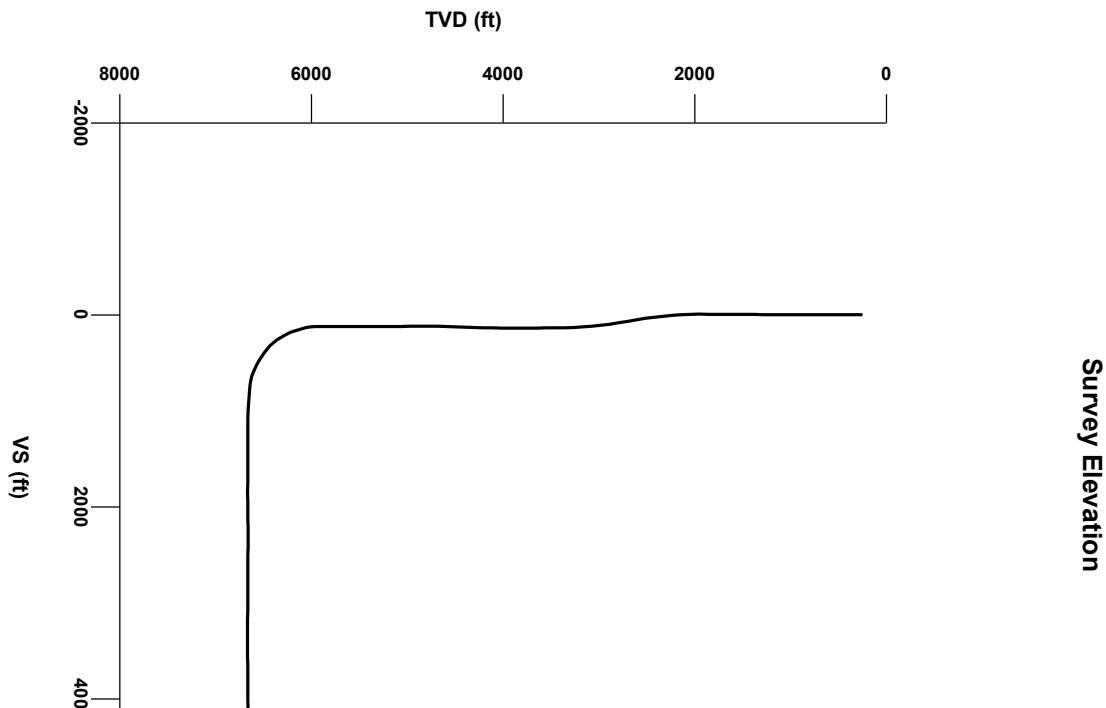
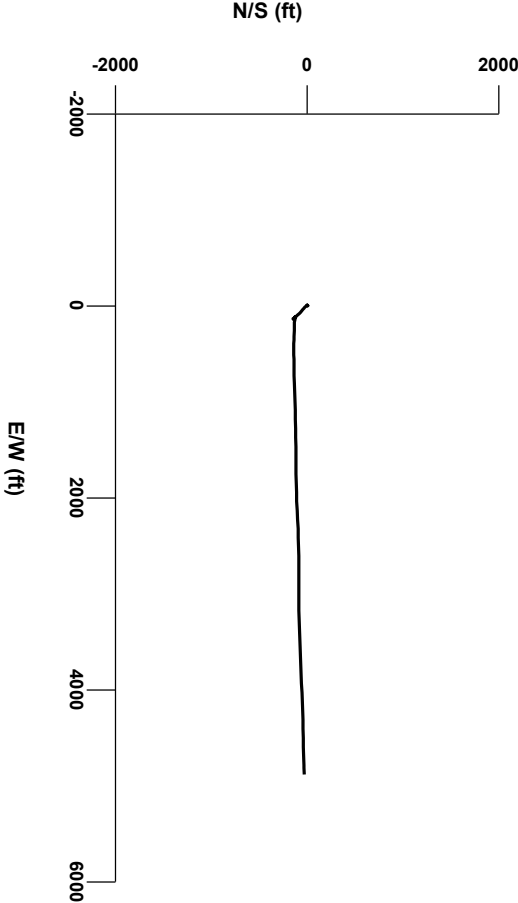


LOG created using LPLOT VH Version 3.0, July 07, 2013, Copyright (C) 1999-2009 Pason Systems Corp.

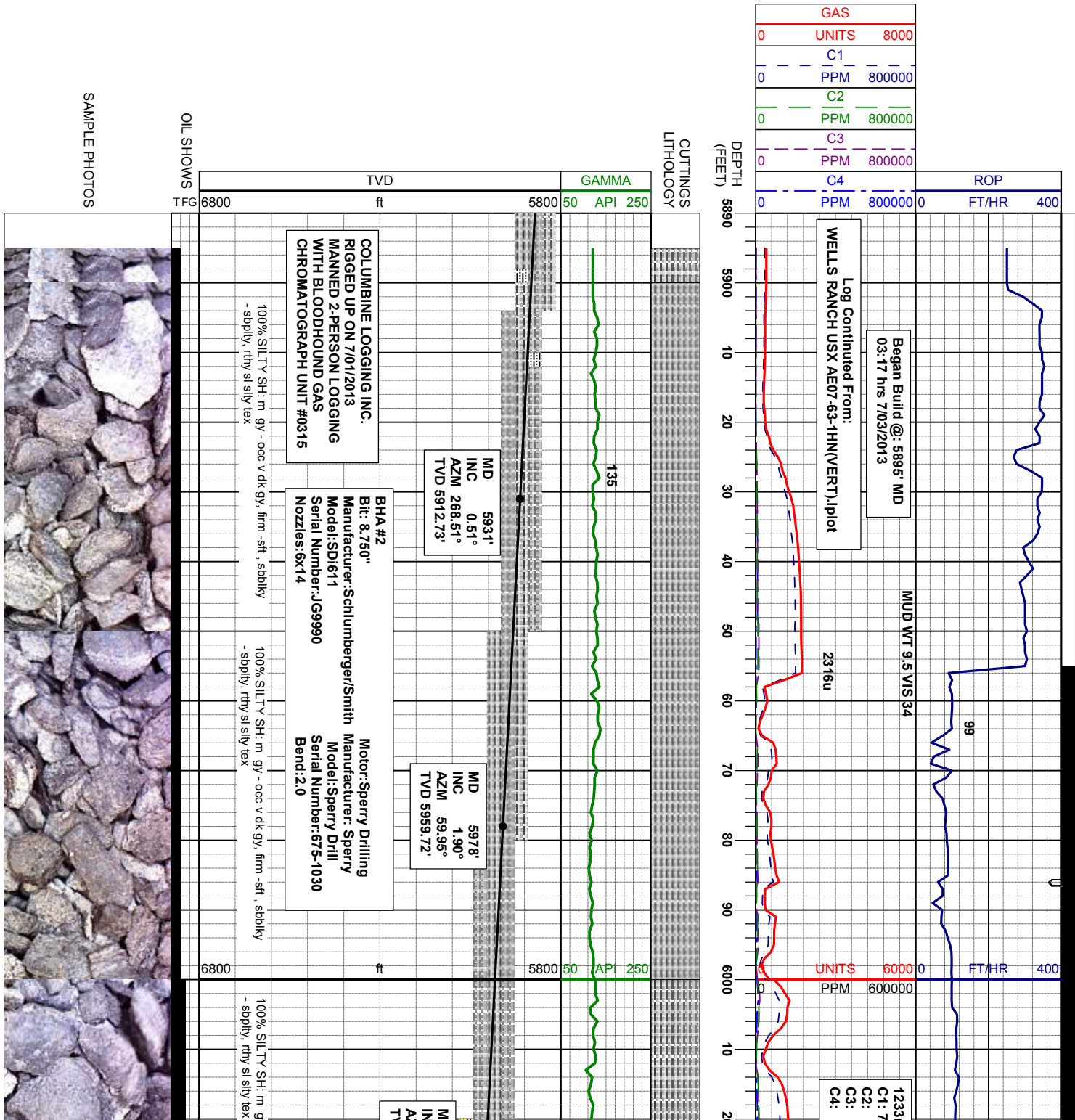
OPERATOR: NOBLE ENERGY INC.
WELL: WELLS RANCH USX AE07-63-1HN
LOCATION: SEC12 T6N R63W
COUNTY: WELD
STATE: COLORADO
SPOT: 1039' FSL ; 65' FEL
ELEVATION: GE: 4,856' KB 4,880'
FIELD: WATTENBERG
SPUD DATE: 07/01/2013
TD DATE: 07/06/2013
DATES LOGGED: 07/01/2013 - 07/06/2013
DEPTHS LOGGED: 1000' - 11122'
LOGGERS: JOHN READY, MIKE GREENE
DRILLING FLUID: WATER, MUD, POLY
DRILLING RIG: H&P 322
API: 05-123-37084
LOG TYPE: HORIZONTAL
SCALE: 1:240 (5 inches per 100 feet)
REMARKS: WELLSITE GEOLOGICAL SERVICES PROVIDED BY COLUMBINE LOGGING INC

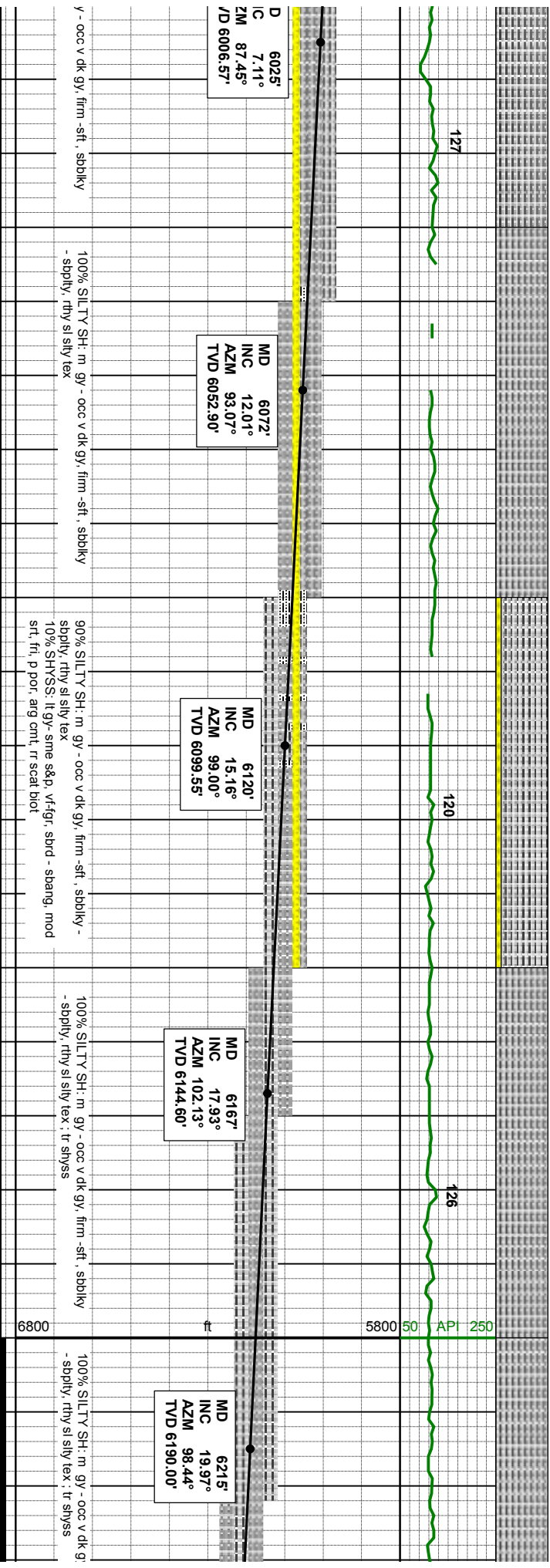
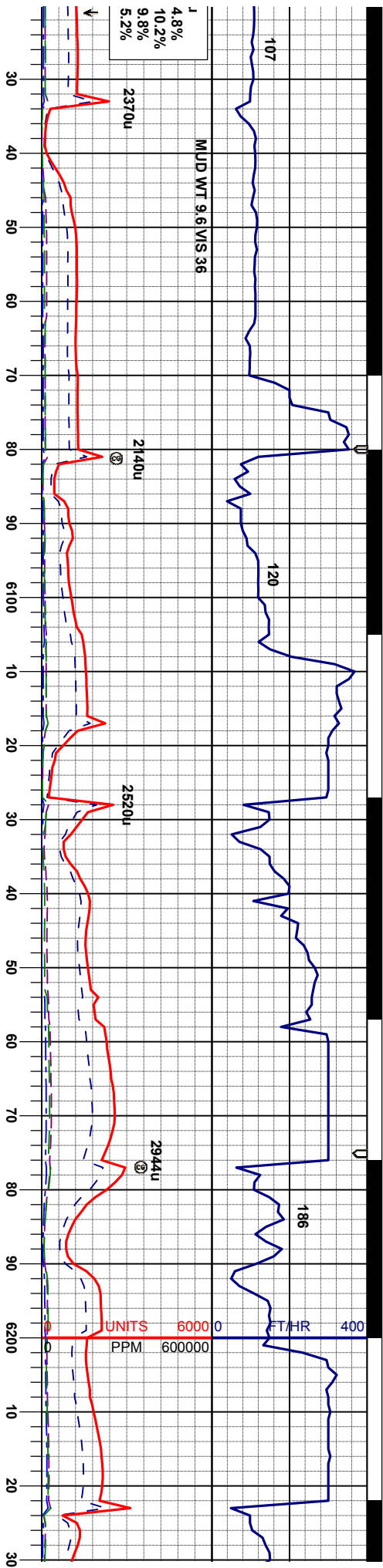


