



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1113881  
OIL & GAS CONSERVATION DIVISION

Form ACO-1  
August 2013

Form must be Typed  
Form must be Signed  
All blanks must be Filled

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

Purchaser: \_\_\_\_\_

Designate Type of Completion:

- New Well  Re-Entry  Workover
- Oil  WSW  SWD  SIOW
- Gas  D&A  ENHR  SIGW
- OG  GSW  Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic  Other (Core, Expl., etc.): \_\_\_\_\_

If Workover/Re-entry: Old Well Info as follows:

Operator: \_\_\_\_\_

Well Name: \_\_\_\_\_

Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_

- Deepening  Re-perf.  Conv. to ENHR  Conv. to SWD
- Plug Back  Conv. to GSW  Conv. to Producer
- Commingled Permit #: \_\_\_\_\_
- Dual Completion Permit #: \_\_\_\_\_
- SWD Permit #: \_\_\_\_\_
- ENHR Permit #: \_\_\_\_\_
- GSW Permit #: \_\_\_\_\_

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - \_\_\_\_\_

Spot Description: \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE  NW  SE  SW

GPS Location: Lat: \_\_\_\_\_, Long: \_\_\_\_\_  
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum:  NAD27  NAD83  WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ Feet

Multiple Stage Cementing Collar Used?  Yes  No

If yes, show depth set: \_\_\_\_\_ Feet

If Alternate II completion, cement circulated from: \_\_\_\_\_

feet depth to: \_\_\_\_\_ w/ \_\_\_\_\_ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

Location of fluid disposal if hauled offsite:

Operator Name: \_\_\_\_\_

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested  
Date: \_\_\_\_\_
- Confidential Release Date: \_\_\_\_\_
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_



1113881

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**INSTRUCTIONS:** Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i>  Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No  Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No  List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample  Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD:	Size:	Set At:	Packer At:	Liner Run: <input type="checkbox"/> Yes <input type="checkbox"/> No
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Date of First, Resumed Production, SWD or ENHR.	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____
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Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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**#1 Durler-Schmidt**  
180' FNL & 2350' FEL  
150' N & 40' W NW NW NE Section 14-26S-23W  
Ford County, Kansas  
API# 15-057-20851-00-00  
Elevation: 2428' GL, 2439' KB

Sample Tops			Ref. Well
Anhydrite	1496'	+943	+2
B/Anhydrite	1534'	+905	-3
Stotler	3486'	-1047	+5
Heebner	4103'	-1664	+6
Lansing	4212'	-1773	+8
Muncie Shale	4396'	-1957	+5
Stark Shale	4522'	-2083	+6
Hush	4570'	-2131	+5
BKC	4601'	-2162	+13
Marmaton	4606'	-2167	+14
Altamont	4648'	-2209	+15
Pawnee	4728'	-2289	+11
Fort Scott	4755'	-2316	+14
Cherokee Shale	4774'	-2335	+8
Huck	4856'	-2417	+9
Atoka Shale	4867'	-2428	+6
Mississippian	4870'	-2431	+37
RTD	5130'	-2694	

# ALLIED OIL & GAS SERVICES, LLC

059041

Federal Tax I.D.# 20-5976804

REMIT TO P.O. BOX 93999  
SOUTHLAKE, TEXAS 76092

SERVICE POINT:  
Great Bend, KS

Dwight Edwards

DATE <u>10-23-12</u>	SEC. <u>14</u>	TWP. <u>26S</u>	RANGE <u>23W</u>	CALLED OUT	ON LOCATION <u>12:50 AM</u>	JOB START <u>9:34 AM</u>	JOB FINISH <u>12:10 PM</u>
LEASE <u>Dwight Edwards</u> WELL # <u>1</u>			LOCATION <u>560 East of Spearville, Turn south on 12th rd, West at dead end for 1/4 mile, Turn south on 12th rd to right, 1/4 mile east turn west to 113rd, Turn North back 1/4 mile, West into location.</u>		COUNTY <u>Ford</u>	STATE <u>KS</u>	
OLD OR NEW (Circle one)					<u>1.01</u>	<u>7.95</u>	

CONTRACTOR Duke 10 OWNER Ritche Exploration

TYPE OF JOB Surface Casing  
 HOLE SIZE 12 1/4" T.D. 350 ft  
 CASING SIZE 8 5/8" 24" DEPTH 337 ft  
 TUBING SIZE DEPTH  
 DRILL PIPE DEPTH  
 TOOL DEPTH  
 PRES. MAX MINIMUM  
 MEAS. LINE SHOE JOINT 4211 ft  
 CEMENT LEFT IN CSO. 4211 ft - 2.68 bbls (11.23 sy)  
 PERFS.  
 DISPLACEMENT 18.75 bbls Fresh Water

CEMENT AMOUNT ORDERED 225 sy "A" + 3% Cel  
 + 2% Cel

EQUIPMENT

PUMP TRUCK # <u>398</u>	CEMENTER <u>Charles Ekins</u>	<u>1</u>
	HELPER <u>Josh Isaac</u>	<u>1</u>
BULK TRUCK # <u>344/170</u>	DRIVER <u>Joel Monahan</u>	<u>2</u>
BULK TRUCK #	DRIVER	

COMMON	<u>225</u>	@ <u>17.90</u>	<u>4,027.50</u>
POZMIX		@	
GEL	<u>4</u>	@ <u>23.40</u>	<u>93.60</u>
CHLORIDE	<u>8</u>	@ <u>64.00</u>	<u>512.00</u>
ASC		@	
		@	
		@	
		@	
		@	
		@	
		@	
		@	
		@	
HANDLING	<u>242.9</u>	@ <u>2.48</u>	<u>602.39</u>
MILEAGE	<u>11.09 X 45 X</u>	<u>2.60</u>	<u>1,297.95</u>
			TOTAL <u>6,533.92</u>

REMARKS:  
Pump 5 bbls Fresh Water  
Pump 33.5 bbls (225 sy) Cement  
Drop Plug  
Displace with 18.75 bbls Fresh Water  
Leave 2.7 bbls (11.23 sy) Cement in Casing  
Circulate 14 bbls (29.5 sy) Cement to Surface

SERVICE

DEPTH OF JOB	<u>350</u>		
PUMP TRUCK CHARGE		<u>1512.35</u>	
EXTRA FOOTAGE		@	
MILEAGE	<u>Hum 45</u>	@ <u>7.70</u>	<u>346.50</u>
MANIFOLD		@	
	<u>Hum 45</u>	@ <u>4.40</u>	<u>198.00</u>
		@	

CHARGE TO: Ritche Exploration  
 STREET \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

TOTAL 2,056.75

PLUG & FLOAT EQUIPMENT

<u>8 5/8" Bellie Plug</u>	@ <u>131.04</u>	<u>131.04</u>
<u>8 7/8" Wooden Plug</u>	@ <u>107.64</u>	<u>107.64</u>
<u>8 7/8" Cement Bucket</u>	@ <u>559.24</u>	<u>559.24</u>
	@	
	@	

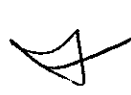
TOTAL 797.94

To: Allied Oil & Gas Services, LLC.  
 You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

SALES TAX (if Any) 431.76  
 TOTAL CHARGES 9,387.21  
 DISCOUNT 25% 2,346.92 IF PAID IN 30 DAYS

PRINTED NAME Dwight Edwards  
 SIGNATURE Dwight Edwards Reg # 10

7040.79



Duke-Schmidt

**ALLIED OIL & GAS SERVICES, LLC** 052628

Federal Tax I.D.# 20-5975804

REMIT TO P.O. BOX 31  
RUSSELL, KANSAS 67665

SERVICE POINT: Liberal, KS

DATE <u>11-03-12</u>	SEC <u>7A</u>	TWP <u>26S</u>	RANGE <u>23W</u>	CALLED OUT	ON LOCATION	JOB START <u>12:00</u>	JOB FINISH <u>1:00</u>
LEASE <u>Schmidt</u>	WELL # <u>1-14</u>	LOCATION <u>E. Dodge City</u>			COUNTY <u>Ford</u>	STATE <u>KS</u>	
OLD OR (NEW) (Circle one)						<u>1.03</u>	<u>7.95</u>

CONTRACTOR Duke # 10  
 TYPE OF JOB PTA- Rotary  
 HOLE SIZE 7 7/8 T.D.  
 CASING SIZE 8 3/8 247' DEPTH 335'  
 TUBING SIZE DEPTH  
 DRILL PIPE 4 1/2 16.6 # DEPTH 1530 feet  
 TOOL DEPTH  
 PRES. MAX MINIMUM  
 MEAS. LINE SHOE JOINT  
 CEMENT LEFT IN CSO.  
 PERFS.  
 DISPLACEMENT

OWNER Ritchie Exploration Inc

CEMENT AMOUNT ORDERED 2.50 sk 60/40  
4% Gel, 1/4 #/sk Flo Seal.

COMMON	@ 15.95	
POZMIX	@	
GEL	@	
CHLORIDE	@	
ASC	@	
<u>ALC 2A - Light 2.50 sk</u>	@ 15.95	<u>3987.50</u>
<u>Flo Seal 62.5 #</u>	@ 2.97	<u>185.62</u>
	@	
	@	
	@	
	@	
	@	
HANDLING <u>2.61 cut</u>	@ 2.48	<u>647.28</u>
MILEAGE <u>560.55</u>	@ 2.60	<u>1457.43</u>
<b>TOTAL</b>		<u>6,277.83</u>

EQUIPMENT  
 PUMP TRUCK CEMENTER Ruben Chavez  
# 530/484 HELPER Vicente Torres  
 BULK TRUCK  
# 472/467 DRIVER Lenny Barza  
 BULK TRUCK  
 # DRIVER

REMARKS:

Mix pump 50 sk at 1530', displace with 18.6 Bar Mud-Rig;  
Mix pump 80 sk at 890', displace with 7.6 Bar of H2O, 3rd plug 50 sk at 380' displace 2.4 Bbls.  
4th plug 20 sk at 60';  
50 sk Mouse Hole and 30 sk Pat. Thank you.

