



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1156771  
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: \_\_\_\_\_



1156771

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 <i>(Attach Additional Sheets)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
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:				

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:  Yes  No

Date of First, Resumed Production, SWD or ENHR. \_\_\_\_\_ Producing Method:  
 Flowing    Pumping    Gas Lift    Other *(Explain)* \_\_\_\_\_

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> <i>(Submit ACO-4)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
--	---	---

Form	ACO1 - Well Completion
Operator	Samuel Gary Jr. & Associates, Inc.
Well Name	HAGER-SPROUL 1-35
Doc ID	1156771

All Electric Logs Run

DIL
MICRO
POR
SONIC
SPECTRAL

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

August 29, 2013

CLAYTON CAMOZZI  
Samuel Gary Jr. & Associates, Inc.  
1515 WYNKOOP, STE 700  
DENVER, CO 80202

Re: ACO1  
API 15-137-20651-00-00  
HAGER-SPROUL 1-35  
NW/4 Sec.35-04S-23W  
Norton 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,  
CLAYTON CAMOZZI



**QUALITY OILWELL CEMENTING, INC.**

PO Box 32 - 740 West Wichita Ave, Russell KS 67665  
 Phone: 785-324-1041 fax: 785-483-1087  
 Email: cementing@ruraltel.net

Date: 5/11/2013  
 Invoice # 6838

P.O.#:  
 Due Date: 6/10/2013  
 Division: Russell

# Invoice

**Contact:**  
 Samuel Gary Jr & Associates Inc  
**Address/Job Location:**  
 Samuel Gary Jr & Associates Inc  
 1815 11th Street  
 Great Bend, KS 67530

**Reference:**  
 HAGER-SPROUL 1-35

**Description of Work:**  
 LONG SURFACE JOB

DRLG  COMP  W/O  LOE  GG

Account	8200.138
Well/Prospect	
Dick	
AFE	
Approval	<i>AGM</i>
Description	

Services / Items Included:	Quantity	Price	Taxable	Item	Quantity	Price	Taxable
Labor		\$ 991.39	No				
Common-Class A	250	\$ 3,403.71	Yes				
8 5/8" Basket	2	\$ 686.17	Yes				
Bulk Truck Matl-Material Service Charge	264	\$ 573.26	No				
Pump Truck Mileage-Job to Nearest Camp	51	\$ 552.61	No				
Calcium Chloride	9	\$ 465.71	Yes				
Bulk Truck Mileage-Job to Nearest Bulk Plant	51	\$ 323.37	No				
8 5/8" Centralizer	2	\$ 138.97	Yes				
8 5/8" Top Rubber Plug	1	\$ 115.09	Yes				
Baffle Plate Aluminum, 8 5/8"	1	\$ 97.71	Yes				
Premium Gel (Bentonite)	5	\$ 88.38	Yes				

**Invoice Terms:**

Net 30		SubTotal: \$ 7,436.36
	Discount Available <u>ONLY</u> if Invoice is Paid & Received within listed terms of invoice:	\$ (1,115.45)
		SubTotal for Taxable Items: \$ 4,246.38
		SubTotal for Non-Taxable Items: \$ 2,074.53
		Total: \$ 6,320.91
		Tax: \$ 299.37
		<b>Amount Due: \$ 6,620.28</b>
		<b>Applied Payments:</b>
		<b>Balance Due: \$ 6,620.28</b>

7.05% Norton County Sales Tax

**Thank You For Your Business!**

Past Due Invoices are subject to a service charge (annual rate of 24%)  
 This does not include any applicable taxes unless it is listed.  
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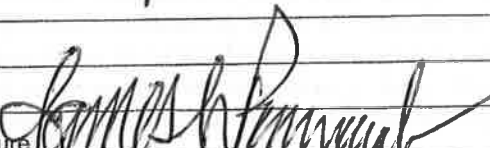
# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025  
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 6838

Date	5-9-13	Sec.	35	Twp.	4	Range	23	County	Norton	State	KS	On Location	9:30pm	Finish	12:15		
Lease								Hager-Sprout		Well No.		1-35		Owner		V E Sinto	
Contractor								Discovery 2		To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.							
Type Job								Surface		Charge To		Sam Gary Jr + Assoc					
Hole Size				12 1/4		T.D.		563		Street							
Csg.				8 5/8		Depth		563		City							
Tbg. Size						Depth				State							
Tool						Depth				The above was done to satisfaction and supervision of owner agent or contractor.							
Cement Left in Csg				41.70ft		Shoe Joint		41.70ft		Cement Amount Ordered		250 com 3%LLC					
Meas Line				23#		Displace		33.4 BBL		2%LLC							
<b>EQUIPMENT</b>								Common									
Pumptrk		5		No.		Cementer/Helper		Matt		Poz. Mix							
Bulktrk		1		No.		Driver		Boett		Gel. 5							
Bulktrk		pu		No.		Driver		Doug		Calcium 9							
<b>JOB SERVICES &amp; REMARKS</b>								Hulls									
Remarks:								Salt									
Rat Hole								Flowseal									
Mouse Hole								Kol-Seal									
Centralizers								2, 11		Mud CLR 48							
Baskets								2, 12		CFL-117 or CD110 CAF 38							
D/V or Port Collar								Sand									
Cement died Circulate								Handling		264							
								Mileage									
<b>FLOAT EQUIPMENT</b>								Guide Shoe									
Centralizer		2		8 5/8													
Baskets		2		8 5/8													
AFU Inserts																	
Float Shoe																	
Latch Down																	
Baffle plate																	
Rubber plug																	
Pumptrk Charge								Long Surface									
Mileage								51									
Thanks  								Tax									
								Discount									
								Total Charge									



**QUALITY OILWELL CEMENTING, INC.**  
 PO Box 32 - 740 West Wichita Ave, Russell KS 67665  
 Phone: 785-324-1041 fax: 785-483-1087  
 Email: cementing@ruraltel.net

**Date:** 5/17/2013  
**Invoice #** 6799  
**P.O.#:**  
**Due Date:** 6/16/2013  
**Division:** Russell

# Invoice

**Contact:**  
 Samuel Gary Jr & Associates Inc  
**Address/Job Location:**  
 Samuel Gary Jr & Associates Inc  
 1815 11th Street  
 Great Bend, KS 67530

DRLG  COMP  W/O  LOE  GG

Account	8300-238
Well/Prospect	
Deck	
AFE	
Approval	<i>[Signature]</i>
Description	

**Reference:**  
 HAGER-SPROUL 1-35

**Description of Work:**  
 PROD LONG STRING

Services / Items Included:	Quantity	Price	Taxable	Item	Quantity	Price	Taxable
Labor		\$ 963.85	No	Defoamer A or CAF-38	50	\$369.44	Yes
Common-Class A	225	\$ 2,978.25	Yes	Auto Fill Float Shoe, 5 1/2"	1	\$323.00	Yes
Cement Port Collar, 5 1/2"	1	\$ 2,638.89	Yes	Bulk Truck Mileage-Job to Nearest Bulk Plant	51	\$314.39	No
5 1/2" Basket	5	\$ 1,815.56	Yes	Salt (Fine)	19	\$279.98	Yes
Gilsonite	1057	\$ 1,673.58	Yes	Latch Down Plug & Baffle, 5 1/2"	1	\$236.44	Yes
CFL 117	176	\$ 1,144.39	Yes	Flo Seal	56	\$118.22	Yes
5 1/2" Turbolizer	11	\$ 673.44	Yes	KCL	2	\$63.04	Yes
Pump Truck Mileage-Job to Nearest Camp	51	\$ 537.26	No				
Bulk Truck Matl-Material Service Charge	254	\$ 536.22	No				
CD-110	117	\$ 494.00	Yes				
Mud Clear	500	\$ 390.56	Yes				

**Invoice Terms:**

Net 30

**SubTotal:** \$ 15,550.51  
**Discount Available** ONLY if Invoice is Paid & Received within listed terms of invoice: \$ (2,332.58)

SubTotal for Taxable Items:	\$ 11,218.97
SubTotal for Non-Taxable Items:	\$ 1,998.96
<b>Total:</b>	<b>\$ 13,217.93</b>
<b>Tax:</b>	<b>\$ 790.94</b>

7.05% Norton County Sales Tax

**Thank You For Your Business!**

**Amount Due:** \$ 14,008.87  
**Applied Payments:**  
**Balance Due:** \$ 14,008.87

Past Due Invoices are subject to a service charge (annual rate of 24%)  
 This does not include any applicable taxes unless it is listed.  
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Rig Time - 900.00  
 13,108.87

RECEIVED

MAY 24 2013

SAMUEL GARY JR.  
 & ASSOCIATES, INC.

# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Home Office P.O. Box 32 Russell, KS 67665

No. 6799

Phone 785-483-2025  
Cell 785-324-1041

Date	Sec.	Twp.	Range	County	State	On Location	Finish
5-15-13	35	4	23	Norton	KS		01:30

Lease Hager Sprawl Well No. 1-35 Location  Hwy 9 3W to XRD 1/2E - Sinto

Contractor Discovery #2 Owner To Quality Oilwell Cementing, Inc.  
 You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.

Type Job Production String Charge To Sam Gray Jr & Associates

Hole Size 7 7/8 T.D. 3880 Street \_\_\_\_\_ State \_\_\_\_\_

Csg. 5 1/2 15.50# Depth 3878.28 City \_\_\_\_\_ State \_\_\_\_\_

Tbg. Size \_\_\_\_\_ Depth \_\_\_\_\_

Tool Port Collar Depth 1916 The above was done to satisfaction and supervision of owner agent or contractor.

