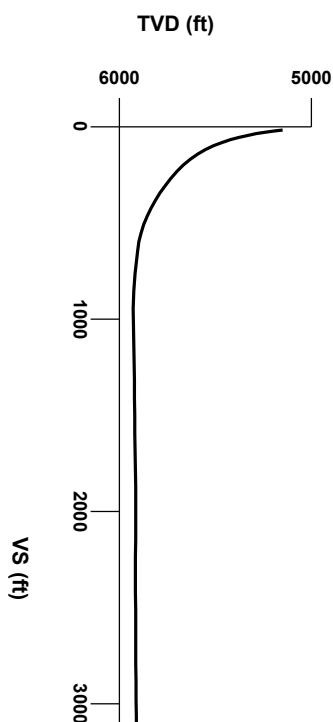


LOG created using LPLLOT VH Version 3.0, June 29, 2013, Copyright (C) 1999-2009 Pason Systems Corp.

OPERATOR: NOBLE ENERGY INC
WELL: TIMBRO LD19-73HN
LOCATION: SEC 19 T9N R58W
COUNTY: WELD
STATE: COLORADO
SPOT: 288' FSL; 300' FEL
ELEVATION: 4825' GL; 4849' KB
FIELD: WILDCAT
SPUD DATE: 6/21/2013
TD DATE: 6/28/2013
DATES LOGGED: 6/23/2013 - 6/28/2013
DEPTHS LOGGED: 5220' - 10273' MD
LOGGERS: LAURA KELLOGG; CONOR PESICKA
DRILLING FLUID: LSND
DRILLING RIG: H&P 273
API: 05-123-36268
LOG TYPE: HORIZONTAL
SCALE: 1:240 (5 inches per 100 feet)
REMARKS: WELLSITE GEOLOGICAL SERVICES
 PROVIDED BY COLUMBINE LOGGING INC



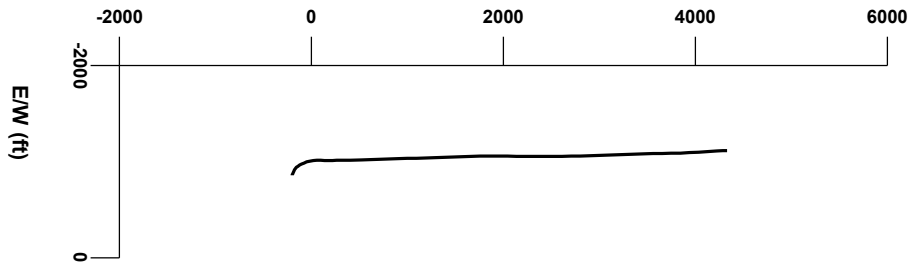
Survey Elevation

4000

5000

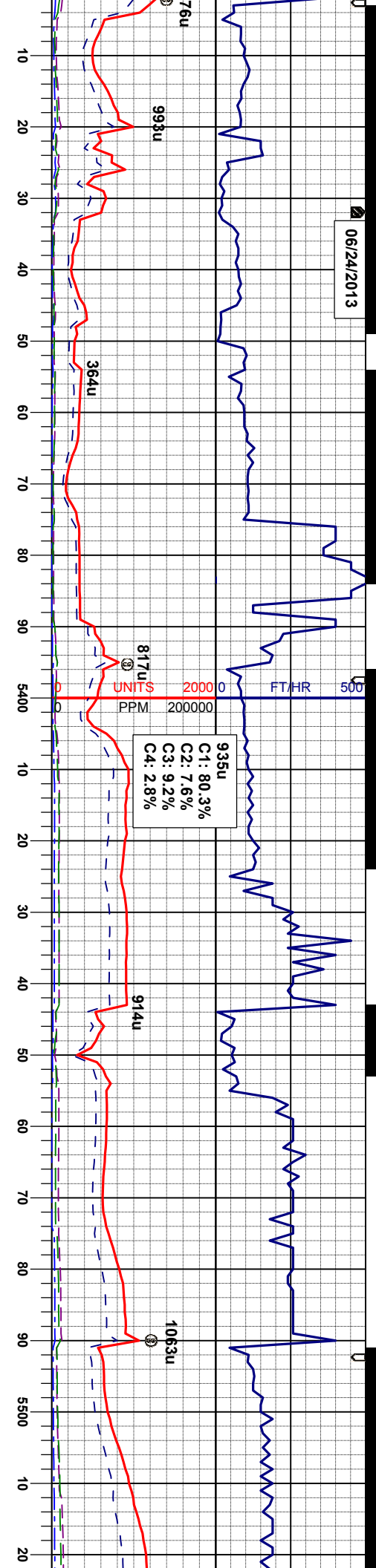
Survey Plan

N/S (ft)



LITHOLOGIES

06/24/2013



MD 5346'
INC 12.9°
AZM 296.4°
TVD 5242.13'

MD 5393'
INC 17.1°
AZM 294.9°
TVD 5287.52'

MD 5441'
INC 19.7°
AZM 294.5°
TVD 5333.06'

MD 5488'
INC 19.6°
AZM 295.0°
TVD 5377.32'

WT IN 10.30/ OUT 10.30
VIS IN 34/ OUT 34

WT IN 10.60/ OUT 10.60
VIS IN 45/ OUT 45

WT IN 10.60/ OUT 10.60
VIS IN 50/ OUT 50

WT IN 10.60/ OUT 10.60
VIS IN 48/ OUT 48

WT IN 10.50+ / OUT 10.50+
VIS IN 38/ OUT 38

SLTYSH: lly-gy-gybrn, sbblky-sbply, gt-
sdy tex, arg cnt, v sl calc

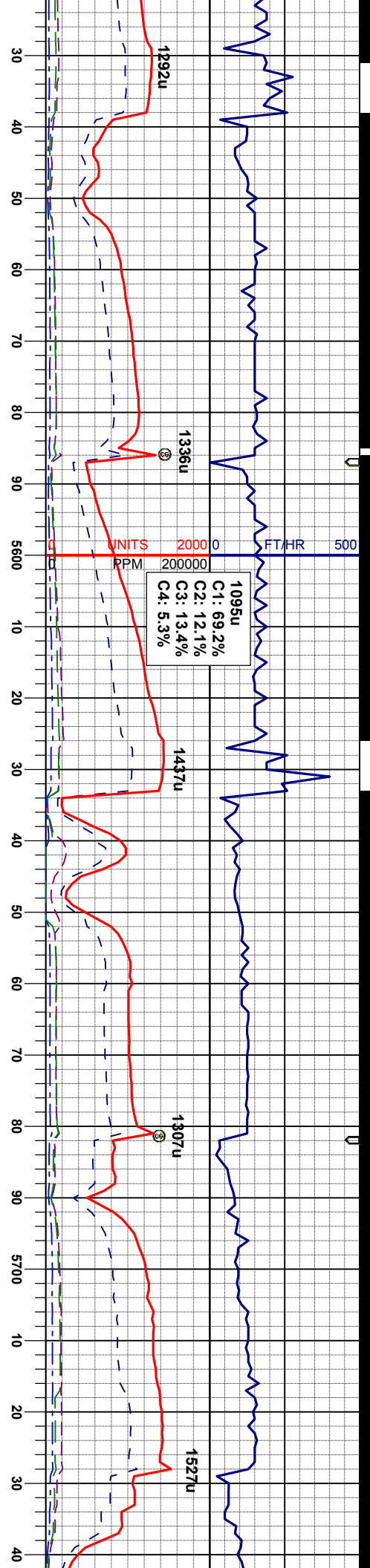
SLTYSH: lly-gy-gybrn, sbblky-sbply, gt-
sdy tex, arg cnt, v sl calc

SLTYSH: lly-gy-gybrn, sbblky-sbply, gt-
sdy tex, arg cnt, v sl calc

SLTYSH: lly-gy-gybrn, sbblky-sbply, gt-
sdy tex, arg cnt, v sl calc

SLTYSH: lly-gy-gy-gy, gt-
sdy tex, arg cnt, v





MD 5536'
INC 20.7°
AZM 306.1°
TVD 5422.40'

MD 5583'
INC 22.1°
AZM 317.4°
TVD 5466.18'

WT IN 10.50/ OUT 10.50
VIS IN 35/ OUT 35

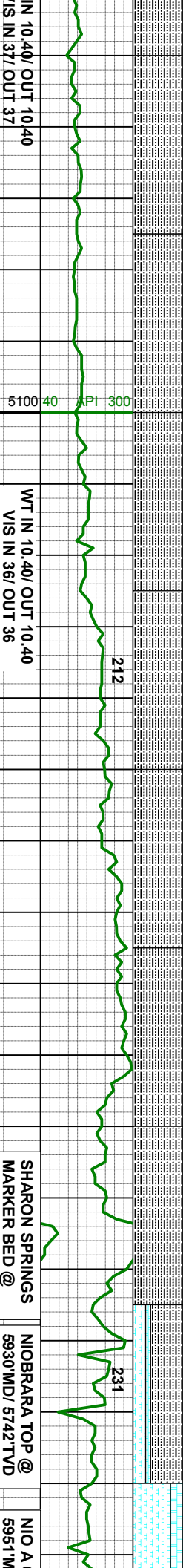
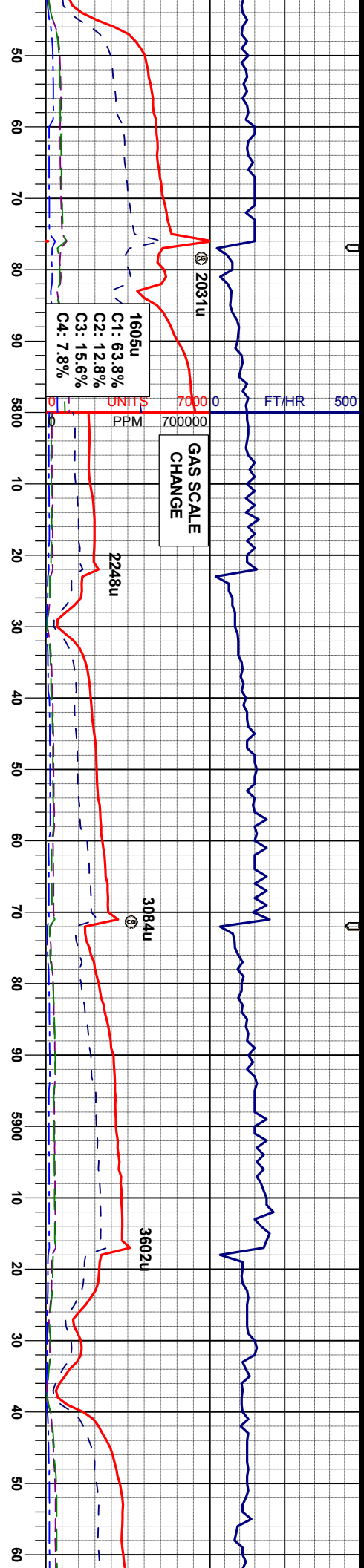
MD 5631'
INC 24.4°
AZM 335.3°
TVD 5510.29'

MD 5678'
INC 28.2°
AZM 330.7°
TVD 5552.42'

MD 5725'
INC 33.0°
AZM 333.7°
TVD 5592.87'

