



## DRILL STEM TEST REPORT

Prepared For: **Cobalt Energy LLC**

PO Box 8037  
Wichita KS 67208

ATTN: Larry Nicholson

**Kaus "A" #1-19**

**19-6s-25w Graham,KS**

Start Date: 2017.03.11 @ 04:05:44

End Date: 2017.03.11 @ 12:20:08

Job Ticket #: 64098                      DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2017.03.13 @ 16:42:23



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Cobalt Energy LLC

**19-6s-25w Graham,KS**

PO Box 8037  
Wichita KS 67208

**Kaus "A" #1-19**

Job Ticket: 64098

**DST#: 1**

ATTN: Larry Nicholson

Test Start: 2017.03.11 @ 04:05:44

## GENERAL INFORMATION:

Formation: **LKC B-C**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:28:09

Time Test Ended: 12:20:08

Test Type: Conventional Bottom Hole (Initial)

Tester: Ray Schwager

Unit No: 77

**Interval: 3695.00 ft (KB) To 3732.00 ft (KB) (TVD)**

Reference Elevations: 2596.00 ft (KB)

Total Depth: 3732.00 ft (KB) (TVD)

2591.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8360**

**Inside**

Press@RunDepth: 186.63 psig @ 3701.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.03.11

End Date:

2017.03.11

Last Calib.:

2017.03.11

Start Time: 04:05:44

End Time:

12:20:08

Time On Btm:

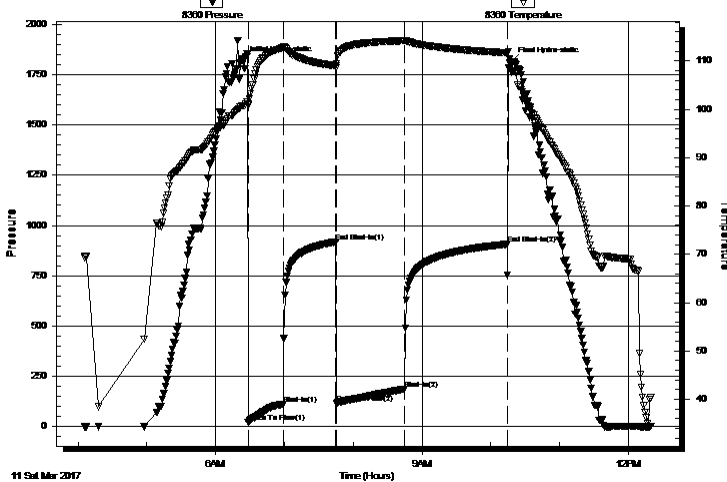
2017.03.11 @ 06:24:09

Time Off Btm:

2017.03.11 @ 10:17:38

**TEST COMMENT:** 30-IFP-w k to a gd bl 1/2" to 9" bl  
45-ISIP-no bl bk  
60-FFP-w k to a gd bl surface to 7" bl  
90-FSIP-no bl bk

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1820.62	100.76	Initial Hydro-static
4	23.03	100.83	Open To Flow (1)
35	112.20	112.73	Shut-In(1)
81	918.77	108.99	End Shut-In(1)
81	117.39	108.63	Open To Flow (2)
141	186.63	114.16	Shut-In(2)
230	906.91	111.66	End Shut-In(2)
234	1814.84	109.40	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
186.00	Water	0.97
180.00	MW 20%M80%W w/show of oil	2.52
1.00	CO	0.01

Gas Rates

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



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# DRILL STEM TEST REPORT

Cobalt Energy LLC

19-6s-25w Graham,KS

PO Box 8037  
Wichita KS 67208

**Kaus "A" #1-19**

Job Ticket: 64098 **DST#: 1**

ATTN: Larry Nicholson

Test Start: 2017.03.11 @ 04:05:44

## GENERAL INFORMATION:

Formation: **LKC B-C**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:28:09

Time Test Ended: 12:20:08

Test Type: Conventional Bottom Hole (Initial)

Tester: Ray Schwager

Unit No: 77

**Interval: 3695.00 ft (KB) To 3732.00 ft (KB) (TVD)**

Reference Elevations: 2596.00 ft (KB)

Total Depth: 3732.00 ft (KB) (TVD)

2591.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 6751 Outside**

Press@RunDepth: psig @ 3701.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.03.11

End Date:

2017.03.11

Last Calib.:

2017.03.11

Start Time: 04:05:46

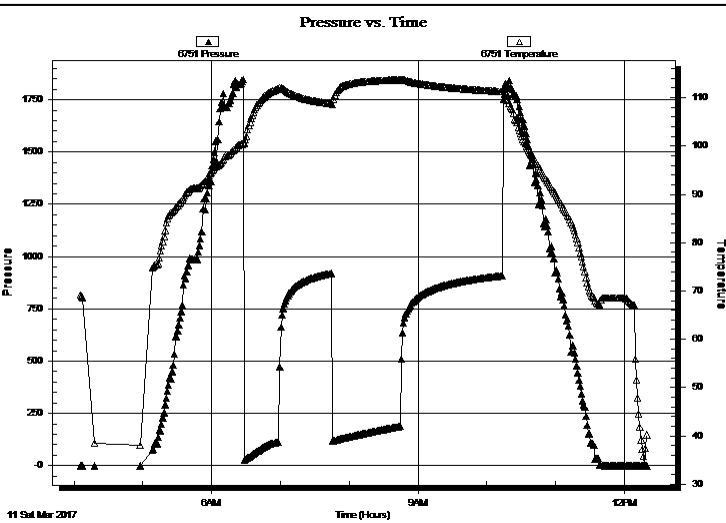
End Time:

12:20:10

Time On Btm:

Time Off Btm:

**TEST COMMENT:** 30-IFP-w k to a gd bl 1/2" to 9" bl  
45-ISIP-no bl bk  
60-FFP-w k to a gd bl surface to 7" bl  
90-FSIP-no bl bk



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
186.00	Water	0.97
180.00	MW 20%M80%W w/show of oil	2.52
1.00	CO	0.01

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Cobalt Energy LLC

**19-6s-25w Graham,KS**

PO Box 8037  
Wichita KS 67208

**Kaus "A" #1-19**

Job Ticket: 64098

**DST#: 1**

ATTN: Larry Nicholson

Test Start: 2017.03.11 @ 04:05:44

## Tool Information

Drill Pipe:	Length: 3491.00 ft	Diameter: 3.80 inches	Volume: 48.97 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 180.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 49.86 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	3695.00 ft			Final 53000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	37.00 ft			
Tool Length:	66.00 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			3667.00	
Shut In Tool	5.00			3672.00	
Hydraulic tool	5.00			3677.00	
Jars	5.00			3682.00	
Safety Joint	3.00			3685.00	
Packer	5.00			3690.00	29.00 Bottom Of Top Packer
Packer	5.00			3695.00	
Stubb	1.00			3696.00	
Perforations	5.00			3701.00	
Recorder	0.00	8360	Inside	3701.00	
Recorder	0.00	6751	Outside	3701.00	
Perforations	28.00			3729.00	
Bullnose	3.00			3732.00	37.00 Bottom Packers & Anchor

**Total Tool Length: 66.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Cobalt Energy LLC

**19-6s-25w Graham,KS**

PO Box 8037  
Wichita KS 67208

**Kaus "A" #1-19**

Job Ticket: 64098

**DST#: 1**

ATTN: Larry Nicholson

Test Start: 2017.03.11 @ 04:05:44

## 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:

63000 ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.74 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 900.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
186.00	Water	0.969
180.00	MW 20%M80%W w/show of oil	2.525
1.00	CO	0.014

