



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

**Well Name:** JAMES KOEHN #4-31 (NW)  
**API:** 15 - 069 - 20,490 - 00 - 00  
**Location:** Se-Ne-Nw-NW 1/4 of SEC. 31 - 28 S. - 30 W  
**License Number:** KCC #5316  
**Spud Date:** 11/29/2014  
**Surface Coordinates:** 521' FNL & 1303' FWL

**Region:** GRAY CO., KS.  
**Drilling Completed:** 12/11/2014

**Bottom Hole  
Coordinates:**  
**Ground Elevation (ft):** 2826'                      **K.B. Elevation (ft):** 2837'  
**Logged Interval (ft):** NA                      **To:** NA                      **Total Depth (ft):** 5400'  
**Formation:** MISSISSIPPIAN "ST. LOUIS"  
**Type of Drilling Fluid:** CHEMICAL/POLYMER/GEL. & MUD DISPLACEMENT @ 2922'.

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**OPERATOR**

**Company:** Falcon Exploration, Inc. KCC #5316  
**Address:** 125 North Market Street, Ste. #1252  
Wichita, Kansas 67202

**GEOLOGIST**

**Name:** David P. Williams, P.G. #88 KSBTP  
**Company:** DW Energy, LLC (DWE)  
**Address:** 312 North Broadview Street  
Wichita, Kansas 67208

## CASING & DEVIATION

Surface Casing: Spud at 7:45 pm on 12/29/14. Drilled 12-1/4" to 1883'. Ran 44 joints of new 24#, 8-5/8" casing. Tallied 1867.17'. Set at 1878' KB. Welded straps on GS & bottom 3 joints, then tack welded all collars. Cemented with 460 sks A-Conn; 3% CC, 1/4# FS. Tailed with 150 sks Premium Plus; 2% CC. Cement did circulate. Plug down at 1:30 pm on 12/01/14 Basic Energy Svcs Cementing ticket #05215. Centralizers (6) ;11;18;24;32;37. Baskets (2) 2;24.

Deviation Survey's: @ 1883' = 3/4 degree; @ 5108' = 3 degrees; @ 5180' = 4 degrees; @ 5212' = 4 1/2 degrees; @ 5400' = 3 degrees.

Plugging Data: Received plugging orders 12/11/14 from (Kenny Sullivan). Heavy mud in hole. Top of junk in hole 5125'. Heavy mud in hole. Bottom plug at 1920' with 50 sks. 2nd plug at 810' with 40 sks, top plug at 60' with 20 sks. Plugged RH w/30 sks, MH w/20 sks. Cement was 60/40 POZ with 4% Gel. Plugging complete at 8:45 pm on 12/11/14. Basic Energy Svcs Cementing ticket #05095. Sterling reported to KCC (Eric MacLaren) on 12/12/14.

## DSTs

~~DST # 1~~ Interval: 5124'-5180'. Times: 5"-90"-60"-180"; Blow: IF= BOB/1.5". BOB/4" Blow Back (ISIP). FF= BOB/0.5". With GTS @ 10.5" (See Gauge Report Below). BOB Blowback (FSIP).

Recovery: 3860' GIP & 1230' TF: 360' GSMCO (21% G & 74% O & 5% M); 310' GHMCO (8% G, 56% O & 36% M); 60' GHOCM (8% G, 32% O, & 60% M).

Pressures: IH=2493#; FH=2492#; IF=134-140#; FF=189-428#; ISIP=818#; FSIP=814#; Temp.=126 degrees. F.; API Oil Grv.=26 degrees. F..

FF Gas Gauge: @ 20"=2.3 Mcf; @ 50"=TSTM.

~~DST #2~~ Interval: 5182'-5212'. Times: 5"-90"-60"-180"; Blow: IF= Good/2' Build BOB/2.5". No Blow Back (ISIP). FF=Good /1" Builf/BOB/8.5". Had 3" Blowback (FSIP).

Recovery: 1110' GIP. & 740' TF: 45" SO & WCMO (9% O & 17% Wtr & 74% M); 65' OHMCW (14% O, 46% Wtr. & 40% M); 320' SMCW (w/Tr O) 93% Wtr & 7% M); 310' Wtr. (100% Wtr.).

Pressures: IH=2479#; FH=2471#; IF=52-109#; FF=136-372#; ISIP=850#; FSIP=825#; Temp.=128 degrees F.; Chl.=144,000 Ppm; PH=5.5; Rw=.10 @ 65 deg. F..

~~DST #3~~ Interval 5370' - 5400'. Miss-Run. Tool Stuck. No Recovery.

## Comments

From the negative results from DST #3 as the tool was lost in hole. This well was plugged and abandoned.

Respectfully submitted,

David P. Williams, P. G. # 88 KSBTP

### ROCK TYPES

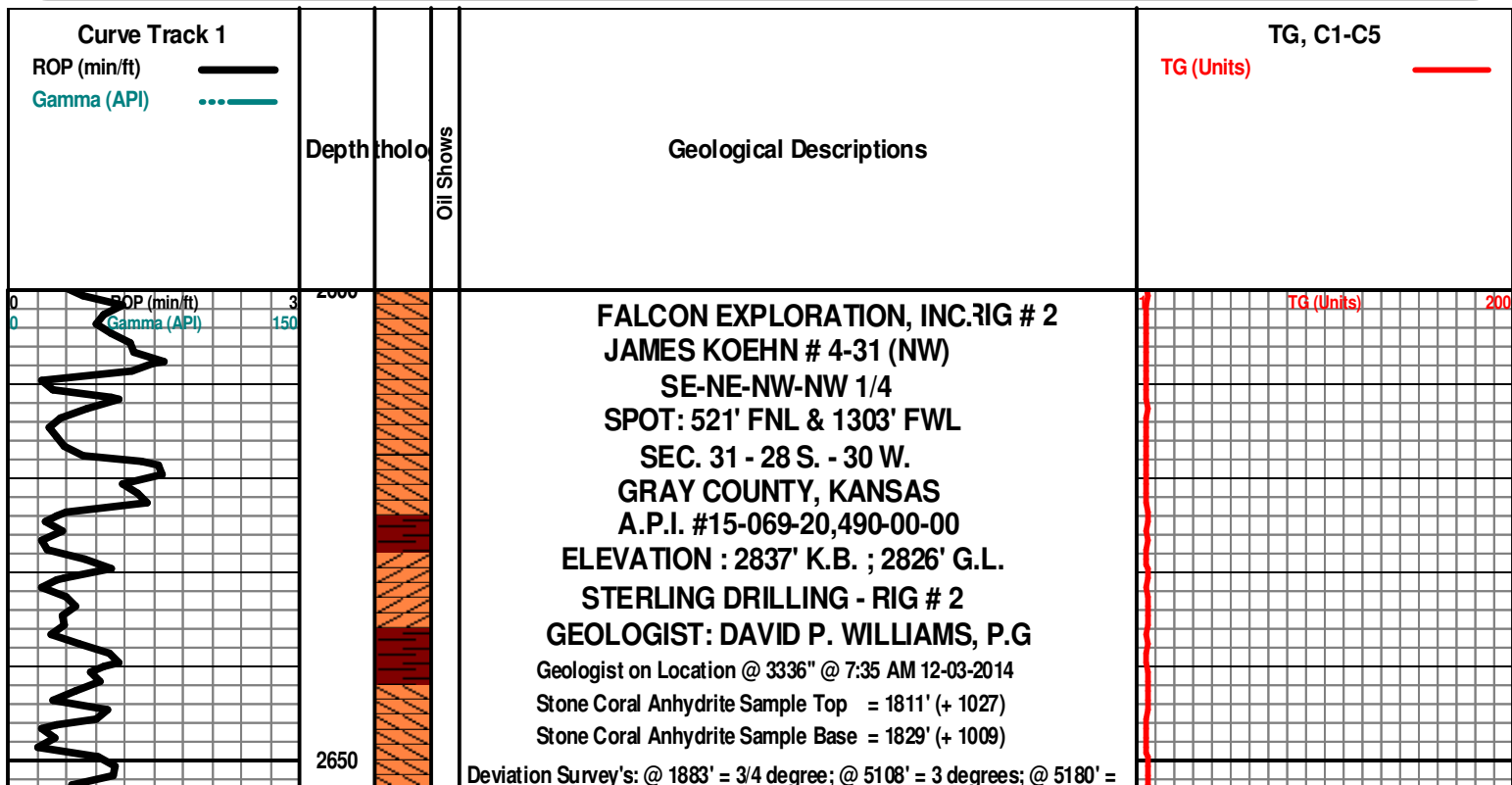
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	Bent		Coal		Gyp		Red shale		Sltst
	Brec		Congl		Igne		Salt		Ss
	Carb sh		Dol		Lmst		Shale		Till
	Cht		Grn sh		Meta		Shcol		

