



DRILL STEM TEST REPORT

Prepared For: **Arcadian Resources LLC**

1302 Olive St.
Concordia KS 66901

ATTN: Sean Deenihan

Ross #1-27

27-14-33 Logan,KS

Start Date: 2019.04.04 @ 14:25:15

End Date: 2019.04.04 @ 21:50:45

Job Ticket #: 65130 DST #: 1

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

Printed: 2019.04.10 @ 08:50:41



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Arcadian Resources LLC

27-14-33 Logan, KS

1302 Olive St.
Concordia KS 66901

Ross #1-27

ATTN: Sean Deenihan

Job Ticket: 65130

DST#: 1

Test Start: 2019.04.04 @ 14:25:15

GENERAL INFORMATION:

Formation: **LKC H - J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:14:00

Time Test Ended: 21:50:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Mike Roberts

Unit No: 81

Interval: 4015.00 ft (KB) To 4104.00 ft (KB) (TVD)

Reference Elevations: 2860.00 ft (KB)

Total Depth: 4104.00 ft (KB) (TVD)

2850.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 10.00 ft

Serial #: 8968

Outside

Press@RunDepth: 558.36 psig @ 4084.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.04.04

End Date:

2019.04.04

Last Calib.:

2019.04.04

Start Time:

14:25:15

End Time:

21:50:45

Time On Btm:

2019.04.04 @ 17:13:45

Time Off Btm:

2019.04.04 @ 19:16:45

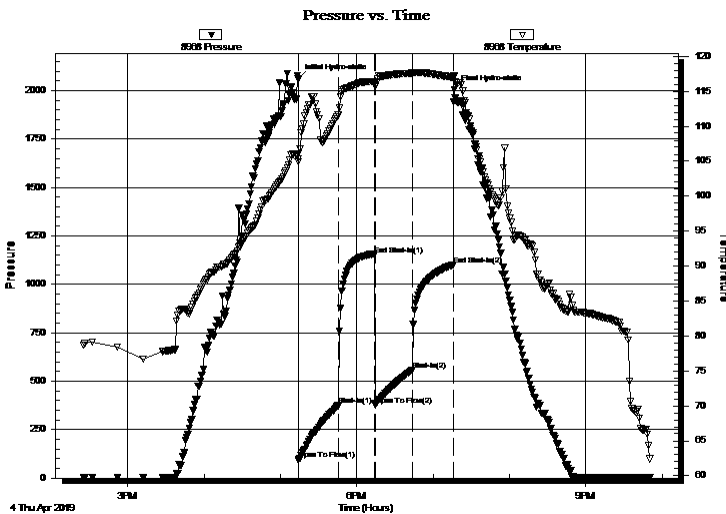
TEST COMMENT: IF: Built to 59" blow BOB in 3 min.

IS: No return blow

FF: Built to 45" blow

FS: No return blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2059.13	106.07	Initial Hydro-static
1	95.73	104.93	Open To Flow (1)
32	375.20	111.63	Shut-In(1)
61	1152.63	116.38	End Shut-In(1)
61	378.62	115.75	Open To Flow (2)
90	558.36	117.60	Shut-In(2)
122	1098.46	117.01	End Shut-In(2)
123	2005.39	117.12	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
682.00	mud/ 1st stand had oil spots 100%m	9.57
558.00	mcw 30%m 70%w	7.83
124.00	mcw 4%m 96%w	1.74

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Arcadian Resources LLC

27-14-33 Logan, KS

1302 Olive St.
Concordia KS 66901

Ross #1-27

Job Ticket: 65130

DST#: 1

ATTN: Sean Deenihan

Test Start: 2019.04.04 @ 14:25:15

Tool Information

Drill Pipe:	Length: 4012.00 ft	Diameter: 3.80 inches	Volume: 56.28 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 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: 56.28 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	4015.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	89.00 ft			
Tool Length:	120.00 ft			
Number of Packers:	2	Diameter: 7.88 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3985.00	
Shut In Tool	5.00			3990.00	
Hydraulic tool	5.00			3995.00	
Jars	5.00			4000.00	
EM Tool	3.00			4003.00	
Safety Joint	3.00			4006.00	
Packer	5.00			4011.00	31.00 Bottom Of Top Packer
Packer	4.00			4015.00	
Stubb	1.00			4016.00	
Perforations	4.00			4020.00	
Change Over Sub	1.00			4021.00	
Drill Pipe	62.00			4083.00	
Change Over Sub	1.00			4084.00	
Recorder	0.00	8968	Outside	4084.00	
Recorder	0.00	8521	Inside	4084.00	
Perforations	15.00			4099.00	
Bullnose	5.00			4104.00	89.00 Bottom Packers & Anchor
Total Tool Length:	120.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Arcadian Resources LLC

27-14-33 Logan, KS

1302 Olive St.
Concordia KS 66901

Ross #1-27

Job Ticket: 65130

DST#: 1

ATTN: Sean Deenihan

Test Start: 2019.04.04 @ 14:25:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 8.00 lb/gal

Cushion Length:

ft

Water Salinity:

25000 ppm

Viscosity: 40.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.57 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 5500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
682.00	mud/ 1st stand had oil spots 100%m	9.567
558.00	mcw 30%m 70%w	7.827
124.00	mcw 4%m 96%w	1.739

Total Length: 1364.00 ft Total Volume: 19.133 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

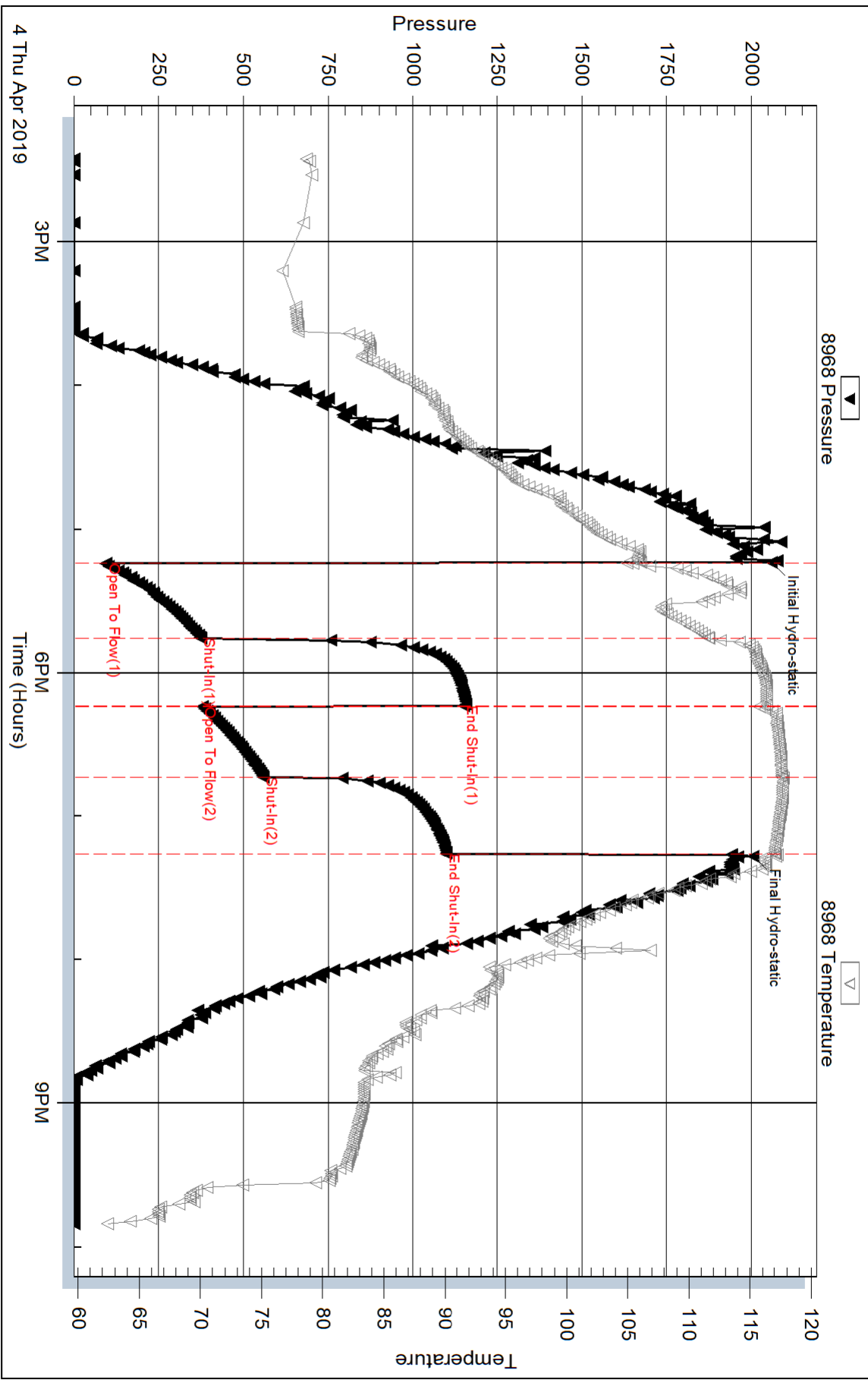
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW= .444@ 54.6= 25,000 ppm