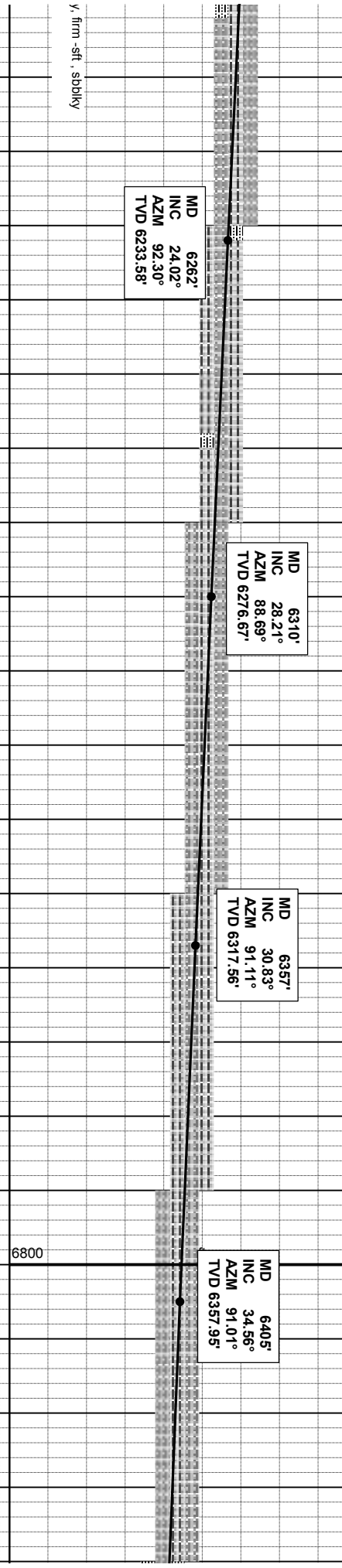
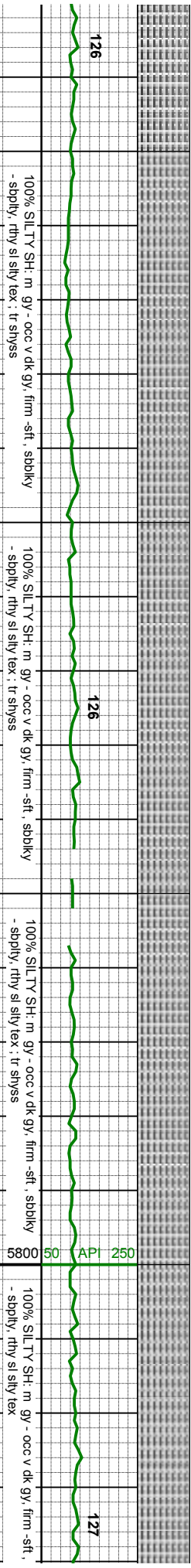
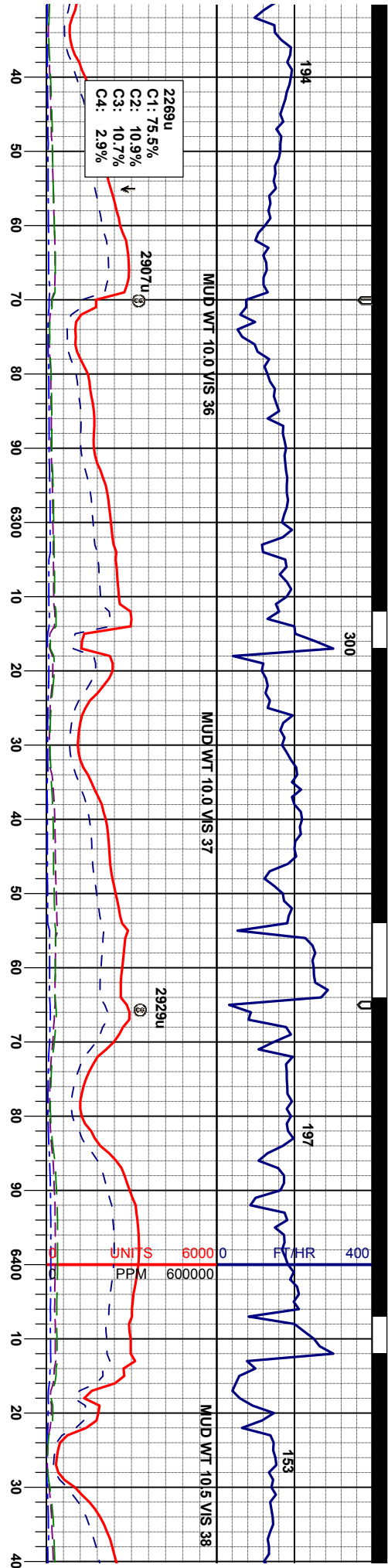
Survey Plan

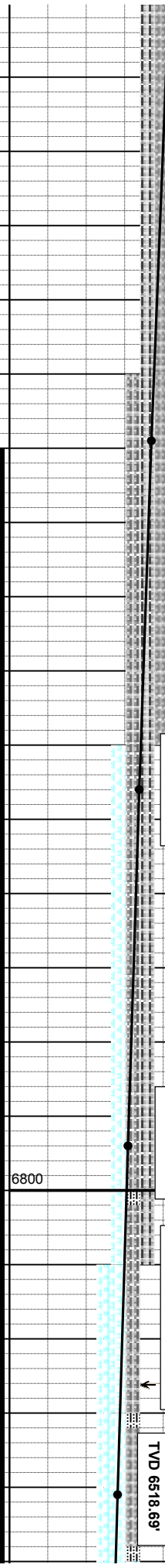
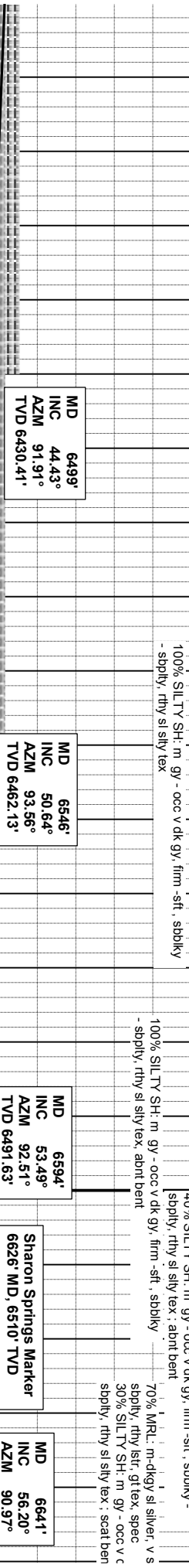
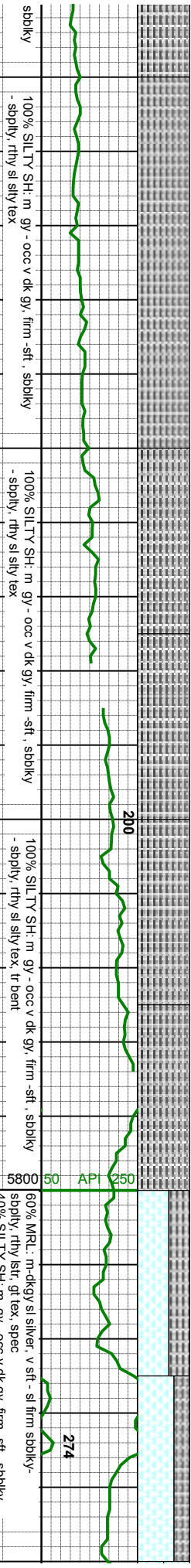
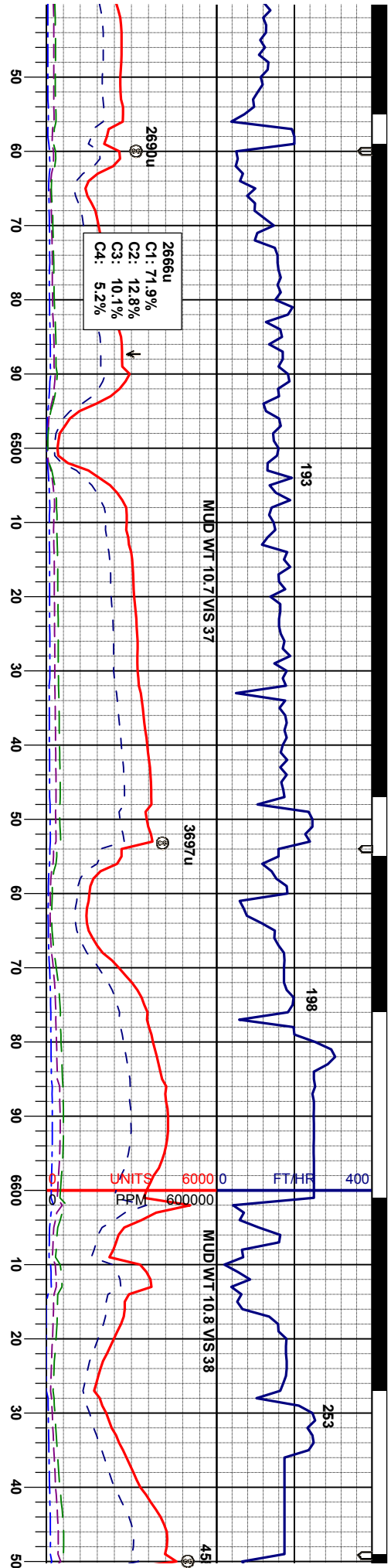


