



**Woolsey Operating Company, LLC**

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

Measured Depth Log

**Well Name:** Weckworth #4

**Location:** Section 9 - Township 35 South - Range 12 West

**License Number:** 15-007-23723-0000

**Region:** Barber County, KS

**Spud Date:** June 30, 2011

**Drilling Completed:** July 11, 2011

**Surface Coordinates:** 2310' FSL, 10' FWL or 320' W of NW NW SW

Hardtner Field

**Bottom Hole Coordinates:** Verticle Hole

**Ground Elevation (ft):** 1418'

**K.B. Elevation (ft):** 1429'

**Logged Interval (ft):** 4000'      **To:** 5520'      **Total Depth (ft):** 5520'

**Formation:** Kansas City Goup ----> Simpson Group

**Type of Drilling Fluid:** Chemical Mud Displaced at 3293'

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

**OPERATOR**

**Company:** Woolsey Operating Company,LLC

**Address:** 125 N. Market, Suite 1000

Wichita, KS 67202

**GEOLOGIST**

**Name:** Bill Klaver

**Company:** Woolsey Operating Co. LLC

**Address:** 125 N. Market, Wichita Kansas, 67202

## COMMENTS

Surface Casing: Spud 5:45 pm on 6/29/2011, set 5 joints 10 3/4" X 32.75#/ft casing at 224' KB, 240 sx Class A, 2% gel, 3% cc. Cement did circulate. Plug down 2 am on 6/30/2011.

Production Casing:

Deviation Surveys: 3/4 at 228', 1/2 at 1205'. 1/2 at 1706', 1/2 at 2209', 3/4 at 2716', 1/2 at 3201', 3/4 at 3697', 7/8 at 4696', 3/4 at 4910', 3/4 at 5250', 3/4 at 5520'.

Pipe Strap @ 4910', Strap: 4912.52', Board: 4912.73', strap .21' short to the board. No correction was made to the board.

Duke Drilling Rig 10 Bit Record:

#1 14 3/4" HTC RR in at 0' out at 288'. 288' in 2.5 hours

#2 7 7/8" Varel HE-29 in at 288', out at 4910', 4622' in 117 hours, average footage of 39.5'/hour.

#3 7 7/8" Varel HE-21 in at 4910', out at 5520', 610' in 45 1/2 hours, average footage of 13'/hour.

Gas Detector: Woolsey Operating Company, Gas Trailer #2

Mud System: Mud-Co., Brad Bortz, Engineer

DSTs: Trilobite Testing Co. Leal Cason, Gary Pevoteaux, Testers

OH Logs: Superior Well Service, Dual Induction Laterolog w/SP, CNL-FDC w/PE, GR, Caliper. Jeff Luebbers, Engineer.

## DSTs

DST #1 Mississippian, 4840'-4910'. 30"-60"-60"-120", Strong blow BOB 2 minutes into IFP. GTS 2 minutes into FFP (GTS 32 Minutes), Rec: 4622' GIP, 210' GCM (2%G, 98%M). IHP 2339, IFP 79-75, ISIP 608, FFP 38-81, FSIP 583. FHP 2327. BHT 127. Gas rates during FFP on 1/4" choke. 10"-20" 29.3 MCF, 30"-50" 27.7 MCF, 60"-26.1 MCF.

DST #2 Misener Sand, 5136'-5250'. 30"-60"-60"-90", SB BOB 2 minutes into IFP, FB BOB 10 minutes into FFP. Rec: 65' OSM (<1%O), 185' GOCWM (28%G, 11%O, 29%W, 32%M), 185' GOCMW (9%G, 7%O, 28%M, 56%W), 180' OSMW (<1%O, 12%M, 88%W). Rw .08 ohms at 84 degrees. Chlorides 78,000 ppm. IHP 2557, IFP 87-177, ISIP 1979, FFP 202-321, FSIP 1969, FHP 2443. BHT 131 degrees.

