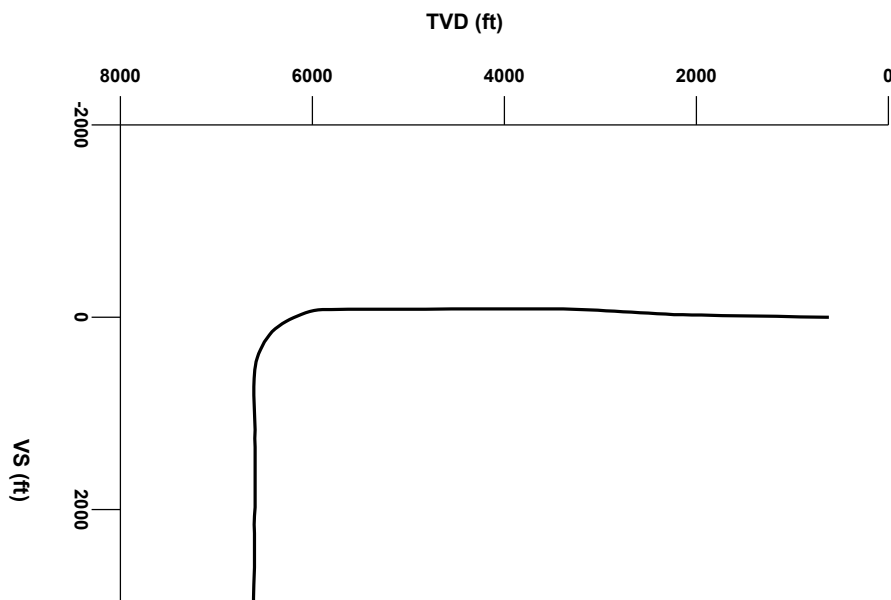




LOG created using LPLOT VH Version 3.0, July 07, 2013, Copyright (C) 1999-2009 Pason Systems Corp.

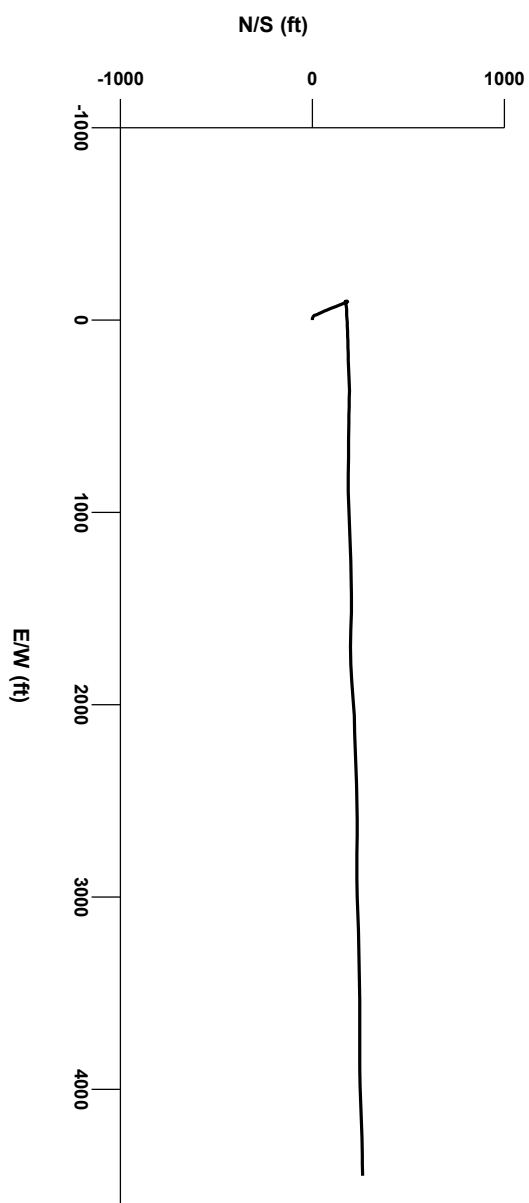
OPERATOR: NOBLE ENERGY INC
WELL: WOLFPACK B02-64-1HN
LOCATION: NWSW SEC2, T5N, R64W
COUNTY: WELD
STATE: COLORADO
SPOT: 1463' FSL, 170' FWL
ELEVATION: GE: 4616', KB: 4632'
FIELD: WATTENBERG
SPUD DATE: 06/29/2013
TD DATE: 07/07/2013
DATES LOGGED: 07/01/2013 - 07/07/2013
DEPTHS LOGGED: 1000' - 10853
LOGGERS: CHRIS WILLATT, TONY COX
DRILLING FLUID: LSND
DRILLING RIG: PRECISION 829
API: 05-123-37324
LOG TYPE: HORIZONTAL
SCALE: 1:240 (5 inches per 100 feet)
REMARKS: WELLSITE GEOLOGICAL SERVICES PROVIDED BY COLUMBINE LOGGING INC.

LOG CONTINUES FROM FILE: WOLFPACK B02-64-1HN VERT.lplot



Survey Elevation

Survey Plan

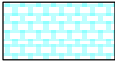


4000


6000



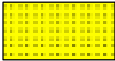
LITHOLOGIES



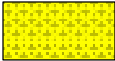
Chalk



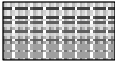
Marl



Sandstone




Shaly Sandstone




Silty Shale


ENGINEERING SYMBOLS




Connection




Connection Gas



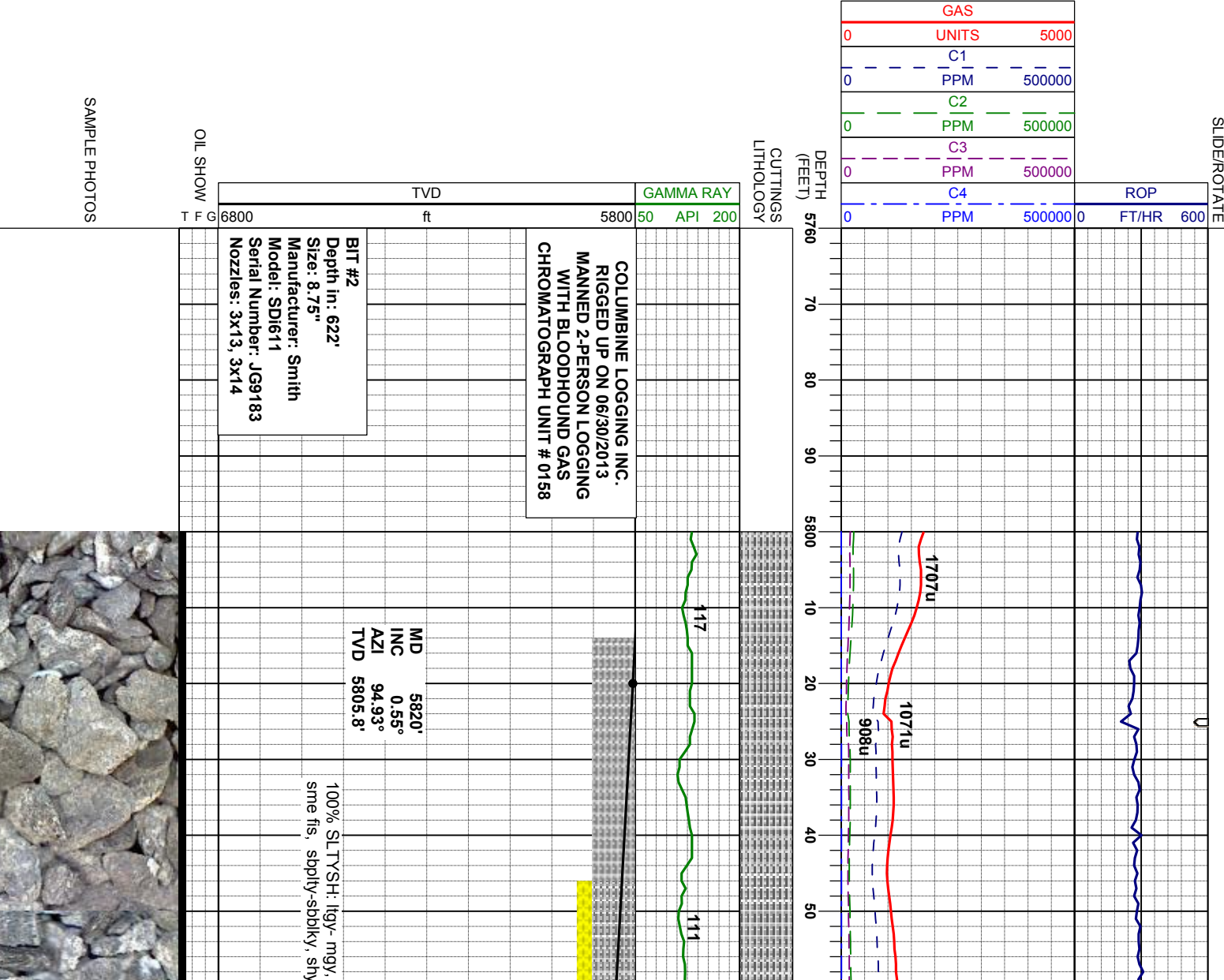
Midnight Depth

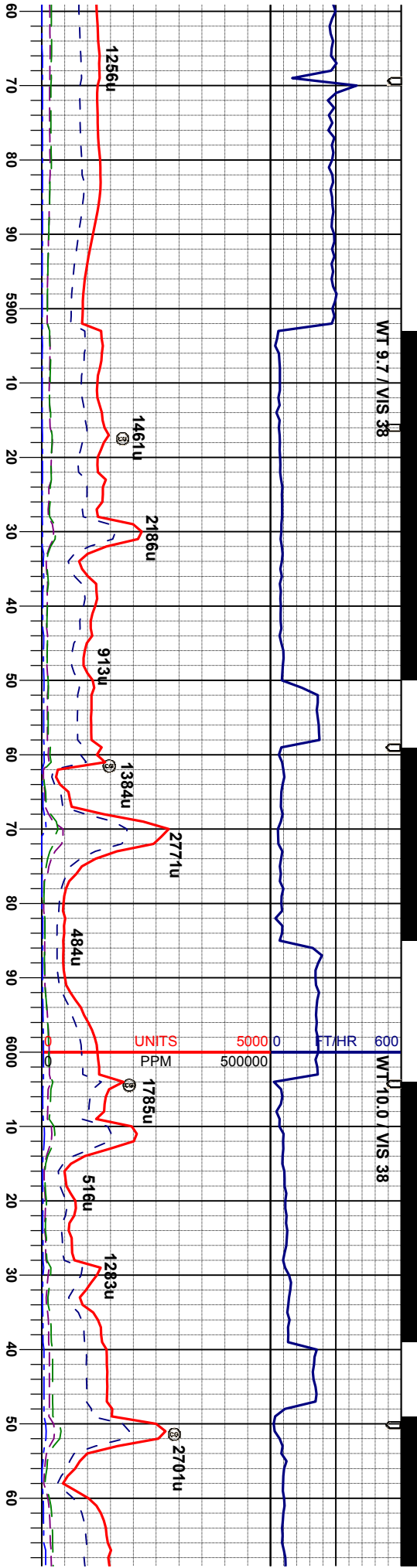


Normal Fault



Arrow





BEGIN 50' SAMPLES
WITH 50' DESCRIPTIONS

MD 5910'
INC 2.20°
AZI 80.23°
TVD 5895.8'

sft-mod firm,
-silty tex
85% SLTYSH: ltgy- mgy, sft-mod firm, sme
fss, spbly-sbdkly, shy-silty tex
15% SHYSS: off wh - lt gy, trmsl - op, vf - f
gr, sb ang, sb mdd, mod srt, sft - frm, arg
mtx, tr glau, sl calc

MD 5955'
INC 6.77°
AZI 81.31°
TVD 5940.6'

80% SLTYSH: ltgy- mgy, sft-mod firm, sme
fss, spbly-sbdkly, shy-silty tex
20% SHYSS: off wh - lt gy, trmsl - op, vf - f
gr, sb ang, sb mdd, mod srt, sft - frm, arg
mtx, tr glau, sl calc

