



DRILL STEM TEST REPORT

Prepared For: **F G Holl Company LLC**

9431 East Central suite 100
Wichita, Kansas 67206-2563

ATTN: Renee Hustain

Calcara #4-19

19-19s-14w Barton

Start Date: 2019.07.13 @ 20:02:00

End Date: 2019.07.14 @ 04:34:00

Job Ticket #: 01368 DST #: 5

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

Printed: 2019.07.14 @ 05:17:19



DRILL STEM TEST REPORT

F G Holl Company LLC

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ATTN: Renee Hustean

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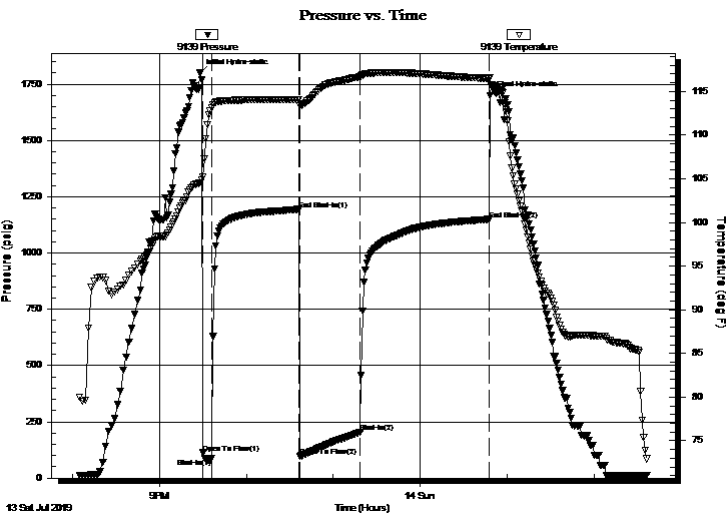
Test Start: 2019.07.13 @ 20:02:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 23:24:00
 Time Test Ended: 04:34:00
 Interval: **3445.00 ft (KB) To 3555.00 ft (KB) (TVD)**
 Total Depth: 3555.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Gene Budig
 Unit No:
 Reference Elevations: 1911.00 ft (KB)
 1903.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 9139 Outside
 Press@RunDepth: 1149.02 psig @ 3550.00 ft (KB) Capacity: 5000.00 psig
 Start Date: 2019.07.13 End Date: 2019.07.14 Last Calib.: 2019.07.14
 Start Time: 20:05:00 End Time: 02:36:30 Time On Btm: 2019.07.13 @ 21:28:00
 Time Off Btm: 2019.07.14 @ 00:48:00

TEST COMMENT: 1st Opening 5 Minutes strong blow gas to surface in 5 minutes
 1st Shut-In 60 Minutes no blow back
 2nd Opening 45 Minutes strong blow see gas flow report
 2nd Shut-In 90 Minutes weak blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1798.36	104.58	Initial Hydro-static
2	112.25	105.18	Open To Flow (1)
8	87.29	113.14	Shut-In(1)
68	1193.68	114.05	End Shut-In(1)
69	98.17	113.39	Open To Flow (2)
111	203.74	116.64	Shut-In(2)
200	1149.02	116.48	End Shut-In(2)
200	1698.97	116.61	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
100.00	Clean Bassy Oil 20% Gas 80% Oil	1.40
60.00	Oil and gas cut w ater	0.84
0.00	30%Gas 30%Oil 10%Mud 30%Water	0.00
60.00	slightly oil land mud cut w ater	0.84
0.00	4%Oil 8%Mud 88%Water	0.00
180.00	Water Chlorides 28000	2.52

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.25	25.50	63.30
Last Gas Rate	0.25	10.50	39.50
Max. Gas Rate	0.25	25.50	63.30



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 Interval: **3445.00 ft (KB) To 3555.00 ft (KB) (TVD)**
 Reference Elevations: 1911.00 ft (KB)
 Total Depth: 3555.00 ft (KB) (TVD)
 1903.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Fair
 KB to GR/CF: 8.00 ft

