

Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1248252
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: _____

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

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

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

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
--	---

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

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	Samuel Gary Jr. & Associates, Inc.
Well Name	OTTLEY 1-18
Doc ID	1248252

All Electric Logs Run

DEN-NEUT
INDUCTION
MICRO
SONIC
SPECTRAL



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: 12/13/2014
 Invoice # 739
 P.O.#:
 Due Date: 1/12/2015
 Division: Russell

Invoice

RECEIVED
 DEC 17 2014
 HAYS, KANSAS

Contact:
 Samuel Gary Jr & Associates Inc
Address/Job Location:
 Samuel Gary Jr & Associates Inc
 1935 LOUIE ROAD
 HAYS KANSAS 67601

DRLG COMP W/O LOE GG

Account	8200.138
Well/Prospect	
Deck	
AFE	
Approval	<i>[Signature]</i>
Description	

RECEIVED

DEC 19 2014

SAMUEL GARY JR.
 & ASSOCIATES, INC.

Reference:
 OTTLEY 1-18

Description of Work:
 SURFACE JOB

Services / Items Included:	Quantity	Price	Taxable	Item	Quantity	Price	Taxable
Labor		\$ 963.85	No				
Common-Class A	175	\$ 3,047.92	Yes				
Bulk Truck Matl-Material Service Charge	184	\$ 388.44	No				
Calcium Chloride	6	\$ 352.51	Yes				
Pump Truck Mileage-Job to Nearest Camp	27	\$ 284.43	No				
Flo Seal	87	\$ 183.67	Yes				
Bulk Truck Mileage-Job to Nearest Bulk Plant	27	\$ 166.44	No				
Premium Gel (Bentonite)	3	\$ 51.55	Yes				

Invoice Terms:

Net 30

SubTotal: \$ 5,438.81

Discount Available ONLY if Invoice is Paid & Received within listed terms of invoice: \$ (815.82)

SubTotal for Taxable Items: \$ 3,090.30

SubTotal for Non-Taxable Items: \$ 1,532.69

Total: \$ 4,622.99

Tax: \$ 251.86

8.15% Sheridan County Sales Tax

Amount Due: \$ 4,874.85

Applied Payments:

Balance Due: \$ 4,874.85

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.
 ©2008-2013 Straker Investments, LLC. All rights reserved.

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. 739

Date	Sec.	Twp.	Range	County	State	On Location	Finish
12-12-14	18	10	30	Sheridan	KS		7:45 PM

Location Grinnell N to 120 4 1/4 W S into

Lease <u>Ottley</u>	Well No. <u>1-18</u>	Owner
Contractor <u>Discovery #4</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>Surface</u>		Charge To <u>Sam Gary Jr.</u>
Hole Size <u>12 1/4</u>	T.D. <u>263'</u>	Street
Csg. <u>8 5/8</u>	Depth <u>263'</u>	City
Tbg. Size	Depth	State
Tool	Depth	The above was done to satisfaction and supervision of owner agent or contractor.
Cement Left in Csg. <u>20'</u>	Shoe Joint	Cement Amount Ordered <u>175 com 3% cc 2% Gel</u>
Meas Line	Displace <u>15 1/2 bbl</u>	<u>1/2 flo seal</u>

EQUIPMENT

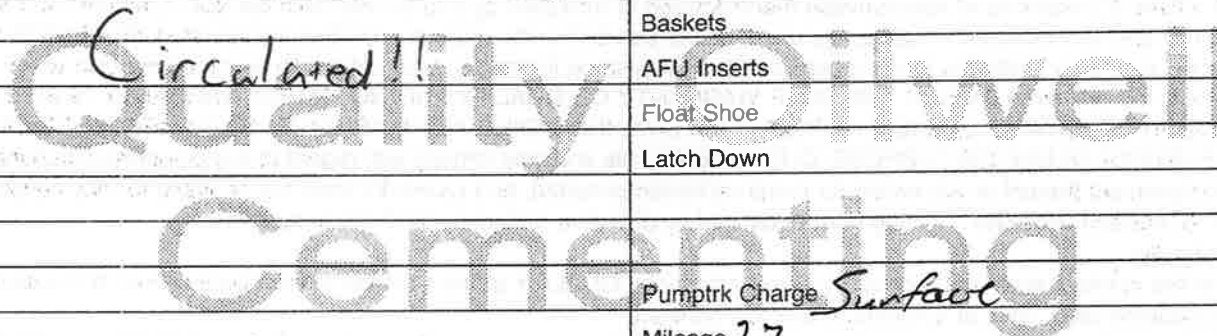
Pumptrk <u>20</u>	No.	Cementer	Common <u>175</u>
		Helper <u>Craig</u>	Poz. Mix
Bulktrk <u>9</u>	No.	Driver <u>Ryan</u>	Gel. <u>3</u>
		Driver <u>Brett</u>	Calcium <u>6</u>

JOB SERVICES & REMARKS

Remarks:	Hulls
Rat Hole	Salt
Mouse Hole	Flowseal <u>87#</u>
Centralizers	Kol-Seal
Baskets	Mud CLR 48
D/V or Port Collar	CFL-117 or CD110 CAF 38
	Sand
	Handling <u>184</u>
	Mileage

FLOAT EQUIPMENT

<u>Cement</u>	Guide Shoe
	Centralizer
	Baskets
	AFU Inserts
	Float Shoe
	Latch Down



Pumptrk Charge Surface
Mileage 27

X Signature Mike Joseph

Tax
Discount
Total Charge


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. 742

Date	12-22-14	Sec.	18	Twp.	10	Range	30	County	Sheridan	State	KS	On Location		Finish	2:15 PM				
Location								Grinnell 4 1/2 N to Rd 120 4 1/2 W S.W.											
Lease	Ottley			Well No.	1-18			Owner											
Contractor	Discovery #4			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 Gary Jr.							
Hole Size	7 7/8			T.D.	4591'			Street											
Csg.	5 1/2			Depth	4584'			City								State			
Tbg. Size				Depth				The above was done to satisfaction and supervision of owner agent or contractor.											
Tool				Depth				Cement Amount Ordered								180 Q pro-c 10% Salt 5% bit 1/4 ft			
Cement Left in Csg.	43.35'			Shoe Joint	43.35'			480 QMDC 1/2 fb											
Meas Line				Displace	108 bbl			Common								180 Q pro-c			
EQUIPMENT				Poz. Mix								480 Qmbc							
Pumptrk	5	No.		Cementer	Brett			David			Gel.								
Bulktrk	19	No.		Driver	Chad			Calcium								KCL 2 gal			
Bulktrk	9	No.		Driver	Tyson			Hulls								Salt 16			
JOB SERVICES & REMARKS				Remarks:								Flowseal				285 #			
Rat Hole - 30sx				Mouse Hole - 15sx								Kol-Seal				900 #			
Centralizers 1,3,5,7,9,11,13,15,48,60,77,81				Mud CLR 48 - 500 gal								CFL-117 or CD110 CAF 38				20 bbl KCL			
Baskets - 49,61,78 + 90				D/V or Port Collar								Sand				Handling		685	
Mixed 500 Gal Mud Flush				Mileage								5 1/2				FLOAT EQUIPMENT			
Plugged Rat + Mouse				Guide Shoe								Centralizer - 8 turbos + 4 Reg				Baskets - 4			
Mixed 435 QMDC				AFU Inserts								Float Shoe - 1				Latch Down - 1			
Mixed 180 Q-Pro-c				Lift pressure @ 1000 lb								Pumptrk Charge				prod string			
Displaced 108 bbl 1st 20 KCL				Landed @ 2000 lbs								Mileage				27			
Plug held				Cement Circulated!!								Tax							
80 sks to Pit				Discount								Total Charge							
Signature																			



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates Inc.

18/10s/30w Sheridan KS

1515 Wynkoop STE 700
Denver, CO 80202

Ottley #1-18

Job Ticket: 60837

DST#: 1

ATTN: Clayton Camozzi

Test Start: 2014.12.17 @ 16:35:00

GENERAL INFORMATION:

Formation: **LKC "D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:40:00

Time Test Ended: 00:12:30

Test Type: Conventional Bottom Hole (Initial)

Tester: James Winder

Unit No: 83

Interval: 4060.00 ft (KB) To 4082.00 ft (KB) (TVD)

Reference Elevations: 2941.00 ft (KB)

Total Depth: 4082.00 ft (KB) (TVD)

2933.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8791

Inside

Press@RunDepth: 79.23 psig @ 4061.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.17

End Date:

2014.12.18

Last Calib.:

2014.12.18

Start Time:

16:35:05

End Time:

00:12:29

Time On Btm:

2014.12.17 @ 18:39:45

Time Off Btm:

2014.12.17 @ 22:18:00

TEST COMMENT:

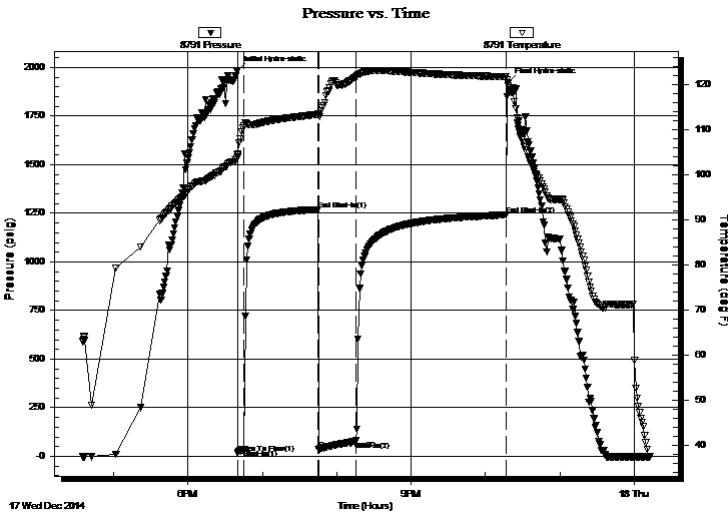
5 - IF: Blow built to 3 1/2" (Diesel in bucket)

60 - ISI: Surface blow back, lasted about 15 min., then dead

30 - FF: Blow built to BOB (11") at 27 1/2 min.

120 - FSI: Surface blow back at 15 min., lasted about 10 min., then dead

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1983.97	104.33	Initial Hydro-static
1	16.99	103.88	Open To Flow (1)
6	34.06	110.81	Shut-In(1)
65	1269.42	113.41	End Shut-In(1)
66	37.86	113.07	Open To Flow (2)
96	79.23	121.70	Shut-In(2)
217	1242.36	121.77	End Shut-In(2)
219	1922.35	120.49	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
130.00	MCW w/trace oil 70%w, 30%m	1.54
10.00	SMCO 93%o, 5%m, 2%g	0.14

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates Inc.

1515 Wynkoop STE 700
Denver, CO 80202

ATTN: Clayton Camozzi

18/10s/30w Sheridan KS

Ottley #1-18

Job Ticket: 60837

DST#: 1

Test Start: 2014.12.17 @ 16:35:00

GENERAL INFORMATION:

Formation: **LKC "D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:40:00

Time Test Ended: 00:12:30

Test Type: Conventional Bottom Hole (Initial)

Tester: James Winder

Unit No: 83

Interval: 4060.00 ft (KB) To 4082.00 ft (KB) (TVD)

Total Depth: 4082.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2941.00 ft (KB)

2933.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8320 Fluid

Press@RunDepth: psig @ 4027.00 ft (KB)

Start Date: 2014.12.17

End Date: 2014.12.18

Start Time: 16:35:05

End Time: 00:10:44

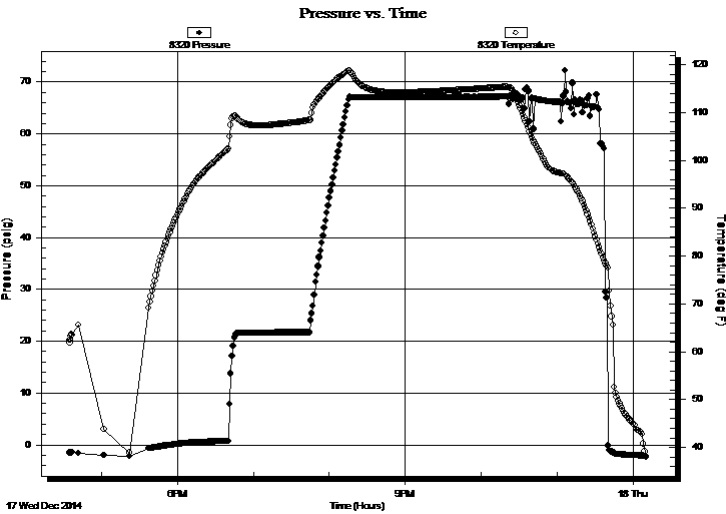
Capacity: 8000.00 psig

Last Calib.: 2014.12.18

Time On Btm:

Time Off Btm:

TEST COMMENT: 5 - IF: Blow built to 3 1/2" (Diesel in bucket)
60 - ISI: Surface blow back, lasted about 15 min., then dead
30 - FF: Blow built to BOB (11") at 27 1/2 min.
120 - FSI: Surface blow back at 15 min., lasted about 10 min., then dead



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
130.00	MCW w/trace oil 70%w, 30%m	1.54
10.00	SMCO 93%o, 5%m, 2%g	0.14

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Samuel Gary Jr. & Associates Inc.

18/10s/30w Sheridan KS

1515 Wynkoop STE 700
Denver, CO 80202

Ottley #1-18

Job Ticket: 60837

DST#: 1

ATTN: Clayton Camozzi

Test Start: 2014.12.17 @ 16:35:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

33.2 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

63000 ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
130.00	MCW w /trace oil 70%w , 30%m	1.541
10.00	SMCO 93%o, 5%m, 2%g	0.140

Total Length: 140.00 ft Total Volume: 1.681 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

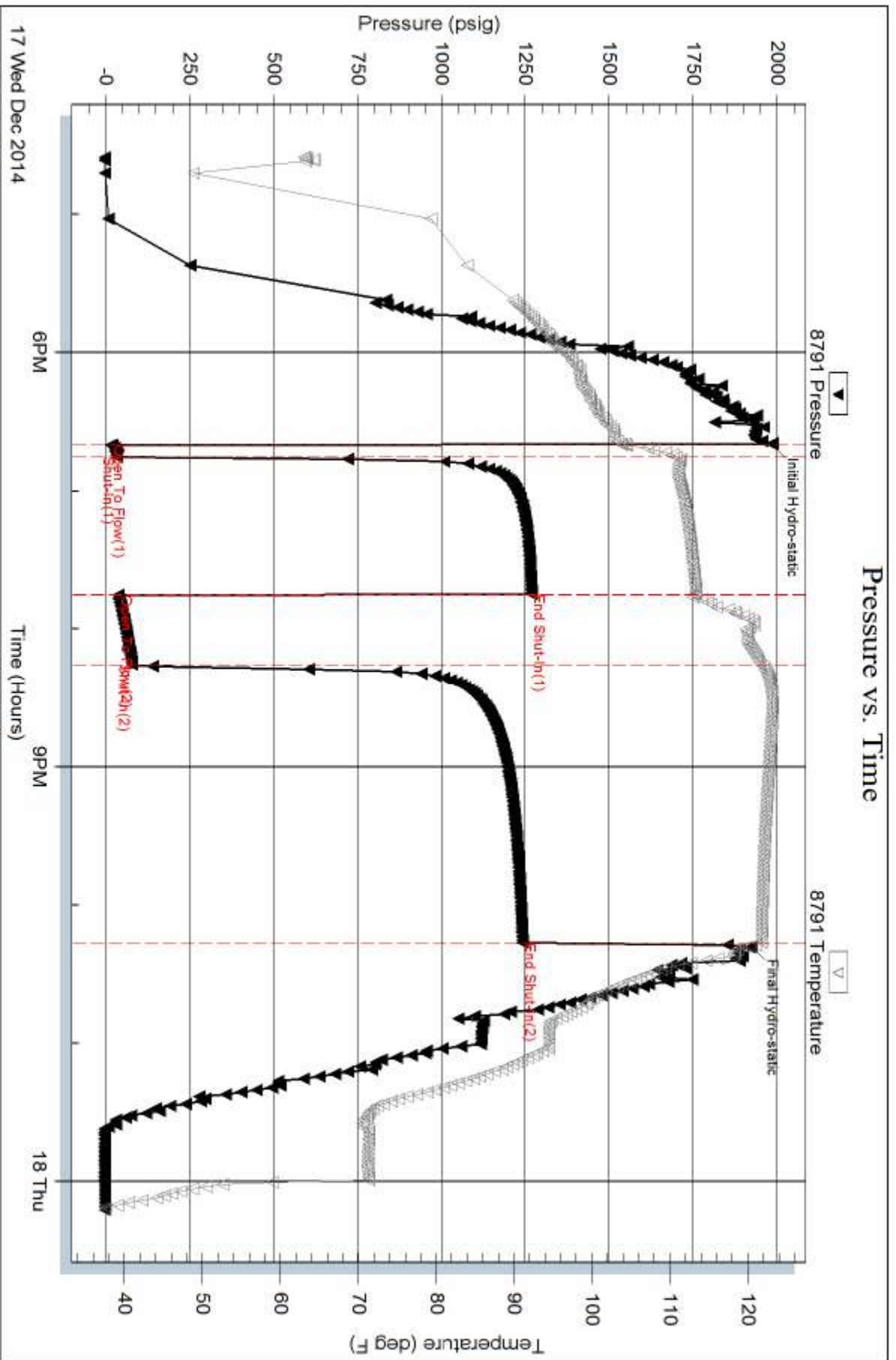
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Gravity = 31.2 api @ 40 deg F Corrected Gravity = 33.2 api
RW = .245 ohms @ 34.8 def F Chlorides = 63,000 ppm

Pressure vs. Time



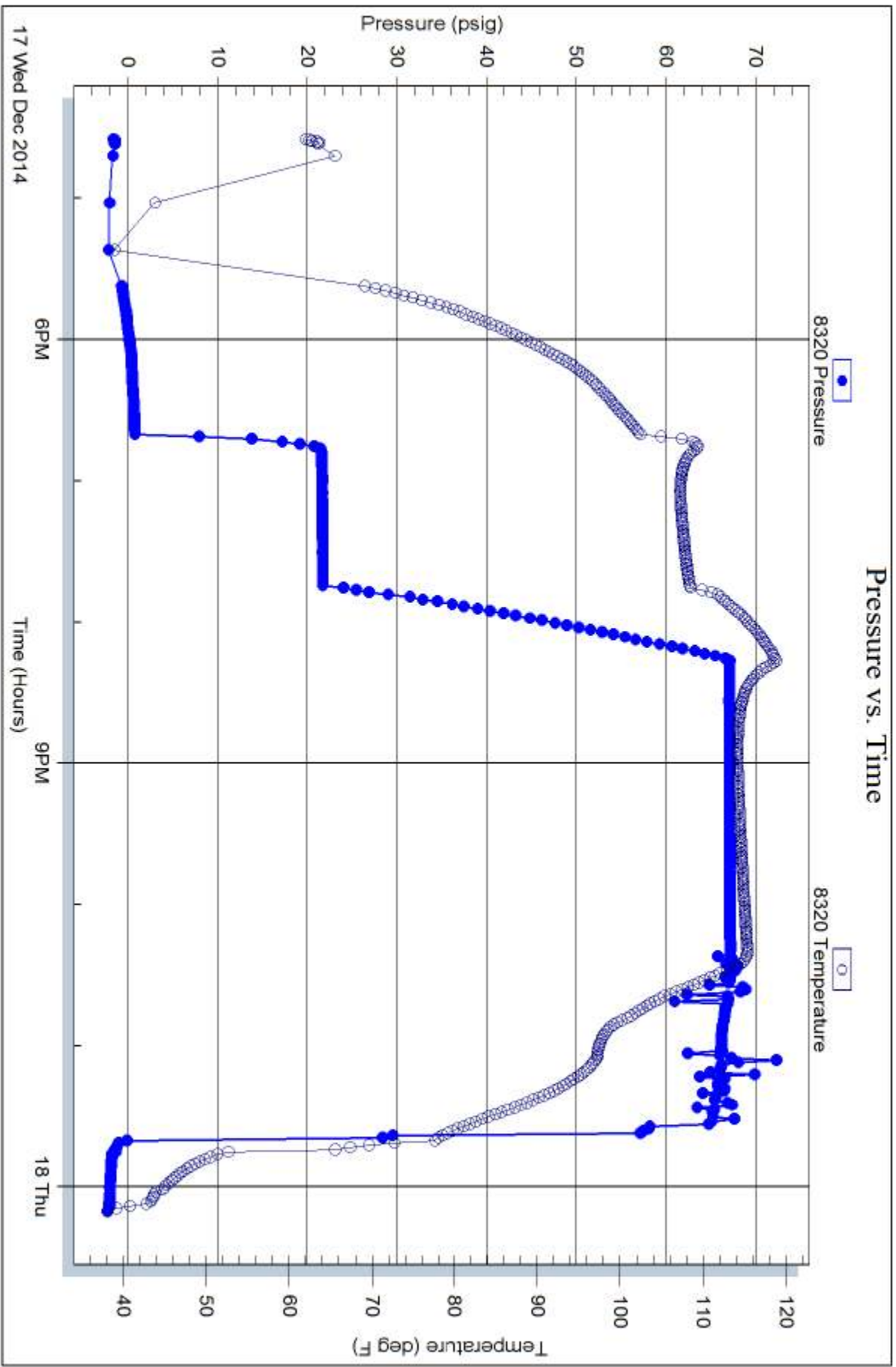
Serial #: 8320

Fluid

Samuel Gary Jr. & Associates Inc.