SERVICE

DEPTH OF JOB		<u>1530 feet</u>
PUMP TRUCK CHARGE		<u>1,250.00</u>
EXTRA FOOTAGE	@	
MILEAGE heavy Veh	@ 7.70	<u>4,23.50</u>
MANIFOLD	@	
light Vehicle	@ 4.40	<u>242.00</u>
	@	
<b>TOTAL</b>		<u>1,915.50</u>

CHARGE TO: Ritchie Exploration Inc  
 STREET \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

PLUG & FLOAT EQUIPMENT

	@	
	@	
	@	
	@	
	@	
<b>TOTAL</b>		

To: Allied Oil & Gas Services, LLC.  
 You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

SALES TAX (If Any) 657.36  
 TOTAL CHARGES 8,193.33  
 DISCOUNT 1638.67 IF PAID IN 30 DAYS  
\$ 6,554.66 Net.

PRINTED NAME SCOTT EDWARDS  
 SIGNATURE Scott Edwards

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Conservation Division  
Finney State Office Building  
130 S. Market, Rm. 2078  
Wichita, KS 67202-3802



Phone: 316-337-6200  
Fax: 316-337-6211  
<http://kcc.ks.gov/>

Mark Sievers, Chairman  
Thomas E. Wright, Commissioner  
Shari Feist Albrecht, Commissioner

Sam Brownback, Governor

February 06, 2013

John Niernberger  
Ritchie Exploration, Inc.  
8100 E 22ND ST N # 700  
BOX 783188  
WICHITA, KS 67278-3188

Re: ACO1  
API 15-057-20851-00-00  
Durler-Schmidt 1  
NE/4 Sec.14-26S-23W  
Ford County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,  
John Niernberger



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

Well Name: # 1 DURLER-SCHMIDT  
Location: 150' N. & 40' W. - NW - NW - NE OF SEC. 14 - 26 S. - 23 W.  
License Number: A.P.I. # 15-057-20,851-00-00  
Spud Date: 10/22/2012  
Surface Coordinates: SPOT: 2350' FEL & 180' FNL

Region: FORD CO., KS.  
Drilling Completed: 11/03/2012

Bottom Hole  
Coordinates:  
Ground Elevation (ft): 2428'                      K.B. Elevation (ft): 2439'  
Logged Interval (ft): SURF. CSGTo: 5133'      Total Depth (ft): 5133'  
Formation: MISSISSIPPIAN SALEM (SPERGEN)  
Type of Drilling Fluid: CHEMICAL/ POLYMER/ GEL

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

**OPERATOR**

Company: RITCHIE EXPLORATION, INC.  
Address: P.O. BOX 783188  
WICHITA, KANSAS 67278-3188

**GEOLOGIST**

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

**CASING & DEVIATION**

Ran 8 jts new 24# 8-5/8" surface casing. Tally at 337', set at 350'. Cemented with 225 sacks common, 3% cc, 2% gel. Cement did circulate. Plug down at 10:00 A.M. on 10/23/12.

Deviation Survey's Taken: @ 355' - 3/4 degree; @ 1503' = 3/4 degree; @ 2003' = 1 degree; @ 2501' = 1/2 degree; @ 3001' = 1 degree; @ 3500' = Miss-Run; @ 4001' = 1 degree; @ 4870' = 1 degree; @ 4990' = 1 1/2 degrees; @ 5130' = 1 degree.

## DSTs

**DST #1 4664'-4740'.** Times: 30"-45"-45"-60". Blow: IF= Weak Blow Build / 1/2"; FF= Weak Surface Blow. Recovery: 15' M (100% M). Tool Spl. Spotty Oil Show:(100% M). Pressures: IH = 2263#; FH = 2261#; IF= 8-13#; FF= 11-11#; ISIP = 31#; FSIP= 20#; Temp.= 115 degrees F.

**DST # 2: 4805'-4870'.** Times: 30"-45"-120"-120". Blow: IF=Strong BOB/Inst. GTS'/10" (See Gas Gauge Rept. Below).

Recovery: 140' M: (Tool Spl. = 1% O; 99% M), Pressures: IH = 2302#; FH = 2302#; IF = 347-240#; FF = 291-156#; ISIP = 1320#; FSIP = 1444#; Temp = 122 degrees F..

**DST #2 Gas Gauges:** IF @ 10"=2.675 MMcf; @ 15"= 2.075 MMcf; @ 20"= 1.824 MMcf; @ 25"= 1.694 MMcf; @ 30"= 1.490 MMcf; FF@ 10"=1.529 MMcf; @ 20"= 1.421 MMcf; @ 30"= 1.270 MMcf; @ 40"= 1.146 MMcf; @ 50"= 1.064 MMcf; @ 60" = 1.023 MMcf; @ 70" = 980 Mcf; @ 80" = 893 Mcf; @ 90" = 893 Mcf; @ 100"= 847 Mcf; @ 110"= 847 Mcf; @ 120"= 847 Mcf. Gas Does Burn.

**DST # 3 4904'-4990'.** Times: 30"-45"-30"-60". Blow: IF = Weak Build to BOB/ 5"; FF= BOB/6.5". Recovery: TF=1405': 90' HWCM (46% Wtr, 49% M); 1220' MCW (73% Wtr; 27% M); 95' SMCW (97% Wtr, 3% M). Pressures: IH = 2334#; FH= 2314#; IF=36-388#; FF= 392-649#; ISIP=1490#; FSIP=1487#; Temp=127 degrees F; Chl = 58,000 Ppm; RW= .20 @ 76 degrees F.; PH=7.0.


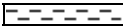

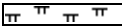
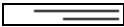
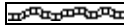

















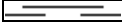

## Comments

After review of all of the pertinent geological and structural data, drill test test recoveries and reservoir pressures, including two samples presented for gas analysis that indicated low BTU non-commercial gas aswas recovered from DST #2, and electric logs analyses it was recommended by all parties to plug and abandoned this test well as a non- commercial dry hole..

Respectfully submitted,

David P. Williams, P. G.

## ROCK TYPES

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



### 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
  - Gryslt
  - Grysh
  - Gyp
  - Lms
  - 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

