



DRILL STEM TEST REPORT

Prepared For: **GRAND MESA OPERATING**

1700 N WATERFRONT PKWY BLDG 600
WICHITA KS 67206

ATTN: MACK ARMSTRONG

34-12S-32W LOGAN

DALE 1-34

Start Date: 2011.04.05 @ 07:00:00

End Date: 2011.04.05 @ 15:48:00

Job Ticket #: 1011 DST #: 4

Eagle Testers LLC.

P.O.Box 1011, Great Bend, KS 67530

620-617-7548

Printed: 2011.04.05 @ 08:07:20

GRAND MESA OPERATING
DALE 1-34
34-12S-32W LOGAN
DST # 4
JOHNSON
2011.04.05



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GRAND MESA OPERATING

DALE 1-34

1700 N WATERFRONT PKWY BLDG 600
WICHITA KS 67206

34-12S-32W LOGAN

Job Ticket: 1011

DST#: 4

ATTN: MACK ARMSTRONG

Test Start: 2011.04.05 @ 07:00:00

GENERAL INFORMATION:

Formation: **JOHSON**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:25:30

Time Test Ended: 15:48:00

Test Type: Conventional Bottom Hole (Initial)

Tester: DAVID NICHOLS

Unit No: 15 21 MRT OAKLEY

Interval: **4538.00 ft (KB) To 4575.00 ft (KB) (TVD)**

Reference Elevations: 2989.00 ft (KB)

Total Depth: 4575.00 ft (KB) (TVD)

2983.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 6.00 ft

Serial #: **6666**

Inside

Press @ Run Depth: 210.09 psig @ 4571.00 ft (KB)

Capacity: 5000.00 psig

Start Date: 2011.04.05

End Date: 2011.04.05

Last Calib.: 2011.04.05

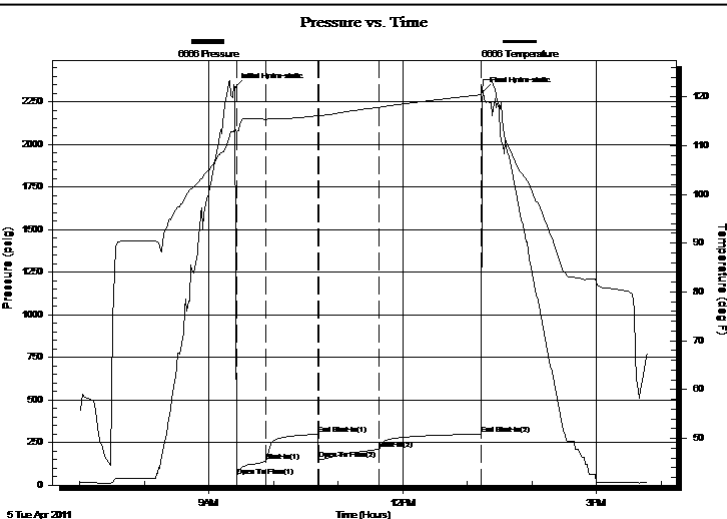
Start Time: 07:00:00

End Time: 15:48:00

Time On Btm: 2011.04.05 @ 09:24:30

Time Off Btm: 2011.04.05 @ 13:14:30

TEST COMMENT: 30-INITIAL OPENING GOOD BLOW BOTTOM BUCKET IN 12 MINS
45-INITIAL SHUT IN FAIR BLOW BACK BUILT TO 4 INCHES INTO WATER
60-FINAL OPENING GOOD BLOW BOTTOM BUCKET IN 10 MINS
90-FINAL SHUT IN SRFACE BLOW BACK



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2330.81	113.41	Initial Hydro-static
1	51.38	112.85	Open To Flow (1)
29	139.96	115.40	Shut-In(1)
77	298.53	116.14	End Shut-In(1)
78	150.90	116.10	Open To Flow (2)
134	210.09	117.86	Shut-In(2)
228	299.55	120.40	End Shut-In(2)
230	2311.70	123.44	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
660.00	GAS IN PIPE 100%GAS	8.49
120.00	CLEAN GASSY OIL 20%GAS80%OIL	1.75
330.00	MUD CUT GASSY OIL	4.83
0.00	30% MUD 15% GAS 55% OIL	0.00