SLTYSH: lgy-gy-gybrn, sbblky-sbply, gt-sily tex, arg cnt, v sl calc





MD 5772
INC 37.6°
AZM 336.9°
TVD 5631.44'

MD 5820'
INC 42.6°
AZM 341.8°
TVD 5667.93'

MD 5867'
INC 47.0°
AZM 347.1°
TVD 5701.29'

MD 5917'
INC 51.4°
AZM 353.9°
TVD 5733.97'

MD 5951M
INC 51.4°
AZM 353.9°
TVD 5733.97'

SLTYSH: lly-gy-gybrn, sbblky-sbply, gt-sily tex, arg cnt, v sl calc

SLTYSH: lly-gy-gybrn, sbblky-sbply, gt-sily tex, arg cnt, v sl calc

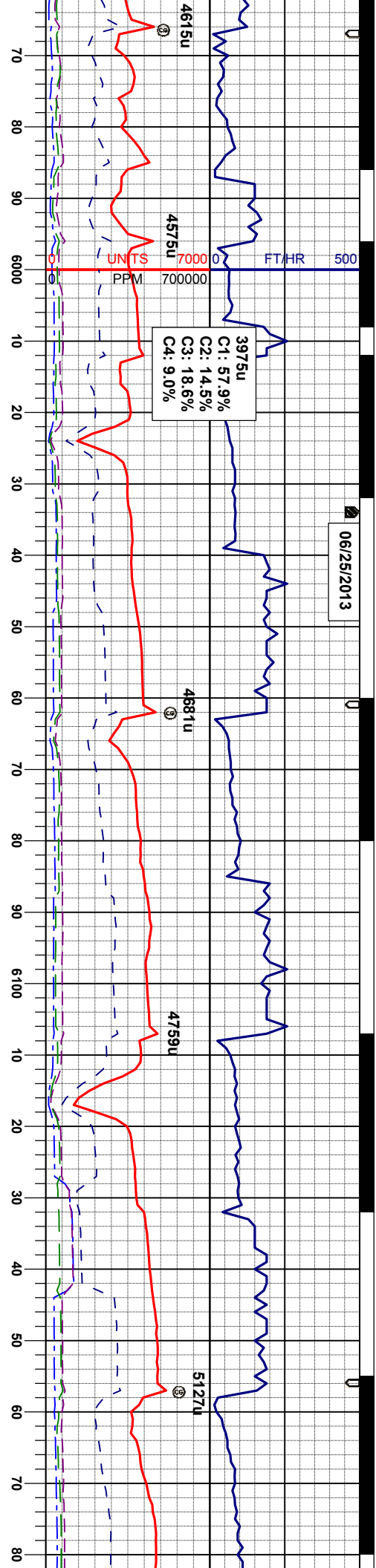
SLTYSH: gy-dky-gybrn, sbblky-sbply, gt-sily tex, arg cnt, v sl calc, tr bent

SLTYSH: gy-dky-gybrn, sbblky-sbply, gt-sily tex, arg cnt, v sl calc, tr bent
MRL: dky-gybrn, sbblky-sbply, stf, mot-rthy tex, v calc, abnt bent, tr pyr
CHK: lly-crm, sbblky, stf - firm, mot-wxy tex, v calc

MRL: dky-gybrn, sbblky-sbply, stf, mot-rthy tex, v calc, abnt bent, tr pyr
CHK: lly-crm, sbblky, stf - firm, mot-wxy tex, v calc



06/25/2013



CHALK @ WT IN 10.40/ OUT 10.40 VIS IN 37/ OUT 37

NIO A MARL @ 6005' MD/ 5786' TVD

WT IN 10.45/ OUT 10.45 VIS IN 36/ OUT 36

NIO B CHALK @ 6125' MD/ 5844' TVD

5962' 54.0° 359.7° 61.25'

MD	INC	AZM	TVD
6010'	57.2°	0.6°	5788.37'

CHK: lly-crm, sbblky, sft - firm, mot-wxy
tex, v calc
MRL: dgy-gybrn, sbblky-sbply, sft, mot-rthy tex, v calc, tr bent, tr pyr

MD	INC	AZM	TVD
6057'	60.2°	0.8°	5812.78'

CHK: lly-crm, sbblky, sft - firm, mot-wxy
tex, v calc
MRL: dgy-gybrn, sbblky-sbply, sft, mot-rthy tex, v calc, tr bent, tr pyr

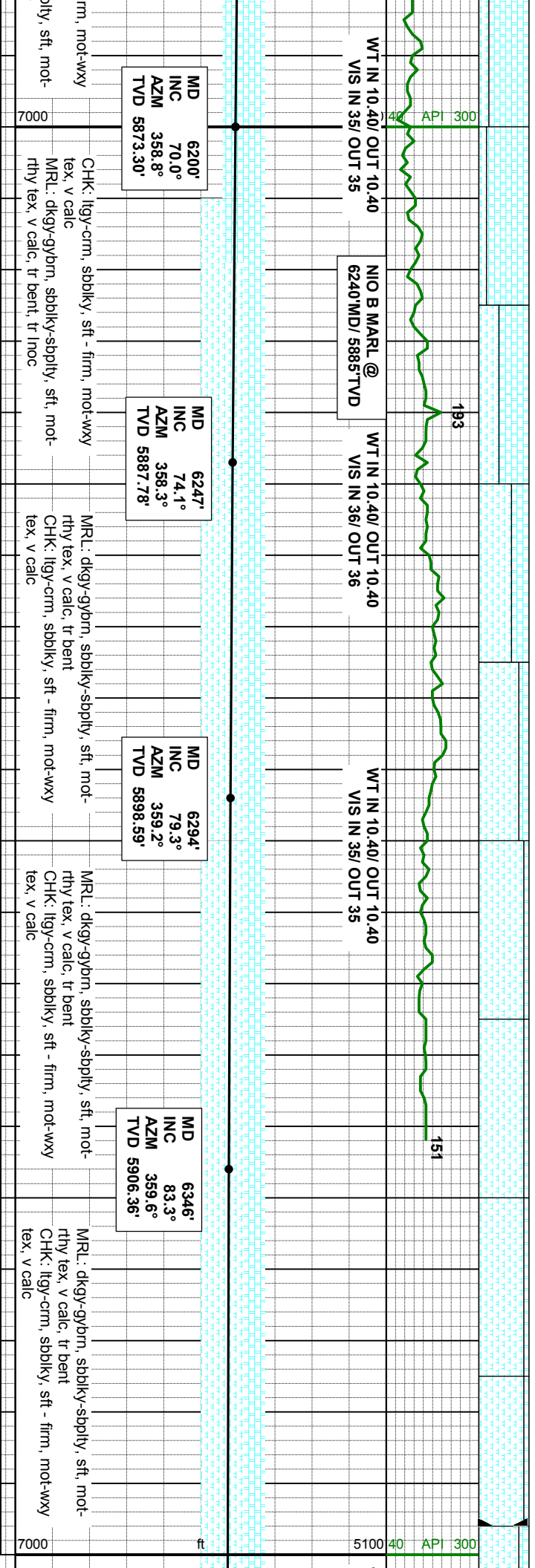
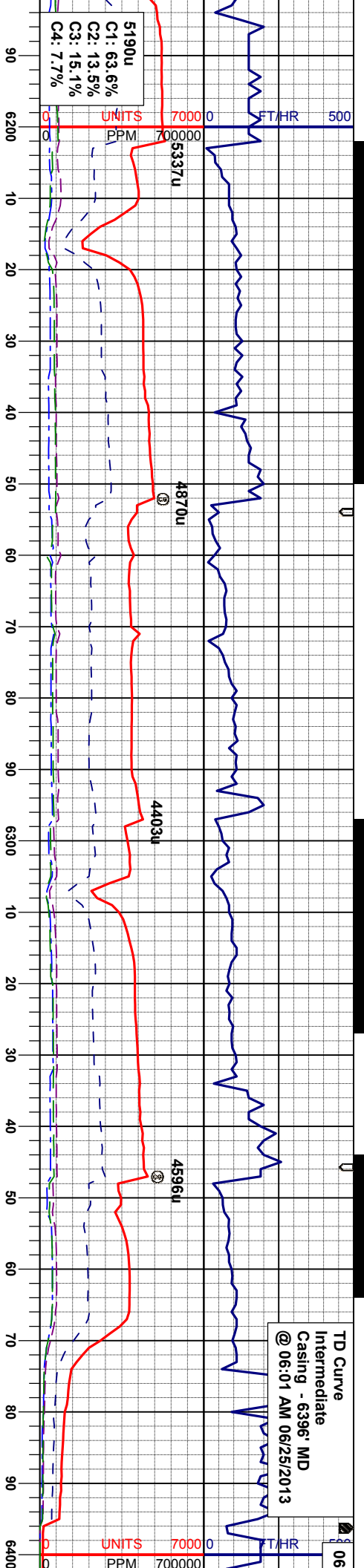
MD	INC	AZM	TVD
6105'	63.4°	359.7°	5835.46'

CHK: lly-crm, sbblky, sft - firm, mot-wxy
tex, v calc
MRL: dgy-gybrn, sbblky-sbply, sft, mot-rthy tex, v calc, tr bent, tr pyr

MD	INC	AZM	TVD
6152'	66.3°	359.6°	5855.43'

CHK: lly-crm, sbblky, sft - firm, mot-wxy
tex, v calc
MRL: dgy-gybrn, sbblky-sbply, sft, mot-rthy tex, v calc, tr bent, tr pyr



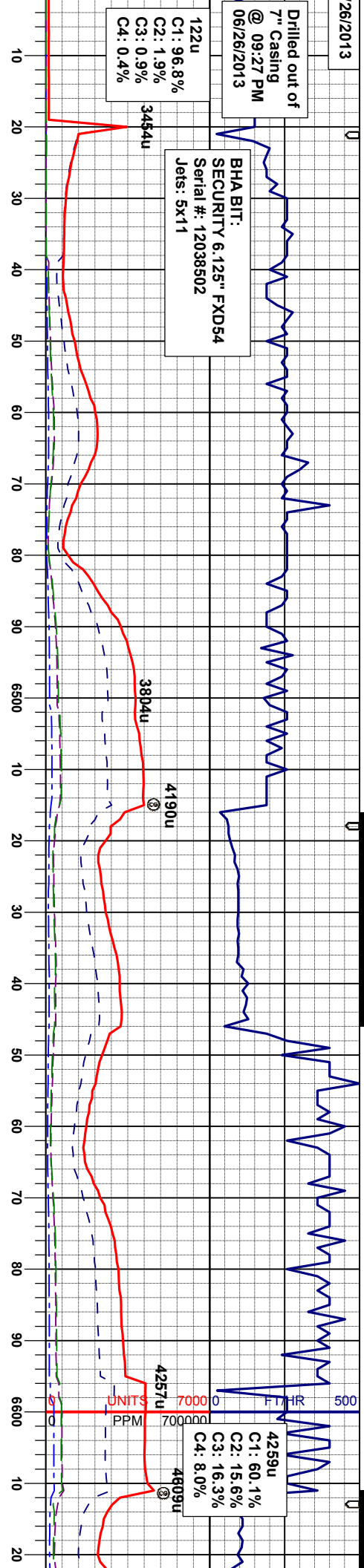


26/2013

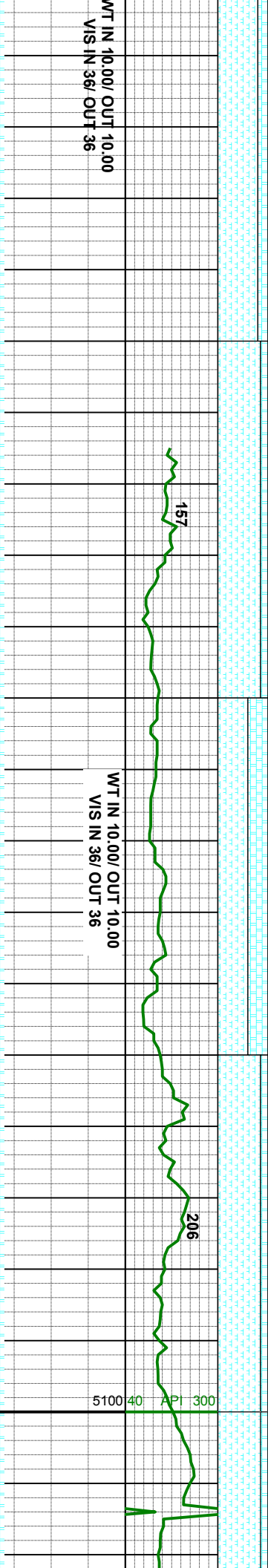
Drilled out of
7" Casing
@ 09:27 PM
06/26/2013

