

DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

Joseph-Hess #1

30-13s-31w Gove, KS

Start Date: 2013.07.27 @ 16:51:30

End Date: 2013.07.27 @ 23:14:30

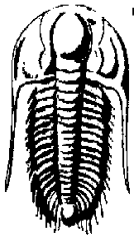
Job Ticket #: 53185 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.08.05 @ 13:33:09



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

30-13s-31w Gove, KS

Joseph-Hess #1

Job Ticket: 53185

DST#: 1

Test Start: 2013.07.27 @ 16:51:30

GENERAL INFORMATION:

Formation: **LKC C**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:29:00

Time Test Ended: 23:14:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Brandon Turley

Unit No: 60

Interval: 3927.00 ft (KB) To 3963.00 ft (KB) (TVD)

Total Depth: 3963.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2873.00 ft (KB)

2866.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8373 Inside

Press@RunDepth: 89.38 psig @ 3928.00 ft (KB)

Start Date: 2013.07.27

End Date:

2013.07.27

Start Time: 16:51:35

End Time:

23:14:29

Capacity: 8000.00 psig

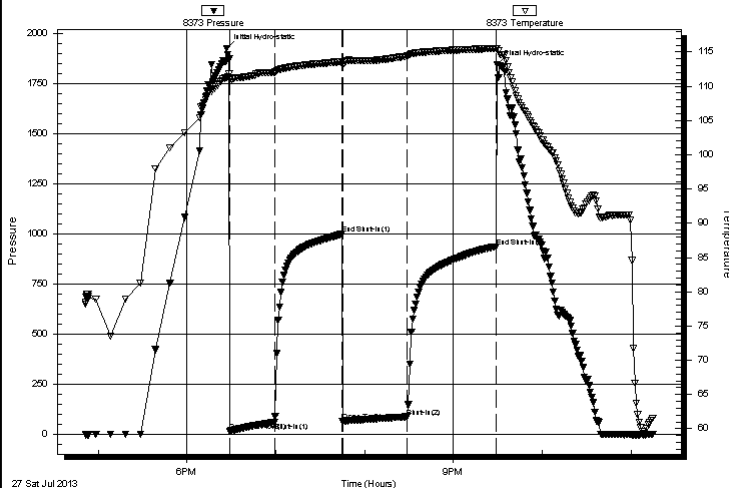
Last Calib.: 2013.07.27

Time On Btm: 2013.07.27 @ 18:27:00

Time Off Btm: 2013.07.27 @ 21:29:30

TEST COMMENT: IF: 1/4" blow built to 3" in 30 min.
IS: No return.
FF: Surface blow built to 3" in 45 min.
FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

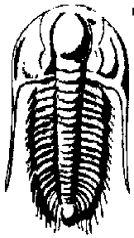
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1925.59	111.25	Initial Hydro-static
2	17.75	111.08	Open To Flow (1)
32	61.88	112.03	Shut-In(1)
78	1000.18	113.59	End Shut-In(1)
78	65.07	113.06	Open To Flow (2)
122	89.38	114.41	Shut-In(2)
182	937.69	115.53	End Shut-In(2)
183	1845.26	115.52	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	mcw 90%w 10%m	0.30
102.00	w cm 30%w 70%m	0.91
2.00	free oil 100%o	0.03

Gas Rates

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



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

30-13s-31w Gove, KS

Joseph-Hess #1

Job Ticket: 53185

DST#: 1

Test Start: 2013.07.27 @ 16:51:30

GENERAL INFORMATION:

Formation: **LKC C**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:29:00

Time Test Ended: 23:14:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Brandon Turley

Unit No: 60

Interval: 3927.00 ft (KB) To 3963.00 ft (KB) (TVD)

Total Depth: 3963.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2873.00 ft (KB)

2866.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8356 Outside

Press@RunDepth: psig @ 3928.00 ft (KB)

Start Date: 2013.07.27

End Date:

2013.07.27

Start Time: 16:51:33

End Time:

23:14:27

Capacity: 8000.00 psig

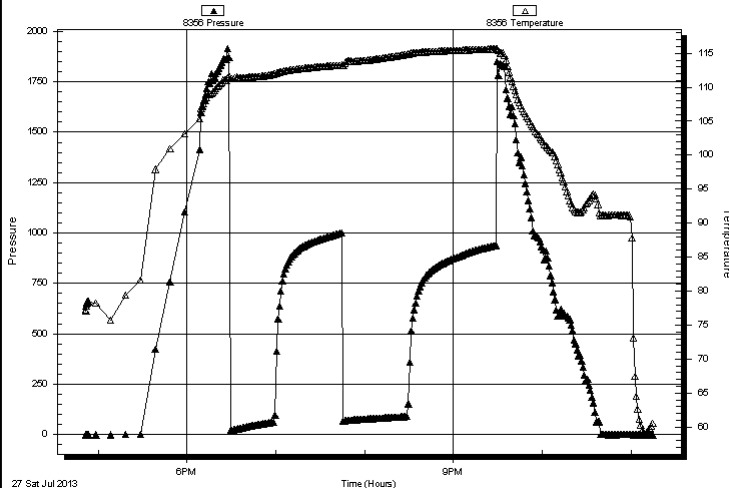
Last Calib.: 2013.07.27

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: 1/4" blow built to 3" in 30 min.
IS: No return.
FF: Surface blow built to 3" in 45 min.
FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

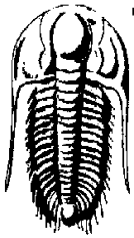
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
-------------	-----------------	--------------	------------

Recovery

Length (ft)	Description	Volume (bbl)
62.00	mcw 90%w 10%m	0.30
102.00	w cm 30%w 70%m	0.91
2.00	free oil 100%o	0.03

Gas Rates

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



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc

30-13s-31w Gove, KS

8100 E 22nd St N 700
Wichita, KS 67278

Joseph-Hess #1

Job Ticket: 53185

DST#: 1

ATTN: Adam Eldani

Test Start: 2013.07.27 @ 16:51:30

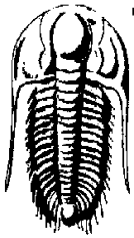
Tool Information

Drill Pipe:	Length:	3791.00 ft	Diameter:	3.88 inches	Volume:	55.44 bbl	Tool Weight:	2000.00 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:	122.00 ft	Diameter:	2.25 inches	Volume:	0.60 bbl	Weight to Pull Loose:	75000.00 lb
					Total Volume:	56.04 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		14.00 ft					String Weight: Initial	60000.00 lb
Depth to Top Packer:		3927.00 ft					Final	60000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		36.00 ft						
Tool Length:		64.00 ft						
Number of Packers:		2	Diameter:	6.75 inches				
Tool Comments:								

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Stubb	1.00			3900.00	
Shut In Tool	5.00			3905.00	
Hydraulic tool	5.00			3910.00	
Jars	5.00			3915.00	
Safety Joint	3.00			3918.00	
Packer	5.00			3923.00	28.00 Bottom Of Top Packer
Packer	4.00			3927.00	
Stubb	1.00			3928.00	
Recorder	0.00	8373	Inside	3928.00	
Recorder	0.00	8356	Outside	3928.00	
Perforations	30.00			3958.00	
Bullnose	5.00			3963.00	36.00 Bottom Packers & Anchor

Total Tool Length: 64.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc

30-13s-31w Gove, KS

8100 E 22nd St N 700
Wichita, KS 67278

Joseph-Hess #1

Job Ticket: 53185

DST#: 1

ATTN: Adam Eldani

Test Start: 2013.07.27 @ 16:51:30

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 51.00 sec/qt

Water Loss: 7.17 in³

Resistivity: 0.00 ohm.m

Salinity: 1500.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

Oil API:

0 deg API

Water Salinity: 44000 ppm

ft

bbl

psig

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
62.00	mcw 90%w 10%m	0.305
102.00	w cm 30%w 70%m	0.909
2.00	free oil 100%o	0.029

Total Length: 166.00 ft Total Volume: 1.243 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .19@63=44000

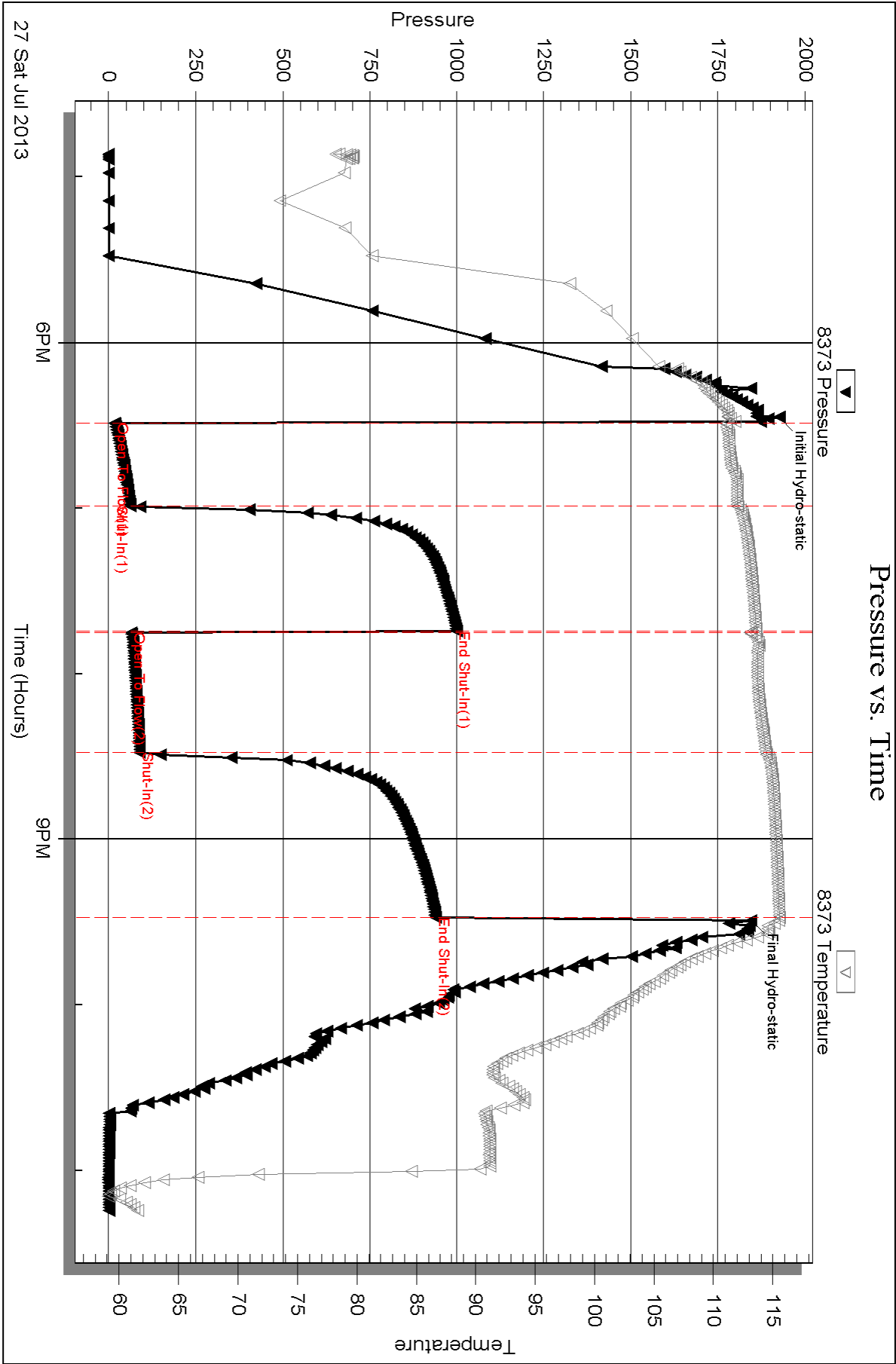
Serial #: 8373

Inside

Ritchie Exploration Inc

Joseph-Hess #1

DST Test Number: 1

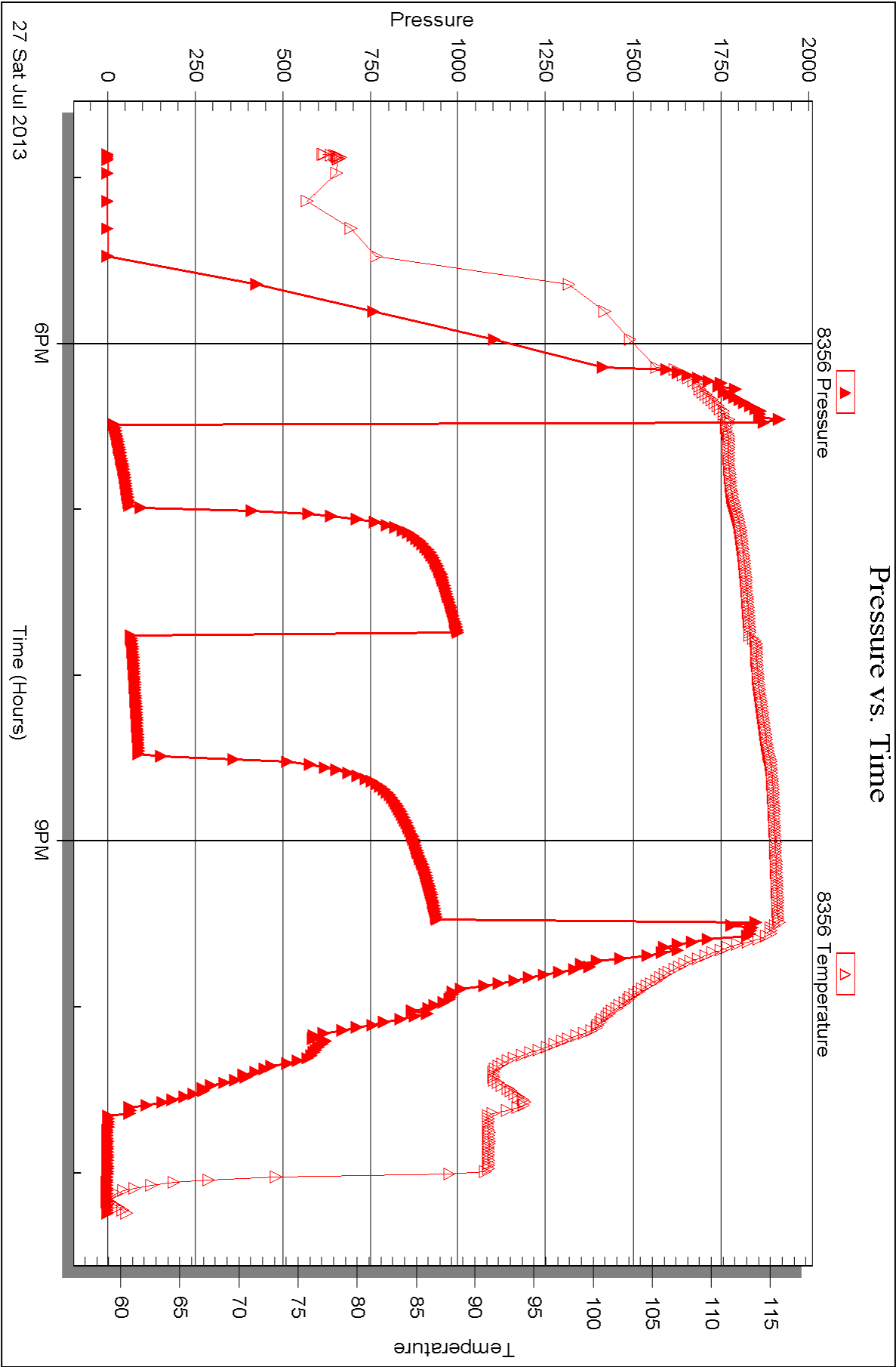


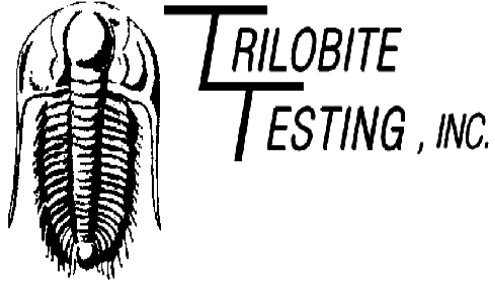
Serial #: 8356

Outside Ritchie Exploration Inc

Joseph-Hess #1

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

Joseph-Hess #1

30-13s-31w Gove, KS

Start Date: 2013.07.28 @ 08:49:22

End Date: 2013.07.28 @ 15:26:22

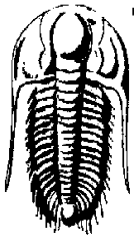
Job Ticket #: 53186 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.08.05 @ 13:32:35



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

30-13s-31w Gove, KS

Joseph-Hess #1

Job Ticket: 53186

DST#: 2

Test Start: 2013.07.28 @ 08:49:22

GENERAL INFORMATION:

Formation: **LKC D&E**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:43:52

Time Test Ended: 15:26:22

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 3959.00 ft (KB) To 4002.00 ft (KB) (TVD)

Total Depth: 4002.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2873.00 ft (KB)

2866.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8373 Inside

Press@RunDepth: 49.67 psig @ 3960.00 ft (KB)

Start Date: 2013.07.28

End Date:

2013.07.28

Start Time: 08:49:27

End Time:

15:26:21

Capacity: 8000.00 psig

Last Calib.: 2013.07.28

Time On Btm: 2013.07.28 @ 10:41:52

Time Off Btm: 2013.07.28 @ 13:48:52

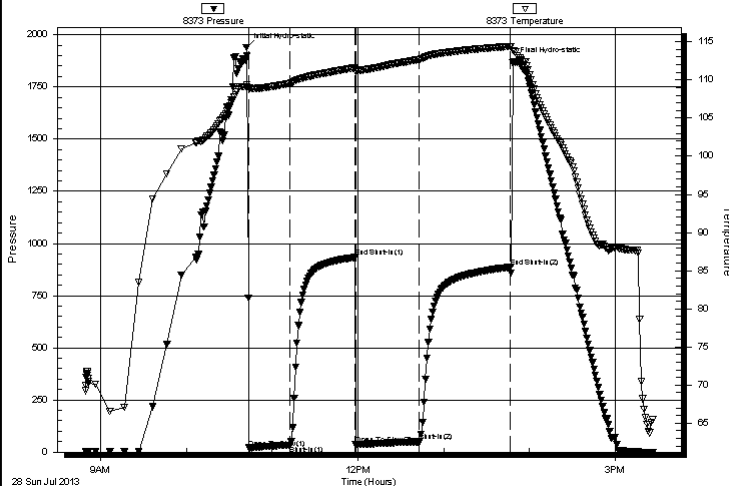
TEST COMMENT: IF: Surface blow built to 1 3/4" in 30 min.

IS: No return.

FF: Surface blow built to 1/2" in 45 min.

FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1939.87	109.14	Initial Hydro-static
2	19.96	108.94	Open To Flow (1)
31	33.35	109.55	Shut-In(1)
76	933.30	111.60	End Shut-In(1)
77	35.64	111.14	Open To Flow (2)
121	49.67	112.69	Shut-In(2)
185	886.39	114.40	End Shut-In(2)
187	1871.92	113.85	Final Hydro-static

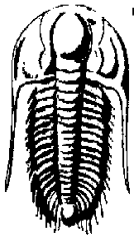
Recovery

Length (ft)	Description	Volume (bbl)
65.00	wcm 5%w 95% m	0.32

Gas Rates

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

* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

30-13s-31w Gove, KS

Joseph-Hess #1

Job Ticket: 53186

DST#: 2

Test Start: 2013.07.28 @ 08:49:22

GENERAL INFORMATION:

Formation: **LKC D& E**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:43:52

Time Test Ended: 15:26:22

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 3959.00 ft (KB) To 4002.00 ft (KB) (TVD)

Total Depth: 4002.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2873.00 ft (KB)

2866.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8356 Outside

Press@RunDepth: psig @ 3960.00 ft (KB)

Start Date: 2013.07.28

End Date:

2013.07.28

Start Time: 08:50:02

End Time:

15:26:56

Capacity: 8000.00 psig

Last Calib.:

2013.07.28

Time On Btm:

Time Off Btm:

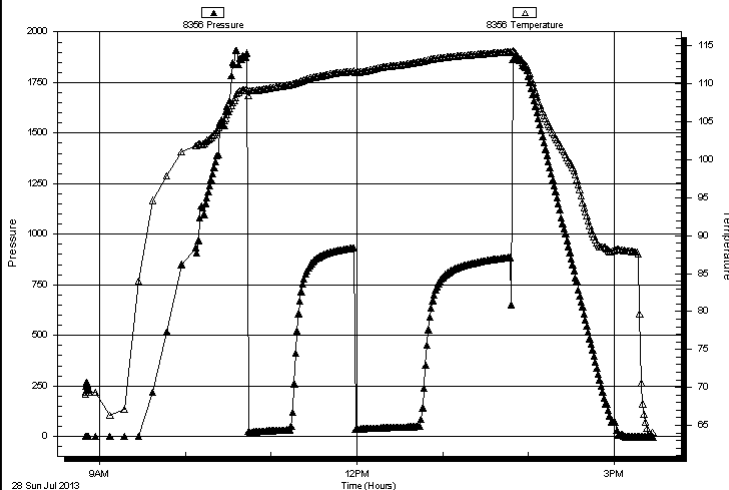
TEST COMMENT: IF: Surface blow built to 1 3/4" in 30 min.

IS: No return.

FF: Surface blow built to 1/2" in 45 min.

FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

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

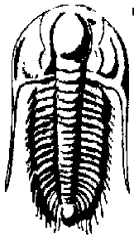
Recovery

Length (ft)	Description	Volume (bbl)
65.00	w cm 5%w 95% m	0.32

Gas Rates

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

* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc

30-13s-31w Gove, KS

8100 E 22nd St N 700
Wichita, KS 67278

Joseph-Hess #1

Job Ticket: 53186

DST#: 2

ATTN: Adam Eldani

Test Start: 2013.07.28 @ 08:49:22

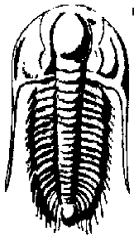
Tool Information

Drill Pipe:	Length:	3822.00 ft	Diameter:	3.88 inches	Volume:	55.89 bbl	Tool Weight:	2000.00 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:	122.00 ft	Diameter:	2.25 inches	Volume:	0.60 bbl	Weight to Pull Loose:	75000.00 lb
					Total Volume:	56.49 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		13.00 ft					String Weight: Initial	60000.00 lb
Depth to Top Packer:		3959.00 ft					Final	60000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		43.00 ft						
Tool Length:		71.00 ft						
Number of Packers:		2	Diameter:	6.75 inches				
Tool Comments:								

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Stubb	1.00			3932.00	
Shut In Tool	5.00			3937.00	
Hydraulic tool	5.00			3942.00	
Jars	5.00			3947.00	
Safety Joint	3.00			3950.00	
Packer	5.00			3955.00	28.00 Bottom Of Top Packer
Packer	4.00			3959.00	
Stubb	1.00			3960.00	
Recorder	0.00	8373	Inside	3960.00	
Recorder	0.00	8356	Outside	3960.00	
Perforations	3.00			3963.00	
Change Over Sub	1.00			3964.00	
Drill Pipe	32.00			3996.00	
Change Over Sub	1.00			3997.00	
Bullnose	5.00			4002.00	43.00 Bottom Packers & Anchor

Total Tool Length: 71.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc

30-13s-31w Gove, KS

8100 E 22nd St N 700
Wichita, KS 67278

Joseph-Hess #1

Job Ticket: 53186

DST#: 2

ATTN: Adam Eldani

Test Start: 2013.07.28 @ 08:49:22

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.16 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
65.00	w cm 5%w 95%m	0.320

Total Length: 65.00 ft

Total Volume: 0.320 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

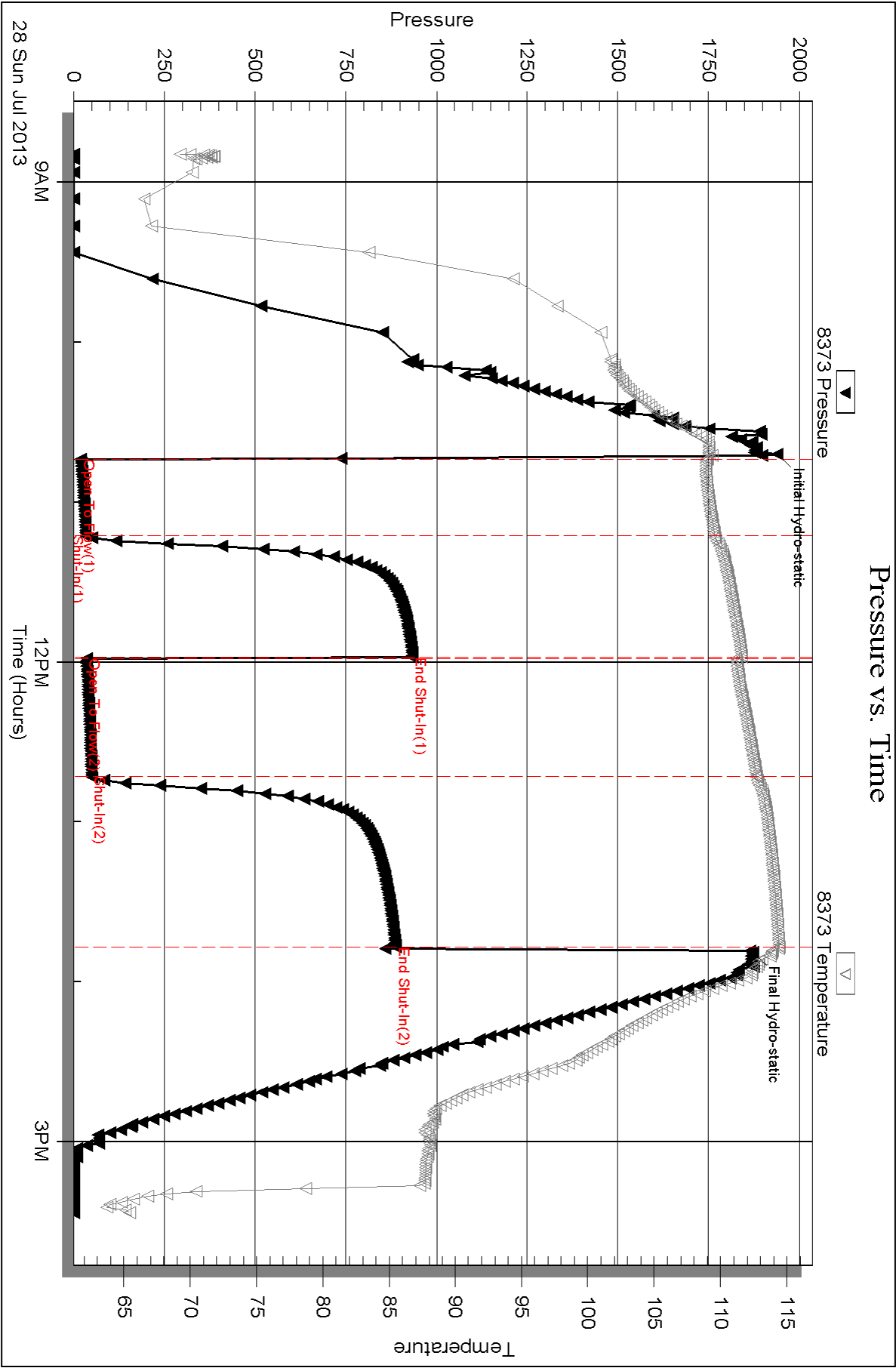
Serial #: 8373

Inside

Ritchie Exploration Inc

Joseph-Hess #1

DST Test Number: 2

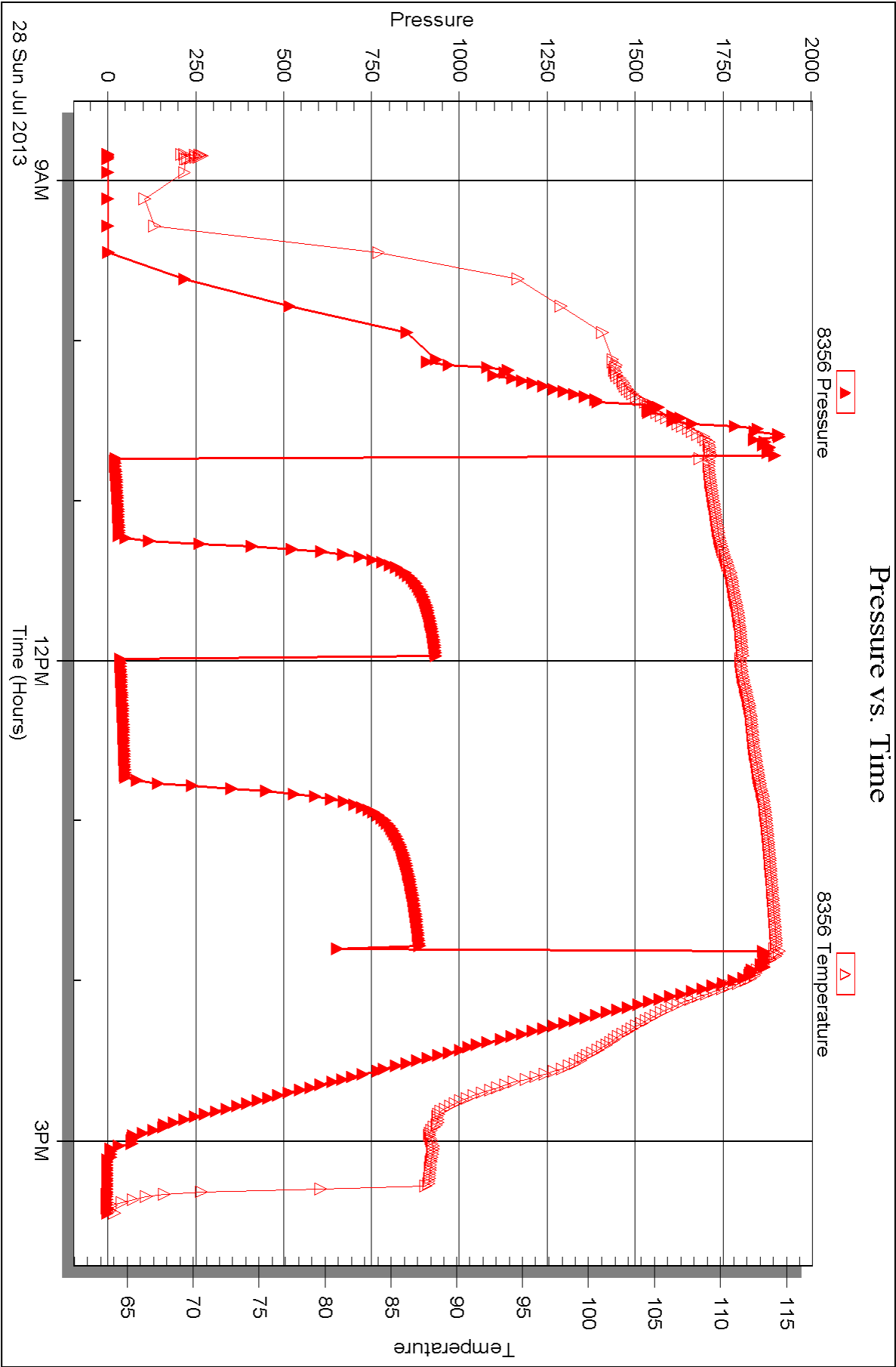


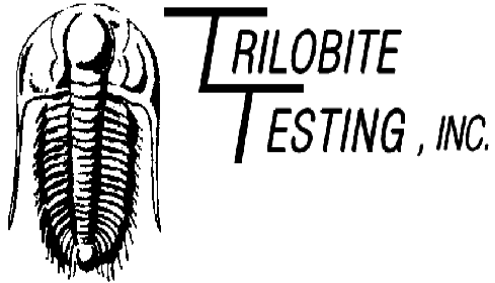
Serial #: 8356

Outside Ritchie Exploration Inc

Joseph-Hess #1

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

Joseph-Hess #1

30-13s-31w Gove, KS

Start Date: 2013.07.28 @ 21:53:11

End Date: 2013.07.29 @ 05:04:11

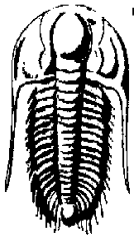
Job Ticket #: 53187 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.08.05 @ 13:32:03



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Ritchie Exploration Inc

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

30-13s-31w Gove, KS

Joseph-Hess #1

Job Ticket: 53187

DST#: 3

Test Start: 2013.07.28 @ 21:53:11

GENERAL INFORMATION:

Formation: **LKC F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:47:41

Time Test Ended: 05:04:11

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 3999.00 ft (KB) To 4020.00 ft (KB) (TVD)

Total Depth: 4020.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2873.00 ft (KB)

2866.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8373 Inside

Press@RunDepth: 226.60 psig @ 4000.00 ft (KB)

Start Date: 2013.07.28

End Date:

2013.07.29

Start Time: 21:53:16

End Time:

05:04:10

Capacity: 8000.00 psig

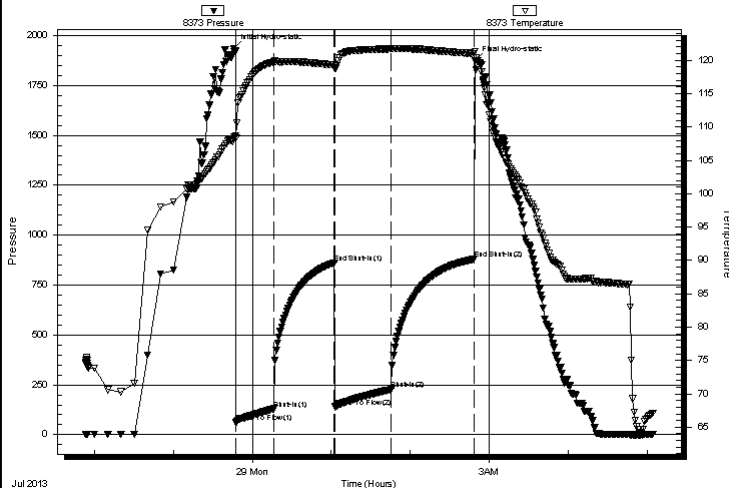
Last Calib.: 2013.07.29

Time On Btm: 2013.07.28 @ 23:45:41

Time Off Btm: 2013.07.29 @ 02:49:11

TEST COMMENT: IF: BOB in 11 min.
IS: Surface blow built to 1/2"
FF: BOB in 12 min.
FS: Surface blow built to 2"

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1935.70	108.25	Initial Hydro-static
2	61.41	108.43	Open To Flow (1)
31	129.14	119.73	Shut-In(1)
77	859.23	119.26	End Shut-In(1)
77	139.76	118.74	Open To Flow (2)
120	226.60	121.73	Shut-In(2)
183	878.92	121.02	End Shut-In(2)
184	1874.10	121.30	Final Hydro-static

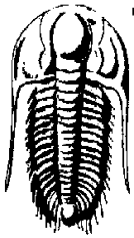
Recovery

Length (ft)	Description	Volume (bbl)
186.00	mcw 95%w 5%m	1.54
124.00	mcw 80%w 20%m	1.81
124.00	ocw m 10%o 40%w 50%m	1.81
62.00	mco 80%o 20%m	0.91
0.00	124 GIP	0.00

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Ritchie Exploration Inc

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

30-13s-31w Gove, KS

Joseph-Hess #1

Job Ticket: 53187

DST#: 3

Test Start: 2013.07.28 @ 21:53:11

GENERAL INFORMATION:

Formation: **LKC F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:47:41

Time Test Ended: 05:04:11

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 3999.00 ft (KB) To 4020.00 ft (KB) (TVD)

Total Depth: 4020.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2873.00 ft (KB)

2866.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8356 Outside

Press@RunDepth: psig @ 4000.00 ft (KB)

Start Date: 2013.07.28

End Date:

2013.07.29

Start Time: 21:53:16

End Time:

05:04:10

Capacity: 8000.00 psig

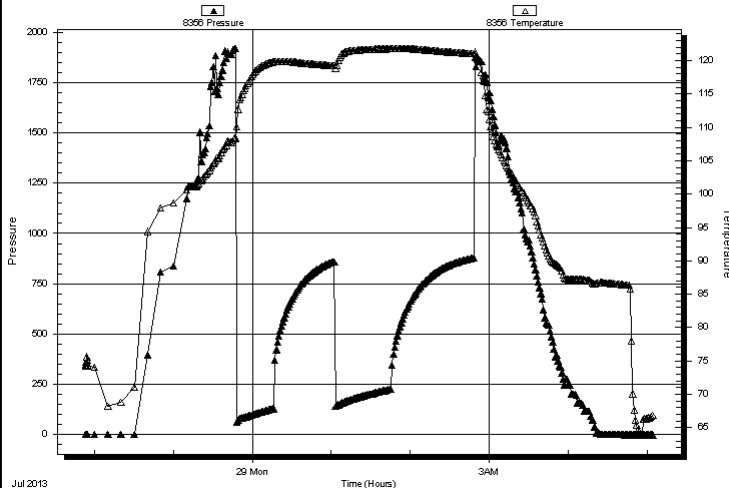
Last Calib.: 2013.07.29

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: BOB in 11 min.
IS: Surface blow built to 1/2"
FF: BOB in 12 min.
FS: Surface blow built to 2"

Pressure vs. Time



PRESSURE SUMMARY

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

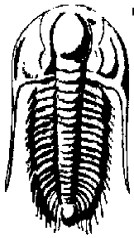
Recovery

Length (ft)	Description	Volume (bbl)
186.00	mcw 95%w 5%m	1.54
124.00	mcw 80%w 20%m	1.81
124.00	ocw m 10%o 40%w 50%m	1.81
62.00	mco 80%o 20%m	0.91
0.00	124 GIP	0.00

Gas Rates

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

* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc

30-13s-31w Gove, KS

8100 E 22nd St N 700
Wichita, KS 67278

Joseph-Hess #1

Job Ticket: 53187

DST#: 3

ATTN: Adam Eldani

Test Start: 2013.07.28 @ 21:53:11

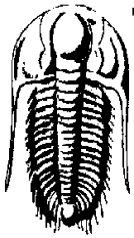
Tool Information

Drill Pipe:	Length:	3858.00 ft	Diameter:	3.88 inches	Volume:	56.42 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length:	122.00 ft	Diameter:	2.25 inches	Volume:	0.60 bbl	Weight to Pull Loose:	80000.00 lb
					Total Volume:	57.02 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		4.00 ft					String Weight: Initial	60000.00 lb
Depth to Top Packer:		3999.00 ft					Final	62000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		21.00 ft						
Tool Length:		44.00 ft						
Number of Packers:		2	Diameter:	6.75 inches				
Tool Comments:								

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Stubb	1.00			3977.00	
Shut In Tool	5.00			3982.00	
Hydraulic tool	5.00			3987.00	
Safety Joint	3.00			3990.00	
Packer	5.00			3995.00	23.00 Bottom Of Top Packer
Packer	4.00			3999.00	
Stubb	1.00			4000.00	
Recorder	0.00	8373	Inside	4000.00	
Recorder	0.00	8356	Outside	4000.00	
Perforations	15.00			4015.00	
Bullnose	5.00			4020.00	21.00 Bottom Packers & Anchor

Total Tool Length: 44.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc

30-13s-31w Gove, KS

8100 E 22nd St N 700
Wichita, KS 67278

Joseph-Hess #1

Job Ticket: 53187

DST#: 3

ATTN: Adam Eldani

Test Start: 2013.07.28 @ 21:53:11

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 52.00 sec/qt

Water Loss: 10.36 in³

Resistivity: 0.00 ohm.m

Salinity: 3000.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

Oil API:

0 deg API

Water Salinity: 70000 ppm

ft

bbl

psig

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
186.00	mcw 95%w 5%m	1.536
124.00	mcw 80%w 20%m	1.813
124.00	ocw m 10%o 40%w 50%m	1.813
62.00	mco 80%o 20%m	0.907
0.00	124 GIP	0.000

Total Length: 496.00 ft Total Volume: 6.069 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .12@66=70000

