

DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration**

PO Box 783188
Wichita, KS 67278

ATTN: Terry McLeod

Campbell-Joseph

19-13s-31w Gove,KS

Start Date: 2011.12.02 @ 02:15:00

End Date: 2011.12.02 @ 10:11:00

Job Ticket #: 45487 DST #: 1

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

Printed: 2011.12.07 @ 16:35:05



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Ritchie Exploration

19-13s-31w Gove, KS

PO Box 783188
Wichita, KS 67278

Campbell-Joseph

Job Ticket: 45487

DST#: 1

ATTN: Terry McLeod

Test Start: 2011.12.02 @ 02:15:00

GENERAL INFORMATION:

Formation: **LKC 'C-G'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:39:00

Time Test Ended: 10:11:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Chuck Smith

Unit No: 37

Interval: 3937.00 ft (KB) To 4042.00 ft (KB) (TVD)

Reference Elevations: 2884.00 ft (KB)

Total Depth: 4042.00 ft (KB) (TVD)

2873.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8018

Inside

Press @ Run Depth: 635.62 psig @ 3949.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.12.02

End Date:

2011.12.02

Last Calib.:

2011.12.02

Start Time: 02:15:02

End Time:

10:11:00

Time On Btm:

2011.12.02 @ 04:37:50

Time Off Btm:

2011.12.02 @ 07:28:40

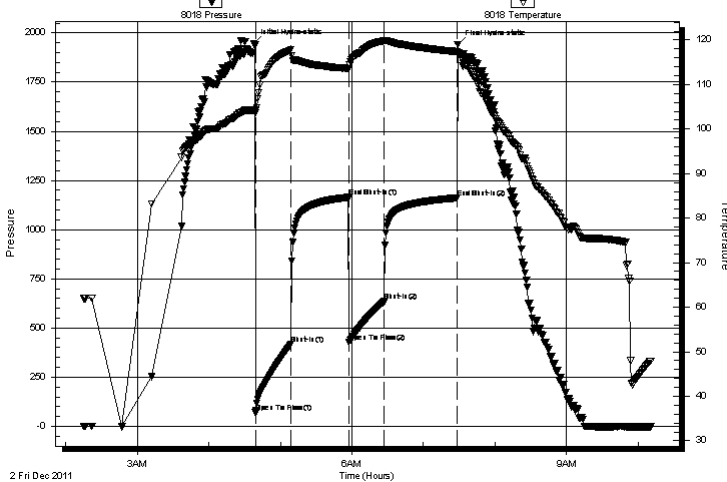
TEST COMMENT: B.O.B. @ 3 1/2 min.

No return.

B.O.B. @ 4 min.

No return.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1945.01	104.22	Initial Hydro-static
2	69.93	103.62	Open To Flow (1)
31	418.90	117.84	Shut-In(1)
80	1164.50	113.61	End Shut-In(1)
80	429.88	113.51	Open To Flow (2)
110	635.62	119.81	Shut-In(2)
171	1161.32	117.39	End Shut-In(2)
171	1939.37	117.12	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
428.00	MW 10m 90w	4.36
310.00	MW 30m 70w	4.35
372.00	WM 25w 75m	5.22
226.00	M 100m	3.17

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration

19-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

Campbell-Joseph

Job Ticket: 45487

DST#: 1

ATTN: Terry McLeod

Test Start: 2011.12.02 @ 02:15:00

Tool Information

Drill Pipe:	Length: 3775.00 ft	Diameter: 3.80 inches	Volume: 52.95 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 22000.00 lb
Drill Collar:	Length: 180.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 53.84 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.50 ft			String Weight: Initial 63000.00 lb
Depth to Top Packer:	3947.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	95.00 ft			
Tool Length:	117.50 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3925.50	
Shut In Tool	5.00			3930.50	
Hydraulic tool	5.00			3935.50	
Safety Joint	2.50			3938.00	
Packer	5.00			3943.00	22.50 Bottom Of Top Packer
Packer	4.00			3947.00	
Stubb	1.00			3948.00	
Perforations	1.00			3949.00	
Recorder	0.00	8018	Inside	3949.00	
Recorder	0.00	6751	Outside	3949.00	
Perforations	25.00			3974.00	
Change Over Sub	1.00			3975.00	
Drill Pipe	63.00			4038.00	
Change Over Sub	1.00			4039.00	
Bullnose	3.00			4042.00	95.00 Bottom Packers & Anchor

Total Tool Length: 117.50



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration

19-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

Campbell-Joseph

Job Ticket: 45487

DST#: 1

ATTN: Terry McLeod

Test Start: 2011.12.02 @ 02:15:00

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:

26000 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.38 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
428.00	MW 10m 90w	4.364
310.00	MW 30m 70w	4.348
372.00	WM25w 75m	5.218
226.00	M100m	3.170

Total Length: 1336.00 ft Total Volume: 17.100 bbl

Num Fluid Samples: 0

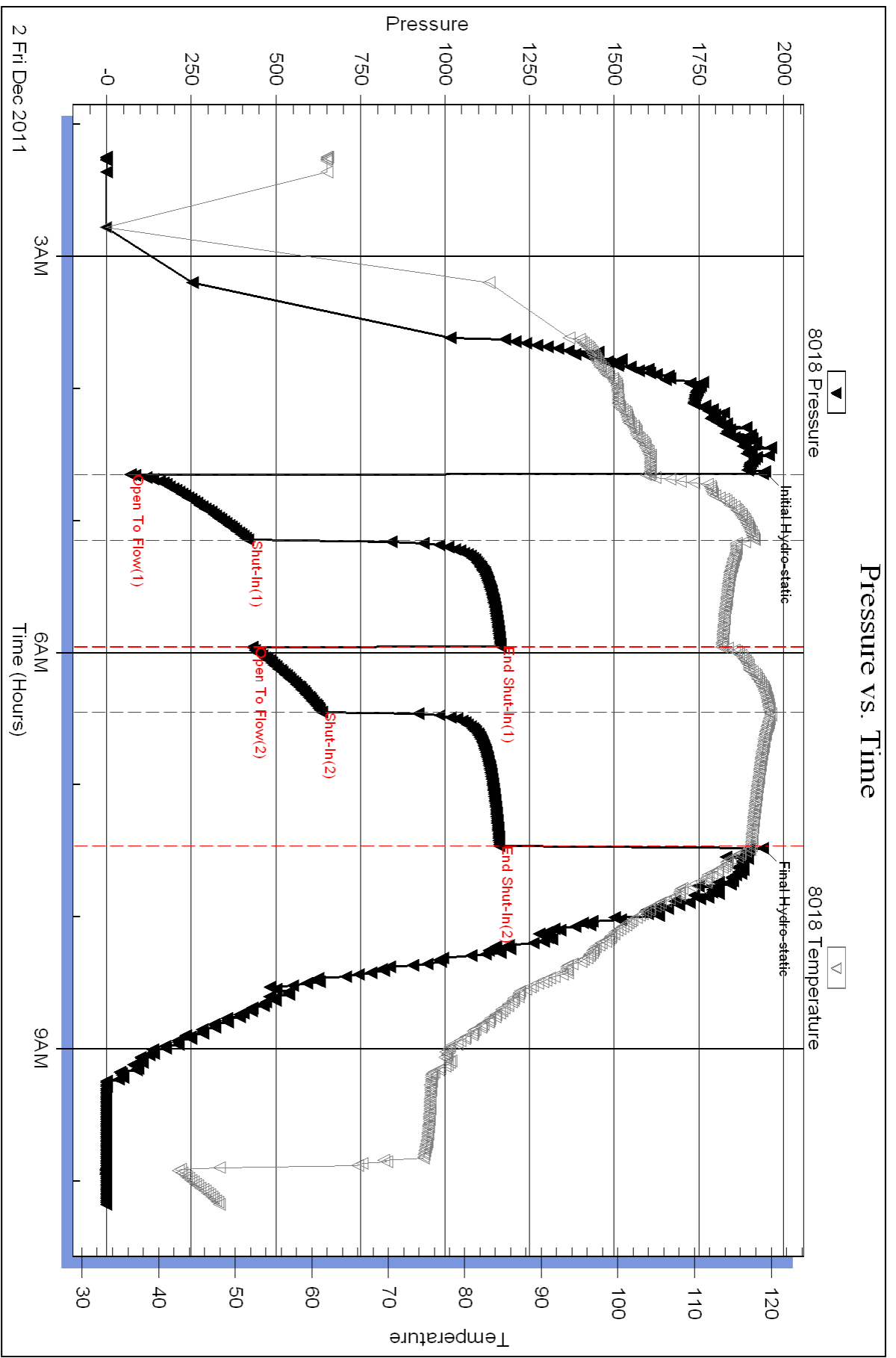
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Rw .324 @ 58 deg F