### ACCESSORIES

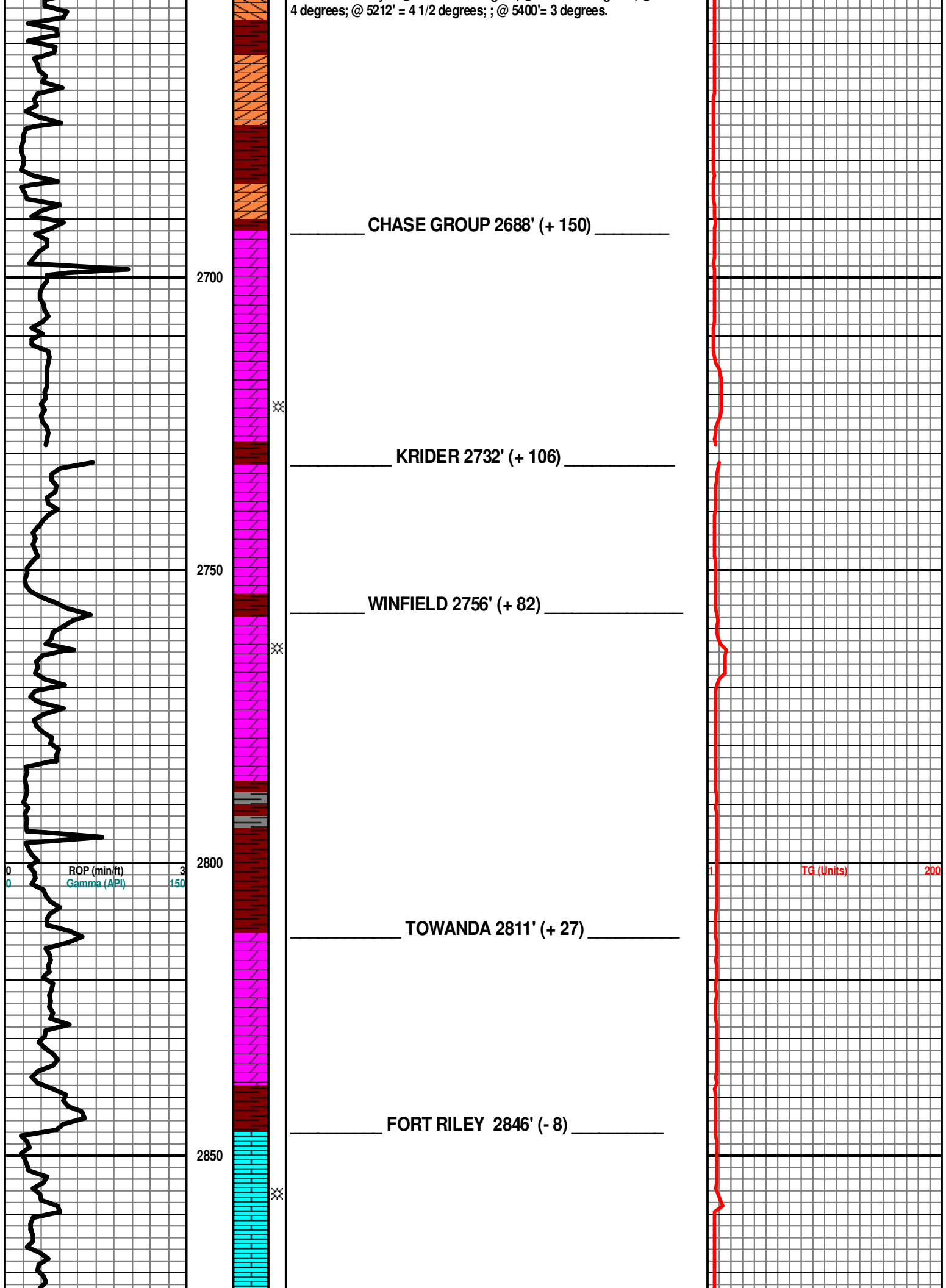
MINERAL		FOSSIL		STRINGER		TEXTURE	
	Anhy		Algae		Anhy		Boundst
	Arggrn		Amph		Arg		Chalky
	Arg				Bent		Cryxln
	Bent				Coal		Earthy
	Bit				Dol		Finexln
	Brecfrag				Gyp		Grainst
	Calc				Ls		Lithogr
	Carb				Mrst		Microxln
	Chtdk				Sltstrg		Mudst
	Chtlt				Ssstrg		Packst
	Dol						Wackest
	Feldspar						
	Ferrpel						
	Ferr						
	Glau						
	Gyp						

### OTHER SYMBOLS

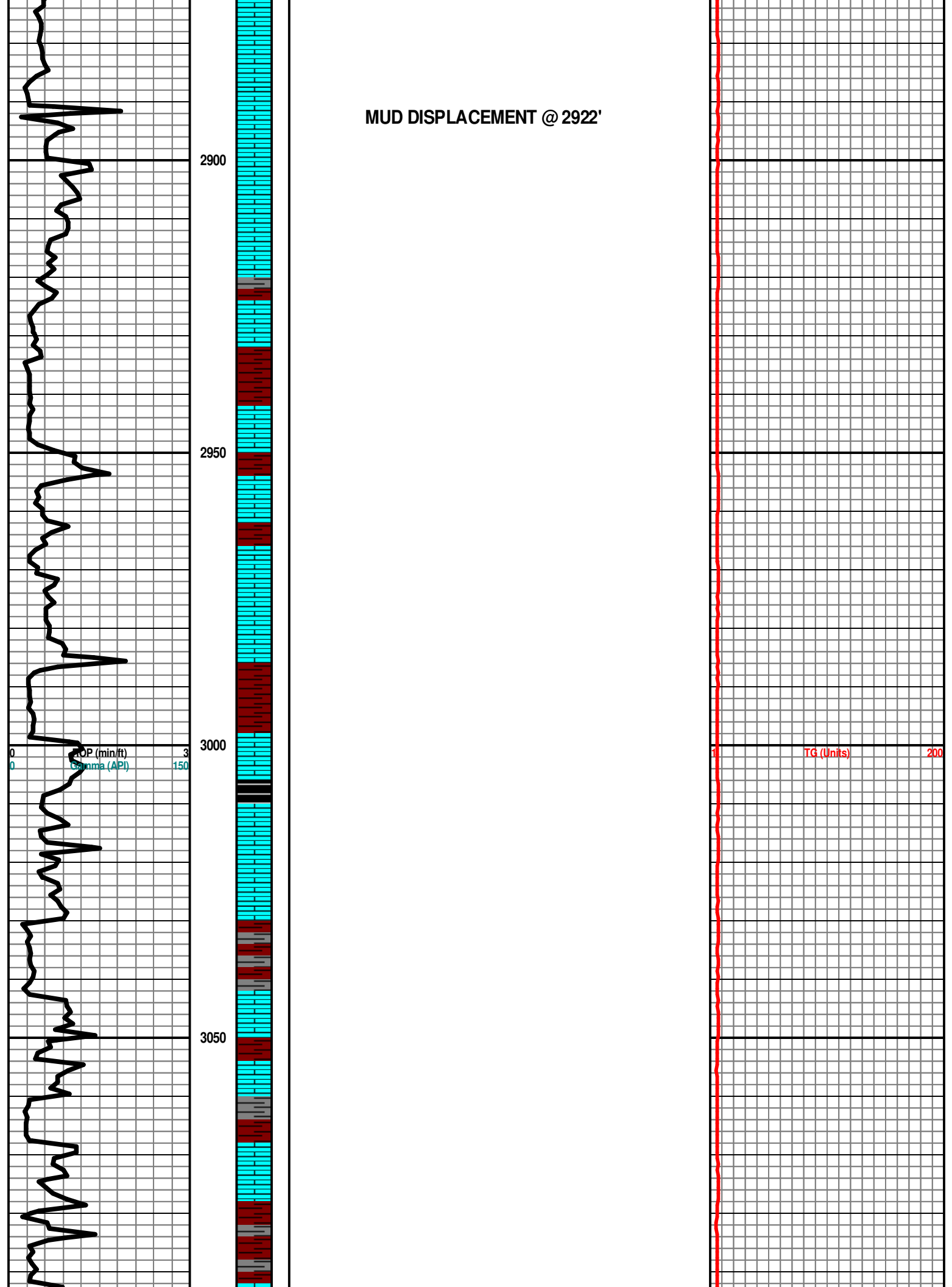
POROSITY		SORTING		ROUNDING		EVENT	
	Earthy		Vuggy		Rounded		Rft
	Fenest		Well		Subrnd		Sidewall
	Fracture		Moderate		Subang		
	Inter		Poor		Angular		
	Moldic						
	Organic						
	Pinpoint						
				<b>OIL SHOW</b>			
					Gas show	<b>INTERVAL</b>	
							Dst
							Dst_alt



4 degrees; @ 5212' = 4 1/2 degrees; ; @ 5400' = 3 degrees.



# MUD DISPLACEMENT @ 2922'



3100

COTTONWOOD 3138' (-300)

3150

NEVA 3182' (-344)

3200

TG (Units)

200

ROP (min/ft) 3  
Gamma (API) 150

3250

Note: All samples have been lagged to depth by calculated time.

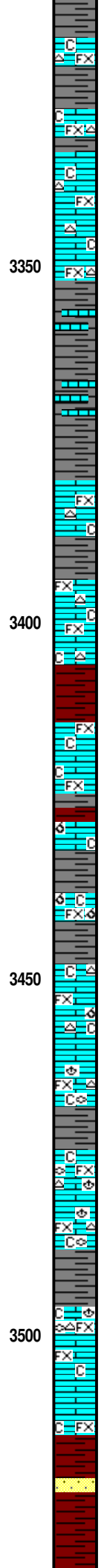
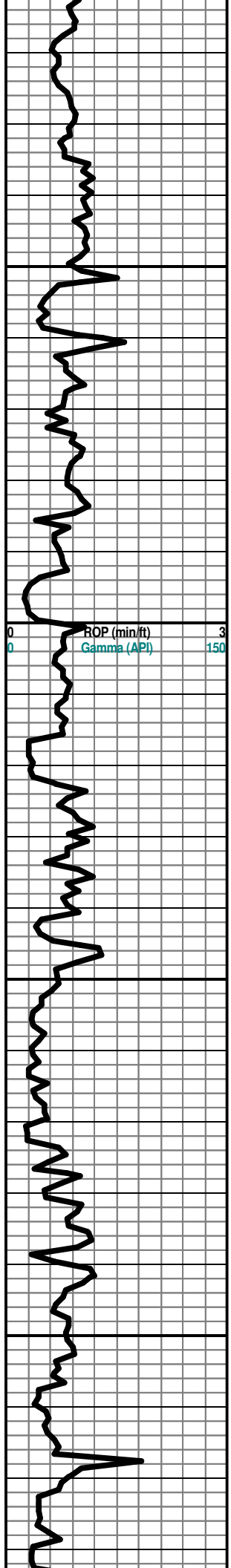
Begin 31' Sample Examination @ 3300'.

