



# ENTRADA GeoSciences



A Service Division of Core Laboratories



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

Well Name: Boies B-19P-O3  
Location: SESE Sec 19 T2S R97W Rio Blanco County, Colorado  
Licence Number: 05-103-11067-00  
Spud Date: 6/27/2008  
Surface Coordinates: 306' FSL, 1184' FEL  
39.8554301, -108.3186119  
Bottom Hole Coordinates: SWSE 19 2S 97W  
515' FSL, 2019' FEL  
Ground Elevation (ft): 6248  
Logged Interval (ft): 1867  
Formation: Green River-Mahogany, Green River-Garden Gultch, Orange Marker, Ohio Creek, Wil  
Type of Drilling Fluid: Mud

Region: Sulphur Creek  
Drilling Completed: 7/15/2008  
K.B. Elevation (ft): 6278  
To: 10,930  
Total Depth (ft): 10,930

Printed by STRIP.LOG from WellSight Systems 1-800-447-1534 [www.WellSight.com](http://www.WellSight.com)

## OPERATOR

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

## GEOLOGIST

Name: Mark Tapy, Bob Wells  
Company: Entrada GeoSciences / Core Laboratories  
Address: 11 Inverness Way South  
Englewood, CO 80112  
303-825-7140

## Drilling Company

Grey Wolf Rig #106

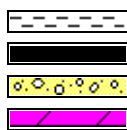
## Comments

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



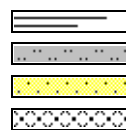
Clyst  
Coal  
Congl  
Dol



Gyp  
Igne  
Lmst  
Meta



Mrlst  
Salt  
Shale  
Shcol



Shgy  
Sltst  
Ss  
Till

## ACCESSORIES

### MINERAL

Anhy  
 Arggrn  
 Arg  
 Bent  
 Bit  
 Breccfrag  
 Calc  
 Carb  
 Chtdk  
 Chtlit  
 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

Sltstrg  
 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

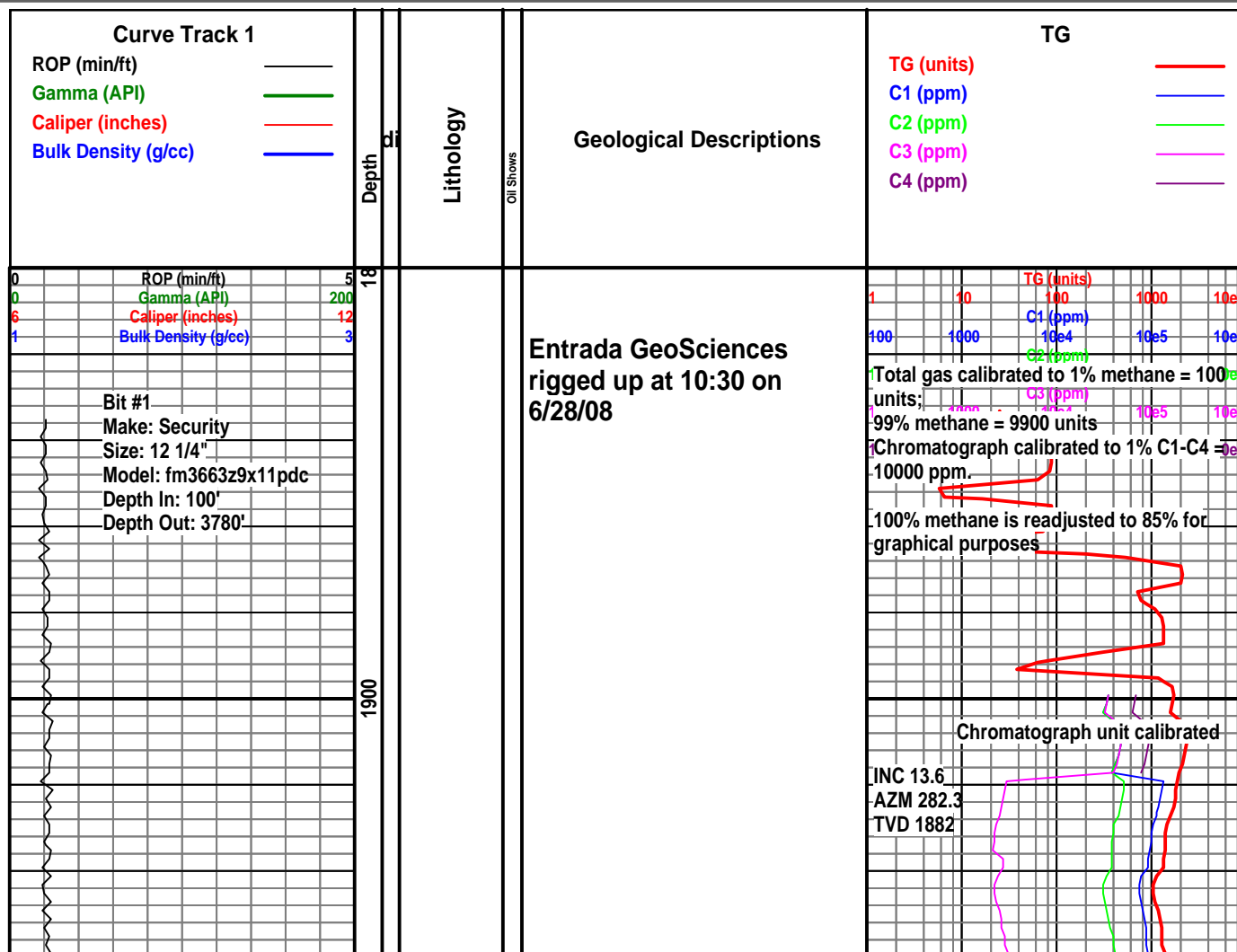
Even  
 Spotted  
 Ques  
 Dead

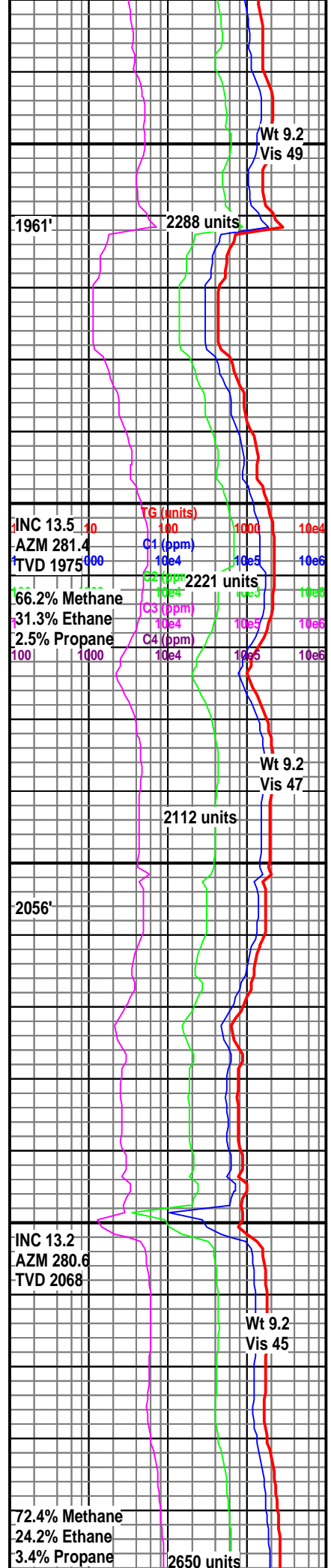
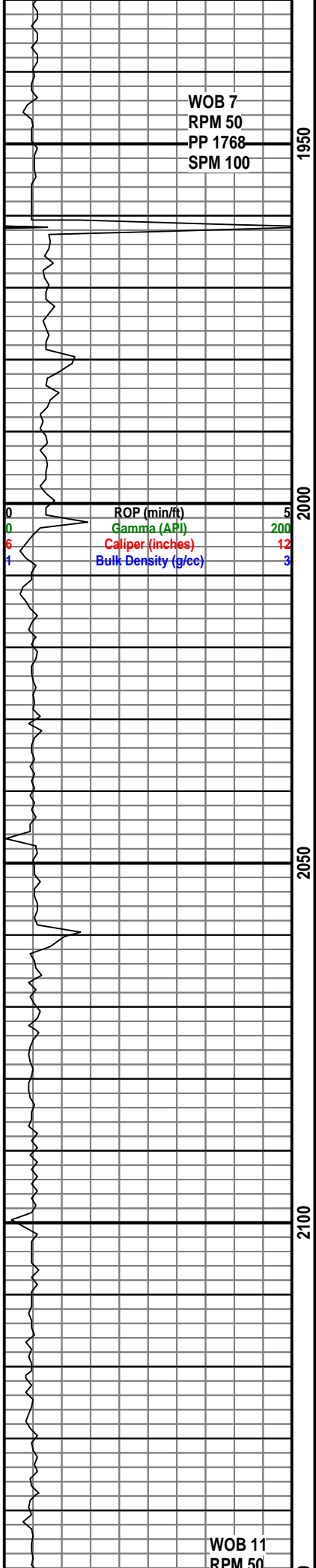
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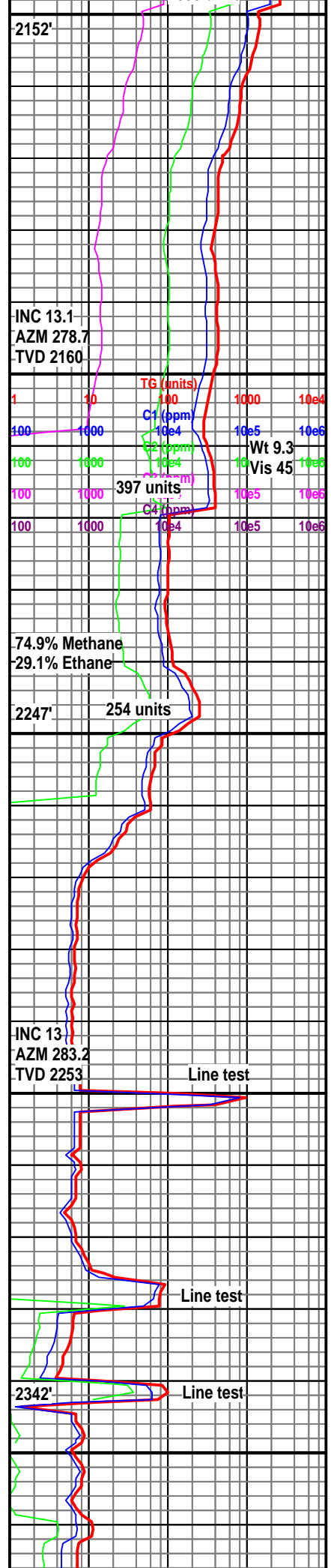
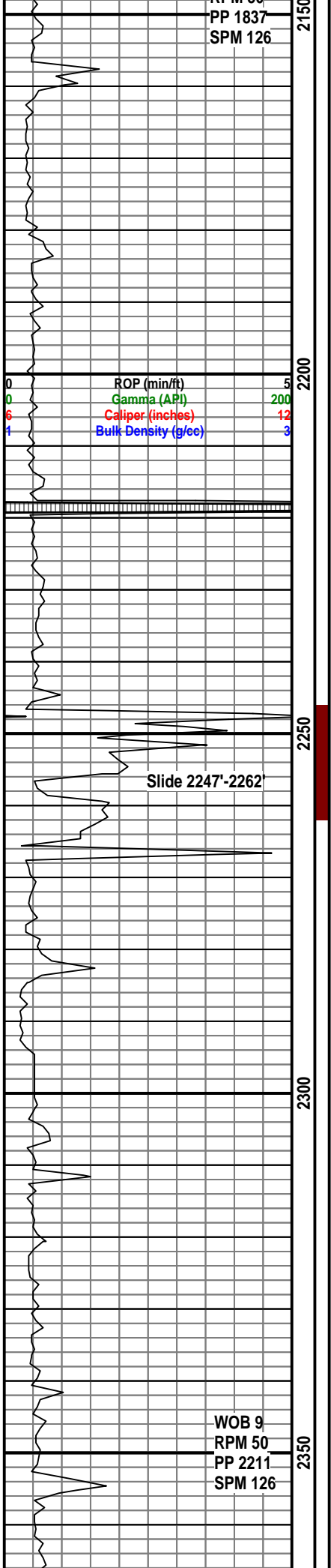
Core  
 Dst  
 Srftcsg  
 Cv-v  
 Cv-c  
 Conductor  
 sltst

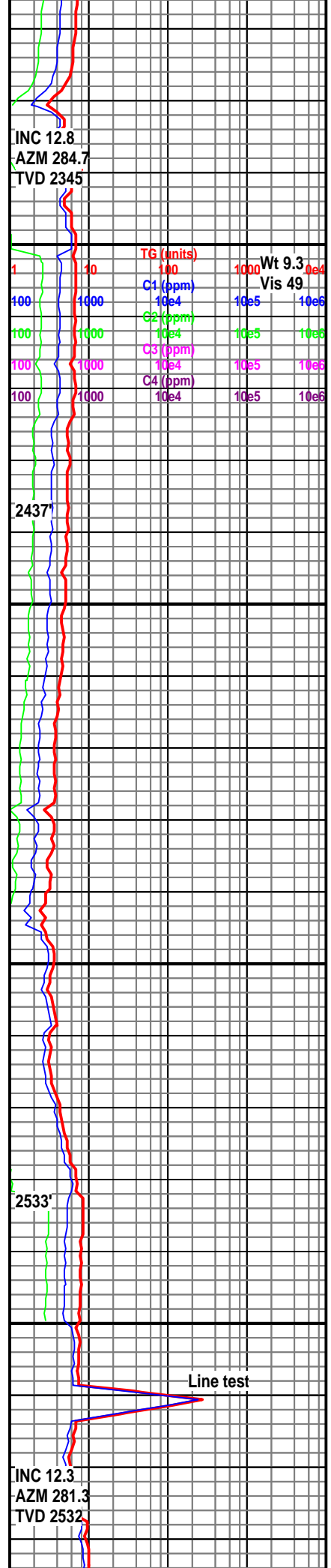
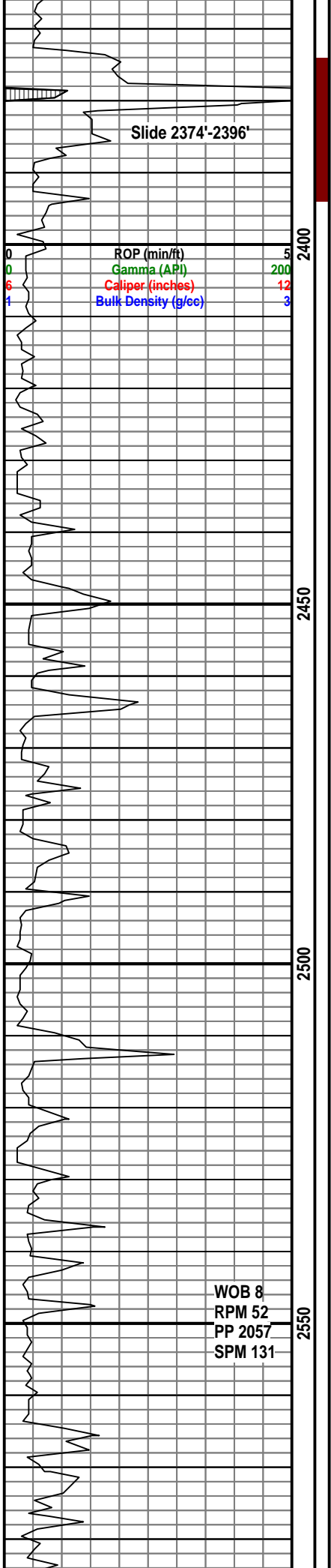
### EVENTS

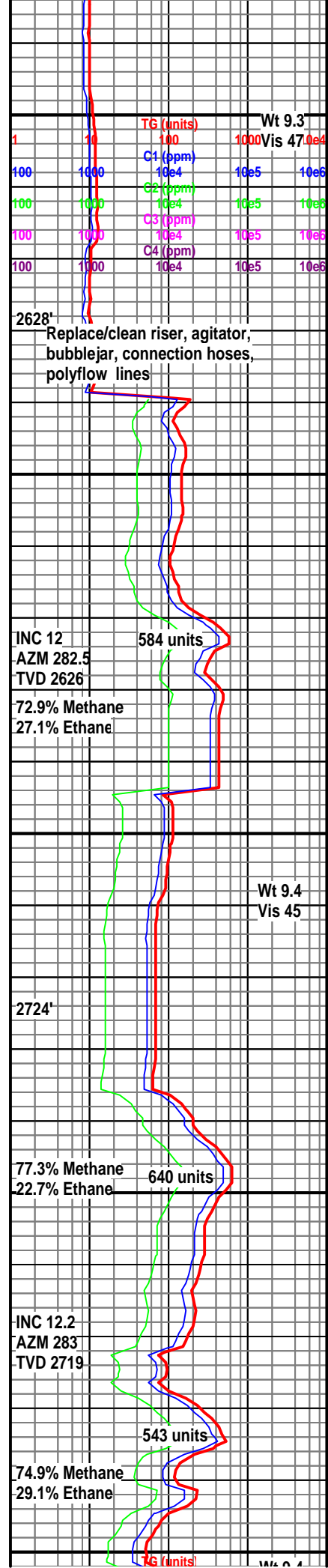
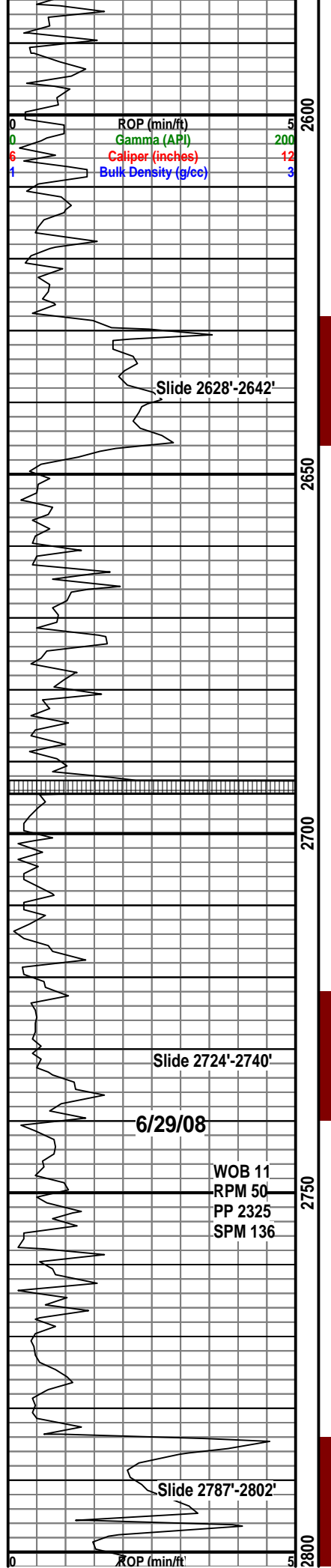
Rft  
 Sidewall  
 Srftcsg