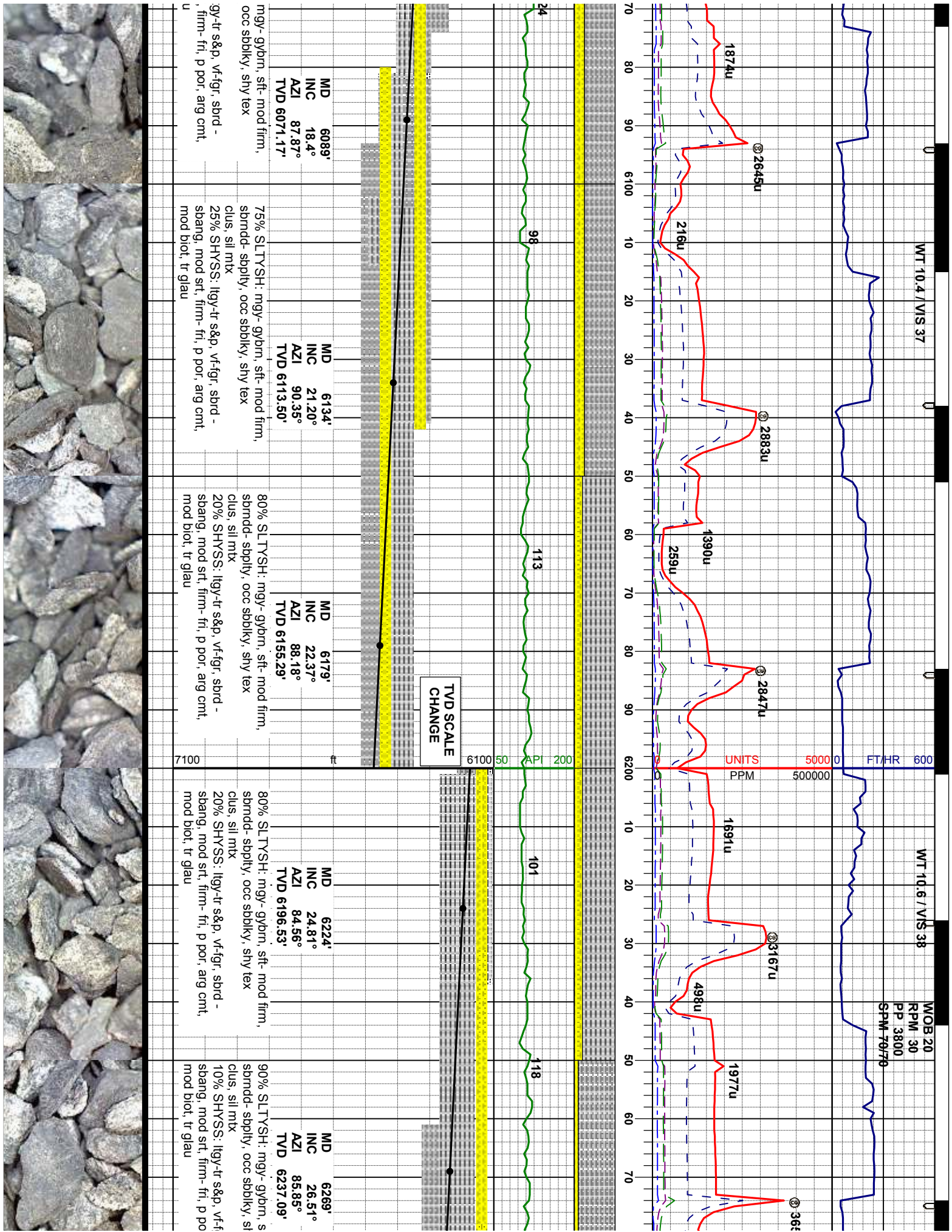
MD 6000'
INC 10.25°
AZI 81.72°
TVD 5986.12'

80% SLTYSH: mgy- gybrn, sft- mod firm,
sbrndd- spbly, occ sbdkly, shy tex
clus, sil mtx
20% SHYSS: ltgy-tr s&p, vf-fgr, sbrd -
sbang, mod srt, frm- trl, p por, arg cntl,
mod biot, tr glau

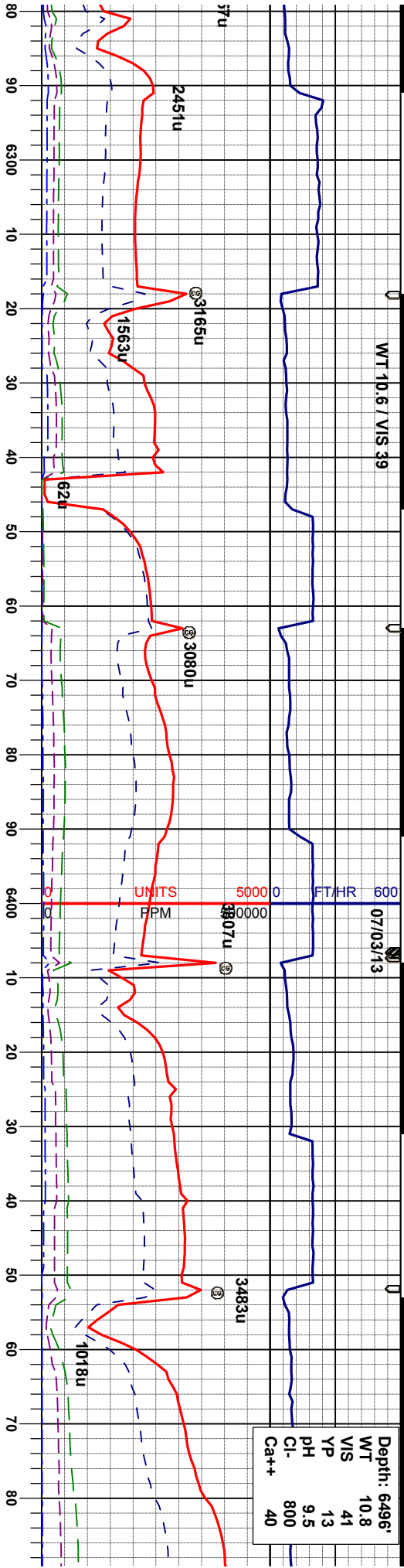
MD 6044'
INC 14.87°
AZI 83.84°
TVD 6028.05'

75% SLTYSH:
sbrndd- spbly,
clus, sil mtx
25% SHYSS: lt
sbang, mod srt
mod biot, tr glau

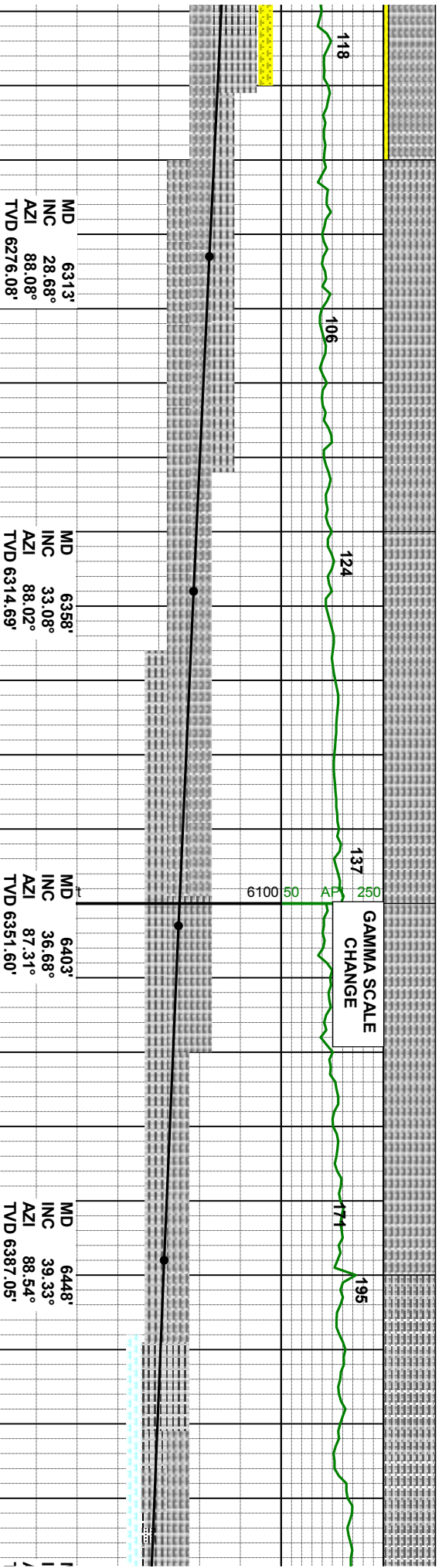




Depth: 6496'
WT 10.8
VIS 41
VP 13
pH 9.5
Cl- 800
Ca++ 40



GAMMA SCALE
CHANGE



MD 6313'
INC 28.68°
AZI 88.08°
TVD 6276.08'

MD 6358'
INC 33.08°
AZI 88.02°
TVD 6314.69'

MD 6403'
INC 36.68°
AZI 87.31°
TVD 6351.60'

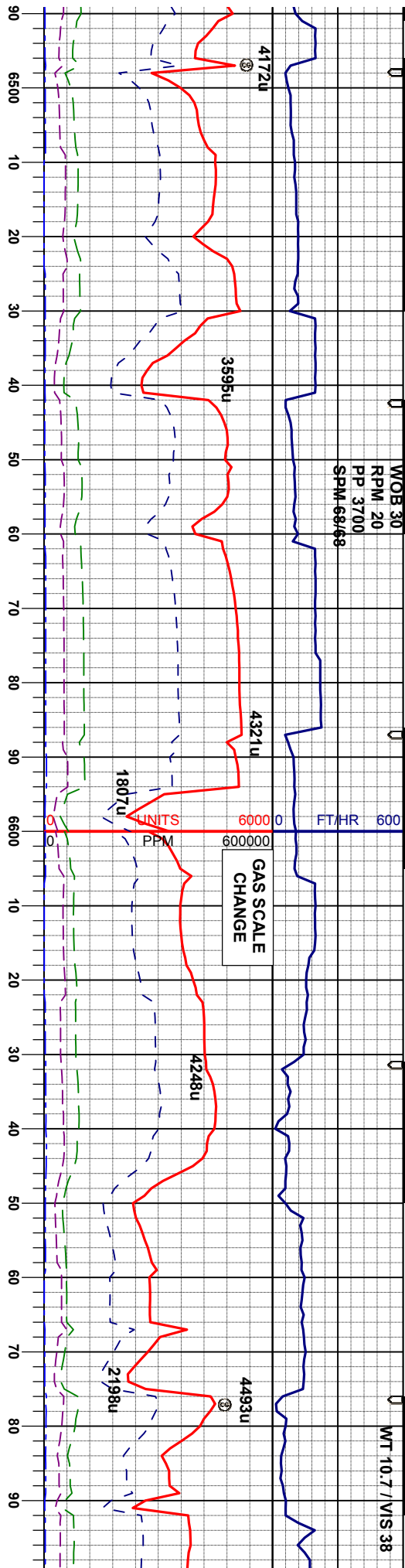
MD 6448'
INC 39.33°
AZI 88.54°
TVD 6387.05'

ft. mod firm, 100% SLTYSH: pred gy, sme dk gy, sme lt gy, pred firm, occ hd, flky-blky, silty-fis text
ty tex 100% SLTYSH: pred gy, sme dk gy, sme lt gy, pred firm, occ hd, flky-blky, silty-fis text
gr, sbrd - 100% SLTYSH: pred gy, sme dk gy, sme lt gy, pred firm, occ hd, flky-blky, silty-fis
r, arg cnt, tr dsm pyr



WOB 30
RPM 20
PP 3700
SPM 68/68

WT 10.7 / VIS 38



SHARON SPRINGS MKR
LOGGER TOP
MD 6564' TVD 6465'

MD 6582'
INC 55.51°
AZI 88.92°
TVD 6475.83'

MD 6627'
INC 58.83°
AZI 87.79°
TVD 6500.22'

MD 6672'
INC 62.29°
AZI 87.15°
TVD 6522.33'

NIORARA
LOGGER TOP
MD 6575' TVD 6472'

NIORARA A CHALK
LOGGER TOP
MD 6627' TVD 6500'

NIORARA A MARL
LOGGER TOP
MD 6665' TVD 6519'

MD 6493' NC 45.79° AZI 88.67° TVD 6420.18'

MD 6538' INC 51.89° AZI 88.67° TVD 6449.8'

100% SLTYSH: pred gy, sme dk gy, sme lt gy, pred firm, occ hd, flky-bkly, silty-fis text, tr dism pyr, abnt bent

50% CHK: lt-mgy, mot-stri, sft, sbply-sbply, rthy-sb wxy lstr, silty tex, vcalic, mod dism pyr

25% MRL: mgy, sft, mfirm, sbply-sbply, rthy lstr, silty tex, org/calc mtx, vcalic

25% SLTYSH: pred gy, sme dk gy, sme lt gy, pred firm, occ hd, flky-bkly, silty-fis text, tr dism pyr, abnt bent

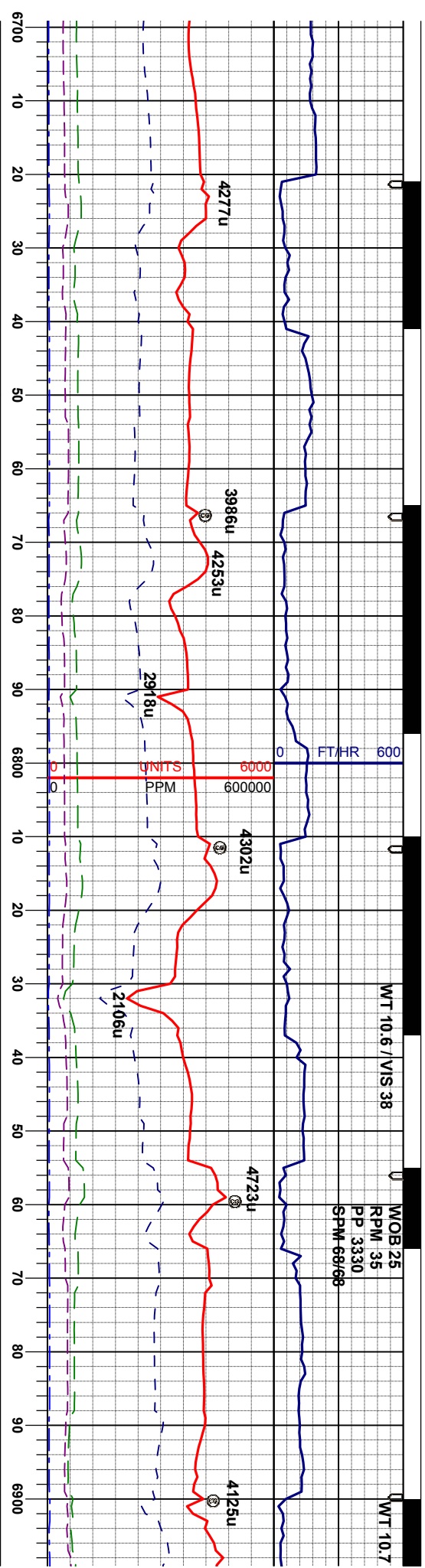
60% MRL: mgy, sft, mfirm, sbply-sbply, rthy lstr, silty tex, org/calc mtx, vcalic

40% CHK: lt-mgy, mot-stri, sme fis, sft, sbply-sbply, rthy-sb wxy lstr, silty tex, vcalic, mod dism pyr, tr bent

50% MRL: mgy, sft, mfirm, sbply-sbply, rthy lstr, silty tex, org/calc mtx, vcalic