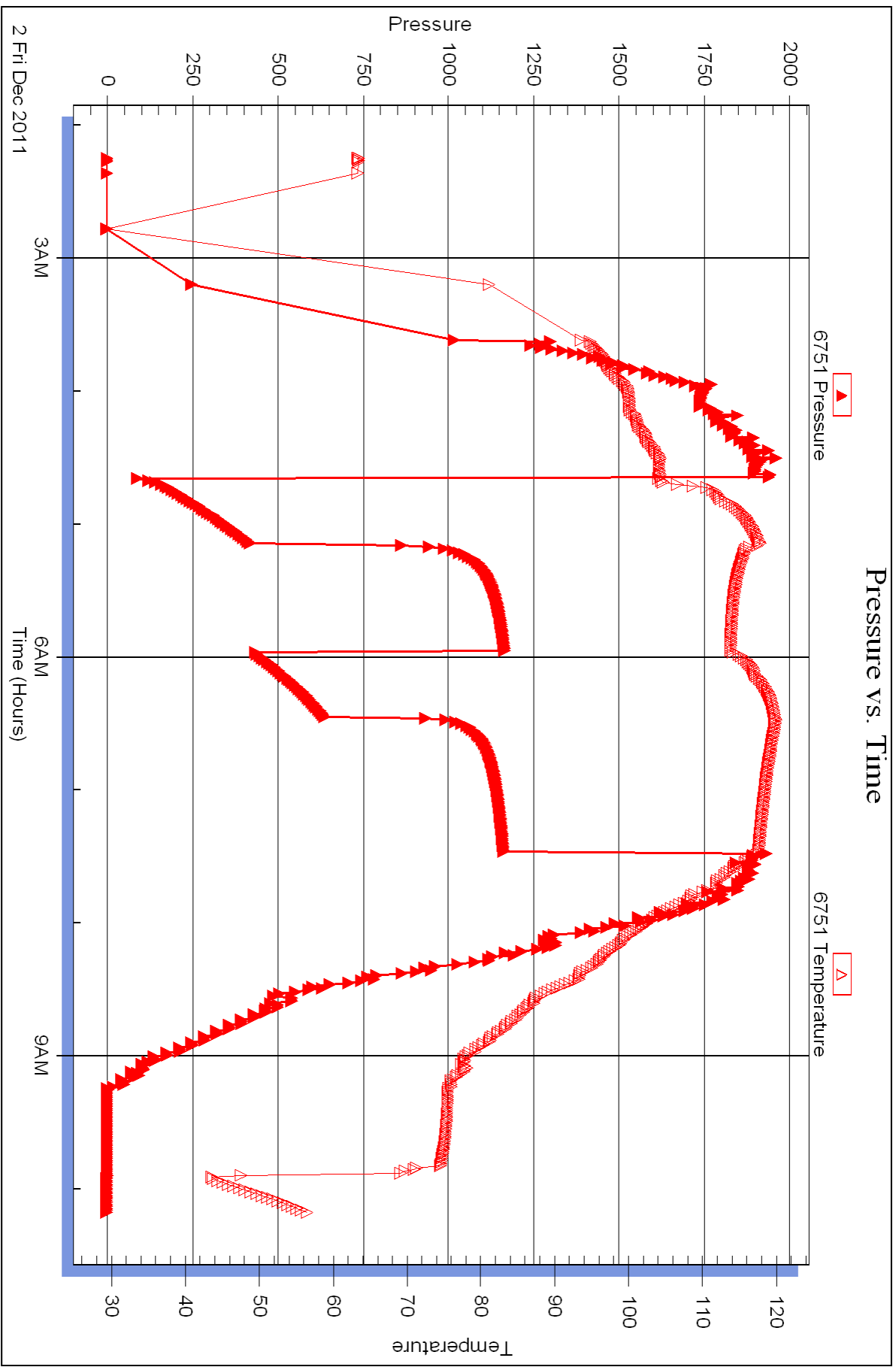
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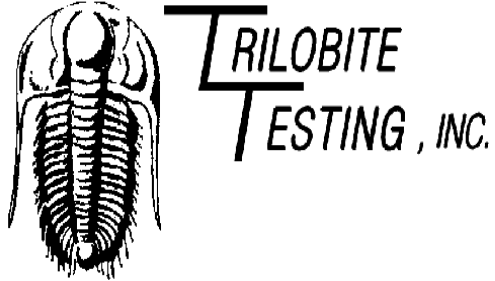
Outside

Richie Exploration

Campbell-Joseph

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration**

PO Box 783188
Wichita, KS 67278

ATTN: Terry McLeod

Campbell-Joseph

19-13s-31w Gove,KS

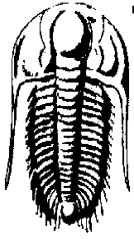
Start Date: 2011.12.03 @ 02:50:00

End Date: 2011.12.03 @ 10:41:00

Job Ticket #: 45488 DST #: 2

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

Printed: 2011.12.07 @ 16:34:25



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DRILL STEM TEST REPORT

Ritchie Exploration

19-13s-31w Gove, KS

PO Box 783188
Wichita, KS 67278

Campbell-Joseph

Job Ticket: 45488

DST#: 2

ATTN: Terry McLeod

Test Start: 2011.12.03 @ 02:50:00

GENERAL INFORMATION:

Formation:

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:01:20

Time Test Ended: 10:41:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 37

Interval: 4078.00 ft (KB) To 4200.00 ft (KB) (TVD)

Reference Elevations: 2884.00 ft (KB)

Total Depth: 4200.00 ft (KB) (TVD)

2873.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8018

Inside

Press @ Run Depth: 93.00 psig @ 4080.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.12.03

End Date: 2011.12.03

Last Calib.: 2011.12.03

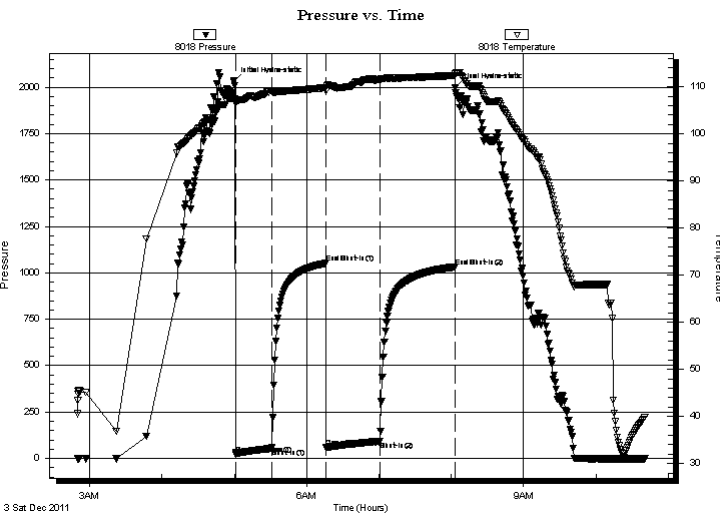
Start Time: 02:50:02

End Time: 10:41:00

Time On Btm: 2011.12.03 @ 04:59:40

Time Off Btm: 2011.12.03 @ 08:03:20

TEST COMMENT: 3" Blow.
No return.
Surface blow.
No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2029.36	107.48	Initial Hydro-static
2	24.01	106.91	Open To Flow (1)
32	55.22	108.98	Shut-In(1)
77	1051.27	109.83	End Shut-In(1)
77	58.33	109.23	Open To Flow (2)
122	93.00	111.56	Shut-In(2)
184	1032.00	112.46	End Shut-In(2)
184	1996.00	112.81	Final Hydro-static