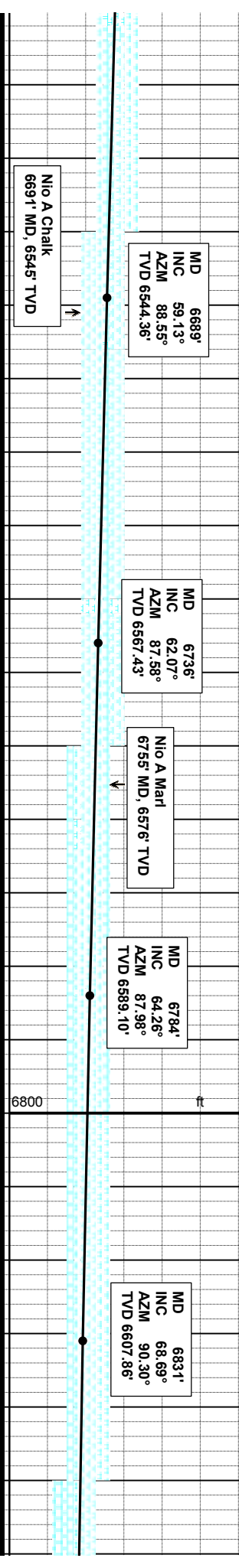
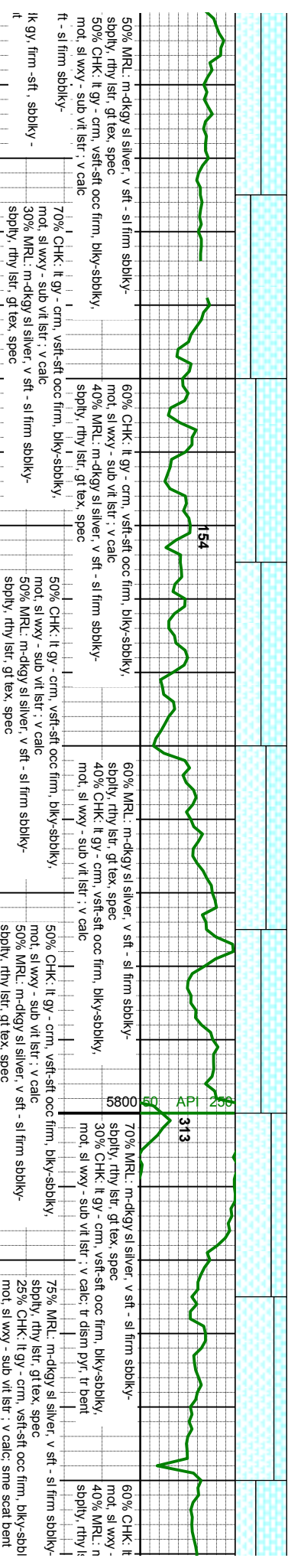
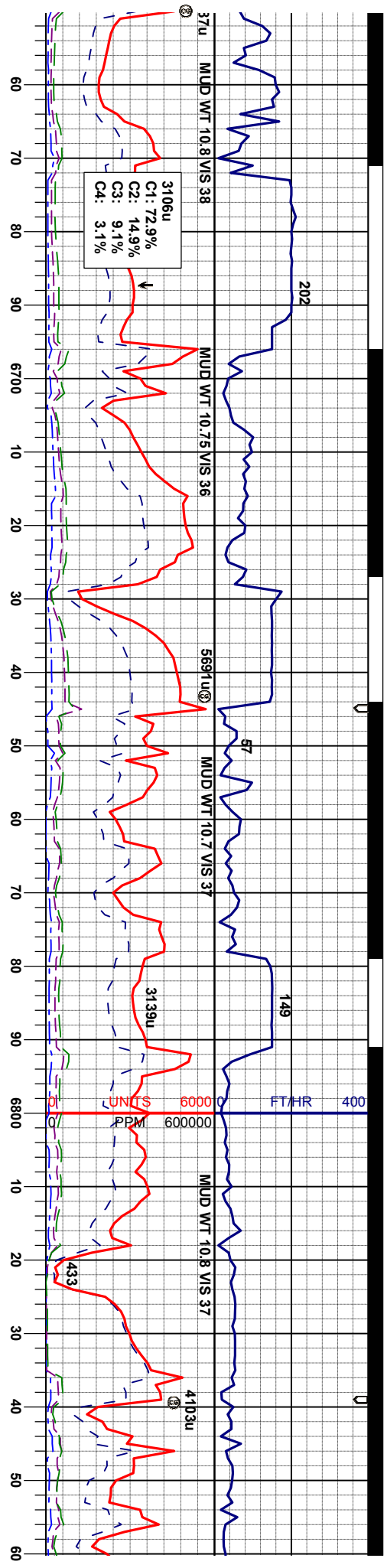
LITHOLOGIES			
	Chalk		Marl
			Shaly Sandstone
			
ENGINEERING SYMBOLS			
	Casing		Casing
			Connection
			
	Arrow		Midnight Depth
			Normal Fault
			

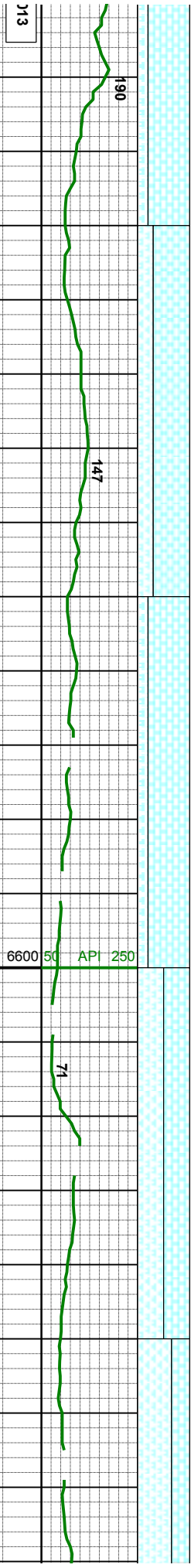
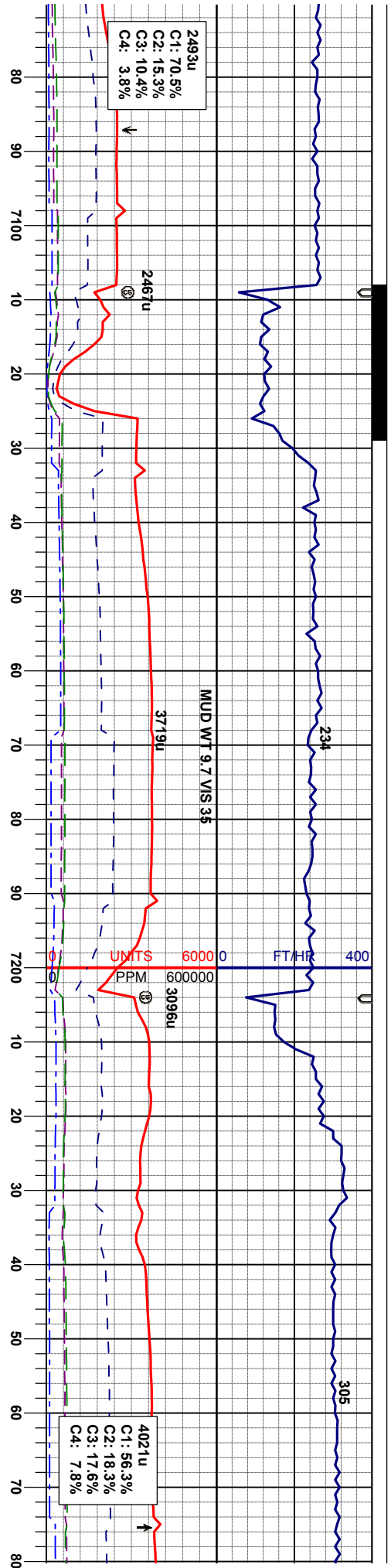












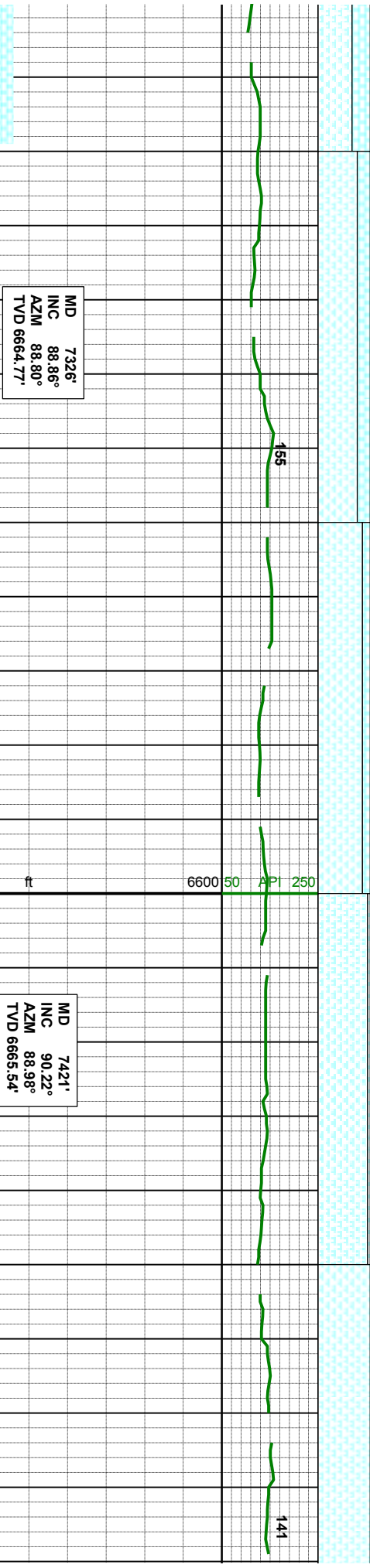
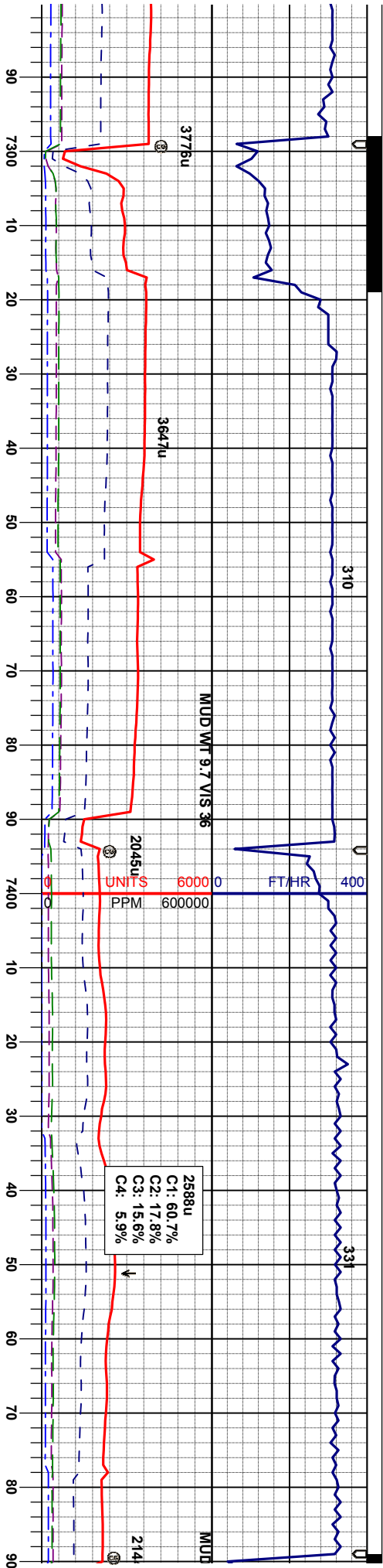
Motor: Sperry Drill
Manufacturer: Sperry Drilling
Model: Sperry Drill
Serial Number: 475-904
Bend: 1.5

MD 7136'
INC 86.64°
AZM 88.39°
TVD 6655.73'

MD 7231'
INC 86.79°
AZM 87.77°
TVD 6661.17'

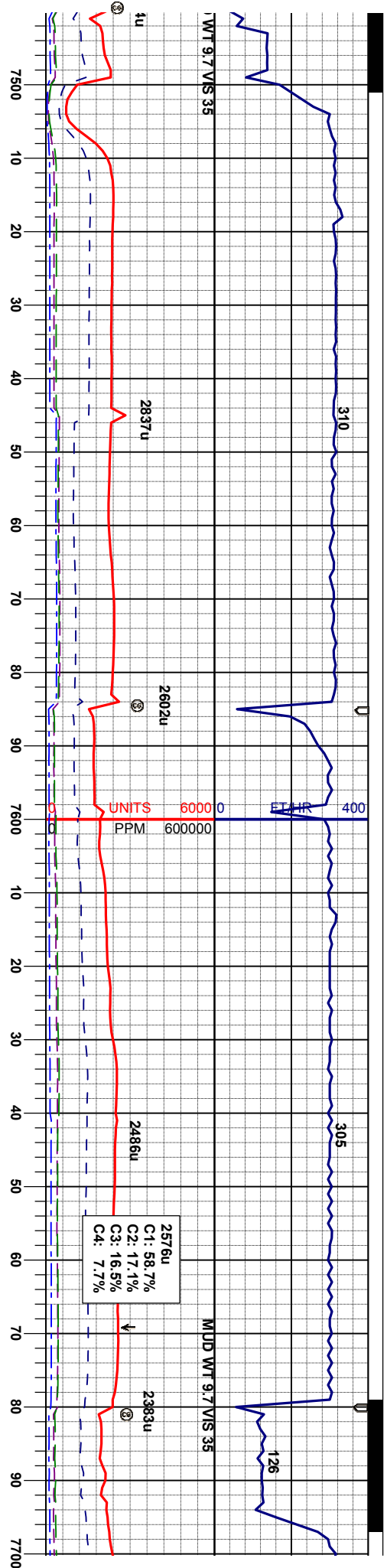
1. vst-ft occ firm, biky-sbbiky, 70% CHK: lt gy - crm, vst-ft occ firm, biky-sbbiky, 80% CHK: lt gy - crm, vst-ft occ firm, biky-sbbiky, 50% CHK: lt gy - crm, vst-ft occ firm, biky-sbbiky, 65% MRL: m-dkgy sl silver, v sft - i
sft: v calc, 30% MRL: m-dkgy sl silver, v sft - sl firm sbbiky- 50% MRL: m-dkgy sl silver, v sft - sl firm sbbiky- 35% CHK: lt gy - crm, vst-ft occ f
silver, v sft - sl firm sbbiky- 30% MRL: m-dkgy sl silver, v sft - sl firm sbbiky- 50% MRL: m-dkgy sl silver, v sft - sl firm sbbiky- 35% CHK: lt gy - crm, vst-ft occ f
spec, rthy istr, gt lex, spec





si firm sbdky- irm, bdky-sbdky,	75% MRL: m-dkgy sl silver, v sft - sl firm sbdky- sbdky, rthy lstr, tr arg, gt tex, spec 25% CHK: lt gy - cm, vsft-sft occ firm, bdky-sbdky, mot, sl wxy - sub vt lstr - v calc	85% MRL: m-dkgy sl silver, v sft - sl firm sbdky- sbdky, rthy lstr, tr arg, gt tex, spec 15% CHK: lt gy - cm, vsft-sft occ firm, bdky-sbdky, mot, sl wxy - sub vt lstr - v calc	95% MRL: m-dkgy sl silver, v sft - sl firm sbdky- sbdky, rthy lstr, tr arg, gt tex, spec 5% CHK: lt gy - cm, vsft-sft occ firm, bdky-sbdky, mot, sl wxy - sub vt lstr - v calc	100% MRL: m-dkgy sl silver, v sft - sl firm sbdky- sbdky, rthy lstr, tr arg, gt tex, spec
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MD 7517'
INC 89.69°
AZM 89.03°
TVD 6665.62'