Total Length: 367.00 ft      Total Volume: 3.508 bbl

Num Fluid Samples: 0

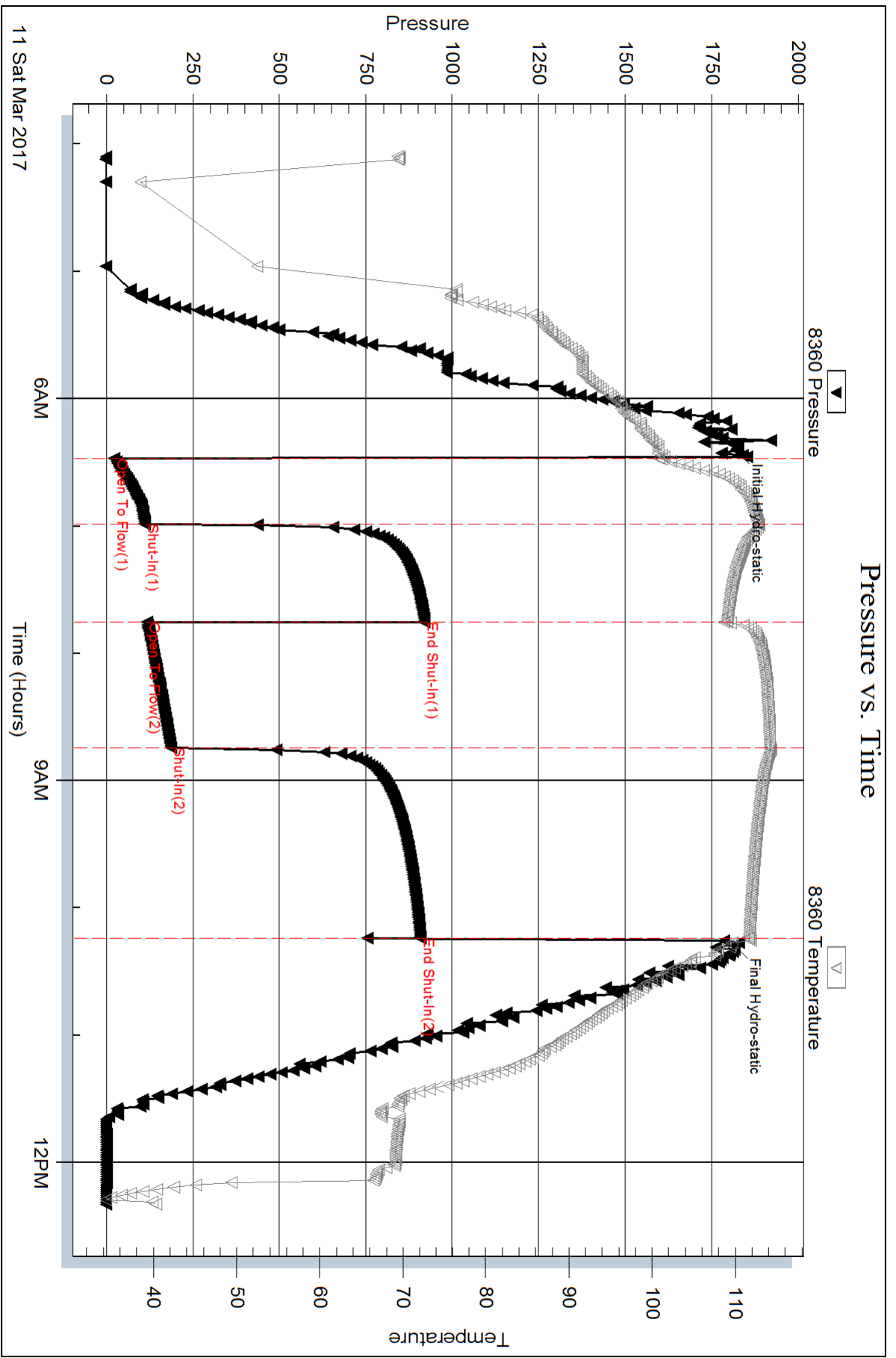
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .13@65F







## DRILL STEM TEST REPORT

Prepared For: **Cobalt Energy LLC**

PO Box 8037  
Wichita KS 67208

ATTN: Larry Nicholson

### **Kaus "A" #1-19**

#### **19-6s-25w Graham,KS**

Start Date: 2017.03.11 @ 19:41:03

End Date: 2017.03.12 @ 05:08:12

Job Ticket #: 64099                      DST #: 2

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

Printed: 2017.03.13 @ 16:41:51





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Cobalt Energy LLC

**19-6s-25w Graham,KS**

PO Box 8037  
Wichita KS 67208

**Kaus "A" #1-19**

Job Ticket: 64099

**DST#: 2**

ATTN: Larry Nicholson

Test Start: 2017.03.11 @ 19:41:03

## GENERAL INFORMATION:

Formation: **LKC E-G**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:51:58

Time Test Ended: 05:08:12

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 77

**Interval: 3731.00 ft (KB) To 3762.00 ft (KB) (TVD)**

Reference Elevations: 2596.00 ft (KB)

Total Depth: 3762.00 ft (KB) (TVD)

2591.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8360**

**Inside**

Press@RunDepth: 148.44 psig @ 3736.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.03.11

End Date:

2017.03.12

Last Calib.:

2017.03.12

Start Time:

19:41:03

End Time:

04:08:12

Time On Btm:

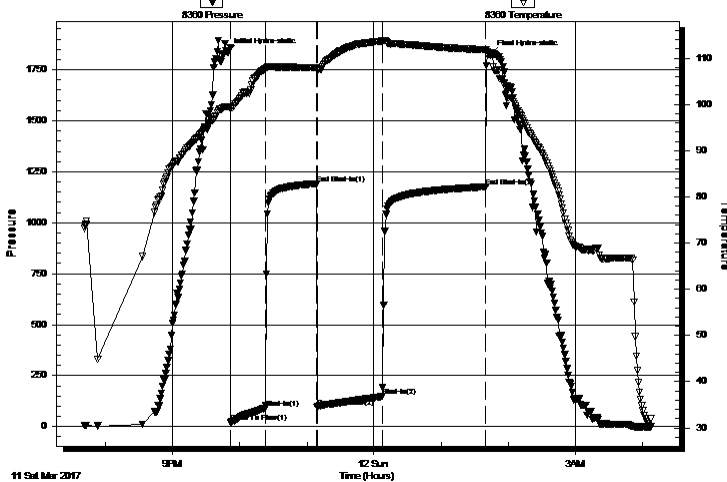
2017.03.11 @ 21:49:13

Time Off Btm:

2017.03.12 @ 01:44:27

**TEST COMMENT:** 30-IFP-w k to a fr bl 1/2" to 6" bl  
45-ISIP-no bl bk  
60-FFP-w k to a fr bl 1/4" to 5" bl  
90-FSIP-no bl bk

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1836.41	99.49	Initial Hydro-static
3	20.98	99.03	Open To Flow (1)
34	89.89	107.71	Shut-In(1)
80	1191.48	107.92	End Shut-In(1)
80	94.32	107.29	Open To Flow (2)
139	148.44	113.68	Shut-In(2)
231	1176.08	111.84	End Shut-In(2)
236	1822.42	111.17	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
186.00	Water	0.97
90.00	SOCMW 5%O25%M70%W	1.26
20.00	CO	0.28
0.00	70' GIP	0.00

Gas Rates

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

\* Recovery from multiple tests



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# DRILL STEM TEST REPORT

Cobalt Energy LLC

**19-6s-25w Graham,KS**

PO Box 8037  
Wichita KS 67208

**Kaus "A" #1-19**

Job Ticket: 64099

**DST#: 2**

ATTN: Larry Nicholson

Test Start: 2017.03.11 @ 19:41:03

## GENERAL INFORMATION:

Formation: **LKC E-G**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:51:58

Time Test Ended: 05:08:12

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 77

**Interval: 3731.00 ft (KB) To 3762.00 ft (KB) (TVD)**

Reference Elevations: 2596.00 ft (KB)