BHA BIT:
SECURITY 6.125" FXD54
Serial #: 12038502
Jets: 5x11

122u
C1: 96.8%
C2: 1.9%
C3: 0.9%
C4: 0.4%



WT IN 10.00/ OUT 10.00
VIS IN 36/ OUT 36



MRL: dkgy-gybrn, sdbkly-sbply, sft, mot-
rthy tex, v calc
CHK: llyg-crm, sdbkly, sft - firm, mot-wxy
tex, v calc

MRL: dkgy-gybrn, sdbkly-sbply, sft, mot-
rthy tex, v calc
CHK: llyg-crm, sdbkly, sft - firm, mot-wxy
tex, v calc

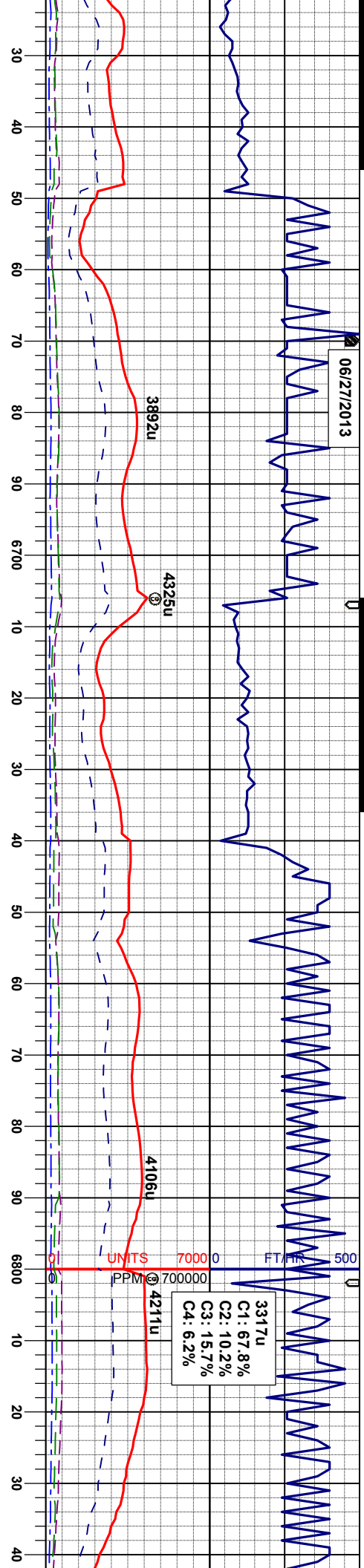
MRL: dkgy-gybrn, sdbkly-sbply, sft, mot-
rthy tex, v calc
CHK: llyg-crm, sdbkly, sft - firm, mot-wxy
tex, v calc

MRL: dkgy-gybrn, sdbkly-sbply, sft, mot-
rthy tex, v calc
CHK: llyg-crm, sdbkly, sft - firm, mot-wxy
tex, v calc

MRL: dkgy-gybrn, sdbkly-sbply, sft, mot-
rthy tex, v calc
CHK: llyg-crm, sdbkly, sft - firm, mot-wxy
tex, v calc



06/27/2013



MD 6656'
INC 89.3°
AZM 358.7°
TVD 5928.89'

sbdkly-sbpily, sft, mot-
bky, sft - firm, mot-wxy

MRL: dkgy-gy/brn, sbdkly-sbpily, sft, mot-
rthy tex, v calc
CHK: lgy-crm, sbdkly, sft - firm, mot-wxy
tex, v calc

MD 6751'
INC 92.1°
AZM 358.3°
TVD 5927.64'

CHK: lgy-crm, sbdkly, sft - firm, mot-wxy
tex, v calc
MRL: dkgy-gy/brn, sbdkly-sbpily, sft, mot-
rthy tex, v calc

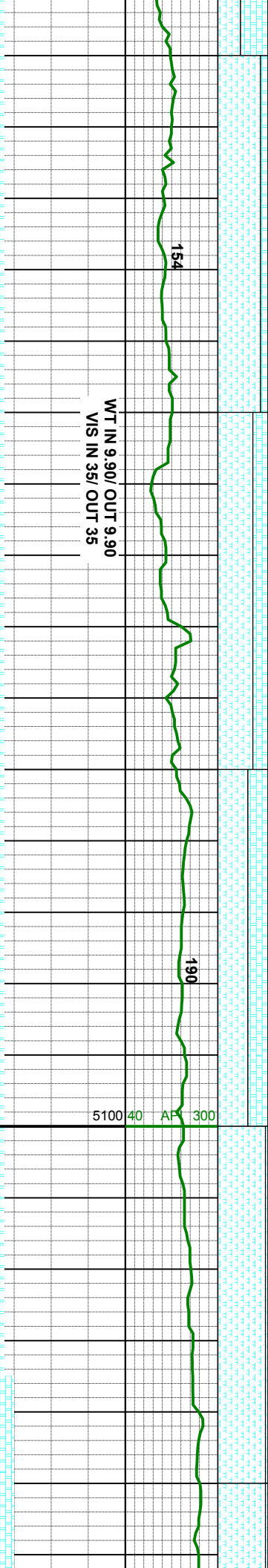
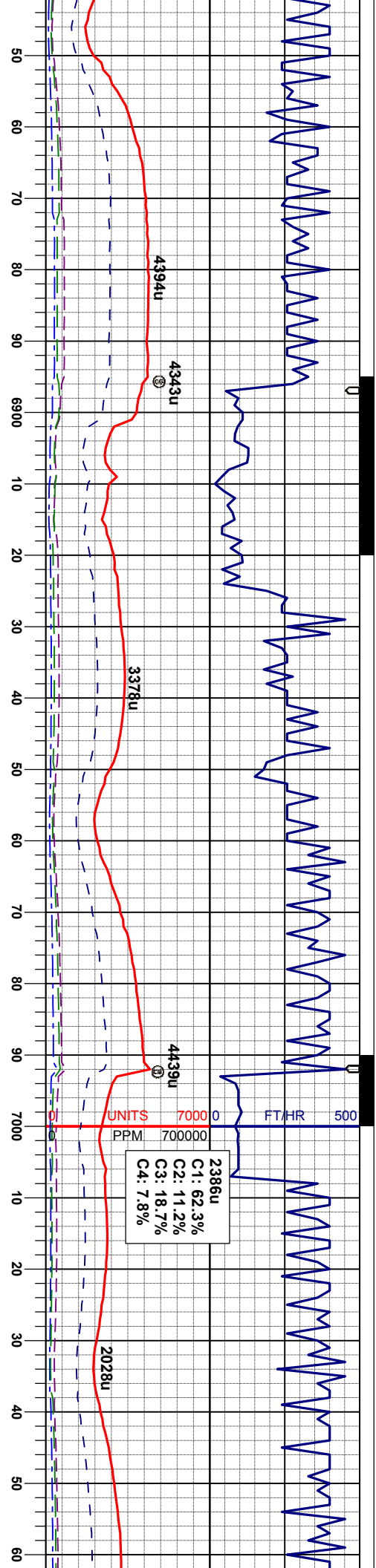
MRL: dkgy-gy/brn, sbdkly-sbpily, sft, mot-
rthy tex, v calc
CHK: lgy-crm, sbdkly, sft - firm, mot-wxy
tex, v calc

WT IN 9.90/ OUT 9.90
VIS IN 35/ OUT 35

MD INC
AZM
TVD

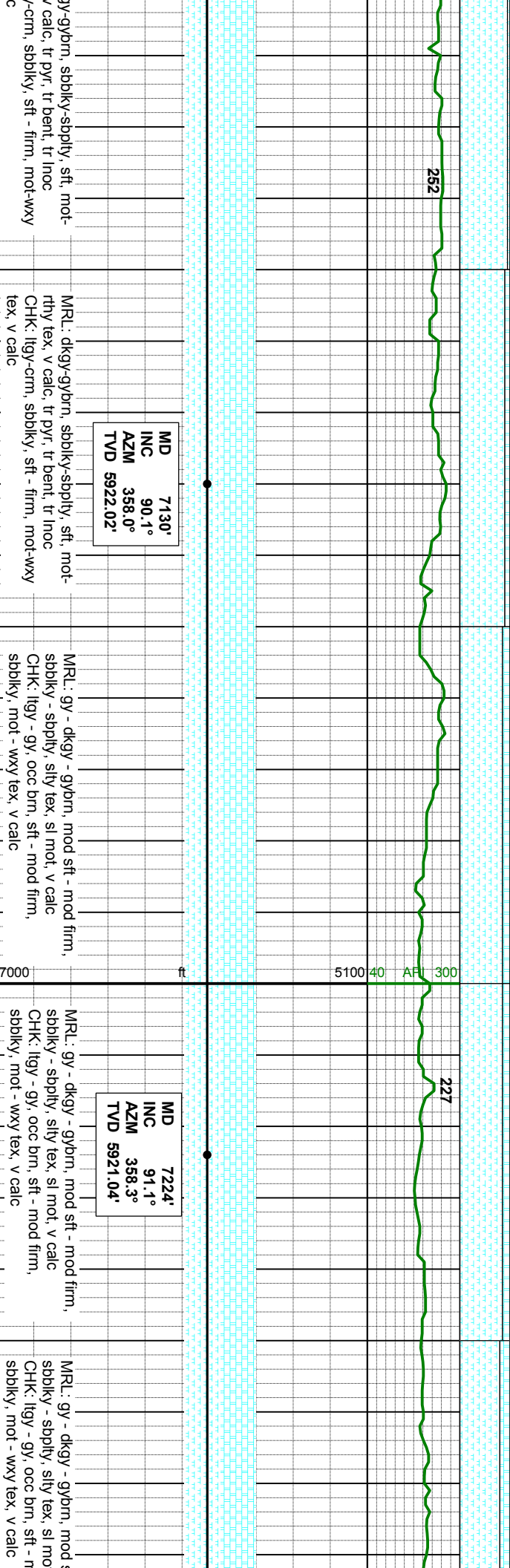
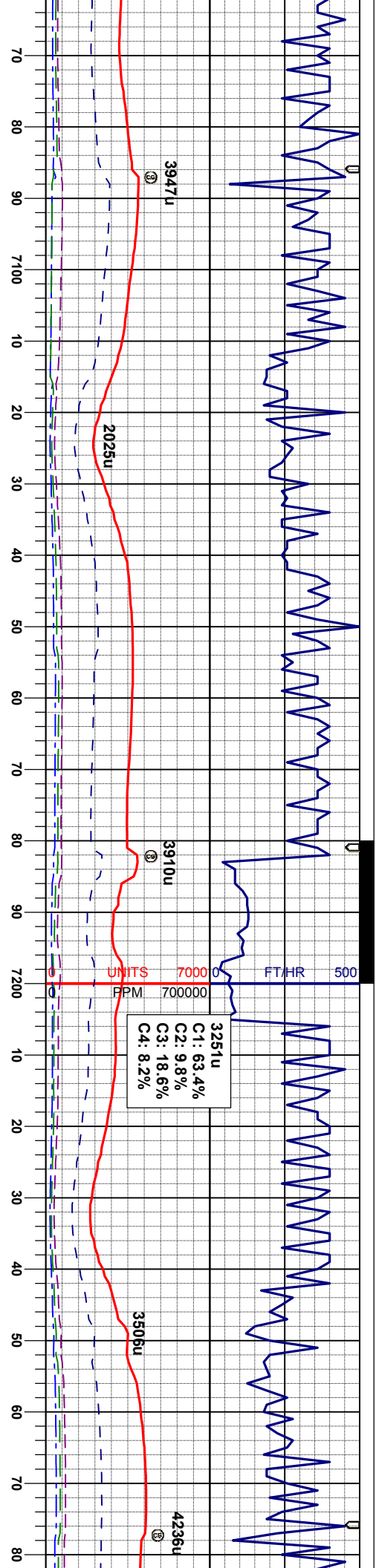
CHK: lgy-crm, sbdkly, sft - firm, mot-w-
tex, v calc
MRL: dkgy-gy/brn, sbdkly-sbpily, sft, m
rthy tex, v calc