Cement Left in Csg. 44.89 Shoe Joint 44.89 Cement Amount Ordered 225 @ 200 lb salt 5% Gilonite

Meas Line \_\_\_\_\_ Displace 91 1/4 BBL 4 # FB 3 # CD-110 .86 # CFL-117 .25 # CAF-38

EQUIPMENT			Common
Pumptrk	No.	Cement Helper	<u>225</u>
Bulktrk	No.	Driver	<u>20 BBL KCL 50 gal 1 min flush</u>
Bulktrk	No.	Driver	
Bulktrk	No.	Driver	

Job Services & Remarks

Remarks: \_\_\_\_\_

Rat Hole 30SK Flowseal 56#

Mouse Hole 15SK Kol-Seal 1057#

Centralizers \_\_\_\_\_ Mud CLR 48 500 gal

Baskets \_\_\_\_\_ CFL-117 or CD110 CAF 38 50#

D/V or Port Collar \_\_\_\_\_ Sand 176#

5 1/2 spool 3878. Bullage 3833. Handling 254

Est. Circulation. Pump 500 gal 1 min flush Mileage \_\_\_\_\_

10 BBL spacer-cement rethole mouse hole.

Cement 5 1/2 with 180SK Clear lines

D. Displace Plug. 1st 2 BBL with KCL

Plug land w/ 2 200# H&L

Release Pressure Day.

Guide Shoe \_\_\_\_\_

Centralizer 11 Turbolizers

Baskets 5 weatherford

AFU Inserts \_\_\_\_\_

Float Shoe 1

Latch Down \_\_\_\_\_

Port Collar Rotator

Pumptrk Charge prod Long String

Mileage 51

Tax \_\_\_\_\_

Discount \_\_\_\_\_

Total Charge \_\_\_\_\_

X Signature James Hummel





**QUALITY OILWELL CEMENTING, INC.**  
 PO Box 32 - 740 West Wichita Ave, Russell KS 67665  
 Phone: 785-324-1041 fax: 785-483-1087  
 Email: cementing@ruraltel.net

Date: 6/10/2013  
 Invoice # 6915  
 P.O.#:  
 Due Date: 7/10/2013  
 Division: Russell

# Invoice

**Contact:**  
 Samuel Gary Jr & Associates Inc  
**Address/Job Location:**  
 Samuel Gary Jr & Associates Inc  
 1815 11th Street  
 Great Bend, KS 67530

DRLG  COMP  W/O  LOE  GG

Account	8300.217
Well/Prospect	
Deck	
AFE	
Approval	AB
Description	

**RECEIVED**  
**JUN 24 2013**  
**SAMUEL GARY JR.**  
**& ASSOCIATES, INC.**

**Reference:**  
 HAGER SPROUL 1-35

**Description of Work:**  
 CIR CEMENT & SQUEEZ JOB

Services / Items Included:	Quantity	Price	Taxable	Item	Quantity	Price	Taxable
Labor		\$ 991.39	No				
mon, MetsoBeads, Plater, Gel, FloSeal, Calcium)	115	\$ 2,387.27	Yes				
Common-Class A	50	\$ 680.74	Yes				
Bulk Truck Matl-Material Service Charge	312	\$ 677.49	No				
Pump Truck Mileage-Job to Nearest Camp	51	\$ 552.61	No				
Bulk Truck Mileage-Job to Nearest Bulk Plant	51	\$ 323.37	No				
Flo Seal	62	\$ 134.63	Yes				
Calcium Chloride	2	\$ 103.49	Yes				

**Invoice Terms:**

Net 30

SubTotal:	\$	5,850.98
Discount Available <u>ONLY</u> if Invoice is Paid & Received within listed terms of invoice:	\$	(877.65)
SubTotal for Taxable Items:	\$	2,810.21
SubTotal for Non-Taxable Items:	\$	2,163.12
Total:	\$	4,973.33
Tax:	\$	198.12
<b>Amount Due:</b>	<b>\$</b>	<b>5,171.45</b>
<b>Applied Payments:</b>		
<b>Balance Due:</b>	<b>\$</b>	<b>5,171.45</b>

7.05% Norton County Sales Tax

**Thank You For Your Business!**

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# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025  
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 6915

Date <u>6-10-13</u>	Sec.	Twp.	Range	County <u>Norton</u>	State <u>KS</u>	On Location	Finish <u>12:30pm</u>
				Location <u>Hwy 9 &amp; 283 3N RD X 1/2 E S into</u>			

Lease <u>Hager Sprawl</u>	Well No. <u>1-35</u>	Owner
Contractor <u>Alliance Well Service</u>	To Quality Oilwell Cementing, inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.	
Type Job <u>Circ Cement/Squeeze</u>	Charge To <u>Sam Cary Jr &amp; Assoc</u>	
Hole Size	T.D.	Street
Csg.	Depth	City State
Tbg. Size	Depth	The above was done to satisfaction and supervision of owner agent or contractor.
Tool <u>Expert Clark</u>	Depth	Cement Amount Ordered <u>250 Q mdc 1/4 flow</u>
Cement Left in Csg.	Shoe Joint	

Meas Line Displace 10BL 106EL 50 com 3% salt sand

EQUIPMENT			Common
Pumptrk <u>17</u>	No. Cementer <u>Chig</u>	Helper	<u>USED 115 Q mdc 10 gal 2 sand 50% 3% salt</u>
Bulktrk <u>14</u>	No. Driver <u>Cody</u>	Driver	<u>Pos mix 115 Q mdc 1/4 flow</u>
Bulktrk <u>13</u>	No. Driver <u>Doug</u>	Driver	<u>Get 50 com</u>
	No. Driver <u>Chad</u>	Driver	Calcium <u>2</u>

JOB SERVICES & REMARKS		Hulls
Remarks:		Salt
Rat Hole		Flowseal <u>62#</u>
Mouse Hole		Kol-Seal
Centralizers		Mud CLR 48
Baskets		CFL-117 or CD110 CAF 38
D/V or Port Collar		Sand
<u>Plug set @ 2989. Test to 2000# Hk.</u>		Handling <u>312</u>
<u>Turn hole curve 2974. &amp; spot sand.</u>		Mileage
<u>Perfs @ 1460. Packer set to Circ &amp; Squeeze</u>		<b>FLOAT EQUIPMENT</b>
<u>1261. Rate 48 @ 1000# m. x 115 SIC &amp;</u>		Guide Shoe
<u>Cement Circulated. mixed 50% 3% salt</u>		Centralizer
<u>Displaced</u>		Baskets
<u>Cement + Circulated!</u>		AFU Inserts
		Float Shoe
		Latch Down

Pumptrk Charge <u>Circ Cement &amp; Squeeze</u>
Mileage <u>51</u>

X Signature <u>[Signature]</u>	Tax
	Discount
	Total Charge



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates

**35-4s-23w Norton KS**

1515 Wynkoop STE 700  
Denver CO, 80202

**Hager-Sproul 1-35**

Job Ticket: 52189

**DST#: 1**

ATTN: Clayton Camozzi

Test Start: 2013.05.12 @ 23:41:00

## GENERAL INFORMATION:

Formation: **Lansing "A"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:20:30

Time Test Ended: 10:10:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Cody Bloedorn

Unit No: 66

**Interval: 3428.00 ft (KB) To 3477.00 ft (KB) (TVD)**

Reference Elevations: 2335.00 ft (KB)

Total Depth: 3477.00 ft (KB) (TVD)

2327.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 8354 Inside**

Press @ Run Depth: 819.04 psig @ 3463.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.05.12

End Date:

2013.05.13

Last Calib.:

2013.05.13

Start Time: 23:51:00

End Time:

10:10:30

Time On Btm:

2013.05.13 @ 02:20:00

Time Off Btm:

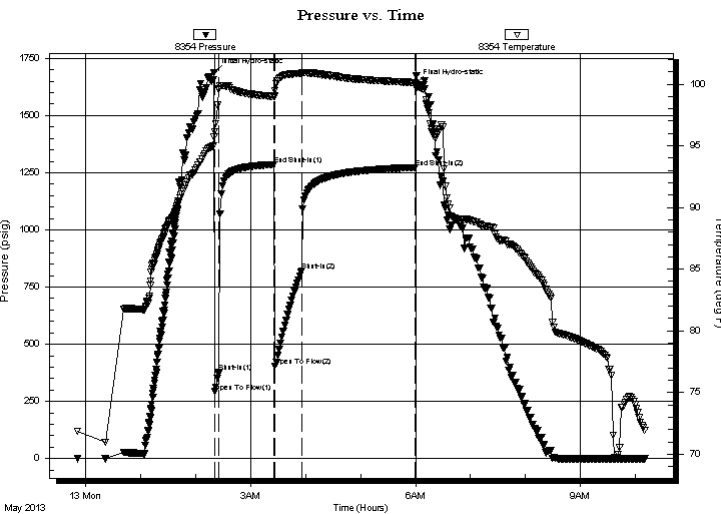
2013.05.13 @ 06:00:00

**TEST COMMENT:** 05 - IFF- B.O.B. in 30 Seconds

60 - ISF- No return

30 - FFP- B.O.B. in 20 Seconds

120 - FSF- 6" return in 78 Minutes, died back to a 1/2" blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1688.70	95.73	Initial Hydro-static
1	292.29	96.15	Open To Flow (1)
6	377.54	99.63	Shut-In(1)
65	1285.44	98.97	End Shut-In(1)
66	402.99	99.02	Open To Flow (2)
96	819.04	100.84	Shut-In(2)
220	1272.54	100.12	End Shut-In(2)
220	1639.61	100.06	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
124.00	GSOCWM, 10%G, 10%O, 30%W, 50%M	1.46
1985.00	GMCO, 5%M, 20%G, 75%O	27.84
186.00	GMCO, 10%M, 20%G, 70%O	2.61
0.00	372' of G.I.P.	0.00

## Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Samuel Gary Jr. & Associates

**35-4s-23w Norton KS**

1515 Wynkoop STE 700  
Denver CO, 80202

**Hager-Sproul 1-35**

Job Ticket: 52189

**DST#: 1**

ATTN: Clayton Camozzi

Test Start: 2013.05.12 @ 23:41:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

31 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 66.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.60 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
124.00	GSOCWM, 10%G, 10%O, 30%W, 50%M	1.457
1985.00	GMCO, 5%M, 20%G, 75%O	27.844
186.00	GMCO, 10%M, 20%G, 70%O	2.609
0.00	372' of G.I.P.	0.000

Total Length: 2295.00 ft      Total Volume: 31.910 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