Total Depth: 3762.00 ft (KB) (TVD)

2591.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 6751 Outside**

Press@RunDepth: psig @ 3736.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.03.11

End Date:

2017.03.12

Last Calib.:

2017.03.12

Start Time: 19:40:41

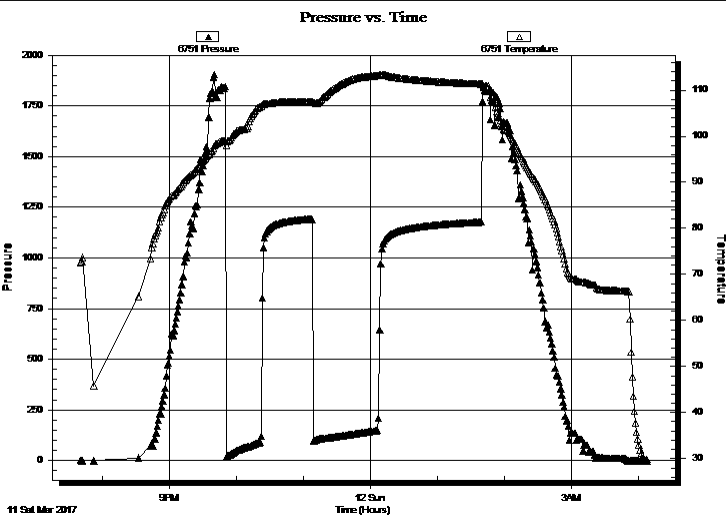
End Time:

04:07:50

Time On Btm:

Time Off Btm:

**TEST COMMENT:** 30-IFP-w k to a fr bl 1/2" to 6" bl  
45-ISIP-no bl bk  
60-FFP-w k to a fr bl 1/4" to 5" bl  
90-FSIP-no bl bk



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
186.00	Water	0.97
90.00	SOCMW 5%O25%M70%W	1.26
20.00	CO	0.28
0.00	70' 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**

Cobalt Energy LLC

**19-6s-25w Graham,KS**

PO Box 8037  
Wichita KS 67208

**Kaus "A" #1-19**

Job Ticket: 64099

**DST#: 2**

ATTN: Larry Nicholson

Test Start: 2017.03.11 @ 19:41:03

## Tool Information

Drill Pipe:	Length: 3552.00 ft	Diameter: 3.80 inches	Volume: 49.83 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 180.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 50.72 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 51000.00 lb
Depth to Top Packer:	3731.00 ft			Final 52000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	31.00 ft			
Tool Length:	60.00 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			3703.00	
Shut In Tool	5.00			3708.00	
Hydraulic tool	5.00			3713.00	
Jars	5.00			3718.00	
Safety Joint	3.00			3721.00	
Packer	5.00			3726.00	29.00 Bottom Of Top Packer
Packer	5.00			3731.00	
Stubb	1.00			3732.00	
Perforations	4.00			3736.00	
Recorder	0.00	8360	Inside	3736.00	
Recorder	0.00	6751	Outside	3736.00	
Perforations	23.00			3759.00	
Bullnose	3.00			3762.00	31.00 Bottom Packers & Anchor

**Total Tool Length: 60.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Cobalt Energy LLC

**19-6s-25w Graham,KS**

PO Box 8037  
Wichita KS 67208

**Kaus "A" #1-19**

Job Ticket: 64099

**DST#: 2**

ATTN: Larry Nicholson

Test Start: 2017.03.11 @ 19:41:03

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

29 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

42000 ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.75 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
186.00	Water	0.969
90.00	SOCMW 5%O25%M70%W	1.262
20.00	CO	0.281
0.00	70' GIP	0.000

Total Length: 296.00 ft

Total Volume: 2.512 bbl

Num Fluid Samples: 0

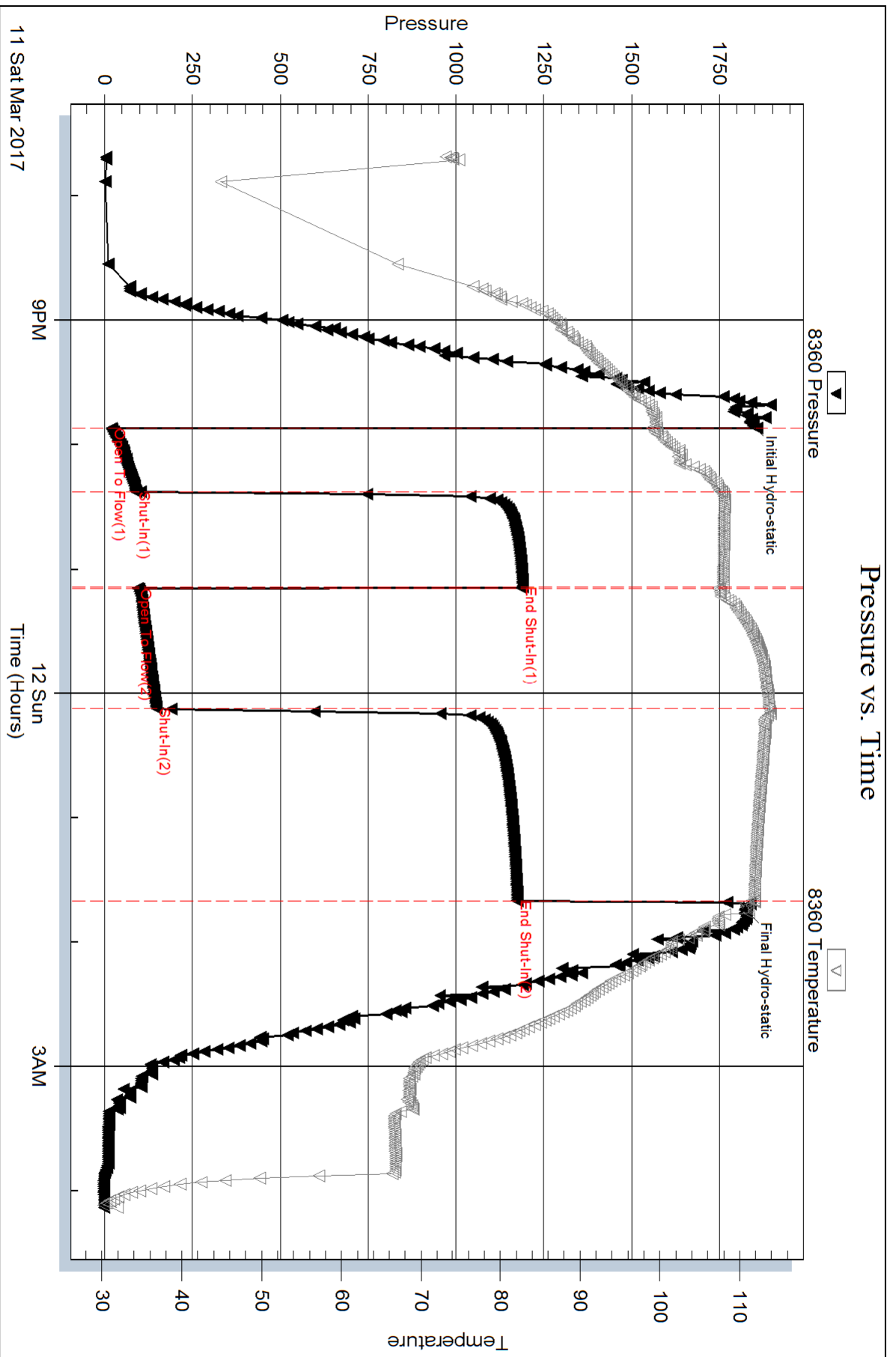
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .21@60F

