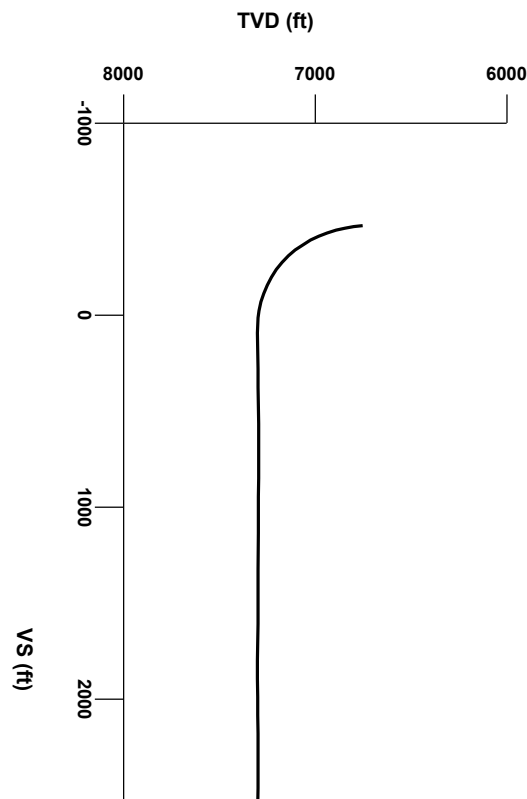




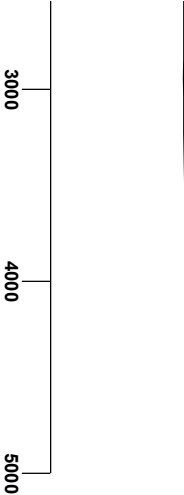
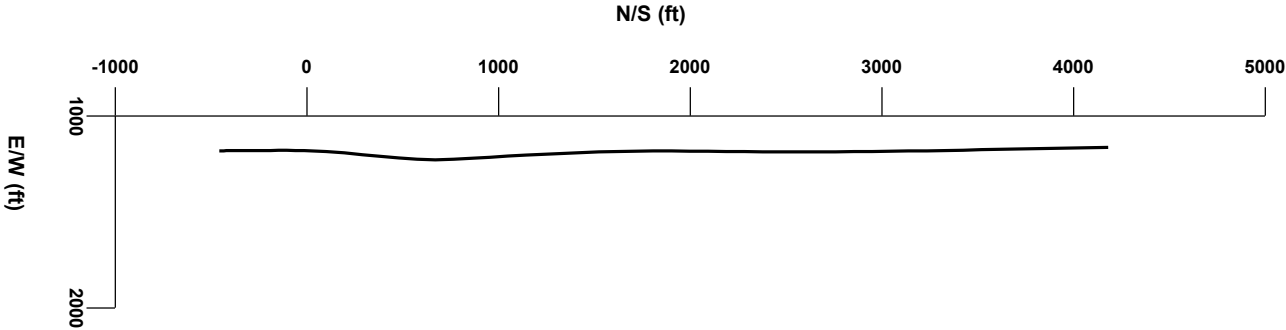
LOG created using LPLLOT VH Version 3.0, April 18, 2013, Copyright (C) 1999-2009 Pason Systems Corp.

OPERATOR: ANADARKO PETROLEUM CORPORATION
WELL: BYDALEK 28C-20HZ
LOCATION: SEC 20, T2N, R65W
COUNTY: WELD
STATE: COLORADO
SPOT: 521' FSL x 1146' FWL
ELEVATION: 4931' GL - 4944' KB
FIELD: WATTENBERG
SPUD DATE: 4/7/2013
TD DATE: 4/13/2013
DATES LOGGED: 4/9/2013 - 4/13/2013
DEPTHS LOGGED: 6900' - 12039'
LOGGERS: ZACH UBER & FRANK KORFANTA
DRILLING FLUID: LSND
DRILLING RIG: ENSIGN138
API: 05-123-36212
LOG TYPE: HORIZONTAL
SCALE: 1:240 (5 inches per 100 feet)
REMARKS: Wellsite Geological Services Provided By Columbine Logging Inc.

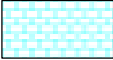


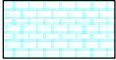
Survey Elevation


Survey Plan





LITHOLOGIES

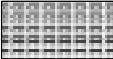
Chalk

Limestone

Marl

Shale

Shaly Sandstone


Silty Shale


MODIFIERS


B


Bentonite


ENGINEERING SYMBOLS


Casing


Casing


Connection


Connection Gas

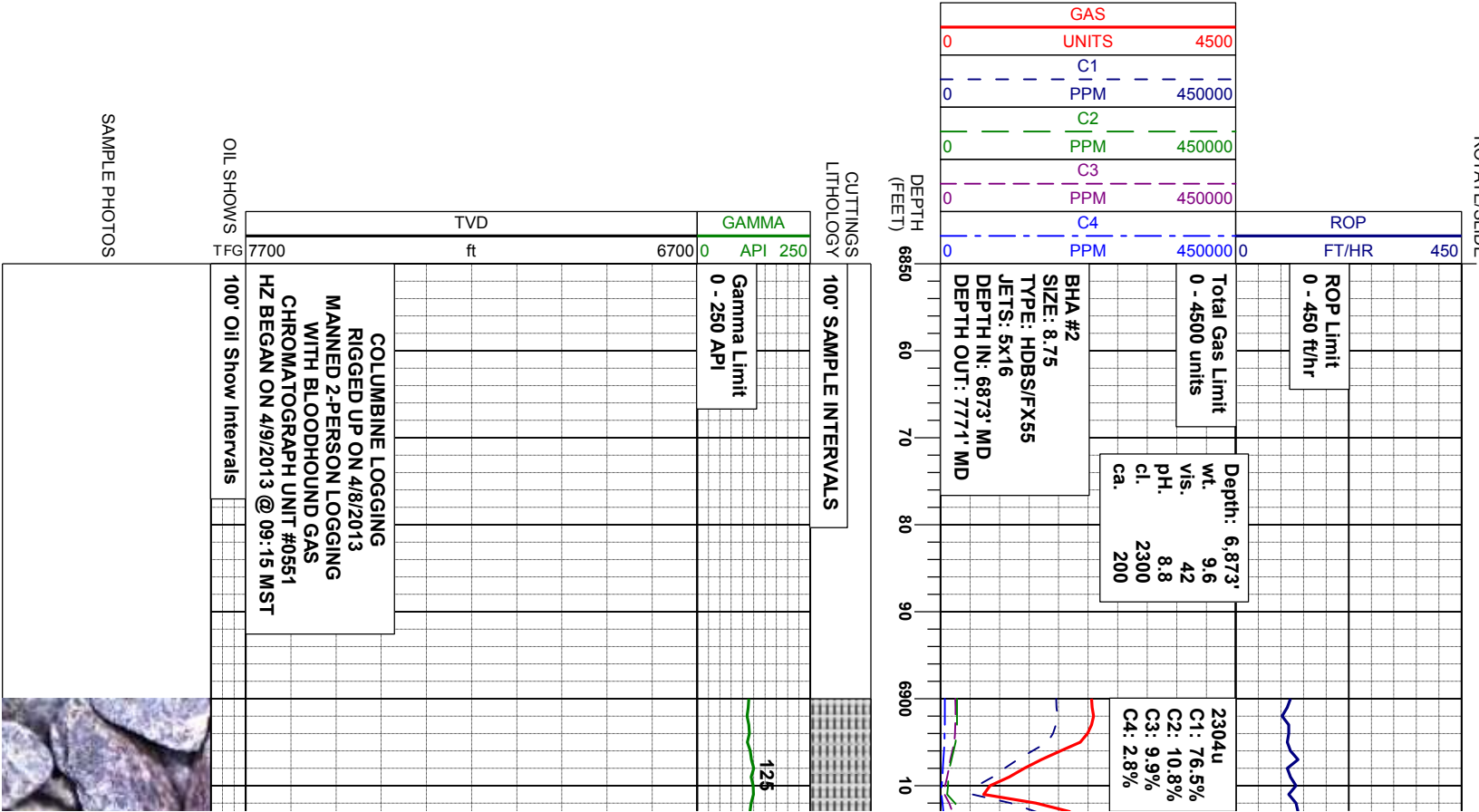
Arrow

Midnight Depth

Normal Fault

Oil To Surface

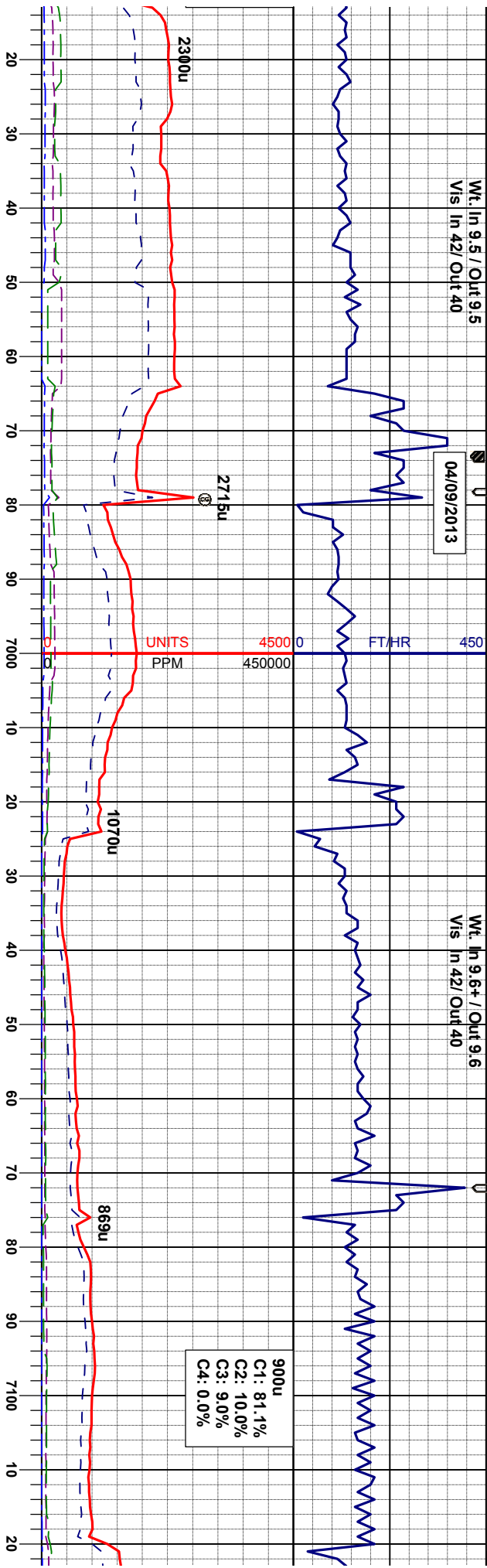
Reverse Fault



Wt. In 9.5 / Out 9.5
Vis In 42/ Out 40

04/09/2013

Wt. In 9.6+ / Out 9.6
Vis In 42/ Out 40



Sharon Spri
7121' MD, 66

MD: 6924'
INC: 4.6°
AZM: 0.6°
TVD: 6752.18'

MD: 6971'
INC: 8.1°
AZM: 359.2°
TVD: 6798.88'

MD: 7018'
INC: 11.4°
AZM: 359.0°
TVD: 6845.19'

MD: 7065'
INC: 14.8°
AZM: 357.5°
TVD: 6890.97'

MD: 7114'
INC: 19.1°
AZM: 356.8°
TVD: 6937.83'

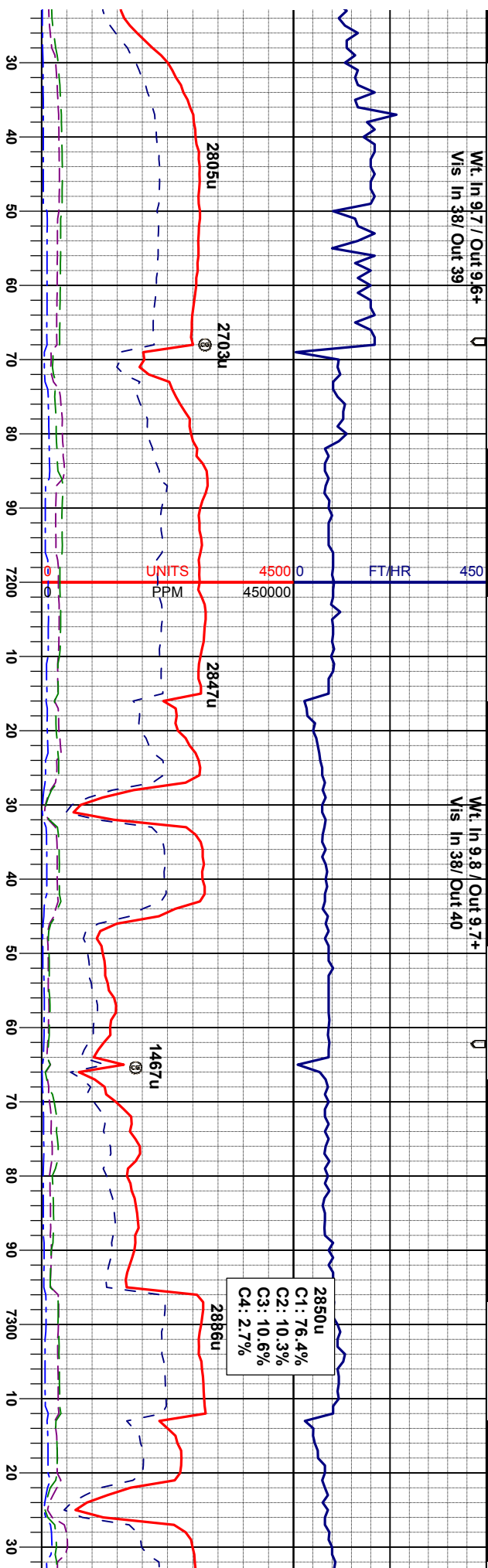
100% SLTYSH: gy - m gy, occ lt gy, fgr -
vfg, firm - sl brt, sbolky - sbply, fri, sm,
sbwxy - sl gt tex
Oil Show: n string dul bl flor cut w/ln frt dul
bl-wh flor ring, n vis o sin

