



## Woolsey Operating Company, LLC

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

Well Name: STERNBERGER 'B' #4  
Location: Section 12 - Township 35 South - Range 12 West  
License Number: 15-007-24259-00-00 Region: Barber County, Kansas  
Spud Date: December 4, 2014 Drilling Completed: December 10, 2014  
Surface Coordinates: Approx. S 1/2 N 1/2 NW SW  
2010' FSL and 660' FWL

Bottom Hole  
Coordinates:  
Ground Elevation (ft): 1383' K.B. Elevation (ft): 1395'  
Logged Interval (ft): 4200' To: 5075' Total Depth (ft): 5075'  
Formation: Kansas City ----> Mississippian  
Type of Drilling Fluid: Chemical Mud

Printed by MUD.LOG from WellSight Systems 1-800-447-1534 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 at 5 pm on 12/4/2014. Set 5 joints of 13 3/8" X 48#/ft new casing at 217' (tally 200.46') with 300 sx Class A, 2% gel, 3% cc (by Allied). Cement did circulate. Plug down at 12:30 am on 12/5/2014.

Production Casing: 5 1/2" X 16.5#/ft

Deviation Surveys: 3/4 at 217', 1/4 at 1108', 1/2 at 1581', 3/4 at 2118', 0 at 2625', 1/4 at 3101', 1/2 at 3609', 1 at 4085', 1 at 4528', 1 at 5075'.

Pipe Strap @ no pipe strap taken

Fossil Drilling Co. Rig 3 Bit Record:

- 1) 17 1/2" Smith Tool RR in at 0' out at 217', 2.75 hours
- 2) 7 7/8" Varel H333 PDC in at 217' out at 5075', 85 1/2 hours

Gas Detector: Woolsey Operating Co. Gas Shack #2

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

DSTs: No tests were ran.

Company Man: Mike Tharp, Woolsey Operating Company

E-Logs: Nabors Completion and Production Services, Dual Induction Laterolog w/SP, CNL/FDC w/PE, Gamma Ray and Caliper.





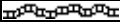



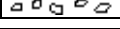




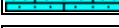
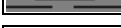


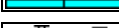
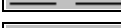





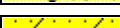
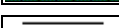






## DSTs

No formation tests were ran.

## CREWS

Jim Wenrich, Tool Pusher  
Daniel Orrentia, Daylights  
Ron Burns, Evening  
Kirk Shuman, Morning  
Chris Slatts, Relief

## ROCK TYPES

	Anhy		Shy dolo		Sltst		Shale 3
	Bent		Dol		Ss		Silty dol
	Brec		Gyp		Black sh		Dol lmst
	Cht		Sdy lmst		Gry sh		Dol 2
	Clyst		Lmst		Shale		Granite wash
	Coal		Mrlst		Shysltst		Lmst
	Congl		Salt		Slysh		Calc dol
	Sdy dolo		Shale		Ss 2		Shale 3

