

LITHOLOGY STRIP LOG

WellSight Systems

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

Well Name: Moeder #1-21

Well Id:

Location: 2305' FNL & 331' FWL, Sec. 21-T13S-R17W, Ellis County, KS.

License Number: 15-051-26822-00-00

Region: Sugar Loaf Field

Spud Date: 3/28/2016

Drilling Completed: 4/2/2016

Surface Coordinates: 2305' FNL & 331' FWL, Sec. 21-T13S-R17W

Bottom Hole Same as above

Coordinates:

Ground Elevation (ft): 2002'

K.B. Elevation (ft): 2013'

Logged Interval (ft): 2950'

To: 3630'

Total Depth (ft): 3630'

Formation: Arbuckle at Total Depth

Type of Drilling Fluid: Freshwater/Gel to 2896'; Chemical Gel 2896' to 3630'

Printed by MUD.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Herman L. Loeb, LLC.

Address: P.O. Box 838

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GEOLOGIST

Name: Jon D. Christensen

Company: Consulting Petroleum Geologist

Address: 9002 W. Silver Hollow St.

Wichita, KS. 67205-8856

Cores

None Taken

DSTs

DST #1(Lansing 'E' Zone) 3366' - 3386'(Corrected Depths to Log) Test Times 15"-45"-30"-60" IFP Weak Surface Blow, FFP No Blow, Flushed Tool - Weak Surface Blow died in 2 Min., no Blowback on SI's; REC: 230' Drig. Mud no shows of oil or gas; IFP 16-20#, ISIP 126#, FFP 25-140#, FSIP 171#, IHP 1656#, FHP 1631#, BHT 103 Deg. F.

DST #2(Arbuckle) 3532' - 3571'(Corrected Depths to Log) Test Times 15"-45"-45"-90" IFP Fair 4.5" Blow, FFP Good 8" Blow, Surface Blowback for 21 Min. on FSI; REC: 30' Gas in Pipe, 126' Clean Oil(28 Deg. API at 60 Deg.), 62' HOCM(45%O, 55%M), no water; IFP 22-46#, ISIP 1055#, FFP 54-95#, FSIP 1056#, IHP 1845#, FHP 1722#, BHT 106 Deg. F.

