



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1073378  
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: \_\_\_\_\_

1073378

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> _____ _____
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Form	ACO1 - Well Completion
Operator	Samuel Gary Jr. & Associates, Inc.
Well Name	LIEBL 2-1
Doc ID	1073378

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  
Ward Loyd, Commissioner  
Thomas E. Wright, Commissioner

Sam Brownback, Governor

February 02, 2012

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

Re: ACO1  
API 15-009-25612-00-00  
LIEBL 2-1  
NE/4 Sec.01-18S-12W  
Barton 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 at 303-831-4673.

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: 10/13/2011  
 Invoice # 5219

P.O.#:  
 Due Date: 11/12/2011  
 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	8200-138
Well/Prospect	LIEBL 2-1
Deck	
AFE	
Approval	AGS
Description	

**Reference:**  
 LIEBL 2-1

**Description of Work:**  
 SURFACE JOB

**Services / Items Included:**

	Quantity	Price	Taxable	Item	Quantity	Price	Taxable
Labor		\$ 963.85	No				
Common-Class A	180	\$ 2,318.00	Yes				
Bulk Truck Matl-Material Service Charge	189	\$ 399.00	No				
Pump Truck Mileage-Job to Nearest Camp	26	\$ 273.90	No				
Calcium Chloride	6	\$ 238.51	Yes				
Bulk Truck Mileage-Job to Nearest Bulk Plant	26	\$ 160.28	No				
Premium Gel (Bentonite)	3	\$ 51.55	Yes				

**Invoice Terms:**

Net 30

SubTotal: \$ 4,405.09  
 Discount Available ONLY if Invoice is Paid & Received  
 within listed terms of invoice: \$ (660.76)

SubTotal for Taxable Items: \$ 2,216.86  
 SubTotal for Non-Taxable Items: \$ 1,527.47

7.30% Barton County Sales Tax

Total: \$ 3,744.32  
 Tax: \$ 161.83

**Amount Due: \$ 3,906.15**

**Applied Payments:**

**Balance Due: \$ 3,906.15**

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

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

No. 5219

Date 10/8/11 Sec. 1 Twp. 18 Range 12 County Barton State KS On Location \_\_\_\_\_ Finish 7:45 PM

Lease LIEBL Well No. 2-1 Location Claslin, 1 1/2 S, W into

Contractor Discovery Drilling Rig #2 Owner \_\_\_\_\_

Type Job Surface 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.

Hole Size 12 1/4" T.D. 347' Charge To Samuel Gary Jr. + Associates Inc

Csg. 8 5/8" Depth 347' Street \_\_\_\_\_

Tbg. Size \_\_\_\_\_ Depth \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_

Tool \_\_\_\_\_ Depth \_\_\_\_\_ The above was done to satisfaction and supervision of owner agent or contractor.

Cement Left in Csg. 15" Shoe Joint \_\_\_\_\_ Cement Amount Ordered 180 sx Com 3% CC 2% gel

Meas Line \_\_\_\_\_ Displace 21 Bbls.

**EQUIPMENT**

Pumptrk <u>9</u> No. <u>9</u>	Cementer Helper <u>Paul</u>	Common <u>180</u>
Bulktrk <u>8</u> No. <u>8</u>	Driver <u>Matt</u>	Poz. Mix _____
Bulktrk <u>A</u> No. <u>A</u>	Driver <u>Doug</u>	Gel. <u>3</u>

**JOB SERVICES & REMARKS**

Remarks:	Hulls
Rat Hole	Salt
Mouse Hole	Flowseal
Centralizers	Kol-Seal
Baskets	Mud CLR 48
D/V or Port Collar	CFL-117 or CD110 CAF 38
<u>Est Circ.</u>	Sand
<u>Mix 180 sx</u>	Handling <u>189</u>
<u>Displace</u>	Mileage _____
<u>Cement Circulated</u>	

**FLOAT EQUIPMENT**

Guide Shoe	
Centralizer	
Baskets	
AFU Inserts	
Float Shoe	
Latch Down	

Pumptrk Charge Surface  
Mileage 26

Tax \_\_\_\_\_  
Discount \_\_\_\_\_  
Total Charge \_\_\_\_\_

X Signature He P Wink

*Thank You!!*



**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: 10/17/2011  
 Invoice # 5225

P.O.#:  
 Due Date: 11/16/2011  
 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	8200-145
Well/Prospect	LIEBL 2-1
Deck	
AFE	
Approval	<i>[Signature]</i>
Description	

**Reference:**  
 LIEBL 2-1

**Description of Work:**  
 PLUG JOB

Services / Items Included:	Quantity	Price	Taxable	Item	Quantity	Price	Taxable
Labor		\$ 991.39	Yes				
Common-Class A	111	\$ 1,470.27	Yes				
Bulk Truck Matl-Material Service Charge	191	\$ 414.74	Yes				
POZ Mix-Standard	74	\$ 369.58	Yes				
Pump Truck Mileage-Job to Nearest Camp	26	\$ 281.72	Yes				
Bulk Truck Mileage-Job to Nearest Bulk Plant	26	\$ 164.85	Yes				
Premium Gel (Bentonite)	6	\$ 106.05	Yes				
Dry Hole Plug	1	\$ 60.80	Yes				

**Invoice Terms:**

Net 30

	SubTotal:	\$	3,859.41
	Discount Available <u>ONLY</u> if Invoice is Paid & Received within listed terms of invoice:	\$	(578.91)
<hr/>			
	SubTotal for Taxable Items:	\$	3,280.50
	SubTotal for Non-Taxable Items:	\$	-
<hr/>			
	Total:	\$	3,280.50
	Tax:	\$	239.48
	<b>Amount Due:</b>	\$	<b>3,519.98</b>
	<b>Applied Payments:</b>		
	<b>Balance Due:</b>	\$	<b>3,519.98</b>

7.30% Barton 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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Phone 785-483-2025  
Cell 785-324-1041

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

No. 5225

Date	10/14/11	Sec.	1	Twp.	18	Range	12	County	Barton	State	KS	On Location		Finish	6:15AM
Lease	LIEBL	Well No.	2-1		Location Clafin, 1E, 1/2 S, W1/4										
Contractor	Discovery Drilling Rig #2							Owner							
Type Job	PTA							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.							
Hole Size	7 7/8"		T.D.		3470'										
Csg.	Depth							Charge To							
Tbg. Size	Depth							Samuel Gary Jr. + Associates Inc.							
Tool	Depth							Street							
Cement Left in Csg.	Shoe Joint							City State							
Meas Line	Displace							The above was done to satisfaction and supervision of owner agent or contractor.							
							Cement Amount Ordered 185 5x60/40 L/gel								

EQUIPMENT

Pumptrk	9	No.	Cementer	Paul	1/4# Flocele
			Helper		Common
Bulktrk	8	No.	Driver	Matt	111
			Driver		Poz. Mix
Bulktrk	PU	No.	Driver	Doug	24
			Driver		Gel.

JOB SERVICES & REMARKS

Remarks:		Calcium
Rat Hole	30 5x	Hulls
Mouse Hole	15 5x	Salt
Centralizers		Flowseal
Baskets		46#
D/V or Port Collar		Kol-Seal
		Mud CLR 48
		CFL-117 or CD110 CAF 38
		Sand
		Handling
		191
		Mileage

FLOAT EQUIPMENT

Guide Shoe	8 5/8"
Centralizer	
Baskets	Dry Hole Plug
AFU Inserts	
Float Shoe	
Latch Down	

Thank You!!

X Signature June White

Pumptrk Charge		Tax
Mileage	26 plug	Discount
		Total Charge





## DRILL STEM TEST REPORT

Prepared For: **Samuel Gary Jr & Assoc Inc**

1515 Wynkoop  
Ste700  
Denver Co 80202

ATTN: Clayton Camozzi

**Liebl #2-1**

**1-18s-12w Barton**

Start Date: 2011.10.11 @ 21:50:25

End Date: 2011.10.12 @ 03:16:19

Job Ticket #: 44571                      DST #: 1

Trilobite Testing, Inc  
PO Box 362 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2011.10.12 @ 11:15:42

Samuel Gary Jr & Assoc Inc  
1-18s-12w Barton  
Liebl #2-1  
DST # 1  
LKC "C"  
2011.10.11



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Samuel Gary Jr & Assoc Inc

**1-18s-12w Barton**

1515 Wynkoop  
Ste700  
Denver Co 80202  
ATTN: Clayton Camozzi

**Liebl #2-1**

Job Ticket: 44571

**DST#: 1**

Test Start: 2011.10.11 @ 21:50:25

## GENERAL INFORMATION:

Formation: **LKC "C"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:24:20

Time Test Ended: 03:16:19

Test Type: Conventional Bottom Hole (Initial)

Tester: Ray Schwager

Unit No: 42

**Interval: 3100.00 ft (KB) To 3126.00 ft (KB) (TVD)**

Reference Elevations: 1843.00 ft (KB)

Total Depth: 3126.00 ft (KB) (TVD)

1835.00 ft (CF)

Hole Diameter: 7.85 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 6625 Inside**

Press @ Run Depth: 24.27 psig @ 3101.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.10.11

End Date:

2011.10.12

Last Calib.: 2011.10.12

Start Time: 21:50:25

End Time:

03:16:19

Time On Btm: 2011.10.11 @ 23:20:50

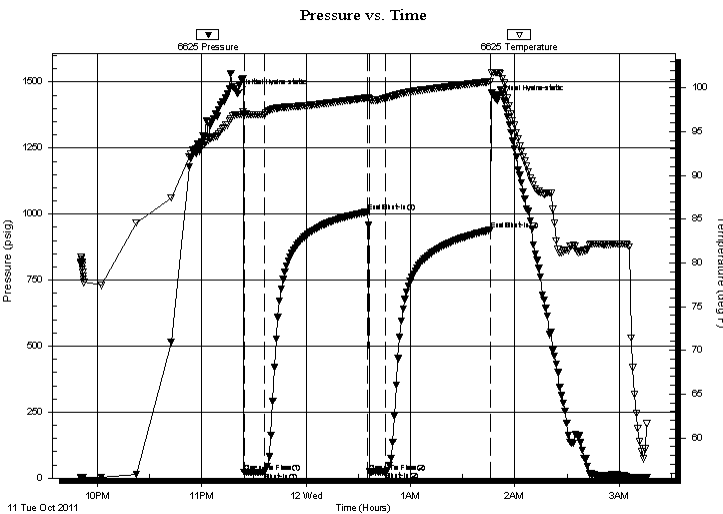
Time Off Btm: 2011.10.12 @ 01:49:20

TEST COMMENT: 10-IFP-surface bl

60-ISIP-no bl bk

10-FFP-no bl

60-FSIP-no bl bk



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1456.78	96.93	Initial Hydro-static
4	21.36	97.09	Open To Flow (1)
15	22.74	96.96	Shut-In(1)
75	1007.95	98.87	End Shut-In(1)
76	23.74	98.71	Open To Flow (2)
85	24.27	98.84	Shut-In(2)
145	939.54	100.73	End Shut-In(2)
149	1433.07	101.76	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud	0.07

## Gas Rates

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



**TRILOBITE TESTING, INC.**

## DRILL STEM TEST REPORT

Samuel Gary Jr & Assoc Inc

**1-18s-12w Barton**

1515 Wynkoop  
Ste700  
Denver Co 80202  
ATTN: Clayton Camozzi

**Liebl #2-1**

Job Ticket: 44571      **DST#: 1**  
Test Start: 2011.10.11 @ 21:50:25

### GENERAL INFORMATION:

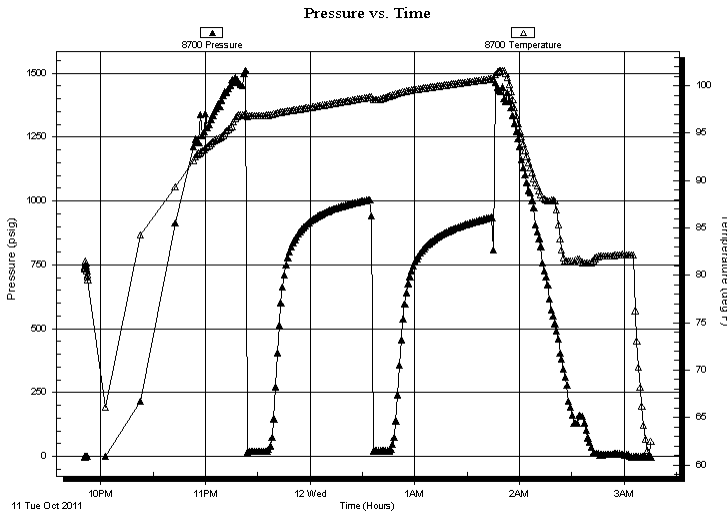
Formation: **LKC "C"**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 23:24:20  
Time Test Ended: 03:16:19  
**Interval: 3100.00 ft (KB) To 3126.00 ft (KB) (TVD)**  
Total Depth: 3126.00 ft (KB) (TVD)  
Hole Diameter: 7.85 inches Hole Condition: Fair  
Test Type: Conventional Bottom Hole (Initial)  
Tester: Ray Schwager  
Unit No: 42  
Reference Elevations: 1843.00 ft (KB)  
1835.00 ft (CF)  
KB to GR/CF: 8.00 ft

**Serial #: 8700 Outside**

Press @ Run Depth:                      psig @           3101.00 ft (KB)	Capacity:    8000.00 psig
Start Date:                                  2011.10.11           End Date:                                  2011.10.12	Last Calib.:                                      2011.10.12
Start Time:                                 21:50:43            End Time:                                 03:15:07	Time On Btm:
	Time Off Btm:

**TEST COMMENT:** 10-IFP-surface bl  
60-ISIP-no bl bk  
10-FFP-no bl  
60-FSIP-no bl bk

### PRESSURE SUMMARY



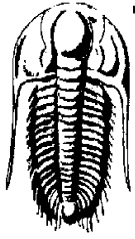
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

### Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud	0.07

### Gas Rates

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



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Samuel Gary Jr & Assoc Inc  
 1515 Wynkoop  
 Ste700  
 Denver Co 80202  
 ATTN: Clayton Camozzi

**1-18s-12w Barton**

**Liebl #2-1**

Job Ticket: 44571

**DST#: 1**

Test Start: 2011.10.11 @ 21:50:25

## GENERAL INFORMATION:

Formation: **LKC "C"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 23:24:20  
 Time Test Ended: 03:16:19  
 Interval: **3100.00 ft (KB) To 3126.00 ft (KB) (TVD)**  
 Total Depth: 3126.00 ft (KB) (TVD)  
 Hole Diameter: 7.85 inches  
 Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Ray Schwager  
 Unit No: 42  
 Reference Elevations: 1843.00 ft (KB)  
 1835.00 ft (CF)  
 KB to GR/CF: 8.00 ft

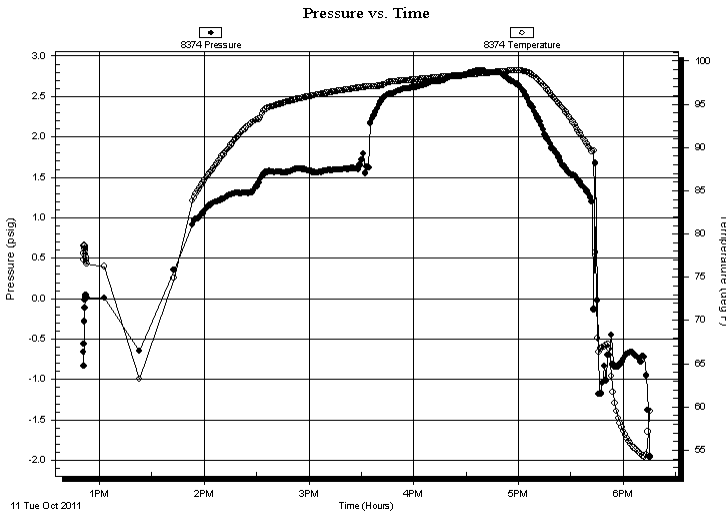
## Serial #: 8374

## Fluid

Press @ Run Depth: psig @ 3065.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2011.10.11 End Date: 2011.10.11 Last Calib.: 2011.10.12  
 Start Time: 12:50:47 End Time: 18:15:41 Time On Btm:  
 Time Off Btm:

TEST COMMENT: 10-IFP-surface bl  
 60-ISIP-no bl bk  
 10-FFP-no bl  
 60-FSIP-no bl bk

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud	0.07

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Samuel Gary Jr & Assoc Inc

**1-18s-12w Barton**

1515 Wynkoop  
Ste700  
Denver Co 80202  
ATTN: Clayton Camozzi

**Liebl #2-1**

Job Ticket: 44571

**DST#: 1**

Test Start: 2011.10.11 @ 21:50:25

## Tool Information

Drill Pipe:	Length: 3090.00 ft	Diameter: 3.80 inches	Volume: 43.34 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 43.34 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 47000.00 lb
Depth to Top Packer:	3100.00 ft			Final 47000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	26.00 ft			
Tool Length:	61.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Recorder	0.00	8374	Fluid	3065.00	
Blank Spacing	5.00			3070.00	
Change Over Sub	1.00			3071.00	
Shut In Tool	5.00			3076.00	
Sampler	2.00			3078.00	
Hydraulic tool	5.00			3083.00	
Jars	5.00			3088.00	
Safety Joint	2.00			3090.00	
Packer	5.00			3095.00	35.00 Bottom Of Top Packer
Packer	5.00			3100.00	
Stubb	1.00			3101.00	
Recorder	0.00	6625	Inside	3101.00	
Recorder	0.00	8700	Outside	3101.00	
Perforations	22.00			3123.00	
Bullnose	3.00			3126.00	26.00 Bottom Packers & Anchor

**Total Tool Length: 61.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Samuel Gary Jr & Assoc Inc

**1-18s-12w Barton**

1515 Wynkoop

**Liebl #2-1**

Ste700

Job Ticket: 44571

**DST#: 1**

Denver Co 80202

ATTN: Clayton Camozzi

Test Start: 2011.10.11 @ 21:50:25

## 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: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3600.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud	0.070

Total Length: 5.00 ft      Total Volume: 0.070 bbl

Num Fluid Samples: 0

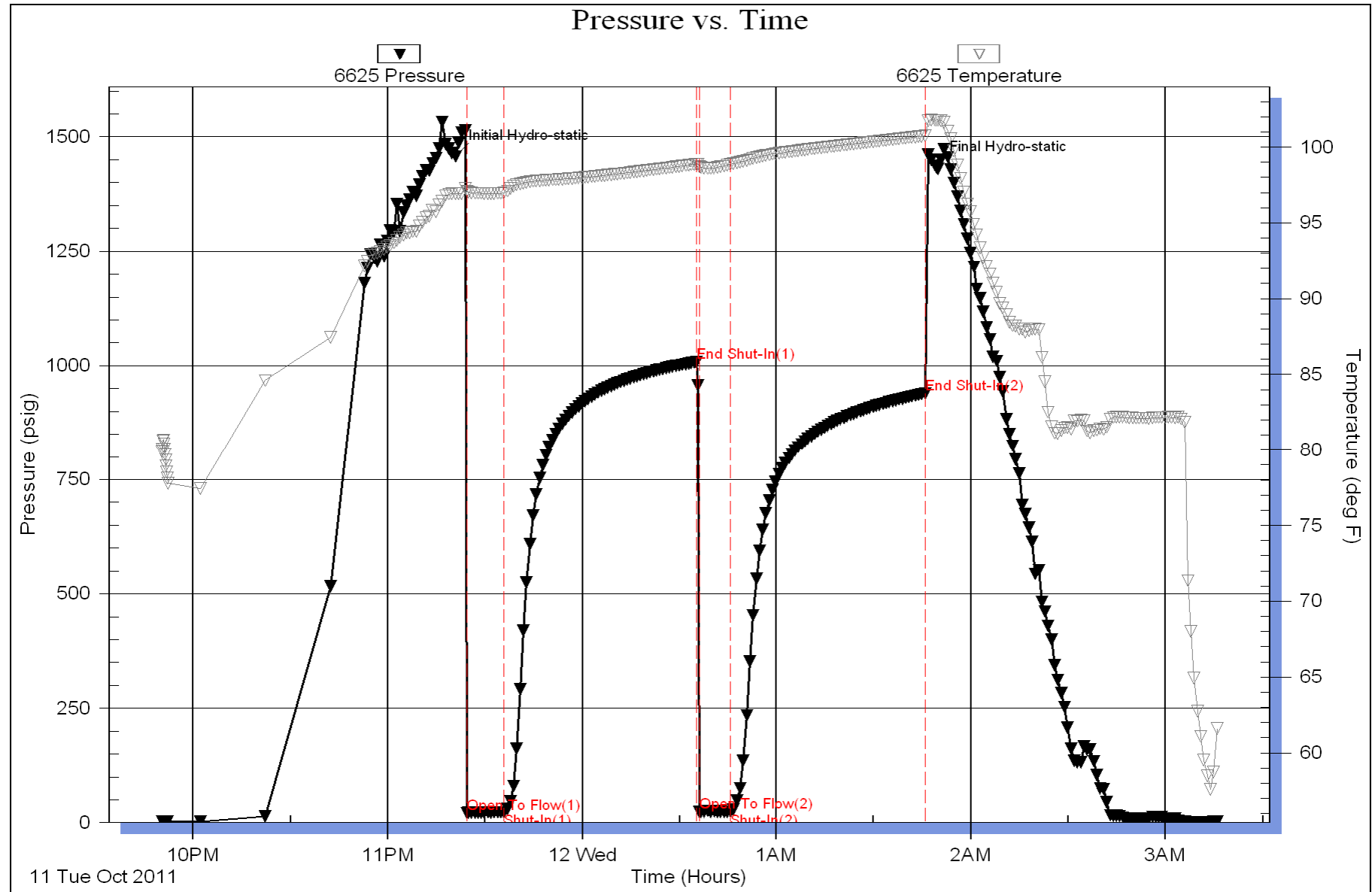
Num Gas Bombs: 0

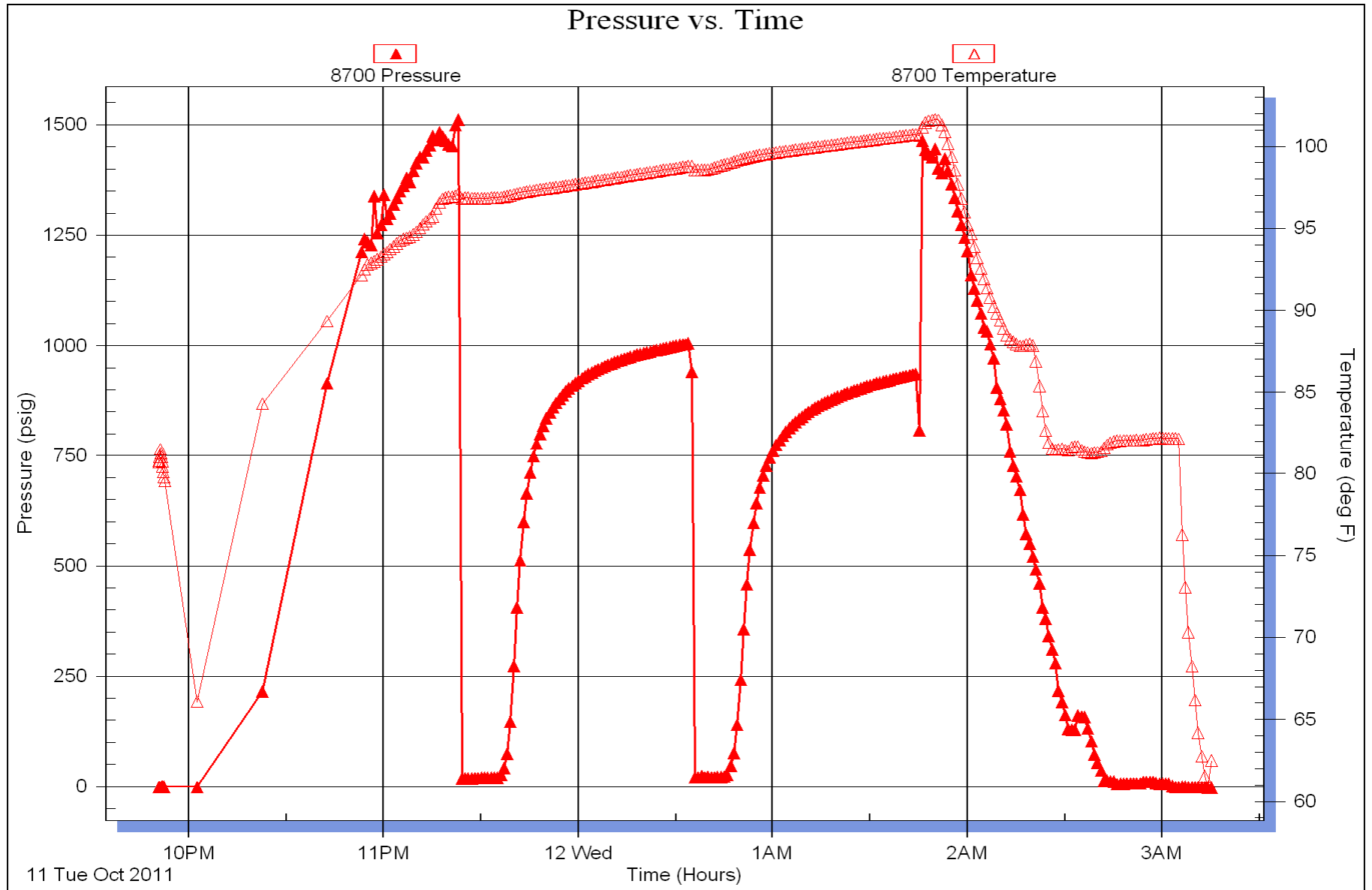
Serial #:

Laboratory Name:

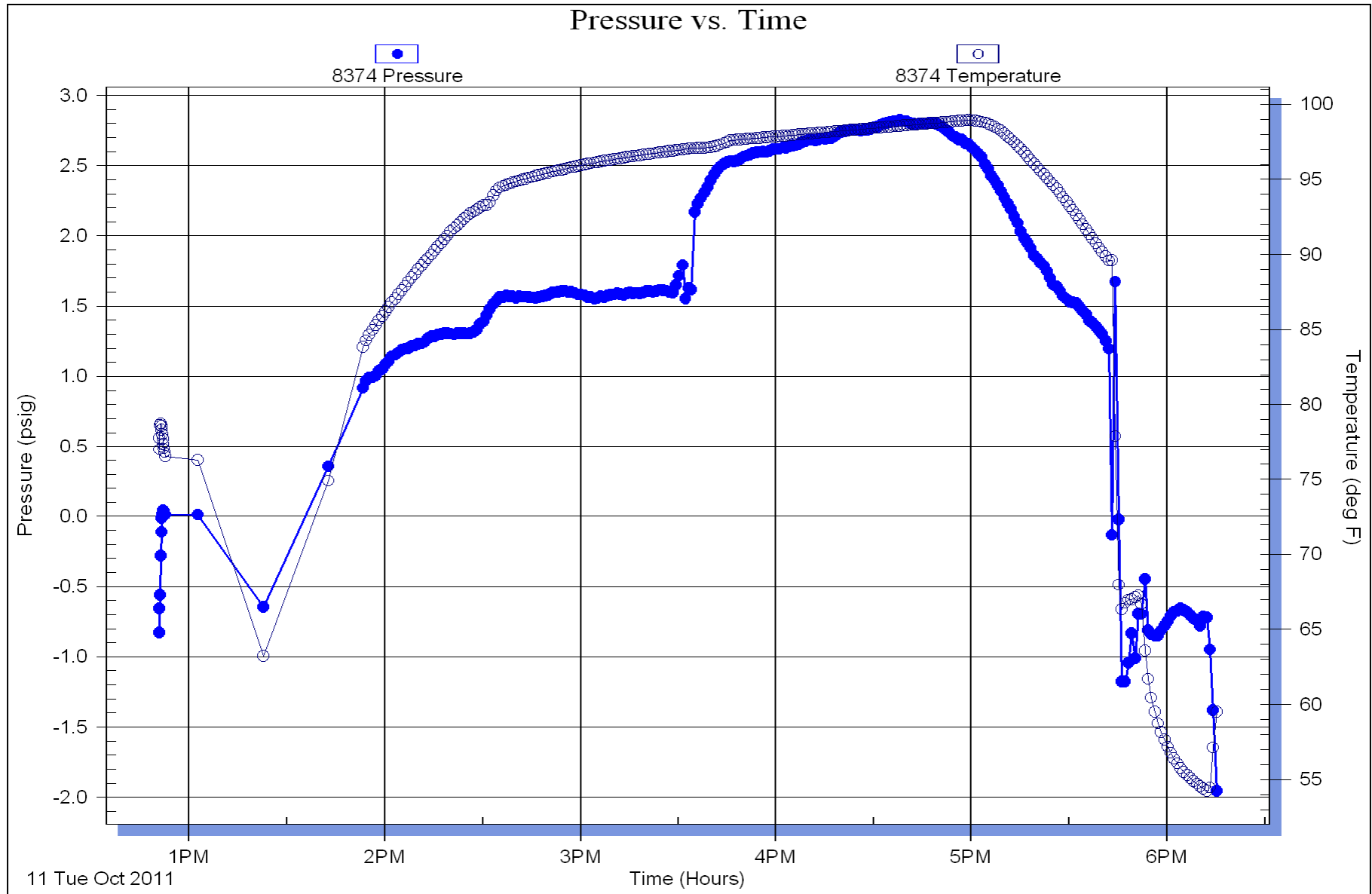
Laboratory Location:

Recovery Comments: Sampler Data:2000ML Mud 50PSI





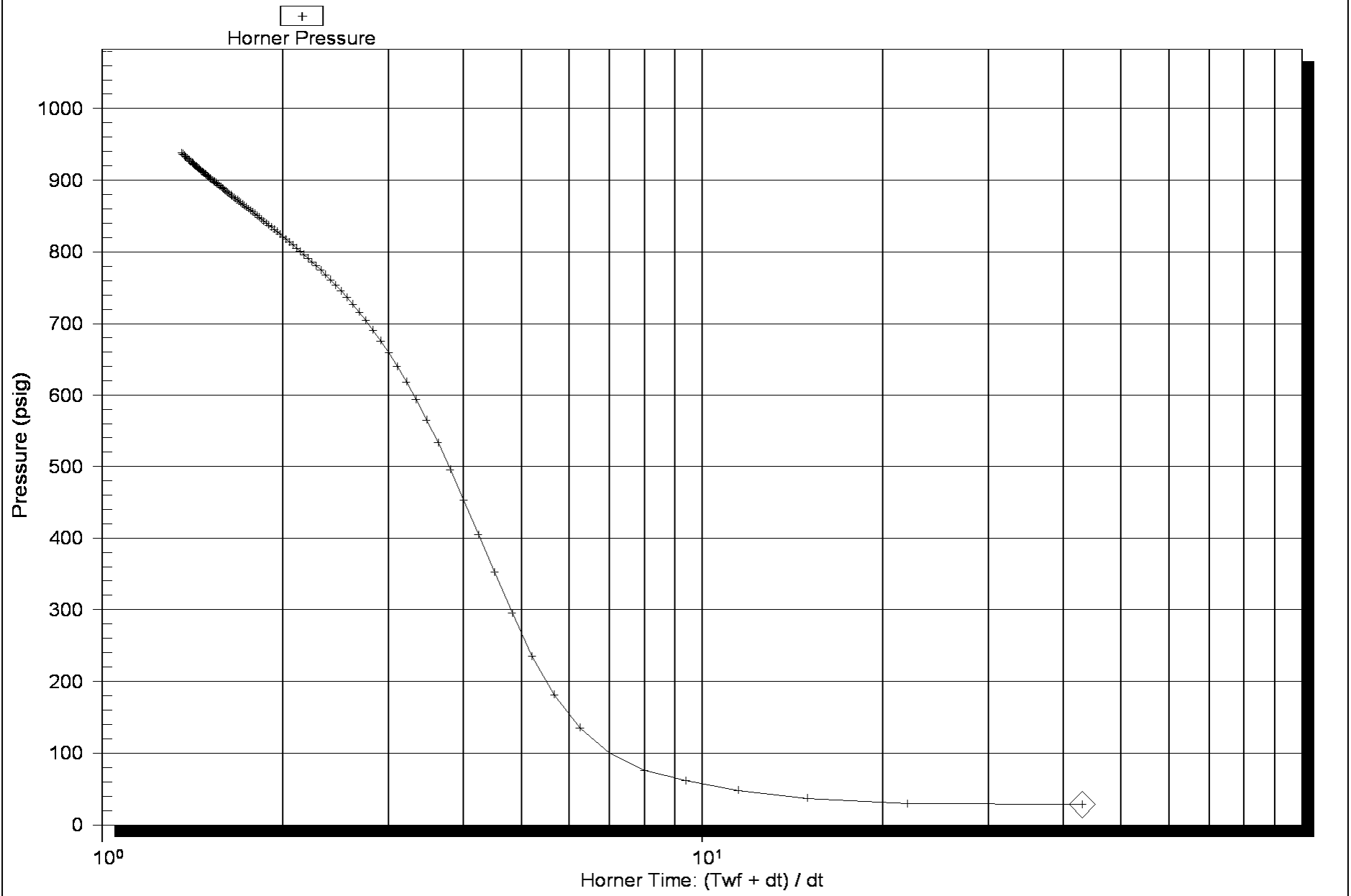




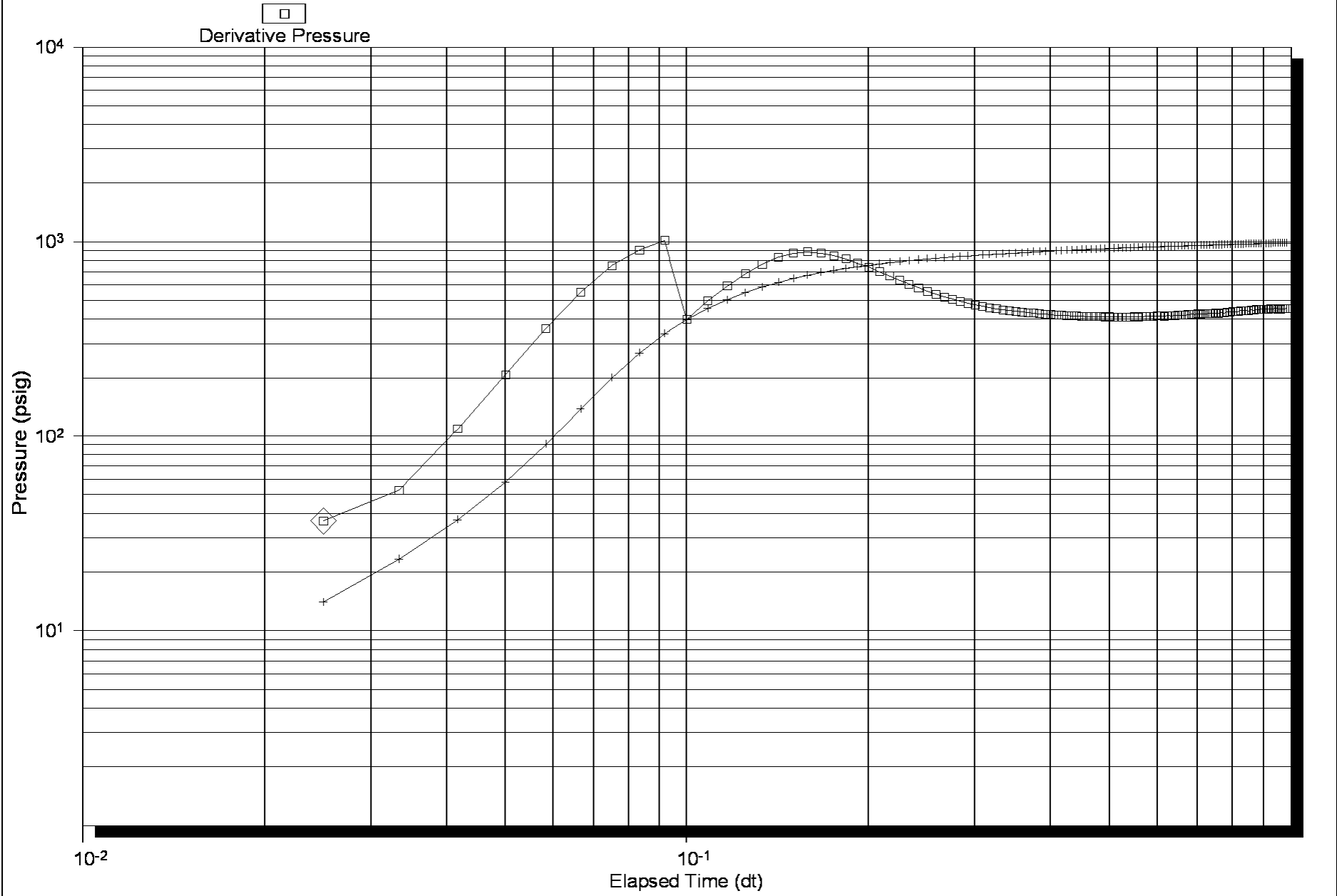
### Horner Plot

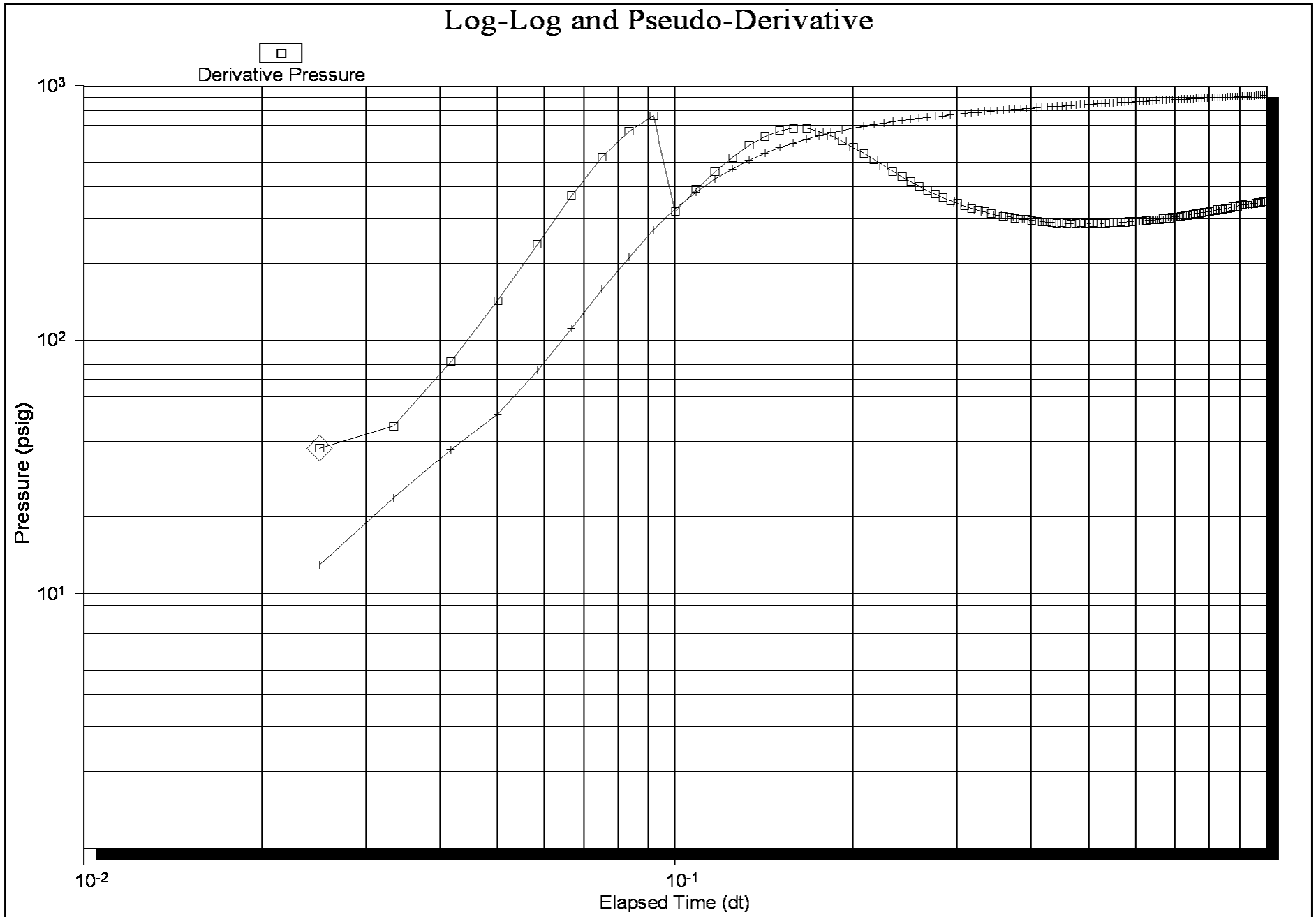


### Horner Plot



### Log-Log and Pseudo-Derivative







## DRILL STEM TEST REPORT

Prepared For: **Samuel Gary Jr & Assoc Inc**

1515 Wynkoop  
Ste700  
Denver Co 80202

ATTN: Clayton Camozzi

### **Liebl #2-1**

#### **1-18s-12w Barton**

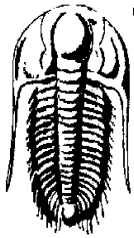
Start Date: 2011.10.12 @ 18:00:50

End Date: 2011.10.12 @ 23:48:14

Job Ticket #: 44572                      DST #: 2

Trilobite Testing, Inc  
PO Box 362 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2011.10.13 @ 10:04:50



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Samuel Gary Jr & Assoc Inc

**1-18s-12w Barton**

1515 Wynkoop  
Ste700  
Denver Co 80202  
ATTN: Clayton Camozzi

**Liebl #2-1**

Job Ticket: 44572

**DST#: 2**

Test Start: 2011.10.12 @ 18:00:50

## GENERAL INFORMATION:

Formation: **LKC I-J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:34:45

Time Test Ended: 23:48:14

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 42

**Interval: 3230.00 ft (KB) To 3260.00 ft (KB) (TVD)**

Reference Elevations: 1843.00 ft (KB)

Total Depth: 3260.00 ft (KB) (TVD)

1835.00 ft (CF)

Hole Diameter: 7.85 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 6625 Inside**

Press @ Run Depth: 38.64 psig @ 3231.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.10.12 End Date: 2011.10.12

Last Calib.: 2011.10.12

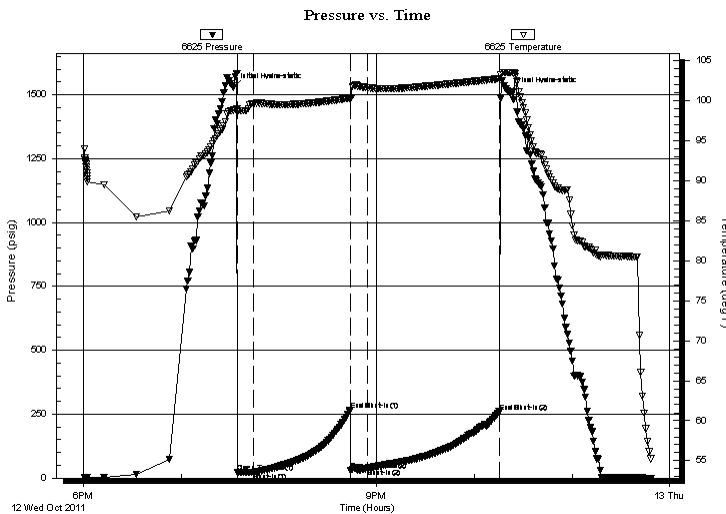
Start Time: 18:00:50 End Time: 23:48:14

Time On Btm: 2011.10.12 @ 19:32:15

Time Off Btm: 2011.10.12 @ 22:21:44

**TEST COMMENT:** 10-IFP-surface bl  
60-ISIP-no bl bk  
15-FFP-no bl  
75-FSIP-no bl

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1527.49	98.80	Initial Hydro-static
3	21.06	98.77	Open To Flow (1)
12	22.68	99.61	Shut-In(1)
72	266.90	100.30	End Shut-In(1)
72	29.63	100.28	Open To Flow (2)
82	38.64	101.61	Shut-In(2)
163	259.80	102.74	End Shut-In(2)
170	1510.46	103.50	Final Hydro-static

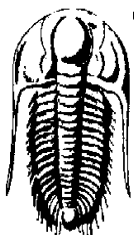
## Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud	0.07

## Gas Rates

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

\* Recovery from multiple tests



# TRILOBITE TESTING, INC.

## DRILL STEM TEST REPORT

Samuel Gary Jr & Assoc Inc

1515 Wynkoop  
Ste700  
Denver Co 80202  
ATTN: Clayton Camozzi

**1-18s-12w Barton**

**Liebl #2-1**

Job Ticket: 44572 **DST#: 2**  
Test Start: 2011.10.12 @ 18:00:50

### GENERAL INFORMATION:

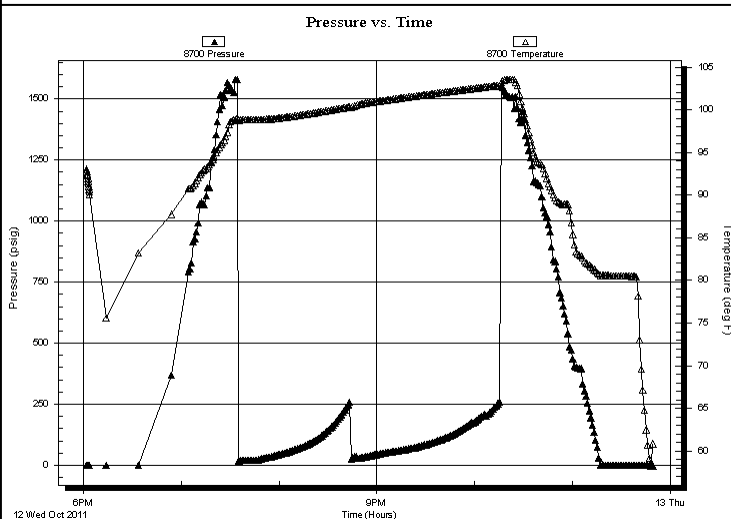
Formation: **LKC I-J**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 19:34:45  
 Time Test Ended: 23:48:14  
 Interval: **3230.00 ft (KB) To 3260.00 ft (KB) (TVD)**  
 Total Depth: 3260.00 ft (KB) (TVD)  
 Hole Diameter: 7.85 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Ray Schwager  
 Unit No: 42  
 Reference Elevations: 1843.00 ft (KB)  
 1835.00 ft (CF)  
 KB to GR/CF: 8.00 ft

### Serial #: 8700

Outside

Press@RunDepth: psig @ 3231.00 ft (KB)  
 Start Date: 2011.10.12 End Date: 2011.10.12  
 Start Time: 18:01:50 End Time: 23:49:14  
 Capacity: 8000.00 psig  
 Last Calib.: 2011.10.12  
 Time On Btm:  
 Time Off Btm:

TEST COMMENT: 10-IFP-surface bl  
 60-ISIP-no bl bk  
 15-FFP-no bl  
 75-FSIP-no bl



### PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

### Recovery

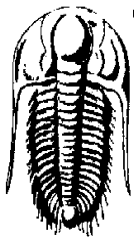
Length (ft)	Description	Volume (bbl)
5.00	Mud	0.07

### Gas Rates

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

\* Recovery from multiple tests





# TRILOBITE TESTING, INC.

## DRILL STEM TEST REPORT

Samuel Gary Jr & Assoc Inc

1515 Wynkoop  
Ste700  
Denver Co 80202  
ATTN: Clayton Camozzi

**1-18s-12w Barton**

**Liebl #2-1**

Job Ticket: 44572                      **DST#: 2**  
Test Start: 2011.10.12 @ 18:00:50

