



DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 West State Road 4
Olmitz, KS 67564-8561

ATTN: Tom Larson, Tom Ferta

Taylor Trust #1-20

20-12s-14w Russell,KS

Start Date: 2015.09.08 @ 04:45:08

End Date: 2015.09.08 @ 08:55:48

Job Ticket #: 62661 DST #: 1

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2015.09.10 @ 13:47:17



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering Inc

20-12s-14w Russell,KS

562 West State Road 4
Olmitz, KS 67564-8561

Taylor Trust #1-20

Job Ticket: 62661

DST#: 1

ATTN: Tom Larson, Tom Ferta

Test Start: 2015.09.08 @ 04:45:08

GENERAL INFORMATION:

Formation: **LKC "A-B"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:58:03

Time Test Ended: 08:55:48

Test Type: Conventional Bottom Hole (Initial)

Tester: Ray Schwager

Unit No: 70

Interval: 2780.00 ft (KB) To 2808.00 ft (KB) (TVD)

Reference Elevations: 1621.00 ft (KB)

Total Depth: 2808.00 ft (KB) (TVD)

1616.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8018

Inside

Press@RunDepth: 44.39 psig @ 2781.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.09.08

End Date:

2015.09.08

Last Calib.: 2015.09.08

Start Time: 04:45:08

End Time:

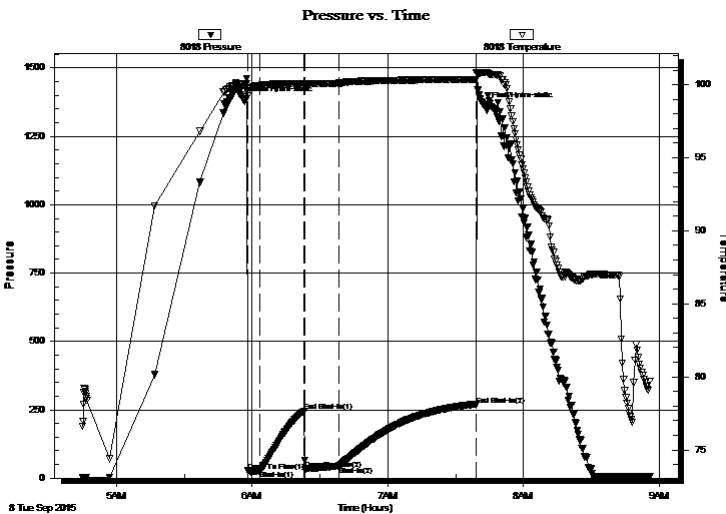
08:55:48

Time On Btm: 2015.09.08 @ 05:56:33

Time Off Btm: 2015.09.08 @ 07:43:03

TEST COMMENT: 5-IFP-wk to a fr bl 1/2" to 4" bl
20-ISIP-no bl
15-FFP-Strg bl in 9 min , started w / 4" bl
60-FSIP-no bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1379.75	100.04	Initial Hydro-static
2	26.84	99.23	Open To Flow (1)
7	27.69	99.95	Shut-In(1)
27	243.95	100.09	End Shut-In(1)
27	32.36	100.05	Open To Flow (2)
42	44.39	100.11	Shut-In(2)
103	267.28	100.37	End Shut-In(2)
107	1359.02	100.84	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
50.00	O&GCM 20%G11%O69%M	0.35
0.00	260' GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering Inc

20-12s-14w Russell,KS

562 West State Road 4
Olmitz, KS 67564-8561

Taylor Trust #1-20

Job Ticket: 62661

DST#: 1

ATTN: Tom Larson, Tom Ferta

Test Start: 2015.09.08 @ 04:45:08

Tool Information

Drill Pipe:	Length: 2317.00 ft	Diameter: 3.80 inches	Volume: 32.50 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 466.00 ft	Diameter: 2.70 inches	Volume: 3.30 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: 65000.00 lb
			<u>Total Volume: 35.80 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	2780.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	28.00 ft			
Tool Length:	57.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			2752.00	
Shut In Tool	5.00			2757.00	
Hydraulic tool	5.00			2762.00	
Jars	5.00			2767.00	
Safety Joint	3.00			2770.00	
Packer	5.00			2775.00	29.00 Bottom Of Top Packer
Packer	5.00			2780.00	
Stubb	1.00			2781.00	
Recorder	0.00	8018	Inside	2781.00	
Recorder	0.00	8700	Outside	2781.00	
Perforations	24.00			2805.00	
Bullnose	3.00			2808.00	28.00 Bottom Packers & Anchor

Total Tool Length: 57.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc

20-12s-14w Russell,KS

562 West State Road 4
Olmitz, KS 67564-8561

Taylor Trust #1-20

Job Ticket: 62661

DST#: 1

ATTN: Tom Larson, Tom Ferta

Test Start: 2015.09.08 @ 04:45:08

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 10.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.73 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5900.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
50.00	O&GCM 20%G11%O69%M	0.354
0.00	260' GIP	0.000

