



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

Well Name: FITZGERALD "A" # 5-30
Location: N/2 - N/2 - NE of Sec. 30 - T. 30 S. - R. 31 W.
License Number: A.P.I. #15-081-22,027-00-00
Spud Date: 8/24/2013
Surface Coordinates: SPOT: 330' FNL & 1320' FEL
Region: HASKELL CO., KS.
Drilling Completed: 8/31/2013

**Bottom Hole
Coordinates:**
Ground Elevation (ft): 2846' **K.B. Elevation (ft):** 2857'
Logged Interval (ft): 4000' **To:** 5700' **Total Depth (ft):** 5700' RTD 5701' LTD
Formation: MISSISSIPPIAN
Type of Drilling Fluid: CHEMICAL/POLYMER/GEL

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

OPERATOR

Company: McCOY PETROLEUM CORPORATION KCC LIC. NO. # 5003
Address: 8080 E. CENTRAL, STE. 300
WICHITA, KANSAS 67206-2366

GEOLOGIST

Name: DAVID P. WILLIAMS, P.G.
Company: DW ENERGY, LLC
Address: 312 N. BROADVIEW STREET
WICHITA, KANSAS 67208

CASINGS & DEVIATION

Spud at 2:00 am on 08/22/13. Drilled 12-1/4" to 1826'. Ran 42 joints of new 24#, 8-5/8" casing. Tallied 1808.' Set at 1821' KB. Welded straps on shoe, bottom 3 joints and top 2 joints, tacked collars on the remainder. Centralizers (6) on joints 1-3- 5-7-39. Basket at 120'. Float insert in top of 1st joint. Cemented with 450 sks MDC; 3% CC, & 1/4# FS; Plus tailed with 175 sks Common with 2% Gel; 3% CC & 1/4# CF. Cement did circulate.. Plug down at 1:15 pm on 08/22/13. Quality Cementing ticket #5940.

Deviation Survey's Taken: @ 1836' = 1 degree; @ 4688' = 3/4 degree; and @ 5700' = 1-1/4 degree

DSTs

~~ DST # 1 ~ 4666'-4688'. Times: 30"- 60"- 60"- 90".

Blow: IF=Strong/ BOB/1". Weak 2" Blow Back During ISIP. FF= Strong Blow BOB/ Instant & GTS @ 10" (See Gauge Report). FSIP= 7" Blow Back

Recovery: 330' TF: 80" WGMO (20% G; 48% O; 2% W & 30%M); 185' WMGO (25% G; 57% O; 9% W & 7% M); 65' MWOG(36% G; 30% O; 27% W; 7% M). API Oil Grv.= 41 degrees Chl.= 71,000 Ppm. Rw =0.95 @ 80 degrees F.

Pressures: IH= 2518#; FH= 2242#; IF= 48 82#; FF= 81-130#; ISIP= 712#; FSIP= 723#; T.= 123 degrees. F.

Gas Gauge FF= @ 10"= 6.8 Mcf; @ 20"= 7.5 Mcf; @ 30"= 7.8 Mcf; @ 40"= 8.5 Mcf; @ 50"= 9.6 Mcf; @ 60"= 9.9 Mcf.

~~ DST # 2 ~ 5268'-5328'. Times: 30"- 60"- 60"- 90".


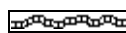
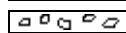

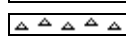
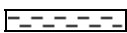









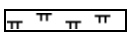


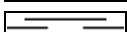
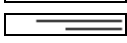
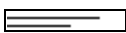



Blow: IF=Strong/ BOB 15sec/GTS @ 3min (See Gauge Report). FF= Strong Blow BOB/ Instant. FSIP= Weak Surface Blow - 2"

Recovery: 170' TF: 170' GCM (5% G; 95%M).











































































Pressures: IH= 2679#; FH= 2490#; IF= 509-458#; FF= 512-478#; ISIP= 1692#; FSIP= 1669#; T.= 118 degrees. F.

Gas Gauge IF= @ 10"=1,466 Mcf; @ 20"= 1,705 Mcf; @30"= 1,726 Mcf. FF= @ 10"= 1,900 Mcf; @ 20"= 2,095 Mcf; @ 30"= 2,117 Mcf; @ 40"= 2,117 Mcf; @ 50"= 2,139 Mcf; @ 60"= 2,139 Mcf.

ROCK TYPES

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

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

- POROSITY**
 [E] Earthy
 [B] Fenest
 [F] Fracture
 [X] Inter
 [Z] Moldic
 [O] Organic
 [P] Pinpoint

- [V] Vuggy
SORTING
 [W] Well
 [M] Moderate
 [P] Poor

- ROUNDING**
 [R] Rounded
 [r] Subrnd
 [a] Subang
 [A] Angular

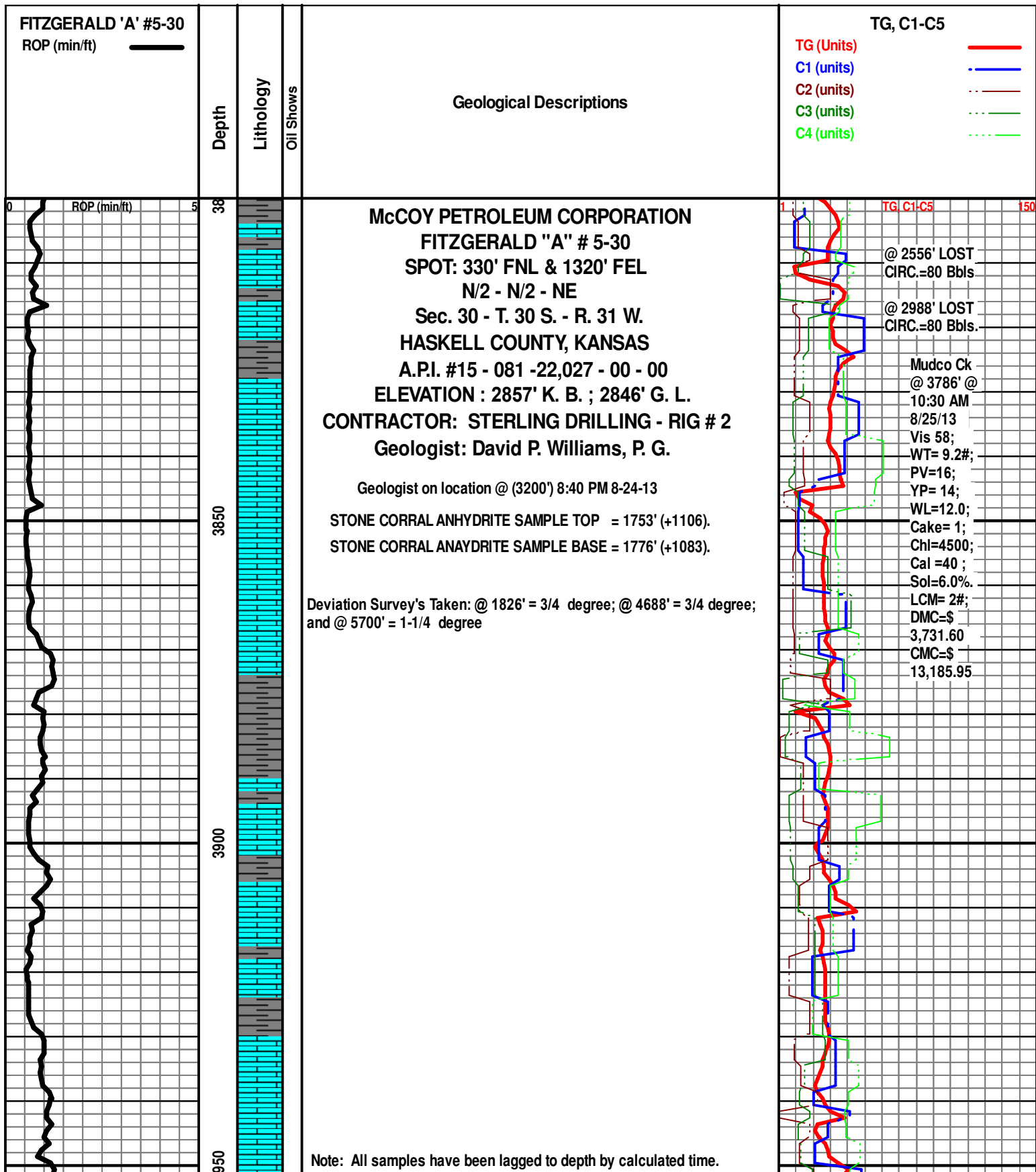
- [●] Even
 [◉] Spotted
 [◌] Ques
 [D] Dead

[■] Dst_alt

- EVENT**
 [▶] Rft
 [◀] Sidewall

- OIL SHOW**
 [X] Gas show

- INTERVAL**
 [■] Core
 [■] Dst



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

Begin 31' Sample Examination @ 4000'.

