

LITHOLOGY STRIP LOG

WellSight Systems

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

Well Name: Musselman #5-34
Location: 335' FSL & 2185' FEL, Sec. 34-T21S-R16W, Pawnee Co., KS.
Licence Number: 15-145-21727-0000 Region: Larned Field
Spud Date: 7/18/2013 Drilling Completed: 7/25/2013
Surface Coordinates: 335' FSL & 2185' FEL, Sec. 34-T21S-R16W

Bottom Hole Same as above
Coordinates:
Ground Elevation (ft): 1984' K.B. Elevation (ft): 1997'
Logged Interval (ft): 3000' To: 3920' Total Depth (ft): 3920'
Formation: Arbuckle at Total Depth
Type of Drilling Fluid: Freshwater/Gel to 2806'; Chemical Gel 2806' to 3920'

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OPERATOR

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GEOLOGIST

Name: Jon D. Christensen
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Cores

None Taken

DSTs

DST #1(Lansing 'A' + 'B' zones) 3512' - 3548'(Corrected Depth to Log) Test Times 15"-45"-30"-60" IFP Weak Surface Blow built to 0.5"; FFP Weak blow built to Fair 4.25" Blow, no Blowback on SI's; REC: No detectable GIP, 30' OCM w/trc Wtr(10%O, 5%W, 85%M) not enough water for Cl determination; IFP 24-30#; ISIP 1104#, FFP 30-36#, FSIP 962#, IHP 1725#, FHP 1704#, BHT 107 Deg. F.

DST #2(Conglomerate/Simpson) 3744' - 3840'(Corrected Depths to Log) Test Times 15"-45"-30"-60" IFP Weak Surface Blow built to 0.5", FFP No Blow, no Blowback on SI's; REC: 10' Drilling Mud, no shows of oil or gas; IFP 20-22#, ISIP 136#, FFP 24-27#, FSIP 53#, IHP 1850#, FHP 1835#, BHT 111 Deg. F.

Comments

7/18/13 MIRU Sterling Drilling Rig #5 Spud at 4:00 PM.; 7/19/13 Drilling at 870'; 7/20/13 Drilling at 1140'; 7/21/13 Drilling at 2260'; 7/22/13 Drilling at 3085'; 7/23/13 TD. 3550' - TOH for DST #1; 7/24/13 Drilling at 3805'; 7/25/13 RTD. 3920' - Reached TD. at 5:00 AM. - TOH for Logs, LTD. 3920' - P & A.

Set new 8 5/8"(24#) Surface Casing set at 1009' with 400 sacks of Cement(Basic Energy Services). Cement did Circulate. PD. at 4:00 PM. 7/19/13.

Surveys: 1.50 Degree at 1014'(Surface Casing); Attempt Survey - Misrun at 3550'(DST #1); 0.75 Deg. at 3842'(DST #2).


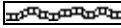
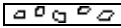

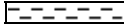







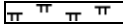

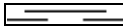

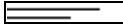



Pipe Strap at 3550'(DST #1): Strap 1.08' Short to the Board, no correction made to the Board.

After review of the Nabors Logs, DST's, Samples and lack of commercial amounts of hydrocarbons, the operator elected to Plug and Abandon the Musselman #5-34 at RTD. 3920' on 7/25/2013.








































































LOG TOPS: Anhydrite 987(+1010), Topeka 3032(-1035), Queen Hill Shale 3284(-1287), Heebner Shale 3391(-1394), Toronto 3406(-1409), Douglas Sand 3446(-1449), Brown Lmst. 3498(-1501), Lansing 'A' 3507(-1510), Lansing 'B' 3536(-1539), Lansing/KC 'H' 3636(-1639), Base Kansas City 3727(-1730), Marmaton 3739(-1742), Conglomerate 3768(-1771), Simpson Sand 3820(-1823), Arbuckle 3873(-1876).

NOTE: This log was shifted upward by 2' for correlation purposes with the Nabors Wireline Services LOGS.

