

## DRILL STEM TEST REPORT

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

1515 Wnykoop Ste 700  
Denver CO 80202

ATTN: Chris Mitchell

### **Ball #1-12**

#### **12-15s-16w Ellis,KS**

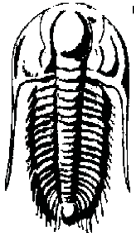
Start Date: 2013.03.02 @ 12:25:30

End Date: 2013.03.02 @ 20:33:54

Job Ticket #: 50361                      DST #: 2

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

Printed: 2013.03.08 @ 10:08:09



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Samuel Gary Jr & Assoc Inc

**12-15s-16w Ellis,KS**

1515 Wnykoop Ste 700  
Denver CO 80202

**Ball #1-12**

Job Ticket: 50361

**DST#: 2**

ATTN: Chris Mitchell

Test Start: 2013.03.02 @ 12:25:30

## GENERAL INFORMATION:

Formation: **LKC J-K**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:13:10

Time Test Ended: 20:33:54

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 42

**Interval: 3324.00 ft (KB) To 3364.00 ft (KB) (TVD)**

Reference Elevations: 1921.00 ft (KB)

Total Depth: 3364.00 ft (KB) (TVD)

1913.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 8369**

**Inside**

Press@RunDepth: 377.38 psig @ 3330.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.03.02

End Date:

2013.03.02

Last Calib.:

2013.03.02

Start Time: 12:25:30

End Time:

20:33:54

Time On Btm:

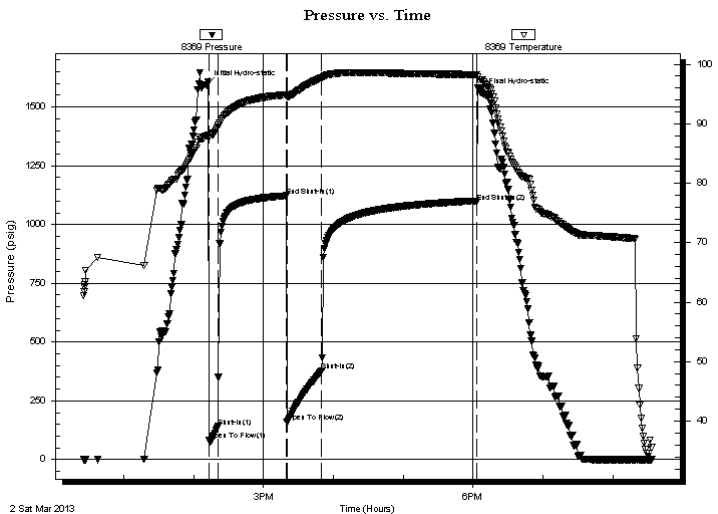
2013.03.02 @ 14:11:10

Time Off Btm:

2013.03.02 @ 18:07:09

**TEST COMMENT:** 5-IFP-strg bl in 2 min  
60-ISIP-1/8" bl bk  
30-FFP-strg bl in 2 min  
120-FSIP-1/8" bl bk

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1593.01	87.96	Initial Hydro-static
2	81.07	87.59	Open To Flow (1)
10	140.55	89.49	Shut-In(1)
69	1122.07	94.85	End Shut-In(1)
69	158.94	94.60	Open To Flow (2)
99	377.38	97.69	Shut-In(2)
232	1095.66	98.25	End Shut-In(2)
236	1561.06	97.35	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
600.00	Water	8.14
120.00	SOCW 2%O98%W	1.68
15.00	O&GCMW 5%G10%O20%M65%W	0.21
0.00	105'GIP	0.00

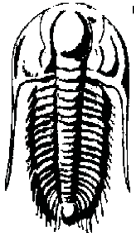
\* Recovery from multiple tests

## Gas Rates

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







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Samuel Gary Jr & Assoc Inc

**12-15s-16w Ellis,KS**

1515 Wnykoop Ste 700  
Denver CO 80202

**Ball #1-12**

Job Ticket: 50361

**DST#: 2**

ATTN: Chris Mitchell

Test Start: 2013.03.02 @ 12:25:30

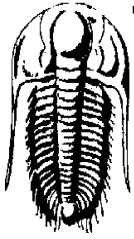
## Tool Information

Drill Pipe:	Length: 3285.00 ft	Diameter: 3.80 inches	Volume: 46.08 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: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 46.23 bbl</u>	Tool Chased 5.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	3324.00 ft			Final 59000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	40.00 ft			
Tool Length:	74.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments: slid tool 5' to bottom

