



DRILL STEM TEST REPORT

Prepared For: **Royal Energy**

P.O. Box 1820
Dodge City ,Kansas 67801

ATTN: Eli Felts

Alpers #2

4-23s-12w Stafford

Start Date: 2018.09.06 @ 23:52:00

End Date: 2018.09.06 @ 06:30:00

Job Ticket #: 01009 DST #: 3

Eagle Testers
1309 Patton Road Great Bend, Kansas 67530
620-791-7394

Printed: 2018.09.06 @ 06:52:16

Royal Energy
4-23s-12w Stafford
Alpers #2
DST # 3
Kansas City "J & K"
2018.09.06



DRILL STEM TEST REPORT

Royal Energy
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 Dodge City, Kansas 67801
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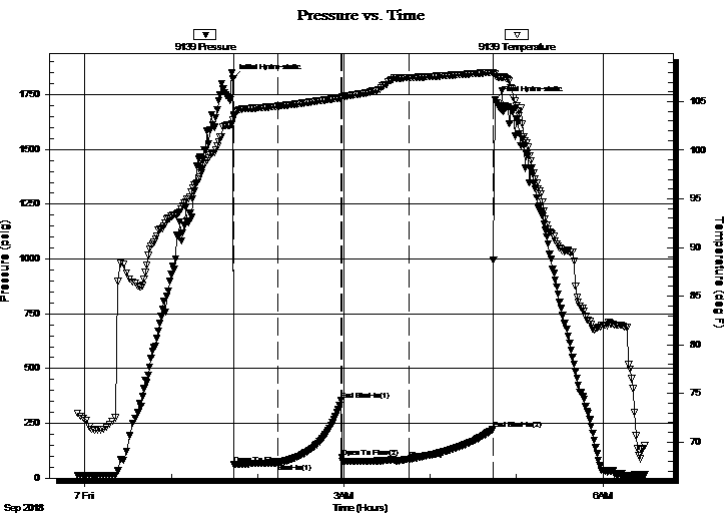
4-23s-12w Stafford
Alpers #2
 Job Ticket: 01009 **DST#: 3**
 Test Start: 2018.09.06 @ 23:52:00

GENERAL INFORMATION:

Formation: **Kansas City "J & K"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 01:44:00 Tester: Gene Budig
 Time Test Ended: 06:30:00 Unit No: 1
 Interval: **3476.00 ft (KB) To 3535.00 ft (KB) (TVD)** Reference Elevations: 1851.00 ft (KB)
 Total Depth: 3535.00 ft (KB) (TVD) 1841.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

Serial #: 9139 Outside
 Press@RunDepth: 222.78 psig @ 3529.77 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.09.06 End Date: 2018.09.07 Last Calib.: 2018.09.06
 Start Time: 23:52:00 End Time: 06:29:00 Time On Btm: 2018.09.07 @ 01:43:00
 Time Off Btm: 2018.09.07 @ 04:45:00

TEST COMMENT: 1st Opening 30 Minutes weak blow built to 1 1/2 inches into the water
 1st Shut-In 45 Minutes
 2nd Opening 45 Minutes weak blow for 24 minutes and died
 2nd Shut--In 60 Minutes



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1822.78	103.08	Initial Hydro-static
1	63.02	103.51	Open To Flow (1)
32	69.76	104.53	Shut-In(1)
75	354.52	105.37	End Shut-In(1)
76	96.28	105.46	Open To Flow (2)
122	86.56	107.46	Shut-In(2)
181	222.78	108.00	End Shut-In(2)
182	1724.99	107.84	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
35.00	Drillinbg Mud	0.49