Ls Wht-Crm-Gry FxIn Poor Pin-Pt lXln Por Chalky Sh Red-Maroon -Gry  
Soft-Fissil No Odor No Flor No Stn NS

3300

FORAKER 3294' (-456)

Ls Wht-Crm-Gry FxIn Poor Pin-Pt lXln Por Cht Wht Fos (Spicule) Chalky Sh  
Red-Maroon-Gry Soft-Fissil No Odor No Flor No Stn NS



Ls Wht-Crm-Gry FxIn Poor IxIn Por Dns Micrite Cht Wht Translu- Op Shp  
Vit Chalk Sh Char-Gry-Red-Maroon-Lt Grn Soft-Fissil No Odor No Stn No  
Flor NS

Ls Wht-Crm-Gry FxIn Poor IxIn Por Dns Micrite Cht Wht-Clear Translu-Op  
Shp Vit Chalk Sh Char-Gry-Red-Maroon-Lt Grn Soft-Fissil No Odor No Stn  
No Flor NS

**FALL CITY 3414' (- 477)**

Ls Crm-Wht-Gry FxIn Poor IxIn Por Dns Micrite Cht Wht-Clear Transp-Op  
Shp Vit Chalk Sh Char-Gry-Red-Maroon-Lt Grn Soft-Fissil No Odor No Stn  
No Flor NS

Ls Wht-Crm-Gry FxIn Grad Pin-Pt Por Fair-Med IxIn Por Grad Poor OOM  
Por Poor Dissolu Poor Leaching Cht Gry Op Shp Vit Fos (Fuss) Chalky Sh  
Char-Gry Fissil No Odor No Stn No Flor NS

LS Crm-Gry FxIn IxIn Por Micritic Dsn No Vis Por Barren Fos (Brach,  
Fuss) Chalk Sh Grn-Red Soft Fissil No Odor No Flor No Stn Fair ? Min  
Flor (Lt Grn) NS

**ROOT SHALE 3514' (- 677)**

TG (Units) 200

@ 3496' LAG  
DEPTH CHANGE  
OUT EXTRACTOR  
FILTER & GAS  
TEST. 77 UNITS  
OBSERVED.

Mudco Ck @ 3527'  
@ 9:20 AM 12/03/14

STOTLER 3533' (- 695)

Vis - 90-

STOILEN 3533 (-693)

VS = 30;  
WT = 8.95;  
PV = 22;  
YP = 25;  
WL = 9.2;  
Cake = 1;  
Chl = 5,800;  
Cal = 120;  
Sol = 3.9%  
LCM = 2#;  
DMC = \$ 5,040.20;  
CMC = \$11,498.45

30" CFS @ 3570' Ls Wht-Crm-Gry Microxln-Fxln Ixln Por Micritic Dsn Barren Grad Fair OOM Por (w/OOL (Small) in pl) Fair InterOOM/OOL Por Fair Leaching Fair Disolu Chalk Sh Grn-Red Soft No Odor Med-Good Flor No Stn NS

60" CFS @ 3570' Ls Wht-Crm-Gry Microxln-Fxln Ixln Por Micritic Dsn Barren Grad Fair OOM Por (w/OOL (Small) in pl) Fair InterOOM/OOL Por Fair Leaching Fair Disolu Fos (Fuss, Spicule) Chalk Sh Grn-Red Soft No Odor Med-Good Flor No Stn NS

TARKIO 3600' (- 763)

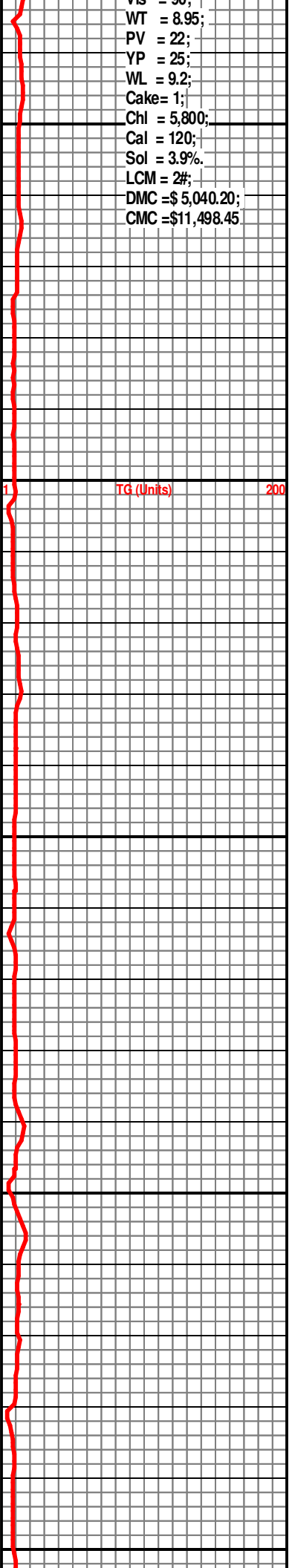
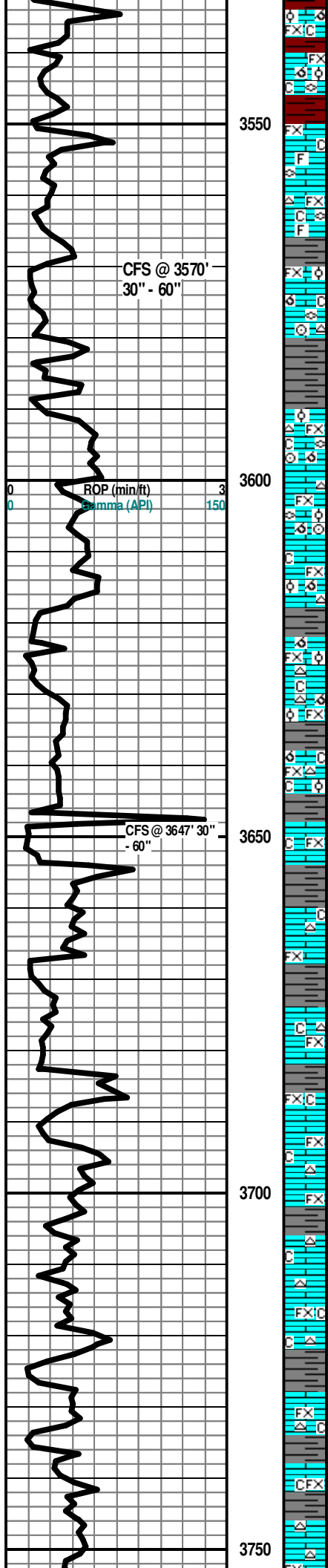
30" CFS @ 3647' Ls Wht-Crm Fxln Ixln Por Grad Fair OOM Por (w/OOL in pl) Fair-Med InterOOM Por Poor Disolu Cht Wht Op Shp Vit Fos (Crin, Fuss) Abd Chalk Sh Grn-Red-Char Soft Fissil No Odor No Stn Fair-Med Flor (Lt Grn-Lt Wht) NS

60" CFS @ 3647' Ls Wht-Crm Fxln Ixln Por Grad Fair OOM Por (w/OOL in pl) Fair-Med InterOOM Por Poor Disolu Cht Wht Op Shp Vit Chalk Sh Grn-Red-Char Soft Fissil No Odor No Stn Fair-Med Flor (Lt Grn-Lt Wht) NS

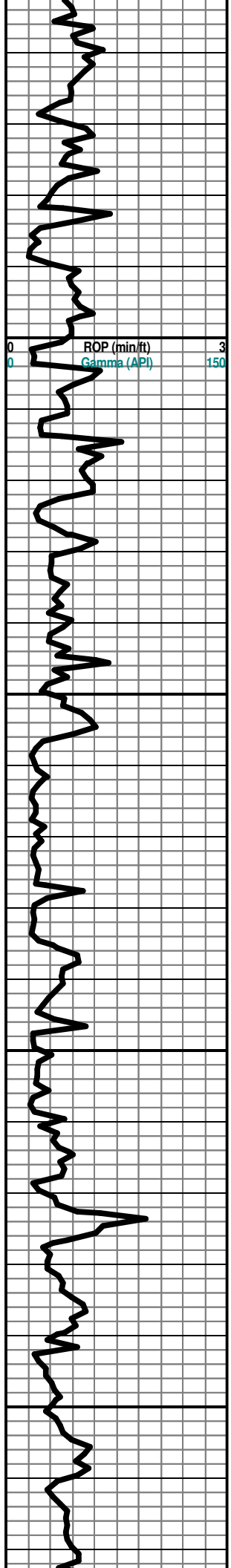
BERN 3674' (- 837)

Ls Wht-Gry Fxln Poor Ixln Ppt Por Grad Micritic Dsn Barren Chalk Sh Gry-Char-Tr/ Blk-Carb Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Gry Fxln Poor Ixln Por Mostly Micritic Grad Poor Ppt Por Dsn Barren Cht Wht-Brn Op Shp Vit Chalk Sh Gry-Char Soft No Odor No Flor No Stn NS