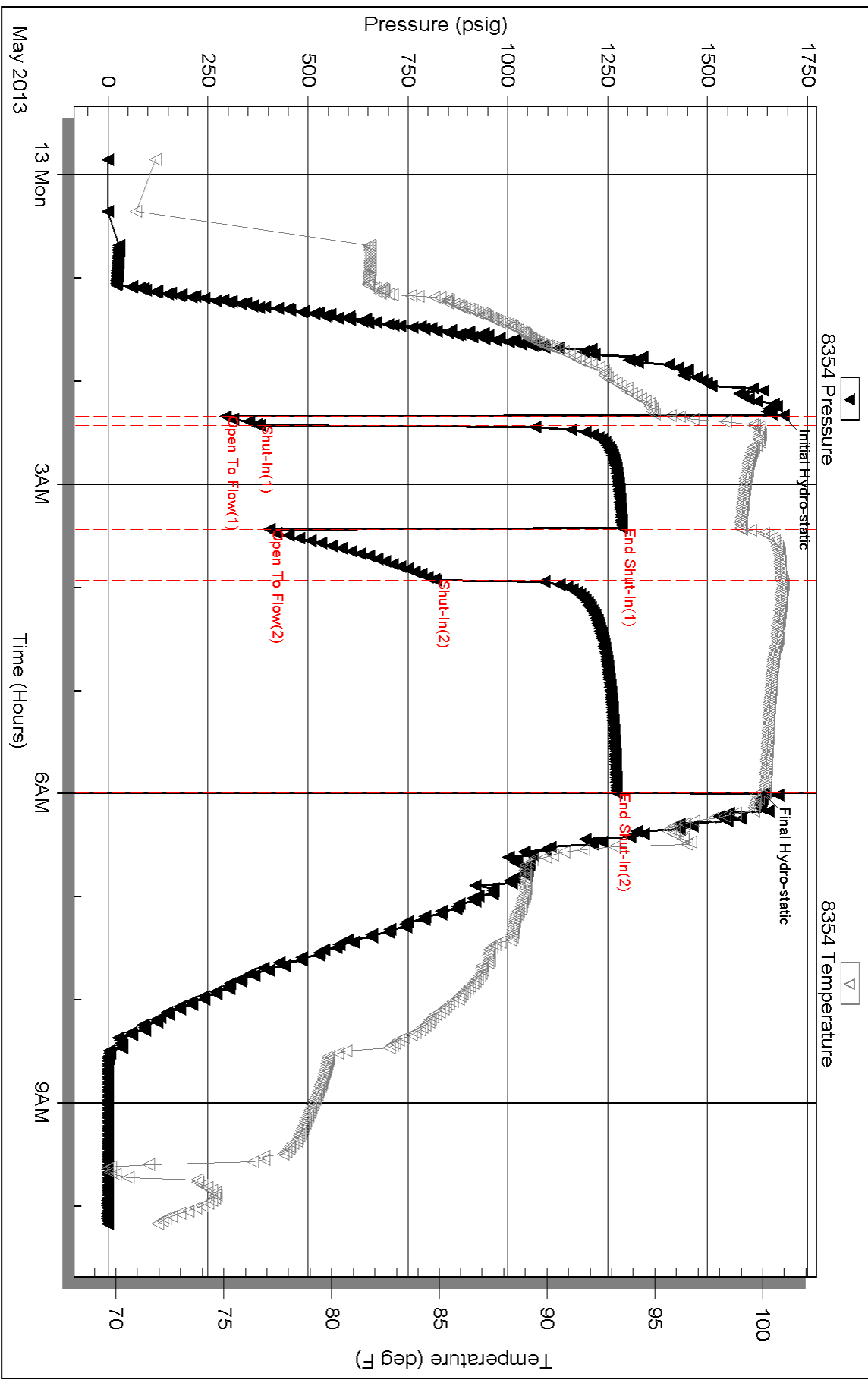
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Gravity 31 @ 60 Degrees = 31  
Could not get water sample.

### Pressure vs. Time



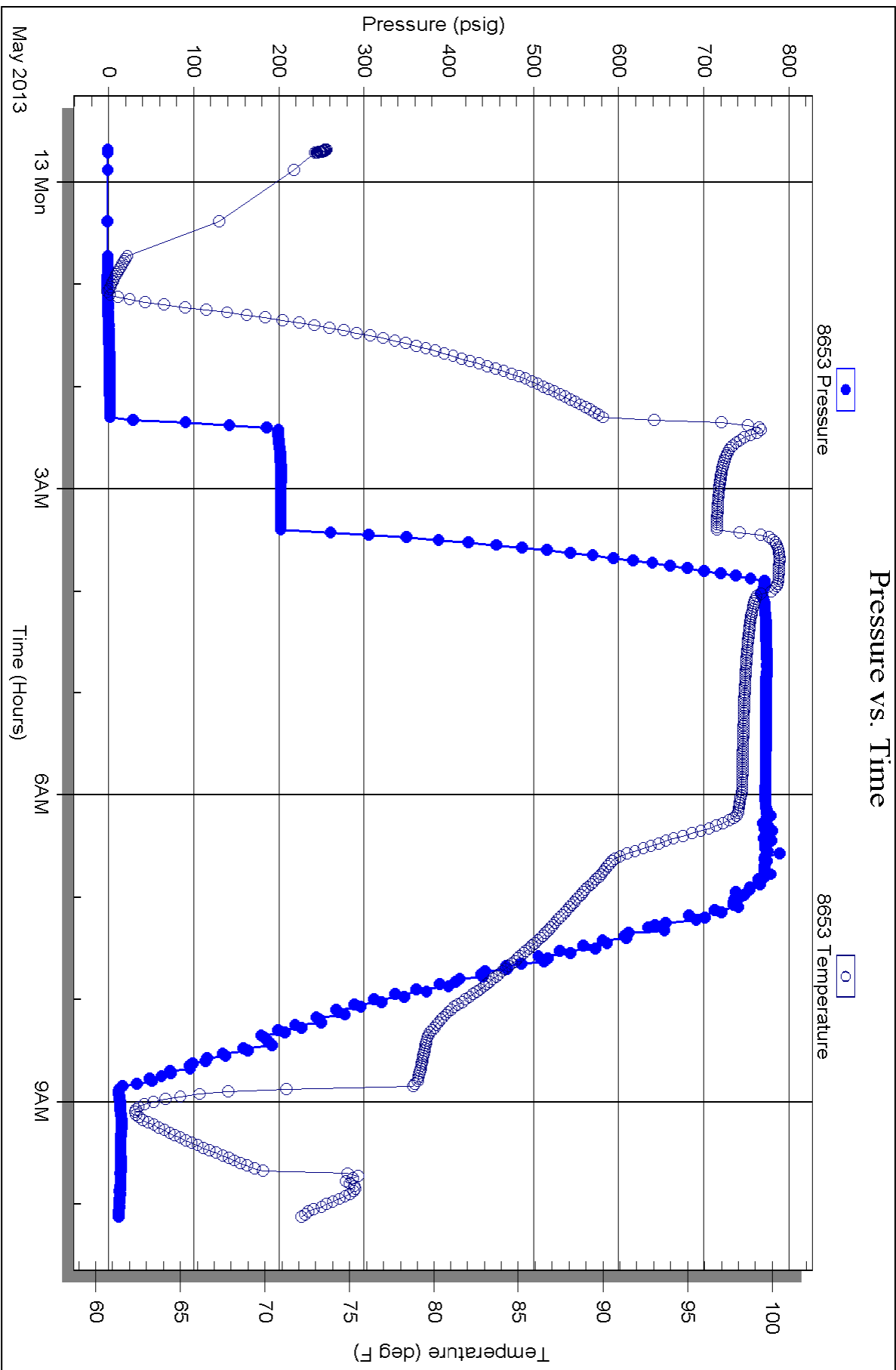
Serial #: 8653

Fluid

Samuel Gary Jr. & Associates

Hager-Sprout 1-35

DST Test Number: 1





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Samuel Gary Jr. & Ass.

**35-4s-23w Norton KS**

1515 Wynkoop STE 700  
Denver CO, 80202

**Hager-Sproul 1-35**

ATTN: Clayton Camozzi

Job Ticket: 52190

**DST#: 2**

Test Start: 2013.05.14 @ 11:52:00

## GENERAL INFORMATION:

Formation: **Gorham Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:24:30

Time Test Ended: 17:59:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 66

**Interval: 3692.00 ft (KB) To 3731.00 ft (KB) (TVD)**

Reference Elevations: 2335.00 ft (KB)

Total Depth: 3731.00 ft (KB) (TVD)

2327.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 8354 Inside**

Press @ RunDepth: 115.38 psig @ 3727.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.05.14

End Date:

2013.05.14

Last Calib.:

2013.05.14

Start Time: 12:02:00

End Time:

17:59:00

Time On Btm:

2013.05.14 @ 13:24:00

Time Off Btm:

2013.05.14 @ 15:48:00

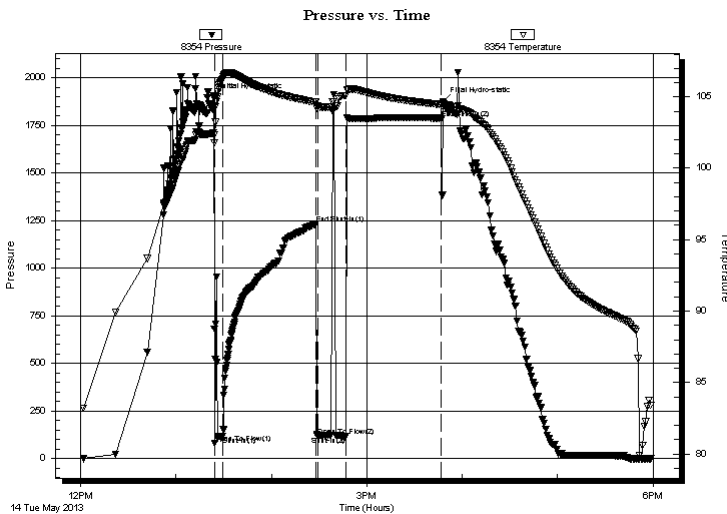
**TEST COMMENT:** 05 - IF- B.O.B. in 2 Minutes

