

## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Incorporated**

8100 East 22nd Street North  
# 700  
PO Box 783188

ATTN: Adam Eldin

### **Nuss Farms 36B #2**

### **36/13S/32W/Logan**

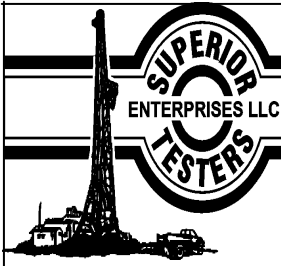
Start Date: 2012.03.26 @ 07:13:00

End Date: 2012.03.26 @ 13:20:00

Job Ticket #: 17628                      DST #: 1

Superior Testers Enterprises LLC  
PO Box 138 Great Bend KS 67530  
1-800-792-6902

Printed: 2012.03.26 @ 14:53:34



# DRILL STEM TEST REPORT

Ritchie Exploration Incorporated

**36/13S/32W/Logan**

8100 East 22nd Street North  
# 700  
PO Box 783188  
ATTN: Adam Eldin

**Nuss Farms 36B #2**

Job Ticket: 17628

**DST#: 1**

Test Start: 2012.03.26 @ 07:13:00

## GENERAL INFORMATION:

Formation: **Lansing/Kansas City**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:33:30

Time Test Ended: 13:20:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 3325 Scott City/60

**Interval: 3971.00 ft (KB) To 3998.00 ft (KB) (TVD)**

Reference Elevations: 2934.00 ft (KB)

Total Depth: 3998.00 ft (KB) (TVD)

2924.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

**Serial #: 6749**

**Inside**

Press @ Run Depth: 50.41 psia @ 3994.00 ft (KB)

Capacity: 5000.00 psia

Start Date: 2012.03.26

End Date: 2012.03.26

Last Calib.: 2012.03.26

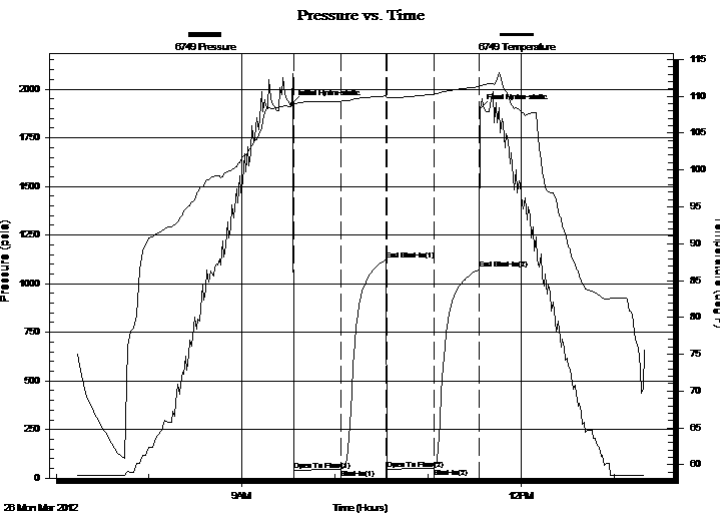
Start Time: 07:14:00

End Time: 13:20:00

Time On Btm: 2012.03.26 @ 09:32:00

Time Off Btm: 2012.03.26 @ 11:33:30

**TEST COMMENT:** 1ST Open 30 Minutes/Weak blow /Blow built to 1/2 inch in bucket of water  
1ST Shut In 30 Minutes/No blow back  
2ND Open 30 Minutes/Dead/No blow  
2ND Shut In 30 Minutes/No blow back



## PRESSURE SUMMARY

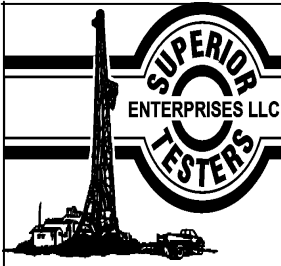
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1922.94	108.68	Initial Hydro-static
2	40.43	108.89	Open To Flow (1)
32	45.45	109.34	Shut-In(1)
61	1121.95	110.06	End Shut-In(1)
62	46.69	109.81	Open To Flow (2)
92	50.41	110.29	Shut-In(2)
121	1073.61	111.28	End Shut-In(2)
122	1901.76	111.49	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
10.00	Oil spotted Mud/ Oil 1%/ Mud 99%	0.05

## Gas Rates

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



# DRILL STEM TEST REPORT

Ritchie Exploration Incorporated

**36/13S/32W/Logan**

8100 East 22nd Street North  
# 700  
PO Box 783188  
ATTN: Adam Eldin

**Nuss Farms 36B #2**

Job Ticket: 17628

**DST#: 1**

Test Start: 2012.03.26 @ 07:13:00

## GENERAL INFORMATION:

Formation: **Lansing/Kansas City**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:33:30

Time Test Ended: 13:20:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 3325 Scott City/60

**Interval: 3971.00 ft (KB) To 3998.00 ft (KB) (TVD)**

Reference Elevations: 2934.00 ft (KB)

Total Depth: 3998.00 ft (KB) (TVD)

2924.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

**Serial #: 6651 Outside**

Press @ RunDepth: 1074.38 psia @ 3995.00 ft (KB)

Capacity: psia

Start Date: 2012.03.26

End Date: 2012.03.26

Last Calib.: 1899.12.30

Start Time: 07:14:00

End Time: 13:20:00

Time On Btm: 2012.03.26 @ 09:32:00

Time Off Btm: 2012.03.26 @ 11:36:00

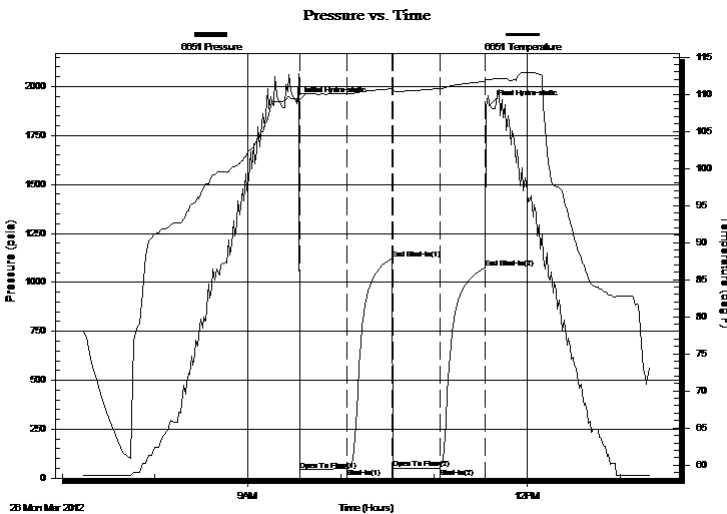
**TEST COMMENT:** 1ST Open 30 Minutes/Weak blow /Blow built to 1/2 inch in bucket of water

1ST Shut In 30 Minutes/No blow back

2ND Open 30 Minutes/Dead/No blow

2ND Shut In 30 Minutes/No blow back

## PRESSURE SUMMARY



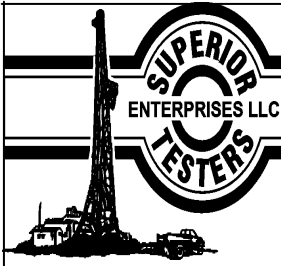
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1923.24	109.40	Initial Hydro-static
2	42.67	110.02	Open To Flow (1)
32	48.44	110.04	Shut-In(1)
61	1121.68	110.71	End Shut-In(1)
62	48.41	110.42	Open To Flow (2)
92	51.61	110.76	Shut-In(2)
121	1074.38	111.71	End Shut-In(2)
124	1907.05	111.99	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
10.00	Oil spotted Mud/ Oil 1%/ Mud 99%	0.05

## Gas Rates

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



# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration Incorporated

**36/13S/32W/Logan**

8100 East 22nd Street North  
 # 700  
 PO Box 783188  
 ATTN: Adam Eldin

**Nuss Farms 36B #2**

Job Ticket: 17628

**DST#: 1**

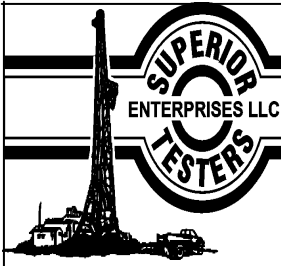
Test Start: 2012.03.26 @ 07:13:00

## Tool Information

Drill Pipe:	Length: 3426.00 ft	Diameter: 3.88 inches	Volume: 50.10 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: 540.00 ft	Diameter: 2.25 inches	Volume: 2.66 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 52.76 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 75000.00 lb
Depth to Top Packer:	3971.00 ft			Final 75000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	27.00 ft			
Tool Length:	54.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3949.00	
Hydraulic Tool	5.00			3954.00	
Jars	5.00			3959.00	
Safety Joint	2.00			3961.00	
Packer	5.00			3966.00	27.00 Bottom Of Top Packer
Packer	5.00			3971.00	
Anchor	22.00			3993.00	
Recorder	1.00	6749	Inside	3994.00	
Recorder	1.00	6651	Outside	3995.00	
Bullnose	3.00			3998.00	27.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>54.00</b>				