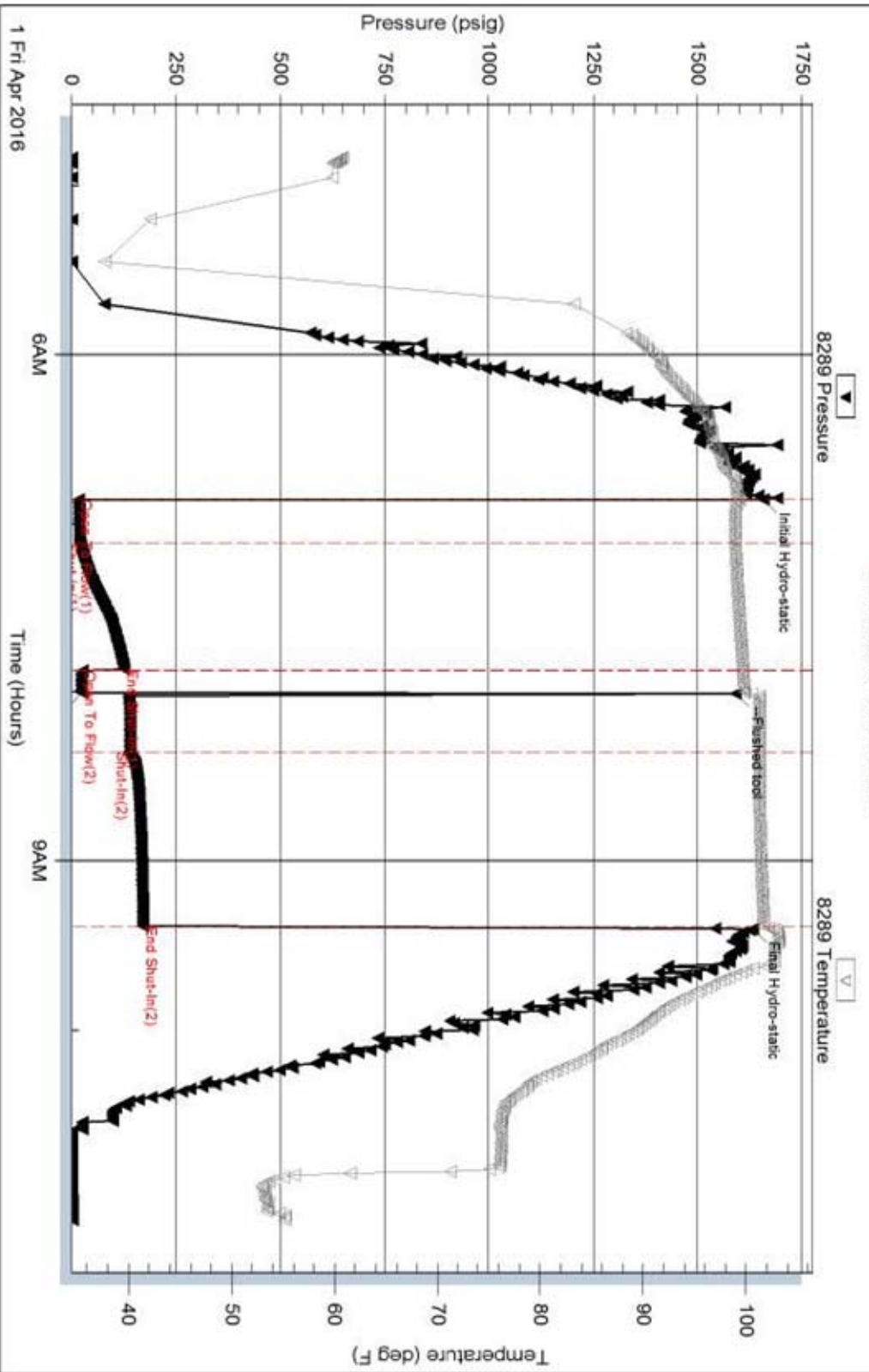
Serial #: 8289

Outside Herman Loeb LLC

Moeder 1-21

DST Test Number: 1

Pressure vs. Time



Triobite Testing, Inc

Ref. No: 64768

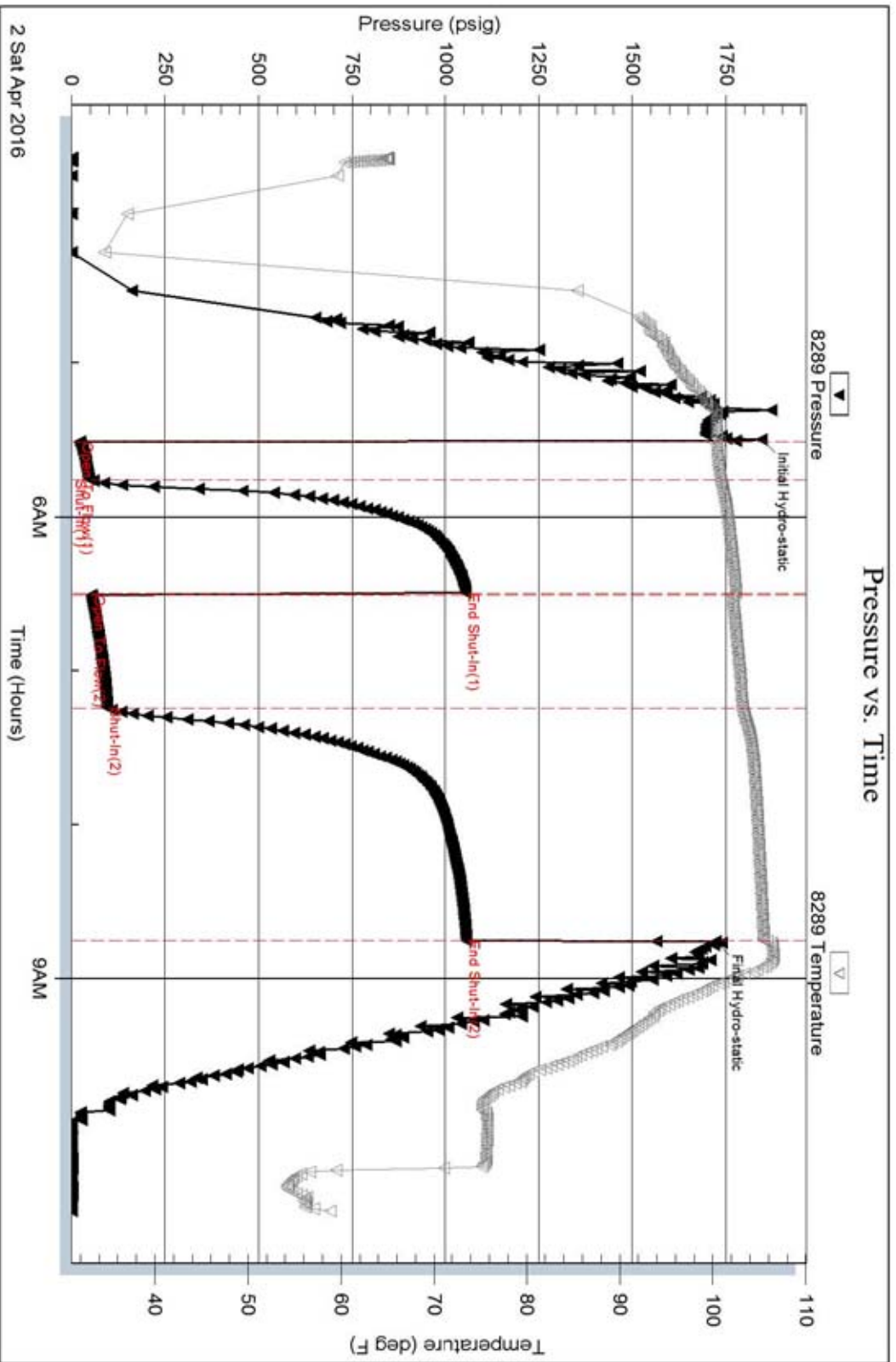
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Serial #: 8289