### GENERAL INFORMATION:

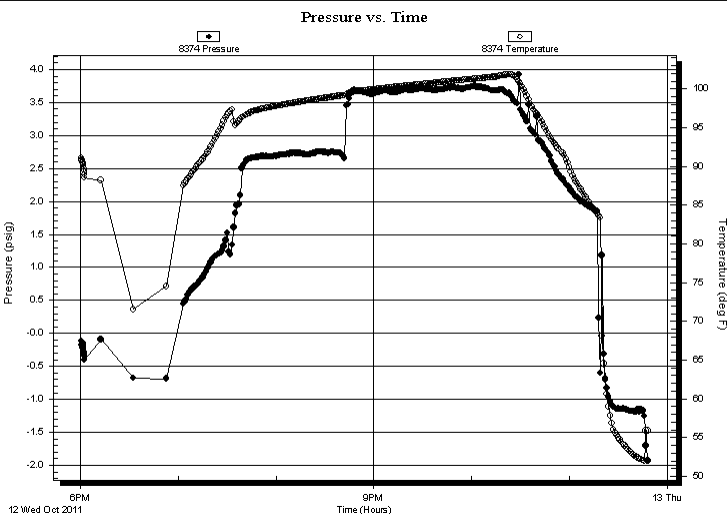
Formation: <b>LKC I-J</b>		
Deviated: No Whipstock:	ft (KB)	Test Type: Conventional Bottom Hole (Reset)
Time Tool Opened: 19:34:45		Tester: Ray Schwager
Time Test Ended: 23:48:14		Unit No: 42
<b>Interval: 3230.00 ft (KB) To 3260.00 ft (KB) (TVD)</b>		Reference Elevations: 1843.00 ft (KB)
Total Depth: 3260.00 ft (KB) (TVD)		1835.00 ft (CF)
Hole Diameter: 7.85 inches	Hole Condition: Fair	KB to GR/CF: 8.00 ft

### Serial #: 8374

### Fluid

Press @ Run Depth:	psig @	3195.00 ft (KB)	Capacity:	8000.00 psig	
Start Date:	2011.10.12	End Date:	2011.10.12	Last Calib.:	2011.10.12
Start Time:	18:00:38	End Time:	23:48:02	Time On Btm:	
				Time Off Btm:	

TEST COMMENT: 10-IFP-surface bl  
60-ISIP-no bl bk  
15-FFP-no bl  
75-FSIP-no bl



### PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

### Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud	0.07

### Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Samuel Gary Jr & Assoc Inc

**1-18s-12w Barton**

1515 Wynkoop  
Ste700  
Denver Co 80202  
ATTN: Clayton Camozzi

**Liebl #2-1**

Job Ticket: 44572

**DST#: 2**

Test Start: 2011.10.12 @ 18:00:50

## Tool Information

Drill Pipe:	Length: 3216.00 ft	Diameter: 3.80 inches	Volume: 45.11 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 45.11 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial 47000.00 lb
Depth to Top Packer:	3230.00 ft			Final 47000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	30.00 ft			
Tool Length:	65.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Recorder	0.00	8374	Fluid	3195.00	
Blank Spacing	5.00			3200.00	
Change Over Sub	1.00			3201.00	
Shut In Tool	5.00			3206.00	
Sampler	2.00			3208.00	
Hydraulic tool	5.00			3213.00	
Jars	5.00			3218.00	
Safety Joint	2.00			3220.00	
Packer	5.00			3225.00	35.00 Bottom Of Top Packer
Packer	5.00			3230.00	
Stubb	1.00			3231.00	
Recorder	0.00	6625	Inside	3231.00	
Recorder	0.00	8700	Outside	3231.00	
Perforations	26.00			3257.00	
Bullnose	3.00			3260.00	30.00 Bottom Packers & Anchor

**Total Tool Length: 65.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Samuel Gary Jr & Assoc Inc

**1-18s-12w Barton**

1515 Wynkoop  
Ste700  
Denver Co 80202  
ATTN: Clayton Camozzi

**Liebl #2-1**

Job Ticket: 44572

**DST#: 2**

Test Start: 2011.10.12 @ 18:00:50

## 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: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.94 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4800.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud	0.070

Total Length: 5.00 ft      Total Volume: 0.070 bbl

Num Fluid Samples: 0

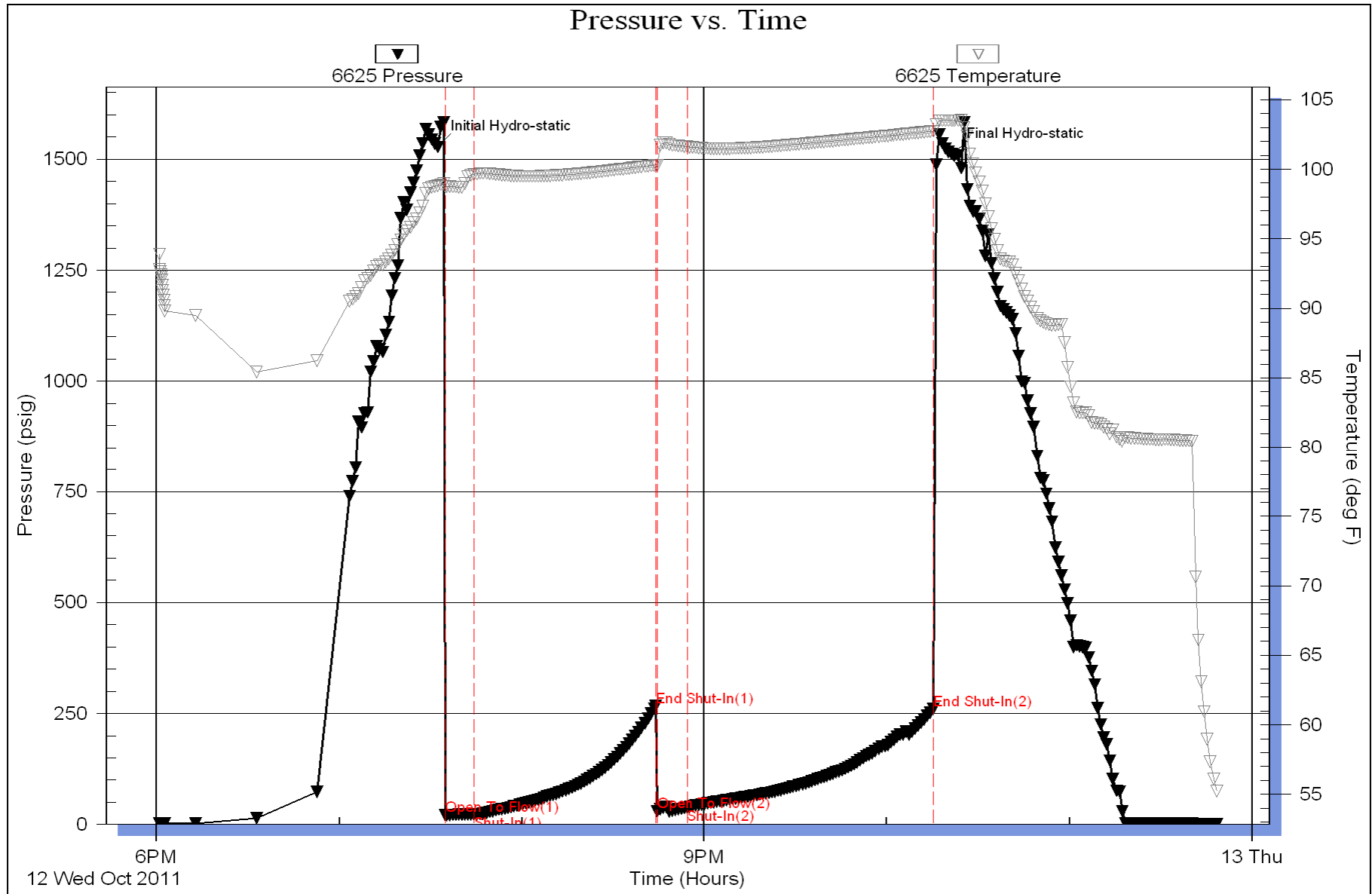
Num Gas Bombs: 0

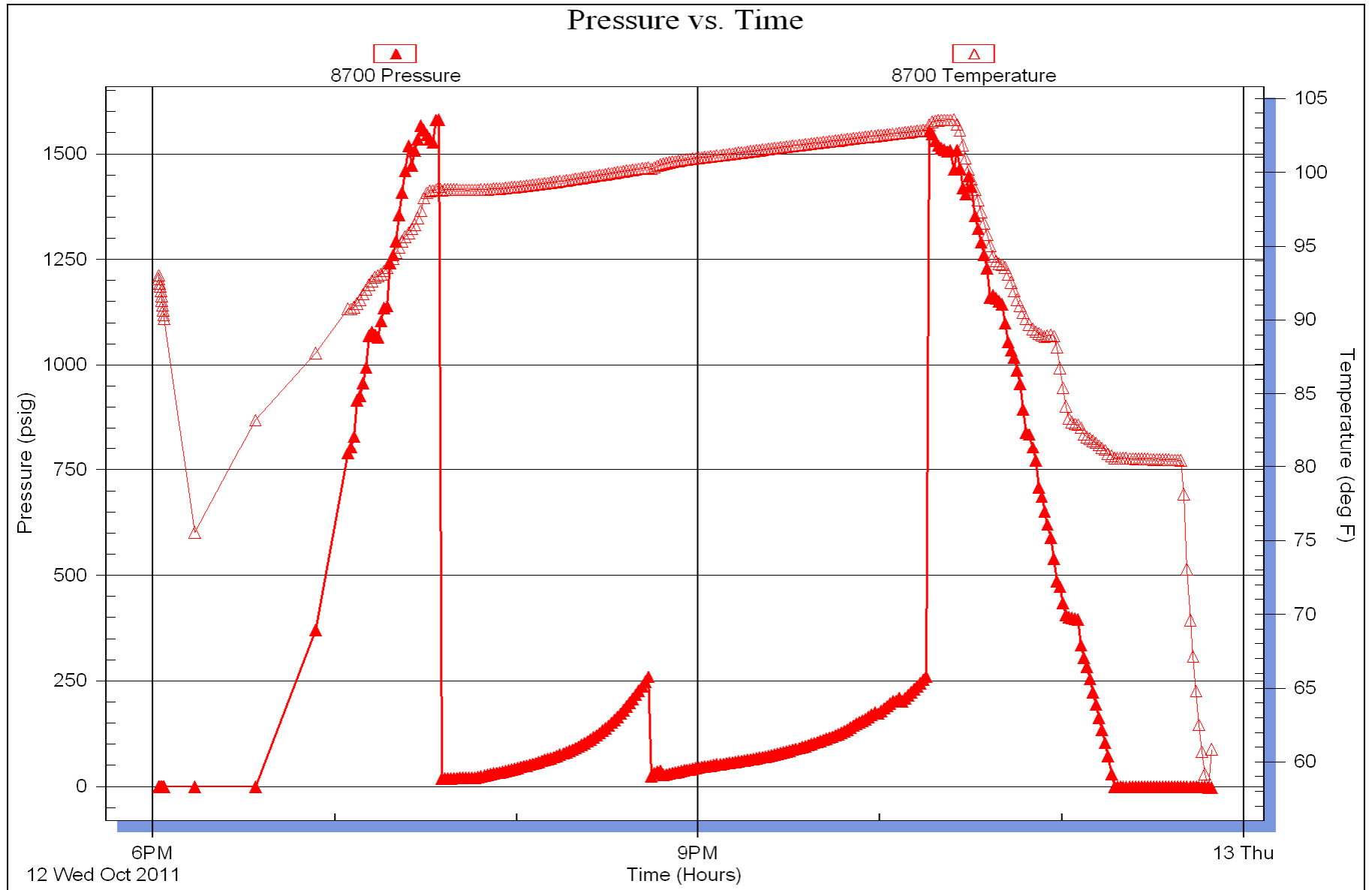
Serial #:

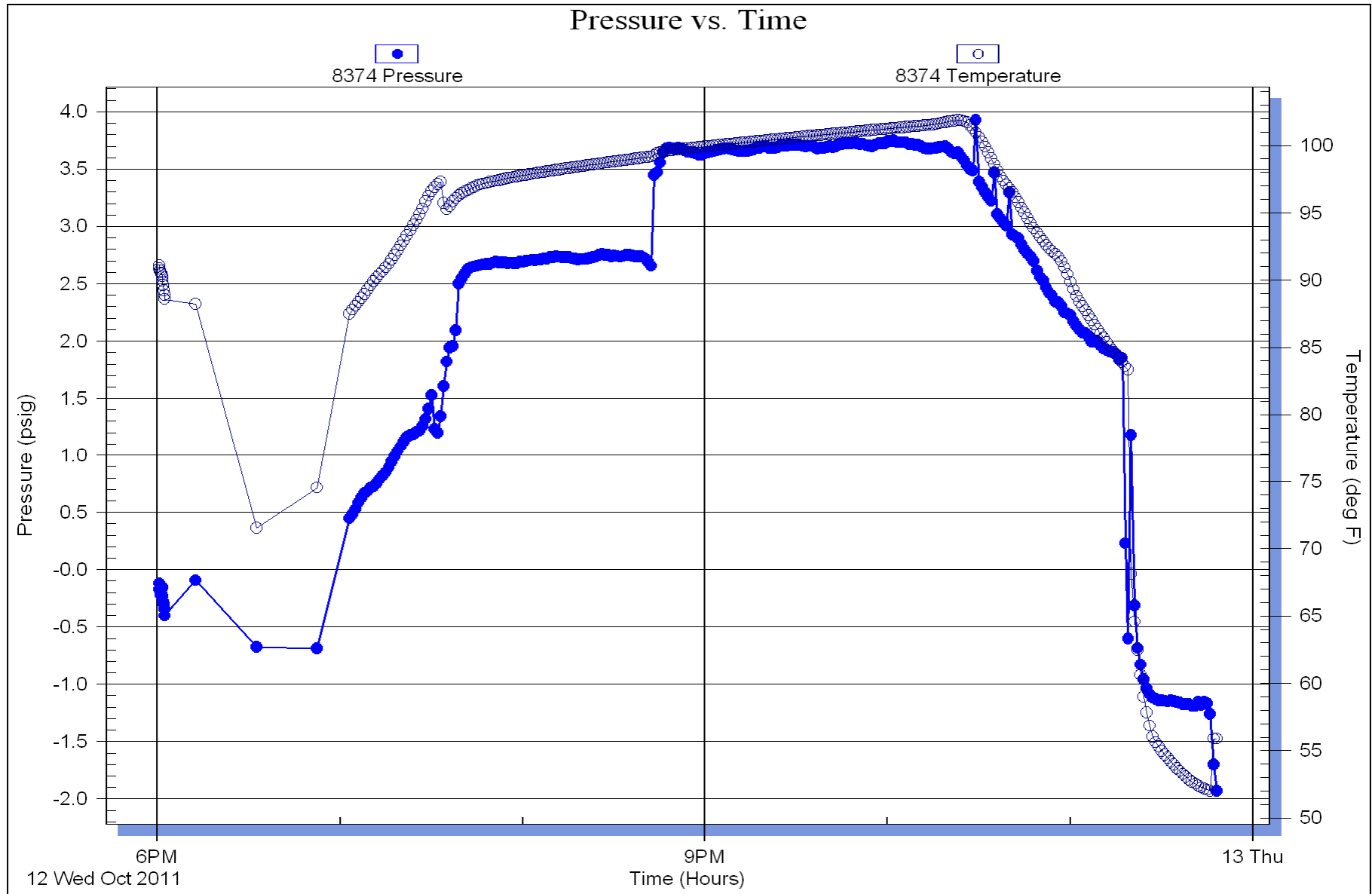
Laboratory Name:

Laboratory Location:

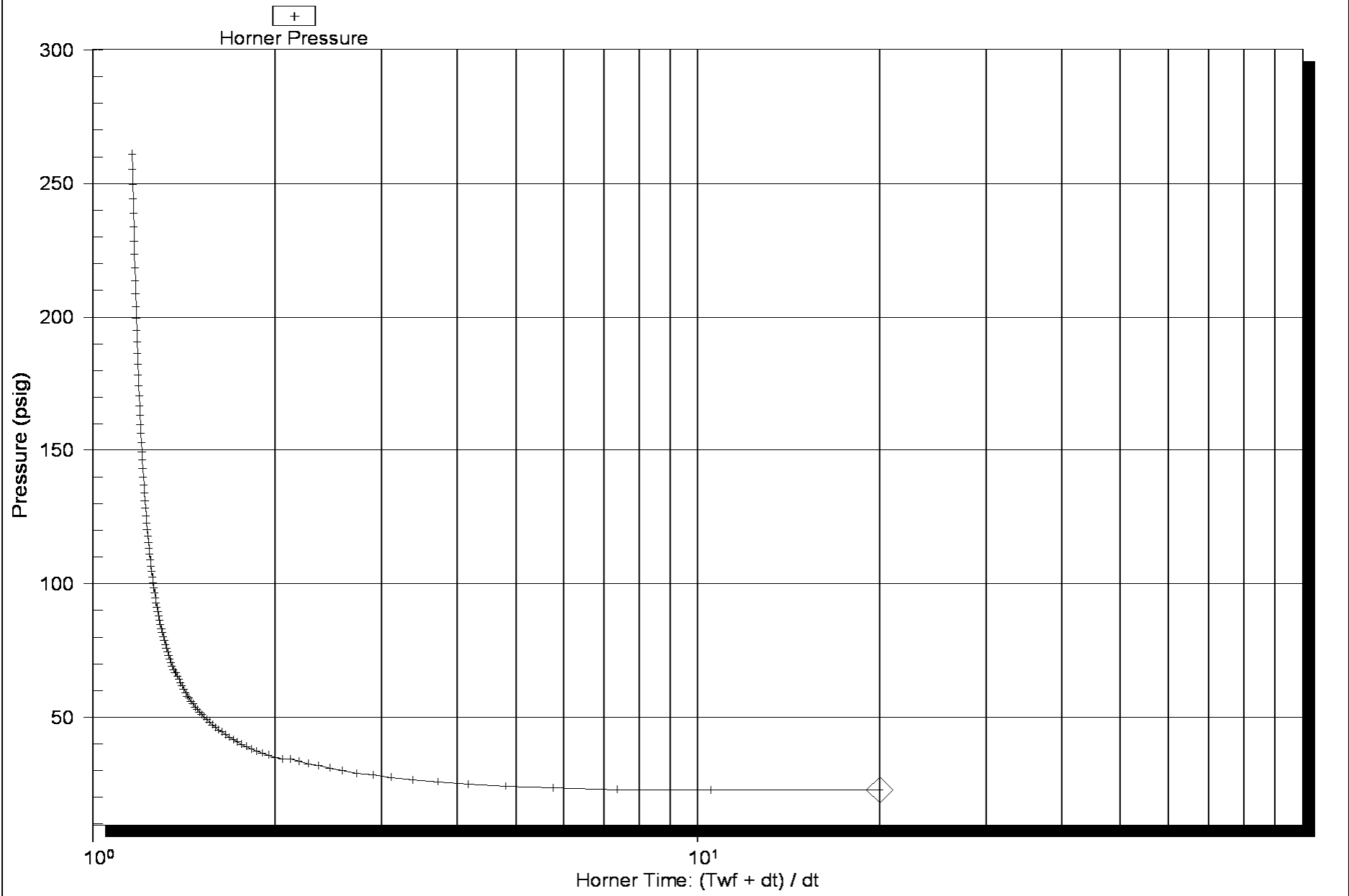
Recovery Comments: Sampler Data: 1000ML Mud PSI 40



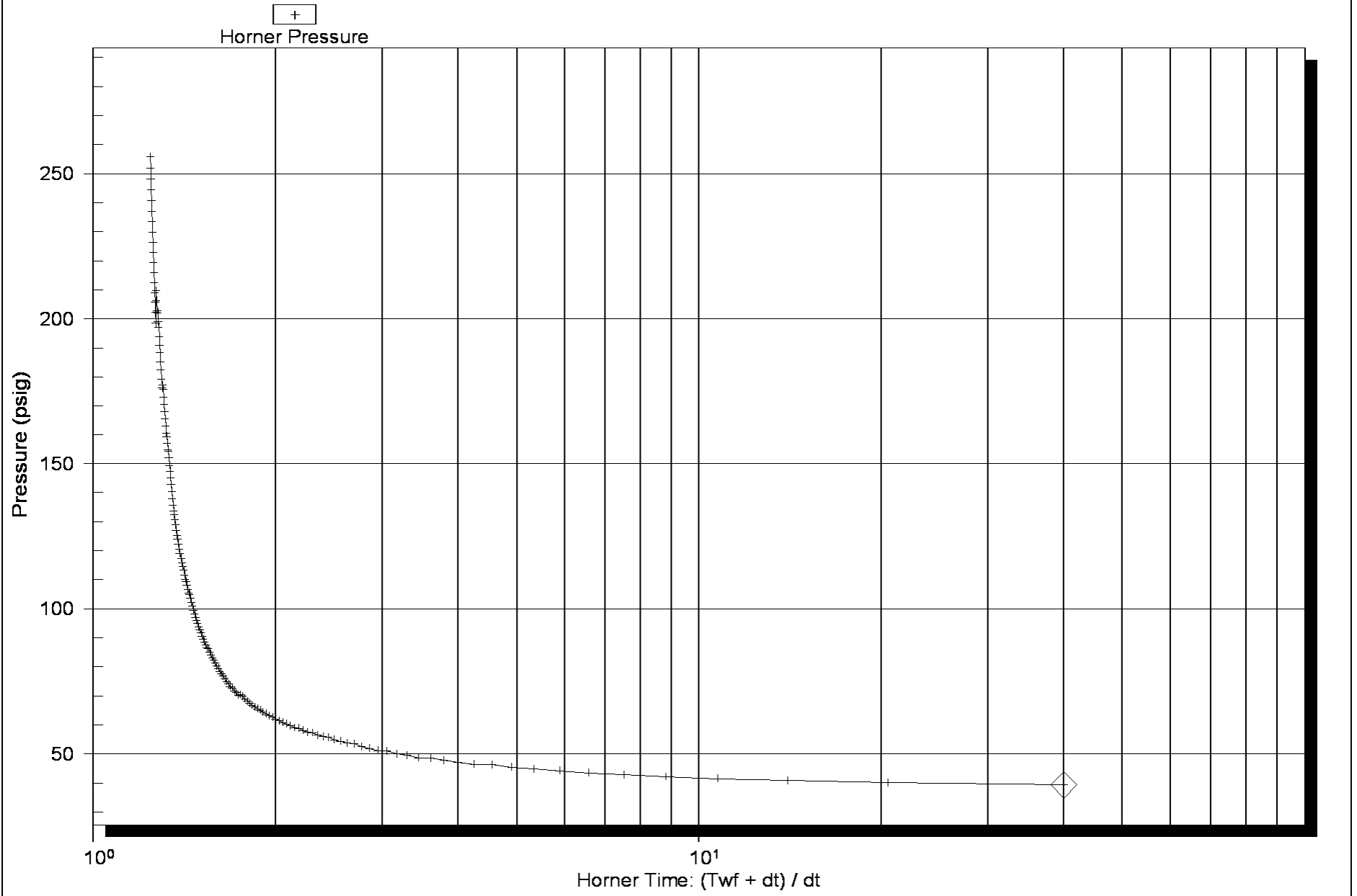




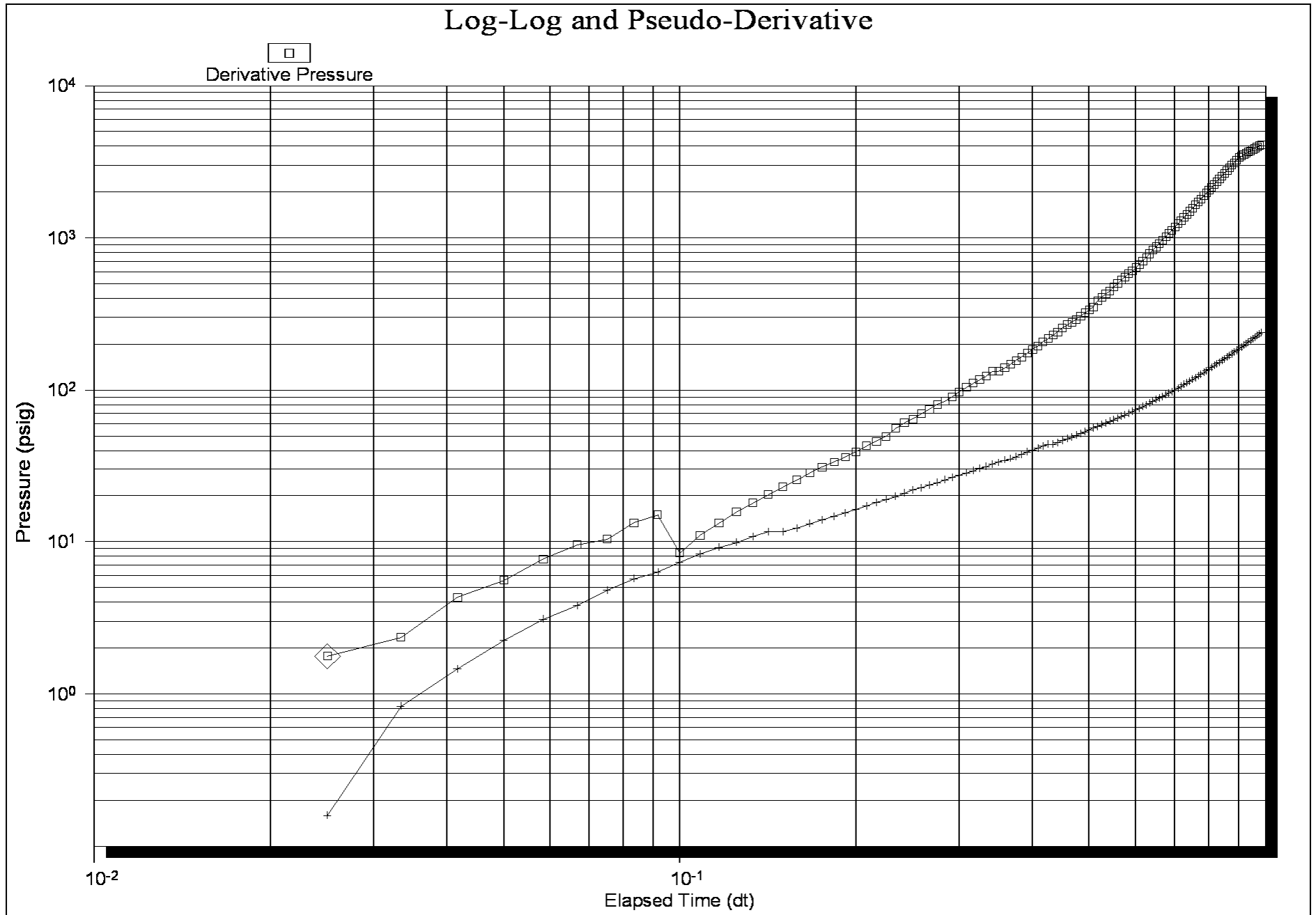
### Horner Plot

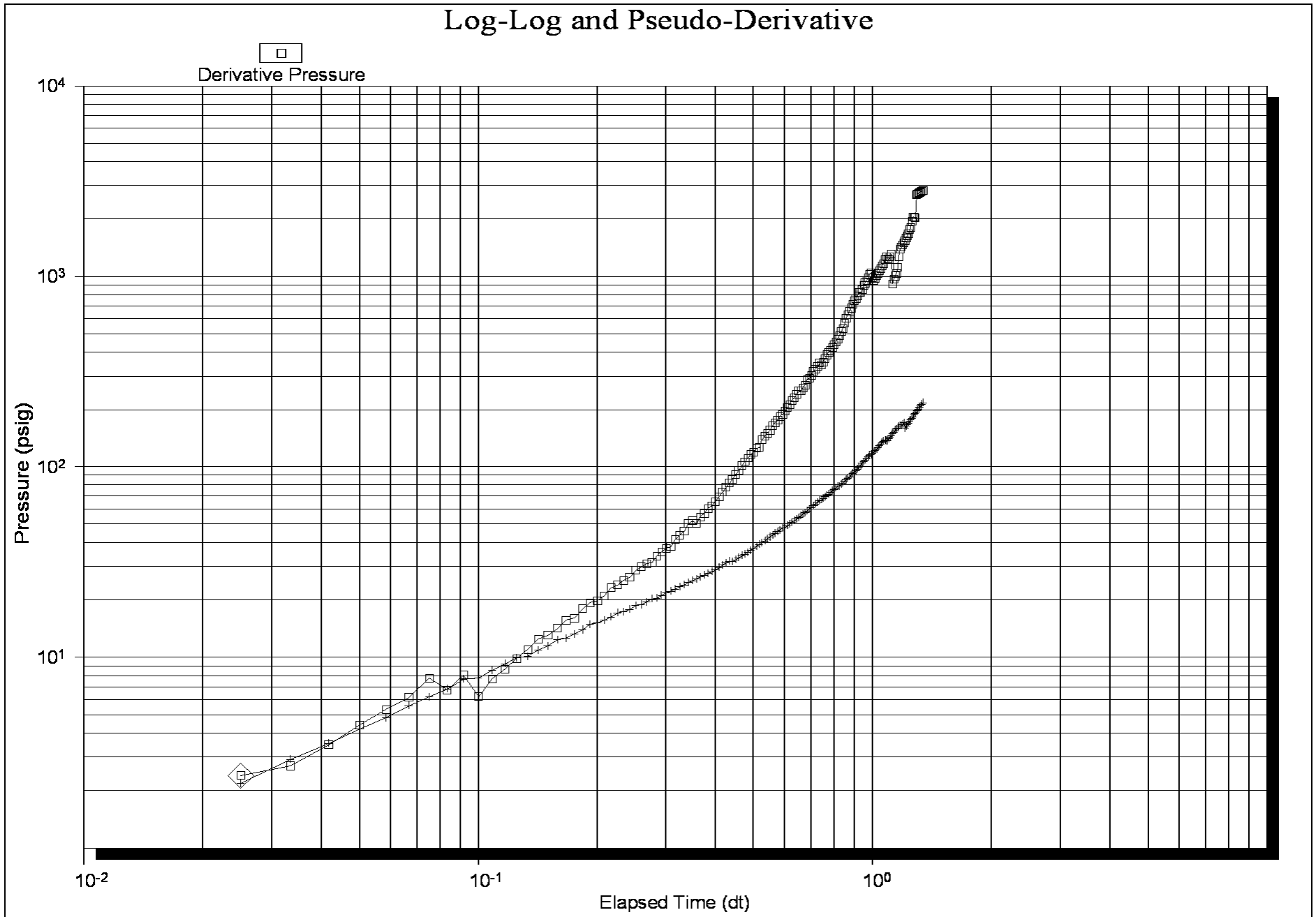


### Horner Plot











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

Well Name: LIEBL 2-1  
Location: Sec. 1-18S -12W, BARTON County, Kansas  
License Number: 15-051-25612  
Spud Date: 10/08/2011  
Surface Coordinates:  
Region: Wildcat  
Drilling Completed: 10/13/2011

Bottom Hole  
Coordinates:  
Ground Elevation (ft): 1835'      K.B. Elevation (ft): 1843'  
Logged Interval (ft): 1800'      To: 3500'      Total Depth (ft): 3500'  
Formation: Lansing, Arbuckle  
Type of Drilling Fluid:

Printed by WellSight Log Viewer from WellSight Systems 1-800-447-1534 [www.WellSight.com](http://www.WellSight.com)

**OPERATOR**

Company: Samuel Gary, Jr & Assoc.  
Address: 1515Wynkoop,Suite 700  
Denver, Co 80202  
Company Geo. Clayto Camozzi

**GEOLOGIST**


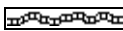
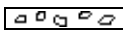
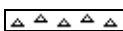
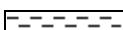



Name: JASON MARSHALL  
Company: Earth Tech, OGL, Inc  
Address: P.O. Box 683  
Hooker, Okla. 73945  
Off: 888-543-8378 Cell: 620-655-1298





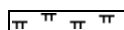

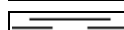
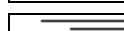
## DST's Report

**DST#1 3100'-3126'**  
**IF: SURFACE BLOW FF: NO BLOW**  
**RECOVERY 5', 100% MUD**  
 IH:1456  
 FIF:21  
 FFF:22  
 ISI:1007  
 SIF:23  
 SFF:24  
 FSI:939  
 FH:1433  
 TIMES:10,60,10,60

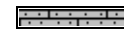





**DST#2 3230'-3260'**  
**IF: SURFACE BLOW FF: NO BLOW**  
**RECOVERY 5', 100% MUD, BHT: 102**  
 IH:1527  
 FIF:21  
 FFF:22  
 ISI:266  
 SIF:29  
 SFF:38  
 FSI:259  
 FH:1510  
 TIMES:10,60,15,75

