LITHOLOGY STRIP LOG

WellSight Systems

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

Well Name: Murfin Simons Farms-Hunt Unit #1-14 D&A
Location: SE SE SW NW Section 14-T17S-R36W
License Number: API:15-203-20232 Region: Wichita Co., KS
Spud Date: Sept. 11, 2013 Drilling Completed: Sept. 22, 2013
Surface Coordinates: 2550 FNL & 1280 FWL Section 14-T17S-R36W

Bottom Hole Coordinates:
Ground Elevation (ft): 3236 K.B. Elevation (ft): 3247
Logged Interval (ft): 3550 To: 4950 Total Depth (ft): 4950
Formation: Mississippian RTD 4950 (-1703). LTD 4954 (-1707)
Type of Drilling Fluid: Chemical. Displaced @ 3396 ft.

Printed by WellSight Log Viewer from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Murfin Drilling Co., Inc.
Address: 250 N. Water Ste 300
Wichita, Kansas 67202

GEOLOGIST

Name: Mikeal K. Maune
Company: Consulting Petroleum Geologist - Kansas Licensed No. 210
Address: Wichita, Kansas
Office: 316-722-8173

COMMENTS

Surface Casing: Spud @ 5:45 pm on 9/11/2013. Set 8 5/8" surf casing @ 266'. Allied cmt w/200sxs of comm 3%cc. PD @ 1:00AM 9/12/2013.

Production Casing: D&A

Deviation Surveys: 1/4 @ 267', 1/4 @ 1015', 1 @ 1763', 1 @ 2548', 1/4 @ 3600', 3/4 @ 3990', 1 1/2 @ 4840'.

Pipe Straps: Pipe Strap @ 3600'. Strap 3614.49'. Board 3611.2'. Strap long to board 3.29'.

Murifn Drilling Co., Inc Rig #22 Bit Record:
Bit #1 12 1/4" RR HTC GT-C1 in @ GL, out @ 267'.
Bit #2 7 7/8" PDC HTC DP05 in @ 267', out @ 3600'.
Bit #3 7 7/8" HTC GX22S in @ 3600', out @ 4950'

Gas Detector: Blue Stem Bloodhound Unit #0258.

Mud System: Morgan Mud, Inc.

DSTs: Trilobite Testing, Inc.

OH Logs: Pioneer Wireline Services, LLC
DIL, CNL/CDL, MEL/BHCS.

Note: Correlation of the Rotary drilling time with the OH Logs indicates the OH Log depths are approximately two feet deep to the Rotary drilling time depths. The Gamma Ray curve on this report has been adjusted uphole two feet to correlate with the drilling time curve.

OH Log Formation Tops: Base Anhydrite 2465 (+782), Stotler 3588 (-341), Topeka 3721 (-474), Heebner 3958 (-711), Lansing 4004 (757), Stark Sh 4278 (-1031), BKC 4378 (-1131), Lenapah 4424 (-1177), Pawnee 4526 (-1279), Ft. Scott 4573 (-1326), Cherokee 4598 (-1351), Morrow 4743 (-1496), Mississippian 4854 (-1607) ,

DSTs

DST #1 (Toronto) 3950-3990/30-60-60-90. 1st Op: Weak Surface Blow, built to 4 inches. 2nd Op: Weak Surface Blow, built to 3/4 inch. Recover: 318' Total fluid. 82' WCM w/oil spks (12% Wtr, 88% M), 59' WCM (37% Wtr, 63% M), 177' MCW (62% Wtr, 38% M). Recovery Chl 23,500. System Chl 6,400. IH 1935#, IFP 26-92#, ISIP 1102#, FFP 98-164#, FSIP 1083#, FH 1821#. BHT 110 F.

DST #2 (Lansing B & D) 4032-4070/30-60-60-90. 1st Op: Weak Surface Blow, built to 3 inches. 2nd Op: Weak Surface Blow, built to 1 inch. Recover: 251' Total fluid. 74' WCM (4% Wtr, 96% M), 59' WCM (19% Wtr, 81% M), 118' WCM (31% Wtr, 69% M), few spots of oil in tool. Recovery Chl 23,500. System Chl 9,000. IH 1997#, IFP 24-71#, ISIP 1133#, FFP 73-138#, FSIP 1120#, FH 1895#. BHT 112 F.

DST #3 (Lansing E & F) 4078-4120/30-60-60-90. 1st Op: Weak Surface Blow, built to 8 inches. 2nd Op: Weak Surface Blow, BOB/ 55 min. Recover: 454' Total fluid. 1' Oil (100% Oil), 91' MCW with skim of Oil (52% Wtr, 48% M), 124' MCW (74% Wtr, 26% M), 238' MCW (84% Wtr, 16% M). Recovery Chl 24,500. System Chl 9,000. IH 2063#, IFP 29-138#, ISIP 1083#, FFP 140-216#, FSIP 1063#, FH 1823#. BHT 114 F.

DST #4 (Pawnee) 4500-4540/30-60-30-60. 1st Op: Weak Surface Blow. 2nd Op: No Blow. Recover: 2' OCM (3% Oil, 97% Mud). IH 2336#, IFP 21-21#, ISIP 83#, FFP 22-22#, FSIP 41#, FH 2087#. BHT 117 F.

ROCK TYPES

- ▨ Anhy
- ▨ Bent
- ▨ Brec
- ▨ Cht
- ▨ Clyst
- ■ Coal
- ▨ Congl
- ▨ Sdy dolo
- ▨ Shy dolo
- ▨ Dol
- ▨ Gyp
- ▨ Sdy lmst
- ▨ Lmst
- ▨ Mrlst
- ▨ Salt
- ▨ Shale
- ▨ Sltst
- ▨ Ss
- ▨ Black sh
- ▨ Gry sh
- ▨ Shale
- ▨ Shyslltst
- ▨ Sltysh

ACCESSORIES

MINERAL

- Anhy
- Arg
- B Bent
- Bit
- Brecfrag
- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Ferrpel
- Ferr
- Glau
- Gyp
- Marl
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt
- Chlorite
- Dol
- Sand
- Slty

FOSSIL

- Algae
- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Fish
- Foram
- F Fossil
- Gastro
- Oolite
- Ostra
- Pelec
- Pelloidal
- Pisolite
- Plant
- Strom
- Fuss
- Oomoldic

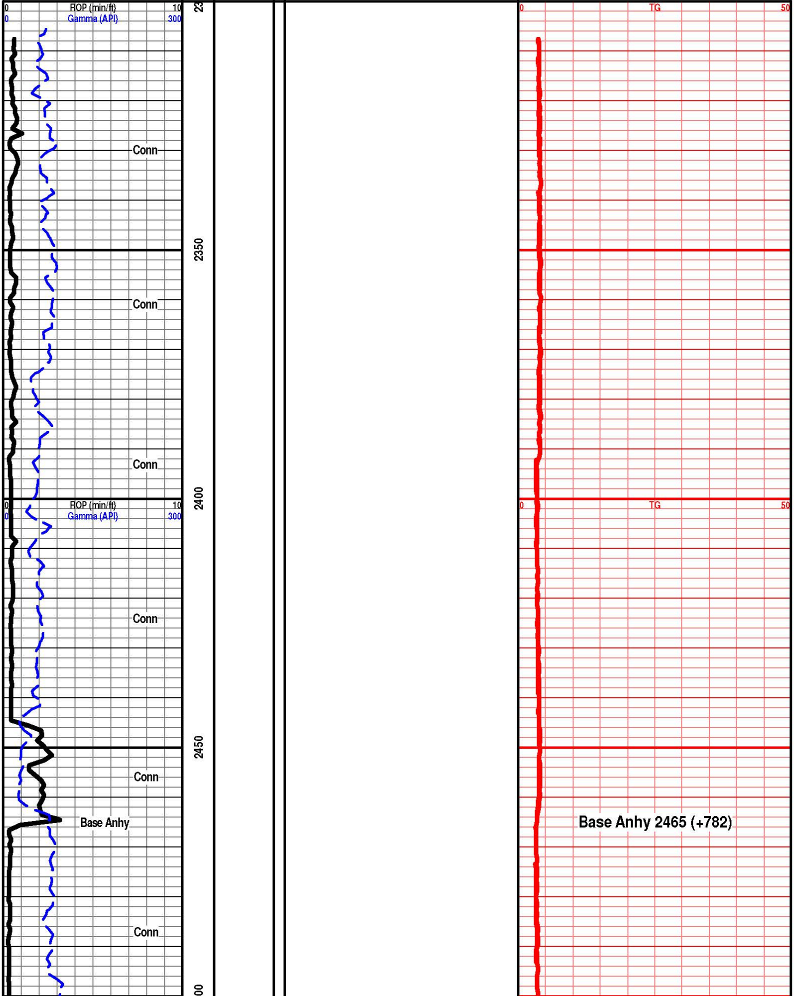
STRINGER

- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Sltstrg
- Ssstrg
- Carbsh
- Clystn
- Dol
- Grysh
- Gryslt
- Lms
- Sandylms
- Sh
- Sltstn

