



## DRILL STEM TEST REPORT

Prepared For: **Cobalt Energy**

115 S Belmont 12  
Wichita, KS 67208

ATTN: Terry McLeod

### **Williams-Hess A 1-15**

### **15-19s-29w Lane,KS**

Start Date: 2014.12.10 @ 15:56:39

End Date: 2014.12.11 @ 01:21:39

Job Ticket #: 59672                      DST #: 1

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

Printed: 2014.12.12 @ 16:05:02



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Cobalt Energy

**15-19s-29w Lane, KS**

115 S Belmont 12  
Wichita, KS 67208

**Williams-Hess A 1-15**

Job Ticket: 59672

**DST#: 1**

ATTN: Terry McLeod

Test Start: 2014.12.10 @ 15:56:39

## GENERAL INFORMATION:

Formation: **Altamont**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:10:09

Time Test Ended: 01:21:39

Test Type: Conventional Bottom Hole (Initial)

Tester: Brandon Turley

Unit No: 79

**Interval: 4441.00 ft (KB) To 4460.00 ft (KB) (TVD)**

Reference Elevations: 2833.00 ft (KB)

Total Depth: 4460.00 ft (KB) (TVD)

2823.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

**Serial #: 8373**

**Inside**

Press@RunDepth: 393.78 psig @ 4446.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.10

End Date:

2014.12.11

Last Calib.:

2014.12.11

Start Time: 15:56:44

End Time:

01:21:39

Time On Btm:

2014.12.10 @ 18:09:09

Time Off Btm:

2014.12.10 @ 22:11:09

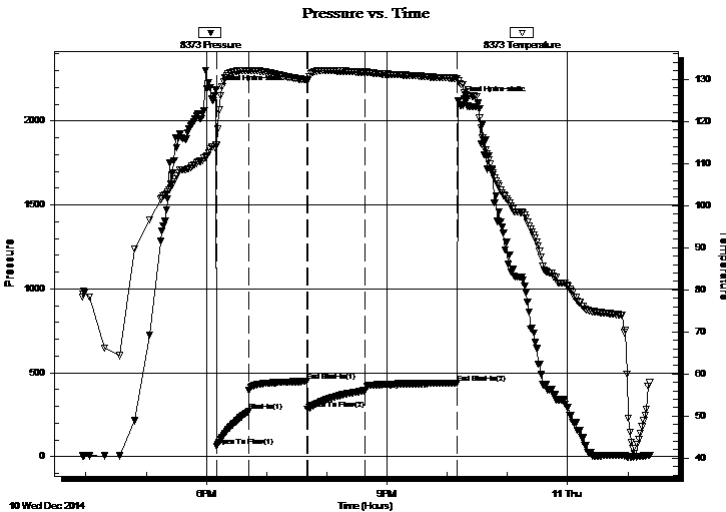
TEST COMMENT: IF: 1/4" blow BOB in 3 1/2 mins.

IS: Surface blow built to 5"

FF: BOB in 10 min.

FS: Surface blow built to 3"

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2189.20	114.34	Initial Hydro-static
1	61.02	114.30	Open To Flow (1)
33	270.64	132.03	Shut-In(1)
91	449.16	129.82	End Shut-In(1)
92	283.67	129.71	Open To Flow (2)
149	393.78	131.65	Shut-In(2)
241	439.26	130.20	End Shut-In(2)
242	2123.71	129.59	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
310.00	mcw 95%w 5%m	4.35
186.00	mcw 80%w 20%m	2.61
248.00	gocmw 10%g 10%o 40%w 40%m	3.48
124.00	go 10%g 90%o	1.74
0.00	372 GIP	0.00

