



Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name: Razor 27K-3405A
Location: NESW 27-T10N-R58W Weld County, Colorado
License Number: 05-123-37748
Spud Date: 8/8/2013
Surface Coordinates: Lat.: 40.808608 Long.: -103.853331
Region: Redtail
Drilling Completed:
Bottom Hole Coordinates:
Ground Elevation (ft): 4750 K.B. Elevation (ft): 4767
Logged Interval (ft): 89 To: 5150 Total Depth (ft): 5150
Formation: Pierre, Hygiene, Sharon Springs, Niobrara, Ft Hays, Codell, Carlile, Bridge Creek, Ha
Type of Drilling Fluid: Water Based Mud
Printed by STRIP.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Whiting Oil & Gas Corporation
Address: 1700 Broadway Suite 2300
Denver, CO 80290
303-837-1661

GEOLOGIST

Name: Todd Nakata, Mark Denler and Kyle Newman
Company: Acme Geologic Consulting
Address: 108 Berry Street
Little Rock, AR 72205
www.acmegeo.com


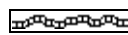
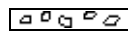



Drilling Company

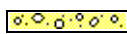





CADE Drilling rig #21

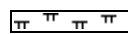
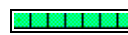
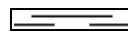
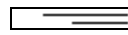
Comments





Lithologies and tops at drilled depths, not corrected to elogs. Where the well bore gas is 100% methane, the C1 line is moved to 85% for graphical purposes only.

ROCK TYPES

 Anhy
 Bent
 Brec
 Cht
 Clyst
 Coal




















 Congl
 Dol
 Gyp
 Igne
 Lmst
 Meta











 Mrlst
 Salt
 Shale
 Shcol
 Shgy
 Slstst

 Ss
 Till
 Cyan mrlst
 Cyan chk









ACCESSORIES

MINERAL

 Anhy
 Arggrn
 Arg
 Bent
 Bit
 Brecfrag
 Calc
 Carb
 Chtdk
 Chtlt
 Dol
 Feldspar
 Ferrpel
 Ferr
 Glau
 Gyp
 Hvymin
 Kaol
 Marl

 Minxl
 Nodule
 Phos
 Pyr
 Salt
 Sandy
 Silt
 Sil
 Sulphur
 Tuff

FOSSIL

 Algae
 Amph
 Belm
 Bioclst
 Brach
 Bryozoa
 Cephal
 Coral












 Crin
 Echin
 Fish
 Foram
 Fossil
 Gastro
 Oolite
 Ostra
 Pelec
 Pellet
 Pisolite
 Plant
 Strom

STRINGER

 Anhy
 Arg
 Bent
 Coal
 Dol









 Gyp
 Ls
 Mrst
 Slststrg
 Ssstrg

TEXTURE

 Boundst
 Chalky
 Cryxln
 Earthy
 Finexln
 Grainst
 Lithogr
 Microxln
 Mudst
 Packst
 Wackest

OTHER SYMBOLS





POROSITY TYPE

 Earthy
 Fenest
 Fracture
 Inter
 Moldic
 Organic
 Pinpoint
 Vuggy


SORTING

 Well
 Moderate
 Poor

ROUNDING




 Rounded
 Subrnd
 Subang
 Angular

OIL SHOWS

 Good
 Fair
 Poor
 Dead

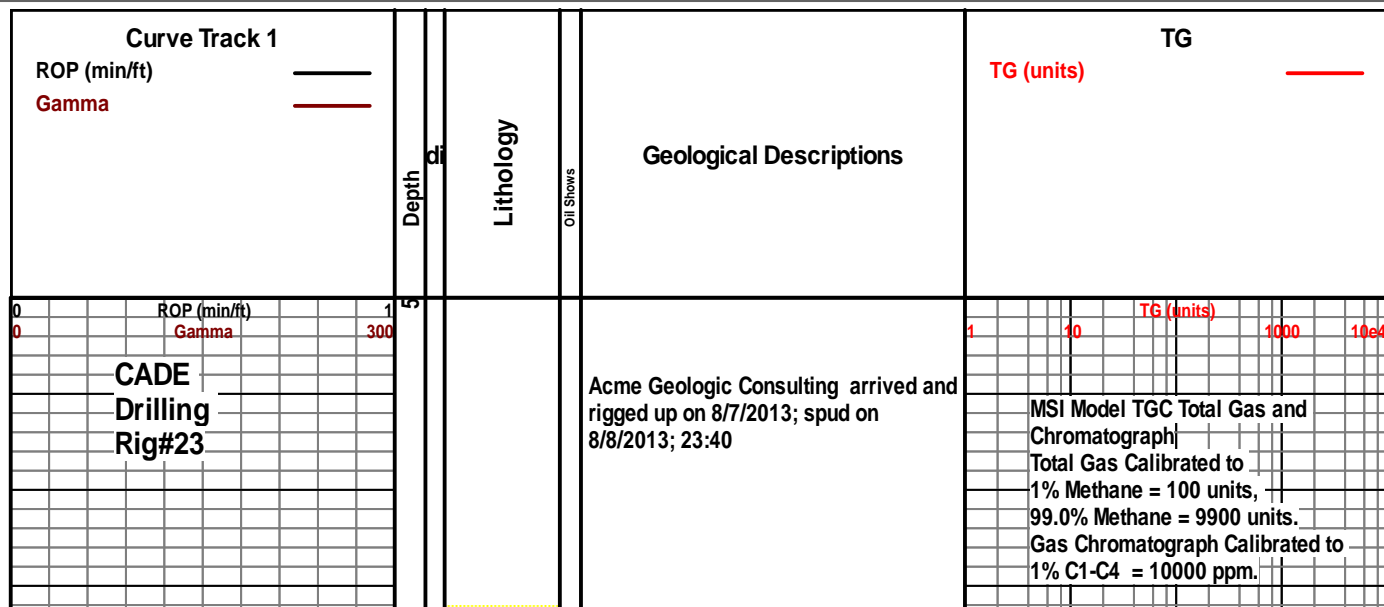
INTERVALS

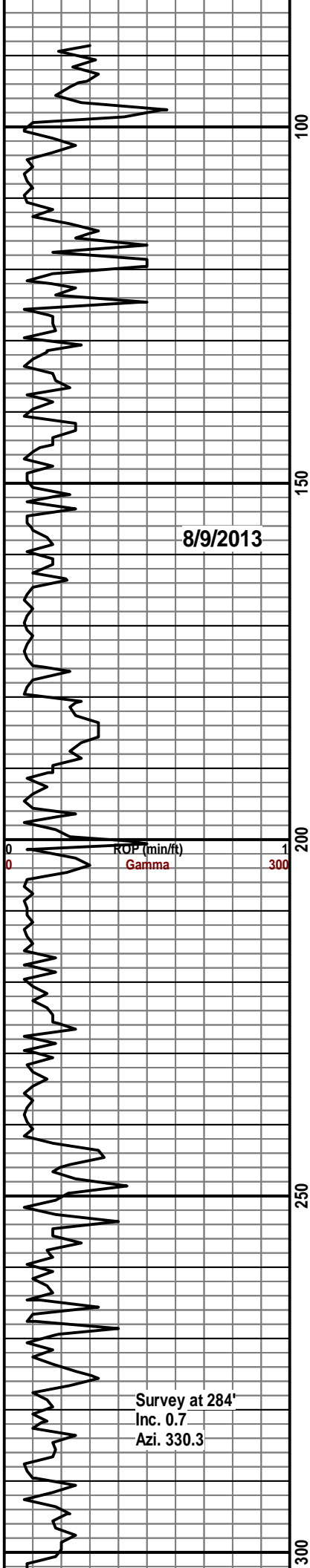
 Core
 Dst
 Srfcsg

 Cv-v
 Cv-c
 Conductor

EVENTS

 Rft
 Sidewall
 Srfcsg

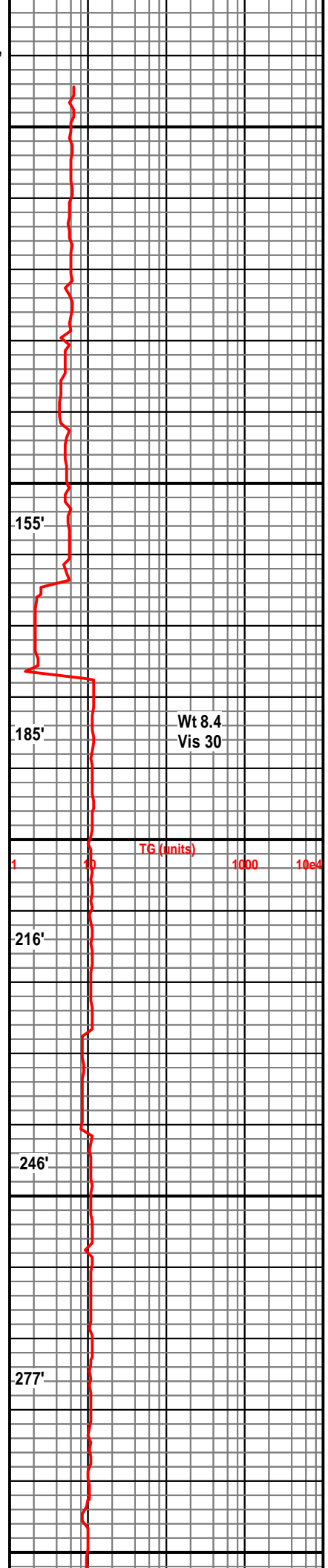


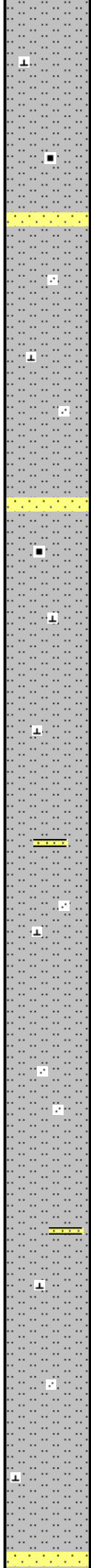
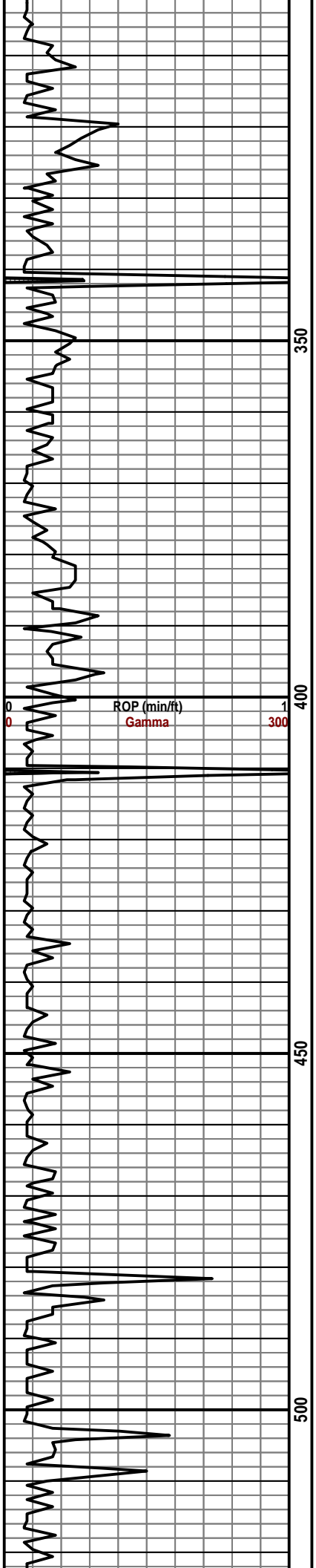


89-100 Ss trnsI wht-lt blu hue ip, vf gr, cons-uncons, sb rd-rd, w srt, mod calc, occ Sltst dk gy, sb blkly, frm, sdy ip, mod calc, nsfoc, 85% Ss, 15% Sltst

100-200 Sltst dk gy, sb blkly-blky, frm-mod hd ip, sdy ip, abnt-sme Ss off wht trnsI, vf gr, sb rd-rd, cons-uncons ip, mod w cmt, w srt, mod calc, nsoc, rr dull org min flor, 60% Sltst, 40% Ss