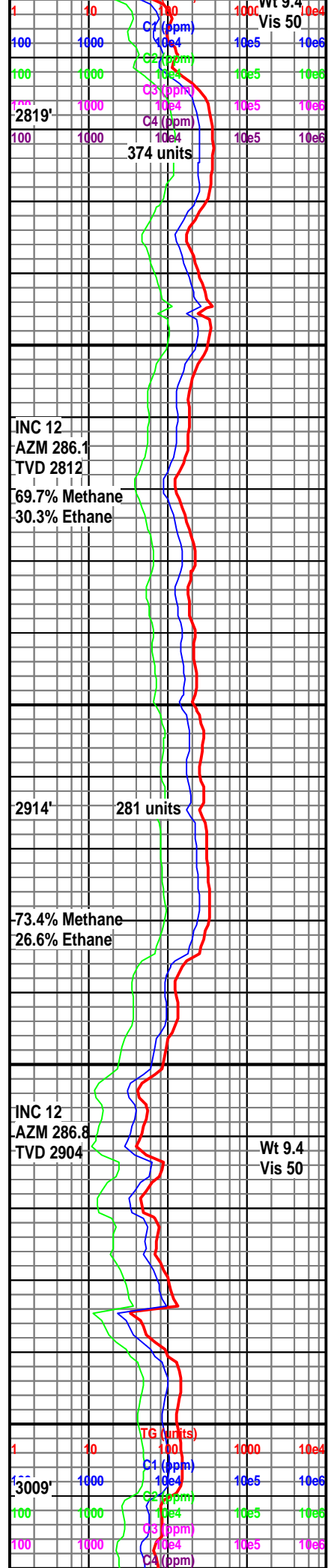
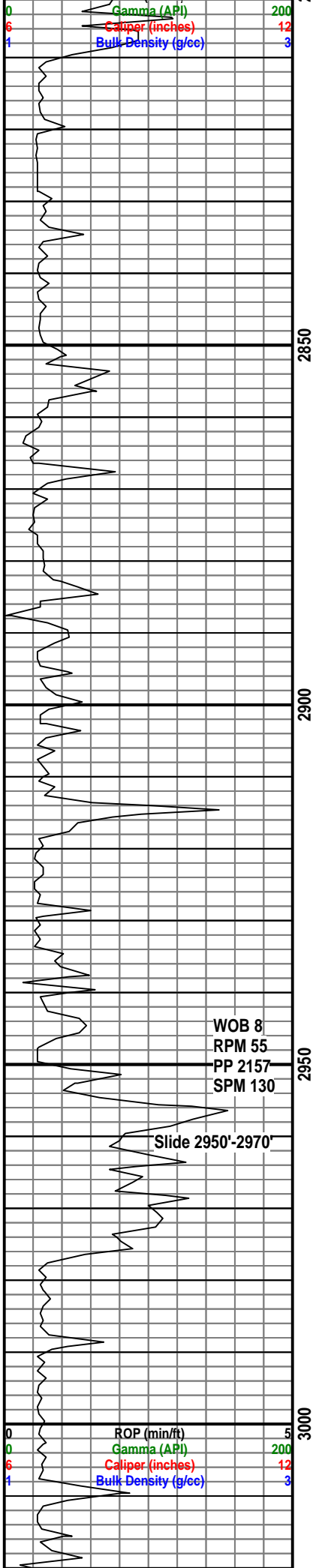






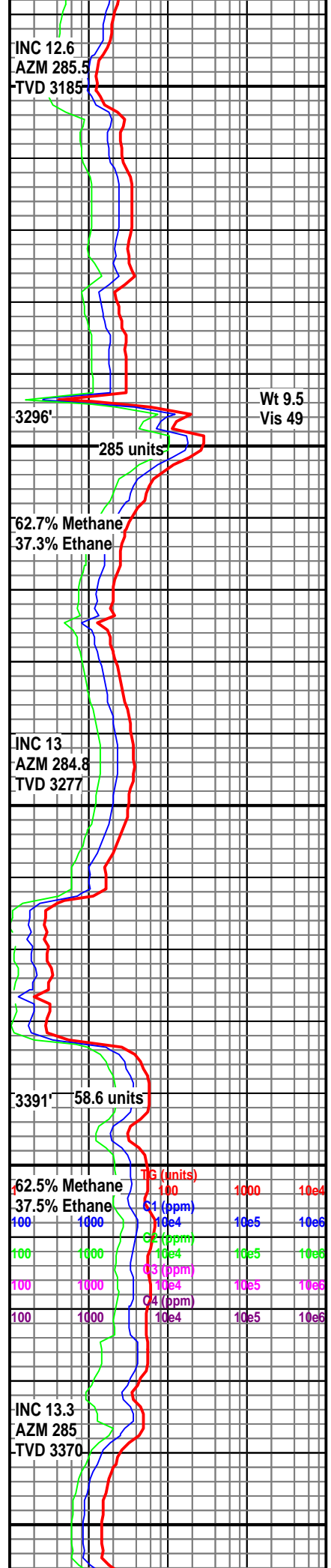
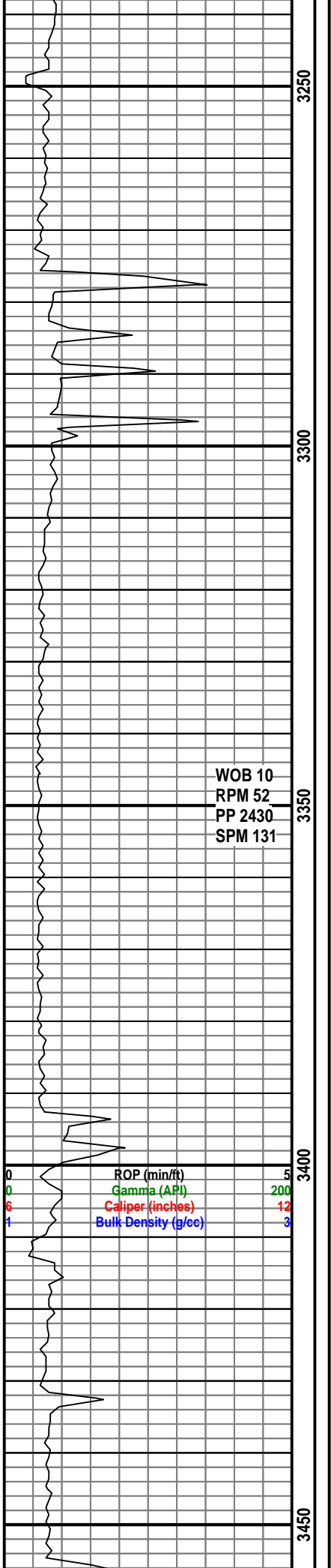


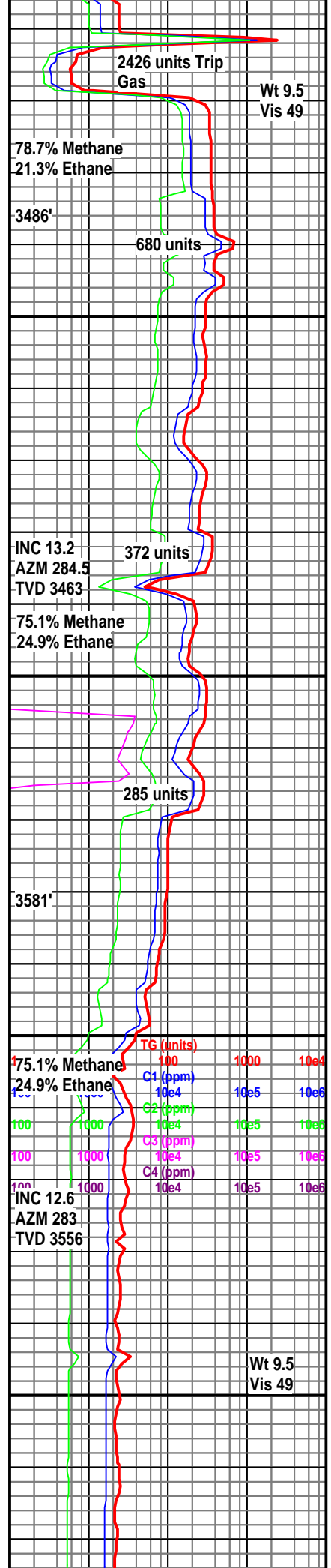
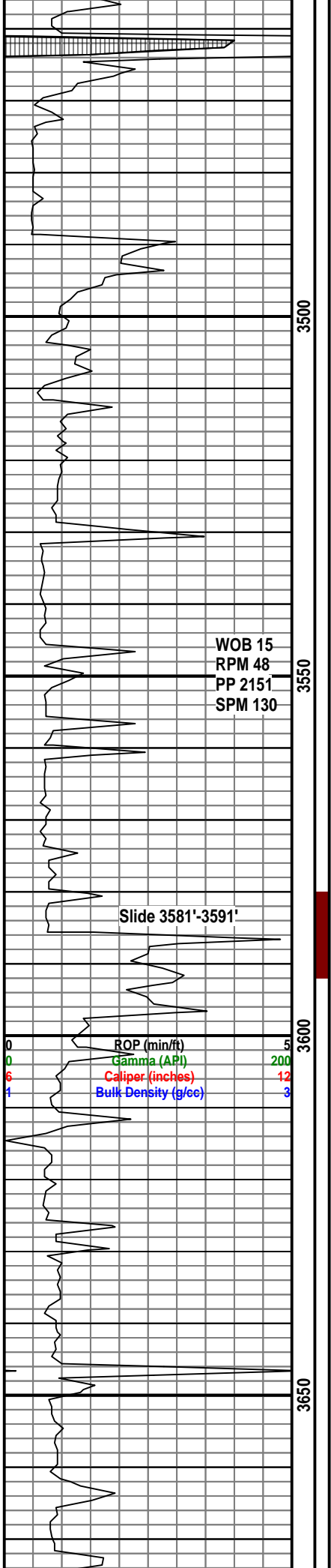


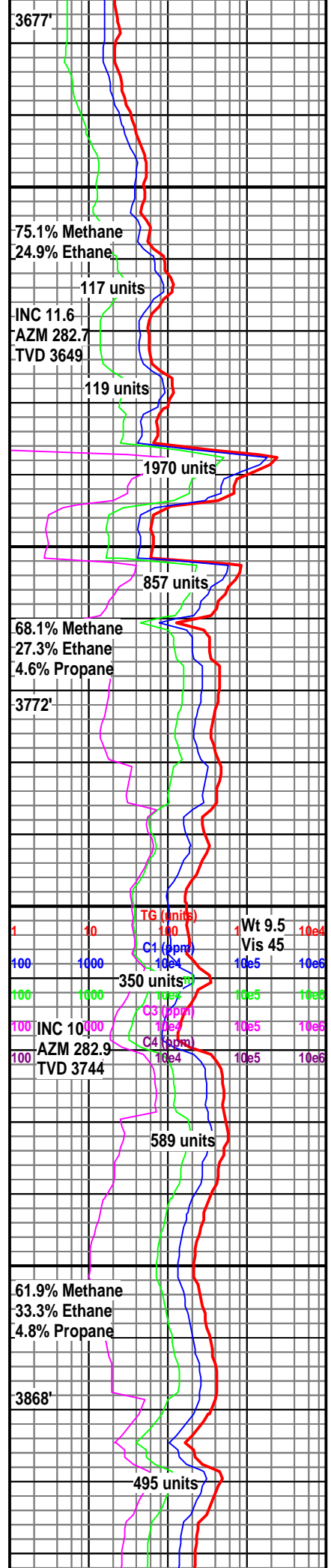
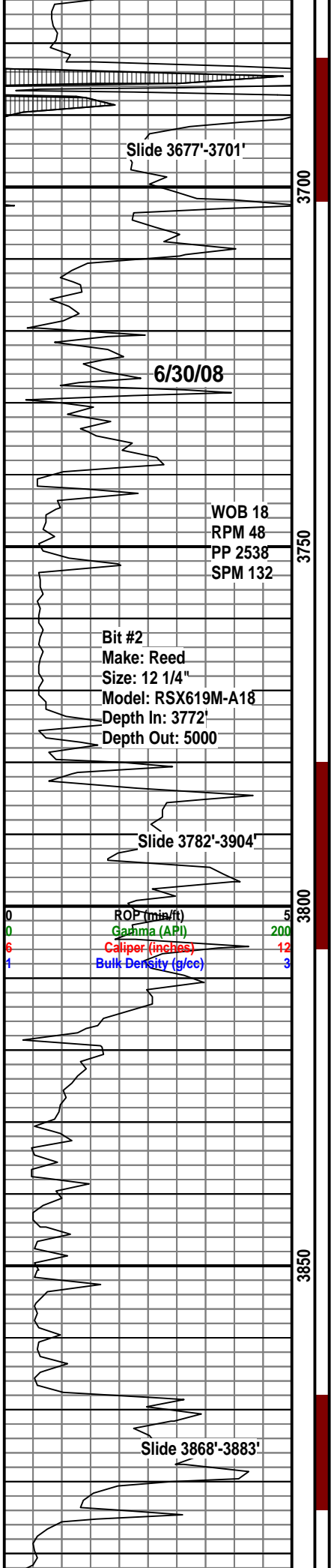


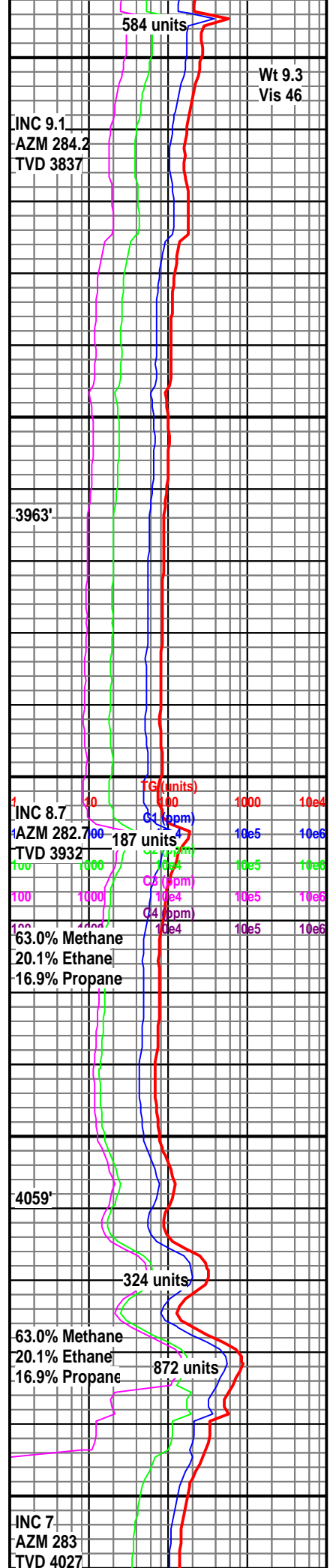
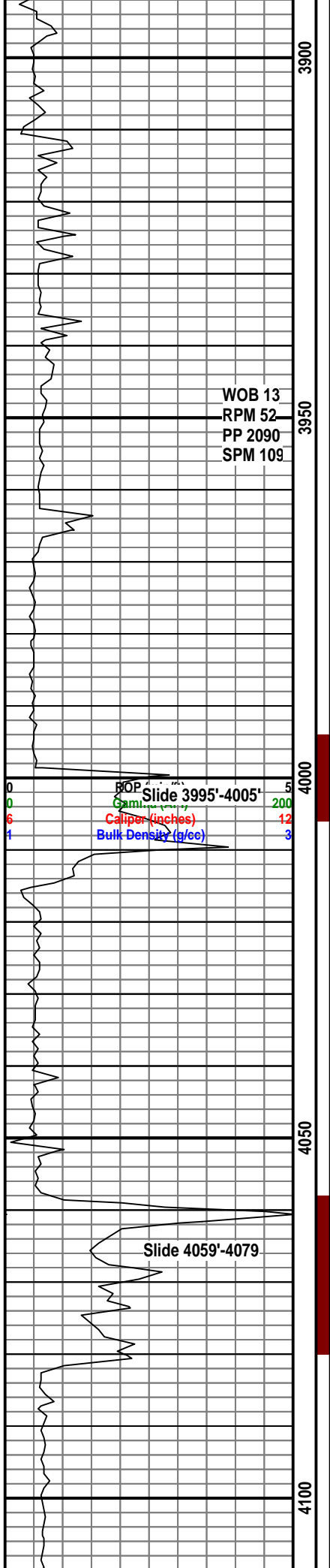