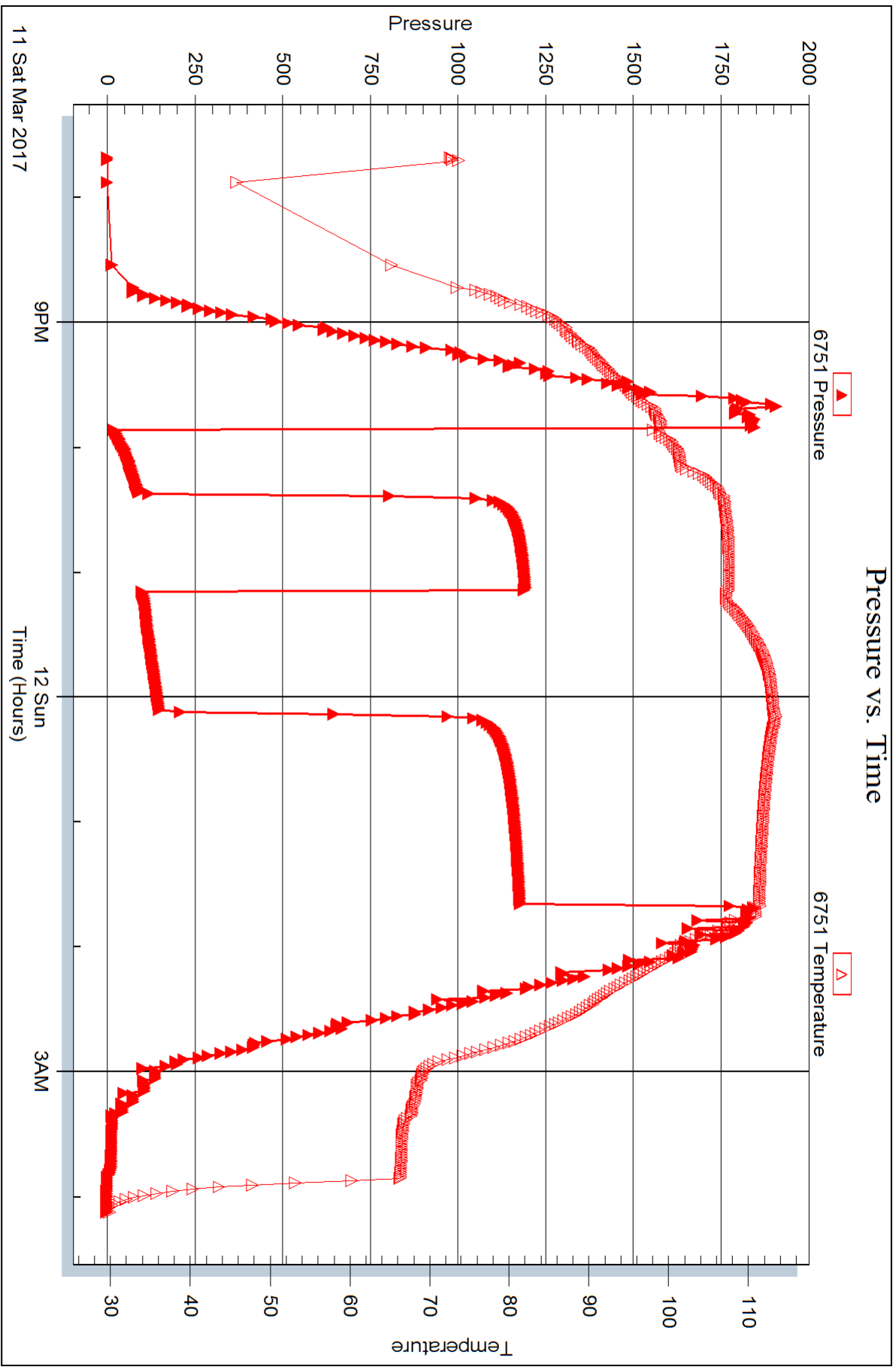


Serial #: 6751

Outside Cobalt Energy LLC

Kaus "A" #1-19

DST Test Number: 2





## DRILL STEM TEST REPORT

Prepared For: **Cobalt Energy LLC**

PO Box 8037  
Wichita KS 67208

ATTN: Larry Nicholson

### **Kaus "A" #1-19**

#### **19-6s-25w Graham,KS**

Start Date: 2017.03.12 @ 14:35:38

End Date: 2017.03.12 @ 22:32:32

Job Ticket #: 64100                      DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2017.03.13 @ 16:41:20



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Cobalt Energy LLC

**19-6s-25w Graham,KS**

PO Box 8037  
Wichita KS 67208

**Kaus "A" #1-19**

Job Ticket: 64100

**DST#: 3**

ATTN: Larry Nicholson

Test Start: 2017.03.12 @ 14:35:38

## GENERAL INFORMATION:

Formation: **LKC H-J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:39:33

Time Test Ended: 22:32:32

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 77

**Interval: 3779.00 ft (KB) To 3834.00 ft (KB) (TVD)**

Reference Elevations: 2596.00 ft (KB)

Total Depth: 3834.00 ft (KB) (TVD)

2591.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8360**

**Inside**

Press@RunDepth: 245.45 psig @ 3783.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.03.12

End Date:

2017.03.12

Last Calib.:

2017.03.12

Start Time: 14:35:38

End Time:

22:32:32

Time On Btm:

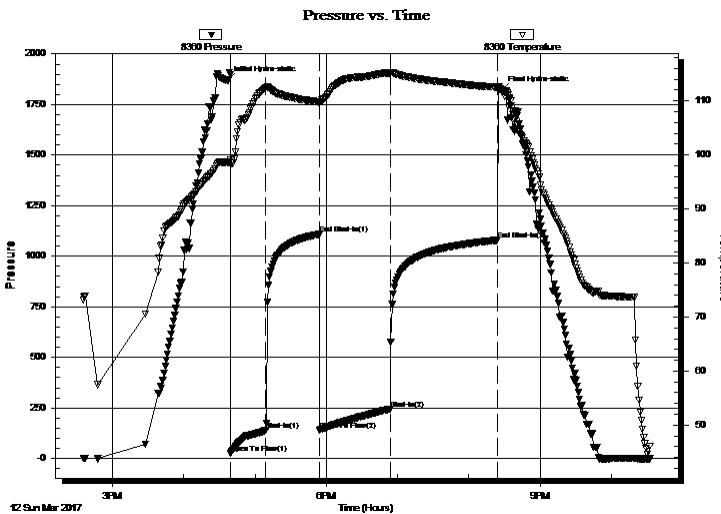
2017.03.12 @ 16:36:33

Time Off Btm:

2017.03.12 @ 20:27:47

**TEST COMMENT:** 30-IFP-w k to BOB in 25 min  
45-ISIP-no bl  
60-FFP-w k to BOB in 50 min  
90-FSIP-no bl

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1870.02	98.62	Initial Hydro-static
3	25.70	98.44	Open To Flow (1)
33	138.06	112.45	Shut-In(1)
78	1108.17	109.81	End Shut-In(1)
78	140.79	109.47	Open To Flow (2)
138	245.45	115.16	Shut-In(2)
228	1079.31	112.52	End Shut-In(2)
232	1816.64	112.07	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
360.00	Water	3.41
60.00	SOCMW 1%O14%M85%W	0.84
50.00	OCMW6%O19%M75%W	0.70
0.00	70' GIP	0.00

\* Recovery from multiple tests

## Gas Rates

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







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Cobalt Energy LLC

**19-6s-25w Graham,KS**

PO Box 8037  
Wichita KS 67208

**Kaus "A" #1-19**

Job Ticket: 64100

**DST#: 3**

ATTN: Larry Nicholson

Test Start: 2017.03.12 @ 14:35:38

## Tool Information

Drill Pipe:	Length: 3585.00 ft	Diameter: 3.80 inches	Volume: 50.29 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 180.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 51.18 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 51000.00 lb
Depth to Top Packer:	3779.00 ft			Final 53000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	55.00 ft			
Tool Length:	84.00 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			3751.00	
Shut In Tool	5.00			3756.00	
Hydraulic tool	5.00			3761.00	
Jars	5.00			3766.00	
Safety Joint	3.00			3769.00	
Packer	5.00			3774.00	29.00 Bottom Of Top Packer
Packer	5.00			3779.00	
Stubb	1.00			3780.00	
Perforations	3.00			3783.00	
Recorder	0.00	8360	Inside	3783.00	
Recorder	0.00	6751	Outside	3783.00	
Blank Spacing	33.00			3816.00	
Perforations	15.00			3831.00	
Bullnose	3.00			3834.00	55.00 Bottom Packers & Anchor