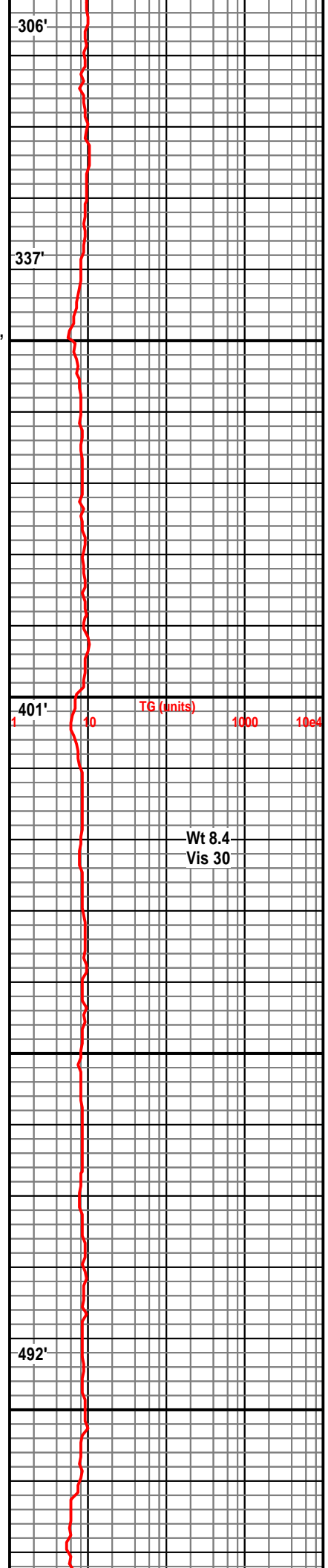
200-300 Sltst dk gy, sb blkly-blky, frm, sdy ip, mod-v calc, tr Ss trnsI wht, vf gr, sb rd-rd, cons, w srt, mod cmt, rr org min flor, nsoc, 95% Sltst, 5% Ss

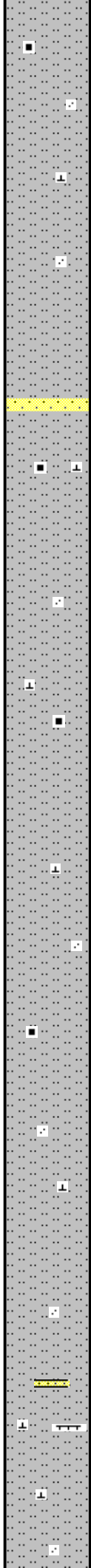
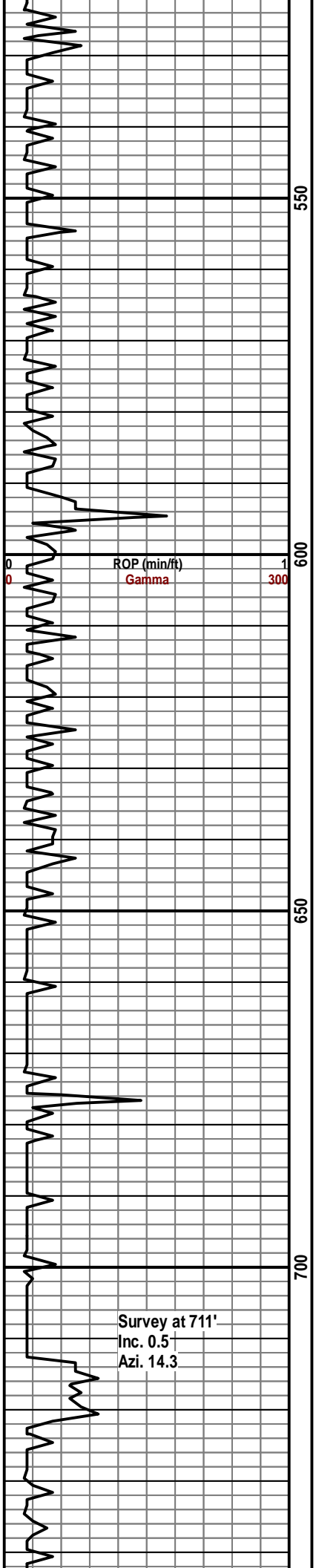




300-400 Sltst dk gy-gy brn, sb
blky-blky, mod frm, sdy ip, sl-mod calc,
occ carb mat, tr Ss a/a, nsfoc, 95%
Sltst, 5% Ss

400-500 Sltst dk-med gy, blky-sb blky,
occ sb plty, mod frm-frm ip, sdy ip,
mod calc, rr Ss a/a, rr dull orng min
flor, nsoc, Sltst 100%

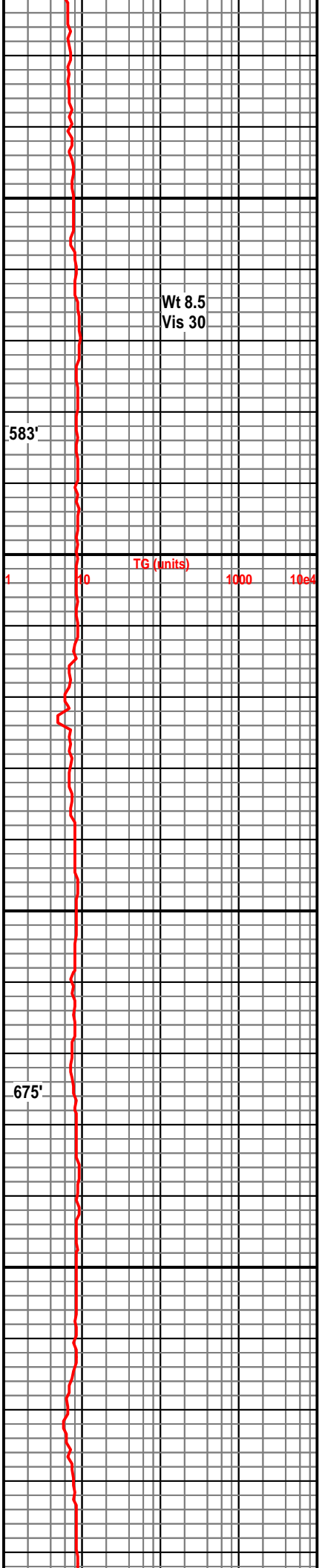


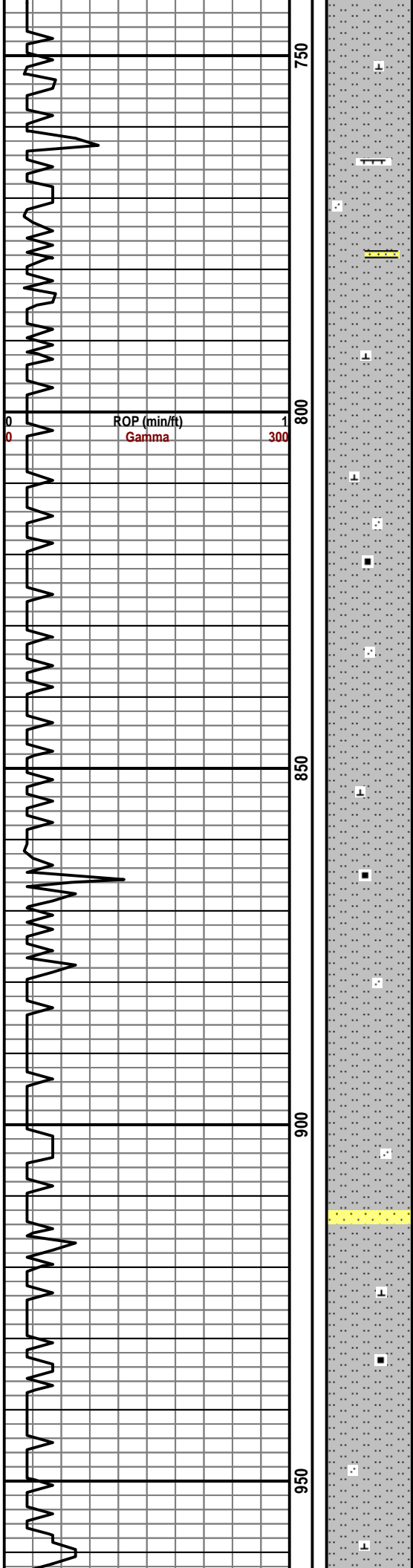


500-600 Sltst med gy, tr dk gy, sb
blky-blky, mod frm-frm, sdy tex, mod
calc, rr carb mat, tr Ss trnsi wht, vf-f gr,
sb rd-rd, cons, w cmt, w srt, mod calc,
tr dull orng min flor, nsoc, 95% Sltst,
5% Ss

600-700 Sltst med gy, occ dk gy, sb
plty-sb blky-blky, mod calc, sdy ip,
carby ip, tr cal xls, tr dull yel min flor,
nsoc, 100% Sltst

700-800 Sltst predy med gy, tr dk gy,
sb blky-blky, sdy tex ip, v calc, mrlly ip,

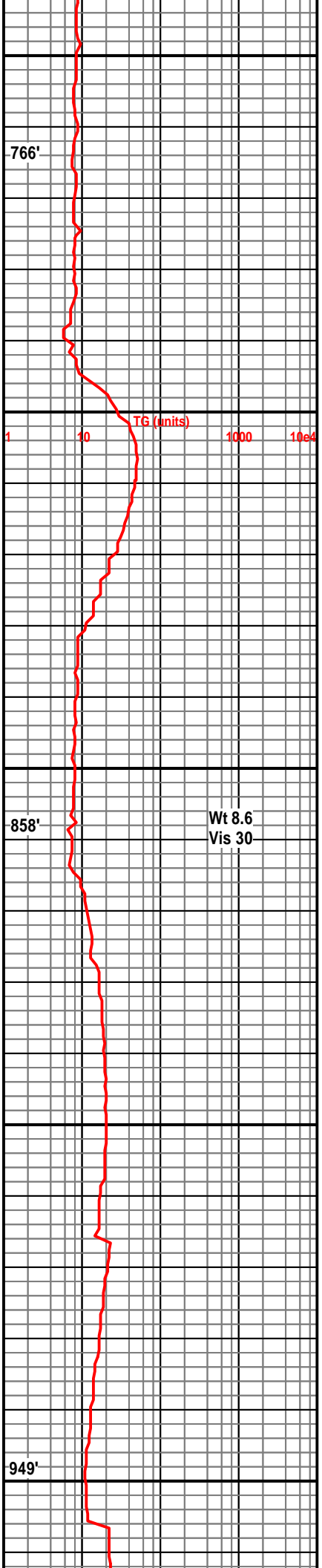


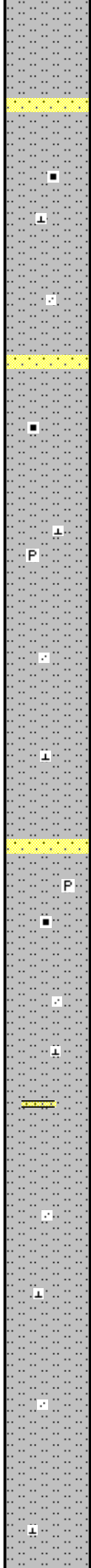
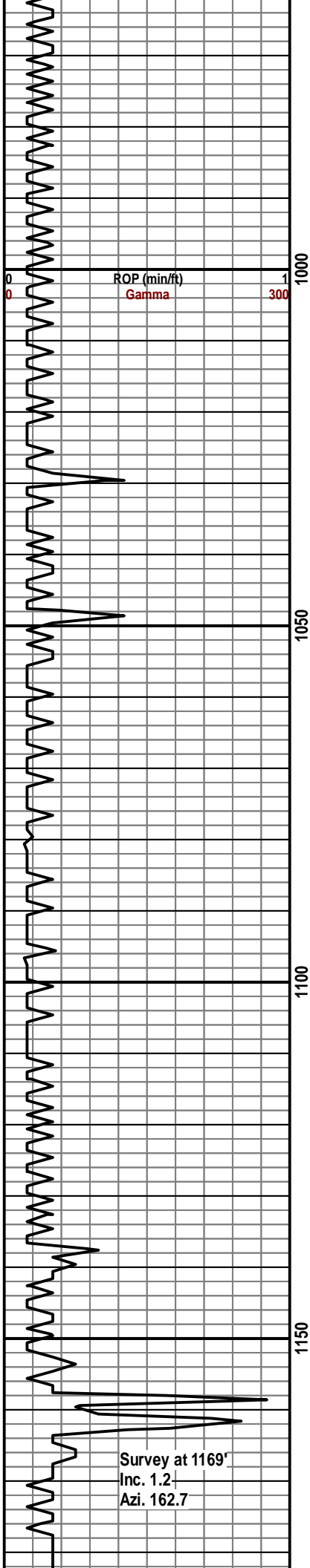


rr Ss trnsI wht vf-f gr, sb rd,
cons-uncons, mod cmt, tr cal c gr xls,
rr dull orng min flor, nsoc, 95% Sltst,
5% Ss

800-900 Sltst med gy, sb blk-y-sb plty,
sdy, carb ip, mod calc, mod frm-sft,
nsfoc, 100% Sltst

