



DRILL STEM TEST REPORT

Prepared For: **RJM COMPANY**

P.O. BOX 256
CLAFLIN, KANSAS 67525-0256

ATTN: WYATT URBAN

HOWARD 1

22-19S-13W BARTON

Start Date: 2015.09.24 @ 11:09:00

End Date: 2015.09.24 @ 00:00:00

Job Ticket #: 01239 DST #: 2

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

Printed: 2015.09.24 @ 05:59:00



DRILL STEM TEST REPORT

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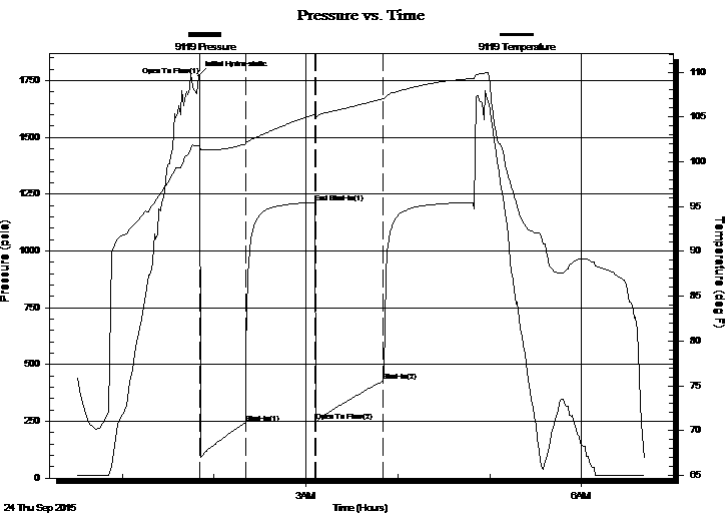
22-19S-13W BARTON
HOWARD 1
 Job Ticket: 01239 **DST#: 2**
 Test Start: 2015.09.24 @ 11:09:00

GENERAL INFORMATION:

Formation: **ARBUCKLE**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 00:30:00
 Time Test Ended: 00:00:00
 Interval: **3382.00 ft (KB) To 3385.00 ft (KB) (TVD)**
 Total Depth: 3485.00 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: 1849.00 ft (KB)
 1843.00 ft (CF)
 KB to GR/CF: 6.00 ft

Serial #: 9119 Inside
 Press@RunDepth: 1213.40 psia @ 3480.19 ft (KB) Capacity: psia
 Start Date: 2015.09.24 End Date: 2015.09.24 Last Calib.: 1899.12.30
 Start Time: 00:30:00 End Time: 06:41:30 Time On Btm: 2015.09.24 @ 01:50:00
 Time Off Btm:

TEST COMMENT: 1st OPENING 30 MINUTES FAIR BLOW BUILT TO THE BOTTOM OF A 5 GALLON BUCKET IN 7 MINUTES
 1ST SHUT-IN 45 MINUTES-NO BLOW BACK
 2ND OPENING 45 MINUTES FAIR BLOW BUILT TO THE BOTTOM OF A 5 GALLON BUCKET IN 8 MINUTES
 2ND SHUT-IN 60 MINUTES-NO BLOW BACK



PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1771.17	101.79	Initial Hydro-static
1	1770.17	101.77	Open To Flow (1)
31	241.39	101.99	Shut-In(1)
76	1213.40	105.25	End Shut-In(1)
77	249.59	105.00	Open To Flow (2)
121	427.66	107.04	Shut-In(2)

Recovery

Length (ft)	Description	Volume (bbl)
70.00	mud	0.98
90.00	WATERY MUD 80 MUD 20 WATER	1.26
150.00	MUDDY WATER 50 MUD 50 WATER	2.10
240.00	MUDDY WATER 40 MUD 60 WATER	3.37
120.00	SLIGHTLY MUDDY WATER	1.68
0.00	15 MUD 85 WATER	0.00

Gas Rates

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



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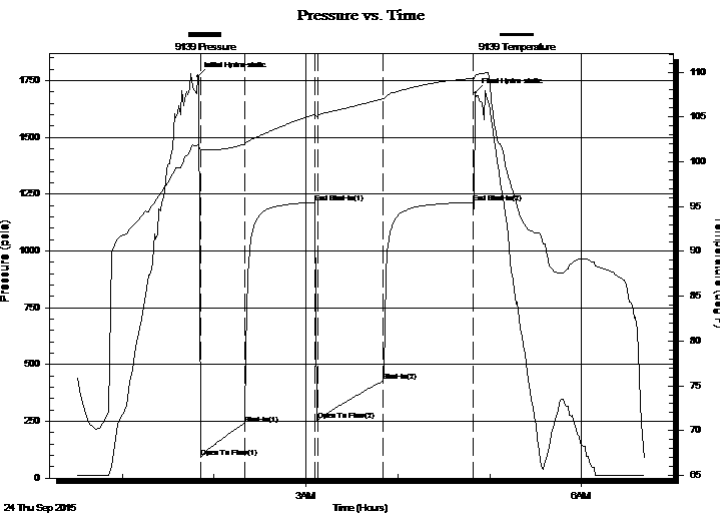
22-19S-13W BARTON
HOWARD 1
 Job Ticket: 01239 **DST#: 2**
 Test Start: 2015.09.24 @ 11:09:00

