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

Well Name: Schroeder Unit #1
Location: Thomas County
License Number: API #15-193-20965-0000
Spud Date: 6/30/16
Surface Coordinates: Section 14, Township 6 South, Range 33 West
165' FNL & 2,135' FWL
Bottom Hole Coordinates: Vertical well with minimal deviation, same as above
Ground Elevation (ft): 3,088' **K.B. Elevation (ft):** 3,096'
Logged Interval (ft): 3,700 **To:** RTD **Total Depth (ft):** 4,600
Formation: Lansing-Miss
Type of Drilling Fluid: Chemical (Mud Co.)

Region: Kansas
Drilling Completed: 7/11/16

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OPERATOR

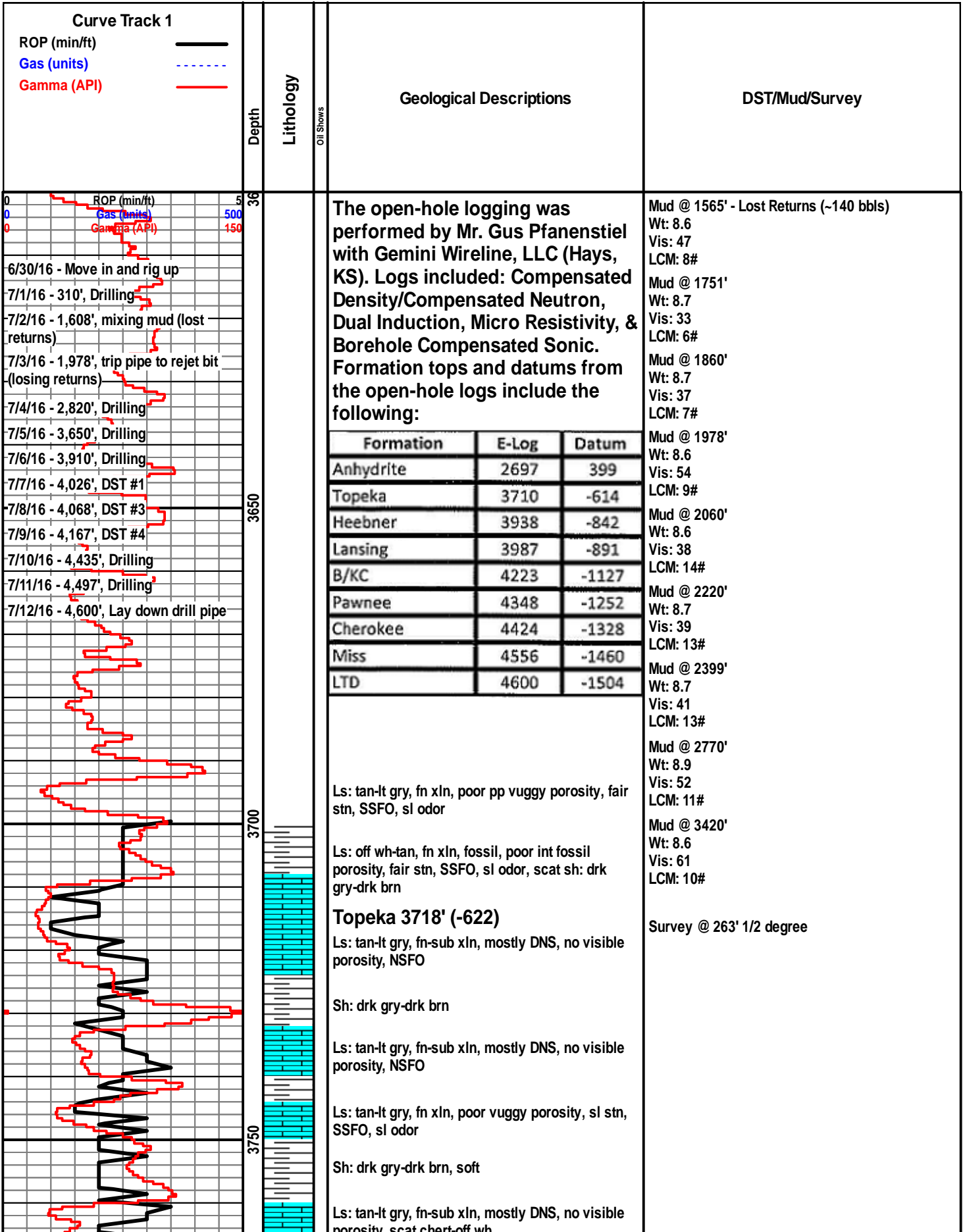
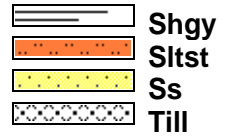
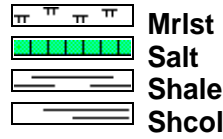
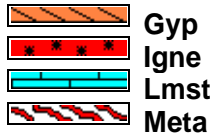
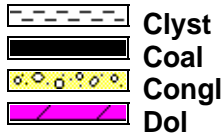
Company: John O. Farmer, Inc.
Address: 370 W. Wichita, Ave.
Russell, KS 67665