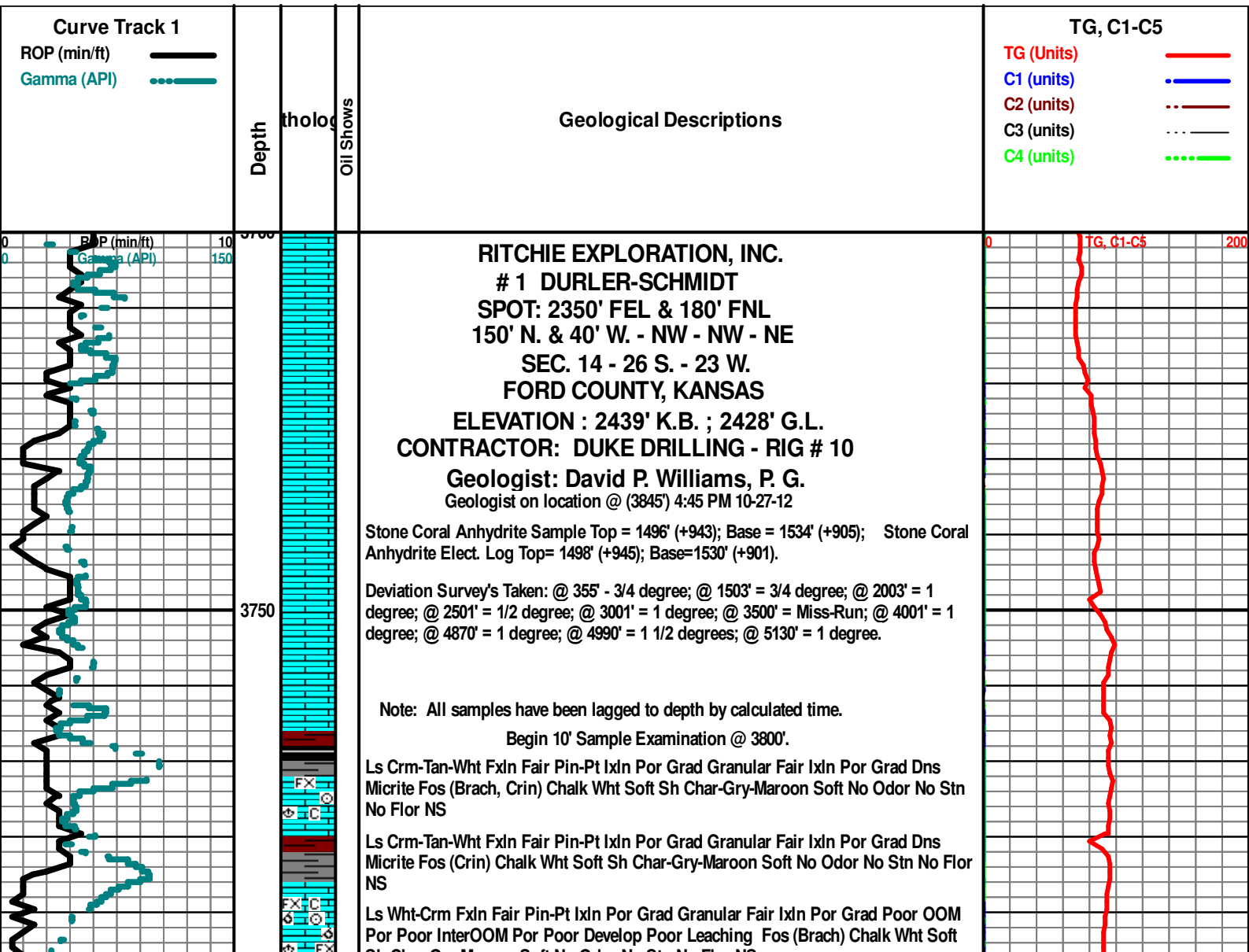
- OIL SHOW**
- Gas show

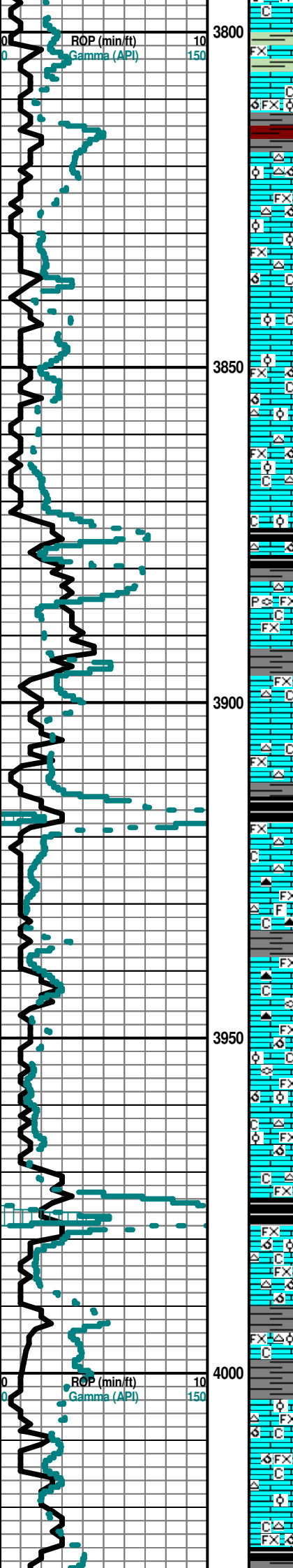
- Even
- Spotted
- Ques
- Dead

- INTERVAL**
- Straddle test tail pipe
  - Core

- Dst\_alt
- Dst

- EVENT**
- Rft
  - Sidewall





Sh Crm-Tan-Maroon Soft No Stn No Flor NS

Ls Crm-Tan-Wht Fxln Fair Pin-Pt Ixln Por Grad Dns Micrite Chalk Wht Soft Sh  
Grn-Char-Gry-Maroon Soft No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Fair Pin-Pt Ixln Por Grad Poor OOL/OOM Por (w/OOL in pl) Poor  
InterOOM Por Poor Develop Poor Leaching Cht Tan Op Shp Vit Chalk Wht Soft Sh  
Char-Gry-Maroon Soft No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Fair Pin-Pt Ixln Por Grad Poor OOL/OOM Por (w/OOL in pl) Poor  
InterOOM/OOM Por Poor Develop Poor Leaching Cht Gry Op Shp Vit Chalk Wht  
Soft Sh Char-Gry-Maroon Soft No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Fair Pin-Pt Ixln Por Grad Poor OOL/OOM Por (w/OOL in pl) Poor  
InterOOM/OOM Por Poor Develop Poor Leaching Cht Wht-Gry Op Shp Vit Chalk Wht  
Soft Sh Char-Gry-Maroon Soft No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Fair Pin-Pt Ixln Por Grad Poor OOL/OOM Por (w/OOL in pl) Poor InterOOM/OOM Por  
Poor Develop Poor Leaching Cht Wht-Gry Op Shp Vit Chalk Wht Soft Sh Char-Gry-Maroon Soft No  
Odor No Stn No Flor NS

Ls Wht-Crm Fxln Fair Pin-Pt Ixln Por Grad Poor OOL/OOM Por (w/OOL in pl) Poor InterOOM/OOM Por  
Poor Develop Poor Leaching Fos (Crim) Cht Wht-Gry Op Shp Vit Chalk Wht Soft Sh Blk  
Carb-Char-Gry-Maroon Soft No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Fair Pin-Pt Ixln Por Tr OOL/OOM Por AA Dec Grad Dns Micrite Fos (Crim) Cht  
Wht-Gry Op Shp Vit Chalk Wht Soft Sh Blk Carb-Char-Gry-Maroon Soft No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Fair Pin-Pt Ixln Por (w/Pyr Includ) Grad Dns Micrite Fos (Fuss) Cht  
Gry Op Shp Vit Chalk Wht Soft Sh Char-Gry-Maroon Soft No Odor No Stn No Flor  
NS

Ls Wht-Crm Fxln Fair Pin-Pt Ixln Por Grad Dns Micrite Cht Drk Amber Op Shp Vit  
Chalk Wht Soft Sh Char-Gry-Maroon Soft No Odor No Stn No Flor NS

Ls Wht-Crm-Tan Fxln Fair Pin-Pt Ixln Por Grad Dns Micrite Cht Wht Op Shp Vit  
Chalk Wht Soft Sh Char-Gry Soft No Odor No Stn No Flor NS

Ls Wht-Crm-Tan Fxln Fair Pin-Pt Ixln Por Grad Dns Micrite Cht Wht-Gry Op Shp Vit  
Chalk Wht Soft Sh Char-Gry Soft No Odor No Stn No Flor NS

Ls Wht-Crm-Tan Fxln Fair Pin-Pt Ixln Por Grad Dns Micrite Cht Wht - Gry - Drk Gry  
(w/Fos Includ) Transp-Op Shp Vit Chalk Wht Soft Sh Char-Gry Soft No Odor No Stn  
No Flor NS

Ls Wht-Crm-Tan Fxln Fair Pin-Pt Ixln Por Grad Dns Micrite Fos (Fuss) Cht Gry-Drk  
Gry Translu-Op Shp Vit Chalk Wht Soft Sh Char-Gry Soft No Odor No Stn No Flor  
NS

Ls Wht-Crm Fxln Fair Pin-Pt Ixln Por Grad OOL/OOM Por Poor Inter - OOL/OOM Por Poor Develop Poor  
Leaching Grad Dns Micrite Fos (Fuss) Cht Wht-Gry Op Shp Vit Chalk Wht Soft Sh Char-Gry-Maroon  
Soft No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Fair Pin-Pt Ixln Por Grad OOL/OOM Por Poor Inter - OOL/OOM Por Poor Develop Poor  
Leaching Grad Dns Micrite Fos (Fuss) Cht Wht-Gry Op Shp Vit Chalk Wht Soft Sh Char-Gry-Maroon  
Soft No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Fair Pin-Pt Ixln Por Grad OOL/OOM Por Poor Inter - OOL/OOM Por Poor Develop Poor  
Leaching Grad Dns Micrite Fos (Fuss) Cht Wht-Gry Op Shp Vit Chalk Wht Soft Sh Char-Gry-Maroon  
Soft No Odor No Stn No Flor NS

**QUEEN HILL 3974' (- 1535)**

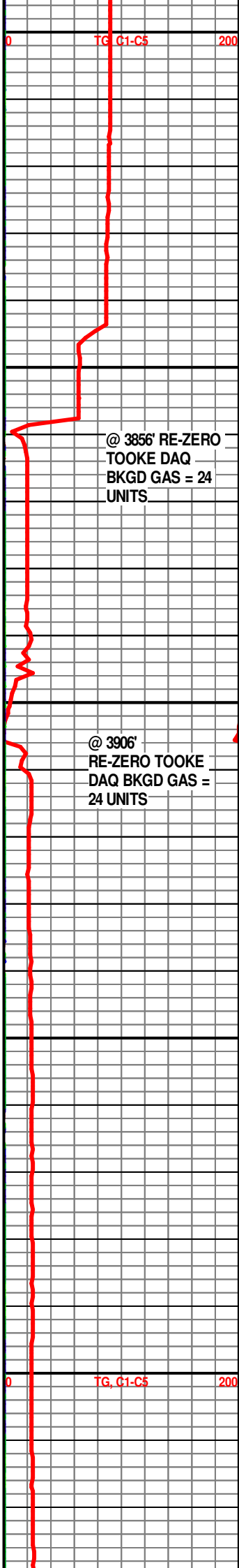
Sh Blk Carb-Char-Gry-Maroon Soft-Fissil Ls Wht-Crm Fxln Fair Pin-Pt Ixln Por Grad  
OOL/OOM Por Poor Inter - OOL/OOM Por AA Poor Develop Poor Leaching Grad  
Dns Micrite Fos (Fuss) Cht Wht-Gry Op Shp Vit Chalk Wht Soft No Odor No Stn No  
Flor NS