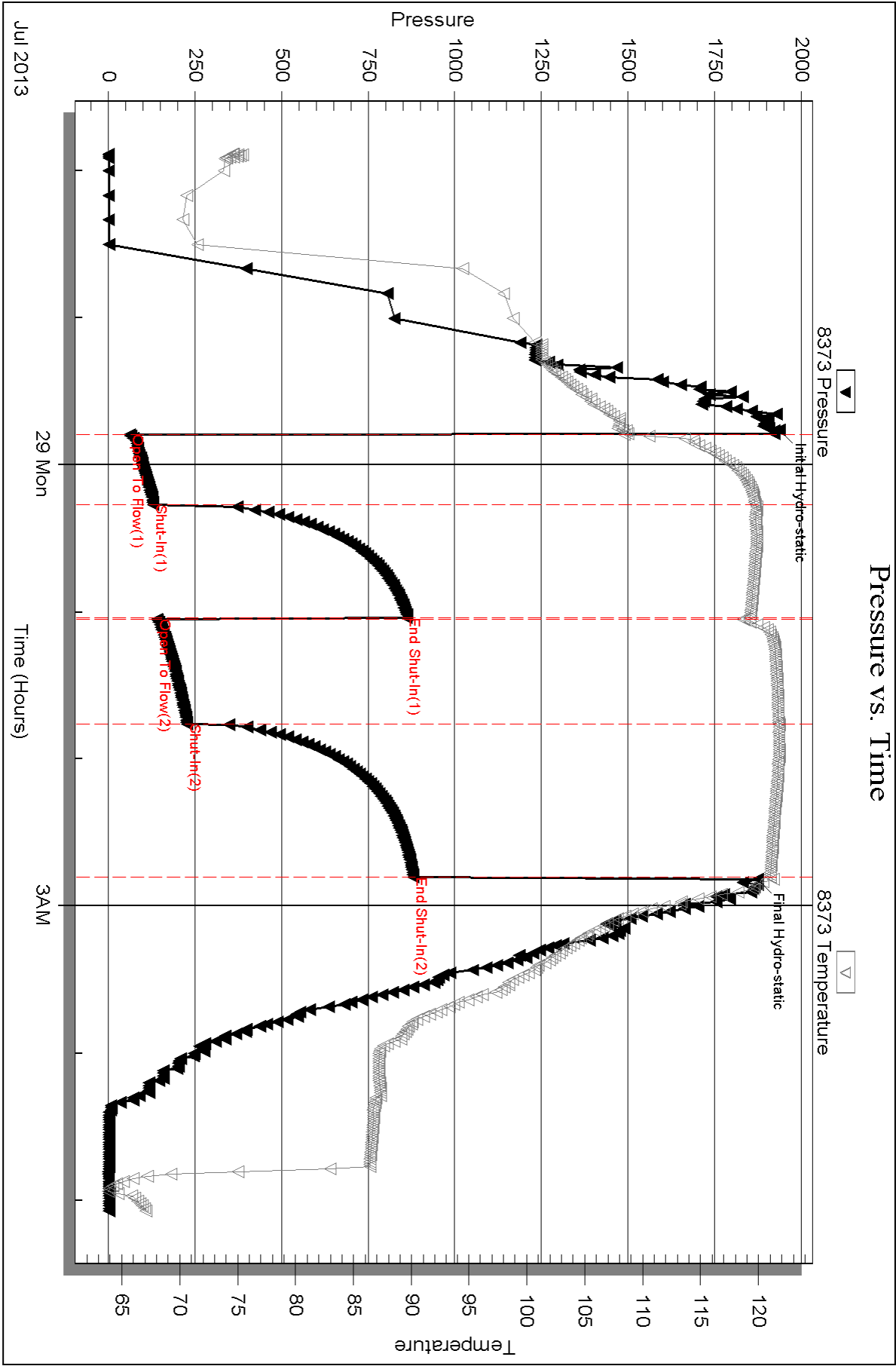
Serial #: 8373

Inside

Ritchie Exploration Inc

Joseph-Hess #1

DST Test Number: 3



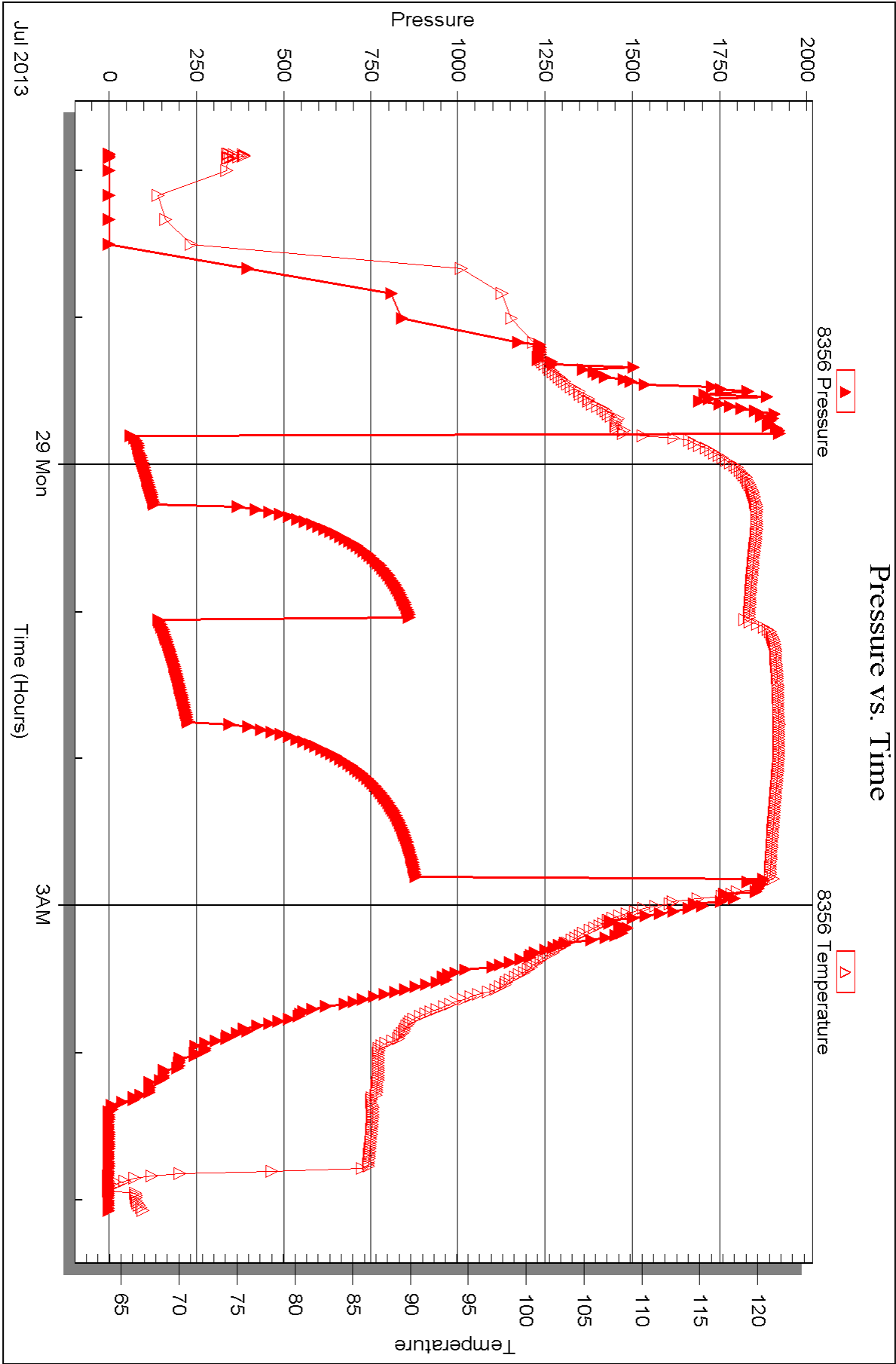
Serial #: 8356

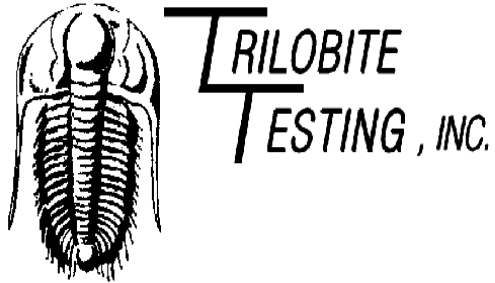
Outside

Ritchie Exploration Inc

Joseph-Hess #1

DST Test Number: 3





DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

Joseph-Hess #1

30-13s-31w Gove, KS

Start Date: 2013.07.29 @ 15:38:02

End Date: 2013.07.29 @ 20:46:32

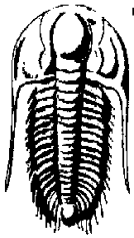
Job Ticket #: 53188 DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.08.05 @ 13:31:28



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

30-13s-31w Gove, KS

Joseph-Hess #1

Job Ticket: 53188

DST#: 4

Test Start: 2013.07.29 @ 15:38:02

GENERAL INFORMATION:

Formation: **LKC H**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:16:02

Time Test Ended: 20:46:32

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 4061.00 ft (KB) To 4097.00 ft (KB) (TVD)

Reference Elevations: 2873.00 ft (KB)

Total Depth: 4097.00 ft (KB) (TVD)

2866.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8373 Inside

Press@RunDepth: 21.19 psig @ 4062.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.07.29

End Date:

2013.07.29

Last Calib.: 2013.07.29

Start Time: 15:38:07

End Time:

20:46:31

Time On Btm: 2013.07.29 @ 17:14:02

Time Off Btm: 2013.07.29 @ 19:17:32

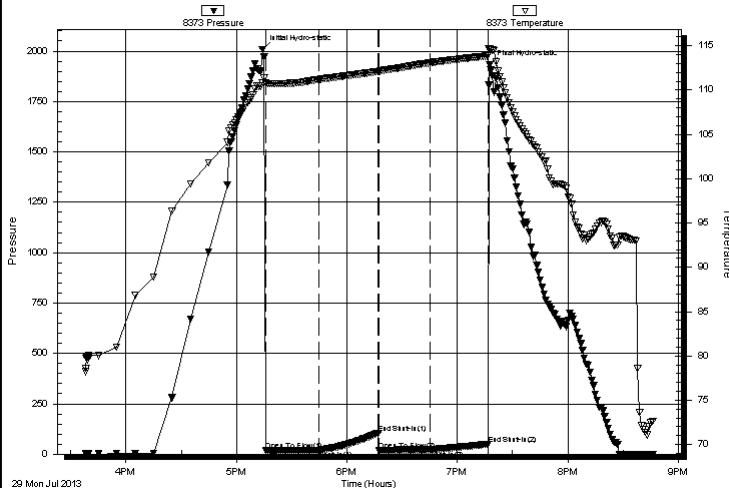
TEST COMMENT: IF: Surface blow died in 6 min.

IS: No return.

FF: No blow.

FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2008.82	110.87	Initial Hydro-static
2	17.26	110.83	Open To Flow (1)
31	18.72	111.19	Shut-In(1)
63	102.99	112.10	End Shut-In(1)
64	19.23	112.09	Open To Flow (2)
91	21.19	113.08	Shut-In(2)
123	49.38	113.85	End Shut-In(2)
124	1931.74	114.70	Final Hydro-static

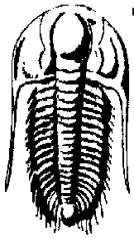
Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud 100% m	0.02

Gas Rates

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

* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

30-13s-31w Gove, KS

Joseph-Hess #1

Job Ticket: 53188

DST#: 4

Test Start: 2013.07.29 @ 15:38:02

GENERAL INFORMATION:

Formation: **LKC H**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:16:02

Time Test Ended: 20:46:32

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 4061.00 ft (KB) To 4097.00 ft (KB) (TVD)

Reference Elevations: 2873.00 ft (KB)

Total Depth: 4097.00 ft (KB) (TVD)

2866.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8356 Outside

Press@RunDepth: psig @ 4062.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.07.29

End Date:

2013.07.29

Last Calib.:

2013.07.29

Start Time: 15:38:32

End Time:

20:46:56

Time On Btm:

Time Off Btm:

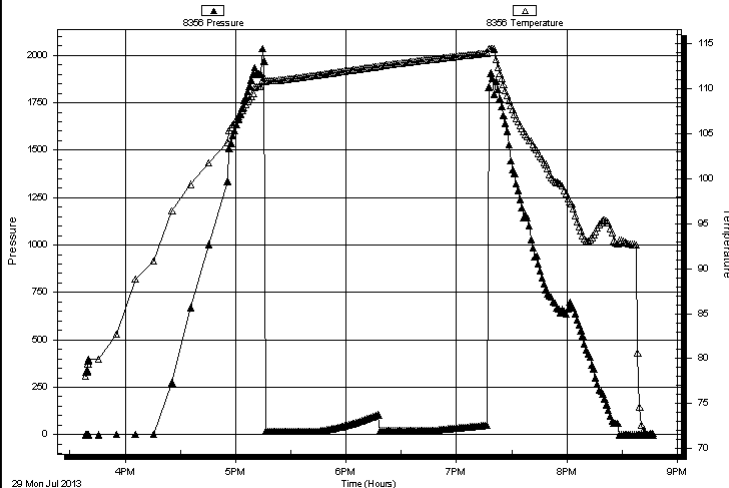
TEST COMMENT: IF: Surface blow died in 6 min.

IS: No return.

FF: No blow.

FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

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

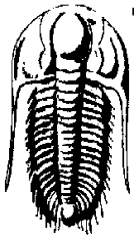
Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud 100% m	0.02

Gas Rates

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

* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc

30-13s-31w Gove, KS

8100 E 22nd St N 700
Wichita, KS 67278

Joseph-Hess #1

Job Ticket: 53188

DST#: 4

ATTN: Adam Eldani

Test Start: 2013.07.29 @ 15:38:02

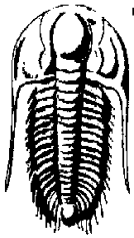
Tool Information

Drill Pipe:	Length:	3920.00 ft	Diameter:	3.88 inches	Volume:	57.33 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length:	122.00 ft	Diameter:	2.25 inches	Volume:	0.60 bbl	Weight to Pull Loose:	65000.00 lb
					Total Volume:	57.93 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		4.00 ft					String Weight: Initial	60000.00 lb
Depth to Top Packer:		4061.00 ft					Final	60000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		36.00 ft						
Tool Length:		59.00 ft						
Number of Packers:		2	Diameter:	6.75 inches				
Tool Comments:								

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Stubb	1.00			4039.00	
Shut In Tool	5.00			4044.00	
Hydraulic tool	5.00			4049.00	
Safety Joint	3.00			4052.00	
Packer	5.00			4057.00	23.00 Bottom Of Top Packer
Packer	4.00			4061.00	
Stubb	1.00			4062.00	
Recorder	0.00	8373	Inside	4062.00	
Recorder	0.00	8356	Outside	4062.00	
Perforations	30.00			4092.00	
Bullnose	5.00			4097.00	36.00 Bottom Packers & Anchor

Total Tool Length: 59.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc

30-13s-31w Gove, KS

8100 E 22nd St N 700
Wichita, KS 67278

Joseph-Hess #1

Job Ticket: 53188

DST#: 4

ATTN: Adam Eldani

Test Start: 2013.07.29 @ 15:38:02

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbl

Water Loss: 9.57 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	mud 100%m	0.025

Total Length: 5.00 ft

Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8373

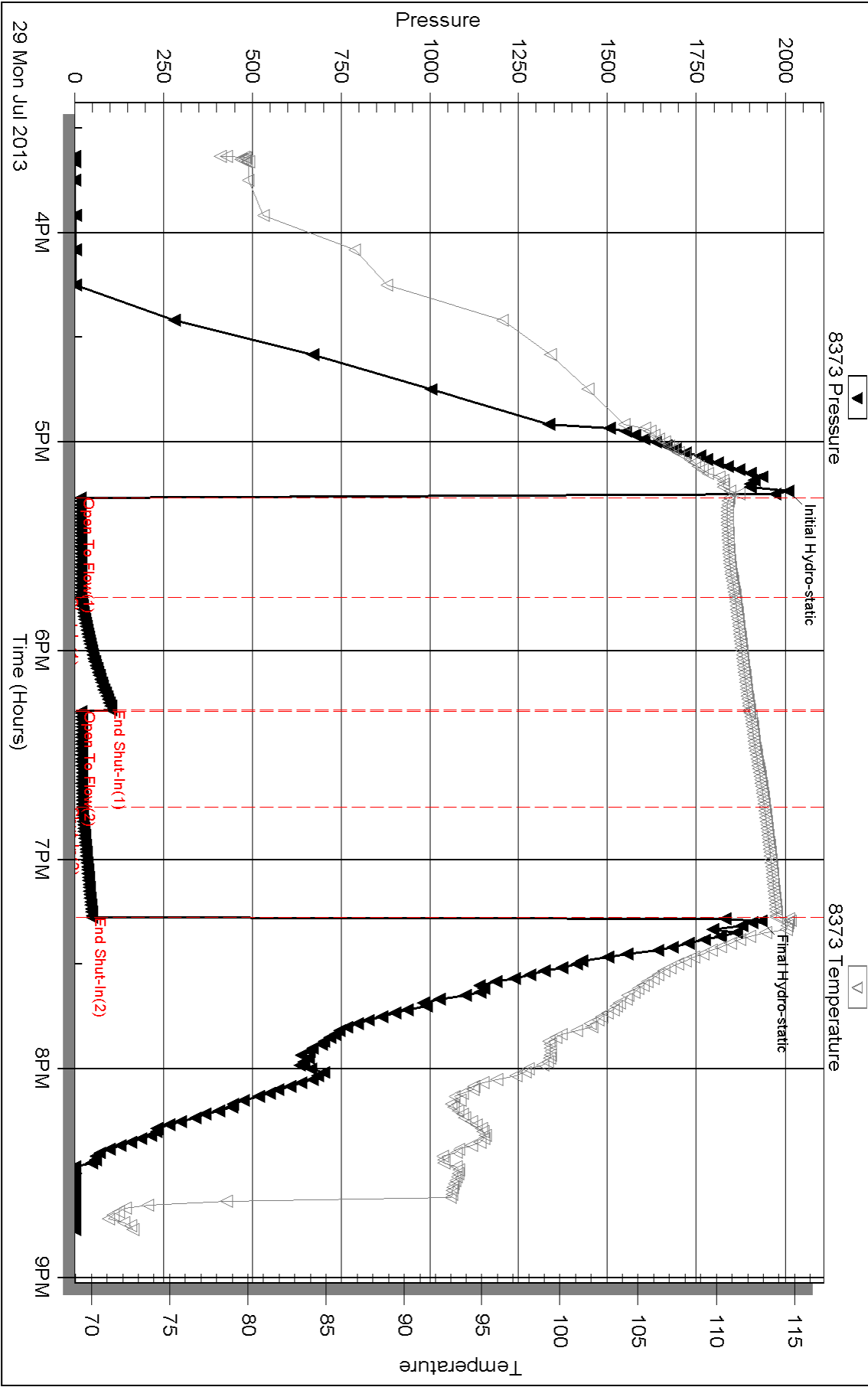
Inside

Ritchie Exploration Inc

Joseph-Hess #1

DST Test Number: 4

Pressure vs. Time

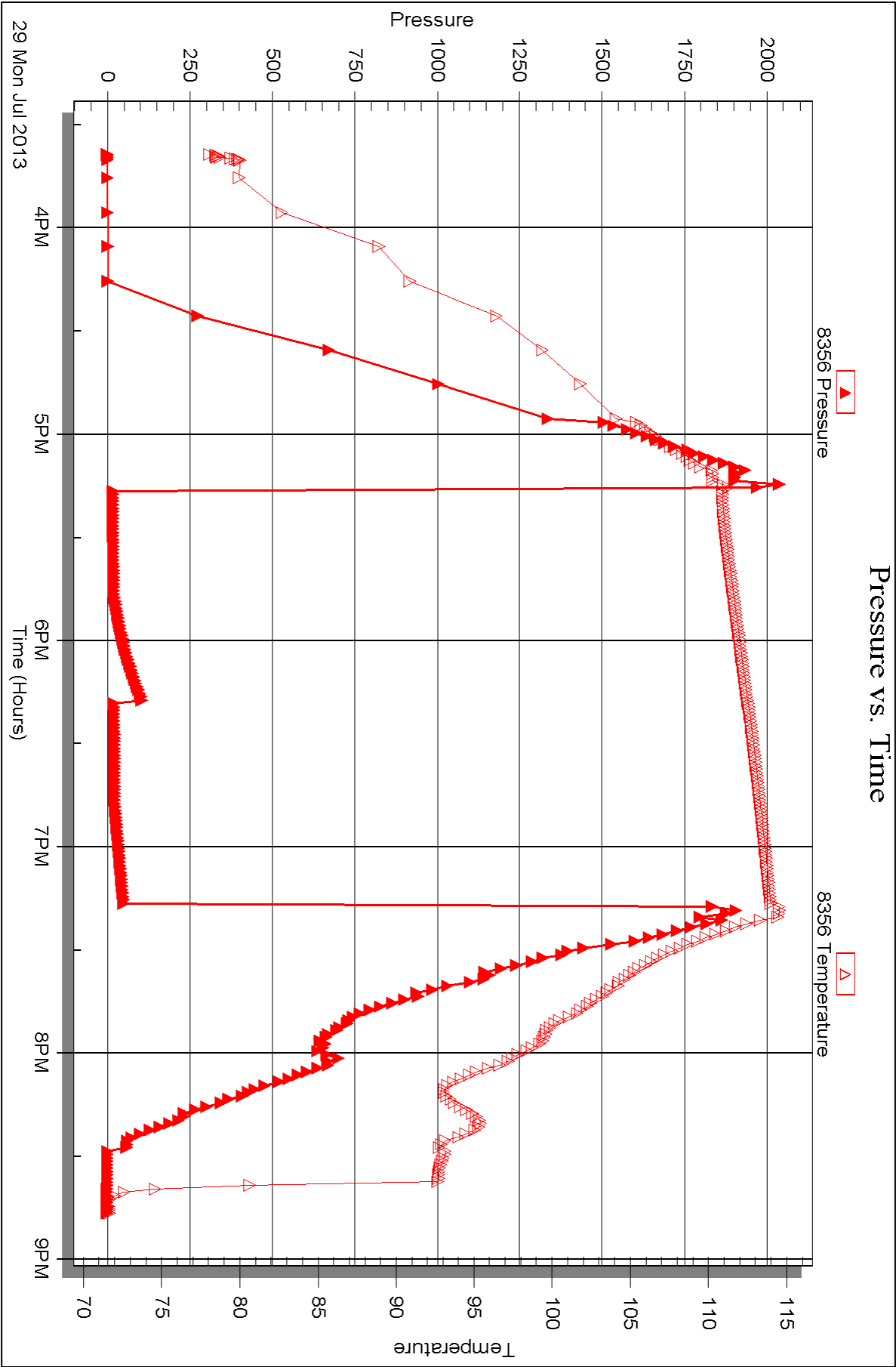


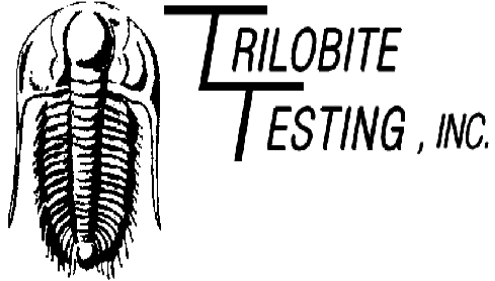
Serial #: 8356

Outside Ritchie Exploration Inc

Joseph-Hess #1

DST Test Number: 4





DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

Joseph-Hess #1

30-13s-31w Gove, KS

Start Date: 2013.07.30 @ 09:23:42

End Date: 2013.07.30 @ 15:54:12

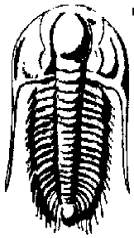
Job Ticket #: 53189 DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.08.05 @ 13:30:29



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

30-13s-31w Gove, KS

Joseph-Hess #1

Job Ticket: 53189

DST#: 5

Test Start: 2013.07.30 @ 09:23:42

GENERAL INFORMATION:

Formation: **LKC I-J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:15:12

Time Test Ended: 15:54:12

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 4093.00 ft (KB) To 4150.00 ft (KB) (TVD)

Total Depth: 4150.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2873.00 ft (KB)

2866.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8373 Inside

Press@RunDepth: 113.56 psig @ 4094.00 ft (KB)

Start Date: 2013.07.30

End Date:

2013.07.30

Start Time: 09:23:47

End Time:

15:54:11

Capacity: 8000.00 psig

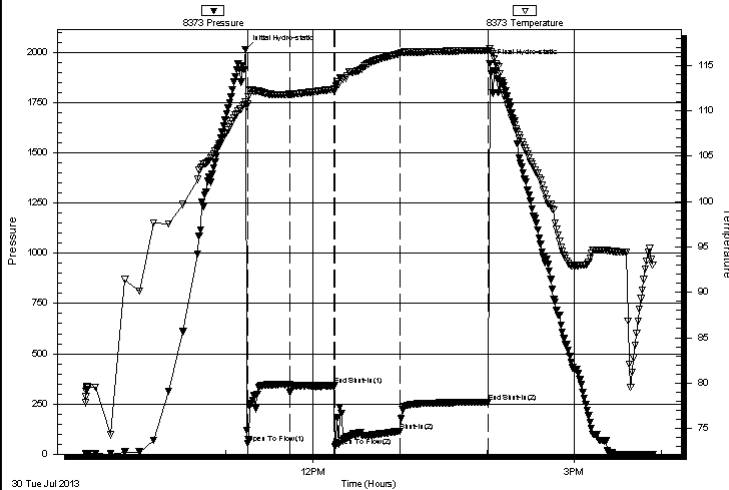
Last Calib.: 2013.07.30

Time On Btm: 2013.07.30 @ 11:13:42

Time Off Btm: 2013.07.30 @ 14:01:42

TEST COMMENT: IF: 1/4" blow built to 1/2" died in 10 min.
IS: No return.
FF: No blow. Flushed tool 1/4" blow BOB in 40 min.
FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2015.96	110.98	Initial Hydro-static
2	55.27	110.73	Open To Flow (1)
31	306.71	111.79	Shut-In(1)
61	341.20	112.38	End Shut-In(1)
62	40.63	112.27	Open To Flow (2)
106	113.56	116.31	Shut-In(2)
167	257.80	116.66	End Shut-In(2)
168	1945.86	116.87	Final Hydro-static

