

TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Tomlinson Operating LLC**

7154 W State St
Boise ID 83714

ATTN: Sid Tomlinson

6-12-18-Ellis Ks

Harman # 1

Start Date: 2009.07.10 @ 09:16:42

End Date: 2009.07.10 @ 15:19:12

Job Ticket #: 34322 DST #: 1

Tomlinson Operating LLC

Harman # 1

6-12-18-Ellis Ks

DST # 1

Topeka

2009.07.10

Trilobite Testing, Inc
PO Box 1733 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

RECEIVED
AUG 31 2009
KCC WICHITA



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Tomlinson Operating LLC

Harman # 1

7154 W State St
Boise ID 83714

6-12-18-Ellis Ks

ATTN: Sid Tomlinson

Job Ticket: 34322

DST#: 1

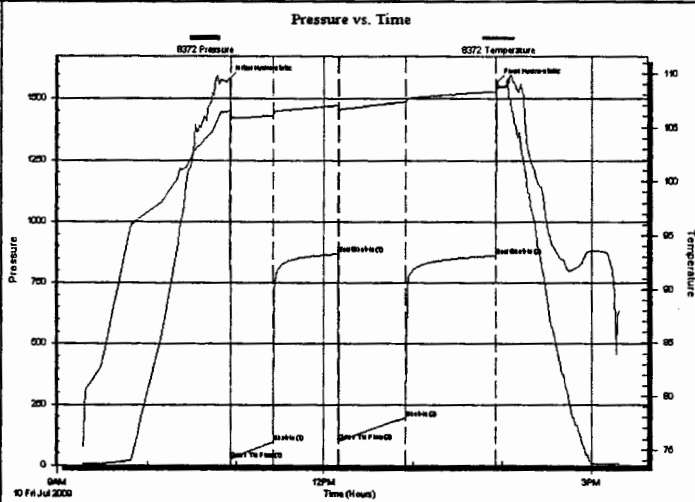
Test Start: 2009.07.10 @ 09:16:42

GENERAL INFORMATION:

Formation: **Topeka**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 10:55:42
 Time Test Ended: 15:19:12
 Interval: **3280.00 ft (KB) To 3292.00 ft (KB) (TVD)**
 Total Depth: 3292.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole
 Tester: Dan Bangle
 Unit No: 38
 Reference Elevations: 2076.00 ft (KB)
 2066.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 8372 Inside
 Press@RunDepth: 194.22 psig @ 3289.00 ft (KB) Capacity: 7000.00 psig
 Start Date: 2009.07.10 End Date: 2009.07.10 Last Calib.: 2009.07.10
 Start Time: 09:16:43 End Time: 15:19:12 Time On Btm: 2009.07.10 @ 10:54:42
 Time Off Btm: 2009.07.10 @ 13:56:42

TEST COMMENT: IF-Weak building to 1"
 FF-Weak building to strong B-B in 43 min



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1580.44	106.46	Initial Hydro-static
1	24.86	105.68	Open To Flow (1)
31	95.52	106.09	Shut-In(1)
75	868.46	107.03	End Shut-In(1)
76	98.11	106.53	Open To Flow (2)
120	194.22	107.36	Shut-In(2)
181	861.19	108.34	End Shut-In(2)
182	1567.13	108.55	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
310.00	Wtr	4.35

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Tomlinson Operating LLC

Harman # 1

7154 W State St
Boise ID 83714

6-12-18-Ellis Ks

Job Ticket: 34322

DST#: 1

ATTN: Sid Tomlinson

Test Start: 2009.07.10 @ 09:16:42

Tool Information

Drill Pipe:	Length: 3290.00 ft	Diameter: 3.80 inches	Volume: 46.15 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 40000.00 lb
			<u>Total Volume: 46.15 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 38000.00 lb
Depth to Top Packer:	3280.00 ft			Final 39000.00 lb
Depth to Bottom Packer:	ft			
Interval betw een Packers:	12.00 ft			
Tool Length:	32.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3261.00	
Shut in Tool	5.00			3266.00	
Hydraulic tool	5.00			3271.00	
Packer	5.00			3276.00	20.00 Bottom Of Top Packer
Packer	4.00			3280.00	
Stubb	1.00			3281.00	
Perforations	8.00			3289.00	
Recorder	0.00	8372	Inside	3289.00	
Recorder	0.00	8520	Outside	3289.00	
Bullnose	3.00			3292.00	12.00 Bottom Packers & Anchor
Total Tool Length:	32.00				