Outside Herran Loeb LLC

Moeder 1-21

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 64769

Printed: 2016.04.02 @ 11:31:30

Comments

3/28/16 MIRU Sterling Drilling Co. Rig #4, Spud at 8:30 PM; 3/29/16 Drilling at 603'; 3/30/16 Drilling at 1175'; 3/31/16 Drilling at 3028'; 4/1/16 TD. 3388' - DST #1; 4/2/16 TD. 3573' - DST #2; 4/3/16 RTD. 3630', LTD. 3628' - LDDP, Set new 5 1/2" Production Casing, PD. at 12:00 PM.

Set New 8 5/8"(23#) Surface Casing at 688' with 315 sacks of cement(Basic Energy Services). PD. at 1:30 PM. 3/29/16. Cement did circulate to cellar.

Set new 5 1/2"(15.5#) Production Casing at 3628' with 150 sacks of "Loeb Blend" Cement. PD. at 12:00 PM. on 4/3/16.

Surveys: 0.75 Deg. at 693'(Surface Casing); 1.0 Deg. at 3150'(Bit Trip); 1.0 Deg. at 3388'(DST #1); 1.0 Deg. at 3630' RTD.

Pipe Strap at 3150'(Bit Trip): Strap 0.16' Short to the Board, no correction made to the Board.

After review of the Pioneer Wiring Logs, DST #2, structural position and positive indications of commercial amounts of recoverable hydrocarbons, the operator elected to set new 5 1/2" Production Casing for completion in the Arbuckle.








































































LOG TOPS: Anhydrite 1238(+775), Base Anhydrite 1277(+736), Topeka 3016(-1003), Queen Hill Shale 3182(-1169), Heebner Shale 3260(-1247), Toronto 3279(-1266), Lansing 3304(-1291), Lansing 'E' 3377(-1364), Base Kansas City 3534(-1521), Conglomerate 3554(-1541), Arbuckle 3556(-1543).