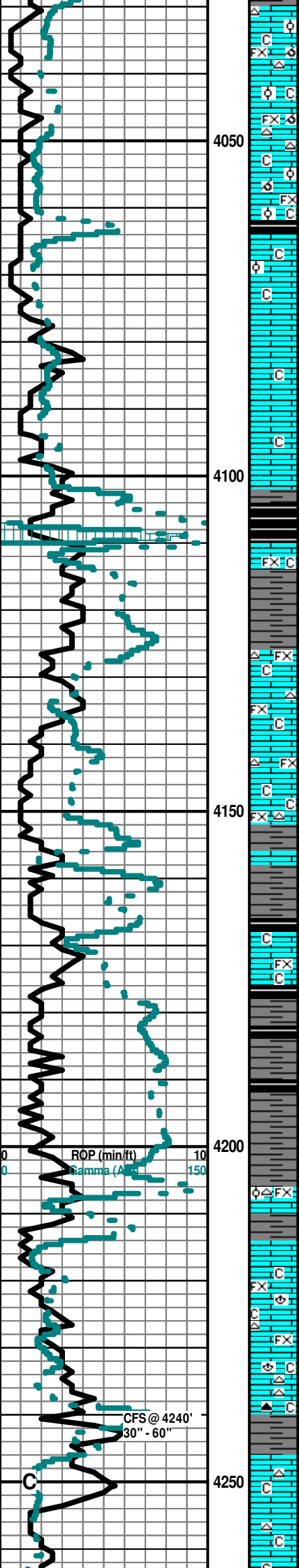
Ls Wht-Crm Fxln Fair Pin-Pt Ixln Por Grad OOL/OOM Por Poor Inter - OOL/OOM  
Por Poor Develop Poor Leaching Grad Dns Micrite Fos (Fuss) Cht Wht-Gry Op Shp  
Vit Chalk Wht Soft Sh Char-Gry-Maroon Soft No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Fair Pin-Pt Ixln Por Grad OOL/OOM Por Poor Inter - OOL/OOM Por AA Poor Develop  
Poor Leaching Grad Dns Micrite Fos (Fuss) Cht Wht-Gry Op Shp Vit Chalk Wht Soft Sh Blk  
Carb-Char-Gry-Maroon Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Tan Fxln Fair Pin-Pt Ixln Por Grad OOL/OOM Por Poor Inter -  
OOL/OOM Por AA Poor Develop Poor Leaching Grad Dns Micrite Fos (Fuss) Cht  
Wht-Gry Op Shp Vit Chalk Wht Soft Sh Char-Gry-Maroon Soft-Fissil No Odor No  
Stn No Flor NS

Ls Wht-Crm Fxln Fair Pin-Pt Ixln Por Grad OOL/OOM Por Poor Inter - OOL/OOM  
Por AA Poor Develop Poor Leaching Grad Dns Micrite Cht Wht Op Shp Vit Chalk  
Wht Soft Sh Blk Carb-Char-Gry-Maroon Soft-Fissil No Odor No Stn No Flor NS





Ls Wht-Crm Fxln Fair Pin-Pt Ixln Por Grad OOL/OOM Por Poor Inter - OOL/OOM Por AA Poor Develop Poor Leaching Grad Dns Micrite Cht Wht Op Shp Vit Chalk Wht Soft Sh Blk Carb-Char-Gry-Maroon Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Fair Pin-Pt Ixln Por Grad OOL/OOM Por Poor Inter - OOL/OOM Por AA Poor Develop Poor Leaching Grad Dns Micrite Cht Wht Op Shp Vit Chalk Wht Soft Sh Blk Carb-Char-Gry-Maroon Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Fair Pin-Pt Ixln Por Grad OOL/OOM Por Poor Inter - OOL/OOM Por AA Poor Develop Poor Leaching Grad Dns Micrite Cht Wht Op Shp Vit Chalk Wht Soft Sh Blk Carb-Char-Gry-Maroon Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Fair Pin-Pt Ixln Por Grad OOL/OOM Por Poor Inter - OOL/OOM Por AA Poor Develop Poor Leaching Grad Dns Micrite Cht Wht Op Shp Vit Chalk V Abd Wht Soft Sh Char-Gry-Grn-Maroon Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Poor-Fair Pin-Pt Ixln Por Grad Dns Micrite Cht Wht Op Shp Vit Chalk Wht Soft Sh Char-Gry-Grn-Maroon-Tr Blk Carb Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Poor-Fair Pin-Pt Ixln Por Grad Dns Micrite Cht Wht Op Shp Vit Chalk Wht Soft Sh Char-Gry-Grn-Maroon-Tr Blk Carb Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Poor-Fair Pin-Pt Ixln Por Grad Dns Micrite Cht Wht Op Shp Vit Chalk Wht Soft Sh Char-Gry-Grn-Maroon-Tr Blk Carb Soft-Fissil No Odor No Stn No Flor NS

**HEEBNER 4103' (- 1664)**

Sh Blk Carb-Char-Gry-Tr red Soft-Fissil (w/SG in Blk Carb Sh) Ls Wht-Crm Fxln Poor Pin-Pt Ixln Por Grad Dns Micrite Cht Wht Op Shp Vit Chalk Wht Soft Fos (Brach) No Odor No Stn No Flor NS

Sh Blk Carb-Char-Gry-Tr red Soft-Fissil (w/SG in Blk Carb Sh) Ls Wht-Crm Fxln Poor Pin-Pt Ixln Por Grad Dns Micrite Cht Wht Op Shp Vit Chalk Wht Soft Fos (Brach) No Odor No Stn No Flor NS

**TORONTO 4124' (- 1685)**

Ls Crm-Tan Fxln Fair-Poor Pin-Pt Ixln Por Grad Dns Micrite Cht Wht Op Shp Vit Chalk Wht Soft Sh Blk Carb-Char-Gry-Aqua-Maroon Soft-Fissil No Odor No Stn No Flor NS

Ls Crm-Tan Fxln Poor-Fair Pin-Pt Ixln Por Grad Dns Micrite Cht Wht Op Shp Vit Chalk Wht Soft Sh Blk Carb-Char-Gry-Aqua-Maroon Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Poor-Fair Pin-Pt Ixln Por Grad Dns Micrite Cht Wht Op Shp Vit Fos (Brach) Chalk Wht Soft Sh Blk Carb-Char-Gry-Aqua-Maroon Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Poor-Fair Pin-Pt Ixln Por Grad Dns Micrite Cht Wht Op Shp Vit Fos (Brach) Chalk Wht Soft Sh Blk Carb-Char-Gry-Aqua-Maroon Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Poor-Fair Pin-Pt Ixln Por Grad Dns Micrite Cht Wht Op Shp Vit Fos (Brach) Chalk Wht Soft Sh Blk Carb-Char-Gry-Aqua-Maroon Soft-Fissil No Odor No Stn No Flor NS

**DOUGLAS 4167' (- 1728)**

Sh Char-Gry-Aqua-Grn-Maroon-Tr Blk Carb Soft-Fissil Ls Crm-Tan-Gry Fxln Den Micrite No Odor No Stn No Flor NS

Sh Char-Gry-Aqua-Grn-Maroon-Tr Blk Carb Soft-Fissil Ls Crm-Tan Fxln Den Micrite Grad Tr Poor Pin-Pt Ixln Por Cht Wht Op Shp Vit No Odor No Stn No Flor NS

Sh Char-Gry-Aqua-Grn-Maroon-Tr Blk Carb Soft-Fissil Ls Crm-Tan Fxln Den Micrite Cht Wht Op Shp Vit No Odor No Stn No Flor NS

**IATAN (BROWN LIME) 4205' (- 1766)**

Ls Wht-Crm-Tan Fxln Fair-Poor Dns Micrite Cht Wht-Tan (w/OOL in pl) Op Shp Vit Chalk Wht Soft Sh Char-Gry-Maroon Soft-Fissil No Odor No Stn No Flor NS

**LANSING 4212' (- 1773)**

Ls Wht-Crm-Tan Fxln Fair-Poor Dns Micrite Cht Wht-Tan (w/OOL in pl) Op Shp Vit Chalk Wht Soft Sh Char-Gry-Maroon Soft-Fissil No Odor No Stn No Flor NS

30" CFS @ 4240' Ls Wht-Crm-Tan Fxln Fair-Poor Pin-Pt Ixln Por Grad Dns Micrite Cht Crm-Tan (Banded Wht) Op Shp Vit Fos (Brach) Chalk Wht Soft Sh Char-Gry-Maroon Soft-Fissil No Odor No Stn No Flor NS

60" CFS @ 4240' Ls Wht-Crm-Tan Fxln Fair-Poor Pin-Pt Ixln Por Grad Dns Micrite Cht Wht-Crm-Amber Translu-Op Shp Vit Fos (Brach) Chalk Wht Soft Sh Char-Gry-Maroon Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Tan Fxln Fair-Poor Pin-Pt Ixln Por Grad Dns Micrite Cht Wht-Crm-Amber Translu-Op Shp Vit Fos (Brach) Chalk Wht Soft Sh Char-Gry-Maroon Soft-Fissil No Odor No Stn No Flor NS

30" CFS @ 4275' Ls Wht-Crm Fxln Fair-Poor Pin-Pt Ixln Por Grad Dns Micrite Cht Wht-Amber Translu-Op Shp Vit Chalk Wht Soft Sh Char-Gry-Maroon Soft-Fissil No Odor No Stn No Flor NS

ADJUST CHROMATOGRAPH

CLEAN OUT FROZEN EXTRACTOR LINE & ACUMULATION CHAMBER

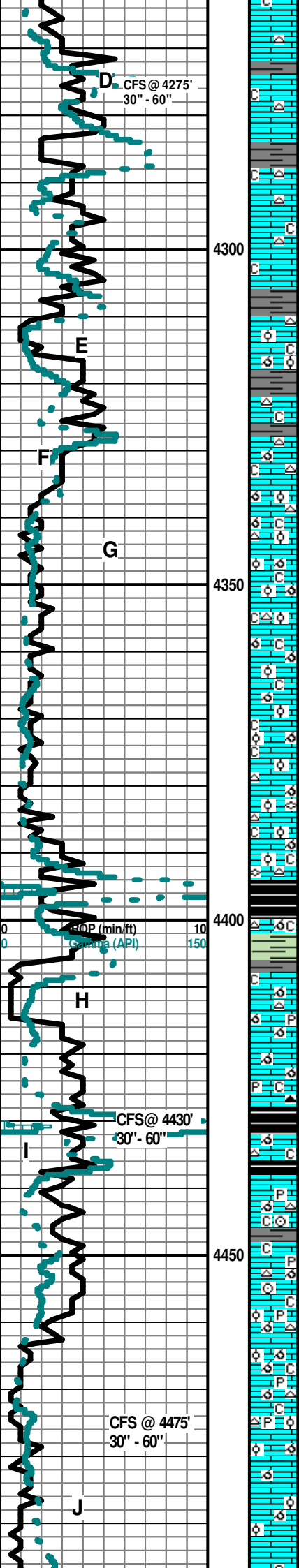
RE-ZERO TOOKE DAQ @ 4120' LAG DEPTH. BKGD GAS = 20 UNITS.

