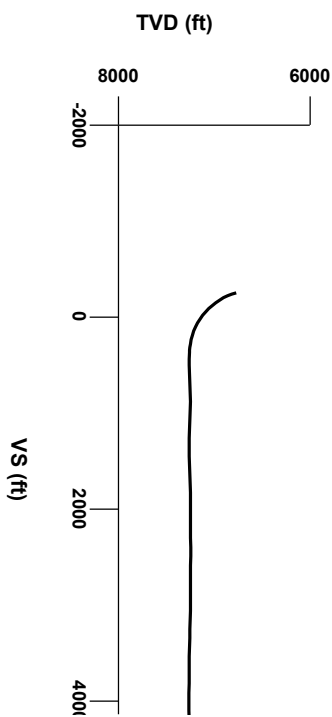




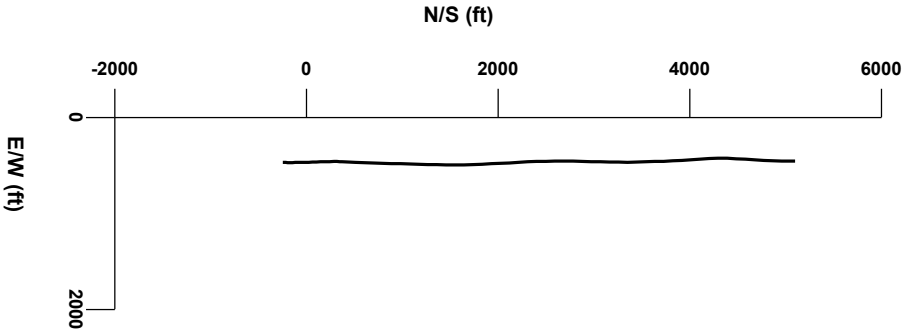
LOG created using Lplot VH Version 3.0, May 13, 2013, Copyright (C) 1999-2009 Pason Systems Corp.

OPERATOR: ANADARKO PETROLEUM CORPORATION
WELL: RUSSIAN FIDDLER 14N-18HZ
LOCATION: SEC 19 T2N R65W
COUNTY: WELD
STATE: COLORADO
SPOT: 318' FSL 1,303' FWL
ELEVATION: GR 5,000' KB 5,013'
FIELD: WATTENBERG
SPUD DATE: 05/02/2013
TD DATE: 05/13/2013
DATES LOGGED: 05/03/2013 - 05/13/2013
DEPTHS LOGGED: 6,800' - 12,394'
LOGGERS: LACEY LITTLE, MIKE GREENE
DRILLING FLUID: FW LSND
DRILLING RIG: ENSIGN 145
API: 05-123-36222-00
LOG TYPE: HORIZONTAL
SCALE: 1:240 (5 inches per 100 feet)
REMARKS: Wellsite Geological Services Provided By Columbine Logging Inc.



Survey Elevation

Survey Plan



6000

0

Chalk

Limestone

Marl

Silty Shale

ENGINEERING SYMBOLS

Casing

Casing

Connection

Connection Gas

Midnight Depth

ROTATE/SLIDE

5

ROP

MIN/FT

0

DEPTH (FEET)

6800

10

20

30

40

50

60

70

80

90

6900

10

20

30

GAS

UNITS

6000

0

C1

PPM

600000

0

C2

PPM

600000

0

C3

PPM

600000

0

C4

PPM

600000

0

Oil Shows Every 100'

2484u

C1: 83%

C2: 6%

C3: 10%

C4: 1%

3199u

3199u

MWT: IN 9.7/ OUT 9.5+

VS: IN 43/ OUT 41

MWT: IN 9.7+/ OUT 9.7

VS: IN 44/ OUT 41

MWT: IN 9.7

VS: IN 44/ C

CUTTINGS

LITHOLOGY

GAMMA RAY

API 220

0

6700

ft

TVD

7600

TFG

100% SLTY SH: m - dk gy, sft - mod, silty

tex, v f gr, sb pily, non calc; OIL SHW: fnt

yel / wh, fst sting, sl tr stn, sl tr o

100% SLTY SH: m - dk gy, sft - mod, silty

tex, v f gr, sb pily, non calc; OIL SHW: fnt

yel / wh, fst sting, sl tr stn, sl tr o

100% SLTY SH: m - dk gy, sft - mod, silty

tex, v f gr, sb pily, non calc; OIL SHW: fnt

ormg / wh, fst sting, tr stn, tr o

MD 6818'

INC 12.98°

AZM 355.82°

TVD 6769.64'

MD 6865'

INC 17.62°

AZM 359.31°

TVD 6814.96'

MD 6913'

INC 22.78°

AZM 4.53°

TVD 6859.99'

COLUMBINE LOS/03/2013

MANNED 2-PERSON LOGGING

WITH BLOODHOUND GAS

CHROMATOGRAPH UNIT #0313




BIT 8.75"

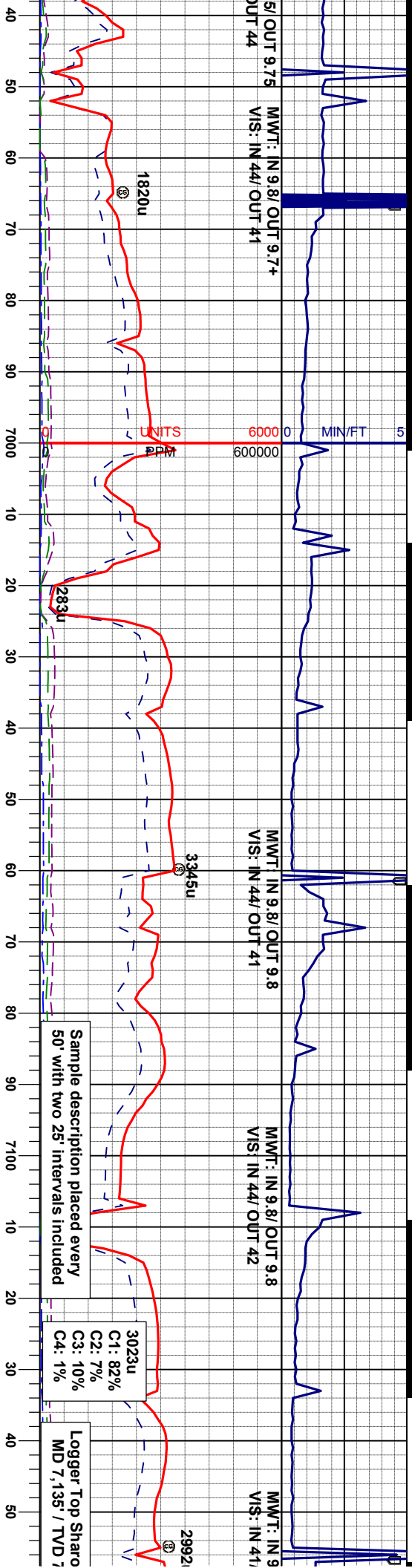
VAREL VM513SH

7 X 14 JETS

DEPTH IN: 6.725'

SAMPLE PHOTOS





MWT: IN 9.8/ OUT 9.7+
VIS: IN 44/ OUT 41

MWT: IN 9.8/ OUT 9.8
VIS: IN 44/ OUT 41

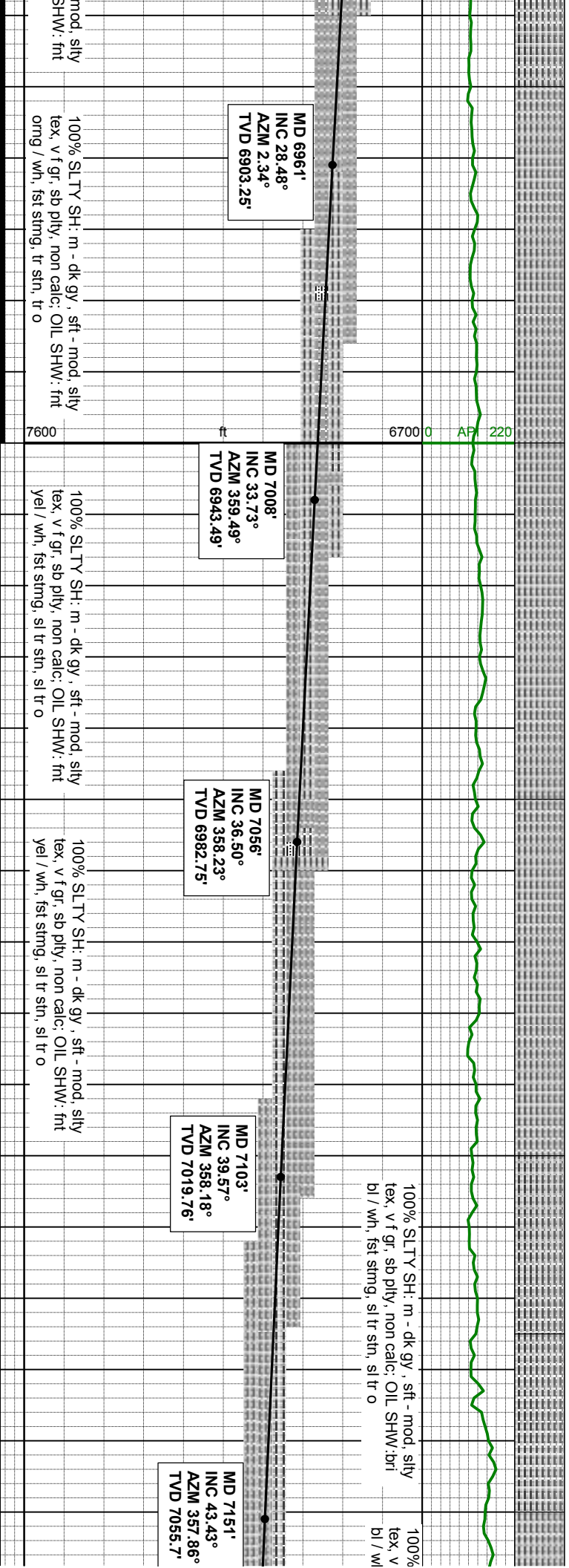
MWT: IN 9.8/ OUT 9.8
VIS: IN 44/ OUT 42

MWT: IN 9.8/ OUT 9.8
VIS: IN 44/ OUT 41

Sample description placed every
50' with two 25' intervals included

3023u
C1: 82%
C2: 7%
C3: 10%
C4: 1%

Logger Top Sharo
MD 7.135' / TVD 7.135'



MD 6961'
INC 28.48°
AZM 2.34°
TVD 6903.25'

MD 7008'
INC 33.73°
AZM 359.49°
TVD 6943.49'

MD 7056'
INC 36.50°
AZM 358.23°
TVD 6982.75'

MD 7103'
INC 39.57°
AZM 358.18°
TVD 7019.76'

MD 7151'
INC 43.43°
AZM 357.86°
TVD 7055.7'

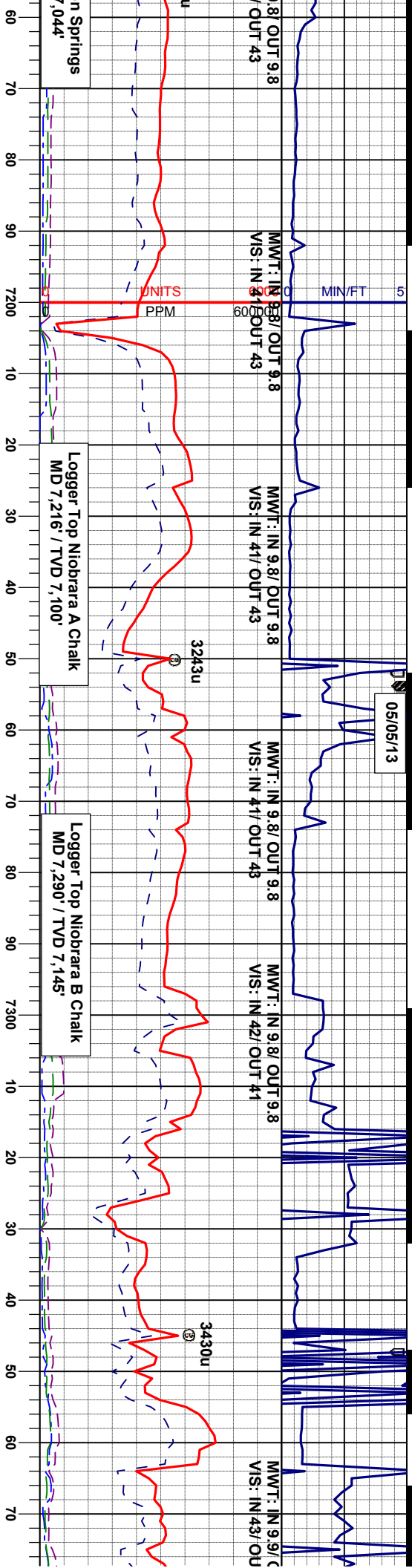
100% SLTY SH: m - dk gy, sft - mod, silty
tex, v f gr, sb pily, non calc; OIL SHW: fnt
ormg / wh, fst sting, tr stn, tr o