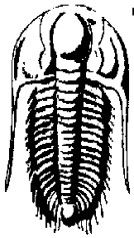
Recovery

Length (ft)	Description	Volume (bbl)
122.00	gocw m 20%g 5%o 20%w 55%m	0.60
102.00	gocw m 10%g 20%o 10%w 60%m	1.49

Gas Rates

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

* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

30-13s-31w Gove, KS

Joseph-Hess #1

Job Ticket: 53189

DST#: 5

Test Start: 2013.07.30 @ 09:23:42

GENERAL INFORMATION:

Formation: **LKC I-J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:15:12

Time Test Ended: 15:54:12

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 4093.00 ft (KB) To 4150.00 ft (KB) (TVD)

Total Depth: 4150.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2873.00 ft (KB)

2866.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8356 Outside

Press@RunDepth: psig @ 4094.00 ft (KB)

Start Date: 2013.07.30

End Date:

2013.07.30

Start Time: 09:23:18

End Time:

15:53:42

Capacity: 8000.00 psig

Last Calib.:

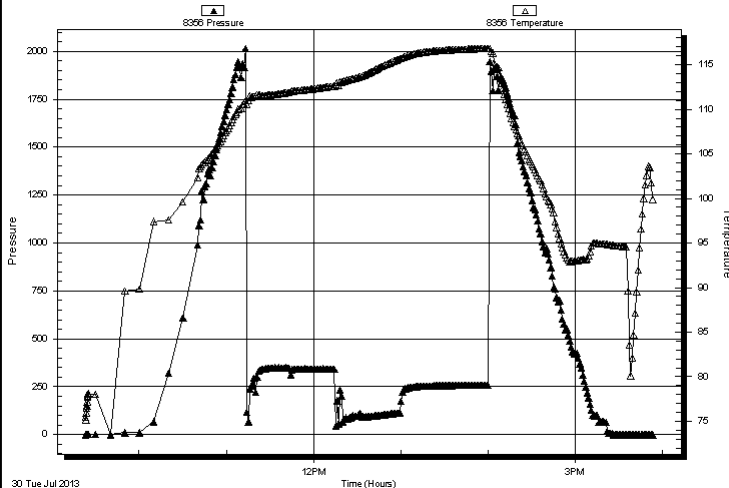
2013.07.30

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: 1/4" blow built to 1/2" died in 10 min.
IS: No return.
FF: No blow. Flushed tool 1/4" blow BOB in 40 min.
FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

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

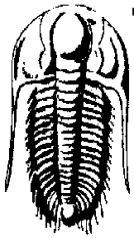
Recovery

Length (ft)	Description	Volume (bbl)
122.00	gocw m 20%g 5%o 20%w 55%m	0.60
102.00	gocw m 10%g 20%o 10%w 60%m	1.49

Gas Rates

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

* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc

30-13s-31w Gove, KS

8100 E 22nd St N 700
Wichita, KS 67278

Joseph-Hess #1

Job Ticket: 53189

DST#: 5

ATTN: Adam Eldani

Test Start: 2013.07.30 @ 09:23:42

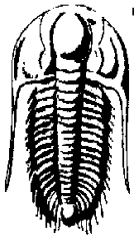
Tool Information

Drill Pipe:	Length: 3948.00 ft	Diameter: 3.88 inches	Volume: 57.74 bbl	Tool Weight:	2000.00 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: 122.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	65000.00 lb
		Total Volume:	58.34 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial	60000.00 lb
Depth to Top Packer:	4093.00 ft			Final	60000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	57.00 ft				
Tool Length:	85.00 ft				
Number of Packers:	2	Diameter:	6.75 inches		
Tool Comments:					

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Stubb	1.00			4066.00	
Shut In Tool	5.00			4071.00	
Hydraulic tool	5.00			4076.00	
Jars	5.00			4081.00	
Safety Joint	3.00			4084.00	
Packer	5.00			4089.00	28.00 Bottom Of Top Packer
Packer	4.00			4093.00	
Stubb	1.00			4094.00	
Recorder	0.00	8373	Inside	4094.00	
Recorder	0.00	8356	Outside	4094.00	
Perforations	17.00			4111.00	
Change Over Sub	1.00			4112.00	
Drill Pipe	32.00			4144.00	
Change Over Sub	1.00			4145.00	
Bullnose	5.00			4150.00	57.00 Bottom Packers & Anchor

Total Tool Length: 85.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc

30-13s-31w Gove, KS

8100 E 22nd St N 700
Wichita, KS 67278

Joseph-Hess #1

Job Ticket: 53189

DST#: 5

ATTN: Adam Eldani

Test Start: 2013.07.30 @ 09:23:42

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

34000 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbl

Water Loss: 9.57 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
122.00	gocw m 20%g 5%o 20%w 55%m	0.600
102.00	gocw m 10%g 20%o 10%w 60%m	1.492

Total Length: 224.00 ft

Total Volume: 2.092 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .14@101=34000

Serial #: 8373

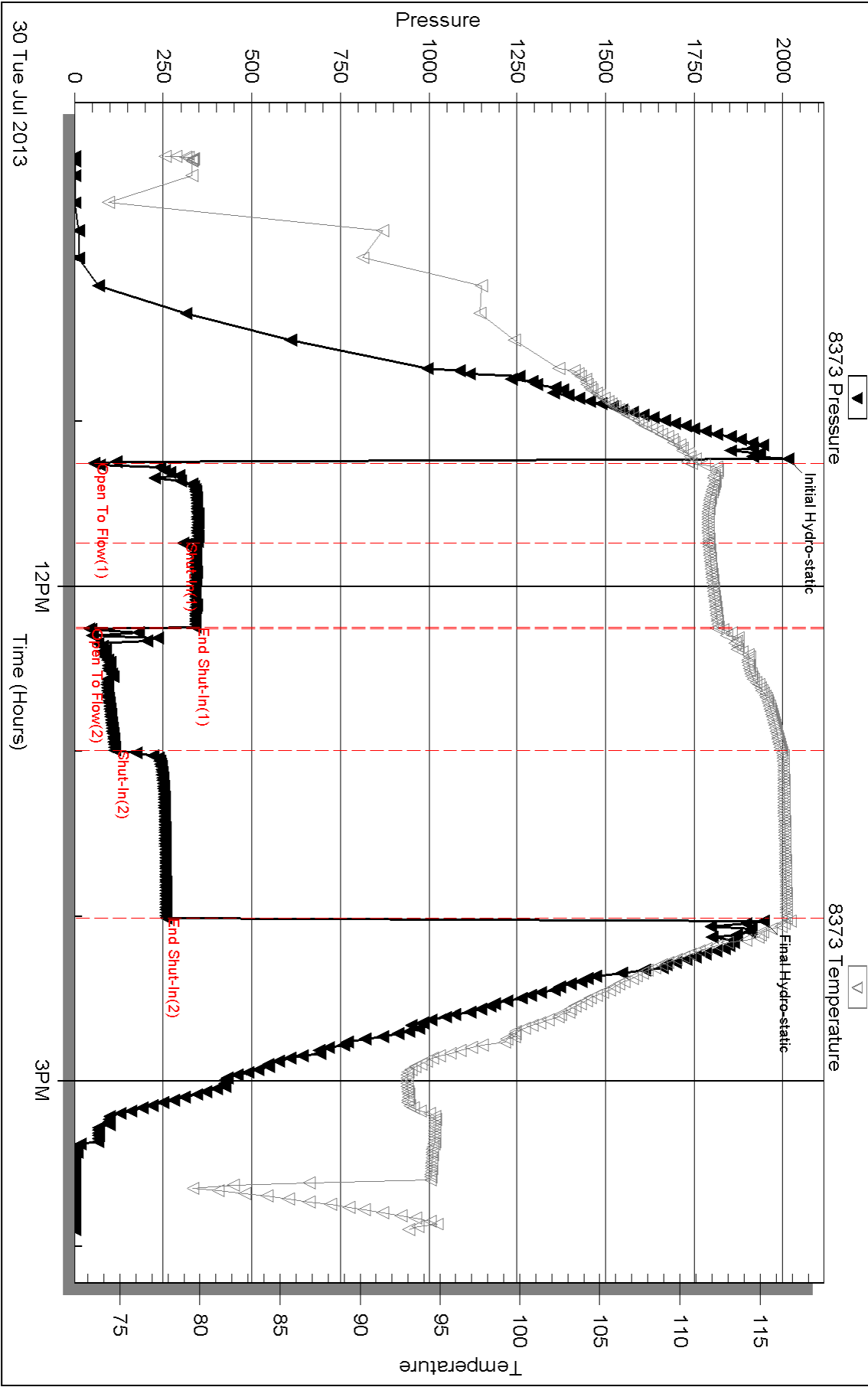
Inside

Ritchie Exploration Inc

Joseph-Hess #1

DST Test Number: 5

Pressure vs. Time

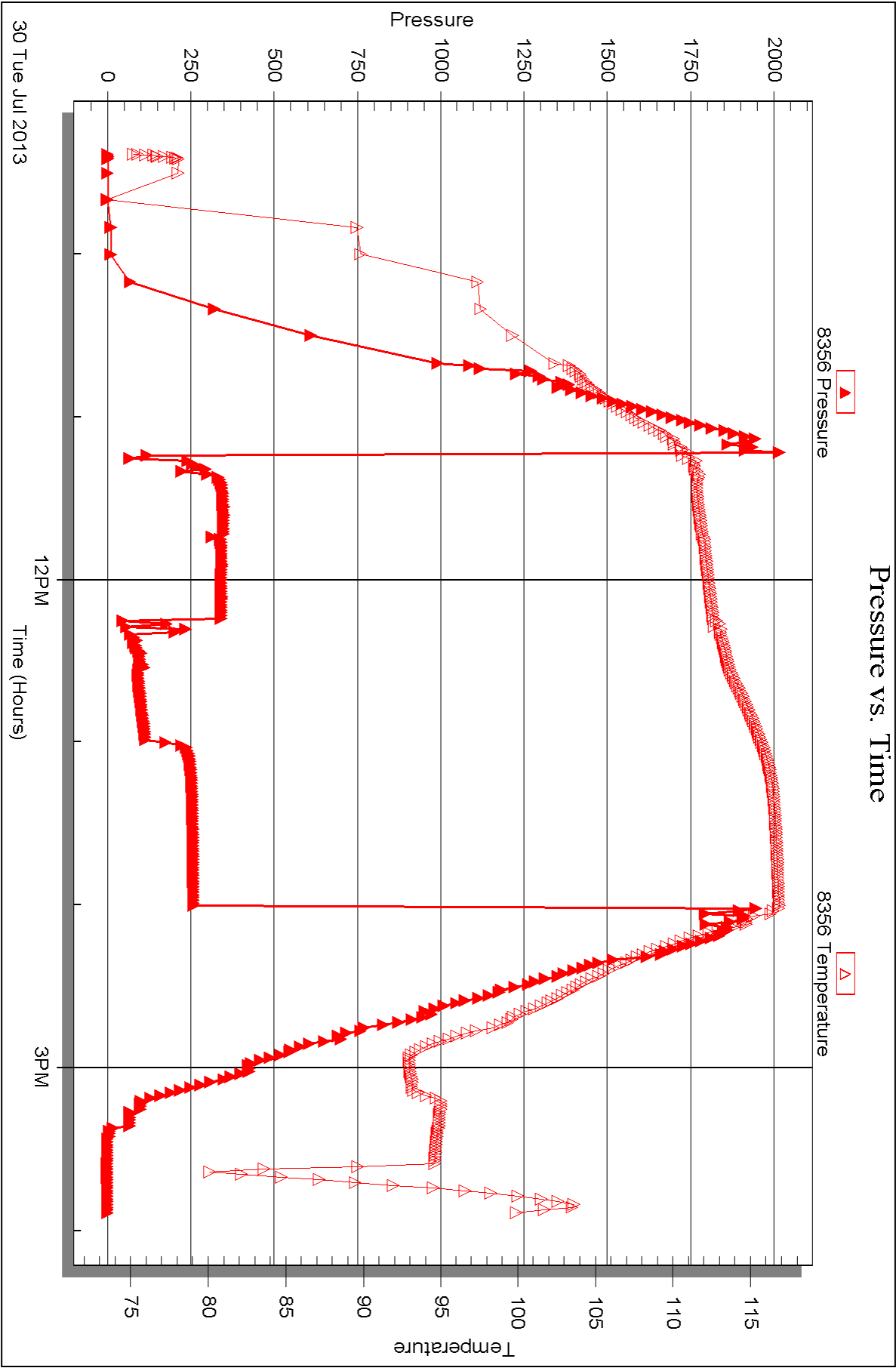


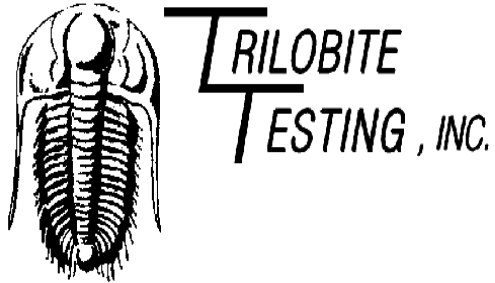
Serial #: 8356

Outside Ritchie Exploration Inc

Joseph-Hess #1

DST Test Number: 5





DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

Joseph-Hess #1

30-13s-31w Gove, KS

Start Date: 2013.07.31 @ 04:29:06

End Date: 2013.07.31 @ 12:12:36

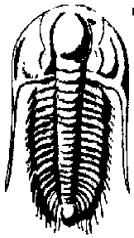
Job Ticket #: 53190 DST #: 6

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.08.05 @ 13:28:35



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

30-13s-31w Gove, KS

Joseph-Hess #1

Job Ticket: 53190

DST#: 6

Test Start: 2013.07.31 @ 04:29:06

GENERAL INFORMATION:

Formation: **LKC K-L**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:50:36

Time Test Ended: 12:12:36

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 4145.00 ft (KB) To 4230.00 ft (KB) (TVD)

Total Depth: 4230.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2873.00 ft (KB)

2866.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8373 Inside

Press@RunDepth: 454.31 psig @ 4146.00 ft (KB)

Start Date: 2013.07.31

End Date:

2013.07.31

Start Time: 04:29:11

End Time:

12:12:35

Capacity: 8000.00 psig

Last Calib.: 2013.07.31

Time On Btm: 2013.07.31 @ 06:47:36

Time Off Btm: 2013.07.31 @ 09:50:06

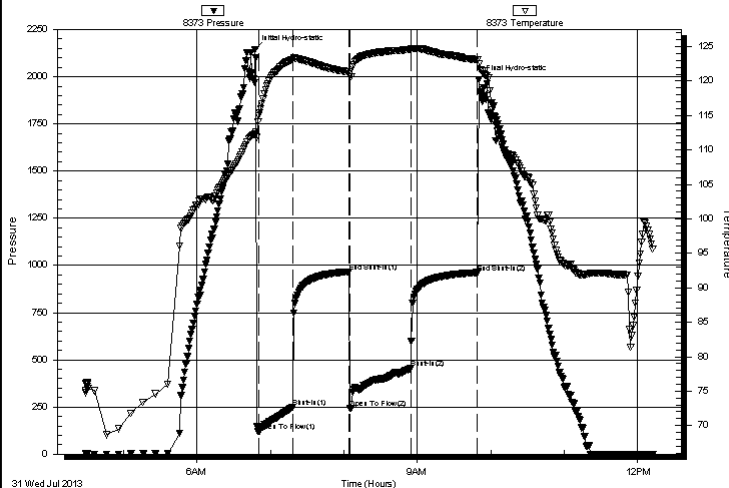
TEST COMMENT: IF: BOB in 7 min.

IS: No return.

FF: BOB in 10 min.

FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2145.23	112.32	Initial Hydro-static
3	120.10	114.96	Open To Flow (1)
31	247.50	123.13	Shut-In (1)
77	967.11	121.30	End Shut-In (1)
78	243.44	120.61	Open To Flow (2)
127	454.31	124.60	Shut-In (2)
182	962.34	123.08	End Shut-In (2)
183	1985.26	122.46	Final Hydro-static

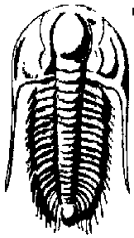
Recovery

Length (ft)	Description	Volume (bbl)
496.00	water 100%w	6.07
186.00	mcw 80%w 20%m	2.72
174.00	mw 50%w 50%m	2.54

Gas Rates

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

* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

30-13s-31w Gove, KS

Joseph-Hess #1

Job Ticket: 53190

DST#: 6

Test Start: 2013.07.31 @ 04:29:06

GENERAL INFORMATION:

Formation: **LKC K-L**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:50:36

Time Test Ended: 12:12:36

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 4145.00 ft (KB) To 4230.00 ft (KB) (TVD)

Total Depth: 4230.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2873.00 ft (KB)

2866.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8356 Outside

Press@RunDepth: psig @ 4146.00 ft (KB)

Start Date: 2013.07.31

End Date:

2013.07.31

Start Time: 04:29:20

End Time:

12:12:44

Capacity: 8000.00 psig

Last Calib.: 2013.07.31

Time On Btm:

Time Off Btm:

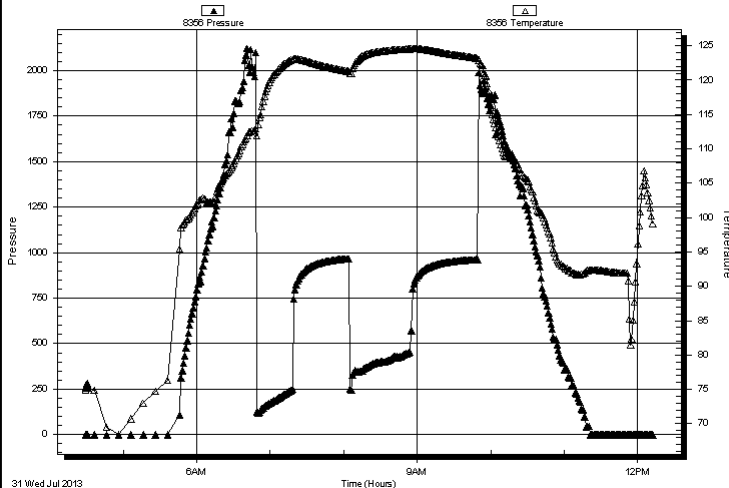
TEST COMMENT: IF: BOB in 7 min.

IS: No return.

FF: BOB in 10 min.

FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

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

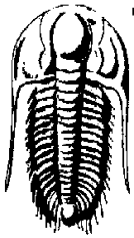
Recovery

Length (ft)	Description	Volume (bbl)
496.00	water 100%w	6.07
186.00	mcw 80%w 20%m	2.72
174.00	mw 50%w 50%m	2.54

Gas Rates

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

* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc

30-13s-31w Gove, KS

8100 E 22nd St N 700
Wichita, KS 67278

Joseph-Hess #1

Job Ticket: 53190

DST#: 6

ATTN: Adam Eldani

Test Start: 2013.07.31 @ 04:29:06

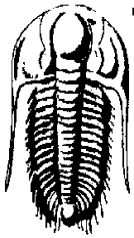
Tool Information

Drill Pipe:	Length: 4010.00 ft	Diameter: 3.88 inches	Volume: 58.64 bbl	Tool Weight: 2000.00 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: 122.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 65000.00 lb
		Total Volume: 59.24 bbl		Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4145.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	85.00 ft			
Tool Length:	113.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		
Tool Comments:				

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Stubb	1.00			4118.00	
Shut In Tool	5.00			4123.00	
Hydraulic tool	5.00			4128.00	
Jars	5.00			4133.00	
Safety Joint	3.00			4136.00	
Packer	5.00			4141.00	28.00 Bottom Of Top Packer
Packer	4.00			4145.00	
Stubb	1.00			4146.00	
Recorder	0.00	8373	Inside	4146.00	
Recorder	0.00	8356	Outside	4146.00	
Perforations	15.00			4161.00	
Change Over Sub	1.00			4162.00	
Drill Pipe	62.00			4224.00	
Change Over Sub	1.00			4225.00	
Bullnose	5.00			4230.00	85.00 Bottom Packers & Anchor

Total Tool Length: 113.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc

30-13s-31w Gove, KS

8100 E 22nd St N 700
Wichita, KS 67278

Joseph-Hess #1

Job Ticket: 53190

DST#: 6

ATTN: Adam Eldani

Test Start: 2013.07.31 @ 04:29:06

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 55.00 sec/qt

Water Loss: 9.57 in³

Resistivity: 0.00 ohm.m

Salinity: 2500.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

Oil API:

0 deg API

Water Salinity: 70000 ppm

ft

bbl

psig

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
496.00	water 100%w	6.069
186.00	mcw 80%w 20%m	2.720
174.00	mw 50%w 50%m	2.545

Total Length: 856.00 ft Total Volume: 11.334 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .09@85=70000