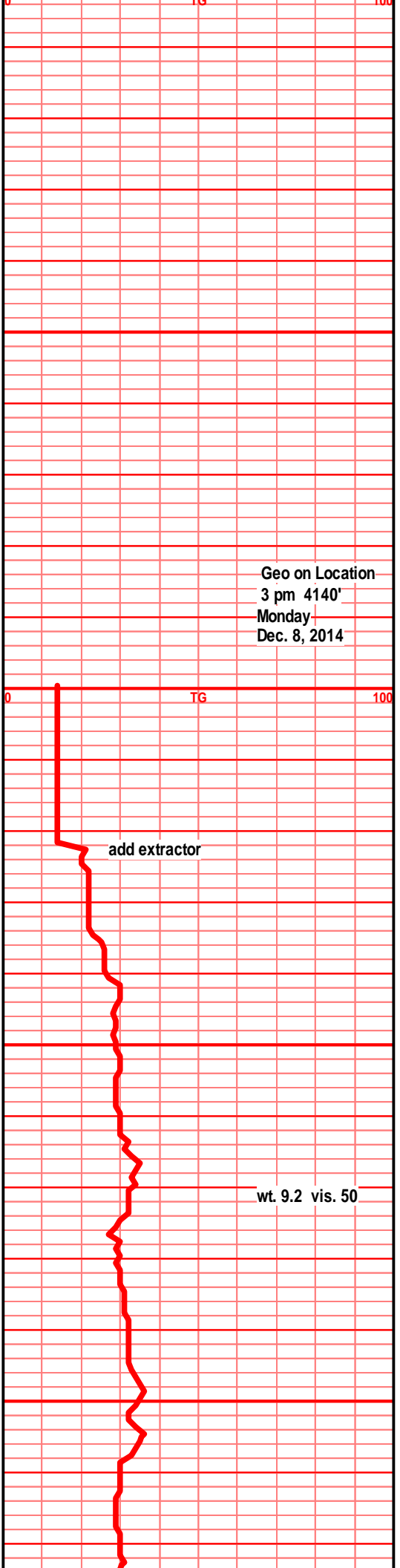
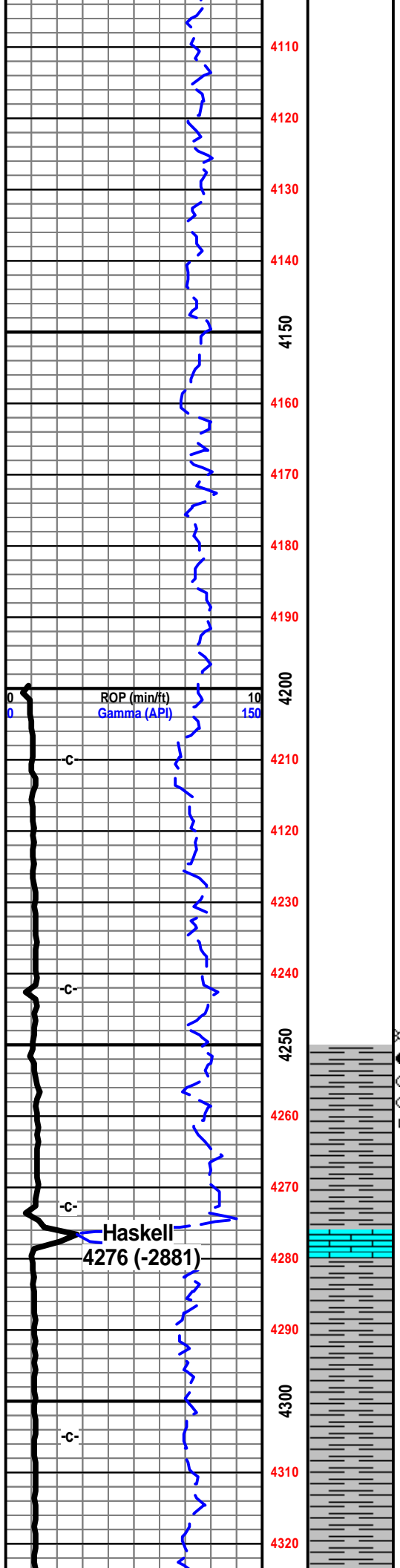


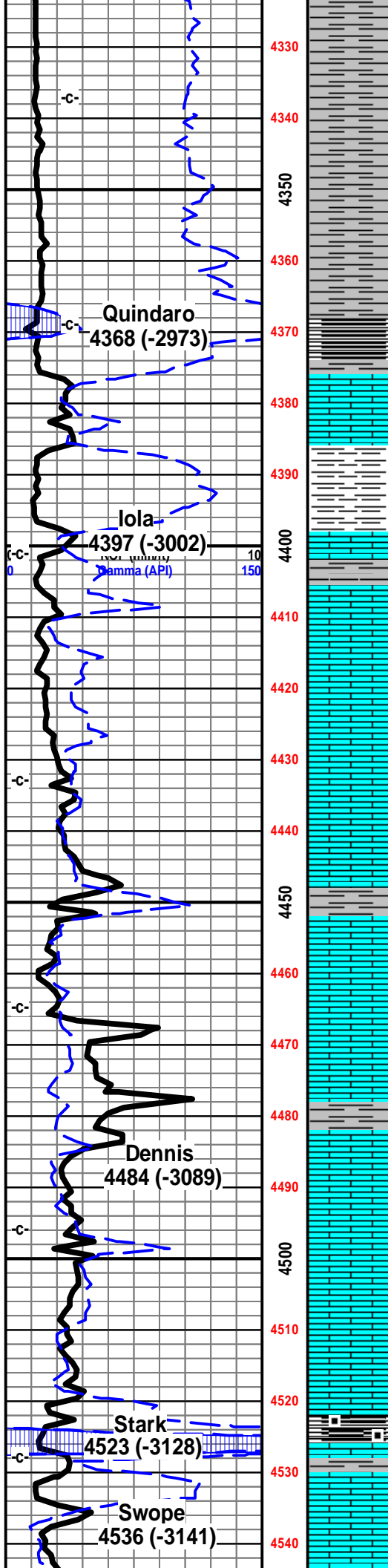
December 4, 2014 MIRT/Spud  
 December 5, 2014 Drill plug 8:30 am  
 December 6, 2014 Drilling at 1830'  
 December 7, 2014 Drilling at 3140'  
 December 8, 2014 Drilling at 3780'  
 December 9, 2014 Drilling at 4634'  
 December 10, 2014 Logging at 5075'

