTY SH: ltgy-mgy, firm, sbplty-plty,  
slyt tex, tr LS, tr bent, tr pyr, tr fos frag

MUD WT 9.1/9.1  
VIS 37/37 IN/OUT

LOGGER TOP OF  
TEPEE BUTTES  
MD 5,905' TVD 5,702'

MD 5928'  
TVD 5724.99'  
INC 5.27°  
AZM 178.96°





SLTY SH: ltgy-mgy, firm, sbplty-plty,  
sly tex, tr LS, tr bent, tr pyr, tr fos frag

MUD WT 9.1/9.1+  
VIS 37/37 IN/OUT

MD 6023'  
TVD 5819.69'  
INC 3.74°  
AZM 177.93°

SLTY SH: ltgy-mgy, firm, sbplty-plty,  
sly tex, tr LS, tr pyr, tr fos frag

02/14/2012  
Mud Wt: 9.70  
FVis: 37  
PVis: 7  
YP: 9  
GELS: 3/8/15  
API Filt: 10.0  
CAKE: 1/0  
pH: 8.4  
Cl: 4,600  
Ca: 200

LOG CONTINUES ON  
HORIZONTAL L PLOT LOG  
WAHLERT AC33-66HN  
HORIZONTAL

Thank You for Using  
Columbine Logging Inc.