# DRILL STEM TEST REPORT

## FLUID SUMMARY

Ritchie Exploration Incorporated

**36/13S/32W/Logan**

8100 East 22nd Street North  
 # 700  
 PO Box 783188  
 ATTN: Adam Eldin

**Nuss Farms 36B #2**

Job Ticket: 17628

**DST#: 1**

Test Start: 2012.03.26 @ 07:13:00

### Mud and Cushion Information

Mud Type: Gel Chem  
 Mud Weight: 9.00 lb/gal  
 Viscosity: 61.00 sec/qt  
 Water Loss: 7.20 in<sup>3</sup>  
 Resistivity: ohm.m  
 Salinity: 2000.00 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
10.00	Oil spotted Mud/ Oil 1%/ Mud 99%	0.049

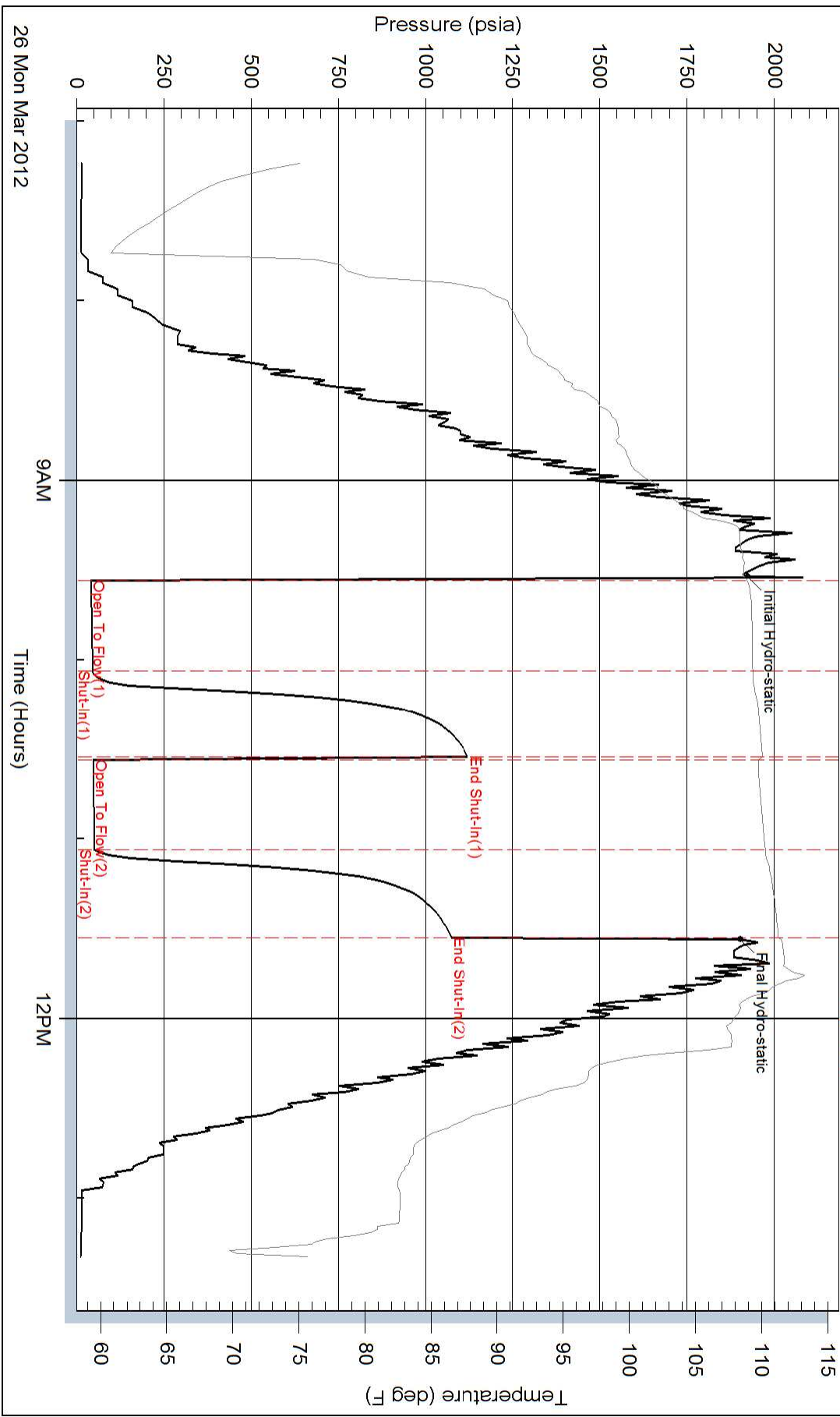
Total Length: 10.00 ft      Total Volume: 0.049 bbl

Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:

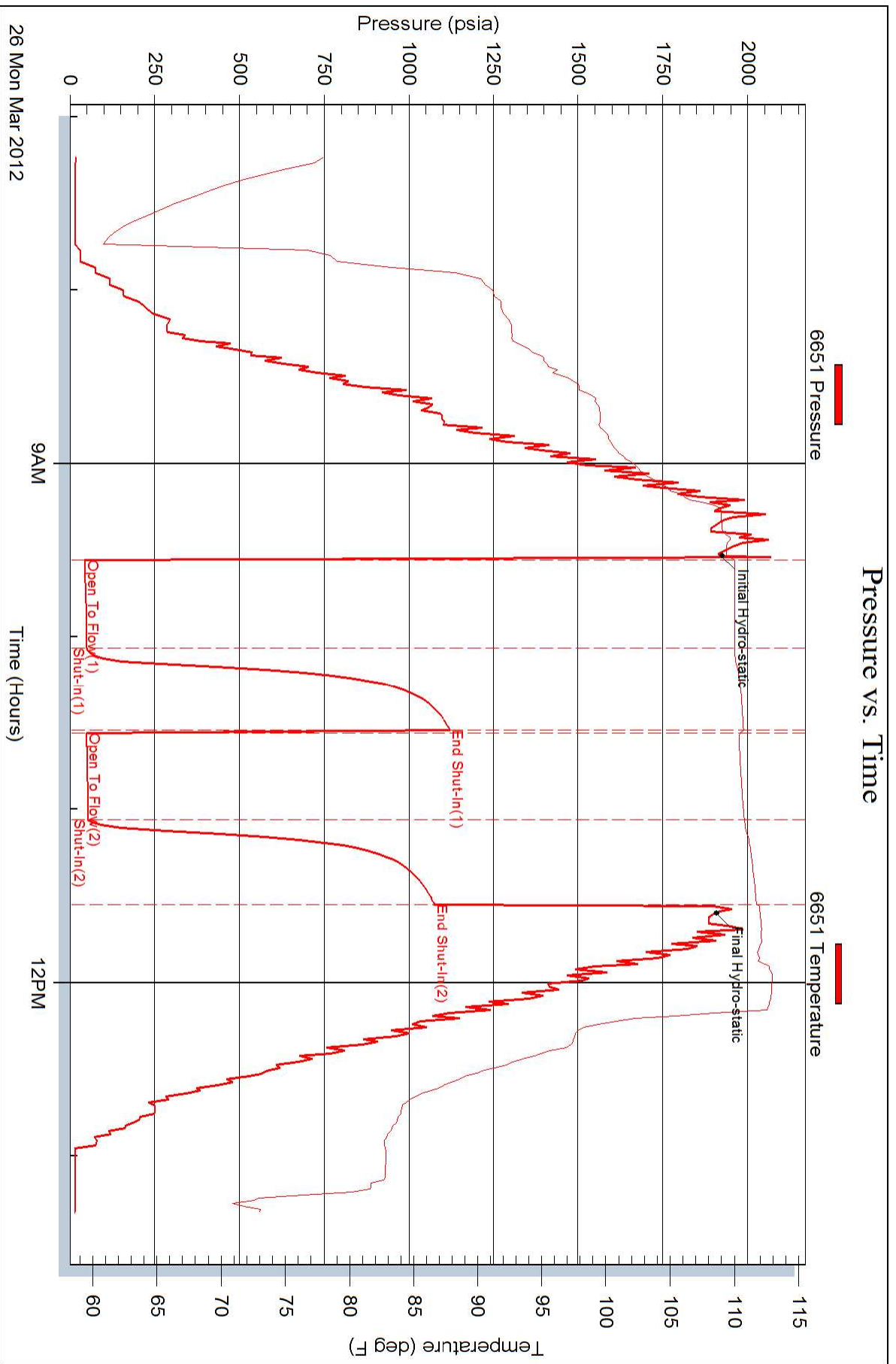
Laboratory Name:      Laboratory Location:

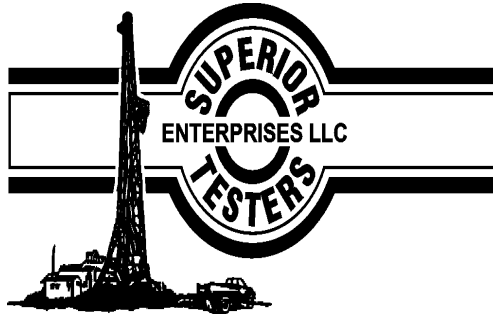
Recovery Comments:

### Pressure vs. Time



### Pressure vs. Time





## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Incorporated**

8100 East 22nd Street North  
# 700  
PO Box 783188

ATTN: Adam Eldani

### **Nuss Farms 36B #2**

### **36/13S/32W/Logan**

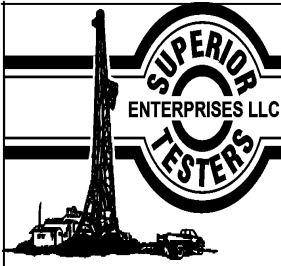
Start Date: 2012.03.27 @ 02:19:00

End Date: 2012.03.27 @ 08:00:00

Job Ticket #: 17629                      DST #: 2

Superior Testers Enterprises LLC  
PO Box 138 Great Bend KS 67530  
1-800-792-6902

Printed: 2012.03.27 @ 08:13:45



# DRILL STEM TEST REPORT

Ritchie Exploration Incorporated

**36/13S/32W/Logan**

8100 East 22nd Street North  
# 700  
PO Box 783188  
ATTN: Adam Eldani

**Nuss Farms 36B #2**

Job Ticket: 17629

**DST#: 2**

Test Start: 2012.03.27 @ 02:19:00

## GENERAL INFORMATION:

Formation: **Lansing/Kansas City**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:13:30

Time Test Ended: 08:00:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 3325 Scott City/60

**Interval: 3997.00 ft (KB) To 4054.00 ft (KB) (TVD)**

Reference Elevations: 2934.00 ft (KB)

Total Depth: 4054.00 ft (KB) (TVD)

2924.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

**Serial #: 6749 Inside**

Press @ RunDepth: 62.19 psia @ 4050.01 ft (KB)

Capacity: 5000.00 psia

Start Date: 2012.03.27 End Date: 2012.03.27

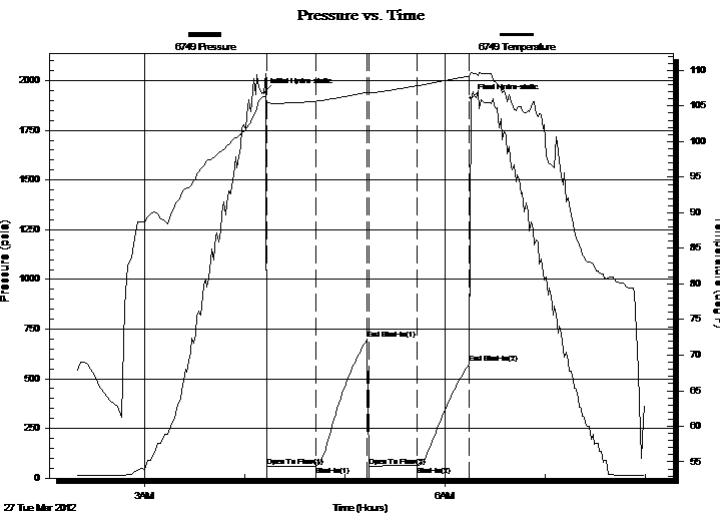
Last Calib.: 2012.03.27

Start Time: 02:19:00 End Time: 08:00:00

Time On Btm: 2012.03.27 @ 04:11:30

Time Off Btm: 2012.03.27 @ 06:15:30

**TEST COMMENT:** 1ST Open 30 Minutes/Weak blow/Blow built to 1/2 inch in 10 minutes/Blow died in 26 minutes  
1ST Shut In 30 Minutes/No blow back  
2ND Open 30 Minutes/Dead/No blow  
2ND Shut In 30 Minutes/No blow back



## PRESSURE SUMMARY

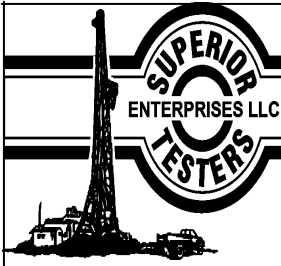
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1939.10	106.27	Initial Hydro-static
2	58.09	105.53	Open To Flow (1)
31	60.59	105.67	Shut-In(1)
62	699.33	106.92	End Shut-In(1)
63	60.98	106.81	Open To Flow (2)
92	62.19	107.85	Shut-In(2)
123	577.80	109.20	End Shut-In(2)
124	1910.00	109.68	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud 100%	0.02

## Gas Rates

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



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Ritchie Exploration Incorporated

**36/13S/32W/Logan**

8100 East 22nd Street North  
# 700  
PO Box 783188  
ATTN: Adam Eldani

**Nuss Farms 36B #2**

Job Ticket: 17629

**DST#: 2**

Test Start: 2012.03.27 @ 02:19:00

## GENERAL INFORMATION:

Formation: **Lansing/Kansas City**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:13:30

Time Test Ended: 08:00:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 3325 Scott City/60

**Interval: 3997.00 ft (KB) To 4054.00 ft (KB) (TVD)**

Reference Elevations: 2934.00 ft (KB)

Total Depth: 4054.00 ft (KB) (TVD)

2924.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

**Serial #: 6651 Outside**

Press @ RunDepth: 578.18 psia @ 4051.01 ft (KB)

Capacity: 5000.00 psia

Start Date: 2012.03.27

End Date: 2012.03.27

Last Calib.: 2012.03.27

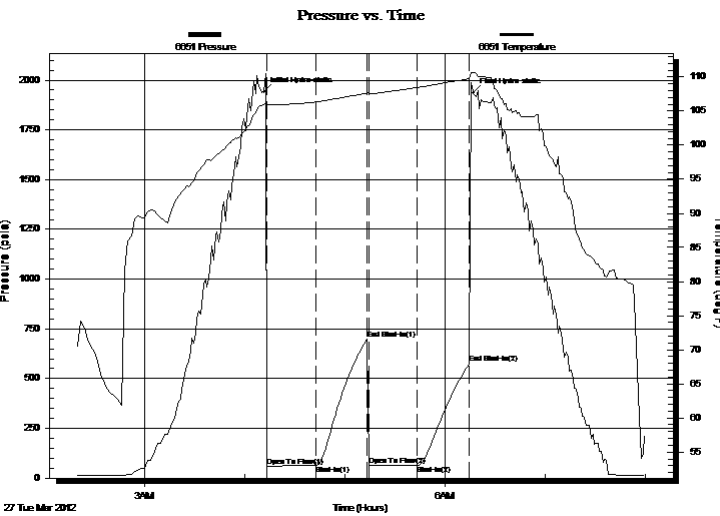
Start Time: 02:19:00

End Time: 08:00:00

Time On Btm: 2012.03.27 @ 04:11:30

Time Off Btm: 2012.03.27 @ 06:17:00

**TEST COMMENT:** 1ST Open 30 Minutes/Weak blow/Blow built to 1/2 inch in 10 minutes/Blow died in 26 minutes  
1ST Shut In 30 Minutes/No blow back  
2ND Open 30 Minutes/Dead/No blow  
2ND Shut In 30 Minutes/No blow back



## PRESSURE SUMMARY

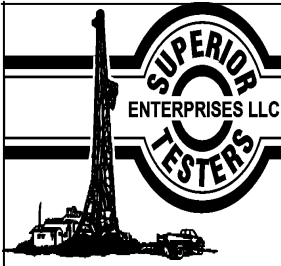
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1940.45	105.88	Initial Hydro-static
2	60.02	105.85	Open To Flow (1)
31	62.22	106.33	Shut-In(1)
63	699.75	107.63	End Shut-In(1)
63	62.84	107.48	Open To Flow (2)
92	64.23	108.45	Shut-In(2)
124	578.18	109.73	End Shut-In(2)
126	1936.22	110.60	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud 100%	0.02