MD 7612'
INC 90.62°
AZM 88.74°
TVD 6665.36'

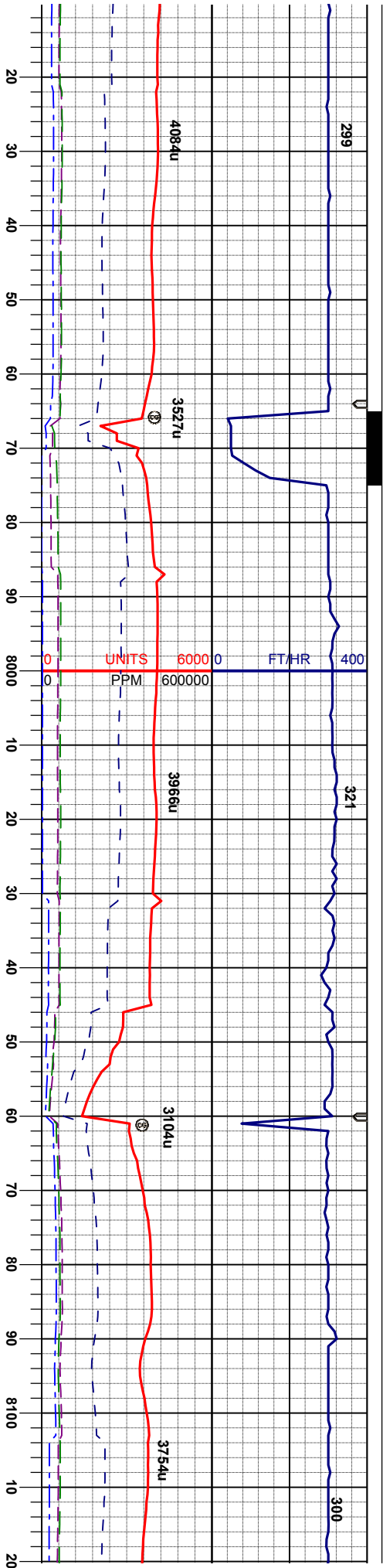
70% MRL: m-dkgy sl silver, v sft - sl firm sbbkly-
sbbly, rthy lstr, tr arg, gt tex, spec
30% CHK: lt gy - crm, vsft-sft occ firm, bkly-sbbkly,
mol, sl wxy - sub vit lstr ; v calc

65% MRL: m-dkgy sl silver, v sft - sl firm sbbkly-
sbbly, rthy lstr, tr arg, gt tex, spec
35% CHK: lt gy - crm, vsft-sft occ firm, bkly-sbbkly,
mol, sl wxy - sub vit lstr ; v calc

60% CHK: lt gy - crm, vsft-sft occ firm, bkly-sbbkly,
mol, sl wxy - sub vit lstr ; v calc
40% MRL: m-dkgy sl silver, v sft - sl firm sbbkly-
sbbly, rthy lstr, gt tex, spec

70% CHK: lt gy - crm, vsft-sft occ firm, bkly-sbbkly,
mol, sl wxy - sub vit lstr ; v calc
30% MRL: m-dkgy sl silver, v sft - sl firm sbbkly-
sbbly, rthy lstr, gt tex, spec



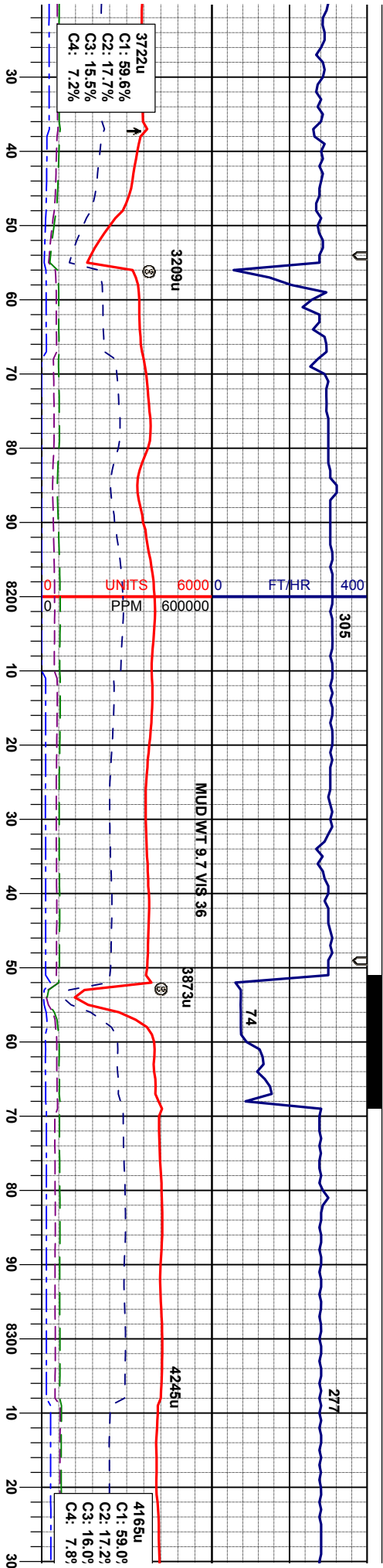


MD 7992'
INC 88.83°
AZM 88.82°
TVD 6664.71'

MD 8086'
INC 89.32°
AZM 87.91°
TVD 6666.23'

IL - m-dkgy sl silver, v sft - sl firm sdbkly-
thly lstr, tr arg, gt tex, spec
IK, gy, v tr brn, vsft-sft occ firm, bkly-sbdkly,
wxy - sub vit lstr ; v calc
70% MRL - m-dkgy sl silver, v sft - sl firm sdbkly-
sdbkly, rthy lstr, tr arg, gt tex
30% CHK: IL gy - crm, vsft-sft occ firm, bkly-sbdkly,
mot, sl wxy - sub vit lstr ; v calc
90% MRL - m-dkgy sl silver, v sft - sl firm sdbkly-
sdbkly, rthy lstr, tr arg, gt tex, spec
10% CHK: IL gy - crm, vsft-sft occ firm, bkly-sbdkly,
mot, sl wxy - sub vit lstr ; v calc
55% CHK: gy - IL gy, v tr brn, vsft-sft occ firm, bkly-
sdbkly, mot, sl wxy - sub vit lstr ; v calc
45% MRL - m-dkgy silver, v sft - sl firm sdbkly- sdbkly,
rthy lstr, tr arg, gt tex, spec, tr diam pyr
85% MRL: m-dkgy sl :
sdbkly, rthy lstr, tr arg,
15% CHK: IL gy - crm,
mot, sl wxy - sub vit ls



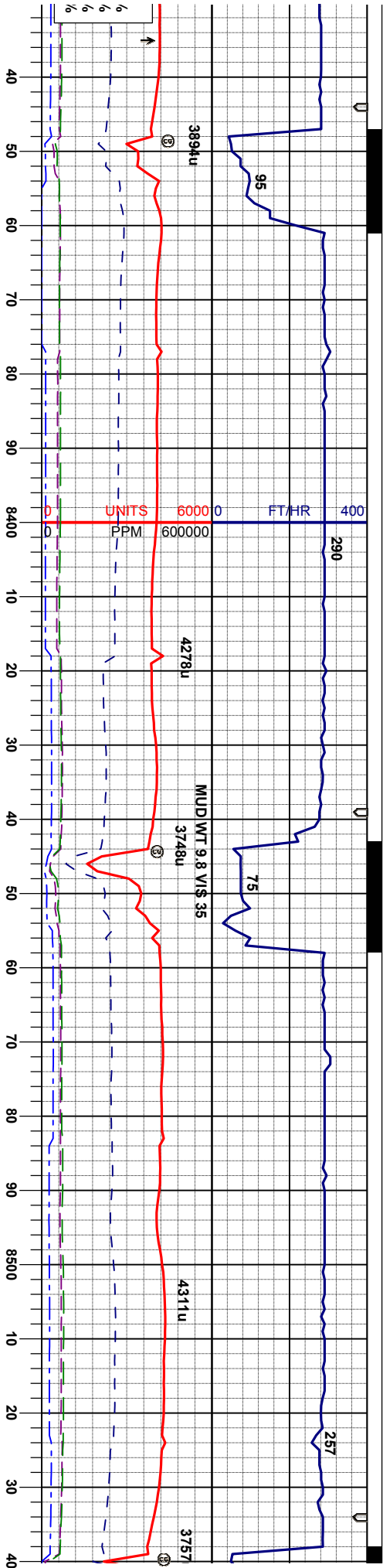


MD 818.1'
INC 91.48°
AZM 89.66°
TVD 6665.56'

MD 827.6'
INC 90.40°
AZM 87.19°
TVD 6664.00'

silver, v sft - sl firm sbdkly- gt tex, spec vsft-sft occ frm, bkly-sbdkly, tr - v calc	65% MRL: m-dkgy sl silver, v sft - sl firm sbdkly- sbdkly, rthy lstr, tr arg, gt tex, spec 35% CHK: lt gy - crm, vsft-sft occ frm, bkly-sbdkly, mot, sl wxy - sub vit lstr : v calc	80% CHK: gy - lt gy, v tr brn, vsft-sft occ frm, bkly- sbdkly, mot, sl wxy - sub vit lstr : v calc 20% MRL: dkgy sl silver, v sft - sl firm sbdkly- sbdkly, rthy lstr, tr arg, gt tex, spec, tr disn pyr	90% CHK: gy - lt gy, v tr brn, vsft-sft occ frm, sbdkly, mot, sl wxy - sub vit lstr : v calc 10% MRL: m-dkgy sl silver, v sft - sl firm sbdkly- sbdkly, rthy lstr, tr arg, gt tex, spec, tr disn pyr	75% CHK: gy - lt gy, v tr brn, vsft- sbdkly, mot, sl wxy - sub vit lstr : 25% MRL: m-dkgy sl silver, v sft - sbdkly, rthy lstr, tr arg, gt tex, spe
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MD 8371'
INC 90.09°
AZM 87.08°
TVD 6663.60'

MD 8466'
INC 91.29°
AZM 86.99°
TVD 6662.45'