NOTE: This log was shifted upward by 2' for correlation purposes with the Pioneer Wiring 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  Wackest
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OTHER SYMBOLS

- POROSITY**
- E Earthy
 - F Fenest
 - X Fracture
 - I Inter
 - M Moldic
 - O Organic
 - P Pinpoint
 - V Vuggy

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

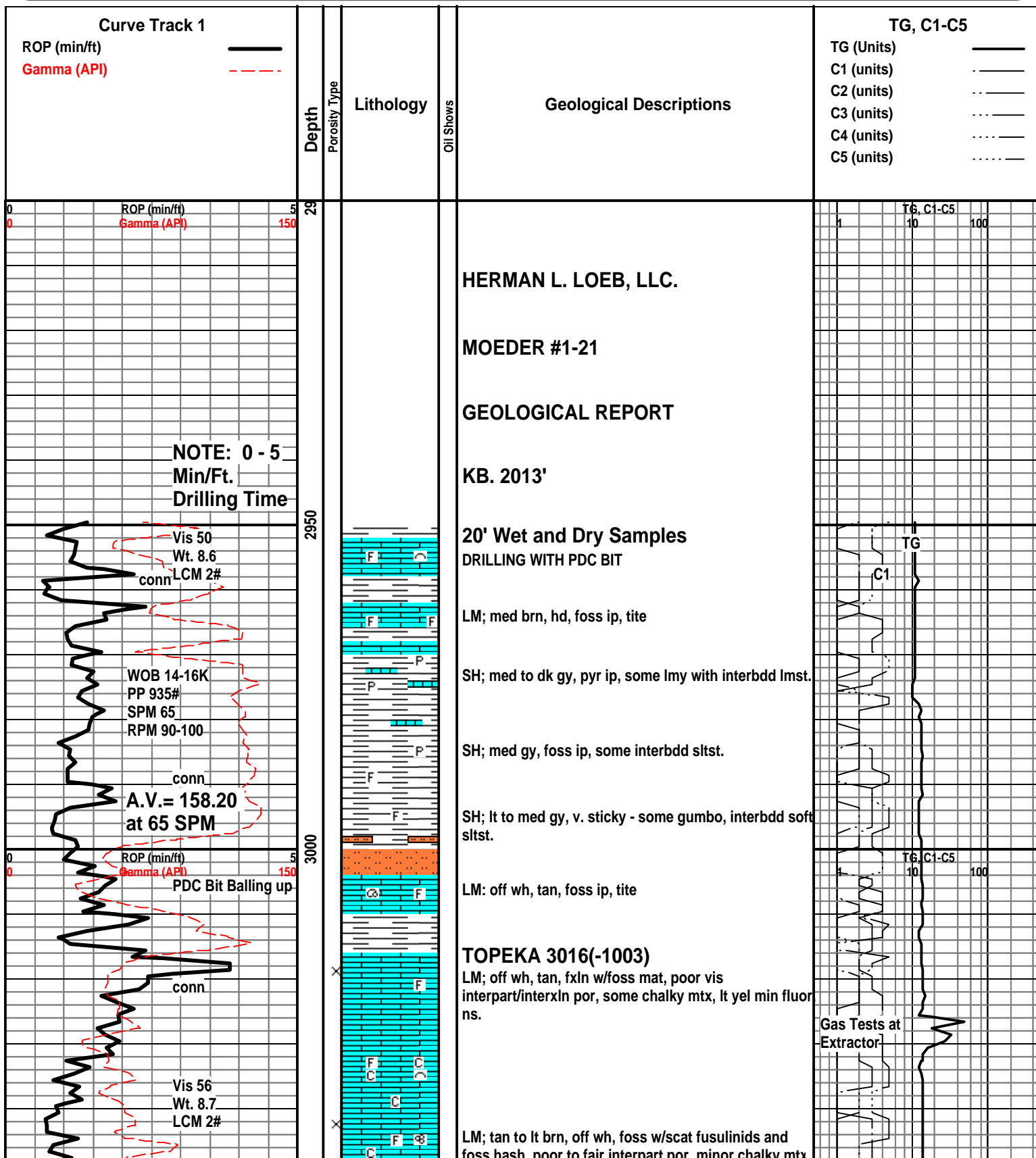
- ROUNDING**
- R Rounded
 - r Subrnd
 - a Subang