No Sample Caught.

GAS KICK= 168 UNITS

TG C1-C5

@ 4011' PTD
ADJUST
ANNULAR
VELOCITY
(AV)= 180.10

Ls Crm-Gry FxIn Dns Micrite Grad Poor OOL Por (w/Small OOL in pl)
Barren Poor Dissolu Poor Leaching Chalk Wht Soft Abd Sh Char-Gry-Blk
Carb Fissil No Flor No Stn No Odor NS

Ls Crm-Gry FxIn Dns Micrite Grad Poor OOM Por Poor InterOOM Por
Barren Poor Dissolu Poor Leaching Chalk Wht Soft Sh Char-Gry- Blk Carb
Fissil No Flor No Stn No Odor NS

Ls Crm-Gry FxIn Dns Micrite Grad Poor OOM Por Poor InterOOM Por
Barren Poor Dissolu Poor Leaching Chalk Wht Soft Sh Char- Gry-Blk Carb
Fissil No Flor No Stn No Odor NS

SH GAS KICK= 118 UNITS.

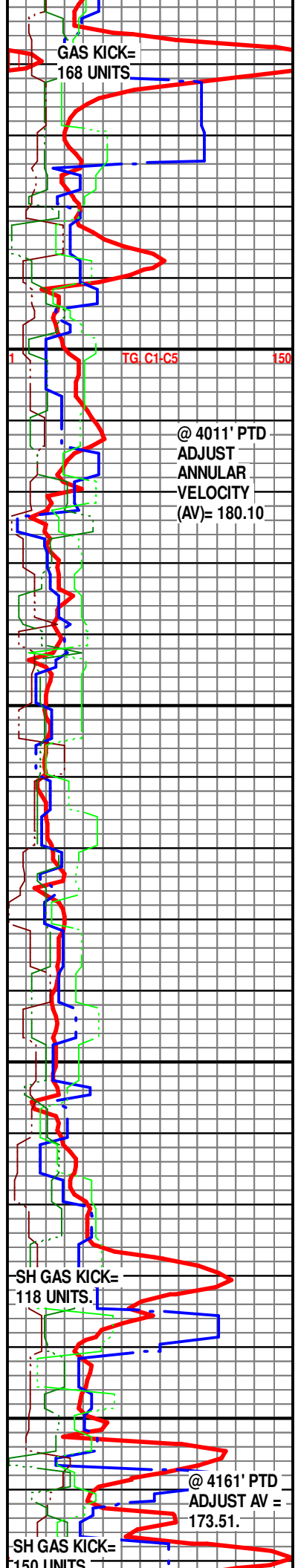
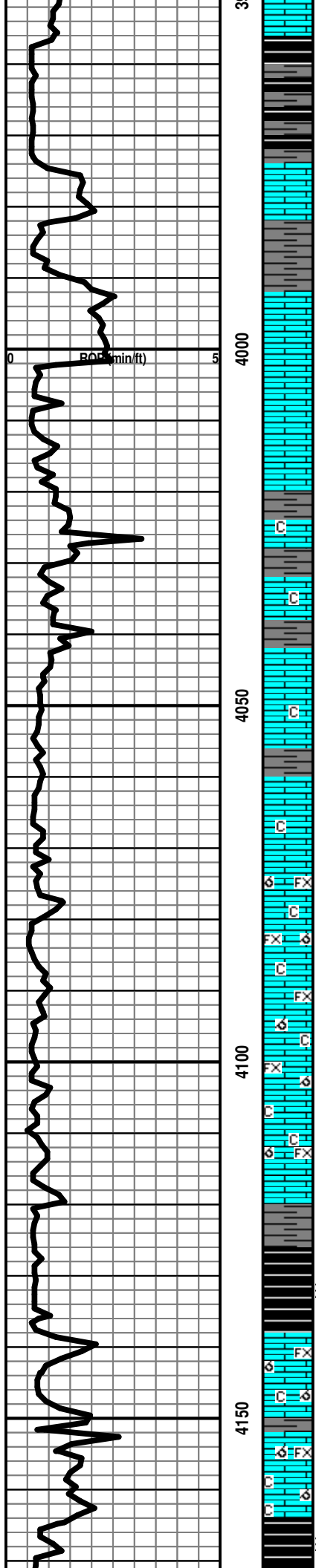
Sh Char-Gry-Blk Carb Fissil Abd Ls Crm-Gry FxIn Dns Micrite Grad Poor
OOM Por Poor InterOOM Por Barren Poor Dissolu Poor Leaching Chalk
Wht Soft No Flor No Stn No Odor NS

@ 4161' PTD
ADJUST AV =
173.51.

SH GAS KICK= 150 UNITS

HEEBNER 4165' (- 1308)

LEVENWORTH 4172' (- 1315)



LEVENWORTH 4172 (- 1315)

Sh -Blk Carb-Char-Grn-Gry Fissil Abd Ls Wht-Crm-Gry-Brn FxIn Dns
Micrite (w/Pyr Includ) Chalk Wht Soft No Flor No Stn No Odor NS

Ls Wht-Crm-Gry-Brn FxIn Dns Micrite Grad Poor-Fair OOM Por (w/Fair Vug
Leaching-2 pcs) Barren Chalk Wht Sh Char-Grn-Gry- Blk Carb Fissil Abd
No Flor No Stn No Odor NS

LANSING 4224' (- 1367)

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

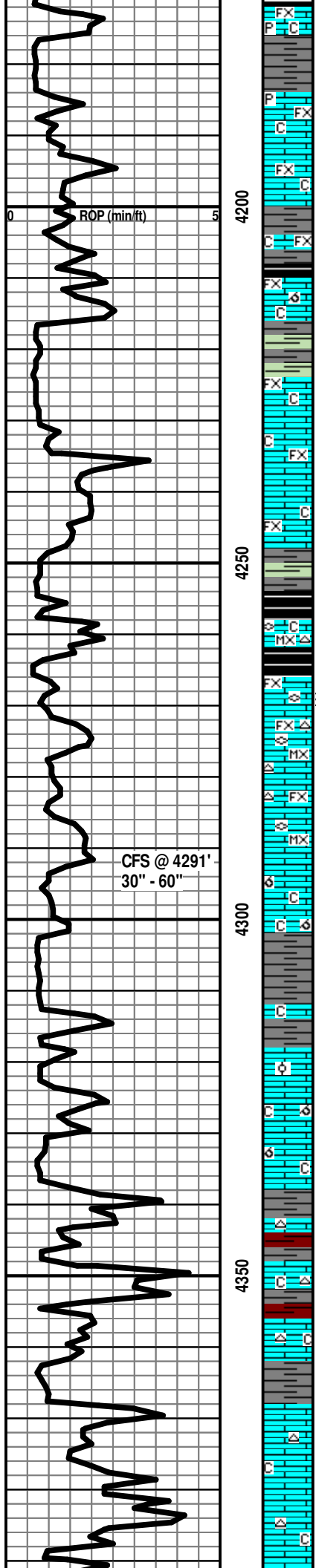
30" CFS @ 4291' Ls Wht-Crm FxIn-MicroxIn Dns Micrite Grad Poor Pin-Pt
IxIn Por Cht Wht-Crm Op Shp Vit Fos (Fuss) Sh Char-Gry-Blk Carb AA No
Odor No Flor No Stn NS

60" CFS @ 4291' Ls Wht-Crm FxIn-MicroxIn Dns Micrite Grad Poor Pin-Pt
IxIn Por Cht Wht-Crm Op Shp Vit Fos (Fuss) Sh Char-Gry-Blk Carb AA No
Odor No Flor No Stn NS

CFS @ 4291'
30" - 60"

Ls Wht-Crm-Gry FxIn Dns Micrite Grad Poor-Fair IxIn Pin-Pt Por Grad Poor
OOM Por (w/OOL in pl) Poor Dissolu Poor Leaching Barren Chalk Wht Sh
Char-Gry-Maroon-Red Fissil ? Min Flor (5 Pcs) No Stn No Odor NS

Ls Wht-Crm-Gry FxIn Dns Mostly Micrite Grad Poor-Fair IxIn Pin-Pt Por
Barren Cht Wht Op Vit Shp Chalk Wht Sh Char- Grn- Gry- Maroon -Red
Fissil ? Min Flor No Stn No Odor NS