100% SLTY SH: m - dk gy, sft - mod, silty
tex, v f gr, sb pily, non calc; OIL SHW: fnt
yel / wh, fst sting, sl tr stn, sl tr o

100% SLTY SH: m - dk gy, sft - mod, silty
tex, v f gr, sb pily, non calc; OIL SHW: fnt
yel / wh, fst sting, sl tr stn, sl tr o

100% SLTY SH: m - dk gy, sft - mod, silty
tex, v f gr, sb pily, non calc; OIL SHW: brr
bl / wh, fst sting, sl tr stn, sl tr o

100% SLTY SH: m - dk gy, sft - mod, silty
tex, v f gr, sb pily, non calc; OIL SHW: brr
bl / wh, fst sting, sl tr stn, sl tr o



n Springs
,044'

Logger Top Niobrara A Chalk
MD 7,216' / TVD 7,100'

Logger Top Niobrara B Chalk
MD 7,290' / TVD 7,145'

SLTY SH: m - dk gy, sft - mod, silty
tex, v f gr, sb pily, non calc; OIL SHW: bri
n, fst string, sl tr shn, sl tr o

100% SLTY SH: m - dk gy, sft - mod, silty
tex, v f gr, sb pily, non calc, tr chk; OIL
SHW: bri bl / wh, fst string, fr sin, fr o

30 - 25% SLTY SH: m - dk gy, sft - mod,
silty tex, v f gr, sb pily, non calc; 40 - 30%
CHK: lt crm / gy - gy, stri, v sft, sb biky -
pily, sl mot, v calc; 30 - 45% MRL: m gy -
dk gy brn, mod - firm, sb pily - sb biky, rthy
lstr, silty - arg tex, mot, v calc; OIL SHW: bri
bl / wh, fst string, fr sin, fr o

15 - 0% SLTY SH: m - dk gy, sft - mod, silty
tex, v f gr, sb pily, non calc; 60 - 60% CHK:
lt crm / gy - gy, stri, v sft, sb biky - pily, sl
mot, v calc; 25 - 40% MRL: m gy - dk gy
brn, mod - firm, sb pily - sb biky, rthy lstr,
silty - arg tex, mot, v calc; OIL SHW: frt bl /
wh, fst string, sl tr shn, sl tr o

0 - 10% SLTY SH: m - dk
tex, v f gr, sb pily, non ca
lt crm / gy - gy, stri, v sft,
mot, v calc; 55 - 70% MR
brn, mod - firm, sb pily -
silty - arg tex, mot, v calc,
frt bl / wh, fst string, sl tr s

MD 7198'
INC 48.62°
AZM 359.41°
TVD 7088.33'

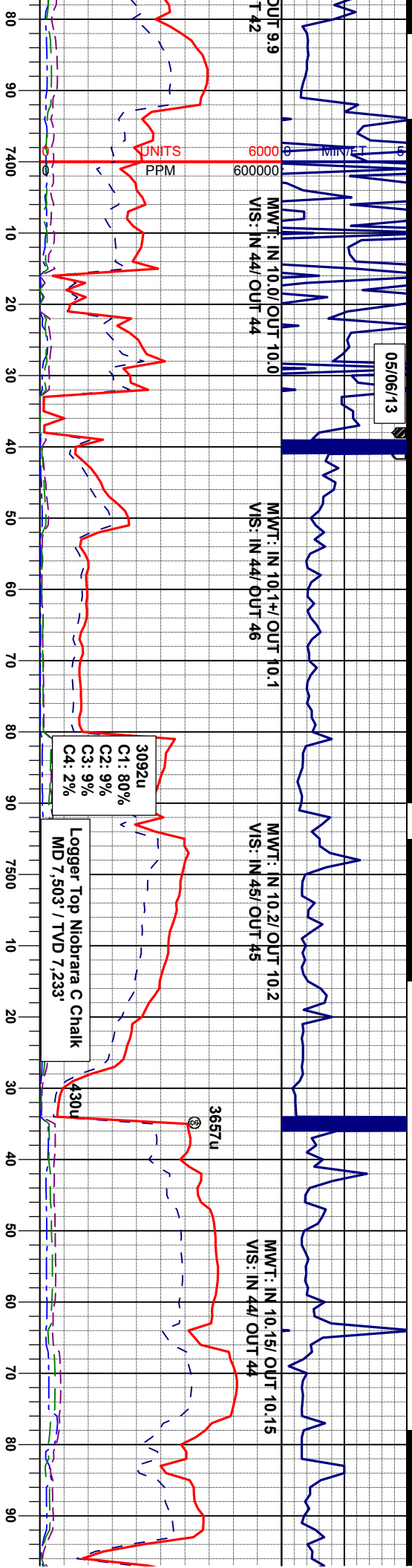
MD 7246'
INC 51.80°
AZM 359.65°
TVD 7119.04'

MD 7293'
INC 55.46°
AZM 358.44°
TVD 7146.91'

MD 7340'
INC 59.40°
AZM 358.70°
TVD 7172.21'

7600





gy, sft - mod, silty
ic, 45 - 20 % CHK:
sb blkly - ply, sl
L: m gy - dk gy
sb blkly, rthy lstr,
tr fos: OIL SHW:
str, sl tr o

10 - 25% SLTY SH: m - dk gy, sft - mod,
silty tex, v f gr, sb ply, non calc, 30 - 15%
CHK: lt crm / gy - gy, stri, v sft, sb blkly -
ply, sl mot, v calc: 60 - 60% MRL: m gy -
dk gy brn, mod - firm, sb ply - sb blkly, rthy
lstr, silty - arg tex, mot, v calc, tr fos: OIL
SHW: bri wh, fst stmg, tr str, tr o

10 - 10% SLTY SH: m - dk gy, sft - mod,
silty tex, v f gr, sb ply, non calc, 30 - 60%
CHK: lt crm / gy - gy, stri, v sft, sb blkly -
ply, sl mot, v calc: 60 - 30% MRL: m gy -
dk gy brn, mod - firm, sb ply - sb blkly, rthy
lstr, silty - arg tex, mot, v calc, tr fos: OIL
SHW: bri wh, fst stmg, tr str, tr o

25 - 20% SLTY SH: m - dk gy, sft - mod,
silty tex, v f gr, sb ply, non calc, 40 - 35%
CHK: lt crm / gy - gy, stri, v sft, sb blkly -
ply, sl mot, v calc: 35 - 45% MRL: m gy -
dk gy brn, mod - firm, sb ply - sb blkly, rthy
lstr, silty - arg tex, mot, v calc, tr fos: OIL
SHW: bri yel / wh, fst stmg, fr str, fr o

10 - 0% SLTY SH: m - dk gy, sft - mod, silty
tex, v f gr, sb ply, non calc, 70 - 40% CHK:
lt crm / gy - gy, stri, v sft, sb blkly - ply, sl
mot, v calc: 30 - 60% MRL: m gy - dk gy
brn, mod - firm, sb ply - sb blkly, rthy lstr,
silty - arg tex, mot, v calc: OIL SHW: bri yel /
wh, fst stmg, fr str, fr o

MD 7387'
INC 63.68°
AZM 357.60°
TVD 7194.6'

MD 7434'
INC 69.97°
AZM 357.99°
TVD 7213.09'

MD 7482'
INC 74.44°
AZM 359.16°
TVD 7227.75'

MD 7529'
INC 77.97°
AZM 357.04°
TVD 7238.96'

MD 7577'
INC 80.21°
AZM 0.84°
TVD 7248.05'

BIT 8.75"
REED E1202
2 X 18 & 3 X 16 JETS
DEPTH IN: 7,438'

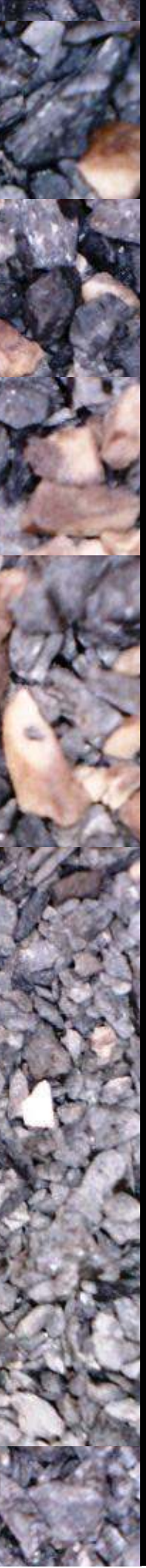
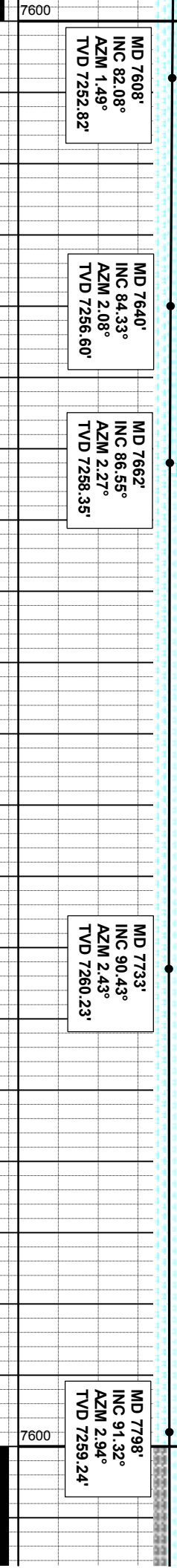
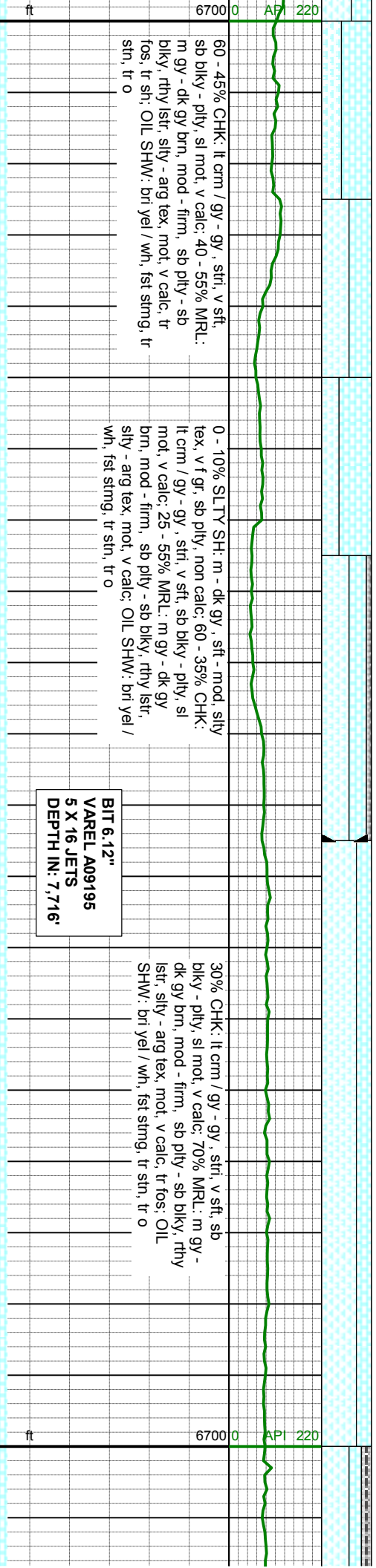
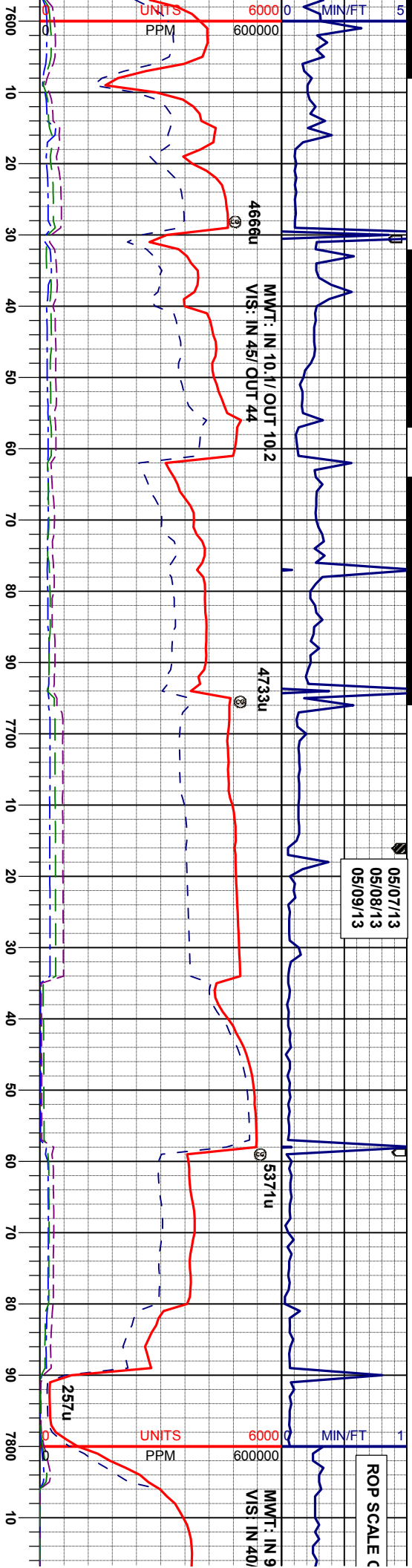
7600