Serial #: 8373

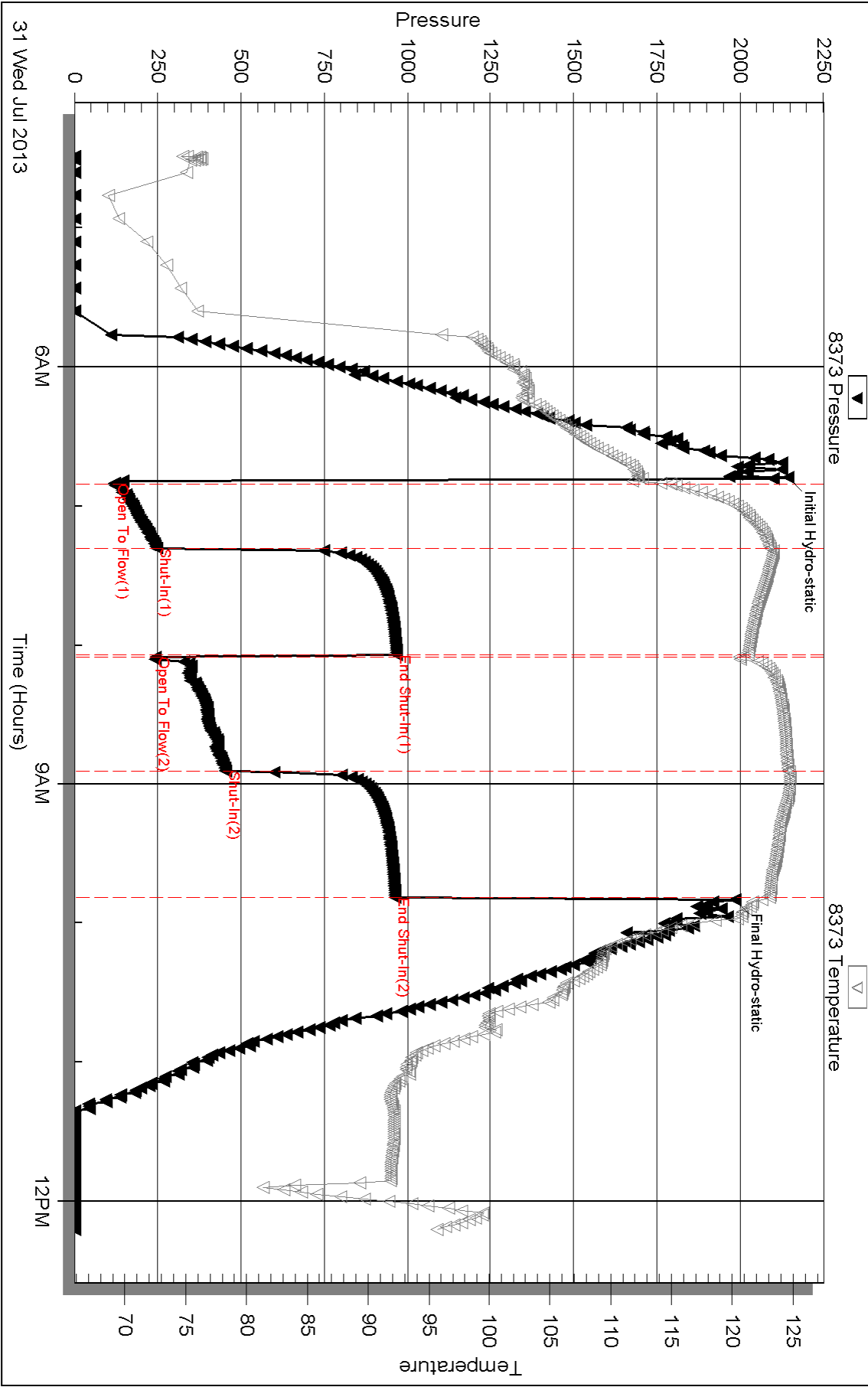
Inside

Ritchie Exploration Inc

Joseph-Hess #1

DST Test Number: 6

Pressure vs. Time

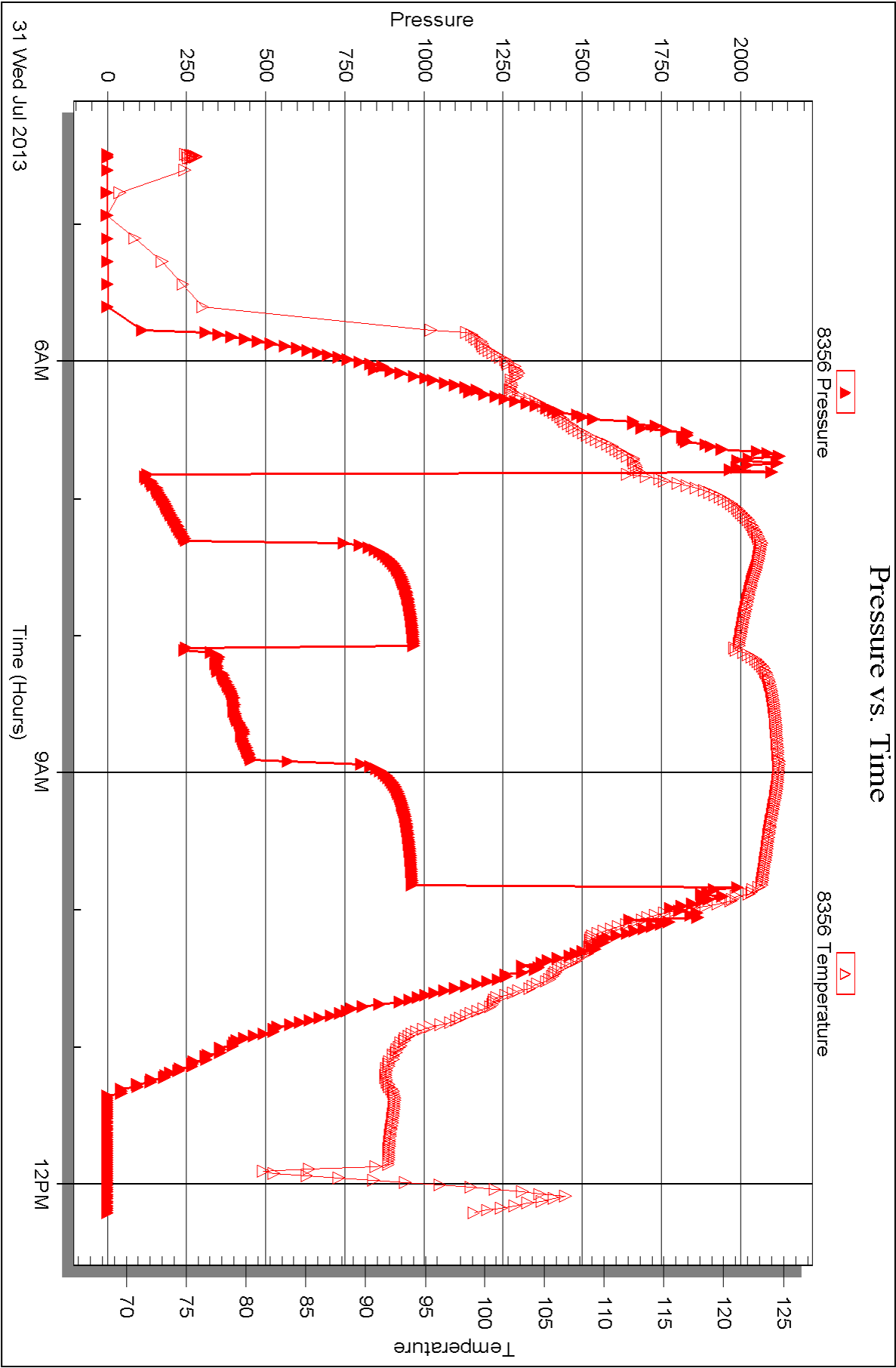


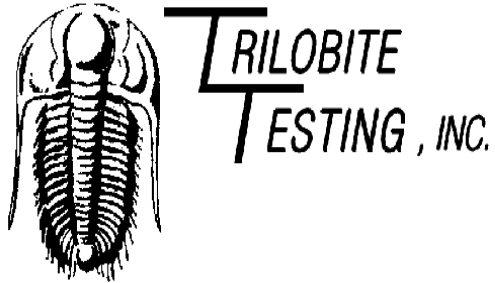
Serial #: 8356

Outside Ritchie Exploration Inc

Joseph-Hess #1

DST Test Number: 6





DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

Joseph-Hess #1

30-13s-31w Gove, KS

Start Date: 2013.08.01 @ 05:27:27

End Date: 2013.08.01 @ 09:41:27

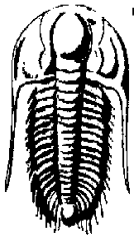
Job Ticket #: 53191 DST #: 7

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.08.05 @ 13:27:42



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

30-13s-31w Gove, KS

Joseph-Hess #1

Job Ticket: 53191

DST#: 7

Test Start: 2013.08.01 @ 05:27:27

GENERAL INFORMATION:

Formation: **Altamont/ Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:36:27

Time Test Ended: 09:41:27

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 4224.00 ft (KB) To 4340.00 ft (KB) (TVD)

Total Depth: 4340.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2873.00 ft (KB)

2866.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8373 Inside

Press@RunDepth: 1952.24 psig @ 4225.00 ft (KB)

Start Date: 2013.08.01

End Date:

2013.08.01

Start Time: 05:27:32

End Time:

09:41:27

Capacity: 8000.00 psig

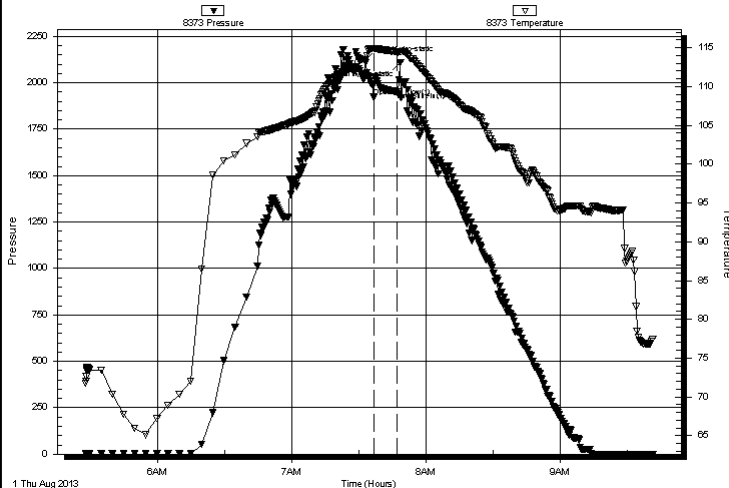
Last Calib.: 2013.08.01

Time On Btm: 2013.08.01 @ 07:32:27

Time Off Btm: 2013.08.01 @ 07:48:27

TEST COMMENT: IF: Packers Failed at open.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2118.88	113.48	Initial Hydro-static
4	1923.69	114.87	Open To Flow (1)
15	1952.24	114.49	End Shut-In(1)
16	2109.20	114.51	Final Hydro-static

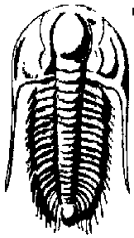
Recovery

Length (ft)	Description	Volume (bbl)
206.00	mud 100% _m	1.83

Gas Rates

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

* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

30-13s-31w Gove, KS

Joseph-Hess #1

Job Ticket: 53191

DST#: 7

Test Start: 2013.08.01 @ 05:27:27

GENERAL INFORMATION:

Formation: **Altamont/ Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:36:27

Time Test Ended: 09:41:27

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 4224.00 ft (KB) To 4340.00 ft (KB) (TVD)

Total Depth: 4340.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2873.00 ft (KB)

2866.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8356 Outside

Press@RunDepth: psig @ 4225.00 ft (KB)

Start Date: 2013.08.01

End Date:

2013.08.01

Start Time: 05:27:51

End Time:

09:41:46

Capacity: 8000.00 psig

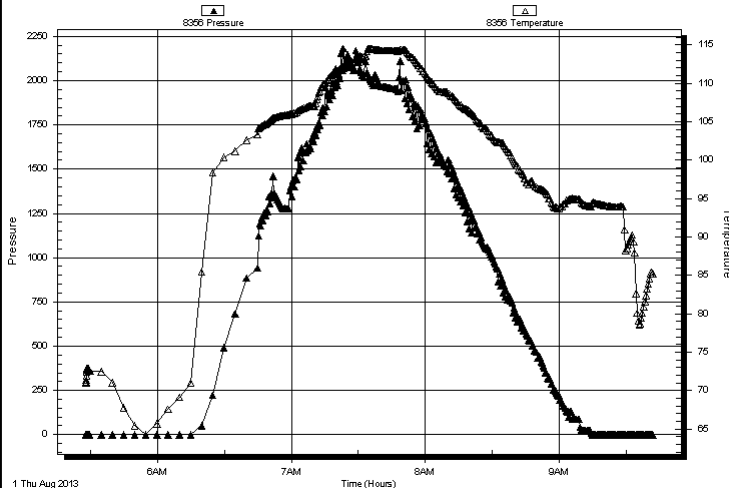
Last Calib.: 2013.08.01

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: Packers Failed at open.

Pressure vs. Time



PRESSURE SUMMARY

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

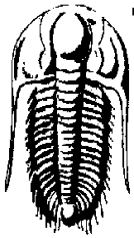
Recovery

Length (ft)	Description	Volume (bbl)
206.00	mud 100% _m	1.83

Gas Rates

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

* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc

30-13s-31w Gove, KS

8100 E 22nd St N 700
Wichita, KS 67278

Joseph-Hess #1

Job Ticket: 53191

DST#: 7

ATTN: Adam Eldani

Test Start: 2013.08.01 @ 05:27:27

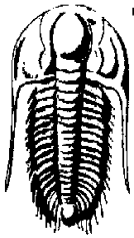
Tool Information

Drill Pipe:	Length:	4104.00 ft	Diameter:	3.88 inches	Volume:	60.02 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length:	122.00 ft	Diameter:	2.25 inches	Volume:	0.60 bbl	Weight to Pull Loose:	60000.00 lb
					Total Volume:	60.62 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		30.00 ft					String Weight: Initial	60000.00 lb
Depth to Top Packer:		4224.00 ft					Final	60000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		116.00 ft						
Tool Length:		144.00 ft						
Number of Packers:		2	Diameter:	6.75 inches				
Tool Comments:								

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Stubb	1.00			4197.00	
Shut In Tool	5.00			4202.00	
Hydraulic tool	5.00			4207.00	
Jars	5.00			4212.00	
Safety Joint	3.00			4215.00	
Packer	5.00			4220.00	28.00 Bottom Of Top Packer
Packer	4.00			4224.00	
Stubb	1.00			4225.00	
Recorder	0.00	8373	Inside	4225.00	
Recorder	0.00	8356	Outside	4225.00	
Perforations	13.00			4238.00	
Change Over Sub	1.00			4239.00	
Drill Pipe	95.00			4334.00	
Change Over Sub	1.00			4335.00	
Bullnose	5.00			4340.00	116.00 Bottom Packers & Anchor

Total Tool Length: 144.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc

30-13s-31w Gove, KS

8100 E 22nd St N 700
Wichita, KS 67278

Joseph-Hess #1

Job Ticket: 53191

DST#: 7

ATTN: Adam Eldani

Test Start: 2013.08.01 @ 05:27:27

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 51.00 sec/qt

Water Loss: 8.78 in³

Resistivity: 0.00 ohm.m

Salinity: 2000.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity:

0 deg API

0 ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
206.00	mud 100%m	1.828

Total Length: 206.00 ft

Total Volume: 1.828 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

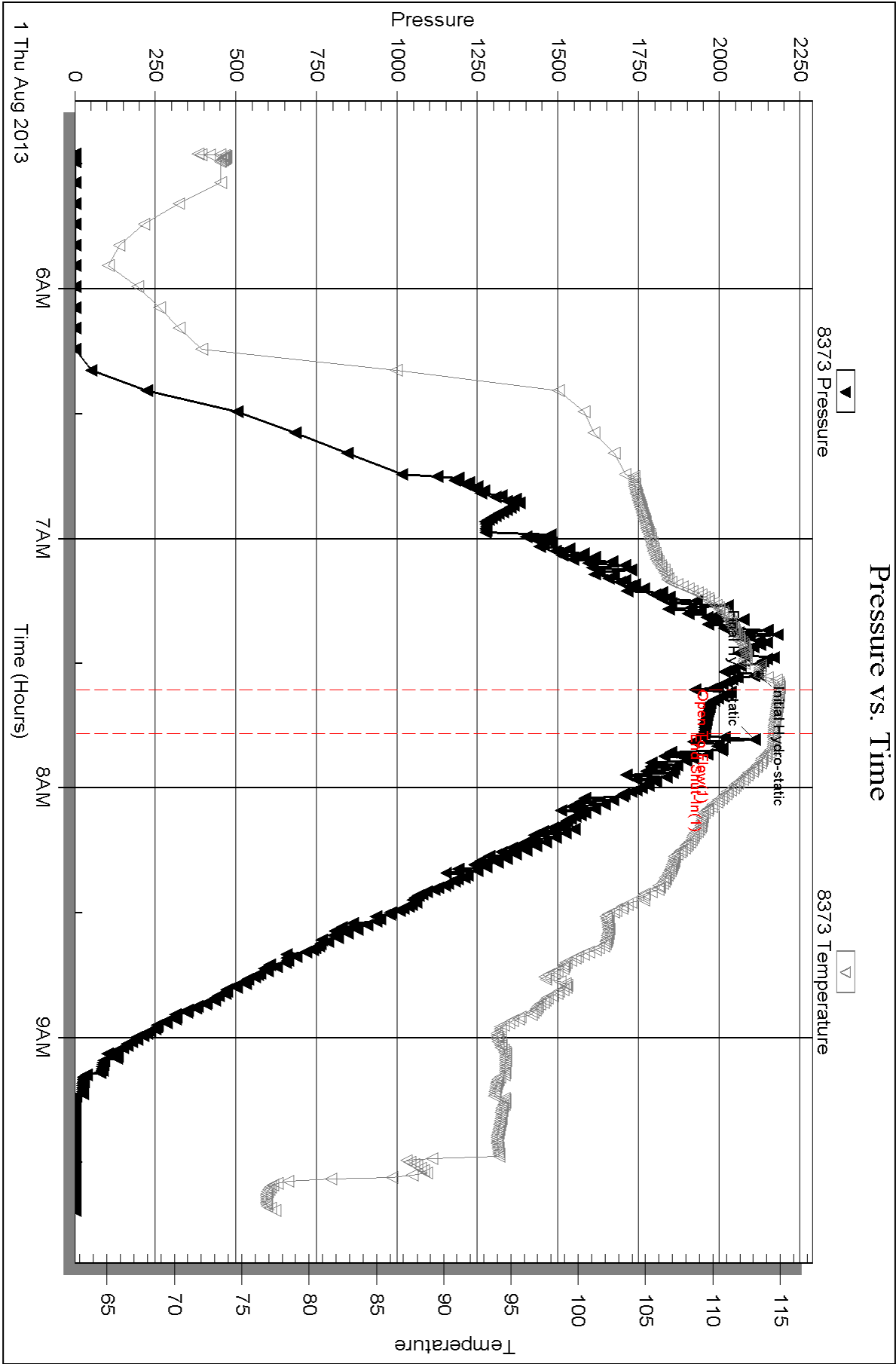
Serial #: 8373

Inside

Ritchie Exploration Inc

Joseph-Hess #1

DST Test Number: 7



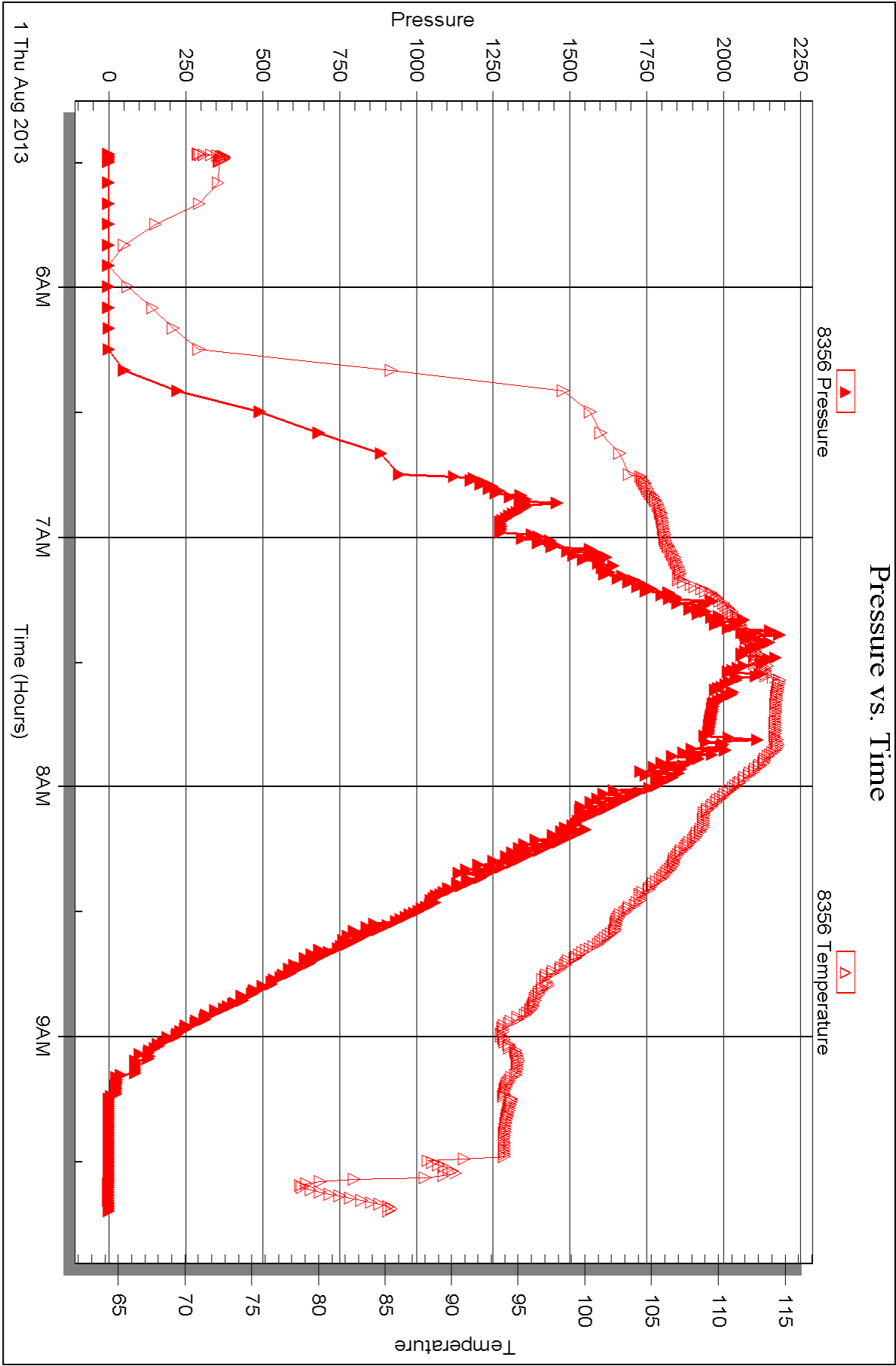
Serial #: 8356

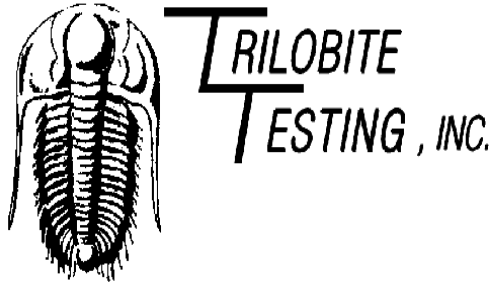
Outside

Ritchie Exploration Inc

Joseph-Hess #1

DST Test Number: 7





DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

Joseph-Hess #1

30-13s-31w Gove, KS

Start Date: 2013.08.01 @ 10:04:48

End Date: 2013.08.01 @ 16:23:18

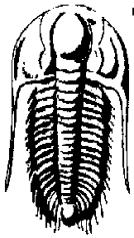
Job Ticket #: 53192 DST #: 8

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.08.05 @ 13:26:49



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

30-13s-31w Gove, KS

Joseph-Hess #1

Job Ticket: 53192

DST#: 8

Test Start: 2013.08.01 @ 10:04:48

GENERAL INFORMATION:

Formation: **Altamont/ Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:36:48

Time Test Ended: 16:23:18

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 4208.00 ft (KB) To 4340.00 ft (KB) (TVD)

Total Depth: 4340.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2873.00 ft (KB)

2866.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8373 Inside

Press@RunDepth: 41.54 psig @ 4209.00 ft (KB)

Start Date: 2013.08.01

End Date:

2013.08.01

Start Time: 10:04:53

End Time:

16:23:17

Capacity: 8000.00 psig

Last Calib.: 2013.08.01

Time On Btm: 2013.08.01 @ 12:34:18

Time Off Btm: 2013.08.01 @ 14:38:48

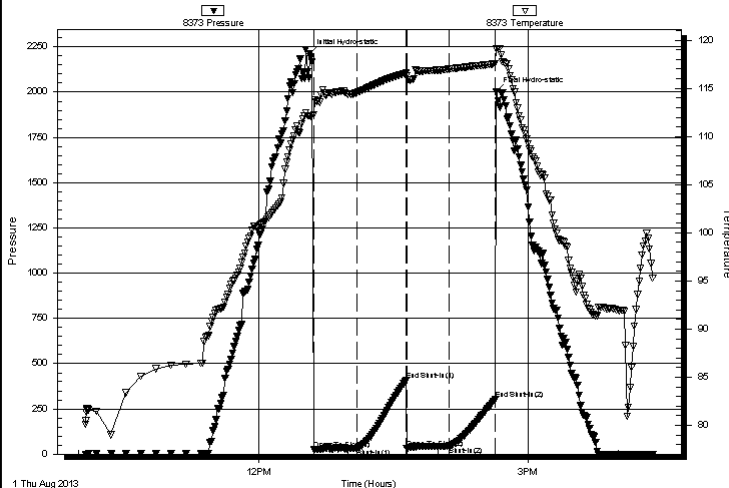
TEST COMMENT: IF: 1/4" blow died in 8 min.

