



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

Well Name: JAMES KOEHN #3-31 (NW)
Location: S2-S2-N2-NW 1/4 of SEC. 31 - 28 S. - 30 W
License Number: A.P.I. #15-069-20,459-00-00
Spud Date: 01/23/2014
Surface Coordinates: 1160' FNL & 1320' FWL

Region: GRAY CO., KS.
Drilling Completed: 2/05/2014

**Bottom Hole
Coordinates:**
Ground Elevation (ft): 2828' **K.B. Elevation (ft):** 2838'
Logged Interval (ft): SURFACE To: 5531' **Total Depth (ft):** 5531'
Formation: MISSISSIPPIAN "SALEM (SPERGEN)"
Type of Drilling Fluid: CHEMICAL/POLYMER/GEL. & MUD DISPLACEMENT @ 2900'.

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OPERATOR

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

GEOLOGIST

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

Casing & Deviation Survey's

Spud 1/23/14. Drilled 12-1/4" surface hole with PDC bit. CTCH. Trip out to run 8-5/8" surface casing. Ran 44 jts new 24# 8 5/8" surface casing. Tally 1847'. Set at 1862' w/460 sx common, 2% gel, 3% CC,, 150 sx premium 2% gel. Plug down at 9:30 A.M. Cement did circulate.

Deviation Survey's: @ 1863' = 3/4 degree; @ 4923' = 7/8 degree; @ 5530' = 1/2 degree,

DSTs

~~DST # 1~~ Interval: 5119'-5170'. Times: 5"- 90"- 75"-150"; Blow: IF= Strong/ BOB/0.5". BOB Blow Back (ISIP).

FF= BOB/1". With GTS @ 8" into FF (See Gauge Report Below). BOB Blowback (FSIP).

Recovery: 3165' GIP: 1910' TF: 600' GO (21% G & 79% O); 540' GHMCO (7% G, 58% O & 35% M); 100' SOCM (16% O, 84% M); 670' GSMCO (15% G, 76% O & 9% M).

Pressures: IH=2502#; FH=2500#; IF=215-231#; FF=301-760#; ISIP=1003#; FSIP=1000#; T.=128 degrees F.. API Grv.=25 degrees F..

FF Gas Gauge: @ 10"=4.45 Mcf; @ 20"=5.83 Mcf; @ 30"=5.60 Mcf; @ 40"=5.86 Mcf; @ 50"=5.86 Mcf; @ 60"=5.05 Mcf; @ 70"= 4.76 Mcf; @ 75"=4.45 Mcf.

~~DST #2~~ Interval: 5180'-5192'. Times: 5"-90"-32"-30"; Blow: IF= Weak Surface Blow. No Blow Back (ISIP).. FF=Weak Surface Blow/Died in 15" (Flushed Tool Slight Surge & Died). No Blowback (FSIP).

Recovery: 5' M (w/Tr. O).

Pressures: IH= 2493#; FH= 2484#; IF=6-14#; FF=8-16#; ISIP= 1319#; FSIP=527#; T.=119 degrees F..

~~DST #3~~ Interval: 5384'-5410'. Times: 5"-90"-60"-180"; Blow: IF= Weak Surface Blow/1". No Blow Back (ISIP). FF=Weak Building To BOB/56.5". No Blowback (FSIP).

Recovery: 190' GIP; 25' SOCM (8% O & 92% M). Tool Spl: (25% O, 48% M & 27% Wtr). Chl.= 25,000 Ppm. PH=7.0. RW= 0.36 @ 61 degrees F..

Pressures: IH= 2585#; FH= 2582#; IF= 8-9#; FF=10-17#; ISIP = 1463#; FSIP=1463#; T.= 124 degrees F..


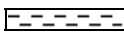

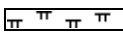
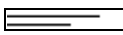
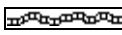




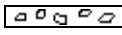
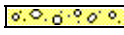

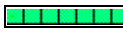




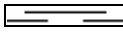

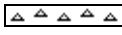


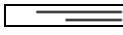
Comments

After review of all geologic samples as examined, combined with the fluid and pressures results from all drill stem tests taken and analysis from the electric logs run, it was determined by all parties that production casing should be run in order to further evaluate this well.

Respectfully submitted,

David P. Williams, P.G

ROCK TYPES

| | | | | | | | | | |
|--|---------|---|--------|---|--------|--|-----------|---|-------|
|  | Anhy |  | Clyst |  | Gry sh |  | Mrlst |  | Shgy |
|  | Bent |  | Coal |  | Gyp |  | Red shale |  | Sltst |
|  | Brec |  | Congl |  | Igne |  | Salt |  | Ss |
|  | Carb sh |  | Dol |  | Lmst |  | Shale |  | Till |
|  | Cht |  | Grn sh |  | Meta |  | Shcol | | |

ACCESSORIES

- MINERAL**
- Anhy
 - Arggrn
 - Arg
 - Bent
 - Bit
 - Breclfrag
 - 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
- Fuss
- Gastro
- Oolite
- Oomold
- Ostra
- Pelec

- Pellet
- Pisolite
- Plant
- Strom

STRINGER

- Anhy
- Arg
- Bent
- Coal
- Dol
- Grysh
- Gyp
- Ls
- Mrst
- Sltstrg
- Ssstrg

TEXTURE

- Boundst
- Chalky
- Cryxln
- Earthy
- Finexln
- Grainst
- Lithogr
- Microxln
- Mudst
- Packst
- Wackest

OTHER SYMBOLS

- POROSITY**
- Earthy
 - Fenest
 - Fracture
 - Inter
 - Moldic
 - Organic
 - Pinpoint

- Vuggy

- SORTING**
- Well
 - Moderate
 - Poor

- ROUNDING**
- Rounded
 - Subrnd
 - Subang
 - Angular

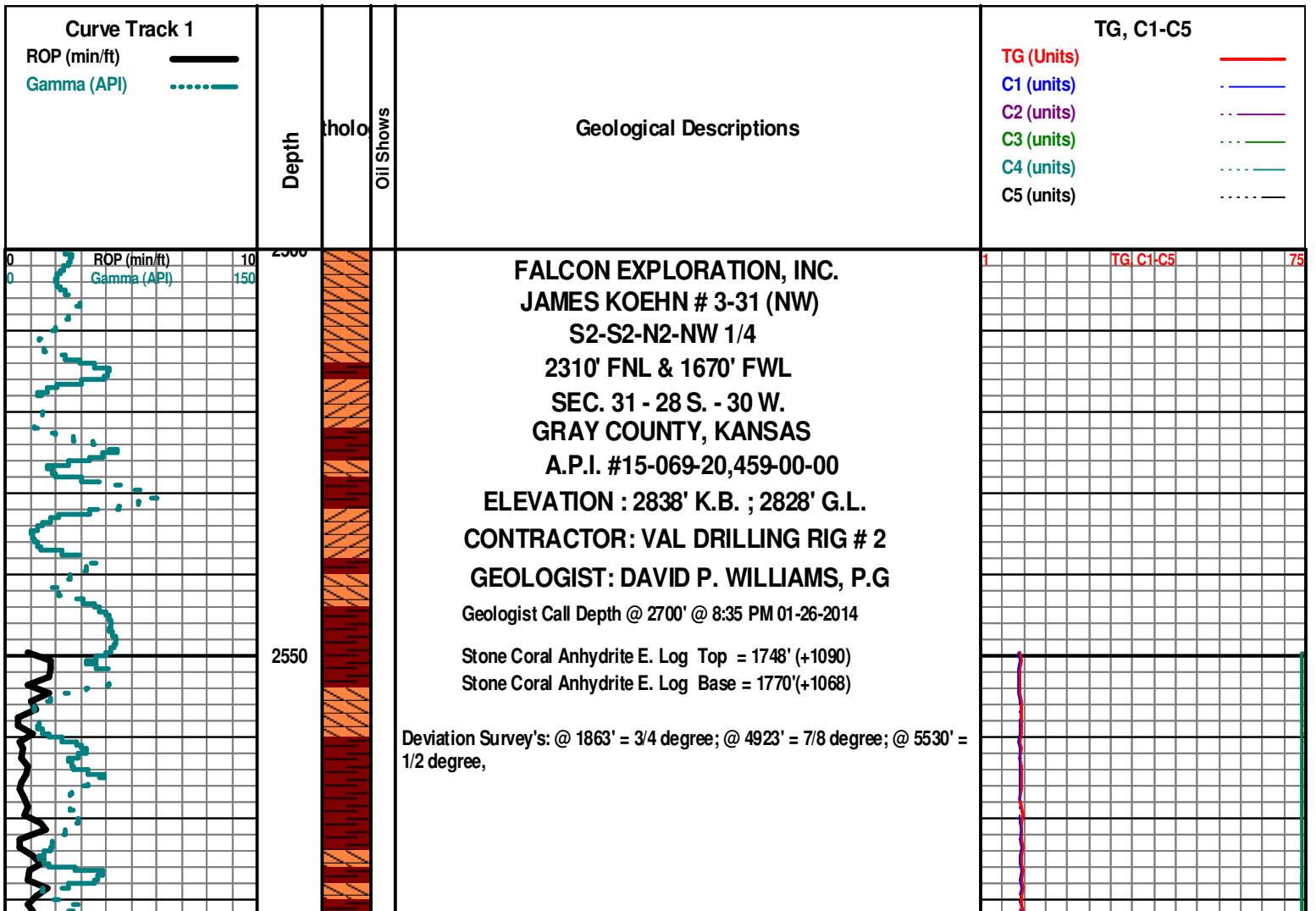
- Even
- Spotted
- Ques
- Dead

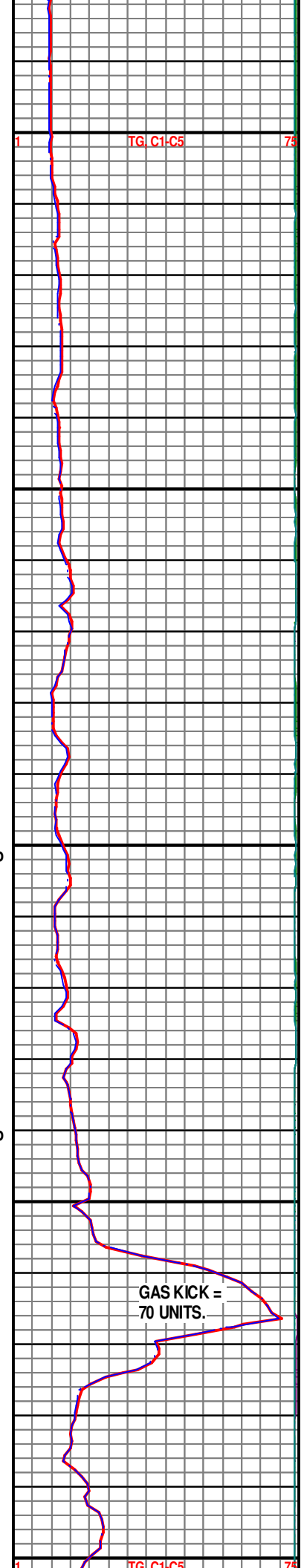
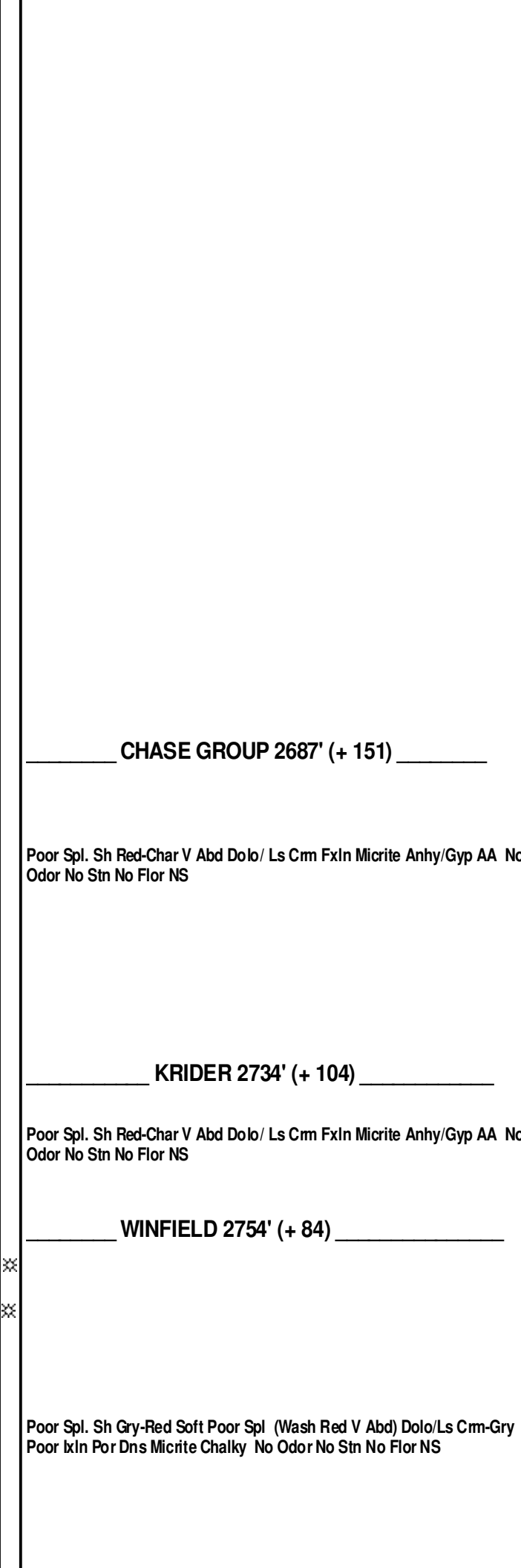
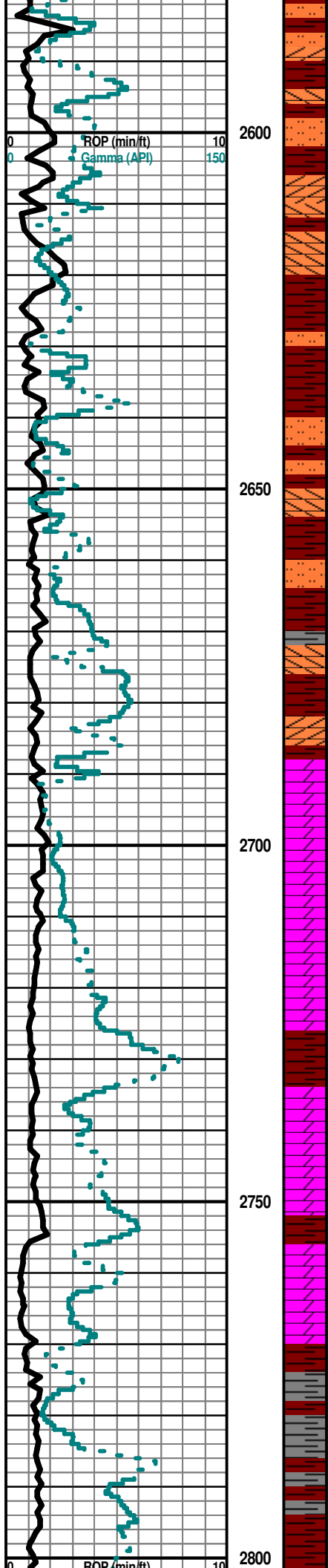
- Core