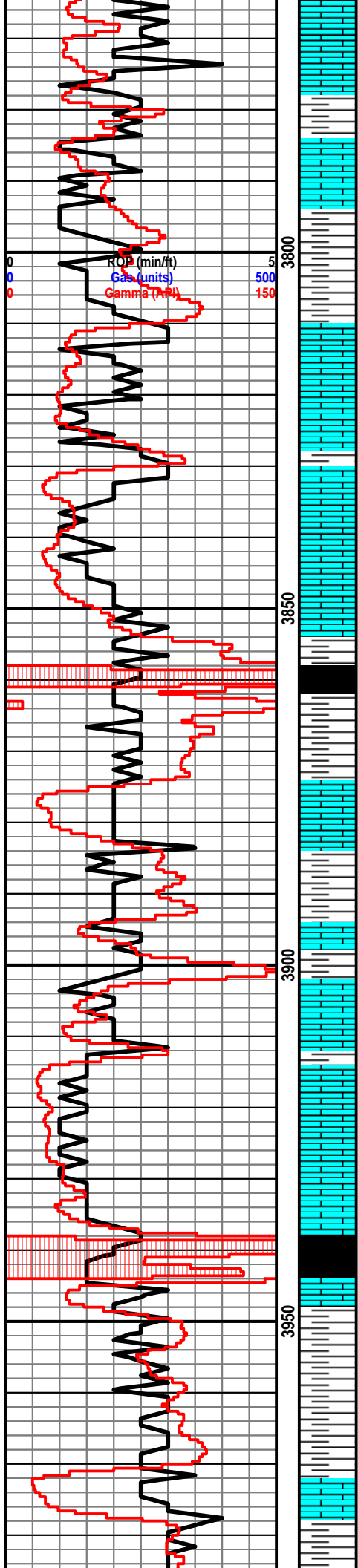
Comments

The Schroeder Unit #1 well was drilled by Discovery Drilling Rig #1 (Tool Pusher: Cliff Mayfield).

The location for the Schroeder Unit #1 well was found via 3-D seismic survey. Geologic samples were collected and evaluated from 3,700'-4,600'. Structurally, the Schroeder Unit #1 ran 14' high at the Lansing and 20' high at the Cherokee, to the Lincoln #1, 2,950' to the east, northeast. Four bottom-hole tests were conducted in the Lansing, all yielding negative results. A bottom-hole test was also conducted to evaluate the Cherokee, which resulted in positive fluid and pressure recovery. Based upon sample shows, electric log evaluation, DST results, and good structural position, the decision was made to set 5 1/2" production casing to further evaluate the Cherokee section in the Schroeder Unit #1 well on 7/12/16.

ROCK TYPES





Ls: ala

Sh: drk gry-brn

Ls: tan-lt gry, fn xln, poor int xln porosity, NSFO, scat chert

Sh: gry-brn

Ls: tan-lt gry, fn-sub xln, mostly DNS, no visible porosity, NSFO

Ls: tan-gry, fn xln, poor int xln porosity, scat blk tarry asph stn, SSFO, sl odor

Sh: drk gry-brn

Ls: tan-gry, fn xln, poor int xln porosity, scat blk tarry asph st, VSSFO, sl odor

Ls: tan-gry, fn-md xln, poor int xln porosity, DNS, scat-fair blk tarry asph st, VSSFO, sl odor

Sh: drk gry-blk, carb

Sh: drk gry-brn-grn-rd

Ls: off wh-tan, fn xln, chalky, poor int xln porosity, scat blk tarry asph st, SO in cup, no odor

Sh: gry-rd-grn

Ls: off wh-tan-gry, fn xln, fossil, poor int fossil porosity, scat drk brn tarry stn, NSFO, no odor