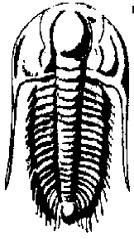
Recovery

Length (ft)	Description	Volume (bbl)
150.00	M100 m Oil spots in tool.	0.74

* Recovery from multiple tests

Gas Rates

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



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DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration

19-13s-31w Gove, KS

PO Box 783188
Wichita, KS 67278

Campbell-Joseph

Job Ticket: 45488

DST#: 2

ATTN: Terry McLeod

Test Start: 2011.12.03 @ 02:50:00

Tool Information

Drill Pipe:	Length: 3905.00 ft	Diameter: 3.80 inches	Volume: 54.78 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 180.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 55.67 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	29.50 ft			String Weight: Initial 66000.00 lb
Depth to Top Packer:	4078.00 ft			Final 67000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	122.00 ft			
Tool Length:	144.50 ft			
Number of Packers:	2	Diameter: 6.75 inches		

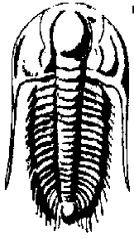
Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4056.50	
Shut In Tool	5.00			4061.50	
Hydraulic tool	5.00			4066.50	
Safety Joint	2.50			4069.00	
Packer	5.00			4074.00	22.50 Bottom Of Top Packer
Packer	4.00			4078.00	
Stubb	1.00			4079.00	
Perforations	1.00			4080.00	
Recorder	0.00	8018	Inside	4080.00	
Recorder	0.00	6751	Outside	4080.00	
Perforations	21.00			4101.00	
Change Over Sub	1.00			4102.00	
Drill Pipe	94.00			4196.00	
Change Over Sub	1.00			4197.00	
Bullnose	3.00			4200.00	122.00 Bottom Packers & Anchor

Total Tool Length: 144.50



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DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration

19-13s-31w Gove, KS

PO Box 783188
Wichita, KS 67278

Campbell-Joseph

Job Ticket: 45488

DST#: 2

ATTN: Terry McLeod

Test Start: 2011.12.03 @ 02:50:00

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: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.37 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3400.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
150.00	M100 m Oil spots in tool.	0.738

Total Length: 150.00 ft Total Volume: 0.738 bbl

Num Fluid Samples: 0

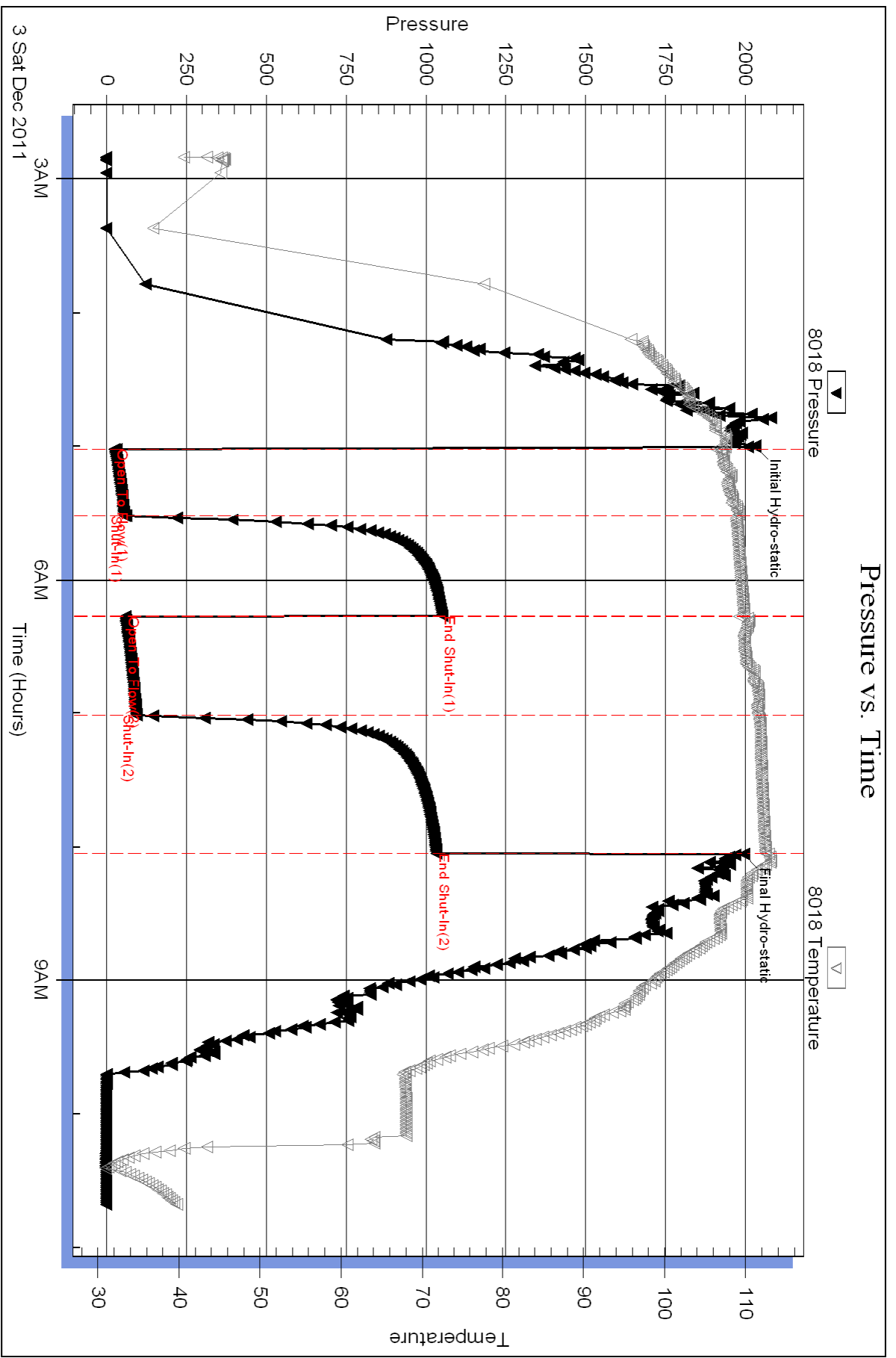
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