50% CHK: lt-mgy, mot-stri, sme fis, sft, sbply-sbply, rthy-sb wxy lstr, silty tex, vcalic, mod dism pyr, tr bent





MD 6717'
INC 64.99°
AZI 87.21°
TVD 6542.31'

MD 6762'
INC 66.72°
AZI 89.88°
TVD 6560.72'

MD 6806'
INC 72.25°
AZI 91.84°
TVD 6576.13'

MD 6851'
INC 77.67°
AZI 90.86°
TVD 6587.81'

NIOBRARA B CHALK
LOGGER TOP
MD 6878' TVD 6593'

MD 6896'
INC 80.52°
AZI 90.47°
TVD 6596.32'

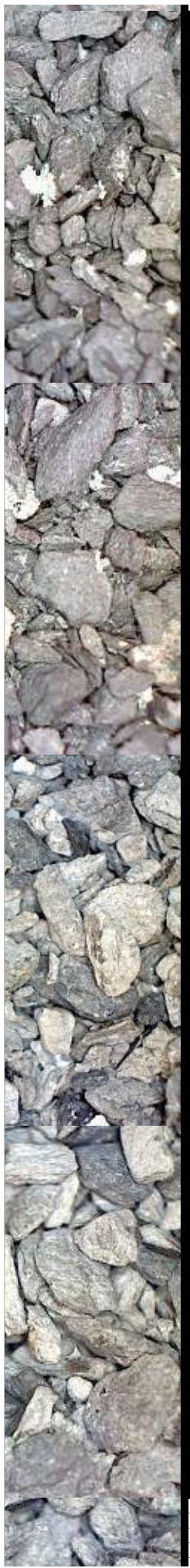
90% MRL: mgy, sft-mfirm, sbply-sbblky, sme fis, rthy lstr, silty tex, org/calc mtx, vcalc
10% CHK: lt-mgy, mot-stri, sft, sbply-sbblky, rthy-sb wxy lstr, silty tex, vcalc, tr dism pyr

100% MRL: mgy, sft-mfirm, sbply-sbblky, sme fis, rthy lstr, silty tex, org/calc mtx, vcalc, tr dism pyr

100% MRL: mgy, sft-mfirm, sbply-sbblky, sme fis, rthy lstr, silty tex, org/calc mtx, vcalc, tr dism pyr

70% CHK: lt-mgy, mod wh, mot-stri, sft, sbply-sbblky, rthy-sb wxy lstr, silty tex, vcalc, tr inoc
30% MRL: mgy, sft-mfirm, sbply-sbblky, sme fis, rthy lstr, silty tex, org/calc mtx, vcalc, tr calcite

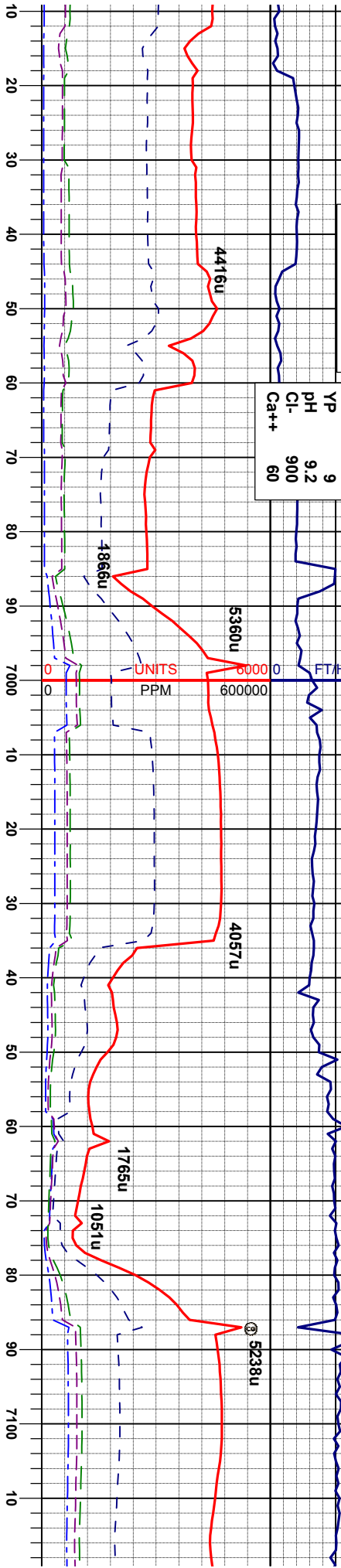
90% sbply
vcalc
10% sme
vcalc



Depth: 6984' 07/04/13 - 07/05/13 WT 9.1 / VIS 32

BIT #2 CUT 6099' IN 54.75 HRS

WT 10.2
VIS 37
YP 9
pH 9.2
Cl- 900
Ca++ 60



TD BUILD SECTION 6984' MD @ 11:47 HRS 07/03/2013 CASING SET @ 6984' MD DRILLED OUT @ 21:15 HRS, 07/05/2013

GAMMA SCALE CHANGE

BIT #3 Depth in: 6984' Size: 6.125" Manufacturer: Varel Model: VM513S Serial Number: 4005901 Nozzles: 5x14

MD 6935' INC 83.25° AZI 91.67° TVD 6601.82'

MD 7025' INC 87.16° AZI 90.23° TVD 6609.34'

MD 71' INC 87° AZI 90° TVD 6613

CHK: lt- mgy, mod wh, mot-stri, sft, /-sbbky, rthy-sb wxy lstr, silty tex, mod lnoc

90% CHK: lt- mgy, mod wh, mot-stri, sft, sbbly-sbbky, rthy-sb wxy lstr, silty tex, vcalc, mod lnoc

10% MRL: mgy, sft- mfirm, sbbly-sbbky, sme fis, rthy lstr, silty tex, org/calc mt, vcalc, tr calcite

85% CHK: lt- mgy, mod wh, mot-stri, sft, sbbly-sbbky, rthy-sb wxy lstr, silty tex, vcalc, mod lnoc

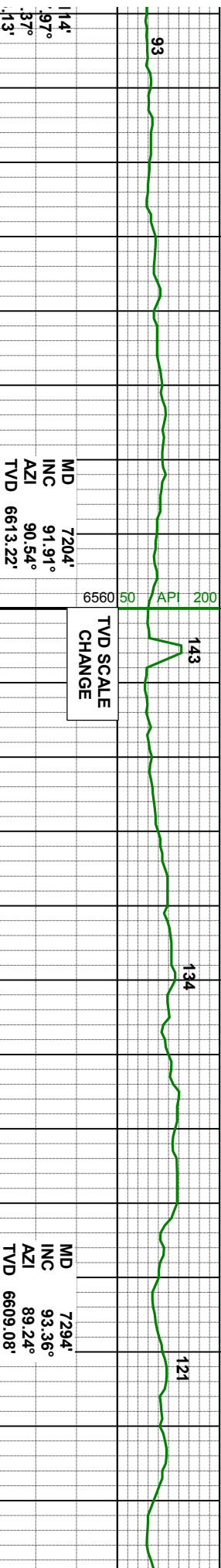
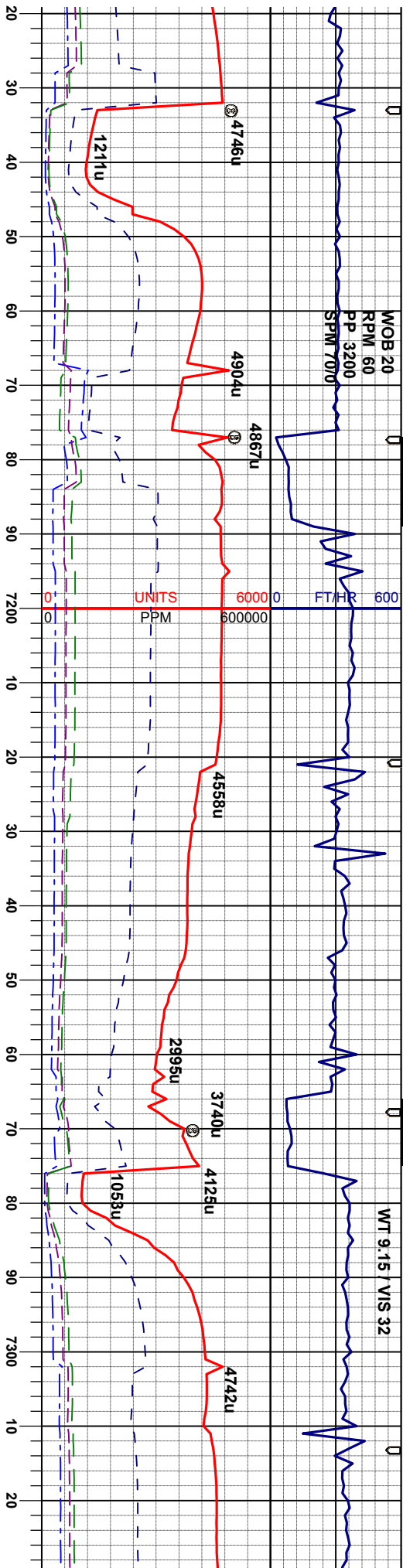
15% MRL: mgy, sft- mfirm, sbbly-sbbky, sme fis, rthy lstr, silty tex, org/calc mt, vcalc, tr calcite

80% CHK: lt- mgy, mod wh, mot-stri, sft, sbbly-sbbky, rthy-sb wxy lstr, silty tex, vcalc, mod lnoc

20% MRL: mgy, sft- mfirm, sbbly-sbbky, sme fis, rthy lstr, silty tex, org/calc mt, vcalc, tr calcite

70% CHK: lt gy - n - sbbky, sl mot, sl 30% MRL: mgy, sft rthy lstr, silty tex, c





19y, sft - mod firm, sbply wxy, rthy text, v calc, t- mfirm, sbply-sbply, rthy lstr, silty tex, org/calc mtb, vcalc

60% CHK: lt gy - mgy, sft - mod firm, sbply - sbply, sl mot, sl wxy, rthy text, v calc, 40% MRL: mgy, sft- mfirm, sbply-sbply, rthy lstr, silty tex, org/calc mtb, vcalc

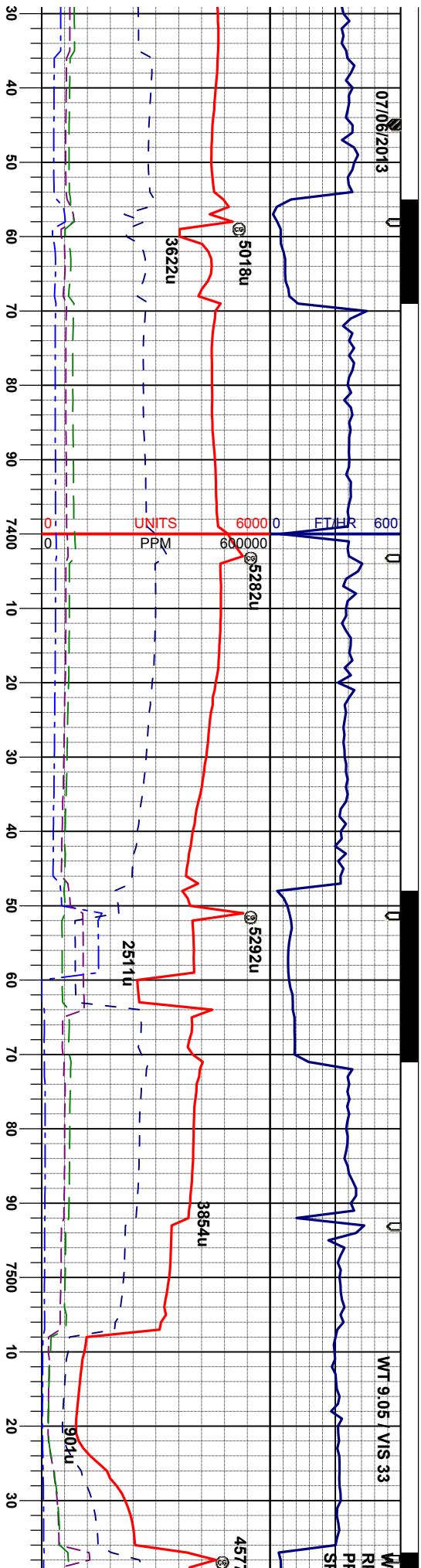
70% CHK: lt gy - mgy, sft - mod firm, sbply - sbply, sl mot, sl wxy, rthy text, v calc, 30% MRL: mgy, sft- mfirm, sbply-sbply, rthy lstr, silty tex, org/calc mtb, vcalc

70% CHK: lt gy - mgy, sft - mod firm, sbply - sbply, sl mot, sl wxy, rthy text, v calc, 30% MRL: mgy, sft- mfirm, sbply-sbply, rthy lstr, silty tex, org/calc mtb, vcalc

80% CHK: lt gy - mgy, sft - sbply, sl mot, sl wxy, rth, 20% MRL: mgy, sft- mfirm, rthy lstr, silty tex, org/calc r

6660





MD 7383'
INC 92.90°
AZI 87.94°
TVD 6604.22'

MD 7473'
INC 91.02°
AZI 87.82°
TVD 6601.15'

mod firm, sbply
v text, v calc.
sbply-sbply,
mtx, vcalc

90% CHK: lt gy - mgy, sft - mod firm, sbply
- sbply, sl mot, sl wxy, rthy text, v calc.
10% MRL: mgy, sft- mfirm, sbply-sbply,
rthy istr, silty tex, orgcalc mtz, vcalc

80% CHK: lt gy - mgy, sft - mod firm, sbply
- sbply, sl mot, sl wxy, rthy text, v calc.
20% MRL: mgy, sft- mfirm, sbply-sbply,
rthy istr, silty tex, orgcalc mtz, vcalc