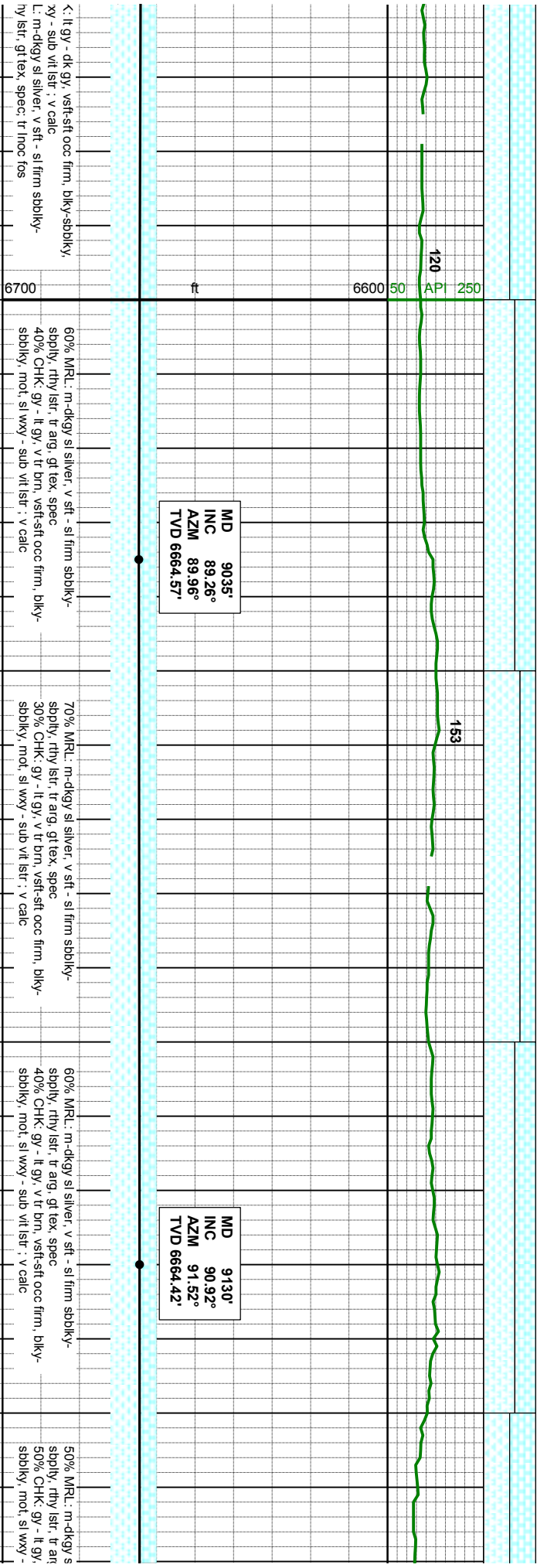
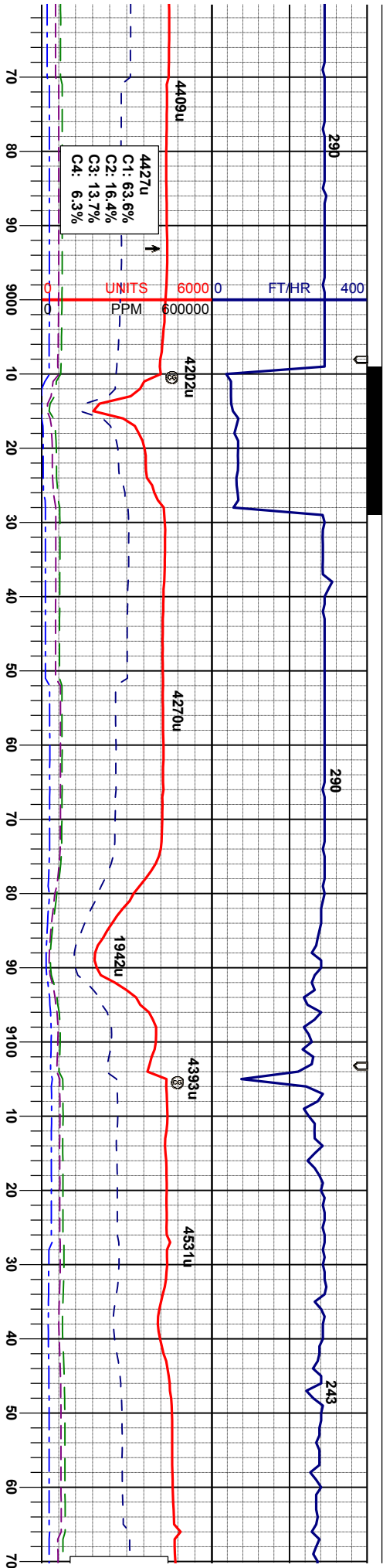
60% CHK: lt gy - crm, vsft-sft occ firm, biky-sbdky, mot, sl wxy - sub vit lstr : v calc
40% MRL: m-dkgy sl silver, v sft - sl firm sbdky- spdky, rthy lstr, gt tex, spec: tr inoc fos

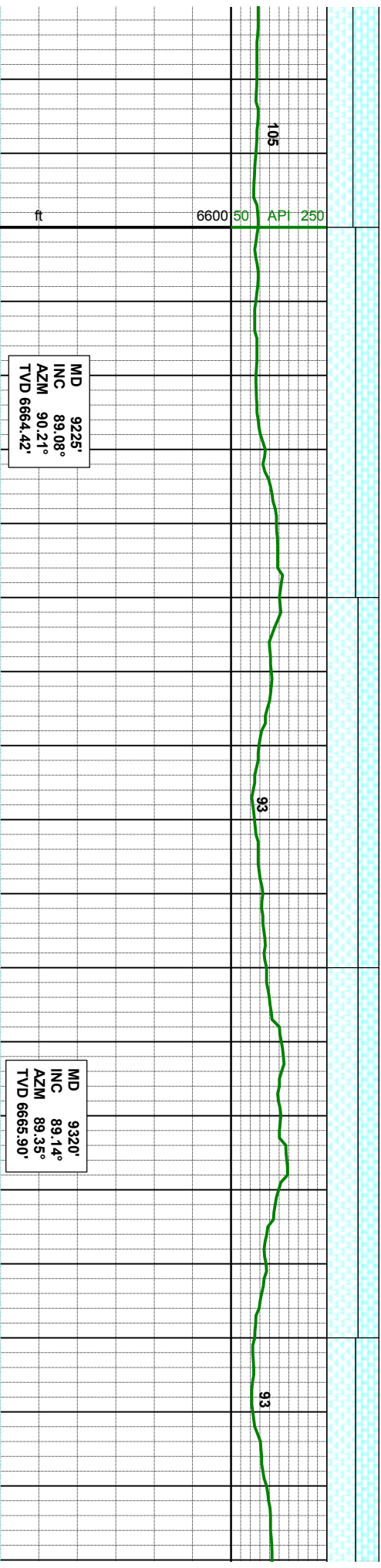
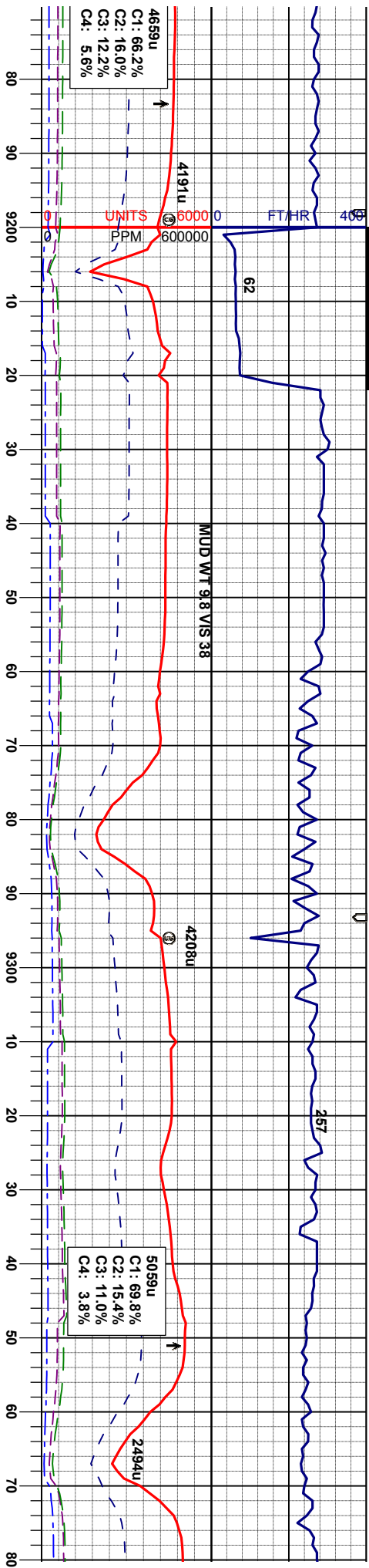
65% MRL: m-dkgy sl silver, v sft - sl firm sbdky- spdky, rthy lstr, tr arg, gt tex, spec
35% CHK: lt gy - crm, vsft-sft occ firm, biky-sbdky, mot, sl wxy - sub vit lstr : v calc

60% CHK: lt gy - crm, vsft-sft occ firm, biky-sbdky, mot, sl wxy - sub vit lstr : v calc
40% MRL: m-dkgy sl silver, v sft - sl firm sbdky- spdky, rthy lstr, gt tex, spec: tr inoc fos

90% CHK: lt gy - crm, vsft-sft occ firm, biky-sb mot, sl wxy - sub vit lstr : v calc
10% MRL: m-dkgy sl silver, v sft - sl firm sbdk spdky, rthy lstr, gt tex, spec: tr inoc fos







silver, v sft - sl firm sbdky-
3, gt tex, spec
v tr brn, vsft-sft occ firm, blk-
sub vit lstr : v calc

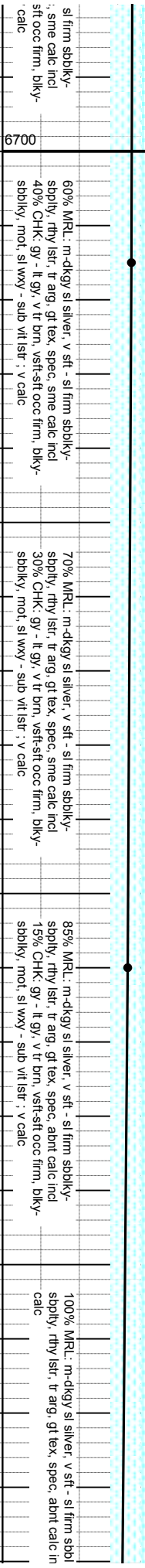
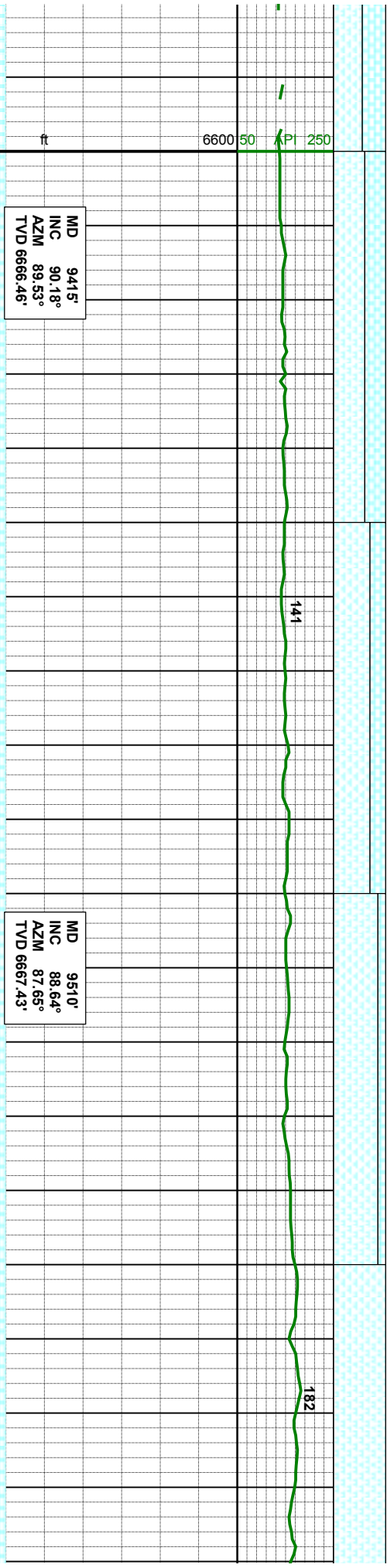
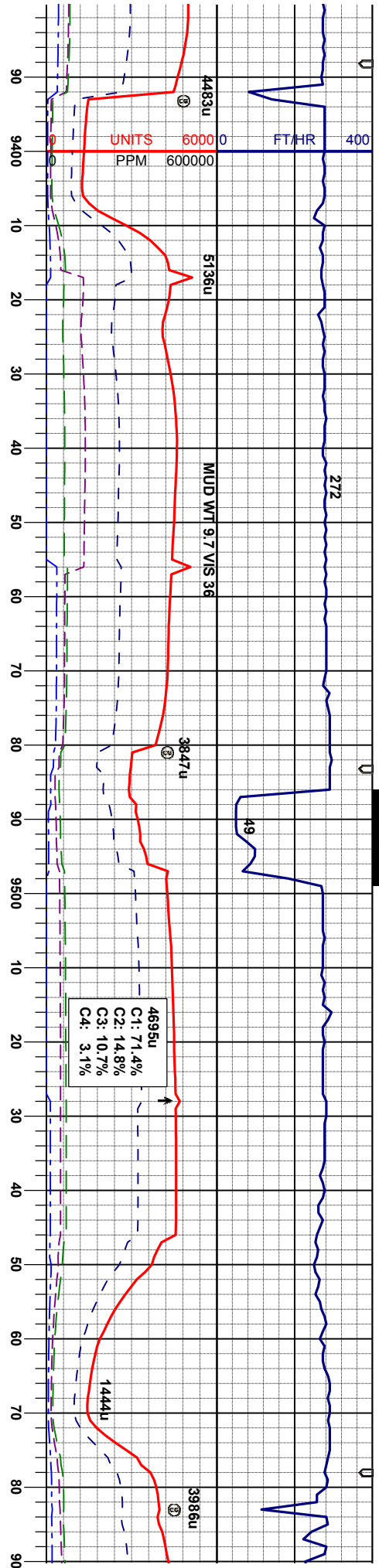
55% MRL: m-dkgy sl silver, v sft - sl firm sbdky-
spply, rthy lstr, tr arg, gt tex, spec, sme calc incl
45% CHK: gy - lt gy, v tr brn, vsft-sft occ firm, blk-
sbbky, mot, sl wxy - sub vit lstr : v calc