Ls Wht-Crm FxIn Poor IxIn Por Grad Micritic Dsn Barren Chalk Sh  
Char-Grn-Aqua-Red No Odor No Flor No Stn NS

**TOPEKA 3804' (- 967)**

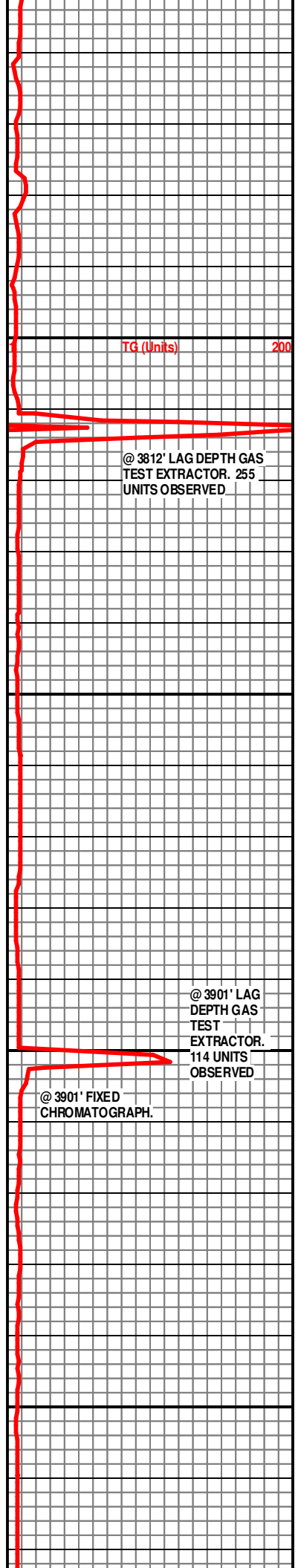
Ls Wht-Crm-Gry FxIn Poor IxIn Por Grad Micritic Dsn Barren Chalk Abd  
Cht Wht Op Shp Vit Sh Char-Grn Fissil Soft No Odor No Flor No Stn NS

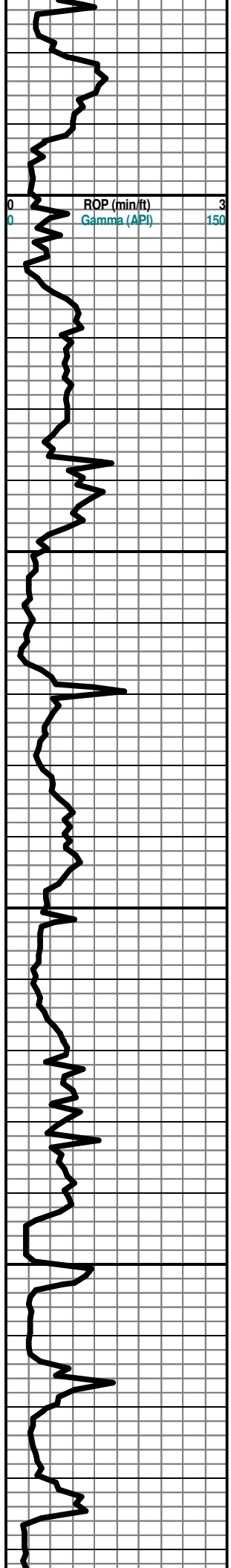
Ls Wht-Crm FxIn Poor IxIn Por Grad Micritic Dsn Barren Chalk Wht Abd  
Cht Wht-Gry Transl-Op Shp Vit Sh Char-Red Fissil Soft No Odor No Flor  
No Stn NS

Ls Wht-Crm-Gry FxIn Poor IxIn Por Mostly Micritic Dsn Barren Fos (Fuss)  
Chalk Wht Abd Sh Char-Grn Fissil No Odor No Flor No Stn NS

Ls Wht-Crm MicroIn-FxIn IxIn Por Micritic Dsn Barren Grad Poor OOM  
Por Poor InterOOM Por Poor Leaching Poor Disolu Chalk Sh Char-Gry No  
Odor No Flor No Stn NS

Ls Wht-Gry FxIn Poor IxIn Por Mostly Micritic Dsn Barren Chalk Abd Cht  
Gry Transl-Op Shp Vit Sh Char-Grn Fissil-Soft No Odor No Flor No Stn  
NS





4000  
4050  
4100  
4150



LeCOMPTON 4002' (- 1165)  
 Ls Wht-Crm-Gry FxIn Dns Micrite Grad Poor Ppt IxIn Por Chalk Abd Fos  
 (Fuss) Sh Gry-Char Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm FxIn Poor IxIn Por Grad Micritic Dsn Barren Chalk Abd Sh Blk  
 Carb Fissil No Odor No Flor No Stn NS

QUEEN HILL 4064' (- 1227)  
OREAD 4068' (- 1231)

Ls Crm-Gry FxIn Poor-Fair IxIn Por Chalk Sh Char-Grn Fissil No Odor No  
 Stn No Flor NS

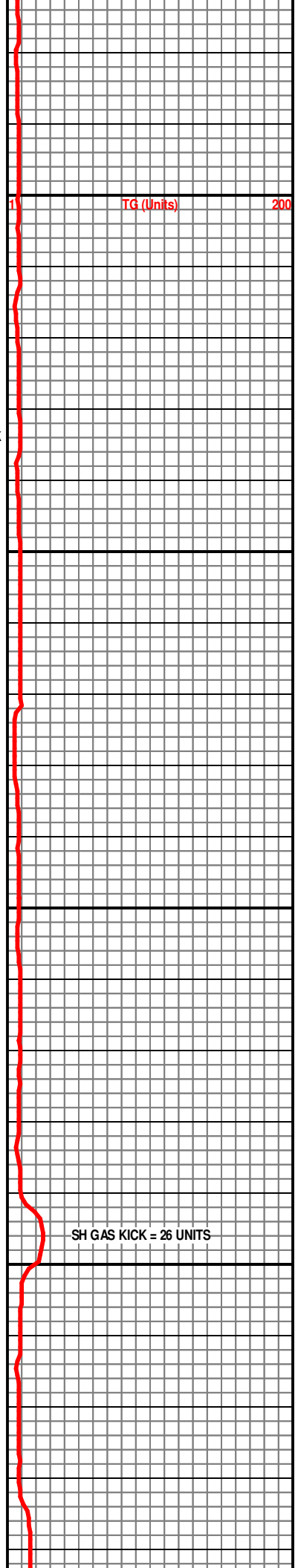
Ls Crm-Gry FxIn Poor-Fair IxIn Por Cht Wht-Tan (Banded) Op Shp Vit  
 Chalk Abd Sh Char-Grn Fissil No Odor No Stn No Flor NS

HEEBNER 4142' (- 1305)  
 Sh Blk Carb-Gry-Char Soft-Fissil Ls Wht-Crm-Gry FxIn Dns Micrite Grad  
 Poor Ppt IxIn Por Chalk No Odor No Flor No Stn SG in Blk Sh

TORONTO 4162' (- 1325)

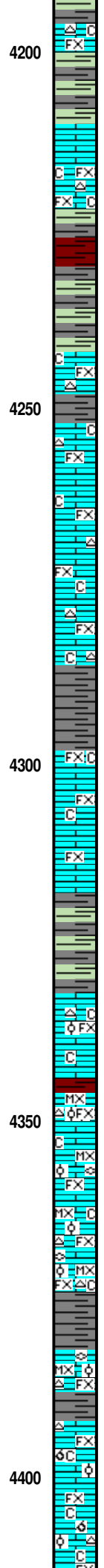
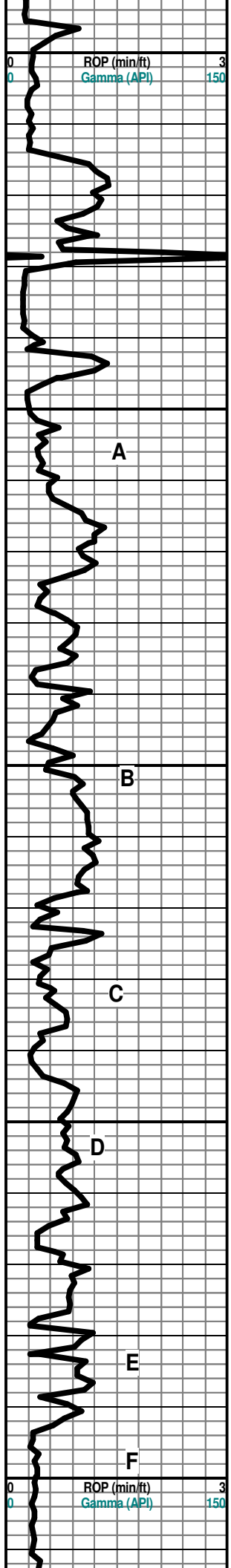
DOUGLAS 4180' (- 1343)

Sh Char-Drab Grn-Aqua-GrySoft-Fissil Ls Crm FxIn Dns Micrite Poor IxIn



TG (Units) 200

SH GAS KICK = 26 UNITS



Por Chalk Cht Wht Translu-Op Shp Vit Sh Blk Carb-AA Fissil No Odor No Stn No Flor NS

Ls Crm-Gry FxIn Dns Micrite Poor IxIn Por Chalk Cht Wht Translu- Op Shp Vit Sh Char-Drab Grn/Gry Fissil No Odor No Stn No Flor NS

IATAN (BROWN LIME) 4242' (- 1405)

