

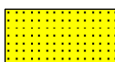
LOG created using LPLOT VH Version 3.0, June 04, 2012, Copyright (C) 1999-2009 Pason Systems Corp.

OPERATOR: NOBLE ENERGY INC
WELL: EIFERT PC E11-65HN
LOCATION: SEC 11, T6N, R65W
COUNTY: WELD
STATE: COLORADO
SPOT: 1896' FSL, 417' FEL
ELEVATION: GL 4749', KB 4762'
FIELD: WATTENBERG
SPUD DATE: MAY 26, 2012
TD DATE: JUNE 3, 2012
DATES LOGGED: MAY 27 - MAY 28, 2012
DEPTHS LOGGED: 696 - 6300' MD
LOGGERS: BRITTANY GUZZO, RYAN SHILLING
DRILLING FLUID: FW, LSND
DRILLING RIG: ENSIGN 121
API: 05-123-34526
LOG TYPE: VERTICAL
SCALE: 1:240 (5 inches per 100 feet)
REMARKS: LAT, LONG: 40.49874, -104.62233

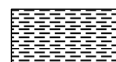
LITHOLOGIES



No Sample



Sandstone



Shale



Shaly Sandstone



Shaly Siltstone



Silty Shale

ENGINEERING SYMBOLS



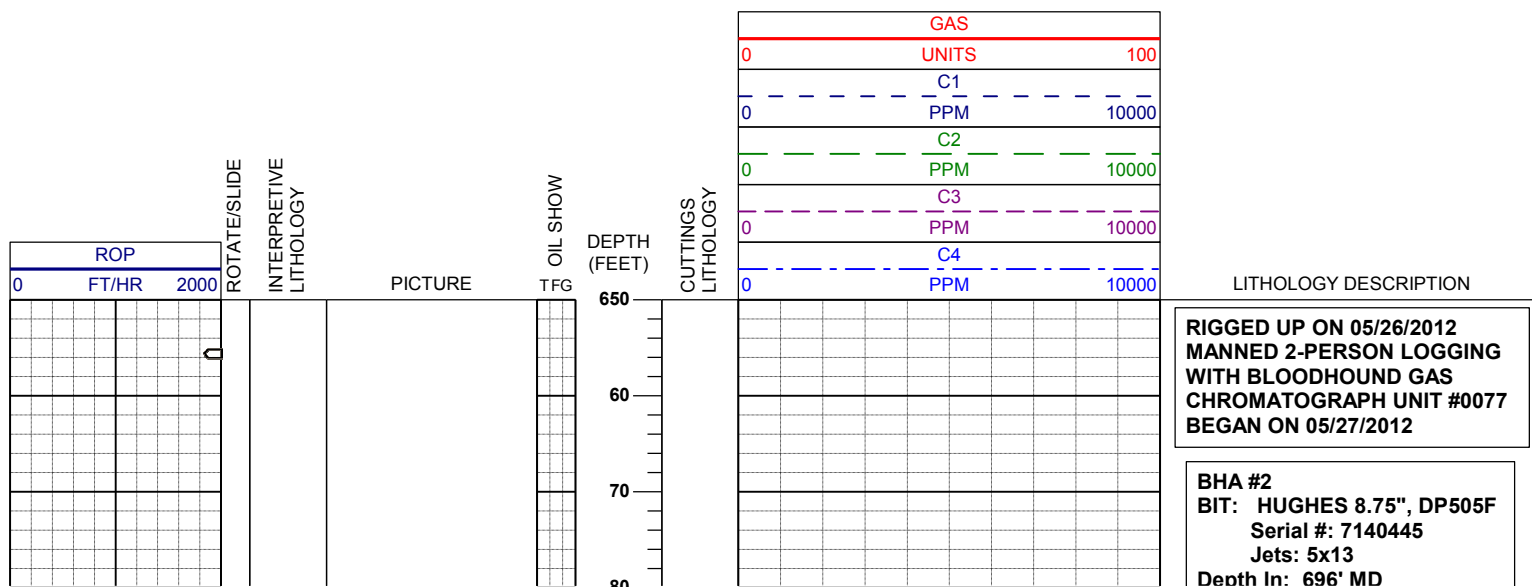
Connection

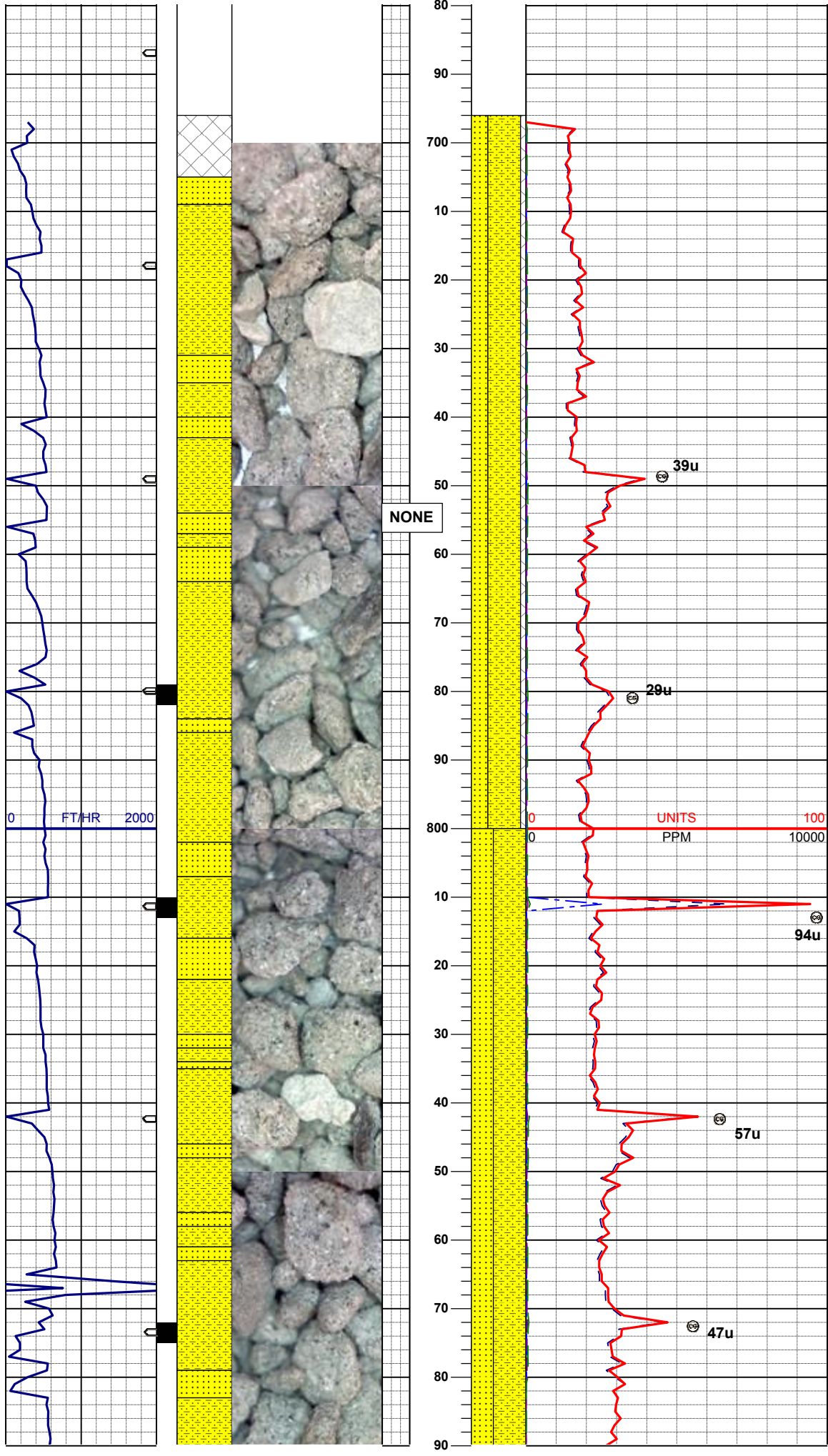


Connection Gas



Midnight Depth





SAMPLE INTERVAL 100'

SURVEY
MD 729'
TVD 729.00'
INC 1.3°
AZI 13.9°

60% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, mod-psrt, sft, ppor, argcmt, slcalc, grd to
30% SS: wh-ltgy, s&p, f-vfgr, sbrd, mod-wsrt, ppor, argcmt, calc, phlog, glau,
10% CMT: , trslytsh

39u

29u

UNITS
PPM

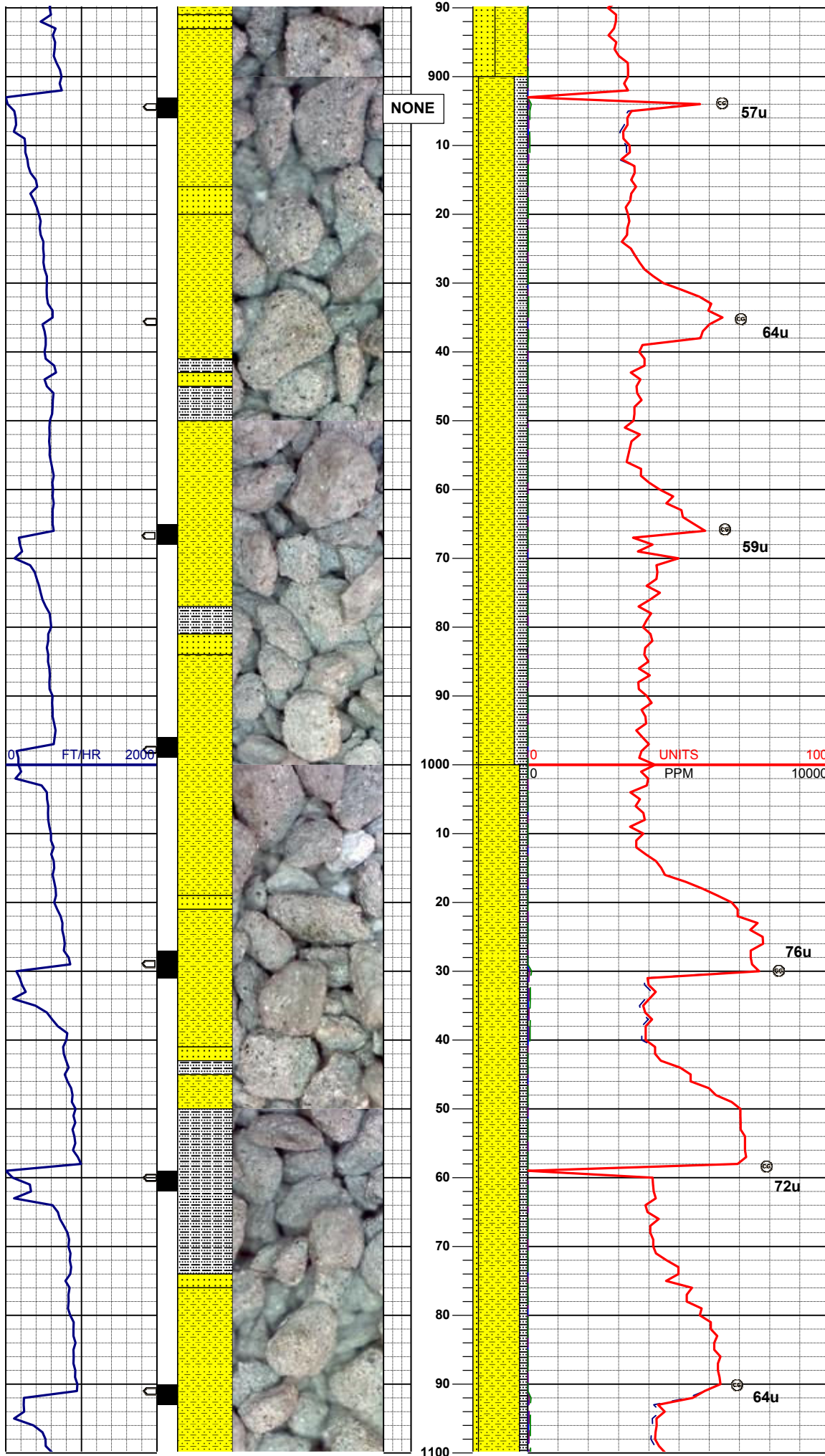
94u

SURVEY
MD 822'
TVD 821.89'
INC 4.0°
AZI 10.7°

60% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, mod-psrt, sft, ppor, argcmt, slcalc, grd to
40% SS: wh-ltgy, s&p, f-vfgr, sbrd, mod-wsrt, ppor, argcmt, calc ; phlog, glau, scat sltysh, trcmt

57u

47u



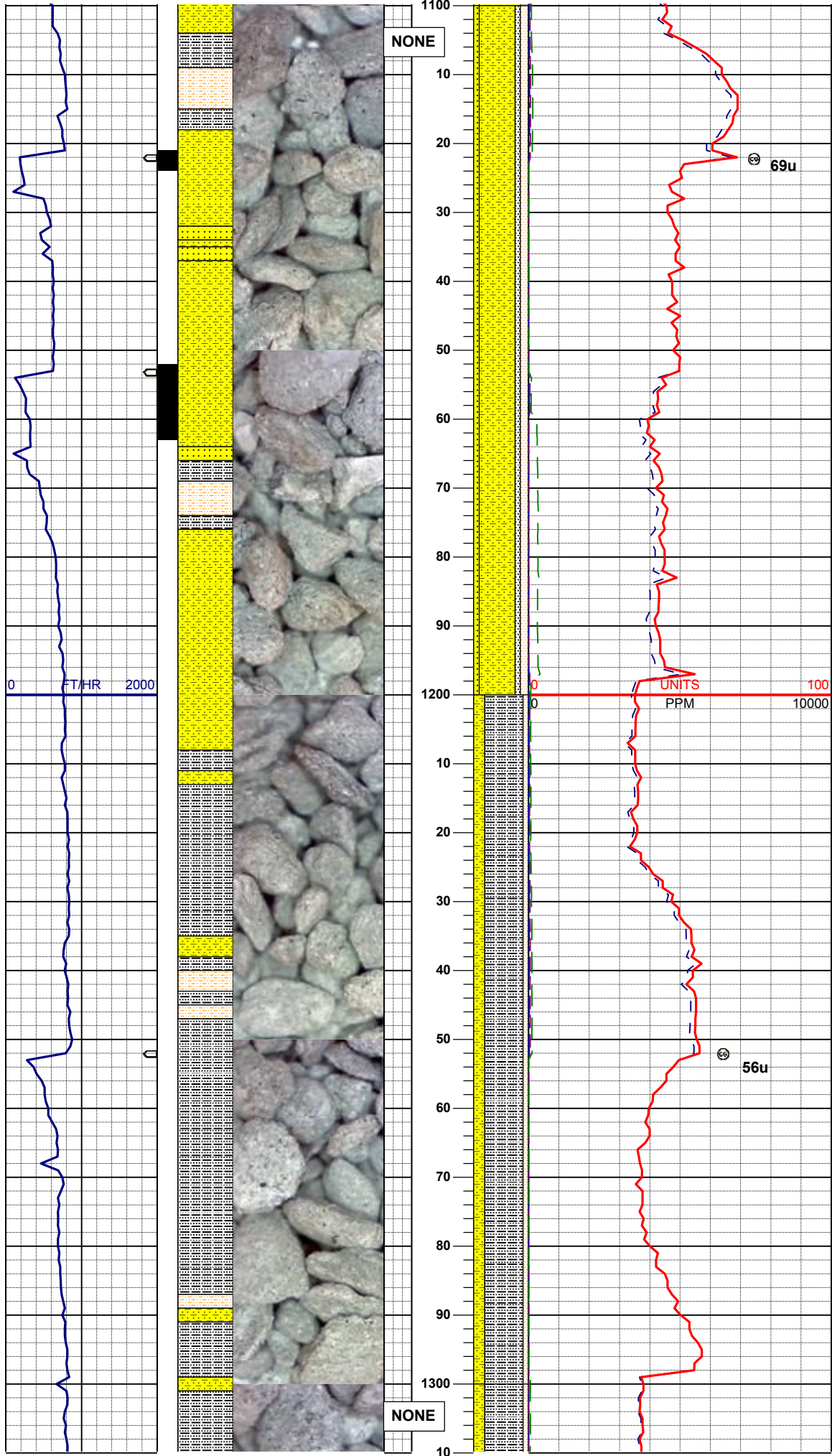
SURVEY
MD 915'
TVD 914.51'
INC 6.2°
AZI 9.9°

65% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, mod-psrt, sft, ppor, argcmt, slcalc, grd to
25% SLTYSH: mgy, sft-sl firm, sbblky, fgr-slsdy, noncalc, trphloglam,
10% SS: wh-ltgy, s&p, f-vfgr, sbrd, mod-wsrt, ppor, argcmt, calc ; phlog, glau

75% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, mod-psrt, sft, ppor, argcmt, slcalc, grd to
15% SLTYSH: mgy, sft-sl firm, sbblky, fgr-slsdy, noncalc, trphloglam,
10% SS: wh-ltgy, s&p, f-vfgr, sbrd, mod-wsrt, ppor, argcmt, calc ; phlog, glau