Pressure vs. Time



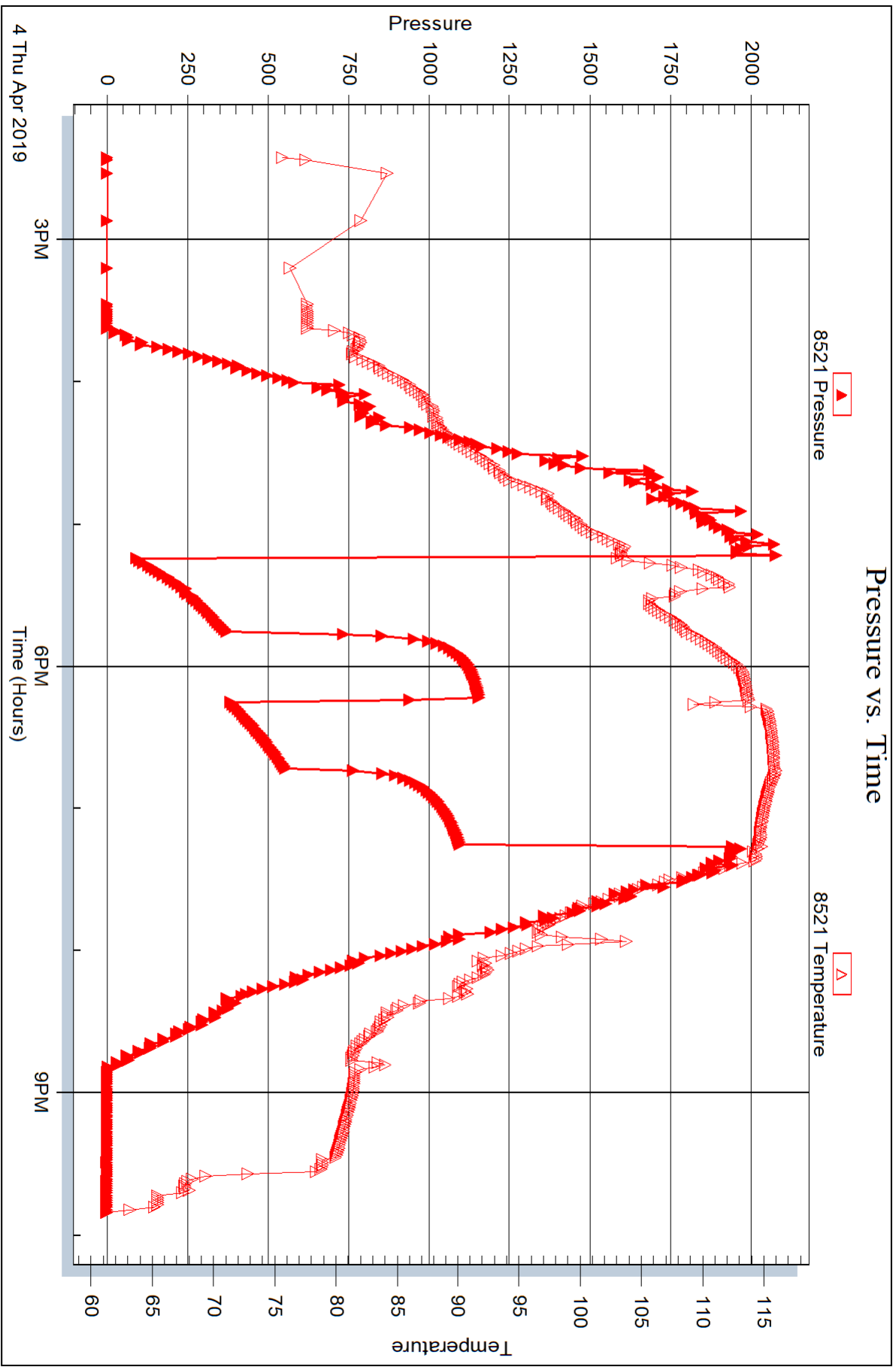
Serial #: 8521

Inside

Arcadian Resources LLC

Ross #1-27

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 65130

Printed: 2019.04.10 @ 08:50:42



DRILL STEM TEST REPORT

Prepared For: **Arcadian Rresources LLC**

1302 Olive St.
Concordia KS 66901

ATTN: Sean Deenihan

Ross #1-27

27-14-33 Logan,KS

Start Date: 2019.04.06 @ 22:21:15

End Date: 2019.04.07 @ 06:33:00

Job Ticket #: 65131 DST #: 2

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

Printed: 2019.04.10 @ 08:49:29



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Arcadian Resources LLC

27-14-33 Logan, KS

1302 Olive St.
Concordia KS 66901

Ross #1-27

Job Ticket: 65131

DST#: 2

ATTN: Sean Deenihan

Test Start: 2019.04.06 @ 22:21:15

GENERAL INFORMATION:

Formation: **LKC I - K**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:23:15

Time Test Ended: 06:33:00

Test Type: Conventional Straddle (Reset)

Tester: Mike Roberts

Unit No: 81

Interval: 4030.00 ft (KB) To 4155.00 ft (KB) (TVD)

Reference Elevations: 2860.00 ft (KB)

Total Depth: 4600.00 ft (KB) (TVD)

2850.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 10.00 ft

Serial #: 8521

Inside

Press@RunDepth: 627.25 psig @ 4130.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.04.06

End Date:

2019.04.07

Last Calib.:

2019.04.07

Start Time: 22:21:15

End Time:

06:33:00

Time On Btm:

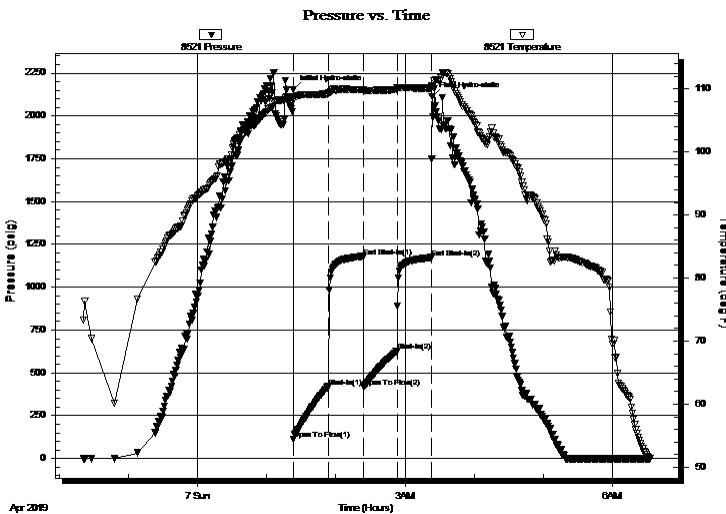
2019.04.07 @ 01:23:00

Time Off Btm:

2019.04.07 @ 03:23:30

TEST COMMENT: IF: Built to 75" blow
IS: No return blow
FF: Built to 49" blow
FS: No return blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2153.09	108.75	Initial Hydro-static
1	111.54	108.11	Open To Flow (1)
31	418.77	109.18	Shut-In(1)
61	1177.76	109.87	End Shut-In(1)
62	419.02	109.64	Open To Flow (2)
90	627.25	110.09	Shut-In(2)
120	1173.20	110.13	End Shut-In(2)
121	2111.86	110.43	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
310.00	mud 100%m	4.35
620.00	w cm 40%w 60%m	8.70
124.00	w cm 50%w 50%m	1.74
372.00	mcw 30%m 70%w	5.22

Gas Rates

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

* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Arcadian Resources LLC

27-14-33 Logan, KS

1302 Olive St.
Concordia KS 66901

Ross #1-27

ATTN: Sean Deenihan

Job Ticket: 65131

DST#: 2

Test Start: 2019.04.06 @ 22:21:15

GENERAL INFORMATION:

Formation: **LKC I - K**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:23:15

Time Test Ended: 06:33:00

Test Type: Conventional Straddle (Reset)

Tester: Mike Roberts

Unit No: 81

Interval: **4030.00 ft (KB) To 4155.00 ft (KB) (TVD)**

Reference Elevations: 2860.00 ft (KB)

Total Depth: 4600.00 ft (KB) (TVD)

2850.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 10.00 ft

Serial #: 8968

Outside

Press@RunDepth: psig @ 4130.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.04.06

End Date: 2019.04.07

Last Calib.: 2019.04.07

Start Time: 22:21:15

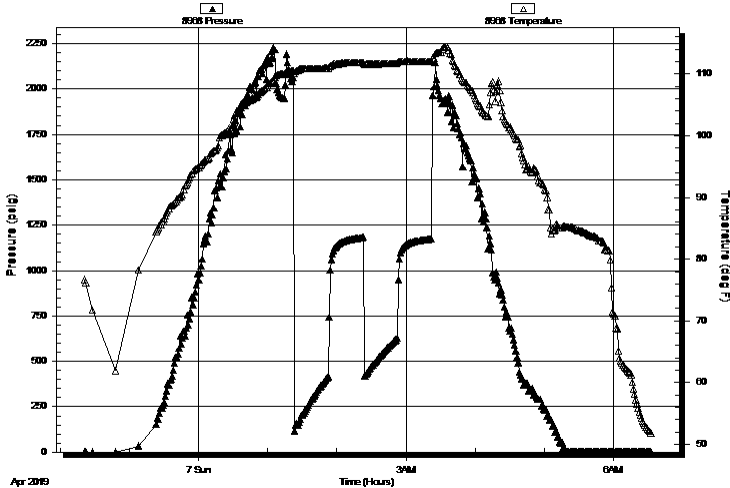
End Time: 06:32:45

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: Built to 75" blow
IS: No return blow
FF: Built to 49" blow
FS: No return blow

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
310.00	mud 100% m	4.35
620.00	w cm 40% w 60% m	8.70
124.00	w cm 50% w 50% m	1.74
372.00	mcw 30% m 70% w	5.22

Gas Rates

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

* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Arcadian Resources LLC

27-14-33 Logan,KS

1302 Olive St.
Concordia KS 66901

Ross #1-27

ATTN: Sean Deenihan

Job Ticket: 65131

DST#: 2

Test Start: 2019.04.06 @ 22:21:15

GENERAL INFORMATION:

Formation: **LKC I - K**

Deviated: No Whipstock: ft (KB)

Test Type: Conventional Straddle (Reset)

Time Tool Opened: 01:23:15

Tester: Mike Roberts

Time Test Ended: 06:33:00

Unit No: 81

Interval: **4030.00 ft (KB) To 4155.00 ft (KB) (TVD)**

Reference Elevations: 2860.00 ft (KB)

Total Depth: 4600.00 ft (KB) (TVD)

2850.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 10.00 ft

Serial #: 8288

Below (Straddle)

Press@RunDepth: psig @ 4592.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.04.06