### ROCK TYPES

	Anhy
	Bent
	Brec
	Cht
	Clyst
	Coal
	Congl
	Dol

	Gyp
	Igne
	Lmst
	Meta
	Mrlst
	Salt
	Shale
	Shcol

	Shgy
	Sltst
	Ss
	Till
	Carb sh
	Dol
	Dtd
	Gry sh

	Sandylms
	Shale
	Sltstn
	Shlyslts
	Sltlysh
	Lms

### ACCESSORIES

#### MINERAL

- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Breclrag
- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Feldspar
- Ferrpel
- Ferr
- Glau
- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr

- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff
- Chlorite
- Dol
- Sand
- Sltly

#### FOSSIL

- Algae
- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Fish
- Foram

- Fossil
- Gastro
- Oolite
- Ostra
- Pelec
- Pellet
- Pisolite
- Plant
- Strom
- Fuss
- Oomold

#### STRINGER

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

- Clystn
- Dol
- Grysh
- Gryslt
- Lms
- Sandylms
- Sh
- Sltstn

#### TEXTURE

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

### OTHER SYMBOLS

#### POROSITY TYPE

- Earthy
- Fenest
- Fracture
- Inter
- Moldic
- Organic
- Pinpoint
- Vuggy

#### SORTING

- Well
- Moderate
- Poor

#### ROUNDING

- Rounded
- Subrnd
- Subang

- Angular

#### OIL SHOWS

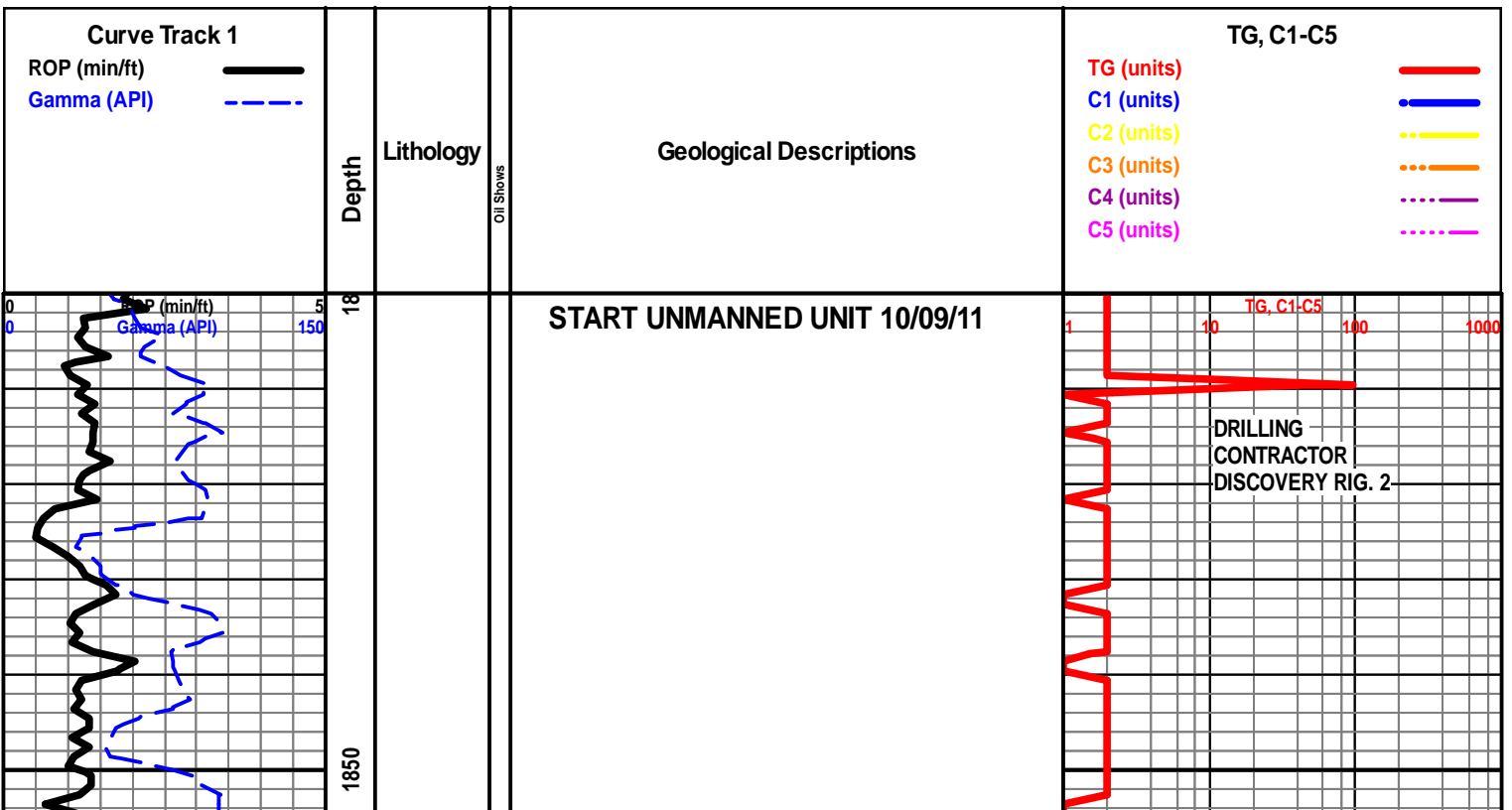
- Even
- Spotted
- Ques
- Dead
- Gas show

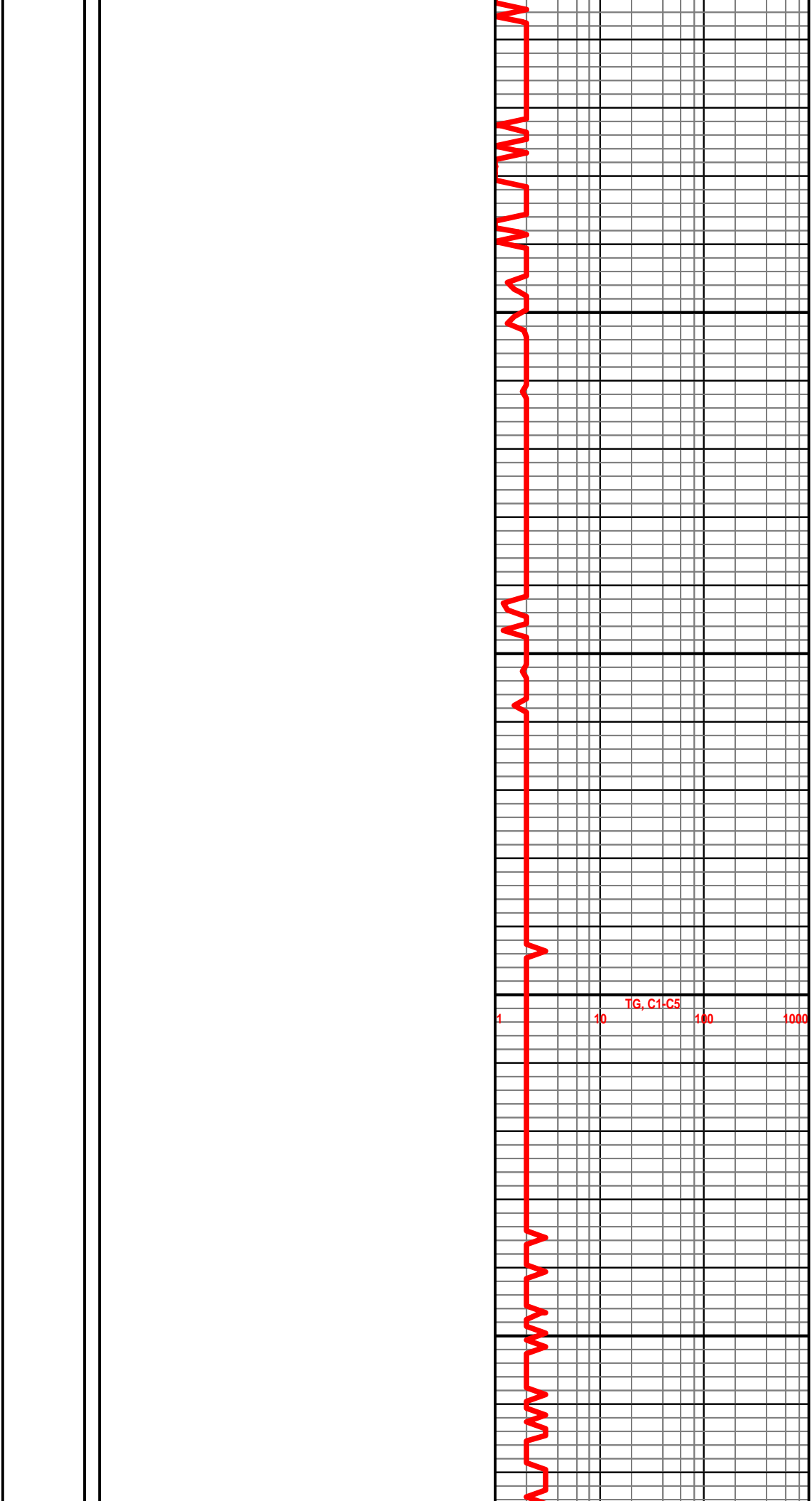
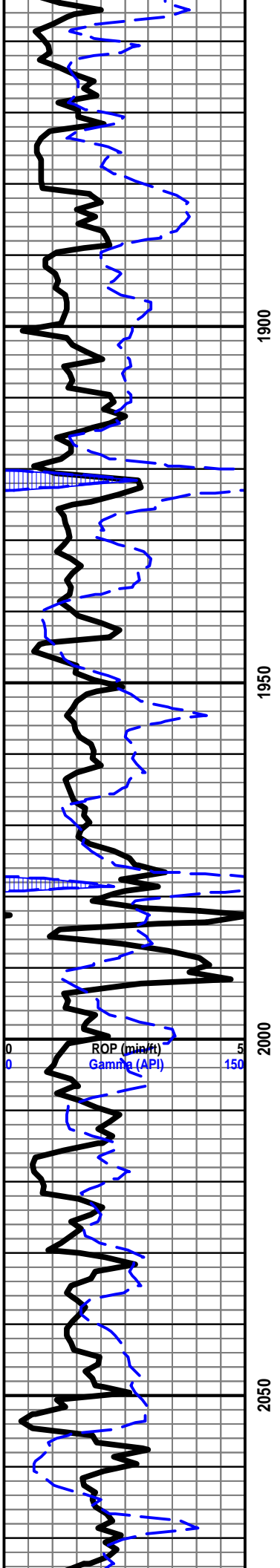
#### INTERVALS

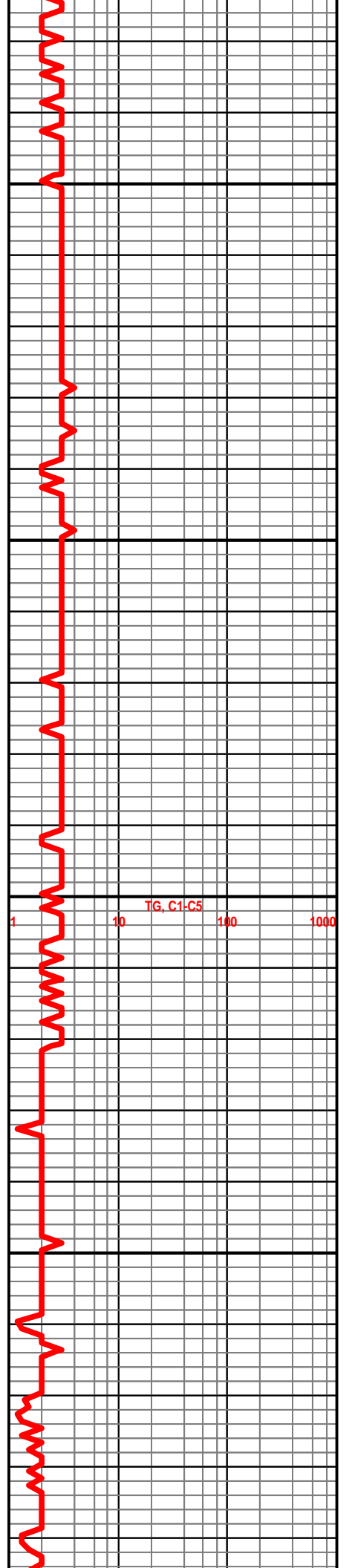
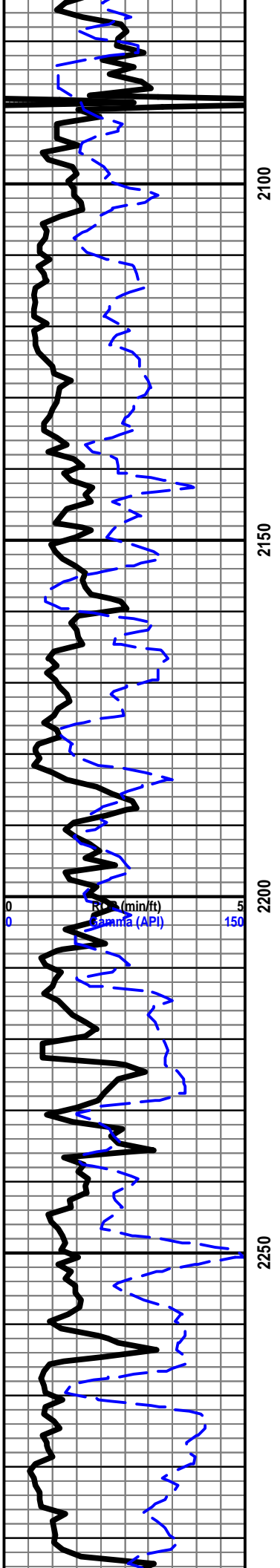
- Core
- Dst
- Dst

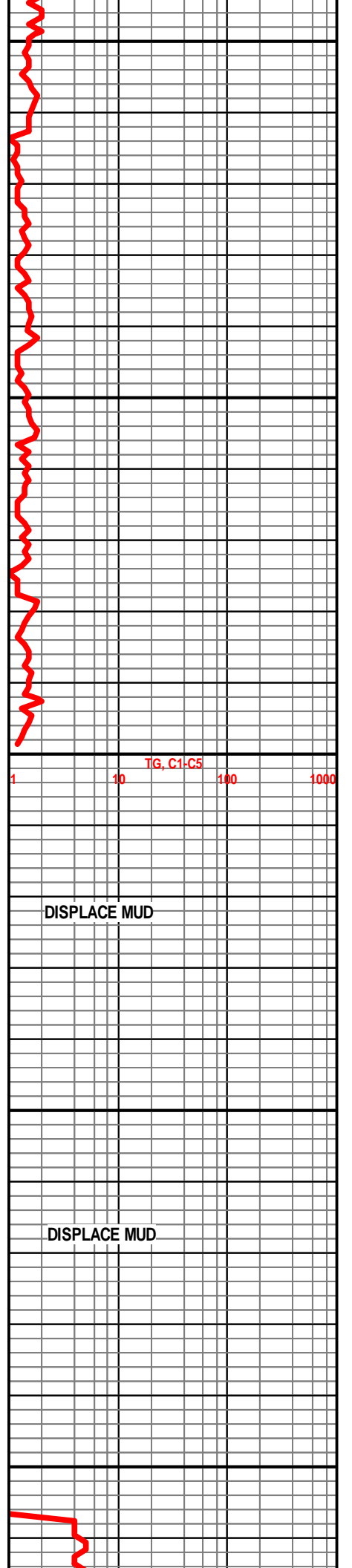
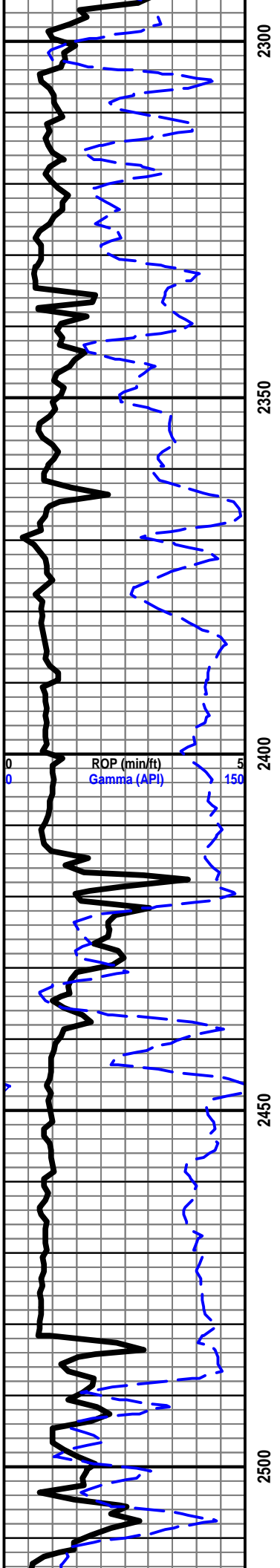
#### EVENTS