- EVENT**
- Rft
 - Sidewall

- OIL SHOW**
- Gas show

- INTERVAL**
- Dst
 - Dst_alt





GAS KICK = 70 UNITS.

TOWANDA 2808' (+ 30)

Poor Spl. Sh Gry-Red Soft Poor Spl (Wash Red V Abd) Dolo/Ls Crm-Gry
Poor Ixln Por Dns Micrite Chalky No Odor No Stn No Flor NS

FORT RILEY 2846' (- 8)

Poor Spl. Sh Gry-Red Soft Poor Spl (Wash Red V Abd) Ls Crm-Gry Poor
Ixln Por Dns Micrite Chalky No Odor No Stn No Flor NS

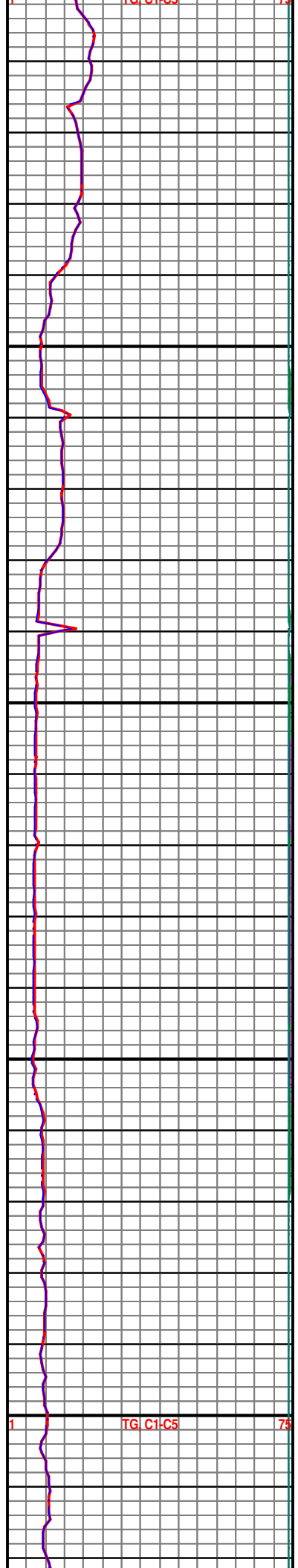
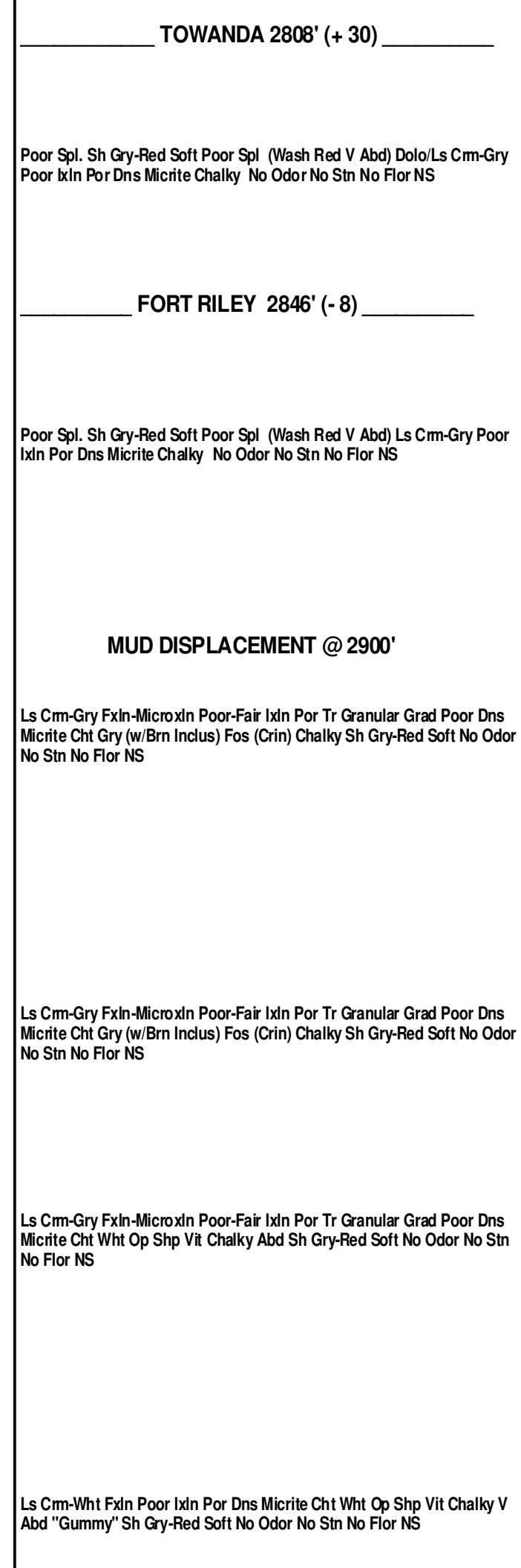
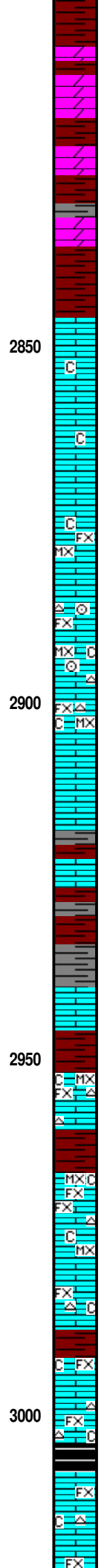
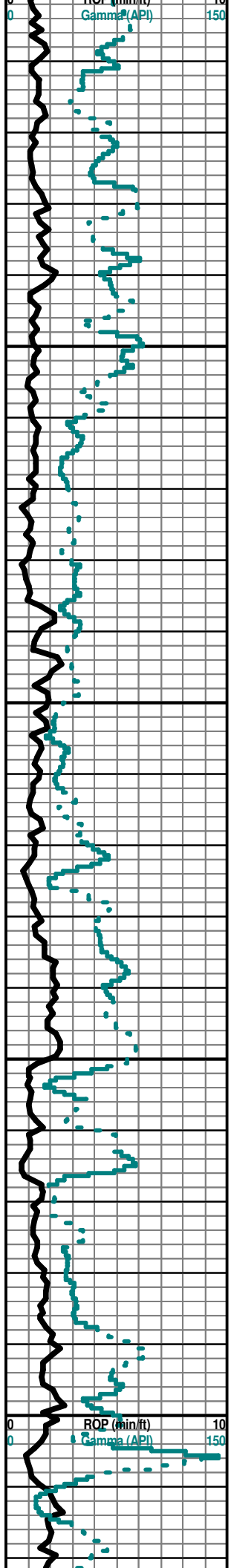
MUD DISPLACEMENT @ 2900'

Ls Crm-Gry Fxln-Microxn Poor-Fair Ixln Por Tr Granular Grad Poor Dns
Micrite Cht Gry (w/Brn Incls) Fos (Crin) Chalky Sh Gry-Red Soft No Odor
No Stn No Flor NS

Ls Crm-Gry Fxln-Microxn Poor-Fair Ixln Por Tr Granular Grad Poor Dns
Micrite Cht Gry (w/Brn Incls) Fos (Crin) Chalky Sh Gry-Red Soft No Odor
No Stn No Flor NS

Ls Crm-Gry Fxln-Microxn Poor-Fair Ixln Por Tr Granular Grad Poor Dns
Micrite Cht Wht Op Shp Vit Chalky Abd Sh Gry-Red Soft No Odor No Stn
No Flor NS

Ls Crm-Wht Fxln Poor Ixln Por Dns Micrite Cht Wht Op Shp Vit Chalky V
Abd "Gummy" Sh Gry-Red Soft No Odor No Stn No Flor NS



TG C1-C5

75

3050

Ls Crm-Wht FxIn Poor IxIn Por Dns Micrite Cht Wht Op Shp Vit Chalky
Dec Sh Gry-Red Soft No Odor No Stn No Flor NS

3100

Ls Crm-Wht-Gry FxIn Poor IxIn Por Dns Micrite Chalky Dec Sh Gry- Red-
Maroon Soft No Odor No Stn No Flor NS

COTTONWOOD 3136' (-298)

3150

Ls Crm-Wht-Gry FxIn Poor IxIn Por Dns Micrite Cht Gry Op Shp Vit Chalky
Sh Gry-Red-Maroon Soft No Odor No Stn No Flor NS

3200

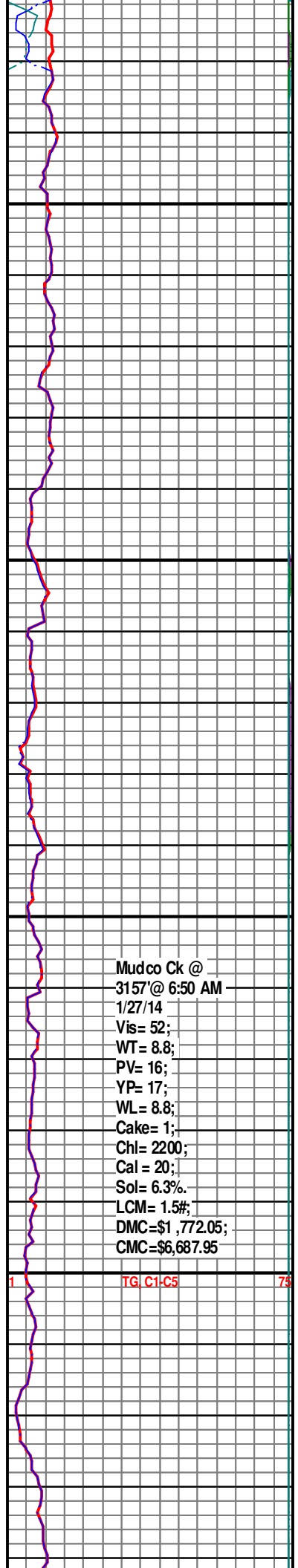
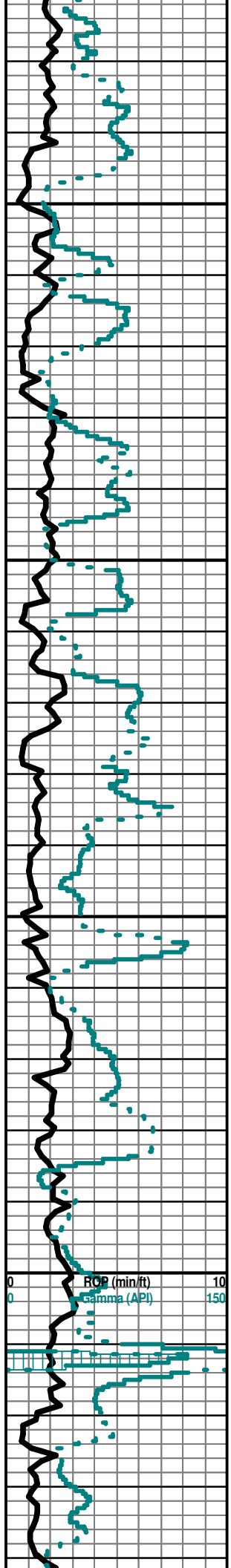
Ls Crm-Wht-Gry FxIn Poor IxIn Por Dns Micrite Cht Gry Op Shp Vit Chalky
Sh Gry-Red-Maroon Soft (Wash Red) No Odor No Stn No Flor NS

