



**Woolsey Operating Company, LLC**

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

Measured Depth Log

**Well Name:** Myers A-1  
**Location:** Irreg Section 13 - Township 35 South - Range 13 West  
**License Number:** 15-007-24132-0000 **Region:** Barber County, Kansas  
**Spud Date:** March 4, 2014 **Drilling Completed:** March 16, 2014  
**Surface Coordinates:** Irreg 13 - 35S - 13W / NW NW NW  
330' FNL & 330' FEL  
**Bottom Hole Coordinates:**  
**Ground Elevation (ft):** 1436 **K.B. Elevation (ft):** 1448  
**Logged Interval (ft):** 4000 **To:** 5600 **Total Depth (ft):** 5600  
**Formation:** Kansas City Group ---> Simpson Group  
**Type of Drilling Fluid:** Chemical Mud Displaced at 3400'  
Printed by WellSight Log Viewer 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:** Blake Miller  
**Company:** Woolsey Operating Co. LLC  
**Address:** 125 N. Market, Wichita Kansas, 67202

## COMMENTS

Surface Casing: Spud at 3:45 pm on March 4, 2014. Set 5 joints of 13 3/8" x 48#/ft new surface casing at 217' (tally 205') with 300 sacks Class A, 2% gel, 3% cc, 1/4# Celoflake (by Allied). Plug down at 11:15 pm on March 4, 2014. Cement did circulate.

Production Casing:

Deviation Surveys: .1/2° at 220', 1/4° at 1014', 1/2° at 1554', 3/4° at 2088', 1° at 2533', 1/4° at 3611', 1° at 4118', 1° at 4627', 1° at 4834', 3/4° at 5600'

Pipe Strap @ 4834'. Strap: 4851.15', Board: 4850.23', Long .92'

Contractor Bit Record:

- 1) 17 1/2" Varel HE21 RR, in at 0', out at 220'
- 2) 7 7/8" Varel HE21 RR, in at 220', made made 4490' in 99.5 hours
- 3) 7 7/8" Varel HE29 RR, in at 4834', out at 5600', made 766' in 61 hrs

Gas Detector: Woolsey Operating Co., Gas Trailer #2

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

DSTs: Trilobite Testing, Leal Cason, Tester

E-Logs: Nabors Completion & Production Services, Ian Mabb, Dual Induction Larelog with SP, CNL-FDC with PE, Gamma Ray and Caliper

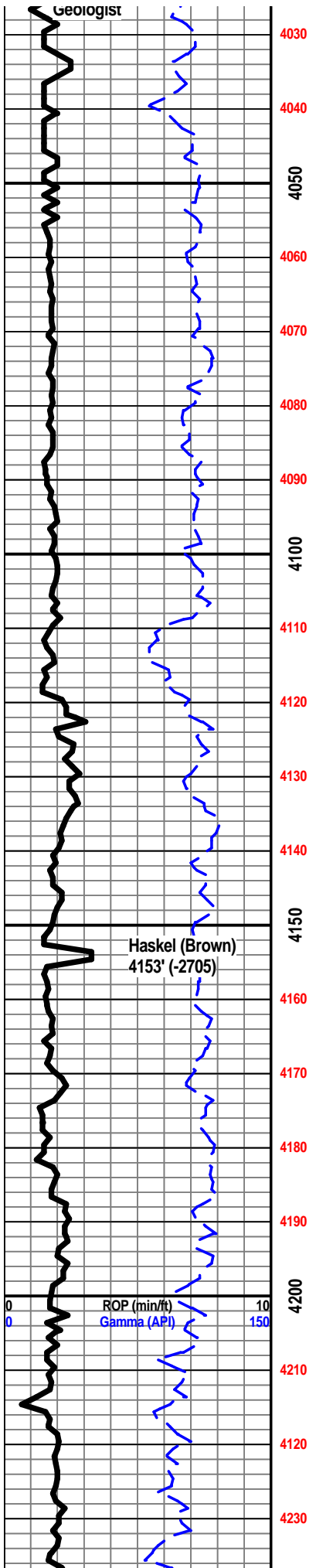
## DSTs

1.) 4760-4834, 30-60-60-90, (1) 1" blow building to 6.5" blow, (2) BOB blow in 10 seconds, remained BOB, Rec: 626' GIP, 130' GCM (5% Gas, 95% Muud), IHSP: 2375, IFP: 57-66. ISIP: 966, FHSP: 2290, FFP: 56-88, FSIP: 1146, BHT: 124 Degrees

2.) 4850-4994, 30-60-60-120, (1) BOB blow in 45 seconds, remained BOB, (2) BOB blow in 90 seconds, remained BOB, Rec: 3818' GIP, 235' water, 63' SOCMW (5% Oil, 30% Mud, 65% Water), 83' GSOCM (10% G, 5% Oil, 85% Mud), IHSP: 2441, IFP: 46-130, ISIP: 1773, FHSP: 2316, FFP: 130-246, FSIP: 1767, BHT: 128 Degrees

3.) 4895-4933, 30-60-60-120, (1) BOB blow in 10", remained BOB, (2) BOB blow in 17", remained BOB, Rec: 235' Water, 63' SOCM (2% Oil, 98% Mud), IHSP: 2465, IFP: 45-92, ISIP: 1785, FHSP: 2494, FFP: 103-163, FSIP: 1781, BHT: 123 Degrees





1430 GL, 1446 RD  
API 15-007-24132-0000

Reference wells for structural correlation: Woolsey Operating's Rogg #1, N1/2 N 1/2 SW, 7-35S-R12W, Woolsey Operating Company's Mikita #1, 600' FNL, 2,300' FWL, 17-35S-12W, Woolsey Operating's Mackey #1, N1/2 N1/2, 18-35S-12W, Woolsey Operating Company's Myers #1, NW SW NE NE, 14-35S-13W.

One minute drill time was recorded from 4000' to rotary total depth. Ten foot rotary cuttings were collected from 4500' to rotary total depth and were delivered to the Survey at the completion of the test.

7 am progress:

- Mar. 4, 2014: MIRU Fossil Drilling rig #3
- Mar. 5, 2014: WOC at 220'
- Mar. 6, 2014: Drilling ahead at 1870'
- Mar. 7, 2014: Drilling ahead at 2787'
- Mar. 8, 2014: Drilling ahead at 3590'
- Mar. 9, 2014: Drilling ahead at 4320'
- Mar. 10, 2014: Drilling ahead at 4710'
- Mar. 11, 2014: Tripping in to resume drilling at 4834'
- Mar. 12, 2014: Drilling ahead at 4900'
- Mar. 13, 2014: Drilling ahead at 4995'
- Mar. 14, 2014: Drilling ahead at 5260'
- Mar. 15, 2014: Drilling ahead at 5460'
- Mar. 16, 2014: Logging at 5600'

Oil & Gas Show Legend:

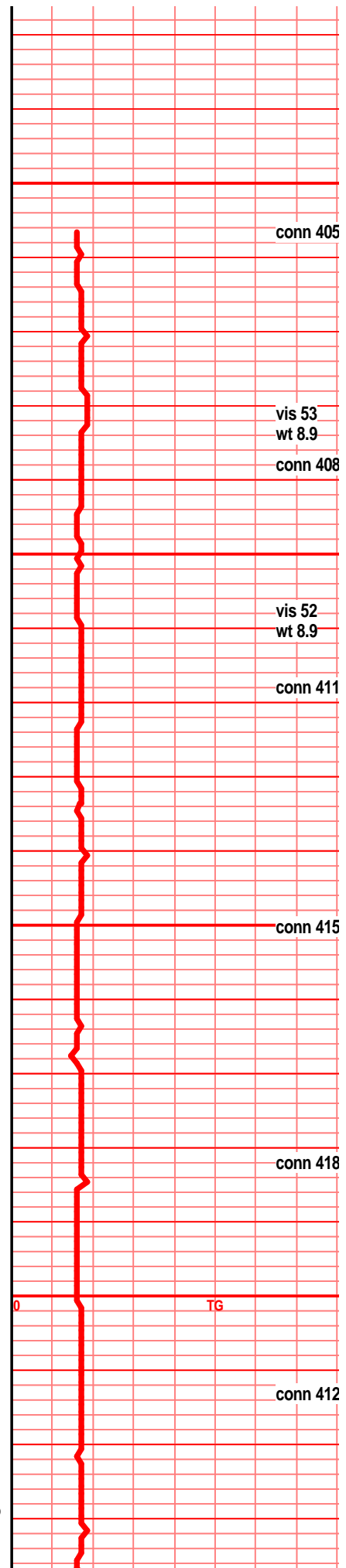
- Good Show/Saturation
- Slight Show
- Very Slight Show/Questionable
- ✱ Gas