- E- Log Tops:
- Herington 1907 (-512)
  - Onaga 2777 (-1382)
  - Waubunsee 2834 (-1439)
  - Stotler 2967 (-1572)
  - Topeka 3273 (-1878)
  - LeCompton 3605 (-2210)
  - Kanwaka 3633 (-2238)
  - Heebner 3829 (-2434)
  - Toronto 3838 (-2443)
  - Douglas Group 3867 (-2472)
  - Douglas Shale 3928 (-2533)
  - Haskell 4280 (-2885)
  - Quindaro 4370 (-2975)
  - Iola 4402 (-3007)
  - Drum 4456 (-3061)
  - Dennis 4490 (-3095)
  - Stark 4527 (-3132)
  - Swope 4539 (-3144)
  - Hushpuckney 4559 (-3164)
  - Hertha 4570 (-3175)
  - B/Kansas City 4609 (-3214)
  - Pawnee 4718 (-3323)
  - Cherokee Group 4763 (-3368)
  - Mississippi 4828 (-3433)
  - LTD 5078 (-3683)

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

Geo on Location  
 3 pm 4140'  
 Monday  
 Dec. 8, 2014





4330  
4340  
4350  
4360  
4370  
4380  
4390  
4400  
4410  
4420  
4430  
4440  
4450  
4460  
4470  
4480  
4490  
4500  
4510  
4520  
4530  
4540

lst crm buff tan f xln gran sub chlky, foss frags, tr foss ool/pelletal, calc xln fill, inter xln, foss mold por

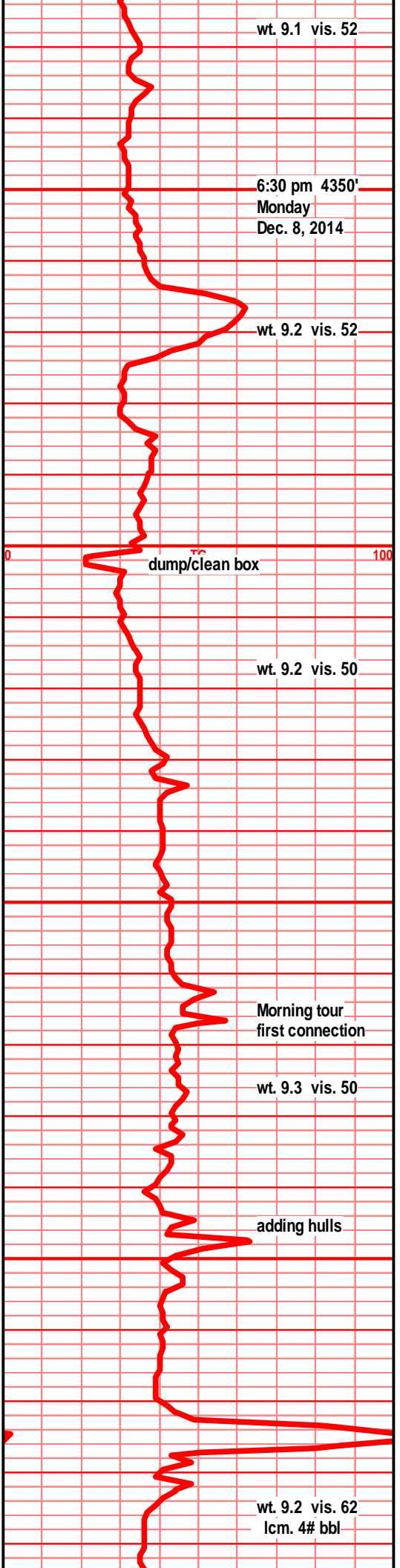
lst crm tan buff f sli med xln gran blk ang sub chlky foss frags, inter xln por, foss mold por,