MUD WT: 8.4+ VIS: 28 IN
MUD WT: 8.6 VIS: 28 OUT

SURVEY
MD 1102'
TVD 1099.60'
INC 10.5°
AZI 20.6°



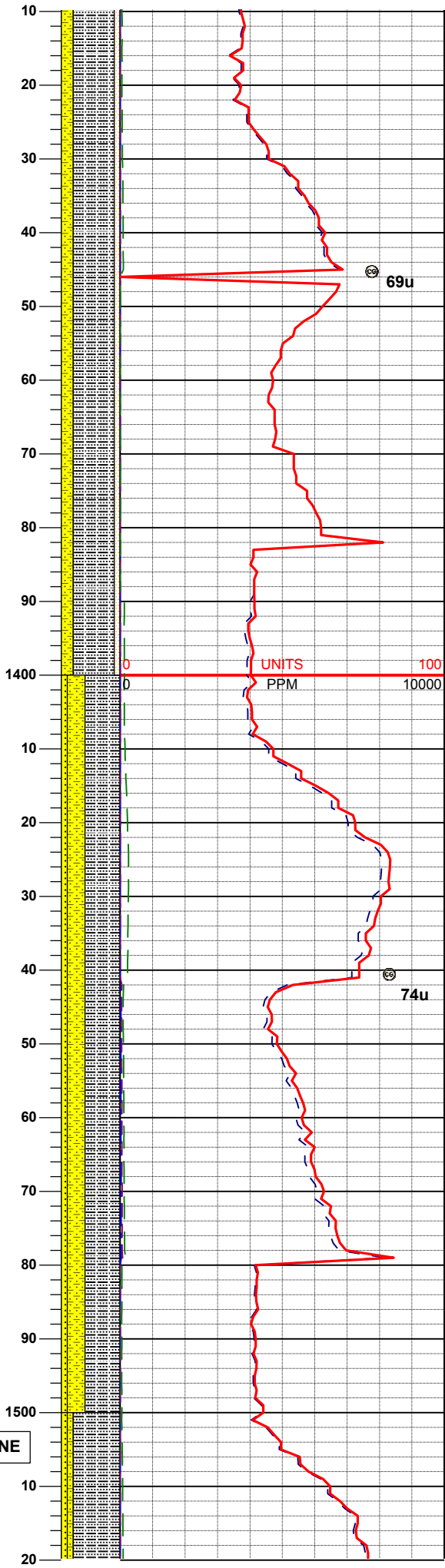
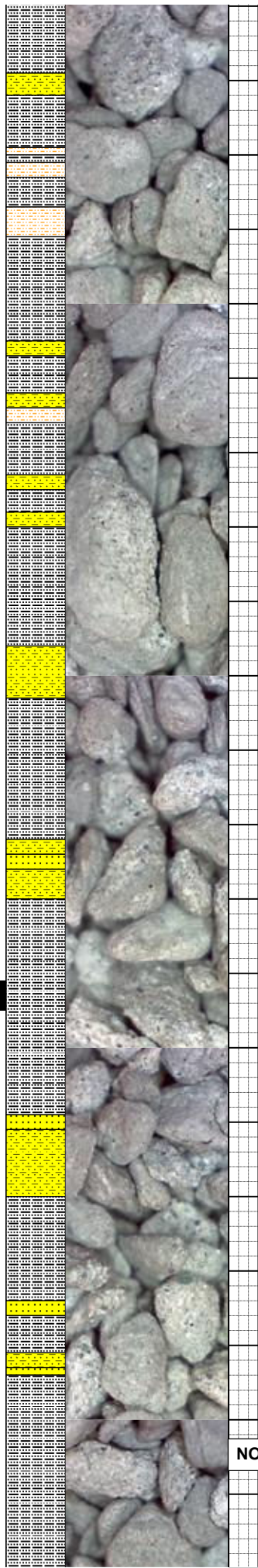
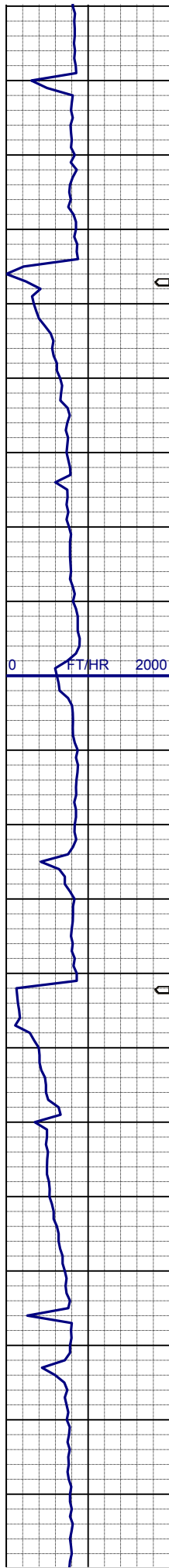
MUD REPORT
1152' MD
Wt - 8.50
Vis - 28
pH - 11.0
YP - N/A
API fit - 20
Ck - 1/0
Chld - 800

65% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, mod-psrt, sft, ppor, argcmt, slcalc,
15% SHYSLTST: ltgy, vsft, sbrd-sbplty, noncalc, grd to
10% SLTYSH: mgy, sft-sl firm, sbblky, fgr-slsdy, noncalc, trphloglam,
10% SS: wh-ltgy, s&p, f-vfgr, sbrd, mod-wsrt, ppor, argcmt, calc ; phlog, glau

SURVEY
MD 1201'
TVD 1196.46'
INC 13.4°
AZI 31.8°

70% SLTYSH: m-mdkgy, sl firm, sbblky-sbplty, fgr-slsdy, occintbdss, noncalc, grd to
20% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, psrt, sft-sl firm, ppor, argcmt, slcalc,
10% SHYSLTST: ltgy, vsft, sbrd-sbplty, noncalc ; phlog, glau, occss

SURVEY
MD 1296'
TVD 1288.87'
INC 13.4°
AZI 31.3°



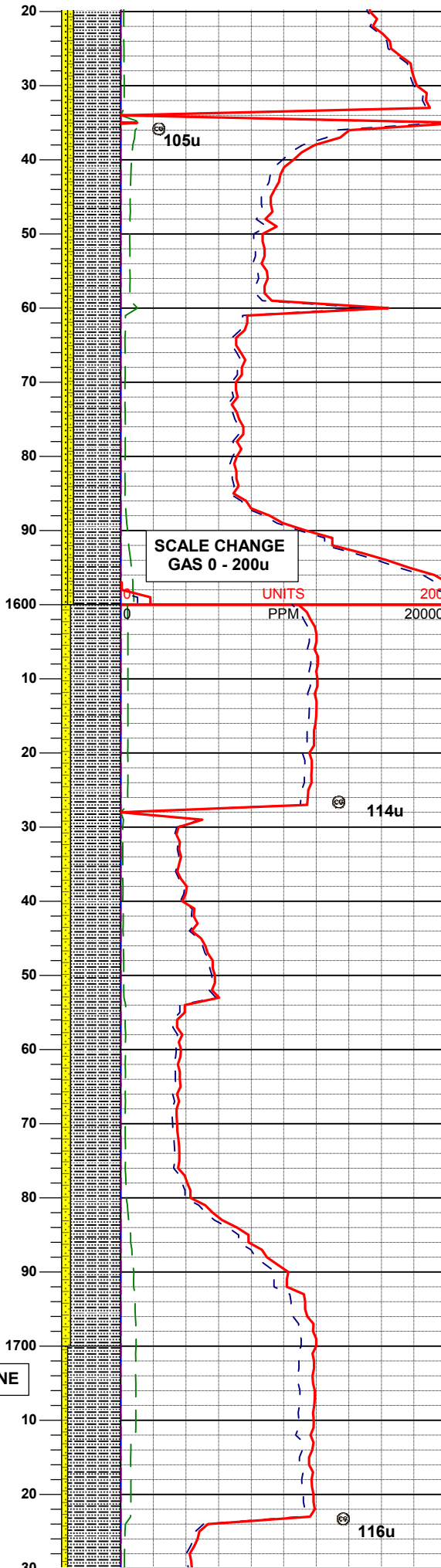
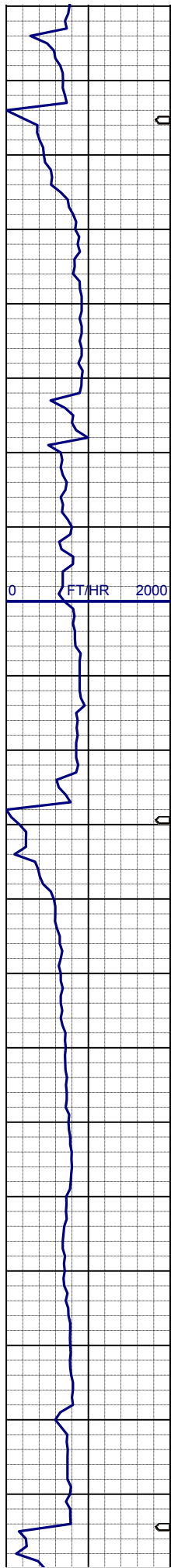
70% SLTYSH: m-mdkgy, sl firm, sbblky-sbply, fgr-slsdy, noncalc, grdg to
20% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, psrt, sft-sl firm, ppor, argcm, slcalc,
10% SHYSLTST: ltgy, vsft, sbrd-sbply, noncalc ; phlog, glau, scatss

SURVEY
MD 1391'
TVD 1381.38'
INC 12.9°
AZI 33.4°

60% SLTYSH: m-mdkgy, sl firm, sbblky-sbply, fgr-sltly w/occintbdss, noncalc, grdg to
30% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, psrt, sft-sl firm, ppor, argcm, slcalc,
10% SS: wh-ltgy, s&p, f-mfgr, sbrd, mod-wsrt, firm -hd, brit, p-modpor, arg-calcmt, abnt mas glau ; phlog

SURVEY
MD 1484'
TVD 1472.06'
INC 12.8°
AZI 23.9°

NONE



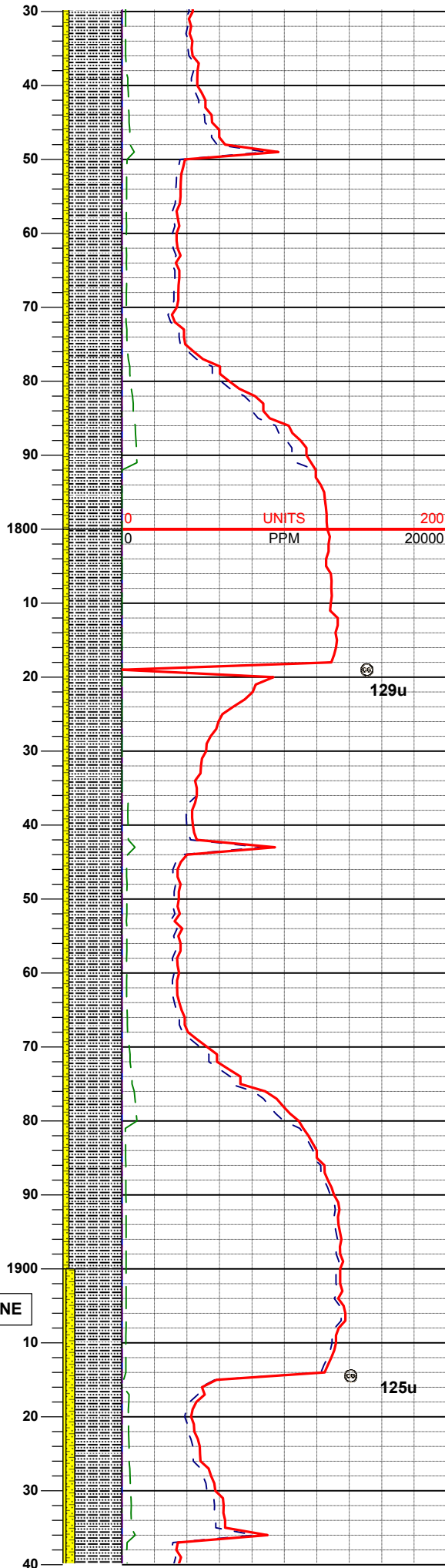
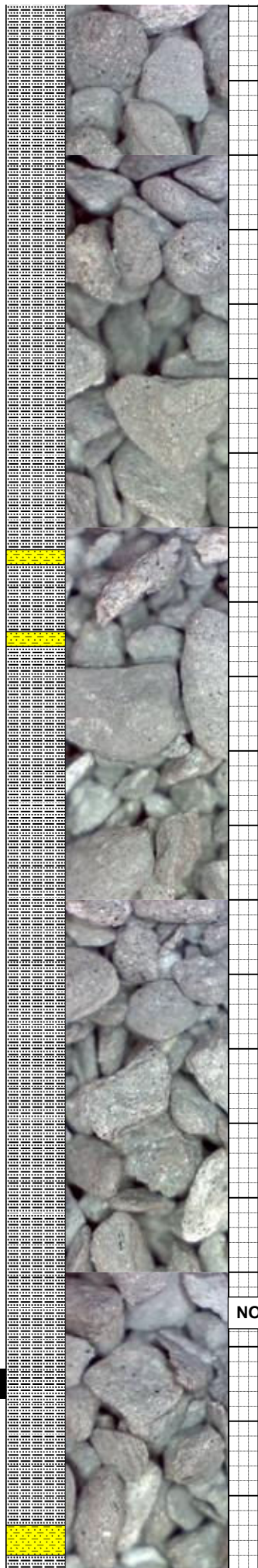
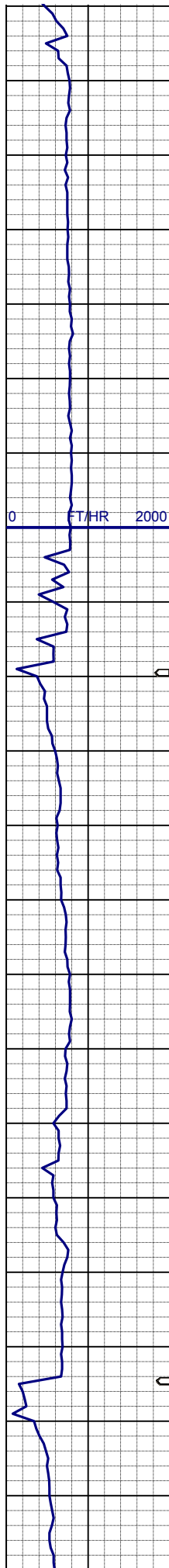
80% SLTYSH: m-mdkgy, sl firm, sbblky-sbply, fgr-slty w/occintbdss, noncalc, grdg to 10% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, sbply, p-modsrt, sft-sl firm, ppor, argcmt, slcalc, grdg to 10% SS: wh-ltgy, s&p, f-mfgr, sbrd, mod-wsrt, firm -hd, brit, p-modpor, arg-calcmt, abnt mas glau ; lamphlog

SURVEY
MD 1578'
TVD 1563.83'
INC 12.2°
AZI 24.1°

MUD WT: 8.5 VIS: 28 IN
MUD WT: 8.7 VIS: 35 OUT

85% SLTYSH: m-mdkgy, sl firm, sbblky-sbply, fgr-slsdy w/occintbdss, noncalc, grdg to 15% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, sbply, p-modsrt, sft-sl firm, ppor, argcmt, slcalc ; lamphlog, scatss

SURVEY
MD 1673'
TVD 1656.60'
INC 12.7°
AZI 28.5°



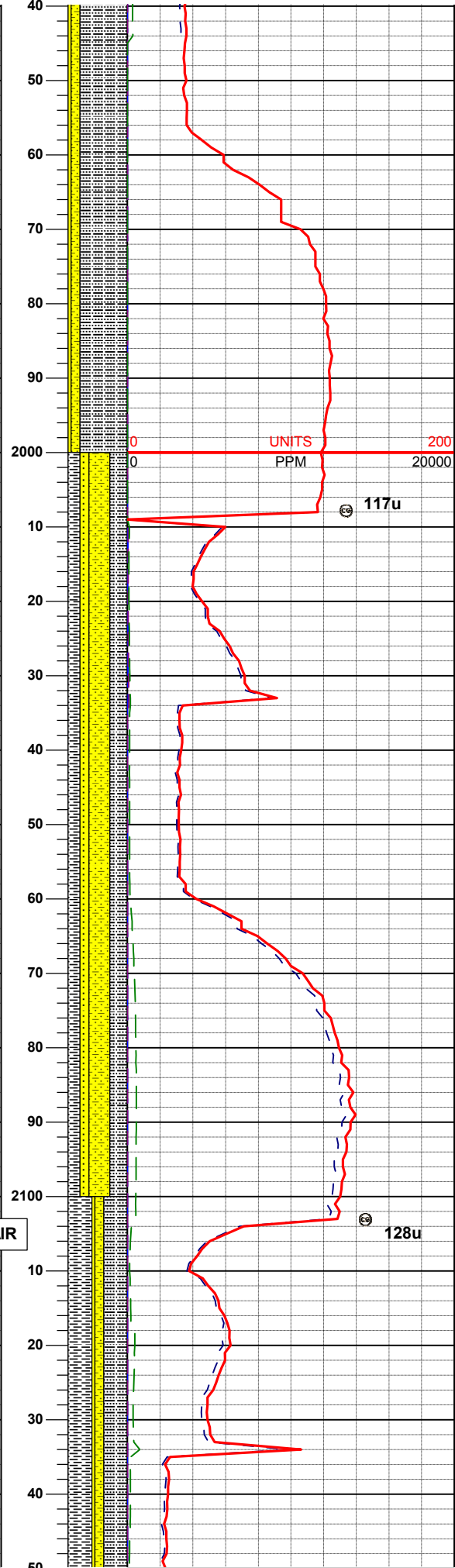
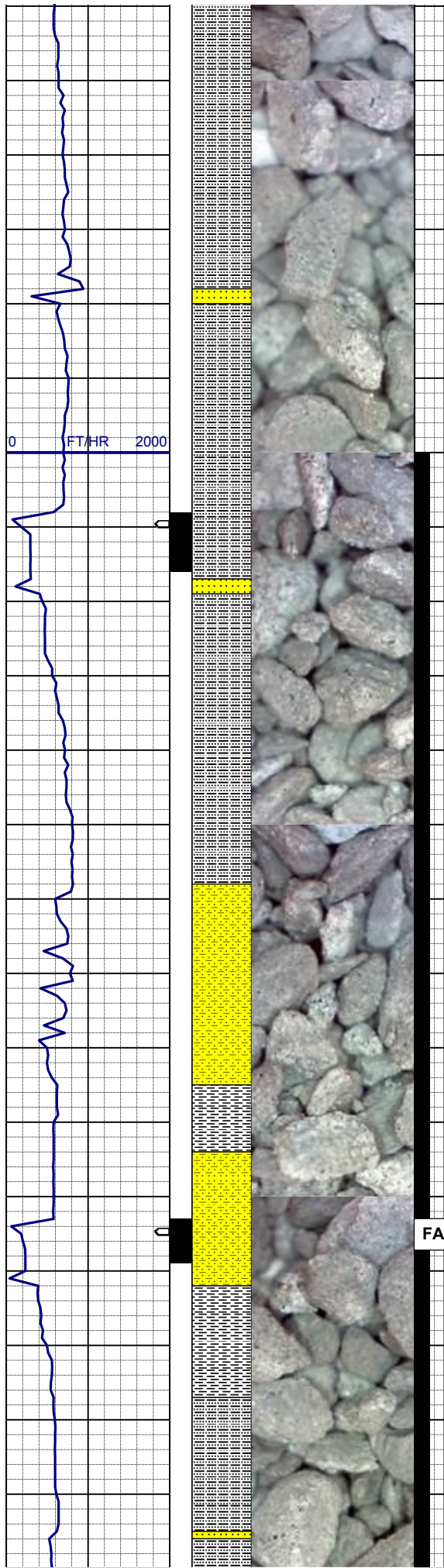
90% SLTYSH: ltm-mdkgy, sl firm, sbbky-sbply, fgr-slsdy w/occintbdss, noncalc, grdg to 10% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, sbply, p-modsrt, sft-sl firm, ppor, argcmt, slcalc ; lamphlog, occss, occ calcincl