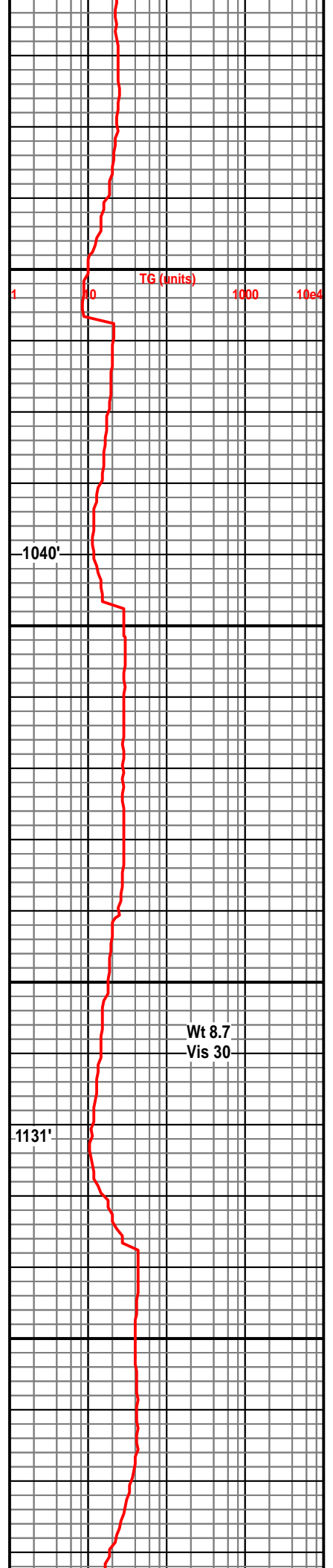
900-1000 Sltst med gy, dk gy ip, sb
plty-sb blk-y, tr blk-y, frm-mod frm, sdy,
mod calc, carby ip, tr Ss trnsI off wht,
vf gr, predy sb ang, cons, mod w cmt,
sl-mod calc, rr dull orng min flor, nsoc,
90% Sltst, 10% Ss

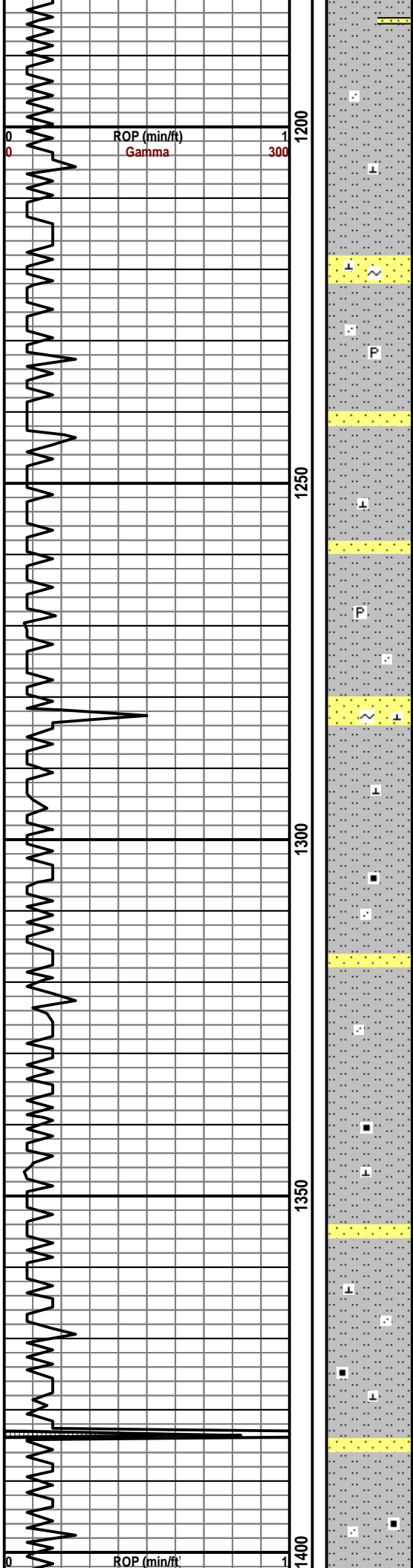




1000-1100 Sltst med gy, tr dk gy, sb
blky-sb plty, sdy, sl-mod calc, carb
mat, tr Ss trnsi wht-off wht trnsi, sb
ang, vf gr, uncon-cons, mod wk cmt,
sl calc, rr cal xls, rr pyr, rr dull yel min
flor, nsoc, 90% Sltst, 10% Ss

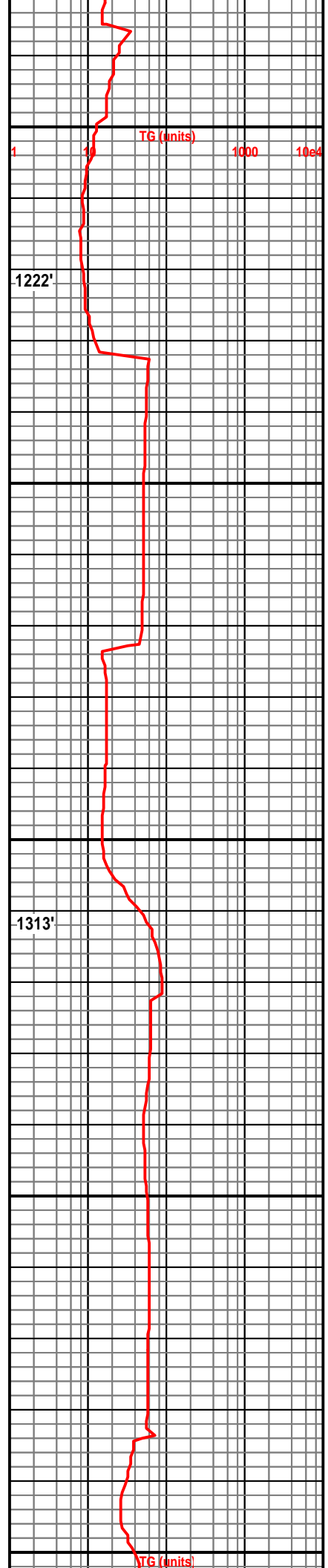
1100-1200 Sltst med gy, tr dk gy, sb
blky, mod frm-mod frm, sl-n calc, sdy
ip, rr Ss aa, nsfoc, 98% Sltst, 2% Ss

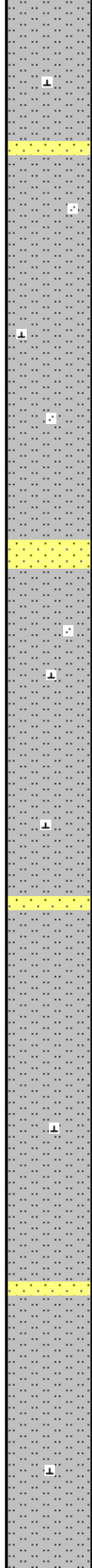
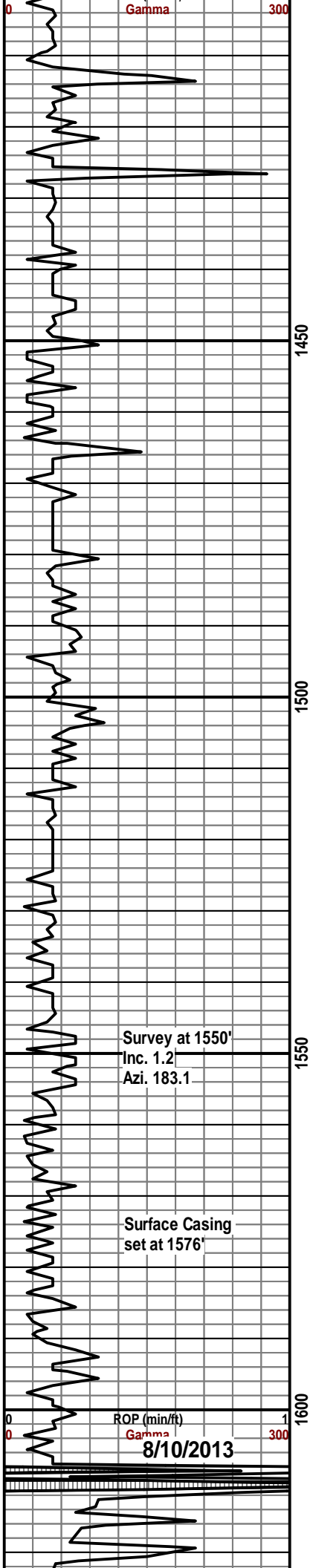




1200-1300 Siltst med gy, sb plty-sb blky, tr blky, sdy, frm, tr carb mat, mod calc, tr-occ Ss trnsi wht-off wht trnsi, vf-f gr, sb rd-sb ang, cons, w cmt, tr glau in mtx, mod-v calc, mod w srt, tr pyr, nsfoc, 80% Siltst, 20% Ss

1300-1400 Siltst med gy, sb blky-blky, occ sb plty, frm, mod-sl calc, v sdy, carb mat, tr Ss a/a, rr dull yel min flor, nsoc, Siltst 90%, Ss 10%

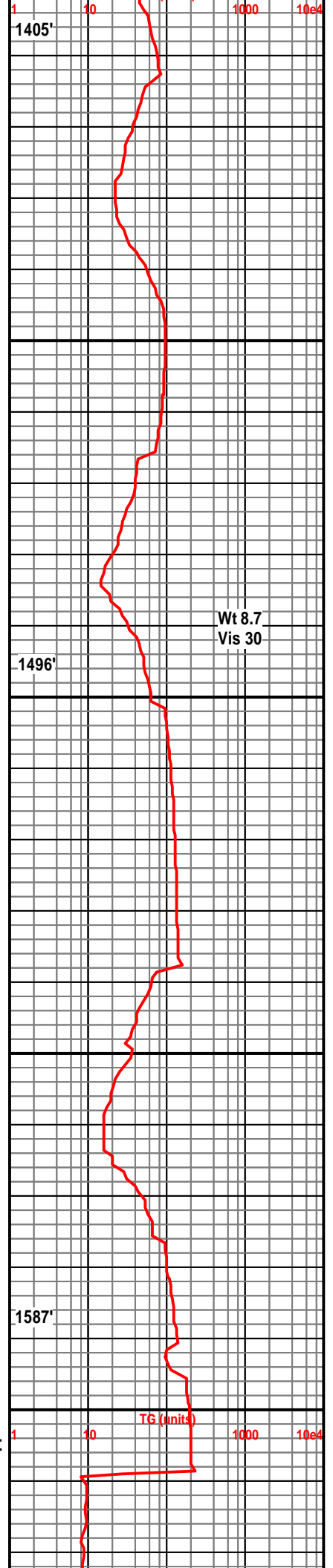


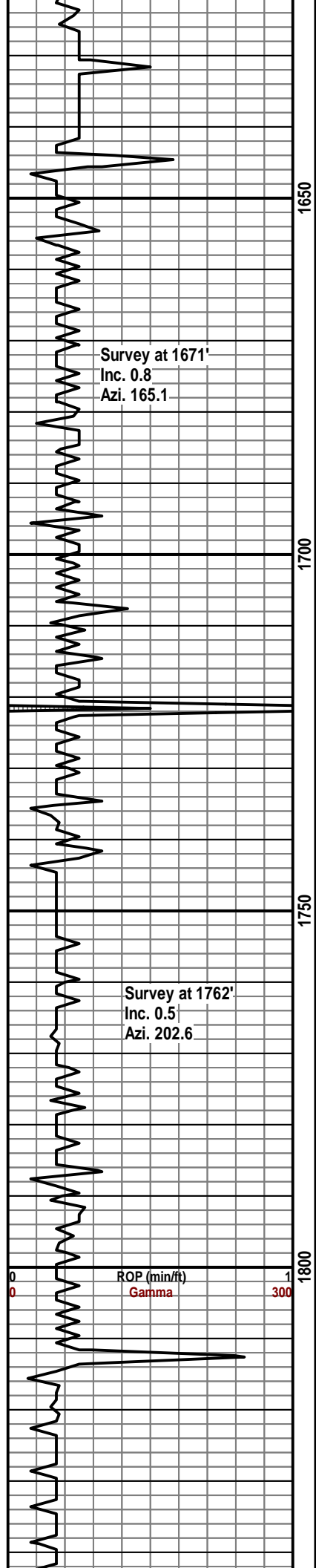


1400-1500 Sltst med gy, tr dk gy, sb plty-sb blkly, mod frm-frm ip, sdy, tr Ss trnsi off wht, vf gr, sb rd-sb ang, cons, mod cmt, v calc, rr dull yel min flor, nsoc, 90% Sltst, 10% Ss

