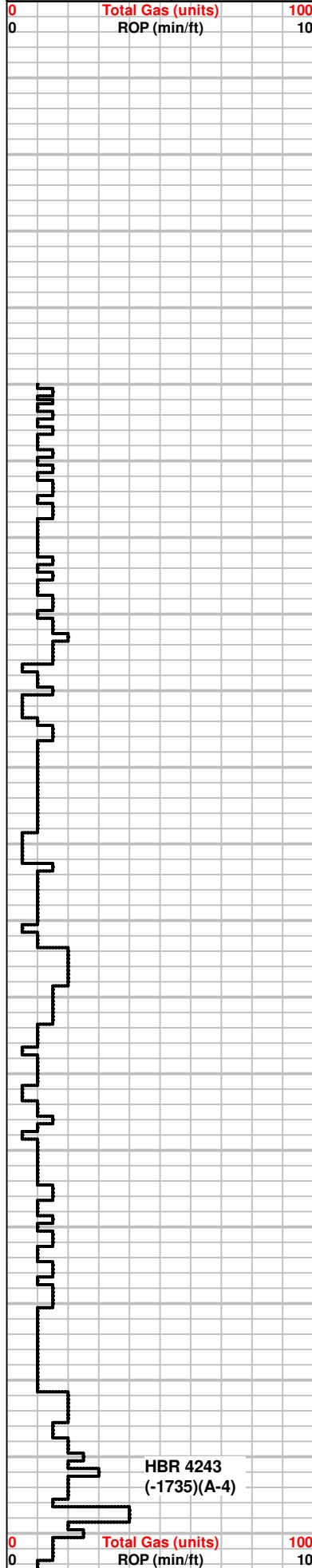


1:240 Imperial

Total Gas (units)

ROP (min/ft)

Cored Interval
DST Interval



4060
4070
4080
4090
4100
4110
4120
4130
4140
4150
4160
4170
4180
4190
4200
4210
4220
4230
4240
4250

Geologist on Loc @ 1030 PM 3/9/2016
Bloodhound Gas Detector (Unit 5258) provided by Bluestem Labs

MS-WS, crm to off white, m-xln to co-gr. txt, sandy to fossilif.,
Cherty, firm, some SH, gray, grn, vf-pyrite xtals, scat SSpcs, tan,
friable., NS

MS, some WS, crm to lt. tan, gritty to f-gr txt, hard, some glauc,
fossils, scatt chalky pcs, NS

SH, red, gray, grn, MS-WS, A.A., some pcs gray, f-xln, hard, some
Chert, bone white

MS, lt. gray to lt. tan, massive to f-xln, txt, dense, some pcs friable,
oolitic to fossil frgmts, some barren, NS, SH, gray grn, brn

SH, red, gray, sand in part, MS, A.A., rhombic to xln txt, scatt
fossils, NS

MS, crm to lt. gray, chalky to dense xln matrix, fossils, sandy in
part, rare Chert nodules, bone white, pyrite.

MS, crm to lt. tan, f-xln txt, some gritty pcs, fossilif., micro to co-gr
oolitic, fossil frgmts, mineral specs, SH, gren, red, sandy, rare gray

SH, rare blk(1 pc), green, gray, MS-WS, crm to gray, m-xln txt,
friable to hard pcs, oolitic, fossilif, calcite rhombs, shcalky pcs
throughout, NS

MS-WS, A.A, scatt tan, massive, dense pcs

WS-MS, crm to lt. tan, lt. gray, vf-gr gritty matrix, co-gr Chert
frgmts, fossilif, NS

MS-WS, A.A., inc in gray pcs, some w/ vuggy por. sandy/micro
oolitic txt, hard,
SH, gray, red, silty

SH, gray, green, MS-WS, crm to lt. tan, m-xln to m-gr txt, fossils
(brachs), some chalky pcs, sandy in part