100% SLTYSH: gy - m gy, occ lt gy, fgr -
vfg, firm - sl brt, sbolky - sbply, fri, sm,
sbwxy - sl gt tex
Oil Show: n string mod brt bl flor cut w/ln
frt dul bl-wh flor ring & v frt o sin



Wt. In 9.7 / Out 9.6+
Vis In 38/ Out 39

Wt. In 9.8 / Out 9.7+
Vis In 38/ Out 40



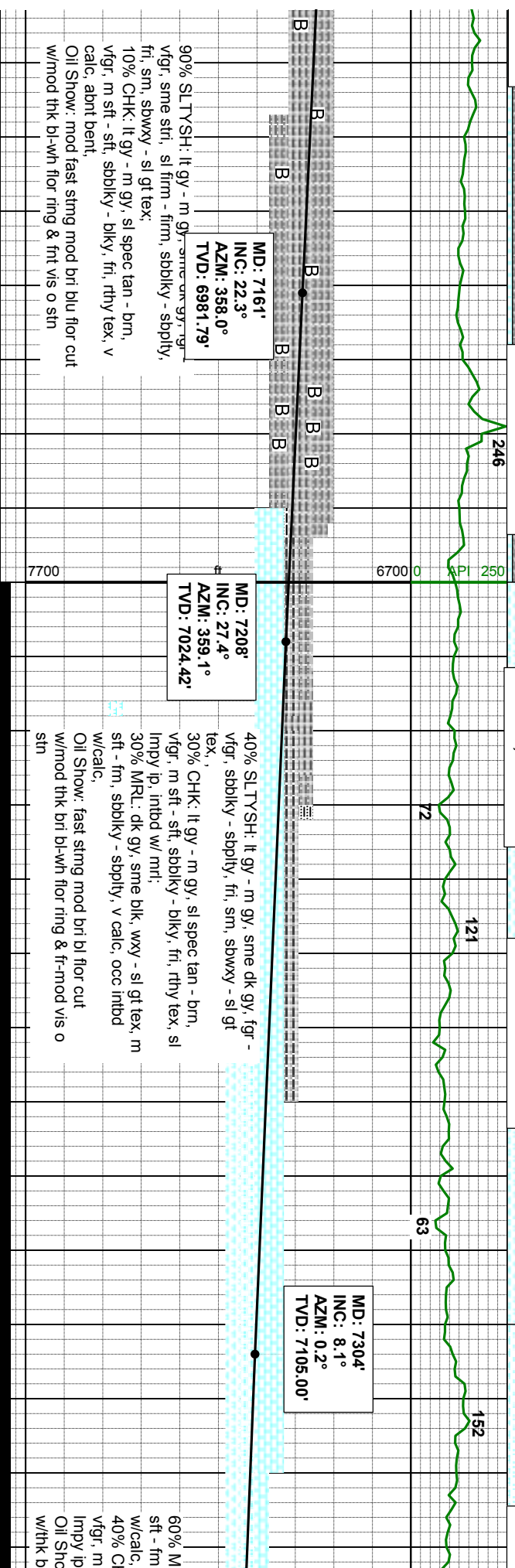
ngs Top 144' TVD

Niobrara A Chalk Top 7182' MD, 7001' TVD

Niobrara B Top 7229' MD, 7043' TVD

Niobrara B Chalk Top 7250' MD, 7061' TVD

Niobrara 7338' N



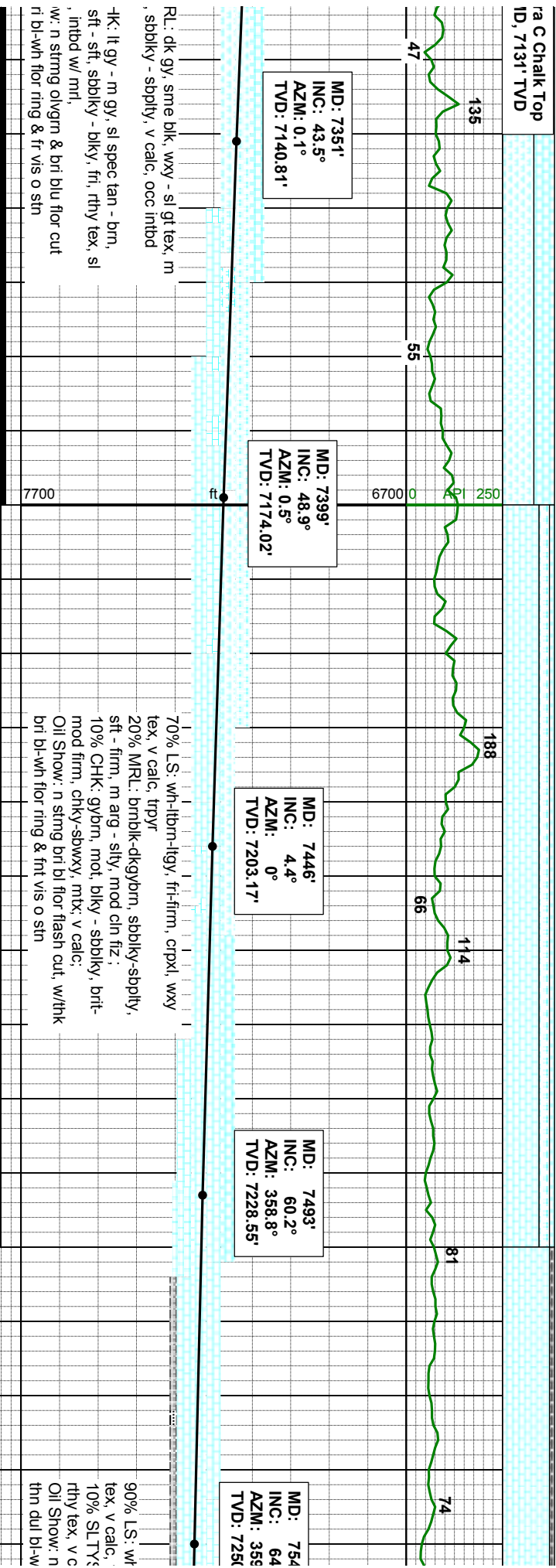
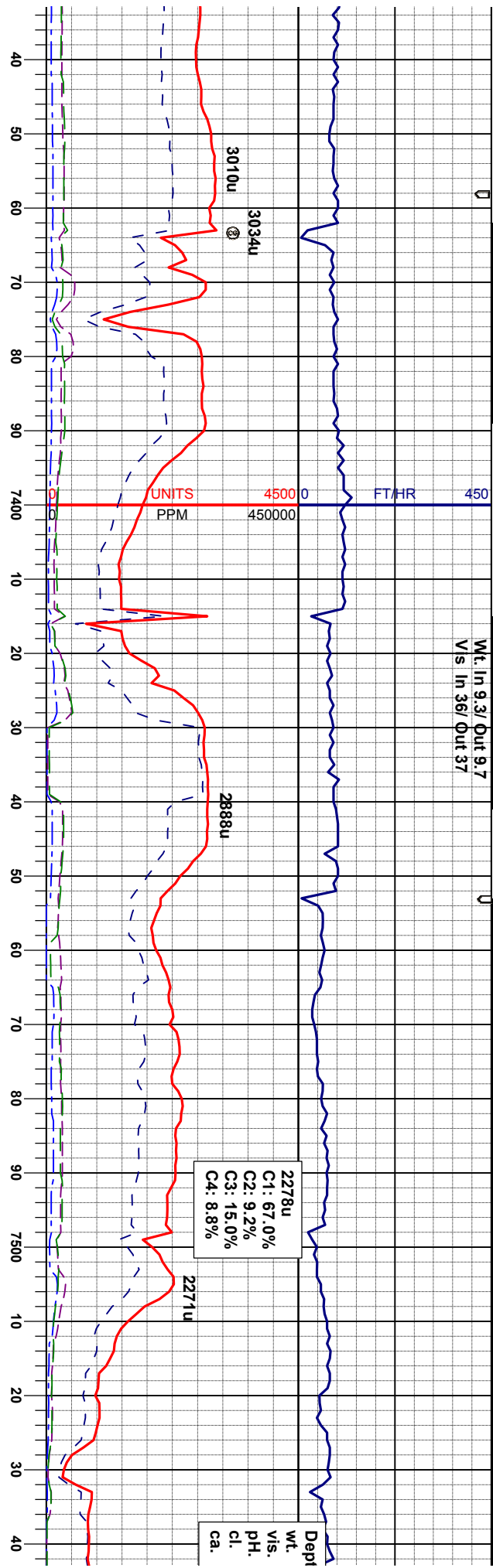
MD: 7161'
INC: 22.3°
AZM: 358.0°
TVD: 6981.79'

90% SLT YSH: lt gy - m gy, sme dk gy, fgr - vfg, sme sft, sl firm - firm, sbblky - sbply, fri, sm, sbwxy - sl gt tex;
10% CHK: lt gy - m gy, sl spec tan - brn, vfg, m sft - sft, sbblky - blky, fri, rthy tex, v calc, abnt bent;
Oil Show: mod fast stmg mod bri blu flor cut w/mod thk bl-wh flor ring & fnt vis o stn

40% SLT YSH: lt gy - m gy, sme dk gy, fgr - vfg, sbblky - sbply, fri, sm, sbwxy - sl gt tex, ' 30% CHK: lt gy - m gy, sl spec tan - brn, vfg, m sft - sft, sbblky - blky, fri, rthy tex, sl lmpy lp, intbd w/ mrl; 30% MRL: dk gy, sme blk, wxy - sl gt tex, m sft - fm, sbblky - sbply, v calc, occ intbd w/calc;
Oil Show: fast stmg mod bri bl flor cut w/mod thk bri bl-wh flor ring & fr-mod vis o stn

60% M sft - fm w/calc, 40% Cf vfg, m lmpy lp Oil Shn w/thk b

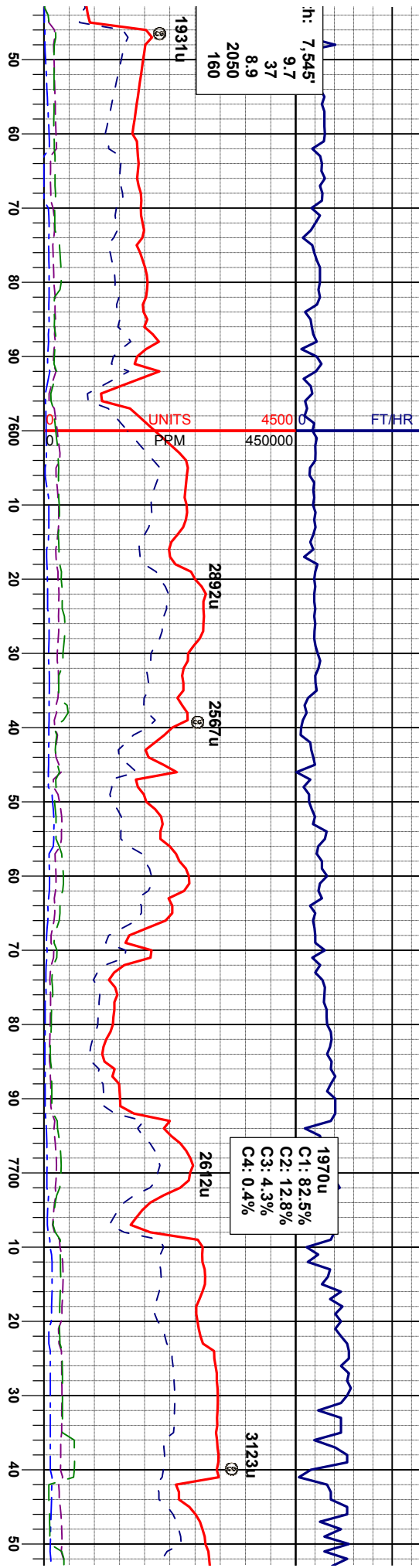




Wt. In 9.6/ Out 9.7
Vis In 36/ Out 37

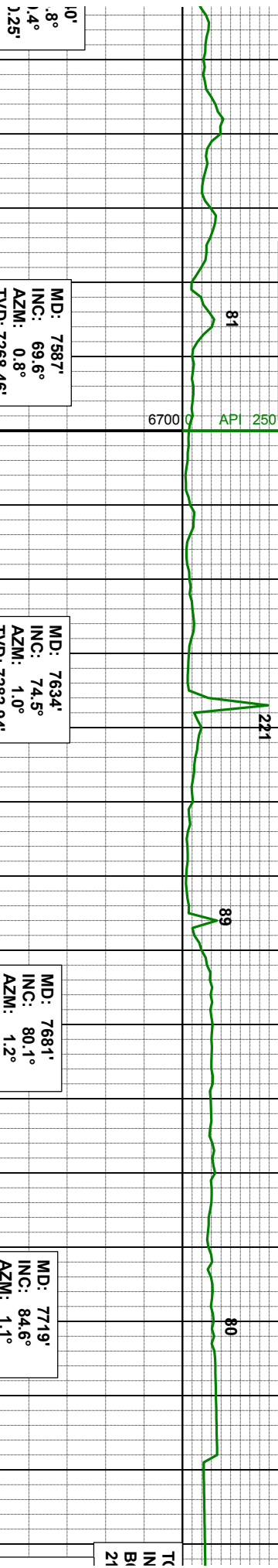
4/10/2013

Wt. In 9.7/ Out 9.7+
Vis In 36/ Out 37



Fort Hays Top
7587' MD, 7268' TVD

Codell Tc
7671' MD



1-lbtrn-ltgy, fri-firm, cpxl, wxy
tr mas pyr,
Sh: m-dk gy, firm, sbbkly-blky,
alc, occ intbd w/pyr,
stng olvgn-purp flor cut w/v frnt,
n flor ring & n vis o stn