## Gas Rates

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



# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration Incorporated

**36/13S/32W/Logan**

8100 East 22nd Street North  
 # 700  
 PO Box 783188  
 ATTN: Adam Eldani

**Nuss Farms 36B #2**

Job Ticket: 17629

**DST#: 2**

Test Start: 2012.03.27 @ 02:19:00

## Tool Information

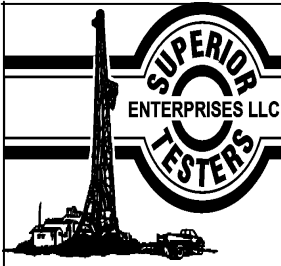
Drill Pipe:	Length: 3448.00 ft	Diameter: 3.88 inches	Volume: 50.42 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 540.00 ft	Diameter: 2.25 inches	Volume: 2.66 bbl	Weight to Pull Loose: 104000.0 lb
			<u>Total Volume: 53.08 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 76000.00 lb
Depth to Top Packer:	3997.00 ft			Final 76000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	57.01 ft			
Tool Length:	84.01 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			3975.00	
Hydraulic Tool	5.00			3980.00	
Jars	5.00			3985.00	
Safety Joint	2.00			3987.00	
Packer	5.00			3992.00	27.00 Bottom Of Top Packer
Packer	5.00			3997.00	
Change Over Sub	0.65			3997.65	
Drill Pipe	31.71			4029.36	
Change Over Sub	0.65			4030.01	
Anchor	19.00			4049.01	
Recorder	1.00	6749	Inside	4050.01	
Recorder	1.00	6651	Outside	4051.01	
Bullnose	3.00			4054.01	57.01 Bottom Packers & Anchor

**Total Tool Length: 84.01**



# DRILL STEM TEST REPORT

## FLUID SUMMARY

Ritchie Exploration Incorporated

**36/13S/32W/Logan**

8100 East 22nd Street North  
 # 700  
 PO Box 783188  
 ATTN: Adam Eldani

**Nuss Farms 36B #2**

Job Ticket: 17629

**DST#: 2**

Test Start: 2012.03.27 @ 02:19:00

### Mud and Cushion Information

Mud Type: Gel Chem  
 Mud Weight: 9.00 lb/gal  
 Viscosity: 55.00 sec/qt  
 Water Loss: 6.40 in<sup>3</sup>  
 Resistivity: ohm.m  
 Salinity: 2200.00 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
5.00	Mud 100%	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

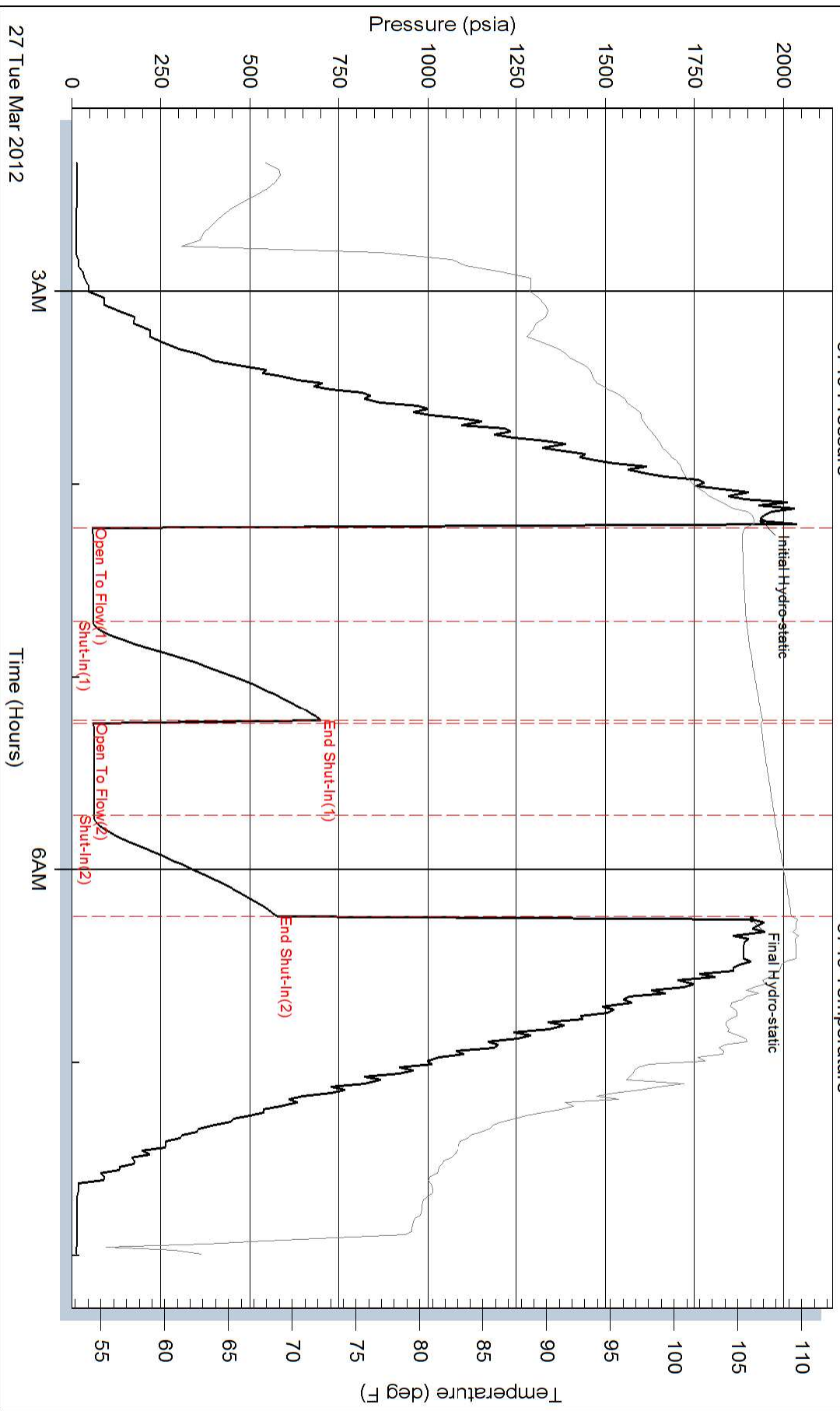
Serial #:

Laboratory Name:

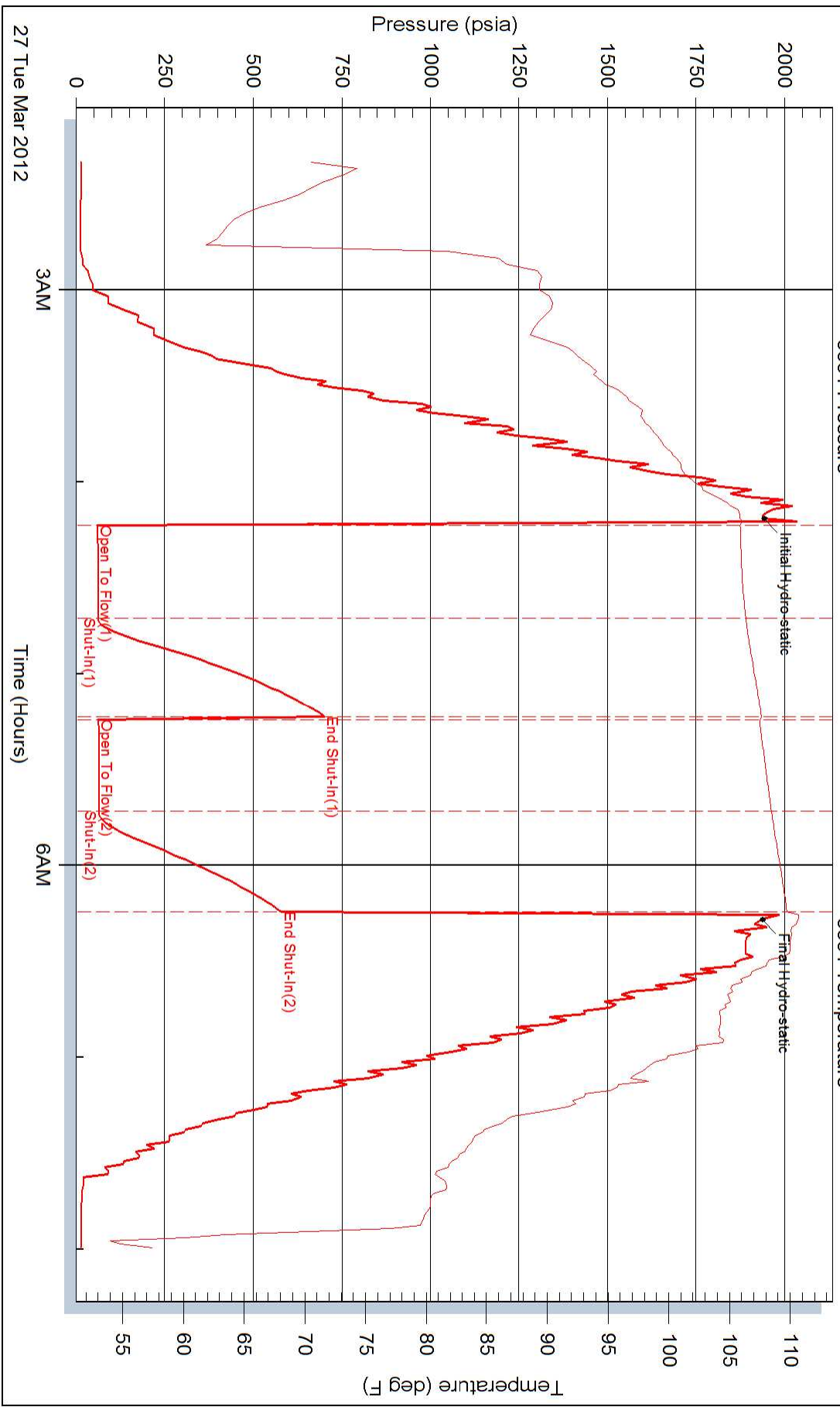
Laboratory Location:

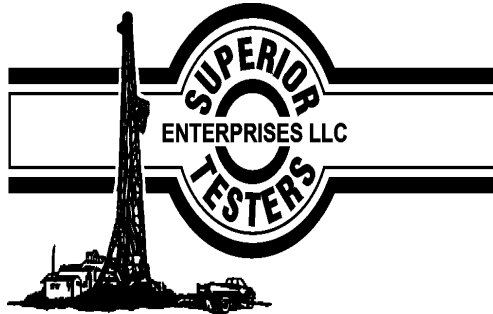
Recovery Comments:

### Pressure vs. Time



### Pressure vs. Time





## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Incorporated**

8100 East 22nd Street North  
# 700  
PO Box 783188

ATTN: Adam Eldani

### **Nuss Farms 36B #2**

### **36/13S/32W/Logan**

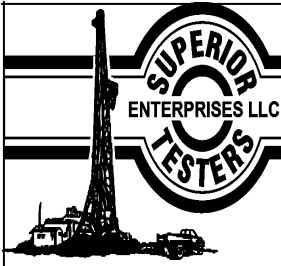
Start Date: 2012.03.27 @ 20:12:00

End Date: 2012.03.28 @ 01:40:00

Job Ticket #: 17630                      DST #: 3

Superior Testers Enterprises LLC  
PO Box 138 Great Bend KS 67530  
1-800-792-6902

Printed: 2012.03.28 @ 01:52:51



# DRILL STEM TEST REPORT

Ritchie Exploration Incorporated

**36/13S/32W/Logan**

8100 East 22nd Street North  
# 700  
PO Box 783188  
ATTN: Adam Eldani

**Nuss Farms 36B #2**

Job Ticket: 17630

**DST#: 3**

Test Start: 2012.03.27 @ 20:12:00

## GENERAL INFORMATION:

Formation: **Lansing/Kansas City**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:05:30

Time Test Ended: 01:40:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 3325 Scott City/60

**Interval: 4107.00 ft (KB) To 4139.00 ft (KB) (TVD)**

Reference Elevations: 2934.00 ft (KB)

Total Depth: 4139.00 ft (KB) (TVD)

2924.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

**Serial #: 6749**

**Inside**

Press @ RunDepth: 87.79 psia @ 4135.00 ft (KB)

Capacity: 5000.00 psia

Start Date: 2012.03.27

End Date:

2012.03.28

Last Calib.:

2012.03.28

Start Time: 20:12:00

End Time:

01:40:00

Time On Btm:

2012.03.27 @ 22:03:30

Time Off Btm:

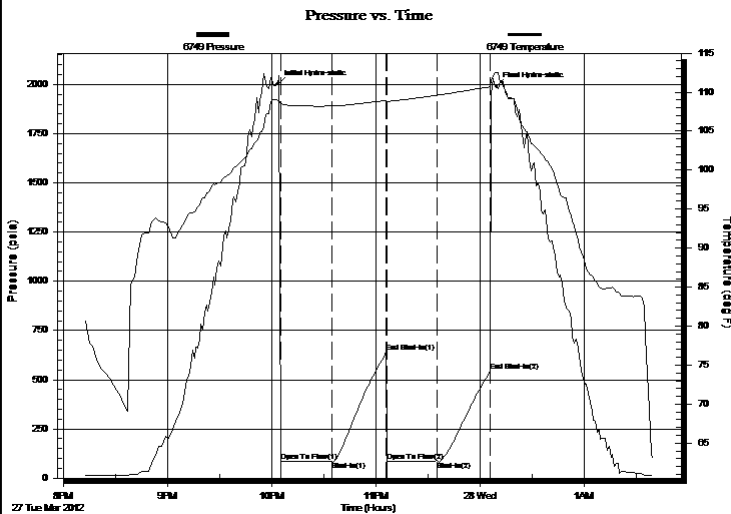
2012.03.28 @ 00:09:30

**TEST COMMENT:** 1ST Open 30 Minutes/Weak surface blow/Blow did not build/Blow died in 11 minutes

1ST Shut In 30 Minutes/No blow back

2ND Open 30 Minutes/Dead/No blow

2ND Shut In 30 Minutes/No blow back



## PRESSURE SUMMARY

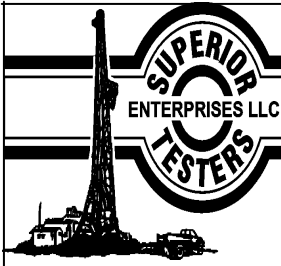
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2001.67	108.93	Initial Hydro-static
2	85.37	108.54	Open To Flow (1)
32	87.09	108.22	Shut-In(1)
63	638.74	108.95	End Shut-In(1)
63	85.64	108.67	Open To Flow (2)
92	87.79	109.60	Shut-In(2)
123	545.33	110.69	End Shut-In(2)
126	1989.27	112.50	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
90.00	Mud 100%	0.44

## Gas Rates

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



# DRILL STEM TEST REPORT

Ritchie Exploration Incorporated

**36/13S/32W/Logan**

8100 East 22nd Street North  
 # 700  
 PO Box 783188  
 ATTN: Adam Eldani

**Nuss Farms 36B #2**

Job Ticket: 17630

**DST#: 3**

Test Start: 2012.03.27 @ 20:12:00

## GENERAL INFORMATION:

Formation: **Lansing/Kansas City**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:05:30

Time Test Ended: 01:40:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 3325 Scott City/60

**Interval: 4107.00 ft (KB) To 4139.00 ft (KB) (TVD)**

Reference Elevations: 2934.00 ft (KB)

Total Depth: 4139.00 ft (KB) (TVD)

2924.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

**Serial #: 6651 Outside**

Press @ RunDepth: 545.40 psia @ 4136.00 ft (KB)

Capacity: 5000.00 psia

Start Date: 2012.03.27

End Date:

2012.03.28

Last Calib.:

2012.03.28

Start Time: 20:12:00

End Time:

01:40:00

Time On Btm:

2012.03.27 @ 22:03:30

Time Off Btm:

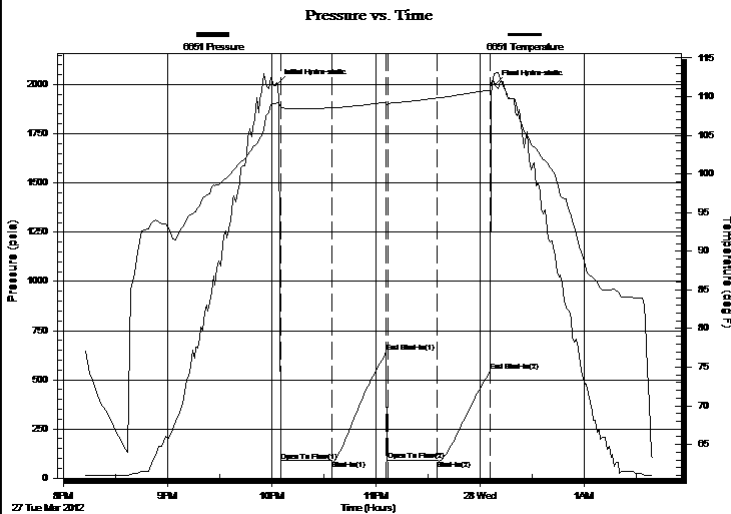
2012.03.28 @ 00:09:00

**TEST COMMENT:** 1ST Open 30 Minutes/Weak surface blow/Blow did not build/Blow died in 11 minutes

1ST Shut In 30 Minutes/No blow back

2ND Open 30 Minutes/Dead/No blow

2ND Shut In 30 Minutes/No blow back



## PRESSURE SUMMARY

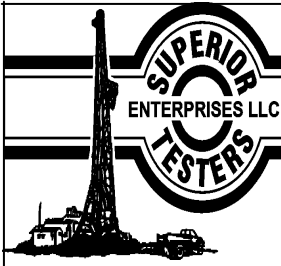
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2003.08	109.20	Initial Hydro-static
2	87.51	108.62	Open To Flow (1)
32	89.03	108.54	Shut-In(1)
63	638.76	109.28	End Shut-In(1)
64	88.73	109.14	Open To Flow (2)
92	89.71	109.82	Shut-In(2)
123	545.40	110.87	End Shut-In(2)
126	1997.85	113.04	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
90.00	Mud 100%	0.44