**Total Tool Length: 84.00**



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# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Cobalt Energy LLC

**19-6s-25w Graham,KS**

PO Box 8037  
Wichita KS 67208

**Kaus "A" #1-19**

Job Ticket: 64100

**DST#: 3**

ATTN: Larry Nicholson

Test Start: 2017.03.12 @ 14:35:38

## 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:

53000 ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2100.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
360.00	Water	3.410
60.00	SOCMW 1%O14%M85%W	0.842
50.00	OCMW6%O19%M75%W	0.701
0.00	70' GIP	0.000

Total Length: 470.00 ft      Total Volume: 4.953 bbl

Num Fluid Samples: 0

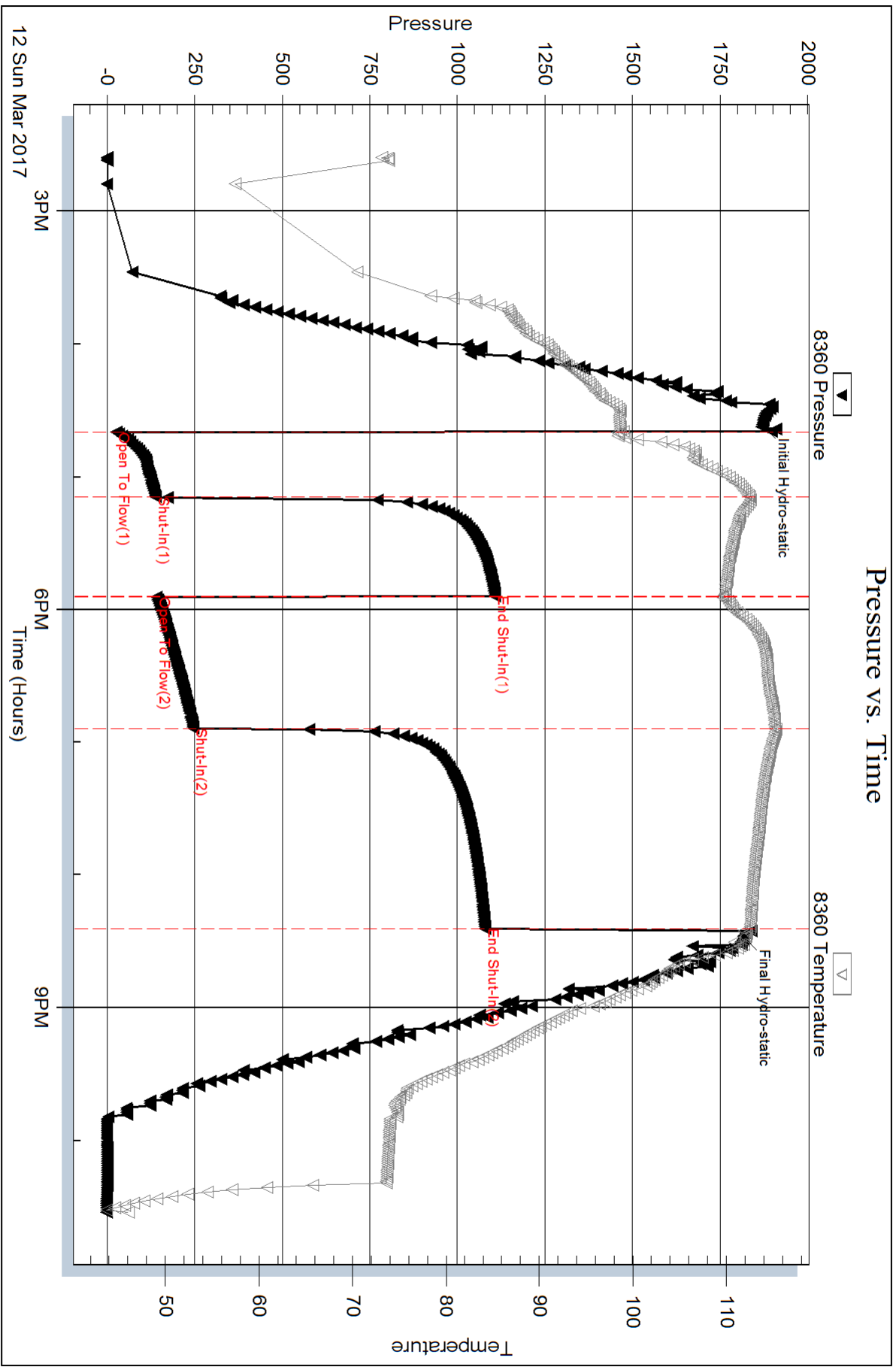
Num Gas Bombs: 0

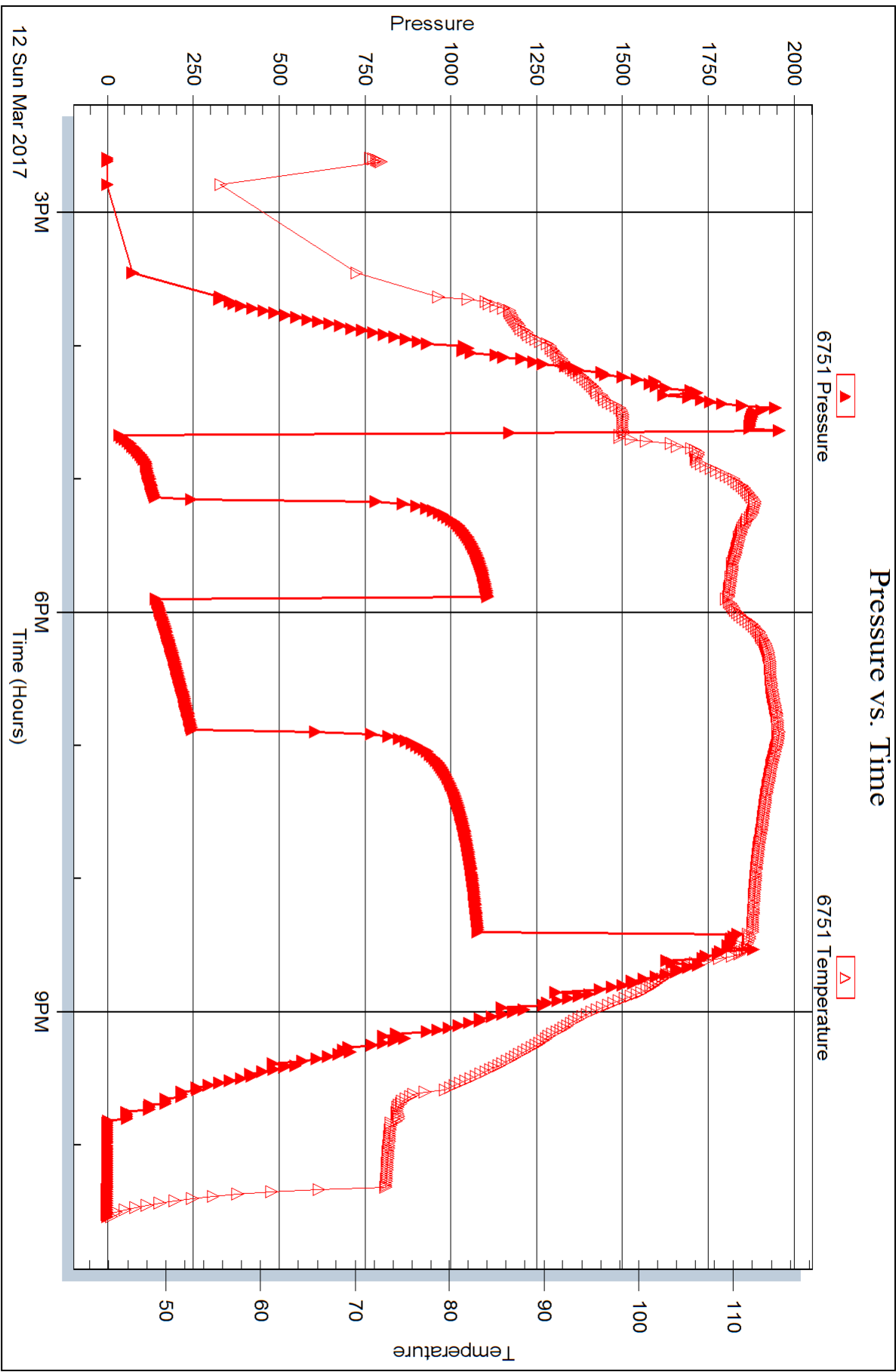
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .16@60F