RECEIVED

AUG 31 2009

KCC WICHITA



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Tomlinson Operating LLC

Harman # 1

7154 W State St
Boise ID 83714

6-12-18-Ellis Ks

Job Ticket: 34322 **DST#: 1**

ATTN: Sid Tomlinson

Test Start: 2009.07.10 @ 09:16:42

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	92000 ppm
Viscosity: 47.00 sec/qt	Cushion Volume: bbl		
Water Loss: 8.77 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 4000.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
310.00	Wtr	4.348

Total Length: 310.00 ft Total Volume: 4.348 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments: Rw .07 @ 86 = 92000ppm

Serial #: 8372

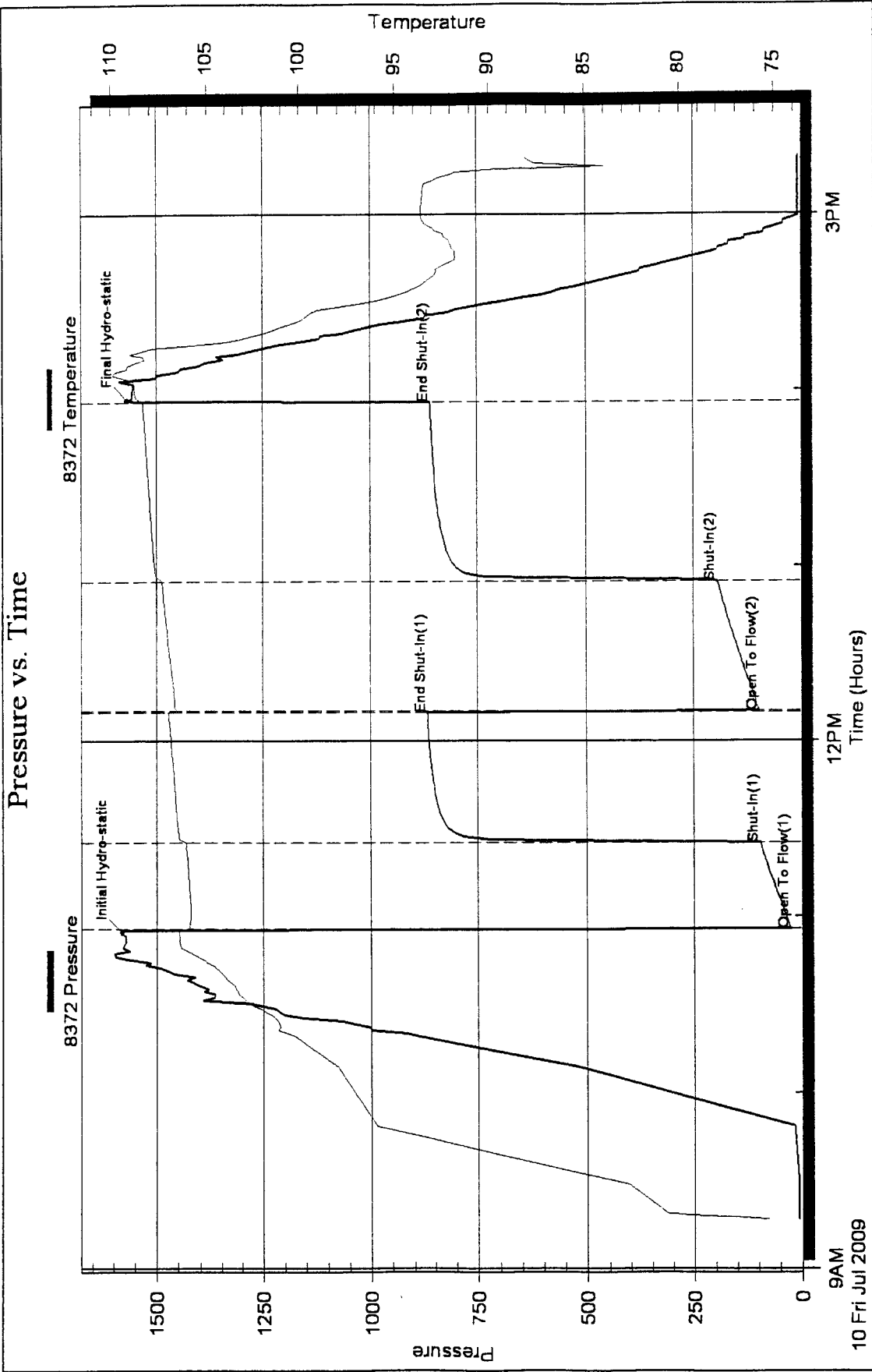
Inside

Tomfinson Operating LLC

6-12-18-Ellis Ks

DST Test Number: 1

Pressure vs. Time

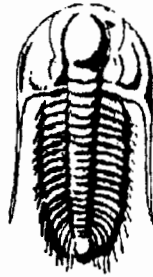


8372
 18 JUL 2009
 KOOVICHITA

Trilobite Testing, Inc

Ref. No: 34322

Printed: 2009.07.13 @ 15:35:28 Page 5



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Tomlinson Operating LLC**

7154 W State St
Boise ID 83714

ATTN: Sid Tomlinson

6-12-18-Ellis Ks

Harman # 1

Start Date: 2009.07.11 @ 05:32:39