Ls: off wh-tan, fn xln, fossil, poor int fossil porosity, NSFO, no odor, chalky

Heebner 3940' (-844)

Sh: blk, carb, fissile

Sh: drk gry-brn-rd, soft

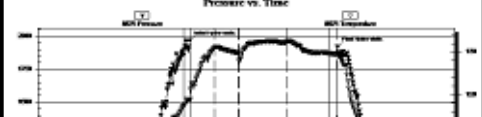
Sh: ala

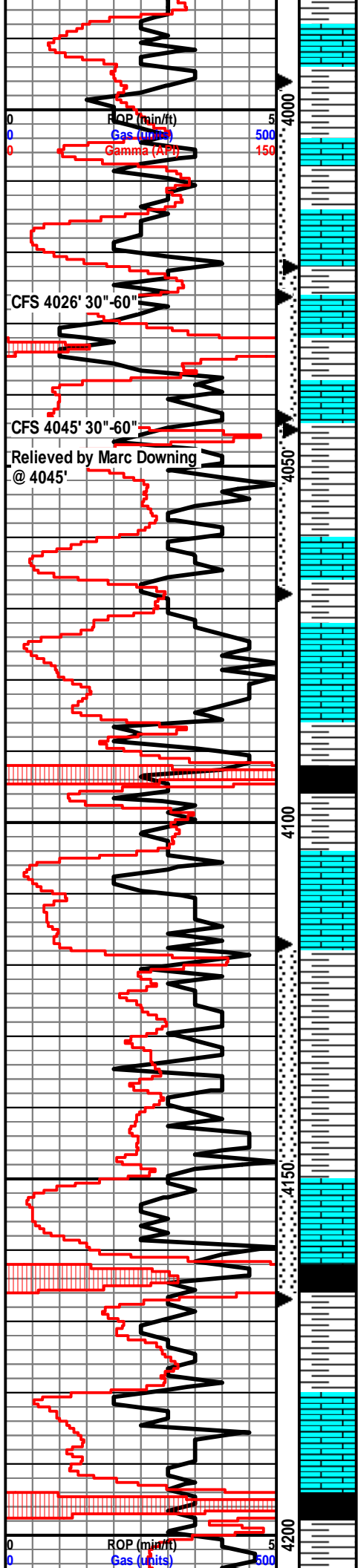
Ls: off wh-tan, fn xln, fossil, poor fossil & int part porosity, sl-fair oil st, S-FSFO, fair odor

Sh: gry-grn

Mud @ 3890'
 Wt: 8.9
 Vis: 52
 LCM: 5#

DST #1 3,996-4,026' (Lansing B-C)
 30"-30"-60"-60"
 IF: weak blow built to 6", no blow on shut in
 FF: BOB in 43 minutes, no blow on shut in
 Rec: 189' Mud Cut Water (5% M, 95% W), 204' Muddy Water (50% W, 50% M)
 FP: 19-79, 91-183#
 SIP: 1,228-1,231#
 HP: 1,966-1,921#
 BHT: 130





Lansing 3988' (-892)

Ls: off wh-tan, fn xln, poor int xln porosity, scat brn stn, scat chalky

Ls: off wh-lt gry, fn xln, poor int xln porosity, NSFO, no odor, scat sh: gry

Ls: off wh-tan, fn xln, ool, fossil, fair int part porosity, fair-good oil sat, SSFO, sl odor, scat sh: gry-brn-grn

Ls: off wh-tan, fn xln, ool, fair vuggy & int part porosity, fair-good drk brn st, FSFO, fair-good odor

Ls: off wh-tan, fn-md xln, poor-fair int xln porosity, sl scat oil stn, VSSFO, no odor, hvy chert-off wh-tan-gry

Ls: tan-lt gry, fn xln, DNS, no visible porosity, NSFO

Sh: gry

Sh: brn-rd

Ls: wht, md xln, md-lrg ool, scat foss, scat sub xln, chalky rx, mostly vry dns, pr porosity, 1 pc w/ vry poor resid stn, NSFO, no odor

Sh: brn

Ls: tan-wht, md xln, vry DNS, poor porosity, NSFO

Ls: wht, fn-md xln, few rx w/ spotted SFO in fair int xln porosity, hvy chert gry-wht, pr-fr rnbw stn, rare edge stn, no odor