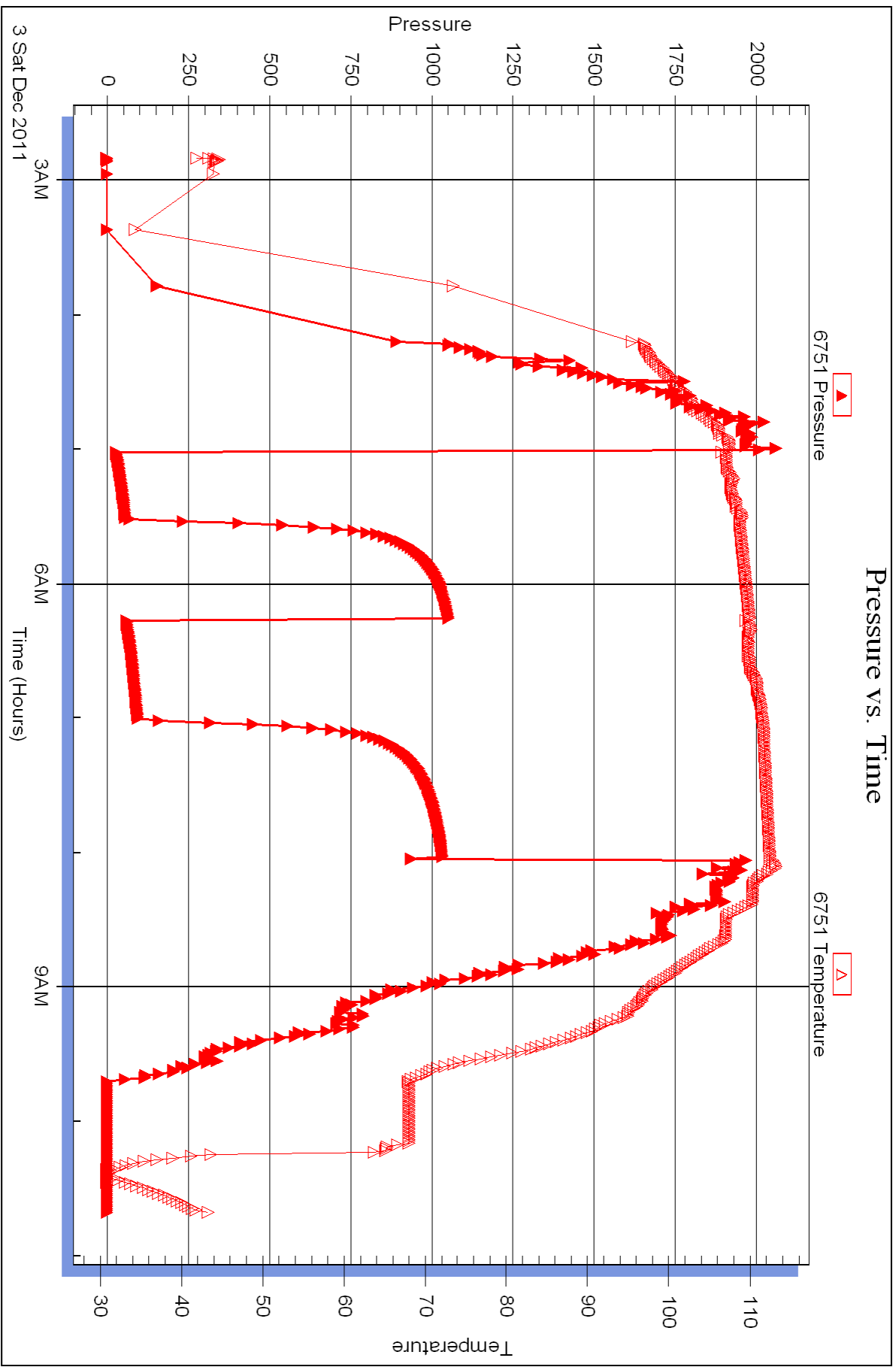
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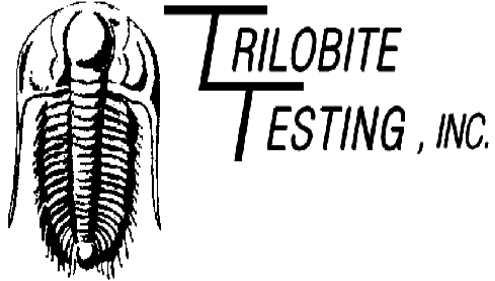
Outside

Richie Exploration

Campbell-Joseph

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration**

PO Box 783188
Wichita, KS 67278

ATTN: Terry McLeod

Campbell-Joseph

19-13s-31w Gove,KS

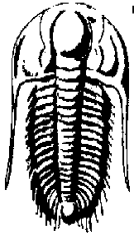
Start Date: 2011.12.03 @ 19:45:00

End Date: 2011.12.04 @ 05:00:30

Job Ticket #: 45489 DST #: 3

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

Printed: 2011.12.07 @ 16:33:45



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration

19-13s-31w Gove, KS

PO Box 783188
Wichita, KS 67278

Campbell-Joseph

Job Ticket: 45489

DST#: 3

ATTN: Terry McLeod

Test Start: 2011.12.03 @ 19:45:00

GENERAL INFORMATION:

Formation: **LKC 'L'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:11:50

Time Test Ended: 05:00:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 37

Interval: 4195.00 ft (KB) To 4240.00 ft (KB) (TVD)

Reference Elevations: 2884.00 ft (KB)

Total Depth: 4240.00 ft (KB) (TVD)

2873.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8018

Inside

Press @ Run Depth: 129.96 psig @ 4197.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.12.03

End Date:

2011.12.04

Last Calib.: 2011.12.04

Start Time: 19:45:02

End Time:

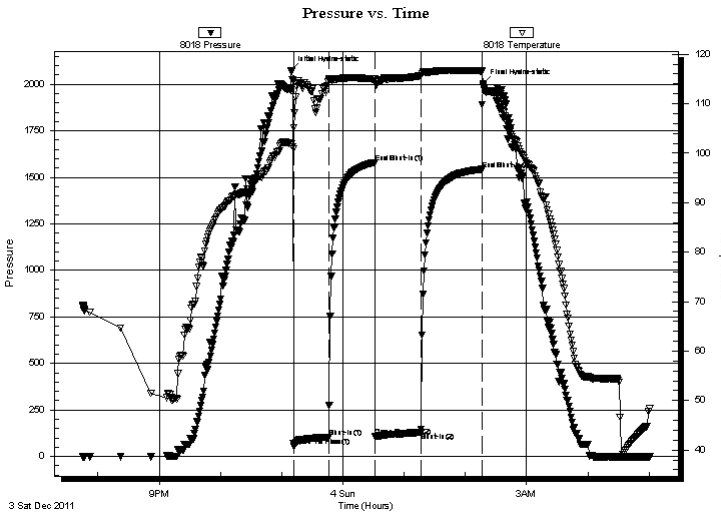
05:00:30

Time On Btm: 2011.12.03 @ 23:09:20

Time Off Btm: 2011.12.04 @ 02:17:20

TEST COMMENT: 8" Blow.
No return.
5" Blow.
No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2075.02	101.90	Initial Hydro-static
3	55.25	105.11	Open To Flow (1)
37	105.26	114.90	Shut-In(1)
82	1580.38	114.98	End Shut-In(1)
83	107.52	114.34	Open To Flow (2)
127	129.96	115.69	Shut-In(2)
187	1543.52	116.59	End Shut-In(2)
188	2002.90	113.78	Final Hydro-static

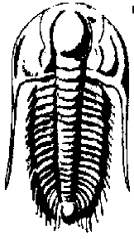
Recovery

Length (ft)	Description	Volume (bbl)
245.00	WM20w 80m	2.07

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration

19-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

Campbell-Joseph

Job Ticket: 45489

DST#: 3

ATTN: Terry McLeod

Test Start: 2011.12.03 @ 19:45:00

Tool Information

Drill Pipe:	Length: 4028.00 ft	Diameter: 3.80 inches	Volume: 56.50 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 22000.00 lb
Drill Collar:	Length: 150.00 ft	Diameter: 2.25 inches	Volume: 0.74 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 57.24 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.50 ft			String Weight: Initial 65000.00 lb
Depth to Top Packer:	4195.00 ft			Final 65000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	45.00 ft			
Tool Length:	67.50 ft			
Number of Packers:	2	Diameter: 6.75 inches		