lst crm buff tan f xln sub chlky gran soft, foss frags, tr foss ool, pelletal, calc xln fill, pp moldic por

shl gry blk, blk carb, wxy grsy pcs, gas bubs, blk ang cab pieces

lst crm tan lt gry in prt, f xln, gran blk ang mstly dns, sub chlky, foss frags, calc xln fill, foss mold pp por

lst crm tan lt arv/tan f xln gran blk ang dns



wt. 9.1 vis. 52

6:30 pm 4350'  
Monday  
Dec. 8, 2014

wt. 9.2 vis. 52

0 100  
dump/clean box

wt. 9.2 vis. 50

Morning tour  
first connection

wt. 9.3 vis. 50

adding hulls

wt. 9.2 vis. 62  
lcm. 4# bbl

lst crm tan gry, tan xln gran blk ang dns  
sub chlky foss frags, tr ool/pelletal, inter xln  
por, calc xln fill

shl drk gry, blk carb, blk ang pcs, grsy wxy  
text, abun gas bubs

shl gry calc, lst tan lt gry tan f xln blk ang,  
dns, tr sub chlky, foss frags, calc xln fill, tr  
inter xln, foss mold por

lst crm gry tan tr buff f xln blk ang gran dns,  
foss frags, foss ool/pelletal, calc xln fill sub  
chlky,

lst crm tan lt gry tan f vf xln dns hrd blk ang  
gran, sub chlky, foss frags, tr foss ool, calc  
xln fill, tr pp foss mold por

shl drk gry blk, tr carb text, lst crm gry tan f  
xln, dns blk ang sli arg, tr sub chlky, calc xln  
fill, tr foss frags, gran soft arg in prt

shl gry drk gry blk, silty, gritty, calc in prt,

lst crm tan, gry tan brn in prt, f vf xln dns hrd  
blk ang arg silty, tr calc fill, tr micro foss  
frags

shl gry, gry brn silty gritty calc, lst tan gry brn  
f xln dns hrd blk ang arg silty, calc xln fill, tr  
foss frags,

shl gry drk gry blk brn, silty gritty, lst lt blkue  
gry green f vf xln dns hrd arg, micro xln in prt,  
tr calc xln fill

lst crm buff tan f vf xln dns hrd blk, sub  
chlky, micro foss frags, micro ool, pelletal,  
micro calc xln fill

shl gry brn calc, lst tan crm buff, f vf xln dns  
hrd blk, sub chlky, foss frags, micro ool,  
micro calc xln fill,

lst crm buff tan f vf xln dns hrd blk ang tr sub  
chlky, micro foss frags/ool, calc xln fill,

lst crm buff tan f vf xln dns hrd blk, some sub  
chlky, foss frags, micro ool tr pelletal, calc  
xln fill

lst crm buff tan f vf xln dnse hrd sub chlky  
foss frag micro ool, calc xln fill

shl drk gry blk, silty gritty, blk carb in prt, wxy  
grsy text, blk ang pcs, abun gas bub, tr filmy  
cond on brk

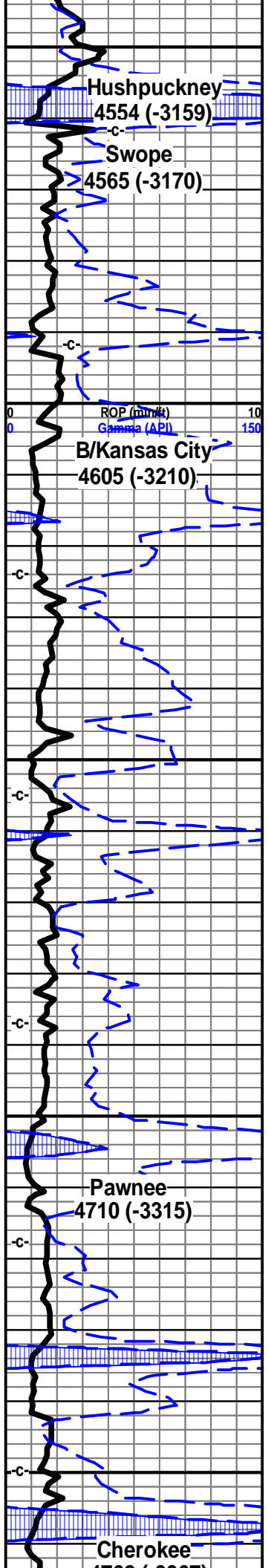
lst crm buff lt gry tan f vf xln dns hrd blk ang  
foss frags, foss ool, micro ool/pelletal, crs  
calc xln fill, tr pp por, tr gas bubs on brk