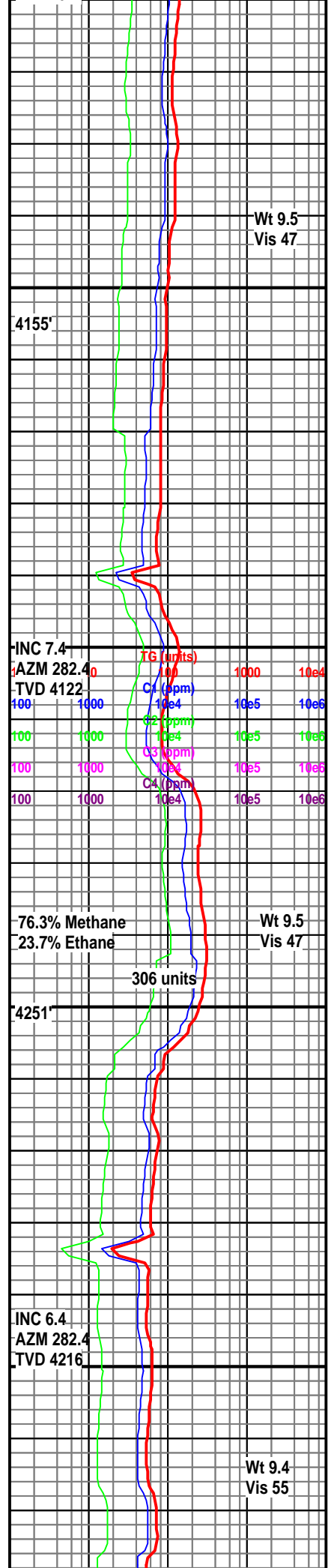
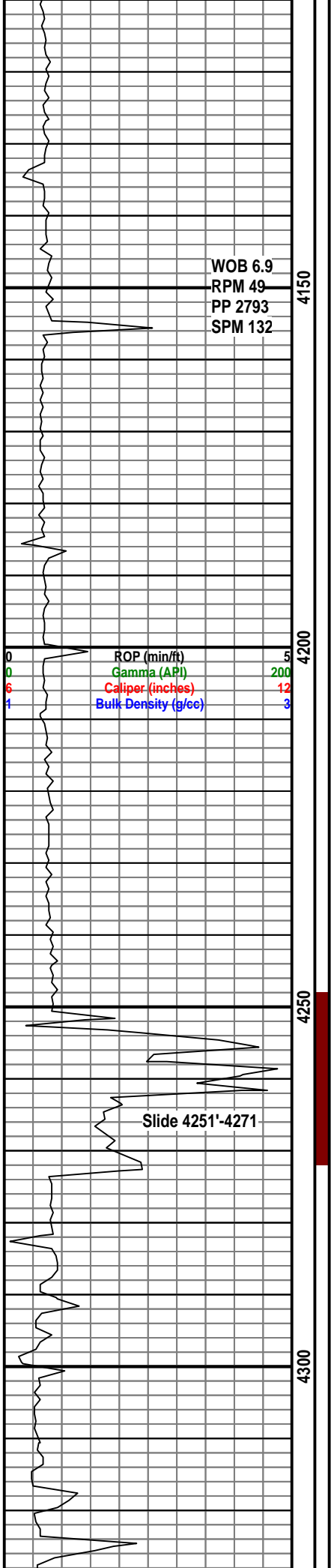


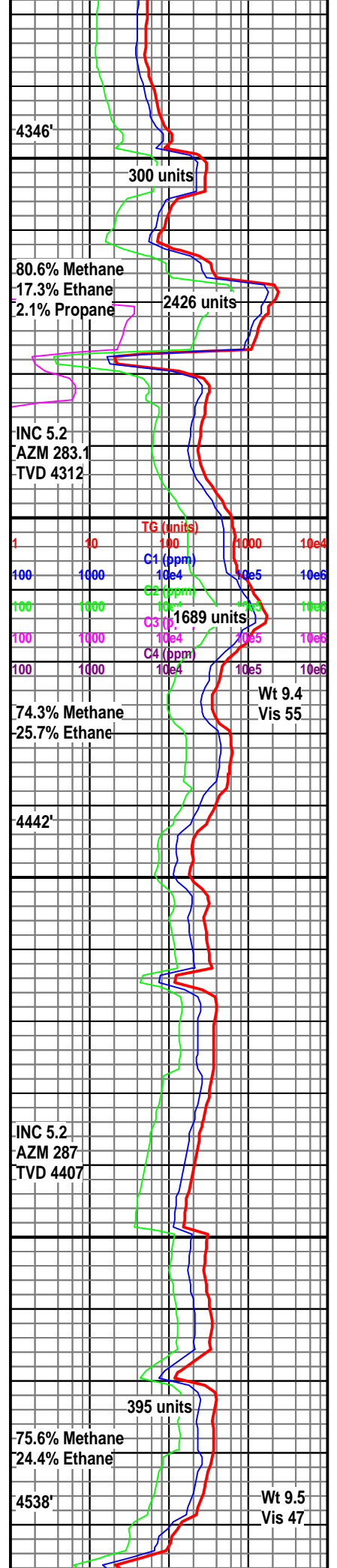
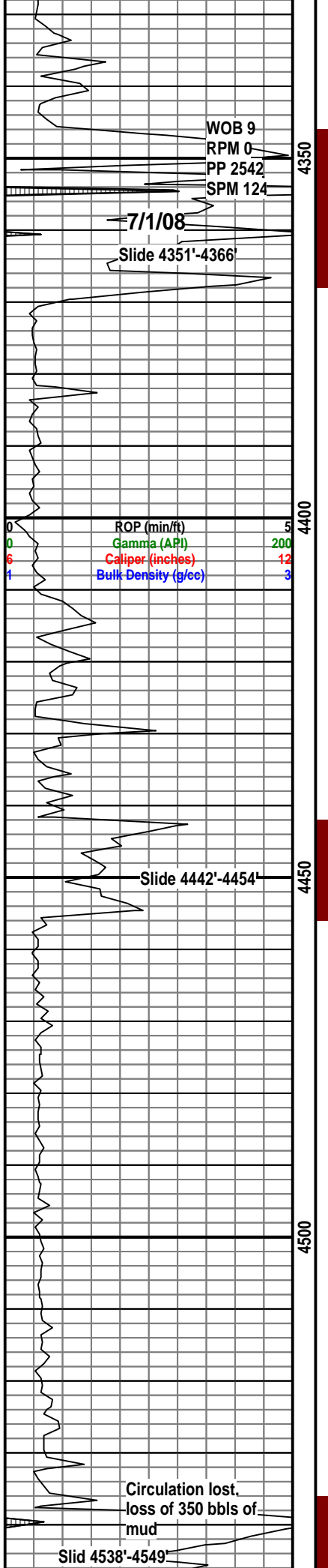


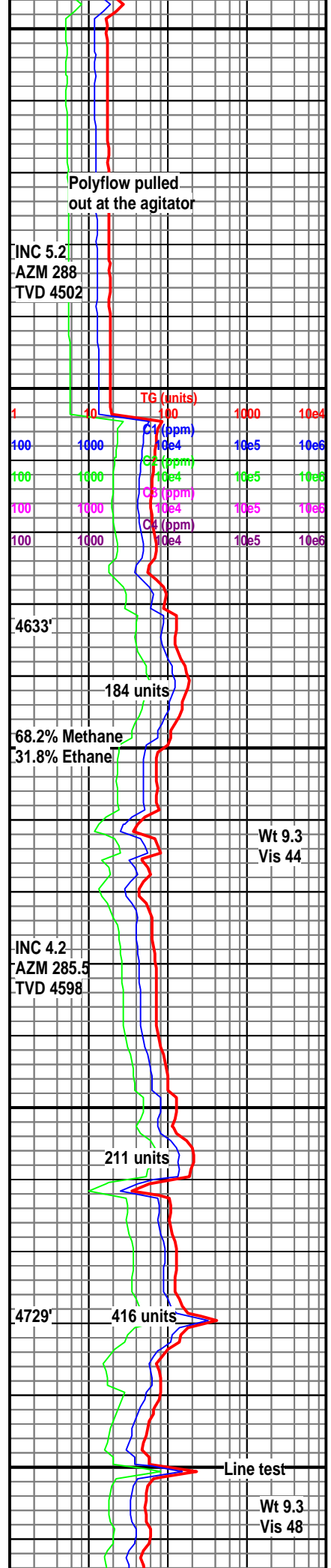
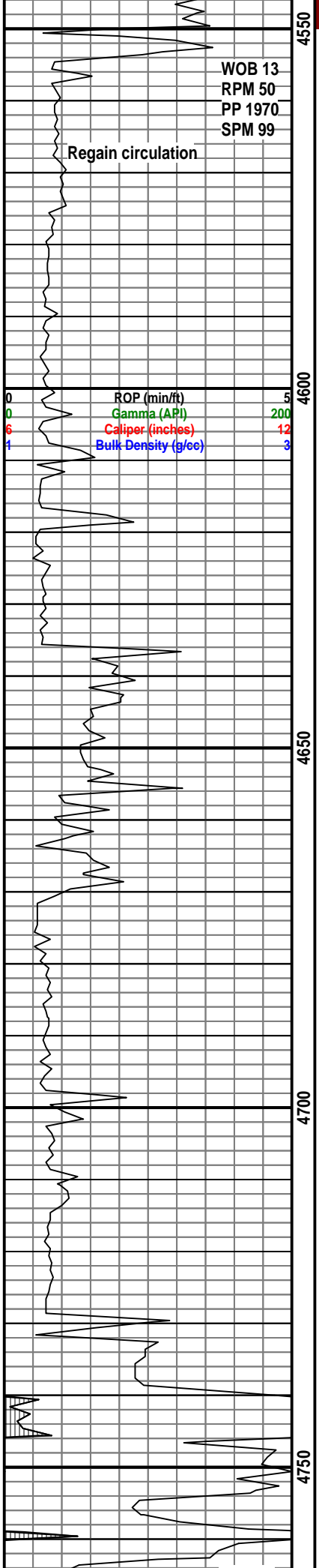


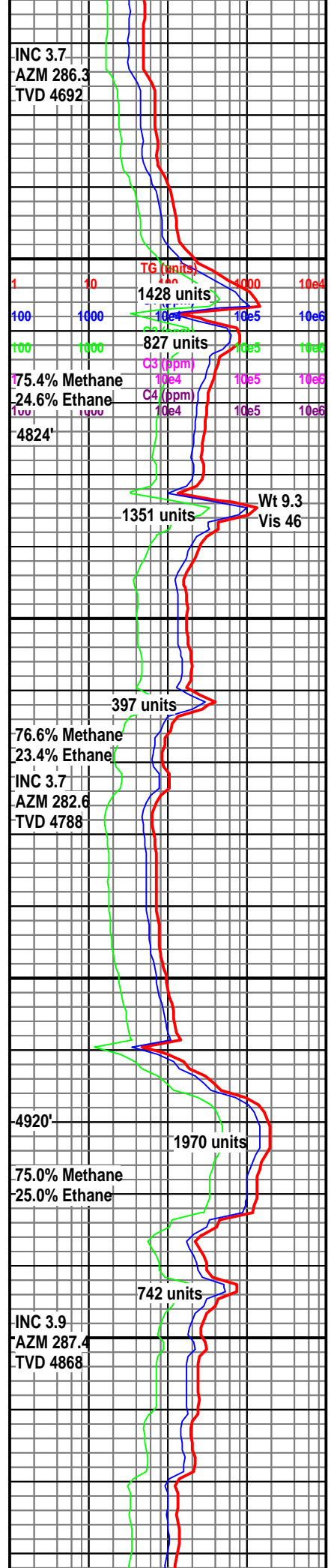
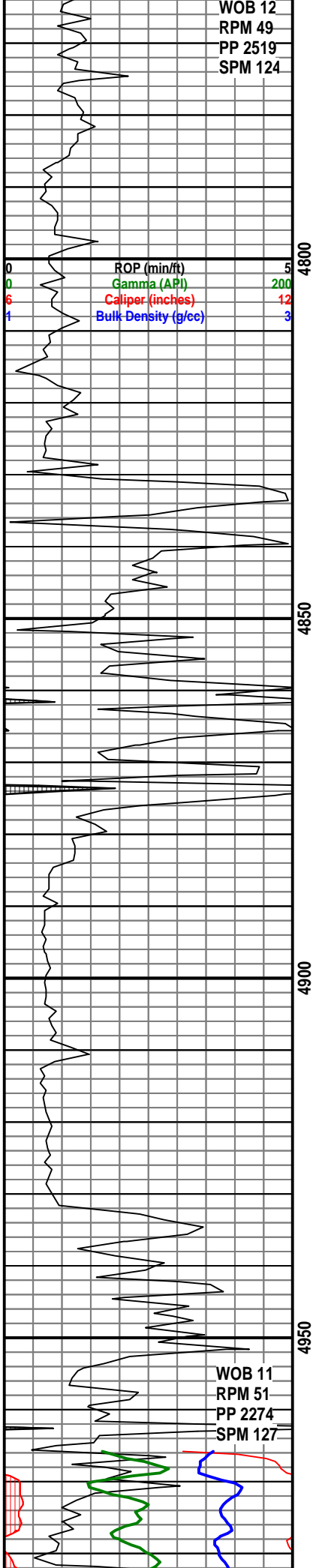




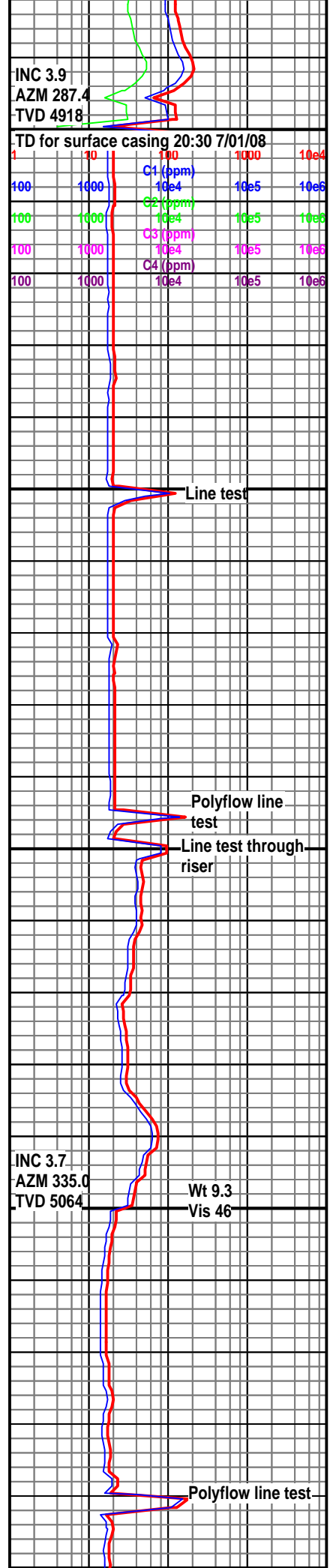
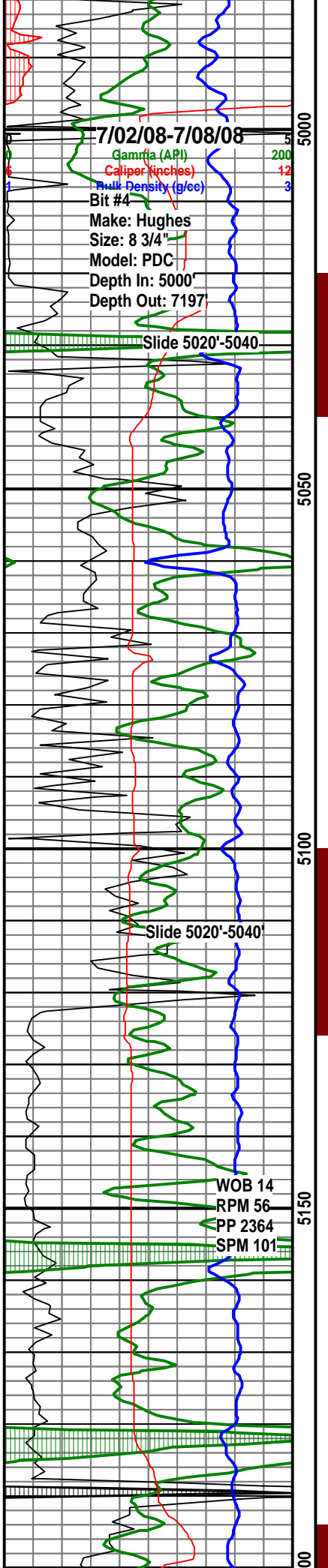


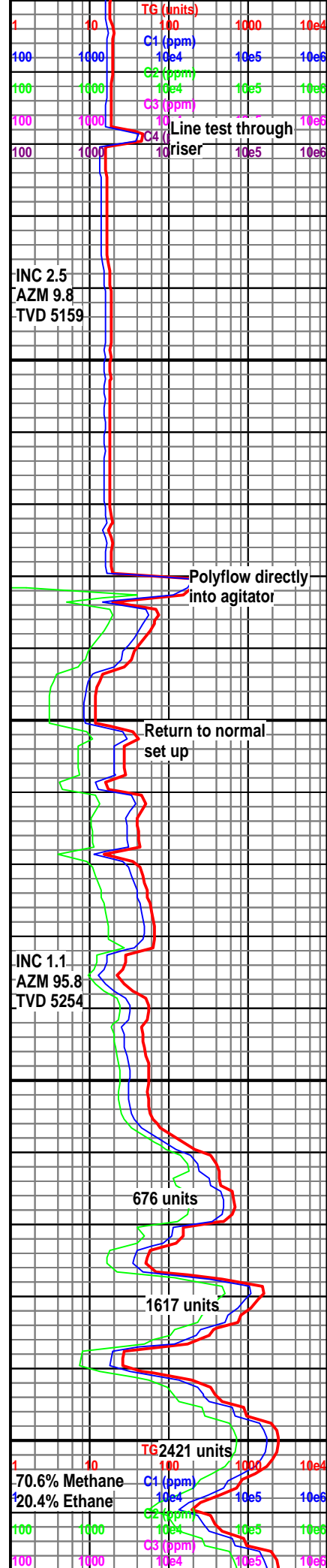
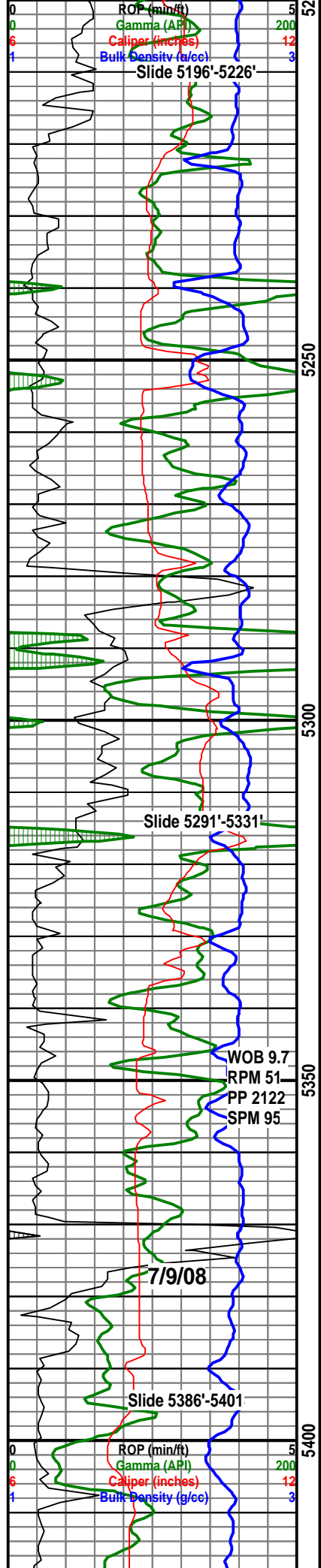