NEVA 3184' (- 346)

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

Mudco Ck @
3157' @ 6:50 AM
1/27/14
Vis= 52;
WT= 8.8;
PV= 16;
YP= 17;
WL= 8.8;
Cake= 1;
Chl= 2200;
Cal= 20;
Sol= 6.3%
LCM= 1.5#;
DMC=\$1,772.05;
CMC=\$6,687.95

TG, C1-C5



3250

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

3300

Ls Wht-Crm-Gry FxIn Poor Pin-Pt IxIn Por Cht Wht (w/Fos (Spic Inlus)
Chalky Sh Red-Maroon-Gry Soft-Fissil No Odor No Flor No Stn NS

3350

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

3400

Ls Wht-Crm-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

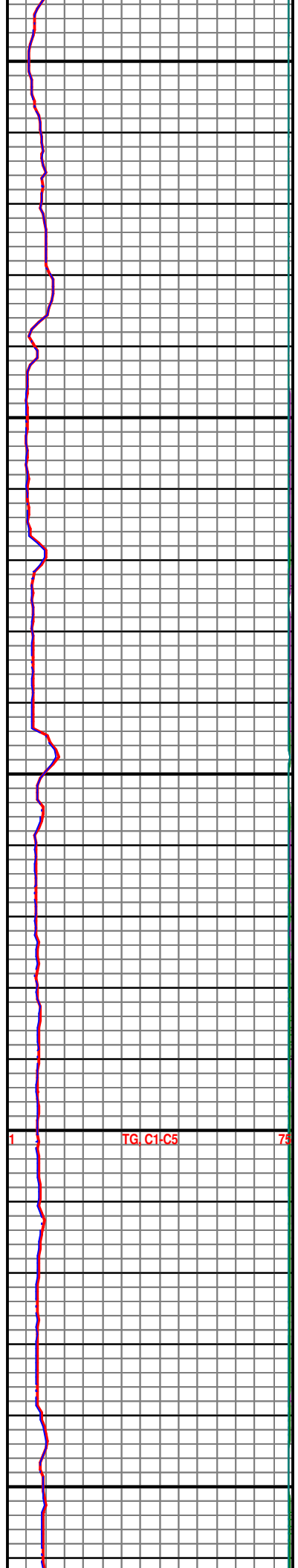
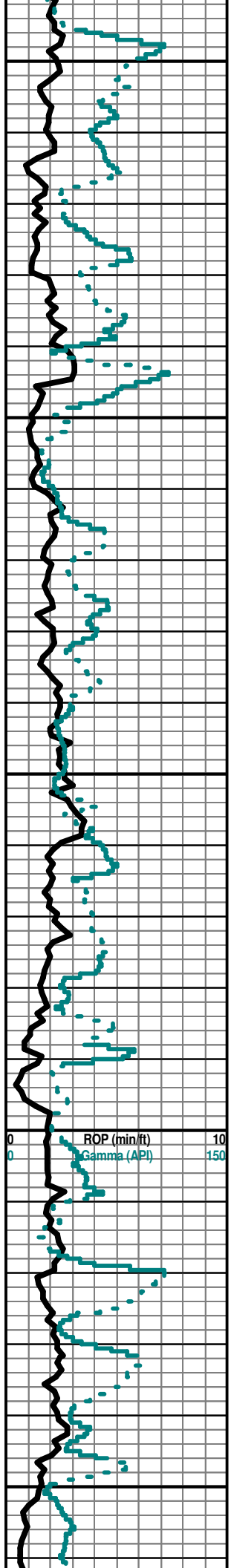
3450

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

FALL CITY 3426' (- 588)

3450

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



TG C1-C5

3500

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

ROOT SHALE 3518' (- 680)

3550

LS Wht-Crm-Gry MicroxIn-FxIn IxIn Por Micritic Dsn Barren Grad Tr/Fair OOM Por w/OOL (Small) in pl Fair InterOOM/OOL Por Fair Leaching Fair Disolu Sh Grn-Red Soft Fos (Brach) Chalk Wht Abd No Odor Med-Good Flor No Stn NS

STOTLER 3538' (- 700)

3600

LS Wht-Crm-Gry MicroxIn-FxIn IxIn Por Micritic Dsn Barren Grad Tr/Fair OOM Por w/OOL (Small) in pl Fair InterOOM/OOL Por Fair Leaching Fair Disolu Sh Grn-Red Soft Fos (Brach) Chalk Wht Abd No Odor Med-Good Flor No Stn NS

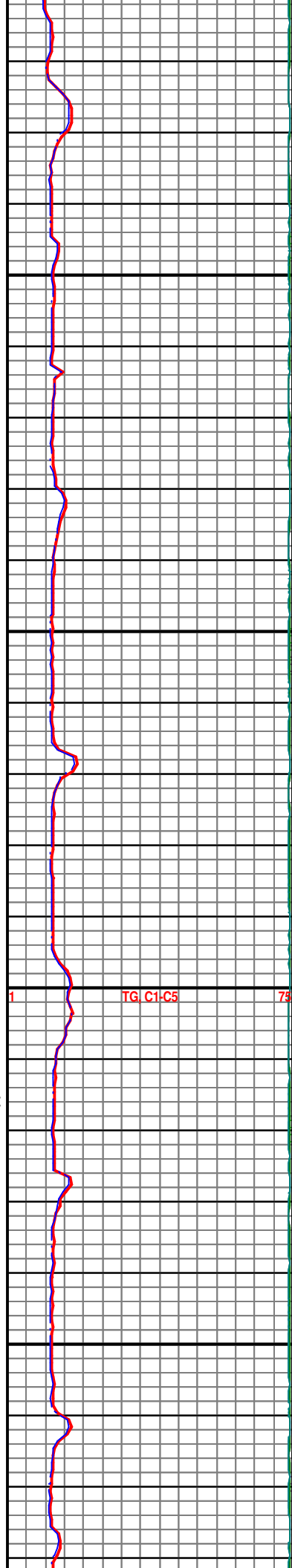
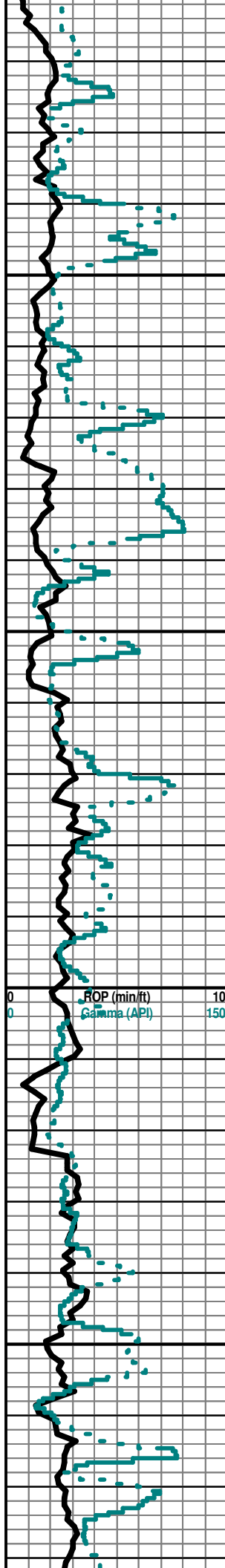
TARKIO 3598' (- 760)

3650

Ls Wht-Crm FxIn IxIn Por Grad Fair OOM Porw/OOL in pl w/Fair-Med InterOOM Por Poor Leaching Poor Disolu Sh Grn-Red-Char Soft Fossil Cht Wht Op Shp Vit Chalk Wht Soft No Odor No Stn Med Flor (Lt Grn-Lt Wht-25% of Spl) Dec NS

Ls Wht-Gry MicroxIn-FxIn IxIn Por Micritic Dsn Barren Chalk Wht Abd Cht Gry Op-Shp-Vit Sh Gry-Char-Brn Soft No Odor ? Med Min Flor Dec No Stn NS

BERN 3624' (- 786)



3700

Ls Wht-Crm-Gry FxIn Tr/Poor IxIn Por Mostly Micritic AA Dsn Barren Chalk Wht V Abd Cht-Wht-Tan Op Shp Vit Sh Gry-Char Soft No Odor No Flor No Stn NS

3750

Ls Wht-Crm FxIn Tr/Poor IxIn Por Mostly Micritic AA Dsn Barren Chalk Wht Abd Fos (Fuss Sh Tr/ Char-Red Soft No Odor No Flor No Stn NS

3800

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

TOPEKA 3808' (- 970)

3850

Ls Wht-Crm-Gry FxIn Poor IxIn Por Mostly Micritic Dsn Barren Chalk Wht Abd Cht Wht-Gry Op Shp Vit Fos (Fuss) Sh Blk Carb-Char Fissil Soft No Odor No Flor No Stn NS

3900

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

TG, C1-C5 79

Mudco Ck @
3799' @ 8:25 AM
1/28/14
Vis= 49;
WT= 9.25;
PV= 15;
YP= 16;
WL= 9.2;
Cake= 1;
Chl= 2100;
Cal= 40;
Sol= 6.3%
LCM= 1.5#;
DMC=\$ 713.30;
CMC=\$ 7,401.30

ROP (min/ft)
10
150

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

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

START 10' SAMPLE EXAMINATION @ 4000'

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

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

Ls Wht-Crm-Gry FxIn Dns Micrite Grad Poor Pin-Pt IxIn Por Chalk V Abd Fos (Fuss) Sh
Gry-Char Soft-Fissil No Odor No Flor No Stn NS

LeCOMPTON 4008' (- 1170)

Ls Wht-Crm-Gry FxIn Dns Micrite Grad Poor Pin-Pt IxIn Por Chalk V Abd
Fos (Fuss) Sh Gry-Char Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Gry FxIn Dns Micrite Grad Poor Pin-Pt IxIn Por Chalk V Abd
Fos (Fuss) Sh Gry-Char Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Gry FxIn Dns Micrite Grad Poor Pin-Pt IxIn Por Chalk V Abd
Fos (Fuss) Sh Gry-Char Soft-Fissil No Odor No Flor No Stn NS

Sh Gry-Char Soft-Fissil Ls Wht-Crm-Gry FxIn Dns Micrite Grad Poor
Pin-Pt IxIn Por Chalk V Abd Fos (Fuss) No Odor No Flor No Stn NS

Ls Wht-Crm FxIn Dns Micrite Grad Poor Pin-Pt IxIn Por Cht Wht- Gry - Drk Blk Op Shp Vit
Chalk Abd Fos (Fuss) Sh Blk Carb-Gry-Char Soft-Fissil No Odor No Flor No Stn NS

**QUEEN HILL 4068' (- 1230)
OREAD 4072' (- 1234)**

Ls Wht-Crm FxIn Dns Micrite Grad Poor Pin-Pt IxIn Por Cht Wht- Gry - Drk Blk Op Shp Vit
Chalk Abd Fos (Fuss) Sh Blk Carb- Gry- Char Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm FxIn Dns Micrite Grad Poor Pin-Pt IxIn Por Cht Wht- Gry - Drk Blk Op Shp Vit
Chalk Abd Fos (Fuss) Sh Blk Carb-Gry-Char Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm FxIn Dns Micrite Grad Poor Pin-Pt IxIn Por Cht Wht- Gry - Drk Blk Op Shp Vit
Chalk Abd Fos (Fuss) Sh Blk Carb-Gry-Char Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm FxIn Dns Micrite Grad Poor Pin-Pt IxIn Por Cht Wht- Gry - Drk Blk Op Shp Vit
Chalk Abd Fos (Fuss) Sh Blk Carb-Gry-Char Soft-Fissil No Odor No Flor No Stn NS