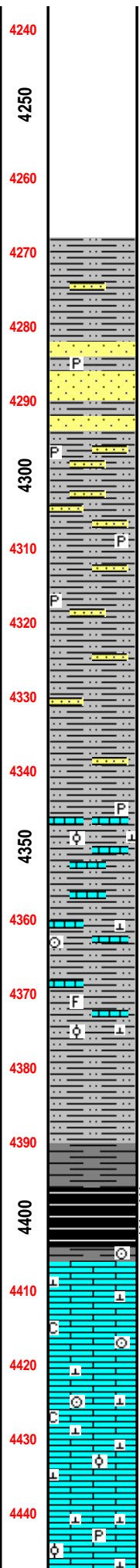
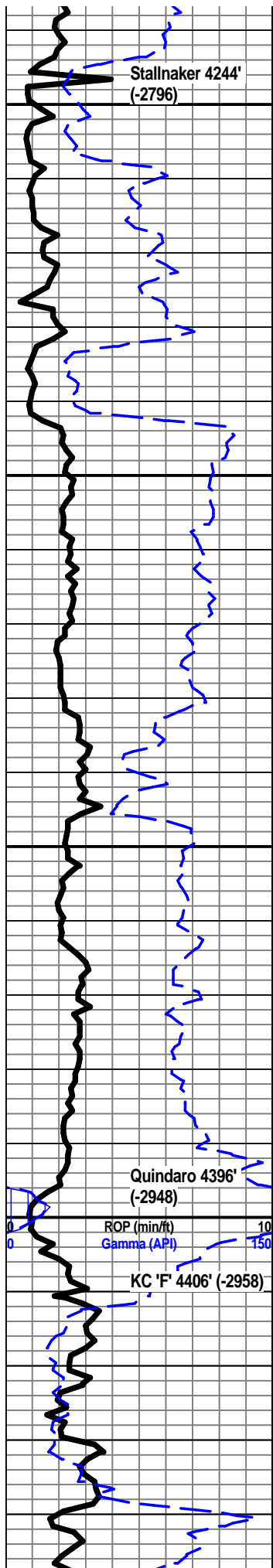
DSTs:

- 1.) (4760-4834) 30-60-60-90, (1) 1" blow bldg to to 6.5", (2) BOB 10 seconds, remained BOB, Rec: 626' GIP, 130' GCM (5% Gas, 95% Mud), [966-1146], FP: 58-66/56-88
- 2.) (4850-4994) 30-60-60-120, (1) BOB 45 seconds, remained BOB, (2) BOB 90 seconds, remained BOB, Rec: 3818' GIP, 235' W, 63' SOCMW (5% Oil, 30% Mud, 65% Water), 83' GSOCM (10% G, 5% Oil, 85% Mud), [1773-1767], FP: 46-130/130-246
- 3.) (4895-4933) 30-60-60-120, (1) BOB 10", remained BOB, (2) BOB 17", remained BOB, Rec: 235' W, 63' SOCM (2%Oil, 98% Mud), [1785-1781] FP: 45-92/103-163

Mud Checks:

- 4341': Wt 9.1, vis 57, PV 15, YP 15, gel 17/54, pH 10.5, WL 9, cake 1/32, chls 2000, sand tr, solids 5.6, LCM 0#, SPM 58, PP 800#
- 4756': Wt 9.1, vis 54, PV 15, YP 15, gel 17/49, pH 10.5, WL 9, cake 1/32, chls 2000, sand tr, solids 5.6, LCM 3#, SPM 58, PP 800#
- 4848': Wt 9.1, vis 55, PV 15, YP 16, gel 17/54, pH 10, WL 9, cake 1/32, chls 3,500 sand tr, solids 5.5, LCM 3#, SPM 58, PP 850#
- 4933': Wt 9.2, vis 56, PV 15, YP 16, gel 17/56, pH 10.5, WL 9, cake 1/32, chls 5,000, sand tr, solids 6.1, LCM 8#, SPM 58, PP 0#
- 5047': Wt 8.9, vis 61, PV 16, YP 16, gel 17/54, pH 10.5, WL 9,





cake 1/32, chls 6,000, sand tr, solids 3.9, LCM 11#, SPM 58, PP 700#

5295': Wt 9.1, vis 63, PV 17, YP 19, gel 18/54, pH 10, WL 9.2, cake 1/32, chls 5,000, sand tr, solids 5.4, LCM 12#, SPM 58, PP 0#

5486': Wt 9.1, vis 53, PV 17, YP 18, gel 16/56, pH 10.5, WL 8.8, cake 1/32, chls 5,000, sand tr, solids 5.3, LCM 13#, SPM 58, PP 650#

SH- lt-drk gry, vfn grn, sl slty, few sdy pcs, waxy-grty, soft, very friable, blk lam seen, carb conc horiz. drk pcs sl fissile & flaky, fnr grn.

SH- lt-drk gry, vfn gn, sl slty, sl sdy, grty, sft waxy text, friable, black lam, blk carb & grn conc horiz, sm pcs, poor sort. SS- few wht pcs, qtz dom, 5-10% lithics, vfn-fn grn, poor-mod silica cem

SS- wht gry, sl shly, vfn-fn grn, qtz dom, ~10% lithics, mod silica cem, poor sort, low interstitial por, pyr xln, sub ang-sub rnd. SH- grys, vfn grn, waxy, friable, blkcarb & grn lam, wdy carb mtx in both ss & sh

SS- wht gry, shly, qtz dom, ~5% lithics, vfn-fn grn, well silica/arg cem, low interstitial por, pur xln, carb lam & conc horiz

SS- wht gry, qtz dom, well cem, lam & carb horiz, low por, mod-well cem. SH- gry, vry sdy, vfn grn, soft waxy text, friable, carb & grn conc & lam.

SH- gry, vfn grn, sl slty/sdy, sft, waxy & grty, friable, flky blkky pcs, irreg fac, poor sort, fnt lam. lower amount ss pcs- wht, vfn-fn grn, well cem.

LS- wht tan brn, vfn grn, cacl xln, tite, no chlk, sub ang, calc xln ool, few foss xln, low pyr xln, few hrd ang, lt brn chrt pcs, blk incl, shrp

SH- gry, vfn grn, slty, sl sdy, few blk carb lam, drkr pcs- vry thin lam/bed, fissile & flaky

LS- wht tan brn, predom brn, vfn grn, hrd, tite, ang-subang, calc xln, calc crin, lm crin cast, low calc foss frags

SH- gry drk gry, vfn grn, sl slty, sft, waxy, flaky/splintery frac, no lam seen but fissile. LS- wht tan brn gry, vfn grn, vari hrdns, calc xln, grys w/ v hvy foss & ool xln, sub ang-ang

SH- drk gry, vfn grn, sl slty, soft-med hrdns, waxy text, fnt lam seen, blkky, sub ang-sub rnd

SH- blk carb, vfn grn, hrd tite, sl fissile, platy-blky frac, vfn v fnt lams, low pyr xln, gas bubs