## CREWS

Joe Livingston, Tool Pusher

Scott Edwards, Days

Colby Crawford, Evening

Alex Ordonez, Morning

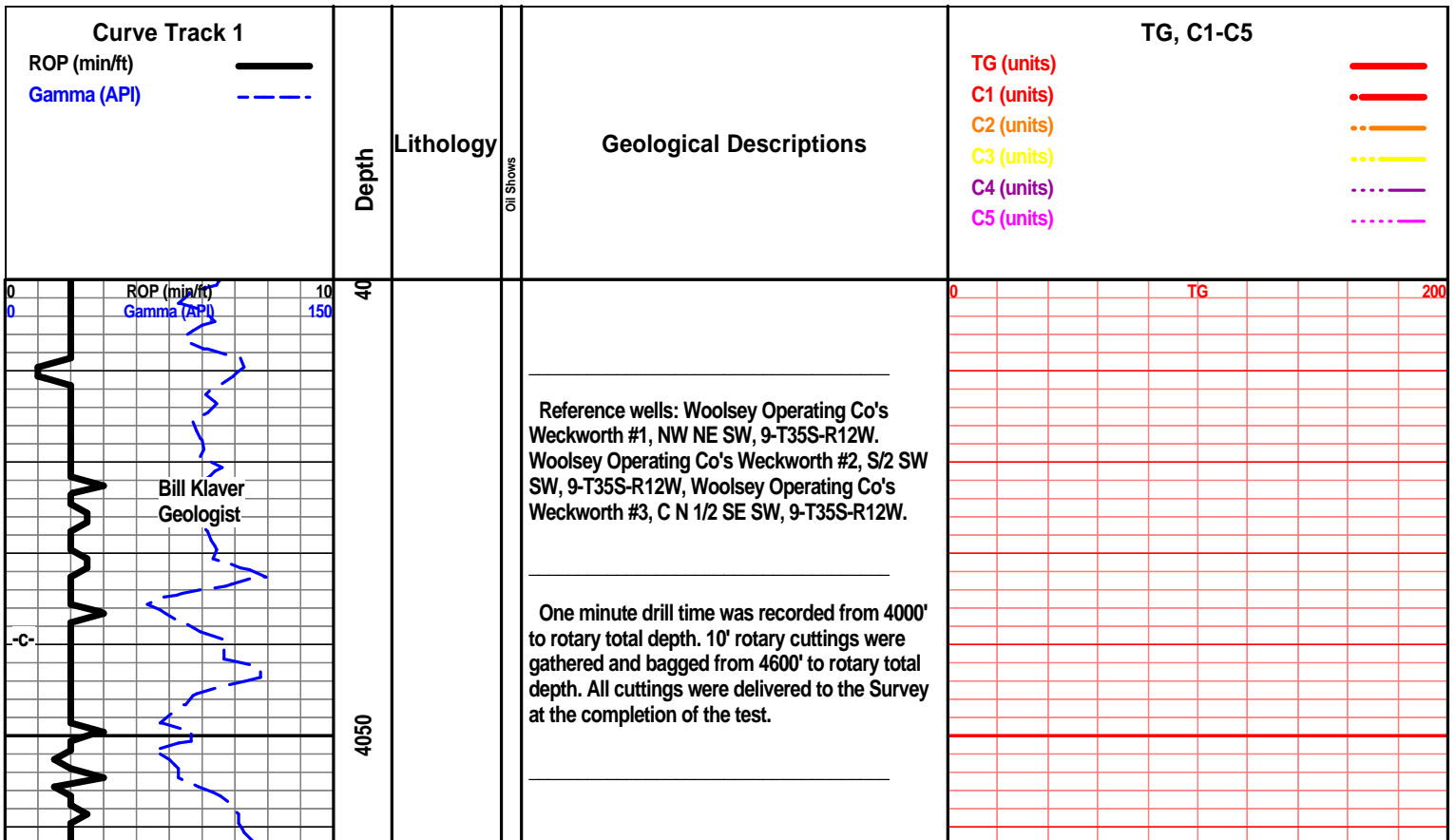
Ron Burns, Relief

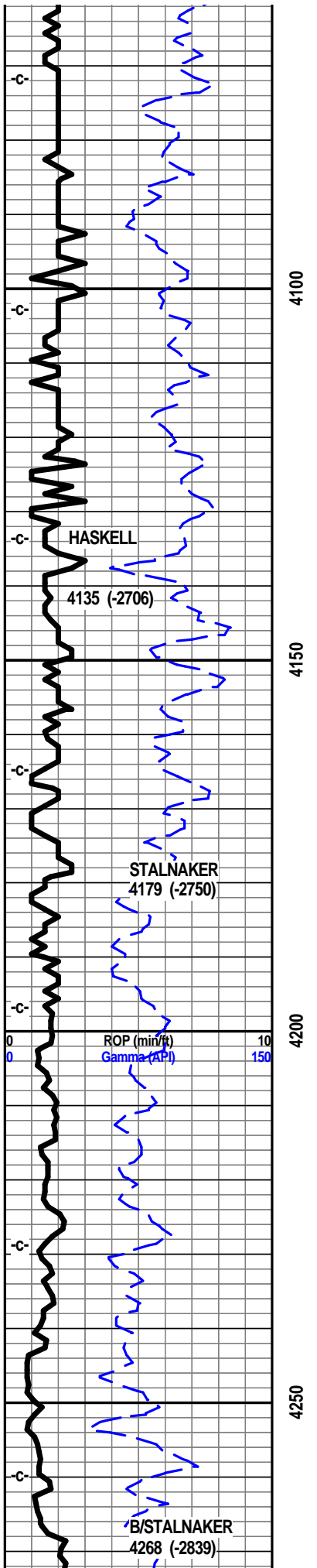
### ROCK TYPES

	Anhy		Congl		Lmst		Black sh
	Bent		Sdy dolo		Mrlst		Gry sh
	Brec		Shy dolo		Salt		Shale
	Cht		Dol		Shale		Shyslst
	Clyst		Gyp		Sltst		Sltst
	Coal		Sdy lmst		Ss		

### ACCESSORIES

<b>MINERAL</b>		Chlorite		Pelec		Grysh	
	Anhy		Dol		Gryslt		
	Arg		Sand		Lms		
	Bent		Silty		Sandylms		
	Bit	<b>FOSSIL</b>		Plant		Sh	
	Brecfrag		Algae		Strom		Sltstn
	Calc		Amph		Fuss		
	Carb		Belm		Oomoldic	<b>TEXTURE</b>	
	Chtdk		Bioclst		Anhy		Boundst
	Chtlt		Brach		Arg		Chalky
	Dol		Bryozoa		Bent		Cryxln
	Ferrpel		Cephal		Coal		Earthy
	Ferr		Coral		Dol		Finexln
	Glau		Crin		Gyp		Grainst
	Gyp		Echin		Ls		Lithogr
	Marl		Fish		Mrst		Microxln
	Nodule		Foram		Sltstng		Mudst
	Phos		Fossil		Ssstrg		Packst
	Pyr		Gastro		Carbsh		Wackst
	Salt		Oolite		Clystn		
	Sandy		Ostra		Dol		
	Silt						





**7 am Progress:**

June 29, 2011 MIRT, Spud 5:45 pm  
 June 30, 2011 WOC, Plug down 2 am  
 July 1, 2011 Drilling at 1738'  
 July 2, 2011 Drilling at 2466'  
 July 3, 2011 Drilling at 2998'  
 July 4, 2011 Drilling at 3275'  
 July 5, 2011 Drilling at 3955'  
 July 6, 2011 Drilling at 4535'  
 July 7, 2011 Drilling at 4808'  
 July 8, 2011 Drilling at 4924'  
 July 9, 2011 Drilling at 5163'  
 July 10, 2011 DST #2 at 5250'  
 July 11, 2011 CFS at 5408'  
 July 12, 2011 E-logs out 4 am