SURVEY
MD 1768'
TVD 1749.15'
INC 13.4°
AZI 28.1°

90% SLTYSH: ltm-mdkgy, modsft-firm, sbbky-sbply, fgr-slsdy w/smeintbdss, noncalc, grdg to 10% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, sbply, p-modsrt, sl firm - modsft, ppor, argcmt, slcalc ; lamphlog

SURVEY
MD 1863'
TVD 1841.82'
INC 12.0°
AZI 22.9°

80% SI TYSH: ltm-mdkav modsft-



firm, sbblky-sbplty, fgr-slsdy
w/smeintbdss, noncalc, grdg to
15% SHYSS: lt-mgy, f-mfgr, sbdr-
sbang, sbplty, p-modsrt, sl firm -
modsft, ppor, argcmt, slcalc,
5% SS: wh-ltgy, s&p, f-mfgr, sbdr,
mod-wsrt, firm -hd, brit, arg&calccmt,
glau ; lamphlog

SURVEY
MD 1958'
TVD 1934.82'
INC 11.6°
AZI 25.3°

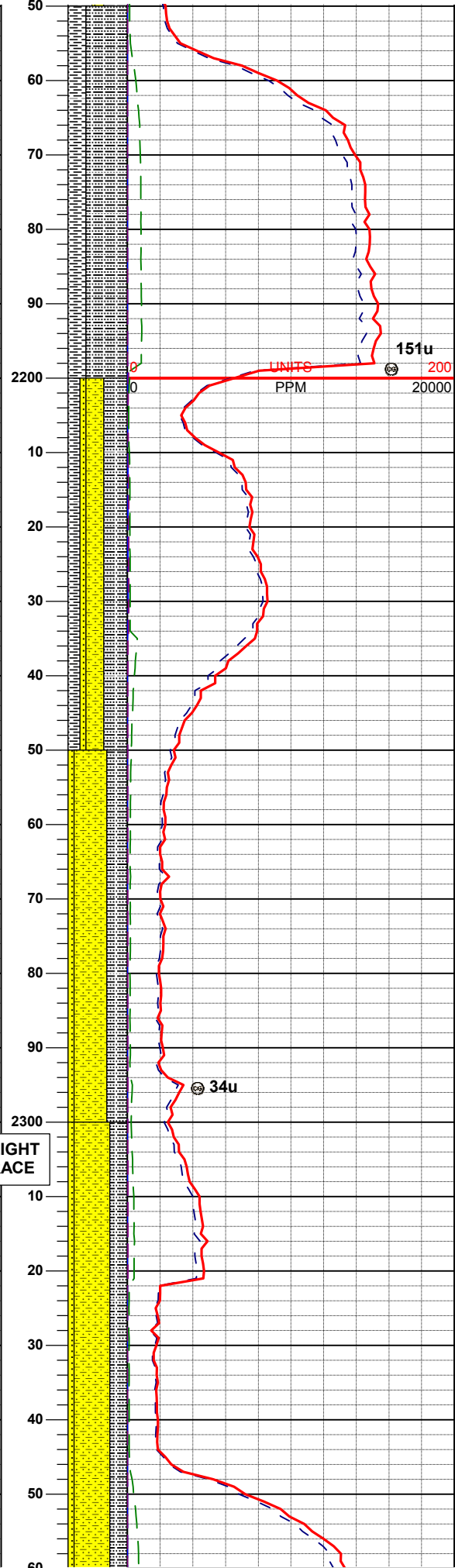
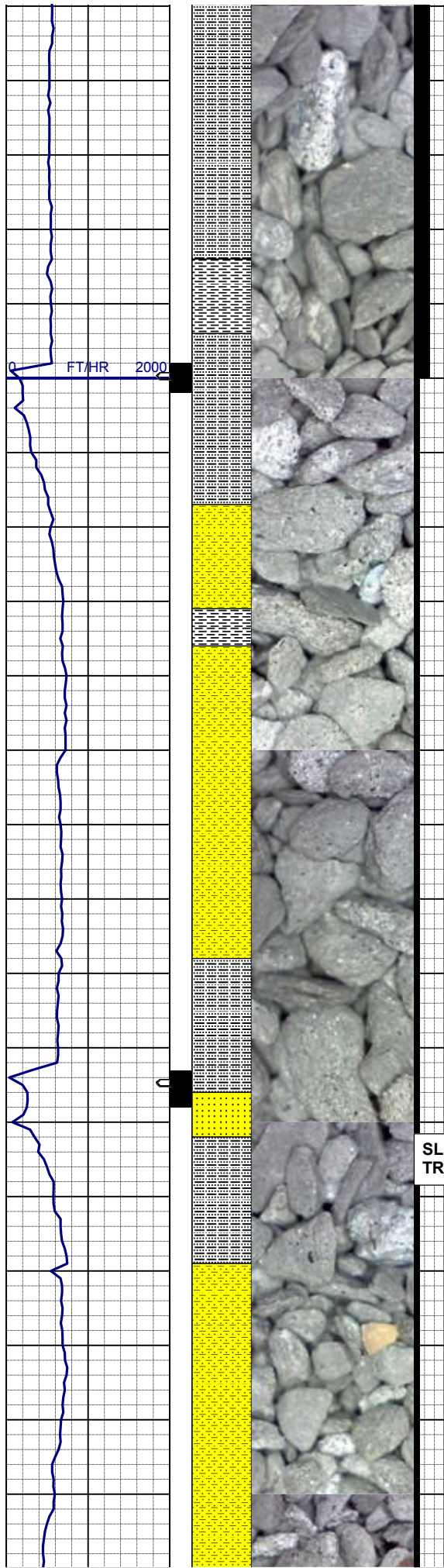
SURVEY
MD 2053'
TVD 2027.74'
INC 12.4°
AZI 26.4°

35% SHYSS: lt-mgy, f-mfgr, sbdr-
sbang, sbplty, p-modsrt, sl firm -
modsft, ppor, argcmt, slcalc, grdg to
30% SLTYSH: ltm-mgy, modsft-sl
firm, sbblky-sbplty, fgr-slsdy
w/smeintbdss, noncalc, grdg to
20% SH: mgy, firm, sbplty-sbblky, rthy
-slsly w/intbdss,
15% SS: wh-ltgy, s&p, f-mfgr, sbdr,
mod-wsrt, firm -hd, brit, arg&calccmt,
glau ; lamphlog

MUD WT: 8.5 VIS: 28 IN
MUD WT: 9.1+ VIS: 28 OUT

40% SLTYSH: ltm-mgy, modsft-sl
firm, sbblky-sbplty, fgr-slsdy
w/smeintbdss, noncalc, grdg to
40% SH: m-mdkgy, firm, sbplty-
sbblky, rthy-slsly w/intbdss, noncalc,
15% SHYSS: lt-mgy, f-mfgr, sbdr-
sbang, sbplty, p-modsrt, sl firm -
modsft, ppor, argcmt, slcalc, glau,
grdg to
5% SS: wh-ltgy, s&p, f-mfgr, sbdr,
mod-wsrt, firm -hd, brit, arg&calccmt,
glau ; lamphlog, sme calcincl

SURVEY
MD 2148'
TVD 2120.45'



INC 12.8°
AZI 26.9°

70% SLTYSH: ltm-mgy, modsft-sl
firm, sbblky-sbply, fgr-slsdy, noncalc,
grdg to
30% SH: m-mdkgy, firm, sbply-
sbblky, rthy-slsly, noncalc ; lamphlog,
trintbdss

PIERRE PROG TOP
2198' TVD/ 2207' MD

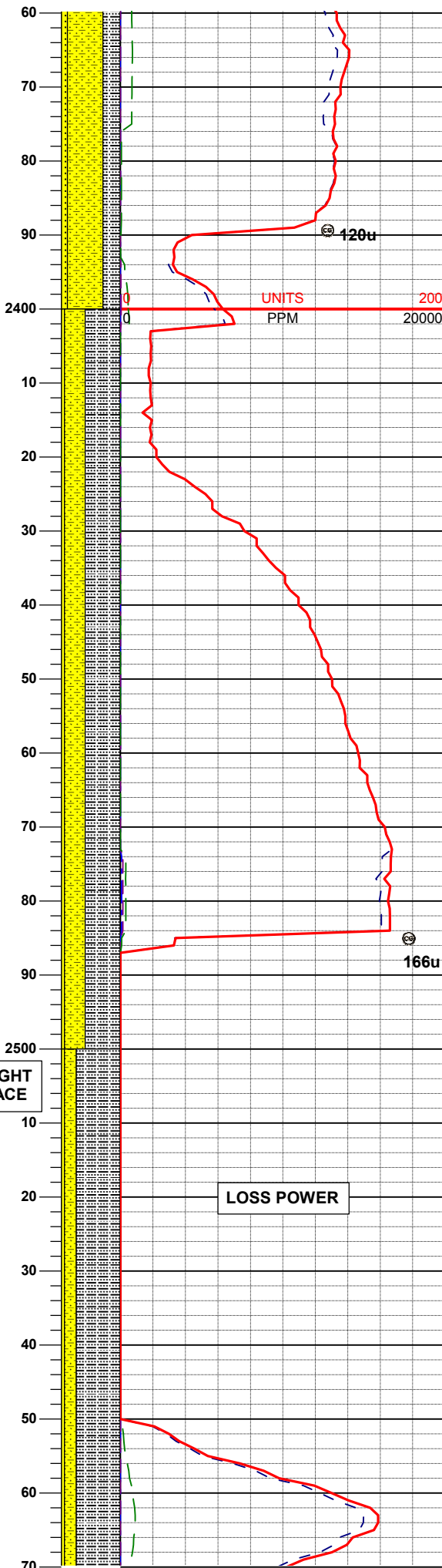
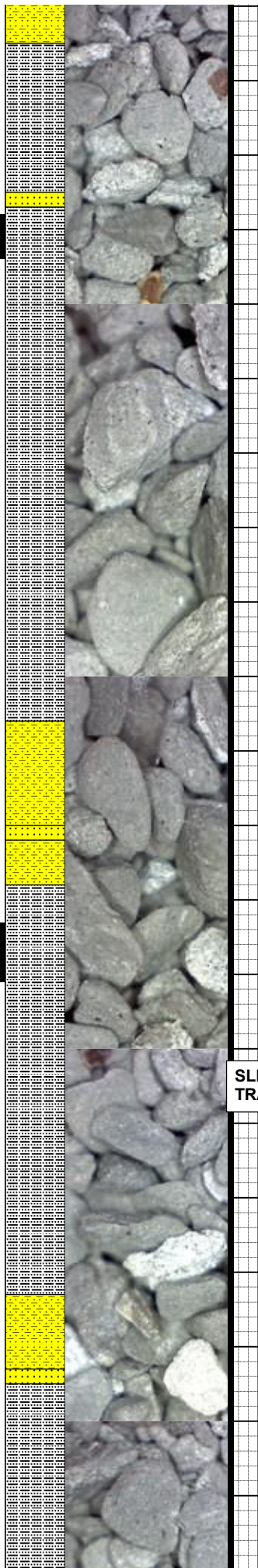
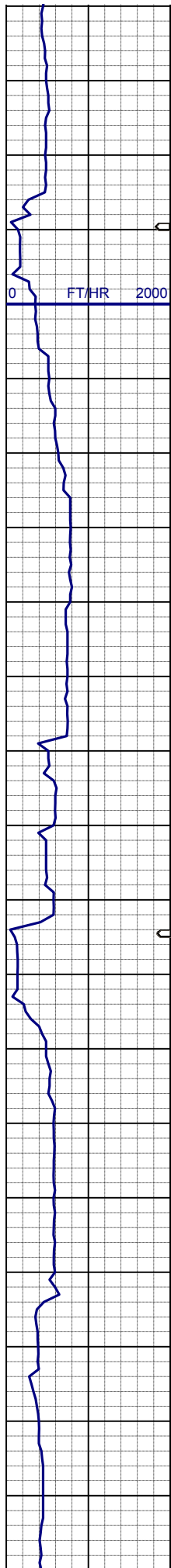
40% SLTYSH: ltm-mgy, modsft-sl
firm, sbblky-sbply, fgr-slsdy, noncalc,
grdg to
30% SHYSS: lt-mgy, f-mfgr, sbrd-
sbang, sbply, modsrt, sl firm -modsft,
ppor, argcmt, slcalc, glau, grdg to
20% SH: m-mdkgy, firm, sbply-
sbblky, rthy-slsly w/occintbdss,
noncalc,
10% SS: wh-ltgy, s&p, f-mfgr, sbrd,
mod-wsrt, firm -hd, brit, arg&calccmt,
glau ; lamphlog, sme calcincl

SURVEY
MD 2243'
TVD 2213.00'
INC 13.3°
AZI 23.6°

55% SHYSS: lt-mgy, f-mfgr, sbrd-
sbang, sbply, modsrt, sl firm -modsft,
ppor, argcmt, slcalc, glau, grdg to
35% SLTYSH: ltm-mgy, modsft-sl
firm, sbblky-sbply, fgr-slsdy, noncalc,
grdg to
10% SS: wh-ltgy, s&p, f-mfgr, sbrd,
mod-wsrt, firm -hd, brit, arg&calccmt,
glau ; lamphlog, sme calcincl, smesh

SURVEY
MD 2338'
TVD 2305.56'
INC 12.7°
AZI 25.5°

60% SHYSS: lt-mgy, f-mfgr, sbrd-
sbang, sbply, modsrt, sl firm -modsft,
ppor, argcmt, slcalc, glau, grdg to
30% SLTYSH: ltm-mgy, modsft-sl
firm, sbblky-sbply, fgr-slsdy, noncalc,
grdg to
10% SS: wh-ltgy, s&p, f-mfgr, sbrd,
mod-wsrt, firm -hd, brit, arg&calccmt,
glau ; lamphlog, sme calcincl, smesh



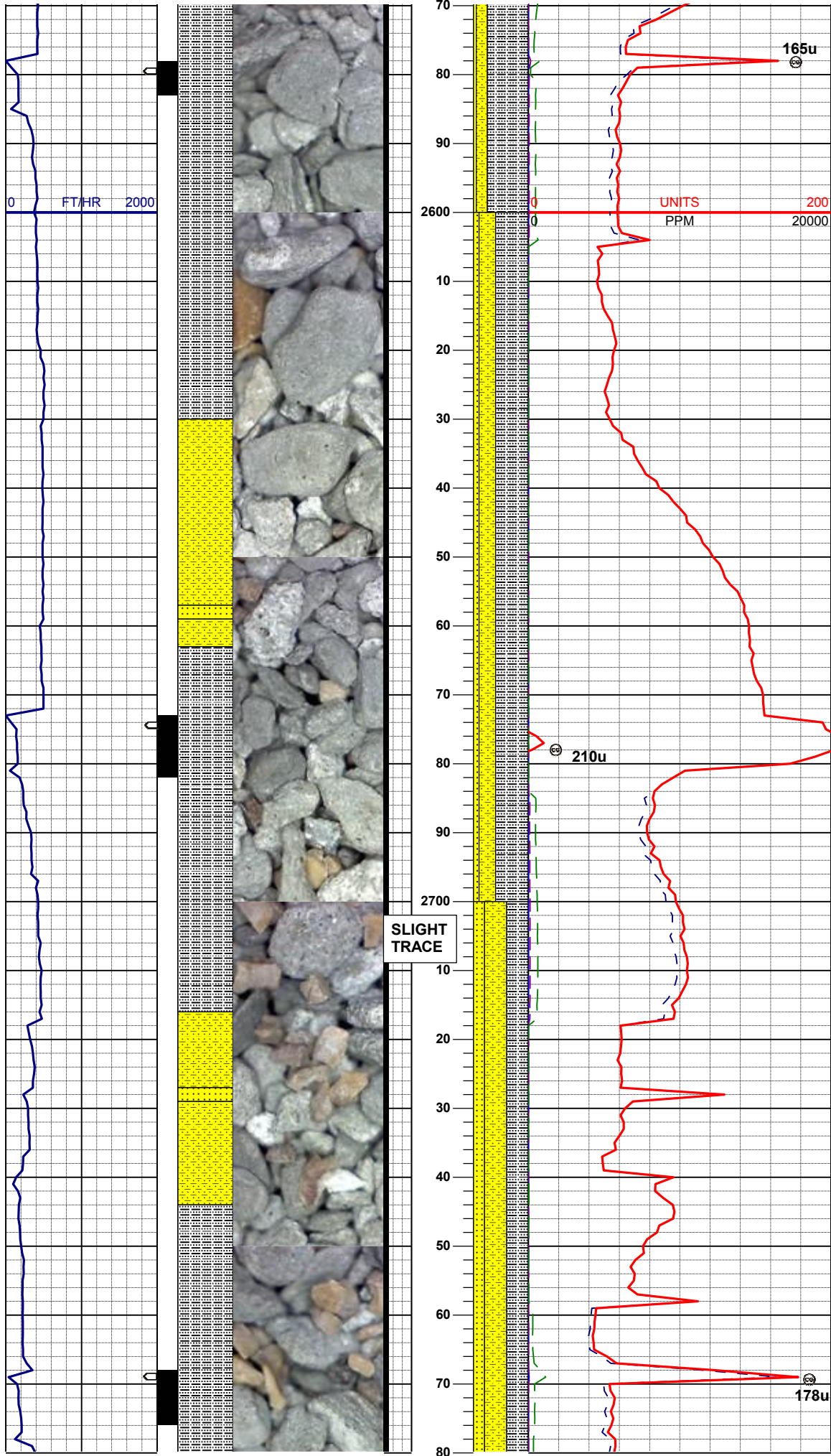
glau ; lamphlog, sme calcmt, smest

SURVEY
MD 2433'
TVD 2398.47'
INC 11.4°
AZI 31.7°

60% SLTYSH: ltm-mdkgy, modsft-firm, sbblky-sbply, fgr-slidy w/smeintbdss, noncalc, grdg to 35% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, sbply, p-modsrt, sl firm - modsft, ppor, argcmt, slcalc, 5% SS: wh-ltgy, s&p, f-mfgr, sbrd, mod-wsrt, firm -hd, brit, arg&calcmt, glau ; lamphlog