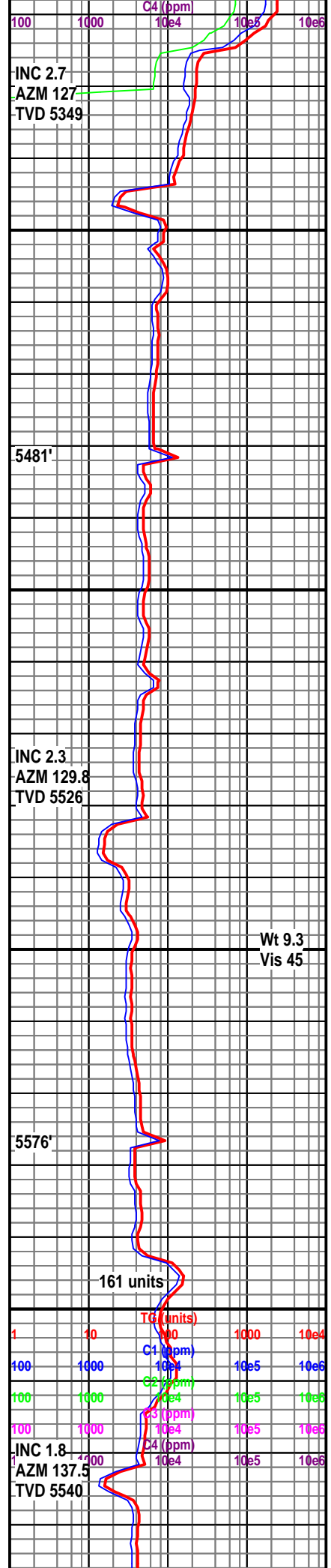
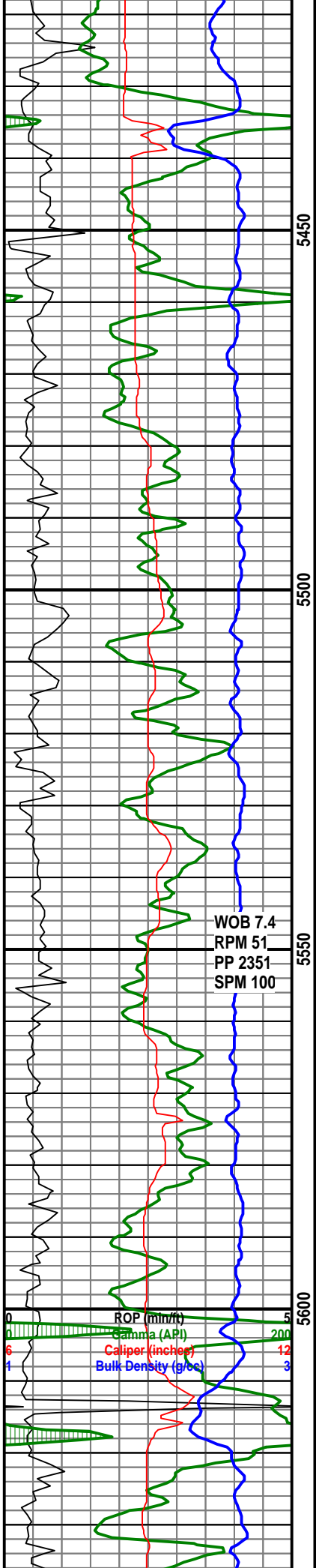


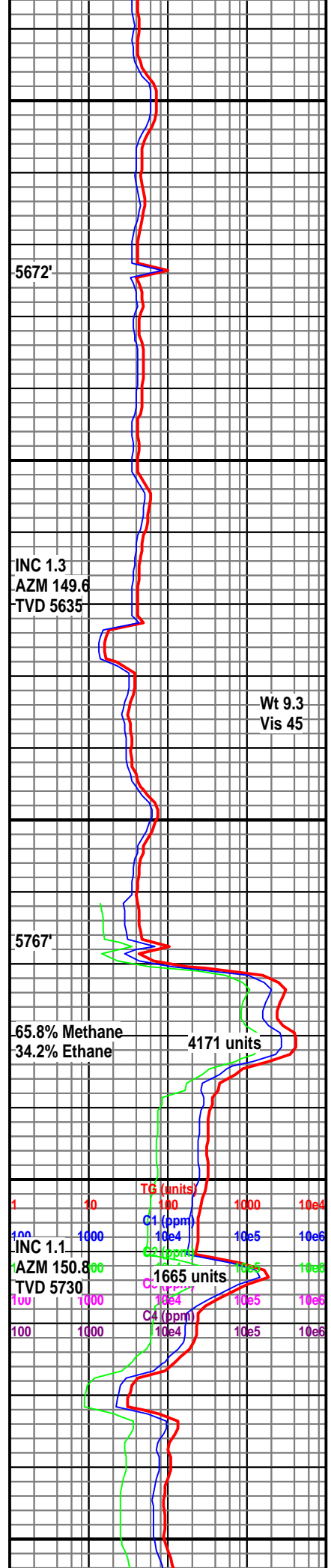
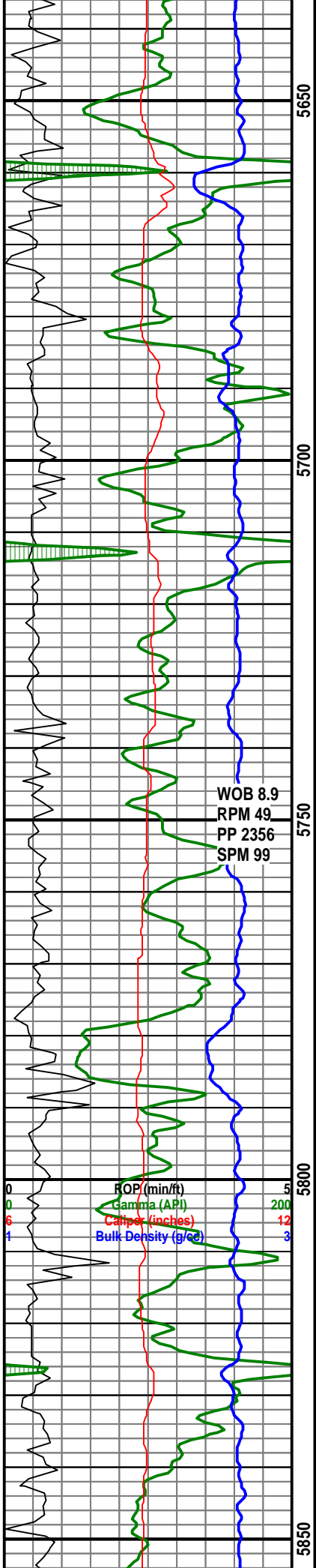


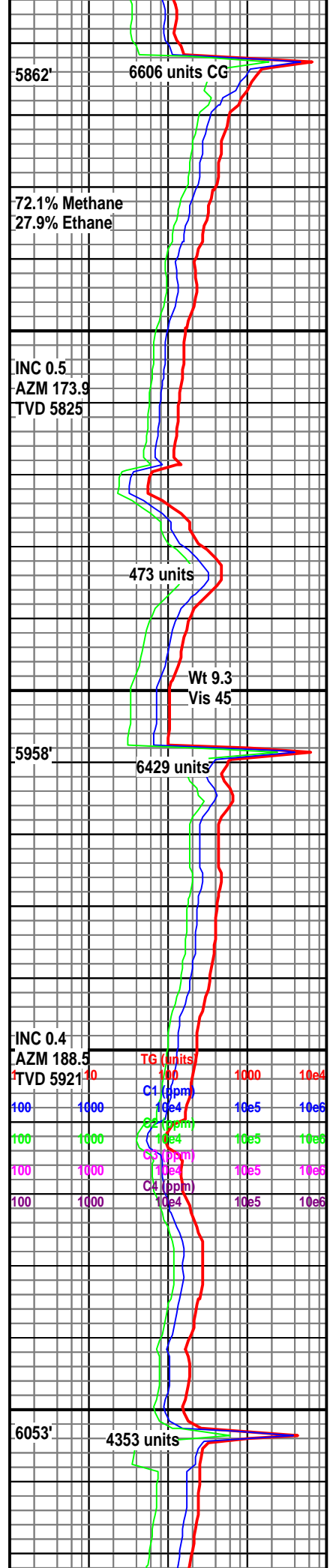
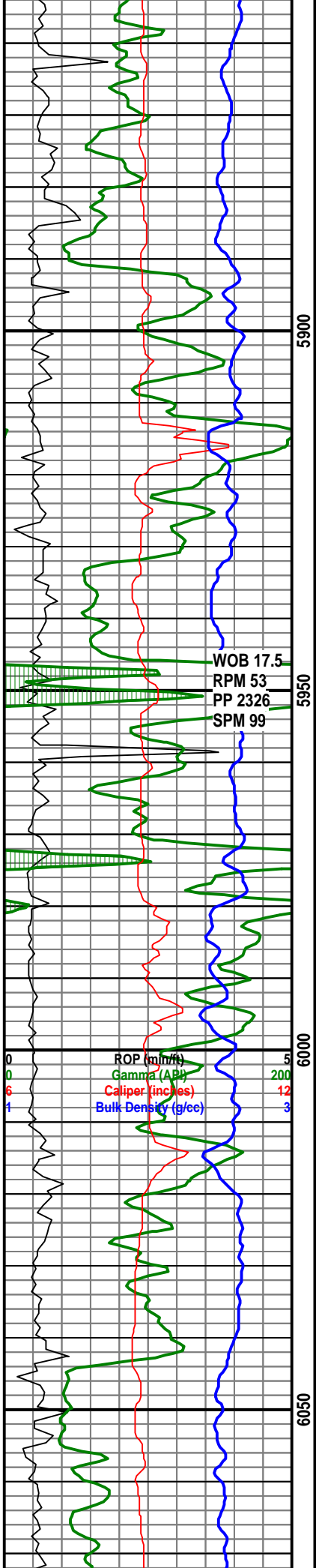


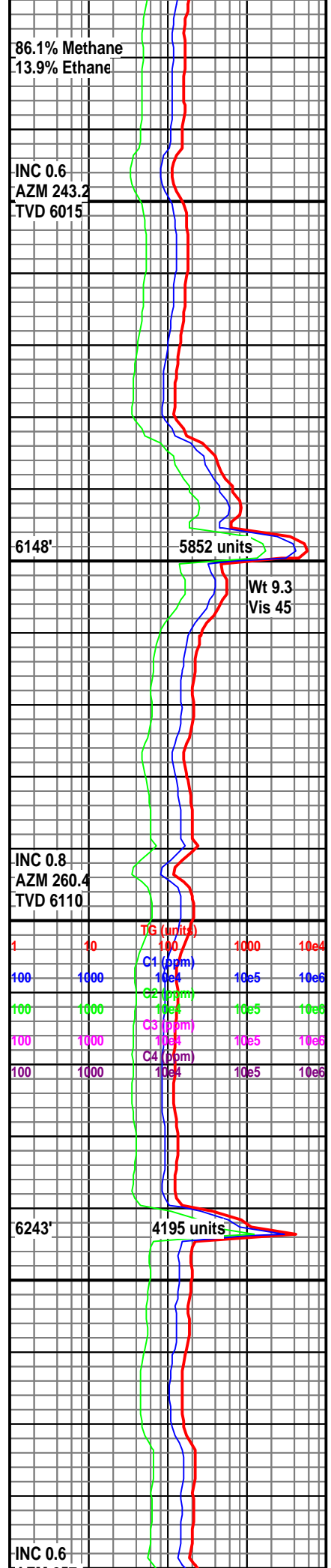
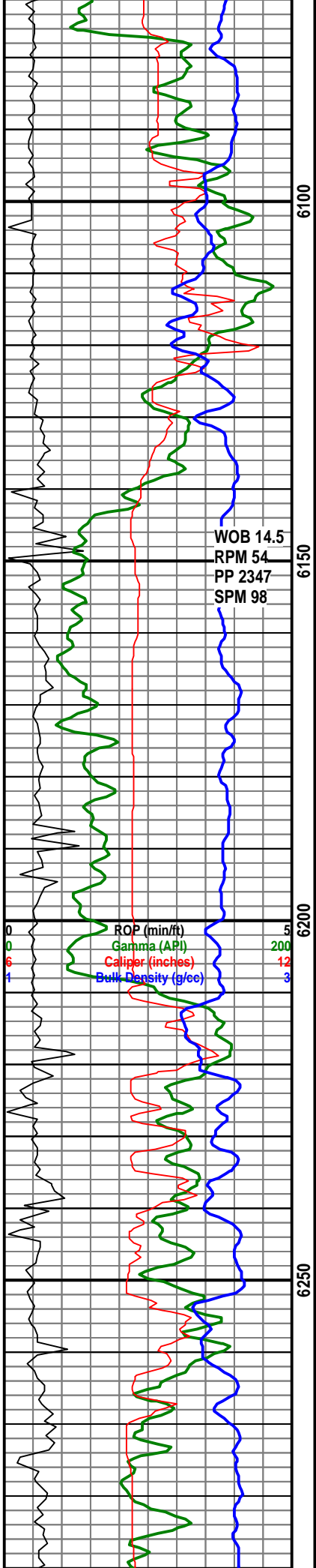


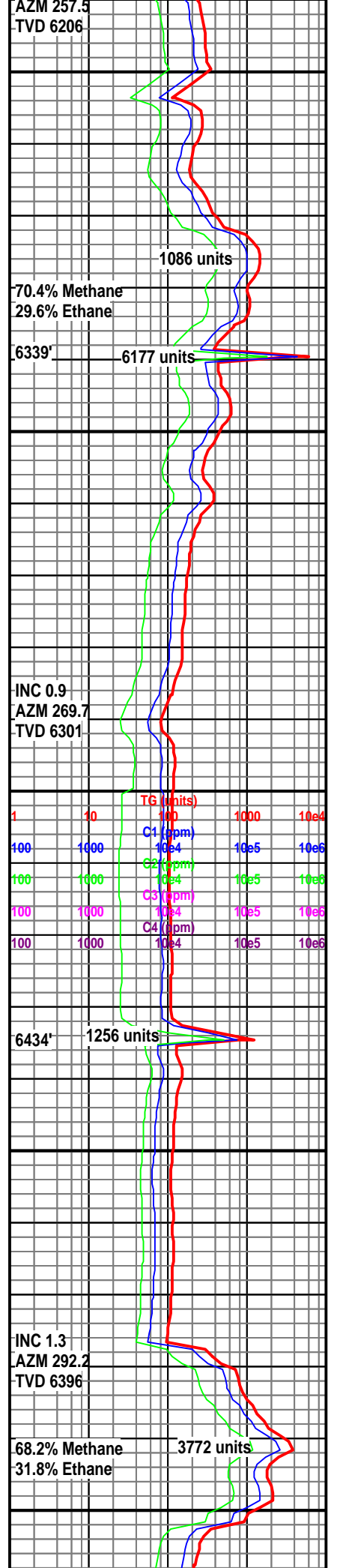
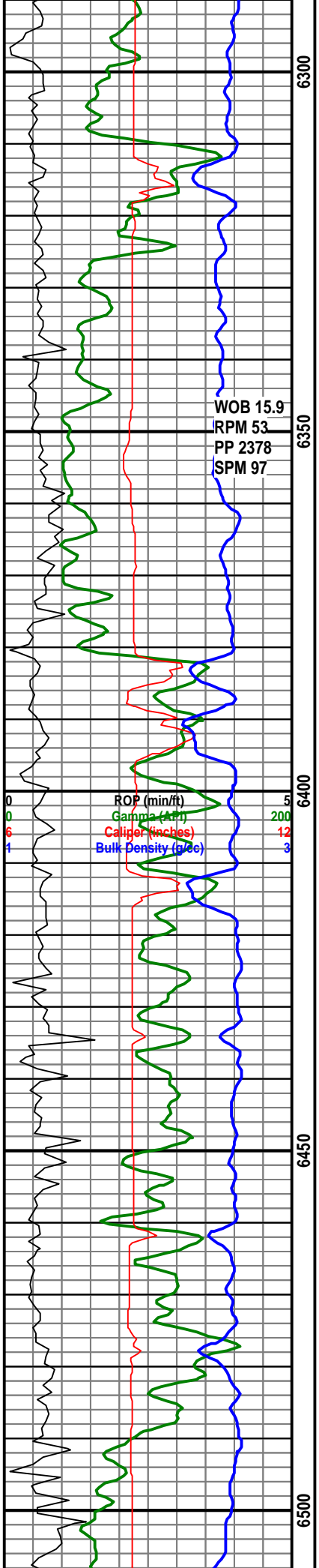