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Cobalt Energy

**15-19s-29w Lane,KS**

115 S Belmont 12  
Wichita, KS 67208

**Williams-Hess A 1-15**

Job Ticket: 59672

**DST#: 1**

ATTN: Terry McLeod

Test Start: 2014.12.10 @ 15:56:39

## Tool Information

Drill Pipe:	Length: 4445.00 ft	Diameter: 3.80 inches	Volume: 62.35 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	80000.00 lb
			<u>Total Volume: 62.35 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial	60000.00 lb
Depth to Top Packer:	4441.00 ft			Final	68000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	23.00 ft				
Tool Length:	41.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Stubb	1.00			4424.00	
Shut In Tool	5.00			4429.00	
Hydraulic tool	5.00			4434.00	
Safety Joint	2.00			4436.00	
Packer	5.00			4441.00	18.00 Bottom Of Top Packer
Packer - Shale	4.00			4445.00	
Stubb	1.00			4446.00	
Recorder	0.00	8373	Inside	4446.00	
Recorder	0.00	8166	Outside	4446.00	
Perforations	13.00			4459.00	
Bullnose	5.00			4464.00	23.00 Anchor Tool

**Total Tool Length: 41.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Cobalt Energy

**15-19s-29w Lane,KS**

115 S Belmont 12  
Wichita, KS 67208

**Williams-Hess A 1-15**

Job Ticket: 59672

**DST#: 1**

ATTN: Terry McLeod

Test Start: 2014.12.10 @ 15:56:39

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

33 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

42000 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.99 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1900.00 ppm

Filter Cake: 1.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
310.00	mcw 95%w 5%m	4.348
186.00	mcw 80%w 20%m	2.609
248.00	gocmw 10%g 10%o 40%w 40%m	3.479
124.00	go 10%g 90%o	1.739
0.00	372 GIP	0.000

Total Length: 868.00 ft      Total Volume: 12.175 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 32@50=33

.26@47=42000







## DRILL STEM TEST REPORT

Prepared For: **Cobalt Energy**

115 S Belmont 12  
Wichita, KS 67208

ATTN: Terry McLeod

### **Williams-Hess A 1-15**

### **15-19s-29w Lane,KS**

Start Date: 2014.12.12 @ 02:23:14

End Date: 2014.12.12 @ 08:21:14

Job Ticket #: 59673                      DST #: 2

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

Printed: 2014.12.12 @ 16:04:21





**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Cobalt Energy

**15-19s-29w Lane, KS**

115 S Belmont 12  
Wichita, KS 67208

**Williams-Hess A 1-15**

ATTN: Terry McLeod

Job Ticket: 59673

**DST#: 2**

Test Start: 2014.12.12 @ 02:23:14

## GENERAL INFORMATION:

Formation: **Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:31:14

Time Test Ended: 08:21:14

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 79

**Interval: 4570.00 ft (KB) To 4615.00 ft (KB) (TVD)**

Reference Elevations: 2833.00 ft (KB)

Total Depth: 4615.00 ft (KB) (TVD)

2823.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

**Serial #: 8373**

**Inside**

Press@RunDepth: 28.71 psig @ 4575.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.12

End Date:

2014.12.12

Last Calib.:

2014.12.12

Start Time: 02:23:19

End Time:

08:21:13

Time On Btm:

2014.12.12 @ 04:29:44

Time Off Btm:

2014.12.12 @ 06:30:44

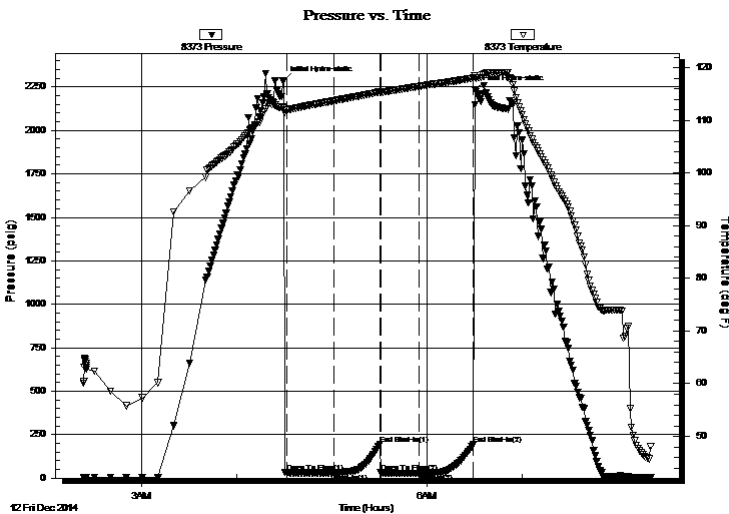
TEST COMMENT: IF: 1/4" blow died in 12 min.