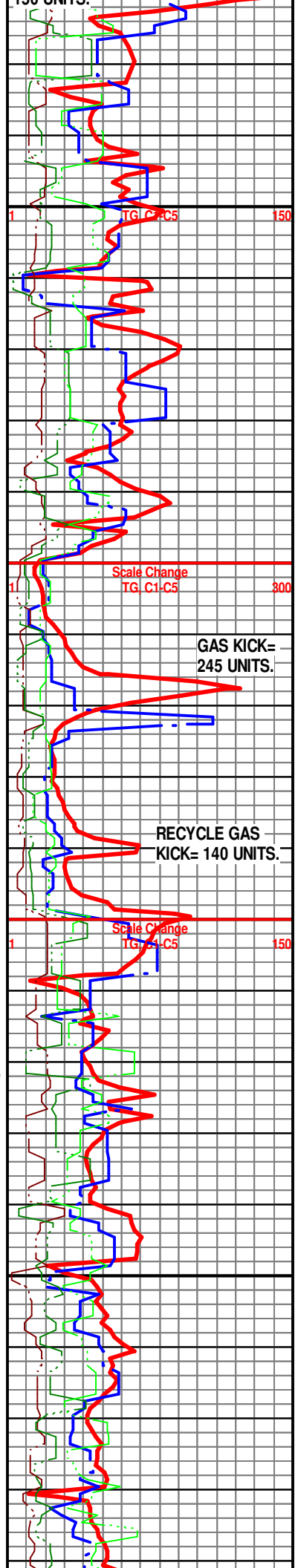


4200

4250

4300

4350



150

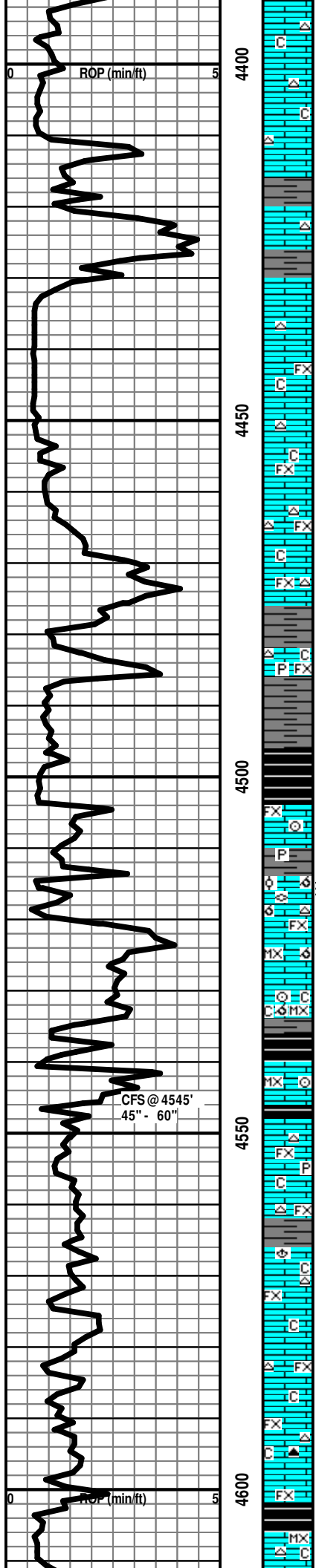
Scale Change
TGI C1C5 300

GAS KICK=
245 UNITS.

RECYCLE GAS
KICK= 140 UNITS.

Scale Change
TGI C1C5 150

150



Ls Wht-Crm-Gry FxIn Dns Mostly Micrite (w/Pyr Includ) Grad Poor-Fair IxIn
 Pin-Pt Por Barren Cht Wht Op Vit Shp Chalk Wht Sh
 Char-Grn/Gry-Maroon-Red Fissil ? Min Flor No Stn No Odor NS

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

Begin 10' Wet & Dry Sample Examination @ 4500'.

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

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

Ls Wht-Crm-Lt Tan FxIn Micritic Grad Poor IxIn Por Cht Wht Op Vit Shp Pyr
 Mass Chalk Wht Soft Abd Sh Char-Gry-Grn Soft-Fissil No Odor ? Min Flor
 No Stn NS

Sh Char-Gry-Blk Carb Soft-Fissil Ls Wht-Crm-Tan FxIn Micritic (w/Poor IxIn
 Por) Fos (Crin) Chalk Wht Soft Abd No Odor ? Min Flor No Stn NS

Sh Char-Gry-Blk Carb Soft-Fissil Ls Wht-Crm-Tan FxIn Micritic (w/Poor IxIn
 Por) Fos (Crin) Chalk Wht Soft Abd No Odor No Min Flor No Stn NS

LANSING "G" 4514' (-1657')

Ls Crm-Lt Tan FxIn Med-Good OOM Por (w/Smal-Med Sized OOL in pl) Med Dissolu Med Vug
 Leaching SG & SFO (In Wtr Under Heat (Both Gas & Oil Do Flor (Lt Grn) Cht Wht (w/Fuss
 Includ) Op Shp Vit Sh Char-Gry (w/Pyr Includ) Fissil Poor-Med Flor Fair Odor Tr Sat Stn Lt Brn
 MSG & MSO

Ls Crm-Wht MicroIn Dns Micrite Grad Poor OOM Por Poor InterOOM Por Barren Poor Dissolu
 Poor Leaching VSSG & VSSO AA (Sluff ?) Fos (Crin) Sh Char-Gry Soft-Fissil No Odor No Stn
 No Flor NS

30" CFS @ 4545' Ls Crm-Wht MicroIn Dns Micrite Grad Poor OOM AA Fos (Crin) Sh
 Char-Gry Soft-Fissil No Odor No Stn No Flor NS

60" CFS @ 4545' Ls Crm-Wht MicroIn Dns Micrite Fos (Crin) Sh Char-Gry Soft- Fissil No
 Odor No Stn No Flor NS

CFS @ 4545'
 45" - 60"

Ls Wht-Tan FxIn Micrite Cht Wht-Gry-Tan Translu- Op Shp Vit Pyr Mass
 Chalky Sh Char-Gry Soft-Fissil No Odor No Stn No Flor NS

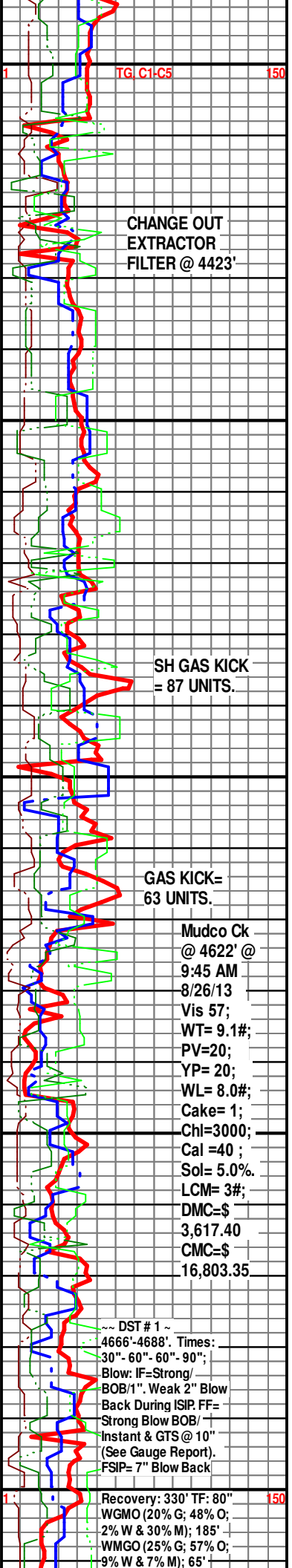
Ls Wht-Crm-Tan FxIn Micrite Cht Wht-Gry Op Shp Vit Fos (Brach) Chalky
 Sh Char-Gry No Odor No Stn No Flor Dec NS

Ls Crm-Tan-Gry FxIn Micrite Cht Wht-Gry Op Shp Vit Chalky Sh Char- Gry-
 Blk Carb No Odor No Stn No Flor NS

Ls Crm-Tan-Gry FxIn Micrite Cht Wht-Gry Op Shp Vit Chalky Sh Char- Gry-
 Blk Carb No Odor No Stn No Flor NS

Ls Crm-Tan-Gry FxIn Micrite Cht Wht-Amber (Banded) Op Shp Vit Pyr Mass
 Chalky Sh Char-Gry Fissil No Odor No Stn ? Min Flor NS