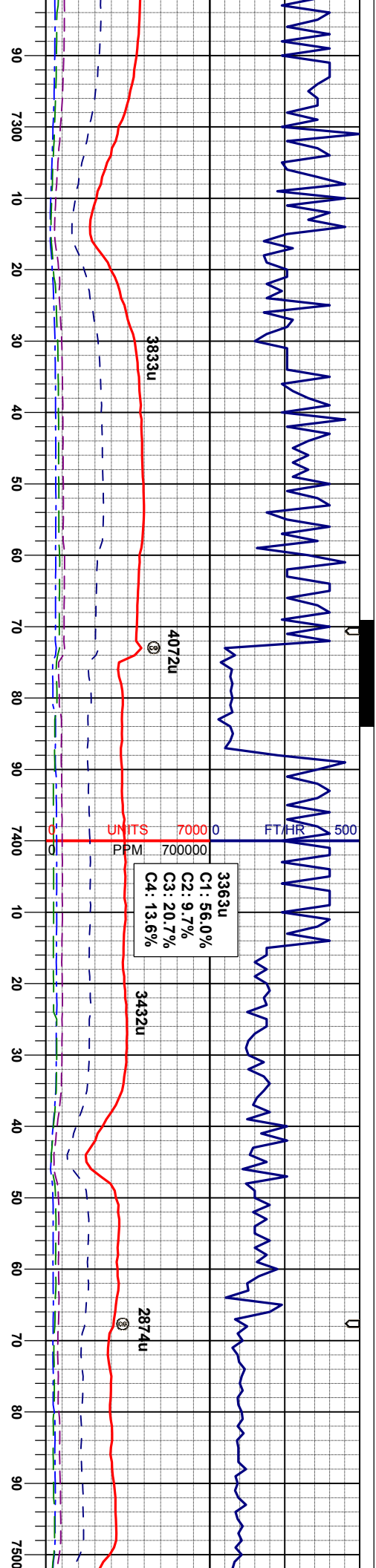




6845' 90.3° 357.1° 5925.67'		MD 6940' INC 90.7° AZM 359.6° TVD 5924.84'		MD 7035' INC 91.3° AZM 359.0° TVD 5922.69'	
MRL: dkgy-gybrn, sbblky-sbply, sft, mot-rthy tex, v calc, tr pyr, tr bent, tr inoc		MRL: dkgy-gybrn, sbblky-sbply, sft, mot-rthy tex, v calc, tr pyr, tr bent, tr inoc		MRL: dkgy-gybrn, sbblky-sbply, sft, mot-rthy tex, v calc, tr pyr, tr bent, tr inoc	
CHK: llyg-crm, sbblky, sft - firm, mot-wxy tex, v calc		CHK: llyg-crm, sbblky, sft - firm, mot-wxy tex, v calc		CHK: llyg-crm, sbblky, sft - firm, mot-wxy tex, v calc	







WT IN 9.90/ OUT 9.90
VIS IN 35/ OUT 35

MD 7319'
INC 90.1°
AZM 358.7°
TVD 5920.05'

MRL: gy - dkgy - gybrn, mod sft - mod firm,
sbbiky - sbply, silty tex, sl mot, v calc
CHK: ltgy - gy, occ brn, sft - mod firm,
sbbiky, mot - wxy tex, v calc

MRL: gy - dkgy - gybrn, mod sft - mod firm,
sbbiky - sbply, silty tex, sl mot, v calc
CHK: ltgy - gy, occ brn, sft - mod firm,
sbbiky, mot - wxy tex, v calc

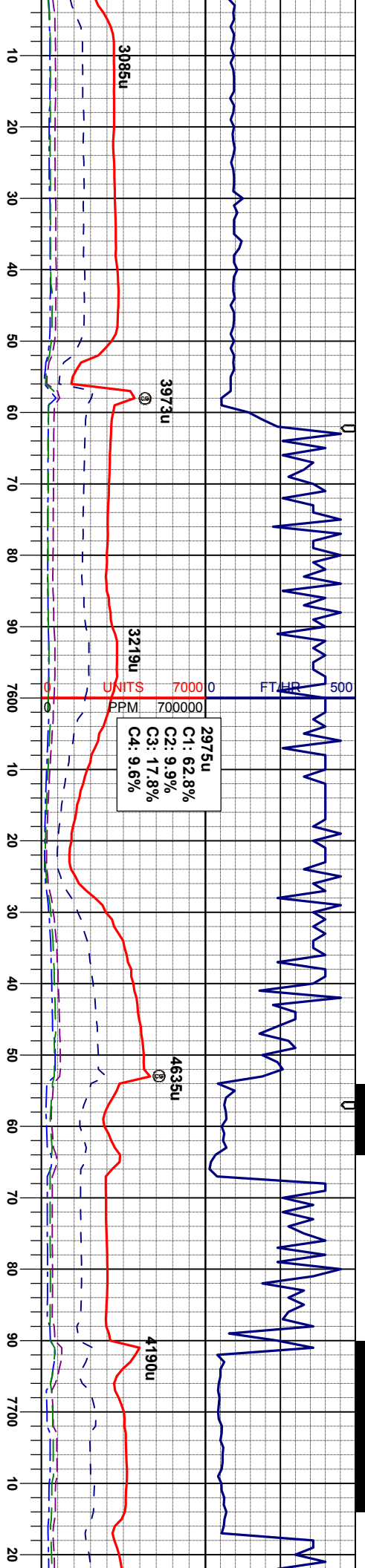
MD 7414'
INC 90.8°
AZM 357.8°
TVD 5919.30'

MRL: gy - dkgy - gybrn, mod sft - mod firm,
sbbiky - sbply, silty tex, sl mot, v calc
CHK: ltgy - gy, occ brn, sft - mod firm,
sbbiky, mot - wxy tex, v calc

MRL: gy - dkgy - gybrn, mod sft - mod firm,
sbbiky - sbply, silty tex, sl mot, v calc
CHK: ltgy - gy, occ brn, sft - mod firm,
sbbiky, mot - wxy tex, v calc

WT IN 10.05/ C
VIS IN 36/ OUT 36





UT 10.05

WT IN 10.00/ OUT 10.00
VIS IN 37/ OUT 37

WT IN 10.00/ OUT 10.00
VIS IN 38/ OUT 38

MD 7509'
INC 91.1°
AZM 357.8°
TVD 5917.73'

MRL: gy - dkgy - gybrn, mod sft - mod firm,
sbbky - sbbpy, sily tex, sl mot, v calc
CHK: lgy - gy, occ brn, sft - mod firm,
sbbky, mot - wxy tex, v calc

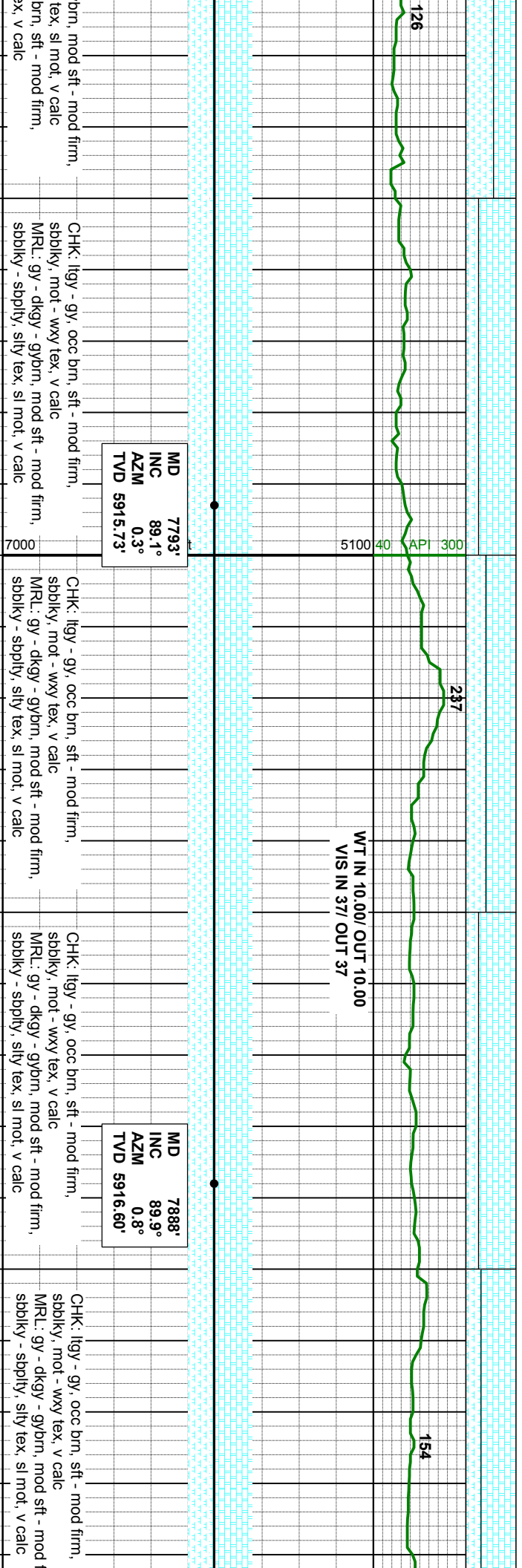
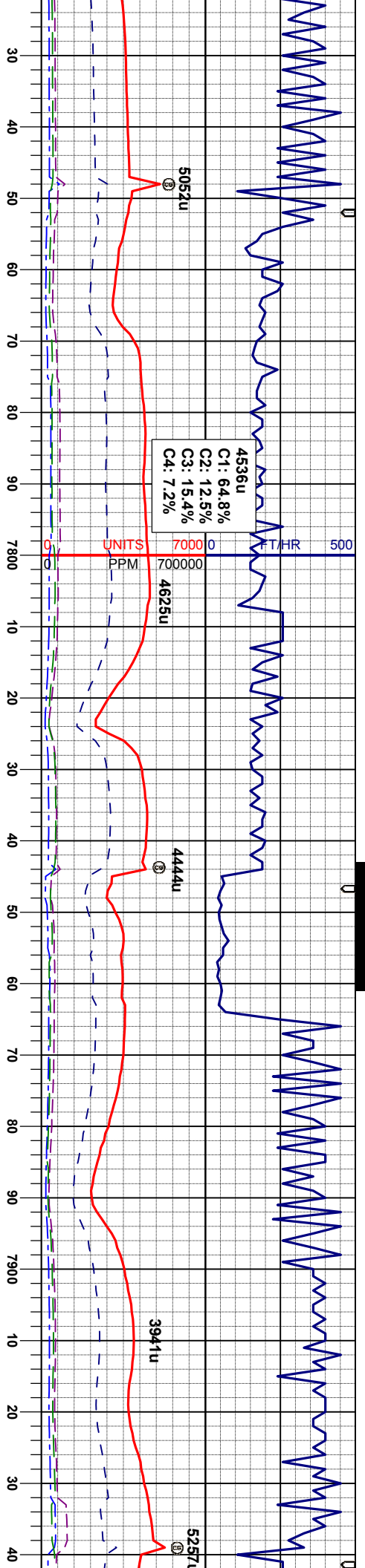
MD 7604'
INC 90.8°
AZM 357.1°
TVD 5916.15'