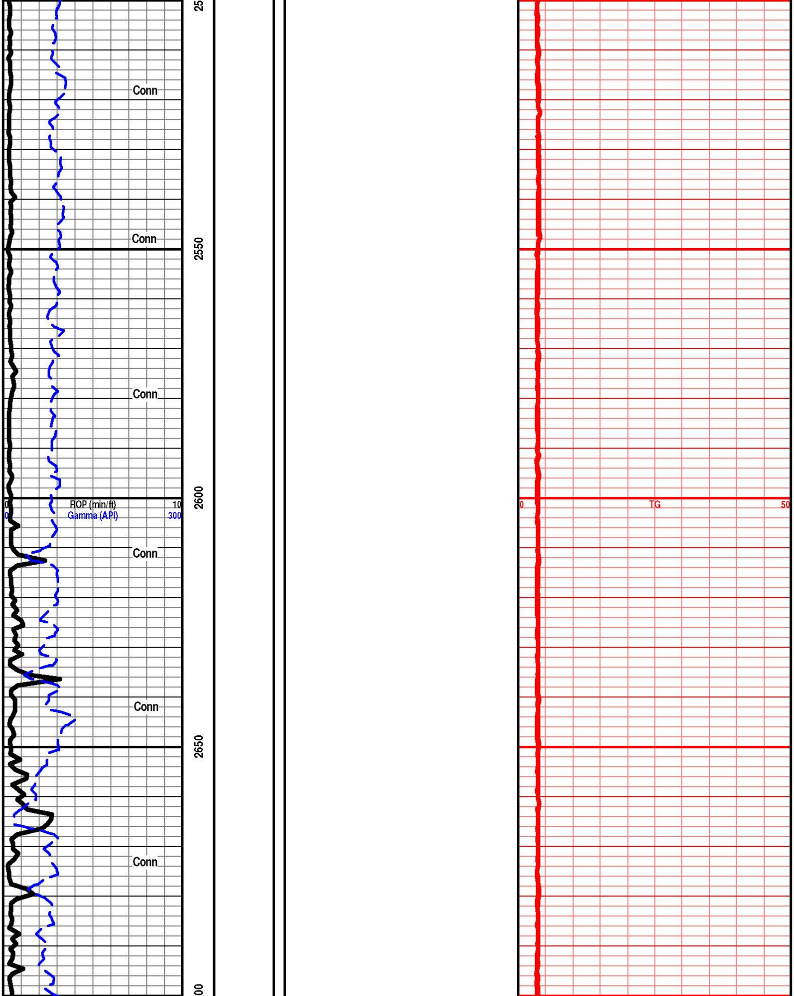
TEXTURE

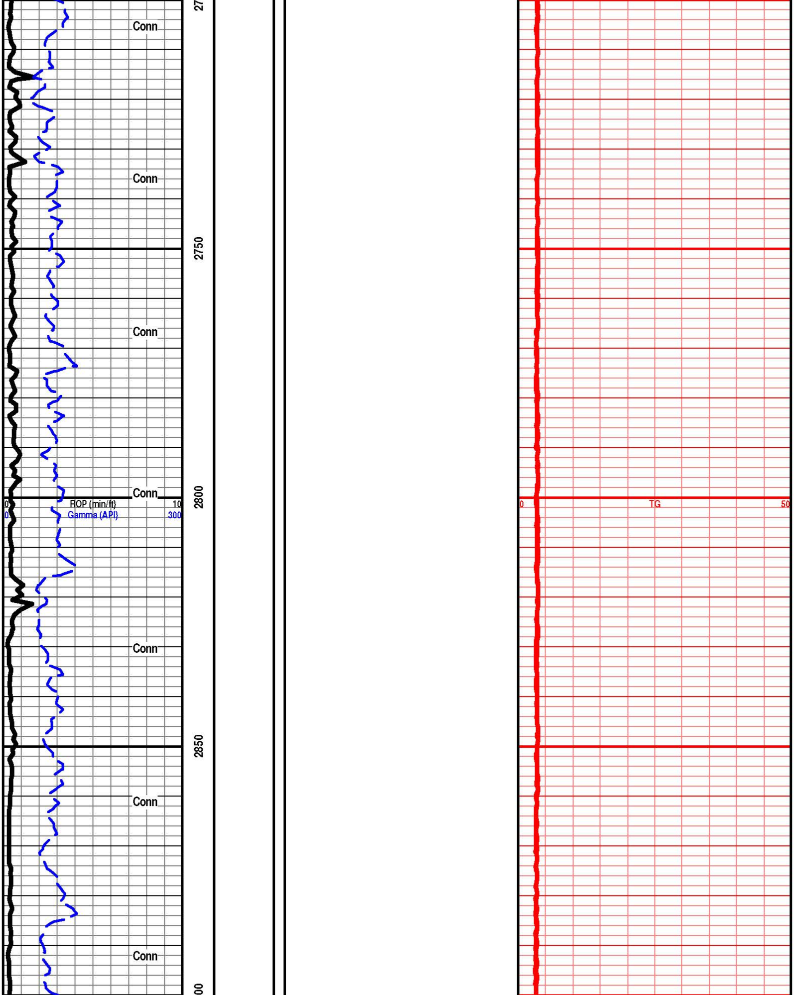
- BS Boundst
- C Chalky
- CX CryxIn
- E Earthy
- FX FinexIn
- GS Grainst
- L Lithogr
- MX MicroxIn
- MS Mudst
- PS Packst
- WS Wackest

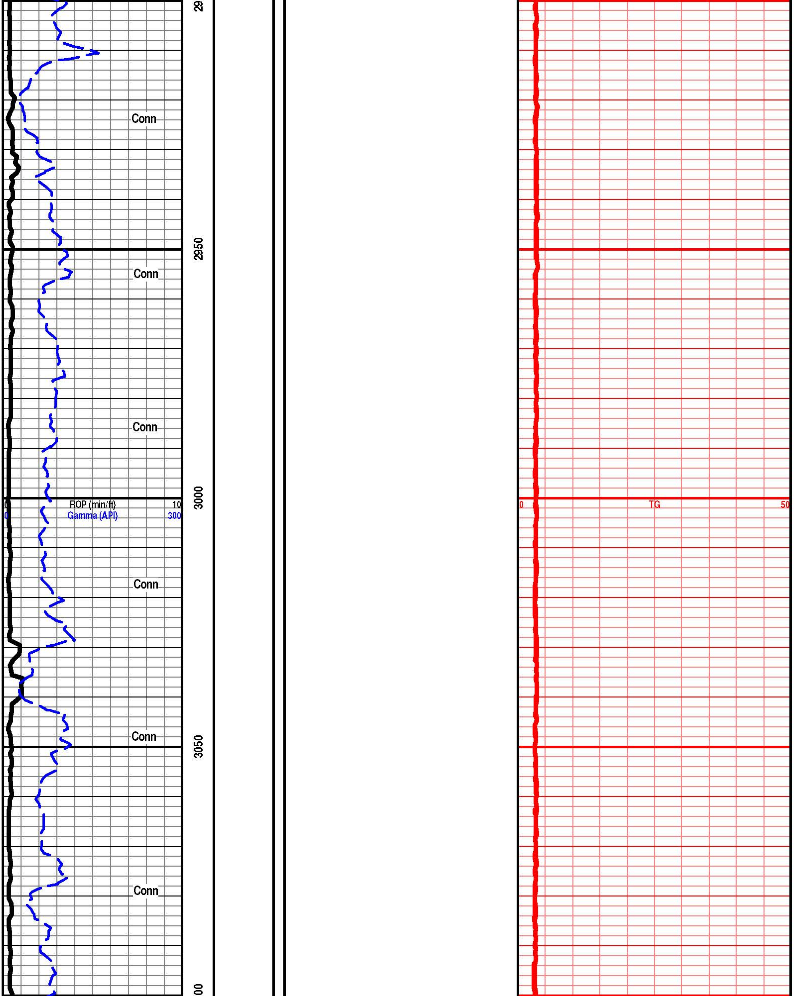
Curve Track 1	Depth	Lithology	Oil Shows	Geological Descriptions	TG, C1-C5
ROP (min/ft) Gamma (API)					TG (units) C1 (units) C2 (units) C3 (units) C4 (units) C5 (units)