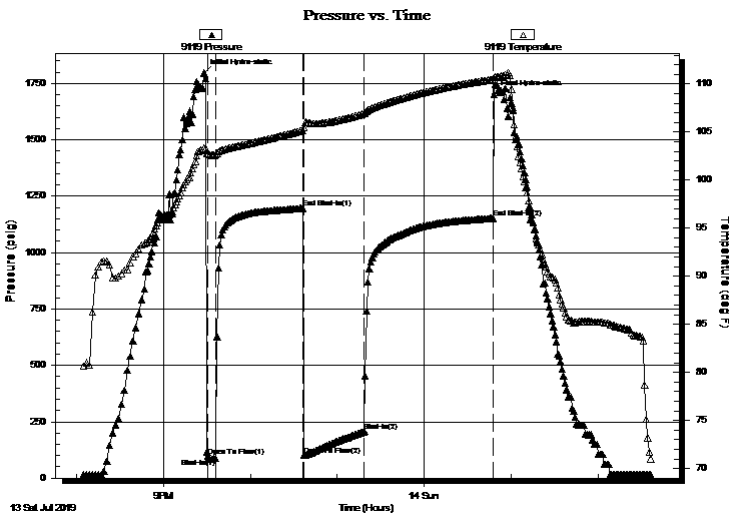
Serial #: 9119

Inside

Press@RunDepth: 1152.06 psig @ 3550.00 ft (KB) Capacity: 5000.00 psig
 Start Date: 2019.07.13 End Date: 2019.07.14 Last Calib.: 2019.07.14
 Start Time: 20:05:00 End Time: 02:36:30 Time On Btm: 2019.07.13 @ 21:28:00
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 1st Shut-In 60 Minutes no blow back
 2nd Opening 45 Minutes strong blow see gas flow report
 2nd Shut-In 90 Minutes weak blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1795.55	103.32	Initial Hydro-static
3	98.47	102.81	Open To Flow (1)
8	89.04	102.62	Shut-In(1)
69	1196.58	105.16	End Shut-In(1)
69	100.22	105.50	Open To Flow (2)
111	206.49	106.92	Shut-In(2)
200	1152.06	110.48	End Shut-In(2)
200	1700.86	110.70	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
100.00	Clean Bassy Oil 20% Gas 80% Oil	1.40
60.00	Oil and gas cut w ater	0.84
0.00	30%Gas 30%Oil 10%Mud 30%Water	0.00
60.00	slightly oil land mud cut w ater	0.84
0.00	4%Oil 8%Mud 88%Water	0.00
180.00	Water Chlorides 28000	2.52

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.25	25.50	63.30
Last Gas Rate	0.25	10.50	39.50
Max. Gas Rate	0.25	25.50	63.30



DRILL STEM TEST REPORT

TOOL DIAGRAM

F G Holl Company LLC

19-19s-14w Barton

9431 East Central suite 100
Wichita, Kansas 67206-2563

Calcara #4-19

Job Ticket: 01368

DST#: 5

ATTN: Renee Hustean

Test Start: 2019.07.13 @ 20:02:00

Tool Information

Drill Pipe:	Length: 3528.00 ft	Diameter: 3.80 inches	Volume: 49.49 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:	68000.00 lb
			<u>Total Volume: 49.49 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial	50000.00 lb
Depth to Top Packer:	3545.00 ft			Final	52000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	10.00 ft				
Tool Length:	40.00 ft				
Number of Packers:	1	Diameter:	inches		
Tool Comments:					

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3520.00	
Hydraulic tool	5.00			3525.00	
Jars	5.00			3530.00	
Safety Joint	5.00			3535.00	
Packer	5.00			3540.00	30.00 Bottom Of Top Packer
Packer	5.00		Fluid	3545.00	
Anchor	5.00			3550.00	
Recorder	0.00	9119	Inside	3550.00	
Recorder	0.00	9139	Outside	3550.00	
Bullnose	5.00			3555.00	10.00 Bottom Packers & Anchor
Total Tool Length:	40.00				



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FLUID SUMMARY

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DST#: 5

ATTN: Renee Hustean

Test Start: 2019.07.13 @ 20:02:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 48.00 sec/qt
Water Loss: 9.18 in³
Resistivity: ohm.m
Salinity: 6000.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: deg API
Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
100.00	Clean Bassy Oil 20% Gas 80% Oil	1.403
60.00	Oil and gas cut w ater	0.842
0.00	30%Gas 30%Oil 10%Mud 30%Water	0.000
60.00	slightly oil land mud cut w ater	0.842
0.00	4%Oil 8%Mud 88%Water	0.000
180.00	Water Chlorides 28000	2.525

Total Length: 400.00 ft Total Volume: 5.612 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