ft

6700

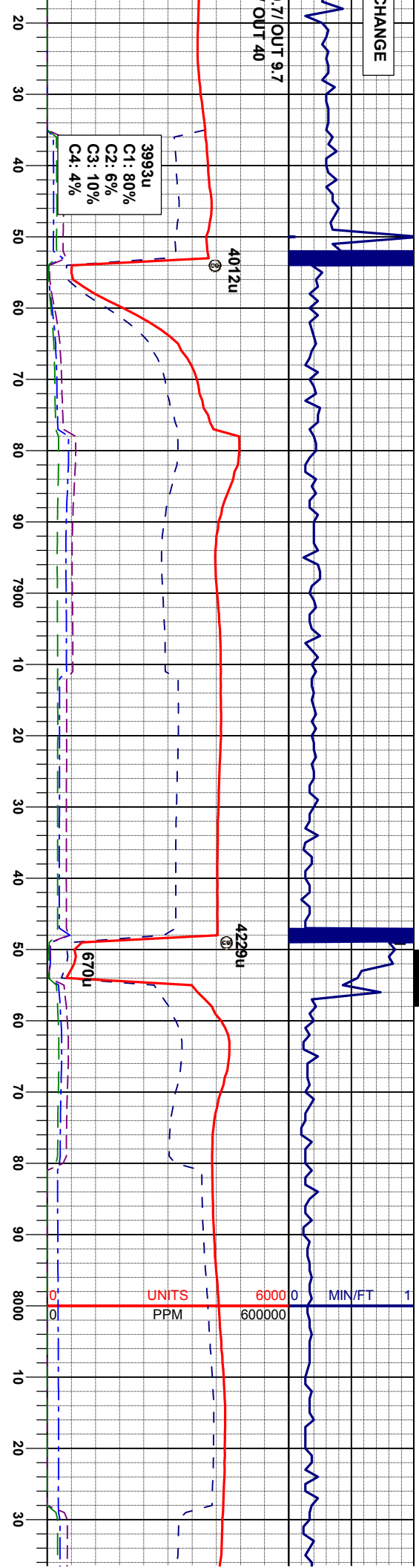
API 220





CHANGE

7/ OUT 9.7
OUT 40



25% CHK: lt crm / gy - gy, sft, v sft, sb
biky - pily, sl mot, v calc; 55% MRL: m gy -
dk gy brn, mod - firm, sb pily - sb biky, rthy
lstr, silty - arg tex, mot, v calc; 20% SLTY
SH: m - dk gy, m - firm, v f gr, silty, sub mod
- sb pily, non calc, tr fos; OIL SHW: brn yel /
wh, mod string, mod sin, mod o

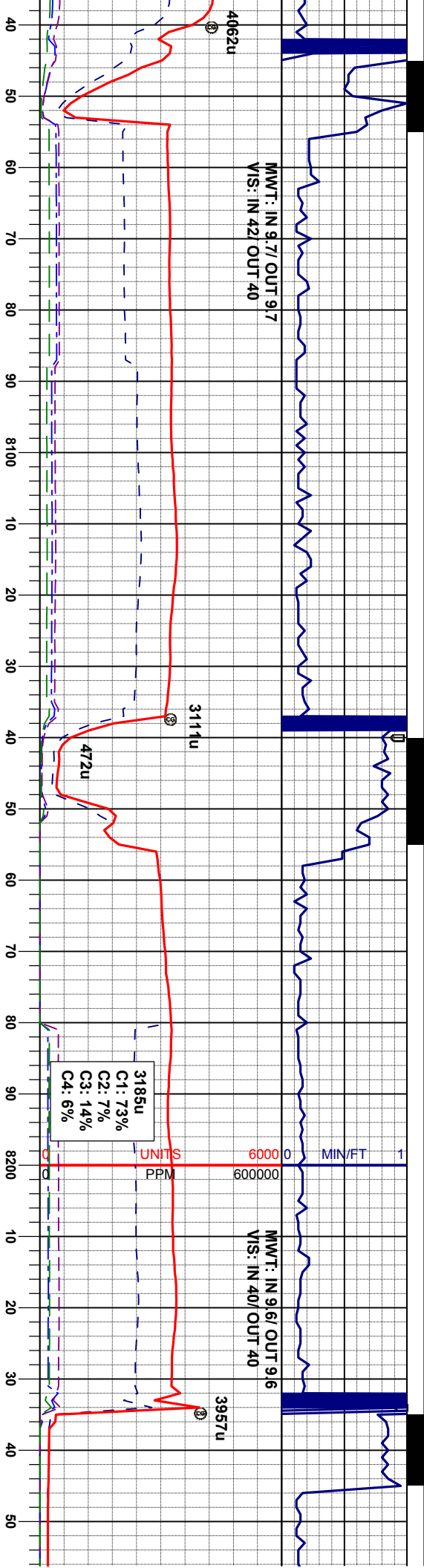
15% CHK: lt crm / gy - gy, sft, v sft, sb
biky - pily, sl mot, v calc; 60% MRL: m gy -
dk gy brn, mod - firm, sb pily - sb biky, rthy
lstr, silty - arg tex, mot, v calc; 25% SLTY
SH: m - dk gy, m - firm, v f gr, silty, sub mod
- sb pily, non calc, tr fos; OIL SHW: brn yel /
wh, fst string, fr sin, fr o

30% CH
biky - pily
dk gy brn
lstr, silty
SH: m -
- sb pily,
fst string,

MD 7883'
INC 91.79°
AZM 2.74°
TVD 7256.66'

MD 7988'
INC 92.06°
AZM 1.41°
TVD 7253.47'

7600 ft 6700 0 AP 220



It cm / gy - gy, stri, v sft, sb
sl mot, v calc; 50% MRL: m gy -
mod - firm, sb ply - sb biky, rthy
arg tex, mot, v calc; 20% SLTY
dk gy, m - firm, v f gr, slty, sub mdd
non calc, tr fos; OIL SHW: bri wh,
sl tr str, sl tr o

40% CHK: It cm / gy - gy, stri, v sft, sb
biky - ply, sl mot, v calc; 40% MRL: m gy -
dk gy brn, mod - firm, sb ply - sb biky, rthy
sltr, slty - arg tex, mot, v calc; 20% SLTY
SH: m - dk gy, m - firm, v f gr, slty, sub mdd
- sb ply, non calc, tr fos; OIL SHW: bri wh,
fst strng, sl tr str, sl tr o

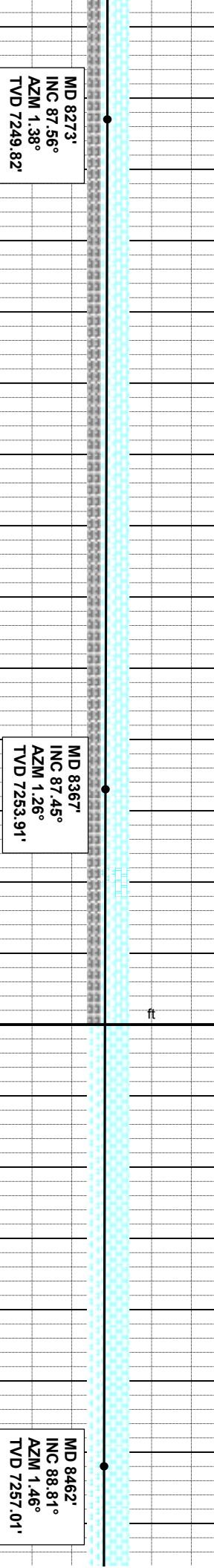
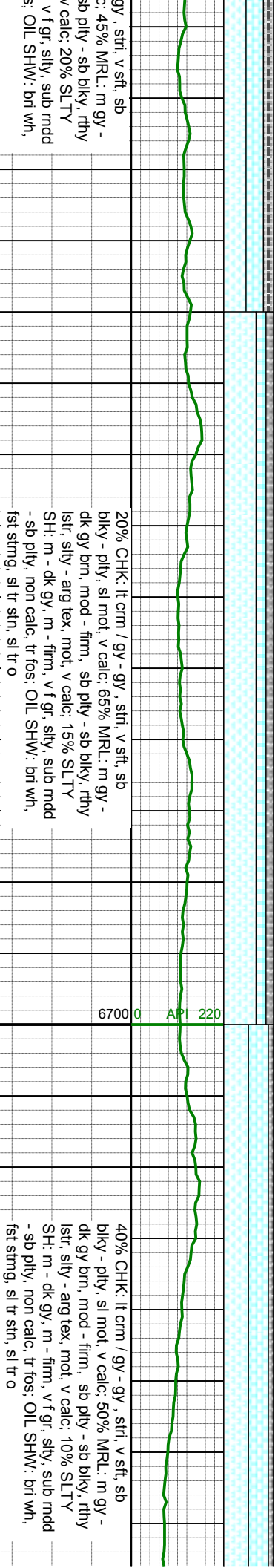
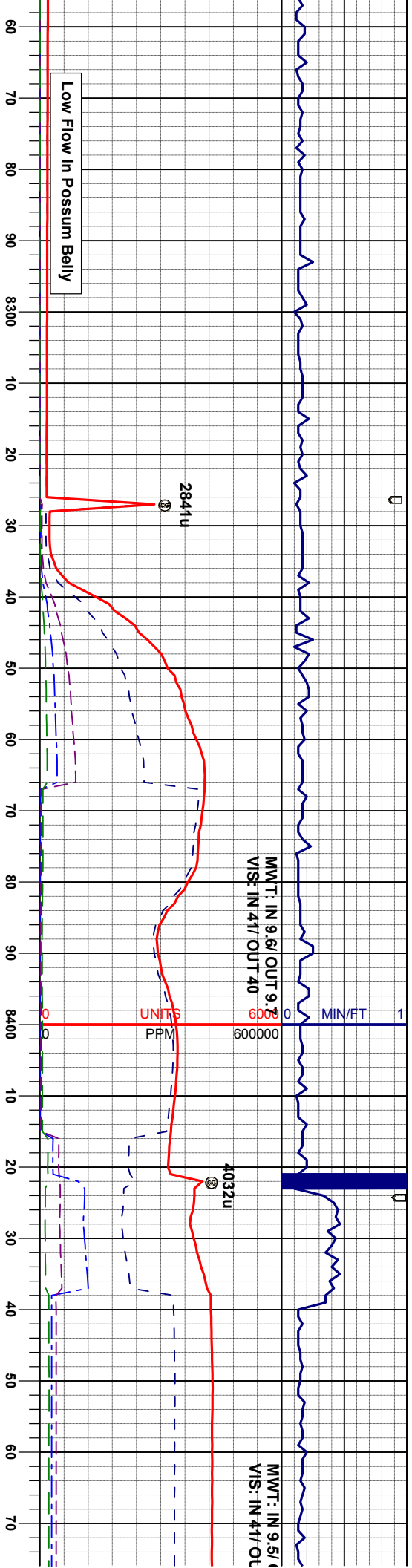
35% CHK: It cm / gy - i
biky - ply, sl mot, v calc
dk gy brn, mod - firm, s
sltr, slty - arg tex, mot, v
SH: m - dk gy, m - firm,
- sb ply, non calc, tr fos;
fst strng, tr str, tr o