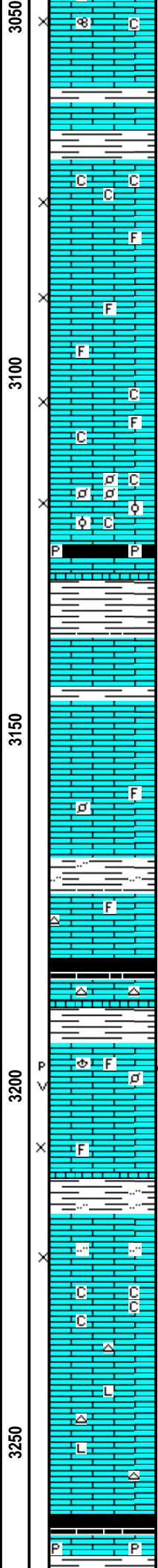
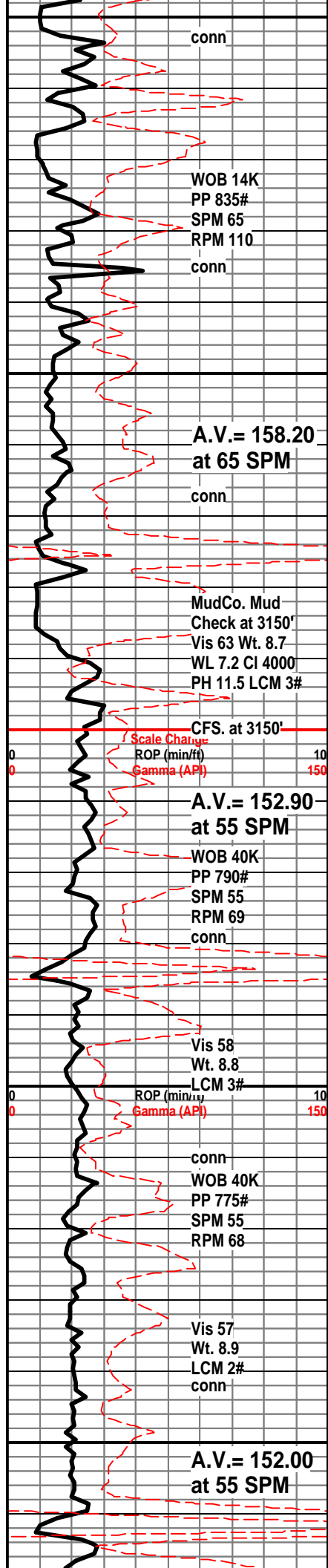
- A Angular

- OIL SHOW**
- E Even
 - S Spotted
 - Q Ques
 - D Dead

- INTERVAL**
- Core
 - Dst

- EVENT**
- ▽ Rft
 - ▶ Sidewall





lt yel floor, no vis stn, no odor, ns.

SH; med gy, gy grn, platy

LM; tan to lt brn, buff, fxln w/scat fair to occ gd interxln por, minor chalky mtx, dull yel min fluor, no stn or odor, ns.

LM; tan to lt gy, gy brn, fxln w/scat foss mat, poor to fair interpart/interxln por, lt to med yel fluor, no stn or odor, ns.

LM; tan to buff, off wh, fxln w/foss mat, interbdd pelletal/partly oolitic lmst, chalky ip, fair interpart por, lt to occ med yel fluor, no stn or odor, ns.

SH; blk, carb ip, occ pyr

LM; med brn, dense, micritic, tite

LM; off wh, tan, fxln w/scat soft chalk and chalky mtx, bcm dense, trc poor interxln por, no fluor, no stn or odor, ns.

BIT TRIP AT 3150'
DRILLING WITH BUTTON BIT

LM; tan to cream, buff, fxln to micritic, no vis por, no fluor, ns.

SH; lt gy, gy grn, silty ip.

LM; tan to lt brn, rare well cem foss, much dense micrite, rare gy cht, scat spar calc xtals, no fluor, no vis por, ns.

QUEEN HILL SHALE 3182(-1169)
SH; blk, platy, carb ip.
LM; lt brn, hd, blocky, scat gy cht, no por, ns.

LM; lt to med brn, scat well cem foss mat, few pcs w/poor p-p/small vug por, spots of blk residual oil, v. faint to no odor, med yel fluor, gd cut, no live shows