60 - IS- No return

15 - FF- No blow for 5 Minutes, flushed tool, weak surface blow. Died in 3 Minutes

60 - FS- No return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1894.78	102.49	Initial Hydro-static
1	80.71	102.34	Open To Flow (1)
6	118.67	106.29	Shut-In(1)
64	1233.28	104.62	End Shut-In(1)
65	118.29	104.37	Open To Flow (2)
83	115.38	105.10	Shut-In(2)
143	1788.20	104.47	End Shut-In(2)
144	1874.23	104.47	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
155.00	Mud, 100%M	1.89

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)

\* Recovery from multiple tests









**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Samuel Gary Jr. & Ass.

**35-4s-23w Norton KS**

1515 Wynkoop STE 700  
Denver CO, 80202

**Hager-Sproul 1-35**

Job Ticket: 52190

**DST#: 2**

ATTN: Clayton Camozzi

Test Start: 2013.05.14 @ 11:52:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 66.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
155.00	Mud, 100%M	1.892

Total Length: 155.00 ft      Total Volume: 1.892 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8354

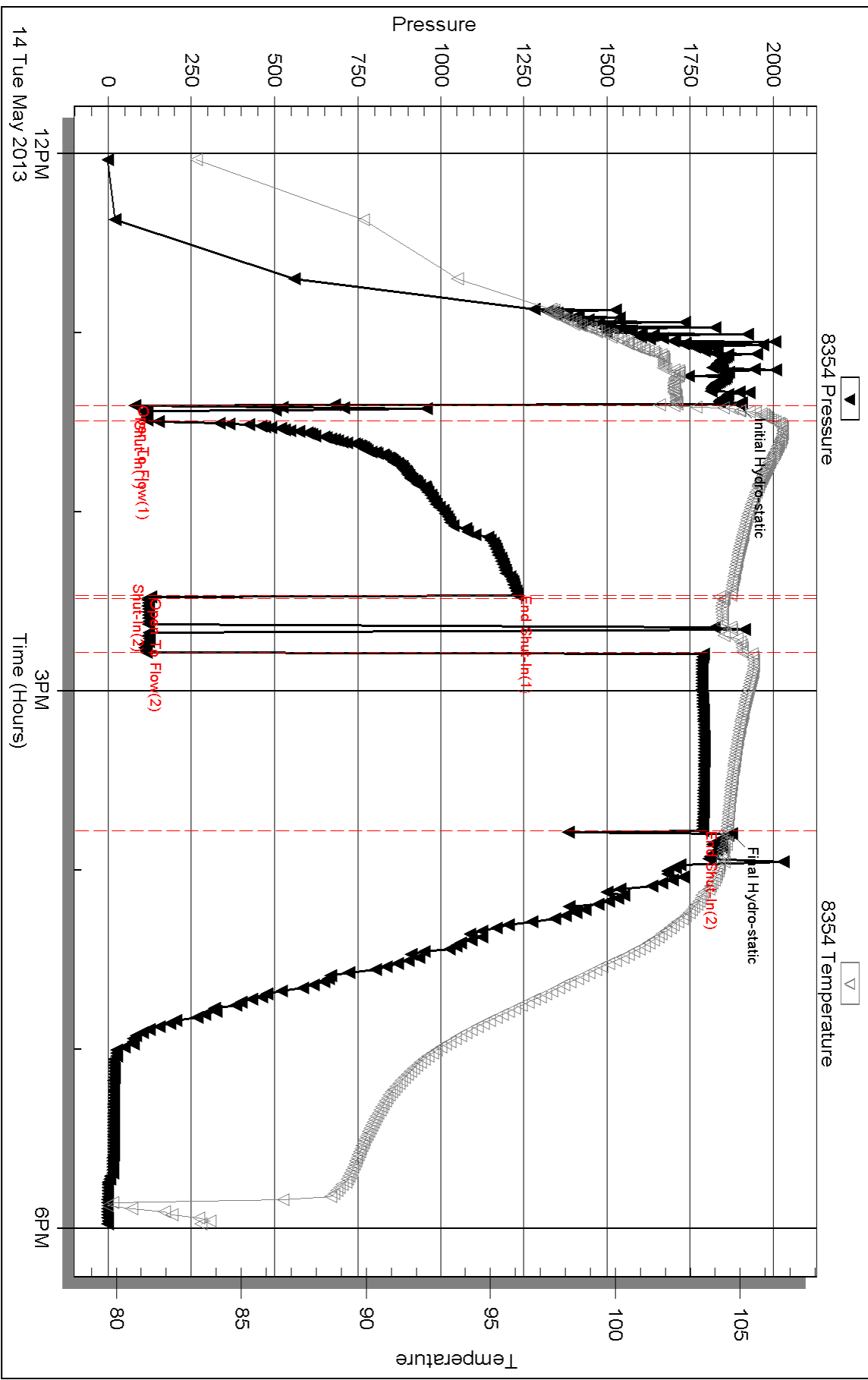
Inside

Samuel Gary Jr. & Ass.

Hager-Sprout 1-35

DST Test Number: 2

### Pressure vs. Time

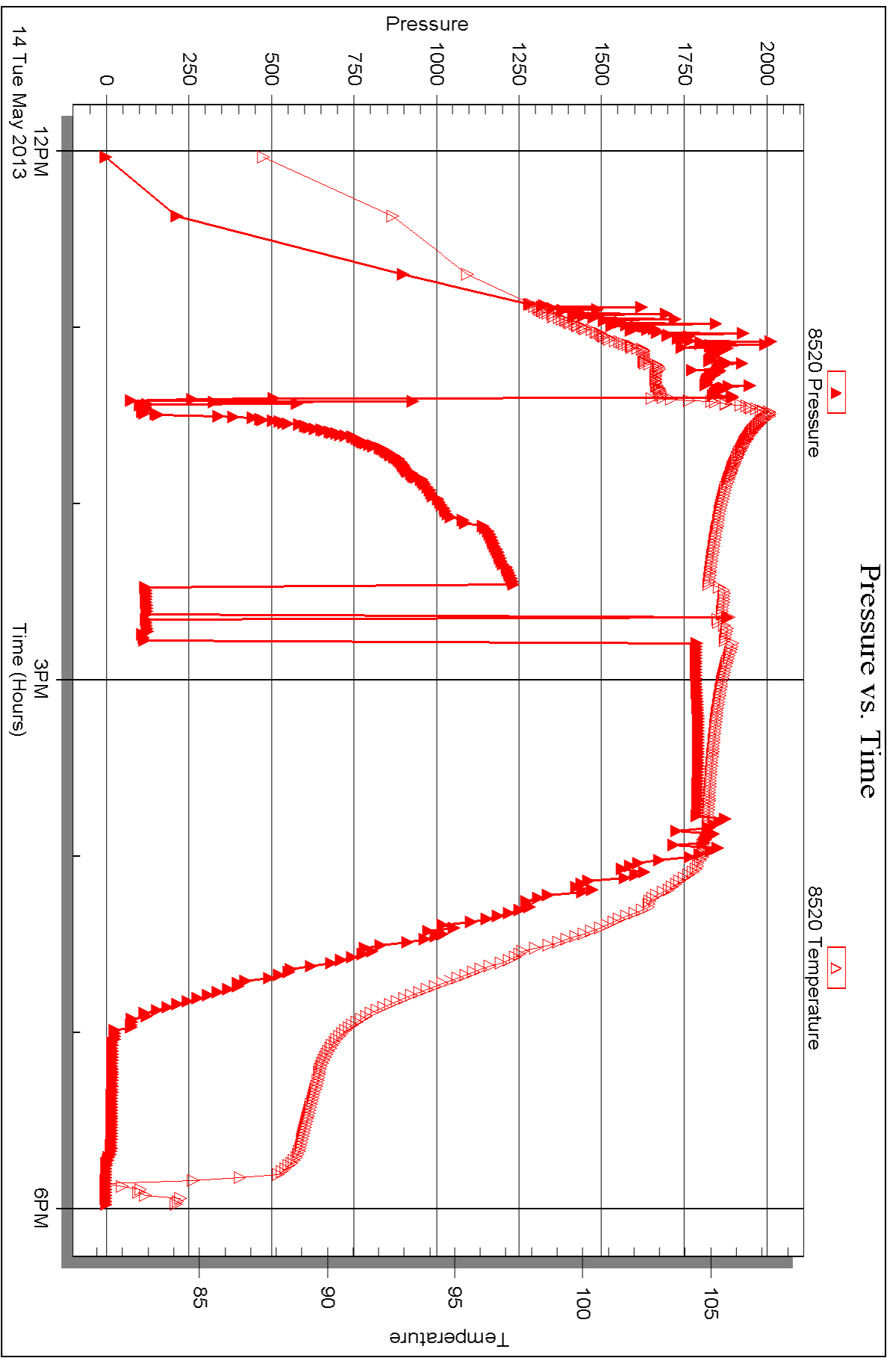


Serial #: 8520

Outside Samuel Gary Jr. & Ass.