IS: No return.

FF: No blow.

FS: No return.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2285.84	112.58	Initial Hydro-static
2	32.12	111.96	Open To Flow (1)
32	29.86	113.74	Shut-In(1)
61	195.46	115.40	End Shut-In(1)
61	30.63	115.32	Open To Flow (2)
86	28.71	116.46	Shut-In(2)
120	192.40	118.02	End Shut-In(2)
121	2232.41	118.11	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
3.00	mud 100%m	0.04

\* 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

**15-19s-29w Lane,KS**

115 S Belmont 12  
Wichita, KS 67208

**Williams-Hess A 1-15**

Job Ticket: 59673

**DST#: 2**

ATTN: Terry McLeod

Test Start: 2014.12.12 @ 02:23:14

## Tool Information

Drill Pipe:	Length: 4569.00 ft	Diameter: 3.80 inches	Volume: 64.09 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:	70000.00 lb
			<u>Total Volume: 64.09 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial	62000.00 lb
Depth to Top Packer:	4570.00 ft			Final	62000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	49.00 ft				
Tool Length:	67.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Stubb	1.00			4553.00	
Shut In Tool	5.00			4558.00	
Hydraulic tool	5.00			4563.00	
Safety Joint	2.00			4565.00	
Packer	5.00			4570.00	18.00 Bottom Of Top Packer
Packer - Shale	4.00			4574.00	
Stubb	1.00			4575.00	
Recorder	0.00	8373	Inside	4575.00	
Recorder	0.00	8166	Outside	4575.00	
Perforations	5.00			4580.00	
Change Over Sub	1.00			4581.00	
Drill Pipe	32.00			4613.00	
Change Over Sub	1.00			4614.00	
Bullnose	5.00			4619.00	49.00 Anchor Tool

**Total Tool Length: 67.00**



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# DRILL STEM TEST REPORT

**FLUID SUMMARY**

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**15-19s-29w Lane, KS**

115 S Bellmont 12  
Wichita, KS 67208

**Williams-Hess A 1-15**

Job Ticket: 59673

**DST#: 2**

ATTN: Terry McLeod

Test Start: 2014.12.12 @ 02:23:14

## 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: 47.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2300.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
3.00	mud 100%m	0.042

Total Length: 3.00 ft      Total Volume: 0.042 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

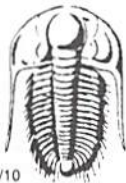
Laboratory Name:

Laboratory Location:

Recovery Comments:







# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 59672

Well Name & No. Williams-Hess A 1-15 Test No. 1 Date 12-10-14  
 Company LOBBIT Energy LLC Elevation 2833 KB 2823 GL  
 Address 115 S. Belmont 12 Wichita, KS 67208  
 Co. Rep / Geo. Terry McLeod Rig Southwind 70  
 Location: Sec. 15 Twp. 19S Rge. 29W Co. Lame State KS

Interval Tested 4441 4460 Zone Tested A1+9MONT  
 Anchor Length 19 Drill Pipe Run 4445 Mud Wt. 9.25  
 Top Packer Depth 4436 Drill Collars Run — Vis 50  
 Bottom Packer Depth 4441 Wt. Pipe Run — WL 6.0  
 Total Depth 4460 Chlorides 1900 ppm System LCM 2  
 Blow Description IF: 1/4 blow BoB in 3 1/2 min.  
#5: surface blow built to 5.  
FF: BoB in 10 min.  
FS: surface blow built to 3.