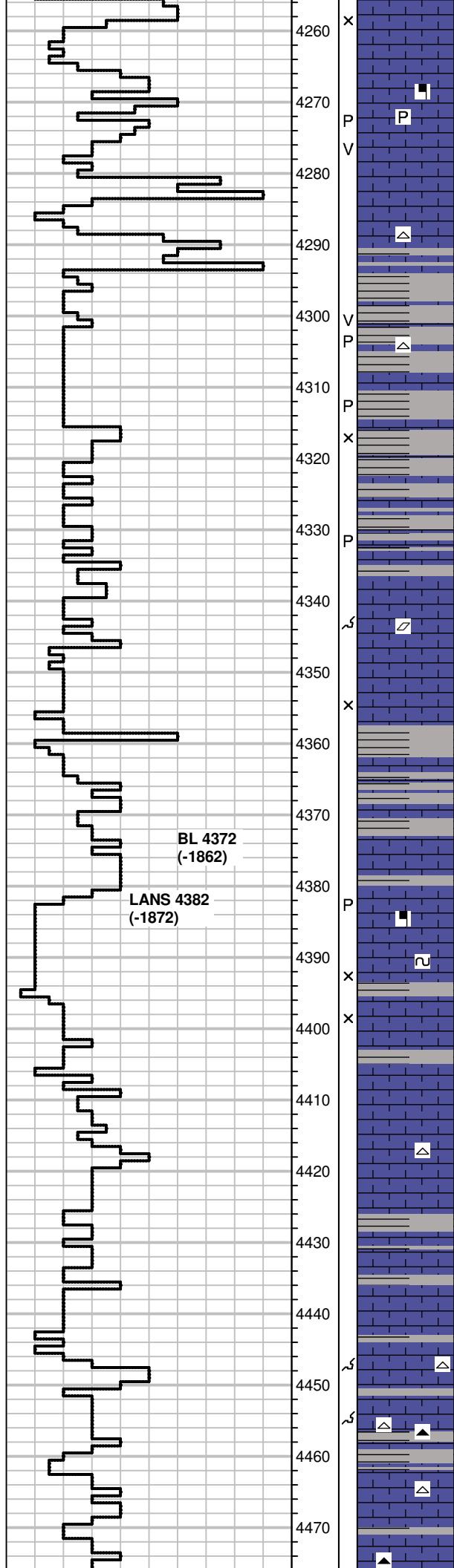
MS, crm, f-gr, gritty txt, hard to firm, dull fluor, NS

HBR 4243
(-1735)(A-4)

Total Gas (units)

ROP (min/ft)

P



4260 X SH, blk, gray, MS, lt gray, chalky to f-xln, hard, rare vf-pyrite xtals, dark mineral specs

4270 P P MS, A.A., SH, gray, red, grn

4280 V MS, crm to gray, vf-xln to massive txt, some chalky pcs scatt, Chert frgmnts in gritty/silty matrix, white, opaque

4290 P MS, crm to gray, f-xln to massive txt, sandy in part, some f-xln pyrite xtals, Chert, white, milky SH, grays, red

4300 P MS, brn to crm, chalky, some silty SH, grn, brn

4310 X SH, gray, blk, red, silty to sandy, MS, brn to tan, f-xln to f-gr, sandy micro oolitic in part, NS

4320 P WS-MS, crm, f-xln, m-gr oolitic to micro oolitic, gritty txt, SH, red, predominant in sample tray.

4330 P MS, crm to brn, dense, massive to xln txt, fossil frgmnts, m-gr ooids in clear calcite matrix, SH, gray, green, red, silty in part.

4340 S MS, crm to brn, dense, massive txt, fossil frgmnts(brachs, crinoids), m-gr oolitic pcs, xln txt in part, calcite rhombs, some SH red, gray

4350 X MS-crm to tan, massive to f-xln, txt, firm to dense, fossilif(crinoids, ooids, brachs), SH, gray

4360 SH, gray, brn, some green, MS, tan to crm, f-xln, gritty txt, firm, NS

4370 MS, brn, vf-xln, dense, scatt fossil frgmnts, NS SH, grays

4380 P SH, gray, green, MS, crm to lt. gray, f-xln mottled pcs, mineral specs, some f-gr oolitic pcs, fossilif frgmnts, firm, NS

4390 X MS, crm to tan, brn, f-xln, some dense pcs, mottled pcs scatt, some glauc, fossils, NS, SH, gray, green

4400 X MS, tan to brn, mic-xln, dense, fossils(fusulinids), NS SH, gray

4410 O Flood of MS, crm to lt. tan, mic-xln to dense, sli. sandy, hard pcs, fossilif. Chert, off white, rare lt edge stn in dry