SURVEY
MD 2528'
TVD 2491.50'
INC 12.0°
AZI 31.3°

75% SLTYSH: ltm-mdkgy, modsft-firm, sbblky-sbply, fgr-slidy w/smeintbdss, noncalc, grdg to 20% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, sbply, p-modsrt, sl firm - modsft, ppor, argcmt, slcalc, 5% SS: wh-ltgy, s&p, f-mfgr, sbrd, mod-wsrt, firm -hd, brit, arg&calcmt, glau ; lamphlog

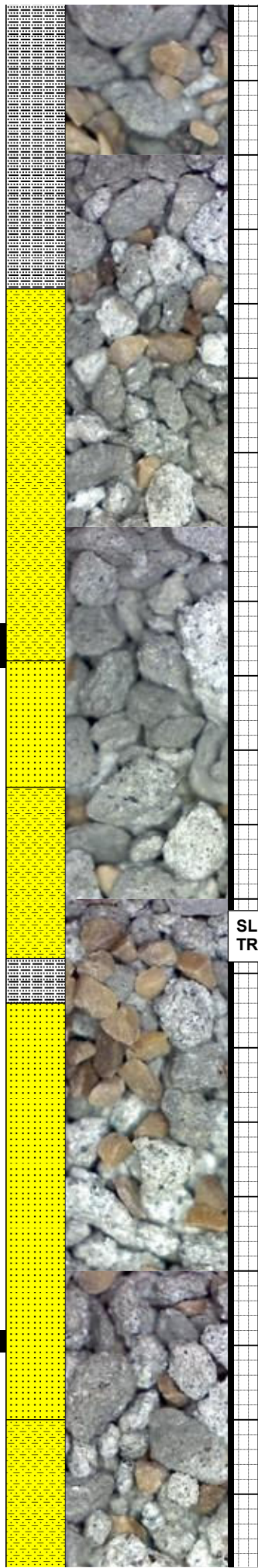
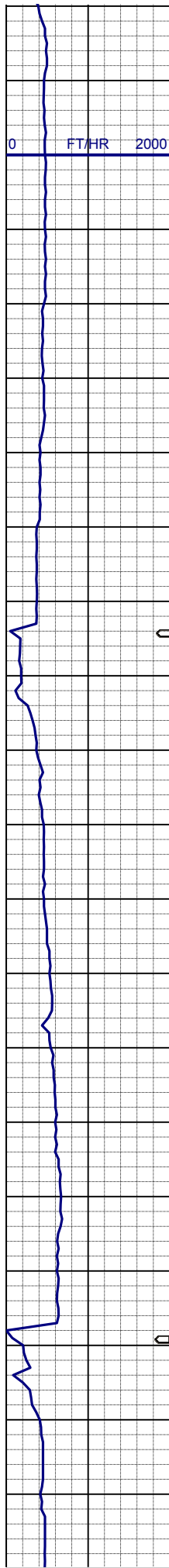


60% SLTYSH: ltm-mdkgy, modsft-firm, sbblky-sbply, fgr-slidy w/smeintbdss, noncalc, grdg to 30% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, sbply, p-modsrt, sl firm - modsft, ppor, argcmt, slcalc, 10% SS: wh-ltgy, s&p, f-mfgr, sbrd, mod-wsrt, firm -hd, brit, arg&calcmt, glau ; lamphlog

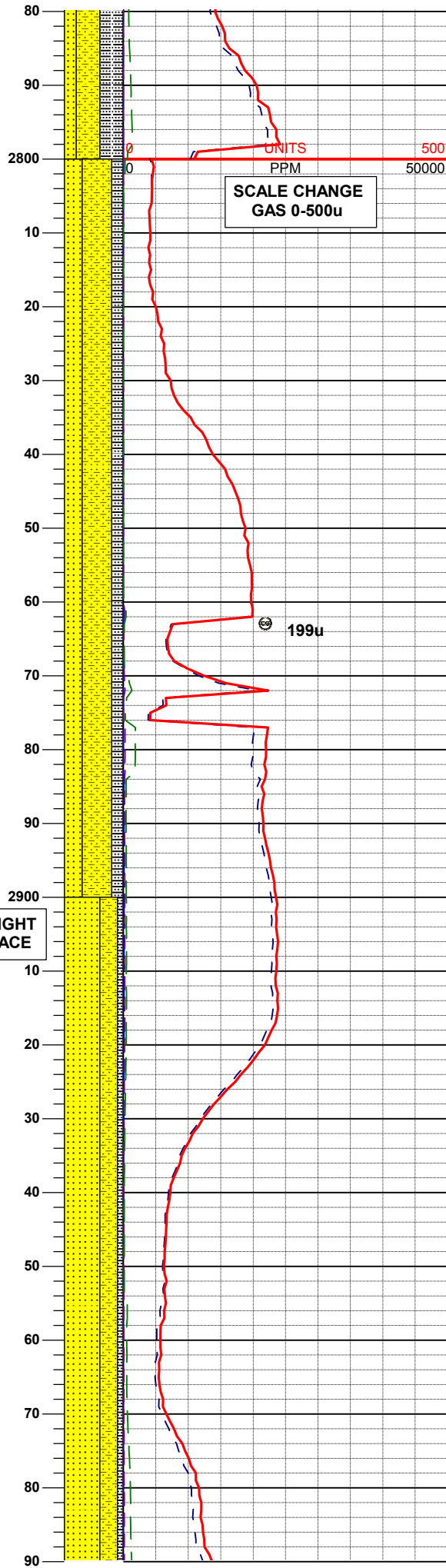
MUD WT: 8.4+ VIS: 28 IN
MUD WT: 8.6 VIS: 29 OUT

SURVEY
MD 2718'
TVD 2677.33'
INC 11.7°
AZI 32.7°

40% SLTYSH: ltm-mdkgy, modsft-firm, sbblky-sbply, fgr-slidy w/smeintbdss, noncalc, grdg to 40% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, sbply, p-modsrt, sl firm - modsft, ppor, argcmt, slcalc, 20% SS: wh-ltgy, s&p, f-mfgr, sbrd, mod-wsrt, firm -hd, brit, arg&calcmt, glau ; lamphlog



SLIGHT
TRACE

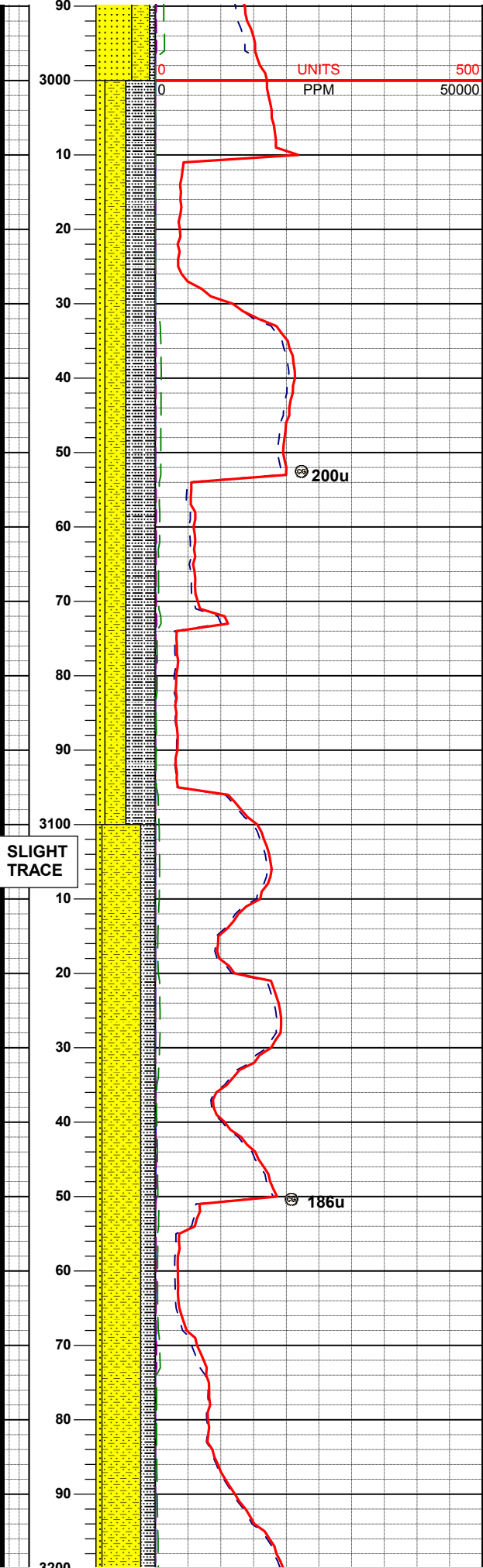
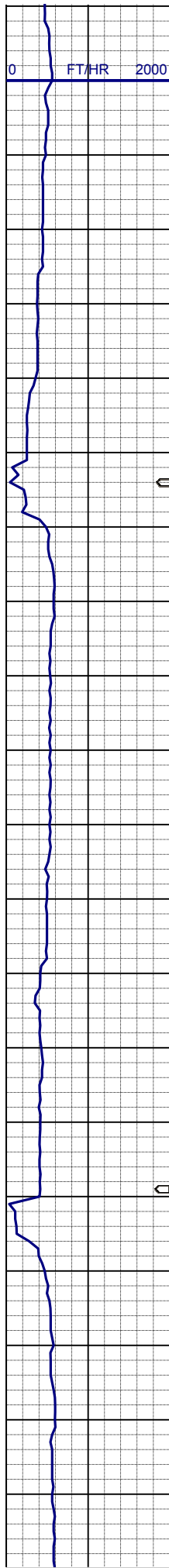


SURVEY
MD 2813'
TVD 2770.22'
INC 12.5°
AZI 32.7°

50% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, sbpity, modsrt, sl firm -modsft, ppor, argcmt, slcalc, glau, grdg to 30% SS: wh-ltgy, s&p, f-mfgr, sbrd, mod-wsrt, firm -hd, brit, arg&calccmt, glau ; lamphlog
20% SLTYSH: ltm-mgy, modsft-sl firm, sbblky-sbpity, fgr-slsdy, noncalc

SURVEY
MD 2908'
TVD 2862.90'
INC 12.9°
AZI 28.7°

60% SS: wh-ltgy, s&p, f-mfgr, sbrd, mod-wsrt, firm -hd, brit, arg&calccmt, glau ; lamphlog grdg to 30% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, sbpity, modsrt, sl firm -modsft, ppor, argcmt, slcalc, glau
10% SLTYSH: ltm-mgy, modsft-sl firm, sbblky-sbpity, fgr-slsdy, noncalc



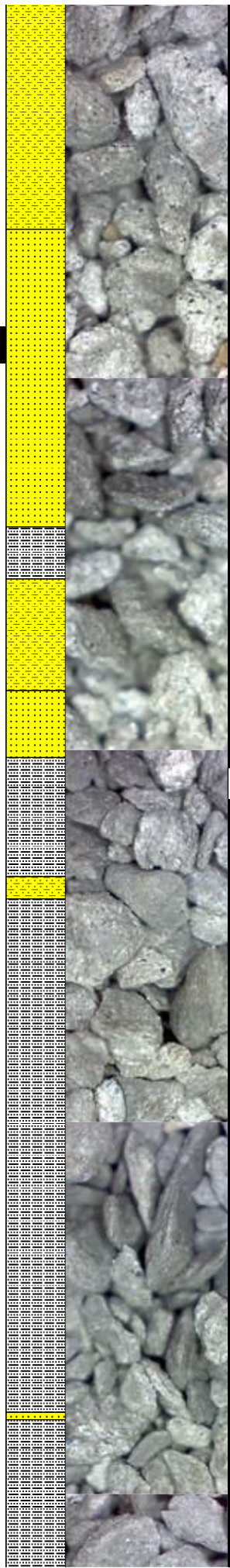
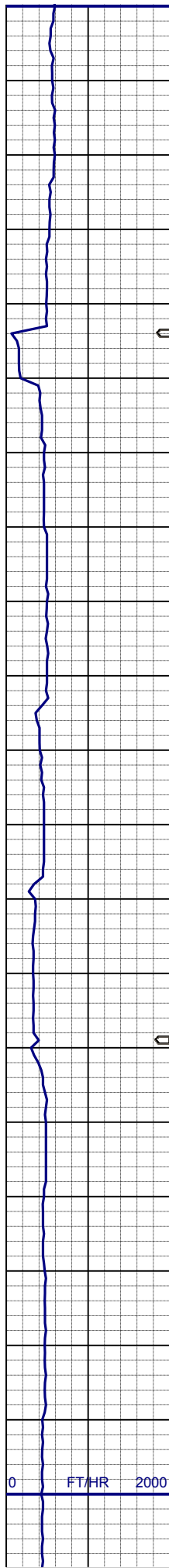
SURVEY
MD 3003'
TVD 2955.41'
INC 13.4°
AZI 35.4°

50% SLTYSH: ltm-mdkgy, modsft-firm, sbblky-sbply, fgr-slsdy w/smeintbdss, noncalc, grdg to 35% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, sbply, p-modsrt, sl firm - modsft, ppor, argcmt, slcalc, 15% SS: wh-ltgy, s&p, f-mfgr, sbrd, mod-wsrt, firm -hd, brit, arg&calccmt, glau ; lamphlog

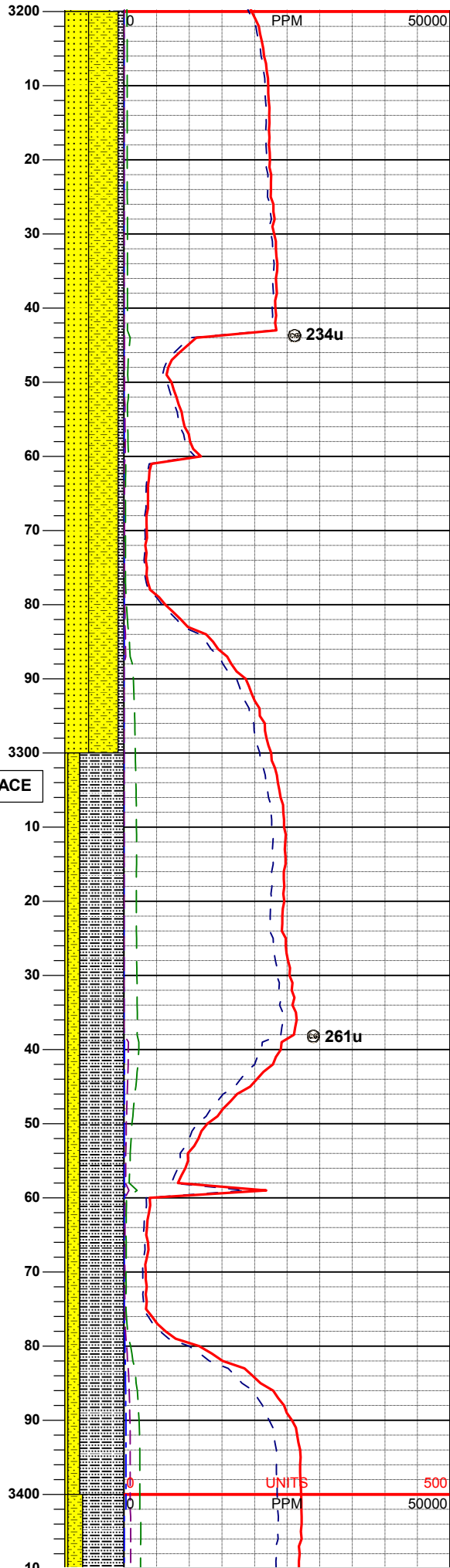
SURVEY
MD 3098'
TVD 3047.79'
INC 13.6°
AZI 32.4°

65% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, sbply, modsrt, sl firm -modsft, ppor, argcmt, slcalc, glau, grdg to 25% SLTYSH: ltm-mgy, modsft-sl firm, sbblky-sbply, fgr-slsdy, noncalc, 10% SS: wh-ltgy, s&p, f-mfgr, sbrd, mod-wsrt, firm -hd, brit, arg&calccmt, glau ; lamphlog

SURVEY
MD 3193'
TVD 3140.18'
INC 13.2°



TRACE



INC 13.5°
AZI 33.1°

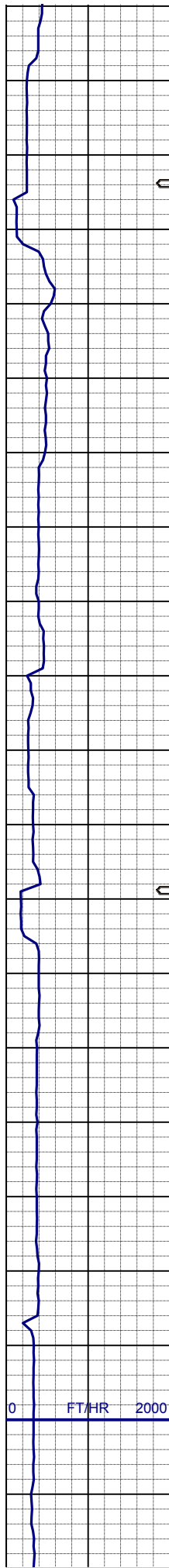
50% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, sbpity, modsrt, sl firm -modsft, ppor, argcmt, slcalc, glau, grdg to 40% SS: wh-ltgy, s&p, f-mfgr, sbrd, mod-wsrt, firm -hd, brit, arg&calccmt, glau ; lamphlog
10% SLTYSH: ltm-mgy, modsft-sl firm, sbblky-sbpity, fgr-slidy, noncalc