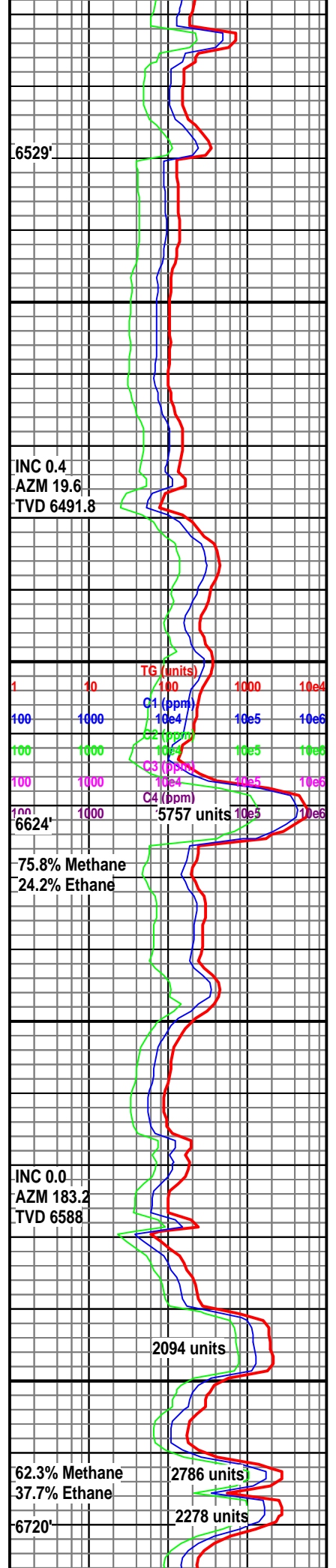
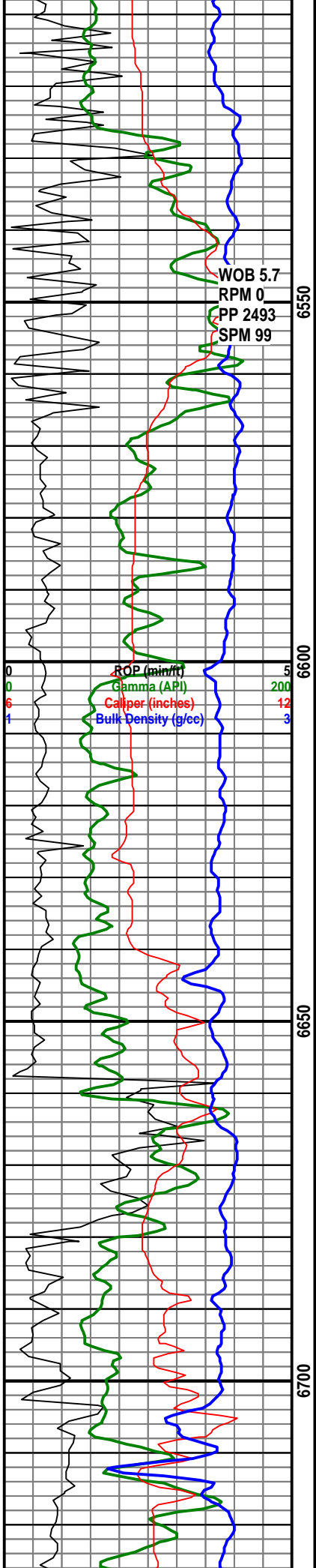




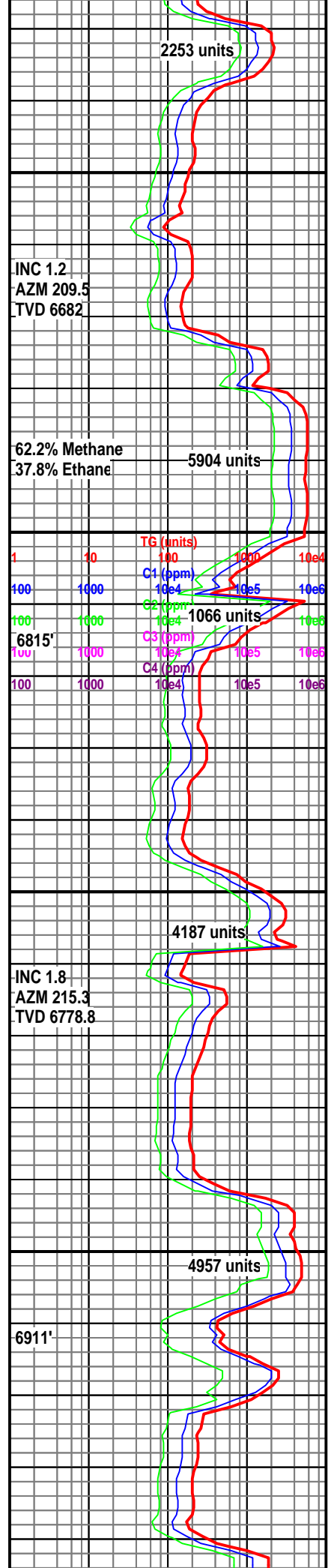
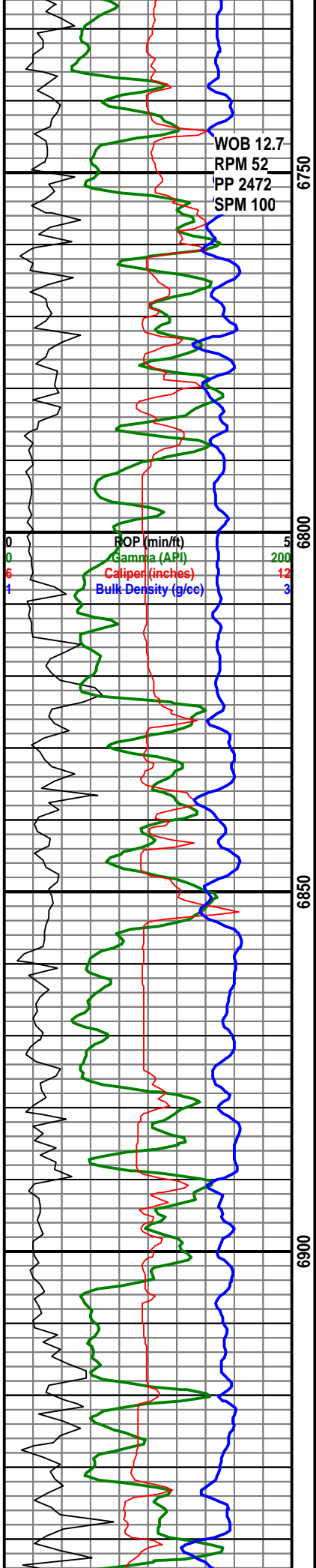


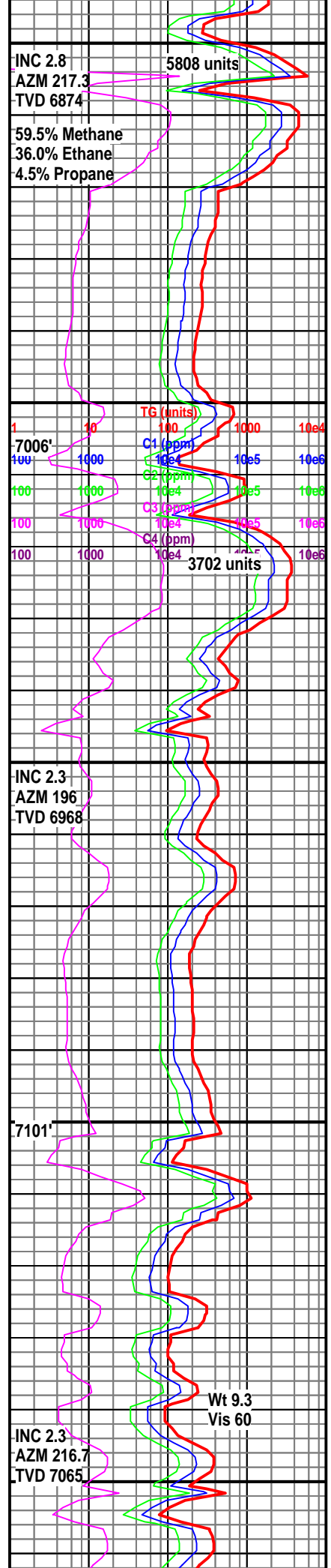
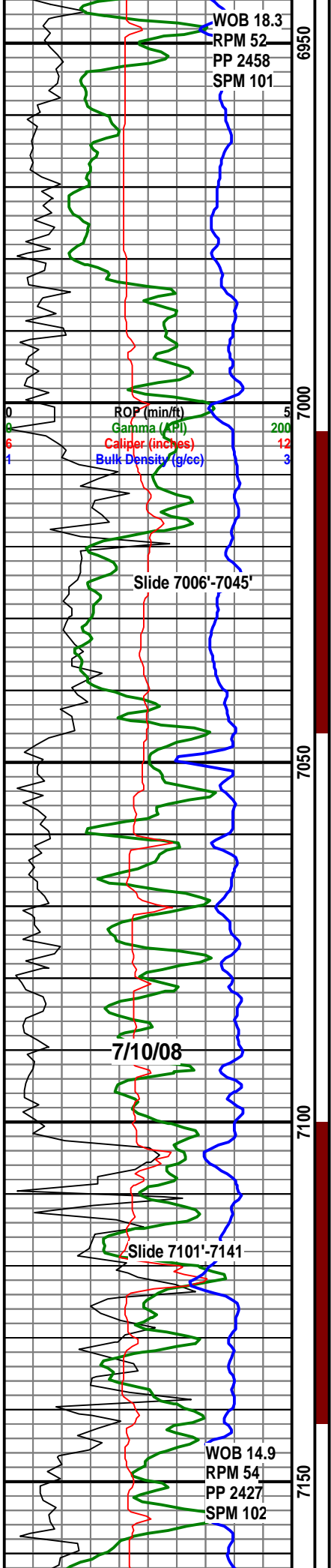


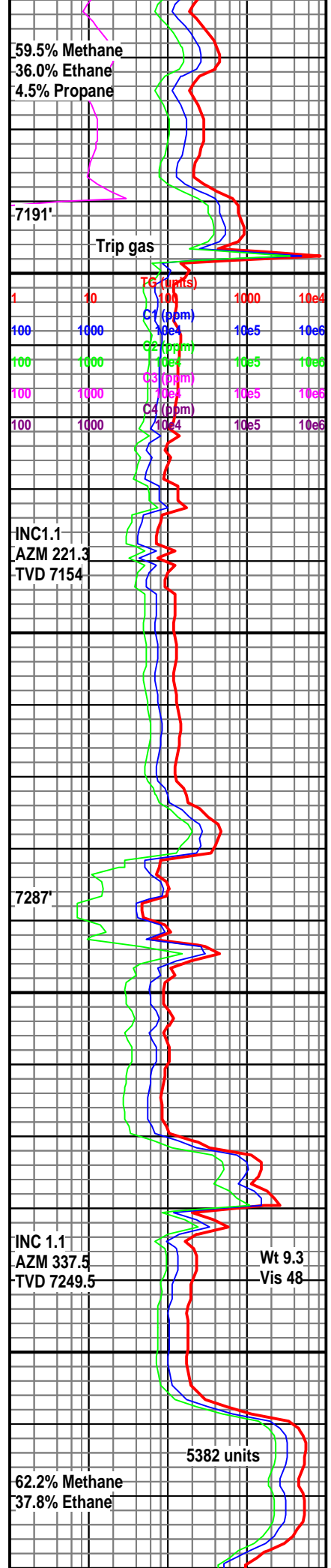
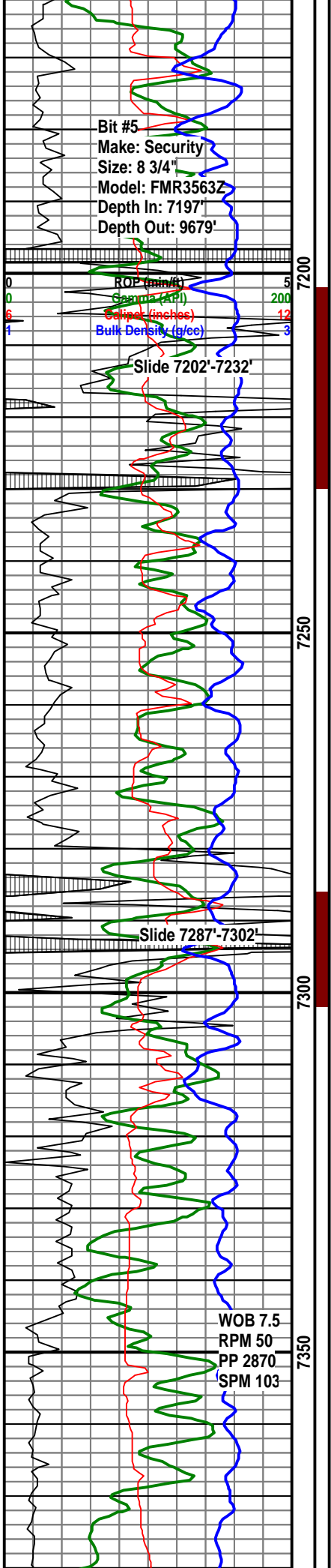


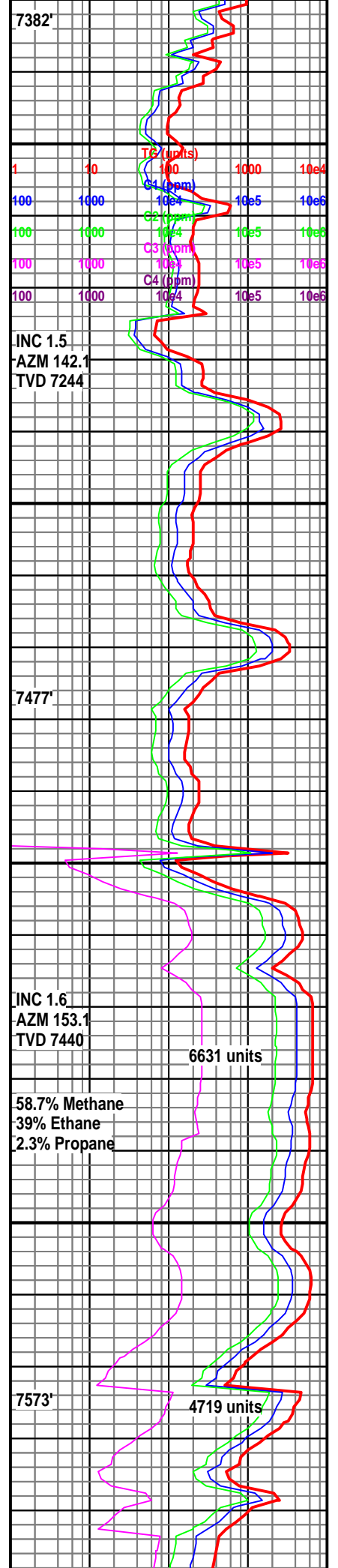
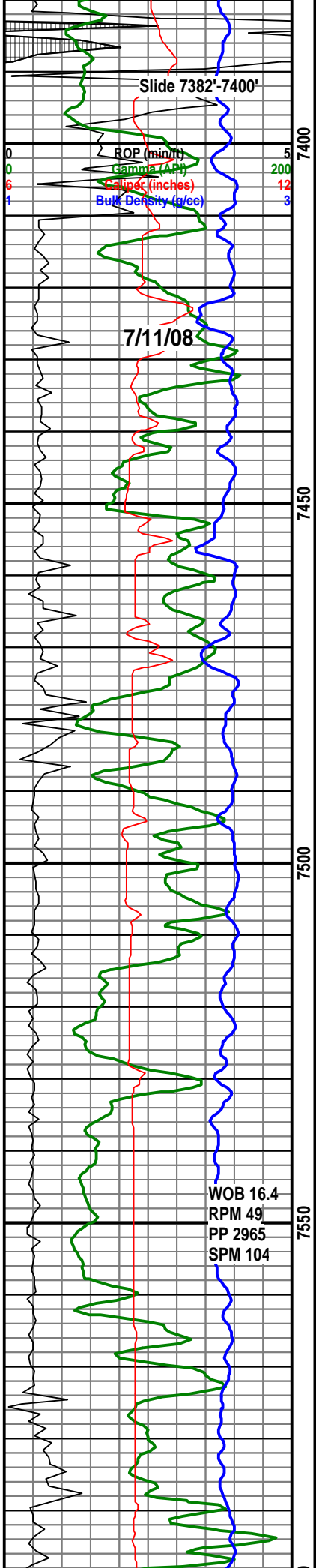




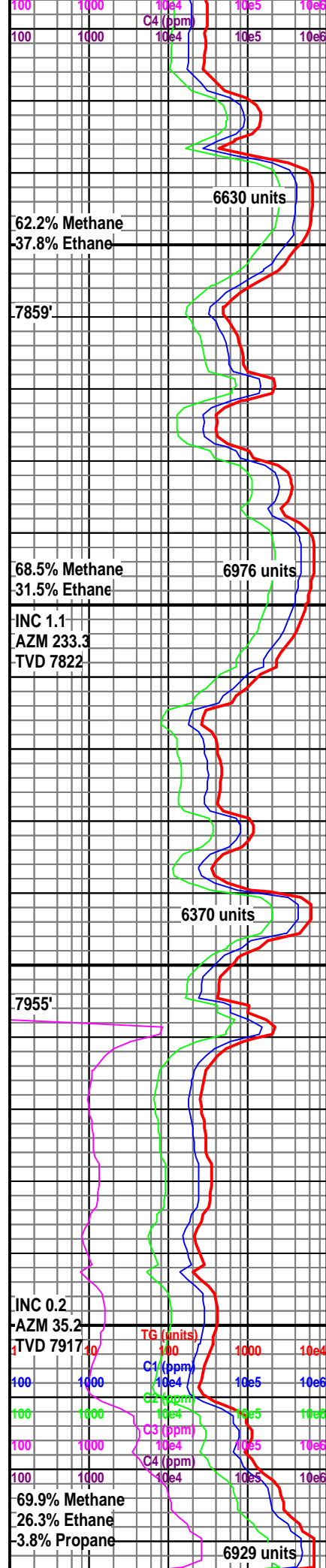
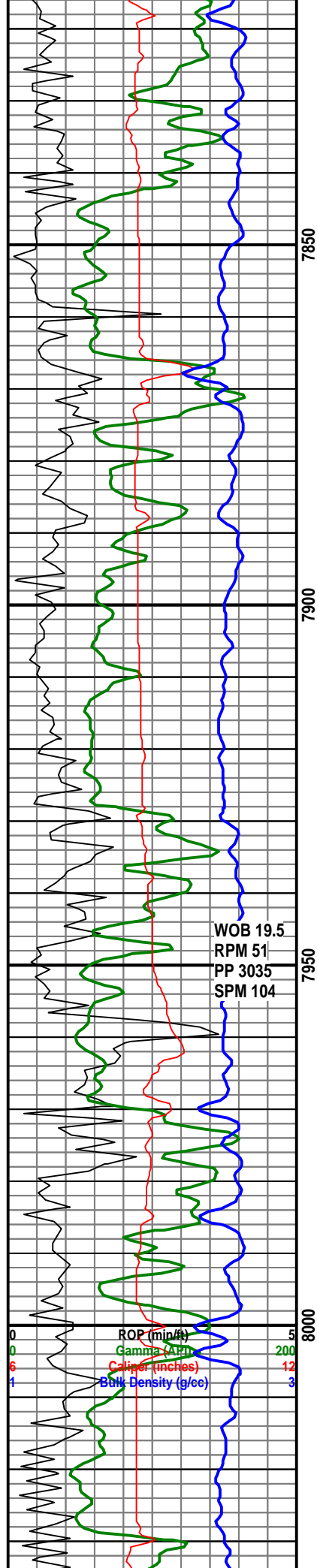