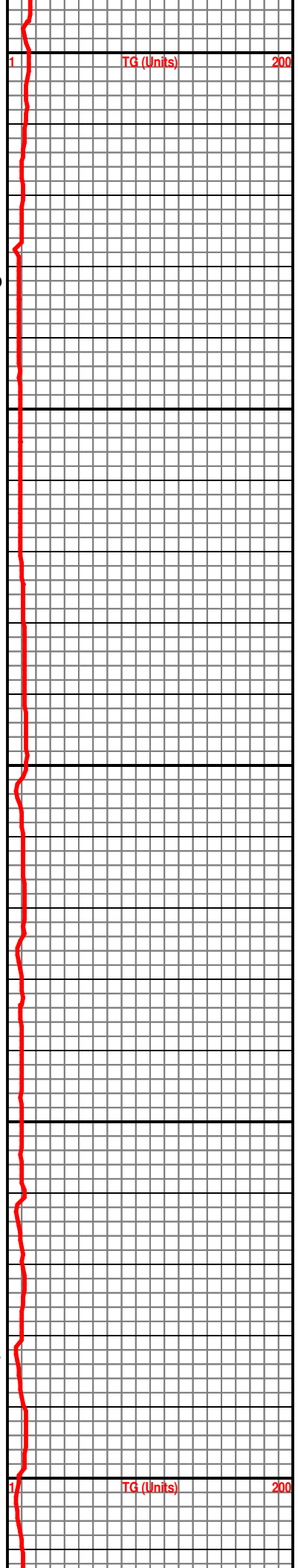
LANSING 4252' (- 1415)

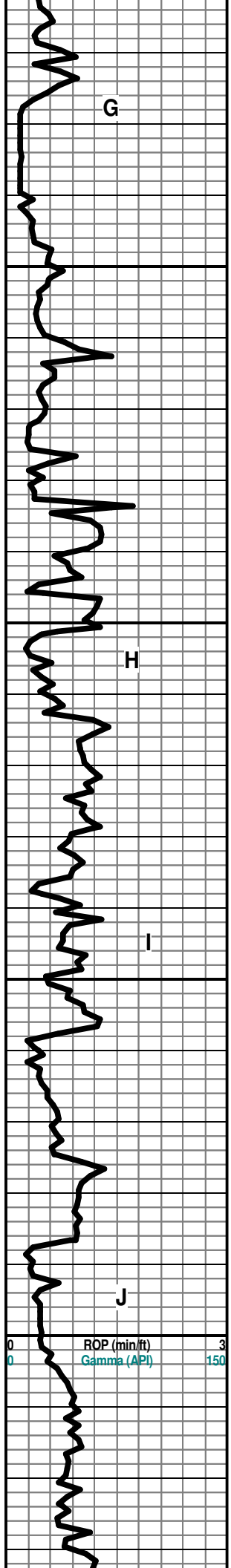
Ls Wht MicroxIn-FxIn Micritic Grad Fair InterOOL Por (w/Small OOL in pl) Poor-Fair Leaching Por Barren Fair Flor (Lt Grn-Wht) Cht Wht-Gry Op Shp Vit Abd Chalk Sh Char-Gry-Grn Fissil No Odor Fair Scat ? Min Flor No Stn NS

Ls Crm-Gry MicroxIn-FxIn Poor IxIn Por Grad Micritic Cht Wht Op Shp Vit Chalk Wht Sh Char-Gry Fissil No Odor No Stn ? Sli Min Flor NS

Ls Wht-Crm MicroxIn-FxIn Poor IxIn Por Grad Grad Poor InterOOL Por (w/Small Ooids in pl) Chalk Sh Char-Gry/Grn-Red Fissil No Odor No Stn Sli Flor (Lt Grn) NS

Ls Wht-Crm MicroxIn-FxIn Poor IxIn Por Grad Micritic Grad Poor InterOOL Por (w/Small Ooids in pl) Cht Wht (w/Fos(Fuss) Includ) Op Shp Vit Chalk Sh Char-Gry Fissil No Odor No Stn ? Sli Min Flor NS





Ls Wht-Crm-Tan Fxln Poor OOM Por (w/OOL (Small-Med Ooids Includ in pl) Poor Inter-OOM/OOL Por Poor Leaching Cht Wht Op Shp Vit Sh Char-Gry-Maroon Fissil No Odor No Flor No Stn NS

4450

Ls Crm-Gry Fxln Good OOM Por Grad Poor Ixln Por Micritic Barren Dns Chalky Sh Gry-Grn-Aqua Fissil No Odor No Stn No Flor NS

4500

Sh Char-Gry-Blk Carb Fissil Ls Crm-Tan Fxln Micritic Grad Fair-Med OOM (w/Small OOL in pl) Fair Dissolu Barren Cht Wht-Drk Gry Op Shp Vit Chalky No Odor No Flor No Stn NS

H

4550

Ls Crm-Tan Fxln Micritic Grad Fair-Med OOM (w/Small OOL in pl) Por Fair Dissolu Barren Cht Wht-Drk Gry Op Shp Vit Chalky Sh Char-Gry-Blk Carb Fissil No Odor No Flor No Stn NS

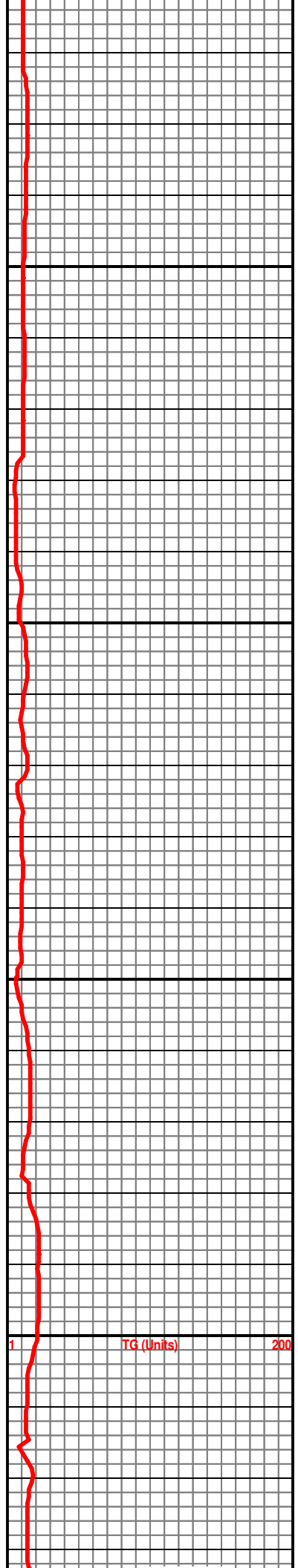
I

4600

Ls Wht-Crm Fxln Micritic (w/Pyr Includ Cht Wht-Drk Gry (w/ Fos Includ) Op Shp Vit Chalk Abd Sh Char-Gry-Grn-Blk Carb Fissil No Odor No Flor No Stn NS

J

ROP (min/ft) 3  
Gamma (API) 150



STARK SHALE 4636' (- 1799)

SH GAS KICK = 78 UNITS.

KANSAS CITY "SWOPE" (K) 4646' (-1809)

Ls Crm-Gry MicroIn-FxIn Dns Micrite Chalky Sh Char-Gry Fissil No Odor No Stn Tr ? Min Flor NS

Ls Crm-Tan FxIn Poor OOM Por (w/OOL in pl) Poor-Fair Dissolu Grad Micritic Chalk Sh Blk Carb-Char-Gry Fissil No Odor No Flor No Stn NS

Sh Char-Gry Fissil Ls Crm-Tan-Gry FxIn Poor IxIn Por Micritic Dns Barren Grad Poor OOM (w/Small OOids in pl) Por Chalk Fos (Fuss) No Odor No Flor No Stn NS

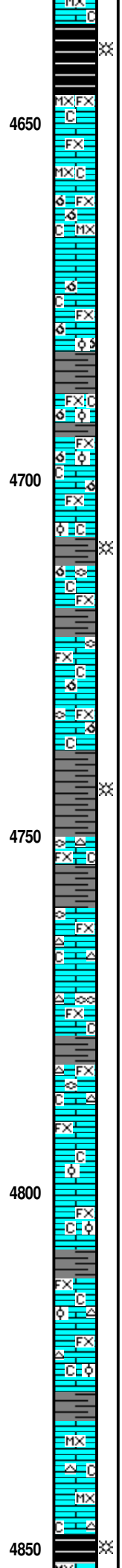
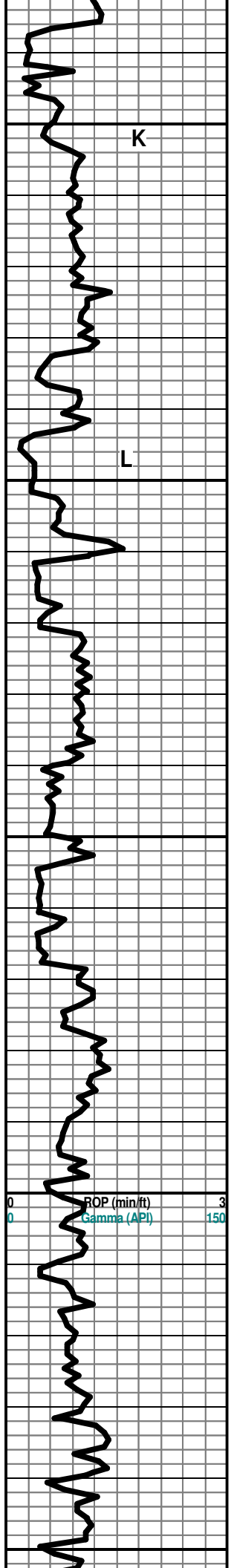
MARMATON 4761' (- 1924)

Ls Wht-Crm FxIn Poor IxIn Por Micritic Dns Barren Cht Wht (w/Fos (Fuss) Includ) Chalk Wht Soft Sh Char-Gry Fissil AA No Odor No Flor No Stn NS