Mud-Co. 4070'  
 wt. 9.2 vis. 51  
 wl. 9.0 chl. 4,000

**E-Log Tops:**

Herington 1953 (-524)  
 Onaga 2824 (-1395)  
 Wabaunsee 2880 (-1451)  
 Stotler 3022 (-1593)  
 Topeka 3486 (-2057)  
 LeCompton 3639 (-2210)  
 Kanwaka 3662 (-2233)  
 Elgin Sand 3757 (-2328)  
 Heebner 3868 (-2439)  
 Toronto 3879 (-2450)  
 Douglas Group 3923 (-2494)  
 Douglas Shale 3944 (-2515)  
 Ireland Sand 4033 (-2604)  
 Haskell 4135 (-2706)  
 Stalnaker Sand 4179 (-2750)  
 Quindaro Shale 4389 (-2960)  
 Kansas City 'F' 4405 (-2976)  
 Kansas City 'G' 4432 (-3003)  
 Kansas City 'H' 4481 (-3052)  
 Kansas City 'I' 4523 (-3094)  
 Stark 4562 (-3133)  
 Swope 4572 (-3143)  
 Hushpuckney 4593 (-3164)  
 Hertha 4605 (-3176)  
 B/Kansas City 4647 (-3218)  
 Pawnee 4736 (-3307)  
 Cherokee Group 4782 (-3353)  
 Cherokee Sand 4804 (-3375)  
 Mississippi 4834 (-3405)  
 C3 4842 (-3413)  
 C2A 4859 (-3430)  
 C2 4915 (-3486)  
 C1 4969 (-3540)  
 Osage 5045 (-3616)  
 Northview Shale 5098 (-3669)  
 Compton 5120 (-3691)  
 Kinderhook 5142 (-3713)  
 Woodford 5215 (-3786)  
 Misener Sand 5240 (-3811)

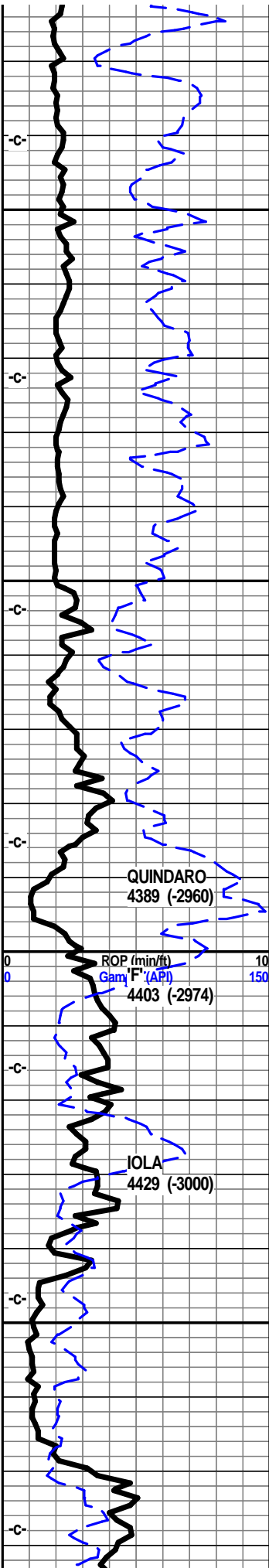
0 TG 200

wt. 9.0 vis. 49

wt. 9.0 vis. 48

Viola 5278 (-3849)  
 Simpson Group 5394 (-3965)  
 Wilcox 5406 (-3977)  
 McLish Shale 5471 (-4042)  
 LTD 5524 (-4095)

**Oil/Gas Show Legend**  
 Gas  
 Even Stain/Saturation  
 Spotted Stain/Saturation  
 Questionable  
 Dead/Gilsonitic

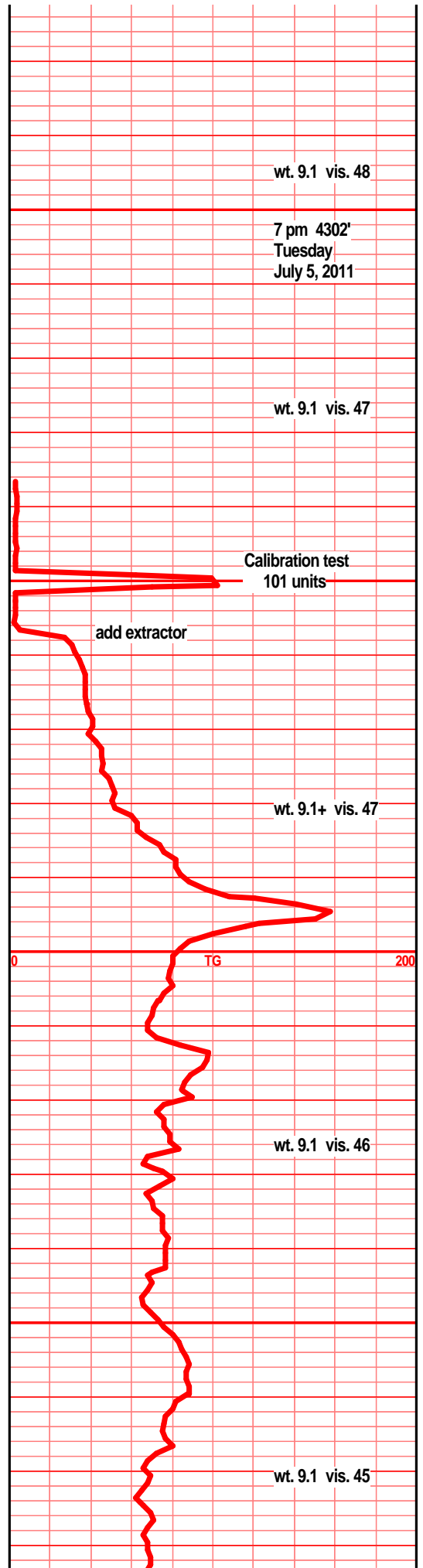
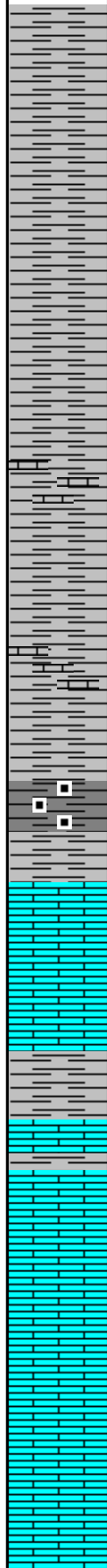