4420 MS, A.A., some chalky pcs, scatt sandy pcs SH, dk gray, gray, silty in part

4430 MS, crm, tan, brn, f-xln to chalky, sandy, some pcs dense, mottled SH, green, gray

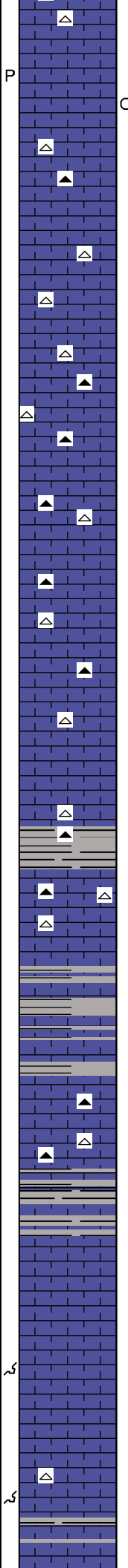
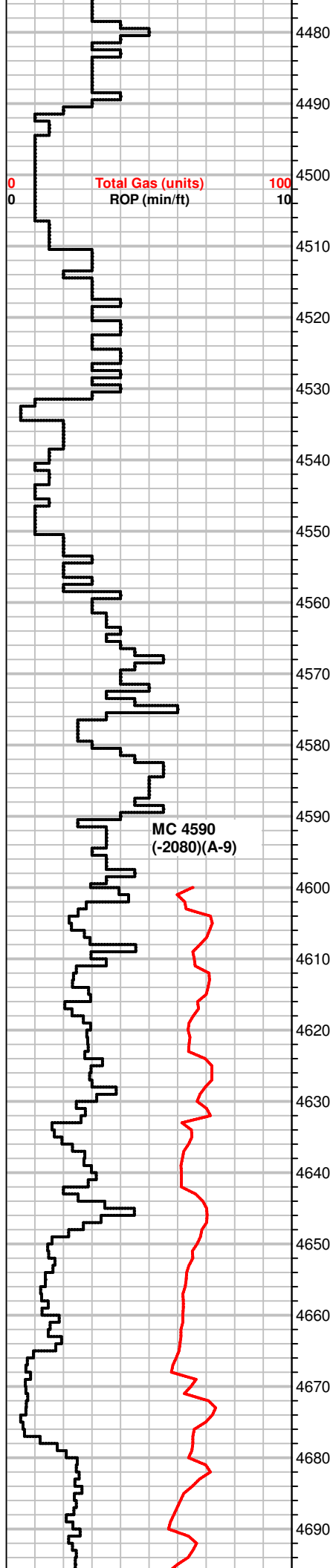
4440 MS, crm to lt. gray, f-gr to gritty txt, chalky matrix in part, firm to hard, some pcs dense, Chert frgmnts, white, some SH, grays

4450 MS, crm to gray, f-gr, silty txt, A.A., some micro oolitic pcs, Chert, white, blk, blocky, NS, some SH, gray, green

4460 MS, crm to lt. gray, massive txt, dense, firm, some pcs friable, rare pyrite, fossils, scatt ooids, Chert, gray, micro fossils, NS

4470 MS, lt. gray, tan, crm, mottled, silty in part, mineral specs, soft.

**Rough drilling from 4280-4314.
Bit Trip @ 4314.
Pipe Strap 5.65' Short**



MS, crm to tan, brn, f-xln, dense to chalky matrix, fossils(brachs, ooids) frgmts, pp por.

MS-WS, crm to brn, f to m-gr oolitic txt, some pcs massive, dense, rare edge stn dry, SH, gray

MS-WS, crm to gray, m-gr txt, mottled pcs, some oolitic, sparse fossil frgmts, rare pyrite xtals, Chert, white, fossilif., blk

MS, crm, f-xln, massive txt, some WS, brn, sandy to silty, mineral specs, Chert, white, Crinoid stems, SH, green

MS, scatt WS, crm to brn, most w/ massive txt, dark m-gr ringed ooids in WS, fossil frgmts, Chert, blk, white

MS, crm to brn, f-xln, hard, some chalky, soft, f-gr ooids in chalky mtrx, dec in WS A.A., Chert, white, blk some SH, brn, blk, gray

MS, crm to lt. gray, f-xln to silty, dark mineral specs in gray pcs, chalky crm pcs, some dense, fossils, Chert, white, grayish brn, f to m-gr ooids in brn silty mtrx., dull fluor, NS

MS-WS, crm to brn, some gray, f-xln to massive txt, sub oolitic pcs, firm to hard, Chert, white, gray SH, brn, gray, silty