Total Length: 50.00 ft Total Volume: 0.354 bbl

Num Fluid Samples: 0

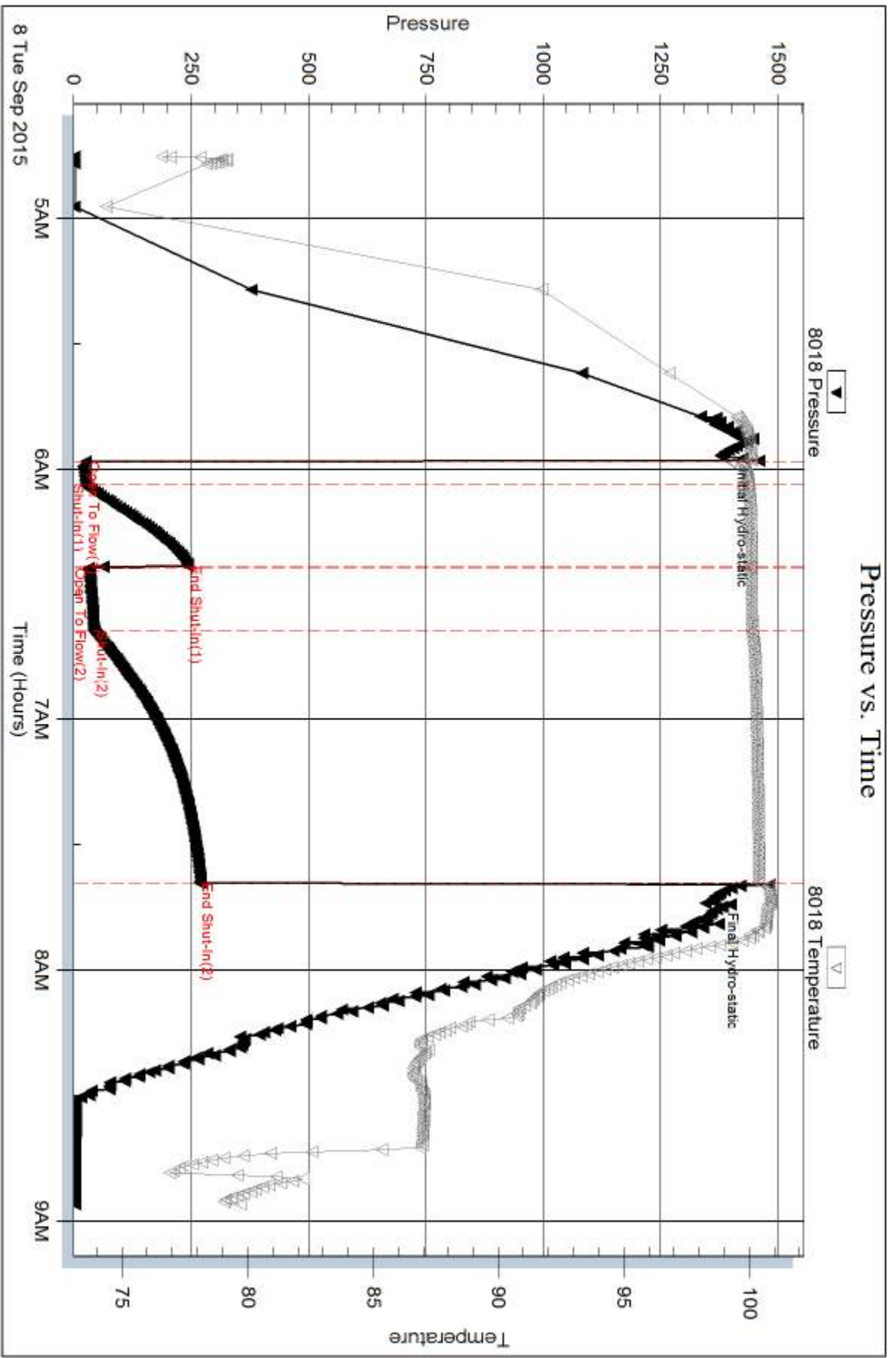
Num Gas Bombs: 0

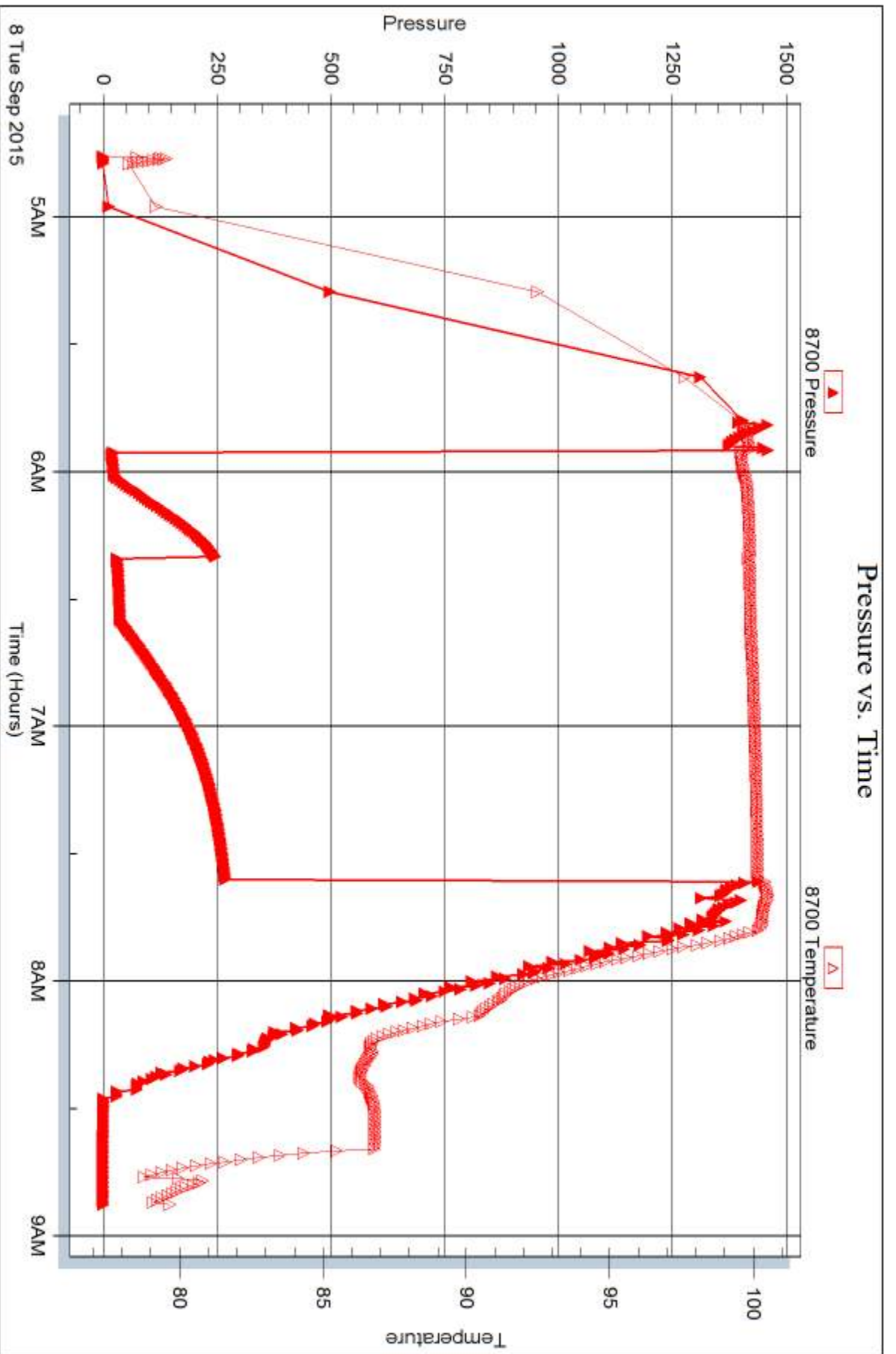
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 West State Road 4
Olmitz, KS 67564-8561

ATTN: Tom Larson, Tom Ferta

Taylor Trust #1-20

20-12s-14w Russell,KS

Start Date: 2015.09.08 @ 16:45:29

End Date: 2015.09.08 @ 19:48:09

Job Ticket #: 62662 DST #: 2

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2015.09.10 @ 13:46:49



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering Inc

20-12s-14w Russell,KS

562 West State Road 4
Olmitz, KS 67564-8561

Taylor Trust #1-20

Job Ticket: 62662

DST#: 2

ATTN: Tom Larson, Tom Ferta

Test Start: 2015.09.08 @ 16:45:29

GENERAL INFORMATION:

Formation: **LKC "D-E"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:57:09

Time Test Ended: 19:48:09

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 70

Interval: 2817.00 ft (KB) To 2838.00 ft (KB) (TVD)

Reference Elevations: 1621.00 ft (KB)

Total Depth: 2838.00 ft (KB) (TVD)

1616.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8018

Inside

Press@RunDepth: 22.00 psig @ 2818.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.09.08

End Date:

2015.09.08

Last Calib.:

2015.09.08

Start Time: 16:45:29

End Time:

19:48:09

Time On Btm:

2015.09.08 @ 17:55:54

Time Off Btm:

2015.09.08 @ 18:46:39

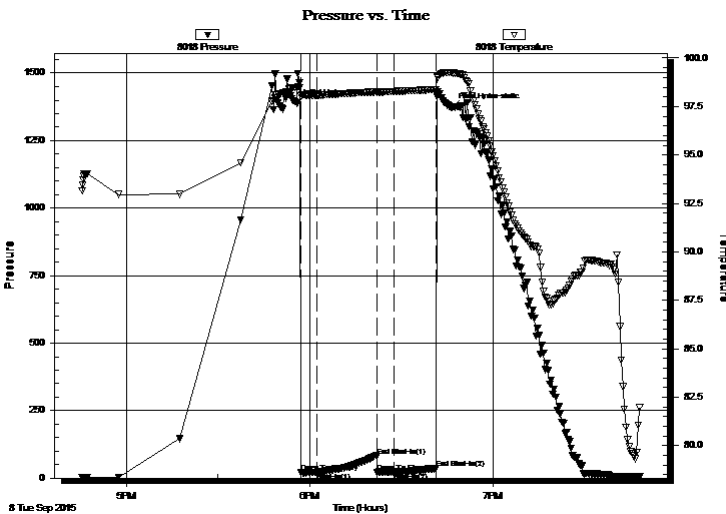
TEST COMMENT: 5-IFP-surface bl died in 3 min

20-ISIP-no bl

5-FFP-no bl

15-FSIP-no bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1388.45	98.48	Initial Hydro-static
2	20.15	98.03	Open To Flow (1)
7	20.59	98.07	Shut-In(1)
26	79.73	98.25	End Shut-In(1)
27	21.77	98.23	Open To Flow (2)
32	22.00	98.28	Shut-In(2)
46	35.53	98.37	End Shut-In(2)
51	1372.15	99.24	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1.00	Mud w/show of oil	0.01

* Recovery from multiple tests

Gas Rates

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



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DRILL STEM TEST REPORT

Larson Engineering Inc

20-12s-14w Russell, KS

562 West State Road 4
Olmitz, KS 67564-8561

Taylor Trust #1-20

Job Ticket: 62662 **DST#: 2**

ATTN: Tom Larson, Tom Ferta

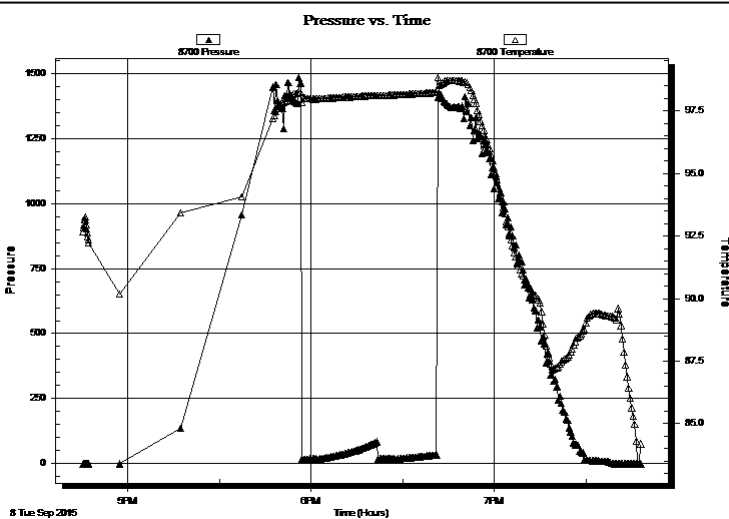
Test Start: 2015.09.08 @ 16:45:29

GENERAL INFORMATION:

Formation: LKC "D-E"	Deviated: No Whipstock: ft (KB)	Test Type: Conventional Bottom Hole (Reset)
Time Tool Opened: 17:57:09	Time Test Ended: 19:48:09	Tester: Ray Schwager
Interval: 2817.00 ft (KB) To 2838.00 ft (KB) (TVD)	Reference Elevations: 1621.00 ft (KB)	Unit No: 70
Total Depth: 2838.00 ft (KB) (TVD)		1616.00 ft (CF)
Hole Diameter: 7.88 inches	Hole Condition: Fair	KB to GR/CF: 5.00 ft

Serial #: 8700	Outside				
Press@RunDepth: psig @ 2818.00 ft (KB)	Capacity: 8000.00 psig				
Start Date: 2015.09.08	End Date: 2015.09.08	Last Calib.: 2015.09.08			
Start Time: 16:45:18	End Time: 19:47:58	Time On Btm:			
		Time Off Btm:			

TEST COMMENT: 5-IFP-surface bl died in 3 min
 20-ISIP-no bl
 5-FFP-no bl
 15-FSIP-no bl



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
1.00	Mud w/show of oil	0.01

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering Inc

20-12s-14w Russell,KS

562 West State Road 4
Olmitz, KS 67564-8561

Taylor Trust #1-20

Job Ticket: 62662

DST#: 2

ATTN: Tom Larson, Tom Ferta

Test Start: 2015.09.08 @ 16:45:29

Tool Information

Drill Pipe:	Length: 2352.00 ft	Diameter: 3.80 inches	Volume: 32.99 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 466.00 ft	Diameter: 2.70 inches	Volume: 3.30 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: 55000.00 lb
			<u>Total Volume: 36.29 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	2817.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	21.00 ft			
Tool Length:	50.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			2789.00	
Shut In Tool	5.00			2794.00	
Hydraulic tool	5.00			2799.00	
Jars	5.00			2804.00	
Safety Joint	3.00			2807.00	
Packer	5.00			2812.00	29.00 Bottom Of Top Packer
Packer	5.00			2817.00	
Stubb	1.00			2818.00	
Recorder	0.00	8018	Inside	2818.00	
Recorder	0.00	8700	Outside	2818.00	
Perforations	17.00			2835.00	
Bullnose	3.00			2838.00	21.00 Bottom Packers & Anchor