ROCK TYPES

 Anhy  Bent  Brec  Cht	 Clyst  Coal  Congl  Dol	 Gyp  Igne  Lmst  Meta	 Mrlst  Salt  Shale  Shcol	 Shgy  Sltst  Ss  Till
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ACCESSORIES

MINERAL  Anhy  Arggrn  Arg  Bent  Bit  Brecfrag  Calc  Carb  Chtdk  Chtlt  Dol  Feldspar  Ferrpel  Ferr  Glau	 Gyp  Hvymin  Kaol  Marl  Minxl  Nodule  Phos  Pyr  Salt  Sandy  Silt  Sil  Sulphur  Tuff	FOSSIL  Algae  Amph  Belm  Bioclst  Brach  Bryozoa  Cephal  Coral  Crin  Echin  Fish  Foram  Fossil  Gastro  Oolite	 Ostra  Pelec  Pellet  Pisolite  Plant  Strom STRINGER  Anhy  Arg  Bent  Coal  Dol  Gyp  Ls  Mrst	 Sltstrg  Ssstrg TEXTURE  Boundst  Chalky  Cryxln  Earthy  Finexln  Grainst  Lithogr  Microxln  Mudst  Packst  Wackst
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OTHER SYMBOLS

- POROSITY**
- E Earthy
 - F Fenest
 - X Fracture
 - Inter
 - Moldic
 - Organic
 - Pinpoint