## Gas Rates

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



# DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Incorporated

**36/13S/32W/Logan**

8100 East 22nd Street North  
 # 700  
 PO Box 783188  
 ATTN: Adam Eldani

**Nuss Farms 36B #2**

Job Ticket: 17630

**DST#: 3**

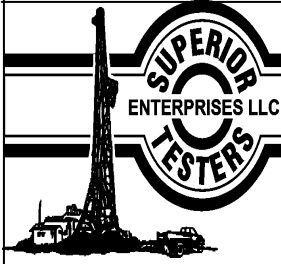
Test Start: 2012.03.27 @ 20:12:00

## Tool Information

Drill Pipe:	Length: 3575.00 ft	Diameter: 3.88 inches	Volume: 52.28 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: 540.00 ft	Diameter: 2.25 inches	Volume: 2.66 bbl	Weight to Pull Loose: 88000.00 lb
			<u>Total Volume: 54.94 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 76000.00 lb
Depth to Top Packer:	4107.00 ft			Final 76000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	32.00 ft			
Tool Length:	54.00 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			4090.00	
Hydraulic Tool	5.00			4095.00	
Safety Joint	2.00			4097.00	
Packer	5.00			4102.00	22.00 Bottom Of Top Packer
Packer	5.00			4107.00	
Anchor	27.00			4134.00	
Recorder	1.00	6749	Inside	4135.00	
Recorder	1.00	6651	Outside	4136.00	
Bullnose	3.00			4139.00	32.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>54.00</b>				



# DRILL STEM TEST REPORT

## FLUID SUMMARY

Ritchie Exploration Incorporated

**36/13S/32W/Logan**

8100 East 22nd Street North  
# 700  
PO Box 783188  
ATTN: Adam Eldani

**Nuss Farms 36B #2**

Job Ticket: 17630

**DST#: 3**

Test Start: 2012.03.27 @ 20:12:00

### Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 48.00 sec/qt

Water Loss: 10.49 in<sup>3</sup>

Resistivity: ohm.m

Salinity: 2500.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psia

Oil API:

Water Salinity: ppm

deg API

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
90.00	Mud 100%	0.443

Total Length: 90.00 ft      Total Volume: 0.443 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 6749