1500-1600 Sltst med-dk gy, sb blkly, mod frm-sft, rr Ss trnsi-wht, vf gr, sb rd-sb ang, cons, mod cmt, v calc, nsfoc, 90% Sltst, 10% Ss

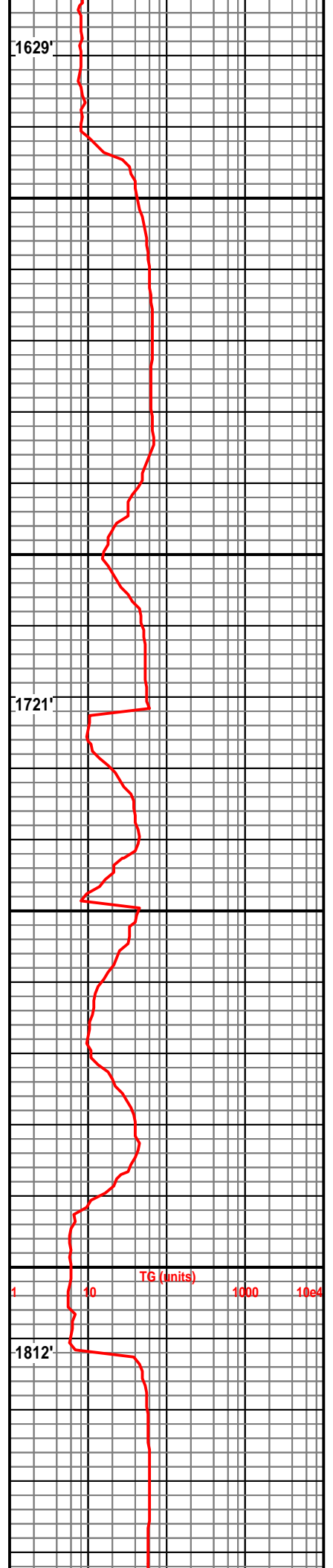
Surface casing 1605' reached at 06:00 on 8/9/2013; Resume drilling at 04:12 at 8/10/2013

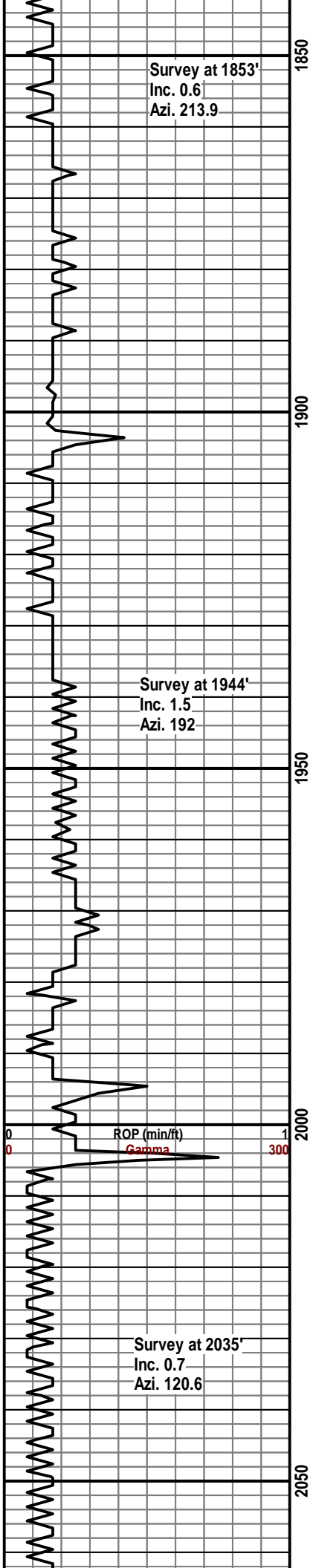




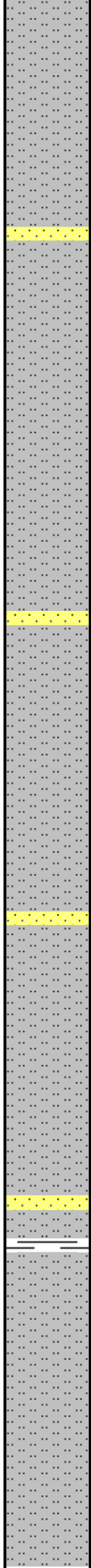
1600-1700 Sltst med gy, sb plty-sb
blky, occ blky, mod frm-sft ip, sl-mod
calc, rr Ss trnl wht vf gr, sb rd-sb ang,
cons, mod cmt, mod-v calc, nsfoc 95%
Sltst, 5% Ss

1700-1800 Sltst med gy-gy, sb plty-sb
blky, mod frm-sft, non calc, arg, rr Ss
trnl-wht, vf gr, sb rd-sb ang, mod cmt,
nsfoc 95% Sltst, 5% Ss





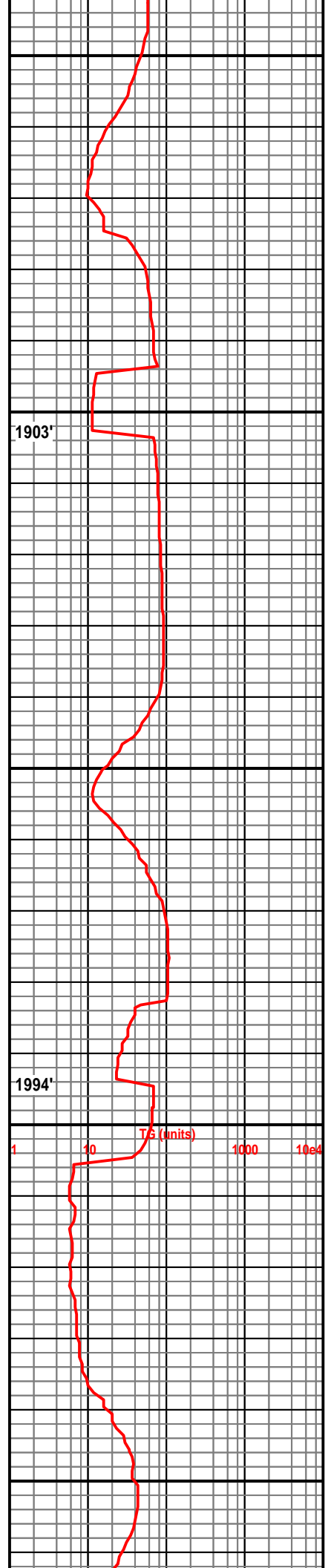
1850
1900
1950
2000
2050

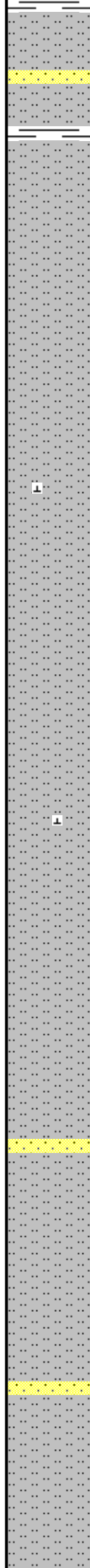
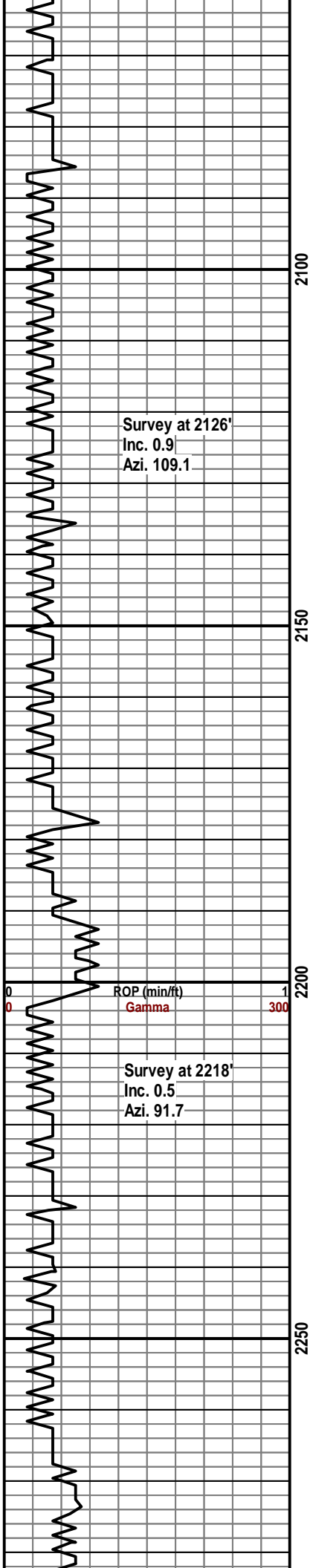


1800-1900 Slstst med gy-gy, sb plty-sb
blky, mod frm-sft, non calc, arg, rr Ss
trnl-wht, vf gr, sb rd-sb ang, mod cmt,
nsfoc 95% Slstst, 5% Ss

1900-2000 Slstst med gy-gy, sb plty-sb
blky, mod frm-sft, non calc, arg, rr Ss
trnl-wht, vf gr, sb rd-sb ang, mod cmt,
nsfoc 95% Slstst, 5% Ss

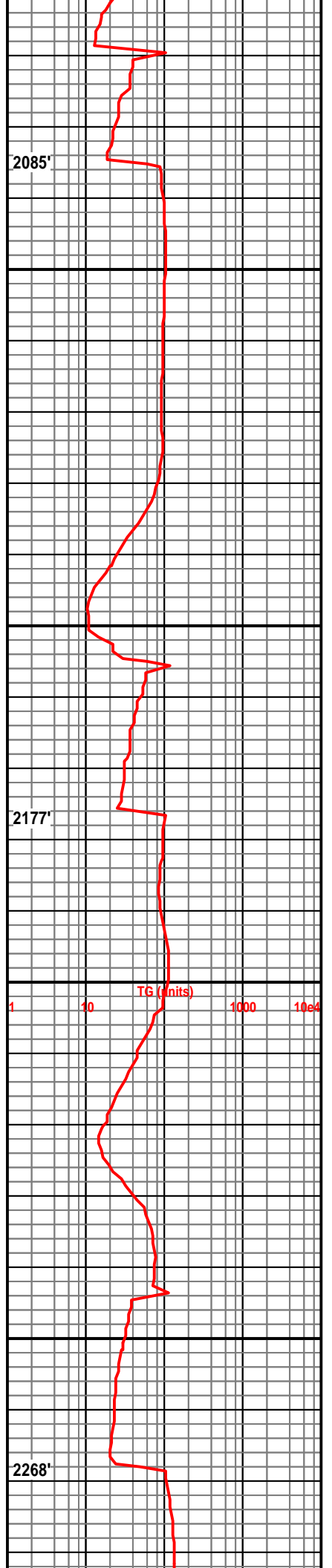
2000-2100 Slstst med gy-gy, sb plty-sb
blky, mod frm-sft, non calc, arg, rr Sh
dk gy, plty, grdg to slstst ip, rr Ss
trnl-wht, vf gr, sb rd-sb ang, mod cmt,
nsfoc 95% Slstst, 5% Ss

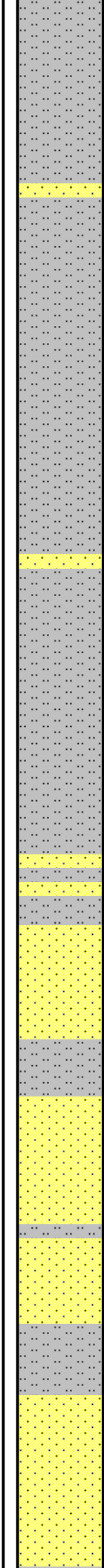
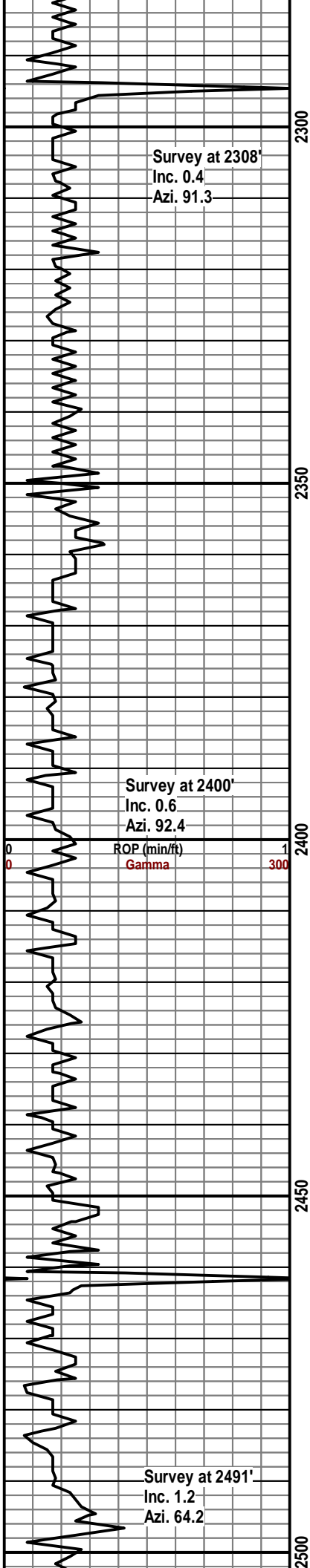