Total Tool Length: 50.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc

20-12s-14w Russell,KS

562 West State Road 4
Olmitz, KS 67564-8561

Taylor Trust #1-20

Job Ticket: 62662

DST#: 2

ATTN: Tom Larson, Tom Ferta

Test Start: 2015.09.08 @ 16:45:29

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 10.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.74 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5200.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1.00	Mud w/show of oil	0.007

Total Length: 1.00 ft Total Volume: 0.007 bbl

Num Fluid Samples: 0

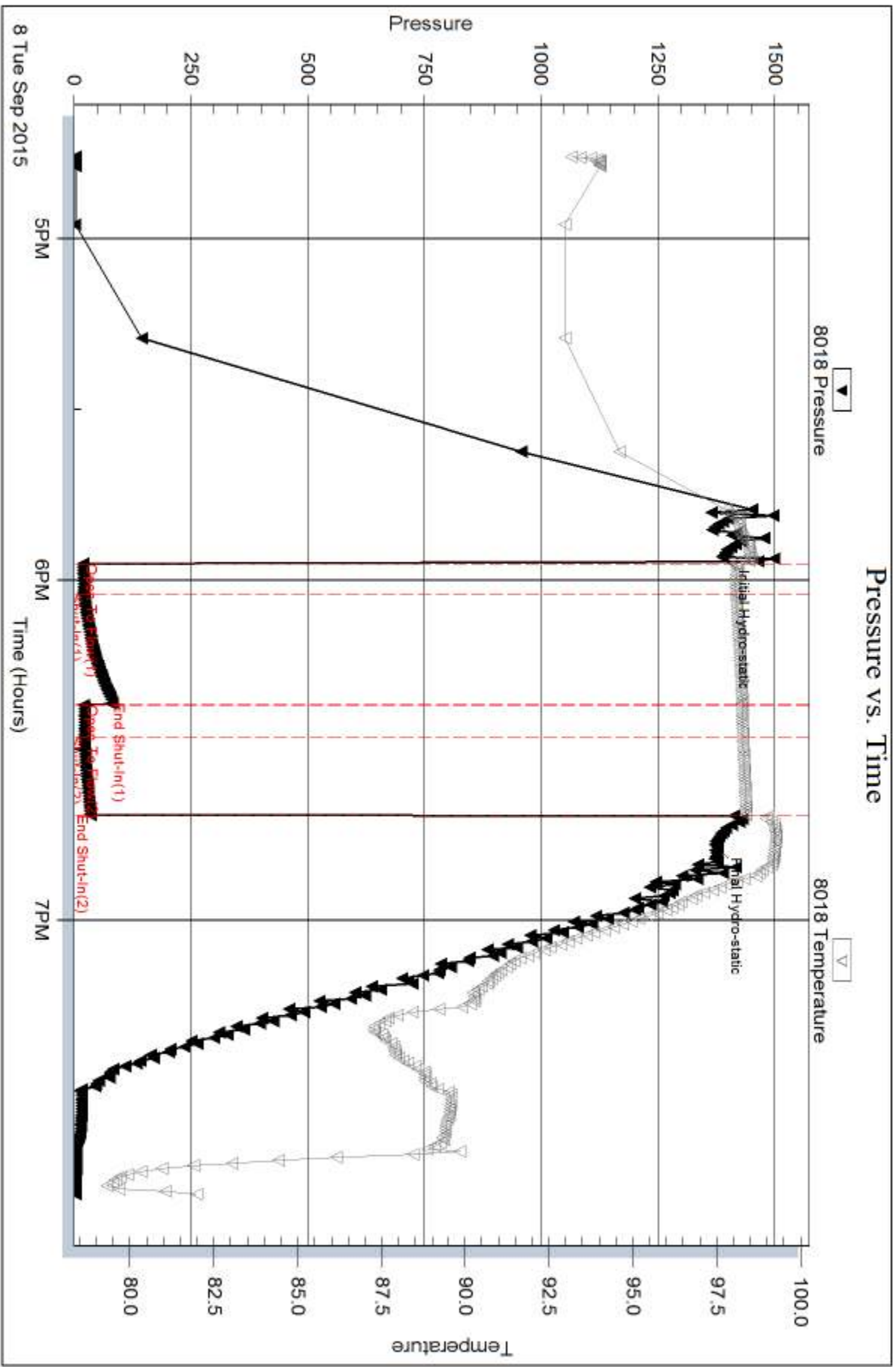
Num Gas Bombs: 0

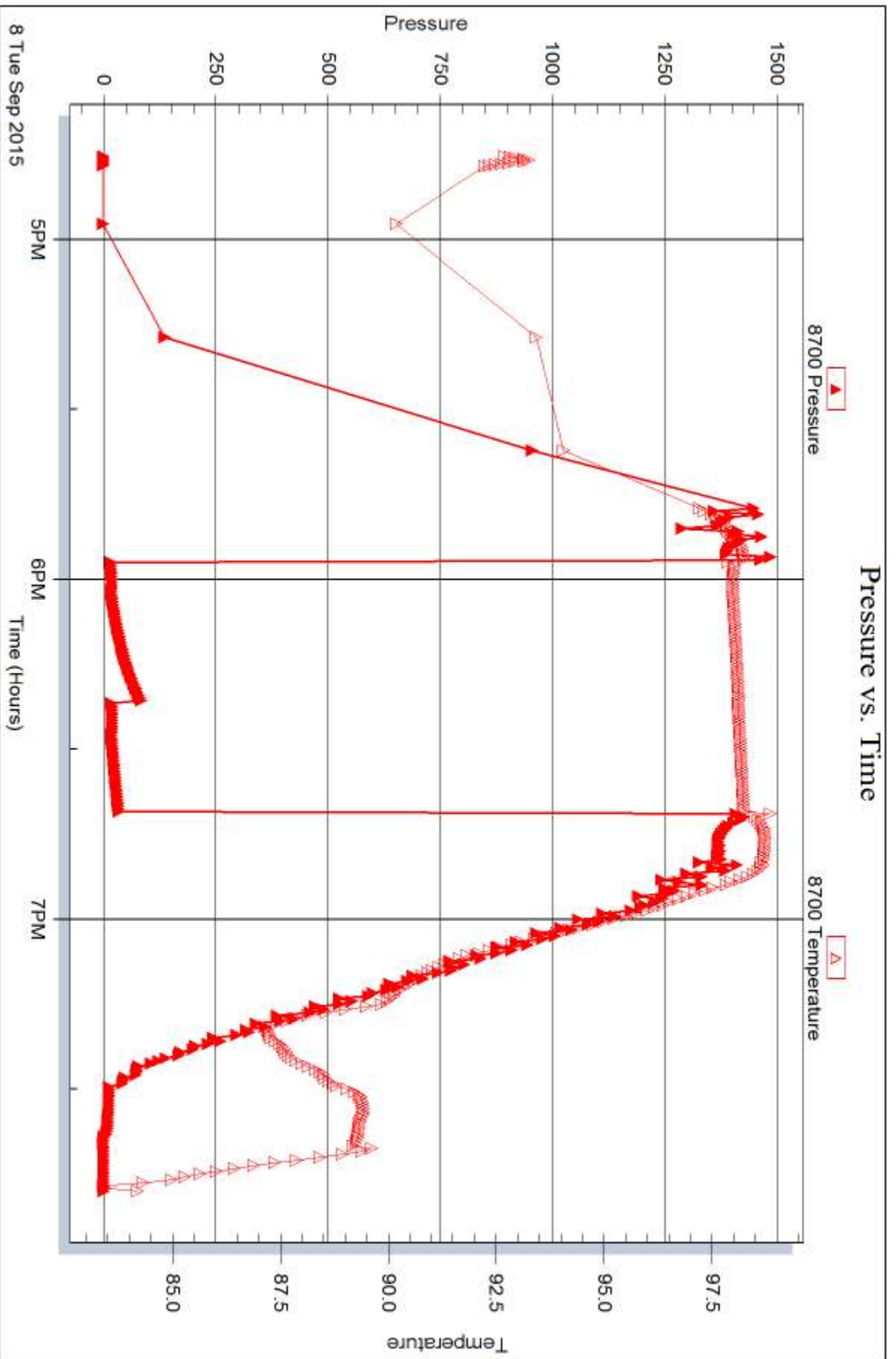
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 West State Road 4
Olmitz, KS 67564-8561

ATTN: Tom Larson, Tom Ferta

Taylor Trust #1-20

20-12s-14w Russell,KS

Start Date: 2015.09.09 @ 03:55:54

End Date: 2015.09.09 @ 08:51:48

Job Ticket #: 62663 DST #: 3

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2015.09.10 @ 13:46:05



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering Inc

20-12s-14w Russell,KS

562 West State Road 4
Olmitz, KS 67564-8561

Taylor Trust #1-20

Job Ticket: 62663

DST#: 3

ATTN: Tom Larson, Tom Ferta

Test Start: 2015.09.09 @ 03:55:54

GENERAL INFORMATION:

Formation: **LKC "G"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:08:34

Time Test Ended: 08:51:48

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 70

Interval: 2870.00 ft (KB) To 2876.00 ft (KB) (TVD)

Reference Elevations: 1621.00 ft (KB)

Total Depth: 2876.00 ft (KB) (TVD)

1616.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8018 Inside

Press@RunDepth: 67.67 psig @ 2871.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.09.09

End Date:

2015.09.09

Last Calib.:

2015.09.09

Start Time: 03:55:54

End Time:

08:51:48

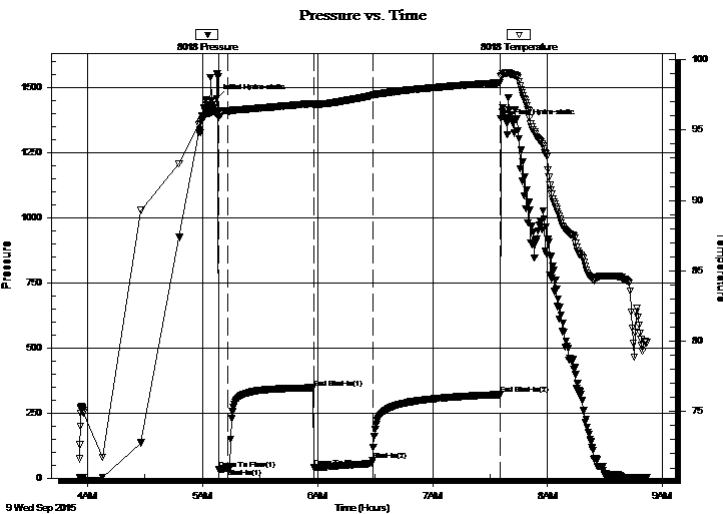
Time On Btm:

2015.09.09 @ 05:07:19

Time Off Btm:

2015.09.09 @ 07:38:49

TEST COMMENT: 5-IFP-w k bl thru-out 1/4" to 1 1/4" bl
45-ISIP-no bl
30-FFP-no bl 1st 3 min, then surface to 1/4" bl
60-FSIP-no bl



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1456.86	96.32	Initial Hydro-static
2	33.65	95.89	Open To Flow (1)
6	37.19	96.35	Shut-In(1)
51	347.10	96.88	End Shut-In(1)
51	40.30	96.70	Open To Flow (2)
82	67.67	97.45	Shut-In(2)
148	320.93	98.36	End Shut-In(2)
152	1361.04	99.05	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
65.00	WM 25% W75%M	0.46

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering Inc

20-12s-14w Russell,KS

562 West State Road 4
Olmitz, KS 67564-8561

Taylor Trust #1-20

Job Ticket: 62663

DST#: 3

ATTN: Tom Larson, Tom Ferta

Test Start: 2015.09.09 @ 03:55:54

Tool Information

Drill Pipe:	Length: 2383.00 ft	Diameter: 3.80 inches	Volume: 33.43 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 466.00 ft	Diameter: 2.70 inches	Volume: 3.30 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: 55000.00 lb
			<u>Total Volume: 36.73 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	8.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	2870.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	6.00 ft			
Tool Length:	35.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			2842.00	
Shut In Tool	5.00			2847.00	
Hydraulic tool	5.00			2852.00	
Jars	5.00			2857.00	
Safety Joint	3.00			2860.00	
Packer	5.00			2865.00	29.00 Bottom Of Top Packer
Packer	5.00			2870.00	
Stubb	1.00			2871.00	
Recorder	0.00	8018	Inside	2871.00	
Recorder	0.00	8700	Outside	2871.00	
Perforations	2.00			2873.00	
Bullnose	3.00			2876.00	6.00 Bottom Packers & Anchor

Total Tool Length: 35.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc

20-12s-14w Russell, KS

562 West State Road 4
Olmitz, KS 67564-8561

Taylor Trust #1-20

Job Ticket: 62663

DST#: 3

ATTN: Tom Larson, Tom Ferta

Test Start: 2015.09.09 @ 03:55:54

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:

42000 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.74 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5400.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
65.00	WM 25%W75%M	0.460

Total Length: 65.00 ft Total Volume: 0.460 bbl

Num Fluid Samples: 0

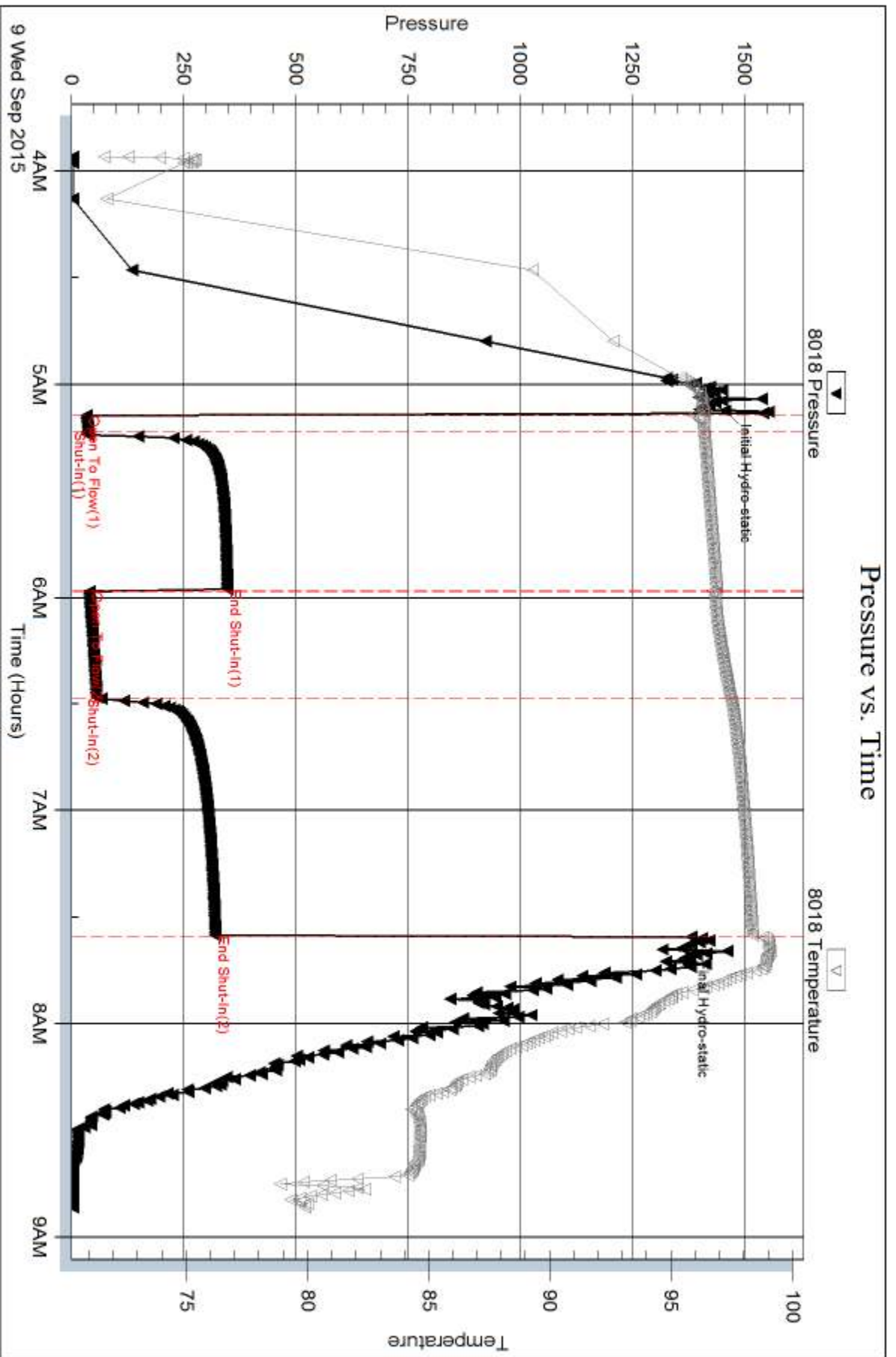
Num Gas Bombs: 0

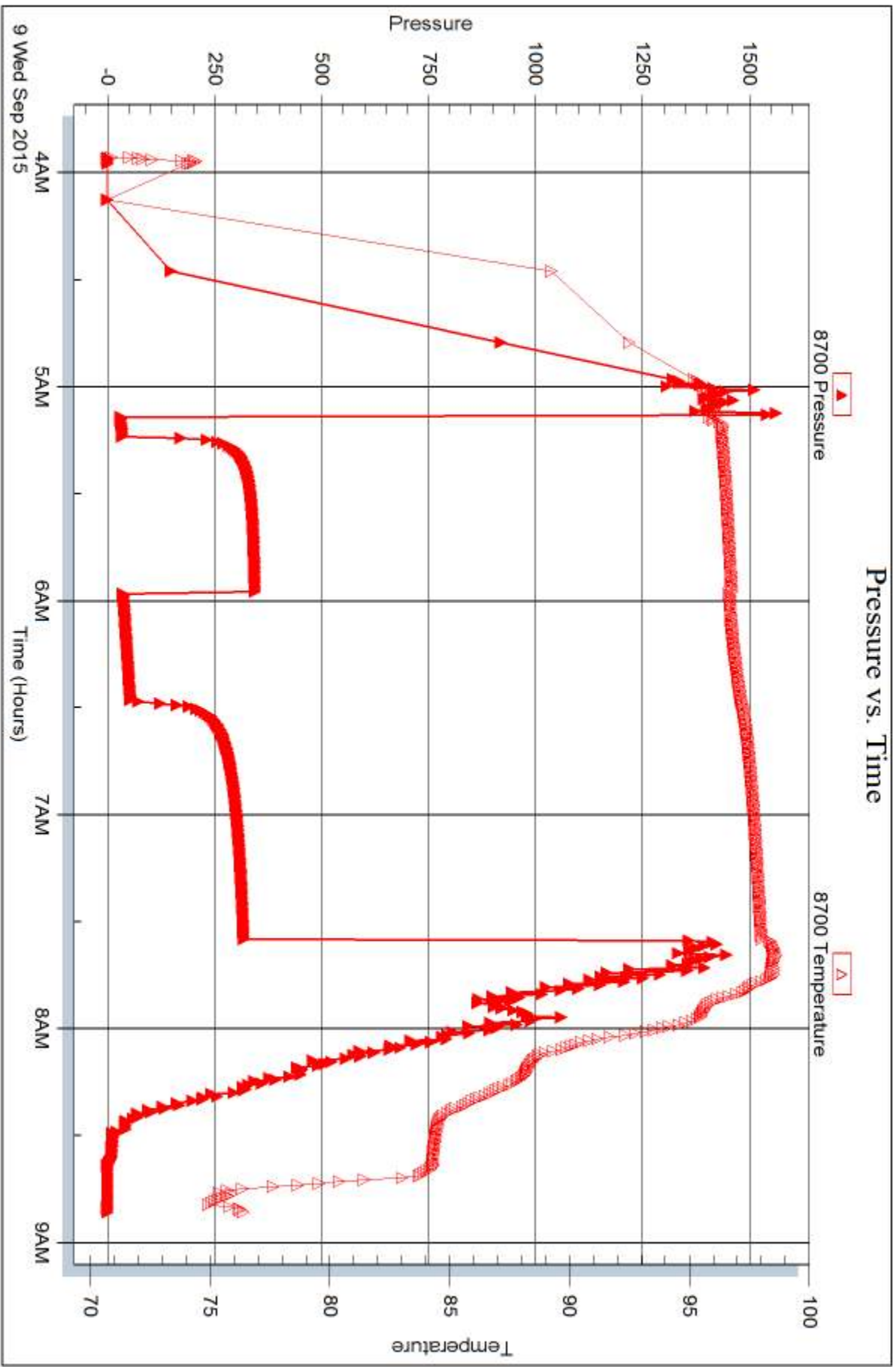
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .17@72F