Ls Crm-Gry FxIn-MicroIn Micrite Cht Wht Op Shp Vit Chalky Sh Blk
 Carb-Char-Gry Fissil No Odor No Stn No Flor NS



CHANGE OUT
 EXTRACTOR
 FILTER @ 4423'

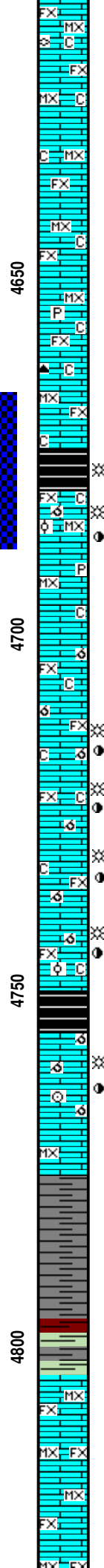
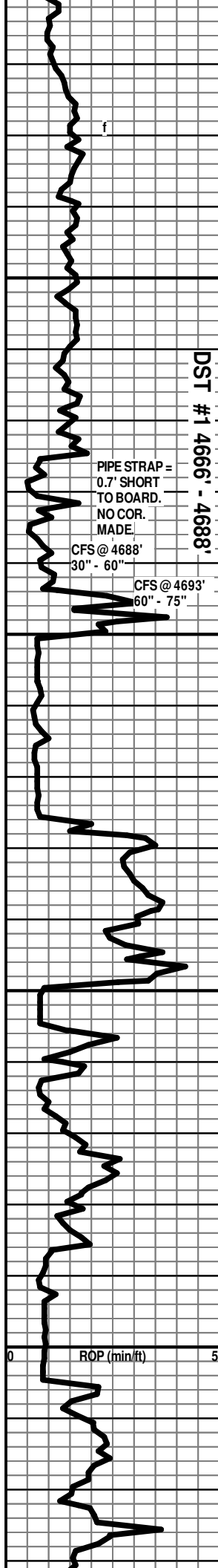
SH GAS KICK
 = 87 UNITS.

GAS KICK=
 63 UNITS.

Mudco Ck
 @ 4622' @
 9:45 AM
 8/26/13
 Vis 57;
 WT= 9.1#;
 PV=20;
 YP= 20;
 WL= 8.0#;
 Cake= 1;
 Chl=3000;
 Cal =40 ;
 Sol= 5.0%.
 LCM= 3#;
 DMC=\$
 3,617.40
 CMC=\$
 16,803.35

~ DST # 1 ~
 4666'-4688'. Times:
 30"- 60"- 60"- 90";
 Blow: IF=Strong/
 BOB/1". Weak 2" Blow
 Back During ISIP. FF=
 Strong Blow BOB/
 Instant & GTS @ 10"
 (See Gauge Report).
 FSIP= 7" Blow Back

Recovery: 330' TF: 80"
 WGMO (20% G; 48% O;
 2% W & 30% M); 185'
 WMGO (25% G; 57% O;
 9% W & 7% M); 65'



Ls Crm-Tan FxIn-MicroxIn Micrite Fos (Fuss) Chalky Sh Char-Gry Fissil No Odor No Stn ? Min Flor NS

Ls Crm-Tan FxIn-MicroxIn Micrite Chalky Sh Char-Gry Fissil No Odor No Stn No Flor NS

Ls Crm-Tan FxIn-MicroxIn Micrite Chalk Sh Char-Gry Fissil No Odor No Stn No Flor NS

Ls Crm-Tan FxIn-MicroxIn Micrite Chalk Sh Char-Gry Fissil No Odor No Stn No Flor NS

Ls Crm-Tan FxIn-MicroxIn Micrite (w/Pyr Inclus) Chalk Sh Char- Gry Fissil No Odor No Stn No Flor NS

Ls Crm-Tan FxIn-MicroxIn Micrite Cht Drk-Gry (w/Wht Inclus) Op Shp Vit Chalk Sh Char-Gry Fissil No Odor No Stn No Flor NS

STARK SHALE 4675' (- 1818)

KANSAS CITY "SWOPE (K)" 4681' (- 1824)

30" CFS @ 4688' Ls Crm-Tan-Gry FxIn-MicroxIn Micrite Grad Poor-Fair OOM Por (1 Pc w/ Good Dissolu & Good InterOOM/ixIn Por w/ SG & SO) Chalk Sh Blk Carb-Char-Gry Soft-Fissil Fair Inc Odor Sli Brn Stn Sli ? Flor (2 Pcs) VSSG & VSSO

60" CFS @ 4688' Ls Wht-Crm FxIn Fair OOM Por Fair-Dissolu Fair Vug Leaching FSG & FSFO (In Wtr Under Heat Both Gas & Oil Do Flor (Lt Grn-Wht)) Cht Wht-Gry Op Shp Vit Chalky Sh Char-Gry-Blk Carb Fissil Tr Flor (5% of Tray) Faint-Fair Odor Inc Tr ? Sat Lt Brn Stn FSG & FSO

60" CFS @ 4693' Ls Crm-Wht MicroxIn Barren Micritic No Vis Por Pyr Mass Chalk AA Sh AA Tr ? Flor (3 pcs) No Odor No Stn NS

75" CFS @ 4693' Ls Crm-Wht MicroxIn Barren Micritic AA Pyr Mass Chalk AA Sh AA Tr ? Flor (2 pcs) No Odor No Stn NS

Ls Crm-Wht FxIn Med OOM/ixIn Por Med Dissolu Med Leaching (w/ VSSG & VSSO AA) Chalk Sh Char-Gry-Blk Carb AA Faint ? Odor Sli Scat Flor Sli Lt Brn Stn VSSG & VSSO

Ls Crm-Wht FxIn Med OOM/ixIn Por Med Dissolu Med Leaching (w/ VSSG & VSSO AA) Chalk Sh Char-Gry-Blk Carb AA Faint ? Odor Sli Scat Flor Sli Lt Brn Stn VSSG & VSSO

Ls Crm-Wht FxIn Med OOM/ixIn Por Med Dissolu Med Leaching (w/VSSG & VSSO AA) Chalk Sh Char-Gry-Blk Carb AA Faint ? Odor Sli Scat Flor Sli Lt Brn Stn SSG & SSO

Ls Crm-Wht FxIn Lg OOM Vug Por (w/Med-Lg OOL in pl) Good Dissolu Good Leaching (w/SSG & SSO) Chalk Sh Char-Gry-Blk Carb AA Faint ? Odor Sli Scat Flor Sli Lt Brn Stn SSG & SSO

HUSHPUCKNEY SHALE 4750' (- 1893)

Sh Blk Carb-Char Fissil Ls AA Med OOM Por Faint ? Odor No Flor No Stn NS

KANSAS CITY "HERTHA (L)" 4756' (- 1899)

Ls Wht-Crm FxIn Med-Good OOM Por Med-Good Dissolu Med-Good Vug Leached Por (w/VSSG & VSSO w/ ? Scatt Lt Grn Flor) Sli ? Odor No Stn VSSG & VSSO

Ls Wht-Crm FxIn Med-Good OOM Por Med-Good Dissolu Med-Good Vug Leached Por (w/VSSG & VSSO w/ ? Scatt Lt Grn Flor) Cht Wht-Gry Op Shp Vit Fos (Crin) Sli ? Odor No Stn VSSG & VSSO

Sh Char-Gry-Blk Carb Fissil Ls Tan-Gry FxIn-MicroxIn Dns Micrite AA No Odor no Flor No Stn NS

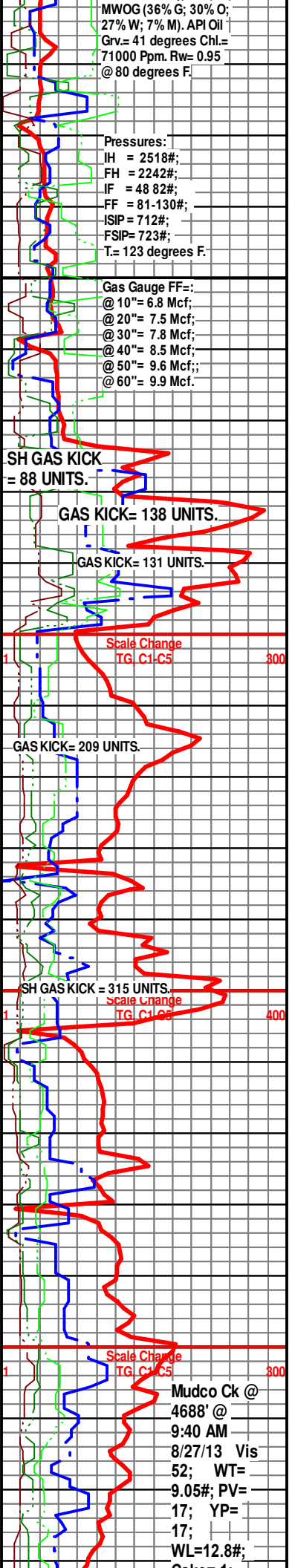
Sh Char-Gry-Blk Carb Fissil Ls Tan-Gry FxIn-MicroxIn Dns Micrite AA No Odor no Flor No Stn NS