Gas Rates

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



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Tester: DAVID NICHOLS

Unit No: 15 21 MRT OAKLEY

Interval: **4538.00 ft (KB) To 4575.00 ft (KB) (TVD)**

Reference Elevations: 2989.00 ft (KB)

Total Depth: 4575.00 ft (KB) (TVD)

2983.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 6.00 ft

Serial #: **6663** Outside

Press @ RunDepth: 301.16 psig @ 4572.00 ft (KB)

Capacity: 5000.00 psig

Start Date: 2011.04.05

End Date:

2011.04.05

Last Calib.:

2011.04.05

Start Time: 07:00:00

End Time:

15:40:30

Time On Btm:

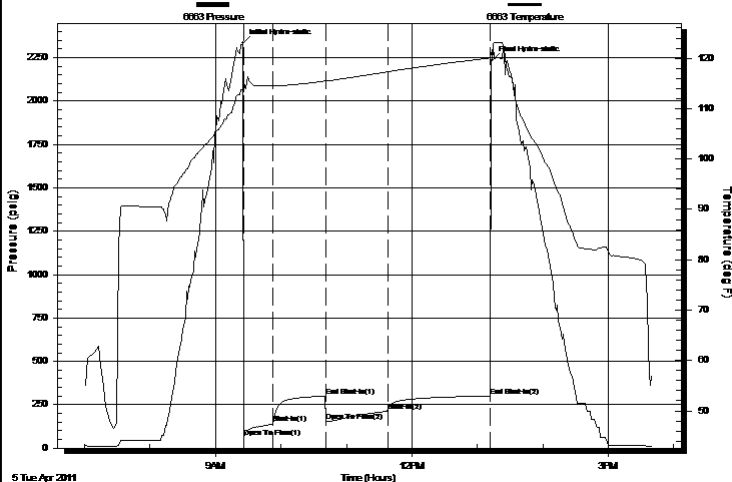
2011.04.05 @ 09:25:00

Time Off Btm:

2011.04.05 @ 13:13:30

TEST COMMENT: 30-INITIAL OPENING GOOD BLOW BOTTOM BUCKET IN 12 MINS
45-INITIAL SHUT IN FAIR BLOW BACK BUILT TO 4 INCHES INTO WATER
60-FINAL OPENING GOOD BLOW BOTTOM BUCKET IN 10 MINS
90-FINAL SHUT IN SRFACE BLOW BACK

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2333.14	113.88	Initial Hydro-static
1	61.14	113.28	Open To Flow (1)
28	141.53	114.49	Shut-In(1)
76	300.30	115.52	End Shut-In(1)
77	152.74	115.47	Open To Flow (2)
133	212.41	117.31	Shut-In(2)
227	301.16	120.07	End Shut-In(2)
229	2230.55	120.75	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
660.00	GAS IN PIPE 100%GAS	8.49
120.00	CLEAN GASSY OIL 20%GAS80%OIL	1.75
330.00	MUD CUT GASSY OIL	4.83
0.00	30% MUD 15% GAS 55% OIL	0.00

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

GRAND MESA OPERATING

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DST#: 4

ATTN: MACK ARMSTRONG

Test Start: 2011.04.05 @ 07:00:00

Tool Information

Drill Pipe:	Length: 4392.00 ft	Diameter: 3.88 inches	Volume: 64.23 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: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 64.82 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	3.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	4538.00 ft			Final 61000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	37.00 ft			
Tool Length:	66.00 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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Shut-in tool	5.00			4514.00	
Hydraulic tool	5.00			4519.00	
Change over sub	1.00			4520.00	
Jars	6.00			4526.00	
Safety Joint	2.00			4528.00	
Packer	5.00			4533.00	29.00 Bottom Of Top Packer
Packer	5.00			4538.00	
Anchor	32.00			4570.00	
Recorder	1.00	6666	Inside	4571.00	
Recorder	1.00	6663	Outside	4572.00	
Bullnose	3.00			4575.00	37.00 Bottom Packers & Anchor

Total Tool Length: 66.00



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FLUID SUMMARY

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Job Ticket: 1011

DST#: 4

ATTN: MACK ARMSTRONG

Test Start: 2011.04.05 @ 07:00:00

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: 79.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.20 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
660.00	GAS IN PIPE 100%GAS	8.487
120.00	CLEAN GASSY OIL 20%GAS80%OIL	1.755
330.00	MUD CUT GASSY OIL	4.826
0.00	30% MUD 15% GAS 55% OIL	0.000