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 West State Road 4
Olmitz, KS 67564-8561

ATTN: Tom Larson, Tom Ferta

Taylor Trust #1-20

20-12s-14w Russell,KS

Start Date: 2015.09.09 @ 16:50:57

End Date: 2015.09.09 @ 21:17:51

Job Ticket #: 62664 DST #: 4

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2015.09.10 @ 13:45:26



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering Inc

20-12s-14w Russell,KS

562 West State Road 4
Olmitz, KS 67564-8561

Taylor Trust #1-20

Job Ticket: 62664

DST#: 4

ATTN: Tom Larson, Tom Ferta

Test Start: 2015.09.09 @ 16:50:57

GENERAL INFORMATION:

Formation: **LKC "I"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:00:52

Time Test Ended: 21:17:51

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 70

Interval: 2932.00 ft (KB) To 2961.00 ft (KB) (TVD)

Reference Elevations: 1621.00 ft (KB)

Total Depth: 2961.00 ft (KB) (TVD)

1616.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8018

Inside

Press@RunDepth: 220.67 psig @ 2933.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.09.09

End Date:

2015.09.09

Last Calib.:

2015.09.09

Start Time:

16:50:57

End Time:

21:17:51

Time On Btm:

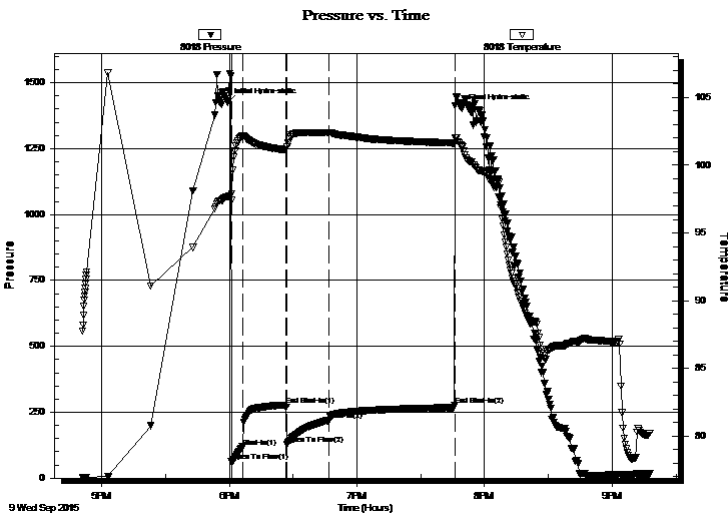
2015.09.09 @ 17:59:07

Time Off Btm:

2015.09.09 @ 19:49:22

TEST COMMENT: 5-IFP-strg bl in 3 min
20-ISIP-no bl
20-FFP w k to strg in 7 min
60-FSIP-no bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1426.12	97.69	Initial Hydro-static
2	62.56	97.40	Open To Flow (1)
7	118.92	102.15	Shut-In(1)
28	277.20	101.16	End Shut-In(1)
28	127.26	101.17	Open To Flow (2)
48	220.67	102.38	Shut-In(2)
107	276.70	101.62	End Shut-In(2)
111	1402.67	101.36	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
248.00	Water	1.76
124.00	MW 40%M60%W	0.88
45.00	MW 25%M75%W w/show of oil	0.32
0.00	75' GIP	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering Inc

20-12s-14w Russell, KS

562 West State Road 4
Olmitz, KS 67564-8561

Taylor Trust #1-20

Job Ticket: 62664

DST#: 4

ATTN: Tom Larson, Tom Ferta

Test Start: 2015.09.09 @ 16:50:57

GENERAL INFORMATION:

Formation: **LKC "I"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:00:52

Time Test Ended: 21:17:51

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 70

Interval: 2932.00 ft (KB) To 2961.00 ft (KB) (TVD)

Reference Elevations: 1621.00 ft (KB)

Total Depth: 2961.00 ft (KB) (TVD)

1616.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8700 Outside

Press@RunDepth: psig @ 2933.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.09.09

End Date:

2015.09.09

Last Calib.:

2015.09.09

Start Time: 16:50:44

End Time:

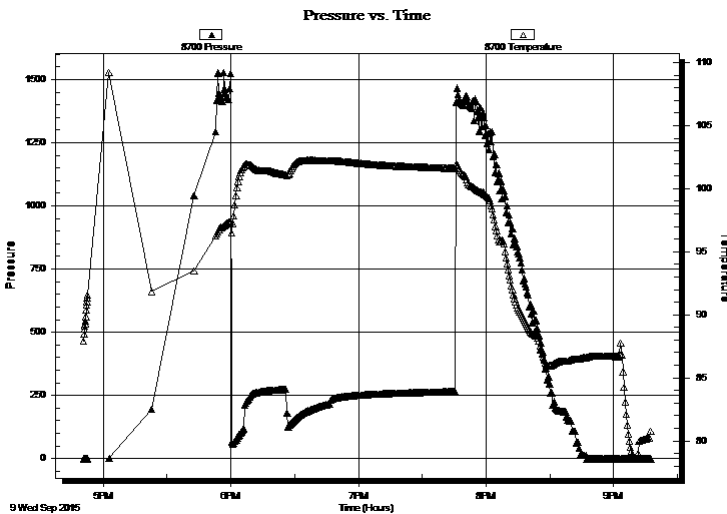
21:17:38

Time On Btm:

Time Off Btm:

TEST COMMENT: 5-IFP-strg bl in 3 min
20-ISIP-no bl
20-FFP w k to strg in 7 min
60-FSIP-no bl

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
248.00	Water	1.76
124.00	MW 40%M60%W	0.88
45.00	MW 25%M75%W w/show of oil	0.32
0.00	75' 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

Larson Engineering Inc

20-12s-14w Russell,KS

562 West State Road 4
Olmitz, KS 67564-8561

Taylor Trust #1-20

Job Ticket: 62664

DST#: 4

ATTN: Tom Larson, Tom Ferta

Test Start: 2015.09.09 @ 16:50:57

Tool Information

Drill Pipe:	Length: 2447.00 ft	Diameter: 3.80 inches	Volume: 34.32 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 466.00 ft	Diameter: 2.70 inches	Volume: 3.30 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: 60000.00 lb
			<u>Total Volume: 37.62 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	2932.00 ft			Final 49000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	29.00 ft			
Tool Length:	58.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			2904.00	
Shut In Tool	5.00			2909.00	
Hydraulic tool	5.00			2914.00	
Jars	5.00			2919.00	
Safety Joint	3.00			2922.00	
Packer	5.00			2927.00	29.00 Bottom Of Top Packer
Packer	5.00			2932.00	
Stubb	1.00			2933.00	
Recorder	0.00	8018	Inside	2933.00	
Recorder	0.00	8700	Outside	2933.00	
Perforations	25.00			2958.00	
Bullnose	3.00			2961.00	29.00 Bottom Packers & Anchor

Total Tool Length: 58.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc

20-12s-14w Russell,KS

562 West State Road 4
Olmitz, KS 67564-8561

Taylor Trust #1-20

Job Ticket: 62664

DST#: 4

ATTN: Tom Larson, Tom Ferta

Test Start: 2015.09.09 @ 16:50:57

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 10.00 lb/gal

Cushion Length:

ft

Water Salinity:

118000 ppm

Viscosity: 45.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.14 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 7500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
248.00	Water	1.756
124.00	MW 40%M60%W	0.878
45.00	MW 25%M75%W w/show of oil	0.319
0.00	75' GIP	0.000