V Vuggy

- SORTING**
- W Well
 - M Moderate
 - P Poor

- ROUNDING**
- R Rounded
 - Subr Subrond
 - a Subang
 - A Angular

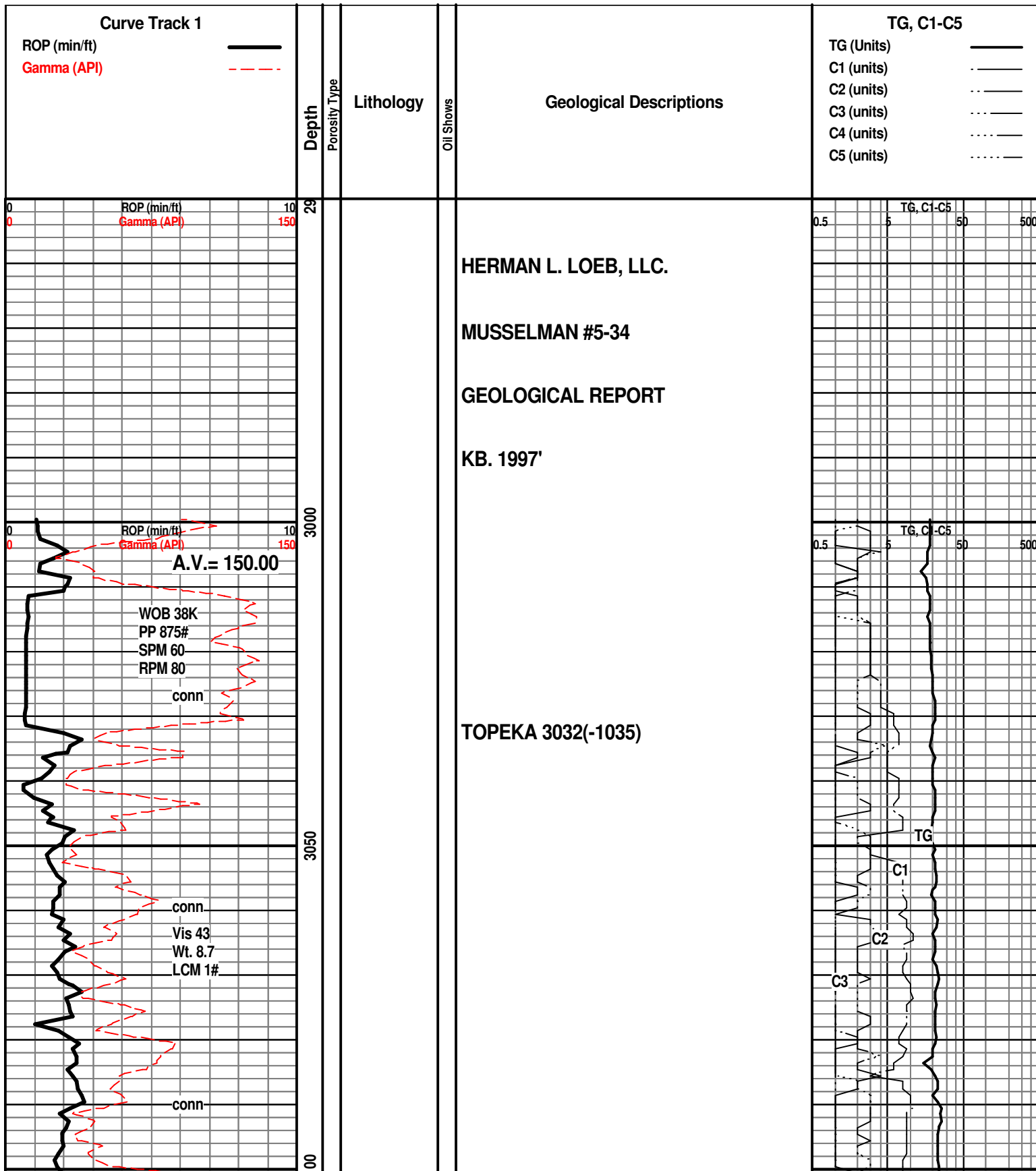
OIL SHOW

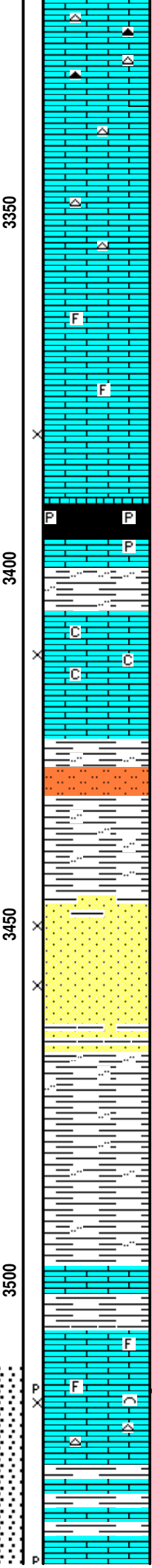
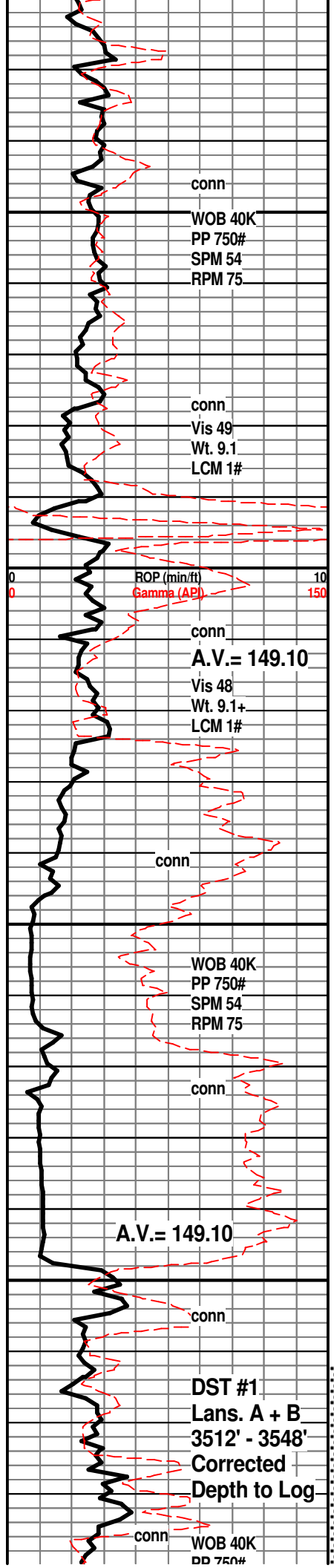
- Even

- Spotted
- Ques
- Dead

- INTERVAL**
- Core
 - Dst

- EVENT**
- Rft
 - Sidewall





LM; lt to med brn, gy brn, most hd, micritic, blocky, rare gy cht, no vis por, ns.

LM; med brn, dense, micritic, blocky, occ cherty, lrg increase in gy shales, no fluor, no stn, ns.

LM; tan to lt brn, buff, fxl, occ foss, poor vis interxln por, dull yel to no fluor, no stn or odor, ns.

HEEBNER SHALE 3391(-1394)

SH; blk, carb, blocky, occ pyr

LM; med brn, dense, micritic, pyr ip.