MS, crm to tan, vf-gr sugrary txt, scatt fossils, pyrite, Chert, white, gray, fossilif. SH, gray green, silty, rare blk pcs

MS, crm, massive to mic-xln txt, dense, hard, dull fluor, scatt m-gr fossilif pcs, NS, Chert, white, Sh red, gray

MS, crm to tan, f-xln to mic-xln, fossil frgmts, firm to hard, Chert, white, gray, micro oolitic SH, sea green, gray, brn, sandy to silty

MS, crm , vf-xln, dense, scatt fossils, some sub oolitic pscs, partly sandy, Chert, white, gray SH, gray, green, silty

MS, A.A, crm to off white, some chalky, Chert, white, gray SH, gray

SH, gray, scatt grn, MS, A.A., dec amt in tray

SH, gray, grn, MS, crm to off white, soft, friable, some pcs sub oolitic to micro oolitic, NS

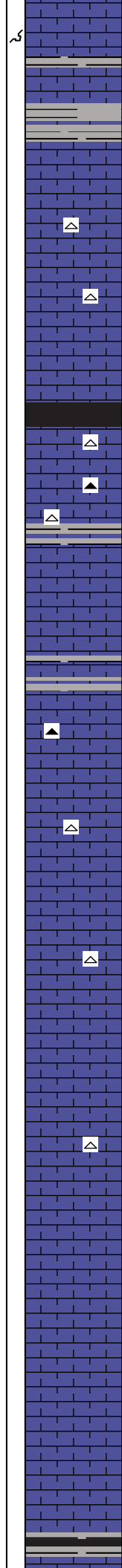
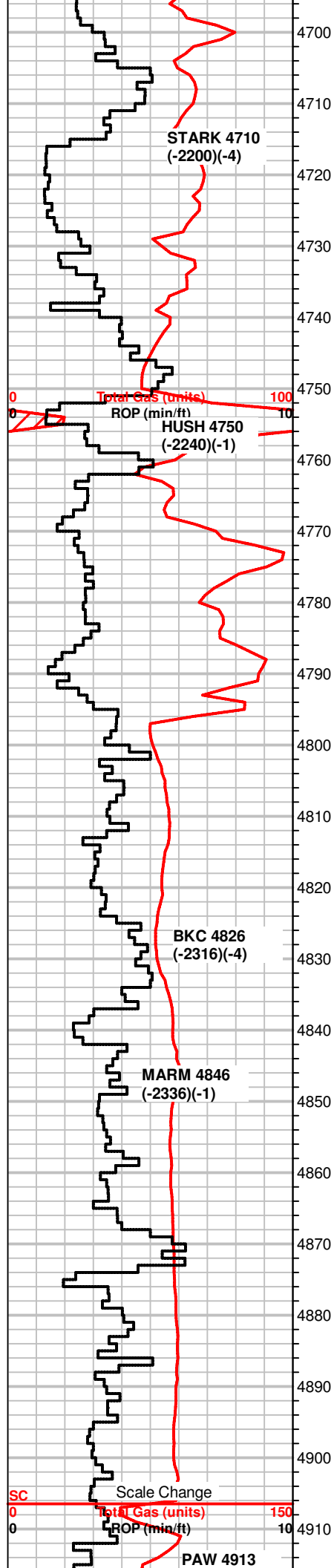
MS-WS, crm to brn, f-xln, co-gr oolitic to massive pcs, Chert, brn gray, white SH, grays, green, brnish-red

SH, green, gray, sea green, MS, crm, f-xln to chalky, sparse fossils

MS, crm to lt. tan, f-xln to chalky, scatt fossils, hard to firm, rare bright fluor, NS

MS-WS, crm, f-xln to chalky, f-gr ooids in sandy chalky mtrx, moldic por., some SH, gray

MS, crm to lt. tan, f-xln, some pcs mottled, soft, chalky, Chert, white, fossilif, moldic por. SH, blk, gray



A.A., WS, crm, m-gr oolitic, chalky mtrx, NS
SH, gray, sea green

SH, gray, MS-WS, crm to brn, f-xln, scatt oolitic m-gr pcs, most dense, NS

SH, gray, green, brn, blk, striated pcs
MS, crm to off white, massive txt, friable, some dense, NS

MS, crm to off white, chalky to f-xln, some pcs dense, Chert, white, fossilif. in part