Total Length: 417.00 ft Total Volume: 2.953 bbl

Num Fluid Samples: 0

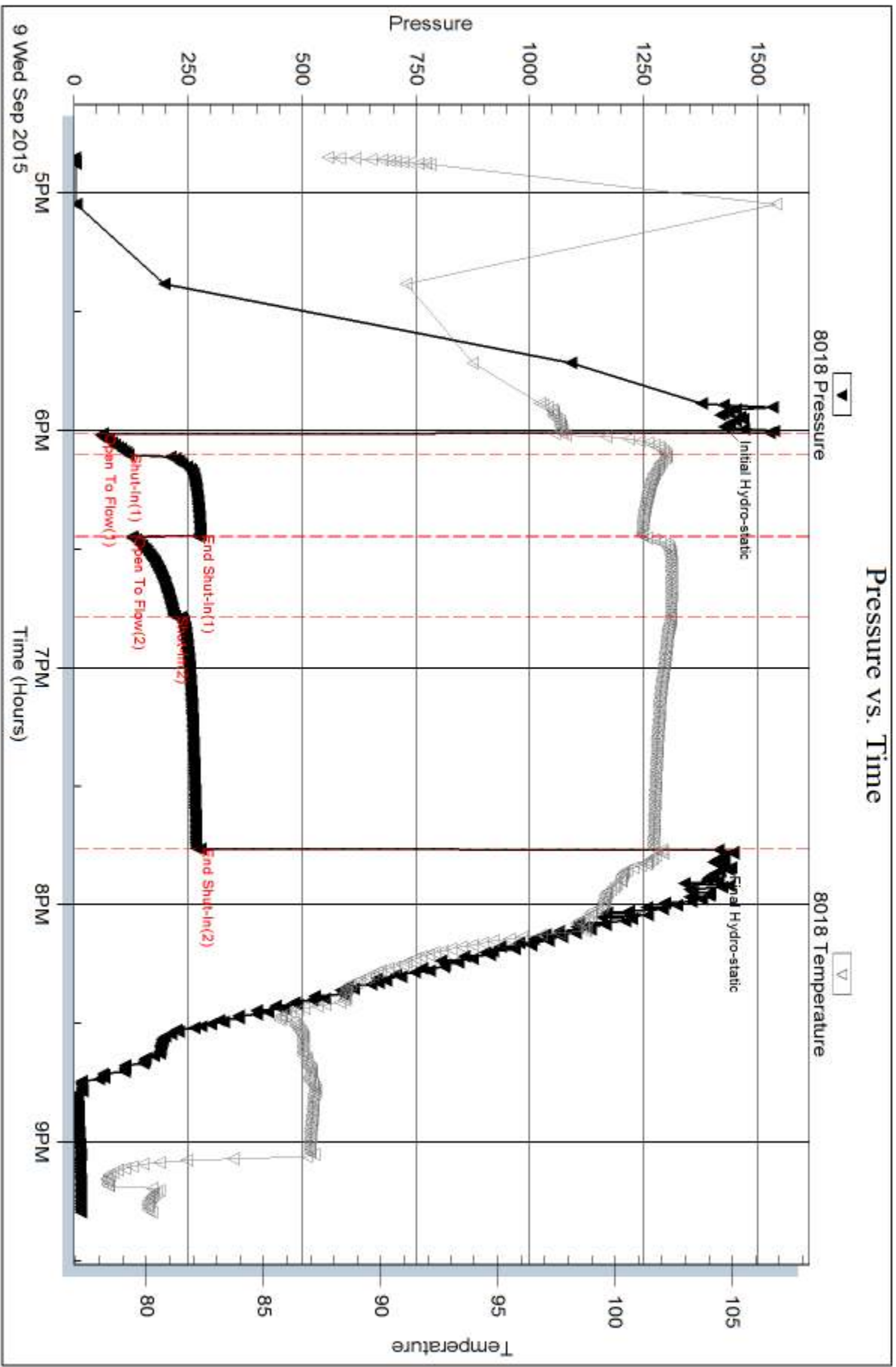
Num Gas Bombs: 0

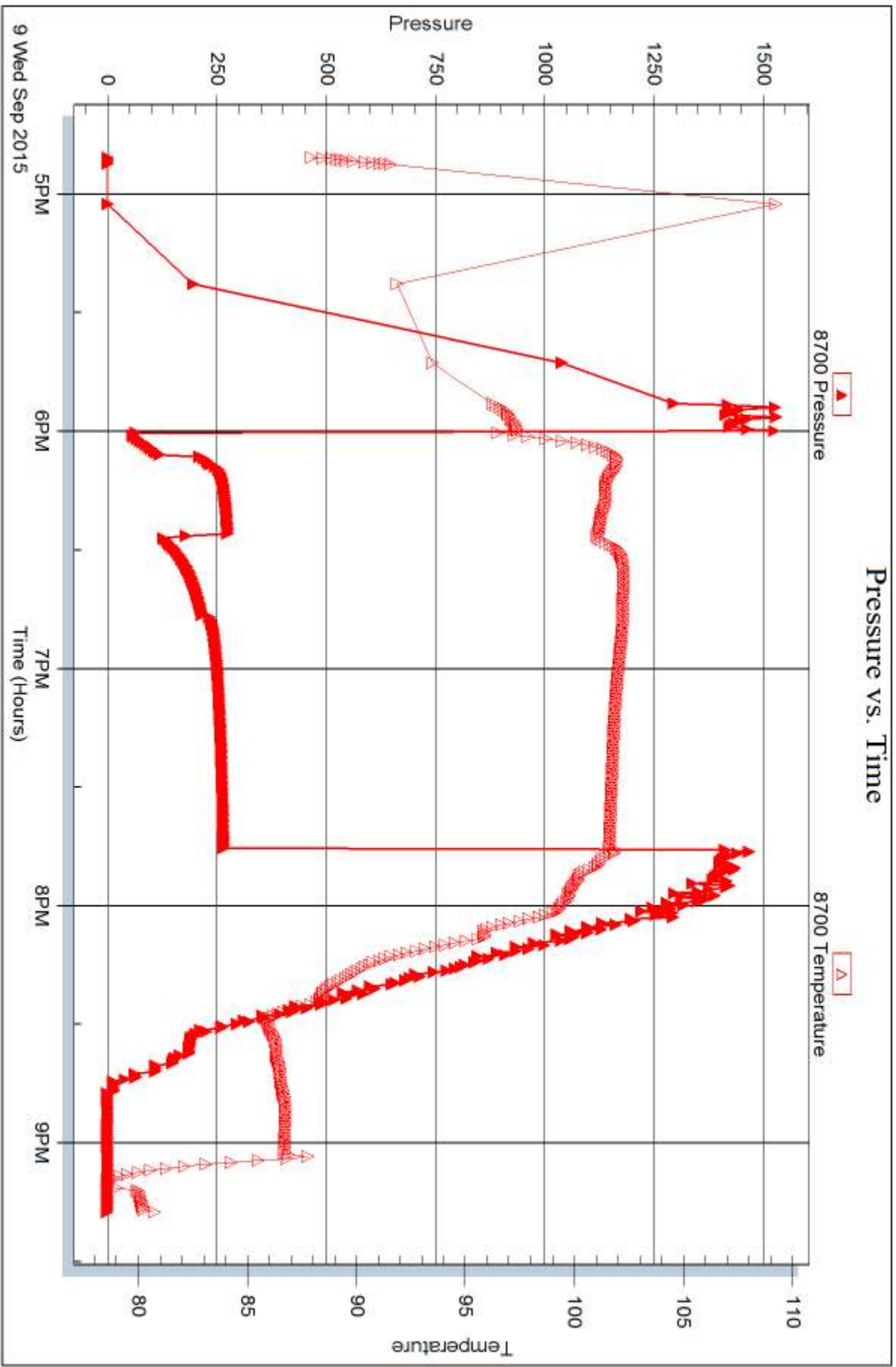
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .06 @ 80F







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 West State Road 4
Olmitz, KS 67564-8561

ATTN: Tom Larson, Tom Ferta

Taylor Trust #1-20

20-12s-14w Russell,KS

Start Date: 2015.09.10 @ 02:20:48

End Date: 2015.09.10 @ 06:21:58

Job Ticket #: 62665 DST #: 5

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2015.09.10 @ 13:44:12



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering Inc

20-12s-14w Russell,KS

562 West State Road 4
Olmitz, KS 67564-8561

Taylor Trust #1-20

Job Ticket: 62665

DST#: 5

ATTN: Tom Larson, Tom Ferta

Test Start: 2015.09.10 @ 02:20:48

GENERAL INFORMATION:

Formation: **LKC "J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:49:43

Time Test Ended: 06:21:58

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 70

Interval: 2964.00 ft (KB) To 2980.00 ft (KB) (TVD)

Reference Elevations: 1621.00 ft (KB)

Total Depth: 2980.00 ft (KB) (TVD)

1616.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8018

Inside

Press@RunDepth: 28.03 psig @ 2965.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.09.10

End Date:

2015.09.10

Last Calib.:

2015.09.10

Start Time:

02:20:48

End Time:

06:21:58

Time On Btm:

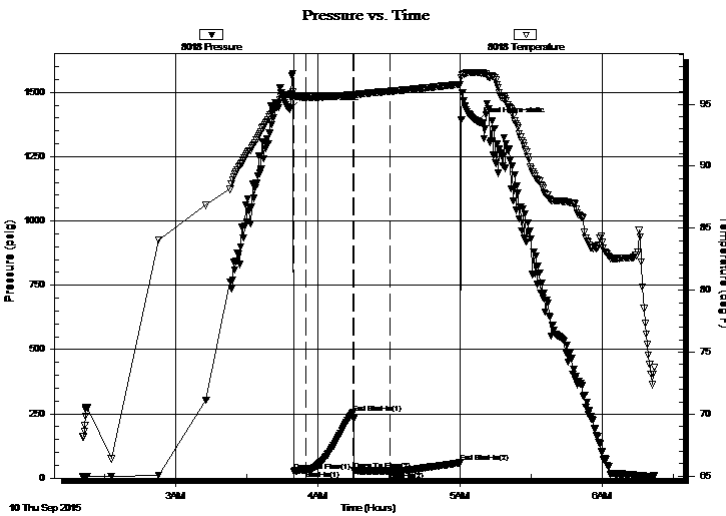
2015.09.10 @ 03:48:13

Time Off Btm:

2015.09.10 @ 05:07:13

TEST COMMENT: 5-IFP-w k bl thru-out 1/8" bl
20-ISIP-no bl
15-FFP-w k surface bl thru-out
30-FSIP-no bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1433.70	95.80	Initial Hydro-static
2	26.26	95.48	Open To Flow (1)
7	31.05	95.56	Shut-In(1)
27	253.99	95.76	End Shut-In(1)
27	30.33	95.68	Open To Flow (2)
43	28.03	96.04	Shut-In(2)
72	59.94	96.60	End Shut-In(2)
79	1386.60	97.55	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud	0.04

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering Inc

20-12s-14w Russell,KS

562 West State Road 4
Olmitz, KS 67564-8561

Taylor Trust #1-20

Job Ticket: 62665

DST#: 5

ATTN: Tom Larson, Tom Ferta

Test Start: 2015.09.10 @ 02:20:48

Tool Information

Drill Pipe:	Length: 2479.00 ft	Diameter: 3.80 inches	Volume: 34.77 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 466.00 ft	Diameter: 2.70 inches	Volume: 3.30 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: 60000.00 lb
			<u>Total Volume: 38.07 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	2964.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	16.00 ft			
Tool Length:	45.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			2936.00	
Shut In Tool	5.00			2941.00	
Hydraulic tool	5.00			2946.00	
Jars	5.00			2951.00	
Safety Joint	3.00			2954.00	
Packer	5.00			2959.00	29.00 Bottom Of Top Packer
Packer	5.00			2964.00	
Stubb	1.00			2965.00	
Recorder	0.00	8018	Inside	2965.00	
Recorder	0.00	8700	Outside	2965.00	
Perforations	12.00			2977.00	
Bullnose	3.00			2980.00	16.00 Bottom Packers & Anchor

Total Tool Length: 45.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc

20-12s-14w Russell, KS

562 West State Road 4
Olmitz, KS 67564-8561

Taylor Trust #1-20

Job Ticket: 62665

DST#: 5

ATTN: Tom Larson, Tom Ferta

Test Start: 2015.09.10 @ 02:20:48

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 63.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.17 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 7500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud	0.035

Total Length: 5.00 ft Total Volume: 0.035 bbl

Num Fluid Samples: 0

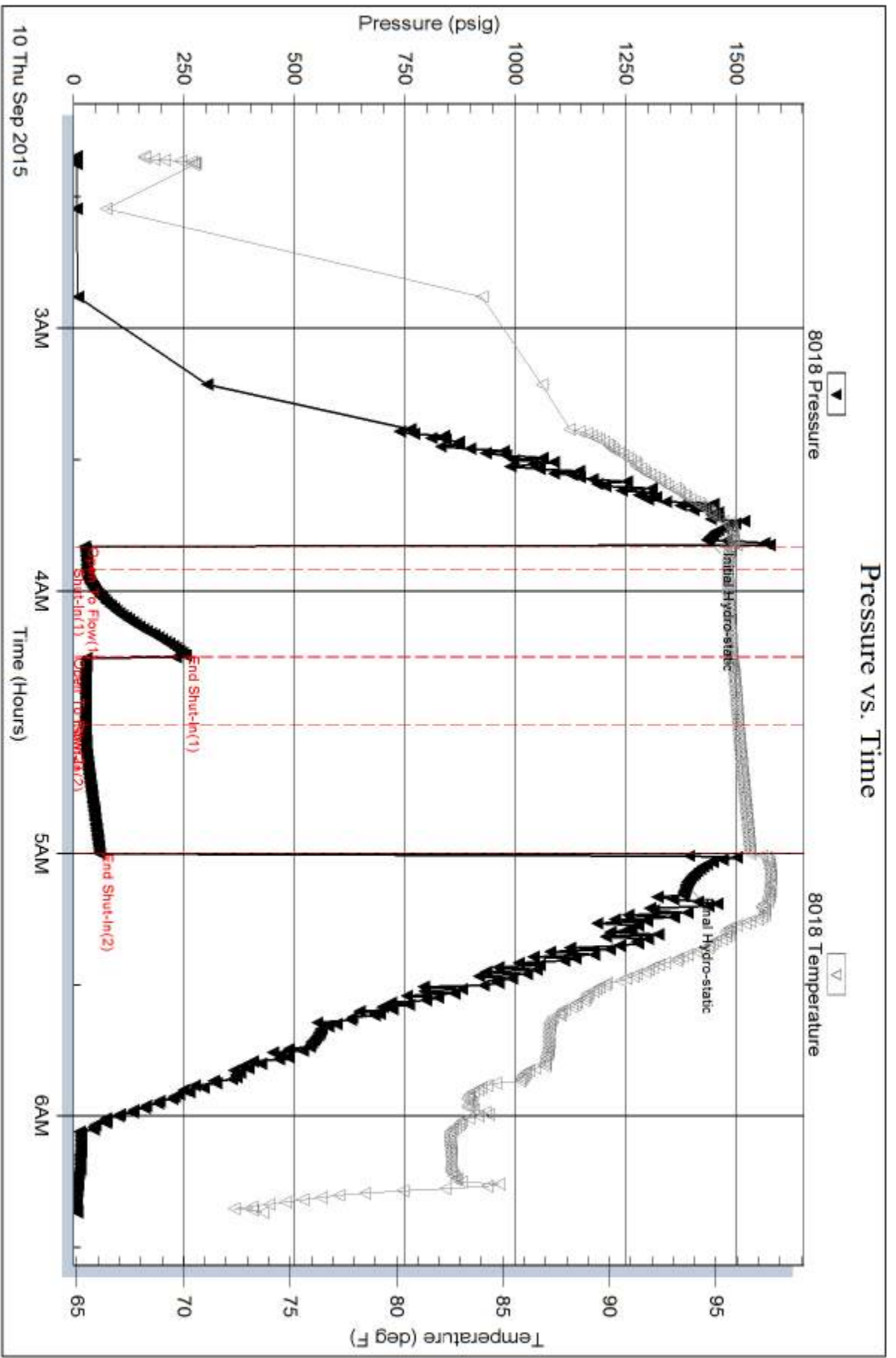
Num Gas Bombs: 0

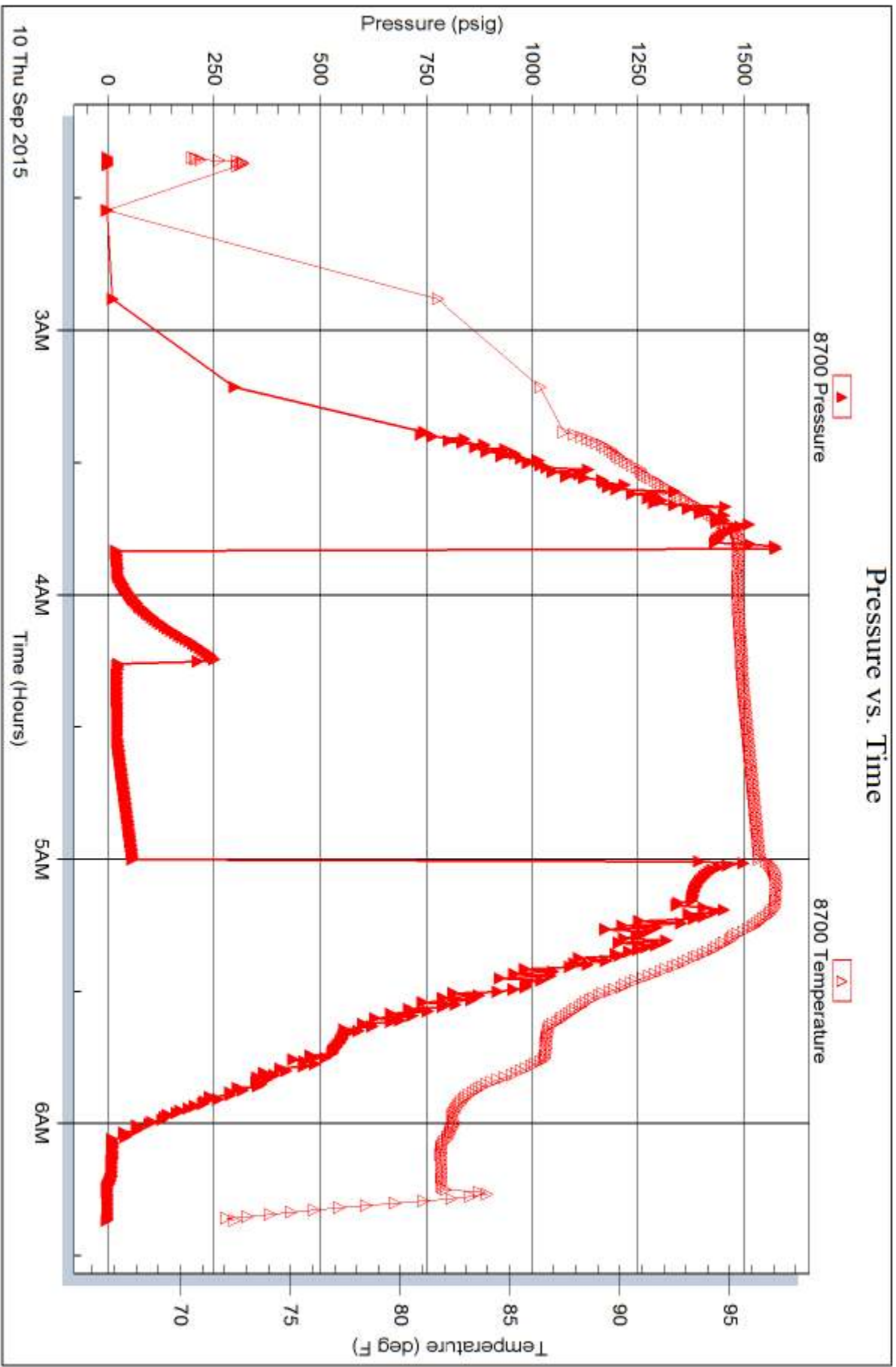
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62661