12 Sun Mar 2017



## DRILL STEM TEST REPORT

Prepared For: **Cobalt Energy LLC**

PO Box 8037  
Wichita KS 67208

ATTN: Larry Nicholson

**Kaus "A" #1-19**

**19-6s-25w Graham,KS**

Start Date: 2017.03.13 @ 06:05:44

End Date: 2017.03.13 @ 12:11:38

Job Ticket #: 64127                      DST #: 4

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

Printed: 2017.03.13 @ 16:40:38



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Cobalt Energy LLC

**19-6s-25w Graham,KS**

PO Box 8037  
Wichita KS 67208

**Kaus "A" #1-19**

Job Ticket: 64127

**DST#: 4**

ATTN: Larry Nicholson

Test Start: 2017.03.13 @ 06:05:44

## GENERAL INFORMATION:

Formation: **LKC "K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:15:54

Time Test Ended: 12:11:38

Test Type: Conventional Bottom Hole (Initial)

Tester: Ray Schwager

Unit No: 77

**Interval: 3831.00 ft (KB) To 3850.00 ft (KB) (TVD)**

Reference Elevations: 2596.00 ft (KB)

Total Depth: 3850.00 ft (KB) (TVD)

2591.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8360**

**Inside**

Press@RunDepth: 16.39 psig @ 3832.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.03.13

End Date:

2017.03.13

Last Calib.: 2017.03.13

Start Time: 06:05:44

End Time:

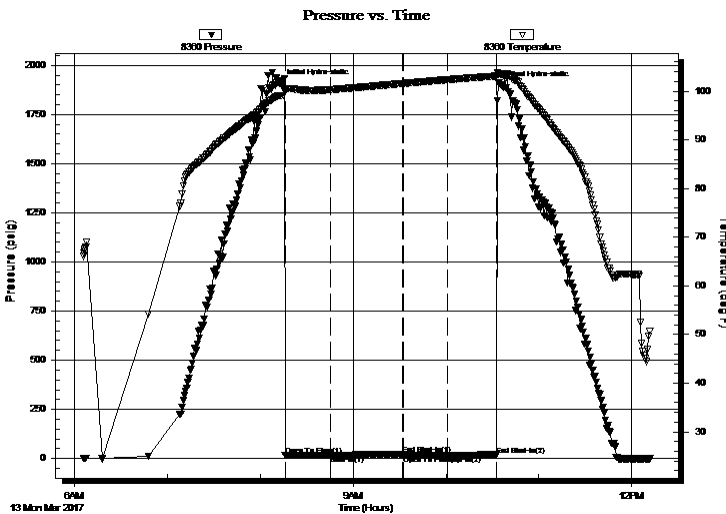
12:11:38

Time On Btm: 2017.03.13 @ 08:12:54

Time Off Btm: 2017.03.13 @ 10:35:53

TEST COMMENT: 30-IFP w k bl thru-out 1/4" to surface bl  
45-ISIP-no bl  
30-FFP-no bl  
30-FSIP-no bl

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1906.62	99.10	Initial Hydro-static
3	16.25	100.03	Open To Flow (1)
33	16.98	100.34	Shut-In(1)
79	23.03	101.59	End Shut-In(1)
80	16.66	101.60	Open To Flow (2)
109	16.39	102.39	Shut-In(2)
140	19.21	103.15	End Shut-In(2)
143	1894.43	103.40	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
1.00	Mud	0.00

## Gas Rates

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







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Cobalt Energy LLC

**19-6s-25w Graham,KS**

PO Box 8037  
Wichita KS 67208

**Kaus "A" #1-19**

Job Ticket: 64127

**DST#: 4**

ATTN: Larry Nicholson

Test Start: 2017.03.13 @ 06:05:44

## Tool Information

Drill Pipe:	Length: 3648.00 ft	Diameter: 3.80 inches	Volume: 51.17 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 180.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 52.06 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	26.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	3831.00 ft			Final 52000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	19.00 ft			
Tool Length:	48.00 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			3803.00	
Shut In Tool	5.00			3808.00	
Hydraulic tool	5.00			3813.00	
Jars	5.00			3818.00	
Safety Joint	3.00			3821.00	
Packer	5.00			3826.00	29.00 Bottom Of Top Packer
Packer	5.00			3831.00	
Stubb	1.00			3832.00	
Recorder	0.00	8360	Inside	3832.00	
Recorder	0.00	6751	Outside	3832.00	
Perforations	15.00			3847.00	
Bullnose	3.00			3850.00	19.00 Bottom Packers & Anchor

**Total Tool Length: 48.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Cobalt Energy LLC

**19-6s-25w Graham,KS**

PO Box 8037  
Wichita KS 67208

**Kaus "A" #1-19**

Job Ticket: 64127

**DST#: 4**

ATTN: Larry Nicholson

Test Start: 2017.03.13 @ 06:05:44

## 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: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2100.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1.00	Mud	0.005