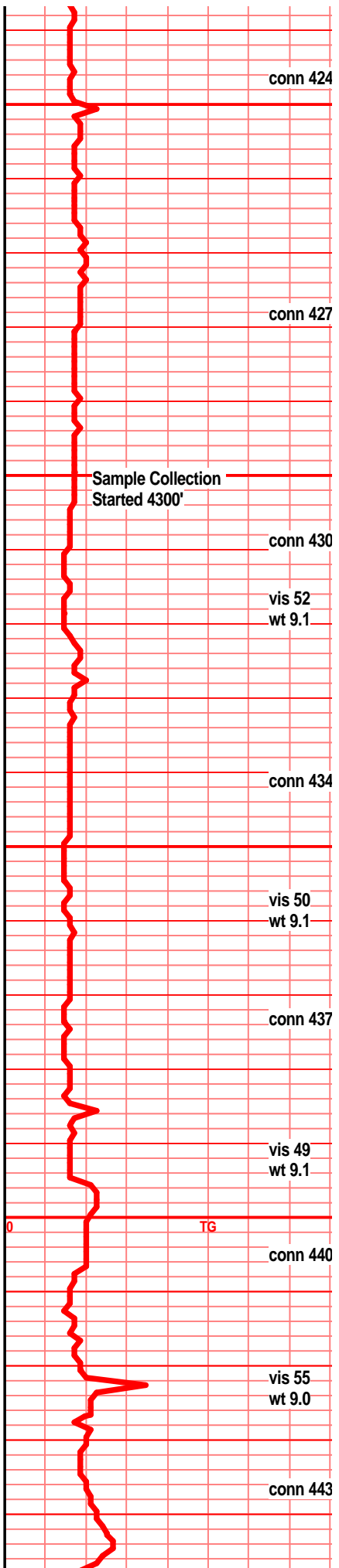
SH- blk drk gry, carb, vfn grn, hrd, dns, blks- hrd, sl fissile, platy blkky frac, gas bubs. grys- sft, friable, sl slty, waxy text, few lm crin

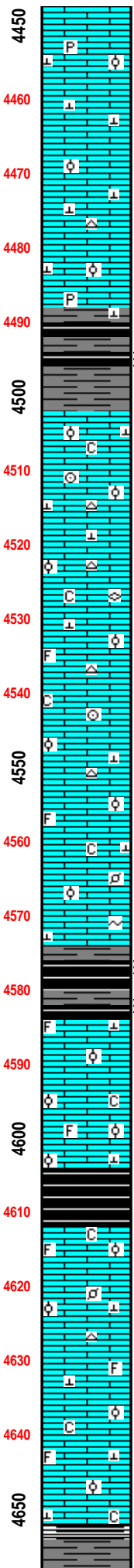
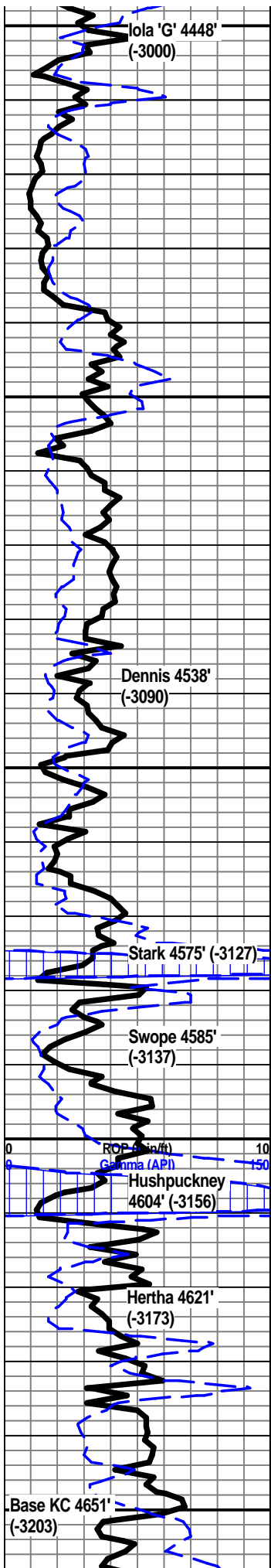
LS- wht tan gry, xln, vfn grn, sub chlk, sft-med hrdns, sl foss moldic por, calc foss & microfoss, calc crin, ools, blkky irreg pcs

LS- off wht tan gry, fn grn, xln, sub chlky, sft-med hrdns, foss moldic & pin pt por(disol irreg voids), hvy calc xln & foss xln-microfoss & ool

LS- off wht gry, low tan pcs, vfn-fn grn, xln, sub chlky, grty text, tan/wht sft chlky, gry hrd tite v xln, calc foss frag/xln, ools, low por

LS- off wht gry lt brn, xln, vfn-fn grn, chlky, calc xln, grty text,





low pyr. brn pcs- v hvy foss, trags & ools. wht/tans- chiky. grys- v xln, hrd, low/fnt foss re-xln, low por.

LS- off wht tan gry, predom hrd tite gry, sub chiky, grty text, sub ang, low por, low pyr xln, low foss seen in gry, few ool

LS- off wht tan, vari xln size, vfn-fn grn lm host, grty text, sub chlk, med hrdns, hvy calc xln, ool crin & foss frag, sl foss moldic por

LS- tanoff wht, few gry, vfn-fn grn, hrd xln, low chlk, grty text, calc foss & por xln, ool & foss frag, sub ang, few brn chrt pcs, stylolites?

LS- off wht tan gry, fn grn, few crs xln, low chlk, low pyr xln, calc xln, foss frags, few ool, foss moldic por

SH- blk drk gry, carb, vfn grn, wxy flaky text, fissile, blk pcs w. platy/flaky frac, lam seen on frac, gry pcs- more fissile, splintery, sft, gas bubs?

LS- off wht tan drk gry, sl vuggy por, wht/tan pcs- fn grn, some crs calc por/frac xln, sub chiky, foss frag xln, ools. drk gry-brn pcs- vfn grn, xln, hrd, tite, sl chrt, crin & ool, sub ang-ang

LS- wht/tan drk gry/brn, predom gry/brn, vfn grn, xln, hrd, tite, chrt, hvy foss re-xln, ools, spicules in ls & chrt pcs, shrp ang. tan/wht- sl chiky, sft, ools, calc foss frag

LS- lt brn drk gry- fn grn, xln, few crs calc xln, chrt, ang, hrd tite, spicules and fusulinids, sl vuggy/foss mold por, rare crin

LS- off wht tan lt brn, vfn grn, chiky, some crs por/frac calc xln, sl chrt, ools, xln foss frag, sft-med hrdns, grty text, sub ang, sl foss/vuggy mold por, stylolites

LS- tan lt gry, fn grn, calc xln, inc chrt cont, lt pcs chiky & soft, crs calc por/frac & foss xln, few crin & shell foss frag, ools, stylolites, low vuggy por, rare spicules, few fusulinids

LS- tan drty gry/brn, fn grn, grty text, sub chiky, drty pcs- hvy foss frag & ool cont, sl vuggy por, friable, poor cem, sl chrt

LS- tan lt brn, xln, fn grn, grty text, gluac pellet, low chrt, low chlk, foss frag ool fusulinid xln, poor sample poor sort, vry sml pcs

SH- blk carb, vfn grn, waxy, sl fissile flaky frac, fnt lam, v sml vfn/thin sheets on frac, gas bubs

SH- gry pcs, vfn grn- sl crsr than blk carb, soft, friable, waxy, irreg frac, no gas

LS- off wht tan brn, vfn grn, calc xln, chiky, grty text, ool, calc microfoss and frags, brn pcs- hrd/dns hvyr foss & ool

LS- off wht tan/brn, vfn grn, soft, chiky, med calc xln, fnt foss frag strct prsvd, fnt fusilind struct, ools, sl vuggy por. few pcs ortho- oosparite w/ oomoldic por (not dom lith)

SH- blk carb, vfn grn, hrd-fissile, flaky pcs on frac, sl grsy text, platy- blk irreg pcs, ang-subang

LS- off wht tan, few gry, fn grn, xln, sl chiky, calc & chrt xln, friable whr chiky, grty text, foss frag rexln, ools, sl vuggy por

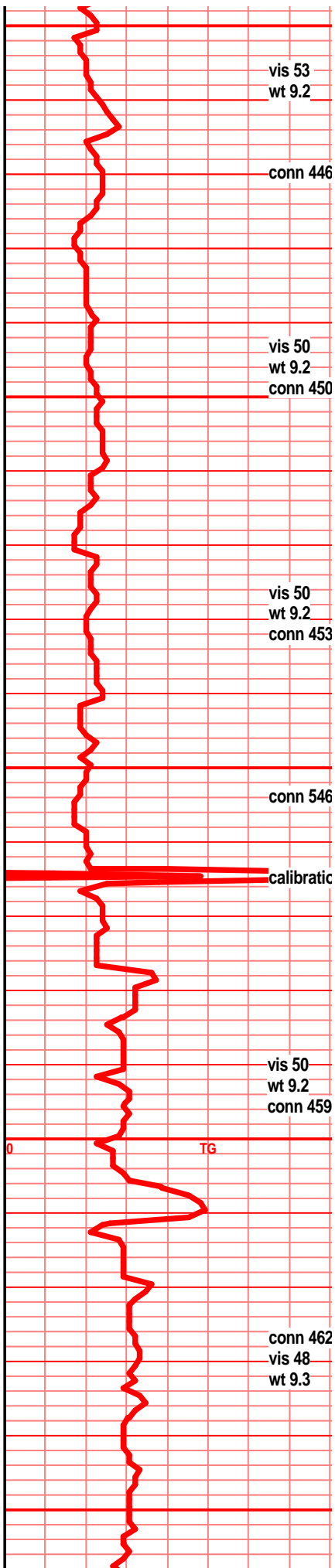
LS- off wht tan lt brn, vfn-fn grn, calc xln, grty text, foss frag ools & pelloids, subang, few shrp chrt pcs, wht- chiky & sft, brn- v xln & hrd/dns