End Date: 2009.07.11 @ 11:46:09

Job Ticket #: 34323 DST #: 2

Trilobite Testing, Inc
PO Box 1733 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

RECEIVED
AUG 31 2009
KCC WICHITA



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Torrinson Operating LLC

Harman # 1

7154 W State St
Boise ID 83714

6-12-18-Ellis Ks

Job Ticket: 34323

DST#: 2

ATTN: Sid Torrinson

Test Start: 2009.07.11 @ 05:32:39

GENERAL INFORMATION:

Formation: **B-C LK**
 Deviated: **No Whipstock:** ft (KB)
 Time Tool Opened: 07:04:09
 Time Test Ended: 11:46:09

Test Type: Conventional Bottom Hole
 Tester: Dan Bangle
 Unit No: 38

Interval: **3377.00 ft (KB) To 3430.00 ft (KB) (TVD)**
 Total Depth: 3430.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2076.00 ft (KB)
 2066.00 ft (CF)
 KB to GR/CF: 10.00 ft

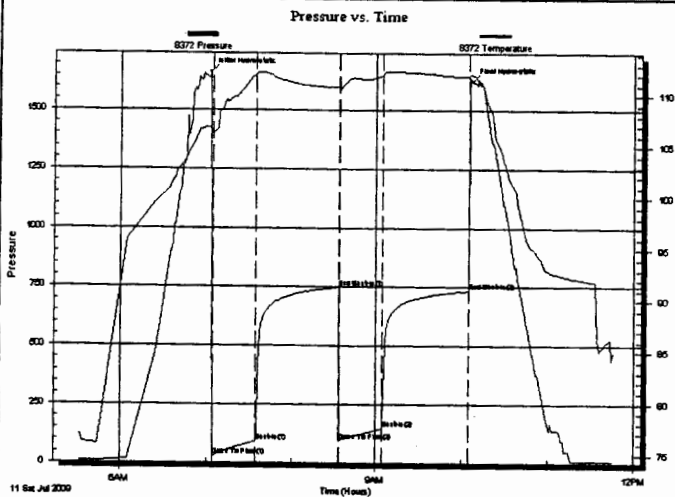
Serial #: 8372

Inside

Press@RunDepth: 146.23 psig @ 3426.00 ft (KB)
 Start Date: 2009.07.11 End Date: 2009.07.11
 Start Time: 05:32:40 End Time: 11:46:09

Capacity: 7000.00 psig
 Last Calib.: 2009.07.11
 Time On Btm: 2009.07.11 @ 07:02:39
 Time Off Btm: 2009.07.11 @ 10:06:09