80% LS: wh-lbtrn, fri-firm, sbbkly, cpxl, wxy
tex, v calc, trpyr, tr fos frag, cin flz;
20% SHY: SS: mgy, cl-trns, pred cgr, occ
tgr, sbang-sbrndd, p-modstr, fri-brtl, mod-g
consol, non-scalc, tr glau,
Oil Show: n stng olvgn-purp flor cut w/pch
mod bri bl-wh flor ring & n vis o stn

75% LS: wh-lbtrn, fri-firm, sbbkly, cpxl, wxy
tex, v calc, trpyr, tr fos frag, cin flz;
25% SHY: SS: mgy, cl-trns, pred cgr, occ
tgr, sbang-sbrndd, p-modstr, fri-brtl, mod-g
consol, non-si calc,
Oil Show: n stng olvgn-purp flor cut w/ mod
thk bri bl-wh flor ring & n vis o stn



4/11/2013

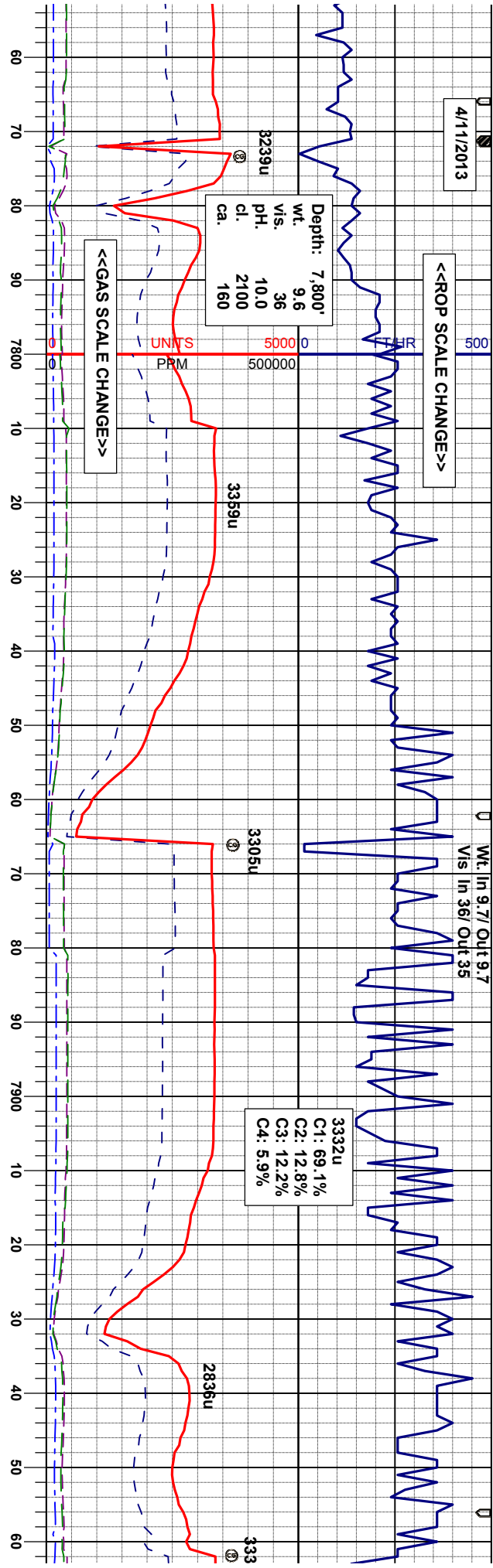
<<ROP SCALE CHANGE>>

Wt. In 9.7' Out 9.7'
Vis In 36l Out 35

Depth: 7,800'
wt. 9.6
vis. 36
pH. 10.0
cl. 2100
ca. 160

3332u
C1: 69.1%
C2: 12.8%
C3: 12.2%
C4: 5.9%

<<GAS SCALE CHANGE>>



7291' TVD

Change to 150' samples
due to high ROP rate

JOH @ 7,771' MD FOR
INTERMEDIATE CASING
CB ON 04/11/2013 @
11:37hrs.

BHA #3
SIZE: 6.124
TYPE: VM513S
JETS: 5X16
DEPTH IN: 7771' MD
DEPTH OUT: MD

<<TVD SCALE CHANGE>>

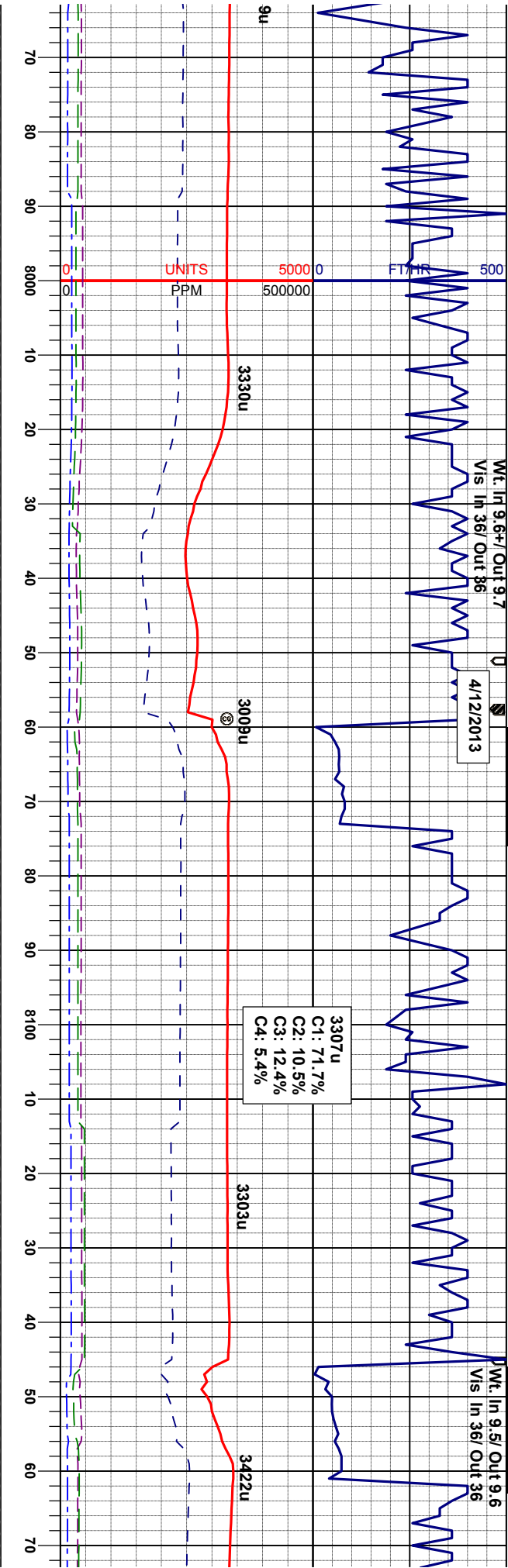
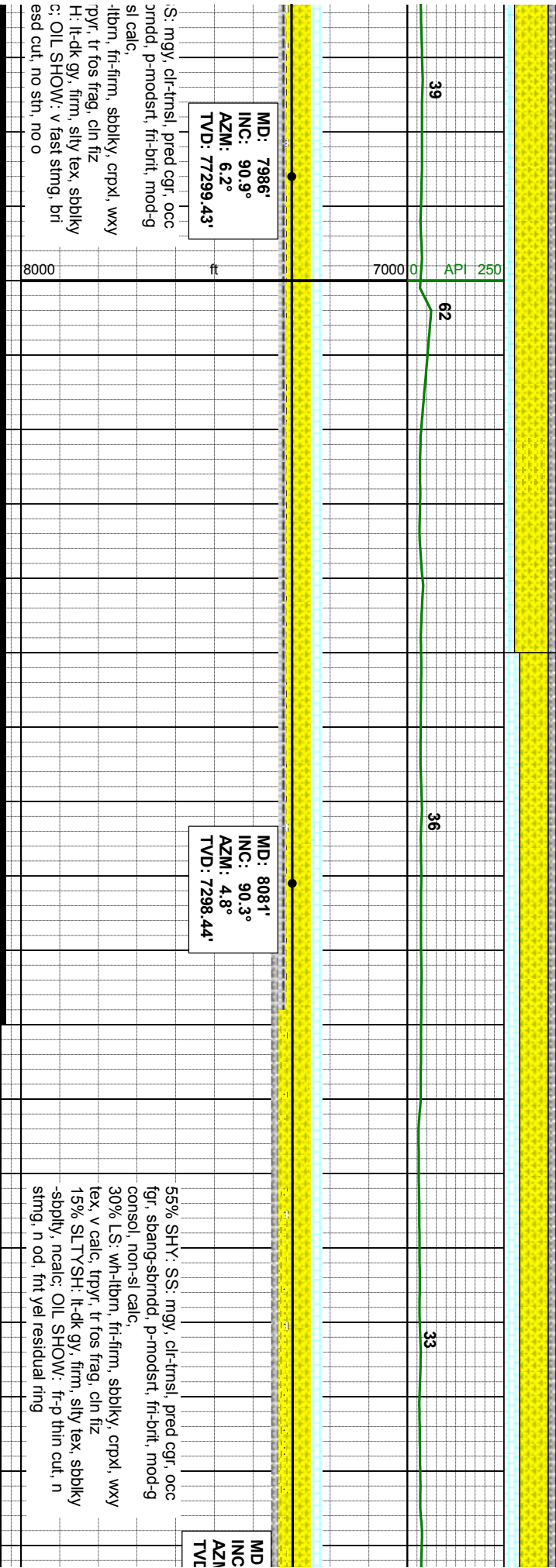
MD: 7797'
INC: 89.9°
AZM: 3.7°
TVD: 7302.06'

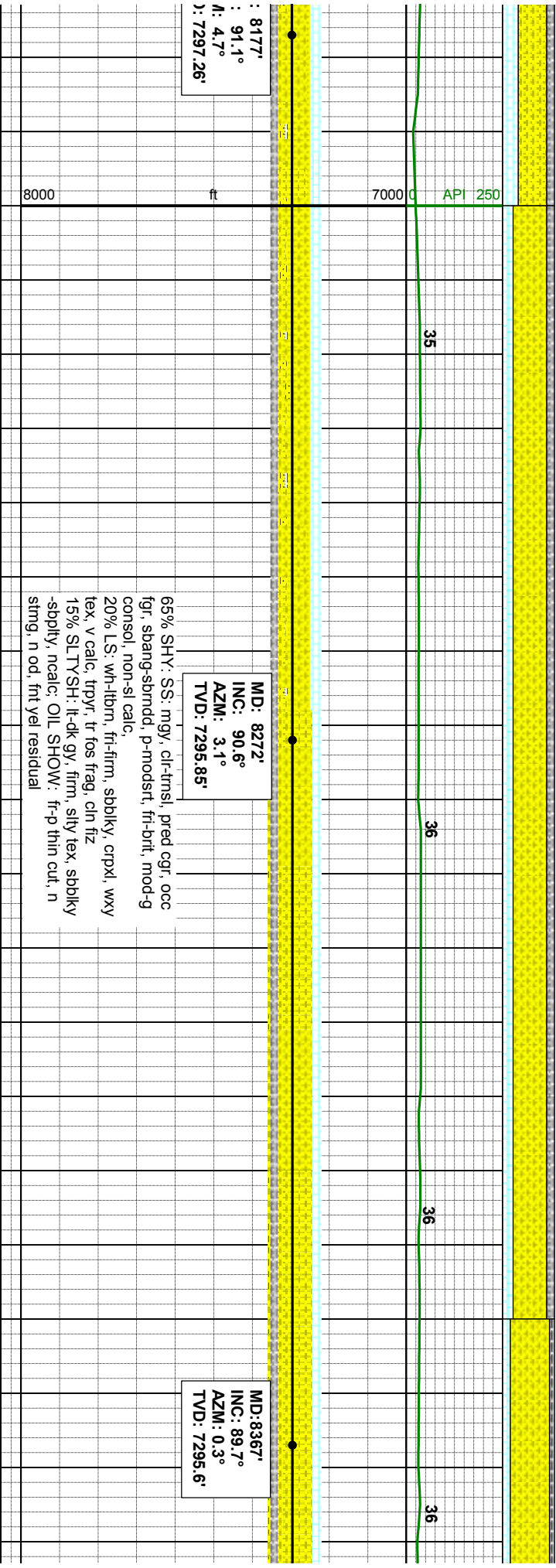
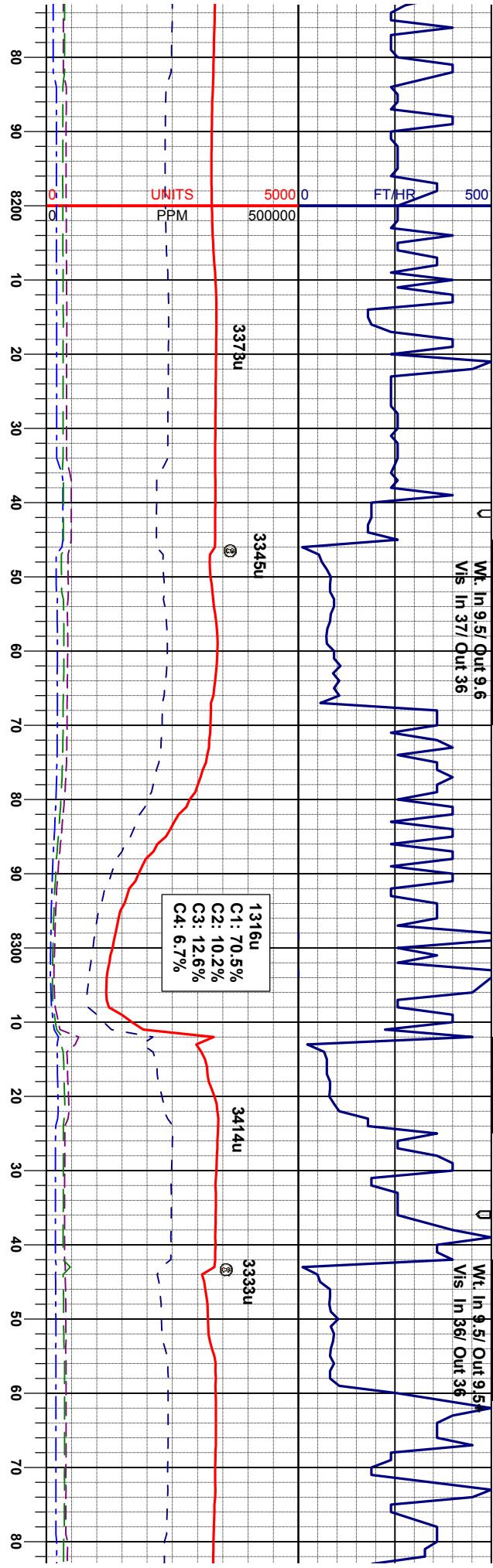
MD: 7892'
INC: 91.2°
AZM: 5.4°
TVD: 7301.15'