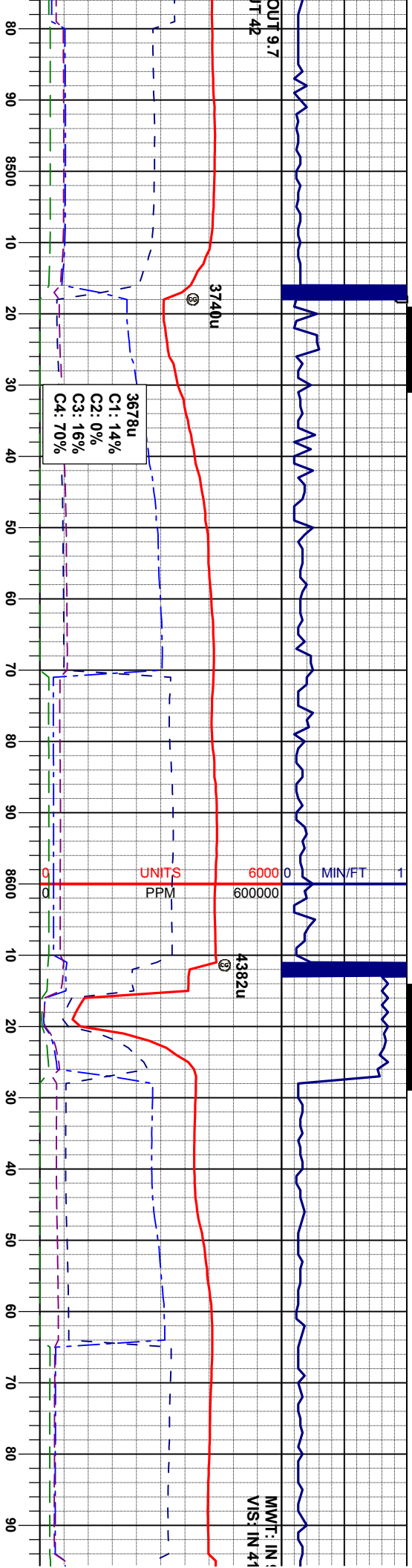
MD 8083'
INC 91.69°
AZM 1.22°
TVD 7250.36'

MD 8178'
INC 90.70°
AZM 1.80°
TVD 7248.38'

ft 6700 0 AP 220 7600







OUT 9.7
T 42

MWT: IN :
V/S: IN 41

C1: 14%
C2: 0%
C3: 16%
C4: 70%

55% CHK: lt crn / gy - gy, str, v sft, sb
bkly - pily, sl mot, v calc, 45% MRL: m gy -
dk gy brn, mod - firm, sb pily - sb bkly, rthy
lstr, silty - arg tex, mot, v calc, tr fos: OIL
SHW: bri wh, fst string, tr str, tr o

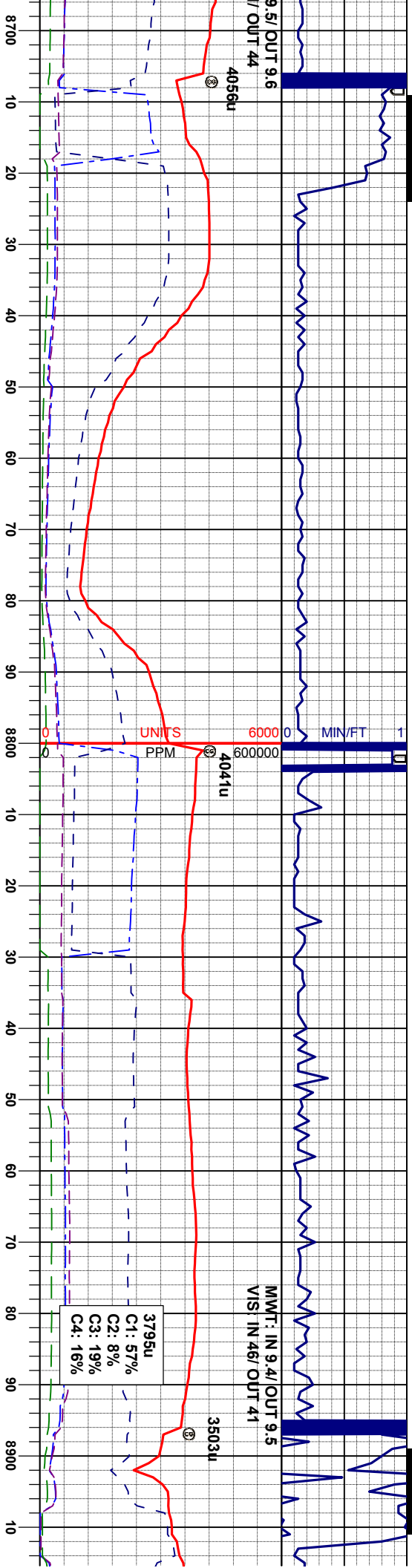
65% CHK: lt crn / gy - gy, str, v sft, sb
bkly - pily, sl mot, v calc, 35% MRL: m gy -
dk gy brn, mod - firm, sb pily - sb bkly, rthy
lstr, silty - arg tex, mot, v calc, tr sh, tr calc:
OIL SHW: bri wh, fst string, sl tr str, sl tr o

MD 8557'
INC 88.85°
AZM 1.72°
TVD 7258.95'

MD 8652'
INC 89.01°
AZM 1.50°
TVD 7260.73'

6700 0 API 220
ft





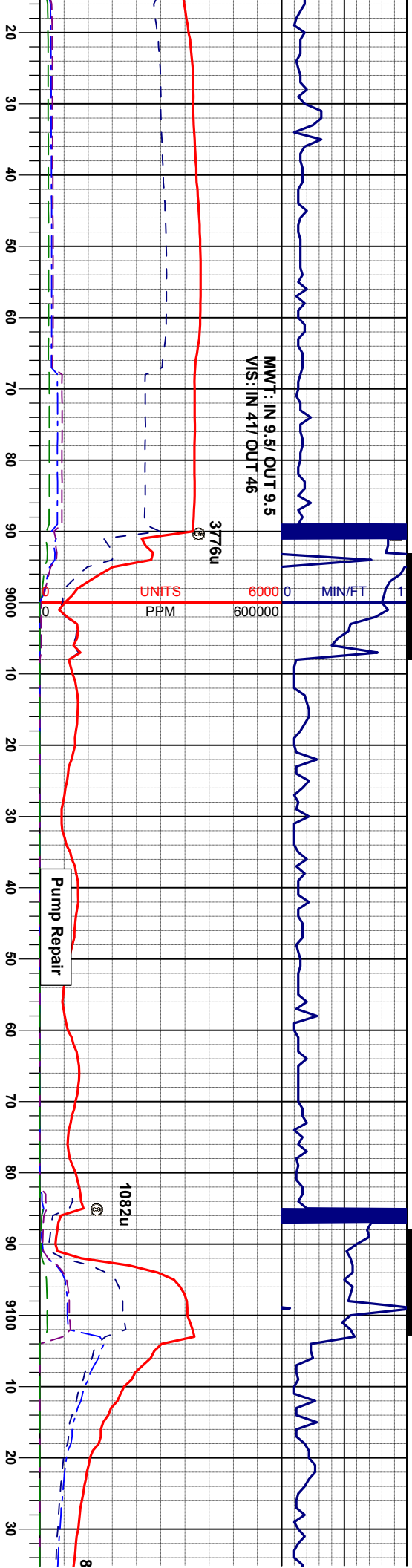
65% CHK: lt crm / gy - gy, str, v sft, sb
biky - pily, sl mot, v calc; 35% MRL: m gy -
dk gy brn, mod - firm, sb pily - sb biky, rthy
lstr, silty - arg tex, mot, v calc, tr sh, tr calc;
OIL SHW: bri wh, fst string, tr shn, tr o

MD 8747'
INC 91.81°
AZM 359.91°
TVD 7260.05'

ft 6700 0 API 220 7600

40% CHK: lt crm / gy - gy, str, v sft, sb
biky - pily, sl mot, v calc; 60% MRL: m gy -
dk gy brn, mod - firm, sb pily - sb biky, rthy
lstr, silty - arg tex, mot, v calc, tr sh, OIL
SHW: bri yel / wh, mod string, tr shn, tr o

MD 8842'
INC 92.30°
AZM 0.39°
TVD 7256.64'



MMWT: IN 9.5/ OUT 9.5
VIS: IN 41/ OUT 46

3776u

UNITS
PPM

Pump Repair

1082u

35% CHK: It cm / gy - gy - sft, v sft, sb
biky - ply, sl mot, v calc: 45% MRL: m gy -
dk gy brn, mod - firm, sb ply - sb biky, rthy
lstr, sily - arg tex, mot, v calc: 20% SLTY
SH: m - dk gy, m - firm, v f gr, sily, sub mdd
- sb ply, non calc, tr fos; OIL SHW: brt wh,
mod string, sl tr sin, sl tr o

50% CHK: It cm / gy - gy - sft, v sft, sb
biky - ply, sl mot, v calc: 30% MRL: m gy -
dk gy brn, mod - firm, sb ply - sb biky, rthy
lstr, sily - arg tex, mot, v calc: 20% SLTY
SH: m - dk gy, m - firm, v f gr, sily, sub mdd
- sb ply, non calc, tr fos; OIL SHW: brt wh,
mod string, tr sin, tr o