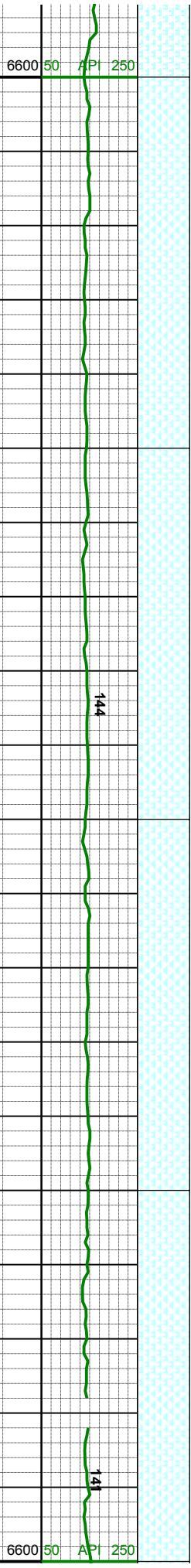
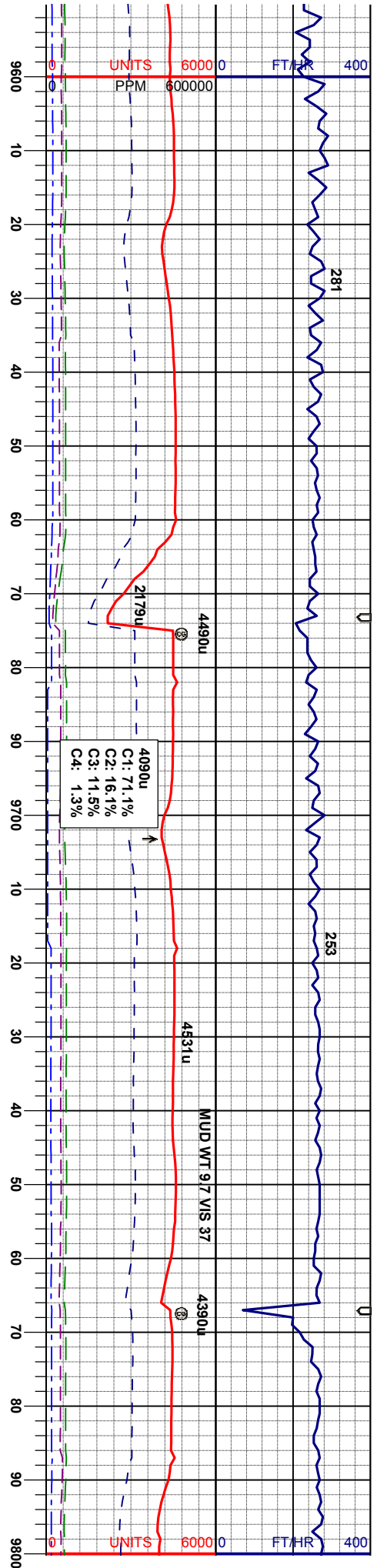
60% MRL: m-dkgy sl silver, v sft - sl firm sbdky-
spply, rthy lstr, tr arg, gt tex, spec, sme calc incl
40% CHK: gy - lt gy, v tr brn, vsft-sft occ firm, blk-
sbbky, mot, sl wxy - sub vit lstr : v calc

60% MRL: m-dkgy sl silver, v sft - sl firm sbdky-
spply, rthy lstr, tr arg, gt tex, spec, sme calc incl
40% CHK: gy - lt gy, v tr brn, vsft-sft occ firm, blk-
sbbky, mot, sl wxy - sub vit lstr : v calc

55% MRL: m-dkgy sl silver, v sft -
spply, rthy lstr, tr arg, gt tex, spec
45% CHK: gy - lt gy, v tr brn, vsft-
sbbky, mot, sl wxy - sub vit lstr : v







MD 9605'
INC 89.41°
AZM 87.64°
TVD 6669.04'

MD 9699'
INC 90.09°
AZM 87.21°
TVD 6669.44'

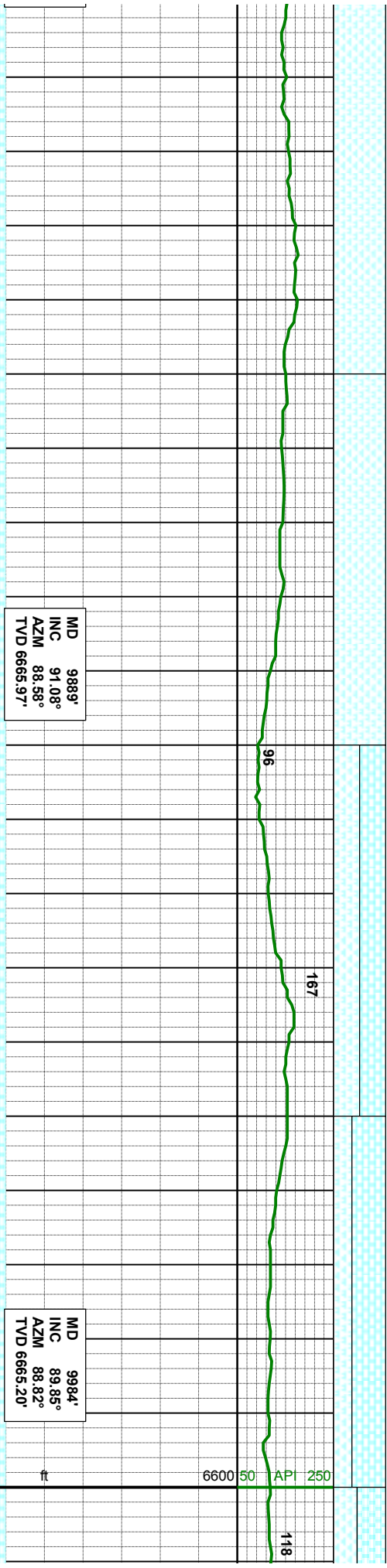
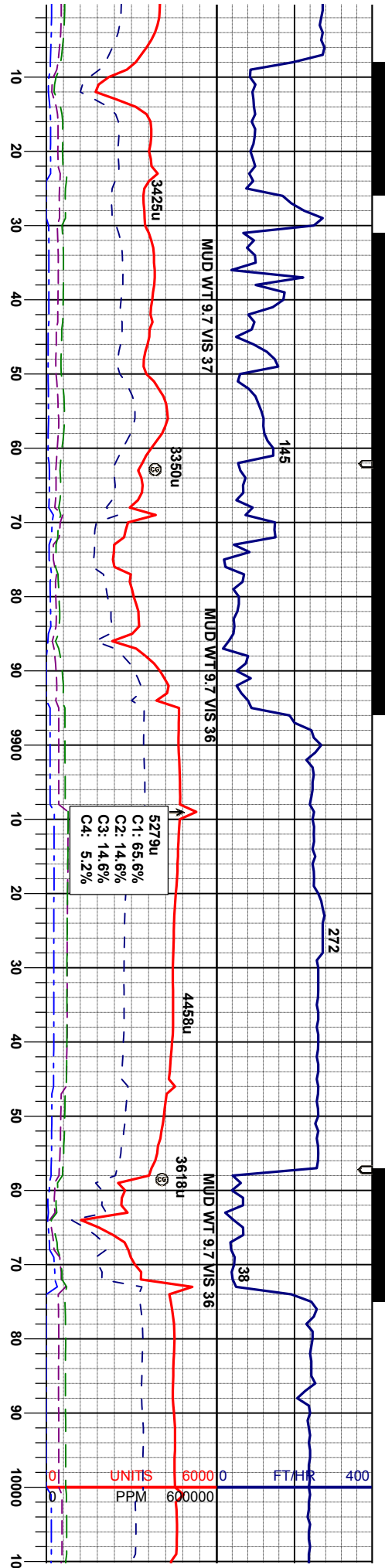
MD 9794'
INC 91.51°
AZM 87.70°
TVD 6668.11'

100% MRL: m-dkgy sl silver, v sft - sl firm sbdky-sbdky, rthy lstr, tr arg, gt tex, spec, abnt calc incl ; v calc

100% MRL: m-dkgy sl silver, v sft - sl firm sbdky-sbdky, rthy lstr, tr arg, gt tex, spec, abnt calc incl ; v calc

100% MRL: m-dkgy sl silver, v sft - sl firm sbdky-sbdky, rthy lstr, tr arg, gt tex, spec, abnt calc incl ; v calc





100% MR.L: m-dkgy sl silver, v sft - sl firm sbbkly-sbply, rthy lst, tr arg, gt tex, spec, abnt calc incl; v calc

100% MR.L: m-dkgy sl silver, v sft - sl firm sbbkly-sbply, rthy lst, tr arg, gt tex, spec, abnt calc incl; v calc

50% MR.L: m-dkgy sl silver, v sft - sl firm sbbkly-sbply, rthy lst, tr arg, gt tex, spec, abnt calc trac