TEST COMMENT: IF-Weak building to strong B-B in 17 min
 FF-Weak building to 2"



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1662.53	106.91	Initial Hydro-static
2	26.81	106.07	Open To Flow (1)
32	90.89	112.09	Shut-In (1)
91	748.37	110.85	End Shut-In (1)
92	96.01	110.60	Open To Flow (2)
122	146.23	111.99	Shut-In (2)
182	734.58	111.95	End Shut-In (2)
184	1624.56	112.12	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
185.00	Mdy Wtr	2.60
60.00	Sltly OC Mdy W 3%o 77%w 20%o	0.84
5.00	CO	0.07

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Tomlinson Operating LLC

Harman # 1

7154 W State St
Boise ID 83714

6-12-18-Ellis Ks

Job Ticket: 34323

DST#: 2

ATTN: Sid Tomlinson

Test Start: 2009.07.11 @ 05:32:39

Tool Information

Drill Pipe:	Length: 3385.00 ft	Diameter: 3.80 inches	Volume: 47.48 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 40000.00 lb
			Total Volume: 47.48 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial 38000.00 lb
Depth to Top Packer:	3377.00 ft			Final 39000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	52.00 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
Change Over Sub	1.00			3358.00	
Shut In Tool	5.00			3363.00	
Hydraulic tool	5.00			3368.00	
Packer	5.00			3373.00	20.00 Bottom Of Top Packer
Packer	4.00			3377.00	
Stubb	1.00			3378.00	
Perforations	2.00			3380.00	
Change Over Sub	1.00			3381.00	
Drill Pipe	30.00			3411.00	
Perforations	15.00			3426.00	
Recorder	0.00	8372	Inside	3426.00	
Recorder	0.00	8520	Outside	3426.00	
Bullnose	3.00			3429.00	52.00 Bottom Packers & Anchor

Total Tool Length: 72.00

RECEIVED
AUG 31 2009
KCC WICHITA



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Tomlinson Operating LLC

Harman # 1

7154 W State St
Boise ID 83714

6-12-18-Ellis Ks

Job Ticket: 34323

DST#: 2

ATTN: Sid Tomlinson

Test Start: 2009.07.11 @ 05:32:39

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

65000 ppm

Viscosity: 44.00 sec/qt

Cushion Volume:

bbl

Water Loss: 9.16 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3800.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
185.00	Mdy Wtr	2.595
60.00	SltlyOCMdyW 3%o 77%w 20%m	0.842
5.00	CO	0.070

Total Length: 250.00 ft Total Volume: 3.507 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