lst crm buff tan f xln blk ang dns hrd, tr sli  
sub chlky, foss frags, micro ool, calc xln fill

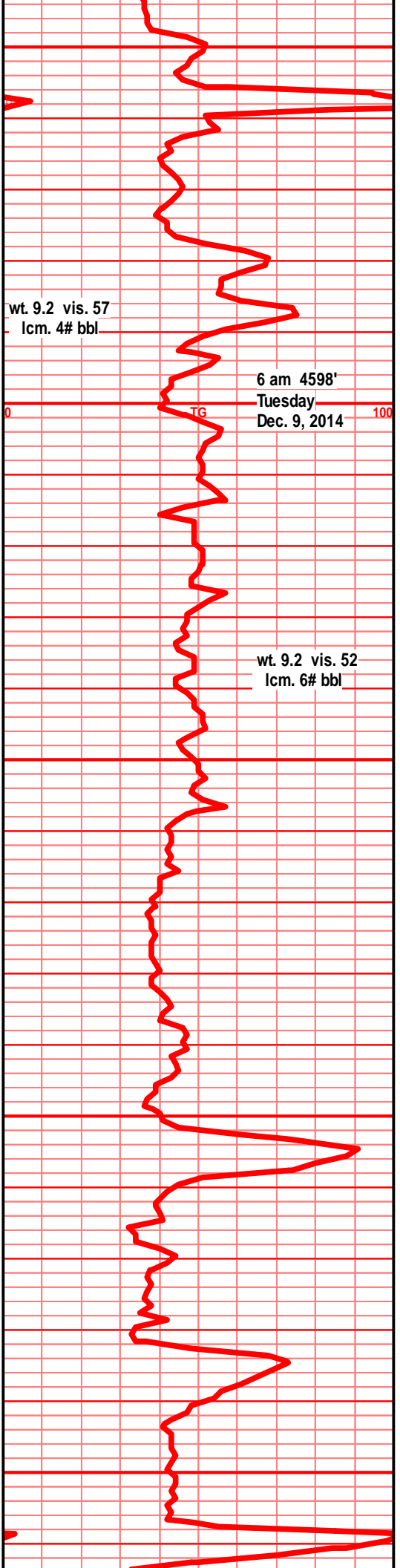
shl gry drk gry blk, blk carb, blk ang pcs,  
wxy grsy text in prt, gas bubs

lst crm buff lt gry f vf xln, dns hrd blk ang tr  
sli sub chlky, foss frags, micro calc xln fill

shl gry dkr gry blk, blk carb text in prt, wxy  
grsy text in prt, blk ang pcs, tr gas bubs