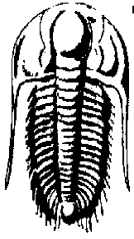
Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4173.50	
Shut In Tool	5.00			4178.50	
Hydraulic tool	5.00			4183.50	
Safety Joint	2.50			4186.00	
Packer	5.00			4191.00	22.50 Bottom Of Top Packer
Packer	4.00			4195.00	
Stubb	1.00			4196.00	
Perforations	1.00			4197.00	
Recorder	0.00	8018	Inside	4197.00	
Recorder	0.00	6751	Outside	4197.00	
Perforations	7.00			4204.00	
Change Over Sub	1.00			4205.00	
Drill Pipe	31.00			4236.00	
Change Over Sub	1.00			4237.00	
Bullnose	3.00			4240.00	45.00 Bottom Packers & Anchor

Total Tool Length: 67.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration

19-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

Campbell-Joseph

Job Ticket: 45489

DST#: 3

ATTN: Terry McLeod

Test Start: 2011.12.03 @ 19:45:00

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:

27000 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.38 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2200.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
245.00	WM20w 80m	2.070

Total Length: 245.00 ft Total Volume: 2.070 bbl

Num Fluid Samples: 0

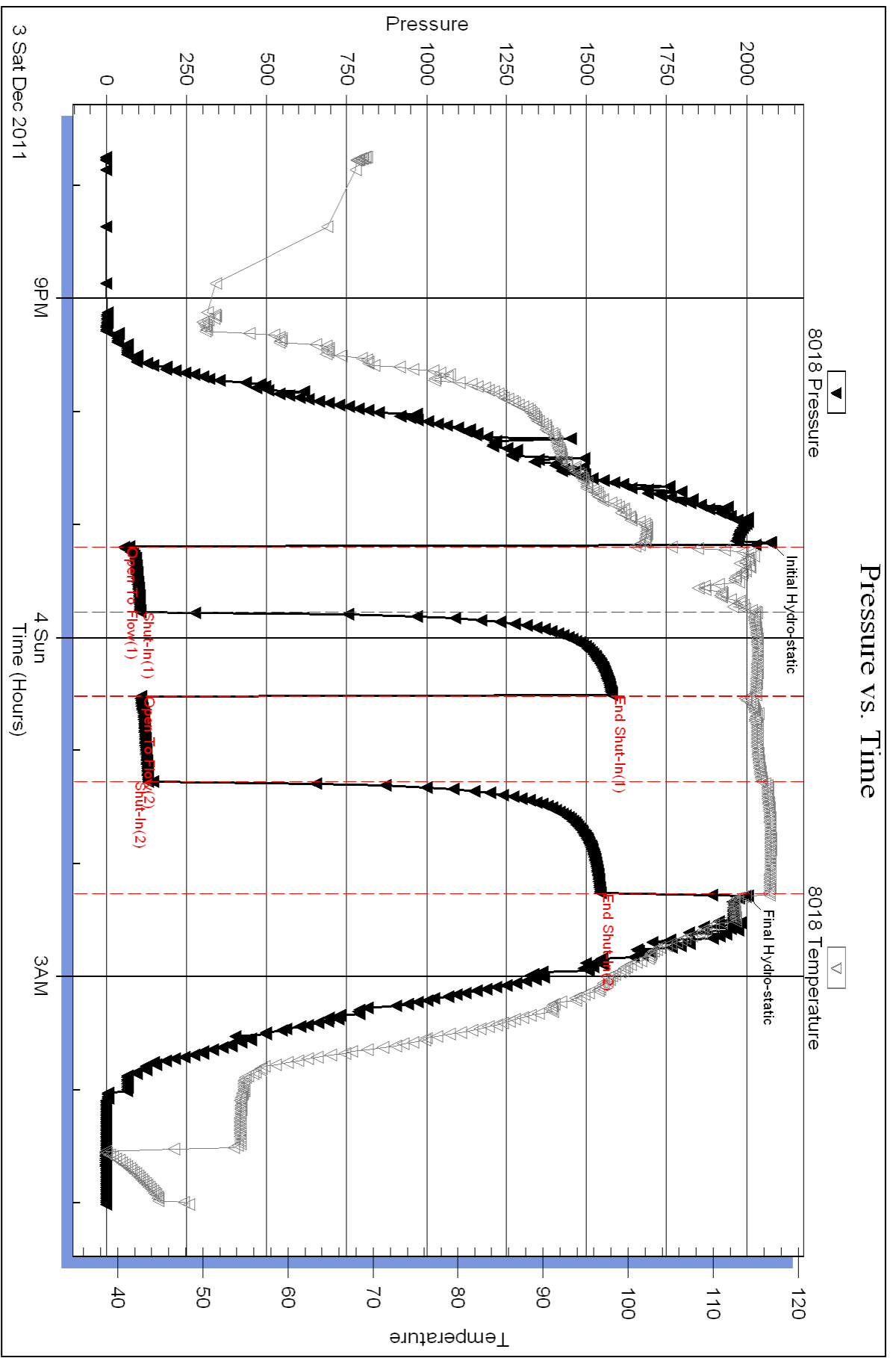
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Rw .350 @ 50 degF



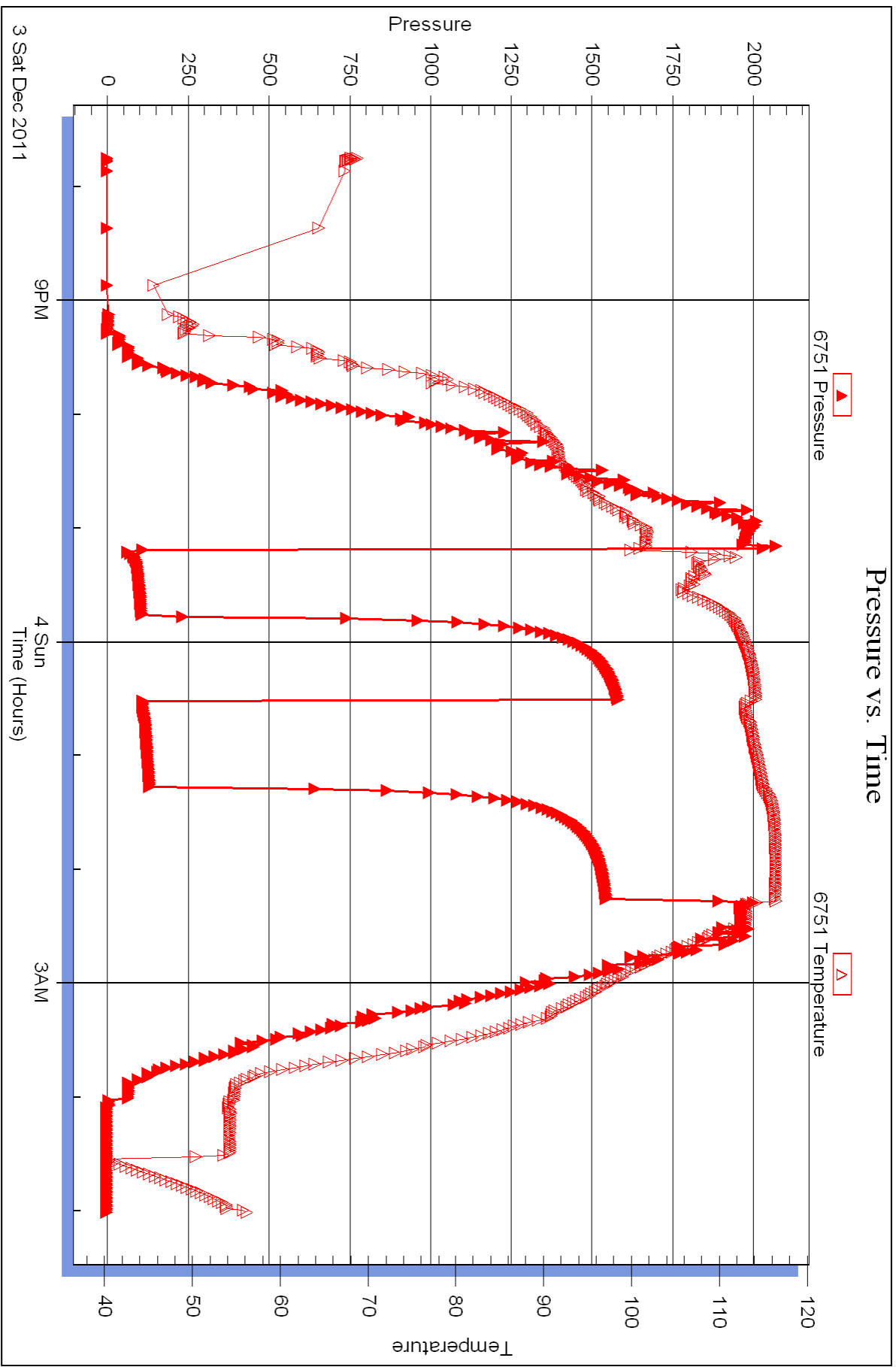
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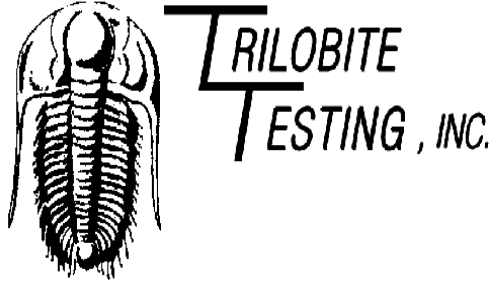
Outside