Hager-Sprout 1-35

DST Test Number: 2



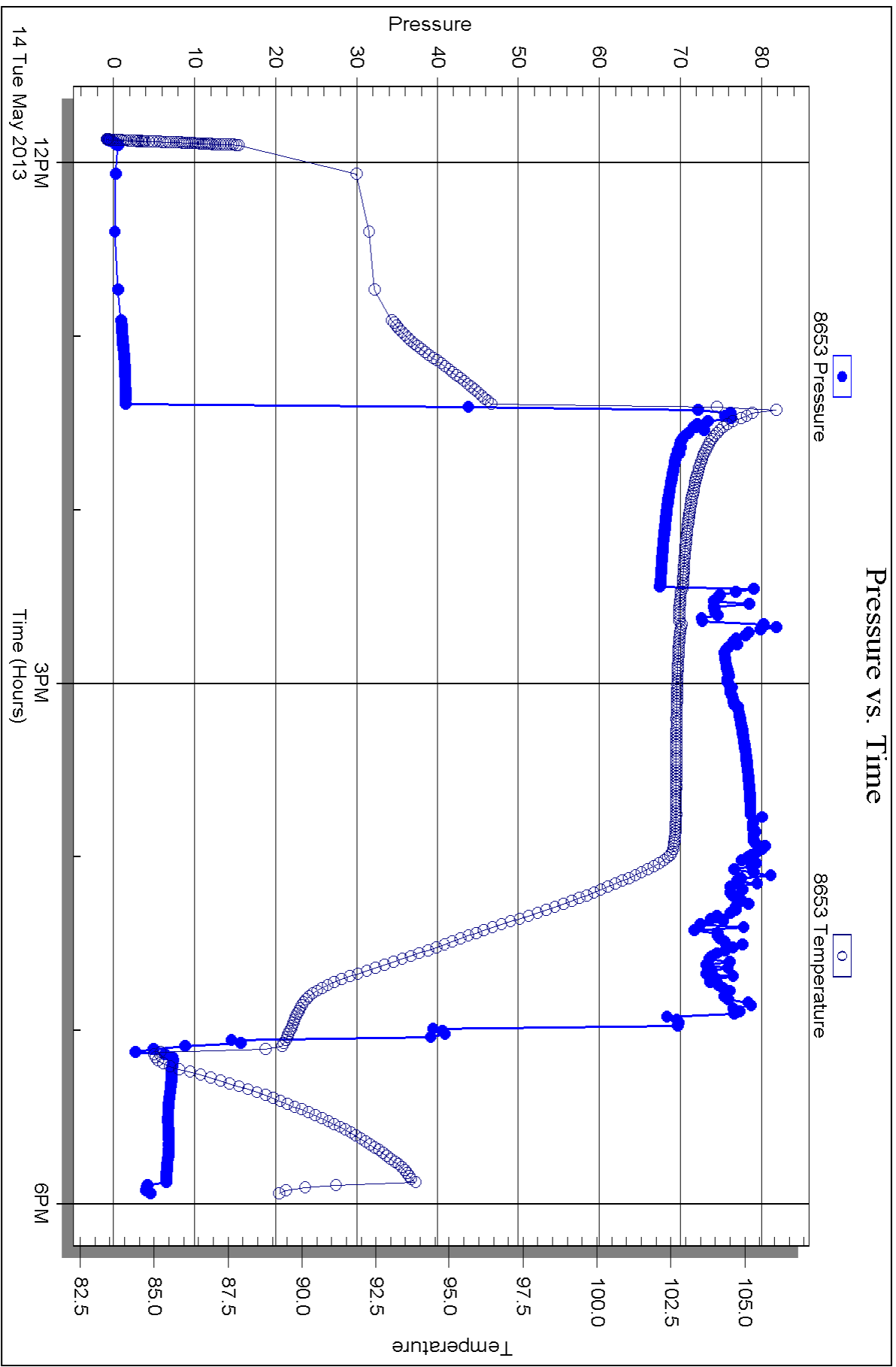
Serial #: 8653

Fluid

Samuel Gary Jr. & Ass.

Hager-Sproull 1-35

DST Test Number: 2





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

Well Name: SGA HAGER-SPROUL 1-35  
 Location: SEC. 35 4S-23W NORTON COUNTY, KANSAS  
 License Number: 15-137-20651-0000 Region: WILDCAT  
 Spud Date: 5/9/13 Drilling Completed: 5/15/13  
 Surface Coordinates: 105 FNL/ 2140 FWL

Bottom Hole Coordinates:  
 Ground Elevation (ft): 2327' K.B. Elevation (ft): 2335'  
 Logged Interval (ft): 3150' To: 3880' Total Depth (ft): 3880'  
 Formation: Lansing, Arbuckle  
 Type of Drilling Fluid:

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

**OPERATOR**

Company: Samuel Gary Jr. & Assoc.  
 Address: 1515 Wynkoop, Ste. # 700  
 Denver, Colo. 80202  
 Geo: Clayton Camozzi

**GEOLOGIST**

Name: Schuyler Hedrick  
 Company: Earth Tech OGL, Inc.  
 Address: PO Box 683  
 Hooker, Okla . 73945  
 Off. 888-543-8378



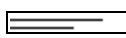
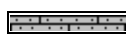
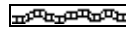



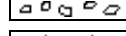



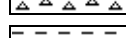

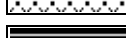

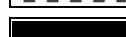
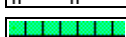



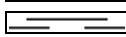
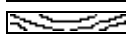


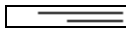




**DST's Report**

DST# 1 3428'-3477' 5-60-30-120  
 IF- B.O.B. IN 30 SEC., ISI- 3" RETURN, FF- B.O.B. IN 20 SEC., FSI- 6" RETURN IN 78 MIN, DIED BACK TO 1/2" BLW  
 IH- 1688, FH- 1639/ IF- 292 TO 377, FF- 402 TO 819/ ISI- 1285, FSI- 1272  
 REC. 2295' OF TF./ 124' OF GSOCWM 10% GAS, 10% OIL, 30% WATER, 50% MUD/ 1985' OF GMCO 20% GAS, 75% OIL, 5% MUD/ 186' GMCO 20% GAS, 70% OIL, 10% MUD/ 372' OF GIP/ GRAVITY- 31

**DST's Report**

DST# 2 3692'-3731' 5-60-15-60  
 IF- B.O.B. IN 2 MIN, ISI- NO RETURN, FF- NO BLW FOR 5 MIN, FLSHD TOOL SURF. BLW DIED IN 3 MIN, FSI- NO RETURN  
 IH- 1894, FH- 1874/ IF- 80 TO 118, FF- 118 TO 115/ ISI- 1233, FSI- 1788  
 REC. 155' OF TF/ 155' OF MUD 100% MUD

**ROCK TYPES**

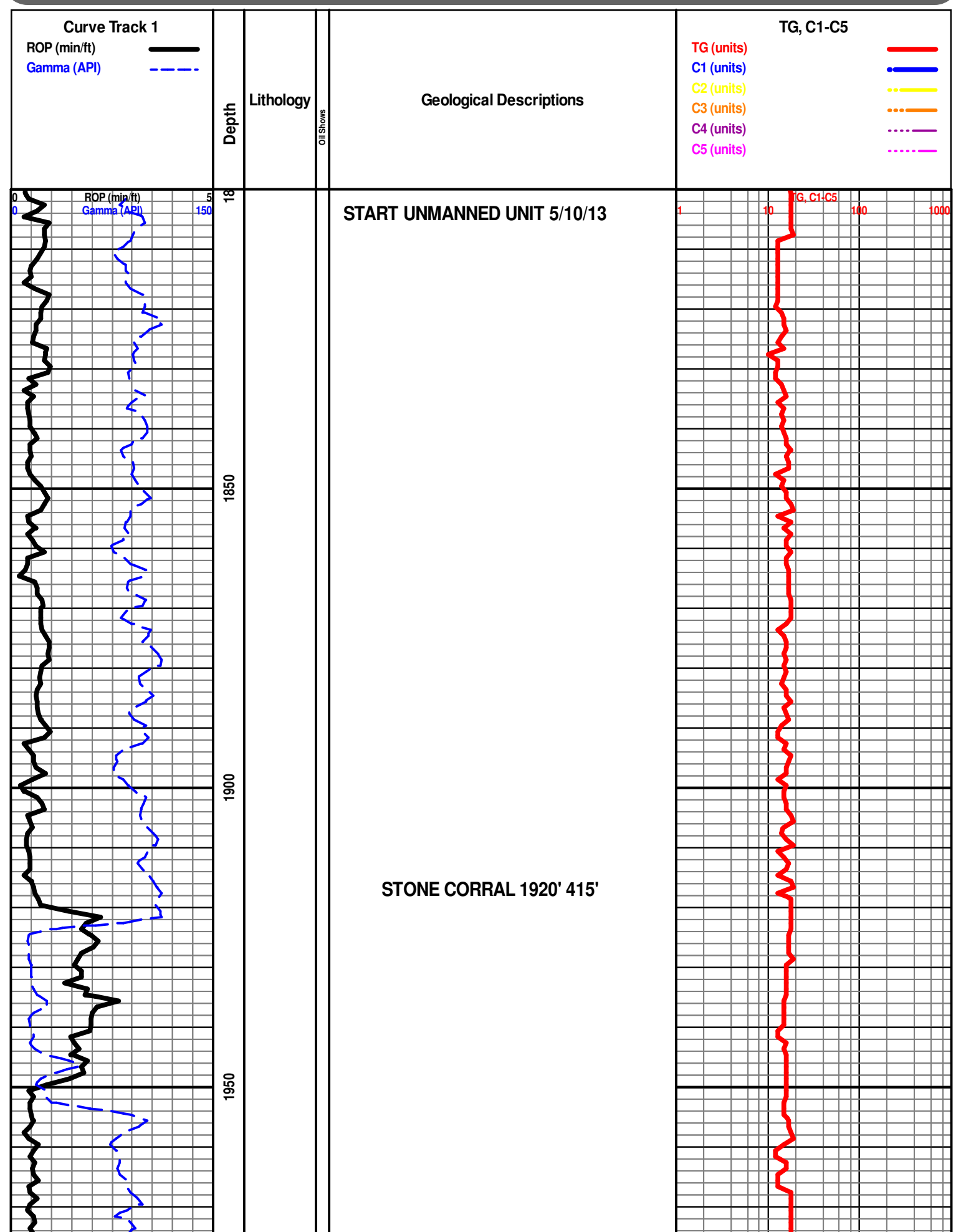
 Anhy	 Gyp	 Shgy	 Sandylms
 Bent	 Igne	 Sltst	 Shale
 Brec	 Lmst	 Ss	 Sltstn
 Cht	 Meta	 Till	 Shlyslts
 Clyst	 Mrlst	 Carb sh	 Sltyslts
 Coal	 Salt	 Dol	 Lms
 Congl	 Shale	 Dtd	
 Dol	 Shcol	 Gry sh	