End Date: 2019.04.07

Last Calib.: 2019.04.07

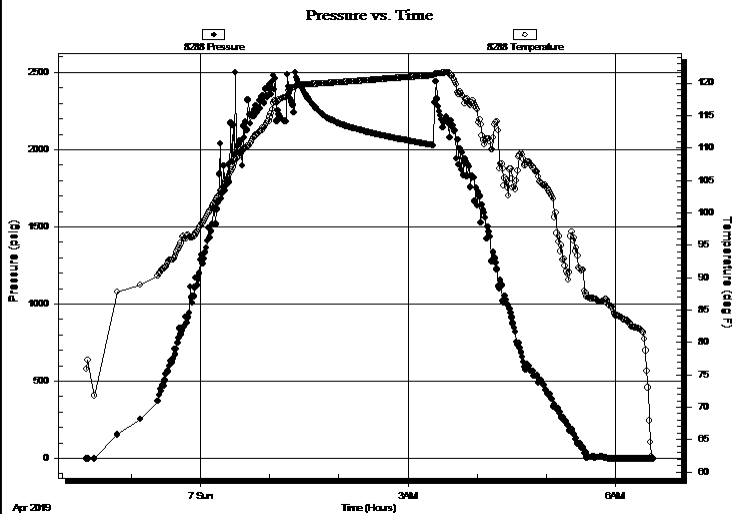
Start Time: 22:21:15

End Time: 06:32:30

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: Built to 75" blow
IS: No return blow
FF: Built to 49" blow
FS: No return blow



PRESSURE SUMMARY

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

Recovery

Gas Rates

Length (ft)	Description	Volume (bbl)
310.00	mud 100%m	4.35
620.00	w cm 40%w 60%m	8.70
124.00	w cm 50%w 50%m	1.74
372.00	mcw 30%m 70%w	5.22

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Arcadian Resources LLC

27-14-33 Logan, KS

1302 Olive St.
Concordia KS 66901

Ross #1-27

Job Ticket: 65131

DST#: 2

ATTN: Sean Deenihan

Test Start: 2019.04.06 @ 22:21:15

Tool Information

Drill Pipe:	Length: 4020.00 ft	Diameter: 3.80 inches	Volume: 56.39 bbl	Tool Weight: 1500.00 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: 90000.00 lb
			<u>Total Volume: 56.39 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4030.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	4598.00 ft			
Interval between Packers:	568.00 ft			
Tool Length:	599.00 ft			
Number of Packers:	2	Diameter: 7.88 inches		

Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

Change Over Sub	1.00			4000.00	
Shut In Tool	5.00			4005.00	
Hydraulic tool	5.00			4010.00	
Jars	5.00			4015.00	
EM Tool	3.00			4018.00	
Safety Joint	3.00			4021.00	
Packer	5.00			4026.00	31.00 Bottom Of Top Packer
Packer	4.00			4030.00	
Stubb	1.00			4031.00	
Perforations	4.00			4035.00	
Change Over Sub	1.00			4036.00	
Drill Pipe	93.00			4129.00	
Change Over Sub	1.00			4130.00	
Recorder	0.00	8968	Outside	4130.00	
Recorder	0.00	8521	Inside	4130.00	
Perforations	21.00			4151.00	
Blank Off Sub	1.00			4152.00	
Packer - Shale	3.00			4155.00	
Stubb	1.00			4156.00	
Perforations	2.00			4158.00	
Change Over Sub	1.00			4159.00	
Drill Pipe	433.00			4592.00	
Recorder	0.00	8288	Below	4592.00	
Change Over Sub	1.00			4593.00	
Bullnose	5.00			4598.00	568.00 Bottom Packers & Anchor

Total Tool Length: 599.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Arcadian Resources LLC

27-14-33 Logan,KS

1302 Olive St.
Concordia KS 66901

Ross #1-27

Job Ticket: 65131

DST#: 2

ATTN: Sean Deenihan

Test Start: 2019.04.06 @ 22:21:15

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:

24000 ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.78 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 9500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
310.00	mud 100%m	4.348
620.00	w cm 40%w 60%m	8.697
124.00	w cm 50%w 50%m	1.739
372.00	mcw 30%m 70%w	5.218

Total Length: 1426.00 ft Total Volume: 20.002 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