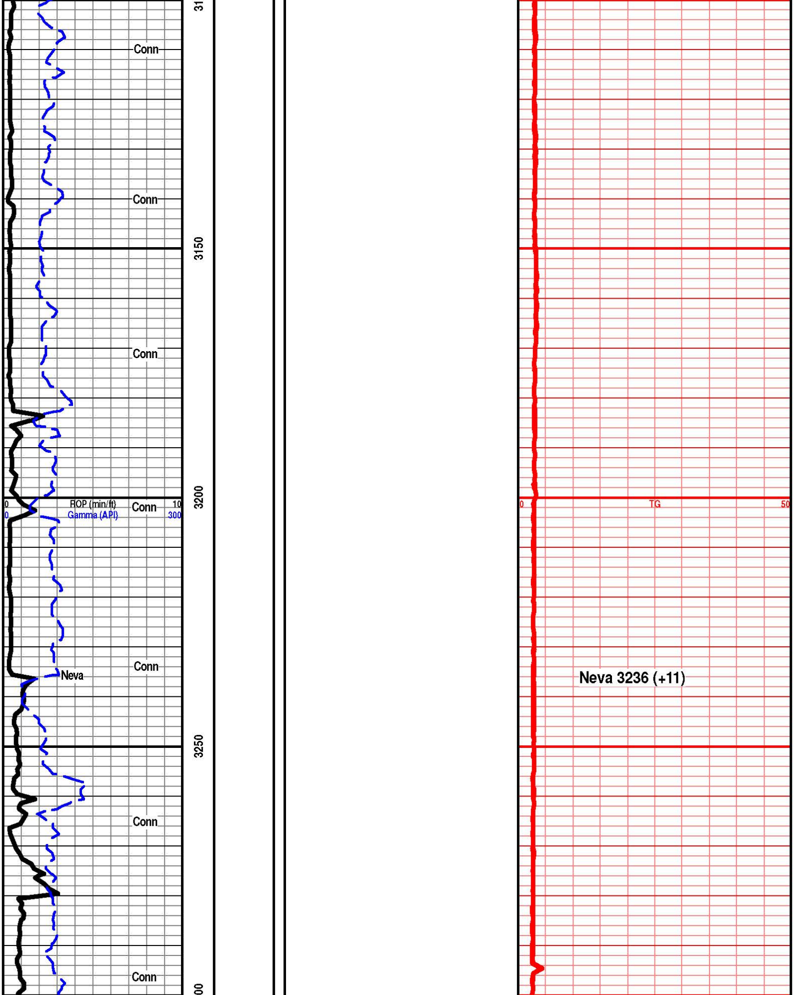


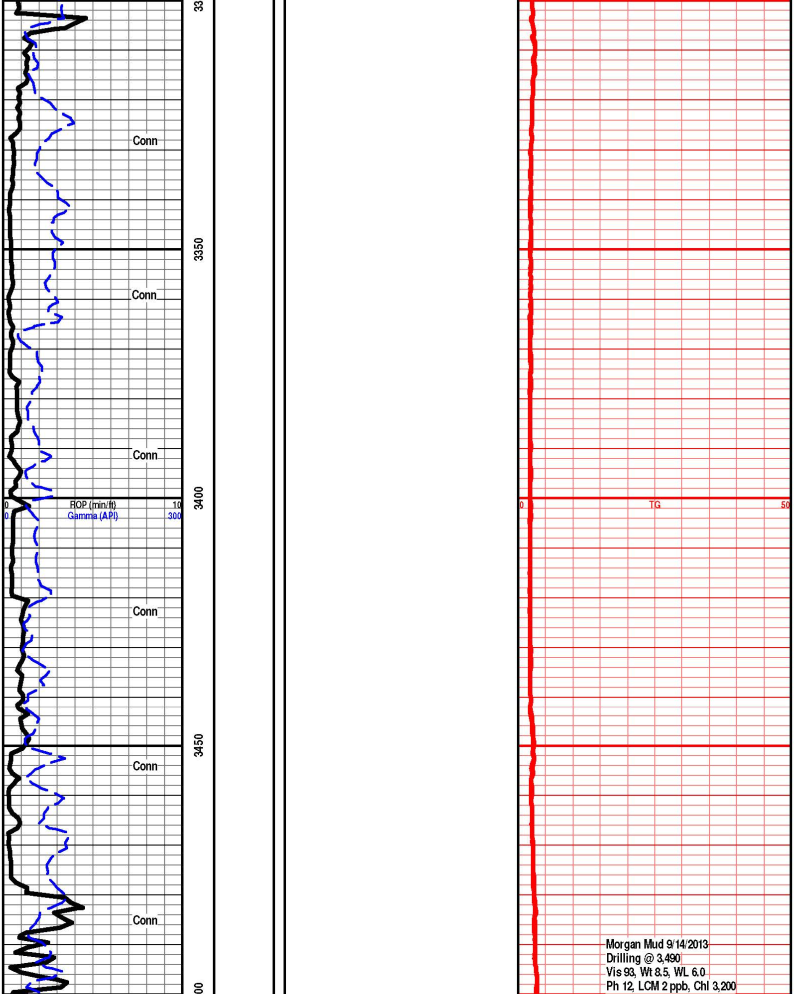
Base Anhy 2465 (+782)



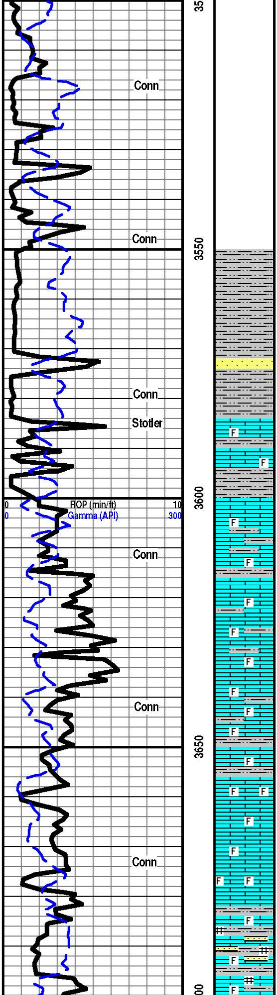








Morgan Mud 9/14/2013
Drilling @ 3,490
Vis 93, Wt 8.5, WL 6.0
Ph 12, LCM 2 ppb, Chl 3,200



Sh & Shy Sltstn, lt gry, gry, tr blk spks, soft. Shy Sltstn, gry, blk spks, tr foss, soft. Shy Ls, gry, dk gry, mdstn, arg, sl foss.

Sh & Shy Sltstn, gry, dk gry, blk carb spks, tr foss, sl aren in part, vfn qtz gr, soft. Shy Sst, lt gry, vfn gr, arg in part, soft. Shy Sltstn, gry, dk gry, blk spks, soft, gummy.

Ls, tan, gry, mdstn, sl foss, soft-hard. Ls, tan, gry, mdstn, dns. Sh & Shy Sltstn, gry, dk gry, blk spks, tr foss, soft.

Ls, crm, tan, mdstn, wkestn, sl foss, arg, in part. Ls, crm, wkestn, foss, brn spks, 2nd calcite. Shy Ls, tan, gry, mdstn, sl foss, arg.

Ls, tan, crm, mdstn, wkestn, foss, soft-hard. Ls, gry, mdstn, wkestn, foss, brn spks, 2nd calcite.

Flood Ls, tan, gry, mott, mdstn, wkestn, foss, 2nd calcite. Shy Ls, gry, dk gry, wkestn, foss, arg, dns.

Ls, tan, gry, wkestn, pkstn, foss, pell, 2nd calcite, pp por, mostly tite. Shy Ls, gry, tan, mott, mdstn, wkestn, foss, arg.

Flood Shy Ls, gry, dk gry, wkestn, foss, arg. Shy Sltstn, gry, foss, calc.

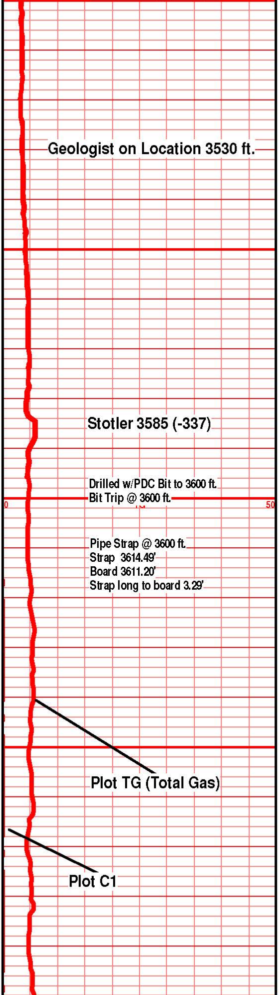
Ls, tan, brn, gry, mdstn, wkestn, foss, spt chky text, soft-hard. Ls, tan, brn, mdstn, dns.

Ls, tan, brn, wkestn, pkstn, foss, pell, 2nd calcite, tr pp por, soft-hard.

Flood Ls, tan, crm, wkestn, pkstn, foss, pell, 2nd calcite, pp por, soft-hard. Ls, tan, mdstn, wkestn, foss, tr pell, hard.

Shy Ls, gry, dk gry, wkestn, foss, pyr, arg, spt chky text. Shy Sltstn, gry, foss, calc.