Otley #1-18

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 60837

Printed: 2014, 12, 18 @ 08:12:31



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates Inc.

18/10s/30w Sheridan KS

1515 Wynkoop STE 700
Denver, CO 80202

Ottley #1-18

Job Ticket: 60838

DST#: 2

ATTN: Clayton Camozzi

Test Start: 2014.12.18 @ 16:18:00

GENERAL INFORMATION:

Formation: **LKC "I"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 18:21:45
 Time Test Ended: 23:50:15
 Interval: **4154.00 ft (KB) To 4185.00 ft (KB) (TVD)**
 Total Depth: 4185.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: James Winder
 Unit No: 83
 Reference Elevations: 2941.00 ft (KB)
 2933.00 ft (CF)
 KB to GR/CF: 8.00 ft

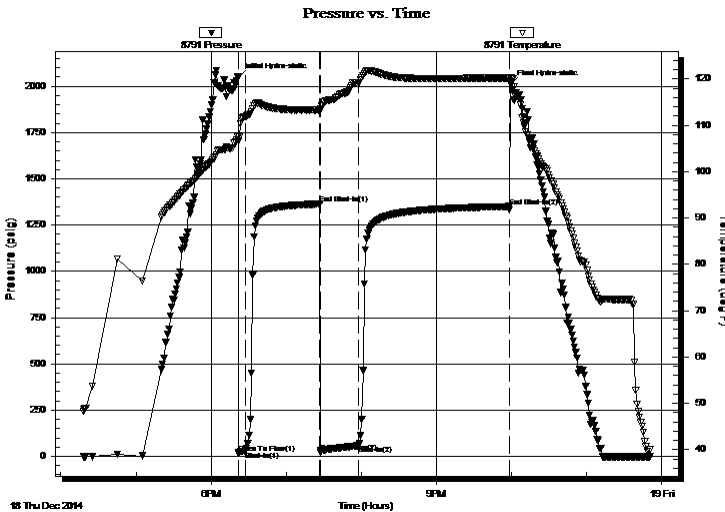
Serial #: 8791

Inside

Press @ Run Depth: 57.62 psig @ 4155.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.12.18 End Date: 2014.12.18 Last Calib.: 2014.12.19
 Start Time: 16:18:05 End Time: 23:50:14 Time On Btm: 2014.12.18 @ 18:21:30
 Time Off Btm: 2014.12.18 @ 21:59:15

TEST COMMENT: 5 - IF: Blow built to 5 1/2" (Diesel in bucket)
 60 - ISI: Surface blow back, lasted 5 - 10 min., then dead
 30 - FF: 5" Surge blow at open, built to BOB (11") at 5 min.
 120 - FSI: No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2046.83	107.54	Initial Hydro-static
1	15.21	106.56	Open To Flow (1)
6	28.84	111.90	Shut-In(1)
66	1363.83	113.43	End Shut-In(1)
66	23.38	113.47	Open To Flow (2)
97	57.62	119.20	Shut-In(2)
217	1350.72	120.20	End Shut-In(2)
218	2011.38	120.27	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	GMCO 46%o, 44%g, 10%m	0.07
102.00	GOM 47%m, 38%o, 15%g	1.29
0.00	GIP = 385'	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates Inc.

18/10s/30w Sheridan KS

1515 Wynkoop STE 700
Denver, CO 80202

Ottley #1-18

Job Ticket: 60838

DST#: 2

ATTN: Clayton Camozzi

Test Start: 2014.12.18 @ 16:18:00

GENERAL INFORMATION:

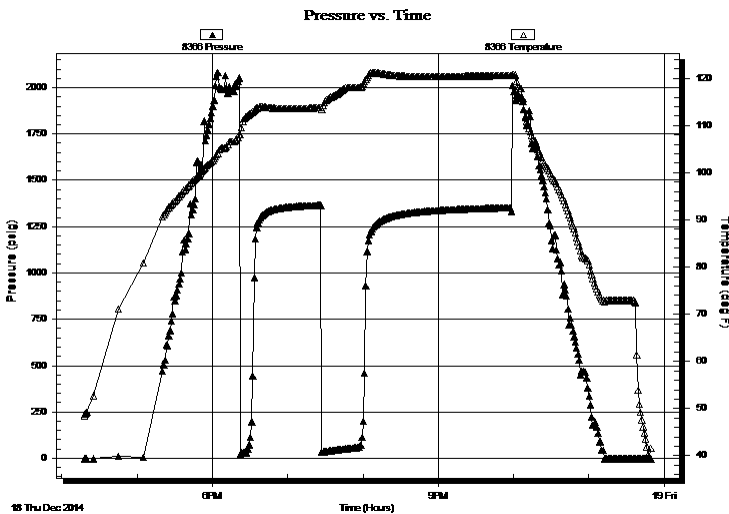
Formation: **LKC "I"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 18:21:45
 Time Test Ended: 23:50:15
 Interval: **4154.00 ft (KB) To 4185.00 ft (KB) (TVD)**
 Total Depth: 4185.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: James Winder
 Unit No: 83
 Reference Elevations: 2941.00 ft (KB)
 2933.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8366

Outside

Press @ Run Depth: psig @ 4155.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.12.18 End Date: 2014.12.18 Last Calib.: 2014.12.19
 Start Time: 16:18:05 End Time: 23:49:29 Time On Btm:
 Time Off Btm:

TEST COMMENT: 5 - IF: Blow built to 5 1/2" (Diesel in bucket)
 60 - IS: Surface blow back, lasted 5 - 10 min., then dead
 30 - FF: 5" Surge blow at open, built to BOB (11") at 5 min.
 120 - FS: No blow back



PRESSURE SUMMARY

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

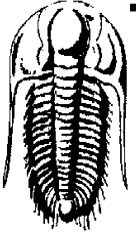
Recovery

Length (ft)	Description	Volume (bbl)
15.00	GMCO 46%o, 44%g, 10%m	0.07
102.00	GOM 47%m, 38%o, 15%g	1.29
0.00	GIP = 385'	0.00

Gas Rates

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

* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates Inc.
1515 Wynkoop STE 700
Denver, CO 80202
ATTN: Clayton Camozzi

18/10s/30w Sheridan KS
Ottley #1-18
Job Ticket: 60838 **DST#: 2**
Test Start: 2014.12.18 @ 16:18:00

GENERAL INFORMATION:

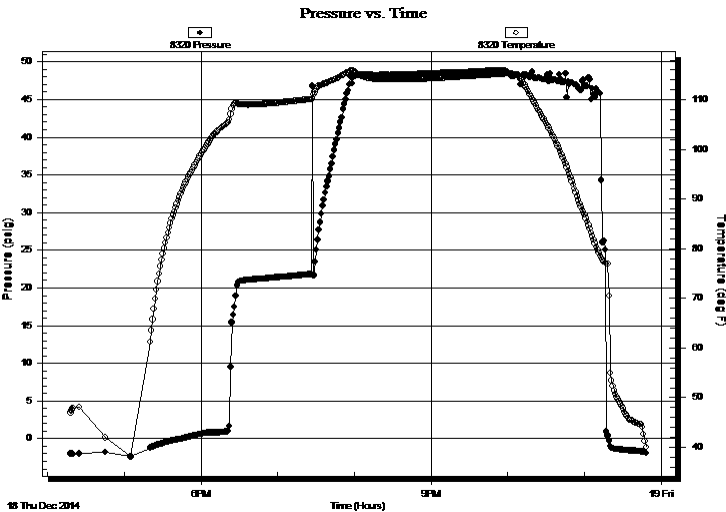
Formation: LKC "I"
Deviated: No **Whipstock:** **ft (KB)** **Test Type:** Conventional Bottom Hole (Reset)
Time Tool Opened: 18:21:45 **Tester:** James Winder
Time Test Ended: 23:50:15 **Unit No:** 83
Interval: 4154.00 ft (KB) To 4185.00 ft (KB) (TVD) **Reference Elevations:** 2941.00 ft (KB)
Total Depth: 4185.00 ft (KB) (TVD) 2933.00 ft (CF)
Hole Diameter: 7.88 inches **Hole Condition:** Fair **KB to GR/CF:** 8.00 ft

Serial #: 8320

Fluid

Press @ Run Depth: **psig @** 4121.00 ft (KB) **Capacity:** 8000.00 psig
Start Date: 2014.12.18 **End Date:** 2014.12.18 **Last Calib.:** 2014.12.19
Start Time: 16:18:05 **End Time:** 23:48:29 **Time On Btm:**
Time Off Btm:

TEST COMMENT: 5 - IF: Blow built to 5 1/2" (Diesel in bucket)
60 - ISI: Surface blow back, lasted 5 - 10 min., then dead
30 - FF: 5" Surge blow at open, built to BOB (11") at 5 min.
120 - FSI: No blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
15.00	GMCO 46%o, 44%g, 10%m	0.07
102.00	GOM 47%m, 38%o, 15%g	1.29
0.00	GIP = 385'	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Samuel Gary Jr. & Associates Inc.

18/10s/30w Sheridan KS

1515 Wynkoop STE 700
Denver, CO 80202

Ottley #1-18

Job Ticket: 60838

DST#: 2

ATTN: Clayton Camozzi

Test Start: 2014.12.18 @ 16:18:00

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: 60.00 sec/qt

Cushion Volume: bbl

Water Loss: 7.95 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure: psig

Salinity: 700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	GMCO 46%o, 44%g, 10%m	0.074
102.00	GOM 47%m, 38%o, 15%g	1.285
0.00	GIP = 385'	0.000

Total Length: 117.00 ft Total Volume: 1.359 bbl

Num Fluid Samples: 0

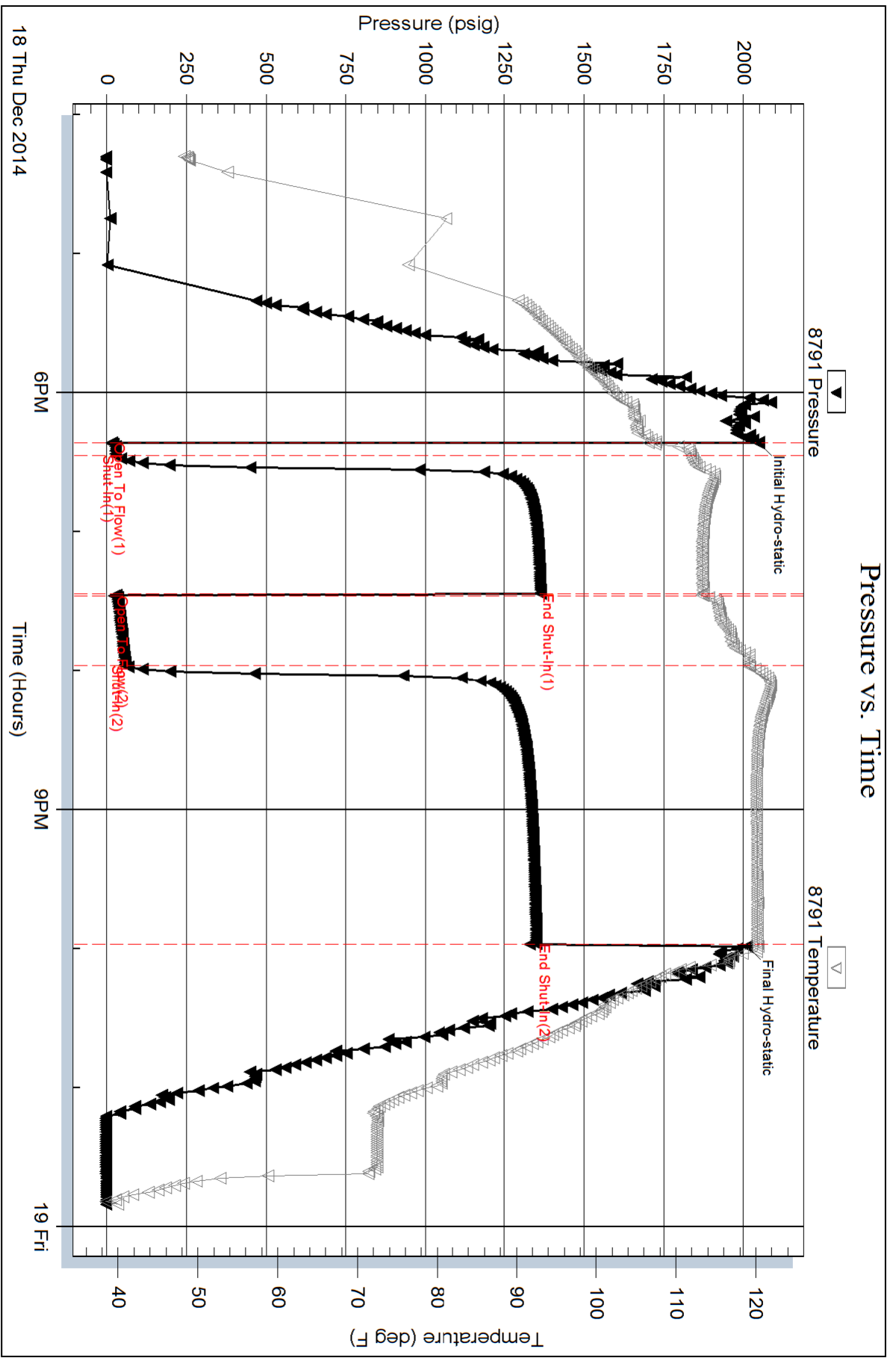
Num Gas Bombs: 0

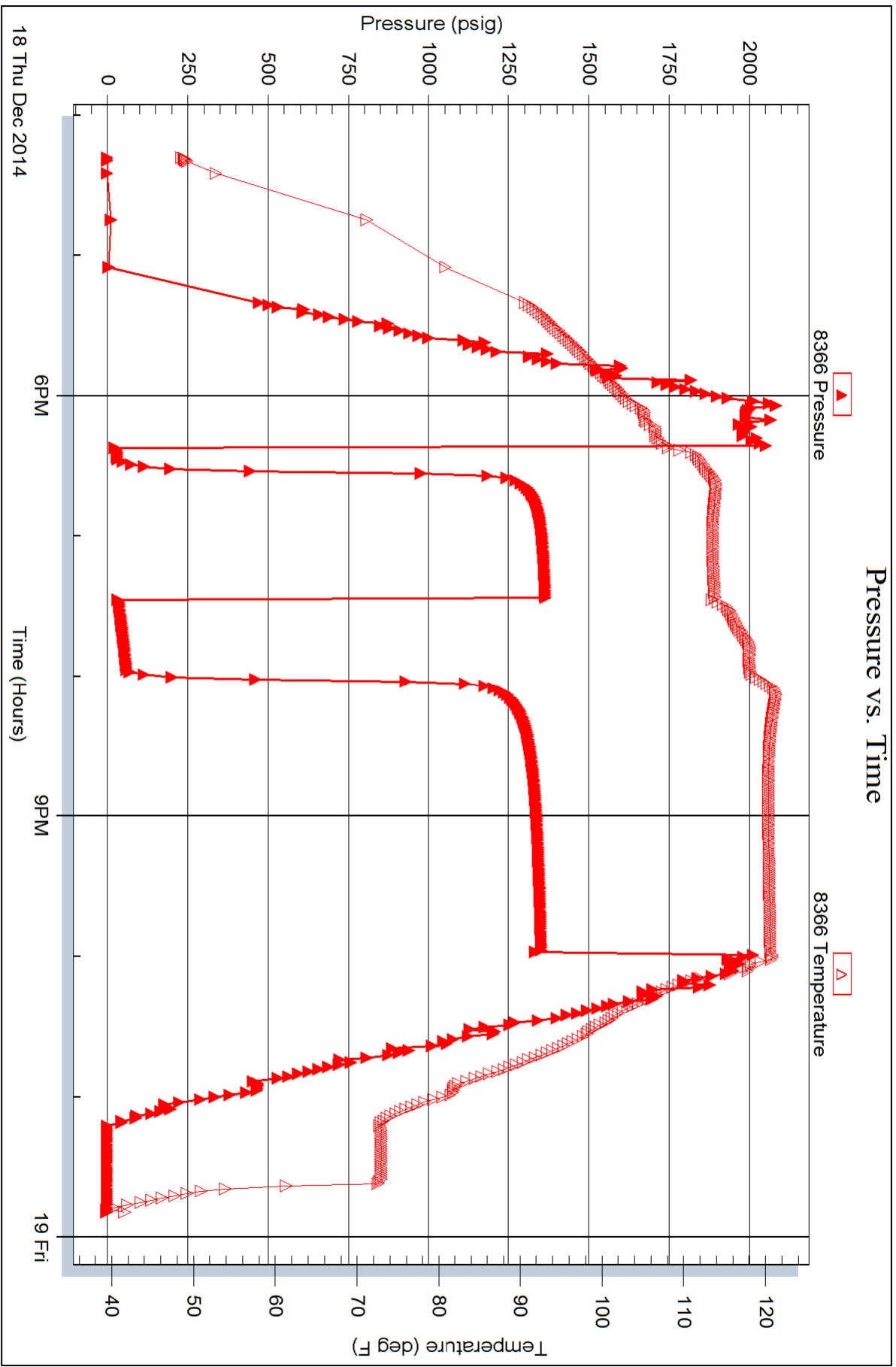
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





Serial #: 8320

Fluid

Samuel Gary Jr. & Associates Inc.

Ottley #1-18

DST Test Number: 2





TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates Inc.

18/10s/30w Sheridan KS

1515 Wynkoop STE 700
Denver, CO 80202

Ottley #1-18

Job Ticket: 60839

DST#: 3

ATTN: Clayton Camozzi

Test Start: 2014.12.19 @ 14:00:00

GENERAL INFORMATION:

Formation: **LKC "K - L"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:01:15

Time Test Ended: 21:30:30

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 83

Interval: 4231.00 ft (KB) To 4267.00 ft (KB) (TVD)

Reference Elevations: 2941.00 ft (KB)

Total Depth: 4267.00 ft (KB) (TVD)

2933.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8791

Inside

Press @ Run Depth: 266.04 psig @ 4232.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.19 End Date: 2014.12.19

Last Calib.: 2014.12.19

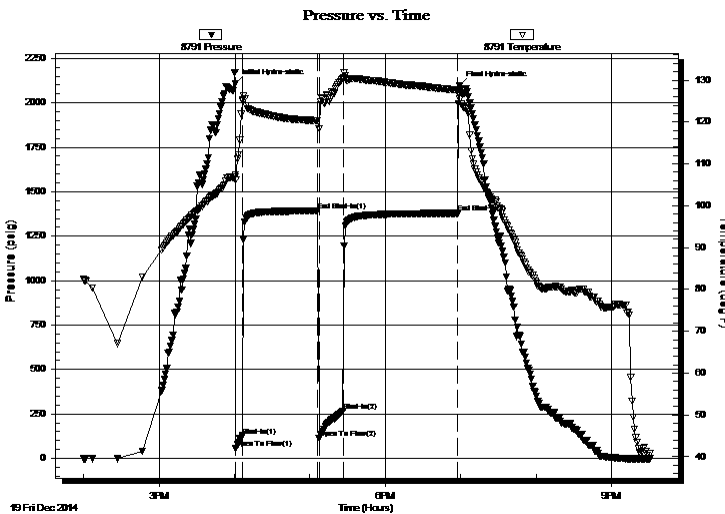
Start Time: 14:00:05 End Time: 21:30:29

Time On Btm: 2014.12.19 @ 16:01:00

Time Off Btm: 2014.12.19 @ 18:58:45

TEST COMMENT: 5 - IF: Blow built to BOB (11") at 2 min. (Diesel in bucket)
60 - IS: Occasional surface bubbles, No steady blow back
20 - FF: Blow built to BOB at 2 min.
90 - FS: Blow back built to 4", dieing back at 35 min.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2106.94	107.31	Initial Hydro-static
1	57.87	106.21	Open To Flow (1)
6	127.25	125.34	Shut-In(1)
66	1391.82	120.32	End Shut-In(1)
67	112.47	118.48	Open To Flow (2)
86	266.04	130.51	Shut-In(2)
177	1379.38	127.58	End Shut-In(2)
178	2095.26	126.70	Final Hydro-static

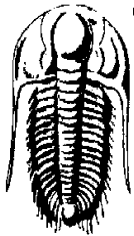
Recovery

Length (ft)	Description	Volume (bbl)
255.00	SM/GWCO 58%o, 20%w, 18%g, 4%m	3.29
315.00	GMCO 43%o mix, 17% free o, 21%m, 19%g	4.42
45.00	GMCO 46% free o, 5% o mix, 38%m, 11%g	0.63
0.00	GIP = 580'	0.00

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates Inc.