Total Length: 1.00 ft      Total Volume: 0.005 bbl

Num Fluid Samples: 0

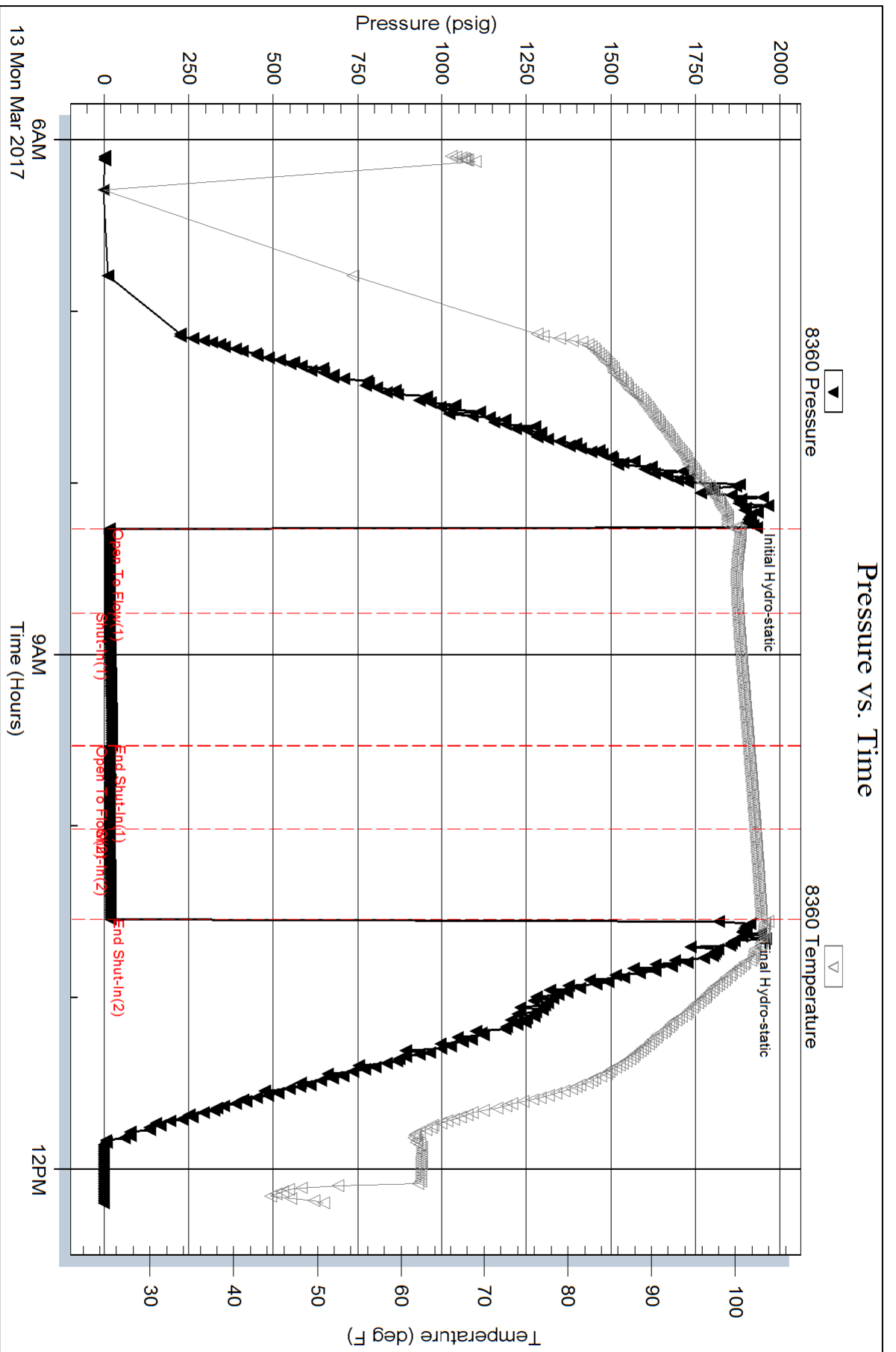
Num Gas Bombs: 0

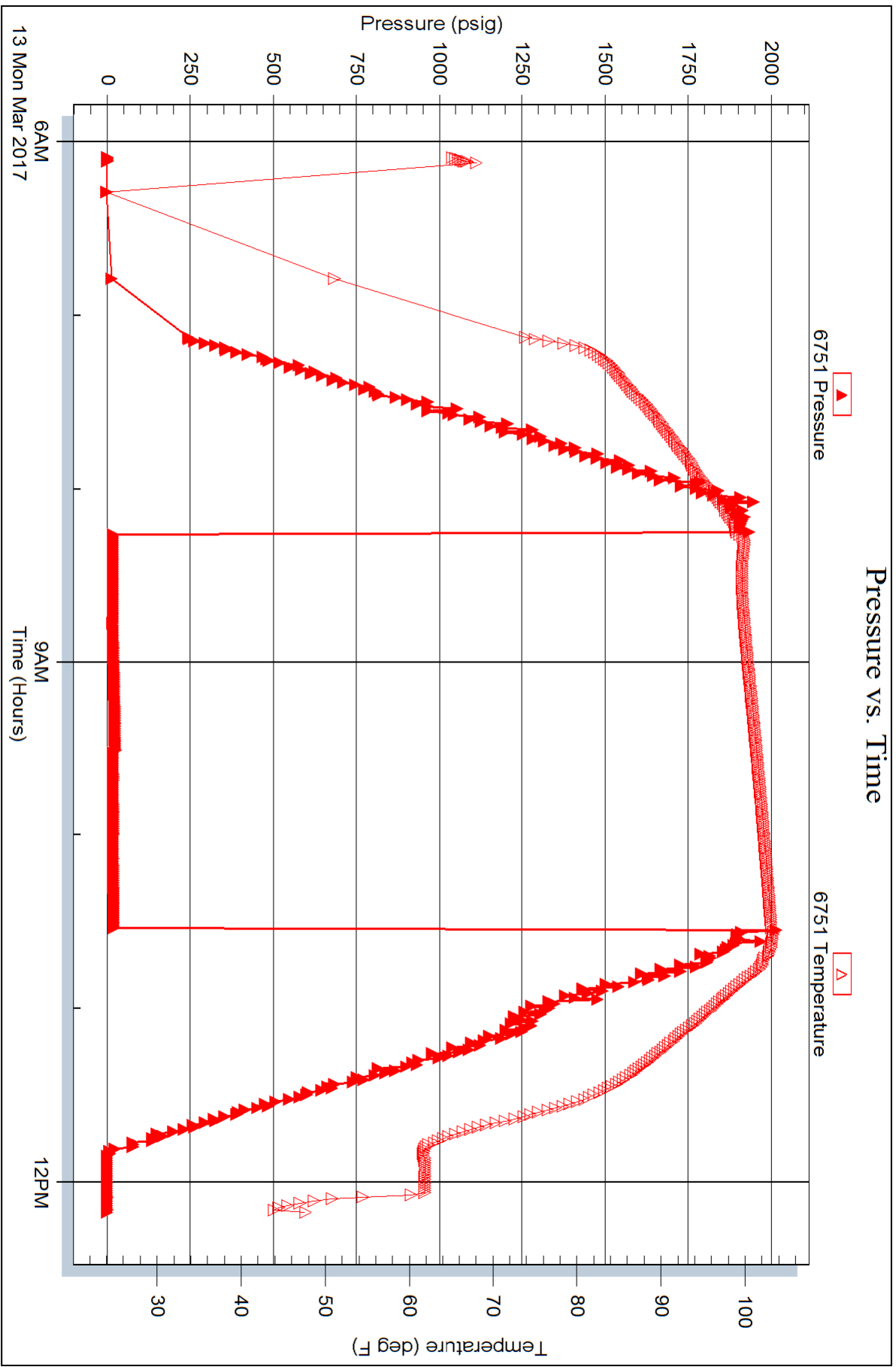
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

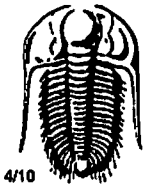




13 Mon Mar 2017  
6AM

9AM  
Time (Hours)

12PM



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 64098

Well Name & No. KAUS 'A' #1-19 Test No. 1 Date 3-11-17  
 Company Cobalt Energy LLC Elevation 2596 KB 2591 GL  
 Address 115 S. Belmont #12 PO Box 8037 Wichita, KS 67208  
 Co. Rep / Geo. LARRY NICHOLSON Rig MURFIN RIG 7  
 Location: Sec. 19 Twp. 6<sup>s</sup> Rge. 25<sup>w</sup> Co. GRAHAM State K

Interval Tested 3695-3732 Zone Tested LKG B-C  
 Anchor Length 37 Drill Pipe Run 3491 Mud Wt. 9  
 Top Packer Depth 3690 Drill Collars Run 180 Vis 57  
 Bottom Packer Depth 3695 Wt. Pipe Run - WL 6.8  
 Total Depth 3732 Chlorides 900 ppm System LCM 2<sup>#</sup>  
 Blow Description IFP - WEAK TO A GOOD BLOW 1/2" TO 9" BLOW  
ISIP - NO BLOW  
FFP - WEAK TO A GOOD BLOW SURFACE TO 7" BLOW  
FSIP - NO BLOW

Rec	Feet of	%gas	%oil	%water	%mud
<u>1</u>	<u>CO</u>				
<u>180</u>	<u>MW w/show foil</u>			<u>80</u>	<u>20</u>
<u>186</u>	<u>WATER</u>				