SURVEY
MD 3288'
TVD 3232.60'
INC 13.5°
AZI 25.2°

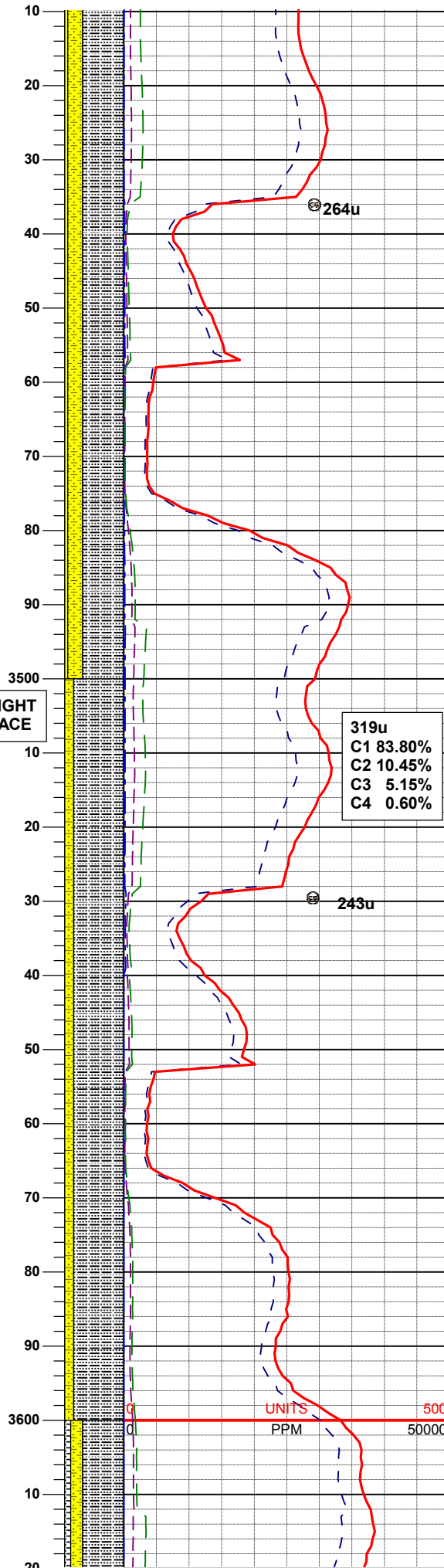
75% SLTYSH: ltm-mdkgy, modsft-firm, sbblky-sbpity, fgr-slidy w/smeintbdss, noncalc, grdg to 20% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, sbpity, p-modsrt, sl firm -modsft, ppor, argcmt, slcalc, 5% SS: wh-ltgy, s&p, f-mfgr, sbrd, mod-wsrt, firm -hd, brit, arg&calccmt, glau ; lamphlog

SURVEY
MD 3382'
TVD 3324.34'
INC 11.7°
AZI 28.7°

UNITS
PPM
500
50000



SLIGHT
TRACE



70% SLTYSH: ltm-mdkgy, modsft-firm, sbblky-sbplty, fgr-slsdy w/smeintbdss, noncalc, grdg to 25% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, sbplty, p-modsrt, sl firm - modsft, ppor, argcmt, slcalc, 5% SS: wh-ltgy, s&p, f-mfgr, sbrd, mod-wsrt, firm -hd, brit, arg&calccmt, glau ; lamphlog

SURVEY
MD 3477'
TVD 3417.43'
INC 11.3°
AZI 25.5°

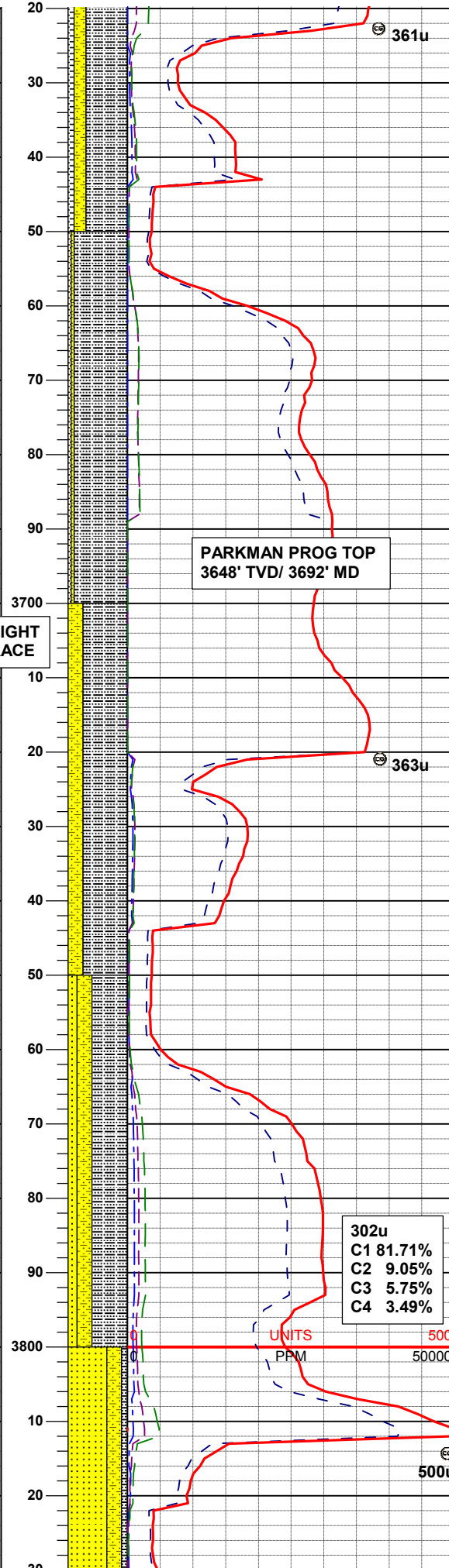
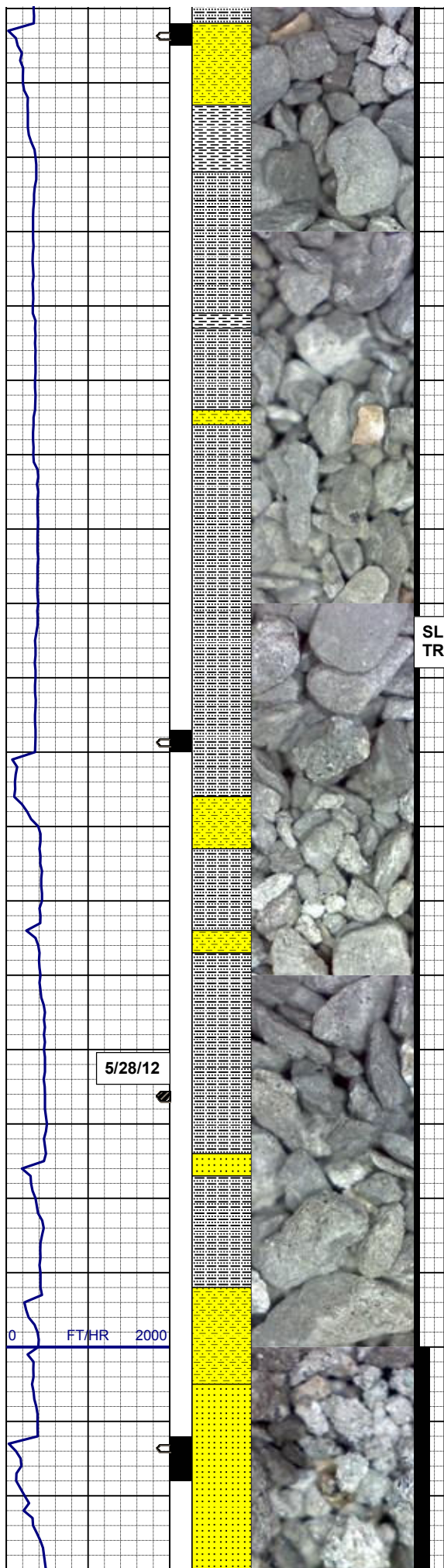
319u
C1 83.80%
C2 10.45%
C3 5.15%
C4 0.60%

85% SLTYSH: ltm-mdkgy, modsft-firm, sbblky-sbplty, fgr-slsdy w/smeintbdss, noncalc, grdg to 15% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, sbplty, p-modsrt, sl firm - modsft, ppor, argcmt, slcalc ; sme ss

SURVEY
MD 3572'
TVD 3510.51'
INC 11.8°
AZI 18.8°

MUD WT: 8.4 VIS: 28 IN
MUD WT: 8.5 VIS: 27 OUT

70% SLTYSH: ltm-mgy, modsft-sl firm, sbblky-sbplty, fgr-slsdy, noncalc,



grag to
20% SHYSS: lt-mgy, f-mfgr, sbrd-
sbang, sbply, modsrt, sl firm -modsft,
ppor, argcmt, slcalc, glau, grdg to
10% SH: m-mdkgy, firm, sbply-
sbbly, rthy-slsly w/occintbdss,
noncalc ; sme ss, tr sltst

SURVEY
MD 3677'
TVD 3603.75'
INC 10.3°
AZI 26.0°

90% SLTYSH: ltm-mgy, modsft-sl
firm, sbbly-sbply, fgr-slsdy, noncalc,
grdg to
5% SHYSS: lt-mgy, f-mfgr, sbrd-
sbang, sbply, modsrt, sl firm -modsft,
ppor, argcmt, slcalc, glau, grdg to
5% SH: m-mdkgy, firm, sbply-sbbly,
rthy-slsly w/occintbdss, noncalc ;
sme ss, tr sltst

MUD REPORT
3701' MD
Wt - 8.60
Vis - 28
pH - 9.5
YP - 4
API flt - 20
Ck - 1/0
Chld - 400

75% SLTYSH: ltm-mgy, modsft-sl
firm, sbbly-sbply, fgr-slsdy, noncalc,
grdg to
25% SHYSS: lt-mgy, f-mfgr, sbrd-
sbang, sbply, modsrt, sl firm -modsft,
ppor, argcmt, slcalc, glau ; sme ss, tr
sltst

SURVEY
MD 3762'
TVD 3697.37'
INC 9.3°
AZI 22.2°

60% SLTYSH: ltm-mdkgy, modsft-
firm, sbbly-sbply, fgr-slsdy
w/smeintbdss, noncalc, grdg to
25% SHYSS: lt-mgy, f-mfgr, sbrd-
sbang, sbply, p-modsrt, sl firm -
modsft, ppor, argcmt, slcalc,
15% SS: wh-ltgy, s&p, f-mfgr, sbrd,
mod-wsrt, firm -hd, brit, arg&calcmt,
glau ; lamphlog, tr pyr ctd

302u
C1 81.71%
C2 9.05%
C3 5.75%
C4 3.49%

PARKMAN PROG TOP
3648' TVD/ 3692' MD

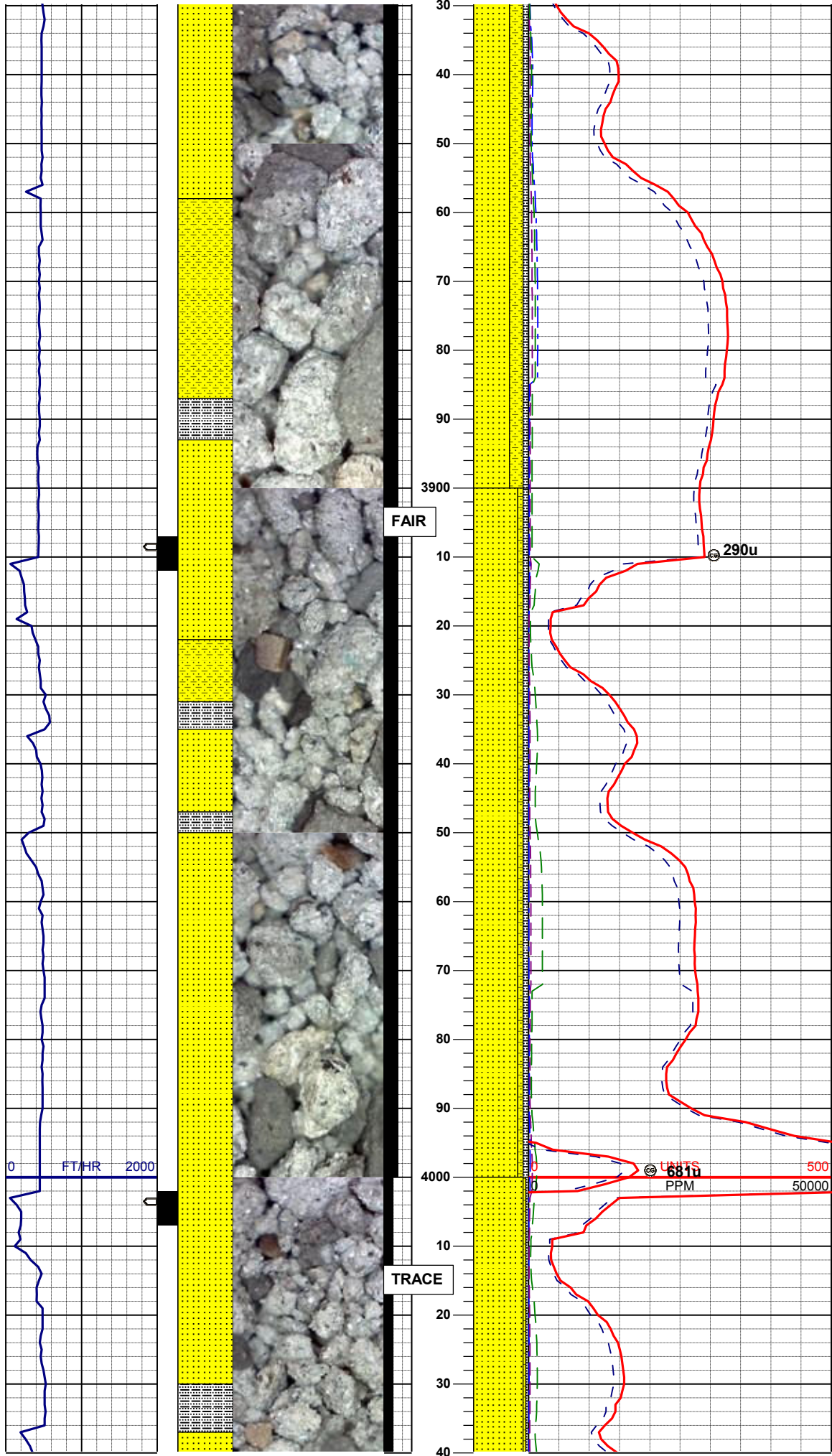
SLIGHT
TRACE

363u

500

50000

500u



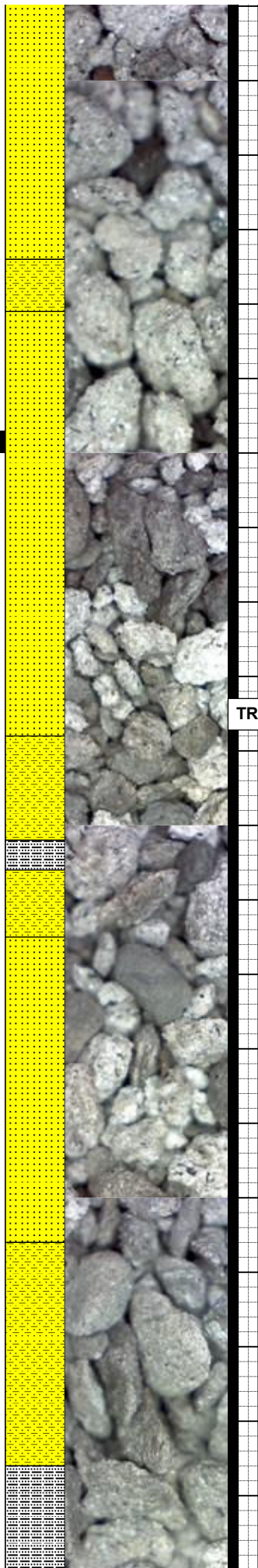
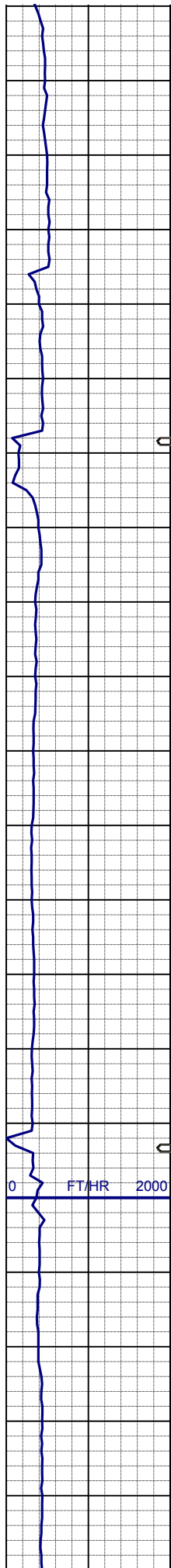
65% SS: wh-ltgy, s&p, f-mfgr, sbrd, mod-wsrt, firm -hd, brit, arg&calccmt, glau ; lamphlog grdg to 25% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, sbply, modsrt, sl firm -modsft, ppor, argcmt, slcalc, glau 10% SLTYSH: ltm-mgy, modsft-sl firm, sbply-sbply, fgr-slsdy, noncalc

SURVEY
MD 3857'
TVD 3790.94'
INC 10.6°
AZI 28.7°

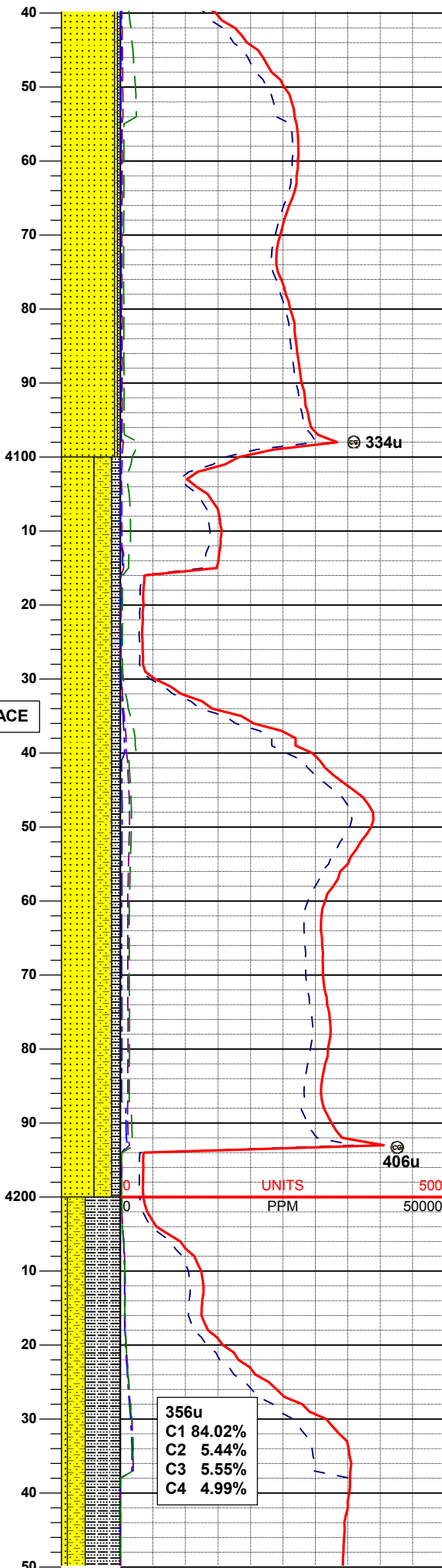
80% SS: wh-ltgy, s&p, f-mfgr, sbrd, mod-wsrt, firm -hd, brit, arg&calccmt, glau ; lamphlog grdg to 10% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, sbply, modsrt, sl firm -modsft, ppor, argcmt, slcalc, glau 10% SLTYSH: ltm-mgy, modsft-sl firm, sbply-sbply, fgr-slsdy, noncalc