PLATTSMOUTH 4118' (- 1288)

3950

4000

4050

4100

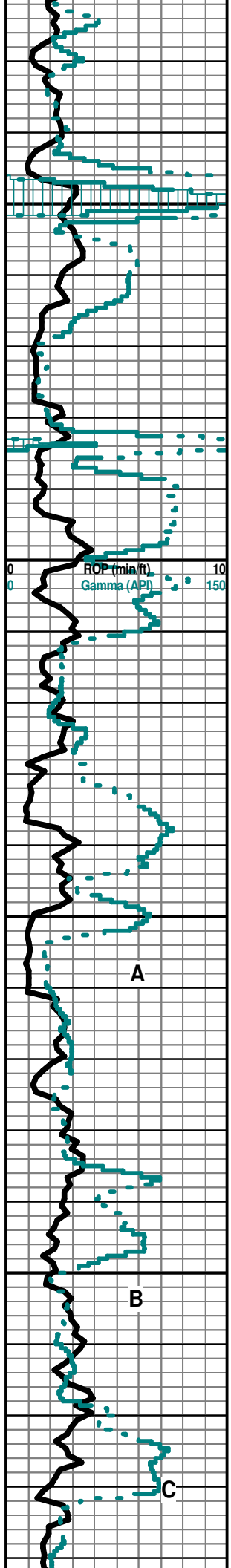
ROP (min/ft)
Gamma (API)

10

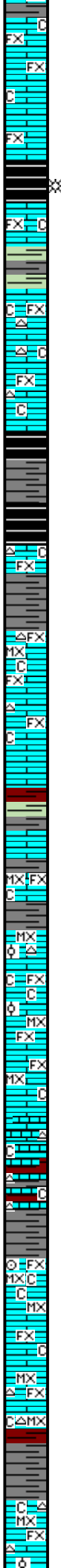
150

TG, C1-C5

75



4150
4200
4250
4300



Ls Wht-Crm-Gry FxIn Dns Micrite Grad Poor Pin-Pt IxIn Por Chalk Sh Blk Carb-Gry-Char-Lt Grn Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Gry FxIn Dns Micrite Grad Poor Pin-Pt IxIn Por Chalk Sh Blk Carb-Gry-Char-Lt Grn Soft-Fissil No Odor No Flor No Stn NS

HEEBNER 4146 (- 1308)

Sh Blk Carb (w/GSG)- Gry-Char-Lt Grn Soft-Fissil Ls Wht- Crm- Gry FxIn Dns Micrite Grad Poor Pin-Pt IxIn Por Chalk No Odor No Flor No Stn GSG in Blk Sh

Ls Wht-Crm-Gry FxIn Dns Micrite Grad Poor Pin-Pt IxIn Por Chalk Sh Blk Carb- Gry-Char-Lt Grn Soft-Fissil No Odor No Flor No Stn GSG in Blk Sh

TORONTO 4166' (- 1328)

Ls Wht-Crm FxIn Dns Micrite Poor IxIn Por Chalk Wht Soft Cht Wht Transl-Op Shp Vit Sh Char-Drab Grn Fissil No Odor No Stn No Flor Ns

Ls Crm FxIn Dns Micrite Poor IxIn Por Chalk Wht Soft Cht Wht Transl-Op Shp Vit Sh Blk Carb-Char-Grn Fissil F-G SG No Odor No Stn No Flor F-MSG (in Sh Blk Carb AA)

DOUGLAS 4182' (- 1344)

Sh Blk Carb-Drab Grn-Aqua-Gry Soft-Fissil Ls Wht-Crm FxIn Dns Micrite Poor IxIn Por Chalk Wht Soft Cht Wht Transl-Op Shp Vit Sh Blk Carb-Char-Grn Fissil No Odor No Stn No Flor NS

Sh Char-Drab Grn-Aqua-Gry Soft-Fissil Ls Crm FxIn Dns Micrite Poor IxIn Por Chalk Wht Soft Cht Wht Transl-Op Shp Vit Sh Blk Carb-Char-Grn Fissil No Odor No Stn No Flor NS

Ls Crm-Gry MicroxIn-FxIn Dns Micrite Poor IxIn Por Chalk Wht Soft Sh Char-Gry Fissil No Odor No Stn No Flor NS

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

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

IATAN (BROWN LIME) 4244' (- 1406)

Ls Crm-Tan-Gry FxIn-MicroxIn Dns Micrite Poor IxIn Por Chalk Wht Soft Sh Aqua-Char-Gry/Grn-Maroon Soft-Fissil No Odor No Stn No Flor NS

LANSING 4252' (- 1414)

Ls Wht-Crm MicroxIn-FxIn Micritic Fair ? Min Stn Flor (Lt Grn-Wht of Spl through Tray 40%) Cht Wht Op Shp Vit V Chalk Wht Soft Sh Char-Gry-Grn Fissil No Odor NS

Ls Crm-Gry MicroxIn-FxIn Poor IxIn Micritic Por Grad Poor OOL Poor InterOOL Por (w/Small OOids in pl) Poor Leaching Por Poor Develop Barren Chalk Soft Sh Char-Gry-Maroon Fissil No Odor No Stn ? Sli Min Flor Dec NS

Ls Crm-Gry MicroxIn-FxIn Poor IxIn Pin-Pt IxIn Por Grad Micritic Chalk Wht Soft Sh Char-Gry Fissil No Odor No Stn ? Sli Min Flor NS

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

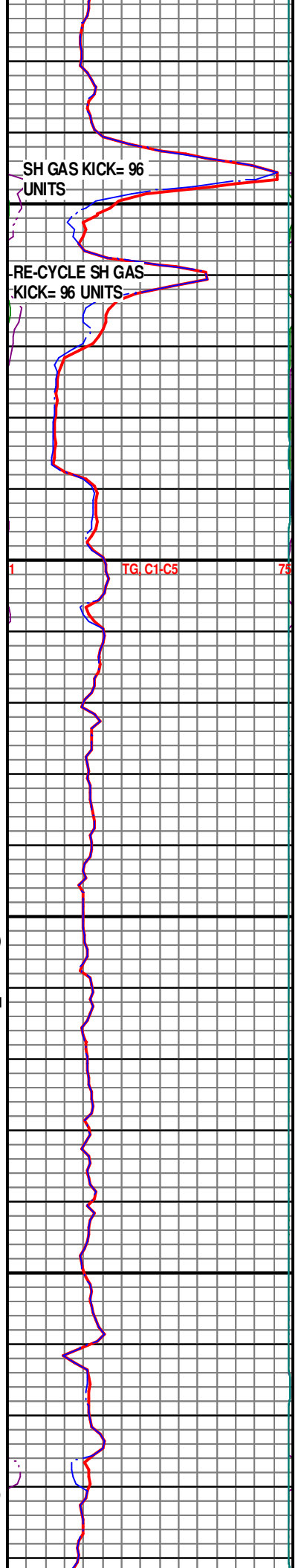
Ls Crm-Tan MicroxIn-FxIn Poor IxIn Por Grad Micritic Cht Wht Op Shp Vit Fos (Crin) Chalk Sh Char-Gry Fissil No Odor No Stn ? Sli Min Flor Dec NS

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

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

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

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

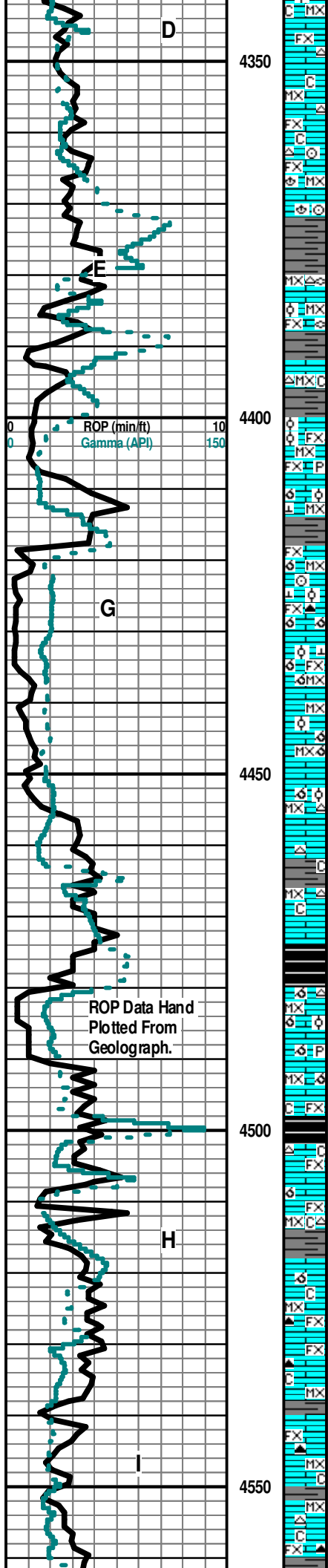


A

B

C

TG, C1-C5



4350
4400
4450
4500
4550

InterOOM Por w/ Small Ooids in pl Chalk Wht Soft V Abd Sh Char-Gry/Grn-Red Fissil No Odor No Stn Sli Flor (Lt Grn) NS

Ls Crm-Gry Microxln-Fxln Poor Ixln Por Grad Micritic Cht Tan- Gry Op Shp Vit Chalk Wht Soft Sh Char-Gry Fissil No Odor No Stn ? Sli Min Flor Sh Char-Gry Fissil No Odor No Stn ? Sli Min NS

Ls Wht-Crm-Gry Microxln-Fxln Poor Ixln Por Micritic Cht Wht-Gry Banded Op Shp Vit Chalk Wht Soft Fos (Brach, Crin) Sh Blk Carb-Char-Gry Fissil No Odor No Stn ? Sli Min Flor NS

Ls Wht-Crm-Gry Microxln-Fxln Poor Ixln Por Micritic Cht Wht-Gry Banded Op Shp Vit Chalk Wht Soft Fos (Brach, Crin) Sh Blk Carb-Char-Gry Fissil No Odor No Stn ? Sli Min Flor NS

Ls Wht-Crm Microxln-Fxln Poor Ixln Por Grad Micritic Cht Wht (w/Fos (Fuss) Includ) Op Shp Vit Chalk Wht Soft Sh Char-Gry Fissil No Odor No Stn ? Sli Min Flor NS

Chalk Wht Abd Ls Crm-Gry Microxln-Fxln Dns Micrite Poor Ixln Por Grad Poor OOM Por Poor InterOOM Poor Leaching Poor Develop Cht Wht-Gry Op Shp Vit Sh Char-Gry Fissil No Odor No Stn Tr ? Min Flor NS

Ls Wht-Crm-Gry Microxln Poor Ixln Por Micritic (w/Pyr Includ) Grad OOL Por (w/Small-Med Ooids - w/Ctr's Fill w/ ? Drk-Gry Calcite Includ in pl) Poor Inter-OOM/OOL Por Poor Develop Poor Leaching Cht Wht Op Shp Vit Sh Char-Gry-Maroon Fissil No Odor No Flor No Stn NS

No Sample Caught

Ls Crm-Tan Good (Grad Sli Vug) OOM Por (w/Small-Med Ooids w/Ctr's Fill w/? Drk-Gry Calcite? Includ in pl) Good Inter-OOM/OOL Por Good Develop Good Leaching Cht Drk Blk Op Shp Vit Fos (Crin) Sh Char-Gry Fissil No Odor No Flor No Stn NS

Ls Crm-Tan Good Vug OOM Por (w/Med-Lg Ooids w/Ctr's Fill w/? Drk-Gry Calcite? Includ in pl) Good Inter-OOM/OOL Por Good Develop Good Leaching Cht Gry-Drk Gry Op Shp Vit Sh Char-Gry Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Tan OOM Por w/OOL (Small-Med Ooids w/Ctr's Fill w/? Drk-Gry Calcite? Includ in pl) Poor Inter-OOM/OOL Por Poor Develop Poor Leaching (w/Pyr Includ) Cht Wht Op Shp Vit Sh Char-Gry Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Tan OOM Por w/OOL (Small-Med Ooids w/Ctr's Fill w/? Drk-Gry Calcite? Includ in pl) Poor Inter-OOM/OOL Por Poor Develop Poor Leaching Grad Dns Micrite Barren Cht Tan Op Shp Vit Sh Char-Gry Fissil No Odor No Flor No Stn NS

Ls Gry-Crm Microxln-Fxln Poor Ixln Por Grad Micritic Cht Wht-Gry Op Shp Vit Chalk Wht Soft Sh Char-Gry Fissil No Odor No Stn Tr ? Min Flor NS