1515 Wynkoop STE 700
Denver, CO 80202

ATTN: Clayton Camozzi

18/10s/30w Sheridan KS

Ottley #1-18

Job Ticket: 60839

DST#: 3

Test Start: 2014.12.19 @ 14:00:00

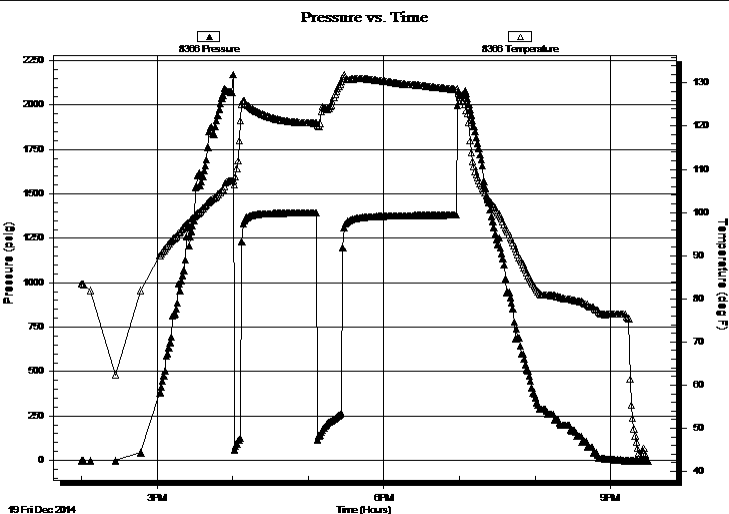
GENERAL INFORMATION:

Formation: LKC "K - L"	Test Type: Conventional Bottom Hole (Reset)
Deviated: No Whipstock ft (KB)	Tester: James Winder
Time Tool Opened: 16:01:15	Unit No: 83
Time Test Ended: 21:30:30	Reference Elevations: 2941.00 ft (KB)
Interval: 4231.00 ft (KB) To 4267.00 ft (KB) (TVD)	2933.00 ft (CF)
Total Depth: 4267.00 ft (KB) (TVD)	KB to GR/CF: 8.00 ft
Hole Diameter: 7.88 inches Hole Condition: Fair	

Serial #: 8366 Outside

Press @RunDepth: psig @ 4232.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2014.12.19 End Date: 2014.12.19	Last Calib.: 2014.12.19
Start Time: 14:00:05 End Time: 21:29:44	Time On Btm:
	Time Off Btm:

TEST COMMENT: 5 - IF: Blow built to BOB (11") at 2 min. (Diesel in bucket)
60 - IS: Occasional surface bubbles, No steady blow back
20 - FF: Blow built to BOB at 2 min.
90 - FS: Blow back built to 4", dieing back at 35 min.



PRESSURE SUMMARY

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

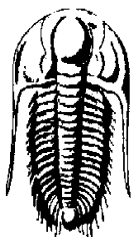
Recovery

Length (ft)	Description	Volume (bbl)
255.00	SM/GWCO 58%o, 20%w, 18%g, 4%m	3.29
315.00	GMCO 43%o mix, 17% free o, 21%m, 19%g	4.42
45.00	GMCO 46% free o, 5% o mix, 38%m, 11%g	0.63
0.00	GIP = 580'	0.00

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates Inc.

1515 Wynkoop STE 700
Denver, CO 80202

ATTN: Clayton Camozzi

18/10s/30w Sheridan KS

Ottley #1-18

Job Ticket: 60839 **DST#: 3**
Test Start: 2014.12.19 @ 14:00:00

GENERAL INFORMATION:

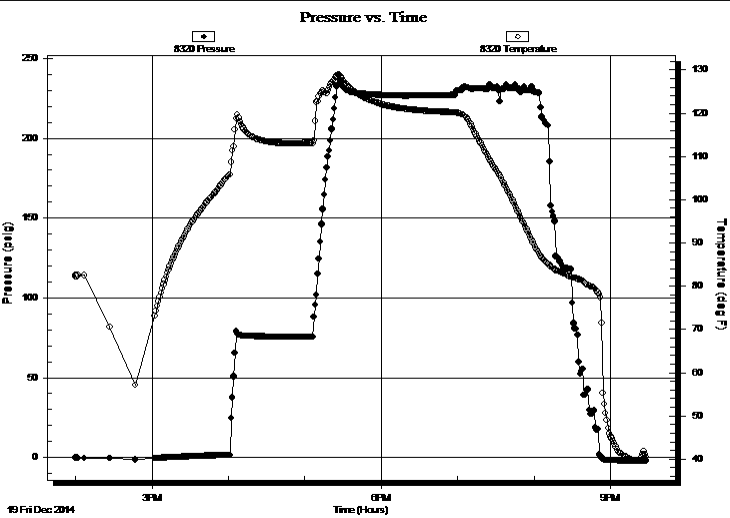
Formation: **LKC "K - L"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 16:01:15
 Time Test Ended: 21:30:30
 Interval: **4231.00 ft (KB) To 4267.00 ft (KB) (TVD)**
 Total Depth: 4267.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Bottom Hole (Reset)
 Tester: James Winder
 Unit No: 83
 Reference Elevations: 2941.00 ft (KB)
 2933.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8320 Fluid

Press @ Run Depth: psig @	4198.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2014.12.19	End Date: 2014.12.19	Last Calib.: 2014.12.19
Start Time: 14:00:05	End Time: 21:28:29	Time On Btm:
Time Off Btm:		

TEST COMMENT: 5 - IF: Blow built to BOB (11") at 2 min. (Diesel in bucket)
 60 - IS: Occasional surface bubbles, No steady blow back
 20 - FF: Blow built to BOB at 2 min.
 90 - FS: Blow back built to 4", dieing back at 35 min.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
255.00	SM/GWCO 58%o, 20%w, 18%g, 4%m	3.29
315.00	GMCO 43%o mix, 17% free o, 21%m, 19%	4.42
45.00	GMCO 46% free o, 5% o mix, 38%m, 11%	0.63
0.00	GIP = 580'	0.00

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. & Associates Inc.

18/10s/30w Sheridan KS

1515 Wynkoop STE 700
Denver, CO 80202

Ottley #1-18

Job Ticket: 60839

DST#: 3

ATTN: Clayton Camozzi

Test Start: 2014.12.19 @ 14:00:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 61.00 sec/qt
Water Loss: 7.95 in³
Resistivity: ohm.m
Salinity: 700.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: 39.8 deg API
Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
255.00	SM/GWCO 58%o, 20%w, 18%g, 4%m	3.295
315.00	GMCO 43%o mix, 17% free o, 21%m, 19%g	4.419
45.00	GMCO 46% free o, 5% o mix, 38%m, 11%g	0.631
0.00	GIP = 580'	0.000

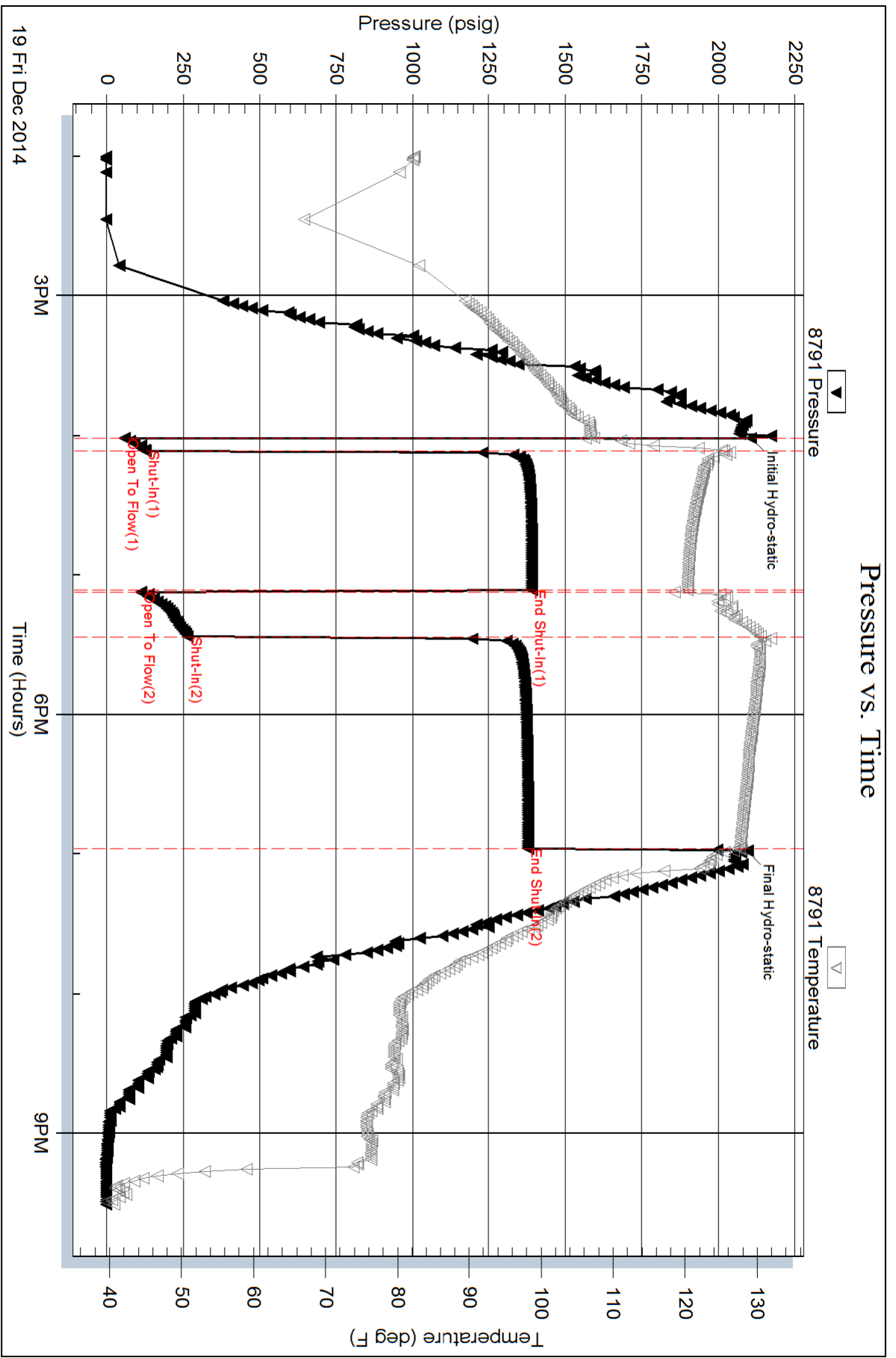
Total Length: 615.00 ft Total Volume: 8.345 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: Gravity = 37 api @ 32 deg F Corrected Gravity = 39.8 api

The top 360' had a mix of oil, gas, mud (looked to be mostly oil) I seperated the mixture amount and the clean free oil amount in the fluid description

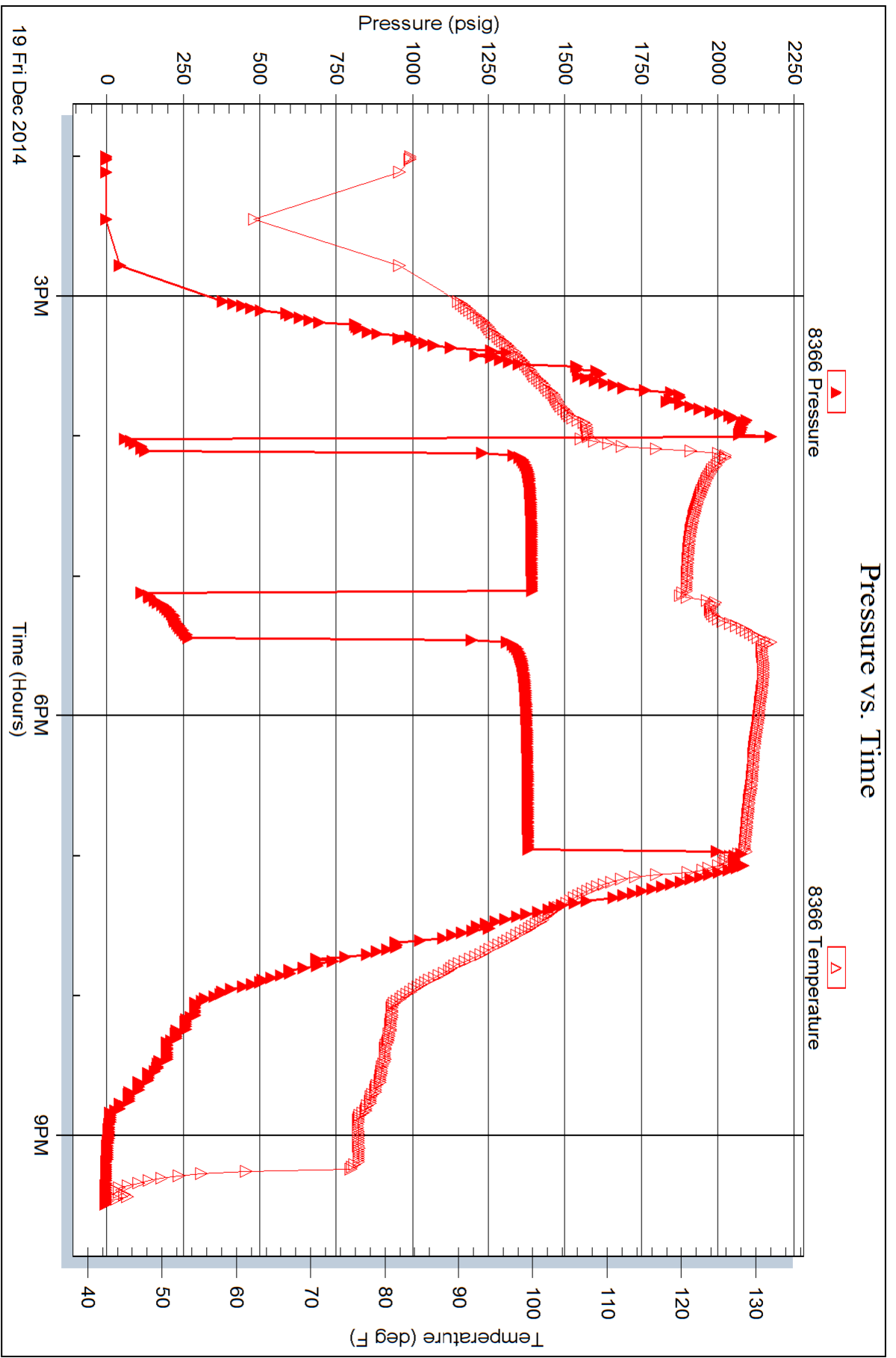


Serial #: 8366

Outside Samuel Gary Jr. & Associates Inc.

Ottley #1-18

DST Test Number: 3



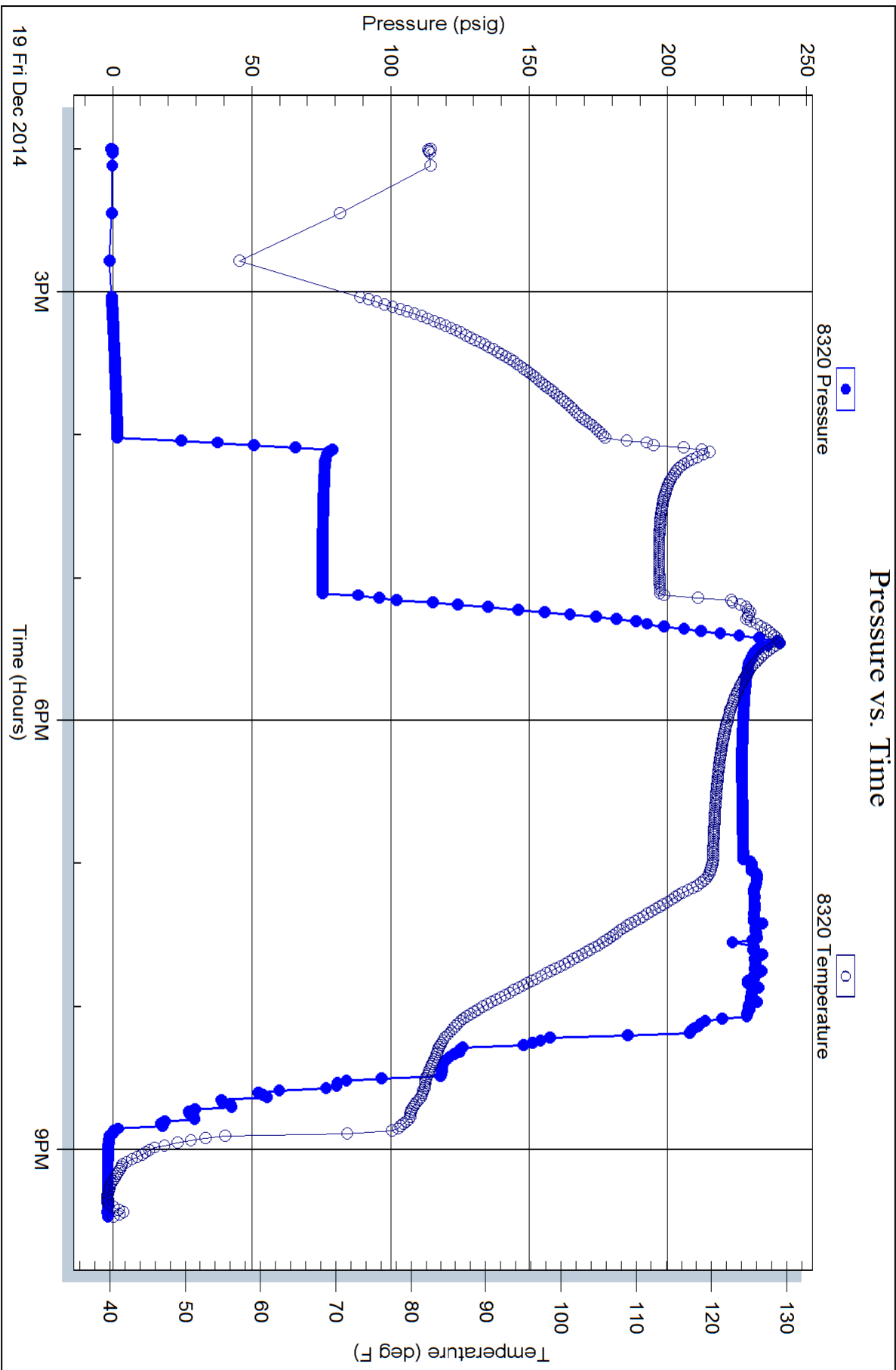
Serial #: 8320

Fluid

Samuel Gary Jr. & Associates Inc.

Ottley #1-18

DST Test Number: 3





TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates Inc.

18/10s/30w Sheridan KS

1515 Wynkoop STE 700
Denver, CO 80202

Ottley #1-18

Job Ticket: 60840

DST#: 4

ATTN: Clayton Camozzi

Test Start: 2014.12.20 @ 20:11:00

GENERAL INFORMATION:

Formation: **Pawnee**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 22:16:45
 Time Test Ended: 03:56:15
 Interval: **4404.00 ft (KB) To 4451.00 ft (KB) (TVD)**
 Total Depth: 4451.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: James Winder
 Unit No: 83
 Reference Elevations: 2941.00 ft (KB)
 2933.00 ft (CF)
 KB to GR/CF: 8.00 ft

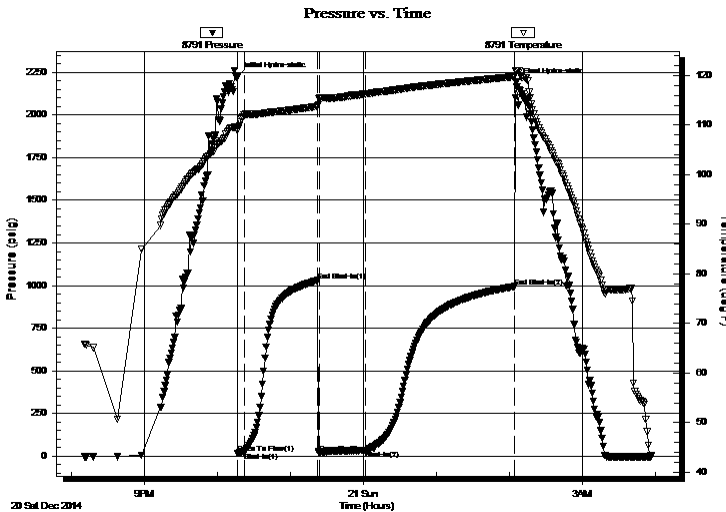
Serial #: 8791

Inside

Press @ Run Depth: 37.11 psig @ 4405.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.12.20 End Date: 2014.12.21 Last Calib.: 2014.12.21
 Start Time: 20:11:05 End Time: 03:56:14 Time On Btm: 2014.12.20 @ 22:16:30
 Time Off Btm: 2014.12.21 @ 02:05:30

TEST COMMENT: 5 - IF: Blow built to 1 1/2"
 60 - ISI: Some weak surface blow back
 40 - FF: 2" Blow at open, built to 9"
 120 - FSI: No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2222.23	109.59	Initial Hydro-static
1	16.45	108.92	Open To Flow (1)
6	26.21	112.03	Shut-In(1)
66	1029.82	113.80	End Shut-In(1)
68	19.80	115.29	Open To Flow (2)
106	37.11	116.23	Shut-In(2)
228	995.11	119.76	End Shut-In(2)
229	2192.38	120.96	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
50.00	SOCM 88%m, 7%o, 5%g	0.42
0.00	GIP = 80'+	0.00

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates Inc.