SH; lt gy grn, firm, occ silty

TORONTO 3406(-1409)

LM; off wh, lt gy, wh, fxl, some w/sucrosic text, poor interxln por, uniform lt yel fluor, no stn or odor, occ soft - chalky mtx, no gas kick, ns.

DOUGLAS SHALE 3424(-1427)

SH; lt gy, silty w/interbdd stst, platy, occ mica

SH; lt gy, gy grn, fiss, silty

DOUGLAS SAND 3446(-1449)

SS; lt gy, all f gr qtz, clusters, gd intergran por, v. mica ip, most clean, fri, spotted dull to lt yel fluor, gas bubbles evident, no odor, no vis oil stn, some agril ss, poss. gas zone - check logs

SH; lt to med gy, platy, some v. soft - gumbo, sticky ip.

SH; med gy, fiss, silty ip.

BROWN LMST. 3498(-1501)

LM; med brn, hd, blocky, tite

LANSING 'A' 3507(-1510)

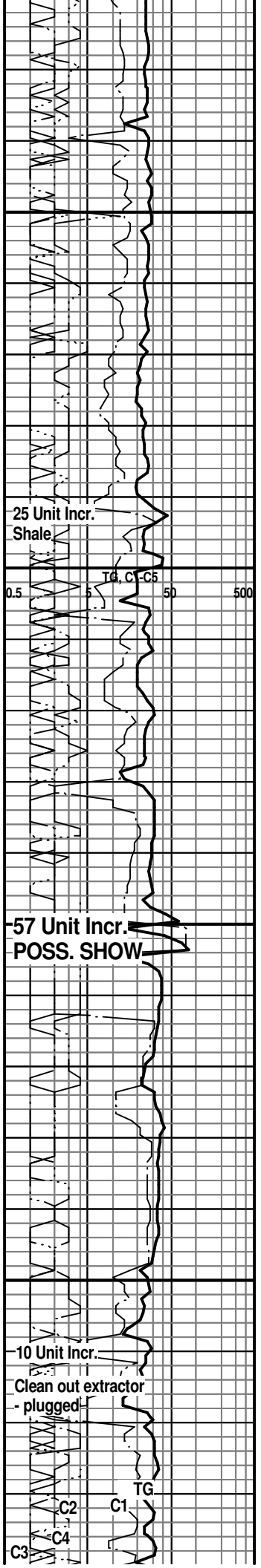
LM; off wh, med xln, scat well cem foss, no vis stn, no odor, lt yel min fluor, no sample show

LM; off wh, foss, scat fair p-p and interpart por, much spotted lt/med brn oil stn, fair to gd odor, med yel fluor, SSFO, some tite, fair cut

LM; off wh, tan, hd, scat tan/off wh cht, tite

LANSING 'B' 3536(-1539)

LM; off wh, buff, foss ip, much p-p w/occ vug por, most



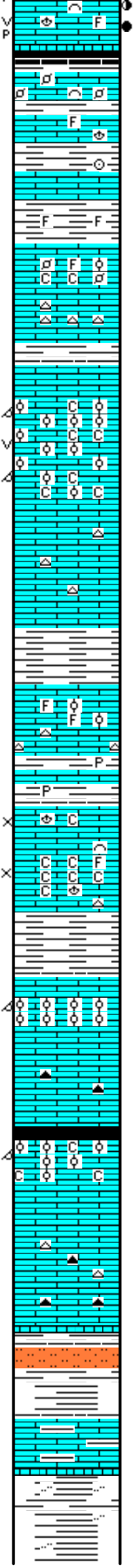
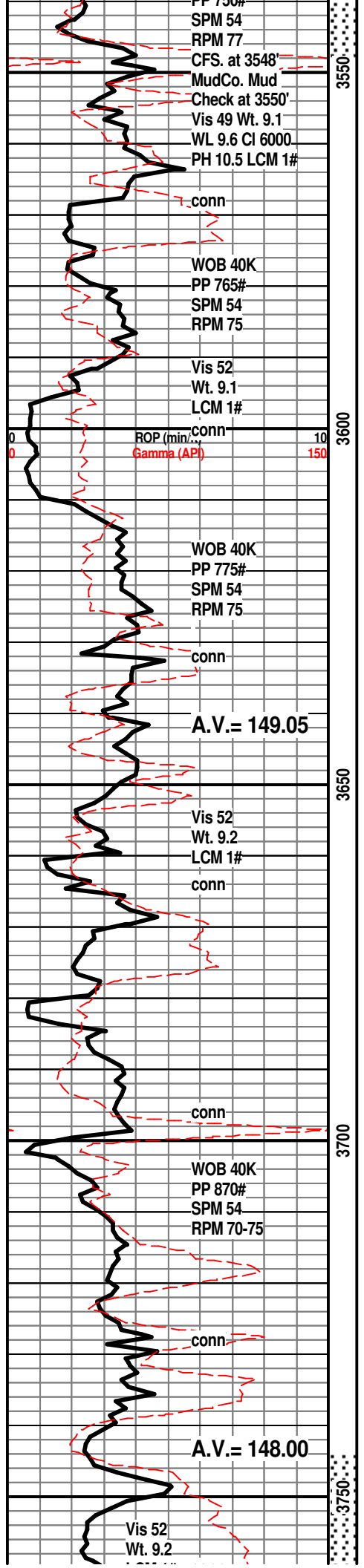
25 Unit Incr. Shale