Shy Ls, gry, dk gry, foss, wkestn, arg, aren in part, vfn qtz gr. Shy Sltstn, gry, dk gry, aren, vfn qtz gr, micro pyr. Tr Sst, lt gry, vfn qtz gr, mica, pyr, arg, semi friable.



Geologist on Location 3530 ft.

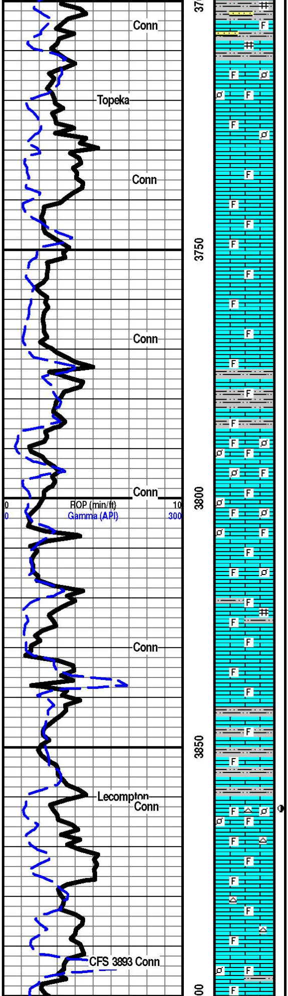
Stotler 3585 (-337)

Drilled w/PDC Bit to 3600 ft.
Bit Trip @ 3600 ft.

Pipe Strap @ 3600 ft.
Strap 3614.49'
Board 3611.20'
Strap long to board 3.29'

Plot TG (Total Gas)

Plot C1



Sh & Shy Sltstn, gry, dk gry, aren, vfn qtz gr, mica, pyr. Tr Shy Sst, gry, brn, vfn qtz gr, mica, micro pyr, arg, semi friable. Shy Ls, gry, tan, mott, wkestn, foss, arg, tr pyr.

Flood Ls, crm, tan, pkstn, foss, pell, pp por, tr foss moldic por, 2nd calcite, soft-hard. Ls, crm, tan, wkestn,pkstn, foss, pell, dns. Ls, tan, brn, mdstn, dns.

Ls, crm, tan, lt gry, wkestn, pkstn, foss, pell, 2nd calcite. Ls, tan, lt gry, mdstn, dns.

Ls, crm, tan, mdstn, wkestn, foss, dns. Ls, wh, crm, tan, mdstn, spt chky text, mostly tite.

Flood Ls, wh, crm, lt gry, mdstn, sl foss, spt chky text, soft, with Ls, tan, mdstn, wkestn, foss, 2nd calcite, dns.

Ls, wh, crm, tan, mott, wkestn, foss, spt chky text. Ls, crm, tan, mott, wkestn, foss, 2nd calcite, soft-hard.

Ls, wh, tan, mott, mdstn, wkestn, foss, spt chky text, mostly hard, dns. Ls, tan, mdstn, dns. Ls, lt gry, mdstn, sl foss, arg in part.

Flood Shy Ls, lt gry, dk gry, wkestn, pkstn, foss, pell, 2nd calcite, tr pyr, arg.

Shy Ls, lt gry, dk gry, mott, wkestn, tr pkstn, dk gry-grn foss & pell frag, pyr, lg 2nd calcite, arg in part.

Ls, wh, tan, mott, mdstn, wkestn, foss, spt chky text. Ls, tan, wkestn, pkstn, foss, pell, pp por, tr foss moldic por, 2nd calcite.

Ls, wh, tan, mott, mdstn, wkestn, foss, spt chky text. Ls, tan, wkestn, pkstn, foss, pell, pp por, tr foss moldic por, 2nd calcite.

Ls, wh, tan, mott, mdstn, wkestn, foss, spt chky text. Ls, tan, wkestn, pkstn, foss, pell, spt chky text, tr pp & foss moldic por.

Ls, tan, gry, wkestn, pkstn, foss, pell, gry-grn foss frag, 2nd calcite, pyr, arg.

Ls, wh, tan, mdstn, spt chky text. Ls, wh, tan, mdstn, wkestn, foss, soft-hard.

Flood Ls, tan, mealy text, mdstn, wkestn, foss, arg in prt, tr pyr, gry-brn spks, 2nd calcite. Ls, tan, brn, mdstn, sl foss, dns.

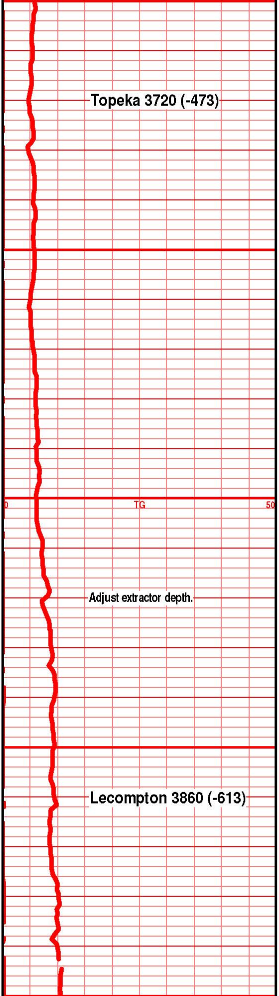
Ls, tan, brn, mott gry, wkestn, tr pkstn, foss, brn-blk mineral spks, tr micro pyr, 2nd calcite, arg in paart. Shy Ls, tan, gry, mott, foss, arg. Ls, tan, brn, mdstn, dns.

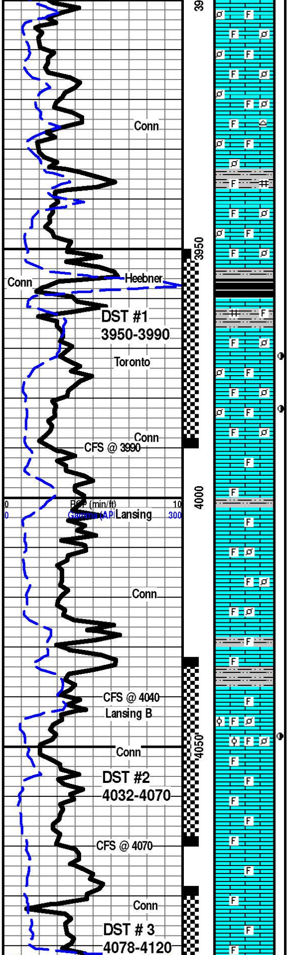
Ls, wh, tan, mott, mdstn, wkestn, foss, micro pyr, 2nd calcite, soft-hard. Trace Ls, wh, wkestn, tr pkstn, foss, pell, 2nd calcite, pp por, tr foss moldic por, few frag w/ spt blk stn, trace blk tarry oil, few gas bubbles, 99% barren, NS. Tr Cht, milky, lt gry, sub op, foss, ang, sharp.

Ls, tan, mdstn, wkestn, foss, clear 2nd calcite, soft-hard. Ls, tan, brn, mdstn, dns. Ls, tan, brn, wkestn, foss, 2nd calcite, hard.

Ls, tan, wkestn, pkstn, foss, pell, tr ool, 2nd calcite. Ls, tan, mdstn, dns. Ls, tan, brn, wkestn, pkstn, foss, pell, tr ool, 2nd calcite. Trace Cht, milky, tan, sub op, ang, sharp.

Ls, tan, gry, mdstn, wkestn, foss, dns. Ls, tan, wkestn, pkstn, foss, pell, 2nd calcite. Ls, tan, wkestn, pkstn, foss, pell, w/rd-brn Sltstn.





Ls, tan, mdstn, wkestn, foss, spt chky text in part. Ls, tan, mdstn, dns. Ls, tan, wkestn, pkstn, foss, pell, 2nd calcite, dns.

Ls, tan, mdstn, wkestn, foss, spt chky text in part. Ls, tan, wkestn, pkstn, foss, pell, 2nd calcite. Ls, tan, mdstn, dns.

Ls, tan, wkestn, pkstn, tan-gry foss & pell frag, 2nd calcite. Ls, tan, mdstn, wkestn, foss, spt chky text. Trace Cht, tan, milky, sub op, ang, sharp.

Sh, blk,gry, pyr. Ls, tan, mdstn, wkestn, foss, arg, w/Shy Sltstn, dk gry, rd-brn.

Flood Ls, tan, wkestn, pkstn, foss, pell, tan, dk gry-grn foss & pell frag, pyr, 2nd calcite. Ls, tan, lt gry, mott wkestn, pkstn, foss, 2nd calcite, soft-hard.

Flood Sh, blk, carb, pyr. Sh & Shy Sltsn, blk, dk gry, tr foss, pyr. Ls, tan, lt gry, mott, wkestn, pkstn, foss, Pell, dk gry-grn foss frag in part, pyr.