SURVEY
MD 3952'
TVD 3884.23'
INC 11.2°
AZI 38.3°

SURVEY
MD 4047'
TVD 3977.31'
INC 11.9°
AZI 31.1°



TRACE



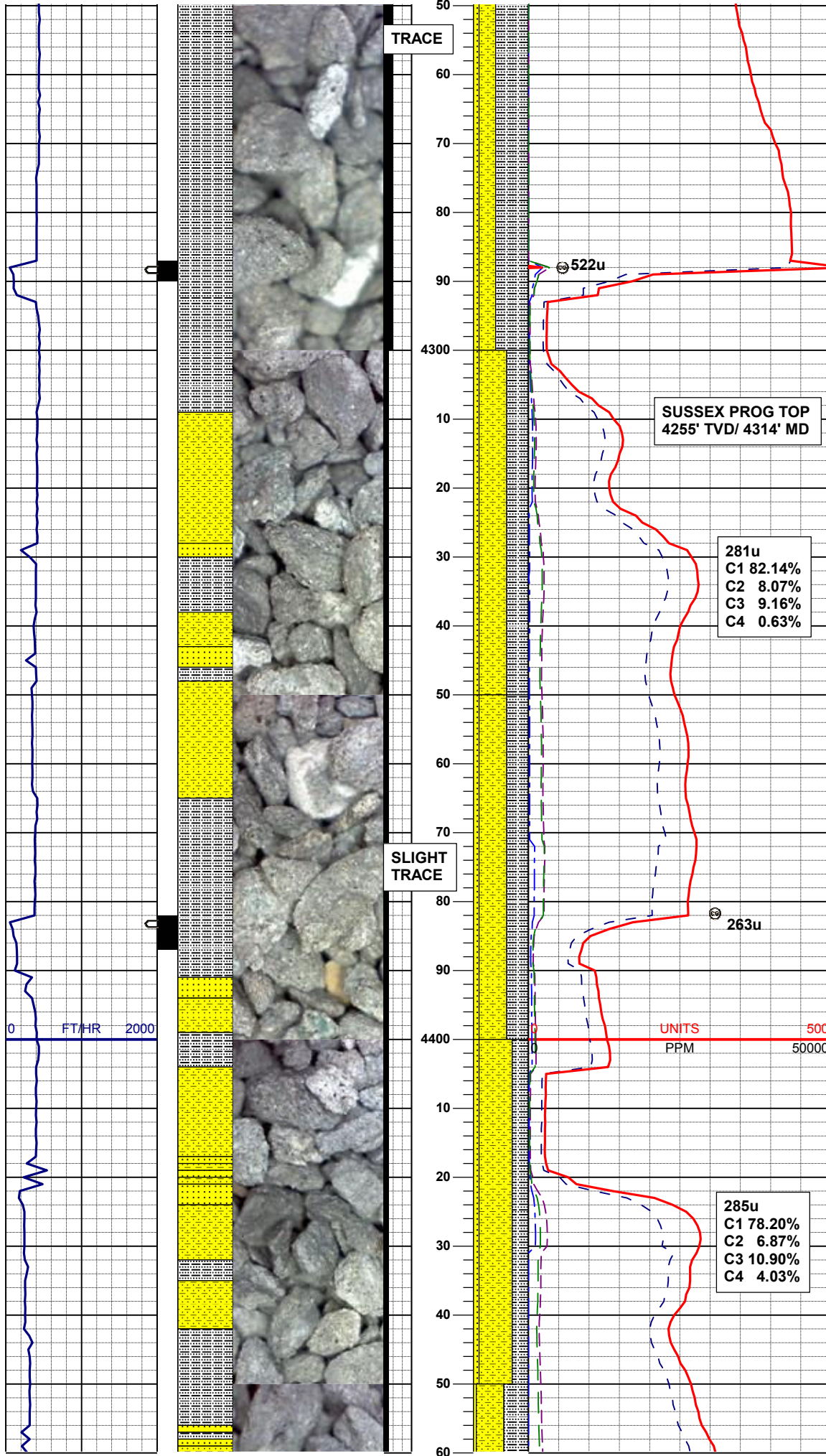
90% SS: wh-ltgy, s&p, f-mfgr, sbrd, mod-wsrt, firm -hd, brit, arg&calccmt, glau ; lamphlog grdg to 5% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, sbply, modsrt, sl firm -modsft, ppor, argcmt, slcalc, glau 5% SLTYSH: ltm-mgy, modsft-sl firm, sbply-sbply, fgr-slsdy, noncalc

SURVEY
MD 4142'
TVD 4070.32'
INC 11.6°
AZI 32.5°

55% SS: wh-ltgy, s&p, f-mfgr, sbrd, mod-wsrt, firm -hd, brit, arg&calccmt, glau ; lamphlog grdg to 30% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, sbply, modsrt, sl firm -modsft, ppor, argcmt, slcalc, glau 15% SLTYSH: ltm-mgy, modsft-sl firm, sbply-sbply, fgr-slsdy, noncalc

SURVEY
MD 4237'
TVD 4163.49'
INC 10.9°
AZI 31.0°

60% SLTYSH: ltm-mdkgy, modsft-firm, sbply-sbply, fgr-slsdy w/smeintdss, noncalc, grdg to 30% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, sbply, modsrt, sl firm



sbang, sbply, p-modsrt, sl firm -
modsf, ppor, argcmt, slcalc,
10% SS: wh-ltgy, s&p, f-mfgr, sbdr,
mod-wsrt, firm -hd, brit, arg&calccmt,
glau ; lamphlog, tr pyr ctd

50% SHYSS: lt-mgy, f-mfgr, sbdr-
sbang, sbply, p-modsrt, sl firm -
modsf, ppor,
40% SLTYSH: ltm-mdkgy, modsf-
firm, sbply-sbply, fgr-slsdy
w/smeintbdss, noncalc
10% SS: wh-ltgy, s&p, f-mfgr, sbdr,
mod-wsrt, firm -hd, brit, arg&calccmt,
glau ; lamphlog,

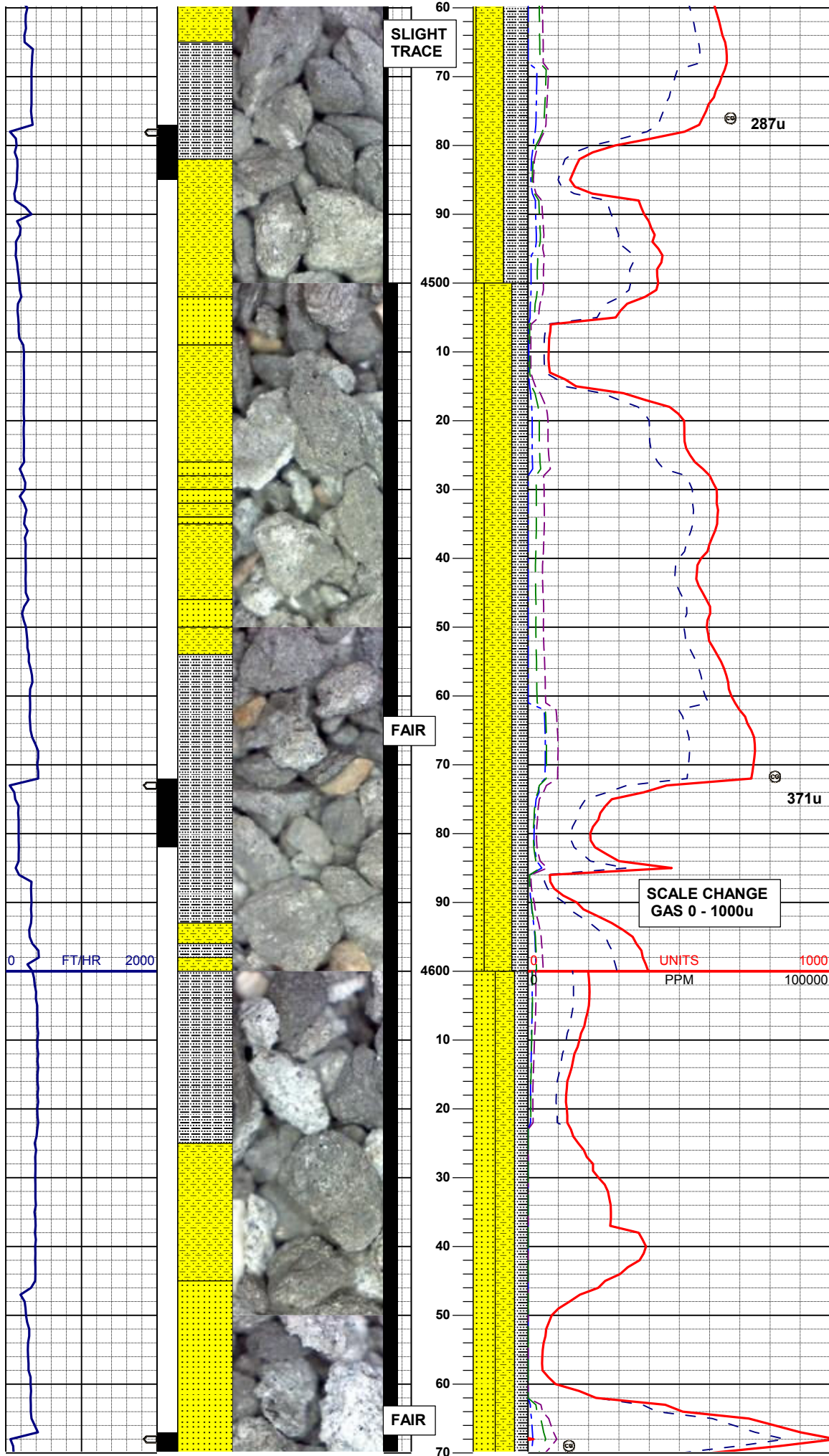
SURVEY
MD 4332'
TVD 4256.86'
INC 10.4°
AZI 25.5°

50% SHYSS: lt-mgy, f-mfgr, sbdr-
sbang, sbply, p-modsrt, sl firm -
modsf, ppor,
40% SLTYSH: ltm-mdkgy, modsf-
firm, sbply-sbply, fgr-slsdy
w/smeintbdss, noncalc
10% SS: wh-ltgy, s&p, f-mfgr, sbdr,
mod-wsrt, firm -hd, brit, arg&calccmt,
glau ; lamphlog,

SURVEY
MD 4427'
TVD 4350.58'
INC 8.4°
AZI 22.2°

60% SHYSS: lt-mgy, f-mfgr, sbdr-
sbang, sbply, p-modsrt, mod firm,
ppor, slcalc, grdg to
30% SLTYSH: ltm-mdkgy, mod firm -
occsft, sbply-sbply, fgr-slsdy
w/ocintbdss, noncalc
10% SS: wh-ltgy, s&p, f-mfgr, sbdr,
mod-wsrt, firm -hd, brit, arg&calccmt,
glau ; lamphlog

MUD WT: 8.4 VIS: 27 IN
MUD WT: 8.4 VIS: 27 OUT



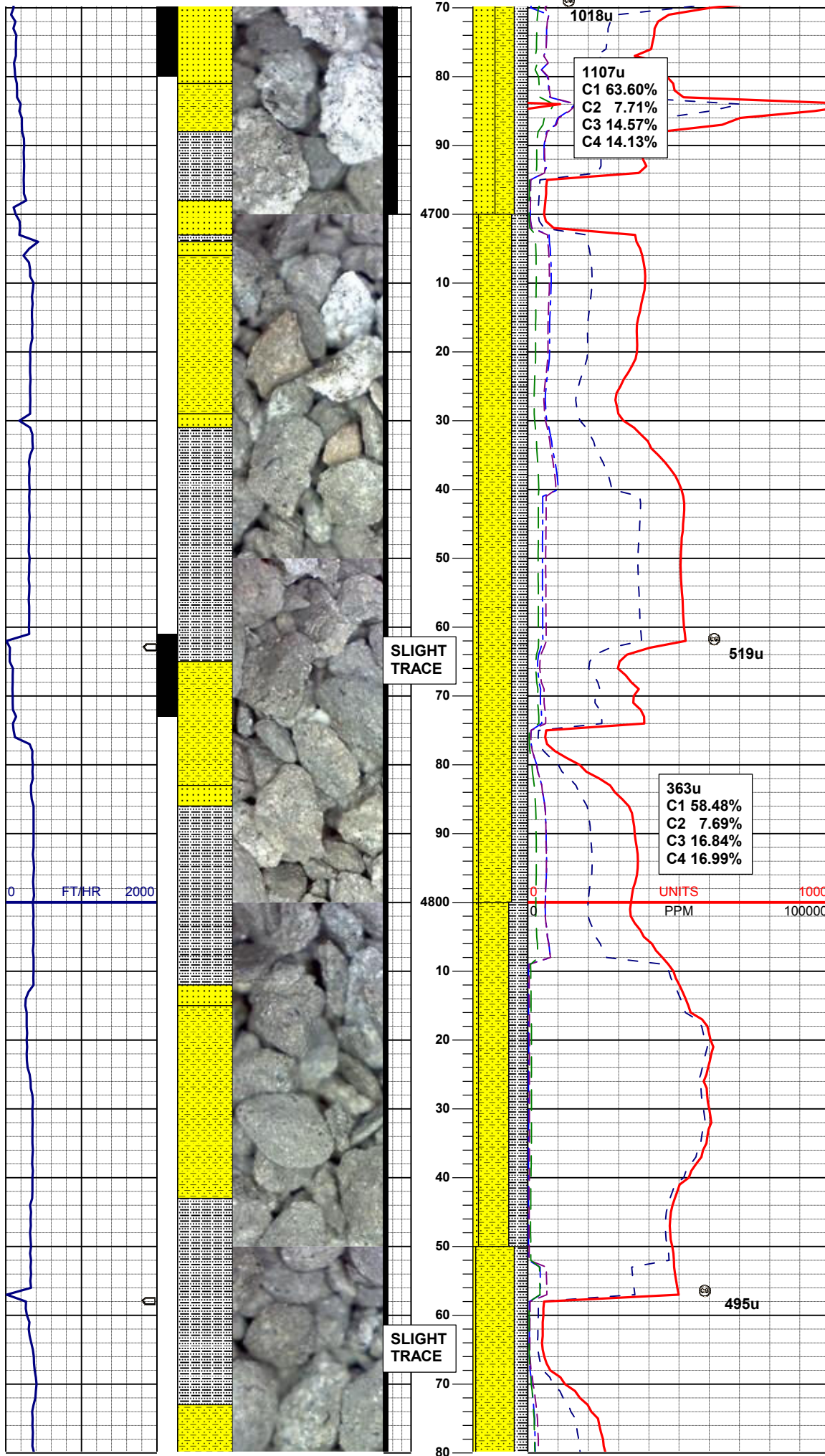
50% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, sbply, p-modsrt, mod firm, ppor, scalc, grdg to 45% SLTYSH: ltm-mdkgy, mod firm - occsft, sbply-sbply, fgr-slsdy w/occintbdss, noncalc 5% SS: wh-ltgy, s&p, f-mfgr, sbrd, mod-wsrt, firm -hd, brit, arg&calccmt, glau ; lamphlog, trfos

SURVEY
MD 4522'
TVD 4444.79'
INC 6.4°
AZI 20.4°

50% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, sbply, p-modsrt, mod firm, ppor, scalc, grdg to 30% SLTYSH: ltm-mdkgy, mod firm - occsft, sbply-sbply, fgr-slsdy w/occintbdss, noncalc, 20% SS: wh-ltgy, s&p, f-mfgr, sbrd, mod-wsrt, firm -hd, brit, arg&calccmt, glau ; lamphlog, trfos, trpyrcotg

SURVEY
MD 4617'
TVD 4539.35'
INC 4.5°
AZI 25.3°

40% SS: wh-ltgy, s&p, f-mfgr, sbrd, mod-wsrt, firm -hd, brit-fri, arg&calccmt, glau, 35% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, sbply, p-modsrt, mod firm, fri, ppor, scalc, grdg to 25% SLTYSH: ltm-mdkgy, mod firm - occsft, sbply-sbply, fgr-slsdy w/intbdss, noncalc, trpyrcotg ; lamphlog



SURVEY
MD 4711'
TVD 4633.16'
INC 2.7°
AZI 34.7°

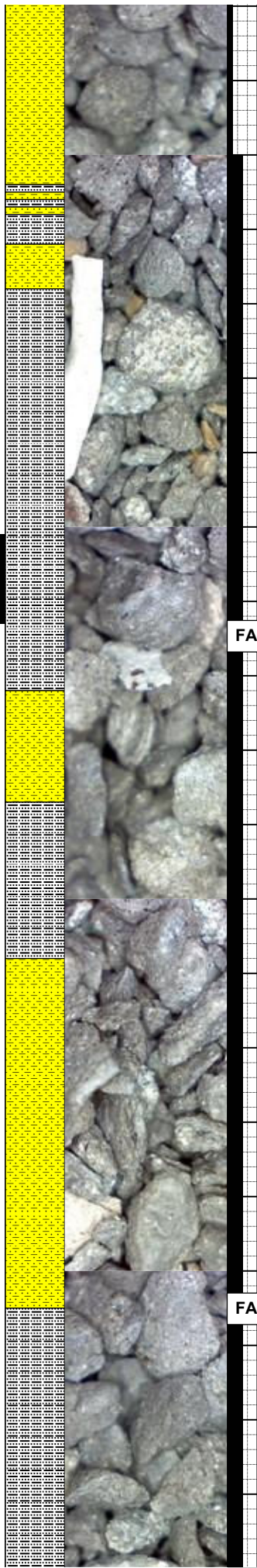
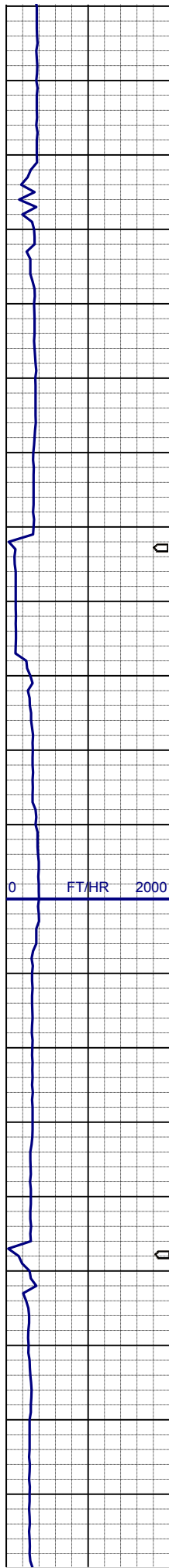
60% SHYSS: mgy, f-mfgr, sbdr-sbang, sbply, p-modsrt, mod firm - firm, fri, ppor, slcalc, grdg to 30% SLTYSH: ltm-mdkgy, mod firm - sft, sbply-sbblky, fgr-slsdy, noncalc, trpyrcotg, 10% SS: wh-ltgy, s&p, f-mfgr, sbdr, mod-wsrt, firm -hd, brit-fri, arg&calcmnt, glau ; lamphlog