### ACCESSORIES

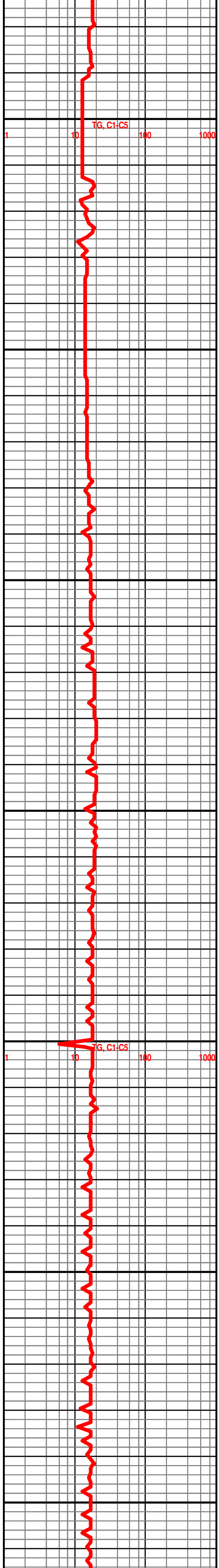
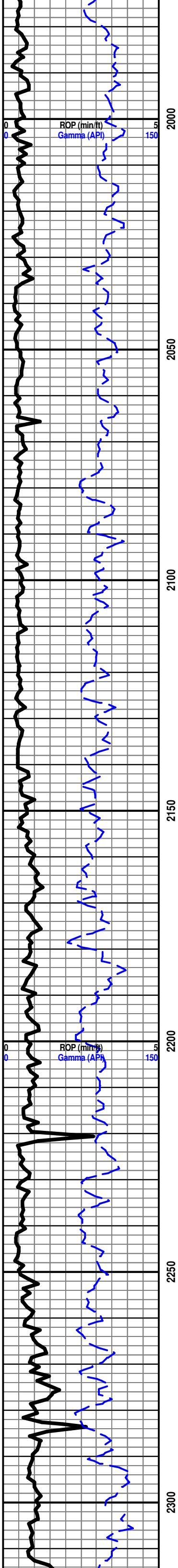
<b>FOSSIL</b> [A] Algae [B] Amph [C] Belm [D] Bioclst [E] Brach [F] Bryozoa [G] Cephal [H] Coral [I] Crin [J] Echin [K] Fish [L] Foram [M] Fossil [N] Gastro [O] Oolite [P] Ostra [Q] Pelec [R] Pellet [S] Pisolite [T] Plant [U] Strom [V] Fuss [W] Oomold	<b>MINERAL</b> [X] Anhy [Y] Arggrn [Z] Arg [AA] Bent [AB] Bit [AC] Breclrag [AD] Calc [AE] Carb [AF] Chtdk [AG] Chtlt [AH] Dol [AI] Feldspar [AJ] Ferrpel [AK] Ferr [AL] Glau [AM] Gyp [AN] Hvymin [AO] Kaol [AP] Marl [AQ] Minxl [AR] Nodule [AS] Phos [AT] Pyr	<b>ACCESSORIES</b> [AU] Salt [AV] Sandy [AW] Silt [AX] Sil [AY] Sulphur [AZ] Tuff [BA] Chlorite [BB] Dol [BC] Sand [BD] Sltly	<b>ACCESSORIES</b> [BE] Dol [BF] Grysh [BG] Gryslt [BH] Lms [BI] Sandyms [BJ] Sh [BK] Sltstn
<b>STRINGER</b>			
[BL] Anhy [BM] Arg [BN] Bent [BO] Coal [BP] Dol [BQ] Gyp [BR] Ls [BS] Mrst [BT] Sltstrg [BU] Ssstrg [BV] Carbsh [BW] Clystn			
<b>TEXTURE</b>			
[BX] Boundst [BY] Chalky [BZ] Cryxln [CA] Earthy [CB] Finexln [CC] Grainst [CD] Lithogr [CE] Microxln [CF] Mudst [CG] Packst [CH] Wackest			

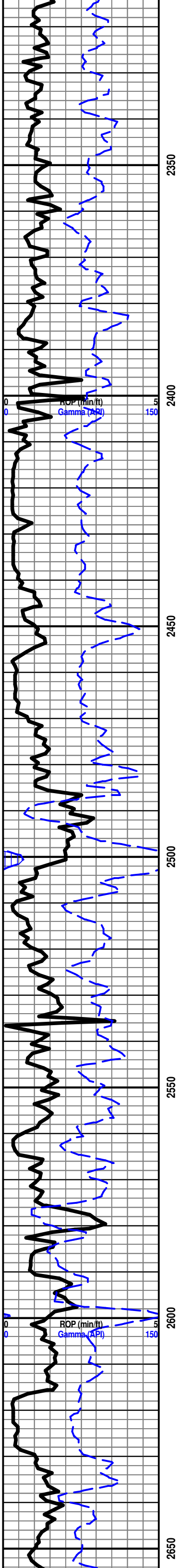
### OTHER SYMBOLS

<b>POROSITY TYPE</b> [CI] Earthy [CJ] Fenest [CK] Fracture [CL] Inter [CM] Moldic [CN] Organic [CO] Pinpoint [CP] Vuggy	<b>SORTING</b> [CQ] Well [CR] Moderate [CS] Poor	<b>OTHER SYMBOLS</b> [CT] Angular <b>OIL SHOWS</b> [CU] Even [CV] Spotted [CW] Ques [CX] Dead [CY] Gas show	<b>INTERVALS</b> [CZ] Core [DA] Dst [DB] Dst
<b>ROUNDING</b> [DC] Rounded [DD] Subrnd [DE] Subang	<b>EVENTS</b> [DF] Rft [DG] Sidewall		



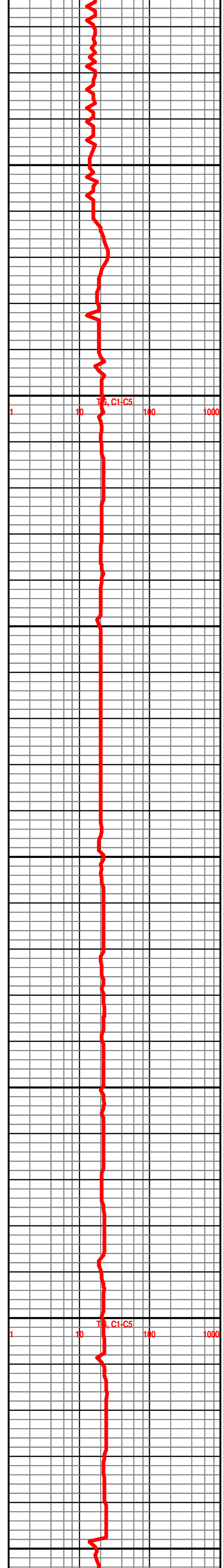


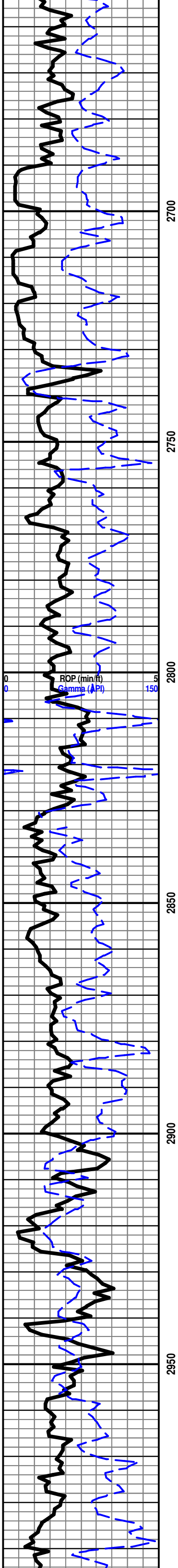




MATTFIELD 2485'-150'

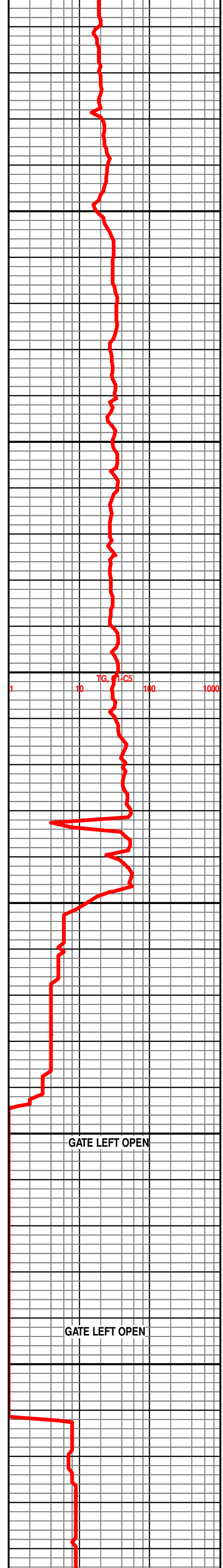
WRELORD 2575'-240'





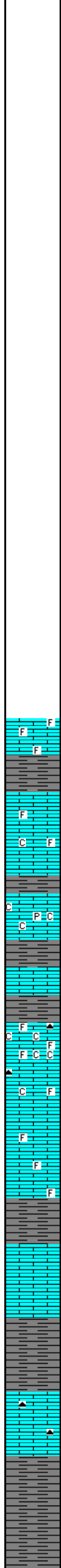
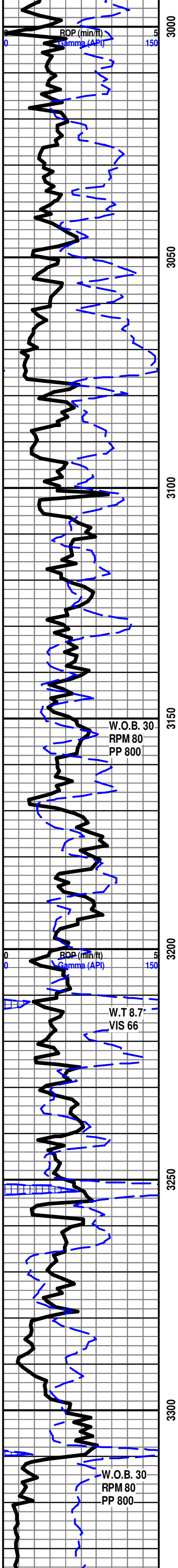
2950 2900 2850 2800 2750 2700