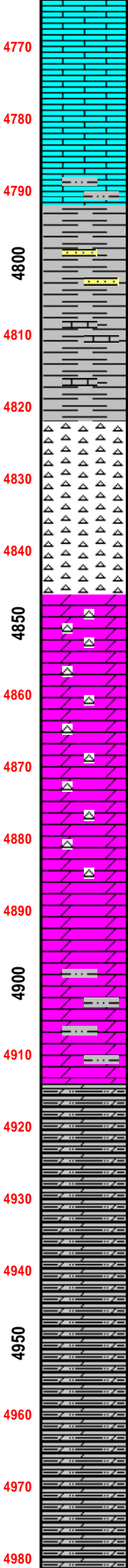
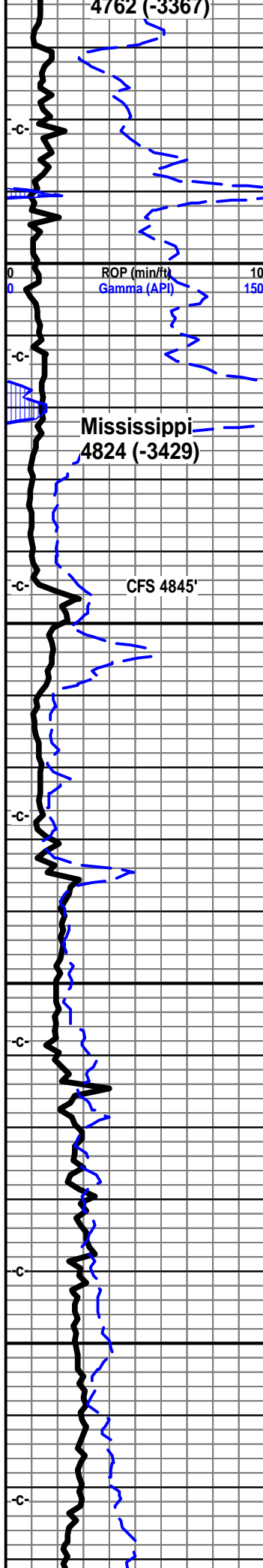
4550  
4560  
4570  
4580  
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4640  
4650  
4660  
4670  
4680  
4690  
4700  
4710  
4720  
4730  
4740  
4750  
4760



wt. 9.2 vis. 57  
lcm. 4# bbl

6 am 4598'  
Tuesday  
Dec. 9, 2014

wt. 9.2 vis. 52  
lcm. 6# bbl



4762 (-3367)

4770  
Ist tan dull gry f vf xln dns hrd blk ang, sli sub chlky, tr foss frags, calc xln fill

4780  
Ist tan dull tan lt gry f vf xln dns hrd blk ang, micro foss frags, calc xln fill, sli silty arg text,

4790  
Ist dull tan lt gry dull tan gry, f vf xln dns hrd blk ang, micro foss frags, sli sub chlky, tr calc xln fill.

4800  
shl gry gry lt gry green silty gritty, sli sndy, gran, sli calc in prt, soft mushy in prt, tr sst, lt gry green vf grnd, sub ang/sub rded grns, w/srted, fria mushy, clay fill, tr stain, nodor NSFO

4810  
Ist drk gry brn micro xln dns hrd blk ang vry arg, silty, clay clasts, shl gry med gry green silty gritty, soft gran

4820  
chrt off wht tan brn mott, weath sli spongy sli trip text, gran soft, pp moldic por, brn stain, fair odor, SFO, abun gas bubs, chrt off wht bone wht, tr lt blue/gry, shrp frsh opaq with tan brn mottled weath edge, sli trip gran spongy edge text, pp moldic por, stain, SFO abun gas bubs

4830  
chrt off wht tan brn mott, weath sli spongy sli trip text, gran soft, pp moldic por, brn stain, fair odor, SFO, abun gas bubs, chrt off wht bone wht, tr lt blue/gry, shrp frsh opaq with tan brn mottled weath edge, sli trip gran spongy edge text, pp moldic por, stain, SFO abun gas bubs

4840  
chrt off wht tan brn mott, weath sli spongy sli trip text, gran soft, pp moldic por, brn stain, fair odor, SFO, abun gas bubs, chrt off wht bone wht, tr lt blue/gry, shrp frsh opaq with tan brn mottled weath edge, sli trip gran spongy edge text, pp moldic por, stain, SFO abun gas bubs

4850  
chrt off wht tan brn mott, weath sli spongy sli trip text, gran soft, pp moldic por, brn stain, fair odor, SFO, abun gas bubs, chrt off wht bone wht, tr lt blue/gry, shrp frsh opaq with tan brn mottled weath edge, sli trip gran spongy edge text, pp moldic por, stain, SFO abun gas bubs

4860  
chrt off wht tan brn mott, weath sli spongy sli trip text, gran soft, pp moldic por, brn stain, fair odor, SFO, abun gas bubs, chrt off wht bone wht, tr lt blue/gry, shrp frsh opaq with tan brn mottled weath edge, sli trip gran spongy edge text, pp moldic por, stain, SFO abun gas bubs

