



DRILL STEM TEST REPORT

Prepared For: **GRAND MESA OPERATING**

1700 N WATERFRONT PKWY BLDG 600
WICHITA KS 67206

ATTN: MAC ARMSTRONG

33-13S-31W GOVE

KLAUS 1-33

Start Date: 2011.04.12 @ 13:00:00

End Date: 2011.04.12 @ 20:37:00

Job Ticket #: 1016 DST #: 1

Eagle Testers LLC.

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

620-617-7548

Printed: 2011.04.12 @ 13:29:42

GRAND MESA OPERATING
KLAUS 1-33
33-13S-31W GOVE
DST # 1
LKC-C-
2011.04.12



DRILL STEM TEST REPORT

GRAND MESA OPERATING

KLAUS 1-33

1700 N WATERFRONT PKWY BLDG 600
WICHITA KS 67206

33-13S-31W GOVE

Job Ticket: 1016

DST#: 1

ATTN: MAC ARMSTRONG

Test Start: 2011.04.12 @ 13:00:00

GENERAL INFORMATION:

Formation: **LKC -C-**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:05:30

Time Test Ended: 20:37:00

Test Type: Conventional Bottom Hole (Initial)

Tester: DAVID NICHOLS

Unit No: 15 321 RT M GREAT BE

Interval: 3946.00 ft (KB) To 3968.00 ft (KB) (TVD)

Reference Elevations: 2859.00 ft (KB)

Total Depth: 3968.00 ft (KB) (TVD)

2854.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 6666

Inside

Press @ Run Depth: 230.89 psig @ 3964.00 ft (KB)

Capacity: 5000.00 psig

Start Date: 2011.04.12

End Date:

2011.04.12

Last Calib.:

2011.04.12

Start Time: 13:00:00

End Time:

20:37:00

Time On Btm:

2011.04.12 @ 15:04:30

Time Off Btm:

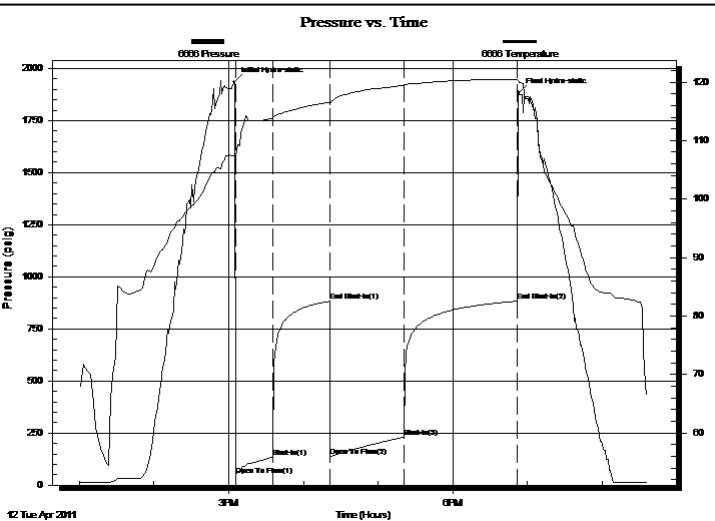
2011.04.12 @ 18:53:00

TEST COMMENT: 30-INITIAL OPENING WEAK BUILDING BLOW BUILT TO 9 INCHES INTO WATER

45-INITIAL SHUT IN NO BLOW BACK

60-FINAL OPENING WEAK BUILDING BLOW BOTTOM BUCKET IN 50 MINS

90-FINAL SHUT IN NO BLOW BACK



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1935.55	107.24	Initial Hydro-static
1	44.74	107.27	Open To Flow (1)
31	134.62	113.87	Shut-In(1)
77	883.18	116.53	End Shut-In(1)
77	138.88	116.17	Open To Flow (2)
137	230.89	119.45	Shut-In(2)
227	882.65	120.47	End Shut-In(2)
229	1886.14	120.05	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
150.00	MUDDY WATER TRACE OF OIL	0.44
0.00	40%MUD 60%WATER	0.00
180.00	WATER 100%WATER	2.63
60.00	MUDDY WATER 30%MUD 70%WATER	0.88

Gas Rates

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



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Tester: DAVID NICHOLS

Unit No: 15 321 RT M GREAT BE

Interval: 3946.00 ft (KB) To 3968.00 ft (KB) (TVD)