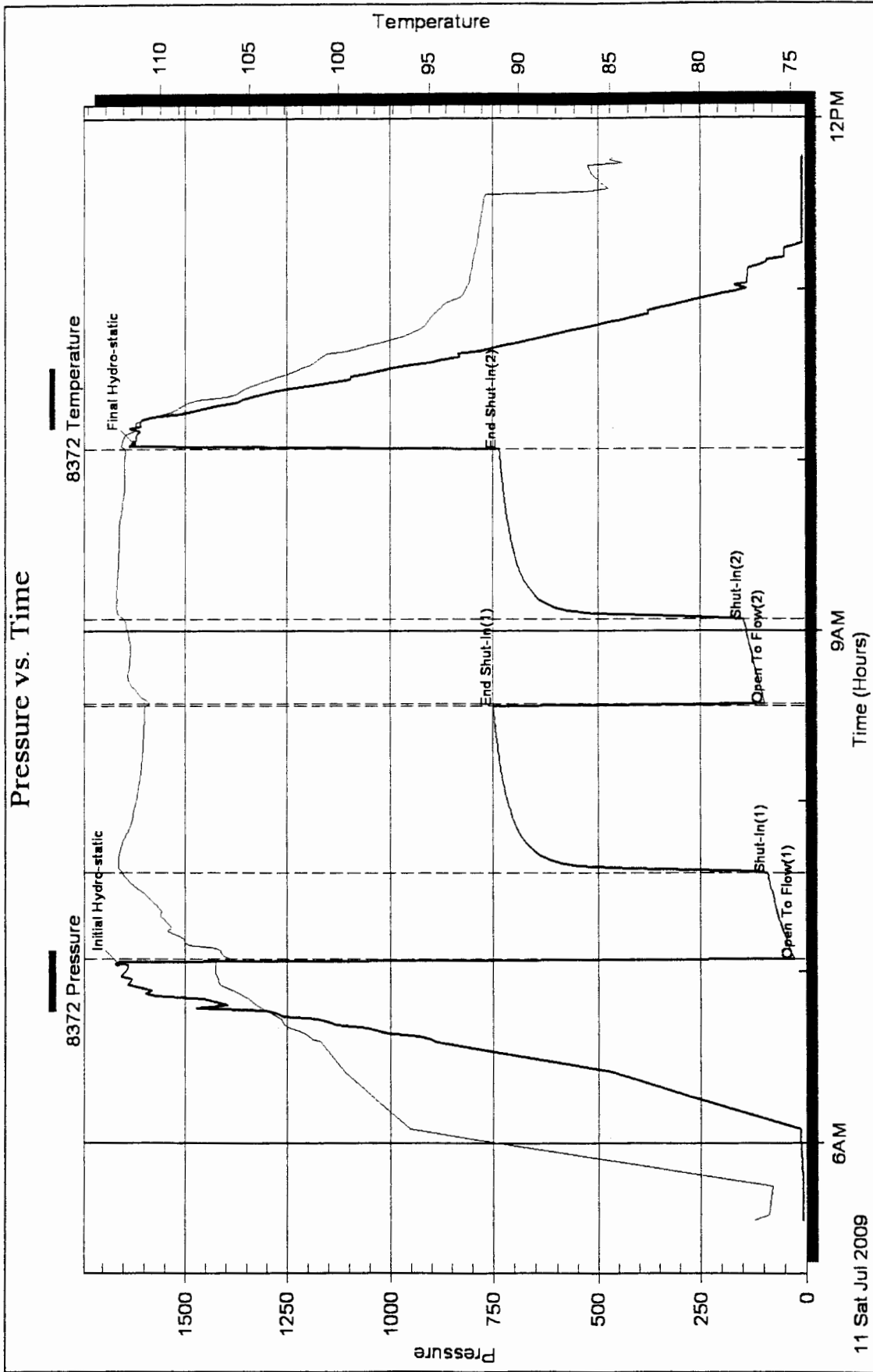
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .09 @ 87 F 65000 ppm chlorides

Pressure vs. Time



6-12-18-ELLIS KS
 8372
 11 Sat Jul 2009



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Tomlinson Operating LLC**

7154 W State St
Boise ID 83714

ATTN: Sid Tomlinson

6-12-18-Ellis Ks

Harman # 1

Start Date: 2009.07.12 @ 04:00:05

End Date: 2009.07.12 @ 10:04:05

Job Ticket #: 34324 DST #: 3

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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

RECEIVED

AUG 31 2009

KCC VAGHITA

Printed: 2009.07.13 @ 15:37:17 Page 1

Tomlinson Operating LLC

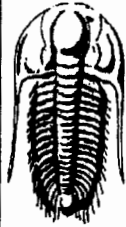
Harman # 1

6-12-18-Ellis Ks

DST # 3

I-J-K-L

2009.07.12



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Tomlinson Operating LLC

Harman # 1

7154 W State St
Boise ID 83714

6-12-18-Ellis Ks

ATTN: Sid Tomlinson

Job Ticket: 34324

DST#: 3

Test Start: 2009.07.12 @ 04:00:05

GENERAL INFORMATION:

Formation: I-J-K-L

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:20:05

Time Test Ended: 10:04:05

Test Type: Conventional Bottom Hole

Tester: Dan Bangle

Unit No: 38

Interval: 3502.00 ft (KB) To 3578.00 ft (KB) (TVD)

Total Depth: 3578.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2076.00 ft (KB)

2066.00 ft (CF)

KB to GR/CF: 10.00 ft

Serial #: 8372

Inside

Press@RunDepth: 74.26 psig @ 3506.00 ft (KB)