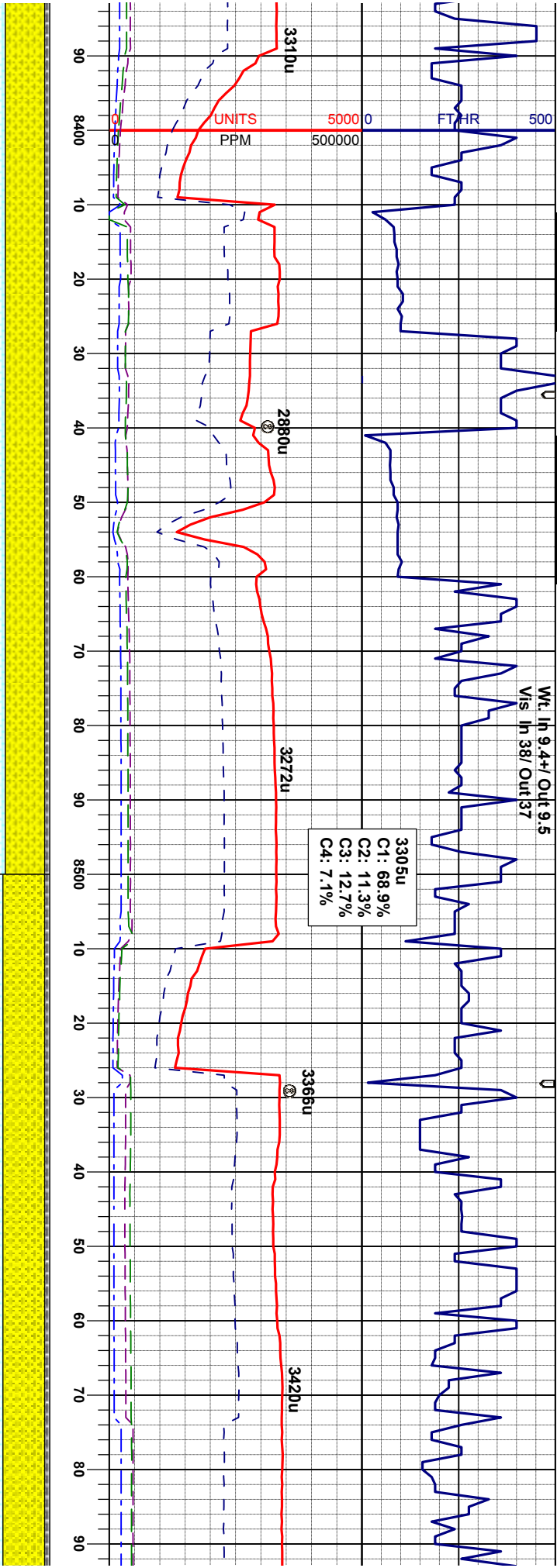
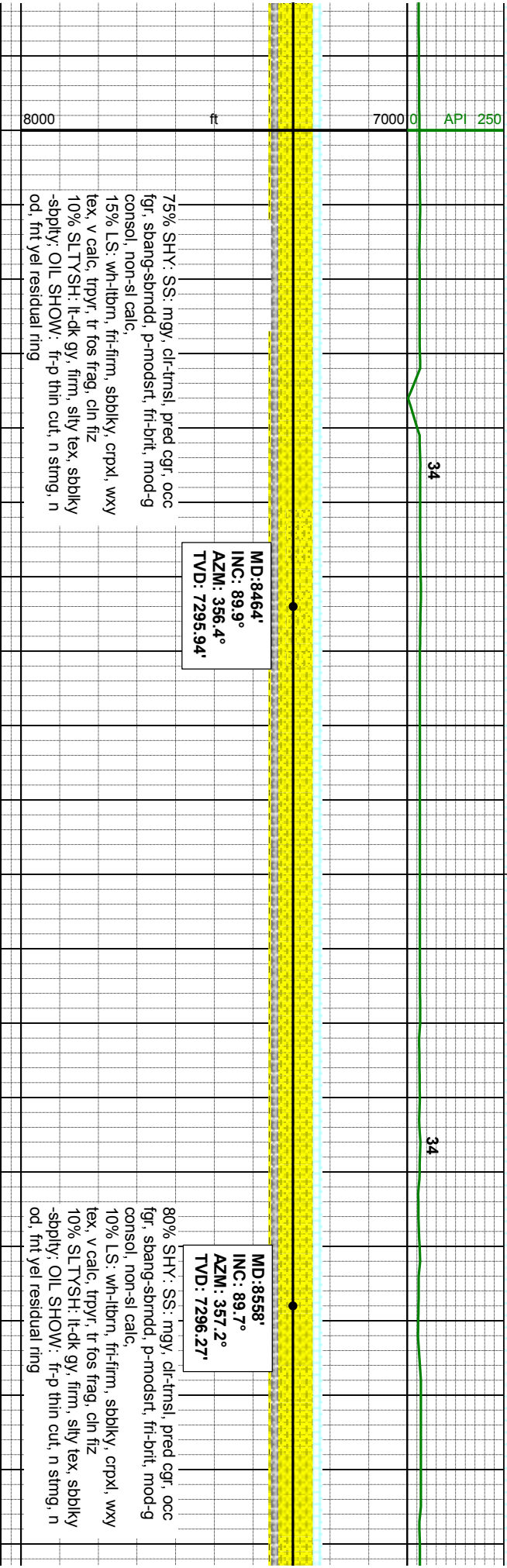
80% SHY: SS: mgy, cl-trnsi, pred cgr, occ
fgr, sbang-sbrndd, p-modstf, fri-brit, mod-g
consol, non-sl calc.
20% SLTYSH: lt-dk gy, firm, silty tex, sdbiky
-sdbiky, ncalc.
20% LS: wh-lbrn, fri-firm, sdbiky, crpxl, wxy
tex, tr fos frag, calc, cin fiz

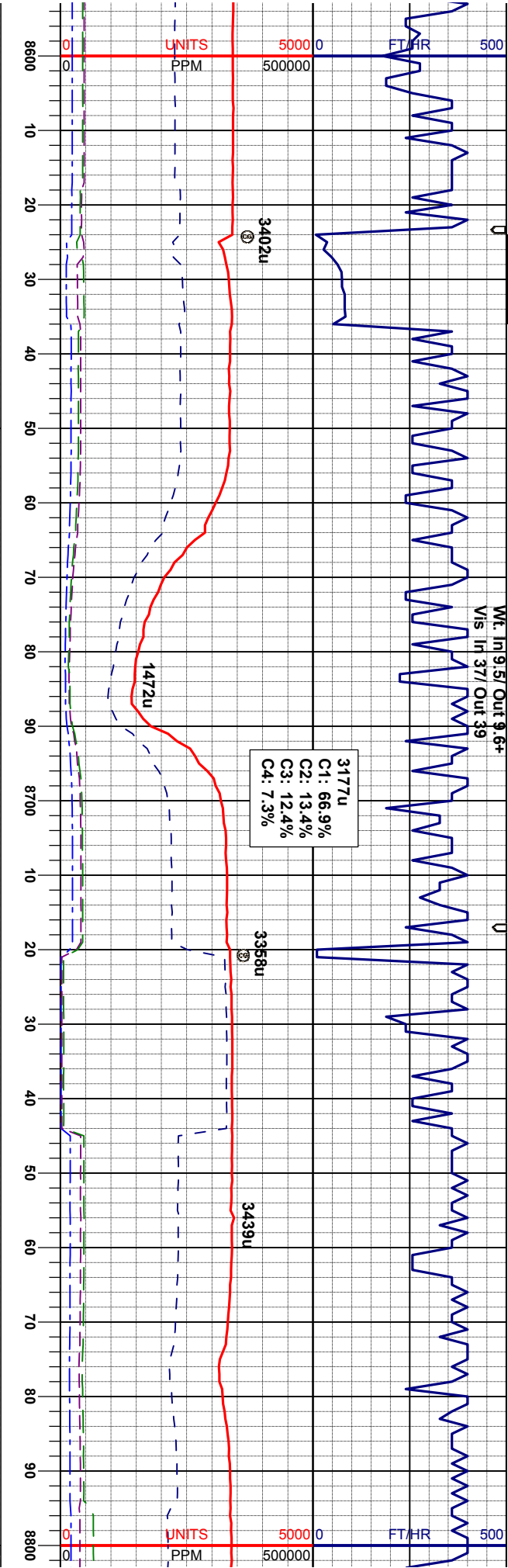
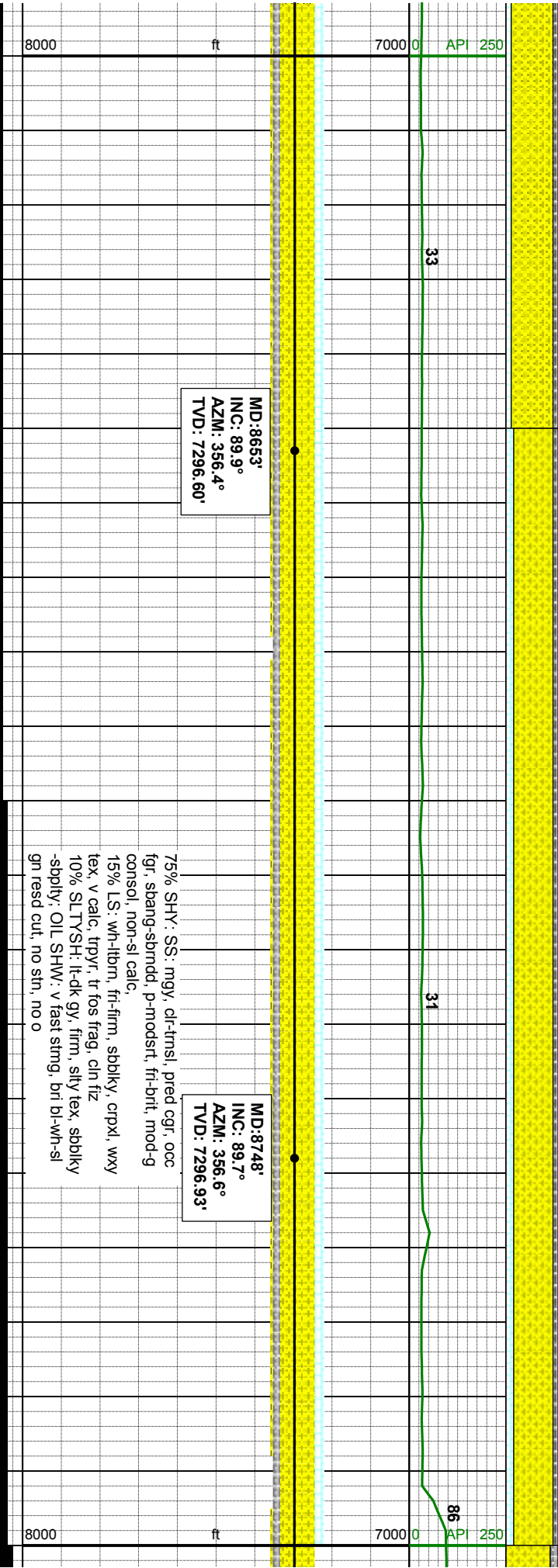
65% SHY: S
fgr, sbang-sl
consol, non-
20% LS: wh-
tex, v calc, ti
15% SLTYS
-sdbiky, ncali
bl-wh-sl gn r