SH- gry blk, vfn grn, sl slty, sft-med hrdns, fnt lam seen, fw blk carb lens in gry, waxy text

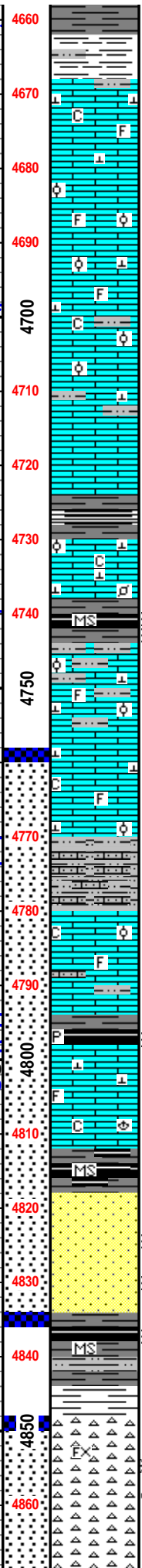
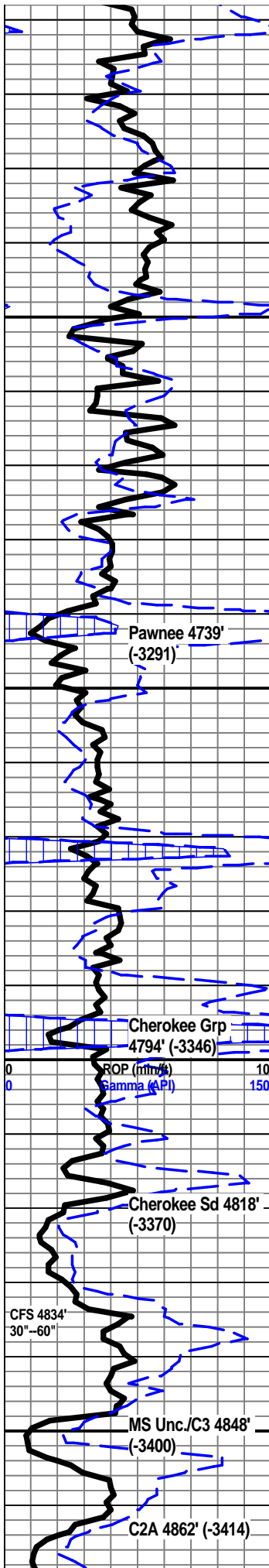
LS- off wht tan gry lt brn, fn grn, xln, sub chiky, grty text. calc por & foss frag fill. gry lt brn pcs- hrd, tite, fresh shrp faces, ools, foss frag

LS- lt-drk gry, lsr chiky wht ool, calc xln pcs. vfn grn, sl shly in prts, xln, hrd, crin, foss frags

SH- blk carb, few grys, vfn grn, sl grty grsy text, hrd, tite, lam seen. limv?. no gas bubs







SH- gry, fn grn, few blk carb lam, soft friable, flaky-blky irreg frac, soft

SH- gry gry/blu, vfn grn, grty grny text, irreg frac, sft, friable, limy?

LS- gry/blu-grn, vfn grn, sl slty/sdy, grty text, hrd tite. wht pcs- chlky, sft, friable, calc xln, low foss

LS- off wht tan, fn grn, chlky, friable, low por. tan pcs- hvy ool & calc xln-oosparite, hrd, tite, shrp ang fresh faces. gry/grn/blu pcs- vfn grn, sl slty, grty text, irreg frac

LS- off wht tan, vfn grn, xln, hrd tite, ang-sub ang, hvy ool w/ calc cem- oosparite, xln foss frags, fresh faces, sft whr sl chlky

SH- gry grn, vfn grn, grny grty text, sl sdy, no lam, irreg frac, blk pcs

LS- off wht gry lt brn, fn grn, xln, chlky, gry text, crs calc por/frac fill, foss frag, mod-hvy ool in whts brn, grys low foss seen.

LS- off wht tan- fn grn, xln, hrd, subchlky-sftr, few gluac incl, foss frag, abun ools vari cem. few lt brn/gry- low/no foss, hvy xln, hrd tite

SH- gry blk, vfn grn, friable, waxy text, splintery flaky fissile frac, splintery pcs abun, lam seen, no gas bubs

LS- off wht, lt gry lt brn, fn grn, xln, sub chlky, grty text, friable-med hrdns, micro foos, low ool & pelloid. gry brn pcs- hvy calc xln, few ool/pelloid, very tite

SH- drk gry gry/blu, vfn grn, wxy text, sft waxy, friable, good lam/carb conc horiz, splintery platy pcs & frac.

SH- blk carb, vfn grn, vfn "sheets" on frac, grsy text, hrd, blk irreg pcs, good gas bubs

LS- off wht lt brn, drty look, fn grn, med-crs calc xln in prts, grty text, sub chlky, low-fnt foss struct prsvd, low ool/pelloid

LS- off hwt tan lt brn, sub chlky in prts, calc por frac & foss frag fill, low ool/prsvd struc, sub ang

SH- gry brn grn/blu, sl sdy slty, grty grny text, irreg frac, no lam seen, grn incl visbl, blk pcs current?

LS- tan lt brn, fn grn, drty look, low chl, grty text, med- hrd, calc xln, crs cln calc in voids, low xln foss, ools, subang

LS- drk brn, argil, calcitic, hrd tite, grny gty text, sl slty/sdy, no foss or ools, vfn grn inclseen

SH- predom blk, low drk gry, carb, vfn grn, blk pcs, hrd, tite, no lam, low pyr xln, vfn flakes on frac, low gas bubs

LS- wht tan lt brn, fn grn, crs calc xln, sub chl, grty text, rexln low foss frag/ool, single rib'd centr indent brach mold

SH- mudstone-blk carb, few grys, vfn grn, grty-grsy text, few pcs sl slty, irreg pcs, flaky frac, poor lam, low gas bubs

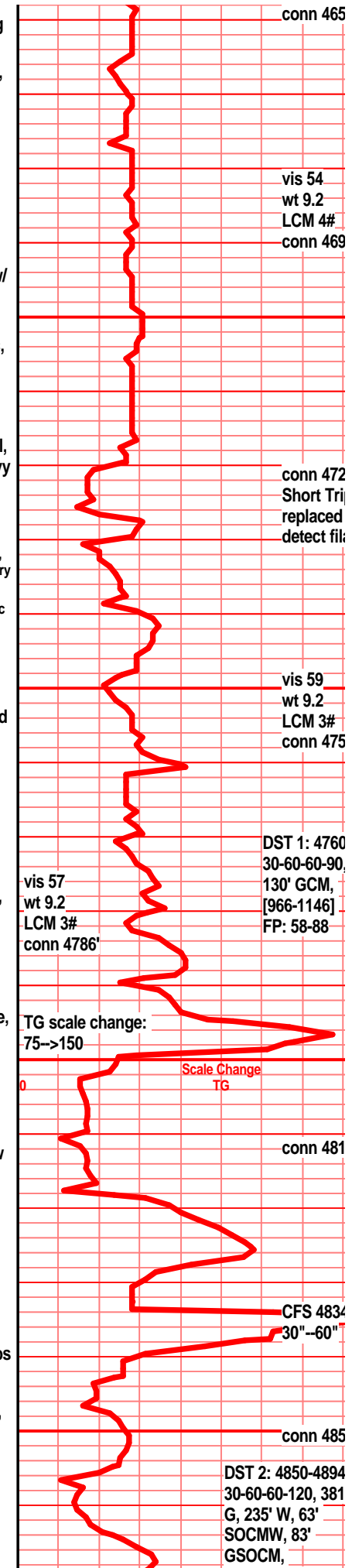
SS- lt brn, brn stn, qtz dom (wht trans), blk lithics present, vfn grn, friable, mod silica cem, subang-subrnd, mod sort, good por, good show free o, vry gassy, good odor