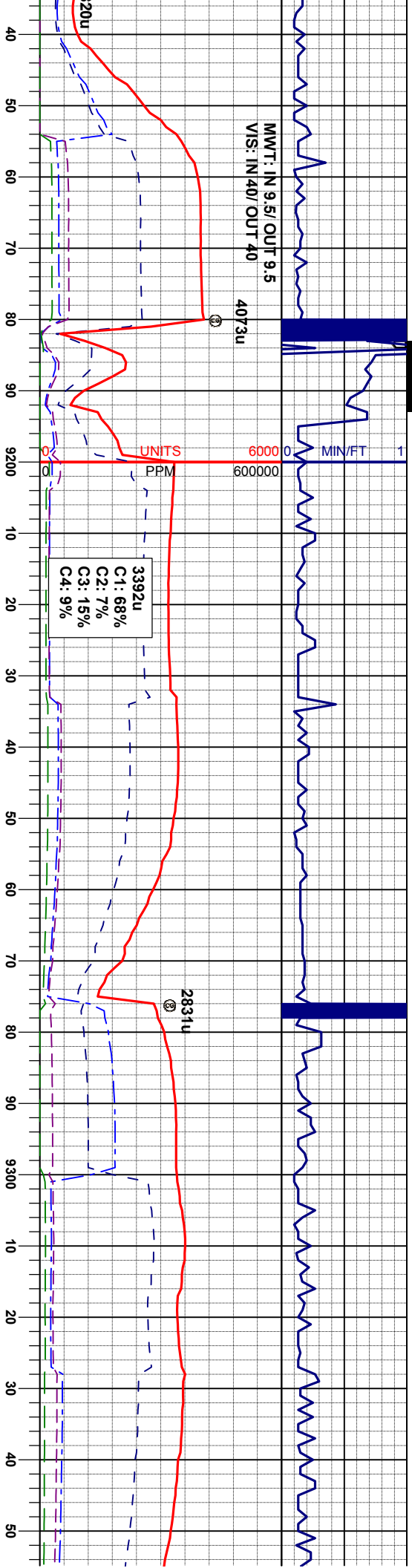
55% CHK: It cm / gy - gy - sft, v sft, sb
biky - ply, sl mot, v calc: 30% MRL: m gy -
dk gy brn, mod - firm, sb ply - sb biky, rthy
lstr, sily - arg tex, mot, v calc: 20% SLTY
SH: m - dk gy, m - firm, v f gr, sily, sub mdd
- sb ply, non calc, tr fos; OIL SHW: brt wh,
mod string, tr sin, tr o

MD 8836'
INC 92.40°
AZM 359.11°
TVD 7252.79'

MD 9031'
INC 92.24°
AZM 358.13°
TVD 7248.94'

MD 9126'
INC 90.92°
AZM 357.62°
TVD 7246.32'

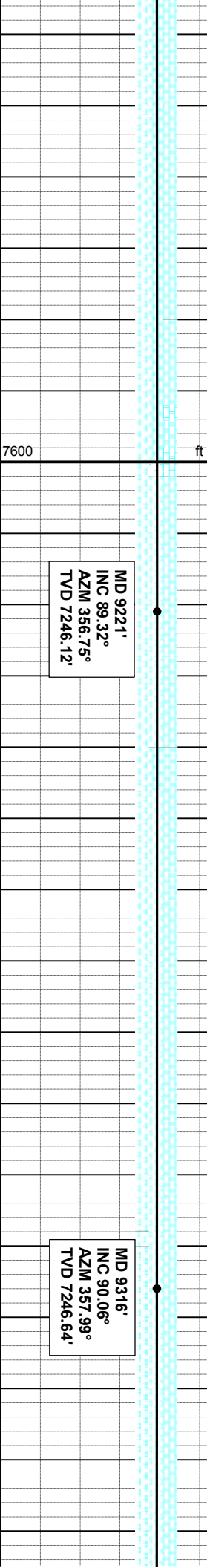


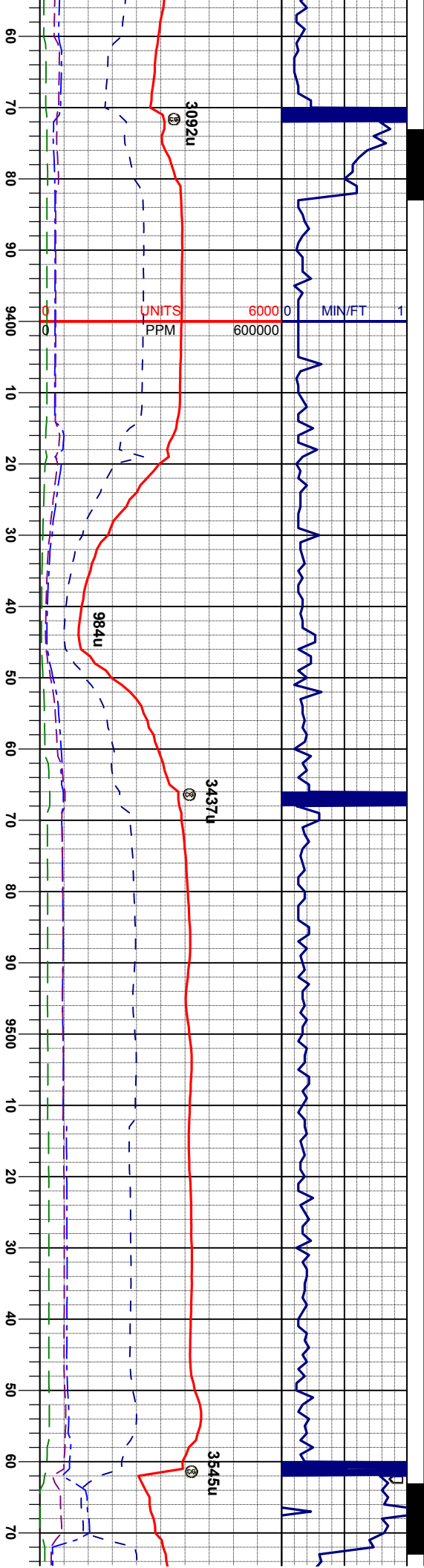


m / gy - gy , str, v sft, sb
mot, v calc, 30% MRL: m gy -
d - firm, sb ply - sb blk, rthy
ex, mot, v calc: 15% SLTY
m - firm, v f gr, silty, sub mod
calc, tr fos; OIL SHW: bri wh,
t o

50% CHK: lt crm / gy, str, v sft, sb blk -
ply, sl mot, v calc: 40% MRL: m gy - dk gy
brn, mod - firm, sb ply - sb blk, rthy lstr.
silty - arg tex, mot, v calc: 10% SLTY SH: m
- dk gy, m - firm, v f gr, silty, sub mod - sb
ply, non calc, tr fos; OIL SHW: bri wh, fst
stng, sl tr stn, sl tr o

50% MRL: m gy - dk gy t
ply - sb blk, rthy lstr, slt
mot: 40% CHK: lt crm / g
blk - ply, sl mot, v calc:
- dk gy, m - firm, v f gr, sl
ply, non calc, tr fos; OIL
stng, sl tr stn, sl tr o

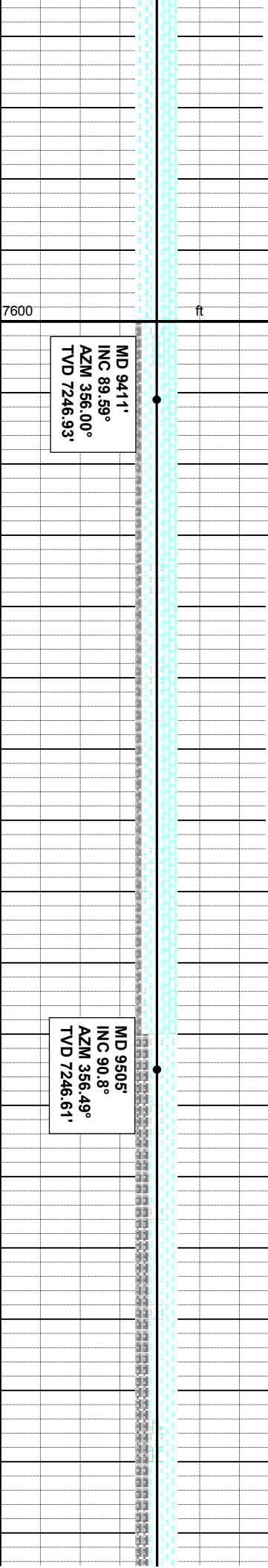




brn, firm - sl hd, sb
y - arg tex, v calc,
y, str, v sft, sb
10% SLTY SH: m
ly, sub mdd - sb
SHW: bri wh, fst

40% CHK: lt crm / gy str, v sft, sb blkly -
ply, sl mot, v calc; 40% MRL: m gy - dk gy
brn, mod - firm, sb ply - sb blkly, rthy lstr;
sily - arg tex, mot, v calc; 20% SLTY SH: m
- dk gy, m - firm, v f gr, sily, sub mdd - sb
ply, non calc, tr fos; OIL SHW: bri wh, fst
sting, fr sin, fr o

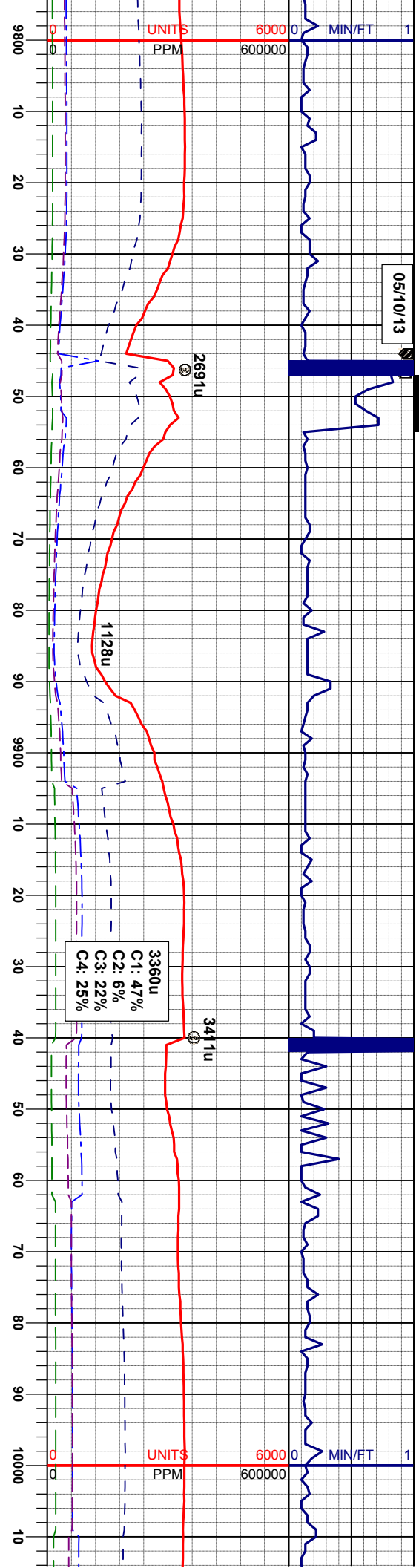
70% MRL: m gy - dk gy brn, firm - sl hd, sb
ply - sb blkly, rthy lstr, sily - arg tex, v calc,
mot; 30% SLTY SH: m - dk gy, gt tex, firm -
hd, sily tex, arg, non calc, tr fos; OIL SHW:
bri wh, fst sting, fr sin, fr o



MD 9411'
INC 89.59°
AZM 356.00°
TVD 7246.93'

MD 9505'
INC 90.8°
AZM 356.49°
TVD 7246.61'