IS: No return.

FF: No blow. Flushed tool no blow.

FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2211.23	112.19	Initial Hydro-static
3	24.93	112.29	Open To Flow (1)
32	30.01	114.56	Shut-In(1)
64	406.31	116.57	End Shut-In(1)
65	32.46	116.29	Open To Flow (2)
93	41.54	117.01	Shut-In(2)
124	301.33	117.56	End Shut-In(2)
125	2004.41	119.10	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	mud 100% m	0.05

Gas Rates

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

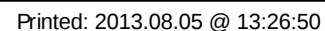
* Recovery from multiple tests

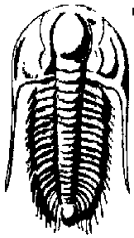


Test Start: 2013.08.01 @ 10:04:48

KB to GR/CF: 7.00 ft

FS: No return.





TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc

30-13s-31w Gove, KS

8100 E 22nd St N 700
Wichita, KS 67278

Joseph-Hess #1

Job Ticket: 53192

DST#: 8

ATTN: Adam Eldani

Test Start: 2013.08.01 @ 10:04:48

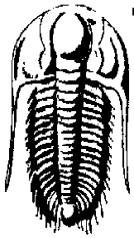
Tool Information

Drill Pipe:	Length:	4074.00 ft	Diameter:	3.88 inches	Volume:	59.58 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length:	122.00 ft	Diameter:	2.25 inches	Volume:	0.60 bbl	Weight to Pull Loose:	65000.00 lb
					Total Volume:	60.18 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		16.00 ft					String Weight: Initial	60000.00 lb
Depth to Top Packer:		4208.00 ft					Final	60000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		132.00 ft						
Tool Length:		160.00 ft						
Number of Packers:		2	Diameter:	6.75 inches				
Tool Comments:								

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Stubb	1.00			4181.00	
Shut In Tool	5.00			4186.00	
Hydraulic tool	5.00			4191.00	
Jars	5.00			4196.00	
Safety Joint	3.00			4199.00	
Packer	5.00			4204.00	28.00 Bottom Of Top Packer
Packer	4.00			4208.00	
Stubb	1.00			4209.00	
Recorder	0.00	8373	Inside	4209.00	
Recorder	0.00	8356	Outside	4209.00	
Perforations	29.00			4238.00	
Change Over Sub	1.00			4239.00	
Drill Pipe	95.00			4334.00	
Change Over Sub	1.00			4335.00	
Bullnose	5.00			4340.00	132.00 Bottom Packers & Anchor

Total Tool Length: 160.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc

30-13s-31w Gove, KS

8100 E 22nd St N 700
Wichita, KS 67278

Joseph-Hess #1

Job Ticket: 53192

DST#: 8

ATTN: Adam Eldani

Test Start: 2013.08.01 @ 10:04:48

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbl

Water Loss: 8.78 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	mud 100%m	0.049

Total Length: 10.00 ft

Total Volume: 0.049 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8373

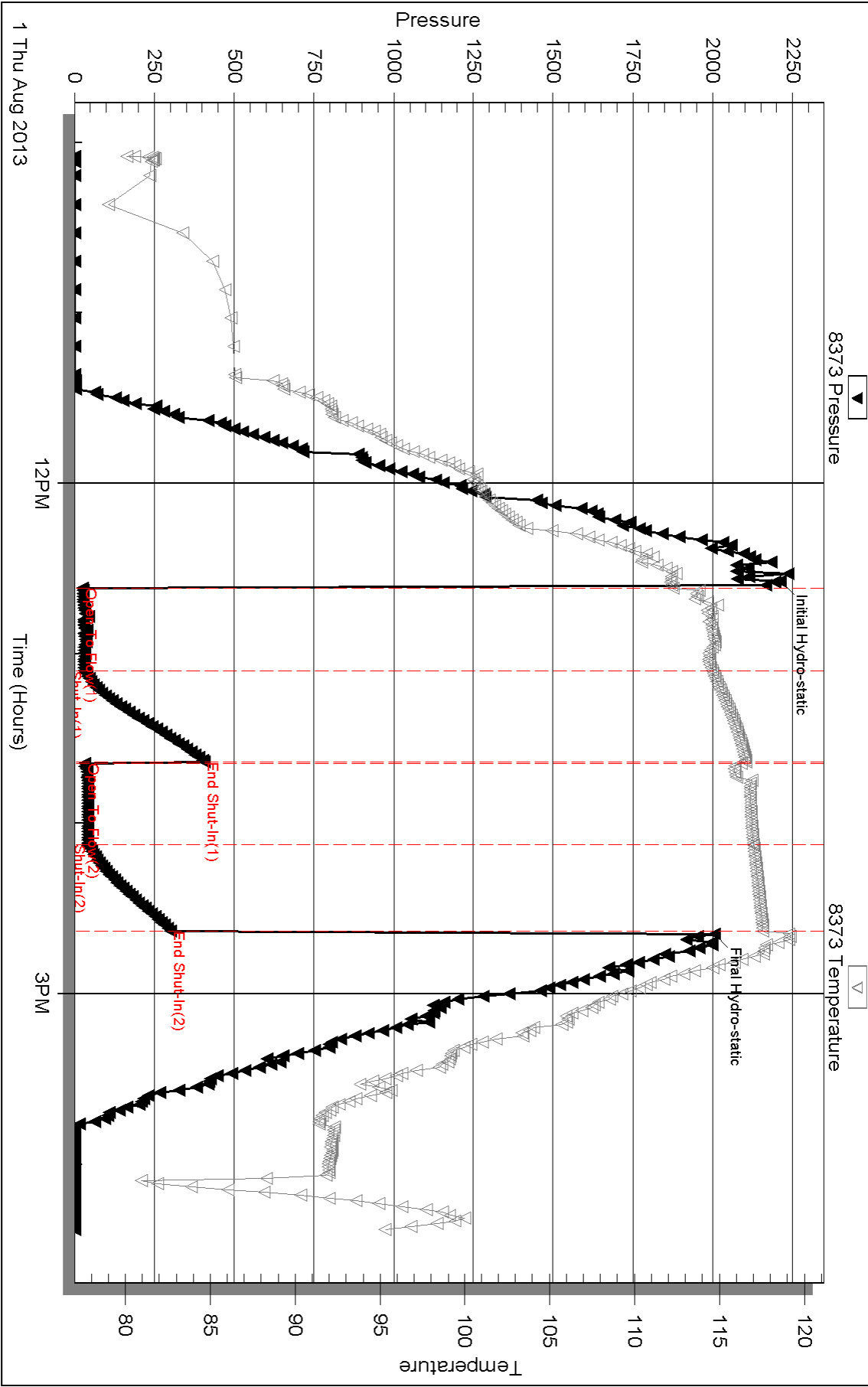
Inside

Ritchie Exploration Inc

Joseph-Hess #1

DST Test Number: 8

Pressure vs. Time

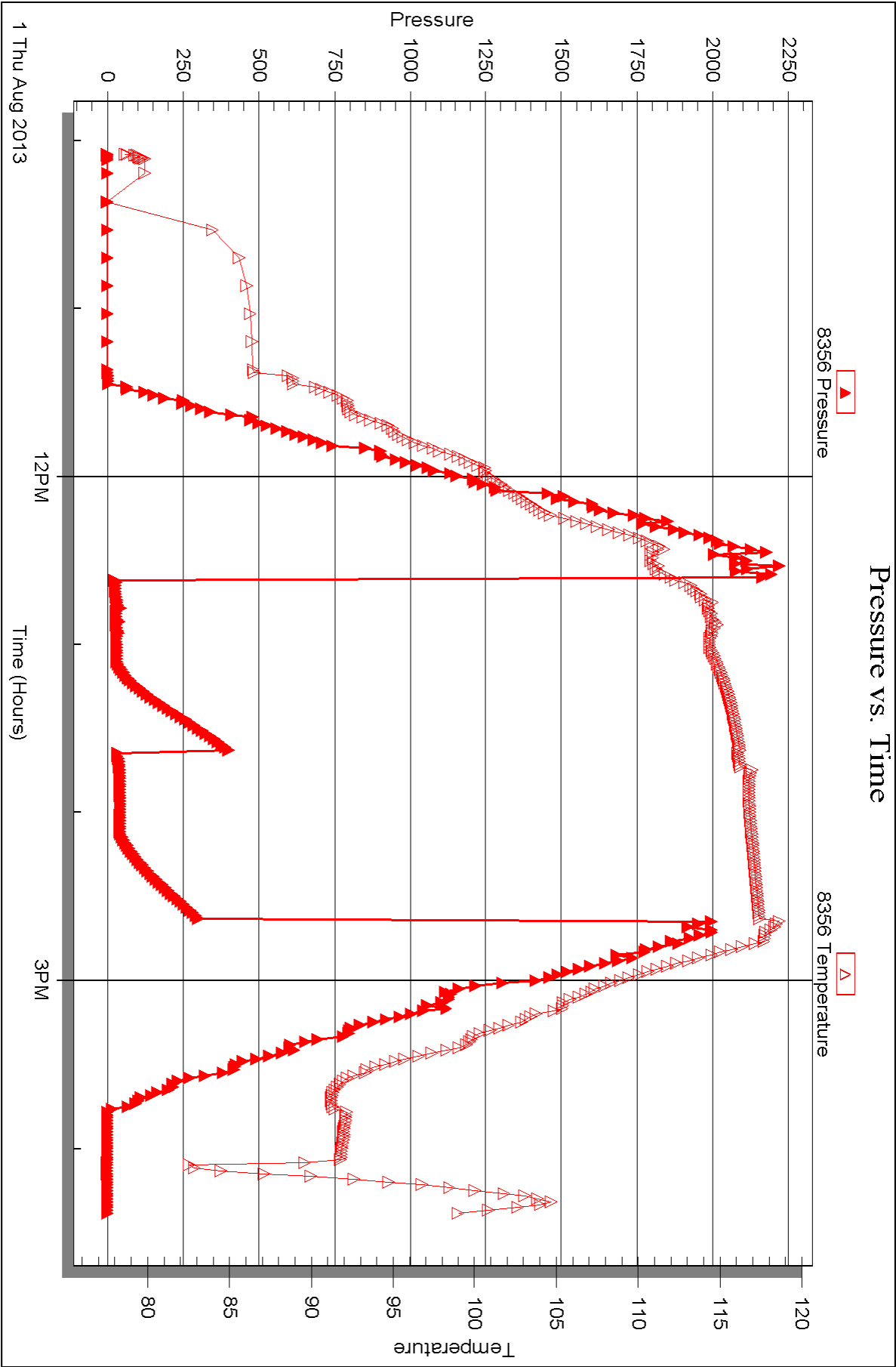


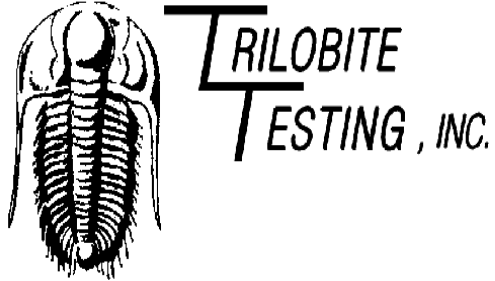
Serial #: 8356

Outside Ritchie Exploration Inc

Joseph-Hess #1

DST Test Number: 8





DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

Joseph-Hess #1

30-13s-31w Gove, KS

Start Date: 2013.08.02 @ 05:41:09

End Date: 2013.08.02 @ 11:45:39

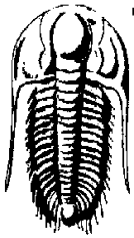
Job Ticket #: 53193 DST #: 9

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.08.05 @ 13:26:08



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

30-13s-31w Gove, KS

Joseph-Hess #1

Job Ticket: 53193

DST#: 9

Test Start: 2013.08.02 @ 05:41:09

GENERAL INFORMATION:

Formation: **Myric Station**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:47:39

Time Test Ended: 11:45:39

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 4336.00 ft (KB) To 4423.00 ft (KB) (TVD)

Total Depth: 4423.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2873.00 ft (KB)

2866.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8373 Inside

Press@RunDepth: 48.60 psig @ 4337.00 ft (KB)

Start Date: 2013.08.02

End Date:

2013.08.02

Start Time: 05:41:14

End Time:

11:45:38

Capacity: 8000.00 psig

Last Calib.: 2013.08.02

Time On Btm: 2013.08.02 @ 07:46:09

Time Off Btm: 2013.08.02 @ 09:49:09

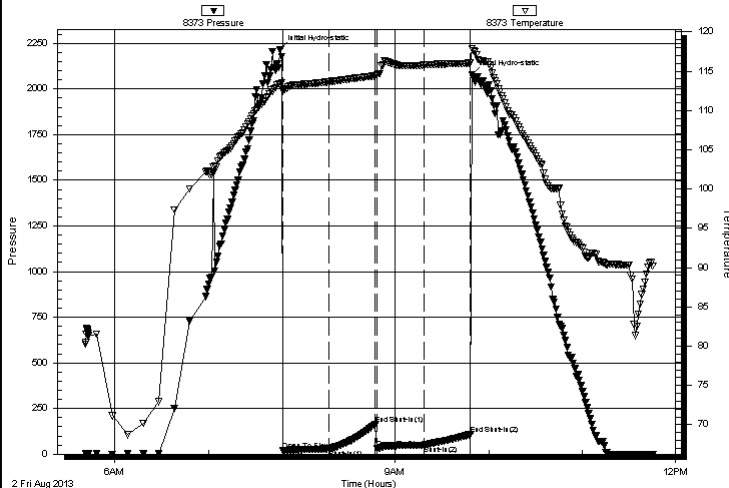
TEST COMMENT: IF: 1/4" blow died in 6 min.

IS: No return.

FF: No blow. Flushed tool 1/4" blow died in 4 min.

FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2217.09	113.40	Initial Hydro-static
2	18.98	112.43	Open To Flow (1)
31	29.10	113.62	Shut-In(1)
61	164.81	114.39	End Shut-In(1)
62	32.58	114.57	Open To Flow (2)
92	48.60	115.76	Shut-In(2)
122	108.09	116.02	End Shut-In(2)
123	2079.90	117.89	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	mud oil spots on top 100% m	0.30

Gas Rates

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

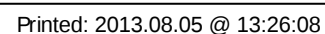
* Recovery from multiple tests

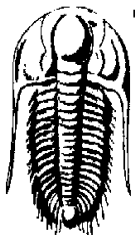


Test Start: 2013.08.02 @ 05:41:09

KB to GR/CF: 7.00 ft

FS: No return.





TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc

30-13s-31w Gove, KS

8100 E 22nd St N 700
Wichita, KS 67278

Joseph-Hess #1

Job Ticket: 53193

DST#: 9

ATTN: Adam Eldani

Test Start: 2013.08.02 @ 05:41:09

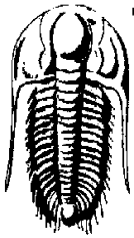
Tool Information

Drill Pipe:	Length:	4199.00 ft	Diameter:	3.88 inches	Volume:	61.41 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length:	122.00 ft	Diameter:	2.25 inches	Volume:	0.60 bbl	Weight to Pull Loose:	75000.00 lb
					Total Volume:	62.01 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		8.00 ft					String Weight: Initial	60000.00 lb
Depth to Top Packer:		4336.00 ft					Final	60000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		87.00 ft						
Tool Length:		110.00 ft						
Number of Packers:		2	Diameter:	6.75 inches				
Tool Comments:								

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Stubb	1.00			4314.00	
Shut In Tool	5.00			4319.00	
Hydraulic tool	5.00			4324.00	
Safety Joint	3.00			4327.00	
Packer	5.00			4332.00	23.00 Bottom Of Top Packer
Packer	4.00			4336.00	
Stubb	1.00			4337.00	
Recorder	0.00	8373	Inside	4337.00	
Recorder	0.00	8356	Outside	4337.00	
Perforations	16.00			4353.00	
Change Over Sub	1.00			4354.00	
Drill Pipe	63.00			4417.00	
Change Over Sub	1.00			4418.00	
Bullnose	5.00			4423.00	87.00 Bottom Packers & Anchor

Total Tool Length: 110.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc

30-13s-31w Gove, KS

8100 E 22nd St N 700
Wichita, KS 67278

Joseph-Hess #1

Job Ticket: 53193

DST#: 9

ATTN: Adam Eldani

Test Start: 2013.08.02 @ 05:41:09

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbl

Water Loss: 9.59 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2600.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	mud oil spots on top 100% _m	0.295