TG, C1-C5 200

Mudco Ck @ 4243' @ 8:30 AM 10/28/12 Vis 54; WT=9.15# PV= 16; YP= 18; WL= 8.4; Cake= 1; Chl=5400; Cal= 20; Sol=5.4% LCM= 2#; DMC=\$ 1612.45 CMC=\$ 11016.05 18163.55

ROP (min/ft) 10 Gamma (A) 150

CFS @ 4240' 30" - 60"



60" CFS @ 4275' Ls Wht-Crm FxIn Fair-Poor Pin-Pt IxIn Por Grad Dns Micrite Cht Wht-Amber Translu-Op Shp Vit Chalk Wht Soft Sh Char-Gry-Maroon Soft-Fissil No Odor No Stn No Flor NS

GAS KICK= 52 UNITS.

Ls Wht-Crm FxIn Fair-Poor Pin-Pt IxIn Por Grad Dns Micrite Cht Wht-an Translu-Op Shp Vit Chalk Wht Soft Sh Char-Gry-Maroon Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm FxIn Fair-Poor Pin-Pt IxIn Por Grad Dns Micrite Cht Wht-Tan Translu-Op Shp Vit Chalk Wht Soft Sh Blk Carb-Char-Gry-Maroon Soft - Fissil No Odor No Stn No Flor NS

Ls Wht-Crm FxIn Fair-Poor Pin-Pt IxIn Por Grad Dns Micrite Cht Wht-Tan Translu-Op Shp Vit Chalk Wht Soft Sh Blk Carb-Char-Gry-Maroon Soft - Fissil No Odor No Stn No Flor NS

Ls Wht-Crm FxIn Fair-Poor Pin-Pt IxIn Por Grad Dns Micrite Cht Wht-Tan Translu-Op Shp Vit Chalk Wht Soft Sh Blk Carb-Char-Gry-Maroon Soft - Fissil No Odor No Stn No Flor NS

Ls Wht-Crm FxIn Fair-Poor Pin-Pt IxIn Por Grad Poor-Fair OOL/OOM Por (w/OOL in PI) Poor Develop Poor Leaching Cht Wht-Tan Translu-Op Shp Vit Chalk Wht Soft ShChar-Gry-Maroon Soft - Fissil No Odor No Stn No Flor NS

Ls Wht-Crm FxIn Fair-Poor Pin-Pt IxIn Por Grad Dns Micrite Cht Wht-Tan Translu-Op Shp Vit Chalk Wht Soft Sh Blk Carb-Char-Gry-Maroon Soft - Fissil No Odor No Stn No Flor NS

Ls Wht-Crm FxIn Fair-Poor Pin-Pt IxIn Por Grad Poor-Fair OOL/OOM Por (w/OOL in PI) Poor Develop Poor Leaching Cht Wht Op Shp Vit Fos (Fuss) Chalk Wht Soft ShChar-Gry-Maroon Soft - Fissil No Odor No Stn No Flor NS

Ls Wht-Crm FxIn Fair-Poor Pin-Pt IxIn Por Grad Poor-Fair OOL/OOM Por (w/OOL in PI) Poor Develop Poor Leaching Cht Wht Op Shp Vit Fos (Fuss) Chalk Wht Soft ShChar-Gry-Maroon Soft - Fissil No Odor No Stn No Flor NS

Ls Wht-Crm FxIn Fair-Poor Pin-Pt IxIn Por Grad Poor-Fair OOL/OOM Por (w/OOL in PI) Poor Develop Poor Leaching Cht Wht Op Shp Vit Fos (Fuss) Chalk Wht Soft ShChar-Gry-Maroon Soft - Fissil No Odor No Stn No Flor NS

Ls Wht-Crm FxIn Fair-Poor Pin-Pt IxIn Por Grad Poor-Fair OOL/OOM Por (w/OOL in PI) Poor Develop Poor Leaching Cht Wht Op Shp Vit Fos (Fuss) Chalk Wht Soft ShChar-Gry-Maroon Soft - Fissil No Odor No Stn No Flor NS

Ls Wht-Crm FxIn Fair-Poor Pin-Pt IxIn Por Grad Poor-Fair OOL/OOM Por (w/OOL in PI) Poor Develop Poor Leaching Cht Wht Op Shp Vit Fos (Fuss) Chalk Wht Soft ShChar-Gry-Maroon Soft - Fissil No Odor No Stn No Flor NS

Ls Wht-Crm FxIn Fair-Poor Pin-Pt IxIn Por Grad Poor-Fair OOL/OOM Por (w/OOL in PI) Poor Develop Poor Leaching Cht Wht Op Shp Vit Fos (Fuss) Chalk Wht Soft ShChar-Gry-Maroon Soft - Fissil No Odor No Stn No Flor NS

**MUNCIE CREEK 4396' (- 1957)**

Sh Blk Carb-Char-Gry Fissil w/SSG Ls AA Barren ? Min Flor No Odor No Stn NS

SH GAS KICK= 68 UNITS

**KANSAS CITY "DRUM" (H) 4408' (- 1969)**

0" CFS @ 4430' Ls Crm-Tan-Wht FxIn Abd Good OOM Por (Tr OOL in pl) Good Develop Good Vug Leaching Grad Dns Micrite (w/Pyr Inclus) Barren Cht Wht-Drk Gry Translu-Op Shp Vit ? Min Flor No Odor No Stn NS

30" CFS @ 4430' Ls Crm-Tan-Wht FxIn Abd Good OOM Por (Tr OOL in pl) Good Develop Good Vug Leaching Grad Dns Micrite (w/Pyr Inclus) Barren Cht Wht-Drk Gry Translu-Op Shp Vit ? Min Flor No Odor No Stn NS

60" CFS @ 4430' Ls Crm-Tan-Wht FxIn Abd Good OOM Por (Tr OOL in pl) Good Develop Good Vug Leaching Grad Dns Micrite (w/Pyr Inclus) Barren Cht Wht-Drk Gry Translu-Op Shp Vit ? Min Flor No Odor No Stn NS

Ls Crm-Tan-Wht FxIn Dns Micrite (w/Pyr Inclus) Barren Grad Tr/Good OOM Por AA Good Develop Good Vug Leaching Cht Wht-Gry Translu-Op Shp Vit Sh Gry-Grm-Char Fissil ? Min Flor No Odor No Stn NS

Ls Crm-Tan-Wht FxIn Dns Micrite (w/Pyr Inclus) Barren Grad Tr/Good OOM Por AA Good Develop Good Vug Leaching Fos (Crin) Cht Wht-Gry Translu-Op Shp Vit Sh Blk Carb-Gry-Grm-Char Fissil ? Min Flor No Odor No Stn NS

Ls Crm-Tan-Wht FxIn Dns Micrite (w/Pyr Inclus) Barren Grad Tr/Good OOM Por AA Dec Good Develop Good Vug Leaching Fos (Crin) Cht Wht-Tan Op Shp Vit Sh Blk Carb-Gry-Grm-Char Fissil ? Min Flor No Odor No Stn NS

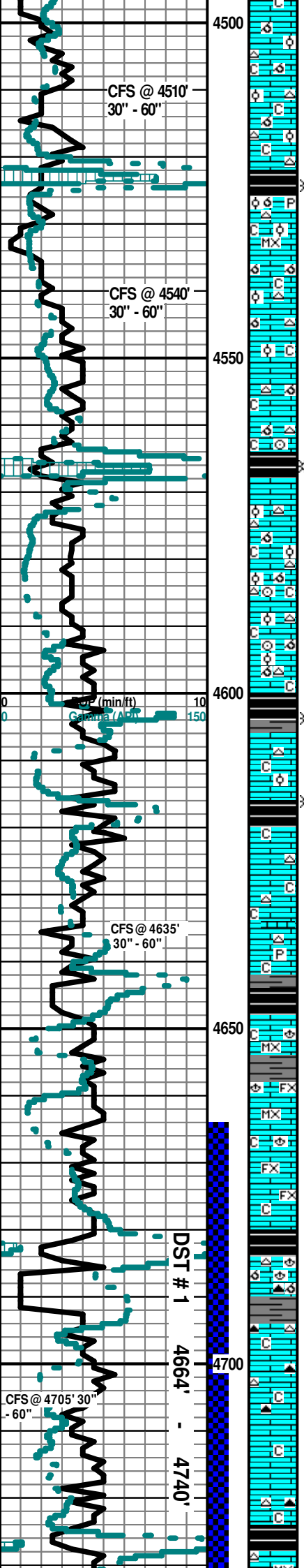
30" CFS @ 4475' Ls Crm-Tan-Wht FxIn Abd Good OOM Por (Tr OOL in pl) Good Develop Good Vug Leaching Grad Dns Micrite (w/Pyr Inclus) Barren Cht Wht-Drk Gry Translu-Op Shp Vit ? Min Flor No Odor No Stn NS

60" CFS @ 4475' Ls Crm-Tan-Wht FxIn Abd Good OOM Por (Tr OOL in pl) Good Develop Good Vug Leaching Grad Dns Micrite (w/Pyr Inclus) Barren Cht Wht-Drk Gry Translu-Op Shp Vit ? Min Flor No Odor No Stn NS