Sh Char-Gry Fissil Ls Gry-Crm Microxln-Fxln Poor Ixln Por Grad Micritic Cht Wht- Gry Op Shp Vit Chalk Wht Soft No Odor No Stn Tr ? Min Flor NS

MUNCIE CREEK 4474' (- 1636)

Ls Crm-Tan Good Vug OOM Por (w/Tr Small-Med Ooids w/Ctr's Fill w/Drk-Gry Calcite Includ in pl) Mostly Poor InterOOM Por Good Develop Good Leaching Grad Micrite (w/Pyr Includ) Cht Wht Op Shp Vit Chalk Sh Blk Carb-Char-Gry-Maroon Fissil No Odor No Flor No Stn NS

Ls Tan-Crm Microxln-Fxln Good Vug OOM Por Grad Micrite Barren Poor Ixln Por Chalk Sh Char-Gry Fissil No Odor No Stn Tr ? Min Flor NS

Sh Blk Carb-Char-Gry Fissil Ls Gry-Crm Microxln-Fxln Poor Ixln Por Grad Micritic Cht Wht- Gry Op Shp Vit Chalk Wht Soft Sh Char-Gry Fissil No Odor No Stn Tr ? Min Flor NS

Sh Blk Carb-Char-Gry Fissil Ls Gry-Crm Microxln-Fxln Poor Ixln Por Grad Micritic Cht Wht- Gry Op Shp Vit Chalk Wht Soft Sh Char-Gry Fissil No Odor No Stn Tr ? Min Flor NS

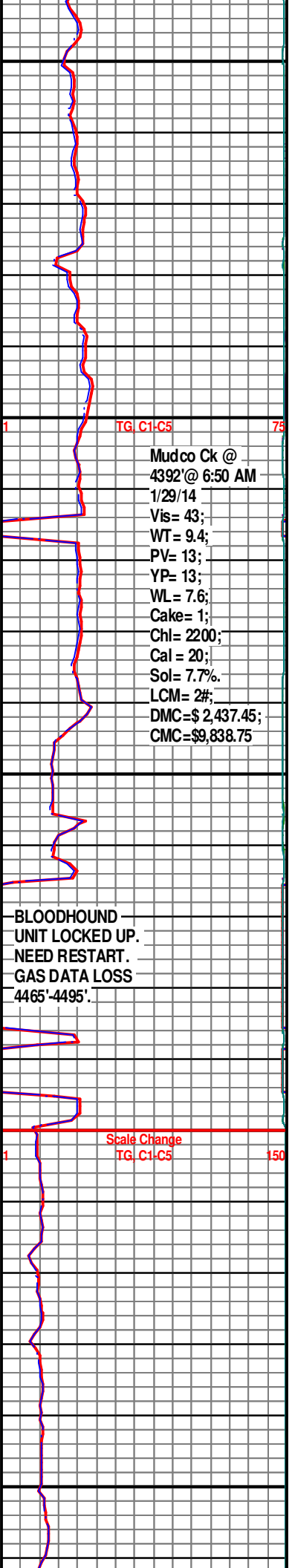
Ls Crm-Gry Microxln-Fxln Good Vug OOM Por (Tr Only) Grad Micrite Barren Poor Ixln Por Cht Gry- Drk Gry Op Shp Vit Chalk Sh Char-Gry Fissil No Odor No Stn Tr ? Min Flor NS

Ls Gry-Crm Microxln-Fxln Poor Ixln Por Grad Micritic Cht Gry-Drk Gry Op Shp Vit Chalk Wht Soft Sh Char-Gry Fissil No Odor No Stn Tr ? Min Flor NS

Ls Gry-Crm Microxln-Fxln Poor Ixln Por Grad Micritic Cht Gry-Drk Gry Op Shp Vit Chalk Wht Soft Sh Char-Gry Fissil No Odor No Stn Tr ? Min Flor NS

Ls Gry-Crm Microxln-Fxln Poor Ixln Por Grad Micritic Cht Gry-Drk Gry Op Shp Vit Chalk Wht Soft Sh Char-Gry Fissil No Odor No Stn Tr ? Min Flor NS

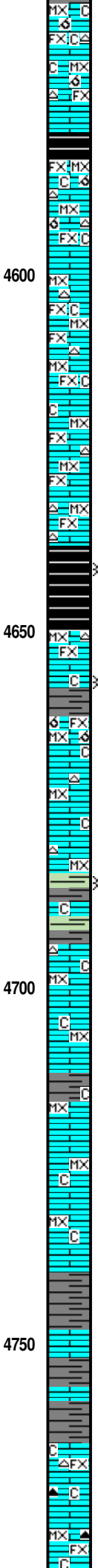
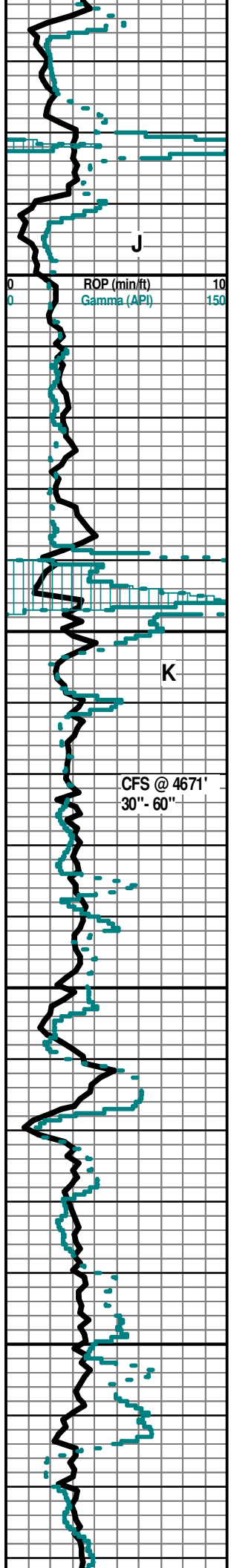
Ls Crm-Tan Good Vug OOM Por Mostly Med Good InterOOM Por Good Develop Good



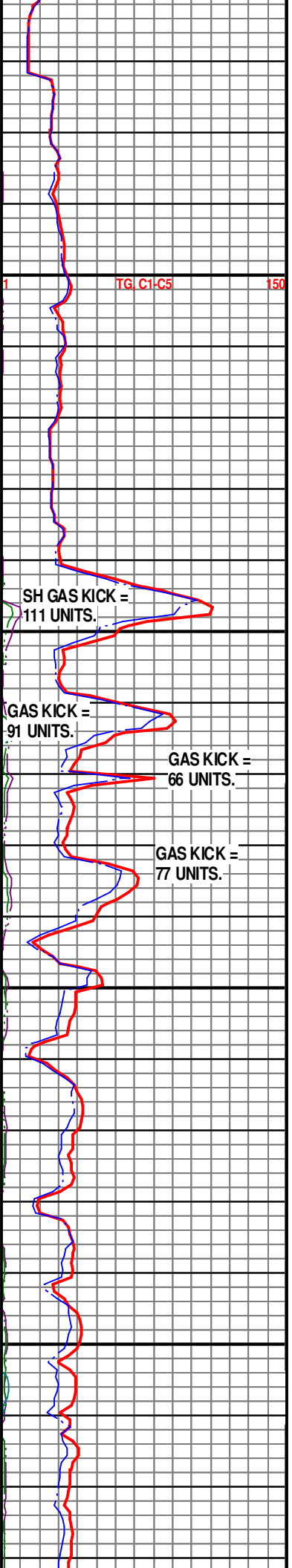
Mudco Ck @
4392' @ 6:50 AM
1/29/14
Vis= 43;
WT= 9.4;
PV= 13;
YP= 13;
WL= 7.6;
Cake= 1;
Chl= 2200;
Cal= 20;
Sol= 7.7%
LCM= 2#;
DMC=\$ 2,437.45;
CMC=\$9,838.75

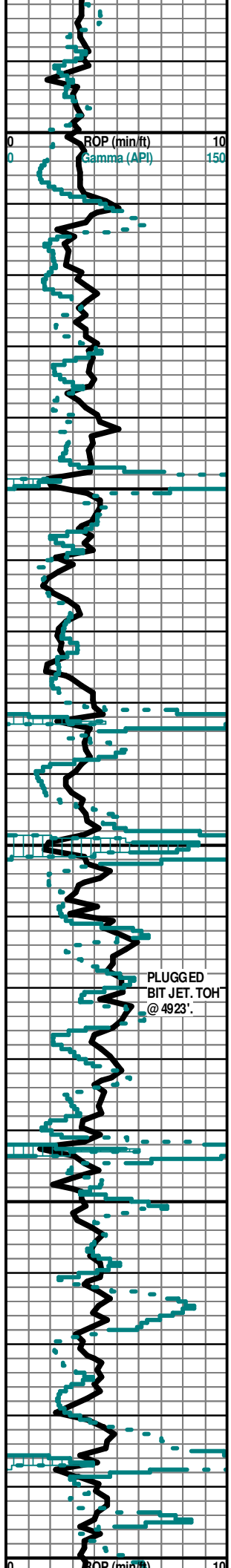
BLOODHOUND
UNIT LOCKED UP.
NEED RESTART.
GAS DATA LOSS
4465'-4495'.

Scale Change
TG, C1-C5



Ls Cht-Tan Microxln-Fxn Dns Micrite Grad Tr Poor Ixln Por Poor InterOOM Por Poor Leaching Grad Micrite Cht Gry Op Shp Vit Chalk V Abd Sh Char-Gry Fissil No Odor No Flor No Stn NS
 Chalk Wht Abd Ls Crm-Gry Microxln-Fxn Dns Micrite Poor Ixln Por Grad Poor OOM Por Poor InterOOM Poor Leaching Poor Develop Cht Lt Gry Op Shp Vit Sh Char-Gry Fissil No Odor No Stn Tr ? Min Flor NS
 Ls Crm-Gry Microxln-Fxn Dns Micrite Grad Tr Poor Ixln Por Poor InterOOM Por Poor Leaching Poor Develop Cht Lt Gry Op Shp Vit Chalk Sh Char-Gry-Blk Carb Fissil No Odor No Stn Tr ? Min Flor NS
 Ls Crm-Tan Microxln-Fxn Dns Micrite Grad Tr Poor Ixln Por Poor InterOOM Por Poor Leaching Poor Develop Cht Lt Gry Op Shp Vit Chalk Sh Char- Gry- Blk Carb Fissil No Odor No Stn Tr ? Min Flor NS
 Ls Crm-Tan Microxln-Fxn Dns Micrite Cht Lt Gry Op Shp Vit Chalk Sh Char-Gry Fissil No Odor No Stn Tr ? Min Flor NS
 Ls Crm-Gry Microxln-Fxn Dns Micrite Cht Lt Gry Op Shp Vit Chalk Sh Char-Gry Fissil No Odor No Stn Tr ? Min Flor NS
 Ls Crm-Gry Microxln-Fxn Dns Micrite Cht Lt Gry Op Shp Vit Chalk Sh Char-Gry Fissil No Odor No Stn Tr ? Min Flor NS
 Ls Crm-Gry Microxln-Fxn Dns Micrite Cht Lt Gry Op Shp Vit Chalk Sh Char-Gry Fissil No Odor No Stn Tr ? Min Flor NS
STARK SHALE 4640' (- 1802)
 Sh Blk Carb Fissil GSG ? Faint Odor No Flor No Stn SG in Blk Sh
KANSAS CITY "SWOPE" (K) 4650' (-1812)
 30" CFS @ 4671' Ls Wht-Gry Microxln Dns Micrite Cht Wht-Lt Gry Op Shp Vit Chalk Sh Blk Carb-Char-Gry Fissil ? Faint Odor No Stn Tr ? Min Flor NS
 60" CFS @ 4671' Ls Crm-Tan Microxln-Fxn Dns Micrite Grad (Tr 1 Pc) Good Vug OOM Por Med-Good OOM Por (Poor InterOOM Por) Good Leaching Good Develop Chalk Dec Sh Char-Gry (Tr Only) Fissil No Odor No Stn Tr ? Min Flor NS
 Ls Wht-Gry Microxln Dns Micrite Cht Wht-Lt Gry Op Shp Vit Chalk Sh Blk Carb-Char-Gry Fissil No Odor No Stn Tr ? Min Flor NS
 Ls Wht-Gry Microxln Dns Micrite Cht Wht-Lt Gry Op Shp Vit Chalk Sh Blk Carb-Char-Gry Fissil No Odor No Stn Tr ? Min Flor NS
 Ls Crm-Gry Microxln Dns Micrite Cht Wht Gry Op Shp Vit Chalk Sh Char-Gry-Aqua Fissil No Odor No Stn Tr ? Min Flor NS
 Ls Crm-Gry Microxln Dns Micrite Cht Wht Gry Op Shp Vit Chalk Sh Blk Carb-Char-Gry-Aqua Fissil No Odor No Stn Tr ? Min Flor NS
 Ls Crm-Drk Gry Microxln Dns Micrite Grad Tr Good Vug OOM Por Good Leaching Good Develop Poor Inter-Connect of Vugs Chalk Abd Sh Blk Carb-Char-Gry-Aqua Fissil No Odor No Stn Tr ? Min Flor NS
 Ls Crm-Drk Gry Microxln Dns Micrite Chalk Abd Sh Blk Carb-Char-Gry-Aqua Fissil No Odor No Stn Tr ? Min Flor NS
 Ls Tan-Gry Fxn Dns Micritic Barren Cht Drk Gry Op (w/Fos (Crin) & Small Ooid Includ) Sh Char-Gry-Maroon Fissil No Odor No Flor No Stn NS
 Ls Tan-Gry Fxn Dns Micritic Barren Cht Drk Gry Op (w/Fos (Crin) & Small Ooid Includ) Sh Char-Gry-Maroon Fissil No Odor No Flor No Stn NS
 Sh Char-Gry Fissil Ls Gry Fxn Poor Ixln Por Micritic Dns Barren Chalk Wht Soft Fos (Fuss) No Odor No Flor No Stn NS
MARMATON 4764' (- 1926)
 Sh Char-Gry Fissil Ls Gry Fxn Poor Ixln Por Micritic Dns Barren Chalk Wht Soft Fos (Fuss) No Odor No Flor No Stn NS
 Ls Wht-Crm Microxln-Fxn Poor Ixln Por Micritic Dns Barren Cht Drk Gry Op Shp Vit Chalk Wht Soft Sh Char-Gry-Grn Fissil No Odor No Flor No Stn NS