Reference Elevations: 2859.00 ft (KB)

Total Depth: 3968.00 ft (KB) (TVD)

2854.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 6663 Outside

Press @ Run Depth: 884.75 psig @ 3965.00 ft (KB)

Capacity: 5000.00 psig

Start Date: 2011.04.12

End Date:

2011.04.12

Last Calib.:

2011.04.12

Start Time: 13:00:00

End Time:

20:42:00

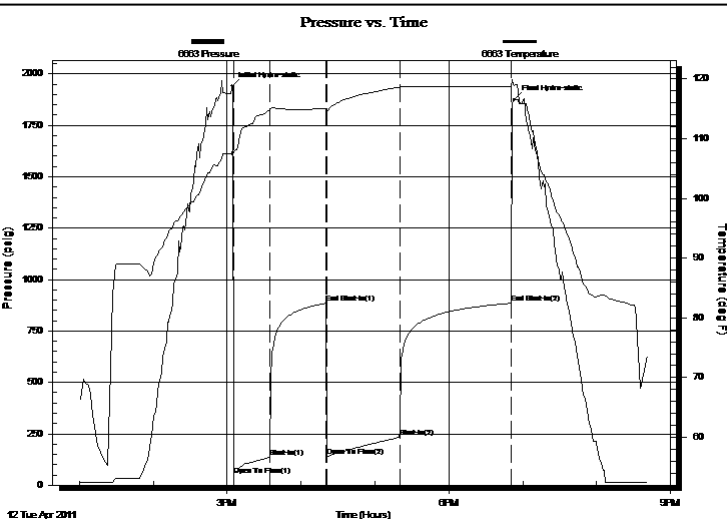
Time On Btm:

2011.04.12 @ 15:04:00

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2011.04.12 @ 18:53:30

TEST COMMENT: 30-INITIAL OPENING WEAK BUILDING BLOW BUILT TO 9 INCHES INTO WATER
45-INITIAL SHUT IN NO BLOW BACK
60-FINAL OPENING WEAK BUILDING BLOW BOTTOM BUCKET IN 50 MINS
90-FINAL SHUT IN NO BLOW BACK



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1939.06	107.64	Initial Hydro-static
1	47.88	107.71	Open To Flow (1)
31	136.90	114.79	Shut-In(1)
77	884.88	114.98	End Shut-In(1)
77	139.28	114.70	Open To Flow (2)
136	232.21	118.64	Shut-In(2)
227	884.75	118.78	End Shut-In(2)
230	1874.58	118.95	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
150.00	MUDDY WATER TRACE OF OIL	0.44
0.00	40%MUD 60%WATER	0.00
180.00	WATER 100%WATER	2.63
60.00	MUDDY WATER 30%MUD 70%WATER	0.88

Gas Rates

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



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TOOL DIAGRAM

GRAND MESA OPERATING

KLAUS 1-33

1700 N WATERFRONT PKWY BLDG 600
WICHITA KS 67206

33-13S-31W GOVE

Job Ticket: 1016

DST#: 1

ATTN: MAC ARMSTRONG

Test Start: 2011.04.12 @ 13:00:00

Tool Information

Drill Pipe:	Length: 3800.00 ft	Diameter: 3.88 inches	Volume: 55.57 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: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 55.57 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	3.00 ft			String Weight: Initial 55000.00 lb
Depth to Top Packer:	3946.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	22.00 ft			
Tool Length:	51.00 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			3922.00	
Hydraulic tool	5.00			3927.00	
Change over sub	1.00			3928.00	
Jars	6.00			3934.00	
Safety Joint	2.00			3936.00	
Packer	5.00			3941.00	29.00 Bottom Of Top Packer
Packer	5.00			3946.00	
Anchor	17.00			3963.00	
Recorder	1.00	6666	Inside	3964.00	
Recorder	1.00	6663	Outside	3965.00	
Bullnose	3.00			3968.00	22.00 Bottom Packers & Anchor

Total Tool Length: 51.00



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FLUID SUMMARY

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DST#: 1

ATTN: MAC ARMSTRONG

Test Start: 2011.04.12 @ 13:00:00

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: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.40 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1200.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
150.00	MUDDY WATER TRACE OF OIL	0.439
0.00	40%MUD 60%WATER	0.000
180.00	WATER 100%WATER	2.632
60.00	MUDDY WATER 30%MUD 70%WATER	0.877