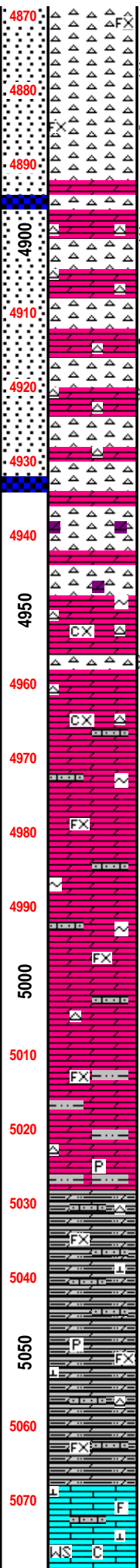
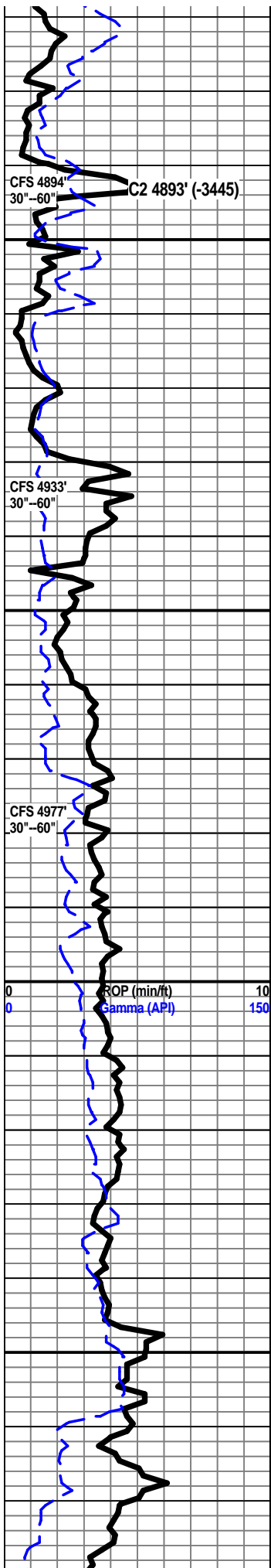
SH- mudstone- gry blk red gry/grn, vfn grn, sl slty in prts, soft friable, platy splintery pcs, fissile, no lam seen, gas bubs

CHRT- crystalline- wht opa-qtz trans, brn oil stn, vfn grn, hrd, shrp ang fresh faces, vuggy & pin point por w/ stn/oil, vss free o

CHRT- crystalline- wht orang opa-qtz trans, drusy qtz xln in few, show DO, shrp ang fresh faces, sl vuggy por, gas bubs

CHRT- crystalline- wht opa-qtz w/ brn/blk stn, few yelw/orng





pcs, hrd, few gluac incl, trip grty text, shrp fresh ang pcs w/o grty trip text, oil stn thruout, goo vuggy & pin point por thruout, trip pcs w/ interstitial por also, good show free oil, gas bubs, good odor

CHRT- crystalline- wht w/ bfn stn, incr trip chrt, incr stn, low pyr xln, grty trip text, good vuggy & interstitial por, good show oil, good odor

DOL- crystalline- wht gry gry/grn, hvy brn oil stn, fn grn, grty text, chrt, hrd, interstitial por, fair vug & pin pt por, gluac incl, pyr xln, few cln opa q wht chrts, show free oil, gas bubs

CHRT- crystalline- wht sl ylw, vfn grn, cln pcs hrd/tite- no stn, no dolo xln, shrp ang pcs, fresh faces. dry pcs- trip text &/or dolo xln, vug & interstitial por, oil stn, show free oil, dead oil, gas bubs, good odor

DOL- crystalline- wht brn, chrt, brn oil stn, grty text, vfn-fn grn, gluac incl, hrd, good interstitial por, good vug/pin pt por, show free oil, gas bubs, good odor

CHRT- crystalline- wht tan lt brn, opa q, vfn grn, grty trip text, brn oil stn, good odor, sl vug por, interstitial por, show "goosey" & free oil, good odor

CHRT- crystalline- wht, opa q, vfn grn, cln-sl drty, gluac incl, rare brn/blk stn, limy, dol pcs w/ partial chrt xln- grty text, med hrdns, blk irreg, subang, drty brn stn in prts. cln chrts- wht, shrp ang fresh faces.

DOL- crystalline- tan brn gry, vfn grn, hvy chrt xln, brn stn on dol portion, limy, low gluac incl, grty text, no foss visibl. CHRT- partial xln, wht opa q, cln, fresh faces, faint odor, tite, show of free oil, low gas bubs on frac, fair-poor por

DOL- crystalline- tan lt brn wht, vfn grn, grty text, hvy chrt xln, brn stn in dol, gluac incl, limy. chrt- wht tan gry, cln, fresh faces. fnt odor, show of oil, low gas bubs

DOL- crystalline- drk gry, vfn grn, gluac incl, hrd tite, sub ang-ang, no chrt, sl limy-effer, no shows

DOL- crystalline- gry drkgry tan, fn grn, grty sdy text, hrd tite, few blk grn & gluac incl, sl sdy,limy, no foss present, sub ang-ang

DOL- crystalline- off wht tan gry drk, predom gry, fn grn, cln, hrd tite, grty sdy text, incr blk & glauc incl, sl sdy, sl limy-effer, no foss, subang-ang

DOL- crystalline- wht lt-drk gry, fn grn, grty sdy text, few blk grn incl, sl sdy, limy, rare chrt xln in rare frac, hrd/tite, no foss, subang-ang

DOL- crystalline- lt-drk gry, predom drk, fn grn, grty sdy text, sl soft, sl slty sdy, few blk grn incl, rare drk/lt banding, tite, no foss, sub ang

DOL- crystalline- wht lt-drk gry, drk gry dom, whts rare & sl chrt, rare pyr xln, blk grn incl persist, sl slty sd incl, med hrdns, grty sdy text, subang-ang

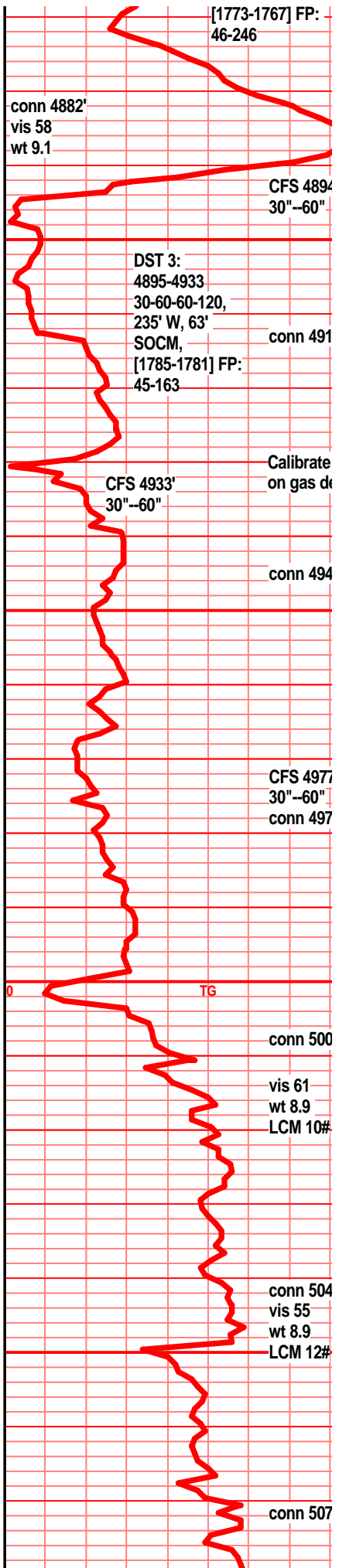
DOL- crystalline- wht lt-drk gry, fn grn, whts sl chrt, low gluac & blk grn incl, grty text, sdy slty, subang, poor sort pcs

DOL- crystalline- wht lt-drk gry, sl chty & calc xln, sd & blk grn incl, sdy slty, grty text, whts softer-calc, sl friable shly pcs, subang