4800
4850
4900
4950
5000



Ls Wht-Crm MicroIn-FxIn Poor IxIn Por Micritic Dns Barren Cht Drk Gry Op Shp Vit Chalk Wht Soft Sh Blk Carb-Char-Gry-Grn Fissil No Odor No Flor No Stn NS

Ls Wht-Crm MicroIn-FxIn Poor IxIn Por Micritic Dns Barren Cht Drk Gry Op Shp Vit Chalk Wht Soft Sh Blk Carb-Char-Gry-Grn Fissil No Odor No Flor No Stn NS

Ls Crm-Wht-Gry FxIn Poor IxIn Por Micritic Dns Barren Chalk Inc Sh Gry/Grn Fissil No Odor No Flor No Stn NS

Ls Gry-Crm FxIn Poor IxIn Por Micritic Dns Barren Grad Poor-Fair OOL Por (w/Small OOids in p) Poor Dissolu Poor Leaching Chalky Abd Sh Gry Fissil No Odor No Flor No Stn NS

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

Ls Crm-Tan FxIn Poor IxIn Por Micritic Dns Barren Cht Crm-Tan Op Shp Vit Chalk Sh Blk Carb-Char-Gry-Drab Grn-Maroon Soft-Fissil No Odor No Flor No Stn NS

Ls Crm-Tan FxIn Poor IxIn Por Micritic Dns Barren Cht Crm-Tan Op Shp Vit Chalk Sh Blk Carb-Char-Gry-Drab Grn-Maroon Soft -Fissil No Odor No Flor No Stn NS

PAWNEE 4850' (- 2012)

Ls Wht-Crm MicroIn Poor IxIn Por Micritic Dns Barren Cht Wht- Lt Gry Op Shp Vit Chalk Sh Char-Gry-Drab Grn (Tr Only) Fissil No Odor No Flor No Stn NS

Ls Wht-Crm MicroIn Poor IxIn Por Micritic Dns Barren Cht Wht- Lt Gry Op Shp Vit Chalk Sh Char-Gry-Drab Grn (Tr Only w/Pyr Includ) Fissil No Odor No Flor No Stn NS

Ls Wht-Crm MicroIn Poor IxIn Por Micritic Dns Barren Chalk Abd Cht Wht- Lt Gry Op Shp Vit Sh Blk Carb-Char-Gry-Drab Grn (w/Pyr Includ) Fissil No Odor No Flor No Stn NS

LABETTE 4878' (- 2040)

Ls Wht-Crm FxIn Poor IxIn Por Micritic Dns Barren Grad Poor Pin-Pt IxIn Por Grad Poor OOM Por No-Poor Leaching Chalk Abd Cht Lt Gry Op Shp Vit Sh Blk Carb Fissil No Odor No Flor No Stn NS

Ls Wht-Crm FxIn Poor IxIn Por Micritic Dns Barren Grad Poor Pin-Pt IxIn Por Grad Poor OOM Por No-Poor Leaching Chalk Abd Cht Lt Gry Op Shp Vit Sh Blk Carb Fissil No Odor No Flor No Stn NS

CHEROKEE 4898' (- 2060)

30" CFS @ 4923' Sh Char-Gry-Drab Grn (Tr Only w/Pyr Includ) Fissil Ls Wht-Crm FxIn Poor IxIn Por Micritic Dns Barren Grad Poor Pin-Pt IxIn Por Grad Poor OOM Por No-Poor Leaching Chalk Abd Cht Lt Gry Op Shp Vit No Odor No Flor No Stn NS

Sh Char-Gry-Drab Grn (Tr Only w/Pyr Includ) Fissil Ls Wht-Crm FxIn Poor IxIn Por Micritic Dns Barren Grad Poor Pin-Pt IxIn Por Grad Poor OOM Por No-Poor Leaching Chalk Abd Cht Lt Gry Op Shp Vit No Odor No Flor No Stn NS

Sh Char-Gry-Grn Fissil Ls Tan-Gry FxIn Dns Micritic Barren Chalk Abd Cht Amber Translu Shp Vit No Odor No Flor No Stn NS

Ls Crm-Tan-Gry FxIn Dns Micritic Barren Chalk Abd Cht Wht Op Shp Vit Fos (Coral) Sh Char-Gry-Grn Fissil No Odor No Flor No Stn NS

SECOND CHEROKEE SHALE 4941' (- 2103)

Sh Blk Carb-Gry-Grn Fissil (SSG) Ls Crm-Tan-Gry FxIn Dns Micritic Barren Chalk Abd Cht Wht Op Shp Vit No Odor No Flor No Stn SSh Blk Carb

Sh Char-Gry-Grn Fissil Ls Crm-Tan-Gry FxIn Dns Micritic Barren Chalk Abd Cht Wht Op Shp Vit No Odor No Flor No Stn NS

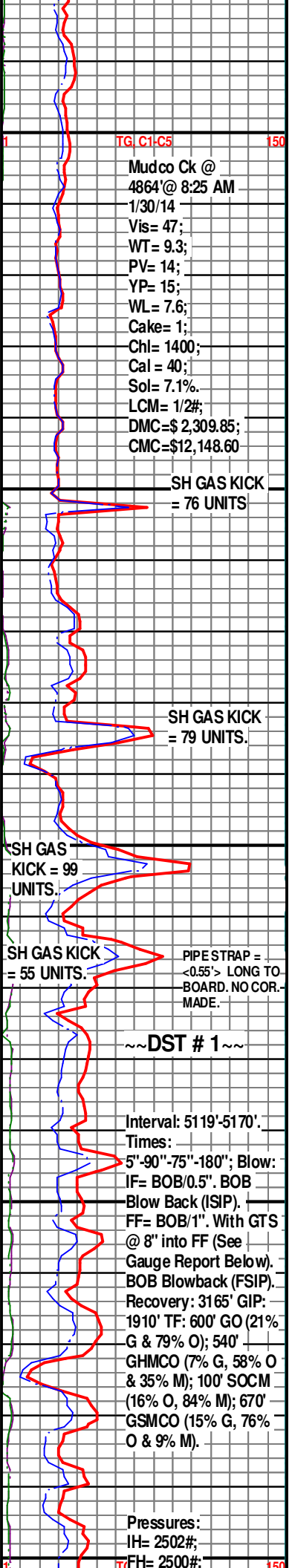
Ls Crm-Tan-Gry FxIn Dns Micritic Barren Chalk Abd Cht Wht Op Shp Vit Sh Char-Gry-Grn Fissil No Odor No Flor No Stn NS

Ls Crm-Tan-Gry FxIn Dns Micritic Barren Chalk Abd Cht Wht Op Shp Vit Sh Char-Gry-Grn Fissil No Odor No Flor No Stn NS

THIRD CHEROKEE SHALE 4982' (- 2144)

Sh Blk Carb-Gry-Grn Fissil (SSG) Ls Tan-Crm-Gry FxIn Dns Micritic Barren Chalk Abd Cht Amber-Tan Translu Shp Vit No Odor No Flor No Stn SSh Blk Carb

Ls Crm-Tan FxIn Dns Micritic Barren Chalk Abd Cht Wht Op Shp Vit Sh Char (w/Pyr Includ) Gry-Grn Fissil No Odor No Flor No Stn NS



TG, C1, C5

Mudco Ck @ 4864' @ 8:25 AM 1/30/14
Vis= 47;
WT= 9.3;
PV= 14;
YP= 15;
WL= 7.6;
Cake= 1;
Chl= 1400;
Cal = 40;
Sol= 7.1%
LCM= 1/2#;
DMC=\$ 2,309.85;
CMC=\$12,148.60

SH GAS KICK = 76 UNITS

SH GAS KICK = 79 UNITS

SH GAS KICK = 99 UNITS

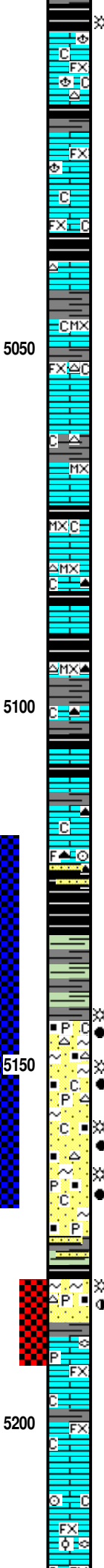
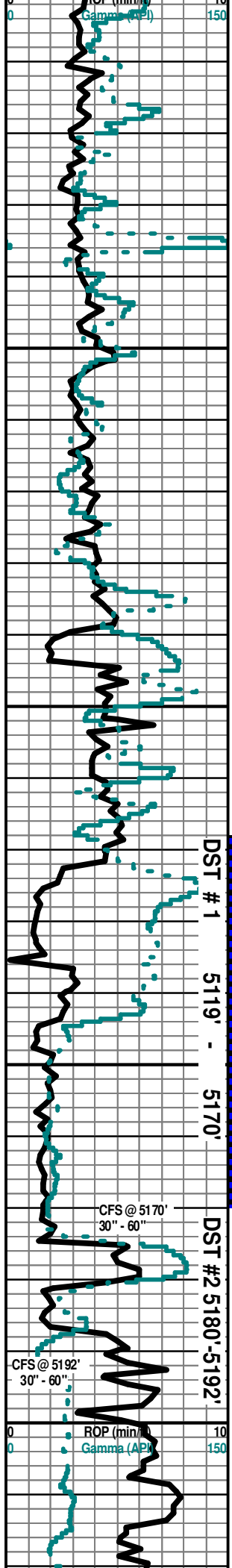
SH GAS KICK = 55 UNITS. PIPE STRAP = <0.55'> LONG TO BOARD. NO COR-MADE.

~DST # 1~

Interval: 5119'-5170'.
Times:
5"-90"-75"-180"; Blow:
IF= BOB/0.5". BOB
Blow Back (ISIP).
FF= BOB/1". With GTS @ 8" into FF (See Gauge Report Below).
BOB Blowback (FSIP).
Recovery: 3165' GIP:
1910' TF: 600' GO (21% G & 79% O); 540' GHMCO (7% G, 58% O & 35% M); 100' SOCM (16% O, 84% M); 670' GSMCO (15% G, 76% O & 9% M).

Pressures:
IH= 2502#;
FH= 2500#;

PLUGGED BIT JET. TOH @ 4923'.