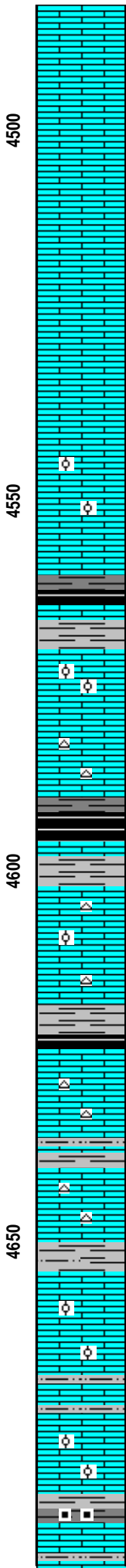
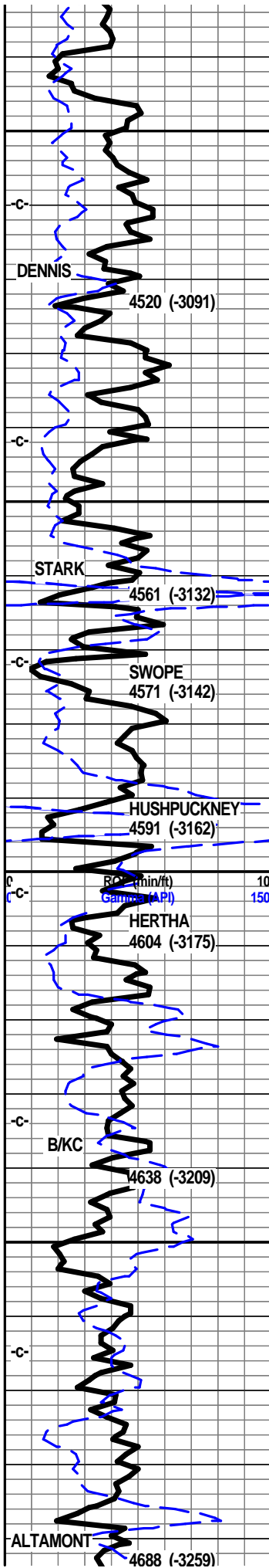
4300

4350

4400

4450





4500

4550

4600

4650

Ist crm buff tan f sli med xln gran blkly ang sub chlky calc xln fill, foss frags, crsly in prt

Ist crm tan buff f sli med xln blkly ang gran foss frags, crsly foss in prt, frags/ool/pelletal, calc xln fill chlky

Ist tan brff crm f xln dns hrd blkly ang foss frags, calc xln fill, foss ool, pelletal

shl gry drk gry blk, blk carb, wxy grsy text, tr gas bubs

Ist crm buff tan f sli med xln gran blkly flky sub chlky, foss frags, foss ool/pelletal, calc xln fill, inter xln por

Ist crm tan buff f xln blkly ang dns bec hrd, foss frags, foss ool/pelletal, tr sub chlky, calc xln fill, tr chrt tan shrp frsh

shl drk gry blk, blk carb, wxy grsy in prt, gas bubs, lst gry tan vf xln gritty arg, tr foss frags,

Ist crm tan brn f vf xln dns hrd blkly ang, calc xln fill, tr arg, foss frags, foss ool, tr chrt tan shrp frsh

Ist buff tan f vf xln blkly dns mstly hrd, tr sub chlky, foss frags, micro ool, calc xln fill,

shl drk gry blk, blk carb, gas bubs, lst tan lt gry f vf xln dns hrd blkly ang, tr arg, tr foss frags, tr calc xln fill

shl gry med gry calc fiss, lst tan lt gry lt brn vf xln dns hrd blkly ang tr foss frags, tr chrt tan wht shrp frsh opa

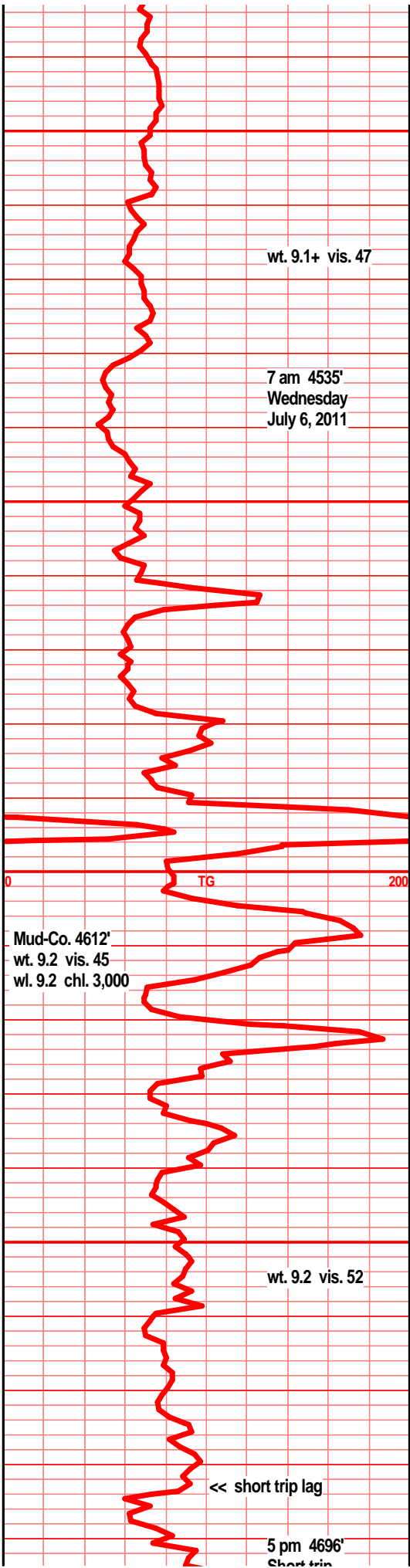
Ist crm gry tan f vf xln dns rd blkly ang arg, tr foss frags, tr sub chlky, mstly hrd dns, much gry brn calc shls, chrt gry shrp frsh

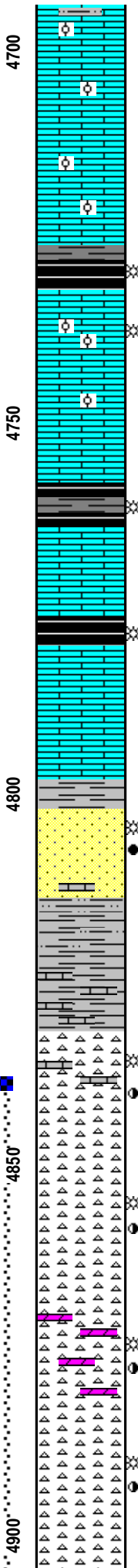
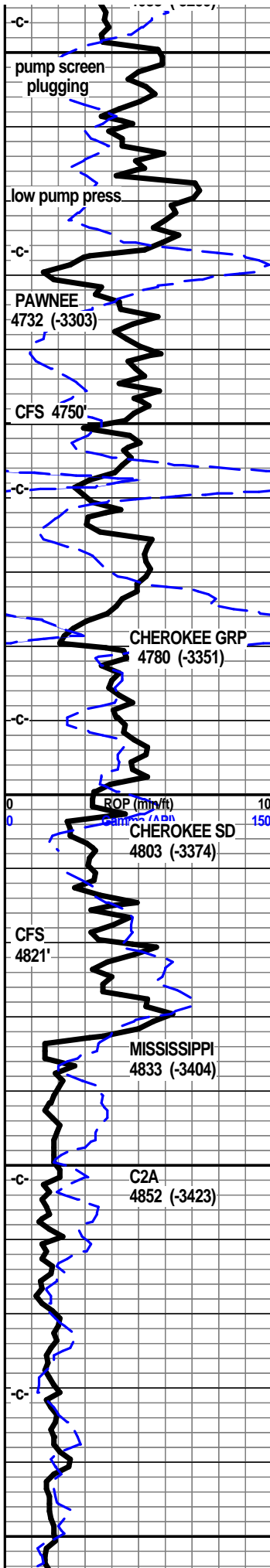
shls gry gry/green silty gritty calc, lst gry tan dull tan vf xln dns hrd ang arg, silty arg -poor spl-