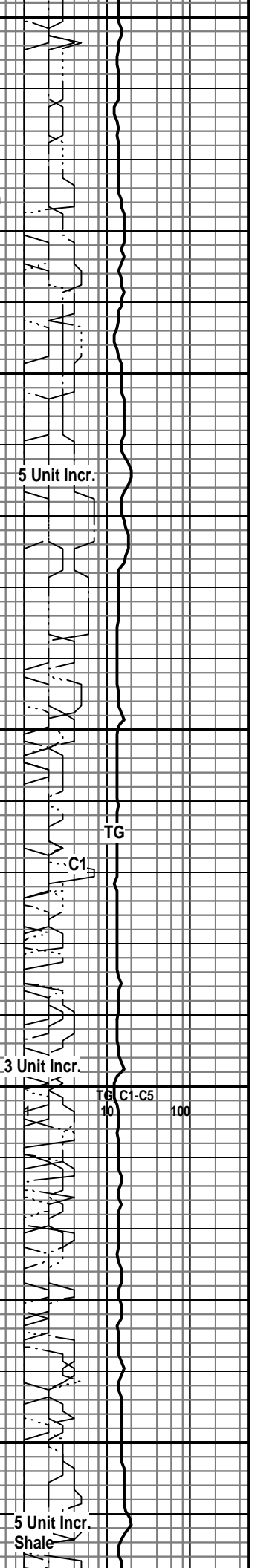
LM; tan to buff, f to med xln, some gran text, rare poor interxln por, dull yel fluor, no stn, ns.

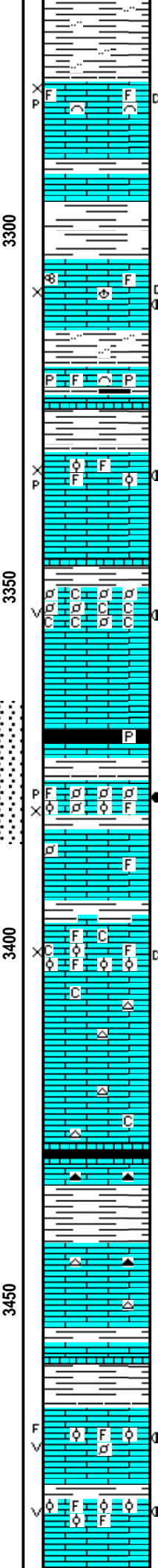
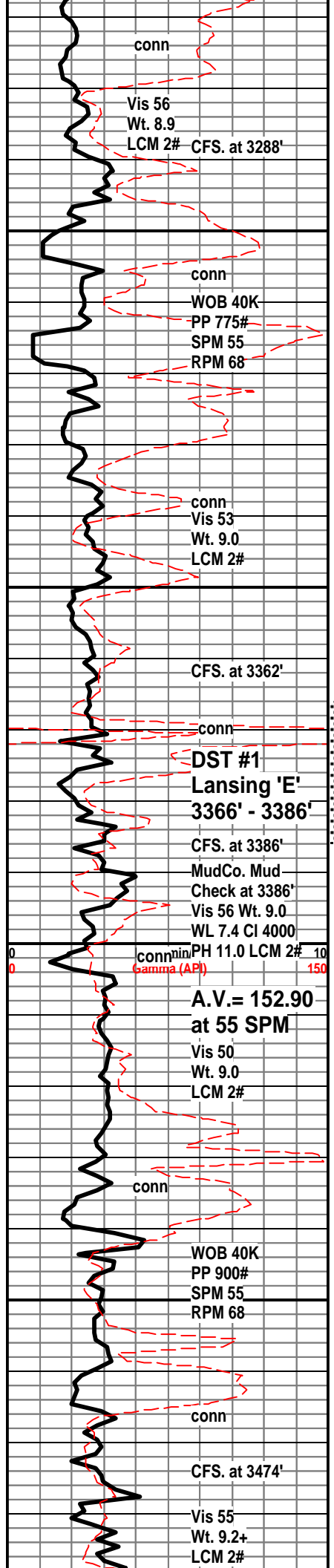
SH; lt to med gy, silty ip.

LM; off wh, wh, tan, fxln, scat soft chalky mtx, interbdd dense micrite, spotty lt yel fluor, no vis stn, no odor, ns.

LM; tan to cream, lt brn, most dense - micritic, scat gy cht, some litho, no vis por, no fluor, ns.

HEEBNER SHALE 3260(-1247)
SH; blk, carb ip, platy
LM; med brn, hd, scat pyr





SH; med gy, grn, silty ip, platy

TORONTO 3279(-1266)
LM; tan to cream, off wh, foss ip, poor interpart and p-p por, scat spar calc xtals, med yel fluor, few pcs w/blk dead stn, no odor, no gas kick, no live shows

LM; tan to lt gy, dense, micritic, tite

SH; red/brn, grn, gy grn, mushy/ v. soft ip.