Total Length: 1110.00 ft Total Volume: 15.068 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

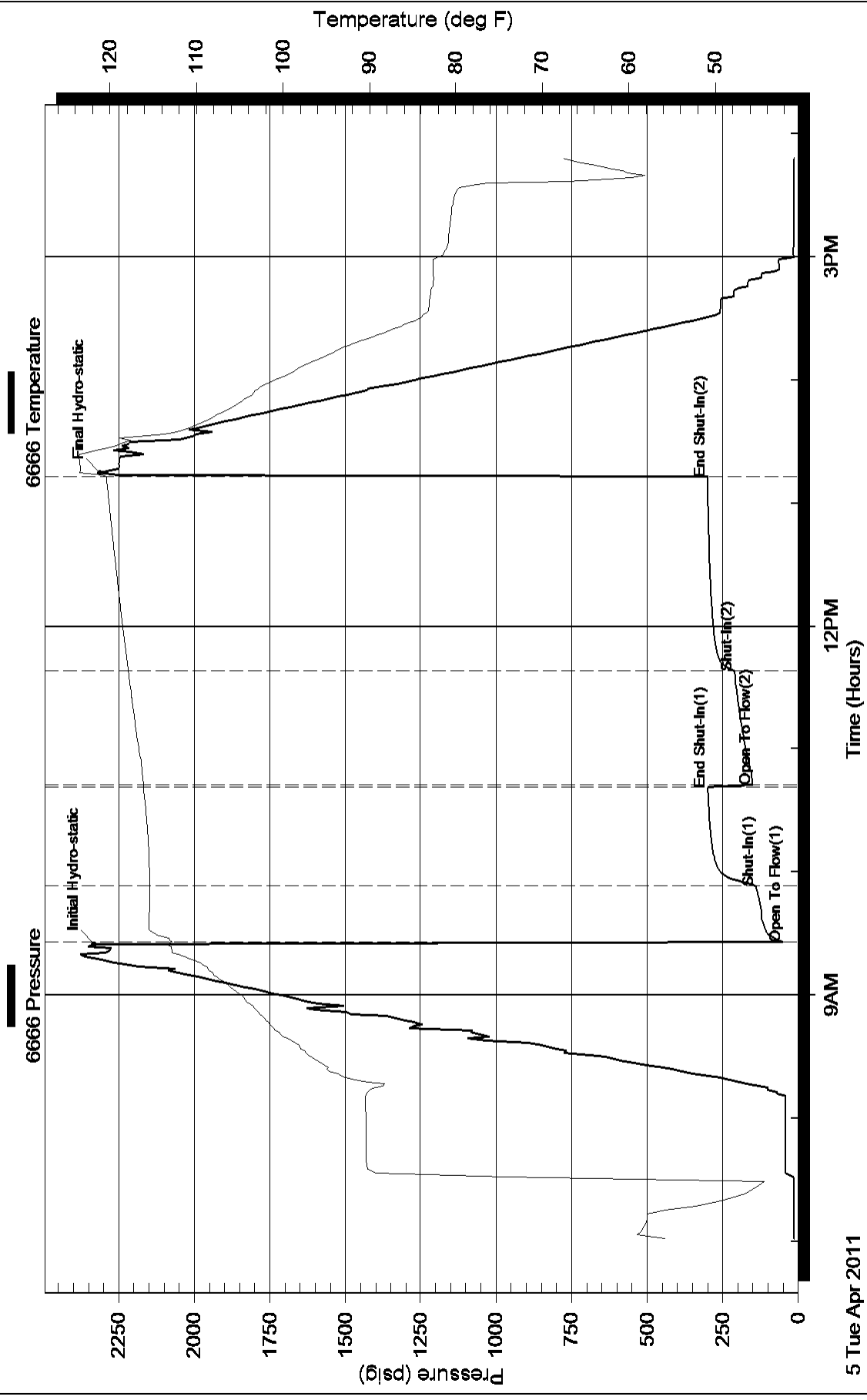
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: GRAVITY OF OIL 32

Pressure vs. Time



Pressure vs. Time