MUD WT: 8.8 VIS: 27 IN
MUD WT: 8.6 VIS: 27 OUT

SURVEY
MD 4806'
TVD 4728.11'
INC 1.2°
AZI 99.2°

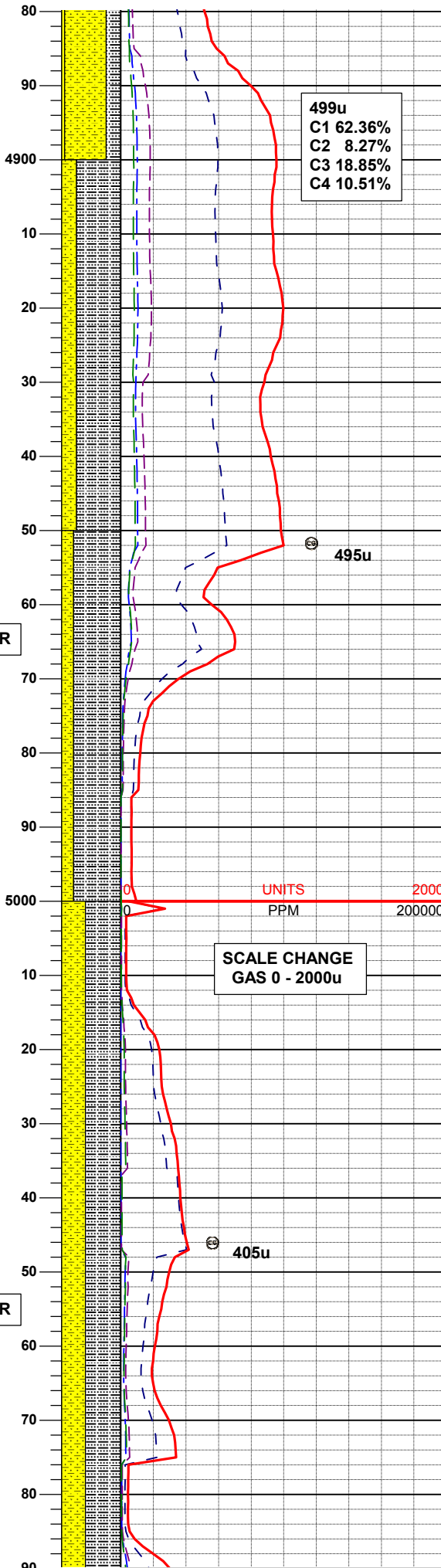
55% SHYSS: mgy, f-mfgr, sbdr-sbang, sbply, psrt, mod firm - firm, fri, ppor, slcalc, grdg to 35% SLTYSH: ltm-mdkgy, mod firm - sft, sbply-sbblky, fgr-sdy, noncalc, trpyrcotg, 10% SS: wh-ltgy, s&p, f-mfgr, sbdr, mod-wsrt, firm -hd, brit-fri, arg&calcmnt, glau ; lamphlog

70% SHYSS: mgy, f-mfgr, sbang-sbdr, sbply, psrt, mod firm - firm, fri, ppor, slcalc, grdg to 25% SLTYSH: m-mltgy, mod firm -sft, sbply-sbblky, fgr-vsdly, noncalc, trpyrcotg, 5% SS: wh-ltgy, s&p, f-mfgr, sbdr, mod-wsrt, firm -hd, brit-fri, arg&calcmnt, glau ; lamphlog



FAIR

FAIR



499u
C1 62.36%
C2 8.27%
C3 18.85%
C4 10.51%

495u

SCALE CHANGE
GAS 0 - 2000u

405u

5% SS: wt-lgy, s&p, f-migr, sbrd,
mod-wsrt, firm -hd, brit-fri,
arg&calccmt, glau ; lamphlog

SURVEY
MD 4901'
TVD 4823.08'
INC 1.8°
AZI 89.3°

SHANNON PROG TOP
4844' TVD/ 4917' MD

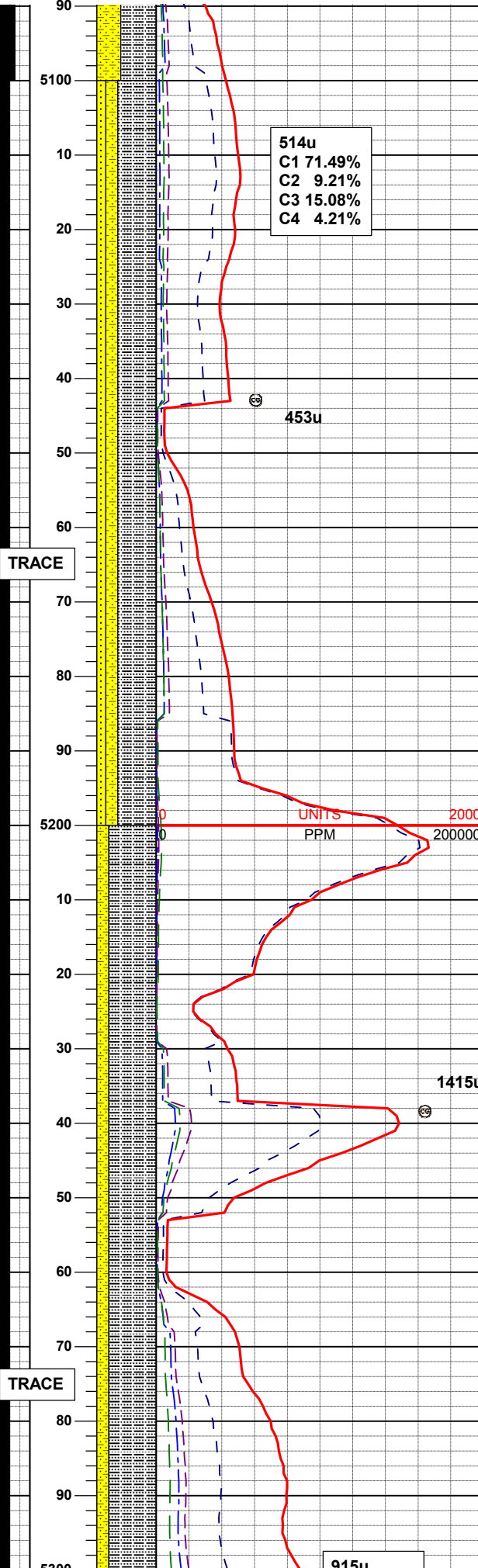
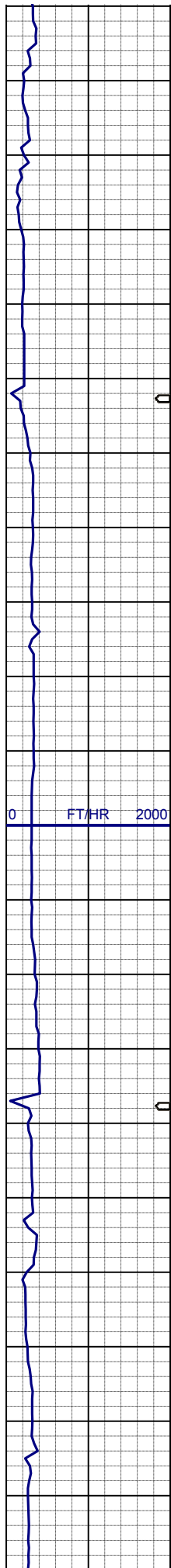
75% SLTYSH: m-mltgy, mod firm -sft,
sbply-sbblky, fgr-slsdy, noncalc, grdg to
25% SHYSS: mgy, f-mfgr, sbang-
sbrd, sbply, psrt, mod firm - firm, fri,
ppor, scalc

80% SLTYSH: m-mltgy, mod firm -sft,
sbply-sbblky, smeply, fgr-slsdy,
noncalc, grdg to
20% SHYSS: mgy, f-mfgr, sbang-
sbrd, sbply, psrt, mod firm - firm, fri,
ppor, scalc

SURVEY
MD 4996'
TVD 4918.07
INC 0.2°
AZI 303.4°

60% SLTYSH: m-mltgy, mod firm -sft,
sbply-sbblky, smeply, fgr-slsdy,
noncalc, trpyrcotg, grdg to
40% SHYSS: mgy, f-mfgr, sbang-
sbrd, sbply, psrt, mod firm - firm, fri,
ppor, scalc

SURVEY
MD 5001'



MD 5091
TVD 5013.07'
INC 0.4°
AZI 194.4°

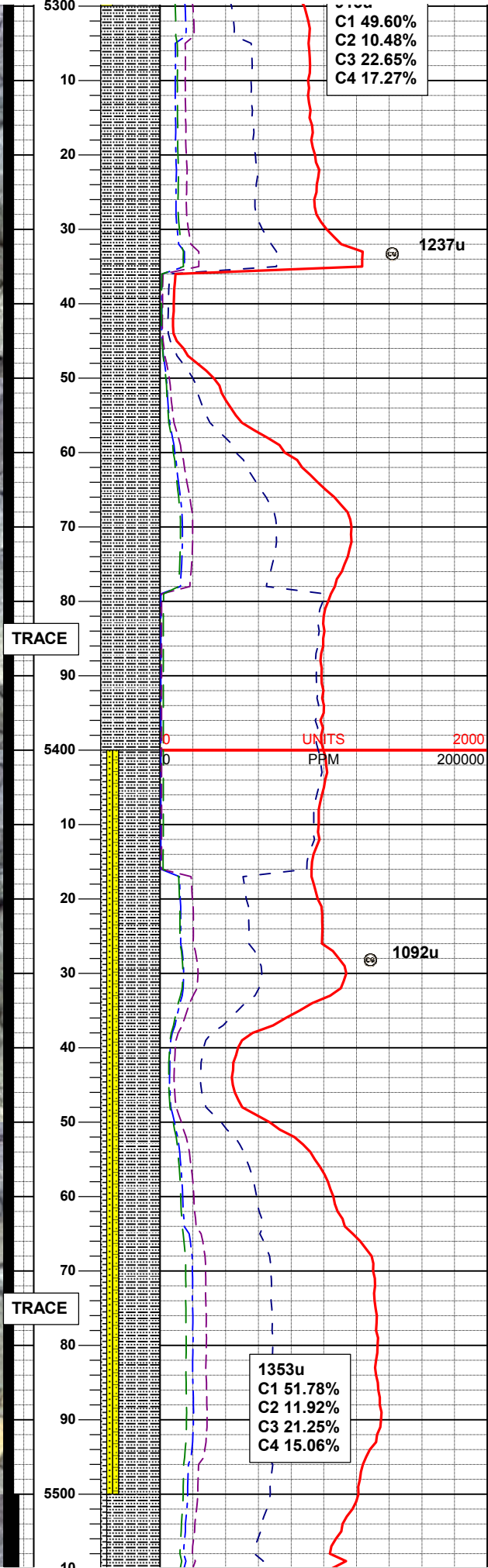
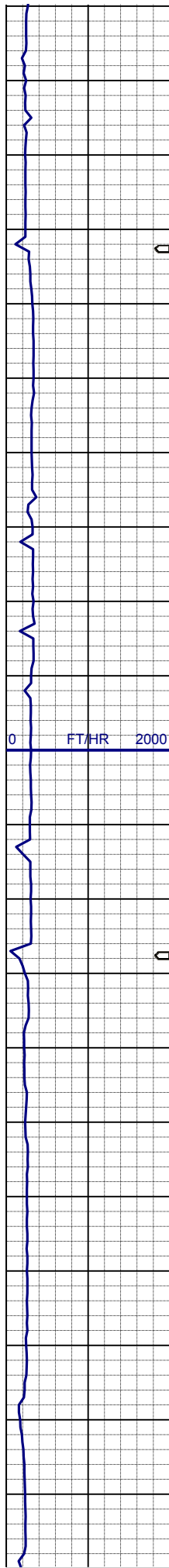
65% SLTYSH: m-mltgy, mod firm -sft, sbplty-sbblky, smeplty, fgr-slsdy, noncalc, trpyrcotg, grdg to 20% SHYSS: mgy, f-mfgr, sbang-sbrd, sbplty, p-modsrt, mod firm - firm, fri, ppor, slcalc, glau, grdg to 15% SS: wh-ltgy, s&p, f-mfgr, sbrd, mod-wsrt, firm -hd, brit-fri, arg&calccmt, glau ; occccalcincl

SURVEY
MD 5186'
TVD 5108.06
INC 0.4°
AZI 158.2°

80% SLTYSH: m-mltgy, mod firm -sft, sbplty-sbblky, smeplty, fgr-slsdy, noncalc, trpyrcotg, grdg to 20% SHYSS: mgy, f-mfgr, sbang-sbrd, sbplty, p-modsrt, mod firm - firm, fri, ppor, slcalc, glau ; occccalcincl

MUD WT: 8.8 VIS: 29 IN
MUD WT: 8.9 VIS: 28 OUT

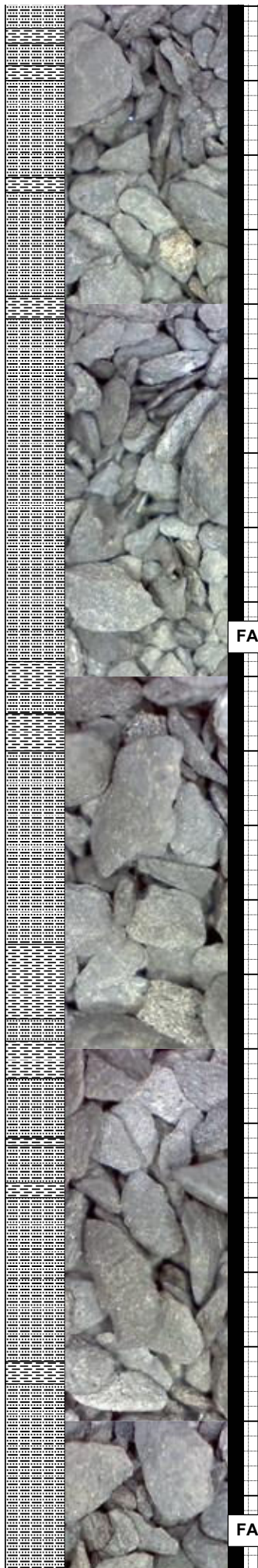
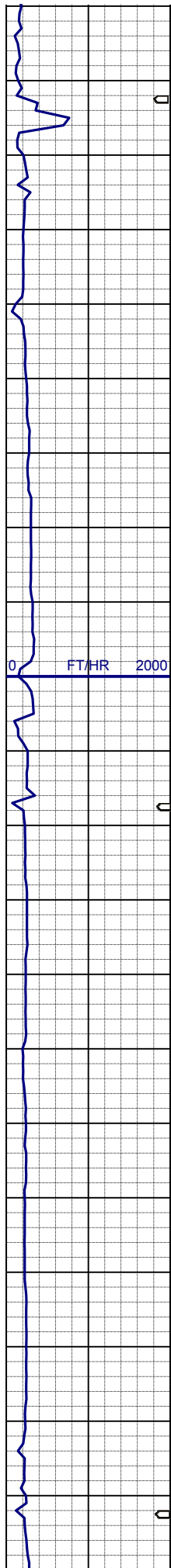
SURVEY
MD 5281'
TVD 5203.06'
INC 0.4°
AZI 200.9°



100% SLTYSH: m-mltgy, mod firm - sft, sbplty-sbblky, smeplty, fgr-slsdy, noncalc, trpyrcotg, smeshyss

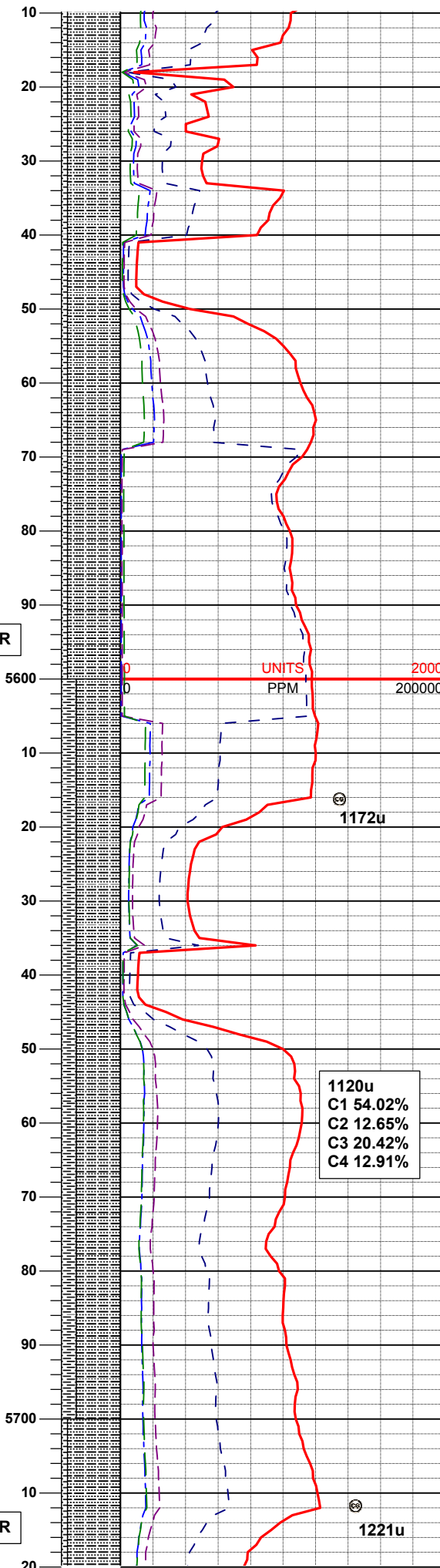
SURVEY
MD 5376'
TVD 5298.06'
INC 0.3°
AZI 226.3°