4870  
chrt off wht tan brn mott, weath sli spongy sli trip text, gran soft, pp moldic por, brn stain, fair odor, SFO, abun gas bubs, chrt off wht bone wht, tr lt blue/gry, shrp frsh opaq with tan brn mottled weath edge, sli trip gran spongy edge text, pp moldic por, stain, SFO abun gas bubs

4880  
chrt off wht tan brn mott, weath sli spongy sli trip text, gran soft, pp moldic por, brn stain, fair odor, SFO, abun gas bubs, chrt off wht bone wht, tr lt blue/gry, shrp frsh opaq with tan brn mottled weath edge, sli trip gran spongy edge text, pp moldic por, stain, SFO abun gas bubs

4890  
chrt off wht tan brn mott, weath sli spongy sli trip text, gran soft, pp moldic por, brn stain, fair odor, SFO, abun gas bubs, chrt off wht bone wht, tr lt blue/gry, shrp frsh opaq with tan brn mottled weath edge, sli trip gran spongy edge text, pp moldic por, stain, SFO abun gas bubs

4900  
chrt off wht tan brn mott, weath sli spongy sli trip text, gran soft, pp moldic por, brn stain, fair odor, SFO, abun gas bubs, chrt off wht bone wht, tr lt blue/gry, shrp frsh opaq with tan brn mottled weath edge, sli trip gran spongy edge text, pp moldic por, stain, SFO abun gas bubs

4910  
chrt off wht tan brn mott, weath sli spongy sli trip text, gran soft, pp moldic por, brn stain, fair odor, SFO, abun gas bubs, chrt off wht bone wht, tr lt blue/gry, shrp frsh opaq with tan brn mottled weath edge, sli trip gran spongy edge text, pp moldic por, stain, SFO abun gas bubs

4920  
chrt off wht tan brn mott, weath sli spongy sli trip text, gran soft, pp moldic por, brn stain, fair odor, SFO, abun gas bubs, chrt off wht bone wht, tr lt blue/gry, shrp frsh opaq with tan brn mottled weath edge, sli trip gran spongy edge text, pp moldic por, stain, SFO abun gas bubs

4930  
chrt off wht tan brn mott, weath sli spongy sli trip text, gran soft, pp moldic por, brn stain, fair odor, SFO, abun gas bubs, chrt off wht bone wht, tr lt blue/gry, shrp frsh opaq with tan brn mottled weath edge, sli trip gran spongy edge text, pp moldic por, stain, SFO abun gas bubs

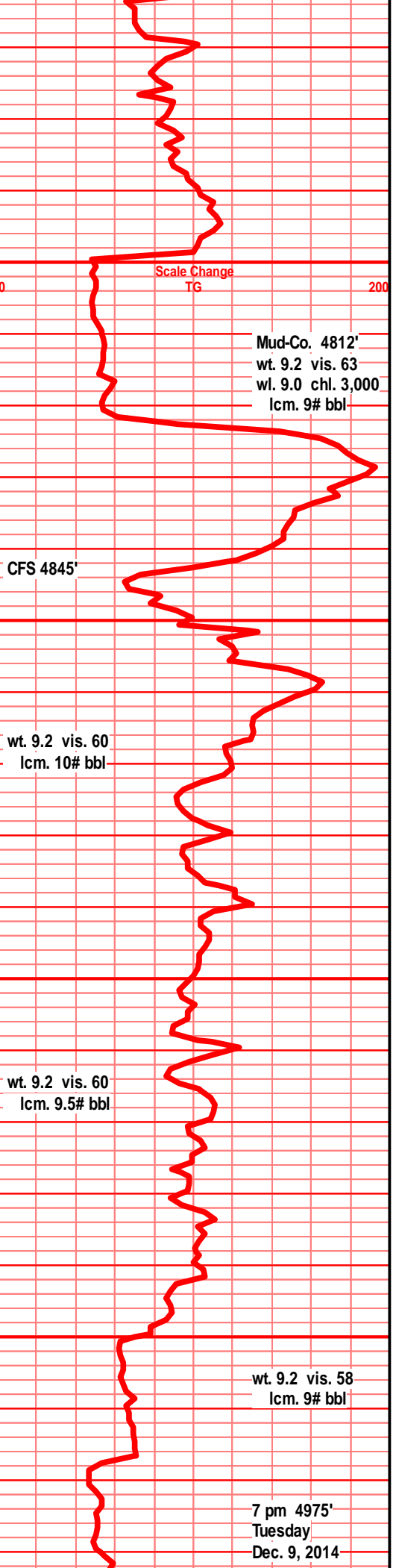
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4950  
chrt off wht tan brn mott, weath sli spongy sli trip text, gran soft, pp moldic por, brn stain, fair odor, SFO, abun gas bubs, chrt off wht bone wht, tr lt blue/gry, shrp frsh opaq with tan brn mottled weath edge, sli trip gran spongy edge text, pp moldic por, stain, SFO abun gas bubs