2000-2100 Slst med gy-gy, sb plty-sb
blky, mod frm-sft, non calc, arg, rr
calcite, nsfoc 100% Slst

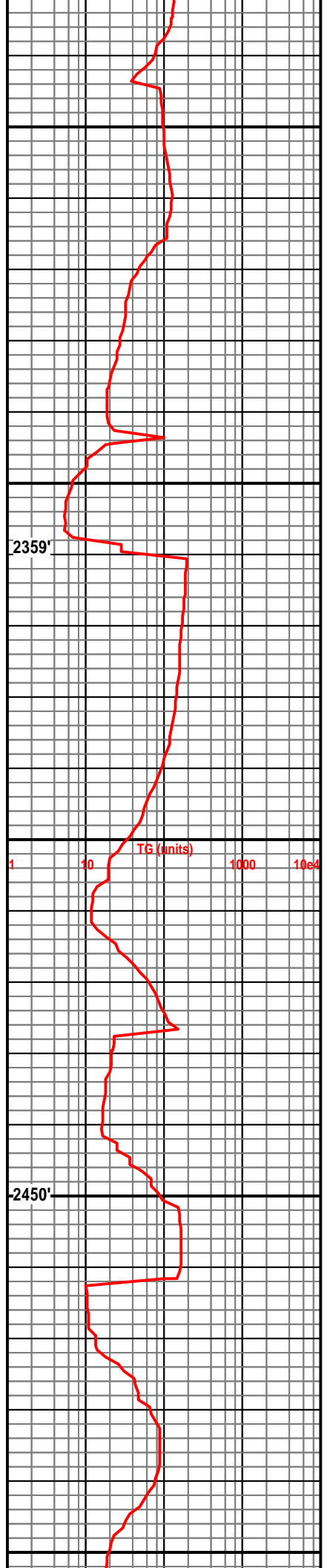
2200-2300 Slst med gy-gy, sb plty-sb
blky, mod frm-sft, non calc, arg, rr Sh
dk gy, plty, grdg to slst ip, rr Ss
trnl-wht, vf gr, sb rd-sb ang, mod cmt,
nsfoc 95% Slst, 5% Ss

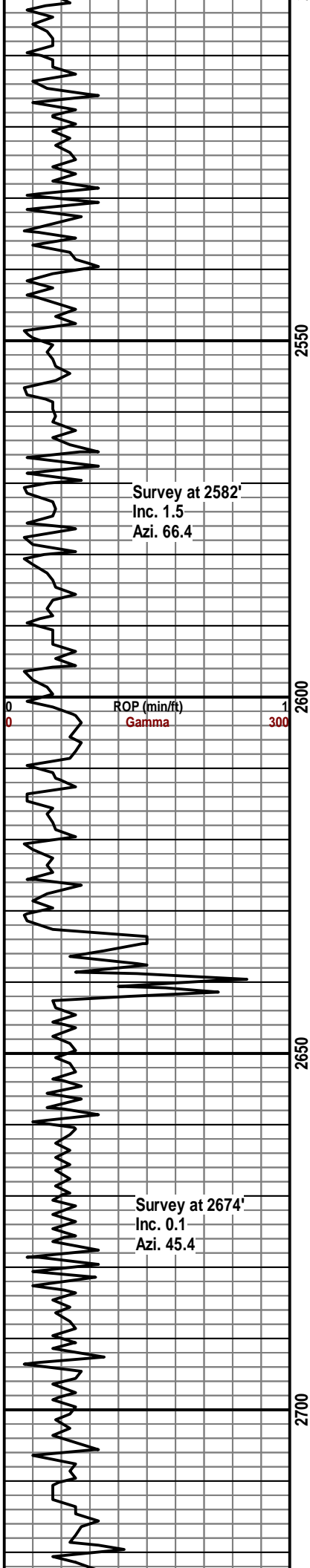




2300-2400 Siltst med gy-gy, sb plty-sb
blky, sft, non calc, arg, tr Ss trnl-wht, f
gr, sb rd-sb ang, mod cmt-uncon, nsfoc
70% Siltst, 30% Ss

2400-2500 Ss wht-gy, f gr, sb rd-sb
ang, mod con, calc cmt, nsfoc, tr Siltst,
dk-med gy, sb plty-sb blky, 70% Ss,
30% Siltst





Survey at 2582'
Inc. 1.5
Azi. 66.4

ROP (min/ft)
Gamma

2550

2600

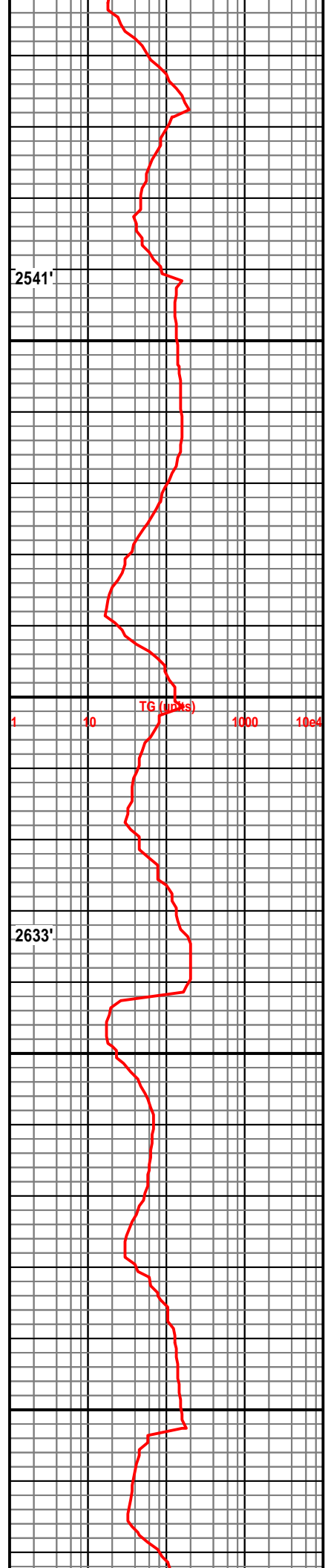
2650

2700

Survey at 2674'
Inc. 0.1
Azi. 45.4

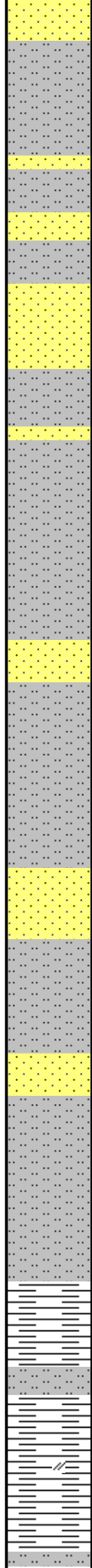
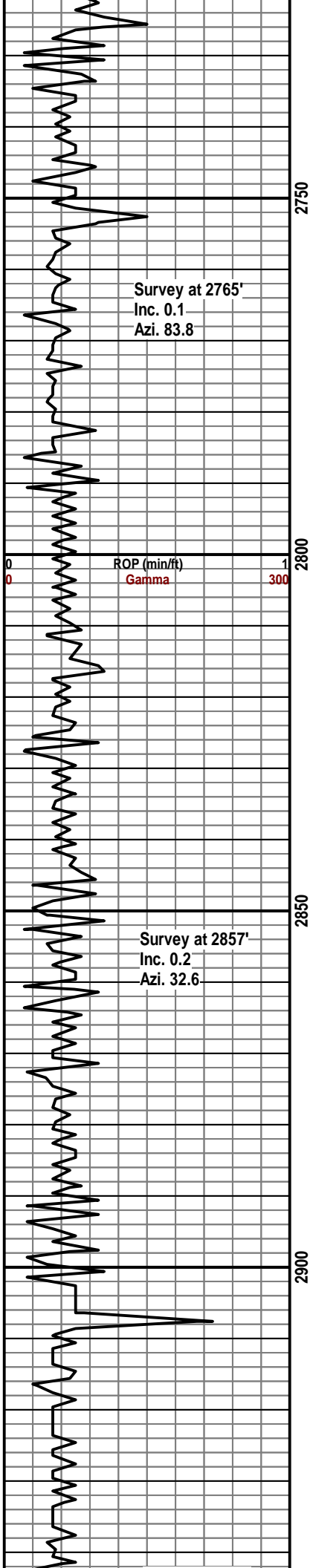
2500-2600 Ss wht-gy, f gr, sb rd-sb ang, mod con, calc cmt, nsfoc, tr Sltst, dk-med gy, sb plty-sb blk, 70% Ss, 30% Sltst

2600-2700 Sltst med gy-gy, sb plty-sb blk, sft, non calc, arg, abnt Ss trnl-wht, f gr, sb rd-sb ang, mod cmt-uncon, nsfoc 50% Sltst, 50% Ss



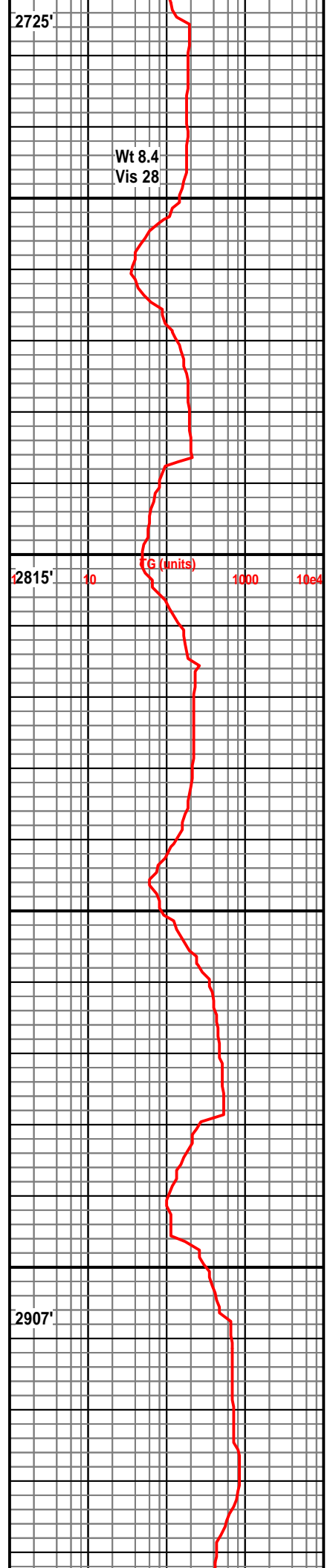
2541'

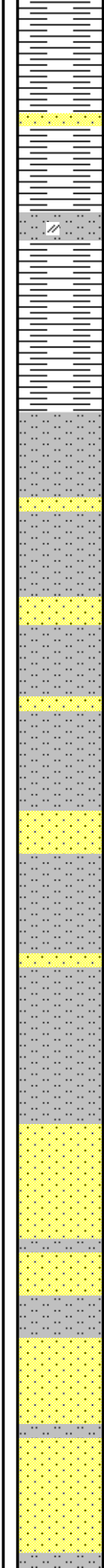
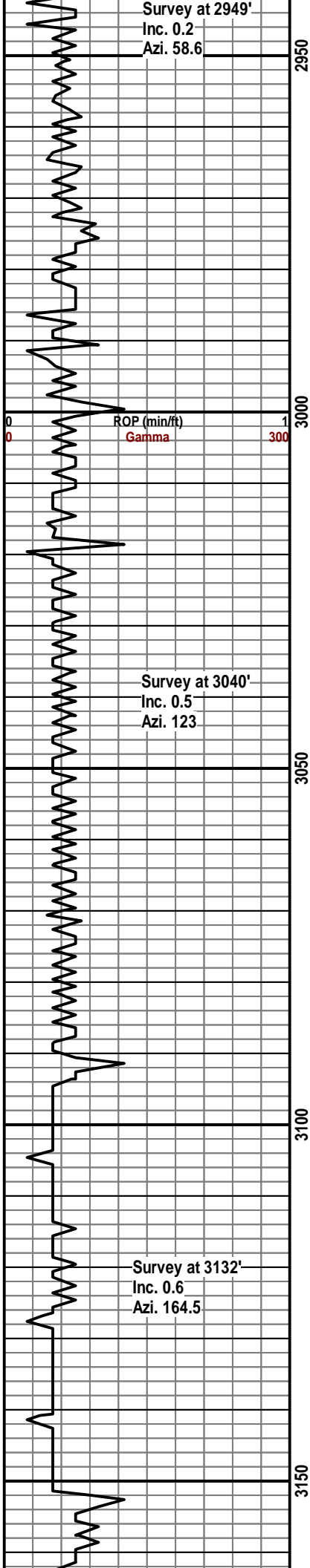
2633'