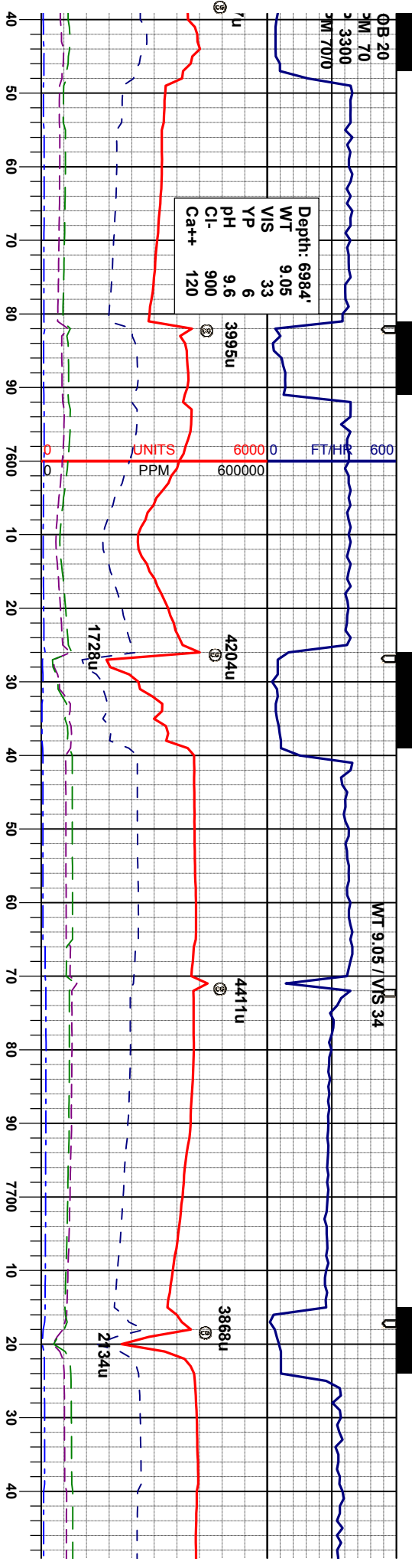
90% CHK: lt gy - mgy, sft - mod firm, sbply
- sbply, sl mot, sl wxy, rthy text, v calc.
10% MRL: mgy, sft- mfirm, sbply-sbply,
rthy istr, silty tex, orgcalc mtz, vcalc

75% CHK: lt gy - mgy, sft - mod firm,
- sbply, sl mot, sl wxy, rthy text, v c
25% MRL: mgy, sft- mfirm, sbply-st
rthy istr, silty tex, orgcalc mtz, vcalc

6660

ft

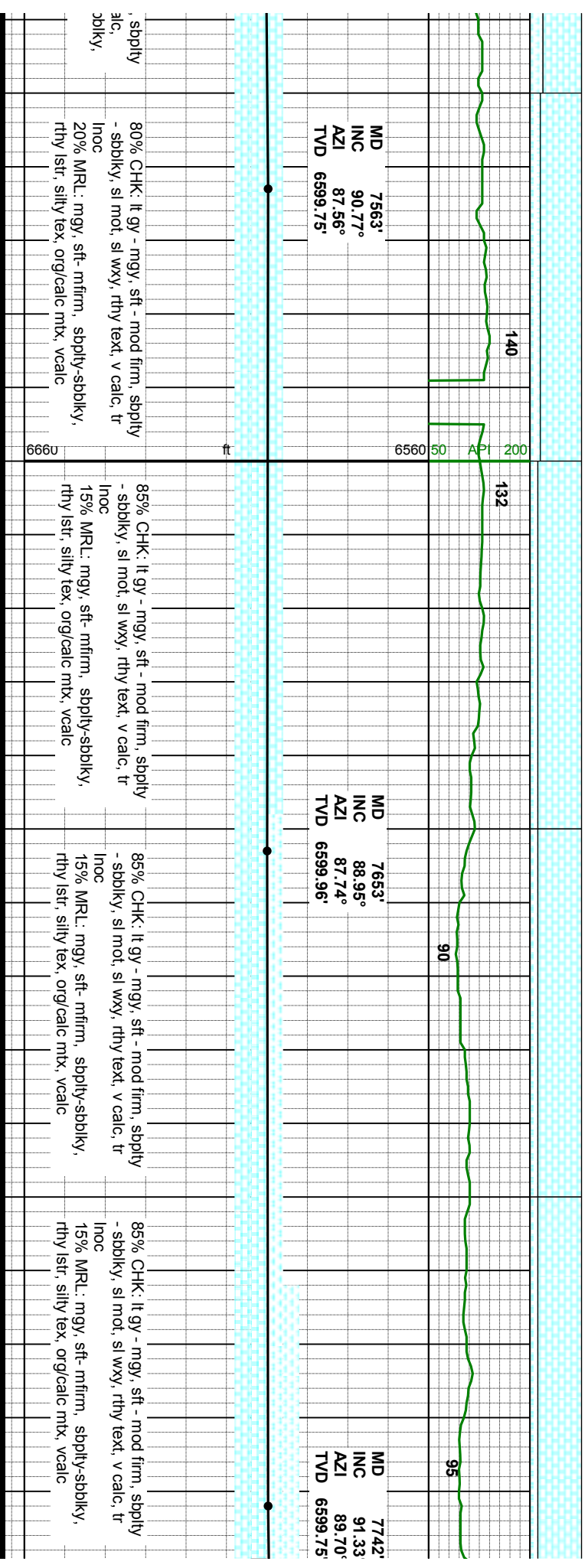


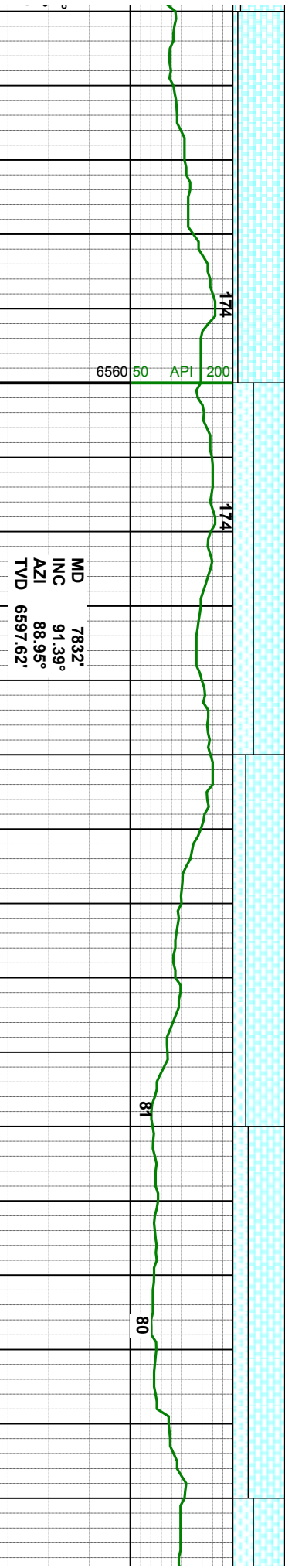
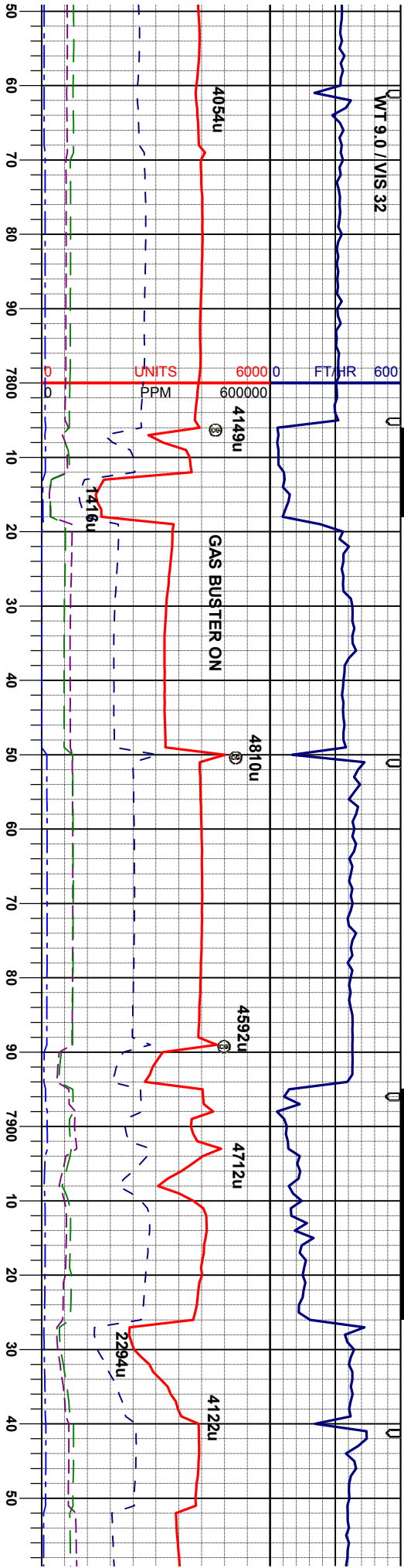


MD 7563'
INC 90.77°
AZI 87.56°
TVD 6599.75'

MD 7653'
INC 88.95°
AZI 87.74°
TVD 6599.96'

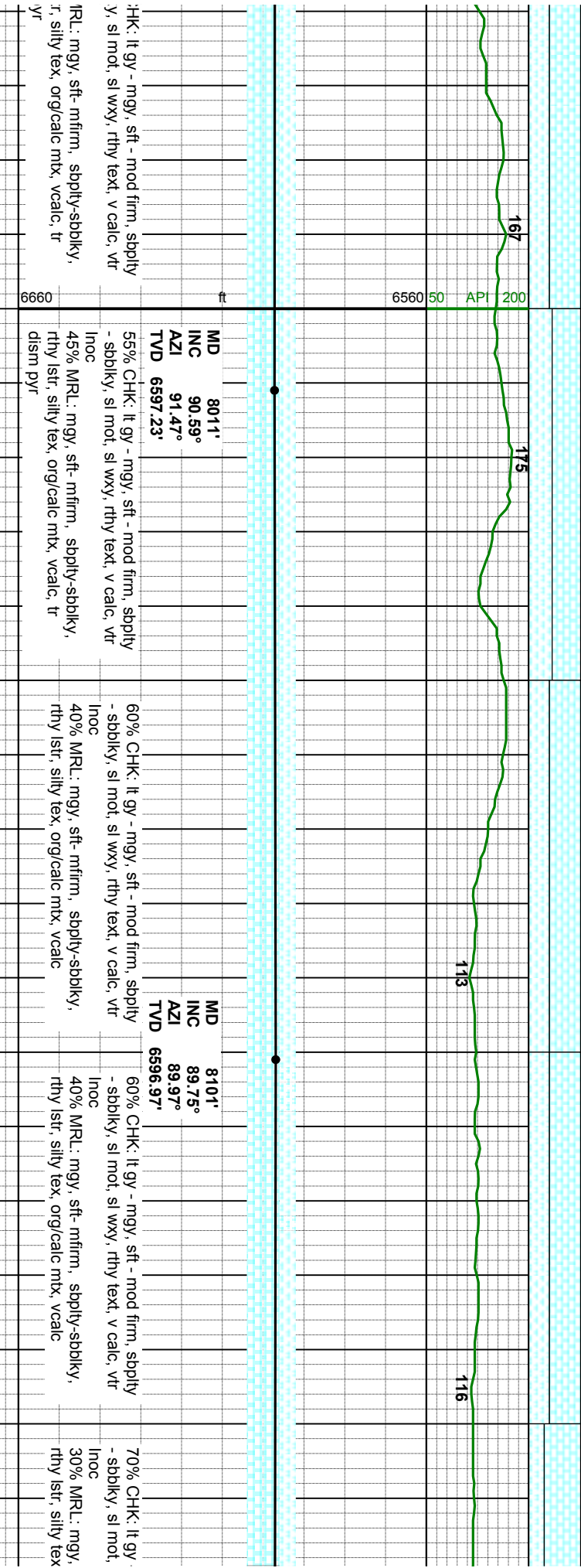
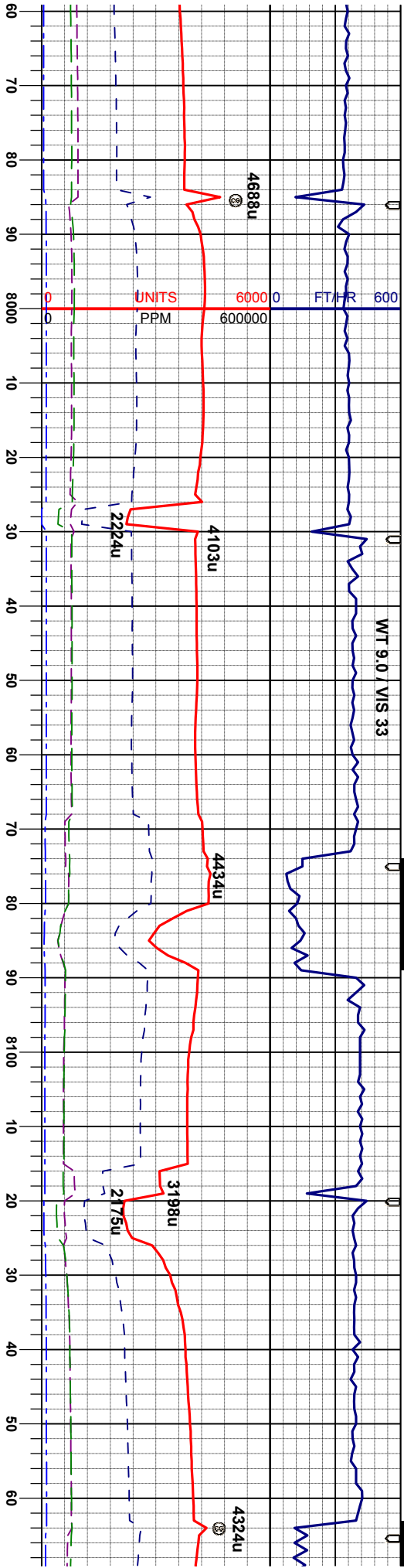
MD 7742'
INC 91.33°
AZI 89.70°
TVD 6599.75'