Gas Rates

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



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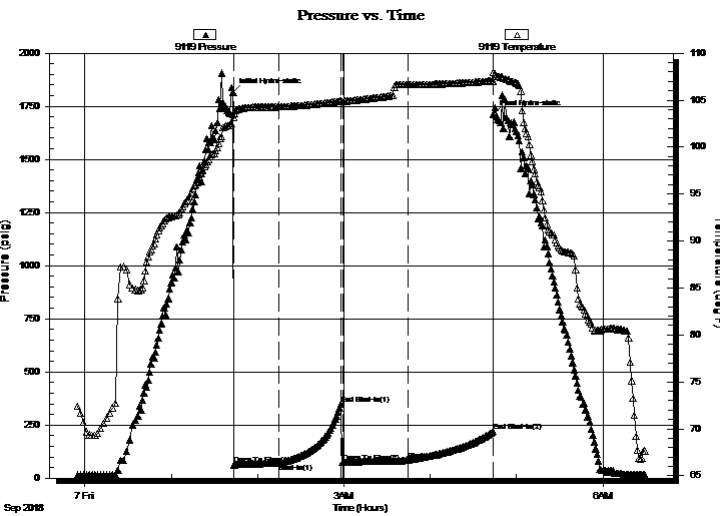
4-23s-12w Stafford
Alpers #2
 Job Ticket: 01009 **DST#: 3**
 Test Start: 2018.09.06 @ 23:52:00

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 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 01:44:00
 Time Test Ended: 06:30:00
 Interval: **3476.00 ft (KB) To 3535.00 ft (KB) (TVD)**
 Total Depth: 3535.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Gene Budig
 Unit No: 1
 Reference Elevations: 1851.00 ft (KB)
 1841.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 9119 Inside
 Press@RunDepth: 219.09 psig @ 3529.77 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.09.06 End Date: 2018.09.07 Last Calib.: 2018.09.06
 Start Time: 23:52:00 End Time: 06:29:00 Time On Btm: 2018.09.07 @ 01:43:00
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TEST COMMENT: 1st Opening 30 Minutes weak blow built to 1 1/2 inches into the water
 1st Shut-In 45 Minutes
 2nd Opening 45 Minutes weak blow for 24 minutes and died
 2nd Shut-In 60 Minutes



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1814.23	103.51	Initial Hydro-static
1	63.38	103.19	Open To Flow (1)
32	70.73	104.29	Shut-In(1)
75	347.48	104.91	End Shut-In(1)
76	75.24	104.87	Open To Flow (2)
122	85.75	106.65	Shut-In(2)
181	219.09	107.05	End Shut-In(2)
181	1711.46	107.95	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
35.00	Drilling Mud	0.49

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

Royal Energy
 P.O. Box 1820
 Dodge City ,Kansas 67801
 ATTN: Eii Felts

4-23s-12w Stafford
Alpers #2
 Job Ticket: 01009 **DST#: 3**
 Test Start: 2018.09.06 @ 23:52:00

Tool Information

Drill Pipe:	Length: 3452.00 ft	Diameter: 3.80 inches	Volume: 48.42 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:	20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	84000.00 lb
			<u>Total Volume: 48.42 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial	42000.00 lb
Depth to Top Packer:	3476.00 ft			Final	42000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	58.77 ft				
Tool Length:	88.77 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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Shut In Tool	5.00			3451.00	
Hydraulic tool	5.00			3456.00	
Jars	5.00			3461.00	
Safety Joint	5.00			3466.00	
Packer	5.00			3471.00	30.00 Bottom Of Top Packer
Packer	5.00		Fluid	3476.00	
Anchor	5.00			3481.00	
Change Over Sub	0.75			3481.75	
Drill Pipe	31.27			3513.02	
Change Over Sub	0.75		Inside	3513.77	
Anchor	16.00			3529.77	
Recorder	0.00	9119	Inside	3529.77	
Recorder	0.00	9139	Outside	3529.77	
Bullnose	5.00			3534.77	58.77 Bottom Packers & Anchor

Total Tool Length: 88.77



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FLUID SUMMARY

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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: 57.00 sec/qt	Cushion Volume: bbl		
Water Loss: 13.20 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 12500.00 ppm			
Filter Cake: 1.00 inches			