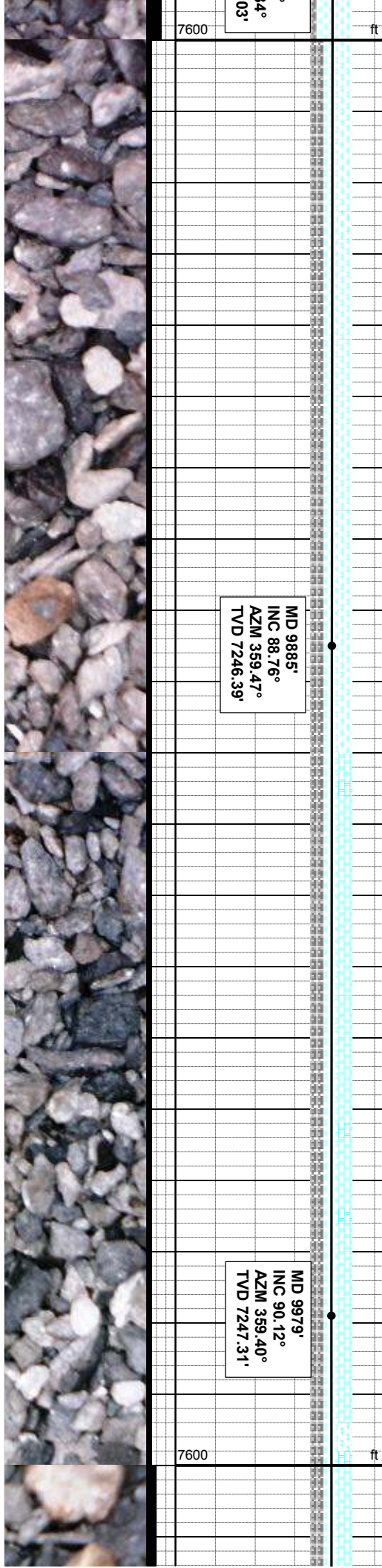


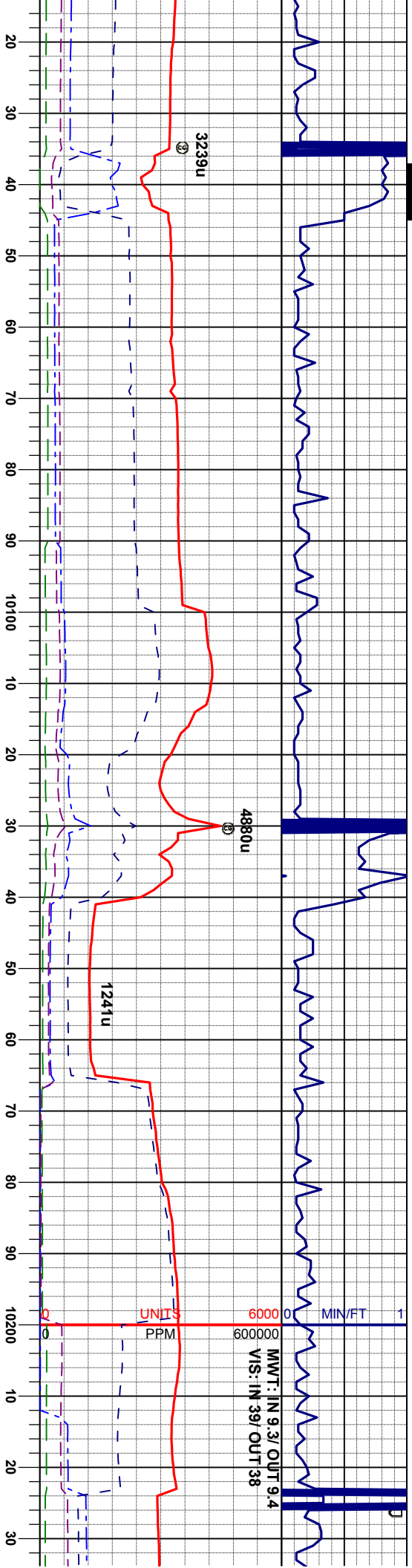
65% MRL: m gy - dk gy brn, firm - sl hd, sb
ply - sb blkly, rthy lstr, silty - arg tex, v calc,
mot; 35% SLTY SH: m - dk gy, gt tex, firm -
hd, silty tex, arg, non calc, tr fos; OIL SHW:
bl / wh, fst stmg, sl tr stn, sl tr o

65% MRL: m gy - dk gy brn, firm - sl hd, sb
ply - sb blkly, rthy lstr, silty - arg tex, v calc,
mot; 20% SLTY SH: m - dk gy, gt tex, firm -
hd, silty tex, arg, non calc, tr fos; 15% CHK:
crm gy / brn, sft - mod, sb ply - sb blkly, v f
gr, strf, sl mot; OIL SHW: bl / wh, fst stmg,
sl tr stn, sl tr o

MD 9885'
INC 88.76°
AZM 359.47°
TVD 7246.39'

MD 9979'
INC 90.12°
AZM 359.40°
TVD 7247.31'





55% MRL: m gy - dk gy brn, firm - sl hd, sb
ply - sb blk, rthy lstr, silty - arg tex, v calc,
mot: 30% SLTY SH: m - dk gy, gt tex, firm -
hd, silty tex, arg, non calc, tr fos: 15% CHK:
crm gy / brn, sft - mod, sb ply - sb blk, v f
gr, str, sl mot: OIL SHW: bl / wh, fst strng,
tr str, tr o

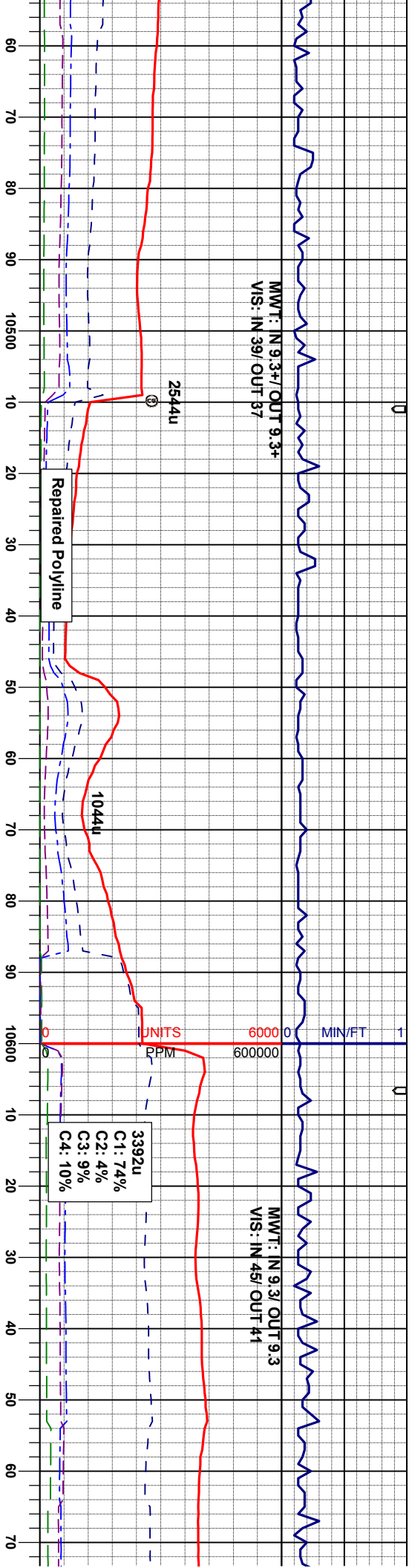
60% MRL: m gy - dk gy brn, firm - sl hd, sb
ply - sb blk, rthy lstr, silty - arg tex, v calc,
mot: 15% SLTY SH: m - dk gy, gt tex, firm -
hd, silty tex, arg, non calc, tr fos: 20% CHK:
crm gy / brn, sft - mod, sb ply - sb blk, v f
gr, str, sl mot: OIL SHW: bl / wh, fst strng,
sl tr str, sl tr o

MD 10074'
INC 90.39°
AZM 1.40°
TVD 7246.89'

MD 10169'
INC 89.44°
AZM 2.01°
TVD 7247.03'

7600 ft 67000 API 220





dk gy brn, firm - sl hd, sb
stir, silty - arg tex, v calc,
- m - dk gy, gt tex, firm -
- n calc, tr fos, tr chk; OIL
trng, sl tr stn, sl tr o

55% MRL: m gy - dk gy brn, firm - sl hd, sb
ply - sb blk, rthy lstr, silty - arg tex, v calc,
mot, 45% SLTY SH: m - dk gy, gt tex, firm -
hd, silty tex, arg, non calc, tr fos, tr chk; OIL
SHW: bl / wh, fst slng, fr stn, fr o

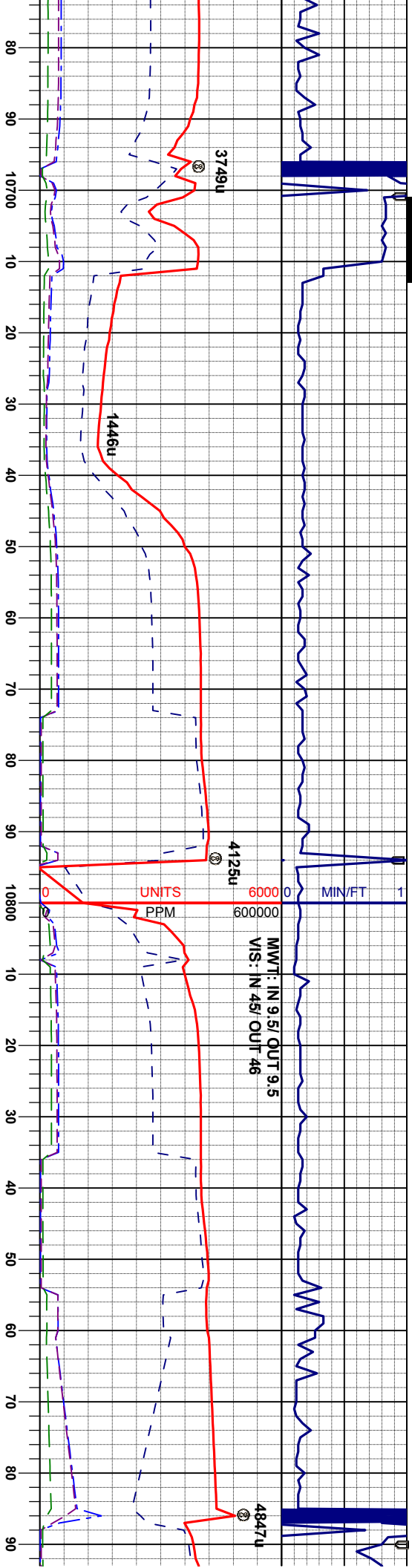
70% MRL: m gy - dk gy brn, firm - sl hd, st
ply - sb blk, rthy lstr, silty - arg tex, v calc,
mot, 30% SLTY SH: m - dk gy, gt tex, firm -
hd, silty tex, arg, non calc, tr fos, sl tr chk;
OIL SHW: bl / wh, fst slng, tr stn, tr o

454'
INC 88.79°
AZM 249.97'

MD 10548'
INC 88.30°
AZM 0.88°
TVD 7252.52'

MD 10643'
INC 88.18°
AZM 359.83°
TVD 7255.44'





65% MRL: m gy - dk gy brn, firm - sl hd, sb
ply - sb blk, rthy lstr, silty - arg tex, v calc,
mot: 35% SLTY SH: m - dk gy, gt tex, firm -
hd, silty tex, arg, non calc, tr fos, sl tr chk;
OIL SHW: bl / wh, fst stmg, tr stn, tr o

MD 10738'
INC 88.92°
AZM 358.47°
TVD 7257.85'

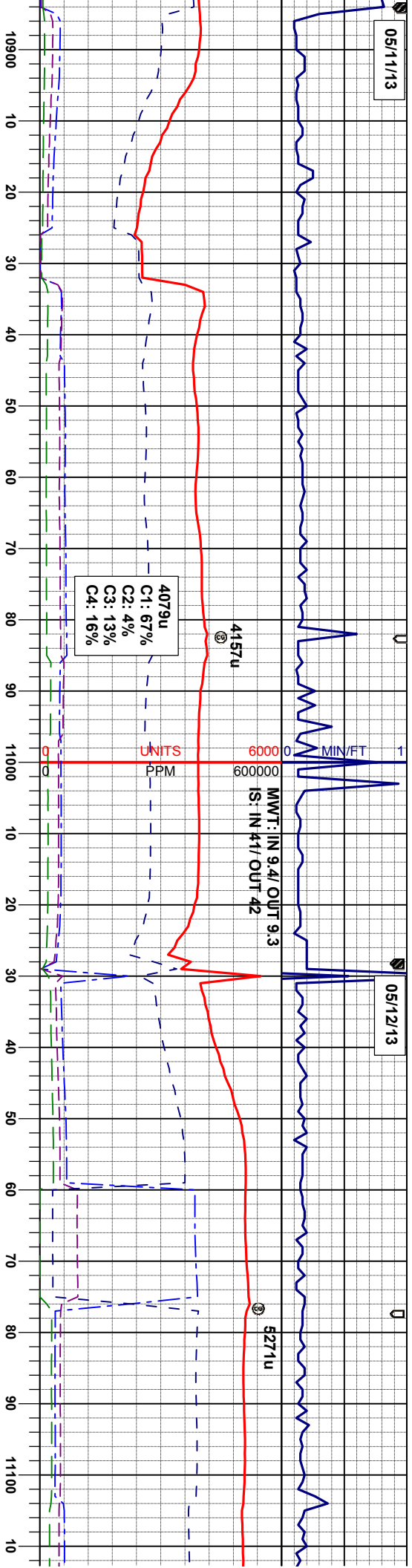
75% MRL: m gy - dk gy brn, firm - sl hd, sb
ply - sb blk, rthy lstr, silty - arg tex, v calc,
mot: 25% SLTY SH: m - dk gy, gt tex, firm -
hd, silty tex, arg, non calc, tr fos, sl tr chk;
OIL SHW: bl / wh, mod stmg, fr stn, fr o