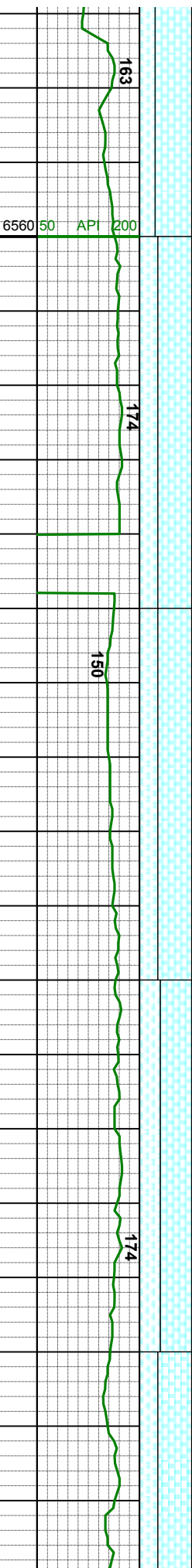
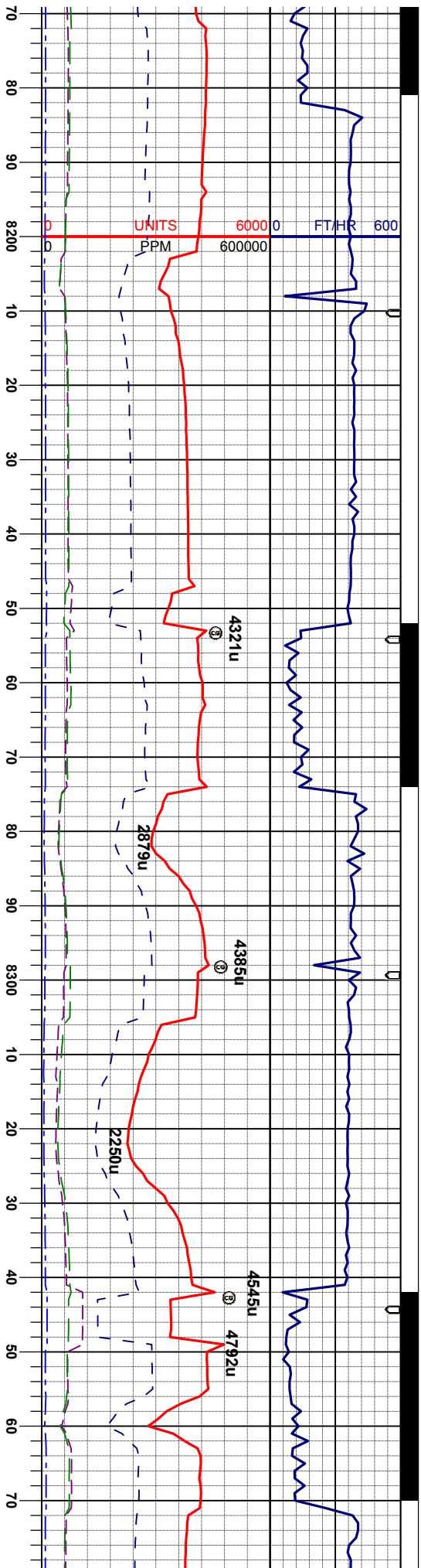




90% CHK: lt gy - mgy, sft - mod firm, sbply - sbply, sl mot, sl wxy, rthy tex, v calc, tr inoc	60% CHK: lt gy - mgy, sft - mod firm, sbply - sbply, sl mot, sl wxy, rthy tex, v calc, tr inoc	75% CHK: lt gy - mgy, sft - mod firm, sbply - sbply, sl mot, sl wxy, rthy tex, v calc, tr inoc	70% CHK: lt gy - mgy, sft - mod firm, sbply - sbply, sl mot, sl wxy, rthy tex, v calc, tr inoc	60% C
10% MRL: mgy, sft - mfirm, sbply-sbply, rthy lst, silty tex, org/calc mtx, vcalc	40% MRL: mgy, sft - mfirm, sbply-sbply, rthy lst, silty tex, org/calc mtx, vcalc, tr	25% MRL: mgy, sft - mfirm, sbply-sbply, rthy lst, silty tex, org/calc mtx, vcalc, tr	30% MRL: mgy, sft - mfirm, sbply-sbply, rthy lst, silty tex, org/calc mtx, vcalc, tr	40% N
6660				dism p







MD 8190'
INC 89.94°
AZI 89.30°
TVD 6597.21'

- mgy, sft - mod firm, sbply
- wxy, rthy text, v calc, vtr
sft- mfirm, sbply-sbply,
, org/calc mt, vcalc

65% CHK: lt gy - mgy, sft - mod firm, sbply
- sbply, sl mot, sl wxy, rthy text, v calc, vtr
Inoc
35% MRL: mgy, sft- mfirm, sbply-sbply,
rthy istr, silty tex, org/calc mt, vcalc

65% CHK: lt gy - mgy, sft - mod firm, sbply
- sbply, sl mot, sl wxy, rthy text, v calc, vtr
Inoc
35% MRL: mgy, sft- mfirm, sbply-sbply,
rthy istr, silty tex, org/calc mt, vcalc

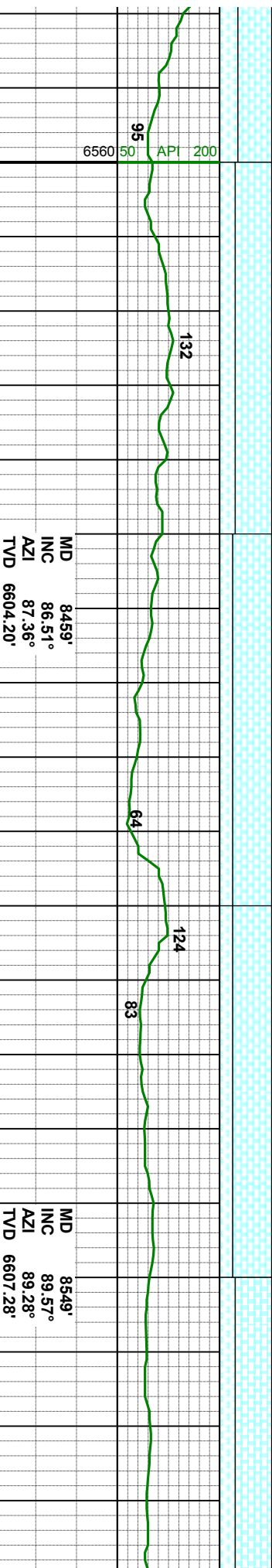
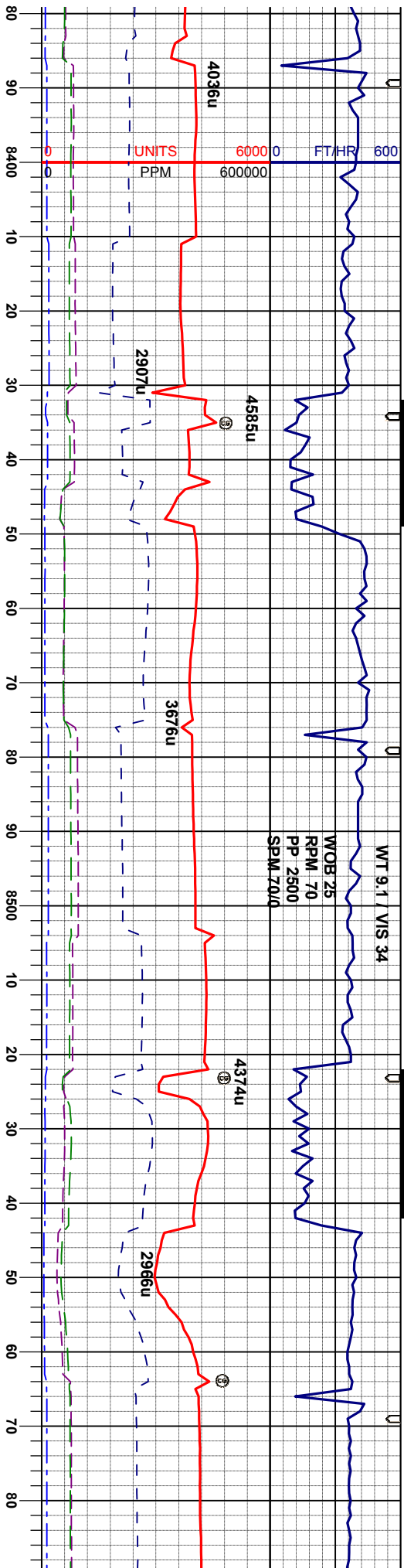
60% CHK: lt gy - mgy, sft - mod firm, sbply
- sbply, sl mot, sl wxy, rthy text, v calc, vtr
Inoc
40% MRL: mgy, sft- mfirm, sbply-sbply,
rthy istr, silty tex, org/calc mt, vcalc

65% CHK: lt gy - mgy, sft - mod firm, sbply
- sbply, sl mot, sl wxy, rthy text, v calc, vtr
Inoc
35% MRL: mgy, sft- mfirm, sbply-sbply,
rthy istr, silty tex, org/calc

MD 8280'
INC 90.40°
AZI 84.46°
TVD 6596.94'

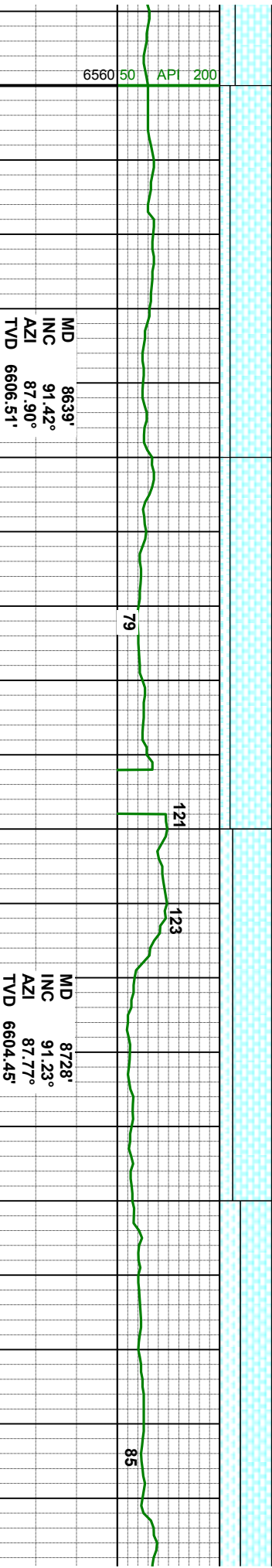
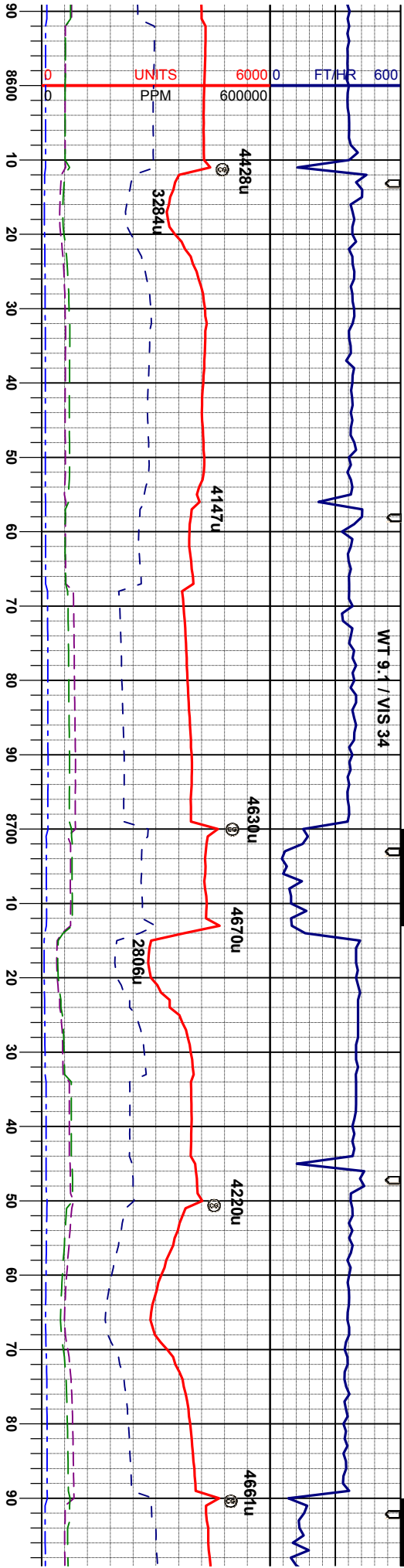
MD 8370'
INC 86.89°
AZI 85.50°
TVD 6599.07'