Sh: blk, carb

Sh: brn w/ red

Ls: wht, md xln, foss, fr int xln porosity, sub xln-chalky

Sh: gry w/ scat brn foss Ls

Sh: brn-red

Sh: red-brn, arg in prt

Ls: wht, fn-md xln, scat foss, fr-gd int xln porosity, sub xln in prt, many barren w/ pyt flakes, scat fr sat stn w/ fr-gd spotted SFO, lt odor

Stark 4165' (-1069)

Sh: blk, carb

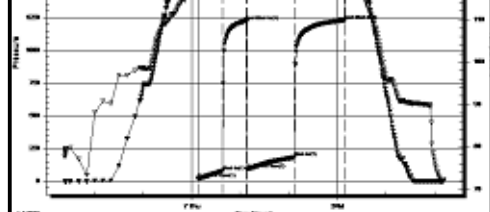
Sh: brn w/ red

Ls: wht, md xln, ool in prt, sub xln w/ scat fr int xln porosity, NSFO

Hushpuckney 4198' (-1102)

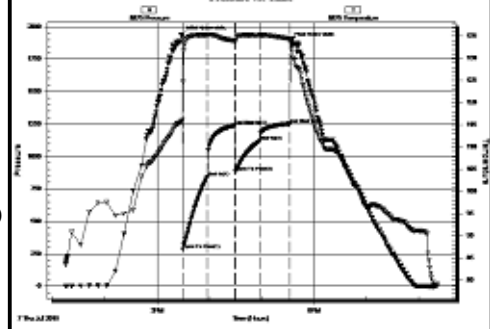
Sh: blk, carb

Sh: brn

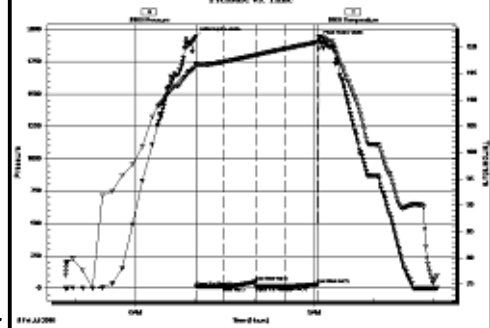


Mud @ 4026'
Wt: 9.0
Vis: 53
LCM: 5#

DST #2 4,022-4,045' (Lansing D)
30"-30"-30"-30"
IF: BOB in 30 seconds, no blow on shut in
FF: BOB in 1 minute, no blow on shut in
Rec: 2,142' Mud Cut Water (5% M, 95% W), 283' Water (Chl. 26k)
FP: 283-843, 883-1,119#
SIP: 1,238-1,252#
HP: 1,932-1,881#
BHT: 134

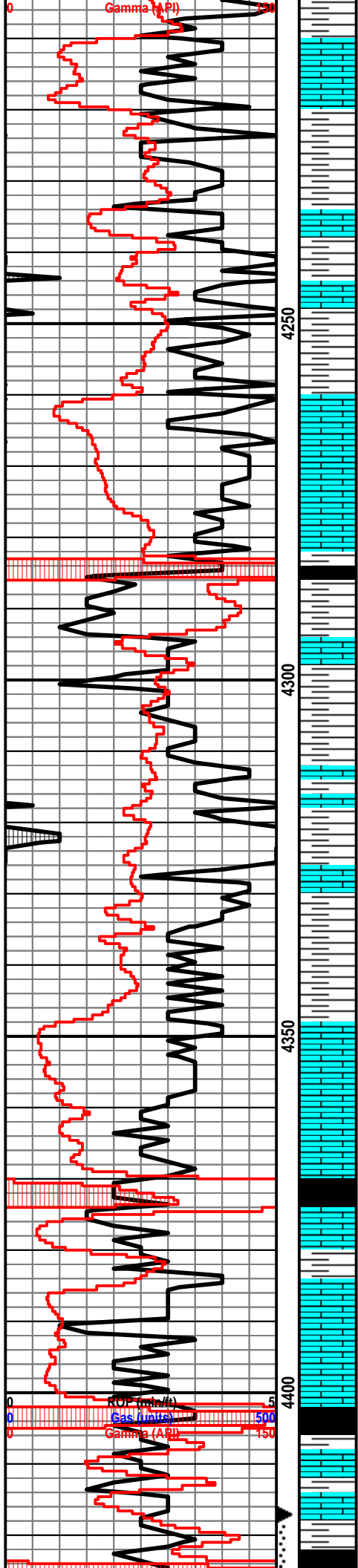


DST #3 4,043-4,068' (Lansing F)
30"-30"-30"-30"
IF: weak blow died in 12 minutes
FF: no blow
Rec: 5' Mud
FP: 13-13, 14-29#
SIP: 49-29#
HP: 1,943-1,916#
BHT: 122