Ls, wh, tan, wkewstn, foss, 2nd calc, dns. Ls, tan, wkestn, pkstn, foss, fn pell, 2nd calcite. Trace Ls, wh, wkestn, pkstn, pp por, tr foss moldic por, 1-2 frag/tray, VSS dk brn-blk oil stn, trace dk brn FO.

2% Ls, wh, tan, wkestn, pkstn, foss, pell, pp por, tr foss moldic & vug por. Spt dk brn-blk oil stn in por, SS dk brn FO, trace bleeding gas. No Flor. Pred Ls, wh, tan, wkestn, pkstn, foss, pell, 2nd calcite, soft-hard.

Ls, wh, tan, mdstn, wkestn, foss, spt chky text. Ls, wh, tan, wkestn, pkstn, foss, clear 2nd calcite, tr pp por. Trace Cht, milky, tan, semi transl, ang, sharp.

Flood Ls, wh, tan, mdstn, spt chky text. Ls, wh, tan, wkestn, pkstn, foss, pell, abdnt clear 2nd calcite, tr pp & foss moldic por.

Ls, wh, tan, mdstn, spt chky text. Ls, tan, mdstn, sl foss, dns. Ls, wh, tan, wkestn, pkstn, foss, tr pell, 2nd calcite, tr pp & foss moldic por. Trace Cht, milky, semi transl, ang.

Ls, wh, tan, mdstn, spt chky text. Ls, wh, tan, wketn, pkstn, foss, pell, 2nd calcite, tr pp por. Ls, tan, mdstn, sl foss, dns.

Ls, wh, tan, mott, lt gry, mdstn, sl foss, dns. Flood Shy Sltstn, gry, dk gry, micro pyr, calc. Shy Ls, tan, mdstn, sl foss, w/Sltstn, gry, brn.

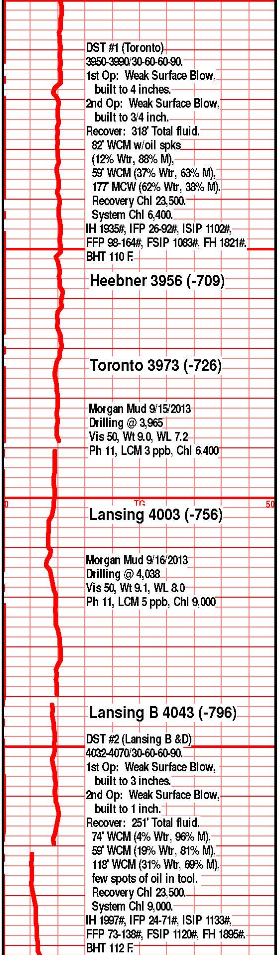
Flood Ls, wh, tan, mdstn, wkestn, foss, spt chky text. Ls, wh, tan, wkestn, foss, pell, 2nd calcite, spt chky text. 2% Ls, tan, wkestn, pkstn, foss, pell, ool?, pp por, tr foss moldic por and spt inter gran por. Spt dk brn-blk oil stn in por, VSS dk brn FO. Few frag w/tarry oil in por. Trace bleeding gas in larger frag. No Flor.

Ls, wh, tan, mdstn, wkestn, foss, 2nd calcite, spt chky text. Ls, wh, tan, mdstn, 2nd calcite, sl foss, dns. Ls, tan, wkestn, foss, 2nd calcite dns.

Flood Ls, wh, tan, mdstn, wkestn, foss, 2nd calcite, spt chky text, mostly dns.

Ls, wh, tan, mdstn, sl foss, spt chky text. Ls, tan, mdstn, wkestn, foss, 2nd calcite, soft-hard. Ls, tan, mdstn, sl foss, 2nd calcite, dns.

Ls, wh, tan, mott, mdstn, wkestn, spt chky text. Ls, tan, lt gry, mdstn, wkestn, foss, 2nd calcite, soft to dns.



DST #1 (Toronto)
3950-3990/30-60-60-90.
1st Op: Weak Surface Blow,
built to 4 inches.
2nd Op: Weak Surface Blow,
built to 3/4 inch.
Recover: 318' Total fluid.
82' WCM w/oil spks
(12% Wtr, 88% M),
59' WCM (37% Wtr, 63% M),
177' MCW (62% Wtr, 38% M).
Recovery Chl 23,500.
System Chl 6,400.
IH 1935#, IFP 26-92#, ISIP 1102#,
FFP 98-164#, FSIP 1083#, FH 1821#.
BHT 110 F.

Heebner 3956 (-709)

Toronto 3973 (-726)

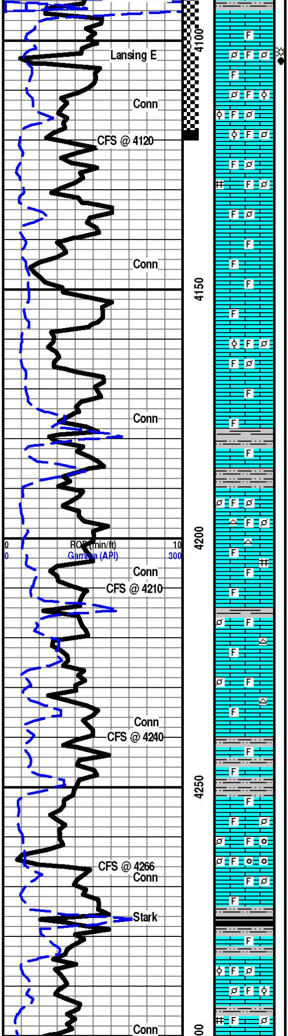
Morgan Mud 9/15/2013
Drilling @ 3,965
Vis 50, Wt 9.0, WL 7.2
Ph 11, LCM 3 ppb, Chl 6,400

Lansing 4003 (-756)

Morgan Mud 9/16/2013
Drilling @ 4,038
Vis 50, Wt 9.1, WL 8.0
Ph 11, LCM 5 ppb, Chl 9,000

Lansing B 4043 (-796)

DST #2 (Lansing B &D)
4032-4070/30-60-60-90.
1st Op: Weak Surface Blow,
built to 3 inches.
2nd Op: Weak Surface Blow,
built to 1 inch.
Recover: 251' Total fluid.
74' WCM (4% Wtr, 96% M),
59' WCM (19% Wtr, 81% M),
118' WCM (31% Wtr, 69% M),
few spots of oil in tool.
Recovery Chl 23,500.
System Chl 9,000.
IH 1997#, IFP 24-71#, ISIP 1133#,
FFP 73-138#, FSIP 1120#, FH 1895#.
BHT 112 F.



Ls, tan, mdstn, wkestn, sl foss, spt chky text. Ls, tan, brn, wkestn, foss, 2nd calcite filled por, dns.

4103-4105 Slight Odor. Ls, tan, lt gry, pkstn, foss, pp, foss moldic, vug and gd intergran por. Light brn oil stn & sat, GSFO on break, trace gas bubbles.

4105-4120 Ls, wh, tan, mott, mdstn, wkestn, foss, pell, spt chky text. Ls, wh, tan, mott, mdstn, wkestn, foss, 2nd calcite, dns. Ls, tan, brn, wkestn, pkstn, foss, pell, tr ool, 2nd calcite, spt chky text, tr pyr, mostly hard, dns.

Ls, wh, tan, mott, mdstn, foss, tr pyr, spt chky text. Ls, tan, wkestn, tr pkstn, foss, pell, soft-hard. Ls, tan, brn, mdstn, wkestn, foss, 2nd calcite, dns.

Ls, wh, tan, mdstn, wketn, foss, 2nd calcite, spt chky text. Ls, tan, wkestn, pkstn, foss, pell, tr ool, 2nd calcite filled por.

Flood Ls, wh, tan, mdstn, wkestn, foss, spt chky text, soft. Ls, tan, wkestn, foss, 2nd calcite, tr pyr, tr pp & foss moldic por.

Ls, wh, tan, mdstn, foss, spt chky text. Ls, wh, tan, mdstn, wkestn, foss, 2nd calcite, dns.

Ls, wh, tan, mdstn, foss, spt chky text. Ls, tan, wkestn, tr pkstn, foss, pell, 2nd calcite, tr pp & foss moldic por. Ls, wh, wkestn, pkstn, foss, pell, tr ool, 2nd calcite.

Ls, wh, lt gry, mdstn, wkestn, foss, 2nd calcite, spt chky text. Ls, lt gry, mdstn, wkestn, foss, 2nd calcite, tr pyr, dns.

Shy Sltstn, gry, dk gry, blk, pyr, tr foss. Ls, wh, tan, lt gry, mdstn, wkestn, foss, abndt 2nd calcite, spt chky text, mostly dns.

Ls, gry, tan, mott, mdstn, wkestn, foss, 2nd calcite, dns. Ls, wh, tan, wkestn, pkstn, foss, pell, 2nd calcite, spt chky text in part. Trace Cht, milky, lt gry, sub op, ang.