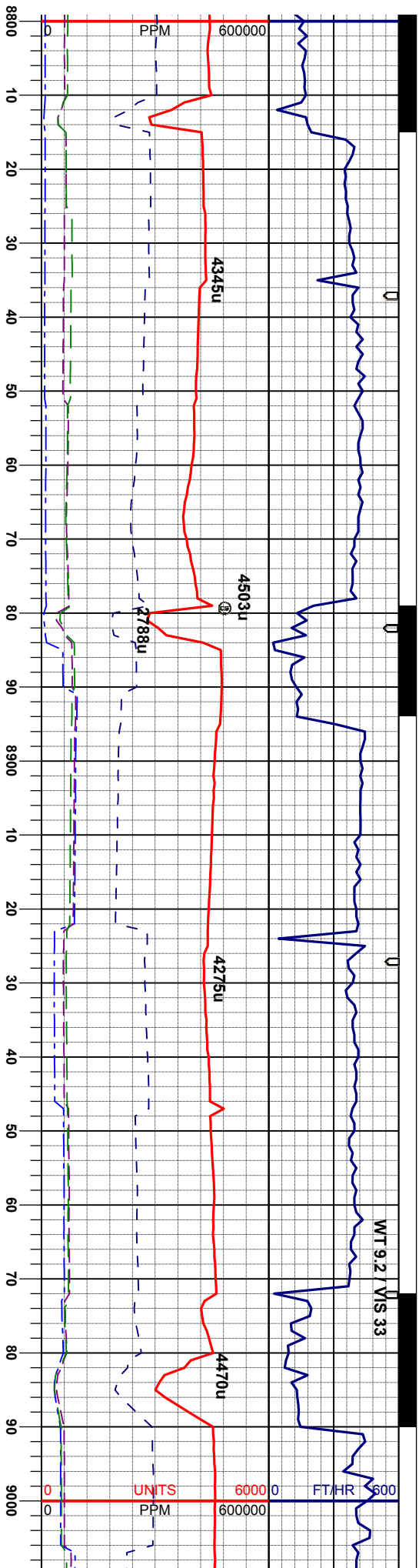
mod firm, sbply y tex, v calc, vtr	70% CHK: lt gy - mgy, sft - mod firm, sbply - sbply, sl mot, sl wxy, rthy tex, v calc, vtr Inoc	75% CHK: lt gy - mgy, sft - mod firm, sbply - sbply, sl mot, sl wxy, rthy tex, v calc, tr- mod Inoc	75% CHK: lt gy - mgy, sft - mod firm, sbply - sbply, sl mot, sl wxy, rthy tex, v calc, tr mod Inoc	70% CHK: lt gy - mgy, sft - mod firm, - sbply, sl mot, sl wxy, rthy tex, v ce Inoc
sbply-sbply, mtx, vcalc	30% MRL: mgy, sft- mfirm, sbply-sbply, rthy lstr, silty tex, org/calc mtx, vcalc, tr calcite	25% MRL: mgy, sft- mfirm, sbply-sbply, rthy lstr, silty tex, org/calc mtx, vcalc, tr calcite	25% MRL: mgy, sft- mfirm, sbply-sbply, rthy lstr, silty tex, org/calc mtx, vcalc, tr calcite	30% MRL: mgy-dkgy / blk, sft- mfirm sbply-sbply, rthy lstr, silty tex, org/c mtx, vcalc
6660				





80% CHK: lt gy - mgy, sft - mod firm, sbply - sbbiky, sl mot, sl wxy, rthy text, v calc, tr	80% CHK: lt gy - mgy, sft - mod firm, sbply - sbbiky, sl mot, sl wxy, rthy text, v calc, tr	75% CHK: lt gy - mgy, sft - mod firm, sbply - sbbiky, sl mot, sl wxy, rthy text, v calc, tr	60% CHK: lt gy - mgy, sft - mod firm, sbply - sbbiky, sl mot, sl wxy, rthy text, v calc, tr
Inoc	Inoc	Inoc	Inoc
20% MRL: mgy-dkgy / blk, sft - mfirm, sbply-sbbiky, rthy lstr, silty tex, org/calc mtb, vcalc	20% MRL: mgy-dkgy / blk, sft - mfirm, sbply-sbbiky, rthy lstr, silty tex, org/calc mtb, vcalc	25% MRL: mgy-dkgy / blk, sft - mfirm, sbply-sbbiky, rthy lstr, silty tex, org/calc mtb, vcalc	40% MRL: mgy-dkgy / blk, sft - mfirm, sbply-sbbiky, rthy lstr, silty tex, org/calc mtb, vcalc





MD 8818'
INC 89.17°
AZI 88.00°
TVD 6604.13'

MD 8907'
INC 89.75°
AZI 89.13°
TVD 6604.97'

MD 8997'
INC 88.64°
AZI 89.33°
TVD 6606.23'

GAMMA
CHANG

300

50

6560

ft

6660

107

61

123

70% CHK: lt gy - mgy, sft - mod firm, sbply
- sbblky, sl mot, sl wxy, rthy tex, v calc, tr
Inoc
30% MRL: mgy-dkgy, sft - mfirm, sbply-
sbblky, rthy lstr, silty tex, org/calc mtx,
vcalc, tr calcite

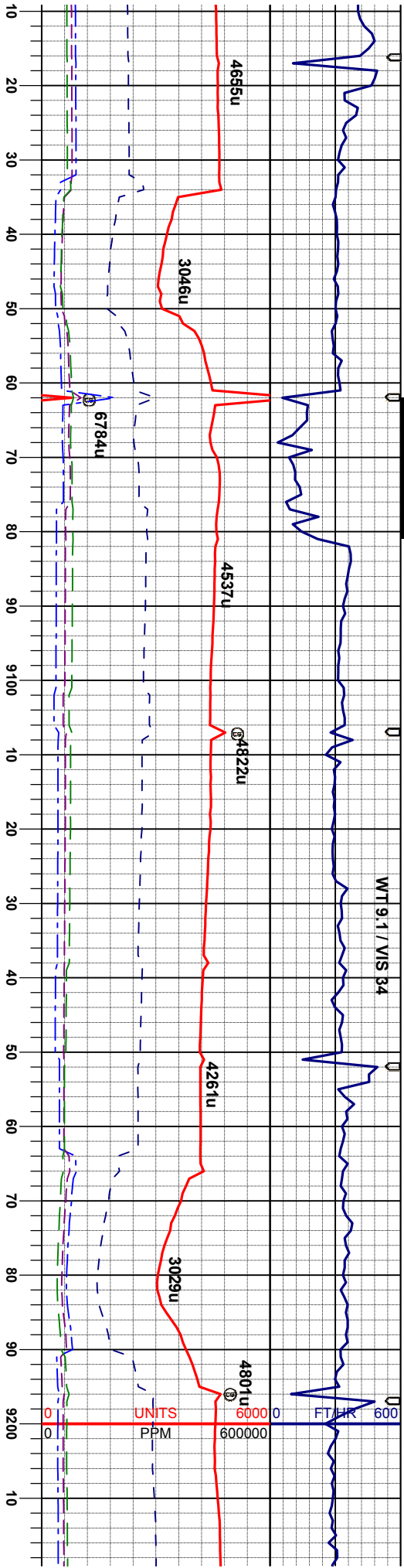
85% CHK: lt gy - mgy, sft - mod firm, sbply
- sbblky, sl mot, sl wxy, rthy tex, v calc, tr
Inoc
15% MRL: mgy-dkgy, sft - mfirm, sbply-
sbblky, rthy lstr, silty tex, org/calc mtx,
vcalc, tr calcite

90% CHK: lt gy - mgy, sft - mod firm, sbply
- sbblky, sl mot, sl wxy, rthy tex, v calc, tr
Inoc
10% MRL: mgy-dkgy, sft - mfirm, sbply-
sbblky, rthy lstr, silty tex, org/calc mtx,
vcalc, tr calcite

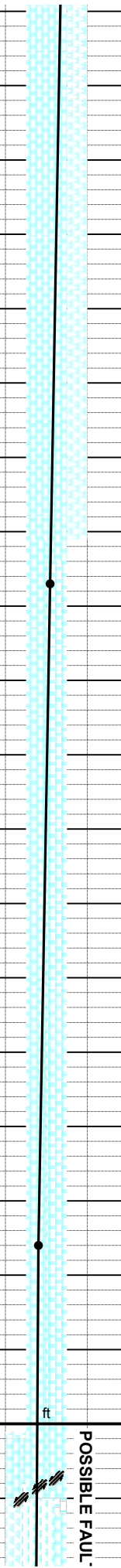
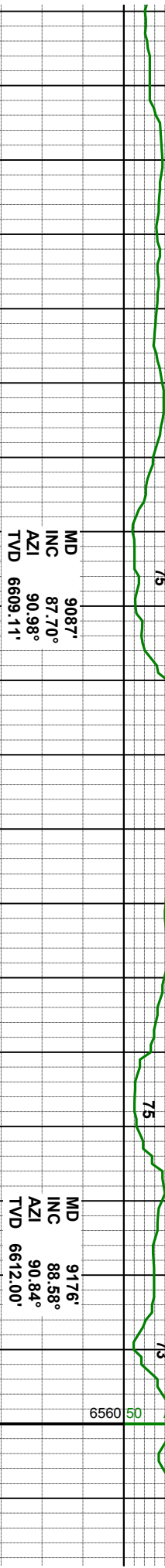
90% CHK: lt gy - mgy, sft - mod firm, sbply
- sbblky, sl mot, sl wxy, rthy tex, v calc, tr
Inoc
10% MRL: mgy-dkgy, sft - mfirm, sbply-
sbblky, rthy lstr, silty tex, org/calc mtx,
vcalc, tr calcite

90% C
- sbblk
Inoc
10% N
sbblky
vcalc,





SCALE
E, 50-300 API



HK: lt gy - mgy, sft - mod firm, sbply
y, sl mot, sl wxy, rthy tex, v calc, tr

85% CHK: lt gy - mgy, sft - mod firm, sbply
- sbply, sl mot, sl wxy, rthy tex, v calc, tr

15% MRL: mgy-dgy, sft - mfirm, sbply-
sbply, rthy lstr, silty tex, org/calc mtx,
vcalc, tr calcite

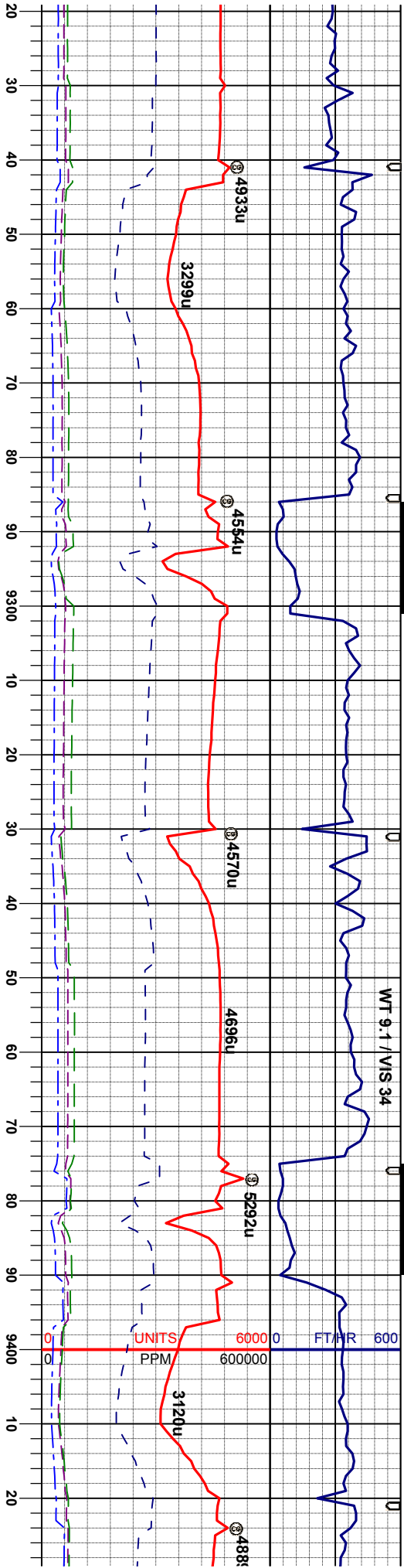
90% CHK: lt gy - mgy, sft - mod firm, sbply
- sbply, sl mot, sl wxy, rthy tex, v calc, tr

10% MRL: mgy-dgy, sft - mfirm, sbply-
sbply, rthy lstr, silty tex, org/calc mtx,
vcalc, tr calcite

80% CHK: lt gy -
- sbply, sl mot, s

20% MRL: mgy-d
sbply, rthy lstr, s
vcalc, tr calcite



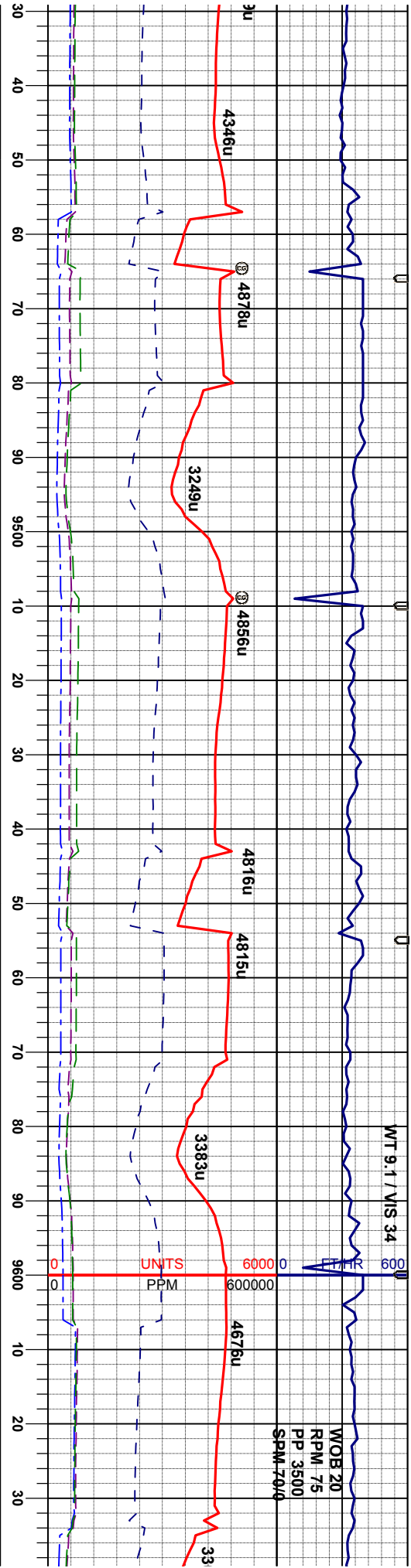


MD 9311'
INC 90.12°
AZI 89.08°
TVD 6613.52'