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Recorder	0.00	8374	Fluid	3290.00	
Blank Spacing	4.00			3294.00	
Change Over Sub	1.00			3295.00	
Shut In Tool	5.00			3300.00	
Sampler	2.00			3302.00	
Hydraulic tool	5.00			3307.00	
Jars	5.00			3312.00	
Safety Joint	2.00			3314.00	
Packer	5.00			3319.00	34.00 Bottom Of Top Packer
Packer	5.00			3324.00	
Stubb	1.00			3325.00	
Perforations	5.00			3330.00	
Recorder	0.00	8369	Inside	3330.00	
Recorder	0.00	8700	Outside	3330.00	
Perforations	31.00			3361.00	
Bullnose	3.00			3364.00	40.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>74.00</b>				



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**FLUID SUMMARY**

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Denver CO 80202

**Ball #1-12**

Job Ticket: 50361

**DST#: 2**

ATTN: Chris Mitchell

Test Start: 2013.03.02 @ 12:25:30

## 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:

74000 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.79 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 7100.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
600.00	Water	8.143
120.00	SOCW 2%O98%W	1.683
15.00	O&GCMW 5%G10%O20%M65%W	0.210
0.00	105'GIP	0.000

Total Length: 735.00 ft      Total Volume: 10.036 bbl

Num Fluid Samples: 0

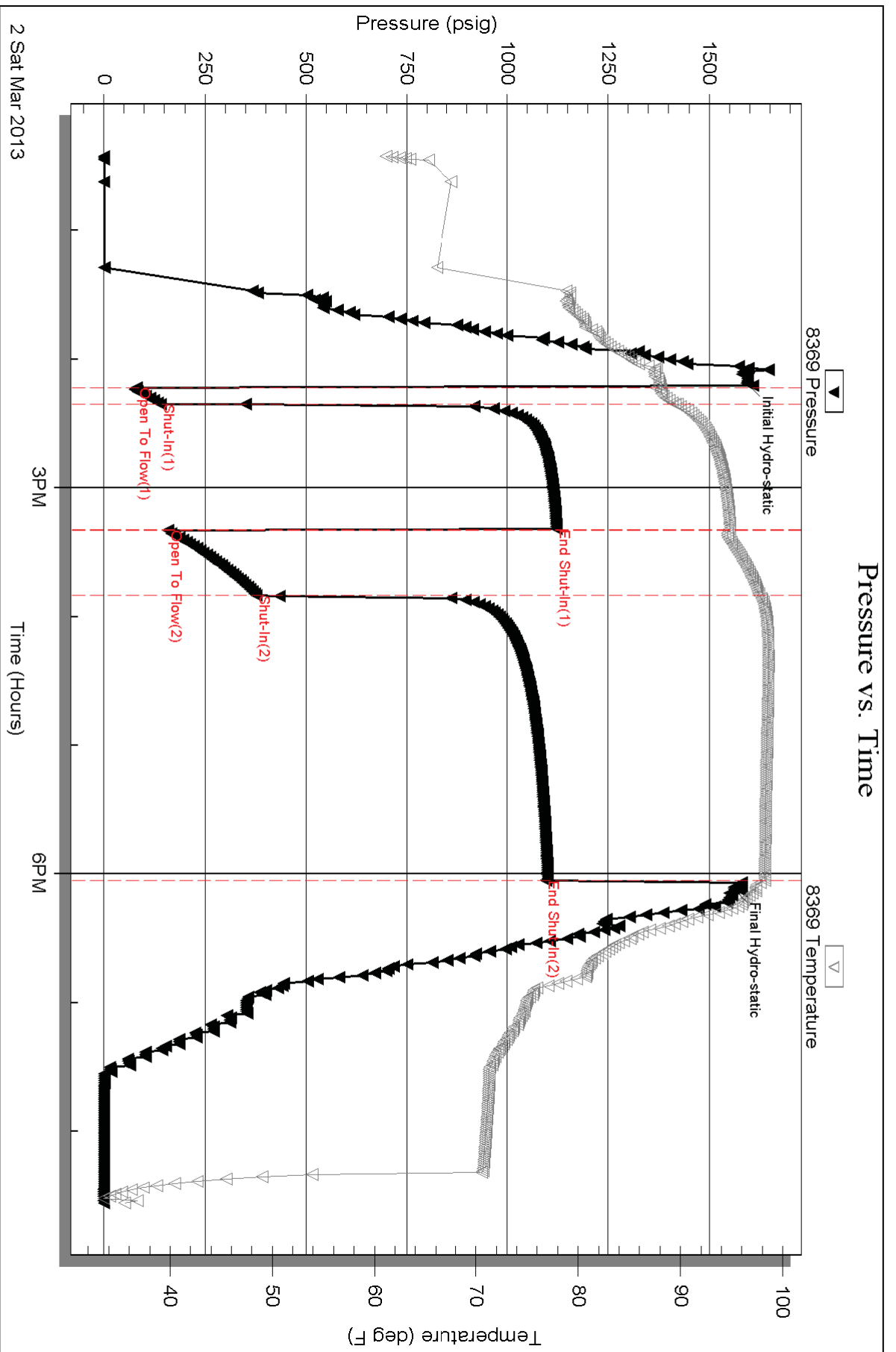
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Sampler Data:450PSI 40MLoil 1960ML Water RW .12 @ 60F