70% SLTYSH: m-mltgy, mod firm -sft, sbplty-sbblky, smeplty, fgr-slsdy, noncalc, trpyrcotg, grdg to 10% SHYSS: mgy, f-mfgr, sbang-sbrd, sbplty, p-modsrt, mod firm - firm, fri, ppor, slcalc, glau, grdg to 10% SS: wh-ltgy, s&p, f-mfgr, sbrd, mod-wsrt, firm -hd, brit-fri, arg&calccmt, glau, 10% SH: m-dkbrngy, firm, plty-sbplty, rthy-slsity, noncalc; lamphlog



FAIR

FAIR



90% SLTYSH: m-mltgy, mod firm -sft, sbplty-sbblky, smeplty, fgr-slsdy, vslcalc, grdg to 10% SH: m-dkbrngy, firm, plty-sbplty, rthy-slsly, vslcalc; lamphlog, trpyrcotg, trbent

SURVEY
MD 5566'
TVD 5488.05
INC 1.0°
AZI 158.8°

MUD WT: 9.0 VIS: 29 IN
MUD WT: 9.0 VIS: 29 OUT

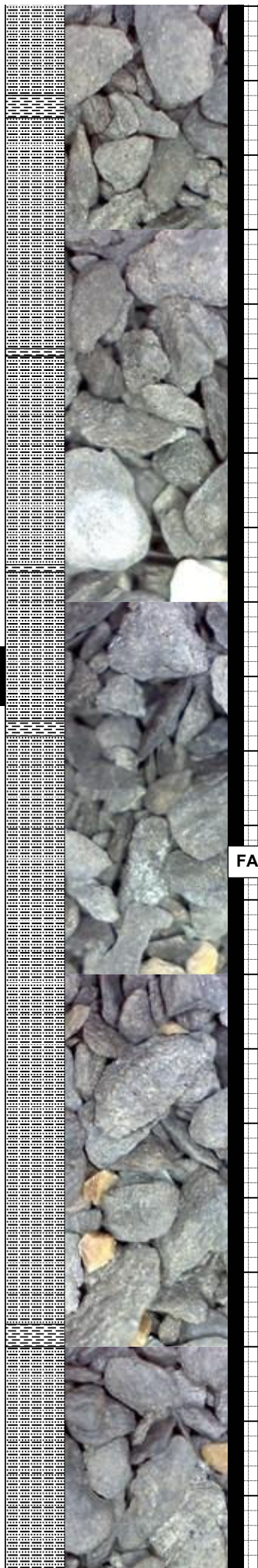
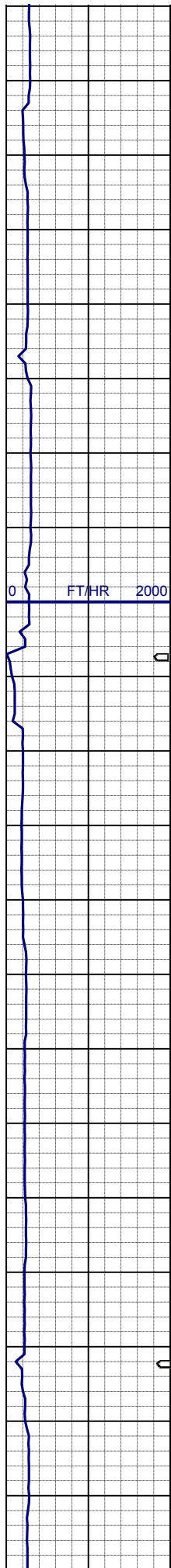
75% SLTYSH: m-mltbrngy, mod firm -sft, sbplty-sbblky, smeplty, fgr-slsdy, vslcalc, grdg to 25% SH: m-dkbrngy, firm, plty-sbplty, rthy-slsly, vslcalc; lamphlog, trpyrcotg, trbent

1120u
C1 54.02%
C2 12.65%
C3 20.42%
C4 12.91%

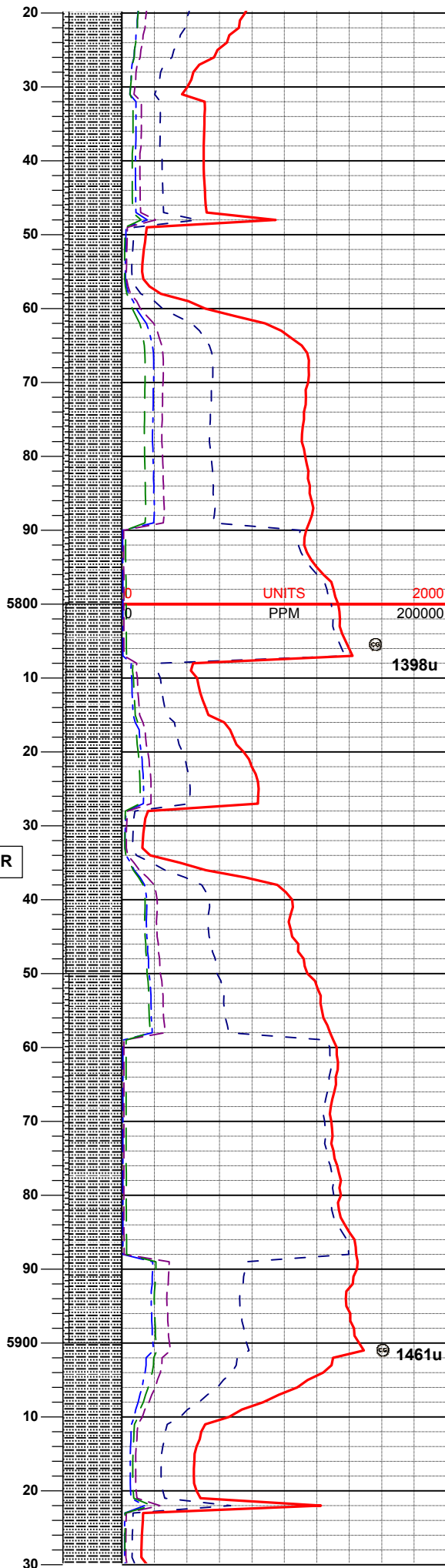
SURVEY
MD 5661'
TVD 5583.04'
INC 0.7°
AZI 133.3°

MUD REPORT
5690' MD
Wt - 9.05
Vis - 29
pH - 9.0
YP - 4
API flt - 18
Ck - 2/0
Chld - 690

MUD WT: 9.0 VIS: 29 IN



FAIR



MUD WT: 9.0+ VIS: 30 IN
MUD WT: 9.0 VIS: 30 OUT

90% SLTYSH: m-mltbrngy, mod firm -
sft, sbplty-sbblky, smeplty, fgr-slsdy,
vsiscalc, grdg to
10% SH: m-dkbrngy, firm, plty-sbplty,
rthy-slsity, vsiscalc; lamphlog,
trpyrcotg, trbent, trss

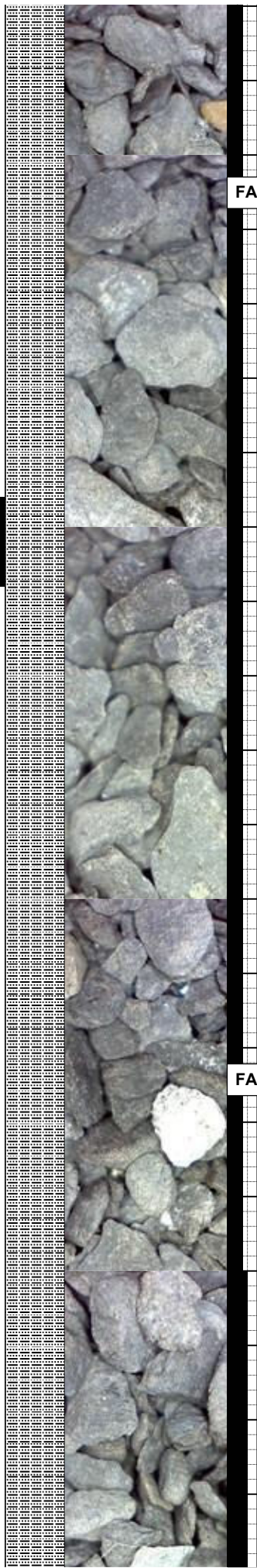
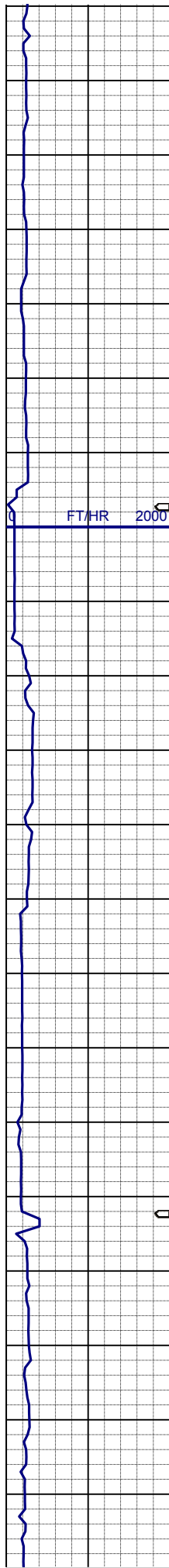
SURVEY
MD 5756'
TVD 5678.03'
INC 1.2°
AZI 129.2°

95% SLTYSH: m-mltbrngy, mod firm,
sbplty-sbblky, smeplty, fgr-slsdy,
vsiscalc,
5% SH: m-dkbrngy, firm, plty-sbplty,
rthy-slsity, vsiscalc; lamphlog, trpyrcotg

SURVEY
MD 5851'
TVD 5773.01'
INC 1.0°
AZI 187.9°

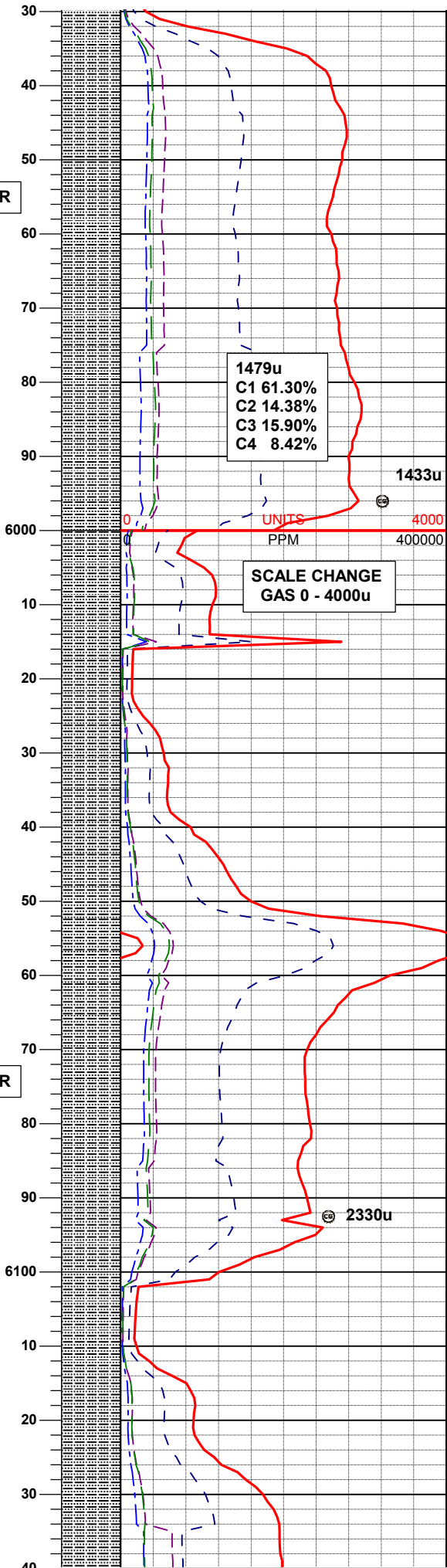
90% SLTYSH: m-mltbrngy, mod firm,
sbplty-sbblky, smeplty, fgr-slsdy,
vsiscalc,
10% SH: m-dkbrngy, firm, plty-sbplty,
rthy-slsity, vsiscalc; lamphlog,
trpyrcotg, trbent, tr calcite

100% SLTYSH: m-mltbrngy, mod
firm, sbplty-sbblky, smeplty, fgr-slsdy,
vsiscalc, lamphlog, trpyrcotg, trbent,
trss, trsh



FAIR

FAIR



1479u
C1 61.30%
C2 14.38%
C3 15.90%
C4 8.42%

1433u

SCALE CHANGE
GAS 0 - 4000u

UNITS
PPM

4000
400000

2330u

SURVEY
MD 5946'
TVD 5867.98'
INC 1.9°
AZI 180.0°

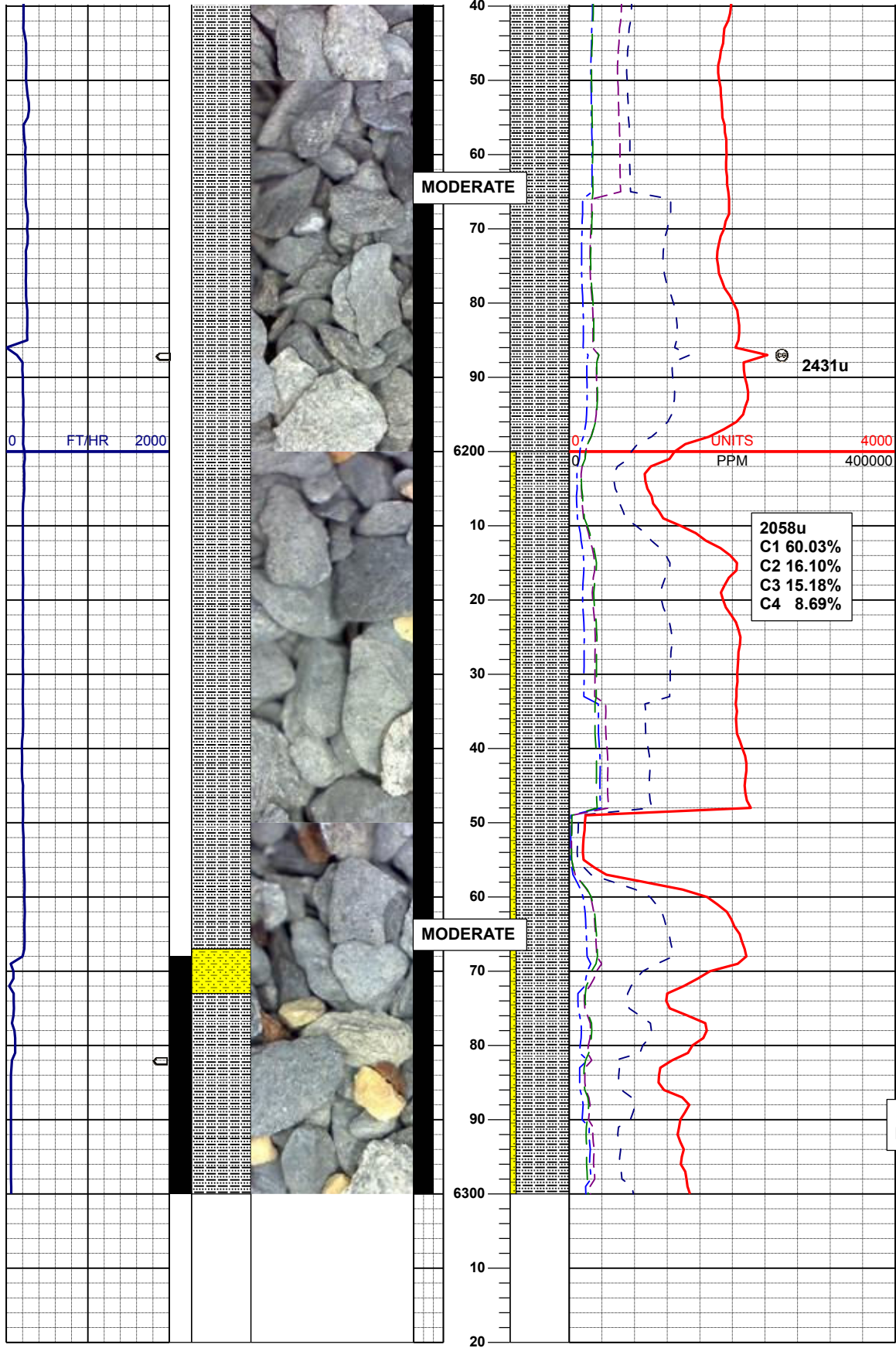
100% SLTYSH: m-mltbrngy, mod
firm, sbplty-plty, occsbbkly, fgr-slsdy,
vsicalc, lamphlog, trpyrcotg, trss, trsh

SURVEY
MD 6041'
TVD 5962.96'
INC 0.4°
AZI 239.6°

100% SLTYSH: m-mltbrngy, mod
firm, sbplty-plty, occsbbkly, fgr-slsdy,
vsicalc, lamphlog, trpyrcotg, trss, trsh

MUD WT: 9.4 VIS: 32 IN
MUD WT: 9.3 VIS: 31 OUT

SURVEY
MD 6136'
TVD 6057.96'



INC 0.2°
AZI 275.8°

100% SLTYSH: m-mltbrngy, mod firm, sbply-pty, occsbbky, fgr-slsdy, vsllcalc, lamphlog, trpyrcotg, trss, trsh

MUD WT: 9.4+ VIS: 32 IN
MUD WT: 9.5 VIS: 33 OUT

90% SLTYSH: m-mltgy, mod firm -sft, sbply-sbbky, smepty, fgr-slsdy, noncalc, trpyrcotg, grdg to 10% SHYSS: mgy, f-mfgr, sbang-sbrd, sbply, p-modsrt, mod firm - firm, fri, ppor, slcalc, glau, tr sh

TD VERTICAL @ 6268' MD
5/28/2012 16:06MST

LOG CONTINUES ON L PLOT
EIFERT PC E11-65HN HORIZONTAL

THANK YOU FOR USING
COLUMBINE LOGGING INC.