MS, crm to brn, rare WS, xln to m-gr oolitic txt, chalky mtrx, scatt dense pcs, dull fluor, NS, rare Chert, white

MS, brn to gray, crm, f-xln, dense, some chalky crm pcs, firm, NS

SH, blk, bubbling gas, gray, silty
MS, crm to lt. gray, some lt. brn, f-xln, firm, NS
Chert, white

MS-WS, crm to lt. brn, f-xln to massive, dense, scatt fossils, m-gr ooids in tite xln mtrx, Chert, white, brn, fossilif.
Scatt SH, brn, blk

WS, off white, m-gr, oolitic to fossilif, dense, dull fluor, NS
some SH, gray

MS-WS, crm to brn, oolitic to micro oolitic, fossilif, some gray shaly pcs
SH, dk gray, red

MS, crm, gray, brn, f-xln, gritty in part, some dense, firm, Chert, blk, blocky
SH, dk. gray, gray, grn

MS-WS, m to crm, xln txt, scatt fossils, tite mtrx, Chert frgmts, off white, SH, gray, sandy

SH, gray, grn, platy to elongated pcs.
MS-WS, A.A.

MS, gray to brn, xln, some pcs sandy/shaly, scatt dense pcs, Chert, tan, crinoids, NS

MS, crm to gray, earthy/chalky txt, some xln, scatt fossils/mineral specs, SH, gray, green

SH, blk, gray, green
MS, gray to crm, f-xln, dense, Cherty pcs, firm, NS

MS-WS, crm to lt. gray, mic-xln to massive txt, mineral inclusions, fossils, firm, dull fluor, NS

MS-WS, A.A, inc in SH, green, gray, rare blk, silty

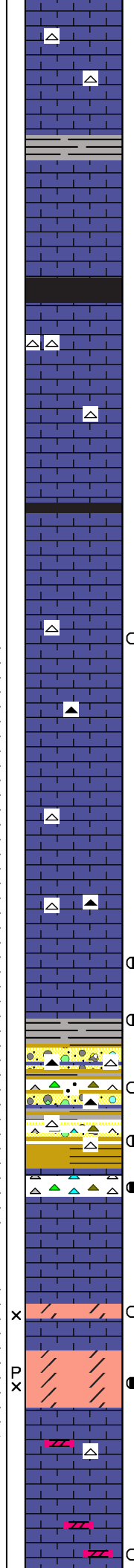
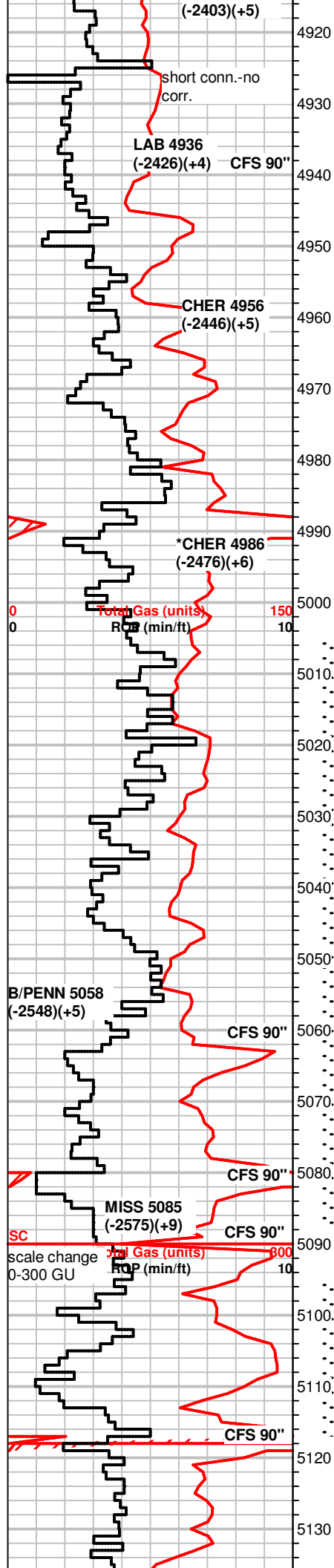
MS-WS, crm to tan, f-xln to chalky, sub oolitic, m-gr, some SH, gray, grn, blk

Flood MS, crm, f-xln to earthy txt, firm to hard, sub oolitic pcs, mineral fluor, NS

MS, tan to lt. brn, mic-xln to massive txt, dense, rare chalky pcs, scatt fossils, NS