Ist crm tan f vf xln blkly ang dns pcs, tr sub chlky foss frags, micro ool/pelletal, calc xln fill, massive blkly

Ist crm tan buff f vf xln dns hrd blkly calc xln fill, foss frags, micro ool, pelletal, blkly ang pcs, tr sub chlky

shl gry drk gry blk, lst crm buff f vf xln dns hrd blkly, tr sub chlky, foss frags, micro ool/pelletal,





calc xin fill

1st crm tan buff f xln blkly ang tr sub chlky, foss frags, micro ool, calc xin fill, much frsh "splintery" shls in spl

1st tan buff vf xln dns hrd blkly ang pcs, tr sub chlky, tr calc xin fill, micro foss frags, ool/pelletal

1st crm tan tr lt brn vf xln dns hrd blkly massive, calc xin fill, tr sub chlky tr foss frags, micro ool,

shl gry drk gry blk, blk carb, gas bubs, blkly ang pcs

1st crm tan buff f sli med xln, flky blkly ang pcs, sndy/gritty in prt, sub chlky to chlky, foss frags, foss ool, inter xln por, hvy calc xin fill, bright UV, gas bubs, nodor, nsfo/stain. 1st tan gry mott, f sli med xln blkly chlky sli arg pcs, foss frags, crsly ool in prt, calc xin fill

shl gry drk gry blk, blk carb in prt, 1st tan gry vf xln blkly dns hrd ang. sli arg, foss frags

1st tan buff lt brn f xln dns, hrd, blkly, ang, tr micro foss, tr gritty, foss frags

shl gry blk, 1st tan gry tan buff, f vf xln dns, hrd blkly, tr arg, sub chlky/gritty in prt, tr foss frags, calc xin fill

1st crm tan buff off wht, f vf xln blkly dns hrd, sub chlky in prt, foss frags, micro foss, calc xin fill, mstly dns hrd blkly ang

1st tan crm lt gry vf xln dns hrd blkly tr foss, sub chlky, shl gry med gry calc

sst brn drk brn clstrs, vf grnd, sub ang grns, w/srtd, f/prly cem, sub fria, soft/mushy in prt, inter grn por, bleeding oil/gas, gd stain/sat, abun gas bubs, gd odor, dead flky stain

sst wht off wht vf grnd, sub rded grns w/srtd, vry calc, limy, blkly ang clstrs, shls gry drk gry/green silty sndy gritty, 1st tan buff, gry, vf xln blkly dns, hrd sub chlky, pyritic fill,

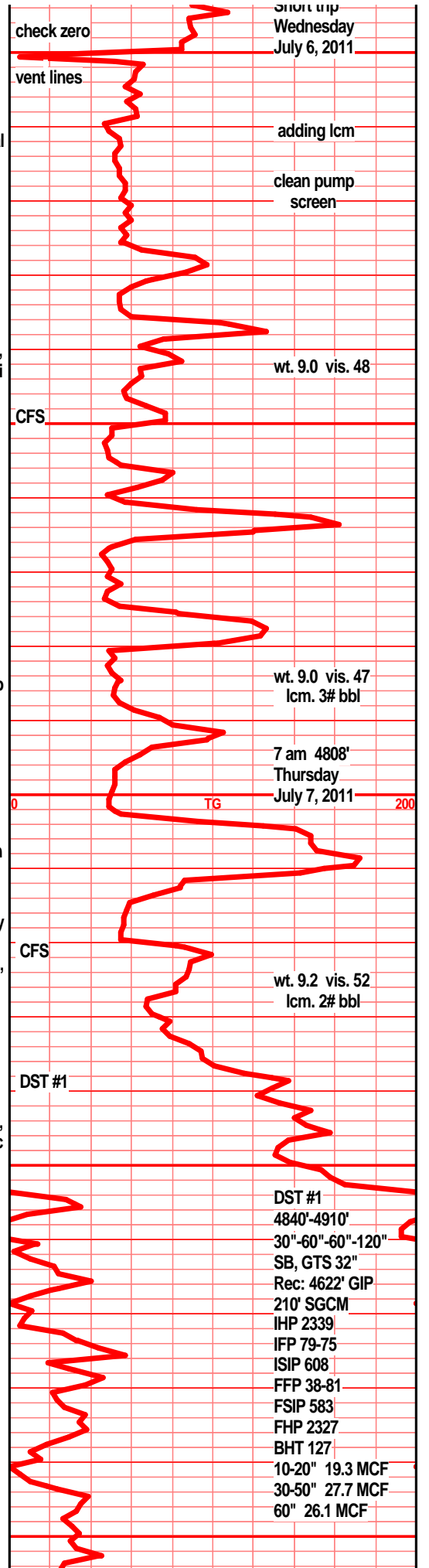
chrt wht tan lt gry, lt smokey, shrp, frsh, opa, blkly-ang pcs, transl, tr frac por, tr weath sli trip text, sli pp/moldic por, sli odor, brn stain, tr gas bubs, vssfo/brkn