Rec Total 367 BHT 111 Gravity - API RW .13 @ 65 °F Chlorides 63000 ppm

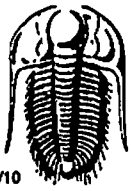
(A) Initial Hydrostatic <u>1820</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>0045</u>
(B) First Initial Flow <u>23</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>0405</u>
(C) First Final Flow <u>112</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>0625</u>
(D) Initial Shut-In <u>918</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>1010</u>
(E) Second Initial Flow <u>117</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>1220</u>
(F) Second Final Flow <u>186</u>	<input checked="" type="checkbox"/> Mileage <u>175 RT</u> 124rt 93	Comments
(G) Final Shut-In <u>906</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1814</u>	<input type="checkbox"/> Straddle	
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Packer
	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Extra Copies
Initial Open <u>30</u>	<input type="checkbox"/> Day Standby	Sub Total <u>0</u>
Initial Shut-In <u>45</u>	<input type="checkbox"/> Accessibility	Total <u>1468</u>
Final Flow <u>60</u>	Sub Total <u>1468</u>	MP/DST Disc't
Final Shut-In <u>90</u>		

Approved By \_\_\_\_\_

Our Representative Ray Schwager

Thank you

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



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 64099

Well Name & No. Kaus "A" #1-19 Test No. 2 Date 3-11-17  
 Company Cobalt Energy LLC Elevation 2596 KB 2591 GL  
 Address 115 S. Belmont #12 PO Box 8037 Wichita, KS 67228  
 Co. Rep / Geo. LARRY NICHOLSON Rig MURFIN 1197  
 Location: Sec. 19 Twp. 6<sup>s</sup> Rge. 25<sup>w</sup> Co. GRAHAM State Ks

Interval Tested 3731-3762 Zone Tested LKC E-6  
 Anchor Length 31 Drill Pipe Run 3552 Mud Wt. 9.1  
 Top Packer Depth 3726 Drill Collars Run 180 Vis 57  
 Bottom Packer Depth 3731 Wt. Pipe Run - WL 6.8  
 Total Depth 3762 Chlorides 1000 ppm System LCM 2#  
 Blow Description IFP - WEAK TO A FAIR BLOW 1/2" TO 6" BLOW  
ISIP - NO BLOW  
FFP - WEAK TO A FAIR BLOW 1/4" TO 5" BLOW  
FSTIP - NO BLOW

Rec	Feet of	%gas	%oil	%water	%mud
<u>70</u>	<u>GIP</u>				
<u>20</u>	<u>CO</u>				
<u>90</u>	<u>SOCMW</u>		<u>5</u>	<u>70</u>	<u>25</u>
<u>186</u>	<u>WATER</u>				

Rec Total 296 BHT 111 Gravity 29 API RW .21 @ 60 °F Chlorides 42000 ppm

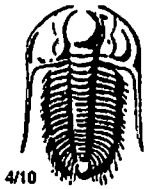
(A) Initial Hydrostatic <u>1836</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>1900</u>
(B) First Initial Flow <u>20</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>1940</u>
(C) First Final Flow <u>89</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>2150</u>
(D) Initial Shut-In <u>1191</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>0135</u>
(E) Second Initial Flow <u>94</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>0508</u>
(F) Second Final Flow <u>148</u>	<input checked="" type="checkbox"/> Mileage <u>93</u>	Comments <u>Time change</u>
(G) Final Shut-In <u>1176</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1822</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Open <u>30</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Flow <u>60</u>	<input type="checkbox"/> Day Standby	Total <u>1468</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1468</u>	

Approved By \_\_\_\_\_

Our Representative RAY SCHWAGN

THANK YOU

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 64100

Well Name & No. KAUS "A" #1-19 Test No. 3 Date 3-12-17  
 Company Cobalt Energy LLC Elevation 2596 KB 2591 GL  
 Address 115 S. BELMONT #12 PO Box 8037 WICHITA, KS 67208  
 Co. Rep / Geo. LARRY NICHOLSON Rig MURFIN 197  
 Location: Sec. 19 Twp. 6 Rge. 25 Co. GRAHAM State Ks

Interval Tested 3779-3834 Zone Tested LKC H-J  
 Anchor Length 55 Drill Pipe Run 3585 Mud Wt. 9.2  
 Top Packer Depth 3774 Drill Collars Run 180 Vis 57  
 Bottom Packer Depth 3779 Wt. Pipe Run - WL 7.6  
 Total Depth 3834 Chlorides 2100 ppm System LCM 2#

Blow Description IFF - WEAK TO BOB IN 25 MIN  
ISIP - NO BLOW  
FFP - WEAK TO BOB IN 50 MIN  
FSIP - NO BLOW

Rec	Feet of	%gas	%oil	%water	%mud
<u>70</u>	<u>GIP</u>				
<u>50</u>	<u>OCWM</u>		<u>6</u>	<u>75</u>	<u>19</u>
<u>60</u>	<u>SOCM</u>		<u>1</u>	<u>85</u>	<u>14</u>
<u>360</u>	<u>WATER</u>				
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 470 BHT 112 Gravity - API RW .16 @ 60 °F Chlorides 53000 ppm

- (A) Initial Hydrostatic 1870
- (B) First Initial Flow 25
- (C) First Final Flow 138
- (D) Initial Shut-In 1108
- (E) Second Initial Flow 140
- (F) Second Final Flow 245
- (G) Final Shut-In 1079
- (H) Final Hydrostatic 1816

- Test 1050
- Jars 250
- Safety Joint 75
- Circ Sub
- Hourly Standby
- Mileage 93
- Sampler
- Straddle
- Shale Packer
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility
- Sub Total 1468

- T-On Location 1340
- T-Started 1435
- T-Open 1640
- T-Pulled 2025
- T-Out 2232

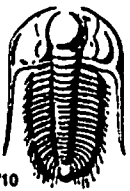
- Comments
- Ruined Shale Packer
- Ruined Packer
- Extra Copies
- Sub Total 0
- Total 1468
- MP/DST Disc't

Initial Open 30  
 Initial Shut-In 45  
 Final Flow 60  
 Final Shut-In 90

Approved By \_\_\_\_\_

Our Representative Ray Schwager **THANK YOU**

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 64127

Well Name & No. Kaus "A" 1-19 Test No. 4 Date 3-13-17  
 Company Cobalt Energy LLC Elevation 2596 KB 2591 GL  
 Address 115 S. Belmont #12 PO Box 8037 Wichita, KS 67208  
 Co. Rep / Geo. Larry Nicholson Rig Murfin rig 7  
 Location: Sec. 19 Twp. 6<sup>s</sup> Rge. 25<sup>w</sup> Co. Graham State K

Interval Tested 3831-3850 Zone Tested LKC K  
 Anchor Length 19 Drill Pipe Run 3648 Mud Wt. 9.2  
 Top Packer Depth 3826 Drill Collars Run 180 Vis 59  
 Bottom Packer Depth 3831 Wt. Pipe Run - WL 7.6  
 Total Depth 3850 Chlorides 2100 ppm System LCM 2#  
 Blow Description IFP - Weak Blow thru-out 1/4" to surface blow  
ISIP - NO Blow  
FFP - NO Blow  
FSIP - NO Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>1</u>	<u>Mud</u>				
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 1 BHT 103 Gravity - API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic <u>1906</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>0530</u>
(B) First Initial Flow <u>16</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>0605</u>
(C) First Final Flow <u>16</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>0815</u>
(D) Initial Shut-In <u>23</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>1030</u>
(E) Second Initial Flow <u>16</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>1211</u>
(F) Second Final Flow <u>16</u>	<input checked="" type="checkbox"/> Mileage <u>93</u>	Comments
(G) Final Shut-In <u>19</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1894</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby	Total <u>1468</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1468</u>	

Approved By \_\_\_\_\_ Our Representative Ray Schwager Thank you

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