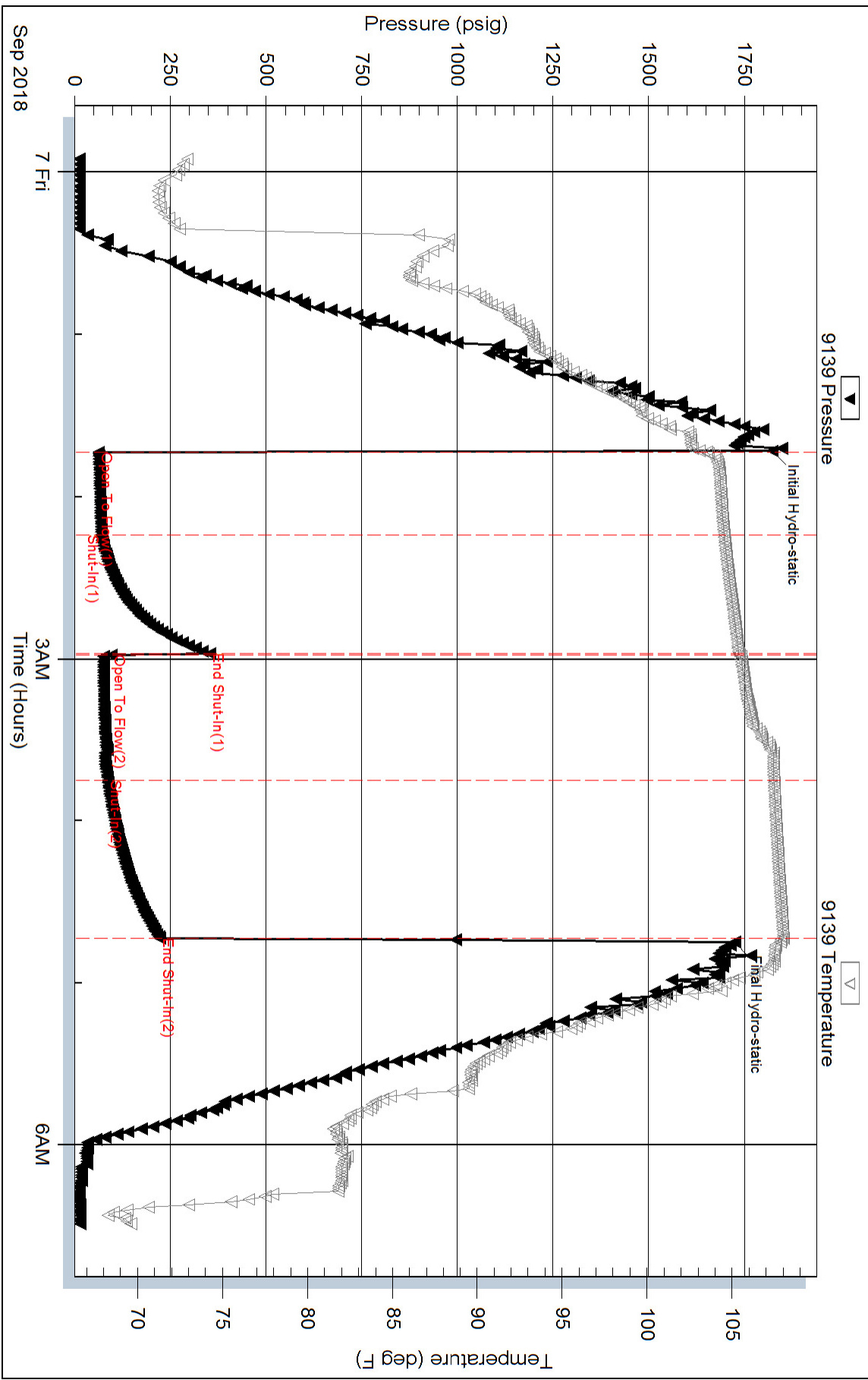
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
35.00	Drillinbg Mud	0.491

Total Length: 35.00 ft Total Volume: 0.491 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

Pressure vs. Time



Pressure vs. Time