DOL-crystalline- predom drk gry, low wht pcs w/ sl chrt xln, sd incl, sl slty, limy, rare pyr xln, sdy grty text- sl waxy, hrd, subang

DOL- crystalline- lt- drk gry, drk gry dom, slty sdy, limy, sd incl, sft-hrd, grty- sl waxy text, sl friable, irreg frac, subang

LS- wacke-packstone- wht off wht tan, calc xln, sd grn incl, sub chlky, vfn-fn grn, tite, friable, foss frags, ools, cln opa q clac faces, spicules. few chrt pcs- fossiliferous grainstone, wht tan, shrp ang



[1773-1767] FP: 46-246

conn 4882' vis 58 wt 9.1

CFS 4894 30"-60"

DST 3: 4895-4933 30-60-60-120, 235' W, 63' SOCM, [1785-1781] FP: 45-163

conn 491

Calibrate on gas d

CFS 4933 30"-60"

conn 494

CFS 4977 30"-60" conn 497

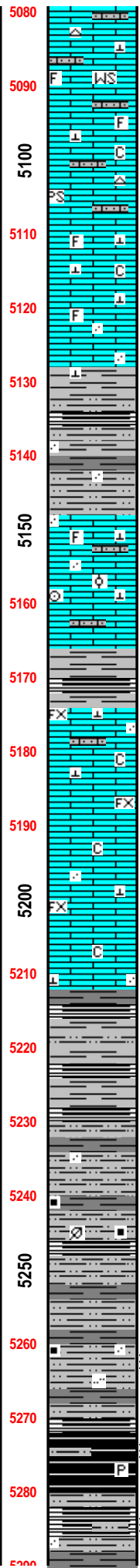
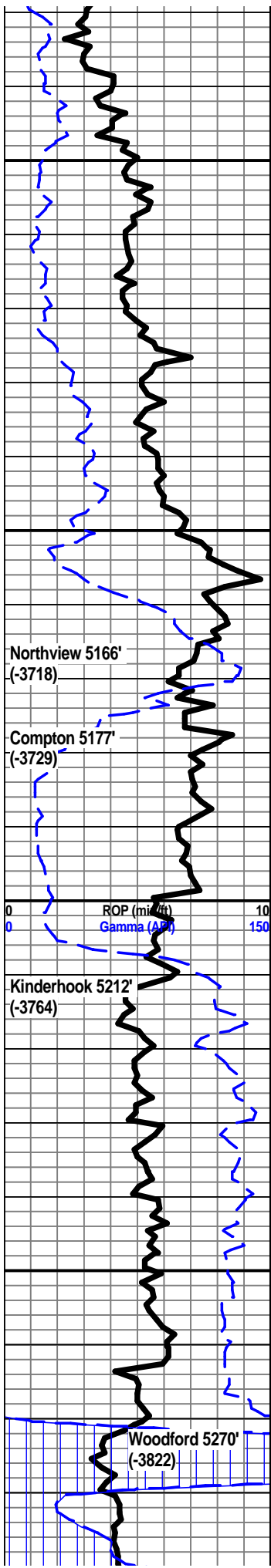
conn 500

vis 61 wt 8.9 LCM 10#

conn 504 vis 55 wt 8.9 LCM 12#

conn 507





LS- wacke-packstone- wht off wht tan, calc xln, vfn grn, med-crs xln, sub chlky, friable, grty text, sd gn incl, calc foss frag/shell few crin. low chrt xln-wht shrp opaqln faces.

LS- wackestone- wht off wht, vfn grn, chlky, sd gn incl, clac xln, friable, grty text, calc foss frag & crin, ools, sub ang. lt grn pcs- carb mud & sd grn, low foss.

LS- packstone- wht off wht tans, vfn-fn grn, chlky fossiliferous pcs (wackestone), friable, grty-chlky text, sd gn incl, crs calc xln & foss frags. rare chrt xln- fossiliferous grainstone, opaqln wht, frsh cln shrp faces

LS- packstone-crystalline- wht off wht tan, few lt grn pcs, vfn grn, crs calc xln, sub chlky, sd gn incl, friable, grty-chlky text, hvy calc xln foss fags/ools, fresh face shrp ang calc. lt grn pcs- vfn grn sdy dol.

LS- crystalline- wht off wht tan, fn grn, crs calc xln, chlky pcs less calc/foss (wackestone), low sd gn incl, foss frag, grty text, friable, sub ang

SH- mudstone- blk grn red/brn, vfn grn, sd incl visibl, fissile, lam seen, splintery platy pce, flaky frac, grsy text

SH- mudstone- vfn grn, gry/grn red/brn, sl slty sdy, grn incl visibl, waxy- grty text, friable, irreg pcs & frac, fnt lam in red/brn

LS- crystalline- off wht gry/grn drty gry, fn grn, med-crs calc xln, grty text, sl slty, friable, calc crin, ools, fnt foss struct prsvd. grn pcs- wackestone- sl waxy text, sd gn incl, fn calc xln

SH- mudstone- blk gry lt grn-grn/blu red, vfn grn, waxy grsy text, friable. reds- sl sdy, irreg pcs, no lam. blk gry grn- fissile, good lam, splintery/flaky

LS- crystalline- lt gry gry/grn, vfn grn, sl chlky in parts, sd incl whr chlky, vfn xln, hrd tite, ang-subang, no foss seen

LS- crystalline- wht off wht gry, vfn grn, v sl chlky, friable, vfn xln, no/rare foss frag,

LS- crystalline- wht gry lt grn/gry, vfn grn xln, sl chlky, friable, no/rare fnt foss frag struct prsvd. chlky pcs- mud-wackestone- foss frag vry fnt, vfn grn xln, low sd incl

LS- crystalline- wht tan gry-grygrn, vfn grn xln, friable, no foss prsvd, sub ang, lrg pcs. chlky pcs- mudstone- wht, vry friable soft, sl sdy, rare calc foss

SH- mudstone- blk lt-drk gry, vfn grn, vfn sd incl, sl grty text. blk drk gry- flaky frac, good lam visble, flaky splintery pcs. lt gry- soft friable, no/poor lam, blk grn ncl, irreg frac/pcs

SH- mudstone- gry blk drk brn, vfn grn, friable, sd gn incl. blks- good lam, low gn incl, carb, fissile, splintery flaky. brn grys- sdy, grty text, soft, irreg frac/pcs

SH- mudstone- blk gry brn, vfn grn, friable, sl sdy. blk gryss- fissile, well lam, vfn low sd incl, flaky frac/pcs, woody mtx horiz few grys. brns- sdy, soft, irreg pcs, grty text

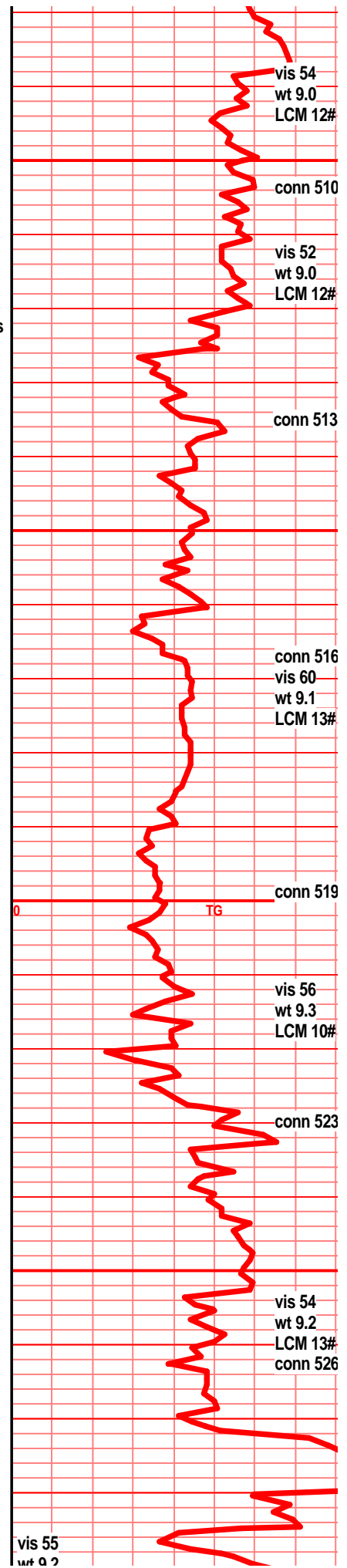
SH- mudstone- blk drk gry/brn, vfn grn, sdy, grty waxy text, sl fissile, friable, poor-no lam, fnt lam in blk/grys