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GAS RATES

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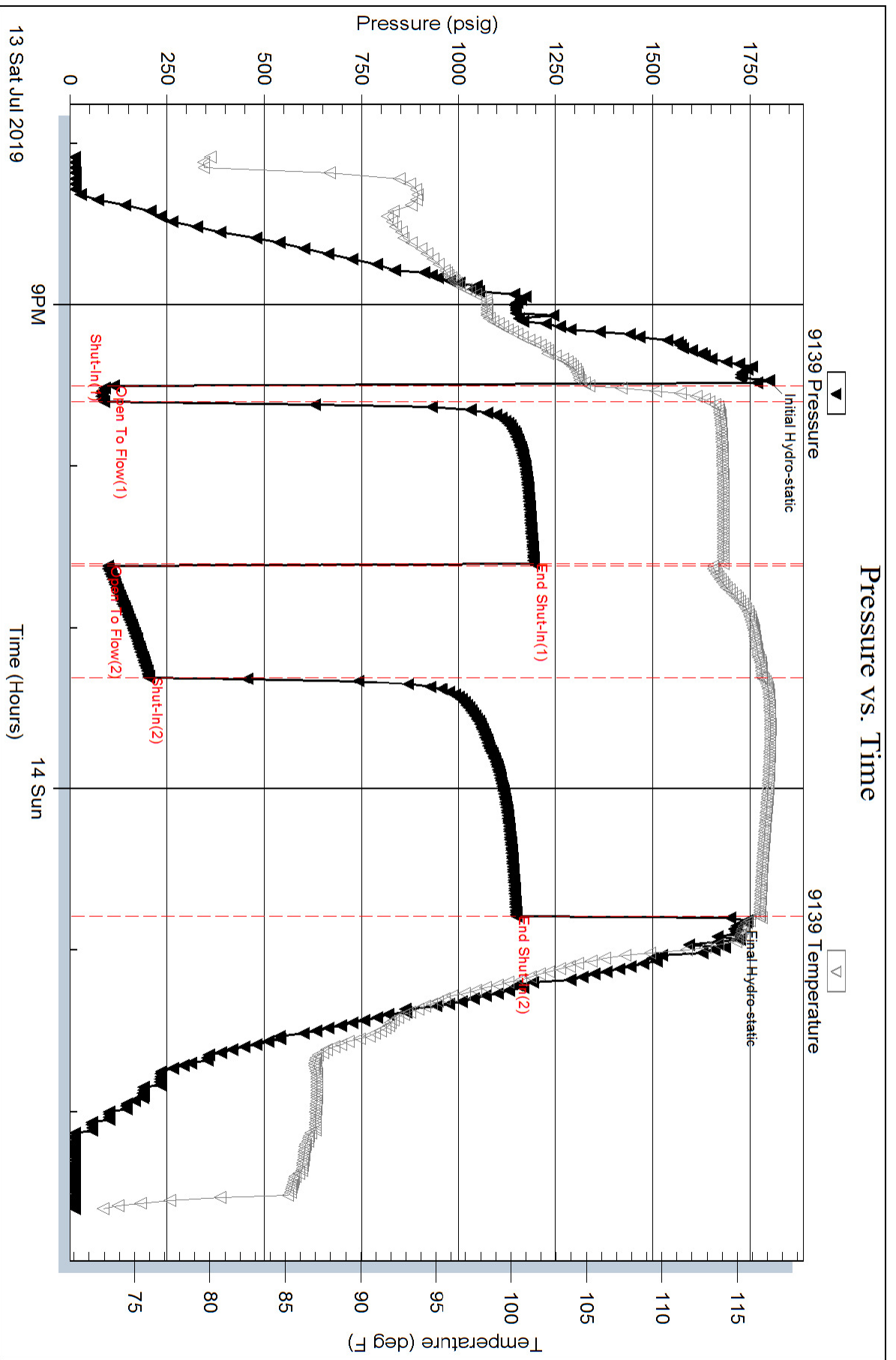
Test Start: 2019.07.13 @ 20:02:00

Gas Rates Information

Temperature: 59 (deg F)
Relative Density: 0.65
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
2	5	0.25	25.50	63.30
2	15	0.25	21.00	56.16
2	25	0.25	17.00	49.81
2	35	0.25	15.00	46.64
2	45	0.25	10.50	39.50



Pressure vs. Time