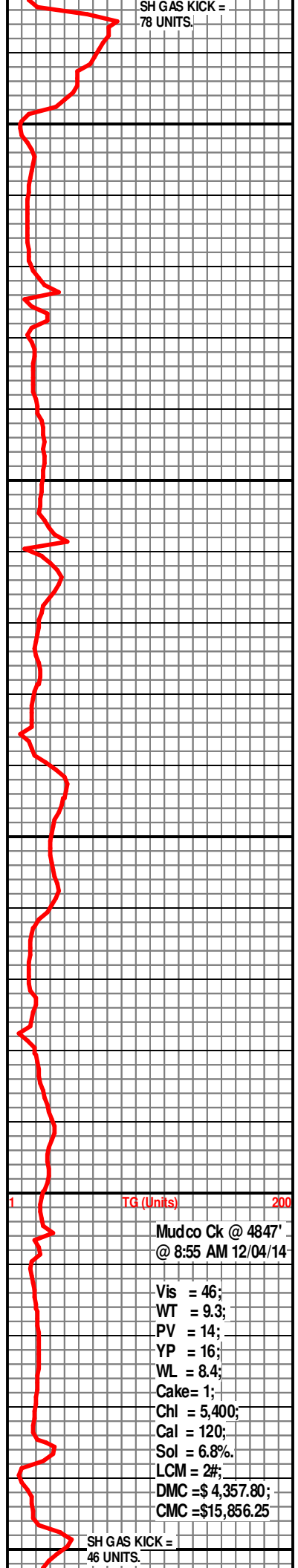
Ls Crm-Tan-Gry FxIn Poor IxIn Por Micritic Dns Barren Grad Poor OOL Por (w/Small OOids in pl) Poor Dissolu Cht Wht Op Shp Vit Chalk Sh Gry/Grn Fissil No Odor No Flor No Stn NS

PAWNEE 4852' (- 2015)

SH GAS KICK = 46 UNITS.

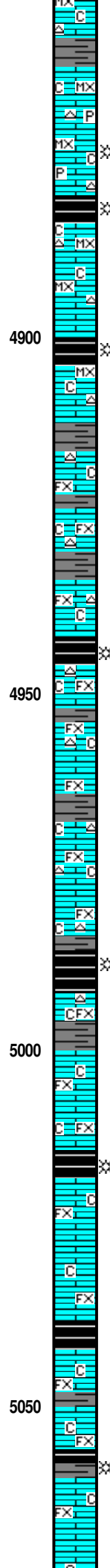
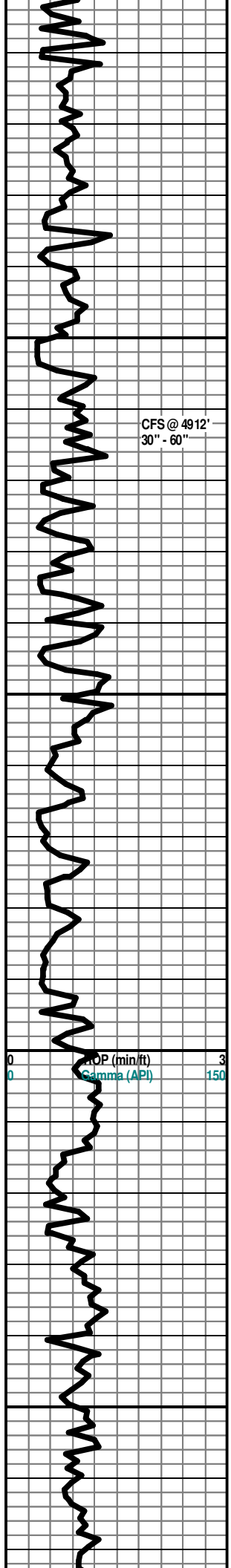


Descriptive text for geological units: STARK SHALE, KANSAS CITY "SWOPE", MARMATON, and PAWNEE.



Mudco Ck @ 4847' @ 8:55 AM 12/04/14

- Vis = 46; WT = 9.3; PV = 14; YP = 16; WL = 8.4; Cake = 1; Chl = 5,400; Cal = 120; Sol = 6.8%; LCM = 2#; DMC = \$4,357.80; CMC = \$15,856.25



Ls Wht-Crm-Tan MicroIn-FxIn Poor Granular IxIn Por Micritic Dns Barren  
 Cht Wht-Lt Gry Op Shp Vit Chalk (Abd) Sh Blk Carb-Char-Gry- Drab Grn  
 (w/Pyr Incls) Fissil Faint ? Odor Sli ? Min Flor No Stn ? SG

**LABETTE 4880' (- 2053)**

30" CFS @ 4912' Ls Wht-Crm MicroIn Poor IxIn Por Micritic Dns Barren  
 Cht Wht- Lt Wht-Crm-Tan Op Shp Vit Chalk (Abd) Sh Blk  
 Carb-Char-Gry-Drab Grn Fissil No Odor Sli ? Min Flor No Stn NS

**CHEROKEE 4900' (- 2073)**

60" CFS @ 4912' Sh Blk Carb-Char-Gry-Drab Grn Fissil Ls Wht-Crm  
 MicroIn Poor IxIn Por Micritic Dns Barren Cht Wht-Lt Wht-Crm-Tan Op  
 Shp Vit Chalk No Odor Sli ? Min Flor No Stn NS

**SECOND CHEROKEE SHALE 4942' (- 2115)**

Sh Blk Carb-Gry Fissil Ls Crm-Wht FxIn Poor IxIn Por Micritic Dns Barren  
 Cht-Amber Op Shp Vit Chalky No Odor No Flor No Stn NS

**THIRD CHEROKEE SHALE 4984' (-2157)**

Sh Blk Carb-Gry Fissil Ls Crm-Tan FxIn Poor IxIn Por Micritic Dns Barren  
 Cht-Amber Op Shp Vit Chalky No Odor No Flor No Stn NS

Ls Crm-Wht-Tan FxIn Poor IxIn Por Micritic Dns Barren Cht Amber-Wht  
 Translu-Op Shp Vit Chalk Sh Blk Carb-Gry Fissil No Odor No Flor No Stn  
 NS

GAS KICK =  
35 UNITS.

SH GAS KICK =  
46 UNITS

SH GAS KICK  
= 74 UNITS

SH GAS KICK  
= 79 UNITS

SH GAS  
KICK= 53  
UNITS

SH GAS KICK=  
49 UNITS

SH GAS KICK=  
67 UNITS

**~DST # 1~**

Interval: 5124'-5180'.  
 Times: 5'-90"-60"-180";  
 Blow: IF= BOB/1.5". BOB/4"  
 Blow Back (ISIP).  
 FF=BOB/0.5". With GTS @  
 10.5" (See Gauge Report  
 Below). BOB Blowback  
 (FSIP).

Recovery: 3860' GIP. &  
 1230' TF: 360' GSMCO(21%  
 G & 74% O & 5% M); 310'  
 GHMCO (8% G, 56% O &  
 36% M); 60' GHOCM (8% G,  
 32% O, & 60% M)

CFS @ 4912'  
30" - 60"

ROP (min/ft) 3  
 Gamma (API) 150

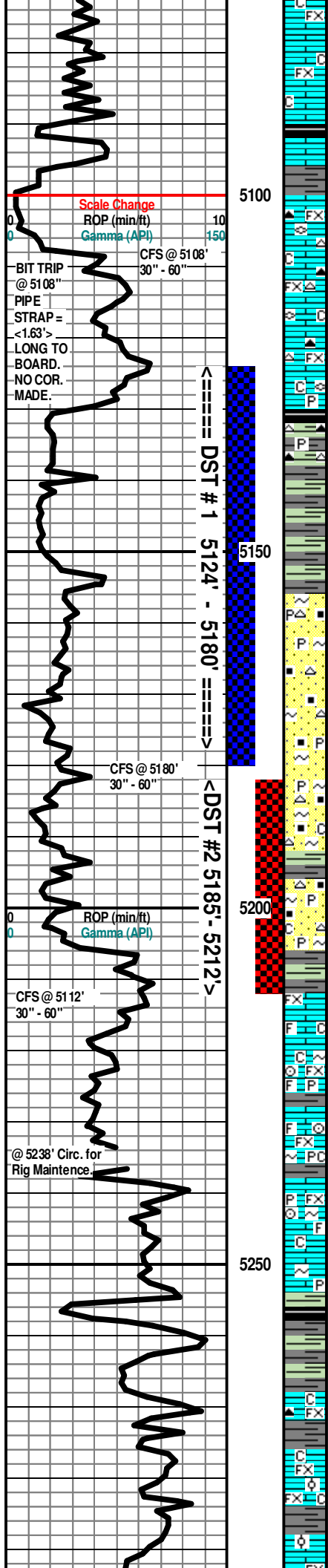
TG (Units) 200

4900

4950

5000

5050



30" CFS @ 5108' Ls Crm-Wht-Tan FxIn Por Micritic Dns Barren Cht Amber-Gry Translu-Op Shp Vit Chalk Sh Blk Carb- Char-Gry Fissil No Odor No Flor No Stn NS

60" CFS @ 5108' Ls Crm-Wht-Tan FxIn Poor IxIn Por Micritic Dns Barren Cht Amber-Gry Translu-Op Shp Vit Chalk Fos (Fuss) Sh Blk Carb-Char-Gry Inc Fissil No Odor No Flor No Stn NS

75" CFS @ 5108' Ls Crm-Wht-Tan FxIn Poor IxIn Por Micritic Dns Barren Cht Amber-Gry Translu-Op Shp Vit Chalk Fos (Fuss) Sh Blk Carb-Char-Gry Inc Fissil No Odor No Flor No Stn NS