Ls, wh, lt gry, mott, wkestn, tan & gry-grn foss frag, tr pyr, spt chky text. Ls, wh, tan, lt gry, mdstn, wkestn, foss, tr pyr. Ls, wh, tan, mdstn, 2nd calcite, dns.

Shy Sltstn, gry, calc tr foss, tr pyr. Shy Ls, tan, gry, mott, wkestn, tan-gry, foss, arg, tr pyr. Ls, tan, wh, mott, mdstn, wkestn, foss, 2nd calcite, spt chky text. Ls, wh, tan, wkestn, foss, pell, 2nd calcite. Tr cht, milky, lt gry, transl, ang.

Ls, tan, mdstn, 2nd calcite, tr foss, spt chky text. Ls, wh, tan, mdstn, wkestn, sl foss, tr foss & pell frag, 2nd calcite, soft-hard. Ls, wh, tan, mdstn, dns. Tr Cht, milky, gry, transl, ang, sharp.

Ls, wh, gry, mott, wkestn, dk gry-grn foss frag, tr pyr, soft-hard. Ls, tan, brn, wkestn, foss, 2nd calcite. Shy Ls, gry, wkestn, foss, arg, tr pyr.

Flood Ls, tan, gry, mott, wkestn, tan-gry foss frag, tr pyr, arg. Ls, wh, lt gry, wkestn, foss, pell, 2nd calcite, spt chky text. Ls, tan, wkestn, pkstn, foss, pell, 2nd calcite.

4262-4266 CFS 50 min Flood Ls, tan, pkstn, foss, pell, ool, pp, foss moldic & oom por, 2nd calcite.

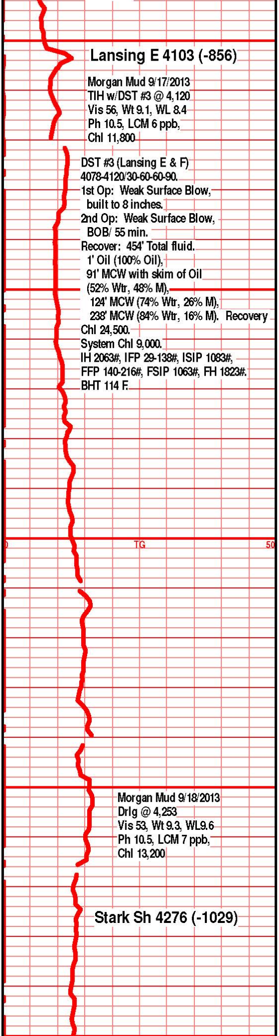
Ls, tan, mdstn, wkestn, foss, pell, tr ool, 2nd calcite, dns.

Sh & Shy Sltstn, gry, dk gry-blk, carb, pyr.

Shy Ls, gry, dk gry, wkestn, foss, arg. Ls, tan, brn, mdstn, wkestn, foss, 2nd calcite.

Ls, wh, tan, mott, mdstn, tr foss, spt chky text. Ls, tan, wkestn, pkstn, foss, pell, tr ool, 2nd calcite, spt chky text. Ls, tan, brn, wkestn, pkstn, foss, pell, 2nd calcite, dns.

Shy Ls, gry, mdstn, wkestn, foss, arg, tr pyr, dk gry to blk spks.



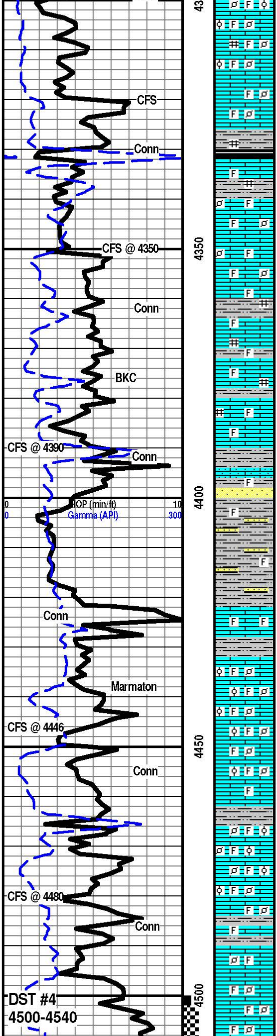
Lansing E 4103 (-856)

Morgan Mud 9/17/2013
TIH w/DST #3 @ 4,120
Vis 56, Wt 9.1, WL 8.4
Ph 10.5, LCM 6 ppb,
Chl 11,800

DST #3 (Lansing E & F)
4078-4120/30-60-60-90.
1st Op: Weak Surface Blow,
built to 8 inches.
2nd Op: Weak Surface Blow,
BOB/ 55 min.
Recover: 454' Total fluid.
1' Oil (100% Oil),
91' MCW with skim of Oil
(52% Wtr, 48% M),
124' MCW (74% Wtr, 26% M),
238' MCW (84% Wtr, 16% M). Recovery
Chl 24,500.
System Chl 9,000.
IH 2063#, IFP 29-138#, ISIP 1083#,
FFP 140-216#, FSIP 1063#, FH 1823#.
BHT 114 F.

Morgan Mud 9/18/2013
Drlg @ 4,253
Vis 53, Wt 9.3, WL9.6
Ph 10.5, LCM 7 ppb,
Chl 13,200

Stark Sh 4276 (-1029)



Flood Ls, off wh, mott lt gry, wkestn, pkstn, tan-dk gry foss & pell frag, tr ool, abundt 2nd calcite, tr pyr, soft-hard.

Ls, wh, tan, lt gry, wkestn, tr pkstn, foss, pell, tr ool, 2nd calcite, soft-hard. Ls, off wh, mott lt gry, wkestn, pkstn, tan-dk gry foss & pell frag, tr ool, abundt 2nd calcite, tr pyr, soft-hard.

Ls, tan, gry, wkestn, pkstn, foss, pell, tr ool, 2nd calcite, dns. Ls, gry, mdstn, sl foss, 2nd calcite.

Sh & Shy Sltstn, dk gry-blk, tr foss, pyr. Sh, blk, carb, pyr.

Shy Ls, gry, dk gry, wkestn, foss, arg, tr pyr. Shy Sltstn, gry, dk gry, pyr. Ls, tan, brn, wkestn, w/dk brn Shy Sltstn, tr pyr.

Ls, crm, tan, brn, mdstn, wkestn, foss, pell, 2nd calcite. Ls, tan, brn, mdstn, sl foss, spt chky text. Ls, tan, gry mott, mdstn, wkestn, foss, 2nd calcite, pyr.

Flood Ls, wh, tan, lt gry, mdstn, sl foss, soft-hard. Ls, wh, pkstn, foss, pell, ool, 2nd calcite, dns. Ls, tan, brn, wkestn, pkstn, foss, 2nd calcite.

Ls, tan, dirty gry, gry, mott, brn spks, mdstn, wkestn, foss, soft-hard. Shy Ls, gry, brn, wkestn, foss, arg, tr pyr. Shy Sltstn, gry, dk gry-brn, pyr.

Shy Ls, tan, brn, gry, mott, mdstn, wkestn, foss, arg in part. Shy Sltstn, dk gry, brn, sl foss, pyr. Ls, tan, brn, mott, mdstn, wkestn, foss.

Flood Ls, tan, brn, mott dirty gry, w/brn spks, mdstn, wkestn, foss, spt chky text. Ls, gry, mdstn, wkestn, foss, pyr. Ls, gry, mott brn, w/brn spks, mdstn, wkestn, arg in part, pyr.

Shy Sltstn, gry, dk gry, calc, foss, pyr. Shy Ls, gry, mdstn, wkestn, foss, 2nd calc, arg, tr aren, vfn qtz gr.

Flood Shy Sltstn, lt gry, dk gry, aren, vfn qtz gr, micro pyr, tr foss frag. Sdy Sltstn, gry, vfn qtz gr, micro pyr, soft. Sdy Ls, gry, vfn qtz gr, arg, foss frag, micro pyr, dns.

Shy Sltstn, gry, dk gry, aren in part, vfn qtz gr. Sdy Sltstn, tan, gry, vfn qtz gr, arg, micro pyr, soft.

Ls, tan, brn, mott, wkestn, foss, 2nd calcite, dns.

Sh & Shy Sltstn, tan, brn, gry, aren in part, vfn qtz gr, mico pyr. Sh, dk gry, micro pyr.

Ls, tan, lt gry, wkestn, pkstn, foss, pell, ool, 2nd calcite, pp por, spt intergran por, soft-hard. Ls, tan, brn, wkestn, pkstn, foss, pell, ool, 2nd calcite, dns.

Ls, wh, tan, mott, wkestn, pkstn, foss, pell, ool, 2nd calcite, dns.

Ls, tan, pkstn, tr grnstn, foss, pell, ool, 2nd calcite, tr pp por, soft-hard. Ls, tan, pkstn, foss, pell, ool, 2nd calcite, dns.

Ls, tan, brn, pkstn, foss, pell, ool, 2nd calcite, pp por, soft to dns. Ls, lt gry, mdstn, dns.