Mud @ 4168'
Wt: 9.1
Vis: 47
LCM: 6#

DST #4 4,117-4,167' (Lansing J)
30"-30"-60"-60"
IF: weak blow built to 8", no blow on shut in
FF: weak blow built to 9", no blow on shut in
Rec: 126' Mud Cut Water (30%M, 70%W), 126' Water Cut Mud (15%W, 85%M), 73' Water Cut Mud (5%W, 95%M)
FP: 20-77, 89-157#
SIP: 796-793#
HP: 2,047-1,989#



Ls: tan-brn, md xln, foss, vry DNS, no visible porosity, scat sub xln, chalky rx, NSFO

Sh: brn w/ gry

Sh: brn

Ls: tan-gry, fn-md xln, poor porosity, NSFO

Sh: red-brn, washes red

Ls: tan-wht, mostly poor porosity & DNS, scat sub xln rx, 1-2 pcs w/ hvy brn stn in pr porosity, no odor

Ls: Trng, tan-gry, some drk gry, DNS w/ no visible porosity

Sh: gry w/ brn

Ls: tan, fn-md xln, poor porosity, DNS

Sh: brn w/ lt gry, vry gummy, Trng red

Ls: tan-wht, scat ool, poor porosity & DNS

scat DNS tan Ls, abnt red sh in samples

Ls: tan, md xln, w/ scat md-lrg foss, no visible porosity, NSFO

Sh: brn w/ gry

Pawnee 4349' (-1253)

Ls: tan-wht, fn-vry fn xln, no visible porosity, tite, DNS, scat wht-gry foss, chert, NSFO, no odor

Sh: blk, carb

Myrick Station 4374' (-1278)

Ls: wht, fn-md xln, sub xln-chalky, NSFO

Ls: wht-tan, fn-md xln, mostly DNS, w/ poor porosity, fr amt wht-tan, gry foss, chert, NSFO

Sh: blk, carb

Fort Scott 4402' (-1306)

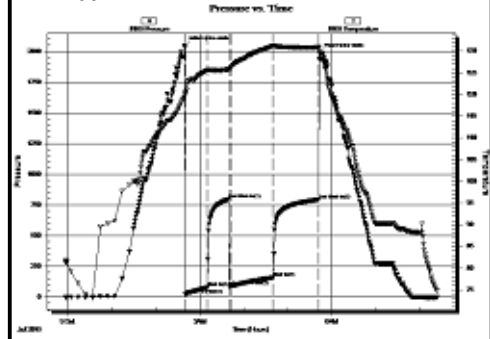
Ls: tan, md xln, mostly poor porosity & DNS, NSFO

Ls: Trng wht-tan, fn-md xln, sub xln in prt, rest DNS, NSFO

Cherokee Sh. 4422' (-1326)