Ls Crm-Tan-Wht FxIn Fair-Med OOM Por (Tr Med Ooids in pl) Fair-Med Develop Fair-Med Leaching (Tr Good Vug Leaching) Barren Cht Wht Op Shp Vit Chalk Abd Sh Blk Carb-Gry-Grm Soft-Fissil ? Min Flor No Odor No Stn NS

30" CFS @ 4510' Ls Crm-Tan-Wht FxIn Fair OOM Por (Tr Small Ooids in pl) Fair Develop Fair Leaching Cht Wht-Lt Grv Translu-Op Shp Vit Chalk Abd Sh Blk Carb-Gry-Grm Soft-Fissil ? Min Flor

Mudco Ck @ 4604' @ 9:40 AM 10/29/12 Vis 55; WT=9.15# PV= 17; YP= 18; WL= 8.4; Cake= 1; Chl=3900; Cal= 20; Sol=5.5%. LCM= 2#; DMC=\$ 1845.30 CMC=\$ 12861.35



No Odor No Stn NS

60" CFS @ 4510' Ls Wht-Crm-Tan FxIn Poor OOM Por (Tr OOL in pl) Poor Develop PoorLeaching Grad Dns Micrite Barren Cht Wht-Lt Gry Translu-Op Shp Vit Chalk Abd ? Min Flor No Odor No Stn NS

Ls Wht-Crm-Tan FxIn Poor OOM Por (Tr OOL in pl) Poor Develop PoorLeaching Grad Dns Micrite Barren Cht Wht-Lt Gry Translu-Op Shp Vit Chalk Abd ? Min Flor No Odor No Stn NS

**STARK STARK 4522' (- 2083)**

**KANSAS CITY "SWOPE" (K) 4526' (- 2086)**

30" CFS @ 4540' Sh Blk Carb (w/Pyr Inklus)-Gry Fissil (w/SSG) Ls Ls Crm-Tan-Wht FxIn Fair OOM Por (Tr Small Ooids in pl) Fair Deve bp Fair Leaching Cht Wht-Lt Gry Translu-Op Shp Vit Chalk Abd ? Min Flor No Odor No Stn NS

60" CFS @ 4540' Ls Wht-Crm FxIn Poor-Good OOM Por (Tr Small-Med-Lg Ooids in pl) Poor-Good Develop Poor-Good Vug Leaching Cht Wht Op Shp Vit Chalk Abd ? Min Flor No Odor No Stn NS

Ls Wht-Crm FxIn Poor-Fair OOM Por (Tr Small-Med Ooids in pl) Poor-Fair Develop Poor-Fair Vug Leaching Dec Cht Wht Op Shp Vit Chalk Abd ? Min Flor No Odor No Stn NS

Ls Wht-Crm-Tan FxIn Dns Micrite Barren Fos (Crim) Cht Wht-Tan-Amber Translu-Op Shp Vit Chalky Sh Blk Carb-Gry-Char Fissil ? Min Flor No Odor No Stn NS

**HUSHPUCKNEY 4564' (- 2125)**

**KANSAS CITY "HERTHA" (L) 4568' (- 2129)**

Ls Wht-Crm-Tan FxIn Dns Micrite Barren Grad Tr Good OOM Por Good InterOOM Por Good Dissolu Good Leaching (5 Pcs) Fos (Crim) Cht Wht-Tan-Amber Translu-Op Shp Vit Chalky Sh Blk Carb-Gry-Char Fissil ? Min Flor No Odor No Stn NS

Ls Wht-Crm-Tan FxIn Dns Micrite Barren Grad Tr Good OOM Por Good InterOOM Por Good Dissolu Good Leaching (5 Pcs) Fos (Crim) Cht Wht-Tan-Amber Translu-Op Shp Vit Chalky Sh Blk Carb-Gry-Char Fissil ? Min Flor No Odor No Stn NS

**BASE KANSAS CITY 4601' (- 2162)**

**MARMATON 4606' (- 2167)**

Ls Wht-Crm-Tan FxIn Dns Micrite Barren Grad Fair OOM Por Fair InterOOM Por Fair Dissolu Fair Leaching Cht Wht-Tan-Amber Translu-Op Shp Vit Chalky Sh Blk Carb-Char-Gry Fissil ? Min Flor No Odor No Stn NS

30" CFS @ 4635' Ls Tan-Gry MicroxIn Dns Micrite Grad Tr Poor Pin-P tIxIn Por Cht Wht-Gry-Amber Translu-Op Shp Vit Chalk AA Sh Blk Carb-Char-Gry-Aqua ? Min Flor No Stn No Odor NS

60" CFS @ 4635' Ls Tan-Gry MicroxIn Dns Micrite Grad Tr Poor Pin-Pt lXIn Por Cht Wht-Gry-Amber Translu-Op Shp Vit Chalk AA Sh Blk Carb-Char-Gry-Aqua ? Min Flor No Stn No Odor NS

Sh Blk Carb-har-Gry-Grn-Red-Purpl Soft-Fissil Ls Wht-Crm FxIn Dns Micrite Grad Med-Good OOM Por Barren Cht Wht -Gry -Amber Translu- Op Shp Vit Chalky Pyr Mass No Stn ? Min Flor No Odor NS

**ALTAMONT "A" 4648' (- 2209)**

Ls Tan-Gry MicroxIn Dns Micrite Barren Fos (Brach) Chalk Sh Char- Gry- Grn -Red Soft-Fissil ? Min Flor No Stn No Odor NS

Ls Tan-Gry-Crm MicroxIn Dns Micrite Barren Fos (Brach) Chalk Sh Char- Gry- Grn -Red Soft-Fissil ? Min Flor No Stn No Odor NS

Sh Blk Carb-Char-Gry-Grn-Red Soft-Fissil Ls Wht-Crm MicroxIn-FxIn Dns Micritic Barren Grad to Fair-Med-Good OOM Por Med-Good Leahing Med-Good Develop Fos (Brach) ? Min Flor No Stn No Odor NS

**ALTAMONT "B" 4685' (- 2246)**

30" CFS @ 4705' Ls Wht-Crm MicroxIn-FxIn Dns Micritic Barren Grad to Fair-Med-Good OOM Por Med-Good Leahing Med-Good Develop Cht Amber (Banded Wht) Translu-Op Shhp Vit Fos (Brach) Chalky Sh Char-Gry-Grn-Red Soft-Fissil Tr Sli ? Min Flor No Stn No Odor NS

60" CFS @ 4705' Ls Wht-Crm-Gry MicroxIn-FxIn Dns Micritic Barren Chalky Cht Amber-Gry Translu Shp Vit Sh Char-Gry-Grn-Red Soft-Fissil ? Min Flor No Stn No Odor NS

Ls Wht-Crm MicroxIn-FxIn Dns Micritic Barren Chalky Sh Char -Gry- Grn- Red Soft-Fissil No Flor No Stn No Odor NS

30" CFS @ 4740' Ls Wht MicroxIn-FxIn Dns Micrite Tr V Poor ldn Por Barren Cht Tan-Gry-Amber Translu-Op Shp Vit Chalky Sh Blk Carb-Gry- Grn-Aqua Soft-Fissil Sli ? Min Flor No Stn No Odor NS

**PAWNEE 4728' (- 2289)**

SH GAS KICK= 48 UNITS

RE-ZERO TOOKE DAQ @ 4541' LAG DEPTH. BKGD GAS SET= 12 UNITS.

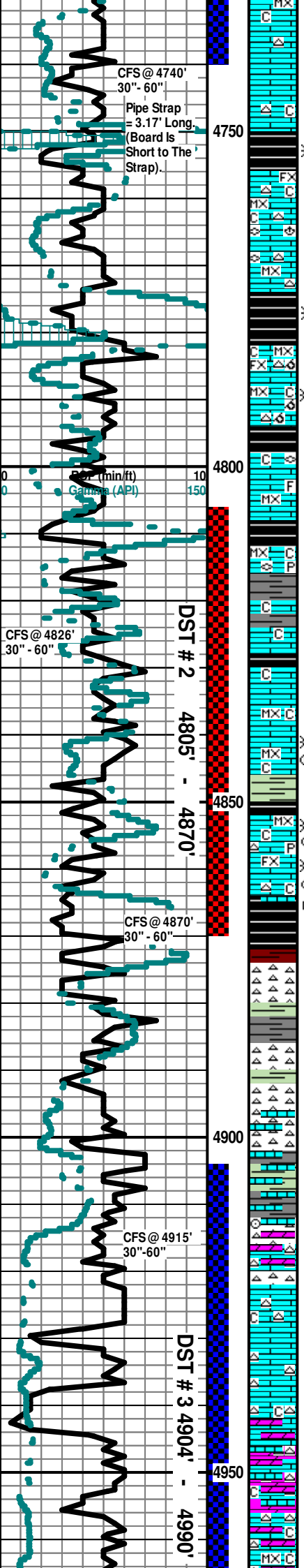
SH GAS KICK= 51 UNITS

TG, C1-C5 200

GAS KICK = 50 UNITS

DST #1 4664'-4740'.  
 Times: 30"-45"-45"-60".  
 Blow: IF= Weak Blow  
 Build / 1/2"; FF= Weak Surface Blow.  
 Recovery: 15' M (Tool Spl.w Spots Oil Show,100% M).  
 Pressures: IH=2263#; FH=2261#; IF= 8-13#; FF= 11-11#; ISIP= 31#; FSIP= 20#; Temp.= 115 degrees

F. Mudco Ck @  
 4740' @ 8:05 AM 10/30/12 Vis 56; WT=9.4#; PV= 18; YP= 18; WL= 9.4; Cake= 1; Chl=5600; Cal= 20; Sol=7.5%. LCM=2#; DMC=#; 393.45 CMC=# \$13254.80