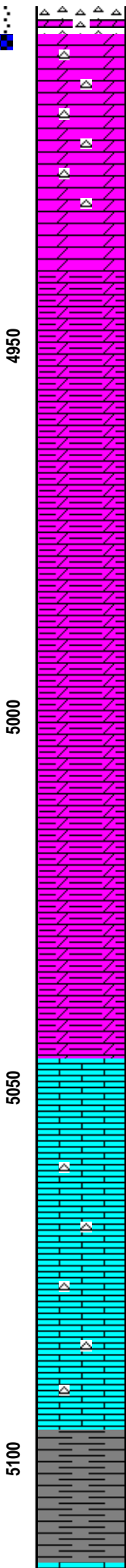
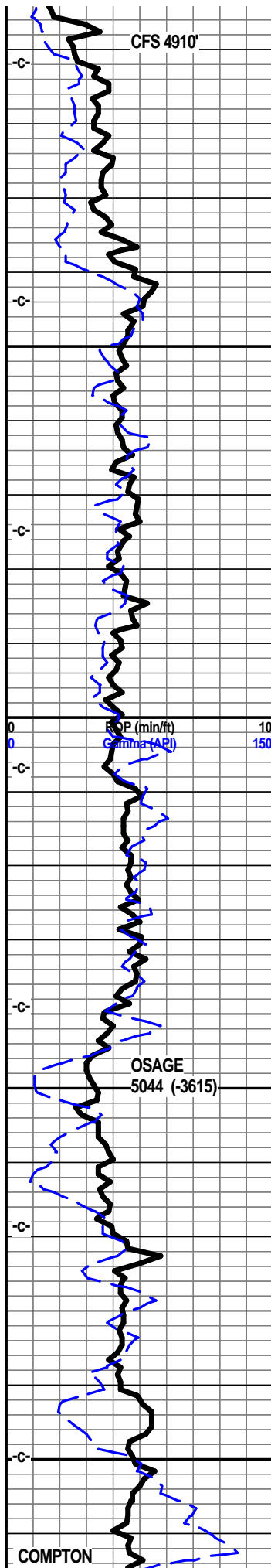
chrt wht off wht, lt gry, smokey, shrp, frsh, opa, transl, blkly, frac por, tr weath trip text, pp/moldic por, gas bubs, brn stain, sso, tr druzi qrtz

chrt lt gry, gry brn mott, shrp, frsh, opa, transl, w/gd weath trip text por, gd weath edge pp/moldic por, tr tan brn dolo edge with gd pp/moldic por, inter xln por, gd strong odor in all, "bleeding" oil/gas, dull UV, gd SFO/Stain, free oil on spl cup water, tr druzi qrtz

chrt lt gry, gry off wht, smokey, shrp frsh, blkly, transl, opa, gd weath edge trip text, pp, vug, moldic por, brn stain, brn SFO, gd gas bubs, strong odor, bleeding gas/oil, oil on spl cup water, dolo-dolo chrt tan brn f xln w/gry smokey frsh chrt inclu, gd inter xln/pp por, stain, SFO, gas bubs

chrt lt gry smokey shrp frsh opa, w/weath trip text edges, gd pp, vug, moldic por, gd odor, gd





SFO/brn stain, dull UV, gas bubs, doio cnrt, tan brn dolo w/gry smokey chrt inclu, weath text, gd stain, SFO, gas bubs, tr glau

dolo off wht v lt gry, f vf xln dns, silic text, hrd blk ang pcs, tr glau, tr chrty, chrt wht opa q shrp frsh, tr edge drk edge stain, NSFO, no vis gas

dolo crm tan lt gry vf xln dns hrd blk ang pcs, silic text, tr glau, tr wht opa q frsh chrt

dolo lt gry bec med gry, vf xln dns hrd, blk ang, bec arg, silty, gritty,

dolo silty dolo med drk gry f xln gran gritty silty arg, tr silic text, mstly hrd dns

dolo med gry, gry drk gry vf xln silty gritty pyritic in prt, tr silic text, shly dolstn, gritty silty arg

dolo gry med drk gry vf xln dns hrd silty gritty arg, shly dolstn med gry silty gritty arg, pyritic

dolostn, med gry drk gry vf xln gritty silty gran, tr silic text,

dolo, shly silty dolo, drk gry silty gritty shly, shly dolstn, silty gritty gran hrd blk ang dns pcs

dolo gry med gry vf xln gran gritty silty arg, mudstn, silty gritty

dolostn, silty shly gritty, f xln blk ang pcs, tr silic text,

dolo, silty shly dolstn, mud stn silty gritty shly, arg tr silic text, hrd blk ang pcs

shl gry drk gry dolo in prt, silty gritty, dolo drk gry silty gritty arg dns hrd blk pcs

shl gry drk gry silty gritty hrd blk pcs, dolo text, pyritic

dolo, dolo shl, silty gritty arg, tr calc, blk ang dns pcs

lt wht off wht f xln, sli med xln in prt, flky, tr sub chlky, tr chrty, chrt wht shrp frsh opa q, tr glau,

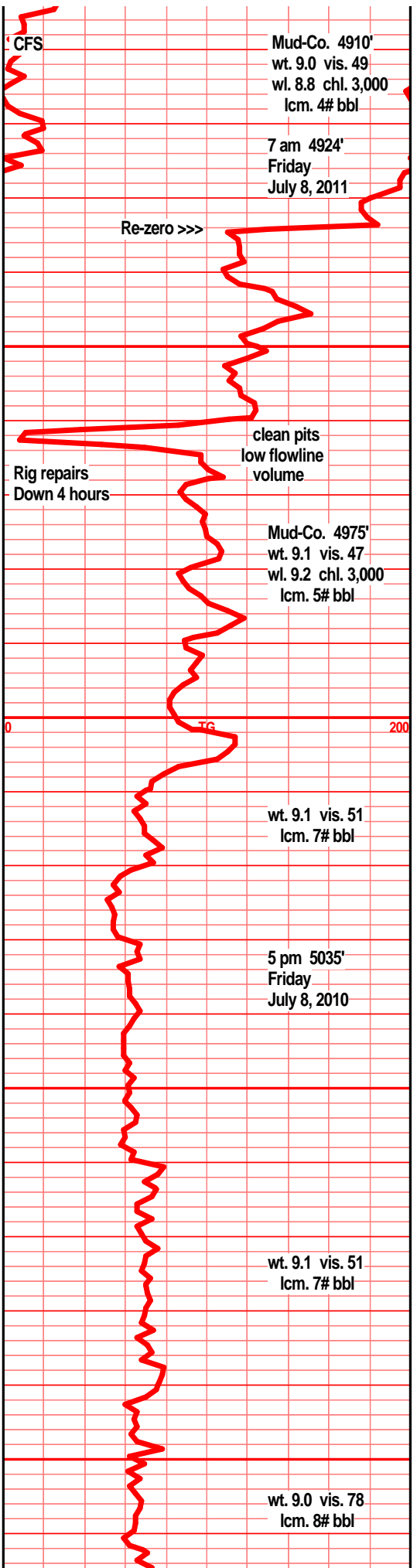
lst wht off wht f sli med xln blk flky, tr sub chlky, tr chrty, chrt wht opa q shrp