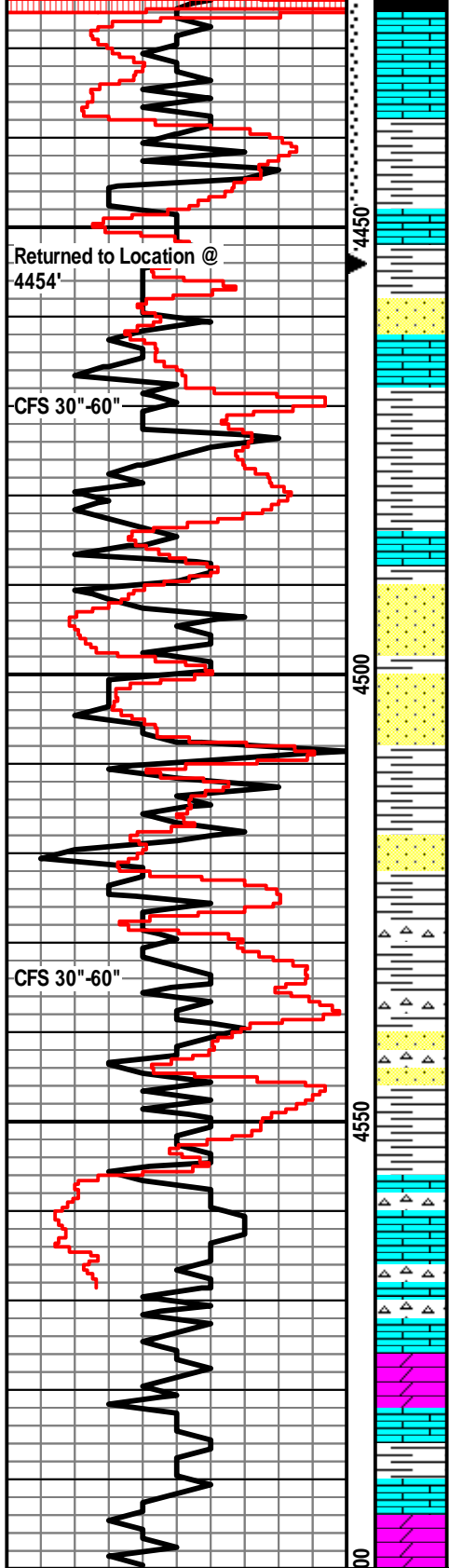
Sh: blk, carb

BHT: 130



Mud @ 4400'
Wt: 8.9
Vis: 55
LCM: 6#

DST #5 4,417-4,454' (Cherokee)
30"-30"-45"-60"
IF: BOB in 8 minutes, 5" blow back on shut in
FF: BOB in 6 minutes, BOB in 25 minutes on shut in
Rec: 769' Gas in Pipe, 239' Gassy Oil (30%G, 70% O), 189' Gassy Oil (20%G, 80%O), 126' Gassy Oil Cut Mud (10%O, 20%G, 70%M)
FP: 138-161, 162-209#
SIP: 1.064-1.017#



Sh: drk, carb

Ls: tan, fn-md xln, few sml foss, fr vuggy porosity, tite in prt, fr lt brn sat stn, FSFO, gassy in prt when broken, fr odor

Ls: tan-wht, fn-md xln, mostly DNS, 1-2 rxns w/ lt stn A/A, poss carry, scat tan-lt gry chert, no odor, Trng mostly gr sh in 60' CFS

Sh: drk gry-brn-grn

Sh: rd-grn, soft

Ss: md-crs grn, sub ang, poorly sorted, fairly well cemented, poor-fair int grn porosity, trace dead oil stn, no odor

Sh: rd-gry

Sh: drk gry-brn-rd

Ss: off wh, fn-md grn, sub ang, poorly sorted, poor-fairly well cemented, poor-fair int grn porosity, SSFO, sl odor

Ss: off wh-clr, fn-md grn, fairly well rnd, fair sorting, poorly cemented, poor-fair int grn porosity, fair oil stn, sl odor

Sh: drk gry-brn-grn

Ss: off wh, md-crs grn, ang, poorly sorted, well cemented, poor int grn porosity, NSFO, no odor, hvy sh: drk gry-brn-grn

Chert: vari-colored, DNS

Ss: fn-md grn, friable, w/ pr-fair int grn porosity, tr blk asph stn, trace wh chert, scat vari colored chert, DNS

Sh: rd-gry-grn-brn

Mississippi 4553' (-1457)

Ls: tan, fn-md xln, mostly DNS, sl foss, poor int xln porosity, NSFO, hvy chert-wh-lt gry-yellow

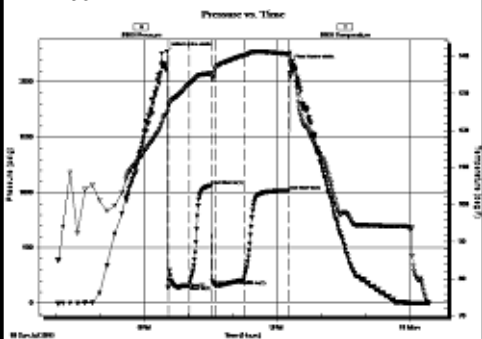
Ls: wh-lt gry, fn xln, mostly DNS, no visible porosity, NSFO, scat dolo: w/ poor int xln porosity, hvy chert-off wh-tan-lt gry

Dolo-Ls: wh-tan, fn-md xln, w/ poor int xln porosity, chert: ala, scat sh: drk gry-brn

Sh: gry-lt grn

Dolo: wh-tan, fn-md xln, mostly DNS, hvy chert-off wh-tan-lt gry

HP: 2,275-2,163#
BHT: 138



Mud @ 4470'
Wt: 8.9
Vis: 67
LCM: 4#

Survey @ 4600' 3/4 degree