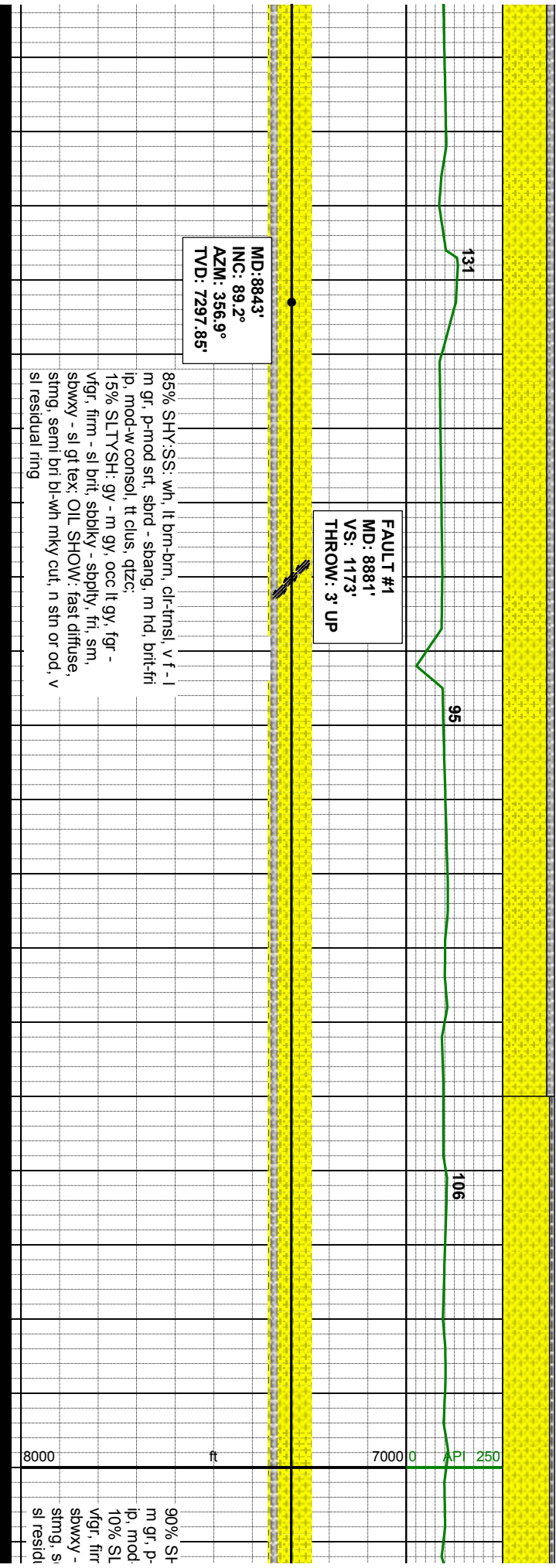
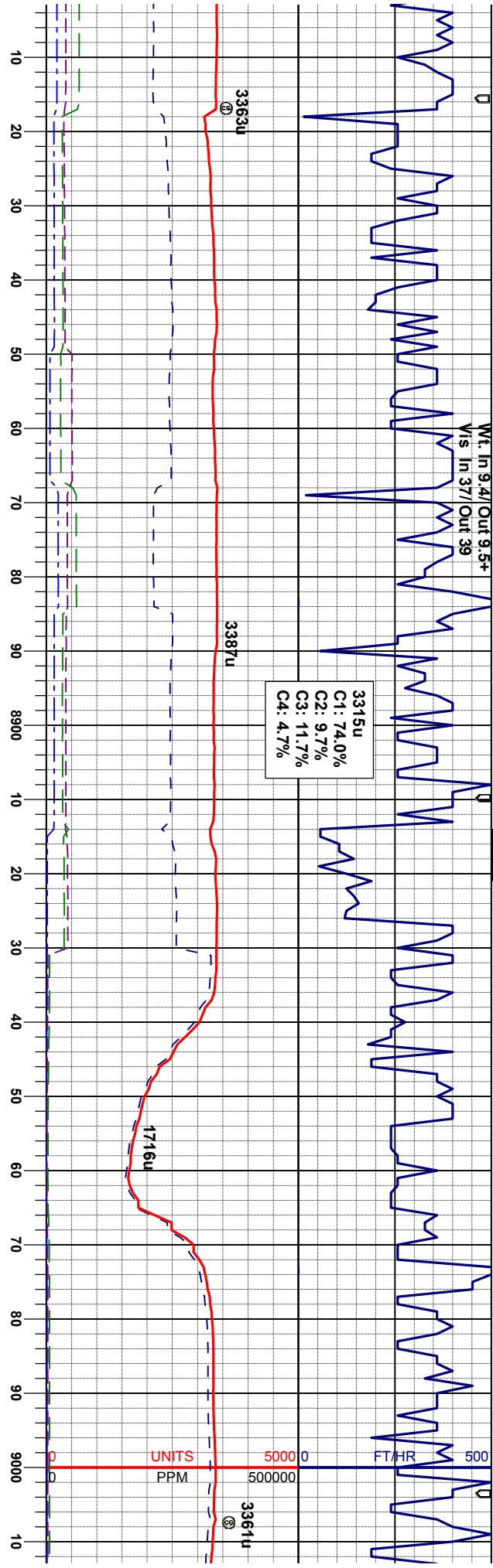


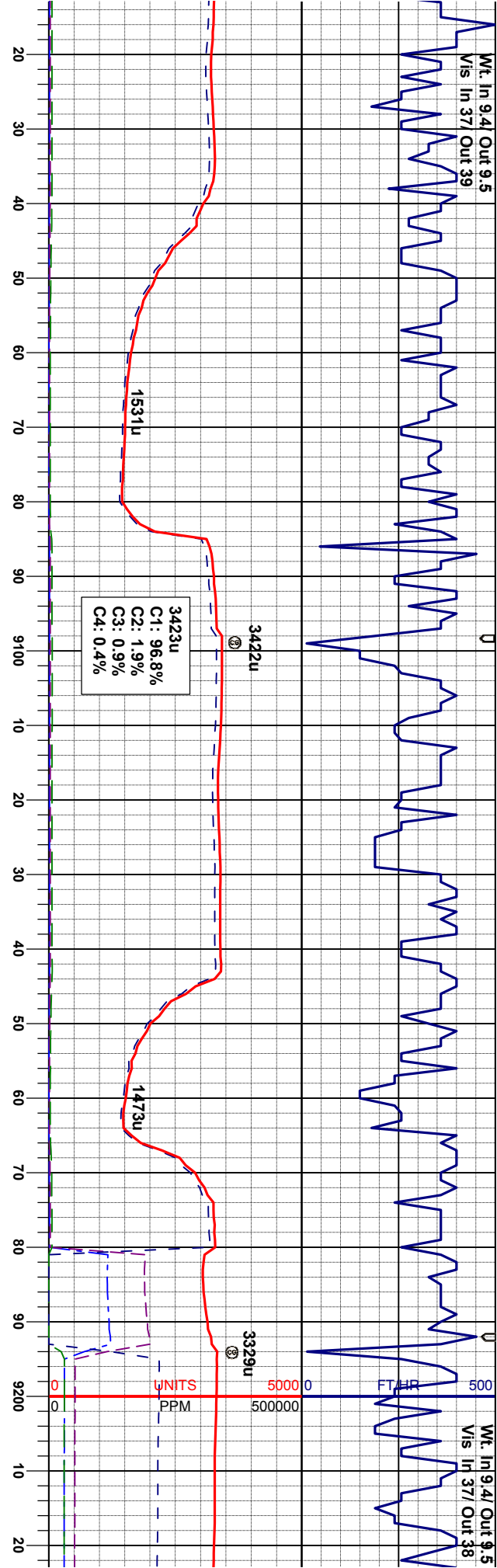
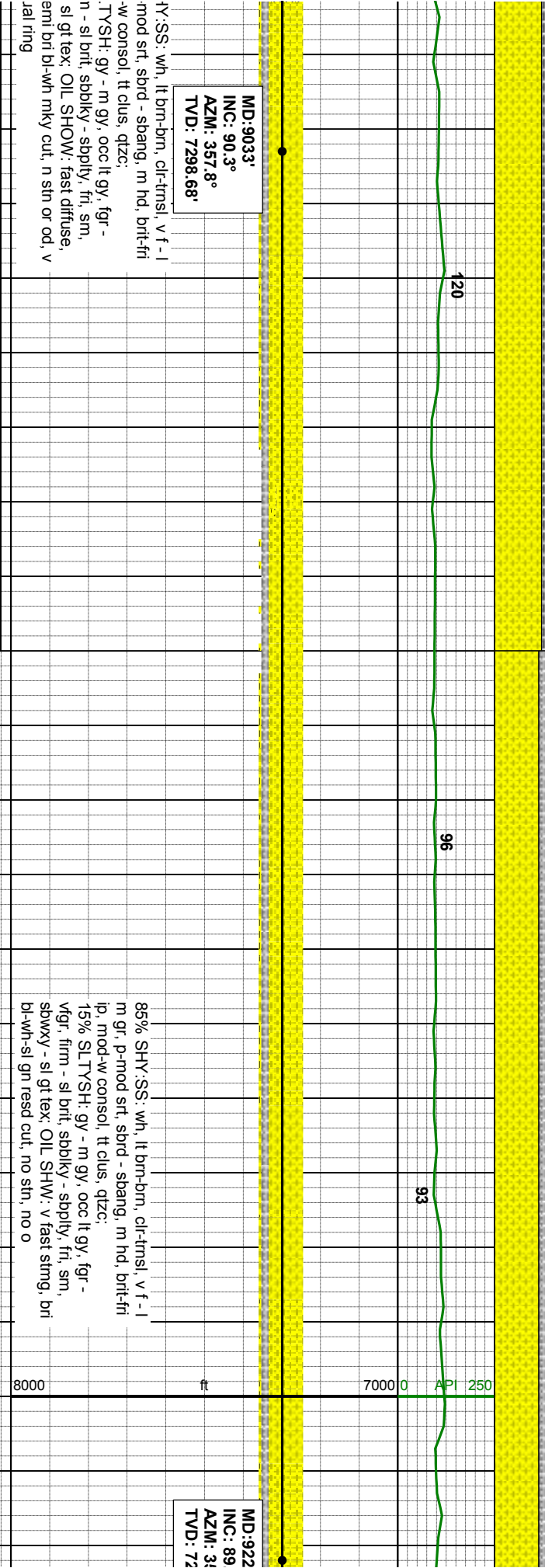






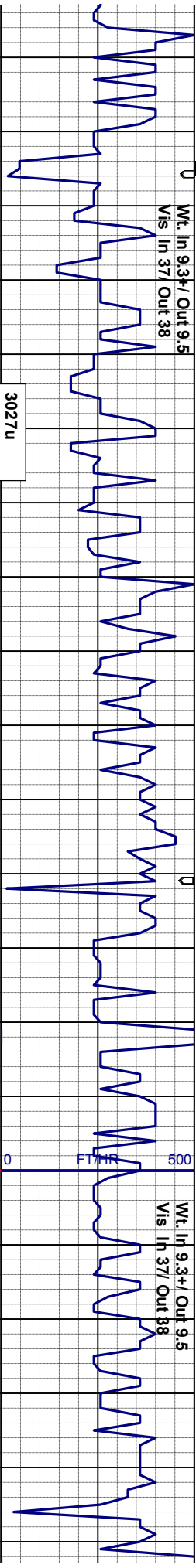






Wt. In 9.3+/ Out 9.5
Vis In 37/ Out 38

Wt. In 9.3+/ Out 9.5
Vis In 37/ Out 38



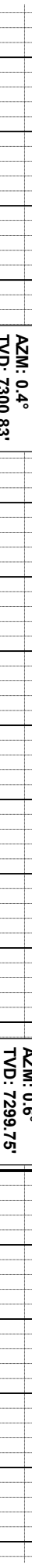
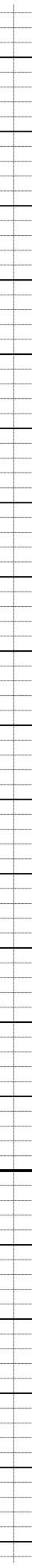
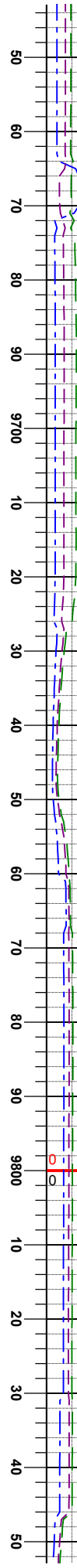
3028u