Sh Char-Gry-Blk Carb-Maroon Fissil Ls Tan-Gry FxIn-MicroxIn Dns Micrite AA No Odor no Flor No Stn NS

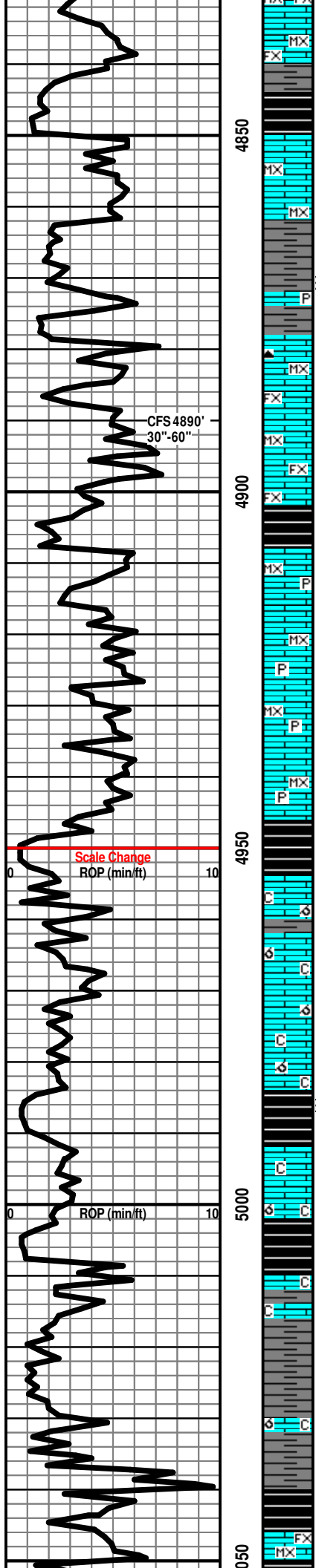
ALTAMONT "A" 4908' (- 2051)

Sh Char-Grn-Gry-Blk Carb Fissil Ls Tan-Gry FxIn-MicroxIn Dns Micrite AA No Odor No Flor No Stn NS

Sh Char-Grn-Gry-Blk Carb Fissil Ls Tan-Gry FxIn-MicroxIn Dns Micrite Grad Med-Good Vug OOM Por Barren No Odor No Flor No Stn NS



Mudco Ck @ 4688' @ 9:40 AM 8/27/13 Vis 52; WT= 9.05#; PV= 17; YP= 17; WL=12.8#;



Ls Wht-Crm-Tan-Gry MicroIn-FxIn Dns Micrite Sh Blk Carb-Char Fissil No Flor No Stn ? Faint-No Odor NS

Ls Wht-Crm-Tan-Gry MicroIn-FxIn Dns Micrite Sh Blk Carb-Char Fissil No Flor No Stn ? Faint-No Odor NS

MARMATON 4850' (- 1993)

Ls Wht-Crm-Tan-Gry MicroIn Dns Micrite Sh Blk Carb-Char Fissil No Flor No Stn No Odor NS

Ls Wht-Crm-Tan-Gry MicroIn Dns Micrite Sh Blk Carb-Char Fissil No Flor No Stn No Odor NS

30" CFS @ 4890' Sh Gry-Char Soft-Fissil Abd Ls Wht-Crm FxIn- MicroxIn Micrite Grad Poor OOM Por (? Sluff) Barren Pyr Mass No Odor No Stn No Flor NS

MARMATON "B" 4879' (- 2022)

60" CFS @ 4890' Ls Wht-Crm-Tan MicroxIn-FxIn Dns Micrite Cht Drk Gry Op Shp Vit Sh Blk Carb-Char Fissil AA No Flor No Stn No Odor NS

Ls Wht-Crm-Tan MicroxIn-FxIn Dns Micrite Cht Drk Gry Op Shp Vit Sh Blk Carb-Char Fissil AA No Flor No Stn No Odor NS

Ls Wht-Crm-Tan MicroxIn-FxIn Dns Micrite Chalk Sh Blk Carb-Char Fissil No Flor No Stn No Odor NS

ALTAMONT 4908' (- 2051)

Ls Wht-Crm-Tan-Gry-Brn MicroxIn Dns Micrite (w/Pyr Includ) Barren Chalky Sh Blk Carb-Char Fissil No Flor No Stn No Odor NS

Ls Wht-Crm-Tan-Gry-Brn MicroxIn Dns Micrite (w/Pyr Includ) Barren Chalky Sh Blk Carb-Char Fissil No Flor No Stn No Odor NS

Ls Wht-Crm-Tan-Gry-Brn MicroxIn Dns Micrite (w/Pyr Includ) Barren Chalky Sh Blk Carb-Char Fissil No Flor No Stn No Odor NS

Ls Wht-Crm-Tan-Gry-Brn MicroxIn Dns Micrite (w/Pyr Includ) Barren Chalky Sh Blk Carb-Char Fissil No Flor No Stn No Odor NS

PAWNEE 4954' (- 2097')

Ls Wht-Crm-Tan FxIn-MicroxIn Grad Fair-Med OOM Por (w/Small OOids in pl) Fair-Med-Good Dissolu Med-Good Vug Leaching Chalk Sh Char-Gry-Blk Carb Fissil No Odor NoStn NoFlor NS

Ls Wht-Crm-Tan FxIn-MicroxIn Grad Fair OOM Por (w/Small OOids in pl) Fair Good Dissolu Fair Vug Leaching Grad Dns Micrite Chalk Sh Char-Gry-Blk Carb Fissil No Odor NoStn NoFlor NS

Ls Wht-Crm-Tan FxIn-MicroxIn Micritic Grad Fair OOM Por Fair Dissolu Fair Vug Leaching Grad Dns Micrite Chalky Sh Blk Carb-Char-Gry Fissil No Odor No Stn No Flor NS

LABETTE SHALE 4986' (- 2129)

Sh Blk Carb-Char-Gry Fissil Ls Wht-Crm FxIn-MicroxIn Micritic Grad Poor-Fair OOM Por Poor Dissolu Poor Vug Leaching Chalky No Odor No Flor No Stn NS

FORT SCOTT 4992' (- 2135)

Sh Blk Carb-Char-Gry Fissil Ls Wht-Crm FxIn-MicroxIn Micritic Chalky No Odor No Flor No Stn NS

CHEROKEE SHALE 5002' (- 2145)

Sh Blk Carb-Char-Gry Fissil Ls Wht-Crm FxIn-MicroxIn Micritic Grad Med-Good OOM Por Good Dissolu Good Vug Leaching Chalky No Odor No Flor No Stn NS

Sh Blk Carb-Char-Gry Fissil Ls Wht-Crm FxIn-MicroxIn Micritic Grad Med-Good OOM Por Good Dissolu Good Vug Leaching Chalky No Odor No Flor No Stn NS

Sh Char-Gry Fissil Ls Wht-Crm FxIn-MicroxIn Micritic No Odor No Flor No Stn NS

30" CFS @ 5039' Sh Char-Gry Fissil Ls Wht-Crm FxIn-MicroxIn Micritic Grad Med-Good OOM Por Good Dissolu Good Vug Leaching Chalky No Odor No Flor No Stn NS

SECOND CHEROKEE SHALE 5040' (- 2183)

Sh Blk Carb-Char-Gm/Gry-Maroon Fissil Ls Wht-Crm FxIn-MicroxIn Micritic No Odor No Stn No Flor NS