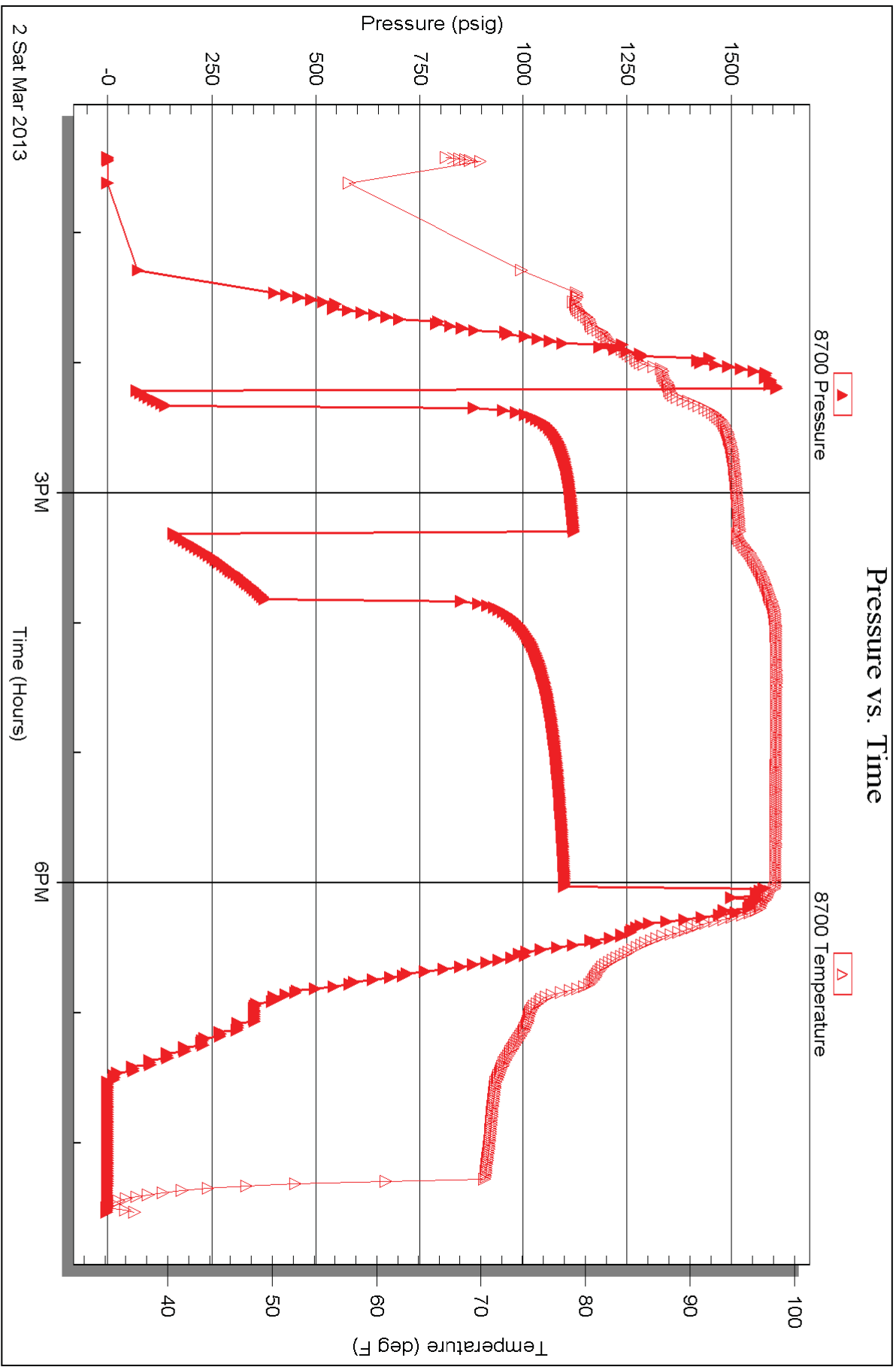


Serial #: 8700

Outside Samuel Gary Jr & Assoc Inc

Ball #1-12

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 50361

Printed: 2013.03.08 @ 10:08:13



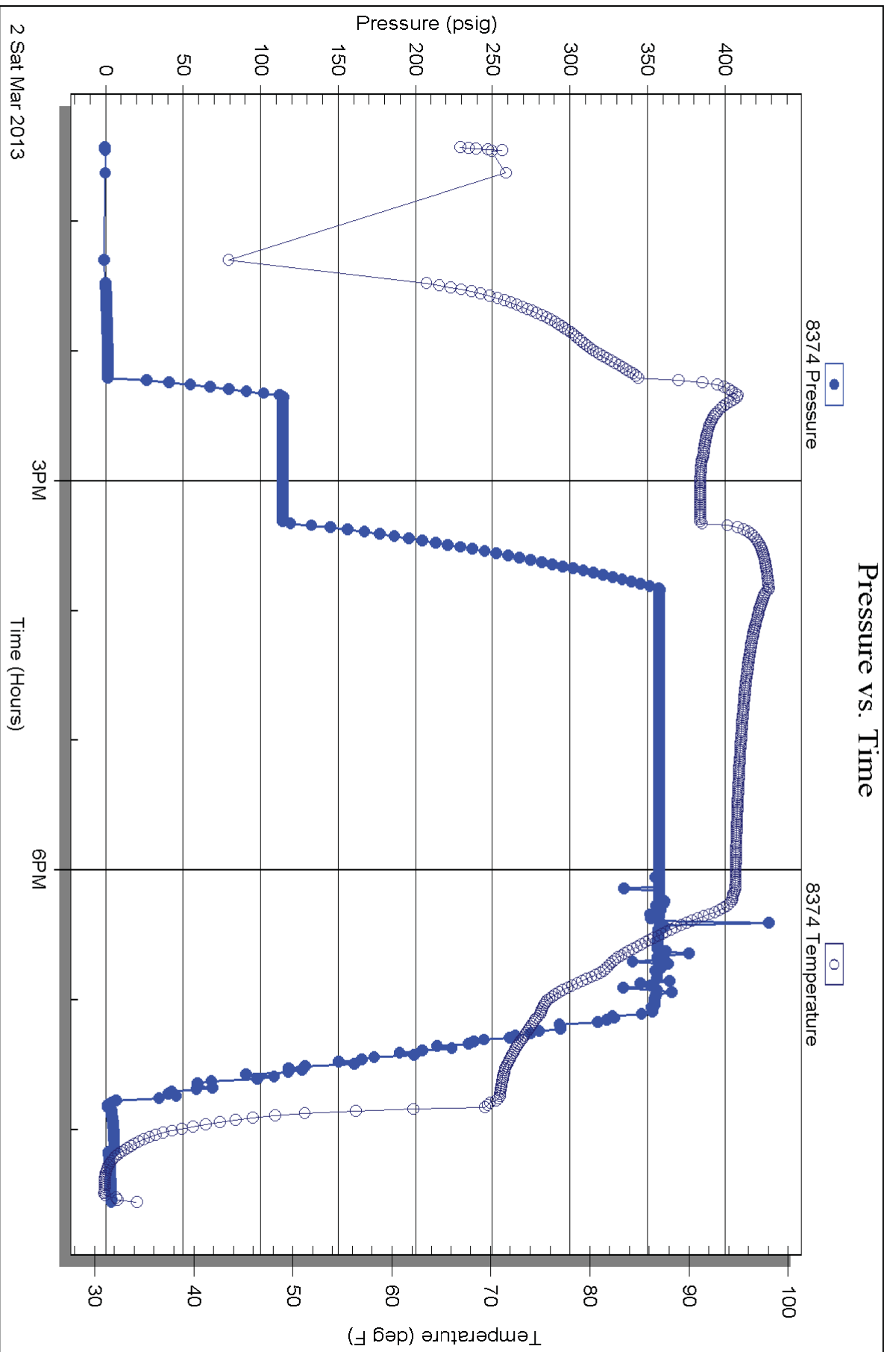
Serial #: 8374

Fluid

Samuel Gary Jr & Assoc Inc

Ball #1-12

DST Test Number: 2





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 50360

Well Name & No. BALL #1-12 Test No. 1 Date 3-1-13  
 Company SAMUEL GARY JR + ASSOCIATES INC Elevation 1921 KB 1913 GL  
 Address 1515 WYNKOOP STE 700 DENVER, CO 80202  
 Co. Rep / Geo. CHRIS MITCHELL Rig DISCOVERY RIG 2  
 Location: Sec. 12 Twp. 15<sup>S</sup> Rge. 16<sup>W</sup> Co. FLLIS State KO

Interval Tested 3189-3217 Zone Tested LKC C-D  
 Anchor Length 28 Drill Pipe Run 3136 Mud Wt. 8.8  
 Top Packer Depth 3184 Drill Collars Run 30 Vis 50  
 Bottom Packer Depth 3189 Wt. Pipe Run - WL 7.2  
 Total Depth 3217 Chlorides 5100 ppm System LCM -

Blow Description IFP - WEAK TO STRONG IN 2 MIN  
ISIP - NO BLOW  
FFP - STRONG BLOW THRU-OUT  