**Begin 10' Samples Wet & Dry @ 5140'**

Ls Crm-Wht-Tan FxIn Poor IxIn Por Micritic Dns Barren Cht Amber-Gry Translu-Op Shp Vit Chalk Fos (Fuss) Sh Blk Carb-Char-Gry Inc "Gummy" Fissil No Odor No Flor No Stn NS

**MORROW SHALE 5130' (- 2293)**

Sh Blk Carb-Gry-Drab Grn Fissil "Gummy" Ls Crm-Tan MicroxIn Poor IxIn Por Micritic Dns Barren Chalk Cht Drk Amber (w/Fos Inklus) Translu Shp Vit Pyr Mass No Odor No Flor No Stn NS

Sh Blk Carb-Gry-Drab Grn Fissil "Gummy" Ls Crm-Tan MicroxIn Poor IxIn Por Micritic Dns Barren Chalk Cht Drk Amber (w/Fos Inklus) Translu Shp Vit Pyr Mass No Odor No Flor No Stn NS

**MORROW SAND 5156' (- 2319)**

Qtz Ss Clear-Wht Fair IGrn Por Ang-Sub Ang (cl. = 350-500 Microns = 1.5 - 1.0 Ø) Med-Well Sort Sli Tr CaCO3 Matrix (w/Carb & Glacu Inklus) Friable (w/SG & SFO (Lt Brn)) Cht Wht Op Shp Vit Sh AA Pyr Mass No Flor No Odor Sli ? Lt Brn Stn) SG & SFO

30" CFS @ 5180' Qtz Ss Wht-Clear Med-Lg IGrn Por Ang-Sub Ang-Sub Rd (vcL = 1000-1410 Microns = 0.0 - 5 Ø) Well Sort Sli-None CaCO3 Matrix (w/Carb & Glacu Inklus) V Friable (w/Abd Indiv Sd Grns Present-w/GSG & GSFO (Lt Brn)) Cht Wht Op Shp Vit Sh AA Pyr Mass No Flor Faint Odor Fair-Med (Lt Brn Stn) GSG & GSFO

60" CFS @ 5180' Qtz Ss Wht-Clear Med-Lg IGrn Por Ang-Sub Ang-Sub Rd (cJ = 710-1000 Microns = 0.5 - 0.0 Ø) Well Sort Med CaCO3 Matrix (w/Carb & Glacu Inklus) Friable (w/Abd Indiv Sd Grns Present-w/GSG & GSFO (Lt Brn)) Cht Tan Op Shp Vit Sh AA Pyr Mass No Flor ? Faint Odor Fair-Med (Lt Brn Stn) GSG & GSFO

30" CFS @ 5212' Qtz Ss Clear-Wht Med-Lg IGrn Por Ang-Sub Ang (vcL = 1000-1410 Microns = 0.5 - 0.5 Ø) Well Sort Tr/CaCO3 Matrix (w/Carb & Glacu Inklus & Hvy Gilsonitic Residue) V Friable (w/Abd Indiv Sd Grns Present-w/GSG & GSFO (Lt Brn)) Cht Amber-Yell Translu-Op Shp Vit (w/Pyr Inklus) Chalky Sh AA No Flor Faint Odor Med-Good (Lt Brn & Drk Blk Stn) GSG & GSO

60" CFS @ 5212' Qtz Ss Clear-Gry-Wht-Lt Brn Med-Lg Inc Frosted-Clear Grns Ang-Sub Ang Grad Med-Lg Grns & Clusters (w/Carb & Glacu Inklus & Hvy Gilsonitic Residue) AA Good Igrn Por V Friable Med-Well Sort GSG & GSFO Cht (Tr Only) Pyr Mass Chalky Sh AA Faint Odor Abd SFO in Spl Tray GSG & GSFO

Sh Char-Drab Grn-Gry-Aqua-Drk Brn Fissil Ls Wht FxIn Dns Micrite Cht Drk Blk Op Shp Vit Chalky No Odor No Stn No Flor NS

Ls Wht-Crm FxIn Dns Micrite (w/Chlorite or Glacu Inklus) Grad Fair-Med IxIn Ppt Pt Por Fos (Crin) Pyr Mass Chalk Sh Char-Gry/Grn-Aqua Fissil No Odor No Flor NS

Ls Wht-Crm FxIn Dns Micrite (w/Chlorite or Glacu Inklus) Grad Fair-Med IxIn Ppt Pt Por Fos (Crin) Pyr Mass Chalk Sh Char-Gry/Grn-Aqua Fissil No Odor No Flor NS

Ls Wht-Crm FxIn Dns Micrite (w/Chlorite or Glacu Inklus) Grad Fair-Med IxIn Ppt Pt Por Fos (Crin) Pyr Mass Chalk Sh Char-Gry/Grn-Aqua Fissil No Odor No Flor NS

Ls Wht FxIn Dns Micrite (w/Chlorite or Glacu Inklus) Grad Fair-Med IxIn Ppt Pt Por Pyr Mass Chalk Sh Blk Carb-Char-Gry/Grn-Aqua Fissil No Odor No Flor NS

Sh Char-Gry-Grn (w/Pyr Inklus) Fissil Ls Wht-Grn/Gry MicroxIn Dns Micrite Fos (Crin) Chalk No Odor No Flor NS

**MISSISSIPPIAN "Ste. GEN" 5269' (- 2432)**

Sh Char-Drab Grn-Gry-Aqua-Drk Brn Fissil Ls Wht MicroxIn Dns Micrite Cht Drk Blk Op Shp Vit Chalky No Odor No Stn No Flor NS

Ls Wht-Gry FxIn Poor OOL Por (w/Small OOL in pl w/ Qtz Ss Crm-Tan VFGm Ang-Sub Ang Inklus (fL=125-177 Microns= 3.0-225 Ø) "Sandy OOL Ls" Barren Grad Ls CrmTan-Gry FxIn Dns Micrite Chalky Sh Char-Blk Carb-Gry-Drab Grn-Aqua Fissil No Odor No Stn No Flor NS

Ls Wht-Gry FxIn Poor OOL Por (w/Small OOL in pl w/ Qtz Ss Crm-Tan VFGm Ang-Sub Ang Inklus (fL=125-177 Microns= 3.0-225 Ø) "Sandy OOL Ls" Barren Grad Ls CrmTan-Gry FxIn

Pressures:  
 IH = 2493#;  
 FH = 2492#;  
 IF = 134-140#;  
 FF = 189-428#;  
 ISIP = 818#; FSIP = 814#;  
 Temp. = 126 deg. F.  
 API Grv.= 26 deg. F.  
 FF Gas Gauge:  
 @ 20" = 2.3 Mcf;  
 @ 50" = TSTM.

Mudco Ck @ 5180' @ 9:40 AM 12/05/14  
 Vis = 58;  
 WT = 9.25;  
 PV = 19;  
 YP = 20;  
 WL = 9.2;  
 Cake= 1;  
 Chl = 3,800;  
 Cal = 20;  
 Sol = 6.2%  
 LCM = 3#;  
 DMC = \$ 2,379.05;  
 CMC = \$18,235.30

Mudco Ck @ 5212' @ 10:00 AM 12/06/14  
 Vis = 64;  
 WT = 8.9#;  
 PV = 18;  
 YP = 19;  
 WL = 8.0;  
 Cake= 1;  
 Chl = 4,000;  
 Cal = 20;  
 Sol = 4.1%  
 LCM = 3.5#;  
 DMC = \$ 958.20;  
 CMC = \$19,193.50

GAS KICK = 33 UNITS

GAS KICK = 43 UNITS

GAS KICK = 169 UNITS

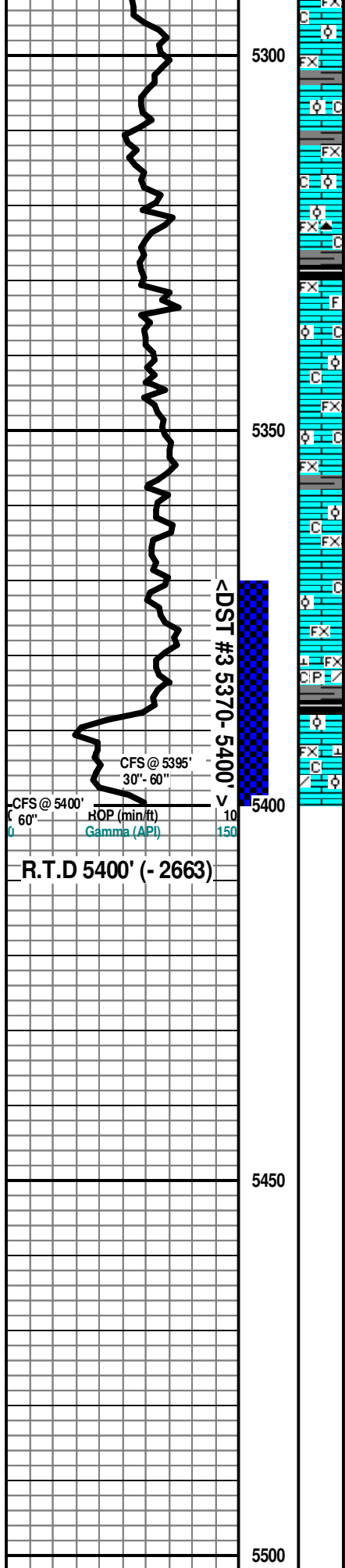
GAS KICK = 142 UNITS

Scale Change  
 IG (Units) 400

~DST # 2~  
 Interval: 5182'-5212' ;  
 Times: 5"-90"-60"-180";  
 Blow: IF= Good/2' Build BOB/2.5". No Blow Back (ISI P). FF=Good /1"  
 Builf/BOB/8.5". Had 3"  
 Blowback (FSIP).  
 Recovery: 11 10' GIP. & 740' TF: 45" SO & WCMO (9% O & 17% Wtr & 74% M); 65' OHMCW (14% O, 46% Wtr & 40% M); 320' SMCW (w/Tr O) 93% Wtr & 7% M); 310' Wtr (100% Wtr.).