Sh Blk Carb-Gry-Grn Fissil (SSG) Ls Crm-Tan Fxln Dns Micritic Barren Fos (Brach) Chalk No Odor No Flor No Stn SSH Blk Carb

Ls Crm-Wht-Tan Fxln Poor Ixln Por Micritic Dns Barren Chalk
Cht-Amber-Tan Translu Shp Vit Fos (Brach) Sh Blk Carb-Gry Fissil No Odor No Flor No Stn NS

Ls Crm-Tan-Lt Brn Fxln Poor Ixln Por Micritic Dns Barren Chalk Sh Blk Carb-Gry Fissil No Odor No Flor No Stn NS

Sh Blk Carb-Gry Fissil Ls Crm-Tan-Lt Brn Fxln Poor Ixln Por Micritic Dns Barren Chalk No Odor No Flor No Stn NS

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

Ls Crm-Wht-Tan Fxln Poor Ixln Por Micritic Dns Barren Chalk Cht-Amber (Abd) Translu Shp Vit Sh Blk Carb-Gry Fissil No Odor No Flor No Stn NS

Ls Gry-Crm-Tan Microxln Poor Ixln Por Micritic Dns Barren Chalk
Cht-Amber (Abd) Translu Shp Vit Sh Blk Carb-Gry (Tr Only) Fissil No Odor No Flor No Stn NS

Ls Gry-Crm Microxln Poor Ixln Por Micritic Dns Barren Chalk Cht-Lt Gry Translu-Op Shp Vit Sh Blk Carb-Gry (Tr Only) Fissil No Odor No Flor No Stn NS

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

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

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

30" CFS @ 5125' Sh Blk Carb-Gry-Drab Grn Fissil Ls Crm-Tan Microxln Poor Ixln Por Micritic Dns Barren Chalk Cht Drk Amber Translu Shp Vit Fos (Crin) Qtz Ss Gry VFGm Poor InterGran Por (w/Carb Inklus) No Odor No Flor No Stn NS

MORROW SHALE 5124' (- 2286)

60" CFS @ 5125' Sh Blk Carb-Gry-Drab Grn Fissil Ls Crm-Tan Microxln Poor Ixln Por Micritic Dns Barren Chalk Cht Drk Amber (w/Fos Inklus) Translu Shp Vit Qtz Ss Wht-Gry (2 Pcs) Lg-VFGm Ang-SubAng Poor InterGran Por (w/Carb Inklus) Fair Sort No Odor No Flor No Stn NS

Sh Blk Carb-Gry-Drab Grn Fissil Ls Crm-Tan Microxln Poor Ixln Por Micritic Dns Barren Chalk Cht Drk Amber (w/Fos Inklus) Translu Shp Vit Qtz Ss Wht-Gry (2 Pcs) Lg-VFGm Ang-SubAng Poor InterGran Por (w/Carb Inklus) Fair Sort No Odor No Flor No Stn NS

MORROW SAND 5144' (- 2306)

Qtz Ss Crm-tan-Lt Brn Abd Small-Med Clear Grn Ang-SubAng Clusters Good Igran Por V Friable Well Sort (w/CaCO3 Matrix, Glacu Tr & Carb Tr Inklus? Fluvial) GSG & GSFO (Free Oil in Spl Under Wtr w/Heat) Cht Wht Op Vit Shp Good-Strong Odor Dull Flor Pyr Mass Sh Gry "Gummy-Drab Grn Soft-Fissil (Both G & O Do Not Flor) Chalky GSG & GSFO

30" CFS @ 5170' Qtz Ss Lt Brn-Brn V Abd Small-Med Clear Grn Inc Size Ang-SubAng (Upward Fineing) Clusters Good Igran Por V Friable Well Sort (w/CaCO3 Matrix, Glacu Dec & Hvy Blk Carb Inc Inklus ? Fluvial) GSG & Abd GSFO (SFO AA) Micro-Lamination Qtz Ss Btw Sh (Aqua-Blk) Cht Wht Op Vit Shp (Tr Only) Pyr Mass Sh Blk Carb-Gry-Drab Grn Fissil Chalk (Tr Only) Good-Strong Odor VGSG & VGSFO

60" CFS @ 5170' Qtz Ss AA Lt-Brn-Gry Fine-Med Grns (w/Glacu Dec Carb Dec Inklus) Well Sort Good-Strong Odor GSG & GSFO AA ? Dec Sat Stn

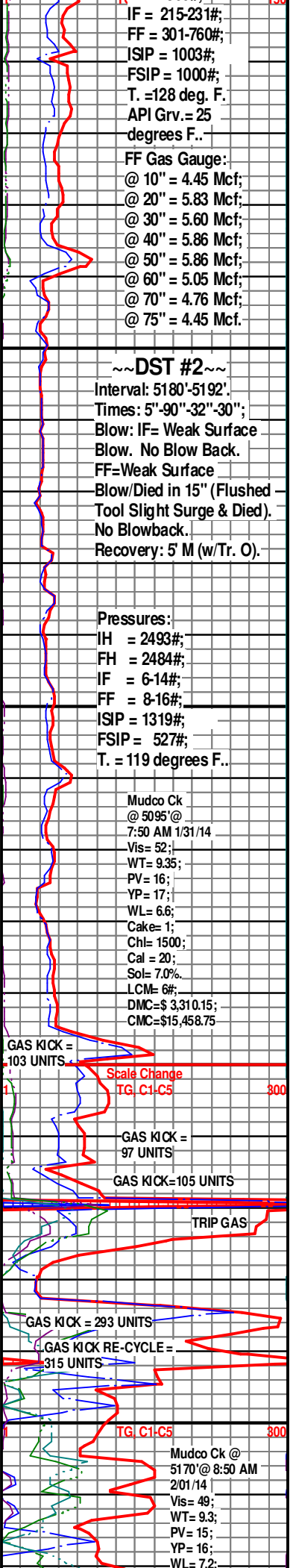
CHESTERIAN 5180' (- 2342)

30" CFS @ 5192' (Morrow ?) Qtz Ss Wht-Lt BrnSmall-Lg Inc Frosted-Clear Grns Ang/Lg Grns SubAng/Small Grn Clusters (w/Pyr Inklus) Good Igran Por Friable Med-Well Sort (Glacu Tr & Hvy Blk Carb Inklus Tr ? Fluvial) GSG & GSFO (w/Boken Under Heat in Wtr) Pyr Mass Cht Amber Translu Vit Shp (Tr Only) Pyr Mass Sh Blk Carb-Gry Fissil Faint Odor Abd SFO in Spl Tray SG & GSFO

60" CFS @ 5192' (Morrow ?) Ls Crm Microxln-Fxln Fair Pin-Pt Ixln Por (w/Fos (Fuss) Inklus) Qtz Ss Wht-Lt BrnSmall-LG Inc Frosted-Clear Grns Ang /Lg Grns (Few WO/Glacu) SubAng /Small Grn Clusters (W/Glacu) AA Good Por AA Friable Med-Well Sort AA GSG & GSFO (w/Boken Under Heat in Wtr) Cht AA Pyr AA Sh AA Faint Odor Abd SFO in Spl Tray GSG & GSFO

Ls Wht-Fxln Dns Micrite Grad Fos (Brach & Fos Inclusion) Pyr Mass Chalk Sh Char-Gry-Grn-Blk Carb Fissil No Odor No Flor NS

Ls Wht Fxln Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Crd Dns Micrite Fos (Crin) Foss Chalky Abd Ch Char Grn Crm Blk



Grad Dns Micrite Fos (Crin, Fuss) Chalk V Abd Sh Char- Gry- Grn- Blk Carb Fissil No Odor No Flor NS

Ls Wht FxIn Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Dns Micrite Fos (Crin, Fuss) Chalk V Abd Sh Char- Gry- Grn- Blk Carb Fissil No Odor No Flor NS

Ls Wht FxIn Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls CrmTan-Gry FxIn Dns Micrite Chalky Sh Varicolored Fissil No Odor No Stn No Flor NS

Ls Wht-Crm FxIn Dns Micrite Grad Pin-Pt lXIn Por Barren Tr Qtz Ss AA (w/SO ? Sluff) Chalky Sh Gry-Grn-Aqua Fissil No Odor No Stn No Flor NS

Ls Wht-Crm FxIn Dns Micrite Grad Pin-Pt lXIn Por Barren Cht Wht Op Shp Vit Chalky Pry Mass Sh Varicolored Blk Carb-Char-Aqua-Red-Maroon (Wash Red) Fissil No Odor No Stn No Flor NS

Qtz Ss Aqua-Wht VFGm Well Rounded-Well Sort Dns Semi-Friable Fair CaCO3 Matrix Barren Ls AA FxIn Barren Sli ? Min Flor Cht Amber Translu Shp Vit Chalky Sh Varicolored AA (Wash Red) Soft-Fissil No Odor No Stn No Flor NS

MISSISSIPPIAN "Ste. GEN" 5278' (- 2440)

Ls Wht FxIn Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls CrmTan-Gry FxIn Dns Micrite AA Tr Qtz Ss AA Cht Wht (w/Fos (Crin/OOL (Drk Gry-Blk Includ) Chalky Sh Varicolored Soft Fissil AA No Odor No Stn No Flor NS

Ls Wht FxIn Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls Crm-Gry FxIn Dns Micrite Chalky Sh Varicolored Fissil No Odor No Stn No Flor NS

Ls Wht-Gry-Sli Aqua FxIn Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls Crm-Gry FxIn Dns Micrite Chalky Sh Blk Carb-Gry Fissil No Odor No Stn No Flor NS

Ls Crm-Tan-Wht FxIn Poor OOL Por (w/Smal-Medl OOL in pl) "Sandy OOL Ls" Barren Grad Ls Crm-Gry FxIn Dns Micrite Chalky Sh Blk Carb-Gry Fissil No Odor No Stn No Flor NS

MISS. ST. LOUIS 5320' (- 2498)

Ls Wht FxIn Poor OOL Por (w/Small Ooids in pl) "Sandy OOL Ls" Barren Grad Ls Crm-Gry FxIn Dns Micrite Cht Wht Translu-Op Shp Vit (Tr Only) Chalky Sh Char -Gry-Grn-Aqua-Ren Fissil No Odor No Stn No Flor NS

Ls Wht FxIn Poor OOL Por (w/Small Ooids in pl) "Sandy OOL Ls" Barren Grad Ls Crm-Gry FxIn Dns Micrite Cht Wht Translu-Op Shp Vit (Tr Only) Chalky Sh Char -Gry-Grn-Aqua-Ren Fissil No Odor No Stn No Flor NS

Ls Wht FxIn Poor OOL Por (w/Small Ooids in pl) "Sandy OOL Ls" Barren Grad Ls Crm-Gry FxIn Dns Micrite Cht Wht Translu-Op Shp Vit (Tr Only) Chalky Sh Char -Gry-Grn-Aqua-Ren Fissil No Odor No Stn No Flor NS

Ls Wht FxIn Poor OOL Por (w/Small Ooids in pl) "Sandy OOL Ls" Barren Tr Glacu Includ Grad Ls Crm-Gry FxIn Dns Micrite Cht Wht Translu-Op Shp Vit (Tr Only) Chalky Sh Char -Gry-Grn-Aqua-Ren Fissil No Odor No Stn No Flor NS

Ls Wht FxIn Poor OOL Por (w/Small Ooids in pl) "Sandy OOL Ls" Barren Tr Glacu Includ Grad Ls Crm-Gry FxIn Dns Micrite Cht Wht Translu-Op Shp Vit (Tr Only) Chalky Sh Char -Gry-Grn-Aqua-Ren Fissil No Odor No Stn No Flor NS

Ls Wht FxIn Poor OOL Por (w/Small Ooids in pl) "Sandy OOL Ls" Tr Glacu Includ Barren Grad Ls Crm-Gry FxIn Dns Micrite Cht Wht Translu-Op Shp Vit (Tr Only) Chalky Sh Char -Gry-Grn-Aqua-Ren Fissil No Odor No Stn No Flor NS

30" CFS @ 5400' Ls Wht Med OOL Por (w/Med Ooids in pl) Friable Med-Good InterOOL Por (w/Drk Brn-Blk Stn in Pin-Pt Inter OOL Por) MSG & MSO (w/SFO in Wtr Under Heat) Tr Glacu Includ Cht Wht-Tan Op Shp Vit Chalky V Abd Fair Odor No Flor MSG & MSO

ST. LOUIS LWR "B" Ø 5388' (- 2550)

60" CFS @ 5400' Ls Wht Med OOL Por (w/Med-Lg Ooids in pl) Friable Med -Good InterOOL Por (w/Drk Brn-Blk Stn in Pin-Pt Inter OOL Por) Inc in Lower Samples GSG & GSO (w/GSG & GSO in Wtr Under Heat) Cht Wht-Org Op Shp Vit Chalk V Abd Fair Odor No Flor GSG & GSO

60" CFS @ 5410' Ls Wht-Crm FxIn Tr. Med OOL Por AA (w/SSG & SSO AA) Grad Dns Micrite Cht Wht-Peach-Org (w/ Blk Includ) Abd Translu-Op Shp Vit Chalk Dec No Odor No Flor Tr SG & SO AA Mostly NS