LANSING 'A' 3304(-1291)
LM; off wh, wh, f to med xln, fair interxln por in some, scat foss mat, rare lt oil stn, faint odor, med yel min fluor, weak milky cut, looks tite

SH; gy grn, grn, silty ip, soft

LM; lt gy brn, foss, hd, pyr ip, tite, ns.

SH; med gy, grn, platy

LM; off wh, buff, foss - partly oolitic, poor/fair interpart and occ p-p por, sev. pcs w/spotted dk brn stn, trc gassy FO, med to brite yel fluor, few pcs w/gd cut, fair odor

LANSING 'D' 3350(-1337)
LM; wh, off wh, foss ip w/scat pellets "floating" in chalk, very chalky, few pcs w/vug por and med brn oil stn, most barren, questionable odor

LM; lt gy, tan, blocky, hd, no vis por, ns.

SH; blk, carb ip, platy, occ pyr

LANSING 'E' 3377(-1364)
LM; tan to cream, v. foss, pelletal/oolitic, fair p-p/interpart por, med/brite yel fluor, most even med brn stn, SFO, fair to gd odor, gd cut

DST #1: Lansing 'E' 3366' - 3386'
Corrected Depths to Log

LM; off wh, wh, foss - oolitic ip, poor to fair interpart por(not oomoldic), minor chalky mtx, lt yel fluor, few pcs w/dk brn dead oil stn, no odor

LM; tan, off wh, occ lt gy, most dense, micritic, rare chalky mtx, scat lt gy/wh cht, no vis por, no fluor, ns.

SH; dk gy/blk, thinly bdd, carb ip.