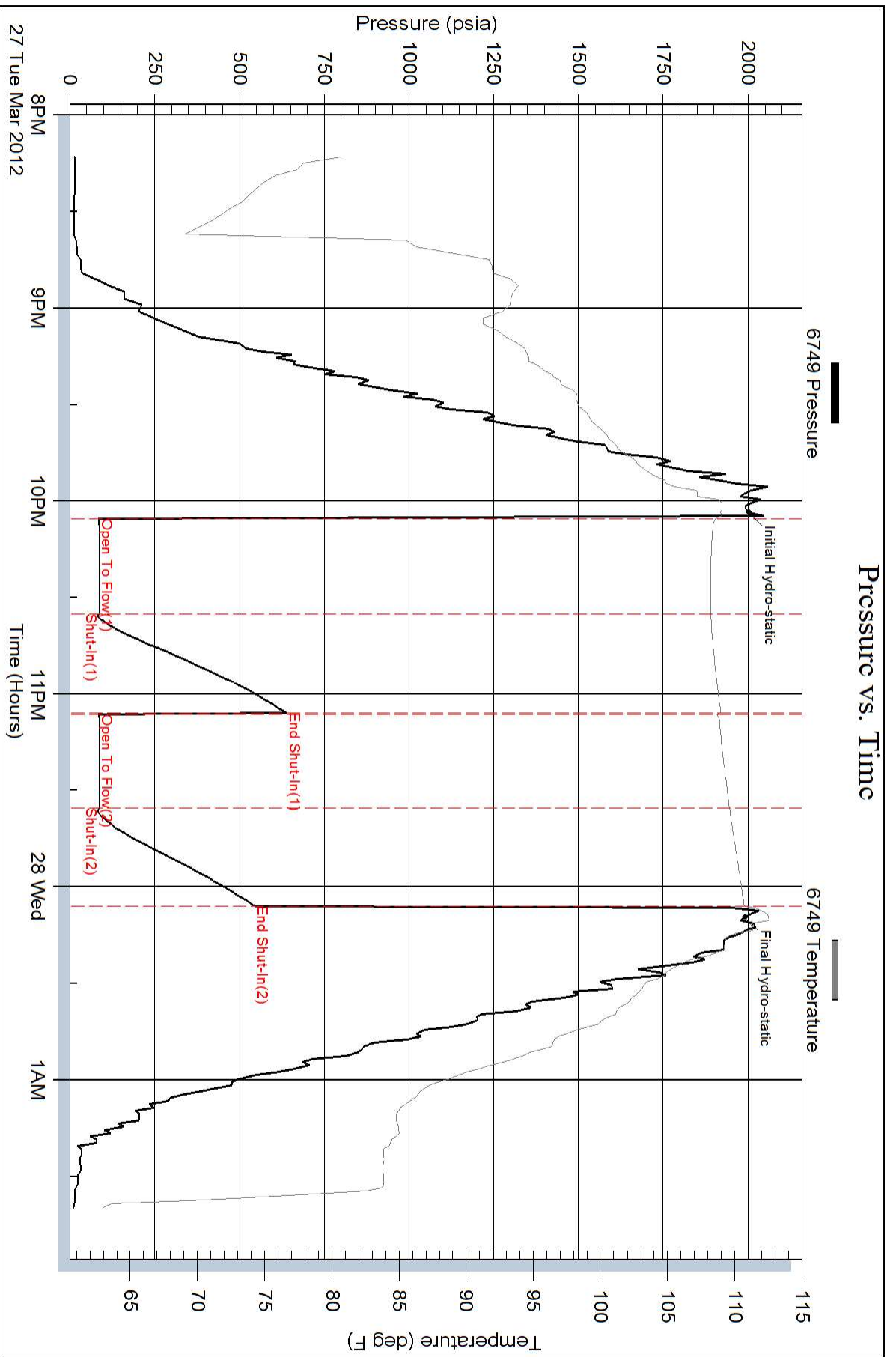
Inside

Ritchie Exploration Incorporated

Nuss Farms 36B #2

DST Test Number: 3

### Pressure vs. Time



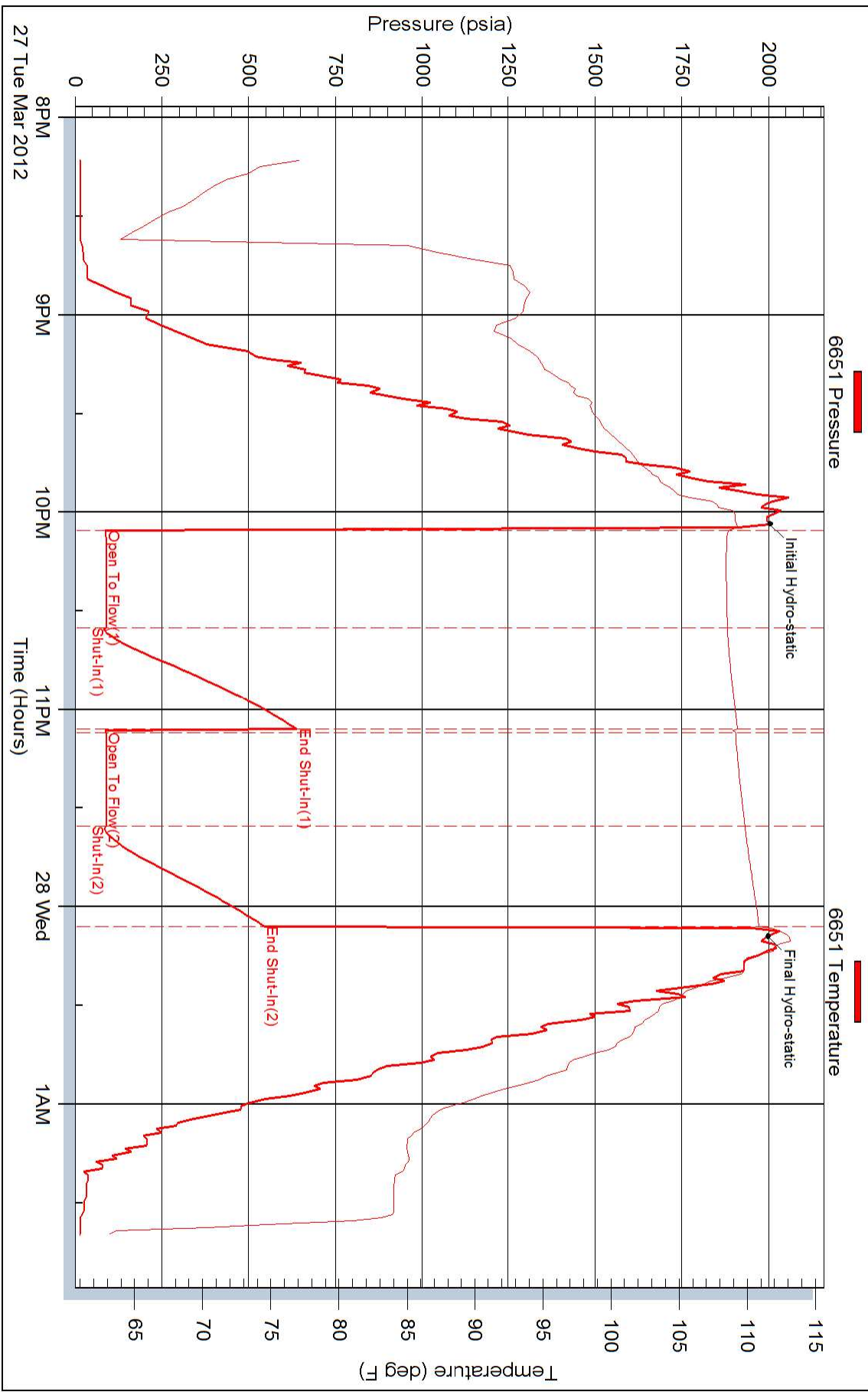
Serial #: 6651

Outside Ritchie Exploration Incorporated

Nuss Farms 36B #2

DST Test Number: 3

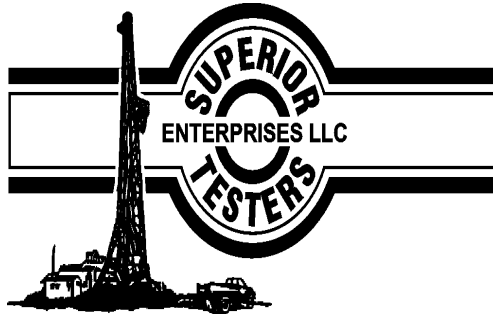
### Pressure vs. Time



Superior Testers Enterprises LLC

Ref. No: 17630

Printed: 2012.03.28 @ 01:52:52



## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Incorporated**

8100 East 22nd Street North  
# 700  
PO Box 783188

ATTN: Adam Eldani

### **Nuss Farms 36B #2**

### **36/13S/32W/Logan**

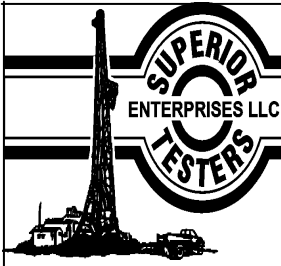
Start Date: 2012.03.30 @ 14:33:00

End Date: 2012.03.30 @ 20:03:30

Job Ticket #: 17632                      DST #: 5

Superior Testers Enterprises LLC  
PO Box 138 Great Bend KS 67530  
1-800-792-6902

Printed: 2012.03.30 @ 20:17:52



# DRILL STEM TEST REPORT

Ritchie Exploration Incorporated

**36/13S/32W/Logan**

8100 East 22nd Street North  
# 700  
PO Box 783188  
ATTN: Adam Eldani

**Nuss Farms 36B #2**

Job Ticket: 17632

**DST#: 5**

Test Start: 2012.03.30 @ 14:33:00

## GENERAL INFORMATION:

Formation: **Johnson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:19:30

Time Test Ended: 20:03:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 3325 Scott City/60

**Interval: 4502.00 ft (KB) To 4548.00 ft (KB) (TVD)**

Reference Elevations: 2934.00 ft (KB)

Total Depth: 4548.00 ft (KB) (TVD)

2924.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

**Serial #: 6749 Inside**

Press @ RunDepth: 53.93 psia @ 4544.00 ft (KB)

Capacity: 5000.00 psia

Start Date: 2012.03.30

End Date: 2012.03.30

Last Calib.: 2012.03.30

Start Time: 14:33:00

End Time: 20:03:30

Time On Btm: 2012.03.30 @ 16:18:00

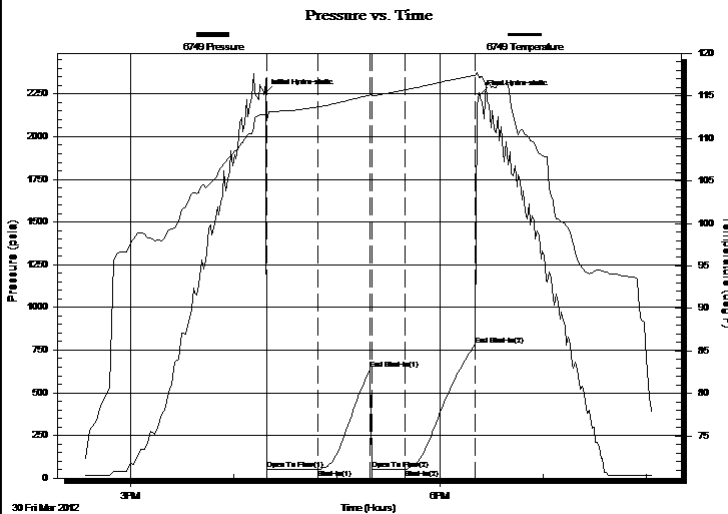
Time Off Btm: 2012.03.30 @ 18:23:00

**TEST COMMENT:** 1ST Open 30 Minutes/Weak blow /Surface blow did not build/Blow died in 15 minutes

1ST Shut In 30 Minutes/No blow back

2ND Open 20 Minutes/Dead/No blow

2ND Shut In 40 Minutes/No blow back



## PRESSURE SUMMARY

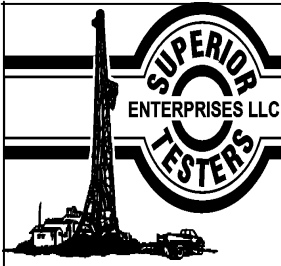
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2251.69	112.78	Initial Hydro-static
2	50.33	112.08	Open To Flow (1)
31	52.88	113.71	Shut-In(1)
62	640.57	115.13	End Shut-In(1)
63	52.89	115.00	Open To Flow (2)
82	53.93	115.71	Shut-In(2)
123	781.92	117.42	End Shut-In(2)
125	2245.05	117.20	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
3.00	Mud 100%	0.01

## Gas Rates

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



# DRILL STEM TEST REPORT

Ritchie Exploration Incorporated  
 8100 East 22nd Street North  
 # 700  
 PO Box 783188  
 ATTN: Adam Eldani

**36/13S/32W/Logan**

**Nuss Farms 36B #2**

Job Ticket: 17632

**DST#: 5**

Test Start: 2012.03.30 @ 14:33:00

## GENERAL INFORMATION:

Formation: **Johnson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:19:30

Time Test Ended: 20:03:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 3325 Scott City/60

**Interval: 4502.00 ft (KB) To 4548.00 ft (KB) (TVD)**

Reference Elevations: 2934.00 ft (KB)

Total Depth: 4548.00 ft (KB) (TVD)

2924.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

**Serial #: 6651 Outside**

Press @ RunDepth: 776.75 psia @ 4545.00 ft (KB)