Richie Exploration

Campbell-Joseph

DST Test Number: 3





DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration**

PO Box 783188
Wichita, KS 67278

ATTN: Terry McLeod

Campbell-Joseph

19-13s-31w Gove,KS

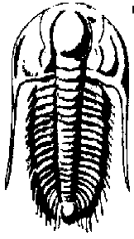
Start Date: 2011.12.05 @ 10:26:00

End Date: 2011.12.05 @ 20:19:49

Job Ticket #: 45490 DST #: 4

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

Printed: 2011.12.07 @ 16:32:25



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration

19-13s-31w Gove, KS

PO Box 783188
Wichita, KS 67278

Campbell-Joseph

ATTN: Terry McLeod

Job Ticket: 45490

DST#: 4

Test Start: 2011.12.05 @ 10:26:00

GENERAL INFORMATION:

Formation: **Johnson**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 13:32:00
 Time Test Ended: 20:19:49
 Interval: **4470.00 ft (KB) To 4530.00 ft (KB) (TVD)**
 Total Depth: 4530.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Chuck Smith
 Unit No: 37
 Reference Elevations: 2884.00 ft (KB)
 2873.00 ft (CF)
 KB to GR/CF: 11.00 ft

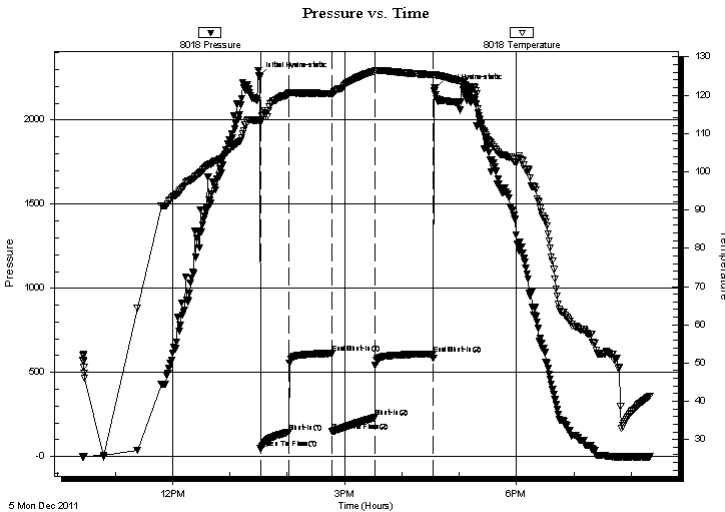
Serial #: 8018

Inside

Press @ Run Depth: 231.86 psig @ 4472.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2011.12.05 End Date: 2011.12.05 Last Calib.: 2011.12.05
 Start Time: 10:26:02 End Time: 20:19:49 Time On Btm: 2011.12.05 @ 13:30:40
 Time Off Btm: 2011.12.05 @ 16:34:20

TEST COMMENT: B.O.B. @ 26 min.
 No return.
 B.O.B. @ 40 min.
 No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2261.44	113.40	Initial Hydro-static
2	46.68	112.97	Open To Flow (1)
32	147.14	120.42	Shut-In(1)
76	613.54	120.48	End Shut-In(1)
77	148.77	120.18	Open To Flow (2)
122	231.86	126.30	Shut-In(2)
182	610.68	125.33	End Shut-In(2)
184	2189.95	125.31	Final Hydro-static

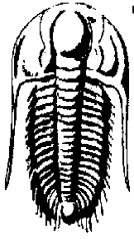
Recovery

Length (ft)	Description	Volume (bbl)
460.00	MW 50m 50w	4.81

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration

19-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

Campbell-Joseph

Job Ticket: 45490

DST#: 4

ATTN: Terry McLeod

Test Start: 2011.12.05 @ 10:26:00

Tool Information

Drill Pipe:	Length: 4280.00 ft	Diameter: 3.80 inches	Volume: 60.04 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 22000.00 lb
Drill Collar:	Length: 180.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 60.93 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	12.50 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	4470.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	60.00 ft			
Tool Length:	82.50 ft			
Number of Packers:	2	Diameter: 6.75 inches		

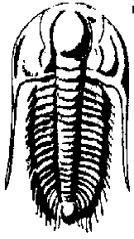
Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4448.50	
Shut In Tool	5.00			4453.50	
Hydraulic tool	5.00			4458.50	
Safety Joint	2.50			4461.00	
Packer	5.00			4466.00	22.50 Bottom Of Top Packer
Packer	4.00			4470.00	
Stubb	1.00			4471.00	
Perforations	1.00			4472.00	
Recorder	0.00	8018	Inside	4472.00	
Recorder	0.00	6751	Outside	4472.00	
Perforations	22.00			4494.00	
Change Over Sub	1.00			4495.00	
Drill Pipe	31.00			4526.00	
Change Over Sub	1.00			4527.00	
Bullnose	3.00			4530.00	60.00 Bottom Packers & Anchor

Total Tool Length: 82.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration

19-13s-31w Gove,KS

PO Box 783188
Wichita, KS 67278

Campbell-Joseph

Job Ticket: 45490

DST#: 4

ATTN: Terry McLeod

Test Start: 2011.12.05 @ 10:26:00

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:

50000 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.38 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
460.00	MW 50m 50w	4.813