Start Date: 2009.07.12 End Date: 2009.07.12

Start Time: 04:00:06 End Time: 10:04:05

Capacity: 7000.00 psig

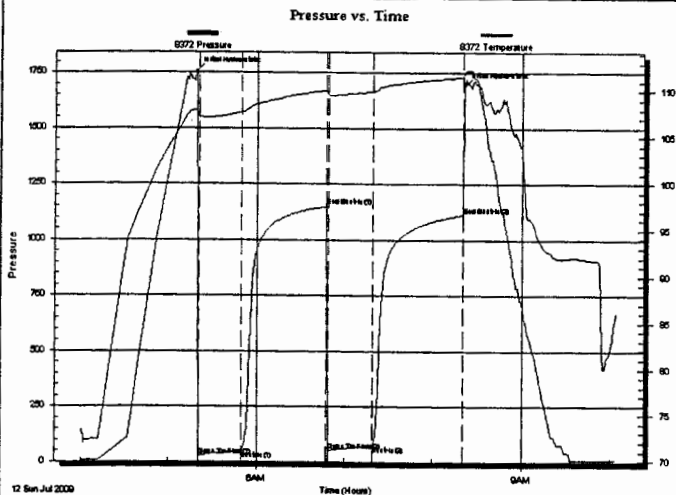
Last Calib.: 2009.07.12

Time On Btm: 2009.07.12 @ 05:18:35

Time Off Btm: 2009.07.12 @ 08:21:05

TEST COMMENT: IF-Weak building to strong B-B in 22 min

FF-Weak building to strong B-B in 14 min



PRESSURE SUMMARY

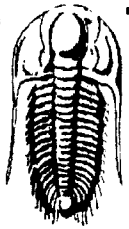
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1756.24	107.99	Initial Hydro-static
2	24.92	107.16	Open To Flow (1)
31	49.06	107.72	Shut-In(1)
90	1149.30	110.09	End Shut-In(1)
91	51.94	109.59	Open To Flow (2)
121	74.26	109.97	Shut-In(2)
182	1111.37	111.53	End Shut-In(2)
183	1690.97	111.99	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
110.00	MGSyO 5%g 65%O 30%m	1.54
25.00	CGSyO 10%g 90%o	0.35
0.00	315 GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Tomlinson Operating LLC

Harman # 1

7154 W State St
Boise ID 83714

6-12-18-Ellis Ks

Job Ticket: 34324

DST#: 3

ATTN: Sid Tomlinson

Test Start: 2009.07.12 @ 04:00:05

Tool Information

Drill Pipe:	Length: 3511.00 ft	Diameter: 3.80 inches	Volume: 49.25 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 50000.00 lb
			Total Volume: 49.25 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	29.00 ft			String Weight: Initial 40000.00 lb
Depth to Top Packer:	3502.00 ft			Final 41000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	76.00 ft			
Tool Length:	96.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3483.00	
Shut In Tool	5.00			3488.00	
Hydraulic tool	5.00			3493.00	
Packer	5.00			3498.00	20.00 Bottom Of Top Packer
Packer	4.00			3502.00	
Stubb	1.00			3503.00	
Perforations	2.00			3505.00	
Change Over Sub	1.00			3506.00	
Recorder	0.00	8372	Inside	3506.00	
Recorder	0.00	8520	Outside	3506.00	
Drill Pipe	61.00			3567.00	
Change Over Sub	1.00			3568.00	
Perforations	7.00			3575.00	
Bullnose	3.00			3578.00	76.00 Bottom Packers & Anchor

Total Tool Length: 96.00

RECEIVED
AUG 31 2013
KOC WICHITA



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Tomlinson Operating LLC

Harman # 1

7154 W State St
Boise ID 83714

6-12-18-Ellis Ks

Job Ticket: 34324

DST#: 3

ATTN: Sid Tomlinson

Test Start: 2009.07.12 @ 04:00:05

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

34 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 41.00 sec/qt

Cushion Volume:

bbf

Water Loss: 8.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
110.00	MCGsyO 5%g 65%O 30%m	1.543
25.00	CGsyO 10%g 90%o	0.351
0.00	315 GIP	0.000

Total Length: 135.00 ft Total Volume: 1.894 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