GENERAL INFORMATION:

Formation: **ARBUCKLE**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 00:30:00 Tester: GENE BUDIG
 Time Test Ended: 00:00:00 Unit No: 1
 Interval: **3382.00 ft (KB) To 3385.00 ft (KB) (TVD)** Reference Elevations: 1849.00 ft (KB)
 Total Depth: 3485.00 ft (KB) (TVD) 1843.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 6.00 ft

Serial #: 9139 Outside
 Press@RunDepth: 1213.92 psia @ 3480.19 ft (KB) Capacity: 5000.00 psia
 Start Date: 2015.09.24 End Date: 2015.09.24 Last Calib.: 2015.09.24
 Start Time: 00:30:00 End Time: 06:41:30 Time On Btm: 2015.09.24 @ 01:49:30
 Time Off Btm: 2015.09.24 @ 04:50:30

TEST COMMENT: 1st OPENING 30 MINUTES FAIR BLOW BUILT TO THE BOTTOM OF A 5 GALLON BUCKET IN 7 MINUTES
 1ST SHUT-IN 45 MINUTES-NO BLOW BACK
 2ND OPENING 45 MINUTES FAIR BLOW BUILT TO THE BOTTOM OF A 5 GALLON BUCKET IN 8 MINUTES
 2ND SHUT-IN 60 MINUTES-NO BLOW BACK



PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1767.69	101.86	Initial Hydro-static
2	93.83	101.36	Open To Flow (1)
31	239.49	101.96	Shut-In(1)
77	1213.40	105.25	End Shut-In(1)
78	253.64	105.07	Open To Flow (2)
121	427.66	107.04	Shut-In(2)
180	1213.92	109.29	End Shut-In(2)
181	1695.60	109.56	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
70.00	mud	0.98
90.00	WATERY MUD 80 MUD 20 WATER	1.26
150.00	MUDDY WATER 50 MUD 50 WATER	2.10
240.00	MUDDY WATER 40 MUD 60 WATER	3.37
120.00	SLIGHTLY MUDDY WATER	1.68
0.00	15 MUD 85 WATER	0.00

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

RJM COMPANY

22-19S-13W BARTON

P.O. BOX 256
CLAFLIN, KANSAS 67525-0256

HOWARD 1

Job Ticket: 01239

DST#: 2

ATTN: WYATT URBAN

Test Start: 2015.09.24 @ 11:09:00

Tool Information

Drill Pipe:	Length: 3390.00 ft	Diameter: 3.80 inches	Volume: 47.55 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:	62000.00 lb
			<u>Total Volume: 47.55 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial	45000.00 lb
Depth to Top Packer:	3382.00 ft			Final	50000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	103.19 ft				
Tool Length:	123.19 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3367.00	
Hydraulic tool	5.00			3372.00	
Top Packer	5.00			3377.00	
Packer	5.00			3382.00	20.00 Bottom Of Top Packer
Anchor	5.00			3387.00	
Change Over Sub	0.75			3387.75	
Drill Pipe	62.69			3450.44	
Change Over Sub	0.75			3451.19	
Anchor	29.00			3480.19	
Recorder	0.00	9119	Inside	3480.19	
Recorder	0.00	9139	Outside	3480.19	
Bullnose	5.00			3485.19	103.19 Anchor Tool

Total Tool Length: 123.19



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FLUID SUMMARY

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22-19S-13W BARTON

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Job Ticket: 01239

DST#: 2

ATTN: WYATT URBAN

Test Start: 2015.09.24 @ 11:09:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 48.00 sec/qt
Water Loss: 9.20 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: psia

Oil API: deg API
Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
70.00	mud	0.982
90.00	WATERY MUD 80 MUD 20 WATER	1.262
150.00	MUDDY WATER 50 MUD 50 WATER	2.104
240.00	MUDDY WATER 40 MUD 60 WATER	3.367
120.00	SLIGHTLY MUDDY WATER	1.683
0.00	15 MUD 85 WATER	0.000
60.00	SLIGHTLY MUDDY WATER	0.842
0.00	10 MUD 90 WATER CHLORIDES 18000	0.000

Total Length: 730.00 ft Total Volume: 10.240 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