Total Length: 60.00 ft

Total Volume: 0.295 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8373

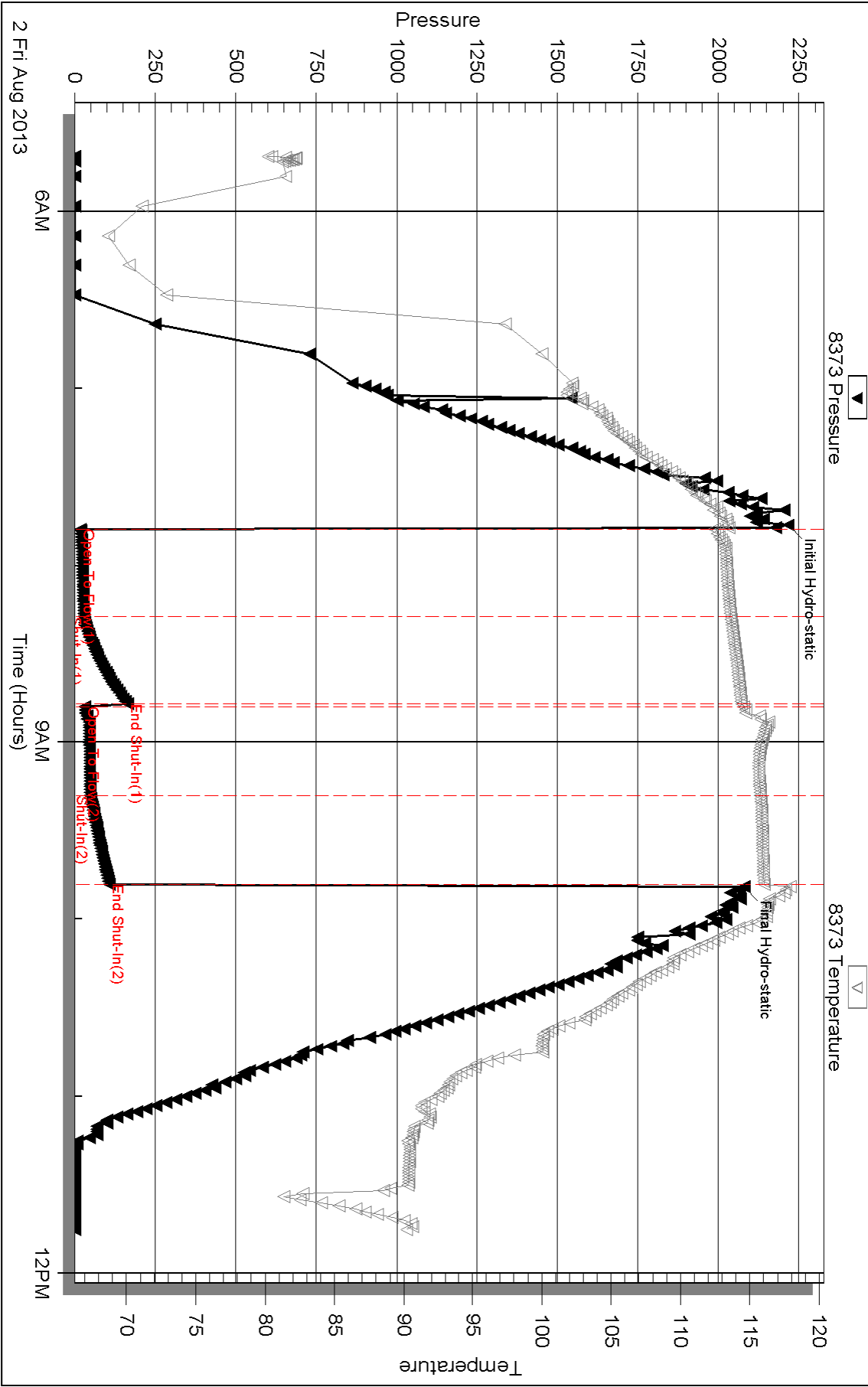
Inside

Ritchie Exploration Inc

Joseph-Hess #1

DST Test Number: 9

Pressure vs. Time

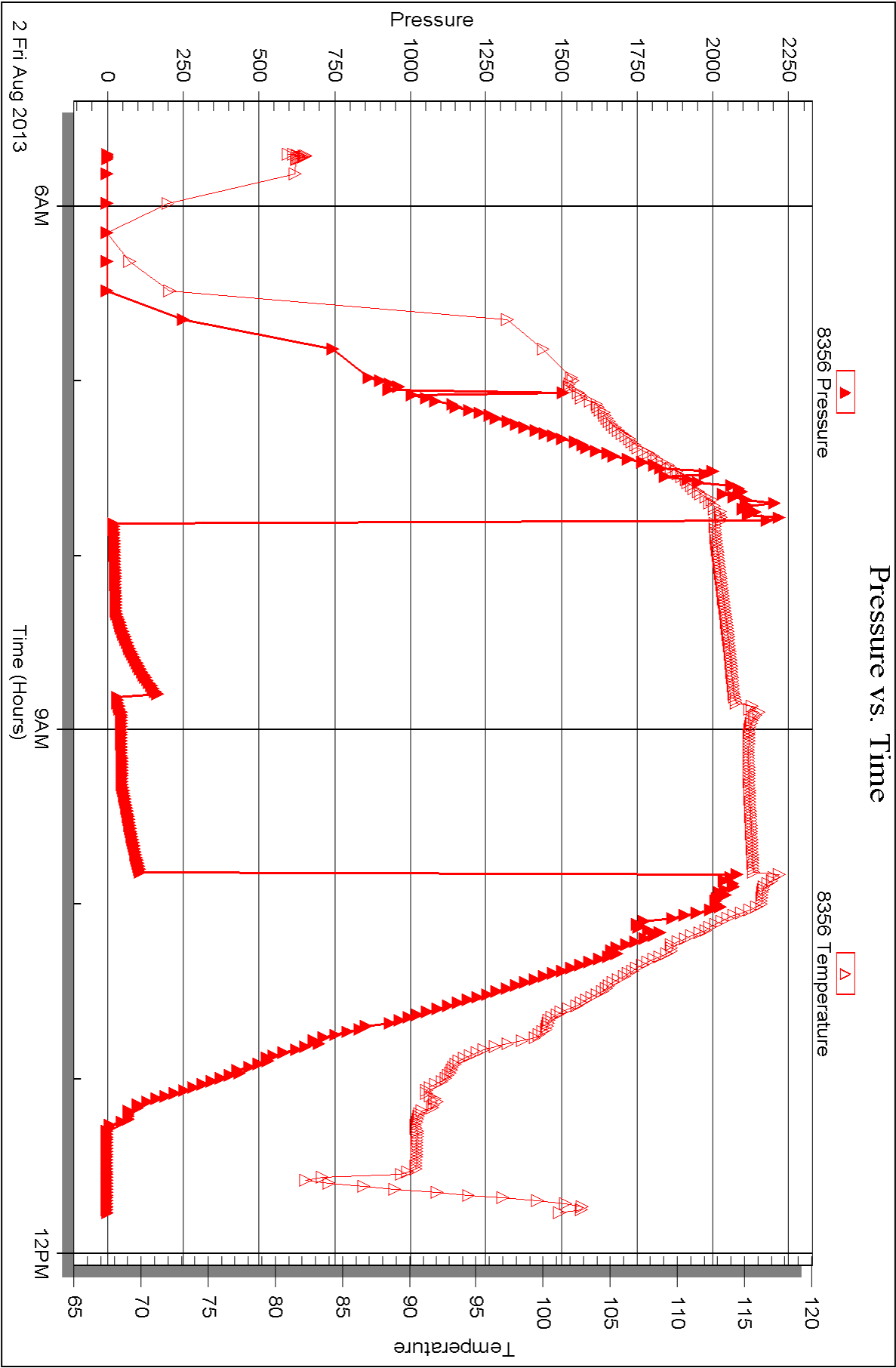


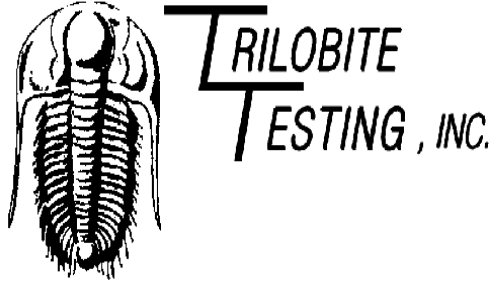
Serial #: 8356

Outside Ritchie Exploration Inc

Joseph-Hess #1

DST Test Number: 9





DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

Joseph-Hess #1

30-13s-31w Gove, KS

Start Date: 2013.08.03 @ 01:30:08

End Date: 2013.08.03 @ 09:02:08

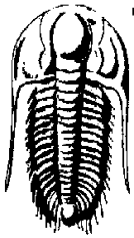
Job Ticket #: 53194 DST #: 10

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.08.05 @ 13:21:45



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

30-13s-31w Gove, KS

Joseph-Hess #1

Job Ticket: 53194

DST#: 10

Test Start: 2013.08.03 @ 01:30:08

GENERAL INFORMATION:

Formation: **Johnson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:44:08

Time Test Ended: 09:02:08

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 4449.00 ft (KB) To 4493.00 ft (KB) (TVD)

Total Depth: 4493.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2873.00 ft (KB)

2866.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8373 Inside

Press@RunDepth: 127.71 psig @ 4454.00 ft (KB)

Start Date: 2013.08.03

End Date:

2013.08.03

Start Time: 01:30:13

End Time:

09:02:07

Capacity: 8000.00 psig

Last Calib.: 2013.08.03

Time On Btm: 2013.08.03 @ 03:42:08

Time Off Btm: 2013.08.03 @ 06:46:38

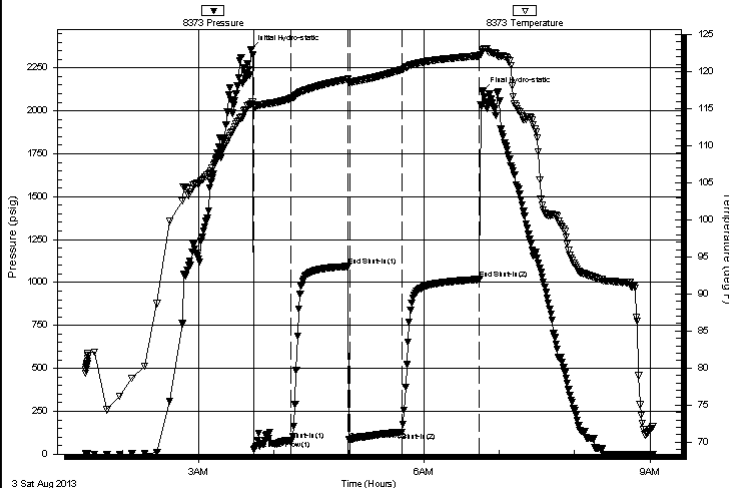
TEST COMMENT: IF: 1/4" blow BOB in 17 min.

IS: No return.

FF: BOB in 9 min.

FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2358.36	115.61	Initial Hydro-static
2	25.39	115.25	Open To Flow (1)
32	78.19	116.41	Shut-In(1)
77	1093.56	118.98	End Shut-In(1)
79	82.55	118.58	Open To Flow (2)
120	127.71	120.23	Shut-In(2)
182	1018.67	122.13	End Shut-In(2)
185	2113.21	122.96	Final Hydro-static

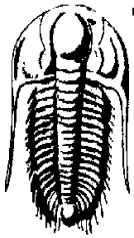
Recovery

Length (ft)	Description	Volume (bbl)
62.00	mw cgo 20%g 60%o 10%w 10%o	0.30
124.00	w mco 85%o 5%w 10%m	1.23
112.00	ocm 5%o 95%m	1.64
0.00	446 GIP	0.00

Gas Rates

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

* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc

8100 E 22nd St N 700
Wichita, KS 67278

ATTN: Adam Eldani

30-13s-31w Gove, KS

Joseph-Hess #1

Job Ticket: 53194

DST#: 10

Test Start: 2013.08.03 @ 01:30:08

GENERAL INFORMATION:

Formation: **Johnson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:44:08

Time Test Ended: 09:02:08

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 4449.00 ft (KB) To 4493.00 ft (KB) (TVD)

Total Depth: 4493.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2873.00 ft (KB)

2866.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8356 Outside

Press@RunDepth: psig @ 4454.00 ft (KB)

Start Date: 2013.08.03

End Date:

2013.08.03

Start Time: 01:30:10

End Time:

09:02:04

Capacity: 8000.00 psig

Last Calib.: 2013.08.03

Time On Btm:

Time Off Btm:

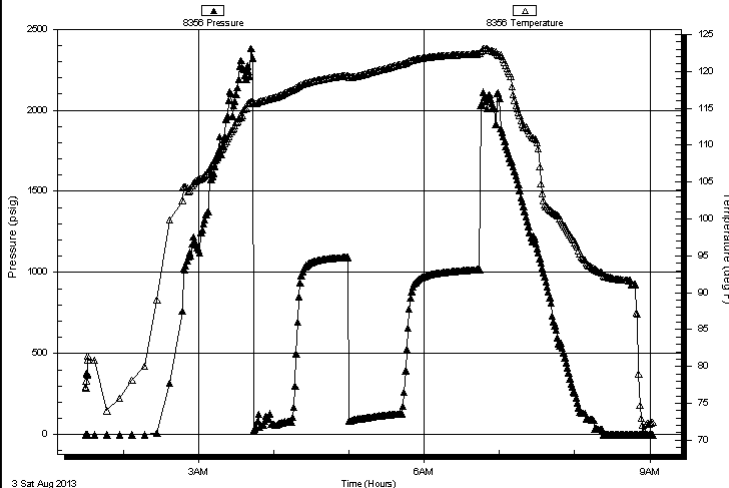
TEST COMMENT: IF: 1/4" blow BOB in 17 min.

IS: No return.

FF: BOB in 9 min.

FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

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

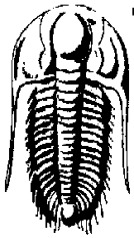
Recovery

Length (ft)	Description	Volume (bbl)
62.00	mw cgo 20%g 60%o 10%w 10%o	0.30
124.00	w mco 85%o 5%w 10%m	1.23
112.00	ocm 5%o 95%m	1.64
0.00	446 GIP	0.00

Gas Rates

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

* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc

30-13s-31w Gove, KS

8100 E 22nd St N 700
Wichita, KS 67278

Joseph-Hess #1

Job Ticket: 53194

DST#: 10

ATTN: Adam Eldani

Test Start: 2013.08.03 @ 01:30:08

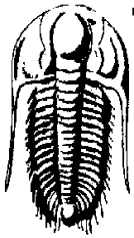
Tool Information

Drill Pipe:	Length: 4323.00 ft	Diameter: 3.88 inches	Volume: 63.22 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 122.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	85000.00 lb
		Total Volume:	63.82 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial	60000.00 lb
Depth to Top Packer:	4449.00 ft			Final	64000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	48.00 ft				
Tool Length:	72.00 ft				
Number of Packers:	2	Diameter:	6.75 inches		
Tool Comments:					

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Stubb	1.00			4426.00	
Shut In Tool	5.00			4431.00	
Hydraulic tool	5.00			4436.00	
Jars	5.00			4441.00	
Safety Joint	3.00			4444.00	
Packer	5.00			4449.00	24.00 Bottom Of Top Packer
Packer - Shale	4.00			4453.00	
Stubb	1.00			4454.00	
Recorder	0.00	8373	Inside	4454.00	
Recorder	0.00	8356	Outside	4454.00	
Perforations	4.00			4458.00	
Change Over Sub	1.00			4459.00	
Drill Pipe	32.00			4491.00	
Change Over Sub	1.00			4492.00	
Bullnose	5.00			4497.00	48.00 Anchor Tool

Total Tool Length: 72.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc

30-13s-31w Gove, KS

8100 E 22nd St N 700
Wichita, KS 67278

Joseph-Hess #1

Job Ticket: 53194

DST#: 10

ATTN: Adam Eldani

Test Start: 2013.08.03 @ 01:30:08

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 45.00 sec/qt

Water Loss: 11.19 in³

Resistivity: 0.00 ohm.m

Salinity: 5600.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

Oil API:

Water Salinity:

0 deg API

0 ppm

ft

bbl

psig

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
62.00	mw cgo 20%g 60%o 10%w 10%o	0.305
124.00	w mco 85%o 5%w 10%m	1.231
112.00	ocm 5%o 95%m	1.638
0.00	446 GIP	0.000

Total Length: 298.00 ft

Total Volume: 3.174 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

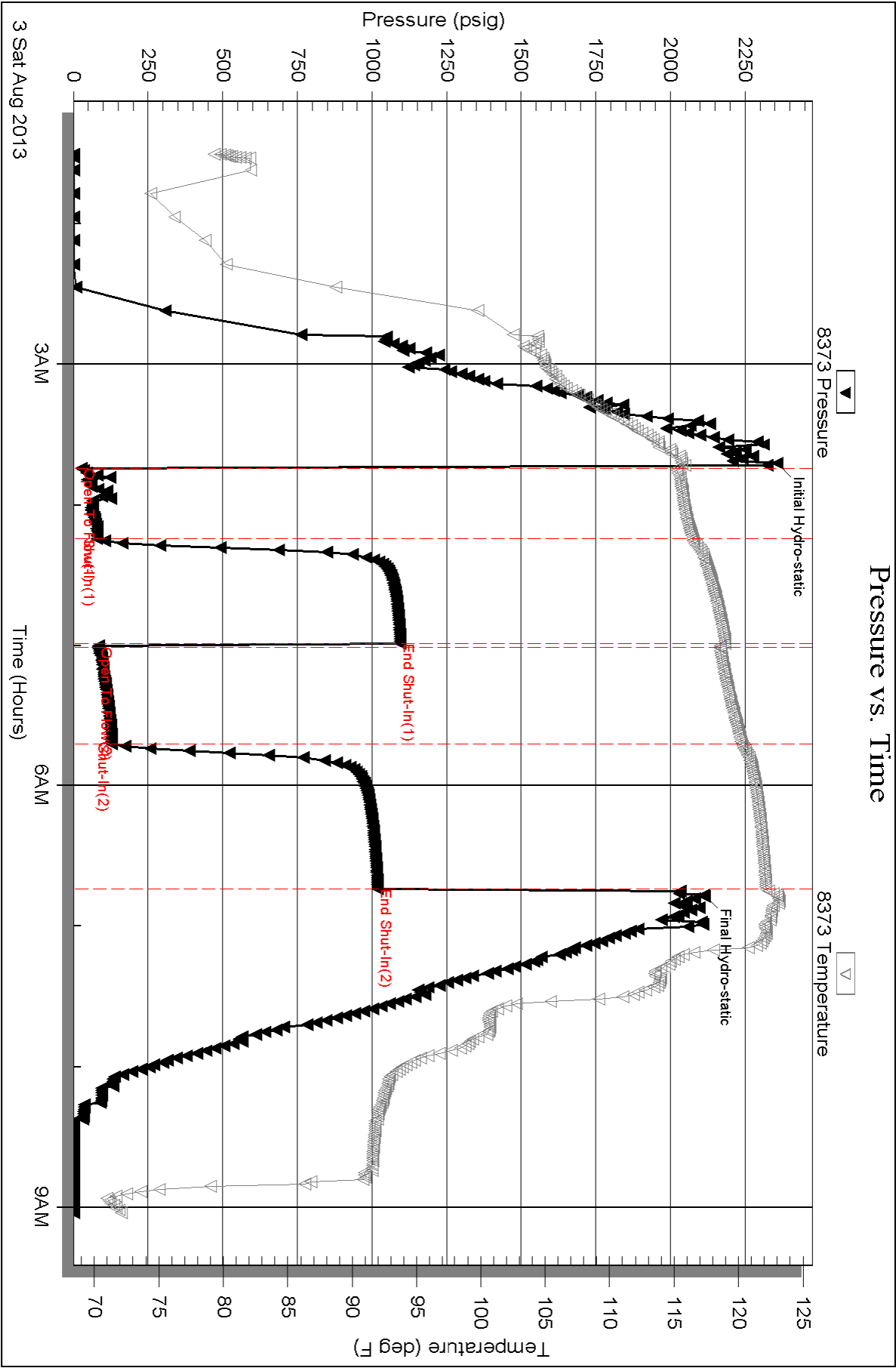
Serial #: 8373

Inside

Ritchie Exploration Inc

Joseph-Hess #1

DST Test Number: 10

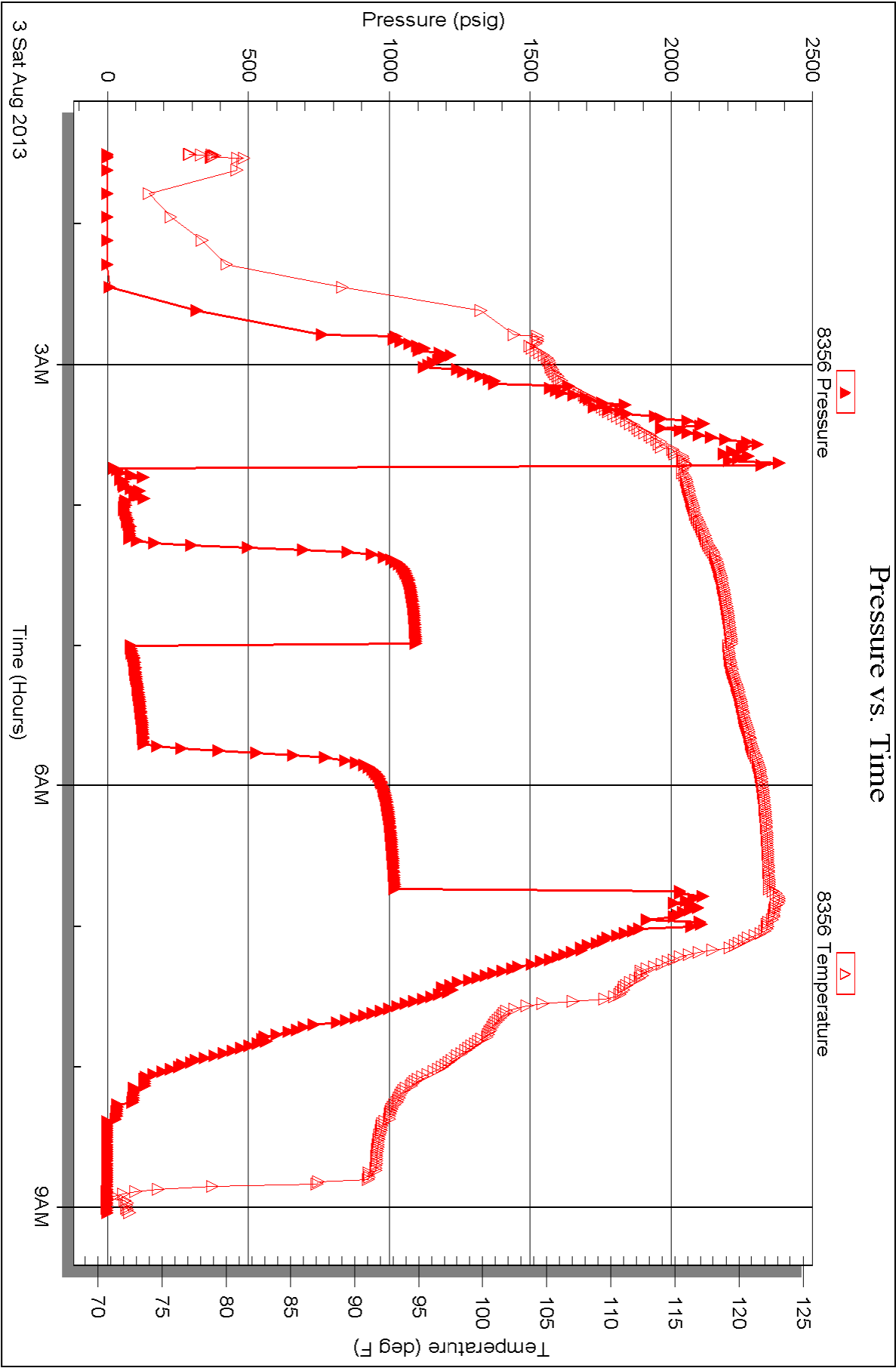


Serial #: 8356

Outside Ritchie Exploration Inc

Joseph-Hess #1

DST Test Number: 10





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53185

Well Name & No. Joseph-Hess #1 Test No. 1 Date 7-27-13
 Company Ritchie Exploration Inc Elevation 2878 KB 2866 GL
 Address 8100 E 22nd St N 700 Wichita, KS 67278
 Co. Rep / Geo. Adam Eldeni Rig WW #12
 Location: Sec. 30 Twp. 13 Rge. 31 Co. Gove State KS

Interval Tested 3927 3963 Zone Tested LKC-C
 Anchor Length 36 Drill Pipe Run 3791 Mud Wt. 9.0
 Top Packer Depth 3922 Drill Collars Run 122 Vis 51
 Bottom Packer Depth 3927 Wt. Pipe Run — WL 7.2
 Total Depth 3963 Chlorides 1500 ppm System LCM 1

Blow Description IF 1 1/4 blow built to 3 in 30 min.
IS: No return.
FF: Surface blow built to 3 in 45 min.
FS: No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>Free oil</u>	<u>2</u>			
<u>102</u>	<u>WCM</u>		<u>30</u>	<u>70</u>	
<u>62</u>	<u>MCLW</u>		<u>90</u>	<u>10</u>	

Rec Total 166 BHT 115 Gravity — API RW 19 @ 65 °F Chlorides 44,000 ppm
 (A) Initial Hydrostatic 1925 ☒ Test 1150 T-On Location 14:30
 (B) First Initial Flow 17 ☒ Jars 250 T-Started 16:51
 (C) First Final Flow 61 ☒ Safety Joint 75 T-Open 18:28
 (D) Initial Shut-In 1006 ☒ Circ Sub NIL T-Pulled 21:28
 (E) Second Initial Flow 65 ☐ Hourly Standby — T-Out 23:14
 (F) Second Final Flow 89 ☒ Mileage 70-108.50 Comments —
 (G) Final Shut-In 937 ☐ Sampler —
 (H) Final Hydrostatic 1845 ☐ Straddle —
☐ Shale Packer —
☐ Extra Packer —
☐ Extra Recorder —
☐ Day Standby —
☐ Accessibility —

Initial Open 30
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 60

Sub Total 1583.50

Approved By —

Our Representative —

Triobite 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.**

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **53186**

Well Name & No. Joseph-Hess #1 Test No. 2 Date 7-28-13
Company Ritchie Exploration Inc Elevation 2873 KB 2866 GL
Address _____
Co. Rep / Geo. Adnan Eldani Rig WW #12
Location: Sec. 30 Twp. 13 Rge. 31 Co. Gove State KS

Interval Tested 3959 4002 Zone Tested LKL-PdF
Anchor Length 43 Drill Pipe Run 3822 Mud Wt. 9.0
Top Packer Depth 3954 Drill Collars Run 122 Vis 51
Bottom Packer Depth 3959 Wt. Pipe Run — WL 7.2
Total Depth 4002 Chlorides 1500 ppm System LCM 1

Blow Description ±F: Surface blow built to 1 3/4 in 30 min.
±S: No return.
FF: Surface blow built to 1/2 in 45 min.
F5: NO return.