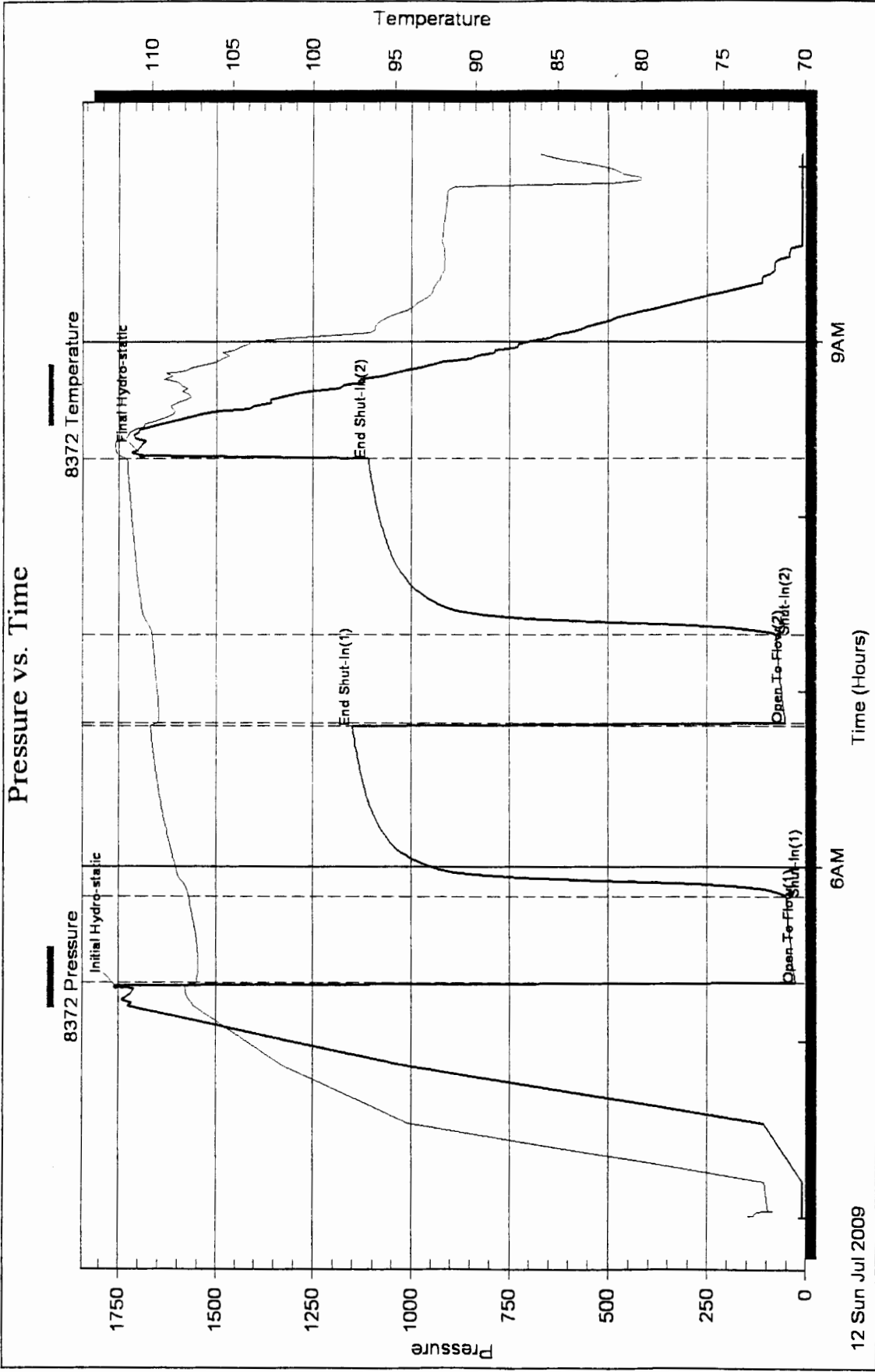
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



12 Sun Jul 2009

6AM

9AM

Time (Hours)

11
 10
 9
 8
 7
 6
 5
 4
 3
 2
 1
 0