Total Length: 390.00 ft Total Volume: 3.948 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RECOVERY CHLORIDES 39,000 PPM

Serial #: 6666

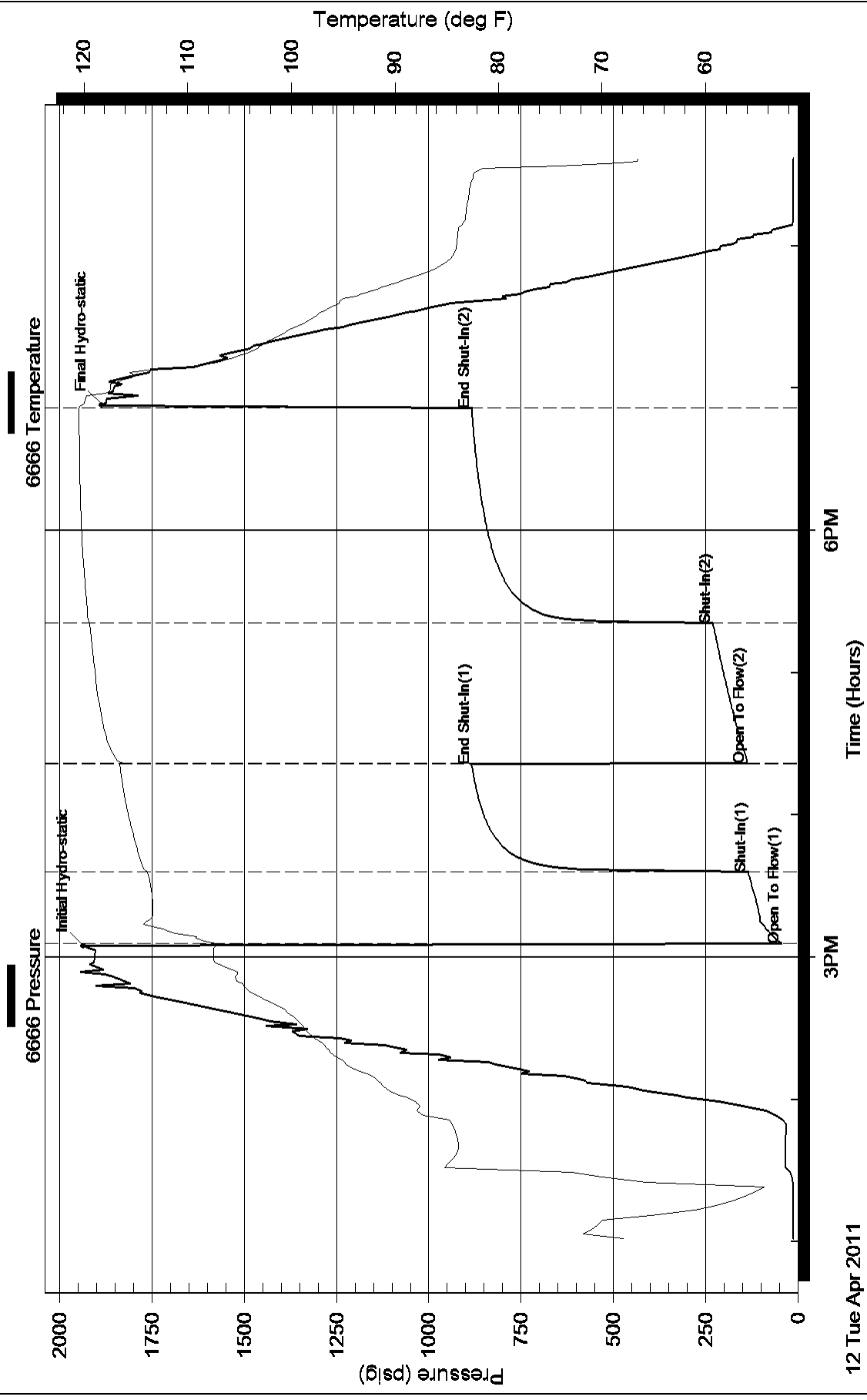
Inside

GRAND MESA OPERATING

33-13S-31W GOVE

DST Test Number: 1

Pressure vs. Time



Pressure vs. Time