lst wht off wht, f slimed xln blk flky ang pcs, tr sub chlky, tr chrty

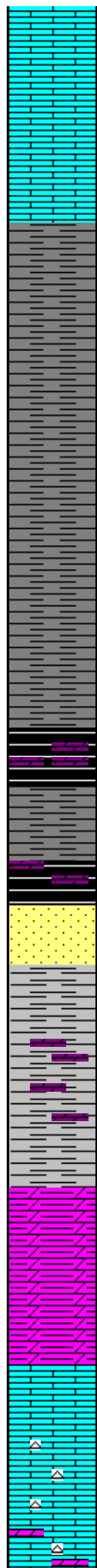
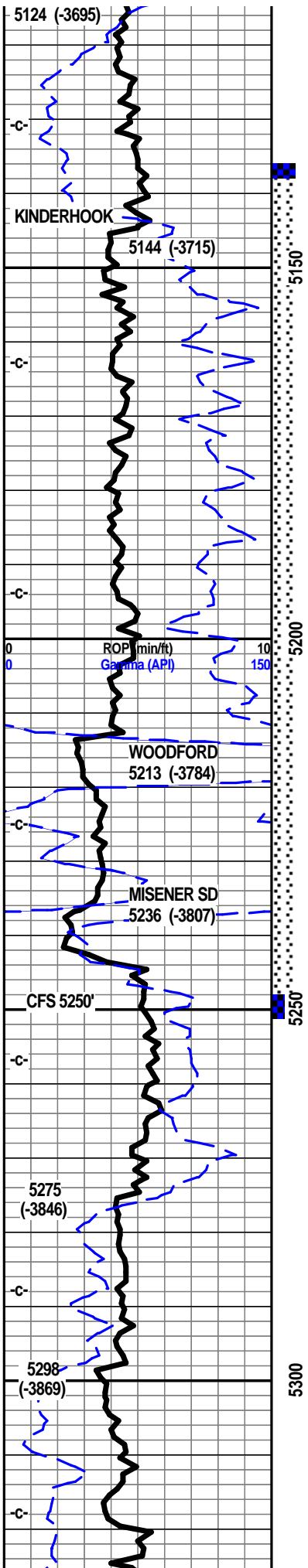
lst wht off wht f sli med xln blk flky ang pcs, tr sub chlky, tr chrty, chrt wht transl shrp frsh opa q

lst off wht lt gry, f sli med xln blk ang flky sub chlky pcs, chrty in prt, shl lt gry green, green, silty gritty

shl gry green, green, silty gritty, pyritic, gran, tr calc







shl gry gry green, blue green silty gritty, pyritic, gran, tr calc

lst wht f xln, sli med xln in prt, blk ang dns pcs, tr foss frags, micro foss frags

lst wht off wht off gry wht, f sli med xln blk ang hrd dns, tr foss frags, micro foss

shl drk bry blk, brn blk, silty gritty

shl gry drk gry blk, gry brn silty gritty pyritic

shl gry drk gry/blk, tr blk carb, silty, gritty pyritic

shl drk gry blk, blk carb text, blk, ang, blk platy pcs, tr pyritic, tr gas bubs

shl drk gry, gry/brn, brn/blk, tr blk carb text, blk flky pcs, pyritic, gritty silty

shl gry drk gry brn, brn blk, silty gritty, bedded, pyritic,

shl, shly dolo, drk brn red, reddish blk, gritty, gran, carb, silty, pyritic, tr sndy, abun gas bubs

shl drk gry blk semi carb, shl-shly dolo, drk brn red, reddish blk, semi carb, silty, gritty, sndy, gran, pyritic, abun gas bubs

sst clr off wht vlt tan clstrs, f med grnd, ang grnd, prly srted, prly to fairly w/cem, mstly sub fria, gd inter grain por, tr min/pyr fill, tr clay clasts, fair odor, fair gas bubs, fair SFO, lt brn SFO, lt transl SFO. Bright yllw UV. FO floating on spl tray,

shl gry drk gry green blk ang hrd pcs, silty gritty in prt, tr pyritic, dolo, shly dolo gry drk red/brn, hrd blk silty dns pcs

shl drk gry/green, brn/red/blk, silty gritty, pyritic, tr carb in prt, gas bubs

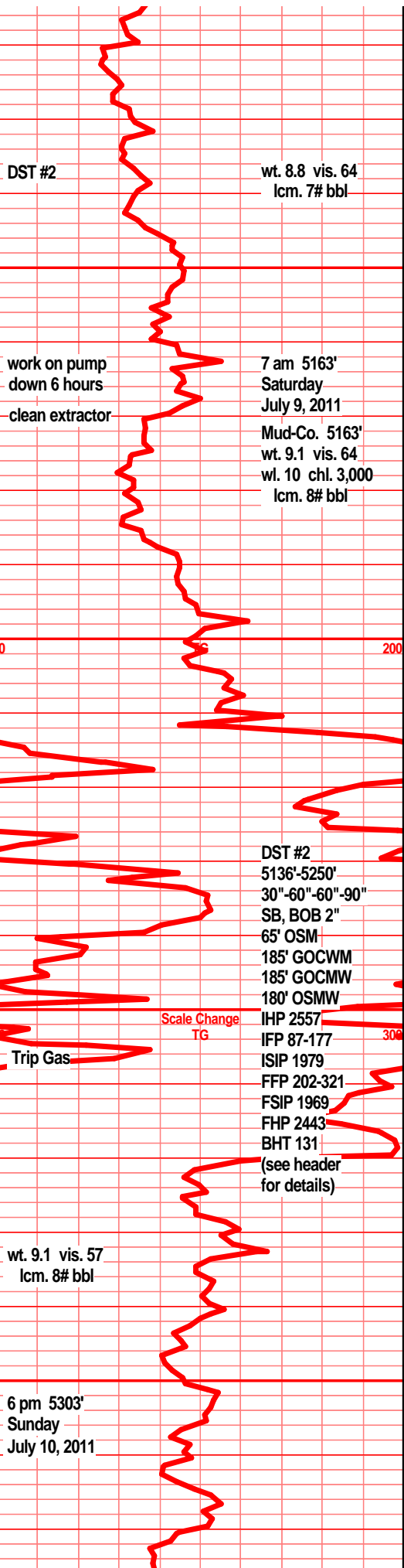
shl, silty shly dolo, gry, lt gry, soft, gran gritty pc, shl brn red/blk, dolo text, blk ang pcs, silty shly