57 Unit Incr. POSS. SHOW

10 Unit Incr.

Clean out extractor - plugged

TG
C2
C1
C4
C3



w/even lt brn stn, gd odor, med to brite yel fluor, SFO, gas bubbles, fair/gd cut

DST #1: Lansing A + B 3512' - 3548'
Corrected Depths to Log

LM; med brn, gy brn, foss - pelletal, well cem, blocky, scat pyr, no vis por, no flour, ns.

SH; med gy, firm, foss ip

LM; tan to off wh, buff, foss ip w/scat small pellets and hash, loosely cem, scat soft chalky mtx, no fluor, no stn, ns.

LM; off wh, buff, dense, scat off wh cht, tite

LANSING 'G' 3591(-1594)

LM; tan to buff, rare lt brn, oolitic w/med size moldic por, scat rare vug por, some brittle, chalky mtx ip, lt to occ med yel min fluor only, no stn or odor, no gas kick, barren, ns.

LM; tan to off wh, buff, dense, most micritic, rare tan cht, tite

SH; med to dk gy, smooth

LANSING/K.C. 'H' 3636(-1639)

LM; lt to med brn, occ lt gy, scat well cem foss, rare oolitic lmst, no vis por, no stn or odor, ns.

SH; med gy, pyr ip, platy

LM; off wh, wh, tan, fxln w/scat foss hash, some gran text, poor to fair interxln por, abnt soft chalky mtx, lt yel min fluor, no stn or odor, no gas kick, ns.

SH; grn, yel, some varic, platy

K.C. 'J' ZONE 3677(-1680)

LM; lt to med brn, oolitic, med to occ lrg molds w/gd oomoldic por, some rextalized, lt yel min fluor, no vis stn, no odor, ns.

LM; lt brn, tan, micritic, blocky, scat amber cht, no vis por, ns.

SH; blk, fiss

LM; lt brn, oolitic w/mostly small to med size molds, fair oomoldic por, scat lt yel min fluor, chalky ip, no stn or odor, no gas kick, ns.

LM; lt to occ med brn, most micritic, blocky, scat grn spicular cht, dense, no vis por, ns.

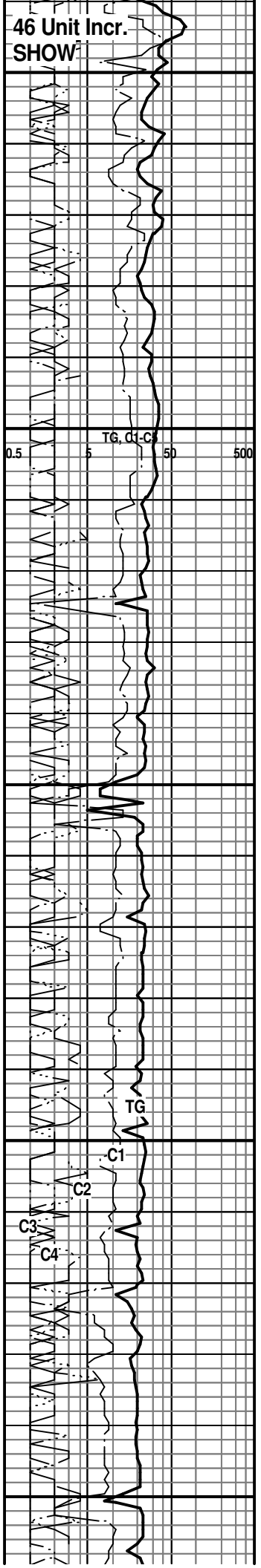
BASE KANSAS CITY 3727(-1730)