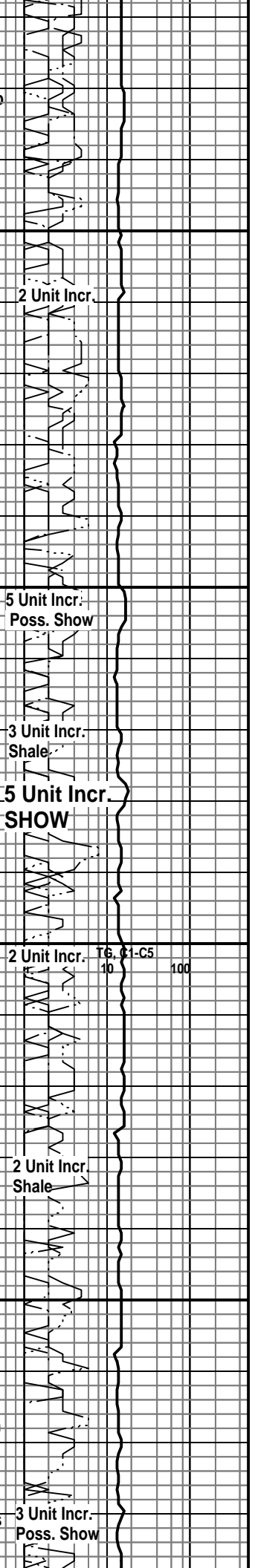
LM; dk brn, hd, scat brn/blk cht, tite

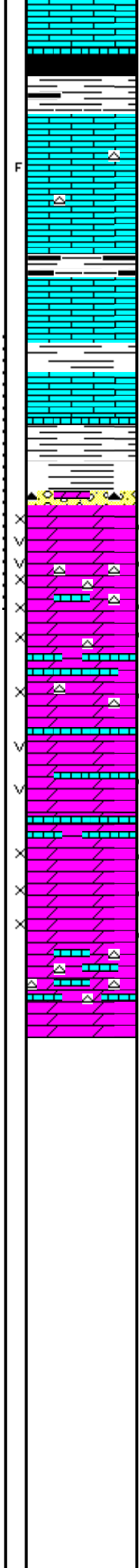
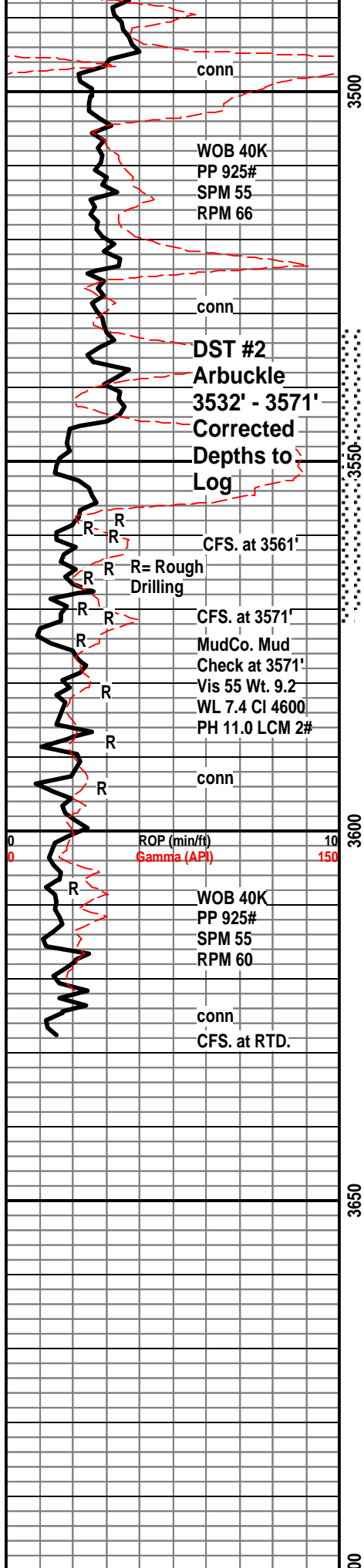
KANSAS CITY 'H' 3442(-1429)
LM; tan to buff, lt brn, most dense, blocky, micritic, interbdd smoky/blk cht at top, no vis por, no fluor, no stn or odor, ns.

SH; grn, gy grn, platy

KANSAS CITY 'I' 3465(-1454)
LM; off wh, tan, foss w/few pellets, few pcs w/live lt brn stn, fair/gd odor, fair p-p w/scat vug por, trc edge stn - poss frags, most appears tite, med yel fluor, thin zone

LM; tan to off wh, buff, foss w/scat oolitic lmst, few pcs w/lt brn spotted oil stn, fair odor, some bleeding oil, med to brite yel fluor, occ vug por, fair to gd cu





SH; blk, platy, some grn, gy grn

LM; tan to cream, buff, fxln to micritic, occ cse spar calc xtals - some edge xtals- poss. frags, dull yel min fluor, no stn or odor, rare off wh cht, ns.

SH; dk gy/blk, thinly bdd

LM; tan to lt brn, hd, micritic, tite

BASE KANSAS CITY 3534(-1521)

SH; rust red/brn, grn, soft ip.

LM; tan to lt brn, hd, micritic, blocky, tite

SH; grn, gy, mush - gumbo, v. sticky

CONG; weath cht, blk, reworked dolo, tar/gils

ARBUCKLE 3556(-1543)

DOL; lt brn, sucrosic to med rhombic, most w/even med brn stn, SFO, sweet odor, med yel fluor, gd interxln w/occ vug por, gd cut

DOL; lt brn, sucrosic to f rhombic, cherty ip, sweet odor, SFO, some tite dolo interbdd, med yel fluor, gd cut, scat gd interxln por, some sat

DST #2: Arbuckle 3532' - 3571'

DOL; tan to buff, lt brn, some gd interxln por w/oil sat, interbdd tite lmy dolo, SFO, med to occ brite yel fluor, gd odor, gd cut, occ cherty

DOL; tan to lt brn, sucrosic to fine rhombic, very lmy zones, interbdd bands of better porous dolo, occ fair vug por, scat cse qtz xtals w/live oil stn, SFO, med to occ brite yel fluor, fair odor

DOL; tan, lt brn, sucrosic to fine rhombic, sev. pcs w/even oil stn, sl. decr. shows from above, med to occ brite yel fluor, fair to occ gd interxln por, SSFO in sev. pcs, fair to gd odor, some sat.

DOL; lt brn, v. lmy ip, interbdd oolitic cht, much dense dolo, rare oil stn, no odor, dull yel fluor

RTD. 3630' at 2:30 PM. on 4/2/16

LTD. 3628'

Pioneer Wireline Services DIL, Dual Porosity, Microlog

NOTE: This log was shifted upward by 2' for correlation purposes with the Pioneer Wireline logs.