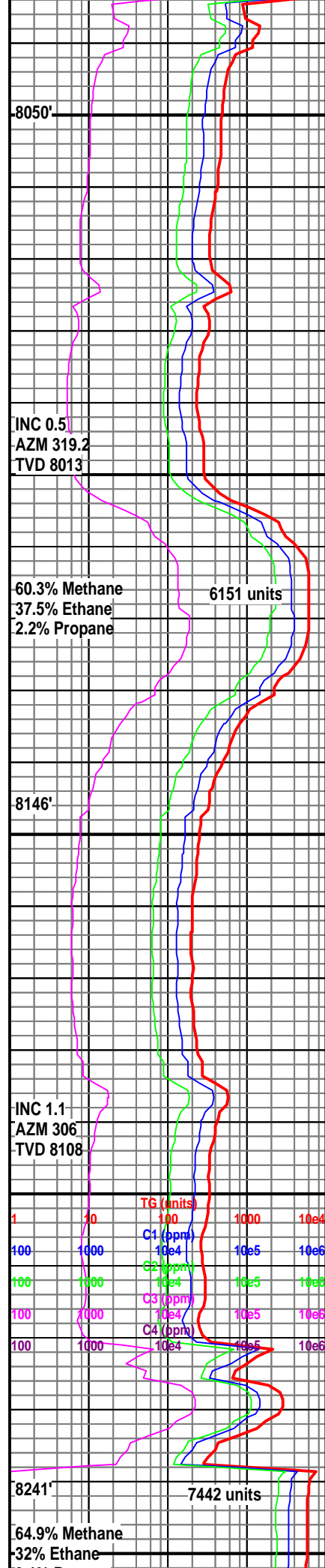
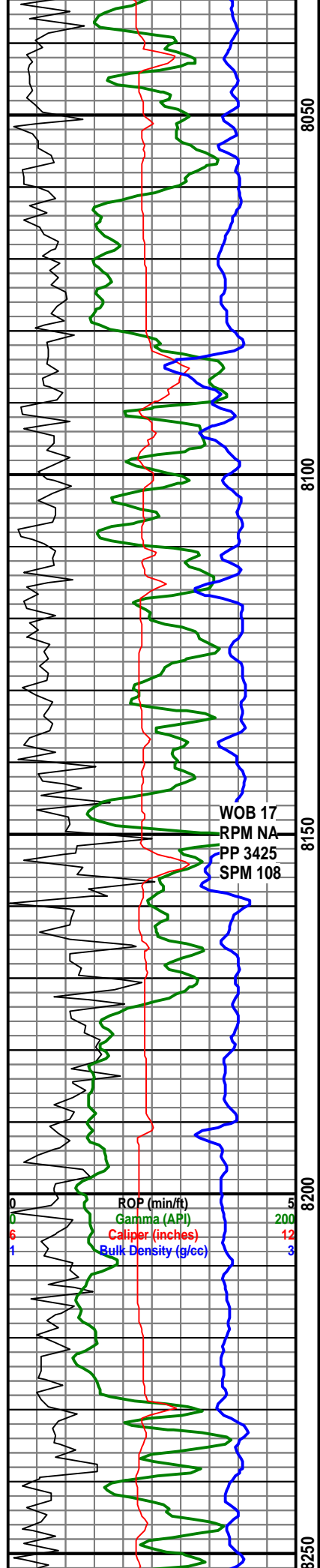


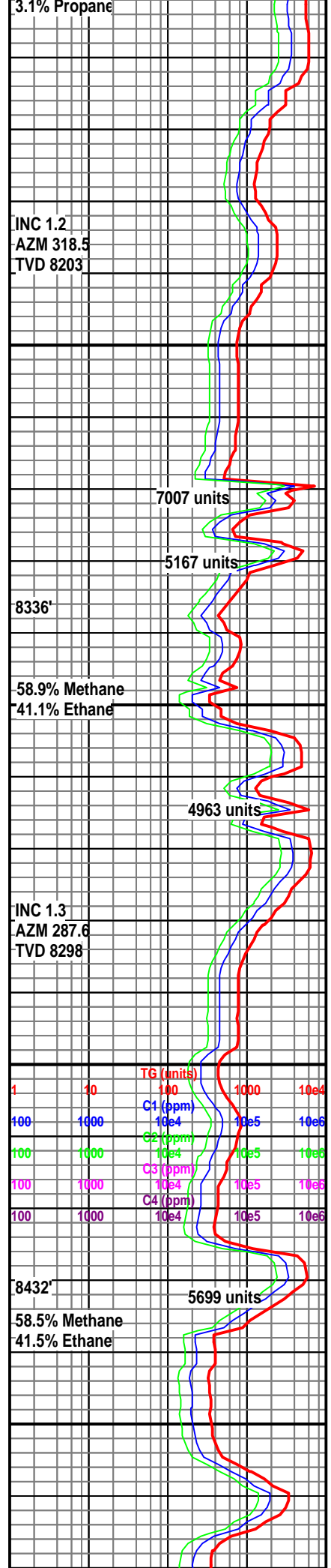
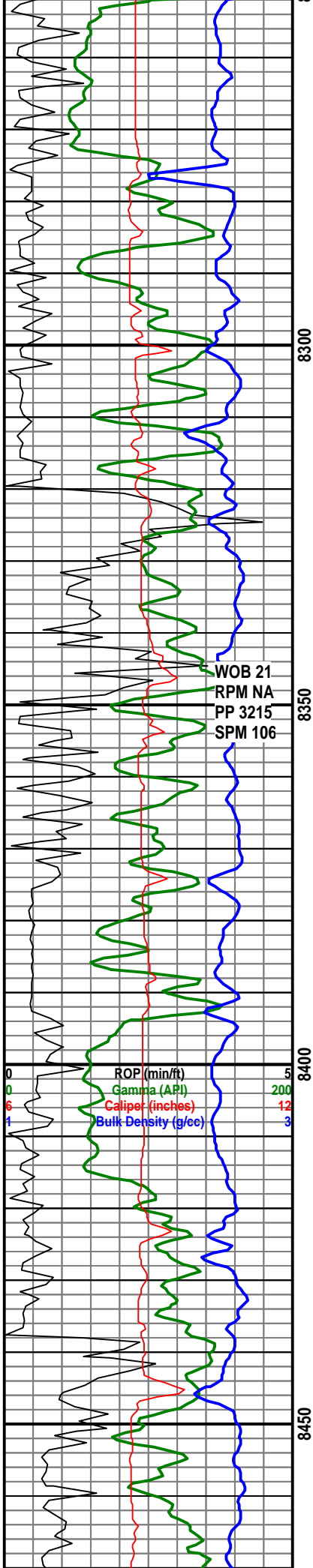




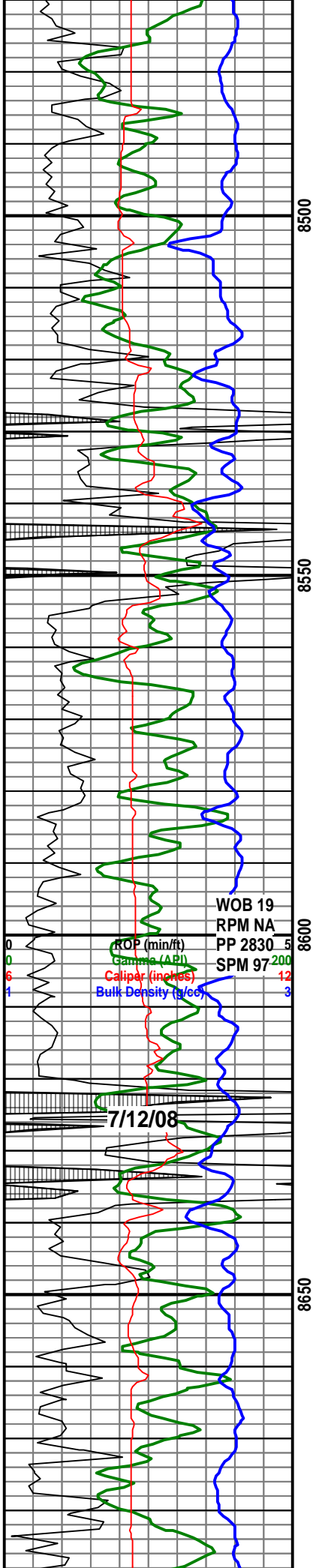








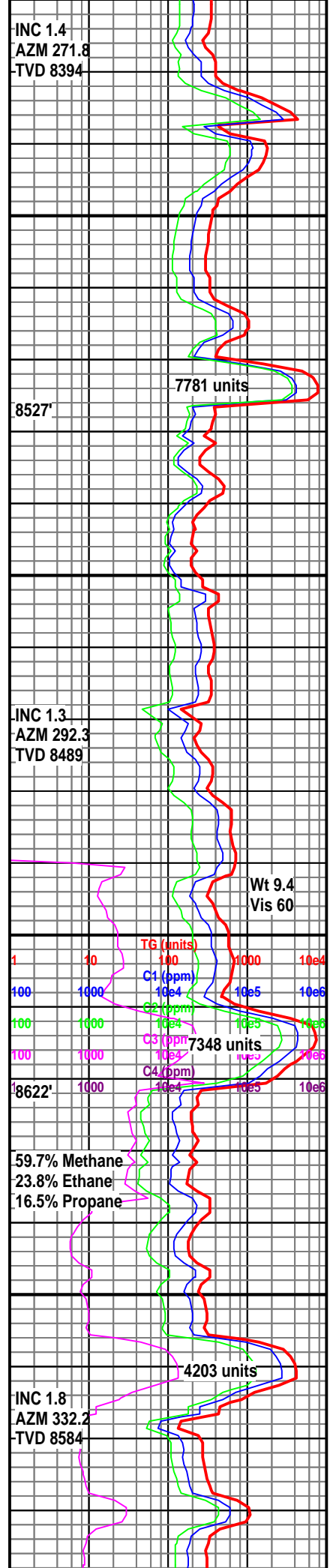




WOB 19  
RPM NA  
PP 2830.5  
SPM 97.200

ROP (min/ft)  
Gamma (API)  
Caliper (inches)  
Bulk Density (g/cc)

7/12/08



INC 1.4  
AZM 271.8  
TVD 8394

7781 units

INC 1.3  
AZM 292.3  
TVD 8489

Wt 9.4  
Vis 60

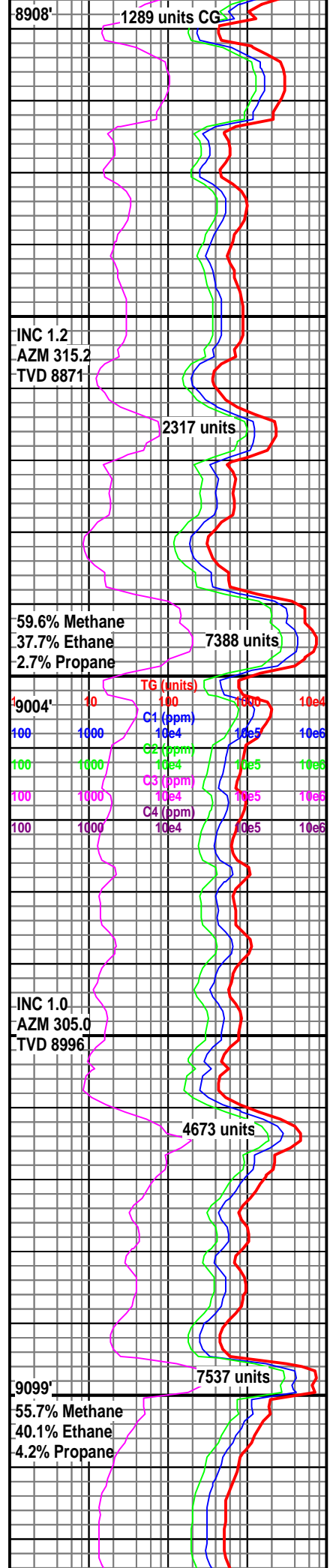
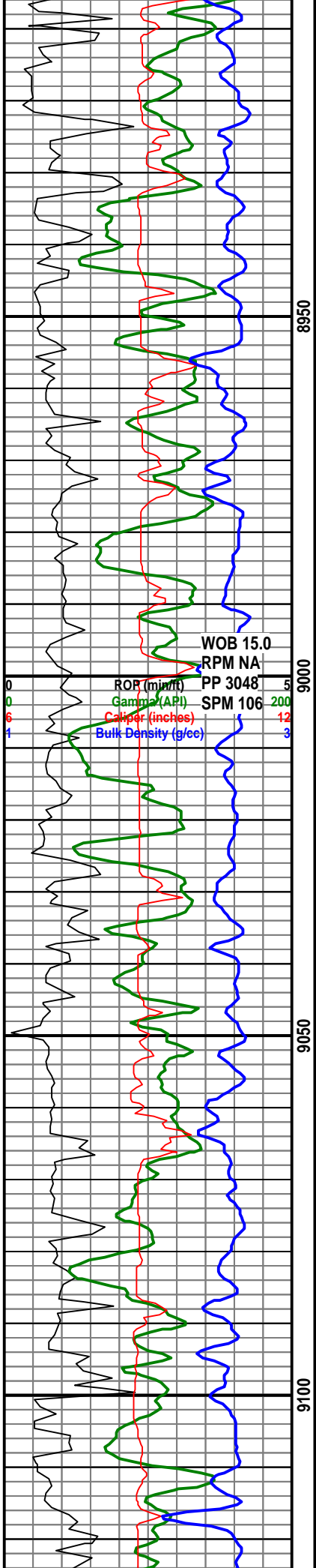
TG (units)  
C1 (ppm)  
C2 (ppm)  
C3 (ppm)  
C4 (ppm)

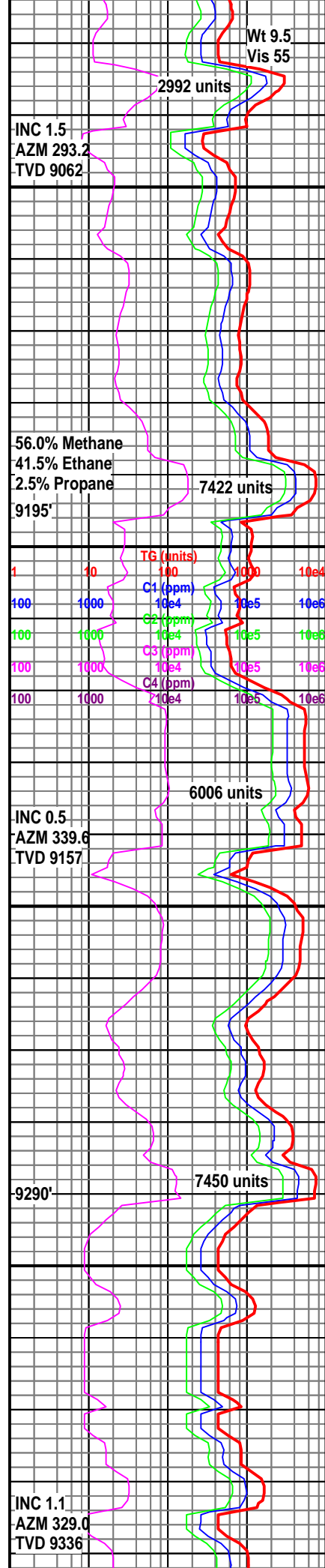
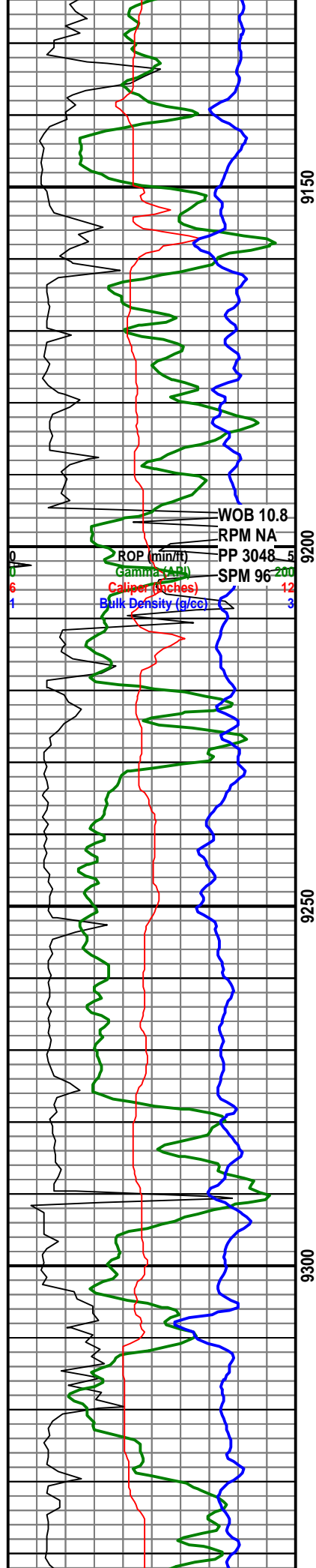
59.7% Methane  
23.8% Ethane  
16.5% Propane