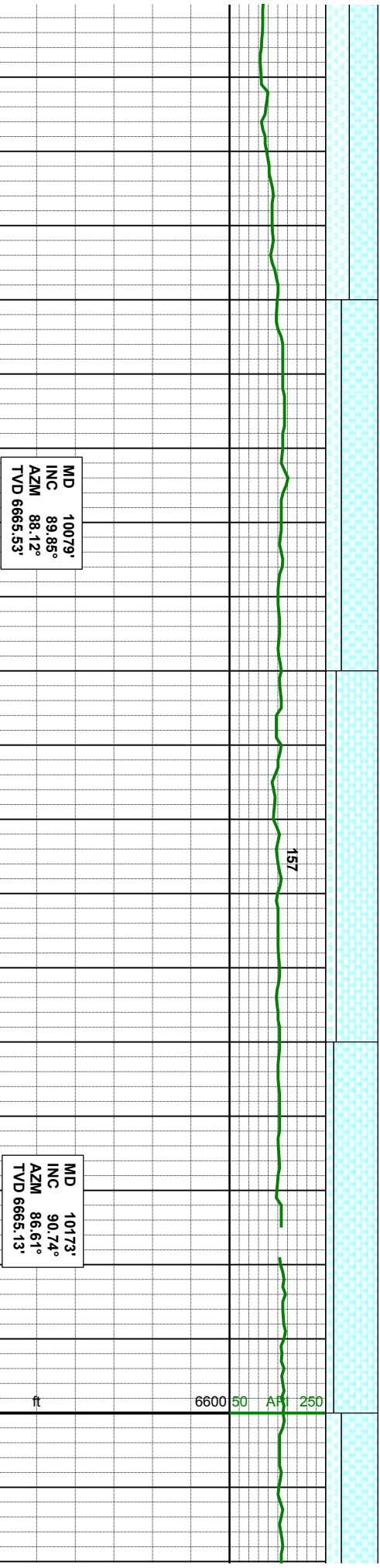
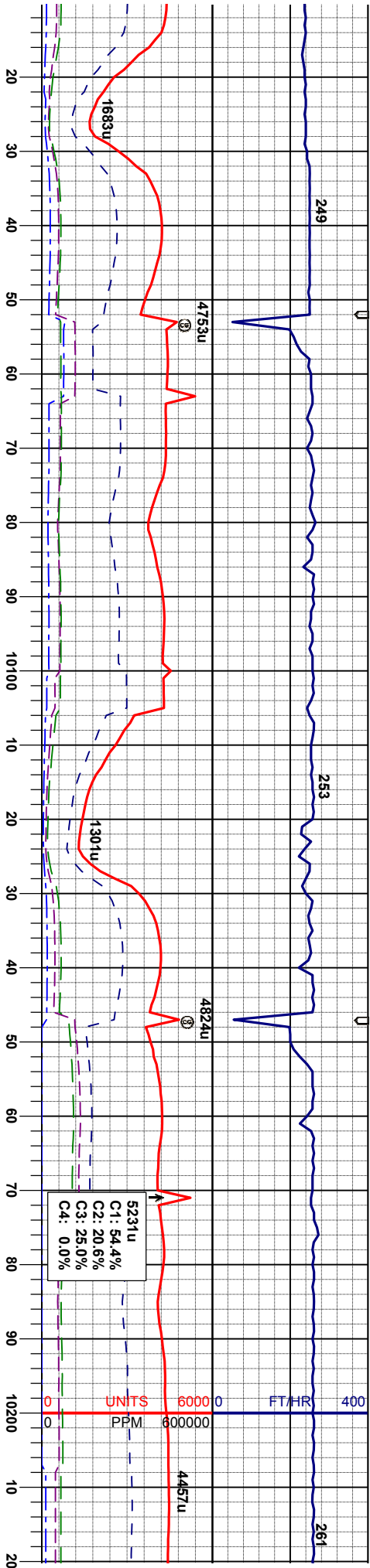
50% CHK: gy - lt gy, v tr brn, vsft-sft occ firm, biky-sbply, mot, sl wxy - sub vit lst; v calc

65% CHK: gy - lt gy, v tr brn, vsft-sft occ firm, biky-sbply, mot, sl wxy - sub vit lst

35% MR.L: m-dkgy sl silver, v sft - sl firm sbbkly-sbply, rthy lst, tr arg, gt tex, spec, abnt calc trac; v calc

55% CH sbbkly, n 45% MR sbply, rt calc





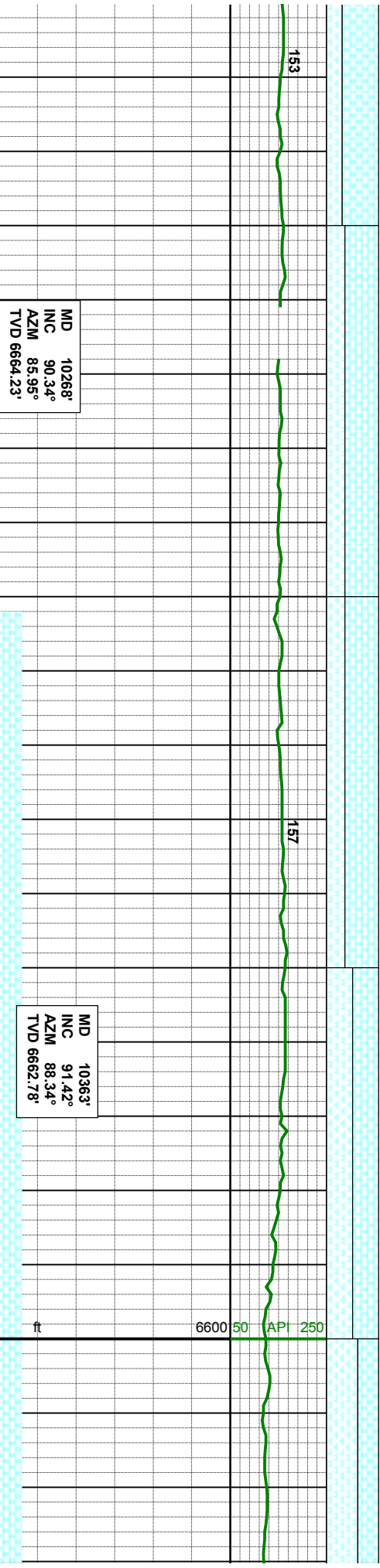
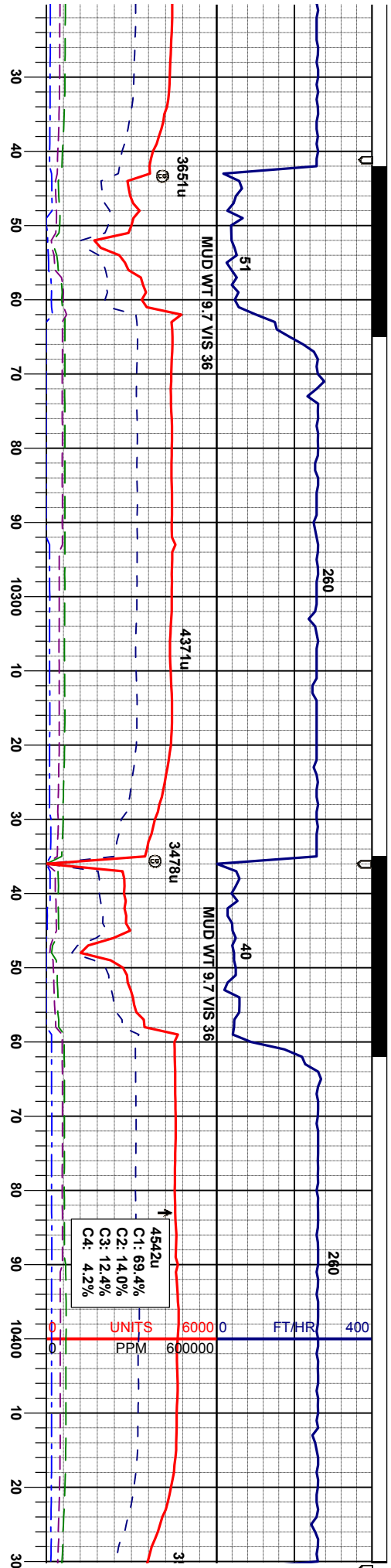
K: gy - lt gy, v tr brn, vsft-sft occ firm, biky-
not, sl wxy - sub vit lstr
L: m-dkgy sl silver, v sft - sl firm sbbiky-
hy lstr, tr arg, gt tex, spec, abnt calc frac : v

70% CHK: gy - lt gy, v tr brn, vsft-sft occ firm, biky-
sbbiky, mot, sl wxy - sub vit lstr
30% MRL: m-dkgy sl silver, v sft - sl firm sbbiky-
sbbiky, rthy lstr, tr arg, gt tex, spec, sme calc frac : v
calc

80% CHK: gy - lt gy, v tr brn, vsft-sft occ firm, biky-
sbbiky, mot, sl wxy - sub vit lstr
20% MRL: m-dkgy sl silver, v sft - sl firm sbbiky-
sbbiky, rthy lstr, tr arg, gt tex, spec, sme calc frac : v
calc

85% CHK: gy - lt gy, v tr brn, vsft-sft occ firm, biky-
sbbiky, mot, sl wxy - sub vit lstr
15% MRL: m-dkgy sl silver, v sft - sl firm sbbiky-
sbbiky, rthy lstr, tr arg, gt tex, spec, sme calc frac : v
calc





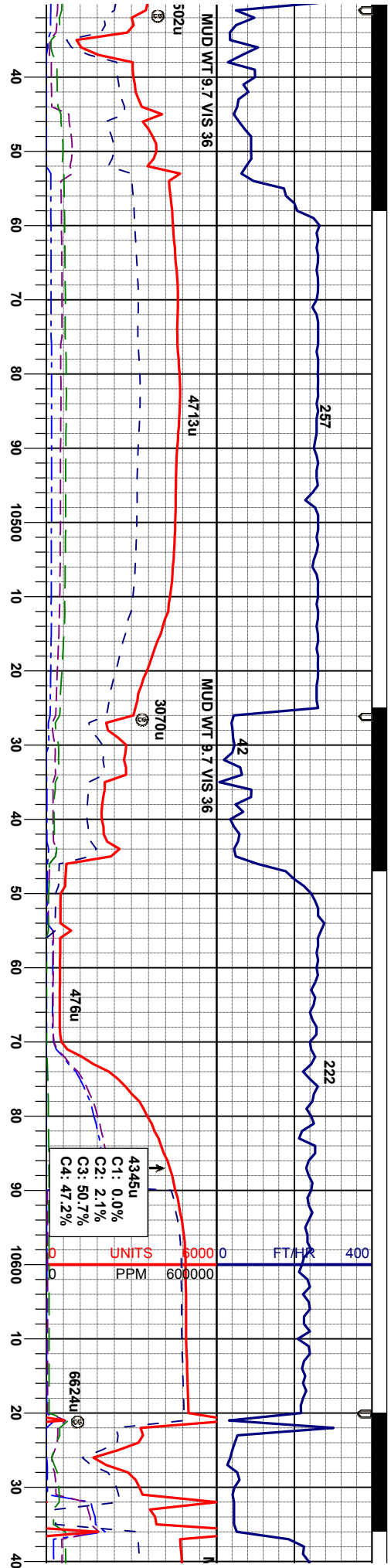
65% CHK: gy - lt gy, v tr brn, vsft-sft occ firm, biky-
sbbiky, mod, sl wxy - sub vit lstr
35% MRL: m-dkgy sl silver, v sft - sl firm sbbiky-
sbbiky, rthy lstr, tr arg, gt tex, spec, sme calc frac: v
calc

65% CHK: gy - lt gy, v tr brn, vsft-sft occ firm, biky-
sbbiky, mod, sl wxy - sub vit lstr
35% MRL: m-dkgy sl silver, v sft - sl firm sbbiky-
sbbiky, rthy lstr, tr arg, gt tex, spec, sme calc frac: v
calc

50% CHK: gy - lt gy, v tr brn, vsft-sft occ firm, biky-
sbbiky, mod, sl wxy - sub vit lstr
50% MRL: m-dkgy sl silver, v sft - sl firm sbbiky-
sbbiky, rthy lstr, tr arg, gt tex, spec, sme calc frac: v
calc

60% MRL: m-dkgy sl silver, v sft -
sbbiky, rthy lstr, tr arg, gt tex, spe
40% CHK: gy - lt gy, v tr brn, vsft-
sbbiky, mod, sl wxy - sub vit lstr





MD 10458.
INC 88.30°
AZM 87.96°
TVD 6663.01'

MD 10552.
INC 90.49°
AZM 88.86°
TVD 6664.00'