60" CFS @ 4740' Ls Wht MicroXn-FxIn Dns Micrite Tr V Poor IxIn Por Barren Cht Tan-Gry-Amber Translu-Op Shp Vit Chalky Sh Blk Carb-Char-Gry- Grn-Aqua Soft-Fissil Sli ? Min Flor No Stn No Odor NS

Sh Blk Carb-Char-Gry-Grn-Red Soft-Fissil Ls Wht-Crm MicroXn-FxIn Dns Micritic Barren Cht AA Chalky AA Scat ? Min Flor No Stn No Odor NS

**FORT SCOTT 4755' (- 2316)**

Sh Blk Carb-Char-Gry-Grn-Red Soft-Fissil Ls Wht-Crm MicroXn-FxIn Dns Micritic Barren Cht AA Chalky AA Scat ? Min Flor No Stn No Odor NS

Ls Wht-Crm MicroXn Dns Micrite Barren Fos (Lg Brach, Lg Fuss) Cht Wht Op Shp Vit Sh Blk Carb AA No Odor No Stn No Flor NS

**CHEROKEE SHALE 4774' (- 2335)**

Sh Blk Carb V Abd-Char (w/SG) Fissil Ls Wht-Crm MicroXn-FxIn Dns Micritic Barren Chalky No Flor No Stn No Odor SG in Blk Sh

Ls Wht MicroXn-FxIn Dns Micrite Tr V Poor IxIn Por Barren Grad Med-Good OOM Por Med-Good Develop Good Vug Leaching (w/? SSG ?) Cht Tan -Gry - Amber Translu-Op Shp Vit Fos (Crin, Fuss) Chalky Sh Blk Carb-Char-Gry-No Flor No Stn No Odor NS

Ls Wht MicroXn-FxIn Dns Micrite Grad Poor IxIn Por Barren Cht Tan -Gry -Amber Translu-Op Shp Vit Fos (Fuss) Chalky Abd Sh Blk Carb-Char -Gry -No Flor No Stn No Odor NS

Ls Wht-Crm-Tan MicroXn Dns Micrite Barren Cht Wht - Amber Translu-Op Shp Vit Chalky Fos (Spiculitic) Sh Blk Carb (w/Pyr Inklus) Char- Gry No Flor No Stn No Odor NS

30" CFS @ 4826' Ls Wht-Crm-Tan MicroXn Dns Micrite Barren Cht AA Chalky Sh Blk Carb (w/Pyr Inklus) Char-Gry-Fissil No Flor No Stn No Odor NS

60" CFS @ 4826' Ls Wht MicroXn-FxIn Dns Micrite Grad Med OOM Por Med Develop Med Leaching Barren Chalky Sh Char-Gry-No Flor No Stn No Odor NS

Ls Wht-Crm MicroXn-FxIn Poor IxIn Pin-Pt Por Cht Wht Op Shp Vit Chalky Sh Char-Gry Fissil No Odor No Flor Sli Stn NS

Ls Wht-Crm MicroXn-FxIn Fair-Med IxIn Pin-Pt Por (w/SG & SO Under Heat in Wtr & Tr Gillsonitic Drk Blk Stn) SFO & SG w/Bkn (Oil & Gas Does Not Flor) Chalky Sh Char-Gry-Drab Grn Fissil No Odor ? Sli Flor Sli Stn SG & SO

**HUCK 4852' (- 2413)**

30" CFS @ 4870' Ls Wht-Crm MicroXn-FxIn Fair-Med IxIn Pin-Pt Por (w/Pyr Inklus) (w/SG & SO Under Heat in Wtr & Tr Gillsonitic Drk Blk Stn) SFO & SG w/Bkn (Oil & Gas Does Not Flor) Cht Wht Op Shp Vit Chalky Sh Char-Gry Fissil No Odor ? Sli Flor Sli Stn SG & SO;

60" CFS @ 4870' Ls Wht-Crm AA (w/SG & SO Under Heat in Wtr & Tr Gillsonitic Drk Blk Stn) SFO & SG w/Bkn AA Chalky Sh AA-Drab Grn Fissil No Odor ? Sli Flor Sli Stn SG & SO

**ATOKA 4867' (- 2428)**

**MISSISSIPPIAN 4870' (- 2431)**

Cht Wht--Crm-Pink-Lt Org Op Shp Vit Fresh V Abd (Tr w/Pyr Inklus) (50% of Spl) Chalk (20% of Spl) Sh Variolored Blk Carb-Char-Drab Grn-Yell-Aqua-Olive-Maroon (30% of Spl) Fissil No Odor No Stn No Flor NS

Cht Wht--Crm-Pink Inc-Lt Org Inc (70% of Spl) Op Shp Vit Fresh V Abd Ls Wht MiroXn Dns Micrite Chalk (10% of Spl) Sh Variolored Blk Carb-Char-Drab Grn Inc-Yell Inc -Aqua-Olive Inc-Maroon (20% of Spl) Fissil No Odor No Stn No Flor NS

Cht Wht--Crm-Pink Inc-Lt Org Inc Translu- Op Shp Vit Fresh (40% of Spl) Ls Wht MiroXn Dns Micrite Inc (25% of Spl) Abd Chalk (10% of Spl) Sh Variolored Blk Carb-Char-Drab Grn Inc-Yell Inc -Aqua-Olive Inc-Maroon Fissil (25% of Spl) No Odor No Stn No Flor NS

30" CFS @ 4915' Cht Wht--Crm-Pink Inc-Lt Org Inc Translu- Op Shp Vit Fresh (50% of Spl) Ls Wht MiroXn Dns Micrite Inc (40% of Spl) Abd Chalk (5% of Spl) Sh Variolored Blk Carb-Char-Drab Grn Inc-Yell Inc -Aqua-Olive Inc-Maroon Fissil (55% of Spl) No Odor No Stn No Flor NS

60" CFS @ 4915' Cht Wht--Crm Dec-Pink Dec-Lt Org Dec Translu- Op Shp Vit Fresh (50% of Spl) Ls Wht MiroXn Dns Micrite Inc (40% of Spl) Abd Chalk (5% of Spl) Fos (Crin) Sh Variolored Blk Carb-Char-Drab Grn Inc-Yell Inc -Aqua-Olive Inc-Maroon Fissil (5% of Spl) No Odor No Stn No Flor NS

Cht Wht--Crm-Pink-Lt Org (Tr Only) Translu- Op Shp Vit Fresh (30% of Spl) Ls Wht MiroXn Dns Micrite Inc (50% of Spl) Abd Chalk (5% of Spl) Sh Variolored Blk Carb-Char-Drab Grn Inc-Yell-Aqua Inc-Olive (Tr Only) -Maroon Fissil (15% of Spl) No Odor No Stn No Flor NS

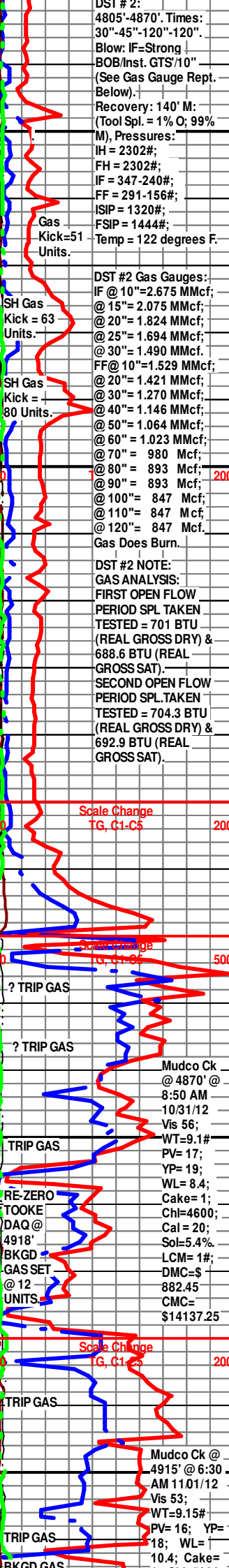
Ls Wht -Crm MicroXn Dns Micritic (25% of Spl) Grad Dolo/Ls Wht-Crm-Yell (w/Cht Wht Inklus) Dns Micrite 25% of Spl) Cht AA Wht Translu-Op Shp-Vit (30% of Spl) Sh Blk Carb-Char-Gry-Aqua-Maroon (20% of Spl) No Odor Tr ? Min flor (Dolo) No Stn NS

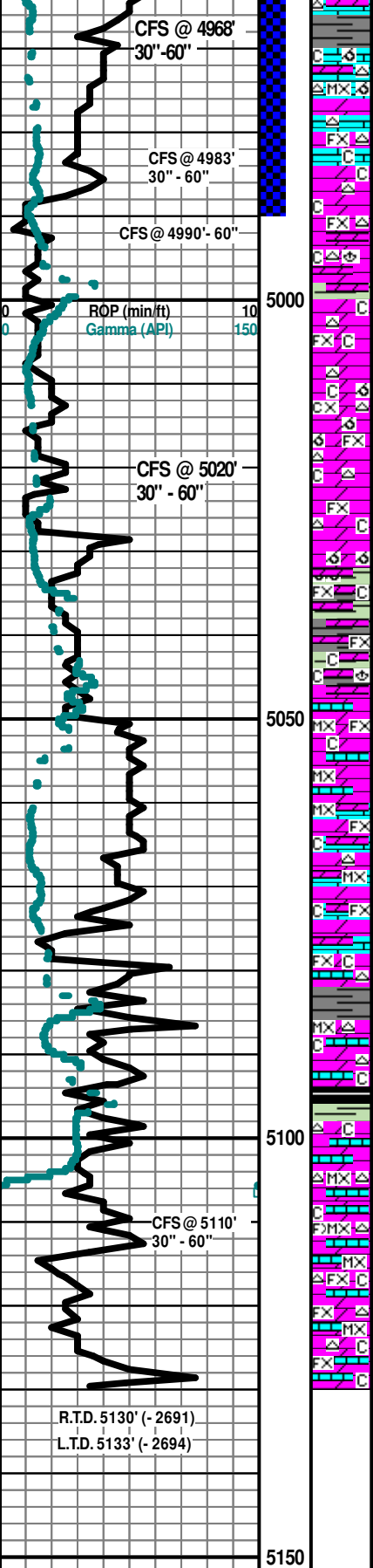
Ls Wht -Crm MicroXn Dns Micritic (60% of Spl) Cht Wht-Lt Gry-Gry Translu-Op Shp-Vit (30% of Spl) Sh Blk Carb-Char-Gry-Aqua-Maroon (10% of Spl) No Odor Tr ? Min Flor (5 Pcs) No Stn NS