18/10s/30w Sheridan KS

1515 Wynkoop STE 700
Denver, CO 80202

Ottley #1-18

Job Ticket: 60840

DST#: 4

ATTN: Clayton Camozzi

Test Start: 2014.12.20 @ 20:11:00

GENERAL INFORMATION:

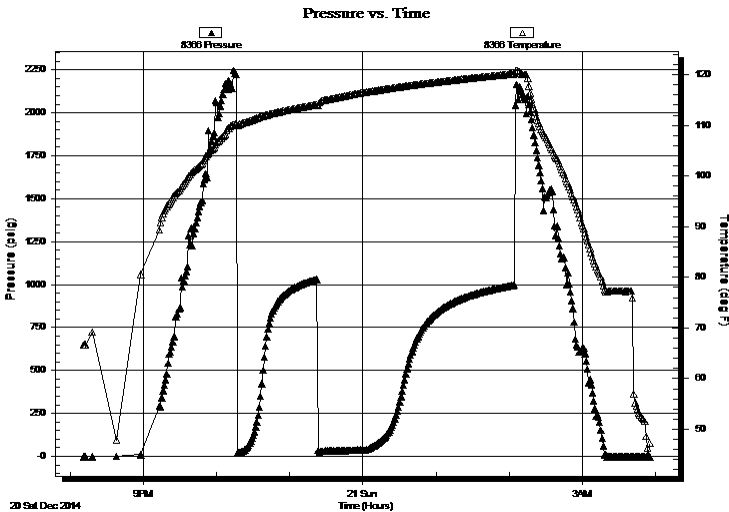
Formation: **Pawnee**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 22:16:45
 Time Test Ended: 03:56:15
 Interval: **4404.00 ft (KB) To 4451.00 ft (KB) (TVD)**
 Total Depth: 4451.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: James Winder
 Unit No: 83
 Reference Elevations: 2941.00 ft (KB)
 2933.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8366 Outside

Press @ RunDepth: psig @ 4405.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.12.20 End Date: 2014.12.21 Last Calib.: 2014.12.21
 Start Time: 20:11:05 End Time: 03:55:29 Time On Btm:
 Time Off Btm:

TEST COMMENT: 5 - IF: Blow built to 1 1/2"
 60 - ISI: Some weak surface blow back
 40 - FF: 2" Blow at open, built to 9"
 120 - FSI: No blow back

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
50.00	SOCM 88%m, 7%o, 5%g	0.42
0.00	GIP = 80'+	0.00

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates Inc.

18/10s/30w Sheridan KS

1515 Wynkoop STE 700
Denver, CO 80202

Ottley #1-18

Job Ticket: 60840

DST#: 4

ATTN: Clayton Camozzi

Test Start: 2014.12.20 @ 20:11:00

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:16:45

Time Test Ended: 03:56:15

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 83

Interval: 4404.00 ft (KB) To 4451.00 ft (KB) (TVD)

Reference Elevations: 2941.00 ft (KB)

Total Depth: 4451.00 ft (KB) (TVD)

2933.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8320 Fluid

Press @ Run Depth: psig @ 4371.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.20

End Date:

2014.12.21

Last Calib.:

2014.12.21

Start Time: 20:11:05

End Time:

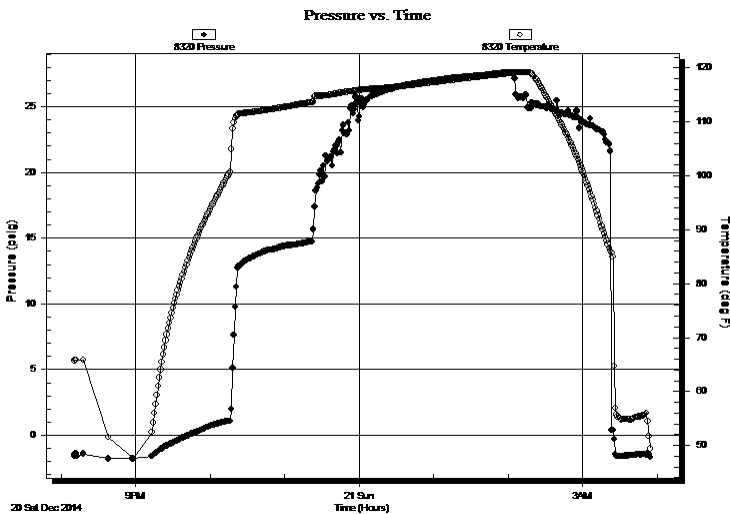
03:54:44

Time On Btm:

Time Off Btm:

TEST COMMENT: 5 - IF: Blow built to 1 1/2"
60 - ISI: Some weak surface blow back
40 - FF: 2" Blow at open, built to 9"
120 - FSI: No blow back

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
50.00	SOCM 88% m, 7% o, 5% g	0.42
0.00	GIP = 80'+	0.00

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. & Associates Inc.

18/10s/30w Sheridan KS

1515 Wynkoop STE 700
Denver, CO 80202

Ottley #1-18

Job Ticket: 60840

DST#: 4

ATTN: Clayton Camozzi

Test Start: 2014.12.20 @ 20:11:00

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: 68.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
50.00	SOCM 88% <i>m</i> , 7% <i>o</i> , 5% <i>g</i>	0.419
0.00	GIP = 80'+	0.000

Total Length: 50.00 ft Total Volume: 0.419 bbl

Num Fluid Samples: 0

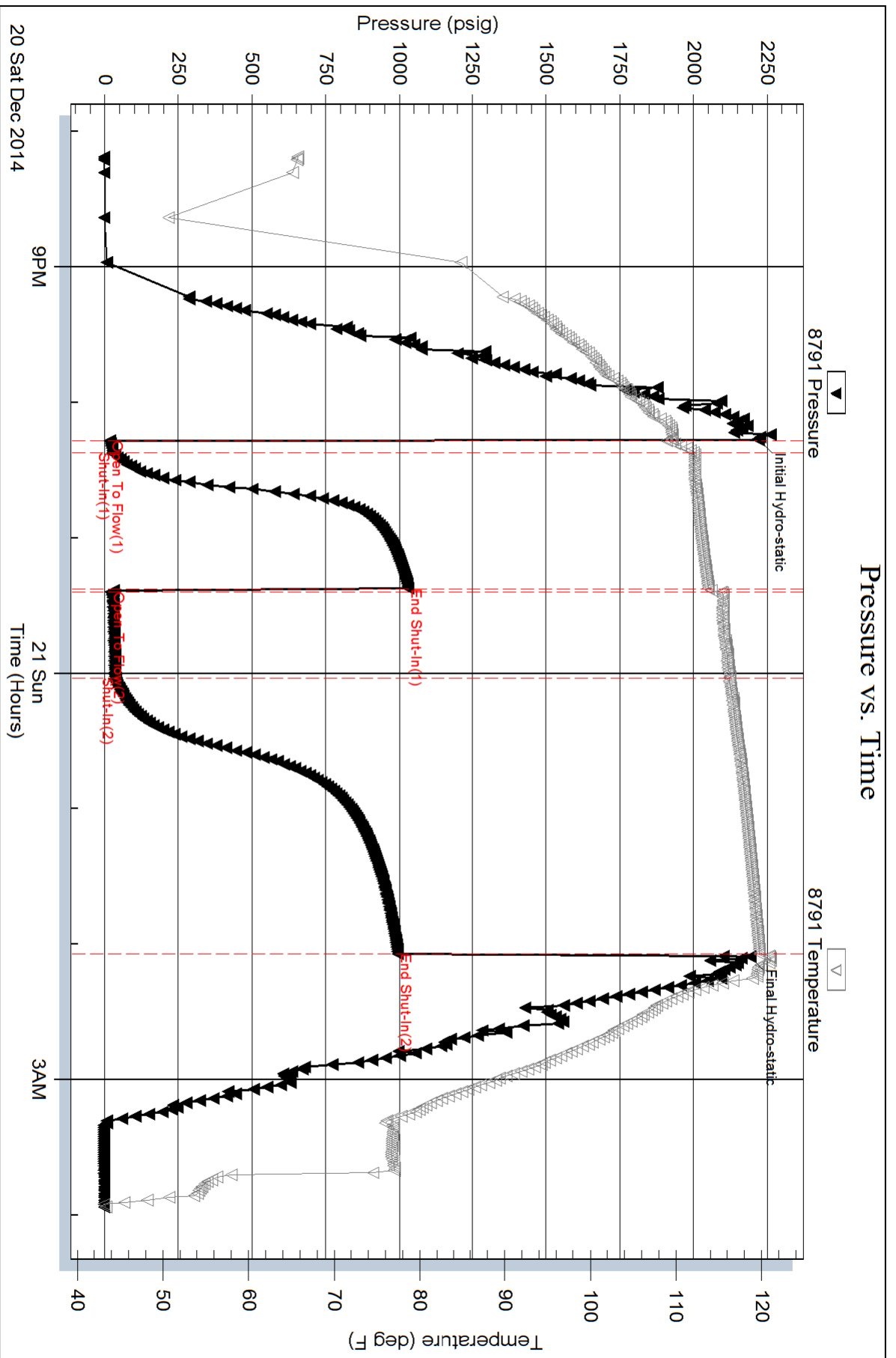
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

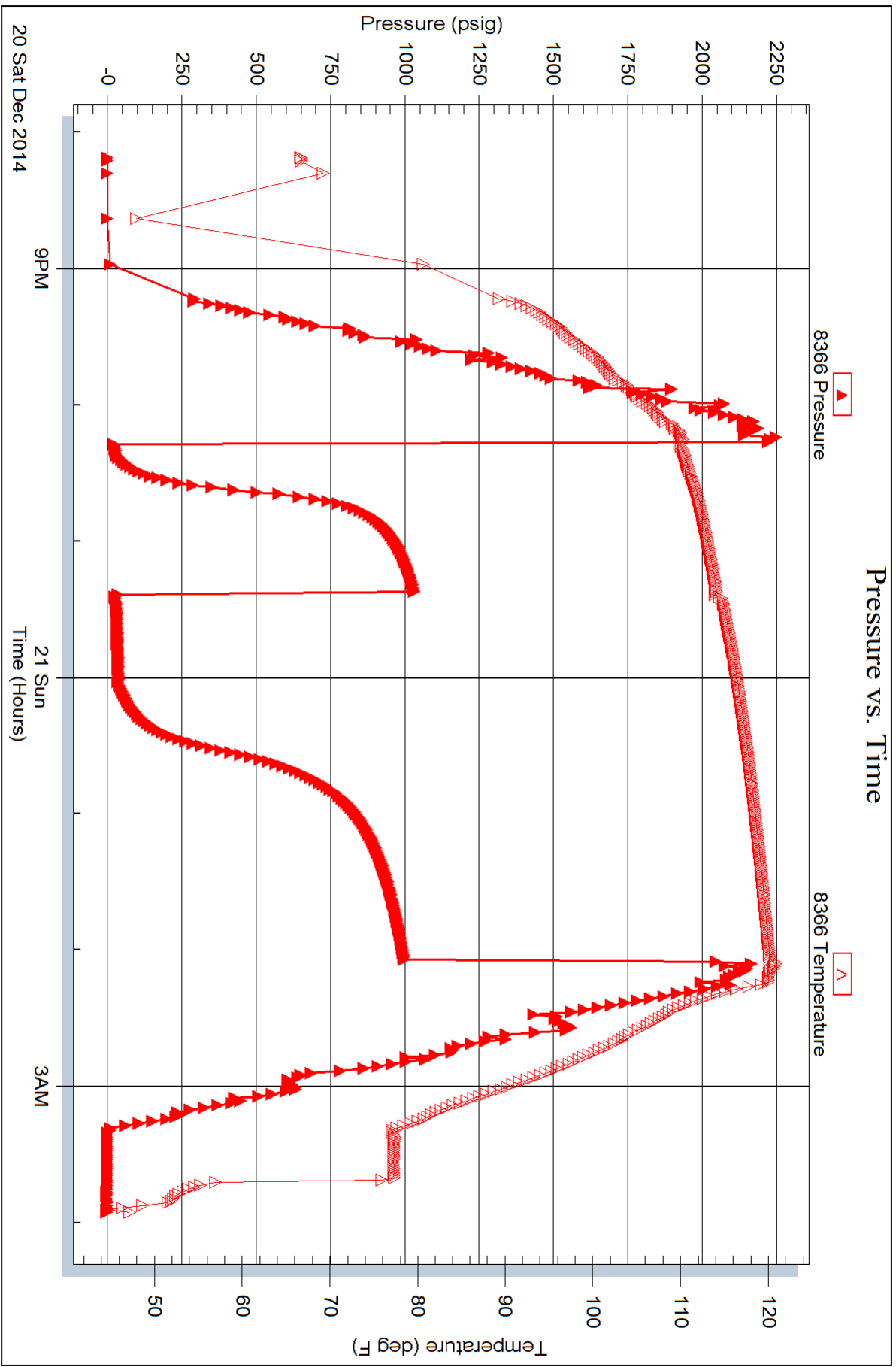


Serial #: 8366

Outside Samuel Gary Jr. & Associates Inc.

Otley #1-18

DST Test Number: 4



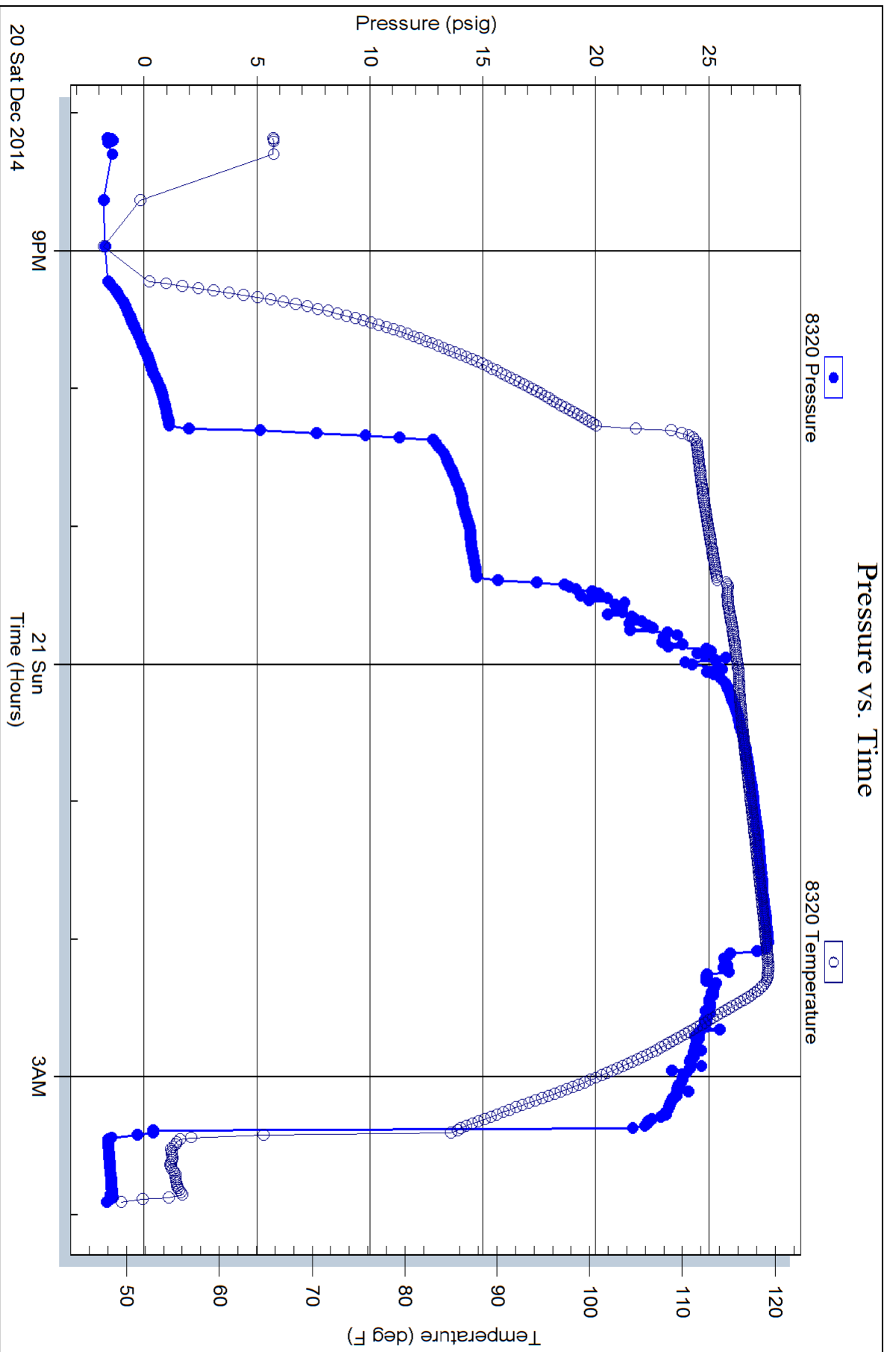
Serial #: 8320

Fluid

Samuel Gary Jr. & Associates Inc.

Ottley #1-18

DST Test Number: 4



Triobite Testing, Inc

Ref. No: 60840

Printed: 2014.12.21 @ 06:09:40



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

Well Name: SGA Ottley 1-18
Well Id:
Location: Sec. 18 T10S R30W
License Number: 15-179-21386
Spud Date: Dec. 12, 2014
Surface Coordinates: 1730' FNL 1740' FEL
Region: Wildcat
Drilling Completed: Dec. 21, 2014

Bottom Hole
Coordinates:
Ground Elevation (ft): 2933' K.B. Elevation (ft): 2941'
Logged Interval (ft): 3700' To: Total Depth (ft): 4595'
Formation: Lansing / Kansas City
Type of Drilling Fluid: Natural Chemical

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

OPERATOR

Company: Samuel Gary Jr. & Assoc.
Address: 1515 Winkoop Street, Suite 700
Denver CO, 80202
Geo: Clayton Camozzi

GEOLOGIST

Name: Jeff Kamps
Company: EARTH TECH OGL, Inc.
Address: PO Box 683
Hooker, Okla 73945
1-580-652-3924
8918 5Th St
Great Bend, Ks. 67530
1-888-543-8378



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates Inc.

18/10s/30w Sheridan KS

1515 Wynkoop STE 700
Denver, CO 80202

Ottley #1-18

Job Ticket: 60837

DST#: 1

ATTN: Clayton Camozzi

Test Start: 2014.12.17 @ 16:35:00

GENERAL INFORMATION:

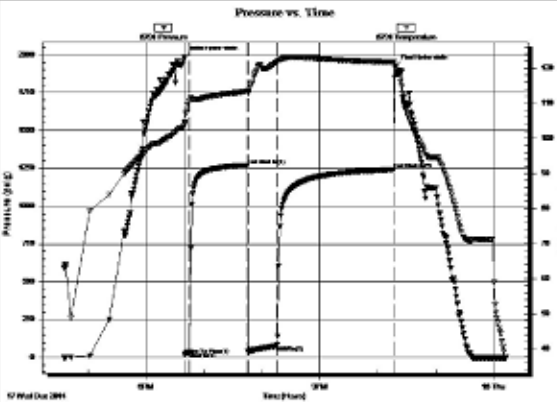
Formation: **LKC "D"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 18:40:00
 Tester: James Winder
 Time Test Ended: 00:12:30
 Unit No: 83
 Interval: **4060.00 ft (KB) To 4082.00 ft (KB) (TVD)**
 Reference Elevations: 2941.00 ft (KB)
 Total Depth: 4082.00 ft (KB) (TVD)
 2933.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Fair
 KB to GR/CF: 8.00 ft

Serial #: 8791

Inside

Press@RunDepth: 79.23 psig @ 4061.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.12.17 End Date: 2014.12.18 Last Calib.: 2014.12.18
 Start Time: 16:35:05 End Time: 00:12:29 Time On Btm: 2014.12.17 @ 18:39:45
 Time Off Btm: 2014.12.17 @ 22:18:00

TEST COMMENT: 5 - IF: Blow built to 3 1/2" (Diesel in bucket)
 60 - IS: Surface blow back, lasted about 15 min., then dead
 30 - FF: Blow built to BOB (11") at 27 1/2 min.
 120 - FS: Surface blow back at 15 min., lasted about 10 min., then dead



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1983.97	104.33	Initial Hydro-static
1	16.99	103.88	Open To Flow (1)
6	34.06	110.81	Shut-in(1)
65	1269.42	113.41	End Shut-in(1)
66	37.86	113.07	Open To Flow (2)
96	79.23	121.70	Shut-in(2)
217	1242.36	121.77	End Shut-in(2)
219	1922.35	120.49	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
130.00	MCW w /trace oil 70%w, 30%v	1.54
10.00	SMCO 93%, 5%v, 2%g	0.14

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates Inc.

18/10s/30w Sheridan KS

1515 Wynkoop STE 700
Denver, CO 80202

Ottley #1-18

Job Ticket: 60838

DST#: 2

ATTN: Clayton Camozzi

Test Start: 2014.12.18 @ 16:18:00

GENERAL INFORMATION:

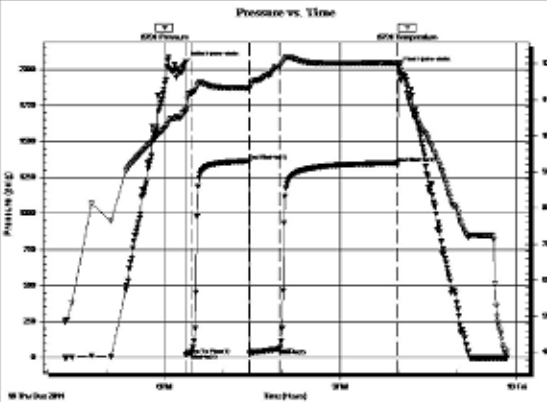
Formation: **LKC "I"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 18:21:45
 Time Test Ended: 23:50:15
 Interval: **4154.00 ft (KB) To 4185.00 ft (KB) (TVD)**
 Total Depth: **4185.00 ft (KB) (TVD)**
 Hole Diameter: **7.88 inches** Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: James Winder
 Unit No: 83
 Reference Elevations: 2941.00 ft (KB)
 2933.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8791

Inside

Press@RunDepth: 57.62 psig @ 4155.00 ft (KB)
 Start Date: 2014.12.18 End Date: 2014.12.18
 Start Time: 16:18:05 End Time: 23:50:14
 Capacity: 8000.00 psig
 Last Calib.: 2014.12.19
 Time On Btm: 2014.12.18 @ 18:21:30
 Time Off Btm: 2014.12.18 @ 21:59:15

TEST COMMENT: 5 - IF: Blow built to 5 1/2" (Diesel in bucket)
 60 - IS: Surface blow back, lasted 5 - 10 min., then dead
 30 - FF: 5" Surge blow at open, built to BOB (11") at 5 min.
 120 - FS: No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2046.83	107.54	Initial Hydro-static
1	15.21	106.56	Open To Flow (1)
6	28.84	111.90	Shut-in(1)
66	1363.83	113.43	End Shut-in(1)
66	23.38	113.47	Open To Flow (2)
97	57.62	119.20	Shut-in(2)
217	1350.72	120.20	End Shut-in(2)
218	2011.38	120.27	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	GMOO 46%o, 44%g, 10%m	0.07
102.00	GOM 47%m, 38%o, 15%g	1.29
0.00	GIP = 385'	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates Inc.