- sl firm sbdkly-
c, sme calc frac
-stf occ firm, bly-
v calc

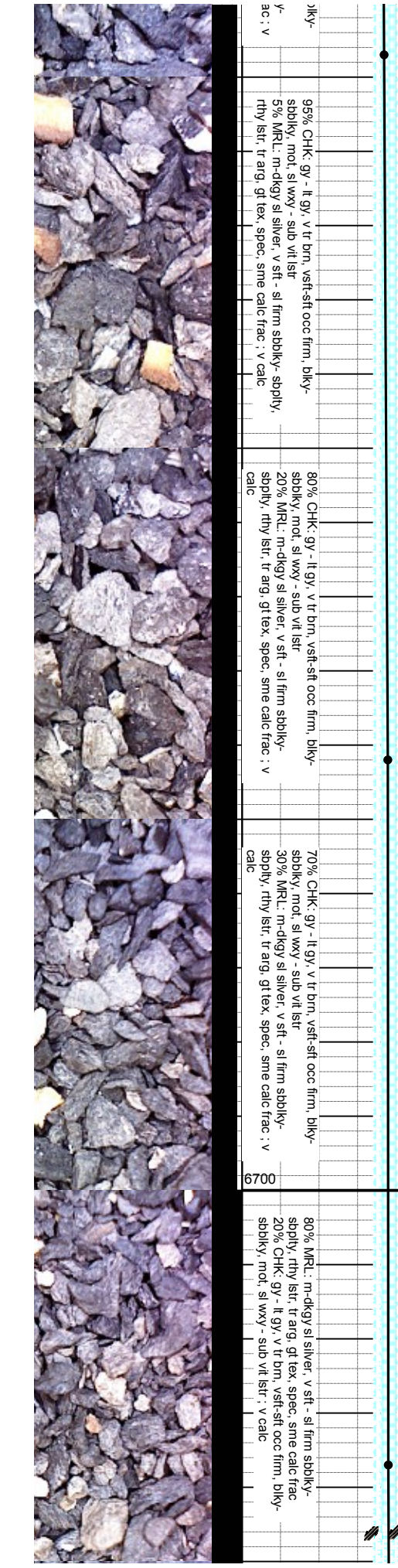
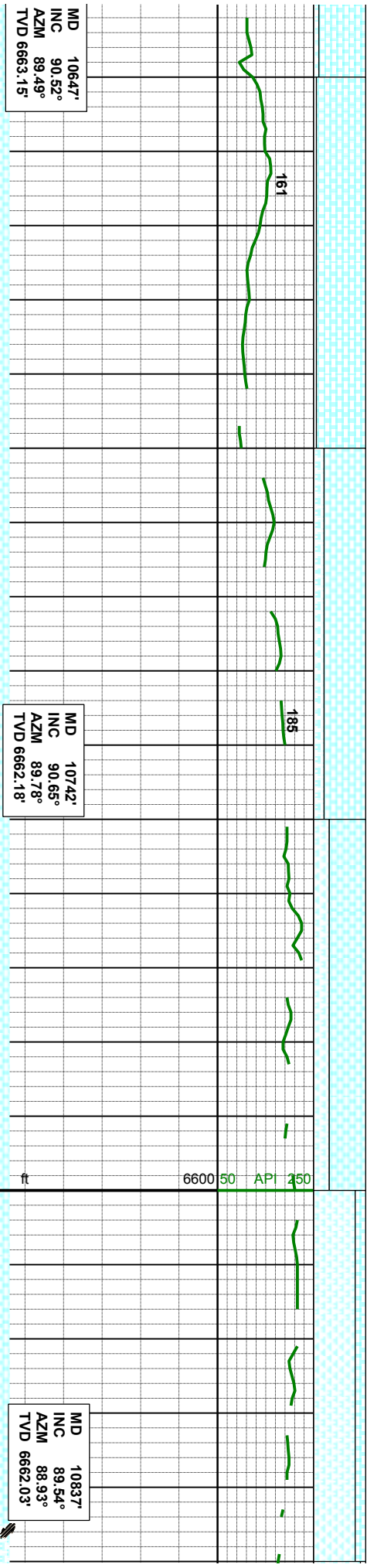
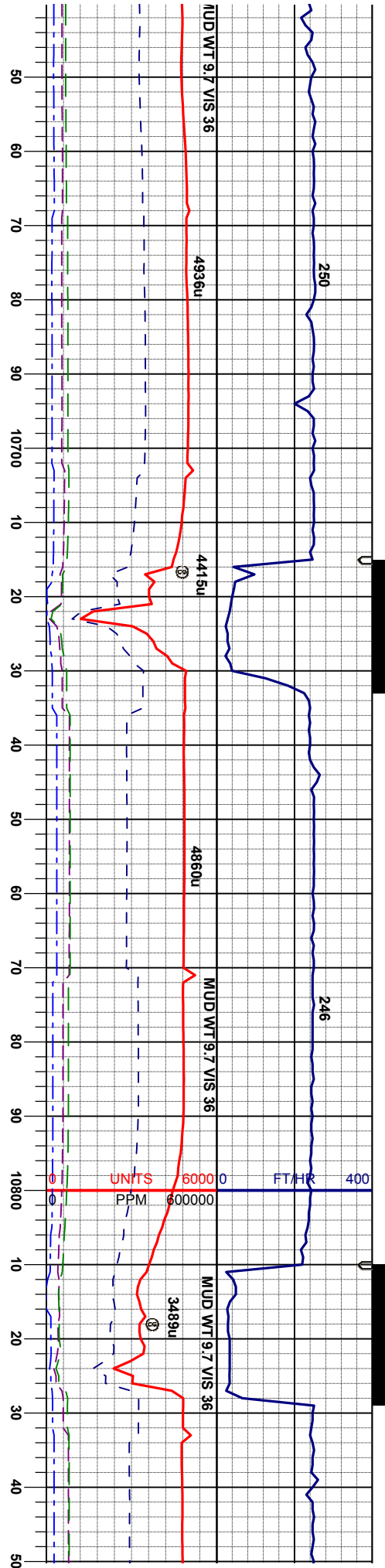
65% MRL- m-dkgy sl silver, v stf - sl firm sbdkly-
spply, rthy lstr, tr arg, gt tex, spec, sme calc frac
35% CHK- gy - ll gy, v tr brn, vsft-stf occ firm, bly-
sbbky, mod, sl wxy - sub vit lstr : v calc

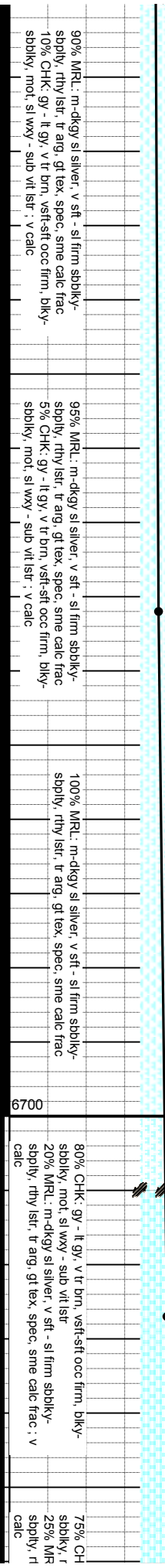
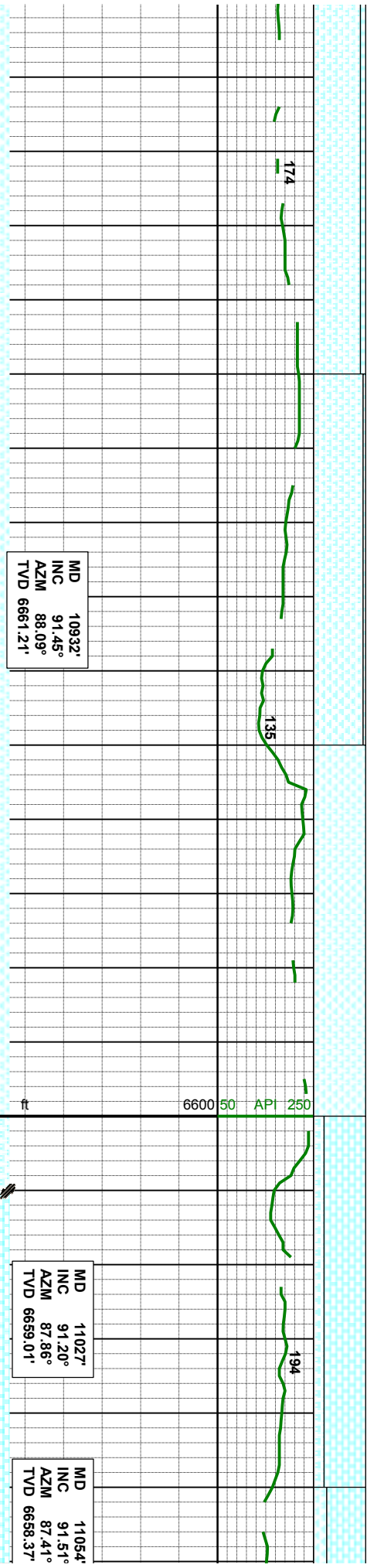
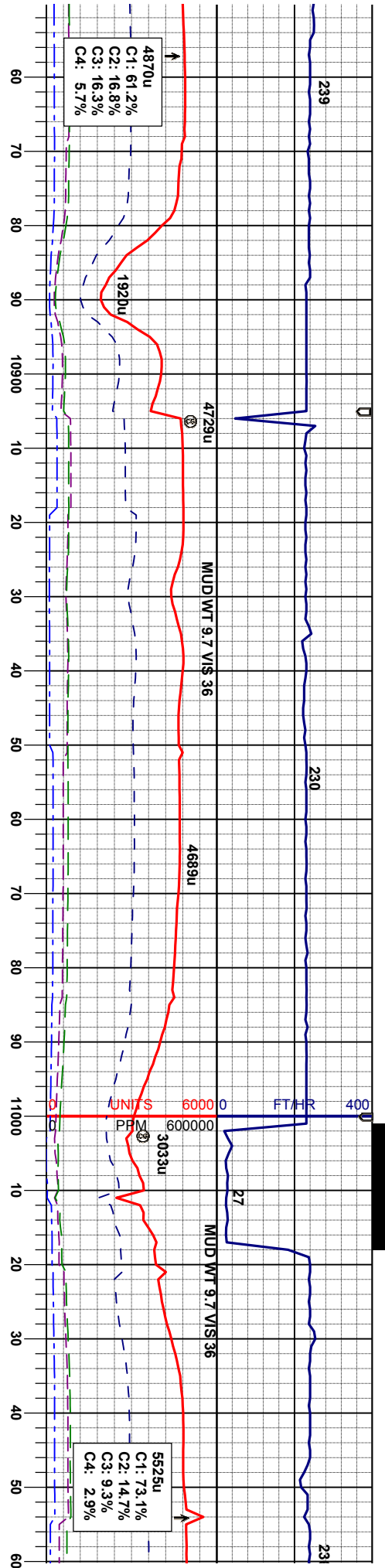
75% MRL- m-dkgy sl silver, v stf - sl firm sbdkly-
spply, rthy lstr, tr arg, gt tex, spec, sme calc frac
25% CHK- gy - ll gy, v tr brn, vsft-stf occ firm, bly-
sbbky, mod, sl wxy - sub vit lstr : v calc

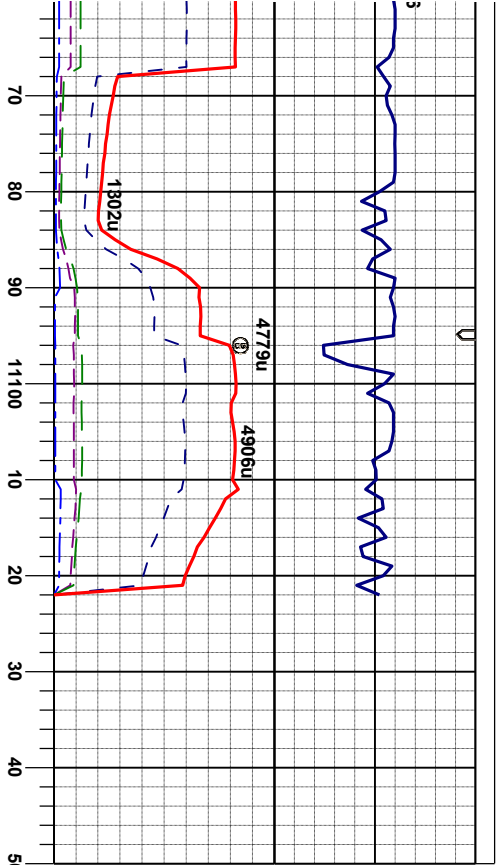
80% MRL- m-dkgy sl silver, v stf - sl firm sbdkly-
spply, rthy lstr, tr arg, gt tex, spec, sme calc frac
20% CHK- gy - ll gy, v tr brn, vsft-stf occ firm, bly-
sbbky, mod, sl wxy - sub vit lstr : v calc

90% CHK- gy - ll gy, v tr brn, vsft-stf occ firm, l
sbbky, mod, sl wxy - sub vit lstr
10% MRL- m-dkgy sl silver, v stf - sl firm sbdkly-
spply, rthy lstr, tr arg, gt tex, spec, sme calc frac









TD Well @ 11122' MD
22:00 hrs 07/06/2013

Thank you for choosing
Columbine Logging INC.

PROJ. TO BIT
MD 11122'
INC 91.51°
AZM 87.41°
TVD 6656.60'

K: gy - lt gy, v tr brn, vsft-sft occ firm, bky-
mot, sl wxy - sub vit lstr
LT: m-dkgy sl silver, v sft - sl firm sbbky-
hly lstr, tr arg, gt tex, spec, sme calc frac : v

80% CHK: gy - lt gy, v tr brn, vsft-sft occ firm, bky-
sbbky, mot, sl wxy - sub vit lstr
20% MRL: m-dkgy sl silver, v sft - sl firm sbbky-
sbbly, rthy lstr, tr arg, gt tex, spec, sme calc frac : v
calc