2600-2700 Siltst med gy-gy, sb plty-sb
blky, sft, non calc, arg, abnt Ss
trnl-wht, f gr, sb rd-sb ang, mod
cmt-uncon, nsfoc 50% Siltst, 50% Ss

2800-2900 Siltst med gy-gy, sb plty-sb
blky, sft, non calc, arg, tr Ss trnl-wht, f
gr, sb rd-sb ang, calc cmt, nsfoc 70%
Siltst, 30% Ss

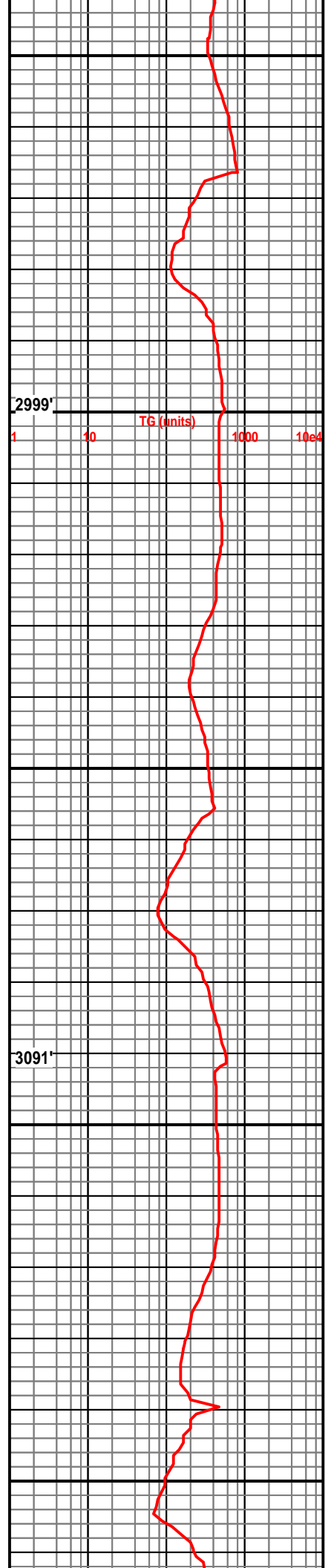


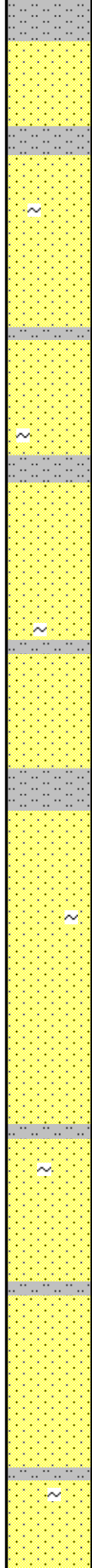
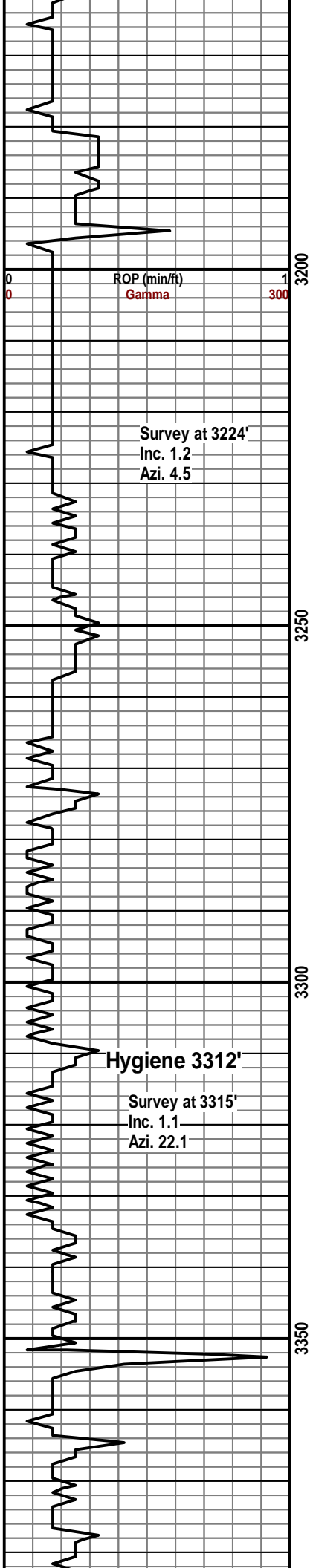


2900-3000 Sh, dk gy-gy, plty-sub blk, grdg to Sltst, rr Ss, rr anhy, 85% Sh, 10% Sltst, 5% Ss.

3000-3100 Sltst med gy-gy, sb plty-sb blk, sft, non calc, arg, tr Ss trnl-wht, f gr, sb rd-sb ang, calc cmt, nsfoc 70% Sltst, 30% Ss

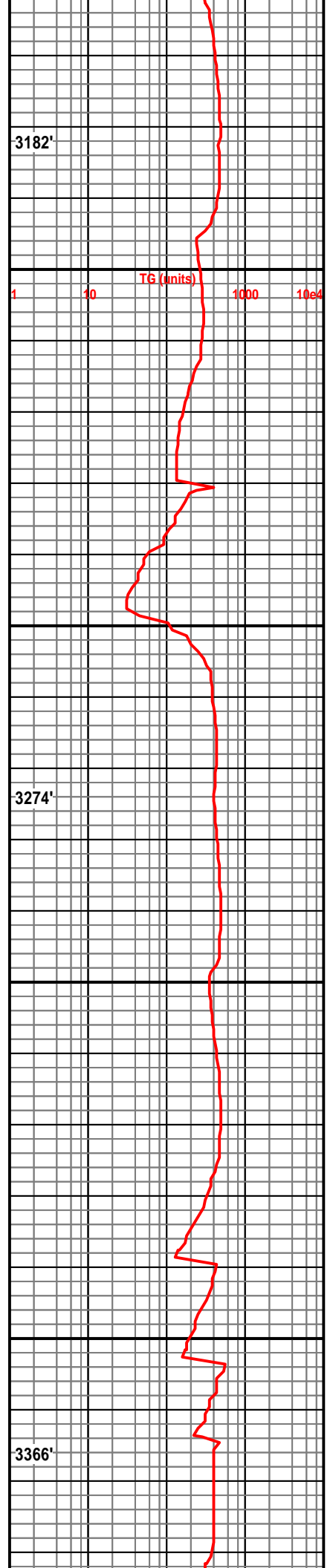
3100-3200 Ss wht-gy, f gr, sb rd-sb ang, mod con, calc cmt, tr Sltst, dk-med gy, sb plty-sb blk, nsfoc 70% Ss, 30% Sltst

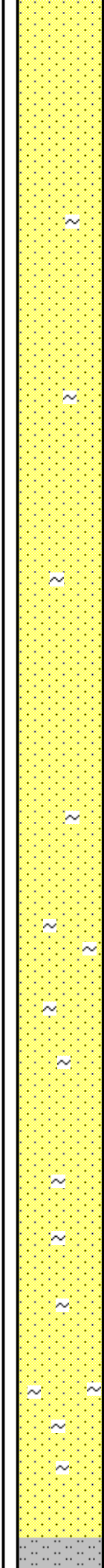
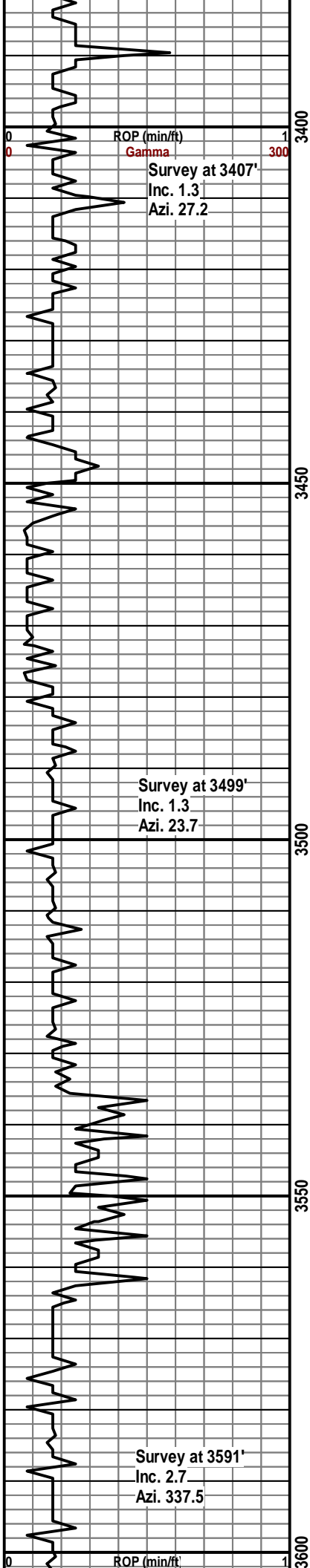




3200-3300 Ss wht-gy-grn, f gr, sb rd-sb ang, mod con, calc cmt, tr Siltst, dk-med gy, sb plty-sb blk, rr glau, nsfoc 80% Ss, 20% Siltst

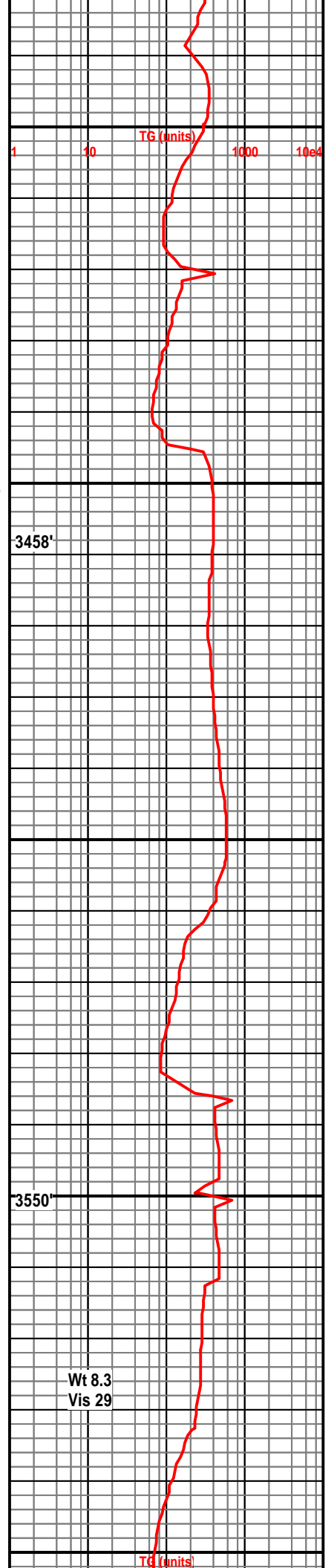
3300-3400 Ss wht-gy-grn, f gr, sb rd-sb ang, mod con, calc cmt, tr Siltst, dk-med gy, sb plty-sb blk, rr glau, nsfoc 90% Ss 10% Siltst