18/10s/30w Sheridan KS

1515 Wynkoop STE 700
Denver, CO 80202

Ottley #1-18

Job Ticket: 60839

DST#: 3

ATTN: Clayton Camozzi

Test Start: 2014.12.19 @ 14:00:00

GENERAL INFORMATION:

Formation: **LKC "K - L"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:01:15

Time Test Ended: 21:30:30

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 83

Interval: **4231.00 ft (KB) To 4267.00 ft (KB) (TVD)**

Reference Elevations: 2941.00 ft (KB)

Total Depth: 4267.00 ft (KB) (TVD)

2933.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8791

Inside

Press@RunDepth: 266.04 psig @ 4232.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.19

End Date:

2014.12.19

Last Calib.:

2014.12.19

Start Time: 14:00:05

End Time:

21:30:29

Time On Btm:

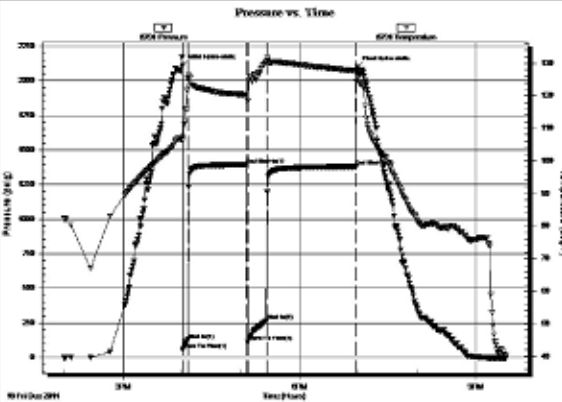
2014.12.19 @ 16:01:00

Time Off Btm:

2014.12.19 @ 18:58:45

TEST COMMENT:

5 - F: Blow built to BOB (11") at 2 min. (Diesel in bucket)
60 - IS: Occasional surface bubbles, No steady blow back
20 - FF: Blow built to BOB at 2 min.
90 - FSI: Blow back built to 4", dying back at 35 min.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2106.94	107.31	Initial Hydro-static
1	57.87	106.21	Open To Flow (1)
6	127.25	125.34	Shut-in(1)
66	1391.82	120.32	End Shut-in(1)
67	112.47	118.48	Open To Flow (2)
86	266.04	130.51	Shut-in(2)
177	1379.38	127.58	End Shut-in(2)
178	2095.26	126.70	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
255.00	SMIGWCO 58%o, 20%w, 18%g, 4% m	3.29
315.00	GMCO 43%o mix, 17% free o, 21% m, 19% g	4.42
45.00	GMCO 46% free o, 5% o mix, 38% m, 11% g	0.63
0.00	GIP = 580'	0.00

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates Inc.

18/10s/30w Sheridan KS

1515 Wynkoop STE 700
Denver, CO 80202

Ottley #1-18

Job Ticket: 60840

DST#: 4

ATTN: Clayton Camozzi

Test Start: 2014.12.20 @ 20:11:00

GENERAL INFORMATION:

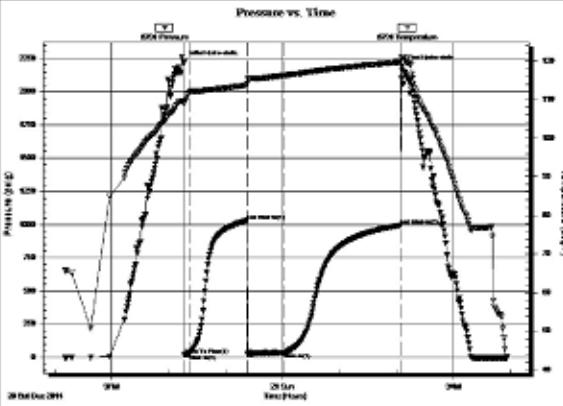
Formation: **Pawnee**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 22:16:45
 Time Test Ended: 03:56:15
 Interval: **4404.00 ft (KB) To 4451.00 ft (KB) (TVD)**
 Total Depth: **4451.00 ft (KB) (TVD)**
 Hole Diameter: 7.88 inches
 Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: James Winder
 Unit No: 83
 Reference Elevations: 2941.00 ft (KB)
 2933.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8791

Inside

Press@RunDepth: 37.11 psig @ 4405.00 ft (KB)
 Start Date: 2014.12.20 End Date: 2014.12.21
 Start Time: 20:11:05 End Time: 03:56:14
 Capacity: 8000.00 psig
 Last Callb.: 2014.12.21
 Time On Btm: 2014.12.20 @ 22:16:30
 Time Off Btm: 2014.12.21 @ 02:05:30

TEST COMMENT: 5 - F: Blow built to 1 1/2"
 60 - IS: Some weak surface blow back
 40 - FF: 2" Blow at open, built to 9"
 120 - FS: No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2222.23	109.59	Initial Hydro-static
1	16.45	108.92	Open To Flow (1)
6	26.21	112.03	Shut-in(1)
66	1029.82	113.80	End Shut-in(1)
68	19.80	115.29	Open To Flow (2)
106	37.11	116.23	Shut-in(2)
228	995.11	119.76	End Shut-in(2)
229	2192.38	120.96	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
50.00	SOOM 88% m, 7% o, 5% g	0.42
0.00	GIP = 80+	0.00

Gas Rates

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

ROCK TYPES

- Anhy
- Bent
- Brec
- Cht
- Clyst
- Coal
- Congl
- Dol

- Gyp
- Igne
- Lmst
- Meta
- Mrlst
- Salt
- Shale
- Shcol

- Shgy
- Slstt
- Ss
- Till
- Carb sh
- Dol
- Dtd
- Gry sh

- Sandylms
- Shale
- Slststn
- Shlyslts
- Sltysh
- 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

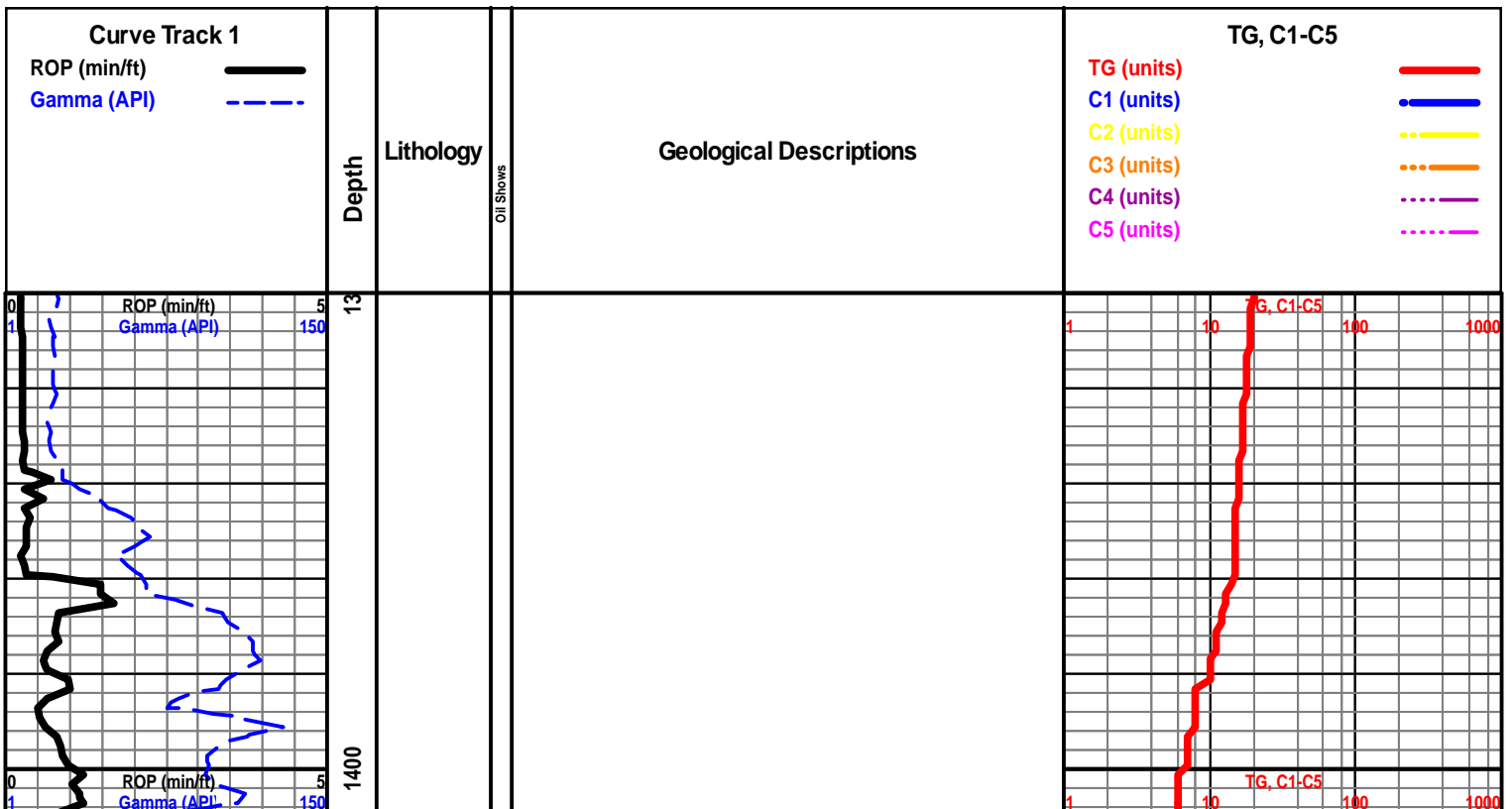
- Even
- Spotted
- Ques
- Dead
- Gas show

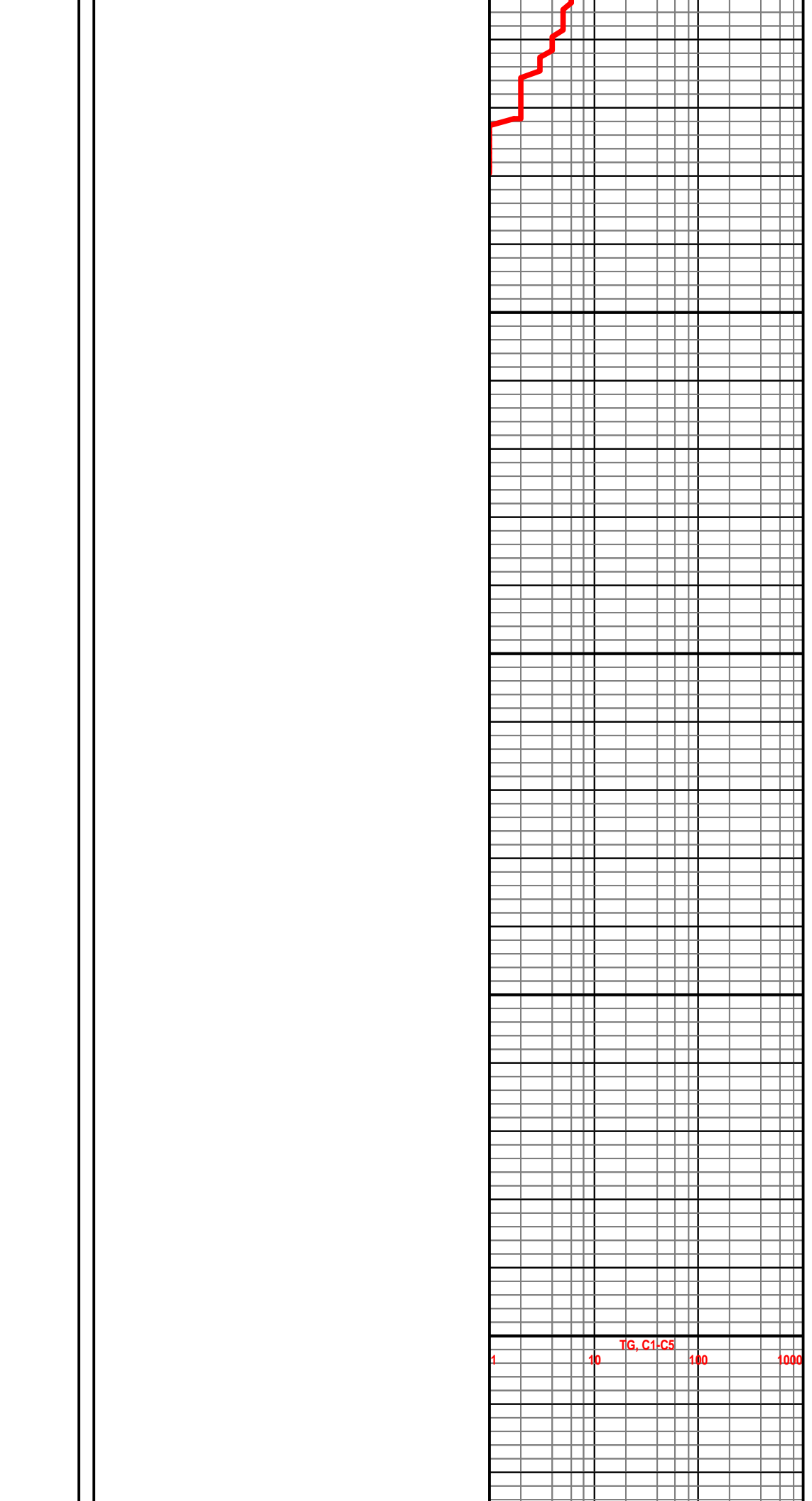
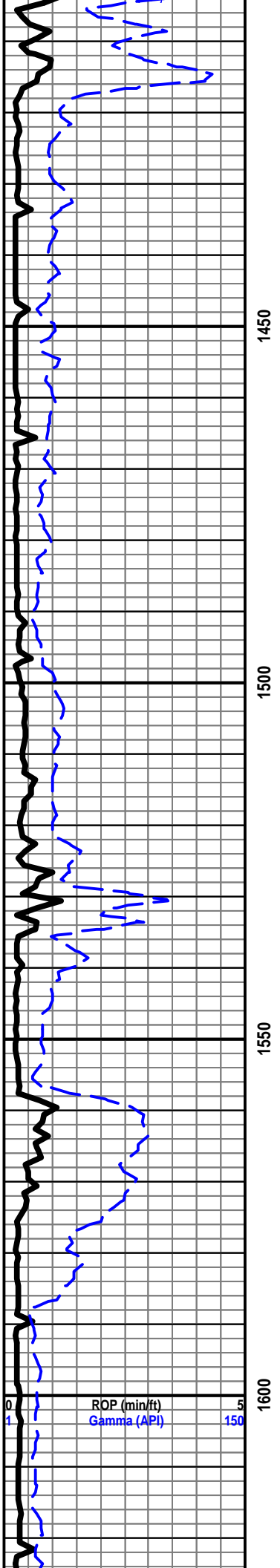
INTERVALS

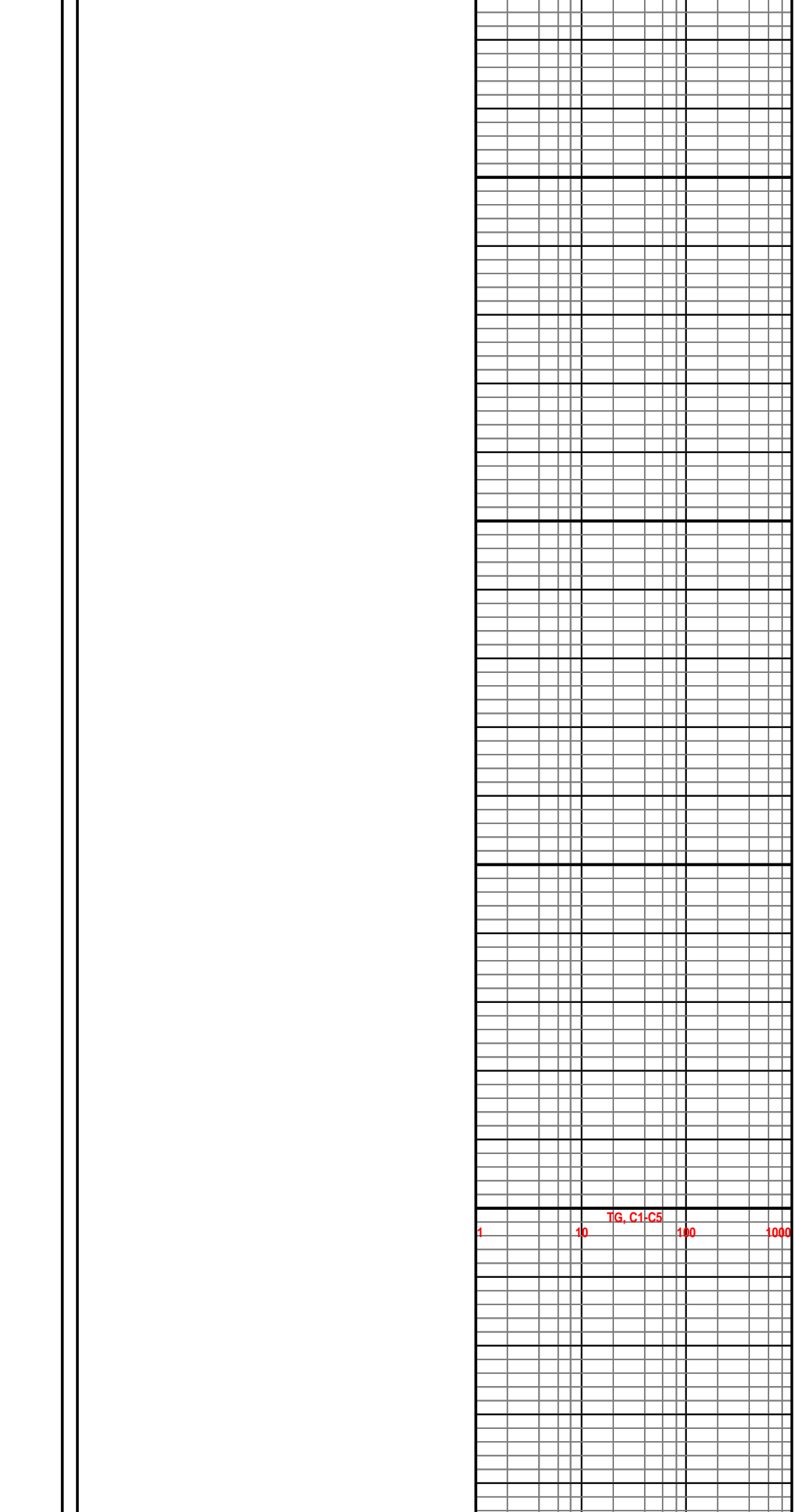
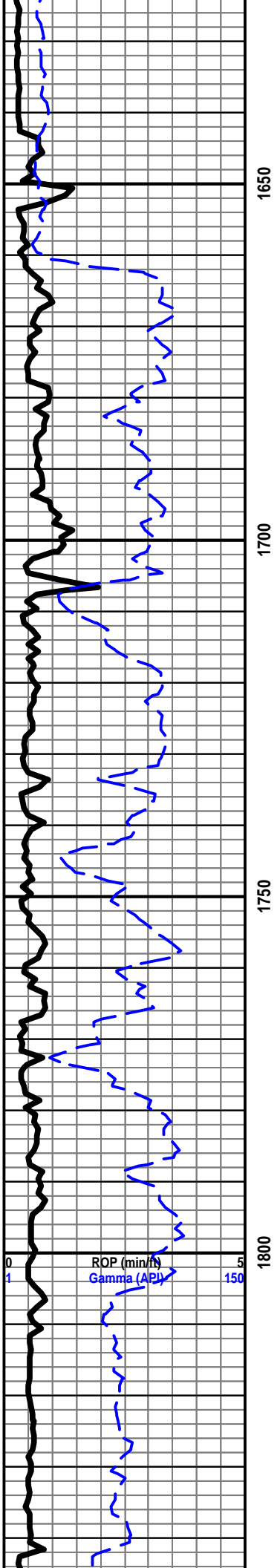
- Core
- Dst
- Dst