MD 9401'
INC 88.80°
AZI 88.16°
TVD 6614.37'

mgly, sft - mod firm, sbply sl wxy, rthy text, v calc, tr	50% CHK: lt gy - mgy, sft - mod firm, sbply - sbply, sl mot, sl wxy, rthy text, v calc, tr Inoc	70% MRL: mgy-dkgy / blk, sft- mfirm, sbply-sbply, rthy lstr, silty tex, org/calc mtx, vcalc	70% MRL: mgy-dkgy / blk, sft- mfirm, sbply-sbply, rthy lstr, silty tex, org/calc mtx, vcalc	90% MRL: mgy-dkgy / blk, sbply-sbply, rthy lstr, silty mtx, vcalc
kgly, sft- mfirm, sbply- silty tex, org/calc mtx,	50% MRL: mgy-dkgy / blk, sft- mfirm, sbply-sbply, rthy lstr, silty tex, org/calc mtx, vcalc	30% CHK: lt gy - mgy, sft - mod firm, sbply - sbply, sl mot, sl wxy, rthy text, v calc	30% CHK: lt gy - mgy, sft - mod firm, sbply - sbply, sl mot, sl wxy, rthy text, v calc	10% CHK: lt gy - mgy, sft - sbply, sl mot, sl wxy, rth



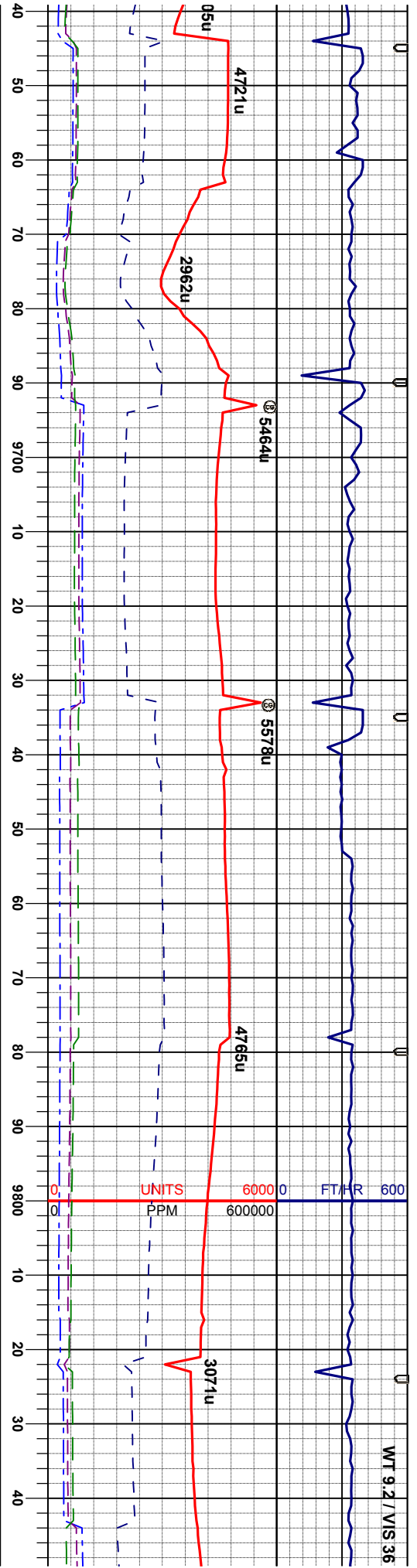


MD 9490'
INC 88.98°
AZI 87.91°
TVD 6616.09'

MD 9580'
INC 89.04°
AZI 88.47°
TVD 6617.64'

sft- mfirm, v tex, org/calc	90% MRL: mgy-dkgy / blk, sft- mfirm, sbply-sbply, rthy lstr, silty tex, org/calc mtx, vcalc	100% MRL: mgy-dkgy / blk, sft- mfirm, sbply-sbply, rthy lstr, silty tex, org/calc mtx, vcalc	100% MRL: mgy-dkgy / blk, sft- mfirm, sbply-sbply, rthy lstr, silty tex, org/calc mtx, vcalc	100% MRL: mgy-dkgy / blk, sft- mfirm, sbply-sbply, rthy lstr, silty tex, org/calc mtx, vcalc
- mod firm, sbply y text, v calc	10% CHK: lt gy - mgy, sft - mod firm, sbply - sbply, sl mot, sl wxy, rthy text, v calc			

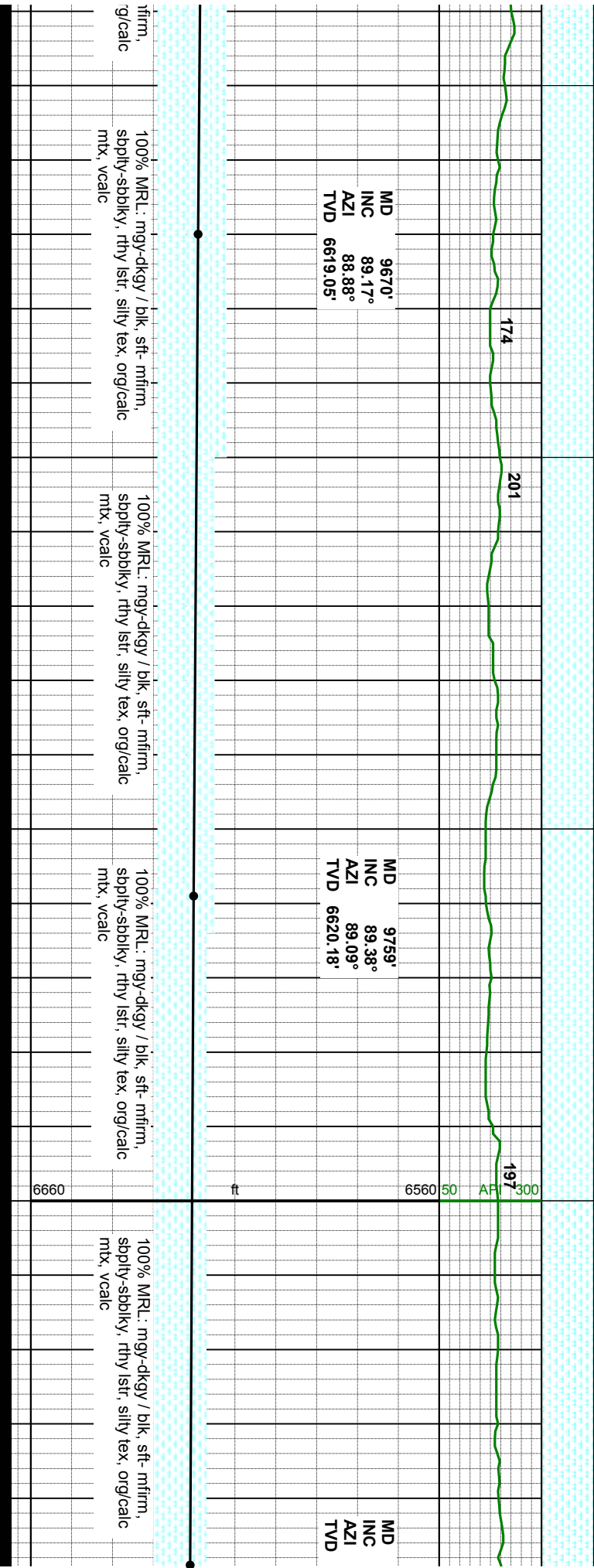


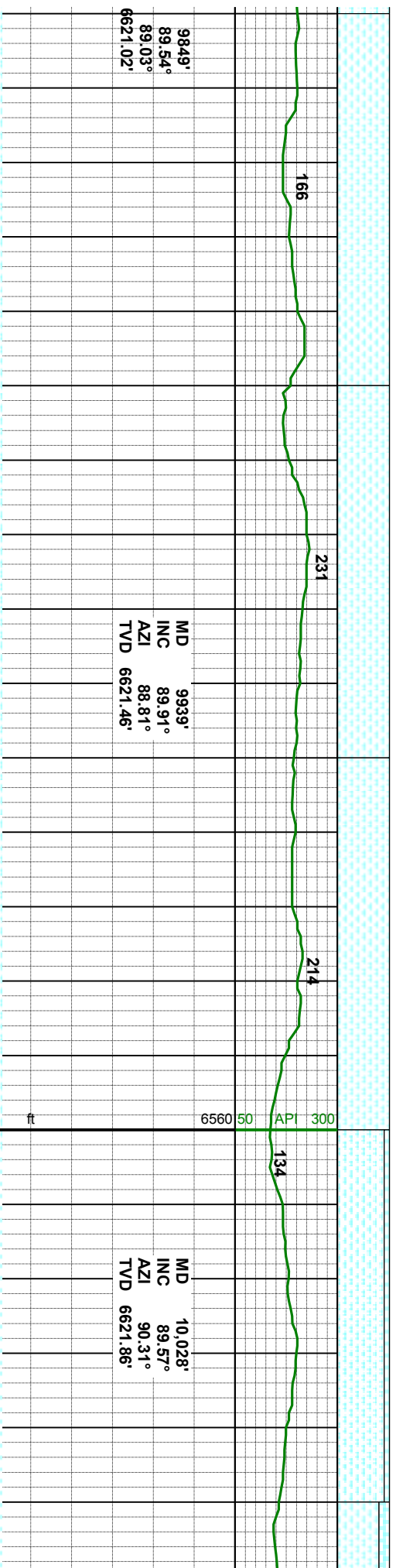
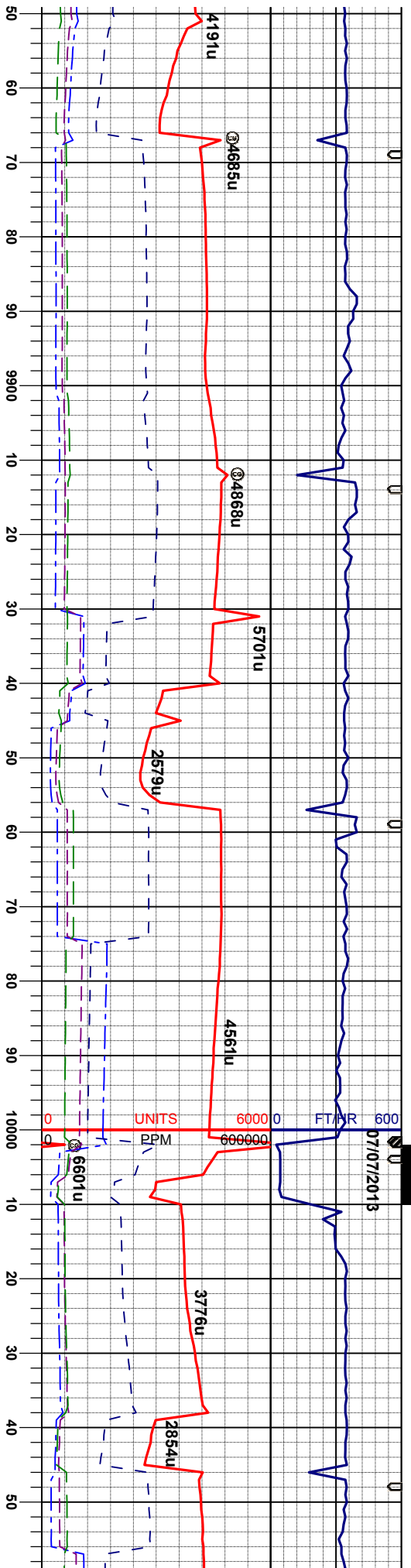


MD 9670'
INC 89.17°
AZI 88.88°
TVD 6619.05'

MD 9759'
INC 89.38°
AZI 89.09°
TVD 6620.18'

MD
INC
AZI
TVD





9849'
89.54°
89.03°
6621.02'

MD	9939'
INC	89.91°
AZI	88.81°
TVD	6621.46'

MD	10,028'
INC	89.57°
AZI	90.31°
TVD	6621.86'

100% MRl: mgy-dkgy / blk, sft- mfirm, sbply-sbblky, rthy lstr, silty tex, org/calc mtx, vcalc

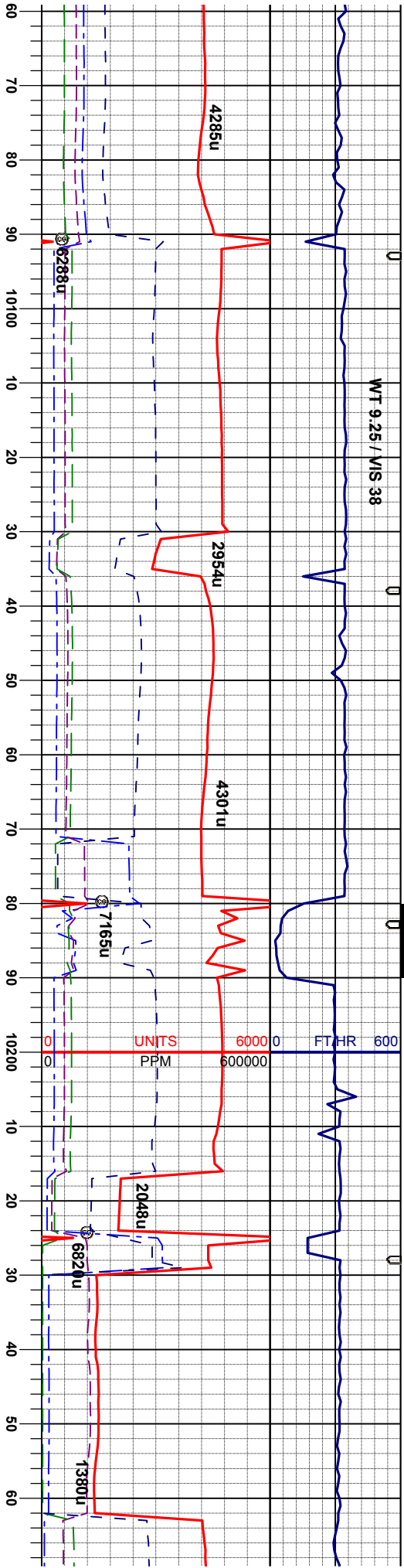
100% MRl: mgy-dkgy / blk, sft- mfirm, sbply-sbblky, rthy lstr, silty tex, org/calc mtx, vcalc