FSIP - 2" BLOW BACK

Rec	Feet of	%gas	%oil	%water	%mud
<u>1270</u>	<u>GIP</u>				
<u>90</u>	<u>WATER</u>				
<u>124</u>	<u>MGO</u>	<u>20</u>	<u>55</u>	<u>20</u>	<u>5</u>

Rec Total 214 BHT 96 Gravity 36 API RW .10 @ 60 °F Chlorides 90000 ppm

(A) Initial Hydrostatic <u>1510</u>	<input checked="" type="checkbox"/> Test 1150	T-On Location <u>1205</u>
(B) First Initial Flow <u>42</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>1250</u>
(C) First Final Flow <u>39</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>1445</u>
(D) Initial Shut-In <u>973</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>1855</u>
(E) Second Initial Flow <u>42</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>2127</u>
(F) Second Final Flow <u>110</u>	<input checked="" type="checkbox"/> Mileage <u>46RT</u> 71.30	Comments _____
(G) Final Shut-In <u>971</u>	<input checked="" type="checkbox"/> Sampler 250	_____
(H) Final Hydrostatic <u>1472</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer

Initial Open <u>5</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>35</u>	<input checked="" type="checkbox"/> Extra Recorder 200	Sub Total <u>0</u>
Final Shut-In <u>150</u>	<input type="checkbox"/> Day Standby	Total <u>1996.30</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't _____
	Sub Total <u>1996.30</u>	

Approved By \_\_\_\_\_ Our Representative RAY SCHWAGER *Thank you*

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



# TRILOBITE TESTING, INC.

P.O. Box 362 • Hays, Kansas 67601

## FLUID SAMPLER DATA

Ticket No. 50360 Date 3-1-13  
 Company Name Samuel Gary Jr + Assoc Inc  
 Lease Ball #1-12 Test No. 1  
 County Ellis Sec. 12 Twp. 15<sup>s</sup> Rng. 16<sup>w</sup>

### SAMPLER RECOVERY

Gas 500 ML  
 Oil 1000 ML  
 Mud — ML  
 Water 500 ML  
 Other — ML  
 Pressure 500 # ML  
 Total 2000 ML

### PIT MUD ANALYSIS

Chlorides 5100 ppm.  
 Resistivity 1.5 ohms @ 54 F  
 Viscosity 50  
 Mud Weight 8.8  
 Filtrate 7.2  
 Other \_\_\_\_\_

### SAMPLER ANALYSIS

Resistivity .10 ohms @ 60 F  
 Chlorides 90000 ppm.  
 Gravity \_\_\_\_\_ corrected @60F