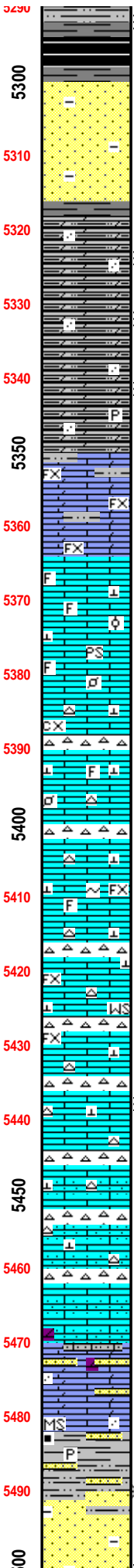
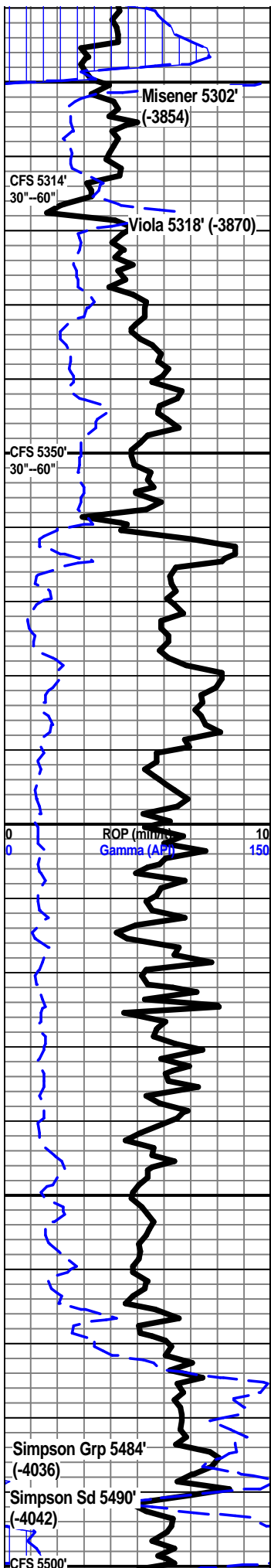
SH- mudstone- lt-drk gry drk brn, vfn grn. lt gry- sl sdy, waxy text, friable, poor lam/rare carb conc horiz. drk gry- grsy text, fissile, fair lam, flaky-blky pcs. brn- vry sdy/slty, grty text, fnt lam, friable, sl fissile, low gas bubs

SH- mudstone- blk carb, vfn grn, vfn sd gn incl, low pyr xln, fissile, fnt lam, grsy text, hrd, gas bubs

SH- mudstone- drk brn blk, fn grn, sdy vis grn incl, grty sl waxy text, vari hrdns, sl fissile, friable in prts, fnt lam- sdy/carb horiz, gas bubs

SH- mudstone- lt arv. vfn arn. sdv. sl artv text. waxv. friable.





irreg pcs & frc, no lam seen, gas bubs

SH- mudstone- vfn grn, carb blk, flaky, vfn lam, gas bubs

SS- wht gry, qtz dom, blk lith present (~5%), qtz trans, subrnd, mod sort, isolated dead stn. wht pcs- poor silica/arg cem, interstitial por. gry stnd pcs- same lith, well cem, tite, hrd blk pcs

SS- wht, qtz dom, incr lith (~5-10%), tans qtz, poor sort, mod silica/arg cem, subang-subrnd, no stnd pcs, sl flour on wtr

SH- mudstone- blk/brn, vfn grn, slty sdy, friable, fissile, sl dol, fnt lam

DOL- mudstone/wackestone- lt gry drk brn, shly dol, vfn grn, slty sdy, grty dol text, waxy, vari hrdns, lam seen, fissile, friable, sl efferv- lime mud?. brn pcs sl red tint, gas bubs

DOL- mud-wackestone- lt gry brn, shly dol, sdy vis grn incl, grty dol text, friable. grys- sl efferv-lime mud, no lam. brns- sl fissile, sl lam, no lime, gas bubs

DOL- mud-wackestone- lt gry drk brn, fn grn, sdy slty, grty sl waxy text. grys- sl efferv-lime mud, no lam, irreg pcs, friable. brns- no lime, fnt lam, fissile, gas bubs

DOL- packstone/crystalline- lt gry tan, vfn grn, sl sdy slty, sl limy, rare pyr xln. pack- lime mud, sd grn incl visbl, friable, shly. cryst- grty dol xln text, low sd, low xln lime/calc, med hrdns

DOL- crystalline- lt gry tan, predom gry, fn grn, sl crsr xln, grty xln dol text, hrd, sl efferv-xln ls, tite, sub ang, lrg pcs, decr lim mud dolo

LS- crystalline- off wht tan few brn, vfn grn, xln, hrd tite, rare fn-med calc xln, shrp ang. low grnstone- fnt foss strct prsvd-re-xln, foss frag ools.

LS- pack-grainstone- wht off wht tan, blk grn & shl frag (fnt lam) incl, calc xln, sub chlk, fnt foss frag prsvd, fnt ool prsvd, lime mud cem, mottled, sl friable, sub ang, low brn chrt xln

LS- pack-crystalline- fn grn, med-crs xln, blk grn/foss incl, hvy calc xln- fnt foss ool & cem, sub chlky (packst)- btr foss/ool prsvd, blk pelloids, friable, sl sdy, chlky sl grty text, subang

CHRT- crystalline- tan lt brn, vfn grn, blk incl, shrp ang fresh, hrd tite, sl spiculitic

LS- packstone-crystalline- wht off wht tan, fn grn, fn-crs xln, blk pelloid, glauc, sub chlky, friable, hvy clac xln, low brn/tan chrt xln, sub ang. pack- chlky, btr foss/pelloid, blk foss prsvd. xln- fnt calc & blk foss prsvd, crs calc xln

CHRT- crystalline- lt brn tan, vfn grn, blk incl, shrp ang, fresh faces, drty, partial xln w/ ls, hrd tite, spiculitic

LS- pack-crystalline- wht tan lt brn, vfn gr, sl crs calc xln, sl vfn chrt xln, chlky, pelloid, glauc, blk grn incl, fnt foss struct in hxy xln cont

LS-wackestone-crystalline- wht tan, vfn grn, chlky in prts, fn calc xln, low chrt xln, low micro foss, partial to comp xln of lime mud, irreg pcs, sub ang-ang

LS- wackestone- crystalline- vfn grn, vfn xl calc, low chrt xln, chlky, low micro foss, grty-chlky text, friable whr chlky/wacke, hrd tite xln mtx

LS- crystalline- tan aff wht, vfn grn, fn xln, few blk grn/lith incl, hrd tite, sub ang-ang. sb chlky ls- wackestone-off wht tan, vfn calc/lime xln, blk grn/lith persist, friable. grty chlky text

CHRT- crystalline- off wht, tan, lt brn, vfn grn, xln, low blk incl, hrd/tite, shrp ang fresh faces, irreg pcs,

LS- crystalline- tan lt brn, vfn grn sl slty sdy, grty text, hrd tite, rare mud stringer, rare spicules, trans calc frac xln. decr wht chlky pcs- wackestone- partial & comp clac lime chrt xln