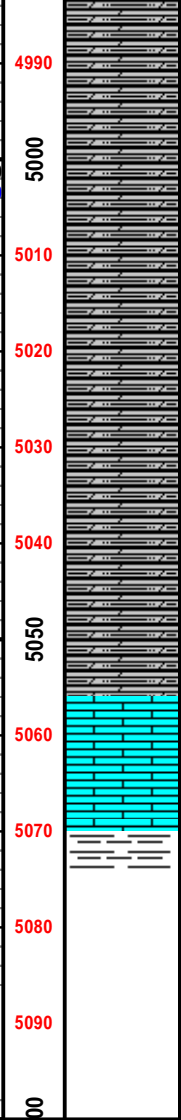
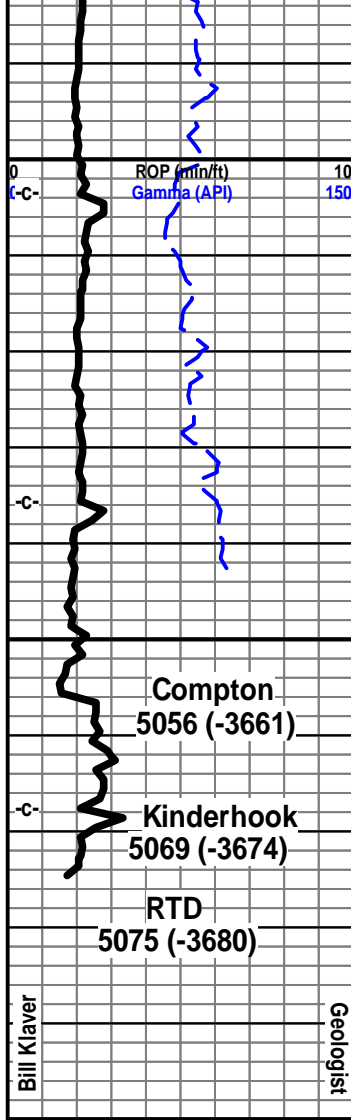
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4970  
chrt off wht tan brn mott, weath sli spongy sli trip text, gran soft, pp moldic por, brn stain, fair odor, SFO, abun gas bubs, chrt off wht bone wht, tr lt blue/gry, shrp frsh opaq with tan brn mottled weath edge, sli trip gran spongy edge text, pp moldic por, stain, SFO abun gas bubs

4980  
chrt off wht tan brn mott, weath sli spongy sli trip text, gran soft, pp moldic por, brn stain, fair odor, SFO, abun gas bubs, chrt off wht bone wht, tr lt blue/gry, shrp frsh opaq with tan brn mottled weath edge, sli trip gran spongy edge text, pp moldic por, stain, SFO abun gas bubs



7 pm 4975'  
Tuesday  
Dec. 9, 2014



dolo silty silic, f vf xln, med drk gry, arg,

dolo silty, silic, f vf xln med, drk gry, gritty gran text,

dolo f vf xln, gritty silty silic, shly, gran

dolo, silty silic f vf xln, gran gritty text,

dolo, silty silic, f vf xln gran gritty shly,

shl, gry, drk gry, silty silic, dolomitic, f vf xln gran gritty

dolo, silty dolo aa

lst off wht dull tan f sli med xln, blk ang hrd pcs, crs calc xln fill, tr micro foss

Woolsey Operating Company  
Sternberger 'B' #4  
2010' FSL and 660' FWL  
Approx. S 1/2 N 1/2 NW SW  
Sec. 12 - Twp 35S - Rge 12W  
Stranathan Field  
Barber County, Kansas  
API # 15-007-24259-00-00  
GL 1383' KB 1395'