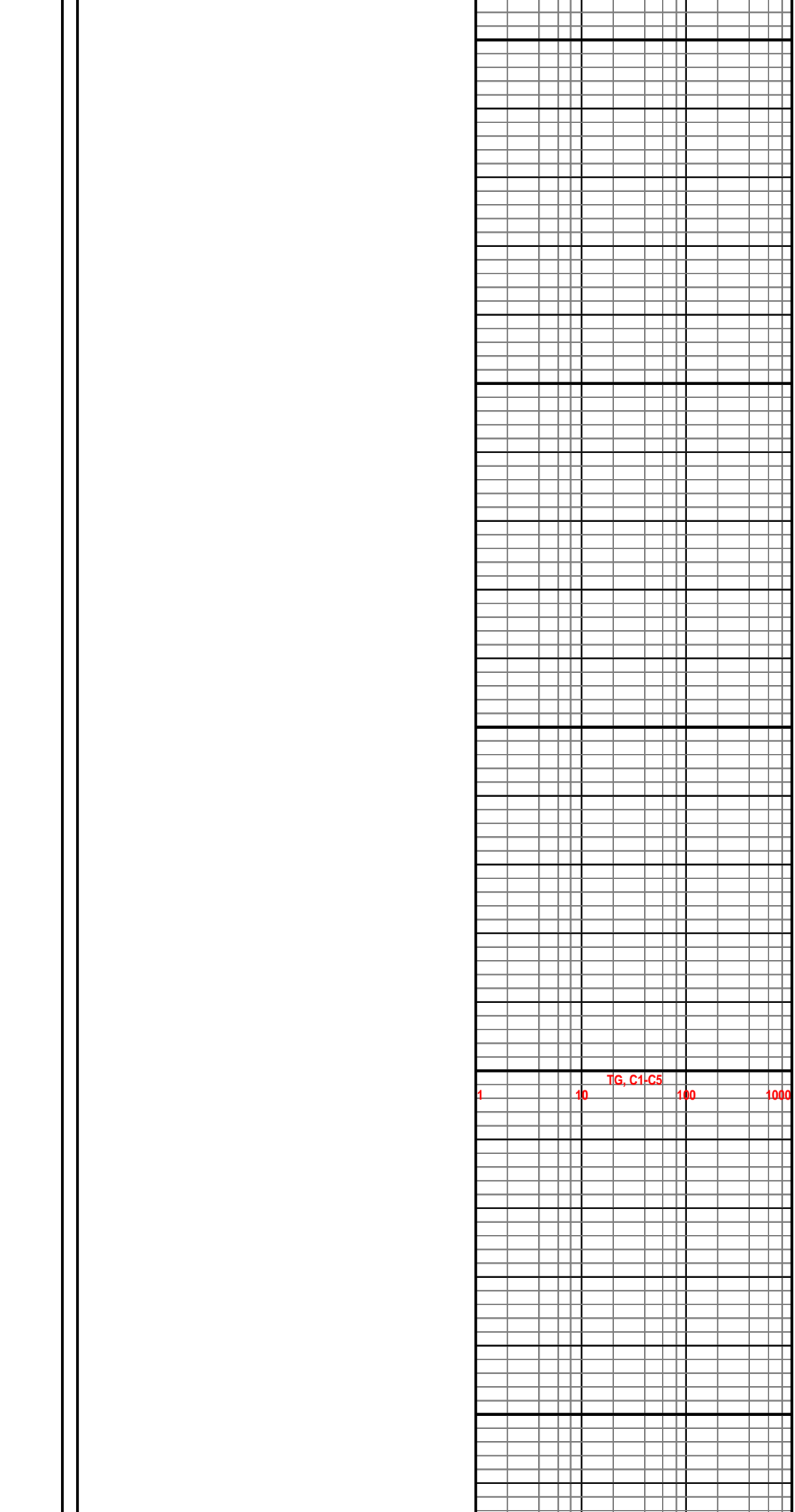
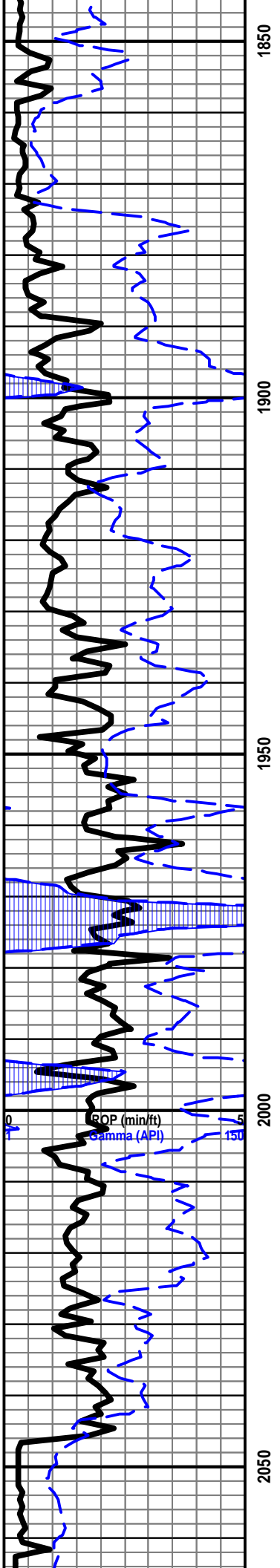
EVENTS

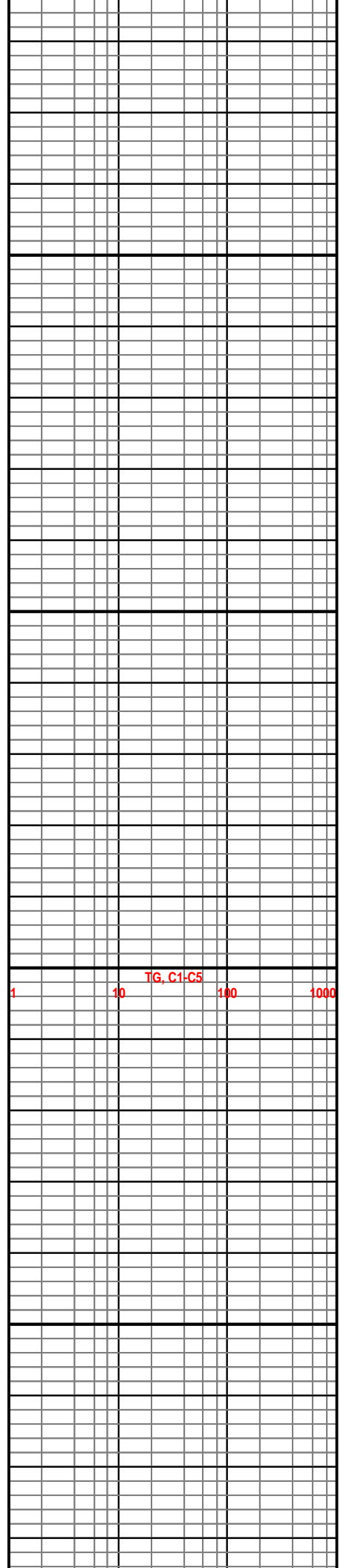
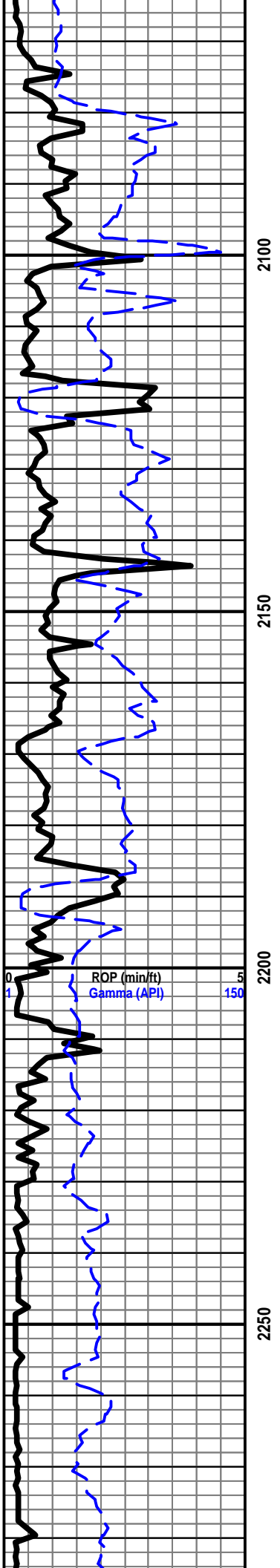
- Rft
- Sidewall

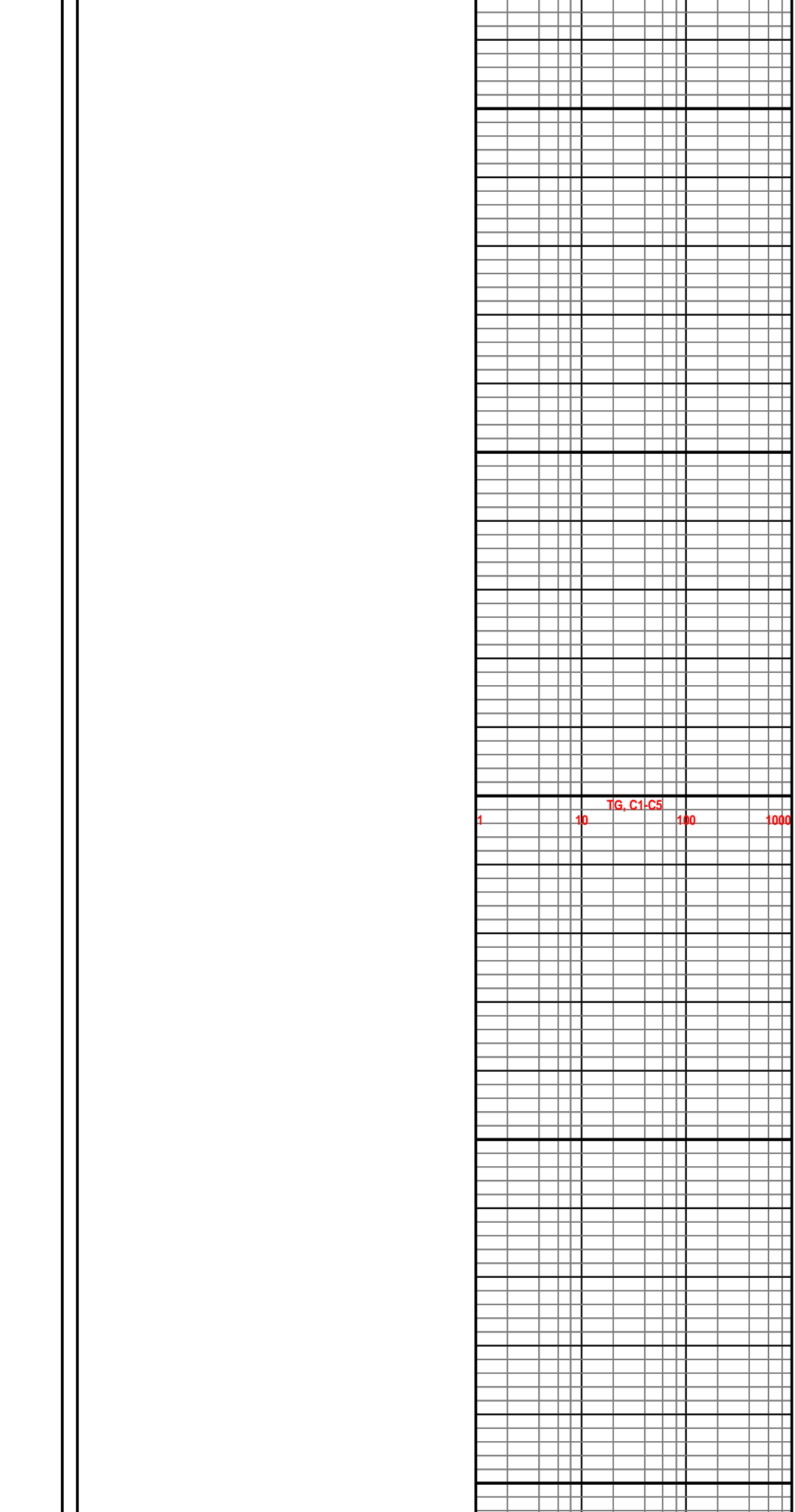
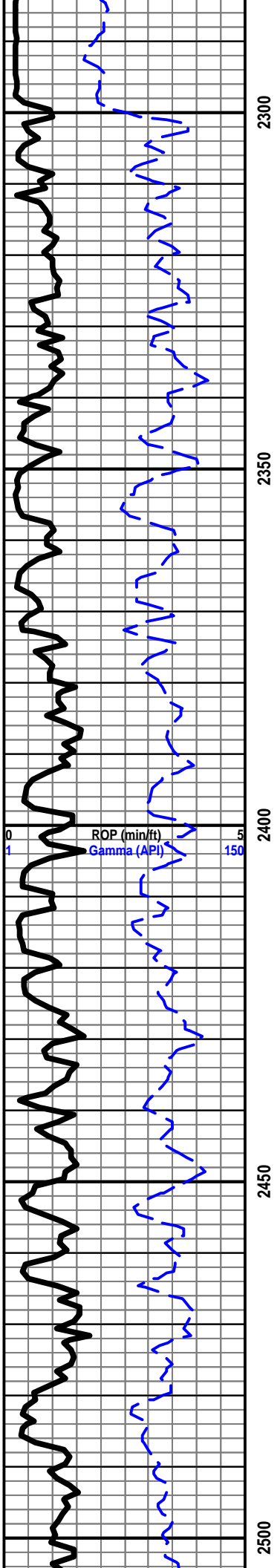


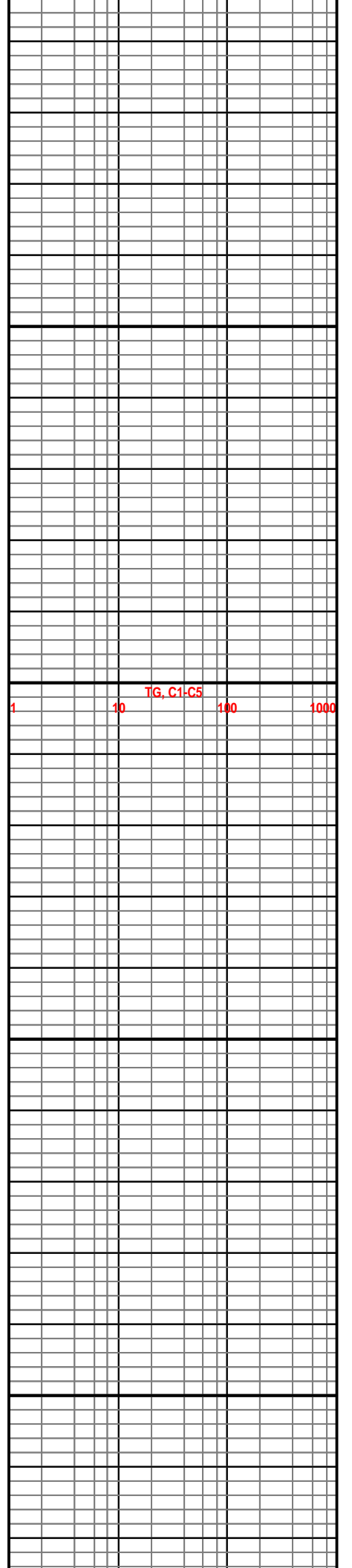
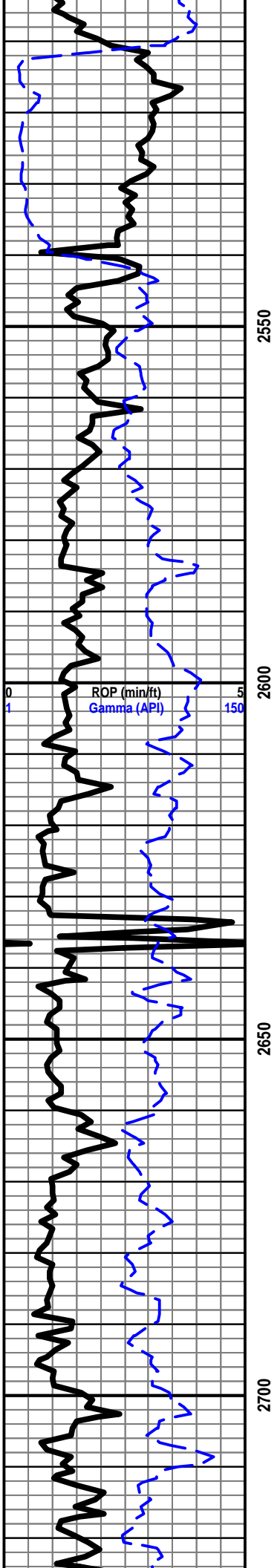


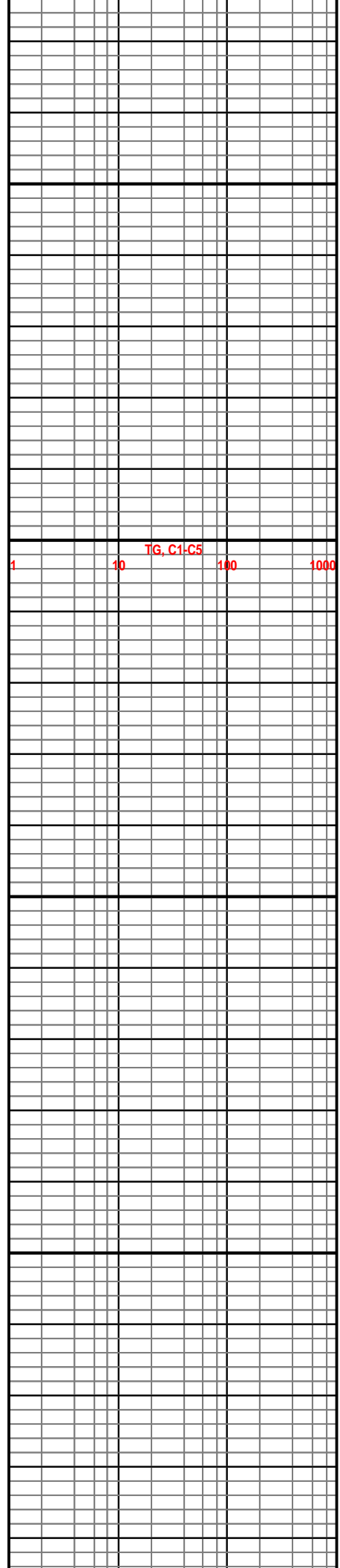
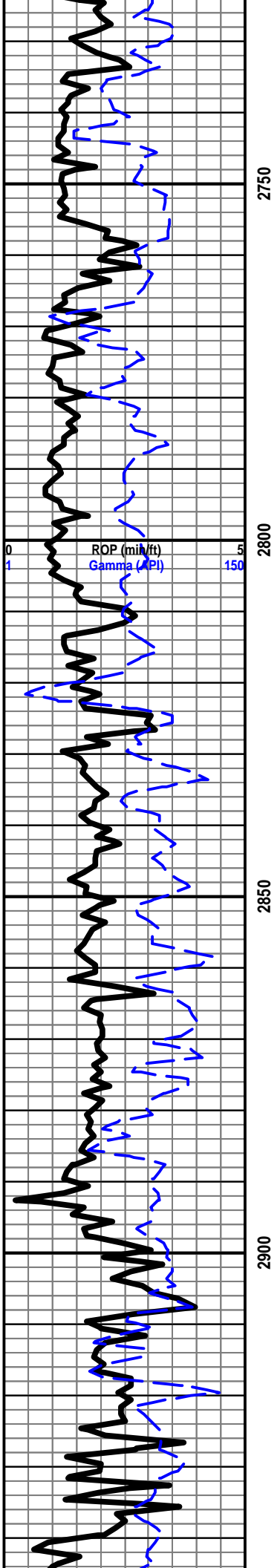