- Rft
- Sidewall





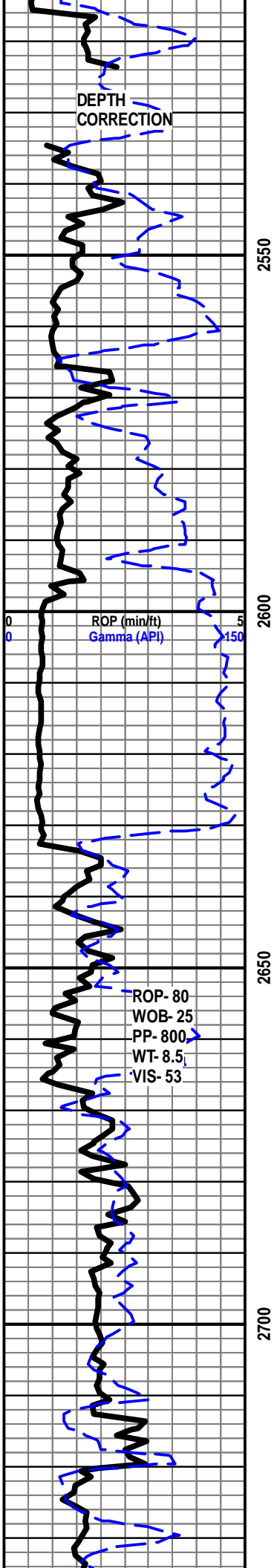




DISPLACE MUD

DISPLACE MUD





SH- LT GRY TO DK GRY, FRM, SMTH BLKY, SLI CALC

**HOWARD 2633' -790'**

LS- LT GRY GRY CRM LT TN, HD DNS TO BRITT, FN TO MD XLN, REXLN MTRX SCAT IP, IMBD CALC XLS IP, SLI TR IMBD FOSS FRAGS, TR FRM WHT CHLK SCAT IP, DLL YEL FLO IP, TR FR INTR-XLN POR, NO VIS CUT, NO VIS SHOW

SH- GRY TO DK GRY, FRM, SMTH BLKY

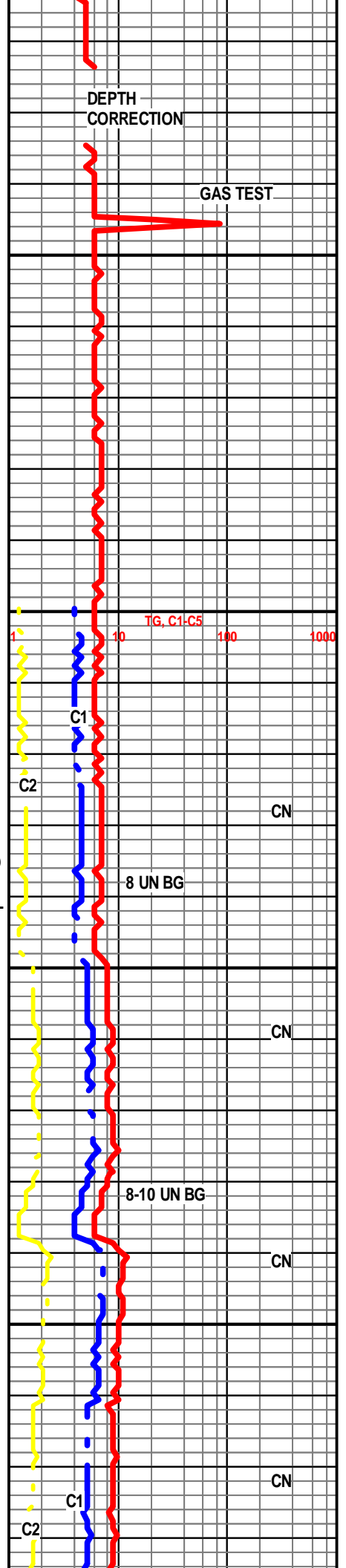
**TOPEKA 2667' -824'**

LS- GRY CRM LT TN, HD DNS TO BRITT, FN TO MD XLN, REXLN MTRX SCAT IP, IMBD CALC XLS IP, SLI TR IMBD FOSS FRAGS, TR FRM TO SFT WHT CHLK SCAT IP, TR IMBD GRY SH, DLL YEL FLO SCAT IP, NO VIS POR, NO VIS CUT, NO VIS SHOW

LS- GRY CRM, HD DNS TO BRITT, FN TO MD XLN, REXLN MTRX SCAT IP, IMBD CALC XLS IP, TR FRM TO SFT WHT CHLK SCAT IP, TR IMBD GRY SH, DLL YEL FLO SCAT IP, NO VIS POR, NO VIS CUT, NO VIS SHOW

SH- GRY TO DK GRY, FRM, SMTH BLKY

SH- GRY TO DK GRY, FRM TO TR SFT, BLKY

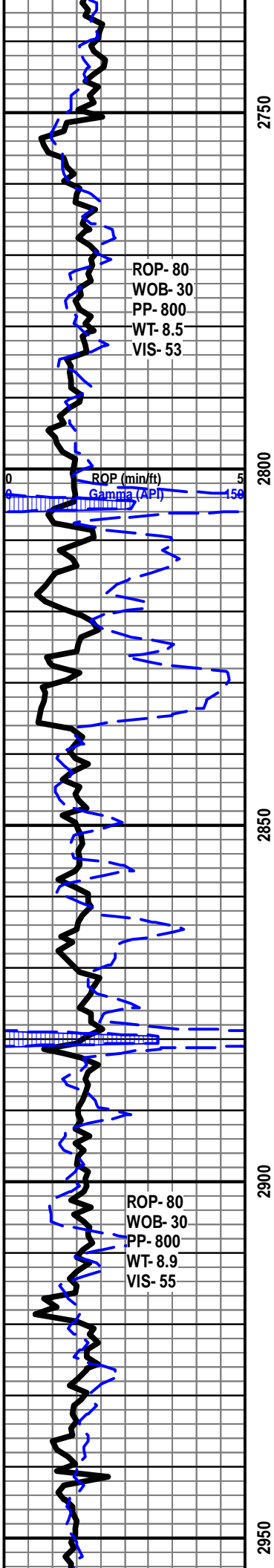


CN

CN

CN

CN



ROP- 80  
WOB- 30  
PP- 800  
WT- 8.5  
VIS- 53

ROP- 80  
WOB- 30  
PP- 800  
WT- 8.9  
VIS- 55

2750  
2800  
2850  
2900  
2950

LS- GRY CRM LT TN, HD DNS TO BRITT, FN TO MD XLN, REXLN MTRX IP, IMBD CALC XLS IP, IMBD FOSS FRAGS SCAT THRU, SLI TR FRM TO SFT GRYISH WHT CHLK, NO VIS FLO, NO VIS POR, NO VIS CUT, NO VIS SHOW

LS- GRY CRM TN, HD DNS TO BRITT, FN TO MD XLN, REXLN MTRX THRU, IMBD CALC XLS IP, IMBD FOSS FRAGS SCAT IP, TR FRM WHT CHLK IP, SLI TR IMBD GRY SH, NO VIS FLO, PR MICRO PP POR, NO VIS CUT, NO VIS SHOW

LS- GRY CRM TN, HD DNS TO BRITT, FN TO MD XLN, REXLN MTRX THRU, IMBD CALC XLS IP, IMBD FOSS FRAGS SCAT IP, TR FRM WHT CHLK IP, NO VIS FLO, NO VIS POR, NO VIS CUT, NO VIS SHOW

SH- SOFT BLACK CARB SHALE

SH- GRY TO DK GRY, FRM, SMTH BLKY, SLI CALC

SH- GRY TO DK GRY, FRM, SMTH BLKY, SLI TR LIMY, SLI TR DISS PYR

LS- GRY CRM LT TN TO TN, HD DNS TO BRITT, FN XLN TO RELN MTRX, IMBD CALC XLS SCAT THRU, IMBD FOSS FRAGS IP, IMBD PYR SCAT IP TO IMBD DISS PYR SCAT THRU, DLL YEL FLO IN 25%, NO VIS POR, NO VIS CUT, NO VIS SHOW

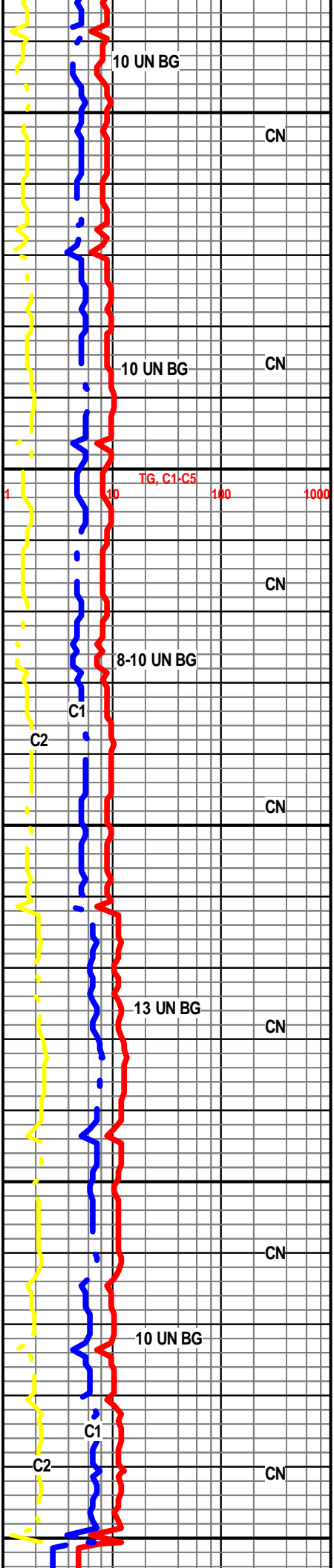
SH- GRY TO DK GRY, FRM, BLKY, SLI CALC, DISS PYR SCAT IP

SH- SOFT BLACK CARB SHALE

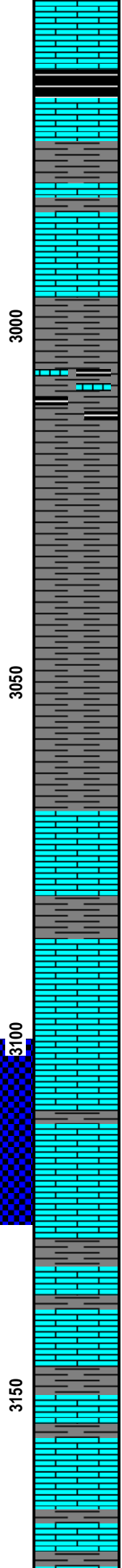
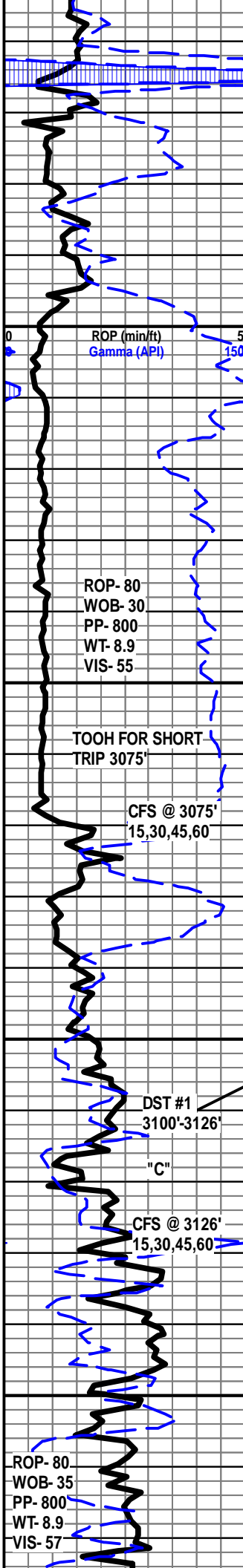
LS- CRM OFF WHT LT TN TN, HD DNS TO BRITT, FN TO MD XLN, REXLN MTRX THRU, IMBD CALC XLS SCAT IP, FRM TO SFT WHT CHLK SCAT IP, IMBD FOSS FRAGS IP, DLL YEL FLO IN 10%, NO VIS POR, NO VIS CUT, NO VIS SHOW

SH- GRY TO DK GRY, FRM, SMTH BLKY

LS- CRM OFF WHT LT TN TN, HD DNS TO BRITT, FN XLN, RXLN MTRX THRU, IMBD CALC XLS THRU, IMBD FOSS FRAGS IP, FRM WHT CHLK SCAT THRU, DLL YEL FLO IN 5%, TR PR INTR-XLN POR, NO VIS CUT, NO VIS SHOW



TIG, C1-C5  
100 1000



**HEEBNER 2964' -1121'**

SH- SOFT BLACK CARB SHALE

LS - CRM OFF WHT LT TN TN, HD DNS TO BRITT, FN TO MD XLN, REXLN MTRX THRU, SLI TR SUCRO TXT, IMBD CALC XLS THRU, SLI TR IMBD FOSS FRAGS IP, TR FRM CHLK SCAT IP, SLI TR IMBD DISS PYR IP, DLL YEL FLO IN 45%, TR FR INTR-XLN POR, PR FLUSH CUT IP, NO STREAM CUT, NO ODOR

**DOUGLAS 2996' -1153'**

SH- GRY TO DK GRY, FRM, BLKY CALC TO LIMY

SH- GRY TO DK GRY, FRM TR SFT, SMTH BLKY

SH- GRY TO DK GYR, FRM SFT IP, BLKY, SLI TR DISS PYR

**BROWN LIME 3069' -1226'**

LS- LT TN TO TN DK CRM, HD DNS TO TT, FN XLN, REXLN MTRX IP, SUCRO TXT, IMBD CALC XLS SCAT IP, IMBD GRY SH SCAT IP, DLL YEL FLO IN 20%, PR INTR-XLN POR, PR FLUSH CUT IP TO PR STREAM CUT IN 5%, NO ODOR

**LANSING 3087' -1244'**

LS- CRM OFF WTH LT TN, HD DNS TO TT, FN XLN, REXLN MTRX IP, IMBD CALC XLS SCAT IP, IMBD FOSS FRAGS IP, IMBD DISS PYR SCAT IP, DLL YEL FLO IN 10%, TR PR INTR-XLN POR, NO VIS CUT, NO VIS SHOW

**LANSING "X" 3110' -1267'**

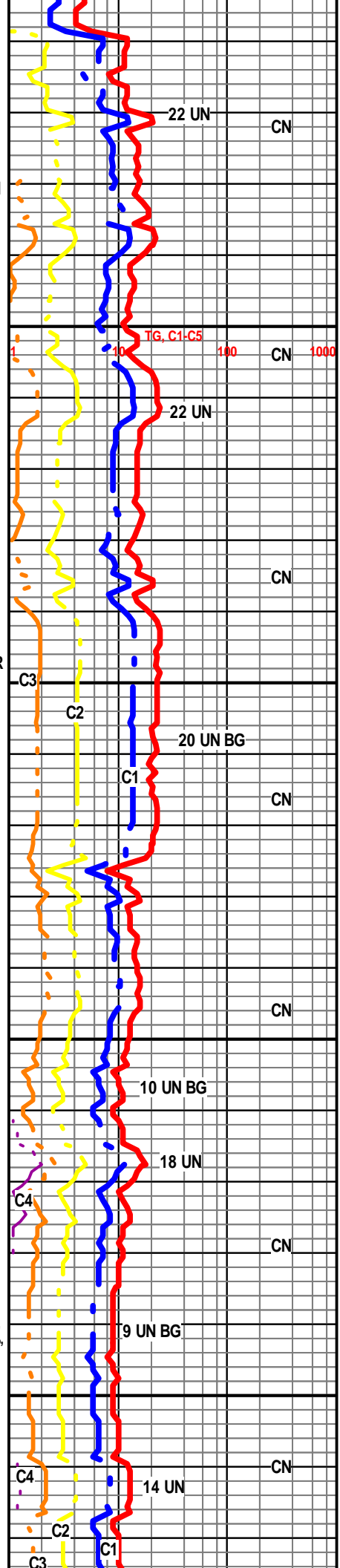
LS- CRM LT TN TO TN, STAIN IN 35%, HD DNS TO BRITT, FN XLN, REXLN MTRX, SUCRO TXT IP, IMBD CALC XLS SCAT IP, IMBD OOL SCAT IP, TR IMBD FOSS FRAGS IP, FRM WHT CHLK SCAT IP, DLL GLD FLO SCAT THRU, FR TO TR GD INTR-XLN TO SLI TR FR OOLCST POR, GD FLUSH CUT THRU TO GD STRONG MLKY BLUE STREAM CUT IN 35%, PR OIL ODOR