Total Length: 460.00 ft

Total Volume: 4.813 bbl

Num Fluid Samples: 0

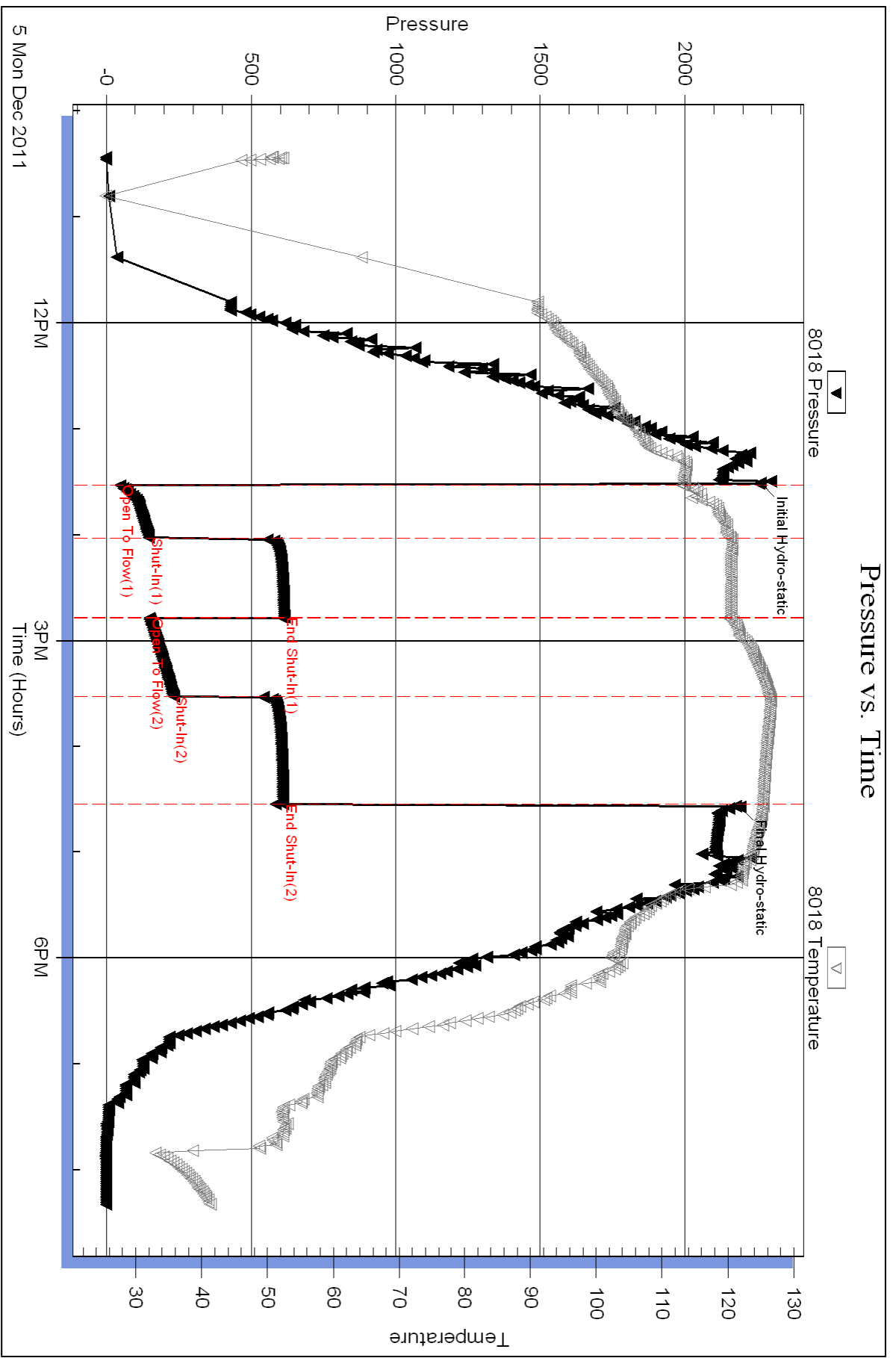
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



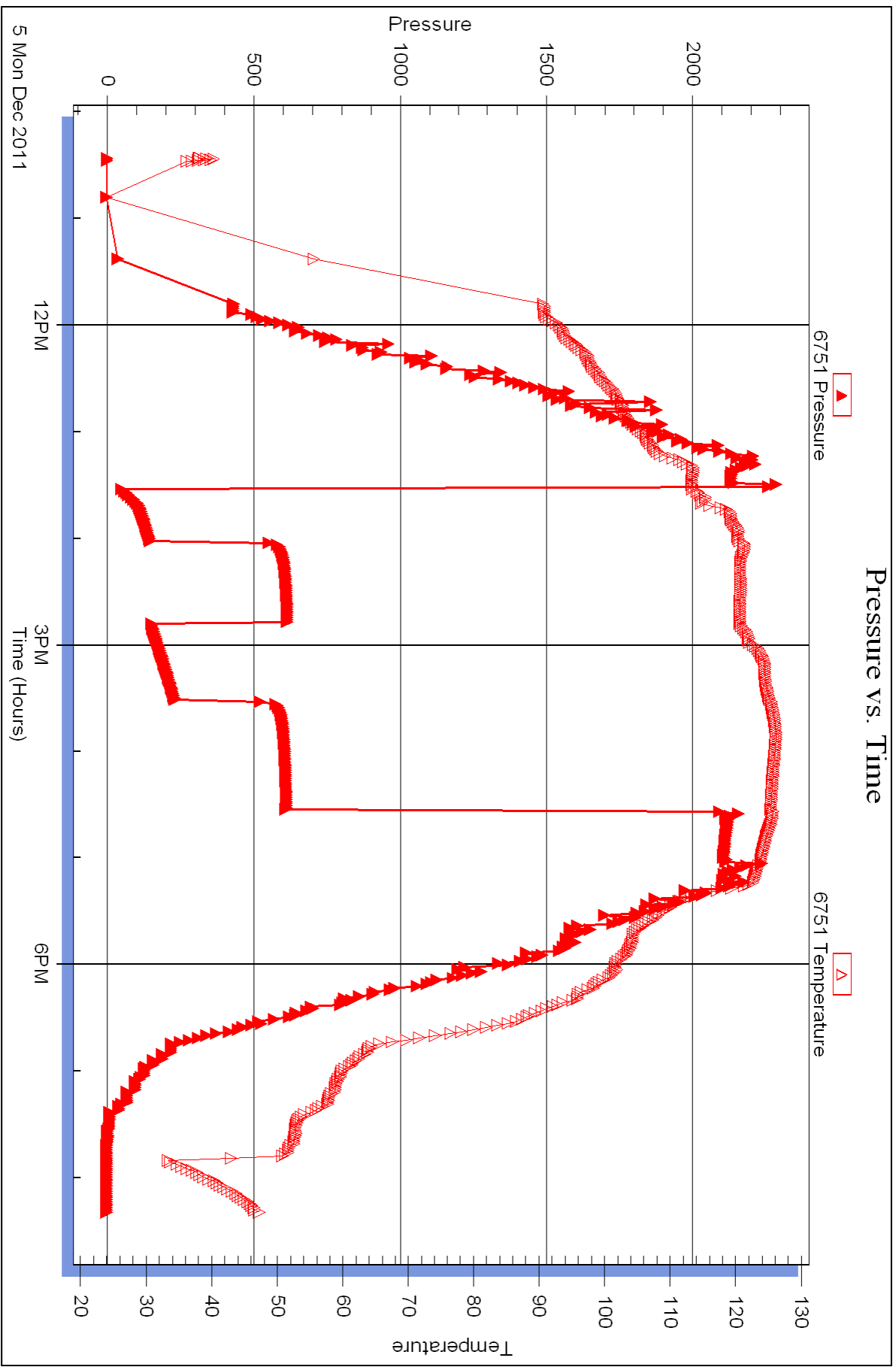
Serial #: 6751

Outside

Richie Exploration

Campbell-Joseph

DST Test Number: 4





TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

RECEIVED Test Ticket

DEC 05 2011

NO. 45487

4/10

BY: _____

Well Name & No. Campell - Joseph Test No. 1 Date 12-2-11
 Company Ritchie Exploration Elevation 2884 KB _____ GL _____
 Address POB 783188 Wichita, KS 67278
 Co. Rep / Geo. Terry McLead Rig MDC #2
 Location: Sec. 19 Twp. 13s Rge. 31w Co. Gove State KS