Well Name & No. Taylor Trust 1-20 Test No. 1 Date 9-8-15
 Company LARSON Engineering Inc Elevation 1621 KB 1616 GL
 Address 562 West State, Road 4 OLMITZ, Ks 67564-8561
 Co. Rep / Geo. Tom Feetal Rig Shields rig 1
 Location: Sec. 20 Twp. 12^s Rge. 14^w Co. Russell State Ks

Interval Tested 2780-2808 Zone Tested LKC A-B
 Anchor Length 28 Drill Pipe Run 2317 Mud Wt. 9.5
 Top Packer Depth 2775 Drill Collars Run — Vis 59
 Bottom Packer Depth 2780 Wt. Pipe Run 466 WL 7.8
 Total Depth 2808 Chlorides 5900 ppm System LCM 2 1/2#

Blow Description TFP - WEAK TO A FAIR BLOW 1/2" TO 4" BLOW
ISIP - NO BLOW
FFP - 5 STRONG BLOW IN 9 MIN, STARTED AT 4" BLOW
FSIP - NO BLOW

Rec	Feet of	%gas	%oil	%water	%mud
<u>260</u>	<u>GAS IN PIPE</u>				
<u>50</u>	<u>0+6 CM</u>	<u>20</u>	<u>10</u>		<u>69</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 50 BHT 100 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 1379 Test 1050 T-On Location 2415
 (B) First Initial Flow 26 Jars 250 T-Started 0445
 (C) First Final Flow 27 Safety Joint 75 T-Open 0600
 (D) Initial Shut-In 243 Circ Sub _____ T-Pulled 0740
 (E) Second Initial Flow 32 Hourly Standby _____ T-Out 0855
 (F) Second Final Flow 44 Mileage 75 RT Comments _____
 (G) Final Shut-In 267 Sampler _____
 (H) Final Hydrostatic 1359 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1450

Initial Open 5
 Initial Shut-In 20
 Final Flow 15
 Final Shut-In 60

MP/DST Disc't _____

Approved By _____ Our Representative RAY SCHWAGG *Thank you*

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62662

Well Name & No. Taylor Trust 1-20 Test No. 2 Date 9-8-15
 Company LARSON Engineering Inc Elevation 1621 KB 1616 GL
 Address 562 West State Road 4 OLMITZ, Ks 67564-8561
 Co. Rep / Geo. Tom FERTAL Rig Shields rig
 Location: Sec. 20 Twp. 12^s Rge. 14^w Co. Russell State K

Interval Tested 2817-2838 Zone Tested 1KC 0-E
 Anchor Length 21 Drill Pipe Run 2352 Mud Wt. 9.5
 Top Packer Depth 2812 Drill Collars Run - Vis 55
 Bottom Packer Depth 2817 Wt. Pipe Run 466 WL 7.8
 Total Depth 2838 Chlorides 5200 ppm System LCM 1#

Blow Description TFP - SURFACE Blow, died in 3 min
ISTIP - NO Blow
FFP - NO Blow
FSIP - NO Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>1</u>	<u>mud</u>				
	<u>w/show of oil</u>				

Rec Total 1 BHT 98 Gravity - API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 1388 Test 1050 T-On Location 1630
 (B) First Initial Flow 20 Jars 250 T-Started 1645
 (C) First Final Flow 20 Safety Joint 75 T-Open 1755
 (D) Initial Shut-In 79 Circ Sub _____ T-Pulled 1840
 (E) Second Initial Flow 21 Hourly Standby _____ T-Out 1948
 (F) Second Final Flow 22 Mileage 75 Comments _____
 (G) Final Shut-In 35 Sampler _____
 (H) Final Hydrostatic 1372 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1450

Initial Open 5 Ruined Shale Packer _____
 Initial Shut-In 20 Ruined Packer _____
 Final Flow 5 Extra Copies _____
 Final Shut-In 15 Sub Total 0
 Total 1450
 MP/DST Disc't _____

Approved By _____ Our Representative RAY SCHWAGG Thank you

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62663

Well Name & No. Taylor Trust 1-20 Test No. 3 Date 9-9-15
 Company LARSON ENGINEERING INC Elevation 1620 KB 1616 GL
 Address 562 WEST STATE, ROAD 4 OLMITZ, Ks 67564-8561
 Co. Rep / Geo. Tom FERTAL Rig Shields rig 1
 Location: Sec. 20 Twp. 12^s Rge. 14^w Co. Russell State Ks

Interval Tested 2870-2876 Zone Tested LKC "G"
 Anchor Length 6 Drill Pipe Run 2383 Mud Wt. 9.4
 Top Packer Depth 2865 Drill Collars Run — Vis 54
 Bottom Packer Depth 2870 Wt. Pipe Run 466 WL 7.8
 Total Depth 2876 Chlorides 5400 ppm System LCM 1#

Blow Description IFP - WEAK Blow thru-out 1/4" to 1 1/4" Blow
ISIP - NO Blow
FFP - NO Blow 1st 3min, then surface to 1/4" Blow
FSIP - NO Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>65</u>	<u>WM</u>			<u>25</u>	<u>75</u>
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 98 Gravity — API RW .17 @ 82 ° F Chlorides 4200 ppm

(A) Initial Hydrostatic 1456 Test 1050 T-On Location 0330
 (B) First Initial Flow 33 Jars 250 T-Started 0355
 (C) First Final Flow 37 Safety Joint 75 T-Open 0505
 (D) Initial Shut-In 347 Circ Sub T-Pulled 0725
 (E) Second Initial Flow 40 Hourly Standby T-Out 0851
 (F) Second Final Flow 67 Mileage 75 Comments _____
 (G) Final Shut-In 320 Sampler _____
 (H) Final Hydrostatic 1361 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 5
 Initial Shut-In 4.5
 Final Flow 30
 Final Shut-In 60

Sub Total 1450

Sub Total 0
 Total 1450
 MP/DST Disc't _____

Approved By _____ Our Representative RAY SCHWAGG *Thank you*

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62664

Well Name & No. Taylor Trust 1-20 Test No. 4 Date 9-9-15
 Company Larson Engineering, Inc Elevation 1621 KB 1616 GL
 Address 562 West State Road 4 OLMITE, Ks 67564-8561
 Co. Rep / Geo. Tom FERTAL, Jim Hedrick Rig Shields rig
 Location: Sec. 20 Twp. 12^s Rge. 14^w Co. Russell State Ks

Interval Tested 2932-2961 Zone Tested LKC "I"
 Anchor Length 29 Drill Pipe Run 2447 Mud Wt. 9.5
 Top Packer Depth 2927 Drill Collars Run - Vis 45
 Bottom Packer Depth 2932 Wt. Pipe Run 466 WL 9.2
 Total Depth 2961 Chlorides 7500 ppm System LCM 1#
 Blow Description TFP - STRONG BLOW IN 3min
ISIP - NO BLOW
FFP - WEAK TO STRONG IN 7min
FSIP - NO BLOW

Rec	Feet of	%gas	%oil	%water	%mud
<u>248</u>	<u>WATER</u>				
<u>124</u>	<u>MW</u>			<u>60</u>	<u>40</u>
<u>45</u>	<u>MW w/show of oil</u>			<u>75</u>	<u>25</u>
<u>75</u>	<u>GAS IN PIPE</u>				

Rec Total 417 BHT 101 Gravity - API RW .06 @ 80 ° F Chlorides 118000 ppm

(A) Initial Hydrostatic 1426 Test 1050 T-On Location 1630
 (B) First Initial Flow 62 Jars 250 T-Started 1650
 (C) First Final Flow 118 Safety Joint 75 T-Open 1800
 (D) Initial Shut-In 277 Circ Sub _____ T-Pulled 1945
 (E) Second Initial Flow 127 Hourly Standby _____ T-Out 2117
 (F) Second Final Flow 220 Mileage 75 Comments _____
 (G) Final Shut-In 276 Sampler _____
 (H) Final Hydrostatic 1402 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 5 Extra Recorder _____ Sub Total 0
 Initial Shut-In 20 Day Standby _____ Total 1450
 Final Flow 20 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 60 Sub Total 1450

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



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62665

Well Name & No. Taylor trust 1-20 Test No. 5 Date 9-10-15
 Company LARSON Engineering Inc Elevation 1621 KB 1616 GL
 Address 562 West STATE Road 4 OLMITZ, Ks 67564-8561
 Co. Rep / Geo. Tom FETAL, Jim Hedrick Rig Shields rig
 Location: Sec. 20 Twp. 12^s Rge. 14^w Co. Russell State Ks

Interval Tested 2964-2980 Zone Tested LKC "J"
 Anchor Length 16 Drill Pipe Run 2479 Mud Wt. 9.4
 Top Packer Depth 2959 Drill Collars Run - Vis 63
 Bottom Packer Depth 2964 Wt. Pipe Run 466 WL 9.2
 Total Depth 2980 Chlorides 7500 ppm System LCM 1#
 Blow Description IFP - WEAK Blow thru-out 1/8" Blow
TSIP - NO BLOW
FFP - WEAK SURFACE Blow thru-out
FSIP - NO BLOW

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

Rec Total 5 BHT 96 Gravity - API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic <u>1433</u>	<input checked="" type="checkbox"/> Test 1050	T-On Location <u>0200</u>
(B) First Initial Flow <u>26</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>0220</u>
(C) First Final Flow <u>31</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>0350</u>
(D) Initial Shut-In <u>253</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>0500</u>
(E) Second Initial Flow <u>30</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>0621</u>
(F) Second Final Flow <u>28</u>	<input checked="" type="checkbox"/> Mileage 75	Comments
(G) Final Shut-In <u>59</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1386</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Open <u>5</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>20</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Flow <u>15</u>	<input type="checkbox"/> Day Standby	Total <u>1450</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1450</u>	

Approved By _____ Our Representative RAY SCHWAGG *Thank you*

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