MD 10833'
INC 89.50°
AZM 357.89°
TVD 7259.16'



05/11/13

05/12/13

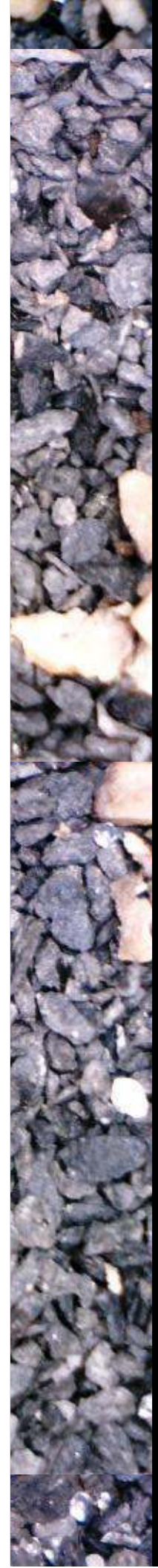


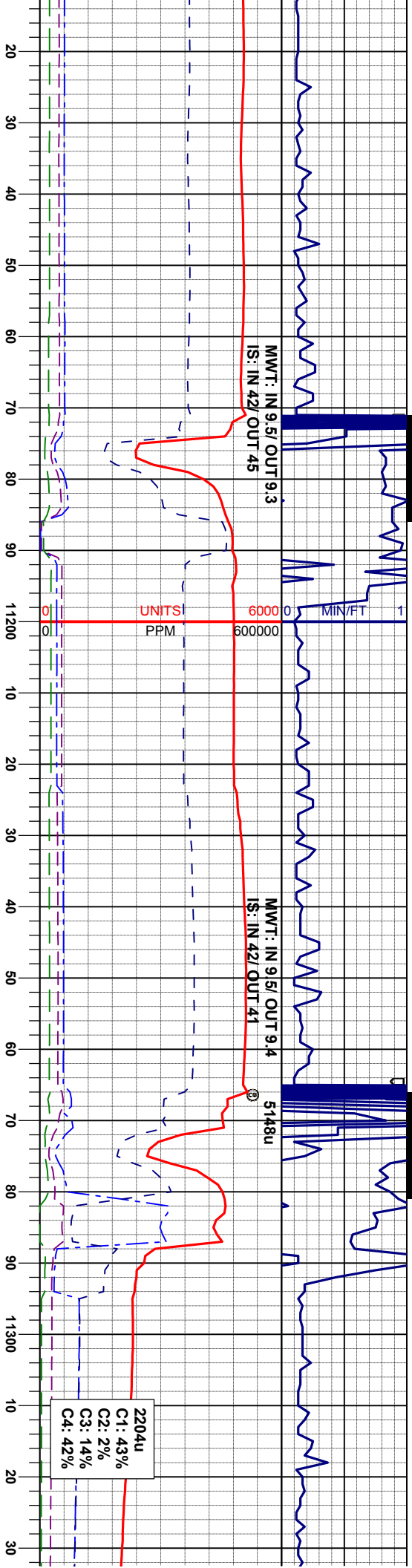
60% MRL: m gy - dk gy brn, firm - sl hd, sb
ply - sb blk, rly lstr, silty - arg tex, v calc,
mot: 40% SLTY SH: m - dk gy, gt tex, firm -
hd, silty tex, arg, non calc, tr fos, sl tr chk;
OIL SHW: bl / wh, mod stmg, tr str, tr o

65% MRL: m gy - dk gy brn, firm - sl hd, sb
ply - sb blk, rly lstr, silty - arg tex, v calc,
mot: 35% SLTY SH: m - dk gy, gt tex, firm -
hd, silty tex, arg, non calc, tr fos, sl tr chk;
OIL SHW: bl / wh, mod stmg, sl tr str, sl tr

MD 10928'
INC 90.27°
AZM 358.50°
TVD 7259.35'

MD 11021'
INC 89.63°
AZM 358.08°
TVD 7259.43'





45% MRL: m gy - dk gy brn, firm - sl hd, sb
ply - sb bky, rthy lstr, silty - arg tex, v calc,
mot: 55% SLTY SH: m - dk gy, gt tex, firm -
hd, silty tex, arg, non calc, tr fos; OIL SHW:
bl / wh, mod string, sl tr stn, sl tr o

65% MRL: m gy - dk gy brn, firm - sl hd, sb
ply - sb bky, rthy lstr, silty - arg tex, v calc,
mot: 35% SLTY SH: m - dk gy, gt tex, firm -
hd, silty tex, arg, non calc, tr fos, tr chk; OIL
SHW: bl / wh, mod string, sl tr stn, sl tr o

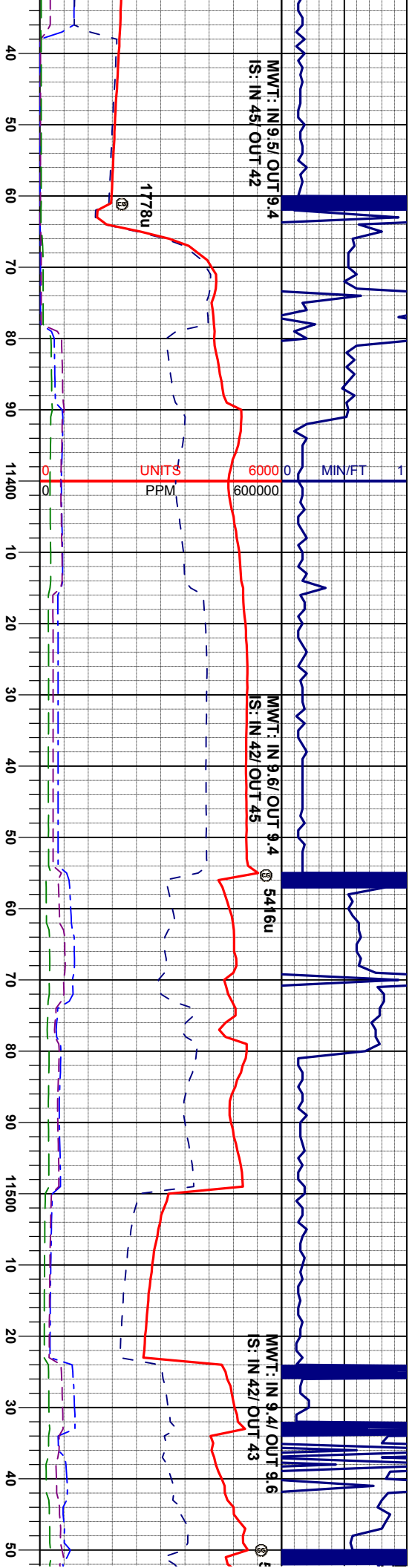
2204u
C1: 43%
C2: 2%
C3: 14%
C4: 42%

D 11116'
C 88.40°
M 357.45°
D 7261.06'

MD 11211'
INC 88.67°
AZM 356.36°
TVD 7263.49'

MD 11306'
INC 89.41°
AZM 356.35°
TVD 7265.08'





55% MRL: m gy - dk gy brn, firm - sl hd, sb
ply - sb blk, rthy lstr, silty - arg tex, v calc,
mot: 15% SLTY SH: m - dk gy, gt tex, firm -
d, silty tex, arg, non calc, tr fos: 40% CHK:
cm / brn, v f gr, sft - mod, sb ply, v calc,
mot: OIL SHW: bl / wh, mod stmg, sl tr stn,
sl tr o

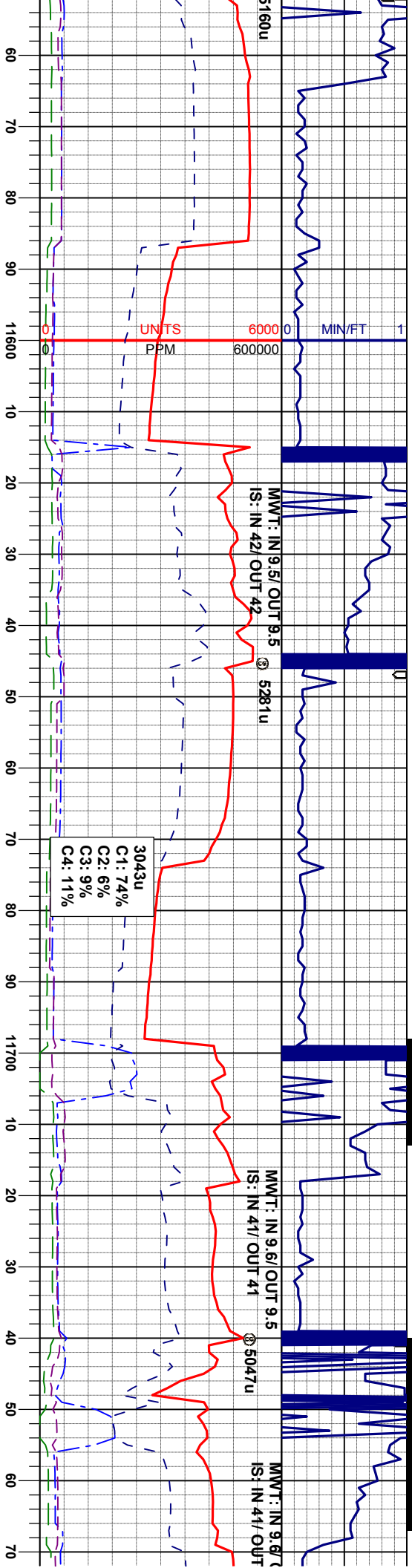
30% MRL: m gy - dk gy brn, firm - sl hd, sb
ply - sb blk, rthy lstr, silty - arg tex, v calc,
mot: 15% SLTY SH: m - dk gy, gt tex, firm -
hd, silty tex, arg, non calc, tr fos: 55% CHK:
lt crm / brn, v f gr, sft - mod, sb ply, v calc,
mot: OIL SHW: bl / wh, mod stmg, sl tr stn,
sl tr o

20% MRL: m gy - dk
ply - sb blk, rthy lstr
mot: 15% SLTY SH:
hd, silty tex, arg, non
lt crm / brn, v f gr, sft
mot: OIL SHW: bl /
sl tr o

MD 11401'
INC 91.60°
AZM 355.69°
TVD 7264.24'

MD 11496'
INC 93.30°
AZM 356.63°
TVD 7260.18'





gy brn, firm - sl hd, sb
r, silty - arg tex, v calc,
m - dk gy, gt tex, firm -
calc, tr fos; 65% CHK:
- mod, sb ply, v calc,
wh, fast stmg, sl tr stn,