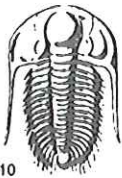
Interval Tested 3947-4042 Zone Tested LKC 'C,D,E,F,G'
 Anchor Length 95 Drill Pipe Run 3775 Mud Wt. 9.1
 Top Packer Depth 3943 Drill Collars Run 180 Vis 50
 Bottom Packer Depth 3947 Wt. Pipe Run 0 WL 6.4
 Total Depth 4042 Chlorides 4700 ppm System LCM 1
 Blow Description B.O.B. @ 3 1/2 min.
No return.
B.O.B. @ 4 min.
No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>226</u>	<u>M</u>			<u>100</u>	
<u>372</u>	<u>WM</u>		<u>25</u>	<u>75</u>	
<u>310</u>	<u>MW</u>		<u>70</u>	<u>30</u>	
<u>428</u>	<u>MW</u>		<u>90</u>	<u>10</u>	
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 1336 BHT 117 Gravity — API RW .324 @ 58 °F Chlorides 26000 ppm
 (A) Initial Hydrostatic 1945 Test 1225 T-On Location 1:30
 (B) First Initial Flow 70 Jars _____ T-Started 2:15
 (C) First Final Flow 419 Safety Joint 75 T-Open 4:39
 (D) Initial Shut-In 1165 Circ Sub _____ T-Pulled 7:28
 (E) Second Initial Flow 430 Hourly Standby _____ T-Out 10:11
 (F) Second Final Flow 636 Mileage 7.5RT 108 Comments _____
 (G) Final Shut-In 1161 Sampler _____
 (H) Final Hydrostatic 1939 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 30 Extra Recorder _____ Sub Total 0
 Initial Shut-In 45 Day Standby _____ Total 1405
 Final Flow 30 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 60 Sub Total 1405

Approved By Jerry L. McLead Our Representative Chuck Smith

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.



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RECEIVED
DEC 05 2011

Test Ticket

NO. 45488

4/10

Well Name & No. Campbell-Joseph Test No. 2 Date 12-3-11
 Company Ritchie Exploration Elevation 2884 KB _____ GL _____
 Address POB 783188 Wichita, KS 67278
 Co. Rep / Geo. Terry McLeod Rig MDC#2
 Location: Sec. 19 Twp. 13s Rge. 3/w Co. Gove State KS

Interval Tested 4078 - 4200 Zone Tested _____
 Anchor Length 122 Drill Pipe Run 3905 Mud Wt. 9.2
 Top Packer Depth 4074 Drill Collars Run 180 Vis 55
 Bottom Packer Depth 4078 Wt. Pipe Run 0 WL 6.4
 Total Depth 4200 Chlorides 3400 ppm System LCM 2
 Blow Description 3" Blow.
No return.
Surface blow.
No return.

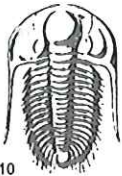
Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>150</u>	Feet of <u>M Oil spots in tool</u>				<u>100</u>
Rec _____	Feet of _____				
Rec _____	Feet of _____				
Rec _____	Feet of _____				

Rec Total 150 BHT 113 Gravity - API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2029 Test 1225' T-On Location 2:45
 (B) First Initial Flow 24 Jars _____ T-Started 2:50
 (C) First Final Flow 55 Safety Joint 75' T-Open 5:01
 (D) Initial Shut-In 1051 Circ Sub N/C T-Pulled 8:03
 (E) Second Initial Flow 58 Hourly Standby _____ T-Out 10:41
 (F) Second Final Flow 93 Mileage 7.5RT 105' Comments _____
 (G) Final Shut-In 1032 Sampler _____
 (H) Final Hydrostatic 1996 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1405'
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1405'

Approved By Terry J. McLeod Our Representative Chuck Smith

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RECEIVED
DEC 07 2011

Test Ticket

NO. 45489

4/10

BY:

Well Name & No. Campbell-Joseph Test No. 3 Date 12-3-11
 Company Ritchie Exploration Elevation 2884 KB _____ GL _____
 Address POB 783188 Wichita, KS 67278
 Co. Rep / Geo. Terry McLead Rig MDC#2
 Location: Sec. 19 Twp. 13s Rge. 31w Co. GOVE State KS

Interval Tested 4195-4240 Zone Tested LKC'L'
 Anchor Length 45 Drill Pipe Run 4028 Mud Wt. 8.9
 Top Packer Depth 4191 Drill Collars Run 150 Vis 55
 Bottom Packer Depth 4195 Wt. Pipe Run 0 WL 6.4
 Total Depth 4240 Chlorides 2200 ppm System LCM 8
 Blow Description 8" Blow.
No return.
5" Blow.
No return.

Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>245</u>	Feet of <u>WM</u>	%gas	%oil	<u>20</u> %water	<u>80</u> %mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud

Rec Total 245 BHT 117 Gravity - API RW 3.50 @ 50 °F Chlorides 27000 ppm
 (A) Initial Hydrostatic 2075 Test 1225' T-On Location 19:00
 (B) First Initial Flow 55 Jars _____ T-Started 19:45
 (C) First Final Flow 105 Safety Joint 75' T-Open 23:12
 (D) Initial Shut-In 1580 Circ Sub 50' T-Pulled 2:16
 (E) Second Initial Flow 108 Hourly Standby _____ T-Out 5:00
 (F) Second Final Flow 130 Mileage 7.5RT 105' Comments _____
 (G) Final Shut-In 1544 Sampler _____
 (H) Final Hydrostatic 2003 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 35 Extra Recorder _____ Sub Total 0
 Initial Shut-In 45 Day Standby _____ Total 1455'
 Final Flow 45 Accessibility _____ MP/DST Disc't _____
 Final Shut-In _____
 Sub Total 1455'

Approved By Terry McLead Our Representative Chuck Smith

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RECEIVED
DEC 07 2011

Test Ticket

NO. 45490

4/10

BY: _____

Well Name & No. Campbell - Joseph Test No. 4 Date 12-5-11

Company Ritchie Exploration Elevation 2884 KB 2873 GL

Address POB 783188 Wichita, KS 67278

Co. Rep / Geo. Terry McLeod Rig MDC #2

Location: Sec. 19 Twp. 13s Rge. 3/w Co. Gove State KS

Interval Tested 4470 - 4530 Zone Tested Johnson

Anchor Length 60 Drill Pipe Run 4280 Mud Wt. 9.1

Top Packer Depth 4466 Drill Collars Run 180 Vis 51

Bottom Packer Depth 4470 Wt. Pipe Run 0 WL 7.2

Total Depth 4530 Chlorides 2800 ppm System LCM 5

Blow Description B.O.B. @ 26 min.

No return.

B.O.B. @ 40 min.

No return.

Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>460</u>	Feet of <u>MW</u>	%gas	%oil	<u>50</u> %water	<u>50</u> %mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 460 BHT _____ Gravity - API RW .180 @ 60 °F Chlorides 50,000 ppm

(A) Initial Hydrostatic 2261 Test 1225' T-On Location 9:00

(B) First Initial Flow 47 Jars _____ T-Started 10:26

(C) First Final Flow 147 Safety Joint 75' T-Open 13:32

(D) Initial Shut-In 614 Circ Sub 50' T-Pulled 16:33

(E) Second Initial Flow 149 Hourly Standby 1/4 hrs 125' T-Out 20:20

(F) Second Final Flow 232 Mileage 75RT 105' Comments _____

(G) Final Shut-In 611 Sampler _____

(H) Final Hydrostatic 2190 Straddle _____ Ruined Shale Packer _____

Initial Open 30 Shale Packer _____ Ruined Packer 320'

Initial Shut-In 45 Extra Packer _____ Extra Copies _____

Final Flow 45 Extra Recorder _____ Sub Total 453.36

Final Shut-In 60 Day Standby 4.0 + 1 day 133.36 Total 20 33.36

Accessibility _____ MP/DST Disc't _____

Sub Total 1590

Approved By Terry McLeod Our Representative Chuck Smith

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