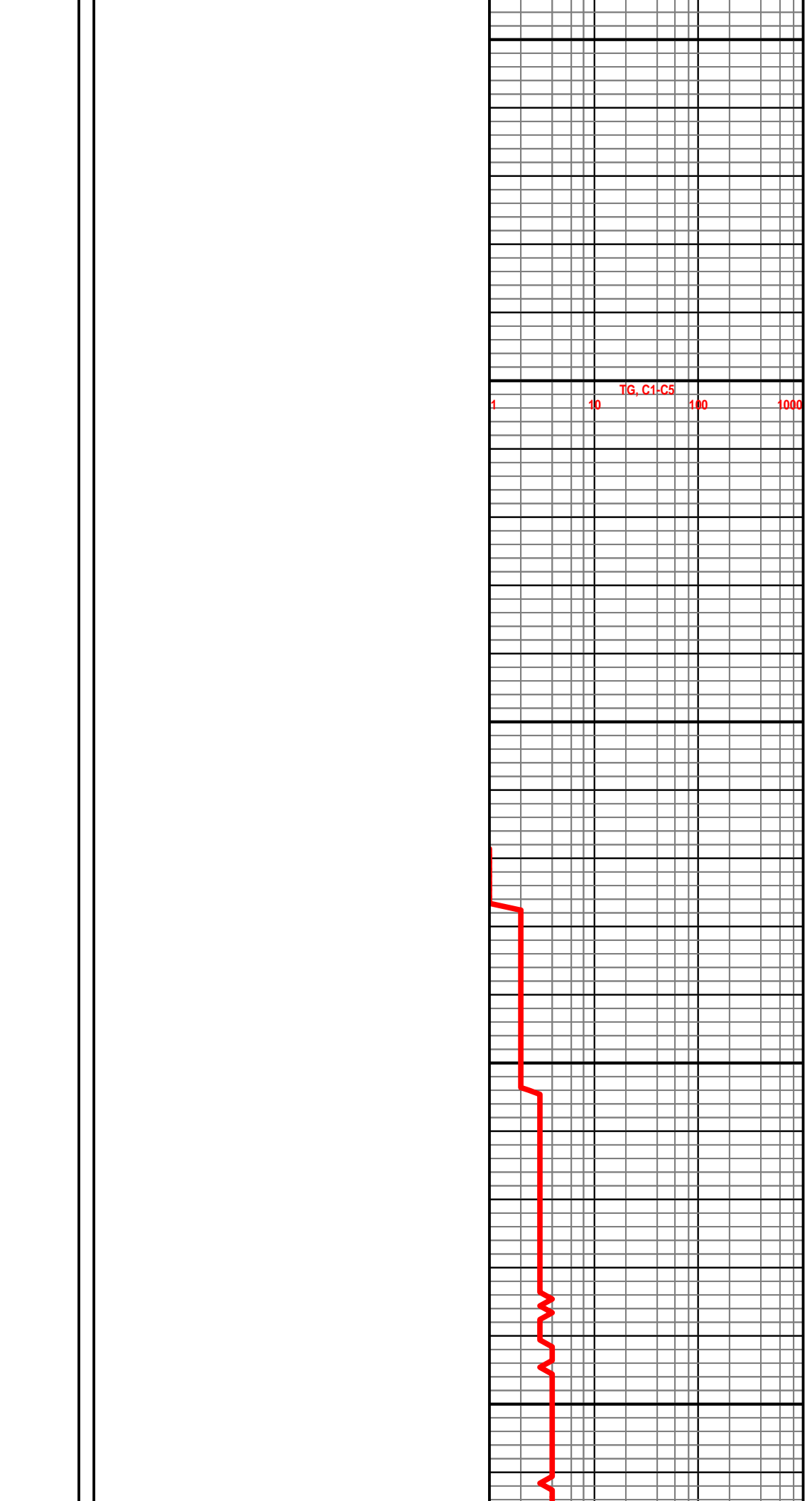
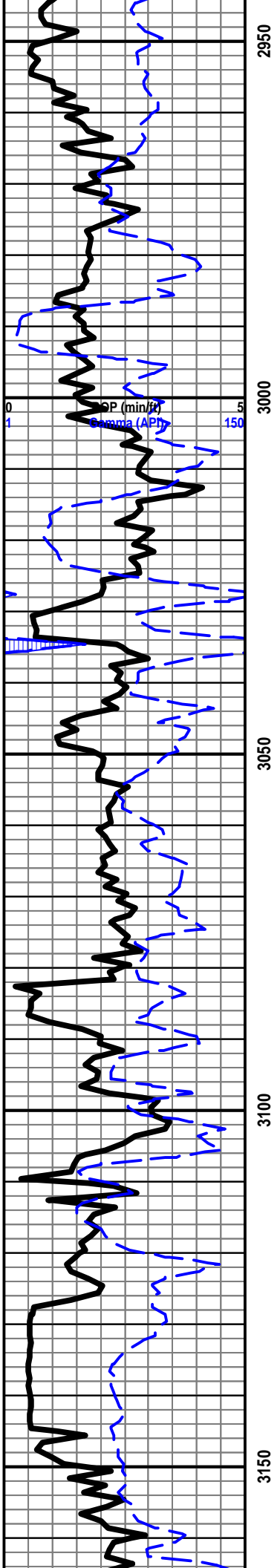


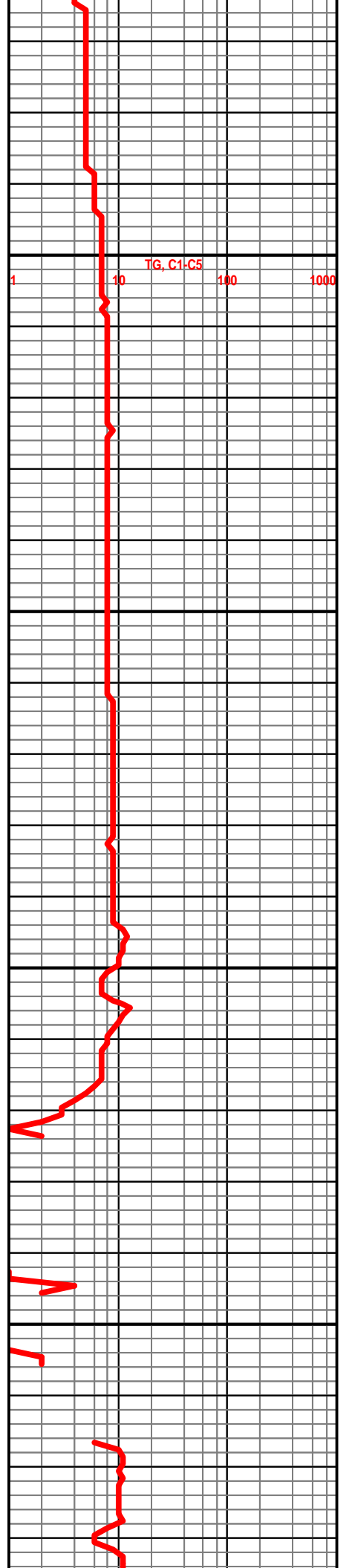
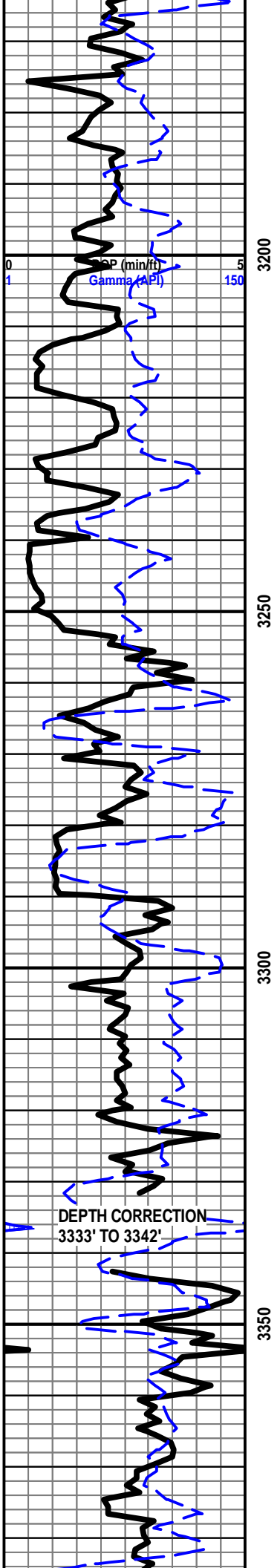


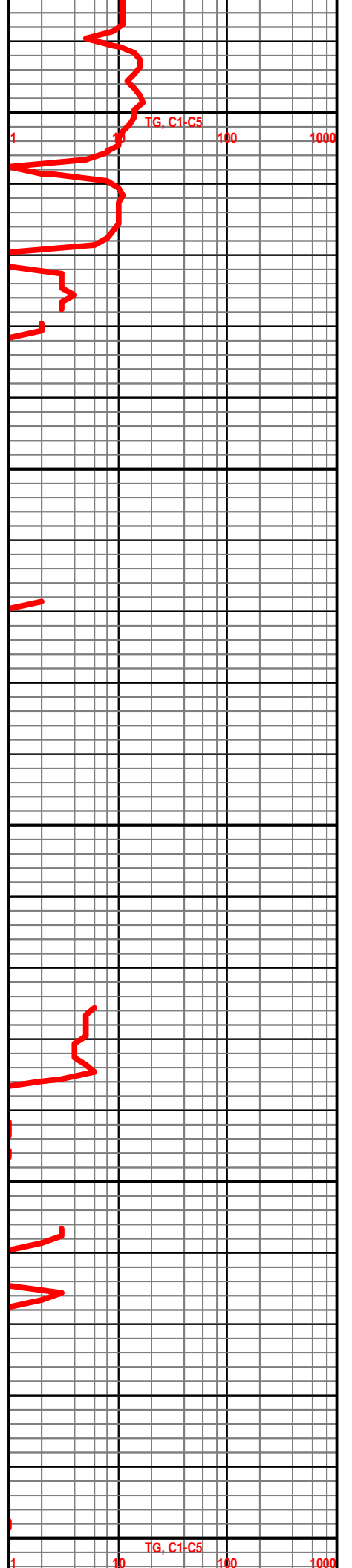
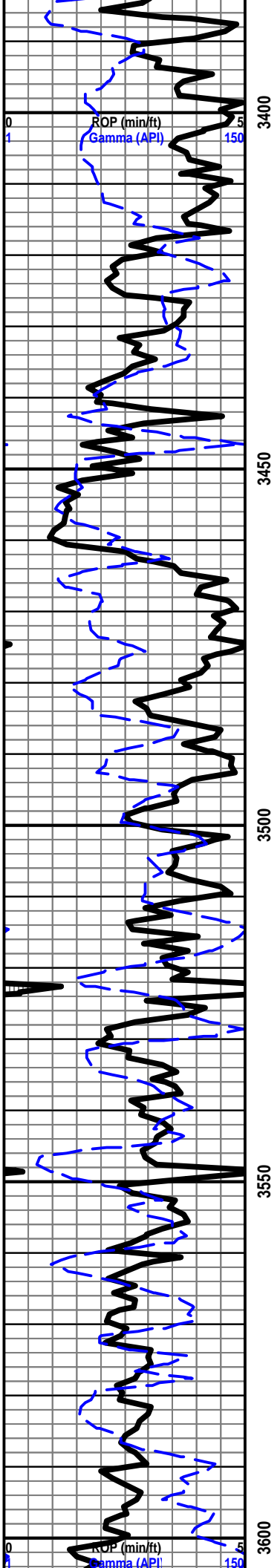


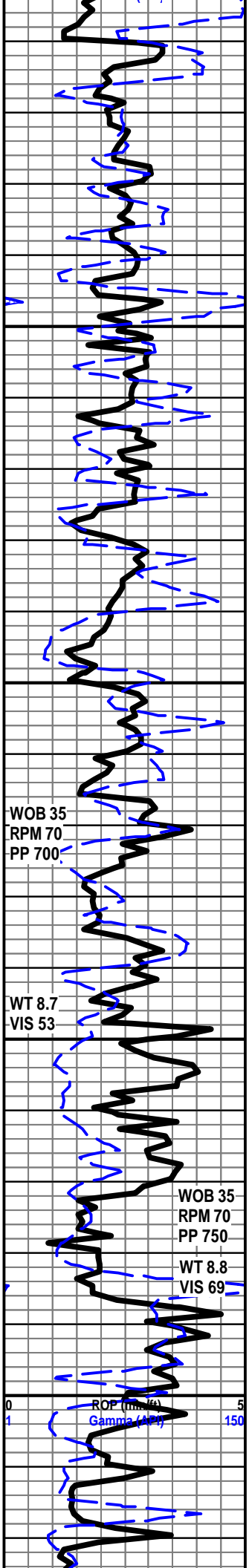












3650

3700

3750

3800

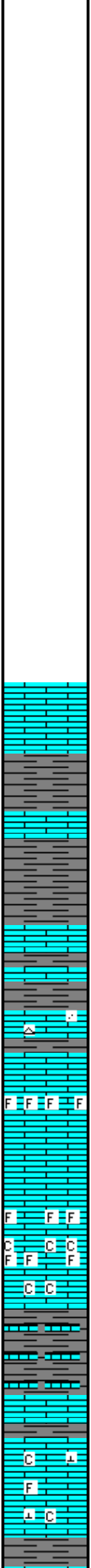
WOB 35
RPM 70
PP 700

WT 8.7
VIS 53

WOB 35
RPM 70
PP 750

WT 8.8
VIS 69

ROP (mm/hr)
Gamma (API)



START 24 HOUR MANNED UNIT
DECEMBER 16, 2014

LS - OFF WHT TO WHT, HD DNS TO BRIT, FN TO VF-XLN,
S-SUCRO, LT TR IMBD SFT WHT CHLK, DLL YEL MIN FLO
IN 20%, TR PR INTER-XLN POR IN 1%, NO CUT OR SHOW

LS - OFF WHT TO LT GRY, HD DNS TO MD DNS, FN TO MD-XLN, VF-XLN
IP, S-SUCRO, NO VIS FLO, NO VIS POR, NO CUT OR SHOW

SH - LT GRY TO GRY, FRM TO SFT, GMMY IP, SLTY SMTH
TXT

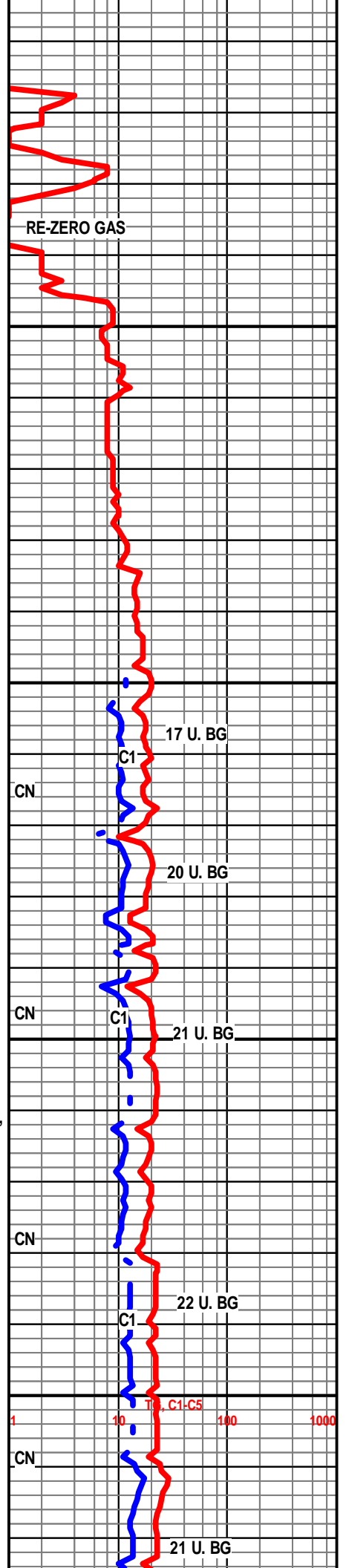
TOPEKA 3746' (-805')

LS - OFF WHT TO CRM, HD DNS TO BRIT, FN-XLN TO VF-XLN IP,
S-SUCRO, TR FREE S-ANG OFF WHT CHRT, LT TR FREEAREN LS, LT TR
IMBD FOSS PELLETS, DLL YEL MIN FLO, NO VIS POR, NO CUT OR SHOW

LS - OFF WHT TO WHT, HD DNS TO BRIT, FN TO MD-XLN,
S-SUCRO, ABDT IMBD FOSS FRAGS, DLL YEL MIN FLO IP,
TR PR INTER-XLN POR IN 1%, NO CUT OR SHOW

LS - OFF WHT TO WHT, HD DNS TO BRIT, MD-XLN TO
RE-XLN IP, S-SUCRO, ABDT IMBD FOSS FRAGS, ABDT
FREE SFT WHT CHLK, DLL YEL MIN FLO IN 50%, PR
INTER-FOSS POR IN 1%, NO CUT OR SHOW

LS - OFF WHT TO WHT, HD DNS TO BRIT, MD-XLN TO
RE-XLN, S-SUCRO, IMBD CALC-XLS, IMBD FOSS
PELLETS, TR FREE SFT WHT CHLK, DLL YEL MIN FLO IN
50%, PR INTER-XLN POR IN 1%, NO VIS CUT OR SHOW



RE-ZERO GAS

CN

CN

CN

CN

17 U. BG

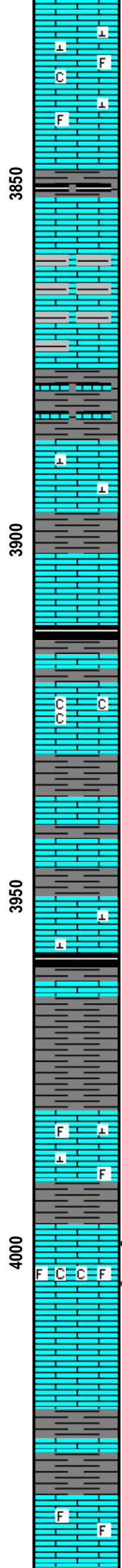
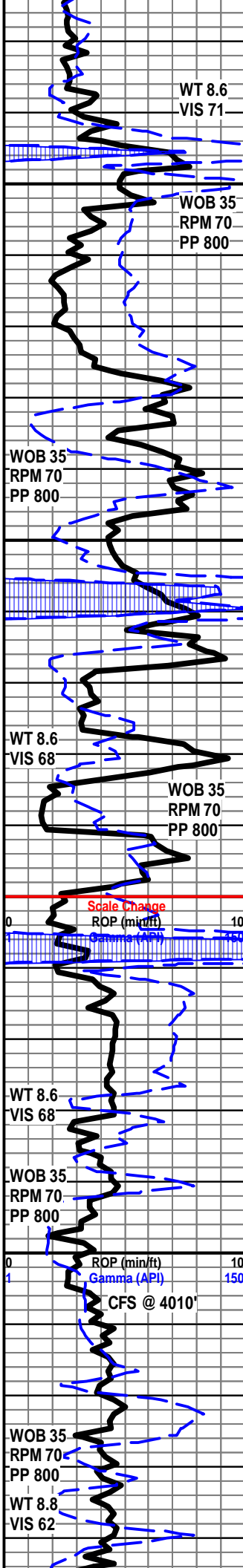
20 U. BG

21 U. BG

22 U. BG

21 U. BG

1 10 100 1000
C1-C5



LS - OFF WHT TO WHT, CRM IP, HD DNS TO BR TT, MD-XLN TO RE-XLN TO V TT SUCRO MTRX, IMBD CALC-XLS, IMBD FOSS FRAGS, TR FREE SFT WHT CHLK, DLL YEL MIN FLO IN 40%, PR TO FR INTER-FOSS POR IN 2%, NO CUT OR SHOW

LS - OFF WHT TO GRY, MOTT, HD DNS TO V BR TT, MD-XLN TO RE-XLN, S-SUCRO, IMBD GRY & DRK GRY SH THRU, NO VIS FLO, NO VIS POR, NO CUT OR SHOW

SH - GRY TO DRK GRY, FRM TO SFT, BLKY SMTH TXT, IMBD LS GRNS THRU, FREE LS THRU

LS - OFF WHT TO WHT, CRM IP, HD DNS TO BR TT, FN TO MD-XLN, S-SUCRO, TR IMBD CALC-XLS, DLL YEL MIN FLO IN 30%, NO VIS POR, NO CUT OR SHOW

LS - OFF WHT TO WHT, HD DNS TO BR TT, FN TO MD-XLN, S-SUCRO, IMBD CALC-XLS, DLL YEL MIN FLO IN 30%, NO VIS POR, NO CUT OR SHOW

LS - OFF WHT TO WHT, CRM IP, HD DNS TO BR TT, FN TO MD-XLN, S-SUCRO, FREE SFT WHT CHLK THRU, DLL YEL MIN FLO IN 40%, NO VIS POR, NO CUT OR SHOW

LS - OFF WHT TO LT GRY, MOTT, HD DNS TO BR TT, FN TO MD-XLN, S-SUCRO, IMBD FOSS FRAGS, DLL YEL MIN FLO IN 20%, NO VIS POR, NO CUT OR SHOW

LS - OFF WHT TO WHT, GRYMOTT IP, HD DNS TO BR TT, FN TO MD-XLN, S-SUCRO, ABDT IMBD CALC-XLS, TR IMBD FOSS FRAGS, DLL YEL MIN FLO IN 50%, NO VIS POR, NO CUT OR SHOW

HEEBNER 3959' (-1018')

SH - GRY TO LT GRY, GRN IP, V FRM TO GMMY, SLTY SMTH TXT

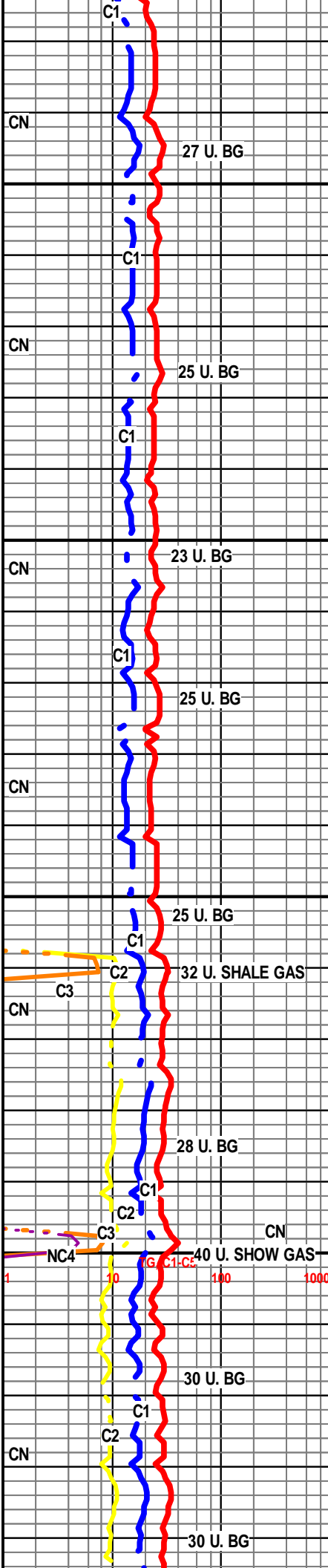
LS - OFF WHT TO CRM, HD DNS TO BR TT, FN TO MD-XLN, S-SUCRO, IMBD CALC-XLS, IMBD FOSS FRAGS, DLL YEL MIN FLO IN 50%, TR PR INTER-FOSS POR IN 1%, NO CUT OR SHOW