Cake= 1;
Chl=6000;
Cal =360;
Sol= 4.7%.
LCM= 3#;
DMC=\$
412.90
CMC=\$
17,216.25

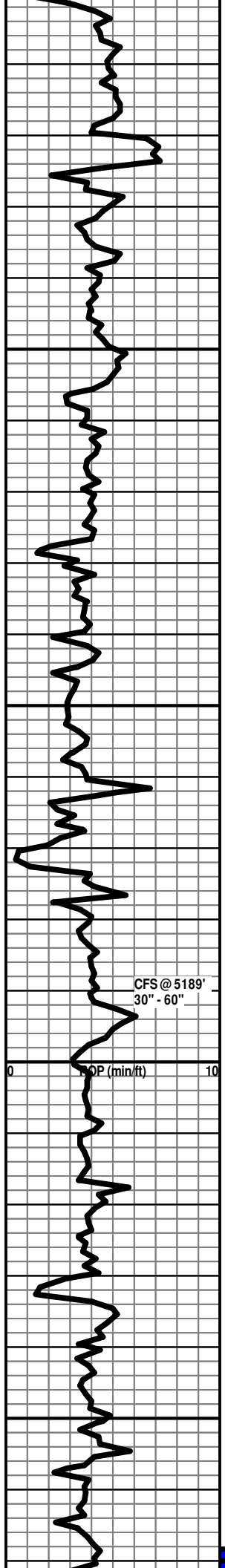
Mudco Ck @
5039' @
9:20 AM
8/28/13 Vis
60; WT=
9.0#; PV=
23; YP=
24;
WL=12.4#;
Cake= 1;
Chl=5400;
Cal =1200;
Sol= 6.6%.
LCM= 3#;
DMC=\$
105.30
CMC=\$
17,321.55

SH GAS KICK = 329 UNITS.

@ 4982' CHANGE-OUT EXTRACTOR FILTER @ 4970' LAG DEPTH.

Scale Change
SH GAS KICK = 180 UNITS.

BIT TRIP @ 5039' CHANGE-OUT PDC TO JZ BUTTON BIT.



Ls Wht-Crm-Tan FxIn-MicroxIn Micritic Sh Char-Gry-Blk Carb-Aqua
 Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Gry FxIn-MicroxIn Micritic Grad Med Yug OOM Por Good
 Dissolu Good Leaching Barren Sh Char-Gry-Blk Carb Fissil No Odor Dec
 NS

Ls Wht-Crm-Gry FxIn-MicroxIn Micritic Grad Med Yug OOM Por Good
 Dissolu Good Leaching Barren Sh Char-Gry-Blk Carb Fissil No Odor Dec
 NS

Ls Wht-Crm-Gry FxIn-MicroxIn Micritic Grad Med OOM/OOL Por (w/Med
 Sized Ooids in pl) Good IxIn Por Barren Sh Char-Gry-Blk Carb Fissil No
 Odor No Flor No Stn NS

Ls Crm-Tan FxIn-MicroxIn Micritic Sh Char-Gry-Blk Carb Fissil No Odor No
 Flor No Stn NS

Sh Char-Gry-Blk Carb Fissil Ls Crm-Tan FxIn-MicroxIn Micritic Cht Wht Op
 Shp Vit No Odor No Flor No Stn NS

Ls Crm-Tan FxIn-MicroxIn Micritic Sh Char-Gry-Blk Carb Fissil No Odor No
 Stn No Flor NS

Ls Crm-Tan FxIn-MicroxIn Micritic Cht Drk Blk Op Shp Vit Sh Blk
 Carb-Char-Gry Fissil No Odor No Stn No Flor NS

Ls Crm-Tan FxIn-MicroxIn Micritic Cht Drk Blk-Gry Op Shp Vit Sh Blk
 Carb-Char-Gry Fissil No Odor No Stn No Flor NS

Ls Crm-Tan FxIn-MicroxIn Micritic Cht Wht Op Shp Vit Sh Blk
 Carb-Char-Gry Fissil No Odor No Stn No Flor NS

Ls Crm-Tan FxIn-MicroxIn Micritic Cht Wht Op Shp Vit Sh Blk
 Carb-Char-Gry Fissil No Odor No Stn No Flor NS

Ls Brn-Crm-Tan FxIn Poor IxIn Por Micritic Dns Barren Grad Med OOM Por
 Med InterOOM & Pin-Pt IxIn Por (w/SG) (Gas Does Flor (Lt Grn)) Chalk Wht
 Soft Sh Char-Gry-Blk Carb Fissil ? Faint Odor Sli Flor Sli ? Stn FSG

30" CFS @ 5189' Ls Brn-Crm-Tan FxIn Med-Good Pin-Pt IxIn Por Grad Med OOM Por Med
 InterOOM (w/GSG & GSO) (Gas & Oil Do Flor (Lt Grn)) Cht Wht-Tan Op Shp Vit Fos (Brach)
 Chalk Wht Soft Sh Char-Gry-Blk Carb Fissil Faint Inc Odor Med Flor Fair Lt Brn Stn GSG &
 GSO

60" CFS @ 5189' Ls Brn-Crm-Tan FxIn Med-Good Pin-Pt IxIn Por Grad Med OOM Por Med
 InterOOM (w/GSG & GSO) (Gas & Oil Do Flor (Lt Grn)) Grad MicroxIn Dns Micrite Cht
 Wht-Amber Translu-Op Shp Vit Fos (Brach, Crin) Chalk Wht Soft Sh Char-Gry-Blk Carb Fissil
 Faint Inc Odor Med Flor Fair Lt Brn Stn GSG & GSO

Ls Crm-Tan MicroxIn Micritic Cht Crm Translu-Op Shp Vit Sh Blk
 Carb-Char-Gry Fissil Faint-No Odor No Srtn No Flor NS

Sh Blk Carb-Char-Gry Fissil Ls Wht-Crm FxIn-MicroxIn Micritic Cht
 Amber-Brn Translu-Op Shp Vit No Odor No Stn No Flor NS

Ls Crm-Tan FxIn-MicroxIn Micritic Cht Crm Translu-Op Shp Vit Sh Blk
 Carb-Char-Gry Fissil No Odor No Stn No Flor NS

Ls Crm-Tan FxIn-MicroxIn Micritic Cht Amber-Brn Translu-Op Shp Vit Sh
 Blk Carb-Char-Gry Fissil No Odor No Stn No Flor NS

ATOKA 5230' (- 2373)

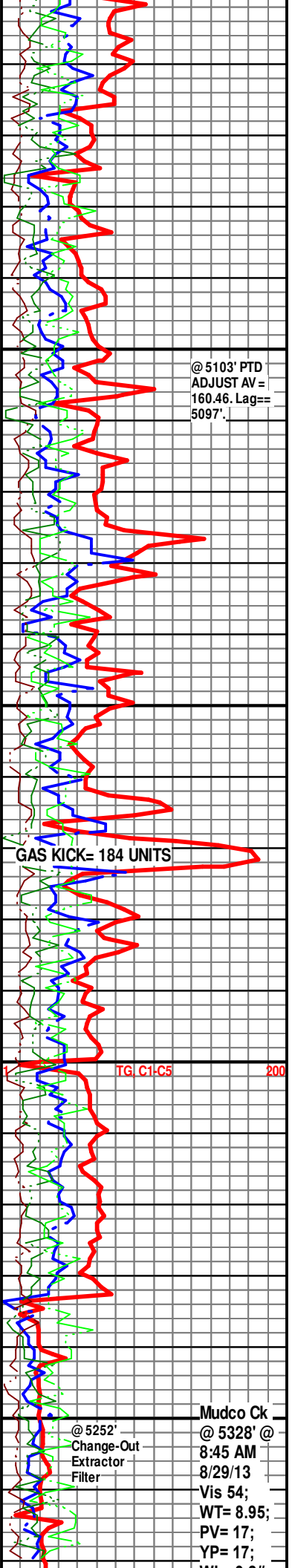
Ls Crm-Tan FxIn-MicroxIn Micritic Cht Amber-Brn Translu-Op Shp Vit Sh
 Blk Carb-Char-Gry Fissil No Odor No Stn No Flor NS