Capacity: 5000.00 psia

Start Date: 2012.03.30

End Date: 2012.03.30

Last Calib.: 2012.03.30

Start Time: 14:33:00

End Time: 20:03:30

Time On Btm: 2012.03.30 @ 16:18:00

Time Off Btm: 2012.03.30 @ 18:23:00

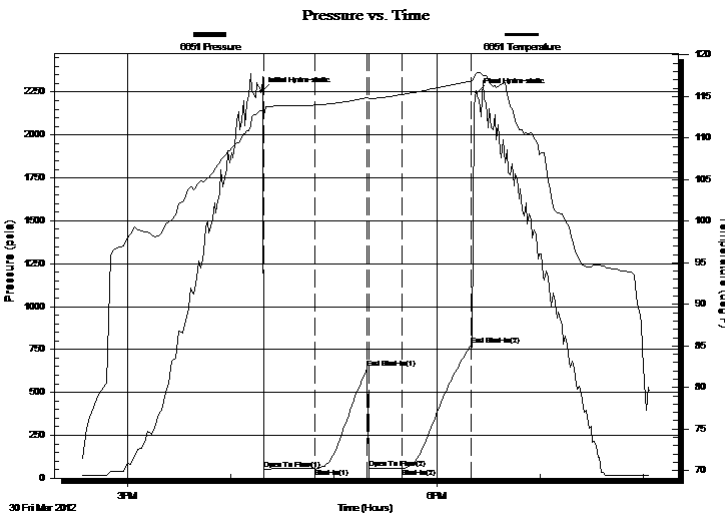
**TEST COMMENT:** 1ST Open 30 Minutes/Weak blow /Surface blow did not build/Blow died in 15 minutes

1ST Shut In 30 Minutes/No blow back

2ND Open 20 Minutes/Dead/No blow

2ND Shut In 40 Minutes/No blow back

## PRESSURE SUMMARY



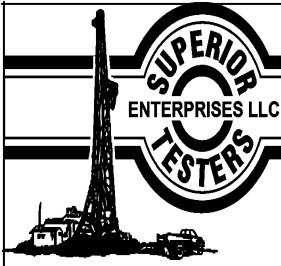
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2253.24	113.27	Initial Hydro-static
2	52.47	112.67	Open To Flow (1)
31	55.40	113.97	Shut-In(1)
62	640.35	114.84	End Shut-In(1)
63	54.94	114.71	Open To Flow (2)
82	56.14	115.23	Shut-In(2)
122	776.75	116.86	End Shut-In(2)
125	2245.69	117.86	Final Hydro-static

## Recovery

## Gas Rates

Length (ft)	Description	Volume (bbl)
3.00	Mud 100%	0.01

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



# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration Incorporated

**36/13S/32W/Logan**

8100 East 22nd Street North  
 # 700  
 PO Box 783188  
 ATTN: Adam Eldani

**Nuss Farms 36B #2**

Job Ticket: 17632

**DST#: 5**

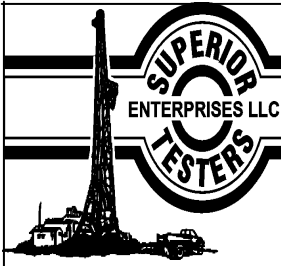
Test Start: 2012.03.30 @ 14:33:00

## Tool Information

Drill Pipe:	Length: 3955.00 ft	Diameter: 3.88 inches	Volume: 57.84 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: 540.00 ft	Diameter: 2.25 inches	Volume: 2.66 bbl	Weight to Pull Loose: 118000.0 lb
			<u>Total Volume: 60.50 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 85000.00 lb
Depth to Top Packer:	4502.00 ft			Final 85000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	46.00 ft			
Tool Length:	68.00 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			4485.00	
Hydraulic Tool	5.00			4490.00	
Safety Joint	2.00			4492.00	
Packer	5.00			4497.00	22.00 Bottom Of Top Packer
Packer	5.00			4502.00	
Anchor	41.00			4543.00	
Recorder	1.00	6749	Inside	4544.00	
Recorder	1.00	6651	Outside	4545.00	
Bullnose	3.00			4548.00	46.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>68.00</b>				



# DRILL STEM TEST REPORT

## FLUID SUMMARY

Ritchie Exploration Incorporated  
8100 East 22nd Street North  
# 700  
PO Box 783188  
ATTN: Adam Eldani

**36/13S/32W/Logan**  
**Nuss Farms 36B #2**  
Job Ticket: 17632      **DST#: 5**  
Test Start: 2012.03.30 @ 14:33:00

### 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:	54.00 sec/qt	Cushion Volume:	bbbl		
Water Loss:	8.00 in <sup>3</sup>	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psia		
Salinity:	4000.00 ppm				
Filter Cake:	1.00 inches				

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
3.00	Mud 100%	0.015

Total Length: 3.00 ft      Total Volume: 0.015 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

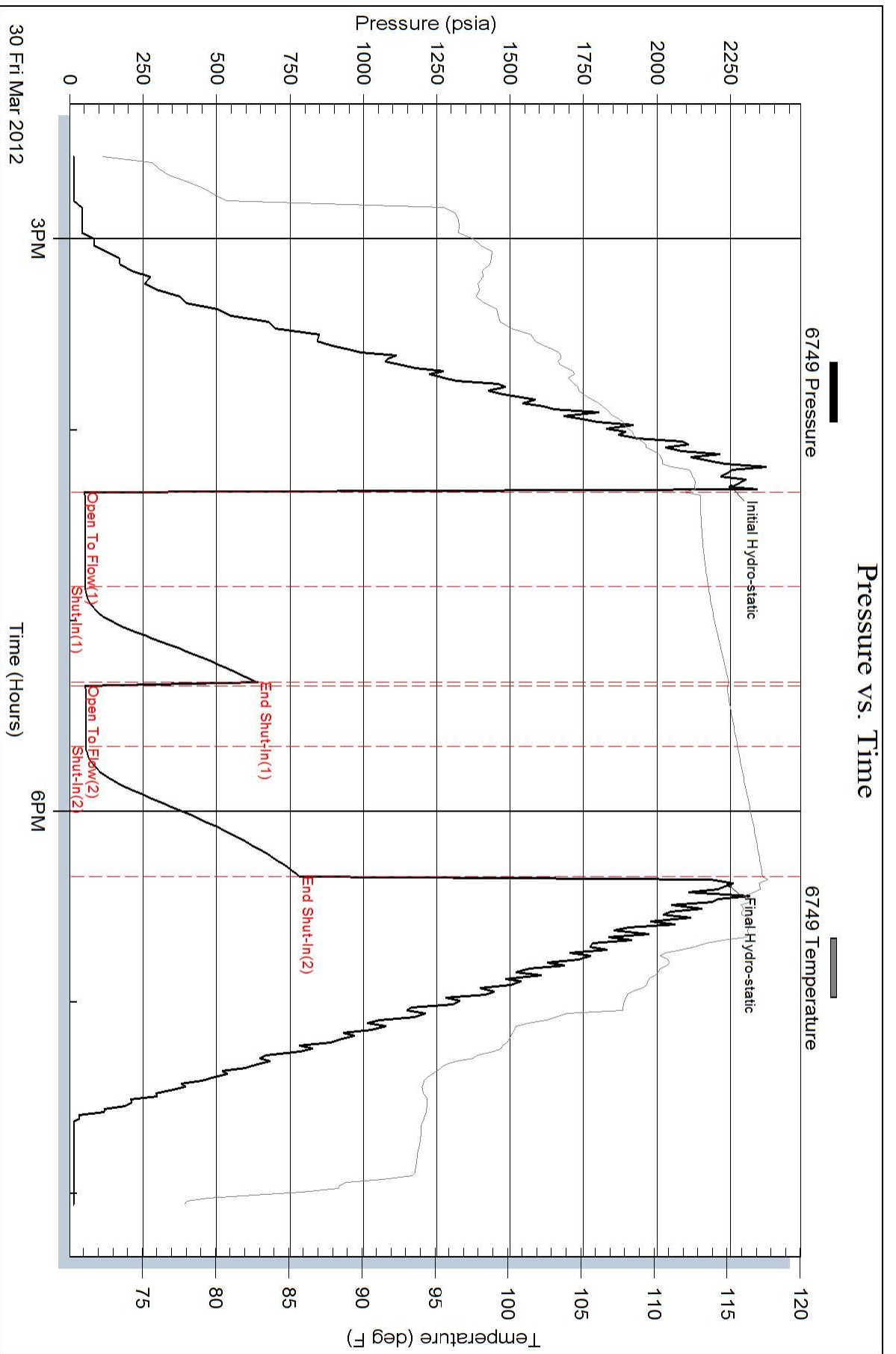
Serial #: 6749

Inside

Richie Exploration Incorporated

Nuss Farms 36B #2

DST Test Number: 5



Superior Testers Enterprises LLC

Ref. No: 17632

Printed: 2012.03.30 @ 20:17:52

### Pressure vs. Time