MS-WS, crm to brn, f-xln to massive, tite, sub oolitic in part

SH, blk, gassy, sli. carb., some gray



MS, crm to tan, f-xln to chalky, friable to soft, scatt fossil frgmts, rare pyrite, vf-gr xtals, scatt Chert, white, 1 pc w/ mineral flour, no odor, no oil show

SH, dk. gray, gray, green, vf-xln pyrite
MS, crm to brn, f-xln to chalky pcs, hard to firm, NS

MS, crm to lt. tan, f-xln to massive, hard to firm, some dense, scatt oolites/fossils, rare chalky pcs, scatt SH, gray

SH, blk, gassy, dk. gray, green, MS, A.A., scatt Chert, white, opaque

MS, crm to brn, f-xln to chalky, firm to soft, Chert, white, translucent, fossil/mineral frgmts, NS
SH, grays, blk,

SH, blk, gassy, gray, A.A., MS, gray to brn, xln, scatt massive pcs, firm, friable, sandy pcs, rare fossilif pcs.

SH, blk, gray, green,
MS, crm to gray, gritty sucrosic txt, chalky in part, pyrite f-xln, hard, sandy

MS, crm to brn, gray, massive to chalky txt, hard to soft pcs, fossilif rare, scatt fluor, no cut, sli. edge stn in dry, Chert, white, tan, gray, fossilif., SH, gray, sandy

MS, crm to tan, scatt brn, f-xln, hard to firm, vf-pyrite xtals, scatt fossils, Chert, brn, SH, green, gray

MS, A.A., inc in SH, dk. gray, gray

SH, grays, silty in part
MS, crm to tan, brn, f-xln, dense, hard to firm, scatt pyrite xtals, NS, Chert, white

Dec in SH, blk, gray, grn, pyrite
MS, crm, f-xln, hard to firm, some chalky, sub oolitic, Chert, white, translucent, dark specs

MS, crm to brn, f-xln to chalky, firm to hrad, scatt fluor, 2 pcs w/ vuggy por, fluor, oil stn, bleeding oil, inst. streaming cut, no odor

MS-WS, crm to off white, f-xln, dense, some chalky, scatt fossils, dull fluor, 2 pcs w/ bright fluor, dead stn, v. sli. streaming cut

MS, crm to brn, f-xln, firm, few pcs w/ bright fluor(spoty), no cut no odor

SH, varicolored, Chert, yellow, white, orange, green, brn, fossilif, oolitic, vuggy por., oil in vugs, bleeding oil in tray, good stain, good odor, scatt MS, rare(1pc) fluor, gas bubbles, inst. cut

Chert, A.A, oil stain, bleeding oil, sli odor in bag, SS clusters A.A., some bleeding oil. MS, crm to gray, f-xln, hard, sli. dolomitic

MS, crm to tan, some brn, f-xln to massive txt, dense to hard, scatt sub oolitic to m-gr oolitic pcs, glauc, NS
Dolo, crm to lt. gray, vf-gr, suc. txt, firm to soft, scatt bright fluor, no stn, no odor, slow milky cut(2pcs)

Dolo crm to lt. brn, f-xln, sugary/granular txt, some pcs w/ co.gr frgmts, rare pcs soft, most tite/hard, mineral to rare bright spotty fluor, rare bleeding oil & gas bubble, live oil droplets, inst cut on select pcs, most slow milky cut unless broken, rare edge stn in dry, some pcs partial oil sat.

MS-WS, crm to off white, massive txt to m-gr txt., hard to firm, some pcs chalky, scatt fossils & sub oolitic pcs, no fluor, NS
Rare Dolo. crm to lt. brn, vf-suc txt, firm to hard, mineral flour, 1pc with inst cut(from above?), no odor

DST #1 5005-5088
30-60-60-90
SB BOB 1"
NBB
SB BOB IMMED
GTS 5" GA 1/4" Choke
30.776 MCF/10"
30.776 MCF/20"
29.190 MCF/30"
27.603 MCF/40"
7.261 MCF/50"
7.261 MCF/60"
NBB
4972' GIP
REC:35' GCM
IH 2619#
IF 28-36#
ISIP 1500#
FF 35-38#
FSIP 1518#
FH 2596#
Temp 120°F