3034u

3016u

3027u
C1: 63.8%
C2: 19.2%
C3: 11.4%
C4: 5.6%

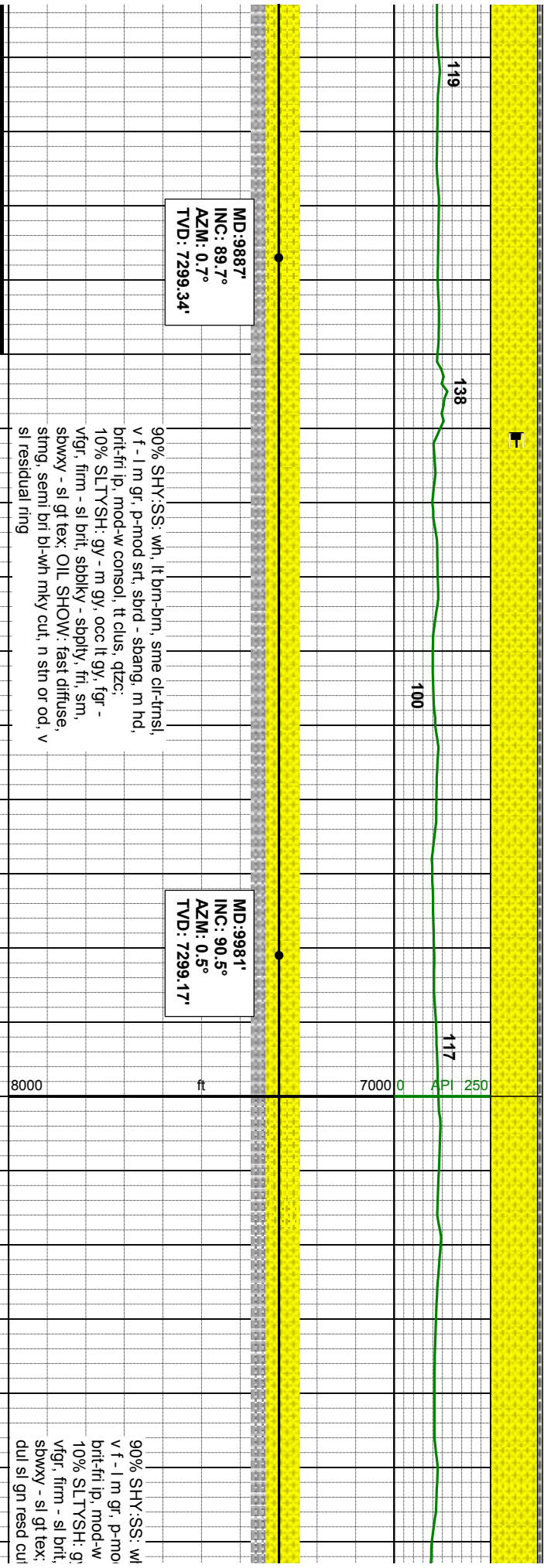
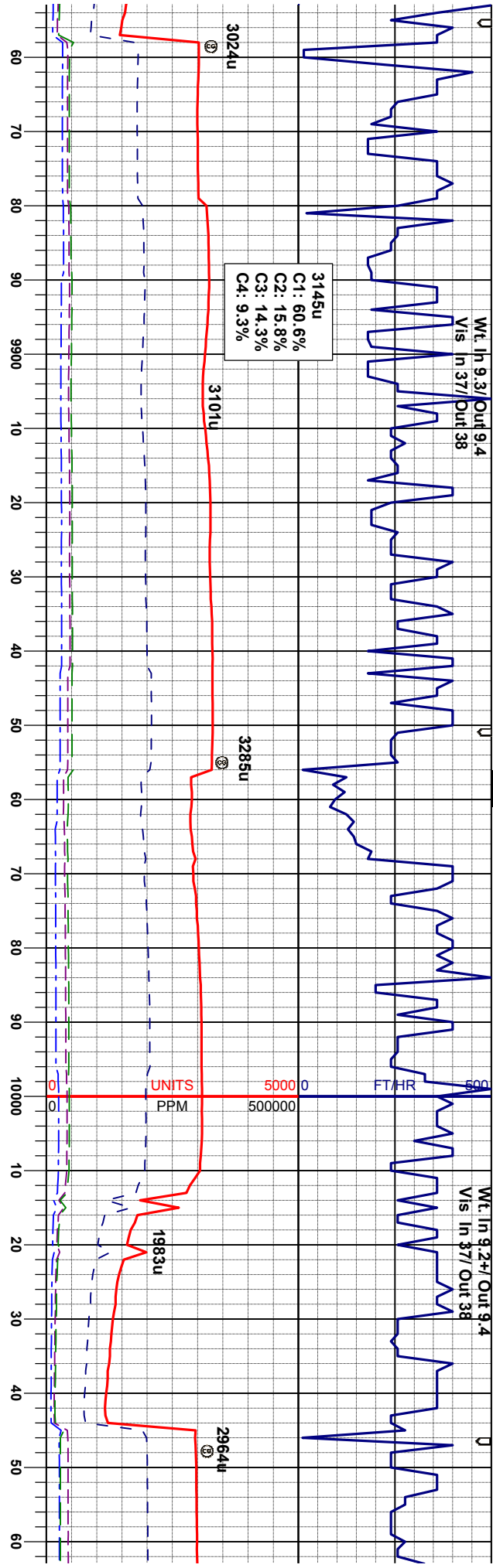
UNITS
PPM

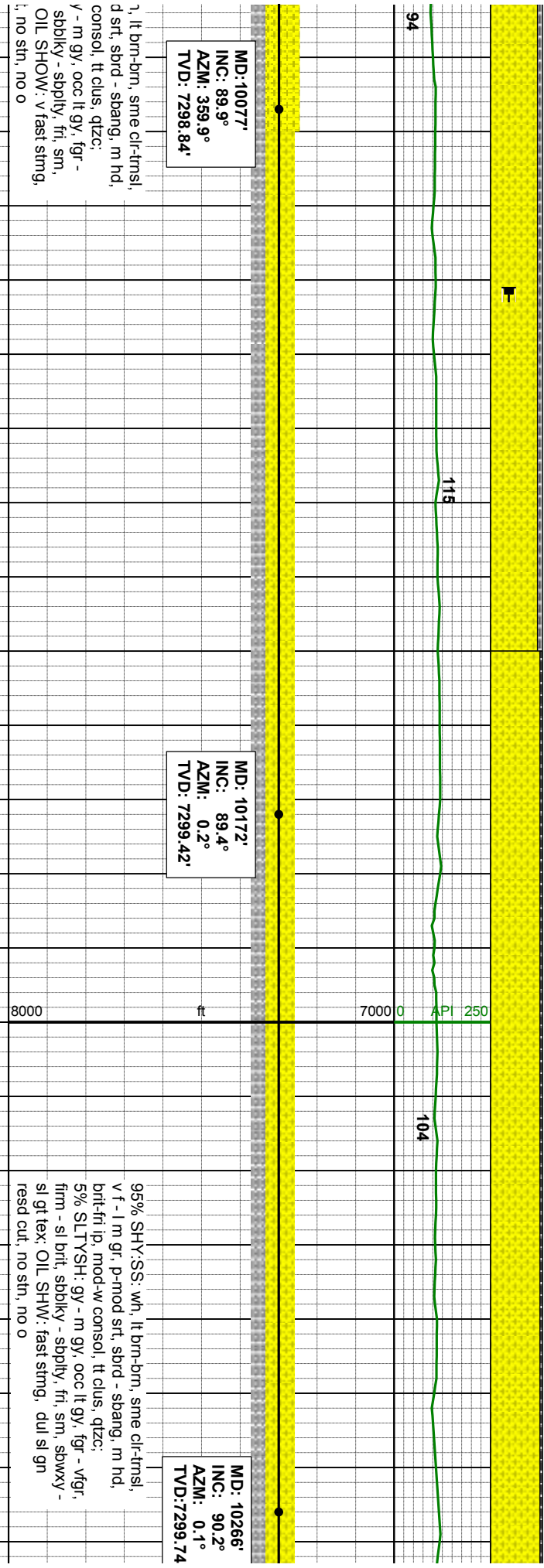
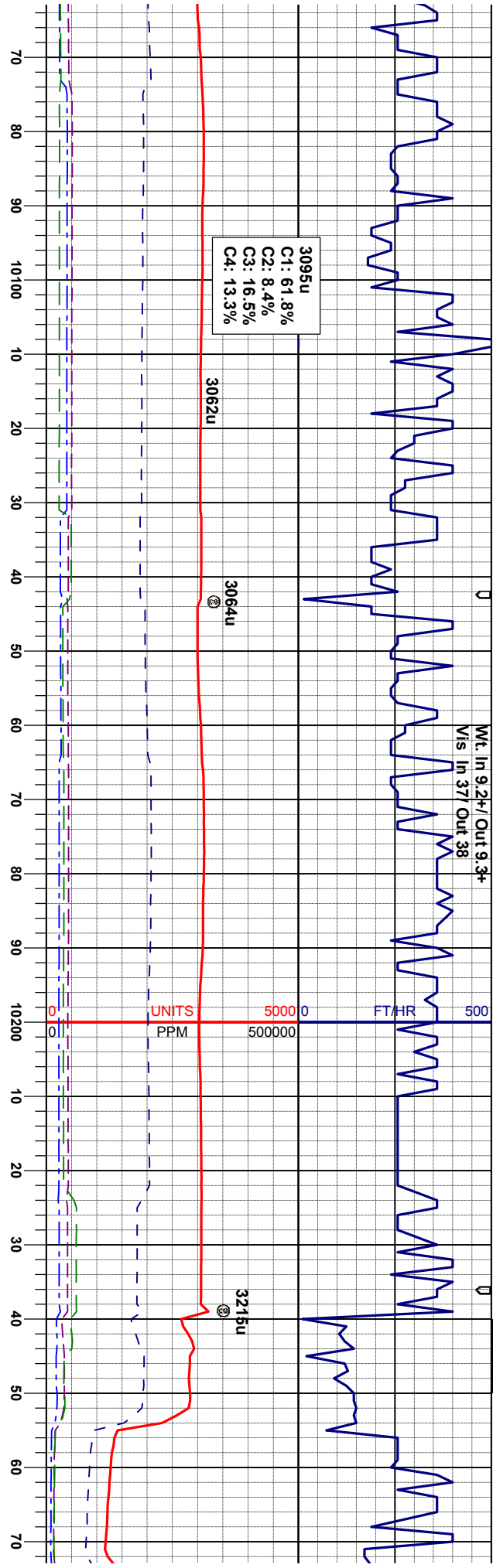


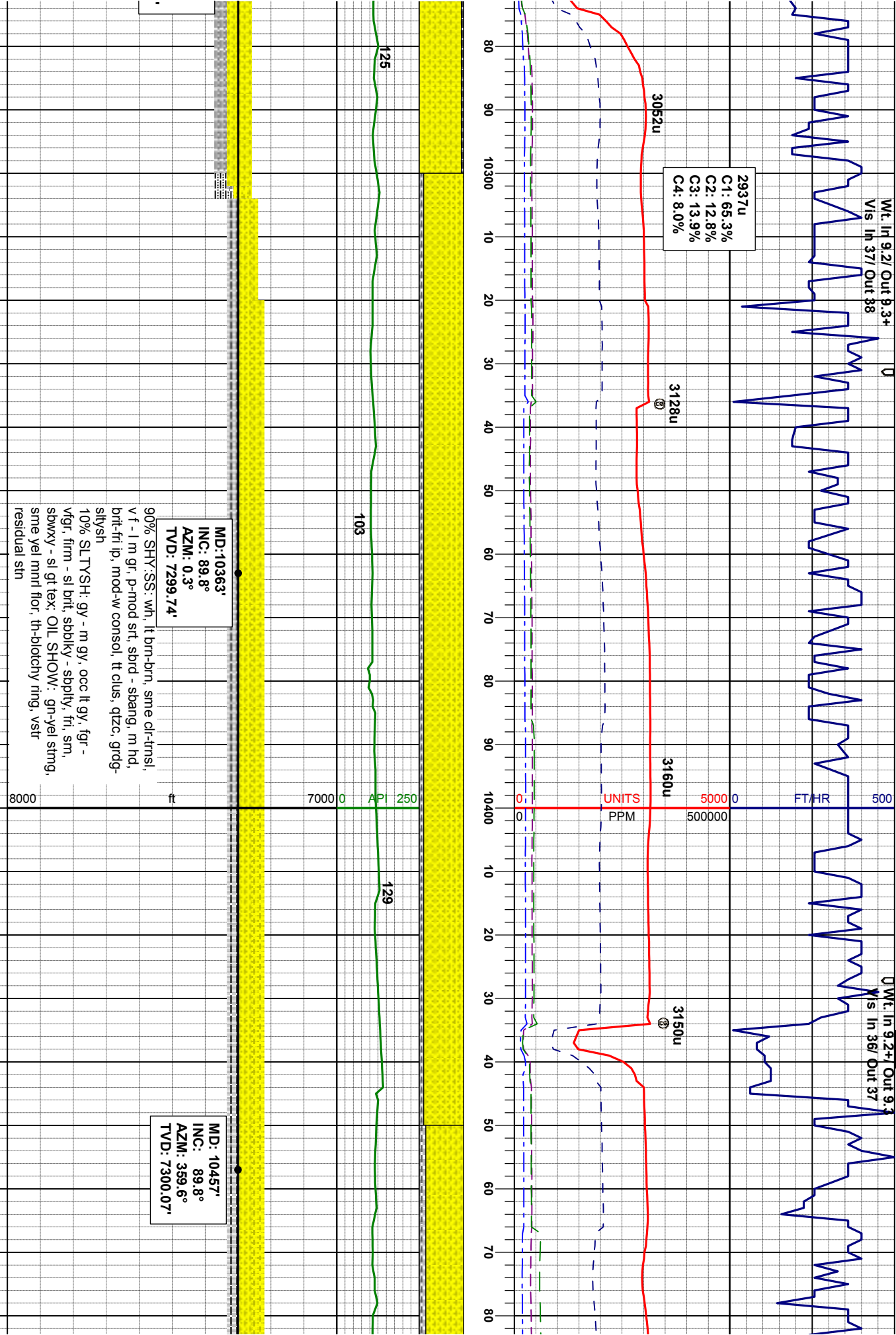
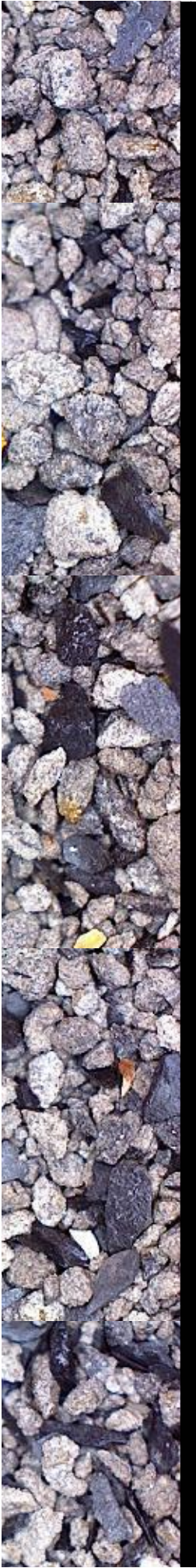
MD: 9696'
INC: 90.5°
AZM: 0.4°
TVD: 7300.83'