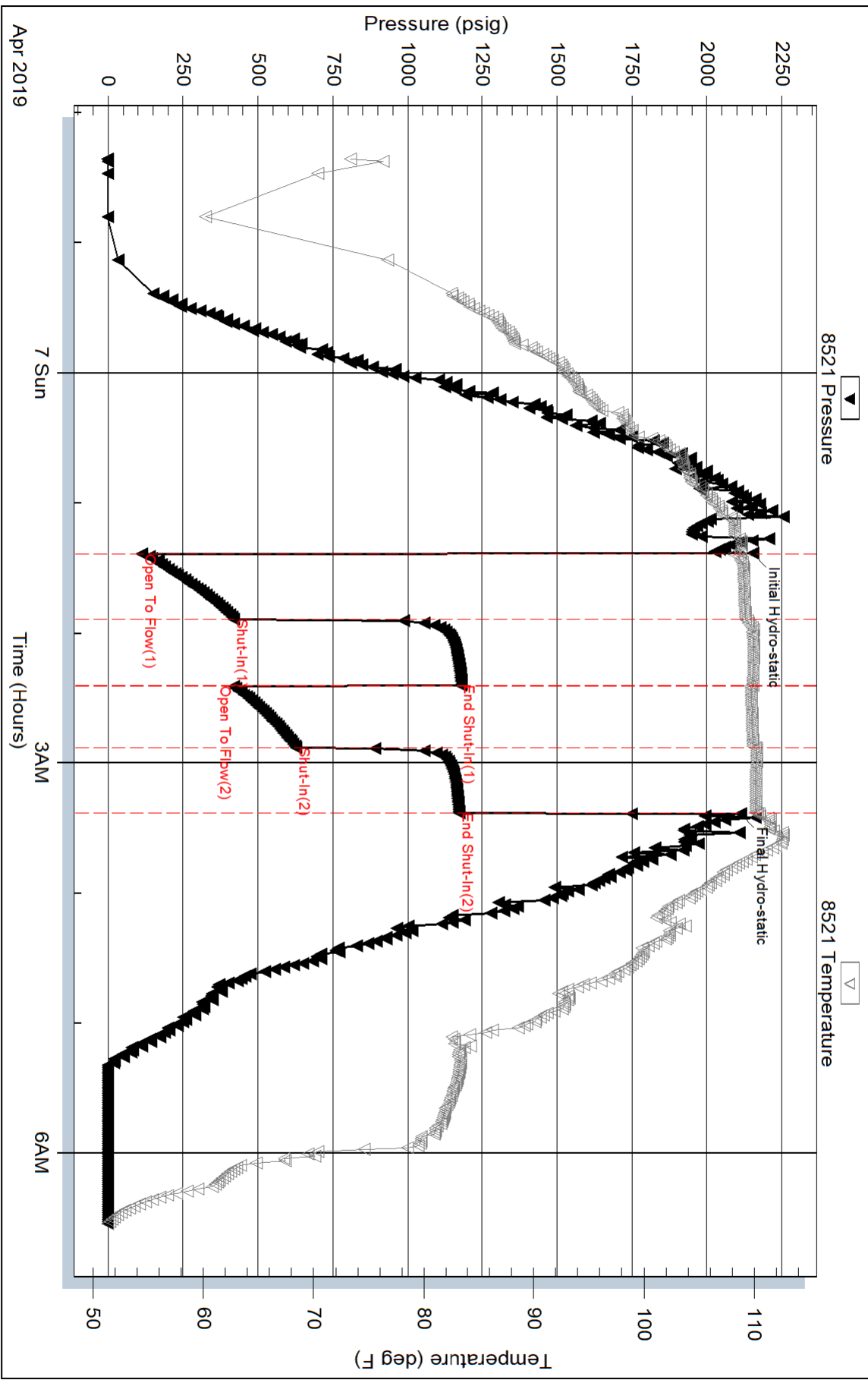
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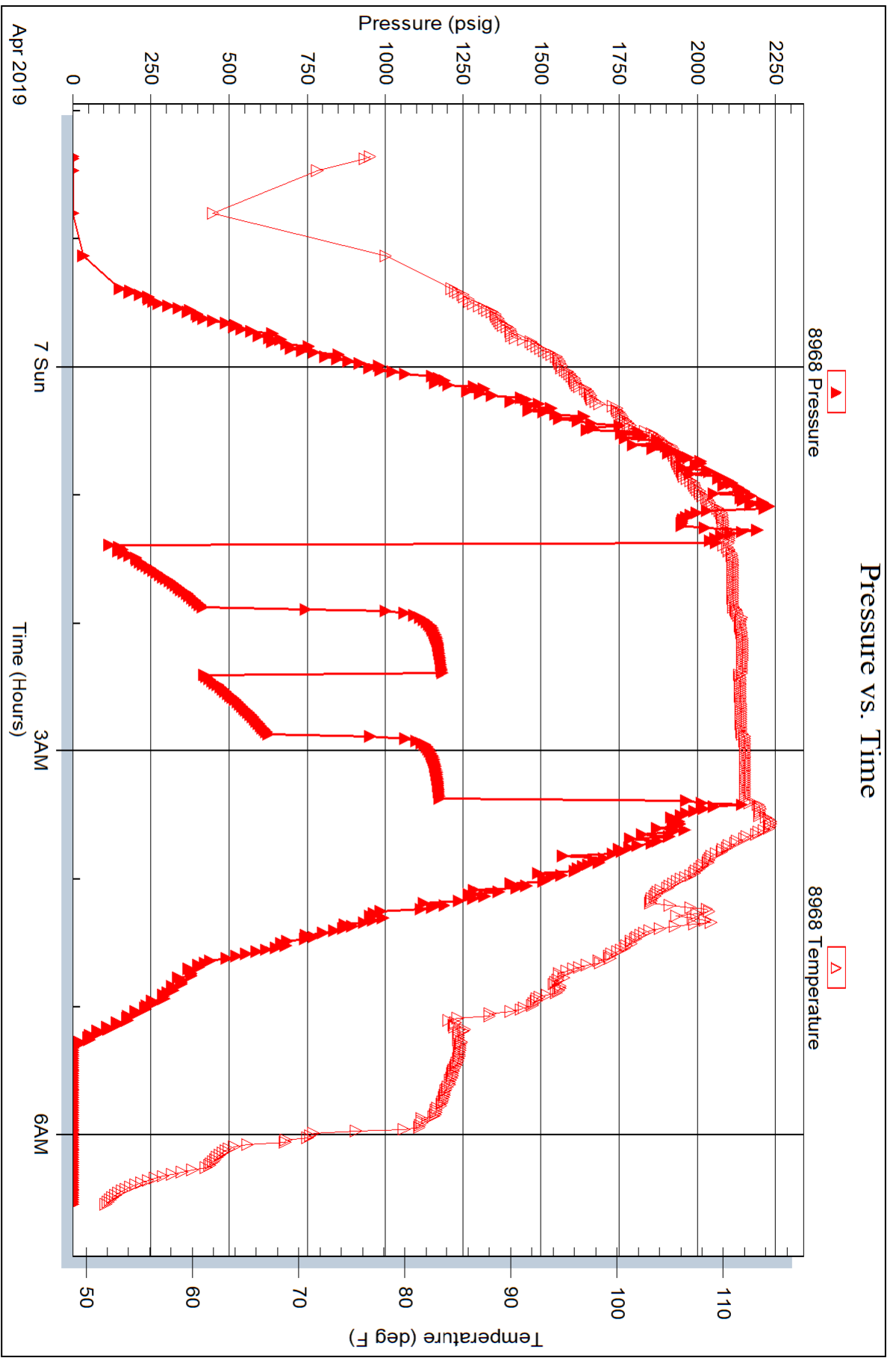
Laboratory Name:

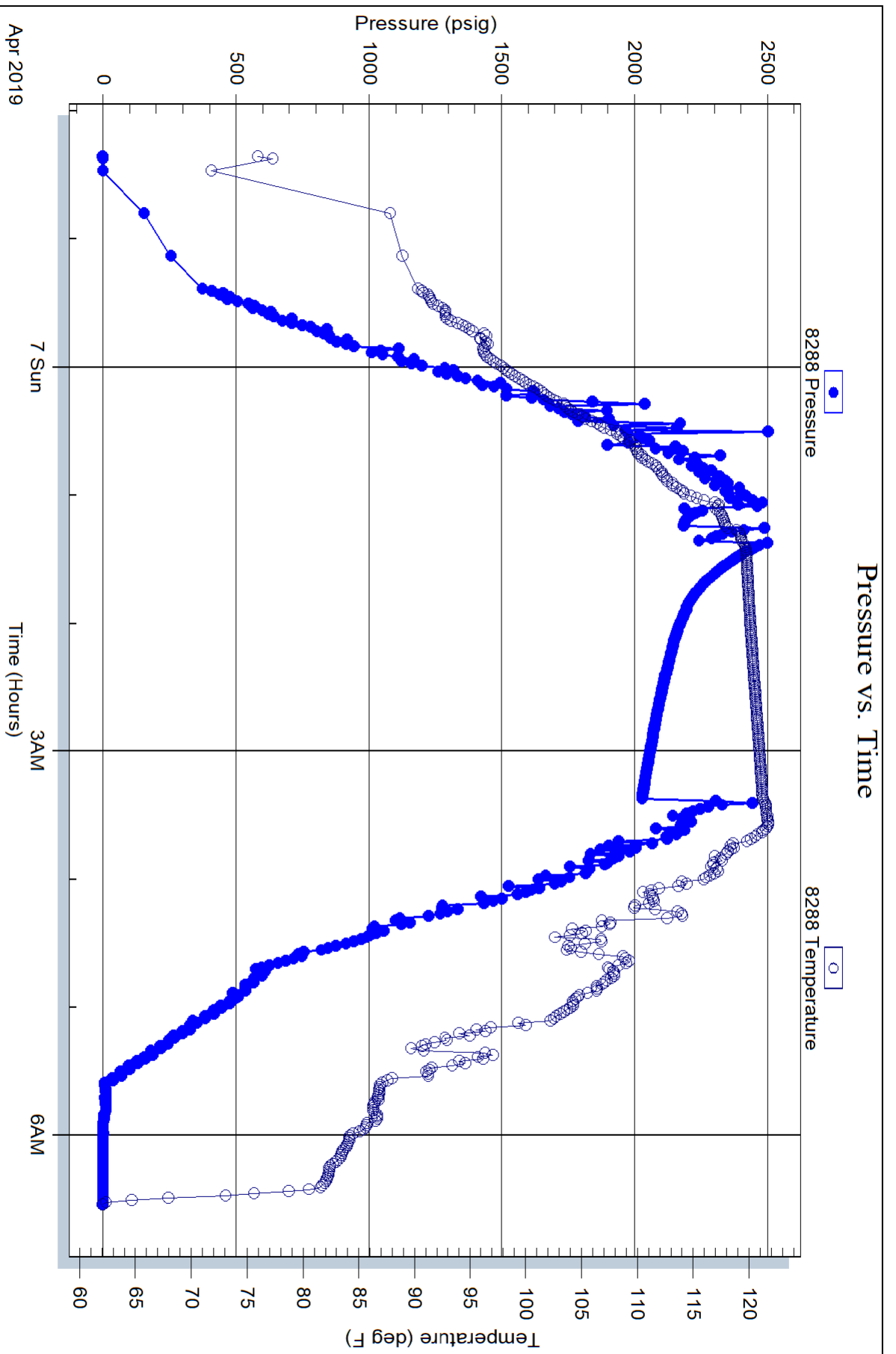
Laboratory Location:

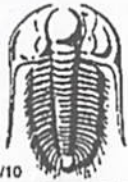
Recovery Comments: RW= .497 @ 57.6= 24000 ppm

Pressure vs. Time









TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 65130

Well Name & No. Ross 1-27 Test No. 1 Date 4-4-19
 Company Arcadian Resources LLC Elevation 2860 KB 2850 GL
 Address 1302 Olive St. Concordia KS 66901
 Co. Rep / Geo. Sean Deenihan Rig Duke 4
 Location: Sec. 27 Twp 14 Rge. 33 Co. Logan State KS

Interval Tested 4015-4104 Zone Tested ~~4015-4104~~ H-I-J
 Anchor Length 89 Drill Pipe Run 4012 Mud Wt. 8.5
 Top Packer Depth 4010 Drill Collars Run Ø Vis 40
 Bottom Packer Depth 4015 Wt. Pipe Run Ø WL 7.6
 Total Depth 4104 Chlorides 5500 ppm System LCM 4
 Blow Description IF: Built to 59" BOB in 3 Min
IS: NO Return Blow
FF: Built to 45" BOB in 4 Min
FS: NO Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>682</u>	<u>MUD - oil spots on 1st stand</u>			<u>100</u>	
<u>558</u>	<u>mcw</u>		<u>70</u>	<u>30</u>	
<u>124</u>	<u>mcw</u>		<u>96</u>	<u>4</u>	

Rec Total 1364 BHT 117 Gravity - API RW 1444 @ 54.4°F Chlorides 25000 ppm
 (A) Initial Hydrostatic 2059 Test 1300 T-On Location 06:35 13:20
 (B) First Initial Flow 95 Jars 250 T-Started 14:25
 (C) First Final Flow 375 Safety Joint 75 T-Open 17:14
 (D) Initial Shut-In 1152 Circ Sub NC T-Pulled 19:14
 (E) Second Initial Flow 378 Hourly Standby _____ T-Out 21:50
 (F) Second Final Flow 558 Mileage 76 RT x 2 Comments Short Trip
 (G) Final Shut-In 1098 Sampler 76+76 Tight-
 (H) Final Hydrostatic 2005 Straddle _____ EM Tool 350
 Shale Packer _____ Ruined Shale Packer _____
 Extra Packer _____ Ruined Packer _____
 Extra Recorder _____ Extra Copies _____
 Day Standby _____ Sub Total 350
 Accessibility _____ Total 2127.00
 Sub Total 1777 MP/DST Disc't _____

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

Approved By [Signature] Our Representative Mike Roberts

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

ARCADIAN ROSS 1-27 DST #2 Test Ticket

NO. 65131

Well Name & No. Ross 1-27 Test No. 2 Date 4-6-19
 Company Arcadian Resources LLC Elevation 2860 KB 2850 GL
 Address 1302 Olive St. Concordia, KS 66901
 Co. Rep / Geo. Sean Deenihan Rig Duke 4
 Location: Sec. 27 Twp 14 Rge. 33 Co. Logan State KS

Interval Tested 4030-4155 ^{TID} 4600 Zone Tested ~~K-Attainment~~ I-K
 Anchor Length 125 Drill Pipe Run 4020 Mud Wt. 9.4
 Top Packer Depth 4025 Drill Collars Run Ø Vis 56
 Bottom Packer Depth 4030 Wt. Pipe Run Ø WL 8.8
 Total Depth 4600 Chlorides 9500 ppm System LCM 4
 Blow Description IF: Boiled to 75"
IS: No Return Blow
FF: Boiled to 49"
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>310</u>	<u>mud</u>			<u>100</u>	
<u>620</u>	<u>WCM</u>		<u>40</u>	<u>60</u>	
<u>124</u>	<u>WCM</u>		<u>50</u>	<u>50</u>	
<u>372</u>	<u>MCLW</u>		<u>70</u>	<u>30</u>	
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 1426 BHT 110 Gravity — API RW 497 @ 57.4% F Chlorides 24000 ppm
 (A) Initial Hydrostatic 2153 Test 1300 T-On Location 21:10
 (B) First Initial Flow 111 Jars 250 T-Started 22:21
 (C) First Final Flow 418 Safety Joint 75 T-Open 01:23
 (D) Initial Shut-In 1177 Circ Sub NC T-Pulled 03:23
 (E) Second Initial Flow 419 Hourly Standby _____ T-Out 06:33
 (F) Second Final Flow 627 Mileage 76 RT 76 Comments _____
 (G) Final Shut-In 1173 Sampler _____
 (H) Final Hydrostatic 2111 Straddle 600 EM Tool 350
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Recorder _____
 Extra Copies _____
 Day Standby 1.5d 11.5h Sub Total 350 + 383.33
 Accessibility _____ Total 3284.33
 Sub Total 2551 MP/DST Disc't _____

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

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