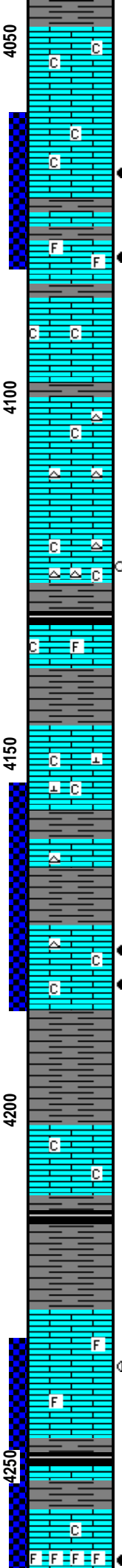
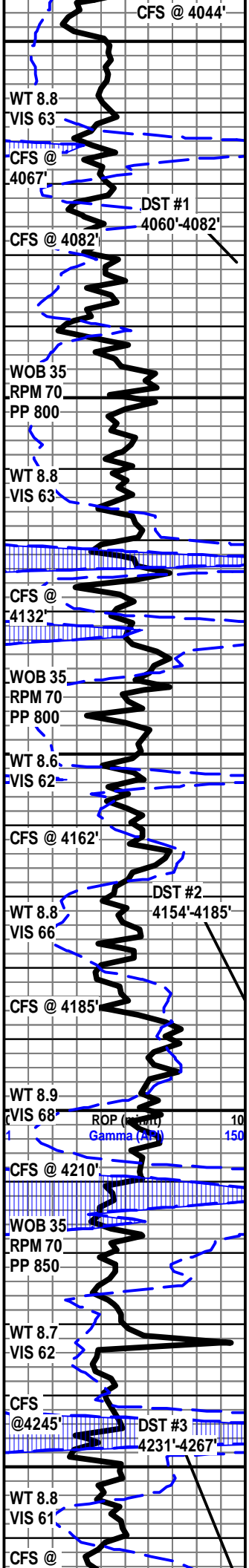
LANSING 3995' (-1054')

LS - OFF WHT TO WHT(W/ LT TN OIL STN IN 30%) HD DNS TO BR TT, FN TO MD-XLN, S-SUCRO, IMBD FOSS FRAGS, ABDT FREE SFT WHT CHLK, YEL GLD MIN FLO IN 40%, SPTTD BRI YEL MIN FLO IN 10%, PR TO FR INTER-FOSS POR IN 2%, FR VUG POR IN 1%, FR INST FL SH CUT, FR TO GD SLOW STRM CUT IN 30%, LT TN LCH ON DISH, STRONG OIL ODOR

LANSING "C" 4035' (-1094')

LS - OFF WHT TO WHT, CRM IP, HD DNS TO BR TT, FN TO VF-XLN, S-SUCRO, TR FREE FOSS FRAGS, LT TR LMNT RD SH, DLL YEL MIN FLO IN 30%, PR INTER-FOSS POR IN 1%, NO CUT OR SHOW





LS - OFF WHT TO WHT, HD DNS TO BRTT, FN TO VF-XLN, S-CHLKY, LT TR FREE S-ANG OFF WHT CHRT, DLL YEL MIN FLO THRU, NO VIS POR, NO CUT OR SHOW

(4067'-4070') LS - OFF WHT TO WHT, CRM IP(W/ LT TN OIL STN IN 30%) HD DNS TO BRTT, FN TO MD-XLN, S-SUCRO, TR IMBD SFT WHT CHLK, YEL GLD FLO IN 50%, FR TO GD VUG POR IN 4%, PR MICRO VUG POR IN 1%, PR INST FLUSH CUT, FR TO GD SLOW STRM CUT IN 15%, NO LCH ON DISH, FAIR OIL ODOR

LANSING "F" 4078' (-1137')

LS - OFF WHT TO CRM (W/ TN OIL STN IN 50%), HD DNS TO BRTT, MD-XLN TO RE-XLN, S-SUCRO, IMBD FOSS FRAGS, YEL GLD FLO THRU, SPTTD YEL GLD FLO IN 10%, GD INTER-FOSS POR IN 4%, FR TO GD VUG POR IN 2%, FR MICRO VUG POR IN 1%, GD INST FLUSH CUT, EXCEL SLOW STRM CUT THRU, TN LCH ON DISH, FAIR OIL ODOR

LS - OFF WHT TO WHT, HD DNS TO BRTT, FN TO VF-XLN, S-SUCRO, IMBD SFT WHT CHLK, NO VIS FLO, NO VIS POR, NO CUT OR SHOW

LS - WHT TO OFF WHT, HD DNS TO BRTT, FN TO VF-XLN, CYRPT-XLN IP, S-SUCRO, TR FREE S-ANG OFF WHT CHRT, LT TR IMBD PYR, DLL YEL MIN FLO THRU, NO VIS POR, NO CUT OR SHOW

(1 ROCK) LS - OFF WHT TO TN, CRM IP, HD DNS TO BRTT, FN TO VF-XLN, CRYTPO-XLN IP, S-SUCRO, FREE S-ANG OFF WHT CHRT, LT TR FREE SFT WHT CHLK, DLL YEL MIN FLO IN 30%, SPTTD BRI YEL MIN FLO IN 10%, PR INTER-XLN POR IN 2%, NO ISNT FLUSH CUT, PR TO V PR SLOW STRM CUT IN 5%, FAINT OIL ODOR, NO LCH ON DISH

LANSING "H" 4135' (-1194')

LS - OFF WHT TO WHT, GRY IP, MOTT, HD DNS TO BRTT, MD-XLN TO FN-XLN, S-SUCRO, IMBD FOSS FRAGS, LMNT GRY SH, TR FREE SFT WHT CHLK, DLL YEL MIN FLO IP, NO VIS POR, NO CUT OR SHOW

LS - OFF WHT TO WHT, HD DNS TO BRTT, FN TO VF-XLN, MD-XLN IP, S-SUCRO, LT TR IMBD CALC-XLS, TR IMBD SFT WHT CHLK, DLL YEL MIN FLO IN 30%, PR INTER-XLN POR IN 1%, NO CUT OR SHOW

LS - OFF WHT TO WHT, HD DNS TO BRTT, FN TO VF-XLN, S-SUCRO, TR FREE S-ANG OFF WHT CHRT, DLL YEL MIN FLO IP, NO VIS POR, NO CUT OR SHOW

LS - OFF WHT TO DRK TN(DUE TO DRK TN OIL STN THRU) HD DNS TO BRTT, FN TO MD-XLN, S-SUCRO, FREE S-ANG OFF WHT CHRT, TR FREE SFT WHT CHLK, YEL GLD FLO THRU, SPTTD YEL GLD FLO IN 30%, GD TO EXCEL VUG POR IN 5%, GD MICRO VUG POR IN 2%, EXCEL INST FLUSH CUT, EXCEL SLOW STRM CUT THRU, TN LCH ON DISH, FAIR OIL ODOR

SH - LT GRY TO GRN TO GRY, V SFT TO V GMMY, SMTH SLTY TXT

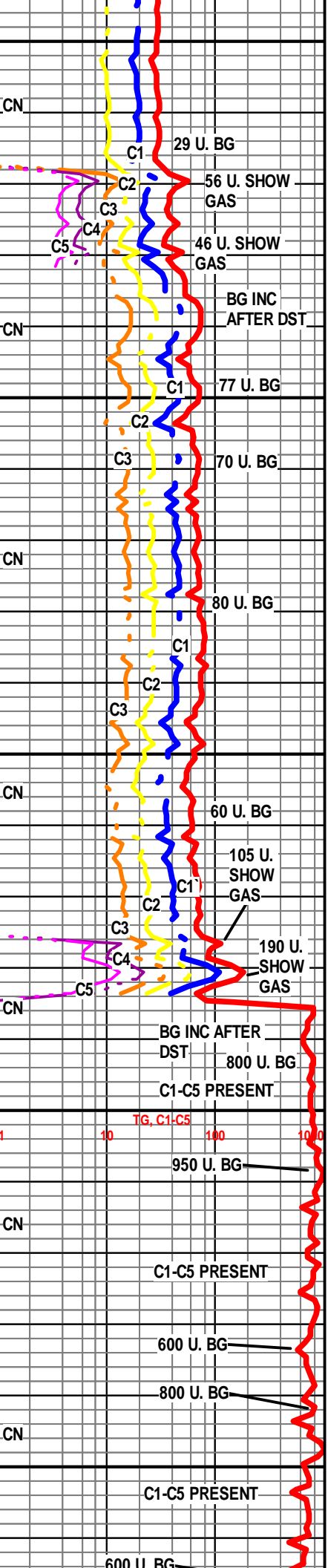
LANSING "J" 4203' (-1262')

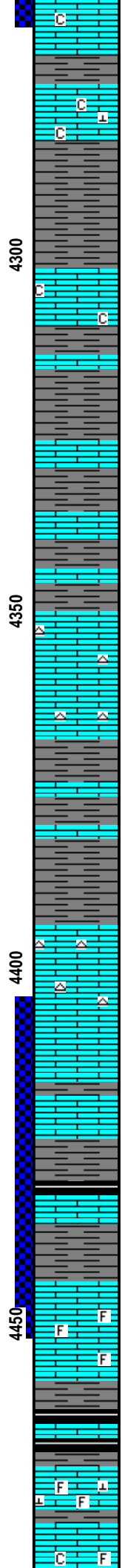
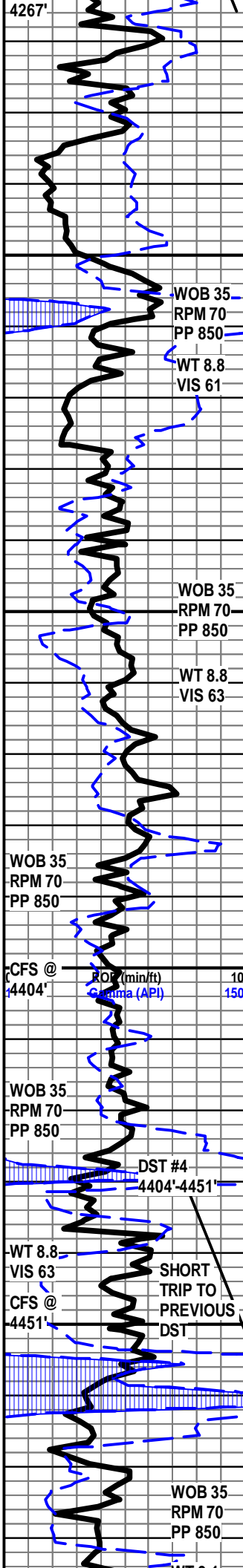
LS - OFF WHT TO WHT, HD DNS TO BRTT, FN TO VF-XLN, CRYPTO-XLN IP, S-SUCRO, TR FREE SFT WHT CHLK, DLL YEL MIN FLO THRU, NO VIS POR, NO CUT OR SHOW

SH - SFT BLK CARB SH, BLKY SPLNTY TXT

LS - OFF WHT TO WHT, CRM IP (W/ LT TN OIL STN IN 20-30%) HD DNS TO BRTT, FN TO VF-XLN, S-SUCRO, TR IMBD FOSS FRAGS, LT TR IMBD SFT WHT CHLK, YEL GLD FLO THRU, SPTTD BRI YEL FLO IN 10%, PR TO FR INTER-FOSS POR IN 2%, FR MICRO VUG POR IN 1%, PR INST FLUSH CUT, FR SLW STRM CUT IN 20%, NO LCH ON DISH, FAIR OIL ODOR

LS - OFF WHT TO CRM(W/ LT TN OIL STN IN 40-50%) HD DNS TO BRTT, FN TO MD-XLN, RE-XLN IP, S-SUCRO, ABTD IMBD FOSS FRAGS, TR IMBD SFT WHT CHLK, YEL GLD MIN FLO THRU, SPTTD BRI YEL FLO IN 15%, FR TO GD INTER-FOSS POR IN 2-3%, PR TO FR MICRO VUG POR IN 1%, GD INST FLUSH CUT, EXCEL SLOW STRM CUT THRU, LT TN LCH ON DISH, FAIR OIL ODOR, LIVE OIL IN SAMPLE CUP





BKC 4272'(-1331')

LS - OFF WHT TO WHT, HD DNS TO BR TT, MD-XLN TO FN-XLN, S-CHLKY, IMBD CALC-XLS, DLL YEL MIN FLO IP, NO VIS POR, NO CUT OR SHOW

SH - RD TO GRY, SFT TO GMMY, BLKY SMTH TXT

LS - OFF WHT TO WHT, LT GRY IP, HD DNS TO BR TT, FN TO VF-XLN, S-CHLKY, TR FREE RD SH, NO VIS FLO, NO POR, NO CUT OR SHOW

SH - GRY TO DRK GRY, FRM TO SFT, BLKY SMTH TXT

LS - OFF WHT TO GRY, WHT IP, HD DNS TO BR TT, FN TO MD-XLN, S-SUCRO, DLL YEL MIN FLO IP, NO VIS POR, NO CUT OR SHOW

LS - OFF WHT TO GRY, MOTT, HD DNS TO BR TT, FN TO VF-XLN, RE-XLN IP, S-SUCRO, TR FREE S-ANG OFF WHT CHRT, DLL YEL MIN FLO IP, NO VIS POR, NO CUT OR SHOW

LS - OFF WHT TO CRM(W/ TN OIL STN IN 15-20%) HD DNS TO BR TT, FN TO VF-XLN, MD-XLN IP, S-SUCRO, ABDT FREE S-ANG OFF WHT TO TN CHRT, YEL GLD FLO IN 40%, SPTTD BRI YEL IN 20%, PR TO FR VUG POR IN 1-2%, PR INTER-XLN POR IN 1%, GD INST FL SH CUT, FR TO GD SLOW STRM CUT IN 40%, NO LCH ON DISH, FAINT OIL ODOR

LS - OFF WHT TO GRY, HD DNS TO BR TT, FN TO VF-XLN, S-SUCRO, DLL YEL MIN FLO IP, NO VIS POR, NO CUT OR SHOW

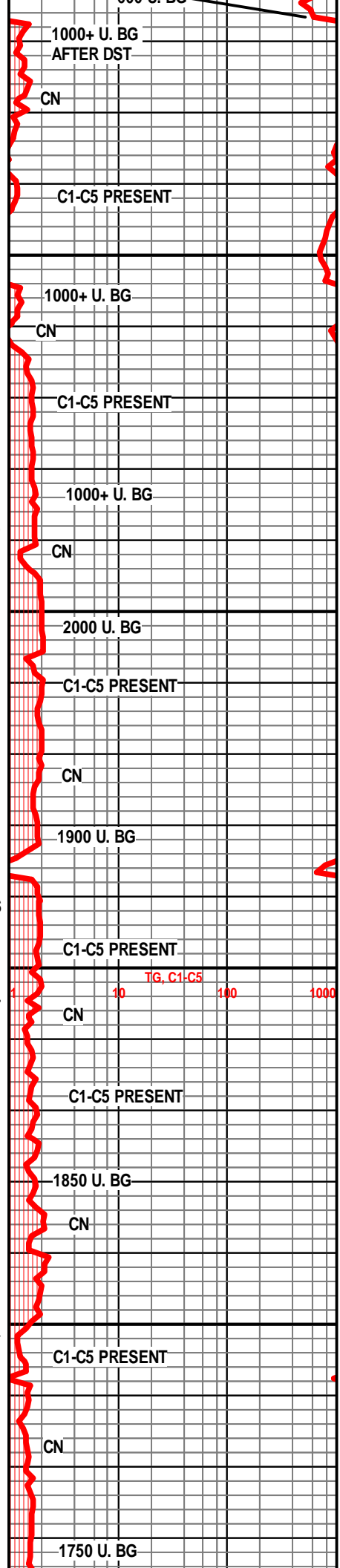
LABETTE 4430'(-1489')

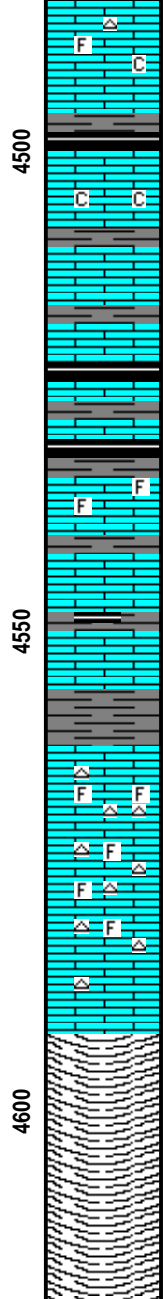
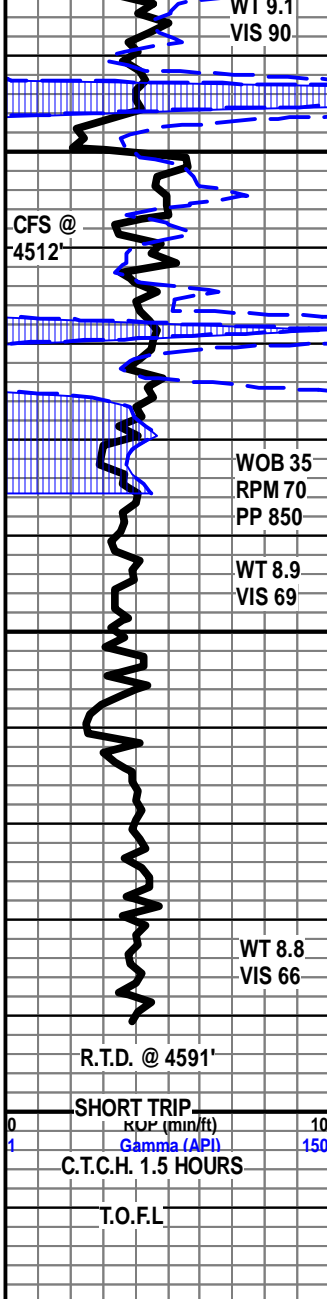
LS - OFF WHT TO CRM (W/ LT TN OIL STN IN 30%) HD DNS TO BR TT, FN TO VF-XLN, MD-XLN IP, S-SUCRO, IMBD FOSS FRAGS, YEL GLD FLO IN 40%, SPTTD BRI YEL FLO IN 10%, FR INTER-FOSS POR IN 3%, PR INTER-XLN POR IN 1%, PR INST FLUSH CUT, FR TO GD SLOW STRM CUT IN 10%, NO LCH ON DISH, GD OIL ODOR

SH - SFT BLK CARB, BLKY SMTH SPLNTY TXT

LS - OFF WHT TO CRM, TN IP, HD DNS TO BR TT, FN TO MD-XLN, S-SUCRO, TR IMD FOSS FRAGS, LT TR IMBD CALC-XLS, LT TR IMBD PYR, YEL MIN FLO THRU, PR TO FR INTER-FOSS POR IN 2%, NO VIS CUT OR SHOW

LS - OFF WHT TO CRM, HD DNS TO BR TT, FN TO MD-XLN, S-SUCRO, IMBD FOSS FRAGS, TR FREE SFT WHT CHL K, LT TR FREE S-ANG OFF





WHT CHRT, DLL YEL MIN FLO IN 10%, PR INTER-FOSS POR IN 1%, NO VIS CUT OR SHOW, GASSY ODOR

CHEROKEE 4499' (-1558')

LS - OFF WHT TO WHT, GRY IP, MOTT, HD DNS TO BR TT, FN TO VF-XLN, MD-XLN IP, S-CHLKY, TR FREE S-ANG OFF WHT CHRT, DLL YEL MIN FLO IP, PR INTER-XLN POR IN 1%, NO CUT OR SHOW

LS - OFF WHT TO WHT, HD DNS TO BR TT, FN TO MD-XLN, S-SUCRO, IMBD FOSS FRAGS, YEL MIN FLO IP, NO VIS POR, NO CUT OR SHOW

LS - OFF WHT TO CRM, HD DNS TO BR TT, FN TO MD-XLN, S-SUCRO, TR IMBD FOSS FRAGS, LT TR IMBD CALC-XLS, NO VIS FLO, PR TO FR INTER-FOSS POR IN 1%, NO CUT OR SHOW

LS - OFF WHT TO WHT, HD DNS TO BR TT, FN TO MD-XLN, S-SUCRO, TR IMBD FOSS FRAGS, NO VIS FLO, PR INTER-XLN POR IP, NO CUT OR SHOW

MISSISSIPPIAN 4562' (-1621)

LS - OFF WHT TO WHT, MOTT IP, HD DNS TO MD DNS, BR TT IP, FN TO MD-XLN, S-SUCRO, IMBD FOSS FRAGS, ABDT FREE S-ANG OFF WHT TO TRANS CHRT, DLL YEL MIN FLO IP, PR INTER-FOSS POR IN 2%, NO CUT OR SHOW

LS - OFF WHT TO CRM, HD DNS TO BR TT, FN TO MD-XLN, S-SUCRO, ABDT IMBD FOSS FRAGS, ABDT FREE S-ANG TRANS TO OFF WHT CHRT, DLL YEL MIN FLO IN 20%, NO VIS POR, NO CUT OR SHOW

R.T.D. @ 4591' AT 5:20 CST ON DEC. 21, 2014

LOGGING SERVICES COMPLETED BY: WEATHERFORD