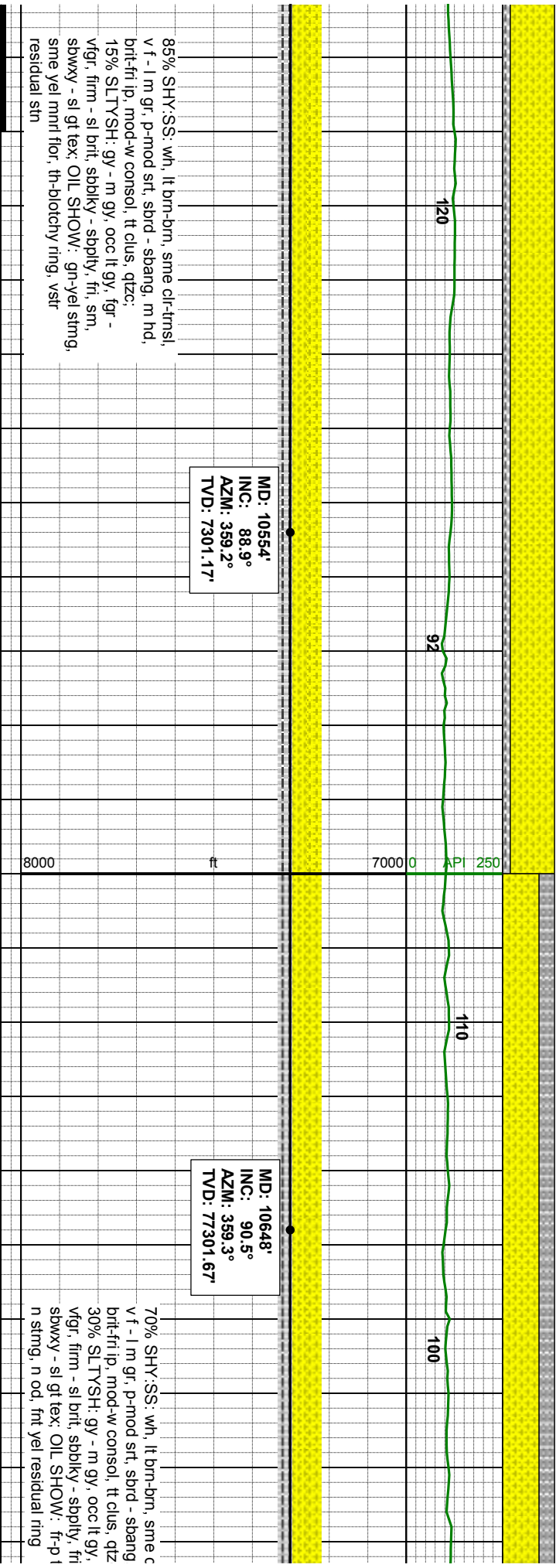
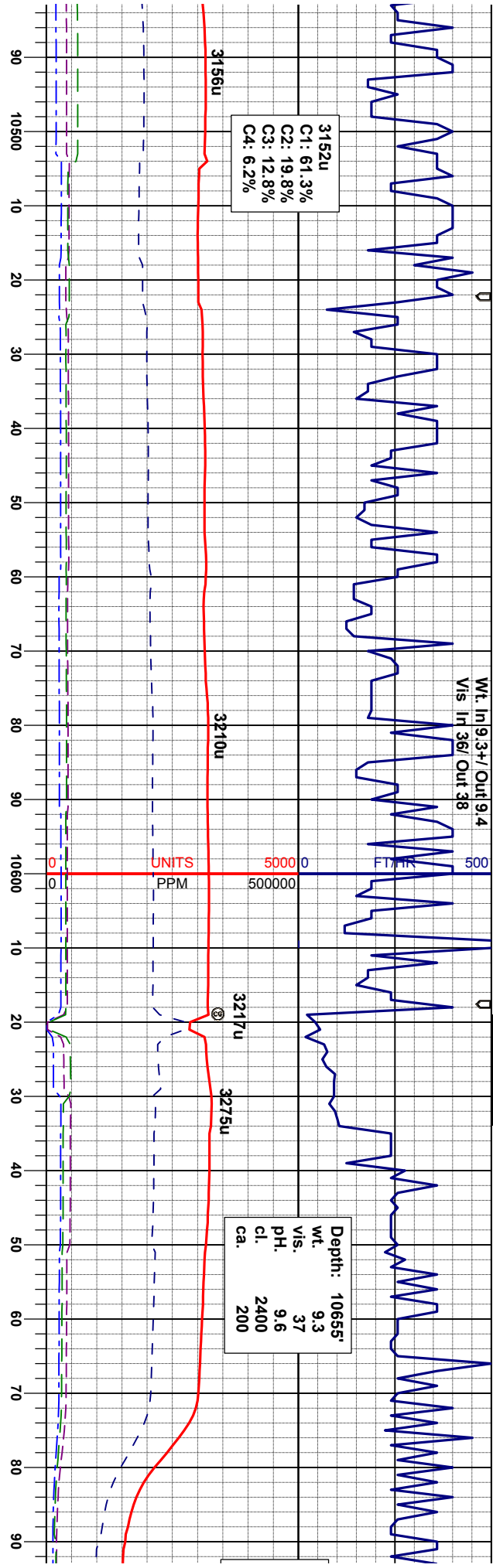
MD: 9791'
INC: 90.8°
AZM: 0.6°
TVD: 7299.75'

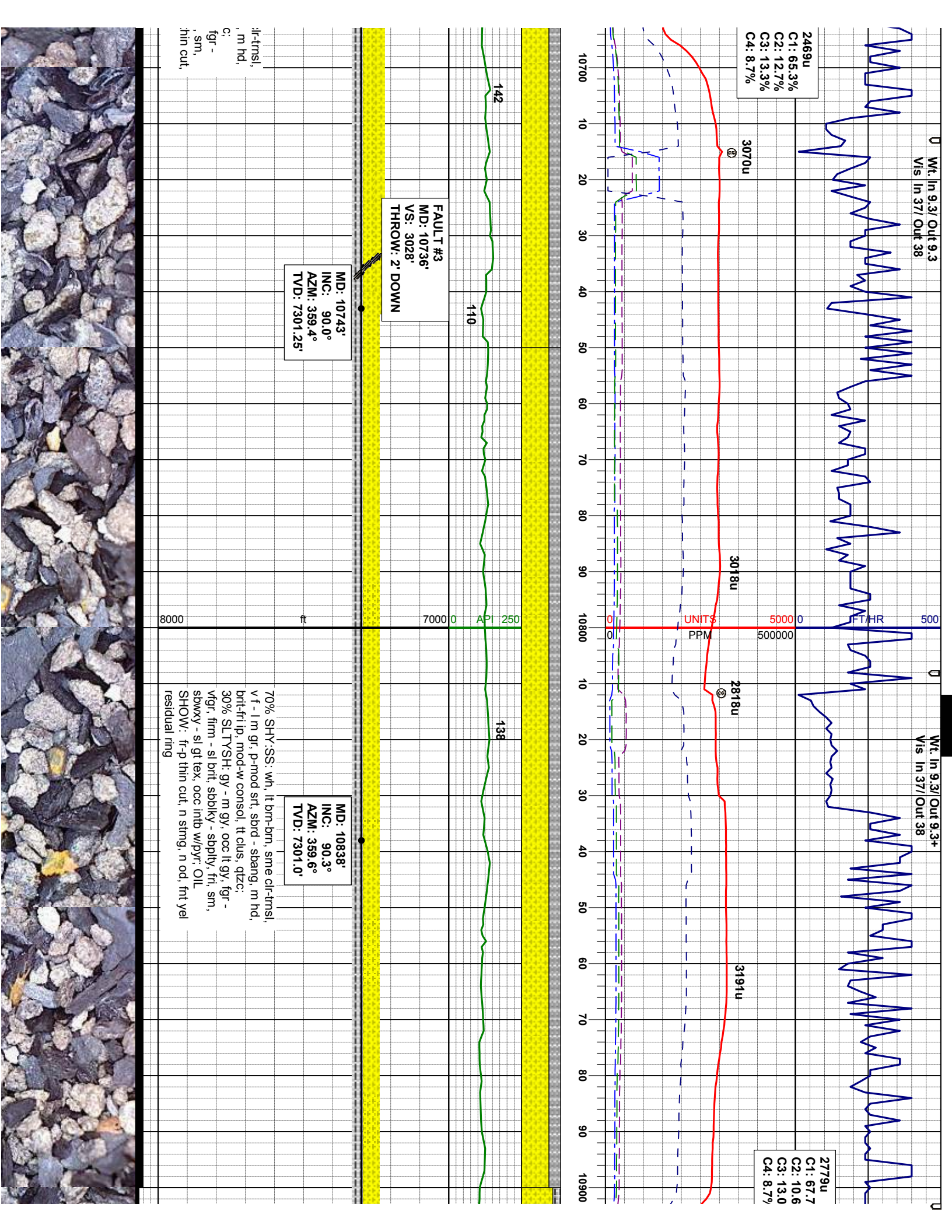
85% SHY:SS: wh, lt brn-brn, occ clr-trns, v
f - l m gr, p-mod srt, sbnd - sbang, m hd, brit
-fri ip, mod-w consol, tt clus, qtzcc:
15% SLTYSH: gy - m gy, occ lt gy, fgr -
vgr, firm - sl brit, sbply - sbply, fri, sm,
sbwxy - sl gt tex: OIL SHOW: slow, diffuse,
blwh mky cut, n flor, sl od, sl residual ring