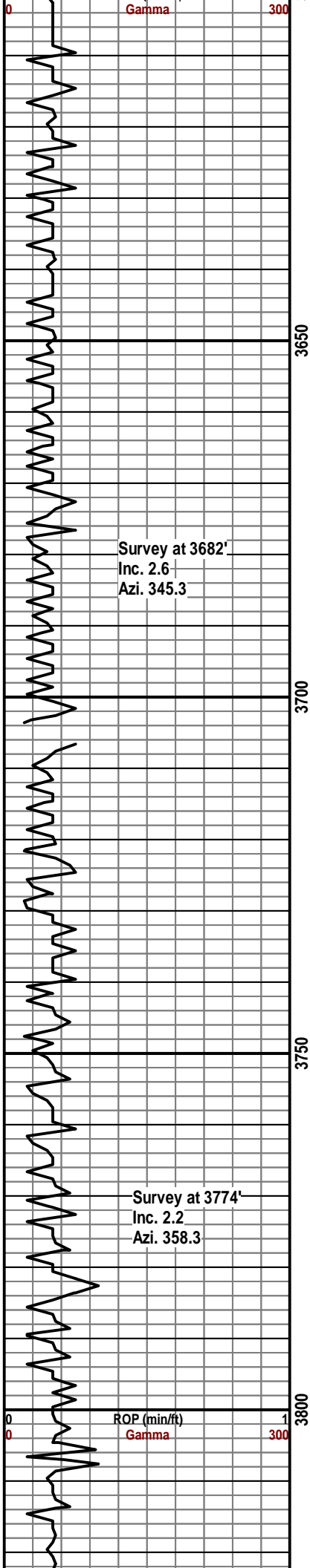




3400-3500 Ss wht-gy-grn, f gr, sb rd-sb
ang, uncon-fri, rr glau, nsfoc 100% Ss

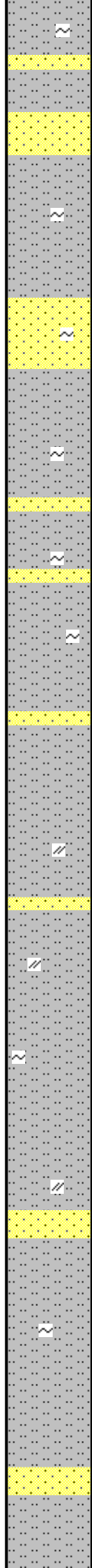
3500-3600 Ss wht-gy-grn, f gr, sb rd-sb
ang, well srt, uncon, occ glau, nsfoc
100% Ss





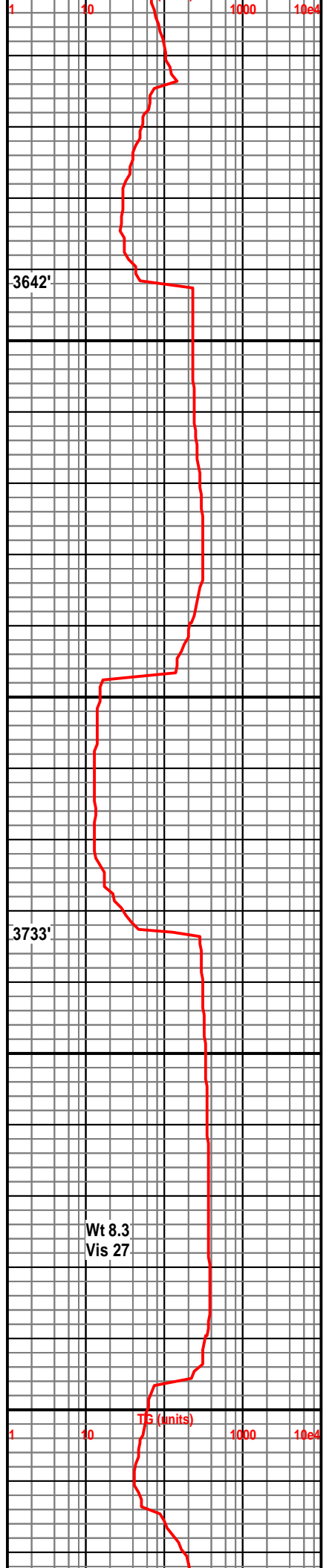
Survey at 3682'
Inc. 2.6
Azi. 345.3

Survey at 3774'
Inc. 2.2
Azi. 358.3



3600-3700 Siltst med gy-gy, sb plty-sb
blky, sft, non calc, arg, tr Ss trnl-wht, f
gr, sb rd-sb ang, calc cmt, glau, nsfoc
70% Siltst, 30% Ss

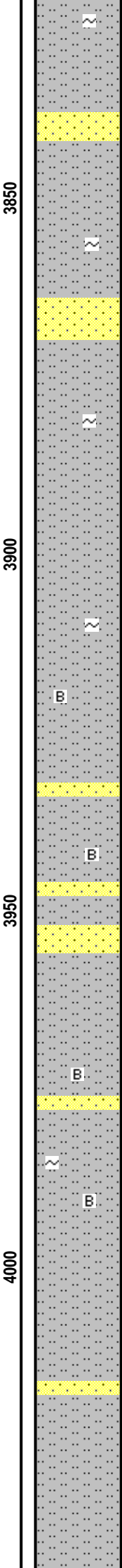
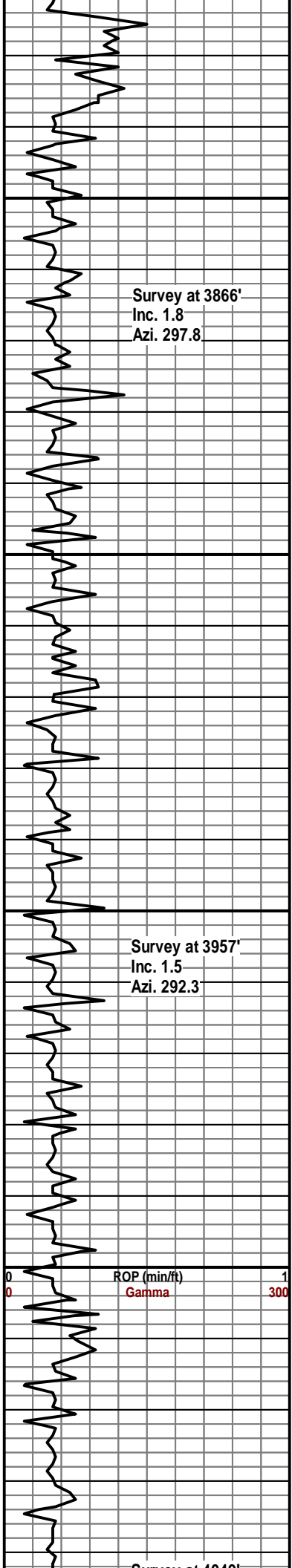
3700-3800 Siltst med gy-gy, sb plty-sb
blky, sft, non calc, arg, rr Ss trnl-wht, f
gr, sb rd-sb ang, calc cmt, rr glau,
nsfoc 80% Siltst, 20% Ss



3642'

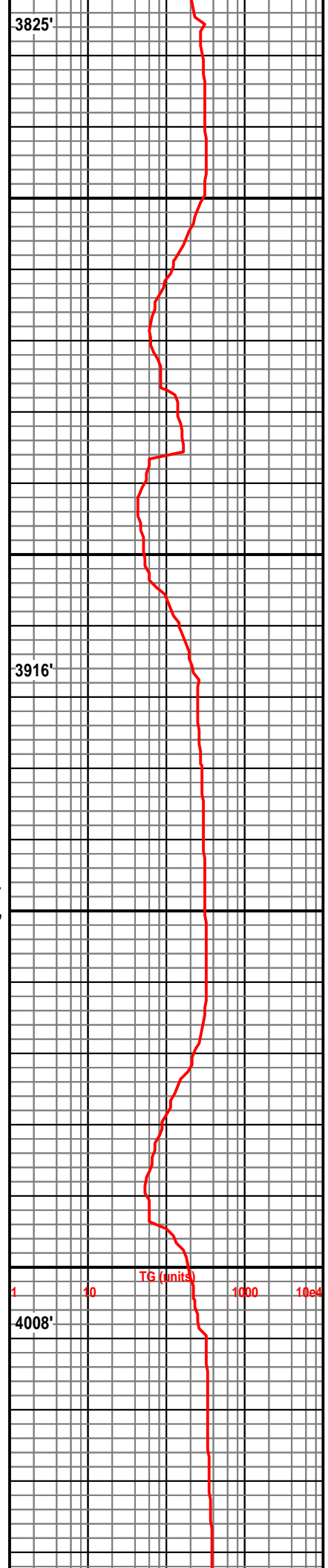
3733'

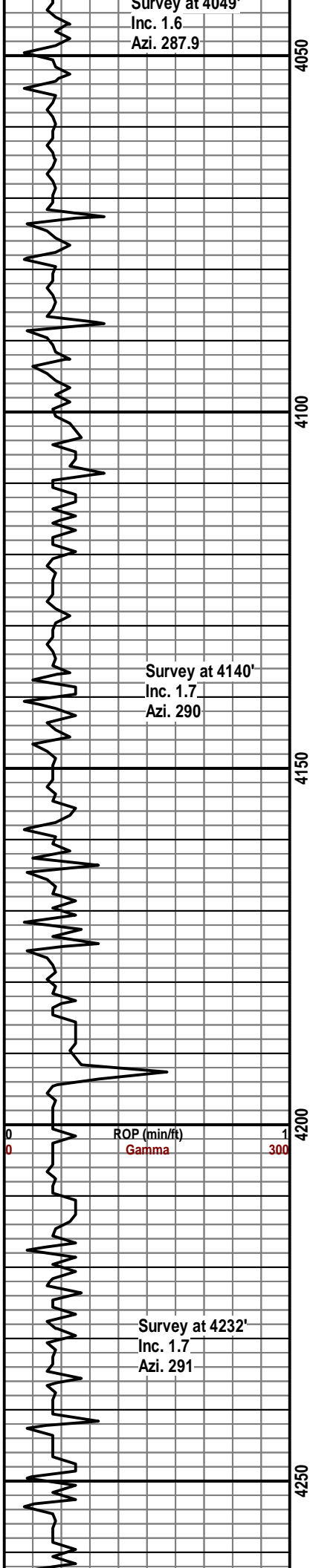
Wt 8.3
Vis 27



3800-3900 Siltst med gy-gy, sb plty-sb blky, sft, non calc, arg, rr Ss trnl-wht, f gr, sb rd-sb ang, calc cmt, rr glau, nsfoc 80% Siltst, 20% Ss

3900-4000 Siltst med gy-gy, sb plty-sb blky, sft, non calc, arg, grdg to Ss ip, rr Ss trnl-wht, f gr, sb rd-sb ang, calc cmt, rr bent, rr glau, nsfoc 80% Siltst, 20% Ss

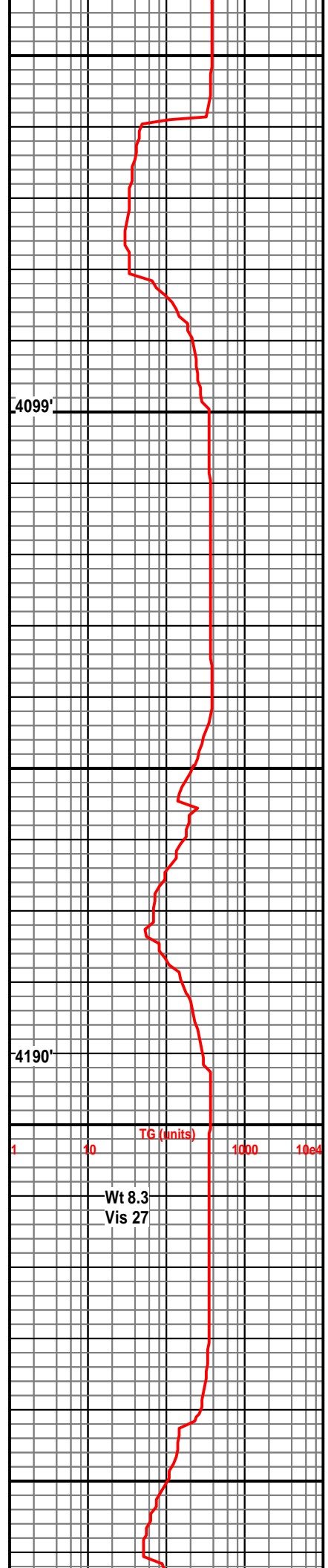


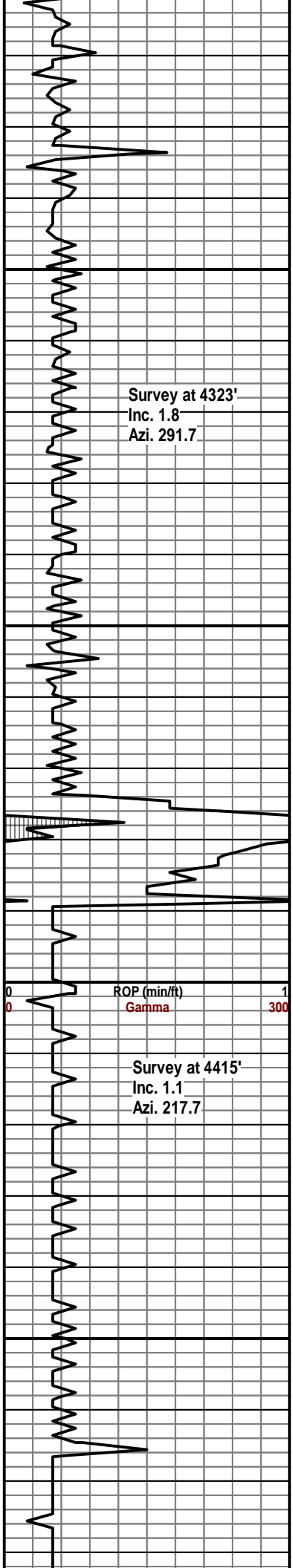


4000-4100 Siltst med gy-dk gy, sb
plty-sb blk, mod frm-sft, n calc, sdy,
grdg to vf gr Ss ip, tr Ss trnsi wht, vf-f
gr, cons, sb rd-sb ang, mod w cmt,
mod-sl calc, mod w srt, rr bent, rr dull
yel min flor, 80% Siltst, 20% Ss