MRL: gy - dkgy - gybrn, mod sft - mod firm,
sbbky - sbbpy, sily tex, sl mot, v calc
CHK: lgy - gy, occ brn, sft - mod firm,
sbbky, mot - wxy tex, v calc

MD 7699'
INC 90.3°
AZM 359.0°
TVD 5915.24'

MRL: gy - dkgy - gybrn, mod sft - mod firm,
sbbky - sbbpy, sily tex, sl mot, v calc
CHK: lgy - gy, occ brn, sft - mod firm,
sbbky, mot - wxy tex, v calc





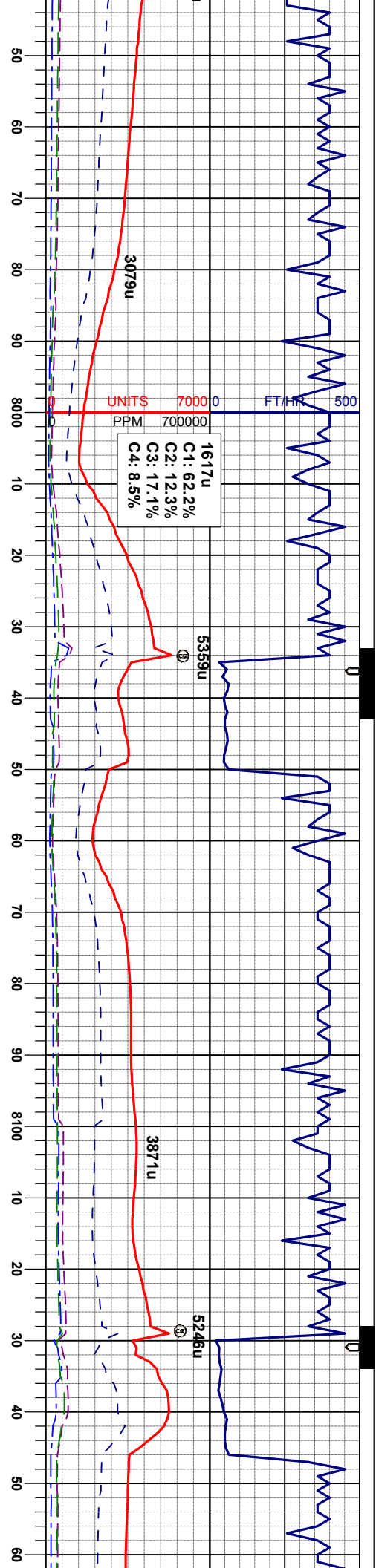
MD 7793'
INC 89.1°
AZM 0.3°
TVD 5915.73'

CHK: lgy - gy, occ brn, sft - mod firm,
sbbiky, mot - wxy tex, v calc
MRL: gy - dkgy - gybrn, mod sft - mod firm,
sbbiky - sbply, silty tex, sl mot, v calc

MD 7888'
INC 89.9°
AZM 0.8°
TVD 5916.60'

CHK: lgy - gy, occ brn, sft - mod firm,
sbbiky, mot - wxy tex, v calc
MRL: gy - dkgy - gybrn, mod sft - mod firm,
sbbiky - sbply, silty tex, sl mot, v calc





WT IN 9.95/ OUT 9.95
VIS IN 37/ OUT 37

WT IN 9.90/ OUT 9.90
VIS IN 37/ OUT 37

MD 7983'
INC 89.7°
AZM 0.6°
TVD 5916.89'

MD 8078'
INC 89.5°
AZM 0.6°
TVD 5917.56'

CHK: lgy - gy, occ brn, sft - mod firm,
sbbiky, mot - wxy tex, v calc
MRL: gy - dkgy - gybrn, mod sft - mod firm,
sbbiky - sbbply, slty tex, sl mot, v calc

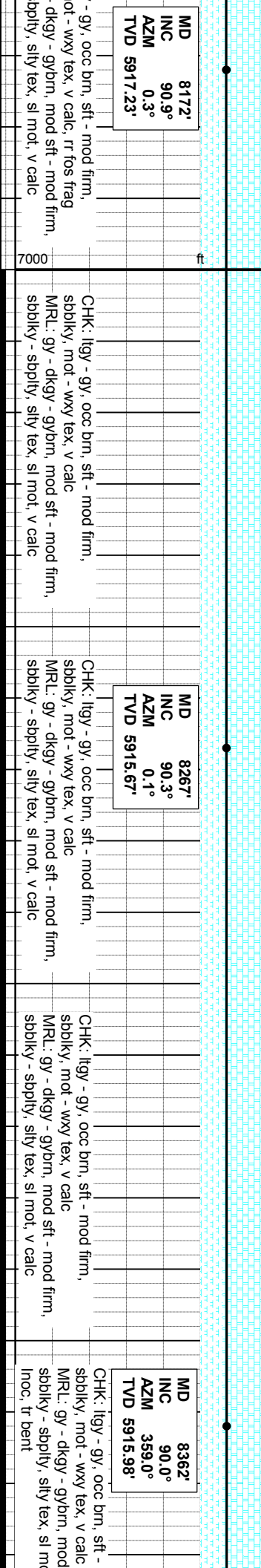
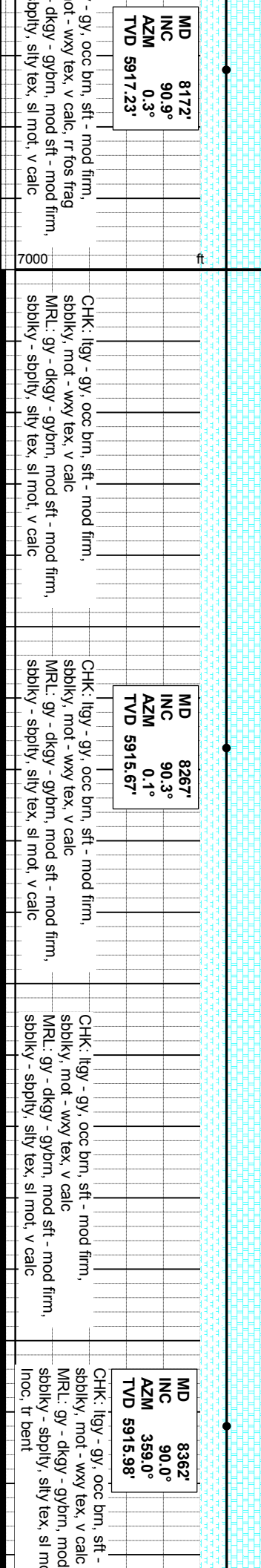
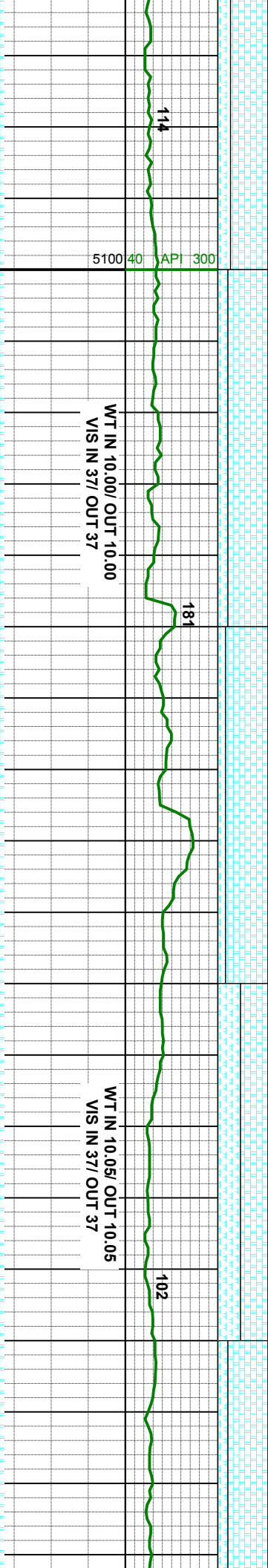
CHK: lgy - gy, occ brn, sft - mod firm,
sbbiky, mot - wxy tex, v calc
MRL: gy - dkgy - gybrn, mod sft - mod firm,
sbbiky - sbbply, slty tex, sl mot, v calc