Shy Sltstn, dk gry-blk, pyr.

Ls, tan, brn, pkstn, tan-gry foss & pell frag, 2nd calcite, tr pyr, dns. Ls, tan, wh, pkstn, grnstn, foss, pell, ool, 2nd calcite, pp por, soft-hard.

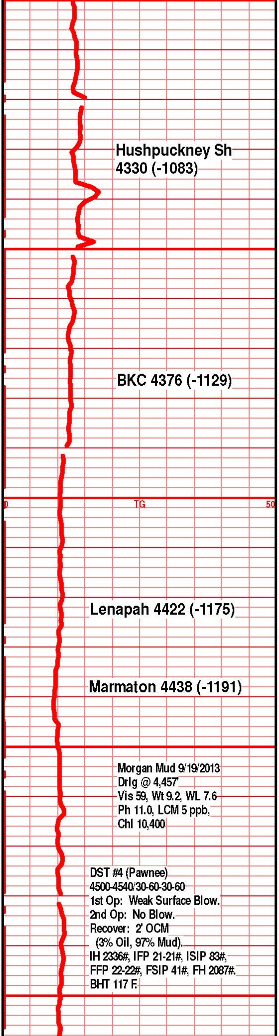
Ls, wh, tan, pkstn, foss, pell, ool, 2nd calcite, tr pp por, soft-hard.

Ls, wh, tan, pkstn, foss, pell, ool, 2nd calcite, soft-hard, mostly dns.

Flood Sh & Shy Sltstn, dk gry-blk, calc, tr foss, pyr. Shy Ls, gry, dk gry, mdstn, wkestn, foss, arg, pyr, dns.

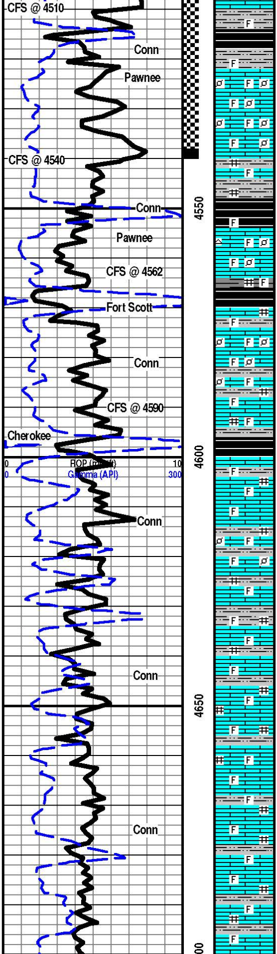
Flood Ls, wh, tan, mdstn, foss, soft to hard. Ls, tan, lt gry, mdstn, wkestn, foss, tr pyr, 2nd calcite. Ls, tan, wkestn, foss, pell, 2nd calcite, dns.

Ls, tan, brn, gry, mdstn, wkestn, foss, 2nd calc, tr pyr, dns. Ls, wh, tan, wkestn, tr pkstn, foss, pell, 2nd calcite, dns. Ls, brn, wkestn, foss, pell, arg in part, pyr, dns.



Morgan Mud 9/19/2013
Drlg @ 4,457'
Vis 59, Wt 9.2, WL 7.6
Ph 11.0, LCM 5 ppb,
Chl 10,400

DST #4 (Pawnee)
4500-4540/30-60-30-60
1st Op: Weak Surface Blow.
2nd Op: No Blow.
Recover: 2' OCM
(3% Oil, 97% Mud).
IH 2336#, IFP 21-21#, ISIP 83#,
FFP 22-22#, FSIP 41#, FH 2087#.
BHT 117 F.



Flood Sh & Shy Sltstn, dk gry-blk, pyr. Sh, blk, carb, pyr. Shy Ls, gry, mdstn, arg, micro pyr. Shy Ls, gry, dk gry, dk brn, wkestn, foss, arg, micro pyr, dns. Shy Ls, dk gry-blk, arg.

Ls, tan, wkestn, pkstn, foss, pell, 2nd calcite, tr micro pyr. Few frag (1%) w/PP BYF and spt brn oil stn in pp, foss moldic & spt inter gran por. VSS lt brn FO on break w/dull yell flor.

Ls, tan, lt gry, mott, wkestn, tr pkstn, 2nd calcite, tan-gry foss & pell frag, tr pyr.

Ls, tan, gry, mott, wkestn, pkstn, 2nd calcite, tan-gry foss & pell frag, tr pyr. Shy Ls, gry, dk gry, mdstn, tr foss, arg, micro pyr.

Sh, blk, carb, pyr. Sh & Shy Sltstn, gry, dk gry-blk, pyr.

Ls, tan, brn mott gry, wkestn, pkstn, tan-dk gry foss & pell frag, 2nd calcite, arg in part, pyr. Ls, wh, tan, mott gry, wkestn, pkstn, spt chky text, tr pyr. Tr. Cht, milky, tan, foss, pell, sub op, ang.

Ls, AA. Shy Ls, dk gry, mdstn, tr foss, arg, pyr.

Flood Sh, blk carb, pyr. Shy Sltstn, gry, dk gry, blk, foss, pyr.

Ls, crm, tan, mott, wkestn, pkstn, foss, pell, 2nd calcite, dns. Ls, wh, tan, mott, wkestn, foss, pell, spt chky text, soft-hard. Ls, tan, brn, dk gry, mdstn, dns.

Shy Ls, brn, gry, mott, wkestn, pkstn, foss, pell, arg, pyr. Ls, gry, brn, wketn, foss, pell, 2nd calcite, arg, dns. Ls, brn, gry, mdstn, dns, pyr.

Shy Ls dk brn, gry, mott, wkestn, foss, 2nd calcite, micro pyr, dns.

Sh, blk, carb, pyr. Shy Sltstn, dk gry-blk, pyr.

Ls, tan, brn, mdstn, wkestn, dk gry foss frag, pyr. Ls, tan, mdstn, foss, micro pyr. Sh & Shy Sltstn, gry, dk gry-blk, pyr.

Sh & Shy Sltstn, dk gry-blk, pyr. Ls, tan, wkestn, pkstn, foss, pell, 2nd caclite, dns. Ls, tan, mdstn, sl foss. Shy Ls, gry, dk gry, wkestn, foss, pell, arg, tr pyr.

Flood Ls, tan, brn, mott, mdstn, dns. Ls, tan, gry, mott, wkestn, foss. Sh & Shy Sltstn, dk gry-blk, pyr.

Ls, tan, gry, mott, mdstn, micro pyr. Ls, tan, brn, mdstn, sl foss, dns. Sh & Shy Sltsn, AA.

Flood Ls, off wh, tan, brn, mdstn, wkestn, foss, soft-hard. Ls, tan, brn, mdstn, sl foss, dns. Sh & Shy Sltstn, dk gry, blk, pyr.

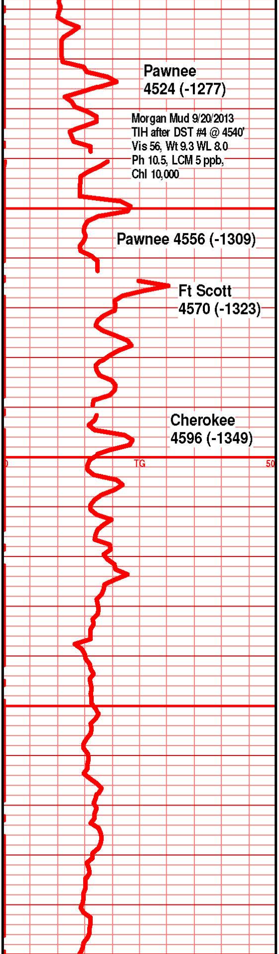
Ls, off wh, tan, mdstn, soft-hard. Ls, tan, brn, mdstn, wkestn, foss, 2nd calcite, dns. Shy Ls, gry, dk gry, mdstn, foss, arg, pyr.

Ls, wh, tan, brn, mott, mdstn, sl foss, dns. Ls, wh, tan, mott mdstn, soft-hard. Shy Ls, brn, gry, mott, mdstn, arg, micro pyr. Shy Ls, brn, gry, mott, mdstn, wkestn, foss, arg, pyr.