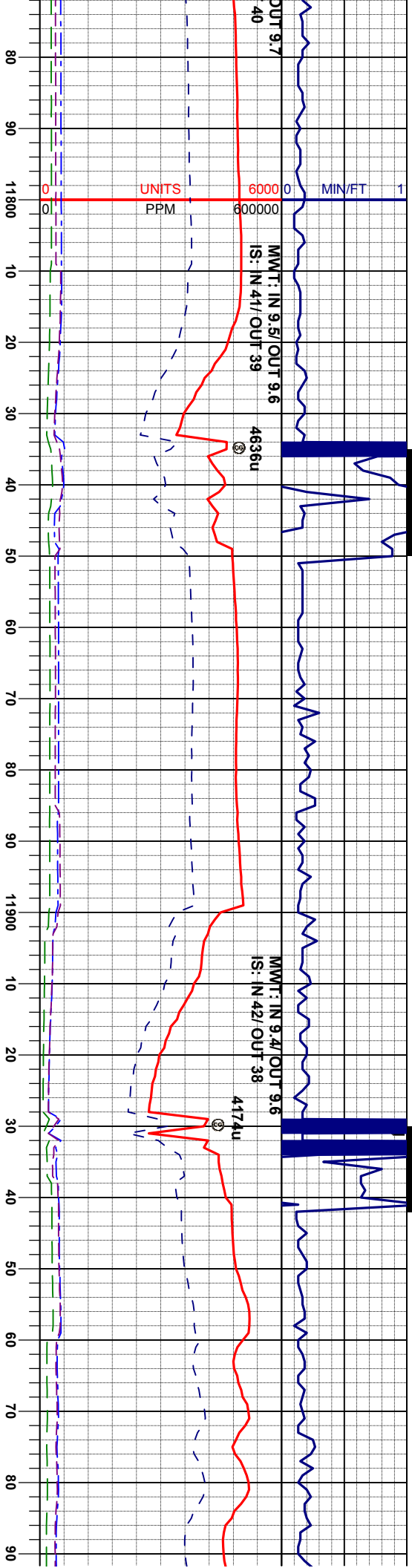
25% MRL: m gy - dk gy brn, firm - sl hd, sb
ply - sb blk, rthy lstr, silty - arg tex, v calc,
mot; 25% SLTY SH: m - dk gy, gt tex, firm -
hd, silty tex, arg, non calc, tr fos; 50% CHK:
lt crm / brn, v f gr, sft - mod, sb ply, v calc,
mot; OIL SHW: bl / wh, fast stmg, sl tr stn,

45% MRL: m gy - dk gy brn, firm - sl hd
ply - sb blk, rthy lstr, silty - arg tex, v c
mot; 35% SLTY SH: m - dk gy, gt tex, f
hd, silty tex, arg, non calc, tr fos; 20% C
lt crm / brn, v f gr, sft - mod, sb ply, v c
mot; OIL SHW: bl / wh, fast stmg, sl tr

MD 11590'
INC 93.03°
AZM 359.37°
TVD 7254.99'

MD 11666'
INC 92.95°
AZM 1.14°
TVD 7249.98'





60% MRL: m gy - dk gy brn, firm - sl hd, sb
ply - sb blk, rthy lstr, silty - arg tex, v calc,
mot: 20% SLTY SH: m - dk gy, gt tex, firm -
hd, silty tex, arg, non calc, tr fos: 20% CHK:
lt crm / brn, v f gr, sft - mod, sb ply, v calc,
mot: OIL SHW: bl / wh, fast string, sl tr sin,
sl tr o

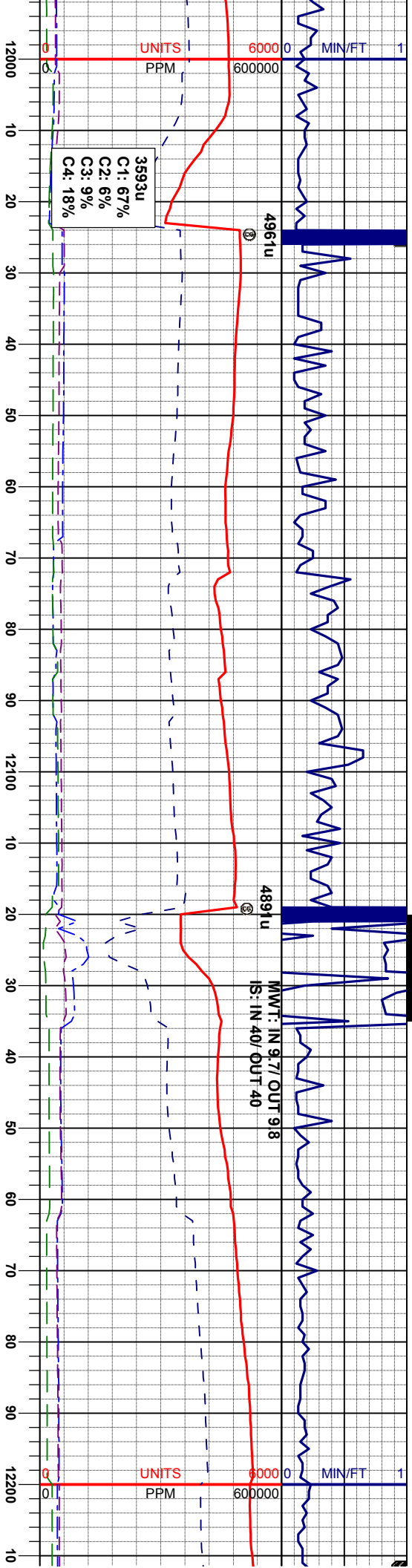
65% MRL: m gy - dk gy brn, firm - sl hd, sb
ply - sb blk, rthy lstr, silty - arg tex, v calc,
mot: 20% SLTY SH: m - dk gy, gt tex, firm -
hd, silty tex, arg, non calc, tr fos: 15% CHK:
lt crm / brn, v f gr, sft - mod, sb ply, v calc,
mot: OIL SHW: bl / wh, mod string, sl tr sin,
sl tr o

MD 11781'
INC 91.23°
AZM 3.62°
TVD 7246.52'

MD 11876'
INC 89.93°
AZM 3.43°
TVD 7245.56'

MD 11971'
INC 88.67°
AZM 3.23°
TVD 7246.72'



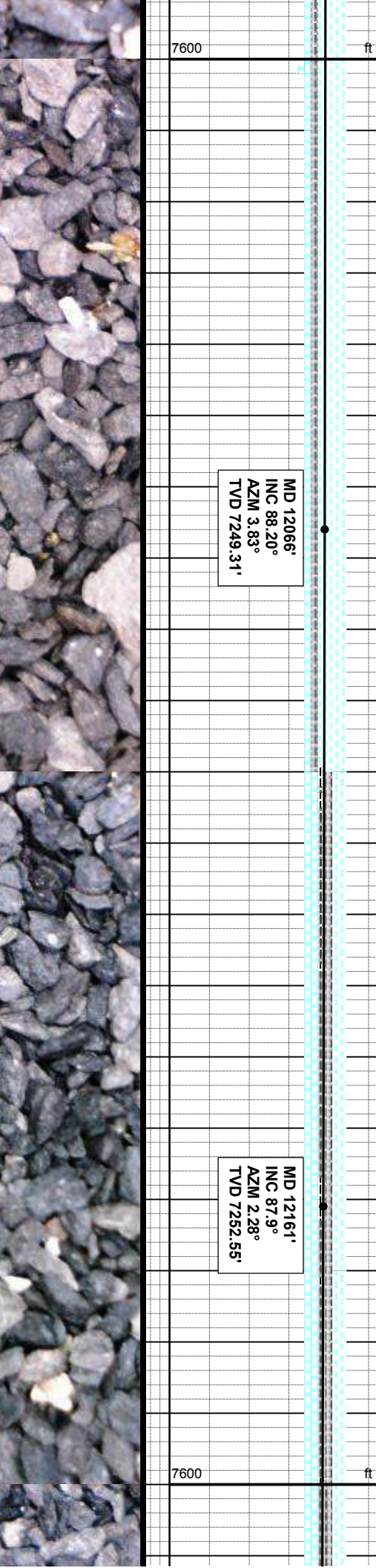


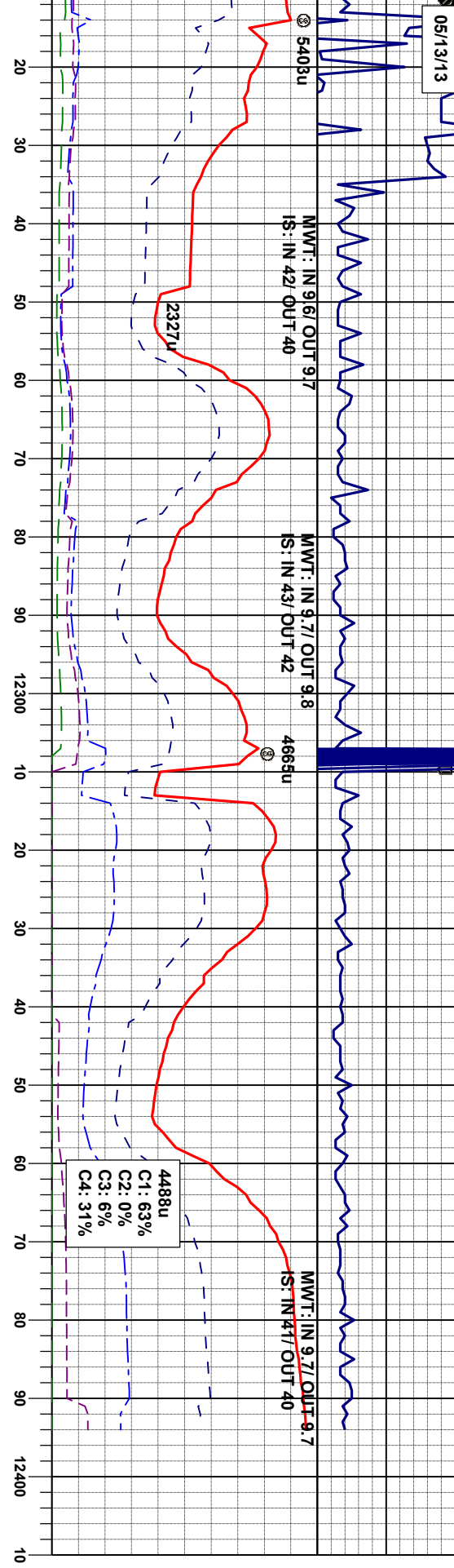
70% MRL: m gy - dk gy brn, firm - sl hd, sb
ply - sb blk, rthy lstr, silty - arg tex, v calc,
mot: 20% SLTY SH: m - dk gy, gt tex, firm -
hd, silty tex, arg, non calc, tr tos; 10% CHK:
lt crm / brn, v f gr, sft - mod, sb ply, v calc,
mot: OIL SHW: bl / wh, fast string, sl tr stn,
sl tr o

60% MRL: m gy - dk gy brn, firm - sl hd, sb
ply - sb blk, rthy lstr, silty - arg tex, v calc,
mot: 20% SLTY SH: m - dk gy, gt tex, firm -
hd, silty tex, arg, non calc, tr tos; 20% CHK:
lt crm / brn, v f gr, sft - mod, sb ply, v calc,
mot: OIL SHW: bl / wh, fast string, sl tr stn,
sl tr o

MD 12066'
INC 88.20°
AZM 3.83°
TVD 7249.31'

MD 12161'
INC 87.9°
AZM 2.28°
TVD 7252.55'





55% MRL: m gy - dk gy brn, firm - sl hd, sb
ply - sb blk, rthy lstr, silty - arg tex, v calc,
mot; 20% SLTY SH: m - dk gy, gt tex, firm -
hd, silty tex, arg, non calc, tr fos; 25% CHK;
lt crm / brn, v f gr, sft - mod, sb ply, v calc,
mot; OIL SHW: bl / wh, fast stmg, sl tr sh,
sl tr o

80% MRL: m gy - dk gy brn, firm - sl hd, sb
ply - sb blk, rthy lstr, silty - arg tex, v calc,
mot; 20% SLTY SH: m - dk gy, gt tex, firm -
hd, silty tex, arg, non calc, tr fos, tr chk; OIL
SHW: bl / wh, fast stmg, sl tr sh, sl tr o

MD 12355'
INC 87.87°
AZM 0.53°
TVD 7256.01'

MD 12340'
INC 87.50°
AZM 0.64°
TVD 7259.45'

MD 12394'
INC 87.50°
AZM 0.64°
TVD 7261.80'

TD @ MD 12,394'
on 05/13/2013 @ 1:56 MST
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Columbine Logging, Inc.