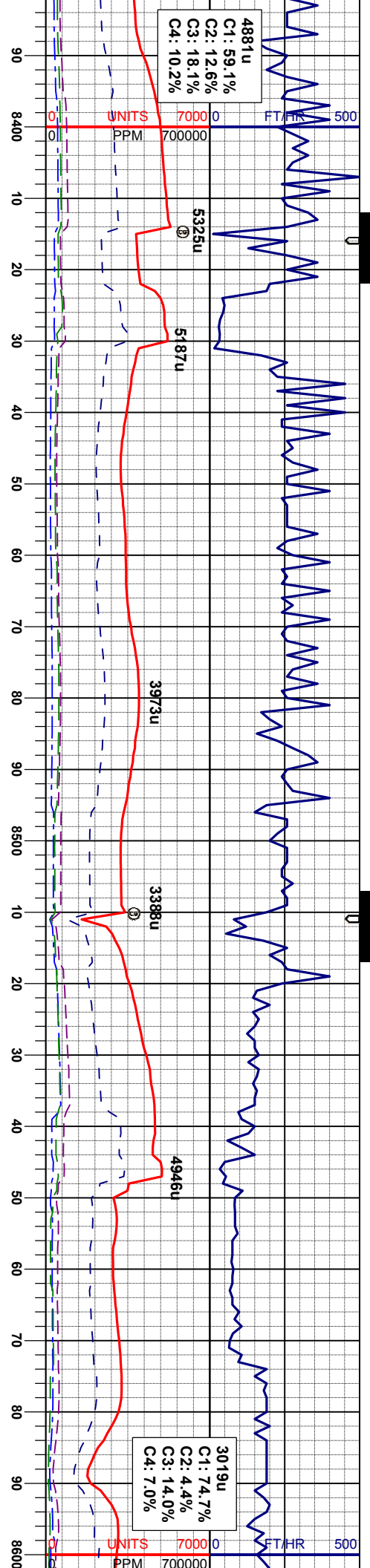
CHK: lgy - gy, occ brn, sft - mod firm,
sbbiky, mot - wxy tex, v calc
MRL: gy - dkgy - gybrn, mod sft - mod firm,
sbbiky - sbbply, slty tex, sl mot, v calc

CHK: lgy - gy, occ brn, sft - mod firm,
sbbiky, mot - wxy tex, v calc
MRL: gy - dkgy - gybrn, mod sft - mod firm,
sbbiky - sbbply, slty tex, sl mot, v calc

CHK: lgy - gy, occ brn, sft - mod firm,
sbbiky, mot - wxy tex, v calc
MRL: gy - dkgy - gybrn, mod sft - mod firm,
sbbiky - sbbply, slty tex, sl mot, v calc





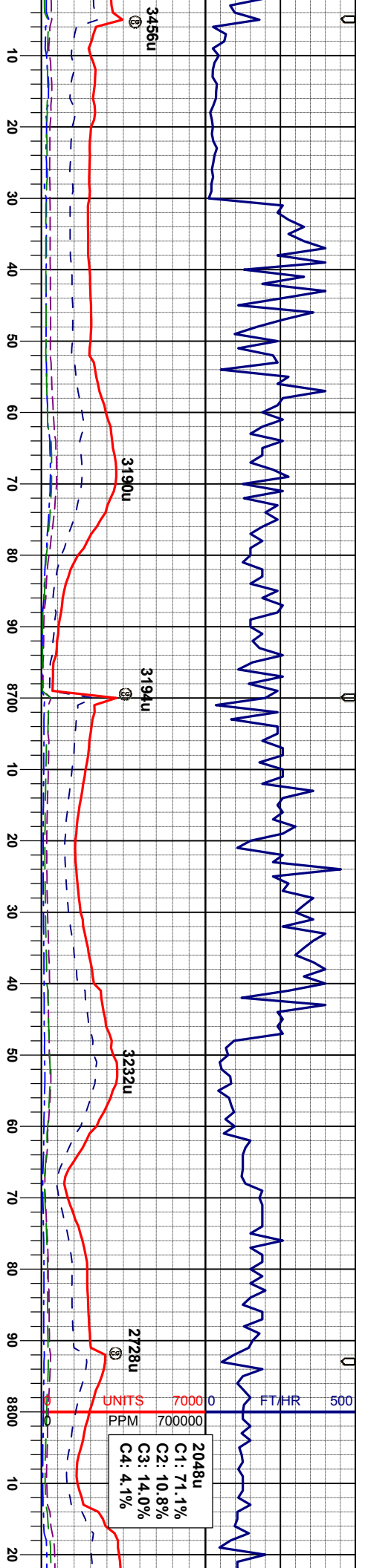


WT IN 10.05/ OUT 10.05
VIS IN 39/ OUT 39

WT IN 10.10/ OUT 10.10
VIS IN 40/ OUT 40

MD INC AZM TVD	8457' 90.5° 0.1° 5914.92'	MR.L: gy - dkgy - gybrn, mod sft - mod firm, sbbiky - sppty, silty tex, sl mot, v calc, tr Inoc CHK: ltgy - gy, occ brn, sft - mod firm, sbbiky - mot - wxy tex, v calc	MR.L: gy - dkgy - gybrn, mod sft - mod firm, sbbiky - sppty, silty tex, sl mot, v calc, tr Inoc CHK: ltgy - gy, occ brn, sft - mod firm, sbbiky - mot - wxy tex, v calc	MD INC AZM TVD	8554' 89.4° 359.4° 5915.48'	MR.L: gy - dkgy - gybrn, mod sft - mod firm, sbbiky - sppty, silty tex, sl mot, v calc, tr Inoc CHK: ltgy - gy, occ brn, sft - mod firm, sbbiky - mot - wxy tex, v calc	MR.L: gy - dkgy - gybrn, mod sft - mod firm, sbbiky - sppty, silty tex, sl mot, v calc, tr Inoc CHK: ltgy - gy, occ brn, sft - mod firm, sbbiky - mot - wxy tex, v calc





2048u
C1: 71.1%
C2: 10.8%
C3: 14.0%
C4: 4.1%

WT IN 10.00/ OUT 10.00
VIS IN 43/ OUT 43

MD 8647'
INC 91.1°
AZM 359.2°
TVD 5914.91'

MRL: gy - dkgy - gybrn, mod sft - mod firm,
sbbiky - sbply, silty tex, sl mot, v calc, tr
Inoc, tr bent
CHK: llyg - gy, occ brn, sft - mod firm,
sbbiky, mot - wxy tex, v calc

MD 8742'
INC 90.7°
AZM 358.3°
TVD 5913.41'

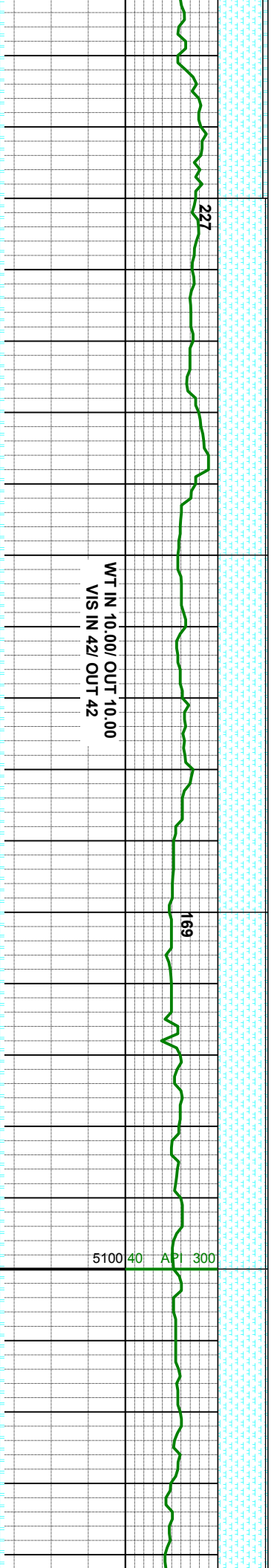
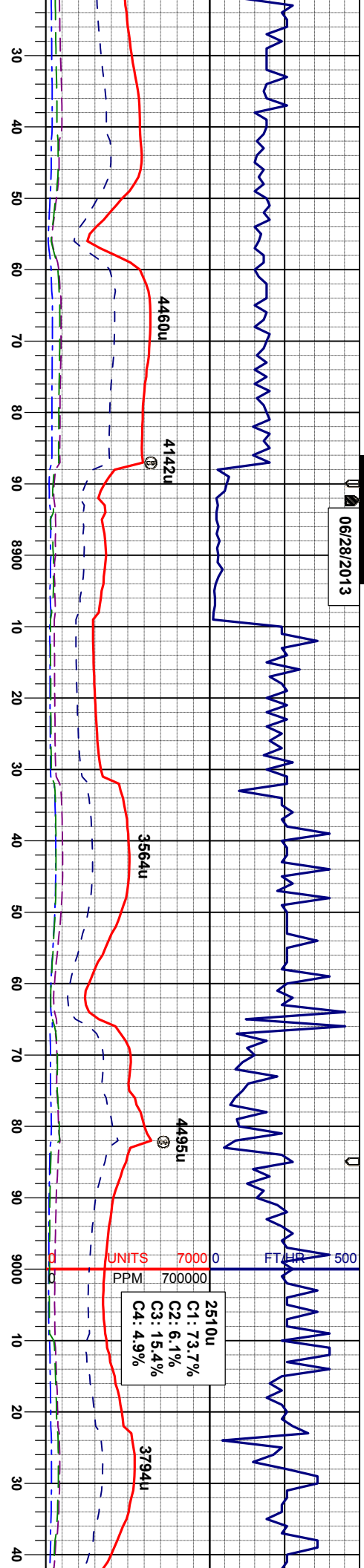
MRL: gy - dkgy - gybrn, mod sft - mod firm,
sbbiky - sbply, silty tex, sl mot, v calc, tr
Inoc, tr bent
CHK: llyg - gy, occ brn, sft - mod firm,
sbbiky, mot - wxy tex, v calc

MRL: gy - dkgy - gybrn, mod sft - mod firm,
sbbiky - sbply, silty tex, sl mot, v calc, tr
Inoc, tr bent
CHK: llyg - gy, occ brn, sft - mod firm,
sbbiky, mot - wxy tex, v calc

MRL: gy - dkgy - gybrn, mod sft - mod firm,
sbbiky - sbply, silty tex, sl mot, v calc, tr
Inoc, tr bent, calc in
CHK: llyg - gy, occ brn, sft - mod firm,
sbbiky, mot - wxy tex, v calc



06/28/2013



WT IN 10.00/ OUT 10.00
VIS IN 42 OUT 42

MD 8836'
INC 90.1°
AZM 358.5°
TVD 5912.76'

MD 8931'
INC 90.6°
AZM 358.1°
TVD 5912.18'

MD 9026'
INC 90.5°
AZM 358.8°
TVD 5911.27'