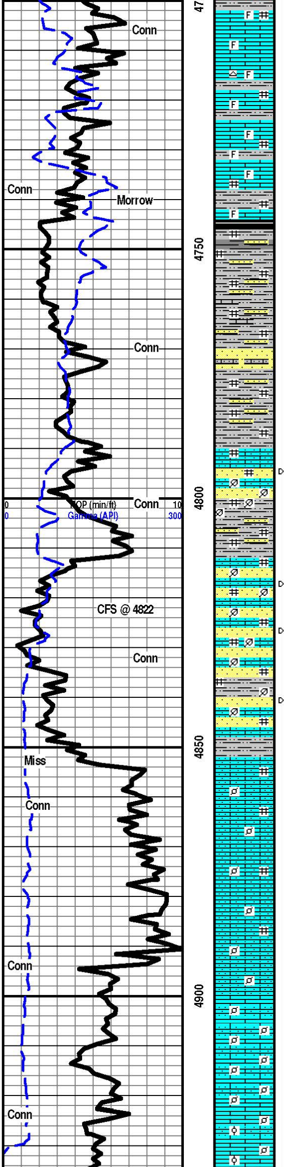
Ls, off wh, tan, mott, mdstn, wkestn, foss. Ls, tan, brn, gry, mdstn, dns. Ls, brn, dk gry, mott, mdstn, wkestn, foss, 2nd calcite, arg, dns.

Ls, off wh, tan, mott, wkestn, foss, dns. Ls, tan, dk brn, mdstn, wkestn, foss, 2nd calicte, micro pyr, dns. Ls, dk brn, dk gry, mdstn, dns. Sh & Shy Sltstn, dk gry-blk, pyr.

Sh & Shy Sltstn, dk gry-blk, pyr. Shy Ls, dk gry-dk brn, mott, mdstn, wkestn, foss, arg, pyr. Ls, tan, brn, mott gry, mdstn, wkestn, foss, 2nd calcite, dns.



Morgan Mud 9/20/2013
TIH after DST #4 @ 4540'
Vis 56, Wt 9.3 WL 8.0
Ph 10.5, LCM 5 ppb,
Chl 10,000



Flood Ls, off wh, tan, brn, mdstn, tr foss, 2nd calcite, mostly dns. Ls, brn, mdstn, wkestn, foss, 2nd calcite, dns. Ls, tan, brn, mott gry, mdstn, wkestn, foss, 2nd calcite, dns.

Ls, tan, brn, mdstn, foss, 2nd calcite, dns. Shy Ls, dk gry, dk brn, mott, wkestn, foss, arg, dns. Sh & Shy Sltstn, dk gry-blk, pyr. Tr Cht, clear, tan, gry, blk, transl, ang.

Flood Ls, tan, brn, gry, mdstn, wketn, foss, 2nd calcite, dns. Shy Ls, gry, dk gry, dk brn, mdstn, wketn, foss, arg, dns. Sh & shy sltstn, gry, dk gry-blk, pyr.

Shy Ls, gry, dk gry, mdstn, wkestn, foss, arg, pyr. Sh & Shy Sltsn, gry, dk gry, blk, pyr.

Sh, gry, dk gry- blk, micro pyr, soft. Shy Sdy Sltstn, gry, aren, bfn qtz gr, arg, micro pyr. Trace thin Shy Sst stringers, vfn qtz gr, blk spks, micro pyr, arg.

Sh & Shy Sltstn, gry, grn, dk gry, blk, blk spks (carb plant fragments, BCPF), micro pyr. Trace thin Shy Sst stringers, vfn qtz gr, blk spks, micro pyr, arg. Shy Sdy Ls, gry, wketn, foss frag, vfn qtz gr, pyr, arg. Shy Ls, gry, dk gry, wkestn, foss, arg, tr pyr.

Shy Sst, calc, gry, vfn qtz gr, blk carb spks, arg, micro pyr, friable to dns.

Flood Shy Sltstn, gry, grn, dk gry, blk carb plant frag, micro pyr, soft. Shy Sdy Sltstn, gry, grn, vfn qtz gr, blk carb plant frag, micro pyr, arg.

D Sst, wh, lr gry, calc, vfn qtz gr, dk gry-grn shale clast, tr blk carb plant frag, tr pyr, poor inter gran por, lg clusters, semi friable to dns. Few clusters w/trace blk asphaltic dead oil stn. Sh & Shy Sltstn, gry, grn, blk carb spks, pyr.

Flood Shy Sltstn, gry, grn, dk gry, aren in part, vfn qtz gr, blk carb spks, micro pyr. Sh, gry, grn, dk gry, micro pyr, tr blk spks, splintery.

D Flood Sst, wh, lt gry, calc cement, vfn sub ang, sub rdd clear qtz gr, gry-grn shale clasts, blk carb spks, micro pyr, arg in part. Small to lg clusters, poor to fair inter gran por, semi friable to dns. Trace blk ashaltic oil stn.

D Sst, wh, lt gry, calc cement, vfn sub ang, sub rdd clear qtz gr, tr gry-grn shale clasts, blk carb spks, micro pyr, arg in part. Small to lg clusters, poor to fair inter gran por, semi friable to dns. Trace blk ashaltic oil stn.

D Sh & Shy Sdy Sltstn, gry, grn, vfn qtz gr in part, pyr. Sst, wh, lt gry, calc cement, gry, grn sh clasts, blk carb plant frag, pyr, arg in part, gry, grn, dk gry Shy Sltstn, poor to fair spt inter gran por, mostly tite. Tr blk asphaltic oil stn.

Shy Sst, gry, grn, waxy, tr foss, micro pyr. Sh, grn, gry, waxy, tr micro pyr.

Sdy Ls, wh, tan, pkstn, vfn sub rdd clear qtz gr, spt chky text in part, mostly tite. Sh, grn, gry, waxy, tr micro pyr.

Sdy Ls, wh, tan, pkstn, vfn-fn clear sub rdd qtz gr, tr pell, micro pyr, soft to dns. Sh, grn, gry, waxy, tr micro pyr.

Sdy Ls, wh, crm, tan, pkstn, vfn-fn clear sub rdd qtz gr, tr pell, micro pyr, soft to dns. Sh & Shy Sltstn, gry, grn, waxy, micro pyr.

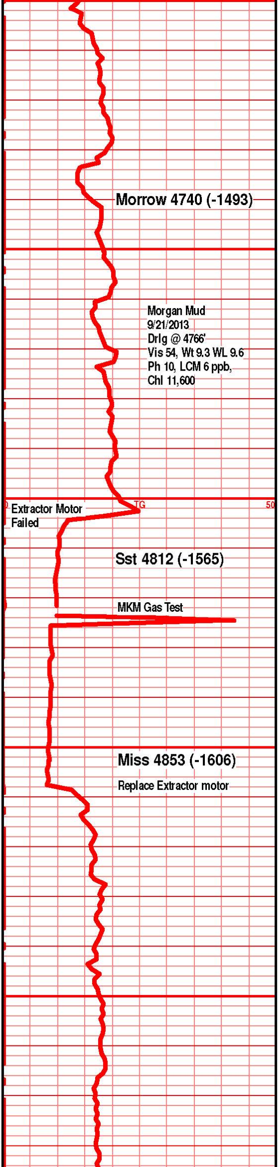
Sdy Ls, wh, crm, tan, pkstn, vfn-fn clear sub rdd qtz gr, tr pell, micro pyr, spt chky text, soft to dns. Sh & Shy Sltstn, gry, grn, waxy, micro pyr.

Sdy Ls, wh, crm, tan, pkstn, vfn-fn clear sub rdd qtz gr, tr pell, micro pyr, spt chky text, soft to dns. Sh & Shy Sltstn, gry, grn, dk gry, micro pyr.

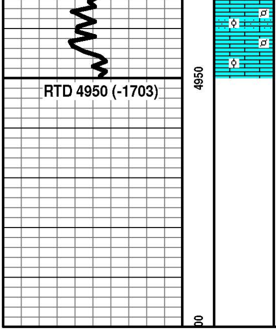
Ls, wh, crm pkstn, fn ool, pell, aren, vfn sub rdd clear qtz gr, spt chky text, soft-hard. Sh & Shy Sltstn, gry, grn, dk gry, micro pyr.

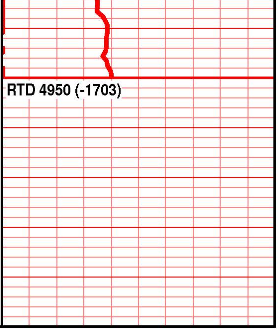
Ls, wh, crm, pkstn, fn ool, pell, aren, vfn sub rdd clear qtz gr, 2nd calcite, spt chky text, soft-hard. Sh & Shy Sltstn, gry, grn, dk gry, micro pyr.

Flood Ls, wh, crm, wkestn, pkstn, fn ool, pell, 2nd calcite, spt chky text, soft-hard. Ls, wh, crm, pkstn, fn ool, pell, aren in part, vfn sub rdd clear qtz gr, 2nd calcite, spt chky text, soft-hard.



Morgan Mud
9/21/2013
Drlg @ 4766'
Vis 54, Wt 9.3 WL 9.6
Ph 10, LCM 6 ppb,
Chl 11,600



Ls, wh, crm, wkestn, pkstn, fn ool, pell, 2nd calcite, spt chky text, soft-hard. Ls, wh, crm, wkestn, pkstn, fn ool, pell, aren in part, vfn sub rdd clear qtz gr, 2nd calcite, soft-hard.