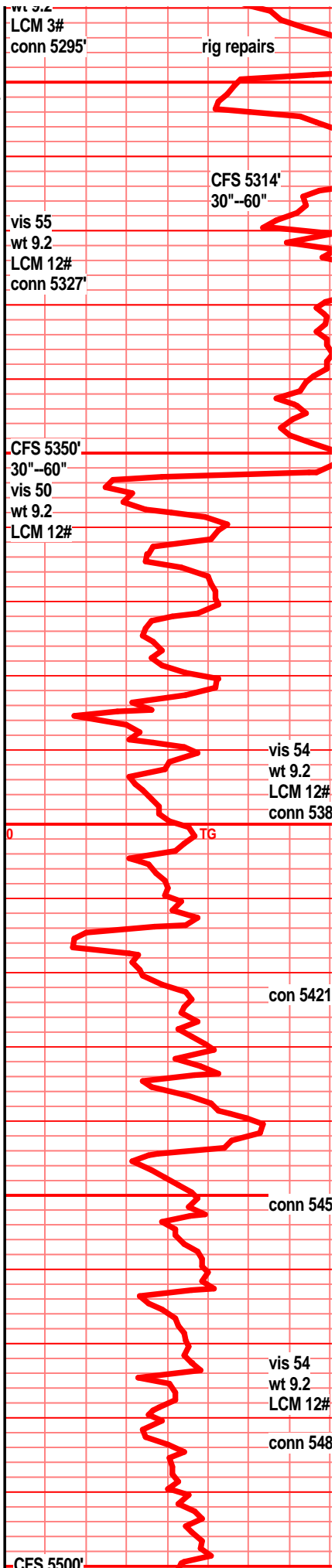
CHRT- crystalline- dull opaqtan lt brn gry, vfn grn, low grn incl, hrd tite, shrp ang fresh frac faces, irreg pcs

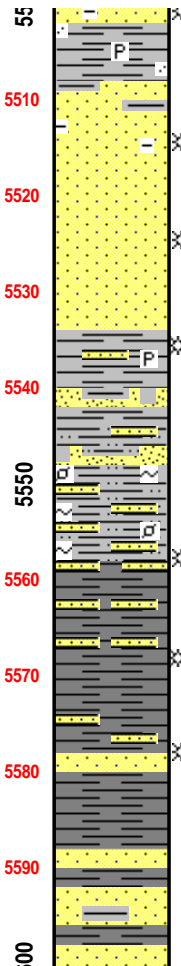
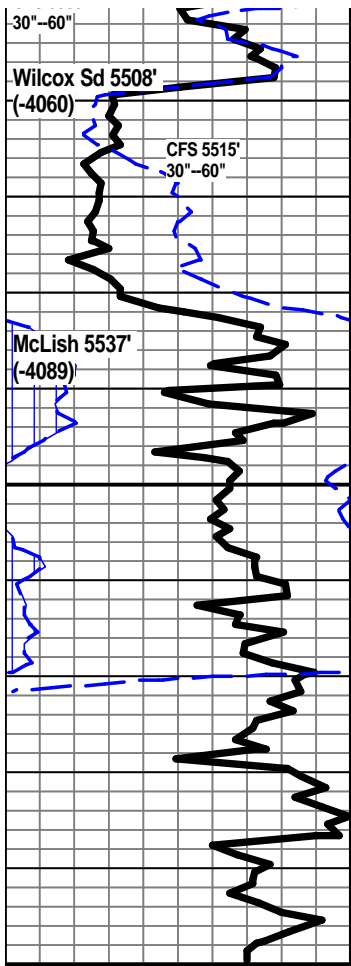
DOL/LS- packstone- brn tan, vfn-fn grn, slty sdy, rnd trans qts grns, limy arg mud cem, dol & calc xln, dol grty sdy text, mod-poor arg grn incl- tan sl trans, qtz dom, poor sort, subang.

SH- mudstone- blu turquoise, vfn grn, sl sdy, pyr xln- crs/more on ls/sh contact, fissile, waxy text, fair lam- blk carb conc horiz, flaky frac, blkly-flaky pcs

SS- wht, low blk lith cont (~5%), vfn-fn grn, trans qtz dom, arg/limy cem (sl efferv), sl grn color to cem in prts, fair por, sub ang grns, poor-mod sort, gas bubs, no oil show

SS- wht, vry low blk lithic cont (<5%), fn grn, trans qtz dom, poor silica cem, high interstitial por. sub ana arns. well sort. blkv pcs. gas bubs. no oil show





SH- mudstone- blu turq, vfn grn, sl sdy, low pyr xln, fissile-friable, waxy text, fnt lam

SS- gry gry blu, vfn-fn grn, trans qts dom, blk liths (~5%), mod arg sl limy cem- blue tint, poor sort, subrnd-subang, good por, no oil shows, low gas bubs

SS- wht, tranz qtz dom, decr arg cem, no blu tint, low (<5%) lithics, vfn-med grn, poor sort, rnd(meds)-subang(vfn), good por, no shows, gas bubs

SS- blu gry, vfn-fn grn, trans qts dom, low blk liths, blu shly cont/cem, low pyr xln, poor sort, mod cem, subrnd-subang sd grns, low gas bubs

SH- mudstone- blu turq, vfn grn, sd grn conc horiz & strngr, pyr xln, fissile, very planar lam- seen well when frac, blkly-flaky pcs, gas bubs. ss- trans qtz grn, poor sort, shly arg cem

SH- wackestone- vfn grn, very sandy, trans qtz grn, por sort, rnd gluac & blk incl-plloidal, low carb foss, vari hrdns, sds thruout & horiz, rare u-shape blk carb mtx (no sds pres)-burrows?

SS- wht w/ blk lith/grn, fn grn, arg/shly cem, pyr xln, occur as stringer or thin beds (pcs bound by shls), gluac pelloids, irreg pcs, low gas bubs

SH- mudstone- gry blu, vfn grn, hrd, fissile, fnt lam-well seen on frac, flaky-irreg pcs, low gas bubs

SS- gry, vfn grn, shly arg cem, hrd, wht qtz grn, low blk liths, sl gas bubs

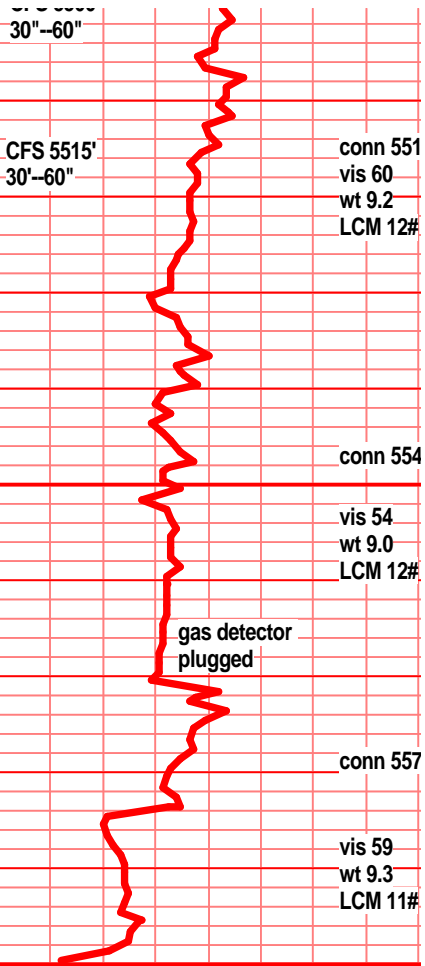
SH- mudstone- gry gry-grn gry-blu, vfn grn, sl pyr, very fissile, well planar lam, flaky fac, splintery flaky pcs

SS- gry, vfn-fn grn, wht trans qtz, low blk lith, shly arg cem, gluc incl, poor sort, gas bubs?

RTD: 5600  
(-4152)

**E-LOG TOPS:**

- Herrington 1961 (-513)
- Onaga 2849 (-1401)
- Wabaunsee 2900 (-1452)
- Lecompton 3639 (-2191)
- Kanwaka 3661 (-2213)
- Elgin Sand 3717 (-2269)
- Heebner 3878 (-2430)
- Toronto 3891 (-2443)
- Douglas Grp 3939 (-2491)
- Haskell 4152 (-2704)
- Stalnaker 4245 (-2797)
- Quindaro Shale 4395 (-2947)
- KC 'F' 4411 (-2963)
- KC 'G' Iola 4451 (-3003)
- KC 'H' Drum 4501 (-3053)
- Stark Shale 4573 (-3125)
- KC 'I' Dennis 4535 (-3087)
- KC 'J' Swope 4583 (-3135)
- Hushpuckney 4602 (-3154)
- KC 'K' Hertha 4610 (-3162)
- Base KC 4649 (-3201)
- Pawnee 4749 (-3301)
- Cherokee Grp 4798 (-3350)
- Cherokee Sand 4818 (-3370)
- Miss Unc 4863 (-3415)
- C2A 4876 (-3428)
- C2 4939 (-3491)
- Osage 5059 (-3611)



conn 551  
vis 60  
wt 9.2  
LCM 12#

conn 554

vis 54  
wt 9.0  
LCM 12#

gas detector plugged

conn 557

vis 59  
wt 9.3  
LCM 11#