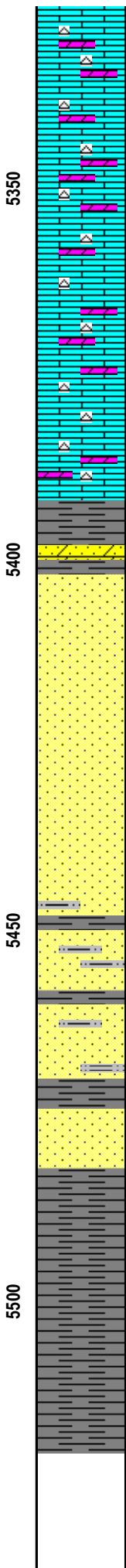
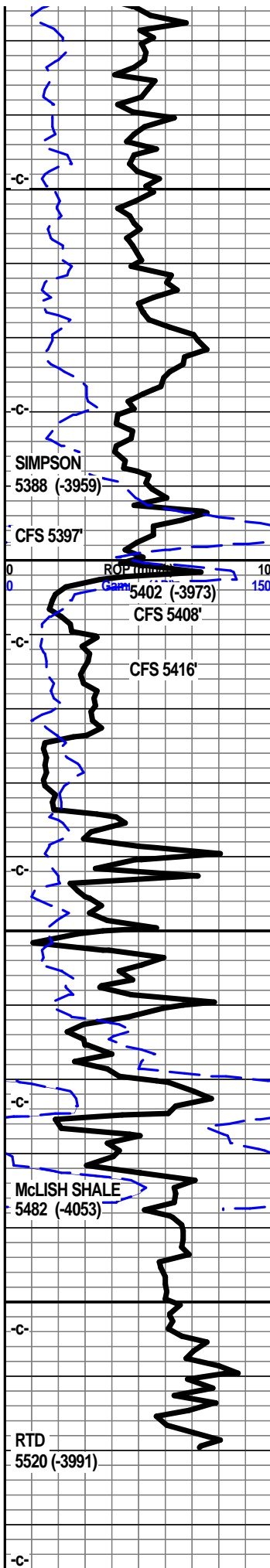
dolo, dolo shl, lt med gry soft gran gritty blk ang pcs, tr pyritic

dolo, shly dolo, gry med gry, silty gritty blk ang pcs, marl in prt, soft mushy

lst wht off wht, tr lt gry tint, f sli med xln blk ang flky, tr pyritic, tr sub chlky, tr micro foss frags, chrt wht shrp opa q transl

lst wht, off wht lt gry mott, f sli med xln, blk, ang, flky, tr sub chlky, tr pyritic, chrt dull tan gry shrp frsh opa q, tr dolo tan brn f med xln, blk ang sndy, inter xln por





lst, dolo in prt, off wht bec lt gry tan f xln blk  
ang dns hrd, sub chlky tr micro foss frags, chrt  
tan dull tan shrp frsh opa q foss

lst crm tan lt brn, dolo in prt, f vf xln dns hrd  
blk, sub chlky in prt, chrt tan lt gry dull tan,  
shrp frsh, opa q foss

lst dolo in prt, tan lt gry brn f vf xln dns hrd, sub  
chlky gran text, tr soft mushy, chrty in prt, chrt  
dull tan shrp frsh foss

lst dolo in prt, f vf xln dns hrd blk, tr sub chlky,  
gran, chrty in prt, chrt dull tan shrp frsh opa  
q foss

lst dolo in prt, f vf xln dns hrd, blk, ang pcs, sub  
chlky/gran in prt, vry chrty, chrt tan dull tan shrp  
frsh

lst dolo in prt, f vf xln tan off wth, tr tan brn, f vf  
xln dns, blk ang, sub chlky, chrty, chrt tan dull  
tan lt brn shrp frsh opa foss, shl teal green,  
sndy, pyritic, wxy, grsy in 60" spl

shl, gry, teal green, sst gry/green f grnd sub ang  
grns, dolo xln fill, pyritic,  
sst clr lt gry clstrs, f grnd, sub rded grns, w/srtd,  
fria/sub fria, prly to fair cem, tr calc cem, silic  
cem, gd inter grn por, SFO, gas bubs, brn  
droplets, lt transl SFO, nodor. 5416'-sst off wht lt  
gry clstrs, f grnd, sub ang grns, sub fria, prly  
srtd in prt, fair/w cem, blk ang clstrs, nodor, brn  
SFO, lt stain, tr gas bubs,

sst clr lt gry clstrs, f grnd, sub rded grns,  
w/srtd, sub fria to fria, prly to w/cem, silic cem, tr  
calc in prt, min fill tr pyritic, tr arg, brn SFO, dead  
flky stain, nodor, tr gas bubs

sst clr off wht lt gry clstrs, f grnd sub rded grns,  
prly srtd, sub fria, mstly tite blk ang clstrs,  
w/cem, tr calc in prt, min fill, pyritic in prt, dead  
flky stain

sst clr lt gry tr off wht clstrs, f grnd, sub ang/sub  
rded grns, prly strd, sub fria/tite, blk ang hrd  
clsts, min fill, pyritic, tr arg, tr clay fill, tr inter grn  
por, tr dead flky stain, tr drk oil droplets, nodor

shl gry drk gry teal green, sst clr lt tan/gry clstrs,  
f grnd, sub ang/sub rded grns prly srtd, sub fria  
to tite blk ang hrd clstrs, min fill, clay fill in prt

shl dkr gry green, teal green, snd grn inclu,  
pyritic

shl gry drk gry green teal green, snd grn inclu,  
min fill, pyritic

shl gry green, teal green wxy grsy blk pcs, snd  
grn inclu, min fill pyritic