MUD DISPLACEMENT



GATE LEFT OPEN

GATE LEFT OPEN



**START 24 HR. MANNED UNIT 5/12/13**

LS- CRM BFF TO LT TN, HD DNS TO TR BRTT IP, MD/F-XLN MTRX, RE-XLN, S-CHLKY, IMB LG FOSS FRAGS THRU, SCAT IMB SM TO MD CALC-XLS, V DUL YEL FLO IN 40%, NO VIS POR, NO VIS CUT OR SHOW

LS- LT TN TO TN, HD DNS TO V SLI TR BRTT IP, F/XLN MTRX, S-CHLKY, SCAT IMB SM FOSS FRAGS THRU, V SLI TR IMB SFT WHT CHLK, NO VIS FLO, NO VIS POR, NO VIS CUT OR SHOW

LS- OFF WHT TO CRM BFF LT TN, HD DNS, F/VF-XLN MTRX, RE-XLN IP, S-CHLKY, SCAT IMB SM CALC-XLS IP, SFT WHT CHLK THRU TRAY, V SLI TR PYR IP, DUL YEL FLO IN 30%, YEL FLO IN 10%, NO VIS POR, NO VIS CUT OR SHOW

**TOPEKA 3216'-881'**

LS- CRM TO LT TN TN, HD DNS TO BRTT IP, MD-XLN, V S-CHLKY, ABDT IMB SFT WHT CHLK THRU, SCAT IMB SM FOSS FRGS, SLI TR ORNG CHRT IN TRAY, DUL YEL FLO IN 30-40%, NO VIS POR, NO VIS CUT OR SHOW

LS- OFF WHT TO CRM BFF, HD DNS TO BRTT IP, MD/F-XLN MTRX, SLI TR S-CHLKY, SCAT IMB FOSS FRGS THRU, IMB SM CALC-XLS IP, NO VIS FLO, NO VIS POR, NO VIS SHOW

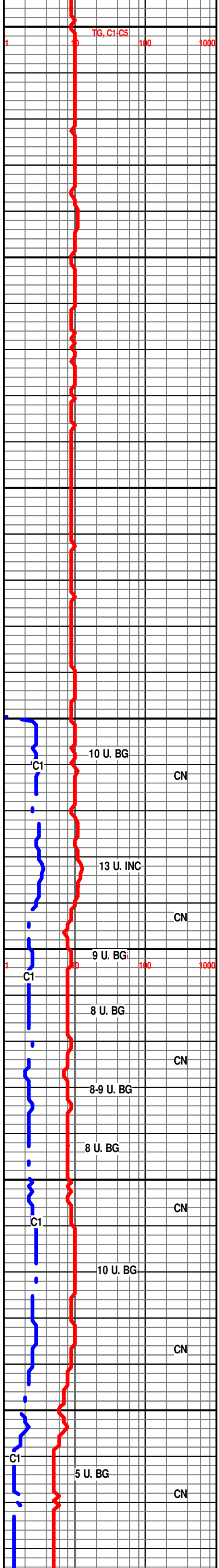
LS- CRM TO LT TN, HD DNS TO SLI TR BRTT IP, F/XLN MTRX, S-CHLKY, S-SCURO IP, SCAT IMB SM CALC-XLS IP, V DUL YEL FLO IN 20%, NO VIS POR, NO VIS CUT OR SHOW

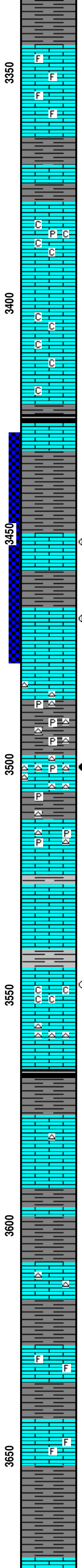
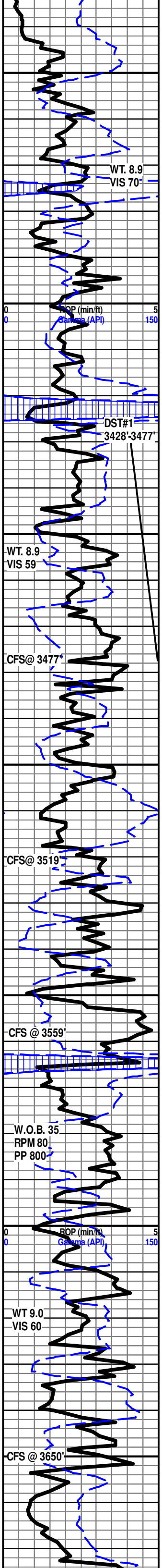
SH- RD TO DK RD GRN MOTT, SFT TO GMMY IP, BLCKY SMTH TXT

LS- OFF WHT TO LT GY, HD DNS, F/VF-XLN MTRX, TR S-CHLKY IP, SLI TR IMB SM CALC-XLS IP, SCAT ORNG CHRT IN TRAY, DUL YEL FLO IP, NO VIS POR, NO VIS CUT OR SHOW

SH- RD TO DK RD, SFT TO V GMMY, BLCKY

SH- RD LT CRN MOTT, V GMMY THRU





SH-RD LT GRN MOTT, V GMMY THRU

LS- LT TN TO TN, HD DNS TO BRTT IP, MD/F-XLN MTRX, RE-XLN, S-SUCRO IP, ABDT IMB SM FOSS FRGS THRU, V SLI TR SFT WHT CHLK IN TRAY, DUL YEL FLO IN 30%, NO VIS POR, NO VIS CUT OR SHOW

LS- OFF WHT TO CRM BFF, HD DNS TO BRTT, MD/F-XLN MTRX, V S-CHLKY, ABDT SFT WHT CHLK THRU TRAY, SLI TR PYR IN TRAY, NO VIS FLO, NO VIS POR, NO VIS SHOW

LS- WHT TO OFF WHT CRM IP, HD DNS TO BRTT, MD/XLN, CHLKY MTRX, ABDT IMB SFT WHT CHLK THRU, V SLI TR IMB SM CALC-XLS IP, DUL YEL FLO IN 40%, YEL FLO IN 10%, NO VIS POR, NO VIS CUT OR SHOW

**HEEBNER 3422'-1087'**

SH- BLCK SFT CARB

SH- LT GY TO GY, FRM TO SFT, BLCKY SMTH TXT

3450'-3454' LS- OFF WHT TO CRM (W/ TN TO DK TN OIL STN IN 30%), HD DNS TO BRTT, MD/XLN, RE-XLN MTRX, CRS SUCRO THRU, ABDT IMB SM TO MD S-ANG LM GRNS THRU, V SLI TR IMB CALC-XLS IP, DUL YEL GLD FLO IN 40%, SCAT YEL GLD FLO IN 20%, FR TO TR GD VUG POR IN 3%, FR SCAT MICRO-VUG POR IN 2%, FR FLSH CUT IN 60%, FR TO GD SLW STRM IN 70%, TN LCH ON DSH, GD OIL ODOR

**LANSING 3467'-1132'**

3468'-3471' LS- CRM TO LT TN (W/ TN OIL STN SCAT IN 10-20%) (W/ TR LIVE OIL STN IN 5-10%), HD DNS TO BRTT IP, MD/F-XLN, SUCRO MTRX, SCAT IMB SM TO MD CALC-XLS THRU, DUL YEL GLD FLO IN 50%, PR TO FR VUG POR IN 2%, PR INTER-XLN POR IN 1%, FR TO GD FLSH CUT IN 70%, GD SLW STRM IN 70%, TN TO DK TN LCH ON DSH, LT OIL ODOR

**LANSING "B" ZONE 3499'-1164'**

3500'-3503' LS- CRM TO LT TN (W/ TN OIL STN IN 60-70%), HD DNS, MD/F-XLN MTRX, S-SUCRO, V SLI TR S-CHLKY IP, IMB SM FOSS FRGS, SCAT IMB SM CALC-XLS THRU, IMB WHT TO LT GYCHRT IP, V SLI TR IMB PYR IP, ABDT WHT TO LT GY CHRT THRU TRAY, SCAT PYR IN TRAY, DUL YEL GLD FLO IN 60%, SPTTD BRT YEL GLD FLO SCAT IN 10%, V PR TO PR TO TR FR MICRO VUG POR IN 3%, FR INTER-XLN POR IN 1%, V SLI TR FR VUG POR IP, FR TO TR GD FLSH CUT IN 80%, GD SLW STRM IN 90%, DK TN LCH ON DSH, V LT OIL ODOR

LS-WHT TO OFF WHT, HD DNS, FN/VFN-XLN MTRX, V SLI TRC S-CHLKY IP, SCAT IMB SM CALC-XLS, V DUL YEL FLO IN 20%, NO VIS POR NO VIS CUT OR SHOW

3548'-3551' LS-OFF WHT TO CRM, (V SLI TRC LT TN OIL STN IP) DNS TO V BRITT, MD-XLN, CHLKY MTRX, ABDT IMB SFT WHT CHLK, SCAT MD TO LG CALC-XLS, V DUL YEL FLO IN 15%, PR TO TRC FR SCAT MICRO-VUG POR IN 6%, FR INTER-XLN IN 1%, NO FLSH CUT, V-SLI TRC V PR SLOW STRM IP, NO LCH ON DSH NO OIL ODOR

**LANSING "F" SHALE 3566'-1231'**

SH-GRY TO LT GRN MOTT, FRM TO SFT, SPLNTY, W/ BLK SFT CARB

LS-OFF WHT TO CRM, HD DNS, FN TO V FN XLN, S-CHLKY IP, IMB CALC-XLS IP, V-SLI TRC WHT CHRT IN TRAY, DUL YEL FLO IN 50%, NO VIS POR, NO VIS CUT OR SHOW