Ls Wht FxIn Poor lXIn Por Micritic Dns Barren Grad Tr OOL Por (w/Small Ooids in pl) AA Barren Cht Wht-Peach-Org Translu-Op Shp Vit Chalk Sh Vari-Colored Char-Gry (w/Pyr Includ) Blk-Carb-Aqua-Marood Soft-Fissil No Odor No Stn No Flor NS

Ls Wht FxIn Poor lXIn Por Micritic Dns Barren Grad Tr OOL Por (w/Small Ooids in pl) AA Barren Cht Wht-Peach-Org Translu-Op Shp Vit Chalk Sh Vari-Colored Char-Gry (w/Pyr Includ) Blk-Carb-Aqua-Marood Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm FxIn Poor lXIn Por Micritic Dns Barren Grad Tr OOL Por (w/Small Ooids in pl) AA Barren Cht Wht-Peach-Org Translu-Op Shp Vit Chalk Sh Vari-Colored Char-Gry (w/Pyr Includ) Blk-Carb-Aqua-Marood Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm FxIn Poor lXIn Por Micritic Dns Barren Grad Tr OOL Por (w/Small Ooids in pl)

Cake= 1;
Chl= 2700;
Cal = 20;
Sol= 7.0%;
LCM= 4#;
DMC=\$ 960.70;
CMC=\$16,419.45

Mudco Ck @
5192' @ 8:50 AM
2/02/14
Vis= 48;
WT= 9.35;
PV= 15;
YP= 16;
WL= 8.0;
Cake= 1;
Chl= 2600;
Cal = 20;
Sol= 7.0%;
LCM= 4#;
DMC=\$ 66.15;
CMC=\$ 16,485.60

~DST #3~

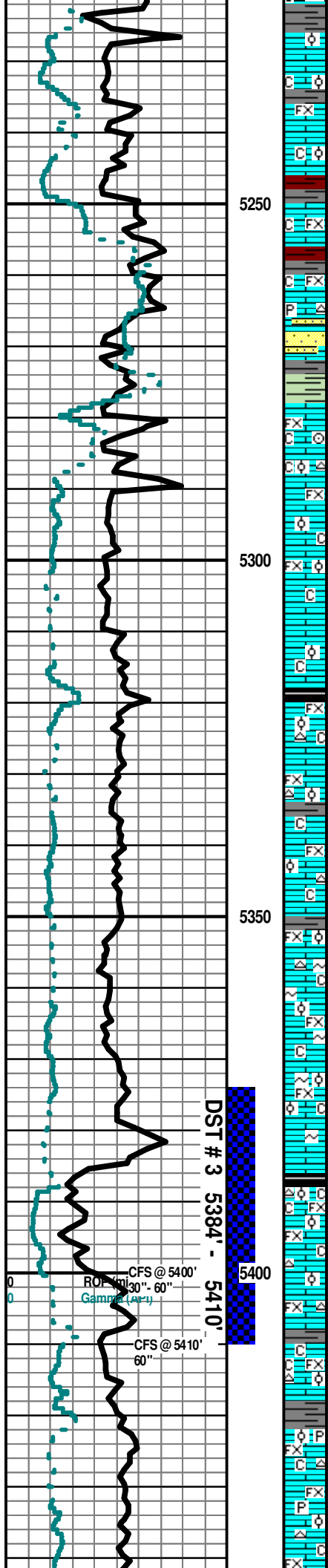
Interval: 5384'-5410'.
Times:
5"-90"-60"-180"; Blow:
IF= Weak Surface
Blow/1". No Blow
Back. FF=Weak
Building To
BOB/56.5". No
Blowback.
Recovery: 190' GIP;
25' SOCM (8% O &
92% M).
Tool Spl: (25% O, 48%
M & 27% Wtr).
Chl. = 25,000 Ppm.
PH=7.0. RW= 0.36 @
61 degrees F..

Pressures:
IH = 2585#;
FH = 2582#;
IF = 8-9#;
FF = 10-17#;
ISIP = 1463#;
FSIP = 1463#;
T. = 124 degrees F..

GAS KICK = 96 UNITS

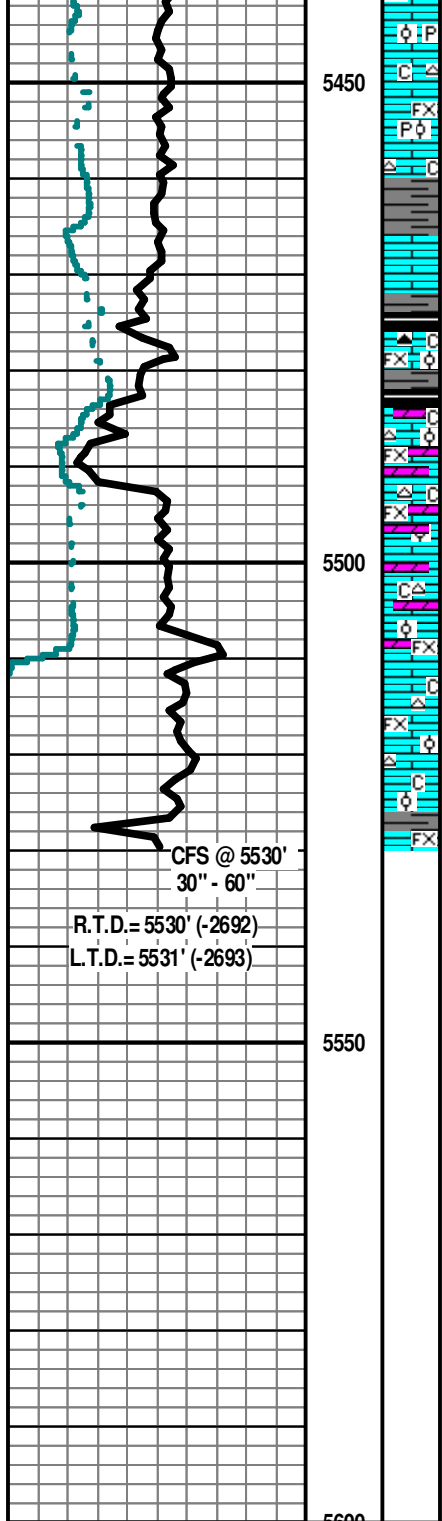
TG C1-C5 300

Mudco Ck @
5410' @ 9:10 AM
2/03/14
Vis= 50;
WT= 9.35;
PV= 16;
YP= 16;
WL= 7.0;
Cake= 1;
Chl= 2100;
Cal = 20;
Sol= 7.0%;
LCM= 4#



DST # 3 5384' - 5410'

CFS @ 5400'
60"
Gamma (API)
CFS @ 5410'
60"



5450

Ls Wht-Crm FxIn Poor lxn Por Micritic Dns Barren Grad Tr OOL Por (w/Small OOids in pl)
 AA Barren Cht Wht-Peach-Org Translu-Op Shp Vit Chalk Sh Vari-Colored Char-Gry (w/Pyr Includ) Blk-Carb-Aqua-Marood Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm FxIn Poor lxn Por Micritic Dns Barren Grad Tr OOL Por (w/Small OOids in pl)
 AA Barren Cht Wht-Gry Translu-Op Shp Vit Chalk Sh Vari-Colored AA Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm FxIn Poor lxn Por Micritic Dns Barren Grad Tr OOL Por (w/Small OOids in pl)
 AA Barren Cht Wht-Gry Translu-Op Shp Vit Chalk Sh Vari-Colored AA Soft-Fissil No Odor No Stn No Flor NS

Ls Crm FxIn Poor lxn Por Micritic Dns Barren Grad Tr OOL Por (w/Small OOids in pl) AA Barren Grad Dolo Gry Fxn Dns Micrite Grad Poor-Fair OOL Por (w/Small OOids in pl) Barren (Tr Glacu Includ) Cht Drk Blk Op Shp Vit Chalk Sh Blk-CarbSoft-Fissil No Odor No Stn No Flor NS

SALEM (SPERGEN) 5484' (- 2646)

Ls Crm FxIn Poor lxn Por Micritic Dns Barren Grad Tr OOL Por (w/Small OOids in pl) AA Barren Grad Dolo Gry Fxn Dns Micrite Grad Poor-Fair OOL Por (w/Small OOids in pl) Barren (Tr Glacu Includ) Cht Wht-Peach Translu- Op Shp Vit Chalk Sh Gry Fissil No Odor No Stn No Flor NS

Ls Crm-Tan FxIn Poor lxn Por Micritic Dns Barren Grad Tr OOL Por (w/Small OOids in pl) AA Barren Cht Wht-Gry Translu-Op Shp Vit Chalk Sh Blk CarbSoft-Fissil No Odor No Stn No Flor NS

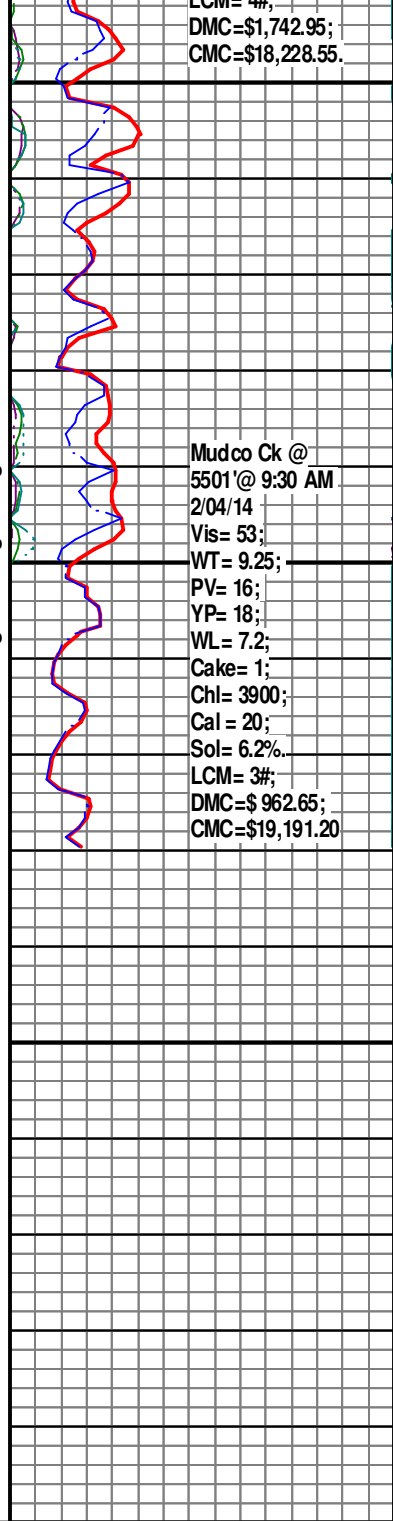
Ls Crm FxIn Poor lxn Por Micritic Dns Barren Grad Tr OOL Por (w/Small OOids in pl) AA Barren Grad Dolo Gry Fxn Dns Micrite Grad Poor-Fair OOL Por (w/Small OOids in pl) Barren (Tr Glacu Includ) Cht Wht-Peach Translu- Op Shp Vit Chalk Sh Gry Fissil No Odor No Stn No Flor NS

30" CFS @ 5530' Ls Crm-Tan FxIn Poor lxn Por Micritic Dns Barren Grad Tr OOL Por (w/Small OOids in pl) AA Barren Grad Dns Micrite Cht Wht-Gry Translu-Op Shp Vit Chalk Sh Blk-CarbSoft-Fissil No Odor No Stn No Flor NS

60" CFS @ 5530' Ls Crm-Tan FxIn Poor lxn Por Micritic Dns Barren Grad Tr OOL Por (w/Small OOids in pl) AA Barren Grad Dns Micrite Cht Wht-Gry Translu-Op Shp Vit Chalk Sh Blk-CarbSoft-Fissil No Odor No Stn No Flor NS

5500

5600



LCM= 4#;
 DMC=\$1,742.95;
 CMC=\$18,228.55.

Mudco Ck @
 5501' @ 9:30 AM
 2/04/14
 Vis= 53;
 WT= 9.25;
 PV= 16;
 YP= 18;
 WL= 7.2;
 Cake= 1;
 Chl= 3900;
 Cal = 20;
 Sol= 6.2%
 LCM= 3#;
 DMC=\$ 962.65;
 CMC=\$19,191.20

CFS @ 5530'
 30" - 60"

R.T.D.= 5530' (-2692)
 L.T.D.= 5531' (-2693)

Electric Logs Run: By Pioneer (LogTech) Logging: Dual
 Induction; Compensated Density-Neutron; Sonic;
 Microresistivity & Cased Hole Gamma Ray-Nutron Logs.

Geologist left Location @ 9:00 AM on 2-05-14