Rec	Feet of	%gas	%oil	%water	%mud
<u>124</u>	<u>90</u>	<u>10</u>	<u>90</u>		
<u>248</u>	<u>90cmw</u>	<u>10</u>	<u>10</u>	<u>40</u>	<u>40</u>
<u>186</u>	<u>MLW</u>			<u>80</u>	<u>20</u>
<u>310</u>	<u>MLW</u>			<u>95</u>	<u>5</u>
<u>372</u>	<u>GIP</u>				

Rec Total 868 BHT 130 Gravity 33 API RW .26 @ 47 °F Chlorides 42,000 ppm

(A) Initial Hydrostatic 2189  Test 1250 T-On Location 13:45  
 (B) First Initial Flow 61  Jars T-Started 15:36  
 (C) First Final Flow 270  Safety Joint 75 T-Open 17:48  
 (D) Initial Shut-In 449  Circ Sub NIL T-Pulled 21:48  
 (E) Second Initial Flow 283  Hourly Standby T-Out 1:00  
 (F) Second Final Flow 393  Mileage 72- 111.60 Comments \_\_\_\_\_  
 (G) Final Shut-In 439  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2123  Straddle \_\_\_\_\_  
 Shale Packer 250  Ruined Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Open 30  Day Standby \_\_\_\_\_ Sub Total 0  
 Initial Shut-In 60  Accessibility \_\_\_\_\_ Total 1686.60  
 Final Flow 60 Sub Total 1686.60 MP/DST Disc't \_\_\_\_\_  
 Final Shut-In 90

Approved By Terry McLeod

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.



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 59673

Well Name & No. Williams-Hess A-1-15 Test No. 2 Date 12-12-14  
 Company Cobalt Energy LLC Elevation 2833 KB 2823 GL  
 Address \_\_\_\_\_  
 Co. Rep / Geo. Terry McLeod Rig Southwind 70  
 Location: Sec. 15 Twp. 19S Rge. 29W Co. Lane State KS

Interval Tested 4570 4615 Zone Tested Cherokee  
 Anchor Length \_\_\_\_\_ 45 Drill Pipe Run 4569 Mud Wt. 9.2  
 Top Packer Depth \_\_\_\_\_ 4565 Drill Collars Run \_\_\_\_\_ Vis 47  
 Bottom Packer Depth \_\_\_\_\_ 4570 Wt. Pipe Run \_\_\_\_\_ WL 8.0  
 Total Depth \_\_\_\_\_ 4615 Chlorides 2300 ppm System LCM 2

Blow Description IF: 1/4 blow died in 12 min.  
IS: No return.  
FF: No blow.  
FS: No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>3</u>	<u>Mud</u>			<u>100</u>	
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Rec Total 3 BHT 118 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ ° F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2285  Test 1250 T-On Location 2:00  
 (B) First Initial Flow 32  Jars \_\_\_\_\_ T-Started 2:23  
 (C) First Final Flow 29  Safety Joint 75 T-Open 4:29  
 (D) Initial Shut-In 195  Circ Sub NIC T-Pulled 6:29  
 (E) Second Initial Flow 30  Hourly Standby \_\_\_\_\_ T-Out 8:20  
 (F) Second Final Flow 28  Mileage 72- 223.20 Comments \_\_\_\_\_  
 (G) Final Shut-In 192  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2232  Straddle \_\_\_\_\_  
 Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Copies \_\_\_\_\_

Initial Open 30  Shale Packer 250  
 Initial Shut-In 30  Extra Packer \_\_\_\_\_  
 Final Flow 30  Extra Recorder \_\_\_\_\_  
 Final Shut-In 30  Day Standby 1d 1h  
 Accessibility \_\_\_\_\_  
 Sub Total 1798.20 Total 1831.53  
 MP/DST Disc't \_\_\_\_\_

Approved By Terry L. McLeod 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.