SH; varic, grn, rust red/brn, silty w/interbdd brn sltst, firm

MARMATON 3739(-1742)

LM; lt to med gy, gy brn, some argil, scat well cem foss mat, interbdd cse xln sub-chalky lmst, dull yel to no fluor, no stn, no gas kick

SH; varic, grn, gy, rust red, brn, dk gy - blk, occ silty, some v. stickv - dumbo



LCM 1# - conn

WOB 40K
PP 875#
SPM 55
RPM 70

conn

ROP (min/f) 10
Gamma (Af) 150

DST #2
Conglom. &
Simpson SS
3744' - 3840'
Corrected
Depths to
LOG

CFS. at 3840'
MudCo. Mud
Check at 3841'
Vis 52 Wt. 9.3
WL 11.2 CI 6200
PH 9.5 LCM Trc.

CFS. at 3868'

R R R R R
R= Rough Drlg.

CFS. at 3887'

WOB 40K
PP 900#
SPM 55
RPM 75

Vis 56
Wt. 9.2
LCM 2#

CFS. at RTD.

3800
3850
3900
3950



CONGLOMERATE 3768(-1771)

CONGL; weath red lmst, gy and org cht, scat sucrosic text/partly dolomitic lmst, occ weathered nodular lmst, no fluor, no vis stn, no gas kick, ns.

SH; varic, rust red, grn, platy

LM; off wh, weathered, fractured ip, few pcs w/med yel fluor, small vugs w/spotted oil stn, some sandy text, most looks tite

SH; varic, grn, rust red

SH; grn, some turquoise grn, sandy ip w/trc vf gr qtz tite ss, rare pcs w/med gr qtz in shale, no clean ss dev, no vis stn, no fluor

SIMPSON SAND 3820(-1823)

SS; med to cse gr, rnd, argil ip. w/some totally bdd w/blk tar/gilsonite, poor intergran por, interbdd vfg/silty ss - lt gy/grn, tite, no odor, no live shows

SH; grn, some turquoise grn, silty to occ sandy, trc vf gr tite ss, no fluor, no stn, ns.

DST #2: Conglomerate/Simpson Sand 3744' - 3840' Corrected Depth to Log

SH; grn, gy grn, some maroon w/med gr qtz gr in mtx, interbdd ss strng - med gr, shaly

SH; brite turquoise grn, sandy ip, platy

SS; lt brn, f/med gr qtz, clusters, strong odor, lt yel fluor, spotted stn, trc FO in fri clusters, most well cem - pyr ip, no gas kick, fair cut, tar/gils.

ARBUCKLE 3873(-1876)

DOL; off wh, tan, cream, v. lmy at top, hd, med yel min flour, rare spotted stn, med rhombic ip. w/fair vug por, sulfur odor, no gas kick

DOL; tan to lt brn, lt gy, fine rhombic, scat poor vug por, occ oolitic cht, med yel min fluor, no vis oil stn, fair odor, no gas kick, barren por

DOL; off wh, tan, finely rhombic, scat chalky mtx, scat blk dead oil flakes/gils, uniform med yel min flour, fair vug por, faint odor, no live shows, no gas kick

DOL; off wh, tan, lt gy, sucrosic to fine rhombic, fair interxln w/occ vug por, chalky, no stn or odor, occ hd - lmy, ns.

RTD. 3920' at 5:00 AM. 7/25/13

LTD. 3920'

Nabors Wireline Services - DIL,
NEU/DEN w/PE, Microlog, Sonic

NOTE: This log was shifted upward by 2' for correlation purposes with the Nabors LOGS.

5 Unit Incr.

5 Unit Incr.
Poss. Show

4 Unit Incr.
Poss. Show