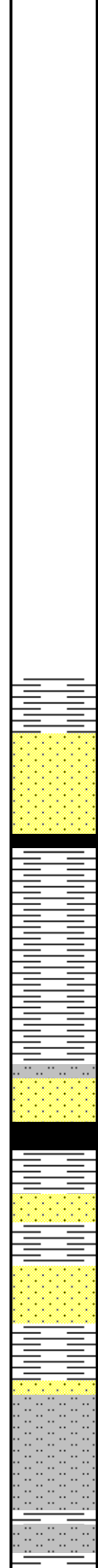
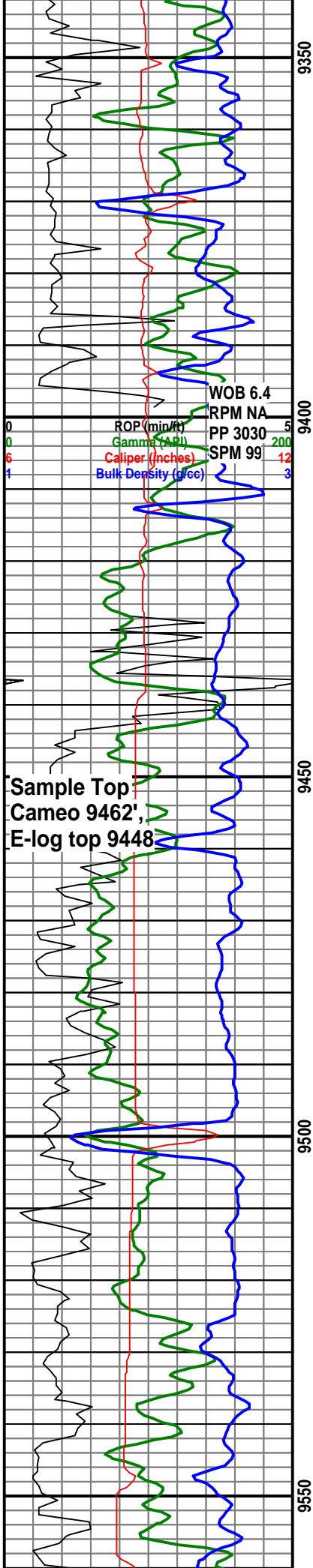
INC 1.8  
AZM 332.2  
TVD 8584

4203 units







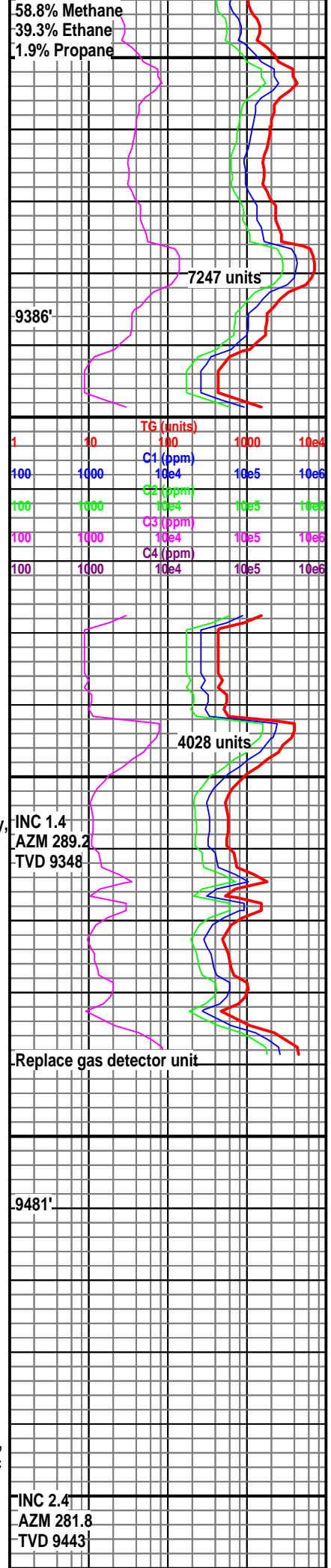


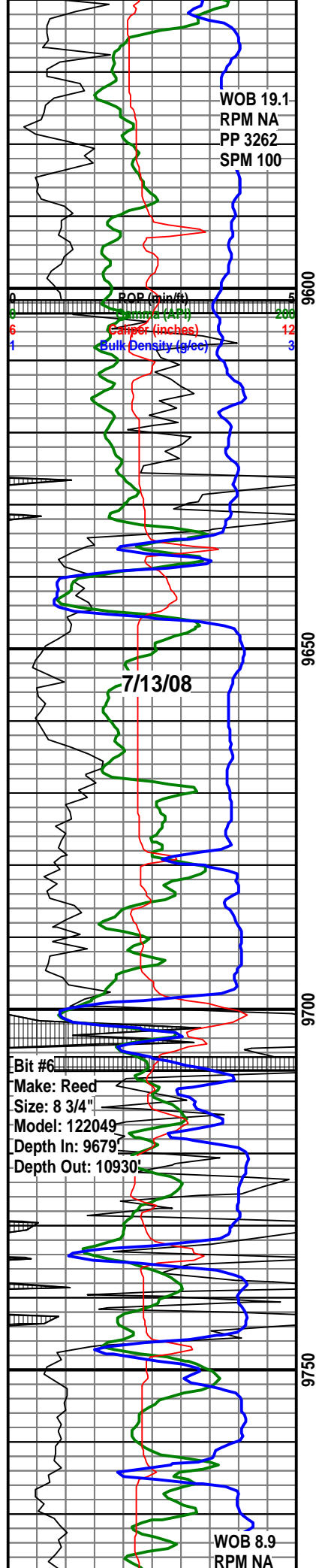
### Shift ROP, Lithology and Gas down 14' to match E-logs

9410-9440 Ss, gy-s&p, vf gr, rd-sb rd, frm, cons, v w srt, abnt Sltst, gy/blk-gy-gy bn, sft-frm, sb blk-splnty, grdg to Sh i/p, occ Coal, nsfoc

9440-9470 Sh, dk gy-blk, frm, sb blk, abnt Sltst, blk-gy-gy bn, sft-frm, sb blk-splnty, grdg to Sh i/p, occ, Ss a/a, occ Coal, blk, non calc, nsfoc

9500-9530 Sltst, blk-gy-gy bn, sft-frm, sb blk, grdg to Sh i/p, occ, Coal, blk, tr Ss s&p, sb rd, frm, , non calc, nsfoc





9530-9560 Sltst, blk-gy-gy bn, sft-frm,  
sb blk, grd to Sh i/p, occ, Coal, blk,  
non calc, nsfoc

9560-9590 Ss wt-trnsl-tan, uncon, f-vf  
gr, mod w srt, occ Coal, blk, sml,  
blkly-flky, v sli calc, nsfoc

9590-9620 Sltst, dk gy-gy, sft, plty grd  
to Sh i/p, occ, Ss, gy-s&p, vf gr, rd-sb  
rd, mod frm, cons, v w srt, occ Coal,  
blkly-flky, non calc, nsfoc

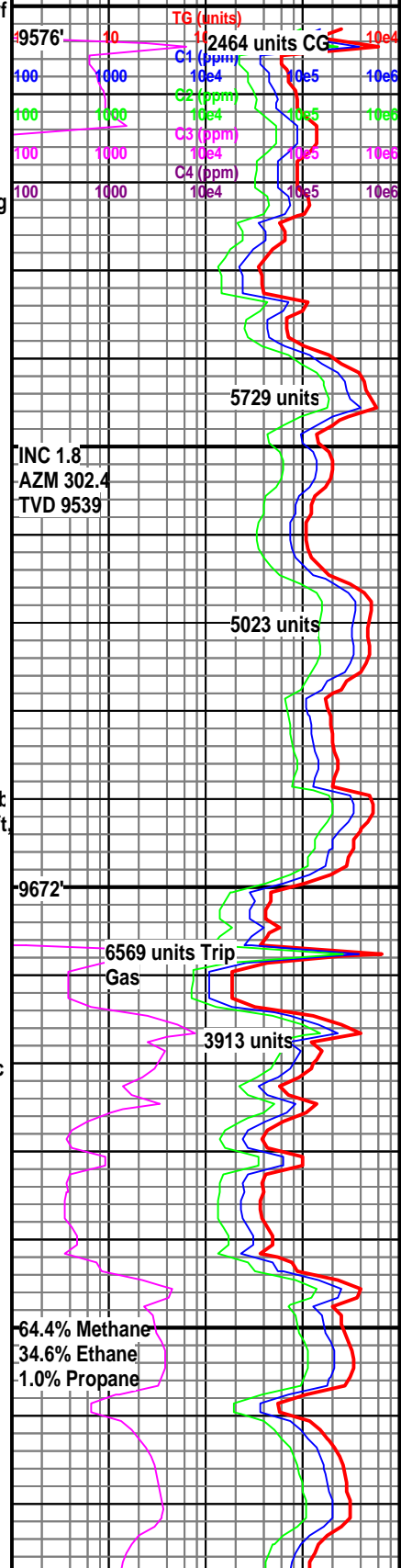
9620-9650 Ss, gy-trnsl-s&p, v fg, sft,  
cons-sme uncon, v w srt, Abnt sltst,  
gy, sb plty-sb blk, occ Coal, sml flky,  
nsfoc

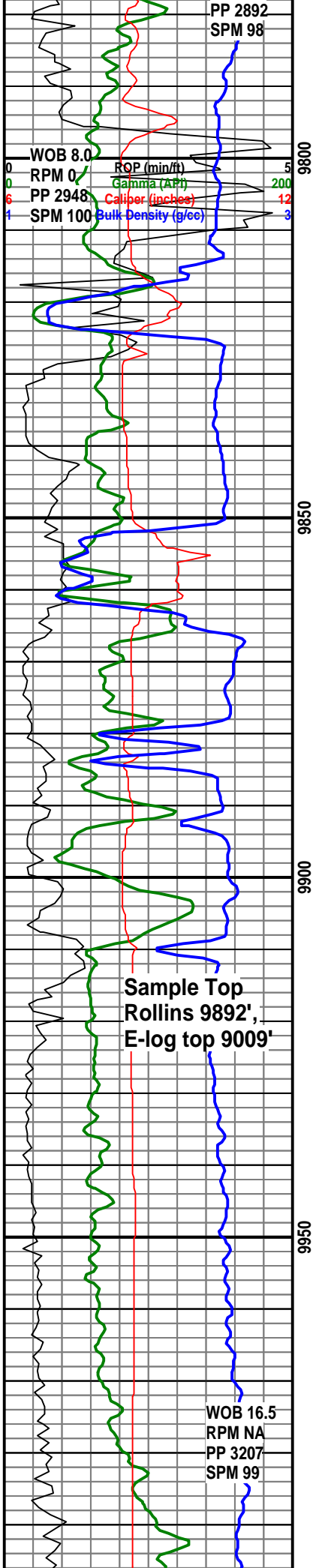
9650-9680 Sltst dk gy, v sft, sb plty-slt  
blk, sdy grd to Sh i/p, tr Coal, blk, sft,  
non calc, nsfoc

9680-9710 Sh, dk gy, plty-blky, frm, oc  
grdg to slty, abnt Coal, sft, non calc,  
nsfoc

9710-9740 Sh, dk gy-gy, sft-mod frm,  
abnt grd to sltst, tr Ss, s&p-gy, cons,  
frm, sub ang, f gr, v w srt, tr Coal, sli  
calc, v tr orgn flr, nsfoc

New chromatograph unit  
malfunctioning,  
Switch back to original  
unit





9740-9770 SS, tan-gy-s&p, rd, cons, f-vf gr, sft-mod frm, abnt Sh blk-dk gy-gy, blk-pty, carb i/p, grdg to sltst i/p, occ Coal, blk, sft, sli calc, nsfoc

9770-9800 Ss tan-s&p-trnsl, cons-tr uncons, m-vf gr, sub ang, Abnt Coal, blk, pp pyr, slty, sli calc, nsfoc

9800-9830 Ss, a/a, abnt, Sltst, gy-dk gy, blk-pty, grdg to v slty i/p, grdg to sh i/p, abnt Coal, blk, shny,

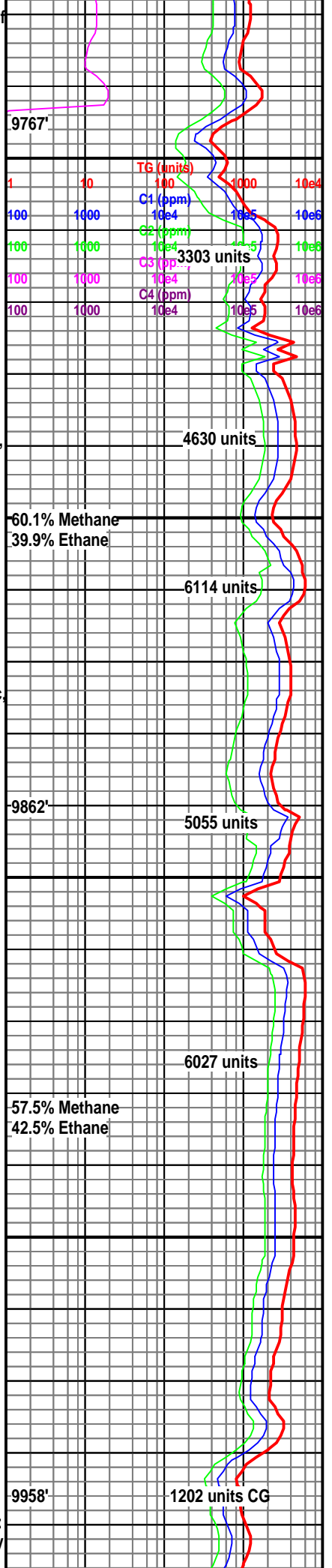
9830-9860 Ss tan-s&p-trnsl, cons, m-f gr, sub ang, frm, abnt Sh, dk gy-gy, blk-pty, frm, decng Coal a/a, non calc, nsfoc

9860-9890 Ss wt-s&p, cons, sub rd, m gr-f gr, frm, occ Sltst, sb blk, frm, non calc, nsfoc

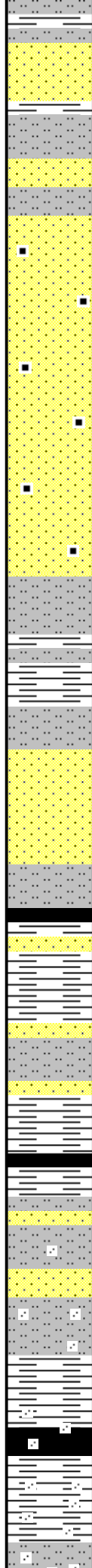
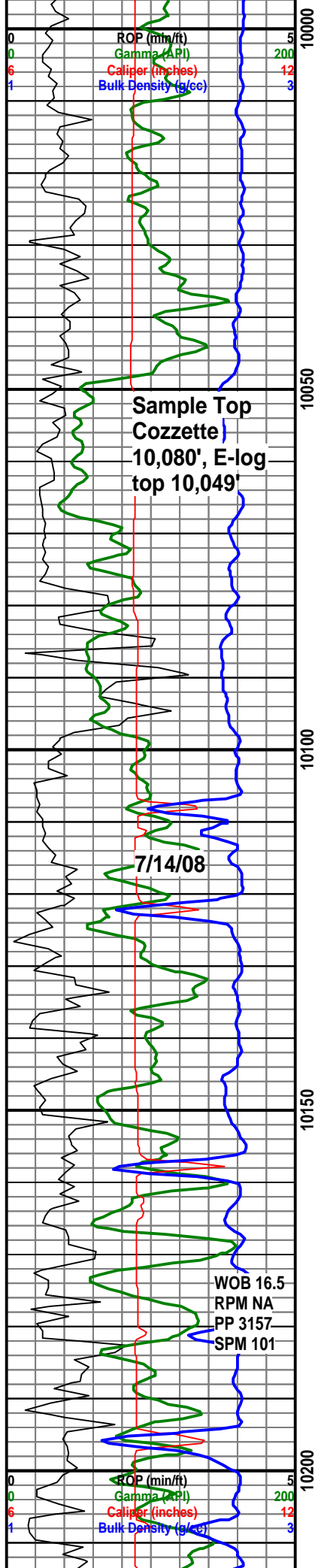
9890-9920 Poor Sample quality, Ss a/a, Sltst a/a. tr Coal

9920-9950 Ss wt-s&p, cons, sub rd, m gr-f gr, frm, occ Sltst, sb blk, frm, non calc, nsfoc

9950-9980 Sltst dk gy, v sft, sb pty-sut blk, sdy grdg to Ss i/p, abnt Coal, blk frm-md hd. non calc. nsfoc







9980-10010 Siltst dk gy, sft, sb sub blkly, sdy grdg to Ss i/p, occ Ss, wt-s&p, cons, sub rd, f gr, frm, blkly, tr Coal, tr lse qrtz, non calc, nsfoc