Pressures:  
 IH = 2479#;  
 FH = 2471#;  
 IF = 52-109#;  
 FF = 136-372#;  
 ISIP = 850#; FSIP = 825#;  
 Temp. = 128 degrees. F.  
 Chl.= 144000 Ppm  
 PH = 5.5;  
 Rw = .10 @ 65 degrees F.

Mudco Ck @ 5238' @ 9:10 AM 12/07/14  
 Vis = 51;  
 WT = 9.05#;  
 PV = 16;  
 YP = 17;  
 WL = 8.4;  
 Cake= 1;  
 Chl = 4,400;  
 Cal = 20;  
 Sol = 4.8%  
 LCM = 2.5#;  
 DMC = \$ 485.75;  
 CMC = \$19,679.25



Dns Micrite Chalky Sh Char-Blk Carb-Gry-Grn-Aqua-Fissil No Odor No Stn No Flor NS

Ls Wht-Gry FxIn Poor OOL Por (w/Small OOL in pl w/ Qtz Ss Crm-Tan VFGrn Ang-Sub Ang Includ (fL=125-177 Microns= 3.0-225 Ø) "Sandy OOL Ls" Barren Grad Ls CrmTan-Gry FxIn Dns Micrite Chalky Sh Char-Gry-Grn-Aqua-Maroon- Red Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Gry FxIn Poor OOL Por (w/Small OOL in pl w/ Qtz Ss Crm-Tan VFGrn Ang-Sub Ang Includ (fL=125-177 Microns= 3.0-225 Ø) "Sandy OOL Ls" Barren Grad Ls CrmTan-Gry FxIn Dns Micrite Chalky Sh Char-Gry-Grn-Aqua-Maroon- Red Soft-Fissil No Odor No Stn No Flor NS

Ls Crm-Gry FxIn Poor OOL Por (w/Small OOL in pl w/ Qtz Ss Crm-Tan VFGrn Ang-Sub Ang Includ (fL=125-177 Microns= 3.0-225 Ø) "Sandy OOL Ls" Barren Grad Ls CrmTan-Gry FxIn Dns Micrite Cht Org-Peach Translu Shp Vit Chalky Sh Blk Carb-Char-Gry-Grn-Aqua-Maroon-Red Soft-Fissil No Odor No Stn No Flor NS

**MISS. "ST. LOUIS" 5340' (- 2503)**

Ls Wht-Crm-Gry FxIn Poor OOL Por (w/Small OOL in pl w/ Qtz Ss Crm-Tan VFGrn Ang-Sub Ang Includ (mU=350-500 Microns = 1.5- 1.0 Ø) "Sandy OOL Ls" Barren Grad Ls CrmTan-Gry FxIn Dns Micrite Fos (? Conodant) Chalky Sh Blk Carb-Char-Gry-Grn-Aqua-Maroon-Red Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Gry FxIn Poor OOL Por (w/Small OOL in pl w/ Qtz Ss Crm-Tan VFGrn Ang-Sub Ang Includ (mU=350-500 Microns = 1.5- 1.0 Ø) "Sandy OOL Ls" Barren Grad Ls CrmTan-Gry FxIn Dns Micrite Chalky Sh Blk Carb-Char-Gry- Grn-Aqua-Maroon-Red Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Gry FxIn Poor OOL Por (w/Small OOL in pl w/ Qtz Ss Crm-Tan VFGrn Ang-Sub Ang Includ (mU=350-500 Microns = 1.5- 1.0 Ø) "Sandy OOL Ls" Barren Grad Ls CrmTan-Gry FxIn Dns Micrite Chalky Sh Blk Carb-Char-Gry- Grn-Aqua-Maroon-Red Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Gry FxIn Poor OOL Por (w/Small OOL in pl w/ Qtz Ss Crm-Tan VFGrn Ang-Sub Ang Includ (mU=350-500 Microns = 1.5- 1.0 Ø) "Sandy OOL Ls" Barren Grad Ls CrmTan-Gry FxIn Dns Micrite Chalky Sh Blk Carb (w/Pyr Includ) Char-Gry-Grn-Aqua Soft-Fissil No Odor No Stn No Flor NS

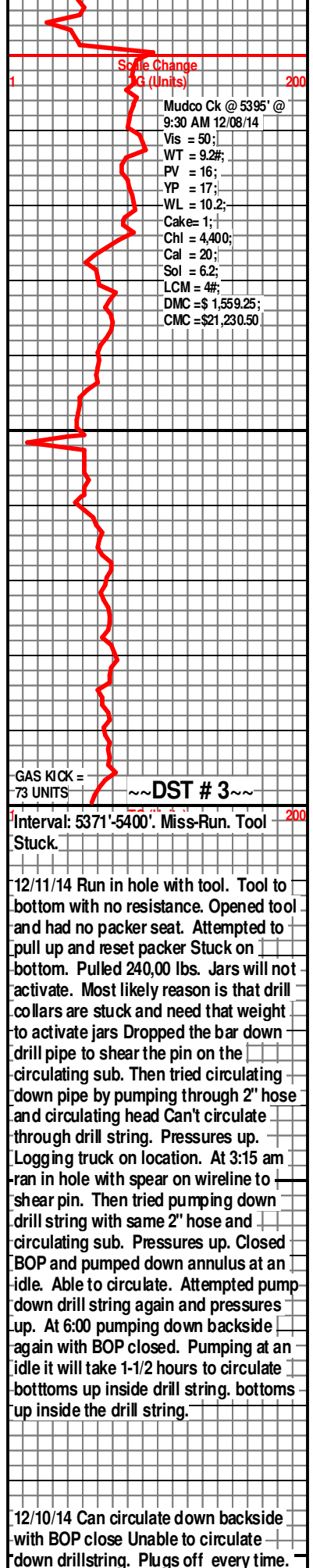
**ST. LOUIS LWR "B" Ø 5388' (- 2551)**

30" CFS @ 5395' Ls Wht Med-Lg OOL Por (w/Med-Lg OOids in pl) V Friable Med -Good Inter-OOL Por (w/Lt & Drk Brn/Blk Stn in Pin-Pt Inter-OOL Por w/Abd Med-Lg Indiv OOids in tray) Med-Good Leaching Of Ooid Arag/Calcite Ctrs Good Develop ((w/GSG & GSFO (Lt Brn) in Wtr Under Heat) Chalk Abd Fair Odor No Flor GSG & GSO

60" CFS @ 5395' Ls Wht Med-Lg OOL Por AA V Friable Good Inter-OOL Por (w/Lt & Drk Brn/Blk Stn AA in Pin-Pt Inter-OOL Por w/Abd OOid Clusters Good Leaching Good Develop (w/GSG & GSFO AA) Fos (Coral) Chalk Abd Fair-Med Odor No Flor GSG & GSO

60" CFS @ 5400' Ls Wht Med-Lg OOL Por AA V Friable Good Inter-OOL Por (w/Lt & Drk Brn/BlkStn AA in Pin-Pt Inter-OOL Por w/OOid Clusters Good Leaching Good Develop (w/GSG & GSFO AA) Chalk Abd Fair-Med Odor No Flor GSG & GSO

Geologist left location @ 12:00 P.M. on 12/11/2014



GAS KICK = 73 UNITS

Interval: 5371'-5400'. Miss-Run. Tool Stuck.

12/11/14 Run in hole with tool. Tool to bottom with no resistance. Opened to oil and had no packer seat. Attempted to pull up and reset packer Stuck on bottom. Pulled 240,00 lbs. Jars will not activate. Most likely reason is that drill collars are stuck and need that weight to activate jars Dropped the bar down drill pipe to shear the pin on the circulating sub. Then tried circulating down pipe by pumping through 2" hose and circulating head Can't circulate through drill string. Pressures up. Logging truck on location. At 3:15 am ran in hole with spear on wireline to shear pin. Then tried pumping down drill string with same 2" hose and circulating sub. Pressures up. Closed BOP and pumped down annulus at an idle. Able to circulate. Attempted pump-down drill string again and pressures up. At 6:00 pumping down backside again with BOP closed. Pumping at an idle it will take 1-1/2 hours to circulate bottoms up inside drill string. bottoms up inside the drill string.

12/10/14 Can circulate down backside with BOP close Unable to circulate down drillstring. Plugs off every time. Free point shows free above 5101'. Perforated bottom drill collar Then pumped mud successfully out the perforation. Spotted 130 oil at 5:00 pm.

R.T.D 5400' (- 2663)

<DST #3 5370- 5400' >

CFS @ 5395' 30"- 60"

HDP (min/ft) 10  
Gamma (API) 150

CFS @ 5400' 60"



(put 110 bbl oil in the annulus and left 20 bbl in pipe. Every 30 minutes have worked pipe and pumped 1/2 bbl.

12/11/14 In hole with free point; Backed off at 5125', Left DST tool plus 7 drill collars, 2 joints drill pipe and circulating sub in hole, Make up jar assembly and trip in hole, Latch onto fish and jar for 8.00 hours, pulling 240,000 lb maximum, No progress. Run in drillstring with free point, then in hole with chargs and and back off jar assembly from fish.

5550

5600