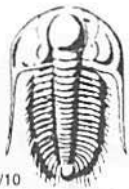
### PIPE RECOVERY

**TOP**  
 Resistivity \_\_\_\_\_ ohms @ \_\_\_\_\_ F  
 Chlorides \_\_\_\_\_ ppm.

**MIDDLE**  
 Resistivity \_\_\_\_\_ ohms @ \_\_\_\_\_ F  
 Chlorides \_\_\_\_\_ ppm.

**BOTTOM**  
 Resistivity \_\_\_\_\_ ohms @ \_\_\_\_\_ F  
 Chlorides \_\_\_\_\_ ppm.





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 50362

Well Name & No. Ball #1-12 Test No. 2 Date 3-2-13  
 Company SAMUEL GARY JR & ASSOCIATES INC Elevation 1921 KB 1913 GL  
 Address 1515 WYNKOOP, STE 700 DENVER, CO 80202  
 Co. Rep / Geo. CHRIS MITCHELL Rig DISCOVERY RIG 2  
 Location: Sec. 12 Twp. 15<sup>S</sup> Rge. 16<sup>W</sup> Co. ELLIS State K

Interval Tested 3324-3364 Zone Tested LKC J-K  
 Anchor Length 40 Drill Pipe Run 3285 Mud Wt. 8.9  
 Top Packer Depth 3319 Drill Collars Run 30 Vis 53  
 Bottom Packer Depth 3324 Wt. Pipe Run - WL 6.8  
 Total Depth 3364 Chlorides 7100 ppm System LCM -

Blow Description IFP - STRONG BLOW IN 2 MIN  
ISIP - 1/8" BLOW BACK  
FFP - STRONG BLOW IN 2 MIN  
FSIP - 1/8" BLOW BACK

Rec	Feet of	%gas	%oil	%water	%mud
<u>105</u>	<u>GIP</u>				
<u>600</u>	<u>WATER</u>				
<u>15</u>	<u>DTGCMW</u>	<u>5</u>	<u>10</u>	<u>65</u>	<u>20</u>
<u>120</u>	<u>SOCMW</u>		<u>2</u>	<u>98</u>	
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 735 BHT 98 Gravity - API RW .12 @ 60 ° F Chlorides 74000 ppm

(A) Initial Hydrostatic 1593  Test 1150 T-On Location 1100  
 (B) First Initial Flow 81  Jars 250 T-Started 1225  
 (C) First Final Flow 140  Safety Joint 75 T-Open 1415  
 (D) Initial Shut-In 1122  Circ Sub T-Pulled 1750  
 (E) Second Initial Flow 158  Hourly Standby T-Out 2033  
 (F) Second Final Flow 377  Mileage 46 RT 71.30 Comments \_\_\_\_\_  
 (G) Final Shut-In 1095  Sampler 250 \_\_\_\_\_  
 (H) Final Hydrostatic 1561  Straddle  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer  Ruined Packer \_\_\_\_\_  
 Extra Packer  Extra Copies \_\_\_\_\_

Initial Open 5  
 Initial Shut-In 60  Extra Recorder 200 Sub Total 0  
 Final Flow 30  Day Standby Total 1996.30  
 Final Shut-In 120  Accessibility MP/DST Disc't \_\_\_\_\_  
 Sub Total 1996.30

Approved By \_\_\_\_\_ Our Representative RAY SCHWAGY THANK YOU

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# TRILOBITE TESTING, INC.

P.O. Box 362 • Hays, Kansas 67601

## FLUID SAMPLER DATA

Ticket No. 50362 Date 3-2-13  
 Company Name SAMUEL GARY JR + ASSOC INC  
 Lease BALL # 1-12 Test No. 2  
 County ELLIS Sec. 12 Twp. 15<sup>s</sup> Rng. 16<sup>w</sup>

### SAMPLER RECOVERY

Gas — ML  
 Oil 40 ML  
 Mud — ML  
 Water 1960 ML  
 Other — ML  
 Pressure 450 # ML  
 Total 2000 ML

### PIT MUD ANALYSIS

Chlorides 7100 ppm.  
 Resistivity 1.2 ohms @ 50 F  
 Viscosity 53  
 Mud Weight 8.9  
 Filtrate 6.8  
 Other —

### SAMPLER ANALYSIS

Resistivity .12 ohms @ 60 F  
 Chlorides 74000 ppm.  
 Gravity \_\_\_\_\_ corrected @60F

### PIPE RECOVERY

**TOP**  
 Resistivity \_\_\_\_\_ ohms @ \_\_\_\_\_ F  
 Chlorides \_\_\_\_\_ ppm.

**MIDDLE**  
 Resistivity \_\_\_\_\_ ohms @ \_\_\_\_\_ F  
 Chlorides \_\_\_\_\_ ppm.

**BOTTOM**  
 Resistivity \_\_\_\_\_ ohms @ \_\_\_\_\_ F  
 Chlorides \_\_\_\_\_ ppm.