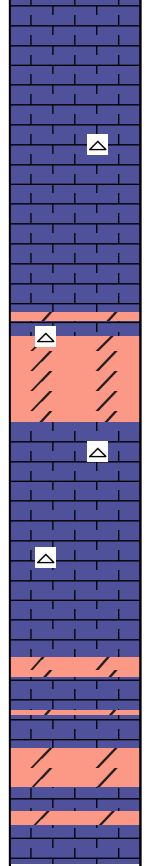
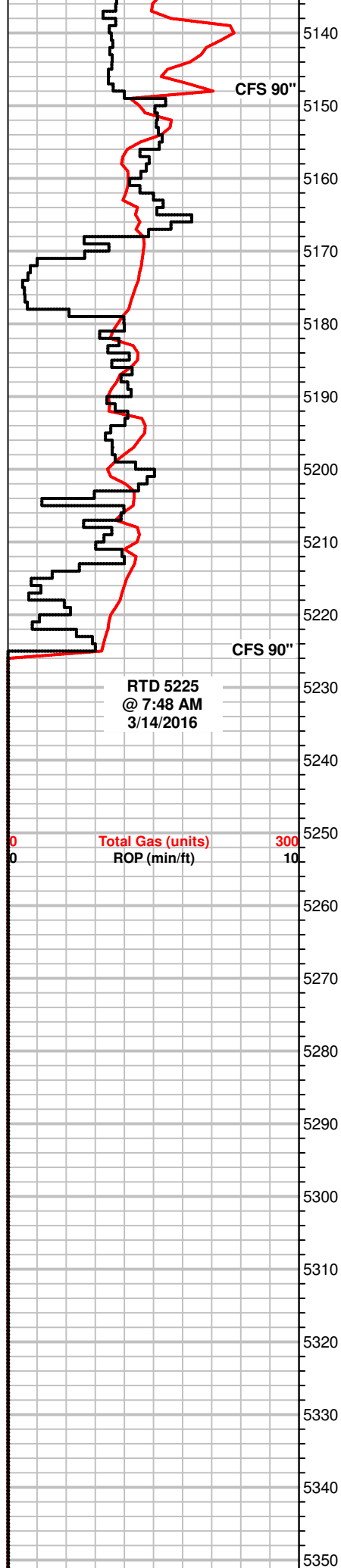
+40 UGK w/ recycle

+62 UGK, w/ recycle

+10 UGK, recycle covered by additional gas kicks

+40 UGK, recycle

DST #2 5095-5117
45-90-100-180
SB BOB 30 sec, GTS 5 min GA 1/4in choke @ 10 min, 1/2 choke after 387 MCF/10 min
1.041 MMCF/20min
1.112 MMCF/30min



MS-WS, crm to off white, f-xln, scatt massive txt, fossilif., sub oolitic in part, NS

MS-WS, crm to off white, f-xln to mic-xln, dense to hard, NS
Chert, white

WS, crm, f-xln, sub oolitic, scatt fossils, friable, rare chalky pcs, glauc specs, NS

MS-WS, A.A.
scatt Dolo, brn, vf suc, hard, dull mineral fluor, NS

Dolo, crm to brn, vf-suc txt., hard, NS

MS-WS, crm to off white, f-xln, sub oolitic pcs, fossil frgmts, glauc, Chert, white, fossilif.

MS-WS, crm to off white, f-xln to chalky txt, soft to firm, NS, Chert, white to lt. gray, fossilif

WS-MS, A.A., glauc, NS
Chert, white, oolitic pcs, fossilif.

Scatt Dolo., brn, vf- xln, suc. txt, hard, dull fluor, NS

Dolo, lt. brn, vf-gr suc. txt, sugary looking xln txt, hard, mineral fluor, NS

WS, crm to off white, f-xln, oolitic to sub oolitic, chalky matrix, NS, Chert, white, opaque, fossilif.

1.095 MMCF/40min
1.095 MMCF/45min
NBB
SB GTS IMMED GA 1/2 in
choke
971 MCF/10min
1.055 MMCF/20min
1.028 MMCF/30min
1.007 MMCF/40min
960 MCF/50min
920 MCF/60min
906 MCF/70 min
893 MCF/80min
839 MCF/90min
805 MCF/100min
NBB
5046' GIP
Rec:55' GCM
IH 2481#
IF 223-282#
ISIP 1490#
FF 274-222#
FSIP 1376#
FH 2510#
Temp 114°F

RTD 5225
@ 7:48 AM
3/14/2016

Total Gas (units) 300
ROP (min/ft) 10