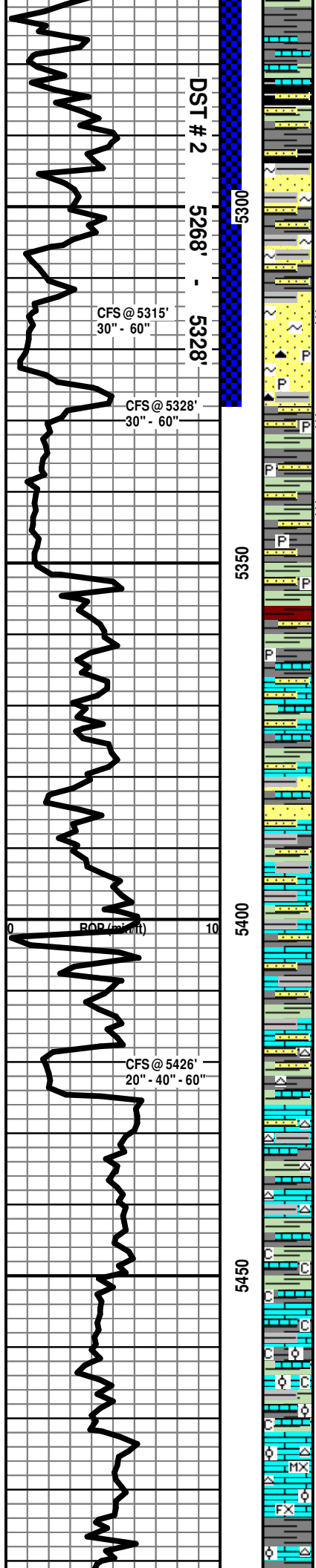
Sh Blk Carb-Char-Gry Fissil Ls Crm-Tan FxIn-MicroxIn Micritic Cht Gry
 Translu-Op Shp Vit No Odor No Srtn No Flor NS

Sh Blk Carb-Char-Gry Fissil Ls Crm-Tan FxIn-MicroxIn Micritic Cht
 Amber-Gry Translu-Op Shp Vit No Odor No Srtn No Flor NS

Sh Blk Carb-Char-Gry Fissil Ls Crm-Tan FxIn-MicroxIn Micritic Cht
 Amber-Gry Translu-Op Shp Vit No Odor No Srtn No Flor NS

Sh Blk Carb-Char-Gry-Aqua Fissil Ls Crm-Tan FxIn-MicroxIn Micritic No
 Odor No Stn No Flor NS





MORROW SHALE 5277' (- 2420)

Sh Char-Gry-Aqua-Blk Carb Fissil Ls Crm-Tan FxIn-MicroxIn Micritic Grad Poor Pin-Pt IxIn Por Qtz Ss Wht Frosted (w/Glacu Inklus) Small- FGn Poor Sort Friable No Odor No Flor NS

Sh Char-Gry-Aqua-Blk Carb Fissil Ls Crm-Tan FxIn-MicroxIn Micritic Grad Poor Pin-Pt IxIn Por Qtz Ss Gry-Wht Frosted (w/Glacu Inklus) Small- FGn Poor-Sort Friable No Odor No Flor NS

30" CFS @ 5315' Sh Char-Gry-Aqua-Blk Carb Fissil Ls Crm-Tan FxIn-MicroxIn Micritic Grad Poor Pin-Pt IxIn Por Qtz Ss Gry-Wht Frosted (w/Glacu Inklus) Small- FGn Poor-Sort Friable No Odor No Flor NS

MORROW SAND 5312' (- 2455)

60" CFS @ 5315' Sh Char-Gry-Aqua-Blk Carb Fissil Ls Crm-Tan FxIn-MicroxIn Micritic Grad Poor Pin-Pt IxIn Por Qtz Ss Wht Frosted (w/Glacu Inklus Abd) Small- FGn Poor Sort Friable (w/SSG) Faint Odor No Stn No Flor NS

30" CFS @ 5328' Qtz Ss Lt Brn (w/CaCO3) Matrix (w/Glacu Inklus) VF-MGrn Clusters Fair-Sort Friable (w/Med SG Under Heat In Wtr w/Lt Brn Stn & Gas Does Not Flor) Grad Vug Leaching Cht Amber Translu Shp Vit Fos (Crim Pyr Mass Faint Inc Odor No Flor Med SG

60" CFS @ 5328' Qtz Ss Lt-Drk Brn (w/CaCO3) Matrix (w/Glacu Inklus) VF-MGrn Clusters Fair-Sort (w/SSG Under Heat In Wtr w/Lt Brn Stn & Gas Does Not Flor) Grad Dns Poor Igrn Por Cht Amber Translu Shp Vit Pyr Mass Faint Odor No Flor SSG

Evan Stone Geologist Relieved David P. Williams P.G. @ 5328' 12:00 PM on 08/29/13 Due To Scheduling Conflict.

Sh Char-Gry-Grn-Blk Carb Fissil Sandy Ls Wht-Crm FxIn-MicroxIn Micritic Dns Barren Qtz Ss Gry-Wht Frosted (w/Glauc Inklus) VF-FGn Poor-Sort Friable No Odor No Flor NS

CHESTER 5366' (- 2509)

Ls Wht-Crm MicroxIn Micrite Dns Barren Sh Char-Gry-Grn-Blk Carb Fissil Qtz Ss Wht FGn Well-Sort Poor Intergran Por Clusters (with/CaCO3 Cmt Matrix) (No Glauc) No Odor No Flor No Stn NS

Qtz Ss Wht Ang - SubAng FGn Mod-Well Sort Poor Intergran Por (with / CaCO3 Cmt Matrix) (No Glauc) Ls Wht-Crm FxIn Dns Barren Foss Sh Gry-Grn-Red Platy-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Gry MicroxIn Micrite Dns Barren Sh Gry-Red-Grn-Sm Blk Carb Fissil Qtz Ss Wht FGn Mod-Well Sort Poor Intergran Por Clusters (with/CaCO3 Cmt Matrix) (No Glauc) No Odor No Flor No Stn NS

Ls Wht-Crm FxIn-MicroxIn Micrite Dns Sm Foss Sh Gry-Blk Carb Fissil Qtz Ss Clr-Wht Ang-SubAng FGn Well-Sort Poor Intergran Por (with / CaCO3 Cmt Matrix) Barren No Odor No Flor No Stn NS

60" CFS @ 5426' Sh Varicolored Char-Gry-Blk Carb-Grn-Aqua-Yell-Red Fissil Cht Wht-Tan-Yell Op Shp Vit Ls Wht-Crm MicroxIn Micrite Dns Barren Qtz Ss Clr-Wht FGn Well-Sort Barren No Odor No Flor No Stn NS

Sh Varicolored Char-Lt Gry-Dk Gry-Blk Carb-Aqua-Yell-Red Fissil Ls Wht-Crm-Gry FxIn-MicroxIn Micrite Dns Barren Cht Tan-Yell Op Shp Vit No Odor No Flor No Stn NS

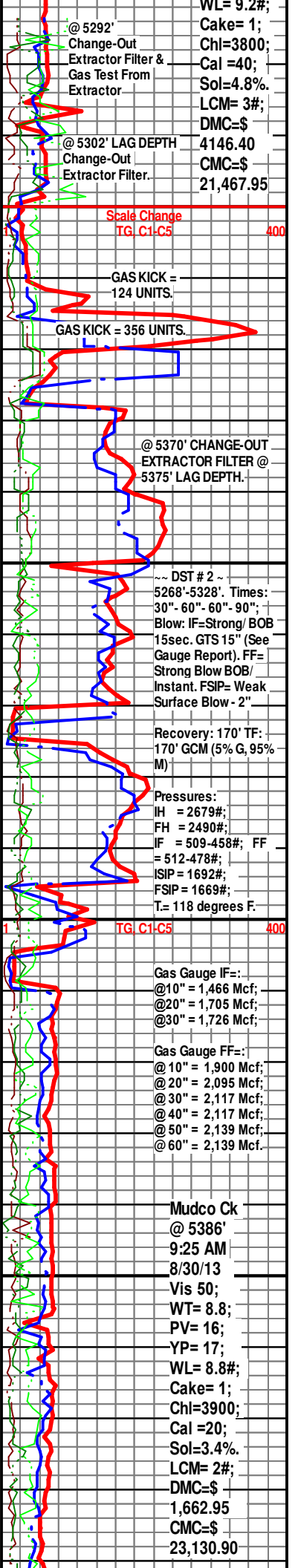
Ls Wht-Crm FxIn-MicroxIn Micrite Dns Chalky Sh Varicolored Char-Lt Gry-Drk Gry-Blk Carb-Aqua-Yell-Red Fissil Cht Wht-Lt Grn-Yell Op Shp Vit No Odor No Flor No Stn NS