**SALEM (SPERGEN) 4944' (- 2505)**

30" CFS @ 4968' Dolo/Ls Gry-Wht-Crm MicroXn Dns Barren Grad FxIn Poor Pin-Pt IxIn Por Baren Cht Wht-Gry-Lt Gry Translu-Op Shp Vit Chalk Wht-Peach Sh Aqua-Char-Grn-Maroon No Odor Tr ? Min Flor (4 Pcs) No Stn NS

60" CFS @ 4968' Ls/Dolo Crm-Wht-Gry MicroXn Dns Barren Grad FxIn Poor-Fair Pin-Pt IxIn Por Baren Cht Wht-Gry-Lt Gry Translu-Op Shp Vit Chalk Wht-Peach Sh Aqua-Char-Grn-Maroon No Odor Tr ? Min Flor (3 Pcs) No Stn NS





30" @ 4983' Ls/Dolo Crm-Wht-Gry MicroxIn Dns Barren Grad FxIn Fair-Pin-Pt IxIn Por Barren Grad Poor OOM Por Poor InterOOM Por Poor Develop Poor Leaching Cht Wht-Gry-Lt Gry Translu-Op Shp Vit Chalk Wht-Peach Sh Aqua - Char - Grn - Maroon No Odor No Flor No Stn NS

60" @ 4983' Dolo/Ls Gry-Crm-Wht MicroxIn Grad FxIn Med Pin-Pt IxIn Por Cht Wht- Gry- Lt Gry- Yell Translu-Op Shp Vit Chalk Wht-Peach Sh Aqua - Char - Grn - Maroon No Odor No Flor No Stn NS

60" CFS @ 4990' Dolo Gry FxIn Grad Med-Good Pin-Pt IxIn Por Grad Med -Good OOM Por Med-Good Dissolu Good Leaching Grad FxIn ? Sucrosic Por Cht Peach Translu Shp Vit Chalk (Tr Only Sh Aqua - Char - Grn - Maroon No Odor No Flor No Stn NS

Dolo Gry-Tan-Crm FxIn Good Vug (Small-Med) Pin-Pt IxIn Por Med-Good Leaching Cht Wh Op Shp Vit Chalk Abd Fos (Lg Brach) Sh Aqua - Char - Grn - Maroon No Odor No Flor No Stn NS

30" CFS @ 5020' Dolo Gry-Crm-Wht FxIn Med Vug InIn Pin-Pt Por Med Leaching Cht Wh-Yell Translu-Op Shp Vit Chalky Sh Aqua - Char - Grn - Olive - Maroon No Odor No Flor No Stn NS

60" CFS @ 5020' Dolo Crm-Wht FxIn Grad Med-Good Pin-Pt IxIn Por Grad Med-Good OOM Por Med-Good Dissolu Good Vug Leaching Mostly FxIn-MxIn IxIn Por Cht Crm-Peach-Lt Org Translu-Op Shp Vit Chalk Dec Sh Aqua - Char - Grn - Olive- Maroon Soft-Fissil No Odor No St nNo Flor NS No Odor No Flor No Stn NS

Dolo Crm-Wht FxIn Grad Good IxIn Por Grad Good ? Sucrosic Vug Por Good Dissolu Good Leaching Cht Wht-Lt Org Translu-Op Shp Vit Chalk Inc Sh Aqua - Char - Grn - Olive-Maroon No Odor No Flor No Stn NS

Dolo Wht-Crm FxIn Grad Med-Good IxIn Vug Por Grad Med OOM Por Med Dissolu Med Leaching Cht Wht Translu-Op Shp Vit Chalk (Inc) Sh Char - Grn - Aqua-Maroon-Olive No Odor No Flor No Stn NS

Dolo Gry-Wht-Crm FxIn Grad Med-Good IxIn Por Med Dissolu Med Leaching Cht Wht Translu-Op Shp Vit Fos (Brach) Chalk (Abd) Sh Char - Grn - Aqua-Maroon-Olive No Odor No Flor No Stn NS

Dolo/Ls Wht-Crm MicroxIn-FxIn Poor IxIn Por Chalk (Abd) Sh Char - Grn - Aqua-Maroon-Olive No Odor No Flor No Stn NS

Ls/Dolo Wht-Crm MicroxIn-FxIn Poor IxIn Por Cht Wht Op Shp Vit Chalk (Abd) Sh Char - Grn -Aqua- Maroon No Odor No Flor No Stn NS

Ls/Dolo Gry-Crm-Wht MicroxIn-FxIn Poor IxIn Por Grad Tr Med XIn (w Vug IxIn Por) Chalky Sh Char - Grn -Aqua (Blue)- Maroon - Olive No Odor No Flor No Stn NS

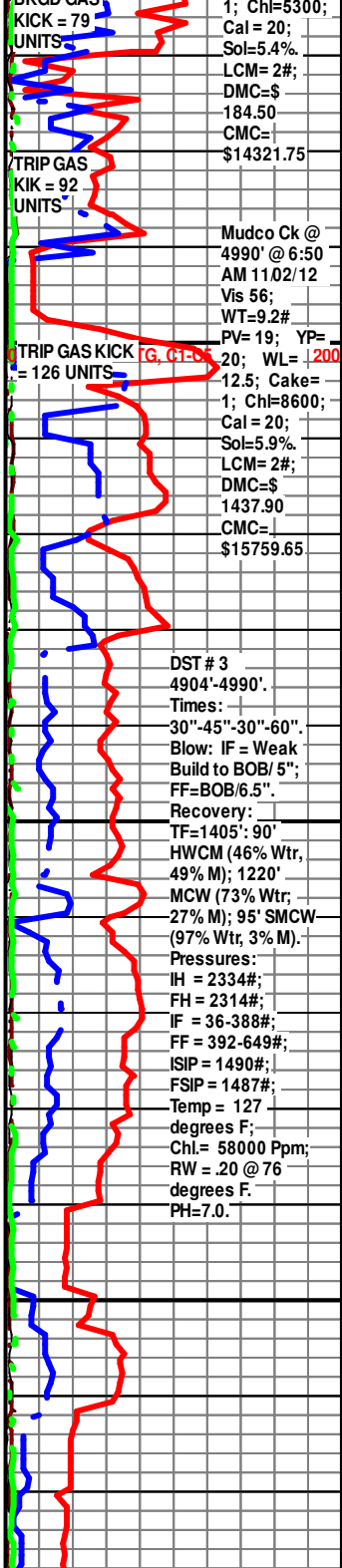
Dolo/Ls Gry-Crm-Wht MicroxIn-FxIn Poor IxIn Por Micritic Cht Wht Translu- Op Shp Vit Chalky Sh Char - Grn -Aqua- Maroon - Olive No Odor No Flor No Stn NS

30" CFS @ 5110' Dolo/Ls Gry-Crm-Wht MicroxIn-FxIn Poor IxIn Por Micritic Grad Poor-Fair IxIn Por (w/Glacu Inlus) V Abd Cht Frosted Wht-Lt Gry (w/OOL & Fos (Spic) Inlus Translu-Op Shp Vit Chalky Sh Char - Grn -Aqua- Maroon - Olive Tr Bk Carb Soft-Fissil No Odor No Flor No Stn NS

60" CFS @ 5110' Dolo/Ls Gry-Crm-Wht MicroxIn-FxIn Poor IxIn Por Micritic Grad Poor-Fair IxIn Por (w/Glacu Inlus) V Abd Cht Frosted Wht-Lt Gry (w/OOL & Fos (Spic) Inlus Translu-Op Shp Vit Chalky Sh Char - Grn -Aqua- Maroon - Olive Tr Bk Carb Soft-Fissil No Odor No Flor No Stn NS

Dolo/Ls Gry-Crm-Wht MicroxIn-FxIn Poor IxIn Por Micritic Grad Poor-Fair IxIn Por (w/Glacu Inlus) V Abd Cht Frosted Wht-Lt Gry (w/OOL & Fos (Spic) Inlus Translu-Op Shp Vit Chalky Sh Char - Grn -Aqua- Maroon - Olive Tr Bk Carb Soft-Fissil No Odor No Flor No Stn NS

30" CFS @ 5130' Dolo/Ls Gry-Crm-Wht MicroxIn-FxIn Poor IxIn Por Micritic Grad Poor-Fair IxIn Por (w/Glacu Inlus) V Abd Cht Frosted Wht-Lt Gry (w/OOL & Fos (Spic) Inlus Translu-Op Shp Vit Chalky Sh Char - Grn -Aqua- Maroon - Olive Tr Bk Carb Soft-Fissil No Odor No Flor No Stn NS



Electric Logs Run: By Nabors Logging:  
 Dual Induction and Compensated Density-Neutron Logs.  
 Geologist Left Location at 11:30 AM on 11/03/2012.