4100-4200 Siltst med gy-dk gy ip, sb
blk-sb plty, mod frm-frn, sdy ip, n
calc, grdg to vf gr Ss ip, nsfoc, 90%
Siltst, 10% Ss

4200-4300 Siltst med gy, tr dk gy, sb
blk-sb plty ip, sdy ip, n calc, tr carb
mat in mtx, rr Ss a/a, nsfoc, 95% Siltst,
5% Ss



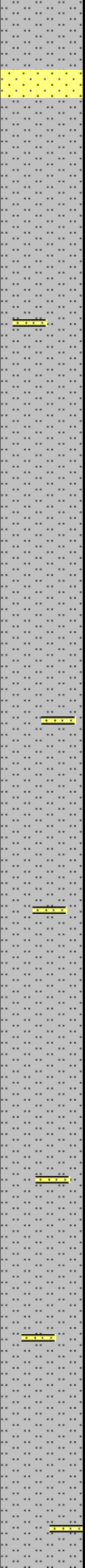


4300

4350

4400

4450



4300-4400 Sltst med gy-dk gy, sb
blky-sb plty, sdy ip, n calc, tr carb mat,
rr Ss a/a, nsfoc, 95% Sltst, 5% Ss

4400-4500 Sltst med gy-dk gy, sb
blky-sb plty, sdy ip, mod frm, occ sft, n
calc, tr carb mat, rr Ss a/a, nsfoc, 95%
Sltst, 5% Ss

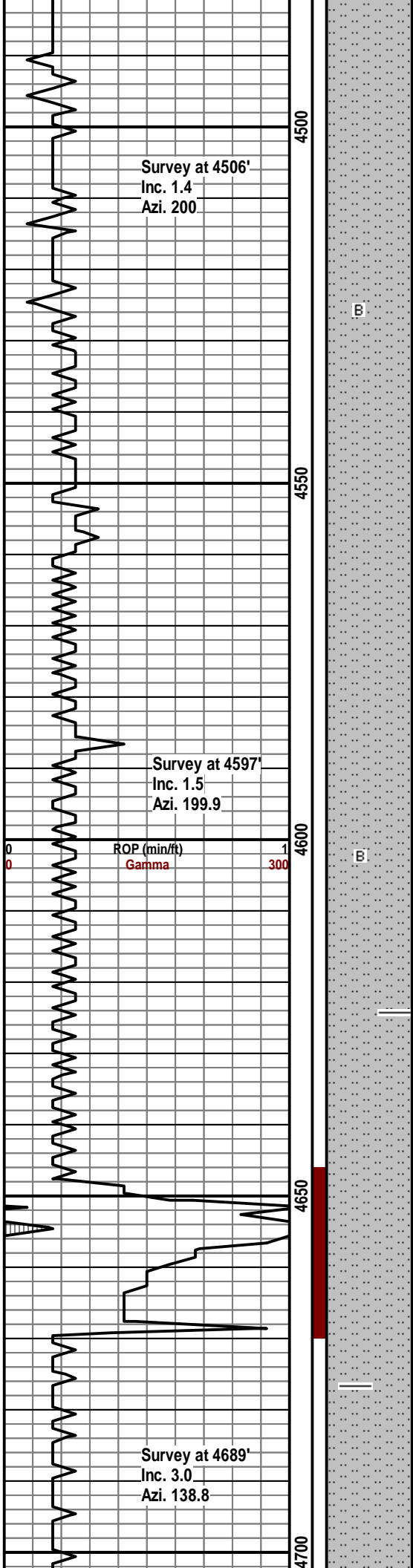
4283'

4376'

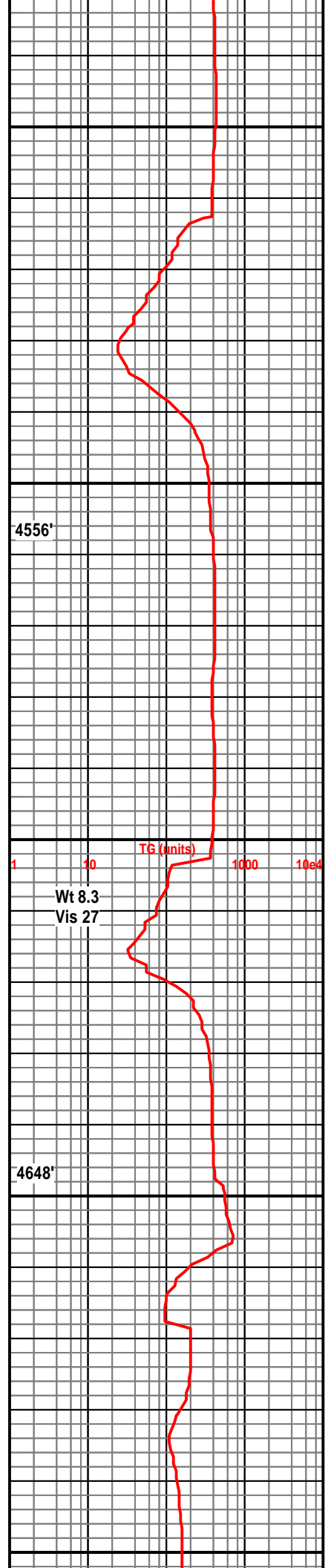
4465'

TG (units)
1 10 1000 10e4

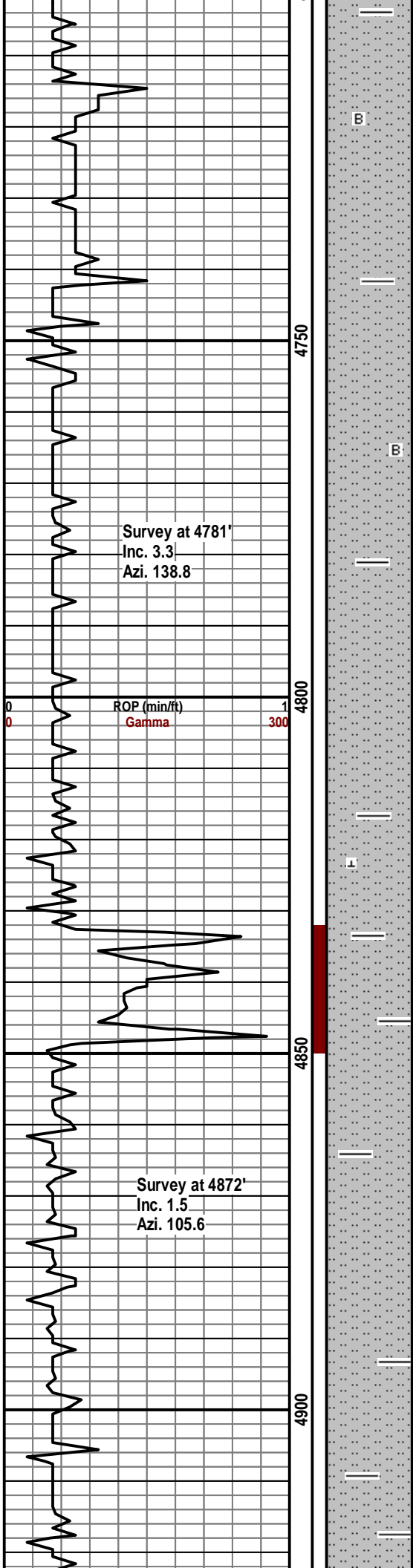
Wt 8.3
Vis 27



4500-4600 Sltst predy med gy, sb
plty-sb blk, mod frm, n calc, sdy ip, rr
bent, nsfoc, 100% Sltst

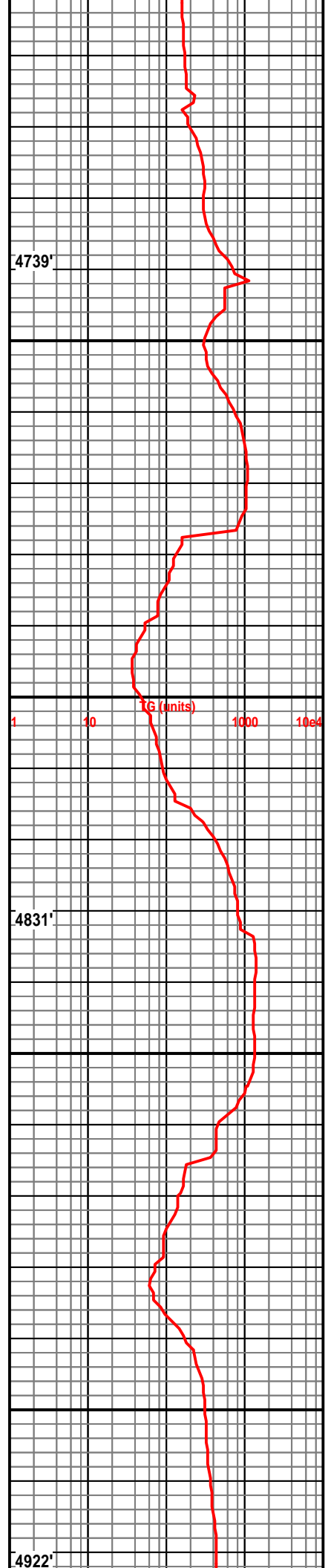


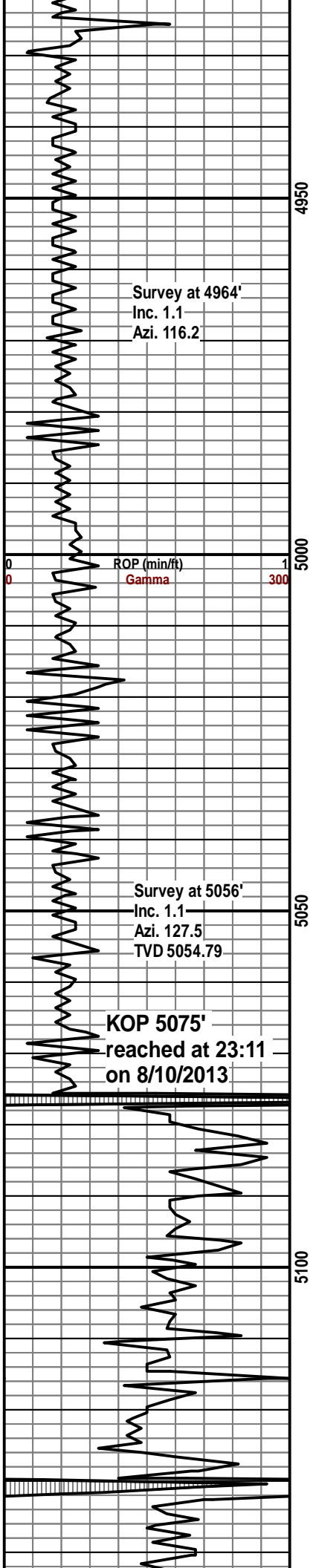
4600-4700 Sltst med gy, sb plty-sb
blk, arg ip, mod frm-frm, sl-n calc, tr
bent, rr dull yel min flor, nsoc, 100%
Sltst



4700-4800 Siltst med gy, sb plty-sb
blky, frm-mod frm, arg ip, n-sl calc, rr
bent, nsfoc, 100% Siltst

4800-4900 Siltst med gy, sb plty-blky,
frm-mod frm mod-v arg, n calc, rr cal,
nsfoc, 100% Siltst





4900-5000 Slst med gy, sb plty-plty,
occ sb blk, mod frm, v arg, n calc,
grdg to Sh, nsfoc, 60% Slst, 40% Sh

Wt 8.3
Vis 27

5000-5050 Slst predy med gy, sb
plty-sb blk, mod frm-frm, n calc, mod
arg, grdg to Sh ip, nsfoc, 70% Slst,
30% Sh

5050-5100 Slst med gy, sb plty-sb
blk, occ blk, mod frm-frm, n calc,
sdy ip, mod arg, grdg to Sh ip, nsfoc,
70% Slst, 30% Sh

5100-5150 Sh med gy, sb plty-blk,
frm, n calc, sl slty tex, rr carb mat, occ
Slst med gy, sb blk, mod frm-frm, sdy
ip, nsfoc, 60% Sh, 40% Slst