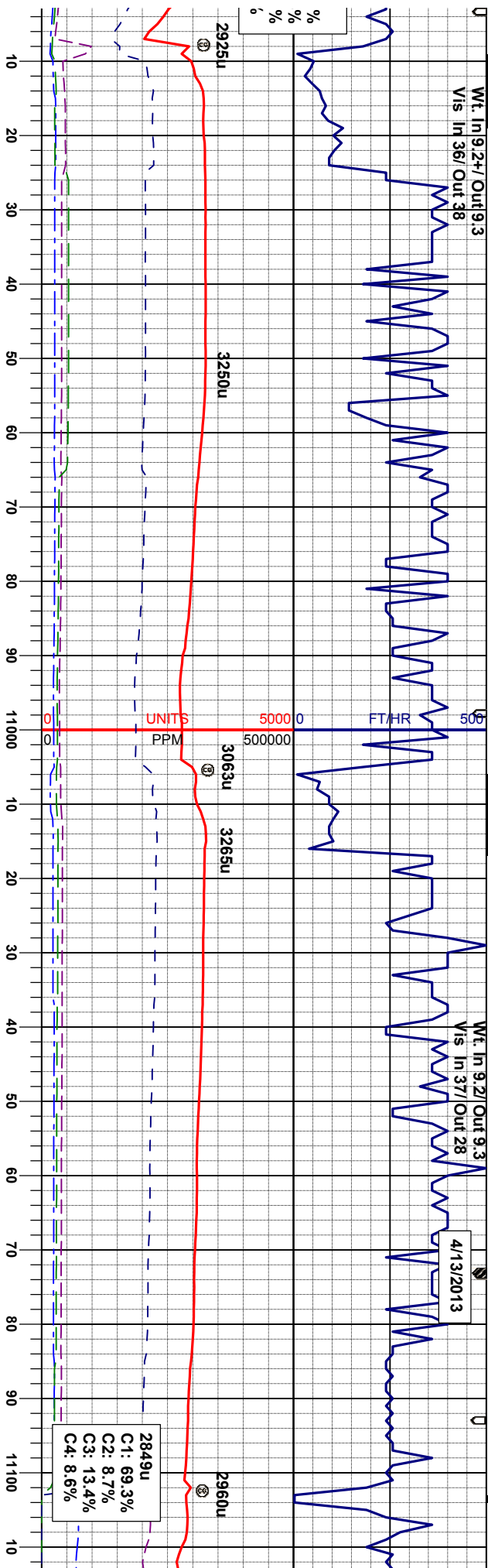




Wt. In 9.24/ Out 9.3
Vis In 36/ Out 38

Wt. In 9.2/ Out 9.3
Vis In 37/ Out 28

4/13/2013



FAULTED INTO FORT HAYS

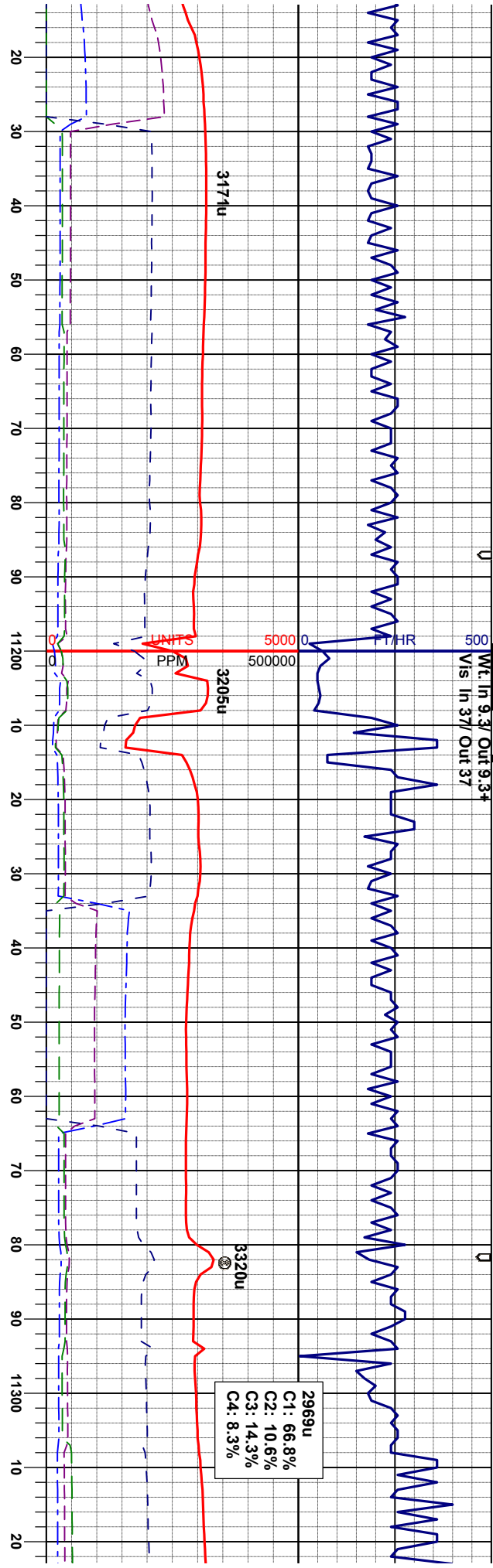
FAULT #4
MD: 11029'
VS: 3321'
THROW: 2' UP

MD: 10934'
INC: 90.9°
AZM: 358.9°
TVD: 7300.0'

MD: 11028'
INC: 91.6°
AZM: 359.2°
TVD: 7297.95'

80% SHY: SS: wh, lt brn-brn, sme cl-trns, v f - l m gr, p-mod srt, sbpd - sbang, m hd, brt-frn ip, mod-w consol, tt clus, qtz; 20% SLTYSH: gy - m gy, occ lt gy, fgr - vfr, firm - sl brt, sbdky - sbply, frn, sm, sbwxy - sl gt tex, occ intb w/pyr; OIL SHOW: du thin ring, n stmg, n od, mod yel residual cut





Wt. In 9.3/ Out 9.3+
Vis In 37/ Out 37

2969u
C1: 66.8%
C2: 10.6%
C3: 14.3%
C4: 8.3%



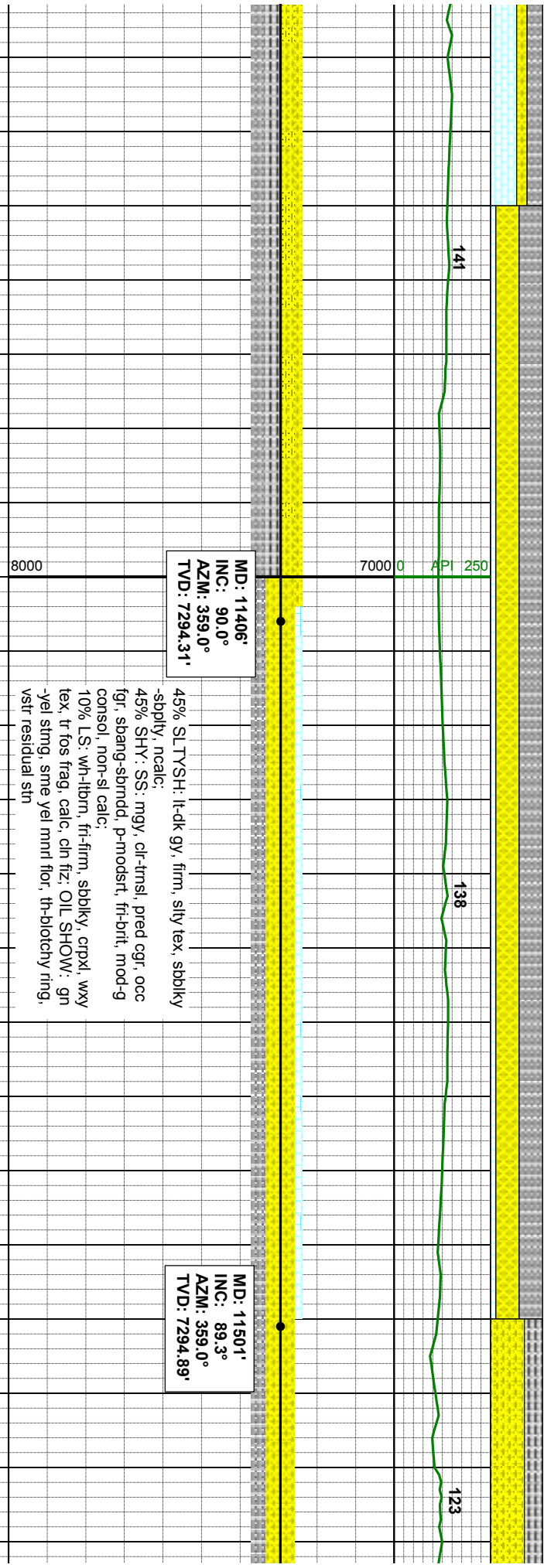
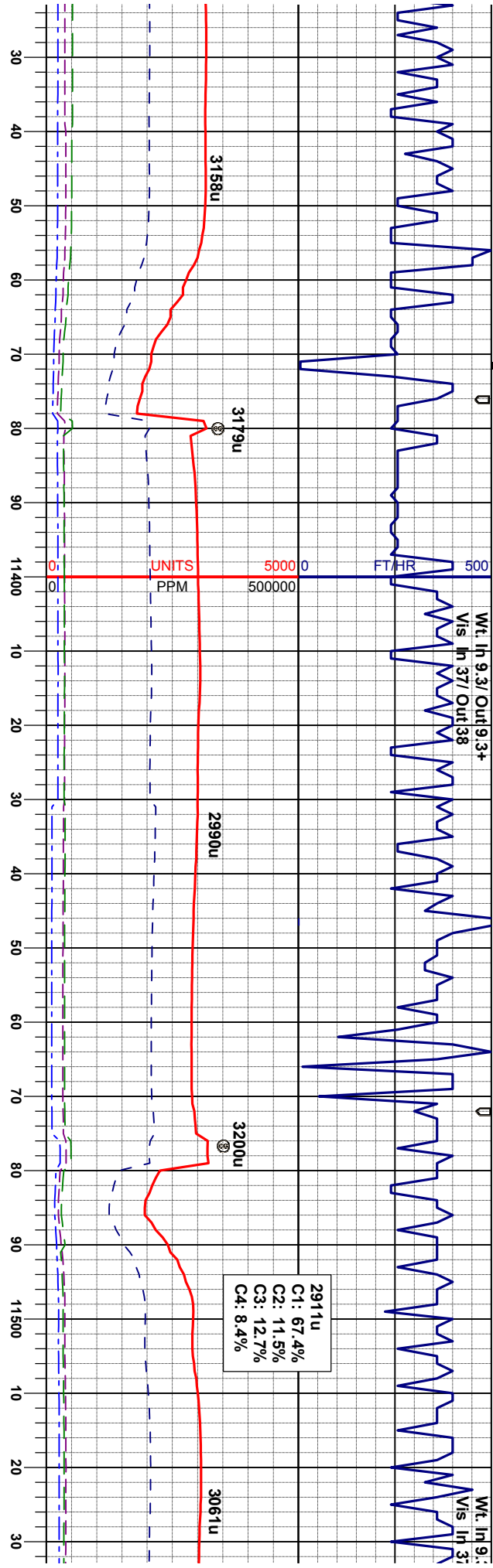
MD: 11123'
INC: 89.9°
AZM: 358.5°
TVD: 7296.7'

MD: 11217'
INC: 90.9°
AZM: 359.2°
TVD: 7296.04'

FAULT #5
MD: 11286'
VS: 3578'
THROW: 36' UP

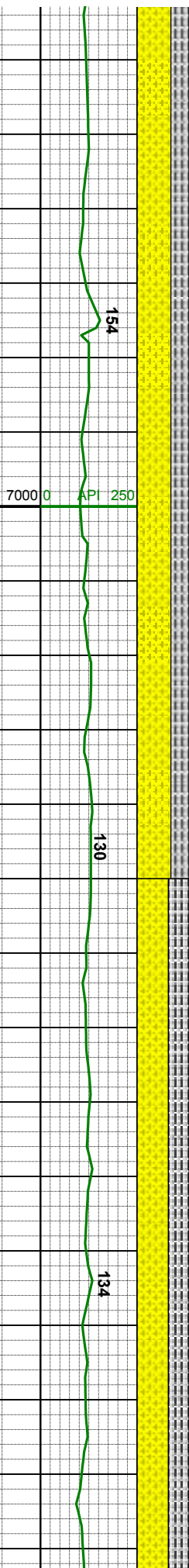
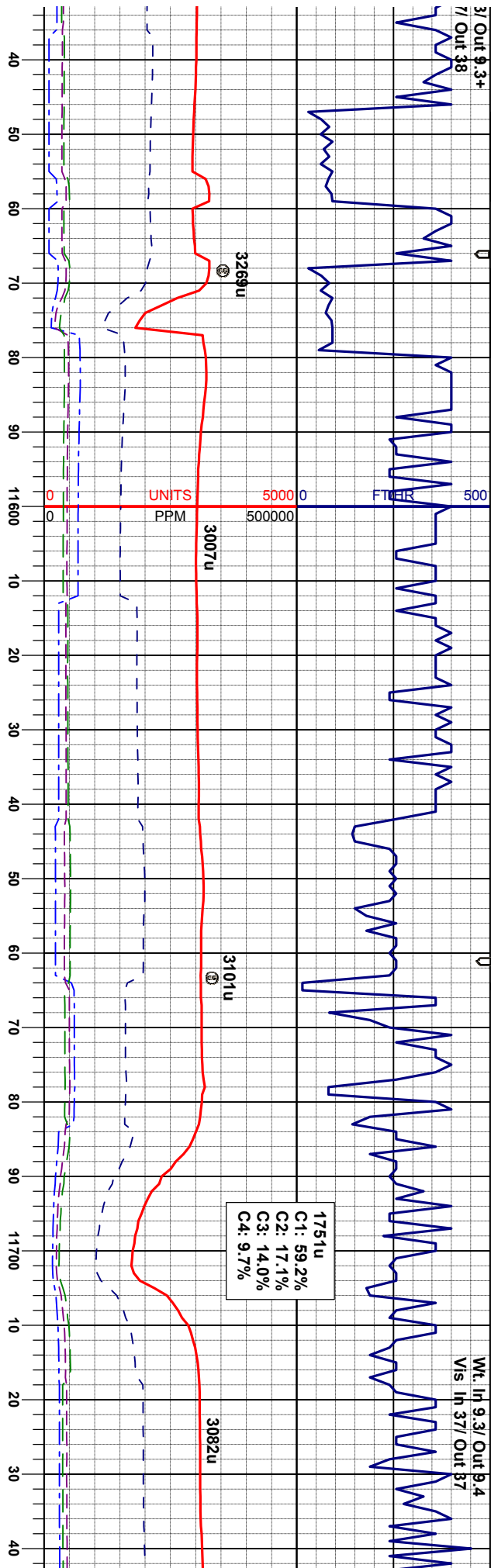
MD: 11312'
INC: 90.6°
AZM: 358.5°
TVD: 7294.80'





3/ Out 9.3+
7/ Out 38

Wt. In 9.3/ Out 9.4
Vis In 37/ Out 37



MD: 11596'
INC: 90.1°
AZM: 358.7°
TVD: 7295.39'

MD: 11691'
INC: 90.2°
AZM: 359.3°
TVD: 7295.14'

65% SHY: SS: wh, lt brn-bm, sme clt-trnsl,
v f - l m gr, p-mod srt, sbnd - sbang, m hd,
brt-frt ip, mod-w consol, lt clus, qtzc;
35% SLTYSH: gy - m gy, occ lt gy, fgr -
vigr, firm - sl brt, sbdky - sbply, fti, sm,
sbwxy - sl gt tex; OIL SHOW: gr-yel stmg,
sme yel mnrt flr, th-blotchy ring, vstr
residual stn

60% SHY: SS: wh, lt brn-bm,
v f - l m gr, p-mod srt, sbnd -
brt-frt ip, mod-w consol, lt cl
40% SLTYSH: gy - m gy, occ
vigr, firm - sl brt, sbdky - sbp
sbwxy - sl gt tex; OIL SHOW:
sme yel mnrt flr, th-blotchy r
residual stn