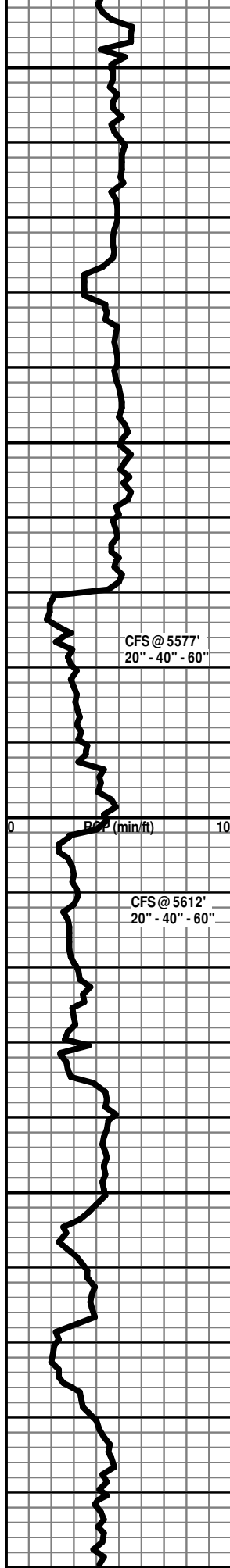
Ls Wht-Crm FxIn-MicroxIn Micrite Dns Sm Arenaceous Chalky Poor-Fair InterIn-InterOOL Por Cht Wht-Gry Op Shp Vit Sh Varicolored Char-Gry-Aqua-Red- Blk Carb Fissil No Odor No Flor No Stn NS

ST. GENEVIEVE 5472' (- 2615)

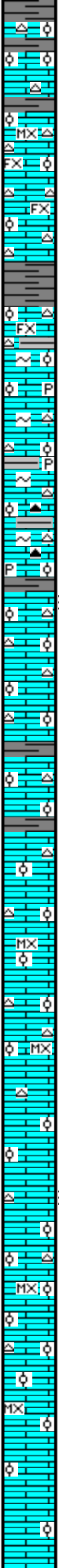
Ls Wht-Crm FxIn Dns Arenaceous Poor InterIn-InterOOL Por Cht Wht-Lt Grn Op Shp Vit Sh Varicolored Lt Gry-Red-Grn-Blk Carb Fissil Sm Sand VFGr-Fgr SubRnd-SubAng No Odor No Flor No Stn NS

Ls Wht-Crm FxIn-MicroxIn Dns Arenaceous Poor-Fair InterOOL Por Sm





5500
5550
5600
5650
5700



Cht Wht Op Shp Vit Sh Varicolored Char-Lt Gry- Red-Grn- Blk Carb Fissil
No Odor No Flor No Stn NS

Ls Wht-Crm-Lt Grn MicroIn Dns Arenaceous Glauc Inklus Poor
InterIn-InterOOL Por Cht Wht Op Shp Vit Sh Varicolored Gry-Red-Brn-Grn
Fissil No Odor No Flor No Stn NS

Ls Wht-Lt Grn FxIn Poor InterIn-InterOOL Por Dns Arenaceous Cht Wht-Lt
Gry Op Shp Vit Sh Varicolored Lt Gry-Yell-Red-Grn Fissil No Odor No Flor
No Stn NS

Sh Varicolored Lt Grn-Gry-Red Fissil Sm Sandy Glauc Inklus Ls
Wht-Crm-Lt Grn FxIn-MicroIn Dns Arenaceous Sm Glauc Inklus Poor
InterIn-Inter OOL Por Sm Cht Wht-Lt Gry Op-Translu Shp Vit No Flor No
Stn NS

Ls Wht-Crm-Lt Grn FxIn Dns Arenaceous Sm Glauc & Pyr Inklus Poor
InterOOL Por Cht AA Sh Varicolored AA Fissil No Odor No Flor No Stn NS

LS Wht-Crm FxIn-MicroIn Dns Arenaceous Sm Chalky Trc Glauc & Pyr
Inklus Poor InterOOL Por Cht Wht-Brn Op-Translu Shp Vit Sm Tripo Sh AA
No Flor No Stn NS

ST. LOUIS 'A' 5570' (- 2713)

40" CFS @ 5577' Ls Wht FxIn Fair-Good OOL Por (with Small/Med OOids in pl) Med-Good
InterOOL Por Scatt Dull Yell Flor Abd Chalk No Odor No Stn VSSG

60" CFS @ 5577' Ls Wht FxIn Fair-Good OOL Por (with Small/Med OOids in pl) Poor-Fair
InterOOL Por Trc Foss Cht Gry-Wht-Tan Op Shp Vit Scatt Dull Yell Flor VSL Odor Abd Chalk No
Flor No Stn NS

Ls Wht FxIn-MicroIn Dns Poor InterIn-InterOOL Por Cht Gry-Tan Op Shp Vit Abd Chalk No
Flor No Stn NS

Ls Wht-Crm FxIn-MicroIn Dns Poor InterOOL Por Cht Wht-Gry Op-Translu Shp Vit Sh Dk
Gry-Grn-Blk Carb Fissil Abd Chalk No Flor No Stn NS

ST. LOUIS 'B' 5602' (- 2745)

Ls Wht FxIn Fair-Good InterOOL Por SSFO (Lt Brn Droplets On Break)
Scatt Brt Yell Flor Strong Odor Cht Wht-Gry Op-Translu Shp Vit Trc Pyr
Mass Abd Chalk Sh Gry-Grn-Red-Brn-Blk Carb Fissil

Ls Wht FxIn-MicroIn VFn OOL (with Small OOids in pl) Poor InterOOL Por
Sm Foss Cht Wht-Gry Op-Translu Sh Gry-Grn-Yell No Flor Fair Odor No
Stn NS

Ls Wht-Crm FxIn-MicroIn VFn OOL (with Small OOids in pl) Poor- Fair
InterOOL Por Cht Wht Translu-Op Shp Vit Sh Varicolored
Aqua-Char-Gry-Maroon AA No Flor V Faint Odor No Stn NS

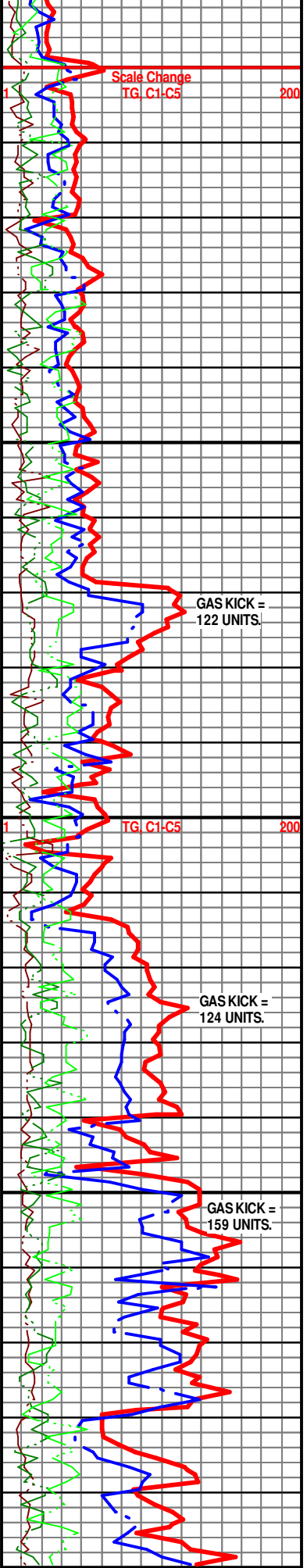
Ls Wht-Crm-Gry FxIn VFn OOL (with V Small OOids in pl) Poor InterOOL
Por Tr Poor OOM Por Cht Wht-Gry-Tan Translu-Op Shp Vit No Flor Sit-Mod
Odor No Stn NS

Ls Wht-Crm FxIn VFn-Fn OOL (with Small-Med OOids in pl) Poor- Fair
InterOOL Por Tr Fair-Good OOM Por Cht AA Spotty Brt Yell Flor Strong
Odor Lt Brn InterOOL Stn NSFO

Ls Wht-Crm-Gry FxIn-MicroIn Fn OOL (with Small-Med OOids in pl) Poor
InterOOL Por Fair-Good OOM Por Cht Wht-Gry Op-Translu Shp Vit Spotty
Brt Yell Flor Fair-Strong Odor Trc Lt Brn InterOOL Stn NSFO

30" CFS @ 5700' Ls Wht-Crm FxIn VFn OOL Por (with V Small OOids in pl)
Poor InterOOL Por Cht Wht-Gry Op Shp Vit No Flor No Odor No Stn NS

60" CFS @ 5700' Ls Wht-Crm FxIn VFn OOL Por (with V Small OOids in pl)
Poor InterOOL Por No Flor No Odor No Stn NS



R.T.D. = 5700' (-2843)
L.T.D. = 5701' (-2844)

Electric Logs Run: By Weatherford Logging:
Induction; Compensated Density-Neutron; Microresistivity.

R.T.D. @ 4:15 PM 8/31/2013

Dual