Rec <u>65</u>	Feet of <u>wcm</u>	%gas	%oil <u>5</u>	%water	<u>95</u> %mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud

Rec Total 65 BHT 114 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>1939</u>	☒ Test 1250	T-On Location <u>8:25</u>
(B) First Initial Flow <u>19</u>	☒ Jars 250	T-Started <u>8:49</u>
(C) First Final Flow <u>33</u>	☒ Safety Joint 75	T-Open <u>10:42</u>
(D) Initial Shut-In <u>933</u>	☒ Circ Sub <u>N/C</u>	T-Pulled <u>13:42</u>
(E) Second Initial Flow <u>35</u>	☐ Hourly Standby	T-Out <u>15:30</u>
(F) Second Final Flow <u>49</u>	☒ Mileage <u>70</u> - 108.50	Comments _____
(G) Final Shut-In <u>886</u>	☐ Sampler	
(H) Final Hydrostatic <u>1871</u>	☐ Straddle	

Initial Open <u>30</u>	☐ Shale Packer	☐ Ruined Shale Packer
Initial Shut-In <u>45</u>	☐ Extra Packer	☐ Ruined Packer
Final Flow <u>45</u>	☐ Extra Recorder	☐ Extra Copies
Final Shut-In <u>40</u>	☐ Day Standby	Sub Total <u>0</u>
	☐ Accessibility	Total <u>1683.50</u>
	Sub Total <u>1683.50</u>	MP/DST Disc't _____

Approved By [Signature]

Our Representative [Signature]

TriLOBITE TESTING INC. shall not be liable for damages 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.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53187

Well Name & No.	Joseph-Hess #1	Test No.	3	Date	7-28-13				
Company	Ritchie Exploration	Elevation	2873	KB	2866	GL			
Address									
Co. Rep / Geo.	Adam Elomi	Rig	WW-#12						
Location: Sec.	30	Twp.	13	Rge.	31	Co.	Gow	State	KS

Interval Tested	3999	4020	Zone Tested	LKC-F		
Anchor Length	21	Drill Pipe Run	3853	Mud Wt.	9.1	
Top Packer Depth	3994	Drill Collars Run	122	Vis	52	
Bottom Packer Depth	3999	Wt. Pipe Run		WL	10.4	
Total Depth	4020	Chlorides	3000	ppm System	LCM	1

Blow Description IF: BoB in 11 min.
IS: Surface blow built to 1/2
FF: BoB in 12 min.
FS: Surface blow built to 2.

Rec	62	Feet of	MCW	%gas	80	%oil		%water	20	%mud
Rec	124	Feet of	OCWM	%gas	10	%oil	40	%water	50	%mud
Rec	124	Feet of	MCW	%gas	3	%oil	80	%water	20	%mud
Rec	186	Feet of	MCW	%gas		%oil	95	%water	5	%mud
Rec		Feet of	124 GIP	%gas		%oil		%water		%mud

Rec Total	486	BHT	121	Gravity		API RW	112 @ 66	F Chlorides	70,000	ppm
-----------	-----	-----	-----	---------	--	--------	----------	-------------	--------	-----

(A) Initial Hydrostatic	1935	☒ Test	1250	T-On Location	21:40
(B) First Initial Flow	61	☐ Jars		T-Started	21:53
(C) First Final Flow	129	☒ Safety Joint	75	T-Open	23:45
(D) Initial Shut-In	859	☒ Circ Sub	N/C	T-Pulled	2:45
(E) Second Initial Flow	139	☐ Hourly Standby		T-Out	5:05
(F) Second Final Flow	216	☒ Mileage	70 - 108.50	Comments	
(G) Final Shut-In	878	☐ Sampler			
(H) Final Hydrostatic	1874	☐ Straddle			

Initial Open	30	☐ Shale Packer		☐ Ruined Shale Packer	
Initial Shut-In	45	☐ Extra Packer		☐ Ruined Packer	
Final Flow	45	☐ Extra Recorder		☐ Extra Copies	
Final Shut-In	60	☐ Day Standby		Sub Total	0
		☐ Accessibility		Total	1433.50
		Sub Total	1433.50	MP/DST Disc't	

Approved By _____ Our Representative

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.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53188

Well Name & No. Joseph - Hess #1 Test No. 4 Date 7-29-13
 Company Ritchie Exploration Elevation 2873 KB 2866 GL
 Address _____
 Co. Rep / Geo. Adam Eldemir Rig WN #12
 Location: Sec. 30 Twp. 13 Rge. 31 Co. Gove State KS

Interval Tested 4061 4097 Zone Tested LKC - H
 Anchor Length 36 Drill Pipe Run 3915 Mud Wt. 9.1
 Top Packer Depth 4056 Drill Collars Run 122 Vis 54
 Bottom Packer Depth 4061 Wt. Pipe Run — WL 9.6
 Total Depth 4097 Chlorides 2500 ppm System LCM 1

Blow Description IF: Surface blow died in 6 min.
FS: No return.
FF: No blow.
FS: No return.

Rec <u>5</u>	Feet of <u>mud</u>	%gas	%oil	%water <u>100</u>	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5 BHT 113 Gravity — API RW — @ — °F Chlorides — ppm
 (A) Initial Hydrostatic 2008 ☒ Test 1250 T-On Location 14:55
 (B) First Initial Flow 17 ☐ Jars T-Started 15:38
 (C) First Final Flow 18 ☒ Safety Joint 75 T-Open 17:15
 (D) Initial Shut-In 102 ☒ Circ Sub NIL T-Pulled 19:15
 (E) Second Initial Flow 19 ☐ Hourly Standby T-Out 20:48
 (F) Second Final Flow 21 ☒ Mileage 70 - 108.50 Comments _____
 (G) Final Shut-In 49 ☐ Sampler _____
 (H) Final Hydrostatic 1931 ☐ Straddle _____
☐ Shale Packer _____
☐ Extra Packer _____
☐ Extra Recorder _____
☐ Day Standby _____
☐ Accessibility _____

Initial Open 30
 Initial Shut-In 30
 Final Flow 30
 Final Shut-In 30

Sub Total 1433.50

Sub Total 0
 Total 1433.50

MP/DST Disc't

Approved By _____

Our Representative [Signature]

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.



TRIBOLITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53189

Well Name & No. Joseph - Hess #1 Test No. 5 Date 7-30-13
Company Ritchie Exploration Elevation 2873 KB 2866 GL
Address _____
Co. Rep / Geo. Adm Eldoni Rig NW #12
Location: Sec. 30 Twp. 13 Rge. 31 Co. Gove State KS

Interval Tested 4093 4150 Zone Tested I-J
Anchor Length 57 Drill Pipe Run 3948 Mud Wt. 9.2
Top Packer Depth 4088 Drill Collars Run 122 Vis 55
Bottom Packer Depth 4093 Wt. Pipe Run --- WL 9.6
Total Depth 4150 Chlorides 2500 ppm System LCM 1

Blow Description ±F: 1/4 blow built to 1/2 died in 10 min
IS: No return.
FF: No blow. Flashed to bl. 1/4 blow BoB in 40 min.
FS: No return.

Rec <u>102</u>	Feet of <u>90cwm</u>	<u>10</u> %gas	<u>20</u> %oil	<u>10</u> %water	<u>60</u> %mud
Rec <u>122</u>	Feet of <u>90cwm</u>	<u>20</u> %gas	<u>5</u> %oil	<u>20</u> %water	<u>55</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 224 BHT _____ Gravity _____ API RW 14' @ 101 °F Chlorides 34,000 ppm

(A) Initial Hydrostatic <u>2015</u>	☒ Test 1250	T-On Location <u>8:45</u>
(B) First Initial Flow <u>55</u>	☒ Jars 250	T-Started <u>9:23</u>
(C) First Final Flow <u>306</u>	☒ Safety Joint 75	T-Open <u>11:13</u>
(D) Initial Shut-In <u>341</u>	☒ Circ Sub <u>NIL</u>	T-Pulled <u>13:58</u>
(E) Second Initial Flow <u>40</u>	☐ Hourly Standby _____	T-Out <u>15:55</u>
(F) Second Final Flow <u>113</u>	☒ Mileage <u>70</u> - 108.50	Comments _____
(G) Final Shut-In <u>257</u>	☐ Sampler _____	
(H) Final Hydrostatic <u>1945</u>	☐ Straddle _____	

Initial Open <u>30</u>	☐ Shale Packer _____	☒ Ruined Packer 320
Initial Shut-In <u>30</u>	☐ Extra Packer _____	☐ Extra Copies _____
Final Flow <u>45</u>	☐ Extra Recorder _____	Sub Total <u>0</u>
Final Shut-In <u>60</u>	☐ Day Standby _____	Total <u>2003.50</u>
	☐ Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1683.50</u>	

Approved By _____ Our Representative _____

Tribolite Testing Inc. shall not be liable for damaged or 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.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53190

Well Name & No. Joseph-Hess #1 Test No. 6 Date 7-31-13
 Company Ritchie Exploration Elevation 2873 KB 2066 GL
 Address _____
 Co. Rep / Geo. Adam Eldeni Rig NW #12
 Location: Sec. 30 Twp. 13 Rge. 31 Co. Gove State KS

Interval Tested 4145 4230 Zone Tested Lansing K-L
 Anchor Length 85 Drill Pipe Run 4010 Mud Wt. 9.2
 Top Packer Depth 4146 Drill Collars Run 122 Vis 55
 Bottom Packer Depth 4145 Wt. Pipe Run — WL 9.6
 Total Depth 4230 Chlorides 2500 ppm System LCM 1

Blow Description IF: BoB in 7 min.
IS: No return.
EB: BoB in 10 min.
FS: No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>174</u>	<u>mw</u>		<u>50</u>	<u>50</u>	
<u>186</u>	<u>mcw</u>		<u>80</u>	<u>20</u>	
<u>496</u>	<u>water</u>		<u>100</u>		
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

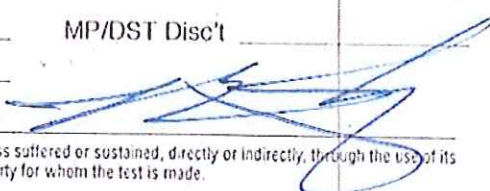
Rec Total 856 BHT 123 Gravity — API RW .09 @ 85 °F Chlorides 70,000 ppm

(A) Initial Hydrostatic <u>2145</u>	☒ Test <u>1250</u>	T-On Location <u>3:56</u>
(B) First Initial Flow <u>120</u>	☒ Jars <u>250</u>	T-Started <u>4:29</u>
(C) First Final Flow <u>247</u>	☒ Safety Joint <u>75</u>	T-Open <u>6:48</u>
(D) Initial Shut-In <u>967</u>	☒ Circ Sub <u>NIC</u>	T-Pulled <u>9:48</u>
(E) Second Initial Flow <u>243</u>	☐ Hourly Standby	T-Out <u>12:12</u>
(F) Second Final Flow <u>454</u>	☒ Mileage <u>70 - 108.50</u>	Comments
(G) Final Shut-In <u>962</u>	☐ Sampler	
(H) Final Hydrostatic <u>1985</u>	☐ Straddle	

Initial Open 30
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 60

☐ Shale Packer
☐ Extra Packer
☐ Extra Recorder
☐ Day Standby
☐ Accessibility
 Sub Total 1683.50

☐ Ruined Shale Packer
☐ Ruined Packer
☐ Extra Copies
 Sub Total 0
 Total 1683.50
 MP/DST Disc't

Approved By _____ Our Representative 
 Triobite Testing Inc. shall not be liable for damaged or 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.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53191

Well Name & No. Joseph-Hess #1 Test No. 7 Date 8-1-13
 Company Ritchie Exploration Elevation 2873 KB 2866 GL
 Address _____
 Co. Rep / Geo. Adm Eldami Rig WW #12
 Location: Sec. 30 Twp. 13 Rge. 31 Co. Cove State KS

Interval Tested 4224 4340 Zone Tested Altamont - Marmaton
 Anchor Length 116 Drill Pipe Run 4104 Mud Wt. 9.1
 Top Packer Depth 4218 Drill Collars Run 122 Vis 51
 Bottom Packer Depth 4224 Wt. Pipe Run _____ WL 8.8
 Total Depth 4340 Chlorides 2000 ppm System LCM 1
 Blow Description IF: Packers Failed & open.

Rec <u>206</u>	Feet of <u>mud</u>	%gas	%oil	%water <u>100</u>	%mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud

Rec Total 206 BHT _____ Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2118</u>	☒ Test 1050	T-On Location <u>4:45</u>
(B) First Initial Flow <u>1923</u>	☒ Jars 250	T-Started <u>5:27</u>
(C) First Final Flow _____	☒ Safety Joint 75	T-Open <u>7:30</u>
(D) Initial Shut-In _____	☒ Circ Sub <u>NIL</u>	T-Pulled <u>7:35</u>
(E) Second Initial Flow _____	☐ Hourly Standby _____	T-Out <u>9:40</u>
(F) Second Final Flow _____	☒ Mileage <u>70</u> - 108.50	Comments _____
(G) Final Shut-In _____	☐ Sampler _____	☐ Ruined Shale Packer
(H) Final Hydrostatic <u>2109</u>	☐ Straddle _____	☐ Ruined Packer
Initial Open _____	☐ Shale Packer _____	☐ Extra Copies _____
Initial Shut-In _____	☐ Extra Packer _____	Sub Total <u>0</u>
Final Flow _____	☐ Extra Recorder _____	Total <u>1483.50</u>
Final Shut-In _____	☐ Day Standby _____	MP/DST Disc't _____
	☐ Accessibility _____	
	Sub Total <u>1483.50</u>	

Approved By _____

Our Representative _____

Triobite 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.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53192

Well Name & No. Joseph - Hess #1 Test No. 8 Date 8-1-13
 Company Ritchie Exploration Elevation 2873 KB 2866 GL
 Address _____
 Co. Rep / Geo. Adam Eldami Rig WW #12
 Location: Sec. 30 Twp. 13 Rge. 31 Co. Gove State KS

Interval Tested 4208 4340 Zone Tested Altamont - Marmaton
 Anchor Length 132 Drill Pipe Run 4074 Mud Wt. 9.1
 Top Packer Depth 4203 Drill Collars Run 122 Vis 51
 Bottom Packer Depth 4208 Wt. Pipe Run _____ WL 8.8
 Total Depth 4340 Chlorides 2000 ppm System LCM 1

Blow Description IF! 1/4 blow died in 8 min.
FS! No return.
FF! No blow. Flushed tool no blow.
FS! No return.

Rec <u>10</u>	Feet of <u>mud</u>	%gas	%oil	%water	<u>100</u>	%mud
Rec _____	Feet of _____	%gas	%oil	%water		%mud
Rec _____	Feet of _____	%gas	%oil	%water		%mud
Rec _____	Feet of _____	%gas	%oil	%water		%mud
Rec _____	Feet of _____	%gas	%oil	%water		%mud

Rec Total 10 BHT 117 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2211 ☒ Test 1250 T-On Location 9:40
 (B) First Initial Flow 24 ☒ Jars 250 T-Started 10:05
 (C) First Final Flow 30 ☒ Safety Joint 75 T-Open 12:36
 (D) Initial Shut-In 406 ☒ Circ Sub N/C T-Pulled 14:36
 (E) Second Initial Flow 32 ☐ Hourly Standby _____ T-Out 16:23
 (F) Second Final Flow 41 ☐ Mileage _____
 (G) Final Shut-In 301 ☐ Sampler _____
 (H) Final Hydrostatic 2004 ☐ Straddle _____

☐ Ruined Shale Packer
☐ Ruined Packer
☐ Extra Copies
 Sub Total 0
 Total 1575
 MP/DST Disc't _____
 Initial Open 30
 Initial Shut-In 30
 Final Flow 30
 Final Shut-In 30
☐ Shale Packer _____
☐ Extra Packer _____
☐ Extra Recorder _____
☐ Day Standby _____
☐ Accessibility _____
 Sub Total 1575

Approved By _____ Our Representative [Signature]
 Trilobite Testing Inc. shall not be liable for damaged or 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.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53193

Well Name & No. Joseph - Hess #1 Test No. 9 Date 8-2-13
 Company Ritchie Exploration Elevation 2873 KB 2866 GL
 Address _____
 Co. Rep / Geo. Adam Eldon Rig NW #12
 Location: Sec. 30 Twp. 13 Rge. 31 Co. Gove State KS

Interval Tested 4336 4423 Zone Tested Myric station
 Anchor Length 87 Drill Pipe Run 4199 Mud Wt. 9.3
 Top Packer Depth 4331 Drill Collars Run 122 Vis 55
 Bottom Packer Depth 4336 Wt. Pipe Run — WL 9.6
 Total Depth 4423 Chlorides 2600 ppm System LCM 1

Blow Description IF: 1/4 blow died in 6 min.
IS: No return.
FF: No blow. Flushed tool 1/4 blow died in 4 min.
FS: No return.

Rec <u>60</u>	Feet of <u>mud oil spots on top</u>	%gas	%oil	%water	<u>100</u> %mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud

Rec Total 60 BHT 116 Gravity — API RW — @ — F Chlorides — ppm
 (A) Initial Hydrostatic 2217 ☒ Test 1250 T-On Location 5:00
 (B) First Initial Flow 18 ☐ Jars _____ T-Started 5:41
 (C) First Final Flow 29 ☒ Safety Joint 75 T-Open 7:47
 (D) Initial Shut-In 164 ☒ Circ Sub _____ T-Pulled 9:47
 (E) Second Initial Flow 32 ☐ Hourly Standby _____ T-Out 11:48
 (F) Second Final Flow 48 ☒ Mileage 70 108.50 Comments _____
 (G) Final Shut-In 108 ☐ Sampler _____
 (H) Final Hydrostatic 2079 ☐ Straddle _____

Initial Open 30
 Initial Shut-In 30
 Final Flow 30
 Final Shut-In 30

☐ Shale Packer
☐ Extra Packer
☐ Extra Recorder
☐ Day Standby
☐ Accessibility
☐ Ruined Shale Packer
☐ Ruined Packer
☐ Extra Copies
 Sub Total 0
 Total 1433.50
 MP/DST Disc't _____

Approved By _____

Our Representative _____

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.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53194

Well Name & No. Joseph - Hess #1 Test No. 10 Date 8-3-13
 Company Ritchie Exploration Elevation 2873 KB 2866 GL
 Address _____
 Co. Rep / Geo. Adam E/dmi Rig WN #12
 Location: Sec. 30 Twp. 13 Rge. 31 Co. Gove State KS

Interval Tested 4449 4493 Zone Tested Johnson
 Anchor Length 44 Drill Pipe Run 4323 Mud Wt. 9.2
 Top Packer Depth 4444 Drill Collars Run 122 Vis 45
 Bottom Packer Depth 4449 Wt. Pipe Run _____ WL 11.2
 Total Depth 4493 Chlorides 5600 ppm System LCM 2

Blow Description IFI: 1/4 blow BoB in 17 min.
IS: No return.
FFi BoB in 9 min.
FSi NO return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>112</u>	<u>0cm</u>	<u>5</u>		<u>95</u>	
<u>124</u>	<u>WMLC</u>	<u>85</u>	<u>5</u>	<u>10</u>	
<u>62</u>	<u>mw c90</u>	<u>20</u>	<u>60</u>	<u>10</u>	
	<u>446 GIP</u>				

Rec Total 298 BHT 122 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2358 ☒ Test 1250
 (B) First Initial Flow 25 ☒ Jars 250
 (C) First Final Flow 38 ☒ Safety Joint 75
 (D) Initial Shut-In 1093 ☒ Circ Sub 10/1
 (E) Second Initial Flow 82 ☐ Hourly Standby _____
 (F) Second Final Flow 127 ☒ Mileage 70 - 108.50
 (G) Final Shut-In 1018 ☐ Sampler _____
 (H) Final Hydrostatic 2113 ☐ Straddle _____

T-On Location 00:35
 T-Started 1:30
 T-Open 3:42
 T-Pulled 6:42
 T-Out 9:02

Initial Open 30
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 60

☒ Shale Packer 250
☐ Extra Packer _____
☐ Extra Recorder _____
☐ Day Standby _____
☐ Accessibility _____
 Sub Total 1933.50

Comments _____
☐ Ruined Shale Packer _____
☐ Ruined Packer _____
☐ Extra Copies _____
 Sub Total 0
 Total 1933.50
 MP/DST Disc't _____

Approved By [Signature]

Our Representative [Signature]

Trilobite Testing Inc. shall not be liable for damages 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.