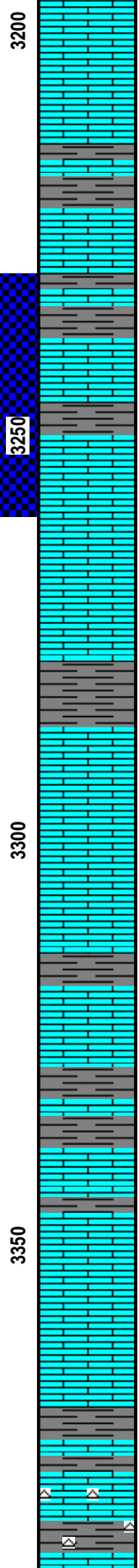
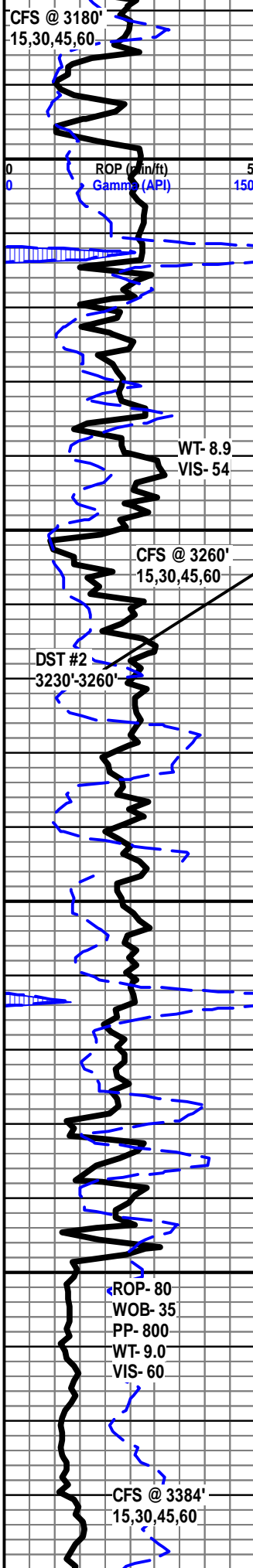
LS- CRM LT TN TO TN, STAIN IN 5%, HD DNS TO BRITT, FN XLN, REXLN MTRX, IMBD CALC XLS SCAT IP, TR IMBD OOL SCAT IP, FRM WHT CHLK IMBD IP, DLL YEL FLO SCAT THRU, FR INTR-XLN TO SLI TR FR VUG POR, FR FLUSH CUT THRU TO GD STRONG MLKY BLUE STREAM CUT IN 25%, NO ODOR

SH- GRY TO DK GRY TR DK BRN, FRM TO SFT, SMTH BLKY, SLI LIMY IP

LS- CRM OFF WHT TN, HD DNS TO BRITT, FN TO MD XLN REXLN MTRX THRU, IMBD CALC XLS SCAT IP, IMBD FOSS FRAGS THRU, SLI TR IMBD OOL SCAT IP, DLL YEL FLO IN 35%, FR INTR-XLN TO GD PPPOR, TR FR FOSSIC POR, GD FLUSH CUT THRU TO GD STRONG MLKY BLUE STREAM CUT IN 45%, LT TN STAIN ON DISH

LS- CRM LT TN TO TN OFF WHT, HD DNS TO BRITT, FN XLN TO REXLN MTRX, IMBD FOSS FRAGS SCAT IP, IMBD OOL SCAT THRU, TR IMBD





GRN CLAY SCAT IP, DLL GLD FLO IN 45%, FR TO TR GD OOLCST TO TR FR MICRO PP POR, PR FLSUH CUT THRU TO PR WEAK MLKY BLUE STREAM CUT IN 10%, NO ODOR

LS- CRM LT TN TO TN OFF WHT, HD DNS TO BRITT, FN XLN TO REXLN MTRX, IMBD FOSS FRAGS SCAT IP, IMBD OOL SCAT THRU, DLL GLD FLO IN 25%, FR OOLCST TO TR PR MICRO PP POR, NO VIS CUT, NO VIS SHOW

**LANSING "Z" 3214' -1371'**

LS- CRM OFF WHT LT TN, STAIN IN 10%, HD DNS TO BRITT, FN TO MD XLN REXLN MTRX THRU, IMBD CALC XLS SCAT THRU, IMBD FOSS FRAGS IP, SLI TR IMBD OOL IP, FRM WHT CHLK SCAT THRU, DLL YEL FLO THRU TO TR BRIT IN 5%, FR TO TR GD INTR-XLN POR, NO VIS CUT NO VIS SHOW

LS- CRM OFF WHT LT TN, STAIN IN 15%, HD DNS TO BRITT, FN TO MD XLN REXLN MTRX THRU, IMBD CALC XLS SCAT THRU, TR IMBD PYR IP, IMBD OOL SCAT IP, DLL YEL FLO THRU, FR TO TR GD INTR-XLN POR TO TR PR OOLCST POR, FR FLUSH CUT THRU TO GD STRONG MLKY BLUE CUT IN 20%, FR TO GD OIL ODOR

LS- CRM OFF WHT LTN TIN TO TN, STAIN IN 35%, HD DNS TO BRITT, FN XLN REXLN MTRX, SUCRO TXT IP, IMBD CALC XLS SCAT THRU, SLI TR IMBD FRM WHT CHLK, TR IMBD OOL SCAT THRU, DLL YEL FLO THRU TO BRIT GLD FLO IN 25%, GD INTR-XLN POR TO FR VUG TO TR FR OOLCST, GD FLUSH CUT THRU, GD STRONG MLKY BLUE STREAM CUT SCAT THRU, GD OIL ODOR, TN STAIN ON DISH

**STARK SHALE 3279' -1436'**

SH- GRAY TO DK GRAY, FRM, SMTH BLKY TO SLI SPLINTY

LS- CRM OFF WHT TO WHT LT TN TO TN, HD DNS TO BRITT, FN TO MD XLN SUCRO MTRX SCAT IP, IMBD CALC XLS SCAT THRU, IMBD FOSS FRAGS SCAT IP, DLL GLD FLO SCAT THRU, FR TO TR GD INTR-XLN POR, NO VIS CUT, NO VIS SHOW

SH- GRAY TO DK GRAY, FRM TO SFT, SMTH SPLINTY

LS- CRM OFF WHT LT TN TO TN, HD DNS TO BRITT, FN XLN REXLN MTRX, SUCRO TXT SCAT THRU, IMBD CALC XLS THRU, IMBD TR FOSS FRAGS, SLI TR FRM WHT CHLK IP, DLL YEL FLO IN 5%, PR INTR-XLN POR, NO VIS CUT, NO VIS SHOW

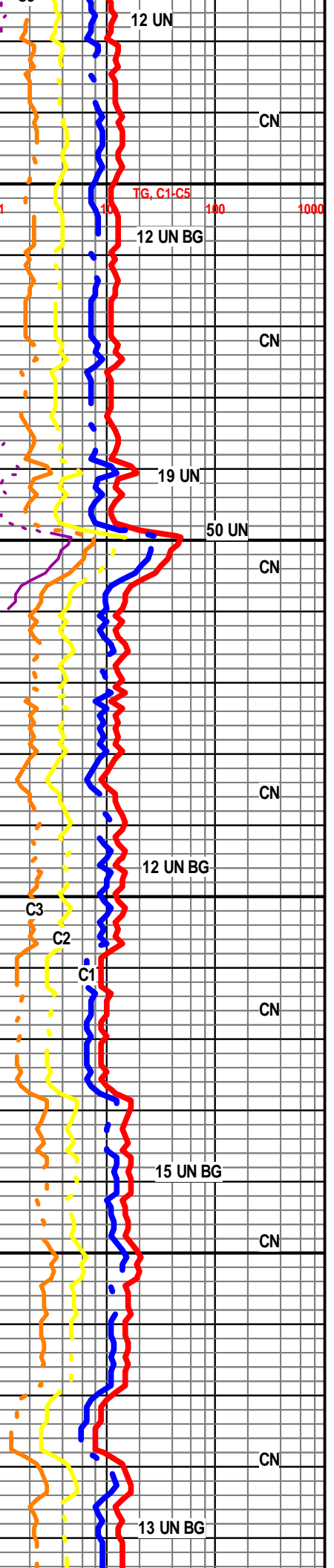
LS- CRM OFF WHT LT TN, HD DNS TO BRITT, FN XLN REXLN MTRX, IMBD CALC XLS THRU, SLI TR FRM WHT CHLK IP, DLL YEL FLO IP, PR INTR-XLN POR, NO VIS CUT, NO VIS SHOW

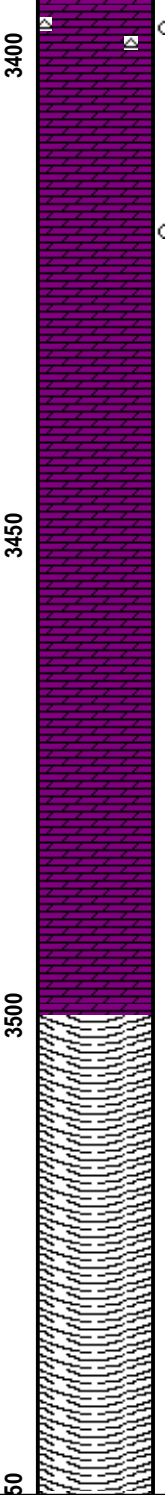
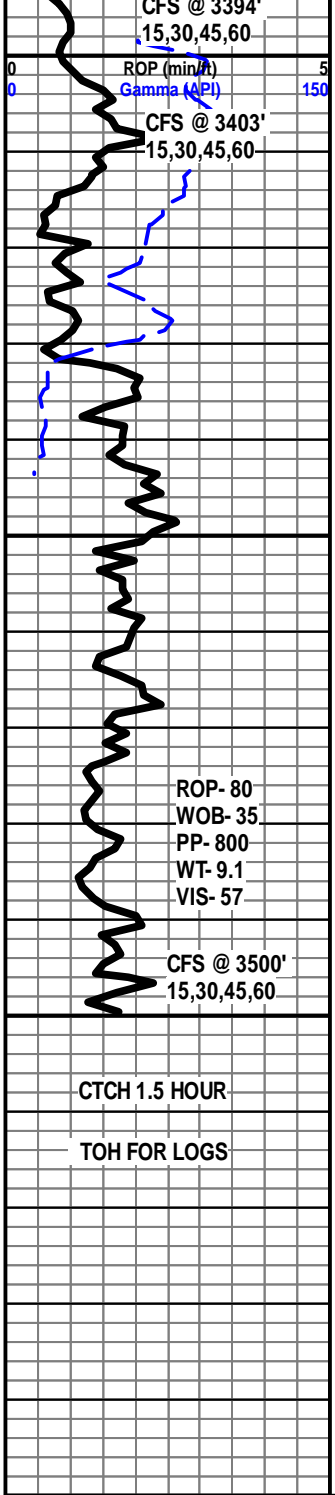
LS- CRM OFF WHT WHT LT TN, HD DNS TO BRITT, FN XLN REXLN MTRX IP, IMBD CALC XLS SCAT IP, TR FRM WHT CHLK IP, SLI TR WHT CHRT SCAT IP, DLL YEL FLO IN 2%, NO VIS POR, NO VIS CUT, NO VIS SHOW

LS- CRM OFF WHT TN, HD DNS TO BRITT, FN XLN TO REXLN MTRX, IMBD CALC XLS SCAT IP, FRM TO SFT WHT CHLK SCAT THRU, YELISH WHT PINK CHRT SCAT THRU, TR GUMMY RDISH BRN SHALE SCAT THRU, DLL YEL FLO THRU, NO VIS POR, NO VIS CUT, NO VIS SHOW

**ARBUCLE 3390' -1547'**

DOL- CRM BUFF TO OFF WHT WHT, HD TT TO BRITT, V/FN TO FN SURCO





MTRX, ABDT IMBD AN LMNTD V/FN FRSTY WHT SM S/RND TO RND QURTZ GRNS, IMBD CHLK SCAT THRU, YELISH WHT CHRT SCAT THRU, DLL GLD YEL FLO SCAT IP, FR MICRO PP POR TO FR INTR-XLN POR, PR FLUSH CUT TO PR RING, NO ODOR

DOL- LT GRY OFF WHT CRM, HD DNS TO BRITT. FN TO MD XLN TO SUCRO MTRX THRU, IMBD ABDT SM TO MD ANG TO S/RND DOL GRNS. TR FRM WHT CHLK IP, TR IMBD DISS PYR SCAT THRU, DLL GLD FLO THRU, FR INTR-XLN POR, PR FLUSH CUT THRU, NO STREAM CUT, NO ODOR, NO STAIN

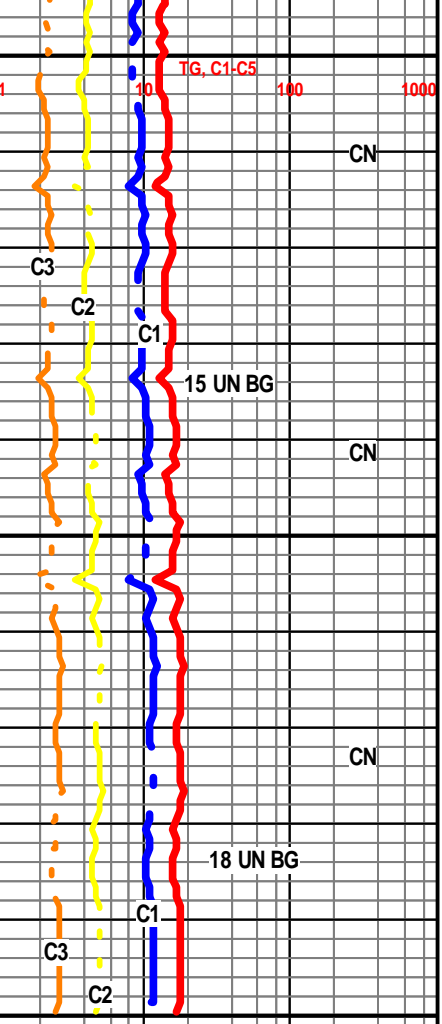
DOL- CRM OFF WHT WHT, HD DNS TO BRITT. FN TO MD XLN TO SUCRO MTRX THRU, IMBD ABDT SM TO MD ANG TO S/RND DOL GRNS. TR FRM WHT CHLK SCAT IP, TR GRN CLAY SCAT IP, DLL YEL FLO THRU, FR TO GD INTR-XLN POR, NO VIS CUT, NO VIS SHOW, NO ODOR

DOL- OFF WHT WHT, HD DNS TO BRITT. FN TO MD XLN TO SUCRO MTRX THRU, IMBD ABDT SM TO MD ANG TO S/RND DOL GRNS. TR FRM WHT CHLK SCAT IP, DLL YEL FLO THRU, GD INTR-XLN TO FR VUG POR, NO VIS CUT, NO VIS SHOW, NO ODOR

DOL- OFF WHT WHT, HD DNS TO BRITT. FN TO MD XLN TO SUCRO MTRX THRU, IMBD ABDT SM TO MD ANG TO S/RND DOL GRNS. TR FRM WHT CHLK SCAT IP, DLL YEL FLO THRU, FR TO GD INTR-XLN POR, NO VIS CUT, NO VIS SHOW

**RTD 3500' @ 5:00 PM 10/13/2011**  
**LOGS BY WEATHERFORD**  
**LIBERAL, KANSAS**

THANK YOU FOR CHOOSING EARTHTECH



SAMPLES WILL BE DELIVERED TO THE KGS

LOG COMPLETED BY  
 JASON MARSHALL