10010-10040 Ss wt-s&p-trnsl, unconsl, m gr-f gr, occ Coal, flky, non calc, nsfoc

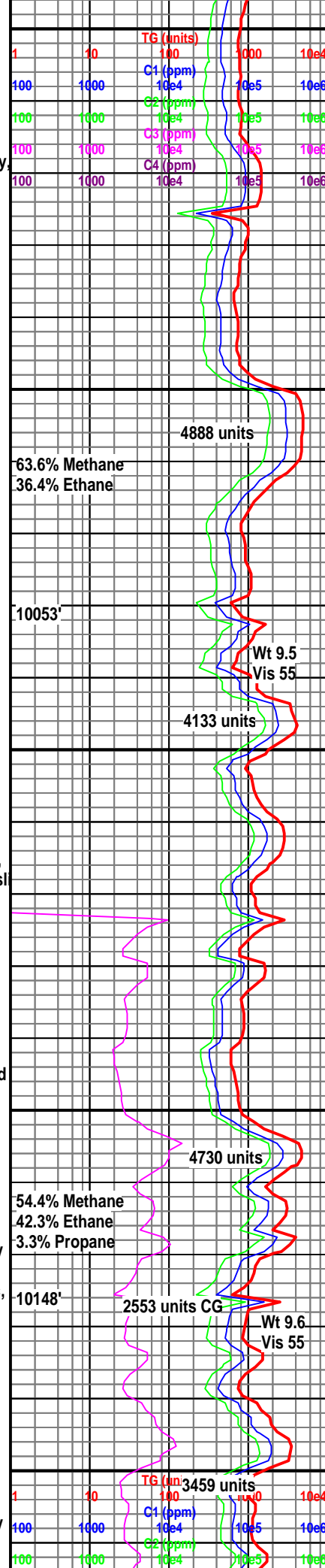
10040-10070 Siltst, gy-tan, sub blkly, sft-mod frm, v slty, abnt Ss, unconsl, f-m gr, suc i/p, occ Coal, fis i/p, non calc, nsfoc

10070-10100 Ss s&p-tan-wt, suc i/p, cons, sub rd, m gr-f gr, frm, abnt Siltst, sb blkly, frm, grdg to Sh i/p, tr Coal, v sl calc, nsfoc

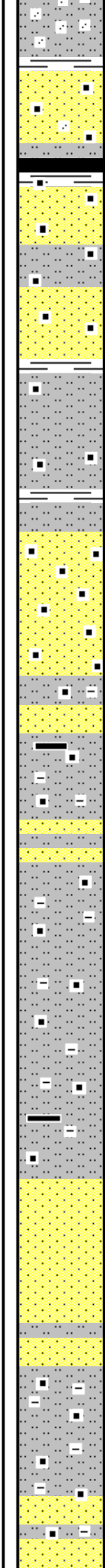
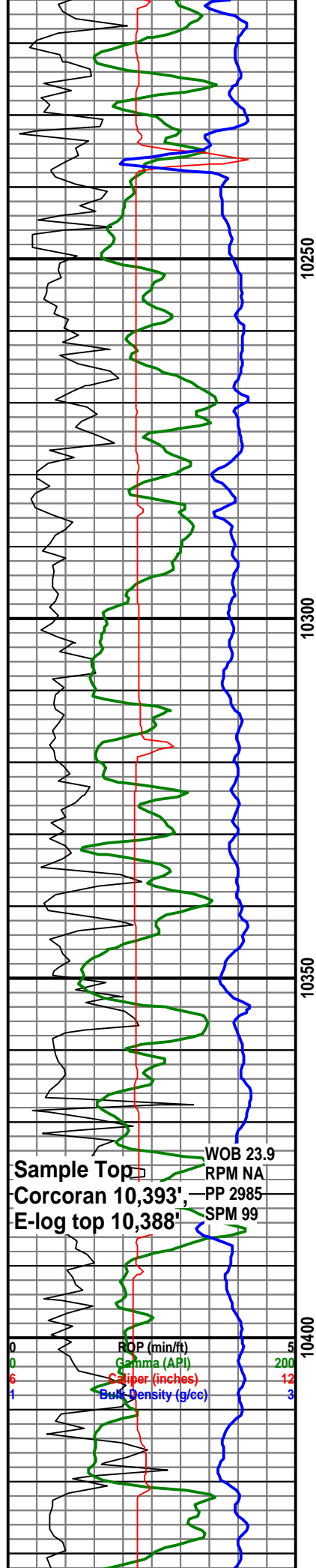
10100-10130 Siltst gy-dk gy-gy bn, sb blkly, frm, abnt Ss s&p-tan-wt, suc i/p, cons, sub rd, m gr-f gr, frm, clyfill i/p, occ Sh dk gy, plty flky-blky, sft-mod frm, occ Coal, blkly-splty, slty, sli calc, nsfoc,

10130-10160 Siltst, dk gy-gy, sub blkly-sub plty, sft-mod frm, grdg to sdy i/p, grdg to Sh i/p, abnt Ss, wt-gy-s&p, cons, f-vf gr, tr Coal, lse qrtz, non calc, nsfoc

10160-10190 Siltst, dk gy-gy, sub blkly-sub plty, sft-mod frm, grdg to sdy i/p, grdg to Sh i/p, occ Coal, lse qrtz, non calc, nsfoc







10190-10220 Ss wt-s&p-trnsl, unconsl, m gr-f gr, occ Coal, blk, tr pyr, non calc, nsfoc

10220-10250 Siltst, dk gy-gy, sub blk-sub plty, frm, sdy i/p, grdg to Sh i/p, abnt Ss tan-s&p-trnsl, cons-sme unconsl, vf gr-f gr, sub rd, frm, v w srt, occ Coal, lse qrtz, non calc, nsfoc

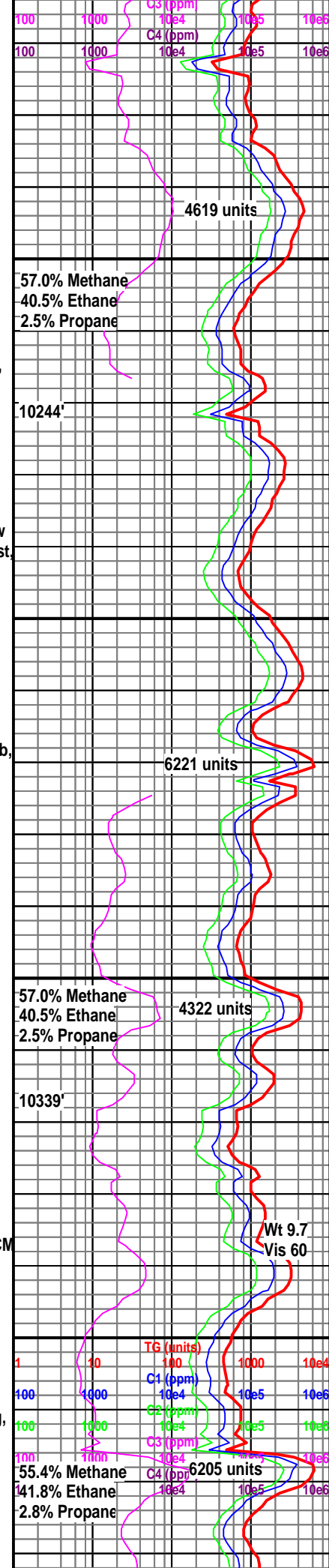
10250-10280 Ss wt-s&p-trnsl-fros, cons-unconsl, sub rd, m gr-f gr, mod w srt, frm, occ Coal, blk, blk-filky, tr Siltst, dk gy, sb blk frm, non calc, nsfoc

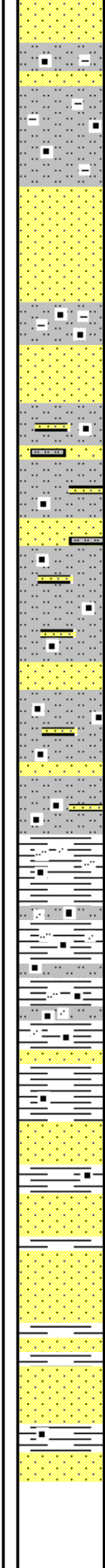
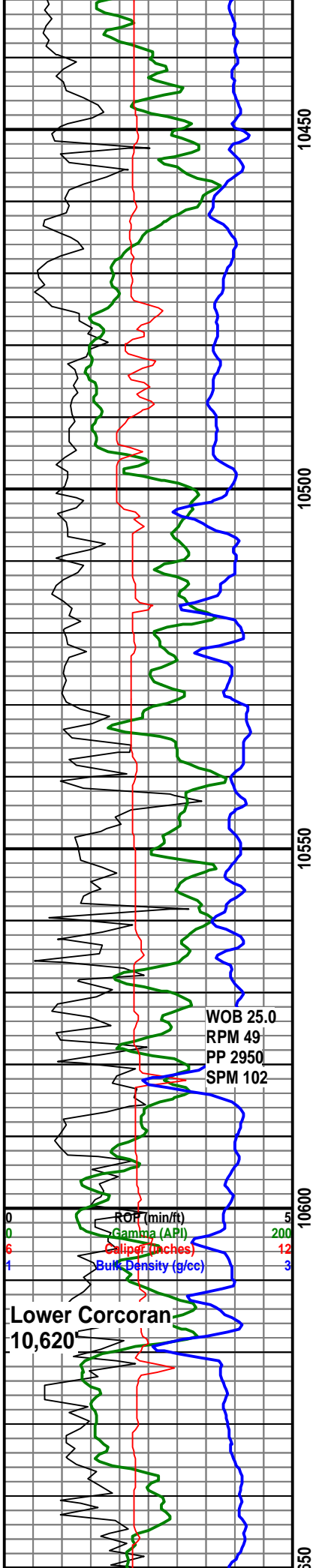
10280-10310 Siltst med-dk gy, arg, carb, plty, wxy ip, frm, Ss trnsl-wh, vf-f gr, mod srt, sb ang, qtz ovgrh, n calc, sb plty, mod frm, tt, tr Coal, blk, vit-sb wxy, pyrc ip, splty, nsfoc

10310-10340 vps, Siltst & Ss aa, 99% LCM

10340-10370 Ss trnsl-wh, vf-f gr, occ med gr, mod srt, sb rd, sft-mod frm, n calc, qtz ovgrh, tt, occ Siltst med gy, plty, frm, carb, n calc, tr Coal, abnt LCM

10370-10400 vps, Siltst med-dk gy, arg, carb, sb plty, mod frm-frm, n calc, Ss trnsl-wh, vf-f gr, mod srt, nsfoc, abnt LCM





10400-10430 Siltst dk gy, arg, carb, sb plty, frm, n calc, Ss lt gy-wh, vf gr, occ f-med gr, slty ip, sb rd-sb ang, mod-ply srt, sft-mod frm, qtz ovgrh, sl calc ip, tt, nsfoc

10430-10460 Ss trns-l-wh, f-med gr, slty ip, mod-ply srt, sb rd, occ fros grs, sl calc ip, disag ip, sft, occ Siltst, dk gy, arg, carb, pyrc ip, sb plty, frm, nsfoc

10460-10490 Siltst med-dk gy, sdy ip, sb plty-plty, carb, pyrc ip, frm, grdg to Ss lt-med gy, vf gr, slty, mod frm, sb plty, tr calc, tt, nsfoc

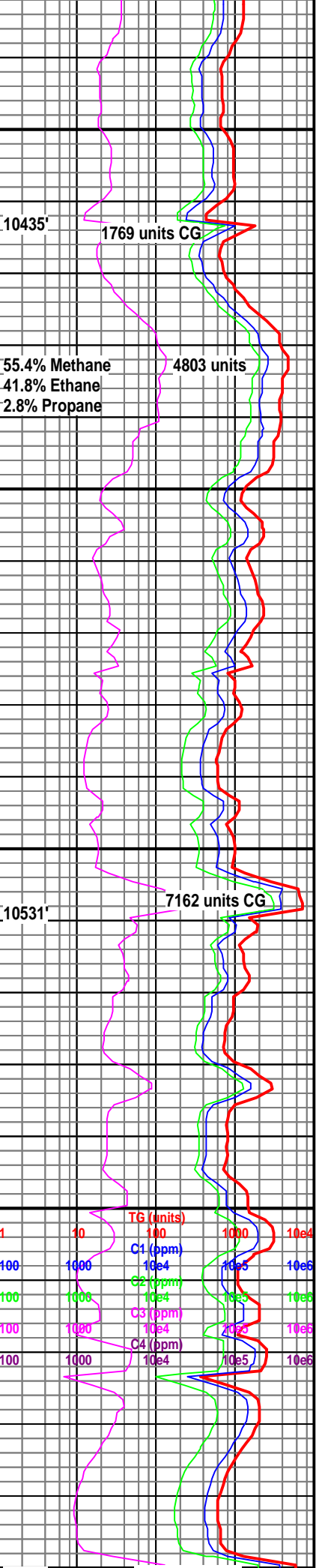
10490-10520 Siltst med-dk gy, sdy ip, sb plty-plty, carb, pyrc ip, frm, grdg to Ss lt-med gy, vf gr, slty, mod frm, sb plty, tr calc, tt, nsfoc

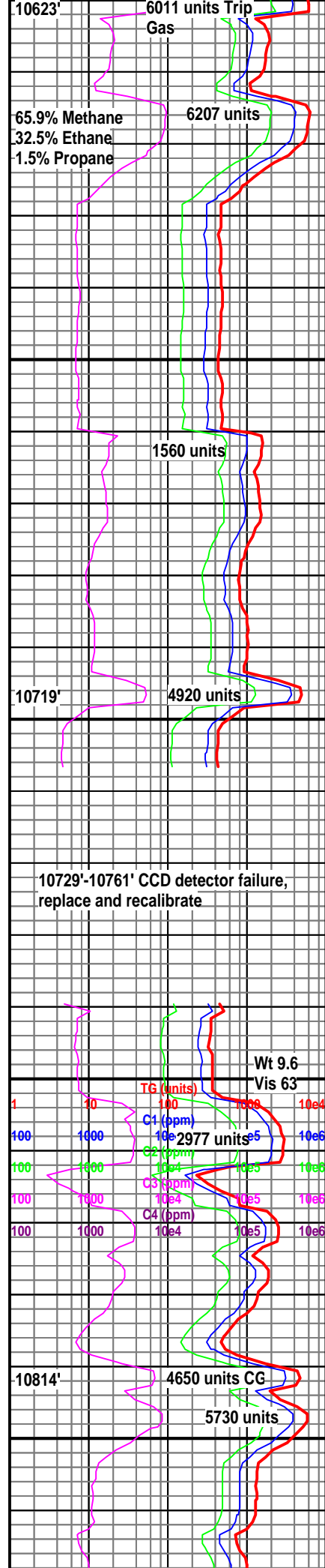
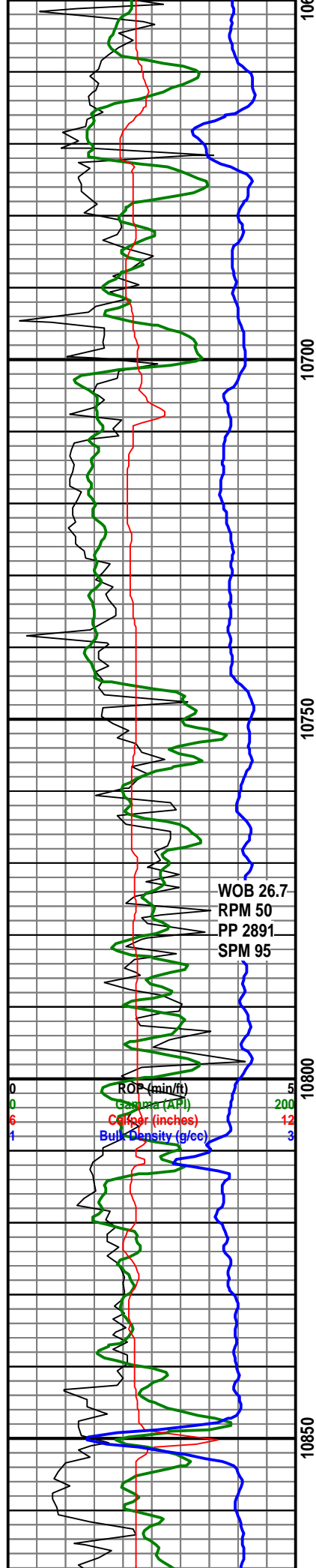
10520-10550 Sh dk gy, v slty, sdy ip, sb plty-plty, carb, pyrc ip, frm, grdg to Siltst, med-dk gy, arg ip, sdy ip, sb ply, carb, pyrc ip, frm, tr Coal blk, sb vit, blk, pyrc, nsfoc

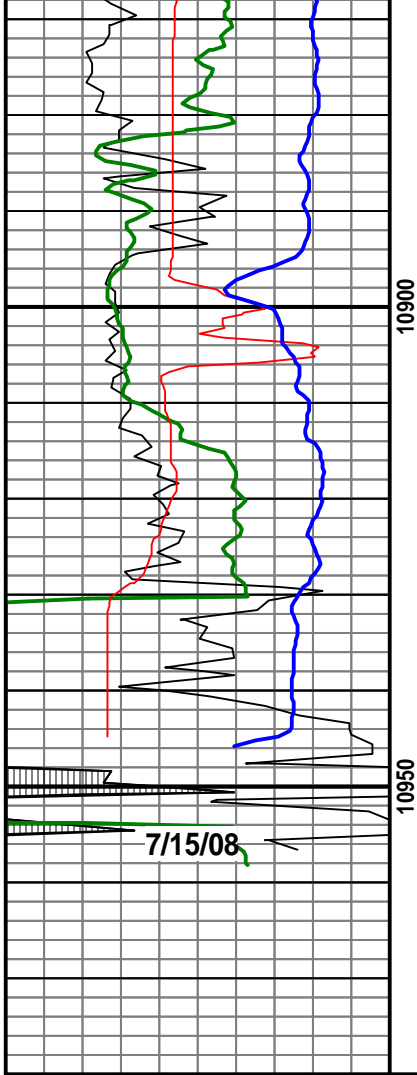
10550-10580' Ss wh-lt gy, vf gr, mod srt, sb ang, sb plty, n calc, mod frm, tt, occ Sh grdg to Siltst aa, nsfoc, abnt LCM

10580-10610' vps, Ss wh-lt gy, vf gr, mod srt, sb ang, sb plty, n calc, mod frm, tt, occ Sh grdg to Siltst aa, nsfoc, abnt LCM

10610' End of Lithology Logging, 7/14/08







Driller's TD 10,930' 00:20  
7/15/08, Logger's TD 10,954'

Entrada Geosciences  
released and rigged down  
gas detection 06:00 7/17/08