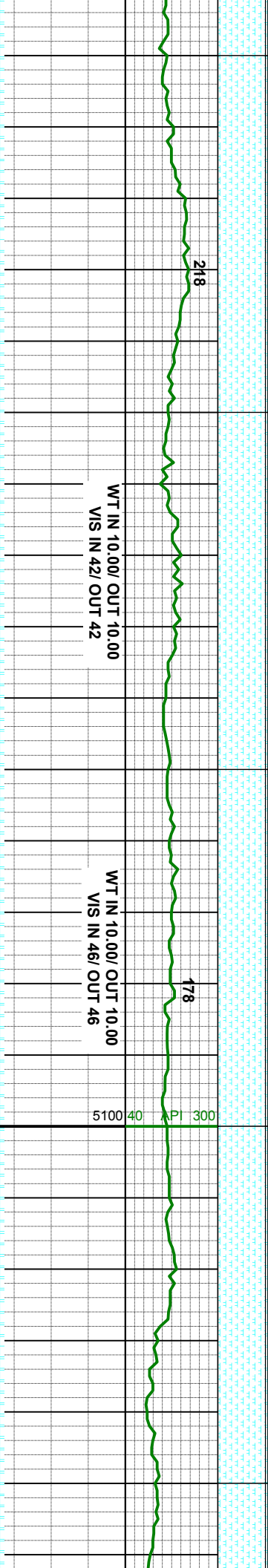
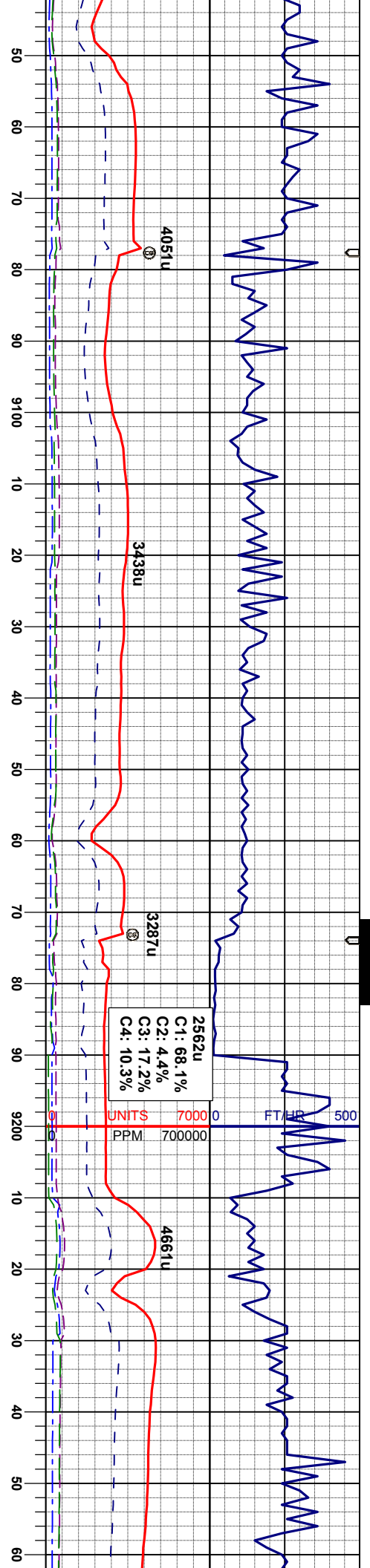
MR.L: gy - dkgy - gybrn, mod sft - mod firm,
sbbiky - sbply, silty tex, sl mot, v calc, tr
Inoc, tr bent, calc incl
CHK: itgy - gy, occ brn, sft - mod firm,
sbbiky, mot - wxy tex, v calc

MR.L: gy - dkgy - gybrn, mod sft - mod firm,
sbbiky - sbply, silty tex, sl mot, v calc, tr
Inoc, tr bent, calc incl
CHK: itgy - gy, occ brn, sft - mod firm,
sbbiky, mot - wxy tex, v calc

MR.L: gy - dkgy - gybrn, mod sft - mod firm,
sbbiky - sbply, silty tex, sl mot, v calc, tr
Inoc, tr bent, calc incl
CHK: itgy - gy, occ brn, sft - mod firm,
sbbiky, mot - wxy tex, v calc

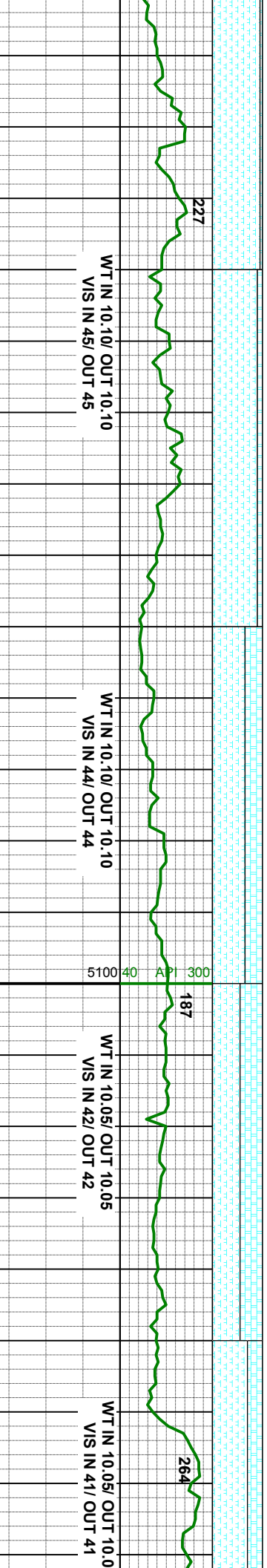
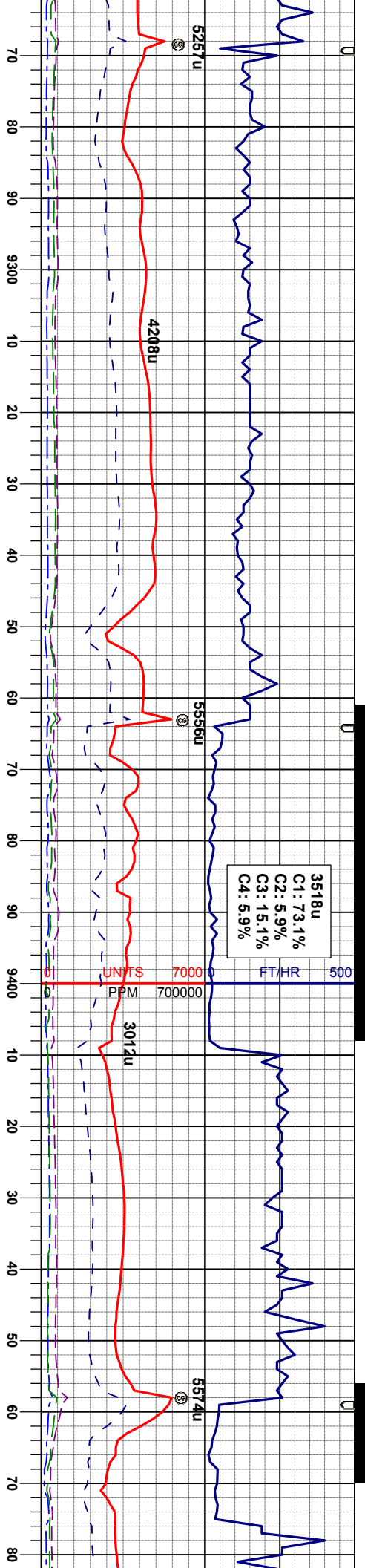
MR.L: gy - dkgy - gybrn, mod sft - mod firm,
sbbiky - sbply, silty tex, sl mot, v calc, tr
Inoc, tr bent, calc incl
CHK: itgy - gy, occ brn, sft - mod firm,
sbbiky, mot - wxy tex, v calc





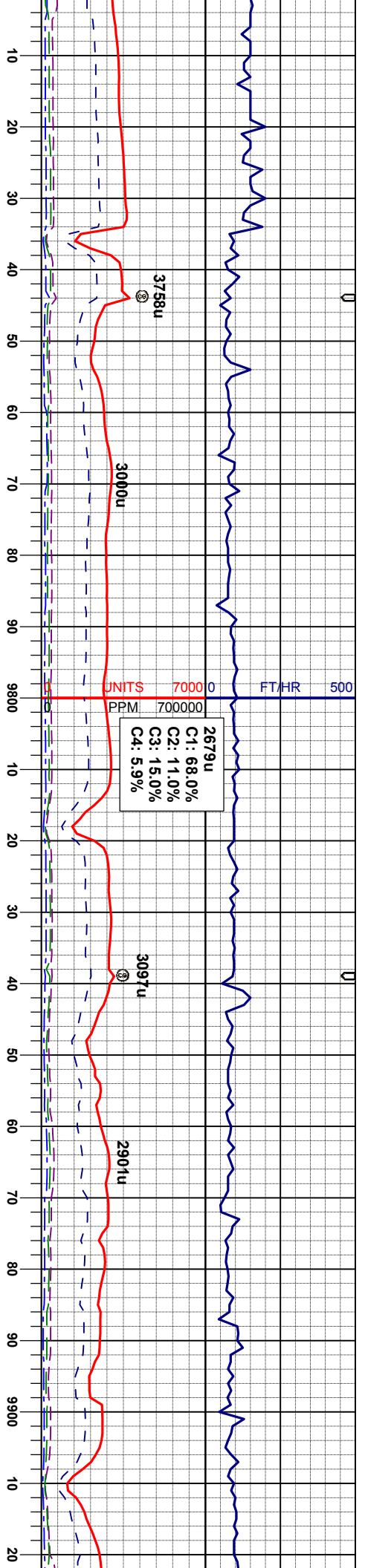
MD 912.1' INC 90.0° AZM 357.4° TVD 5910.85'		MRL: gy - dkgy - gybrn, mod sft - mod firm, sbbiky - sbply, silty tex, sl mot, v calc, tr bent, calc incl CHK: lity - gy, occ brn, sft - mod firm, sbbiky, mot - wxy tex, v calc
MD 9216' INC 90.4° AZM 357.8° TVD 5910.52'		MRL: gy - dkgy - gybrn, mod sft - mod firm, sbbiky - sbply, silty tex, sl mot, v calc, tr bent, tr calc incl CHK: lity - gy, occ brn, sft - mod firm, sbbiky, mot - wxy tex, v calc
MD 9216' INC 90.4° AZM 357.8° TVD 5910.52'		MRL: gy - dkgy - gybrn, mod sft - mod firm, sbbiky - sbply, silty tex, sl mot, v calc, tr bent, tr calc incl CHK: lity - gy, occ brn, sft - mod firm, sbbiky, mot - wxy tex, v calc





MD 9311' INC 88.9° AZIM 357.6° TVD 5911.10'		MD 9406' INC 90.2° AZIM 358.0° TVD 5911.85'	
MR.L: gy - dkgy - gybrn, mod sft - mod firm, sbblky - sbply, sily tex, sl mot, v calc, tr bent, tr calc incl		MR.L: gy - dkgy - gybrn, mod sft - mod firm, sbblky - sbply, sily tex, sl mot, v calc, tr calc incl	
CHK: lly - gy, occ brn, sft - mod firm, sbblky, mot - wxy tex, v calc		CHK: lly - gy, occ brn, sft - mod firm, sbblky, mot - wxy tex, v calc	





2679u
C1: 68.0%
C2: 11.0%
C3: 15.0%
C4: 5.9%

WT IN 10.00/ OUT 10.00
VIS IN 37/ OUT 37

WT IN 10.00/ OUT 10.00
VIS IN 37/ OUT 37

MD	9785'
INC	91.1°
AZM	358.0°
TVD	5906.63'

MD	9880'
INC	91.7°
AZM	357.1°
TVD	5904.31'

MRU: gy - dkgy - gybrn, mod sft - mod firm,
sbbiky - sbbily, sily tex, sl mot, v calc, occ
bent, tr calc incl
CHK: ilgy - gy, occ brn, sft - mod firm,
sbbiky, mot - wxy tex, v calc