100% MRl: mgy-dlkg / blk, sft-mfirm,
sbbply-sbbkly, rthy lstr, silty tex, org/calc
mx, vycalc

90% MRL: mgy-dtgy / blk, sft-mfrm,
sbbly-sbbkly, rthy lstr, sltly tex, org/calc
mtx, vcalc
10% CHK: lt gy - mgy, sft - mod frm, sbbly
-sbbkly, sl mot, sl wxy, rthy text, v calc

80% 1
sbply
mtx, V
20% 0
- sbbl





MD 10,118'
INC 89.35°
AZI 89.98°
TVD 6622.72'

POSSIBLE FAULT

MD 10,208'
INC 90.68°
AZI 89.87°
TVD 6622.69'

MR.L: mgy-dkgy / blk, sft- mfirm, -sbbky, rthy lstr, silty tex, org/calc
CHK: lt gy - mgy, sft - mod firm, sbply ky, sl mot, sl wxy, rthy text, v calc

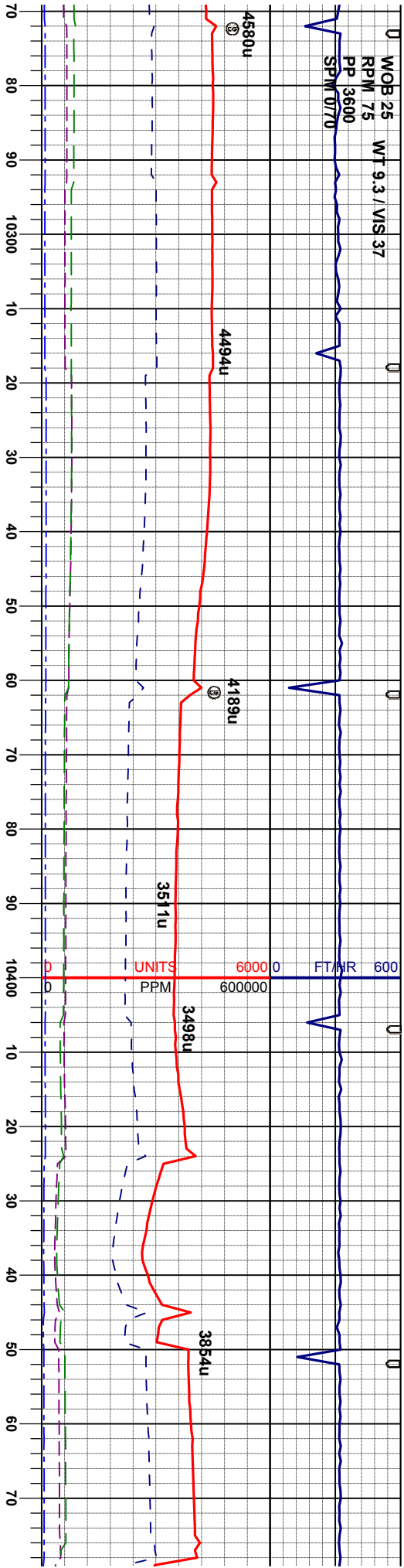
50% MR.L: mgy-dkgy / blk, sft- mfirm, sbply-sbbky, rthy lstr, silty tex, org/calc
50% CHK: lt gy - mgy, sft - mod firm, sbply - sbbky, sl mot, sl wxy, rthy text, v calc

50% MR.L: mgy-dkgy / blk, sft- mfirm, sbply-sbbky, rthy lstr, silty tex, org/calc
50% CHK: lt gy - mgy, sft - mod firm, sbply - sbbky, sl mot, sl wxy, rthy text, v calc

60% CHK: lt gy - mgy, sft - mod firm, sbply - sbbky, sl mot, sl wxy, rthy text, v calc, tr inoc

50% MR.L: mgy-dkgy, sft- mfirm, sbply-sbbky, rthy lstr, silty tex, org/calc
50% CHK: lt gy - mgy, sft - mod firm, sbply - sbbky, rthy lstr, silty tex, org/calc, tr calcite





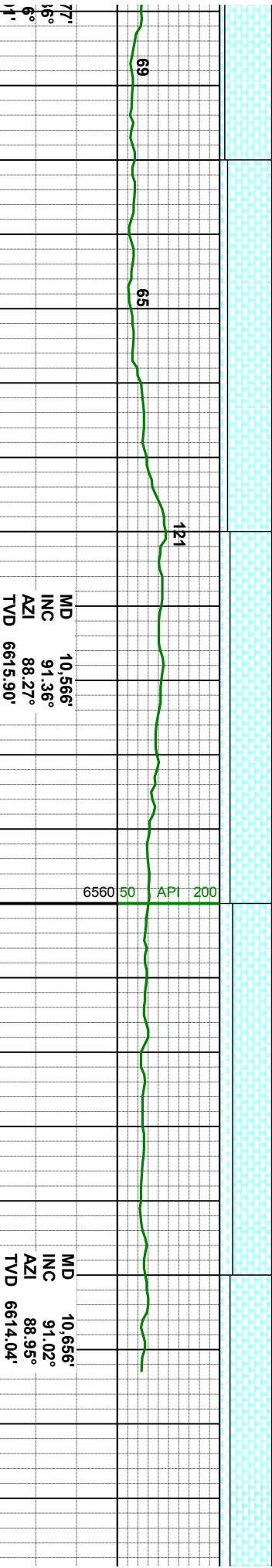
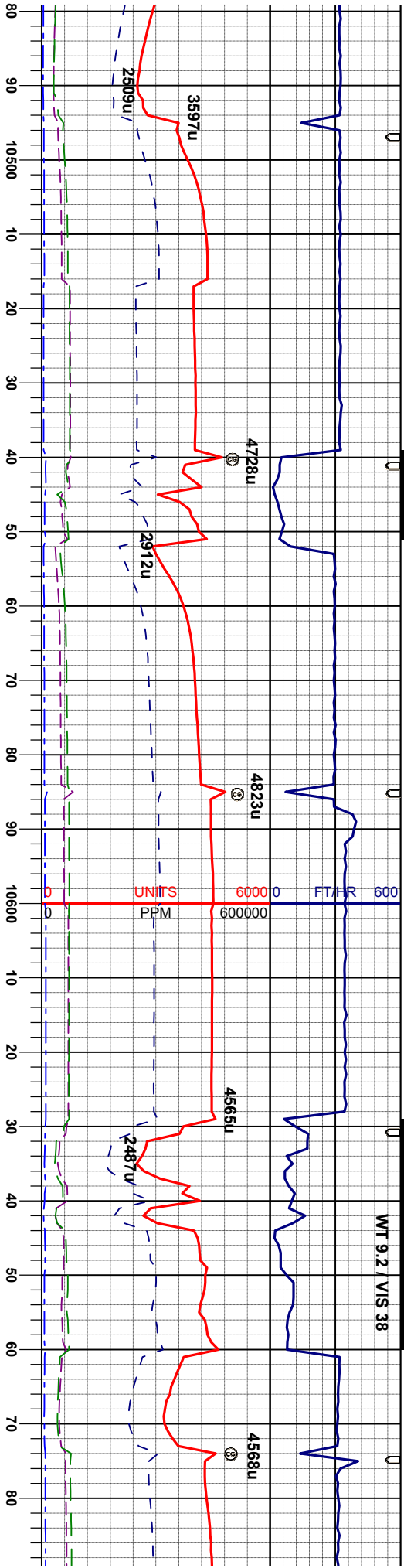
MD 10,297'
INC 91.08°
AZI 89.59°
TVD 6621.33'

MD 10,387'
INC 90.89°
AZI 88.43°
TVD 6619.78'

MD 10,410'
INC 91.1°
AZI 87.1°
TVD 6618.0'

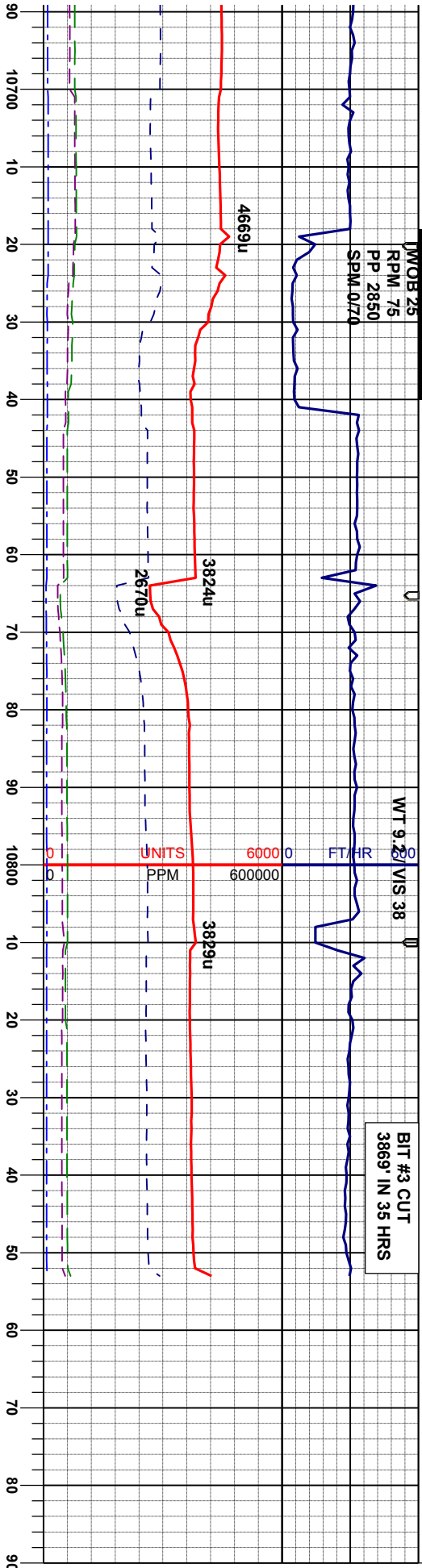
60% MR.L: mgy-dkgy, sft- mfirm, sbply- sbply, rthy lstr, silty tex, org/calc mtx, vcalc, tr calcite	70% CHK: lt gy - mgy, sft - mod firm, sbply - sbply, sl mot, sl wxy, rthy text, v calc 30% MR.L: mgy-dkgy, sft- mfirm, sbply- sbply, rthy lstr, silty tex, org/calc mtx, vcalc, tr calcite	90% CHK: lt gy - mgy, sft - mod firm, sbply - sbply, sl mot, sl wxy, rthy text, v calc 10% MR.L: mgy-dkgy, sft- mfirm, sbply- sbply, rthy lstr, silty tex, org/calc mtx, vcalc, tr calcite	90% CHK: lt gy - mgy, sft - - sbply, sl mot, sl wxy, rth 10% MR.L: mgy-dkgy, sft- sbply, rthy lstr, silty tex, o vcalc, tr calcite
60% MR.L: mgy-dkgy, sft- mfirm, sbply- sbply, rthy lstr, silty tex, org/calc mtx, vcalc, tr calcite	70% CHK: lt gy - mgy, sft - mod firm, sbply - sbply, sl mot, sl wxy, rthy text, v calc 30% MR.L: mgy-dkgy, sft- mfirm, sbply- sbply, rthy lstr, silty tex, org/calc mtx, vcalc, tr calcite	90% CHK: lt gy - mgy, sft - mod firm, sbply - sbply, sl mot, sl wxy, rthy text, v calc 10% MR.L: mgy-dkgy, sft- mfirm, sbply- sbply, rthy lstr, silty tex, org/calc mtx, vcalc, tr calcite	90% CHK: lt gy - mgy, sft - - sbply, sl mot, sl wxy, rth 10% MR.L: mgy-dkgy, sft- sbply, rthy lstr, silty tex, o vcalc, tr calcite





77'	MD 10,566'	MD 10,656'
16°	INC 91.36°	INC 91.02°
6°	AZI 88.27°	AZI 88.95°
11'	TVD 6615.90'	TVD 6614.04'





MD 10,746'
INC 89.35°
AZI 88.90°
TVD 6613.75'

MD 10,789'
INC 89.69°
AZI 88.45°
TVD 6614.10'

BIT PROJECTION
MD 10,853'
INC 89.69°
AZI 88.45°
TVD 6614.455'

TD 10,853' MD
@ 09:02 HRS, 07/07/2013

THANK YOU FOR CHOOSING
COLUMBINE LOGGING INC

sbply	80% CHK: lt gy - mgy, sft - mod firm, sbply	75% CHK: lt gy - mgy, sft - mod firm, sbply	80% CHK: lt gy - mgy, sft - mod firm, sbply
alc	- sbply, sl mot, sl wxy, rthy text, v calc	- sbply, sl mot, sl wxy, rthy text, v calc	- sbply, sl mot, sl wxy, rthy text, v calc
	20% MRL: mgy-dkgy / blk, sft- mfirm,	25% MRL: mgy-dkgy / blk, sft- mfirm,	20% MRL: mgy-dkgy / blk, sft- mfirm,
alc	sbply-sbply, rthy lstr, silty tex, org/calc	sbply-sbply, rthy lstr, silty tex, org/calc	sbply-sbply, rthy lstr, silty tex, org/calc
	mtx, vcalc, tr calcite, tr dism pyr	mtx, vcalc, tr calcite, tr dism pyr	mtx, vcalc, tr calcite, tr dism pyr