**LANSING "G" ZONE 3608'-1273'**

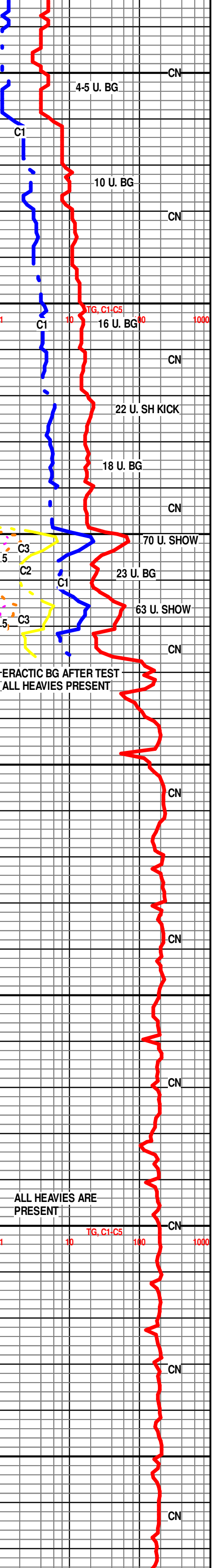
LS-CRM TO LT TN, V-HD DNS, V/CRYPTO XLN, SLI TRC SUCRO IP, SCAT WHT TO LT GRY CHRT IN TRAY, V-SLI TRC IMB RD SH, NO VIS FLO, NO VIS POR, NO VIS SHOW

LS-WHT TO OFF WHT CRM IP, V-HD DNS, F TO VF XLN, IMB FOS FRGS IP, SCAT LG FREE FOS IN TRAY, DUL YEL FLO IN 20%, NO VIS POR, NO VIS CUT OR SHOW

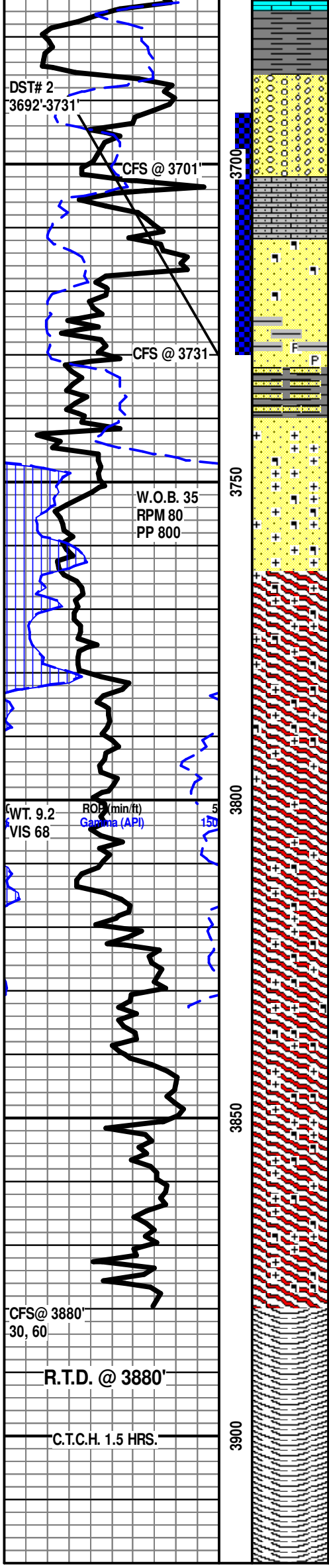
LS-OFF WHT TO CRM, V-HD DNS, MD/F/VF-XLN, S-SUCRO IP, SCAT IMB CALC XLS, IMB SM FOSS FRGS IP, DUL YEL FLO IN 40%, YEL FLO IN 10%, NO VIS POR, NO VIS CUT OR SHOW

**BKC 3653'-1319'**

SH-RD TO DK RD, SFT TO V GMMY







SH-RD LT GRN MOTT FRM TO GMMY THRU, SPLNTY

CONG-LMS W ABDT RD GMMY SH, SCAT WHT CHRT THRU, ABDT SFT WHT CHLK THRU

3705'-3707' LS-CRM TO LT TN TN (W/TN TO LT TN OIL STN IN 70%) (LIVE OIL STN IP) HD DNS TO BRITT, MD-XLN, RE-XLN MTRX, S-SUCRO, ABDT S-ANG TO RND CLR TO FRSTY QRTZ GRNS, SCAT PYR IN TRAY, YEL GLD FLO IN 30%, DUL YEL GLD IN 10%, PR TO TRC FR INTER GRN POR IN 2%, EXCEL FLSH CUT THRU, EXCEL SLOW STRM THRU, DRK TN LCH ON DISH, NO OIL ODOR

3713'-3716' SS-PRED UNCONSLOD GRNS, MD CRS TO PBBLE SIZED, S-ANG TO RND CLR TO FRSTY QRTZ GRNS, SLI-TRC ANG GRNS, IMBD BIOTITE SCAT IP, TRC DUL YEL GLD FLO IN 10%, SPTTD BRI YEL GLD FLO IP, PR WK FLSH CUT IN 10%, FR TO V SLI TRC GD SLW STRM IN 20%, NO LCH ON DISH, NO OIL ODOR, TN OIL STN IN 10% TO 15%

3719'-3723' SS-CLR TO FRSTY WHT (TN OIL STN IN 70%) HD V FRI, FN TO MD CRS S-ANG TO S-RND CLR QRTZ GRNS, FR SRT, PRED SIL CEMNT GRDNG TO TRC CALC CEMNT, SCAT IMBD MIN IP, DUL YEL GLD FLO IN 20%, TRC SPTTD BRI YEL GLD FLO IP, PR TO FR TO GD INTER GRN POR IN 6%, GD FLSH CUT IN 80%, EXCL SLOW STRM CUT THRU, TN LCH ON DISH, NO OIL ODOR, FREE FLOATING OIL IN TRAY

3743'-3746' SS- CLR TO FRSTY ORNG (W/ BLCK LIVE OIL STN IN 50-60%), HD TO FRI IP, ABDT PRED UNCONSOLIDATED MD CRS TO PBBLE ANG TO S-ANG CLR QRTZ GRNS, HV TRC FELDSPAR, SCAT IMB MIN, ABDT F/VF S-RND CLR QRTS GRNS CLSTERS THRU, HD TO FRI, WELL SRT, PRED SLI CMNT, DUL YEL GLD FLO IN 40%, YEL GLD FLO IN 10-20%, FR TO TR GD INTER-GRN POR IN 4%, GD INST FLSH CUT THRU, EXCEL SLW STRM THRU, DK TN LCH ON DSH, NO OIL ODOR

**GRANITE WASH 3765"-1430'**

GRANITE WASH- ORNGE RD CLR IP, ANG TO S-ANG TR S-RND IP, HV TR FELDSPAR THRU, SCAT CLR QRTZ GRNS, IMB BIOTITE P, NO VIS FLO, NO VIS POR, NO VIS SHOW

GRANITE WASH- ORNG RD CLR PNK V HD DNS, ANG TO S-ANG, MOSIAC OF FELDSPAR, ABDT S-ANG CLR QRTZ GRNS THRU, HVY TR MIN (BIOTITE, HEMATITE), NO VIS FLO, NO VIS POR, NO VIS SHOW

GRANITE WASH- CLR ORNG RD, V HD TT, ANG TO S-ANG, ABDT CLR QRTZ GRNS, ABDT IMB BIOTITE, HVY TRC IMB MIN, ABDT FELDSPAR THRU, NO VIS FLO, NO VIS POR, NO VIS SHOW

GRANITE WASH- CRL ORNG RD PNK IP, V HD DNS, ANG TO S-ANG, ABDT ANG CLR QRTZ GRNS THRU, ABDT IMB BIOTITE THRU, HEMATITE, MOSIAC OF FELDSPAR, NO VIS FLO, NO VIS POR, NO VIS SHOW

GRANITE WASH- ORNG RD CLR IP, V HD TT, ANG TO S-ANG, MOSIAC OF FELDSPAR, ABDT IMB BIOTITE, HVY TR MIN, SCAT IMB SM S-ANG CLR QRTZ GRNS THRU, NO VIS FLO, NO VIS POR, NO VIS SHOW

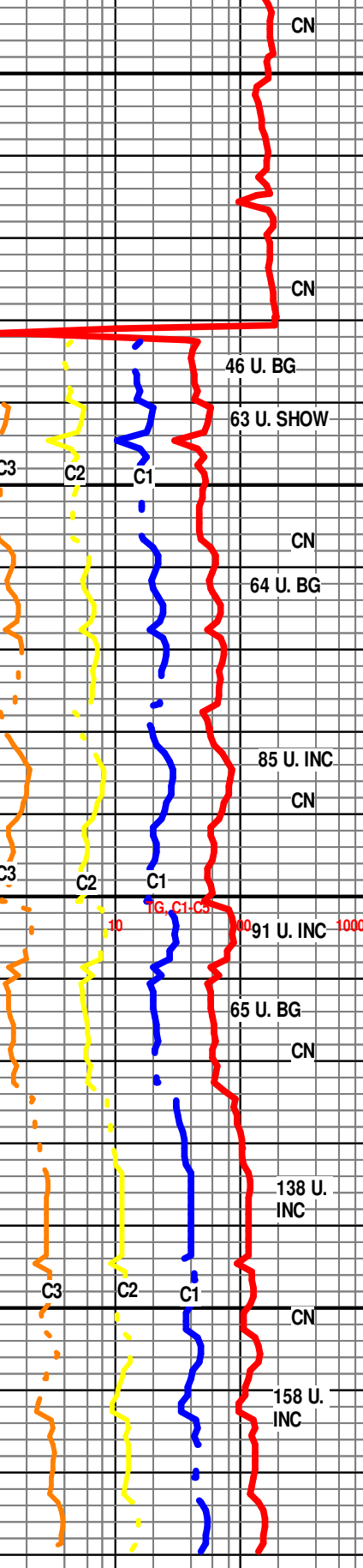
R.T.D. @ 4:05 A.M. 5/15/13

DROP SURVEY

T.O.F.L. @ 5:35 A.M.

WEATHERFORD/ LIBERAL, KANSAS

ALL HEAVIES ARE PRESENT



R.T.D. @ 3880'

SAMPLES WILL BE DELIVERED TO KGS

THANK YOU FOR CHOOSING EARTH TECH

SCHUYLER HEDRICK