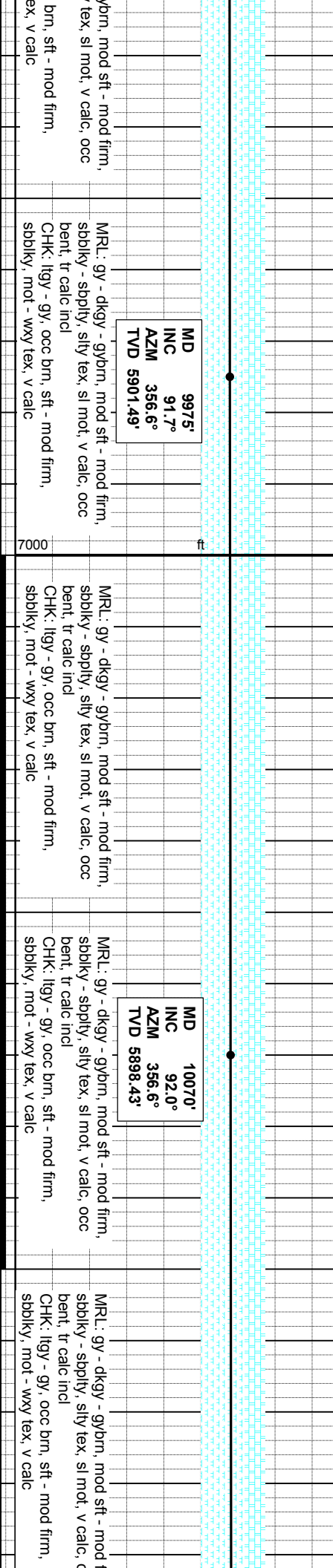
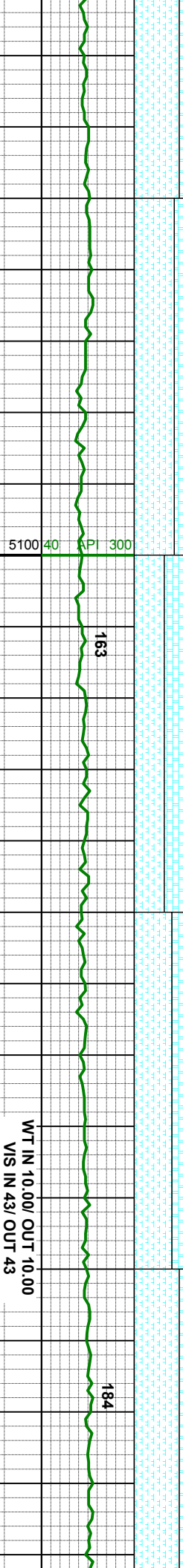
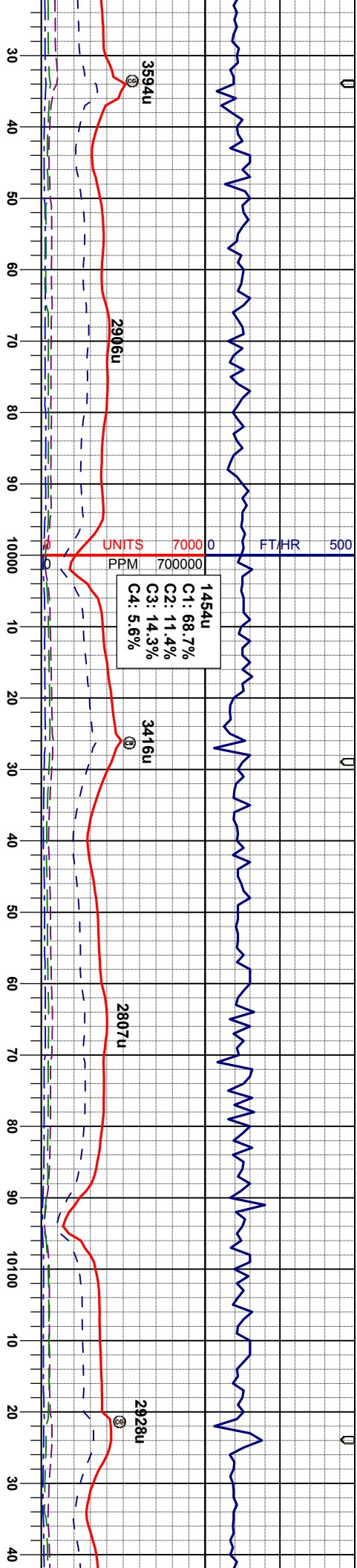
MRU: gy - dkgy - gybrn, mod sft - mod firm,
sbbiky - sbbily, sily tex, sl mot, v calc, occ
bent, tr calc incl
CHK: ilgy - gy, occ brn, sft - mod firm,
sbbiky, mot - wxy tex, v calc

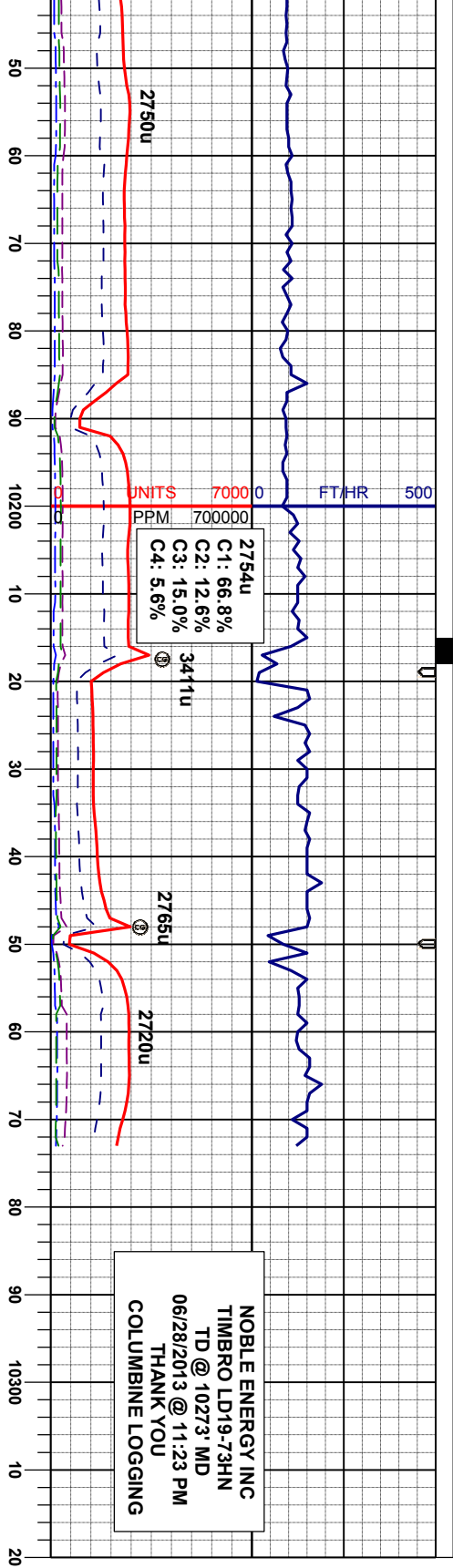
MRU: gy - dkgy - gybrn, mod sft - mod firm,
sbbiky - sbbily, sily tex, sl mot, v calc, occ
bent, tr calc incl
CHK: ilgy - gy, occ brn, sft - mod firm,
sbbiky, mot - wxy tex, v calc

MRU: gy - dkgy - gybrn, mod sft - mod firm,
sbbiky - sbbily, sily tex, sl mot, v calc, occ
bent, tr calc incl
CHK: ilgy - gy, occ brn, sft - mod firm,
sbbiky, mot - wxy tex, v calc

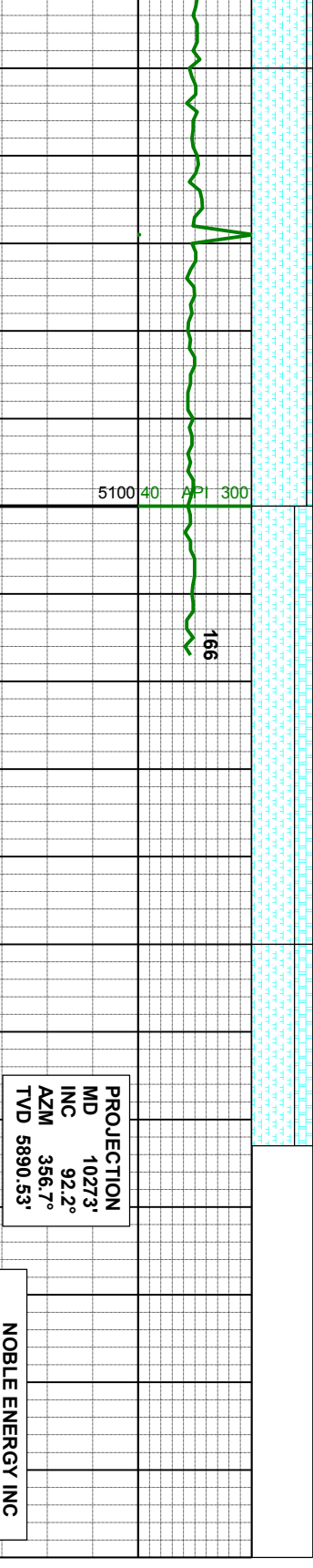
MRU: gy - dkgy - g
sbbiky - sbbily, sily
bent, tr calc incl
CHK: ilgy - gy, occ
sbbiky, mot - wxy t





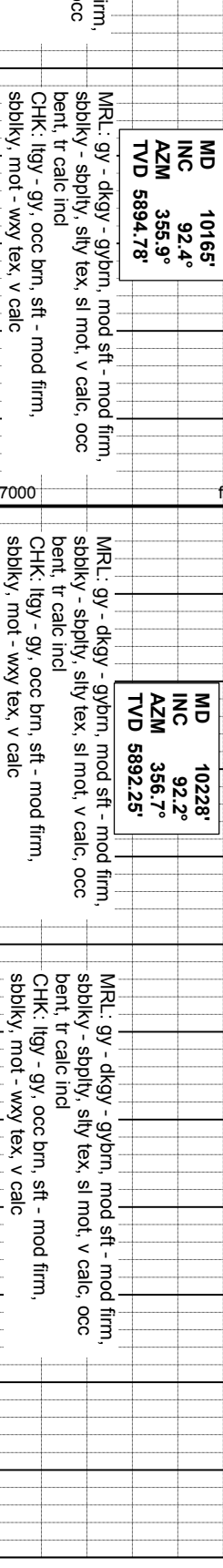


NOBLE ENERGY INC
TIMBRO LD19-73HN
TD @ 10273' MD
06/28/2013 @ 11:23 PM
THANK YOU
COLUMBINE LOGGING



PROJECTION
MD 10273'
INC 92.2°
AZM 356.7°
TVD 5890.53'

NOBLE ENERGY INC
TIMBRO LD19-73HN
TD @ 10273' MD
06/28/2013 @ 11:23 PM



MD 10165'
INC 92.4°
AZM 355.9°
TVD 5894.78'

MDL: gy - dkgy - gybrn, mod sft - mod firm,
sbbiky - sbply, silty tex, sl mot, v calc, occ
bent, tr calc incl
CHK: lgy - gy, occ brn, sft - mod firm,
sbbiky, mot - wxy tex, v calc

MD 10228'
INC 92.2°
AZM 356.7°
TVD 5892.25'

MDL: gy - dkgy - gybrn, mod sft - mod firm,
sbbiky - sbply, silty tex, sl mot, v calc, occ
bent, tr calc incl
CHK: lgy - gy, occ brn, sft - mod firm,
sbbiky, mot - wxy tex, v calc

MDL: gy - dkgy - gybrn, mod sft - mod firm,
sbbiky - sbply, silty tex, sl mot, v calc, occ
bent, tr calc incl
CHK: lgy - gy, occ brn, sft - mod firm,
sbbiky, mot - wxy tex, v calc